STATE OF OHIO
DEPARTMENT OF HIGHWAYS

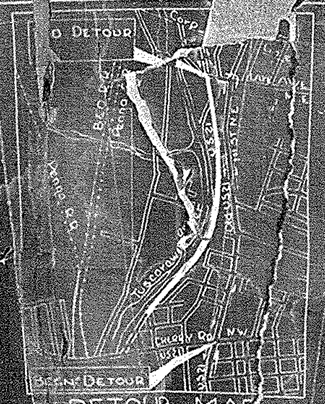
STA - 21 - 11.49; WAY - 21 - 0.00.

GRADE SEPARATION WITH THE PENNSYLVANIA RAILROAD AND THE BALTIMORE & OHIO RAILROAD

CITY OF MASSILLON STARK COUNTY WAYNE COUNTY
PERRY TOWNSHIP LAWRENCE TOWNSHIP CHIPPEWA TOWNSHIP

L & D

Copy

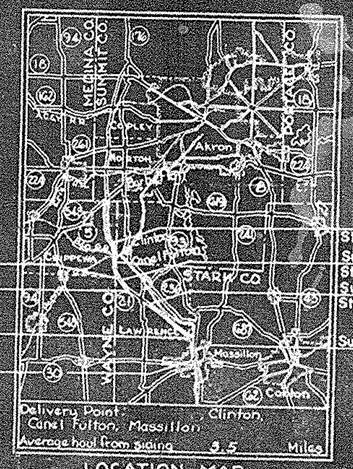


DETOUR MAP

CONVENTIONAL SIGNS

State Line
County Line
Township Line
Section Line
Centerline
Corporation Line
Fenceline
Guardrail (existing)
Guardrail (proposed)
Steel Railroad
Power Poles
Telephone Poles
Trees
Trees (removed)
Limited Access and Right of Way
Access Only
Right of Way Only
Existing Right of Way

L/A
R/W



Resume Project Sta. 1072+29.42
Resume Project Sta. 1014+67.2
Resume Project Sta. 720+44.7
Begin Project Sta. 606+50

End Project Sta. 91+00
Suspend Project Sta. 1068+75.2
Suspend Project Sta. 915+58.1
Suspend Project Sta. 646+17.5

Delivery Point: Canal Fulton, Massillon, Clinton.
Average haul from siding 9.5 Miles

LOCATION MAP

SCALE OF MILES

Portion to be improved
State Roads

SCALE

Plan	1" = 50'
Profile, Horizontal	1" = 50'
Profile, Vertical	1" = 5'
Cross Sections	1" = 5' & 1" = 10'

INDEX OF SHEETS

Title Sheet	1
Typical Sections	2-6
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Alignment Data	8-9, 9A
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Lateral Ditches	71-84
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LINE DATA

New Alignment Project 43,710.96 L.F. Or 8.278 Miles
Net Length of New Alignment 45,349.66 L.F. Or 8.588 Miles

See Sheet No. 8 for Line Data Calculations

Supplemental	
L-1	4-1-50
L-2	4-1-50
L-3	4-1-50
L-3-A	4-1-50
RRA-1	1-20-58
RRA-2	1-20-58
	11-3-58
	7-15-58

Drawings		
A	8-1-60	AR-1-57 2-2-59
B	8-1-56	RB-1-55 2-2-59
	9-1-59	I-80 C.B.*3-A 1-26-59
	10-1-58	T-B.T. No. 2 4-23-59
	6-1-56	T-B.M.H. No. 1-A 1-23-59
NOTE*	10-1-47	F-3 9-1-59
	11-25-58	CS-1-54 Sh. 1 & 2 7-16-*
	1-54	

Supplemental Specifications	
18	Rev. 6-15-59
S-101	12-2-59
M-106.6(d)	Rev. 4-1-58
I-125	Rev. 9-8-60

LIMITED ACCESS

This improvement is especially designated for ... and has been declared a limited access highw... by action of Director of Highways in accordance ... provisions of Section 5511.02 of the Revised Code.

The standard specifications of the State of Ohio Department of Highways, including changes and supplemental specifications listed in the proposal shall govern this improvement.

The right-of-way for this improvement will be provided by the State of Ohio.

I hereby approve these plans and declare that the making of this improvement will not require the closing to traffic of the highway except as noted on Sheet No. 7 and that provisions for the maintenance and safety of traffic will be set forth on these plans and estimates.

Approved Carl L. Campbell
Date 9-19-60 Division Deputy Director

Approved Guy E. Nespor
Date 11-10-60 Deputy Director of Planning and Programming

Approved H. Ackermann
Date 10-28-60 Engineer of Bridges

Approved W. J. Carr
Date 11-2-60 Engineer of Location and Design

Approved C. W. M. Bagley
Date 11-2-60 Deputy Director of Design and Construction

Approved G. A. Berry
Date 11-10-60 First Assistant Director

Approved E. L. Stout
Date 11-10-60 Director of Highways

TYPICAL SECTIONS

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

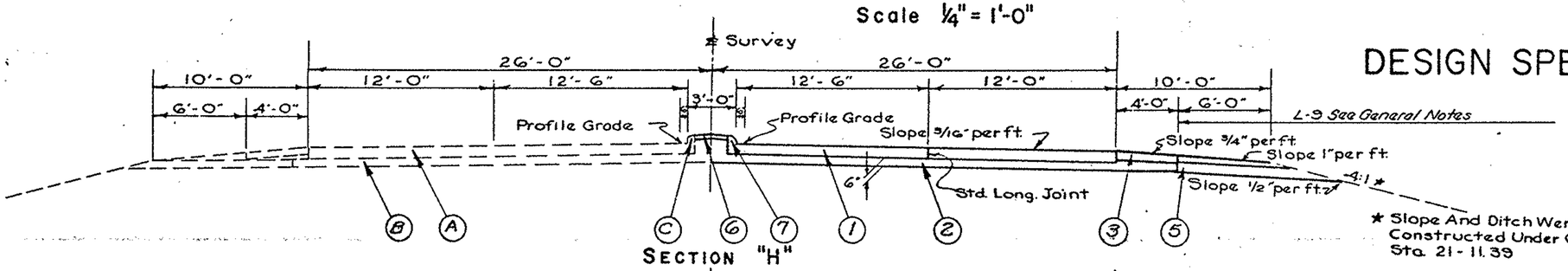
2

STA - 21 - 11.49
WAY - 21 - 0.00
SUM 21 - 0.00

TYPE T-71

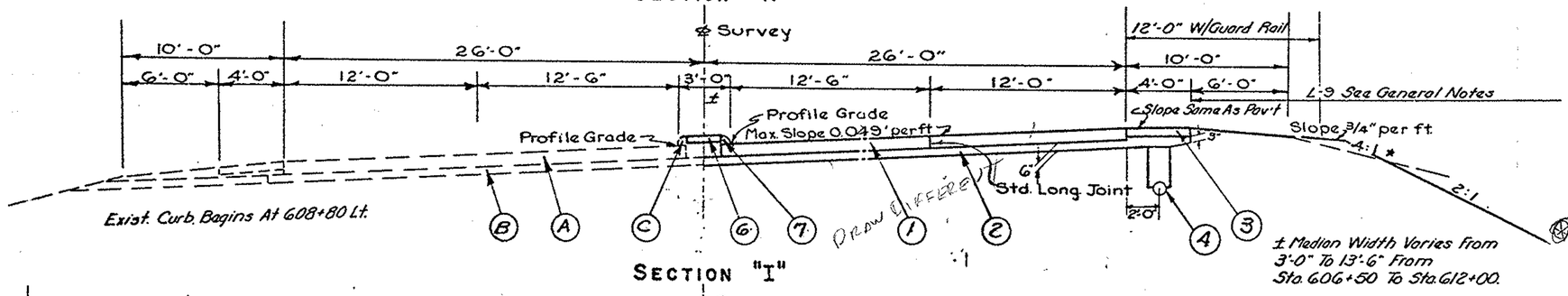
Scale 1/4" = 1'-0"

DESIGN SPEED 50 M.P.H.



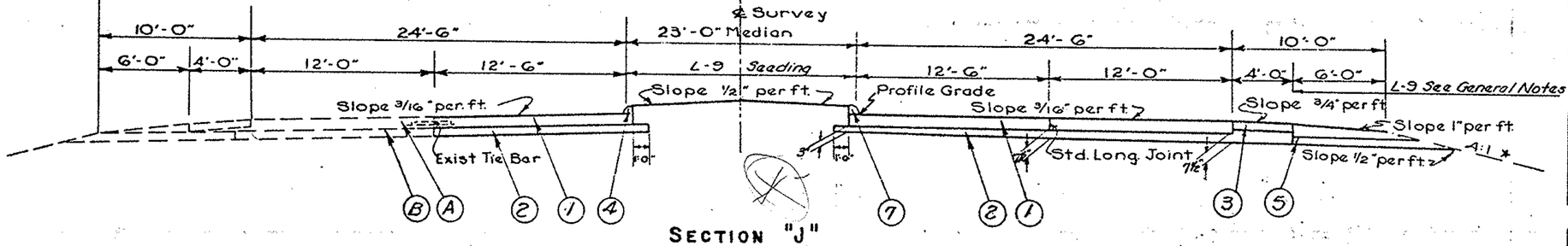
SECTION "H"

* Slope And Ditch Were Constructed Under Original Project Sta. 21 - 11.39

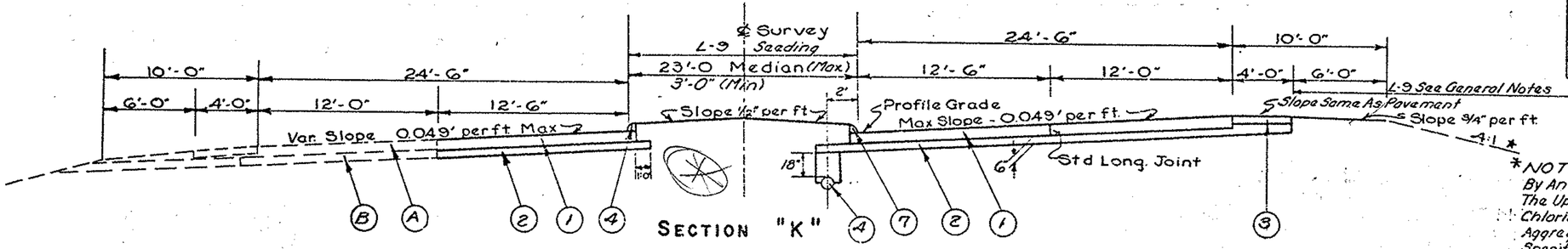


SECTION "I"

± Median Width Varies from 3'-0" To 13'-6" From Sta. 606+50 To Sta. 612+00.



SECTION "J"



SECTION "K"

*NOTE: Aggregate Surfaced Shoulders Shall Be Stabilized By An Admixture Of 1½ Lbs. Per Sq. Yd. Of Calcium Chloride To The Upper 3" Of The Compacted Aggregate. The Calcium Chloride Shall Be Thoroughly Mixed With The Stabilized Aggregate As Described In Item 3-11.12 Of The General Specifications. After Final Shaping And Compacting Of The Shoulders The Surface Shall Be Given An Additional Application Of Calcium Chloride At The Rate Of 0.6 Lbs. Per Sq. Yd. As Described In Item 3-11.14 Of The General Specifications. See Notes In Proposal.

SECTION "H"

FROM	TO	LIN FT
612+25.69 (AH)	612+99.78	74.09
	TOTAL	74.09

SECTION "I"

FROM	TO	LIN FT	DESCRIPTION
606+50	612+00.16 (BK)	550.16	
612+00.16 (BK)	612+25.69 (AH)		Station Equation
612+99.78	627+97.56 (BK)	-97.78	
627+97.56 (BK)	628+00.00 (AH)		Station Equation
628+00.00 (AH)	636+00	800.00	
	TOTAL	2847.94	

SECTION "J"

FROM	TO	LIN FT
642+12.08	646+17.50	-405.42
	TOTAL	-405.42

SECTION "K"

FROM	TO	LIN FT
636+00.00	642+12.08	612.08
	TOTAL	612.08

Ⓐ Existing 9" Reinforced Concrete Pavement
Ⓑ Existing 6" Subbase
Ⓒ Existing Concrete Curb Standard Type 2A

LEGEND

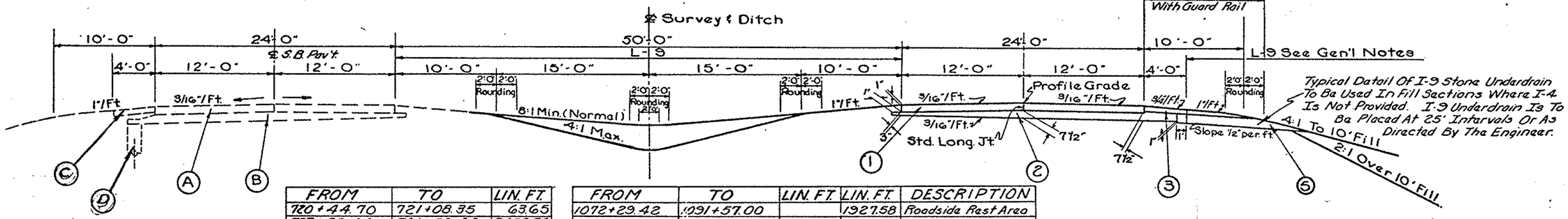
① T-71 9" Reinforced Portland Cement Concrete Pavement
② I-22 Variable Depth Subbase
③ *I-18 6" Stabilized Crushed Aggregate Shoulder (See Note In Proposal)
④ I-4 6" Underdrain (For Location See Plan And Profile Sheets)
⑤ I-9 Stone Underdrain No. 2
⑥ I-21 4" Portland Cement Concrete Median Pavement, Standard Type 1
⑦ I-12 Concrete Curb, Standard Type 2-A

TYPICAL SECTIONS
TYPE T-71

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

STA. 21 - 1149
WAY. 21 - 0.00
SUM. 21 - 0.00

DESIGN SPEED 70 m.p.h.

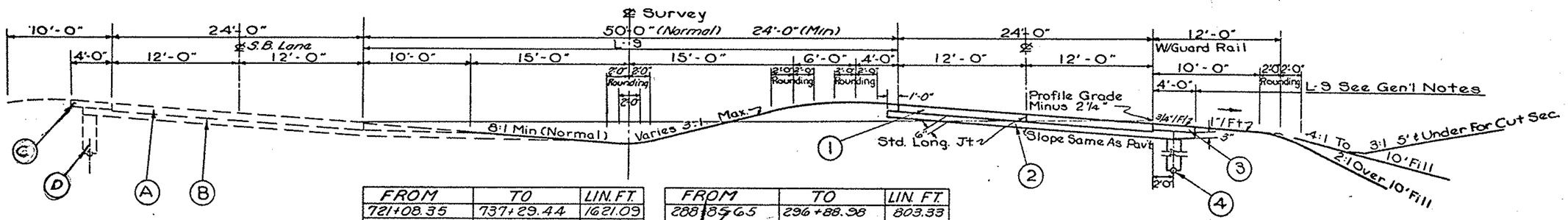


FROM	TO	LIN. FT.
720+44.70	721+08.35	63.65
737+29.44	761+50.00	2420.56
871+92.74	879+80.36	787.62
1014+67.20	1037+49.30	2282.10
1056+52.82	1068+75.20	1222.38

FROM	TO	LIN. FT.	LIN. FT.	DESCRIPTION
1072+29.42	1091+57.00		1927.58	Roadside Rest Area
1091+57.00	1109+13.29 NB	1756.29		
	TOTAL	8532.60	1927.58	

NOTE: In All Cut Sections I-4 Underdrain Is To Be Used To Drain The Subbase.
I-9 Stone Underdrains Are To Be Used In All Fill Sections.
For Details Not Shown See Std. Dwg. RI-1.

SECTION "A"
NORMAL SECTION - 50' MEDIAN
SCALE 1"=5'-0"



FROM	TO	LIN. FT.
721+08.35	737+29.44	1621.09
879+80.36	915+56.10	3575.74
1037+49.30	1056+52.82	1903.52
# 1109+13.29 (N.B.)	1141+31.61 (N.B.)	3218.32
	= 1114+84.26 (℄ Sect.)	
	TOTAL	10318.67

FROM	TO	LIN. FT.
288+85.65	296+88.98	803.33
0+00.00	2+45.80	245.30
308+00.35	3+11+16.96 (BK)	378.57
	= (0+00) AH	
	TOTAL	12820.31

Ⓐ Ⓑ Existing 9" Reinforced Concrete Pav't.
Existing Variable Depth Granular Subbase
Ⓒ Ⓓ Existing Stabilized Shoulder
Existing 6" Underdrain

SECTION "B"
SUPERELEVATED SECTION - 50' MEDIAN
SCALE 1"=5'-0"

Median Varies From 50'-0" To 24'-0"
℄ 1129+94.09 Back = ℄ 0+12.64 Ahead

LEGEND

①	T-71	9" Reinforced Portland Cement Concrete Pavement
②	I-22	Variable Depth Subbase
③	* I-18	6" Stabilized Crushed Aggregate Shoulder.
④	I-4	6" Underdrain (For Location See Plan And Profile Sheets)
⑤	I-9	Stone Underdrain No. 2

* See Note Sheet No. 2

PUBLIC UTILITIES

City Of Massillon Storm & Sanitary Sewers, Massillon, Ohio
Ohio Bell Telephone Company, Canton, Ohio
Ohio Edison Company, Massillon, Ohio
Ohio Water Service Company, Massillon, Ohio
East Ohio Gas Company, Canton, Ohio

Field Books - S.T. 557

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

STA. 21 - 11.49
WAY. 21 - 0.00
SUM. 21 - 0.00

4

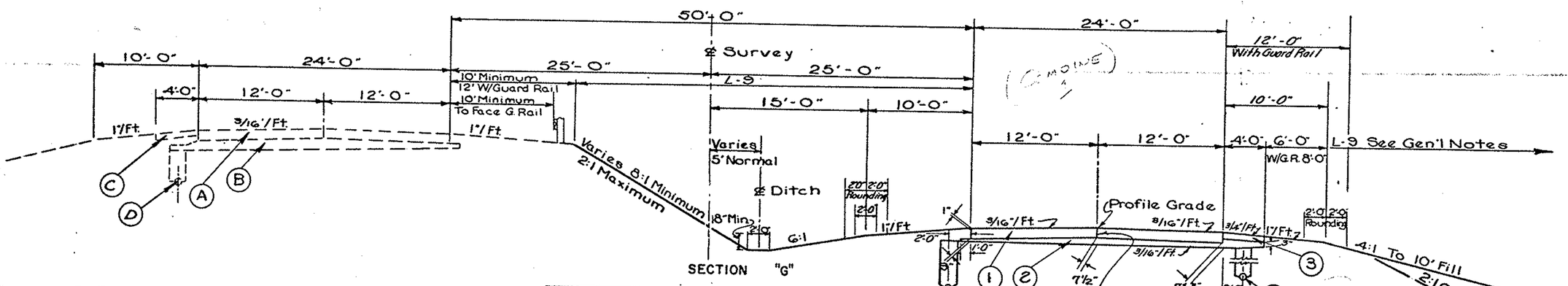
TYPICAL SECTIONS

TYPE T-71

CODE TYPE 721

SCALE - 1"=5'-0"

DESIGN SPEED 70 m.p.h.



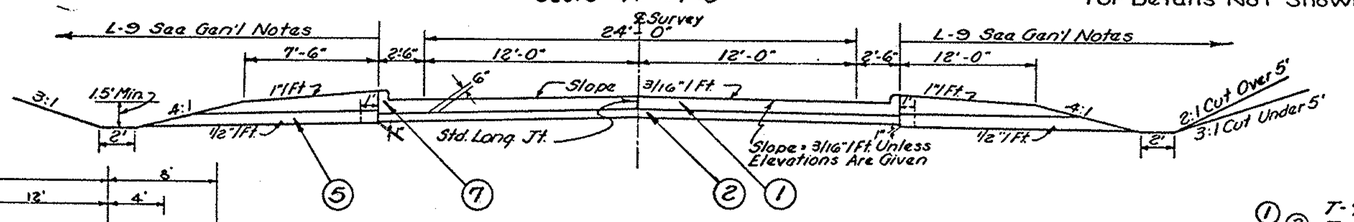
(A) Existing 9" Reinforced Concrete Pavement
(B) Existing Variable Depth Granular Subbase
(C) Existing Stabilized Shoulder
(D) Existing 6" Underdrains

FROM	TO	LIN FT
761+50	799+51.75 (NB)	3801.75
	TOTAL	3801.75

NOTE: Use I-4 Underdrains In All Cut Sections.
I-9 Stone Underdrains Are To Be Used In All Fill Sections.
For Details Not Shown See Std. Dwrg RI-1

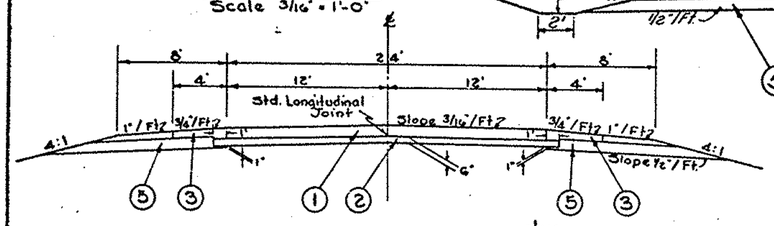
TYPICAL SECTION FOR INTERSECTIONS

Scale 1/4" = 1'-0"



TYPICAL SECTION LAKE AVENUE

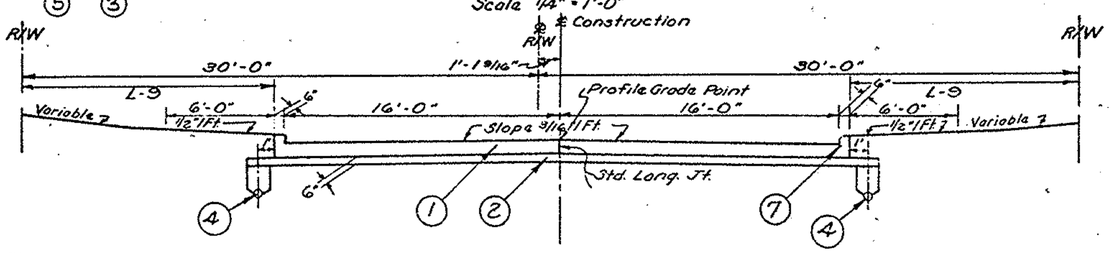
Scale 3/16" = 1'-0"



FROM	TO	LIN. FT.
2+41	4+61.3	220.3
	TOTAL	220.3

TYPICAL SECTION LAKE AVENUE

Scale 1/4" = 1'-0"



LEGEND

(1) (2) I-71 9" Reinforced Portland Cement Concrete Pavement
I-22 Variable Depth Subbase
(3) (4) *I-18 6" Stabilized Crushed Aggregate Shoulder
I-4 6" Underdrain (For Location See Plan And Profile Sheets)
(5) I-9 Stone Underdrain (No. 2)
(7) I-12 Concrete Curb, Standard Type 2-A

* See Note Sheet No. 2

FROM	TO	LIN FT	LIN FT	DESCRIPTION
5+35.71	6+29.6		939	Transition
6+29.6	8+35.2	205.6		
	TOTAL	205.6		

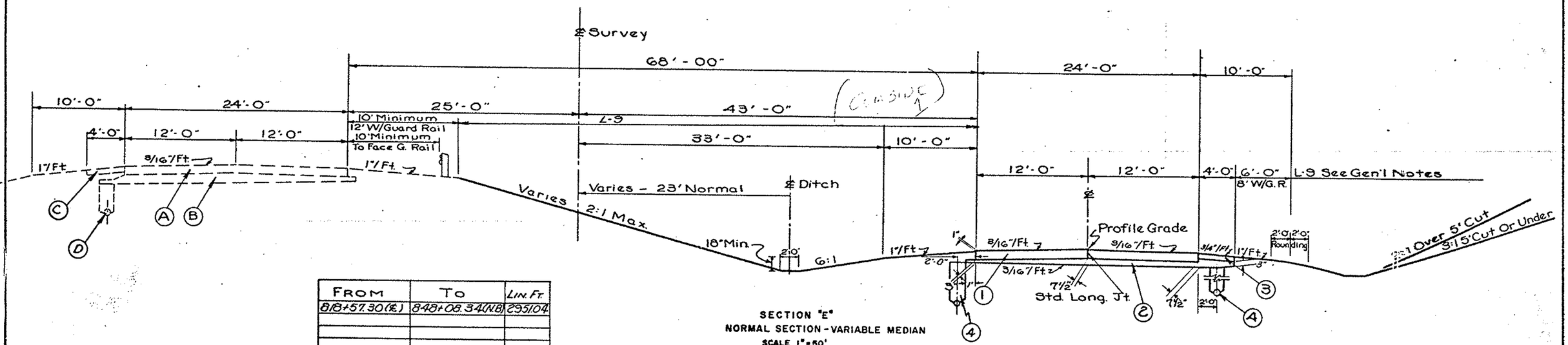
TYPICAL SECTIONS
TYPE T-71

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

5

STA. 21 - 11.49
WAY. 21 - 0.00
SUM. 21 - 0.00

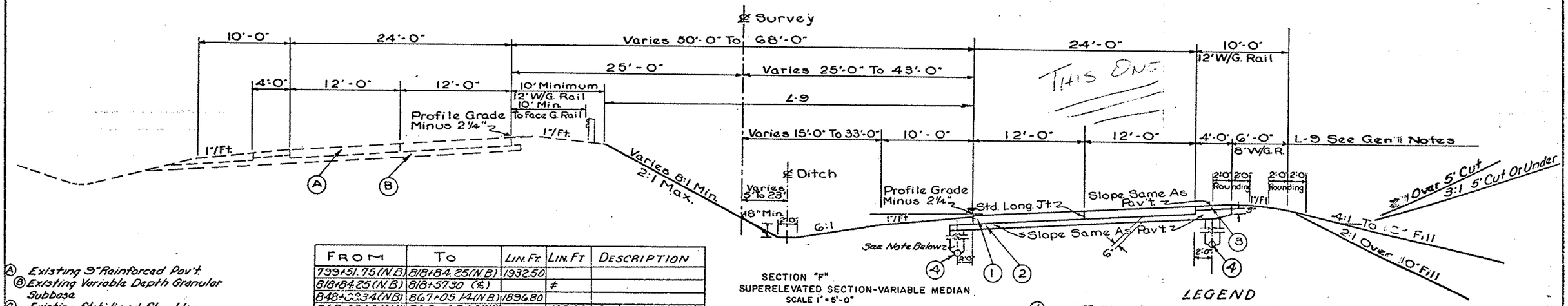
DESIGN SPEED 70 m.p.h.



FROM	TO	LIN. FT.
818+57.30(℄)	848+08.34(NB)	2951.04
	TOTAL	2951.04

SECTION "E"
NORMAL SECTION - VARIABLE MEDIAN
SCALE 1"=50'

NOTE: Use I-4 Underdrains In All Cut Sections.
I-9 Stone Underdrains Are To Be Used On All Fill Sections.
For Details Not Shown See Std. Dwrg RI-1.



FROM	TO	LIN. FT.	LIN. FT	DESCRIPTION
799+51.75(N.B.)	818+84.25(N.B.)	1932.50		
818+84.25(N.B.)	818+57.30 (℄)		≠	
848+03.34(NB)	867+05.14(N.B.)	1896.80		
867+05.14(N.B.)	868+67.14(NB)		162.00	Bridge & App. Limits
868+67.14(N.B.)	871+58.34(N.B.)	291.20		
871+58.34(N.B.)	871+92.74 (℄)		≠	
	TOTAL	4120.50	162.00	

Ⓐ Existing 9" Reinforced Pav't.
Ⓑ Existing Variable Depth Granular Subbase
Ⓒ Existing Stabilized Shoulder
Ⓓ Existing 6" Underdrain

≠ Station Equation; Stationing Of N.B. Pav't. Differs From ℄ Survey.

SECTION "F"
SUPERELEVATED SECTION - VARIABLE MEDIAN
SCALE 1"=5'-0"

NOTE: Typical Detail Of I-4 Where Low Edge Of Superelevated Section Is Towards Median.

LEGEND

① ② T-71 9" Reinforced Portland Cement Concrete Pavement
I-22 Variable Depth Subbase

③ ④ *I-18 6" Stabilized Crushed Aggregate Shoulder
I-4 6" Underdrain (For Location See Plan And Profile Sheets)

*See Note Sheet No. 2

TYPICAL SECTIONS

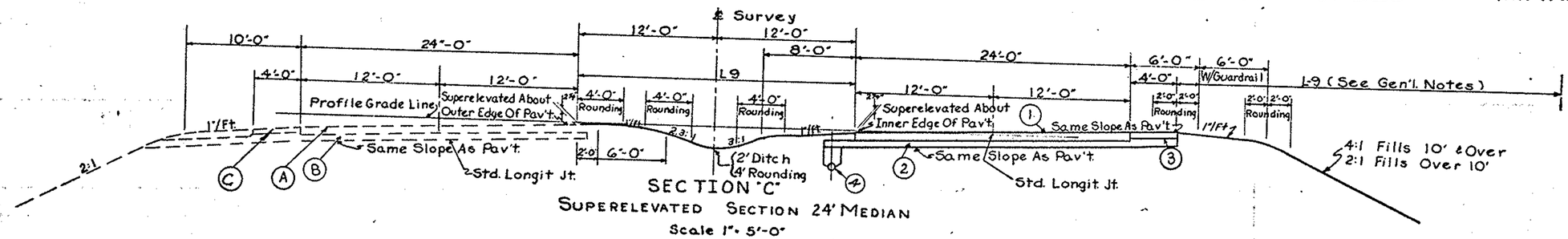
TYPE T-71

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

(6)

STA. 21 - 11.49
WAY. 21 - 0.00
SUM. 21 - 0.00

DESIGN SPEED 70 M.P.H.



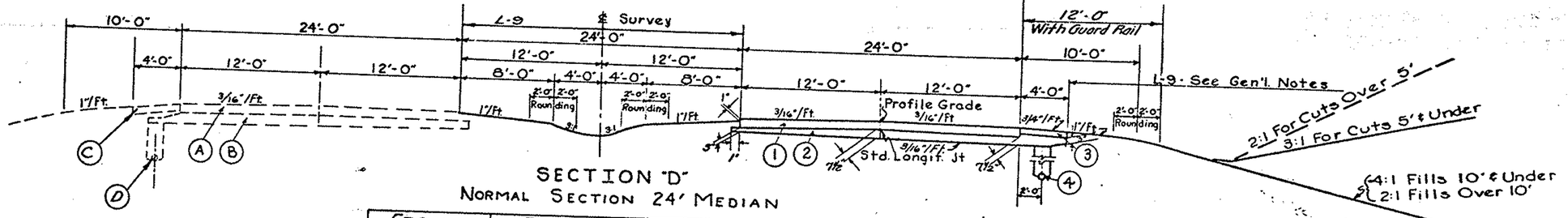
SECTION "C"

SUPERELEVATED SECTION 24' MEDIAN

Scale 1" = 5'-0"

FROM	TO	LIN. FT.	LIN. FT.	DESCRIPTION
65+33.86	65+47.00	13.14		
65+47.00	67+57.61		210.61	Brig. & App. Limits
67+57.61	74+32.46	674.85		
74+32.46	78+16.35		383.89	Brig. & App. Limits
78+16.35	91+00.00	1283.65		
	TOTAL	1971.64	594.50	

For Details Not Shown See Std. Drwg. RI-1.



SECTION "D"

NORMAL SECTION 24' MEDIAN

FROM	TO	LIN. FT.	LIN. FT.	DESCRIPTION
11+84.26	27+00.00	1515.74		
40+00.00	46+28.59	628.59		
46+28.59	48+13.53		184.94	Brig. & App. Limits
48+13.53	49+84.11	170.58		
49+84.11	52+85.89		301.78	Brig. & App. Limits
52+85.89	65+33.86	1247.97		
	TOTAL	3562.88	486.72	

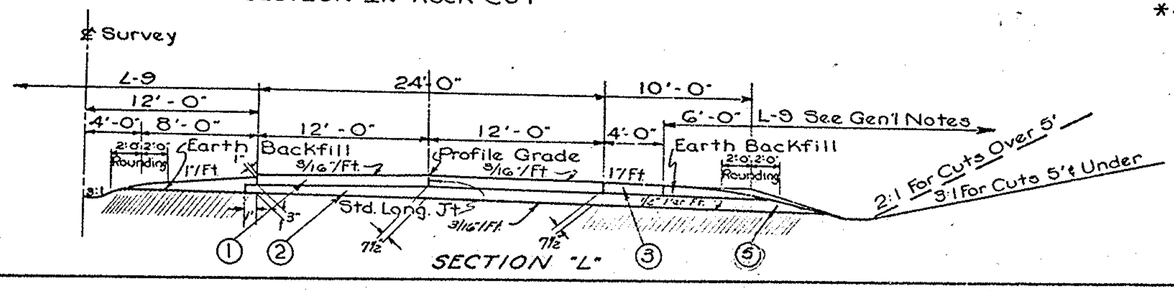
LEGEND

① ②	T-71	9" Reinforced Portland Cement Concrete Pavement
	I-22	Variable Depth Subbase
③	* I-18	6" Stabilized Crushed Aggregate Shoulder
④	I-4	6" Underdrain (For Location See Plan And Profile Sheets)
⑤	I-9	Stone Underdrain No. 2

* See Note Sheet No. 2

Ⓐ Ⓑ Existing 9" Reinforced Concrete Pav't. / Existing Variable Depth Granular Subbase
Ⓒ Ⓓ Existing Stabilized Shoulder / Existing 6" Underdrain

SECTION IN ROCK CUT



SECTION "L"

NOTE: In Areas Where Rock Will Be Encountered (Approx. Sta 27+00 - Sta. 40+00 The I-22 Subbase Is To Be Extended Through The Shoulders Into The Ditch.

SECTION "L"

FROM	TO	LIN. FT.
27+00	40+00	1300.00
	TOTAL	1300.00

P.F. 371 E.C.S.

TYPICAL SECTIONS

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

7

STA- 21-11.49
WAY- 21-0.00
SUM- 21-0.00

GENERAL NOTES

FIELD OFFICE

THE CONTRACTOR SHALL PROVIDE A SUITABLE FIELD OFFICE FOR THE EXCLUSIVE USE OF THE STATE EMPLOYEES IN ACCORDANCE WITH SECTION S-0.01 (b) HAVING A MINIMUM OF 500 SQUARE FEET OF FLOOR SPACE. THE CONTRACTOR SHALL HAVE A TELEPHONE INSTALLED AND MAINTAINED DURING THE CONSTRUCTION OF THIS PROJECT. SUITABLE DRINKING WATER, SANITARY FACILITIES AND 110 VOLT A. C. ELECTRIC OUTLETS SHALL BE PROVIDED.

ITEM 1-9 STONE UNDERDRAIN NO. 2

1-9 STONE UNDERDRAIN WILL BE SPACED AT 25' INTERVALS TO DRAIN THE SUBBASE EXCEPT WHERE 1-4 IS SPECIFIED OR AS DIRECTED BY THE ENGINEER. A QUANTITY OF 9,000 LIN. FT. OF 1-9 STONE UNDERDRAINS NO. 2 HAS BEEN PROVIDED IN THE GENERAL SUMMARY FOR THIS PURPOSE.
720 L. F. OF 8-9 IS INCLUDED ABOVE TO BE USED AS DIRECTED BY THE ENGINEER, BETWEEN STA. 734 + 00 TO STA. 734 + 00 ON THE EAST SIDE OF THE SOUTH BOUND PAVEMENT AND 100 L.F. TO BE USED ON LAKE AVENUE.

DRAINAGE OF SUBBASE MATERIAL

WHERE THE SUBBASE MATERIAL IS DRAINED BY 1-9 OR 1-22 EXTENSIONS TO THE FILL SLOPE OR THE DITCH LINE, THE CONTRACTOR SHALL FINISH, SEED AND MULCH THE SLOPES SO AS NOT TO IMPEDE DRAINAGE. THE ACTUAL AREA OF THE OUTCROP OF THE 1-9 OR 1-22 EXTENSIONS SHALL NOT BE SEEDED.

L-9 SEEDING AND PROTECTING, L-9 COMMERCIAL FERTILIZER AND L-9 AGRICULTURAL LIMING MATERIAL

QUANTITIES FOR THIS ITEM ARE CALCULATED FOR THE SOIL AREAS BETWEEN LINES TEN FEET (10') OUTSIDE THE WORK LIMITS AS SHOWN ON THE CROSS SECTIONS OR TO THE RIGHT OF WAY LINE IF SUCH LINE IS LESS THAN TEN FEET FROM THE WORK LIMITS.
THE SEED MIXTURE FOR THE ENTIRE PROJECT, WITH THE EXCEPTION OF THE REST AREAS SHALL BE AS FOLLOWS:

65 PER CENT KENTUCKY 31 FESCUE	5 PER CENT RED TOP
25 PER CENT KENTUCKY BLUEGRASS	5 PER CENT ALSIKE

THE SEED MIXTURE FOR THE REST AREAS SHALL BE AS FOLLOWS:

45 PER CENT KENTUCKY BLUEGRASS
35 PER CENT ILLAHEE FESCUE
20 PER CENT RED TOP

PLACING SOD IN DITCHES

ALL SOD PLACED IN DITCHES SHALL BE LAID WITH THE LONG EDGES OF THE STRIPS PERPENDICULAR TO THE FLOW LINE OF THE DITCH. SUCCESSIVE STRIPS SHALL BE NEATLY MATCHED AND ALL JOINTS STAGGERED OR BROKEN. THE SOD SHALL BE STAKED SECURELY WITH STAKES PLACED ON MAXIMUM TWO (2') CENTERS IN ROWS NOT MORE THAN TWO FEET APART. STAKES IN ADJACENT ROWS SHALL BE STAGGERED. THE STAKES SHALL BE WOOD FROM 1/2" x 3/4" x 12" TO 1" x 1" x 24", AS REQUIRED TO HOLD THE SOD, AND SHALL BE DRIVEN FLUSH WITH THE TOP OF THE SOD.

SUBGRADE COMPACTION

THE AREA OF COMPACTED SUBGRADE TO BE PAID FOR INCLUDES THE MAIN LINE PAVEMENT, RAMPS AND HARD SURFACED CROSS ROAD PAVEMENTS.

PROPERTY MARKERS

ALL IRON PINS OR MARKERS ON CROSS ROADS SHALL BE SAVED AND ADJUSTED TO GRADE. COST OF ADJUSTING OR RESETTING MARKERS SHALL BE INCLUDED IN THE UNIT PRICE BID FOR E-1 ROADWAY EXCAVATION, METHOD "B".

SPECIAL DITCHES

FOR SPECIAL DITCH GRADES, SEE CROSS SECTIONS.

E-12 PIPE REMOVED

E-12 PIPE REMOVED SHALL INCLUDE THE COST OF REMOVING ANY HEADWALL ENCOUNTERED IN REMOVAL OF THE PIPE.

LOCATION AND SIZE OF PIPES

THE LOCATION, TYPE, DEPTH AND SIZE OF ALL EXISTING PIPES ARE SHOWN AS NEARLY EXACT AS THE AVAILABLE INFORMATION WILL PERMIT. THE STATE OF OHIO WILL NOT BE RESPONSIBLE FOR ANY VARIATIONS FOUND DURING CONSTRUCTION.

FLARING GUARD RAIL AT BRIDGES

GUARD RAIL SHALL BE FLARED TO MEET THE BRIDGE RAILING IN SUCH A MANNER THAT THE CHANGE IN ALIGNMENT OF THE GUARD RAIL SHALL NOT EXCEED 1:20.

GUARD RAIL - UNEVEN LENGTHS

AT SEVERAL LOCATIONS THROUGHOUT THIS PROJECT, UNEVEN LENGTHS OF NEW GUARD RAIL ARE TO BE USED. AT THESE LOCATIONS, THE SPACING OF THE NEW GUARD RAIL MAY BE VARIED AT THE ENDS IN ORDER TO FIT THE SPECIFIC CONDITIONS IN THE FIELD. SEE NOTE BELOW.

UTILITIES

THE CONTRACTOR SHALL NOTIFY, AT LEAST 48 HOURS IN ADVANCE, ALL PUBLIC SERVICE CORPORATIONS WHICH WILL BE AFFECTED BY ANY OF THE CONTRACTOR'S OPERATIONS.
ANY AND ALL WORK REQUIRED FOR PUBLIC OR PRIVATE UTILITIES WILL BE DONE BY AND AT THE EXPENSE OF THEIR RESPECTIVE OWNERS.

UNDERGROUND UTILITIES

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

ELECTRICAL CONDUIT UNDER EXISTING PAVEMENT

THE 3" S-25 GALVANIZED STEEL OR ALUMINUM ELECTRICAL CONDUIT SHALL BE PLACED UNDER THE EXISTING CONCRETE PAVEMENT BY JACKING, BY SHOVING THE PIPE INTO A PREVIOUSLY BORED HORIZONTAL HOLE OR BY OTHER MEANS APPROVED BY THE ENGINEER. THE WORK SHOULD BE DONE IN SUCH A WAY AS TO PROTECT THE EXISTING PAVEMENT FROM ANY POSSIBLE DAMAGE AND TO PERMIT THE UNINTERRUPTED FLOW OF TWO WAY TRAFFIC ON THE PAVEMENT. THE PORTION OF THE CONDUIT UNDER EXISTING CONCRETE PAVEMENT NEED NOT BE ENCASED IN CONCRETE. ALL CONDUITS SHALL BE SUITABLY CAPPED TO PREVENT ENTRANCE OF MOISTURE OR OTHER FOREIGN MATERIAL. COST OF JACKING OR BORING THE PIPE UNDER THE PAVEMENT SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM S-25 SPECIAL LINEAL FEET FURNISHING AND PLACING 3" ELECTRICAL CONDUIT UNDER EXISTING PAVEMENT.

PAVEMENT JOINTS

WHERE RAMP APPROACHES MERGE WITH THE THROUGH PAVEMENT, LONGITUDINAL KEY JOINTS WITH HOOK BOLTS OR TIE BARS AS PER STANDARD DRAWING LJ NO. 1 SHALL BE USED UNLESS OTHERWISE SHOWN ON THE PLANS. TRANSVERSE JOINTS OF THE APPROACH PAVEMENT SHALL BE MATCHED WITH THOSE OF THE PRIMARY LANES.

NON RIGID PAVEMENT REMOVAL

COST OF REMOVING NON RIGID PAVEMENT IS TO BE INCLUDED IN THE UNIT PRICE BID FOR E-1 ROADWAY EXCAVATION, METHOD "B".

ITEM L-10 SODDING

ALL AREAS TO BE SODDED SHALL BE LOOSENED TO A DEPTH OF NOT LESS THAN 2" JUST PRIOR TO LAYING THE SOD. COST SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM L-10 SODDING.

I-15 GUARD RAIL REMOVED AND REBUILT

GUARD RAIL WHICH IS TO BE REMOVED AND REBUILT IS TO BE USED ON THE SOUTHBOUND LANE TO CONNECT WITH THE EXISTING GUARD RAIL. BECAUSE OF THE DIFFERENCE IN THE STYLE OF RAIL, THE REMAINING PORTION OF THE REBUILT GUARD RAIL IS TO BE USED ON INDIVIDUAL RUNS ON THE NORTHBOUND LANE. NEW GUARD RAIL WILL NOT BE COMBINED WITH REBUILT GUARD RAIL. SEE CALCULATIONS ON SHEET 11 TO DETERMINE THE NET LINEAL FEET OF NEW GUARD RAIL NEEDED.

CONTRACTION AND EXPANSION JOINTS

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

REMOVAL OF TREES AND STUMPS

THE NUMBER OF TREES AND STUMPS TO BE REMOVED ARE LISTED BELOW ONLY FOR THE INFORMATION OF THE CONTRACTOR AND THE STATE OF OHIO DOES NOT GUARANTEE THE ACCURACY THEREOF. TREES LOCATED WITHIN 5' OF EXISTING RIGHT OF WAY FENCE ARE NOT INCLUDED. ALL TREES AND STUMPS 12" OR MORE IN DIAMETER THAT ARE MARKED FOR REMOVAL BY THE ENGINEER SHALL BE REMOVED AND PAID FOR UNDER ITEM E-9, LUMP SUM, REMOVAL OF TREES AND STUMPS. THE FOLLOWING ESTIMATE DOES NOT INCLUDE THE AREA WHERE THE REST AREAS ARE LOCATED. SEE SHEET NO. 261 FOR ADDITIONAL INFORMATION DEALING WITH THE REST AREAS.
ESTIMATED TREES AND STUMPS TO BE REMOVED:

12"-18"	637	24"-30"	16	OVER 36"	5
18"-24"	130	30"-36"	4		

EQUIPMENT CONTROL

SELF PROPELLED CRAWLER DRIVEN MACHINERY, EQUIPPED WITH CLEATS, SHALL NOT BE OPERATED ON ANY EXISTING PAVEMENT WHICH IS NOT TO BE DISTURBED, UNLESS PADS ARE FASTENED TO TRACKS BETWEEN CLEATS IN SUCH A WAY THAT CLEATS WILL BE PREVENTED FROM MAKING CONTACT WITH THE PAVEMENT. CRAWLER EQUIPMENT SHALL BE OPERATED IN A MANNER THAT DAMAGE TO EXISTING OR NEW SURFACE WILL NOT OCCUR.

ESTIMATED QUANTITIES

SPECIFIC LOCATIONS AND USAGE OF ESTIMATED OR ADDITIONAL QUANTITIES SET FORTH IN THESE PLANS TO BE USED WHERE DIRECTED BY THE ENGINEER SHALL BE MADE A MATTER OF RECORD BY INCORPORATION INTO THE FINAL CHANGE ORDER GOVERNING CONSTRUCTION OF THIS PROJECT.

1-4	6" UNDERDRAINS	1000 L.F.

MAINTENANCE OF TRAFFIC

TWO WAY TRAFFIC WILL BE MAINTAINED AT ALL TIMES BY THE USE OF ITEM S-15 TEMPORARY RUN-AROUNDS USING CLASS "A" PAVEMENT AS PER PLAN EXCEPT FOR THE DETOUR SHOWN ON PAGE 1. SHALL THE TEMPORARY RUN-AROUNDS SHALL CONSIST OF 6 SEPARATE LUMP SUM ITEMS FOR LENGTHS AS TO BE SHOWN ON THE GENERAL SUMMARY, AND THE WIDTH OF EACH TEMPORARY RUN-AROUND SHALL BE USING AS SHOWN ON THE LINE SHEETS.
ON ALL INTERSECTING COUNTY AND TOWNSHIP ROADS, INCLUDING WEST APPROACH OF LAKE AVE., TRAFFIC SHALL BE MAINTAINED BY THE USE OF EXISTING PAVEMENT, PROPOSED PAVEMENT OR TEMPORARY ROADWAY SURFACE WITH AGGREGATE AND STABILIZED WITH CALCIUM CHLORIDE. PAYMENT FOR CONSTRUCTION, MAINTENANCE AND SUBSEQUENT REMOVAL, WHERE REQUIRED OF THESE TEMPORARY ROADWAYS OTHER THAN THOSE SEPERATELY ITEMIZED UNDER ITEM S-15, SHALL BE INCLUDED IN THE LUMP SUM BID FOR "MAINTAINING TRAFFIC." AGGREGATE AND CALCIUM CHLORIDE REQUIRED SHALL BE PAID FOR AT THE UNIT PRICE BID FOR THE FOLLOWING ITEMS.

750	C.Y. T-10 FURNISHING AND PLACING AGGREGATE FOR TRAFFIC BOUND SURFACE COURSE
15	TONS U-10 FURNISHING AND APPLYING CALCIUM CHLORIDE

DURING CONSTRUCTION OF THE PROPOSED STRUCTURE OVER C.H. 116 THE CONTRACTOR SHALL SAFEGUARD THE TRAVELLING PUBLIC ON THESE ROADS BY PROVIDING PLATFORMS, NETS OR OTHER SUITABLE PROTECTION ABOVE THE TRAVELLED LANES.
THE DETOUR SHOWN ON SHEET 1 WILL BE USED DURING THE CONSTRUCTION OF THE ADDITIONAL LANES ON USR 21 BETWEEN STA. 606 + 50 TO STA. 646 + 17.5. THIS DETOUR WILL BE LIMITED TO A MAXIMUM OF 8 CONSECUTIVE MONTHS. THE DETOUR WILL NOT BE PLACED INTO EFFECT UNTIL THE PROPOSED PAVEMENT FOR LAKE AVE. HAS BEEN CONSTRUCTED.
LAKE AVENUE IS TO BE CLOSED TO THROUGH TRAFFIC DURING THE ACTUAL CONSTRUCTION AND CURING OF THE PAVEMENT.

CONSTRUCTION LAYOUT STAKES

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

ITEM L-12

In lieu of mulching as required by Section L-12.23, vine planting areas shall be seeded and mulched with Item L-9, Seeding and Protecting within 48 hours after the vines are planted.

GENERAL NOTES & DETAILS

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CATCH BASINS ABANDONED

AT VARIOUS LOCATIONS THROUGHOUT THIS PROJECT, EXISTING CATCH BASINS ARE TO BE USED WHICH HAVE NO EXISTING GRATES. AT THE FOLLOWING LOCATIONS, EXISTING BASINS ARE TO BE ABANDONED THESE GRATES ARE TO BE USED ON THE AFOREMENTIONED BASINS.
STATION 725 + 00, 909 + 00, 1019 + 50, 1062 + 50, 1096 + 08 IN STARK COUNTY.
AND STATION 86 + 00 [illegible] IN WAYNE COUNTY.
THE COST OF PLACING THESE GRATES ON THE EXISTING BASIN IS TO BE INCLUDED IN THE PRICE BID FOR ITEM 1-8 CATCH BASINS ABANDONED.

ACCESS

ACCESS TO ALL PROPERTIES ABUTTING THE "NON-LIMITED ACCESS" PORTIONS OF THIS PROJECT SHALL BE MAINTAINED AT ALL TIMES. VEHICULAR ACCESS MAY BE DENIED DURING THE ACTUAL PAVING AND CURING INTERVALS OF THE RIGID TYPE PAVEMENTS IN FRONT OF THE PROPERTIES OR DURING THE CONSTRUCTION AND CURING OF THE DRIVEWAYS PROVIDED HEREIN.

GRADING TOLERANCE

THE GRADING TOLERANCE AS NOTED IN SEC. E-1.10 OF THE SPECIFICATIONS SHALL BE MODIFIED AS FOLLOWS: FOR LAWN AREAS AT RESIDENCES AND BUSINESSES, THE SEED BED SHALL BE PREPARED TO PROVIDE A SMOOTH UNIFORM SURFACE. ALL STONES OR DEBRIS LARGER THAN ONE INCH IN ANY DIMENSION SHALL BE REMOVED FROM THE SURFACE OF THE SEED BED. HAND RAKING WILL NOT BE REQUIRED, IF DIRECTED BY THE ENGINEER, IN ALL OF THE AFOREMENTIONED AREAS IF MACHINES USED DO NOT PROVIDE RESULTS EQUIVALENT TO THE RESULTS OBTAINED BY HAND RAKING. SPECIAL CARE SHALL BE EXERCISED, AS DIRECTED BY THE ENGINEER, TO AVOID WATER BEING TRAPPED OR POCKETED BY, ON OR ADJACENT TO ANY DRIVEWAY OR WALK. COST OF THIS ADDITIONAL WORK SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM E-1 ROADWAY EXCAVATION, METHOD "B".

BERMS AND SLOPES

THE CROSS SECTIONS AS DRAWN HEREIN SHOW STRAIGHT LINES AND ANGLES. IN CONSTRUCTION ALL CORNERS SHALL BE ROUNDED AS SHOWN ON STANDARD DRAWING RI-1. ALL BACKSLOPE TRANSITIONS FROM EMBANKMENT TO EXCAVATION SECTIONS OR FROM ONE SLOPE RATIO TO ANOTHER SHALL BE DONE WITH A GRADUAL CHANGE IN A NEAT AND WORKMANLIKE MANNER TO BLEND INTO THE SURROUNDING TERRAIN AS DIRECTED BY THE ENGINEER.

COOPERATION BETWEEN CONTRACTORS

THE WORK COVERED BY THESE PLANS ADJOINS ANOTHER CONSTRUCTION SECTION OF U.S. 21 TO THE SOUTH. THE CONTRACTOR OF THIS SECTION SHALL PLAN AND COORDINATE HIS WORK WITH THAT OF THE OTHER CONTRACTOR SO THAT A MINIMUM OF INTERFERENCE AND INCONVENIENCE SHALL RESULT.

ROCK SUBGRADE:

The contractor shall be paid for the thickness of I-22 material shown on the typical sections in rock excavation areas. Any pockets in the rock below the plan subgrade elevation shall drain either longitudinally or laterally and all irregularities in the rock below this elevation shall be filled with I-22 material at no additional cost to the State.

SUBGRADE COMPACTION:

The subgrade for drives and mail box turnouts paved with T-70 material shall be compacted for a depth of six (6) inches to the density requirements shown in Table III, Item E-1. Payment for subgrade compaction, as specified above, shall be included in the unit price bid for Item E-1, Roadway Excavation.

LINE DATA CALCULATIONS

BEGIN PROJECT AND WORK STA. 606 + 50.00
SUSPEND PROJECT STA. 646 + 17.60
SUSPEND WORK STA. 648 + 70.00

STATION EQUATION STA. 612 + 00.16 BACK = STA. 612 + 25.69 AHEAD = - 25.53 LIN. FT.
STATION EQUATION STA. 627 + 97.56 BACK = STA. 628 + 00.00 AHEAD = - 2.44 LIN. FT.

ADDITIONAL WORK (LAKE AVE.) = 603.0 LIN. FT.
SUB-TOTAL LENGTH OF PROJECT. = 3939.53 LIN. FT.
SUB-TOTAL LENGTH OF WORK = 3795.09 LIN. FT.

RESUME WORK STA. 715 + 50
RESUME PROJECT. STA. 720 + 44.70
SUSPEND PROJECT AND WORK STA. 915 + 56.10
SUB-TOTAL LENGTH OF PROJECT = 19511.40 LIN. FT.
SUB-TOTAL LENGTH OF WORK = 20006.10 LIN. FT.

RESUME WORK STA. 1014 + 53.50
RESUME PROJECT STA. 1014 + 67.20
SUSPEND PROJECT STA. 1068 + 75.20
SUSPEND WORK STA. 1070 + 00.00

SUB-TOTAL LENGTH OF PROJECT = 5408.00 LIN. FT.
SUB-TOTAL LENGTH OF WORK = 5546.50 LIN. FT.

RESUME PROJECT AND WORK STA. 1072 + 29.42
STATION EQUATION-STARK-WAYNE COUNTY LINE
STA. 1129 + 94.09 BACK = STA. 0 + 12.64 AHEAD

END PROJECT STA. 91 + 00.00
END WORK STA. 92 + 50.00

SUB-TOTAL LENGTH OF PROJECT = 14852.08 LIN. FT.
SUB-TOTAL LENGTH OF WORK = 15002.08 LIN. FT.

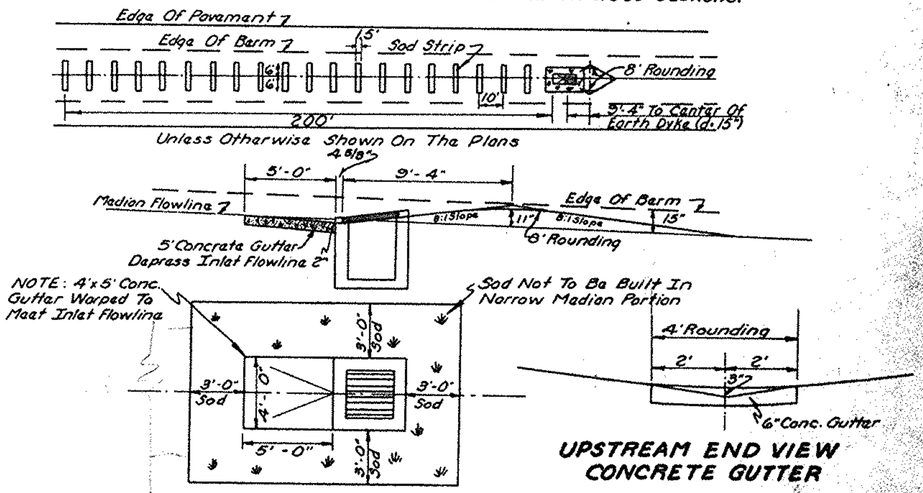
TOTAL LENGTH OF PROJECT = 43,710.96 LIN. FT. OR 8.278 MILES
TOTAL LENGTH OF WORK = 45,349.66 LIN. FT. OR 8.588 MILES

MEDIAN INLET - SPECIAL DETAILS

All Notes As Shown On Standard Construction Drawing I-8 Catch Basin No. 8 Shall Apply With The Exception Of The Paved Gutter. Side Slope Paving Shall Be Omitted And Gutter Construction Shall Be As Detailed Below.

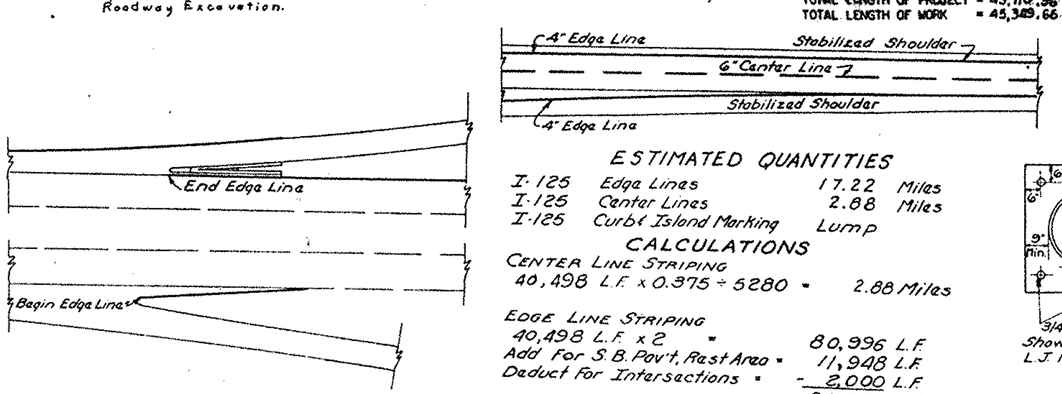
The Sod As Indicated On This Detail Shall Be Included In The Roadway Quantities And Shall Not Be Included In The Cost Of This Catch Basin

Throughout The Narrow Median Portion Of This Project The Sod Strip Is To Be 6'x1.5' And The Paved Gutter Approach To Be Warped To Fit Ditch Section As Shown On Cross Sections.



UPSTREAM END VIEW CONCRETE GUTTER

GUTTER AND SODDING DETAIL
Scale 1/4" = 1'-0"



ESTIMATED QUANTITIES

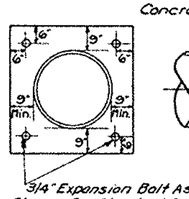
I-125	Edge Lines	17.22	Miles
I-125	Center Lines	2.88	Miles
I-125	Curb & Island Marking	Lump	

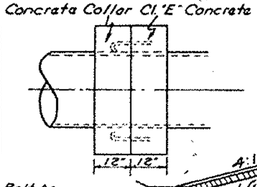
CALCULATIONS

CENTER LINE STRIPING
40,498 L.F. x 0.375 ÷ 5280 = 2.88 Miles

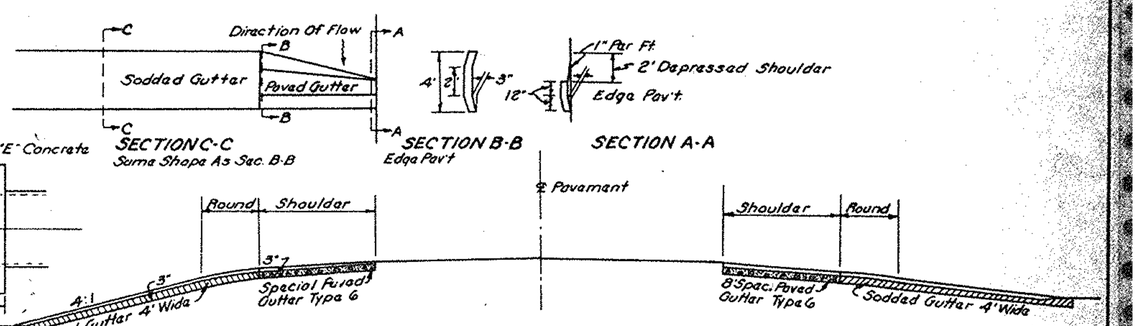
EDGE LINE STRIPING
40,498 L.F. x 2 = 80,996 L.F.
Add For S.B. Pav't, Rest Area = 11,948 L.F.
Deduct for Intersections = - 2,000 L.F.
90,944 L.F.
90944 L.F. ÷ 5,280 = 17.22 Miles

PAVEMENT STRIPING DETAIL
Scale 1" = 50'





CONCRETE COLLAR DETAIL



GUTTER FOR EROSION CONTROL OF SHOULDERS INCLUDING SPECIAL PAVED GUTTER TYPE 6
Scale 1" = 5'

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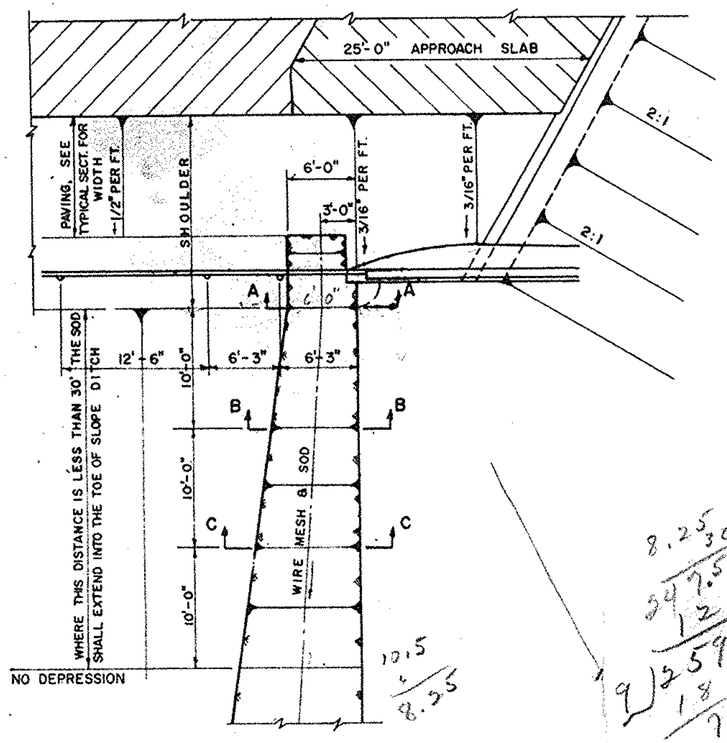
APPROACH SLAB EROSION CONTROL



DETAIL OF EROSION CONTROL

SPECIAL BERM AND SLOPE PROTECTION

PRIOR TO REPLACEMENT OF SOD IN THE BERM AND SLOPE, GALVANIZED POULTRY FENCE SHALL BE PLACED ON THE FINISHED GRADE IN STRANDS WHICH SHALL BE AT RIGHT ANGLES TO THE DIRECTIONS OF FLOW. EACH STRAND SHALL BE STAKED SECURELY ON TOP AND BOTTOM WITH STAKES PLACED AT FOUR FOOT INTERVALS AND ALTERNATED IN ROWS FOUR FEET APART.

STAKES SHALL BE 1"x1"x8" WOOD STAKES AND SHALL BE PERPENDICULAR TO THE GROUND AND FLUSH WITH THE FINISHED GRADE.

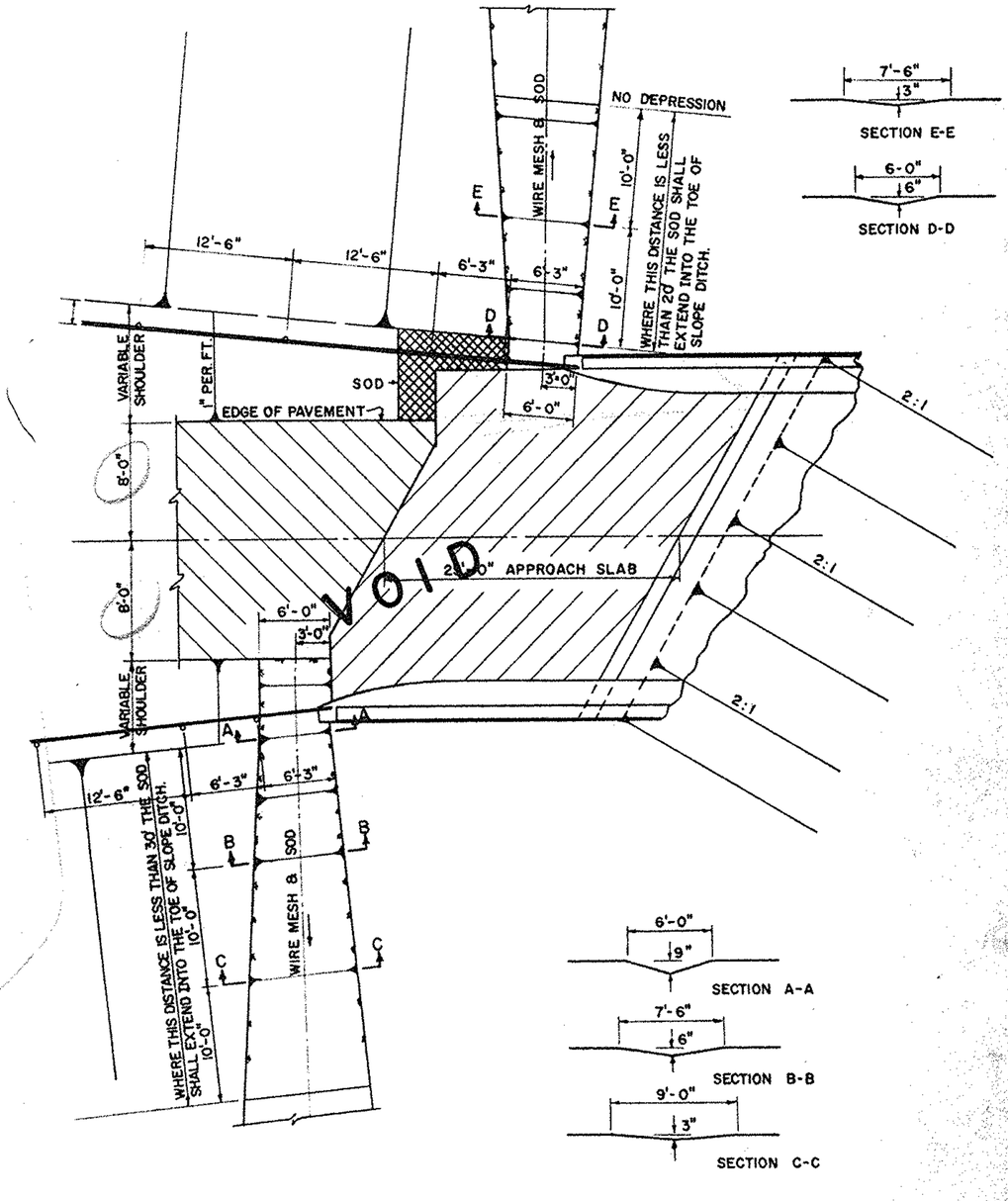
THE FENCE SHALL BE STRAIGHT LINE POULTRY FENCE OR EQUIVALENT WITH STRAND WIDTH OF FOUR FEET HAVING A TWO INCH MESH AND ALL WIRES NO. 20 GAUGE.

THE STRANDS OF FENCING SHALL BE FASTENED TOGETHER AT TWELVE INCH INTERVALS BY MEANS OF HOG RINGS.

THE FENCE SHALL BE SECURED TO THE WOOD STAKES BY METAL STAPLES.

SOD SHALL BE LAID IN ACCORDANCE WITH THE CONSTRUCTION AND MATERIALS SPECIFICATIONS SECTION L-10.07.

PAYMENT FOR ALL THE ABOVE SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM L-10 SODDING FOR SPECIAL BERM AND SLOPE PROTECTION.



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9) 259.5 (28.8
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PIPE CATTLE PASS STRUCTURES

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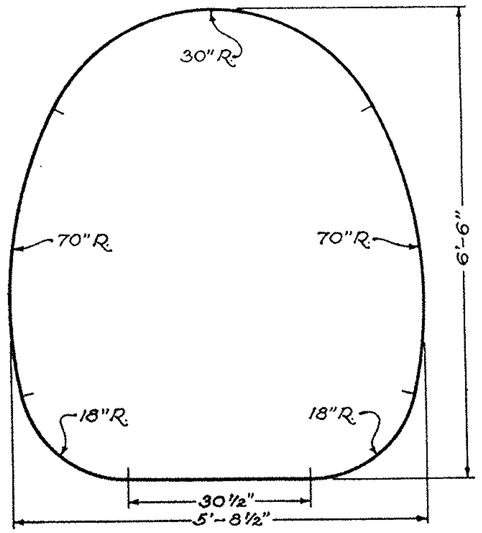
When a pipe cattle pass structure is specified it shall be in accordance with details shown hereon for the design, or designs, specified in the Proposal.

DESIGN "A"



SECTION

SECTIONAL CORRUGATED METAL STRUCTURE

NOTES:— Materials and construction shall be in accordance with Section M-6.4(g), standard drawing SP-53 and Item S-28, except that the structure shall be measured and paid for as Item S-27.

The bottom and corner plates shall be shop coated with bituminous material in accordance with Section M-6.4 (c). After installation of the structure damaged or worn spots in the bituminous coating on the inside of the structure shall be recoated using materials and methods recommended by the manufacturer and as directed by the Engineer.

The bottom of the structure shall then be field paved with a bituminous material. The paving shall consist of a mixture of hot sand and Section M-5.1 Asphalt Cement or other bituminous mixture acceptable to the Engineer and shall be spread and compacted to the satisfaction of the Engineer. The completed pavement shall be smooth and durable and have a minimum average thickness of approximately one inch over the inside crests of the corrugations.

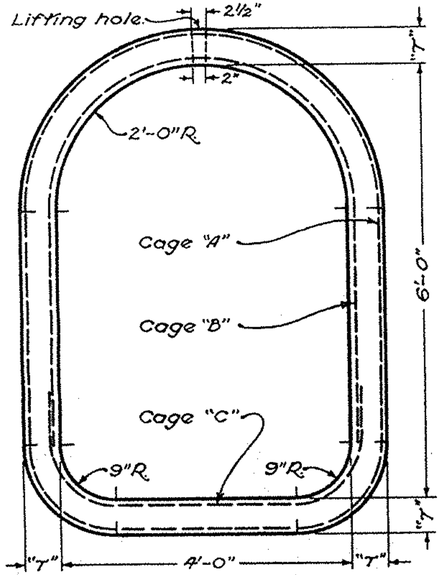
Payment for all of the above shall be included in the unit price bid for the cattle pass item if an "A" design is furnished.

Minimum gage of plates shall be in accordance with the following table for the design specified.

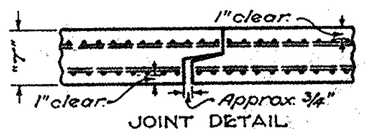
DESIGN	COVER	GAGE *
A-1	2'- 3'	8-7
A-2	3'-10'	10-8
A-3	10'-14'	8-7
A-4	14'-18'	7-5
A-5	18'-22'	5-3
A-6	22'-25'	3-1
A-7	25'-28'	1-1

* *The first number indicates the gage of all plates except the bottom and corner plates. The second number indicates the gage of bottom and corner plates.*

DESIGN "B"



SECTION



JOINT DETAIL

4'x6' REINFORCED CONCRETE PIPE

NOTES:— All splices shall be welded or have 20 bar diameters lap for deformed bars and 40 bar diameters lap for wire or plain bars.

Minimum steel requirements are listed below.

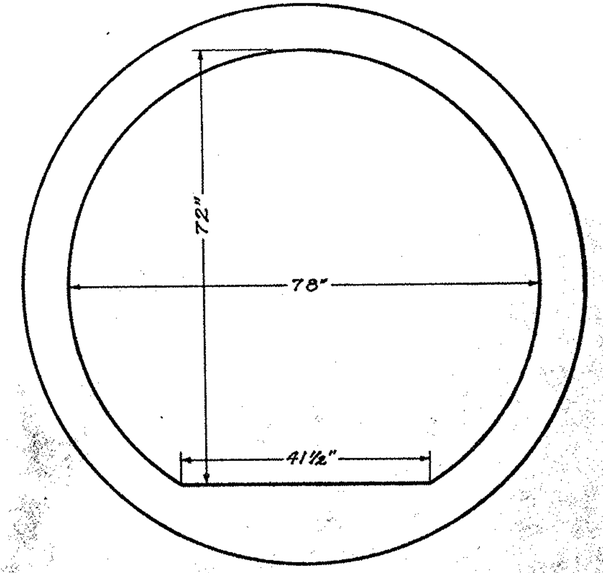
Materials, design and manufacturing methods shall meet the requirements of Section M-6.6, Reinforced Concrete Pipe, except as otherwise noted. Concrete stresses shall have a minimum ultimate compressive value of 4500 lbs. per sq. inch. Sections of pipe shall have a minimum length of four feet.

Reinforcement shall be in accordance with the following table for the design specified.

DESIGN	COVER	MINIMUM STEEL AREA PER FT. OF PIPE IN SQ. IN.			THICKNESS "T"
		CAGE "A"	CAGE "B"	CAGE "C"	
B-1	2'-11'	0.28	0.28	0.28	6"
B-2	11'-14'	0.28	0.28	0.36	6"
B-3	14'-17'	0.28	0.28	0.44	6"
B-4	17'-19'	0.28	0.28	0.50	6"
B-5	19'-25'	0.28	0.28	0.46	8"
B-6	25'-29'	0.28	0.28	0.53	8"
B-7	29'-33'	0.30	0.28	0.62	8"

MINIMUM LONGITUDINAL STEEL = 2.1 SQ. IN. EQUALLY SPACED

DESIGN "C"



SECTION

78"x72" REINFORCED CONCRETE PIPE

NOTES:— Except as otherwise detailed, all materials, design requirements, manufacturing methods, physical test requirements, etc. shall be in accordance with the specifications for 78" diameter Reinforced Concrete Pipe of the class listed in the following table for the design specified.

DESIGN	COVER	PIPE CLASS
C-1	2' TO 14'	SEC. M- 6.6 (b)
C-2	14' TO 19'	SEC. M-106.6 (c)
C-3	19' TO 28'	SEC. M-106.6 (d)

RECAPITULATION

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ROADWAY

Sheet No.	E-1 Exc. C.Y.	E-1 Emb. C.Y.	L-9 Seeding S.Y.	L-10 Spec'l Slope Protect S.Y.	L-10 Sodding S.Y.	E-12 Rem. 15" & Under L.F.	E-12 Remove Pavement L.F.	E-8 R&D Exist. Pav't S.Y.	E-8 R&D Exist. Curb L.F.	E-8 R&D Exist. Gutter L.F.	I-13 Side Walk 4" S.F.	I-15 GR Steel Beam (Deep) L.F.	I-15 G.R. Remv. & Rebld. L.F.	I-15 R&D Wood Post Ea.	S-15 Temp. Run-Around Lump	S-18 R&D Exist. R/W Fence L.F.	S-18 R/W Fence Type Comb. L.F.
7																	
14	408	533	2204		11												
15	1666	61	2969														
16	1574	86	2635														
17	1299	2420	5000						904			650					
19	2064	278	3939		93			1319	24						Lump		
20	6760	12358	12040		170	36		1093	526			125					
21	107	28307	13433		86							825	300			156	30
22	8205	11331	11532		136							150	300				
23	25776	2426	12778		769												
24	36920	3880	13270		561							600	150				
25	2560	28435	11936		380							847.5					
26	15488	5887	13586		128							1096					
27	9053	17751	14782		53							1380					
28	26617	4258	13971		23							1306					
29	9910	16869	14967		53							1450					
30	21970	11203	14601		73							525					
31	13332	19097	12063	30	387							782.59	425				
32	6515	9760	11131		40							129.91	125				
33	19454	3897	12829		88												
34	25316	28032	14886		68	66		886	404			575	650		Lump		
35	1292	10636	8232		68			2120	518			650	650				
37	2373	3670	8714		33			2174	296			575	600		Lump		
38	6204	2531	11743		59												
39	1870	22888	8501		53							750	625				
40	2993	1190	10758		53			984	212			750			Lump		
41	1454	152	4741					1305									
42	12185	1819	11539		1029												
43	26134	2025	16523		663		12	1585	222						Lump		
44	3791	42148	17479		480			572	214	180		1212.5	937.5			125	130
45	5897	21909	12564		463							350	387.5				
46	27194	482	12582	49	403												
47	287	6259	7874		10							250	150				
48	5266	1363	8141		148												
49	33134	561	11137		57							70					
50	995	5223	6124	87	76							992.5		36			
51	131	2526	6990	104	20							1201.		12			
52	273	5813	6081		10							986.5		58			
53	1400	2444	6349		24			1326	238			1112.5	312.5	12	Lump		
54	311	71	1350					946									
~~56~~	~~1812~~	~~1363~~	~~8053~~		~~86~~												
~~57~~	~~16862~~	~~350~~	~~11489~~		~~1840~~												
~~58~~	~~25616~~	~~190~~	~~12328~~		~~132~~												
~~59~~	~~1390~~	~~4628~~	~~11919~~		~~286~~												
~~60~~	~~613~~	~~13118~~	~~10621~~		~~1088~~												
~~61~~	~~22624~~	~~236~~	~~11908~~		~~52~~												
~~62~~	~~4769~~	~~7016~~	~~11643~~		~~868~~												
~~63~~	~~2981~~	~~4414~~	~~11060~~		~~653~~												
~~64~~	~~921~~	~~10118~~	~~10451~~		~~183~~												
~~66~~	~~5243~~	~~6868~~	~~11873~~		~~779~~												
~~66~~	~~1397~~	~~10725~~	~~12039~~		~~823~~												
~~67~~	~~672~~	~~3385~~	~~11045~~		~~33~~												
~~68~~	~~1402~~	~~10970~~	~~12237~~		~~83~~												
~~69~~	~~2406~~	~~14961~~	~~6846~~		~~53~~												
247	801	339	1609														
249					5			742								40	
251					7			864	480								
252					4			484	214								
267					1092											2477	
284																	
303					192												
279			30000														
To CAL.	368993	320318	423,583														
To SUM				270	8002		102	12	16400	4252	120	19342	5050	118	Lump	2736	30

PAVEMENT

Sheet No.	E-1 Exc. Under Pav't C.Y.	I-8 Pav't Slot Sq. Yd. Ea.	I-12 Curb Type 6 L.F.	I-12 Curb Type 2-A L.F.	I-21 Conc. Med. Type I SY	I-21 Conc. Med. Type A C.Y.	I-22 Sub-Base C.Y.	T-71 9" Conc. Pav't S.Y.	I-7 13" App. Slab S.Y.	I-18 6" Stab'l. Shdlr. C.Y.	T-35 Asph. Conc. Type C C.Y.	T-10 Conc. Pav't Cont. Rem. S.Y.
7												
14				780								
15				1141								
16				1166								
17		1		1775				204				
19							34	184				
20							121	695				
21												
22												
23												
24												
25												
26												
27												
28												
29												
30												
31									134			
32												
33												
34							135	749				
35							121	671				
37							280	1540				
38												
39												
40							89	566				
41							112	709				
42												
43							41	262				
44							73	459				
45												
46												
47												
48												
49												
50									201			
51									67			
52									201			
53							160	1010	67			
54							41	262				
~~56~~												
~~57~~												
~~58~~												
~~59~~												
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~~67~~												
~~68~~												
~~69~~												
247												
249				389			314	1774		38	7	91
251				340			587	3365				
252				154			236	1702				
267				688			3117	15446		414		
284												
303												
279												
To CAL.							5521	29598		452		
To SUM		1		6935					670			

DRAINAGE

Sheet No.	I-2 6" U.A. Sub-Drain 17-6.5(a) 17-6.8(b) L.F.	I-2 15" U.A. Sub-Drain 17-6.4 (c) L.F.	I-2 12" S.S. 17-6.5(b) 17-6.8(b) U.A. L.F.	I-2 15" S.S. 17-6.5(b) 17-6.8(b) U.A. L.F.	I-2 24" S.S. 17-6.6(a) 17-6.8(b) L.F.	I-4 6" Under-Drain L.F.	I-4 8" Out L.F.	I-5 For I-4 6"-45° Bend Ea.	I-5 For I-4 6"-60° Bend Ea.	I-5 For I-4 6"-90° Wye Ea.	I-5 For I-4 8"-60° Wye 17-6.4(a) Ea.	I-5 For I-4 15"x30° Bend 17-6.4(a) Ea.	I-5 For I-4 6"-45° Bend 17-6.4(a) Ea.	I-5 For I-4 8"-45° Bend Ea.	*2.10 Inlet Ea.	I-8 * 8 C.B. Ea.	I-8 C.B. 3 Ea.	I-8 3A Ea.	I-8 *2.4 C.B. Ea.	I-8 C.B. Adjust To Grade Ea.	I-8 Man Hole Std No. 1 Ea.	I-8 M.H. Adjust To Grade Ea.	I-14 Pavt'd Gutter Type I L.F.	I-14 Pavt'd Gutter Type G L.F.	I-10 Dump Rock C.Y.	S-1 Conc. for Struct. Cl "E" C.Y.	I-6 Relay Pipe L.F.	I-16 Aband C.B. Ea.	Sheet No.
7						1000																							7
14						598	10	1																					14
15						250																							15
16						329									1											2			16
17					58																								17
19				6		335	10									1													19
20				84		1029	96				1					1													20
21				82												1										3			21
22						556	20	1		1						1					1								22
23				66		1180	10									1								18	16				23
24				68		850	20	2								1								202	16				24
25		92		134		554	58		1		1	4				3								90	8	2			25
26				74		962	85	2								1								175					26
27				86		876	149	3								1										3			27
28				82		1734	61		1	1	1					1										3			28
29		24		60		348	14	2				2				1										3			29
30				88		1025										1										2			30
31	30	14		138		491	10	1	1	1		2				2								60		3			31
32				90		502	20	3								2										3			32
33				78		1968	35	2							1	1													33
34				88		1693	10	1								1									16	3		1	34
35				10		900										1									16			1	35
37				14		200	82									1												1	37
38				70		805	105	1					1			1													38
39		18		148		1093	40	2				2	2			2													39
40		18		64		892	10	1				2				1										3			40
41						675																							41
42				50		786	50	1							1	1													42
43				46		710										1		1						40	8		0.26	12	1	43
44		46		64		413	20	1		1		2				1								880	32	3				44
45		44		134		438	10	1				2				2								140						45
46				64	50	1187										1														46
47						200																								47
48						799	16	1	1												1									48
49				54												1								110						49
50		75		46								2				1										3				50
51		58		48								2				1										3				51
52		52		56		591	10	1				2				1										3				52
53		54		58		926	10	1				2				2									24	3		2		53
54						290																								54
~~56~~																														~~56~~
~~57~~																														~~57~~
~~58~~																														~~58~~
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~~67~~																														~~67~~
~~68~~																														~~68~~
~~69~~																														~~69~~
247																														247
249			16			340		3									2				3							2	249
251																														251
252																														252
267			134	136		1515		4								1	4	1			2					395	5790			267
284																														284
303																								200		14				303
279																						1								279
To CAL.																														To CAL.
To SUM	670		208	2286	50	29054	1021	35	4	4	8	24	3	1	1	38	4	3	1	2	3	3	1915	136	394	58.16	12	11	To SUM

(1031)

C A L C U L A T I O N S

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

STA. 21-11.49
WAY. 21-0.00
SUM. 21-0.00

T-71 9" REINFORCED CONCRETE PAVEMENT

FROM: TYPICAL SECTION "A" = 8,532.60 L.F.
TYPICAL SECTION "B" = 10,318.67 L.F.
TYPICAL SECTION "C" = 1,971.64 L.F.
TYPICAL SECTION "D" = 3,562.88 L.F.
TYPICAL SECTION "E" = 2,951.04 L.F.
TYPICAL SECTION "F" = 4,120.50 L.F.
TYPICAL SECTION "G" = 3,801.75 L.F.
TYPICAL SECTION "L" = 1,300.00 L.F.
36,559.08 L.F. x 24 ÷ 9 = 97,491 S.Y.

FROM: TYPICAL SECTION "H" = 74.09 L.F.
TYPICAL SECTION "I" = 2,847.94 L.F.
2,922.03 L.F. x 25 ÷ 9 = 8,117 S.Y.

FROM: TYPICAL SECTION "J" = 405.42 L.F.
TYPICAL SECTION "K" = 612.08 L.F.
1,017.50 L.F. x 38 ÷ 9 = 4,296 S.Y.

FROM: RECAP 29,598 S.Y.

TOTAL T-71 TO SUMMARY 139,502 S.Y.

I-22 VARIABLE DEPTH SUBBASE

FROM: TYPICAL SECTION "B" = 10,318.67 L.F.
TYPICAL SECTION "C" = 1,971.64 L.F.
TYPICAL SECTION "F" = 4,120.50 L.F.
16,410.81 L.F. x 25 ÷ 9 = 45,586 S.Y.

45,586 S.Y. x 6 ÷ 36 = 7,598 C.Y.

FROM: TYPICAL SECTION "A" = 8,532.60 L.F.
TYPICAL SECTION "D" = 3,562.88 L.F.
TYPICAL SECTION "E" = 2,951.04 L.F.
TYPICAL SECTION "G" = 3,801.75 L.F.
18,848.27 L.F. x 13.09 S.F. ÷ 27 = 9,138 C.Y.

FROM: TYPICAL SECTION "H" = 74.09 L.F.
TYPICAL SECTION "I" = 2847.94 L.F.
2,922.03 L.F. x 26 ÷ 9 = 8,441 S.Y.

8,441 S.Y. x 6 ÷ 36 = 1,407 C.Y.

FROM: TYPICAL SECTION "J" = 405.42 L.F. x 20.52 S.F. ÷ 27 = 308 C.Y.

FROM: TYPICAL SECTION "K" = 612.08 L.F. x 40 ÷ 9 = 2,720 S.Y.

2,720 S.Y. x 6 ÷ 36 = 453 C.Y.

FROM: TYPICAL SECTION "L" = 1,300.00 L.F. x 21.30 S.F. ÷ 27 = 1,026 C.Y.

I-22 UNDER STABILIZED BERM

FROM: TYPICAL SECTIONS "A" THRU "K" EST. = 4,200 C.Y.

ADDITIONAL (I-22 FOR I-4 [MEDIAN EDGE]) EST. = 300 C.Y.

FROM: RECAP 5,521 C.Y.

FROM: APPROACH SLABS 670 x 6 ÷ 36 = 112 C.Y.

TOTAL I-22 TO SUMMARY 30,069 C.Y.

I-18 6" STABILIZED SHOULDERS

FROM: TYPICAL SECTIONS "A" THRU "L" 40,498.61 L.F. x 4 ÷ 9 = 18,000 S.Y.

DEDUCT FOR INTERSECTIONS(EST) = 133 S.Y.

17,867 S.Y. x 6 ÷ 36 = 2,978 C.Y.

FROM: RECAP 452 C.Y.

TOTAL I-18 TO SUMMARY 3,430 C.Y.

E-1 COMPACTED SUBGRADE

FROM: T-71 = 139,502 S.Y.

FROM: APPROACH SLABS 670 S.Y.

TOTAL E-1 TO SUMMARY 140,172 S.Y.

L-9 SEEDING AND PROTECTING

FROM: RECAP 423,589 S.Y.
DEDUCT FOR SODDING - 8,002 S.Y.
DEDUCT FOR I-14 - 897 S.Y.

TOTAL L-9 SEEDING TO SUMMARY 414,684 S.Y.

COMMERCIAL FERTILIZER

$\frac{9 \times 422,686 \times 20}{1000 \times 2000}$ = 38.04 TONS

LIMING MATERIAL

$\frac{9 \times 422,686 \times 100}{1000 \times 2000}$ = 190.21 TONS

EARTH WORK

E-1 = 368,999 C.Y.
E-2 (SHT # 284) = 867 C.Y.
E-3 (SHT # 284) = 666 C.Y.

TOTAL EXCAVATION 370,532 C.Y.

(EMBANKMENT + 25 % - EXCAVATION =
400,398 - 368,999 = 31,398 C.Y.

NET BORROW TO SUMMARY (USE) 31,400 C.Y.

E-1 - 368,999 + 1,486 (UNSUITABLE) = 370,485 C.Y. TO SUMMARY

E-11 WATER

EMB + 40 % =	448,445 x 5 ÷ 1000 =	2,242 M. GAL.
I-22	30,063 x 10 ÷ 1000 =	301 M. GAL.
I-18	3,430 x 20 ÷ 1000 =	69 M. GAL.
	TOTAL E-11 TO SUMMARY	2,612 M. GAL.

I-15 GUARD RAIL

FROM: RECAP 19,342 L.F.
FROM: RECAP (REMOVED & REBUILT) - 5,050 L.F.
14,292 L.F.

USE 14,300 L.F. (EVEN PANEL LENGTHS)

TOTAL I-15 GUARD RAIL TO SUMMARY 14,300 L.F.

SPECIAL MIXING CALCIUM CHLORIDE AND CRUSHED AGGREGATE

FROM: I-18 3,430 C.Y.

$\frac{3430 \text{ C.Y.} \times 36}{6}$ = 20,580 S.Y.

TOTAL MIXING CALCIUM CHLORIDE TO SUMMARY 20,580 S.Y.

S-15 CALCIUM CHLORIDE

FROM: GENERAL NOTES 15 TONS
FROM: SPEC. MIXING CALCIUM CHLORIDE

$\frac{20,580 \text{ S.Y.} \times (1.5\# + 0.6\#)}{2000}$ = 22 TONS

TOTAL S-15 CALCIUM CHLORIDE TO SUMMARY 37 TONS

GENERAL SUMMARY

No.	SHEET No.	ITEM	URBAN TOTAL	RURAL TOTAL	TOTAL	UNIT	DESCRIPTION
							ROADWAY
1	28	E-1	5,748	364,784	370,532	CU. YDS.	ROADWAY EXCAVATION, METHOD "B", AS PER PLAN
2	11	E-1	14,187	125,985	140,172	SQ. YDS.	COMPACTED SUBGRADE
3	11	E-4		31,400	31,400	CU. YDS.	BORROW
4	10	E-6	742	15,658	16,400	SQ. YDS.	REMOVAL AND DISPOSAL OF EXISTING PAVEMENT
5	10	E-6	904	3,348	4,252	LIN. FT.	REMOVAL AND DISPOSAL OF EXISTING CURB
6	10	E-8		120	120	LIN. FT.	REMOVAL AND DISPOSAL OF EXISTING PAVED GUTTER
7	27B	E-9	LUMP	LUMP	LUMP	LUMP	REMOVAL OF TREES AND STUMPS, AS PER PLAN
8	11	E-11	59	2,553	2,612	M-GAL.	WATER
9	28A	E-12		8	8	LIN. FT.	PIPE REMOVED, OVER 15", AS PER PLAN
10	10	E-12		102	102	LIN. FT.	PIPE REMOVED, 15" AND UNDER, AS PER PLAN
11	10	E-12		12	12	LIN. FT.	PIPE REMOVED FOR REUSE
12	28A	E-12		100	100	LIN. FT.	PIPE REMOVED FOR STORAGE
13	10	R-13		3,860	3,860	SQ. FT.	4" CONCRETE SIDEWALK
14	10	R-15	650	13,650	14,300	LIN. FT.	GUARD RAIL STEEL BEAM, STANDARD TYPE (DEEP), AS PER PLAN
15	10	R-15		5,050	5,050	LIN. FT.	GUARD RAIL REMOVED AND REINSTALLED, AS PER PLAN
16	10	R-15		118	118	EACH	WOOD GUARD RAIL POSTS, REMOVED AND DISPOSED OF
17	11	R-16	330	3,100	3,430	CU. YDS.	STABILIZED AGGREGATE SHOULDERS AND APPROACHES
18	27B	L-1		3,800	3,800	CU. YDS.	TOPSOIL STOCKPILED, AS PER PLAN
19	27B	L-3		51,000	51,000	SQ. YDS.	PLACING STOCKPILED TOPSOIL, AS PER PLAN
20	27B	L-5		13,654	13,654	SQ. YDS.	SEEDING AND RENOVATING EXISTING SOD, AS PER PLAN
21	27B	L-6		LUMP	LUMP	LUMP	ROADSIDE CLEANUP, MODIFIED, AS PER PLAN
22	11	L-9	14,401	40,283	414,684	SQ. YDS.	SEEDING AND PROTECTING, AS PER PLAN
23	11	L-9	1.30	36.74	38.04	TONS	COMMERCIAL FERTILIZER (12-12-12)
24	11	L-9	6.49	183.72	190.21	TONS	AGRICULTURAL LIMING MATERIAL, AS PER PLAN
25	10	L-10	16	7,986	8,002	SQ. YDS.	SEEDING, AS PER PLAN
26	10	L-10		270	270	SQ. YDS.	SEEDING FOR SPECIAL BERM AND SLOPE PROTECTION, AS PER PLAN
27	27B	L-12		240	240	EACH	PASSENGER TERMINALS - JAPANESE SPURGE - 2 YEAR FROM POTS
28	27B	L-13		12	12	EACH	ARONIA ARBUTIFOLIA - RED CHOKEBERRY 2' - 3' B AND B 12"
29	27B	L-13		680	680	EACH	CORNUS RACEMOSA - GRAY DOGWOOD 2' - 3' B AND B 12"
30	27B	L-14		16	16	EACH	LIQUIDAMBER STYRACIFLUA - SWEET GUM 1-3/4" TO 2" B AND B 24"
31	27B	L-16		12	12	EACH	ACER RUBRUM - RED MAPLE 1-3/4" TO 2" B AND B 24"
32	27B	L-16		3	3	EACH	AESCULUS GLABRA - OHIO BUCKEYE 1-3/4" TO 2" B AND B 24"
33	27B	L-16		2	2	EACH	QUERCUS PALUSTRIS - PIN OAK 1-3/4" TO 2" B AND B 24"
34	27B	L-16		3	3	EACH	QUERCUS PALUSTRIS - PIN OAK 6' TO 7' B AND B 60"
35	27B	L-17	—	LUMP	LUMP	LUMP	PRUNING EXISTING TREES, AS PER PLAN
36	11	SPEC.	228	20,352	20,580	SQ. YDS.	MIXING CALCIUM CHLORIDE AND CRUSHED AGGREGATE
37	7	M-10	0.2	36.8	37.0	TONS	FURNISHING AND APPLYING CALCIUM CHLORIDE 0.20/S.Y.
38	7	S-10		750	750	CU. YDS.	FURNISHING AND PLACING AGGREGATE FOR TRAFFIC BOUND SURFACE COURSE
39	10	SS-15	40	2,758	2,798	LIN. FT.	REMOVAL AND DISPOSAL OF EXISTING FENCE
40	10	SS-18		30	30	LIN. FT.	FENCE TYPE "B"
41	10	SS-18		292	292	LIN. FT.	FENCE TYPE "C"
42	279	SS-18		2	2	EACH	FENCE GATE, TYPE "C" 6' WIDTH
43	267	SS-18		3101	3101	LIN. FT.	REST AREA FENCE
44	279	SS-25		560	560	LIN. FT.	3" ELECTRICAL CONDUIT, AS PER PLAN
45	8	M-125	0.75	16.47	17.22	MILES	EDGE LINES 4"
46	8	M-125	0.28	2.60	2.88	MILES	LANE AND CENTER LINES 6"
47	8	M-125	—	LUMP	LUMP	LUMP	CURB AND ISLAND MARKING
48	279	SPEC.					STONES
49	279	SPEC.		2	2	EACH	AEROBIC DIGESTION SEWAGE TREATMENT PLANT "HEDWIG"
50	279	SPEC.		2	2	EACH	RODESIDE TOILET AND SEWAGE UNIT, AS PER PLAN
51	279	SPEC.		200	200	LIN. FT.	DRILLED WELLS, AS PER PLAN
52	279	SPEC.		100	100	LIN. FT.	WELL CASING DRIVEN
53	279	SPEC.		100	100	LIN. FT.	WELL CASING SET INSIDE DRIVEN CASING
54	279	SPEC.		20	20	LIN. FT.	WELL SCREEN
55	279	SPEC.		2	2	EACH	PRESSURE WATER SYSTEMS, AS PER PLAN
56	279	SPEC.		20	20	EACH	PARK TABLES, AS PER PLAN
57	279	SPEC.		10	10	EACH	CHARCOAL GRILL AND SERVING TABLE, AS PER PLAN
				308	308	LIN. FT.	2" GALVANIZED PIPE, AS PER PLAN
							PAVEMENT
14	10	T-35	1	3.0	10.0	CU. YDS.	ASPHALTIC CONCRETE SURFACE COURSE TYPE "C" (85-100)
15	10	T-70	97		97	SQ. YDS.	7" PORTLAND CEMENT CONCRETE PAVEMENT
16	11	T-71	14,391	125,111	139,502	SQ. YDS.	9" REINFORCED PORTLAND CEMENT CONCRETE PAVEMENT AS PER PLAN
17	10	T-7		670	670	SQ. YDS.	REINFORCED CONCRETE APPROACH SLABS (TM13")
18	10	T-12	5,251	1,182	6,433	LIN. FT.	CONCRETE CURB, STANDARD TYPE 2-4
19	10	T-12		2,938	2,938	LIN. FT.	SPECIAL PORTLAND CEMENT CURB, MODIFIED AS PER PLAN
20	10	T-12		772	772	LIN. FT.	CONCRETE CURB, STANDARD TYPE 6
21	10	T-21	1,030	48	1,078	SQ. YDS.	PORTLAND CEMENT CONCRETE MEDIAN PAVEMENT-SURFACING TYPE 1, AS PER PLAN
22		T-21		3.6	3.6	CU. YDS.	PORTLAND CEMENT CONCRETE MEDIAN PAVEMENT, TYPE "A", AS PER PLAN
23	11	T-22	2,822	27,241	30,063	CU. YDS.	SUBBASE, AS PER PLAN
24	10	S-15		LUMP	LUMP	LUMP	**ROADWAY CONT'D**
25	10	S-15		LUMP	LUMP	LUMP	TEMPORARY RUN AROUND (CLASS "A" PAVEMENT) STA. 715 + 50 – STA. 734 + 00, AS PER PLAN
26	10	S-15		LUMP	LUMP	LUMP	TEMPORARY RUN AROUND (CLASS "A" PAVEMENT) STA. 886 + 00 – STA. 908 + 00, AS PER PLAN
27	10	S-15		LUMP	LUMP	LUMP	TEMPORARY RUN AROUND (CLASS "A" PAVEMENT) STA. 1018 + 15.40 – STA. 1026 + 39.96, AS PER PLAN
28	10	S-15		LUMP	LUMP	LUMP	TEMPORARY RUN AROUND (CLASS "A" PAVEMENT) STA. 1026 + 65.00 – STA. 1070 + 00, AS PER PLAN
29	10	S-15		LUMP	LUMP	LUMP	TEMPORARY RUN AROUND (CLASS "A" PAVEMENT) STA. 1082 + 00 – STA. 1108 + 50, AS PER PLAN
30							TEMPORARY RUN AROUND (CLASS "A" PAVEMENT) STA. 78 + 00 – STA. 92 + 50, AS PER PLAN
			LUMP	LUMP	LUMP	LUMP	CONSTRUCTION LAYOUT STAKES

GENERAL SUMMARY

STA - 21 - 11.49
WAY - 21 - 0.00
SUM - 21 - 0.00

8	OHIO		

12

GENERAL SUMMARY

	SHEET No.	ITEM	URBAN TOTAL	RURAL TOTAL	TOTAL	UNIT	DESCRIPTION
							DRAINAGE
65	284	E-2		867	867	CU. YDS.	EXCAVATION FOR STRUCTURES
66	284	E-3		666	666	CU. YDS.	CHANNEL EXCAVATION
67	10	I-2		30	30	LIN. FT.	6" STORM SEWERS UNDER PAVEMENT OR APPROACHES SEC. M-6.5 (b) OR M-6.8 (b)
68	279	I-2		502	502	LIN. FT.	6" STORM SEWERS SEC. M-6.8 (a) WITH BITUMINOUS COMPRESSION JOINTS, AS PER PLAN (SANITARY)
69	10	I-2	74	134	208	LIN. FT.	12" STORM SEWERS, UNDER PAVEMENT OR APPROACHES SEC. M-6.5 (b) OR M-6.8 (b)
70	10	I-2		495	495	LIN. FT.	15" STORM SEWERS SEC. M-6.4 (c)
71	10	I-2		2,286	2,286	LIN. FT.	15" STORM SEWERS, UNDER PAVEMENT OR APPROACHES SEC. M-6.5 (b) OR M-6.8 (b)
72	10	I-2		50	50	LIN. FT.	24" STORM SEWERS SEC. M-6.6 (a) OR SEC. M-6.8 (a)
73	10	I-4	1,511	27,543	29054	LIN. FT.	6" UNDERDRAINS
74	10	I-4	10	1,011	1,021	LIN. FT.	8" PIPE OUTLETS FOR UNDERDRAINS SEC. M-6.4 (a)
75	10	I-5		24	24	EACH	15" PIPE SPECIALS FOR STORM SEWERS SEC. M-6.4 (c), AS PER PLAN
76	10	I-5	4	38	42	EACH	6" PIPE SPECIALS FOR UNDERDRAINS
77	10	I-5		3	3	EACH	8" PIPE SPECIALS FOR UNDERDRAINS SEC. M-6.4 (a)
78	10	I-6		12	12	LIN. FT.	RELAYING 12" PIPE FOR STORM SEWERS
79	10	I-8		4	4	EACH	STANDARD NO. 3 CATCH BASINS
80	10	I-8	2	1	3	EACH	STANDARD NO. 3-A CATCH BASINS
81	10	I-8	1		1	EACH	STANDARD NO. 2-10 MEDIAN INLET
82	10	I-8		38	38	EACH	STANDARD NO. 8 CATCH BASINS, AS PER PLA.
83	10	I-8		1	1	EACH	STANDARD NO. 2-4 CATCH BASINS
84	10	I-8		3	3	EACH	STANDARD NO. 1 MANHOLES
85	284	I-8		2	2	EACH	STANDARD NO. 2 MANHOLES, AS PER PLAN
86	10	I-8	1		1	EACH	MONUMENT BOX ADJUSTED TO GRADE
87	10	I-8	*3		*3	EACH	MANHOLES ADJUSTED TO GRADE
88	10	I-8		2	2	EACH	CATCH BASINS ADJUSTED TO GRADE
89	7	I-9	150	8,850	9,000	LIN. FT.	STONE UNDERDRAINS NO. 2
90	10	I-10	2	392	394	CU. YDS.	DUMPED ROCK CHANNEL PROTECTION
91	284	I-10		10	10	SQ. YDS.	RIPRAP
92	10	I-14		1,915	1,915	LIN. FT.	PAVED GUTTER STANDARD TYPE 1
93	10	I-14		136	136	LIN. FT.	PAVED GUTTER TYPE 6, AS PER PLAN
94	10	I-16	2	9	11	EACH	CATCH BASINS ABANDONED, AS PER PLAN
95	10	S-1		58.2	58.2	CU. YDS.	CONCRETE FOR STRUCTURES, CLASS "E"
96	284	S-22		4.6	4.6	CU. YDS.	REMOVAL OF PORTIONS OF EXISTING STRUCTURES
97	284	S-24		LUMP	LUMP	LUMP	REMOVAL OF EXISTING STRUCTURES
98	284	S-27		238	238	LIN. FT.	15" PIPE FOR ROADWAY CULVERTS, SEC. M-6.6 (b)
99	284	S-27		196	196	LIN. FT.	18" PIPE FOR ROADWAY CULVERTS, SEC. M-6.6 (b)
100	284	S-27		616	616	LIN. FT.	24" PIPE FOR ROADWAY CULVERTS, SEC. M-6.6 (b)
101	284	S-27		242	242	LIN. FT.	30" PIPE FOR ROADWAY CULVERTS, SEC. M-6.6 (b)
102	284	S-27		68	68	LIN. FT.	36" PIPE FOR ROADWAY CULVERTS, SEC. M-6.6 (d)
103	284	S-27		96	96	LIN. FT.	36" PIPE FOR ROADWAY CULVERTS, SEC. M-6.4 (d)
104	284	S-27		246	246	LIN. FT.	42" PIPE FOR ROADWAY CULVERTS, SEC. M-6.4 (d)
105	284	S-27		92	92	LIN. FT.	48" PIPE FOR ROADWAY CULVERTS, SEC. M-6.4 (d)
106	284	S-27		204	204	LIN. FT.	54" PIPE FOR ROADWAY CULVERTS, SEC. M-106.6 (d)
107	284	S-27		116	116	LIN. FT.	21" PIPE FOR ROADWAY CULVERTS, SEC. M-6.6 (b)
108	284	S-27		98	98	LIN. FT.	43" X 27" PAVED BITUMINOUS COATED CORRUGATED METAL ARCH SEC. M-5.4 (1) (d) FOR ROADWAY CULVERTS
109	284	S-27		68	68	LIN. FT.	PIPE CATTLE PASS STRUCTURE, DESIGN ALTERNATE "B-1"
110	284	S-27		46	46	LIN. FT.	48" PIPE FOR ROADWAY CULVERTS SEC. M-6.4 (a) 10 GAGE
111	284	S-28		82	82	LIN. FT.	7' - 3" X 5' - 3" SECTIONAL CORRUGATED METAL STRUCTURE, 10-8 GAGE SEC. M-6.4 (g)
112	284	S-28		222	222	LIN. FT.	60" SECTIONAL CORRUGATED METAL STRUCTURE SEC. M-6.4 (g) (10-10 GAGE)

STRUCTURES OVER 20' SPAN

STRUCTURE NO. STA-21-1644 R SEE SHEET NO. 305
STRUCTURE NO. WAY-21-0088 R SEE SHEET NO. 307
STRUCTURE NO. WAY-21-0095 R SEE SHEET NO. 315
STRUCTURE NO. WAY-21-0125 R SEE SHEET NO. 324
STRUCTURE NO. WAY-21-0143 R SEE SHEET NO. 332

* Two of the manholes to be adjusted to grade are on sanitary sewers. They shall be 100% City of Massillon participation.

GENERAL SUMMARY

Rev. 11-14-00 REC

STA - 21 - 1.49
WAY - 21 - 0.00
SUM - 21 - 0.00

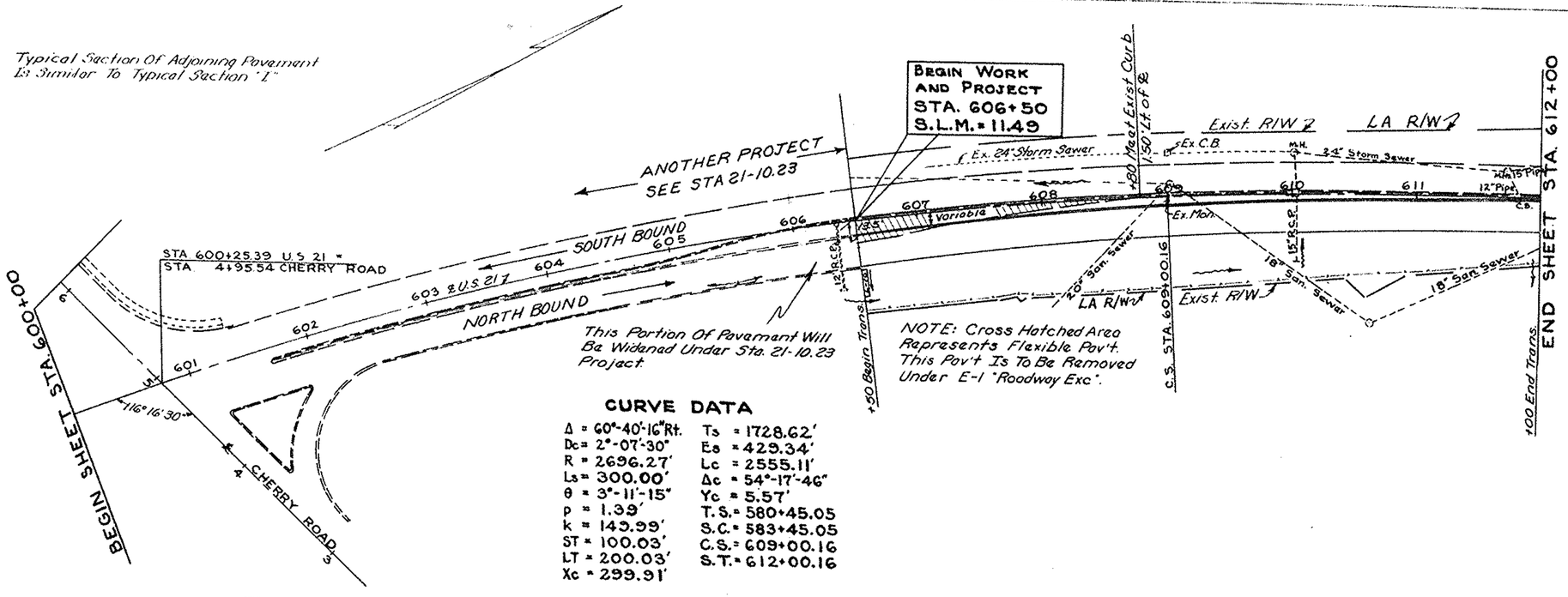
2 OHIO

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

14

STA 21- 11.49
WAY 21-0.00
SUM 21-0.00

Typical Section Of Adjoining Pavement
Is Similar To Typical Section "I"



CURVE DATA

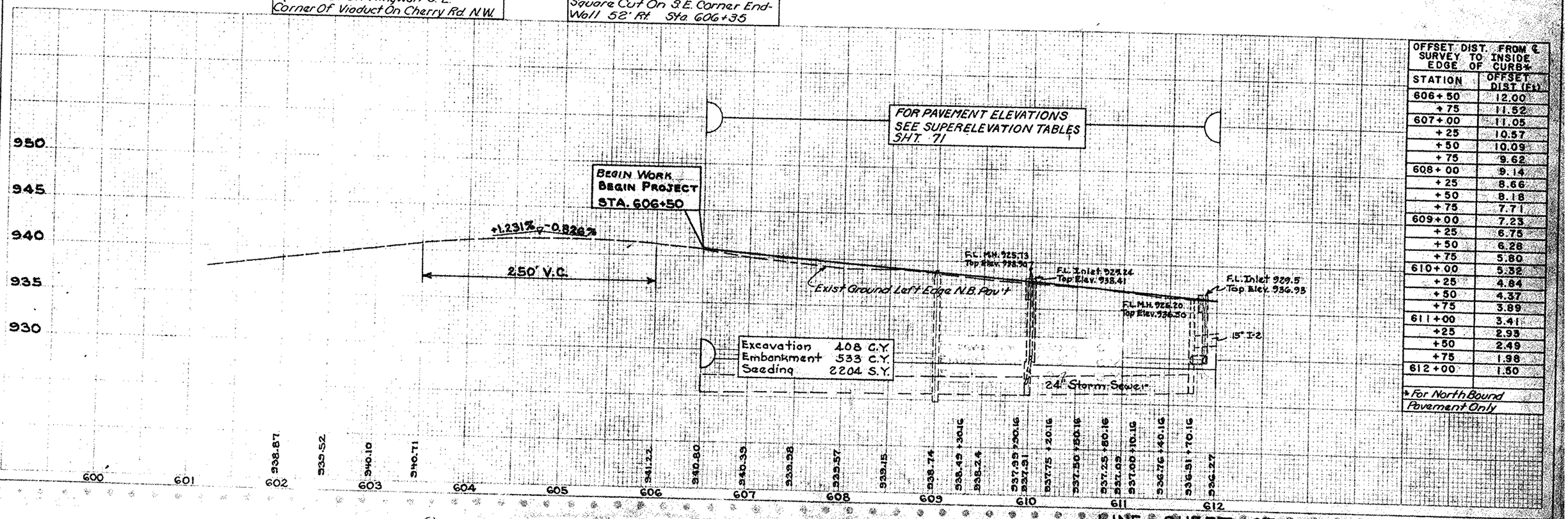
Δ = 60°-40'-16" Rt.	Ts = 1728.62'
Dc = 2°-07'-30"	Es = 429.34'
R = 2696.27'	Lc = 2555.11'
Ls = 300.00'	Δc = 54°-17'-46"
θ = 3°-11'-15"	Yc = 5.57'
p = 1.39'	T.S. = 580+45.05
k = 149.99'	S.C. = 583+45.05
ST = 100.03'	C.S. = 609+00.16
LT = 200.03'	S.T. = 612+00.16
Xc = 299.91'	

B.M.# 1 Elev. 946.57
Square Cut On Wingwall S.E. Corner Of Viaduct On Cherry Rd. N.W.

B.M.# 2 Elev. 936.75
Square Cut On S.E. Corner End-Wall 52' Rt. Sta. 606+35

ESTIMATED QUANTITIES

Item	Description	Unit	STATION From	STATION To	Side	Sub Total	Total
	Pavement						
I-12	Concrete Curb Type 2-A	L.F.	606+50	608+80	Lt.	230	780
I-12	" " "	L.F.	606+50	612+00	Rt.	550	
L-10	Sodding 4" Wide	S.Y.	606+52		Rt.		11
I-21	Port.Cem.Med.Pav't(Var) Type 1	S.Y.	606+50	612+00	Rt.		443



OFFSET DIST. FROM ℄ SURVEY TO INSIDE EDGE OF CURB*	
STATION	OFFSET DIST (Ft)
606+50	12.00
+75	11.52
607+00	11.05
+25	10.57
+50	10.09
+75	9.62
608+00	9.14
+25	8.66
+50	8.18
+75	7.71
609+00	7.23
+25	6.75
+50	6.28
+75	5.80
610+00	5.32
+25	4.84
+50	4.37
+75	3.89
611+00	3.41
+25	2.93
+50	2.49
+75	1.98
612+00	1.50

* For North Bound Pavement Only

LINE SHEET STA. 600+00 TO STA. 612+00

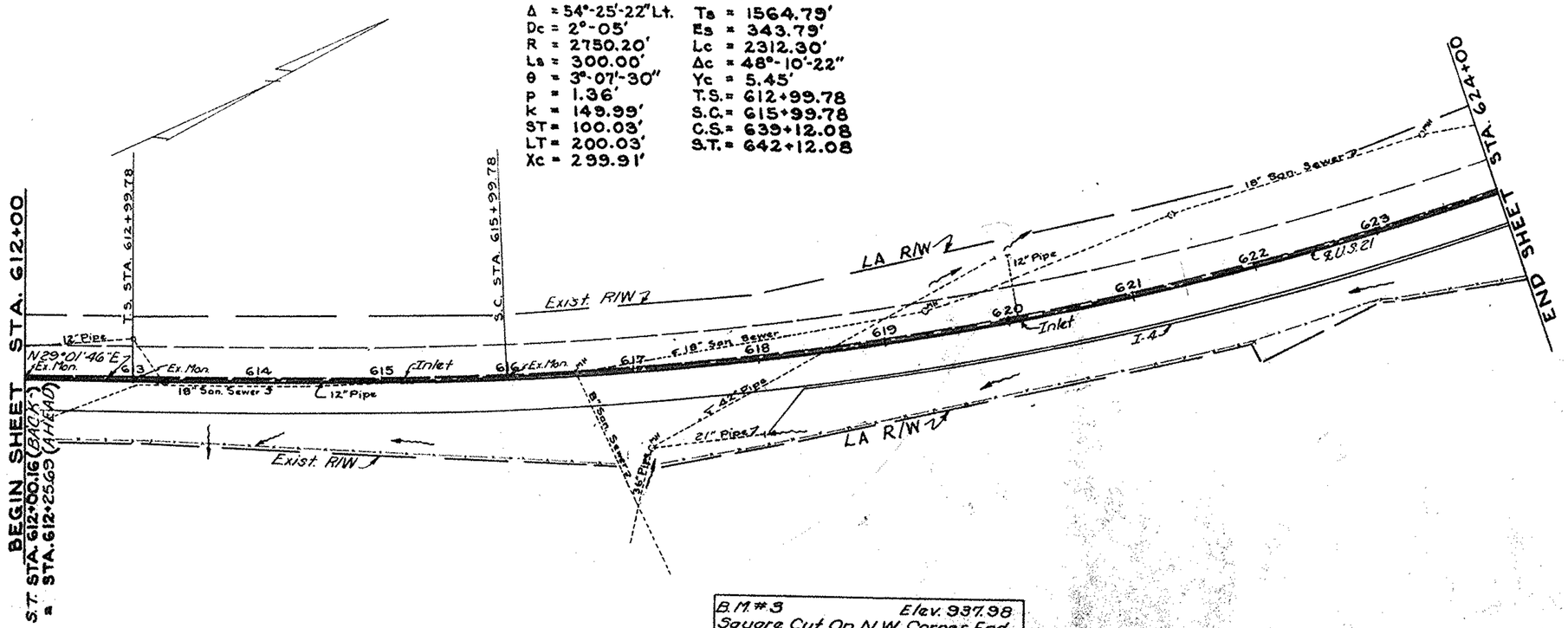
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

15

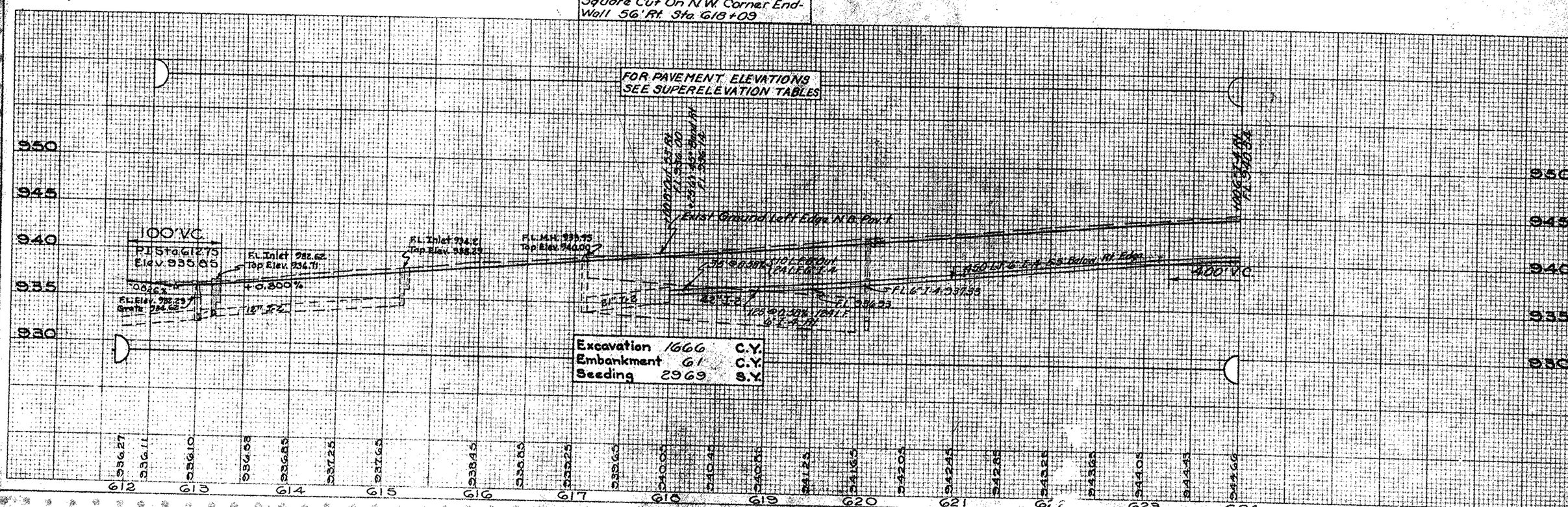
STA 21-11.49
WAY 21-0.00
SUM 21-0.00

CURVE DATA

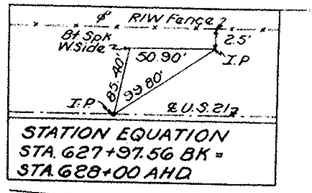
Δ = 54°-25'-22" Lt.	Ts = 1564.79'
Dc = 2°-05'	Es = 343.79'
R = 2750.20'	Lc = 2312.30'
Ls = 300.00'	Δc = 48°-10'-22"
θ = 3°-07'-30"	Yc = 5.45'
p = 1.36'	T.S. = 612+99.78
k = 149.99'	S.C. = 615+99.78
ST = 100.03'	C.S. = 639+12.08
LT = 200.03'	S.T. = 642+12.08
Xc = 299.91'	



ESTIMATED QUANTITIES							
Item	Description	Unit	STATION From	STATION To	Side	Sub Total	Total
	Pavement						
I-12	Conc. Curb Type 2-A	L.F.	612+00	624+00	Rt.		1141
I-21	Port. Cem. Med. Pav't. Type 1	S.Y.	612+00	624+00	℄		254
	Drainage						
I-4	6" Underdrain (Deep)	L.F.	618+00	618+25	Rt.	24	
I-4	6" Underdrain	L.F.	618+25	624+00	Rt.	574	598
I-4	8" Outlet	L.F.	618+00		Rt.		10
I-5	6" x 45° Bend	Ea.	618+25		Rt.		1



LINE SHEET STA. 612+00 TO STA. 624+00



STATION EQUATION
STA. 627+97.56 BK =
STA. 628+00 AHD.

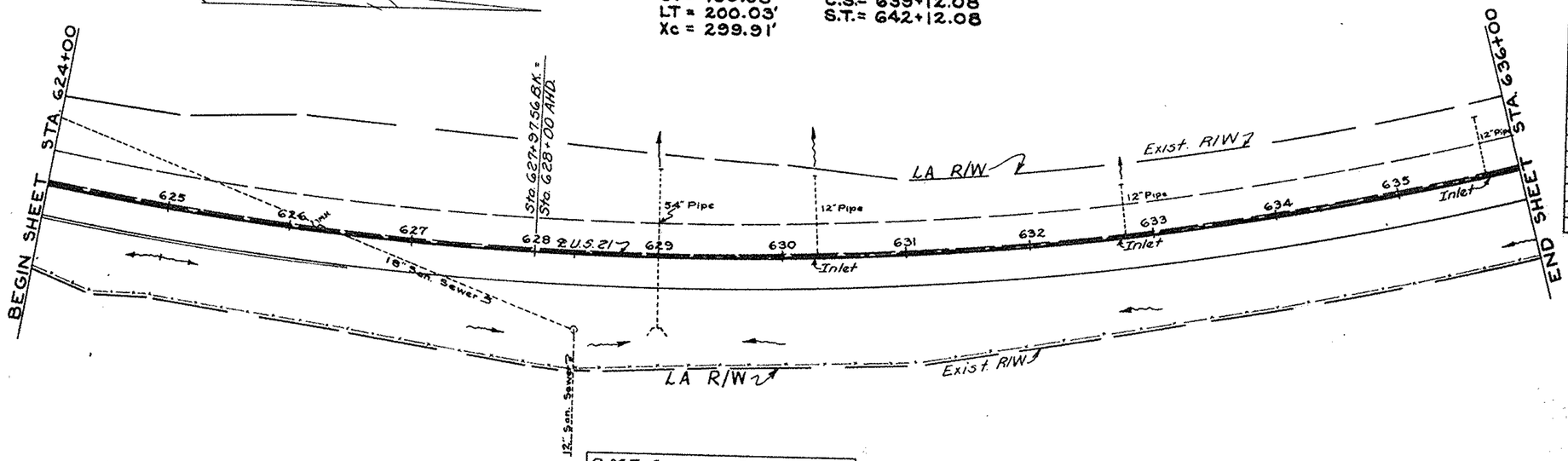
CURVE DATA

Δ = 54°-25'-22" Lt.	Ts = 1564.79'
Dc = 2°-05'	Es = 343.79'
R = 2750.20'	Lc = 2312.30'
Ls = 300.00'	Δc = 48°-10'-22"
θ = 3°-07'-30"	Yc = 5.45'
P = 1.36'	T.S. = 612+99.78
k = 149.99'	S.C. = 615+99.78
ST = 100.03'	C.S. = 639+12.08
LT = 200.03'	S.T. = 642+12.08
Xc = 299.91'	

FED. RD. DIVISION	STATE	PROJECT		
2	OHIO			

16

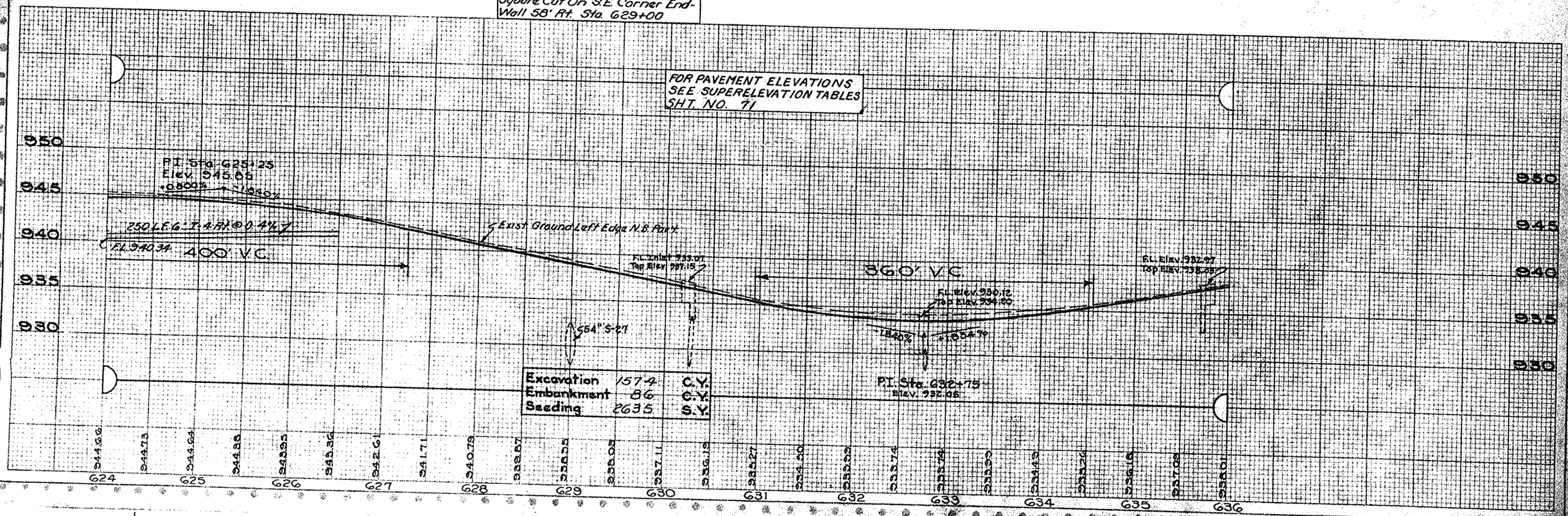
STA 21-11.49
WAY 21-0.00
SUM 21-0.00



ESTIMATED QUANTITIES							
Item	Description	Unit	STATION From	STATION To	Side	Sub Total	Total
	Pavement						
I-12	Concrete Curb Type 2A Type 1-7	L.F.	624+00	636+00	Rt.		1166
I-21	Port. Cem. Mod. Pvt.	S.Y.	624+00	636+00	℄		266
	Drainage						
I-4	6" Underdrain (Deep)	L.F.	624+00	626+50	Rt.		250

B.M. # 4 Elev. 933.80
Square Cut On S.E. Corner End-Wall 58' Rt. Sta. 629+00

FOR PAVEMENT ELEVATIONS SEE SUPERELEVATION TABLES SHT. NO. 71



Excavation	1574	C.Y.
Embankment	86	C.Y.
Seeding	2635	S.Y.

LINE SHEET STA. 624+00 TO STA. 636+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

17

STA - 21 - 11.49
WAY - 21 - 0.00
SUM - 21 - 0.00

CURVE DATA

Δ	= 54°-25'-22"Lt.	Ts	= 1564.79'
Dc	= 2°-05'	Es	= 343.79'
R	= 2750.20'	Lc	= 2312.30'
Ls	= 300.00'	Δc	= 48°-10'-22"
θ	= 3°-07'-30"	Yc	= 5.45'
P	= 1.36'	T.S.	= 612+99.78
K	= 149.99'	S.C.	= 615+99.78
ST	= 100.03'	C.S.	= 639+12.08
LT	= 200.03'	S.T.	= 642+12.08
Xc	= 299.91'		

Typical Section Of Adjoining Pav't
Is Similar To Typical Section "J"

NOTE: For Intersection And Lake Ave.
Detail See Sht. No. 247

NOTE: Sta. 637+50
Begin Earth Median

BEGIN SHEET STA 636+00

STA 636+00
BEGIN TRANSITION

C.S. STA. 639+12.08

S.T. STA. 642+12.08

END TRANSITION
STA. 642+00

END SHEET STA 648+00

Exist. R/W

LA R/W

SUSPEND WORK
STA. 646+70

SUSPEND PROJECT
STA. 646+17.5
S.L.M. - 12.24

SOUTH BOUND

NORTH BOUND

637 638 639 640 641 642 643 644 645 646 647

Exist. Concrete Pav't

℄ U.S. 21

Ex. Mon.

Ex. Mon.

6" Underdrain

Dumped Rock
4'x5'

645 N 85°-23'-36" W 646

NOTE: Shaded Area Is Existing
Asphalt Pavement To Be
Removed Under E-1 Excavation

55' R

90' R

LAKE AVE.
S.R. 230

55' R

647+07
77+92.12

151' R

LA R/W

FOR PAVEMENT OFF SETS
SEE TABLE BELOW

B.M.# 5 Elev. 939.32
R.R. Spike In 24" Stump
68' Lt. Of Sta. 637+83

B.M.# 6 Elev. 938.81
Square Cut On S.E. Corner Of
Endwall 80' Rt Of Sta. 644+04

FOR PAVEMENT ELEVATIONS
SEE SUPERELEVATION TABLES SHT. 71

950
945
940
935
930

Exist. Ground Lt. Edge N.B. Pav't

6" Shallow Underdrain 6.30' Rt.
FL (In) 943.50
FL (Out) 940.50

+1.00 6.7-4 @ 5.5% Rt.
FL 943.38

P.I. STA. 641+60
ELEV. 948.28

-0.600%

+0.34%

-6 @ 1.25% 7-4 Rt @ 0.4%

STA 646+17.5
(MEET EXIST PAV'T.

R.L.M.H. 93+66
Top Elev. 944.20

138 LF 6"-I-4 Rt
Parallel With Profile

300' V.C.

55 @ 9.48% - 58 LF 12" I-2 U.A.

FL (Out) 934.00

6" Underdrain
Elev. 935.8

R.L. Inlet 935.50
FL. Out let 931.38

12" S-2.7

Excavation	1299	C.Y.
Embankment	2420	C.Y.
Seeding	5000	S.Y.

* Beginning At Sta. 639+00 The Right Lane Of The S.B. Pav't Is To Be Constructed With Elevations As Indicated On The Superelevation Tables. The Offsets Given Are Intended To Make The S.B. Pav't 24.5' Wide Up To Sta. 645+00. From Sta. 645+00 To Sta. 646+17.5 The Pav't Will Taper To 24.0' Wide In Order To Meet The Existing Pav't.

ESTIMATED QUANTITIES

Item	Description	Unit	STATION From	STATION To	Side	Sub Total	Total
	Roadway						
E-8	Rem. & Disp. Exist. Curb	L.F.	642+07	646+70	L&R		904
I-8	Mon. Box Adj. to Grade	Ea.	642+12.08				1
I-15	G.R. Steel Beam (Deep)	L.F.	636+25	642+75	Rt.		650
	Pavement						
I-12	Concrete Curb Type 2-A	L.F.	639+00	646+17.5	Lt.	717.5	
I-12	Concrete Curb Type 2-A	L.F.	636+00	646+57	L&R	1057.5	1775
I-21	Port. Cem. Med. Pav't. (Nat.)	S.Y.	636+00	637+50	℄		67
	Type J						
T-11	9" Reinf. Conc. Pav't.	S.Y.	644+00	646+70	R.L.		204
	Drainage						
I-24	12" SS (M-4.5b) M-6.8 (b).	L.F.	639+00		Rt.		58
I-4	6" Underdrain (Shallow)	L.F.	639+00	642+25	Rt.		323
I-8	Std. No. 2-10 Inlet	Ea.	639+00		B.S. Rt.		1
I-10	Dumped Rock (d=2.5')	C.Y.	639+00		Rt.		2.0

OFFSETS TO PAVEMENT EDGES

STATION		S.B. PAVEMENT OUTSIDE EDGE	S.B. PAVEMENT INSIDE EDGE Face of Curb	N.B. PAVEMENT INSIDE EDGE Face of Curb	N.B. PAVEMENT OUTSIDE EDGE
636+00	S.B. PAVEMENT COMPLETED IN THIS AREA	26.00	1.50	1.50	26.00
+25		26.40	1.90	1.90	26.40
+50		26.80	2.30	2.30	26.80
+75		27.20	2.70	2.70	27.20
637+00		27.60	3.10	3.10	27.60
+25		28.00	3.50	3.50	28.00
+50		28.40	3.90	3.90	28.40
+75		28.80	4.30	4.30	28.80
638+00		29.20	4.70	4.70	29.20
+25		29.60	5.10	5.10	29.60
+50		30.00	5.50	5.50	30.00
+75		30.40	5.90	5.90	30.40
639+00	*	30.80	6.30	6.30	30.80
+12.08		31.21	6.71	6.71	31.21
+42.08		32.23	7.73	7.73	32.23
+72.08		33.24	8.74	8.74	33.24
640+02.08		34.25	9.73	9.73	34.25
+32.08		34.71	10.21	10.21	34.71
+62.08		35.19	10.69	10.69	35.19
+92.08		35.67	11.17	11.17	35.67
641+22.08		35.84	11.34	11.34	35.84
+52.08		35.90	11.40	11.40	35.90
+82.08		35.96	11.46	11.46	35.96
642+00.00		36.00	11.50	11.50	36.00
+12.08		36.00	11.50	11.50	36.00
+25					
+50					
+75					
643+00					
+25					
+50					
+75					
644+00				11.50	
+25				10.18	
+50				8.86	
+75				7.53	
645+00			11.50	6.21	
+25			11.61	4.89	
+50			11.71	3.56	
+75			11.82	2.24	
646+00			11.93	0.92	
+17.5			12.00	0.00	

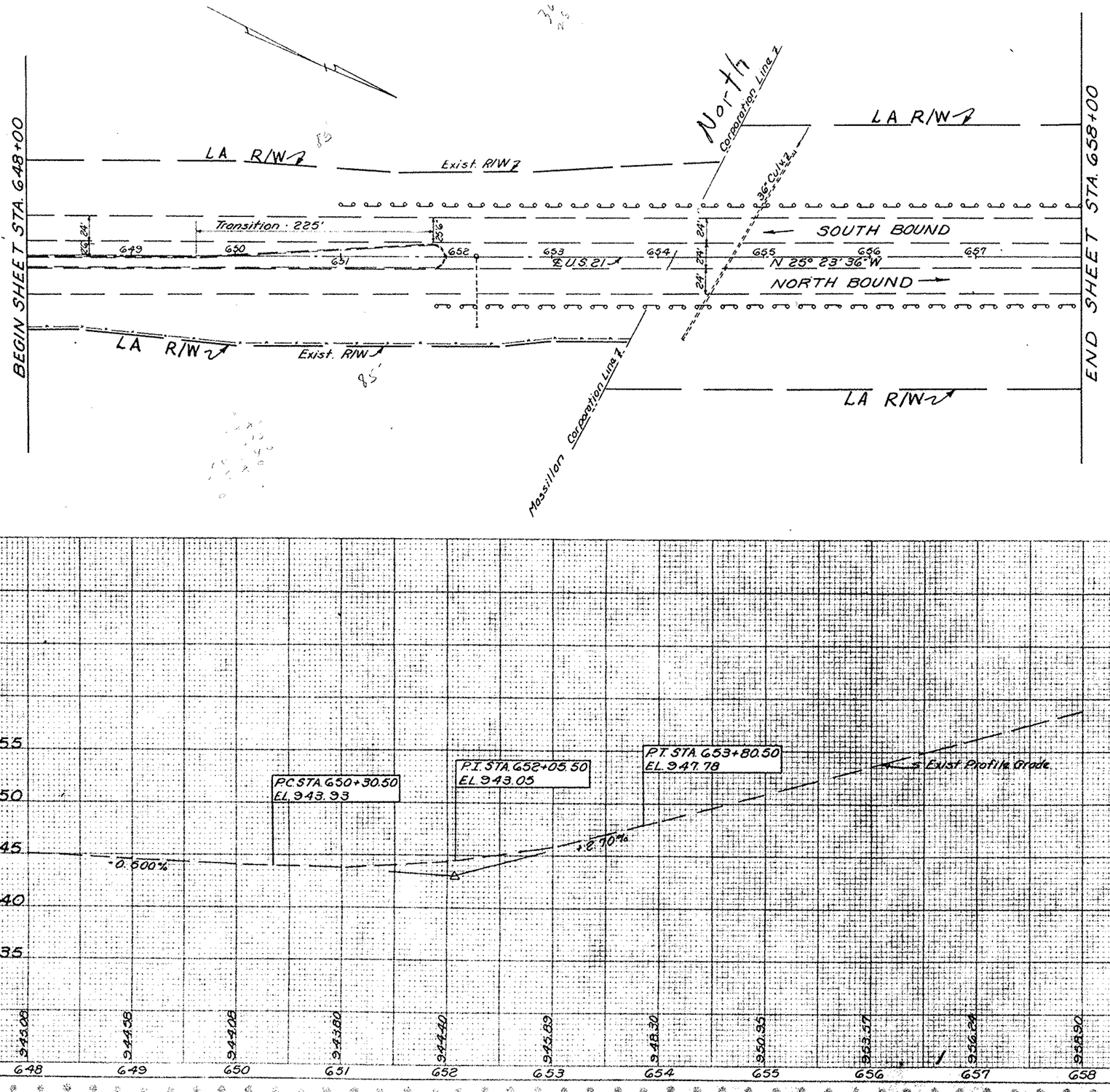
"LINE" SHEET STA. 636+00 TO STA. 648+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

18

STA. 21-11.49
WAY. 21-0.00
SUM. 21-0.00

654+15
606+50
47 65
52 80 = .90

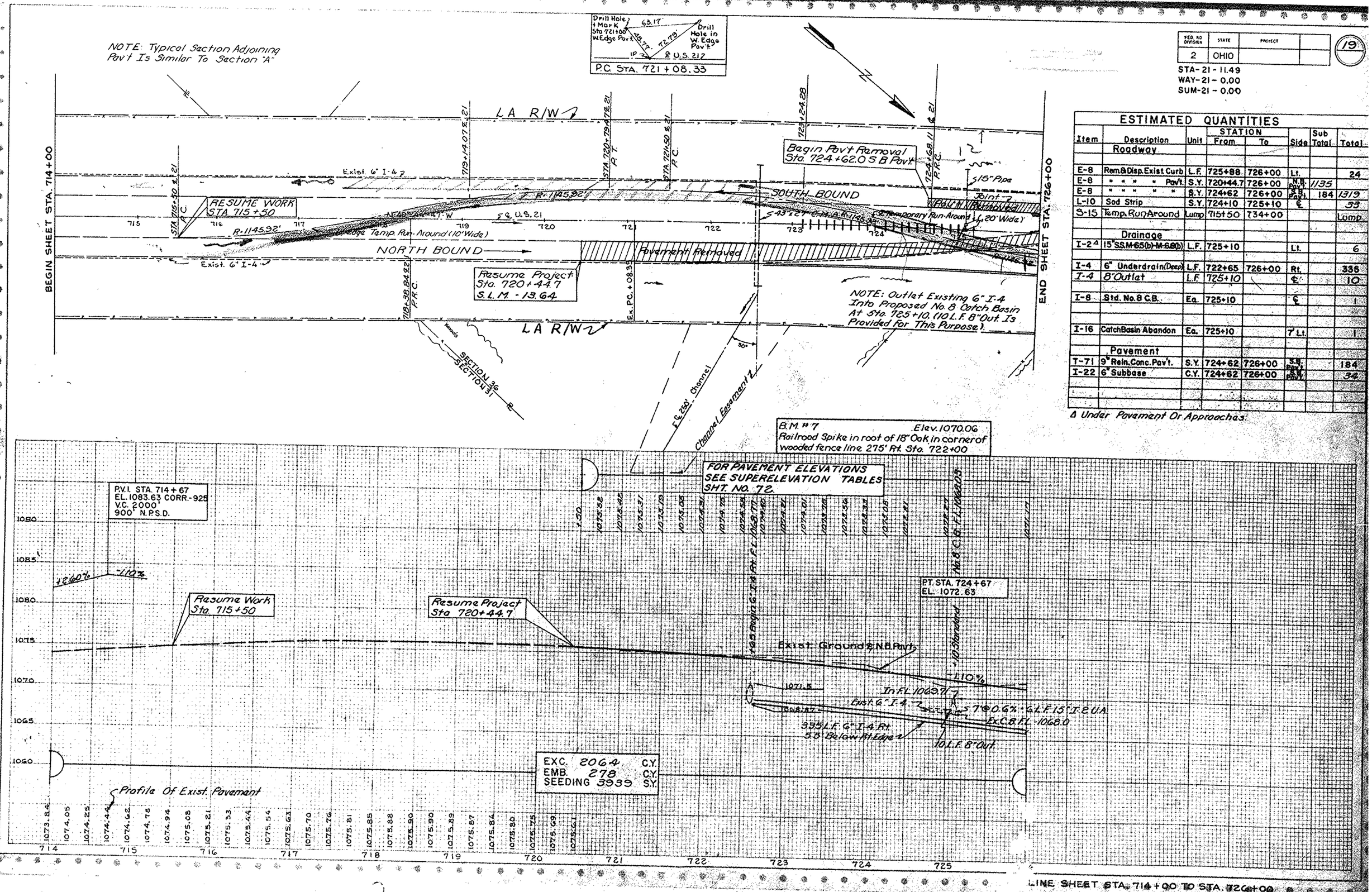


LINE SHEET STA. 648 TO STA. 658+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

19

STA-21 - 11.49
WAY-21 - 0.00
SUM-21 - 0.00



ESTIMATED QUANTITIES

Item	Description	Unit	STATION From	STATION To	Side	Sub Total	Total
	Roadway						
E-8	Rem.&Disp.Exist.Curb	L.F.	725+88	726+00	Lt.		24
E-8	" " " " Pav't.	S.Y.	720+44.7	726+00	N.B. Pav't.	1135	
E-8	" " " " "	S.Y.	724+62	726+00	S.B. Pav't.	184	1319
L-10	Sod Strip	S.Y.	724+10	725+10	℄		33
S-15	Temp. Run Around	Lump	715+50	734+00			Lump
	Drainage						
I-2 Δ	15" S.S.M-6.5(b)-M-6.8(b)	L.F.	725+10		Lt.		6
I-4	6" Underdrain (Deep)	L.F.	722+65	726+00	Rt.		335
I-4	8" Outlet	L.F.	725+10		℄		10
I-8	Std. No. 8 C.B.	Ea.	725+10		℄		1
I-16	Catch Basin Abandon	Ea.	725+10		7' Lt.		1
	Pavement						
T-71	9" Rein. Conc. Pav't.	S.Y.	724+62	726+00	S.B. Pav't.		184
I-22	6" Subbase	C.Y.	724+62	726+00	S.B. Pav't.		34

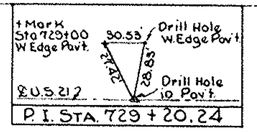
Δ Under Pavement Or Approaches.

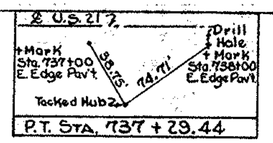
LINE SHEET STA. 714+00 TO STA. 726+00

FED. RD. DIVISION	STATE	PROJECT		
2	OHIO			

20

STA-21-11.49
WAY-21-0.00
SUM-21-0.00





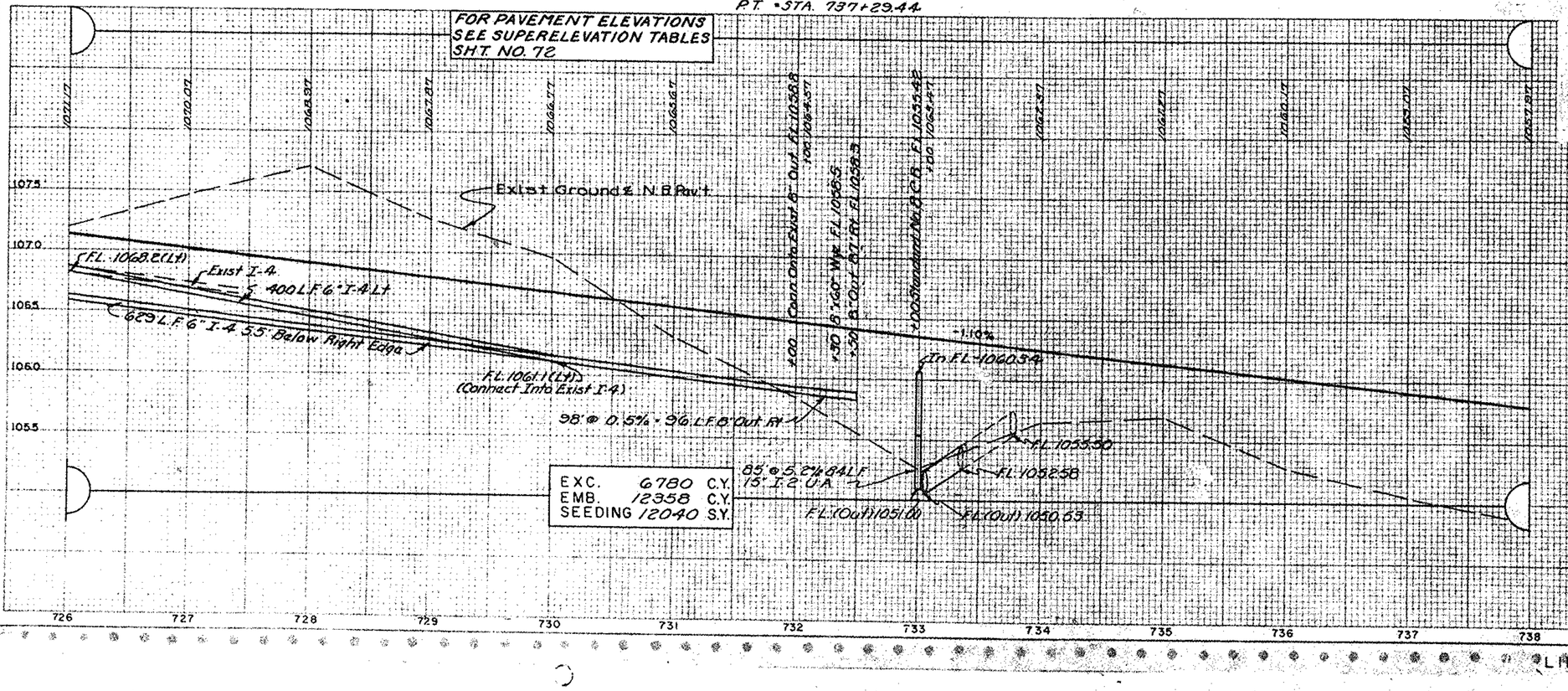
STRUCTURES 20' SPAN & UNDER

Mark	Station	Type	Size	Pay Quan.
C-1	733+33	Std. Pipe Culvert Exten. M-66 (b)	24"x76'	285

ESTIMATED QUANTITIES

Item	Description	Unit	STATION From	STATION To	Side	Sub Total	Total
	Roadway						
E-8	Rem. & Disp. Exist. Curb	L.F.	726+00	728+50	Lt.		526
E-8	" " " Pav't.	S.Y.	726+00	731+21.3	Rt. Pav't.	895	
E-8	" " " "	S.Y.	726+00	731+21.3	Lt. Pav't.	198	1093
E-12	Pipe Rem. 15" & Under	L.F.	728+47		Rt. Pav't.		36
I-15	G.R. Steel Beam (Deep)	L.F.	732+50	733+50	Rt.	100	
I-15	G.R. Steel Beam (Deep)	L.F.	737+75	738+00	Rt.	25	125
L-10	Sodding 6' Wide	S.Y.	731+25	733+00	Rt.	117	
L-10	Sod Strip	S.Y.	731+00	733+00	℄	53	170
	Drainage						
I-2 △	15" S3M65b(1)-M6.8(b)	L.F.	733+00		Rt.		84
I-4	6" Underdrain (Deep)	L.F.	726+00	732+30	Rt.	629	
I-4	6" " "	L.F.	726+00	730+00	Lt.	400	1029
I-4	8" Outlet	L.F.	732+00	732+50	Rt.		96
I-5	8"x60° Wye M-6.46	Ea.	732+30		Rt.		1
I-8	Std. No. 8 C.B.	Ea.	733+00		℄		1
I-16	Catch Basin Aband.	Ea.	728+47		Lt.		1
	Pavement						
T-71	9" Rein. Conc. Pav't.	S.Y.	726+00	731+21.3	Rt. Pav't.		595
I-22	6" Subbase	C.Y.	726+00	731+21.3	Rt. Pav't.		121

△ Under Pavement Or Approaches



FED. RD. DIVISION	STATE	PROJECT		21
2	OHIO			

STA-21-11.49
WAY-21-0.00
SUM-21-0.00

STRUCTURES 20' SPAN & UNDER

Mark	Station	Type		Size	Detail Sheet
C-2	739+34	Pipe Cattle Pass.	Alt. B-1	4'x6'x 68'	285

ESTIMATED QUANTITIES

Item	Description	Unit	STATION From	STATION To	Side	Sub Total	Total
	Roadway						
L-10	Sod Strip	S.Y.	740+00	742+00	℄	53	
L-10	" "	S.Y.	749+00	750+00	℄	33	86
I-15	G.R. Rem. & Rebuilt	L.F.	747+00	750+00	Lt.		300
I-15	G.R. Steel Beam (Deep)	L.F.	738+00	743+00	Rt.	500	
I-15	G.R. Steel Beam (Deep)	L.F.	746+75	750+00	Rt.	325	825
SS-18	Rem. & Disp. Ex. R/W Fence	L.F.	739+24/22	729+24/90	Rt.	78	
SS-18	" " " " "	L.F.	739+44/22	729+44/90	Rt.	78	156
SS-18	R/W Fence Type "D"	L.F.	739+34		Rt.		30
	Drainage						
I-2Δ	15" S.S.M 6.5(b)-M 6.8(b)	L.F.	742+00		Rt.		82
I-8	Std. No. 8 C.B.	Ea.	742+00		℄		1
I-10	Dumped Rock (d = 2.5')	C.Y.	742+00		Rt.		3

Δ Under Pavement Or Approaches

BEGIN SHEET STA. 738 + 00

END SHEET STA. 750 + 00

120' CATTLEPASS APPROACH

4'x6' Cattle Pass (Alt. B)

R/W FENCE

LA R/W

STA. 21-11.00

℄ U.S. 21

N 32° 38' 27" W

739 740 741 742 743 744 745 746 747 748 749

C-2

40' CATTLEPASS

Dumped Rock 10'x3'

NOTE: Taper Fence To Meet Opening Of Cattle Pass.

R/W FENCE

LA R/W

B.M. "8" Elev. 1049.94
Square cut on S.E. corner of End Wall of conc. cattle crossing 82' Lt of Sta. 739+25

100' Standard No. 8 C.B. Fl. 1046.68

1057.97 1056.87 1055.77 1054.67 1053.57 1052.47 1052.20 1051.93 1051.67 1051.41 1051.15 1050.90 1050.65 1050.40 1050.14 1049.89 1049.64 1049.38 1049.13 1048.87 1048.62 1048.37 1048.12 1047.87 1047.62 1047.37 1047.12 1046.87 1046.62

1050
1055
1050
1045

P.C. STA. 743 + 00
EL. 1052.47

P.I. STA. 745+00
EL. 1050.27 CORR. + 0.15'
V.C. 400'

P.T. STA. 747+00
EL. 1048.67

-1.10%

-0.80%

Exist Cattle Pass

Alt. 'B' Cattle Pass 4'x6'x68' @ 2.0%

Fl. 1047.08 (Exist)

Fl. 1045.20 (Out, Exist)

Fl. 1043.84 (Out)

In Fl. 1050.56

83' @ 6.0% - 82 LF 15" T.2 U.A.

Fl. (Out) 1041.76

Exist. Ground ℄ N.B. Point

EXC.	107	C.Y.
EMB.	28307	C.Y.
SEEDING	13433	S.Y.

738 739 740 741 742 743 744 745 746 747 748 749 750

LINE ℄ ET STA. 738+00 TO STA. 750+00

FED. RD. DIVISION	STATE	PROJECT		
2	OHIO			

22

STA. 21-11.49
WAY. 21-0.00
SUM. 21-0.00

STRUCTURES 20' SPAN & UNDER

Mark	Station	Type	Size	Detail Sheet
C-3	750+39	Std. Pipe Culvert Exten. M-66.1(b)	15"x68'	286
C-4	758+92	" " " " "	15"x84'	286
C-5	760+67	" " " " "	24"x84'	287

ESTIMATED QUANTITIES

Item	Description	Unit	STATION From	STATION To	Side	Sub Total	Total
	Roadway						
L-10	Sod Strip	S.Y.	750+00 758+92	751+00 760+00	℄ ℄	33 33	
L-10	Sodding (6' Wide)	S.Y.	751+00	751+75	Rt.	50	136
I-15	G.R. Steel Beam (Deep)	L.F.	750+00	751+50	Rt.		150
I-15	G.R. Rem. & Rebuilt	L.F.	750+00	753+00	Lt.		300
	Drainage						
I-4	6" Underdrain (Deep)	L.F.	758+50	51+84	Rt	102	
# I-4	6" Underdrain "	L.F.	51+00	51+48	Lt	48	
I-4	6" Underdrain "	L.F.	760+25	762+00	Rt.	175	
I-4	6" "	L.F.	756+00	758+34	Rt./	231	556
I-5	6"x 45° Bend	Ea.		758+13	Rt.		1
I-5	6"x 60° Wye	Ea.	758+60		Rt		1
I-4	8" Outlet	L.F.	758+38		Rt	10	
I-4	8" Outlet	L.F.	758+13	758+34	Rt.	10	20
I-8	C.B. Adjust To Grade	Ea.	751+00		℄		1
I-8	Std. No. 8 C.B.	Ea.	758+92		℄		1

Station On T.R. 352

BEGIN SHEET STA. 750+00

END SHEET STA. 762+00

LA R/W

R/W FENCE

℄ of Pav't.

℄ U.S. 21

N 32° 38' 27" W

STA. 21-1424

STA. 21-1437

STA. 21-1441

STA. 753+81.84 ℄ U.S. 21
STA. 50+00 ℄ T.R. 352

N 88° 53' 27" W

15" Conc. Pipe

24" Conc. Pipe

Exist. 6" I-4

C-3

C-4

C-5

6" I-4 @ 0.4%

48 L.F. 6" I-4

735+83.23

758+33.23

760+83.23

For Intersection Detail
See Sht. No. 251

℄ T.R. 352

B.M. #9 Elev. 1032.98
Square cut on top of conc. inlet pipe 80' Lt. of Sta. 750+95

B.M. #10 Elev. 1032.77
Square cut on S.W. corner of End Wall 85' Lt. of Sta. 759+45

P.C. STA. 761+50
EL. 1037.07

-0.80%

℄ TG 1042.79

Ex. TG 1038.61

Exist Ground ℄ N.B. Pav't

100' Adjust Exist. C.B. To Grade

100' 6" I-4 @ 0.4% F.L. 1035.61

6" I-4 @ 0.4%

10 L.F. 8" Out

192 L.F. 6" I-4 @ 0.4%

212 L.F. 6" I-4 (RH) @ 0.4%

In F.L. 1036.35

Prop. Ext.

Exist Culvert 13'x 11.8'

Prop Extension 64' x 13' @ 0.5%

F.L. 1034.34

Ex. F.L. 1033.90

Ex. F.L. 1032.26 (Out)

F.L. 1032.94

Ex. F.L. 1032.52

F.L. 1031.37 (Out)

175 L.F. 6" I-4 Rt. 5.5' Below Rt. Edge

EXC. 8205 C.Y.
EMB. 11331 C.Y.
SEEDING 11532 S.Y.

LINE SHEET STA. 750+00 TO STA. 762+00

EX BASE TYPE A INLET

FED RD DIVISION	STATE	PROJECT		23
2	OHIO			

STA. 21 - 11.49
WAY. 21 - 0.00
SUM. 21 - 0.00

+ Mark Sta 764+00 E. Edge Pav't
℄ U.S. 21
85.39'
+ Mark Sta 765+00 E. Edge Pav't
Tacked Hub
P.O.T. STA. 764 + 17.81

+ Mark Sta 770+00 E. Edge Pav't
Tacked Hub
55.
60.10'
+ Mark Sta 771+00 E. Edge Pav't
℄ U.S. 21
P.O.T. STA. 770+46.08 AHD.

BEGIN SHEET STA. 762 + 00

END SHEET STA. 774 + 00

LA R/W

R/W FENCE

Exist. 6" I-4

℄ U.S. 21

N 32° 38' 27" W

763 764 765 766 767 768 769 770 771 772 773

8' L-10

Beginning At Sta. 764+00 Median Ditch
Is To Be Transitioned from Typical Sec. "A"
To Typical Sec. "G" At Sta. 769+00.

773+82

R/W FENCE

LA R/W

T.R. 344

B.M. #11 Elev. 998.24
Railroad spike in 10" Wild Cherry in fence row 200' Rt. Sta. 773+00

P.I. STA. 763+50
EL. 1035.47 CORR. - 0.72
V.C. 400'

P.T. STA. 765+50
EL. 1030.99

N.P.S.D. - 705

0.80% -2.24%

Exist. Ground ℄ N.B. Pav't

1161 L.F. C.A. 55 Below Right Edge ℄

Tn. FL. 1020.47

FL (Out) 1018.61

Std. S.B. Standard No. 8 C.B. FL 1018.88

-2.24%

Profile Grade S.B. Lane

Std. No. 8 C.B. Rear FL 1020.0

561 @ 0.4% - 66 L.F. 15" I.2.U.A.

Profile Grade U.S.21 N.B. Lane

-30 @ 3.66% - 110 L.F. 8" Out U.S.L.F.G. I-4

EXC. 25776 C.Y.
EMB. 2426 C.Y.
SEEDING 12778 S.Y.

762 763 764 765 766 767 768 769 770 771 772 773 774

1040 1035 1030 1025 1020 1015

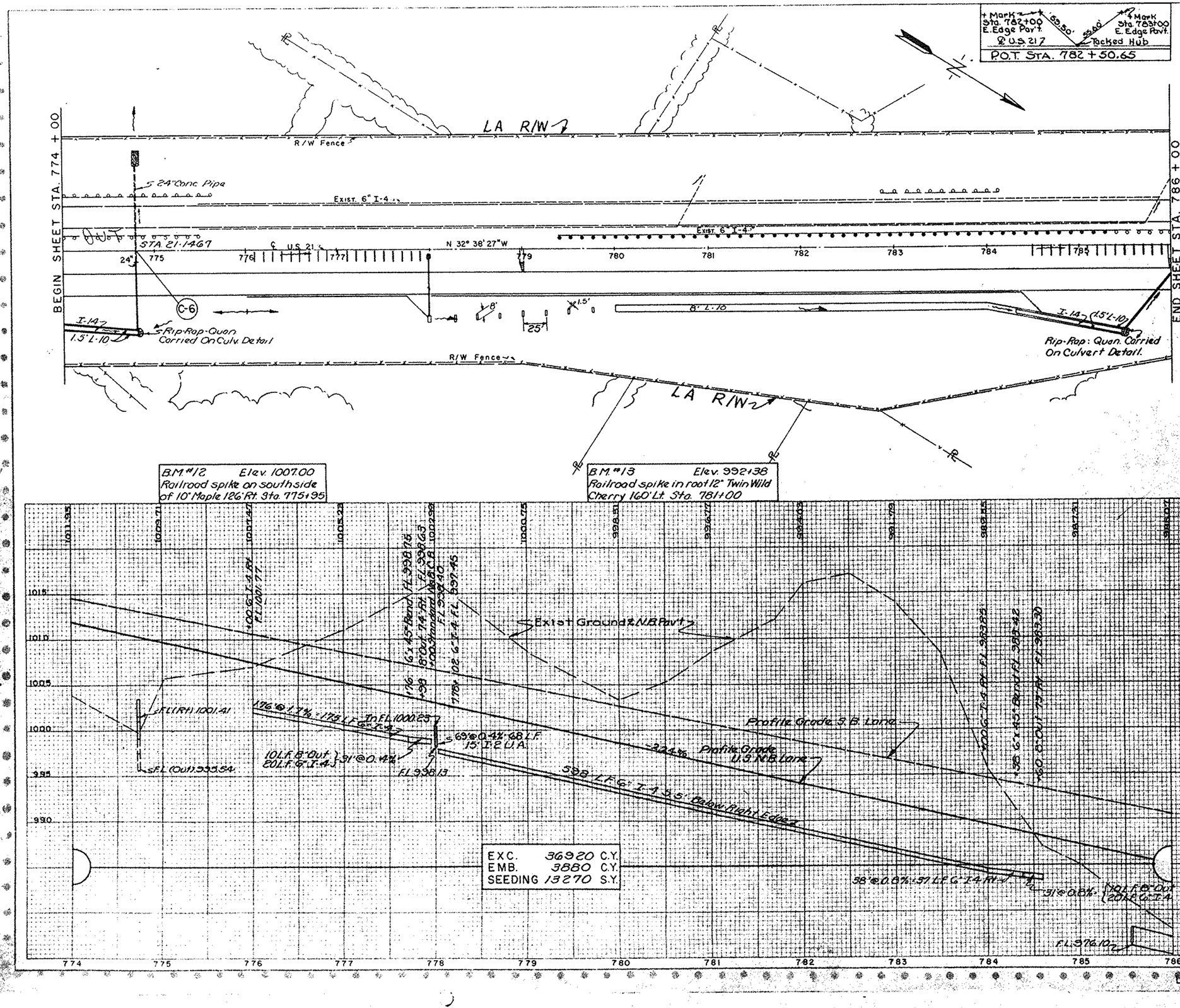
ESTIMATED QUANTITIES

Item	Description	Unit	STATION From	STATION To	Side	Sub Total	Total
	Roadway						
L-10	Sod Strip	S.Y.	767+00	769+00	5' Rt.	53	
L-10	Sodding (6' Wide)	S.Y.	765+00	769+00	Rt.	267	
L-10	" (8' Wide)	S.Y.	769+00	773+82	Rt.	428	
L-10	" (1.5' Wide)	S.Y.	773+82	774+00	Rt.	6	
L-10	" (4' Wide)	S.Y.	772+00		L&R	15	769
	Drainage						
I-2 Δ	15" S.S.M-6.5(b)-M6.8(b)	L.F.	769+00		Rt.		66
I-4	6" Underdrain (Deep)	L.F.	762+00	773+62	Rt.	1161	
I-4	6" "	L.F.	773+62	773+90	Rt.	19	1180
I-4	8" Outlet	L.F.		773+90	Rt.		10
I-8	Std. No. 8 C.B.	Ea.	769+00		5' Rt.		1
I-14	Pave: Gutter Type 1	L.F.	773+82	774+00	Rt.		16
I-14	" " " 6	L.F.	772+00		L&R		76

Δ Under Pavement Or Approaches.

FED. RD. DIVISION	STATE	PROJECT		24
2	OHIO			

STA. 21 - 11.49
WAY. 21 - 0.00
SUM. 21 - 0.00



STRUCTURES 20' SPAN & UNDER

Mark	Station	Type	Size	Detail Sheet
C-6	774+79	Std. Pipe Culvert Exten. M-6.6 (b)	24" x 72'	287

ESTIMATED QUANTITIES

Item	Description	Unit	STATION From	STATION To	Side	Sub Total	Total
	Roadway						
L-10	Sodding (1.5' Wide)	S.Y.	774+00 784+30	774+82 785+50	Rt.	37 30	
L-10	Sodding (8' Wide)	S.Y.	780+00	784+30	Rt.	384	
L-10	Sod Strips	S.Y.	778+00	780+00	Rt.	12	
L-10	" "	S.Y.	776+98 784+38	778+00 786+00	Rt.	93 80	
L-10	" (4' Wide)	S.Y.	779+00	786+00	Rt.	15	561
I-15	G.R. Ram. & Rebuilt	L.F.	774+00	775+50	Lt.		150
I-15	G.R. Steel Beam (Deep)	L.F.	779+40	785+40	Lt.		600
	Drainage						
I-2 Δ	15" S.S.M-65(b)-M.6.8(b)	L.F.	778+00		Rt.		68
I-4	6" Underdrain (Deep)	L.F.	776+00	777+98	Rt.	195	
I-4	6" Underdrain (Deep)	L.F.	778+02	784+38	Rt.	635	
I-4	6" "	L.F.	784+38	784+60	Rt.	20	850
I-4	8" Outlet	L.F.		784+60	Rt.	10	
I-4	8" "	L.F.		777+98	Rt.	10	20
I-5	6" x 45° Bend	Ea.	784+38		Rt.	1	
I-5	6" x 45° "	Ea.	777+76		Rt.	1	2
I-8	Std. No. 6 C.B.	Ea.	778+00		5' Rt.		1
I-14	Paved Gutter Type "6"	L.F.	775+00	786+00	Rt.		16
I-14	Paved Gutter Type 1	L.F.	774+00	774+82	Rt.	82	
I-14	" " " "	L.F.	784+30	785+50	Rt.	120	202

Δ Under Pavement Or Approaches

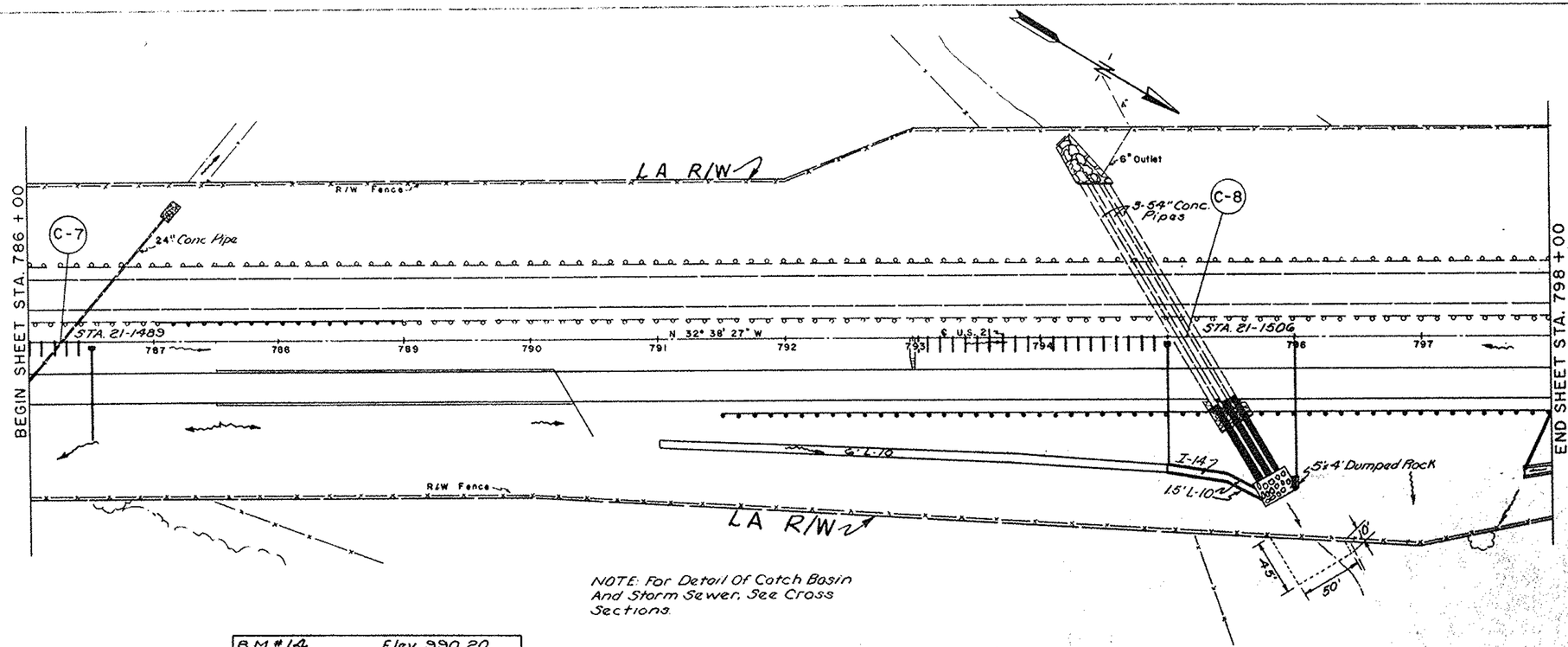
EXC. 36920 C.Y.
EMB. 3880 C.Y.
SEEDING 13270 S.Y.

LINE SHEET STA. 774+00 TO STA. 786+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

25

SUM. 21 - 11.49
WAY. 21 - 0.00
STA. 21 - 0.00

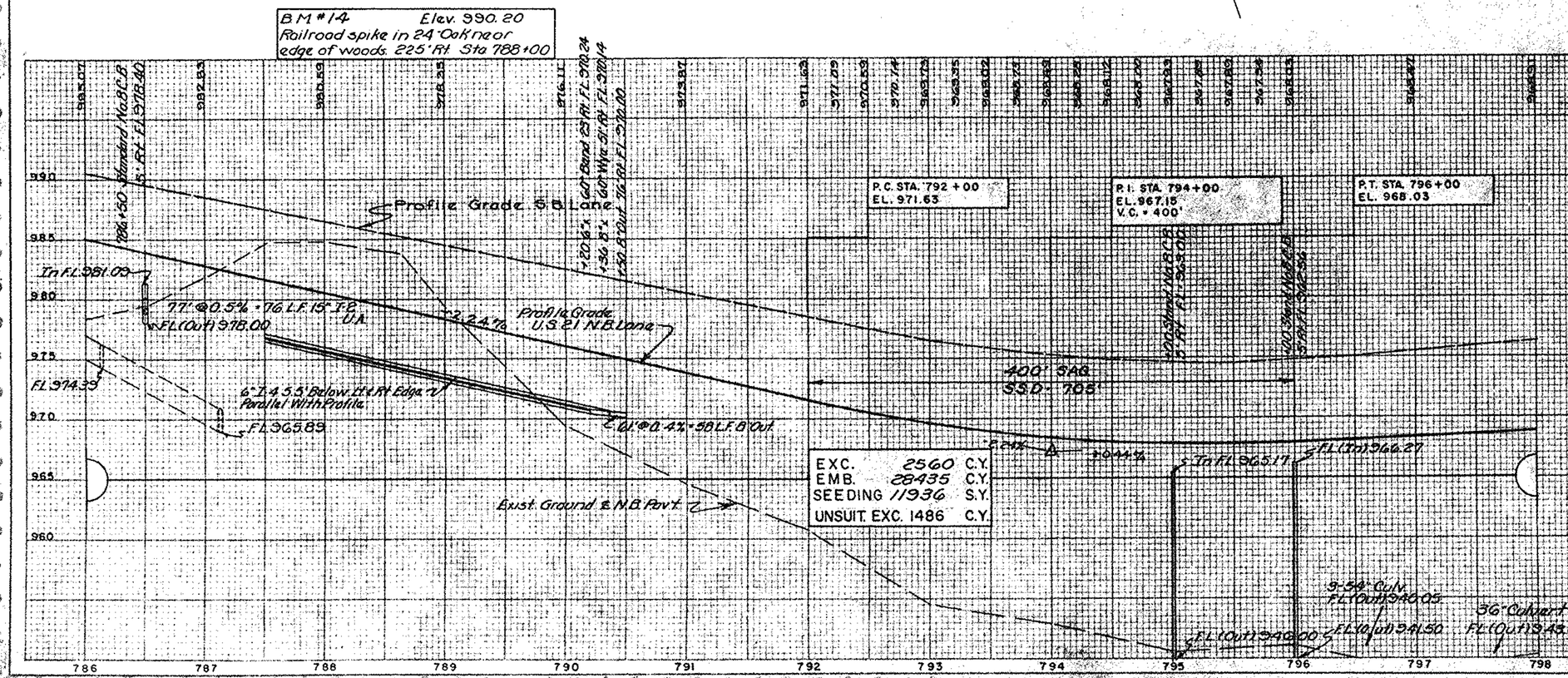


NOTE: For Detail Of Catch Basin And Storm Sewer, See Cross Sections.

STRUCTURES 20' SPAN & UNDER				
Mark	Station	Type	Size	Detail Sheet
C-7	786+26	Std. Pipe Culvert Exten. M6.6(b)	24" X 96'	288
C-8	795+14	" " " " M-106.6(d)	3-54" X 68'	288

ESTIMATED QUANTITIES							
Item	Description	Unit	STATION From	STATION To	Side	Sub Total	Total
	Roadway						
L-10	Sodding (6' Wide)	S.Y.	791+00	795+00	Rt.	267	
L-10	" (1.5' Wide)	S.Y.	795+00	798+00	Rt.	30 / 23	
L-10	Sod. Strip	S.Y.	786+00 / 793+00	786+50 / 798+00	℄	53	
L-10	" (4' Wide)	S.Y.	793+00		Rt.	7	380
I-15	G.R. Steel Beam (Deep)	L.F.	787+02.50	789+00	Lt.	197.50	
I-15	" " " "	L.F.	791+50	798+00	Rt.	650	847.50
	Drainage						
I-2	15" S.S. M-6.4(c)	L.F.	795+00	& 796+00	Rt.		92
I-2 Δ	15" S.S. M-6.5(b)-M6.8(b)	L.F.	795+00	& 796+00	Rt.	112	
I-2 Δ	" " " " " "	L.F.	786+50		Rt.	76	134
I-4	6" Underdrain (Deep)	L.F.	787+50 / 787+50	790+20 / 790+36	Lt. N.B. / Rt. M.B.	269 / 285	554
I-4	8" Outlet	L.F.	787+20	790+50	Rt.		58
I-8	Std. No. 8 C.B.	Ea.	786+50		5' Rt.	1	
I-8	" " " " "	Ea.	795+00	& 796+00	5' Rt.	2	3
I-5	15"x30° Bend [M-6.4(c)]	Ea.	795+00	& 796+00	Rt.		4
I-14	Paved Gutter Type 1	L.F.	795+00	795+70	Rt.	70	
I-14	" " " 1	L.F.	797+80	798+00	Rt.	20	90
I-14	" " " 6"	L.F.	793+00		Rt.		8
I-10	Dumped Rock (d = 2.5')	C.Y.	796+00		Rt.		2
I-5	6"x60° Bend	Ea.	790+20		Lt.		1
I-5	8"x60° Wye	Ea.	790+36		Rt.		1

Δ Under Pavement Or Approaches



LINE SHEET STA. 786+00 TO STA. 798+00

FED. RD DIVISION	STATE	PROJECT		
2	OHIO			

26

STA. 21-11.49
WAY. 21- 0.00
SUM. 21- 0.00

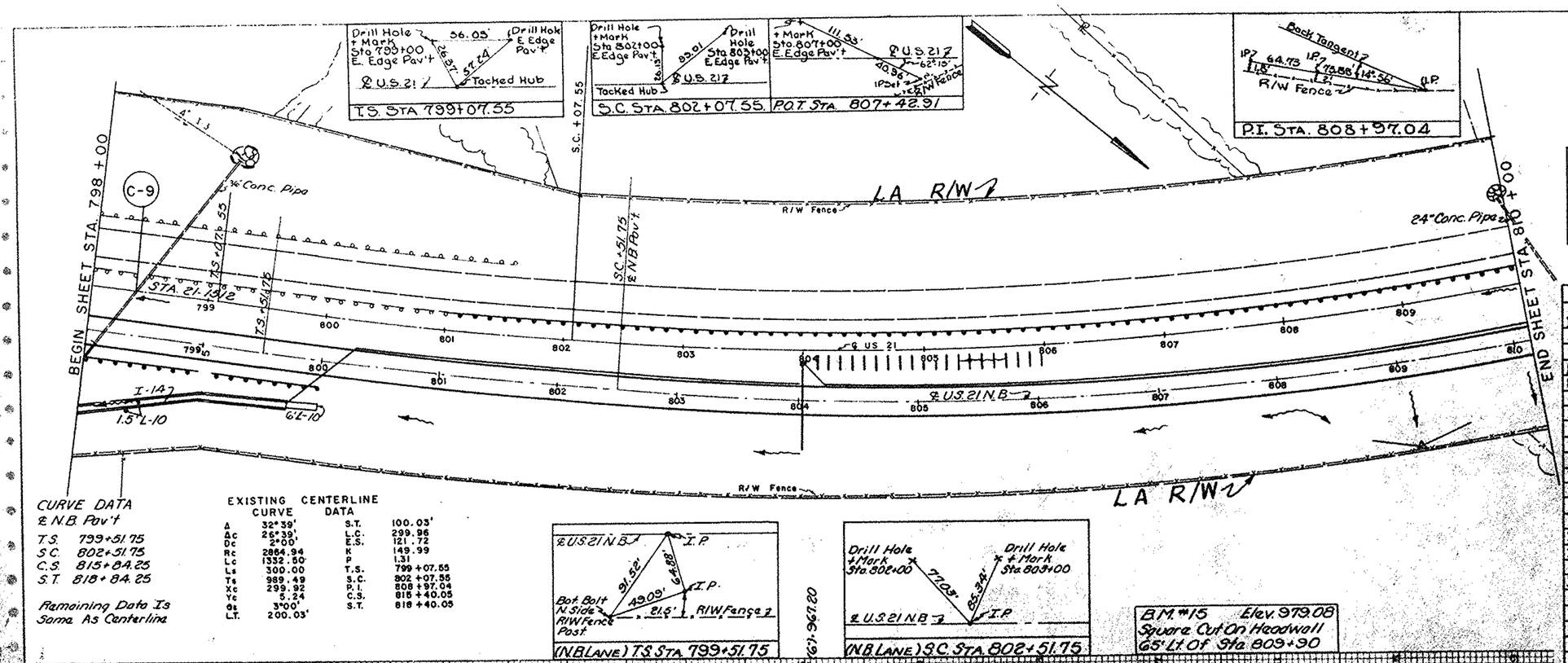
STRUCTURES 20' SPAN & UNDER

Mark	Station	Type	Size	Detail Sheet
C-9	798+42	Std. Pipe Culvert Exten. M-6.6 (d)	36" x 68'	285

ESTIMATED QUANTITIES

Item	Description	Unit	STATION From	STATION To	Side	Sub Total	Total
	Roadway						
L 10	Sodding (1.5' Wide)	S.Y.	798+00	799+75	Rt.	58	
L-10	" (6' Wide)	S.Y.	799+75	800+00	Rt.	17	
L-10	Sod "Strip	S.Y.	804+00	806+00	10' Rt	53	128
I-15	G.R. Steel Beam (Deep)	L.F.	798+00	800+00	Rt.	200	
I-15	" " " "	L.F.	801+00	810+00	Lt.	896	1096
	Drainage						
I-2[A]	15" SSM 65(b)-M 6.8(b)	L.F.	804+00		Rt.		74
I-4	6" Underdrain (Deep)	L.F.	800+29	803+98	Rt.	368	
I-4	6" " "	L.F.	804+00	804+17	Rt.	12	
I-4	6" " "	L.F.	804+17	810+00	Rt.	582	962
I-4	8" Outlet	L.F.	799+75	800+29	Rt.	75	
I-4	8" "	L.F.	804+00		Rt.	10	85
I-5	6" x 45° Bend	Ea.	800+29		Rt.	1	
I-5	6" x 45° Bend	Ea.	804+17		Rt.	1	2
I-8	Std. No. 8 C.B.	Ea.	804+00		10' Rt		1
I-14	Paved Gutter Type I	L.F.	798+00	799+75	Rt.		175

[A] Under Pavement Or Approaches



CURVE DATA
℄ N.B. Pav't

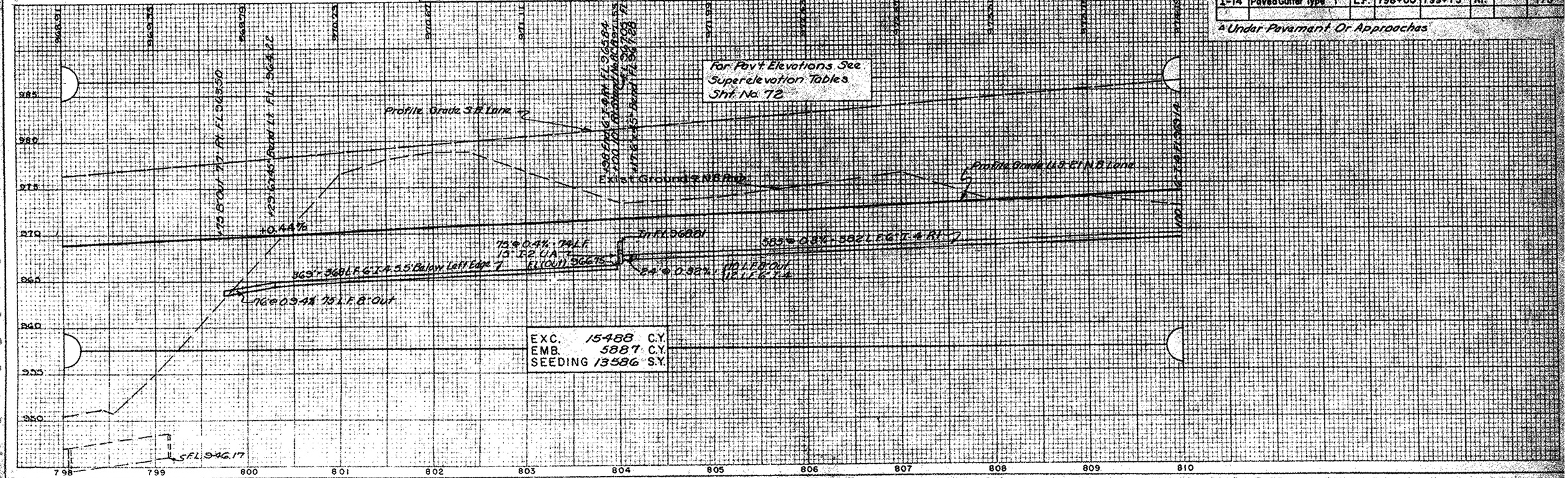
T.S.	799+51.75
S.C.	802+51.75
C.S.	815+84.25
S.T.	818+84.25

Remaining Data Is Same As Centerline

EXISTING CENTERLINE CURVE DATA

Δ	32°39'	S.T.	100.03'
Δc	26°39'	L.C.	299.96
Dc	2°00'	E.S.	121.72
Rc	2864.96	K	149.99
Lc	1332.50'	P	1.31
Ls	300.00	T.S.	799+07.55
Ts	989.49	S.C.	802+07.55
Xc	299.92	P.I.	808+97.04
Yc	5.24	C.S.	815+40.05
θs	3°00'	S.T.	818+40.05
LT.	200.03'		

B.M. #15 Elev. 979.08
Square Cut On Headwall
65' Lt Of Sta 809+90

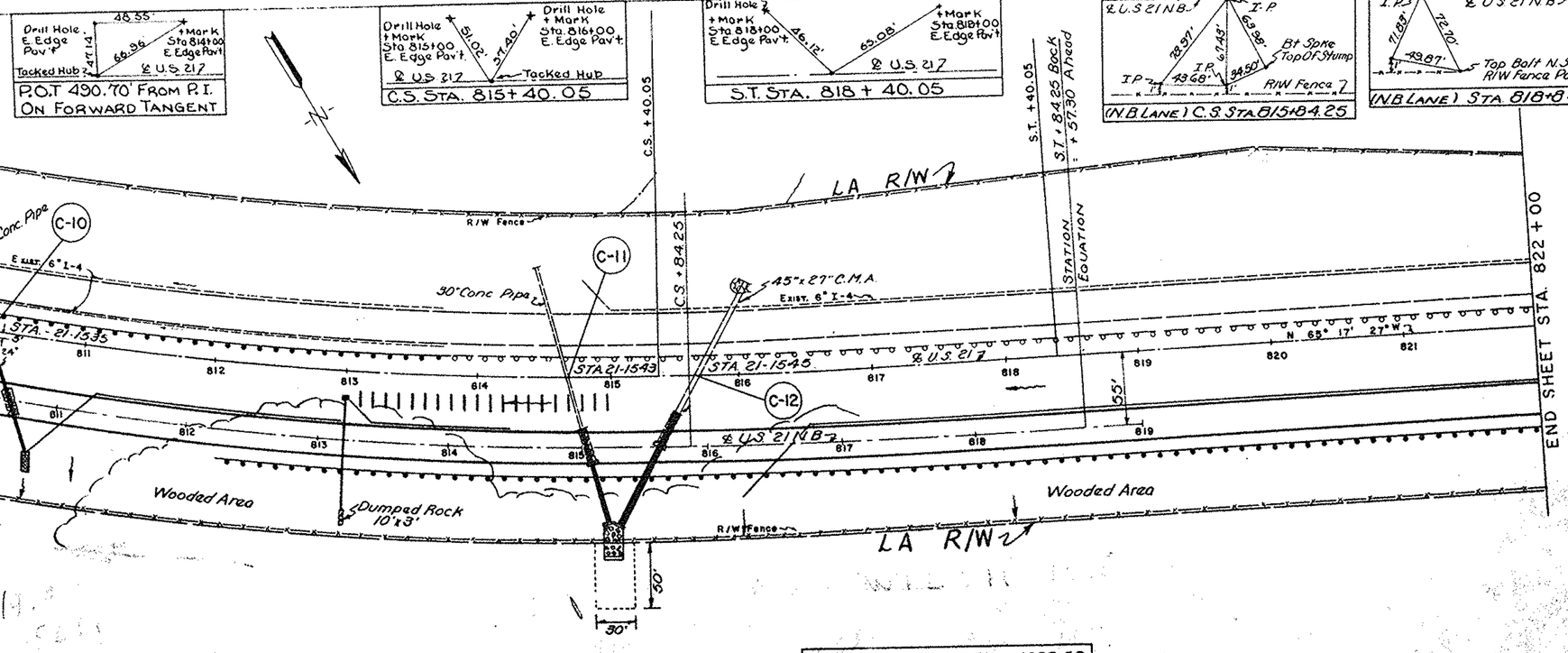


LINE SHEET STA. 798+00 TO STA. 810+00

FED. RD. DIVISION	STATE	PROJECT		
2	OHIO			

21

STA. 21-11.49
WAY. 21- 0.00
SUM. 21- 0.00



STRUCTURES 20' SPAN & UNDER

Mark	Station	Type	Size	Detail Sheet
C-10	810+29	Std. Pipe Culvert Exten. M-6.6(b)	24" X 92'	289
C-11	814+72	" " " " "	30" X 82'	290
C-12	815+75	" " " " M-6.4(b)	45"x27"x98'	290

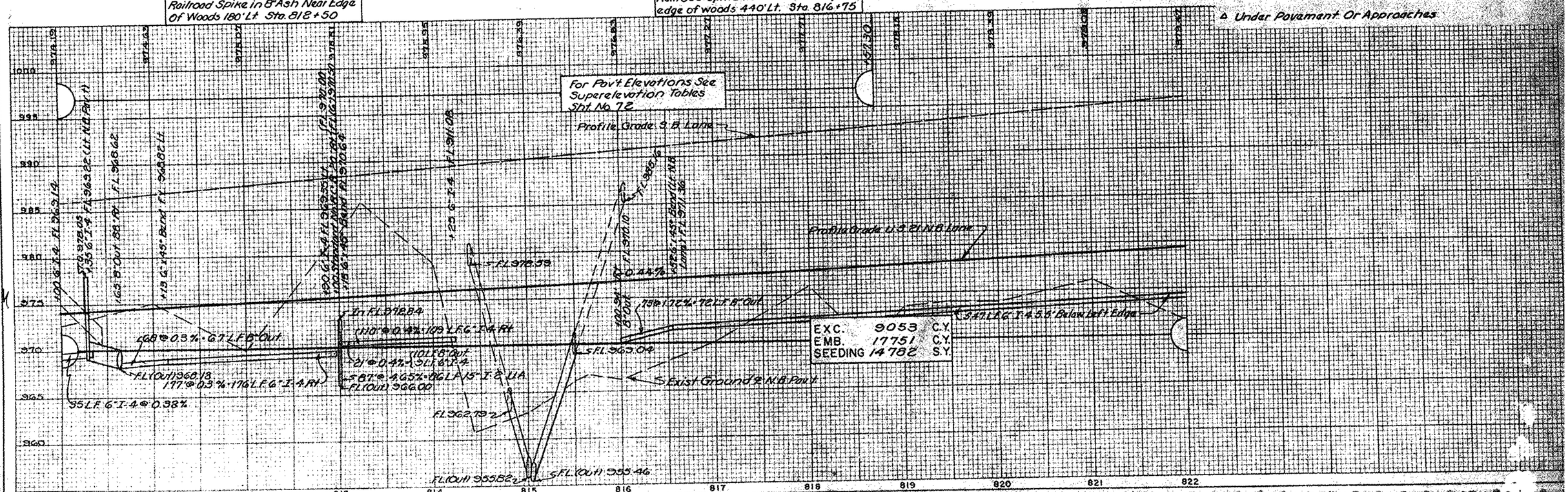
ESTIMATED QUANTITIES

Item	Description	Unit	STATION From	STATION To	Side	Sub Total	Total
	Roadway						
I-15	G.R. Steel Beam (Deep)	L.F.	810+00	813+92	Lt.	380	
I-15	" " " "	L.F.	812+00	822+00	Rt.	1000	1380
L-10	Sod Strip	S.Y.	813+00	815+00	Rt		53
	Drainage						
I-2 △	15" S.S. M-6.5(b)-M-6.8(b)	L.F.	813+00		Rt.		86
I-4	6" Underdrain (Deep)	L.F.	816+52	822+00	Rt.	547	
I-4	6" Underdrain "	L.F.	810+00	810+35	Rt.	35	
I-4	6" " "	L.F.	811+13	812+90	Rt.	176	
I-4	6" " "	L.F.	813+00	814+25		118	276
I-4	8" Outlet	L.F.	813+88	814+25	Rt.	37	
I-4	8" "	L.F.	813+00		Rt	10	149
I-5	6"x 45° Bend	Ea.		813+15	Rt.	1	
I-5	6"x 45° Bend	Ea.		816+52	Rt.	1	
I-5	6"x 45° Bend	Ea.		811+13	Rt	1	3
I-8	Std. No. 8 C.B.	Ea.	813+00		20 Rt		1
I-10	Dumped Rock (d=2.5)	C.Y.	813+00		Rt.		3

△ Under Pavement Or Approaches

B.M. #16 Elev. 1006.13
Railroad Spike in 8" Ash Near Edge Of Woods 180' Lt. Sta. 812+50

B.M. #17 Elev. 1029.52
Railroad spike in 7" Wld. Cherry on edge of woods 440' Lt. Sta. 816+75

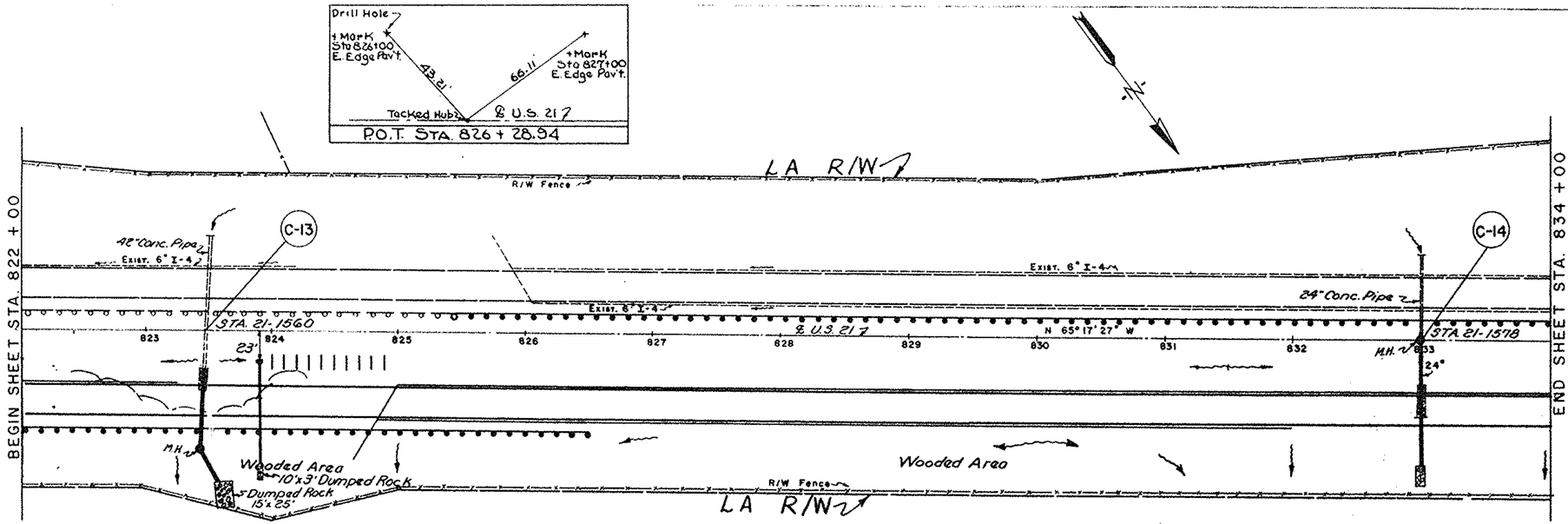


LINE SHEET STA. 810+00 TO STA. 822+00

22

FED. RD DIVISION	STATE	PROJECT		28
2	OHIO			

STA. 21-11.49
WAY. 21-0.00
SUM. 21-0.00

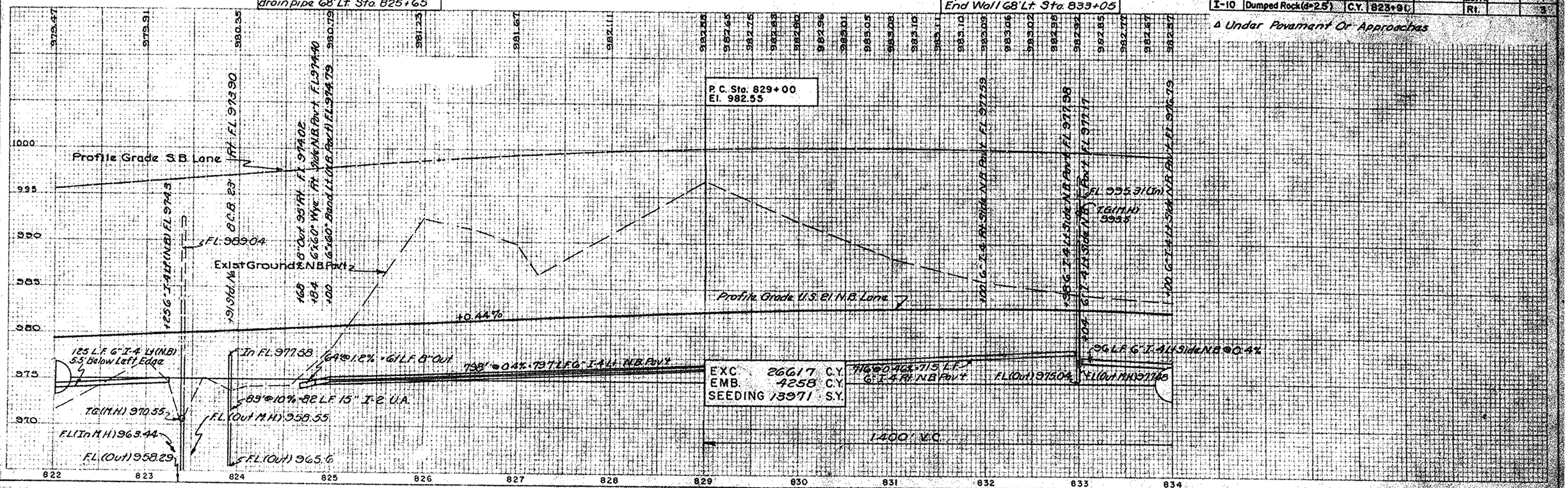


For Detail Of Catch Basin And Storm Sewer See Cross Sections.

STRUCTURES 20' SPAN & UNDER				
Mark	Station	Type	Size	Detail Sheet
C-13	823+40	Std. Pipe Culvert Exten. M-6.4(d)	42"X 84'	291
C-14	833+00	" " " " M-6.6(b)	24"X 100'	291

ESTIMATED QUANTITIES							
Item	Description	Unit	STATION From	STATION To	Side	Sub Total	Total
	Roadway						
I-15	G.R. Steel Beam (Deep)	L.F.	825+44	834+00	Lt.	856	
I-15	" " " "	L.F.	822+00	826+50	Rt.	450	1306
L-10	Sod Strip	S.Y.	823+91	824+91	23Rt		23
	Drainage						
I-24	15" SSM 6.5(b)-M 6.8(b)	L.F.	823+91		Rt.		82
I-4	8" Outlet	L.F.	824+68	825+00	Rt.		61
I-4	6" Underdrain (Deep)	L.F.	822+00	823+25	Rt. (Wa)	125	
I-4	6" " "	L.F.	824+84	832+00	Rt. (Wa)	716	
I-4	6" " "	L.F.	825+00	832+98	Rt. (Wa)	798	
I-4	6" " "	L.F.	833+04	834+00	Rt. (Wa)	96	1734
I-5	(6) x 60° Wye	Ea.	824+68				1
I-5	6" x 60° Bend	Ea.	825+00				1
I-8	Std. No. 8 C.B.	Ea.	823+91		23Rt		1
I-10	Dumped Rock (d=2.5')	C.Y.	823+91		Rt.		3

Δ Under Pavement Or Approaches

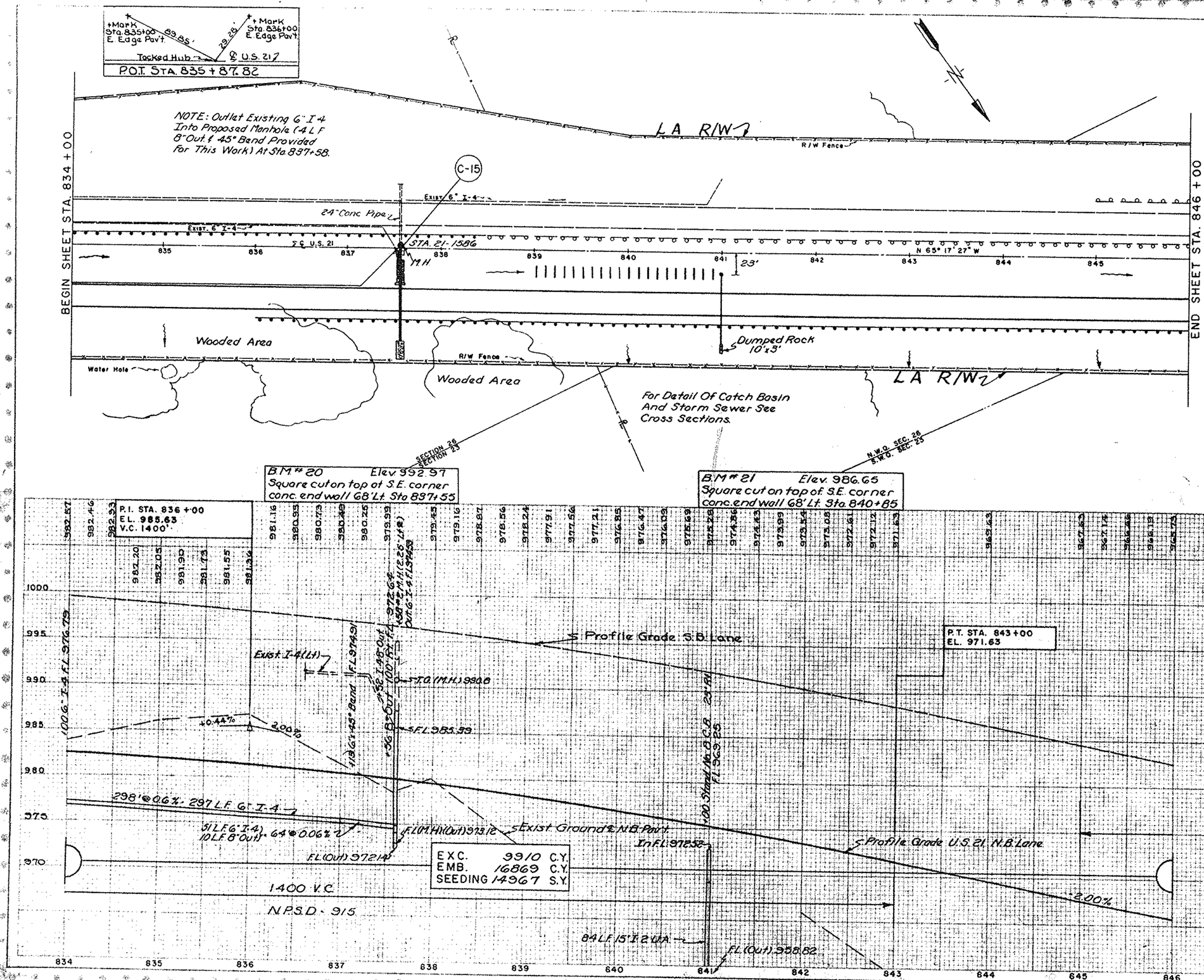


LINE SHEET STA. 822 + 00 TO STA. 834 + 08

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

29

STA. 21-11.49
WAY. 21-0.00
SUM. 21-0.00



STRUCTURES 20' SPAN & UNDER				
Mark	Station	Type	Size	Detail Sheet
C-15	837+58	Std. Pipe Culvert Exten. M-6.6(b)	24" X 96'	292

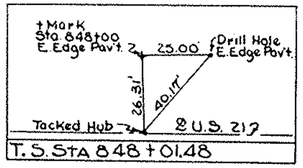
ESTIMATED QUANTITIES							
Item	Description	Unit	STATION From	STATION To	Side	Sub Total	Total
	Roadway						
I-15	G.R. Steel Beam (Deep)	L.F.	834+00	838+50	Lt.	450	
I-15	" " " "	L.F.	836+00	846+00	Rt.	1000	1450
L-10	Sod Strip (1.5' Wide)	S.Y.	839+00	841+00	23' Rt.		53
	Drainage						
I-24	15" SS M-6.5(b)-M-6.8(b)	L.F.	841+00		Rt.		60
I-2	15" S.S. M-6.4(c)	L.F.	841+00		Rt.		24
I-4	6" Underdrain (Deep)	L.F.	834+00	837+13	Rt.	297	
I-4	6" " "	L.F.	837+13	837+56	Rt.	51	348
I-4	8" Outlet	L.F.		837+56	Rt.	10	
I-4	8" Outlet	L.F.		837+52	Rt.	4	14
I-8	Std. No. 8 C.B.	Ea.	841+00		23' Rt.		1
I-5	15" x 30° Bend M-6.4(c)	Ea.		841+00	Rt.		2
I-5	6" x 45° Bend	Ea.	836+98		Rt.	1	
I-5	6" x 45° Bend	Ea.		837+50	Lt.	1	2
I-10	Dumped Rock (d=2.5')	C.Y.	841+00		Rt.		3

△ Under Pavement Or Approaches

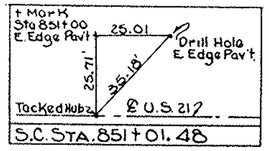
LINE SHEET STA. 834 + 00 TO STA. 846 + 00

FED. RD DIVISION	STATE	PROJECT		30
2	OHIO			

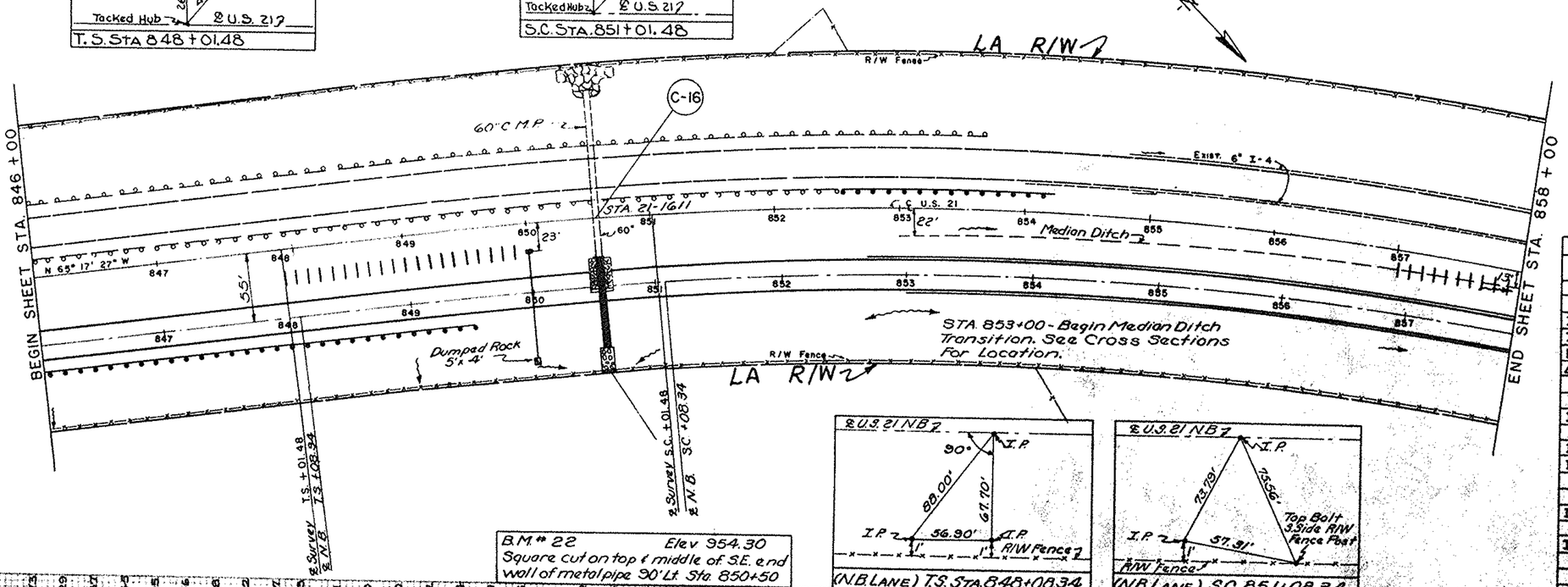
STA. 21 - 11.49
WAY. 21 - 0.00
SUM. 21 - 0.00



T. S. Sta 848 + 01.48



S.C. Sta. 851 + 01.48



(N.B. LANE) T.S. STA. 848+08.34

(N.B. LANE) S.C. 851+08.34

B.M. # 22 Elev 954.30
Square cut on top & middle of S.E. end wall of metal pipe 30' Lt. Sta. 850+50

STRUCTURES 20' SPAN & UNDER				
Mark	Station	Type	Size	Detail Sheet
C-16	850+55	Std. Pipe Culvert Exten. M-6.4 (g)	60" X 72'	292

ESTIMATED QUANTITIES

Item	Description	Unit	STATION From	STATION To	Side	Sub Total	Total
	Roadway						
I-15	G.R. Steel Beam (Deep)	L.F.	846+00	849+50	Rt.	350	
I-15	" " "	L.F.	852+48.45	854+23.45	Lt.	175	525
L-10	Sod Strip	S.Y.	848+00	850+00	23 Rt.	53	
L-10	Sod Strip	S.Y.	857+00	858+00	Rt.	20	73
	Drainage						
I-24	15" SS. M-65(b)-M-68(b)	L.F.	850+00		Rt.		86
I-4	6" Underdrain (Deep)	L.F.	852+75	858+00	Rt.	525	
I-4	6" " "	L.F.	853+00	858+00	Rt. Rt.	500	1025
I-8	Std. No. 8 C.B.	Ea.	850+00		23 Rt.		1
I-10	Dumped Rock (d = 2.5)	C.Y.	850+00		Rt.		2

△ Under Pavement Or Approaches

For Pav't Elevations See Superelevation Tables Sht. No. 72

P.I. Sta. 848+50
E.L. 960.63
V.C. 700'

P.T. Sta. 852+00
EL. 958.75

+00 Standard No. 8 C.B. 23' Rt. F.L. 954.49

+75.6 I-4 Lt. N.B. Pav't F.L. 952.66
+00.6 I-4 Rt. N.B. Pav't F.L. 951.0

Profile Grade S.B. Lane

Profile Grade U.S. 21 N.B. Lane

-2.00% -0.556%

℄ Exist. Ground & N.B. Pav't

℄ In F.L. 958.09

F.L. 951.46

89' @ 7.0% - 88 L.F. 15" I 2 UA

F.L. (Out) 948.60

F.L. 948.17

F.L. (Out) 946.73

525 L.F. 6" I-4, 5.5' Below Edge Pav't Lt. Side N.B.

300 L.F. 6" I-4 5.5 Below Edge Pav't Rt. Side N.B.

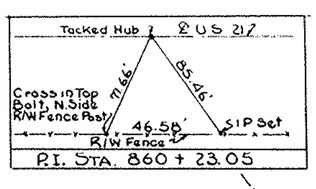
EXC.	21970	C.Y.
EMB.	11203	C.Y.
SEEDING	14601	S.Y.

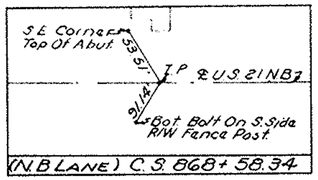
985 980 975 970 965 960 955 950

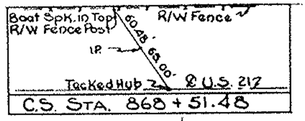
965.73 965.29 964.87 964.45 964.05 963.66 963.28 962.92 962.57 962.23 961.91 961.60 961.30 961.02 960.74 960.49 960.25 960.01 959.80 959.58 959.39 959.22 959.05 958.89 958.75 958.63 958.52 958.42 958.33 958.25 958.18 958.12 958.07 958.03 957.99 957.96 957.93 957.91 957.89 957.88 957.87 957.86 957.85 957.84 957.83 957.82 957.81 957.80 957.79 957.78 957.77 957.76 957.75 957.74 957.73 957.72 957.71 957.70 957.69 957.68 957.67 957.66 957.65 957.64 957.63 957.62 957.61 957.60 957.59 957.58 957.57 957.56 957.55 957.54 957.53 957.52 957.51 957.50 957.49 957.48 957.47 957.46 957.45 957.44 957.43 957.42 957.41 957.40 957.39 957.38 957.37 957.36 957.35 957.34 957.33 957.32 957.31 957.30 957.29 957.28 957.27 957.26 957.25 957.24 957.23 957.22 957.21 957.20 957.19 957.18 957.17 957.16 957.15 957.14 957.13 957.12 957.11 957.10 957.09 957.08 957.07 957.06 957.05 957.04 957.03 957.02 957.01 957.00 956.99 956.98 956.97 956.96 956.95 956.94 956.93 956.92 956.91 956.90 956.89 956.88 956.87 956.86 956.85 956.84 956.83 956.82 956.81 956.80 956.79 956.78 956.77 956.76 956.75 956.74 956.73 956.72 956.71 956.70 956.69 956.68 956.67 956.66 956.65 956.64 956.63 956.62 956.61 956.60 956.59 956.58 956.57 956.56 956.55 956.54 956.53 956.52 956.51 956.50 956.49 956.48 956.47 956.46 956.45 956.44 956.43 956.42 956.41 956.40 956.39 956.38 956.37 956.36 956.35 956.34 956.33 956.32 956.31 956.30 956.29 956.28 956.27 956.26 956.25 956.24 956.23 956.22 956.21 956.20 956.19 956.18 956.17 956.16 956.15 956.14 956.13 956.12 956.11 956.10 956.09 956.08 956.07 956.06 956.05 956.04 956.03 956.02 956.01 956.00 955.99 955.98 955.97 955.96 955.95 955.94 955.93 955.92 955.91 955.90 955.89 955.88 955.87 955.86 955.85 955.84 955.83 955.82 955.81 955.80 955.79 955.78 955.77 955.76 955.75 955.74 955.73 955.72 955.71 955.70 955.69 955.68 955.67 955.66 955.65 955.64 955.63 955.62 955.61 955.60 955.59 955.58 955.57 955.56 955.55 955.54 955.53 955.52 955.51 955.50

846 847 848 849 850 851 852 853 854 855 856 857 858

LINE SHEET STA. 846 + 00 TO STA. 858 + 00







PROPOSED STRUCTURE

Type: Continuous reinf. concrete slab with capped pile substructure.
Spans: 34'-42.5'-34' ⅝ bearings.
Roadway: 44 ft. face to face of guard rails.
Load Frequency: C.F.= 2000(57).
Skew: None.
Wearing Surface: 1" Monolithic.
Approach Slabs: A.S.-1-54(25' long).
Alignment: 2°-00' Curve right.
Superelevation: .064 ft. per ft.

FED. AID DIVISION	STATE	PROJECT		
2	OHIO			

31

STA. 21 - 11.49
WAY. 21 - 0.00
SUM. 21 - 0.00

STRUCTURES 20' SPAN & UNDER

Mark	Station	Type	Size	Detail Sheet
C-17	864+30	Std. Pipe Culvert Exten. (M-6.4(g))	73'x53'x82'	293

CURVE DATA NORTH BOUND LANE

T.S. STA. 848 + 08.34
S.C. STA. 851 + 08.34
C.S. STA. 866 + 58.34
S.T. STA. 871 + 58.34

Remaining Data Is Same As Centerline.

EXISTING CENTERLINE CURVE DATA

Δ	41° 00' RT.	S.T.	100.03
Ac	35° 00'	L.C.	299.96
Dc	2° 00'	E.S.	195.09
Rc	2864.79	K	149.99
Lc	1750	P	1.31
Ls	300.00'	T.S.	848+01.48
Ts	1221.57	S.C.	851+01.48
Xc	299.92'	P.I.	860+23.05
Yc	5.24'	C.S.	866+51.48
θs	3°00'	S.T.	871+51.48
L.T.	200.03		

ESTIMATED QUANTITIES

Item	Description	Unit	STATION From	STATION To	Side	Sub Total	Total
	Roadway						
I-15	G.R. Rem. & Rebuilt	L.F.	862+50	866+75	Lt.		425
I-15	G.R. Steel Beam (Deep)	L.F.	866+06	867+27.07	N.B. Rt.	125.00	
I-15	" " " "	L.F.	862+38.5	869+66.09	N.B. Rt.	607.59	
I-15	" " " "	L.F.	868+44.92	868+94.92	N.B. Rt.	50.	782.59
L-10	Sod Strips (2' Wide)	S.Y.	859+00	861+00	Rt.	14	
L-10	Sodding (8' Wide)	S.Y.	861+00	864+00	Rt.	267	
L-10	Sod Strip	S.Y.	858+00	859+00	Rt.	33	
L-10	" "	S.Y.	865+35	867+35	Rt.	53	
L-10	Sod Strips (1.5' Wide)	S.Y.	864+00	864+60	Rt.	20	387
L-10	Spec. Berm & Slope Prot.	S.Y.	868+75		N.B. Rt.		30
	Drainage						
I-2	15" S.S. M-64(c)	L.F.	867+35		Rt.	14	14
I-2 Δ	15" S.S. M-65(b)-M-68(b)	L.F.	859+00		Rt.	70	
I-2 Δ	15" " " " "	L.F.	867+35		Rt.	88	158
I-2	6" M-65(b)-M-68(b)	L.F.	858+00	858+16	Rt.		30
I-4	8" Outlet	L.F.	858+00	868+00	N.B. Rt.		10
I-4	6" Underdrain (Deep)	L.F.	858+00	862+68	N.B. Rt.	457	
I-4	6" "	L.F.	862+68	863+00	Rt.	34	491
I-5	6" x 60° Bend	Ea.	858+00		N.B. Rt.		1
I-5	6" x 60° Wye	Ea.	858+16		N.B. Rt.		1
I-5	6" x 45° Bend	Ea.	862+68		N.B. Rt.		2
I-5	15" x 30° Bend (M-64(c))	Ea.	867+35		Rt.		2
I-8	Std. No. 8 C.B.	Ea.	859+00		N.B. Rt.	1	
I-8	" " " "	Ea.	867+35		N.B. Rt.	1	2
Z-10	Dumped Rock (d = 2.5')	C.Y.	867+35		Rt.		8
I-14	Paved Gutter Type 1	L.F.	864+00	864+60	Rt.		60
	PAVEMENT						
I-7	Approach Slab T-8	S.Y.	867+35.9	867+61.30	Rt.	67	
I-7	Approach Slab T-13"	S.Y.	868+13.30	868+58.14	Rt.	67.	134

♦ Stationing of N.B. Pavt was used. Deduction made for Bridge.
Δ Under Pavement Or Approaches

LINE SHEET STA. 858+00 TO STA. 870+00

2	OHIO		

32

STA. 21 - 11.49
WAY. 21 - 0.00
SUM. 21 - 0.00

BEGIN SHEET STA. 870 + 00

END SHEET STA. 882+00

+ Mark Sta 871+00 — 53.05' — Drill Hole — 58.50' — 24.93' — Tacked Hub
℄ U.S. 21
S.T. STA. 871 + 51.48

Drill Hole — 56.31' — 74.23' — 64.50' — Drill Hole
+ Mark Sta 872+00 E. Edge Pav't
℄ U.S. 21 N.B.
I.P.
(N.B. LANE) S.T. STA. 871+58.34

+ Mark Sta 878+00 E. Edge Pav't — 63.88' — 46.68' — + Mark Sta 880+00 E. Edge Pav't
℄ U.S. 21 — Tacked Hub
P.C. STA. 879 + 60.36

P.C. + 60.36

L A R/W

R/W Fence

939.72' 18" Conc. Pipe C-18

C-19 30" Conc. Pipe

Exist. 6" I-4

Sta 872+24.27 U.S. 21
= Sta 48+02.84 T.R. 356

STA. 21-1659

N 24° 17' 27" W

℄ U.S. 21

STA. 21-1669

871 872 873 874 875 876 877 878 879 880 881

870 871

℄ N.B. Pav't

Dumped Rock 10'-3'

871+11.69

873+47.89

876+17.89

S.T. +51.48

℄ T.R. 356

NOTE: For Intersection Detail See Sht. No: 251

STATION EQUATION Sta. +58.34 N.B. Pav't = Sta. +32.74 ℄ Survey

BM # 24 Elev. 940.69
Square cut on S.E. corner conc. End Wall 68' Lt. Of Sta 876+00

BM # 25 Elev. 945.90
Square cut on S.E. corner conc. End Wall 73 Lt. Sta. 881+50

FOR PAV'T ELEVATIONS SEE SUPERELEVATION TABLES SHT. NO. 72

+60 Standard No. 8 C.B. FL 943.50

100' 6" I-4 Rt. FL 943.45

100' 347.97

P.C. STA. 874 + 00
EL. 947.47

+115 6"x45° Bend FL 942.35
+36 8" Out 75° Rt. FL 942.23

100' Standard No. 8 C.B. FL 940.36

100' 347.22

P.I. STA. 876 + 00
EL. 946.47 CORR. + 0.75
V.C. = 400'

P.T. STA. 878+00
EL. 948.47

+1.00%

-0.50%

In FL 946.44

FL 941.90

℄ Exist. Ground & N.B. Pav't

FL (Out) 936.75

275' @ 0.4% = 274 L.F. 6" I-4 RH

10 L.F. 8" Out
19 L.F. 6" I-4 RH @ 30° @ 0.4%

In FL 943.84

FL (In) 941.75

10 L.F. 8" Out @ 41° @ 4.46%
30 L.F. 6" I-4 Rt. N.B. Pav't

Top Exist. Inlet 948.5

FL (Out) 942.22

FL 944.88

FL 943.96

691 L.F. 6" I-4 (Lt. N.B. Pav't) Shallow

32 @ 27% = 191 L.F. 6" I-4 Shallow

39 L.F. 6" I-4 (Rt. N.B. Pav't) 5.3' Below Profile

100' 347.30 (Rt.) 100' 347.38 (Lt.)

100' 347.55 (Rt.) 100' 347.63 (Lt.)

100' 347.80 (Rt.) 100' 347.88 (Lt.)

100' 348.05 (Rt.) 100' 348.13 (Lt.)

100' 348.30 (Rt.) 100' 348.38 (Lt.)

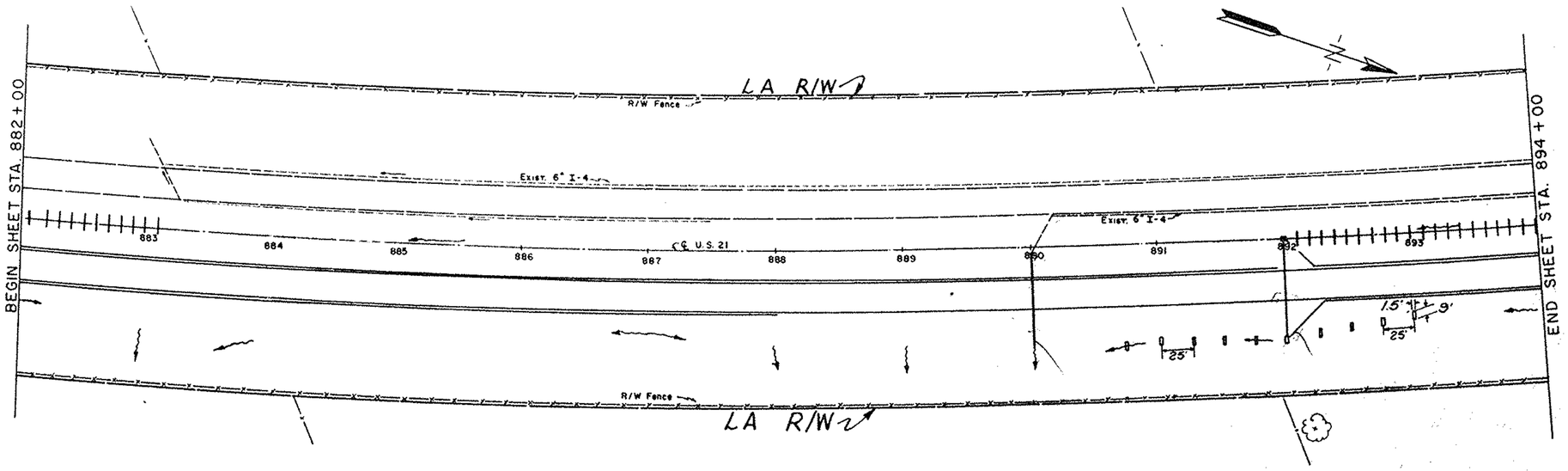
100' 348.55 (Rt.) 100' 348.63 (Lt.)

100'

FED. RD. DIVIS'ON	STATE	PROJECT	
2	OHIO		

33

STA. 21 - 11.49
WAY. 21 - 0.00
SUM. 21 - 0.00



ESTIMATED QUANTITIES

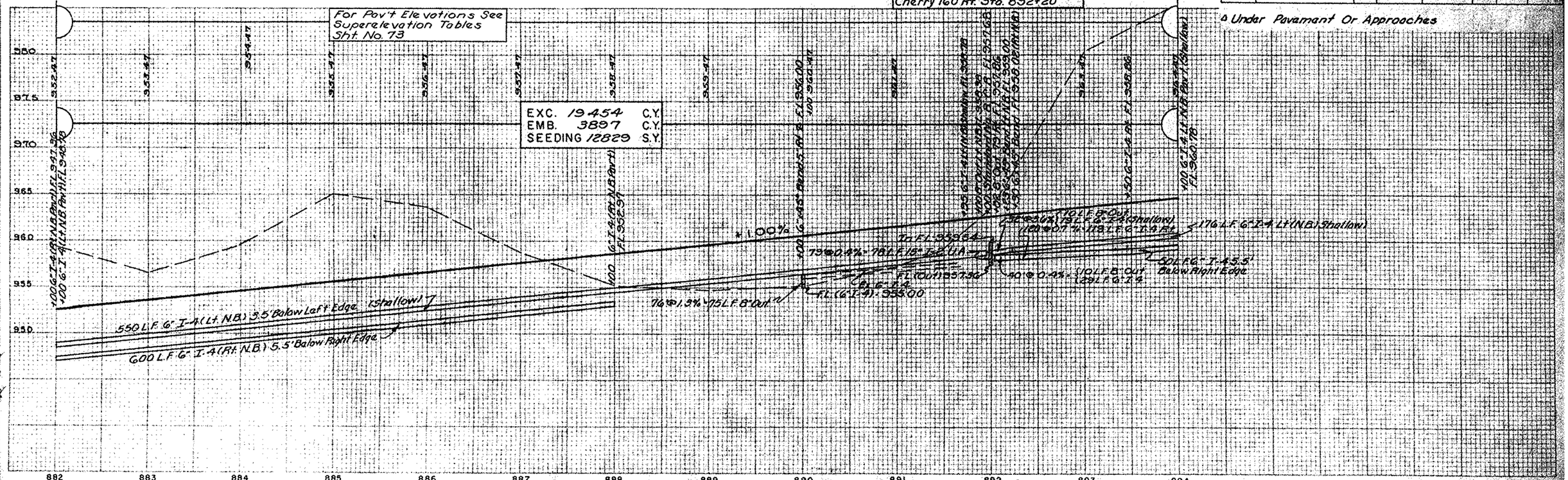
Item	Description	Unit	STATION From	STATION To	Side	Sub Total	Total
	Roadway						
L-10	Sod Strips	S.Y.	890+75	893+00	Rt.	15	
L-10	" "	S.Y.	882+06	883+06	℄	20	
L-10	" "	S.Y.	892+00	894+00	℄	53	88
	Drainage						
I-2 △	15"S.S.M-6.5(b)-M-6.8 (b)	L.F.	892+00		Rt.		78
I-4	6"Underdrain(Shallow)	L.F.	882+00	891+95	N.B. Lt.	995	
I-4	6"Underdrain(Shallow)	L.F.	892+00	894+00	N.B. Lt.	195	
I-4	" " (Deep)	L.F.	882+00	888+00	Rt.	600	
I-4	" " "	L.F.	892+02	892+30	Rt.	29	
I-4	" " "	L.F.	692+30	894+00	Rt.	169	1993
I-4	8" Outlet	L.F.	890+00		Rt.	75	
I-4	8" Outlet	L.F.	892+00		N.B. Lt.	10	
I-4	" "	L.F.	892+02		Rt.	10	95
I-5	6"x 45° Bend	Ea.	892+23		N.B. Lt.	1	
I-5	" " "	Ea.	892+30		Rt.	1	2
I-5	8"x " Bend M-6.4(a)	Ea.	890+00		Rt.		1
I-8	Std. No.8 C.B.	Ea.	892+00		℄		1

△ Under Pavement Or Approaches

B.M.=26 Elev. 966.41
Railroad spike in N. Root of 18" Wild Cherry 160' Rt. Sta. 892+20

For Pav't Elevations See Superelevation Tables Sht. No. 73

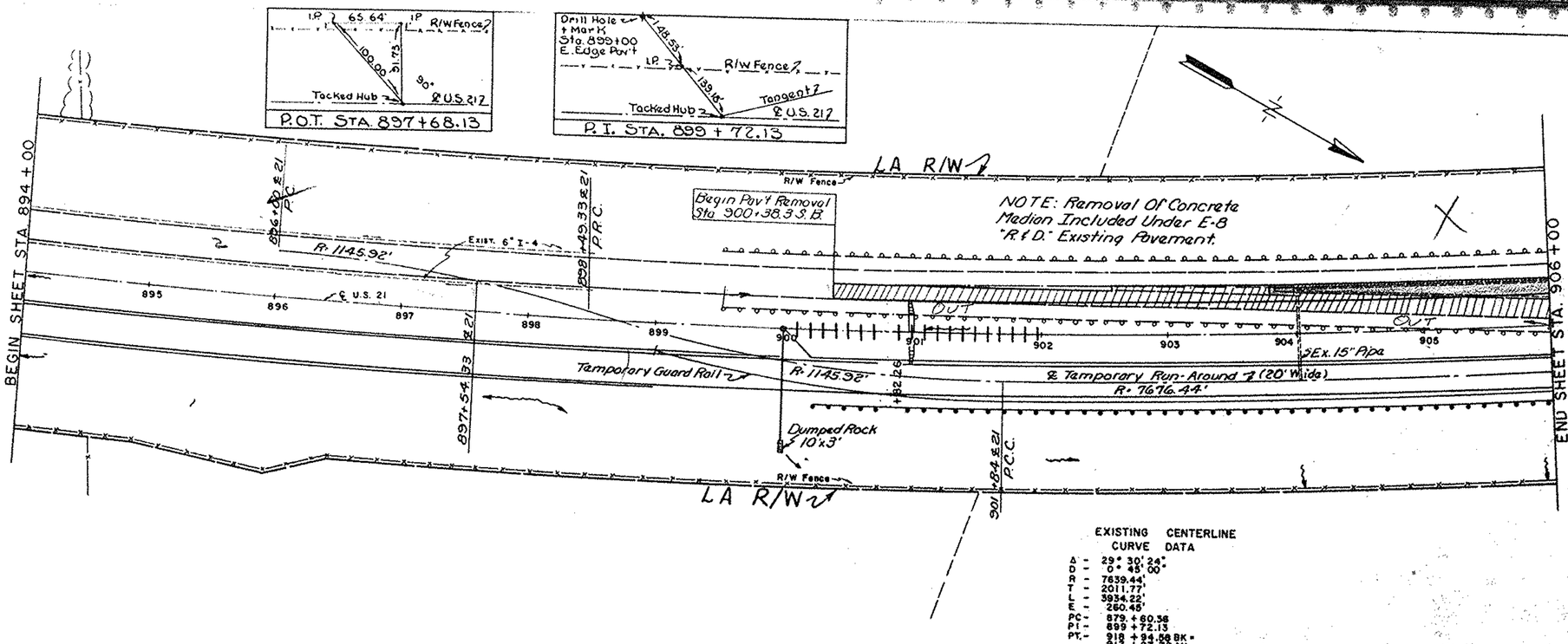
EXC. 19454 C.Y.
EMB. 3897 C.Y.
SEEDING 12829 S.Y.

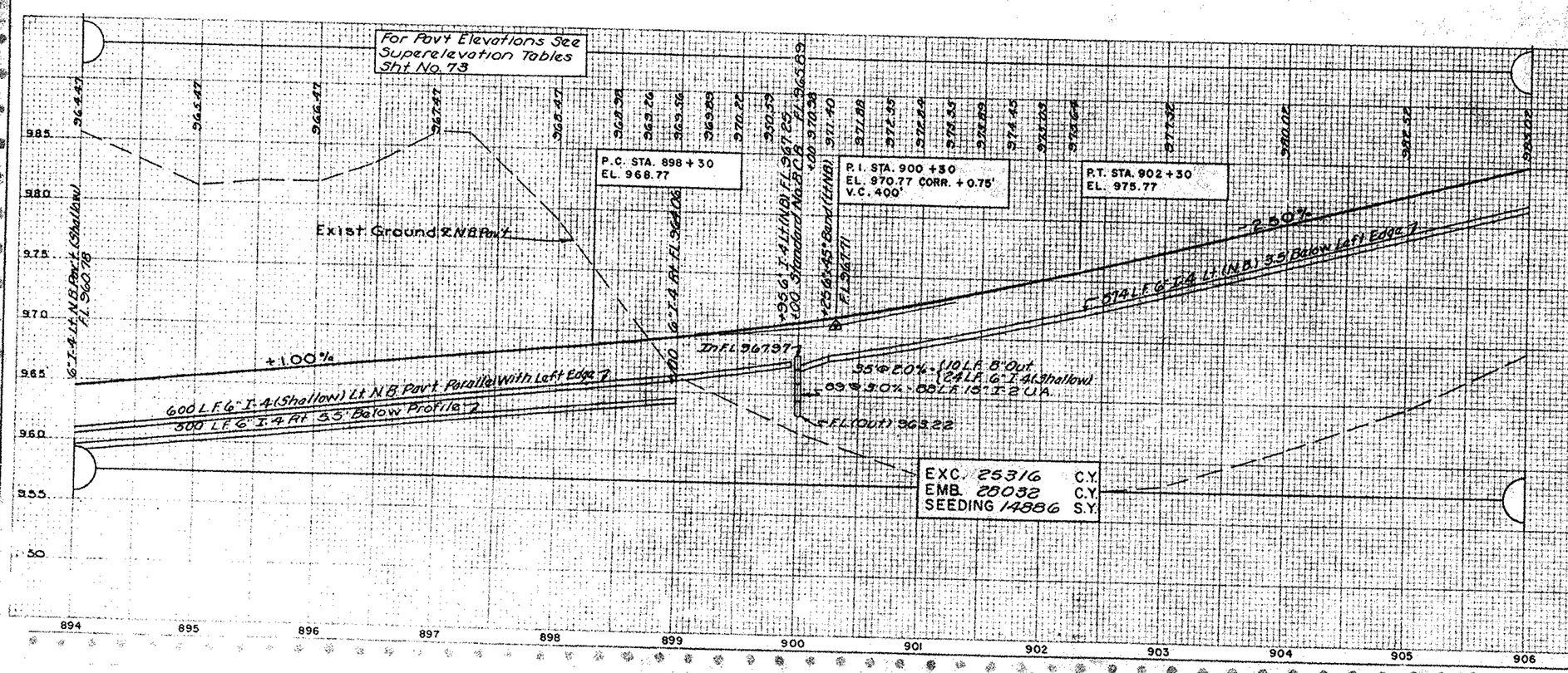

960
955
950
882
883
884
885
886
887
888
889
890
891
892
893
894
100 L.F. 6" I-4 (Lt. N.B.) Parallel
100 L.F. 6" I-4 (Rt. N.B.) Parallel
100 L.F. 6" I-4 (Rt. N.B.) Parallel
100 L.F. 6" I-4 (L

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

34

STA. 21-11.49
WAY. 21-0.00
SUM. 21-0.00





ESTIMATED QUANTITIES

Item	Description	Unit	STATION From	STATION To	Side	Sub. Total	Total
	Roadway						
E-8	Rem.&Disp.Exist.Curb	L.F.	903+98	906+00	Lt.		404
E-8	Rem.&Disp.Exist.Pav't.	S.Y.	900+38.3	906+00	S.B.	129	
E-8	" " " " "	S.Y.	900+82.26	906+00	N.B.	757	886
E-12	Pipe Rem. 15" & Under	L.F.	904+02		L&R.		66
I-15	G.R. Rem & Rebuilt	L.F.	899+50	906+00	Lt.		650
I-15	G.R. Steel Beam (Deep)	L.F.	900+25	906+00	Rt.	575	575
L-10	Sod Strip	S.Y.	900+00	902+00	℄	53	
L-10	" " (4' Wide)	S.Y.	901+00		L&R	15	68
S-15	Temp. Run-Around	Lump	896+00	914+00			Lump
	Drainage						
I-2 Δ	15" S.S. M-6.5(b)-M-6.8(b)	L.F.	900+00		Rt.		88
I-5	6" x 45° Bend	Ea.	900+25		Rt.	Lt. N.B.	1
I-4	8" Outlet	L.F.	900+00		Rt.		10
I-4	6" Underdrain (Deep)	L.F.	894+00	899+00	Rt.	500	
I-4	6" Underdrain (Shallow)	L.F.	894+00	899+95	Lt.	595	
I-4	6" " " "	L.F.	900+00	906+00	Lt. N.B.	598	1693
I-8	Std. No. 8 C.B.	Ea.	900+00		℄		1
I-10	Dump Rock (d=2.5')	C.Y.	900+00		Rt.		3
I-14	Paved Gutter Type 6	L.F.	901+00		L&R		16
I-16	Catch Basin Aban.	Ea.	904+02		Lt.		1
	Pavement						
T-71	9" Rein. Conc. Pav't.	S.Y.	900+38.3	906+00	S.B. Pav't.		749
I-22	6" Subbase	C.Y.	900+38.3	906+00	S.B. Pav't.		135

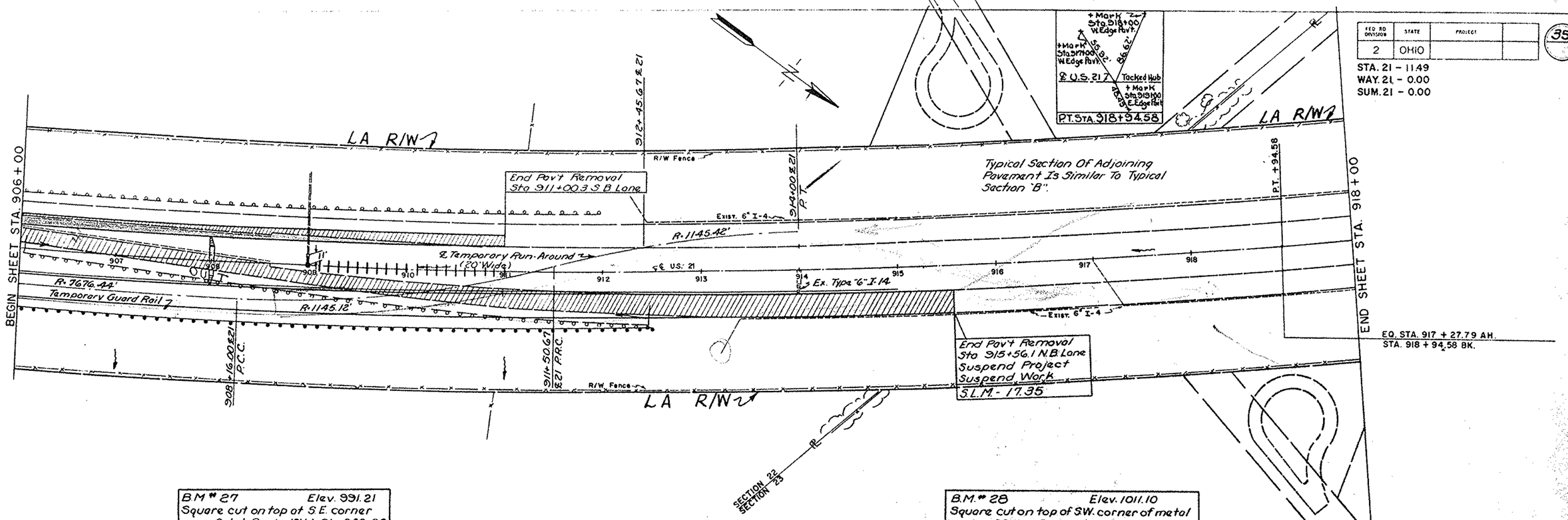
Δ Under Pavement Or Approaches

LINE SHEET STA. 894+00 TO STA. 906+00

FED. RD. DIV. SIGN	STATE	PROJECT	
2	OHIO		

35

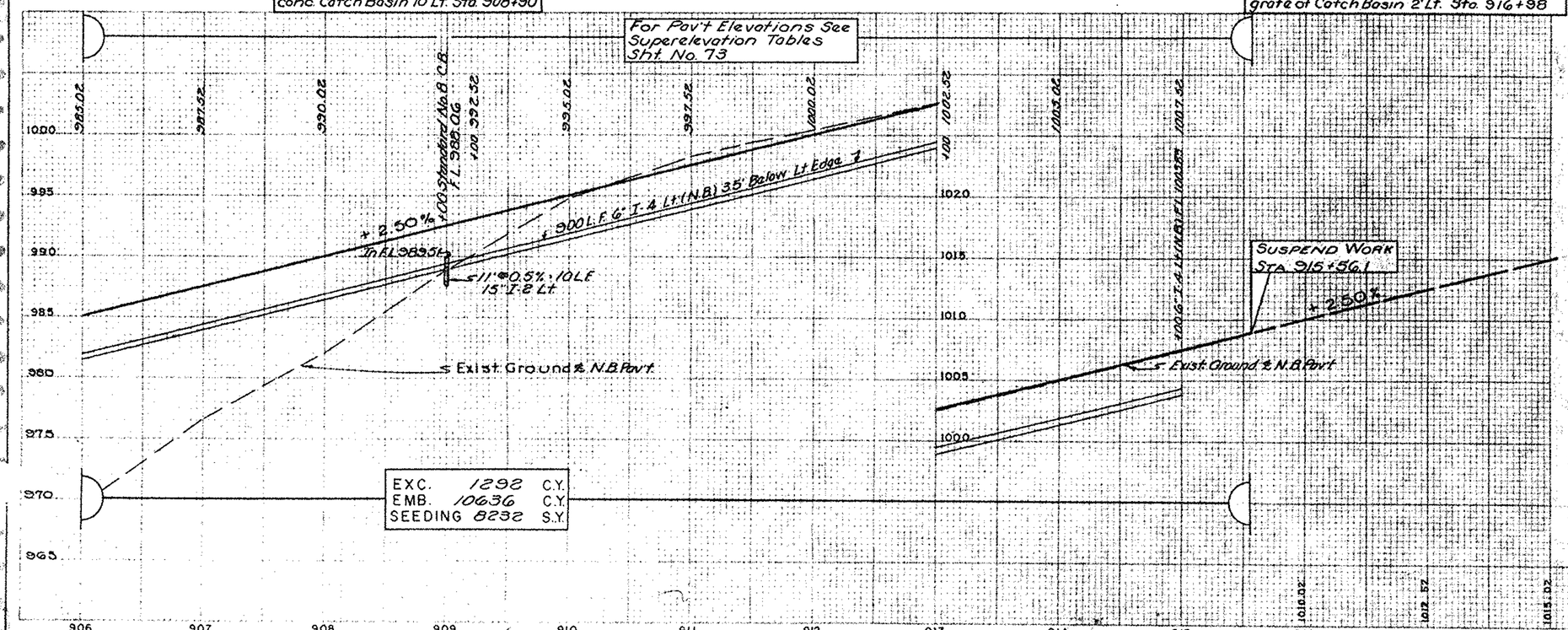
STA. 21 - 11.49
WAY. 21 - 0.00
SUM. 21 - 0.00



B.M. # 27 Elev. 991.21
Square cut on top of S.E. corner conc. Catch Basin 10' Lt. Sta. 908+90

B.M. # 28 Elev. 1011.10
Square cut on top of S.W. corner of metal grate of Catch Basin 2' Lt. Sta. 916+98

For Pav't Elevations See Superelevation Tables Sht. No. 73



ESTIMATED QUANTITIES							
Item	Description	Unit	STATION From	STATION To	Side	Sub Total	Total
	Roadway						
E-8	Rem. & Disp. Exist. Curb	L.F.	906+00	908+59			518
E-8	Rem. & Disp. Exist. Pav't.	S.Y.	906+00	911+00	S.B.	426	
E-8	" " " "	S.Y.	906+00	915+56.1	N.B.	1694	2120
I-15	G.R. Rem. & Rebuilt	L.F.	906+00	912+47.24	Rt.	650	650
I-15	G.R. Steel Beam (Deep)	L.F.	906+00	912+50	Rt.	650	650
L-10	Sod Strip	S.Y.	909+00	911+00	℄	55	
L-10	" " (4' Wide)	S.Y.	908+00		Lt & Rt	15	68
	Drainage						
I-2[A]	15" S.S. M-6.5(b)-M-6.8(b)	L.F.	909+00		Lt.		10
I-4	6' Underdrn. Shallow	L.F.	906+00	915+00	Lt & ℄		900
I-8	Std. No. 8 C.B.	Ea.	909+00		℄		1
I-14	Paved Gutter Type 6	L.F.	908+00		Lt & Rt		16
I-16	Catch Basin Aband.	Ea.	909+00		11' Lt.		1
	Pavement						
T-71	9" Rein. Conc. Pav't.	S.Y.	906+00	911+00.3	S.B.		621
I-22	6" Subbase	C.Y.	906+00	911+00.3	S.B.		121

[A] Under Pavement Or Approaches

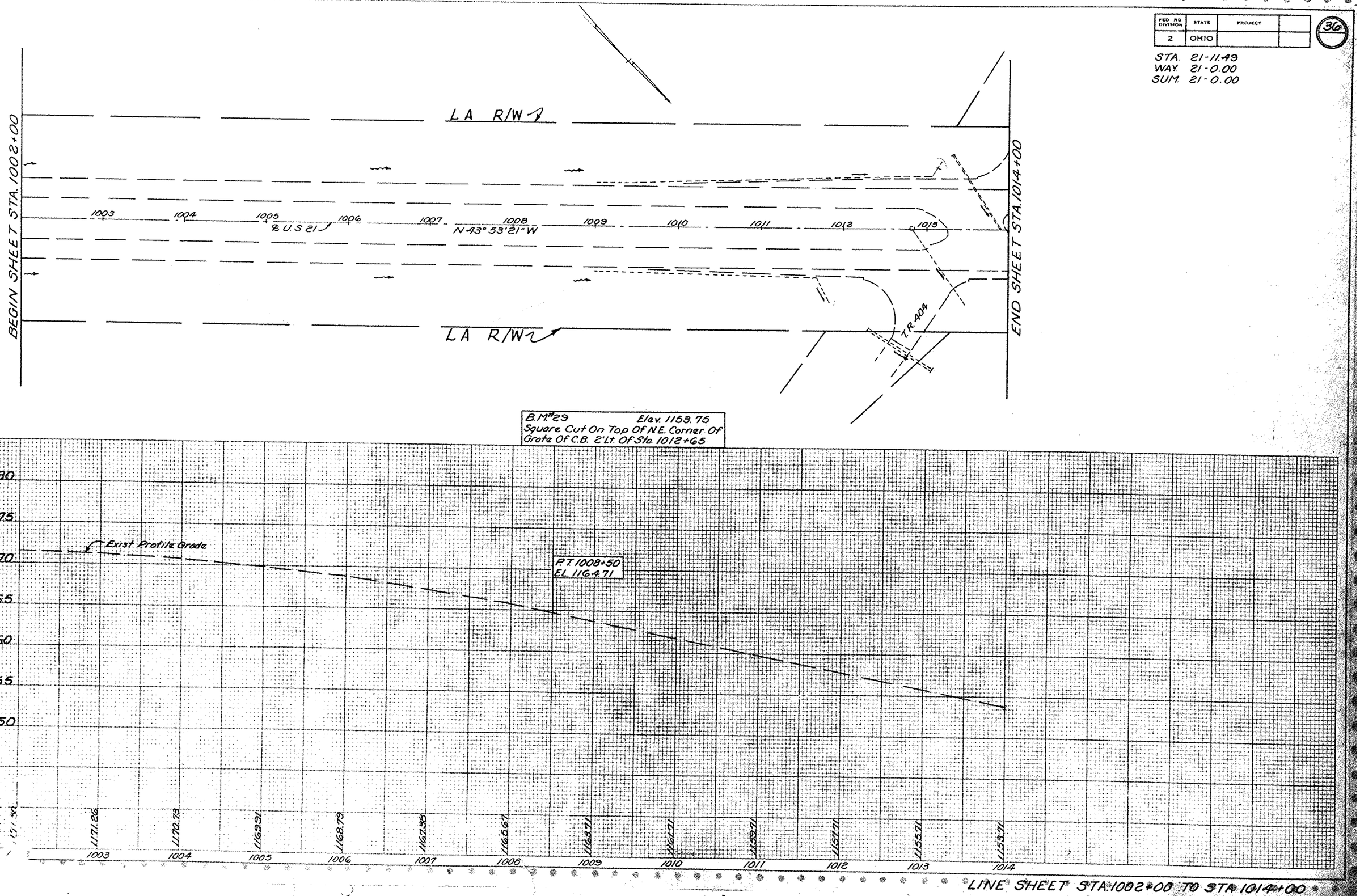
EXC.	1292	C.Y.
EMB.	10636	C.Y.
SEEDING	8232	S.Y.

LINE SHEET STA. 906+00 TO STA. 918+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

36

STA. 21-11.49
WAY. 21-0.00
SUM. 21-0.00

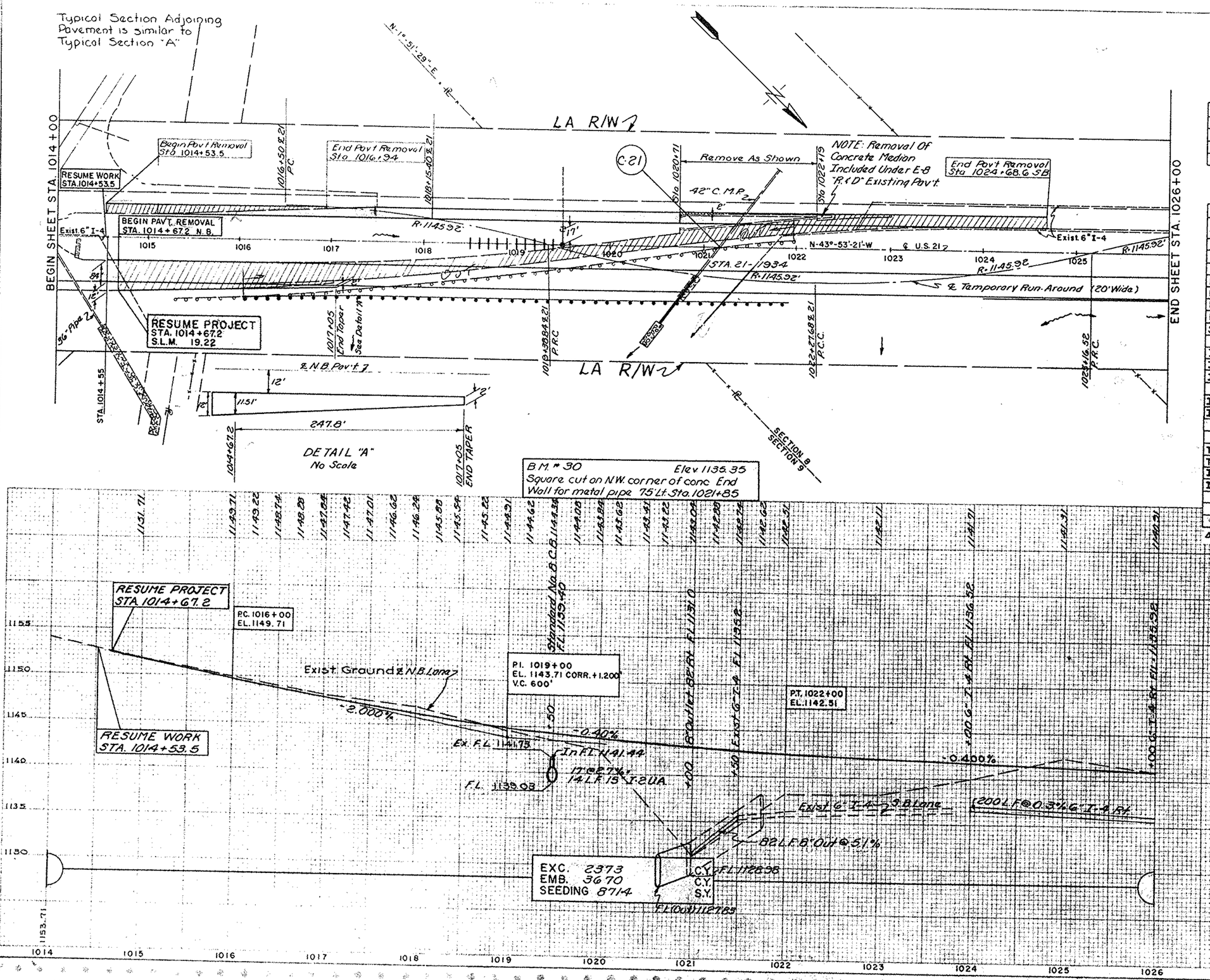


LINE SHEET STA. 1002+00 TO STA. 1014+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

37

STA. 21 - 11.49
WAY. 21 - 0.00
SUM. 21 - 0.00



STRUCTURES 20' SPAN & UNDER				
Mark	Station	Type	Size	Detail Sheet No.
C-21	1021+20	Std. Pipe Culvert Exten. M-6.4 (d)	42" x 64'	295

ESTIMATED QUANTITIES							
Item	Description	Unit	STATION From	STATION To	Side	Sub Total	Total
	Roadway						
I-15	G.R. Rem. & Rebuilt	L.F.	1016+05	1022+00	Rt.		600
I-15	G.R. Steel Beam (Deep)	L.F.	1016+05	1021+80	Rt.		575
E-8	Rem. & Disp. Exist. Pav't.	S.Y.	1014+67.2	1024+68.6	Rt.	1915	
E-8	Rem. & Disp. Exist. Pav't.	S.Y.	1014+53.5	1016+94	Lt.	259	2174
E-8	Rem. & Disp. Exist. Curb	L.F.	1020+71	1022+19	Lt.		296
L-10	Sod Strip	S.Y.	1018+50	1019+50	S.Y.		33
S-15	Temp. Run-Around	Lump	1018+15.40	1026+39.96			Lump
	DRAINAGE						
I-24	15" SS M-6.5 (b) M-6.8 (b)	L.F.	1019+50		Lt.		14
I-4	6" Underdrain	L.F.	1024+00	1026+00	Rt.		200
I-4	8" Outlet	L.F.	1021+00		Rt.		82
I-8	Std. No. 8 C.B.	Ea.	1019+50		℄		1
I-16	Catch Basin Abandoned	Ea.	1019+50		Lt.		1
	Pavement						
T-71	9" Rein. Conc. Pav't. (Taper)	SY	1014+67.2	1017+05	N.B. Pav't.	186	
T-71	9" Rein. Conc. Pav't.	S.Y.	1014+53	1024+68.6	S.B. Pav't.	1354	1540
I-22	Subbase	C.Y.	1014+53	1024+68.6	S.B. Pav't.	244	
I-22	"	C.Y.	1014+67.2	1017+05	N.B. Pav't.	36	280

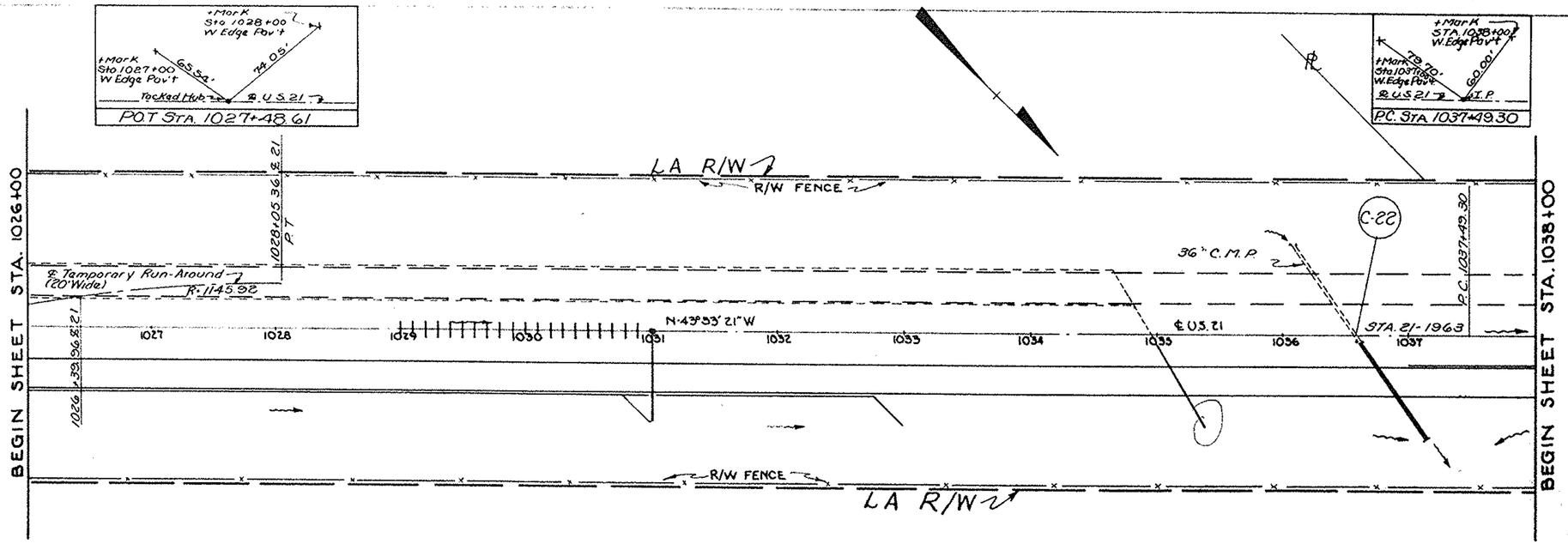
△ Under Pavement Or Approaches

LINE SHEET STA. 1014+00 TO STA. 1026+00

FED. RD DIVISION	STATE	PROJECT		
2	OHIO			

38

STA. 21-11.49
WAY. 21-0.00
SUM. 21-0.00



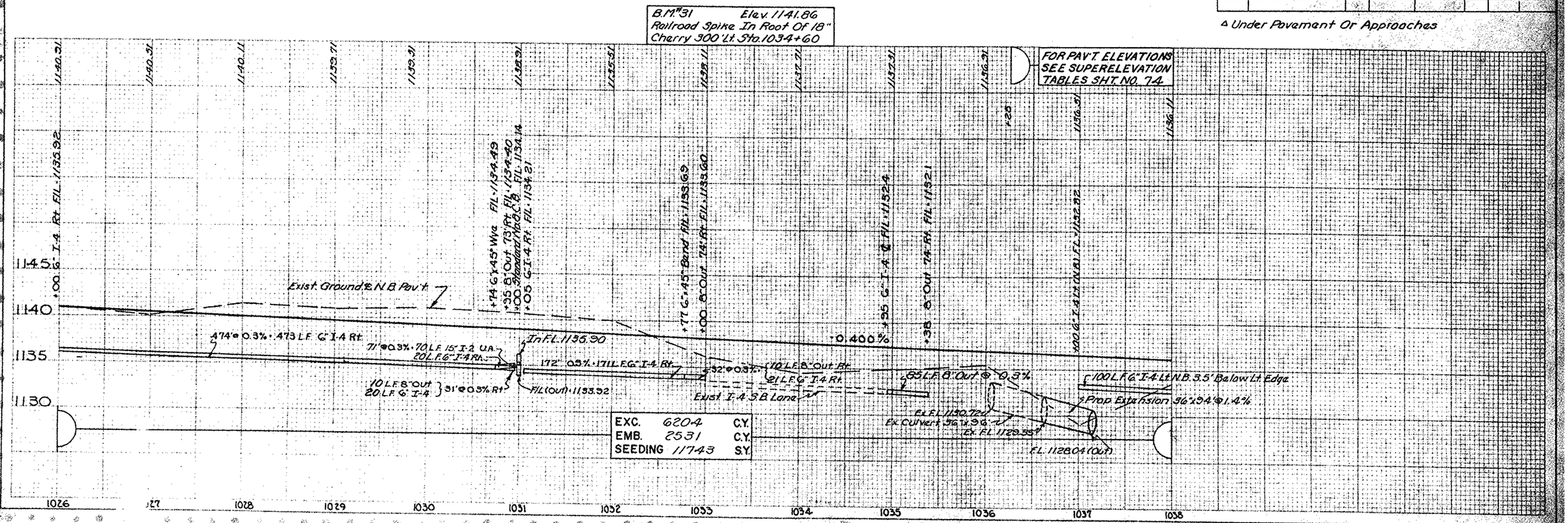
STRUCTURES 20' SPAN & UNDER

Mark	Station	Type	Size	Detail Sheet No.
C-22	1036+59.5	Std. Pipe Culvert Exten. M-6.4(1)	36"x 94'	235

ESTIMATED QUANTITIES

Item	Description	Unit	STATION From	STATION To	Side	Sub Total	Total
	Roadway						
L-10	Sod Strip	S.Y.	1029+00	1031+00	℄		53
	Drainage						
I-2△	15" S.S. M-6.5(b)-M-6.8(b)	L.F.	1031+00		Rt.		70
I-4	6" Underdrain (Deep)	L.F.	1031+05	1033+00	Rt.	192	
I-4	6" Underdrain (Deep)	L.F.	1026+00	1030+95	Rt.	513	
I-4	6" " (Shallow)	L.F.	1037+00	1038+00	Rt. & Lt.	100	805
I-4	8" Outlet	L.F.	1030+74	1030+95	Rt.	10	
I-4	" "	L.F.	1034+95	1035+38	Rt.	85	
I-4	" "	L.F.		1033+00	Rt.	10	105
I-8	Std. No. 8 C.B.	Ea.	1031+00		℄		1
I-5	6" x 45° Wye	Ea.	1030+74		Rt.		1
I-5	6" x 45° Bend	Ea.	1032+77		Rt.		1

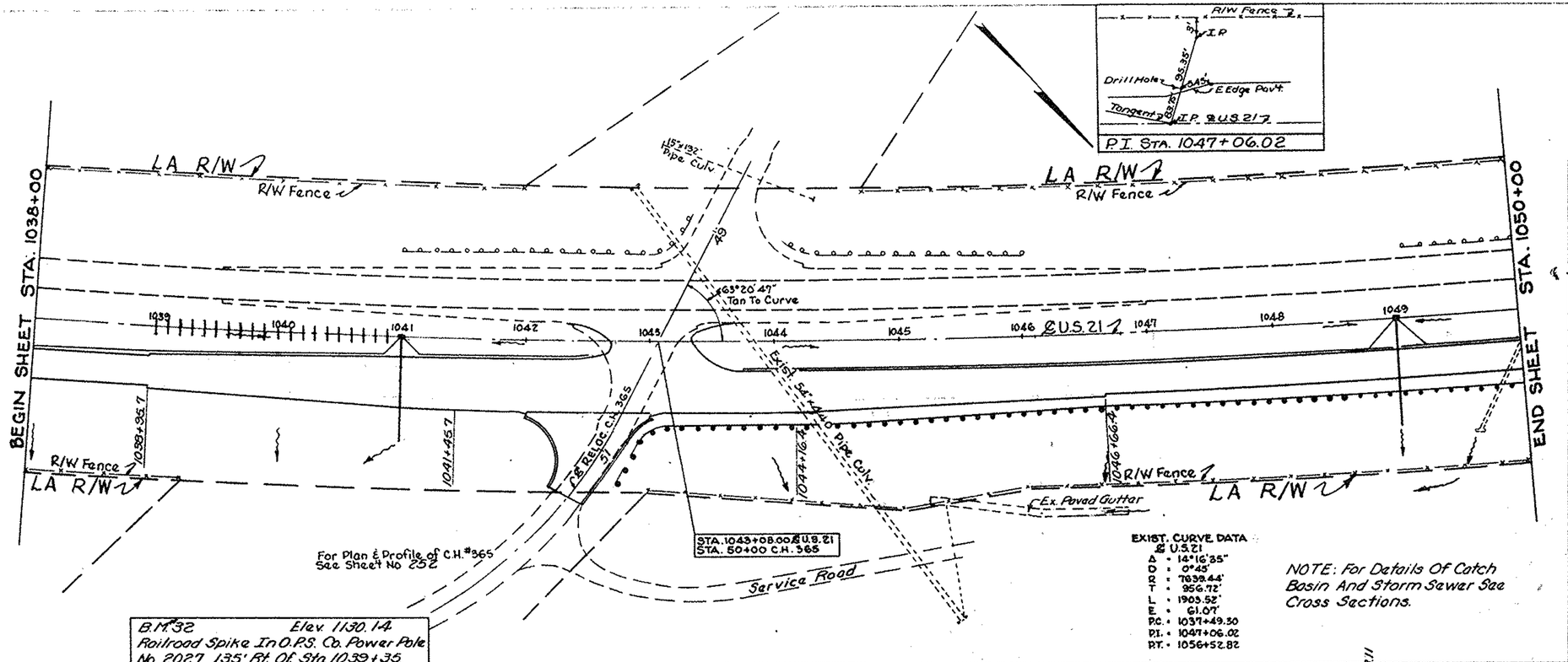
△ Under Pavement Or Approaches



LINE SHEET STA. 1026+00 TO STA. 1038+00

FED. RD DIVISION	STATE	PROJECT		39
2	OHIO			

STA. 21-11.49
WAY. 21-0.00
SUM. 21-0.00



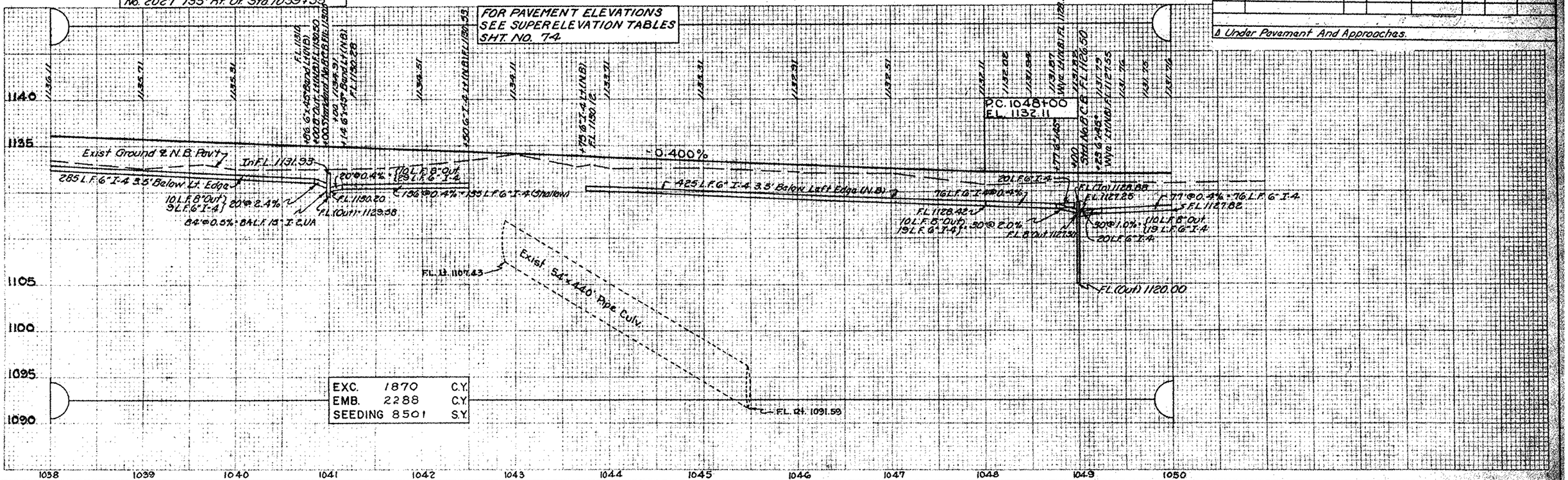
EXIST. CURVE DATA
℄ U.S. 21
Δ = 14°16'35"
D = 0°45'
R = 7638.44'
T = 956.72'
L = 1903.52'
E = 61.07'
P.C. = 1037+49.30
P.I. = 1047+06.02
P.T. = 1056+52.82

NOTE: For Details Of Catch Basin And Storm Sewer See Cross Sections.

ESTIMATED QUANTITIES

Item	Description	Unit	STATION From	STATION To	Side	Sub Total	Total
	Roadway						
I-15	G.R. Rem. & Rebuilt	L.F.	1042+90	1043+00	Rt.		62.5
I-15	G.R. Steel Beam(Deep)	L.F.	1042+70	1050+00	Rt.		750
L-10	Sod Strip	S.Y.	1039+00	1041+00	℄		53
	Drainage						
I-2	15" S.S. M6.4(c)	L.F.	1049+00		Rt.		18
I-2Δ	15" S.S. M-6.5(b)-M-6.8(b)	L.F.	1041+00		Rt.	84	
I-2Δ	" " " "	L.F.	1049+00		Rt.	64	148
I-8	Std. No. 8 C.B.	Ea.	1041+00		℄	1	
I-8	" " "	Ea.	1049+00		℄	1	2
I-5	15"x30° Bend M-6.4(c)	Ea.	1049+00		Rt.		2
I-4	6" Underdrain (Shallow)	L.F.	1038+00	1041+00	Lt. & N.B.	294	
I-4	6" "	L.F.	1041+00	1042+50	Lt. & N.B.	144	
I-4	6" "	L.F.	1043+15	1049+00	Lt. & N.B.	540	
I-4	6" "	L.F.	1049+00	1050+00	Lt. & N.B.	115	1093
I-4	8" Outlet	L.F.	1041+00		Lt. & N.B.	20	
I-4	8" "	L.F.	1049+00		Lt. & N.B.	20	40
I-5	6"x45° Bend	Ea.	1040+86	1041+14			2
I-5	6"x45° Wye	Ea.	1048+77	1049+23			2

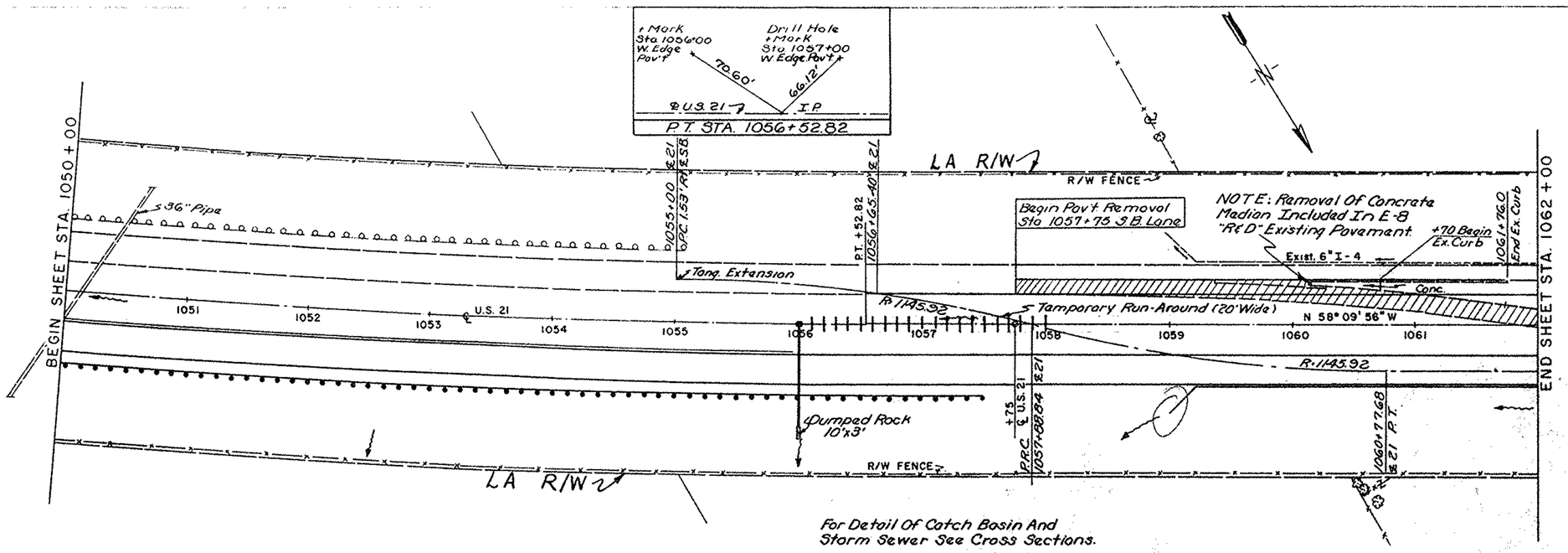
Δ Under Pavement And Approaches.



LINE SHEET STA. 1038+00 TO STA. 1050+00

FED. RD DIVISION	STATE	PROJECT		40
2	OHIO			

STA - 21-11.49
WAY- 21- 0.00
SUM- 21- 0.00



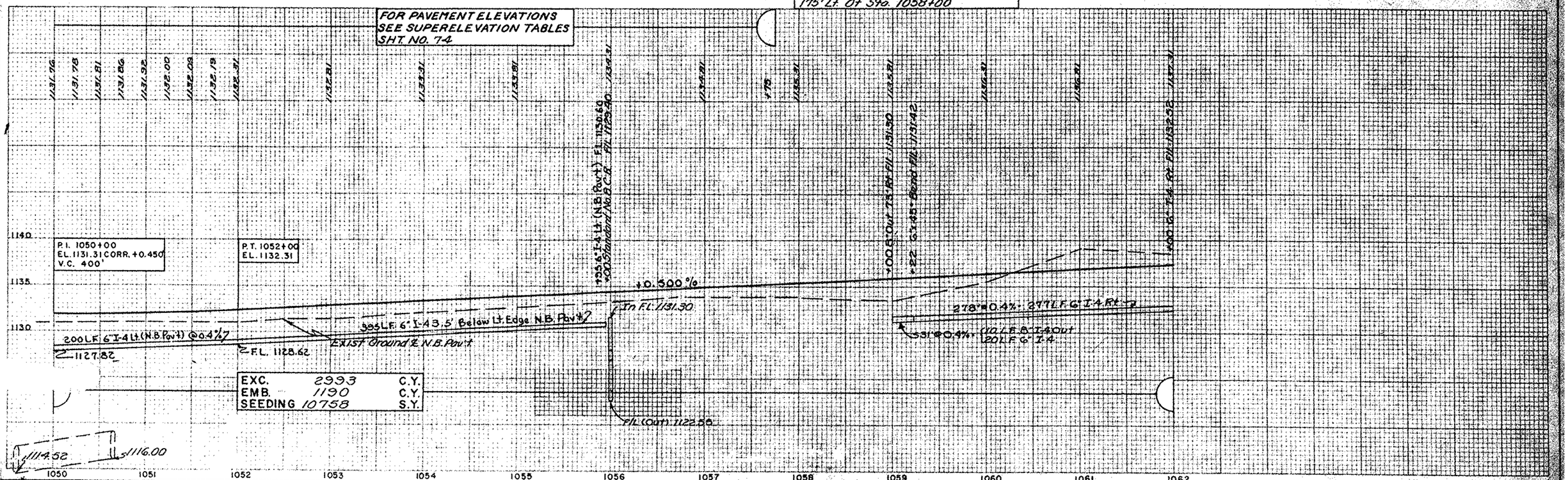
ESTIMATED QUANTITIES

Item	Description	Unit	STATION From	STATION To	Side	Sub Total	Total
	Roadway						
L-10	Sod Strips	S.Y.	1056+00	1058+00	℄		53
I-15	G.R. Steel Beam (Deep)	L.F.	1050+00	1057+50	Rt.		750
E-8	Rem. & Disp. Exist. Pav't.	S.Y.	1057+75	1061+76	S.B.	55	
E-8	" " " "	S.Y.	1057+75	1062+00	N.B.	929	984
E-8	" " " Curb	L.F.	1060+70	1061+76			212
S-15	Temp. Run-Around	Lump	1056+6540	1070+00			Lump
	DRAINAGE						
I-2 △	15" S.S.M-6.5(b)-M-68(b)	L.F.	1056+00		Rt.		64
I-2	15" SS - M-6.4 (C)	L.F.	1056+00		Rt.		18
I-5	15" x 30° Bend (M-6.4a)	Ea.	1056+00		Rt.		2
I-4	6" Underdrain (Deep)	L.F.	1059+00	1062+00	Rt.	297	
I-4	6" Underdrain (Shallow)	L.F.	1050+00	1055+35	Rt.	595	892
I-4	8" Outlet	L.F.	1059+00		Rt.		10
I-5	6" x 45° Bend	Ea.	1059+22		Rt.		1
I-10	Dumped Rock (0-25')	C.Y.	1056+00		Rt.		3
I-8	Std. No. 8 C.B.	Ea.	1056+00		Rt.		1
	PAVEMENT						
T-71	9" Rein. Conc. Pav't	S.Y.	1057+75	1062+00	S.B. Pav't		566
I-22	6" Subbase	C.Y.	1057+75	1062+00	S.B. Pav't		89

△ Under Pavement Or Approaches

B.M. 33 Elev. 1142.48
Railroad Spike In Root Of 30" Elm
175' Lt. Of Sta. 1058+00

FOR PAVEMENT ELEVATIONS SEE SUPERELEVATION TABLES SHT. NO. 74



EXC.	2993	C.Y.
EMB.	1190	C.Y.
SEEDING	10758	S.Y.

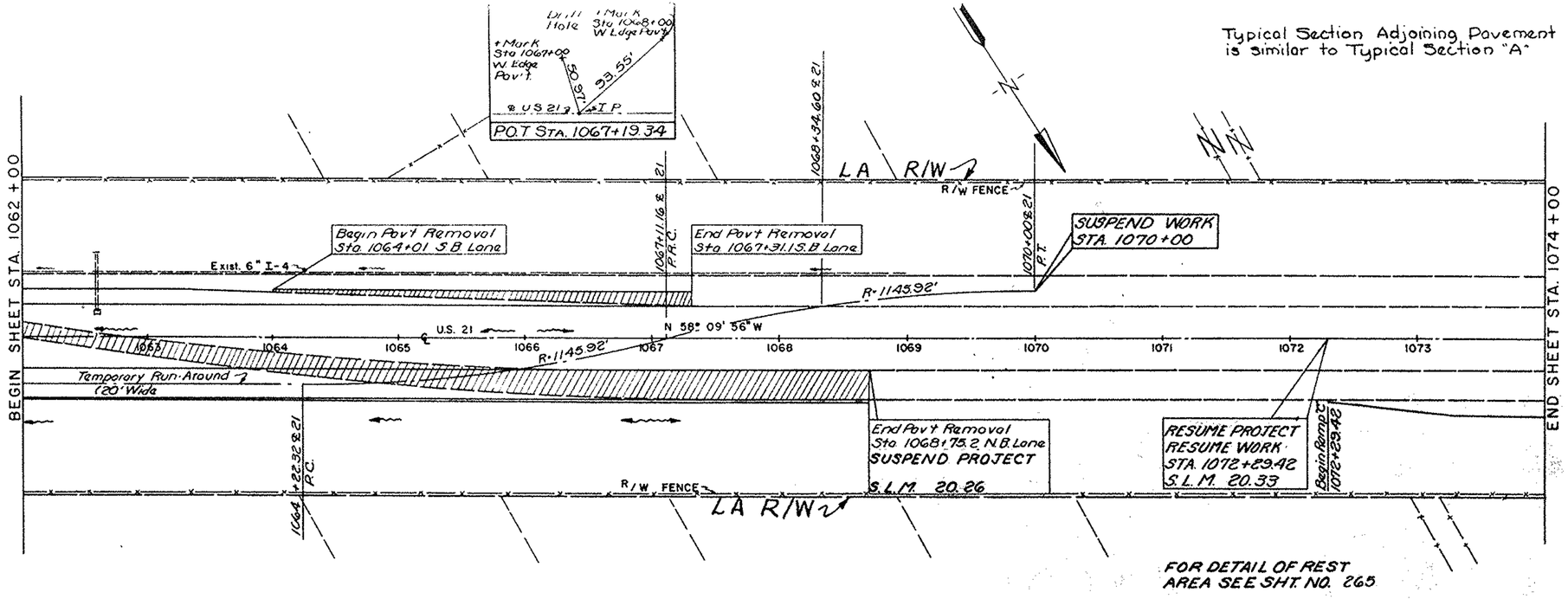
LINE SHEET STA. 1050 + 00 TO STA. 1062 + 00

FED. RD. DIVISION	STATE	PROJECT		
2	OHIO			

41

STA - 21 - 11.49
WAY - 21 - 0.00
SUM - 21 - 0.00

Typical Section Adjoining Pavement is similar to Typical Section "A"

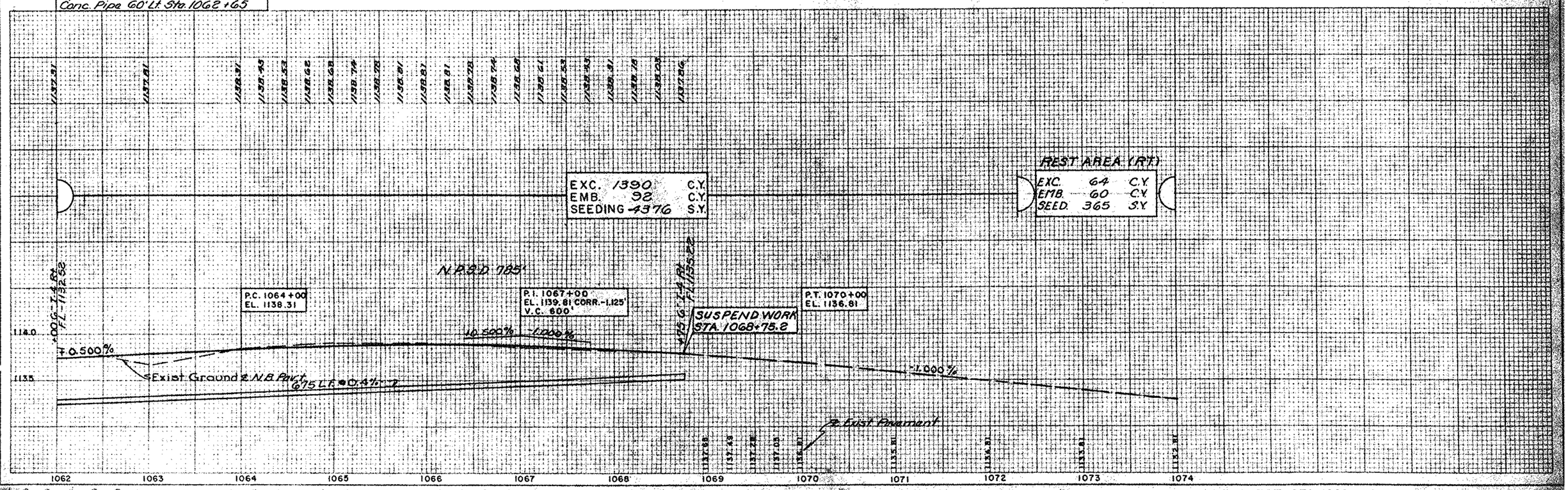


FOR DETAIL OF REST AREA SEE SHT. NO. 265

ESTIMATED QUANTITIES

Item	Description	Unit	STATION From	STATION To	Side	Sub Total	Total
	Roadway						
E-8	Rem. & Disp. Exist. Pav't.	S.Y.	1062+00	1068+75.2	N.B.	1048	
E-8	" " " "	S.Y.	1064+01	1067+31.1	S.B.	257	1305
	Drainage						
I-4	6" Underdrain	L.F.	1062+00	1068+75	Rt.		675
I-16	Catch Basin Abandoned	Ea	1062+60		20' Rt.		1
	Pavement						
T-71	9" Rein. Conc. Pav't.	S.Y.	1062+00	1067+31.1	S.B. Pav't.		709
I-22	Subbase	C.Y.	1062+00	1067+31.1	S.B. Pav't.		112

B.M. 34 Elev. 1134.62
Square Cut On Top Of Second 15" Conc. Pipe 60' Lt. Sta. 1062+65

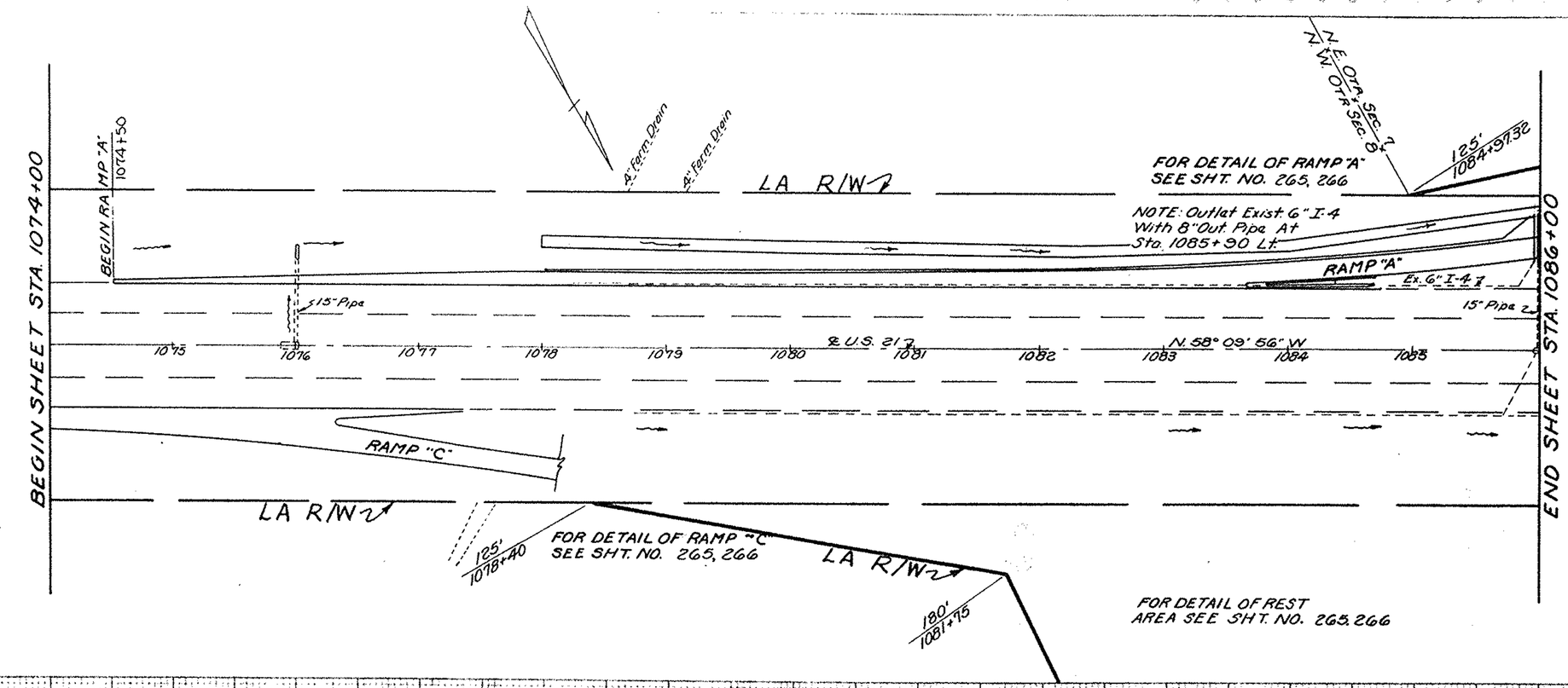


LINE SHEET STA. 1062+00 TO STA. 1074+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

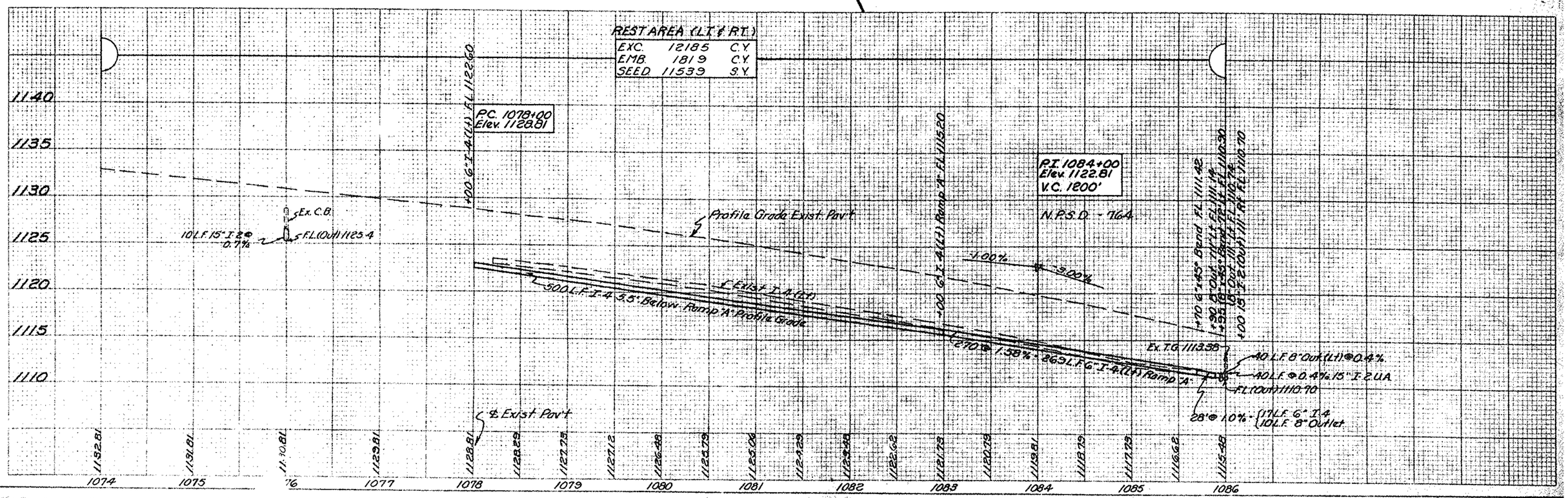
42

STA. 21 - 11.49
WAY. 21 - 0.00
SUM. 21 - 0.00



ESTIMATED QUANTITIES							
Item	Description	Unit	STATION From	STATION To	Side	Sub Total	Total
	ROADWAY						
L-10	Sodding (9' Wide)	S.Y.	1078+00	1088+10	Lt.		1029
	Drainage						
I-2 Δ	15" S.S.M-6.5(b)-M-6.8(b)	L.F.		1076+00	Lt.	10	10
I-2 Δ	15" S.S.M-6.5(b)-M-6.8(b)	L.F.		1086+00	Lt.	40	40
I-4	6" Underdrain (Deep)	L.F.	1078+00	1085+70	Lt.	769	
I-4	6" " "	L.F.	1085+70	1085+90	Lt.	17	786
I-4	8" Outlet	L.F.		1085+95	Lt.	40	
I-4	8" "	L.F.	1085+70	1085+90	Lt.	10	50
I-5	6" x 45° Bend	Ea.		1085+70	Lt.	1	
I-5	8" x 45° Bend	Ea.		1085+95	Lt.	1	

Δ Under Pavement Or Approaches



LINE SHEET STA. 1074+00 TO STA. 1086+00

FED. RD DIVISION	STATE	PROJECT	
2	OHIO		

43

STA. 21-11.49
WAY. 21-0.00
SUM. 21-0.00

BEGIN SHEET STA. 1086+00

END SHEET STA. 1098+00

LA R/W

200'
1088+00

R=50

5'-L-10 Sod

Sta. 1088+15 - 2 Lines 3" Conduit (Quan. Carried On Rest Area Detail).

Exist. 6" I-4

R/W Fence

1092+10.83
P.C.

6'-L-10

* NOTE: Connect Existing 6" I-4 Into No.8 C.B. @ Sta. 1096+00.

1093+65.40
℄ 21

FOR DETAILS OF RAMP "B" SEE SHT. NO. 266, 267

LA R/W

174.42'
1096+64

N 87° 29' 48" W

Section 7
Section 6

7+0

RAMP "B"

6+0

Begin Pav't Removal
Sta. 1096+035 S.B.

6" I-4

6" Raley Pipe (See X-Sect.)

R=1145.92'

1094+08.54
℄ 21 P.R.C.

Ex. Type "6" I-14

℄ U.S. 81

Exist Type "6" I-14

N 58° 09' 56" W (20' Wide) Temporary Run-Around

1087 1088 1089 1090 1091 1092 1093 1094 1095 1096 1097

Exist. 6" I-4

Begin Pav't Removal
Sta. 1091+57.0 N.B.

Curb

RAMP "D"

I-4

℄ 6+10

FOR DETAILS OF RAMP "D" SEE SHT. NO. 266, 267

Medium Wooded Area

R/W Fence

LA R/W

Section 7
N 2° 30' E ± ℄
Section 8

N 87° 29' 48" W

125'
1091+23.16

FOR DETAIL OF REST AREA SEE SHT. NO. 266, 267

1097+77.68
P.T.

B.M. 35 Elev. 1103.42
Railroad Spike In Root Of 16" Oak 300' Lt. Sta. 1089+00

REST AREA (LT. & RT.)

EXC.	18959	C.Y.
EMB.	1959	C.Y.
SEED	10440	S.Y.

P.T. 1090+0
E.L. 1104.81

EXC. 7175 C.Y.
EMB 66 C.Y.
SEEDING 6083 S.Y.

1120
1115
1110
1105
1100
1095
1090
1085
1080

1115.48 1114.89 1114.29 1113.68 1113.06 1112.43 1111.79 1111.14 1110.48 1109.80 1109.12 1108.43 1107.73 1107.01 1106.29 1105.55 1104.81 1101.81

1086 1087 1088 1089 1090 1091 1092 1093 1094 1095 1096 1097 1098

130.6' 7" R.C.P. EL. 1092.83 ±31

1089.81 1090.81 1091.81 1092.81 1093.81 1094.81 1095.81 1096.81 1097.81

25 No. 5A C.B. 31' Rt. EL. 1090.24

100 Standard No. 8 C.B. EL. 1092.06
10 Exist. C.B. To Be Abandoned

40' 6" I-4 Lt. Ramp "B" EL. 1076.5

36 L.F. 15" I-2 U.A. @ 0.8% ℄

Top Grate 1094.84

Exist Ground & N.B. Pav't

FL. (Out) 1090.85

650' 6" I-4 5.5' Below Ramp "D" Profile Grade

Inv. EL. 1089.80

Inv. EL. @ 1.4% 15" I-2 U.A.

NOTE: Exist 6" I-4 To Be Connected With Proposed Catch Basin Sta. 1096+00

260 L.F. 6" I-4 Lt. Ramp "B" 5.5' Below Ramp "B" Profile

℄ Exist Pav't

ESTIMATED QUANTITIES

Item	Description	Unit	STATION From	STATION To	Side	Sub Total	Total
	Roadway						
E-12	Pipe Rem. For Re-Use	L.F.	1096+42	1096+50	Lt.		12
E-8	Rem. & Disp. Exist. Pav't	S.Y.	1096+035	1098+00	S.B.	294	
E-8	Rem. & Disp. Exist. Pav't.	S.Y.	1091+57	1098+00	::B	1291	1585
L-10	Sodding (6' Wide)	S.Y.	1089+30	1098+00	LAR		222
L-10	Sod Strip	S.Y.	1094+00	1096+00	Rt.	690	
L-10	Sodding (1.5' Wide)	S.Y.	1097+60	1098+00	℄	53	
S-15	Temp. Run-Around	Lump	1092+00	1104+50	Lt.	13	663
	DRAINAGE						Lump
I-2 Δ	15" SS M-65(1) M-68(1)	L.F.	1096+00	1096+10	Lt.		10
I-2 Δ	18" SS M-65(1) M-68(1)	L.F.	1093+25		Rt.		36
I-4	6" Underdrain	L.F.	1091+50	1098+00	Rt.	650	
I-4	6" Underdrain	L.F.	1097+40	1098+00	Lt.	60	710
I-8	Std. No. 8 C.B.	Ea.	1096+00		℄		1
I-14	Paved Gutter Type 1	L.F.	1097+60	1098+00	::B & ℄		40
I-16	C.B. - Aband.	Ea.	1096+08		5' Lt.		1
S-1	Conc. Collar Class E	C.Y.	1096+42		Lt.		0.26
I-6	Relaying Pipe	L.F.	1096+42	1096+50	Lt.		12
I-8	Std. No. 3 A C.B.	Ea.	1093+25		Rt.		1
I-14	Paved Gutter Type 6	L.F.	1096+00		Rt.		8
	PAVEMENT						
T-71	9" Rein. Conc. Pav't.	S.Y.	1096+03.5	1098+00	::B & ℄		262
I-22	Subbase	C.Y.	1096+03.5	1098+00	::B & ℄		41

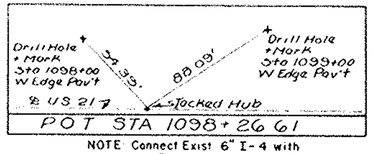
Δ Under Pavement Or Approaches
1.7 S.Y. Of Sod Included For Construction Of Type 6 Gutter.

LINE SHEET STA. 1086 TO STA. 1098+00

FED RD DIVISION	STATE	PROJECT	
2	OHIO		

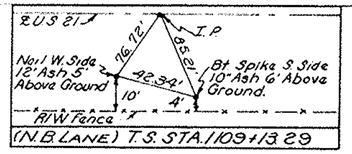
44

STA. 21-1149
WAY. 21-0.00
SUM. 21-0.00

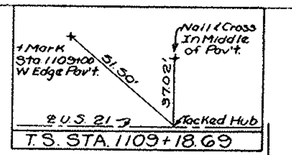


POT STA 1098+26.61

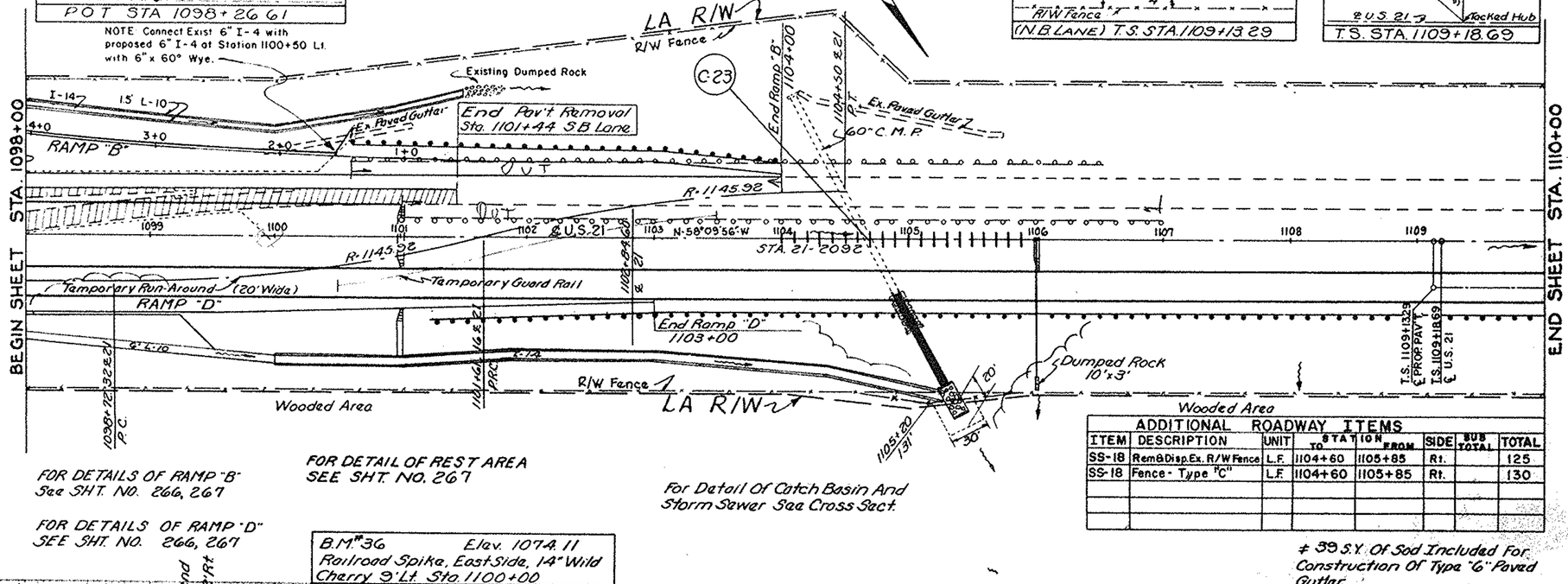
NOTE Connect Exist 6" I-4 with proposed 6" I-4 at Station 1100+50 Lt. with 6" x 60° Wye.



(N.B. LANE) T.S. STA. 1109+13.29



T.S. STA. 1109+18.69



FOR DETAILS OF RAMP "B" See SHT. NO. 266, 267

FOR DETAILS OF RAMP "D" SEE SHT. NO. 266, 267

FOR DETAIL OF REST AREA SEE SHT. NO. 267

For Detail Of Catch Basin And Storm Sewer See Cross Sect.

B.M. #36 Elev. 1074.11
Railroad Spike, East Side, 14" Wild Cherry 9' Lt. Sta. 1100+00

ADDITIONAL ROADWAY ITEMS

ITEM	DESCRIPTION	UNIT	STATION TO	STATION FROM	SIDE	SUB TOTAL	TOTAL
SS-18	Rem & Disp. Ex. R/W Fence	L.F.	1104+60	1105+85	Rt.		125
SS-18	Fence - Type "C"	L.F.	1104+60	1105+85	Rt.		130

39 S.Y. Of Sod Included For Construction Of Type "6" Paved Gutter.

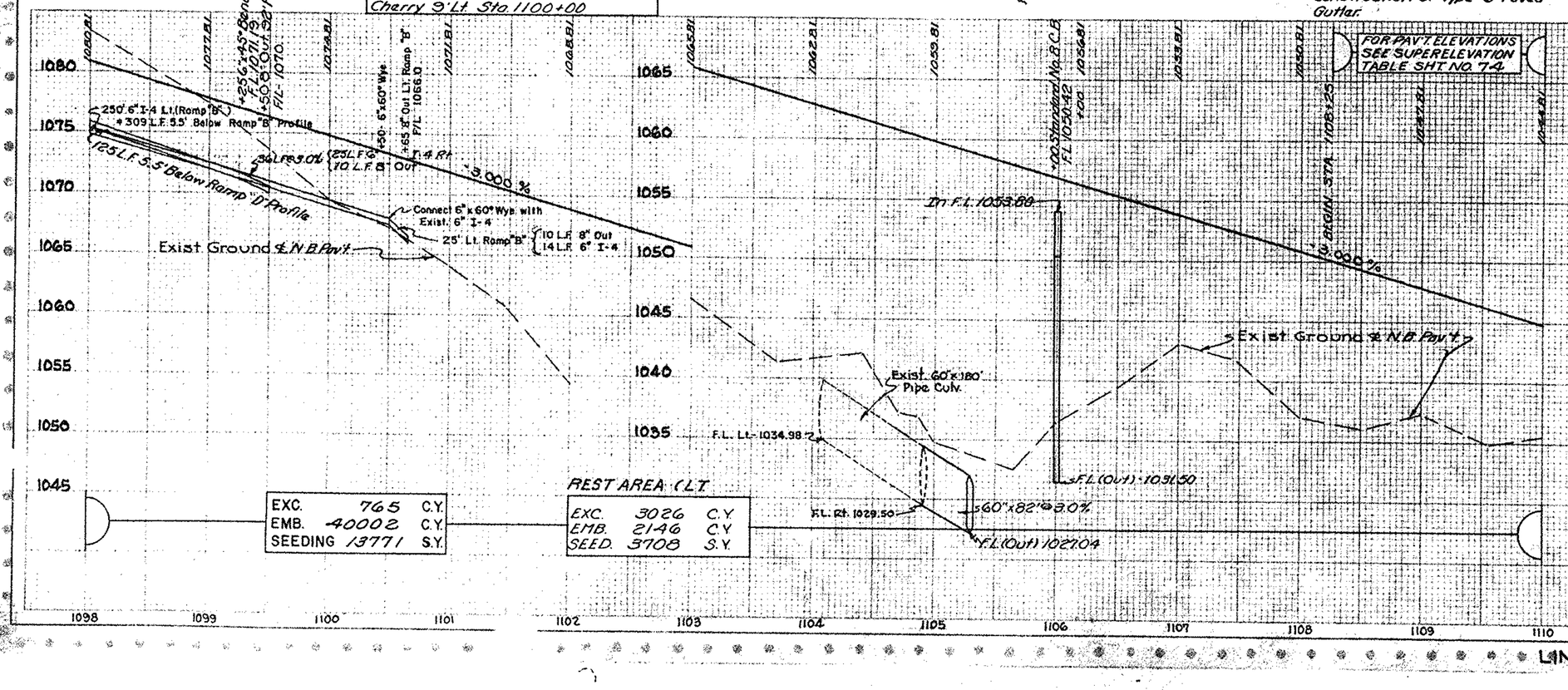
ESTIMATED QUANTITIES

Item	Description	Unit	STATION From	STATION To	Side	Sub Total	Total
	Roadway						
L-10	Sodding	S.Y.	1098+00	1101+50	Rt.	113	
			1099+00	1100+00	Rt.	144	
L-10	Sod Strip	S.Y.	1103+00	1103+25	Rt.	13	480 #
			1104+00	1108+00	Rt.	53	
I-15	G.R. Rem. & Rebuilt	L.F.	1101+00	1107+00	Lt.	600	
I-15	" " " "	L.F.	1100+62.5	1104+00	Lt.	3375	9375
I-15	G.R. Steel Beam (Deep)	L.F.	1101+25	1110+00	Rt.	875	
I-15'	" " " "	L.F.	1100+62.5	1104+00	Lt.	3375	12125
E-8	Rem. & Disp. Exist. Curb	L.F.	1098+00	1099+07			214
E-8	Rem. & Disp. Exist. Pav't.	S.Y.	1098+00	1101+44	Lt.		572
E-8	Rem. & Disp. Ex. Pav't. Gutter	L.F.	1099+90	1101+10	Lt.		120
	Drainage						
I-24	15" S.S.M-65(b)-M-6.8(b)	L.F.	1106+00		Rt.		66
I-2	15" S.S M-64(c)	L.F.	1106+00		Rt.		46
I-4	6" Underdrain	L.F.	1098+00	1099+50	Rt.	150	
I-4	" "	L.F.	1098+00	1100+65	Lt.	263	413
I-4	8" Outlet	L.F.	1099+50	1100+65	R&L		20
I-5	6"x 60° Wye	Ea.	1100+50		Lt.		1
I-5	6"x 45° Bend	Ea.	1099+25				
I-5	15"x 30° Bend M-6.4(c)	Ea.	1106+00		Rt.		2
I-8	Std. No. 8 C.B.	Ea.	1106+00		℄		1
I-10	Dumped Rock Rip Rap	C.Y.	1106+00		Rt.		5
I-14	Paved Gutter Type 1	L.F.	1100+00	1105+25	Rt.	525	
I-14	" " " "	L.F.	1098+00	1101+50	Lt.	355	880
I-14	Paved Gutter Type 6	L.F.	1101+00	1106+00	L&R		32
I-71	9" Rein. Conc. Pav't.	S.Y.	1098+00	1101+44	SB Pav't		459
I-22	Subbase	C.Y.	1098+00	1101+44	S.B. Pav't		7.5

△ Under Pavement Or Approaches

STRUCTURES 20' SPAN & UNDER

Mark	Station	Type	Size	REMK
C-23	1104+66	Std. Pipe Culvert Exten. M-6.4(a)	60" x 82"	256



EXC.	765	C.Y.
EMB.	40002	C.Y.
SEEDING	13771	S.Y.

REST AREA ℄ L T

EXC.	3026	C.Y.
EMB.	2146	C.Y.
SEED.	3708	S.Y.

LINE SHEET STA. 1098+00 TO STA. 1110+00

FED. RD DIVISION	STATE	PROJECT		
2	OHIO			

45

STA. 21-11.49
WAY. 21-0.00
SUM. 21-0.00

Drill Hole + Mark Sta 1112+00 W Edge Pav't — 38.35' — 96°77' — + Mark S to 1113+00 W Edge Pav't
IP
℄ U.S. 21
S.C. STA 1112+18.69

BEGIN SHEET STA. 1110+00

LA R/W
R/W FENCE
C-24
360" C.M.P.
C-25
EXIST. PAVED GUTTER
5'-98" C.M.P.
EXIST PAVED GUTTER
℄ U.S. 21
STA. 21-2112
STA. 21-2116
1111 1112 1113 1114 1115 1116 1117 1118 1119 1120 1121
S.C. 1112+13.28 ℄ Prop. Pav't
S.C. 1112+18.69 ℄ US 21
R/W FENCE
Wooded Area
30'
15'
20'
40'
1:5 1:1.0
NOTE: For Detail Of Catch Basin and Storm Sewer See Cross Sects.
7% 2.76
LA R/W
END SHEET STA. 1122+00

ESTIMATED QUANTITIES

Item	Description	Unit	STATION From	STATION To	Side	Sub Total	Total
	Roadway						
I-15	G.R. Rem. & Rebuilt	L.F.	1114+1479	1118+00	Lt.		387.50
I+15	G.R. Steel Beam (Deep)	L.F.	1114+00	1117+50	Rt.	350	350.00
L-10	Sodding (7' Wide)	S.Y.	1118+00	1122+00	Rt.	311	
L-10	Sod Strip	S.Y.	1115+80	1116+50	℄	106	
L-10	Sod Strip (1.5' Wide)	S.Y.	1116+60	1118+00	Rt	46	463
	Drainage						
I-24	15" SS M-6.5(b)-M-6.8(b)	L.F.	1115+50	1117+00	Rt.	88 50	138
I-4	6" Underdrain (Deep)	L.F.	1117+60	1117+85	Rt.	24	
I-4	" " "	L.F.	1117+85	1122+00	Rt.	414	438
I-4	8" Outlet	L.F.	1117+60		Rt.		10
I-2	15" SS M-6.4(c)	L.F.	1116+50		Rt.		44
I-5	6" x 45° Bend	Ea.	1117+75		Rt.		1
I-5	15" x 30° Bend M-6.4(c)	Ea.	1116+50		Rt.		2
I-8	Std. No. 8 C.B.	Ea.	1117+60		℄	1	
I-8	Std. No. 8 C.B.	Ea.	1116+50		℄	1	2
I-14	Paved Gutter Type I	L.F.	1116+69	1118+00	Rt.		140

Δ Under Pavement Or Approaches

STRUCTURES 20' SPAN & UNDER

Mark	Station	Type	Size	Page
C-24	1115+35	Std. Pipe Culvert Exten. M-6.4 (g)	60" x 68'	296
C-25	1117+33	Std. Pipe Culvert Exten. M-6.4 (d)	48" x 90'	297

B.M. "37" Elev. 1042.43
+ Mark West Edge Pav't
S.B. Lane Sta. 1111+00

Drill Hole — 50.45' — Drill Hole + Mark Sta 1112+00 W. Edge Pav't — 95.22' — 86°78' — I.P.
℄ U.S. 21
(N.B. Lane) S.C. Sta. 1112+13.29

FOR PAV'T ELEVATIONS SEE SUPERELEVATION TABLES SHT. NO. 74

P.C. 1110+50
E.L. 1043.31

P.I. 1114+50
E.L. 1031.31 Corr +3.505
V.C. 800'

P.T. 1118+50
E.L. 1033.39

-3.00% +0.208%
+0.595%

To F.L. 1029.21
To F.L. 1029.29
77 @ 1.0% = 76 L.F. 18" ± 2 ILA
1 @ 11.6 L.F. 6" CMP ± 5° Below Right Edge N.A. Pavement Δ
F.L. (Out) 1025.60
22 @ L.F. 6" ± 10 L.F. 8" Out ± 35° @ 0.5%
F.L. EL. 1017.00
F.L. EL. 1012.30
F.L. (Out) 1009.80
F.L. EL. 1007.60
F.L. (Out) 1007.02
F.L. (Out) 1005.31

Existing Ground ℄ M.B. Pav't

EXC.	5897	C.Y.
EMB.	21909	C.Y.
SEEDING	12564	S.Y.

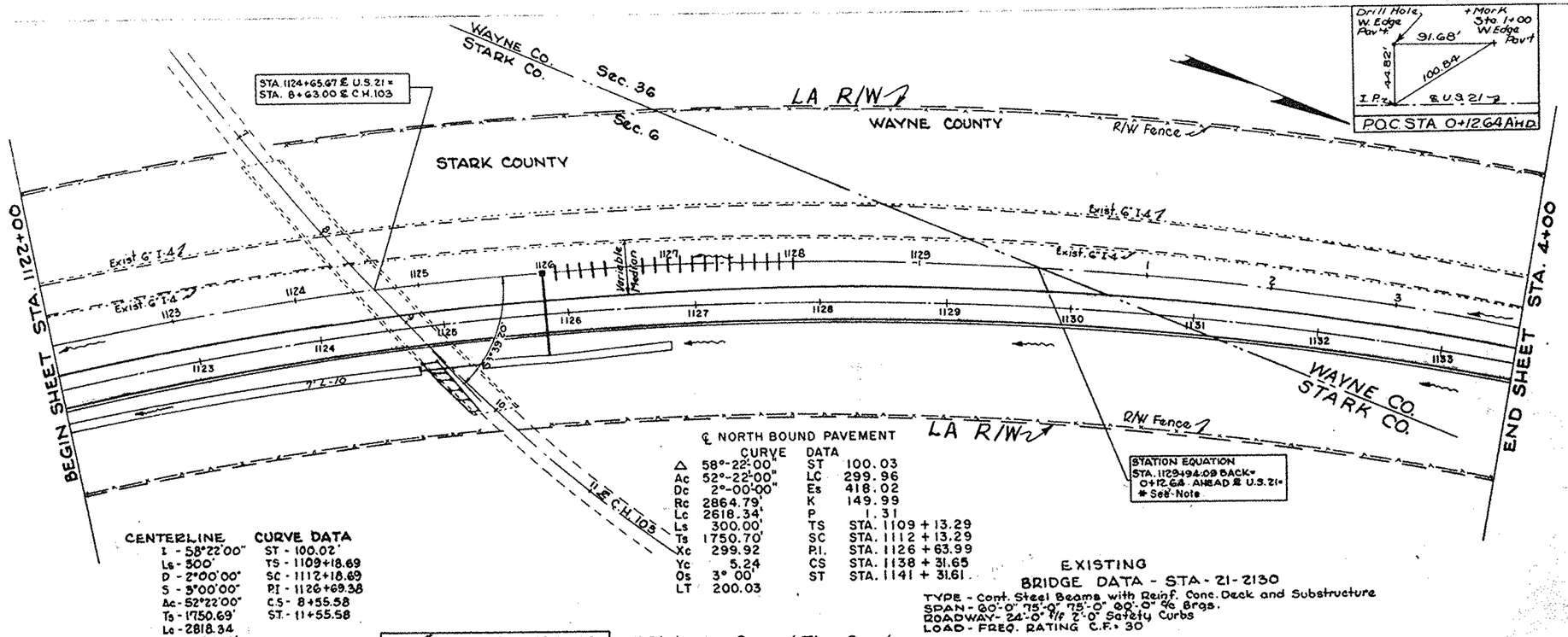
1110 1111 1112 1113 1114 1115 1116 1117 1118 1119 1120 1121 1122

℄ LINE "SHEET" STA. 1110+00 TO STA. 1122+00

FED. RD DIVISION	STATE	PROJECT		
2	OHIO			

46

STA. 21-11.49
WAY. 21-0.00
SUM. 21-0.00



ESTIMATED QUANTITIES

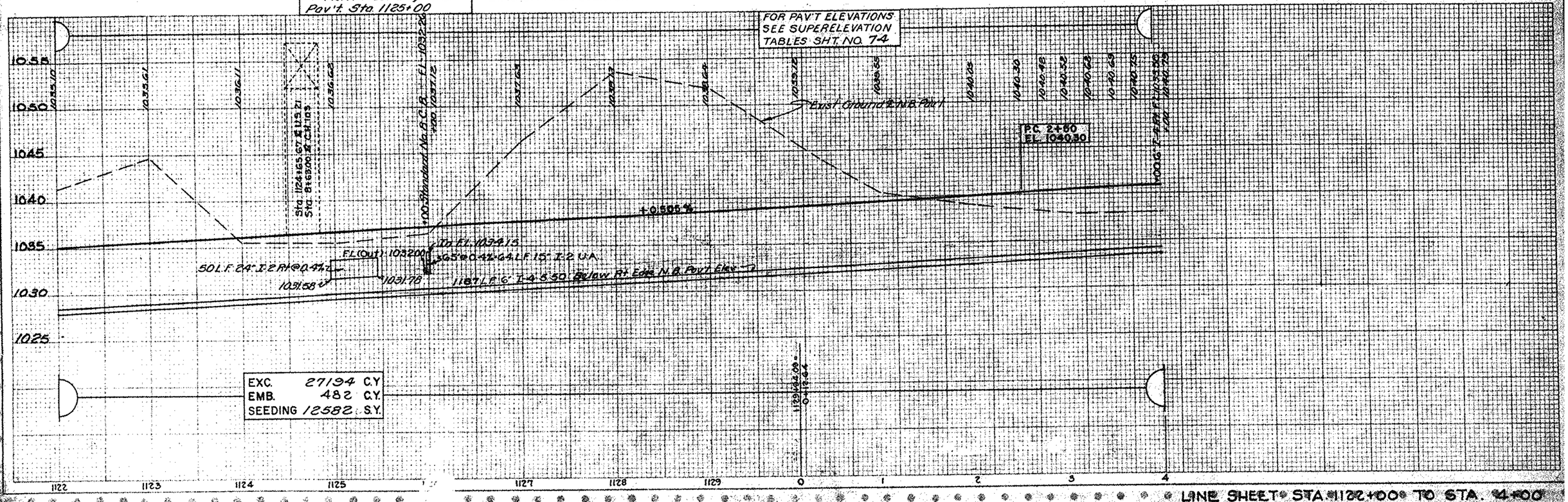
Item	Description	Unit	STATION From	STATION To	Side	Sub Total	Total
	Roadway						
L-10	Sodding (7' Wide)	S.Y.	1122+00	1127+00	Rt.	350	
L-10	Sod Strip	S.Y.	1126+00	1128+00	℄	53	403
L-10	Spec. Berm & Slope Prot.	S.Y.	1125+00		Rt.		49
	Drainage						
I-2Δ	15"S.S.M-6.5(b)-M-6.8(b)	L.F.	1126+00		Rt.		64
I-2	24"S.S.M-6.6(a)-M-6.8(b)	L.F.	1124+95	1125+45	Rt.		50
I-4	6" Underdrain (Deep)	L.F.	1122+00	4+00	Rt.		1187
I-8	Std. No. 8 C.B.	Ea.	1126+00		℄		1

Δ Under Pavement Or Approaches

EXISTING
BRIDGE DATA - STA - 21-2130
TYPE - Cont. Steel Beams with Reinf. Conc. Deck and Substructure
SPAN - 80'-0" 115'-0" 75'-0" 80'-0" ℄ Brgs.
ROADWAY - 24'-0" f/f 2'-0" Safety Curbs
LOAD - FREQ. RATING C.F. = 30

B.M. 38 Elev. 1037.86
"+" Mark West Edge S.B. Pav't Sta. 1125+00

*Stationing Carried Thru County Line On N.B. Pavement



EXC.	27194 C.Y.
EMB.	482 C.Y.
SEEDING	12582 S.Y.

LANE SHEET - STA 1122+00 TO STA. 4+00

FED. RD. DIVISION	STATE	PROJECT		
2	OHIO			

47

STA. 21 - 11.49
WAY. 21 - 0.00
SUM. 21 - 0.00

Drill Hole
+ Mark Sta 8+0 W. Edge Pav't
101.35'
69° 44'
+ Mark Sta 9+00 W. Edge Pav't
IP
℄ U.S. 21
(N.B. LANE) C.S. STA. 1138+31.63

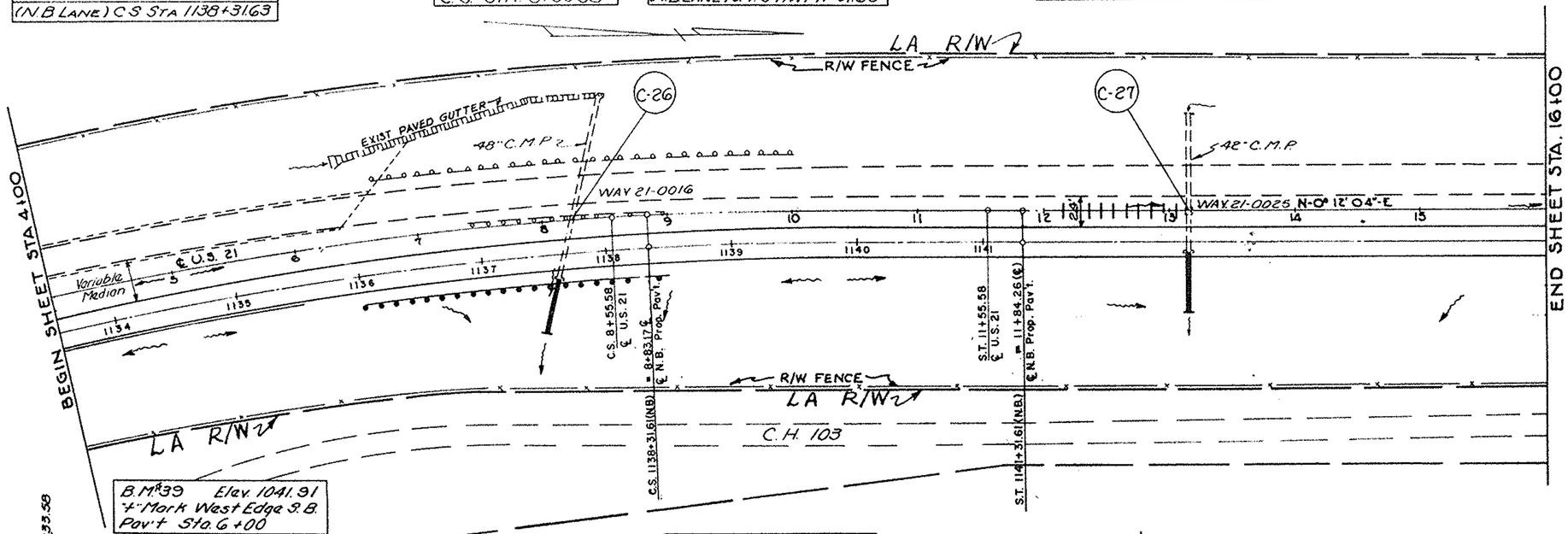
Drill Hole
+ Mark Sta 8+00 W. Edge Pav't
64.34'
68° 56'
+ Mark Sta 9+00 W. Edge Pav't
IP
℄ U.S. 21
C.S. STA. 8+55.58

Drill Hole
+ Mark Sta 11+00 W. Edge Pav't
92.84'
61° 37'
+ Mark Sta. 12+00 W. Edge Pav't
IP
℄ U.S. 21
(N.B. LANE) S.T. STA. 1141+31.63

Drill Hole
+ Mark Sta. 11+00 W. Edge Pav't
53° 43'
56.74'
+ Mark Sta 12+00 W. Edge Pav't
IP
℄ U.S. 21
S.T. STA. 11+55.58

STRUCTURES 20' SPAN & UNDER				
Mark	Station	Type	Size	Detail Sheet
C-26	8+23	Std. Pipe Culvert Exten. M 6.4 (d)	48" x 46'	297
C-27	13+15	Std. Pipe Culvert Exten. M 6.4 (d)	42" x 52'	298

ESTIMATED QUANTITIES							
Item	Description	Unit	STATION From	STATION To	Side	Sub Total	Total
	Roadway						
L-10	Sod Strip	S.Y.	12+15	13+15	℄		10
I-15	G.R. Rem. & Rebuilt	L.F.	7+45	8+95	Lt.		150
I-15	G.R. Steel Beam (Deep)	L.F.	6+50	9+00	Rt.		250
	Drainage						
I-4	6" Underdrain	L.F.	4+00	6+00	Rt.		200

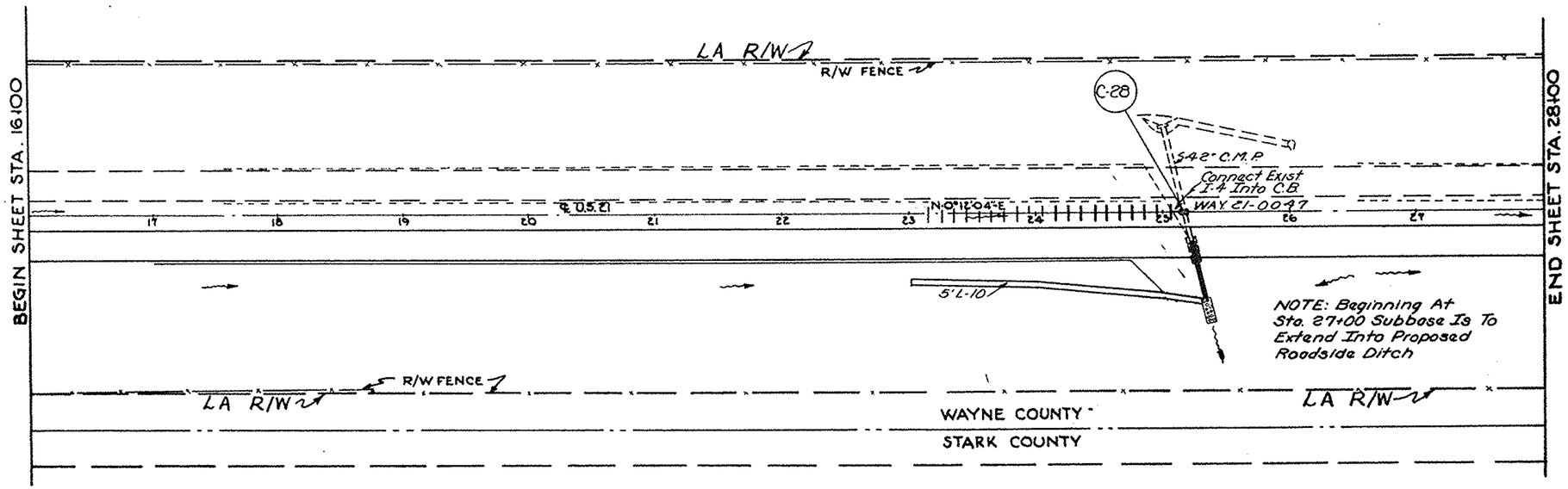


LINE SHEET STA. 4+00 TO STA. 16+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

48

STA. 21-11.49
WAY. 21-0.00
SUM. 21-0.00

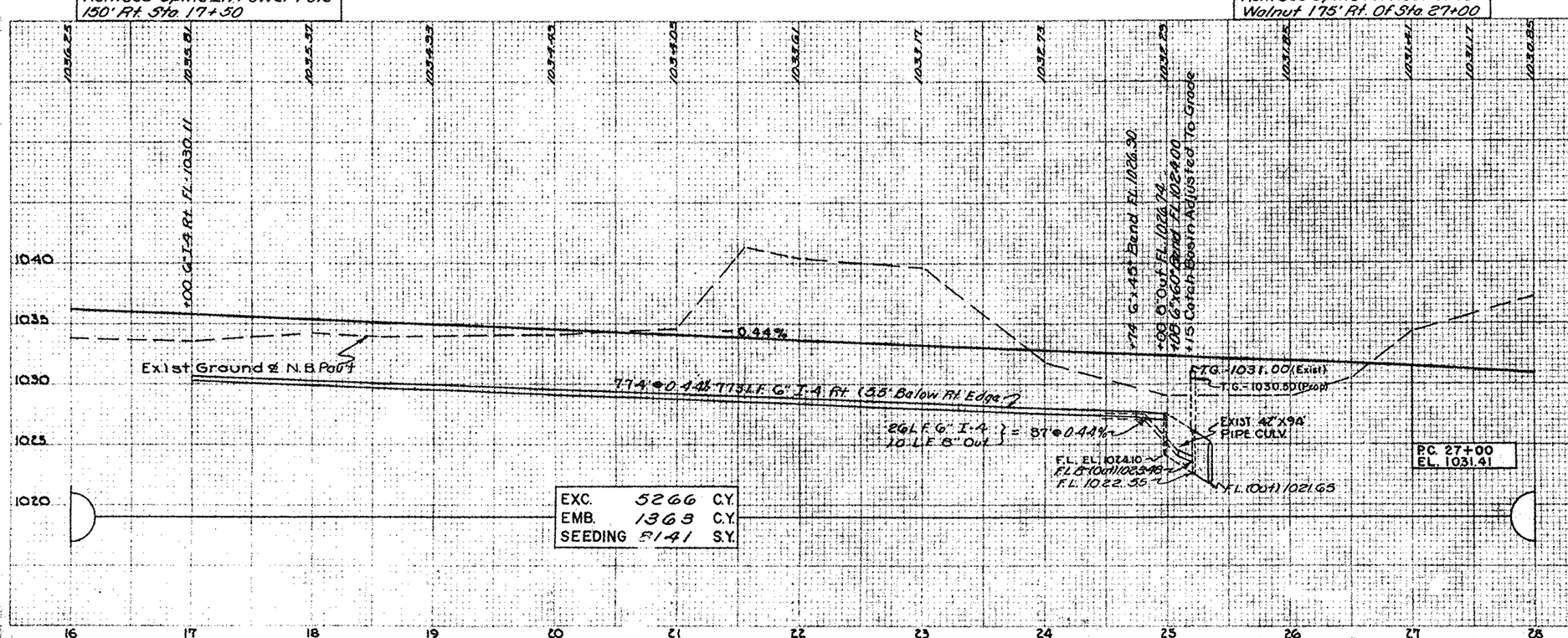


STRUCTURES 20' SPAN & UNDER				
Mark	Station	Type	Size	Detail Sheet
C-28	25 + 15	Std. Pipe Culvert Exten. M6.4(d)	42" x 44'	298

ESTIMATED QUANTITIES							
Item	Description	Unit	STATION From	STATION To	Side	Sub. Total	Total
	Roadway						
L-10	Sod Strip	S.Y.	23 + 15	25 + 15	℄	20	
L-10	Sodding 5' Wide	S.Y.	23+00	25+30	Rt.	128	148
	Drainage						
I-5	6" x 60° Bend	Ea.	25+08		℄		1
I-4	6" Underdrain	L.F.	17+00	24+74	Rt.	773	
I-4	" "	L.F.	24+74	25+00	Rt.	26	799
I-5	6" x 45° Bend	Ea.	24+74		Rt.		1
I-4	8" Outlet	L.F.	24+74	25+00	Rt.	10	
I-4	8" Outlet	L.F.	25+08		Rt.	6	16
I-8	Catch Basin Adjusted	Ea.	25+15		℄		1

B.M. # 40 Elev. 1039.77
Railroad Spike In Power Pole
150' Rt. Sta. 17+50

B.M. # 41 Elev. 1024.03
Railroad Spike In Root Of 18"
Walnut 175' Rt. Of Sta. 27+00



EXC.	5266	C.Y.
EMB.	1363	C.Y.
SEEDING	8141	S.Y.

LINE SHEET STA 16+00 TO STA 28+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

49

STA. 21-11.49
WAY. 21-0.00
SUM. 21-0.00

Drill Hole + Mark Sta 30+00
Drill Hole W. Edge Pav't
39.27'
35.00'
53.07'
Tacked Hub ℄ U.S. 21
P.O.T. STA. 29+98.54

LA R/W

NOTE: Sod Strips In Median Thru Rock Cut (Sta. 27+00 - 40+00) May Be Non-Performed If In The Opinion Of The Engineer The Rock Will Withstand The Expected Velocities.

NOTE: Use Sod Strips 6'x 1.5' Wide. Sta. 36+00 To Sta. 37+00.

BEGIN SHEET STA. 28+00

END SHEET STA. 40+00

℄ U.S. 21

N 0°12'04" E

NOTE: Paved Gutter is to be constructed at the direction of the Engineer.

Wooded Area

Rock Wall

℄ STARK CO. Section - 36 Section - 6 WAYNE CO. Section - 36 Section - 30 ℄ SUMMIT CO.

STARK CO. SUMMIT CO.

NOTE: Sta 39+25 End Subbase Extending Into Proposed Ditch.

B.M.#42 Elev. 1014.49
"+" Mark Stamped W. Side S.B. Lane Of Conc. Pav't Sta 39+00

Ex/st Ground ± N.B. Pav't

-0.440% ▼ -3.000%

N.P.S.D. - .955
P.S.D. - 1500

300' Structure No. BC-35 EL. 1016.16

Fin. El. 1014.92

P.I. 38+00
EL. 1027.89 Corr. -5.120'
V.C. 1600'

-3.000% 0.4% 34 L.F. IS 1.2 U.A.

Fil. (Out) 1014.94

EXC. 33134 C.Y.
EMB. 561 C.Y.
SEEDING 11137 S.Y.

ESTIMATED QUANTITIES

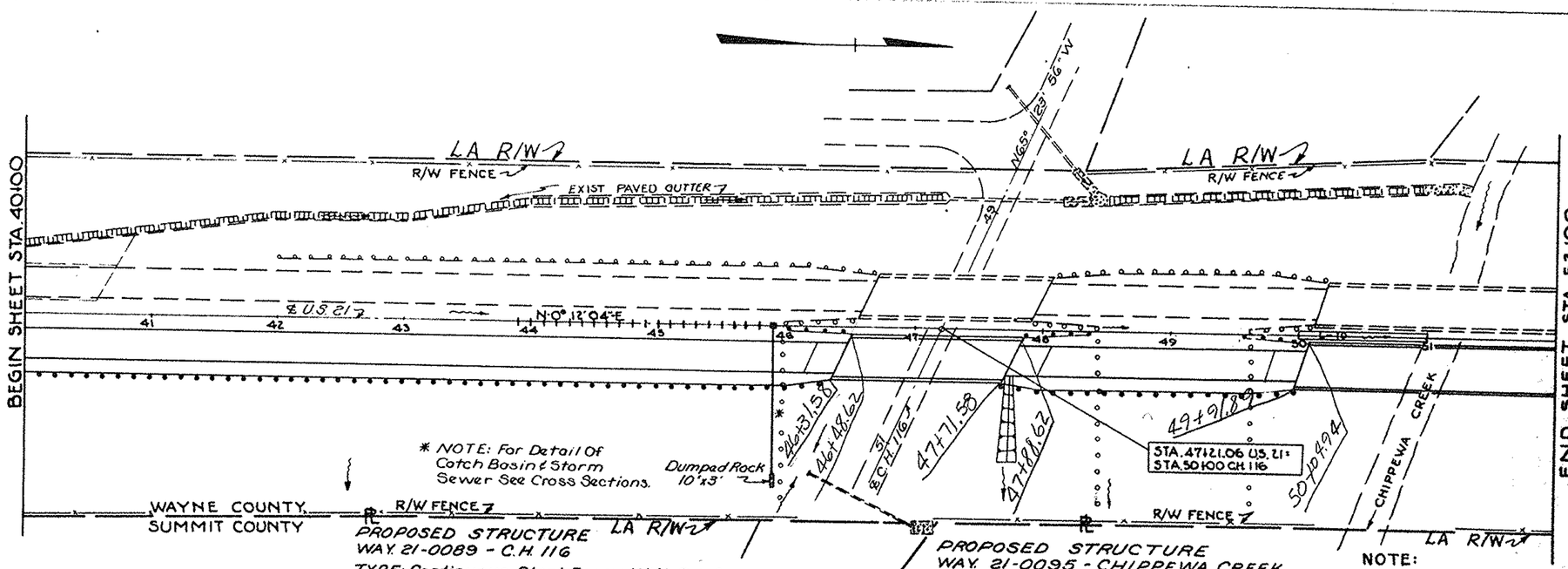
Item	Description	Unit	STATION From	STATION To	Side	Sub Total	Total
	Roadway						
L-10	Sod Strip	S.Y.	38+46	39+50	Rt.	37	
L-10	" "	S.Y.	35+00	37+00	℄	20	57
I-15	G.R. Steel Beam (Deep)	L.F.	39+30	40+00	Rt.		70
	Drainage						
I-24	15" S.S.M. 6.5(b)-M.6.8(b)	L.F.	37+00		Rt.		54
I-8	Std. No. 8 C.B.	Ea.	37+00		℄		1
I-14	Paved Gutter Type I	L.F.	38+46	39+50	Rt.		110

△ Under Pavement Or Approaches

LINE SHEET STA. 28+00 TO STA. 40+00

FED. RD DIVISION	STATE	PROJECT		60
2	OHIO			

STA. 21-11.49
WAY. 21-0.00
SUM. 21-0.00



PROPOSED STRUCTURE
WAY. 21-0089 - C.H. 116
TYPE: Continuous Steel Beams With Reinf. Concrete Deck And Substructure.
SPANS: 40'-50'-40' c/c Brgs.
ROADWAY: 30' Face To Face Of 2'-3" Safety Curbs
LOAD FREQUENCY: C.F. = 2000 (57)
SKEW: 24° 32' 30" L.F.
WEARING SURFACE: 1" Monolithic Concrete
APPROACH SLABS: As-1-54 (25' Long)
ALIGNMENT: Tangent

PROPOSED STRUCTURE
WAY. 21-0095 - CHIPPEWA CREEK
TYPE: Continuous Steel Girders With Reinf. Concrete Deck And Substructure.
SPANS: 76'-95'-76' c/c Brgs.
LOAD FREQUENCY: C.F. = 2000 (57)
ROADWAY: 30'-0" f/f 2'-3" Safety Curbs
SKEW: 20° Left Forward
WEARING SURFACE: 1" Monolithic Concrete
APPROACH SLABS: As-1-57 (25' Long)
ALIGNMENT: Tangent

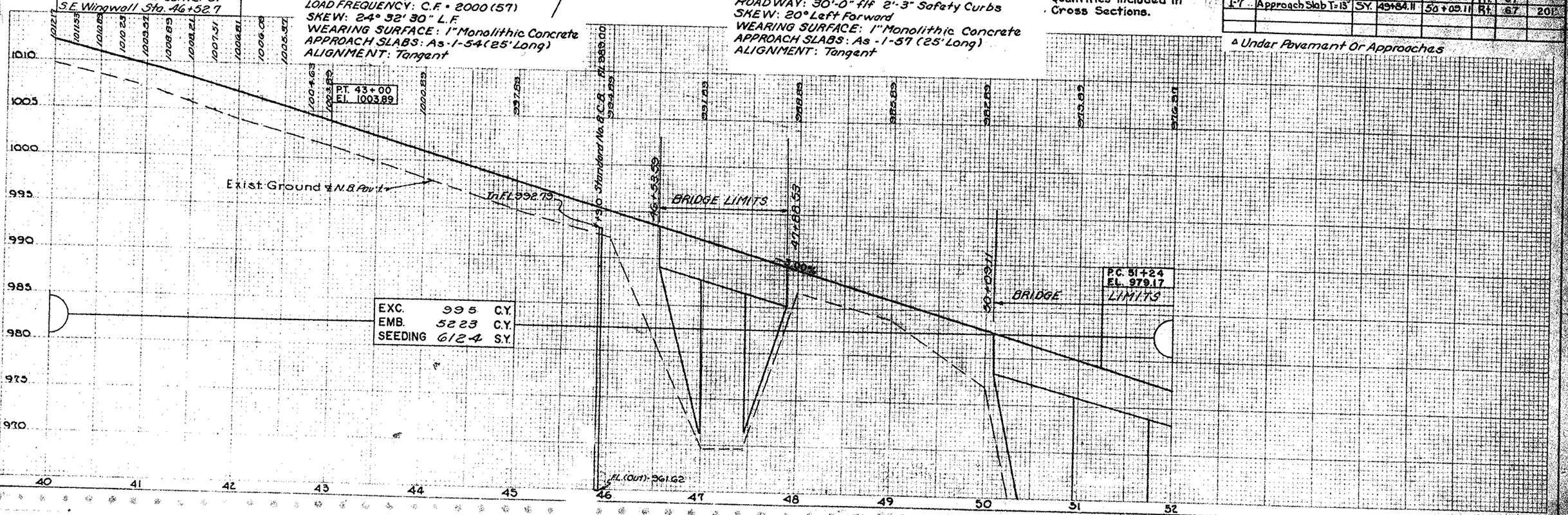
NOTE:
See Site Plan for Benching Procedure for Proposed Structure WAY 21-0095.
Quantities included in Cross Sections.

ESTIMATED QUANTITIES

Item	Description	Unit	STATION From	STATION To	Side	Sub. Total	Total
	Roadway						
I-15	G.R. Steel Beam (Deep)	L.F.	40+00	46+30	Rt.	630	
I-15	" " " "	L.F.	46+95	46+45	Rt.	50	
I-15	" " " "	L.F.	47+88	48+38	Rt.	50	
I-15	" " " "	L.F.	47+74.5	49+87	Rt.	212.5	
I-15	" " " "	L.F.	49+52	50+02	Rt.	50	992.5
I-15	Wood Post Rem. & Disp.	Ea.	46+00		Rt.	12	
I-15	" " " "	Ea.	48+45		Rt.	12	
I-15	" " " "	Ea.	49+57		Rt.	12	36
L-10	Sod Strip	S.Y.	43+90	45+90	℄	20	
L-10	Sod (5' Wide)	S.Y.	50+00	51+00	℄	56	76
L-10	Spec. Bern & Slope Prot.	S.Y.	47+74		105 Rt.		87
	Drainage						
I-24	15" S.S. M-65(b)-M-68(b)	L.F.	45+90		Rt.	146	46
I-2	15" S.S M-64 (c)	L.F.	45+90		Rt.		75
I-5	15" x 30° Bend M-64(c)	Ea.	45+90		Rt.	2	2
I-8	Std. No. 8 C.B.	Ea.	45+90		℄		11
I-10	Dumped Rock (d=2.5')	C.Y.	45+90		Rt.		5
	PAVEMENT						
I-7	Approach Slab T=15"	S.Y.	46+28.59	46+55.59	Rt.	67	
I-7	Approach Slab T=13"	S.Y.	47+88.53	48+15.53	Rt.	67	
I-7	Approach Slab T=15"	S.Y.	49+84.11	50+09.11	Rt.	67	201

△ Under Pavement Or Approaches

B.M.# 43 Elev. 993.71
Drill Hole In S.E. Corner Of S.E. Wingwall Sta. 46+52.7



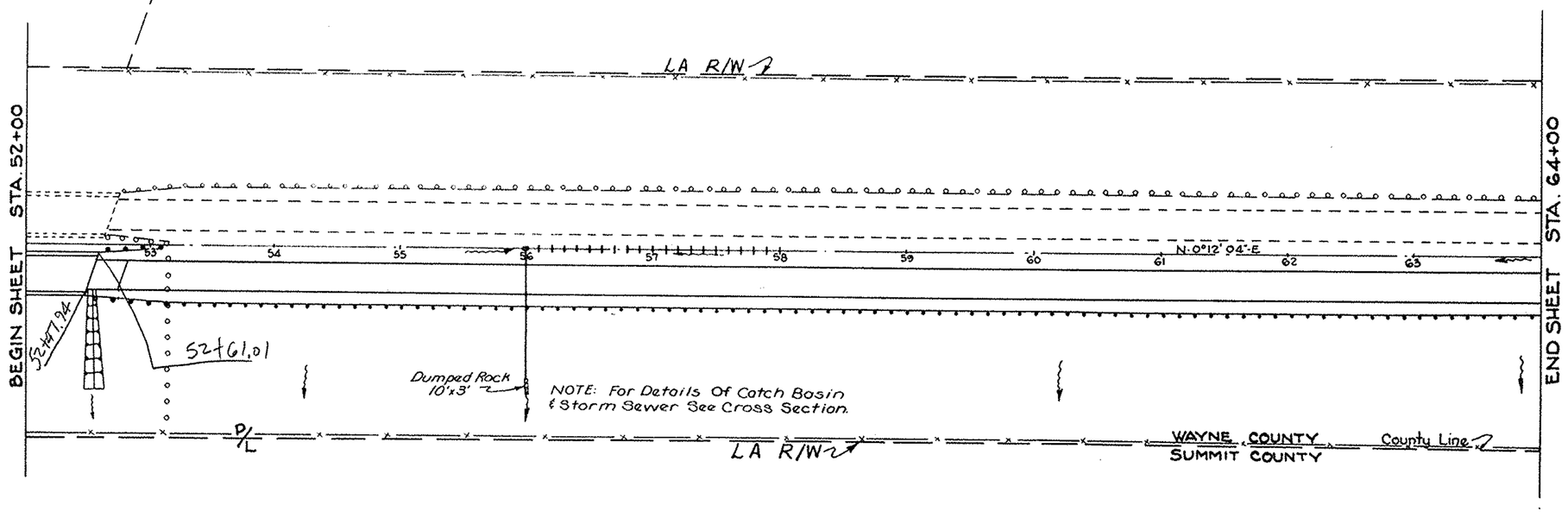
EXC.	995	C.Y.
EMB.	5223	C.Y.
SEEDING	6124	S.Y.

LINE SHEET STA. 40100 TO STA. 52100

FED. RD DIVISION	STATE	PROJECT		
2	OHIO			

51

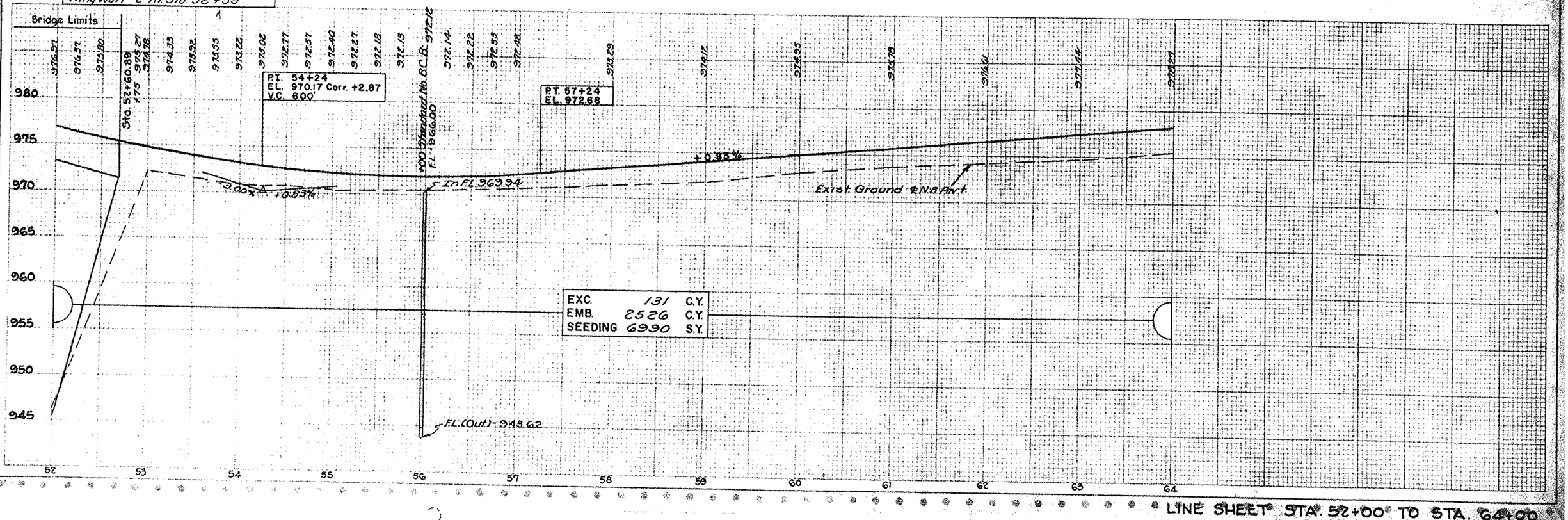
STA. 21-1149
WAY. 21-0.00
SUM. 21-0.00



ESTIMATED QUANTITIES

Item	Description	Unit	STATION From	STATION To	Side	Sub Total	Total
	Roadway						
I-15	G.R. Steel Beam (Deep)	L.F.	52+49	64+00	Rt.	1151	
I-15	" " " "	L.F.	52+64	53+14	Rt.	50	1201
I-15	Wood Post Rem. & Disp.	Ea.	53+19.17		Rt.		12
L-10	Sod Strip	S.Y.	56+00	58+00	℄		20
L-10	Spec. Berm & Slope Prot.	S.Y.	52+49		115' Rt.		104
	Drainage						
I-2 Δ	15" S.S. M-6.5(b)-M-6.8(b)	L.F.	56+00		Rt.		48
I-2	15" S.S. M-64(c)	L.F.	56+00		Rt.		58
I-5	15" x 30" Bend M-64(c)	Ea.	56+00		Rt.		2
I-8	Std. No. 8 C.B.	Ea.	56+00		℄		1
I-10	Dumped Rock (d=2.5')	C.Y.	56+00		Rt.		3
	PAVEMENT						
I-7	Approach Slab T=13"	SY	52+60.89	52+85.89	Rt.		67

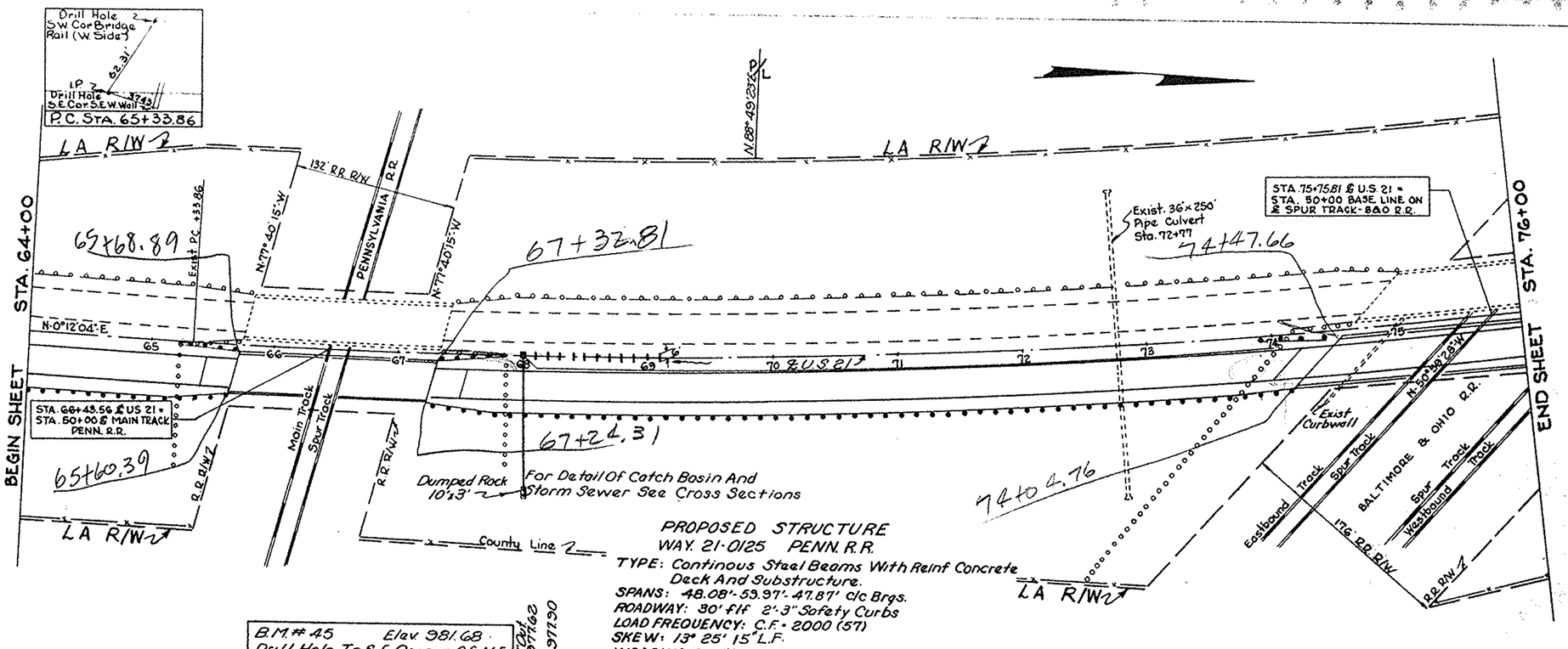
Δ Under Pavement Or Approaches



LINE SHEET STA. 52+00 TO STA. 64+00

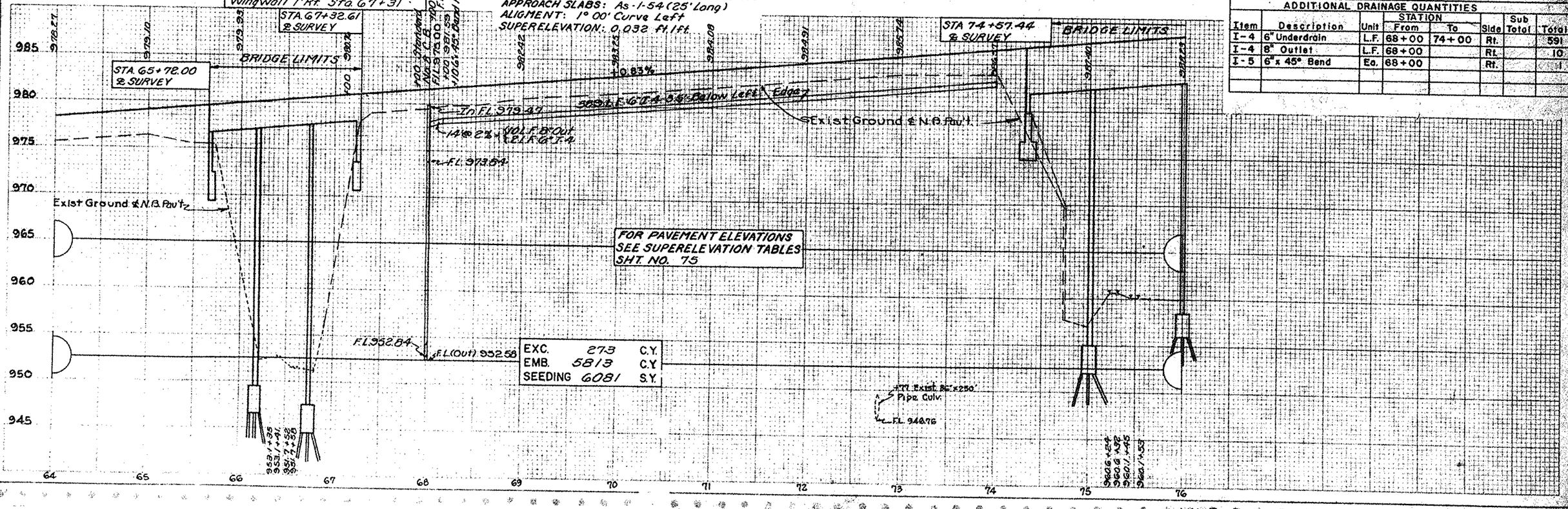
FED. RD DIVISION	STATE	PROJECT		52
2	OHIO			

STA. 21-1149
WAY. 21-0.00
SUM. 21-0.00



PROPOSED STRUCTURE
WAY. 21-0125 PENN. R.R.

TYPE: Continous Steel Beams With Reinf Concrete Deck And Substructure.
SPANS: 48.08'-53.97'-47.87' c/c Brgs.
ROADWAY: 30' f/f 2'-3" Safety Curbs
LOAD FREQUENCY: C.F. - 2000 (57)
SKEW: 13° 25' 15" L.F.
WEARING SURFACE: 1" Monolithic Concrete
APPROACH SLABS: As-1-54 (25' Long)
ALIGMENT: 1° 00' Curve Left
SUPERELEVATION: 0.032 ft./ft.



EXC.	273	C.Y.
EMB.	5813	C.Y.
SEEDING	6081	S.Y.

ESTIMATED QUANTITIES

Item	Description	Unit	STATION From	STATION To	Side	Sub Total	Total
	Roadway						
L-10	Sod Strip	S.Y.	68+00	69+00			10
I-15	G.R. Steel Beam (Deep)	L.F.	64+00	65+61.5	Rt.	161.5	
I-15	" " " "	L.F.	65+17	65+67	Rt.	50	
I-15	" " " "	L.F.	67+29	73+99	Rt.	675	
I-15	" " " "	L.F.	67+35	67+85	Rt.	50	
I-15	" " " "	L.F.	73+90	74+40	Rt.	50	986.5
I-15	Wood Posts Rem. & Disp.	Ea.	65+19		Rt.	12	
I-15	Wood Posts Rem. & Disp.	Ea.	67+90		Rt.	12	
I-15	" " " "	Ea.	73+85	74+17	Rt.	34	58
						67	
	Drainage						
I-24	15" S.S. M-6.5(b)-M-8.8(b)	L.F.	68+00		Rt.		56
I-2	15" S.S. M-6.4(c)	L.F.	68+00		Rt.		52
I-5	15" x 30° Bend M-6.4(c)	Ea.	68+00		Rt.		2
I-8	Std. No. 8 C.B.	Ea.	67+90		℄		1
I-10	Dumped Rock (d=2.5)	C.Y.	67+90		Rt.		3
	PAVEMENT						
I-7	Approach Slab T-15	S.Y.	65+47.66	65+77.06	Rt.	67	
I-7	Approach Slab T-15	S.Y.	67+32.41	67+57.61	Rt.	67	
I-7	Approach Slab T-15	S.Y.	74+32.49	74+57.46	Rt.	67	201

Δ Under Pavament Or Approaches

ADDITIONAL DRAINAGE QUANTITIES

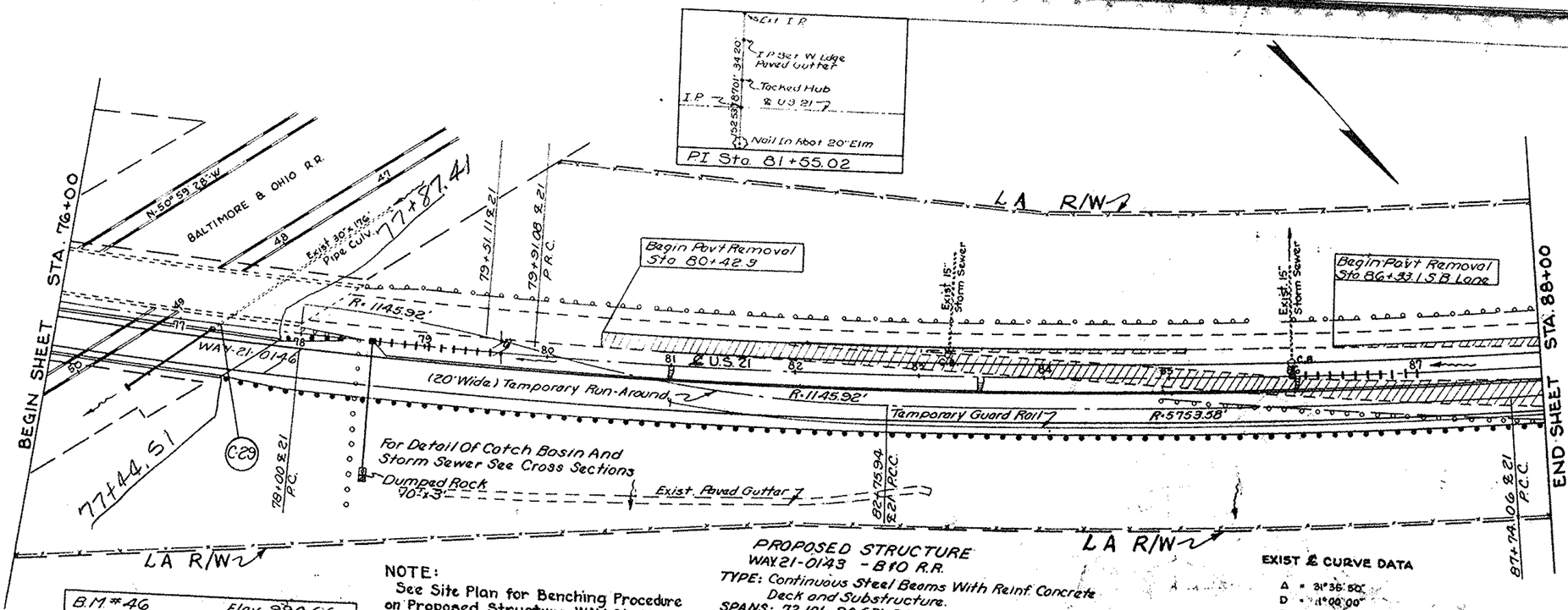
Item	Description	Unit	STATION From	STATION To	Side	Sub Total	Total
I-4	6" Underdrain	L.F.	68+00	74+00	Rt.		591
I-4	8" Outlet	L.F.	68+00		Rt.		10
I-5	6" x 45° Bend	Ea.	68+00		Rt.		1

LINE SHEET STA. 64+00 TO STA. 76+00

FED. AID DIVISION	STATE	PROJECT	
2	OHIO		

53

STA. 21 - 11.49
WAY. 21 - 0.00
SUM. 21 - 0.00



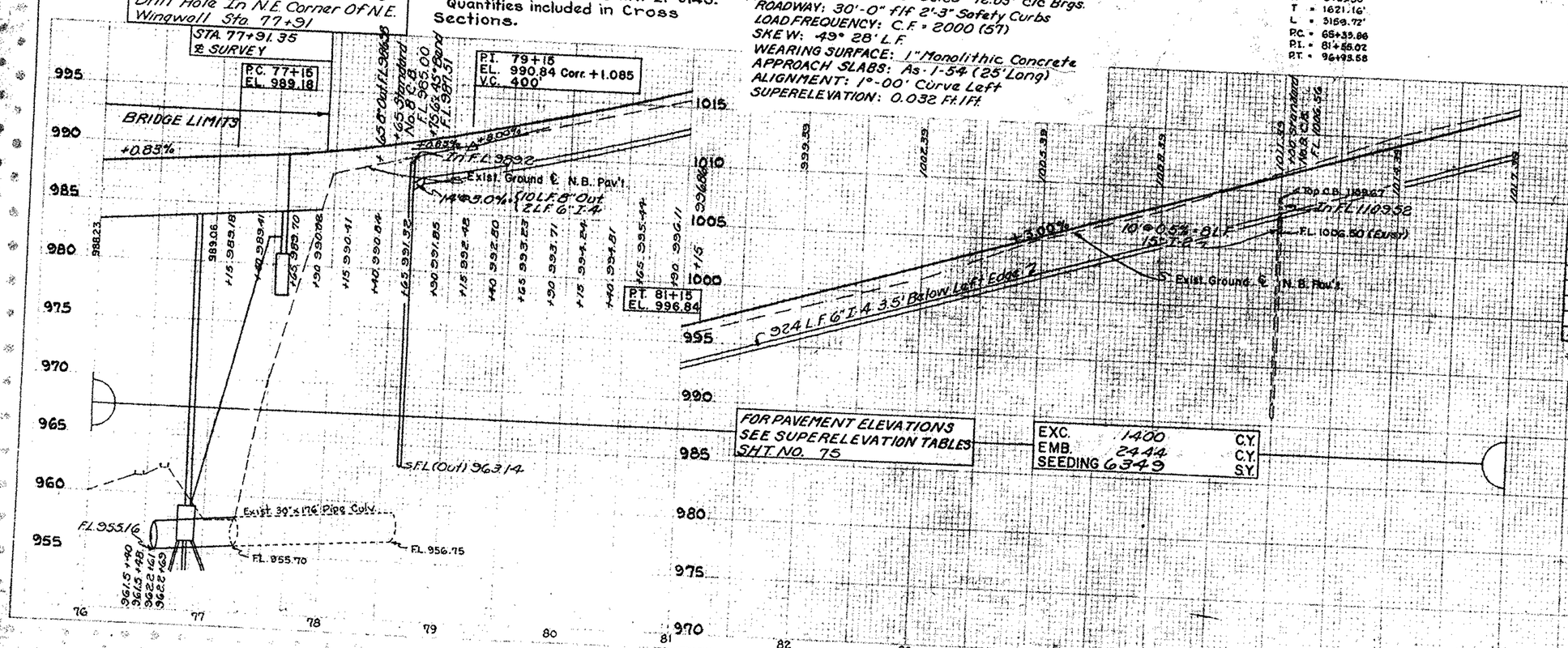
B.M.#46 Elev. 990.66
Drill Hole In N.E. Corner Of N.E. Wingwall Sta. 77+91

NOTE:
See Site Plan for Benching Procedure on Proposed Structure WAY 21-0143. Quantities included in Cross Sections.

PROPOSED STRUCTURE
WAY 21-0143 - B&O R.R.

TYPE: Continuous Steel Beams With Reinf. Concrete Deck and Substructure.
SPANS: 72.10'- 90.63'- 90.29'- 78.03' c/c Brgs.
ROADWAY: 30'-0" f/f 2'-3" Safety Curbs
LOAD FREQUENCY: C.F. = 2000 (57)
SKEW: 49° 28' L.F.
WEARING SURFACE: 1" Monolithic Concrete
APPROACH SLABS: As-1-54 (25' Long)
ALIGNMENT: 1°-00' Curve Left
SUPERELEVATION: 0.032 Ft./Ft.

EXIST & CURVE DATA
Δ = 31°36.50'
D = 1°00.00'
R = 5729.58'
T = 1621.16'
L = 3159.72'
P.C. = 65+35.86
P.I. = 81+55.02
P.T. = 96+93.58


STA. 77+91.35 ℄ SURVEY
P.C. 77+15 EL. 989.18
P.I. 79+15 EL. 990.84 Corr. +1.085 V.C. 400'
P.T. 81+15 EL. 996.84
BRIDGE LIMITS
+0.85%
-3.00%
65' Out. EL. 993.38
+65 Standard No. 8 C.B. EL. 965.00
+15 6"x45° Bend EL. 987.51
IN F.L. 989.2
Exist. Ground ℄ N.B. Pav't
140 @ 9.0% - 510 L.F. 8" Out
2 L.F. 6" I.A.
S.F.L. (Out) 963.14
Exist. 39"x176' Pipe Culv.
FL. 955.16
FL. 955.70
FL. 956.75
+65 395.44
+90 396.11
+15 395.54
+40 394.51
+15 394.24
+30 393.71
+15 393.23
+40 392.80
+65 392.45
+30 391.85
+15 391.32
+40 390.84
+65 390.41
+15 390.07
+30 389.78
+40 389.41
+65 389.06
+15 388.78
388.23
Top C.B. 1003.67
IN F.L. 1001.32
F.L. 1000.50 (Exist.)
Exist. Ground ℄ N.B. Pav't
℄ 324 L.F. 6" I.A. 3.5' Below Left Edge 2
10 @ 0.5% - 51 L.F.
15" I.A.
1002.33
1003.33
1004.33
1005.33
1006.33
1007.33
1008.33
1009.33
1010.33
1011.33
1012.33
1013.33
1014.33
1015.33
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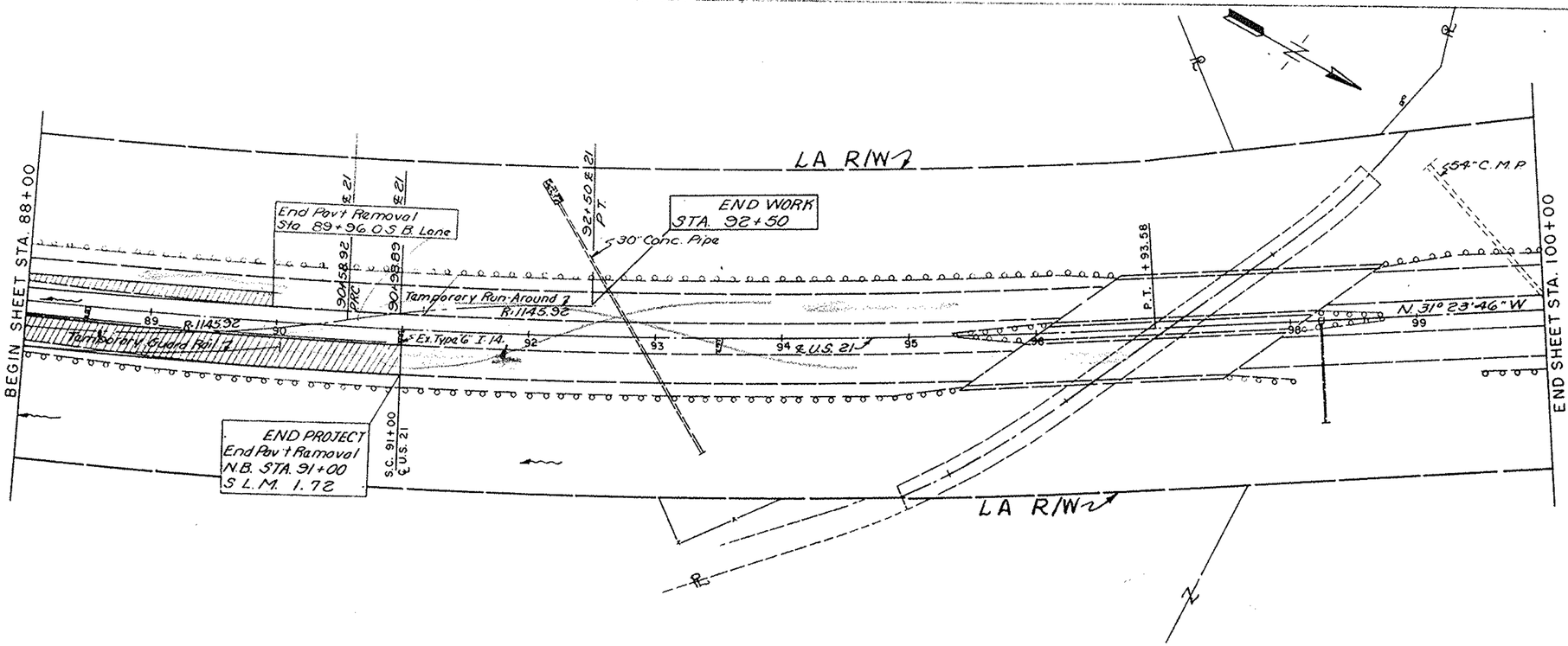
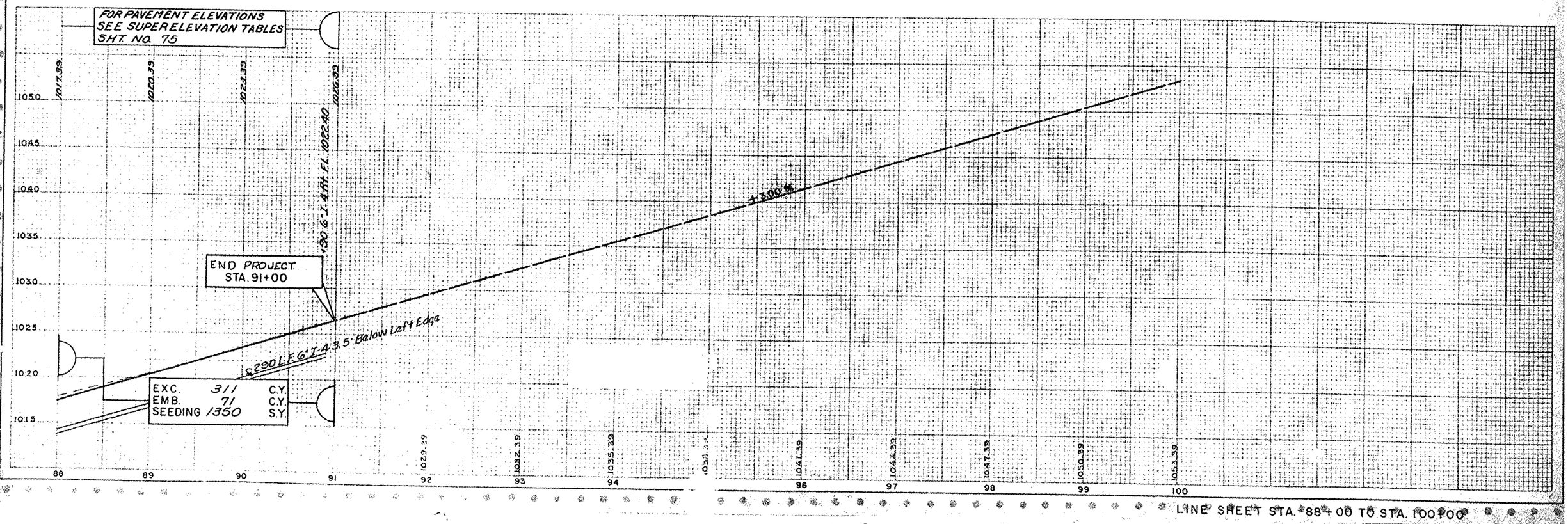
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

54

STA. 21-1149
WAY. 21-0.00
SUM. 21-0.00



ESTIMATED QUANTITIES							
			STATION			Sub	
Item	Description	Unit	From	To	Side	Total	Total
	Roadway						
E-8	Exist. Pav't. Rem.	S.Y.	88+00	89+96	S.B.	196	
E-8	" " "	S.Y.	88+00	91+00	N.B.	750	946
	Pavement						
T-71	9" Reinf. Conc. Pav't.	S.Y.	88+00	89+96	S.B.		262
I-22	Subbase	C.Y.	88+00	89+96	S.B.		41
	Drainage						
I-4	6" Underdrain	L.F.	88+00	90+90	Rt.		290



LINE SHEET STA. 88+00 TO STA. 100+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

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STA-21-1149
WAY-21-0.00
SUM-21-0.00

SUPERELEVATION TABLES

* U. S. 21 NORTH BOUND
P.I. STA. 628 + 64.57

	STATION	NORMAL PROFILE GRADE	LEFT +OR -FROM PROFILE	LEFT ELEVATION LEFT EDGE	CENTERLINE +OR -FROM PROFILE	CENTERLINE ELEVATION ACTUAL ℄	RIGHT +OR -FROM PROFILE	RIGHT ELEVATION RIGHT EDGE
	606+50	940.80	0	940.80	-0.60	940.20	-1.20	939.60
	+75	940.59	|	940.59	|	939.99	|	939.39
	607+00	940.39	|	↑	|	939.79	|	939.19
	+25	940.19	|	|	|	939.59	|	938.99
	+50	939.98	|	|	|	939.38	|	938.78
	+75	39.77	|	|	|	939.17	|	938.57
	608+00	39.57	|	|	|	938.97	|	938.37
	+25	39.36	|	|	|	938.76	|	937.16
	+50	39.15	|	|	|	938.55	↓	937.95
	+75	38.94	|	|	-0.60	938.34	-1.20	937.74
C.S.	609+00.16	938.74	|	|	-0.59	938.15	-1.18	937.56
	609+30.16	38.49	|	|	-0.54	37.95	-1.08	37.41
	+60.16	38.24	|	|	-0.48	37.76	-0.96	37.28
	+90.16	37.99	|	|	-0.42	37.57	-0.84	37.15
	610+20.16	37.75	|	|	-0.36	37.39	-0.72	37.03
	+50.16	37.50	|	|	-0.30	37.20	-0.60	36.90
	+80.16	37.25	|	|	-0.24	37.01	-0.48	36.77
	611+10.16	37.00	|	|	-0.18	36.82	-0.36	36.64
	+40.16	36.76	|	|	-0.12	36.64	-0.24	36.52
	+70.16	36.51	|	|	-0.06	36.45	-0.12	36.39
S.T. (Bk)	612+00.16		|	|	|	|	|	|
(Ah)	612+25.69	936.26	|	|	0.00	936.26	0.00	936.26
	+50	936.11	|	|	+0.07	36.18	+0.15	36.26
	+75	36.05	|	↓	+0.15	36.20	+0.30	36.35
* T.S.	612+99.78	936.10	|	936.10	+0.19	936.29	+0.38	936.48
	613+29.78	36.29	|	936.29	+0.19	936.48	+0.38	936.67
	+59.78	36.53	|	36.53	+0.19	36.72	+0.38	36.91
	+89.78	36.77	|	36.77	+0.20	36.97	+0.39	37.16
	614+19.78	37.01	|	37.01	+0.23	37.24	+0.47	37.48
	+49.78	37.25	|	37.25	+0.29	37.54	+0.59	37.84
	+79.78	37.49	|	37.49	+0.35	37.84	+0.71	38.20
	615+09.78	37.73	|	37.73	+0.41	38.14	+0.82	38.55
	+39.78	37.97	|	37.97	+0.47	38.44	+0.94	38.91
	+69.78	38.21	|	38.21	+0.53	38.74	+1.06	39.27
S.C.	615+99.78	938.45	|	938.45	+0.58	939.03	+1.15	939.60
	616+00	38.46	|	38.46	+0.59	39.05	+1.18	39.64
	616+25	38.65	|	38.65	|	39.24	|	39.83
	+50	38.85	|	38.85	|	39.44	|	40.03
	+75	39.05	|	39.05	|	39.64	|	40.23
	617+00	39.25	|	39.25	|	39.84	|	40.43
	+25	39.45	|	39.45	|	40.04	|	40.63
	+50	39.65	|	↑	|	40.24	|	40.83
	+75	39.85	|	|	|	40.44	|	41.03
	618+00	40.05	|	|	|	40.64	|	41.23
	+25	40.25	|	|	|	40.84	|	41.43
	+50	40.50	|	|	|	41.09	|	41.68
	+75	40.65	|	|	|	41.24	|	41.83
	619+00	40.85	|	|	|	41.44	|	42.03
	+25	41.05	|	|	|	41.64	|	42.23
	+50	41.25	|	|	|	41.84	|	42.43
	+75	41.45	|	|	|	42.04	|	42.63
	620+00	41.65	|	|	|	42.24	|	42.83
	+25	41.85	|	|	|	42.44	|	43.03
	+50	42.05	|	|	|	42.64	|	43.23
	+75	42.25	|	|	|	42.84	|	43.43
	621+00	42.45	|	|	|	43.04	|	43.63
	+25	42.65	|	|	|	43.24	|	43.83
	+50	42.85	|	|	|	43.44	|	44.03
	+75	43.05	|	|	|	43.64	|	44.23
	622+00	43.25	↓	↓	↓	43.84	↓	44.43
	+25	43.45	|	Same Elevation as Profile	|	44.04	|	44.63

Same Elevation as Profile

	STATION	NORMAL PROFILE GRADE	LEFT +OR -FROM PROFILE	LEFT ELEVATION LEFT EDGE	CENTERLINE +OR -FROM PROFILE	CENTERLINE ELEVATION ACTUAL ℄	RIGHT +OR -FROM PROFILE	RIGHT ELEVATION RIGHT EDGE
	622+50	943.65	0	943.65	+0.59	944.24	+1.18	944.83
	+75	943.85	|	|	|	44.44	|	45.03
	623+00	44.05	|	|	|	44.64	|	45.23
	+25	44.25	|	|	|	44.84	|	45.43
	+50	44.43	|	|	|	45.02	|	45.61
	+75	44.57	|	|	|	45.16	|	45.75
	624+00	44.66	|	|	|	45.25	|	45.84
	+25	44.72	|	|	|	45.31	|	45.90
	+50	44.73	|	|	|	45.32	|	45.91
	+75	44.71	|	|	|	45.30	|	45.89
	625+00	44.64	|	|	|	45.23	|	45.82
	+25	44.53	|	|	|	45.12	|	45.71
	+50	44.38	|	|	|	44.97	|	45.56
	+75	44.19	|	|	|	44.78	|	45.37
	626+00	43.95	|	|	|	44.54	|	45.13
	+25	43.68	|	|	|	44.27	|	44.86
	+50	43.36	|	|	|	43.95	|	44.54
	+75	43.01	|	|	|	43.60	|	44.19
	627+00	42.61	|	|	|	43.20	|	43.79
	+25	42.17	|	|	|	42.76	|	43.35
	+50	41.71	|	|	|	42.30	|	42.89
	+75	41.25	|	|	|	41.84	|	42.43
	628+00	40.79	|	|	|	41.38	|	41.97
	+25	40.33	|	|	|	40.92	|	41.51
	+50	39.87	|	|	|	40.46	|	41.05
	+75	39.41	|	|	|	40.00	|	40.59
	629+00	38.95	|	|	|	39.54	|	40.13
	+25	38.49	|	|	|	39.08	|	39.67
	+50	38.03	|	|	|	38.62	|	39.21
	+75	37.57	|	|	|	38.16	|	38.75
	630+00	37.11	|	|	|	37.70	|	38.29
	+25	36.65	|	|	|	37.24	|	37.83
	+50	36.19	|	|	|	36.78	|	37.37
	+75	35.73	|	|	|	36.32	|	36.91
	631+00	35.27	|	|	|	35.86	|	36.45
	+25	34.86	|	|	|	35.45	|	36.04
	+50	34.50	|	|	|	35.09	|	35.68
	+75	34.22	|	|	|	34.81	|	35.40
	632+00	33.99	|	|	|	34.58	|	35.17
	+25	33.83	|	|	|	34.42	|	35.01
	+50	33.74	|	|	|	34.33	|	34.92
	+75	33.70	|	|	|	34.29	|	34.88
	633+00	33.74	|	|	|	34.33	|	34.92
	+25	33.83	|	|	|	34.42	|	35.01
	+50	33.99	|	|	|	34.58	|	35.17
	+75	34.21	|	|	|	34.80	|	35.39
	634+00	34.49	|	|	|	35.08	|	35.67
	+25	34.85	|	|	|	35.44	|	36.03
	+50	35.26	|	|	|	35.85	|	36.44
	+75	35.72	|	|	|	36.31	|	36.90
	635+00	36.18	|	|	|	36.77	|	37.36
	+25	36.64	|	|	|	37.23	|	37.82
	+50	37.09	|	|	|	37.68	|	38.27
	+75	37.55	|	|	|	38.14	|	38.73
	636+00	38.01	|	|	|	38.60	|	39.19
	+25	38.47	|	|	|	39.06	|	39.65
	+50	38.93	|	|	|	39.52	|	40.11
	+75	39.39	|	|	|	39.98	|	40.57
	637+00	39.84	|	|	|	40.43	|	41.02
	+25	40.30	↑	|	|	40.89	|	41.48
	+50	40.76	0	|	+0.59	41.35	+1.18	41.94

Same Elevation as Profile

	STATION	NORMAL PROFILE GRADE	LEFT +OR -FROM PROFILE	LEFT ELEVATION LEFT EDGE	CENTERLINE +OR -FROM PROFILE	CENTERLINE ELEVATION ACTUAL ℄	RIGHT +OR -FROM PROFILE	RIGHT ELEVATION RIGHT EDGE
	637+75	941.22	0	|	+0.59	941.81	+1.18	942.40
	638+00	941.68	|	|	|	42.27	|	42.86
	+25	42.14	|	|	|	42.74	|	43.32
	+50	42.60	|	|	|	43.19	|	43.78
	+75	43.05	|	|	|	43.64	|	44.23
	639+00	943.51	|	|	|	44.10	↑	44.69
C.S.	639+12.08	43.73	|	|	+0.59	944.32	+1.18	944.91
	+42.08	44.26	|	|	+0.56	44.82	+1.08	45.34
	+72.08	44.74	|	|	+0.48	45.22	+0.96	45.70
	640+02.08	45.18	|	|	+0.42	45.60	+0.84	46.02
	+32.08	45.58	|	|	+0.36	45.94	+0.72	46.30
	+62.08	45.95	|	|	+0.30	46.25	+0.60	46.55
	+92.08	46.27	|	|	+0.24	46.51	+0.48	46.75
	641+22.08	46.54	|	|	+0.18	46.72	+0.36	46.90
	+52.08	46.77	|	|	+0.12	46.89	+0.24	47.01
	+82.08	46.96	|	|	+0.06	47.02	+0.12	47.08
S.T.	642+12.08	947.10	|	|	+0.00	947.10	+0.00	947.10
	+25	47.16	|	|	-0.03	47.13	-0.06	47.10
	+50	947.23	|	|	-0.06	47.17	-0.13	47.10
	+75	47.29	|	|	-0.10	47.19	-0.19	47.10
	643+00	47.30	|	|	-0.13	47.17	-0.26	47.04
	+25	47.29	|	|	-0.16	47.13	-0.32	46.97
	+50	947.25	|	|	-0.19	47.06	-0.38	46.87

Same Elevation as Profile

PAVEMENT ELEVATIONS FOR SOUTH BOUND LANE STA. 639+00 TO 643+50

	STATION	NORMAL PROFILE GRADE	LEFT * +OR -FROM PROFILE	LEFT * ELEVATION LEFT EDGE	CENTERLINE +OR -FROM PROFILE	CENTERLINE ELEVATION ACTUAL ℄	RIGHT +OR -FROM PROFILE	RIGHT ELEVATION RIGHT EDGE
	639+00	943.51	-1.18	942.33	-0.59	942.92	0	943.51
C.S.	639+12.08	943.73	-1.18	942.55	-0.59	943.14	|	|
	+42.08	44.26	-1.06	43.20	-0.53	43.73	|	|
	+72.08	44.74	-0.04	43.80	-0.47	44.27	|	|
	640+02.08	945.18	-0.82	944.36	-0.41	944.77	|	|
	+32.08	45.58	-0.71	44.87	-0.36	45.22	|	|
	+62.08	45.95	-0.59	45.36	-0.30	45.65	|	|
	+92.08	46.27	-0.47	45.80	-0.24	46.03	|	|
	641+22.08	946.54	-0.38	946.16	-0.19	946.35	|	|
	+52.08	46.77	↑	46.39	↑	46.58	|	|
	+82.08	46.96	|	46.58	|	46.77	|	|
S.T.	642+12.08	947.10	|	946.72	|	946.91	|	|
	+25	47.16	|	46.78	|	46.97	|	|
	+50	47.23	|	46.85	|	47.04	|	|
	+75	47.26	|	46.88	↓	47.07	↑	|
	643+00	947.30	-0.38	946.92	-0.19	947.11	0	947.30

Same Elevation as Profile

* Left Lane for South Bound Pavement Was Constructed Under Another Project.

SUPERELEVATION TABLES

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

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STA. 21 - 11.49
WAY. 21 - 0.00
SUM. 21 - 0.00

U.S. 21 NORTH BOUND
P.I. STA. 729 + 20.24

STATION	NORMAL PROFILE GRADE	LEFT +OR -FROM PROFILE	LEFT ELEVATION LEFT EDGE	CENTERLINE +OR -FROM PROFILE	CENTERLINE ELEVATION ACTUAL ℄	RIGHT +OR -FROM PROFILE	RIGHT ELEVATION RIGHT EDGE
720+50	1075.61	-0.19	1075.42	0	1075.61	-0.19	1075.42
+75	1075.52	-0.13	1075.39		1075.52		1075.33
721+00	1075.42	-0.06	1075.36		1075.42		1075.23
+25	1075.31	-0.00	1075.31		1075.31		1075.12
+50	1075.19	+0.06	1075.25		1075.19		1075.00
+75	1075.05	+0.13	1075.18		1075.05		1074.86
722+00	1074.91	+0.19	1075.10		1074.91		1074.72
+25	1074.75		1074.94		1074.75		1074.56
+50	1074.58		1074.77		1074.58		1074.39
+75	1074.40		1074.59		1074.40		1074.21
723+00	1074.21		1074.40		1074.21		1074.02
+25	1074.01		1074.20		1074.01		1073.82
+50	1073.78		1073.97		1073.78		1073.59
+75	1073.56		1073.75		1073.56		1073.37
724+00	1073.33		1073.52		1073.33		1073.14
+25	1073.08		1073.27		1073.08		1072.89
+50	1072.81		1073.00		1072.81		1072.62
725+00	1072.27		1072.46		1072.27		1072.08
+25	1071.98		1072.17		1071.98		1071.79
+50	1071.71		1072.90		1071.71		1071.52
+75	1071.41		1071.63		1071.44		1071.25
726+00	1071.17		1071.36		1071.17		1070.98
+25	1070.90		1071.09		1070.90		1070.71
+50	1070.62		1070.81		1070.62		1070.43
+75	1070.35		1070.54		1070.35		1070.16
727+00	1070.07		1070.26		1070.07		1069.88
+25	1069.80		1069.99		1069.80		1069.61
+50	1069.52		1069.71		1069.52		1069.33
+75	1069.25		1069.44		1069.25		1069.06
728+00	1068.97		1069.16		1068.97		1068.78
+25	1068.70		1068.89		1068.70		1068.51
+50	1068.42		1068.61		1068.42		1068.23
+75	1068.15		1068.34		1068.15		1067.96
729+00	1067.87		1068.06		1067.87		1067.68
+25	1067.60		1067.79		1067.60		1067.41
+50	1067.32		1067.51		1067.32		1067.13
+75	1067.05		1067.24		1067.05		1066.86
730+00	1066.77		1066.96		1066.77		1066.58
+25	1066.50		1066.69		1066.50		1066.31
+50	1066.22		1066.41		1066.22		1066.03
+75	1065.94		1066.13		1065.94		1066.75
731+00	1065.67		1065.86		1065.67		1065.48
+25	1065.40		1065.59		1065.40		1065.21
+50	1065.12		1065.31		1065.12		1064.93
+75	1064.84		1065.03		1064.84		1064.65
732+00	1064.57		1064.76		1064.57		1064.38
+25	1064.30		1064.49		1064.30		1064.11
+50	1064.02		1064.21		1064.02		1063.83
+75	1063.74		1063.93		1063.74		1063.55
733+00	1063.47		1063.66		1063.47		1063.28
+25	1063.20		1063.39		1063.20		1063.01
+50	1062.92		1063.11		1062.92		1062.73
+75	1062.64		1062.83		1062.64		1062.45
734+00	1062.37		1062.56		1062.37		1062.18
+25	1062.10		1062.29		1062.10		1061.91
+50	1061.82		1062.01		1061.82		1061.63
+75	1061.54		1061.73		1061.54		1061.35
735+00	1061.27		1061.46		1061.27		1061.08
+25	1061.00		1061.19		1061.00		1061.81
+50	1060.72		1060.91		1060.72		1060.53

STATION	NORMAL PROFILE GRADE	LEFT +OR -FROM PROFILE	LEFT ELEVATION LEFT EDGE	CENTERLINE +OR -FROM PROFILE	CENTERLINE ELEVATION ACTUAL ℄	RIGHT +OR -FROM PROFILE	RIGHT ELEVATION RIGHT EDGE
+75	1060.44	-0.19	1060.63	0	1060.44	-0.19	1060.25
736+00	1060.17		1060.36		1060.17		1059.98
+25	1059.90		1060.09		1059.90		1059.71
+50	1059.62		1059.81		1059.62		1059.43
+75	1059.34	+0.19	1059.53		1059.34		1059.15
737+00	1059.07	+0.13	1059.20		1059.07		1058.88
+25	1058.80	+0.06	1058.86		1058.80		1058.61
+50	1058.52	+0.00	1058.52		1058.52		1058.33
+75	1058.25	-0.06	1058.19		1058.25		1058.06
738+00	1057.97	-0.13	1057.84		1057.97		1057.78
+25	1057.70	-0.19	1057.51	0	1057.70	-0.19	1057.51

U.S. 21 NORTH BOUND
P.I. STA. 809 + 41.24

	STATION	NORMAL PROFILE GRADE	LEFT +OR -FROM PROFILE	LEFT ELEVATION LEFT EDGE	CENTERLINE +OR -FROM PROFILE	CENTERLINE ELEVATION ACTUAL ℄	RIGHT +OR -FROM PROFILE	RIGHT ELEVATION RIGHT EDGE
	798+76.75	969.26	-0.19	969.06	0	969.25	-0.19	969.06
	799+01.75	969.36		969.17	0	969.36	-0.13	969.23
	+26.75	969.47		969.28	0	969.47	-0.06	969.41
T.S.	+51.75	969.58		969.39	0	969.58	+0.00	969.58
	+81.75	969.71		969.52	0	969.71	+0.13	967.84
	800+11.75	969.84		969.65	+0.04	969.88	+0.27	970.11
	+41.75	969.98		969.79	+0.11	970.09	+0.40	970.38
	+71.75	970.11		969.92	+0.18	970.29	+0.54	970.65
	801+01.75	970.24		970.05	+0.24	970.48	+0.67	970.91
	+31.75	970.37		970.18	+0.31	970.68	+0.81	971.19
	+16.75	970.50		970.31	+0.38	970.88	+0.94	971.45
	+19.75	970.64		970.45	+0.44	971.08	+1.08	971.72
	802+21.75	970.77		970.58	+0.51	971.28	+1.21	971.99
S.C.	+51.75	970.90		970.71	+0.58	971.48	+1.35	972.25
	803+00	971.11		970.92		971.69		972.46
	804+00	971.55		971.36		972.13		972.90
	805+00	971.99		971.80		972.57		973.34
	806+00	972.43		972.24		973.01		973.78
	807+00	972.87		972.68		973.45		974.22
	808+00	973.31		973.12		973.89		974.66
	809+00	973.75		973.56		974.33		975.15
	810+00	974.19		974.00		974.77		975.54
	811+00	974.63		974.44		975.21		975.98
	812+00	975.07		974.88		975.65		976.42
	813+00	975.51		975.32		976.09		976.86
	814+00	975.95		975.76		976.53		977.30
	815+00	976.39		976.20	+0.58	976.97	+1.35	977.74
C.S.	815+84.25	976.76		976.57	+0.58	977.34	+1.35	978.11
	816+14.25	976.89		976.70	+0.51	977.40	+1.21	978.10
	+44.25	977.02		976.83	+0.44	977.46	+1.08	978.10
	+74.25	977.16		976.97	+0.38	977.54	+0.94	978.10
	817+04.25	977.29		977.10	+0.31	977.60	+0.81	978.10
	+34.25	977.42		977.23	+0.24	977.66	+0.67	978.09
	+64.25	977.55		977.36	+0.18	977.73	+0.54	978.09
	+94.25	977.68		977.49	+0.11	977.79	+0.41	978.09
	818+24.25	977.82		977.63	+0.04	977.86	+0.27	978.09
	+54.25	977.95		977.76	0	977.95	+0.13	978.08
T.S.	+84.25	978.08		977.89	0	978.08	+0.00	978.08
	819+09.25	978.19		978.00	0	978.19	-0.06	978.13
	+34.25	978.30		978.11	0	978.30	-0.13	978.17
	+59.25	978.41	-0.19	978.22	0	978.41	-0.19	978.22

U.S. 21 NORTH BOUND
P.I. STA. 860 + 29.91

	STATION	NORMAL PROFILE GRADE	LEFT +OR -FROM PROFILE	LEFT ELEVATION LEFT EDGE	CENTERLINE +OR -FROM PROFILE	CENTERLINE ELEVATION ACTUAL ℄	RIGHT +OR -FROM PROFILE	RIGHT ELEVATION RIGHT EDGE
	847+33.34	963.53	-0.19	963.34	0	963.53	-0.19	963.34
	+58.34	963.16		962.97	-0.06	963.10	-0.25	962.91
	+83.34	962.80		962.61	-0.13	962.67	-0.32	962.48
T.S.	848+08.34	962.46		962.27	-0.19	962.27	-0.38	962.08
	+38.34	962.06		961.87	-0.33	961.73	-0.52	961.54
	+68.34	961.68		961.49	-0.42	961.26	-0.65	961.03
	+98.34	961.32		961.13	-0.49	960.83	-0.75	960.53
	849+28.34	960.98		960.79	-0.56	960.42	-0.92	960.06
	+58.34	960.66		960.47	-0.63	960.03	-1.06	959.60
	+88.34	960.36		960.17	-0.59	959.57	-1.19	959.17
	850+18.34	960.07		959.88	-0.76	959.31	-1.33	958.74
	+48.34	959.81		959.62	-0.83	958.98	-1.46	958.35
	+78.34	959.56		959.37	-0.89	958.67	-1.60	957.96
S.C.	851+08.34	959.34		959.15	-0.96	958.38	-1.73	957.61
	+25.00	959.22		959.03		958.26		957.49
	+50.00	959.05		958.86		958.09		957.32
	+75.00	958.90		958.71		957.94		957.17
	852+00.00	958.75		958.56		957.79		957.02
	853+00	958.22		958.03		957.26		956.49
	854+00	957.68		957.49		956.72		955.95
	855+00	957.15		956.93		956.19		955.42
	856+00	956.61		956.42		955.65		954.88
	857+00	956.07		955.88		955.11		954.34
	858+00	955.54		955.35		954.58		953.85
	+25	955.41		955.22		954.45		953.68
	+50	955.27		955.08		954.31		953.54
	+75	955.14		954.95		954.18		953.41
	859+00	955.01		954.82		954.05		953.28
	+25	954.88		954.69		953.92		953.15
	+50	954.75		954.56		953.79		953.02
	+75	954.62		954.43		953.66		952.89
	860+00	954.49		954.30		953.53		952.76
	+25	954.36		954.17		953.40		952.63
	+50	954.23		954.04		953.27		952.50
	+75	954.10		953.91		953.14		952.37
	861+00	953.97		953.78		953.01		952.24
	+25	953.85		953.66		952.89		952.12
	+50	953.72		953.53		952.76		951.99
	+75	953.59		953.40		952.63		951.86
	862+00	953.47		953.28		952.51		951.74
	863+00	952.97		952.78		952.01		951.24
	864+00	952.47		952.28		951.51		950.74
	865+00	951.97		951.78		951.01		950.24
	866+00	951.47		951.28		950.51		949.74
	867+00	950.97		950.78		950.01		949.24
	868+00	950.47		950.28		949.51		948.74
C.S.	868+58.34	950.18		949.99	-0.96	949.22	-1.73	948.45
	+88.34	950.03		949.84	-0.89	949.14	-1.60	948.43
	869+18.34	949.88		949.69	-0.83	949.05	-4.46	948.42
	+48.34	949.73		949.54	-0.76	948.97	-1.33	948.40
	+78.34	949.58		949.39	-0.69	948.89	-1.19	948.39
	870+08.34	949.43		949.24	-0.63	948.80	-1.06	948.37
	+38.34	949.28		949.09	-0.56	948.72	-0.92	948.36
	+68.34	949.13		948.94	-0.49	948.64	-0.79	948.34
	+98.34	948.98		948.79	-0.42	948.56	-0.65	948.33
	871+28.34	948.83		948.64	-0.33	948.50	-0.52	948.31
S.T.	+58.34	948.68		948.49	-0.19	948.49	-0.38	948.30
	+83.34	948.56		948.37	-0.13	948.43	-0.32	948.24
	872+08.34	948.43		948.24	-0.06	948.37	-0.25	948.18
	+33.34	948.31	-0.19	948.12	0	948.31	-0.19	948.12

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

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STA-21 - 11.49
WAY-21 - 0.00
SUM-21 - 0.00

SUPERELEVATION TABLES

U.S. 21 NORTH BOUND
P.I. STA. 899 + 72.13

STATION	NORMAL PROFILE GRADE	LEFT +OR - FROM PROFILE	LEFT ELEVATION LEFT EDGE	CENTERLINE +OR - FROM PROFILE	CENTERLINE ELEVATION ACTUAL ℄	RIGHT +OR - FROM PROFILE	RIGHT ELEVATION RIGHT EDGE
878 + 25	948.72	-0.19	948.53	0	948.72	-0.19	948.53
+50	48.97		48.78		48.97	-0.13	48.84
+75	49.22		49.03		49.22	-0.06	49.16
879 + 00	49.47		49.28		49.47	0	49.47
+25	49.72		49.53		49.72	+0.10	49.82
P.C. +50	49.97		49.78	+0.04	50.01	+0.19	50.16
+75	50.22		50.03	+0.05	50.27	+0.29	50.51
880 + 00	50.47		50.28	+0.10	50.57	+0.39	50.86
+25	50.72		50.53		50.82		51.11
+50	50.97		50.78		51.07		51.36
+75	51.22		51.03		51.32		51.61
881 + 00	51.47		51.28		51.57		51.86
+25	51.72		51.53		51.82		52.11
+50	51.97		51.78		52.07		52.36
+75	52.22		52.03		52.32		52.61
882 + 00	52.47		52.28		52.57		52.86
+25	52.72		52.53		52.82		53.11
+50	52.97		52.78		53.07		53.36
+75	53.22		53.03		53.32		53.61
883 + 00	53.47		53.28		53.57		53.86
+25	53.72		53.53		53.82		54.11
+50	53.97		53.78		54.07		54.36
+75	54.22		54.03		54.32		54.61
884 + 00	54.47		54.28		54.57		54.86
+25	54.72		54.53		54.82		55.11
+50	54.97		54.78		55.07		55.36
+75	55.22		55.03		55.32		55.61
885 + 00	55.47		55.28		55.57		55.86
+25	55.72		55.53		55.82		56.11
+50	55.97		55.78		56.07		56.36
+75	56.22		56.03		56.32		56.61
886 + 00	56.47		56.28		56.57		56.86
+25	56.72		56.53		56.82		57.11
+50	56.97		56.78		57.07		57.36
+75	57.22		57.03		57.32		57.61
887 + 00	57.47		57.28		57.57		57.86
+25	57.72		57.53		57.82		58.11
+50	57.97		57.78		58.07		58.36
+75	58.22		58.03		58.32		58.61
888 + 00	58.47		58.28		58.57		58.86
+25	58.72		58.53		58.82		59.11
+50	58.97		58.78		59.07		59.36
+75	59.22		59.03		59.32		59.61
889 + 00	59.47		59.28		59.57		59.86
+25	59.72		59.53		59.82		60.11
+50	59.97		59.78		60.07		60.36
+75	60.22		60.03		60.32		60.61
890 + 00	60.47		60.28		60.57		60.86
+25	60.72		60.53		60.82		61.11
+50	60.97		60.78		61.07		61.36
+75	61.22		61.03		61.32		61.61
891 + 00	61.47		61.28		61.57		61.86
+25	61.72		61.53		61.82		62.11
+50	61.97		61.78		62.07		62.36
+75	62.22		62.03		62.32		62.61
892 + 00	62.47		62.28		62.57		62.86
+25	62.72		62.53		62.82		63.11
+50	62.97		62.78		63.07		63.36
+75	63.22		63.03		63.32		63.61
893 + 00	63.47		63.28		63.57		63.86
893 + 25	963.72	-0.19	963.53	+0.10	963.82	+0.39	964.11

STATION	NORMAL PROFILE GRADE	LEFT +OR - FROM PROFILE	LEFT ELEVATION LEFT EDGE	CENTERLINE +OR - FROM PROFILE	CENTERLINE ELEVATION ACTUAL ℄	RIGHT +OR - FROM PROFILE	RIGHT ELEVATION RIGHT EDGE
893 + 50	963.97	-0.19	963.78	+0.10	964.07	+0.39	964.36
+75	64.22		64.03		64.32		64.61
894 + 00	64.47		64.28		64.57		64.86
+25	64.72		64.53		64.82		65.11
+50	64.97		64.78		65.07		65.36
+75	65.22		65.03		65.32		65.61
895 + 00	65.47		65.28		65.57		65.86
+25	65.72		65.53		65.82		66.11
+50	65.97		65.78		66.07		66.36
+75	66.22		66.03		66.32		66.61
896 + 00	66.47		66.28		66.57		66.86
+25	66.72		66.53		66.82		67.11
+50	66.97		66.78		67.07		67.36
+75	67.22		67.03		67.32		67.61
897 + 00	67.47		67.28		67.57		67.86
+25	67.72		67.53		67.82		67.11
+50	67.97		67.78		68.07		68.36
+75	68.22		68.03		68.32		68.61
898 + 00	68.47		68.28		68.57		68.86
+25	68.72		68.53		68.82		69.11
+50	68.98		68.79		69.08		69.37
+75	69.26		69.07		69.36		69.65
899 + 00	69.56		69.37		69.66		69.95
+25	69.89		69.70		69.99		70.28
+50	70.22		70.03		70.32		70.61
+75	70.59		70.40		70.69		70.98
900 + 00	70.98		70.79		71.08		71.37
+25	71.40		71.21		71.50		71.79
+50	71.88		71.69		71.98		72.27
+75	72.35		72.16		72.45		72.74
901 + 00	72.84		72.65		72.94		73.23
+25	73.35		73.16		73.45		73.74
+50	73.89		73.70		73.99		74.28
+75	74.45		74.26		74.55		74.84
902 + 00	75.03		74.84		75.13		75.42
+25	75.64		75.45		75.74		76.03
+50	76.27		76.08		76.37		76.66
+75	76.90		76.71		77.00		77.29
903 + 00	77.52		77.33		77.62		77.91
+25	78.15		77.96		78.25		78.54
+50	78.77		78.58		78.87		79.16
+75	79.40		79.21		79.50		79.79
904 + 00	80.02		79.83		80.12		80.41
+25	80.65		80.46		80.75		81.04
+50	81.27		81.08		81.37		81.66
+75	81.90		81.71		82.00		82.29
905 + 00	82.52		82.33		82.62		82.91
+25	83.15		82.96		83.25		83.54
+50	83.77		83.58		83.87		84.16
+75	84.40		84.21		84.50		84.79
906 + 00	85.02		84.83		85.12		85.41
+25	85.65		85.46		85.75		86.04
+50	86.27		86.08		86.37		86.66
+75	86.90		86.71		87.00		87.29
907 + 00	87.52		87.33		87.62		87.91
+25	88.15		87.96		88.25		88.54
+50	88.77		88.58		88.87		89.16
+75	89.40		89.21		89.50		89.79
908 + 00	90.02		89.83		90.12		90.41
+25	90.65		90.46		90.75		91.04
+50	991.27	-0.19	991.08	+0.10	991.37	+0.39	991.66

STATION	NORMAL PROFILE GRADE	LEFT +OR - FROM PROFILE	LEFT ELEVATION LEFT EDGE	CENTERLINE +OR - FROM PROFILE	CENTERLINE ELEVATION ACTUAL ℄	RIGHT +OR - FROM PROFILE	RIGHT ELEVATION RIGHT EDGE
908 + 75	991.90	-0.19	991.71	+0.10	992.00	+0.39	992.29
909 + 00	92.52		92.33		92.62		92.91
+25	93.15		92.96		93.25		93.54
+50	93.77		93.58		93.87		94.16
+75	94.40		94.21		94.50		94.79
910 + 00	95.02		94.83		95.12		95.41
+25	95.65		95.46		95.75		96.04
+50	96.27		96.08		96.37		96.66
+75	96.90		96.71		97.00		97.29
911 + 00	97.52		97.33		97.62		97.91
+25	98.14		97.95		98.24		98.53
+50	98.77		98.58		98.87		99.16
+75	99.40		99.21		99.50		99.79
912 + 00	1000.02		99.83		1000.12		1000.41
+25	00.64		1000.45		00.74		01.03
+50	01.27		01.08		01.37		01.66
+75	01.90		01.71		02.00		02.29
913 + 00	02.52		02.33		02.62		02.91
+25	03.14		02.95		03.24		03.53
+50	03.77		03.58		03.87		04.16
+75	04.40		04.21		04.50		04.79
914 + 00	05.02		04.83		05.12		05.41
+25	05.64		05.45		05.74		06.03
+50	06.27		06.08		06.37		06.66
+75	06.90		06.71		07.00		07.29
915 + 00	07.52		07.33		07.62		07.91
+25	08.14		07.95		08.24		08.53
+50	08.77		08.58		08.87		09.16
915 + 56.1	908.92	-0.19	908.73	+0.10	909.02	+0.39	909.31

U.S. 21 NORTH BOUND
P.I. STA. 315 + 24.08 (BK.)

STATION	NORMAL PROFILE GRADE	LEFT +OR - FROM PROFILE	LEFT ELEVATION LEFT EDGE	CENTERLINE +OR - FROM PROFILE	CENTERLINE ELEVATION ACTUAL ℄	RIGHT +OR - FROM PROFILE	RIGHT ELEVATION RIGHT EDGE
306 + 75	1179.25	-0.19	1179.06	0	1179.25	-0.19	1179.06
307 + 00	78.97	-0.13	78.84		78.97		78.78
+25	78.69	-0.06	78.63		78.69		78.50
+50	78.48	0	78.42		78.42		78.23
+75	78.15	+0.10	78.25		78.15		77.96
308 + 00	77.86	+0.19	78.05		77.86		77.67
P.C. 308+00.39	1177.86	+0.19	1178.05	+0.04	1177.86		1177.67
+25	77.58	+0.29	77.87	+0.05	77.58		77.39
+50	77.30	+0.39	77.69	+0.10	77.40		77.11
+75	77.02		77.41		77.12		76.83
309 + 00	76.75		77.14		76.85		76.56
+25	76.47		76.86		76.57		76.28
+50	76.19		76.58		76.29		76.00
+75	75.91		76.30		76.11		75.72
310 + 00	75.63		76.02		75.73		75.44
+25	75.35		75.74		75.45		75.16
+50	75.08		75.47		75.18		74.89
+75	74.80		75.19		74.90		74.61
311 + 00	74.52		74.91		74.62		74.33
+25	74.24		74.63		74.34		74.05
+50	73.96		74.35		74.16		73.77
+75	73.69		74.08		73.79		73.50
311+78.96 Bk.	73.65		74.04		73.75		73.46
0+00 Ah.							
+25	73.37		73.76		73.47		73.18
+50	73.09		73.48		73.19		72.90
+75	72.82		73.21		72.92		72.63
1+00	72.54		72.93		72.64		72.35
+25	72.26		72.65		72.36		72.07
+50	71.98		72.37		72.18		71.79
+75	71.70		72.09		71.80		71.51
2+00	71.43		71.82		71.53		71.24
+25	71.15		71.54		71.25		70.96
#2+45.3	1170.93	+0.39	1171.32	+0.10	1171.13	-0.19	1170.74

*END PROJECT - MEET EXISTING PAVEMENT.

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

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STA. 21 - 11.49
WAY. 21 - 0.00
SUM. 21 - 0.00

SUPERELEVATION TABLES

U.S. 21 NORTH BOUND
P.I. STA. 1047 + 06.02

STATION	NORMAL PROFILE GRADE	LEFT +OR- FROM PROFILE	LEFT ELEVATION LEFT EDGE	CENTERLINE +OR- FROM PROFILE	CENTERLINE ELEVATION ACTUAL ℄	RIGHT +OR- FROM PROFILE	RIGHT ELEVATION RIGHT EDGE
1036+25	1136.81	-0.19	1136.62	0	1136.81	-0.19	1136.62
1036+50	1136.71	"	1136.52	"	1136.71	-0.13	1136.58
1036+75	1136.61	"	1136.42	"	1136.61	-0.06	1136.55
1037+00	1136.51	"	1136.32	"	1136.51	0	1136.51
1037+25	1136.41	"	1136.27	0	1136.41	+0.10	1136.51
1037+50	1136.31	"	1136.12	+0.04	1136.35	+0.19	1136.50
1037+75	1136.21	"	1136.02	+0.05	1136.26	+0.29	1136.50
1038+00	1136.11	"	1135.92	+0.10	1136.21	+0.39	1136.50
1039+00	1135.71	"	1135.52	"	1135.81	"	1136.10
1040+00	1135.31	"	1135.12	"	1135.41	"	1135.70
1041+00	1134.91	"	1134.72	"	1135.01	"	1135.30
1042+00	1134.51	"	1134.32	"	1134.61	"	1134.90
1043+00	1134.11	"	1133.92	"	1134.21	"	1134.50
1044+00	1133.71	"	1133.52	"	1133.81	"	1134.10
1045+00	1133.31	"	1133.12	"	1133.41	"	1133.70
1046+00	1132.91	"	1132.72	"	1133.01	"	1133.30
1047+00	1132.51	"	1132.32	"	1132.61	"	1132.90
1048+00	1132.11	"	1131.92	"	1132.21	"	1132.50
1048+25	1132.02	"	1131.83	"	1132.12	"	1132.41
1048+50	1131.94	"	1131.75	"	1132.04	"	1132.33
1048+75	1131.87	"	1131.68	"	1131.97	"	1132.26
1049+00	1131.82	"	1131.63	"	1131.92	"	1132.21
1049+25	1131.78	"	1131.59	"	1131.88	"	1132.17
1049+50	1131.76	"	1131.57	"	1131.86	"	1132.15
1049+75	1131.75	"	1131.56	"	1131.85	"	1132.14
1050+00	1131.76	"	1131.57	"	1131.86	"	1132.15
1050+25	1131.78	"	1131.59	"	1131.88	"	1132.17
1050+50	1131.81	"	1131.62	"	1131.91	"	1132.20
1050+75	1131.87	"	1131.68	"	1131.97	"	1132.26
1051+00	1131.92	"	1131.73	"	1132.02	"	1132.31
1051+25	1132.00	"	1131.81	"	1132.10	"	1132.39
1051+50	1132.09	"	1131.90	"	1132.19	"	1132.48
1051+75	1132.20	"	1132.01	"	1132.30	"	1132.69
1052+00	1132.31	"	1132.12	"	1132.41	"	1132.70
1053+00	1132.81	"	1132.62	"	1132.91	"	1133.20
1054+00	1133.31	"	1133.12	"	1133.41	"	1133.70
1055+00	1133.81	"	1133.62	"	1133.91	"	1134.20
1056+00	1134.31	"	1134.12	+0.10	1134.41	+0.39	1134.70
1056+25	1134.44	"	1134.25	+0.05	1134.49	+0.29	1134.73
1056+50	1134.56	"	1134.37	+0.04	1134.60	+0.19	1134.75
1056+75	1134.69	"	1134.50	0	1134.69	+0.10	1134.19
1057+00	1134.81	"	1134.62	"	1134.81	0	1134.81
1057+25	1134.94	"	1134.75	"	1134.94	-0.07	1134.87
1057+50	1135.06	"	1134.87	"	1135.06	-0.13	1134.93
1057+75	1135.19	-0.19	1135.00	0	1135.19	-0.19	1135.00

U.S. 21 NORTH BOUND
P.I. STA. 1126 + 63.99

	STATION	NORMAL PROFILE GRADE	LEFT +OR- FROM PROFILE	LEFT ELEVATION LEFT EDGE	CENTERLINE +OR- FROM PROFILE	CENTERLINE ELEVATION ACTUAL ℄	RIGHT +OR- FROM PROFILE	RIGHT ELEVATION RIGHT EDGE
	1108+25	1050.06	-0.19	1049.87	0	1050.06	-0.19	1049.87
	1108+50	1049.31	"	1049.12	-0.06	1049.25	-0.25	1049.06
	1108+75	1048.56	"	1048.37	-0.11	1048.45	-0.30	1048.26
	1109+00	1047.81	"	1047.62	-0.16	1047.65	-0.35	1047.46
T.S.	1109+13.28	1047.41	"	1047.22	-0.19	1047.22	-0.38	1047.03
	1109+43.28	1046.51	"	1046.32	-0.34	1046.20	-0.53	1045.98
	1109+73.28	1045.61	"	1045.42	-0.43	1045.20	-0.67	1044.94
	1110+03.28	1044.71	"	1044.52	-0.50	1044.21	-0.80	1043.91
	1110+33.28	1043.81	"	1043.62	-0.56	1043.25	-0.93	1042.88
	1110+63.28	1042.92	"	1042.73	-0.63	1042.29	-1.07	1041.85
	1110+93.28	1042.06	"	1041.87	-0.70	1041.36	-1.20	1040.86
	1111+23.28	1041.24	"	1041.05	-0.76	1040.48	-1.33	1039.91
	1111+53.28	1040.47	"	1040.28	-0.83	1039.64	-1.46	1039.01
	1111+83.28	1039.73	"	1039.54	-0.89	1038.84	-1.60	1038.13
S.C.	1112+13.28	1039.03	"	1038.84	-0.96	1038.07	-1.73	1037.34
	1112+25	1038.77	"	1038.58	"	1037.81	"	1037.04
	1112+50	1038.23	"	1038.04	"	1037.27	"	1036.50
	1112+75	1037.72	"	1037.53	"	1036.76	"	1035.99
	1113+00	1037.23	"	1037.04	"	1036.27	"	1035.69
	1113+25	1036.78	"	1036.59	"	1035.82	"	1035.24
	1113+50	1036.35	"	1036.16	"	1035.39	"	1034.81
	1113+75	1035.94	"	1035.75	"	1034.98	"	1034.40
	1114+00	1035.57	"	1035.38	"	1034.61	"	1034.03
	1114+25	1035.22	"	1035.03	"	1034.26	"	1033.49
	1114+50	1034.90	"	1034.71	"	1033.94	"	1033.17
	1114+75	1034.61	"	1034.42	"	1033.65	"	1032.88
	1115+00	1034.35	"	1034.16	"	1033.39	"	1032.62
	1115+25	1034.10	"	1033.91	"	1033.14	"	1032.37
	1115+50	1033.90	"	1033.71	"	1032.94	"	1032.17
	1115+75	1033.72	"	1033.53	"	1032.76	"	1031.99
	1116+00	1033.55	"	1033.36	"	1032.59	"	1031.82
	1116+25	1033.43	"	1033.24	"	1032.47	"	1031.70
	1116+50	1033.32	"	1033.13	"	1032.36	"	1031.59
	1116+75	1033.25	"	1033.06	"	1032.29	"	1031.52
	1117+00	1033.20	"	1033.01	"	1032.24	"	1031.47
	1117+25	1033.19	"	1033.00	"	1032.23	"	1031.46
	1117+50	1033.20	"	1033.01	"	1032.24	"	1031.47
	1117+75	1033.23	"	1033.04	"	1032.27	"	1031.50
	1118+00	1033.29	"	1033.10	"	1032.33	"	1031.56
	1118+25	1033.39	"	1033.20	"	1032.43	"	1031.66
	1118+50	1033.51	"	1033.32	"	1032.55	"	1031.78
	1118+75	1033.63	"	1033.44	"	1032.67	"	1031.90
	1119+00	1033.76	"	1033.57	"	1032.80	"	1032.03
	1119+25	1033.88	"	1033.69	"	1032.92	"	1032.15
	1119+50	1034.01	"	1033.82	"	1033.05	"	1032.28
	1119+75	1034.14	"	1033.95	"	1033.18	"	1032.41
	1120+00	1034.26	"	1034.07	"	1033.30	"	1032.53
	1120+25	1034.39	"	1034.20	"	1033.43	"	1032.66
	1120+50	1034.51	"	1034.32	"	1033.55	"	1032.78
	1120+75	1034.64	"	1034.45	"	1033.68	"	1032.91
	1121+00	1034.76	"	1034.57	"	1033.80	"	1033.03
	1121+25	1034.89	"	1034.70	"	1033.93	"	1033.16
	1121+50	1035.02	"	1034.83	"	1034.06	"	1033.29
	1121+75	1035.14	"	1034.95	"	1034.18	"	1033.41
	1122+00	1035.27	"	1035.08	"	1034.31	"	1033.54
	1122+25	1035.40	"	1035.21	"	1034.44	"	1033.67
	1122+50	1035.52	"	1035.33	"	1034.56	"	1033.79
	1122+75	1035.65	"	1035.46	"	1034.69	"	1033.92
	1123+00	1035.77	"	1035.58	"	1034.81	"	1034.04
	1123+25	1035.90	"	1035.71	"	1034.94	"	1034.17
	1123+50	1036.02	"	1035.83	"	1035.06	"	1034.29

STATION	NORMAL PROFILE GRADE	LEFT +OR- FROM PROFILE	LEFT ELEVATION LEFT EDGE	CENTERLINE +OR- FROM PROFILE	CENTERLINE ELEVATION ACTUAL ℄	RIGHT +OR- FROM PROFILE	RIGHT ELEVATION RIGHT EDGE
1123+75	1036.15	-0.19	1035.96	-0.96	1035.19	-1.73	1034.42
1124+00	1036.28	"	1036.09	"	1035.32	"	1034.55
1124+25	1036.40	"	1036.21	"	1035.44	"	1034.67
1124+50	1036.53	"	1036.34	"	1035.57	"	1034.80
1124+75	1036.66	"	1036.47	"	1035.70	"	1034.93
1125+00	1036.78	"	1036.59	"	1035.82	"	1035.05
1125+25	1036.91	"	1036.72	"	1035.95	"	1035.18
1125+50	1037.03	"	1036.84	"	1036.07	"	1035.30
1125+75	1037.16	"	1036.97	"	1036.20	"	1035.43
1126+00	1037.28	"	1037.09	"	1036.32	"	1035.55
1126+25	1037.41	"	1037.22	"	1036.45	"	1035.68
1126+50	1037.54	"	1037.35	"	1036.58	"	1035.81
1126+75	1037.66	"	1037.47	"	1036.70	"	1035.93
1127+00	1037.79	"	1037.60	"	1036.83	"	1036.06
1127+25	1037.92	"	1037.73	"	1036.96	"	1036.19
1127+50	1038.04	"	1037.85	"	1037.08	"	1036.31
1127+75	1038.17	"	1037.98	"	1037.21	"	1036.44
1128+00	1038.29	"	1038.10	"	1037.33	"	1036.56
1128+25	1038.42	"	1038.23	"	1037.46	"	1036.69
1128+50	1038.54	"	1038.35	"	1037.58	"	1036.81
1128+75	1038.67	"	1038.48	"	1037.71	"	1036.94
1129+00	1038.80	"	1038.61	"	1037.84	"	1037.07
1129+25	1038.92	"	1038.73	"	1037.96	"	1037.19
1129+50	1039.05	"	1038.86	"	1038.09	"	1037.32
1129+75	1039.18	"	1038.99	"	1038.22	"	1037.45
1130+00	1039.30	"	1039.11	"	1039.34	"	1037.57
1130+25	1039.43	"	1039.24	"	1038.47	"	1037.70
1130+50	1039.55	"	1039.36	"	1038.59	"	1037.82
1130+75	1039.68	"	1039.49	"	1038.72	"	1037.95
1131+00	1039.81	"	1039.62	"	1038.85	"	1038.08
1131+25	1039.93	"	1039.74	"	1038.97	"	1038.20
1131+50	1040.06	"	1039.87	"	1039.10	"	1038.33
1131+75	1040.18	"	1039.99	"	1039.22	"	1038.45
1132+00	1040.32	"	1040.13	"	1039.36	"	1038.59
1132+25	1040.44	"	1040.25	"	1039.48	"	1038.71
1132+50	1040.54	"	1040.35	"	1039.58	"	1038.81
1132+75	1040.63	"	1040.44	"	1039.67	"	1038.90
1133+00	1040.69	"	1040.50	"	1039.73	"	1038.96
1133+25	1040.76	"	1040.56	"	1039.79	"	1039.02
1133+50	1040.80	"	1040.61	"	1039.84	"	1039.07
1133+75	1040.82	"	1040.63	"	1039.86	"	1039.09
1134+00	1040.85	"	1040.66	"	1039.89	"	1039.12
1134+25	1040.85	"	1040.66	"	1039.89	"	1039.12
1134+50	1040.83	"	1040.64	"	1039.87	"	1039.10
1134+75	1040.80	"	1040.61	"	1039.84	"	1039.07
1135+00	1040.75	"	1040.56	"	1039.79	"	1039.02
1135+25	1040.69	"	1040.50	"	1039.82	"	1039.15
1135+50	1040.62	"	1040.43	"	1039.66	"	1038.89
1135+75	1040.52	"	1040.33	"	1039.56	"	1038.79
1136+00	1040.42	"	1040.73	"	1039.46	"	1038.69
1136+25	1040.31	"	1040.12	"	1039.35	"	1038.58
1136+50	1040.20	"	1040.01	"	1039.24	"	1038.47
1136+75	1040.09	"	1039.90	"	1039.13	"	1038.36
1137+00	1039.98	"	1039.79	"	1039.02	"	1038.25
1137+25	1039.87	"	1039.68	"	1038.91	"	1038.14
1137+50	1039.76	"	1039.57	"	1038.80	"	1038.03
1137+75	1039.65	"	1039.46	"	1038.69	"	1037.92
1138+00	1039.54	"	1039.35	"	1038.58	"	1037.81
C.S. 1138+25	1039.43	"	1039.24	"	1038.47	"	1037.70
1138+31.61	1039.40	"	1039.21	-0.96	1038.44	-1.73	1037.67
1138+61.61	1039.27	"	1039.08	-0.89	1038.38	-1.60	1037.67

STATION	NORMAL PROFILE GRADE	LEFT +OR- FROM PROFILE	LEFT ELEVATION LEFT EDGE	CENTERLINE +OR- FROM PROFILE	CENTERLINE ELEVATION ACTUAL ℄	RIGHT +OR- FROM PROFILE	RIGHT ELEVATION RIGHT EDGE
1138+91.61	1039.14	-0.19	1038.95	-0.83	1038.31	-1.46	1037.68
1139+21.61	1039.00	"	1038.81	-0.76	1038.24	-1.33	1037.67
1139+51.61	1038.87	"	1038.68	-0.70	1038.17	-1.20	1037.67
1139+81.61	1038.74	"	1038.55	-0.63	1038.11	-1.07	1037.67
1140+11.61	1038.61	"	1038.42	-0.56	1038.05	-0.93	1037.68
1140+41.61	1038.48	"	1038.29	-0.50	1037.98	-0.80	1037.68
1140+71.61	1038.34	"	1038.15	-0.43	1037.91	-0.67	1037.67
1141+01.61	1038.21	"	1038.02	-0.34	1037.87	-0.53	1037.68
S.T. 1141+31.61	1038.08	"	1037.89	-0.19	1037.89	-0.38	1037.68
* 1141+50	1038.00	"	1037.81	-0.15	1037.85	-0.34	1037.66
1141+75	1037.89	"	1037.70	-0.10	1037.79	-0.29	1037.60
1142+00	1037.78	"	1037.59	-0.05	1037.73	-0.24	1037.54
1142+25	1037.67	-0.19	1037.48	0	1037.67	-0.19	1037.48

* STA. 1141+31.61 ℄ U.S. 21 N.B. = STA. 11+84.23 ℄ U.S. 21

Canton
GL-3-6500

Jack Howell

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

75

STA. 21 - 11.49
WAY. 21 - 0.00
SUM. 21 - 0.00

SUPERELEVATION TABLES

U.S. 21 NORTH BOUND
P.I. STA. 175 + 36.43

STATION	NORMAL PROFILE GRADE	LEFT +OR -FROM PROFILE	LEFT ELEVATION LEFT EDGE	CENTERLINE +OR -FROM PROFILE	CENTERLINE ELEVATION ACTUAL ℄	RIGHT +OR -FROM PROFILE	RIGHT ELEVATION RIGHT EDGE
168 + 75	1165.52	-0.19	1165.33	0	1165.52	-0.19	1165.33
169 + 00	1165.89		1165.70		1165.89	-0.13	1165.76
169 + 25	1166.27		1166.08		1166.27	-0.06	1166.21
169 + 50	1166.64		1166.45	▼	1166.64	0	1166.64
169 + 75	1167.02		1166.83	0	1167.02	+0.10	1167.12
170 + 00	1167.39		1167.20	+0.04	1167.43	+0.19	1167.58
170 + 25	1167.77		1167.58	+0.05	1167.82	+0.29	1168.06
170 + 50	1168.14		1167.95	+0.10	1168.24	+0.39	1168.53
170 + 75	1168.52		1168.33		1168.62		1168.91
171 + 00	1168.89		1168.70		1168.99		1169.28
171 + 25	1169.27		1169.08		1169.37		1169.66
171 + 50	1169.64		1169.45		1169.74		1170.03
171 + 75	1170.01		1169.82		1170.11		1170.40
172 + 00	1170.37		1170.18		1170.47		1170.76
172 + 25	1170.72		1170.53		1170.82		1171.11
172 + 50	1171.06		1170.87		1170.16		1171.45
172 + 75	1171.39		1171.20		1171.49		1171.78
173 + 00	1171.71		1171.52		1171.81		1172.10
173 + 25	1172.02		1171.83		1172.12		1172.41
173 + 50	1172.32		1172.13		1172.42		1172.71
173 + 75	1172.62		1172.43		1172.72		1173.01
174 + 00	1172.89		1172.70		1172.99		1173.28
174 + 25	1173.17		1172.98		1173.27		1173.56
174 + 50	1173.43		1173.24		1173.53		1173.82
174 + 75	1173.68		1173.49		1173.78		1174.07
175 + 00	1173.92		1173.73		1174.02		1174.31
175 + 25	1174.15		1173.96		1174.25		1174.54
175 + 50	1174.37	▼	1174.18	▼	1174.47	▼	1174.76
175 + 75	1174.59		1174.40		1174.69		1174.98
176 + 00	1174.79		1174.60		1174.89		1175.18
176 + 25	1174.98		1174.79		1175.08		1175.37
176 + 50	1175.16		1174.97		1175.26		1175.55
176 + 75	1175.35		1175.15		1175.44		1175.73
177 + 00	1175.50		1175.31		1175.60		1175.89
177 + 25	1175.65		1175.46		1175.75		1176.04
177 + 50	1175.79		1175.60		1175.89		1176.18
177 + 75	1175.92		1175.73		1176.02		1176.31
178 + 00	1176.05		1175.86		1176.15		1176.44
178 + 25	1176.16		1175.97		1176.26		1176.55
178 + 50	1176.26		1176.07		1176.36		1176.65
178 + 75	1176.35		1176.16		1176.45		1176.74
179 + 00	1176.44		1176.25		1176.54		1176.83
179 + 25	1176.51		1176.32		1176.61		1176.90
179 + 50	1176.57		1176.38		1176.67		1176.96
179 + 75	1176.63		1176.44		1176.73		1177.02
180 + 00	1176.67		1176.48	▼	1176.77	▼	1177.06
180 + 25	1176.70		1176.51	+0.10	1176.80	+0.39	1177.09
180 + 50	1176.73		1176.54	+0.05	1176.78	+0.29	1177.02
180 + 75	1176.74		1176.55	+0.04	1176.78	+0.19	1176.93
181 + 00	1176.74		1176.55	0	1176.74	+0.10	1176.84
181 + 25	1176.74		1176.55		1176.74	0	1176.74
181 + 50	1176.72		1176.53		1176.72	-0.06	1176.66
181 + 75	1176.70	▼	1176.51	▼	1176.70	-0.13	1176.57
182 + 00	1176.66	-0.19	1176.47	0	1176.66	-0.19	1176.47

U.S. 21 NORTH BOUND
P.I. STA. 292 + 87.69

STATION	NORMAL PROFILE GRADE	LEFT +OR -FROM PROFILE	LEFT ELEVATION LEFT EDGE	CENTERLINE +OR -FROM PROFILE	CENTERLINE ELEVATION ACTUAL ℄	RIGHT +OR -FROM PROFILE	RIGHT ELEVATION RIGHT EDGE
287 + 50	1185.02	-0.19	1184.83	0	1185.02	-0.19	1184.83
287 + 75	1185.10	-0.13	1184.97		1185.10		1184.91
288 + 00	1185.17	-0.06	1185.11		1185.17		1184.98
288 + 25	1185.25	0	1185.25		1185.25		1185.06
288 + 50	1185.33	+0.10	1185.43		1185.33		1185.14
288 + 75	1185.40	+0.19	1185.59	+0.05	1185.44		1185.21
289 + 00	1185.48	+0.29	1185.77	+0.05	1185.53		1185.29
289 + 25	1185.56	+0.39	1185.95	+0.10	1185.66		1185.37
290 + 00	1185.79		1186.18		1185.89		1185.60
291 + 00	1186.10		1186.39		1186.20		1185.91
292 + 00	1186.41		1186.80		1186.51		1186.22
293 + 00	1186.72		1187.11		1186.82		1186.53
294 + 00	1187.03		1187.42		1187.13	▼	1186.84
295 + 00	1187.34		1187.73		1187.44		1187.15
295 + 50	1187.50		1187.89		1187.60		1187.31
295 + 75	1187.57		1187.96		1187.67		1187.38
296 + 00	1187.68	▼	1188.02		1187.73		1187.44
296 + 25	1187.67	+0.39	1188.06	▼	1187.77		1187.48
296 + 50	1187.69	+0.29	1187.98	+0.05	1187.74		1187.50
296 + 75	1187.70	+0.19	1187.89	+0.04	1187.74		1187.51
297 + 00	1187.70	+0.10	1187.80	0	1187.70		1187.51
297 + 25	1187.68	0	1187.68		1187.68		1187.49
297 + 50	1187.65	-0.06	1187.59		1187.65		1187.46
297 + 75	1187.59	-0.13	1187.46	▼	1187.59	▼	1187.40
298 + 00	1187.53	-0.19	1187.34	0	1187.53	-0.19	1187.34

U.S. 21 NORTH BOUND
P.I. STA. 81 + 55.02

STATION	NORMAL PROFILE GRADE	LEFT +OR -FROM PROFILE	LEFT ELEVATION LEFT EDGE	CENTERLINE +OR -FROM PROFILE	CENTERLINE ELEVATION ACTUAL ℄	RIGHT +OR -FROM PROFILE	RIGHT ELEVATION RIGHT EDGE
63 + 25	977.65	-0.19	977.46	0	977.65	-0.19	977.46
+ 50	77.85		77.66		77.85	-0.13	77.72
+ 75	78.02		77.83		78.02	-0.07	77.95
64 + 00	78.27		78.08		78.27	0	78.27
+ 25	78.48		78.29		78.48	+0.09	78.57
+ 50	78.69		78.50	0	78.69	+0.19	78.88
+ 75	78.89		78.70	+0.05	78.94	+0.29	79.18
65 + 00	79.10		78.91	+0.09	79.19	+0.38	79.48
+ 25	79.31		79.12	+0.15	79.46	+0.48	79.79
+ 50	79.52		79.33	+0.19	79.71	+0.58	80.10
+ 75	79.72		79.53		79.91		80.30
66 + 00	79.93		79.74		80.12		80.51
+ 25	80.14		79.95		80.33		80.72
+ 50	80.35		80.16		80.54		80.93
+ 75	80.56		80.37		80.75		81.14
67 + 00	80.76		80.57		80.95		81.34
+ 25	80.97		80.78		81.16		81.55
+ 50	81.18		80.99		81.37		81.76
+ 75	81.39		81.20		81.58		81.97
68 + 00	81.59		81.40		81.78		82.17
+ 25	81.80		81.61		81.99		82.38
+ 50	82.00		81.81		82.19		82.58
+ 75	82.21		82.02		82.40		82.79
69 + 00	82.42		82.23		82.61		983.00
+ 25	82.64		82.45		82.83		83.22
+ 50	82.84		82.65		83.03		83.42
+ 75	83.05		82.86		83.24		83.63
70 + 00	983.26		983.07		983.45		983.84
+ 25	83.47		83.28		83.66		84.05
+ 50	83.68		83.49		83.87		84.26
+ 75	83.88		83.69		84.07		84.46
71 + 00	84.09		83.90		84.28		84.67
+ 25	84.30		84.11		84.49		84.88
+ 50	84.51		84.32		84.70		85.09
+ 75	84.72		84.53		84.91		85.30
72 + 00	84.92		84.73		85.11		85.50
+ 25	85.13		84.94		85.32		85.71
+ 50	85.33		85.14		85.52		85.91
+ 75	85.54		85.35		85.73		86.12
73 + 00	85.75		85.56		85.94		86.33
+ 25	85.96		85.77		86.15		86.54
+ 50	86.17		85.98		86.36		86.75
+ 75	86.37		86.18		86.56		86.95
74 + 00	86.57		86.38		86.76		87.15
+ 25	86.78		86.59		86.97		87.36
+ 50	86.96		86.79		87.17		87.56
+ 75	87.19		987.00		87.38		87.77
75 + 00	87.40		87.21		87.59		87.98
+ 25	87.61		87.42		87.80		88.19
+ 50	87.81		87.62		88.00		88.39
+ 75	88.02		87.83		88.21		88.60
76 + 00	88.23		88.04		88.42		88.81
+ 25	88.44		88.25		88.63		89.02
+ 50	88.64		88.45		88.83		89.22
+ 75	88.85		88.66		89.04		89.43
77 + 00	89.06		88.87		89.25		89.64
+ 25	89.26		89.07		89.45		89.84
+ 50	89.50		89.31		89.69		90.08
+ 75	89.78		89.59		89.97		90.36
78 + 00	990.08		89.89		90.27		90.66
+ 25	990.42	-0.19	990.23	+0.19	990.61	+0.58	991.00

STATION	NORMAL PROFILE GRADE	LEFT +OR -FROM PROFILE	LEFT ELEVATION LEFT EDGE	CENTERLINE +OR -FROM PROFILE	CENTERLINE ELEVATION ACTUAL ℄	RIGHT +OR -FROM PROFILE	RIGHT ELEVATION RIGHT EDGE
78 + 50	990.79	-0.19	990.60	+0.19	990.98	+0.58	991.37
+ 75	91.20		91.01		91.39		91.78
79 + 00	91.65		91.46		91.84		92.23
+ 25	92.12		91.93		92.31		92.70
+ 50	92.63		92.44		92.82		93.21
+ 75	93.17		92.98		93.36		93.75
80 + 00	93.75		93.56		93.94		94.33
+ 25	94.36		94.17		94.55		94.94
+ 50	995.00		94.81		95.19		95.58
+ 75	95.68		95.49		95.87		96.26
81 + 00	96.40		96.21		96.59		96.98
+ 25	97.15		96.96		97.34		97.73
+ 50	97.90		97.71		98.09		98.48
+ 75	98.65		98.46		98.84		99.23
82 + 00	99.39		99.20		99.58		99.97
+ 25	1000.14		99.95		1000.33		1000.72
+ 50	00.89		1000.70		01.08		01.47
+ 75	01.64		01.45		01.83		02.22
83 + 00	02.39		02.20		02.58		02.97
+ 25	03.14		02.95		03.33		03.72
+ 50	03.89		03.70		04.08		04.47
+ 75	04.64		04.45		04.83		05.22
84 + 00	05.39		05.20		05.58		05.97
+ 25	06.14		05.95		06.33		06.72
+ 50	06.89		06.70		07.08		07.47
+ 75	07.64		07.45		07.83		08.22
85 + 00	08.39		08.20		08.58		08.97
+ 25	09.14		08.95		09.33		09.72
+ 50	09.89		09.70		10.08		10.47
+ 75	10.64		10.45		10.83		11.22
86 + 00	11.39		11.20		11.58		11.97
+ 25	12.14		11.95		12.33		12.72
+ 50	12.89		12.70		13.08		13.47
+ 75	13.64		13.45		13.83		14.22
87 + 00	14.39		14.20		14.58		14.97
+ 25	15.14		14.95		14.76		15.15
+ 50	15.89		15.70		16.08		16.47
+ 75	16.64		16.45		16.83		17.22
88 + 00	17.39		17.20		17.58		17.97
+ 25	18.14		17.95		18.33		18.72
+ 50	18.89		18.70		19.08		19.47
+ 75	19.64		19.45		19.83		20.22
89 + 00	20.39		20.20		20.58		20.97
+ 25	21.14		20.95		21.33		21.72
+ 50	21.89		21.70		22.08		22.47
+ 75	22.64		22.45		22.83		23.22
90 + 00	23.39		23.20		23.58		23.97
+ 25	24.14		23.95		24.33		24.72
+ 50	24.89		24.70		25.08		25.47
+ 75	25.64		25.45		25.83		26.22
91 + 00	1026.39	-0.19	1026.20	+0.19	1026.58	+0.58	1026.97

FED. AID PROJ. NO.	STATE	PROJECT	
2	OHIO		

76

STA. 21 - 11.49
WAY. 21 - 0.00
SUM. 21 - 0.00

11.05'

F-7

C-10

F-40

C-7

932.90

NOTE: Remove Exist. Black Top. Under E-1 "Exc."

607+00
940.39

AHEAD
BACK STA. 606+50

BEGIN WORK AND PROJECT
STA. 606+50

STA. 606+50

Black Top

℄ Proposed Work To Be Done Under Contract For STA. 21-10.23

FL. 933.40

606+00
941.22

Black Top

605+50
941.53

Black Top

FL. 933.90

605+00
941.63

Black Top

604+00
941.23

940
935
930
940
940
940
940

	END AREA		VOLUME	
	CUT	FILL	CUT	FILL
	17	47		
			32	87
AHEAD	17	47		
BACK	0	0		

CROSS SECTIONS STA. 604+00 TO STA. 607+00

FED. AID DIVISION	STATE	PROJECT	
2	OHIO		

77

STA. 21 - 11.49
WAY. 21 - 0.00
SUM. 21 - 0.00

	END AREA		VOLUME	
	CUT	FILL	CUT	FILL
935	22	17		
			56	43
940				
935	28	22		
			35	32
940				
935	27	29		
			53	86
940				
935	16	42		
			32	77
940				
935	18	41		
			32	82
940				
	17	47		

CY CY SY

Excavation 408
Embankment 533
Seeding 2204

F-1 C-22 F-16
609+60.16
938.5

F-1 C-25 F-21 C-3
609+00.16
939.1
932.0

F-3 C-27 F-26 C-6
608+66
939.02
932.2

F-3 Black Top C-14 F-39 C-2
608+00
939.57
932.5

Black Top F-3 C-16 F-38 C-2
607+50
939.98
933.0

STA. 607+00

CROSS SECTIONS STA. 607+50 TO STA. 609+60.16

?	OHIO		

78

STA. 21 – 11.49
WAY. 21 – 0.00
SUM. 21 – 0.00

40 30 20 10 0 10 20 30 40 50 60 70 80

18 218 35 203 26 177 27 197 32 233 58

R/W

F-2

C-26

T.S. 612+99.78
936.5

29.5

F-14

C-23

R/W

Sta. 612+00.16 Back
Sta. 612+25.69 Ahead

S.T. 612+00.16 B.K. (END TRANSITION)
S.T. 612+25.69 AH.
936.6

24

F-16

C-13

611+40.16
937.2

F-13

C-20

936.36

610+80.16
937.6

F-1

C-20

F-11

610+20.16
938.0

Existing Culvert Sta. 610.03
F.L. (In) 929.8

STA. 609+60.16

STA. 609+60.16

	END AREA		VOLUME	
	CUT	FILL	CUT	FILL
935	26	2		
			67	22
935	23	14		
			40	34
935	13	16		
			37	32
935	20	13		
			44	28
940	20	12		
			47	32
	22	17		

CROSS SECTIONS STA. 610+20.16 TO STA. T.S. 612+99.78

FED. AID DIVISION	STATE	PROJECT	
2	OHIO		

79

STA. 21 - 11.49
WAY. 21 - 0.00
SUM. 21 - 0.00

615+99.78
938.8

615+39.78
938.4

614+79.78
937.9

614+19.78
937.4

613+59.78
936.9

STA. 612+99.78

	END AREA		VOLUME	
	CUT	FILL	CUT	FILL
940				
935	29	3		
			74	4
940				
935	38	0		
			33	0
940				
935	37	0		
			82	0
940				
935	37	0		
			76	2
940				
935	31	2		
			64	4
	26	2		

	C.Y.
Excavation	1666
Embankment	293
Seeding	3

CROSS SECTIONS STA. 613+59.18 TO STA. 615+99.78

FED. AID DIVISION	STATE	PROJECT	
2	OHIO		

80

STA. 21 – 1149
WAY. 21 – 0.00
SUM. 21 – 0.00

END AREA		VOLUME	
CUT	FILL	CUT	FILL
43	0		
		148	0
37	0		
		66	2
34	2		
		60	6
30	5		
		55	6
30	1		
		113	4
31	1		
		56	3
29	3		

940

940

940

FED. AID PROJECT	STATE	PROJECT		
2	OHIO			

81

STA. 21 - 11.49
WAY. 21 - 0.00
SUM. 21 - 0.00

END AREA		VOLUME	
CUT	FILL	CUT	FILL
64	0	119	0
64	0	116	0
61	0	204	4
49	2	172	4
44	0	161	0
43	0		

624+00
945.2
C-44
C-20
943.9

623+50
945.0
C-38
C-26
943.7

623+00
944.5
C-44
C-17

622+00
943.9
C-45
F-2
C-4

621+00
943.00
C-44

945
940
945
940
945
940
945
940
945
940

53 200 39 200 35 361 30 250 15 189 19

STA. 620+00

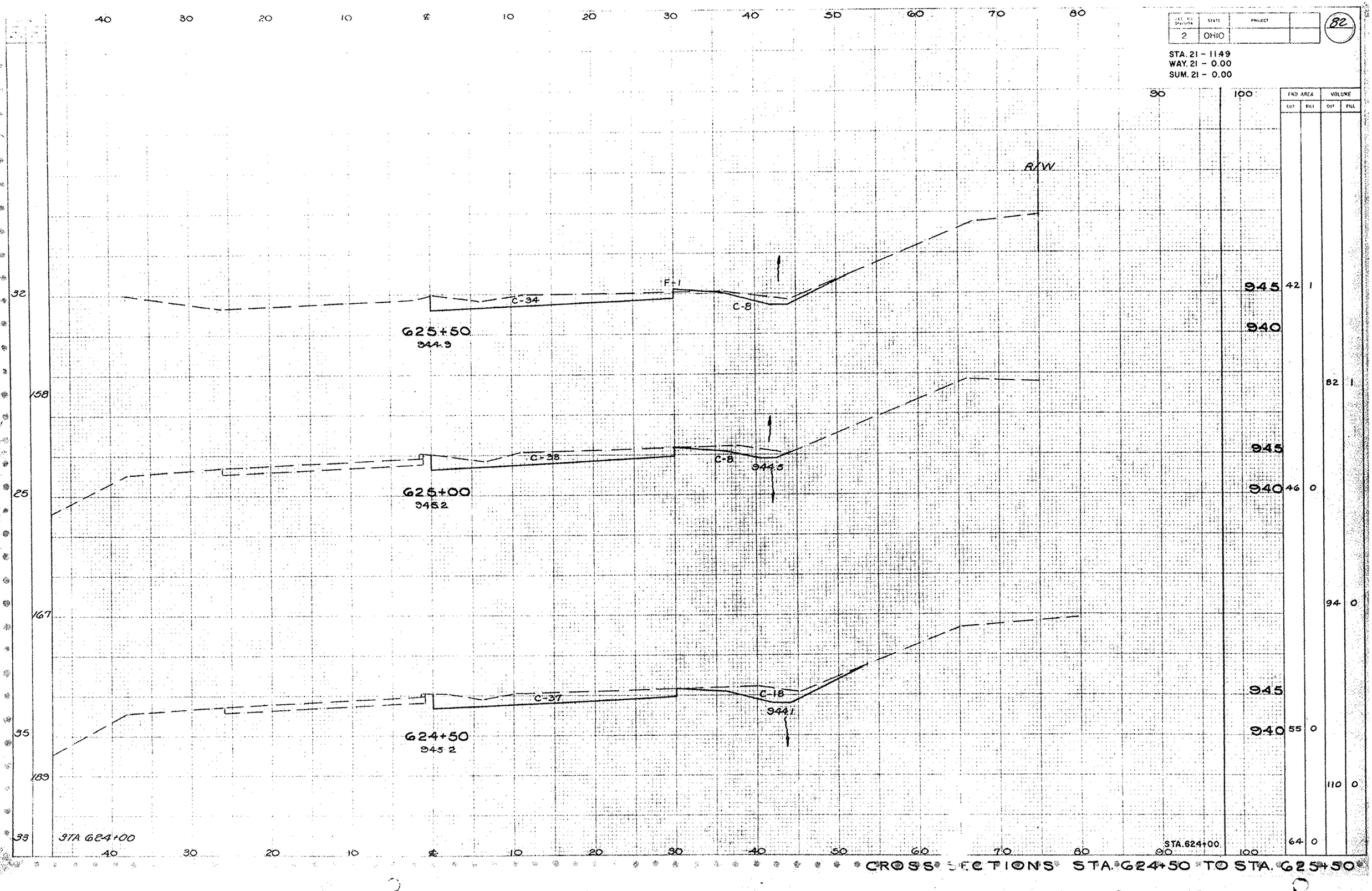
CROSS SECTIONS STA. 621+00 TO STA. 624+00

SEC. NO. DIVISION	STATE	PROJECT	
2	OHIO		

82

STA. 21 - 1149
WAY. 21 - 0.00
SUM. 21 - 0.00

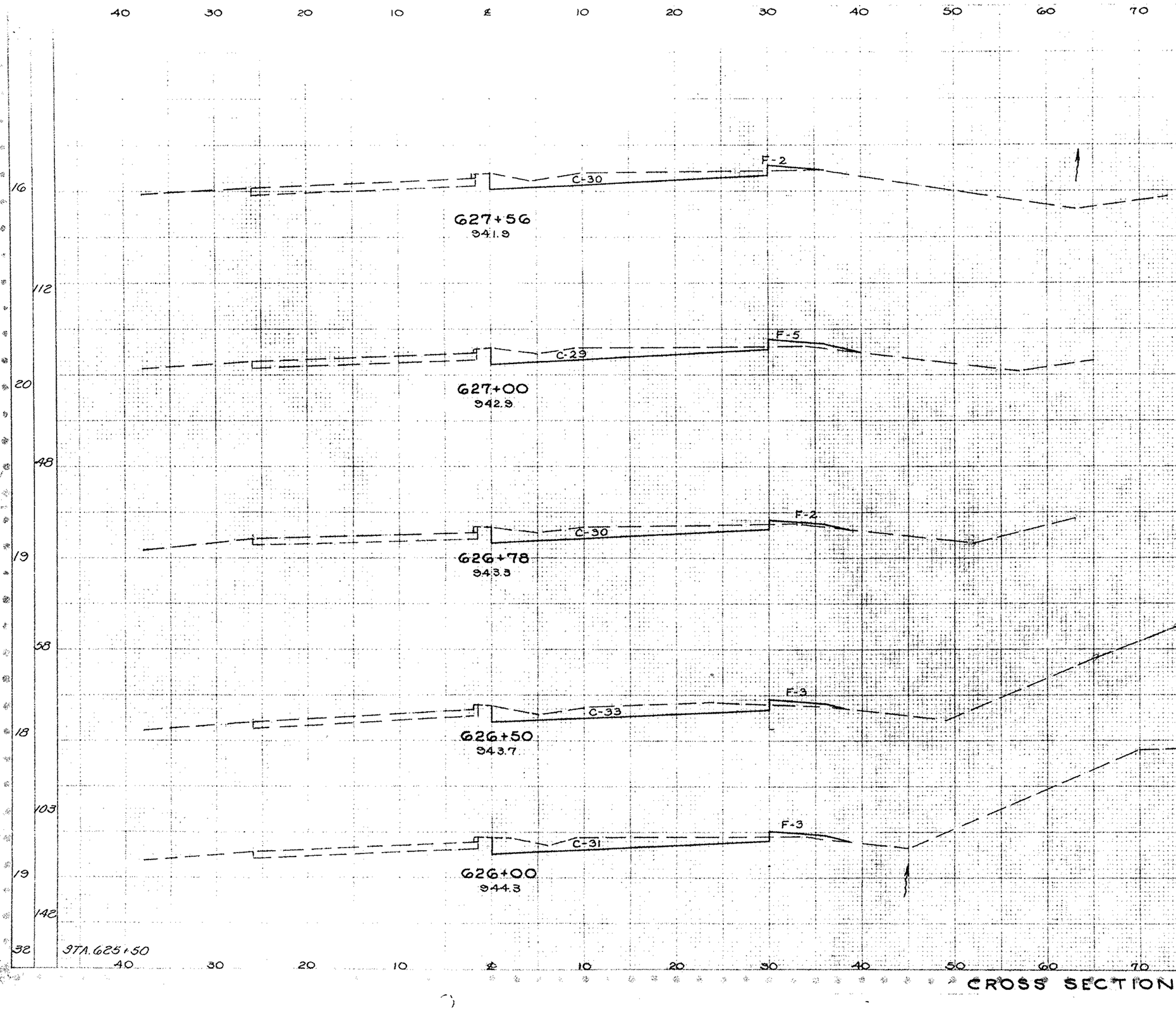
END AREA		VOLUME	
CUT	FILL	CUT	FILL
42	1	82	1
46	0	94	0
55	0	110	0
64	0		



CROSS SECTIONS STA. 624+50 TO STA. 625+50

FED. DIVISION	STATE	PROJECT		83
2	OHIO			

STA. 21 - 11.49
WAY. 21 - 0.00
SUM. 21 - 0.00



END AREA CUT	END AREA FILL		VOLUME CUT	VOLUME FILL
		940		
30	2			
			61	7
		945		
		940		
29	5			
			24	3
		945		
		940		
30	2			
			33	2
		940		
33	3			
			60	5
		945		
		940		
31	3			
			68	4
42	1			

CROSS SECTIONS STA. 626+00 TO STA. 627+56

FED. PROJECT	STATE	PROJECT		
2	OHIO			

84

STA. 21 - 1149
WAY. 21 - 0.00
SUM. 21 - 0.00

40 30 20 10 ℄ 10 20 30 40 50 60 70 80 90 100

630+00
937.5

629+00
939.4

628+50
940.2

627+98
941.2

627+78
941.5

STA 627+56

F-3 C-30
F-7 C-33
F-2 C-36
F-2 C-31
F-4 C-31

54" Culvert (Exist) Sta 629+00
FL. (In) - 928.15

Existing 54" Culvert

		END AREA		VOLUME	
		CUT	FILL	CUT	FILL
17	250	935	30 3	117	19
28	125	935	33 7		
17		930		64	9
		940			
	95	935	36 2		
		930		64	4
		945			
16		940	31 2		
	38			23	2
		945			
18		940	31 4		
	42			25	2
16			30 2		

STA. 627+56

CROSS SECTIONS STA. 627+78 TO STA. 630+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

85

STA. 21 – 11.49
WAY. 21 – 0.00
SUM. 21 – 0.00

	END AREA		VOLUME	
	CUT	FILL	CUT	FILL
636+00	44	0	72	0
635+50	34	0	60	1
635+00	30	1	120	4
634+00	35	1	133	4
633+00	37	1	133	4
632+00	35	1	120	6
631+00	30	2	111	9
STA. 630+00	30	3		

636+00
938.3
C-38
C-6
932.2

635+50
937.4
C-34
931.8

635+00
936.7
C-30
F-1
931.5

634+00
935.0
C-35
C-1
930.6

633+00
934.2
C-37
C-1
930.0

632+00
933.5
C-35
F-1
928.7

631+00
935.7
C-30
F-2

STA. 630+00

CROSS SECTIONS STA. 631+00 TO STA. 636+0

2	OHIO		

86

STA. 21 - 11+49
WAY. 21 - 0.00
SUM. 21 - 0.00

40 30 20 10 ℄ 10 20 30 40 50 60 70 80 90 100

63 410 60 387 56 360 52 517 31 339 30 300 24

STA 636 +00

640+92.08
945.7
C-14 Black Top
F-25
F-126
2:1
940

640+32.08
945.0
C-14 Black Top
F-160
940

639+72.08
944.3
C-18 Black Top
F-17
C-1
F-112
2:1
940

NOTE: Existing Black Top (Asphaltic Concrete) Pavement To Be Removed Under E-1 Roadway Excavation.

639+12.08
943.9
C-17 Black Top
F-11
F.L. 939.5
C-4
F-110
2:1
940
F.L.(Out) 934.00
2'-6"
Dumped Rock
Quantity Carried On Line Sheet

* 38 @ 3.48% = 39'L 12" I-2 UA

BEGIN 6" I-4 STA. 638+75

* LOCATED AT STA 639+00

638+00
941.9
C-25
F-26
2:1
940

637+00
940.4
C-34
F-10
Var.
940

Sta 636+00

END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
14	151		
		31	346
14	160		
		37	321
19	129		
		44	278
21	121		
		95	305
25	26		
		109	67
34	10		
		144	19
44	0		

CROSS SECTIONS STA. 637+00 TO STA. 640+92.08

FED. AID DIVISION	STATE	PROJECT	
2	OHIO		

87

STA. 21 - 11.49
WAY. 21 - 0.00
SUM. 21 - 0.00

	END AREA		VOLUME	
	CUT	FILL	CUT	FILL
945				
	47	46		
			118	158
945				
	39	69		
			47	99
945				
	33	83		
			32	104
945				
	25	104		
			27	130
945				
	23	130		
			24	173
945				
	21	181		
			19	184
Sta. 640+92.08	14	151		

C.Y. / S.S.
Excavation 1295 2420
Embankment 5000
Seeding

643+21
947.01
Blk Top C-25 | Black Top F-33 C-14 | C-8 | F-13

642+47
946.69
Blk Top C-25 | Black Top F-35 C-10 | C-4 | F-34

642+12.08
946.59
Blk Top C-21 | Black Top F-32 C-8 | C-4 | F-51

641+82.08
946.55
Black Top C-15 | C-8 F-33 | C-2 | F-71 2:1

641+52.08
946.2
Black Top C-14 | C-7 F-34 | C-2 | F-96

641+22.08
945.9
Black Top C-16 | C-5 | F-181 2:1

STA. 640+92.08

CROSS SECTIONS STA. 641+22.08 TO STA. 643+21

FED. AID DIVISION	STATE	PROJECT		
2	OHIO			

88

STA. 21 - 11.49
WAY. 21 - 0.00
SUM. 21 - 0.00

	END AREA		VOLUME	
	CUT	FILL	CUT	FILL
Sta 646+17.5	52	0		
			34	0
	52	0		
			206	20
	59	11		
			186	86
	47	38		
			146	131
Sta 643+21	47	46		

40 30 20 10 ℄ 10 20 30 40 50 60 70 80 90 100

945

647+50

945

646+50
946.7

STA. 646+17.5 MEET EXIST CURB

37 STA. 646+17.5

72

SUSPEND PROJECT & WORK
STA. 646+17.5

945

37

C-20 Block to Fill | C-32 Block to Fill

946.08
646+00
947.0

406

F-11

36 C-23 Block to Fill | C-5 Block to Fill | C-31

945

946.58
645+00

STA. 645+00 BEGIN CURB TRANSITION
SEE LINE SHEET FOR OFFSETS

438

F-23

47 C-18 Block to Fill | C-10 Block to Fill | C-19

F-15

945

947.06
644+05
946.89

420

Exist. 15" CMP
F.L. 935.90

Exist 15"

935

43 STA. 643+21

40 30 20 10 ℄ 10 20 30 40 50 60 70 80 90 100

CROSS SECTIONS STA. 644+05 TO STA. 647+50

FED. RD DIVISION	STATE	PROJECT	
2	OHIO		

89

STA. 21-1149
WAY. 21-0.00
SUM. 21-0.00

℄ US 21 NB

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

MATCH LINE

11.9'

MATCH LINE

NOTE: At Sta. 725+10
Extend Exist 15" Storm Sewer
Construct Median Inlet On ℄

40 35 30 25

1069.8

F-8 C-12 C-8 F-2 C-180

1072.27
725+00
1070.8

NOTE: Beginning At Sta 724+62 East Half Of Existing Pavement Is To Be Removed Along The Transverse Joint On The South Bound Pavement See Line Sheet For Detail.

F-2 Temporary Run-Around F-8 C-5 C-96

1072.33
724+00
1070.6

F-22 C-33

1071.50

1074.21
723+00
1071.2

F-20 C-26

1074.91
722+00
1072.1

1075.22
721+00
1072.9

Begin Pav't Removal North Bound
Pav't At Sta 720+44.7
See Line Sheet For Details.

RESUME WORK
RESUME PROJECT
STA 720+44.7

					END AREA		VOLUME	
					CUT	FILL	CUT	FILL
101	1050	867	694	57	1070 200	10		
							557	37
88					1070 101	10		
							248	89
68					1070 33	22		
							109	78
			317		1070 26	20		
							48	37
				0	1070 0	0		

Excavation 2062 3558
Embankment
Seeding

CROSS SECTIONS STA. 721+00 TO STA. 725+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

20

STA. 21-11.49
WAY. 21-0.00
SUM. 21-0.00

℄ U.S. 21 N.B

MATCHLINE E-E — C-6 — F-12 — MATCHLINE E-E — Temporary Run-Around — C-247 — 5:1

1066.77
730+00
1064.7

MATCHLINE DD — C-6 — F-6 — C-2 — MATCHLINE DD — C-421 — 5:1

1067.87
729+00
1064.2

MATCHLINE CC — AC-11 — F-25 — MATCHLINE CC — C-470 — 5:1

1068.97
728+00
1066.5

MATCHLINE BB — C-6 — F-36 — C-26 — MATCHLINE BB — C-426 — 5:1

1070.07
727+00
1068.4

MATCHLINE AA — C-43 — F-26 — MATCHLINE AA — C-352 — 5:1

1071.17
726+00
1071.2

STA 725+00

	END AREA		VOLUME	
	CUT	FILL	CUT	FILL
1060	253	12		
			7263	33
1065	429	6		
			1685	57
1070	481	25		
			1739	113
1070	458	36		
			1580	115
1070	395	26		
			1102	67
Sta 725+00	200	10		

CROSS SECTIONS STA 726+00 TO STA 730+00

2	OHIO		

91

STA. 21-11.49
WAY. 21-0.00
SUM. 21-0.00

℄ U.S. 21 N.B.

1060

1060.17
736+00
1053.4

1061.27
735+00
1057.9

1062.37
734+00
1057.8

1063.47
733+00
1058.4

1064.57
732+00
1059.7

1065.67
731+00
1061.1

F-540

F-238

F-351

F-706

F-425

F-124

4:1

2:1

Temporary Runaround

24" Culvert 733+33
F.L.(Out)-1050.53

85 @ 32% - 84 L.F. 15" I.S.U.R.

C-6
1059.5

C-6
1060.5

NOTE: End Pavement Removal Of South Bound Pavement East Half At Sta. 731+21.30. See Line Sheet for Details.

	END AREA		VOLUME	
	CUT	FILL	CUT	FILL
	0	540		
			0	1441
	0	238		
			0	109
	0	351		
			0	1951
	0	706		
			11	2051
	6	425		
			22	1011
	6	124		
			480	253
	12			

	CUT	FILL
Excavation	6780	
Embankment		2358
Seeding		2040

STA. 730+00

CROSS SECTIONS STA. 731+00 TO STA. 736+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

92

STA. 21-1149
WAY. 21-0.00
SUM. 21-0.00

℄ U.S 21 N.B.

END AREA		VOLUME	
CUT	FILL	CUT	FILL

F-540
TG 1050.09 — 8:1 — 2:1
F.L. 1046.68
1053.57
742+00
1048.3
83'@ 6% - 82 L.F. 18" C.S.P.C.O.A.
F.L.(OUT) 1041.76
1050 | 0 | 540 | 0 | 2119

F-604
1054.67
741+00
1050.3
1050 | 0 | 604 | 0 | 2433

F-710
1055.77
740+00
1050.9
2:1
1050 | 0 | 710 | 0 | 2426

F-600
1056.87
739+00
1051.87
2:1
Cattle Pass Sta. 739+34
4'x6' F.L.(Out)-1043.84
1050 | 0 | 600 | 0 | 2257

F-608
1057.97
738+00
1053.5
8:1 — 3:1
1050 | 0 | 608 | 0 | 2154

F-556
1059.06
737+00
1054.7
7:1 — 4:1
1050 | 0 | 556 | 0 | 2032

STA. 736+00 | 0 | 540

STA. 736+00

CROSS SECTIONS STA. 737+00 TO STA. 742+00

FED. ROAD DIVISION	STATE	PROJECT	
2	OHIO		

93

STA. 21-1149
WAY. 21-0.00
SUM. 21-0.00

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

℄ U.S. 21 N.B.

F-780 — 2:1 — C-37 — 1034.5

1047.87
748+00
1038.9

F-676 — 3:1 — C-67 — 1033.5

1048.64
747+00
1042.4

F-592 — 4:1 — C-67 — 1037.5

1049.51
746+00
1043.9

F-537 — C-87 — 1038.5

1050.42
745+00
1045.1

F-530 — C37 — 1040.0

1051.41
744+00
1046.0

F-486 — 8:1 — 4:1

1052.47
745+00
1047.4

STA. 742+00

STA. 742100

		END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
97	1139				
		1045			
		3	780		
				17	2696
108	1244	1045			
		6	676		
				22	2348
116	1278	1045			
		6	592		
114	1256	1045			
		8	537		
				26	2091
112	1144	1045			
		3	530		
				20	1976
94	1033	1050			
		0	486		
				6	188
92		0	540	0	190

C.Y. Cut — C.Y. Fill — Excavation — Embankment — Seeding

CROSS SECTIONS STA. 748+00 TO STA. 748+00

2	OHIO		

94

STA. 21 - 11.49
WAY. 21 - 0.00
SUM. 21 - 0.00

℄ U.S. 21 N.B.

F-407

1043.87
753+00
1039.0

4:1

C-30
1036.0

F-622

1044.67
752+00
1038.4

4:1

C-28
1035.5

STA. 751+00 Exist. Median Inlet Adjusted To Grade.

T.G. 1042.79

F-857

2:1

C-7
1032.6

1045.47
751+00
10437

15" @ 0.4%

15" S-27 @ 0.8%

For Detail See Culvert C-3

8:1

F-890

C-2
1033.0

1046.27
750+00
10378

8:1

F-859

2:1

C-2
1033.5

1047.07
749+00
10388

STA. 748+00

STA. 748+00

END AREA		VOLUME	
CUT	FILL	CUT	FILL
1035 30	407		
		107	1906
1035 28	622		
		65	2702
1035 7	837		
		17	3196
1035 2	890		
		7	3202
1035 2	939		
		9	2998
1035 3	780		

CROSS SECTIONS STA. 749+00 TO STA. 758+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

95

STA-21-1149
WAY-21-0.00
SUM-21-0.00

MATCH LINE

15" Culvert Sta. 758+98
FL (In) -1034.34

NOTE
END TAPER STA 758+33.23
FOR INTERSECTION

NOTE
BEGIN TAPER STA 755+83.23

Ahead 33 245
Back 33 90

1039.07
759+00
F-20
C-4
C-10

332

1039.87
758+00
1036.9
F-60
C-386

90

933

1038.0
F-53
C-132

78

867

1040.67
757+00
1036.7
F-87
C-167
F-2
C-51

78

911

1041.47
756+00
1039.7

86

994

1042.27
755+00
1037.3
F-160
C-7
1037.5

93

1100

1043.07
754+00
1038.7
F-378
C-3
1036.5

105

STA. 753+00

1040
1035
1045
1040
1035
1040
1035
1040
1035
1040
1035

+33.23

Excavation 8205
Embankment 11332
Seeding 11332

	END AREA		VOLUME	
	CUT	FILL	CUT	FILL
1035	14	20		
AHEAD	14	20	35	49
BACK	386	60		
1045			475	74
1040	386	60		
1035			959	209
1040	132	53		
1035			369	117
1040	67	10		
1035			137	315
1040				
1035	7	160		
1040			19	996
1035	3	378		
			61	1454
	30	407		

Sta. 753+00

CROSS SECTIONS STA. 754+00 TO STA. 759+00

FED. RD DIVISION	STATE	PROJECT	
2	OHIO		

96

STA. 21 - 11.49
WAY. 21 - 0.00
SUM. 21 - 0.00

NOTE
END TAPER STA. 763+33.23

C-799

F-42

8:1

2:1

763+00
1032.4

C-779

F-3

2:1

762+00
1033.7

C-648

F-37

2:1

761+00
1034.5

NOTE
BEGIN TAPER 760+83.23
FOR INTERSECTION

24" Culvert Sta. 760+67
F.L. (In) - 1032.94

			END AREA		VOLUME	
			CUT	FILL	CUT	FILL
95			799	42		
		1035				
1033					2922	83
		1035	779	3		
91						
983					2643	74
		1035	648	37		
86						
1169					2937	168
86	Ahead					
33	Back					
285						
229	Additional Quantity For T.R. 352 (Approx)					
33	STA. 759+00					

STA. 759+77.69 AHEAD 648 37
BACK 14 20

ADDITIONAL QUANTITIES FOR T.R. 352 (APPROX)

Sta. 759+00 14 20

40 57
541 12

CROSS SECTIONS STA. 760+00 TO STA. 763+00

2	OHIO		

97

STA. 21 - 11.49
WAY. 21 - 0.00
SUM. 21 - 0.00

℄ U.S. 21 N.B.

F-6 | C-6 | F-6 | C-130

1025.39
768+00
1023.2

1022.5

1022.0

C-1282

C-3

1025.0

1027.63
767+00
1028.8

2:1

C-1167

F-1 Var. Var.

1022.0

1029.87
766+00
1031.3

2:1

C-890

F-7 7:1

1026.5

1032.07
765+00
1030.0

2:1

NOTE: Beginning At Sta. 764+00
The Median Ditch Is To Be
Transitioned From Typical Sect 'A'
To Typical Sect. 'G.' @ Sta. 769+00

C-940

F-3 8:1

1033.95
764+00
1035.3

2:1

STA. 763+00

END AREA		VOLUME	
CUT	FILL	CUT	FILL
1020 136	12		
		2632	22
1030 1285	0		
		4541	2
1167	1		
1030		3810	15
890	7		
1030		3389	19
940	3		
1035		3221	83
799	42		

Excavation 26776
Embankment 12778
Seeding

STA. 763+00

CROSS SECTIONS STA. 764+00 TO STA. 768+00

FED. AD DIVISION	STATE	PROJECT		98
2	OHIO			

STA. 21-11.49
WAY. 21-0.00
SUM. 21-0.00

℄ U.S. 21 N B

	END AREA		VOLUME	
	CUT	FILL	CUT	FILL
1010	10	204		
			28	609
1015	5	125		
			413	280
1020	218	26		
			2302	54
1030	1025	3		
			2028	57
1020				
	70	28		
1020				
			381	74
	136	12		

C-4 F-204 C-6 1010.0
1014.19 773+00 1012.0
C-1 F-125 C-4
1016.43 772+00 1014.7
F-26 C-218
1018.67 771+00 1016.0
C-1024
C-1 F-3 1017.7
1020.91 770+00 1018.8
F-7 F-19 C-4 F-27 C-66
67' @ 0.4% = 66 L.F. 15" I.E.U.A.
1023.15 769+00 1020.3 1018.61
STA. 768+00

CROSS SECTIONS STA. 769+00 TO STA. 793+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

99

STA. 21-11.49
WAY. 21 - 0.00
SUM. 21 - 0.00

℄ U.S. 21 N.B.

C-723

1000.75
779+00
1004.9

6:1

3976

C-1098

1002.99
778+00
1006.8

68 L.F. @ 0.4% 15" I.2 UA

398.1

2:1

C-530

1005.23
777+00
1005.3

2:1

1002.7

C-21

C-23

F-1

C-12

3:1

1004.9

1007.47
776+00
1006.4

F-569

C-27

1003.2

1009.71
775+00
1005.8

24 Culvert Sta. 774+60
F.L. (In) - 1001.41

F-405

C-49

3:1

1003.0

1011.35
774+00
1008.4

STA. 773+00

	END AREA		VOLUME	
	CUT	FILL	CUT	FILL
1000	723	0		
R/W				
			3372	0
1005	1098	0		
			3015	0
1005	530	0		
			1085	2
1005	56	1		
			107	1056
1005	2	569		
			94	1804
1010	49	405		
			109	1128
	10	204		

Sta. 773+00

CROSS SECTIONS STA. 774+00 TO STA. 779+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

100

STA. 21-1149
WAY. 21-0.00
SUM. 21-0.00

℄ U.S. 21 N.B.

C-2329

C-1573

C-1246

C-911

C-570

99.403
782+00
1000.8

994.75
781+68
1000.9

996.27
781+00
1002.1

997.35
780+52
1001.4

998.51
780+00
1002.1

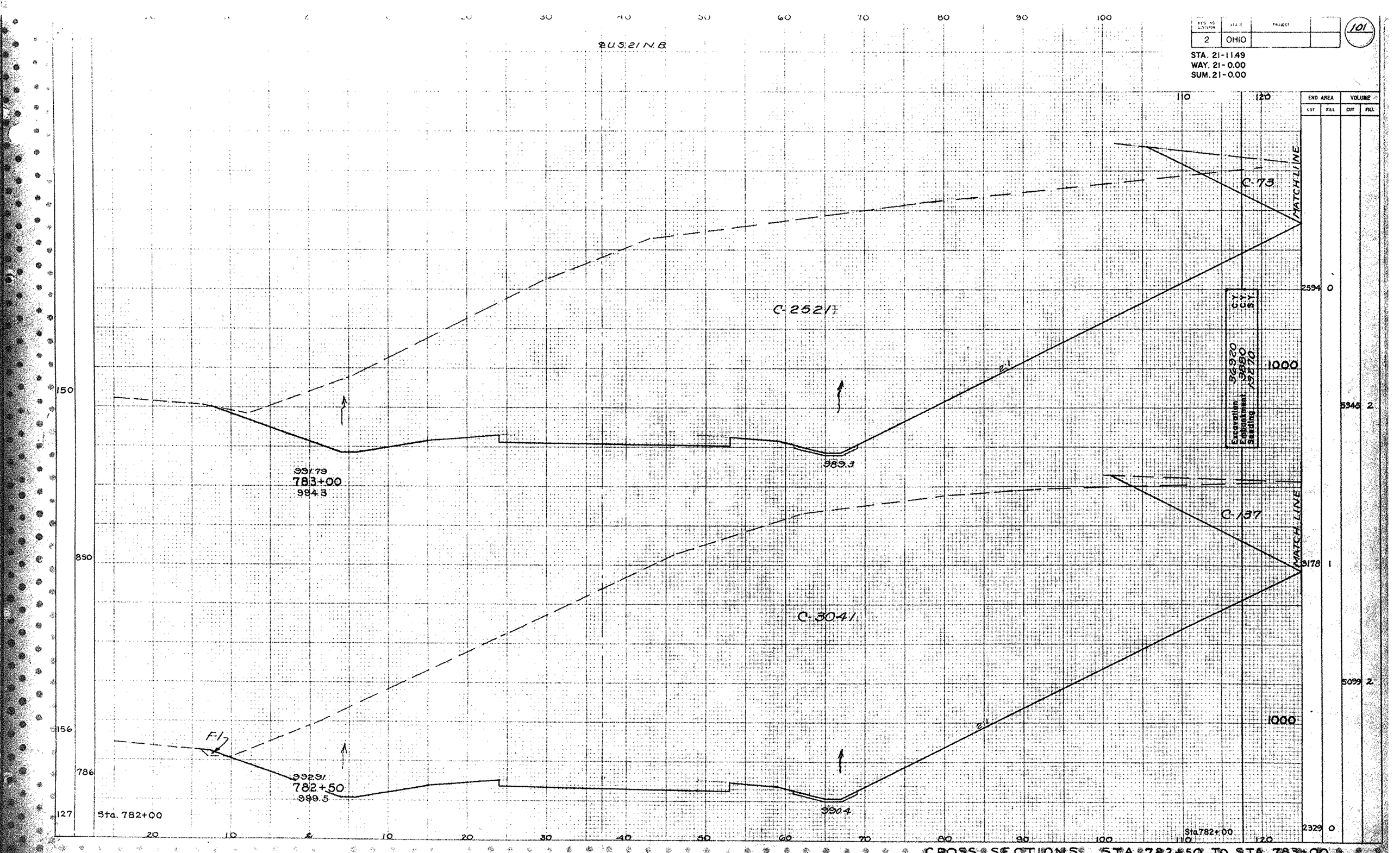
996.0

2:1

	END AREA		VOLUME	
	CUT	FILL	CUT	FILL
782+00	2329	0		
			1000	
781+68	1573	0	2312	0
			1000	
781+00	1246	0	3550	0
			1000	
780+52	911	0	1918	0
			1000	
780+00	570	0	1426	0
			1000	
779+68	723	0	2395	0

Sta. 779+00

CROSS SECTIONS STA. 780+00 TO STA. 782+00



CROSS SECTIONS STA. 782+50 TO STA. 783+00

FED. RD DIVISION	STATE	PROJECT	
2	OHIO		

102

STA. 21-11.49
WAY. 21-0.00
SUM. 21-0.00

℄ US 21 N.B.

C-10
986.24
785+48
986.3
F-258
4:1
C-6
976.3

C-45
987.31
785+00
987.3
F-2
F-100
4:1
C-8
980.3

C-99
988.23
784+59
990.7
F-36
4:1
C-6
983.5

C-576
989.55
784+00
995.1
2:1
987.0

C-1782
990.67
783+50
995.6
2:1
988.2

Sta. 783+00

END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
			985
16	258		
		61	320
			990
33	102		
		120	105
			990
105	36		
		744	40
			990
576	0		
		2184	0
1782	0		
			1000
		4051	0
2594	0		

Sta. 783+00

CROSS SECTIONS STA. 783+50 TO STA. 785+48

REG. AD DIVISION	STATE	PROJECT	
2	OHIO		

103

STA. 21-11.49
WAY. 21-0.00
SUM. 21-0.00

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

℄ U.S. 21 N.B.

C-371
979.20
788+62
980.4
976.7
2:1
975

C-324
980.59
788+00
981.8
978.1
2:1
980

C-236
981.64
787+53
982.8
3:1
985

C-21
982.89
787+00
983.3
F-14
C-9
F-11
C-7
978.5
985

C-13
983.95
786+50
984.0
F-210
76 L.F. @ 0.5% 15" T.F.2.U.A.
C-21
978.0
985

24" Culvert Sta 786+26
F.L.(In)-976.10

C-12
985.07
786+00
984.9
F-312
C-16
977.0
985

Sta. 785+48

	END AREA		VOLUME	
	CUT	FILL	CUT	FILL
	371	0		
			798	0
	324	0		
			487	0
	236	0		
			268	24
	37	25		
			66	218
	34	210		
			58	484
	28	312		
			42	549
	16	258		

85 569
80 415
79 477
83 494
95 547
102 575
97

CROSS SECTIONS STA. 786+00 TO STA. 788+62

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

104

STA. 21 - 11.49
WAY. 21 - 0.00
SUM. 21 - 0.60

℄ U.S 21 N.B.

END AREA		VOLUME	
CUT	FILL	CUT	FILL
8	502		
		22	1665
4	397		
		19	1289
6	299		
		296	565
154	0		
		369	4
371	0		

C-4 — F-502 — 2½:1 — C-4 — 960.0 — 970 — RIW 135'

971.63
792+00
971.2

C-4 — F-397 — 2:1 — C-4 — 967.0 — 970 — RIW 130'

973.67
791+00
973.3

C-6 — F-298 — 3:1 — C-6 — 972.0 — 980

976.11
790+00
975.1

C-23 — F-67 — C-131 — 3:1 — 975.8 — 980

978.35
789+00
979.0

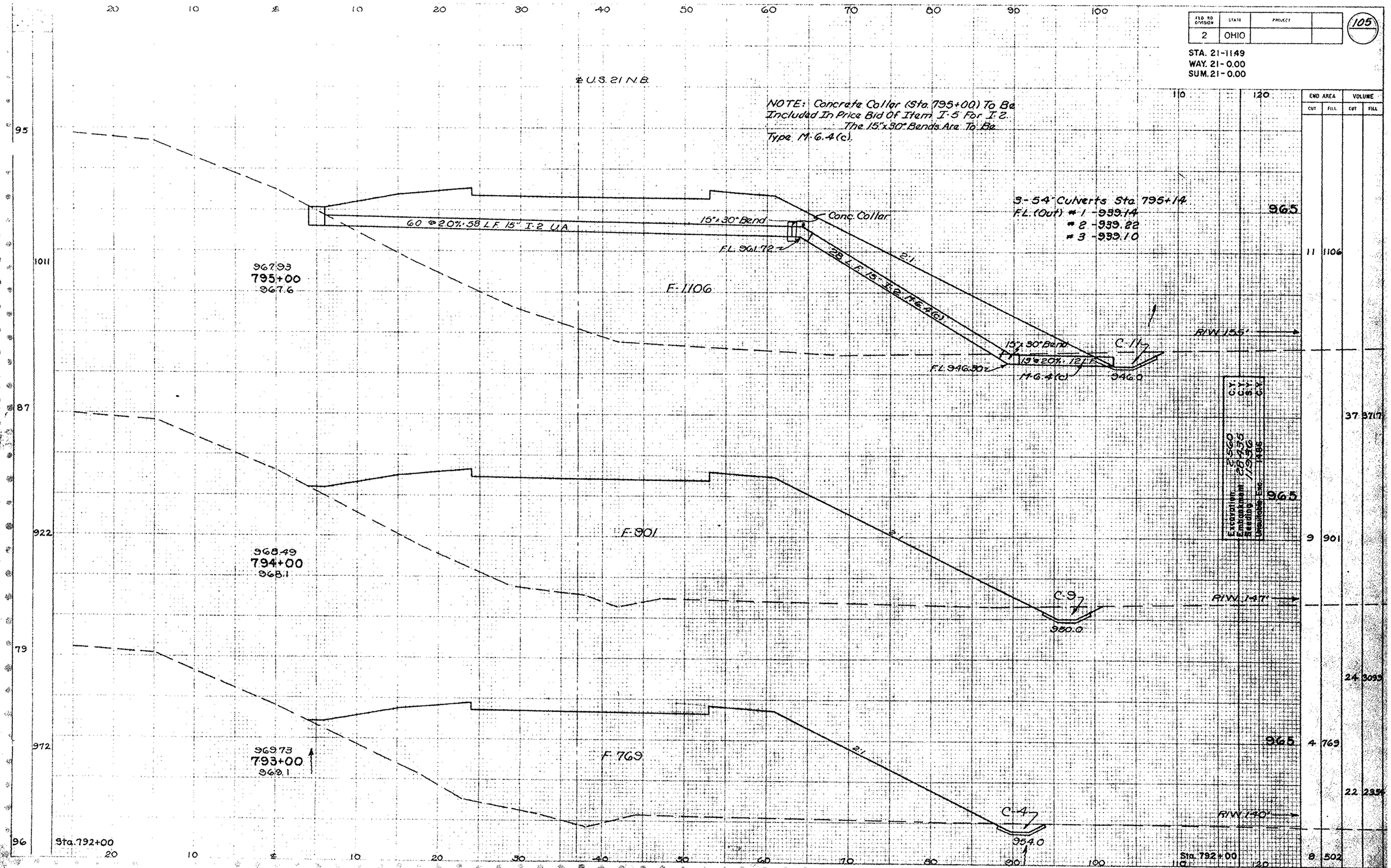
Sta. 788+62

CROSS SECTIONS STA. 789+00 TO STA. 792+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

105

STA. 21-1149
WAY. 21-0.00
SUM. 21-0.00



CROSS SECTIONS STA. 793+00 TO STA. 795+00

2	OHIO			106

STA. 21 - 11.49
WAY. 21 - 0.00
SUM. 21 - 0.00

℄ U.S. 21 N.B.

UNSUITABLE MATERIAL	
END AREA	EXCAVATION
124	
569	
287	
126	
410	
253	
1228	
235	
0	
95	

END AREA		VOLUME	
CUT	FILL	CUT	FILL
	8		1459
	13		2157
	10		1382
			3946
	11		1106

110 120

980
965
955
965

C-8
968.27
796+41
968.3
F-1459
2:1
RTW 160'
C-287
UNSUITABLE EXCAVATION
C-10
NOTE: Concrete Collar Etc. Same As At Sta. 795+00
Concrete Collar
15"x30" Band
56' @ 1.0% - 54 L.F. 15" I.C.P. A
F.L. 962.00
98 L.F. 15" I.C.P. M.64(C)
F-1382
968.03
796+00
968.4
15"x30" Band
15" @ 1.0% - 141 L.F. 15" M.64(C)
F.L. 941.50
RTW 160'
C-253
UNSUITABLE EXCAVATION
NOTE: STA. 795+50
BEGIN UNSUITABLE EXCAVATION
Sta. 795+00
Sta. 795+00

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

CROSS SECTIONS STA. 796+00 TO STA. 796+

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

107

STA. 21-11.49
WAY. 21-0.00
SUM. 21-0.00

℄ U.S. 21 N.B

END AREA		VOLUME	
CUT	FILL	CUT	FILL
18	1319		
0	1433	33	505
8	1459	9	316

965
955
975
965
955
946.0
F/W 145'
C-18
F-1319
968.91
798+00
968.8
36" Culvert Sta. 798+42
F/L (out) - 943.65
F-1433
968.47
797+00
968.2
C-261
F/W 165'
UNSUITABLE EXCAVATION
Sta 796+61
Sta. 796+41

UNSUITABLE MATERIAL	
END AREA	EXCAVATION
0	
	242
	261
	599
124	287

NOTE: STA. 797+50
END UNSUITABLE EXCAVATION

CROSS SECTIONS - STA. 797+00 TO STA. 798+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

108

STA. 21-11.49
WAY. 21-0.00
SUM. 21-0.00

℄ U.S. 21 N.B.

NOTE: Beginning At Sta. 799+07.55 Stationing Of U.S. 21 N.B. Is Given Opposite Of Stationing Of ℄ U.S. 21.

799+00
970.1

799+00.00

F-632

C-1

2:1

C-5
958.0

F-1040

969.14
798+53
968.9

C-4
955.0

F-1037

969.09
798+41
968.7

C-5
951.0

RTW 198'

RTW 195'

Sta. 798+00

Sta. 798+00

END AREA		VOLUME	
CUT	FILL	CUT	FILL
	980		
	970		
19	632		
	960		
		20	1458
	975		
Excavation 1548			
Embankment 599			
Seeding 1350			
	965	4	1040
	950		
	970		2 462
	965		
		5	1037
	950		
		18	1319
			18 178

88
444
82
111
83
397
91

CROSS SECTIONS STA. 798+41 TO STA. 799+00

F&O RD DIVISION	STATE	PROJECT	
2	OHIO		

109

STA. 21-11.49
WAY. 21-0.00
SUM. 21-0.00

	END AREA		VOLUME	
	CUT	FILL	CUT	FILL
804+00	912	1		
804+04.72			1980	2
803+00	787	0		
803+03.28			1919	1
802+40	970	1		
802+42.44			1483	1
802+00	1032	0		
802+01.89			1850	0
801+50	966	0		
801+05.29			1675	1
801+00	843	1		
801+00.80			1748	272
800+00	101	146		
800+00.18			222	1441
Sta. 799+00	19	632		

GROSS SECTIONS STA. 800+00 TO STA. 804+00

FED. RD DIVISION	STATE	PROJECT	
2	OHIO		

110

STA. 21-11.49
WAY. 21-0.00
SUM. 21-0.00

	END AREA		VOLUME	
	CUT	FILL	CUT	FILL
980	154	107		
			552	276
980	144	43		
			539	122
980	147	23		
			1050	46
			420	2
975				
			143	7
975	349	2		
			1172	6
975	290	1		
			1115	4
			312	1

F-1
C-154
810+00
981.8
℄ U.S. 21 N.B.
810+14.32
24" Culvert Sta 810+27
F.L. (Out) - 968.12
F-106
4:1

F-3
C-144
809+00
980.5
809+12.62
F-40

F-1
C-147
808+00
980.1
808+10.95
F-23
4:1

F-2
C-420
807+00
979.5
807+09.33
3:1
972.0

F-2
C-343
806+00
978.2
806+07.75
970.7

F-1
C-214
805+00
977.9
805+06.21
C-76
3:1
968.7

Sta. 804+00

CROSS SECTIONS STA. 805+60 TO STA. 810+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

STA. 21-11.49
WAY. 21-0.00
SUM. 21-0.00

℄ U.S. 21 N.B.

F-27

C-1025

813+25
990.1

813+45.09

F-27

C-788

813+00
990.1

F-8

BG L.F. @ 4.65% 15" T.E.U.A.

813+19.63

F.L. 966.00

F-17

812+00
984.2

C-177

F-2

F-298

812+17.83

811+00
982.3

C-207

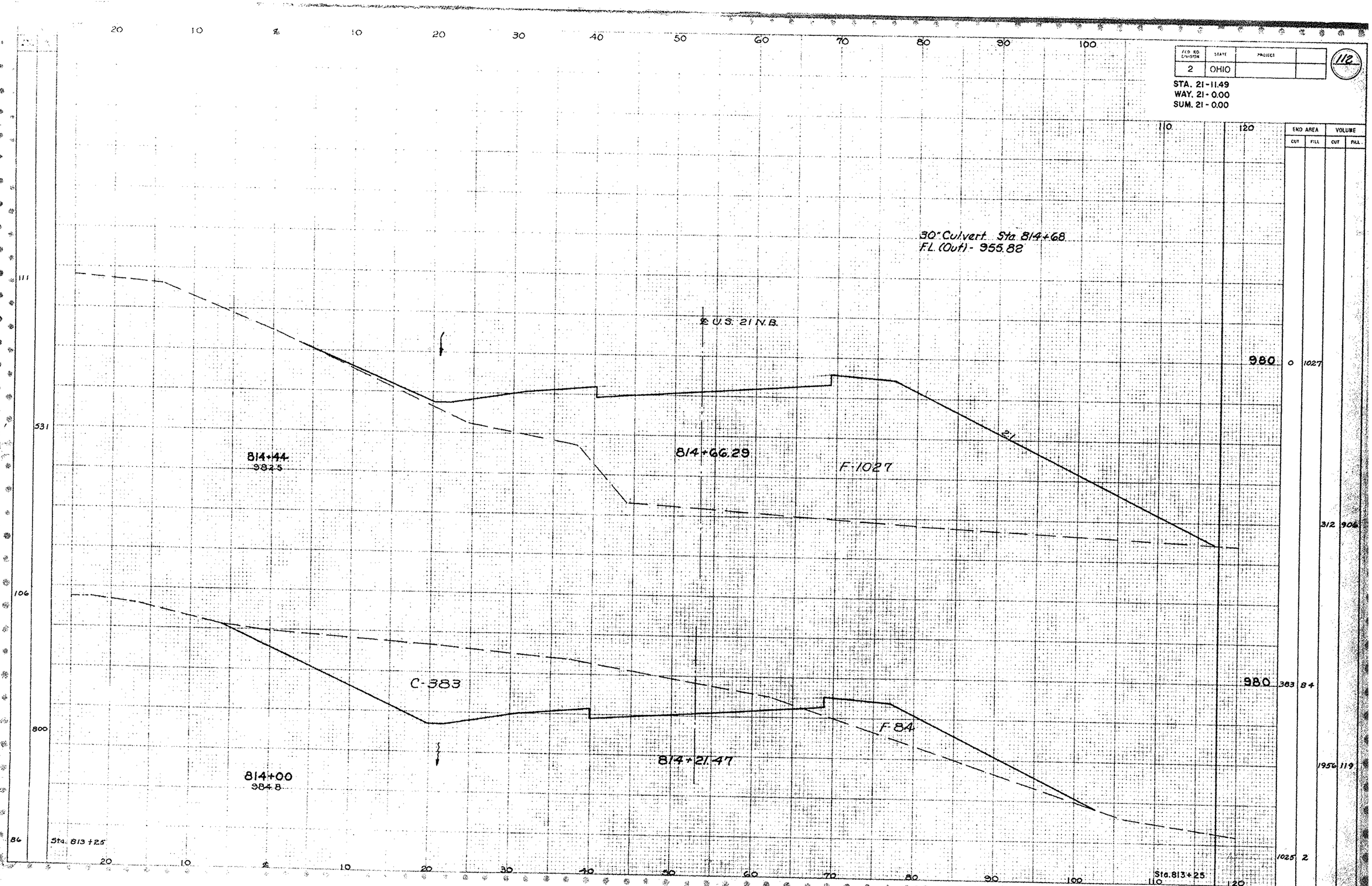
F-42

811+76.06

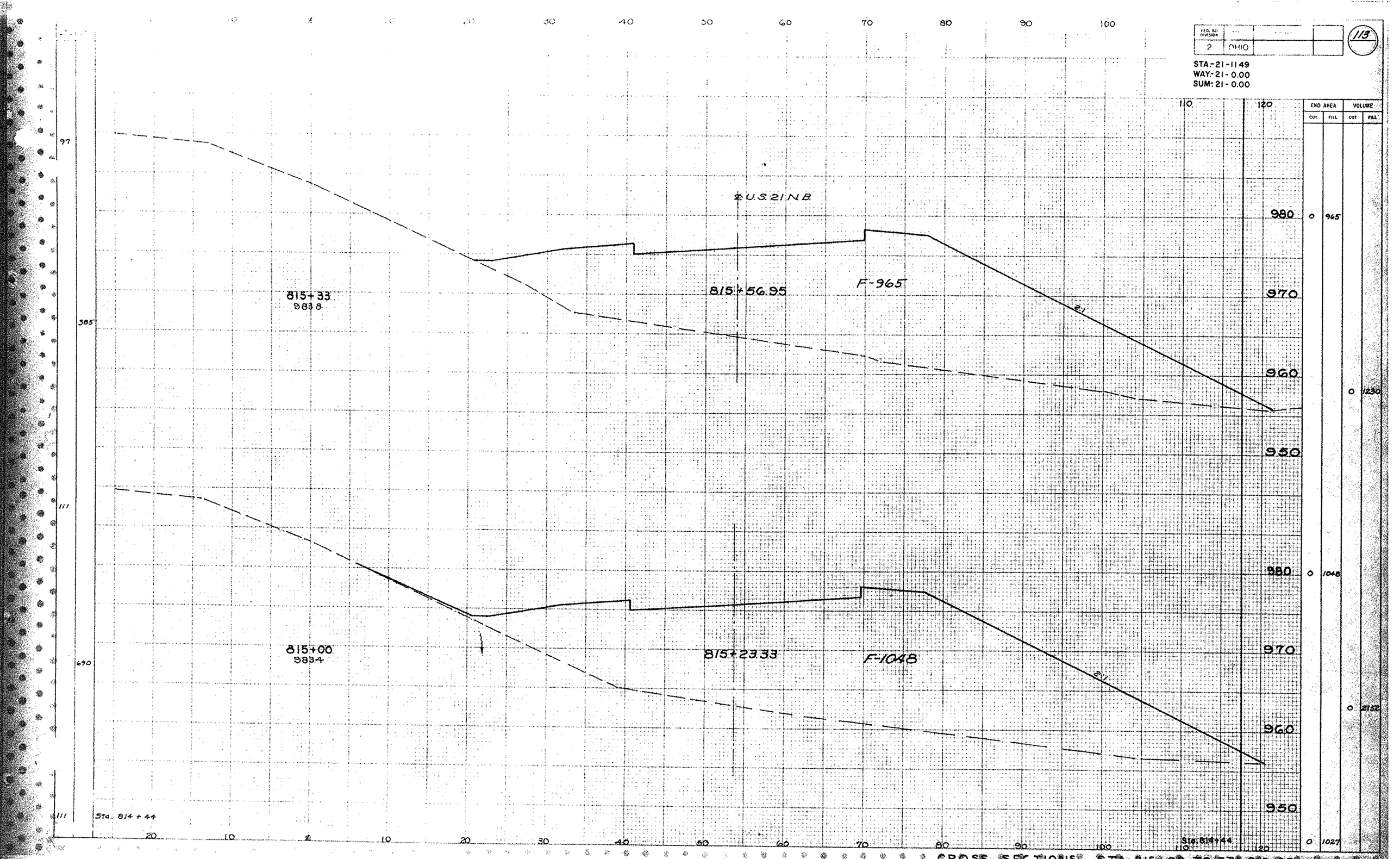
Sta. 810+00

	END AREA		VOLUME	
	CUT	FILL	CUT	FILL
985	1025	2		
			840	6
990	788	10		
			1787	576
980	177	301		
			711	688
980	207	42		
			669	276
	154	107		

CROSS SECTIONS STA. 811+00 TO STA. 813+25



CROSS SECTIONS STA. 814+00 TO STA. 814+44



CROSS SECTIONS STA. 815+00 TO STA 815+33

FED. AID DIVISION	STATE	PROJECT	
2	OHIO		

114

STA. 21-11.49
WAY. 21-0.00
SUM. 21-0.00

END AREA		VOLUME	
CUT	FILL	CUT	FILL
10	849		
		10	462
26	886		
		7	814
0	965		

℄ U.S. 21 N.B.

45" x 27" Culvert Sta 815+65
F.L. (Out) - 955.46

C-10

815+63
9841

815+87.50

F-849

C-26

815+48
9840

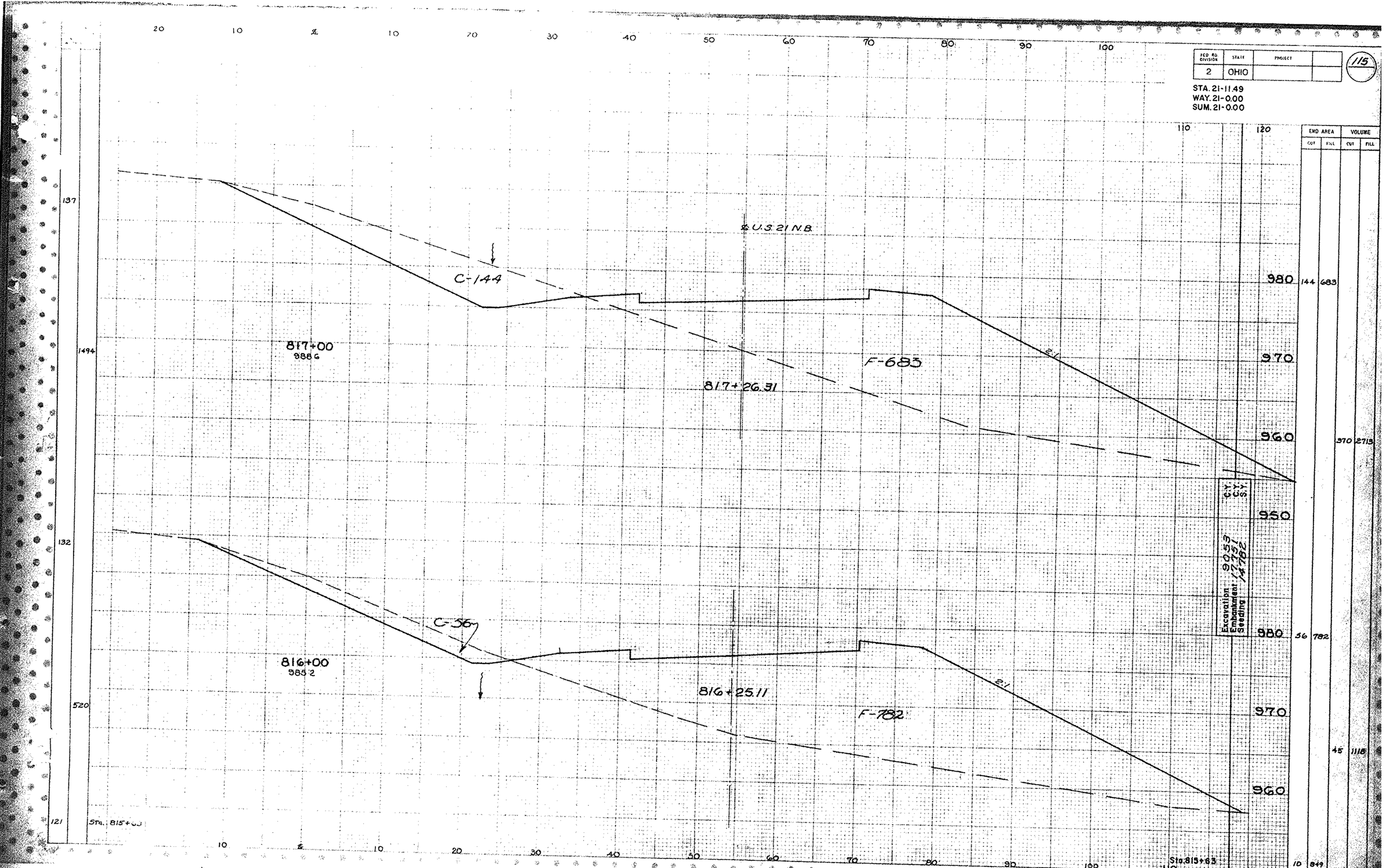
815+72.24

F-886

Sta. 815+33

Sta. 815+35

CROSS SECTIONS STA. 815+48 TO STA 815+63



CROSS SECTIONS STA. 816+00 TO STA. 817+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

116

STA. 21-11.49
WAY. 21-0.00
SUM. 21-0.00

END AREA		VOLUME	
CUT	FILL	CUT	FILL

℄ U.S. 21 N.B.

C-85

℄

817+99
818+64
988.4

F-649

℄

Station Equation
℄ U.S. 21 N.B.
818+84+25 B.K. = 818+57.30 A.H.

C-76

℄

818+00
989.6

F-438

818+26.89

123
853
117
1411
137
Sta. 817+00

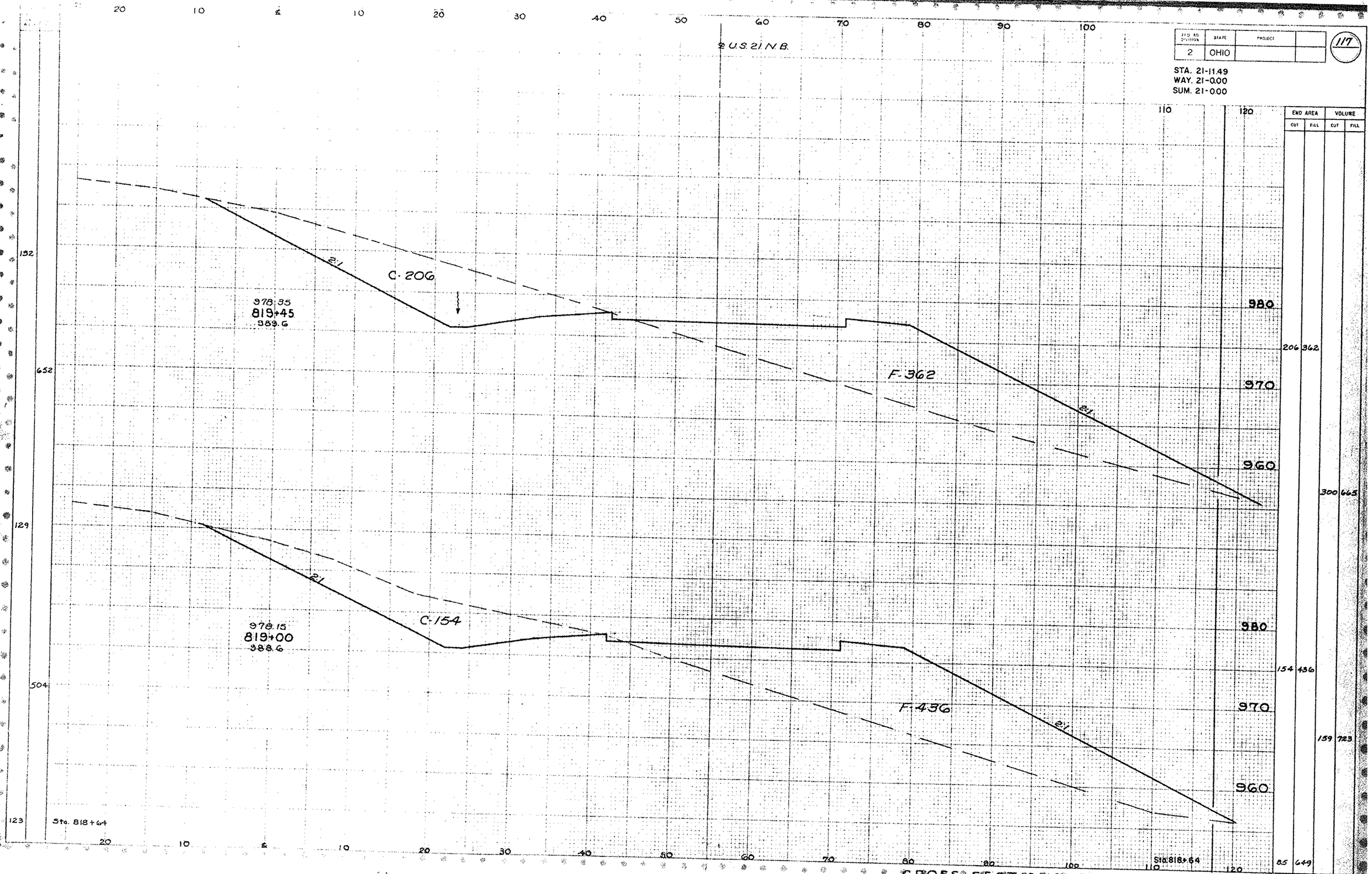
990
980
970
960
950
980
970

970 85 649
291 1288
76 438
407 2076

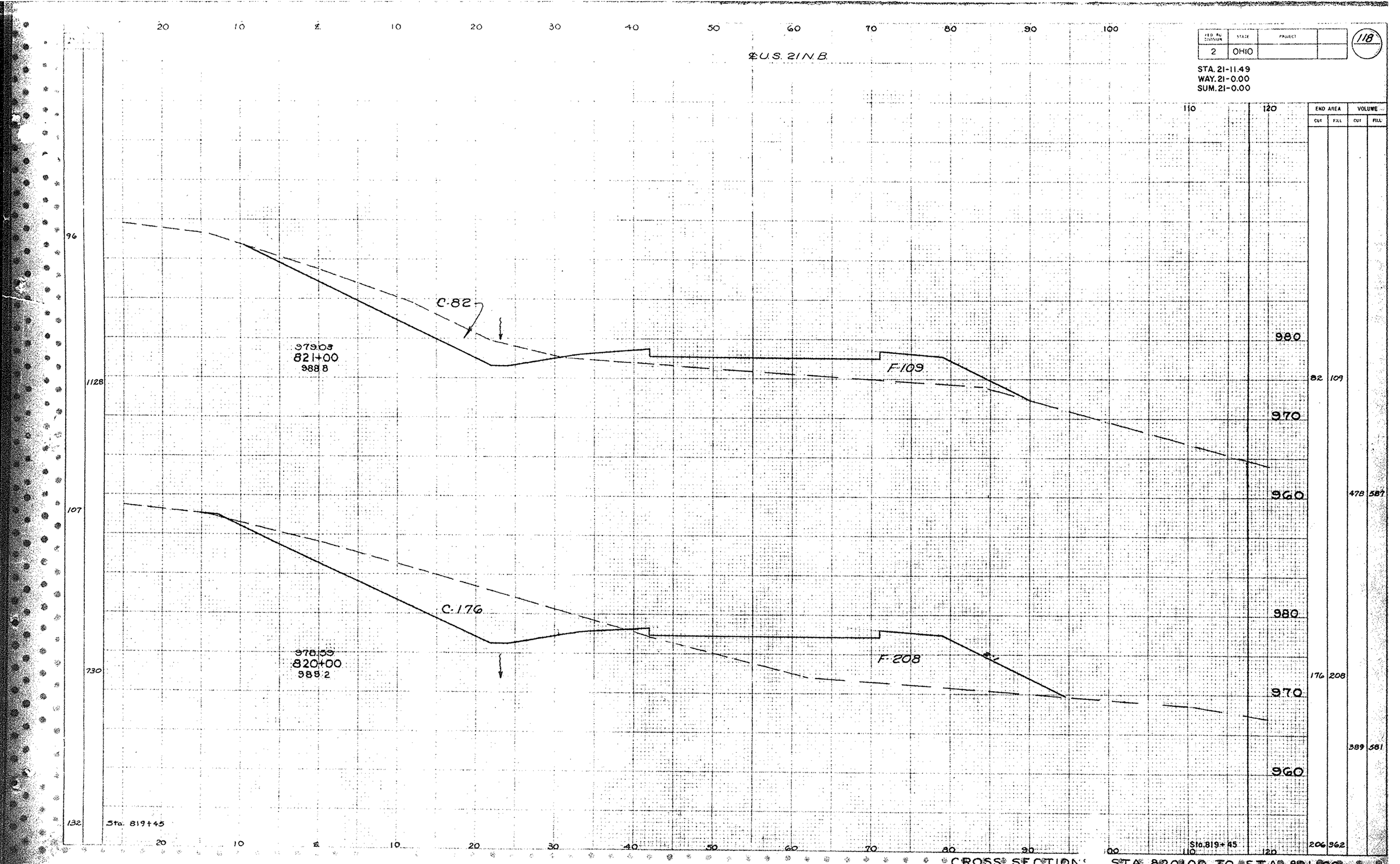
20 10 0 10 20 30 40 50 60 70 80 90 100 110 120

Sta. 817+00

CROSS SECTIONS STA. 818+00 TO STA. 818



CROSS SECTIONS STA. 819+00 TO STA. 819+45



CROSS SECTIONS STA. 820+00 TO STA. 821+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

119

STA. 21-11.49
WAY. 21-0.00
SUM. 21-0.00

END AREA		VOLUME	
CUT	FILL	CUT	FILL

℄ U.S. 21 N.B.

C-104

F-3

F-186

2:1

979.91
823+00
990.1

C-92

F-48.7

2:1

979.47
822+00
989.5

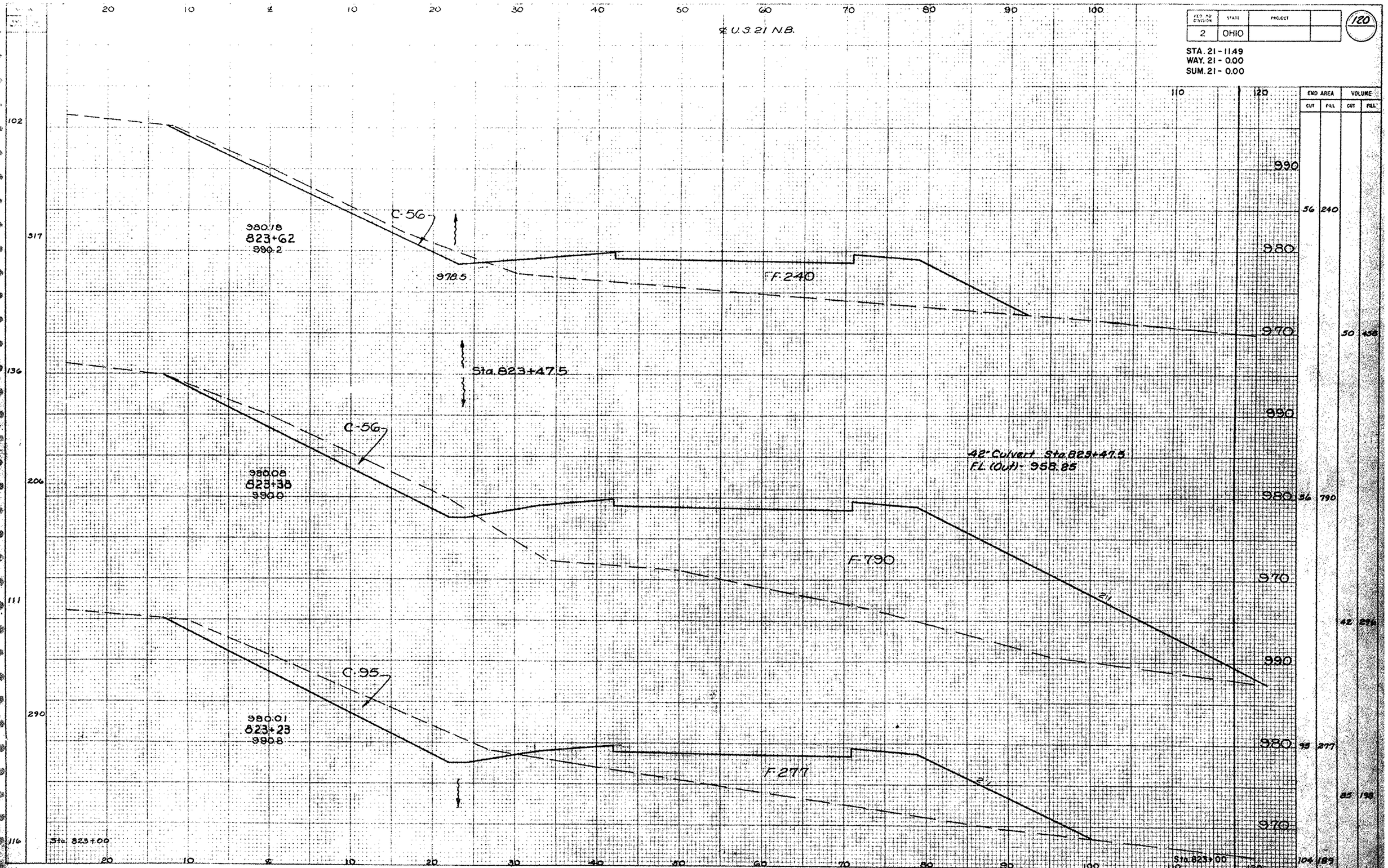
Sta. 821+00

Sta. 821+00

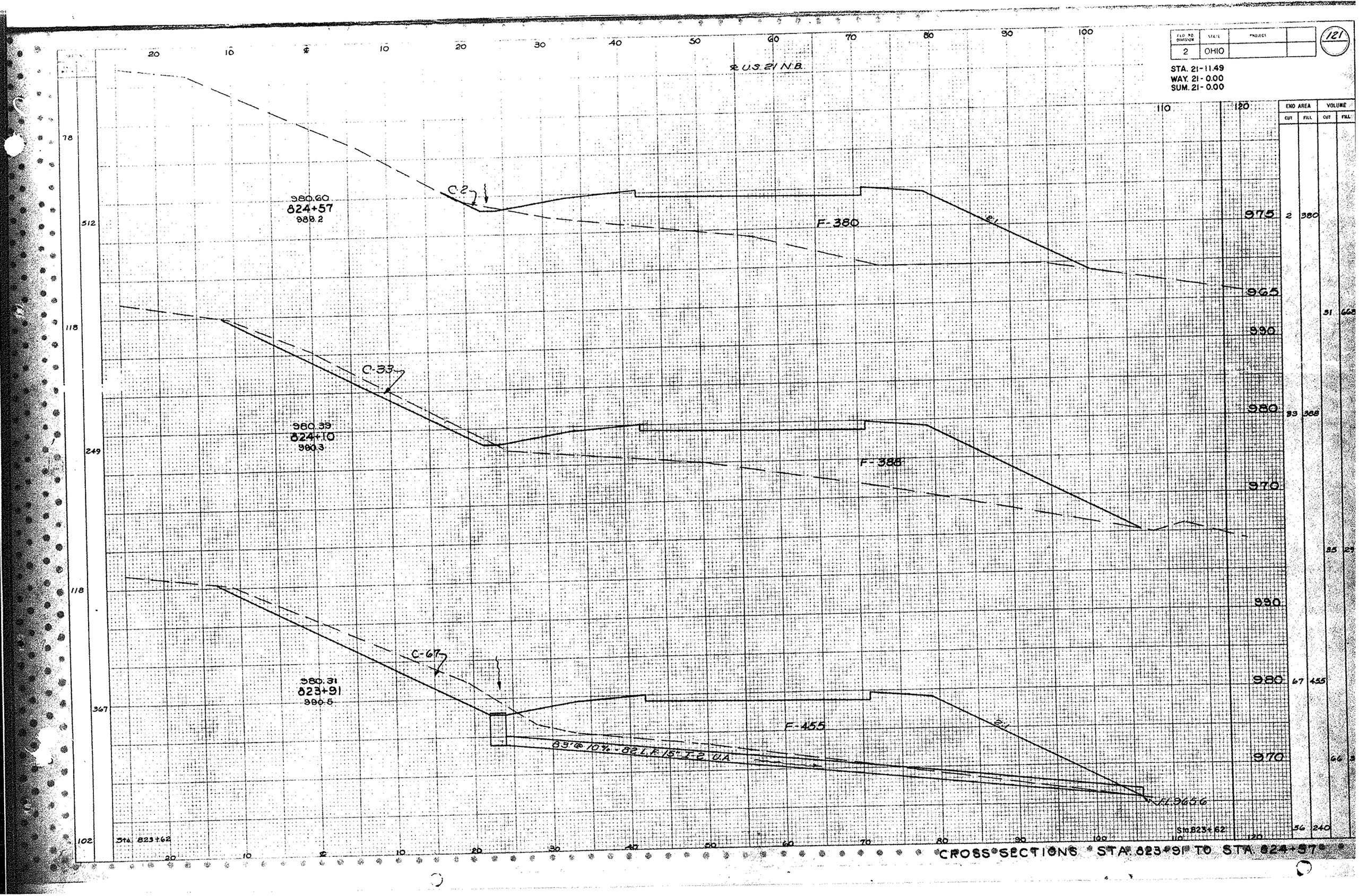
990
980
970
960
980
970
960

104 189
563 1252
92 487
322 1104
82 109

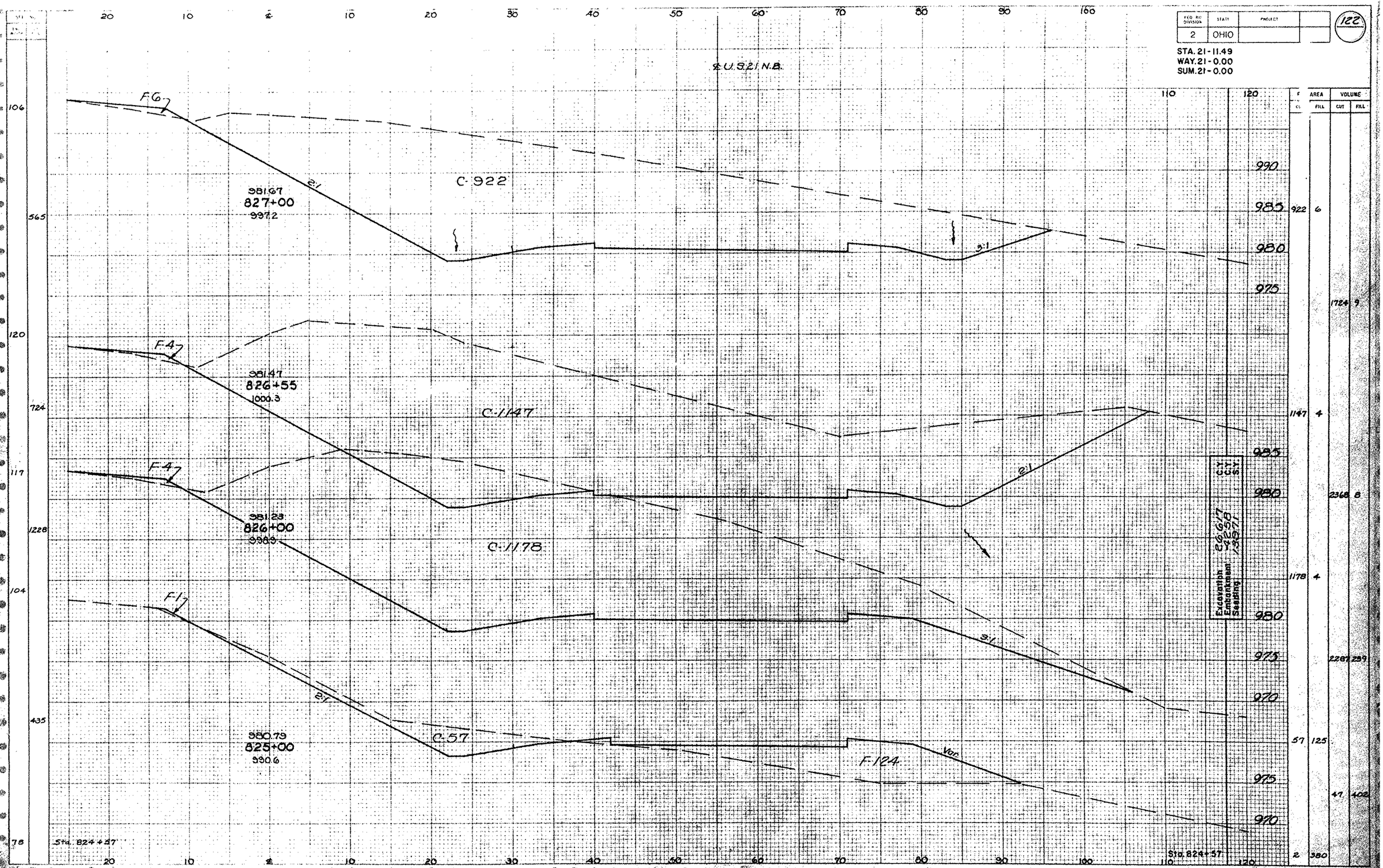
CROSS SECTIONS STA 822+00 TO STA 823+00



CROSS SECTIONS STA. 823+23 TO 823+62



FED. RD. DIVISION 2
STATE OHIO
PROJECT
121
STA. 21-11.49
WAY. 21-0.00
SUM. 21-0.00
℄ U.S. 21 N.B.
980.60
824+57
989.2
C-2
F-380
2:1
980.39
824+10
990.3
C-33
F-388
980.31
823+91
990.5
C-67
F-455
83' @ 10% - 82 L.F. 15" I-2 U.A.
F.L. 965.6
Sta. 823+62
END AREA
VOLUME
CUT
FILL
975
965
990
980
970
2 380
31 668
33 388
35 29
67 455
66
56 240
CROSS SECTIONS STA. 823+91 TO STA. 824+57



FED. RD. DIVISION 2
STATE OHIO
PROJECT
122
STA. 21-11.49
WAY. 21-0.00
SUM. 21-0.00
℄ U.S. 21 N.B.
F-6
C-922
981.67
827+00
997.2
2:1
3:1
F-4
981.47
826+55
1000.3
C-1147
F-4
981.23
826+00
998.9
C-1178
F-1
980.79
825+00
990.6
C-57
F-124
Var.
Excavation 26,617 C.Y.
Embankment 4258 C.Y.
Seeding 13971 S.Y.
Sta. 824+57
Sta. 824+57
AREA
VOLUME
CUT
FILL
CROSS SECTIONS STA. 825+00 TO STA. 827+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

123

STA. 21-1149
WAY. 21-0.00
SUM. 21-0.00

℄ U.S. 21 N.B.

SEEDING

107	
1244	
1117	
1855	
105	
875	
97	
248	
104	

982.90
850+00
997.2

C-979

F-4

982.55
829+00
1000.8

C-1494

F-4

982.11
828+00
999.1

C-748

F-4

981.77
827+22
994.5

C-576

Sta. 827+00

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

END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
979	0		
		4586	2
1494	1		
		4152	9
748	4		
		1913	12
576	4		
		610	4
922	6		

990 985 980 975 980 985 980 975 980 985 980 975

Sta. 827+00

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

CROSS SECTIONS STA. 827+22 TO STA. 880+00

FED. RD DIVISION	STATE	PROJECT	
2	OHIO		

124

STA. 21 - 11.49
WAY. 21 - 0.00
SUM. 21 - 0.00

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

93 1006 88 956 84 1044 104 1172 107

Sta. 830+00

RU 3.21 N.B.

982.37
834+00
996.2

C-444

F-97

982.92
833+00
995.8

C-580

F-47

983.09
832+00
995.8

C-454

983.08
831+00
996.3

C-686

24" Culvert Sta 833+00
F.L.(Out) - 975.04

Sta. 830+00

	END AREA		VOLUME	
	CUT	FILL	CUT	FILL
990	444	9		
			1526	24
990	380	4		
			1544	7
990	454	0		
			2111	0
990	684	0		
			3088	0
	979	0		

CROSS SECTIONS STA. 831+00 TO STA. 834+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

125

STA. 21 - 11.49
WAY. 21 - 0.00
SUM. 21 - 0.00

℄ U.S. 21 N.B.

837+00
995.2

C-426

24" Culvert Sta. 837+57
F.L. (Out) 972.14

F-125

836+00
997.4

C-743

835+00
998.7

C-611

F-107

Sta. 834+00

CROSS SECTIONS STA. 835+00 TO STA. 839+00

	END AREA		VOLUME	
	CUT	FILL	CUT	FILL
990				
	426	125		
980				
			2165	231
970				
990	743	0		
960				
			2508	19
970				
990	611	10		
980				
			1954	35
970				
	144	9		

SEQ. NO. DIVISION	STATE	PROJECT	
2	OHIO		

126

STA. 21 - 11.49
WAY. 21 - 0.00
SUM. 21 - 0.00

℄ U.S. 21 N.B.

978.24
839+00
988.5

C-108

F-255

979.45
838+00
992.8

C-384

F-28

979.98
837+57
990.6

C-198

F-82

END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
990			
980	108	255	
970			
		911	524
990			
980	384	28	
			464 88
990			
980	198	82	
			659 218
	426	126	

Sta. 837+00

Sta. 837+00

CROSS SECTIONS STA 837+57 TO STA 839+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

127

STA. 21-11.49
WAY. 21-0.00
SUM. 21-0.00

℄ U.S. 21 N.B.

NOTE: Concrete Collar (Sta 841+00) To Be Included In Price Bid Of Item I-5 For I-2 Storm Sewer. The 15"x30° Bend Are To Be Type M 6.4 (C).

841+00
984.2

C-2

I.G. 97285

F.L. 969.25

80 L.F. 15" I-2 U.A. @ 20%

F-510

15"x30° Bend

Concrete Collar

F.L. 968.05

15"x30° Bend

F.L. 958.82

840+00
987.2

C-57

F-480

Excavation 1683.99 C.Y.
Embankment 1683.99 C.Y.
Seeding 1.5 AC.

END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
1156			
	90		
1239			
	118		
	105		

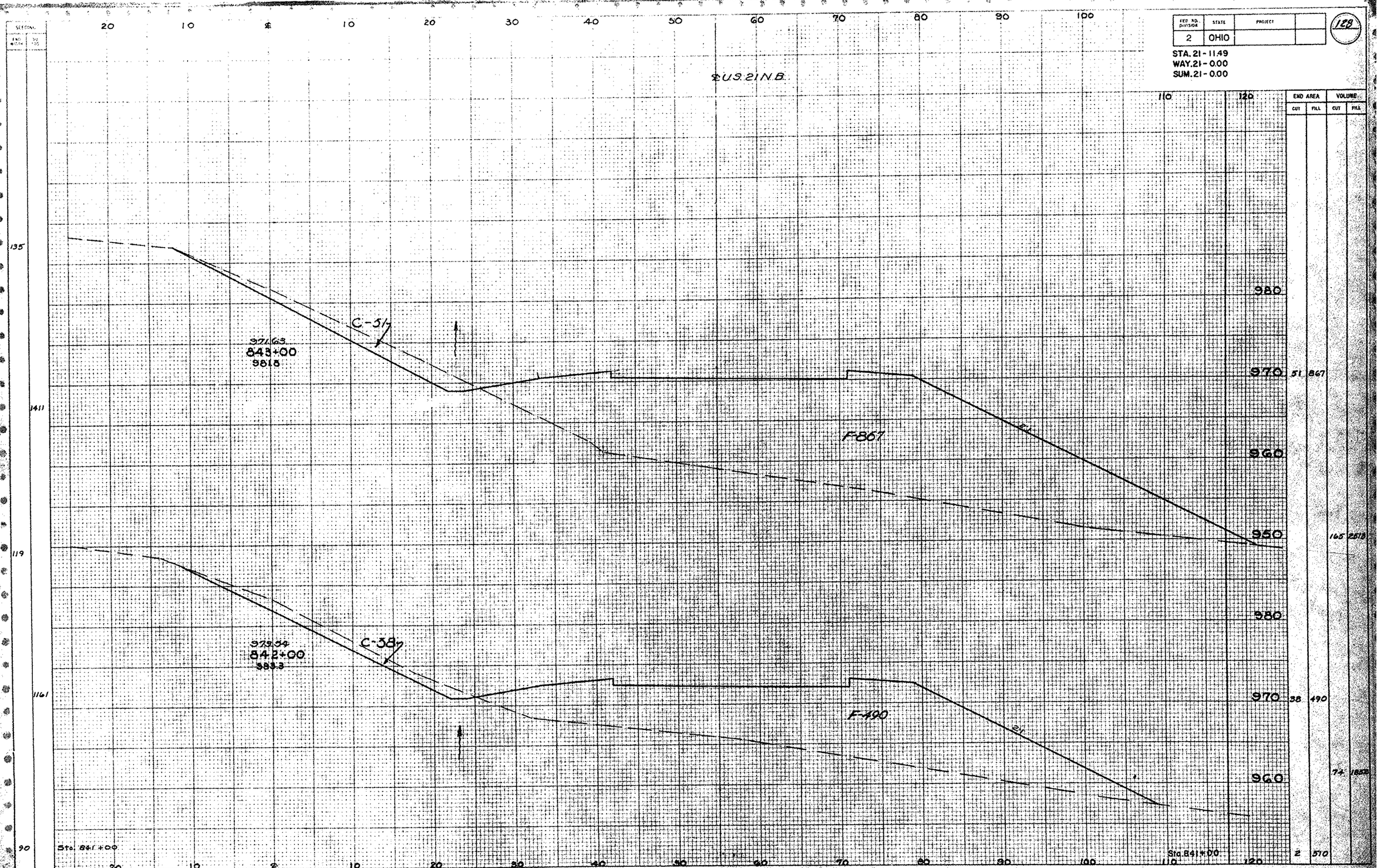
990
980
970
960
950
940
930

2 510
109 1858
57 480
108 255
306 1361

Sta. 839+00

Sta. 839+00

CROSS SECTIONS STA. 840+00 TO STA. 841+00



CROSS SECTIONS STA. 842+00 TO STA. 843+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

129

STA. 21-11.49
WAY. 21-0.00
SUM. 21-0.00

℄ U.S. 21 N.B.

END AREA		VOLUME	
CUT	FILL	CUT	FILL
65	660		
44	862		
31	867		

967.63
845+00
977.7

C-65

F-660

℄

967.63
844+00
979.1

C-44

F-862

℄

202.2819

176.3202

CROSS SECTIONS STA 844+00 TO STA 845+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

130

STA. 21-11.49
WAY. 21-0.00
SUM. 21-0.00

℄ U.S. 21 N.B.

END AREA		VOLUM	
CUT	FILL	CUT	

C-294

964.06
847+00
873.4

847+00

F-535

℄

NOTE. Beginning At Station 847+00
Stationing For ℄ U.S. 21 N.B. Is Given
Opposite The Stationing For
℄ U.S. 21 Survey

C-521

963.73
846+00
875.8

F-514

℄

980
970
960 29 535
950
940
930 150 19
920
910
900
890 217 21
880
870
860 52 514
850
840 65 660

Sta. 845+00

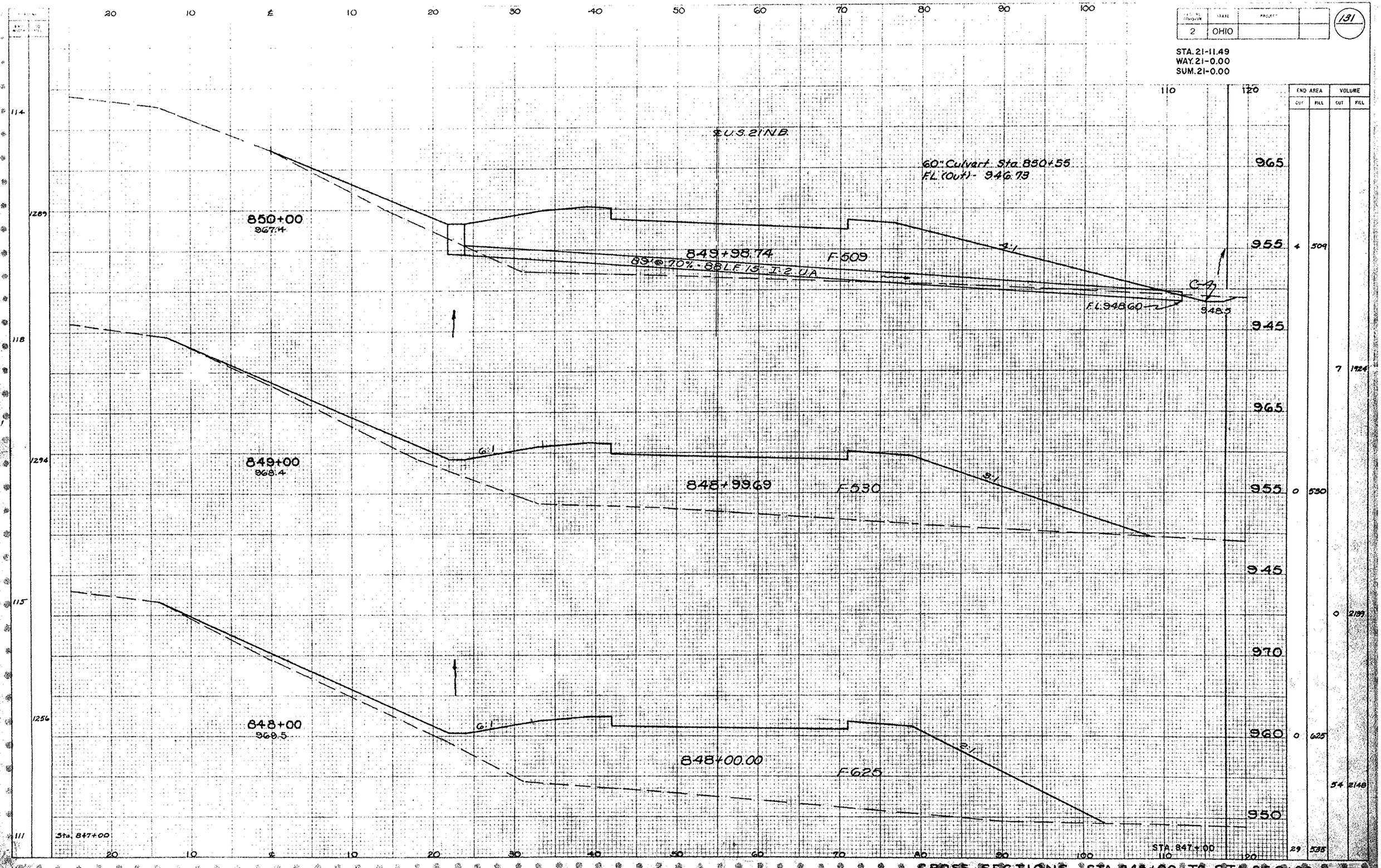
Sta. 855+00

CROSS SECTIONS STA. 846+00 TO STA. 847+00

DIVISION	STATE	PROJECT	
2	OHIO		

131

STA. 21-11.49
WAY. 21-0.00
SUM. 21-0.00



END AREA		VOLUME	
CUT	FILL	CUT	FILL
4	509		
		7	1924
0	530		
		0	2139
0	625		
		54	2148
29	538		

CROSS SECTIONS STA. 848+00 TO STA. 850+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

132

STA. 21-11.49
WAY. 21-0.00
SUM. 21-0.00

℄ U.S. 21 N.B.

854+00
966.6

853+91.50 C.986

853+00
963.2

C.45

C.63

NOTE: Median Ditch Transition At Sta 853+00 At 2 Ft. Per 100 Ft.

852+93.37

852+00
963.7

F-184

C.57

951.0

851+95.26

851+00
965.7

F-382

C.57

949.5

850+97.16

Sta. 850+00

Sta. 850+00

			END AREA		VOLUME	
			CUT	FILL	CUT	FILL
107	1117	960	986	0		
					2026	0
94	1067	960	108	0		
					206	941
98	1200	960	3	184		
					15	1048
118	1289	965	5	382		
					17	1650
114			4	509		

Excavation 21,970
Embankment 11,205
Seeding 1.4

CROSS SECTIONS STA. 851+00 TO STA. 854+00

FED RD DIVISION	STATE	PROJECT	
2	OHIO		

133

STA. 21-11.49
WAY. 21-0.00
SUM. 21-0.00

END AREA		VOLUME	
CUT	FILL	CUT	F
1505	9		
		5366	6
1592	0		
		4987	0
1901	0		
		4663	2
1326	1		
		4280	2
986	0		

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

℄ U.S. 21 N.B.

857+84.24 C-1505

F-3

6:1

858+00
960.1

856+86.02 C-1592

857+00
961.3

855+87.82 C-1301

856+00
963.1

F-12

855+00
966.5

960 970 960 970 960 960

117 1239 106 1161 103 1200 113 1222 107

Sta. 854+00

CROSS SECTIONS STA. 855+00 TO STA. 858+00

FED. RD DIVISION	STATE	PROJECT	
2	OHIO		

134

STA. 21 - 11.49
WAY. 21 - 0.00
SUM. 21 - 0.00

℄ U.S. 21 N.B.

862+00
952.5

F-9 — 6:1 — C-229 — 4:1

948.2

861+77.42

NOTE: End Median Ditch Transition At Sta. 862+00 - 5' Rt. of ℄.

861+00
954.4

F-4 — 8:1 — 6:1 — C-313

948.8

860+79.08

860+00
956.5

F-3 — 8:1 — 6:1 — C-851 — 4:1

949.2

859+80.77

958+82.49

C-393

859+00
958.1

F-8

9" @ 0.4% - 70 L.F. 15" T-2 U.A.

FL 949.77

Sta. 858+00

Sta. 858+00

	END AREA		VOLUME	
	CUT	FILL	CUT	FILL
950	229	9		
			1004	24
960				
950	513	4		
			2187	13
960				
950	851	3		
			4186	20
960	1393	8		
			5847	24
950				
			1505	3

CROSS SECTIONS STA. 859+00 TO STA. 862+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

135

STA. 21-11.49
WAY. 21-0.00
SUM. 21-0.00

℄ U.S. 21 N.B.

7'-3" x 5'-3" Culvert Sta. 864+30
F.L. (Out) - 934.75

	END AREA		VOLUME	
	CUT	FILL	CUT	FILL
950	18	592		
940			6	216
950	12	574		
940			5	276
950			8	574
940			54	991
950	30	121		
940			480	241
950			229	9

Excavation
Embankment
Seeding

864+00
946.5

F-592

863+74.21

C-18
937.0

6:1

863+90
946.6

F-574

836+64.37

C-12
937.5

863+77
946.6

F 574

863+51.37

C-8
938.0

C-23

863+00
950.8

F-14

F-107

Voc

862+75.80

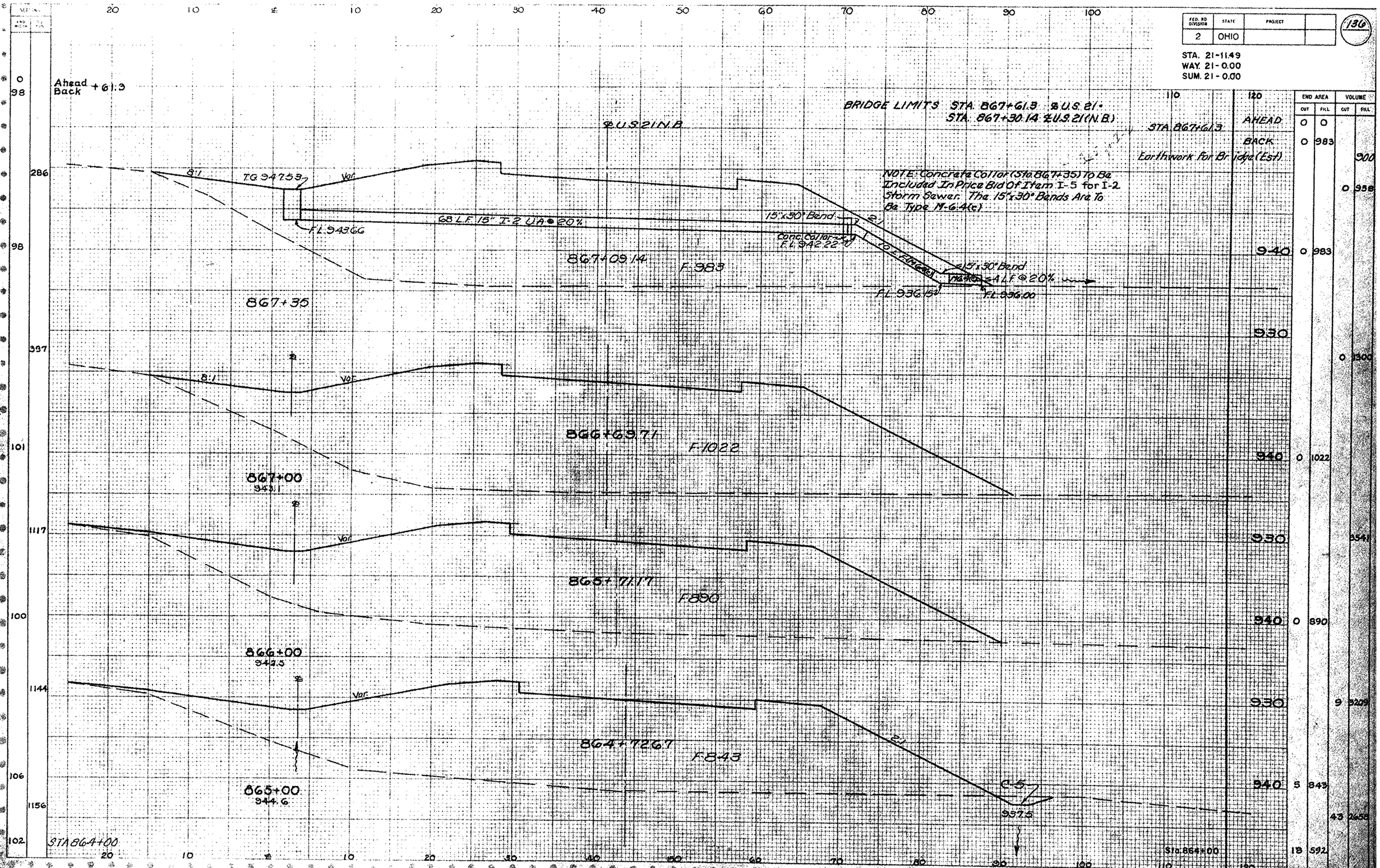
C-7
942.5

NOTE: Sta. 863+00- Median Ditch Is To Be Constructed Between Pavement Edges.

Sta. 862+00

102
111
97
142
100
890
108
1072
85

CROSS SECTIONS STA. 863+00 TO STA. 864+00



FED. RD DIVISION 2
STATE OHIO
PROJECT
136
STA. 21-11.49
WAY. 21-0.00
SUM. 21-0.00
Ahead Back +61.3
BRIDGE LIMITS STA. 867+61.3 ℄ U.S. 21 - STA. 867+30.14 ℄ U.S. 21 (N.B.)
℄ U.S. 21 N.B.
STA. 867+61.3
AHEAD
BACK
Earthwork for Bridge (Est)
NOTE: Concrete Collar (Sta. 867+35) To Be Included In Price Bid Of Item I-5 for I-2 Storm Sewer. The 15"x30° Bends Are To Be Type M-6.4(c)
8:1
T.G. 947.53
Var.
68 L.F. 15" I-2 UA @ 20%
F.L. 943.66
15"x30° Bend
2:1
Conc. Collar F.L. 942.22
867+09.14
F-983
867+35
15"x30° Bend
4 L.F. @ 20%
F.L. 936.15
F.L. 936.00
866+69.71
F-1022
867+00
943.1
865+71.17
F-890
866+00
942.5
864+72.67
F-843
865+00
944.6
C-5
937.5
STA. 864+00
Sta. 864+00
CROSS SECTIONS STA. 865+00 TO STA. 867+35

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

137

STA. 21-11.49
WAY. 21-0.00
SUM. 21-0.00

	END AREA		VOLUME	
	CUT	FILL	CUT	FILL
945	217	1		
			414	723
			56	48
AHEAD	0	378		
STA. 871+97.37				
BACK	0	577		
945			5	791
	4	577		
945			9	1456
	4	733		
			15	2887
940	4	826		
			43	3054
940	19	825		
			9	825
868+73.30 Ahead	0	825		
Back	0	0		
For Tr. Work For Bridge (Est)				253

20 10 0 10 20 30 40 50 60 70 80 90 100 110 120

38 672 Additional Quan. For T.R. 356 (Approx)
435
38 Ahead
66 Back Sta. 871+97.37
271
66
460
72
856
82
956
90 270 90
0

℄ U.S. 21 N.B.
C-21
F-1
873+00
945.8
Sta. 872+24.27 Intersection With T.R. 356
MATCH LINE
Match Line (Ahead Only)
NOTE:
Additional Quantities For T.R. 356 (Approx)
STA. 871+97.37
F-378
F-199
(Back Only)
30 L.F. 15" I.S.U.A. @ 5.6%
871+60
C-47
936.5
NOTE:
End Taper Sta. 871+11.89
871+00
945.8
F-733
C-47
936.0
F-826
870+00
945.3
C-47
934.5
Var.
868+66.98
F-825
C-19
934.0
869+00
944.2
NOTE: Sta. 868+88.37 Begin Taper for Intersection.
BRIDGE LIMIT STA. 868+73.3 ℄ U.S. 21 =
STA. 868+42.14 2 U.S. 21 (N.B.)

"CROSS SECTIONS" STA. 869+00 TO STA. 873+00

FED. AID DIVISION	STATE	PROJECT	
2	OHIO		

138

STA. 21-11.49
WAY. 21-0.00
SUM. 21-0.00

℄ U.S. 21 N.B.

F-3 C-303

949.47
879+00
951.0

F-5 C-145 C-4

948.47
878+00
947.9

948.40

8.1

F-168 C-11

947.66
877+00
946.4

949.0

18" Culvert Sta 876+00
FL(Out)-941.73

Sta 876+17.89 End Taper

F-293

74 L.F. 18" S-27 @ 2.0 %

941.73

C-6

947.22
876+00
947.5

C-250

944.3

947.76
875+00
945.7

C-337

F-1

944.6

947.47
874+00
946.1

Ahead
Back

Sta. 873+10.18

Sta. 873+00

NOTE:
Begin Taper Sta 873+67.89

STA. 873+10.16

	END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
950	303	3		
			837	15
	149	5		
945			296	320
	11	168		
940			31	884
			474	543
940	6	293		
945	250	0		
			1087	2
945	337	1		
			1123	4
AHEAD	337	1		
BACK	217	1	80	0
Sta 873+00	217	1		

CROSS SECTIONS STA. 874+00 TO STA 879+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

139

STA. 21-11.49
WAY. 21-0.00
SUM. 21-0.00

℄ U.S. 21 N B

C-489 F-2 8:1 2:1

884+00
955.8

C-246 F-4 8:1 F-96

883+00
955.0

C-696 F-4 8:1

30" Culvert STA. 881+06
F.L.(out)- 942.20

882+00
951.2

STA. 881+06
Ex. Median Inlet
8:1

F-372

881+00
947.5

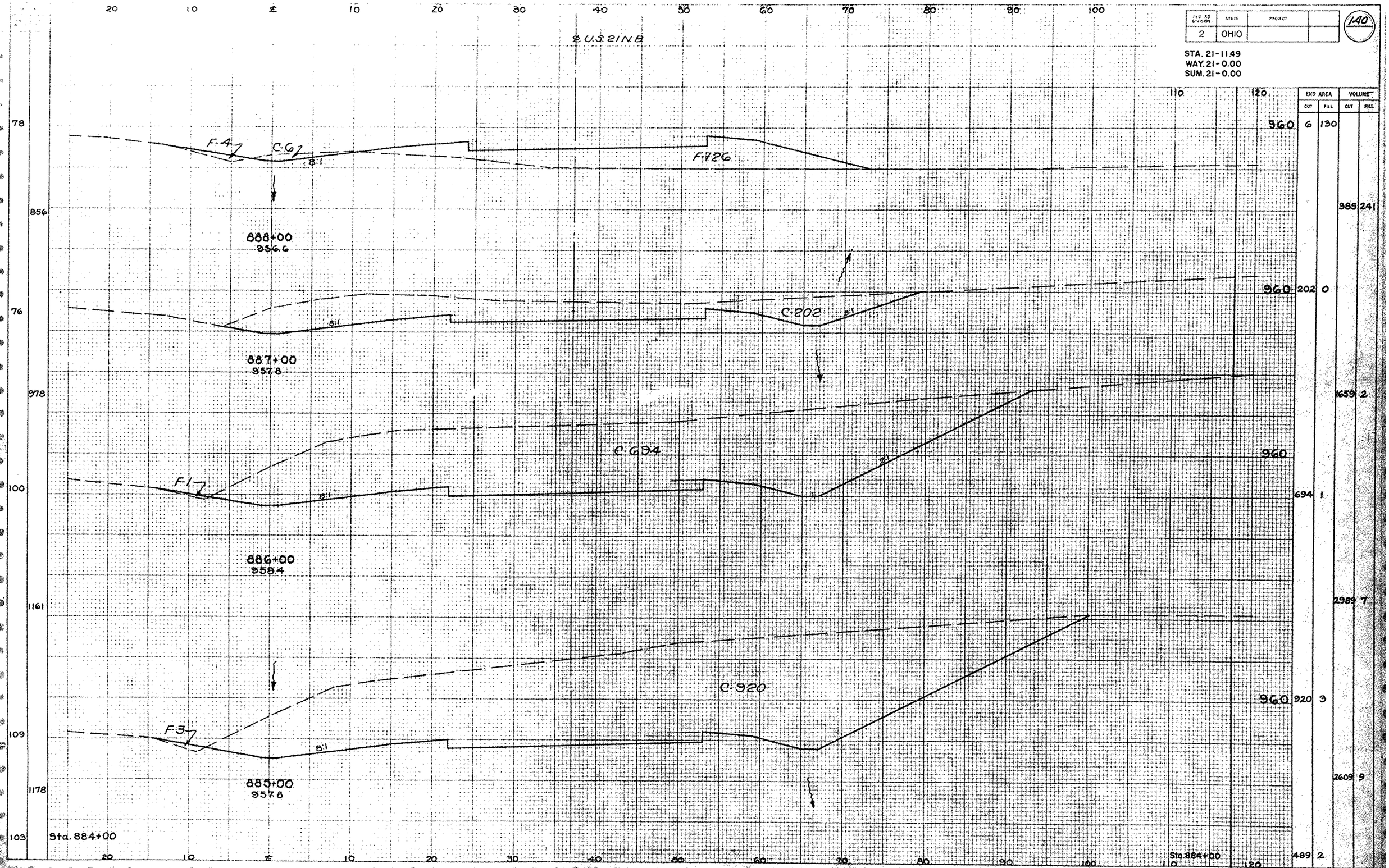
F-8 C-64 8:1 F-70 8:1

880+00
949.9

Sta. 879+00

	END AREA		VOLUME	
	CUT	FILL	CUT	FILL
950	489	2		
			1361	189
950	246	100		
			1744	193
			696	4
950				
			1289	696
945	0	372		
			119	833
945	64	78		
			620	150
			903	3

CROSS SECTIONS STA. 880+00 TO STA. 884+00



CROSS SECTIONS STA. 885+00 TO STA. 888+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

141

STA. 21-1149
WAY. 21-0.00
SUM. 21-0.00

CUSTINB

F-67 C-37 C-1 F-119 C-97 957.0

891+45
959.5

F-218 C-37 956.8

891+00
957.3

F-318

890+00
956.0

C-1 F-266

889+00
955.2

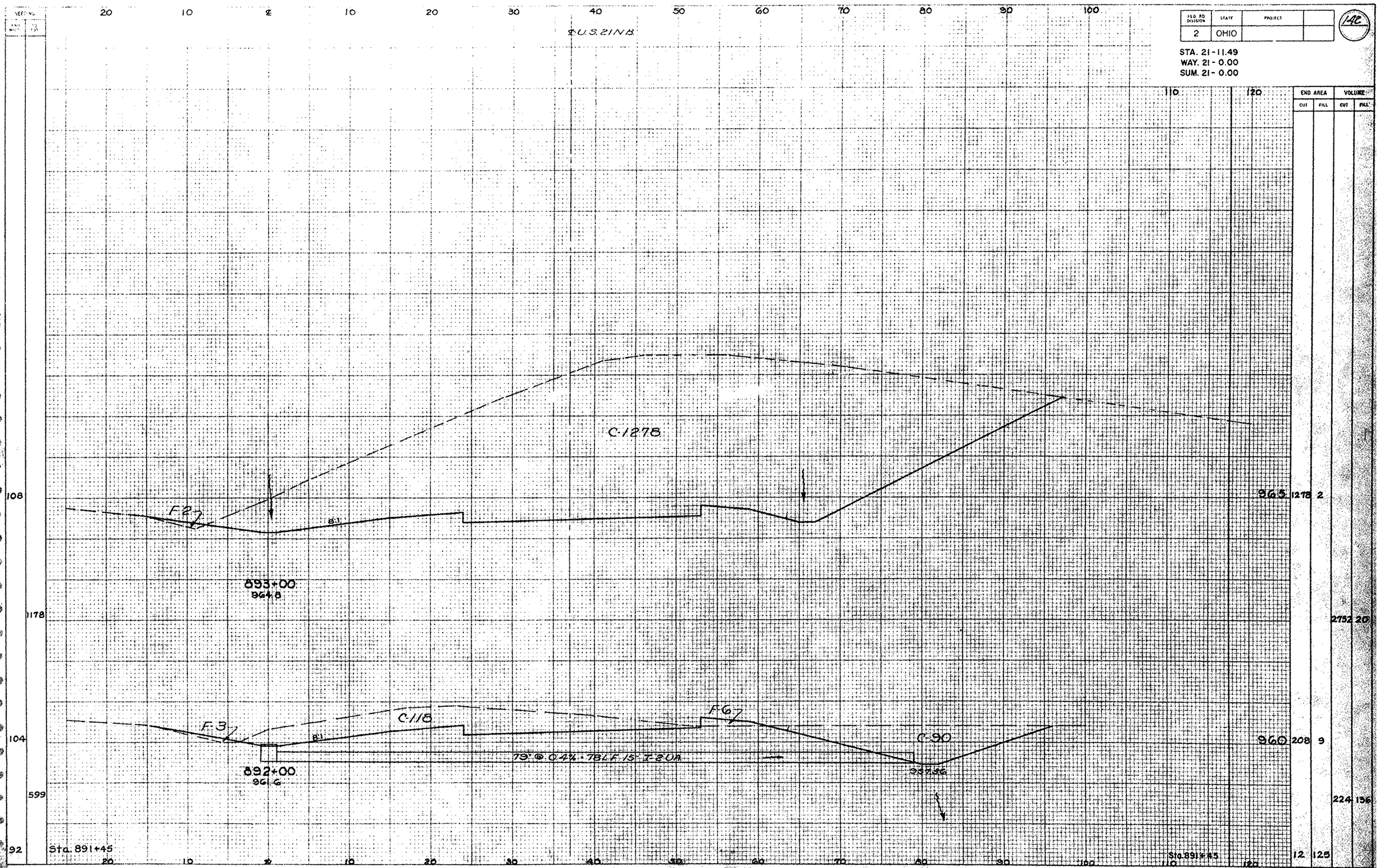
Sta. 888+00

Sta. 888+00

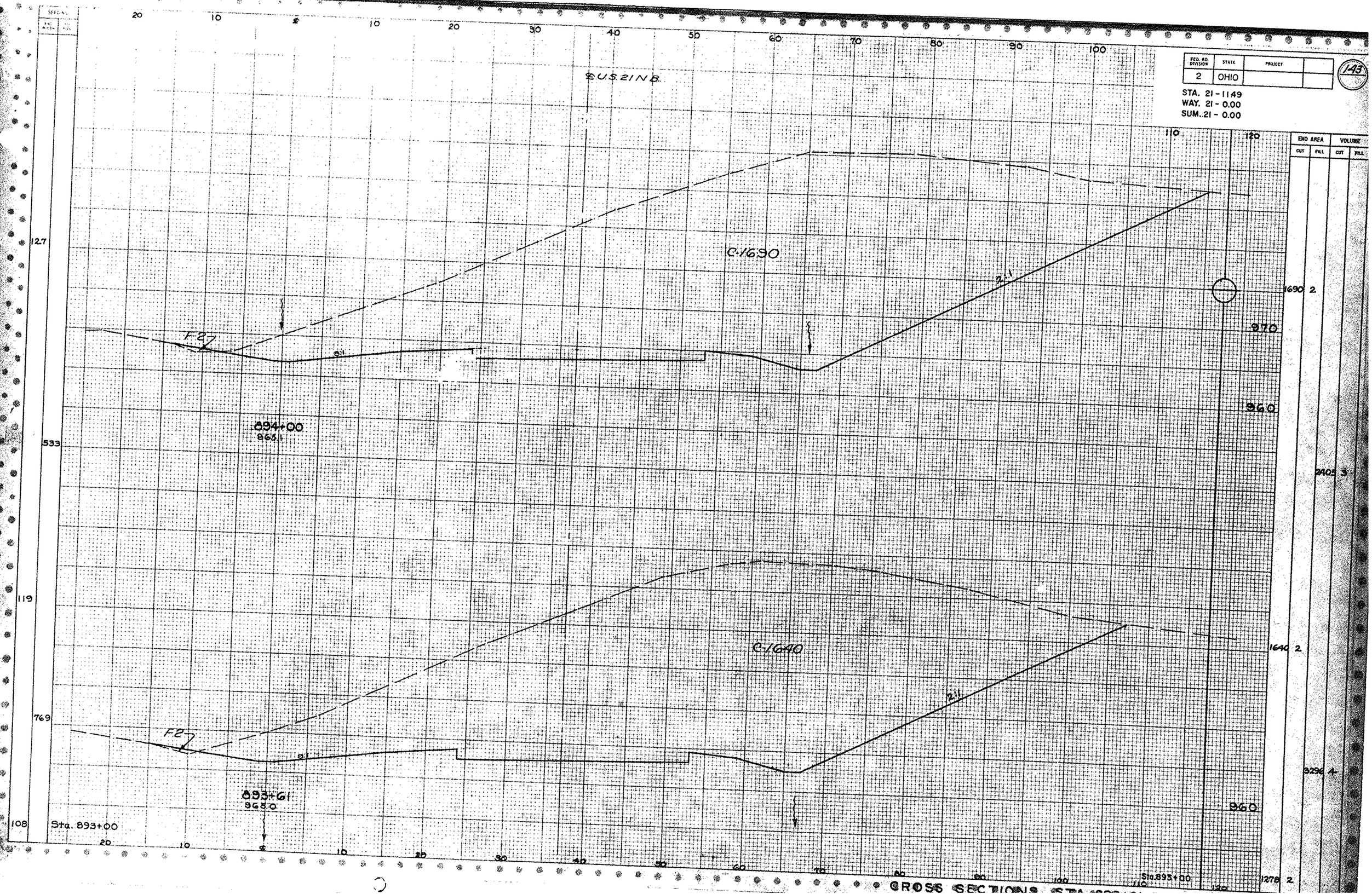
	END AREA		VOLUME	
	CUT	FILL	CUT	FILL
960	12	125		
			13	286
960				
	3	218		
			6	993
960				
	0	318		
			0	1081
	0	266		
950				
			11	733
	6	130		

	CY.	CY.	SY.
Excavation	1945	52	
Embankment	3667		
Seeding	1282.5		

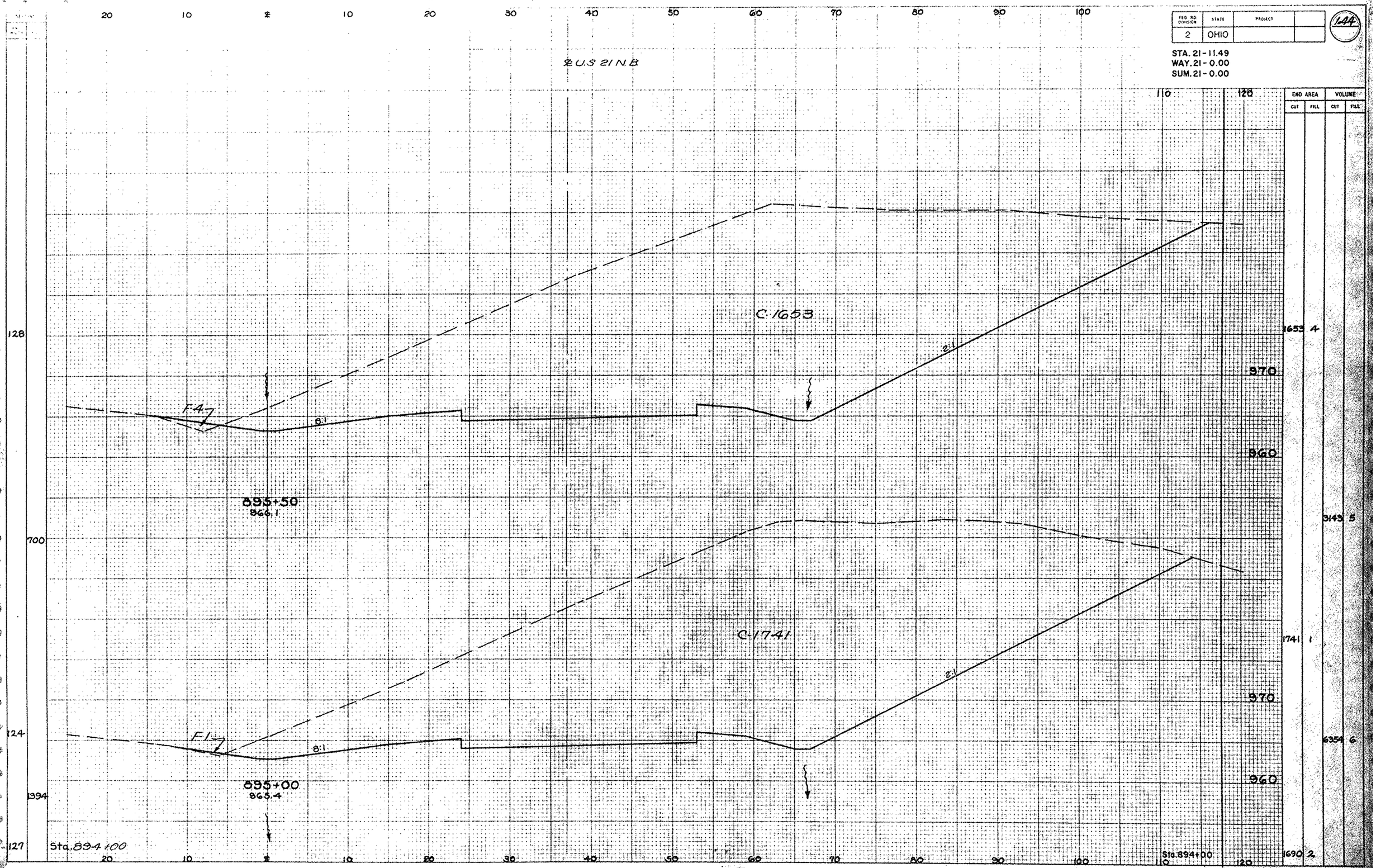
CROSS SECTIONS STA 889+00 TO STA 891+45



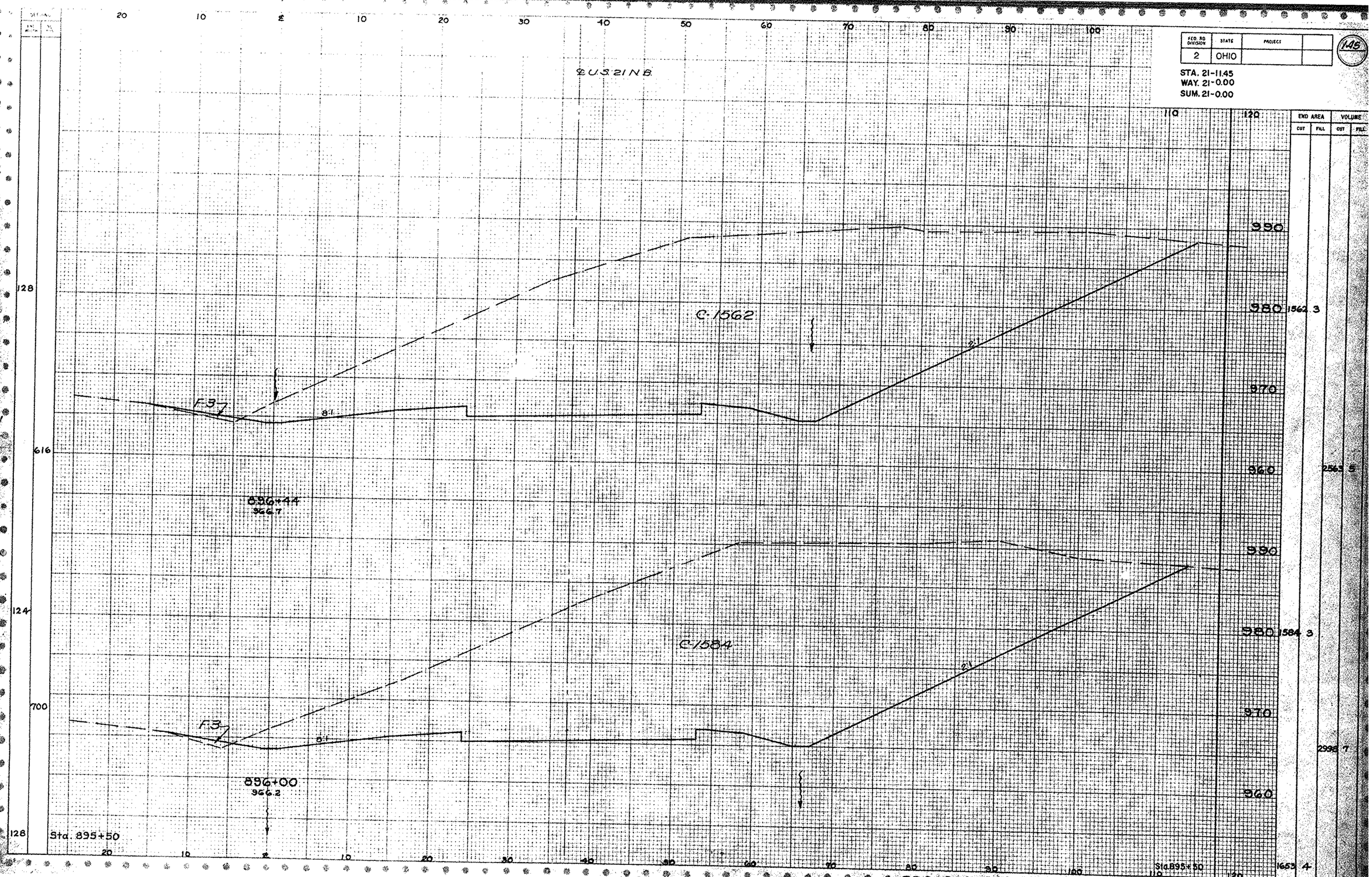
CROSS SECTIONS STA. 892+00 TO STA. 893+00



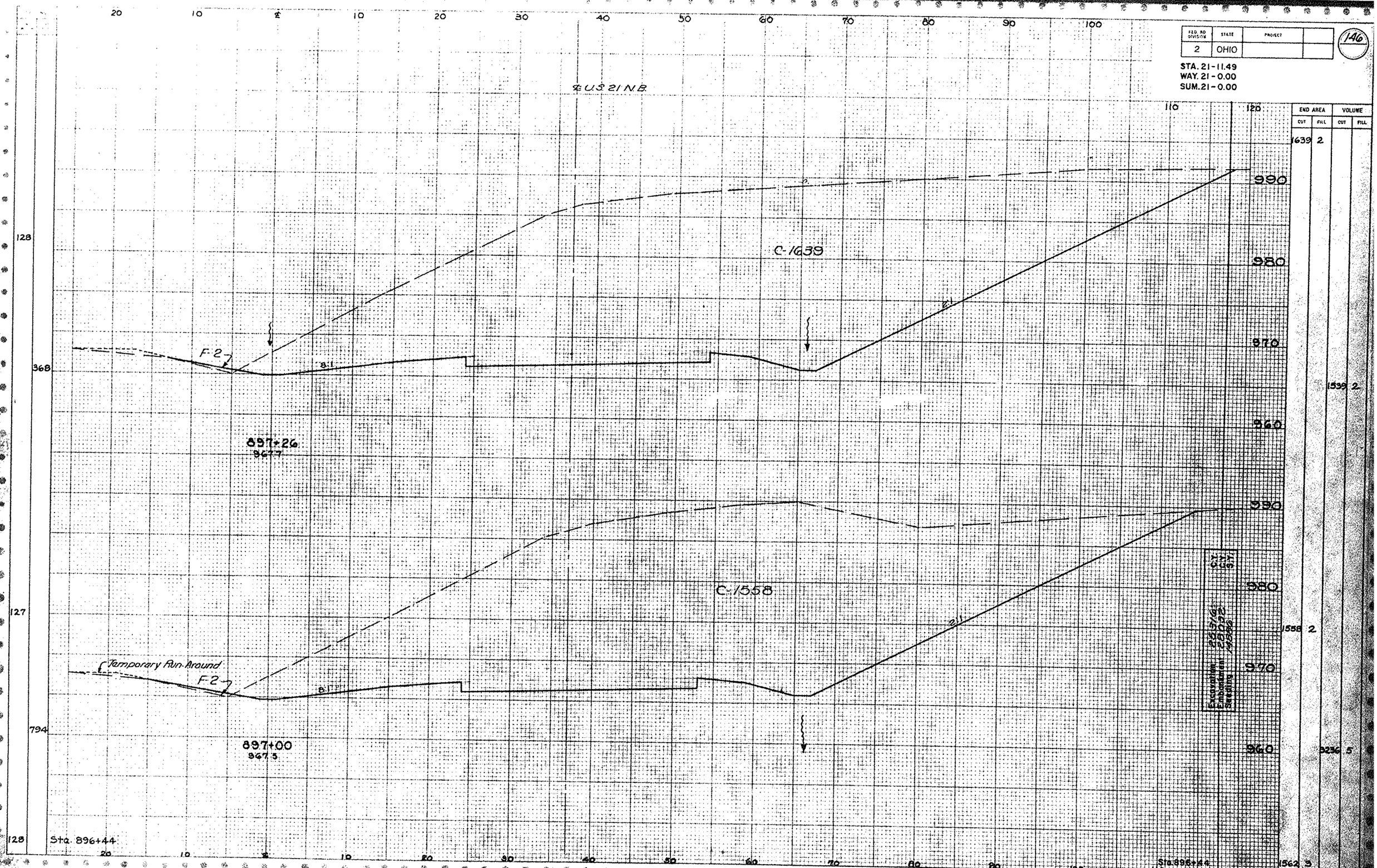
CROSS SECTIONS STA. 893+00



CROSS SECTIONS STA. 895+00 TO STA. 895+50



CROSS SECTIONS STA. 896+00 TO STA. 896+44

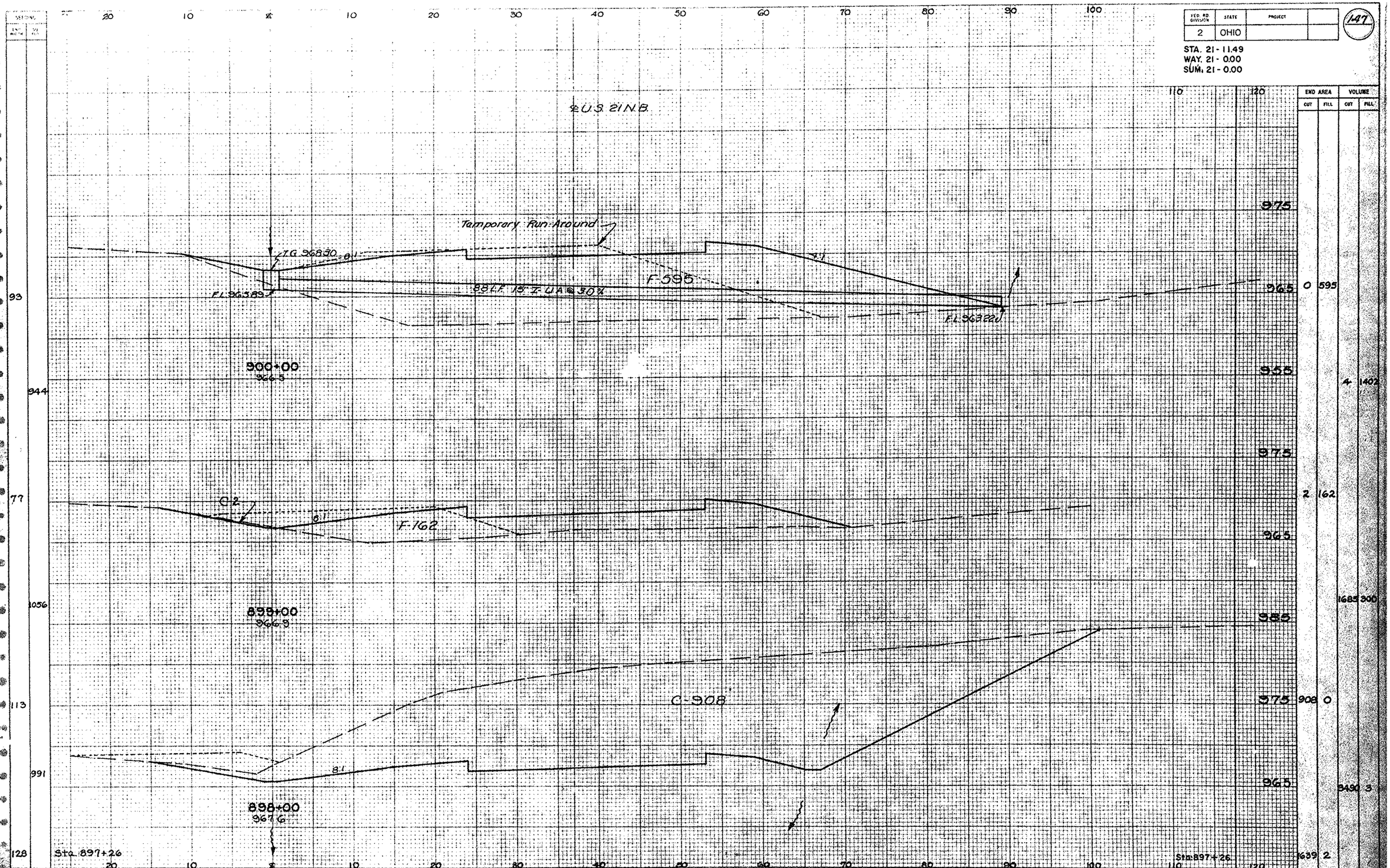


CROSS SECTIONS STA. 897+00 TO STA. 897+26

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

147

STA. 21 - 11.49
WAY. 21 - 0.00
SUM. 21 - 0.00



SEEDING END WIDTH	SEEDING SQ. YDS.	END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
93		0	595		
	944			4	1402
77		2	162		
	1056			1685	300
113		908	0		
	991			3490	3
128		1639	2		

CROSS SECTIONS STA. 898+00 TO STA. 900+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

148

STA. 21 - 11.49
WAY. 21 - 0.00
SUM. 21 - 0.00

END AREA		VOLUME	
CUT	FILL	CUT	FILL
	6		1344
			20 4728

FED. RD DIVISION	STATE	PROJECT	
2	OHIO		

STA. 21-11.49
WAY. 21-0.00
SUM. 21-0.00

END AREA		VOL	
CUT	FILL	CUT	FILL
47	1228		
			144
31	1334		
11	1354		
			31
6	1344		

MATCH LINE 'C'
C-28
C-19
MATCH LINE 'B'
C-17
MATCH LINE 'B'
C-14
MATCH LINE 'A'
C-3
MATCH LINE 'A'
C-8
F-1228
F-1334
F-1354
C.L.
98302
906+00
984.6
98252
905+00
981.3
98302
904+00
979.9
Sta. 903+00
Sta. 903+00
975
970
965
960
955
950
945
940
935
930
925
920
915
910
905
900
895
890
885
880
875
870
865
860
855
850
845
840
835
830
825
820
815
810
805
800
795
790
785
780

FED RD DIVISION	STATE	PROJECT	
2	OHIO		

150

STA. 21-11.49
WAY. 21-0.00
SUM. 21-0.00

	END AREA		VOLUME	
	CUT	FILL	CUT	FILL
990				
980	67	608	103	868
980	76	590	151	1477
980	58	718	194	3604
	47	1228		

MATCH LINE 'C'
C-14
C-53
MATCH LINE 'C'
908+00
989.8
F-608
MATCH LINE 'B'
C-16
MATCH LINE 'B'
C-60
F-590
907+61
988.1
MATCH LINE 'A'
C-20
MATCH LINE 'A'
C-38
F-718
907+00
987.6

Sta. 906+00

GROSS SECTIONS • STA 907+00 TO STA 908+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

151

STA. 21 - 11.49
WAY. 21 - 0.00
SUM. 21 - 0.00

	END AREA		VOLUME	
	CUT	FILL	CUT	FILL
990	30	98		
980			53	154
990	42	110		
980			154	748
990				
980	41	294		
			159	1470
985	45	500		
			207	2052
975	67	608		

Excavation 1286 C.Y.
Embankment 2052 C.Y.
Seeding 2.82 Ac.

911+40
995.7
C-7
NOTE: End Pav't. Removal Sta. 911+00.3 S.B. Lane
MATCH LINE 'C'
MATCH LINE 'C'
F-2
C-5
C-25
F-96
2:1
F-14
C-6
2:1
F-3
C-29
F-93
911+00
994.8
MATCH LINE 'B'
MATCH LINE 'B'
C-1
F-14
C-16
2:1
C-17
F-280
910+00
993.5
C-7
MATCH LINE 'B'
MATCH LINE 'A'
Temporary Turn-Around
C-1
F-15
C-33
2:1
C-4
909+00
991.8
C-7
MATCH LINE 'A'
MATCH LINE 'A'
F-485
2:1
Sta. 908+00
Sta. 908+00

CROSS SECTIONS STA 909+00 TO STA 911+40

FED RD DIVISION	STATE	PROJECT	
2	OHIO		

152

STA. 21-11.49
WAY. 21-0.00
SUM. 21-0.00

STA 915+56.1

NOTE: End Part Removal Sta 915+56.1 N.B Lane.

SUSPEND WORK } STA 915+56.1
SUSPEND PROJECT }

STA 915+56.1

915+00
1004.9

914+00
1002.3

Temporary Run Around

913+00
998.7

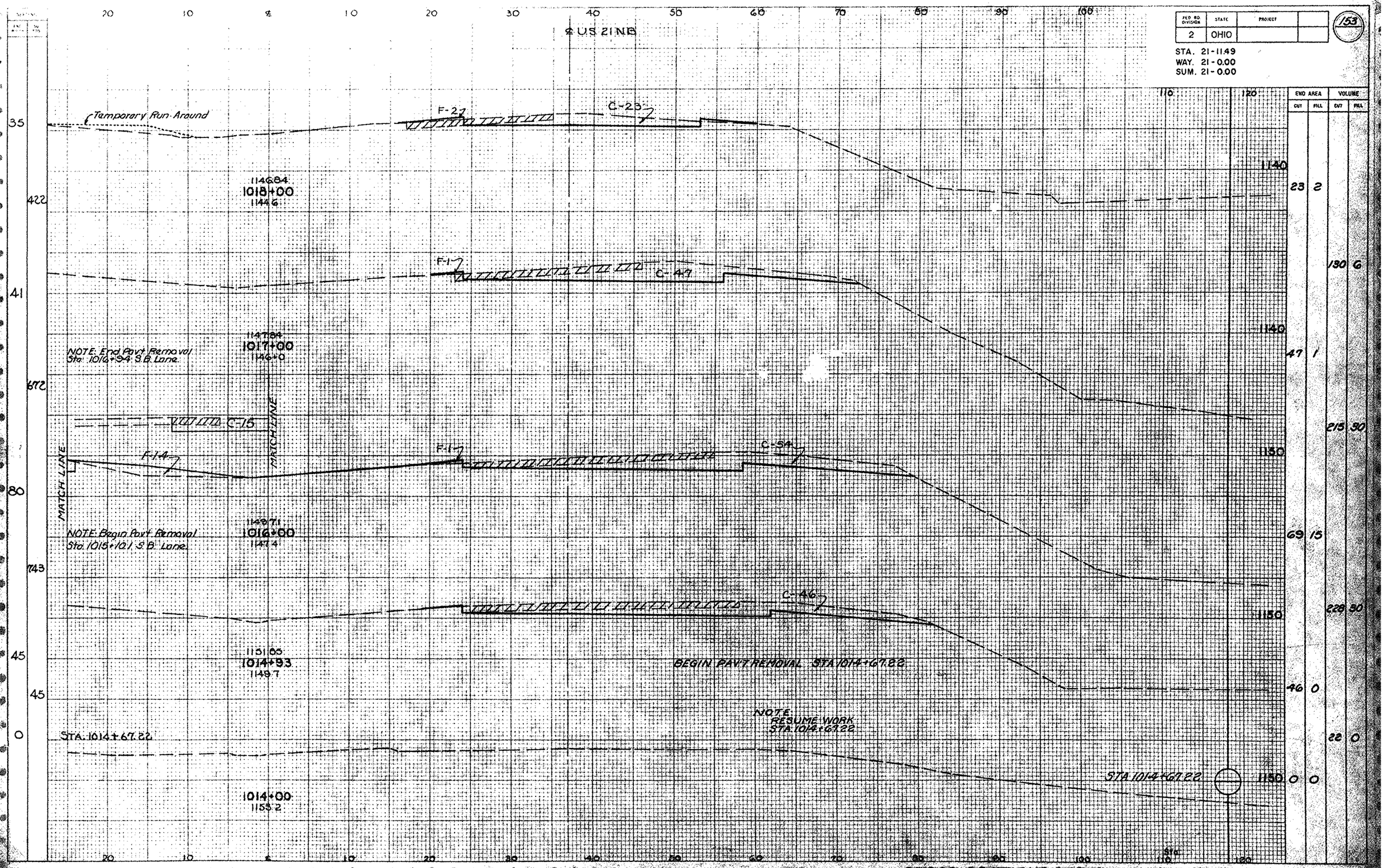
912+00
997.3

Sta. 911+40

F-1 C-12
F-6 C-1
F-2 C-14
F-9 C-17
F-4 C-23
F-27

	END AREA		VOLUME	
	CUT	FILL	CUT	FILL
STA 915+56.1	0	0		
			12	1
	12	1		
1000				
			50	17
1000	15	8		
			59	31
995	17	9		
			85	74
	29	31		
990				
			65	143
985				
Sta. 911+40	30	36		

CROSS SECTIONS STA 912+00 TO STA 915+00



FED. RD. DIVISION 2
STATE OHIO
PROJECT
153
STA. 21-11.49
WAY. 21-0.00
SUM. 21-0.00
℄ US 21 NB
Temporary Run Around
F-2
C-23
1146.84
1018+00
1144.6
F-1
C-47
1147.84
1017+00
1146+0
NOTE: End Pavt Removal Sta. 1016+94 S.B. Lane.
C-15
MATCH LINE
F-14
F-1
C-54
1149.71
1016+00
1147.4
NOTE: Begin Pavt Removal Sta. 1015+10.1 S.B. Lane.
C-46
1151.85
1014+93
1149.7
BEGIN PAVT REMOVAL STA 1014+67.22
NOTE: RESUME WORK STA 1014+67.22
STA. 1014+67.22
1014+00
1153.2
STA 1014+67.22
END AREA
CUT
FILL
VOLUME
CUT
FILL
23 2
130 6
47 1
215 30
69 15
228 30
46 0
22 0
0 0
CROSS SECTIONS STA. 1014+00 TO STA. 1018+00

FED. RD. DIVISION	STATE	PROJECT		
2	OHIO			

154

STA. 21-11.49
WAY. 21-0.00
SUM. 21-0.00

℄ U.S. 21 N.B.

MATCH LINE 'D'

C-13 C-4 F-189 4:1

1142.51
1022+00
1140.1

42" Culvert Sta 1021+19
F.L. (Out) - 112.83

MATCH LINE 'C'

C-19 C-3 C-18 F-488 2:1

BEGIN PAV'T REMOVAL S.B. LANE
STA 1020+71

1143.04
1021+00
1141.8

MATCH LINE 'B'

C-10 F-1 C-34 C-4 F-53 2:1

1143.64
1020+00
1143.7

MATCH LINE 'A'

C-11 F-18 C-23 C-27 F-8

1144.91
1019+00
1144.1

STA. 1018+00

Excavation	2373
Embankment	3670
Seeding	8714

C.Y.
C.Y.
S.Y.

	END AREA		VOLUME	
	CUT	FILL	CUT	FILL
1140	17	189		
			106	1254
1140	40	488		
			163	1017
1140	48	61		
			202	161
1140	61	26		
			156	52
	23	2		

CROSS SECTIONS STA 1019+00 TO STA 1022+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

155

STA. 21-1149
WAY. 21-0.00
SUM. 21-0.00

℄ U.S. 21 N.B.

F-4 — C-299 — 1138.51 — 1032+00 — 1140.1 — 1133.9

F-3 — C-300 — 1138.51 — 1031+00 — 1140.0 — 70 L.F. 15" I.2 C.A. @ 0.4% — 1135.9

F-3 — C-295 — 1139.81 — 1030+00 — 1140.7 — 1130.5

F-7 — C-225 — 1139.71 — 1029+00 — 1141.0

F-5 — C-227 — 1140.11 — 1028+00 — 1141.4

F-2 — C-38 — C-251 — F-17 — C-117 — 1140.51 — 1027+00 — 1141.1

Temporary Run Around

F-2 — C-97 — C-13 — 1140.91 — 1026+00 — 1141.4

F-3 — C-202

NOTE: End Pav't Removal Sta. 1024+66.6 B Line

1141.31 — 1025+00 — 11424

F-3 — C-39 — C-1 — F-23

MATCH LINE B

C-4 — 1141.71 — 1024+00

MATCH LINE A

F-3 — C-5 — F-166

C-1 — 1142.11 — 1023+00 — 1139.9

MATCH LINE A

MATCH LINE B

STA. 1022+00

Sta. 1022+00

	END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
1140	299	4		
			1109	13
	300	3		
1140			1096	11
	293	3		
			959	19
1140				
	225	7		
			837	19
1140				
	227	3		
			594	11
1140				
	94	3		
			378	9
1140				
	110	2		
			578	9
1140				
	202	3		
			456	70
1140				
	44	85		
			93	378
1140				
	6	169		
			24	665
	17	189		

CROSS SECTIONS STA. 1023+00 TO STA. 1032+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

156

STA. 21-11.49
WAY. 21-0.00
SUM. 21-0.00

℄ U.S. 21 N.B.

C-12 / F-129
1138.71
1039+00
1138.9

NOTE:
BEGIN TAPER STA 1038+95.7

C-9 / F-112
1136.11
1038+00
1134.4

C-8 / F-289
1136.51
1037+00
1134.6

C-8 / 1135.6

36" Culvert Sta 1036+94
F.L. (Out) 1128.04

C-2 / F-87
F-79
1135.81
1036+00
1131.7

C-55
1131.7

F-77
1137.51
1035+00
1132.4

C-46
1132.1

F-114
1137.71
1034+00
1134.2

C-13
1132.7

F-5 / C-22
1136.11
1033+00
1137.2

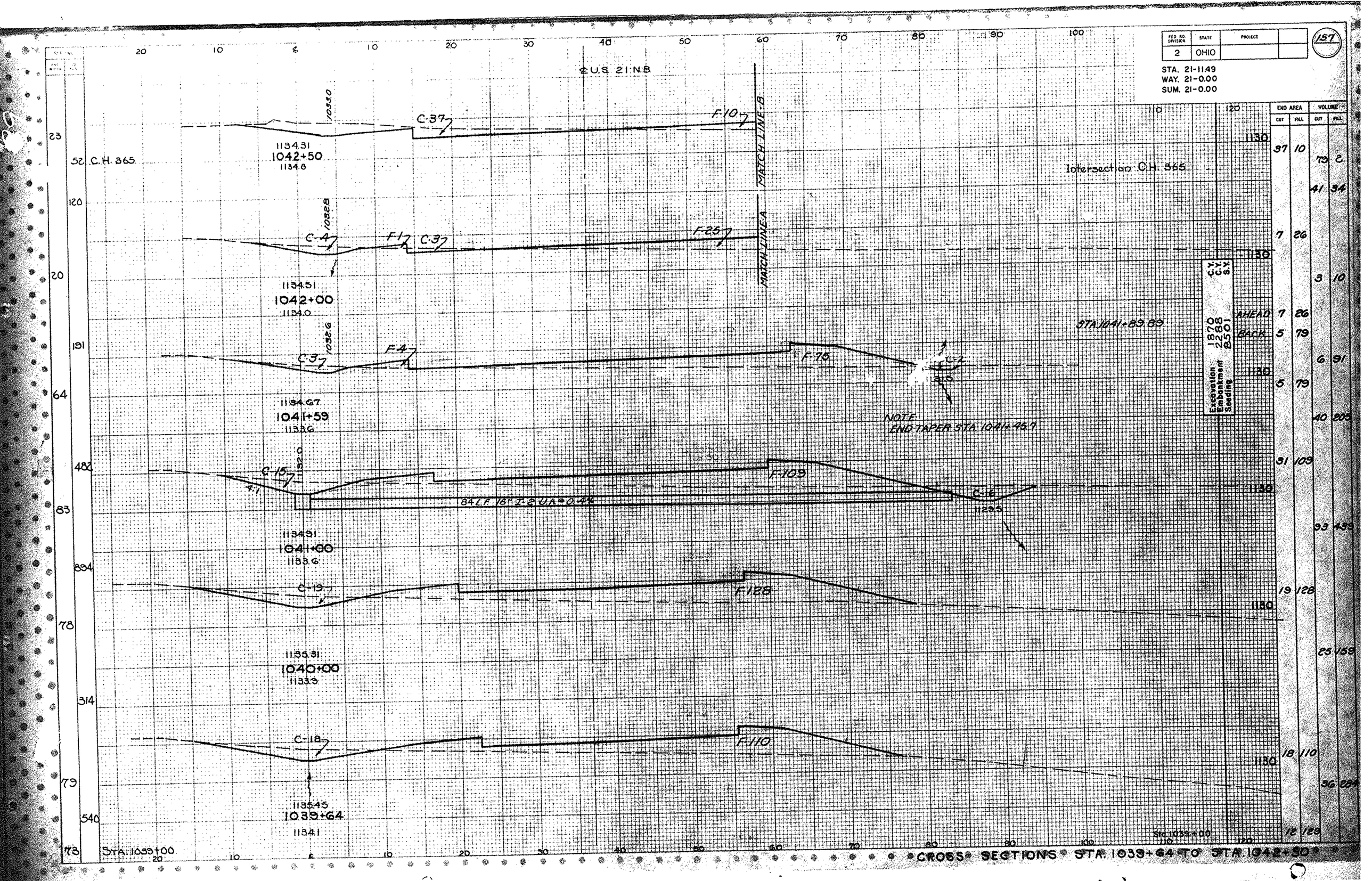
F-34
C-24
1133.1

STA. 1032+00

Excavation 6604 C.Y.
Embankment 2531 C.Y.
Seeding 1.743 S.Y.

END AREA		VOLUME	
CUT	FILL	CUT	FILL
	12		129
			39 444
	9		112
			46 748
	16		289
			135 691
	57		84
			191 296
	46		77
			109 354
	13		114
			109 285
	46		39
			639 80
	299		4

CROSS SECTIONS STA 1033+00 TO STA 1039+00



FED. RD. DIVISION 2
STATE OHIO
PROJECT
157
STA. 21-11.49
WAY. 21-0.00
SUM. 21-0.00
℄ U.S. 21 N.B.
C.H. 365
Intersection C.H. 365
MATCH LINE-B
MATCH LINE-A
STA. 1041+89.89
NOTE
END TAPER STA. 1041+45.7
84 L.F. 18" I-2 U.A. = 0.4%
C-37
F-10
1134.31
1042+50
1134.8
C-4
F-1
C-3
F-25
1134.51
1042+00
1134.0
C-3
F-4
F-75
C-2
1134.67
1041+59
1133.6
C-15
F-109
C-16
1134.91
1041+00
1133.6
C-19
F-128
1135.31
1040+00
1133.9
C-18
F-110
1135.45
1039+64
1134.1
STA. 1039+00
END AREA
VOLUME
CUT
FILL
AHEAD
BACK
Excavation 1870 C.Y.
Embankment 2288 C.Y.
Seeding 8501 S.Y.
CROSS SECTIONS STA. 1039+64 TO STA. 1042+50

FED. RD. DIVISION	STATE	PROJECT		
2	OHIO			

158

STA. 21-11.49
WAY. 21-0.00
SUM. 21-0.00

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

℄ US 21 NB

1130.0 C-54 C-16 F-13 1130

1132.51
1047+00
1132.9
1130.5 C-45 F-17 C-10 F-19 1130

End Taper
Sta 1046+66.4

1132.91
1046+00
1133.3
1131.0 C-39 F-1 C-10 F-26 1130

NOTE
BEGIN TAPER STA 1044+16.4

1133.31
1045+00
1133.5
1131.5 C-21 F-2 C-3 F-46 1130

1133.71
1044+00
1133.4
C-25 F-1 C-7 F-45 1130

1133.79
1043+79
1133.8
F-1 C-10 F-56 1130

1133.85
1043+65
1134.2
Additional Quan. for C.H. 365
C-43 1130

1134.11
1043+00
1134.4
STA. 1042+50

Additional Quan. for C.H. 365
STA 1043+15.82

	END AREA		VOLUME	
	CUT	FILL	CUT	FILL
1120	70	13		
1130			231	61
	55	20		
1120			193	87
1130				
	49	27		
1120			135	137
1130				
	24	47		
1120			22	36
1130				
	32	46		
1120			11	27
1130				
	10	57		
1120			18	104
AHEAD	10	57	79	8
BACK	43	0		
			25	0
STA. 1043+00	43	0		
			74	10
Sta 1042+50	37	10		

CROSS SECTIONS STA. 1043+00 TO STA. 1047+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

159

STA. 21-11.49
WAY. 21-0.00
SUM. 21-0.00

℄ U.S. 21 N.B.

	END AREA		VOLUME	
	CUT	FILL	CUT	FILL
1120	42	36	85	63
1120	50	32	213	96
1120	65	20	265	86
1120	53	19	184	52
1120	71	16	269	54
1125	74	13	267	48
	70	13		

C-40 F-4 C-22 F-32
68 395
1132.56
1052+50
1132.4

C-47 F-2 C-37 F-30
74 828
1132.31
1052+00
1132.4

C-56 C-9 F-20
75 986
1131.92
1051+00
1132.3

C-43 F-1 C-10 F-18
73 649
1131.75
1049+80
1131.9

C-58 C-15 F-16
73 850
1131.62
1049+00
1132.0

Concrete Collar
65'@ 2.0% - 64 L.F. 15" I.2 U.A.
15"x30" Bend
Ft. 1125.18
15"x30" Bend
(M.6.4(C))
10 Lf 15" @ 38%
M.6.4(C)
S.F.A. (out) - 1120.00

NOTE: Concrete Collar (Sta. 1049+00) To Be Included In Price Bid Of Item T-3 for T-2 Storm Sewer. The 15"x30" Bends Are To Be Type M.6.4(C).

C-55 C-19 F-13
80 844
1132.11
1048+00
1132.4

STA. 1047+00

CROSS SECTIONS STA. 1048+00 TO STA. 1052+50

FED. AID DIVISION	STATE	PROJECT	
2	OHIO		

160

STA. 21 - 11.49
WAY. 21 - 0.00
SUM. 21 - 0.00

MATCH LINE

20 10 ℄ 10 20 30 40 50 60 70 80 90 100

℄ U.S. 21 N.B.

C-24 F-34 F-41

1135.81
1058+00
11343

NOTE: Begin Pvt Removal Sta. 1057+750 S.B Lane. C-7

MATCH LINE

C-38 F-3 C-9 F-15

1134.81
1057+00
11343

Temporary Run-Around

C-40 F-27 C-10 F-13

1134.66
1056+69
11344

C-36 F-3 C-5 F-17 F-12

1134.51
1056+00
11339

66 @ 0.4% = 64 L.F. 15" I.2 CA

15"x30° Bend

Concrete Collar Sta. 1056+00 F.L. 1129.16

10 L.F. 15" I.2

NOTE: Concrete Collar (Sta 1056+00) To Be Included In Price Bid Of Item 1.5 For I.2 Storm Sewer. The 15"x30" Bends Are To Be Type M.6.4(c).

C-31 F-37 C-5 F-40

1133.81
1055+00
11334

F.L.(Out) 1122.55

9 @ 50% = 81 L.F. 15" I.2 M.6.4(c)

F.L. 1123.10

C-29 F-27 C-5 F-38

1133.31
1054+00
11329

C-39 F-4 C-1 F-36

1132.81
1053+00
11324

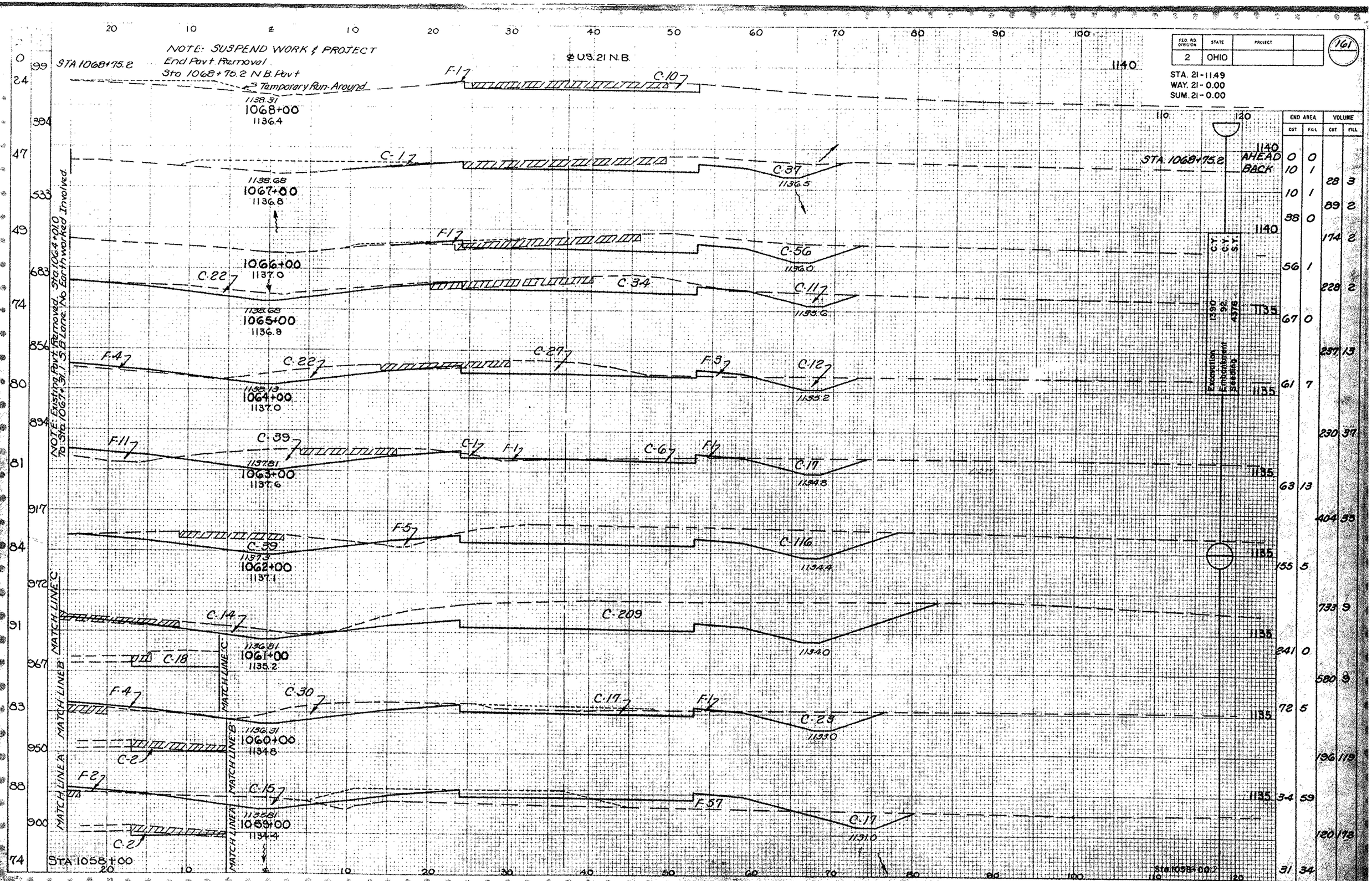
Sta. 1052+50

	END AREA		VOLUME	
	CUT	FILL	CUT	FILL
1125	31	34		
			144	96
1130				
	47	18		
			56	19
1125				
	50	15		
			117	39
1125				
	41	16		
			143	103
1120				
	36	48		
			130	164
1120				
	34	40		
			137	148
1120				
	40	40		
			76	71
1120				
	42	36		

C.Y.
C.Y.
S.Y.

Excavation 2993
Embankment 1190
Seeding 10758

CROSS SECTIONS STA. 1053+00 TO STA. 1058+00

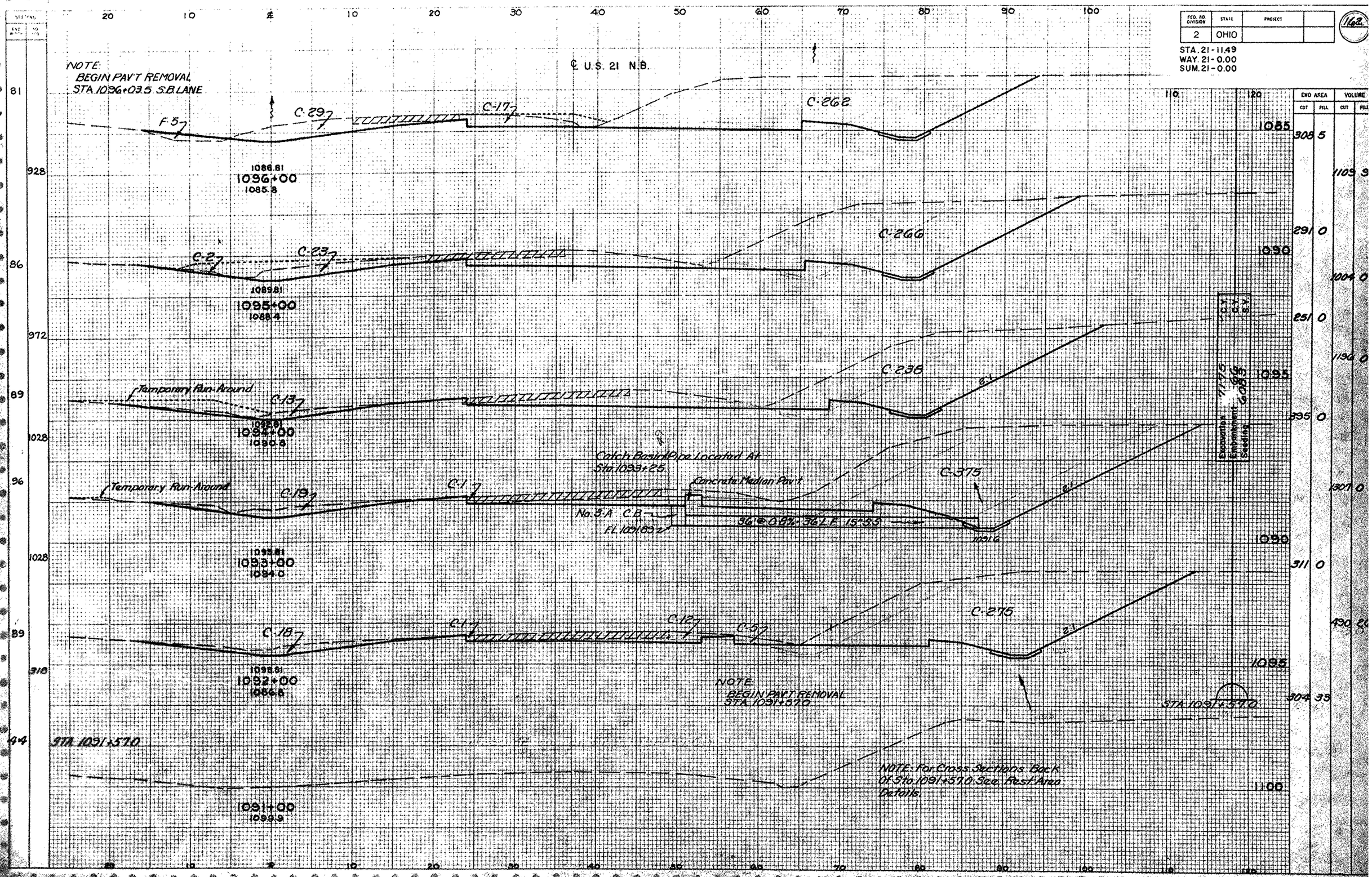


FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

161

STA. 21-11.49
WAY. 21-0.00
SUM. 21-0.00

CROSS SECTIONS STA. 1059+00 TO STA. 1068+00



FED. RD. DIVISION 2
STATE OHIO
PROJECT
STA. 21-11.49
WAY. 21-0.00
SUM. 21-0.00
162
NOTE:
BEGIN PAV'T REMOVAL
STA 1096+03.5 S.B. LANE
℄ U.S. 21 N.B.
F-5
C-29
C-17
C-262
1086.81
1096+00
1085.8
C-2
C-23
C-266
1089.81
1095+00
1088.4
Temporary Run-Around
C-13
C-238
1092.81
1094+00
1090.8
Catch Basin/Pipe Located At
Sta 1093+25
Concrete Median Pav't
C-375
Temporary Run-Around
C-19
C-1
No. 3-A C.B.
F.L. 1091.89
36" @ 0.8% - 36 L.F. 15" S.S.
1091.6
1095.81
1093+00
1094.0
C-18
C-1
C-12
C-5
C-275
1098.81
1092+00
1086.8
NOTE
BEGIN PAV'T REMOVAL
STA 1091+57.0
STA 1091+57.0
STA 1091+57.0
NOTE: For Cross Sections Back
Of Sta 1091+57.0 See Rest Area
Details.
1091+00
1099.9
Excavation 71.75 C.Y.
Embankment 66 C.Y.
Seeding 608.3 S.Y.
END AREA
CUT
FILL
VOLUME
CUT
FILL
1085
308 5
1109 9
1090
291 0
1004 0
1095
251 0
1196 0
395 0
1307 0
1090
311 0
490 20
1095
304 33
1100
CROSS SECTIONS STA 1091+00 TO STA 1096+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

163

STA. 21-11.49
WAY. 21-0.00
SUM. 21-0.00

CROSS SECTIONS STA. 1097+00 TO STA. 1101+00

END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
16	480		
			35 808
21	392		
			34 684
15	347		
			40 434
28	121		
			78 138
56	28		
			435 59
179	4		
			384 8
282	5		
			581 8
288	3		
			1104 15
308	5		

FED. AID DIVISION	STATE	PROJECT		
2	OHIO			

164

STA. 21-11.49
WAY. 21-0.00
SUM. 21-0.00

℄ U.S. 21 N.B.

C-2

F-1363

C-5

1063.71
1108+70
1056.3

1043.0

Temporary Run-Around

F-1261

1066.81
1103+00
1058.3

1049.0

C-9

F-917

2:1

C-11

1055.0

1066.81
1102+00
1062.3

F-665

3:1

C-6

1055.0

1070.43
1101+46
1064.9

Sta. 1101+00

Sta. 1101+00

END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
7	1363		
		21	3402
9	1261		
		37	4034
11	917		
		17	1582
6	665		
		19	976
16	480		

CROSS SECTIONS STA. 1101+46 TO STA. 1103+70

F.H.D. RD. DIVISION	STATE	PROJECT	
2	OHIO		

165

STA. 21-11.49
WAY. 21-0.00
SUM. 21-0.00

℄ U.S. 21 N.B.

F-1724

1060.11
1104+70
1053.8

1061.61
1104+40
1064.4

1061.91
1104+30
1056.9

60" Culvert Sta. 1104+68 ℄ Survey
FL (Out) - 1091.50

F-1539

F-1580

C.7-7
1035.5

C.5-7
1037.5

C.7-7
1040.0

END AREA		VOLUME	
CUT	FILL	CUT	FILL
1050	7 1724		
			7 1813
1055			
	5 1539		
			2 578
1055			
	7 1580		
			16 5270
	7 1363		

Excavation
Embankment
Backfill

Sta. 1103+70 — Sta. 1105+70

CROSS SECTIONS STA. 1104+50 TO STA. 1104+70

FED. RD DIVISION	STATE	PROJECT	
2	OHIO		

STA. 21-1149
WAY. 21-0.00
SUM. 21-0.00

166

℄ U.S. 21 N.B.

1057.86
1105+65
1050.7

F 1990

1059.81
1105+00
1052.5

F 1992

1060.20
1104+87
1052.7

F 1874

C 12

C 8

END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
0	1990		
			14 4794
12	1992		
		5	931
8	1874		
		5	1133
7	1724		

CROSS SECTIONS STA. 1104+87 TO STA. 1105+65

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

167

STA. 21-1149
WAY. 21-0.00
SUM. 21-0.00

℄ U.S. 21 N.B.

	END AREA		VOLUME	
	CUT	FILL	CUT	FILL
	0	658		
			0	1258
	0	852		
			0	1954
	0	1258		
			0	2574
	0	1524		
			0	2276
	0	1990		

F 658

1052.46
1107+45
1048.6

F 852

1053.81
1107+00
1049.4

F 1258

1055.31
1106+50
1049.6

F 1524

1056.81
1106+00
1050.5

Sta. 1105+65

90 508 113 653 122 653 113 476 132

1050 1045 1040 1035 1045 1040 1035 1045 1040 1035

110 120

65'@ 20% - 6.4 L.F. 15" I.2. CIA

15"x30° Bend

Concrete Collar

EL. 1149.12

NOTE: Concrete Collar (Sta 1106+00) To Be Included In Price Bid Of Item 1.5 For I.2 Storm Sewer. The 15"x30° Bends Are To Be Type M-6.4(C).

52 L.F. 15" I.2. CIA @ 2.1%

15"30° Bend

EL. 1041.80

45@ 20% - 4 LF 18" I.3 CIA @

F.L.(in) 1031.50

Sta. 1105+65

CROSS SECTIONS STA. 1106+00 TO STA. 1107+45

FED. RD DIVISION	STATE	PROJECT		168
2	OHIO			

STA. 21 - 11.49
WAY. 21 - 0.00
SUM. 21 - 0.00

℄ U.S. 21 N.B.

1109+99.85
F-598
1110+00
1039.3

1109+54.97
F-714
1109+55
1040.6

1109+00.00
F-715
1047.81
1109+00
1043.0

F-912
1049.31
1108+50
1045.1

F-890
1050.81
1108+00
1046.8

NOTE: Beginning At Station 1108+00, Stationing for ℄ U.S. 21 N.B. Is Given Opposite. The Stationing For U.S. 21 ℄ Survey.

	END AREA		VOLUME	
	CUT	FILL	CUT	FILL
1045	0	598		
			0	1034
1035	0	714		
			0	1454
1040	0	713		
			0	1503
1040	0	912		
			0	1669
1045	0	890		
			0	1571
	0	658		

STA. 1107+45

CROSS SECTIONS STA. 1108+00 TO STA. 1110+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

169

STA. 21-11.49
WAY. 21-0.00
SUM. 21-0.00

	END AREA		VOLUME	
	CUT	FILL	CUT	FILL
1030				
1020				
1010	0	200		
			0	208
1025	0	768		
1020			0	864
1035	0	142		
1030			200	218
1035	138	5		
			330	44
1040	40	19		
1035			74	938
1040	0	218		
1035			0	1611
			0	338

1114+54.91
1114+60
1025.6
F-2001
1114+08.52
F-1265
1114+15
1028.6
1113+80
1032.6
C-142
1113+75.55
1113+00
1036.5
C-22
C-116
1112+96.99
1112+00
1038.0
1111+58.29
1111+00
1038.8
F-218
1110+59.29
STA 1110+00

CROSS SECTIONS STA. 1111+00 TO STA. 1114+60

FED. AID DIVISION	STATE	PROJECT		
2	OHIO			

170

STA. 21-11.49
WAY. 21-0.00
SUM. 21-0.00

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

℄ U.S. 21 N.B.

1115+41.76
E-1672

1115+48
1026.5

1115+05.24
E-1756

1115+11
1026.5

1114+79.58
E-1809

1114+85
1025.8

5:1
2:1

60" Culvert - Sta. 1115+37
F.L. (Out) - 1005.91

			END AREA		VOLUME	
			CUT	FILL	CUT	FILL
118	1030					
	1020		0	1672		
473	1010					
112					0	2349
	1020		0	1756		
332	1010					
			0	1177		
118						
	1020		0	1809		
343						
	1010		0	1769		
129	STA. 1114+60		0	2001		

CROSS SECTIONS STA. 1114+85 TO STA. 1115+48

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

171

STA. 21 - 11.49
WAY. 21 - 0.00
SUM. 21 - 0.00

END AREA		VOLUME	
CUT	FILL	CUT	FILL

1029.7 ℄

5:1

RUS 21 N.B.

1117+06.58

48" Culvert - Sta. 1117+32
F.L. (Out) - 100982

2:1

1117+15
1027.4

F-1076

1029.6

1116+91.78

2:1

1117+00
1027.3

F-1243

1030.4

5:1

F-891

NOTE: Concrete Collar (Sta. 1116+58) To Be Included In Price Bid Of Item 1 S For I.D. Storm Sewer. The 15"x30° Bends Are To Be Type M-6.4(C).

60' @ 2.0% - 58 L.F. 15 T.2 U.A.

1116+50.32

15"x 30° Bend.

Concrete Collar
F.L. 1020.14 ±

28 L.F. 15" R.C.P. (M-6.1)

2:1

1116+58
1027.9

15"x30° Bend (M-6.4(C))

1.7% - 202.16 L.F. 15" T.2

F.L. 1010.14 ±

F.L. 1009.80

1115+93.08

2:1

1116+00
1027.7

F-1500

STA. 1115+48

Sta. 1115+48

CROSS SECTIONS STA. 1116+00 TO STA. 1117+19

FED. AID DIVISION	STATE	PROJECT	
2	OHIO		

172

STA. 21-11.49
WAY. 21-0.00
SUM. 21-0.00

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

U.S. 21 N.B.

1120+86.62
C-570
F-4
5:1
2:1
1121+00
1035.1
1030.0
1035
1030

1119+87.90
C-287
F-3
1120+00
1031.5
1029.6
1035
1030

1118+88.18
C-132
F-47
5:1
1119+00
1029.2
1029.2
1035
1030

1118+44.76
C-108
F-92
1030.3
1028.9
1030
1025

1117+90.48
C-86
F-150
5:1
1118+55
1027.9
1030.0
1028.6
1030
1025

1117+51.00
C-59
F-471
76 L.F. 15" I.C.U.A. @ 1.0%
Var.
1118+00
1027.2
1025.5
1030
1025

1117+60
1027.0

STA. 1117+15

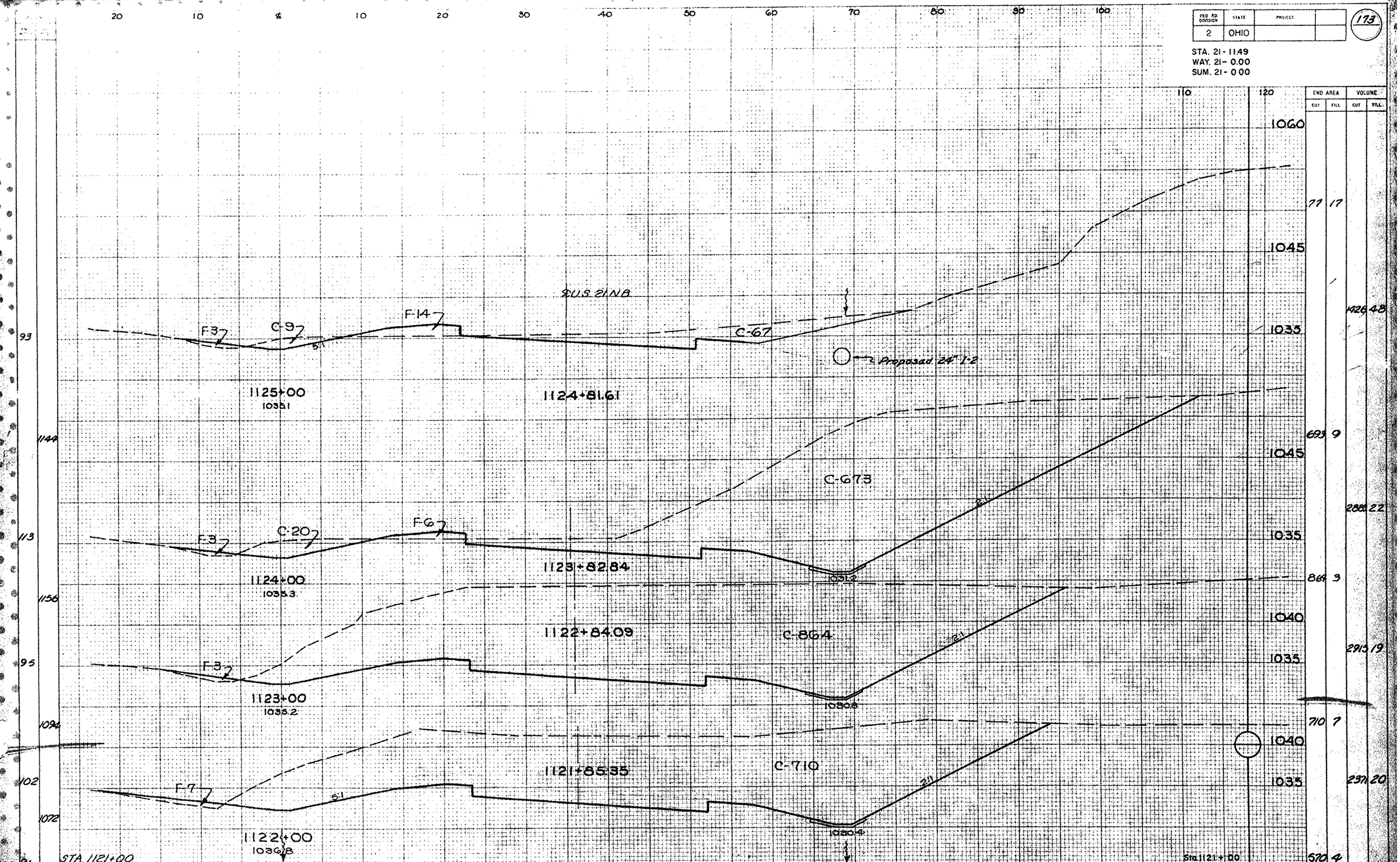
	END AREA		VOLUME	
	CUT	FILL	CUT	FILL
	570	4		
			1387	13
	287	3		
			776	93
	132	47		
			200	116
	108	92		
			197	246
	86	130		
			108	460
	59	471		
			49	1289
	0	1076		

CROSS SECTIONS STA. 1117+60 TO STA. 1121+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

173

STA. 21-11.49
WAY. 21-0.00
SUM. 21-0.00



CROSS SECTIONS STA. 1122+00 TO STA. 1125+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

174

STA. 21-11.49
WAY. 21-0.00
SUM. 21-0.00

END AREA		VOLUME	
CUT	FILL	CUT	FILL

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

106 122 114 136 131 124 93

1055 1045 1035 1055 1045 1035 1055 1045 1035

1320 2 4889 6 1320 1 4202 30 949 15 1698 55 77 17

Excavation 27194 C.Y.
Embankment 14822 C.Y.
Seeding 12582 S.Y.

$US 21 NB

C-1320

1127+78.02

F2 5:1 2:1

1033.8

1128+00
1037.9

C-1320

1126+79.20

F1 5:1 2:1

1033.4

1127+00
1035.8

C-944

F2 C-5 F13 5:1 2:1

STA. 1125+00

1126+00
1035.1

64 L F 15" I 2.90 2% (C) 4½

1125+80.39

1033.0

Sta. 1125+00

"CROSS SECTIONS" STA. 1126+00 TO STA. 1128+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

175

STA. 21 - 11.49
WAY. 21 - 0.00
SUM. 21 - 0.00

	END AREA		VOLUME	
	CUT	FILL	CUT	FILL
1035	4	44		
1030			322	143
1040				
1035	170	33		
			415	93
1040	54	17		
1035			533	35
1040	234	2		
1035			586	8
1045				
	439	3		
	439	3		
1035			2662	10
1045				
	1090	3		
1035			4463	9
	1920	2		

739 761 867 817 994 1183

66 67 70 86 83 83 107 106

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

9'

F-1 1038.5 F-36 ℄ U.S. 21 N.B. F-7 C-4 1036.2

4+00 1038.5 1133+53.03

10'

C-5 1038.0 F-28 C-2 F-5 C-10 1035.6

3+00 1038.5 1132+54.07

F-2 1037.6 C-3 F-15 C-25 C-26 1035.4

2+00 1038.5 1131+55.14

F-2 1038.2 C-284 1035.0

1+00 1038.5 1130+56.24

C-439

F-3 1037.4 1034.6

0+12.64 Ahead 1129+94.09 Back 1129+94.09 1129+69.87

0+12.64 AHEAD 439 3
1129+94.09 BACK 439 3

0+00 BACK = 0+12.64 AHEAD
1129+94.09 - 0.00 & U.S. 21

Stark-Wayne Co. Line

C-1090

F-3 1038.7 1034.2

1129+00 1128+76.86

STA. 1128+00

Sta. 1128+00

"CROSS SECTIONS" STA. 1129+00 TO "STA. 4+00

FED. AID DIVISION	STATE	PROJECT	
2	OHIO		

176

STA. 21-11.49
WAY. 21-0.00
SUM. 21-0.00

	END AREA		VOLUME	
	CUT	FILL	CUT	FILL
120				
	21	33		
110				
			30	46
100				
	20	30		
90				
			48	47
80				
	32	21		
70				
			80	120
60				
	11	44		
50				
			28	163
40				
	4	44		
30				
20				
10				
Sta. 4+00				

20 10 ℄ 10 20 30 40 50 60 70 80 90 100

62 — 273

F-32 — C-10 — F-1 — C-11

1035.8

1136+39.20

6+89
1038.0

64 — 356

1038.9

F-30 — C-8 — C-12

1036.0

1035

1136+00.57

6+50
1038.2

64 — 706

1038.7

C-17 — F-21 — C-13 — C-18

1036.2

1035

1135+51.05

6+00
1038.4

Begin 0.3% Median Ditch

63 — 717

1039.0

8'

F-41 — C-5 — F-3 — C-6

1036.6

1035

1134+52.03

5+00
1038.6

66

STA. 4+00

CROSS SECTIONS STA. 5+00 TO STA. 6+89

FED RD DIVISION	STATE	PROJECT	
2	OHIO		

177

STA. 21-11.49
WAY. 21-0.00
SUM. 21-0.00

END AREA		VOLUME	
CUT	FILL	CUT	FILL
0	247		
		3	257
4	48		
		5	11
16	34		
		8	14
21	33		

Excavation 2887 C.Y.
Embankment 9874 C.Y.
Seeding C.Y.

1035
1035
1035

1038.2 Var F-247 Var
7+60
1038.1
1137+09.54

1038.5 Var F-38 C-17 F-10 C-3
7+13
1037.9
1136+62.97

1038.4 A-1 F-30 C-6 F-42 C-10
1038.7
7+00
1038.0
1136+50.08

STA. 6+89 Sta. 6+89

CROSS SECTIONS STA. 7+00 TO STA. 7+60

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

178

STA. 21-1149
WAY. 21-0.00
SUM. 21-0.00

END AREA		VOLUME	
CUT	FILL	CUT	FILL
0	108		
		1	465
1	415		
		1	1296
1	296		
		0	873
0	931		
		0	247
0	247		

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

55 336 71 465 90 360 72

1037.8 A:1 ℄U.S. 21 N.B. F-108 2:1 1035

9+00
1037.8
1135+48.31

℄-1 1038.0 Var. F-415 2:1 1035 1 415

8+52
1037.8
1138+00.70

1038.1 Var. F-931 2:1 1035 0 931

48" Culvert Sta. 8+43
F.L. (Out) - 1014.15

8+00
1037.8
1137+49.17

STA. 7+60 Sta. 7+60

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

CROSS SECTIONS STA. 8+00 TO STA. 9+00

FED. RD DIVISION	STATE	PROJECT	
2	OHIO		

179

STA. 21-11.49
WAY. 21-0.00
SUM. 21-0.00

	END AREA		VOLUME	
	CUT	FILL	CUT	FILL
10355	1	102		
			1	183
10355	0	95		
			0	337
10355	0	87		
			59	106
10355	5	51		
			4	95
10355	1	100		
			2	385
	0	108		

52 286 51 567 51 381 53 200 53 600 55

1036.2 C-1 F 102
1037.79
12+50
1036.3
1141+87.37
Begin Median Grade - 0.4%

1036.4 F 95
1038.01
12+00
1036.4
1141+47.37

1037.0 F-87
11+00
1036.9
1140+47.42

F-51 C-57
1035.0
10+34
1037.0
1139+81.58

1037.6 C-1 vert F-100
10+00
1037.8
1139+47.72

STA. 9+00

"CROSS SECTIONS" STA. 10+00 TO STA. 12+50

FED. RD DIVISION	STATE	PROJECT	
2	OHIO		

180

STA. 21-11.49
WAY. 21-0.00
SUM. 21-0.00

℄ U.S. 21 N.B

	END AREA		VOLUME	
	CUT	FILL	CUT	FILL
	12	14		
			35	102
	7	41		
			17	198
	2	66		
			6	237
	1	62		
			6	250
	2	73		
			4	898
	0	412		
	1	476		
	1	102		

C-2 — F-9 — C-5 — F-5 — C-5

1035.37
18+00
1034.0

C-3 — F-41 — C-4

1035.81
17+00
1034.6

C-2 — F-66

1036.25
16+00
1034.7

C-1 — F-62

1036.69
15+00
1035.1

C-2 — F-73

1037.13
14+00
1035.6

1035.8

1037.57
13+00
1035.8

42" Culvert Sta. 13+15
F.L. (Out) - 1024.90

F-412

STA. 12+50

Sta. 12+50

CROSS SECTIONS STA. 18+00 TO STA. 13+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

181

STA. 21-11.49
WAY. 21-0.00
SUM. 21-0.00

SEEDING

END WIDTH	SQ. YDS.
77	
	391
76	
	426
66	
	700
60	
	661
59	
	296
52	
	295
50	

℄ U.S. 21 N.B.

C-1 F-10 — 1033.61 — 22+00 — 1031.8 — C-522 — 1030.4 — 2:1

C-1 F-10 — 1033.80 — 21+54 — 1032.1 — C-518 — 1030.8

C-2 F-5 — 1034.05 — 21+00 — 1032.5 — C-162 — 1031.2 — 2:1

C-1 F-11 — 1034.49 — 20+00 — 1032.8 — C-74 — 1031.6

C-3 F-8 — 1034.93 — 19+00 — 1033.8 — C-18 — C-32 — 1032.0

C-2 F-8 — 1035.14 — 18+52 — 1033.8 — C-9 F-1 — C-12 — 1032.4

STA 18+00

AREA CUT	AREA FILL	VOLUME CUT	VOLUME FILL
523	10		
1030			
		888	17
1030	519	10	
		683	15
1030	164	5	
		443	30
1030	75	11	
		237	35
1030	53	8	
		68	14
1030	23	9	
		34	22
	12	14	

Sta. 18+00

CROSS SECTIONS STA. 18+52 TO STA. 22+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

182

STA. 21-11.49
WAY. 21-0.00
SUM. 21-0.00

SEEDING: END WIDTH | SQ. YDS.

℄ U.S. 21 N.B.

44 | 270
C-1 | F-13 | C-3 | F-12
1031.63
26+50
1030.0

53 | 186
C-1 | F-98
1031.85
26+00
1030.3

55 | 475
C-2 | F-94
1031.91
25+69
1030.6

42" Culvert Sta. 25+15
F.L. (Out) 1021.65

69 | 678
C-1 | F-121 | C-30
1025.3
1032.29
25+00
1030.8

53 | 656
C-1 | F-13 | C-9 | F-15 | C-10
1028.7
1032.73
24+00
1031.3

65 | 789
C-2 | F-10 | C-145 | 2:1
1030.0
1033.17
23+00
1031.7

77 | STA. 22+00 ST.

1030

Excavation C.Y.	Embankment C.Y.	Seeding S.Y.
5266	1363	8741

END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
4	25		
		5	114
1	98		
		2	110
2	94		
		42	275
31	121		
		94	276
20	28		
		303	70
147	10		
		1241	37
523	10		

Sta 22+00

CROSS SECTIONS STA. 23+00 TO STA. 26+50

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

183

STA. 21-11.49
WAY. 21-0.00
SUM. 21-0.00

℄ U.S. 21 N.B.

SEEDING END WIDTH	SEEDING SQ. YDS.
74	778
66	739
67	728
64	667
56	556
44	

20 18 ℄ 10 20 30 40 50 60 70 80 90 100 118 120

C-566 — C-1 7, F-5 7 — 2:1
1028.37
31+00
1026.5

C-462 — C-1 7, F-9 7
1029.37
30+00
1027.4

C-394 — C-1 7, F-9 7
1030.21
29+00
1028.6

C-373 — C-1 7, F-4 7 — 2:1
1030.85
28+00
1029.3

C-169 — C-1 7, F-6 7 — 3:1
1031.41
27+00
1029.6

NOTE: Beginning At Sta. 27+00
Extend Subbase Into Prop. Ditch

STA. 26+50

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

Sta. 26+50

END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
	567 5		
1030			1908 26
1030	463 9		1589 33
	395 9		1424 24
1030			1007 19
	374 4		
1030			
1030	170 6		161 29
	4 25		

CROSS SECTIONS STA. 27+00 TO STA. 31+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

184

STA. 21-11.49
WAY. 21-0.00
SUM. 21-0.00

SEEDING

END WIDTH	SQ. YDS.
107	
1133	
97	
950	
74	

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

℄ U.S. 21 N.B.

C-1314

F-5

2:1

10.25.90
33+00
1023.6

C-1012

C-2

F-4

2:1

1027.21
32+00
1025.7

STA. 31+00

Sta. 31+00

END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
1040			
		1314	5
1030			
		4311	17
1040			
		1014	4
1030			
		2928	17
		567	5

CROSS SECTIONS STA. 32+00 TO STA. 33+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

185

STA. 21-11.49
WAY. 21-0.00
SUM. 21-0.00

SEEDING

END WIDTH	SQ. YDS.
116	
572	
118	
700	
107	

℄ U.S. 21 N.B.

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

C-1152

F-7

2:1

102441
34+00
1021.7

C-1517

F-7

2:1

1025.08
33+56
1022.4

STA. 33+00

STA. 33+00

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

END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
1152	7		
		1030	
		1020	
2175	12		
1517	7		
		1030	
		1020	
2936	12		
1314	5		

Excavation 33134 C.Y.
Embankment 1561 C.Y.
Seeding 11737 S.Y.

CROSS SECTIONS STA. 33+56 TO STA. 34+00

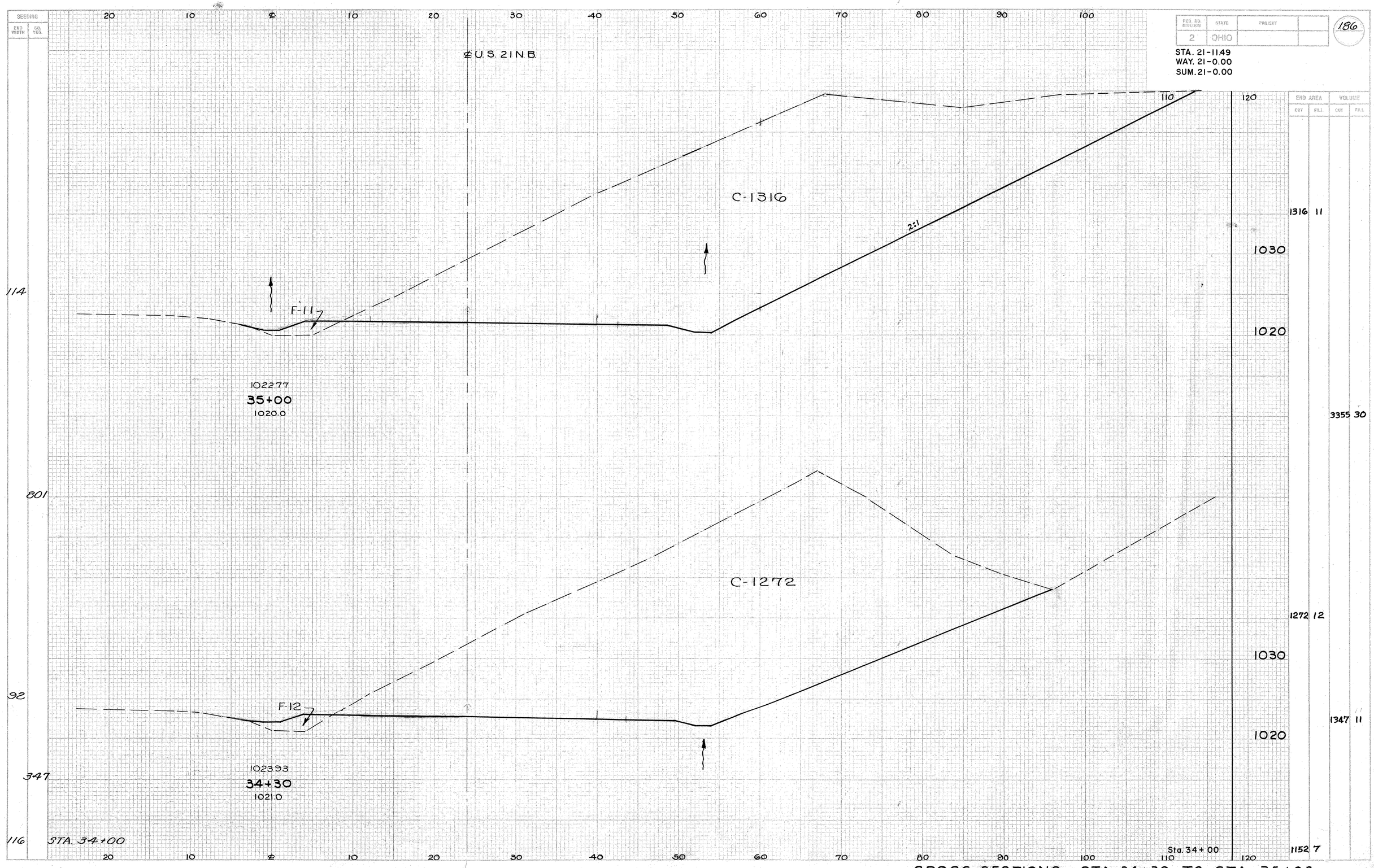
SEEDING	
END WIDTH	SQ. YDS.

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

186

STA. 21-11.49
WAY. 21-0.00
SUM. 21-0.00

END AREA		VOLUME	
CUT	FILL	CUT	FILL



CROSS SECTIONS STA. 34+30 TO STA. 35+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	.	

187

STA. 21-11.49
WAY. 21-0.00
SUM. 21-0.00

SEEDING		END AREA		VOLUME	
END WIDTH	SQ. YDS.	CUT	FILL	CUT	FILL
			1269		12

FED. HWY. DIVISION	STATE	PROJECT	
2	OHIO		

188

STA. 21-11.49
WAY. 21-0.00
SUM. 21-0.00

SEEDING

END WIDTH	SQ YDS.
94	
312	
100	
499	
109	

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

℄ U.S. 21 N.B.

C-1059

F-11

2:1

1017.5

1020.42
36+29
1017.9

C-1136

F-12

2:1

1018.5

1020.97
36+00
1018.5

STA. 35+57

Sta. 35+57

END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
		1059	11
		1179	12
		1136	12
		1915	19
		1269	12

1030
1020
1030
1020

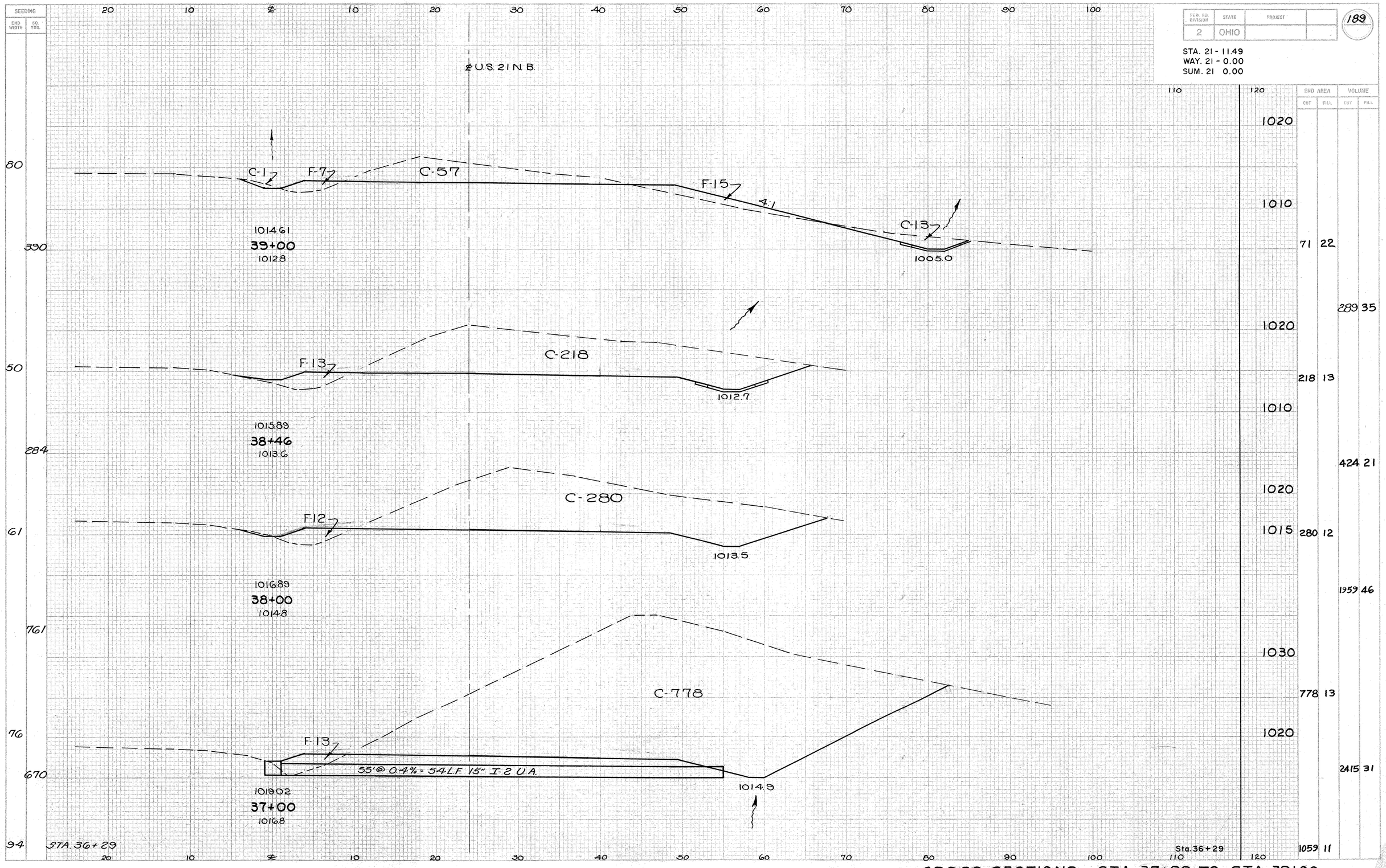
CROSS SECTIONS STA. 36+00 TO STA. 36+29

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

189

STA. 21 - 11.49
WAY. 21 - 0.00
SUM. 21 0.00

SEEDING				END AREA		VOLUME	
END WIDTH	SQ. YDS.			CUT	FILL	CUT	FILL
80			1020				
			1010				
390				71	22		
						289	35
50			1020				
				218	13		
			1010				
284						424	21
			1020				
61			1015	280	12		
						1959	46
761			1030				
						778	13
76			1020				
670						2415	31
94			1059	11			



CROSS SECTIONS STA. 37+00 TO STA. 39+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

190

STA. 21-11.49
WAY. 21-0.00
SUM. 21-0.00

SEEDING		END AREA		VOLUME	
END WIDTH	SQ. YDS.	CUT	FILL	CUT	FILL
54	606				
55	611				
55	750				
80	STA. 39+00				

℄ U.S. 21 N.B.

C-2

F-90

4:1

1006.81
42+00
1005.2

C-1

F-85

1009.57
41+00
1008.0

C-3

F-82

4:1

1012.17
40+00
1010.8

1010
1000
1010
1000
1000
1010
1000

END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
		2 90	
		6 324	
		1 85	
		7 309	
		3 82	
		137 193	
		71 22	

Sta. 39+00

CROSS SECTIONS STA. 40+00 TO STA. 42+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

191

STA. 21 - 11.49
WAY. 21 - 0.00
SUM. 21 - 0.00

SEEDING

END WIDTH	SQ. YDS.
61	
	650
56	
61	
54	

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

℄ U.S. 21 N.B.

C-27

F-87

2:1

1000.89
44+00
999.4

C-17

F-90

Var.

1003.89
43+00
1002.3

STA. 42+00

Sta. 42+00

END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
		2	87
		6	328
		1	90
		6	333
		2	90

1000
990
1000
990

CROSS SECTIONS STA. 43+00 TO STA. 44+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

192

STA. 21 - 11.49
WAY. 21 - 0.00
SUM. 21 - 0.00

SEEDING END WIDTH	SEEDING SQ. YDS.
0	
102	AHEAD
	BACK
	607
102	
	906
61	
678	
61	STA. 44+00

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

℄ U.S. 21 N.B.

STA. 46+53.59

NOTE: Median Inlet To Be Built At Sta. 45+90

C-3

F-148

15"x30° Bend

48' @ 2.0% · 46 L.F. 15" I-2 U.A.

F.L. 989.00

F.L. 988.04

Concrete Collar

2:1

50 L.F. 15" I-2 M-6.4(c)

15"x30° Bend

26' @ 1.6% · 25 L.F. 15" I-2 M6.4(c)

F.L. 942.04

F.L. 961.62

994.89
46+00
993.7

C-17

F-108

2:1

997.89
45+00
996.4

BEGIN BRIDGE STA. 46+53.59

NOTE: Concrete Collar (Sta. 45+90) To Be Included In Price Bid Of Item I.5 For I-2 Storm Sewer. The 15"x30° Bends Are To Be Type M-6.4(c).

Earthwork For Bridge (Est.)

	Excavation C.Y.	Embankment C.Y.	Seeding S.Y.
AHEAD	9995	52238	61244
BACK			

END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
			200
0	0		
3	148		
			6 294
3	148		
			7 474
			6 361
2	87		

990
980
1000
990
980

Sta. 44+00

CROSS SECTIONS STA. 45+00 TO STA. 46+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

193

STA. 21-11.49
WAY. 21-0.00
SUM. 21-0.00

SEEDING

END WIDTH	SQ. YDS.
53	
583	
52	
66	
52	
0	
0	
0	

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

℄ U.S. 21 N.B.

C-3

F-51

985.89
49+00
984.6

C-2

F-49

988.89
48+00
988.0

AHEAD
END BRIDGE STA. 47+88.53
BACK

991.89
47+00
970.3

STA. 46+53.59 (AHEAD)

END BRIDGE STA. 47+88.53

Earthwork for Bridge (Est)

STA. 46+53.59 AHEAD

END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
980			
970	3	51	
		9	185
980	2	49	
		1	21
AHEAD	2	49	
BACK	0	0	
970			
			180
		0	0
970			
		0	0

CROSS SECTIONS STA. 47+00 TO STA. 49+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

194

STA-21-1149
WAY-21-0.00
SUM-21-0.00

NOTE: These quantities include the Benching necessary for Structure WAY-21-0095. FOR BENCHING PROCEDURE SEE SITE PLAN NOTES.
Earth Work For Bridge

SEEDING END WIDTH	SEEDING SQ YDS.	STATION	END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
		980				
		See Note			930	1430
0		AHEAD	0	0		
119		BACK	2	711		
		970				1 240
			2	711		
		960				
						2 365
		950				
		980			3	78
		970				
		960			8	179
		950				
					3	51

BEGIN BRIDGE STA. 50+09.11

℄ U.S. 21 N.B.

AHEAD
BEGIN BRIDGE STA. 50+09.11
BACK

C-2
F-711
2:1
982.89
50+00
981.5

C-3
F-78
983.64
49+75
982.42

STA. 49+00

Sta. 49+00

CROSS SECTIONS STA. 49+75 TO STA. 50+00

SEEDING	
END WIDTH	SQ. YDS.
63	
0	

PED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

195

STA- 21-11.49
WAY- 21- 0.00
SUM- 21- 0.00

END AREA		VOLUME	
CUT	FILL	CUT	FILL

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

℄ U.S. 21 N.B.

AHEAD
END BRIDGE STA. 52+60.89
BACK

END BRIDGE STA. 52+60.89
AHEAD 3 96
BACK 0 0

960
950
940
960
950
940

BRIDGE LIMITS

976.97
52+00
944.4

981.00
50+63
952.5

(Chippewa Creek)

0 STA. 50+09.11 AHEAD

STA. 50+09.11 AHEAD 0 0

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

CROSS SECTIONS STA. 50+63 TO STA. 52+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

196

STA. 21 - 11.49
WAY. 21 - 0.00
SUM. 21 - 0.00

SEEDING	
END WIDTH	SQ. YDS.

END AREA		VOLUME	
CUT	FILL	CUT	FILL

℄ U.S. 21 N.B.

C-3

F-116

2:1

97322
54+00
972.0

3 116

960

950

11 393

99

900

63

C-3

F-96

2:1

374.78
53+00
973.6

3 96

960

4 139

950

274

63

STA. 52+60.89 AHEAD

3 96

STA. 52+60.89 AHEAD

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

CROSS SECTIONS STA. 53+00 TO STA. 54+00

SEEDING	
END WIDTH	SQ. YDS.
51	
233	
76	
165	
99	

REG. RD. DIVISION	STATE	PROJECT	
2	OHIO		

197

STA. 21 - 11.49
WAY. 21 - 0.00
SUM. 21 - 0.00

END AREA		VOLUME	
CUT	FILL	CUT	FILL
	4 44		
			4 84
		3 93	
			2 66
		3 116	

℄ U.S. 21 N.B.

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

C-4

F-44

372.77
54+50
371.7

970
960
950
960
950

C-3

F-93

373.12
54+17
371.8

STA. 54+00

Sta. 54+00

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

CROSS SECTIONS STA. 54+17 TO STA. 54+50

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

198

STA. 21-11.49
WAY. 21-0.00
SUM. 21-0.00

SEEDING

END WIDTH	SQ. YDS.
49	
539	
48	
275	
51	

℄ U.S. 21 N.B.

970.1

C-5

F-3

F-21

2:1

Concrete Collar

15"x30° Bend

50'@ 2.0% - 48 L.F. 15" I-2 U.A.

F.L. 966.00

F.L. 965.00

40 L.F. 15" I-2 M-6.4(c)

15"x30° Bend

19'@ 2.0% - 18 L.F. 15" I-2 M-6.4(c)

F.L. 944.00

F.L.(Out) - 943.62

NOTE: Concrete Collar (Sta. 56+00) Is To Be Included In Price Bid For Item I-5 For I-2 Storm Sewer. The 15"x30° Bends Are To Be Type M-6.4(c)

972.12
56+00
971.3

970.5

C-4

F-42

2:1

972.40
55+00
971.3

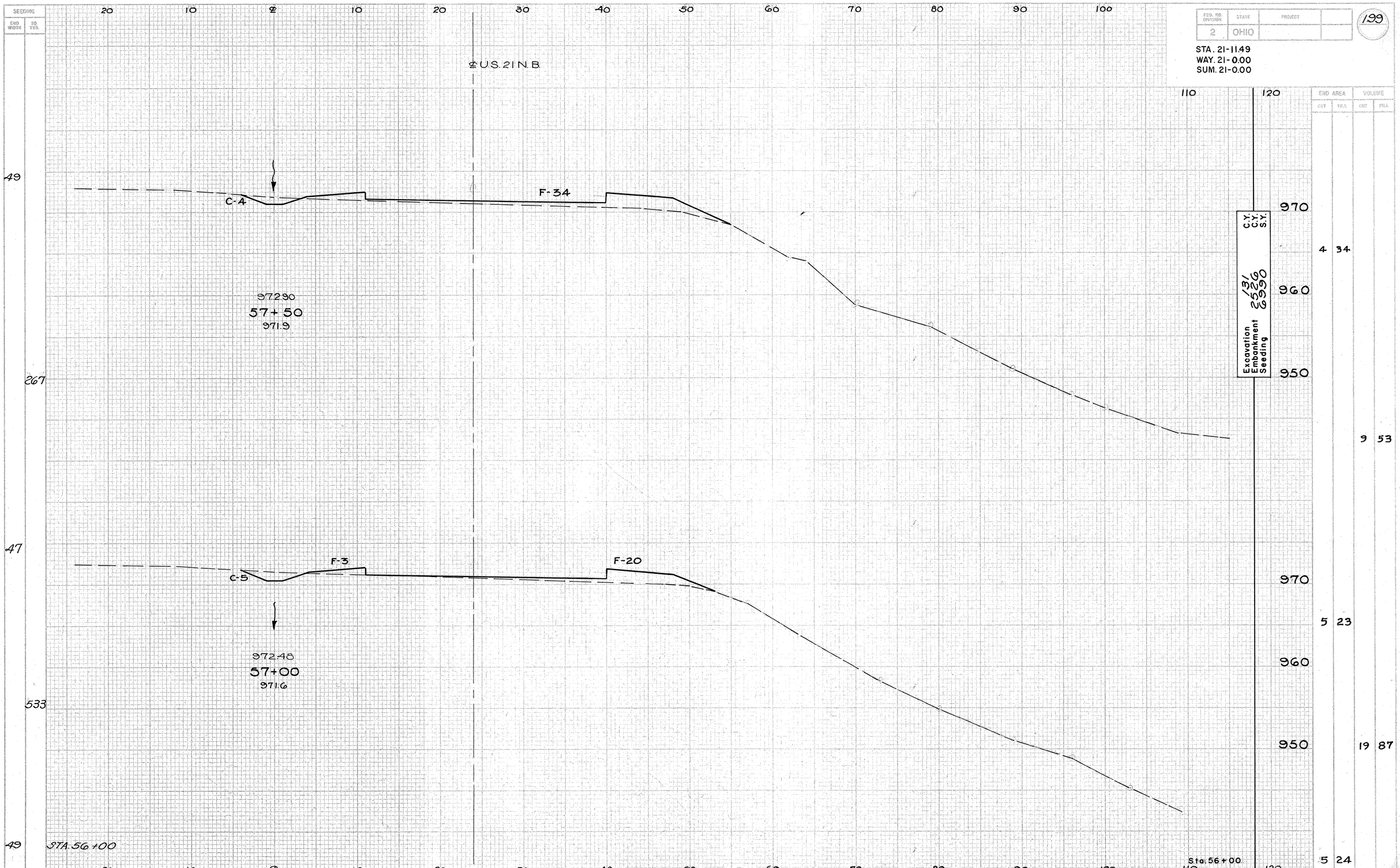
STA. 54+50

Sta. 54+50

END AREA		VOLUME	
CUT	FILL	CUT	FILL
		5	24
		17	122
		4	42
		8	80
		4	44

970
960
970
960
950

CROSS SECTIONS STA. 55+00 TO STA. 56+00



FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

199

STA. 21-11.49
WAY. 21-0.00
SUM. 21-0.00

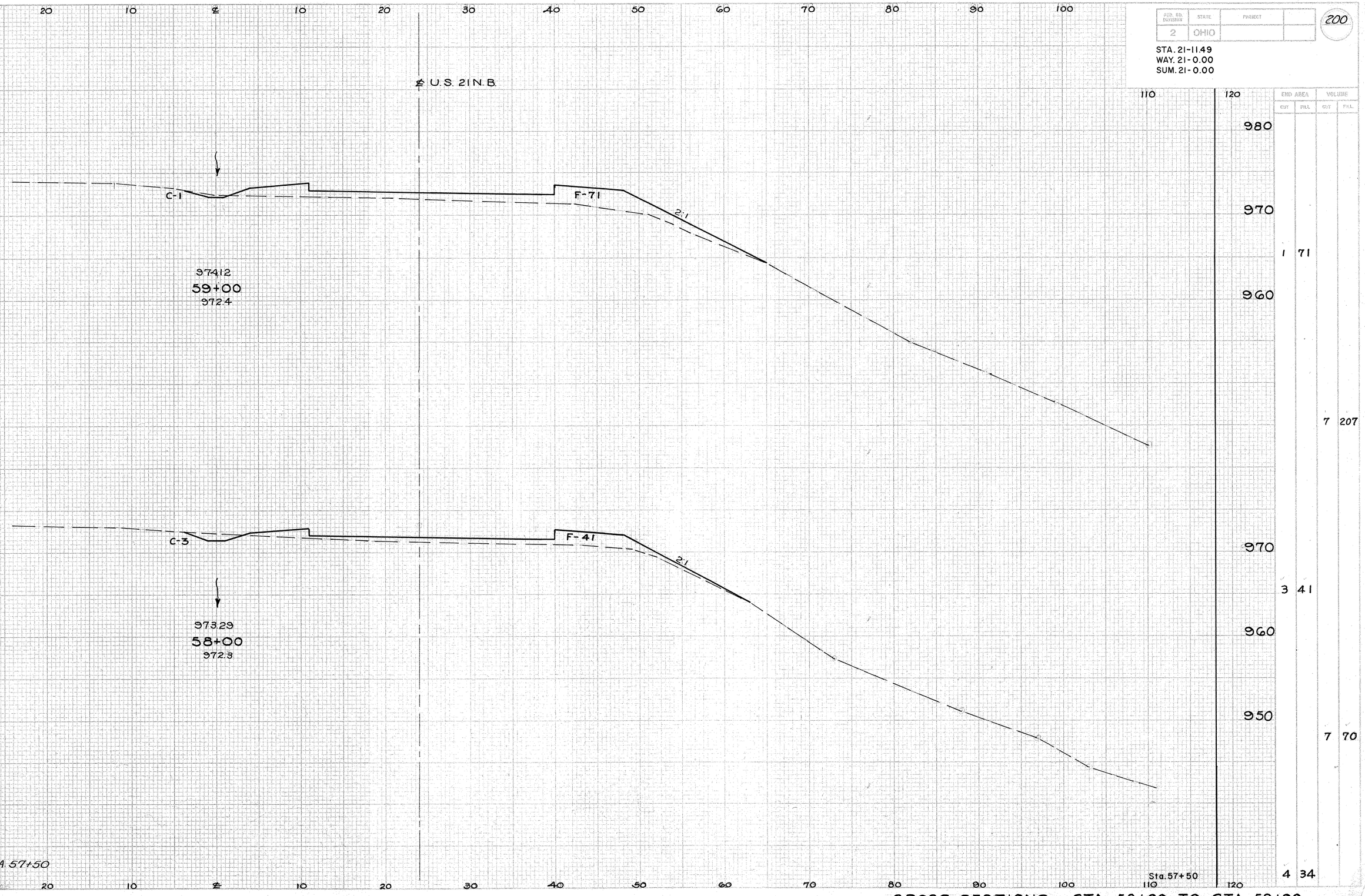
CROSS SECTIONS STA. 57+00 TO STA. 57+50

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

200

STA. 21-11.49
WAY. 21-0.00
SUM. 21-0.00

SEEDING	
END WIDTH	SQ. YDS.
60	
656	
58	
297	
49	STA. 57+50



END AREA		VOLUME	
CUT	FILL	CUT	FILL
980			
970			
1	71		
960			
			7 207
970			
3	41		
960			
950			7 70
			4 34

CROSS SECTIONS STA. 58+00 TO STA. 59+00

FED. RD DIVISION	STATE	PROJECT		
2	OHIO			

201

STA. 21-11.49
WAY. 21-0.00
SUM. 21-0.00

SEEDING

END WIDTH	SQ. YDS.
50	556
50	611
60	STA. 59+00

℄ U.S. 21 N.B.

C-3 F-49

975.78
61+00
974.5

C-3 F-52

974.95
60+00
973.7

	END AREA		VOLUME	
	CUT	FILL	CUT	FILL
980				
970			3	49
960			11	187
			3	52
			7	228
			1	71

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

CROSS SECTIONS STA. 60+00 TO STA. 61+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

202

STA. 21-11.49
WAY. 21-0.00
SUM. 21-0.00

SEEDING

END WIDTH	SQ. YDS.
51	
56	
55	
50	

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

℄ U.S. 21 N.B.

C-2 F-80

977.44
63+00
975.8

C-2 F-69

976.61
62+00
975.2

STA. 61+00

Sta. 61+00

END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
	2 80		
			7 276
	2 69		
		9 219	
	3 49		

980
975
975
970

CROSS SECTIONS STA. 62+00 TO STA. 63+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

203

STA. 21-11.49
WAY. 21-0.00
SUM. 21-0.00

SEEDING	
END WIDTH	SQ. YDS.
52	
572	
51	
567	
51	

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

℄ U.S. 21 N.B.

C-3

F-102

2:1

978.10
65+00
978.1

C-3

F-90

978.27
64+00
977.1

STA. 63+00

Sta. 63+00

END AREA		VOLUME	
CUT	FILL	CUT	FILL
	975		
	970	3	102
			11 356
	975		
	970	3	90
			9 315
		2	80

CROSS SECTIONS STA. 64+00 TO STA. 65+00

FED. RD. DIVISION	STATE	PROJECT		204
2	OHIO			

STA. 21 - 11.49
WAY. 21 - 0.00
SUM. 21 - 0.00

SEEDING END WIDTH	SEEDING SQ. YDS.
54	
	373
56	
	40
56	
0	
	416
52	

NOTE: Median Inlet To Be Built At Sta 68+00

℄ U.S. 21 N.B.

C-5 F-4 F-60 4:1

Concrete Collar ℄ 15"x 30° Bend

58' @ 2.0% - 56 L.F. 15" I-2 UA

FL - 975.00

FIL - 973.84

40 L.F. 15" I-2 M-6.4(c)

15"x 30° Bend

FL (OUT) 952.58

FL 952.84

13' @ 2.0% - 12 L.F. 15" I-2 M-6.4(c)

NOTE: Concrete Collar (Sta 67+90) To Be Included In Price Bid Of Item I-5 For I-2 Storm Sewer. The 15"x 30° Bends Are To Be Type M-6.4(c)

F-5 F-64 Var.

67+39
980.2

AHEAD STA. 67+32.61
BACK

BRIDGE LIMITS STA. 67+32.61 ℄ U.S. 21

STA. 67+32.61 AHEAD BACK

66+00
965.1

AHEAD STA. 65+72
BACK

BRIDGE LIMITS STA. 65+72.00 ℄ U.S. 21

STA. 65+72.00 AHEAD BACK

STA. 65+00

68+00
980.9

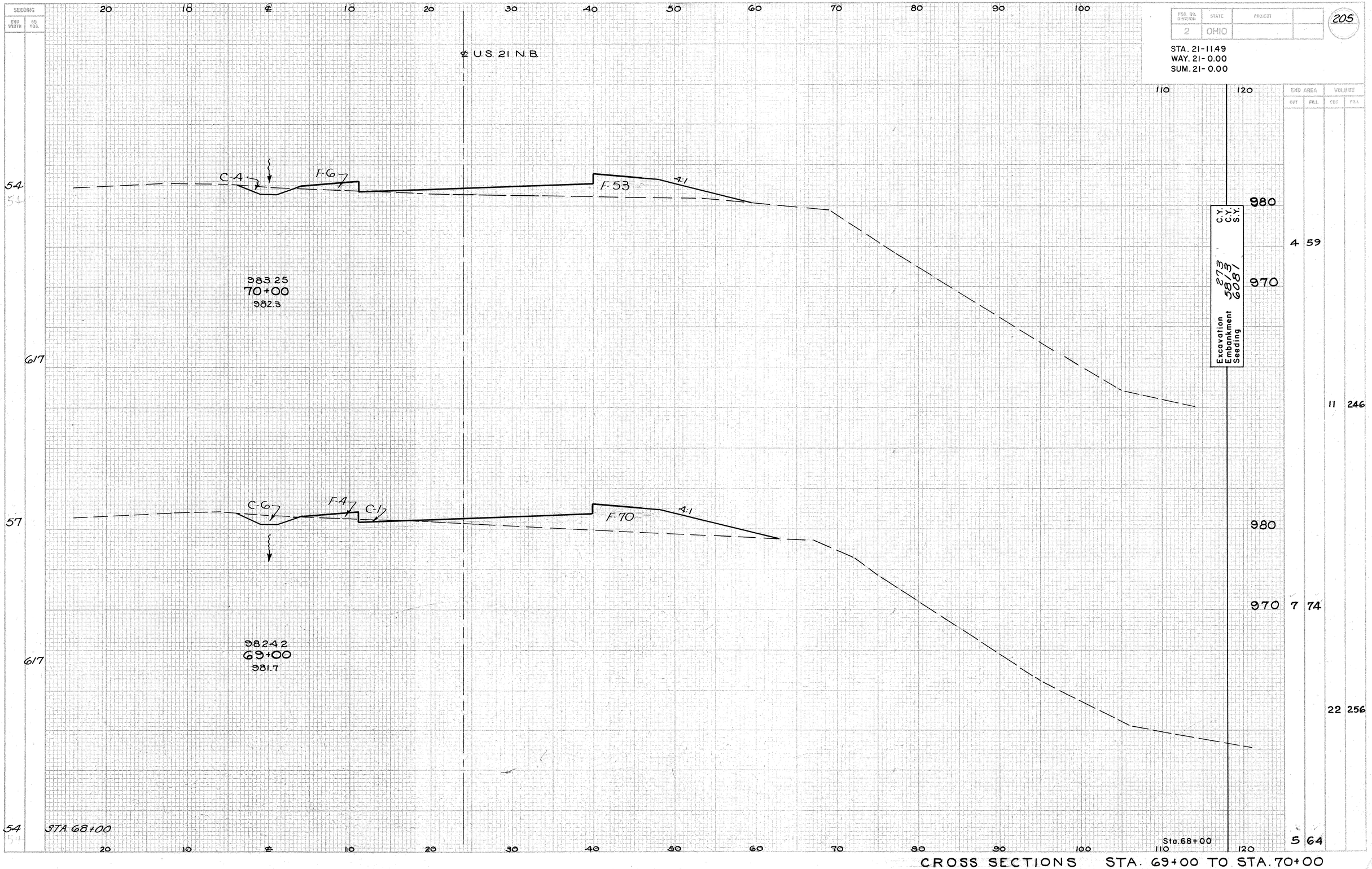
381.59

END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
		5	64
		5	150
		0	69
		0	16
0	69		
0	0		
0	0		
3	102		
		8	272
3	102		

980 970 980 970 965 960

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

CROSS SECTIONS STA. 66+00 TO STA. 68+00



FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

205

STA. 21-11.49
WAY. 21-0.00
SUM. 21-0.00

END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
4	59		
		11	246
7	74		
		22	256
5	64		

CROSS SECTIONS STA. 69+00 TO STA. 70+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

206

STA. 21-1149
WAY. 21-0.00
SUM. 21-0.00

SEEDING		END AREA		VOLUME	
END WIDTH	SQ. YDS.	CUT	FILL	CUT	FILL

SEEDING	
END WIDTH	50 YDS.

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

207

STA. 21-11.49
WAY. 21-0.00
SUM. 21-0.00

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

℄ U.S. 21 N.B.

C-3 F-7 F-907 2:1

986.57
74+00
985.5

110

917

C-3 F-6 F-62 4:1

985.75
73+00
984.6

55

617

56 STA. 72+00

Sta. 72+00

END AREA		VOLUME	
CUT	FILL	CUT	FILL
985			
980			
		3 914	
			11 1819
980			
		3 68	
970			
			11 270
		3 78	

CROSS SECTIONS STA. 73+00 TO STA. 74+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

208

STA. 21 - 11.49
WAY. 21 - 0.00
SUM. 21 - 0.00

SEEDING	
END WIDTH	SQ. YDS.

END AREA		VOLUME	
CUT	FILL	CUT	FILL

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

970
960
965
955
960
955

BRIDGE LIMITS STA. 77+91.35
℄ U.S. 21

Earth Work for Bridge See Note 230 1200

NOTE: These quantities include the Benching necessary for Structure WAY-21-0143. FOR BENCHING PROCEDURE SEE SITE PLAN NOTES.

989.06
77+00
961.2

988.23
76+00
958.5

987.40
75+00
956.4

0 AHEAD STA. 74+57.46
110 BACK
701
110 STA. 74+00

BRIDGE LIMITS STA. 74+57.46
℄ U.S. 21

Earth Work For Bridge See Note Above 160500
STA 74+57.46 AHEAD 0 0
(EST) BACK 3 444
6 1445
3 314

Sta. 74+00

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

CROSS SECTIONS STA. 75+00 TO STA. 77+00

SEEDING	
END WIDTH	SQ. YDS.
82	
465	
104	
584	
87	
84	
87	
0	
0	
0	

PROJECT DIVISION	STATE	PROJECT	
2	OHIO		

209

STA. 21-1149
WAY. 21-0.00
SUM. 21-0.00

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

℄ U.S. 21 N.B.

Temporary Run-Around

C-8 F-17 C-57 F-71

2:1

991.65
79+00
991.2

Median Located At
Sta. 78+65

C-7 F-17 C-57 F-126

15"x30° Bend

52'@ 2.0% - 50 L.F. 15" I-2 U.A.

Concrete Collar 2

F.L. 983.96

990.79
78+55
990.4

NOTE: Concrete Collar (Sta. 78+55) Is To Be Included In Price Bid Of Item I-5 For I-2 Storm Sewer. The 15"x30° Bends Are To Be Type M-6.4(c).

39 L.F. 15" I-2 M-6.4(c)

15"x30° Bend

F.L. 963.46

16'@ 2.0% - 15 L.F. 15" I-2

F.L. (Out) - 963.14

C-3 F-161

2:1

990.08
78+00
988.8

BRIDGE LIMITS STA. 77+91.35
℄ U.S. 21

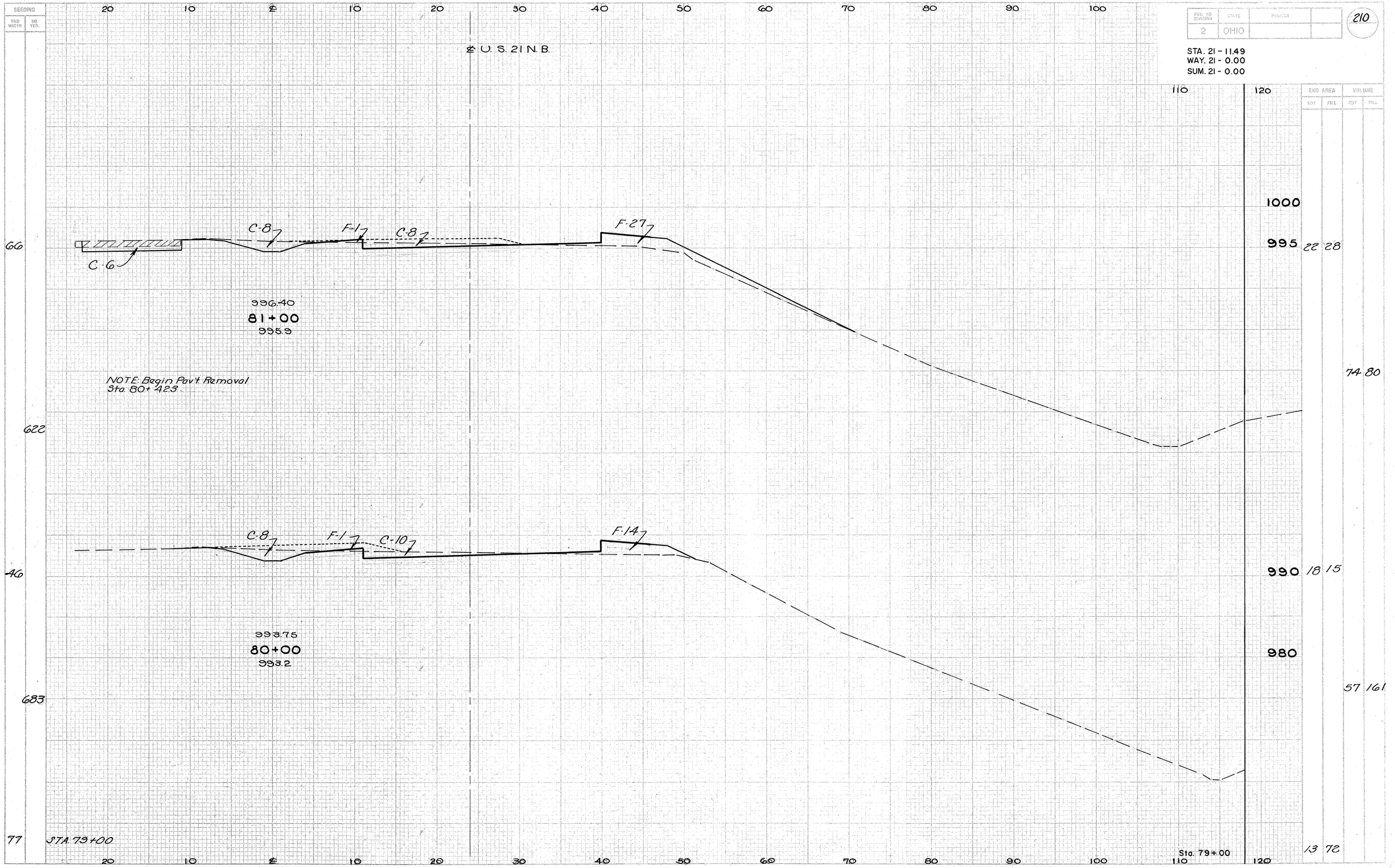
AHEAD STA. 77+91.35
BACK

STA. 77+00

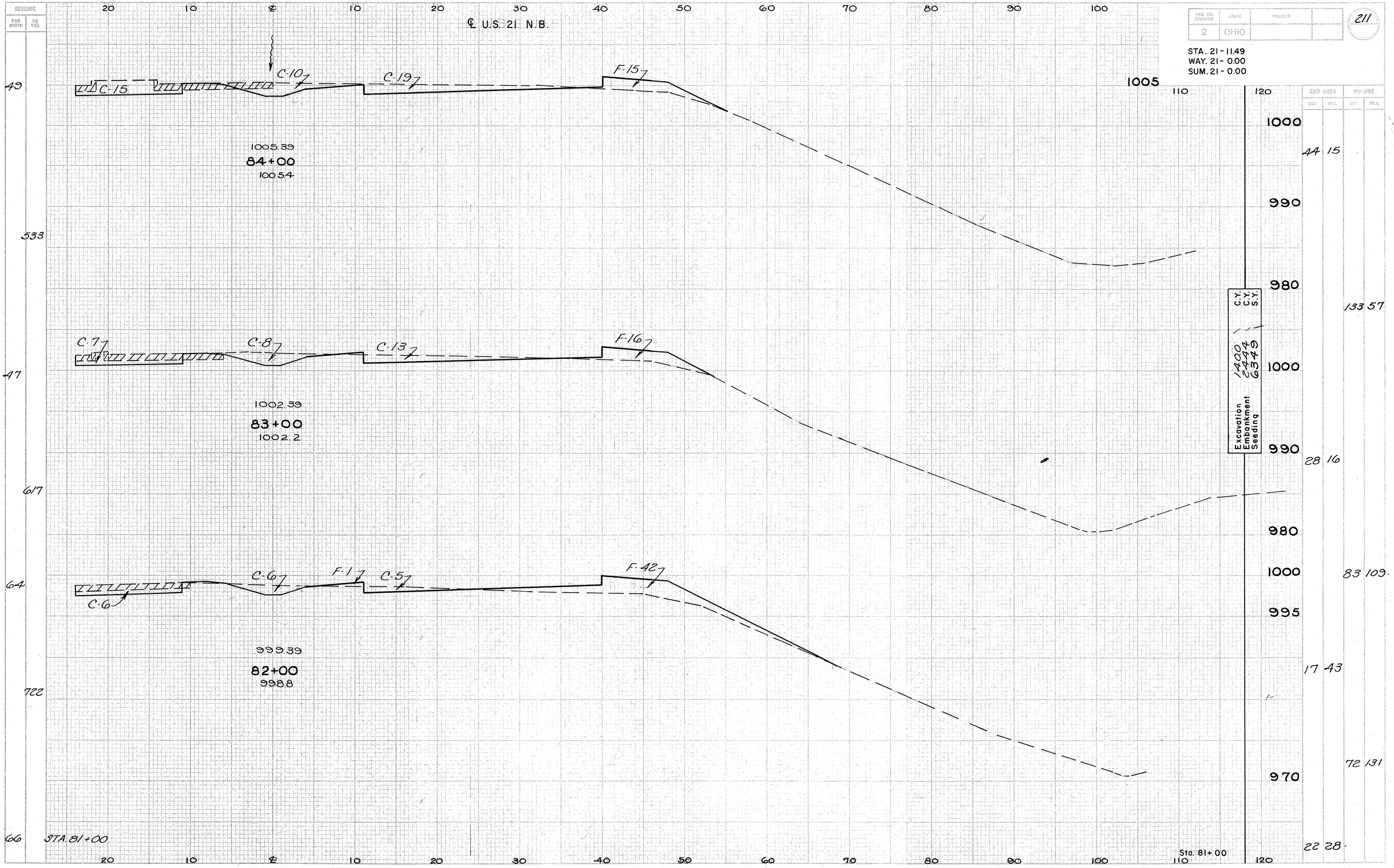
Sta. 77+00

END AREA		VOLUME	
CUT	FILL	CUT	FILL
990	13	72	
980			20 166
990			
980		12 127	
970			15 293
960			
	3	161	
			1 62
960			
AHEAD	3	161	
BACK	0	0	
			0 0
	0	0	

CROSS SECTIONS STA. 78+00 TO STA. 79+00



CROSS SECTIONS STA. 80+00 TO STA. 81+00



FED. RD. DIVISION: 2 | STATE: OHIO | PROJECT:

211

STA. 21-11.49
WAY. 21-0.00
SUM. 21-0.00

CROSS SECTIONS STA. 82+00 TO STA. 84+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

212

STA. 21-11.49
WAY. 21-0.00
SUM. 21-0.00

SEEDING

GND WIDTH	SQ. YDS.
42	
483	
45	
533	
51	
556	
49	

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

℄ U.S. 21 N.B.

C-16 F-6 C-3 C-37 F-27

1014.39
87+00
1013.4

NOTE: Begin Pav't Removal
Sta. 86+33.1 S.B. Lane.

C-10 F-4 C-6 C-32 F-10

8 L.F. 15" I-2 @ 0.5%
1011.39
86+00
1011.1

NOTE: End Pav't Removal
Sta. 85+14.5 S.B. Lane.

C-22 C-21 F-20

C-5

1008.39
85+00
1008.3

STA 84+00

Sta. 84+00

END AREA		VOLUME	
CUT	FILL	CUT	FILL
56	8		
		193	41
48	14		
		178	63
48	20		
		170	65
44	15		

1010 1000 1010 1000 990 1005 990 985

CROSS SECTIONS STA. 85+00 TO STA. 87+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

213

STA. 21-11.49
WAY. 21-0.00
SUM. 21-0.00

SEEDING: END WIDTH | SQ. YDS.

℄ U.S. 21 N.B.

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

END AREA: CUT | FILL — VOLUME: CUT | FILL

Excavation C.Y. 311
Embankment C.Y. 71
Seeding S.Y. 1350

40 — C-21, F-7 — 1023.39 — 90+00 — 1021.5 — 1020

444 — NOTE: End Pav't. Removal Sta. 89+96.0 S.B. Lane. — 1010

21 7

1000

40 — C-10, F-1, F-7, C-23 — 1020.39 — 89+00 — 1018.1 — 1020

100 28

1015

1010

33 8

456 — 1000

131 26

42 — C-11, F-4, F-1, C-27, F-1 — 1017.39 — 88+00 — 1015.7 — 1015

1010

38 6

467 — 1000

174 26

42 — STA. 87+00 — Sta. 87+00

56 8

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

CROSS SECTIONS STA. 88+00 TO STA. 90+00

SEEDING	
END WIDTH	SQ. YDS.

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

214

STA. 21-11.49
WAY. 21-0.00
SUM. 21-0.00

END AREA		VOLUME	
CUT	FILL	CUT	FILL

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

℄ U.S. 21 N.B.

END WORK
STA. 92+50

Note
Sheets 215 to 246
deleted

1030
1025
1010
1005
1030
1020
1010
1000

1029.39
92+00
1027.4

END PROJECT
STA. 91+00

NOTE: End Pav't Removal
Sta. 91+00.0 N.B. Lane

BACK ONLY

Temporary Run-Around
F:1
C:21
C:1
F:1

22 2

80 17

41
450
40

1026.39
91+00
1024.4

STA. 90+00

21 7

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

Sta. 90+00

CROSS SECTIONS STA. 91+00 TO STA. 92+00

LAKE AVENUE - S.R. 236
INTERSECTION DETAIL

PROPOSED CURVE DATA & LAKE AVE.

Δ = 15° 22'		E = 3.13'	
D = 16° 34' 10"		P.C. = 2+77.10	
R = 345.79'		P.T. = 3+67.63	
T = 46.65'		P.I. = 3+23.75	
L = 90.53'			

CURVE DATA
Δ = 104° 35' 30"
R = 70.00'
T = 90.56'
C = 110.77'
L = 127.78'
E = 44.46'

CURVE DATA
Δ = 75° 24' 30"
R = 100.00'
T = 77.30'
C = 122.32'
L = 131.61'
E = 26.39'

CURVE DATA
Δ = 104° 35' 30"
R = 50.00'
T = 64.68'
C = 79.12'
L = 91.27'
E = 31.75'

NOTE: An Estimated Quan. Of 5C.Y. T-35 & 12C.Y. I-18 Has Been Provided To Be Used As Directed By The Engineer To Replace Material Disturbed By Construct: From Sta 7+35 - Sta. 8+35 Lt. & Rt. And On 1st. Street.

NOTE: FOR ESTIMATED QUANTITIES SEE SH'T NO. 249

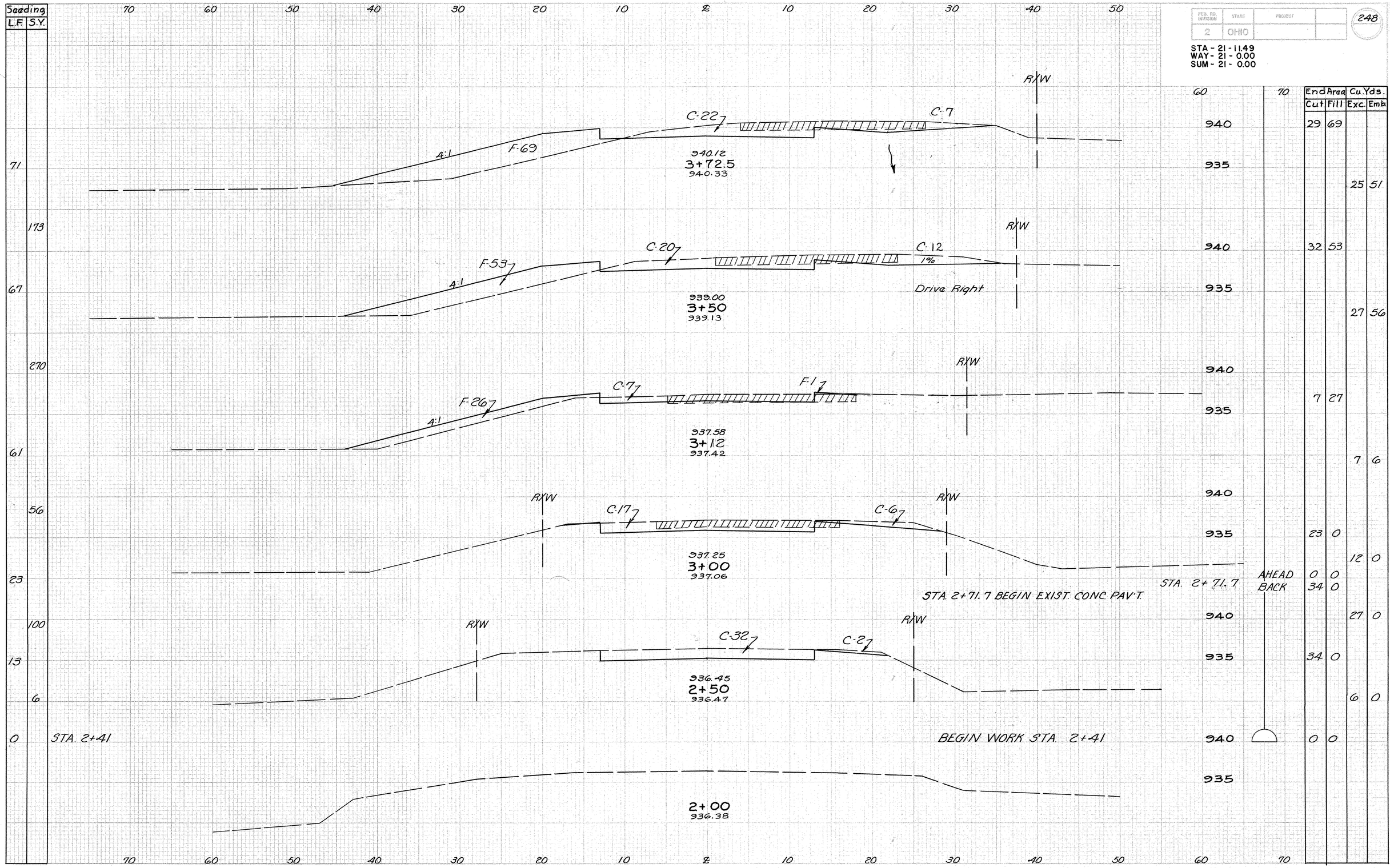
SCALE 1" = 20'

EXCAVATION	801	C.Y.
EMBANKMENT	3339	C.Y.
SEEDING	1609	S.Y.

JOINT LEGEND
① Standard Longitudinal Joint
② Key Joint Without Tie Bars.

TYPICAL SECTION OF ADJACENT PAV'T
10'± 26'± 10'± Var. Var. Slope
3" Macadam
8" Flexible Base

STA. 647+07.21 LAKE AVENUE-SR 236 INTERSECTION



FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

248

STA - 21 - 11.49
WAY - 21 - 0.00
SUM - 21 - 0.00

End Area Cut	End Area Fill	Cu. Yds. Exc.	Cu. Yds. Emb.
29	69		
		25	51
32	53		
		27	56
7	27		
		7	6
23	0		
		12	0
0	0		
34	0		
		27	0
34	0		
		6	0
0	0		

CROSS SECTIONS LAKE AVENUE STA. 2+00 TO STA. 3+72.5

FED. AID DIVISION	STATE	PROJECT		249
2	OHIO			

STA-21-11.49
WAY-21-0.00
SUM-21-0.00

STA. 4+98.51 & LAKE AVENUE
=STA. 647+07.21 & U.S. 21

ESTIMATED QUANTITIES ϕ

ITEM	DESCRIPTION	UNIT	STATION FROM	STATION TO	SIDE	SUB TOTAL	TOTAL
	Roadway						
L-10	Sodding (4' Wide)	S.Y.	6+03		Rt		5
E-8	Rem & Disp. Exist Pavt.	S.Y.	4+06		Rt	16	
E-8	" " " "	S.Y.	2+71.7	4+61.3		726	742
± SS-18	Rem & Disp. Ex. R/W Fence	L.F.	647+47	647+87	Lt.		40

± Stationing On U.S. 21

ESTIMATED QUANTITIES ϕ

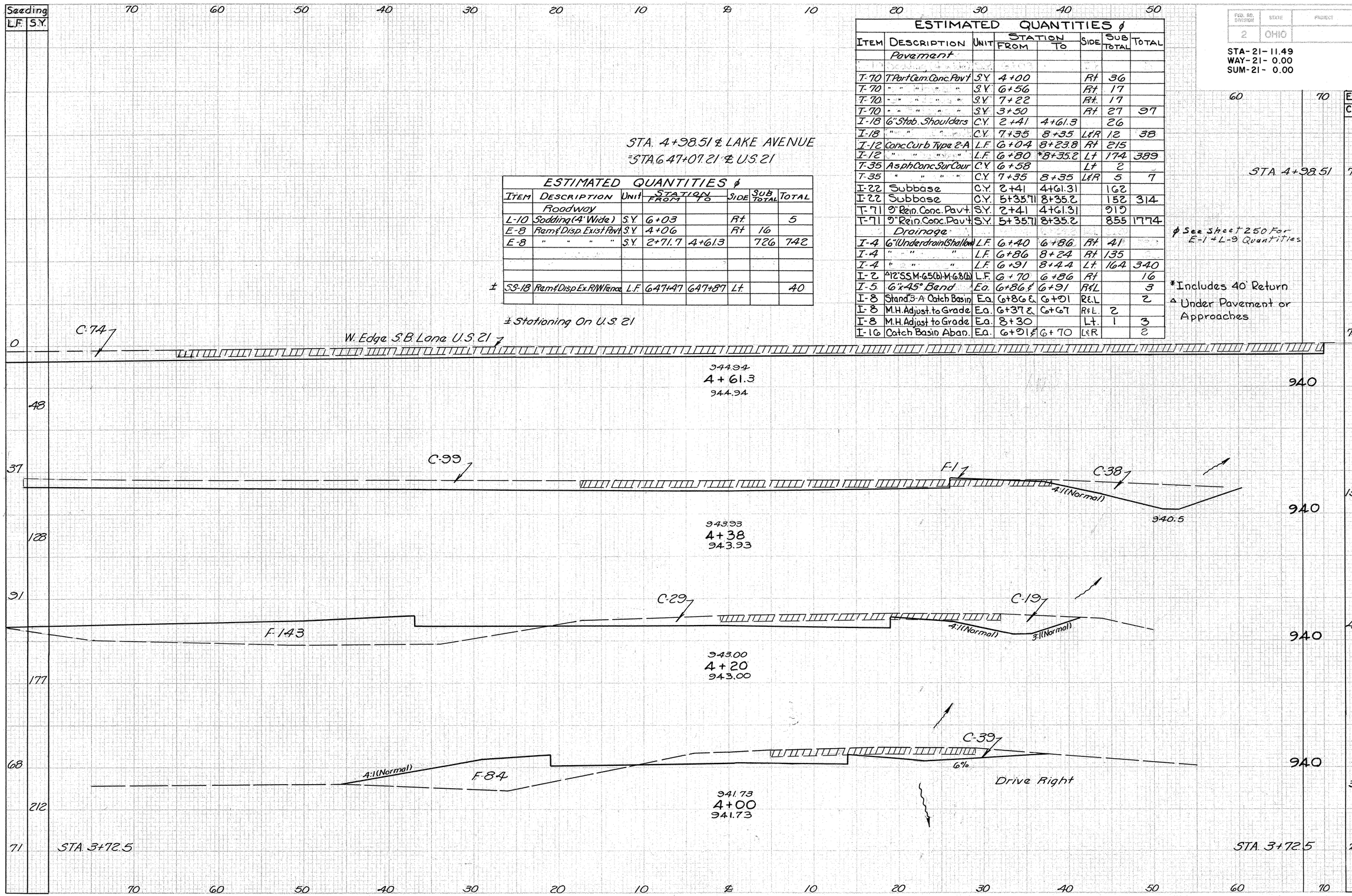
ITEM	DESCRIPTION	UNIT	STATION FROM	STATION TO	SIDE	SUB TOTAL	TOTAL
	Pavement						
T-70	1 Part Cem. Conc. Pavt	S.Y.	4+00		Rt	36	
T-70	" " " " "	S.Y.	6+56		Rt	17	
T-70	" " " " "	S.Y.	7+22		Rt.	17	
T-70	" " " " "	S.Y.	3+50		Rt	27	97
I-18	6" Stab. Shoulders	C.Y.	2+41	4+61.3		26	
I-18	" " "	C.Y.	7+35	8+35	L&R	12	38
I-12	Conc Curb Type 2-A	L.F.	6+04	8+23.8	Rt	215	
I-12	" " " "	L.F.	6+80	*8+35.2	Lt	174	389
T-35	Asph Conc Sur Cour	C.Y.	6+58		Lt	2	
T-35	" " " "	C.Y.	7+35	8+35	L&R	5	7
I-22	Subbase	C.Y.	2+41	4+61.31		162	
I-22	Subbase	C.Y.	5+35.71	8+35.2		152	314
T-71	9" Rein. Conc. Pavt.	S.Y.	2+41	4+61.31		919	
T-71	9" Rein. Conc. Pavt.	S.Y.	5+35.71	8+35.2		855	1774
	Drainage						
I-4	6" Underdrain Shallow	L.F.	6+40	6+86	Rt	41	
I-4	" " "	L.F.	6+86	8+24	Rt	135	
I-4	" " "	L.F.	6+91	8+44	Lt	164	340
I-2	△12"SS M-605(b)-M-608(b)	L.F.	6+70	6+86	Rt		16
I-5	6"x45° Bend	Ea.	6+86 ℄	6+91	R&L		3
I-8	Stand. 3-A Catch Basin	Ea.	6+86 ℄	6+01	R&L		2
I-8	M.H. Adjust to Grade	Ea.	6+37 ℄	6+67	R&L	2	
I-8	M.H. Adjust to Grade	Ea.	8+30		Lt.	1	3
I-16	Catch Basin Aban.	Ea.	6+91 ℄	6+70	L&R		2

ϕ See Sheet 250 For E-1 + L-9 Quantities

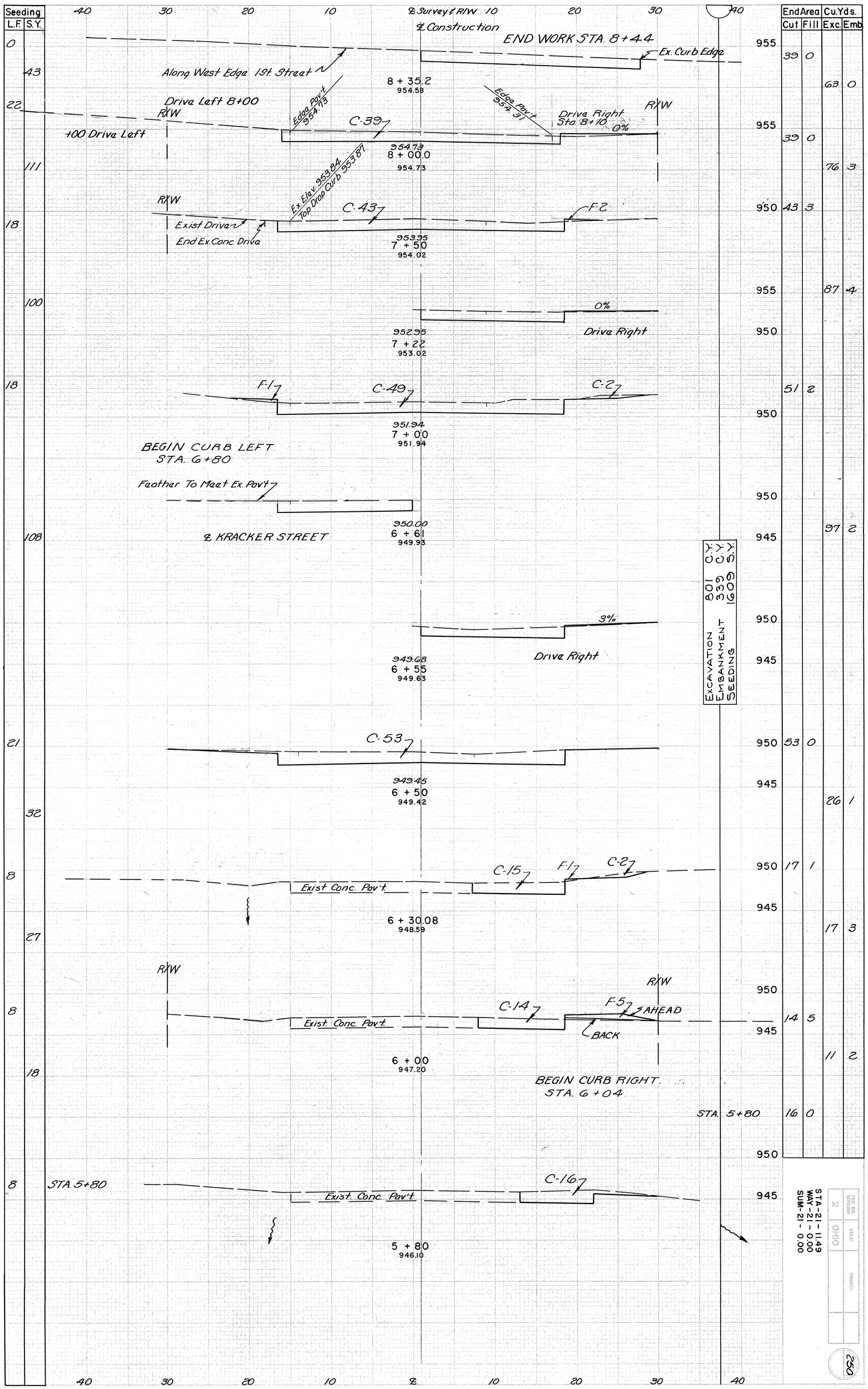
*Includes 40' Return

△ Under Pavement or Approaches

End Area Cut	End Area Fill	Cu. Yds. Exc.	Cu. Yds. Emb.
STA. 4+98.51			
74	0		
			102 0
74	0		
		940	
			91 1
137	1		
		940	
			62 48
48	143		
		940	
			32 84
39	84		
		940	
			33 78
25	69		
STA. 3+72.5			



CROSS SECTIONS LAKE AVENUE STA. 4+00 TO STA. 4+61.3

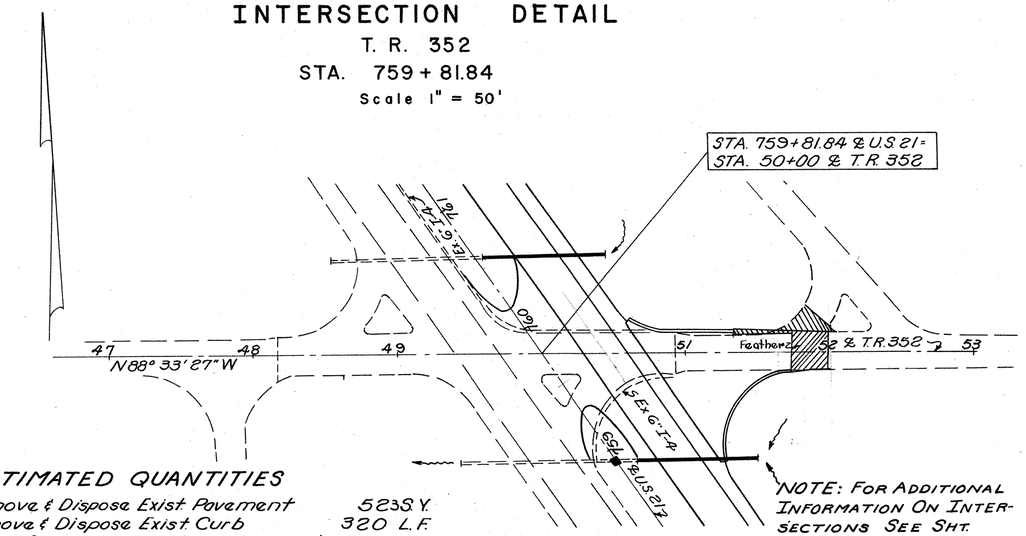

Seeding L.F. S.Y.
40 30 20 10 ℄ Survey ℄ R/W 10 20 30 40
℄ Construction
END WORK STA. 8+44
Ex. Curb Edge
Along West Edge 1st. Street
8 + 35.2
954.58
Drive Left 8+00
R/W
Edge Pav't 954.73
C-39
Edge Pav't 954.31
Drive Right Sta. 8+10
0%
R/W
+00 Drive Left
954.73
8 + 00.0
954.73
Ex. Elev. 953.84 Top Drop Curb 953.87
R/W
C-43
F-2
Exist Drive
End Ex. Conc. Drive
953.35
7 + 50
954.02
0%
952.95
7 + 22
953.02
Drive Right
F-1
C-49
C-2
951.94
7 + 00
951.94
BEGIN CURB LEFT
STA. 6+80
Feather To Meet Ex. Pav't
950.00
6 + 61
949.93
℄ KRACKER STREET
3%
949.68
6 + 55
949.63
Drive Right
C-53
949.45
6 + 50
949.42
C-15
F-1
C-2
Exist Conc. Pav't
6 + 30.08
948.59
R/W
R/W
C-14
F-5
℄ AHEAD
BACK
Exist. Conc. Pav't
6 + 00
947.20
BEGIN CURB RIGHT
STA. 6+04
STA. 5+80
C-16
Exist. Conc. Pav't
5 + 80
946.10
STA. 5+80
EXCAVATION 801 C.Y.
EMBANKMENT 339 C.Y.
SEEDING 1609 S.Y.
End Area Cut Fill
Cu. Yds. Exc. Emb.
955 39 0 63 0
955 39 0
955 76 3
950 43 3
955 87 4
950
950 51 2
950
950
945 97 2
950
945
950 53 0
945 26 1
950 17 1
945 17 3
950
945 14 5 11 2
950
945
950
945
CROSS SECTIONS-LAKE AVENUE STA. 5+80 TO STA. 8+36.5
STA-21-11.49
WAY-21-0.00
SUM-21-0.00
OHIO
250

INTERSECTION DETAIL

T. R. 352

STA. 759 + 81.84

Scale 1" = 50'


STA. 759+81.84 & U.S. 21 =
STA. 50+00 & T.R. 352
12% CUT 2:1
12% CUT 2:1
47
48
49
N88° 33' 27" W
51
Feather
52 & T.R. 352
53
12% CUT 2:1
12% CUT 2:1
12% CUT 2:1

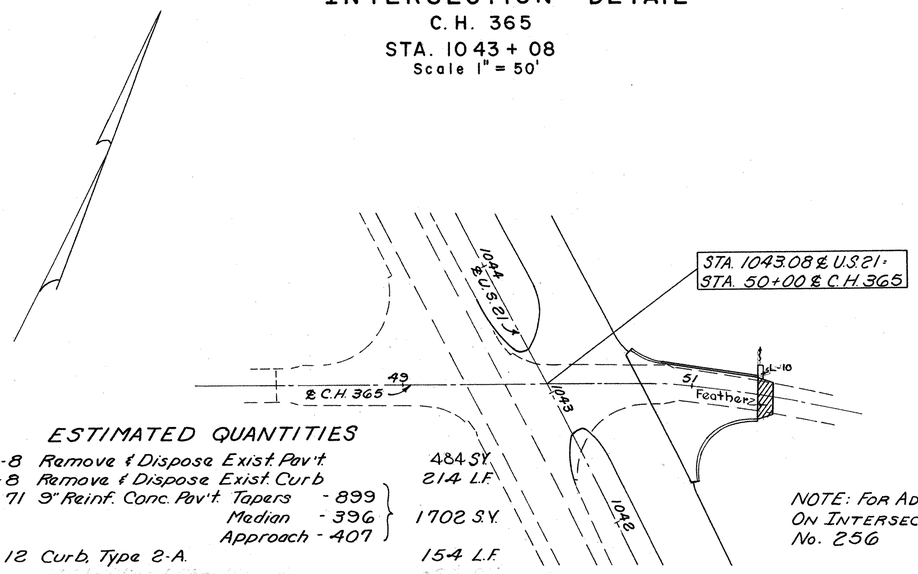
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

252

STA - 21 - 11.49
WAY - 21 - 0.00
SUM - 21 - 0.00

INTERSECTION DETAIL

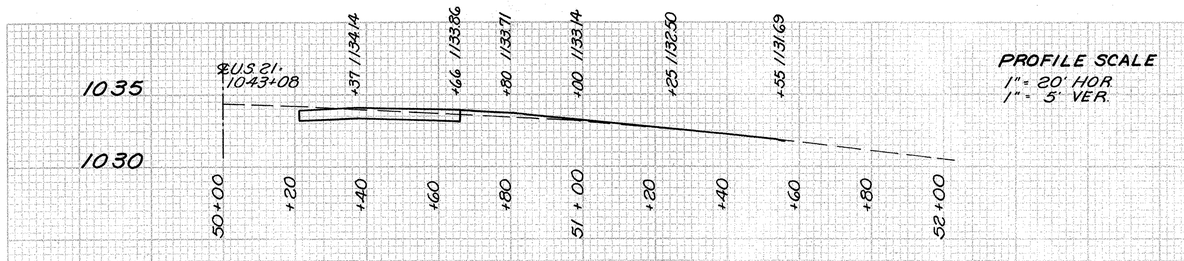
C.H. 365
STA. 1043 + 08
Scale 1" = 50'



NOTE: FOR ADDITIONAL INFORMATION ON INTERSECTIONS SEE SHT. No. 256

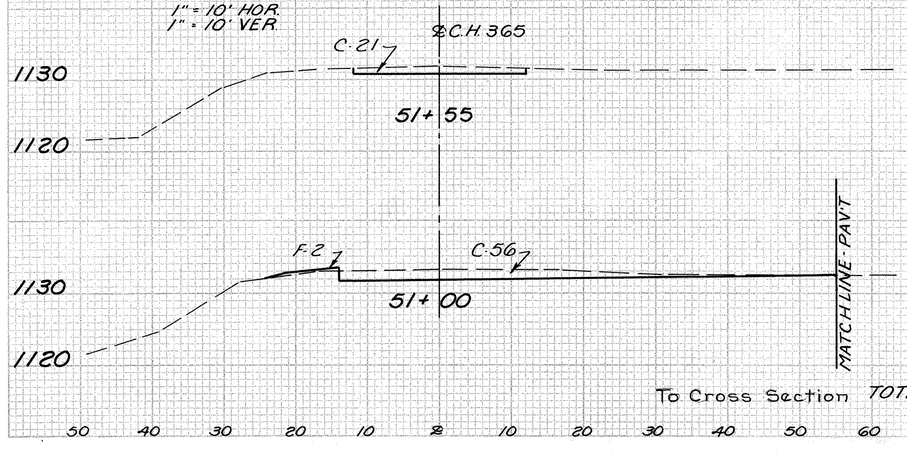
ESTIMATED QUANTITIES

E-8	Remove & Dispose Exist. Pav't	484 S.Y.
E-8	Remove & Dispose Exist. Curb	214 L.F.
T-71	9" Reinf. Conc. Pav't. Tapers - 899 / Median - 396 / Approach - 407	1702 S.Y.
I-12	Curb, Type 2-A	154 L.F.
I-22	Subbase	296 C.Y.
T-35	Asphaltic Concrete Surface Course Type "C" (85-100)	0.7 C.Y.
L-10	Sodding (4' wide)	4 S.Y.



PROFILE SCALE
1" = 20' HOR.
1" = 5' VER.

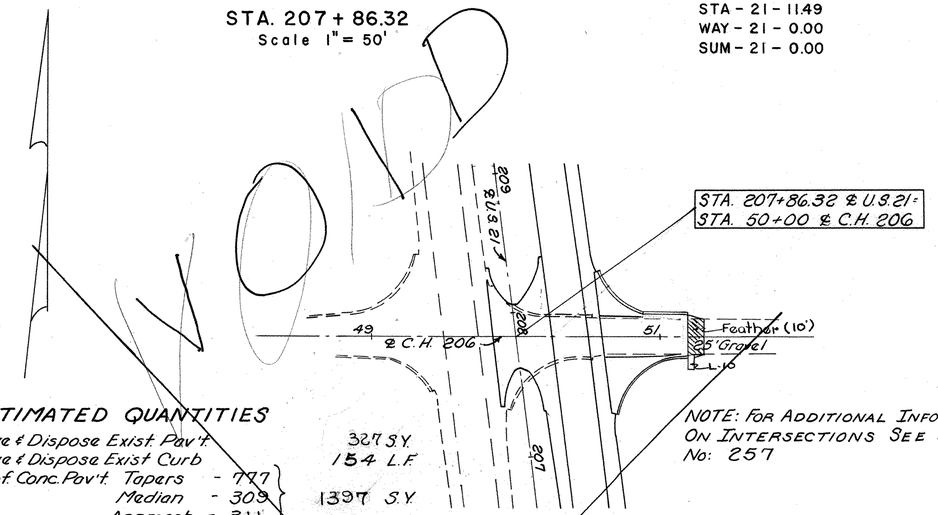
CROSS SECTION SCALE
1" = 10' HOR.
1" = 10' VER.



	SEEDING		END AREA		CU. YDS.	
	L.F.	S.Y.	CUT	FILL	EXC.	EMB.
	4		21	0		
		52			79	2
	13		56	2		
To Cross Section TOTAL		52			79	2

INTERSECTION DETAIL

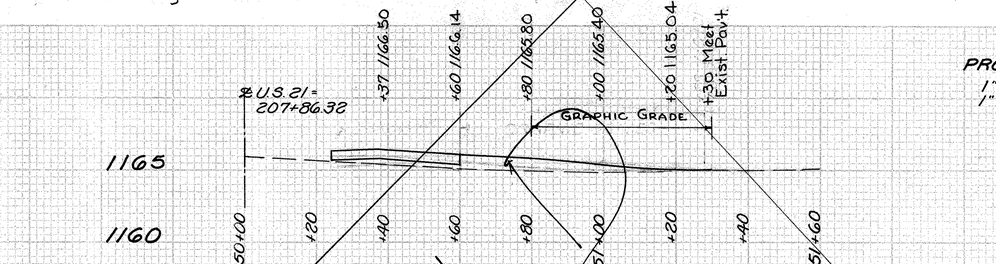
C.H. 206
STA. 207 + 86.32
Scale 1" = 50'



NOTE: FOR ADDITIONAL INFORMATION ON INTERSECTIONS SEE SHT. No: 257

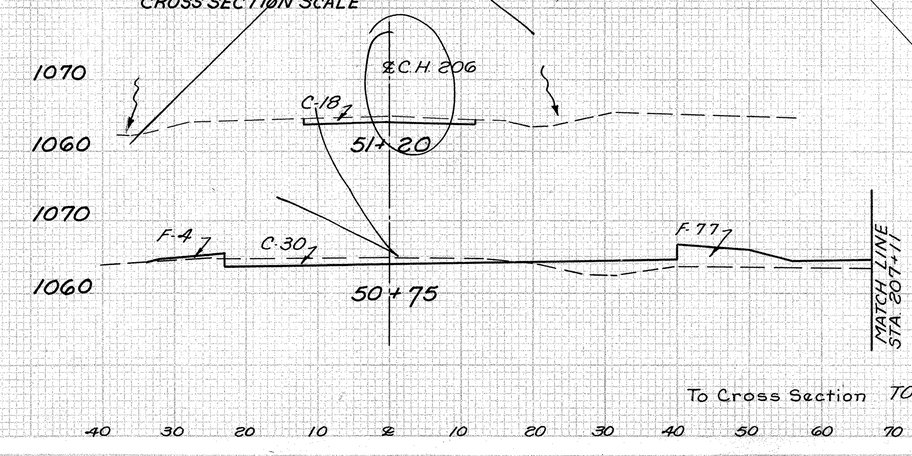
ESTIMATED QUANTITIES

E-8	Remove & Dispose Exist. Pav't	327 S.Y.
E-8	Remove & Dispose Exist. Curb	154 L.F.
T-71	9" Reinf. Conc. Pav't. Tapers - 777 / Median - 309 / Approach - 311	1397 S.Y.
I-12	Curb, Type 2-A	143 L.F.
I-22	Subbase	247 C.Y.
T-35	Asphaltic Concrete Surface Course Type "C" (85-100)	0.6 C.Y.
L-10	Sodding (4' wide)	4 S.Y.



PROFILE SCALE
1" = 20' HOR.
1" = 5' VER.

CROSS SECTION SCALE



	SEEDING		END AREA		CU. YDS.	
	L.F.	S.Y.	CUT	FILL	EXC.	EMB.
	4		18	0		
		129			47	80
	40		30	81		
To Cross Section TOTAL		129			47	80

INTERSECTION DETAILS STA. 1043+08 AND STA. 207+86.32

INTERSECTION DETAIL

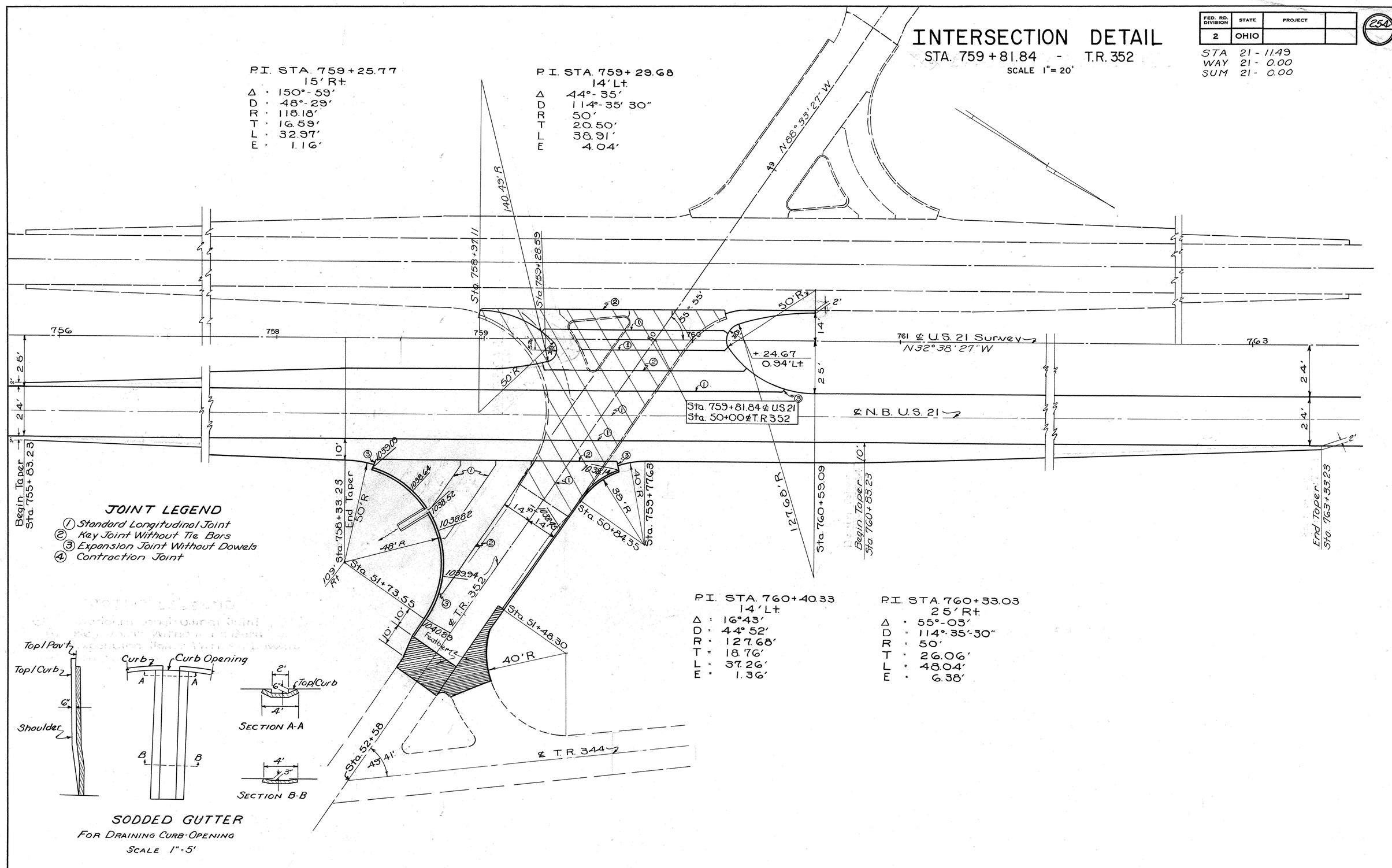
STA. 759 + 81.84 - T.R. 352

SCALE 1" = 20'

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

254

STA 21 - 11.49
WAY 21 - 0.00
SUM 21 - 0.00



INTERSECTION T.R. 352 STA. 759 + 81.84

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

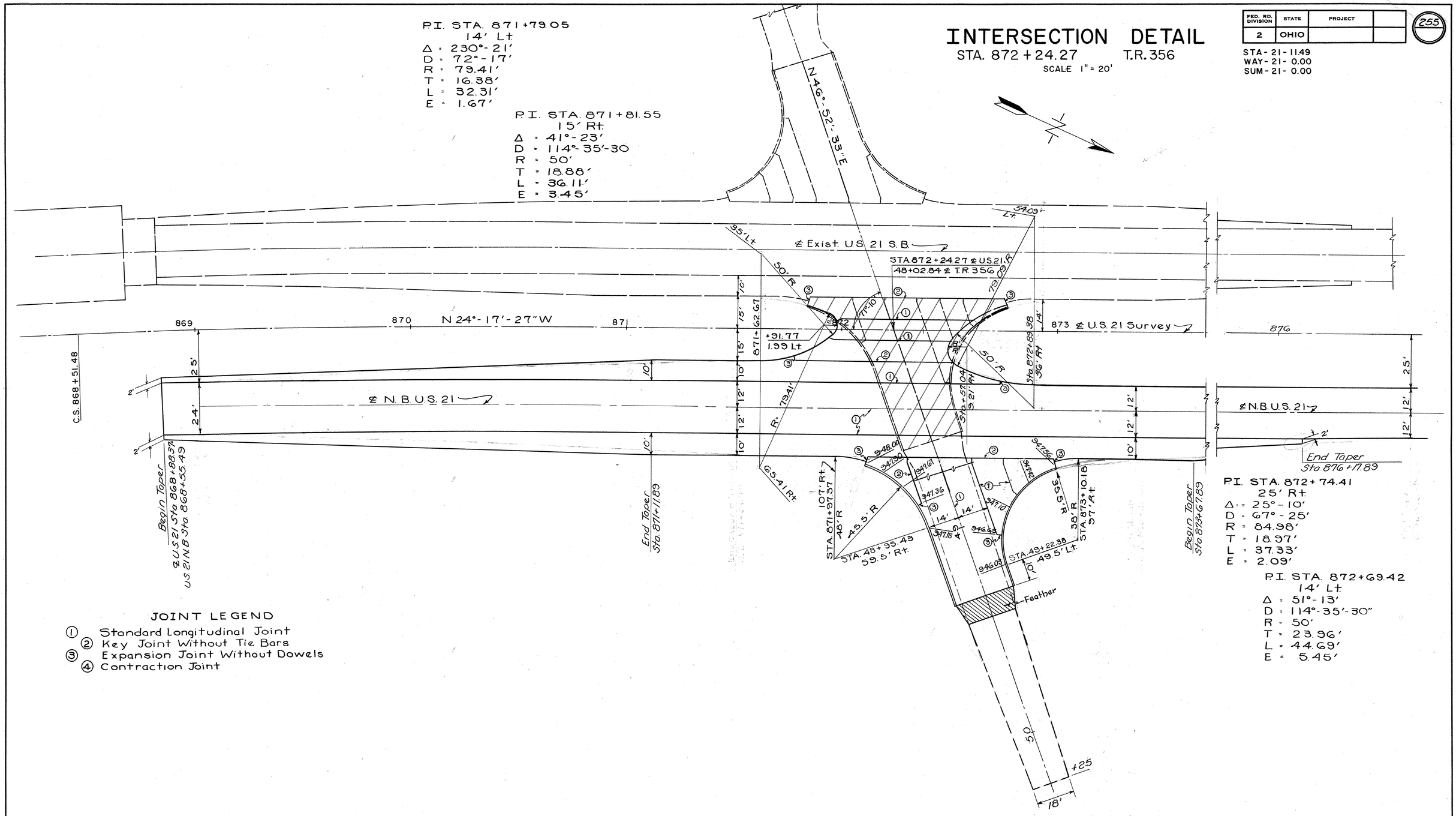
255

INTERSECTION DETAIL

STA. 872 + 24.27 T.R. 356

SCALE 1" = 20'

STA - 21 - 11.49
WAY - 21 - 0.00
SUM - 21 - 0.00



JOINT LEGEND

① Standard Longitudinal Joint
② Key Joint Without Tie Bars
③ Expansion Joint Without Dowels
④ Contraction Joint

INTERSECTION DETAIL

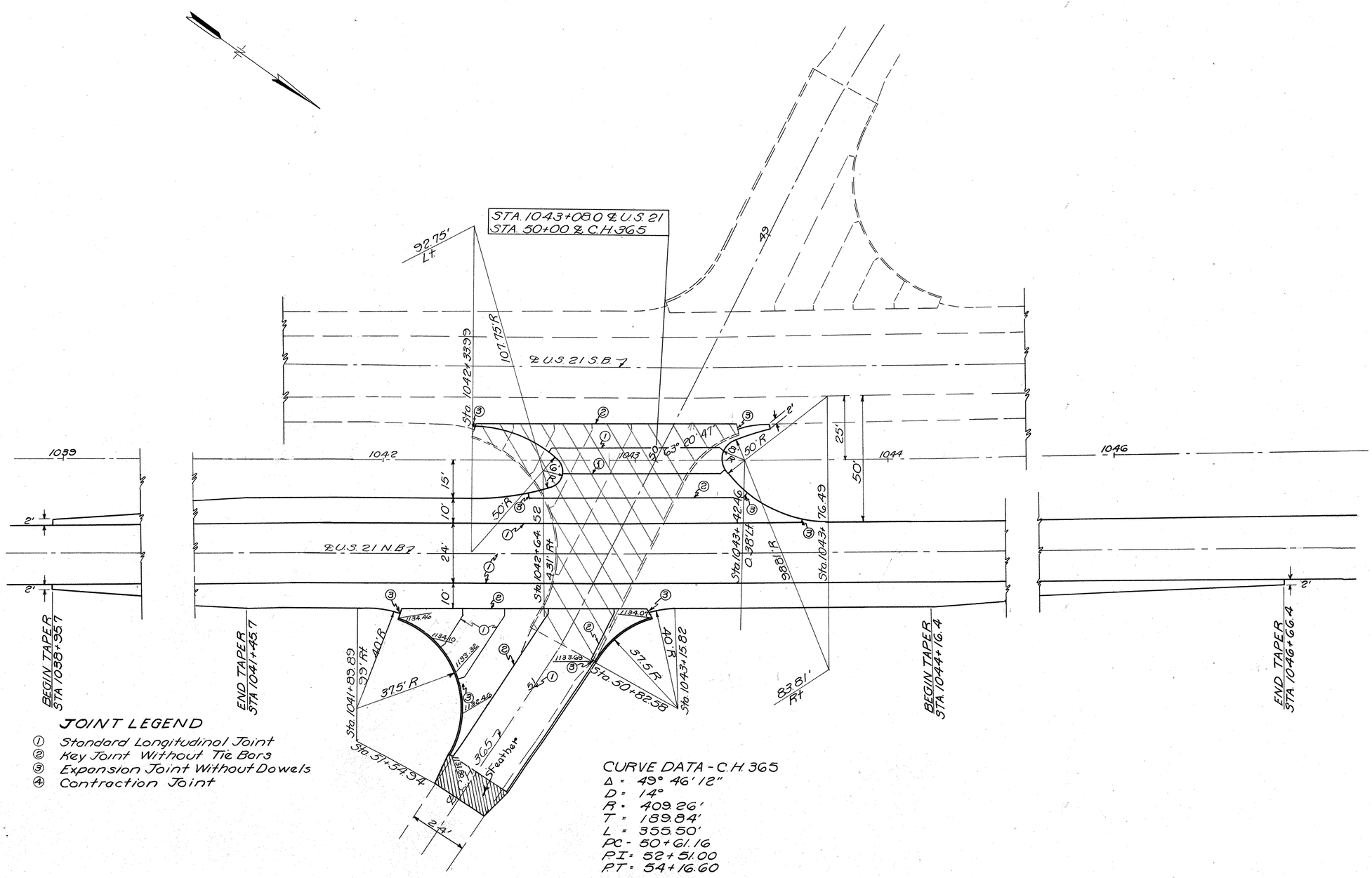
STA. 1043+08 - C.H. 365

SCALE 1" = 20'

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

256

STA. 21-1149
WAY 21-0.00
SUM. 21-0.00



JOINT LEGEND

① Standard Longitudinal Joint
② Key Joint Without Tie Bars
③ Expansion Joint Without Dowels
④ Contraction Joint

CURVE DATA - C.H. 365

Δ = 49° 46' 12"
D = 14°
R = 409.26'
T = 189.84'
L = 355.50'
PC - 50+61.16
PI = 52+51.00
PT = 54+16.60

INTERSECTION C.H. 365 - STA. 1043+08

TYPICAL SECTIONS & DETAILS
ROADSIDE REST AREA

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

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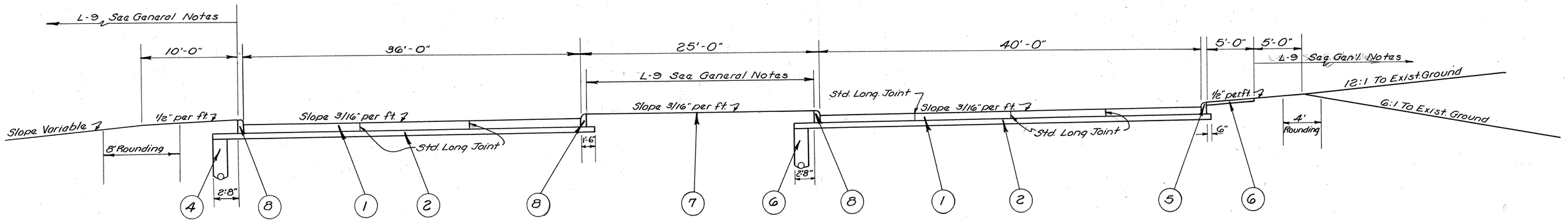
STA. 21-11.49
WAY. 21-0.00
SUM. 21-0.00

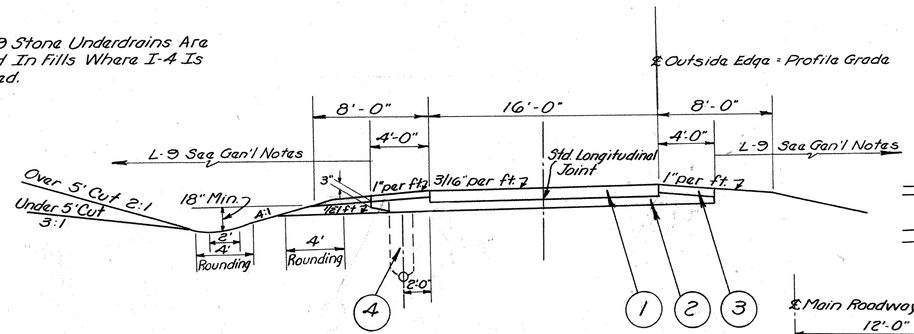


SCALE 1"=5'

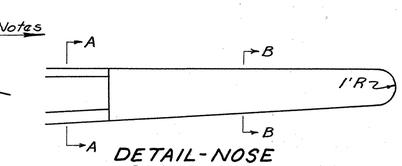
LEGEND

1. T-71 9" Reinforced Portland Cement Concrete Pav't.
2. I-22 6" Subbase
3. I-18 6" Stabilized Shoulders and Approaches
4. I-4 6" Pipe Underdrains
5. I-12 Portland Cement Concrete Curb Type 6
6. I-13 Portland Cement Concrete Sidewalk (4")
7. L-9 Seeding and Protecting
8. I-12 Special Portland Cement Concrete Curb (Modified)

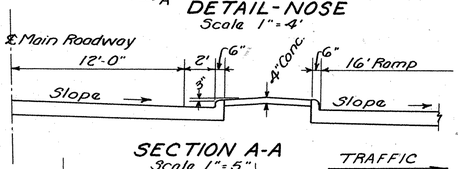
NOTE: I-9 Stone Underdrains Are To Be Used In Fills Where I-4 Is Not Provided.



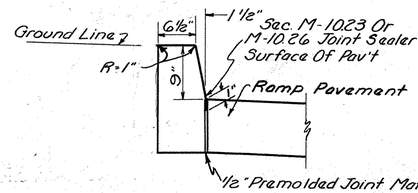
NORMAL RAMP SECTION
SCALE 1"=5'



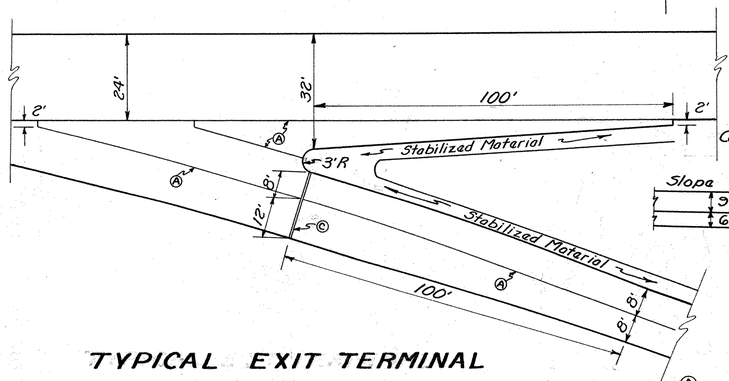
DETAIL-NOSE
Scale 1"=4'



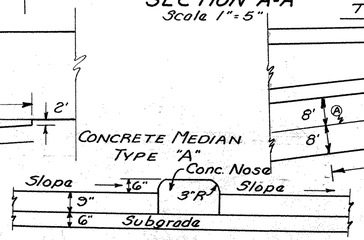
SECTION A-A
Scale 1"=5'



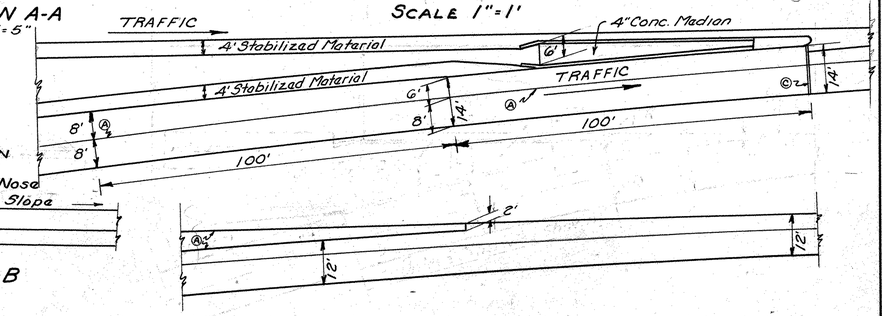
SPECIAL PORTLAND CEMENT CONCRETE CURB DETAIL (MODIFIED)
SCALE 1"=1'



TYPICAL EXIT TERMINAL
SCALE 1"=20'



SECTION B-B
Scale 1"=3'



TYPICAL ENTRANCE TERMINAL
SCALE 1" = 20'

Ⓐ Standard Longitudinal Joint
Ⓑ Key Joint Without Tie Bars
Ⓒ Expansion Joint Without Dowels

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

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REST AREAS GENERAL NOTES

REST AREA TREE PROTECTION

AREAS OTHER THAN THE PARKING LOTS, SHALL NOT BE USED FOR STORAGE OF MATERIALS, PARKING OF EQUIPMENT, OR VEHICLES OR FOR THE LOCATION OF CONSTRUCTION BUILDINGS OF ANY KIND DURING CONSTRUCTION. EQUIPMENT SHALL NOT BE OPERATED OVER TREE ROOT AREAS WHEN THE GROUND IS SOFT THEREBY AVOIDING DEEP RUTTING, SOIL COMPACTION AND DESTRUCTION OF ROOT SYSTEMS.
TREES THAT ARE TO BE SAVED WILL BE MARKED. ALL OTHERS SHALL BE REMOVED.
TREES MARKED TO BE SAVED THAT ARE DAMAGED BEYOND REPAIR BY DESTRUCTION OF MORE THAN 50 o/o OF ROOT AREAS OR 30 o/o OF THE CIRCUMFERENCE OF BARK AREAS ON INDIVIDUAL TREES SHALL BE REMOVED AND REPLACED AT THE CONTRACTOR'S EXPENSE. REPLACEMENTS SHALL BE IN QUANTITY SUFFICIENT TO COMPENSATE FOR SHADED AREAS LOST AND SHALL BE COMPLETED AS PER L-16 WITH THE CONTRACTOR FURNISHING AND PLANTING TREES OF THE SIZE AND VARIETY DIRECTED BY THE ENGINEER.
IN LIEU OF "BOXING" FOR TREE PROTECTION AS REQUIRED BY G-7, E-1 AND STANDARD DRAWING L-1, SNOW FENCE MAY BE USED TO PROHIBIT ACCESS TO TREE ROOT AREAS OF INDIVIDUAL TREES AND TREE GROUPS. THE ROOT AREAS ARE EQUAL IN SIZE TO THE SPREAD OF THE TREE BRANCHES.

ITEM SPECIAL

PARK TABLES, ROADSIDE TOILET AND STORAGE UNIT, CHARCOAL GRILL AND SERVING TABLE SHALL INCLUDE ALL EXCAVATION AND BACKFILL, FURNISHING, HAULING AND PLACING ALL MATERIALS AND ALL LABOR, EQUIPMENT, TOOLS AND INCIDENTALS NECESSARY TO COMPLETE THE ITEMS AS DETAILED ON THE PLAN OR AS SHOWN ON THE PERTINENT STANDARD CONSTRUCTION DRAWINGS AND GENERAL NOTES.

ITEM SPECIAL

DRILLED WELLS, SEE NOTES IN PROPOSAL.

TOP SOIL FOR L ITEMS

THIS SHALL BE OBTAINED FROM STOCK PILES PROVIDED BY L-1, L-12 AND ITEMS L-13. AREAS INDICATED ON THE PLANS FOR THESE ITEMS SHALL BE PREPARED AS PLANTING BEDS. EXCAVATED TO A DEPTH OF 12 INCHES AND BACKFILLED WITH A MIXTURE OF 1/3 TOP SOIL, 1/3 SAND AND 1/3 PEAT MOSS. THIS MIXTURE SHALL BE USED FOR L-14 AND L-16 ITEMS ALSO.

ITEM E-9 REMOVAL OF TREES AND STUMPS IN REST AREAS.

TREES, STUMPS AND CLUMPS OF BRUSH THAT ARE NOT MARKED TO BE SAVED ARE TO BE REMOVED. THE APPROXIMATE NUMBER AND SIZE OF REMOVALS IS AS FOLLOWS:

500	1" TO 3" TREES AND CLUMPS OF BRUSH
400	3" TO 8" TREES
150	8" TO 12" TREES
50	12" TO 18" TREES
5	18" TO 24" TREES
1	24" TO 30" TREES
26	12" TO 18" STUMPS
11	18" TO 24" STUMPS
7	24" TO 30" STUMPS
6	30" TO 36" STUMPS

THE STATE WILL NOT BE RESPONSIBLE FOR ANY VARIATION FOUND DURING CONSTRUCTION. WITHIN THE REST AREAS ONLY THOSE TREES INDICATED BY THE ENGINEER SHALL BE REMOVED. CARE SHALL BE EXERCISED BY THE CONTRACTOR IN PERFORMANCE OF THIS WORK SO THAT NO DAMAGE IS DONE TO TREES INDICATED BY THE ENGINEER TO BE SAVED.
CLEARING AND GRUBBING SHALL BE DONE IN ACCORDANCE WITH SECTION E-1.03 EXCEPT IN AREAS WHERE TREES OR STUMPS ARE TO BE REMOVED WITHIN THE TREE ROOT AREAS OF TREES THAT ARE TO REMAIN. IN SUCH AREAS REMOVALS SHALL BE BY CUTTING TO A MINIMUM DEPTH OF 8 INCHES BELOW FINISH GRADE WITH A STUMP CHIPPER OR SIMILAR EQUIPMENT.
THE LUMP SUM BID FOR ITEM E-9 REMOVAL OF TREES AND STUMPS IN REST AREAS, SHALL CONSTITUTE FULL PAYMENT FOR THIS ITEM.

ITEM L-17 PRUNING EXISTING TREES

ALL TREES WITHIN THE REST AREAS THAT ARE INDICATED TO BE SAVED SHALL BE PRUNED IN ACCORDANCE WITH ITEM L-17 AND IN ADDITION TO L-17 REQUIREMENTS LOW LIMBS SHALL BE REMOVED TO OBTAIN SEVEN (7') FOOT CLEARANCE ABOVE THE GROUND AS DIRECTED. THE NUMBER OF TREES TO BE PRUNED WILL BE APPROXIMATELY 550, RANGING IN SIZE FROM 3" TO 36" IN DIAMETER. BY THE ENGINEER THE STATE WILL NOT BE RESPONSIBLE FOR ANY VARIATION FOUND DURING CONSTRUCTION.
THE LUMP SUM BID FOR ITEM L-17 PRUNING EXISTING TREES SHALL CONSTITUTE FULL PAYMENT FOR THIS ITEM AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED.

ITEM L- 9 SEEDING AND PROTECTING REST AREAS

THE SEED BED SHALL BE PREPARED TO PROVIDE A SMOOTH SURFACE FOR A GOOD LAWN. FINISH GRADING IS TO ELIMINATE HUMPS OR DEPRESSIONS THAT WOULD INTERFERE WITH MOWING WITH A 24 INCH MOWER. ALL STONE AND DEBRIS LARGER THAN ONE INCH IN DIAMETER SHALL BE REMOVED FROM THE SURFACE AND THE AREAS SHALL BE LOOSENED TO A DEPTH OF 2" BEFORE SEEDING.
TOP SOIL SALVAGED AS PER L-1 SHALL BE USED IN FINISH GRADING OVER TREE ROOT AREAS TO AVOID DAMAGE BY GRADING OR TILLAGE EQUIPMENT. IT SHALL BE USED AS DIRECTED TO FILL DEPRESSIONS TO OBTAIN EXTRA SMOOTH FINE GRADING AND TO PROVIDE A MINIMUM DEPTH OF 3" OF TOP SOIL FOR THE REST AREA LAWNS. WHERE IT IS NOT NECESSARY TO CHANGE GRADES, TOP SOIL PLACEMENT WILL NOT BE REQUIRED. PLACING TOP SOIL WILL BE PAID FOR UNDER ITEM L-3.

THE SEED MIXTURE SHALL BE AS FOLLOWS:

45 o/o KENTUCKY BLUEGRASS
35 o/o ILLAHEE FESCUE
20 o/o RED TOP

ITEM L-6 ROADSIDE CLEANUP MODIFIED

THIS ITEM IS ESTIMATED FOR PERFORMANCE ON ALL EARTH AREAS OUTSIDE THE EXCAVATED OR FILLED AREAS WITHIN THE REST AREAS AS DIRECTED. TREE PRUNING AND REMOVAL OF TREES AND STUMPS WILL BE DONE UNDER OTHER ITEMS. IN ADDITION TO THE SPECIFIED REQUIREMENTS OF L-6 THE FOLLOWING WORK SHALL BE PERFORMED.
AREAS OUTSIDE THE TREE ROOT AREAS AND NOT PROVIDED FOR BY ITEM L-5 AT APPROXIMATE STA. 1089 TO 1092 ON THE LEFT SHALL BE PLOWED, FITTED AND GRADED TO OBTAIN DRAINAGE AWAY FROM ALL STRUCTURES AND TO PREVENT PONDING AT ANY POINT. ALL ROUGH UNEVEN AREAS INCLUDING FENCE ROWS SHALL BE GRADED TO ELIMINATE HUMPS OR DEPRESSIONS THAT WOULD INTERFERE WITH A 28" MOWER.
APPROXIMATE 400' OF FENCE SHALL BE REMOVED FROM TREES AND THE TREE TRUNKS REPAIRED. APPROXIMATELY 80 BOULDERS SHALL BE REMOVED AND DISPOSED OF OR BURIED TO A MINIMUM DEPTH OF TWO FEET.
APPROXIMATELY 300 SQUARE FEET OF STONE PILES SHALL BE REMOVED AND DISPOSED OF OR BURIED TO A MINIMUM DEPTH OF TWO FEET.
THE LUMP SUM BID FOR ITEM L-6 ROADSIDE CLEANUP MODIFIED, SHALL CONSTITUTE FULL PAYMENT FOR THIS ITEM AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED.

ITEM L-3 PLACING STOCKPILED TOP SOIL

THE TOP SOIL SHALL BE PLACED TO A DEPTH OF 3 INCHES ON ALL AREAS WHERE GRADING IS REQUIRED IN AND ADJOINING REST AREAS AS SHOWN ON THE CROSS SECTIONS AND BY CONTOUR ON THE PLANS. THIS SHALL INCLUDE THE AREAS ADJOINING SPEED CHANGE RAMPS.
IT SHALL BE PLACED AT VARIABLE DEPTHS NECESSARY TO OBTAIN SMOOTH GRADES OVER TREE ROOT AREAS AND AREAS WHERE TREES, STUMPS, BOULDERS AND STONE PILES ARE REMOVED. MAXIMUM DEPTH OVER TREE ROOT AREAS SHALL BE 3". FERTILIZER FOR THIS ITEM IS INCLUDED IN THE L-9 QUANTITIES.

ITEM L-5 SEEDING AND RENOVATING EXISTING SOD

THE WORK SHALL BE DONE IN THE REST AREA ON THE LEFT FROM APPROXIMATE STA. 1089 + 00 TO APPROXIMATE STA. 1092 + 00 AND IN THE MEDIAN FROM STA. 1081 + 00 TO STA. 1097 + 00. THE SEED MIXTURE SHALL BE THE SAME AS SPECIFIED FOR L-9. TOP SOIL SHALL BE USED FROM STOCK PILES PROVIDED FOR BY L-1. FERTILIZER FOR THIS ITEM IS INCLUDED IN THE L-9 QUANTITY.

ITEM L-1 TOP SOIL STOCKPILED

TOP SOIL MAY BE OBTAINED AT THE FOLLOWING LOCATIONS BETWEEN THE TOP OR TOE OF SLOPE OF PREVIOUS CONSTRUCTION TO THE MOST EASTERLY TOP OR TOE OF SLOPE OF NEW CONSTRUCTION AS SHOWN ON THE CROSS SECTIONS. THE AVERAGE DEPTH OF TOP SOIL IS 9". ON THE RIGHT

STATION		STATION
730 + 00	TO	758 + 00
761 + 00	TO	766 + 00
1022 + 00	TO	1035 + 00
168 + 00	TO	190 + 00
209 + 00	TO	220 + 00
223 + 00	TO	234 + 00
251 + 00	TO	282 + 00
289 + 00	TO	299 + 00

ITEM L-16

In addition to the requirements of this item, the contractor shall be required to furnish the trees.

PRESSURE WATER SYSTEM

METHOD OF MEASUREMENT: THE "ITEM SPECIAL, PRESSURE WATER SYSTEM" AND ALL APPURTENANCES AS DETAILED AND SPECIFIED ON THE PLANS SHALL BE CONSIDERED AS ONE UNIT. THE NUMBER OF UNITS TO BE PAID FOR SHALL BE THE NUMBER OF EACH UNIT, LISTED AND ESTIMATED SEPERATELY, COMPLETE AND ACCEPTED.
BASIS OF PAYMENT: THE WORK INCLUDED IN THIS ITEM SHALL BE PAID FOR AT THE CONTRACT UNIT PRICE BID FOR EACH "ITEM SPECIAL, PRESSURE WATER SYSTEM" COMPLETED AND ACCEPTED, WHICH PRICE AND PAYMENT SHALL CONSTITUTE FULL COMPENSATION FOR FURNISHING, PREPARING, PLACING AND INSTALLING ALL MATERIALS, AND FOR ALL LABOR, EQUIPMENT, TOOLS AND INCIDENTALS NECESSARY TO COMPLETE THIS ITEM AS SHOWN AND SPECIFIED ON THE PLANS.

AEROBIC SEWAGE TREATMENT PLANT

GENERAL: FURNISH AND INSTALL ONE PRE-FABRICATED CONCRETE WASTE TREATMENT PLANT, COMPLETE AND READY FOR OPERATION, IN ACCORDANCE WITH PLANS AND SPECIFICATIONS STATED HEREIN AND ACCEPTABLE TO THE OHIO DEPARTMENT OF HEALTH. THE WASTE TREATMENT PLANT SHALL BE OF THE ACTIVATED SLUDGE TYPE, SPECIFICALLY KNOWN AS AEROBIC DIGESTION, CAPABLE OF TREATING 5000 GALLONS PER DAY OF DOMESTIC SEWAGE OF 210 PARTS PER MILLION, FIVE DAY B. O. D. FROM COMPOSIT SAMPLES OF AVERAGE DAILY FLOW. THE COMPLETE PLANT SHALL CONSIST OF AN AERATION CHAMBER, AND FINAL SETTLING COMPARTMENT.

GENERAL CONTRACTOR

THE GENERAL CONTRACTOR SHALL PROVIDE THE EXCAVATION TO THE ELEVATION AS INDICATED ON THE PLANS. HE SHALL POUR SLAB OF CLASS "C" REINFORCED CONCRETE WITH KEYS AS INDICATED, RUN INFLUENT AND EFFLUENT PIPE AND MAKE NECESSARY BACK-FILL AFTER THE PLANT HAS BEEN ERECTED.

PLANT CONSTRUCTION AND ERECTION (AEROBIC SEWAGE TREATMENT PLANT CONTINUED)

UNDER THIS SECTION OF THE SPECIFICATIONS THE MANUFACTURER SHALL SUPPLY AND COMPLETELY INSTALL ON THE CONCRETE PAD, POURED BY THE GENERAL CONTRVCTOR, A PRE-FABRICATED CONCRETE TANK CONSISTING OF A SINGLE TANK DIVIDED INTO TWO SECTIONS. THE AERATION TANK SHALL BE OF SUFFICIENT SIZE AND CAPACITY TO PROVIDE A 24 HOUR PERIOD OF AERATION. THE BOTTOM OF THE TANK SHALL BE FILLITED AROUND THE TANK TO PREVENT SLUDGE ACCUMULATION. FOR THIS AERATION TANK HE SHALL SUPPLY AND INSTALL A YEOMANS CAVITATOR OF AMPLE SIZE TO PROVIDE A MINIMUM OF 350 CUBIC FEET OF AIR FOR EACH POUND OF B. O. D. APPLIED. WHERE REQUIRED THE AERATION TANK WALLS SHALL BE VERTICALLY EXTENDED IN WHICH CASE CAVITATOR UNIT MAY BE MOUNTED TO SIDE WALLS. ITS RATED CAPACITY SHALL BE BASED ON ITS 24 HOURLY RATE OF B. O. D. APPLICATION AND TANK SIZE TO MAINTAIN CLEANSING VELOCITY. THE CAVITATION SHALL HAVE A TIME CLOCK TO VARY THE AIR SUPPLY WITH THE DEMAND. THE MOTOR DRIVE UNIT SHALL CONSIST OF A ONE (1) H. P., 1750 R.P.M. 110/220 VOLTS, SINGLE PHASE 60 CYCLE MOTOR SUITED FOR OUTDOOR OPERATION, WITH A V BELT DRIVE, MAGNETIC STARTER, WITH H.O.A. SELECTOR SWITCH NEMA IV ENCLOSURE: THE TIME CLOCK, ALSO, A NEMA IV ENCLOSURE.

FINAL SETTLING

THIS SECTION OF THE TANK SHALL BE OF AMPLE SIZE TO PROVIDE FOUR HOURS OF RETENTION BASED ON THE SAME RATES GOVERNING THE AERATION TANK AND SHALL HAVE PROPER BAFFLING.
THE TOTAL SETTLING VOLUME SHALL INCLUDE THE VOLUME OF THE UPPER 1/3 OF THE SLUDGE HOPPER.
THE SETTLED SLUDGE SHALL BE RETURNED TO THE AERATION TANK BY AN AIR LIFT ASSEMBLY, CONSISTING OF AN AIR LIFT PUMP ACTIVATED BY A ROTARY AIR COMPRESSOR WITH A 1/2 H. P., 1750 R.P.M., 110 VOLTS, SINGLE PLASE, 60 CYCLE, OPEN MOTOR AND SHALL BE EQUIPPED WITH AN ELECTRIC TIME CLOCK.

AUTOMATIC SCUM REMOVAL

FROTH OR SCUM FORMED ON THE FINAL SETTLING TANK SHALL BE RETURNED TO THE CAVITATOR DRAFT TUBE BY MEANS OF A FABRICATED STEEL SKIMMING FUNNEL LOCATED AT OR NEAR THE EFFLUENT BAFFLE.

SCREEN

ALL RAW WASTE TRIBUTARY TO THE PLANT WILL PASS THROUGH A MINIMUM CLEAN BAR SCREEN WITH DRY DECK, LOCATED ON THE INSIDE OF THE AERATION TANK AT THE POINT OF EFFLUENT ENTRY.

PRE-FABRICATED TANK

A CONCRETE TANK, AS DESCRIBED ABOVE, SHALL CONSIST OF CONCRETE SLABS WITH A MINIMUM THICKNESS OF SIX INCHES AND SHALL BE ADEQUATELY REINFORCED TO WITH-STAND THE GROUND PRESSURE ON THE OUTSIDE WHEN EMPTY OR THE WATER PRESSURE FROM THE INSIDE IN THE EVENT THAT THERE IS NO EXTERNAL GROUND PRESSURE. THE SUPPLIER OF THIS TANK SHALL COMPLETELY INSTALL ALL EQUIPMENT AND PIPING WITHIN THE PLANT, AS LISTED ABOVE. NOTE THE ENTRANCE AND EXIT ANGLES REQUIRED FOR INFLUENT AND EFFLUENT PIPE SHOWN ON THE PLAN.
HE SHALL, ALSO, PROVIDE A GRATING TO COVER THE AERATION AND FINAL SETTLING TANK: THIS GRATING TO BE HINGED WHERE NECESSARY TO PROVIDE FOR PROPER MAINTENANCE TO PLANT.
THE THREE OUTSIDE WALLS OF THE AERATION TANK SHALL BE 3'-2" ABOVE THE CENTER LINE OF THE INFLUENT PIPE.

ELECTRICAL WORK

THE ELECTRICAL CONTRACTOR SHALL PROVIDE AN INSTRUMENT PANEL ON WHICH IS TO BE MOUNTED THE TIME CLOCKS AND STARTERS, AS LISTED ABOVE. HE ALSO, SHALL RUN THE SERVICE TO THE DISPOSAL PLANT AND SHALL MAKE THE NECESSARY ELECTRICAL CONNECTIONS. SERVICE TO SEWAGE DISPOSAL PLANT SHALL BE DIRECT BURIAL CABLE, USING NUMBER TO WIRE.

METHOD OF MEASUREMENT

THE AEROBIC SEWAGE TREATMENT PLANT AND ALL APPURTENANCES AS DETAILED AND SPECIFIED ON THE PLANS SHALL BE CONSIDERED AS ONE UNIT. THE NUMBER OF UNITS TO BE PAID FOR SHALL BE THE NUMBER OF EACH UNIT, LISTED AND ESTIMATED SEPERATELY, COMPLETE AND ACCEPTED.

BASIS OF PAYMENT

THE WORK INCLUDED IN THIS ITEM SHALL BE PAID FOR AT THE CONTRACT UNIT PRICE BID FOR EACH ITEM SPECIAL, AEROBIC SEWAGE TREATMENT PLANT COMPLETED AND ACCEPTED, WHICH PRICE AND PAYMENT SHALL CONSTITUTE FULL COMPENSATION FOR ALL EXCAVATION AND BACKFILL, AND FOR FURNISHING, HAULING, AND PLACING ALL MATERIALS, AND FOR ALL LABOR, EQUIPMENT, TOOLS AND INCIDENTALS NECESSARY TO COMPLETE THIS ITEM.

BITUMINOUS JOINTS

BITUMINOUS JOINTS FOR SEWERS (SANITARY) AS CALLED FOR IN THESE PLANS SHALL BE BITUMINOUS COMPRESSION TYPE SUCH AS SLIP SEAL OR AN APPROVED EQUAL.

GALVANIZED PIPE

THE 2" GALVANIZED PIPE CALLED FOR ON THIS PLAN SHALL MEET THE REQUIREMENTS OF SEC. M-6.9 AND SEC. M-7.4 (d) OF THE SPECIFICATIONS.

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GENERAL

THE BUILDINGS ARE TO BE CONSTRUCTED AT THE LOCATIONS AND ELEVATIONS SHOWN ON THE PLANS. EXCAVATING AND BACKFILLING SHALL BE AS SPECIFIED UNDER E-1. AGGREGATE FOR SUBGRADE UNDER FLOORS SHALL BE AS SPECIFIED UNDER B-19.

CONCRETE WORK

NOTE: A) THE CONTRACTOR FOR THIS WORK IS REFERRED TO INSTRUCTIONS TO BIDDERS AND GENERAL CONDITIONS AS A PART OF THIS CONTRACT.

1. EXTENT OF WORK

A) THIS CONTRACTOR SHALL FURNISH ALL EQUIPMENT, MATERIAL, LABOR AND SERVICES NECESSARY TO FORM, PLACE, FINISH AND CURE ALL PLAIN AND REINFORCED CONCRETE REQUIRED FOR THE COMPLETION OF THE BUILDING, AS SHOWN ON THE PLANS AND AS HEREINAFTER SPECIFIED. DRIVES ARE NOT INCLUDED IN THIS WORK.

2. GENERAL

A) ALL CONCRETE CONSTRUCTION, EXCEPT WHERE OTHERWISE SPECIFIED HEREINAFTER, SHALL BE CLASS"C", ITEM S-1.

B) CONCRETE MAY BE EITHER READY-MIXED OR JOB-MIXED. ALL READY-MIXED CONCRETE SHALL BE IN STRICT ACCORDANCE WITH SPECIFICATIONS FOR CLASS "C" CONCRETE EXCEPT AS HEREINAFTER MODIFIED AND SPECIFIED.

C) NO CONCRETE SHALL BE PLACED BEFORE CONDUITS, SLEEVES, INSERTS, ETC. ARE IN PLACE TO THE SATISFACTION OF THE ENGINEER OR BEFORE FORMS, REINFORCING AND AFFECTED WORK OF OTHER TRADES HAVE BEEN APPROVED BY THE ENGINEER.

3. MATERIALS

A) MATERIALS SHALL BE IN ACCORDANCE WITH ITEM S-1 CONCRETE FOR STRUCTURES.

B) FABRICATED STEEL REINFORCEMENT SHALL MEET THE REQUIREMENTS OF TYPE "A" MESH, SEC. M-7.15.

4. REINFORCEMENT

A) FLOOR SLABS SHALL BE REINFORCED THROUGHOUT WITH TYPE B BAR MATS OR TYPE "A" MESH, SEC. M-7.15. ADJACENT SHEETS SHALL BE LAPPED AT LEAST 6", SIDES AND ENDS, WITH LAPPED EDGES SECURELY WIRED OR CLIPPED TOGETHER ON NOT OVER 48" CENTERS. FABRIC SHALL BE BROUGHT INTO POSITION IN APPROXIMATELY THE CENTER OF THE SLAB THICKNESS, AS CONCRETE IS PLACED.

B) FOOTINGS SHALL BE REINFORCED THROUGHOUT AND CONTINUOUS WITH 2# 5 BARS PLACED 4" UP FROM BOTTOM AND 3" IN FROM EACH SIDE.

C) OIL, SCALE, RUST, DIRT, OR OTHER COATINGS THAT WOULD DESTROY OR REDUCE THE BOND SHALL BE REMOVED.

5. CONSTRUCTION JOINTS

A) ALL FLOOR SLAB SECTIONS SHALL BE COMPLETED IN ONE POUR.

B) IF AN EMERGENCY JOINT MUST BE MADE, IT SHALL BE KEYED AND DOWELLED TO THE SATISFACTION OF THE ENGINEER. IMMEDIATELY PRIOR TO RESUMING POURING, THE JOINT SURFACE OF CONCRETE IN PLACE SHALL BE CLEANED OF ALL SOIL AND LAITANCE, THOROUGHLY WETTED, AND SLUSHED WITH A COAT OF NEAT-CEMENT GROUT.

6. FLOOR SLABS, PLATFORMS, ETC.

A) CONCRETE FLOOR SLABS AND EXTERIOR APRON AND PLATFORM SHALL BE OF THICKNESS SHOWN ON DRAWINGS AND REINFORCED AS SPECIFIED OR NOTED ON DRAWINGS.

B) INTERIOR SLABS SHALL BE PLACED ON POROUS FILL AS PROVIDED FOR UNDER THE "GENERAL" HEADING. FILL SHALL BE THOROUGHLY SOAKED WITH WATER AND RE-COMPACTED AND RE-SHAPED AS MAY BE REQUIRED, IMMEDIATELY BEFORE CONCRETE IS POURED.

7. FINISHING CONCRETE

A) FLOOR SHALL BE FINISHED INTEGRALLY BY SCREEDING, FLOATING, AND STEEL TROWELING. THE FRESH CONCRETE SHALL BE SCREEDED AND FLOATED WITH WOOD FLOATS OR MECHANICAL FLOATING MACHINES TO TRUE AND EVEN SURFACES AT THE REQUIRED FINISH LEVELS AND UNTIL ONLY ENOUGH MORTAR FOR TROWELING IS BROUGHT TO THE SURFACE. TROWELING SHALL NOT BEGIN UNTIL ALL WATER AND WATER SHEEN HAVE DISAPPEARED FROM THE SURFACE. WATER RISING TO THE SURFACE SHALL BE REMOVED IN A MANNER APPROVED BY THE ENGINEER. NO SAND-CEMENT DUST COAT SHALL BE USED. THE FINISHED SURFACES SHALL BE SMOOTH, EVEN, AND FREE FROM BLEMISHES OF ANY KIND. FINISH THE TOP OF DOOR SILLS WITH FLOOR.

B) EXTERIOR APRON AND PLATFORM SHALL BE FINISHED SMOOTH AND EVEN WITH WOOD FLOATS AND WITHOUT THE USE OF SAND-CEMENT DUST COAT.

8. PATCHING

A) ALL NECESSARY PATCHING OF CONCRETE SHALL BE DONE AFTER OTHER CONTRACTOR'S WORK IS IN PLACE. POINT CAREFULLY AROUND ALL PIPING, ETC.

9. VAPOR BARRIER

A) PROVIDE A 1" THICK SAND CUSHION AND CONTINUOUS MOISTURE-VAPOR BARRIER UNDER FLOOR SLAB.

B) MOISTURE-VAPOR BARRIER TO BE 6 MIL. (.006") THICK PURE POLYETHYLENE PLASTIC FILM, AS MADE BY MEADOWS, SISLCRAFT, VISKING, WASCO, OR EQUAL; OR A POLYETHYLENE-FACED LAMINATE EQUAL TO "MOISTOP" BY AMERICAN SISALCRAFT CORPORATION. USE WIDEST PRACTICABLE WIDTH, LAP AT LEAST 6" AT JOINTS, AND SEAL.

10. PERIMETER INSULATION

A) PRIOR TO FINAL SHAPING AND COMPACTION OF EARTH SUBGRADES INSIDE THE BUILDING, INSTALL VERTICAL AND HORIZONTAL PERIMETER INSULATION CONTINOUSLY AROUND THE EXTERIOR WALLS, AS INDICATED ON THE DRAWINGS AND HEREIN SPECIFIED.

B) MATERIAL TO BE 1" THICK "STYROFOAM" 22, OR "SCORBORD", RIGID PLASTIC INSULATION INSULATING BOARD, BY DOW CHEMICAL COMPANY, MIDLAND, MICHIGAN.

~~11. COLOR HARDENER~~

~~A) IN MEN AND WOMEN TOILET ROOMS, INTO THE SURFACE OF ALL CONCRETE FLOOR SHALL BE INCORPORATED "COLORCRON" HARDENER, BY MASTER BUILDERS COMPANY, CLEVELAND, OHIO. (COLOR TO BE SELECTED) USING 35 LBS. PER 100 SQ. FT., IN STRICT ACCORDANCE WITH THE DIRECTIONS OF THE MANUFACTURER. OTHER ACCEPTABLE MANUFACTURERS: "COLORUNDUM", BY A.C. HORN COMPANY, AND "MARCOLOR", MIXED NON-METALLIC HARDNER BY L. SONNEBORN AND SONS, INC., HYDROMAT BY THE UPCO COMPANY, CLEVELAND 3, OHIO.~~

12. WELL PIT, MANHOLE COVER AND FRAME

A) PROVIDE AND INSTALL CAST IRON MANHOLE COVER AND FRAME OVER WELL PIT. (SEE DRAWING)

B) MANHOLE FRAME AND COVER TO BE TYPE -R-1737, LIGHT DUTY, ROUND, LOCK-TYPE, 1'-10-1/4" DIAM., WT. 115 LBS. BY NEENAH FOUNDRY COMPANY, NEENAH, WISCONSIN, OR SIMILAR TYPE BY FLOCKHART FOUNDRY COMPANY OR APPROVED EQUAL.

C) WELL PIT SHALL BE CONSTRUCTED AS SHOWN ON THE PLAN AND 6" TRANSITE OR PLASTIC CONDUIT PLACED UNDERGROUND AS SHOWN, TO PERMIT PLACING PIPE TO CONNECT THE WELL WITH THE PUMP AND STORAGE TANK.

ROOFING AND SHEET METAL WORK

1. EXTENT OF WORK

A) INSTALL BUILT-UP ROOFING, SHEET METAL WORK, FLASHINGS, (INCLUDING VENT PIPE FLASHING) GRAVEL STOPS AND SKYLIGHT GRAVITY ROOF VENT UNITS.

2. BUILT-UP ROOFING AND FLASHINGS

A) INSTALL GRAVEL-SURFACED "20 YEAR BOND" TYPE ROOF, EITHER:

(1.) BARRETT'S TYPE AA "SPECIFICATION" ROOF; CAREY'S "SPECIFICATION NO. 3-B"; KOPPERS' "SPECIFICATION NO. 17" ROOR
OR,

(2.) JOHNS-MANVILLE'S 4 PLY AQUADAM (SPEC. NO. 801) ROOR, OR CAREY'S 3-A, AND GRAVEL SURFACED.
OR,

(3.) OWENS-CORNING FIBERGLASS CORP'S., "SPEC. 320 IGD" FIBERGLASS REINFORCED ASPHALT ROOF, BUILT-UP OF ASPHALT FILLED FIBERGLASS MATS AND ASPHALT; GRAVEL SURFACED.

B) GRAVEL STOPS AND OTHER MOPPED-IN METAL FLASHING SHALL BE INSTALLED AFTER ALL ROOFING PLIES ARE IN PLACE, AND SHALL HAVE ROOF LEG COATED WITH BITUMINOUS PAINT BEFORE BEING PLACED. APPLY AT LEAST 2-PLY MEMBRANE FLASHINGS OVER SAME BEFORE APPLYING THE FINAL FLOOD COAT OF BITUMINOUS.

3. GRAVEL STOP

A) GRAVEL STOP TO BE EXTRUDED ALUMINUM, TYPE-F, 3/32" THICKNESS, BY ALCOA NO. 42058, 5" FACE OR SIMILAR DESIGN BY REYNOLDS OR KAISER OR APPROVED EQUAL.

4. SKYLIGHT VENTILATORS

A) PLASTIC DOMED SKYLIGHT VENTILATORS TO BE STANDARD RITE-LIGHT SKYDOMES NO. GRV-4242 AS MANUFACTURED BY THE BY-PRODUCTS COMPANY, LANDOVER, MD. OR WASOLITE, WASCO PRODUCTS, INC., CAMBRIDGE, MASS. OR VANCO DOMELITE, E. VAN NOORDEN COMPANY, BOSTON, MASS.

B) SKYLIGHT VENTILATORS TO BE FACTORY ASSEMBLED UNITS, EACH CONSISTING OF AN ACRYLIC PLASTIC DOME, EXTRUDED ALUMINUM FRAME AND CURB FRAME WITH CONDENSATION AND WEEPAGE GUTTERS. DOMES TO BE "WHITE TRANSLUCENT" PLASTIC.

ALUMINUM WINDOWS

1. EXTENT OF WORK

A) FURNISH AND INSTALL ALL ALUMINUM WINDOWS REQUIRED TO COMPLETE THE BUILDING IN ACCORDANCE WITH THE ARCHITECT'S DRAWINGS, AND AS HEREINAFTER SPECIFIED.

B) NO GLAZING OR CAULKING OF WINDOWS IS REQUIRED UNDER THIS BRANCH OF WORK.

C) FURNISH FOUR COPIES OF SHOP DRAWINGS FOR APPROVAL, PRIOR TO SHIPPING.

2. ALUMINUM WINDOWS

A) WINDOWS SHALL BE OF SIZES SHOWN ON THE DRAWINGS, AND OF "COMMERCIAL PROJECTED" CONSTRUCTION, OUTSIDE GLAZED.

B) WINDOWS FURNISHED SHALL BE THOSE OF WILLIAM BAYLEY COMPANY, LUDMAN, MESKER BROTHERS, OR TRUSCON STEEL COMPANY AND SHALL MEET SPECIFICATION CW-2 OF THE ALUMINUM WINDOW MFRS ASSOCIATION.

C) WINDOWS SHALL BE PROPERLY CLEANED AFTER FABRICATION.

D) HARDWARE SHALL BE SOLID CAST WHITE BRONZE AND IN ACCORDANCE WITH THE MANUFACTURER'S STANDARD PRACTICE.

E) ALL BOLTS, CLAMPS, ANCHORS ETC., REQUIRED FOR INSTALLATION, SHALL BE FURNISHED.

F) WINDOWS SHALL BE CAUSTIC ETCHED AND SPRAY LAQUERED IN THE SHOP.

3. ERECTION

A) WINDOWS SHALL BE SET PLUMB AND TRUE IN OPENINGS AND SHALL BE SUBSTANTIALLY ANCHORED AND GROUTED.

B) PROPER PROVISION SHALL BE MADE FOR CAULKING, BY OTHERS, AT WINDOW-TO MASONRY JOINTS, SILLS SHALL BE BEDDED IN SOLIDLY.

C) ALL VENTILATORS SHALL BE ADJUSTED SO AS TO OPERATE SMOOTHLY.

CARPENTRY AND MISCELLANEOUS

1. EXTENT OF WORK

A) FURNISH ALL LABOR, MATERIALS, EQUIPMENT AND INCIDENTALS NECESSARY TO COMPLETE ALL ROUGH AND FINISHED CARPENTRY REQUIREMENTS OF THE BUILDING AND ALL MISCELLANEOUS ITEMS OF WORK SPECIFIED HEREINAFTER, ALL AS SHOWN ON THE PLANS AND/OR HEREIN SPECIFIED.

B) INCLUDE MISCELLANEOUS WORK AS FOLLOWS:

1. GLASS AND GLAZING
2. CAULKING
3. FINISH HARDWARE

C) FURNISH ALL BOLTS, ANCHORS, INSERTS, ETC, REQUIRED TO BE BUILT INTO THE WORK OF OTHERS FOR SECURING WOOD PARTS, AND SUPERVISE THEIR INSTALLATION.

D) COLLECT AND DISPOSE OF ALL DEBRIS ACCUMULATING FROM ALL BRANCHES OF WORK IN CONNECTION WITH THE BUILDING.

2. ROUGH CARPENTRY

A) ALL LUMBER, SIDING, TRIM, THROUGHOUT; EXCEPT OTHERWISE NOTED, SHALL BE SHS STD. K.D. NO. 1 COMMON OR BETTER, SOUTHERN YELLOW PINE OF SIZE INDICATED ON DRAWINGS. ALL LUMBER TO BE PENTACHLOROPHENOL TREATED - SEE PAR. (C).

B) ALL DOORS TO BE FLUSH PANEL, SOLIDCORE, BIRCH, SELECT, OF SIZES INDICATED ON DOOR SCHEDULE AND WITH METAL "AIROLITE" LOUVERS AND ALUMINUM SCREENING BY AIROLITE CORPORATION OR APPROVED EQUAL.

C) PENTACHLOROPHENOL TREATED LUMBER SHALL BE USED THROUGHOUT THE ENTIRE JOB AND SHALL BE TREATED TO 6 LBS. RETENTION IN ACCORDANCE WITH THE REQUIREMENT FOR PENTACHLOROPHENOL TREATMENT, SEC.-M-8.3 OF THE STATE OF OHIO, DEPARTMENT OF HIGHWAYS "CONSTRUCTION AND MATERIAL SPECIFICATIONS." THE TREATING SOLUTION SHALL MEET THE REQUIREMENTS OF SEC. M-10.28.

3. WALL PANELLING

A) FOR MEN AND WOMEN'S TOILETS ONLY, PROVIDE AND INSTALL WALLS AND CEILINGS OF 48" X 96" X 5/32" DELUXE HI-GLOSS PANELS OF "MARLITE" (MARSH WALL PRODUCTS, INC.) APPLIED TO 5/8" EXTERIOR PLYWOOD SHEATHING BY MARSH MASTIC APPLICATION (MARSH WALL PRODUCTS, INC.) AND FINISHED AT CEILING AND BASE WITH MARSH M-45A DRIVE-ON ALUMINUM MOLDING; AT CORNER WALL INTERSECTIONS WITH MARSH MOLDING M-50 A, AND AT BASEBOARD WITH MARSH M-12 BASE.
WALL PANELS TO BE APPLIED VERTICALLY WITH MARSH M-65A MOLDING AS INDICATED ON THE DRAWINGS.
ENTIRE "MARLITE" INSTALLATION TO BE EXECUTED IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS - (MARSH WALL PRODUCTS, INC., DOVER, OHIO.) MARLITE COLOR: TO BE SELECTED.
ABOVE WALL PANELING TO BE AS SPECIFIED OR APPROVED EQUAL.

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CARPENTRY AND MISCELLANEOUS . CONTINUED

4. INSULATION

A) PROVIDE AND INSTALL 4" FIREPROOF MINERAL WOOL ENCASED BLANKET IN ENTIRE CEILING OF BUILDING AND 2" FIREPROOF MINERAL WOOL ENCASED BLANKET ON ALL WALLS AND PARTITIONS OF THE BUILDING. ACCEPTABLE MANUFACTURERS: CELOTEX CORP. CHICAGO, ILLINOIS, ARMSTRONG, AND JOHNS-MANVILLE, OR APPROVED EQUAL.

5. INSULATION VENTS

A) WHERE INDICATED ON THE PLANS, PROVIDE AND INSTALL ALUMINUM 2-1/2" DIAMETER MINIATURE LOUVERED VENTILATORS WITH ALUMINUM SCREENS, BY LEIGH BUILDING PRODUCTS,DIVISION, COOPERSVILLE, MICHIGAN OR APPROVED EQUAL.

6. TOILET PARTITIONS

A) PROVIDE AND INSTALL ALL OVERHEAD-BRACED METAL TOILET PARTITIONS COMPLETE WITH HARDWARE. PARTITIONS TO BE GALVANIZED AND BONDERIZED PANELS AT LEAST 1" THICK WITH A BAKED-ON ENAMEL FINISH. COLOR TO BE SELECTED. ACCEPTABLE MANUFACTURERS: MILLS COMPANY, CLEVELAND, OHIO, HENRY WEIS MFG. COMPANY, ELKHART, INDIANA: FIAT METAL MFG. COMPANY, CHICAGO, ILLINOIS OR SANYMETAL PRODUCTS COMPANY, INC., CLEVELAND OHIO.

7. TOILET ROOM ACCESSORIES

A) FURNISH AND INSTALL FOUR (4) 16" X 24" CHROME-EDGED MIRRORS AS INDICATED ON DRAWINGS - PARKER COMPANY, MIAMI CAREY OR HALLMACK OR APPROVED EQUAL.

8. GLAZING

A) GLAZE ALL WINDOWS, FURNISHING GLAZING CLIPS FOR WINDOWS.

B) TOILET ROOM WINDOWS SHALL HAVE 1/8" HAMMERED GLASS, GLASS SHALL BE EITHER "L.O.F." OR "BLUE RIDGE" OR "MISSISSIPPI GLASS COMPANY" OR "J. MERRILL RICHARDS," BOSTON, MASS.

C) ALL GLAZING SHALL BE DONE WITH APPROVED GLAZING COMPOUND AS MANUFACTURED BY DICKS-PONTIUS, KUHLS, PERCORA, PITTSBURGH OR TREMCO.

D) GLASS IN METAL WINDOWS SHALL BE BEDDED, CLIPPED AND FACE GLAZED.

E) LEAVE ALL GLASS UNBROKEN AND CLEAN AT COMPLETION OF STRUCTURE.

9. CAULKING

A) CAULK AROUND ALL METAL WINDOWS AND EXTERIOR DOOR FRAMES IN A THOROUGH MANNER, USING THE FIRST QUALITY, GUN-GRADE COMPOUND OF TREMCO, PERCORA, KUHL'S OR EQUAL. FOLLOW GUN WITH HAND PRESSURE TOOL WHEREVER NECESSARY FOR A FIRST CLASS JOB.

B) REMOVE ALL STAINS RESULTING FROM CAULKING, AT ONCE, FROM SILLS, FRAMES, ETC.

10. FINISH HARDWARE

A) PROVIDE AND INSTALL DOOR HARDWARE AS FOLLOWS:

1. DOORS (A) EACH DOOR SHALL HAVE:
   1-1/2 PRS. BUTTS BBK 179P, 4-1/2 x 4-1/2 INCHES
   1 CYLINDER LOCKSET SCF2001
   1 HOLD-OPEN ARM GJ76
   1-10" KICKPLATE
   1 DOORSTOP FB13X
2. DOOR (B)
   1-1/2 PRS. BUTTS, BB179P, 4-1/2 x 4-1/2 INCHES
   1 CYLINDER LOCKSET SCF 2001
   1 HOLD-OPEN ARM GJ76
   1-10" KICKPLATE

B) BUTT REFERENCES ARE FROM STANLEY CATALOG; LOCKSETS ARE FROM LOCKWOOD. DOOR STOPS, GLYNN-JOHNSON. SIMILAR AND EQUAL ITEMS AS MANUFACTURED BY RUSSELL AND ERWIN, CORBIN, SARGENT, YALE AND TOWNE MCKINNEY OR HAGER WILL BE ACCEPTABLE.

C) ALL LOCK CYLINDERS SHALL BE KEYED ALIKE, AND MASTERKEYED. FURNISH 2 KEYS FOR EACH LOCK.

D) FINISH FOR LOCKSETS SHALL BE ALUMINUM US 28.

E) INSTALL FINISH HARDWARE NEATLY AND ACCURATELY AND SO THAT IT OPERATES EASILY, QUIETLY AND PROPERLY.

F) LOCKS, TRIM, ETC., SHALL BE FITTED PRIOR TO START OF PAINTERS' WORK, BUT SHALL NOT BE PERMANENTLY INSTALLED UNTIL PAINTERS' WORK IS COMPLETED.

ELECTRICAL

1. NOTES

A) THE CONTRACTOR FOR THIS WORK IS REFERRED TO "INSTRUCTIONS TO BIDDERS AND GENERAL CONDITIONS" AS A PART OF THIS CONTRACT.

B) THIS CONTRACTOR SHALL CAREFULLY READ THE SPECIFICATIONS OF ALL BRANCHES OF WORK PERTAINING TO THE BUILDING SO THAT HE MAY BE FULLY INFORMED AS TO THE WORK TO BE DONE BY EACH CONTRACTOR.

C) THIS CONTRACTOR SHALL COORDINATE HIS WORK WITH THE WORK OF THE OTHER CONTRACTORS IN ORDER TO AVOID DELAY AND INTERFERENCE IN CARRYING OUT THE GENERAL CONSTRUCTION OF THE PROJECT.

D) THE SUBMISSION OF A BID FOR THIS BRANCH OF WORK SIGNIFIES THAT THE CONTRACTOR HAS EXAMINED THE DRAWINGS AND SPECIFICATIONS FOR ALL BRANCHES OF WORK FOR THE PROJECT AND HAS VISITED THE SITE AND IS ACQUAINTED WITH ALL CONDITIONS WHICH MAY IN ANY WAY WHATSOEVER EFFECT THE EXECUTION OF THE WORK.

E) WHERE A MATERIAL OR METHOD IS DESCRIBED BY PERFORMANCE DATA ONLY, ANY PRODUCT OR METHOD MEETING SUCH REQUIREMENTS MAY BE USED. WHERE MORE THAN ONE BRAND NAME IS SPECIFIED, THE FIRST NAME IS THE PRODUCT WHOSE DIMENSIONS AND PERFORMANCE CHARACTERISTICS WERE USED IN IN THE DESIGN. THE OTHER NAMED PRODUCTS MAY BE USED BUT WITH THE UNDERSTANDING THAT IF CHANGES TO THE BUILDING ARE REQUIRED BECAUSE OF DIMENSIONS OR CHARACTERISTICS OF THAT PRODUCT, ANY ADDITIONAL COST SHALL BE A PART OF THE BID.

F) IN CASE ANY CONFLICT DEVELOPS BETWEEN DRAWINGS AND SPECIFICATIONS, SAME SHALL BE REFERRED, BY THE CONTRACTOR, TO THE ENGINEER FOR DECISION AS TO METHOD AND/OR MATERIAL.

2. EXTENT OF WORK

A) THE CONTRACTOR FOR THIS WORK SHALL FURNISH ALL LABOR, MATERIALS AND EQUIPMENT AND INSTALL COMPLETE ALL ELECTRIC WORK AS HEREINAFTER SPECIFIED AND AS SHOWN ON THE PLANS FOR THE TWO REST AREAS.

B) ALL WORK SHALL BE DONE IN STRICT ACCORDANCE WITH THE LATEST EDITION OF THE NATIONAL ELECTRICAL CODE AND SPECIAL REGULATIONS OF THE STATE FIRE MARSHALL AND THE STATE DEPARTMENT OF WORKSHOPS AND FACTORIES.

C) ALL MATERIAL SHALL BE NEW AND CONFORM WITH THE STANDARDS OF THE UNDERWRITERS LABORATORIES, INC. WHEREVER SUCH STANDARDS HAVE BEEN ESTABLISHED AND SHALL FULFILL THE NORMAL REQUIREMENTS FOR SATISFACTORY WORKMANSHIP.

3. INSPECTION

A) ALL WORK SHALL BE INSPECTED BY THE ELECTRICAL INSPECTION BUREAU, INC. OR AN APPROVED ELECTRICAL INSPECTION AGENCY WHICH GUARANTEES ITS' WORK.

B) UPON COMPLETION OF THE WORK THE CONTRACTOR SHALL FURNISH TO THE ENGINEER, A CERTIFICATE OF INSPECTION AND APPROVAL FROM SAID BUREAU OR AGENCY BEFORE FINAL PAYMENT ON CONTRACT WILL BE ALLOWED.

C) FEE FOR INSPECTION SHALL BE PART OF THIS CONTRACT.

4. SERVICE

A) SERVICE WILL BE SINGLE PHASE, 60 CYCLES, 110/220 VOLTS A.C. 3 TO 2 WIRE DISTRIBUTION FOR LIGHTS AND SMALL MOTORS AND 220 VOLTS FOR HEATING UNITS.

5. SERVICE ENTRANCE

A) SERVICE SHALL START FROM A POWER COMPANY POLE LOCATED AT REST AREA FENCE AND BE RUN UNDER GROUND, IN CONDUIT TO A 100 AMP. SWITCH ON PANELBOARD IN BUILDING AND BE CONNECTED TO SAME.

B) CONDUIT SHALL START 20 FEET UP ON POLE. PROVISIONS SHALL BE ON POLE TO MOUNT METER AS PER POWER COMPANY'S INSTRUCTIONS. CONDUIT, WHEN UNDERGROUND, SHALL BE ENCASED IN CONCRETE WITH 3" ALL AROUND CONDUIT. THIS CONTRACTOR SHALL EXCAVATE TRENCH FOR CONDUIT AND PROPERLY BACKFILL OVER SAME.

C) THE CONTRACTOR SHALL VISIT THE SITE TO DETERMINE LOCATION OF STARTING POLE.

D) SIZE OF SERVICE FEEDER SHALL BE 3 NO. 1 RHW WIRES AND SIZE OF CONDUIT SHALL BE 1-1/2". CONDUIT SHALL BE HEAVY WALL GALVANIZED OR SHERADIZED CONDUIT. TOP OF CONDUIT ON POLE SHALL BE PROVIDED WITH A PROPER TYPE POT HEAD. POWER COMPANY WILL MAKE CONNECTION TO THEIR SERVICE BUT THIS CONTRACTOR SHALL HAVE HIS WIRES LONG ENOUGH FOR SAID CONNECTIONS. CONDUIT UNDER THE PAVEMENT WILL BE PROVIDED FOR BY ITEM SS-25.

6. PANELBOARD

A) PANELBOARD SHALL BE DESIGNED FOR 3 TO 2 WIRE DISTRIBUTION, HAVE NEUTRAL BAR ACROSS THE TOP, A 100 AMP. 3P. CIRCUIT BREAKER IN MAINS.

B) BOARD SHALL CONTAIN 10-15 AMP. SINGLE POLE CIRCUIT BREAKERS AND 4 DOUBLE POLE 220 VOLTS 30 AMP. BREAKERS. ONE FOR HEATING UNITS, FUTURE WELL PUMP MOTOR AND SEWAGE TREATMENT PLANT MOTORS.

C) CABINET SHALL BE SINGLE DOOR TYPE AND PANEL OF SQUARE D, GENERAL ELECTRIC OR BULLDOG MAKE.

D) CABINET SHALL BE OF SURFACE TYPE, CONSTRUCTED OF CODE GUAGE STEEL AND GALVANIZED OR PAINTED WITH AN APPROVED PROTECTIVE PAINT OR LACQUER. CABINET SHALL BE PROVIDED WITH WIRING GUTTERS AT TOP, BOTTOM AND SIDES. FRONT SHALL HAVE CODE GUAGE METAL TRIM AND DOOR.

E) DOOR SHALL BE PROVIDED WITH CYLINDER TYPE LOCK AND THREE KEYS SHALL BE DELIVERED TO THE ENGINEER.

ELECTRICAL CONTINUED

7. HEATING UNITS AND CONTROLS

A) THIS CONTRACTOR SHALL PROVIDE AND INSTALL WHERE SHOWN, 3 ELECTRIC HEATING UNITS FOR EACH TOILET ROOM.

B) EACH UNIT SHALL HAVE A RATING OF 2 KW AND BE TYPE H AS MADE BY CHROMALOX OR NO. 690-32 AS MADE BY INDEECO FOR 230 VOLTS, SINGLE PHASE, 60 CYCLES A.C.

C) THE GROUP OF THREE IN EACH TOILET ROOM SHALL BE CONTROLLED BY A PROPER TYPE THERMOSTAT AND CONTACTOR, BOTH LOCATED WHERE SHOWN. THERMOSTATS AND CONTACTORS SHALL BE MADE BY MANUFACTURER OF HEATING UNITS SUPPLIED.

8. PHOTOELECTRIC CONTROL SWITCH

A) THE LIGHTS IN BOTH TOILET ROOMS, VESTIBULES, AND EXTERIOR LOBBY SHALL BE ON ONE CIRCUT AND CONTROLLED BY A PHOTOELECTRIC CONTROL SWITCH.

B) CONTROL SWITCH SHALL BE A G. E. CATALOG NUMBER CR20GG06 OR APPROVED EQUAL.

C) SWITCH SHALL BE MOUNTED ON ROOF AT POINT DIRECTED.

9. WIRE AND WIRING

A) WIRE SHALL BE RUBBER COVERED GRADE RHW NON-METALLIC SHEATH CABLE OF TYPE NMC AND BEAR UNDERWRITERS LABEL.

B) ALL WIRING SHALL BE RUN CONCEALED.

C) WIRE SHALL NOT BE SPLICED ANYWHERE IN OUTLET BOXES. ALL SPLICE JOINTS SHALL BE CAREFULLY MADE CLEANED, SOLDERED AND TAPED WITH SCOTCH NO. 33 ELECTRICAL TAPE.

D) NO WIRE LESS THAN #12 AWG SHALL BE USED.

E) NO JOISTS OR BEAMS SHALL BE NOTCHED TO RUN WIRES. HOLES SHALL BE BORED FOR SAME.

F) RUNS OF CABLES BETWEEN OUTLET BOXES SHALL BE PROPERLY SUPPORTED OR STRAPPED IN PLACE.

G) CABLE SHALL ENTER BOXES THROUGH A KNOCKOUT AND SHALL BE CLAMPED TO THE BOX IF NOT SUPPORTED WITHIN 8" OF BOX.

10. OUTLET BOXES AND FITTINGS

A) ALL LIGHT AND SWITCH OUTLET BOXES SHALL BE OF HEAVY PRESSED GALVANIZED STEEL OF A STANDARD MAKE AND OF SIZE AND SHAPE USAGE AND CONNECTIONS.

B) OUTLETS FOR LIGHT FIXTURES SHALL BE 4" SQUARE OR OCTAGONAL.

C) WHERE TWO OR MORE SWITCHES ARE SHOWN AT ONE POINT, GANG OUTLET BOXES SHALL BE USED.

11. SWITCHES

A) ALL SWITCHES SHALL BE FLUSH TYPE TUMBLE SWITCHES, GENERAL ELECTRIC NO. 2842 OR APPROVED EQUAL AS MADE BY ARROW-HART AND HEGEMAN, PASS AND SEYMOUR, BRYANT OR HUBBELL.

12. PLATES

A) ALL SWITCH PLATES SHALL BE .06" THICK METAL, NICKEL PLATED, OR STAINLESS STEEL.

B) AT POINTS WHERE TWO OR MORE SWITCHES ARE LOCATED GANG SWITCH PLATES SHALL BE USED.

C)

13. GROUNDING

A) SYSTEM SHALL BE GROUNDED IN ACCORDANCE WITH REQUIREMENTS OF NATIONAL ELECTRICAL CODE.

14 FIXTURE SCHEDULE

A) THIS CONTRACTOR SHALL FURNISH AND INSTALL COMPLETE, INCLUDING LAMPS, ALL LIGHTING FIXTURES FOR THE BUILDING. THE STYLE OF FIXTURE BY A LETTER AND NUMBER RESPECTIVELY.

B) STYLE "A" SHALL BE AN ART METAL #15-1115 C.H.
STYLE "B" SHALL BE AN ART METAL #10-1110 C.H.
STYLE "C" SHALL BE AN ART METAL #10-1110 A.A.
STYLE "D" SHALL BE A PORCELAIN OUTLET BOX RECEPTACLE

C) SIMILAR FIXTURE AS MADE BY PRESCOLITE OR VIRDEN WILL BE ACCEPTABLE SUBJECT TO ENGINEER'S APPROVAL.

15. SEWAGE TREATMENT PLANT

A) THIS CONTRACTOR SHALL FURNISH AND INSTALL ALL NECESSARY ELECTRICAL DEVICES AND WIRING REQUIRED FOR SERVICE TO AND THE OPERATION OF THE SEWAGE TREATMENT PLANT AS HEREIN DESCRIBED IN SPECIFICATION FOR SEWAGE TREATMENT PLANT.

REST AREAS ROADSIDE TOILETS AND STORAGE UNIT

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PLUMBING

1. NOTES

A) THE CONTRACTOR FOR THIS WORK IS REFERRED TO "INSTRUCTIONS TO BIDDERS AND GENERAL CONDITIONS" AS PART OF THIS CONTRACT.

B) THIS CONTRACTOR SHALL CAREFULLY READ THE SPECIFICATIONS OF ALL BRANCHES OF WORK PERTAINING TO THE BUILDING SO THAT HE MAY BE FULLY INFORMED AS TO THE WORK TO BE DONE BY EACH CONTRACTOR.

C) THIS CONTRACTOR SHALL CO-ORDINATE HIS WORK WITH THE WORK OF THE OTHER CONTRACTORS IN ORDER TO AVOID DELAY AND INTERFERENCE IN CARRYING ON THE GENERAL CONSTRUCTION OF THE PROJECT.

D) THE SUBMISSION OF A BID FOR THIS BRANCH OF WORK SIGNIFIED THAT THE CONTRACTOR HAS EXAMINED THE DRAWINGS AND SPECIFICATIONS FOR ALL BRANCHES OF WORK FOR THE PROJECT AND HAS VISITED THE SITE AND IS ACQUAINTED WITH ALL CONDITIONS WHICH MAY IN ANY WAY WHATSO EVER EFFECT THE EXECUTION OF THE WORK.

E) WHERE A MATERIAL OR METHOD IS DESCRIBED BY PERFORMANCE DATA ONLY, ANY PRODUCT OR METHOD MEETING SUCH REQUIREMENTS MAY BE USED. WHERE MORE THAN ONE BRAND NAME IS SPECIFIED, THE FIRST NAMED IS THE PRODUCT WHOSE DIMENSIONS AND PERFORMANCE CHARACTERISTICS WERE USED IN THE DESIGN. THE OTHER NAMED PRODUCTS MAY BE USED BUT WITH THE UNDERSTANDING THAT IF CHANGES TO THE BUILDING ARE REQUIRED BECAUSE OF DIMENSIONS OR CHARACTERISTICS OF THAT PRODUCT, ANY ADDITIONAL COST SHALL BE A PART OF THE BID.

F) IN THE CASE ANY CONFLICT DEVELOPS BETWEEN DRAWINGS AND SPECIFICATIONS SAME SHALL BE REFERRED BY THIS CONTRACTOR TO THE ENGINEER FOR A DECISION AS TO METHOD AND FOR MATERIAL.

2. EXTENT OF WORK

A) THE CONTRACTOR FOR THIS WORK SHALL FURNISH ALL LABOR, MATERIAL AND EQUIPMENT AND INSTALL COMPLETE ALL WORK AS HEREINAFTER SPECIFIED, INCLUDING ALL 6" CAST IRON SEWER PIPE TO A MINIMUM DISTANCE OF 100' FROM WATER WELL AS SHOWN ON THE PLANS.

3. INSPECTION

A) ALL WORK SHALL BE INSTALLED IN STRICT ACCORDANCE WITH THE OHIO STATE PLUMBING CODE AND HAVE STATE PLUMBING INSPECTION.

B) THE CONTRACTOR SHALL TAKE OUT A PERMIT WITH THE DIVISION OF STATE PLUMBING INSPECTION BEFORE STARTING ANY WORK. FEE FOR SAME SHALL BE A PART OF THIS CONTRACT AND INCLUDED IN THE UNIT PRICE BID.

C) WHEN WORK IS COMPLETED, CONTRACTOR SHALL FURNISH TO THE ENGINEER, A CERTIFICATE OF APPROVAL FROM THE STATE DEPARTMENT OF HEALTH BEFORE FINAL PAYMENT WILL BE ALLOWED.

4. ROUGHING IN

A) ALL PLUMBING FIXTURES SHALL BE LOCATED AND ROUGHED IN AS SHOWN BY PLANS AND PLUMBING DIAGRAMS.

B) CLEANOUTS SHALL BE PROVIDED WHERE SHOWN AND CALLED FOR BY STATE PLUMBING CODE AND BE INSTALLED IN SUCH A MANNER AS TO BE EASILY ACCESSIBLE FOR RODDING.

C) ALL WASTE AND VENT LINES ABOVE FLOOR SHALL BE STANDARD WEIGHT GALVANIZED STEEL PIPE. FITTINGS FOR WASTE LINES SHALL BE BLACK CAST IRON DRAINAGE TYPE. FITTINGS FOR VENT LINES SHALL BE GALVANIZED MALLEABLE IRON.

D) ALL EXPOSED WORK SHALL BE RUN IN A NEAT MANNER ACCEPTABLE TO THE ENGINEER.

5. BUILDING DRAIN

A) THE BUILDING DRAIN SHALL BE OF EXTRA HEAVY CAST IRON SOIL PIPE AND FITTINGS AND RUN AS SHOWN ON THE PLANS, AS TO LOCATION, SIZE AND CONNECTIONS, TO A MINIMUM DISTANCE OF 100 FEET FROM THE WELL AS SHOWN ON THE PLANS.

B) ALL JOINTS SHALL FIRST BE CAULKED WITH OAKUM AND THEN WELL CAULKED WITH LEAD NOT LESS THAN 1" DEEP.

C) LINES SHALL HAVE A FALL OF NOT LESS THAN 1/8" PER FOOT.

6. EXCAVATION AND BACKFILL

A) TRENCHES NECESSARY FOR LAYING OF DRAINS, OR ANY OTHER LINES UNDER THIS CONTRACT, SHALL BE EXCAVATED AND BACKFILLED BY THE PLUMBER.

B) ANY EXCAVATION WITHIN FIVE FEET OF THE EDGE OF ANY FOOTING AND BELOW THE ELEVATION OF BOTTOM OF SAME, SHALL BE BACKFILLED WITH CLASS "C" CONCRETE TO LEVEL OF BOTTOM OF FOOTING.

C) ALL TRENCHES SHALL BE BACKFILLED BY TAMPING IN THIN LAYERS OF CLEAN DIRT AND PUDDLING.

D) NO TRENCH SHALL BE BACKFILLED UNTIL THE LINE IN SAME HAS BEEN INSPECTED AND APPROVED BY THE PROPER INSPECTOR.

E) THE SURFACE OF BACKFILLED TRENCH SHALL BE RESTORED TO A CONDITION AS GOOD AS THE ORIGINAL SURFACE.

7. WATER PIPING

A) MAIN SHALL START FROM THE STORAGE TANK OF WATER SYSTEM WHICH WILL BE FURNISHED LATER BY OTHERS AND BE RUN AS SHOWN ON PLANS AS TO SIZES, LOCATIONS AND VALVING.

B) EACH BRANCH SHALL BE PROVIDED WITH AN ALL BRASS GATE VALVE, 125 LBS. CLASS.

C) PIPE SHALL BE GALVANIZED STEEL, FITTINGS GALVANIZED MALLEABLE IRON.

D) TWO BRASS HOSE FAUCET DRAINS SHALL BE PROVIDED AND INSTALLED WHERE SHOWN AND LINES SHALL BE RUN SO AS TO DRAIN AT THESE POINTS.

PLUMBING CONTINUED

8. CUTTING AND PATCHING

A) THE CUTTING OF NEW CONCRETE, MASONRY OR ANY OTHER WORK SHALL BE AVOIDED BY THE USE OF SLEEVES INSTALLED AS THE WORK PROGRESSES.

B) IN CASE IT IS NECESSARY TO CUT INTO THE WORK OF ANOTHER CONTRACTOR IT SHALL BE DONE BY THAT CONTRACTOR AT THIS CONTRACTOR'S EXPENSE OR BY THIS CONTRACTOR WITH THE PERMISSION OF OTHER CONTRACTOR.

C) ANY REPAIRING OR PATCHING MADE NECESSARY BY SUCH CUTTING SHALL BE EXECUTED ON THE SAME BASIS, ALL TO THE SATISFACTION OF THE ENGINEER.

9. FLOOR DRAINS

A) SHALL BE ZURN FIG. 2N-215V OR APPROVED EQUAL AS MADE BY JOSAM, WADE, BOOSEY, OR ASCO.

B) CASE IRON 1/2" "S" TRAPS SHALL BE USED WITH EACH FLOOR DRAIN.

C)

10. WATER CLOSETS

A) SHALL BE COMPLETE AS AMERICAN STANDARD F-2495-8 EXCEPT SEAT SHALL BE WHITE OLSONITE NO. 1000. OR APPROVED EQUAL AS MADE BY CHURCH OR STASCO.

B) EQUAL CLOSETS AS MADE BY CRANE, KOHLER OR ELJER WILL BE ACCEPTABLE SUBJECT TO ENGINEER'S APPROVAL.

11. URINALS

A) IN MEN'S TOILET ROOM SHALL BE COMPLETE AS AMERICAN STANDARD F-6240 -1 OR APPROVED EQUAL AS MADE BY CRANE, KOHLER OR ELJER.

B) THE ONE IN WOMEN'S TOILET ROOM SHALL BE COMPLETE AS AMERICAN STANDARD F-5830-1 OR APPROVED EQUAL AS MADE BY CRANE, KOHLER OR ELJER.

12. LAVATORIES

A) SHALL BE 20" X 18" AND COMPLETE AS PER AMERICAN STANDARD P-3867-40 EXCEPT COLD WATER FAUCET SHALL BE R2213 OR CHICAGO NAIAD, SHALL BE NO HOT WATER FAUCET BUT A R2360, FAUCET HOLE COVER FOR SAME, SUPPLY PIPE R2607 AND TRAP R7003-45.

B) EQUAL LAVATORIES AS MADE BY CRANE, KOHLER OR ELJER WILL BE ACCEPTABLE SUBJECT TO ENGINEER'S APPROVAL.

13. DRINKING FOUNTAIN

A) SHALL BE A CRANE 6-590 OR APPROVED EQUAL AS MADE BY AMERICAN STANDARD, KOHLER OR ELJER EQUIPPED WITH MODERN KELLY PUSH BUTTON AUTOMATIC FREEZE PROOF WATER AND DRAIN ASSEMBLY AND CABINET.

14. SUPPORTS FOR WATER CLOSETS AND URINAL

A) WATER CLOSETS SHALL BE SUPPORTED BY ZURN Z-1205 SERIES FIXTURES SUPPORTS.

B) WOMEN'S URINALS SHALL BE SUPPORTED BY SIMILAR TYPE SUPPORT.

C) EQUAL SUPPORTS MADE BY JOSJOSAN AND CRANE WILL BE ACCEPTABLE.

15. CLEANING AND PAINTING

A) AFTER ALL PIPING HAS BEEN APPROVED, ALL SHALL BE CLEANED AND LEFT IN FIRST CLASS CONDITION FOR PAINTING.

METHOD OF MEASUREMENT

THE ITEM SPECIAL, "ROADSIDE TOILETS AND STORAGE UNIT" AND ALL APPURTENANCES AS DETAILED AND SPECIFIED ON THE PLANS SHALL BE CONSIDERED AS ONE UNIT. THE NUMBER OF UNITS TO BE PAID FOR SHALL BE THE NUMBER OF EACH UNIT, LISTED AND ESTIMATED SEPERATELY, COMPLETE AND ACCEPTED.

BASIS OF PAYMENT

THE WORK INCLUDED IN THIS ITEM SHALL BE PAID FOR AT THE CONTRACT UNIT PRICE BID FOR EACH "ITEM SPECIAL, ROADSIDE TOILETS AND STORAGE UNIT" COMPLETED AND ACCEPTED, WHICH PRICE AND PAYMENT SHALL CONSTITUTE FULL COMPENSATION FOR FURNISHING, PREPARING, PLACING AND INSTALLING ALL MATERIALS, AND FOR ALL LABOR, EQUIPMENT, TOOLS AND INCIDENTALS NECESSARY TO COMPLETE THIS ITEM AS SHOWN AND SPECIFIED ON THE PLANS.

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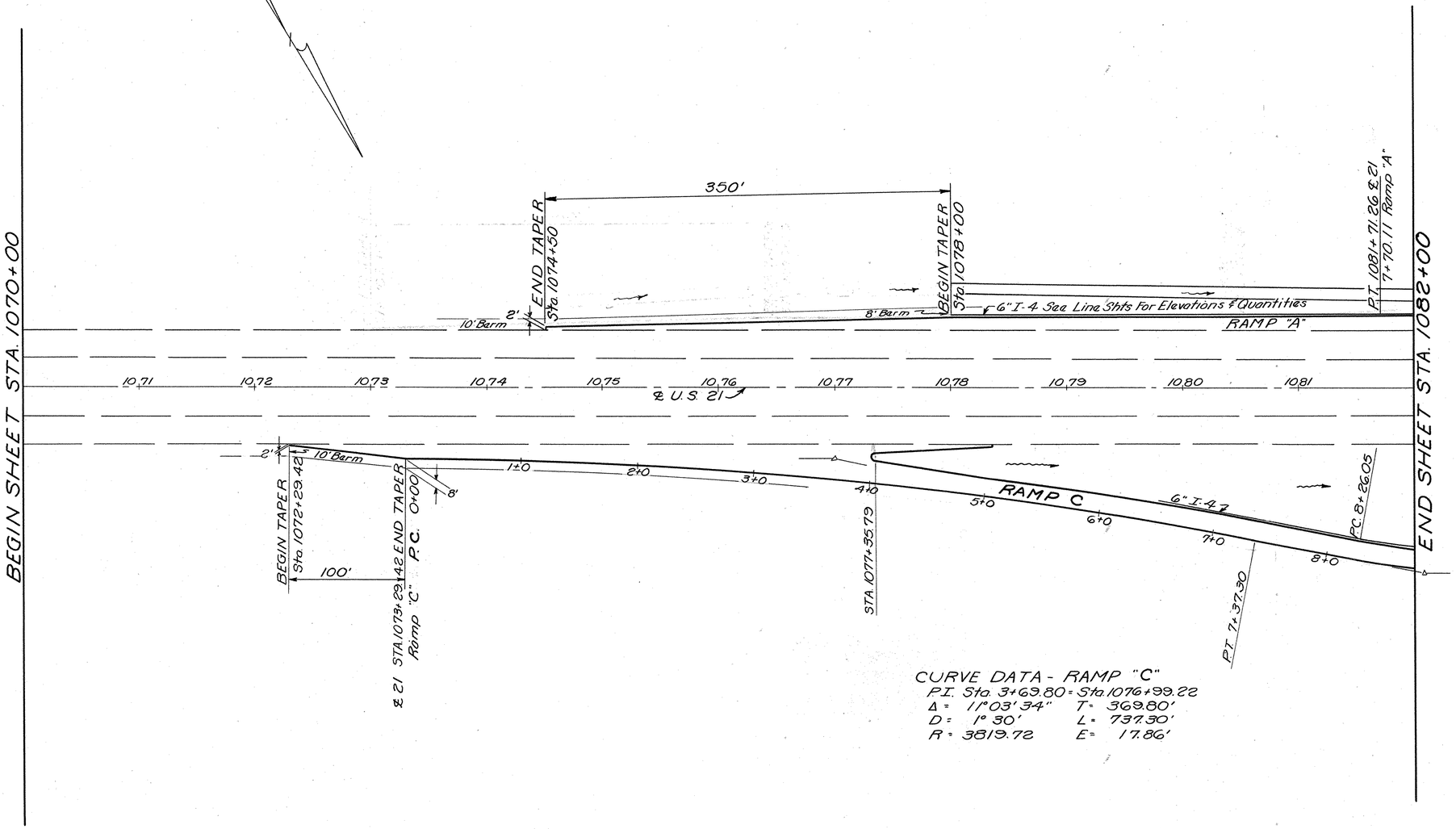
ROADSIDE REST PLAN
STA. 1070+00 TO STA. 1082+00
SCALE 1"= 50'-0"



CURVE DATA - RAMP "C"
P.I. Sta. 3+69.80 = Sta. 1076+99.22
Δ = 11°03'34" T = 369.80'
D = 1° 30' L = 737.30'
R = 3819.72 E = 17.86'

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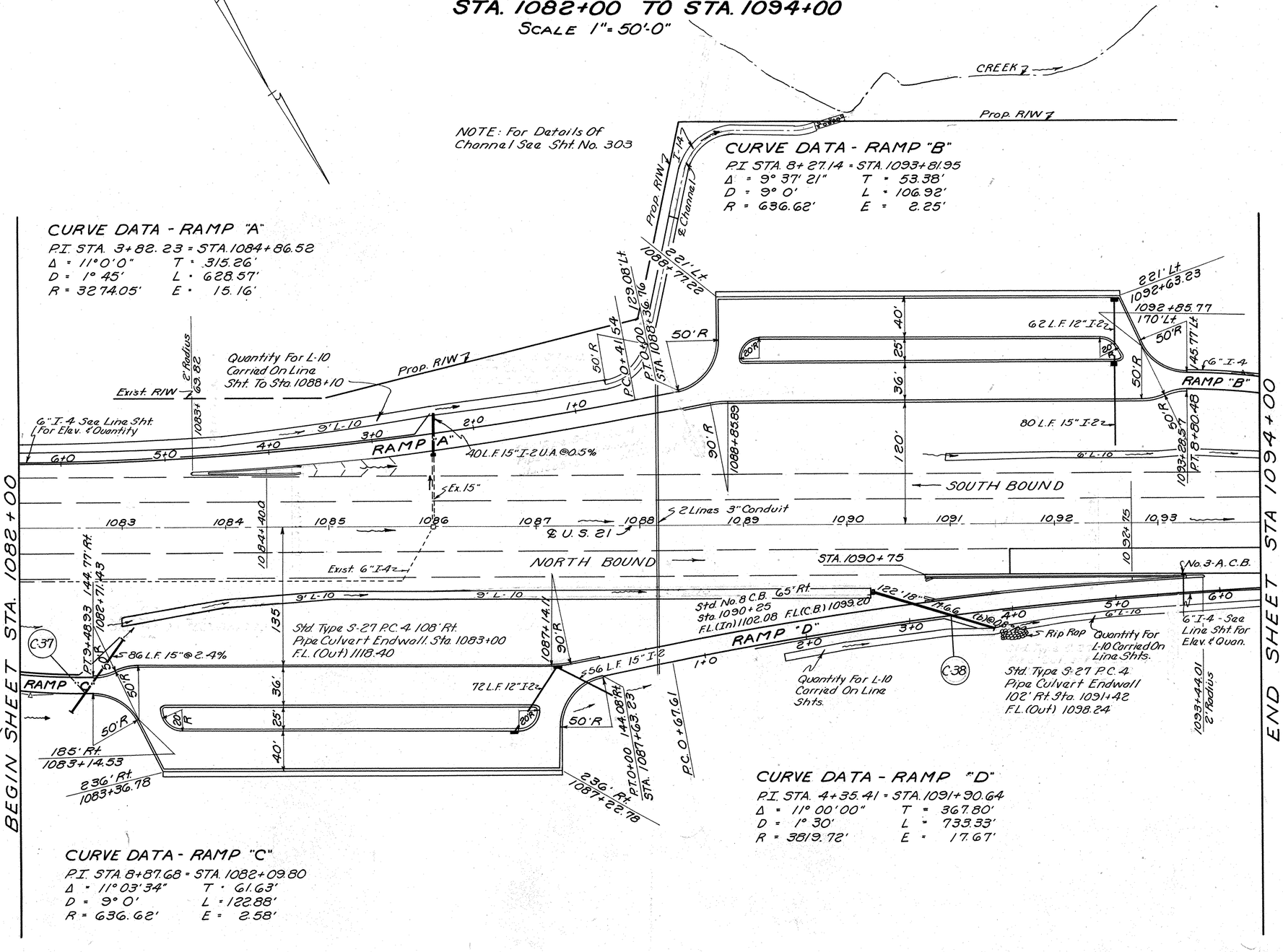
ROADSIDE REST PLAN
STA. 1082+00 TO STA. 1094+00
SCALE 1"= 50'-0"



CURVE DATA - RAMP "C"
P.I. STA. 8+87.68 = STA. 1082+09.80
Δ = 11° 03' 34" T = 61.63'
D = 9° 0' L = 122.88'
R = 636.62' E = 2.58'

CURVE DATA - RAMP "D"
P.I. STA. 4+35.41 = STA. 1091+90.64
Δ = 11° 00' 00" T = 367.80'
D = 1° 30' L = 733.33'
R = 3819.72' E = 17.67'

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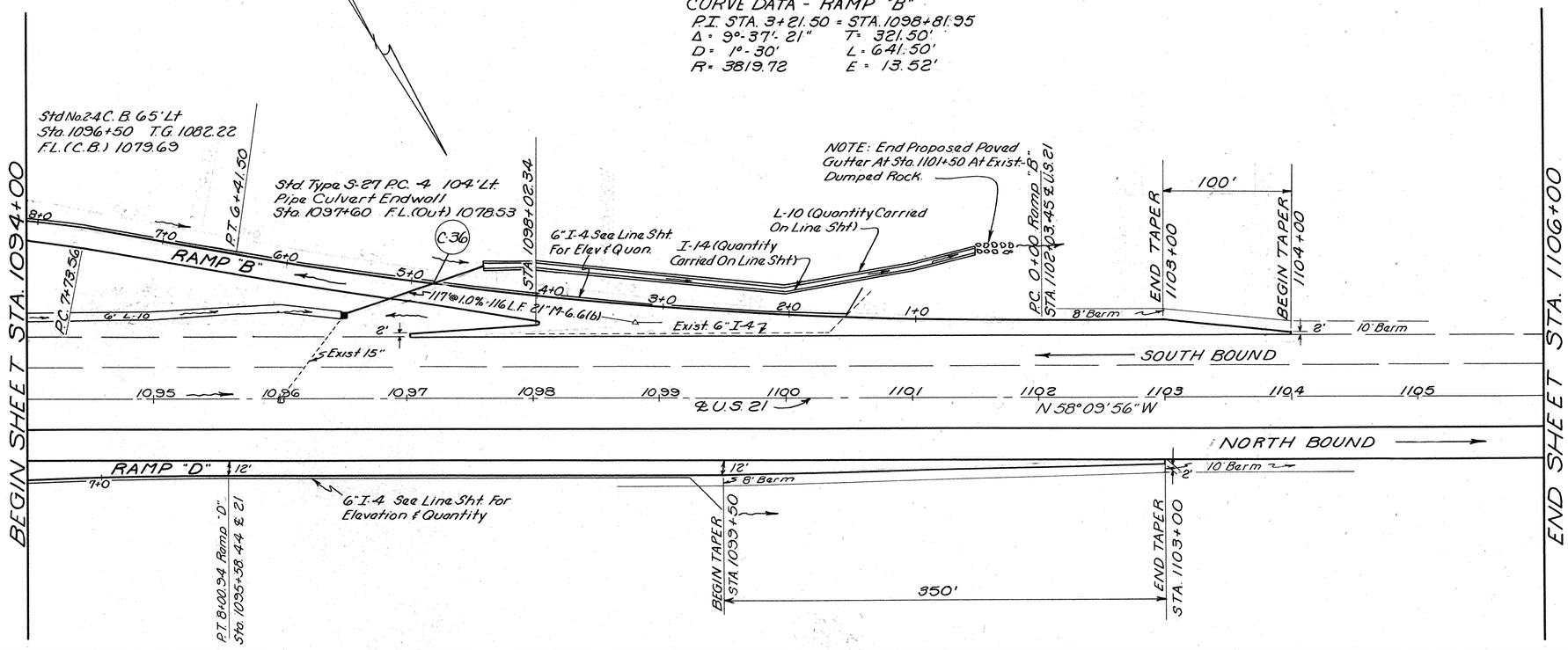
ROADSIDE REST PLAN
STA. 1094+00 TO STA. 1106+00
SCALE 1"=50'-0"

CURVE DATA - RAMP "B"
P.I. STA. 3+21.50 = STA. 1098+81.95
Δ = 9°-37'-21" T = 321.50'
D = 1°-30' L = 641.50'
R = 3819.72 E = 13.52'



SUMMARY OF ROADSIDE REST AREA

Location	ROADWAY I-13 4" Conc. Walk S.F.	SS-18 Rt D Ex. R/W Fence L.F.	SS-18 Rest Area Fence L.F.	L-10 Sod S.Y.	PAVEMENT I-12 Conc Curb Type 6 L.F.	I-12 Spec. Conc Curb L.F.	T-71 9" Rein. Conc. Pav't S.Y.	I-18 6" Stab. Shoulder C.Y.	I-22 Sub Base C.Y.	I-21 Conc Med. Type A C.Y.	I-21 4" Conc Med. Pav't Type I S.Y.	I-12 Conc. Curb Type 2A L.F.	DRAINAGE I-4 6" Under Drain L.F.	I-5 6"x45° Band Ea.	I-2 12" M-6.5(b) M-6.8(b) U.A. L.F.	I-2 15" M-6.5(b) M-6.8(b) U.A. L.F.	I-8 #3 Catch Basin Ea.	S-1 Conc. Class "E" C.Y.	I-10 Riprap S.Y.	STRUCTURES S-27 15" M-6.6 (b) L.F.	S-27 18" M-6.6 (b) L.F.	S-27 21" M-6.6 (b) L.F.	I-8 #8 Catch Basin Ea.	I-8 #2-4 Catch Basin Ea.
Ramp "A" (Lt)							1964	127	445	1.8	23	180													
Ramp "B" (Lt)							1933	116	443									0.36				116		1
Ramp "C" (Rt)							2006	118	458									0.52		86				
Ramp "D" (Rt)							2169	53	415	1.8	25	508						0.30	8		122		1	
Rest Area (Lt)	1930	1194	1461	367	386	1469	3684		678				739	2	62	80	2							
Rest Area (Rt)	1930	1283	1640	725	386	1469	3684		678				776	2	72	56	2							
TO GEN. SUM.			3101																					
TO STRUCT. TABLE																		1.18	8	86	122	116		
TOTAL TO RECAP	3860	2477		1092	772	2938	15446	414	3117	3.6	48	688	1515	4	134	136	4						1	1

ROADSIDE REST PLAN STA. 1094+00 TO STA. 1106+00

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PROFILE RAMP "A"

GRAPHICAL GRADES — 150' V.C. — PVT 1+91 — PVT 1+16 1113+72 — PVC 0+41 — -1.92% — -2.14% — Continue -2.14% Grade To Intersect With A -4.0% Grade On Ramp "B"

PROFILE RAMP "B"

Continue -2.14% Grade To Intersect With A -4.0 % Grade. — PVT 10+76 — 200' V.C. — -2.14% — PVT 9+76 1102.22 — +80.6" I-4 Lt Ramp "B" FL 1092.88 — PVC 8+76 — -4.0% — 280' 6" I-4 Lt. 5.5' Below Profile Ramp "B" — +00.6" I-4 Lt Ramp "B" FL 1081.12 — No.8 C.B. FL 1079.69 — PVT 7+50 +51.11 — 150' SAG — PVT 4+75 1082.22 +61 16"ϕ FL (Out) 1078.53 (21°) +42 16"ϕ +40 8"ϕ Out — 45° Bend Lt Ramp "B" FL 1079.50 — Lt Ramp "B" FL 1079.00 — PVC 4+00 — GRAPHICAL GRADES — -4.0% — -3.0% — 139' @ 1.6% = 138 L.F. 6" I-4 Lt. — 116 L.F. 21" M-66.6(b) @ 1% — 30' @ 1.6% {10 L.F. 8" Out, 19 L.F. 6" I-4

PROFILE RAMP "C"

GRAPHICAL GRADES — -1.0% — +50 6" I-4 Lt. Ramp "C" FL 1120.78 — +28 15"S.27 FL (In) 1119.27 — +33 6" x 45° Bend Lt. FL 1119.10 — +75.8" Out 54° Lt & Ramp "C" FL 1118.90 — +78 15"S.27 FL (Out) 1118.40 — Continue -1.0% Grade To Intersect With A-5.65% Grade On Ramp "D" — 289' @ 0.58% = 288 L.F. 6" I-4 Lt. Ramp "C" — 86 L.F. 15"S.27 @ 2.40% — 51' @ 0.4% {10 L.F. 8" Out, 40 L.F. 6" I-4

PROFILE RAMP "D"

-7.0% — -1.00% — -5.65% — Continue A -1.0% Grade To Ramp "C" — PVT 1+00 — 300' V.C. — PVT 0+50 1117.95 — 185' @ 3.5% = 184 L.F. 6" I-4 Rt. Ramp "D" — +50 6" I-4 Rt. Ramp "D" FL 1115.61 — PVC 2+00 — PVT 2+00 — 300' SAG — 6.55 Hd No.8 C.B. FL 1099.20 — +35 6"ϕ — 30° Bend Rt. Ramp "D" FL 1099.10 — PVT 3+50 1100.39 +72 8" Out FL (Out) 1098.24 — 16' Rt. Ramp "D" FL 1098.14 — PVC 5+00 — T.G. 1102.08 — -5.65% — -3.0% — 122 L.F. 18" M-66.6(b) @ 0.8% — 45° @ 0.8% = {10 L.F. 8" Out, 34 L.F. 6" I-4

RAMP GRADES, ROADSIDE REST

ROADSIDE REST RT., PARKING AREA DETAIL

Scale - 1" = 20'

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1083 | 1084 | ℄ U. S. 21 | 1085 | 1086 N 58°-09'-56" W | 1087

NORTH BOUND LANE

1087 + 14.11
45' Rt.

90' R
11°

F.L. (Out) 1116.5±
Concrete Header

12" Galv. Pipe For
Well Pit Drainage 198'

135'

6"x45° Bend

135 Rt. Sta. 1187+20
Std. Type No. 3 C.B.
F/L 15" I-2 - 1113.84
F/L 12" I-2 - 1114.17
F/L 6" I-4 - 1115.03

1082 + 71.43
94.77' Rt.

50' R.
25°-32'

Begin 6" I-4
F/L 1120.06

452 L.F. 6" I-4

RAMP "D"

RAMP "C"

16'

60'

1122.64
1121.61
1120.61
1119.69
1118.44
1117.86
1117.52
1117.80

1.5%

56 L.F. 15" I-2

P.T. Sta. 0+00 Ramp "D"
144.08' Rt. Sta. 1087 + 63.23

Std. Type S-27 P.C. - 4
Pipe Culvert Endwall
163' Rt. Sta. 1087+70
F/L (our) 1113.03

1113

79°

50' R.

1087 + 72.78
193.16' Rt.

1114

1115

Spice Bush Patch

1087 + 22.78
236' Rt.

1116

P.T. Sta. 9+48.93
160.77' Rt. Sta. 1082+71.43

50' R.

1123.17
1122.17
1121.17
1120.17

12 parking stalls marked with 4" wide paint lines

25'

5' R.

20' R.

Begin 6" I-4
F/L 1120.02

324 L.F. 6" I-4

196' Rt. Sta. 1086+81
Std. Type No. 3 C.B.
F/L 12" I-2 - 1115.25
F/L 6" I-4 - 1116.73

72 L.F. 12" I-2

1119.30

20'

1122.56
1121.56
1120.56

6"x45° Bend

1119.56

F.L. 1116.25

40'

32 parking stalls marked with 4" wide paint lines

1123.51
1123.18
12'
30'
1122.18
1121.18
1120.0

1082 + 71.43
210.77 Rt.

68°-28'

50' R.

20'

12" Walnut

1083 + 14.53
185' Rt.

18" Chy

1083 + 36.78
236' Rt.

5' Concrete Walk

10' Walk

Side Bottom of Well Pit Elev. 1120.8

40'

6'

Wall

28'

Floor Elev. 1125.5

28'-10"

Concrete 3'x6'x4"

F.L. 1121.0

83'-6" Cast Iron Pipe 7
6°±

4' Gate

F.L. 1120.0

Tank Sides Elev. 1123.16

37'-6" V.S.P. Slip Seal 7

F.L. 1118.83
62°±

Tank Bottom Elev. 1111.16

Type "C" Galv. Steel Chain Link Fence

Tank Sides Elev. 1121.16

NOTE: Long Bends Maximum Of 30° May Be Used In Lieu Of Angular Sewer Entrance And Exit From Sewage Treatment Plant

14 Triple Ash
12" Twin Ash
12" Ash
12" Twin Ash
18" Twin Ash
16" Ash
18" Twin Ash

1126
1125
1124
1123
1122
1124.5

Prop. R/W

Prop. R/W 7

18" Elm

1118
1117
1122
1121
1120
1119

18" Maple

ROADSIDE REST RT., PARKING AREA DETAIL

ROADSIDE REST LT., PARKING AREA DETAIL

Scale - 1" = 20'

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16" Oak · 12" Walnut · 18" Oak · 18" Elm · 18" Red Oak · 16" Ash · 14" Elm · 16" Elm · 15" Elm · 16" Maple · 16" Maple · 16" Oak · 16" Maple · 18" Oak · 16 Maple · 14" Oak · 14" Oak · 20" Beach · 12" Maple · 24" Oak · 12" Cherry · 20" Ash · 16" Oak · 16" Elm · 12" Iron Wood · 16" Maple · 16" Maple · 16" Maple · 12" Oak · 12" Maple · 28" Beach

1090 1092 1094 1096 1098 1100 1102 1104 1106 1108 1110

135' 6" V.S.P. To Creek

F.L. 1118.83
Tank Sides Elev. 1090.5
Tank Sides Elev. 1092.5
Tank Bottom Elev. 1080.5
LONG BEND 30° MAX.
Type "C" Galv. Steel Link Chain Fance
F.L. 10890
4' Gate
30" 6" V.S.P.
F.L. 1091.0
No. 1 Man Hole
Concrete Header F.L. 1087.6
Concrete 3'x6'x4"
117' 6" Cast Iron Pipe
F.L. 10980
Floor Elev. 1103.5
28'
28'-6"
Wall
6"
Side Walk
10'
21'
110' 2" Galv. Pipe For Wall Drainage
Bottom of Well Pit F.L. 10895

221' Lt. Sta. 1092+60
Std. Type No. 3 C.B.
F/L 12" I-2 — 1095.84
F/L 6" I-4 — 1096.59

6"x45° Bend
1092+63.22
221' Lt.
1092+85.47
170' Lt.
1093+28.57
195.77' Lt.
50' R.
64°-28'
P.T. 8+80.48 RAMP "B"
145.77' Lt. 1093+28.57
RAMP "B"
16'
50' R.
25°-32'
1093+28.57
79.77' Lt.

Begin 6" I-4
F/L 1105.68
1088+77.22
221' Lt.
382 L.F. 6" I-4
5' Concrete Walk
1108.2 1108.07 1103.93 1101.56 1099.39
20' 12'
40'
32 parking stalls marked with 4" wide paint lines
1099.69 1104.5 1102.18 1099.52
62 L.F. 12" I-2 @ 0.5%
1099.31

1088+27.22
178.16' Lt.
50' R.
79°
20'
1099.00
5' R.
20' R.
25'
357 L.F. 6" I-4
156' Lt. Sta. 1092+60
Std. Type No. 3 C.B.
F/L 12" I-2 — 1095.52
F/L 15" I-2 — 1095.27
F/L 6" I-4 — 1096.12
6"x45° Bend
20' R.
Begin 6" I-4
F/L 1104.94
1107.08 1104.94 1102.57 1100.43
P.T. 0+00 RAMP "A"
129.08' Lt. 1088+36.76
1099.78 1107.64 1105.50 1103.13 1100.74
60'
36'
12 parking stalls marked with 4" wide paint lines
1104.55
19'
1101.20
RAMP "A"
90' R.
11°
120'
80 L.F. 15" I-2 @ 0.55%
50' R.
25°-32'
Std. Type S-27 P.C.-4
Pipe Culvert Endwall
75' Lt. Sta. 1092+60
F/L (Out) 1094.82
1088+85.89
30' Lt.

SOUTH BOUND LANE

1088 1089 1090 1091 1092 1093
℄ U.S. 21
N 58°-09'-56" W

ROADSIDE REST LT., PARKING AREA DETAIL

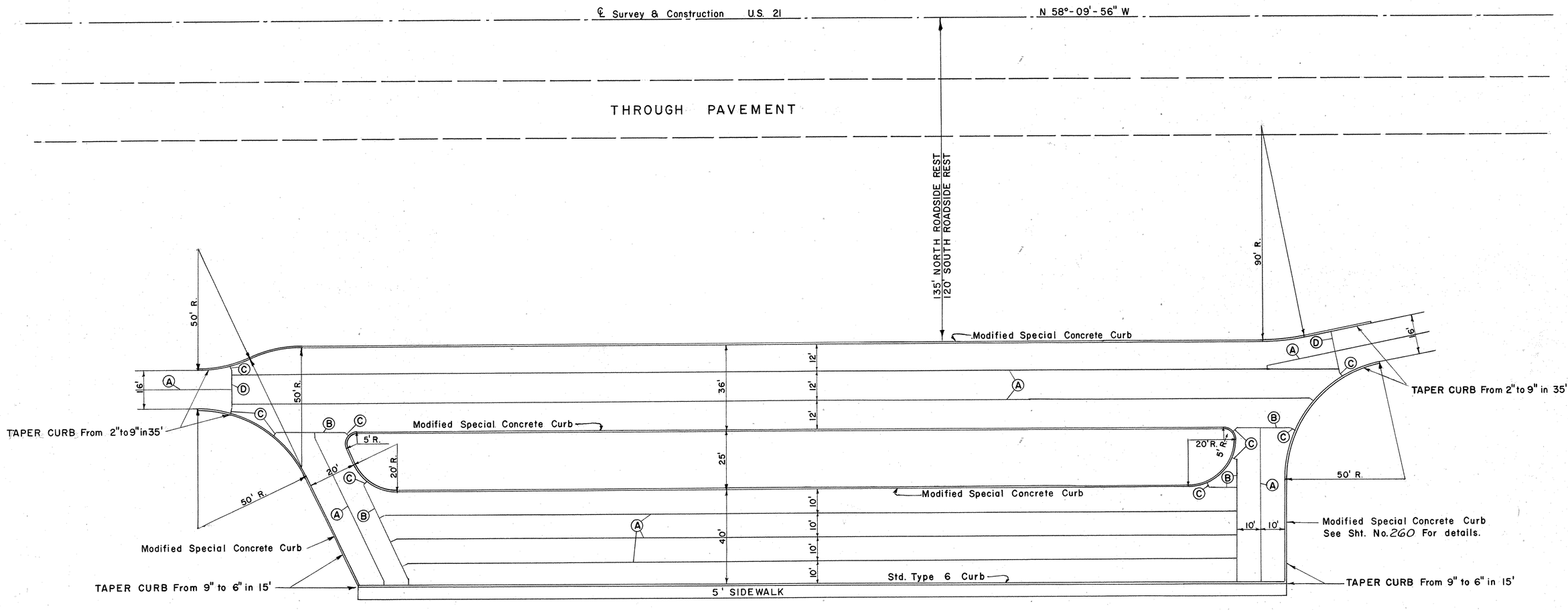
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

271

STA – 21 – 11.49
WAY – 21 – 0.00
SUM – 21 – 0.00

TYPICAL JOINT & CURB LAYOUT
ROADSIDE REST

Scale 1" = 20'



Ⓐ Standard Longitudinal Joint.

Ⓑ Standard Key Joint Without Tie Bars.

Ⓒ Expansion Joint Without Dowels.

Ⓓ Standard Expansion Joint.

FED. NO. DIVISION	STATE	PROJECT		272
2	OHIO			

STA - 21 - 11.49
WAY - 21 - 0.00
SUM - 21 - 0.00

SEEDING L.F.	SEEDING S.Y.		END AREA CUT	END AREA FILL	VOLUME EXC.	VOLUME EMB.
103		1030				
		1020				
	1017	1081+00	284	3		
					672	9
80		1030				
		1020	79	2		
		1080+00				
	733				178	13
52		1030				
		1020	17	5		
	439	1079+00			48	207
27		1030				
		1020	9	107		
		1078+00				
	199				17	264
38		1030				
		1020	7	152		
		1077+45				
	177				16	195
33		1030				
		1020	12	82		
	339	1077+00			41	254
28	STA. 1076+00		10	55	0	0

EXC. 9287 C.Y.
EMB 1330 C.Y.
SEED 7698 S.Y.

SWALE 1077+80

*NOTE: BASE LINE IS 125' RT. & SURVEY

SEEDING L.F.	SEEDING S.Y.		END AREA CUT	END AREA FILL	VOLUME EXC.	VOLUME EMB.
		1040				
		1030				
	28	1076+00				
	300	1040				
		1030				
	26	1075+00				
	272	1040				
		1030				
	23	1074+00				
	267	1040				
		1030				
	25	1073+00				
	98	STA. 1072+29.42				

EXC. 64 C.Y.
EMB 60 C.Y.
SEED 365 S.Y.

NOTE: BEGIN WORK STA. 1072+29.42

END AREA CUT	END AREA FILL	VOLUME EXC.	VOLUME EMB.
10	55		
		41	146
12	24		
		52	67
16	12		
		50	44
11	12		
		14	16
0	0		

CROSS SECTIONS ROADSIDE REST AREA STA 1073+00 TO STA 1081+00 (RIGHT)

FED. RD. DIVISION	STATE	PROJECT		273
2	OHIO			

STA- 21 - 11.49
WAY- 21 - 0.00
SUM- 21 - 0.00

* NOTE: BASE LINE IS 125' RT. & SURVEY

SEEDING L.F	SEEDING S.Y.
73	
	520
71	
	783
70	
	772
69	
	783
72	
	856
82	
	1028
103	

STA. 1081+00

90 80 70 60 50 40 30 20 10 BIL* 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160

℄ N.B. Lane

1086+65
1120
1110
C-670
20:1

1086+00
1120
1110
C-548

1085+00
1120
1110
C-330

1084+00
1120
1110
C-504
20:1
1117.0

1083+00
1130
1120
C-400
12:1
1118.0
F.L.(Out) 1118.40

1082+00
1130
1120
F-1
C-498
1120.0

(1125.5) Floor Elev. for Bldg
40'-0"
28'-6"
C-727
20:1
F-45

END AREA CUT	END AREA FILL	VOLUME EXC.	VOLUME EMB.
670	0		
		1466	0
548	0		
		1759	83
402	45		
		1678	83
504	0		
		1674	0
400	0		
		1663	2
458	1		
		1448	7
284	3		

NOTE: From Sta. 1082+00 - 1090+00 Seeding Quantities On The Right Of The Ramp & Rest Area Are Included On Sht. No. 279.

STA. 1081+00

CROSS SECTIONS ROADSIDE REST AREA STA. 1082+00 TO STA. 1086+65 (RIGHT)

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

274

STA - 21 - 11.49
WAY - 21 - 0.00
SUM - 21 - 0.00

NOTE: STA. 1091+57.00 AHEAD
SEE MAIN LINE CROSS SECTIONS

*NOTE: BASE LINE IS 125' RT & SURVEY

STA. 1091+57.0 BACK

℄ N.B. Lane

R/W

STA. 1091+57.00 BACK

STA. 1090+25
NO. 8 CATCH BASIN

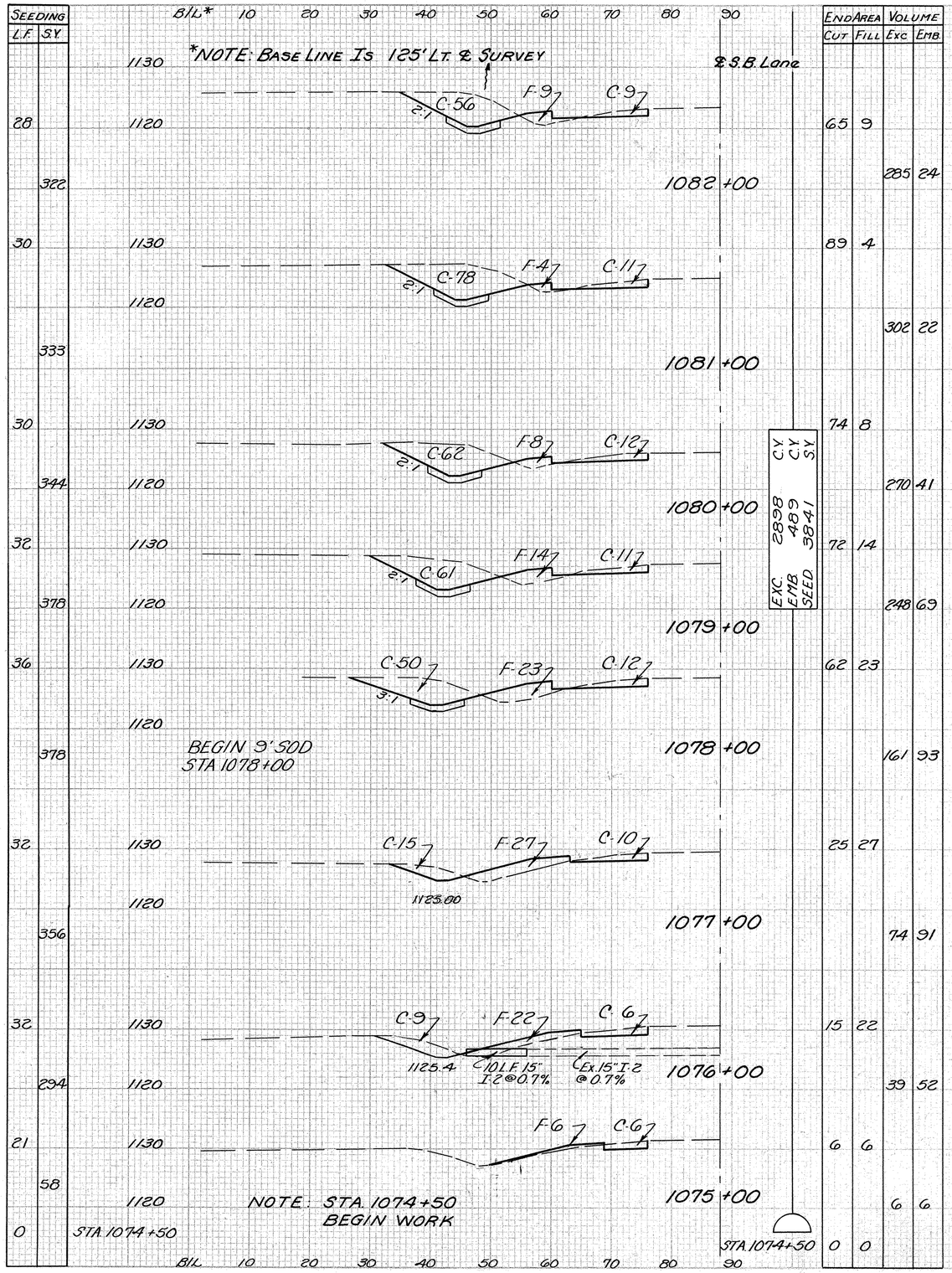
STA. 1086+65

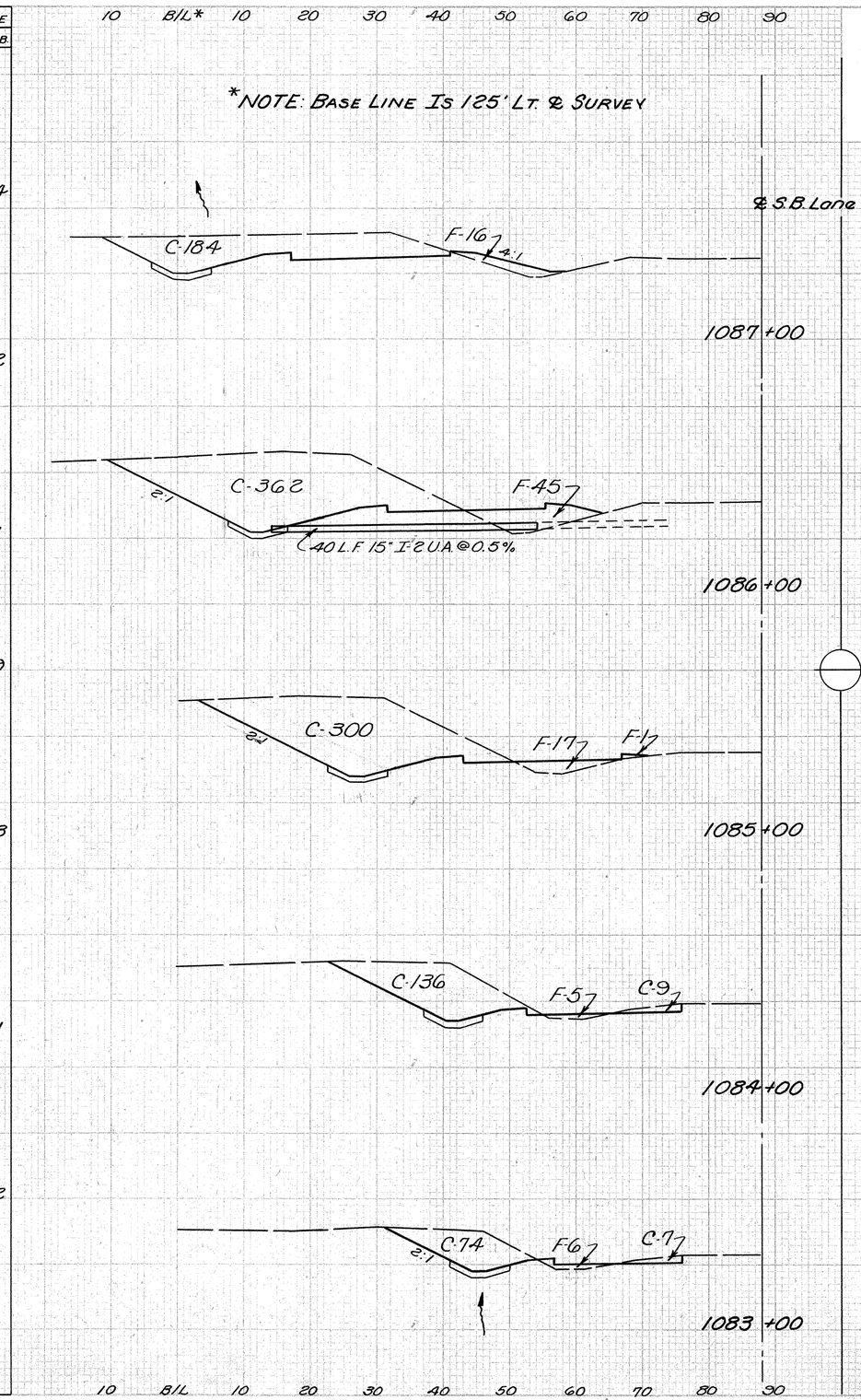
| SEEDING L.F. | SEEDING S.Y. | | |

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

275

STA - 21 - 1149
WAY - 21 - 0.00
SUM - 21 - 0.00





SEEDING L.F.	SEEDING S.Y.	END AREA CUT	END AREA FILL	VOLUME EXC.	VOLUME EMB.
58		184	16		
	683			1011	113
65		362	45		
	683			1226	117
58		300	18		
	561			824	43
43		145	5		
	450			419	20
38		81	6		
	367			270	28
STA. 1082+00 28		65	9		

CROSS SECTIONS ROADSIDE REST AREA STA. 1075+00 TO STA. 1087+00 (LEFT)

FED. RD. DIVISION	STATE	PROJECT		276
2	OHIO			

STA - 21 - 11.49
WAY - 21 - 0.00
SUM - 21 - 0.00

*NOTE: BASE LINE IS 125 LT & SURVEY

| SEEDING L.F. | SEEDING S.Y. | | |

FED. RD. DIVISION	STATE	PROJECT		277
2	OHIO			

STA - 21 - 11.49
WAY - 21 - 0.00
SUM - 21 - 0.00

*NOTE: BASE LINE IS 125' LT. & SURVEY

SEEDING L.F.	SEEDING S.Y.	160	150	140	130	120	110	100	90	80	70	60	50	40	30	20	10	B/L*	10	20	30	40	50	60	70	80	90
46																											
	606																										
63																											
	494																										
64																											
	208																										
61																											
	180																										
59																											
	479																										
59																											
	667																										
61																											

STA. 1091+00

C-537

C-440

C-355

C-290

F-203 Var.

C-166

C-103

F-26 Var.

C-11

F-57

C-20

F-7

C-91

1095+00

1094+00

1093+30

1093+00

1092+73

1092+00

STA. 1091+00

	1100	1090
1095+00		
1094+00	1100	1090
1093+30	1100	1090
1093+00	1100	1090
1092+73	1100	1090
1092+00	1100	1090
STA. 1091+00		

	C.Y.	S.Y.
EXC.	14562	C. 1130 S. 7448
EMB	1130	
SEED	7448	

END AREA CUT	END AREA FILL	VOLUME EXC.	VOLUME EMB
537	0		
		1809	0
440	0		
		1030	0
355	0		
		358	0
290	0		
		279	102
269	203		
		529	396
122	90		
		833	202
328	19		

CROSS SECTIONS ROADSIDE REST AREA STA. 1092+00 TO STA. 1095+00 (LEFT

FED. RD. DIVISION	STATE	PROJECT		278
2	OHIO			

STA - 21 - 11.49
WAY - 21 - 0.00
SUM - 21 - 0.00

SEEDING L.F.	SEEDING S.Y.	END AREA CUT	END AREA FILL	VOLUME EXC.	VOLUME EMB.
0		0	0		
				5	27
113		9	102		
				23	531
556		9	185		
				33	750
844		9	220		
				226	530
706		113	66		
				256	156
406		25	18		
				439	52
278		212	10		

*NOTE: BASE LINE IS 125' LT. & SURVEY

STA. 1104+00

NOTE: END WORK STA. 1104+00

S.B. Lane ℄

C-9 F-102 2:1 1060 1050 68

1103+70

C-9 F-185 2:1 1060 1050 75

1103+00

C-9 F-220 2:1 1060 1050 77

1102+00

C-11 F-66 C-102 1070 1060 50 1056.0

1101+00

C-16 F-18 C-9 1071.0 1070 1060 23

1100+00

STA. 1099+00

10 B/L* 10 20 30 40 50 60 70 80 90

*NOTE: BASE LINE IS 125' LT. & SURVEY

R/W S.B. Lane ℄ C-202 2:1 10730 F-10 C-10 1080 1070

1099+00

R/W C-288 2:1 1076.5 F-9 C-6 1090 1080

STA 1097+60 21" Culv. Out. F.L. 1078.53

1098+00

R/W C-304 1½:1 F-26 1090 1080

1097+00

R/W @ 55' LT B/L

C-291 2:1 F-16 12' F.L.(Ex) 1081.60 Ex. 15" Conc. Concrete Collar F.L.(Prop)- 1080.60 1090 1080

NOTE: Remove And Relay Existing 15" S.S. @ Elev. Shown. The Concrete Collar As Shown Is To Used If Necessary At The Direction Of The Engineer. Quantity Carried On Line Sheet

1096+50

C-392 1090 1080

1096+00

C-504 1090 1080

1095+70

STA. 1095+00

30 20 10 B/L 10 20 30 40 50 60 70 80 90

EXC. C.Y.	EMB C.Y.	SEED S.Y.
3026	2146	3708

SEEDING L.F.	SEEDING S.Y.	END AREA CUT	END AREA FILL	VOLUME EXC.	VOLUME EMB
27		212	10		
	322			937	35
31		294	9		
	483			1107	65
56		304	26		
	331			551	39
63		291	16		
	256			632	15
29		392	0		
	115			498	0
40		504	0		
	334			1350	0
46		537	0		

CROSS SECTIONS ROADSIDE REST AREA STA. 1095+70 TO STA. 1103+70 (LEFT)

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

279

STA. 21 - 11.49
WAY. 21 - 0.00
SUM. 21 - 0.00

GRIFFIN

HIGGINS

WEINRICH

LESTER

Creek

1088+39
390'

710' To C.H. 365

Prop. R/W

NOTE: Electrical Service For Both Rest Areas To Start From Pole At This Approx. Location

1088+00
200'

1084+97.32
125'

Rest Area Fence

1093+85
390'

6" V.S.P.

Sewage Treatment Plant

10 Cornus 3' Spacing 3' Double Row

3' Fence

No. 1 S.T.P.

To Remain Natural Woodland See Note

1096+64.88
114.42'

Bldg

3 Aronia

2" Galv. Pipe

Aesculus?

3 Aronia

3 Acer Rubrum

Pachysandra 1' Spacing

8 Liquidamber 40' Spacing

3 Acer Rubrum

Variable Slope Average 8:1

4'

270 Cornus R. Spacing 3' Double Row

RAMP "A"

RAMP "B"

1081 1082 1083 1084 1085 1086 1087 1088 1089 1090 1091 1092 1093 1094 1095 1096 1097

4800' To C.H. 365 @ Sta. 1042+00

4000' To Wayne Co. Line & C.H. 103 @ Sta. 1129+94.09

4:1

Concrete Header

270 Cornus Racemosa Spacing 3' Double Row

4'

3 Acer Rubrum

2 Lines 3" Conduit Sta. 1088+15

RAMP "D"

RAMP "C"

1091+25.16
125'

2" Well Drainage Pipe

8 Liquidamber 40' Spacing

1081+75
190'

Rest Area Fence Z

3 Acer Rubrum

Aesculus?

3 Aronia

Pachysandra 1' Spacing

Aesculus

Bldg

3 Aronia 3' 4'

Fence

70 Cornus Spacing 3' Double Row

Sewage Treatment Plant

3 Quercus 6" To 7"

2 Quercus 2"

To Remain Natural Woodland See Note.

Prop. R/W

Rest Area Fence Z

HIGGINS

1083+48.58
556.50'

NOTE: Shaded Areas To Remain As Natural Woodland. No L-5 Or L-9 Items Will Be Required. No Grading Or Removal Of Boulders Will Be Required Under L-6. L-3 Will Be For Filling Tree And Stump Removal Holes Only.

ITEM	QUANTITY	UNIT	DESCRIPTION
Spec.	100	L.F.	Well Casing Driven
"	100	L.F.	Well Casing Set Inside Outer Casing
"	20	L.F.	Well Screen
"	308	L.F.	2" Galvanized Pipe As Per Plan

REST AREAS - ESTIMATED QUANTITIES

	ITEM	QUANTITY	UNIT	DESCRIPTION
	L-1	3800	Cu.Yo.	Top Soil Stockpiled
	L-3	51000	S.Y.	Placing Stockpiled Top Soil, Average Depth 3"
	L-5	13654	S.Y.	Seeding And Renovating Existing Sod
	L-6		Lump	Roadside Clean-Up (Modified) As Per Plan
*	L-9	30,000	S.Y.	Seeding And Protecting Roadway Areas - Rest Areas
	L-9	See Calc. Sht	Tons	Agricultural Liming Material
	L-9	See Calc. Sht	Tons	Commercial Fertilizer 12-12-12
	L-12	240	Ea.	Pachysandra Terminals - Japanese Spurge 2yr. From Pots
	L-13	12	Ea.	Aronia Arbutifolia - Red Chokeberry 2-3' B&B 12"
	L-13	680	Ea.	Cornus Racemosa - Gray Dogwood 2-3' B&B 12"
	L-14	16	Ea.	Liquidamber Styraciflua - Sweet Gum 1 3/4" To 2" B&B 24"
	L-14	12	Ea.	Acer Rubrum - Red Maple 1 3/4" To 2" B&B 24"
	L-14	3	Ea.	Aesculus Glabra - Ohio Buckeye 1 3/4" To 2" B&B 24"
	L-14	2	Ea.	Quercus Palustris - Pin Oak 1 3/4" To 2" B&B 24"
	L-16	3	Ea.	Quercus Palustris - Pin Oak 6" To 7" B&B 66" Furnished By Contractor
	L-17		Lump	Pruning Existing Trees
	E-9		Lump	Removal Of Trees And Stumps In Rest Areas As Per Plan
	I-2	502	L.F.	6" Storm Sewer Sec. M-6.8(a) With Bituminous Compression Joint As Per Plan
*	I-8	1	Ea.	Standard Manhole No. 1
	SS-25	560	L.F.	Electrical Equipment 3" Conduit
	Spec	2	Ea.	Aerobic Digestion Sewage Treatment Plant "Yeomans" As Per Plan
	"	2	Ea.	Roadside Toilet And Storage Unit
	"	200	L.F.	Drilled Wells
	"	2	Ea.	Pressure Water Systems As Per Plan
	"	20	Ea.	Park Tables
	"	10	Ea.	Charcoal Grill And Serving Table
*	SS-18	162	L.F.	Type "C" Galvanized Steel Chain Link Fence
	SS-18	2	Ea.	Gates - Width 4'

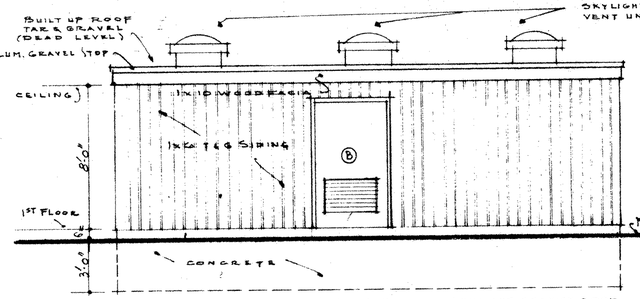
* These Quantities To Recapitulation Sheet; ALL Others To Summary

REST AREA PLANTING PLAN

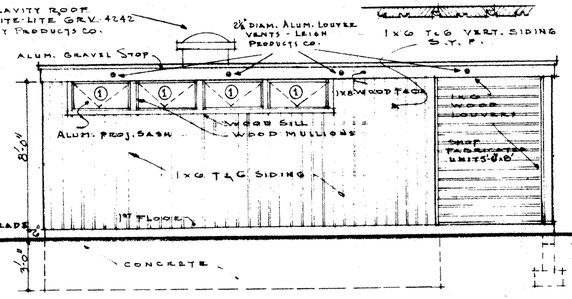
STA. 21-11.49
WAY. 21-0.00
SUM. 21-0.00

(280)

NOTE: ALL LUMBER, SIDING, ETC. TO BE PRESSURETREATED - SEE SPECS.

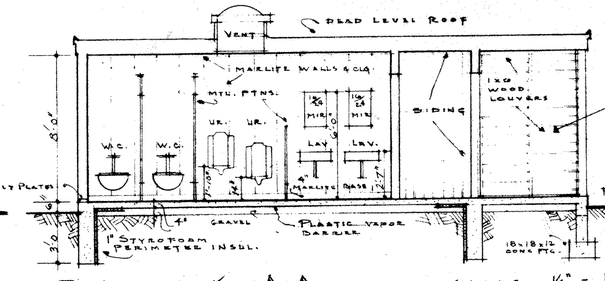


REAR ELEVATION - SCALE 1/4" = 1'-0"

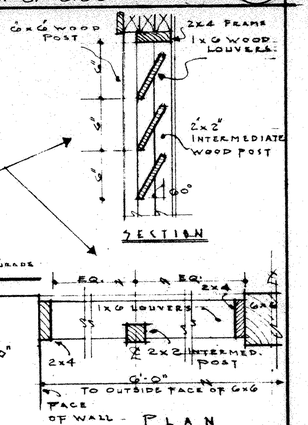


LEFT SIDE ELEVATION - SCALE 1/4" = 1'-0"

(RIGHT SIDE ELEVATION SAME OPPOSITE HAND)



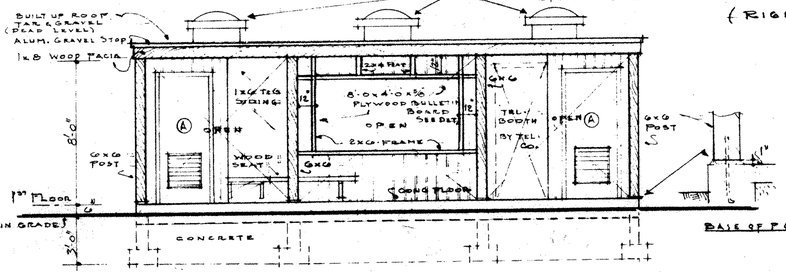
SECTION A-A - SCALE 1/4" = 1'-0"



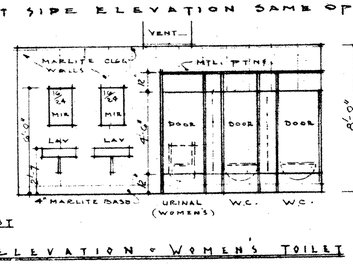
DETAILS OF LOUVERS

SCALE 1½" = 1'-0"

(SHOP FABRICATED UNIT 5'-0" x 8'-0")

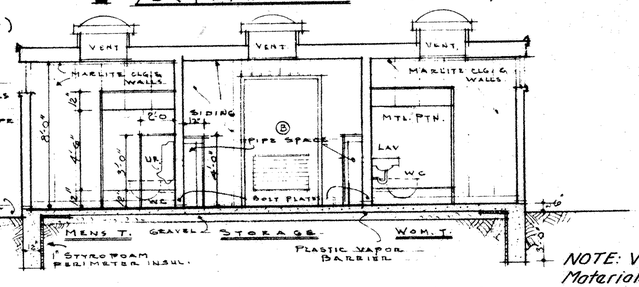


FRONT ELEVATION - SCALE - 1/4" = 1'-0"



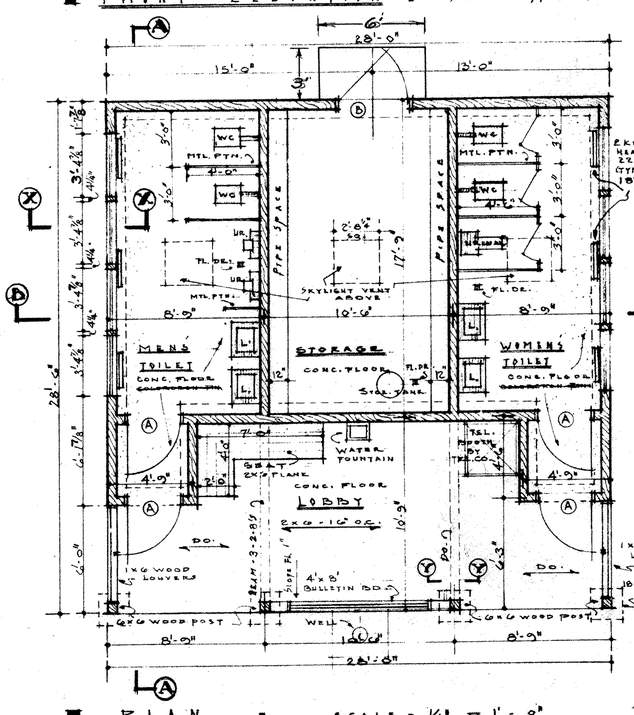
ELEVATION - WOMEN'S TOILET

NOTE: MARLITE PANELS 48"x80"x 3/8" PLANK & BLOCK TYPE



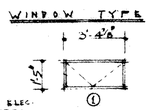
SECTION - B-B - SCALE 1/4" = 1'-0"

NOTE: Where Trade Names Of Materials Are Given An Approved Equal Product May Be Used.



PLAN - SCALE - 1/4" = 1'-0"

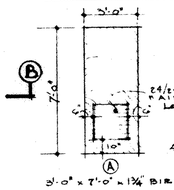
WINDOW TYPE

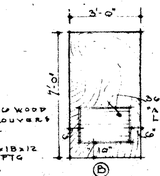


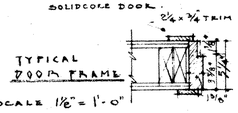
2 KW ELEC. HEATER 220V (TYPICAL) 10" OFF Floor

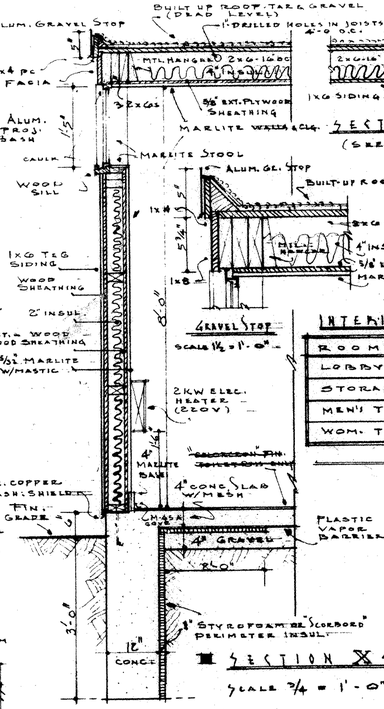
ALUM. PROJECTED SASH W/ SCREEN

DOOR TYPES

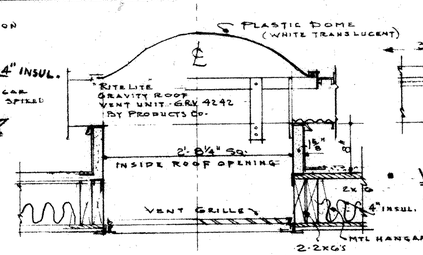








SECTION X-X - SCALE 3/4" = 1'-0"

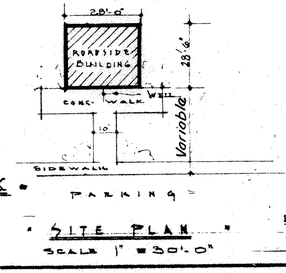


SECTION THRU SKYLIGHT GRAVITY ROOF VENT UNIT

SCALE 1" = 1'-0"

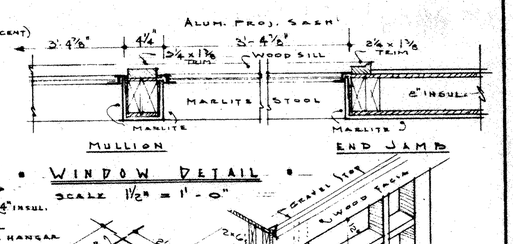
INTERIOR FINISH

ROOM	FLOOR	WALLS	CEILING
LOBBY	CONCRETE	WOOD SIDING	WOOD SIDING
STORAGE	CONCRETE	" "	" "
MEN'S T.	~~CONCRETE~~	MARLITE	MARLITE
WOM. T.	"	MARLITE	MARLITE



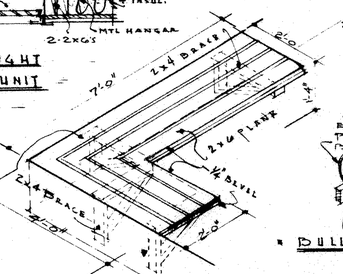
SITE PLAN

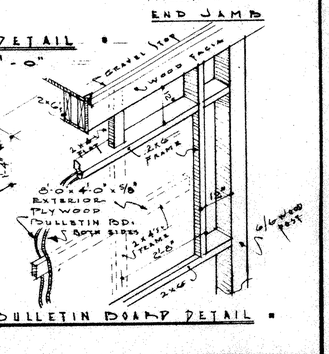
SCALE 1" = 30'-0"



WINDOW DETAIL

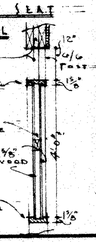
SCALE 1½" = 1'-0"





BULLETIN BOARD DETAIL

LOBBY SEAT DETAIL



BULLETIN BOARD DET. 2X6 FRAME

SCALE ½" = 1'-0"

BUREAU OF LOCATION AND DESIGN
OHIO DEPARTMENT OF HIGHWAYS

ROADSIDE TOILET AND STORAGE UNIT

DATE

STANDARD CONSTRUCTION DRAWING

APPROVED ENGR. L & D

STA. 21-11.49
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PAYMENT INCLUDED IN UNIT PRICE BID FOR "ITEM SPECIAL PRESSURE WATER SYSTEM".

BILL OF MATERIALS

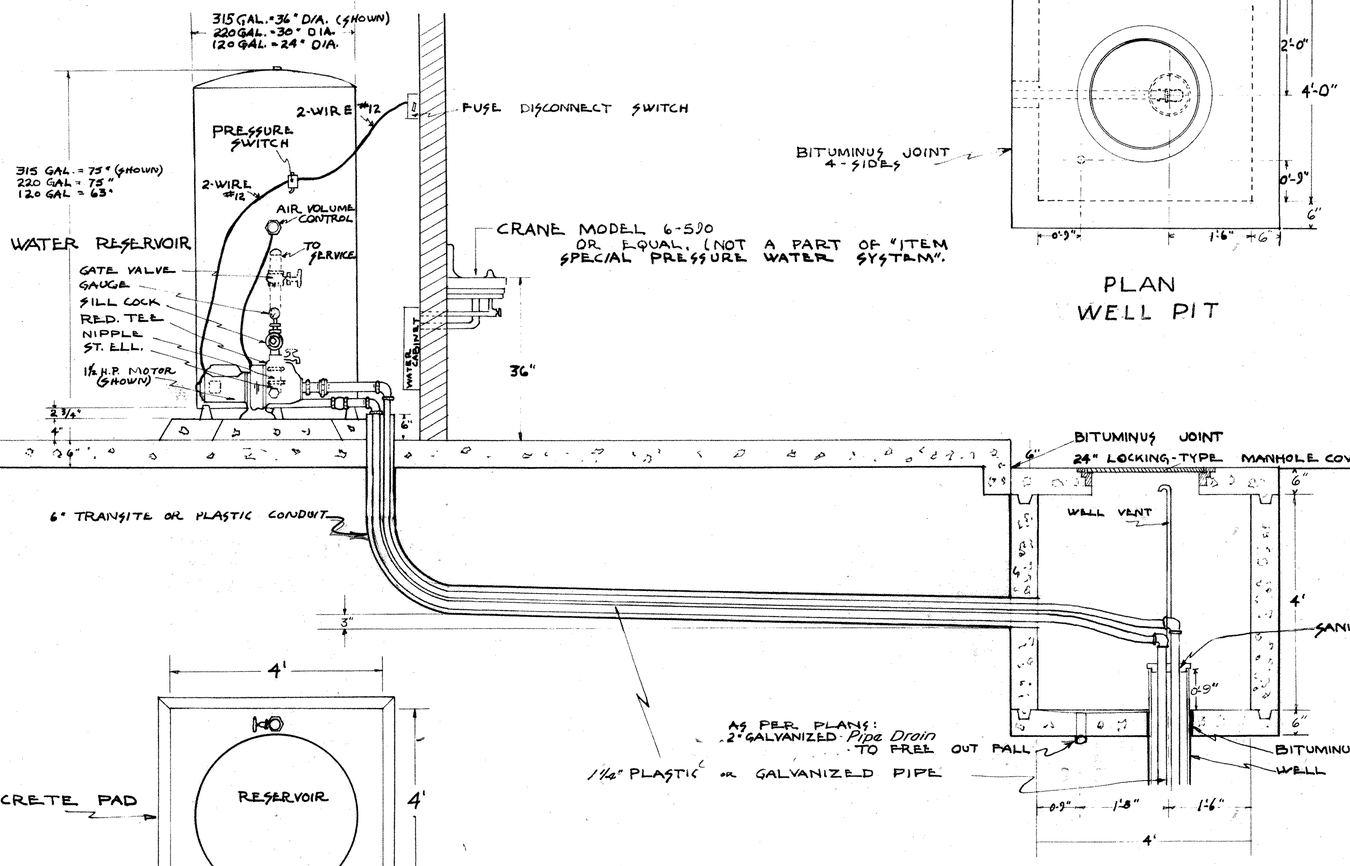
- 1 MEYERS MODEL HC 100 JET PUMP COMPLETE OR EQUAL.
- 1 MEYERS EJECTOR PACKAGE #C4C10 OR EQUAL.
- 1 MEYERS MODEL V120E VERTICAL "FIRE-CURED" EPOXY-COATED PRESSURE TANK OR EQUAL.
- 1 SANITARY WELL SEAL WITH WELL VENT. GALVANIZED PIPE AND FITTINGS FROM PUMP TO PRESSURE TANK.
  PLASTIC OR GALVANIZED PIPE FROM PUMP TO EJECTOR. 4" CONCRETE PAD FOR PUMP AND PRESSURE TANK.

NOTES: GALVANIZED PIPE SHALL BE SCHEDULE 40 GRADE A-53.

PLASTIC PIPE SHALL BE CARLON HI/MOL OR EQUAL. PIPE SHALL HAVE A MAXIMUM CONTINUOUS WORKING PRESSURE OF 100 POUNDS AT 73°F TEMPERATURE.

4" CONCRETE PAD FOR PUMP AND PRESSURE TANK MAY BE POURED INTEGRAL WITH CONCRETE FLOORS.

PAYMENT FOR THE WELL PIT, MANHOLE COVER, ~~AND 2" GALVANIZED PIPE DRAINS~~ SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM SPECIAL, ROADSIDE TOILET AND STORAGE UNIT.



SECTION

PLAN
WELL PIT

PLAN

SCALE: 3/4" = 1'-0"

BUREAU OF LOCATION & DESIGN
OHIO DEPARTMENT OF HIGHWAYS

ROADSIDE REST AREA WATER SYSTEM

DATE 6-15-60

STANDARD CONSTRUCTION DRAWING

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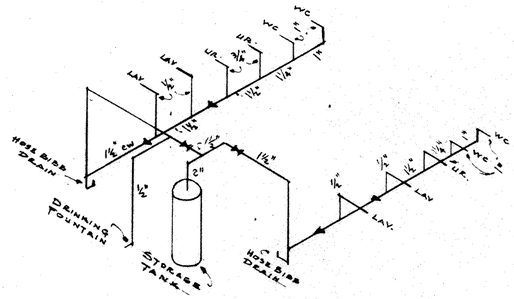
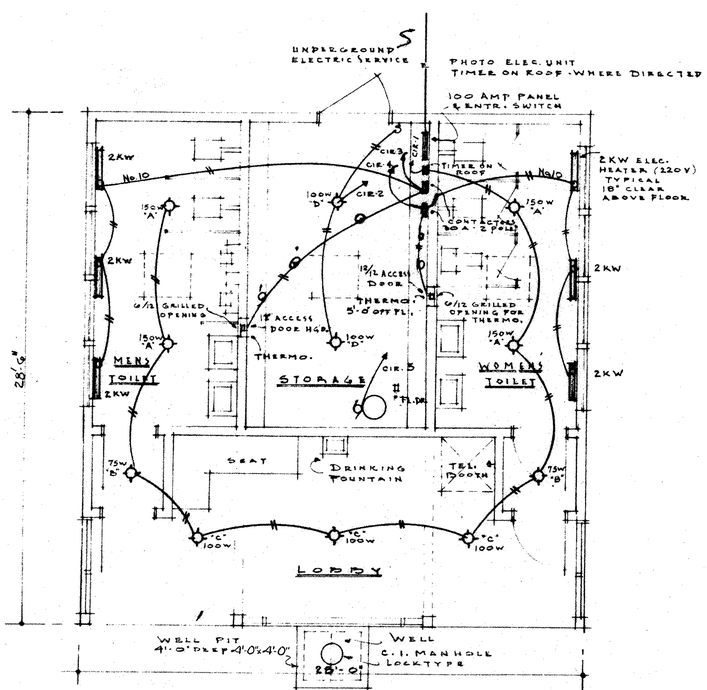
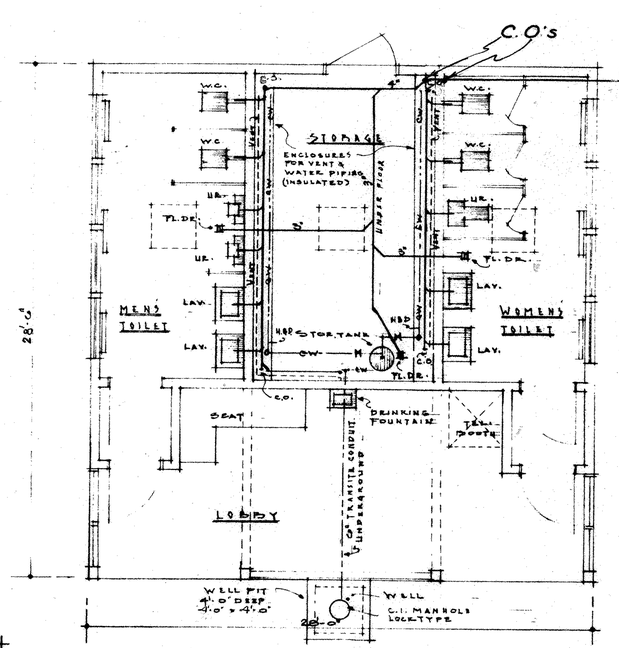


COLD WATER PIPING DIAGRAM
NO SCALE

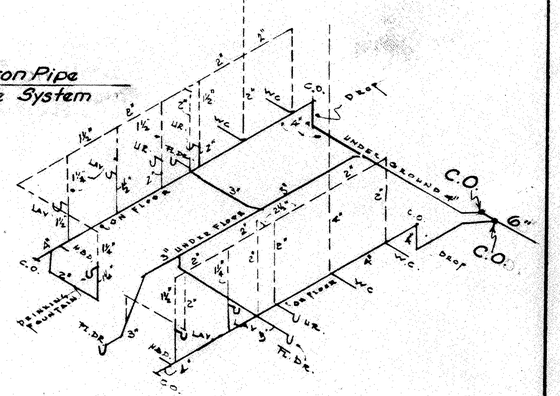


HEATING & ELECTRIC PLAN

SCALE - ¼" = 1'-0"



PLUMBING PLAN



PLUMBING DIAGRAM
NO SCALE

BUREAU OF LOCATION AND DESIGN
OHIO DEPARTMENT OF HIGHWAYS

ROADSIDE TOILET AND STORAGE UNIT

DATE

STANDARD CONSTRUCTION DRAWING

APPROVED _____ ENGR. L & D

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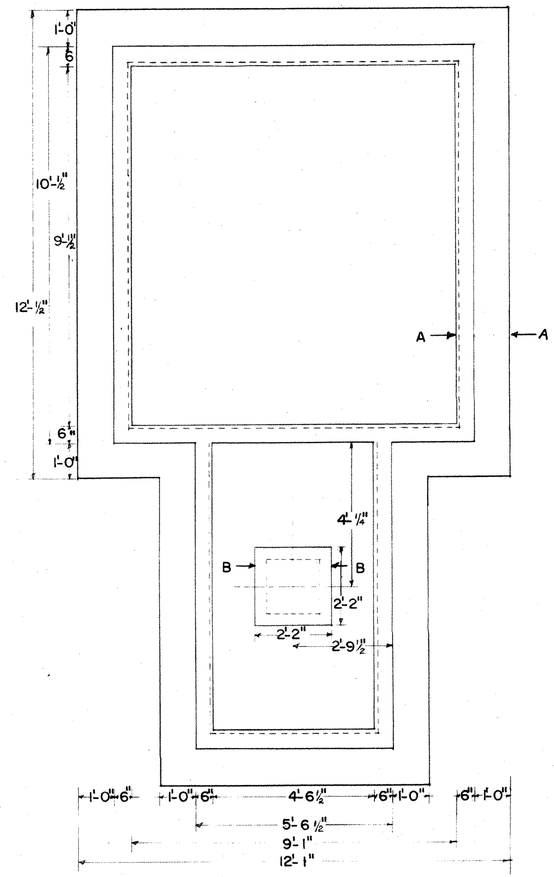
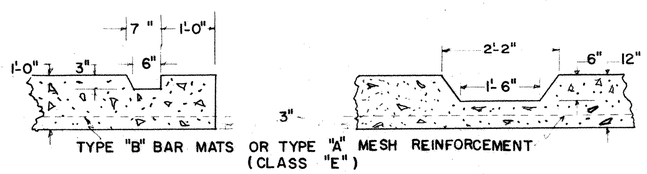


PLAN

SCALE 1/2" = 1'



SECTION A-A SECTION B-B

SCALE 3/4" = 1'

BUREAU OF LOCATION AND DESIGN
OHIO DEPARTMENT OF HIGHWAYS

ROADSIDE REST AREA SEWAGE TREATMENT PLANT BASE

DATE 6-15-60

STANDARD CONSTRUCTION DRAWING

APPROVED ENGR., L. & D.

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

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STA. 21-11.49
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SUM. 21-0.00

STRUCTURES 20'SPAN AND UNDER

S-27 PIPE FOR ROADWAY CULVERTS

CULV. NO.	STRUCTURE NO.	FOR DETAIL SEE SHT. NO.	DRAINAGE AREA	STATION	SIZE *	FLOW LINE ELEVATION LEFT	FLOW LINE ELEVATION RIGHT	CULV. GRADE %	15" M-6.6 (b) L.F.	18" M-6.6 (b) L.F.	21" M-6.6 (b) L.F.	24" M-6.6 (b) L.F.	30" M-6.6 (b) L.F.	36" M-6.6 (b) L.F.	36" M-6.6 (d) L.F.	48" M-6.4 (d) 10 Gage L.F.	42" M-6.4 (d) L.F.	36" M-6.4 (d) L.F.	48" M-6.4 (d) L.F.	54" M-1066 (d) L.F.	4'x6' ALT B-1 CATTLE PASS L.F.	43"x27" M-6.4 (1)(d) L.F.
1	STA-1389	285	11	733+33	24"x76'	1052.58	1050.53	2.7				76										
2	STA-1400	285	8	739+34	4'x6'x68'	1045.20	1043.84	2.0													68	
3	STA-1424	286	1.6	750+99	15"x68'	1031.99	1032.59	0.88	68													
4	STA-1437	286	1.6	758+92	15"x84'	1033.50	1034.34	1.0	84													
5	STA-1441	287	4	760+67	24"x84'	1032.52	1032.94	0.5				84										
6	STA-1467	287	12.5	744+79	24"x72'	999.03	1001.41	3.3				72										
7	STA-1489	288	6.7	786+26	24"x96'	974.39	976.12	1.8				96										
8	STA-1506	288	623	795+14	54"x68'	939.93	939.14 *	1.2												68		
					54"x68'	940.05	939.22	1.2												68		
					54"x68'	939.97	939.10	1.2												68		
9	STA-1512	289	47	798+42	36"x68'	944.19	943.65	0.8							68							
10	STA-1535	289	6	810+29	24"x92'	969.02	968.12	1.0				92										
11	STA-1543	290	10	814+72	30"x82'	962.79	955.82	8.5					82									
12	STA-1545	290	11	815+75	43"x27"x98'	969.04	955.32	14.0														98
13	STA-1560	291	30	823+40	42"x86'	972.91	958.29	See Detail									86					
14	STA-1578	291	4.2	833+00	24"x98'	977.48	976.50	1.0				98										
15	STA-1586	292	4.7	837+58	24"x98'	973.12	972.14	1.0				98										
16	STA-1611	292	120	850+55	60"x72'	948.17	946.73	2.0														
17	STA-1637	293	392	864+30	7'3"x5'3"x82'	936.23	934.75	1.8														
18	STA-1659	293	3.1	876+00	18"x74'	940.37	941.73	2.0		74												
19	STA-1669	294	12	881+06	30"x76'	943.36	942.22	1.5					76									
20	VOID																					
21	STA-1934	295	57	1021+20	42"x64'	1128.98	1127.83	1.8									64					
22	STA-1963	295	13	1036+59	36"x96'	1129.35	1128.04	1.4										96				
23	STA-2092	296	206	1104+69	60"x82'	1029.50	1027.04	3.0														
24	STA-2112	296	190	1115+35	60"x68'	1005.99	1005.31	1.0														
25	STA-2116	297	85	1117+33	48"x92'	1012.52	1007.82	5.1											92			
26	WAY-0016	297	55	8+22	48"x46'	1014.43	1014.15	0.6								46						
27	WAY-0025	298	42	13+15	42"x52'	1025.01	1024.90	0.4									52					
28	WAY-0047	298	45	25+14	42"x44'	1022.42	1021.65	1.75									44					
29	WAY-0146	299	8.5	77+34	30"x84'	955.67	955.16	0.6					84									
~~30~~	~~WAY-0391~~	~~300~~	~~112~~	~~206+41~~	~~36"x80'~~	~~1158.39~~	~~1158.71~~	~~0.4~~						~~80~~								
~~31~~	~~WAY-0395~~	~~300~~	~~65~~	~~208+64~~	~~24"x64'~~	~~1159.69~~	~~1162.38~~	~~4.3~~				~~64~~										
~~32~~	~~WAY-0430~~	~~301~~	~~126~~	~~227+00~~	~~36"x76'~~	~~1151.29~~	~~1151.59~~	~~0.4~~						~~96~~								
~~33~~	~~WAY-0474~~	~~301~~	~~11~~	~~250+20~~	~~24"x74'~~	~~1172.53~~	~~1172.83~~	~~0.4~~				~~94~~										
~~34~~	~~WAY-0508~~	~~302~~	~~17~~	~~268+34~~	~~30"x70'~~	~~1168.27~~	~~1170.37~~	~~3.0~~					~~70~~									
~~35~~	~~WAY-0555~~	~~302~~	~~6.5~~	~~293+00~~	~~30"x80'~~	~~1180.76~~	~~1178.76~~	~~2.8~~					~~80~~									
	C-36	267									116											
REST	C-37	267							86													
AREA	C-38	267								122												
	CHANNEL DTL	303																				
					TOTALS TO RECAP																	
					TOTALS TO SUMMARY				238	196	116	616	242		68	46	246	96	92	204	68	98

S-28

CULV. NO.	60" M-6.4(g) 10-10 Gage L.F.	7'3"x5'3" M-6.4(g) 10-8 Gage L.F.	S-24 REM. EXIST. STRUCT. LUMP	E-12 Pipe Rem. Ovr. 15" L.F.	E-2 EXC. STR. C.Y.	E-3 EXC. CHANEL C.Y.	E-12 PIPE REM. FOR STOR OVR 15" L.F.	S-22 REM. PORT. EX. STRUCT. C.Y.	S-1 CONC. CL "E" C.Y.	I-10 DUMPED ROCK C.Y.	I-10 Rip Rap S.Y.	I-8 STAND MANHOLE NO.1 EA.	I-8 STAND MANHOLE NO.2 EA.
1					38				0.41	11			
2					46	6			4.60				
3					6				0.25				
4				2	34				0.25				
5					37				0.41				
6					16				0.41				
7					36				0.41		2		
8					±44				±5.89	± 52			
						10							
9					6				0.59				
10					51	13	44		0.41	11		1	
11					17				Δ7.74				
12			LUMP		2	5				Δ30			
13			LUMP		48				6.98	28		1	
14			LUMP		43		40		0.41	11			1
15			LUMP		46		16		0.41	19			1
16	72		LUMP		12			2.0	7.58	23			
17		82			107	110		2.0	3.62				
18				4	17				0.30				
19					18				0.55	11			
20													
21					36	4			0.76				
22				2	4			0.6	0.59				
23	82		LUMP		32				6.80	23			
24	68				33	55			3.90	65			
25					28	25			0.86	36			
26					20	4			0.86				
27					24	11			0.61				
28					37	15			0.61	15			
29					29	5			0.51				
~~30~~				~~4~~	~~41~~				~~0.59~~		~~2~~		
~~31~~					~~39~~				~~0.41~~				
~~32~~					~~28~~				~~0.68~~				
~~33~~				~~2~~	~~11~~				~~0.41~~				
~~34~~					~~44~~				~~0.51~~				
~~35~~				~~2~~	~~15~~				~~0.51~~				
									0.36		8		
									0.52				
									0.30				
						403							
									57.90	335		2	
	222	82	LUMP	8	867	666	100	4.6			10		2

* All Culvert Lengths Are Extensions, With Exception Of Those Located In The Rest Area.

✱ See Detail Sheet

± Quantities For Triple Culvert

Δ Quantities For C-11 & C-12 Have Same Endwall

FED. RD. DIVISION	STATE	PROJECT	
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STA 21-11.49
WAY 21-0.00
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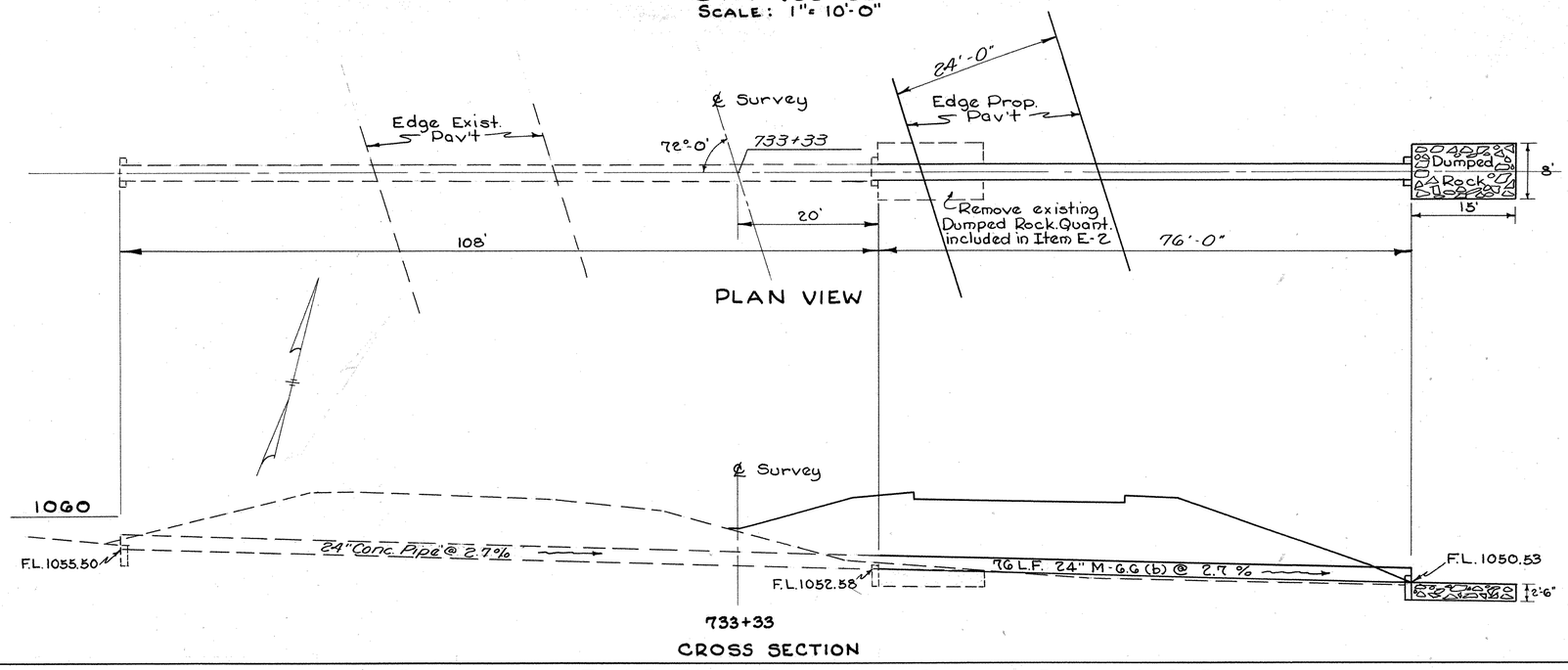
C-1 STRUCTURE NO. STA-21-1389

STA 733+33
SCALE: 1"=10'-0"



ESTIMATED QUANTITIES

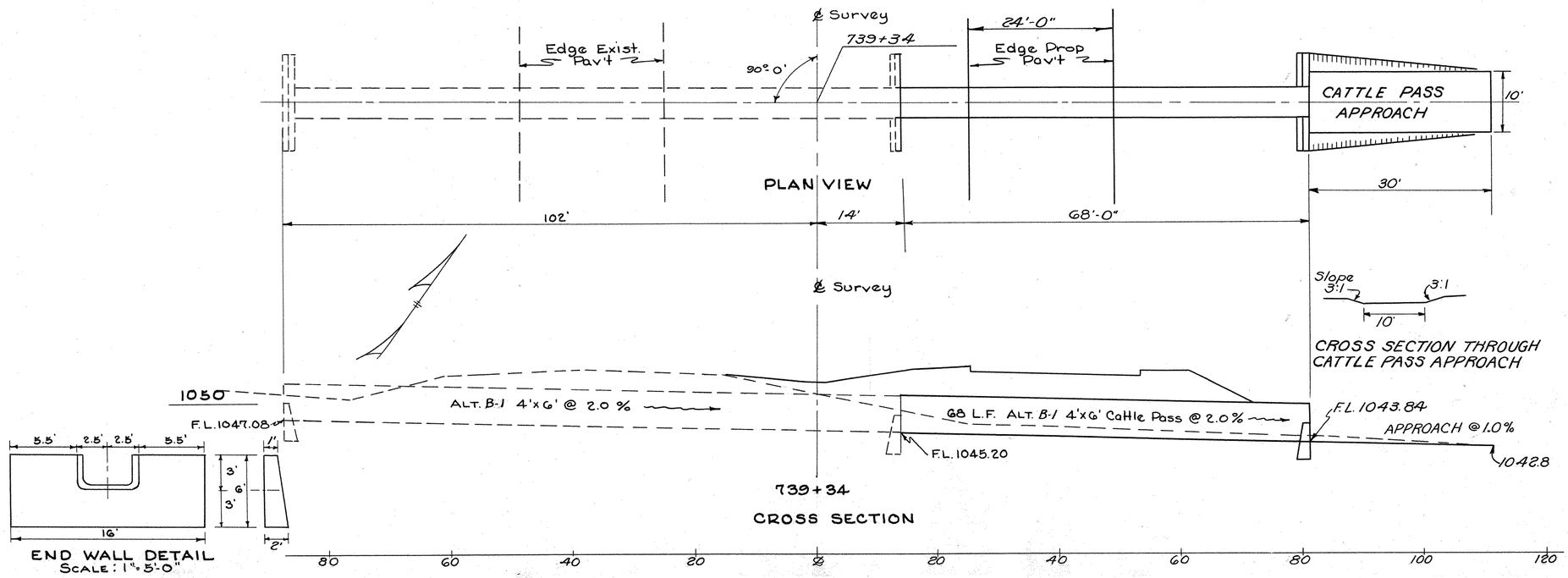
E-2	Excavation For Structures	38 C.Y.
S-1	Concrete For Struct. Cl. "E"	0.41 C.Y.
S-27	24" Rein. Conc. Pipe M-C.C (b)	76 L.F.
I-10	Dumped Rock Channel	11 C.Y.

CULVERT DATA

DRAINAGE AREA: 11 Acres
Q: 24 C.F.S.
TYPE: Rein. Conc. M-C.C (b)
SIZE: 24" x 76'
SKEW: 18° L.F.
STD. DWGS: S-27 P.C. 3, S-27 P.C. 4
WORK REQD: Construct 24" x 76' Culvert With Standard Endwall As Shown. Place Dumped Rock As Shown.

C-2 STRUCTURE NO. STA-21-1400

STA 739+34
SCALE: 1"=10'-0"



ESTIMATED QUANTITIES

E-2	Excavation For Structures	46 C.Y.
E-3	Channel Excavation	6 C.Y.
S-1	Concrete For Struct. Cl "E"	4.6 C.Y.
S-27	Cattle Pass Alt. B-1	68 L.F.

CULVERT DATA

DRAINAGE AREA: 8 Acres
Q: 20 C.F.S.
TYPE: Rein. Conc. Pipe Cattle Pass Alt B-1
SIZE: 4'x6'x68'
SKEW: 0°
* STD. DWGS: D-835. P. 21, SP. 53-16 Ft.
WORK REQD: Construct New 4'x6'x68' Cattle Pass With Standard End-Wall As Shown.
Construct Cattle Pass Approach As Shown.

* See Sheet # 9-A For Further Details

CULVERT DETAILS C-1 & C-2

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

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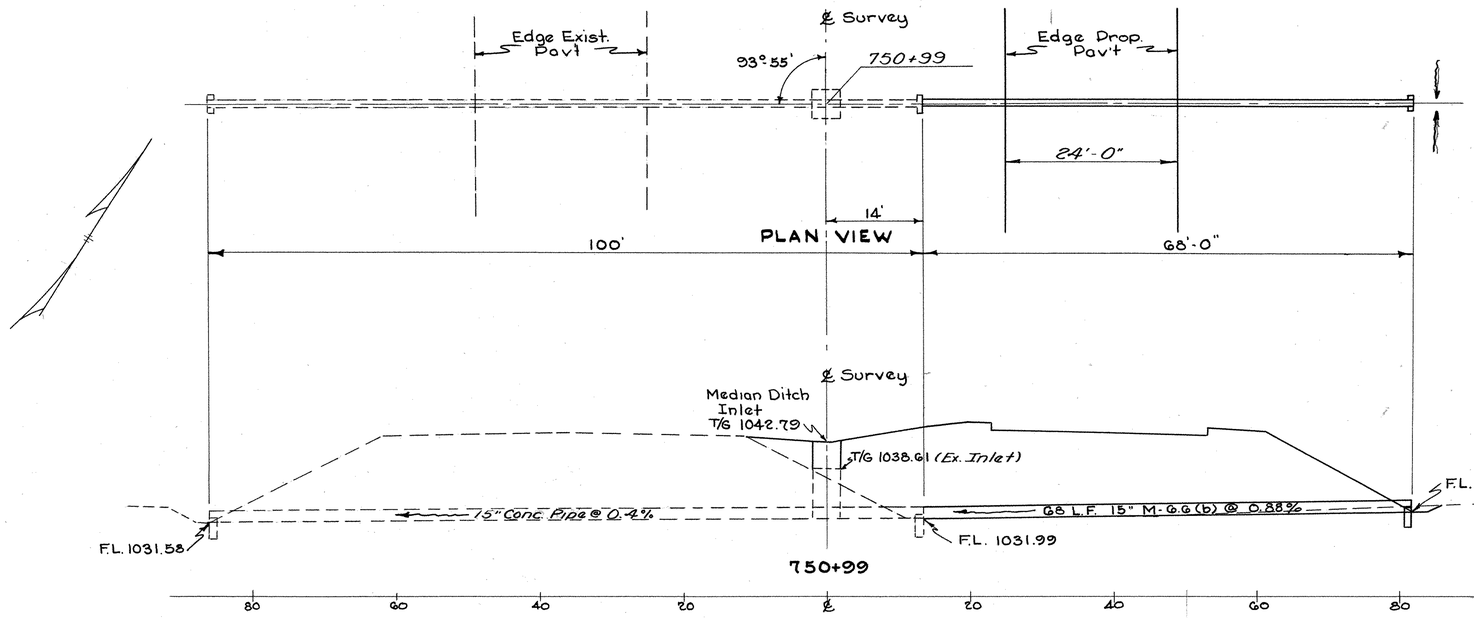
STA 21 - 11.49
WAY 21 - 0.00
SUM 21 - 0.00

C-3 STRUCTURE NO. STA-21-1424

STA 750+99
SCALE: 1" = 10'-0"



CROSS SECTION

ESTIMATED QUANTITIES

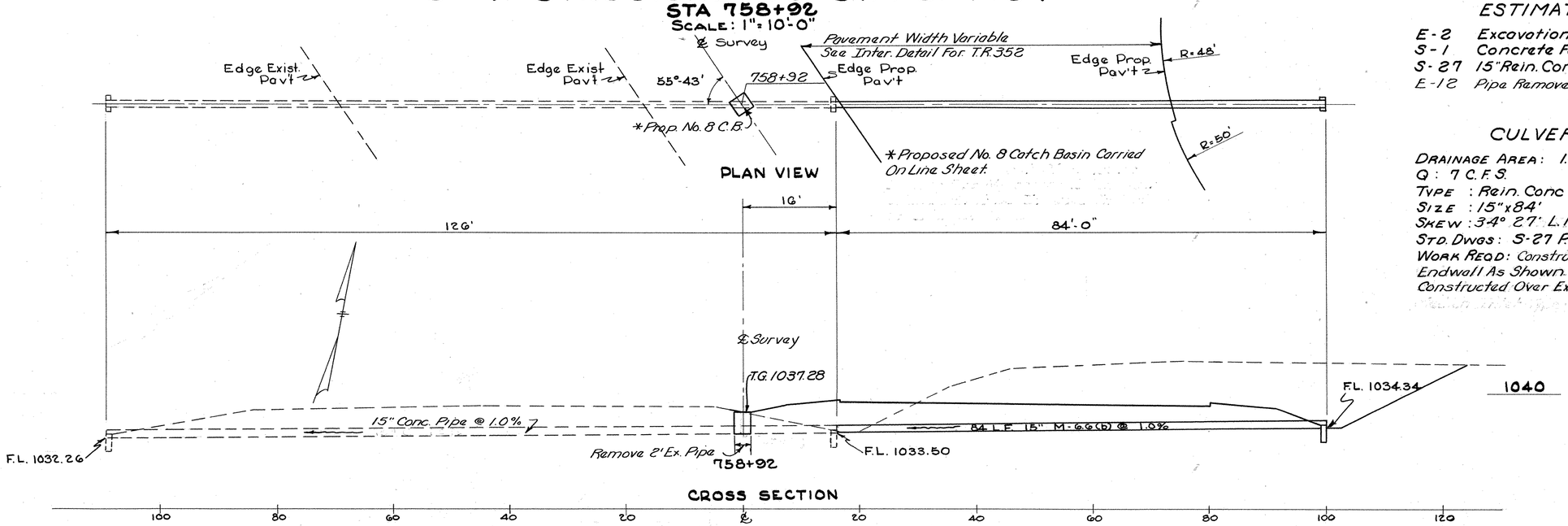
E-2	Excavation For Structures	6	C.Y.
S-1	Concrete For Struct Class "E"	0.25	C.Y.
S-27	15" Rein. Conc. Culv. Pipe M6.6(b)	68	L.F.

CULVERT DATA

DRAINAGE AREA: 1.6 Acres
Q: 5.3 C.F.S.
TYPE: Rein. Conc. Culv Pipe M6.6(b)
SIZE: 15" x 68'
SKEW: 3°55' R.F.
STD. DWGS: S-27 PC-4, S-27 PC.3
WORK REQD: Construct 15" x 68' Culvert As Shown. Construct Standard Endwall.
Adjust Existing Med. Inlet ..... As Shown.

C-4 STRUCTURE NO. STA-21-1437

STA 758+92
SCALE: 1" = 10'-0"



CROSS SECTION

ESTIMATED QUANTITIES

E-2	Excavation For Structures	34	C.Y.
S-1	Concrete For Struct. Class "E"	0.25	C.Y.
S-27	15" Rein. Conc Culv. Pipe M6.6(b)	84	L.F.
E-12	Pipe Removed - 15" & Under	2	L.F.

CULVERT DATA

DRAINAGE AREA: 1.6 Acres
Q: 7 C.F.S.
TYPE: Rein. Conc M6.6(b)
SIZE: 15" x 84'
SKEW: 34° 27' L.F.
STD. DWGS: S-27 P.C. 3, S-27 P.C. 4
WORK READ: Construct 15" x 84' Culvert With Standard Endwall As Shown. No. 8 Catch Basin To Be Constructed Over Existing Pipe At ℄ Of Survey.

CULVERT DETAILS C-3 & C-4

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

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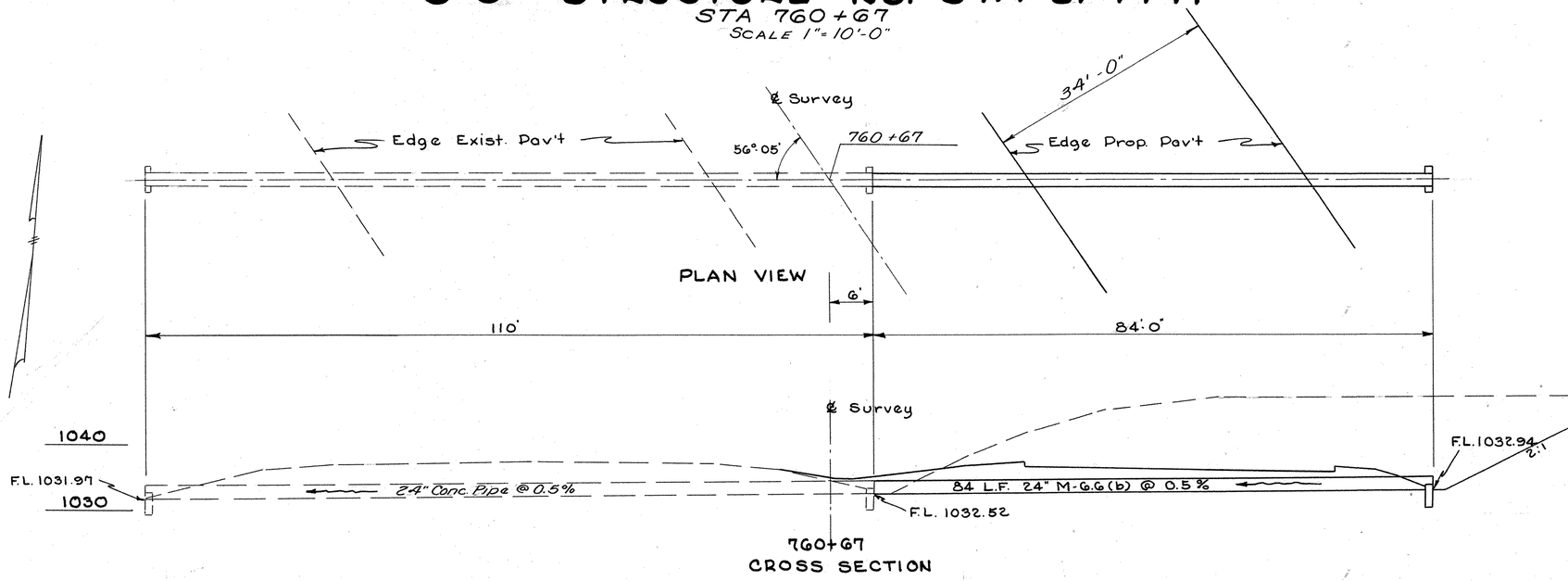
WAY. 21-0.00
SUM. 21-0.00

C-5 STRUCTURE NO. STA-21-1441

STA 760+67
SCALE 1"=10'-0"



ESTIMATED QUANTITIES

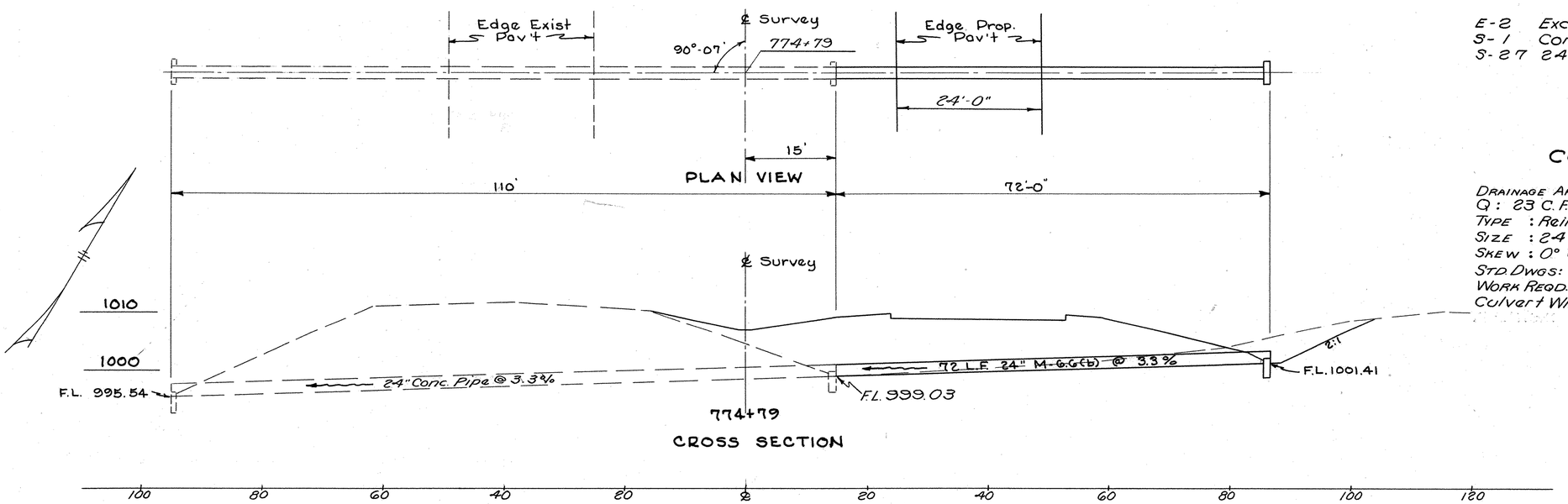
E-2	Excavation For Structures	37 C.Y.
S-1	Concrete for Struct Class "E"	0.41 C.Y.
S-27	24" Rein. Conc. Culv. Pipe M-6.6(b)	84 L.F.

CULVERT DATA

DRAINAGE AREA: 4 Acres
Q: 15 C.F.S.
TYPE : Rein. Conc. Pipe Sec. M6.6 (b)
SIZE : 24"x84'
SKEW : 33°55' L.F.
STD. DWGS: S-27 PC-3, S-27. P.C. 4
WORK REQD.: Construct New 24"x84' Culvert With Standard Endwall As Shown.

C-6 STRUCTURE NO. STA-21-1467

STA. 774+79
SCALE 1"=10'-0"



ESTIMATED QUANTITIES

E-2	Excavation For Structures	16 C.Y.
S-1	Concrete For Struct Class "E"	0.41 C.Y.
S-27	24" Rein. Conc. Culv. Pipe M6.6(b)	72 L.F.

CULVERT DATA

DRAINAGE AREA : 12.5 Acres
Q: 23 C.F.S.
TYPE : Rein. Conc. Pipe Sec. M6.6(b)
SIZE : 24"x72'
SKEW : 0° 07' R.F.
STD. DWGS: S-27, P.C-3, S-27, P.C. 4
WORK REQD.: Construct New 24"x72' Culvert With Standard Endwall As Shown.

CULVERT DETAILS C-5 & C-6

C-7 STRUCTURE NO. STA-21-1489

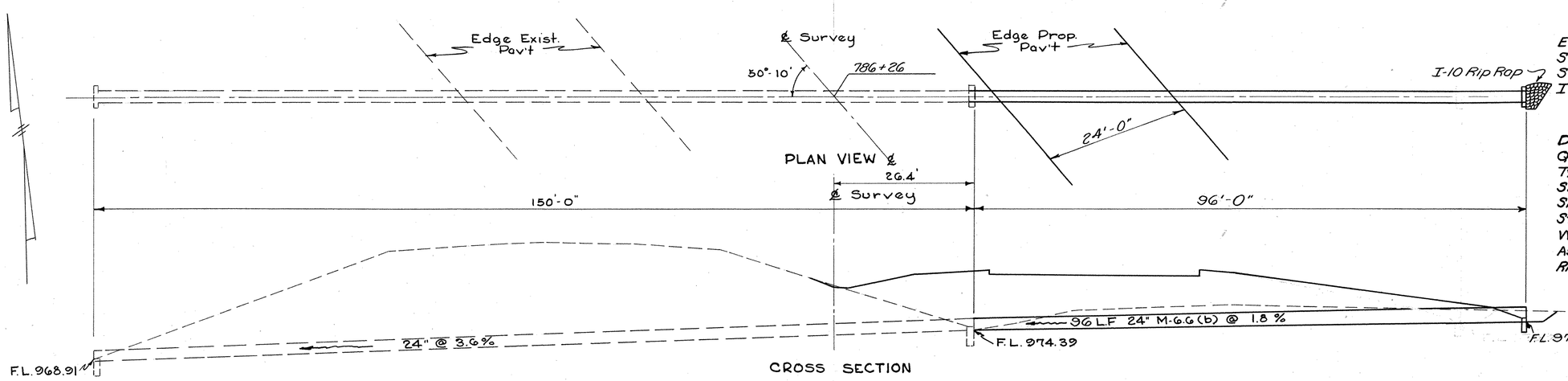
STA 786+26

SCALE: 1" = 10'-0"

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

288

STA 21 - 11.49
WAY 21 - 0.00
SUM 21 - 0.00



ESTIMATED QUANTITIES

E-2	Excavation For Structures	36 C.Y.
S-1	Concrete For Struct. Cl. "E"	.41 C.Y.
S-27	24" Conc. Pipe M.G.G(b)	96 L.F
I-10	Rip Rap	2 S.Y.

CULVERT DATA

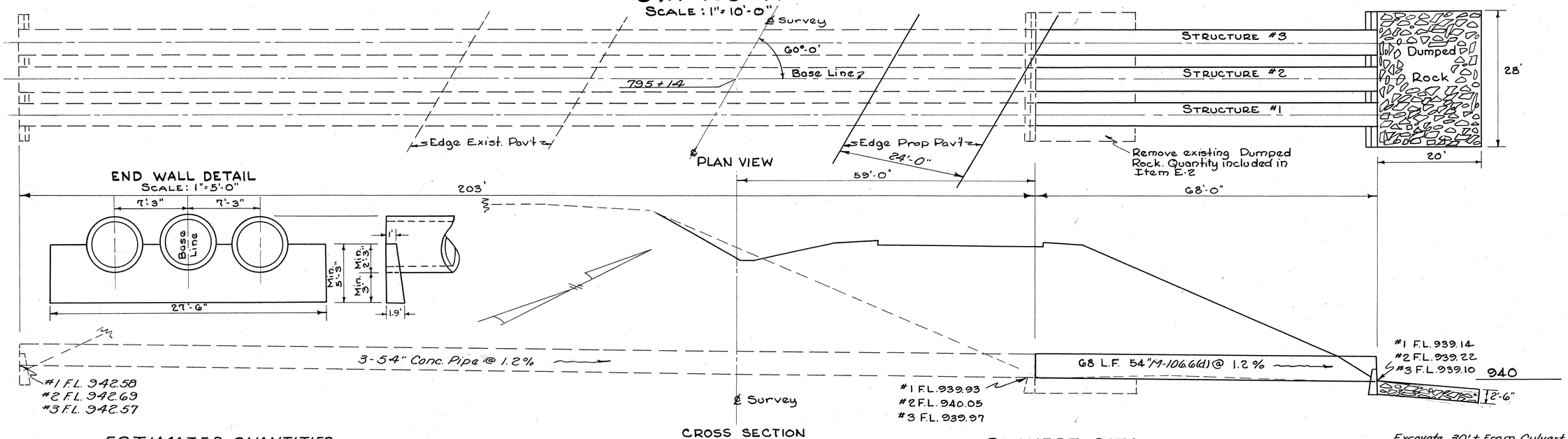
DRAINAGE AREA: 0.7 Acres
Q: 22 C.F.S.
TYPE: Rein. Conc M.G.G(b)
SIZE: 24"x96'
SKEW: 39°-50' L.F.
STD. DWGS: S-27 PC.4, S-27 P.C.3
WORK REQD: Construct New 24"x96' Culvert As Shown. Construct Endwall And Place Rip Rap At Inlet At Direction Of Engineer.

980

C-8 STRUCTURE NO. STA-21-1506G

STA 795+14

SCALE: 1"=10'-0"



ESTIMATED QUANTITIES

E-2	Excavation For Structures	44 C.Y.
S-1	Concrete For Struct. Class "E"	5.89 C.Y.
S-27	54" Conc. Pipe Sec. M-106.6(d)	204 L.F.
I-10	Dumped Rock Channel Protection	52 C.Y.
E-3	Channel Excavation	10 C.Y.

CULVERT DATA

DRAINAGE AREA: 623 Acres
Q: 365 C.F.S.
TYPE: Rein. Conc. Pipe Sec. M-106.6(d)
SIZE: 3(54"x68')
SKEW: 30° R.F.
STD. DWGS: S-27 PC-3, SP-53-27.5 Ft.
WORK REQD: Construct 3-54"x68' Culverts With Special Endwall As Shown. Place Dumped Rock At Outlet At The Direction Of The Engineer.

Excavate 30'± From Culvert Outlet To Meet Existing Channel.

CULVERT DETAILS C-7 & C-8

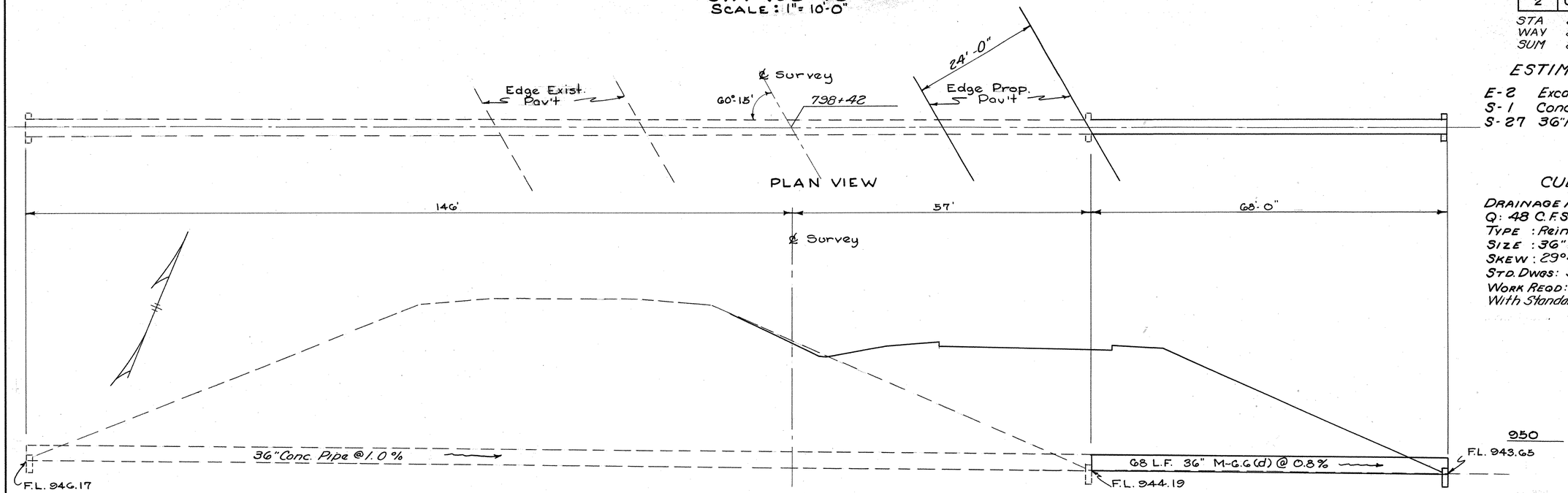
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

289

STA 21-11.49
WAY 21-0.00
SUM 21-0.00

C-9 STRUCTURE NO. STA-21-1512

STA 798+42
SCALE: 1"=10'-0"



ESTIMATED QUANTITIES

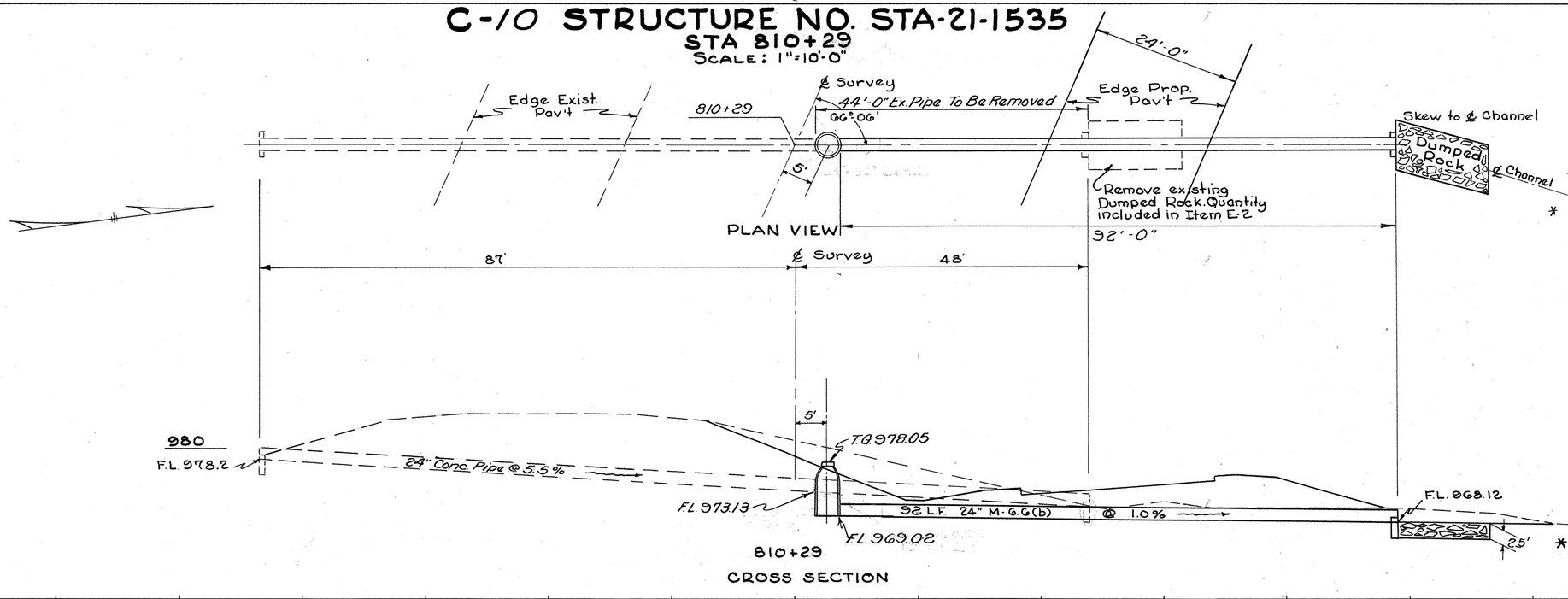
E-2	Excavation For Struct.	6 C.Y.
S-1	Conc. For Struct. Cl. "E"	0.59 C.Y.
S-27	36" Rein. Conc. Pipe MG.G(d)	68 L.F.

CULVERT DATA

DRAINAGE AREA: 47 Acres
Q: 48 C.F.S.
TYPE: Rein. Conc. Pipe Sec. MG.G(d)
SIZE: 36" x 68'
SKEW: 29°45' L.F.
STD. DWGS: S-27 PC-3, S-27 PC-4
WORK REQD: Construct 36" x 68' Culvert With Standard Endwall As Shown.

C-10 STRUCTURE NO. STA-21-1535

STA 810+29
SCALE: 1"=10'-0"



ESTIMATED QUANTITIES

E-2	Excavation For Struct.	51 C.Y.
E-3	Excavation For Channel	13 C.Y.
S-1	Conc. For Struct Cl. "E"	0.41 C.Y.
S-27	24" Rein Conc. MG.G(b)	92 L.F.
I-8	Standard No. 1 Man Hole	1 Ea.
I-10	Dumped Rock Channel	11 C.Y.
* E-12	Pipe Rem. For Storage (Over 15")	44 L.F.

CULVERT DATA

DRAINAGE AREA: 6 Acres
Q: 16 C.F.S.
TYPE: Rein. Conc. Sec. MG.G(b)
SIZE: 24" x 92'
SKEW: 23°54' R.F.
STD. DWGS: S-27 PC-4, S-27 PC-3
WORK REQD: Construct 24" x 92' Culvert With Std. No. 1 Man Hole 5' Rt. & As Shown. Construct Endwall And Place Dumped Rock As Directed By The Engineer. Remove 44' Of Existing Culvert.

* The Cost Of Removing Any Endwalls Shall Be Included In The Price Bid For Item E-12.

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

CULVERT DETAILS C-9 & C-10

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

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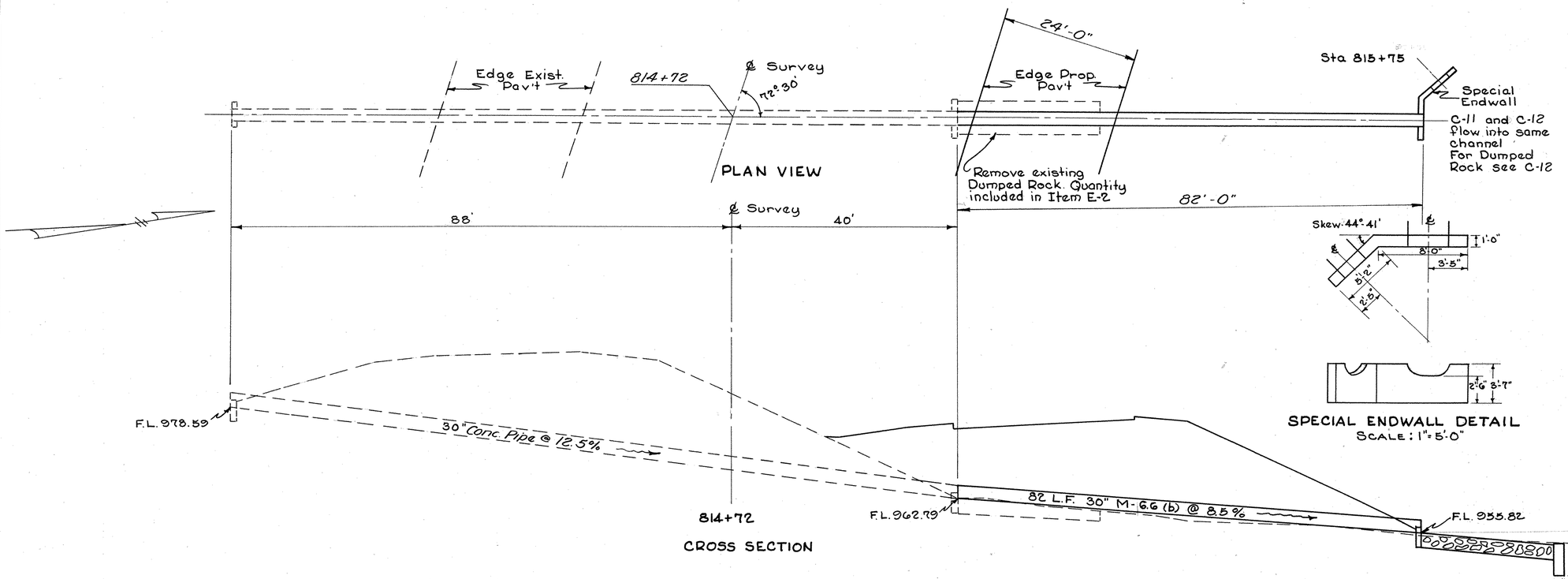
STA 21-11.49
WAY 21-0.00
SUM 21-0.00

C-11 STRUCTURE NO. STA-21-1543

STA 814+72
SCALE: 1" = 10'-0"



ESTIMATED QUANTITIES

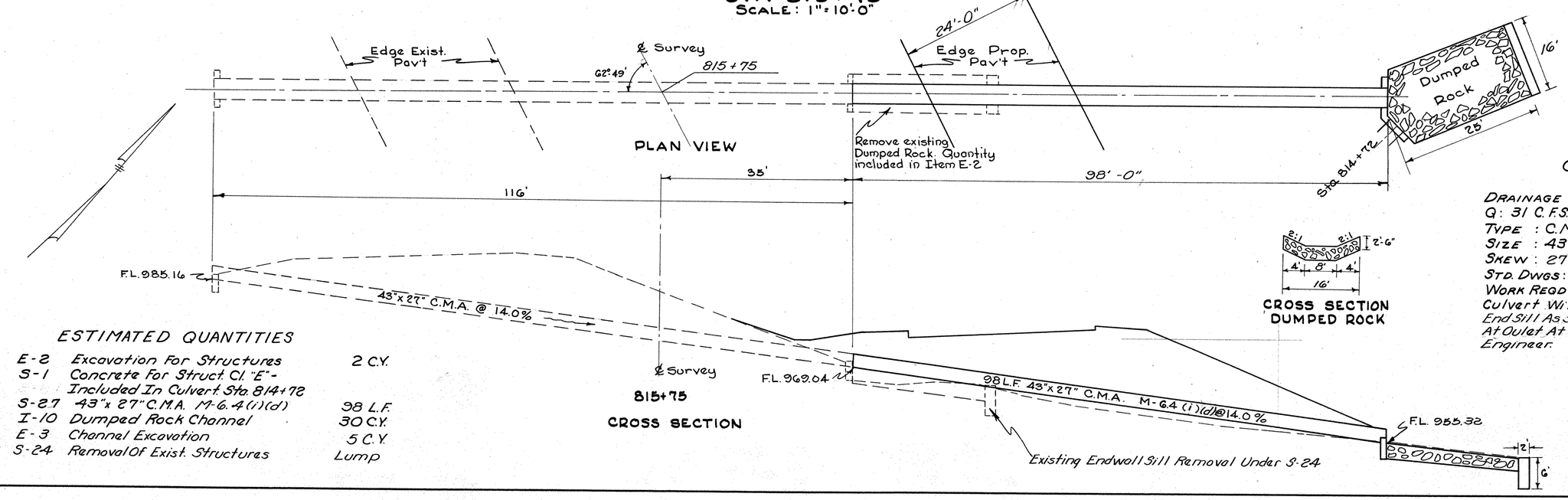
E-2	Excavation For Struct.	17 C.Y.
S-1	Conc. For Struct. Cl. "E"	7.74 C.Y.
S-27	30" Rein. Conc. M6.6 (b)	82 L.F.

CULVERT DATA

DRAINAGE AREA: 10 Acres
Q: 29 C.F.S.
TYPE: Rein. Conc. Pipe M6.6(b)
SIZE: 30" x 82'
SKEW: 17° 30' R.F.
STD. DWGS: S-27 PC-3, S-27 PC-4
WORK REQD: Construct 30" x 82' Culvert With Special Endwall And End Sill As Shown. Place Dumped Rock At Outlet.

C-12 STRUCTURE NO. STA-21-1545

STA 815+75
SCALE: 1" = 10'-0"



ESTIMATED QUANTITIES

E-2	Excavation For Structures	2 C.Y.
S-1	Concrete For Struct. Cl. "E" - Included In Culvert Sta. 814+72	
S-27	43" x 27" C.M.A. M-6.4 (i)(d)	98 L.F.
I-10	Dumped Rock Channel	30 C.Y.
E-3	Channel Excavation	5 C.Y.
S-24	Removal Of Exist. Structures	Lump

CULVERT DATA

DRAINAGE AREA: 11 Acres
Q: 31 C.F.S.
TYPE: C.M.A. M-6.4(i)
SIZE: 43" x 27" x 98' C.M.A.
SKEW: 27° 11' L.F.
STD. DWGS: S-27 PC-3, S-27 PC-4
WORK REQD: Construct 43" x 27" x 98' C.M.A Culvert With Special Endwall And End Sill As Shown. Place Dumped Rock At Outlet At The Direction Of The Engineer.

CULVERT DETAILS C-11 & C-12

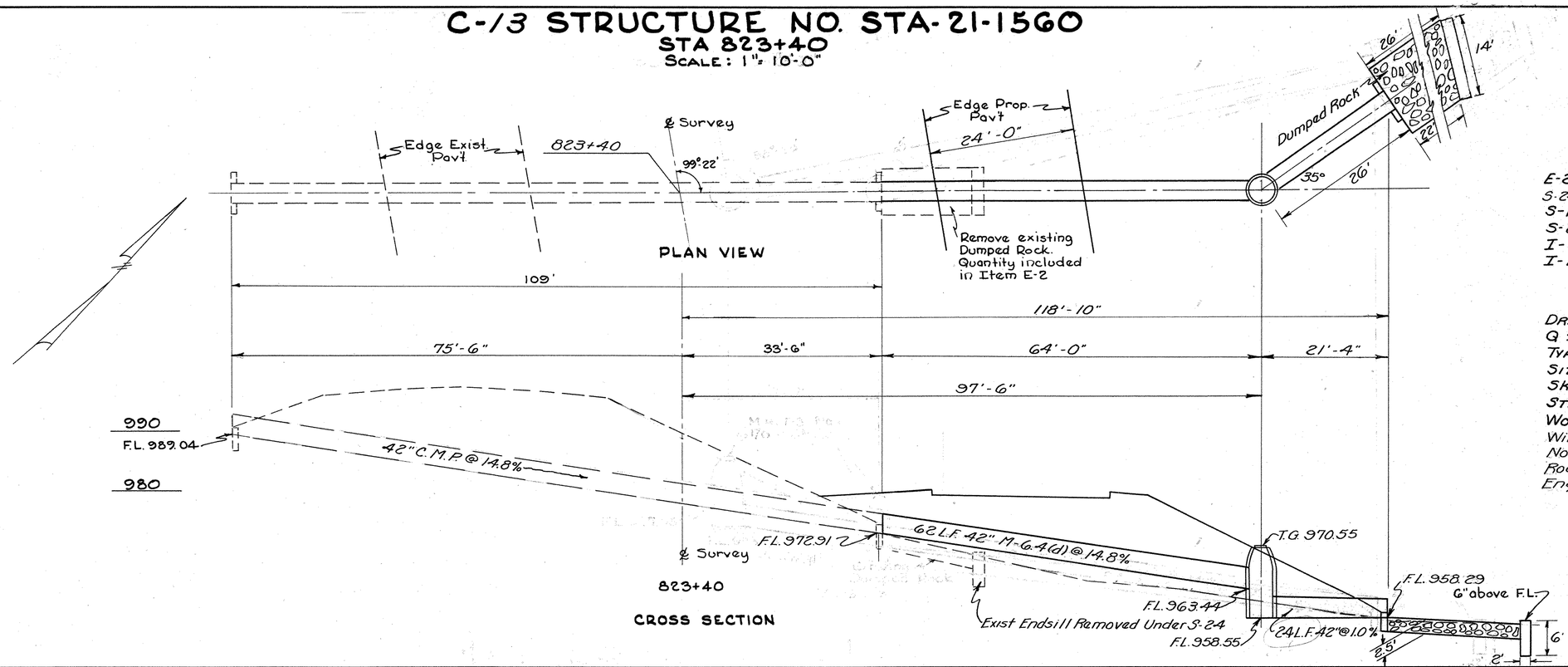
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

291

STA 21-11.49
WAY 21-0.00
SUM 21-0.00

C-13 STRUCTURE NO. STA-21-1560

STA 823+40
SCALE: 1"=10'-0"



ESTIMATED QUANTITIES

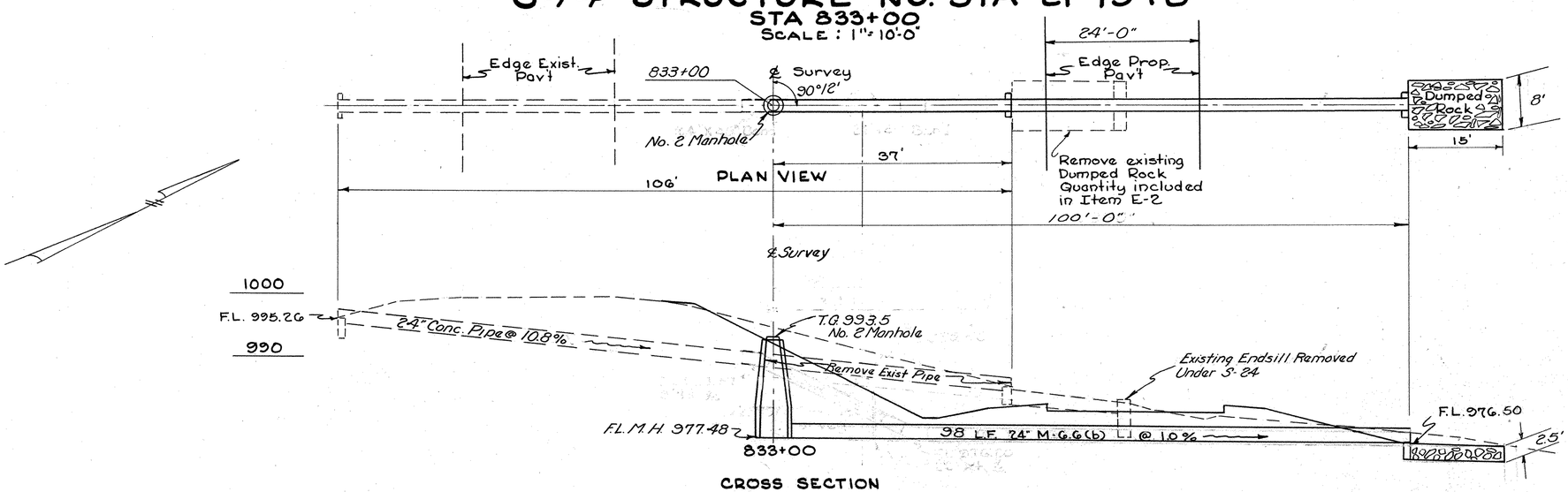
E-2	Excavation For Structures	48 C.Y.
S-24	Removal Of Exist. Struct	Lump
S-1	Concrete For Struct. Cl. "E"	6.98 C.Y.
S-27	42" C.M.P. M6.4(d)	86 L.F.
I-8	Manhole No. 1	1 Ea.
I-10	Dumped Rock Channel	28 C.Y.

CULVERT DATA

DRAINAGE AREA: 30 Acres
Q: 74 C.F.S
TYPE: C.M.P. M-6.4(d)
SIZE: 42"x86'
SKEW: 9°22' R.F.
STD. DWGS: S-27, PC-4, I-8, M.H. No. 1
WORK REQD: Construct 42"x86 Culvert With Standard Endwall As Shown. Construct No. 1 Manhole 97'-6" Rt. Of ℄ And Place Dumped Rock At Outlet At The Direction Of The Engineer.

C-14 STRUCTURE NO. STA-21-1578

STA 833+00
SCALE: 1"=10'-0"



ESTIMATED QUANTITIES

E-2	Excavation For Structures	43	C.Y.
* E-12	Pipe Removal & Storage (Over 15")	40	L.F.
S-1	Concrete For Struct. Cl. "E"	0.41	C.Y.
S-27	24" Rein. Conc. M6.6(b)	98	L.F.
S-24	Removal Of Exist. Structures	Lump	
I-10	Dumped Rock Channel	11	C.Y.
I-8	Standard No. 2 Man Hole (Without Drop Pipe)	1	Ea.

CULVERT DATA

DRAINAGE AREA: 4.2 Acres
Q: 12 C.F.S.
TYPE: Rein. Conc. M6.6(b)
SIZE: 24"x98'
SKEW: 0°12' L.F.
STD. DWGS: S-27 PC-4
WORK REQD: Construct 24"x98' Culvert With Standard Endwall

Place Dump Rock At Outlet
Remove 40' Of Existing 24" Culvert.
Construct Standard No. 2 Man Hole As Shown.

* The Cost Of Removing Any Endwalls Shall Be Included In The Price Bid For Item E-12.

CULVERT DETAILS C-13 & C-14

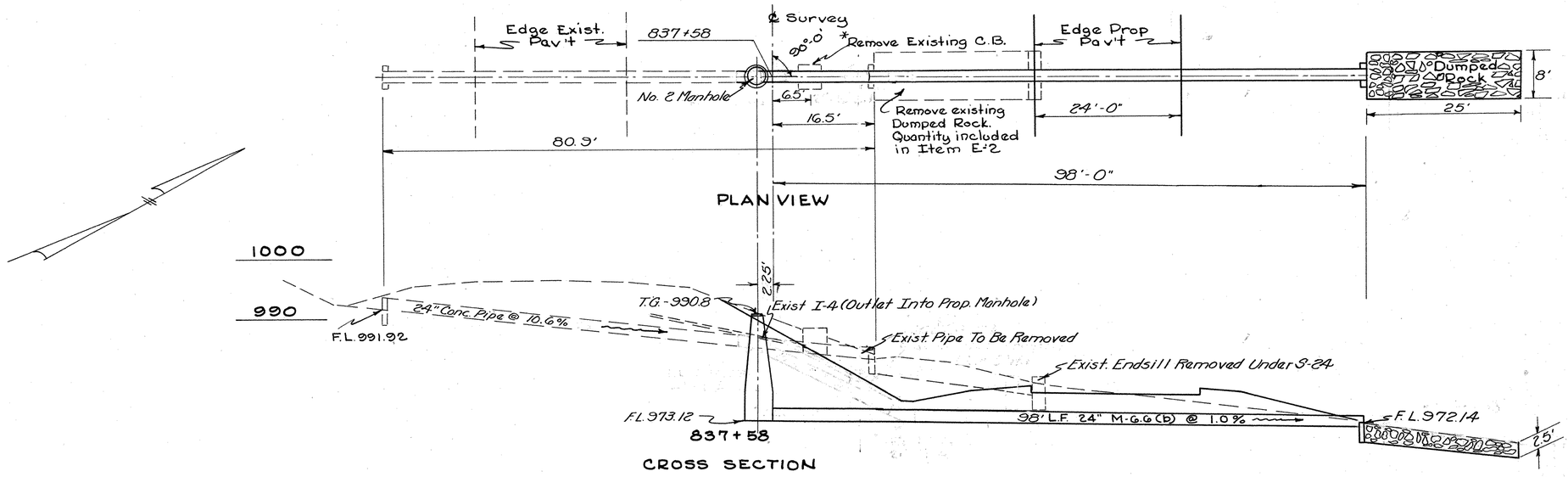
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

292

STA. 21-11.49
WAY 21-0.00
SUM 21-0.00

C-15 STRUCTURE NO. STA-21-1586

STA 837+58
SCALE: 1"=10'-0"



ESTIMATED QUANTITIES

E-2	Excavation For Structures	46 C.Y.
*E-12	Pipe Removal & Storage (Over 15")	16 L.F.
S-1	Concrete For Struct. Class "E"	0.41 C.Y.
S-27	24" Rein. Conc. M6.6(b)	98 L.F.
S-24	Removal Of Exist. Structures	Lump
I-10	Dumped Rock Channel	19 C.Y.
I-8	Standard No. 2 M.H. (Without Drop Pipe)	1 E.A.

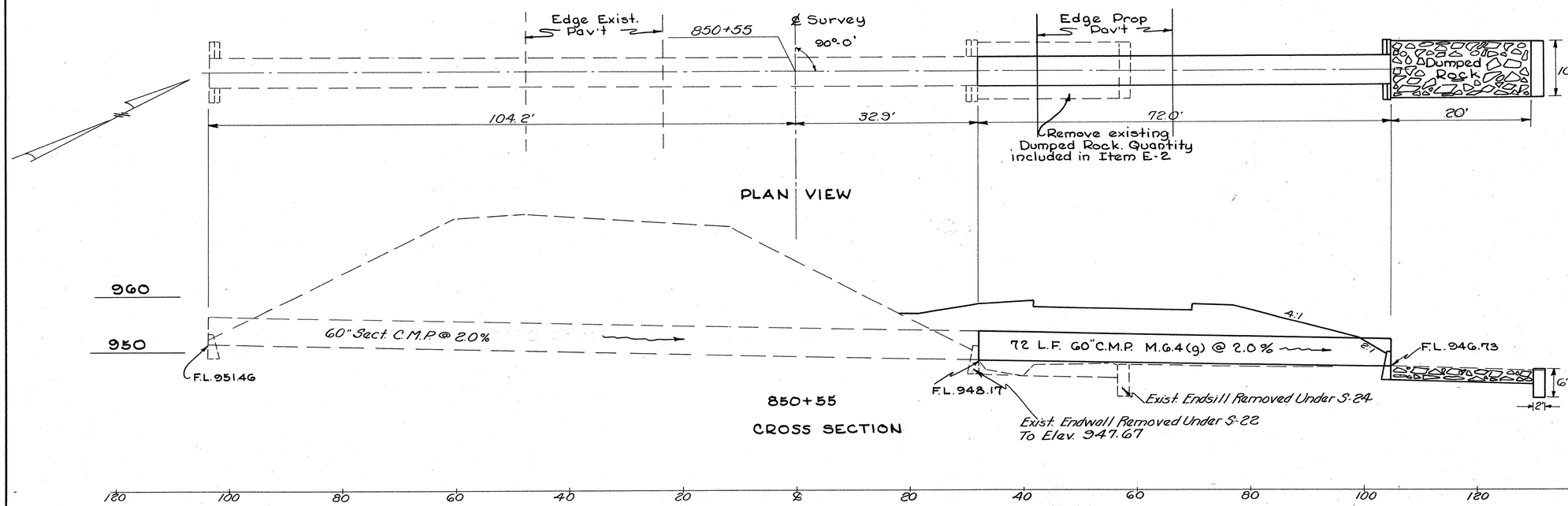
CULVERT DATA

DRAINAGE AREA: 4.7 Acres
Q: 14 C.F.S.
TYPE: Rein. Conc. Pipe M6.6(b)
SIZE: 24" x 98"
SKEW: 0°
STD. DWGS: S-27 PC-4
WORK REQD: Construct 24" x 98' Culvert With Standard Endwall Shown. Build No. 2 Manhole 2.5' Lt Of ℄ Survey. Connect Existing 6" I-4 Into Proposed No. 2 Manhole.

* The Cost Of Removing Existing Catch Basin And Endwall Is To Be Included In The Price Bid For Item E-12 - Pipe Removed For Storage - Over 15".

C-16 STRUCTURE NO. STA-21-1611

STA 850+55
SCALE: 1"=10'-0"



ESTIMATED QUANTITIES

E-2	Excavation For Struct.	12 C.Y.
S-1	Concrete For Struct Cl. "E"	7.58 C.Y.
S-28	60" Sect C.M.P. M-6.4(g) X10-10 Gage)	72 L.F.
I-10	Dumped Rock	23 C.Y.
S-24	Removal Of Exist Structures	Lump
S-22	Removal Of Portion Of Exist Structures	2 C.Y.

CULVERT DATA

DRAINAGE AREA: 120 Acres
Q: 185 C.F.S.
TYPE: Corr. Pipe M6.4(g) (10-10 Gage)
SIZE: 60" x 72'
SKEW: 0°
STD. DWGS: S.P. 53-11 Ft.
WORK REQD: Construct 60" x 72' Culvert With Standard Endwall, Endsill And Place Dumped Rock As Shown.

CULVERT DETAILS C-15 & C-16

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

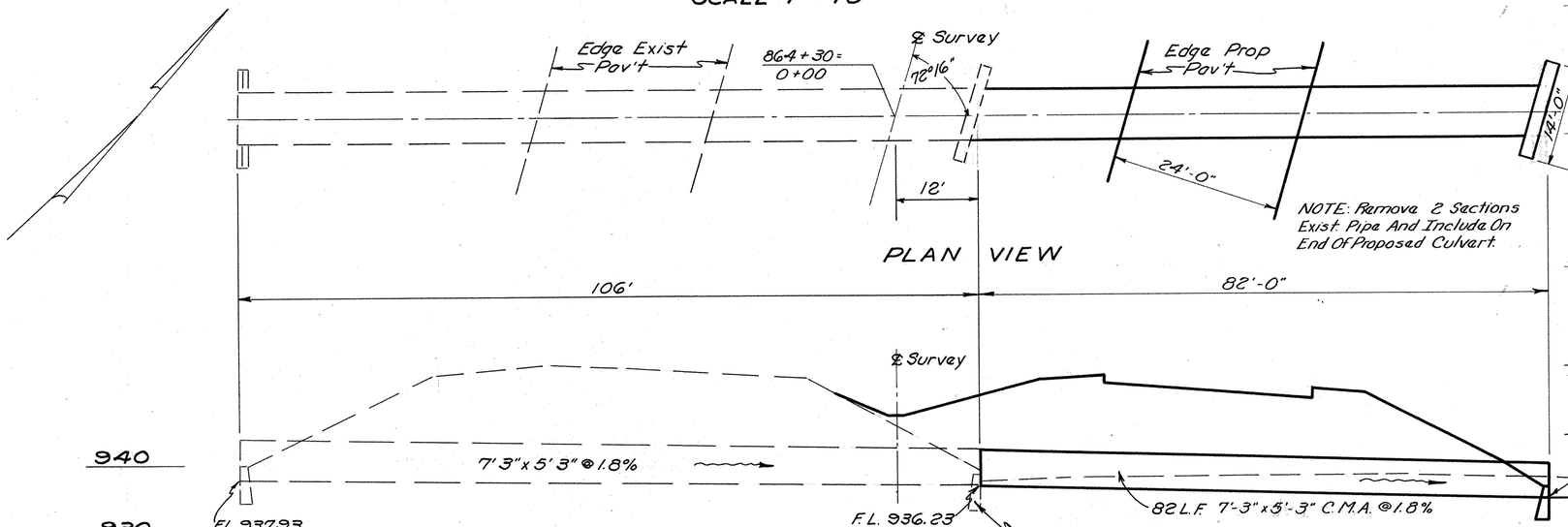
293

STA. 21 - 11.49
WAY. 21 - 0.00
SUM. 21 - 0.00

C-17 STRUCTURE NO. STA. 21-1637

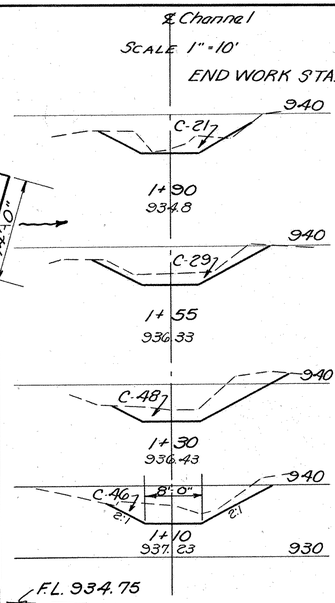
STA. 864+30

SCALE 1" = 10'



864+30 CROSS SECTION

℄ Channel
SCALE 1" = 10'
END WORK STA. 1+90



ESTIMATED QUANTITIES

E-2	Excavation For Structures	107 C.Y.
E-3	Channel Excavation	110 C.Y.
S-1	Concrete For Struct. Cl. "E"	3.62 C.Y.
S-28	7'-3" x 5'-3" C.M.A. (Gage-10-8) M-6.4(g)	82 L.F.
S-22	Removal Of Portion Of Existing Structure	2.0 C.Y.

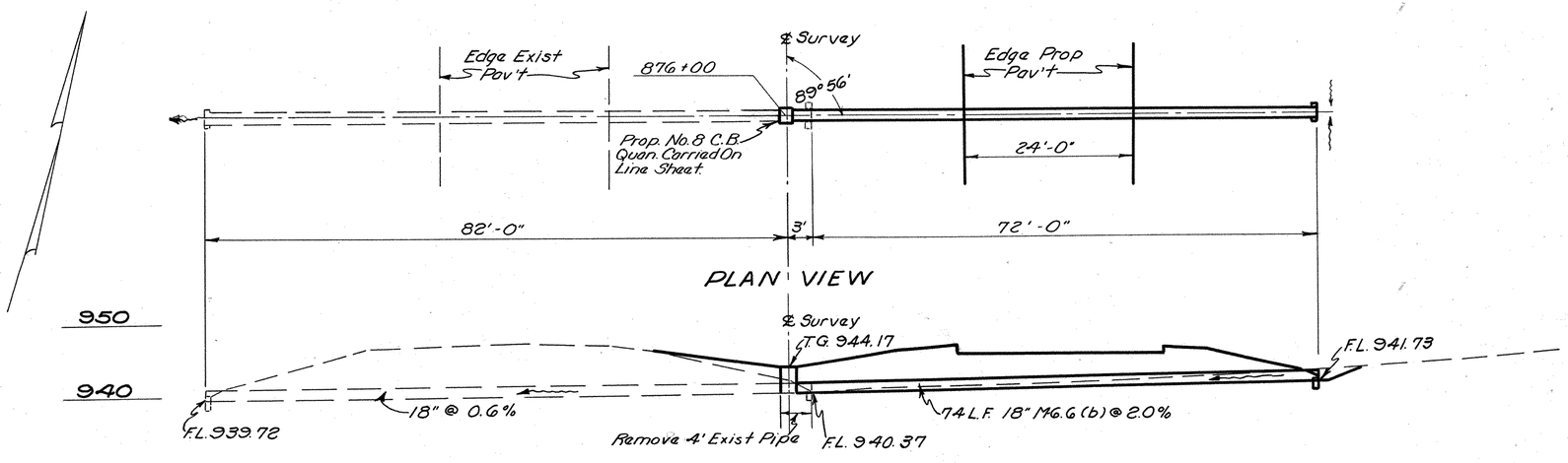
CULVERT DATA

DRAINAGE AREA: 392 Acres
Q: 250 C.F.S.
TYPE: Sectional C.M.A. (Gage-10-8) M-6.4(g)
SIZE: 7'-3" x 5'-3" x 82'
SKEW: 17° 44. R.F.
STD. DWGS: SP-53
WORK REQD: Construct 7'-3" x 5'-3" x 82' Culvert With Standard Endwall As Shown. Excavate Channel At 0% Grade

C-18 STRUCTURE NO. STA. 21-1659

STA. 876+00

SCALE 1" = 10'



876+00 CROSS SECTION

ESTIMATED QUANTITIES

E-2	Excavation For Structures	17 C.Y.
E-12	Pipe Removed (Over 15")	4 L.F.
S-1	Concrete For Struct Cl. "E"	0.30 C.Y.
S-27	18" Reinf. Conc. Pipe M6.6(b).	74 L.F.

CULVERT DATA

DRAINAGE AREA: 3.1 Acres
Q: 10 C.F.S.
TYPE: Reinforced Pipe Sec. M6.6(b)
SIZE: 18" x 74'
SKEW: 0°06' R.F.
STD. DWGS: S-27 PC-4
WORK REQD: Construct New 18" x 74' Culvert With Standard Endwall As Shown. Build Proposed No. 8 Catch Basin Over Existing Culvert At ℄ Survey. (Removal Of 4 L.F. Of Existing Culvert Is Provided In Order To Construct Catch Basin.

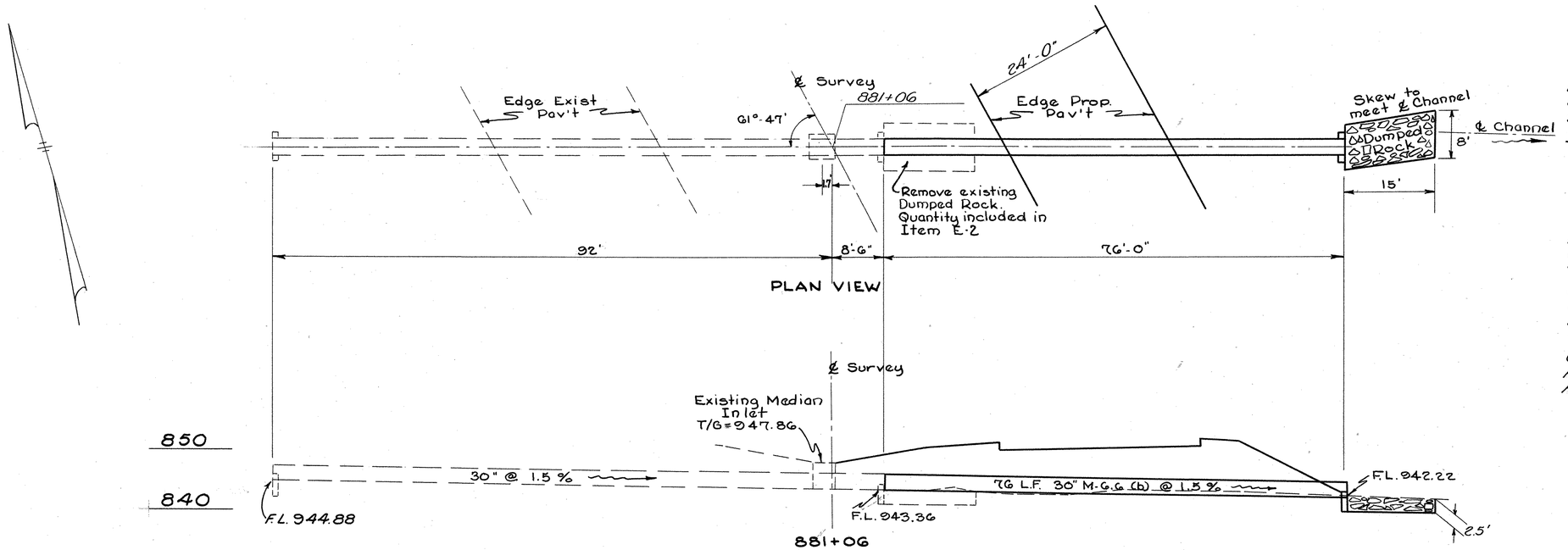
CULVERT DETAILS C-17 & C-18

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

294

STA 21-11.49
WAY 21-0.00
SUM 21-0.00

C-19 STRUCTURE NO. STA-21-1669
STA 881+06
SCALE: 1"=10'-0"



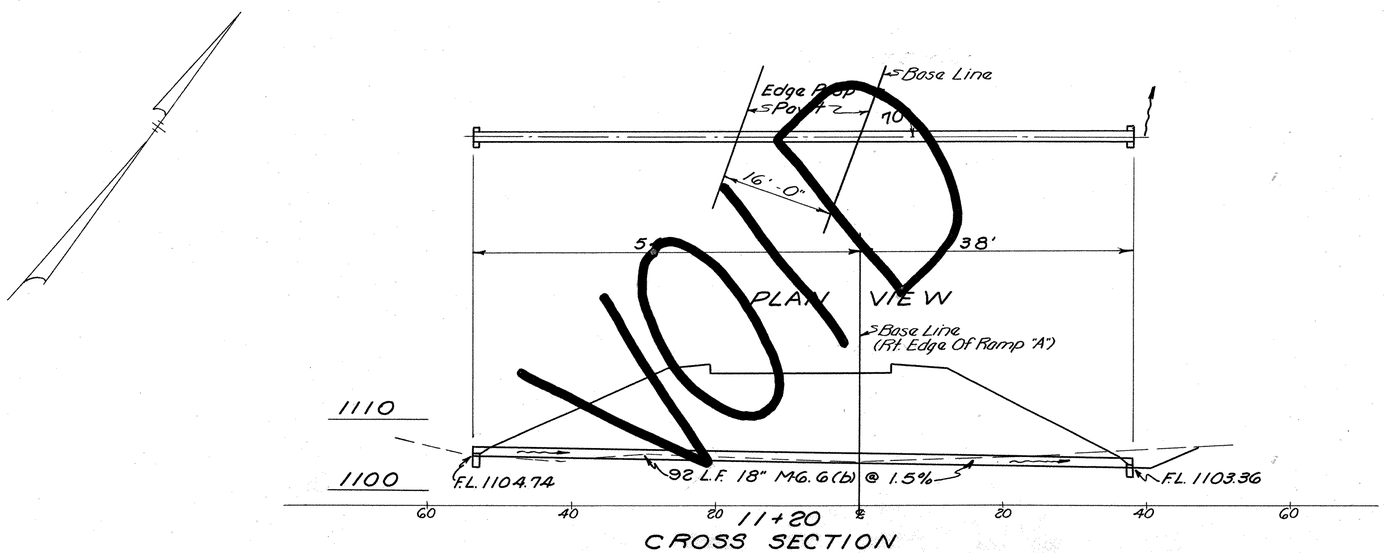
ESTIMATED QUANTITIES

E-2	Excavation For Struct.	18 C.Y.
S-1	Concrete For Struct Cl. "E"	0.55 C.Y.
S-27	30" Rein. Conc. Pipe M6.6(b)	76 L.F.
I-10	Dumped Rock Channel	11 C.Y.

CULVERT DATA

DRAINAGE AREA: 12 Acres
Q: 32 C.F.S.
TYPE: Rein. Conc. Pipe M6.6(b)
SIZE: 30"x 76'
SKEW: 28°13 L.F.
STD. DWGS: S-27 PC-4, S-27 PC-3
WORK REQD: Construct 30"x 76' Culvert With Standard Endwall And Place Dumped Rock At Outlet As Shown.

C-20 STRUCTURE NO. RAMP "A" S.R. 93
STA. 11+20
SCALE 1"=10'-0"



ESTIMATED QUANTITIES

E-2	Excavation For Structures	7 C.Y.
S-1	Concrete For Struct Cl. "E"	060 C.Y.
S-27	18" M6.6(b)	92 L.F.

CULVERT DATA

DRAINAGE AREA: 1.6 Acres
Q: 3.9 C.F.S.
TYPE: M6.6(b)
SIZE: 18"x92'
SKEW: 20° R.F.
STD. DWGS: S-27 PC-4
WORK REQD: Construct 18"x92' Culvert With Standard Endwalls Right And Left As Shown.

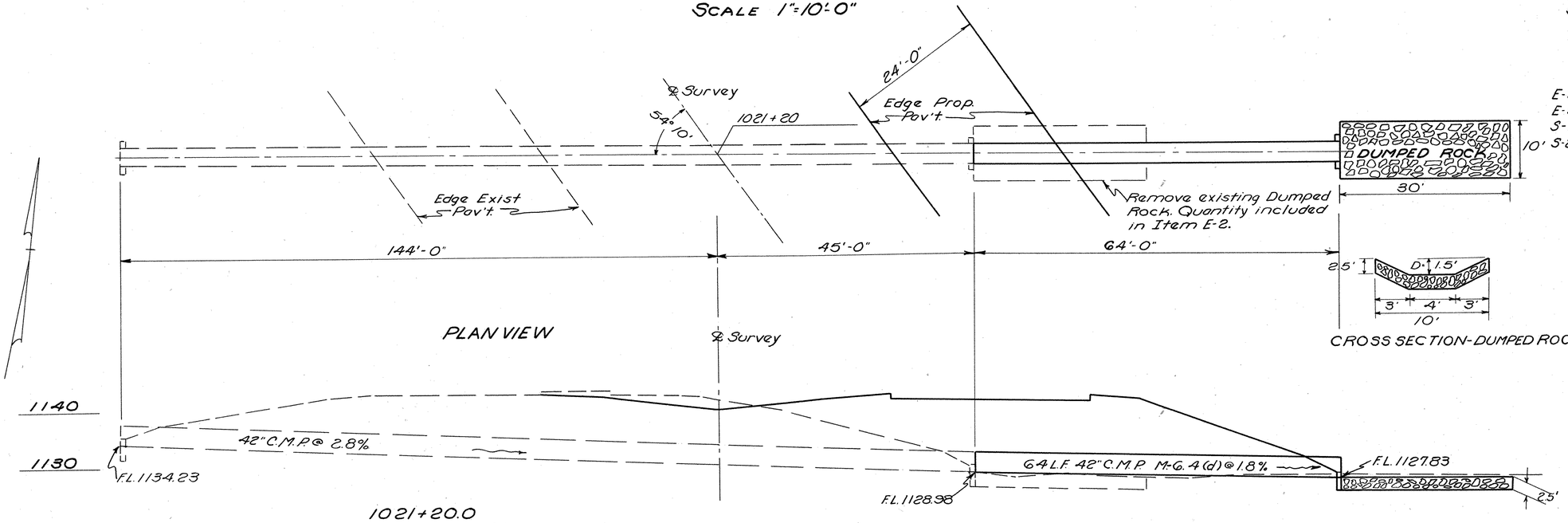
CULVERT DETAILS C-19 & C-20

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

295

STA 21-11.49
WAY 21-0.00
SUM 21-0.00

C-21 STRUCTURE NO. STA. 21-1934
STA. 1021+20.0
SCALE 1"=10'-0"



1021+20.0
CROSS SECTION

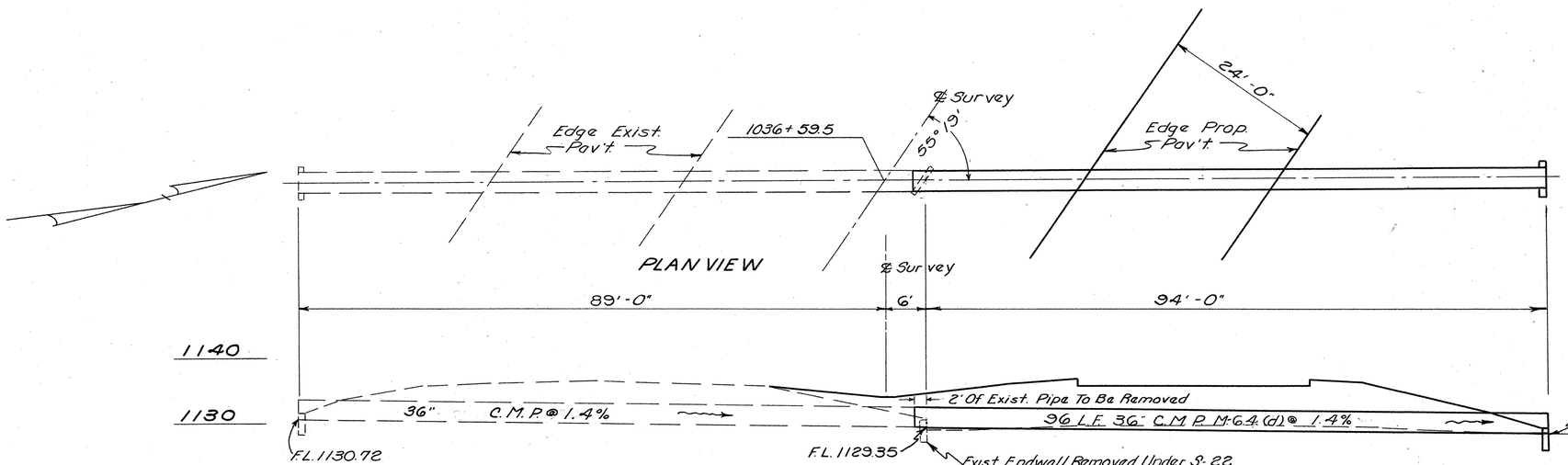
ESTIMATED QUANTITIES

E-2	Excavation For Struct.	36 C.Y.
E-3	Channel Excavation	4 C.Y.
S-1	Concrete For Struct Cl. "E"	0.76 C.Y.
S-27	42" Culvert Pipe M6.4(d)	64 L.F.

CULVERT DATA

DRAINAGE AREA: 57 Acres
Q: 73 C.F.S.
TYPE: C.M.P. M6.4(d)
SIZE: 42"x64'
SKEW: 35° 50' L.F.
STD DWGS: S-27 PC-4, PC-3
WORK REQD: Construct 42"x 64' Culvert With Standard Endwall (R1) As Shown. Place Dumped Rock At Outlet As Shown.

C-22 STRUCTURE NO. STA. 21-1963
STA. 1036+59.5
SCALE 1"=10'-0"



1036+59.5
CROSS SECTION

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

ESTIMATED QUANTITIES

E-2	Excavation For Struct.	4 C.Y.
S-1	Concrete For Struct Cl. "E"	0.59 C.Y.
S-27	36" Culvert Pipe M6.4(d)	96 L.F.
S-22	Removal Of Portion Of Exist. Structure	0.6 C.Y.
E-12	Pipe Removed Over 15"	2 L.F.

CULVERT DATA

DRAINAGE AREA: 13 Acres
Q: 35 C.F.S.
TYPE: C.M.P. M6.4(d)
SIZE: 36"x 96'
SKEW: 34° 41' R.F.
STD. DWGS: S-27 PC-4, PC-3
WORK REQD: Construct 36"x 94' Culvert With Standard Endwall As Shown. Remove Portion Of Existing Endwall And 2 L.F. Of Existing Pipe As Indicated.

CULVERT DETAILS C-21 & C-22

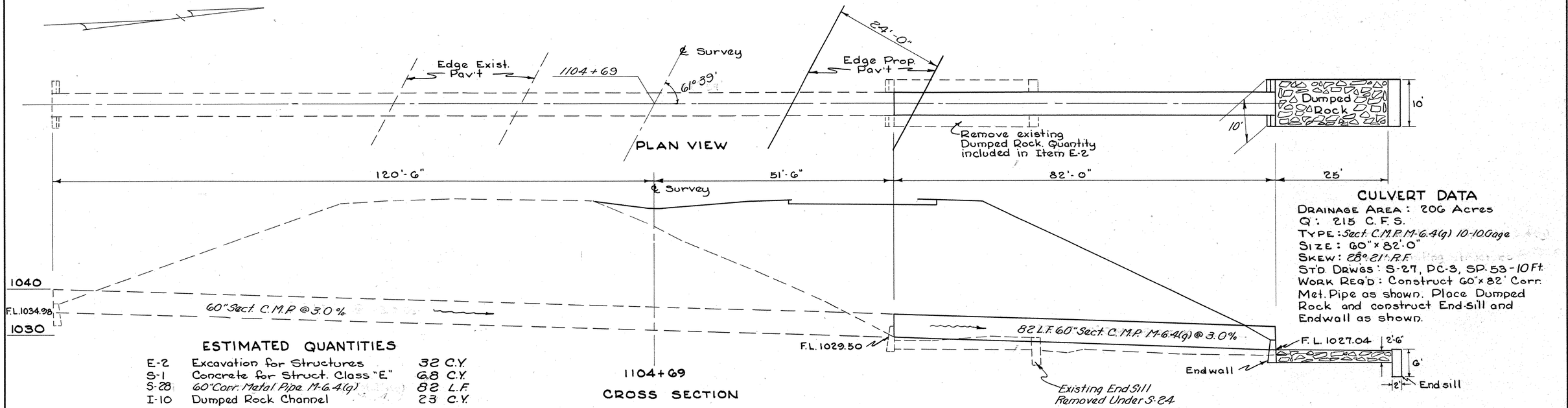
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

296

STA. 21-11.49
WAY 21-0.00
SUM 21-0.00

C-23 STRUCTURE NO. STA-21-2092

STA 1104+69
SCALE: 1"=10'-0"



ESTIMATED QUANTITIES

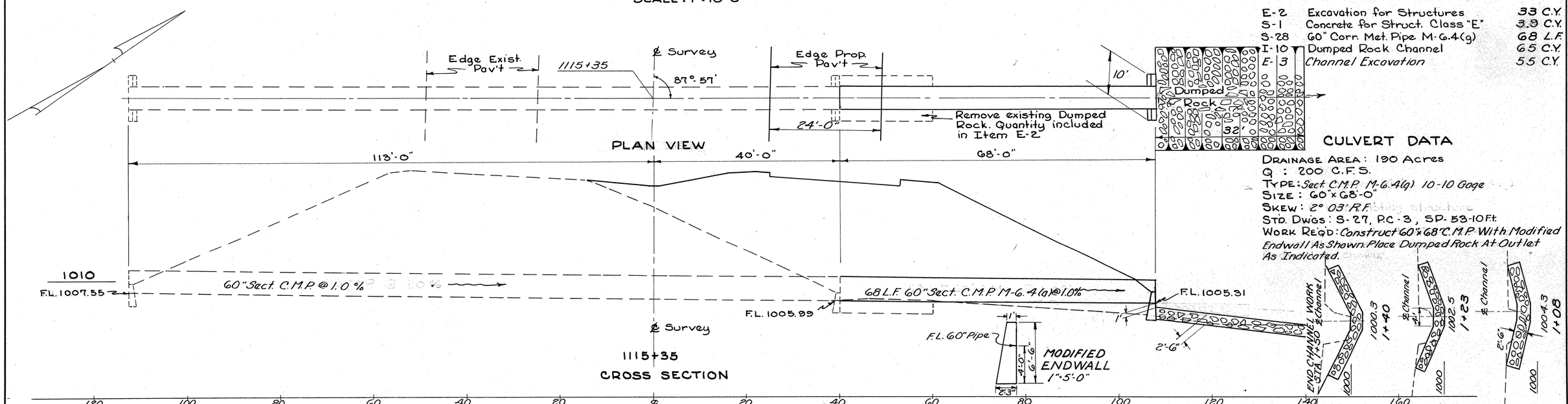
E-2	Excavation for Structures	32 C.Y.
S-1	Concrete for Struct. Class "E"	6.8 C.Y.
S-28	60" Corr. Metal Pipe M-6.4(g)	82 L.F.
I-10	Dumped Rock Channel	23 C.Y.
S-24	Removal Of Exist. Structures	Lump

CULVERT DATA

DRAINAGE AREA: 206 Acres
Q: 215 C.F.S.
TYPE: Sect. C.M.P. M-6.4(g) 10-10 Gage
SIZE: 60" x 82'-0"
SKEW: 28° 21' R.F.
ST'D. DWGS: S-27, PC-3, SP-53-10 Ft.
WORK REQ'D: Construct 60" x 82' Corr. Met. Pipe as shown. Place Dumped Rock and construct End-Sill and Endwall as shown.

C-24 STRUCTURE NO. STA-21-2112

STA 1115+35
SCALE: 1"=10'-0"



ESTIMATED QUANTITIES

E-2	Excavation for Structures	33 C.Y.
S-1	Concrete for Struct. Class "E"	3.9 C.Y.
S-28	60" Corr. Met. Pipe M-6.4(g)	68 L.F.
I-10	Dumped Rock Channel	65 C.Y.
E-3	Channel Excavation	55 C.Y.

CULVERT DATA

DRAINAGE AREA: 190 Acres
Q: 200 C.F.S.
TYPE: Sect. C.M.P. M-6.4(g) 10-10 Gage
SIZE: 60" x 68'-0"
SKEW: 2° 03' R.F.
ST'D. DWGS: S-27, PC-3, SP-53-10 Ft.
WORK REQ'D: Construct 60" x 68' C.M.P. With Modified Endwall As Shown. Place Dumped Rock At Outlet As Indicated.

CULVERT DETAILS C-23 & C-24

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

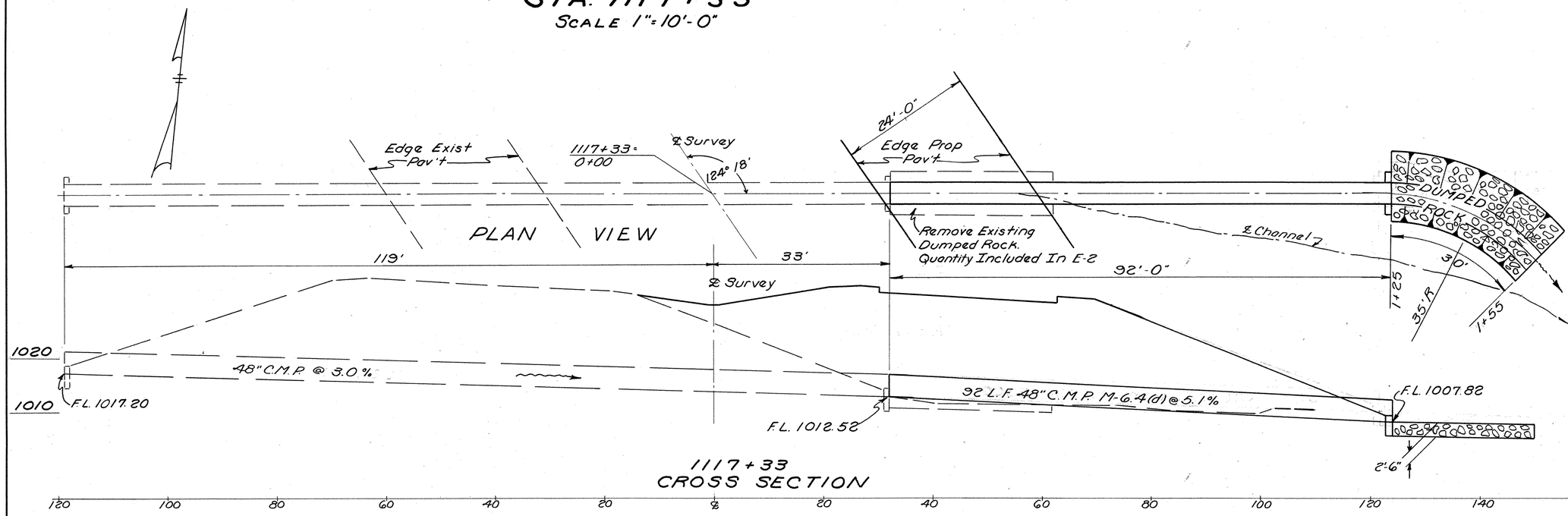
237

STA 21-11.49
WAY 21-0.00
SUM 21-0.00

C-25 STRUCTURE NO. STA. 21-2116

STA. 1117+33

SCALE 1"=10'-0"



ESTIMATED QUANTITIES

E-2	Excavation For Struct.	28 C.Y.
S-1	Conc. For Struct Cl "E"	0.86 C.Y.
S-27	48" C.M.P. M6.4(d)	92 L.F.
I-10	Dumped Rock Channel	36 C.Y.
E-3	Channel Excavation	25 C.Y.

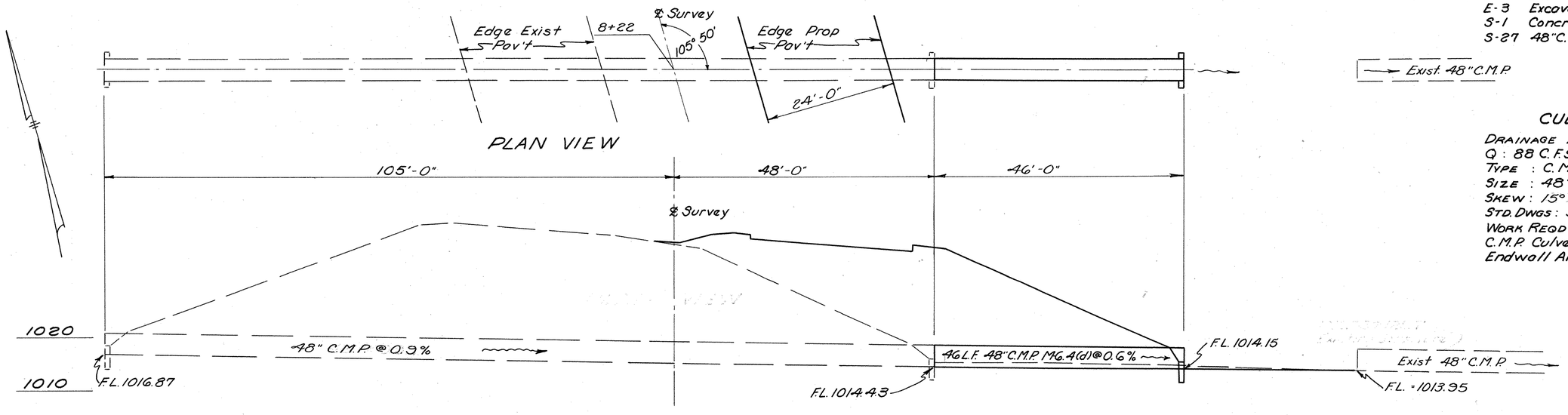
CULVERT DATA

DRAINAGE AREA : 85 Acres
Q : 110 C.F.S.
TYPE : C.M.P. M6.4(d)
SIZE : 48" x 92'
SKEW : 34° 18' L.F.
STD. DWGS : S-27 PC-4, PC-3
WORK REQD : Construct 48" x 92' C.M.P. Culvert With Standard End Wall As Shown. Excavate Outlet Channel 55'± From Outlet Of Culvert. Place Dumped Rock At Outlet At The Direction Of The Engineer.

C-26 STRUCTURE NO. WAY. 21-0016

STA. 8+22

SCALE 1"=10'-0"



ESTIMATED QUANTITIES

E-2	Excavation For Structures	20 C.Y.
E-3	Excavation For Channel	4 C.Y.
S-1	Concrete For Struct. Cl. "E"	0.86 C.Y.
S-27	48" C.M.P. M6.4(d) 10 Gage	46 L.F.

CULVERT DATA

DRAINAGE AREA : 55 Acres
Q : 88 C.F.S.
TYPE : C.M.P. M6.4(d) 10 Gage
SIZE : 48" x 46'
SKEW : 15° 50' L.F.
STD. DWGS : S-27 PC-4, PC-3
WORK REQD : Construct 48" x 46' (10 Gage) C.M.P. Culvert With Standard Endwall And Channel As Shown.

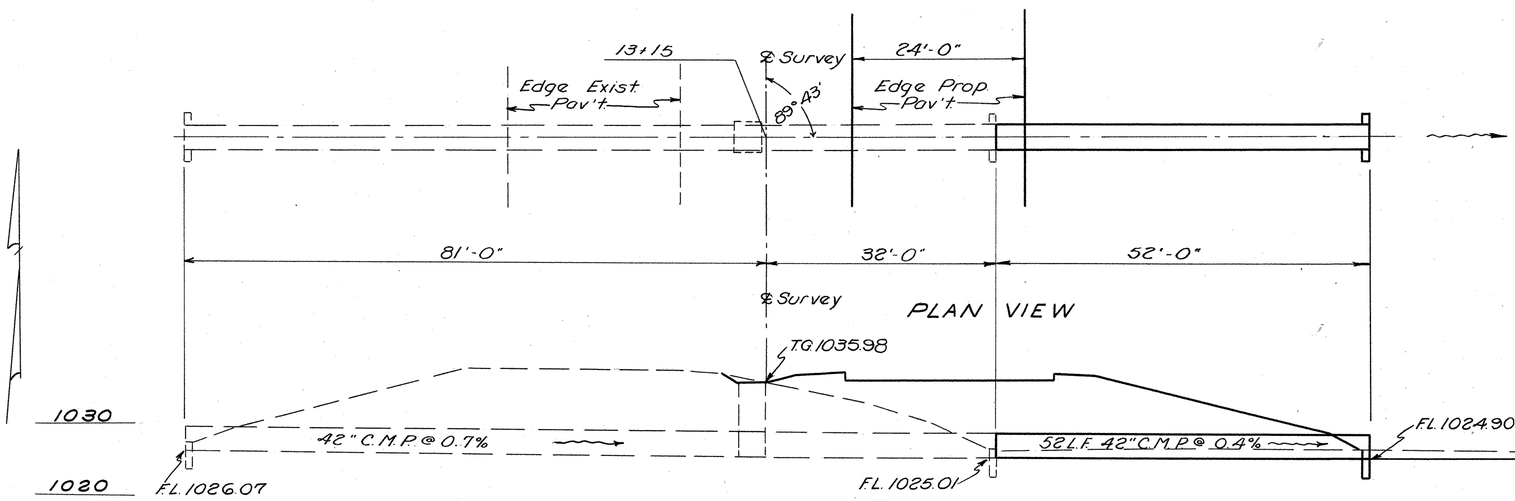
CULVERT DETAILS C-25 & C-26

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

298

STA 21 - 11.49
WAY 21 - 0.00
SUM 21 - 0.00

C-27 STRUCTURE NO. WAY. 21-0025
STA. 13+15
SCALE 1"=10'-0"



13+15
CROSS SECTION

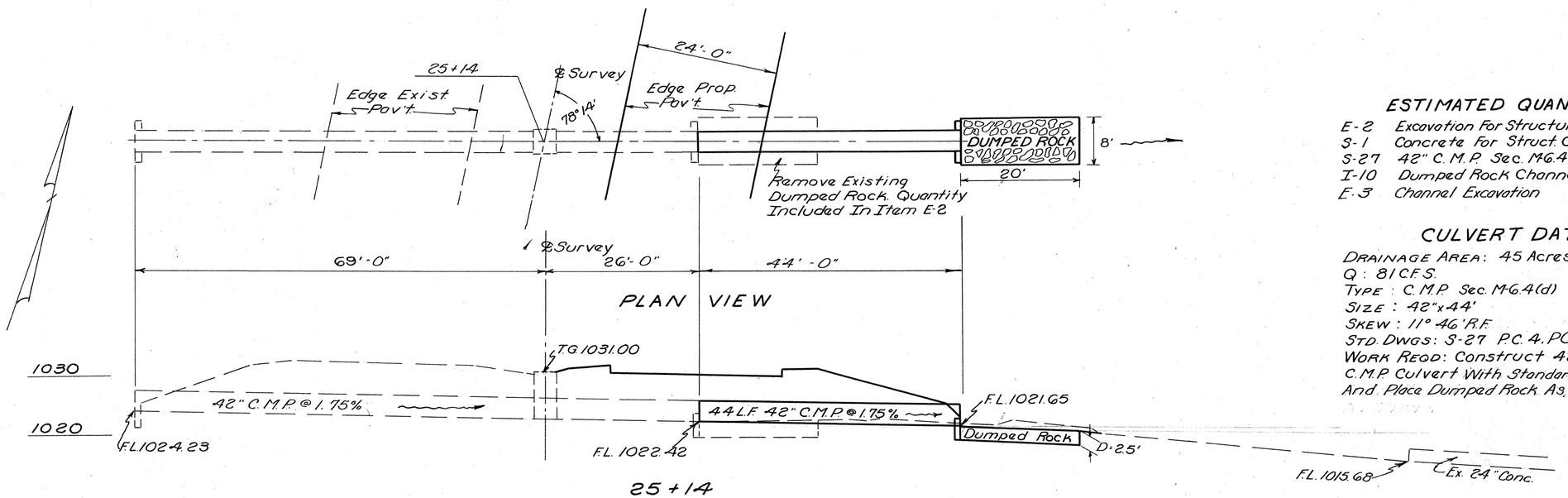
ESTIMATED QUANTITIES

E-2	Excavation For Structures	24 C.Y.
E-3	Excavation for Channel	11 C.Y.
S-1	Concrete For Struct Cl. "E"	0.61 C.Y.
S-27	42" C.M.P. Sec. M6.4(d)	52 L.F.

CULVERT DATA

DRAINAGE AREA: 42 Acres
Q: 74 C.F.S.
TYPE: C.M.P. Sec. M6.4(d)
SIZE: 42"x 52'
SKEW: 0°13' R.F.
STD. DWGS: S-27 PC-4, PC-3
WORK REQD: Construct 42"x52' C.M.P. Culvert With Standard Endwall And Excavate Channel As Shown.

C-28 STRUCTURE NO. WAY. 21-0047
STA. 25+14
SCALE 1"=10'-0"



25+14
CROSS SECTION

80 60 40 20 ℄ 20 40 60 80 100 120

ESTIMATED QUANTITIES

E-2	Excavation For Structures	37 C.Y.
S-1	Concrete For Struct Cl. "E"	0.61 C.Y.
S-27	42" C.M.P. Sec. M6.4(d)	44 L.F.
I-10	Dumped Rock Channel	15 C.Y.
E-3	Channel Excavation	15 C.Y.

CULVERT DATA

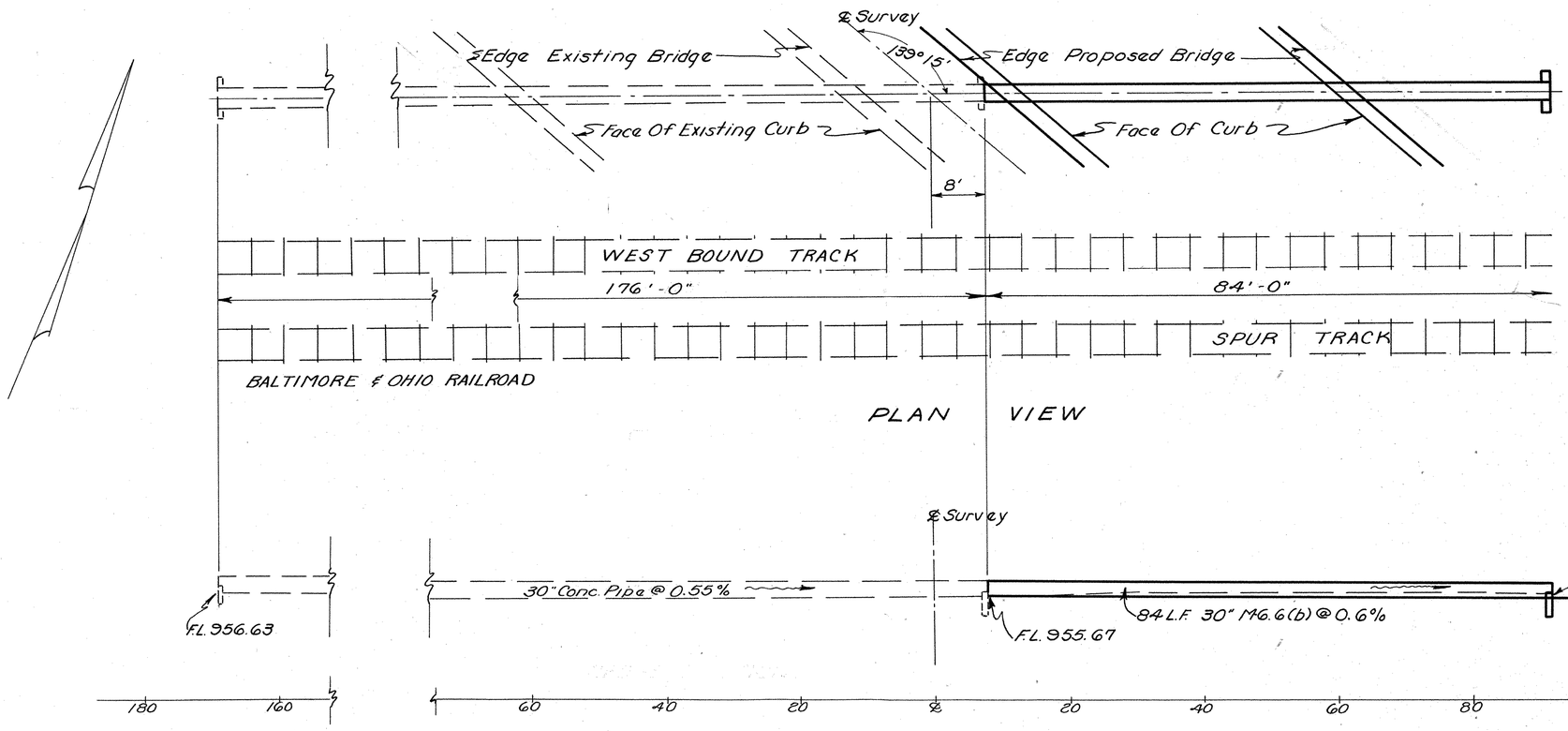
DRAINAGE AREA: 45 Acres
Q: 81 C.F.S.
TYPE: C.M.P. Sec. M-6.4(d)
SIZE: 42"x 44'
SKEW: 11° 46' R.F.
STD. DWGS: S-27 P.C. 4, PC-3
WORK REQD: Construct 42" x 44' C.M.P. Culvert With Standard Endwall And Place Dumped Rock As Shown.

C-29 STRUCTURE NO. WAY. 21-0146
STA. 77+34.0
SCALE 1" = 10'-0"

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

299

STA. 21-11.49
WAY. 21-0.00
SUM. 21-0.00



77+34
CROSS SECTION

ESTIMATED QUANTITIES

E-2	Excavation For Structures	29 C.Y.
S-1	Concrete For Struct Cl. "E"	0.51 C.Y.
S-27	30" Rein. Conc. Pipe M6.6(b)	84 L.F.
E-3	Channel Excavation	5 C.Y.

CULVERT DATA

DRAINAGE AREA: 8.5 Acres
Q: 26 C.F.S.
TYPE: Reinforced Concrete Pipe M6.6(b)
SIZE: 30"x84'
SKEW: 40° 45' L.F.
STD DWGS: S-27 PC-4, PC-3
WORK REQD: Construct 30"x84' Culvert With Standard Endwall As Shown. Excavate Outlet Channel At 0.4% Grade For 45'± From Outlet Of Culvert.

CULVERT DETAILS C-29

FED. RD. DIVISION	STATE	PROJECT		
2	OHIO			

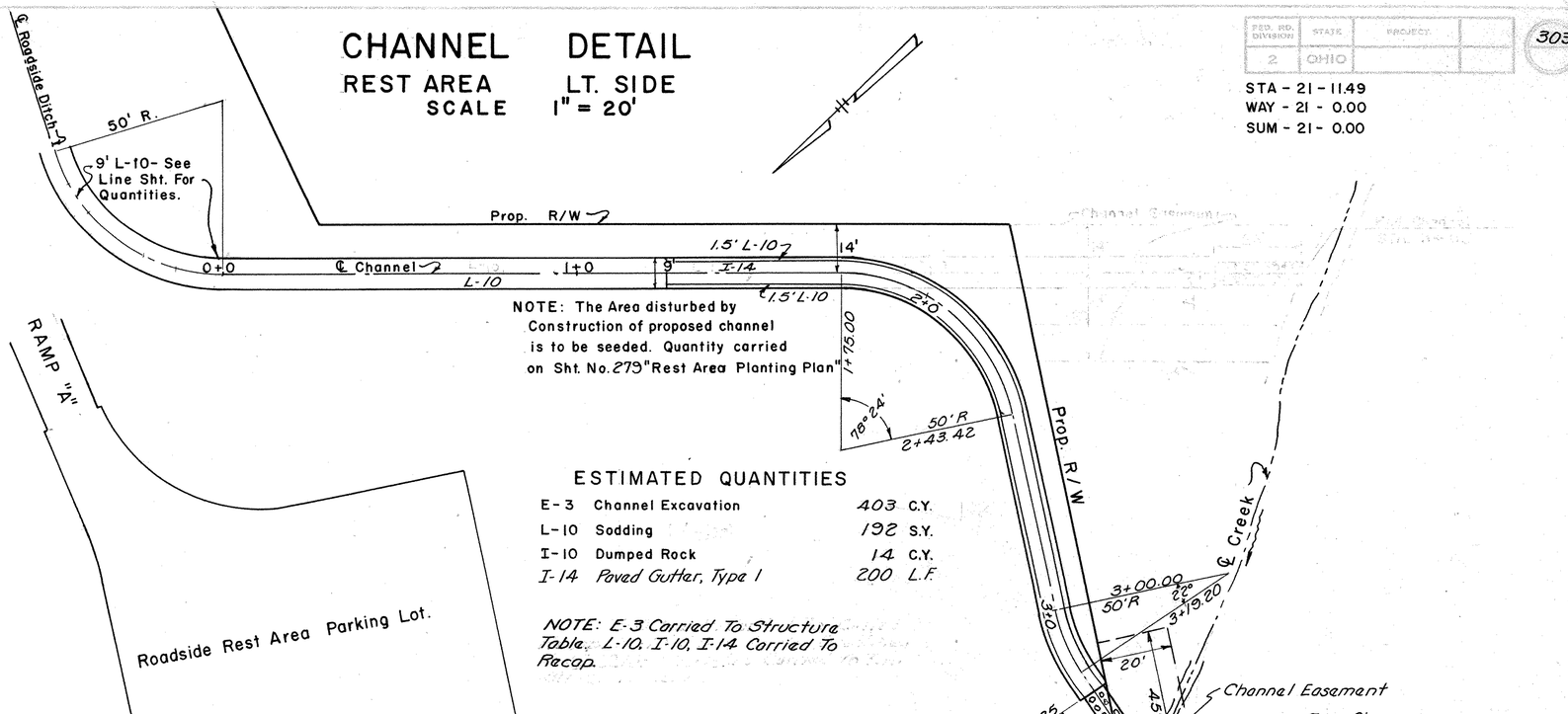
303

STA - 21 - 11.49
WAY - 21 - 0.00
SUM - 21 - 0.00

CHANNEL DETAIL

REST AREA LT. SIDE

SCALE 1" = 20'



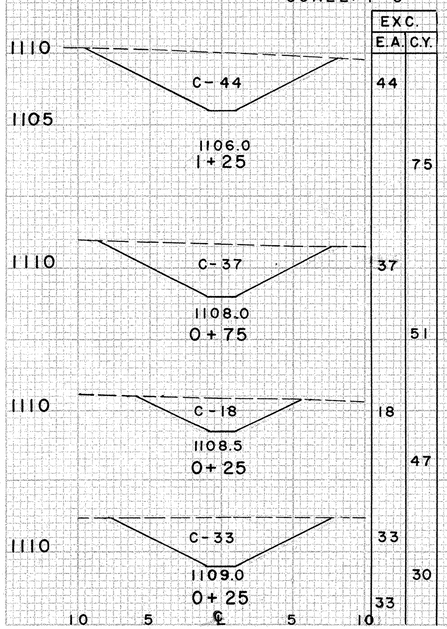
ESTIMATED QUANTITIES

E-3	Channel Excavation	403 C.Y.
L-10	Sodding	192 S.Y.
I-10	Dumped Rock	14 C.Y.
I-14	Paved Gutter, Type I	200 L.F.

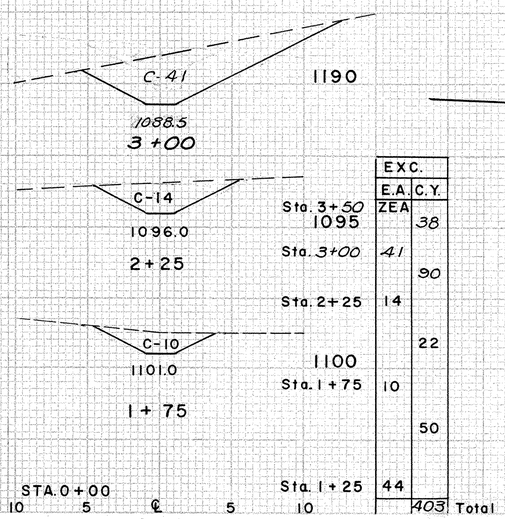
NOTE: E-3 Carried To Structure Table. L-10, I-10, I-14 Carried To Recap.

CROSS SECTIONS

SCALE: 1"=5'

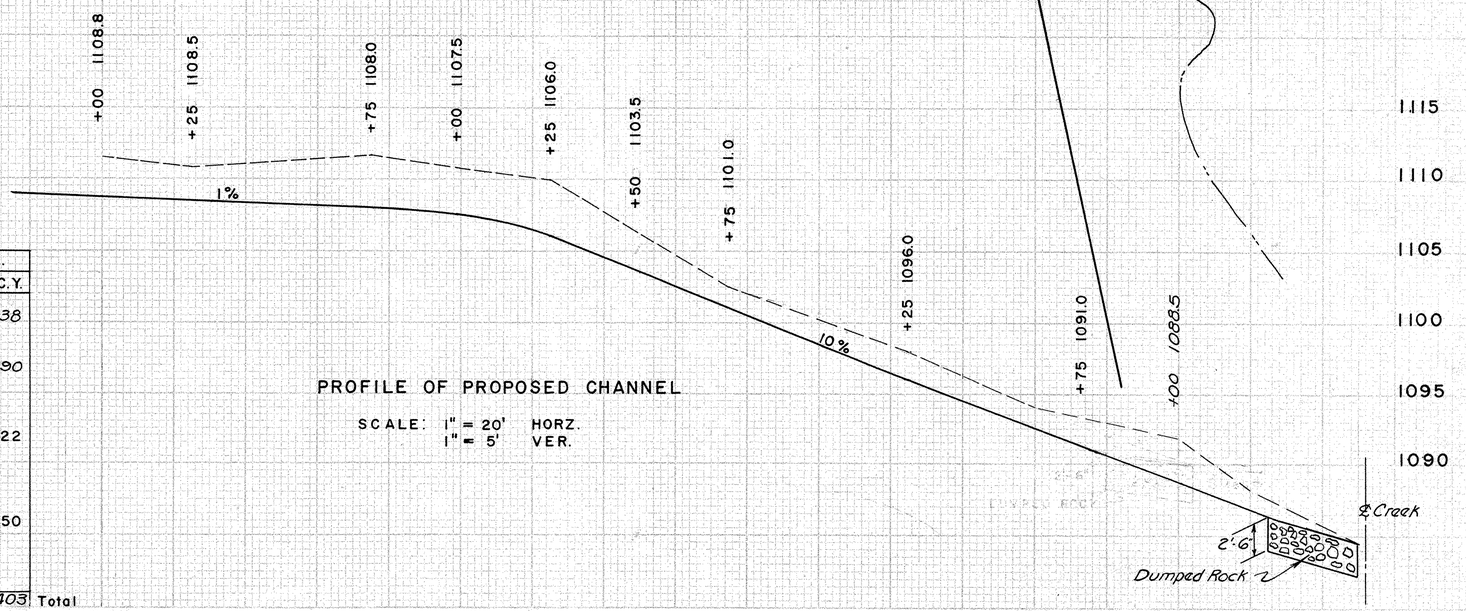


END WORK STA. 3+50



PROFILE OF PROPOSED CHANNEL

SCALE: 1" = 20' HORZ.
1" = 5' VER.



CHANNEL DETAIL - REST AREA LT

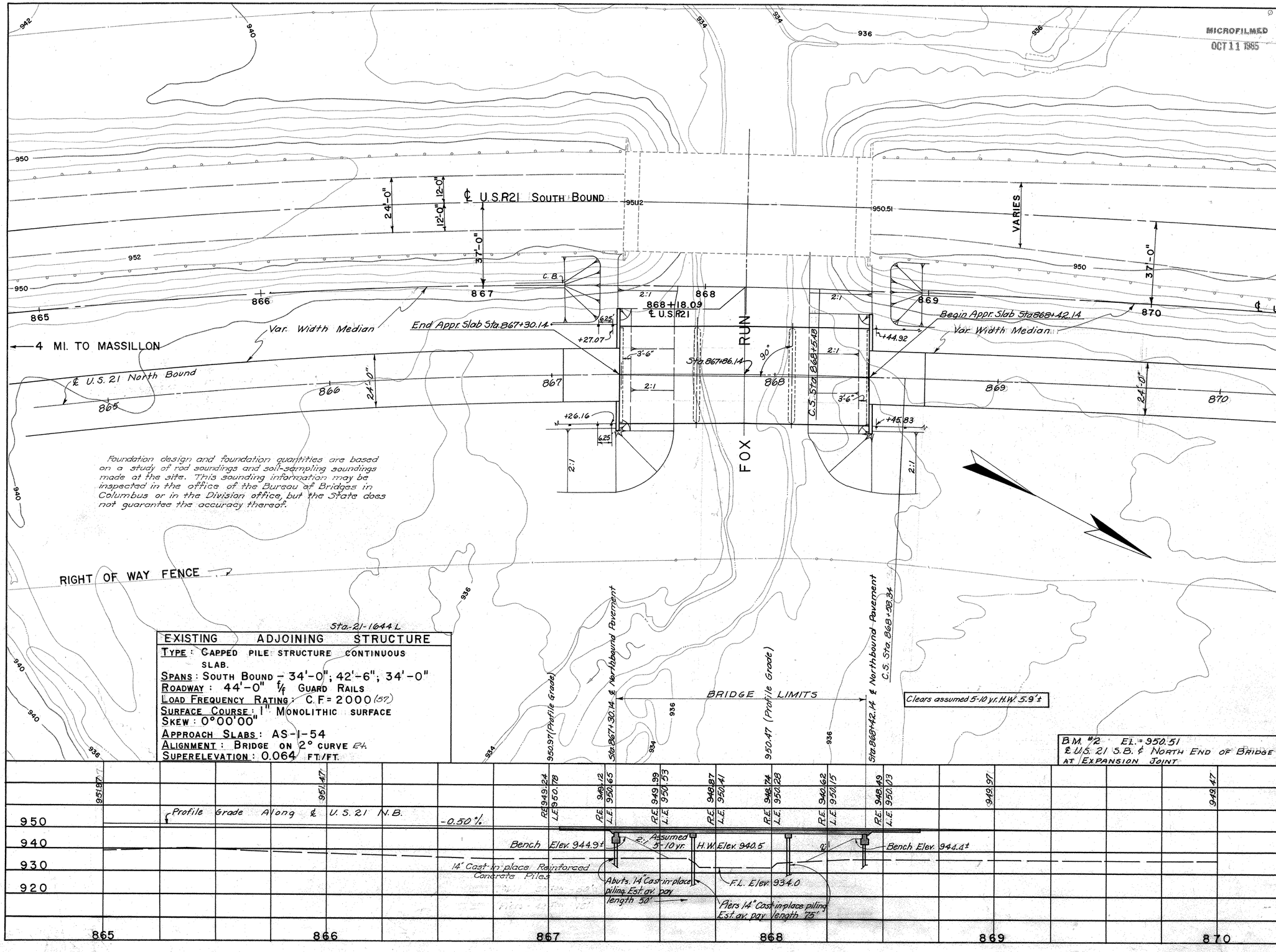
MICROFILMED
OCT 11 1985

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

304

STA 21-11.49
WAY 21- 0.00

4.0 Mi. ± North of Massillon



Foundation design and foundation quantities are based on a study of rod soundings and soil-sampling soundings made at the site. This sounding information may be inspected in the office of the Bureau of Bridges in Columbus or in the Division office, but the State does not guarantee the accuracy thereof.

EXISTING ADJOINING STRUCTURE

TYPE: CAPPED PILE STRUCTURE CONTINUOUS SLAB.
SPANS: SOUTH BOUND - 34'-0"; 42'-6"; 34'-0"
ROADWAY: 44'-0" f/f GUARD RAILS
LOAD FREQUENCY RATING: C.F = 2000 (57)
SURFACE COURSE: 1" MONOLITHIC SURFACE
SKEW: 0°00'00"
APPROACH SLABS: AS-1-54
ALIGNMENT: BRIDGE ON 2° CURVE Rt.
SUPERELEVATION: 0.064 FT./FT.

CURVE DATA ℄ N.B. LANE

P.I. 860 + 28.84

Δ = 41° 00' RT	Y_c = 5.24'
Δ_c = 35° 00'	θ_s = 3° 00'
D_c = 2° 00'	L.T. = 200.03'
R_c = 2864.79'	S.T. = 100.03'
L_c = 1750.00'	E_s = 195.09
L_s = 300.00'	K = 149.99'
T_s = 1221.57'	P = 1.31'
X_c = 299.92'	

DRAINAGE AREA - 14 SQ. MI.

PROPOSED STRUCTURE

TYPE: Continuous reinf. concrete slab with capped pile substructure.
SPANS: 34'-42.5'-34' c/c bearings.
ROADWAY: 44 ft. face to face of guard rails.
LOAD FREQUENCY: CF=2000 (57)
SKEW: None
WEARING SURFACE: Monolithic (1")
APPROACH SLABS: AS-1-54 (25' long)
Alignment: 2°00' Curve right.
SUPERELEVATION: .064 ft. per ft.

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

SITE PLAN

BRIDGE No. STA-21-1644 R
U.S. 21 OVER FOX RUN
STARK CO. US.R21

STA. 867 + 30.14
868 + 42.14

SCALE 1"=20'

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
J.E.P.	J.E.P.		J.H.B.	P.E.S.		

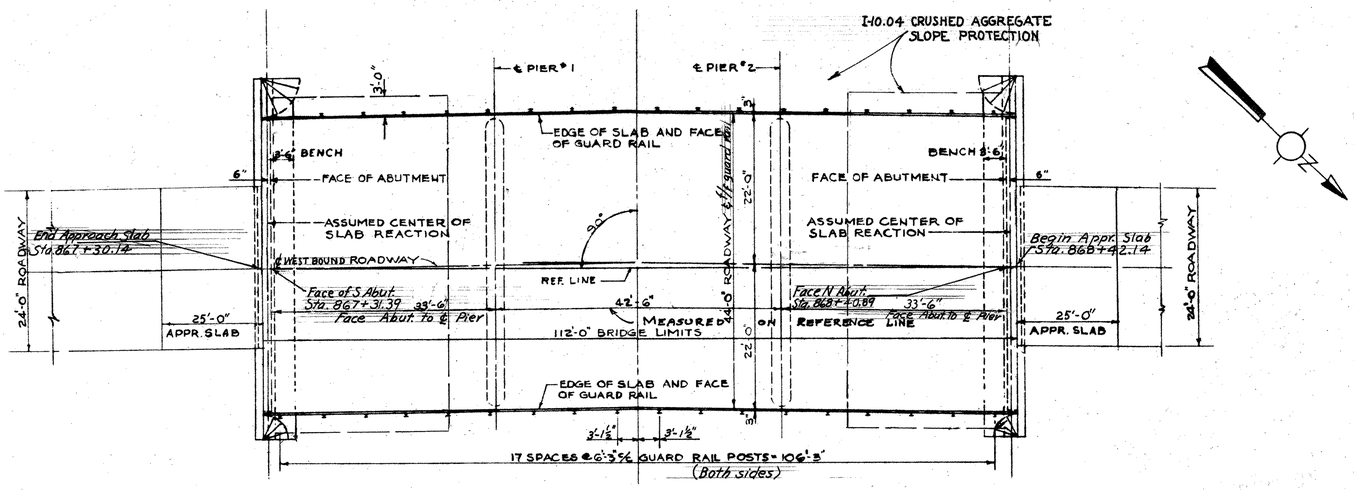
AERIAL SURVEY BFG

MICROFILMED
OCT 11 1985

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

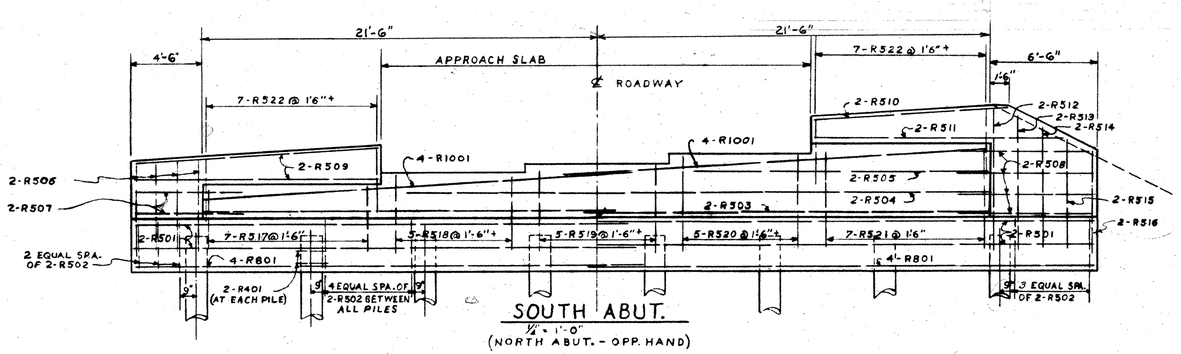
305

STA.-21-11.49
WAY-21-0.00



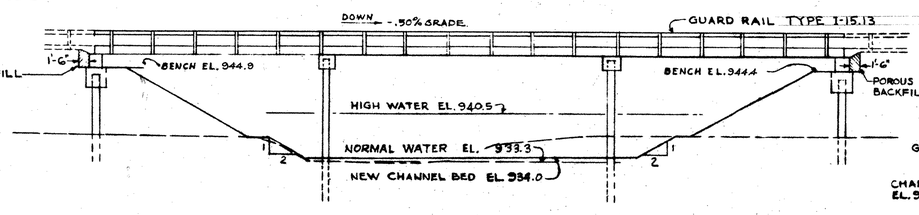
PLAN
3/32 = 1'-0"

PIER PILE ENCASEMENT. AS SHOWN ON STD. DWG. NO. P-1-54 MAY BE OMITTED PROVIDED THAT THE TAPERED PORTION, IF ANY, OF ALL PIER PILES DOES NOT EXTEND ABOVE THE STREAM BED OR THE PROPOSED SURFACE OF THE GROUND. IF THE TAPERED PORTION OF ANY PILE EXTENDS ABOVE THESE LIMITATIONS, THE ENCASEMENT WILL BE REQUIRED FOR ALL THE PIER PILES. IF THE ENCASEMENT IS OMITTED, THE PILE CASINGS SHALL HAVE A THICKNESS OF METAL NOT LESS THAN NO.7 GAGE, AND THE PAINTING OF THE PILES SHALL EXTEND TO LOW WATER ELEVATION OR, IF THE PROPOSED SURFACE OF THE GROUND IS ABOVE LOW WATER, IT SHALL EXTEND TO AT LEAST ONE FOOT BELOW THE PROPOSED SURFACE OF THE GROUND.



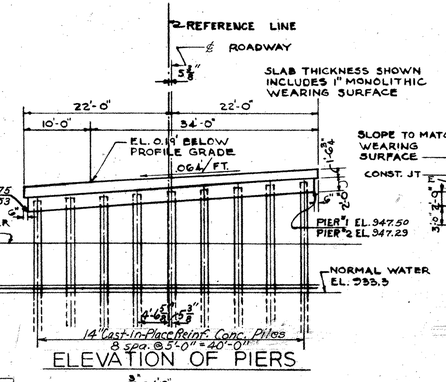
SOUTH ABUT.
1/4" = 1'-0"
(NORTH ABUT. - OPP. HAND)

SEE SITE PLAN FOR LOCATION OF GUARD RAIL POSTS

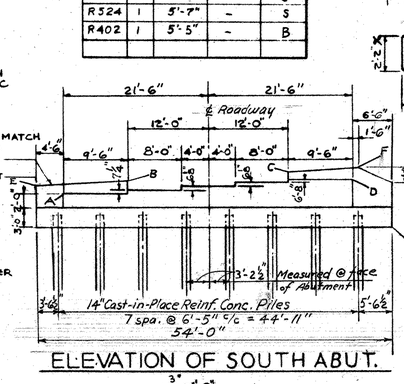


ELEVATION
3/32" = 1'-0"

ABUTMENT ELEVATIONS	A	B	C	D	E	F	G
S Abut.	946.92	949.09	950.62	949.06	948.19	951.33	941.92
N. Abut.	946.37	948.54	950.07	948.51	947.63	950.77	941.37



ELEVATION OF PIERS
3/32" = 1'-0"



ELEVATION OF SOUTH ABUT.
3/32" = 1'-0"
(NORTH ABUT. - OPP. HAND EXCEPT AS SHOWN)

ESTIMATED QUANTITIES

ITEM	TOTAL	UNIT	DESCRIPTION	ABUT.	PIERS	SUPERSTR	GENERAL	As Built
E-2	62	CU. YD.	UNCLASSIFIED EXCAVATION	62				
S-1	303	CU. YD.	CLASS "C" CONCRETE, SUPERSTRUCTURE & PIER CAPS		16	287		
S-1	64	CU. YD.	CLASS "E" CONCRETE, ABUTMENTS	64				
S-4	75,266	LBS.	REINFORCING STEEL	6542	4603	64121	-0-	
S-14	224.02	LIN. FT.	RAILING (TYPE I-13.13 WITH GALV. STEEL POSTS & BOLTS)				224.02	
S-16	LUMP SUM	LUMP SUM	FIRST TEST PILE				LUMP SUM	
S-18	2150	LIN. FT.	14" cast-in-place reinforced concrete piles	800	1350		(1) Revised As Built CO-14 +224.45	2374.45
S-29	34	CU. YD.	POROUS BACKFILL				34 CO-14 -9.14	24.86
I-10	316	SQ. YD.	CRUSHED AGGREGATE SLOPE PROTECTION				316 CO-82 -41	275

GENERAL NOTES

REFERENCE: SHALL BE MADE TO STANDARD DRAWINGS CS-1-54, SHEET NO. 1 & 2, REVISED 7-16-56, A-1-54 REVISED 12-1-54, P-1-54 REVISED 2-2-59, AND SUPPLEMENTAL SPECIFICATION S-101 DATED 12-2-59.

MACHINE FINISH: THE CONCRETE BRIDGE DECK SHALL BE FINISHED AS SPECIFIED IN THE PROPOSAL NOTE, "MACHINE FINISHING OF BRIDGE DECK SLABS".

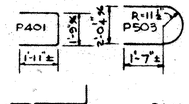
PILES: SHALL BE DRIVEN TO A MINIMUM BEARING CAPACITY OF 30 TONS FOR THE ABUTMENTS, 42 TONS FOR THE PIERS.

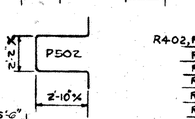
REPLACEMENT BARS: IF REINFORCING BARS ARE FABRICATED FROM STOCK WHICH HAS PREVIOUSLY BEEN TESTED AND APPROVED BY THE OHIO TESTING LABORATORY, TEST SAMPLES AS PROVIDED IN SEC. S-4.02 NEED NOT BE FURNISHED AND REPLACEMENT BARS WILL NOT BE REQUIRED.

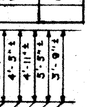
REINFORCING STEEL LIST

MARK	NO.	LENGTH	WEIGHT	SHAPE	MARK	NO.	LENGTH	WEIGHT	SHAPE
SUPERSTRUCTURE					ABUTMENTS				
A1069	120	39'-4"	20,310	S	R1001	16	23'-1"	1589	S
B1069	40	28'-4"	4,877	B					
C1069	36	24'-9"	4047	B					
D1069	20	25'-10"	2223	S	R801	16	28'-3"	1,207	S
E1069	19	18'-4"	1499	S	R501	16	27'-8"	462	S
F1069	90	28'-4"	10973	S	R502	168	6'-7"	1,154	B
G1069	46	13'-3"	2,623	S	R503	8	22'-2"	185	*
H1069	44	8'-10"	1,672	S	R504	4	32'-6"	136	S
J601	46	22'-1"	1,526	S	R505	4	16'-6"	69	S
K601	23	18'-6"	639	S	R506	16	5'-0"	83	S
M701	103	43'-6"	9158	S	R507	8	5'-11"	49	S
N601	70	43'-6"	4,574	S	R508	16	7'-11"	132	S
					R509	8	13'-9"	114	S
					R510	4	10'-9"	45	S
					R511	4	14'-0"	58	S
		PIERS			R512	4	8'-0"	33	S
P1001	8	45'-6"	1,497	S	R513	4	7'-6"	31	S
P901	8	40'-6"	1,102	S	R514	4	6'-10"	29	S
P701	108	4'-0"	883	S	R515	4	6'-2"	26	S
P501	4	40'-6"	169	S	R516	4	5'-6"	23	S
P502	68	9'-0"	638	B	R517	14	8'-5"	123	B
P503	8	6'-4"	53	B	R518	10	9'-9"	102	B
P401	72	5'-5"	261	B	R519	10	10'-9"	112	B
					R520	10	11'-9"	123	B
					R521	14	12'-9"	186	B
					R522	28	8'-2"	239	B
					R401	64	5'-5"	232	B

MARK	NO.	LENGTH	WEIGHT	SHAPE
REPLACEMENT BARS				
R1004	3	7'-2"	-	S
R 901	1	6'-10"	-	S
R 802	1	6'-6"	-	S
R701	1	6'-2"	-	S
R601	1	5'-11"	-	S
R524	1	5'-7"	-	S
R402	1	5'-5"	-	B







R402, R401	1'-9 3/4"
R502	2'-8 1/4"
R517	2'-2 1/4"
R518	2'-2 1/4"
R519	2'-2 1/4"
R520	2'-2 1/4"
R521	2'-2 1/4"
R522	0'-11 1/4"

B1069	27'-1"
C1069	23'-6"

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

GENERAL PLAN & ELEVATION NOTES & ESTIMATED QUANTITIES

BRIDGE NO. STA-21-1644 R
U.S. 21 OVER FOX RUN
STARK CO. STA. 868+18.09

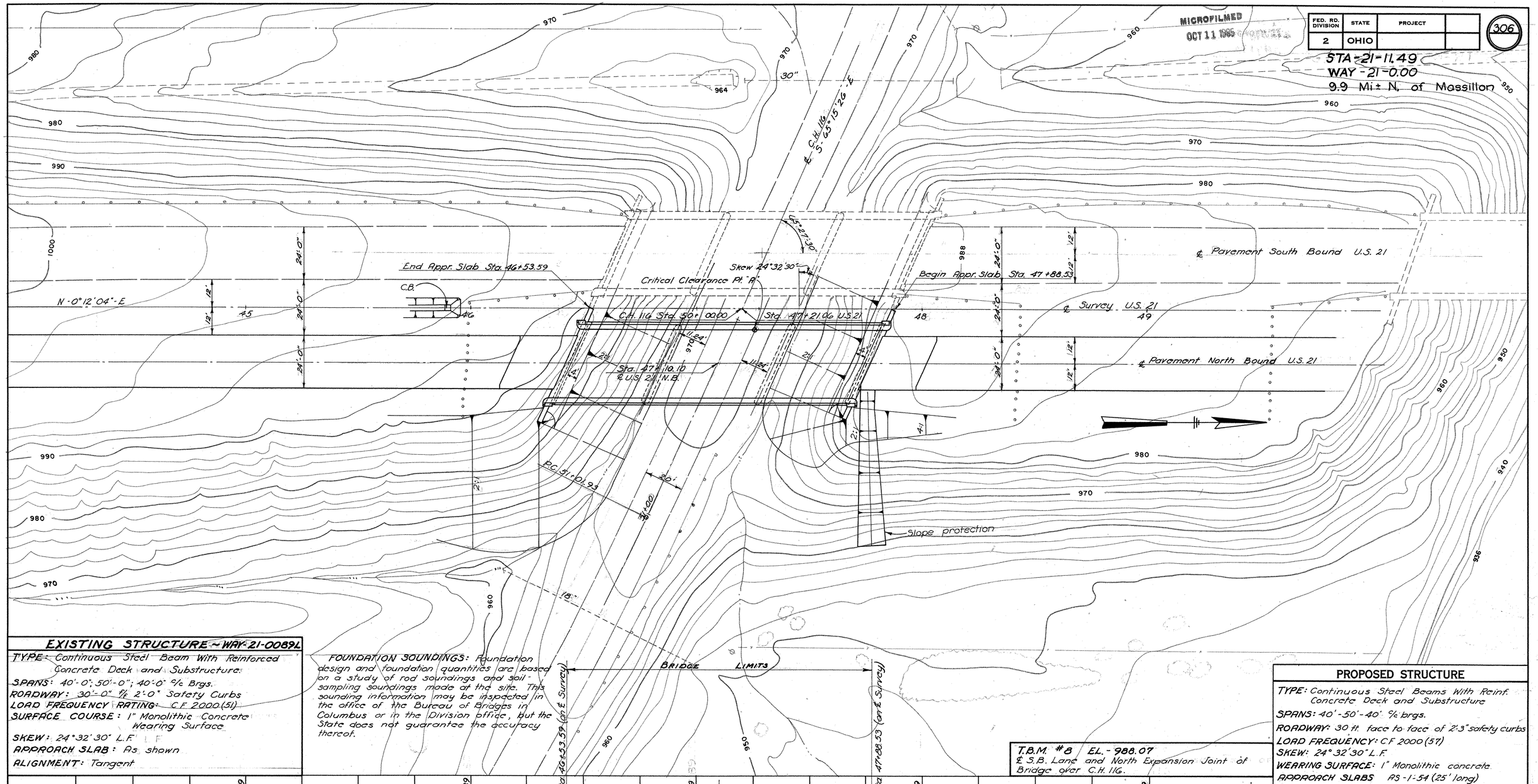
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
S.G. JDJ	F.S.	N.L.D.	R.E.H. J.D.R.	L.N.H. BFG	9-15-60	

MICROFILMED
OCT 11 1985

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

306

STA-21-11.49
WAY-21-0.00
9.9 Mi ± N. of Massillon

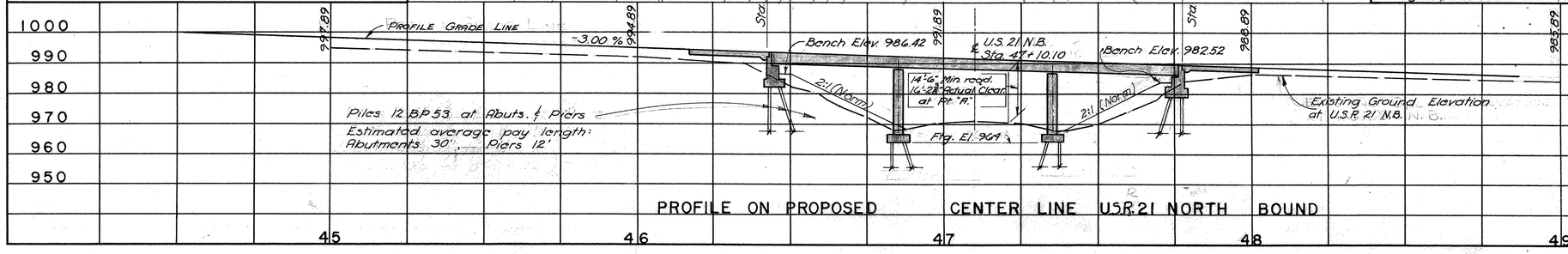


EXISTING STRUCTURE - WAY-21-0089L

TYPE: Continuous Steel Beam With Reinforced Concrete Deck and Substructure.
SPANS: 40'-0"; 50'-0"; 40'-0" ℅ Brgs.
ROADWAY: 30'-0" ℄ 2'-0" Safety Curbs
LOAD FREQUENCY RATING: C.F. 2000(51)
SURFACE COURSE: 1" Monolithic Concrete Wearing Surface
SKEW: 24°32'30" L.F.
APPROACH SLAB: As shown
ALIGNMENT: Tangent

FOUNDATION SOUNDINGS: Foundation design and foundation quantities are based on a study of rod soundings and soil sampling soundings made at the site. This sounding information may be inspected in the office of the Bureau of Bridges in Columbus or in the Division office, but the State does not guarantee the accuracy thereof.

T.B.M. #8 EL. - 988.07
℄ S.B. Lane and North Expansion Joint of Bridge over C.H. 116.



PROPOSED STRUCTURE

TYPE: Continuous Steel Beams With Reinf. Concrete Deck and Substructure
SPANS: 40'-50'-40' ℅ brgs.
ROADWAY: 30 ft. face to face of 2'3" safety curbs
LOAD FREQUENCY: C.F. 2000 (57)
SKEW: 24°32'30" L.F.
WEARING SURFACE: 1" Monolithic concrete
APPROACH SLABS AS-1-54 (25' long)
ALIGNMENT: Tangent

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
BUREAU OF BRIDGES

SITE PLAN

BRIDGE NO. WAY-21-0089R
U.S.R. 21 OVER C.H. 116
WAYNE CO. U.S.R. 21
SEC. WAY 21-0.00 STA. 46+53.59 46+53.59
SCALE 1"=20' 47+88.53

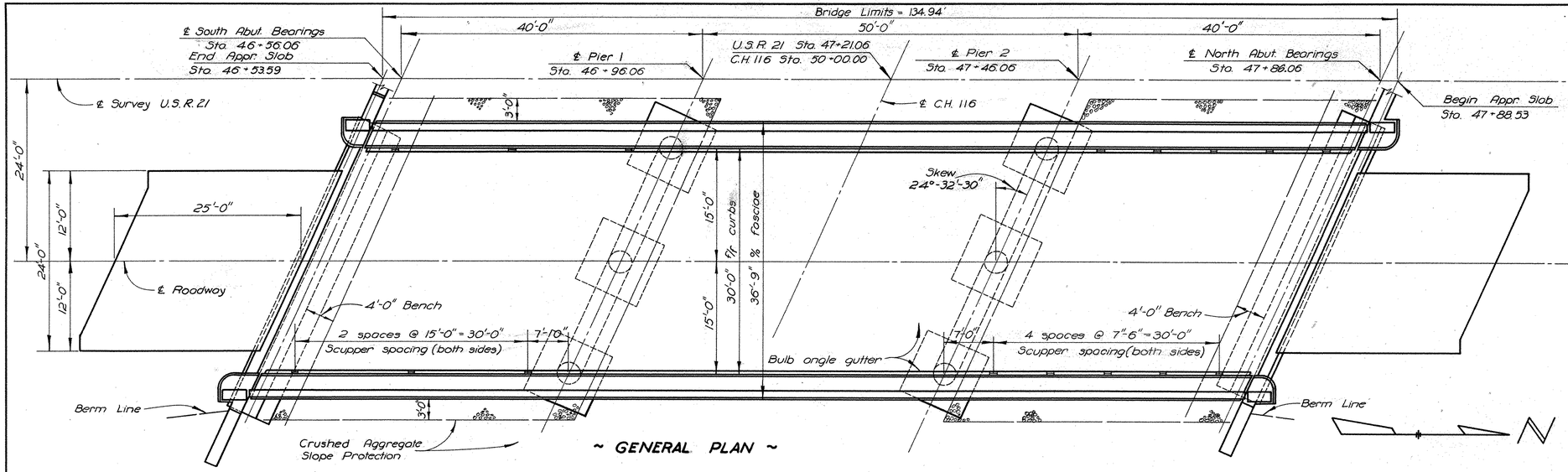
PRESENT TOPOGRAPHY		PROPOSED WORK			
SURVEYED	DRAWN	DESIGNED	DRAWN	CHECKED	REVIEWED
Aerial Survey	Aerial Survey	J.E.P.	J.E.P.	J.H.B.	P.E.S.

BFG AJF 10-21-60.

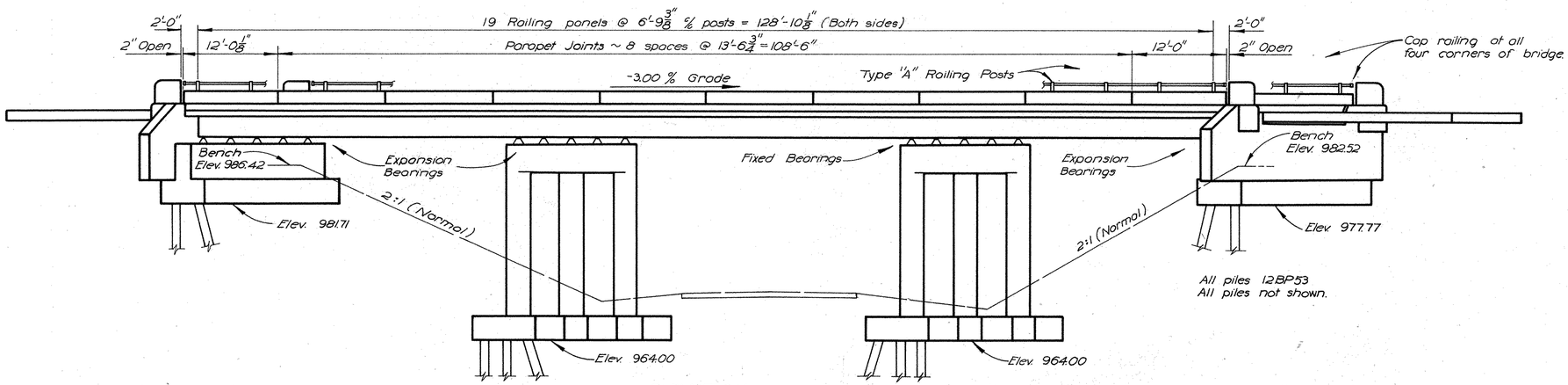
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

307

STA-21-11.49
WAY-21-0.00



~ GENERAL PLAN ~



~ ELEVATION ~

All piles 12BP53
All piles not shown.

ESTIMATED QUANTITIES

Item	Total	Unit	Description	Abut.	Piers	Super.	Gen'l.	As Built	
E-2	266	Cu. Yds.	Unclassified excavation	131	135			00-22 +52.64	318.64
S-1	160	Cu. Yds.	Class "C" concrete, superstructure			160			
S-1	56	Cu. Yds.	Class "C" concrete, piers above footings		56				
S-1	153	Cu. Yds.	Class "E" concrete, abutments	153					
S-1	54	Cu. Yds.	Class "E" concrete, pier footings		54				
S-3	6	Sq. Yds.	Type "B" waterproofing	6					
S-4	70,201	Lbs.	Reinforcing steel	8,372	16,560	45,069		Revised As-Built	
S-7	109,400	Lbs.	Structural steel			109,400			
S-8	109,400	Lbs.	Field painting of structurol steel, as per plan			109,400			
S-9	32	Sq. Ft.	1" preformed expansion joint filler	32					
S-14	279.02	Lin. Ft.	Railing (aluminum rail and supports, concrete parapet and end posts.)			279.02			
S-16	Lump	Sum	First test pile				Lump		
S-18	1180	Lin. Ft.	Steel piles, 12BP53	720	460				
S-29	46	Cu. Yds.	Porous backfill	46					
S-29	16	Each	Scuppers			16			
T-10	425	Sq. Yds.	Crushed aggregate slope protection				425		

PROCEDURE: The finished embankment slopes shall be placed and compacted to the level of the earth bench after which excavation shall be made for the abutments and piers and piles driven.

MAINTENANCE AND PROTECTION OF TRAFFIC: Two lanes of traffic with a minimum horizontal width of 26'-0" shall be maintained on County Road 116 at all times. The Contractor shall safeguard the traveling public by providing platforms, nets or other suitable protection above the traveled lanes. A minimum vertical clearance of 12'-9" shall be provided at all times.

MACHINE FINISH: The concrete bridge deck shall be finished as specified in the Proposal Note, "Machine Finishing of Bridge Deck Slabs".

STEEL: See Proposal regarding A-373 steel.

~ GENERAL NOTES ~

REFERENCE shall be made to Standard Drawings RB-1-55 and AR-1-57, both revised 2-2-59, and to Supplemental Specification No. 5-101 dated 12-2-59.

DESIGN SPECIFICATIONS: This structure conforms to the requirements of "Design Specifications for Highway Structures" of the State of Ohio, Department of Highways, dated 9-1-57 together with current revisions thereof.

EXCAVATION QUANTITY includes the removal of fill material between the top of the earth bench and the bottom of the abutment crossbeam.

EXCAVATION QUANTITY for the piers includes the removal of fill material required for construction of the piers.

PILES shall be driven to firm contact with rock. If the length of penetration is approximately equal to the depth to rock according to the bridge foundation investigation report, the firm contact shall be considered as attained when the capacity according to the formula in Sec. 5-18.05 is not less than the following value for a pile hammer of the indicated energy rating:

For the Abutment piles
- 50 tons per pile using a 7000 ft. lb. hammer
- 45 tons per pile using a 11000 ft. lb. hammer
- 40 tons per pile using a 15000 ft. lb. or greater hammer

For the pier piles
- 45 tons per pile using a 7000 ft. lb. hammer
- 40 tons per pile using a 11000 ft. lb. hammer
- 35 tons per pile using a 15000 ft. lb. or greater hammer

If the energy rating of the hammer is between the ratings as shown above, the required formula capacity shall be determined by interpolation. The design load is 33 tons per pile for the abutment piles and 25 tons per pile for the pier piles.

CONCRETE DECK PLACING: In order to facilitate water curing of the concrete of the deck slab, the placing of concrete shall progress upgrade. The slab may be placed in sections, between transverse construction joints which are parallel to transverse reinforcing steel and are located near the center of any span.

WELDING of structural steel shall be Class "A" except as otherwise shown. Welds shown as field welds may, at the option of the Contractor, be made in the shop.

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

GENERAL PLAN & ELEVATION, NOTES & ESTIMATED QUANTITIES

BRIDGE No. WAY-21-0089R
U.S.R. 21 OVER C.H. 116
WAYNE COUNTY
Sta. 46 + 53.59
Sta. 47 + 88.53

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
J.V.G.	F.F.E.	G.P.G.	R.L.D.	BFG	10-21-60	

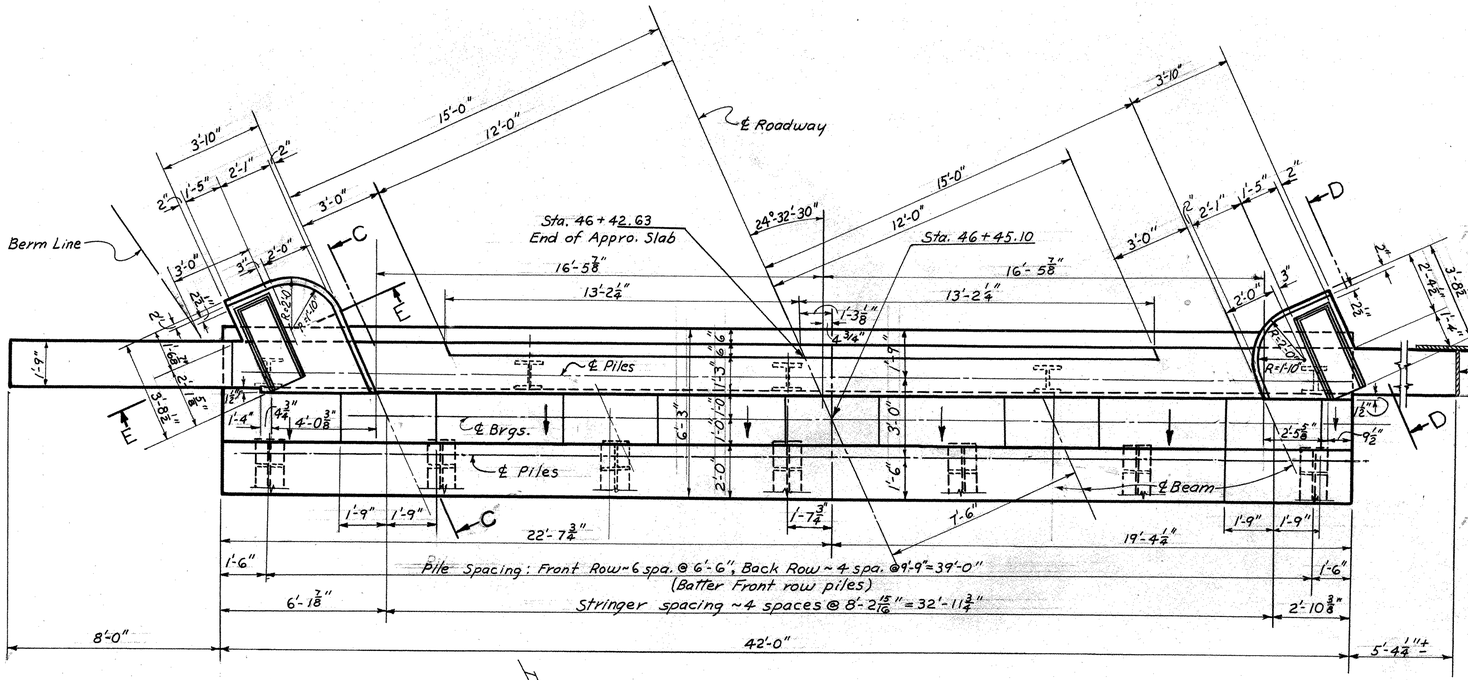
Revised As-Built
CAM

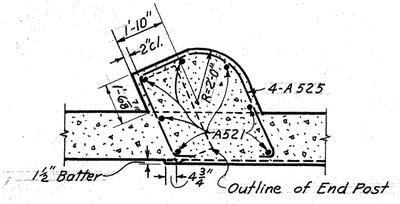
MICROFILMED
OCT 11 1985

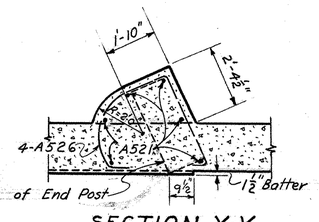
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

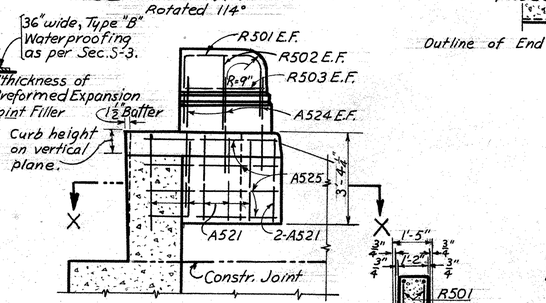
308

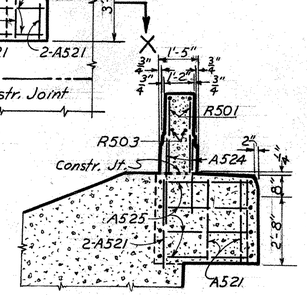
STA-21-11.49
WAY-21-0.00

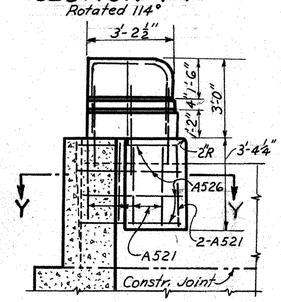


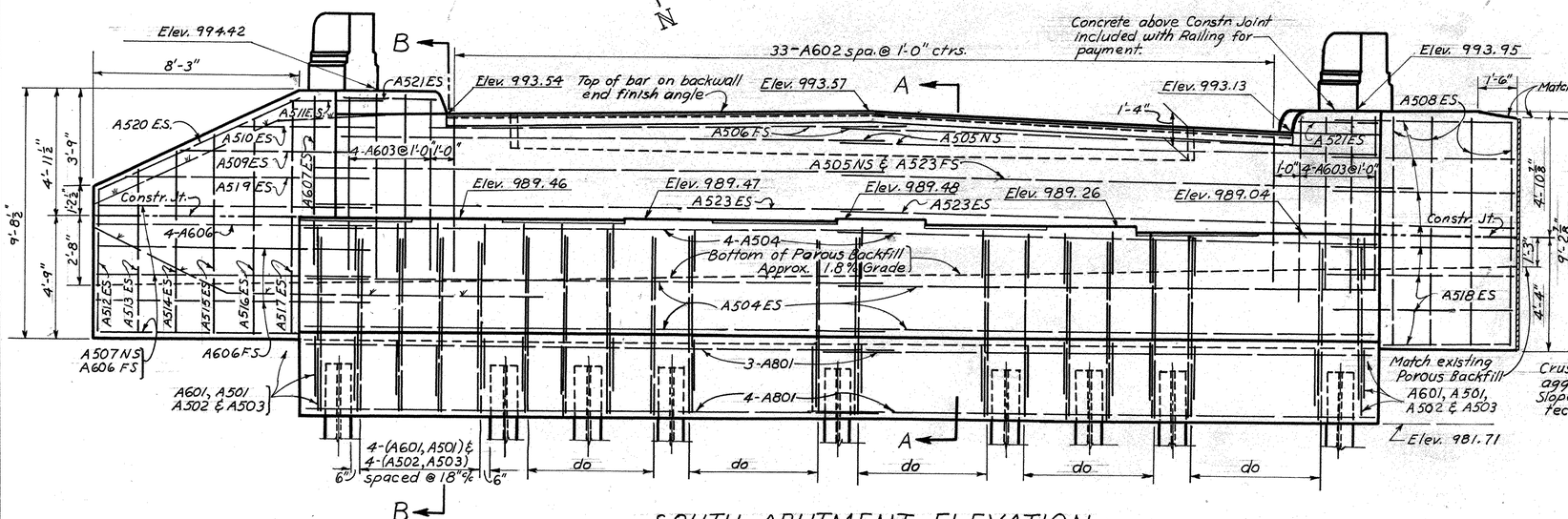


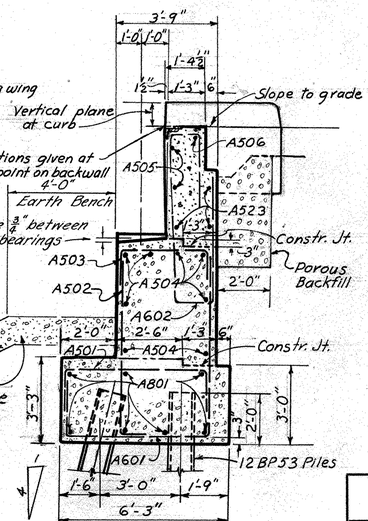


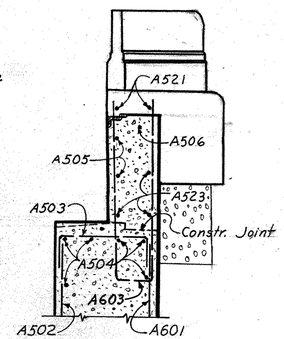












N S denotes Near Side
F S denotes Far Side
E S denotes Each Side

POROUS BACKFILL shall extend upward to the approach slab and to the surface of the earth shoulders. It shall extend outward to the surface of the embankment slope on the east side, and to match the porous backfill at the existing wing wall on the west side. Excavation therefor, in excess of that required for construction of the abutment, shall be considered as paid for in the bid price per cu. yd. paid for porous backfill.

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

SOUTH ABUTMENT DETAILS

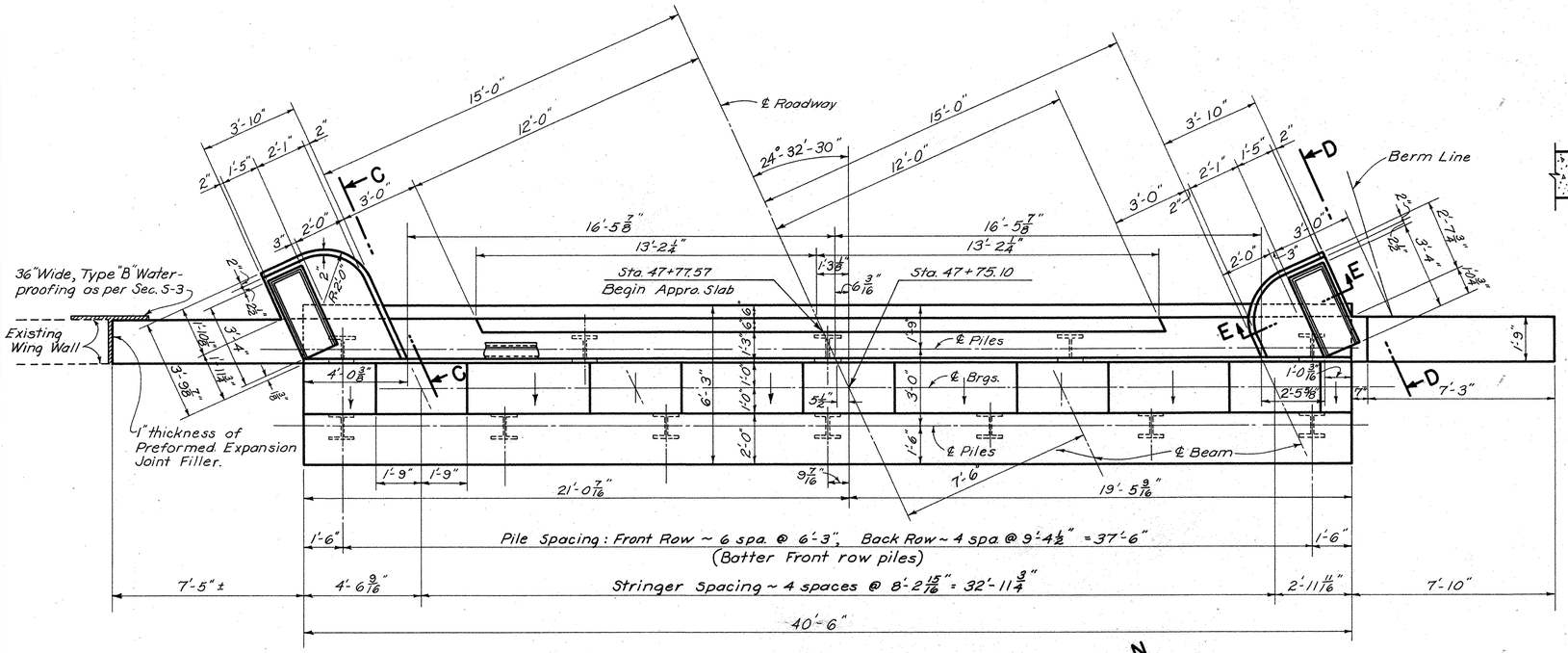
BRIDGE NO. WAY-21-0089R
U.S.R. 21 OVER C.H. 116
WAYNE COUNTY STA. 46+53.59
47+88.53

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
J.V.G.	J.V.G.	N.L.D.	R.L.D.	DFG	10-21-60	

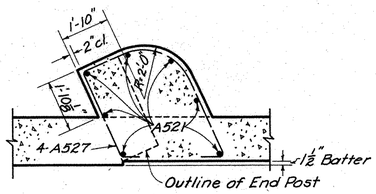
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

309

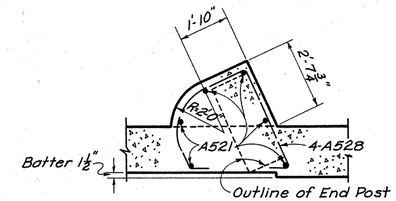
STA-21-11.49
WAY-21-0.00



PLAN



SECTION X-X
(Rotated 114°)



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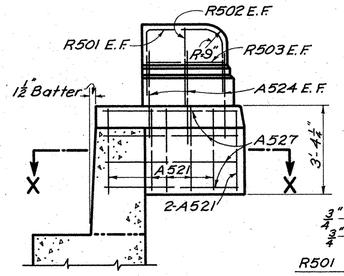
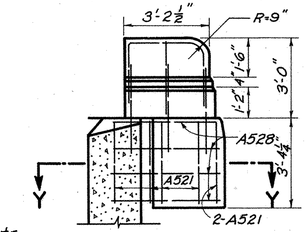
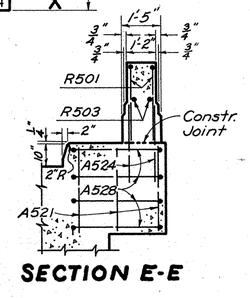
(Rotated 114°)



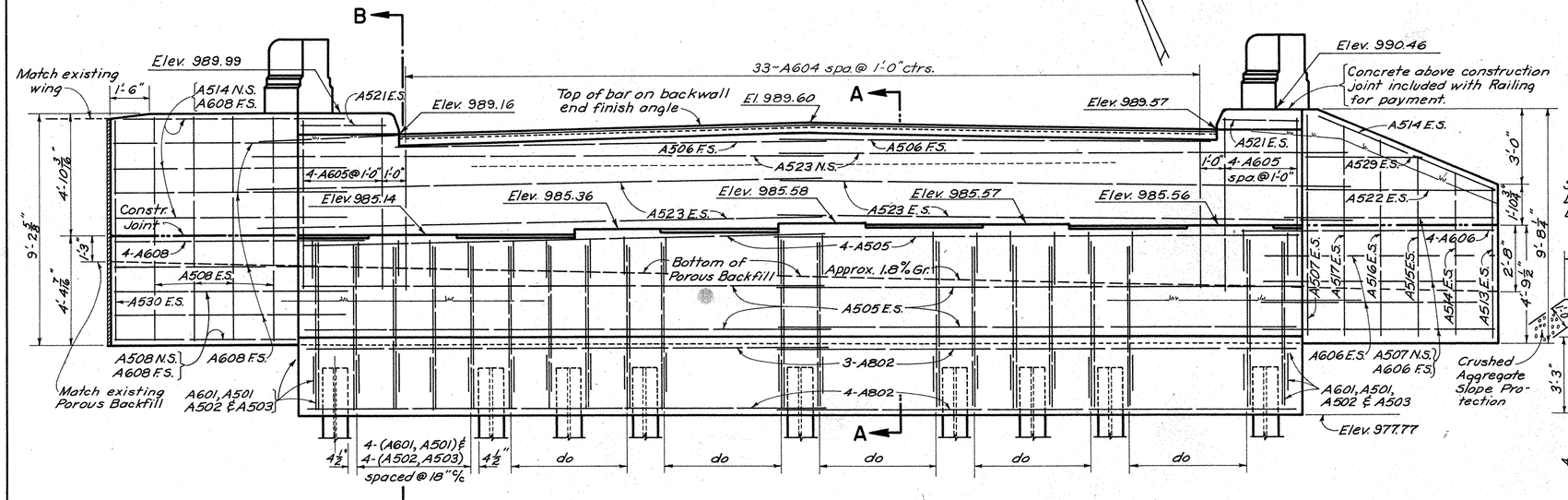
SECTION C-C



SECTION D-D



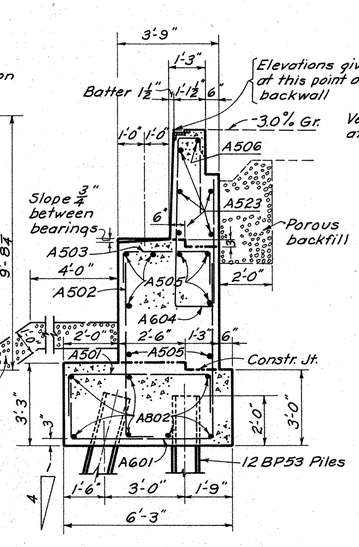
SECTION E-E



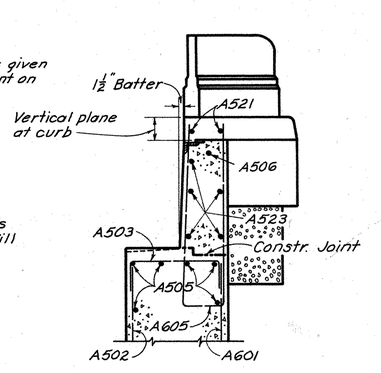
NORTH ABUTMENT ELEVATION

NOTE: For Porous Backfill note see South Abutment detail sheet.

N.S. denotes Near Side.
F.S. denotes Far Side.
E.S. denotes Each Side.



SECTION A-A



SECTION B-B

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

NORTH ABUTMENT DETAILS

BRIDGE NO. WAY-21-0089R
U.S.R. 21 OVER C.H. 116

WAYNE CO. STA. 46+53.59
47+88.53

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
J.V.G.	J.V.G.	Pencil	R.L.D.	BFG A.J.T.	10-21-60	

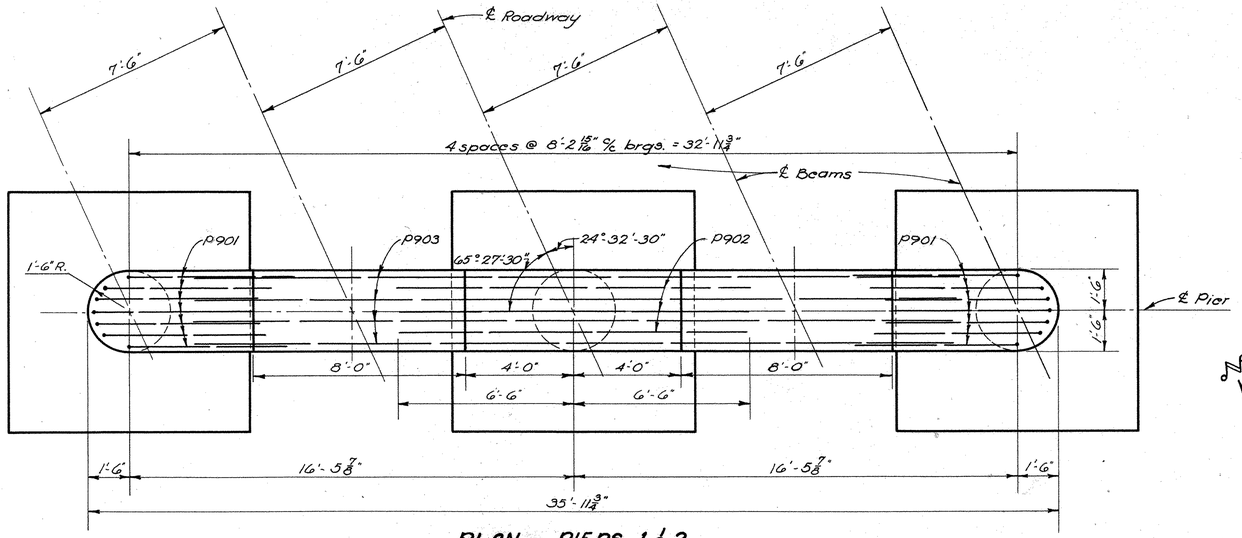
MICROFILMED
OCT 11 1965

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

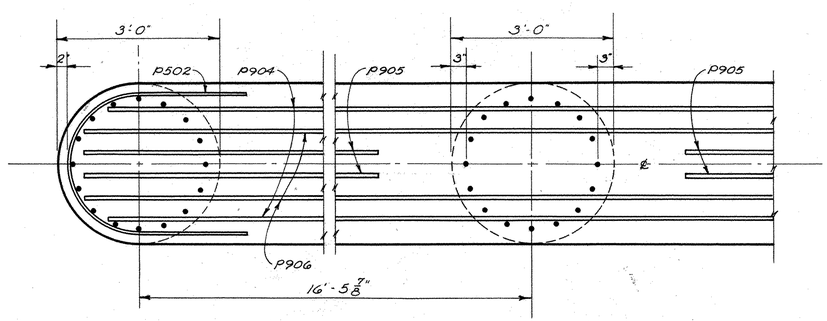
310

STA-21-11.49
WAY-21-0.00

MICROFILMED

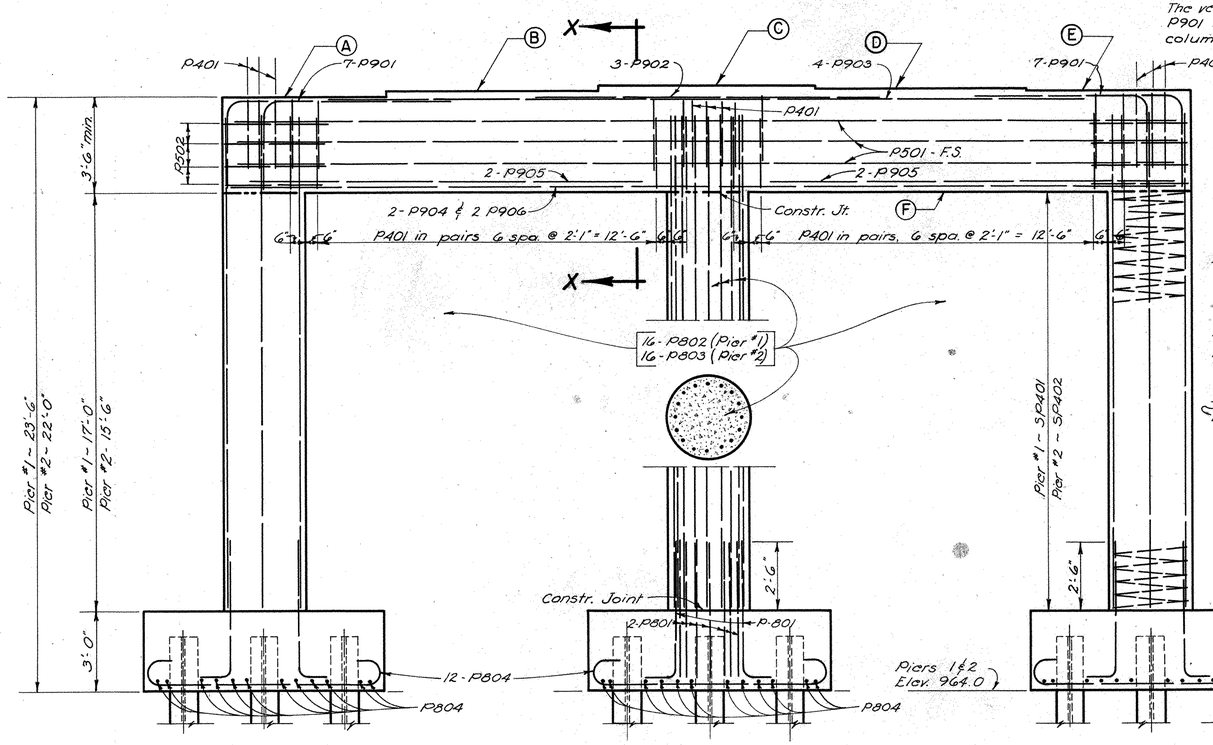


PLAN ~ PIERS 1 & 2
SHOWING TOP REINFORCING



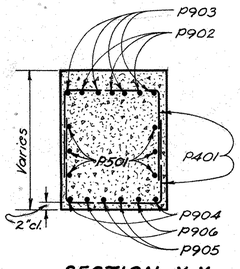
HORIZONTAL SECTION AT BASE OF PIER CAP

NOTE:
The vertical leg of bars P901 shall be lapped to column bars P802 or P803.

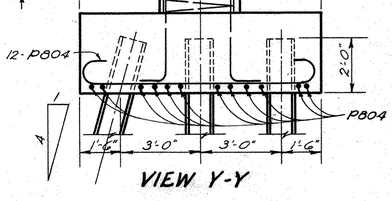


ELEVATION PIERS 1 & 2

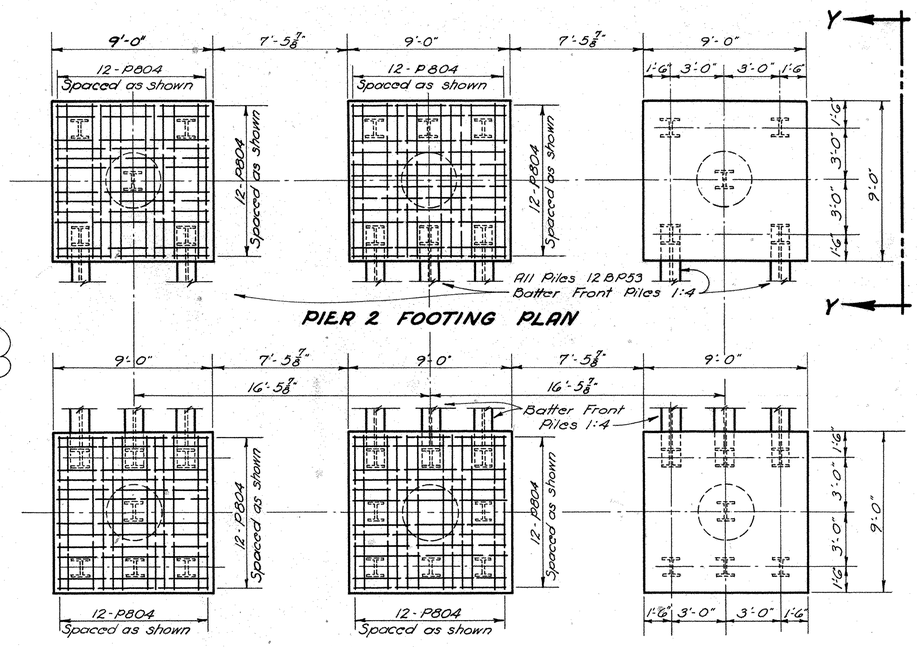
PIER NO.	ELEV. A	ELEV. B	ELEV. C	ELEV. D	ELEV. E	ELEV. F.	FTG. ELEV.
PIER #1	987.50	987.72	987.94	987.92	987.91	984.00	964.00
PIER #2	986.00	986.22	986.44	986.42	986.41	982.50	964.00



SECTION X-X



VIEW Y-Y



NOTE:
Special care shall be taken in placing reinforcing steel in the bridge seat so that it will not interfere with the drilling of anchor bolt holes for bolsters at Pier 2.

E.S. denotes Each Side.

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

PIER DETAILS

BRIDGE NO. WAY-21-0089 R

U.S.R. 21 OVER C.H. 116

WAYNE CO. STA. 46+53.59
47+88.53

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
J.V.G.	J.V.G.		R.L.D.	BFG	10-21-60	

FED. NO. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

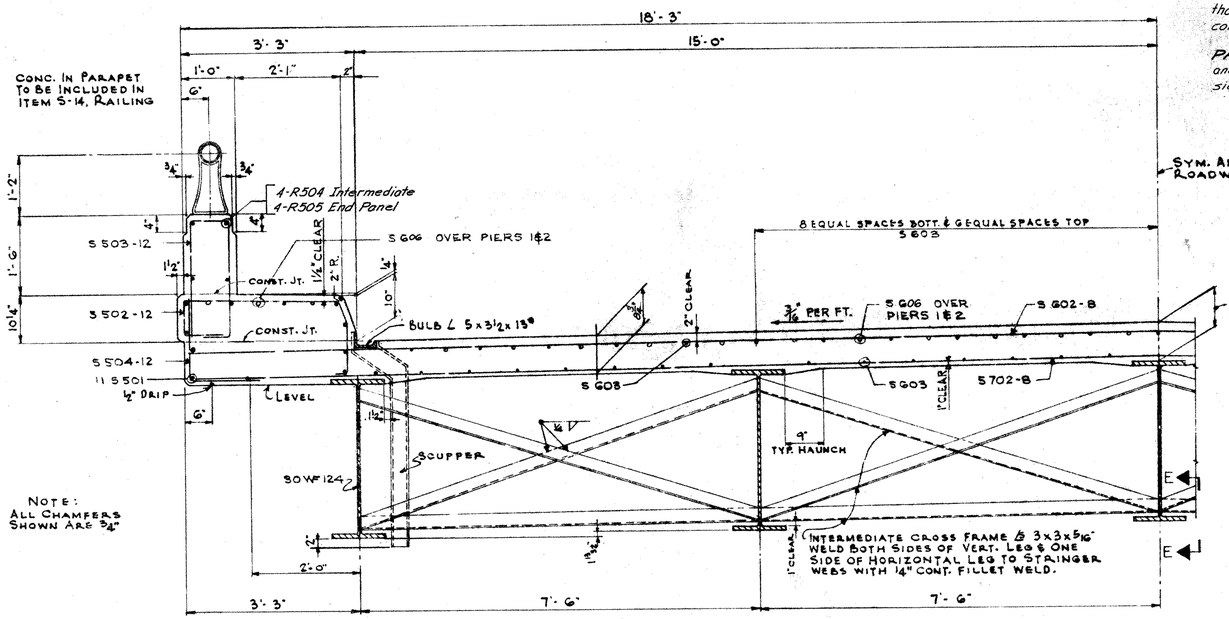
311

STA - 21 - 11.49
WAY - 21 - 0.00

MICROFILMED
OCT 11 1985

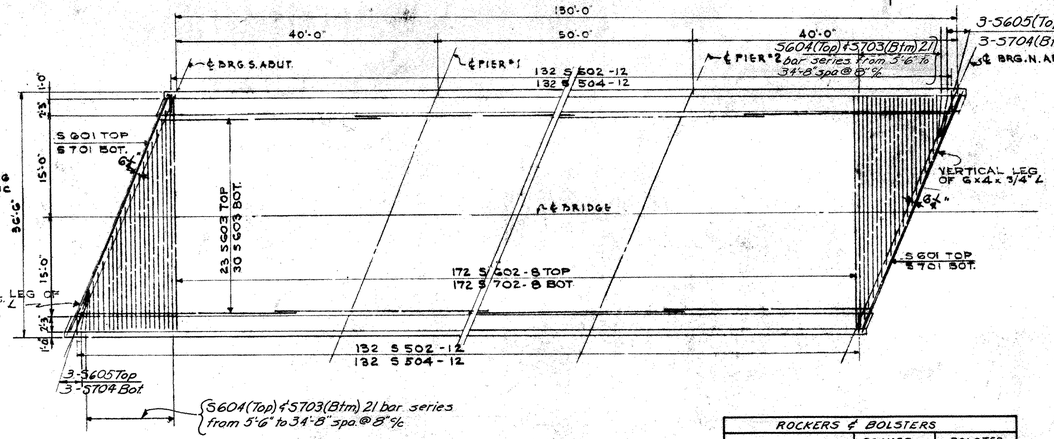
*This is the nominal dimension. The quantity of deck concrete to be paid for shall be based on this dimension, even though deviation from it may be necessary because the top flange of the beam may not have the exact camber or conformation required to place it parallel to the finished grade.

PAINTING After erection and after the shop coat has been cleaned and, where necessary, repainted in accordance with Sec. 513.04, an additional coat of the same paint as used in the shop shall be applied over the outside face of the outside steel beams, and all sides of bottom flange.



NOTE:
ALL CHAMFERS SHOWN ARE 3/4"

TRANSVERSE HALF SECTION

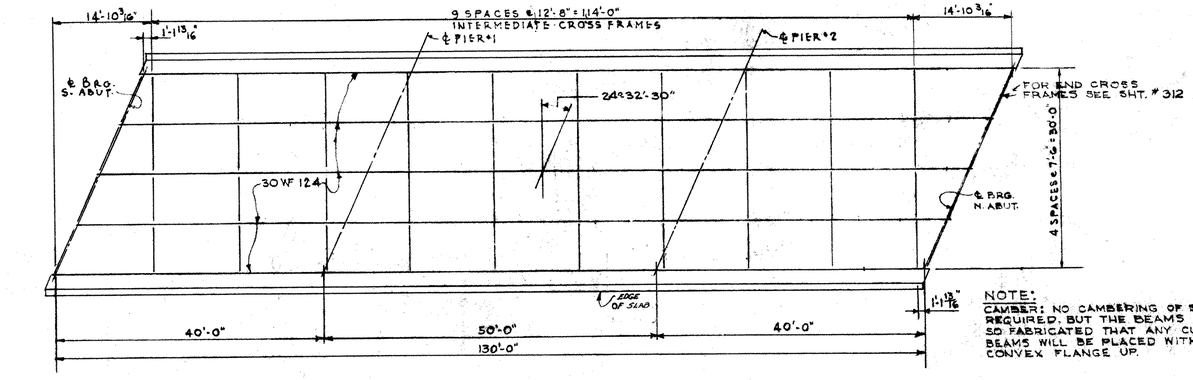


DECK SLAB REINFORCING PLAN

ROCKERS & BOLSTERS		
	ROCKER	BOLSTER
S. ABUTMENT	R-75	
PIER NO. 1	R-150	
PIER NO. 2		B-150
N. ABUTMENT	R-75	

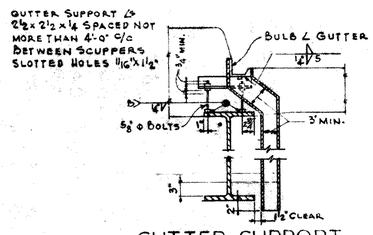
FOR DETAILS SEE DRWG. RB-1-55

MOMENT PLATE SIZES			
LOCATION		INT BMS 30WF124	EXT BMS 30WF124
PIERS 1&2	TOP	9"x 7/8"x 9'-6"	9"x 7/8"x 9'-6"
	BOTT	12"x 7/8"x 9'-6"	12"x 7/8"x 9'-6"

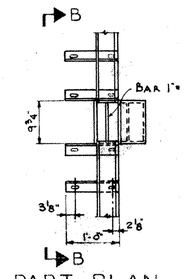


NOTE:
CAMBER: NO CAMBERING OF BEAMS IS REQUIRED, BUT THE BEAMS SHALL BE SO FABRICATED THAT ANY CURVED BEAMS WILL BE PLACED WITH THE CONVEX FLANGE UP.

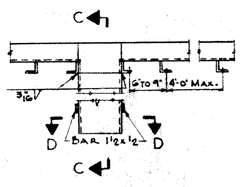
STEEL FRAMING PLAN



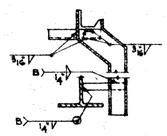
GUTTER SUPPORT AND SCUPPER



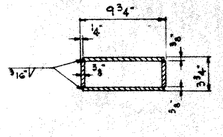
PART PLAN



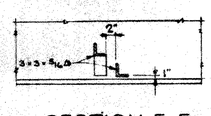
SECTION B-B



SECTION C-C

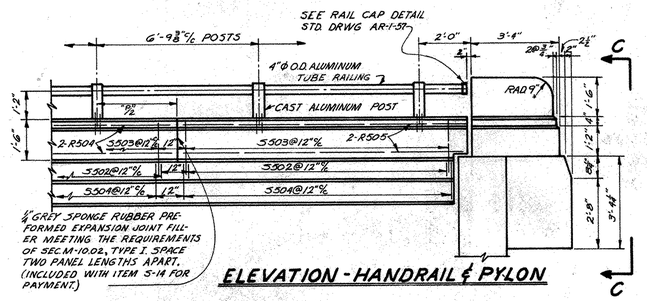


SECTION D-D



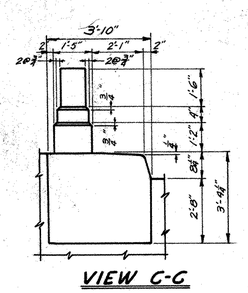
SECTION E-E

DIAGRAM SHOWING STAGGER OF 5606 BARS OVER PIERS #1 AND #2



1/4" GREY SPONGE RUBBER PREFORMED EXPANSION JOINT FILLER MEETING THE REQUIREMENTS OF SEC. M-10.02, TYPE I. SPACE TWO PANEL LENGTHS APART. (INCLUDED WITH ITEM S-14 FOR PAYMENT.)

ELEVATION - HANDRAIL & PYLON



VIEW C-C

GUTTERS SHALL BE ACCURATELY ADJUSTED FOR FOR ALIGNMENT AND GRADE WITH ALLOWANCE FOR DEAD LOAD DEFLECTION BEFORE CONCRETE IS PLACED.

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

SUPERSTRUCTURE DETAILS

BRIDGE NO. WAY-21-0089R
U.S.R. 21 OVER C.H. 116
WAYNE CO. STA. 46+53.59
47+88.53

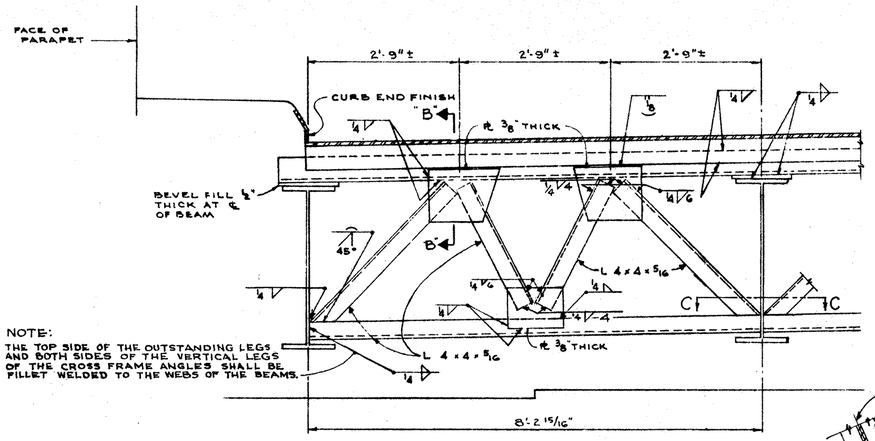
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
G.F. J.V.G.	J.G.N. J.V.G.	RLD	C.A.E. R.L.D.	BFG L.N.R. G.F.	10-21-60	

MICROFILMED
OCT 11 1985

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO	-	

312

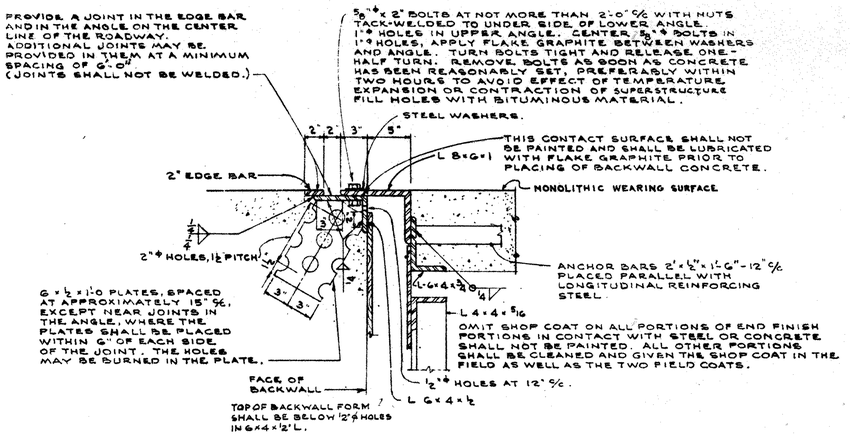
STA-21-11.49
WAY-21-0.00



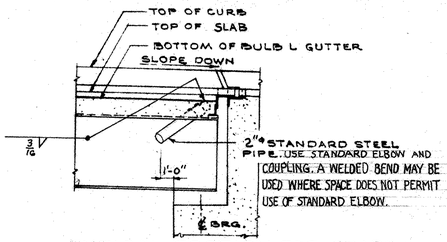
NOTE:
THE TOP SIDE OF THE OUTSTANDING LEGS AND BOTH SIDES OF THE VERTICAL LEGS OF THE CROSS FRAME ANGLES SHALL BE FILLET WELDED TO THE WEBS OF THE BEAMS.

SECTION "A-A"
3/4" = 1'-0"

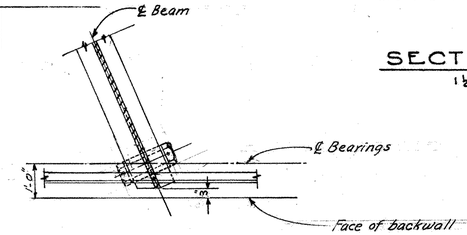
PROVIDE A JOINT IN THE EDGE BAR AND IN THE ANGLE ON THE CENTER LINE OF THE ROADWAY. ADDITIONAL JOINTS MAY BE PROVIDED IN THEM AT A MINIMUM SPACING OF 6'-0". (JOINTS SHALL NOT BE WELDED.)



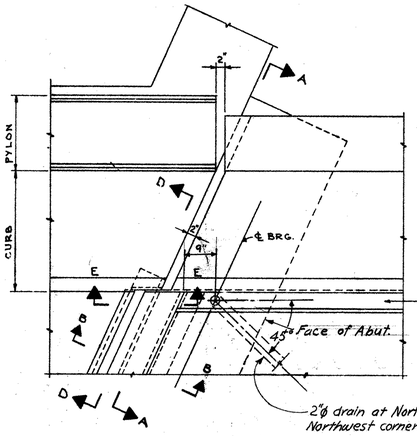
SECTION "B B"
1½" = 1'-0"



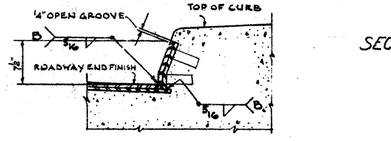
TYPICAL SECTION FOR GRADE SLOPING DOWN TO END FINISH
3/8" = 1'-0"



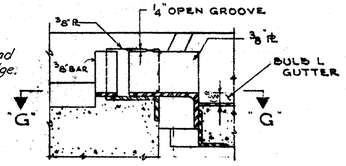
SECTION C-C



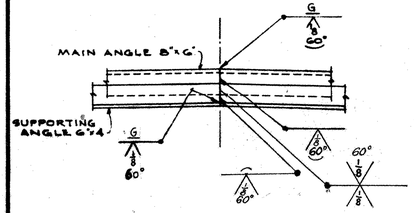
PARTIAL PLAN AT ABUTMENT
3/4" = 1'-0"



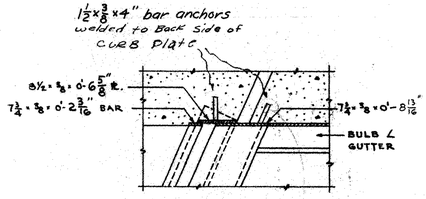
SECTION "D-D"
1" = 1'-0"



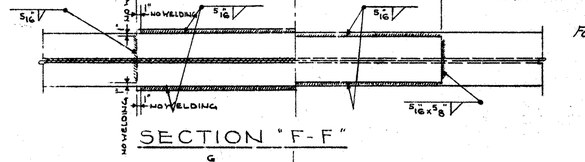
SECTION "E-E"
1" = 1'-0"



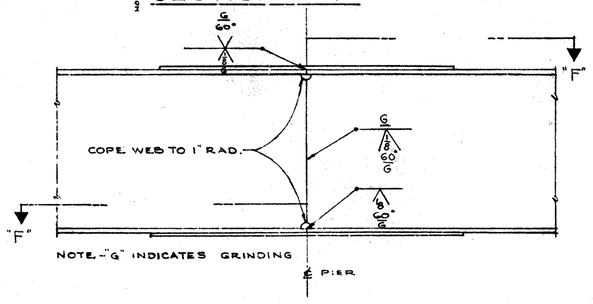
WELDED BUTT JOINT IN SUPERSTRUCTURE END FINISH ANGLES AT ℄ OF ROADWAY.



SECTION "G-G"
1" = 1'-0"



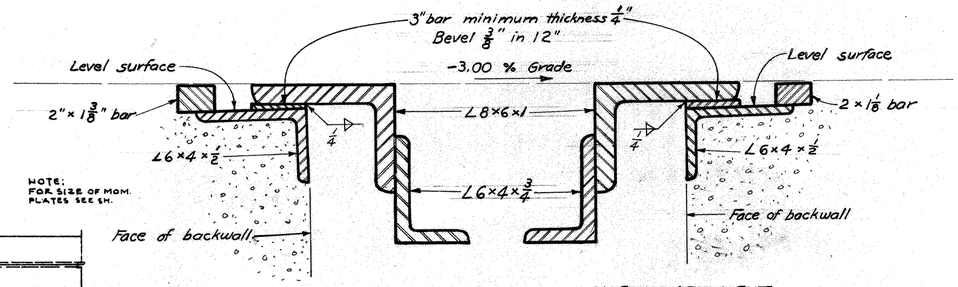
SECTION "F-F"



BEAM SPLICE DETAILS
3/4" = 1'-0"

BEAM SPLICE WELDING PROCEDURE:
1. RAISE THE ABUTMENT ENDS OF THE BEAMS 3/8".
* 2. BUTT WELD THE BEAM FLANGES AND WEB.
3. WELD THE BOTTOM AND TOP MOMENT PLATES.
4. LOWER THE BEAM ENDS TO FINAL POSITION.

* MAKE TWO PASSES IN EACH FLANGE THEN TWO PASSES IN THE WEB. REPEAT, USING ONE PASS AT EACH LOCATION, UNTIL WELDS ARE COMPLETED.



END DAM DETAIL
For additional details see Section B-B

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

SUPERSTRUCTURE DETAILS

BRIDGE NO. WAY-21-0089R
U.S.R. 21 OVER C.H. 116
WAYNE CO. STA 46 + 53.59
47 + 88.53

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
J.A.E. J.V.G.	R.E.B. J.V.G.	N.L.D.	R.E.H. R.L.D.	BFG M.C.	10-21-60	

MICROFILMED
OCT 11 1985

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

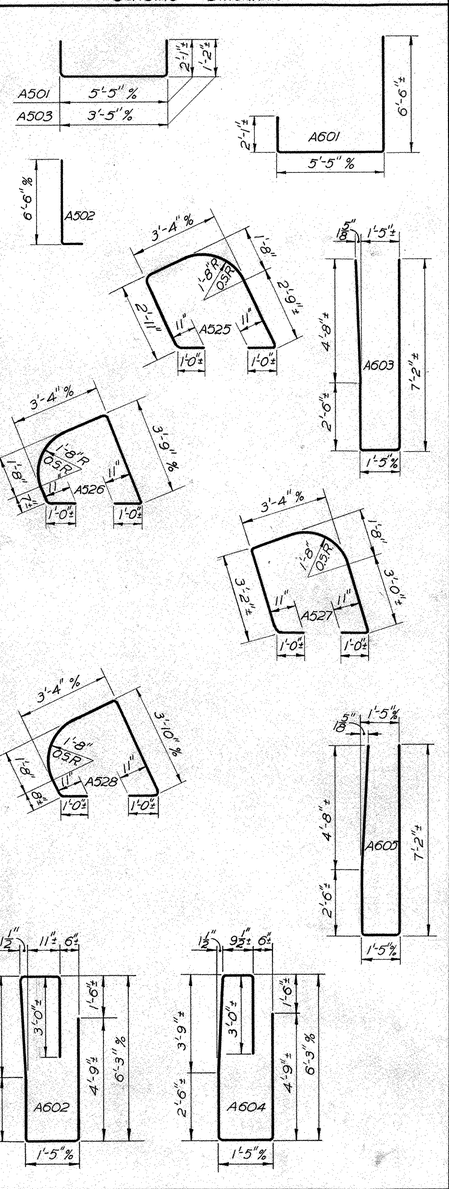
3/3

STA-21-11.49
WAY-21-0.00

REINFORCING STEEL LIST

MARK	No.	LENGTH	WEIGHT	SHP
South Abutment				
A801	14	22'-1"	825	S
A601	26	13'-8"	534	B
A602	33	15'-10"	785	B
A603	8	15'-5"	185	B
A606	9	9'-9"	132	S
A607	2	6'-8"	20	S
A501	26	9'-4"	253	B
A502	26	7'-0"	190	B
A503	26	5'-6"	149	B
A504	16	21'-8"	362	S
A505	4	21'-0"	88	S
A506	2	17'-4"	36	S
A507	3	9'-4"	29	S
A508	8	8'-10"	74	S
A509	2	8'-0"	17	S
A510	2	6'-0"	13	S
A511	2	3'-9"	8	S
A512	2	5'-6"	11	S
A513	2	6'-3"	13	S
A514	2	7'-0"	15	S
A515	2	7'-8"	16	S
A516	2	8'-4"	17	S
A517	2	9'-0"	19	S
A518	16	7'-0"	117	S
A519	2	10'-2"	21	S
A520	2	8'-9"	18	S
A521	17	3'-0"	53	S
A523	6	22'-8"	142	S
A524	12	3'-2"	40	S
A525	4	11'-7"	48	B
A526	4	10'-3"	43	B
North Abutment				
A802	14	21'-4"	797	S
A601	26	13'-8"	534	B
A604	33	15'-7"	772	B
A605	8	15'-5"	185	B
A606	9	9'-9"	132	S
A608	13	9'-2"	179	S
A501	26	9'-4"	253	B
A502	26	7'-0"	190	B
A503	26	5'-6"	149	B
A505	16	21'-0"	350	S
A506	2	17'-4"	36	S
A507	5	9'-4"	49	S
A508	10	8'-10"	92	S
A513	2	6'-3"	13	S
A514	7	7'-0"	51	S
A515	2	7'-8"	16	S
A516	2	8'-4"	17	S
A517	2	9'-0"	19	S
A521	17	3'-0"	53	S
A522	2	7'-6"	16	S
A523	10	22'-8"	236	S
A524	12	3'-2"	40	S
A527	4	12'-1"	50	B
A528	4	10'-5"	43	B
A529	2	4'-6"	9	S
A530	2	8'-8"	18	S

BENDING DIAGRAMS

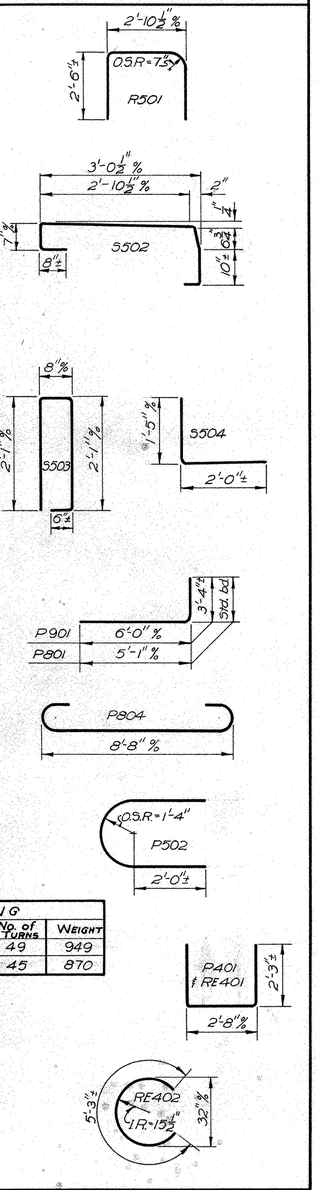


MARK	No.	LENGTH	WEIGHT	SHR
Railing & End Posts (Both Abuts)				
R501	8	7'-6"	Included	B
R502	8	2'-6"	with	S
R503	8	2'-11"	railing	S
R504	64	13'-2"	for	S
R505	16	1.1'-8"	payment	S
Superstructure				
S701	2	39'-9"	162	S
S702	172	36'-2"	12,715	S
	2 series of 21 bars			
S703	34'-8" to 5'-6",		1,724	S
	1'-5½ increment			
S704	6	5'-0"	61	S
S601	2	39'-9"	119	S
S602	172	36'-2"	9,343	S
S603	212	34'-3"	10,906	S
	2 series of 21 bars			
S604	34'-8" to 5'-6",		1,267	S
	1'-5½ increment			
S605	6	5'-0"	45	S
S606	56	20'-0"	1,682	S
S501	88	34'-3"	3,144	S
S502	264	5'-10"	1,606	B
S503	264	5'-0"	1,377	B
S504	264	3'-4"	918	B
Piers				
P901	28	9'-1"	865	B
P902	6	13'-0"	265	S
P903	8	29'-4"	798	S
P904	4	34'-3"	466	S
P905	8	14'-6"	394	S
P906	4	35'-3"	479	S
P801	96	6'-0"	1,538	B
P802	48	19'-6"	2,499	S
P803	48	18'-0"	2,307	S
P804	144	10'-10"	4,165	B
P501	12	33'-0"	413	S
P502	16	8'-2"	136	B
P401	90	6'-11"	416	B

SPIRAL REINFORCING						
MARK	No.	CORE DIA. & SPIRAL	LENGTH	PITCH	No. of TURNS	WEIGHT
SP401	3	32"	17'-0"	4½	49	949
SP402	3	32"	15'-6"	4½	45	870

Replacement Bars				
MARK	No.	LENGTH	WEIGHT	SHR
RE901	1	6'-10"	—	S
RE801	1	6'-6"	—	S
RE701	1	6'-2"	—	S
RE601	2	5'-11"	—	S
RE501	1	5'-7"	—	S
RE401	1	6'-11"	—	B
RE402	1	5'-3"	—	B

BENDING DIAGRAMS



BAR SIZE is indicated in the bar mark. The first digit indicates the bar size number. For example, A700 is a No. 7 size bar.

REPLACEMENT BARS: If reinforcing bars are fabricated from stock which has previously been tested and approved by the Ohio Highway Testing Laboratory, test samples as provided in Sec. 5-4.02 need not be furnished and replacement bars will not be required.

SPIRAL REINFORCING BARS: The "Length" shown in the steel list for the spiral bars is the distance from the top of the footing to the bottom of the pier cap. The "No. of Turns" shown is the "Length" divided by the pitch, plus 3 turns (total number of closed coils), expressed as the nearest whole number. Spiral reinforcing bars shall not have deformations but shall in other respects conform to Item 5-4. 1½ closed coils shall be provided at the ends of each spiral unit. Four steel channel, tee or angle spacers, weighing approximately 0.68 lb. per lin. ft. of spacer, shall be provided for each spiral unit. They shall be equally spaced along the periphery of the coil. The number of pounds of these spacers, based on 0.68 lb. per lin. ft., will be paid for as reinforcing steel and is included in the tabulated quantity of spiral bars.

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

REINFORCING STEEL LIST

BRIDGE No. WAY-21-0089R
U.S.R. 21 over C.H. 116

WAYNE COUNTY STA. 46 + 53.59
47 + 88.53

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
J.V.G.	J.V.G.	G.P.G.	R.L.D.	BFG G.J.F.	10-21-60	

MICROFILMED OCT 11 1985

STA-21-11.49
WAY-21-0.00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

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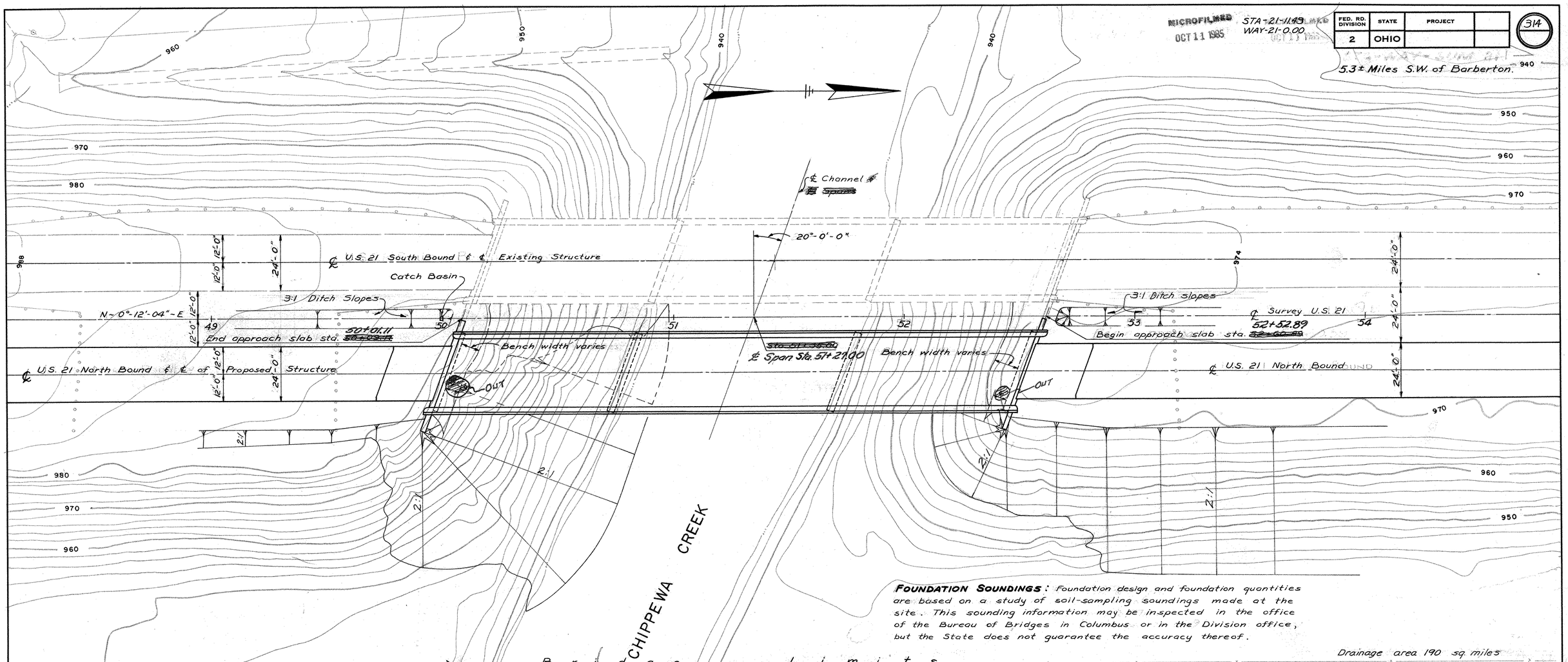
5.3± Miles S.W. of Barberton.



FOUNDATION SOUNDINGS: Foundation design and foundation quantities are based on a study of soil-sampling soundings made at the site. This sounding information may be inspected in the office of the Bureau of Bridges in Columbus or in the Division office, but the State does not guarantee the accuracy thereof.

Drainage area 190 sq. miles

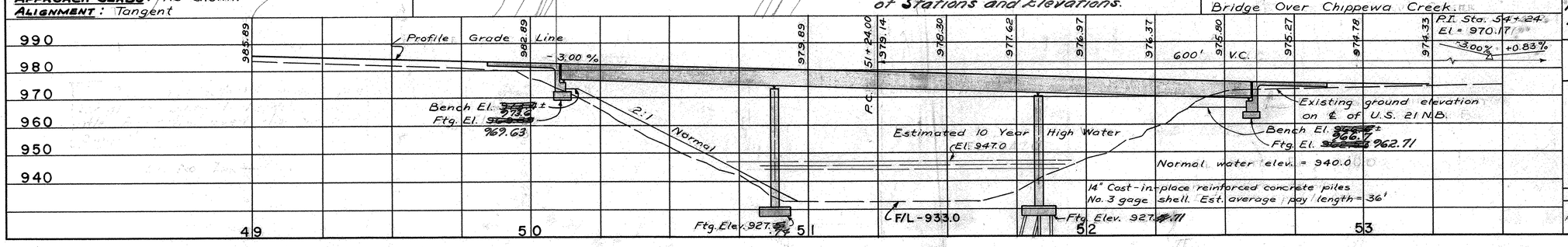
EXISTING STRUCTURE

TYPE: Continuous steel girders with reinforced concrete deck and substructure.
SPANS: 76'-95'-76' c/c brgs.
ROADWAY: 30'-0" f/f 2'-3" safety curbs.
LOAD FREQUENCY RATING: C.F. = 2000
SKEW: 20°0'0" left forward.
SURFACE COURSE: 1" Monolithic concrete.
APPROACH SLABS: As shown.
ALIGNMENT: Tangent

Clears 10 year H.W. 22.6 ±

NOTE:~ Bridge has been moved 8.00' South due to foundation difficulties. See detail plans for revisions of Stations and Elevations.

T.B.M. #6 ~ El. 975.44
℄ S.B. Lane and North Expansion Joint of Bridge Over Chippewa Creek.



PROPOSED STRUCTURE

TYPE: Cont. steel girders with reinf. concrete deck & reinf. conc. substr.
SPANS: 76'-95'-76' c/c brgs.
ROADWAY: 30'-0" f/f 2'-3" safety curbs.
LOAD FREQUENCY: CF = 2000 (57)
SKEW: 20° left forward
WEARING SURFACE: 1" Monolithic conc.
APPROACH SLABS: AS-1-57 (25' long)
ALIGNMENT: Tangent

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
BUREAU OF BRIDGES

SITE PLAN

BRIDGE NO. WAY-21-0095 R
U.S. 21 OVER CHIPPEWA CREEK
WAYNE CO. U.S. 21

SEC. WAY 21-0.00 STA. 50+01.11 52+52.89
SCALE 1" = 20'

PRESENT TOPOGRAPHY		PROPOSED WORK			
SURVEYED	DRAWN	DESIGNED	DRAWN	CHECKED	REVIEWED
Aerial Survey	Aerial Survey	J.H.B.	J.H.B.	J.E.P.	P.E.S.

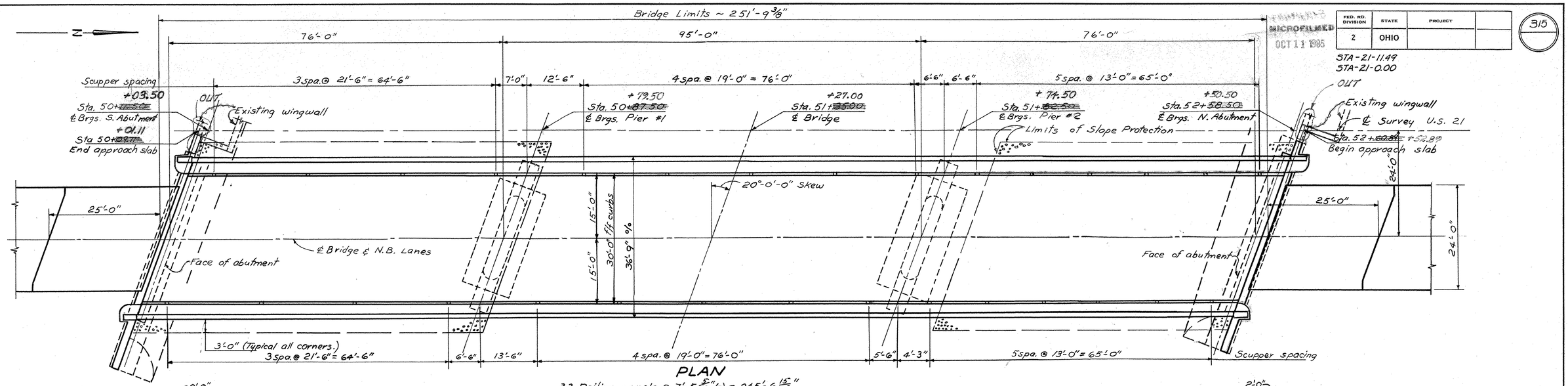
Revised 6-5-61 BFG AJF 9-14-60

MICROFILMED
OCT 11 1985

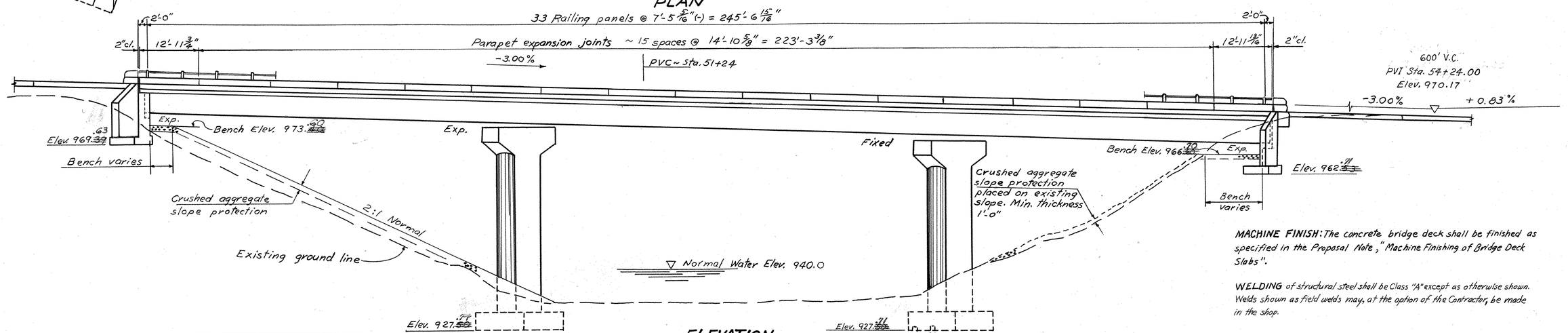
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

315

STA-21-11.49
STA-21-0.00



PLAN



ESTIMATED QUANTITIES

Item	Total	Unit	Description	Abut.	Piers	Superstr.	General	As Built	
E-2	lump	sum	Cofferdams, cribs and sheeting				lump		
E-2	~~476~~	cu. yds.	Unclassified excavation	251	225			C.O.-14 #20.69	596.69
E-2	~~66~~	cu. yds.	Rock excavation		66			C.O.-14 #71.26	137.26
S-1	317	cu. yds.	Class "C" concrete, superstructure			317			
S-1	221	cu. yds.	Class "C" concrete, piers above footings	~~113~~	221				
S-1	~~105~~ 119	cu. yds.	Class "E" concrete, abutment walls	~~105~~				C.O.-7 +14	119
S-1	~~127~~ 105	cu. yds.	Class "E" concrete, footings	~~40~~	87			C.O.-7 +5	132
~~S-3~~	~~22~~	~~lin. ft.~~	~~Waterproofing, premolded sealing strip~~	~~22~~				C.O.-7 -22	0
S-4	~~116,334~~	lbs.	Reinforcing steel	~~8,065~~	27,669	80,600			
S-7	326,100	lbs.	Structural steel			326,100			
S-8	326,100	lbs.	Field painting of structural steel, as per plan			326,100			
S-9	43	sq. yds.	1" preformed expansion joint filler	43					
S-14	512.16	lin. ft.	Railing (aluminum rail, supports, concrete parapet and pylons).	13.0		499.16			
S-16	lump	sum	First test pile		lump				
S-18	760	lin ft.	Cast-in-place concrete piles, 14" diam. No.3 gage min.		760				
S-29	56	cu. yds.	Porous backfill	56					
S-29	30	each	Scuppers, as per plan			30			
I-10	723	sq. yds.	Crushed aggregate slope protection				723		

117,478

WIRE SQ. MESH REINF.

ELEVATION

GENERAL NOTES

REFERENCE shall be made to Standard Drawing No. RB-1-55 revised 2-2-59, and to Supplemental Specification No. S-101 dated 12-2-59.

DESIGN SPECIFICATIONS: This structure conforms to the requirements of "Design Specifications for Highway Structures" of the State of Ohio, Department of Highways, dated 9-1-57 together with current revisions thereof.

PROCEDURE FOR BENCHING THE EXISTING EMBANKMENT SLOPES. The existing south embankment slope shall be excavated to provide 2(two) 14 feet wide stepped benches at elevation 940± and 948± respectively with 1 to 1 slopes between benches. In addition, a bench at elevation 965±, extending 3 feet behind the proposed abutment footing with 1 to 1 slopes up to original ground line shall be excavated in the existing south embankment slope. All elevations and distances shall be measured on the centerline of U.S. 21 North Bound.

EXCAVATION QUANTITY for the south abutment includes the removal of fill material between the top of the earth bench and the bottom of the abutment crossbeam. Excavation quantity for the north abutment includes the removal of material required for construction of the abutments and the removal of existing fill material above the level of the earth bench. Excavation quantity for the piers includes the removal of fill material required for construction of the piers.

FOOTINGS of pier #1 shall extend a minimum of 3" into solid rock or to the elevation shown, whichever is lower.

FOUNDATION BEARING PRESSURE: Abutment footings are designed for a maximum bearing pressure of 1.5 tons per sq. ft. Pier No. 1 footing is designed for a maximum bearing pressure of 6.0 tons per sq. ft.

PILES shall be driven to a minimum bearing capacity of 60 tons per pile for pier No. 2.

CONCRETE DECK PLACING: In order to facilitate water curing of the concrete of the deck slab, the placing of concrete shall progress upgrade. The slab may be placed in sections, between transverse construction joints which are parallel to transverse reinforcing steel and are located near the center of any span.

MACHINE FINISH: The concrete bridge deck shall be finished as specified in the Proposal Note, "Machine Finishing of Bridge Deck Slabs".

WELDING of structural steel shall be Class "A" except as otherwise shown. Welds shown as field welds may, at the option of the Contractor, be made in the shop.

PAINTING AT STIFFENER CRIMPS. The requirement of the last portion of the last sentence in Sec. S-7.14 of the Construction and Materials Specifications which states "... and any remaining openings shall be filled with a metallic compound of a non-shrinking type before the shop paint is applied" shall not apply and the following requirement shall be substituted therefor: "Prior to the assembly of a girder the web plate, the flange angle and the stiffener angle at the location of the crimp in the stiffener angle shall be given a shop coat of paint."

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

Revised As Built

GENERAL PLAN & ELEVATION NOTES & ESTIMATED QUANTITIES

BRIDGE No. WAY-21-0095 R
U.S. 21 OVER CHIPPEWA CREEK
WAYNE Co. STA 50+01.11 ~~STA 50+01.11~~
STA 52+52.89 ~~STA 52+60.81~~

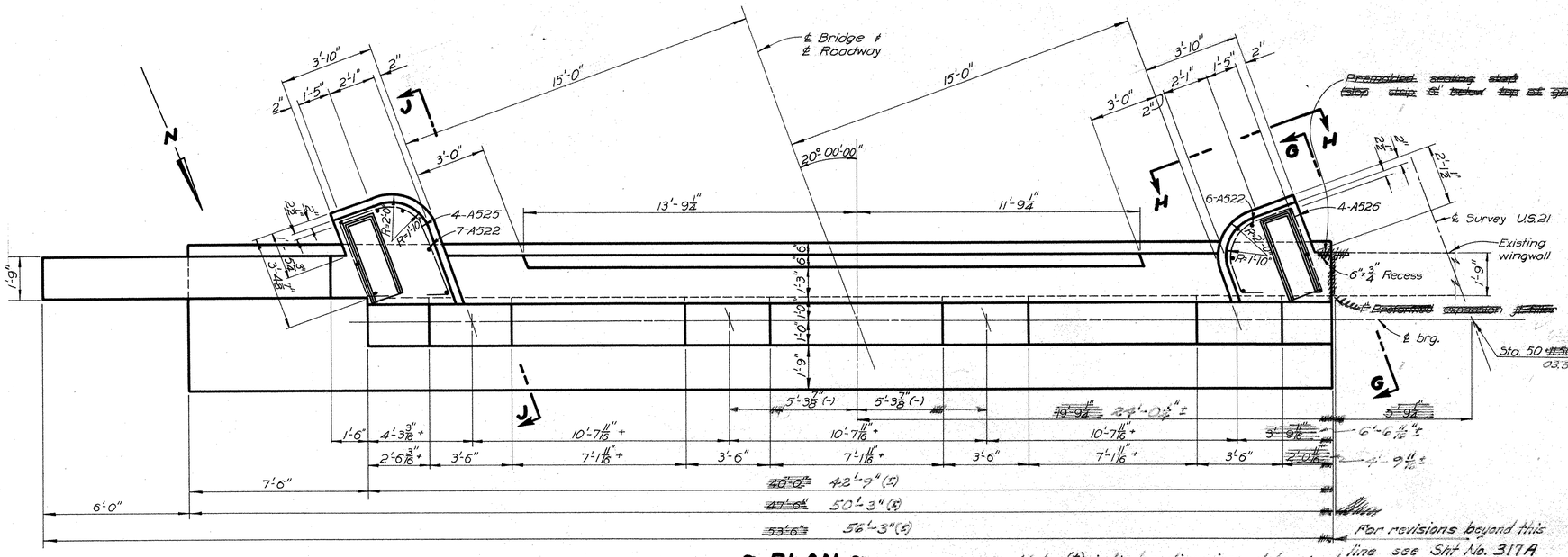
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
J.M.	J.M.	Meglan M.L.D.	CPD	BFG AJG	9-14-60	6-56

Revised As-Built C.P.D.

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

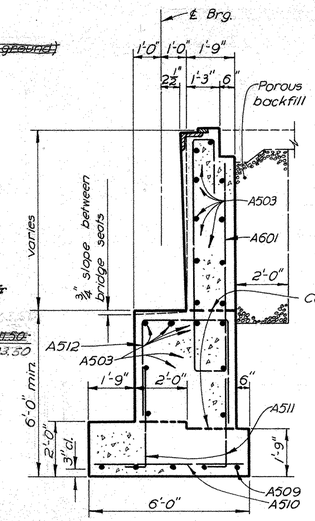
316

STA-21-11.49
WAY-21-0.00

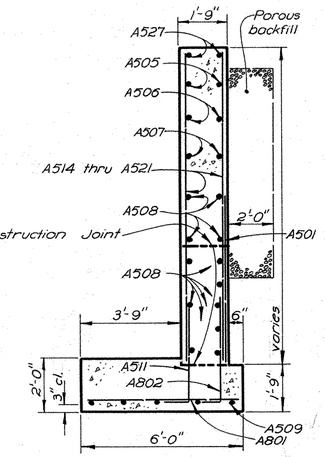


~ PLAN ~

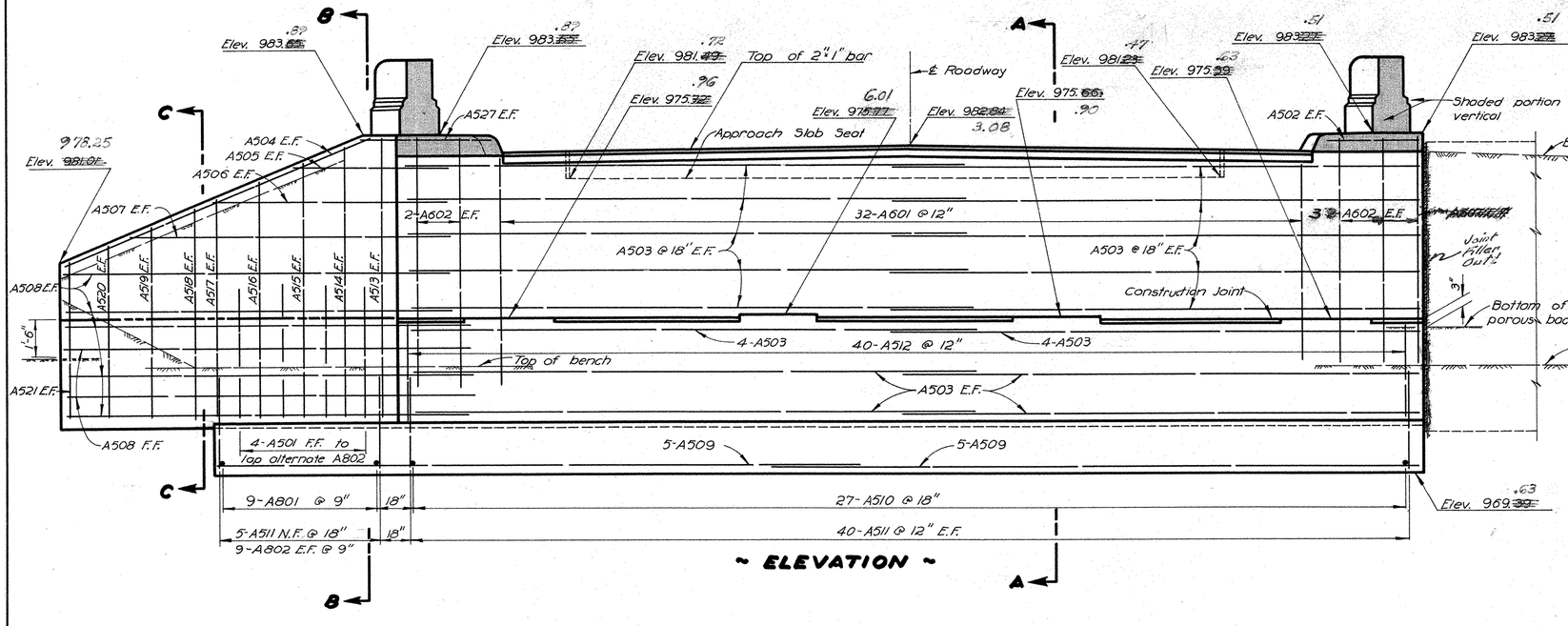
Note: (±) indicates dimensions determined by the location of the existing wingwall.



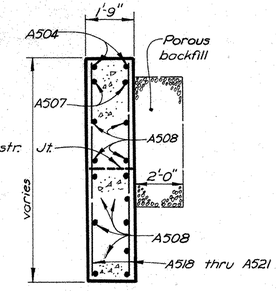
~ SECTION A-A ~



~ SECTION B-B ~



~ ELEVATION ~



~ SECTION C-C ~

~ NOTES ~

POROUS BACKFILL shall extend upward to the approach slab and to the surface of the earth shoulders, and outward to the surface of the embankment slopes. Excavation therefor, in excess of that required for the construction of the abutment, shall be considered as paid for in the bid price per cu. yd. paid for porous backfill.

THE EMBANKMENT at south abutment shall be placed and compacted to the height of the earth bench, after which excavation shall be made for the abutment.

E.F. denotes "each face."
N.F. denotes "near face."
F.F. denotes "far face."

For pylon details see sht. No. 321
For Sections G-G ≠ J-J and view H-H see North Abutment Details sht. No. 317

This sheet is supplemented by Sheet No. 317A

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

SOUTH ABUTMENT DETAILS

BRIDGE No. WAY-21-0095 R
U.S. 21 OVER CHIPPEWA CREEK

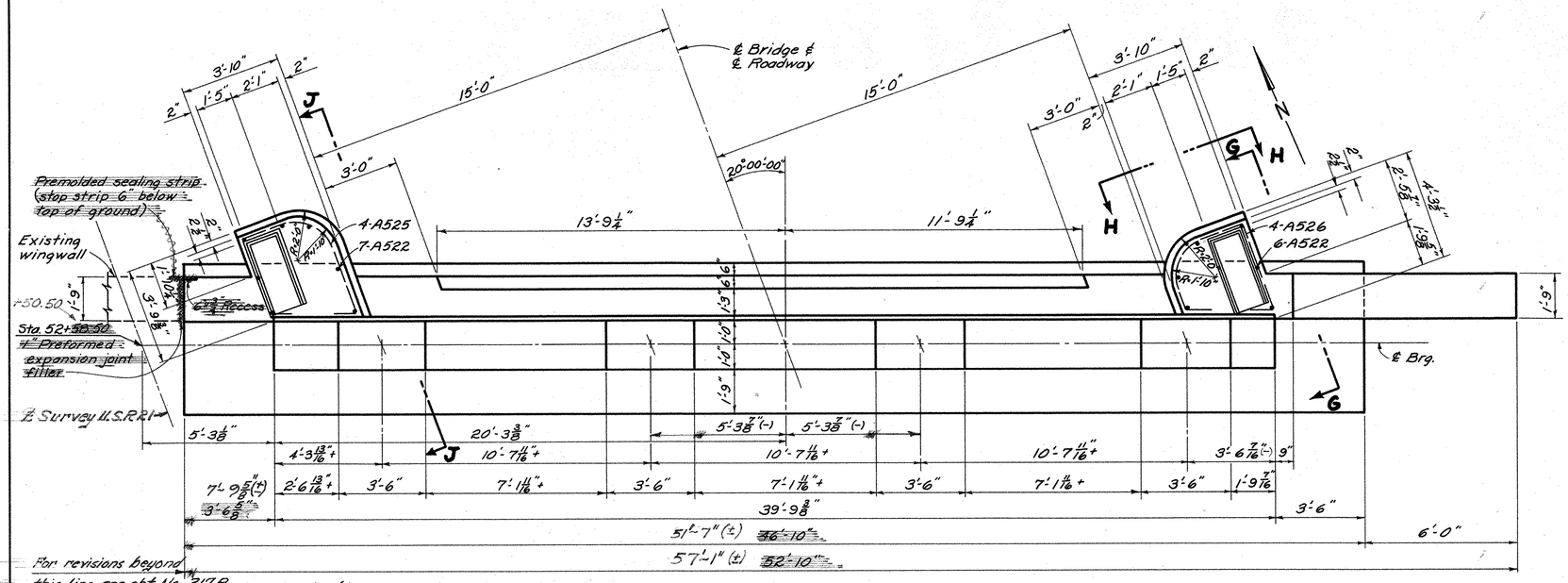
WAYNE Co. STA 50+01.11 STA 50+09.11
STA 52+52.89 STA 52+60.89

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
J.M.	J.M.	Meglen G.P.G.	CPD	BFG	9-14-60	6-5-61

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

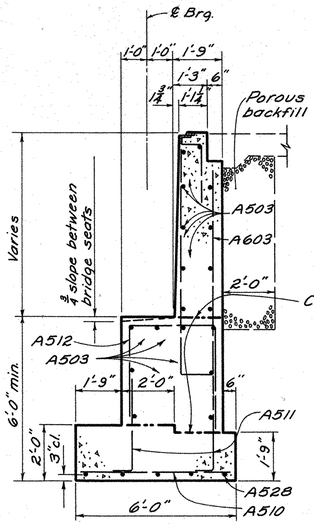
317

STA-21-11.49
WAY-21-0.00

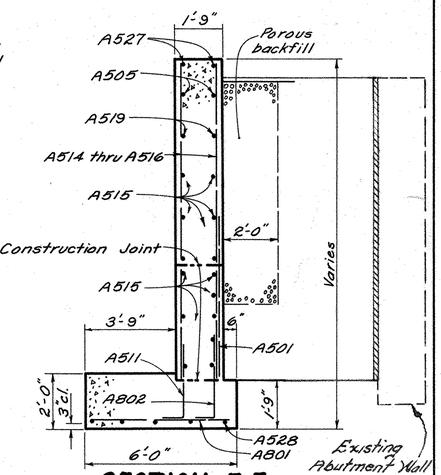


Note: (±) indicates dimensions determined by the location of the existing wingwall.

PLAN

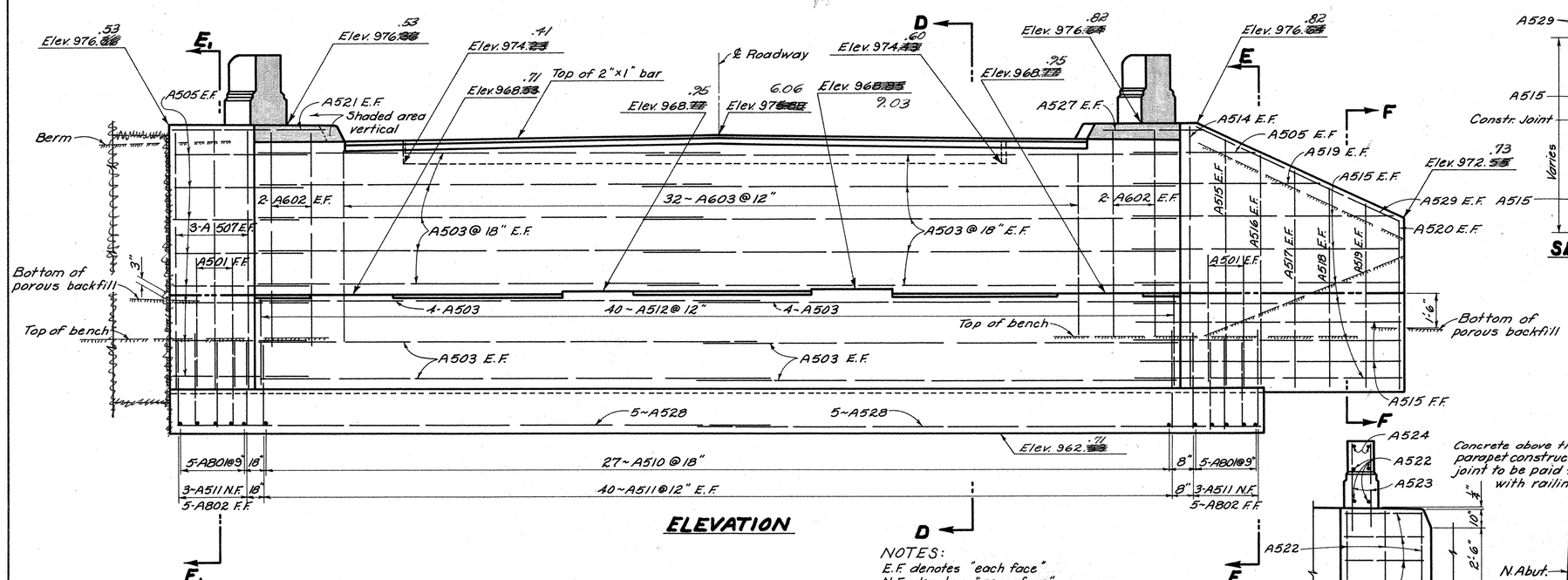


SECTION D-D



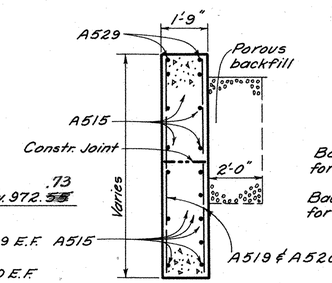
SECTION E-E

Section E-E, similar. For reinforcing steel see Elevation.

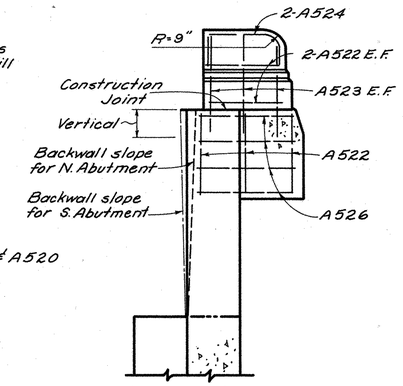


ELEVATION

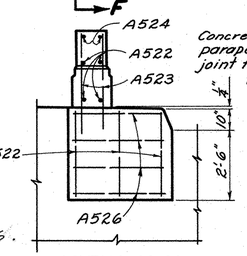
NOTES:
E.F. denotes "each face"
N.F. denotes "near face"
F.F. denotes "far face"
For pylon details see sht. No. 321.
For notes not shown see South Abutment Details, sht. No. 316.



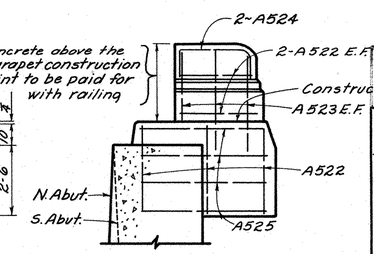
SECTION F-F



SECTION G-G



VIEW H-H



SECTION J-J

This sheet is supplemented by sheet No. 317A

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

NORTH ABUTMENT DETAILS

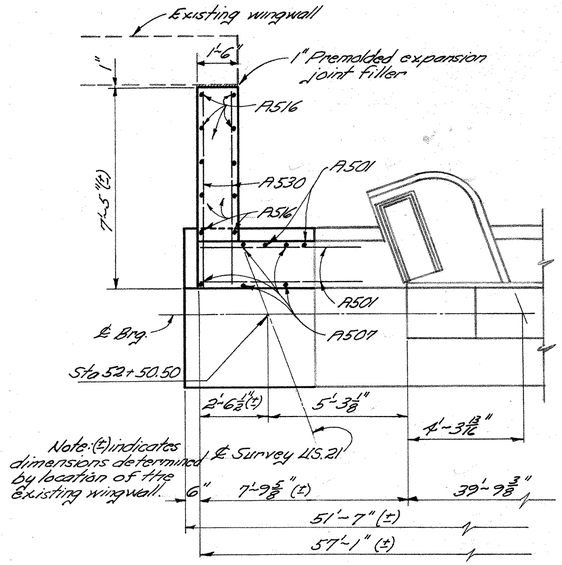
BRIDGE No. WAY-21-0095 R
U.S. 21 over CHIPPEWA CREEK
WAYNE CO. STA 50+01.11 ~~STA 50+09.11~~
STA 52+52.89 ~~52+60.89~~

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
J.M.	J.M.	J.D.P.	CPD	BFG A.J.F.	9-14-60	6-5-61

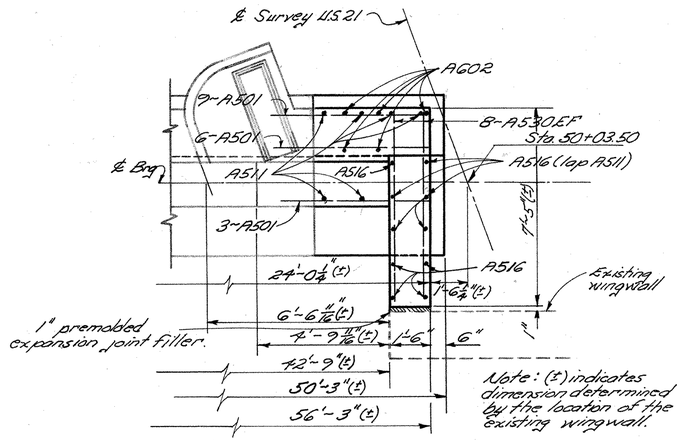
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

317A

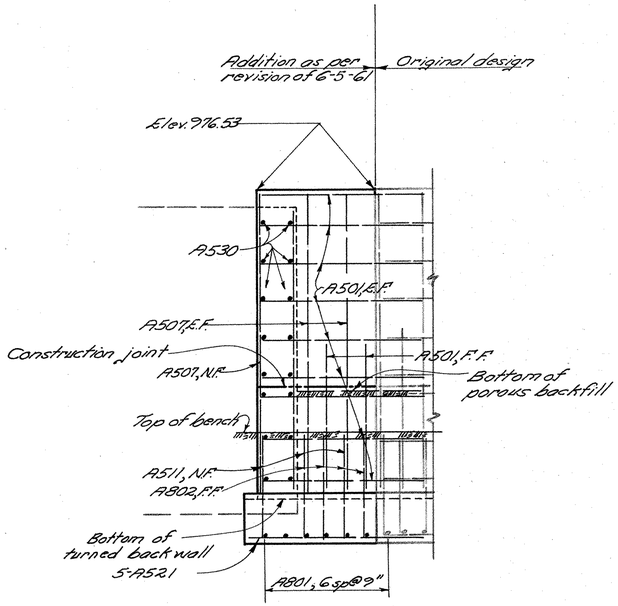
MICROFILMED OCT 11 1985



PART PLAN

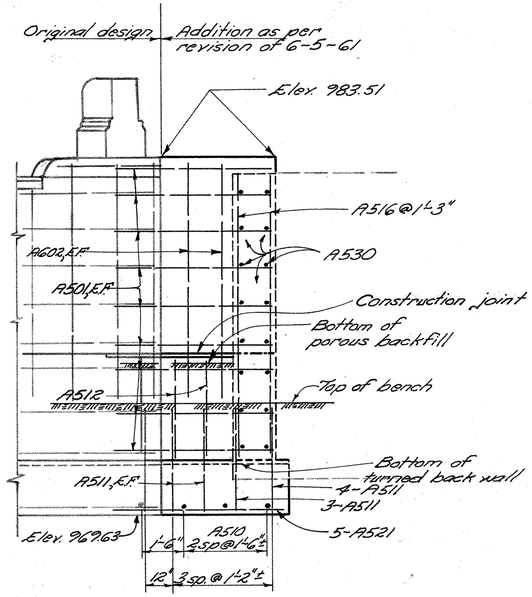


PART PLAN



PART ELEVATION

DETAIL OF N.W. WINGWALL



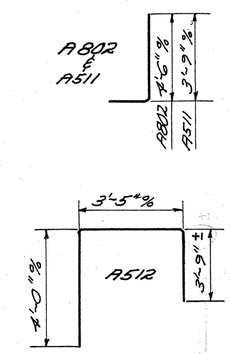
PART ELEVATION

DETAIL OF S.W. WINGWALL

SUPPLEMENTARY REINFORCING STEEL LIST

MARK	No.	LENGTH	WEIGHT	SHP.
North Abutment				
A801	6	5'-8"	91	S
A802	4	5'-5"	58	B
A501	20	5'-10"	122	S
A507	5	11'-9"	61	S
A511	3	4'-3"	13	B
A516	10	10'-6"	110	S
A521	5	6'-6"	34	S
A530	16	7'-2"	120	S
South Abutment				
A602	5	9'-6"	71	S
A501	18	5'-10"	110	S
A510	3	5'-8"	18	S
A511	11	4'-3"	49	B
A512	2	10'-11"	23	B
A516	10	10'-6"	110	S
A521	5	6'-6"	34	S
A530	16	7'-2"	120	S

BENDING DIAGRAMS



This sheet supplements sheets No. 316 and No. 317 and No. 322

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

WINGWALL DETAILS AND SUPPLEMENTARY REINFORCING STEEL LIST

BRIDGE No. WAY-21-0095 R
U.S. 21 over CHIPPEWA CREEK
STA 50+01.11
STA 52+52.89
WAYNE COUNTY

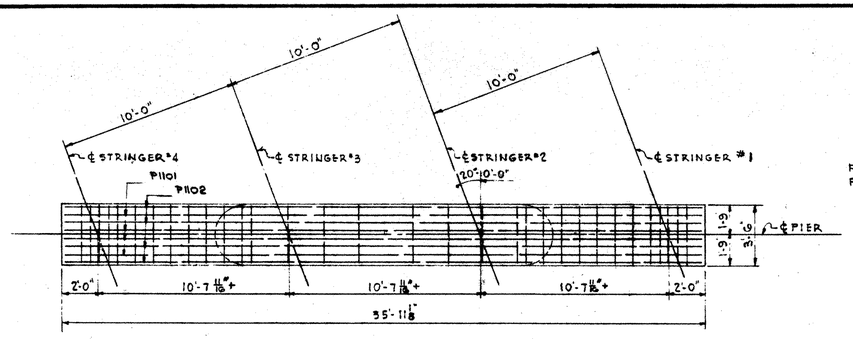
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
JM	JM	Meglan	CPD	BFG A.J.F.	6-5-61	

MICROFILMED
OCT 11 1985

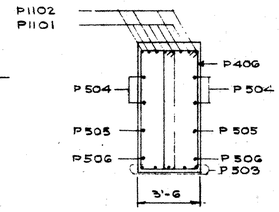
FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

318

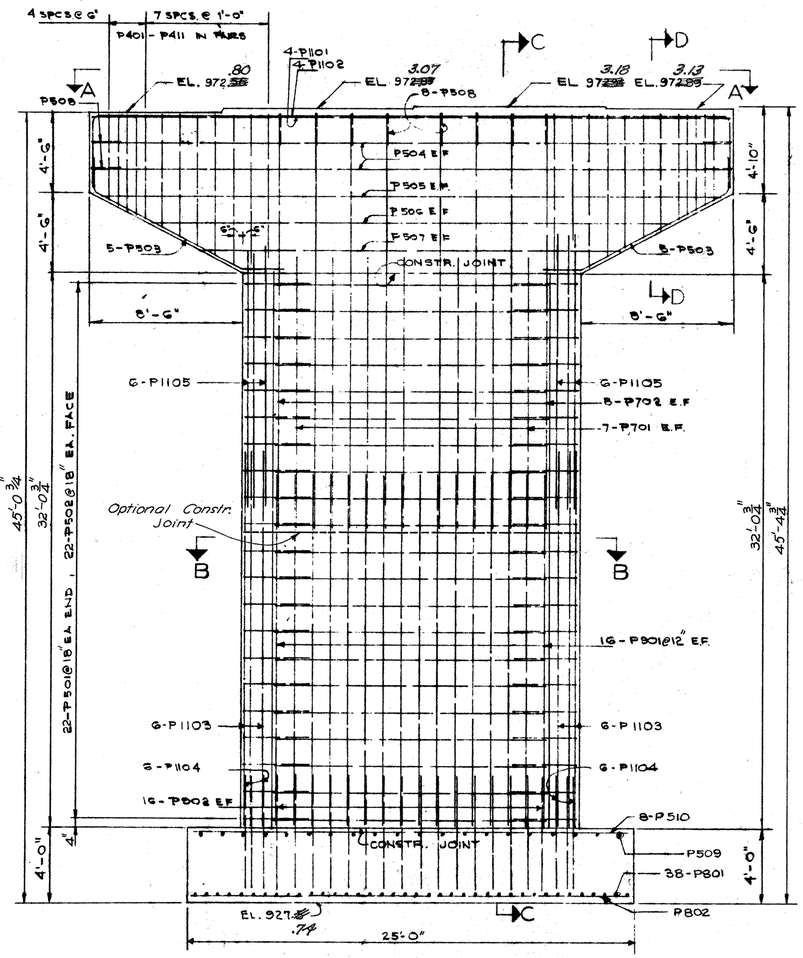
STA. 21-11.49
WAY-21-0.00



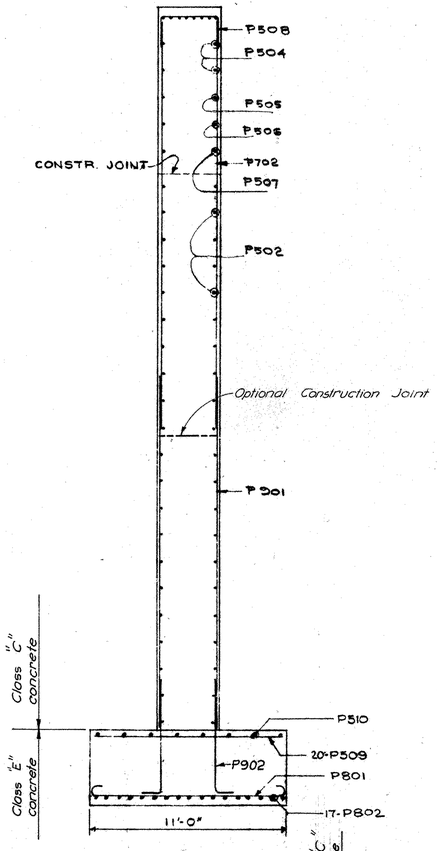
VIEW A-A



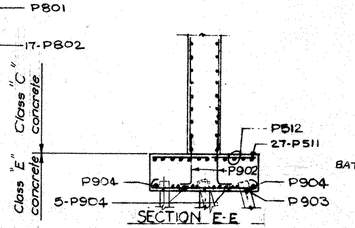
SECTION D-D

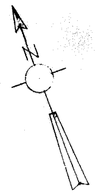


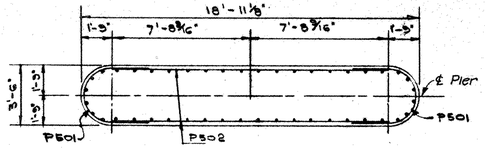
ELEVATION
PIER #1



SECTION C-C



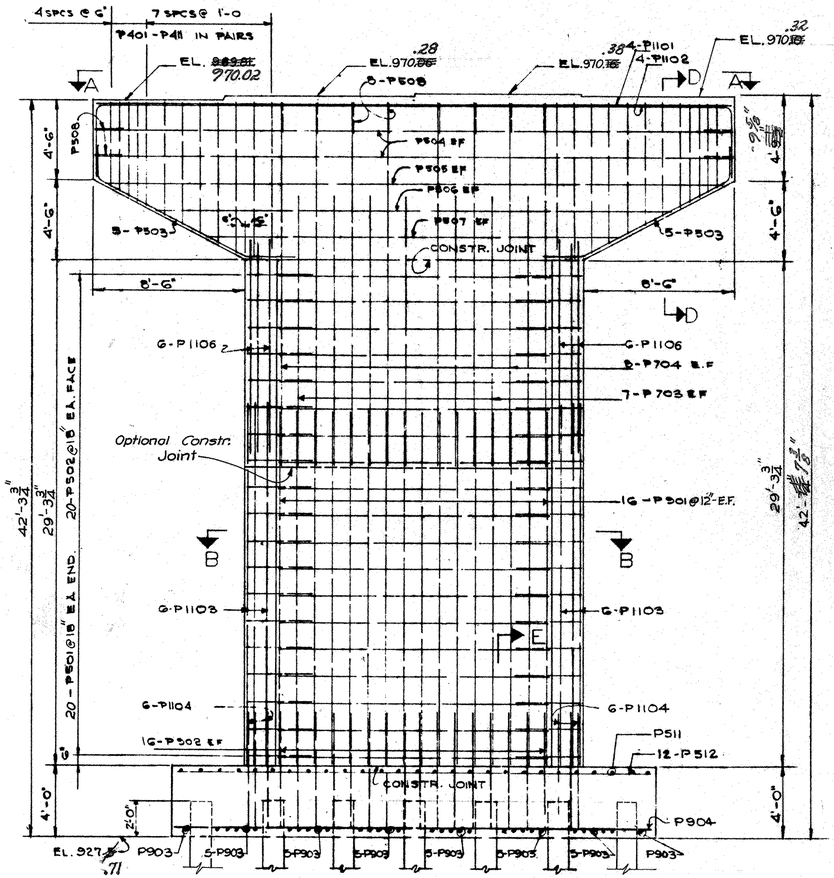




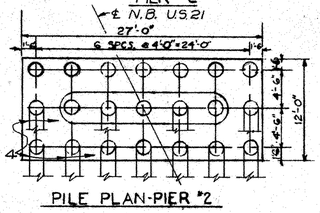
SECTION B-B

NOTES:
Reinforcing steel in the bridge seat of pier No. 2 shall be placed to clear anchor bolts for bolsters.

E.F. denotes "Each Face".



ELEVATION
PIER #2



PILE PLAN-PIER #2

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

5

DETAILS OF PIERS NO. 1, & 2

BRIDGE NO. WAY-21-0095R

U.S. 21 OVER CHIPPEWA CREEK

WAYNE CO.

STA 50+04.11 ~~STA 50+09.11~~
STA 52+52.89 ~~STA 52+60.89~~

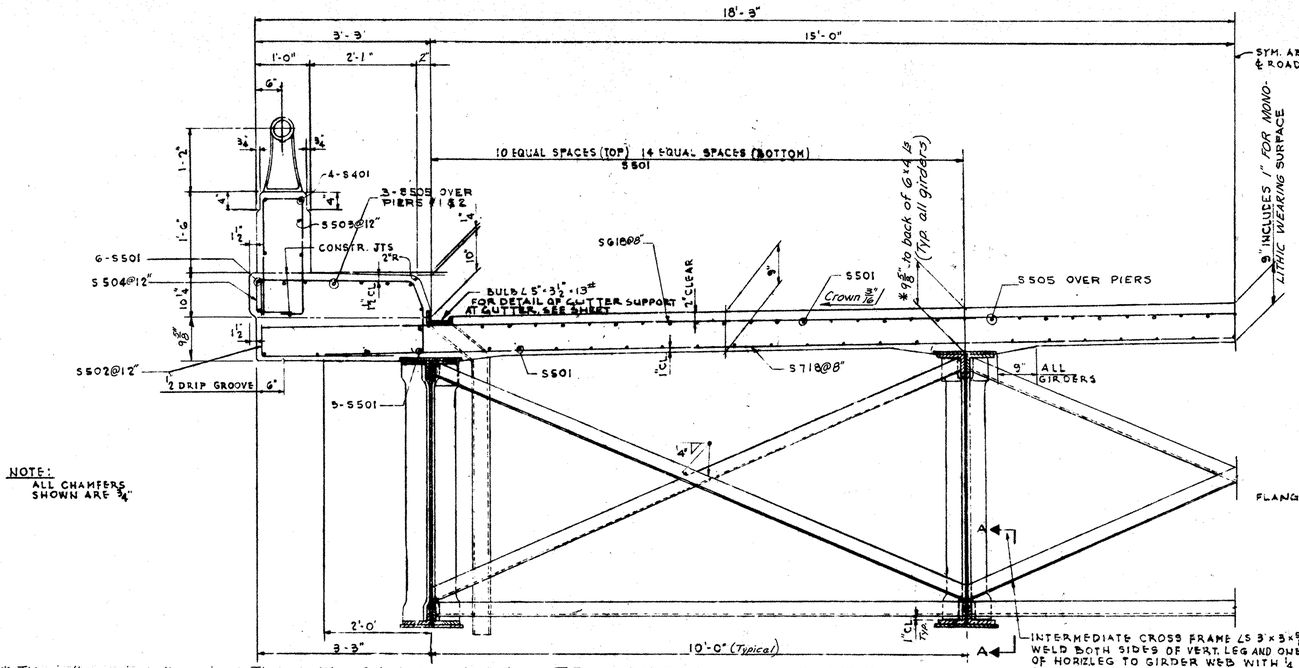
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
J.A.E. J.M.	A.L.B. G.S.	G.P.G. Meghan	E.S.M. CPD	L.N.R. B.F.G.	9-14-60	6-5-61

MICROFILMED
OCT 11 1985

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

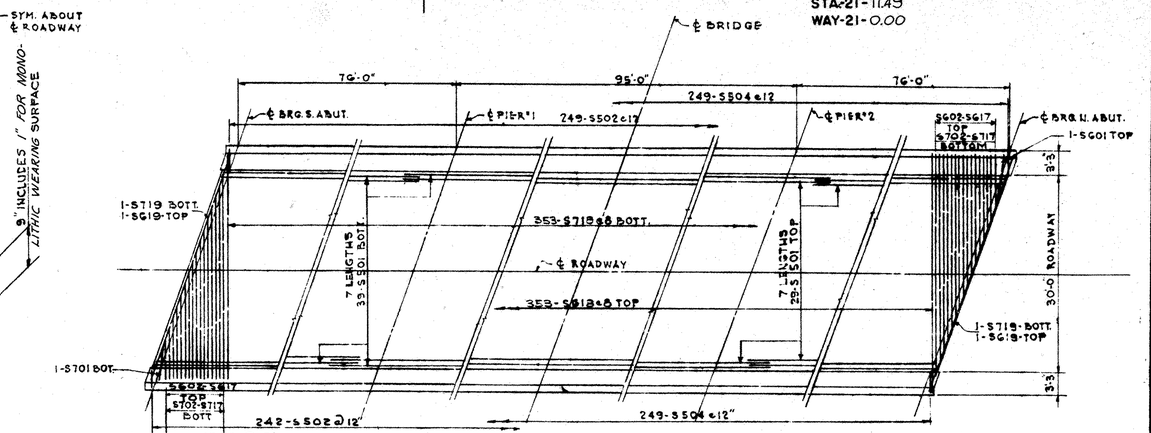
319

STA-21-11.49
WAY-21-0.00

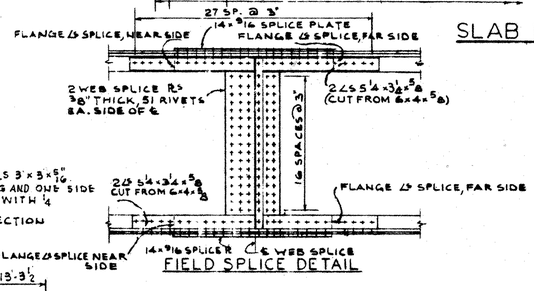


NOTE:
ALL CHAMFERS SHOWN ARE ¾"

TRANSVERSE HALF SECTION



SLAB REINFORCING PLAN



FIELD SPLICE DETAIL

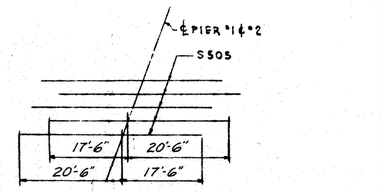
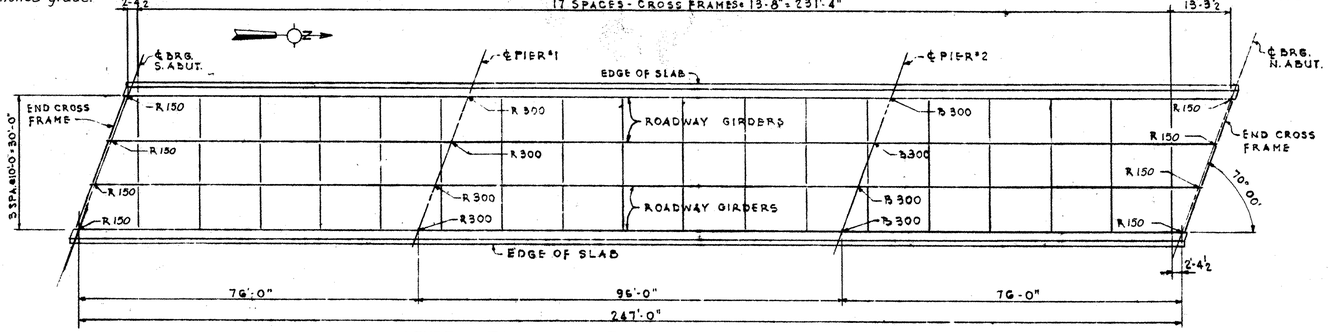
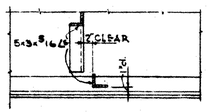


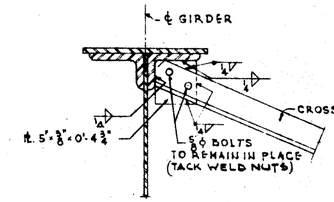
DIAGRAM SHOWING STAGGERING OF S 505 BARS OVER PIERS NO #1 & 2



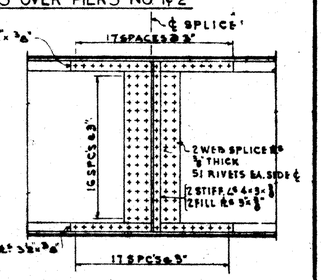
STEEL FRAMING PLAN



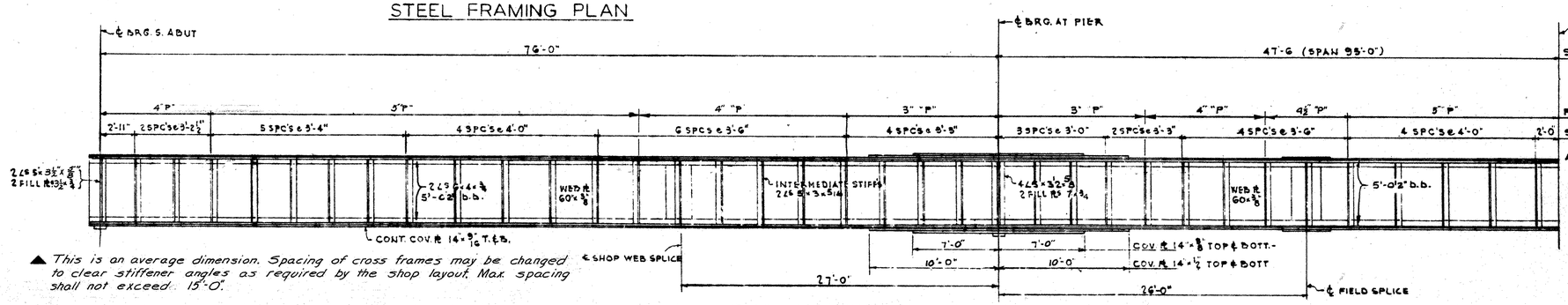
SECTION A-A



TYPICAL DETAIL - TEMPORARY BOLT CONNECTION FOR DIAGONAL CROSSFRAME L'S (FOR ALL INTERMEDIATE CROSS FRAMES) SEE NOTE UNDER TRANSVERSE HALF SECTION FOR BOTTOM CONNECTION



SHOP WEB SPLICE DETAIL ALL GIRDERS



TYPICAL HALF-GIRDER ELEVATION

9 rivets per set of intermediate stiffeners
15 rivets per set of abutment bearing stiffeners
32 rivets per set of pier bearing stiffeners

▲ This is an average dimension. Spacing of cross frames may be changed to clear stiffener angles as required by the shop layout. Max. spacing shall not exceed 15'-0".

* This is the nominal dimension. The quantity of deck concrete to be paid for shall be based on this dimension, even though deviation from it may be necessary because the top flange of the girder may not have the camber or conformation required to place it parallel to the finished grade.

DEFLECTION & CAMBER				
	INT. GIRDERS		FASCIA GIRDERS	
	END SPANS	MID. SPANS	END SPANS	MID SPANS
DEFLECTION DUE TO WEIGHT OF STEEL	0	⅛"	0	⅛
DEFLECTION DUE TO REMAINING D.L.	¼"	¼"	⅜	⅜

NO CAMBERING OF GIRDERS REQUIRED

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

SUPERSTRUCTURE DETAILS

BRIDGE NO. WAY-21-0095R
U.S. 21 OVER CHIPPEWA CREEK
WAYNE CO.
STA 50+01.11 ~~STA. 50+09.11~~
STA 52+52.89 ~~STA. 52+60.89~~

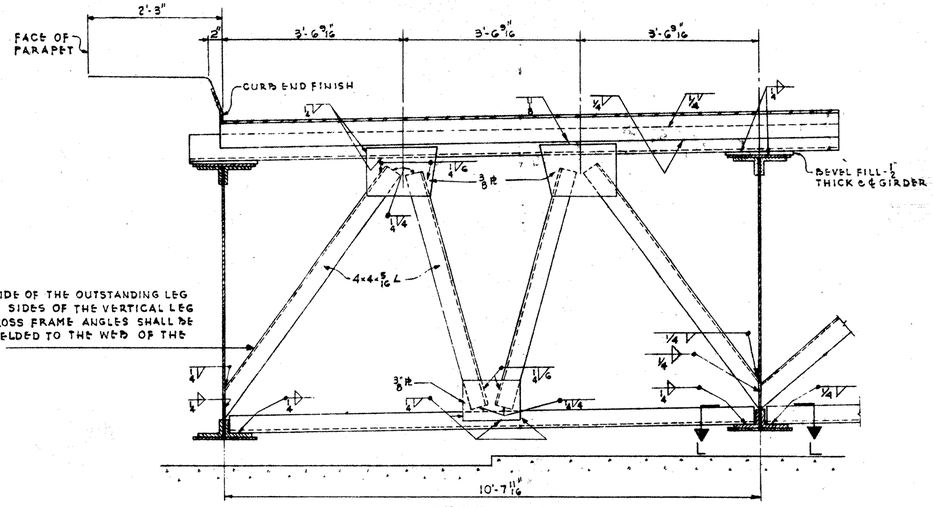
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
J.A.E. J.M.	AL.B	RH	E.S.M. C.P.D	L.N.R. B.F.G	9-14-60	6-5-61

MICROFILMED
OCT 11 1985

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

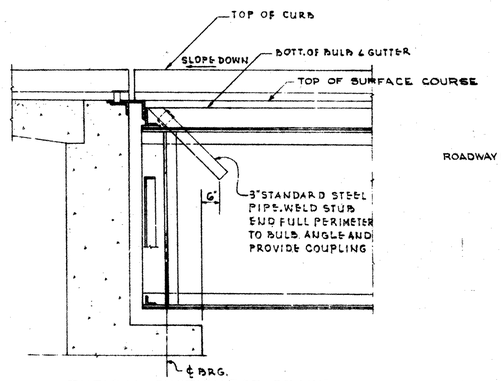
320

STA. 21 - 11.49
WAY-21 - 0.00

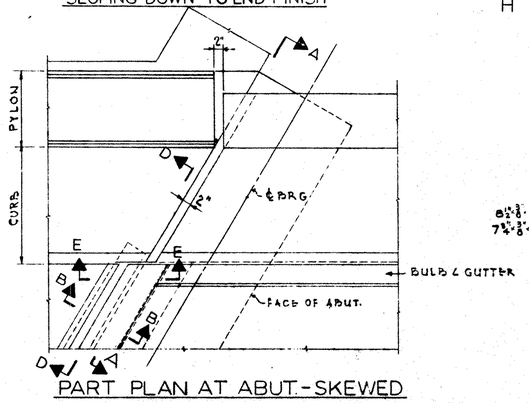


NOTE
THE TOP SIDE OF THE OUTSTANDING LEG AND BOTH SIDES OF THE VERTICAL LEG OF THE CROSS FRAME ANGLES SHALL BE FILLET WELDED TO THE WEB OF THE GIRDERS

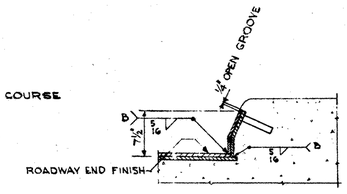
SECTION A-A



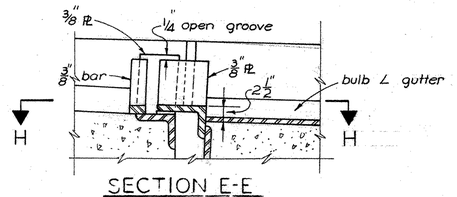
TYPICAL SECTION FOR GRADE SLOPING DOWN TO END FINISH



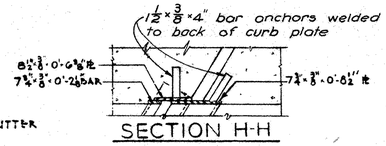
PART PLAN AT ABUT.-SKEWED



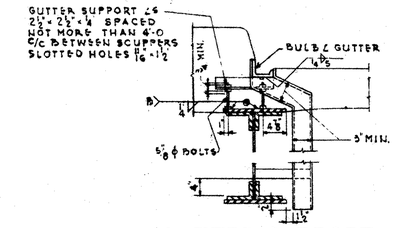
SECTION D-D



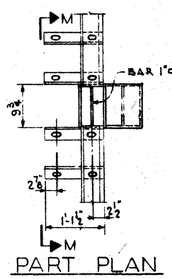
SECTION E-E



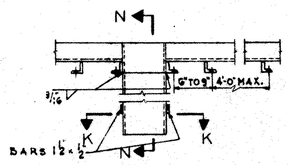
SECTION H-H



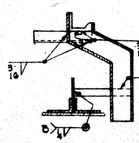
GUTTER SUPPORT AND SCUPPER



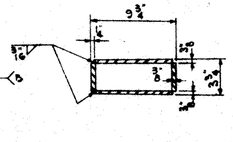
PART PLAN



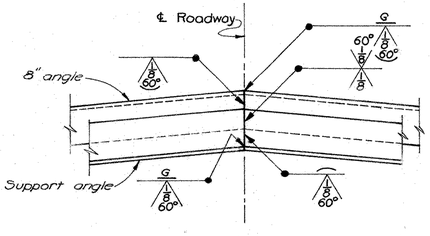
SECTION M-M



SECTION N-N



SECTION K-K

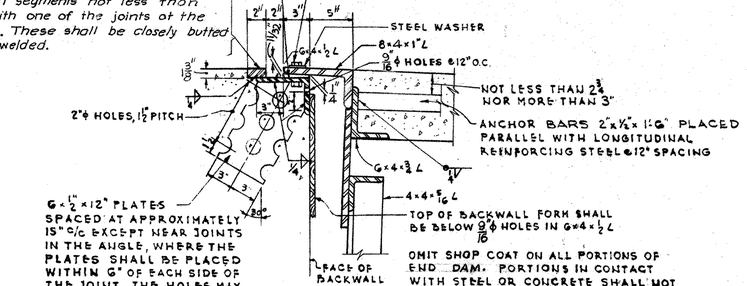


WELDED BUTT JOINT IN SUPERSTRUCTURE END DAM ANGES AT ℄ OF ROADWAY

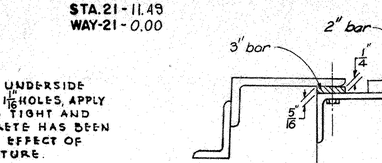
THIS CONTACT SURFACE SHALL NOT BE PAINTED. LUBRICATE WITH FLAKE GRAPHITE PRIOR TO PLACING OF BACKWALL CONCRETE

A welded butt joint in the end dam, along the centerline of roadway, will be required for that portion of the end dam attached to the superstructure. The portion attached to the backwall shall be placed in segments not less than 6'-0" in length, with one of the joints at the apex of the crown. These shall be closely butted but shall not be welded.

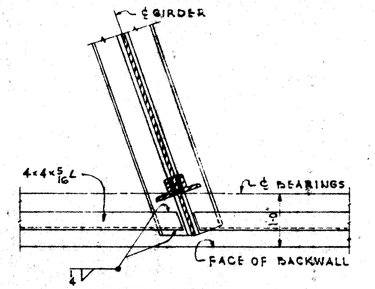
5/8 x 2" BOLTS AT NOT MORE THAN 2'-0" O/C WITH NUTS TACK-WELDED TO UNDERSIDE OF LOWER ANGLE. 1" HOLES IN UPPER ANGLE. CENTER 5/8 BOLTS IN 1 1/16" HOLES, APPLY FLAKE GRAPHITE BETWEEN WASHERS AND ANGLE. TURN BOLTS TIGHT AND RELEASE ONE HALF TURN. REMOVE BOLTS AS SOON AS CONCRETE HAS BEEN REASONABLY SET, PREFERABLY WITHIN TWO HOURS, TO AVOID EFFECT OF TEMPERATURE EXPANSION OR CONTRACTION OF SUPERSTRUCTURE. FILL HOLES WITH BITUMINOUS MATERIAL.



SECTION B-B
(REAR ABUTMENT)



SECTION B-B
(FORWARD ABUTMENT)
For details not shown see Section B-B, rear abutment.



SECTION L - L

NOTES

SHOP DRAWINGS for the girders shall include an overall layout with dimensions showing the relative unloaded vertical position of each girder or girder segment with respect to the others in the same girder line and with respect to a full length base or work line taking into account camber and the profile of the highway.

SHOP ASSEMBLY. *Reaming of holes for rivets or high strength bolts in shop or field splices of girder segments shall be done with at least three adjacent segments assembled in their correct unloaded positions as shown on the shop drawing layout required in the above note.*

PAINTING. *After erection and after the shop coat has been cleaned and, where necessary, repainted in accordance with Sec. 518.04, an additional coat of the same paint as used in the shop shall be applied over the outside face of the outside steel girders and all sides of bottom flange.*

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

SUPERSTRUCTURE DETAILS

BRIDGE NO. WAY21-0095R

U.S. 21 OVER CHIPPEWA CREEK

WAYNE CO.

STA 50+01.11 ~~STA 50+09.11~~
STA 52+52.89 ~~STA 52+60.89~~

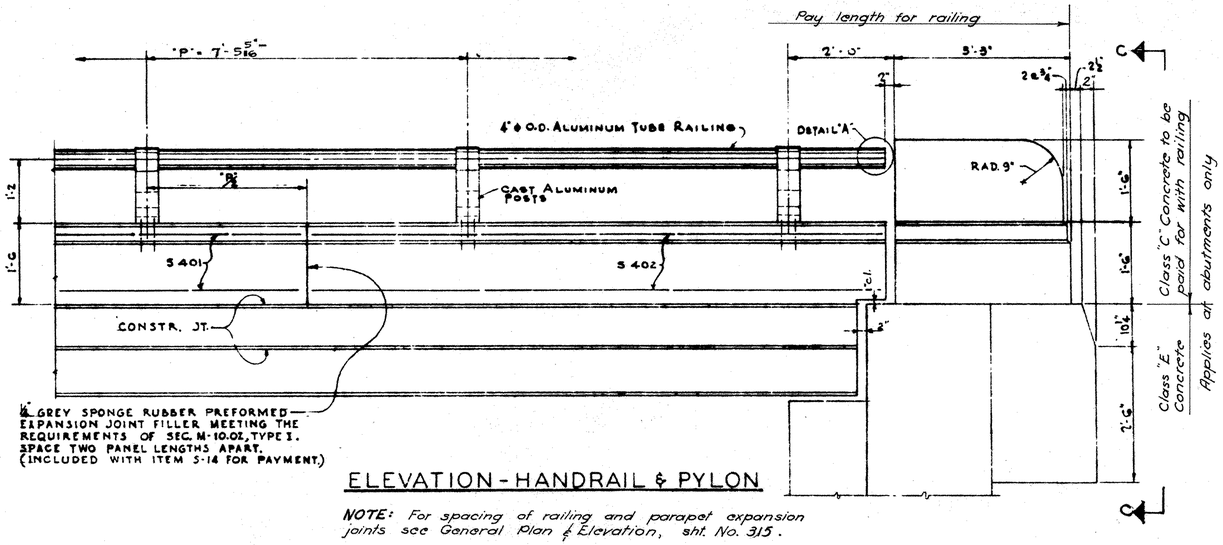
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
J.A.E. J.M.	AL.B.	G.P.G.	E.S.M. CPD	L.N.R. BFG d.m.j.	9-14-60	6-5-61

MICROFILMED
OCT 11 1965

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

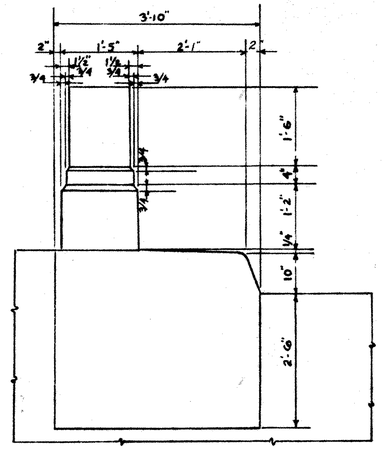
321

STA. - 21 - 11.49
WAY - 21 - 0.00

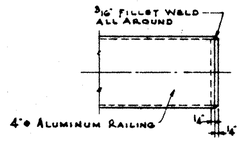


ELEVATION - HANDRAIL & PYLON

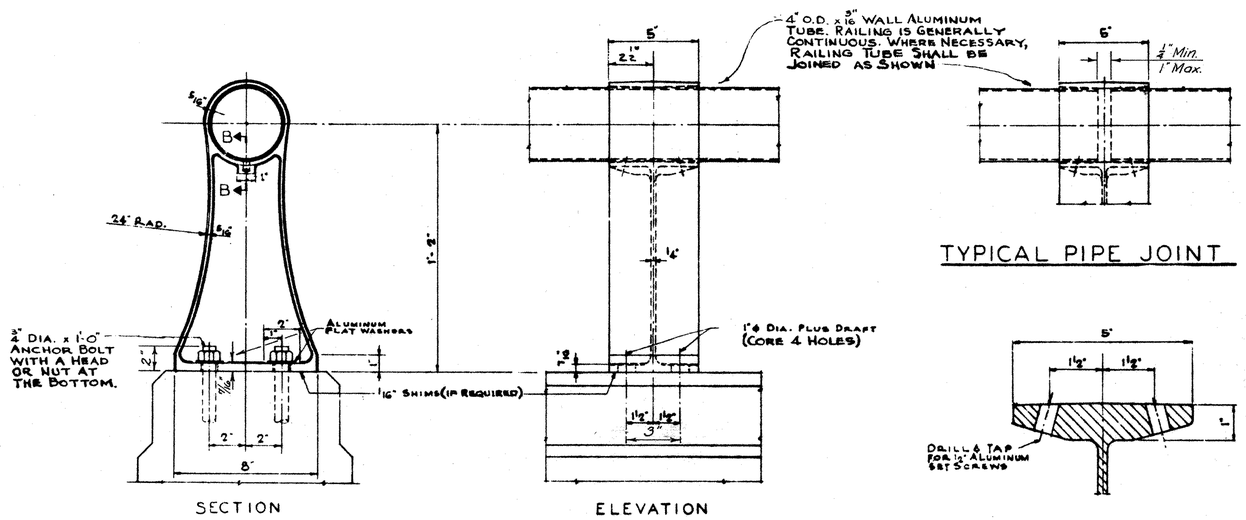
NOTE: For spacing of railing and parapet expansion joints see General Plan & Elevation, sht. No. 315.



VIEW "C-C"



DETAIL A



HANDRAIL DETAILS

TYPICAL PIPE JOINT

SECTION B-B

FINISH: The extreme outer surfaces of cast railing posts shall be given a 60 grit finish.

SHIMS shall be provided under the railing posts, where necessary, to assist in vertical aligning. They shall be of aluminum alloy, 2 3/8" x 1/16" x 8" and shall be slotted for anchor bolts to permit insertion after the posts are in place.

SET SCREWS shall be furnished with each casting and shall be included in the unit price bid per linear foot of railing.

ANCHOR BOLTS shall be aluminum with a head or nut at the lower end. They shall be 1'-0" long and shall have a minimum diameter of 0.62" at the root of the thread. Bolts shall be anodized.

5

HANDRAIL AND PYLON DETAILS

BRIDGE NO. WAY-21-0095R
U.S. 21 OVER CHIPPEWA CREEK
WAYNE CO.
STA 50+01.11 ~~STA. 50+09.1~~
STA 52+52.89 ~~STA 52+60.89~~

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
M.C. J.M.	R.N.	R.N. J.M.B.	E.S.M. C.P.D.	L.N.R. B.F.G.	9-14-60	6-5-61

MICROFILMED
OCT 11 1985

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

STA-21-11.49
WAY-21-0.00

322

REINFORCING STEEL LIST

MARK	No.	LENGTH	WEIGHT	SHP
Superstructure				
S701	2	5'-3"	22	S
S702	2	5'-6"	23	S
S703	2	7'-4"	30	S
S704	2	9'-2"	38	S
S705	2	11'-0"	45	S
S706	2	12'-10"	53	S
S707	2	14'-8"	60	S
S708	2	16'-6"	68	S
S709	2	18'-4"	75	S
S710	2	20'-2"	83	S
S711	2	22'-0"	90	S
S712	2	23'-10"	98	S
S713	2	25'-8"	105	S
S714	2	27'-6"	112	S
S715	2	29'-4"	120	S
S716	2	31'-2"	128	S
S717	2	33'-0"	135	S
S718	353	34'-0"	24,532	S
S719	2	38'-3"	156	S
S601	2	6'-3"	19	S
S602	2	6'-6"	20	S
S603	2	8'-4"	25	S
S604	2	10'-2"	31	S
S605	2	12'-0"	36	S
S606	2	13'-10"	42	S
S607	2	15'-8"	47	S
S608	2	17'-6"	53	S
S609	2	19'-4"	58	S
S610	2	21'-2"	64	S
S611	2	23'-0"	69	S
S612	2	24'-10"	75	S
S613	2	26'-8"	80	S
S614	2	28'-6"	86	S
S615	2	30'-4"	91	S
S616	2	32'-2"	97	S
S617	2	34'-0"	102	S
S618	353	36'-0"	19,087	S
S619	2	38'-3"	115	S
S501	630	36'-10"	24,203	S
S502	498	3'-10"	1,991	B
S503	498	4'-11"	2,554	B
S504	498	5'-9"	2,987	B
S505	68	38'-0"	2,695	S
S401	240	14'-6"	*	S
S402	16	12'-8"	*	S

*Bars included with railing for payment.

MARK	No.	LENGTH	WEIGHT	SHP
Piers #1 and #2				
P1101	8	35'-7"	1,512	S
P1102	8	43'-0"	1,828	B
P1103	24	20'-5"	2,603	S
P1104	24	8'-2"	1,041	B
P1105	12	18'-9"	1,195	S
P1106	12	16'-0"	1,020	S
P901	64	20'-5"	4,443	S
P902	64	7'-7"	1,650	B
P903	32	14'-0"	1,523	B
P904	12	26'-6"	1,081	S
P801	38	10'-6"	1065	S
P802	17	24'-6"	1,112	S
P701	14	15'-11"	455	S
P702	16	22'-9"	744	S
P703	14	13'-3"	379	S
P704	16	20'-0"	654	S
P501	84	9'-0"	788	B
P502	84	14'-7"	1,278	S
P503	20	13'-3"	276	B
P504	8	35'-7"	297	S
P505	4	34'-11"	146	S
P506	4	29'-3"	122	S
P507	4	23'-7"	98	S
P508	24	5'-11"	148	B
P509	20	10'-6"	219	S
P510	8	24'-6"	204	S
P511	27	11'-6"	324	S
P512	12	26'-6"	332	S
PA01	8	13'-7"	73	B
PA02	8	14'-3"	76	B
PA03	8	14'-9"	79	B
PA04	8	15'-3"	81	B
PA05	8	15'-9"	84	B
PA06	8	16'-11"	90	B
PA07	8	17'-11"	96	B
PA08	8	18'-11"	101	B
PA09	8	20'-1"	107	B
PA10	8	21'-1"	113	B
PA11	16	21'-9"	232	B

MARK	No.	LENGTH	WEIGHT	SHP
North Abutment ▲				
A801	10	5'-8"	151	S
A802	10	5'-5"	145	B
A602	8	9'-6"	114	S
A603	32	18'-10"	905	B
A501	4	5'-10"	24	S
A503	36	20'-8"	776	S
A505	18	5'-6"	103	S
A507	6	11'-3"	74	S
A510	27	5'-8"	160	S
A511	86	4'-3"	381	B
A512	40	10'-11"	455	B
A514	2	12'-0"	25	S
A515	16	11'-3"	188	S
A516	2	10'-6"	22	S
A517	2	9'-9"	20	S
A518	2	9'-0"	19	B
A519	4	8'-3"	34	B
A520	2	7'-6"	16	S
A521	2	6'-6"	14	S
A522	21	2'-10"	*	S
A523	12	4'-9"	59	S
A524	4	5'-3"	*	B
A525	4	12'-11"	54	B
A526	4	10'-9"	45	B
A527	2	4'-4"	9	S
A528	10	24'-0"	250	S
A529	2	9'-6"	20	S
South Abutment ▲				
A601	32	19'-2"	921	B
A602	10	9'-6"	143	S
A501	4	5'-10"	24	S
A502	2	3'-7"	7	S
A503	36	20'-8"	776	S
A504	2	13'-0"	27	S
A505	2	5'-6"	11	S
A506	2	8'-6"	18	S
A507	2	11'-9"	25	S
A508	12	15'-0"	188	S
A509	10	24'-6"	256	S
A510	27	5'-8"	160	S
A511	85	4'-3"	377	B
A512	40	10'-11"	455	B
A513	2	12'-2"	25	S
A514	2	12'-0"	25	S

MARK	No.	LENGTH	WEIGHT	SHP
South Abutment (Continued)				
A515	2	11'-3"	23	S
A516	2	10'-6"	22	S
A517	2	9'-9"	20	S
A518	2	9'-0"	19	S
A519	2	8'-3"	17	S
A520	2	7'-6"	16	S
A521	2	6'-6"	14	S
A522	21	2'-10"	*	S
A523	12	4'-9"	59	S
A524	4	5'-3"	*	B
A525	4	12'-11"	54	B
A526	4	10'-9"	45	B
A527	2	4'-4"	9	S
A801	9	5'-8"	136	S
A802	9	5'-5"	130	B
Replacement Bars				
RE1101	1	7'-6"	~	S
RE901	1	6'-10"	~	S
RE801	1	6'-6"	~	S
RE701	2	6'-3"	~	S
RE601	2	5'-11"	~	S
RE501	3	5'-7"	~	S
RE401	1	5'-3"	~	S

▲ For additional abutment reinforcing steel see Supplementary Reinforcing Steel List on sheet No. 317A.

BAR SIZE is indicated in the bar mark. The first digit where three digits are used and the first two digits where four are used, indicate the bar size number. For example: A601 is a No. 8 size bar and P1105 is a number 11 size bar.

REPLACEMENT BARS: If reinforcing bars are fabricated from stock which has previously been tested and approved by the Ohio Highway Testing Laboratory, test samples as provided in Sec. S-A.02 need not be furnished and replacement bars will not be required.

This sheet is supplemented by sheet No. 317A

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

REINFORCING STEEL LIST

BRIDGE No. WAY-21-0025R
U.S. 21 OVER CHIPPEWA CREEK
WAYNE COUNTY
STA 50+01.11
~~STA 51+08.34~~
~~STA 52+16.55~~
STA 52+52.82

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
J.M.	J.G.N.	C.M. Meglan	E.S.M. C.P.D.	L.N.R. B.F.G. A.J.F.	9-14-60	6-5-61

MICROFILMED
OCT 11 1985

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

523

STA 21-11.49
WAY 21-0.00
10.2 Mi.± N. of Massillon

℄ SURVEY CURVE DATA

Δ =	31°-35'-50"	E =	224.55'
D =	1°-00'-00"	PC =	65+33.86
R =	5729.58'	PI =	81+55.02
L =	3159.72'	PT =	96+93.58
T =	1621.16'		

R/W Fence ℄

℄ US 21 South Bound Lane (Existing)

10.2 Miles To Massillon

N 0°-12'-04" E ℄ Survey U.S.R. 21

℄ U.S. 21 PROPOSED NORTH BOUND LANE

PC 65+33.86

End Appr. Slab Sta. 65+72.00

Sta. 66+43.54 ℄ U.S. 21
Sta. 50+00.00 ℄ Main Track PRR
R.R. Sta. 1465+35.5
73°-25'-15" Skew ℄

To Tangent

Main Track 49

Pennsylvania R.R. Spur Track

R/W ℄

+86.51 47.50'

+22.94 47.50'

979.02

980.35

Critical Cl. Pt. "A"

Begin Appr. Slab Sta. 67+32.61

4.8 Miles To Relocated S.R. 982

3' Bench

2:1

4'

5.6'

℄

+63.74 47.50'

+99.42 47.50'

R/W ℄

FOUNDATION SOUNDINGS: Foundation design and foundation quantities are based on a study of rod soundings and soil-sampling soundings made at the site. This sounding information may be inspected in the office of the Bureau of Bridges in Columbus or in the Division office, but the State does not guarantee the accuracy thereof.

R/W Fence ℄

Existing R.R. R/W ℄

Existing R.R. R/W ℄

953.0

65+43.04
149.15

B R I D G E L I M I T S

66+60.74
60.90

Profile Grade 979.52

Profile Grade 979.93

Profile Grade 980.35

Profile Grade 980.76

Profile Grade 981.18

Profile Grade 977.86

Profile Grade 978.27

Profile Grade 978.69

Profile Grade 979.10

Profile Grade 981.59

Profile Grade 982.00

REP 980.10
LEP 979.33

REP 980.51
LEP 979.74

REP 980.93
LEP 980.16

REP 980.84
LEP 980.07

REF TO CEP 980.18

Sta. 65+72.00 (on ℄ Survey)

Sta. 66+48.34 (on ℄ Survey)

Sta. 67+32.61 (on ℄ Survey)

+0.83% Proposed Profile Grade ℄

Bench Elev. 973.4±

Elev. 969.40

Bench Elev. 974.6±

970.60

41 @ 5'-7 1/2" = 230.42 Ctrs. 23.33 Ht.

℄ Main Tk.

℄ Spur Tk.

953 1+35 7.52

953 1+41 7.58

951 7.52

951 7.58

Elev. 946.50

Elev. 944.50

14" Cast-in-place reinf. concr. piles, est. av. pay length 50'

Proposed Profile Grade On Centerline North Bound Lane U.S.R. 21

63+50 64 +50 65 +50 66 +50 67 +50 68 +50

12' 12' 12' 12' 12' 12'

EXISTING ADJACENT BRIDGE

Type: Continuous Steel Beams With Reinforced Concrete Deck & Substructure
Spans 48'-1 3/16", 59'-11 15/16", 47'-10 9/8"
Roadway: 30'-00" F/F, 2'-0" Safety Curb
Load Frequency: 2000 C. F.
Skew: 13°-13'-30" L. F.
Surface Course 1" Monolithic Concrete
Alignment: On 1°-00' Curve Left
Superelevation: 0.032 Ft/Ft

CLEARANCE DIAGRAM
R/W Fence ℄ (Normal to ℄ of Tracks)

Bottom of Steel

Face of Pier

12'-5" Ht. A

23.0 Min. Rad.
23.33 Ctrs.

Toe of Pier

℄ Main Track

4'

℄ Spur Track

60'-0"

PROPOSED STRUCTURE

Type: Continuous steel beams with reinf. concrete deck and substructure.
Spans: 48.08'-59.97'-47.87' c/c brgs.
Roadway: 30 ft. face to face of 2'-3" safety curbs.
Load Frequency: CF = 2000 (57).
Skew: 13°-25'-15" L.F.
Wearing Surface: 1" Monolithic concrete.
Approach Slabs: As-1-54-(25' long).
Alignment: 1°00' Curve left.
Superelevation: 0.032 ft. per ft.

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
BUREAU OF BRIDGES

SITE PLAN

BRIDGE NO. WAY-21-0125R
U.S.R. 21 OVER PENN. R.R.
WAYNE CO. U.S.R. 21

SEC. WAY 21-0.00 STA. 65 +72.00
SCALE 1" = 20' 67 +32.61

PRESENT TOPOGRAPHY		PROPOSED WORK			
SURVEYED	DRAWN	DESIGNED	DRAWN	CHECKED	REVIEWED
		JCP	JCP	JHB	

Aerial Survey BFG JHB 9-19-60

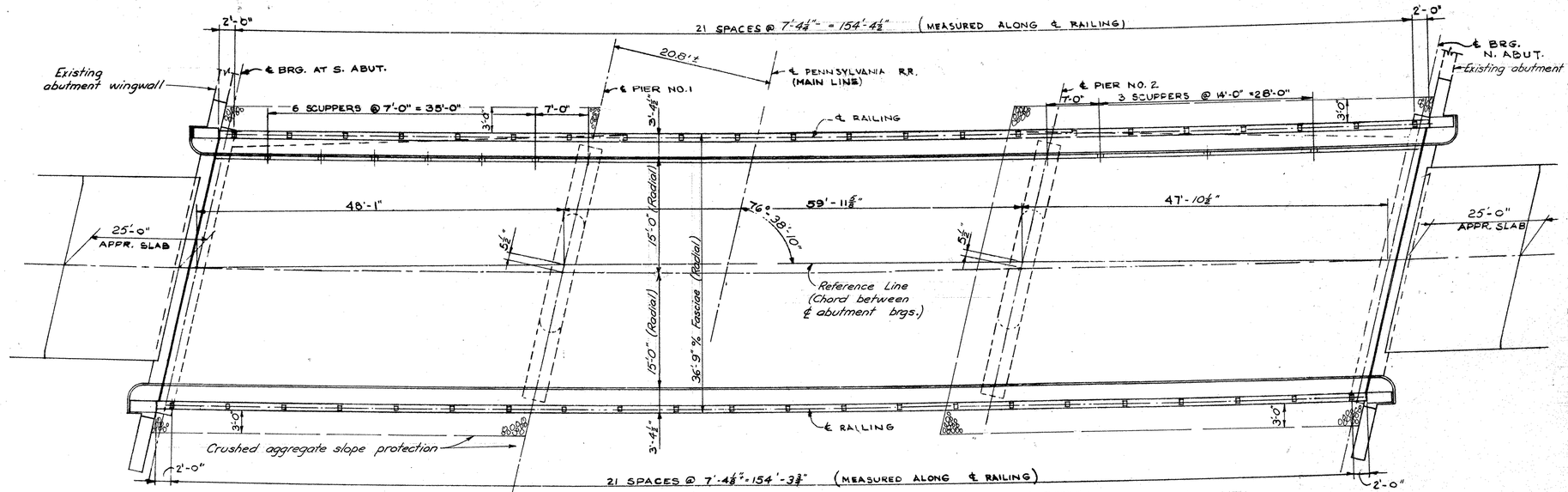
1/8

MICROFILMED OCT 11 1965

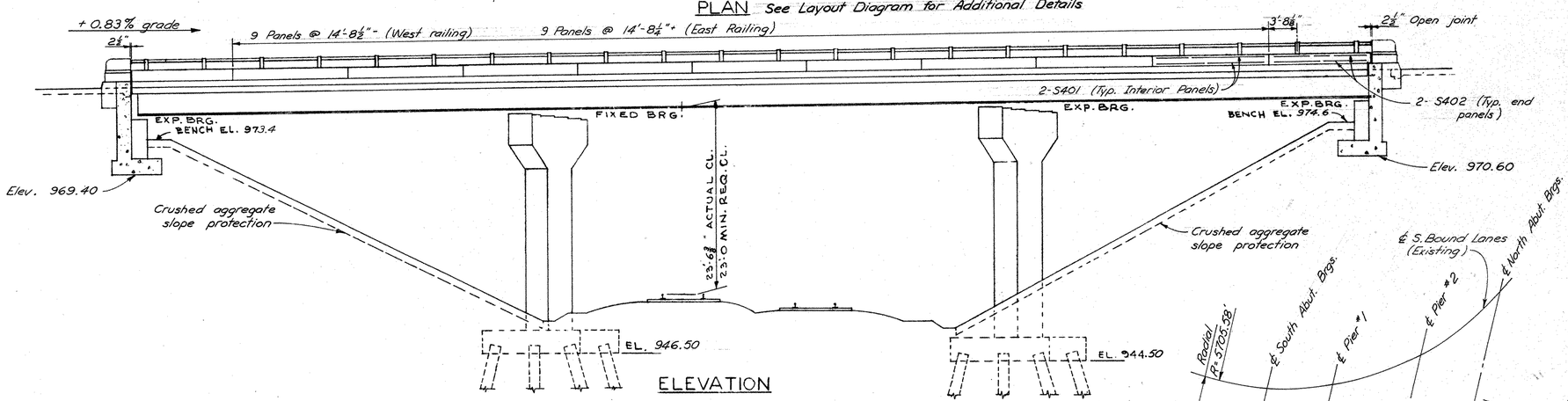
FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
12	OHIO		

324

STA-21-11.49
WAY-21-0.00



PLAN See Layout Diagram for Additional Details



ELEVATION

ESTIMATED QUANTITIES

ITEM	TOTAL	UNIT	DESCRIPTION	ABUT.	PIERS	SUPER.	GENERAL		As Built	
E-2	LUMP	SUM	COFFERDAMS, CRIBS, AND SHEETING				Lump		CO-13 +40.94	415.94
E-2	~~375~~	CU. YDS.	UNCLASSIFIED EXCAVATION	139	236					
S-1	193	CU. YDS.	CLASS "C" CONCRETE, SUPERSTRUCTURE			193				
S-1	136	CU. YDS.	CLASS "C" CONCRETE, PIERS ABOVE FOOTINGS		136					
S-1	85	CU. YDS.	CLASS "E" CONCRETE, ABUTMENT WALLS	85						
S-1	91	CU. YDS.	CLASS "E" CONCRETE, FOOTINGS	32	59					
S-4	80,107	LBS.	REINFORCING STEEL	6,308	19,209	54,590				
S-7	140,500	LBS.	STRUCTURAL STEEL (as per plan)			140,500				
S-8	140,500	LBS.	FIELD PAINTING OF STRUCTURAL STEEL			140,500				
S-14	330.02	LIN. FT.	RAILING *			330.02				
S-16	LUMP	SUM	FIRST TEST PILE				Lump			
S-18	~~1600~~	LIN. FT.	14" CAST-IN-PLACE REINFORCED CONCRETE PILES		1600				CO-7 +251.3	1,851.3
S-29	9	Each	Scuppers			9				
S-29	~~30~~	CU. YDS.	POROUS BACKFILL	30					CO-22 +3	33
I-10	~~481~~	Sq. Yds.	Crushed aggregate slope protection				481			
S-3	~~18~~	Lin. Ft.	Waterproofing, premolded sealing strip	18					CO-12 -18	0
S-9	311	Sq. Ft.	1" Preformed expansion joint filler	31						

*Includes aluminum rail and supports, concrete parapet and pylons

GENERAL NOTES

CONSTRUCTION CLEARANCE OF 19'-0" VERTICALLY ABOVE THE TOP OF THE RAILROAD TRACKS AND 8'-0" HORIZONTALLY FROM THE CENTER OF THE TRACKS SHALL BE MAINTAINED AT ALL TIMES.

SHEETING AND BRACING: BEFORE CONSTRUCTION IS STARTED, EIGHT SETS OF PRINTS SHOWING DETAILS OF THE SHEETING AND BRACING TO BE USED FOR EXCAVATION ADJACENT TO THE RAILROAD TRACKS SHALL BE SUBMITTED TO THE DIRECTOR FOR APPROVAL BY THE DEPARTMENT OF HIGHWAYS AND BY THE RAILROAD COMPANY.

ALIGNING RAILROAD TRACKS: AFTER THE CONTRACTOR HAS COMPLETED ALL EXCAVATION AND BACKFILL ADJACENT TO THE RAILROAD TRACKS IN COMPLIANCE WITH SEC. E-2.04 AND E-2.08 OF THE CONSTRUCTION AND MATERIAL SPECIFICATIONS, SUBJECT TO THE SUPERVISION OF THE RAILROAD COMPANY, NOTHING IN SEC. E-2.04, E-2.08 OR G-8.07 OF THE SPECIFICATIONS SHALL BE CONSTRUED TO HOLD THE CONTRACTOR LIABLE FOR ALIGNING AND RESURFACING THE RAILROAD TRACKS.

REFERENCE *shall be made to Standard Drawing AR-1-57 revised 2-2-59, and to Supplemental Specification S-101 dated 12-2-59.*

DESIGN SPECIFICATIONS: *This structure conforms to the requirements of "Design Specifications for Highway Structures" of the State of Ohio, Department of Highways, dated 9-1-57 together with current revisions thereof.*

RAILROAD AERIAL LINES *shall be relocated by the railroad. The Contractor shall use all precautions necessary to see that the lines are not disturbed during the construction stage and shall cooperate with the railroad in the relocation of these lines. The cost of the relocation shall be included in the railroad force account work.*

EXCAVATION QUANTITY *for the abutments, in addition to that outlined in Sec. E-2.09, includes the removal of material bounded by the proposed bench, by the front vertical plane described in Sec. E-209 and by the finished slope of the cut.*

PILES *shall be driven to a minimum bearing capacity of 50 tons per pile for the piers.*

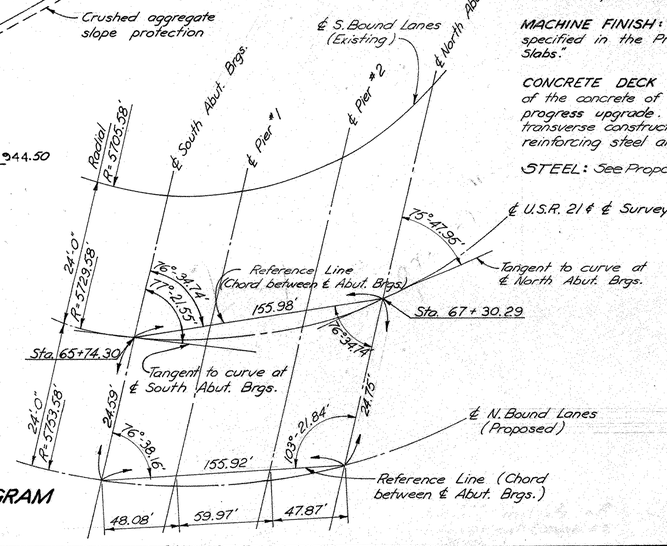
FOUNDATION BEARING PRESSURE: *Abutment footings are designed for a maximum bearing pressure of 1.5 tons per sq. ft.*

WELDING *of structural steel shall be Class "A" except as otherwise shown. Welds shown as field welds may, at the option of the Contractor, be made in the shop.*

MACHINE FINISH: *The concrete bridge deck shall be finished as specified in the Proposal Note, "Machine Finishing of Bridge Deck Slabs."*

CONCRETE DECK PLACING: *In order to facilitate water curing of the concrete of the deck slab, the placing of concrete shall progress upgrade. The slab may be placed in sections, between transverse construction joints which are parallel to transverse reinforcing steel and are located near the center of any span.*

STEEL: *See Proposal regarding A373 Steel.*



LAYOUT DIAGRAM

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

2

GENERAL PLAN & ELEVATION NOTES & ESTIMATED QUANTITIES

Revised As-Built

BRIDGE NO. WAY-21-0125 R
U.S.R. 21 OVER PENN. R.R.
WAYNE CO.
STA. 65 + 72.00
STA. 67 + 32.61

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
E.M. O.P.M.	G.S. O.P.M.	JCH	R.G.M. D.C.H.	L.M.R. B.F.G.	9-19-60	

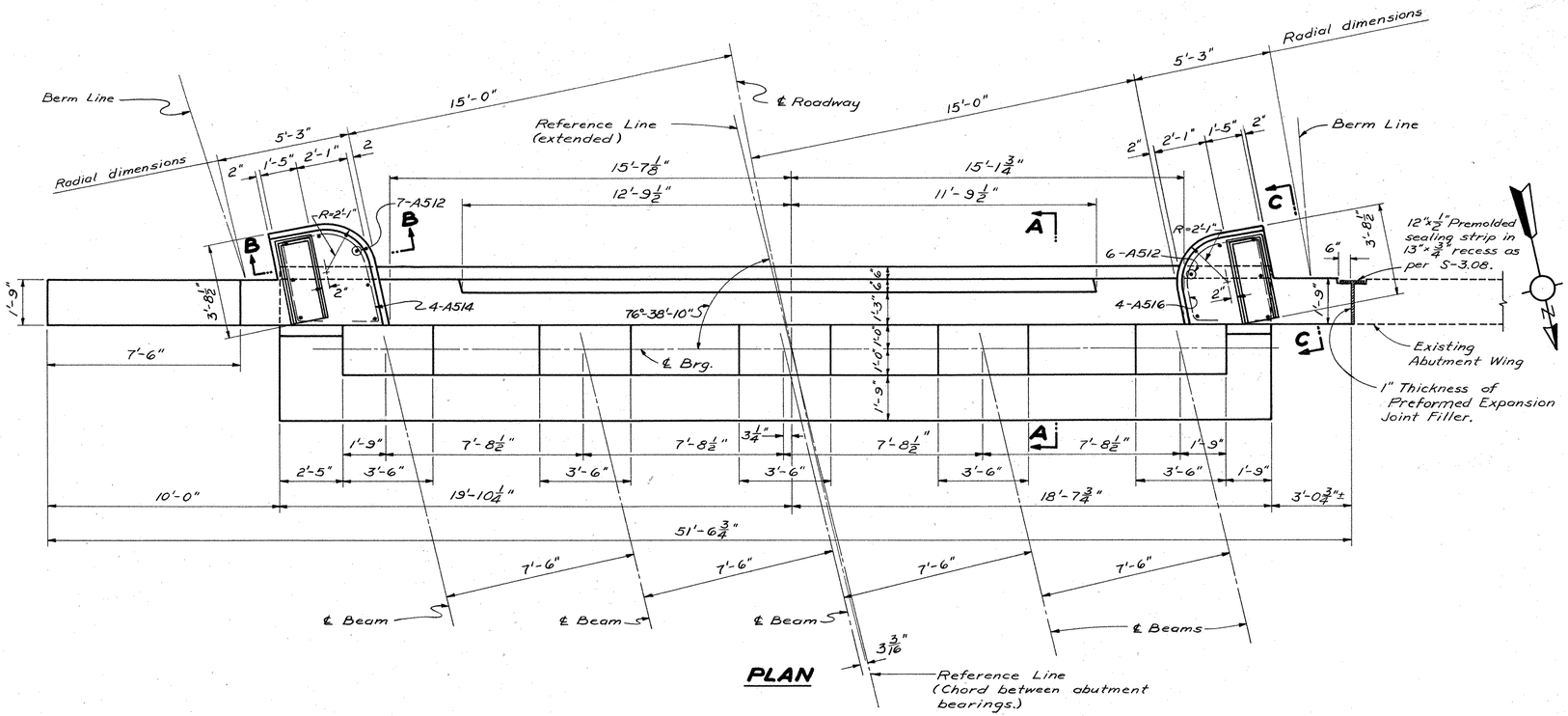
Revised As-Built CAM

MICROFILMED
OCT 23 1985

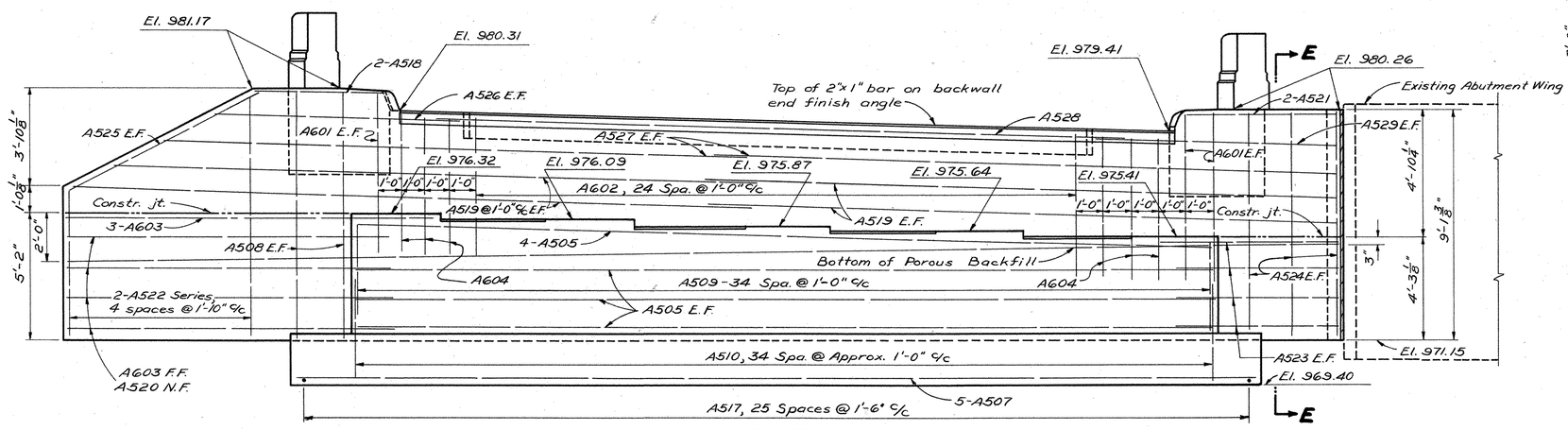
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

325

STA 21-11.49
WAY 21-0.00



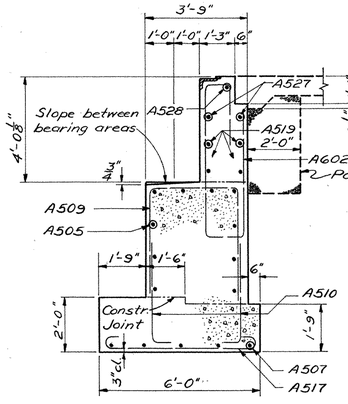
PLAN



ELEVATION

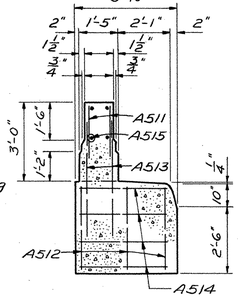
LEGEND
E.F. Denotes Each Face
N.F. Denotes Near Face
F.F. Denotes For Face

NOTE:
Reinforcing bars in the bridge seats to be placed to clear anchor bolts.

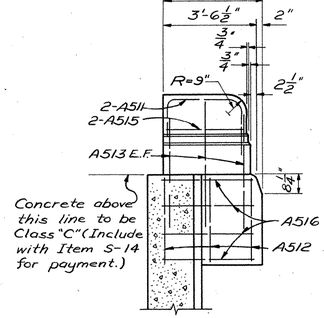


SECTION A-A

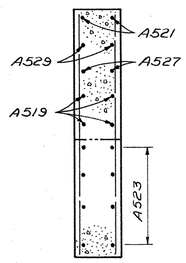
NOTE:
Porous backfill shall extend upward to the underside of the approach slab or to the surface of the earth shoulders and outward to the surface of the embankment slopes. Excavation therefor, in excess of that required for construction of the abutment, shall be considered as paid for in the bid price per cu. yd. paid for porous backfill.



SECTION B-B



VIEW C-C



SECTION E-E

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

SOUTH ABUTMENT DETAILS

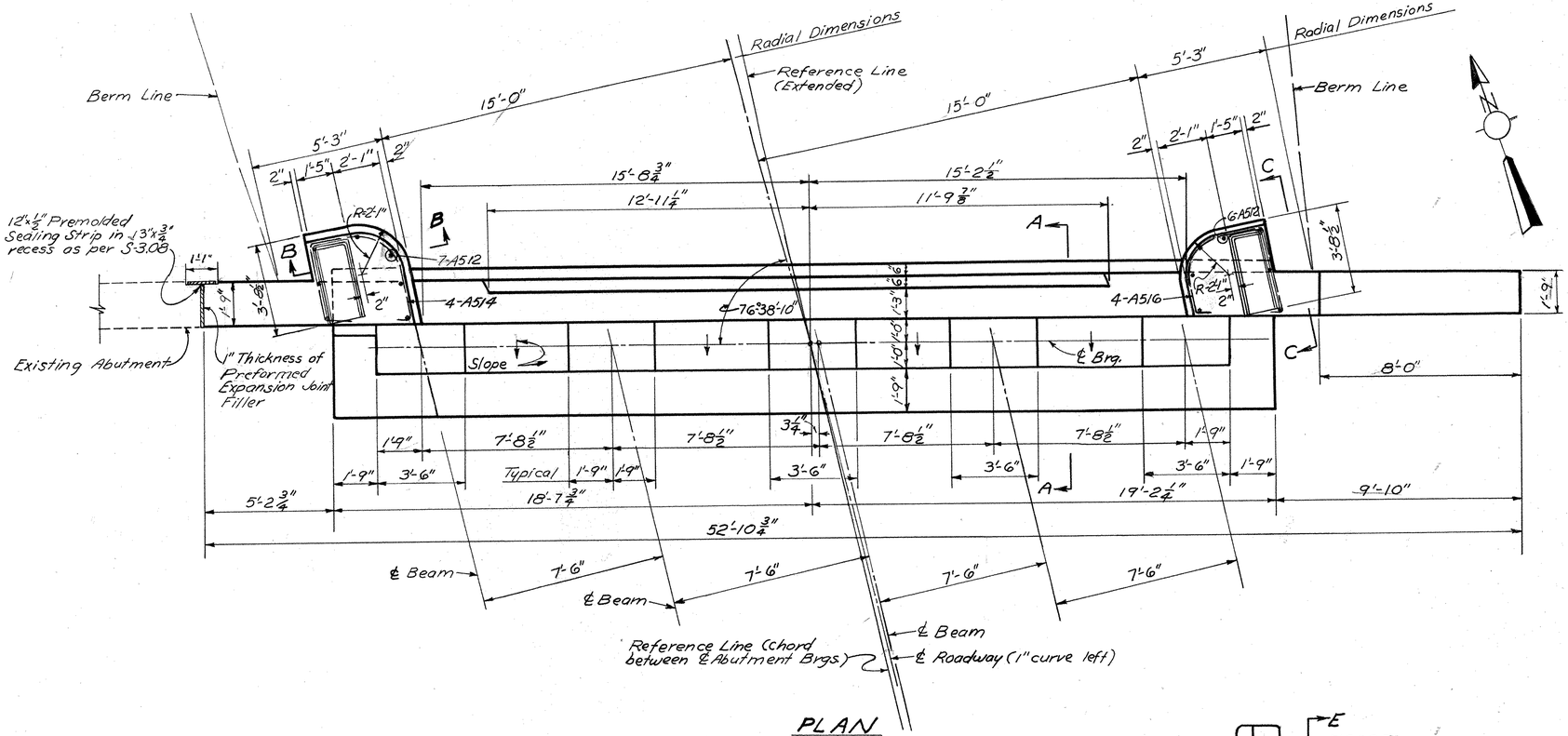
BRIDGE NO. WAY-21-0125R
U.S.R. 21 OVER PENN. R.R.
WAYNE COUNTY **STA. 65+72.00**
67+32.61

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
O.P.M.	Q.P.M.	ADH.	D.C.H.	BFG	9-19-60	

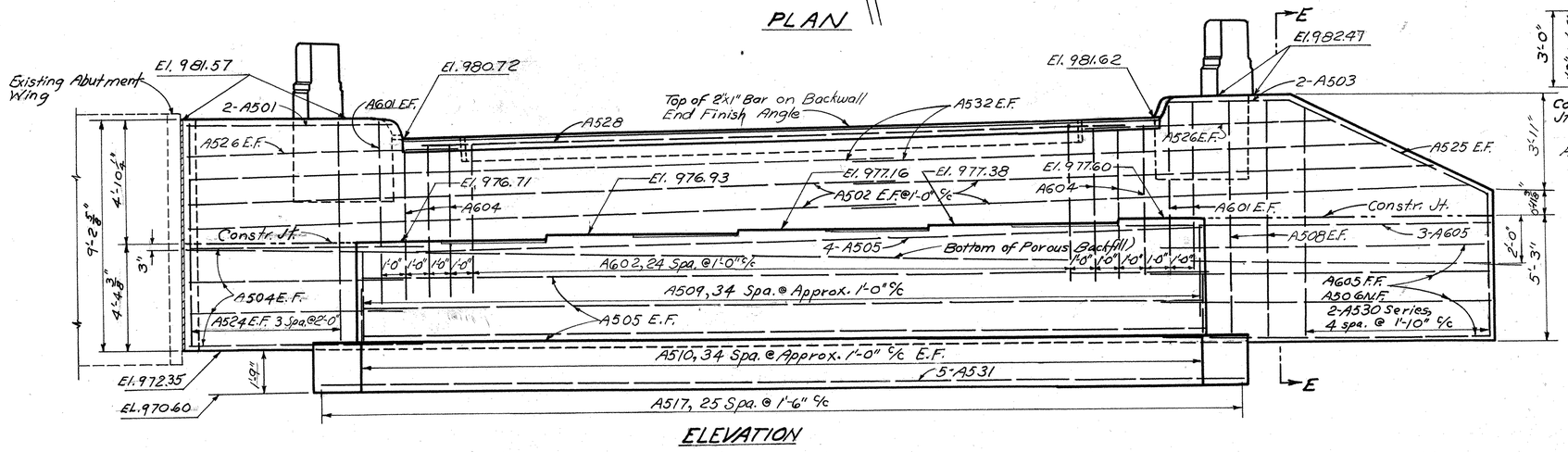
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

326

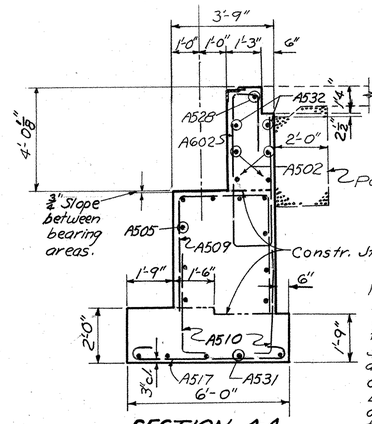
STA-21-11.49
WAY-21-0.00



PLAN



ELEVATION



SECTION A-A

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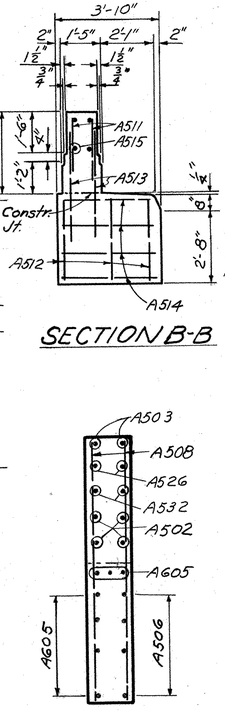
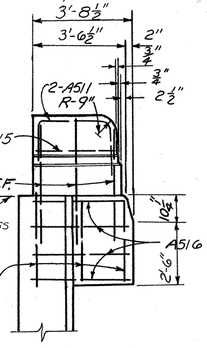
Porous backfill shall extend upward to the under side of the approach slab or to the surface of the earth shoulders, and outward to the surface of the embankment slopes. Excavation therefor, in excess of that required for construction of the abutment, shall be considered as paid for in the bid price per cu. yd. paid for porous backfill.



SECTION B-B



VIEW C-C

SECTION E-E

LEGEND
E.F. Denotes Each Face
N.F. Denotes Near Face
F.F. Denotes Far Face

NOTE:
Reinforcing bars in the bridge seats to be placed to clear anchor bolts.

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

NORTH ABUTMENT DETAILS

BRIDGE NO. WAY-21-0125R
U.S.R. 21 OVER PENN. R.R.

WAYNE CO. STA. 65+72.00
67+32.61

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
O.P.M.	O.P.M.	N.L.D.	D.C.H.	B.F.G.	9-19-60	

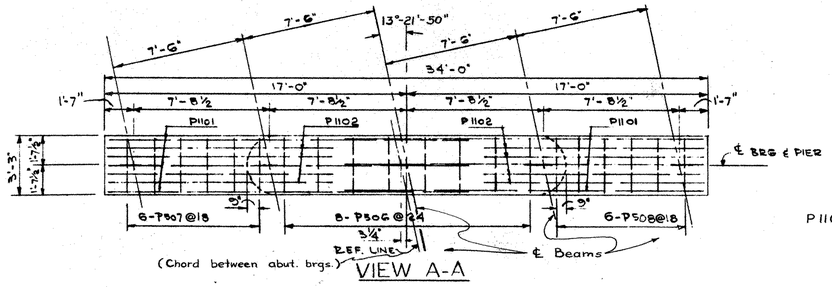
MICROFILMED
OCT 11 1985

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

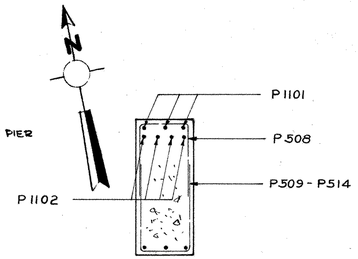
327

STA-21-11.49
WAY-21-0.00

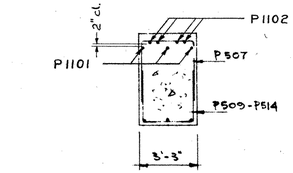
MICROFILMED
OCT 11 1985



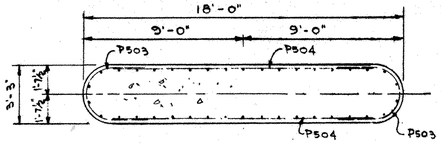
VIEW A-A



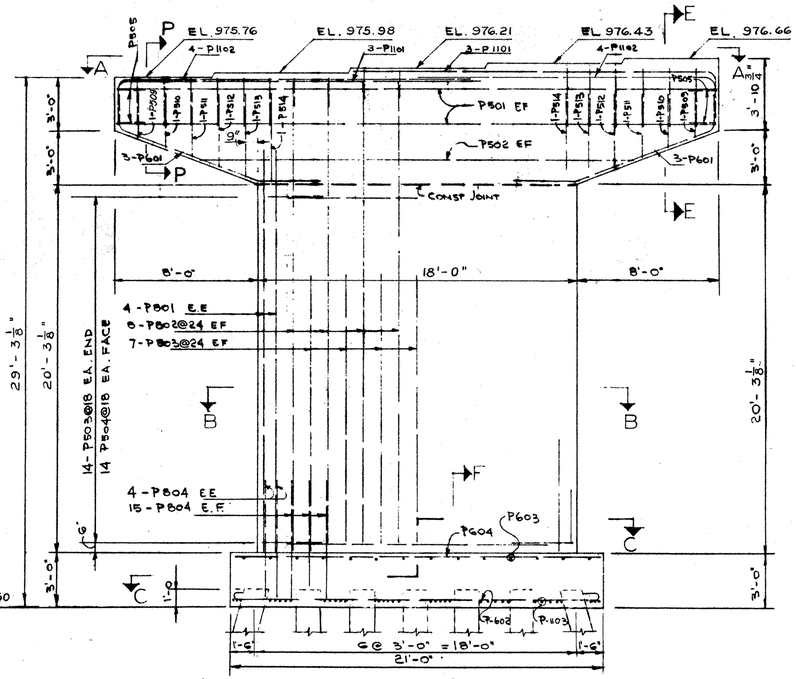
SECTION E-E



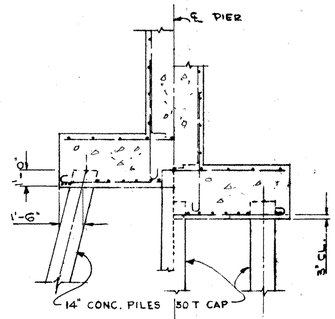
SECTION P-P



SECTION B-B

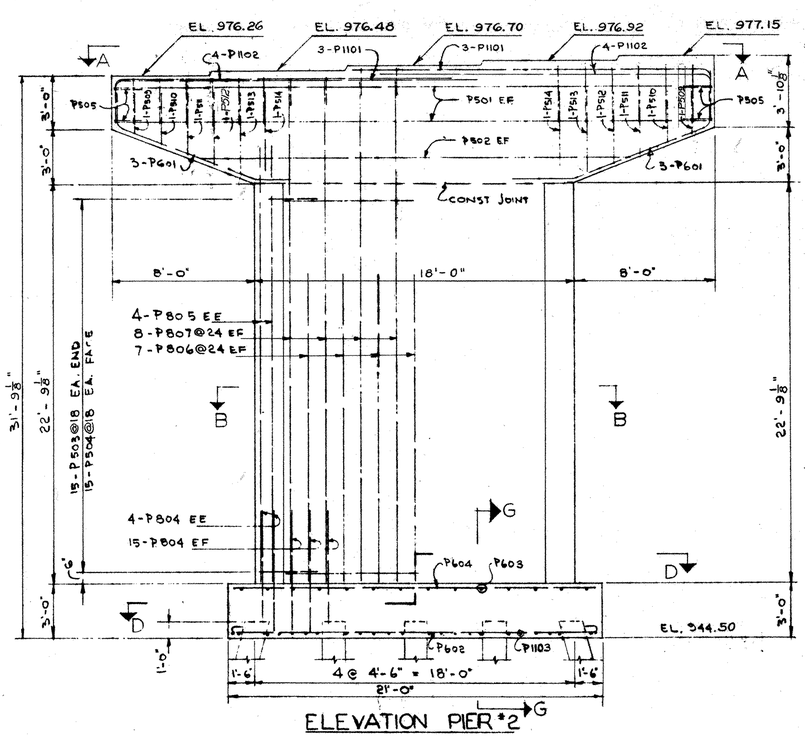


ELEVATION PIER #1



HALF SECT. F-F

HALF SECT. G-G



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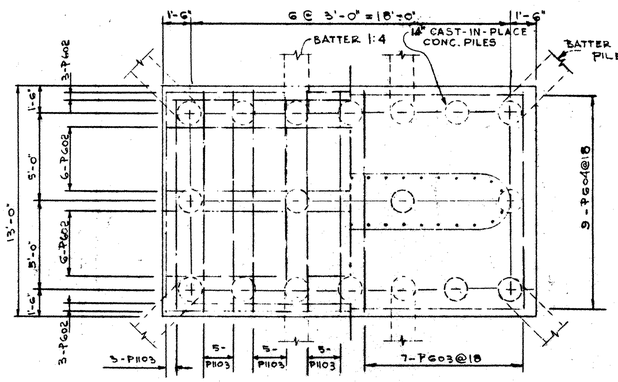
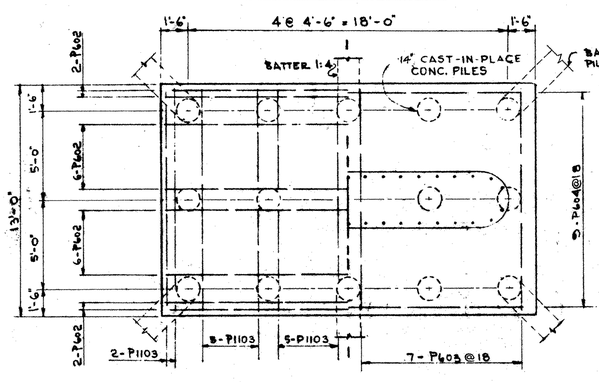


SECTION C-C



SECTION D-D

NOTE.

REINFORCING BARS IN BRIDGE SEATS TO BE PLACED TO CLEAR ANCHOR BOLTS.
E.F. DENOTES "EACH FACE"
N.F. DENOTES "NEAR FACE"
F.F. DENOTES "FAR FACE"
E.E. DENOTES "EACH END"

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

PIER DETAILS

BRIDGE NO. WAY-21-0125 R
U.S.R. 21 OVER PENN. R. R.
WAYNE CO. STA. 65+72.00
67+32.61

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED BFG	DATE	REVISED
N.S.W. OPM	G.S.	A.D.H.	R.G.M. D.C.H	L.N.R.	9-19-60	

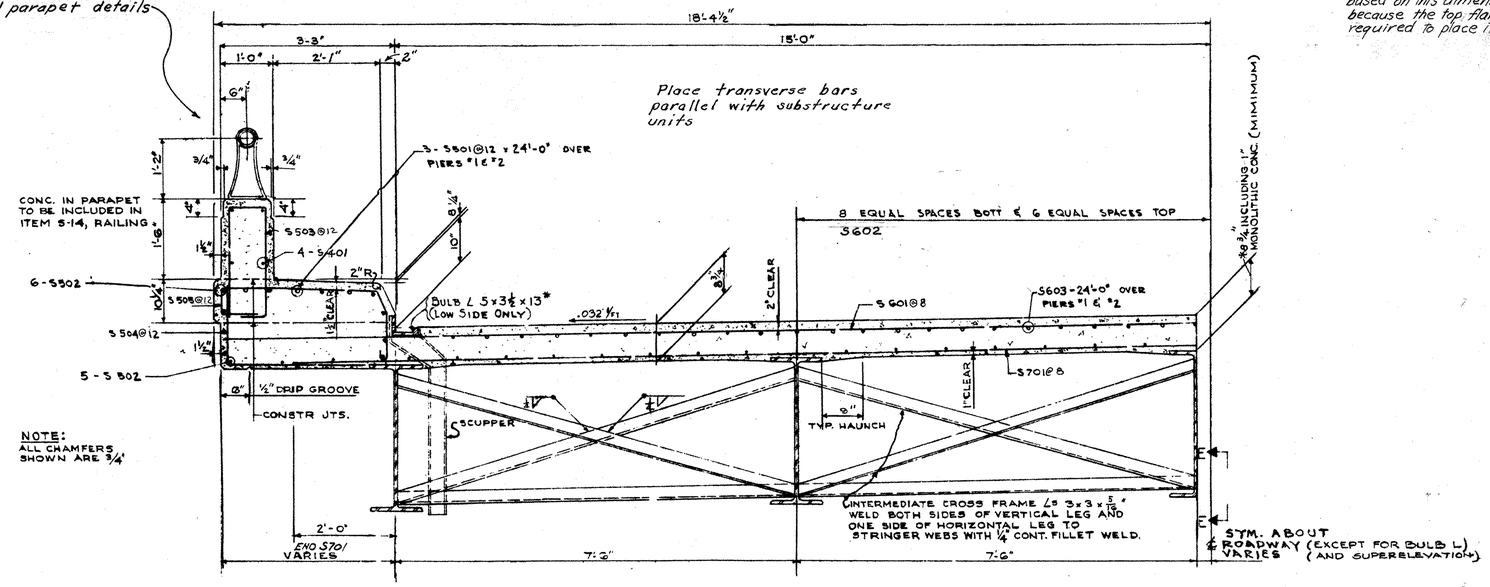
FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

328

STA-21-11.49
WAY-21-0.00

MICROFILMED
OCT 11 1985

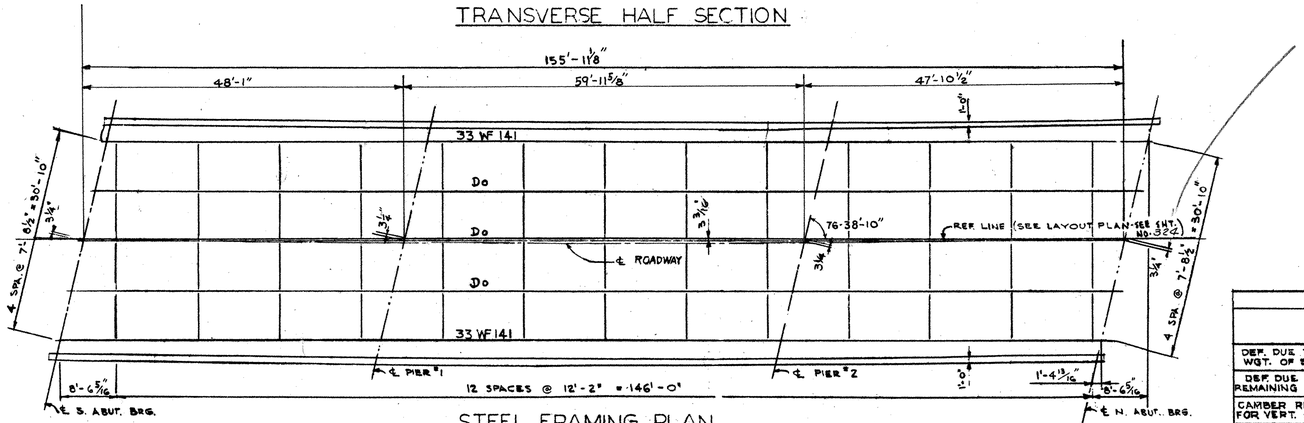
See STD. DWG. AR-1-57 for additional railing and parapet details



NOTE:
ALL CHAMFERS SHOWN ARE ¾'

* This is the normal dimension. The quantity of deck concrete to be paid for shall be based on this dimension, even though deviation from it may be necessary because the top flange of the beam may not have the exact conformation required to place it parallel to the finished grade.

TRANSVERSE HALF SECTION



STEEL FRAMING PLAN

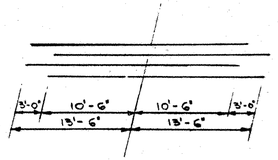
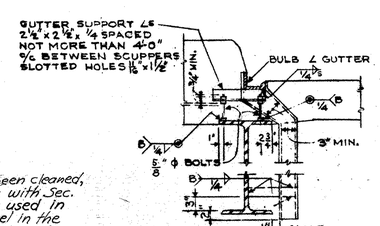


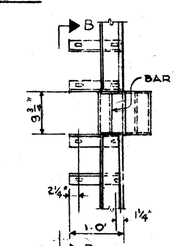
DIAGRAM SHOWING STAGGER OF S615 & S501 BARS OVER PIERS NO 1 & 2

DEFLECTION TABLE	INTERIOR		FASCIA	
	END SPAN	MIDDLE SPAN	END SPAN	MIDDLE SPAN
DEF. DUE TO WGT. OF STEEL	1/32"	1/32"	1/32"	1/32"
DEF. DUE TO REMAINING D.L.	7/32"	3/16"	11/32"	11/32"
CAMBER REQUIRED FOR VERT. CURVE	0	0	0	0
SUM OF DEF. AND CAMBER	1/4"	7/32"	7/16"	3/8"
REQUIRED CAMBER	0	0	0	0

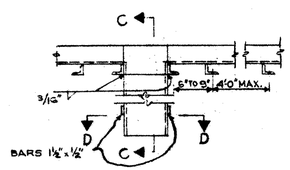
*CAMBER: NO CAMBERING OF BEAMS IS REQUIRED BUT THE BEAMS SHALL BE SO FABRICATED THAT ANY CURVED BEAMS WILL BE PLACED WITH THE CONVEX FLANGE UP.



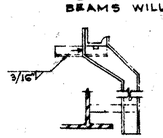
GUTTER SUPPORT AND SCUPPER



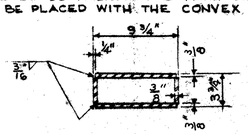
PART PLAN



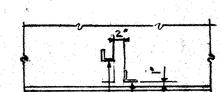
SECTION B-B



SECTION C C



SECTION D-D



SECTION E-E

GUTTERS SHALL BE ACCURATELY ADJUSTED FOR ALIGNMENT AND GRADE WITH ALLOWANCE FOR DEAD LOAD DEFLECTION BEFORE CONCRETE IS PLACED.

PAINTING: After erection and after the shop coat has been cleaned, and where necessary, repainted in accordance with Sec. 5-8.04, an additional coat of the same paint as used in the shop shall be applied to all structural steel in the track span and over the outside face and all sides of bottom flanges of the outside steel beams in the end spans.

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

6

SUPERSTRUCTURE DETAILS

BRIDGE NO. WAY-21-0125R
U.S.R. 21 OVER PENN. R.R.
WAYNE CO. STA. 65+72.00
67+32.61

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
N.S.W. O.P.M.	J.N.	N.L.D.	R.G.M. D.C.H.	BFG L.N.R.	9-19-60	

MICROFILMED OCT 11 1985

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

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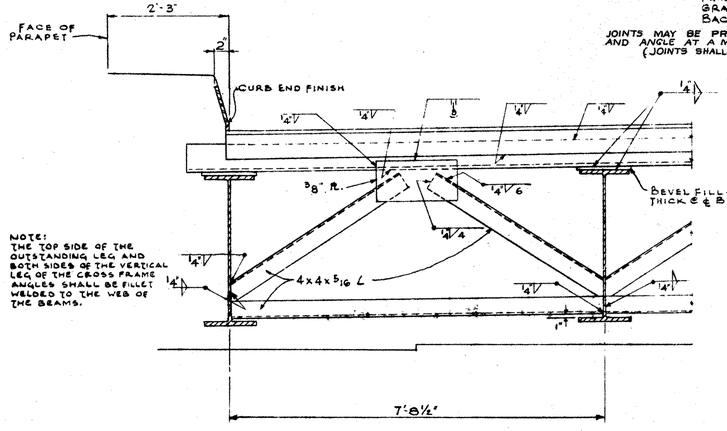
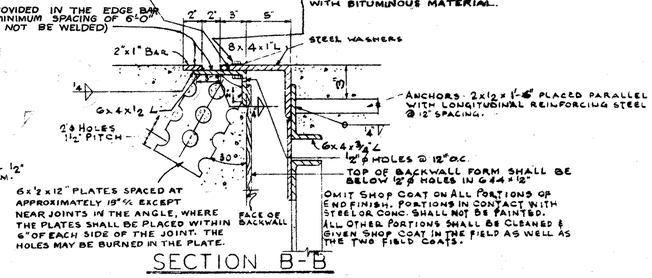


SECTION A-A



SECTION B-B

⅞" x 2" BOLTS AT NOT MORE THAN 2'-0" c/c, WITH NUTS TACK WELDED TO UNDERSIDE OF LOWER ANGLE. 1⅛" Ø HOLES IN UPPER ANGLE. CENTER ⅞" Ø BOLTS IN 1⅛" Ø HOLES. APPLY FLAKE GRAPHITE BETWEEN WASHERS AND ANGLE. TURN BOLTS TIGHT AND RELEASE ONE-HALF TURN. REMOVE BOLTS AS SOON AS CONCRETE HAS BEEN REASONABLY SET, PREFERABLY WITHIN TWO HOURS TO AVOID EFFECT OF TEMPERATURE EXPANSION OR CONTRACTION OF SUPERSTRUCTURE. FILL HOLES WITH BITUMINOUS MATERIAL.

STEEL WASHERS

ANCHORS: 2x½x1'-6" PLACED PARALLEL WITH LONGITUDINAL REINFORCING STEEL @ 12" SPACING.

1¼" Ø HOLES @ 12" c/c.

TOP OF BACKWALL FORM SHALL BE BELOW 1¼" Ø HOLES IN G AND H.

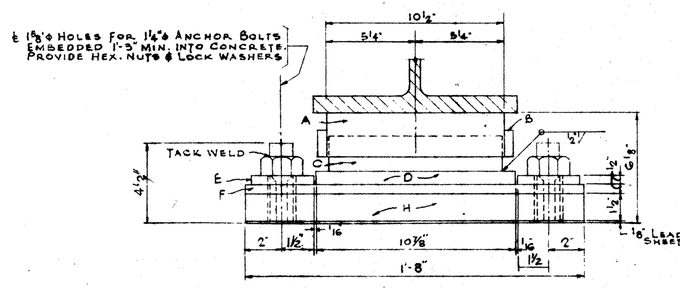
OMIT SHOP COAT ON ALL PORTIONS OF END FINISH. PORTIONS IN CONTACT WITH STEEL OR CONC. SHALL NOT BE PAINTED. ALL OTHER PORTIONS SHALL BE CLEANED & GIVEN SHOP COAT IN THE FIELD AS WELL AS THE TWO FIELD COATS.

THIS CONTACT SURFACE NOT TO BE PAINTED. LUBRICATE WITH FLAKE GRAPHITE PRIOR TO PLACING OF BACKWALL CONC.

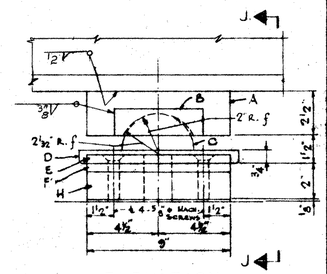
MATERIAL - EXPANSION BEARING

STA. - 21 - 11.49
WAY - 21 - 0.00

A - SOLE PL. - 9" x 2½ x 0'-10½"
B - SIDE PL. - 1½ x ½ x 0'-5"
C - PIN - HALF ROUND 4" x 0'-10⅜"
D - SLIDING PL. - 10" x ¾ x 0'-10⅜"
E - GUIDE PL. - 3" x ½" x 0'-9"
F - BRONZE PL. - 9" x ½ x 1'-8" LEADED BRONZE
H - MASONRY PL. - 9" x 1½ x 1'-8"
2 - ANCH. BOLTS - 1¼ Ø x 1'-8"
4 - ⅝ Ø MACHINE SCREWS
LEAD SHEET - 9" x ⅛ x 1'-8"

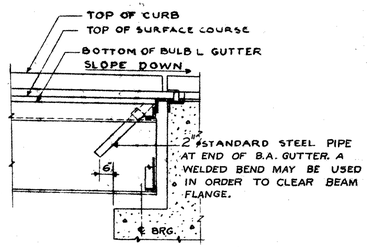


SECTION J-J

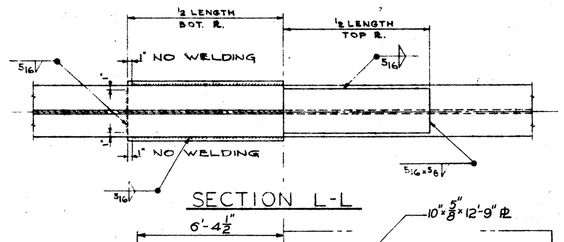


ELEVATION

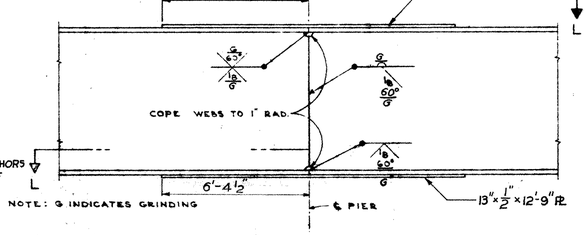
DETAIL OF EXPANSION BEARING



TYPICAL SECTION FOR GRADE SLOPING DOWN TO END FINISH



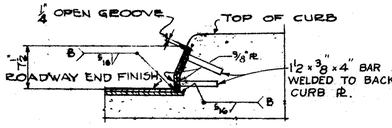
SECTION L-L



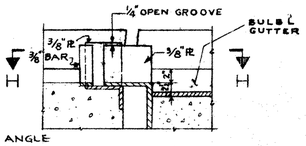
BEAM SPLICE DETAILS

BEAM SPLICE WELDING PROCEDURE:
1. RAISE THE ABUTMENT ENDS OF THE BEAMS 3/4".
*2. BUTT-WELD THE BEAM FLANGES & WEB.
3. WELD THE BOTTOM & TOP MOMENT PLATES.
4. LOWER THE BEAM ENDS TO FINAL POSITION.

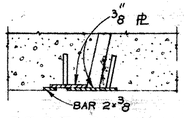
* MAKE ONE PASS IN EACH FLANGE THEN ONE PASS IN WEB; REPEAT UNTIL WELDS ARE COMPLETED.



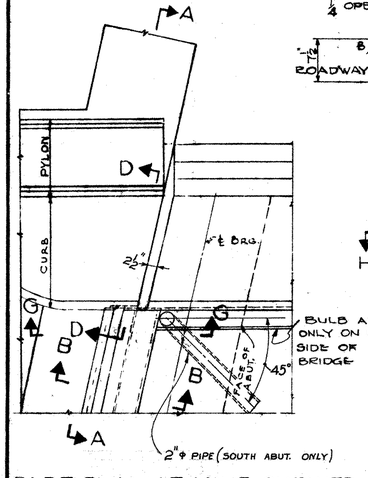
SECTION D-D



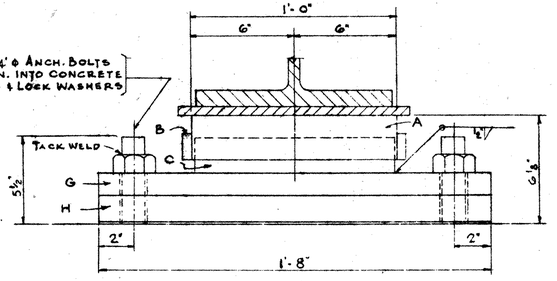
SECTION G-G



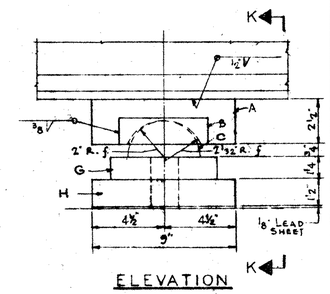
SECTION H-H



PART PLAN AT ABUT. - SKEWED



SECTION K-K



ELEVATION

DETAIL OF FIXED BEARING

MATERIAL - FIXED BEARING

A - SOLE PL. - 9" x 2½ x 1'-0"
B - SIDE PL. - 1½ x ½ x 0'-5"
C - PIN - HALF ROUND 4" x 0'-11⅞"
G - BOTTOM PL. - 7" x 1¼ x 1'-8"
H - MASONRY PL. - 9" x 1½ x 1'-8"
2 - ANCH. BOLTS - 1¼" Ø x 1'-9"
LEAD SHEET - 9" x ⅛" x 1'-8"

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

SUPERSTRUCTURE DETAILS

BRIDGE NO. WAY-21-0125R
U.S.R. 21 OVER PENN. R.R.

WAYNE CO.
SEC. WAY-21

STA. 65+72.00
67+32.61

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
N.S.W. OPM	M.R.	G.P.G.	R.G.M. DC#	BFG L.N.R.	4/19/60	

MICROFILMED
OCT 11 1960

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

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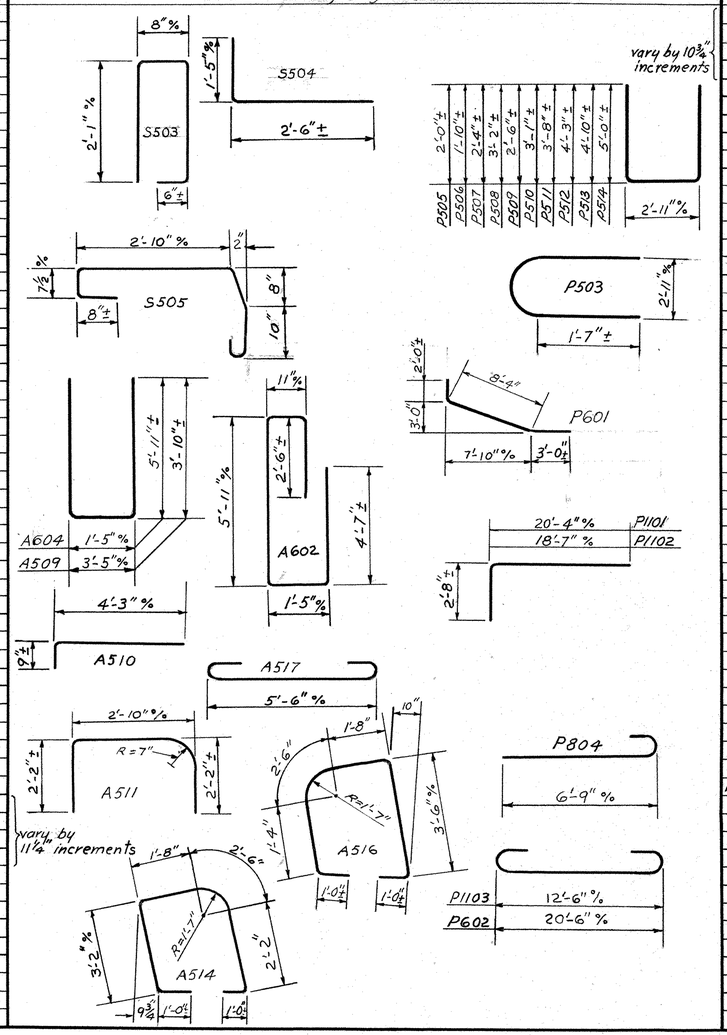
STA-21-11.49
WAY-21-0.00

REINFORCING STEEL LIST

Mark	No.	Length	Weight	Shp.
Superstructure				
S701	237	35'-0"	16,955	S
S601	237	37'-2"	13,230	S
S602	265	33'-0"	13,135	S
S603	44	24'-0"	1,586	S
S501	12	24'-0"	300	S
S502	110	32'-7"	3,738	S
S503	322	5'-0"	1,679	B
S504	316	3'-9"	1,236	B
S505	316	5'-10"	1,840	B
S401	72	14'-0"	673	S
S402	16	12'-8"	135	S
Abutments				
A601	12	6'-6"	117	S
A602	50	14'-8"	1,101	B
A603	7	14'-4"	151	S
A604	12	12'-11"	233	B
A605	7	13'-7"	143	S
A501	2	7'-9"	16	S
A502	8	26'-10"	224	S
A503	2	4'-8"	10	S
A504	8	8'-5"	70	S
A505	20	34'-0"	709	S
A506	4	13'-1"	55	S
A507	5	38'-0"	198	S
A508	8	9'-8"	81	S
A509	70	10'-10"	791	B
A510	70	4'-11"	359	B
A511	8	6'-10"	57	B
A512	26	3'-0"	81	S
A513	24	4'-10"	121	S
A514	8	11'-0"	92	B
A515	8	2'-10"	24	S
A516	8	10'-8"	89	B
A517	52	6'-8"	362	B
A518	2	5'-2"	11	S
A519	8	26'-7"	222	S
A520	4	14'-0"	58	S
A521	2	5'-11"	12	S
	3 series of 5	5'-9" to 9'-6"		
A522			80	S
A523	8	6'-3"	52	S
A524	14	8'-9"	128	S
A525	4	8'-3"	34	S
A526	6	10'-2"	64	S
A527	4	25'-1"	105	S
A528	2	27'-11"	58	S
A529	2	9'-6"	20	S

Bending Diagrams



Mark	No.	Length	Weight	Shp.
A530	2 series of 5	5'-9" to 9'-4"	79	S
A531	5	37'-6"	196	S
A532	4	25'-1"	105	S

Piers

Mark	No.	Length	Weight	Shp.	Pier 1	Pier 2
P1101	12	22'-9"	1,450	B	6	6
P1102	16	21'-0"	1,785	B	8	8
P1103	60	15'-8"	4,994	B	36	24
P801	8	22'-9"	486	S	8	—
P802	16	26'-1"	1,114	S	16	—
P803	14	15'-6"	579	S	14	—
P804	76	7'-10"	1,590	B	38	38
P805	8	24'-9"	529	S	—	8
P806	14	17'-6"	654	S	—	14
P807	16	28'-7"	1,221	S	—	16
P601	12	13'-4"	240	B	6	6
P602	34	21'-10"	1,115	B	18	16
P603	28	12'-6"	526	S	14	14
P604	18	20'-6"	554	S	9	9
P501	8	33'-8"	281	S	4	4
P502	4	24'-3"	101	S	2	2
P503	58	7'-9"	469	B	28	30
P504	58	14'-9"	892	S	28	30
P505	8	6'-8"	56	B	4	4
P506	16	6'-4"	106	B	8	8
P507	12	7'-4"	92	B	6	6
P508	12	9'-0"	113	B	6	6
P509	4	7'-8"	32	B	2	2
P510	4	8'-10"	37	B	2	2
P511	4	10'-0"	42	B	2	2
P512	4	11'-2"	47	B	2	2
P513	4	12'-4"	51	B	2	2
P514	4	12'-8"	53	B	2	2

Replacement Bars

RE1101	1	7'-6"	—	S
RE801	1	6'-6"	—	S
RE701	1	6'-2"	—	S
RE601	2	5'-11"	—	S
RE501	1	5'-7"	—	S
RE401	1	5'-3"	—	S

REPLACEMENT BARS: If reinforcing bars are fabricated from stock which has previously been tested and approved by the Ohio Highway Testing Laboratory, test samples as provided in Sec. S-402 need not be furnished and replacement bars will not be required.

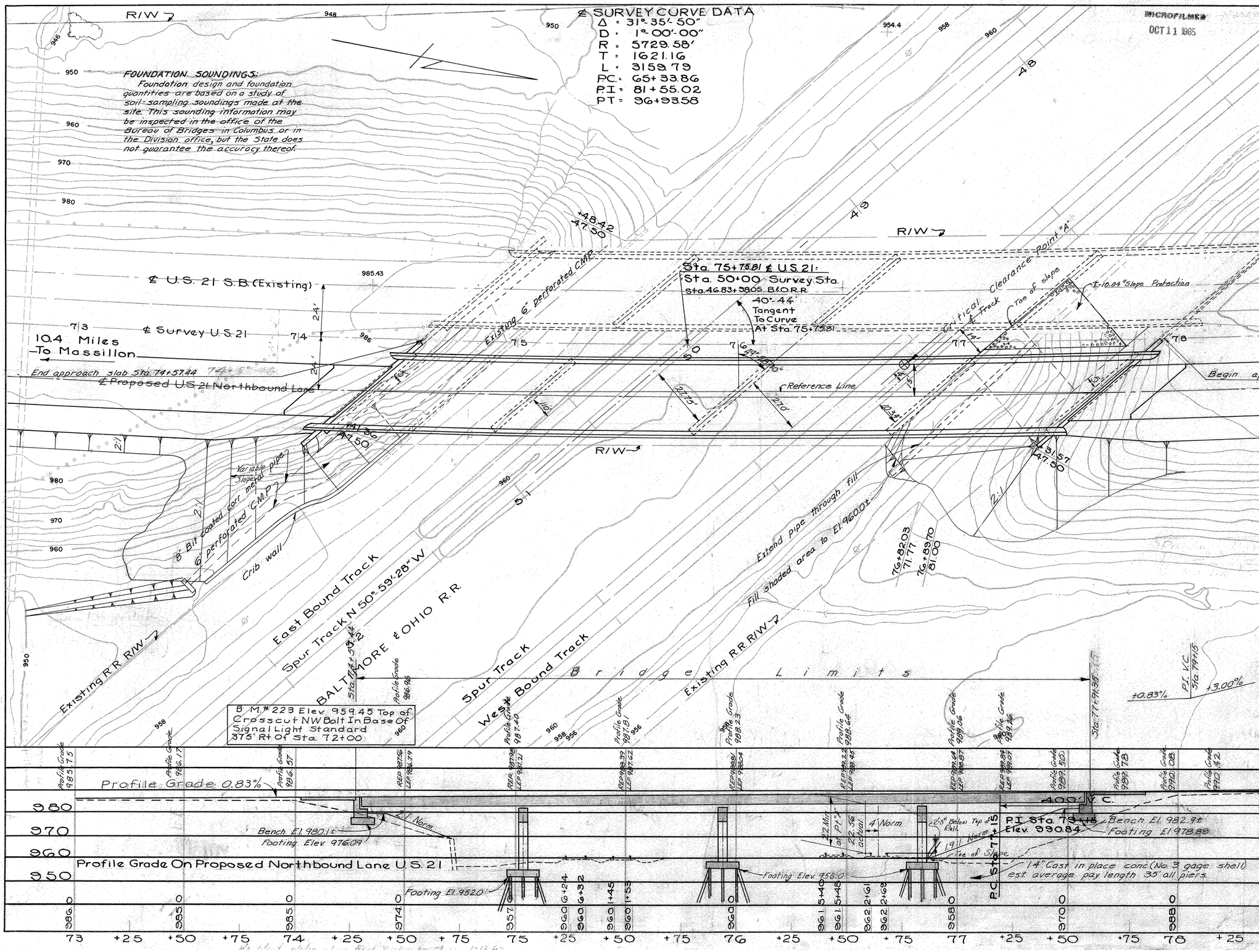
BAR SIZE is indicated in the bar mark. The first digit where three digits are used, and the first two digits where four are used, indicate the bar size number. For example, A700 is a No.7 size bar and A1014 is a No.10 size.

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

REINFORCING STEEL LIST

BRIDGE NO. WAY-21-0125R
U.S.R. 21 OVER PENN. R.R.
WAYNE COUNTY
STA. 65+72.00
67+32.61

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
O.P.M.		N.L.D.	DC#	DFG	9-19-60	



ADJACENT EXISTING STRUCTURE
Type: Continous Steel Beam With Reinforced Deck And Substructure
Spans 73'-0", 91'-6", 91'-6", 73'-0" c/c Brgs
Roadway 30'-0"
2'-0" Safety Curbs
Load Frequency Rating F-2000
Surface Course 1" Monolithic Conc.
Skew 49°-17'-45" L.F.
Approach Slabs AS-1-54
Alignment - 1°-0'-0" Curve Left
Superelevation - 0.032 Ft/Ft

PROPOSED STRUCTURE
TYPE: Continuous steel beams with reinforced conc. deck & substr.
SPANS: 72.10'-90.63'-90.29'-72.03' c/c brgs.
ROADWAY: 30'-0" f/f 2'-3" safety curbs
LOAD FREQUENCY: CF=2000(57)
WEARING SURFACE: 1" Monolithic conc.
SKEW: 49°-28' L.F.
APPROACH SLABS: AS-1-54 (25' long)
ALIGNMENT: 1°-00' curve left
SUPERELEVATION: 0.032 ft/ft.

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

SITE PLAN

BRIDGE NO. WAY-21-0143R
U.S.R. 21 OVER B & O R.R.
WAYNE CO. U.S.R. 21

SEC. WAY 21-0.00 STA. 74+57.44
SCALE 1"=20' 77+91.35

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
J.H.B.	J.H.B.		J.L.P.	P.E.S.		1-13-61

BFG 9 J.F. 10-5-60

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

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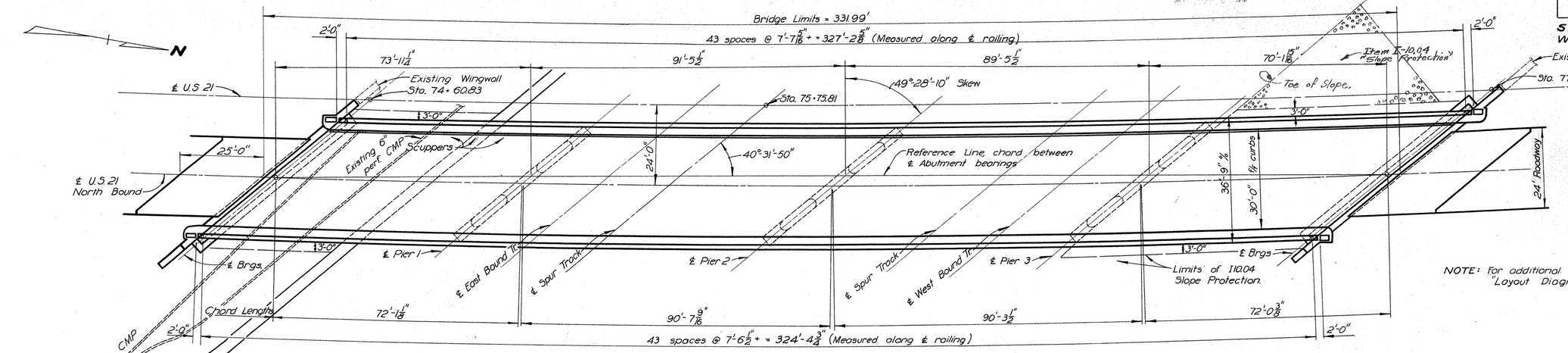
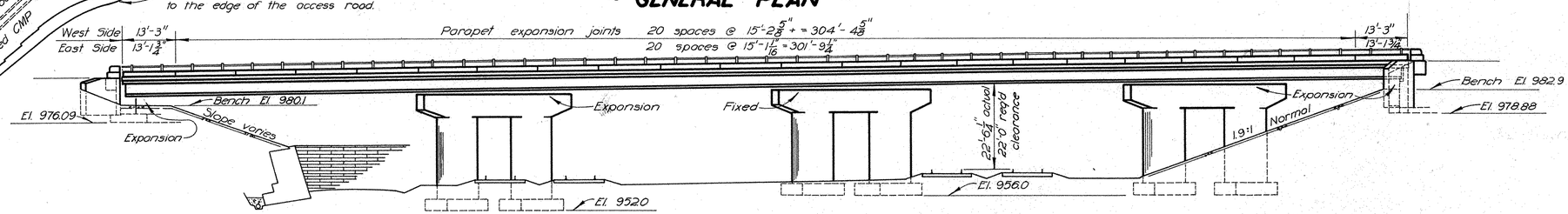
STA-21-11.49
WAY-21-0.00

MICROFILMED
OCT 11 1985



NOTE: For additional dimensions see "Layout Diagram", Sheet No. 339.

~ GENERAL PLAN ~



~ ELEVATION ~
(Pier piles not shown)

ESTIMATED QUANTITIES

Revised As-Built

Item	Total	Unit	Description	Abuts	Piers	Super.	General	As Built	
E-2	Lump	Sum	Cofferdams, cribs and sheeting				Lump		
E-2	380	Cu. Yd.	Unclassified Excavation	160	220			CO-14 +48.58	331.42
S-1	397	Cu. Yd.	Class "C" concrete, superstructure			397			
S-1	264	Cu. Yd.	Class "C" concrete, piers above footings		264				
S-1	131	Cu. Yd.	Class "E" concrete, obutment walls	131					
S-1	143	Cu. Yd.	Class "E" concrete, footings	50	93				
S-3	18	Lin. Ft.	Waterproofing, premolded sealing strip	18					
S-4	146,095	Lbs.	Reinforcing steel	10,079	34,012	102,004			
S-7	455,000	Lbs.	Structural steel			455,000			
S-8	455,000	Lbs.	Field painting of structural steel, as per plan			455,000			
S-9	34	Sq. Ft.	1" Preformed expansion joint filler, Sec. M-10.02	34					
S-14	682.11	Lin. Ft.	Railing (Aluminum rail & supports, concrete parapet & pylons)			682.11			
S-16	Lump	Sum	First test pile		Lump				
S-18	2520	Lin. Ft.	14" Cast-in-place reinforced concrete piles, No. 3 gage		2520			CO-14 +336	2856
S-22	Lump	Sum	Removal of portions of existing precast reinforced concrete cellular retaining wall, as per plan				Lump		
S-29	12	Each	Scuppers			12			
S-29	70	Lin. Ft.	Pipe horizontal collectors, including specials			70			
S-29	150	Lin. Ft.	8"ϕ Bituminous coated corrugated metal pipe, Sec. M-64.1(c) (including endwall)				150		
S-29	52	Cu. Yd.	Porous backfill	52					
I-4	130	Lin. Ft.	6" Helical perf. corrugated metal pipe, Sec. M-64.1(h) for underdrains				130		
I-10	~~703~~ 570	Sq. Yd.	Crushed aggregate slope protection				~~703~~ 570	CO-22 +103	673
I-17	1365	Sq. Ft.	Precast reinforced concrete cellular retaining wall (Permacrete Tri-Crib units) including granular backfill.				1365		

~ GENERAL NOTES ~

REFERENCE shall be made to Standard Drawing RB-1-55 revised 2-2-59, and to Supplemental Specification S-101 dated 12-2-59.

DESIGN SPECIFICATIONS: This structure conforms to the requirements of "Design Specifications for Highway Structures" of the State of Ohio, Department of Highways, dated 9-1-57 together with current revisions thereof.

PROCEDURE: The embankment shall be placed and compacted at the North end of the bridge prior to the constructing of Pier No. 3.

PROCEDURE FOR BENCHING THE EXISTING EMBANKMENT SLOPES: The existing embankment slopes for both the rear and forward abutments shall be excavated to provide a 13 foot minimum width bench. The bench shall be measured normal to the abutment face and shall extend a minimum of 4 feet in front and 3 feet in back of the abutment footing. The footing width is 6 feet. The excavation shall start at elevation 966± for the rear abutment and elevation 969± for the forward abutment. The length of the bench shall be restricted to a point where the 976 foot contour intersects the rear abutment footing and the 979 foot contour intersects the forward abutment footing. The depth of the excavation at this point shall be 10 feet.

EXCAVATION QUANTITY includes the removal of fill material between the top of the earth bench and the bottom of the abutment. Excavation quantity for the piers includes the removal of fill material required for construction of Pier No. 3.

PILES shall be driven to a minimum bearing capacity of 60 tons per pile.

FOUNDATION BEARING PRESSURE: Abutment footings are designed for a maximum bearing pressure of 1.5 tons per sq. ft.

MACHINE FINISH: The concrete bridge deck shall be finished as specified in the Proposal Note, "Machine Finishing of Bridge Deck Slabs".

CONCRETE DECK PLACING: In order to facilitate water curing of the concrete of the deck slab, the placing of concrete shall progress upgrade. The slab may be placed in sections, between transverse construction joints which are parallel to transverse reinforcing steel and are located near the center of any span.

WELDING of structural steel shall be Class "A" except as otherwise shown. Welds shown as field welds may, at the option of the Contractor, be made in the shop.

RAILROAD AERIAL LINES shall be relocated by the railroad. The Contractor shall use all precautions necessary to see that the lines are not disturbed during the construction stage and shall cooperate with the railroad in the relocation of these lines. The cost of the relocation shall be included in the railroad force account work.

FIELD PAINTING: One additional field coat of paint, of the same kind as the shop coat, shall be applied to the structural steel in the track spans before the application of the aluminum paint, except to those surfaces which are to be in contact with concrete. A similar coat shall be applied to the exterior face and the entire bottom flange of the outside beams in the end spans.

CONSTRUCTION CLEARANCE of 19'-0" vertically above the top of the railroad rails and 8'-0" horizontally from the center of tracks shall be maintained at all times.

SHEETING AND BRACING: Before construction is started, eight sets of prints showing details of the sheeting and bracing to be used for excavation adjacent to the railroad tracks shall be submitted to the Director for approval by the Department of Highways and the Railroad Company.

Revised As-Built

ALIGNING RAILROAD TRACKS: After the Contractor has completed all excavation and backfill adjacent to the railroad tracks in compliance with Sec E-204 and E-208 of the Construction and Material Specifications, subject to the supervision of the Railroad Company, nothing in Sec. E-204, E-208 or G-807 of the Specifications shall be construed to hold the Contractor liable for aligning and resurfacing the railroad tracks.

STEEL: See Proposal regarding A373 Steel.

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

GENERAL PLAN & ELEVATION NOTES & ESTIMATED QUANTITIES

BRIDGE No. WAY-21-0143R
U.S. 21 OVER B&O RR
WAYNE COUNTY STA 74 + 57.44 STA 77 + 91.35

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
CPD	CPD	G.P.G.	J.M.	BFG APP	10-5-60	1-19-61

Revised As-Built CAM

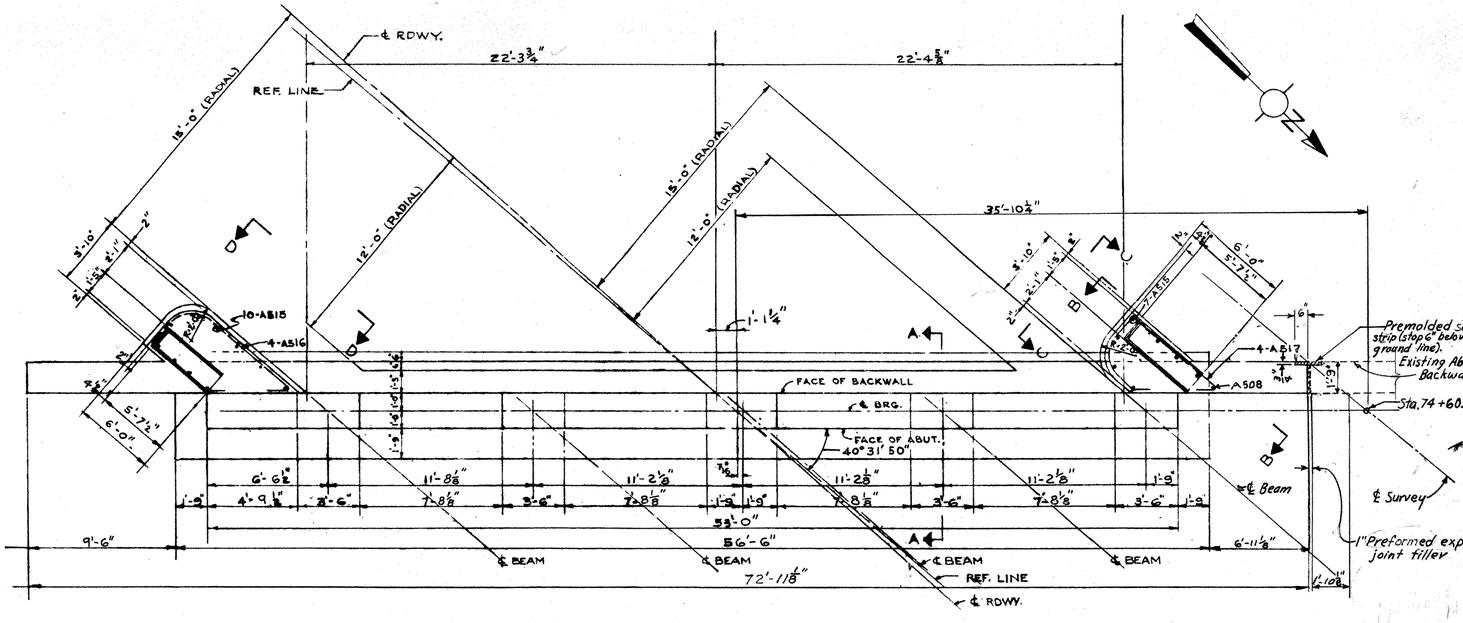
MICROFILMED
OCT 11 1965

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

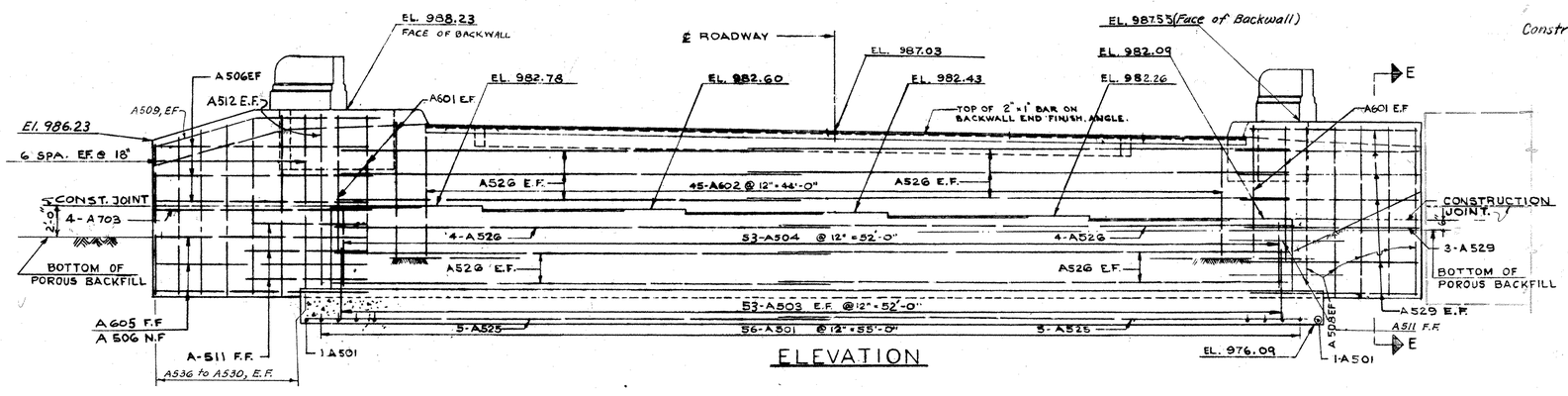
333

POROUS BACKFILL SHALL EXTEND TO THE APPROACH SLAB AND TO THE SURFACE OF THE EARTH SHOULDERS AND TO THE SURFACE OF THE EMBANKMENT SLOPES. EXCAVATION THEREFOR, IN EXCESS OF THAT REQUIRED FOR CONSTRUCTION OF THE ABUTMENT, SHALL BE CONSIDERED AS PAID FOR IN THE BID PRICE PER CU. YD. PAID FOR POROUS BACKFILL.

STA.-21-11.49
WAY-21-0.00



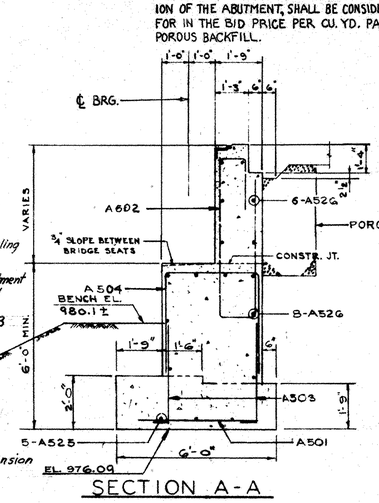
PLAN OF SOUTH ABUTMENT



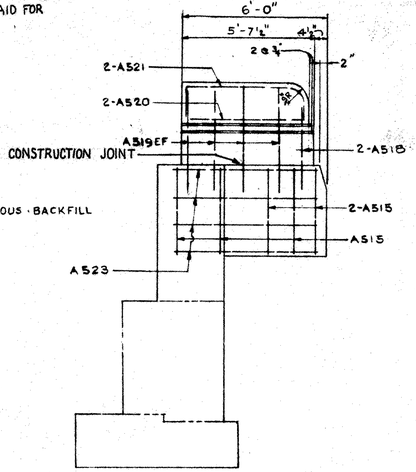
ELEVATION

EF DENOTES EACH FACE
NF DENOTES NEAR FACE
FF DENOTES FAR FACE
FOR PARAPET AND CURB DIMENSIONS SEE SHEET NO. 338

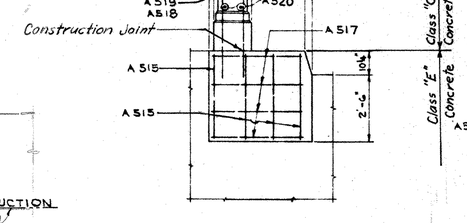
PROCEDURE: The embankment shall be placed and compacted to the level of the earth bench after which excavation shall be made for the abutment.



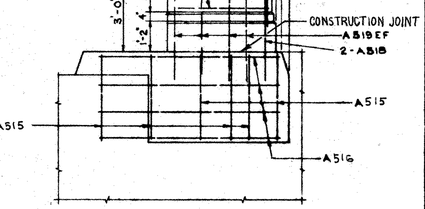
SECTION A-A



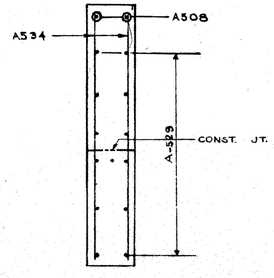
SECTION B-B



SECTION C-C



SECTION D-D



SECTION E-E

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

SOUTH ABUTMENTS DETAILS

BRIDGE NO. WAY-21-0143R
U.S. 21 OVER B. & O. R. R.

WAYNE CO.
SEC. WAY-21

STA. 74+57.44
STA. 77+91.35

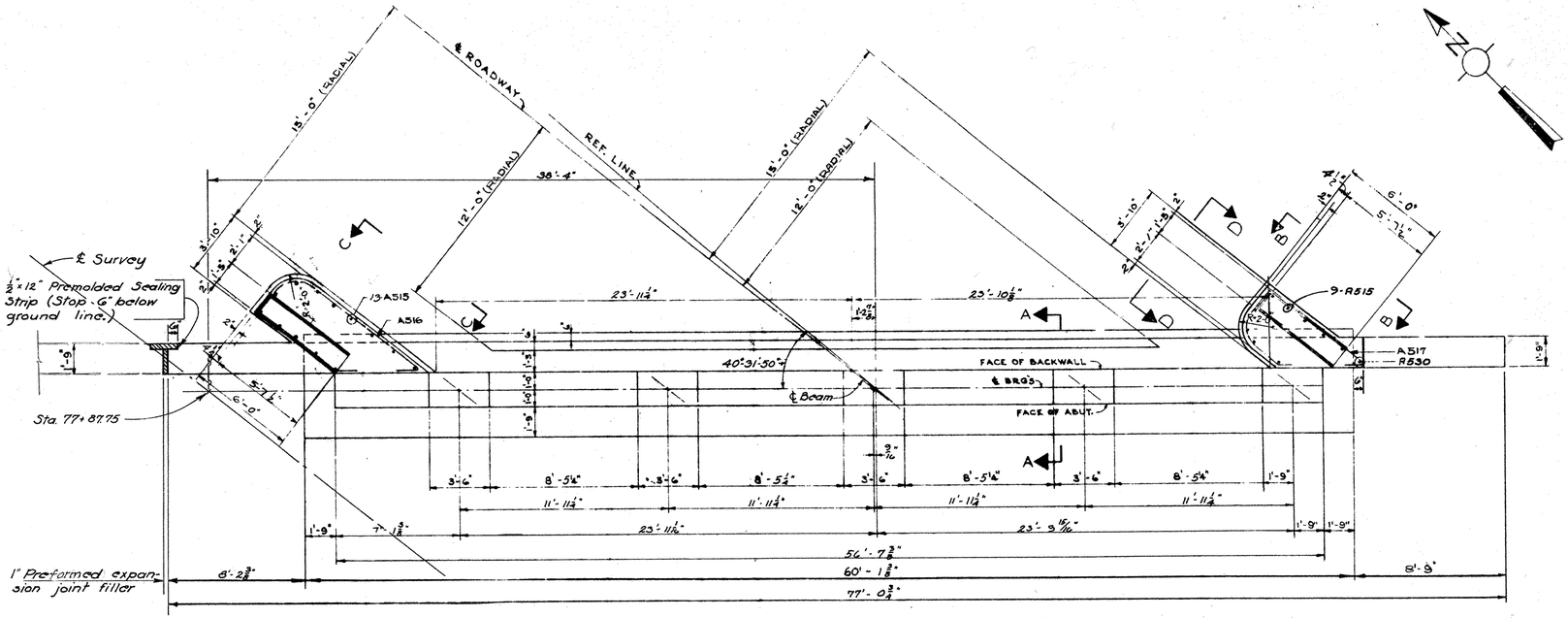
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
J.A.E. CPD	F.S.	N.L.D.	E.S.M. J.M.	L.N.R. BFG	10-5-60	

MICROFILMED
OCT 11 1985

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

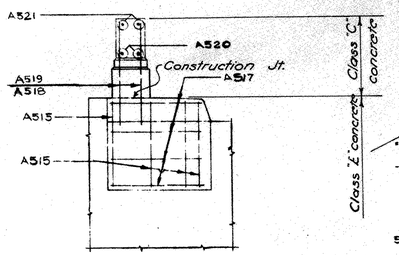
334

STA-21-11.49
WAY-21-0.00

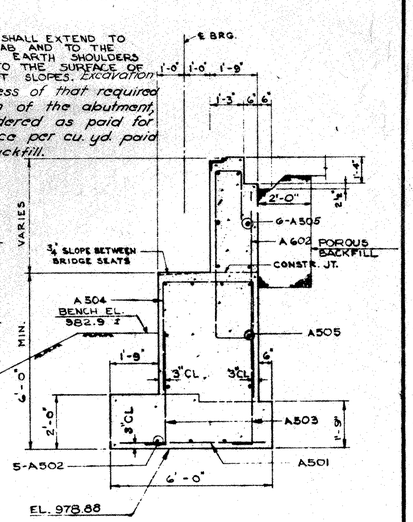


PLAN OF NORTH ABUTMENT

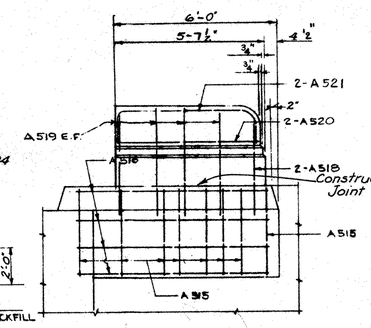
NOTE:
POROUS BACKFILL SHALL EXTEND TO THE APPROACH SLAB AND TO THE SURFACE OF THE EARTH SHOULDERS AND OUTWARD TO THE SURFACE OF THE EMBANKMENT SLOPES. *Excavation therefor, in excess of that required for construction of the abutment, shall be considered as paid for in the bid price per cu. yd. paid for porous backfill.*



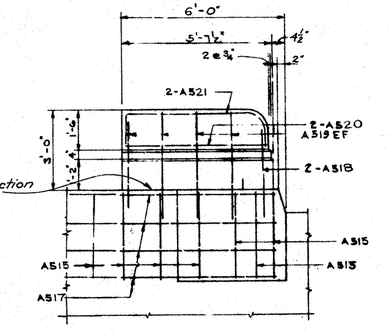
SECTION D-D



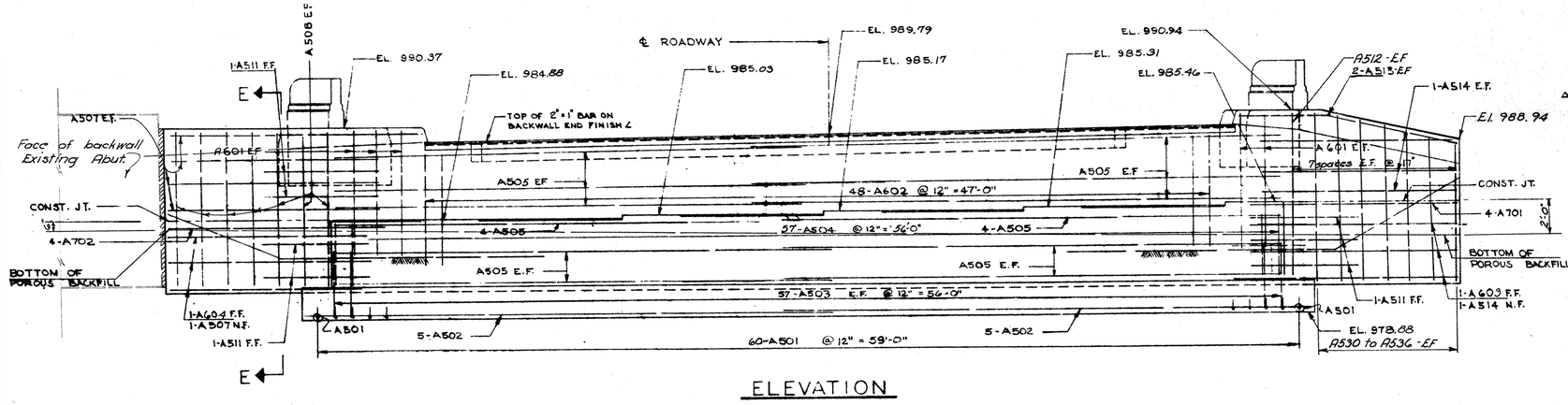
SECTION A-A



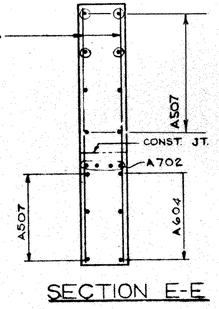
SECTION C-C



SECTION B-B



ELEVATION



SECTION E-E

PROCEDURE: The embankment shall be placed and compacted to the level of the earth bench after which excavation shall be made for the abutment.

E.F. DENOTES EACH FACE.
F.F. DENOTES FAR FACE.
N.F. DENOTES NEAR FACE.
For PARAPET & CURB dimensions see Sht. No 338.

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

NORTH ABUTMENTS DETAILS

BRIDGE NO. WAY-21-0143R
U.S.21 OVER B. & O. R.R.

WAYNE CO. STA. 74+57.44
SEC. WAY-21 STA. 77+91.35

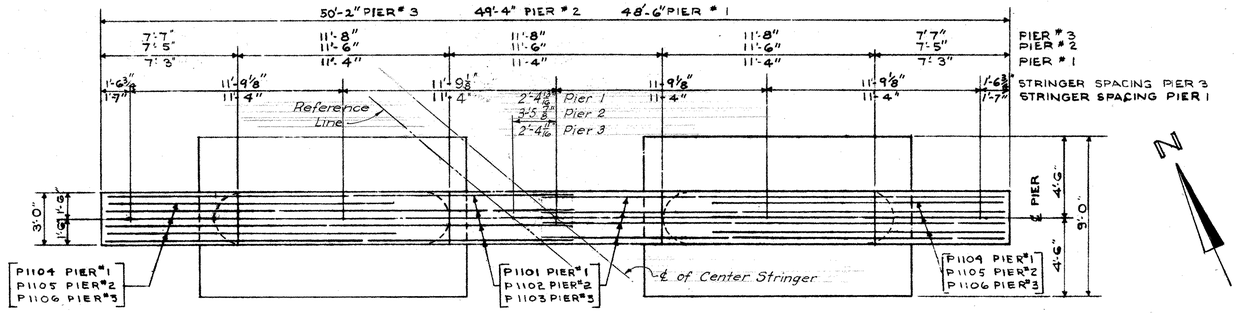
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
J.A.E. C.P.	J.L. F.S.	J.W.B.	E.S.M. J.M.	BFG L.N.R. GJT	10-5-60	

MICROFILMED
OCT 14 1985

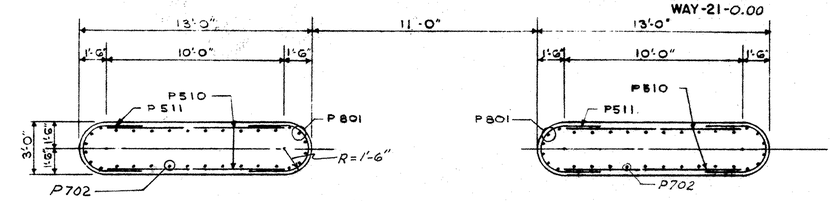
FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

335

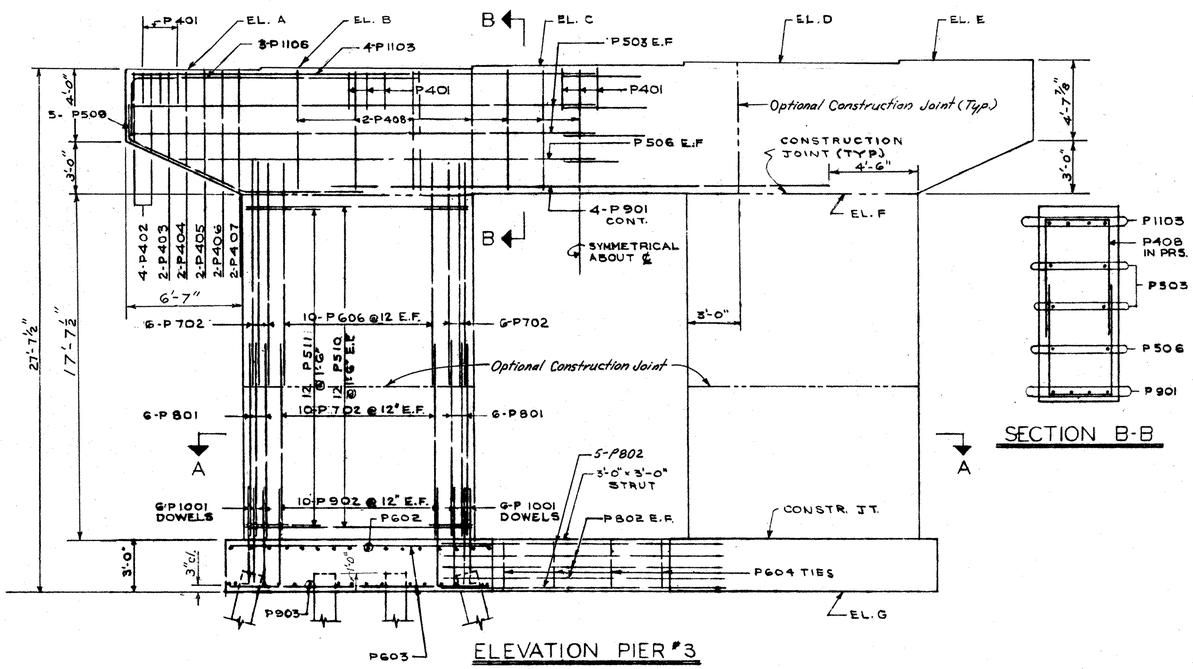
STA-21-11.49
WAY-21-0.00



PLAN PIERS 1, 2 & 3
SHOWING TOP REINFORCING

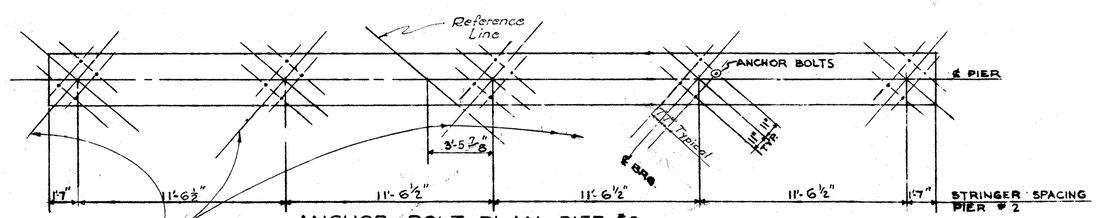


SECTION A-A



ELEVATION PIER #3

SECTION B-B

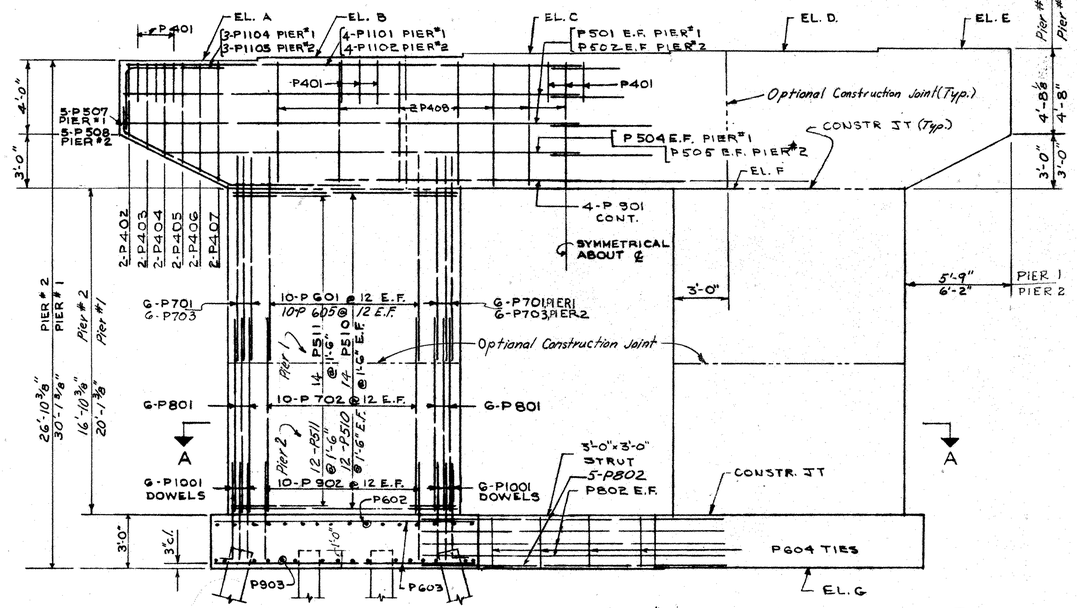


ANCHOR BOLT PLAN PIER #2

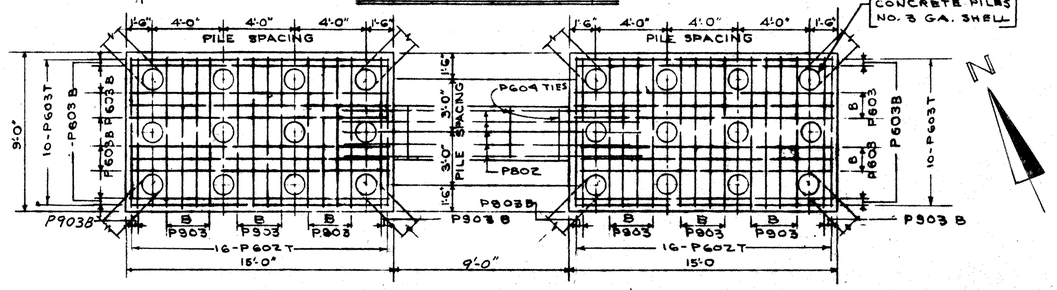
Transverse ℄ of each bearing on piers is to bisect the angle between the beams spliced at that bearing (see Sect. F-F, sht. No 337)

The Contractor shall observe care in placing the bridge seat reinforcing to prevent it from interfering with the anchor bolts.

	ELEV. E	ELEV. D	ELEV. C	ELEV. B	ELEV. A	ELEV. F	ELEV. G
PIER 1	982.79	982.62	982.45	982.28	982.11	975.11	952.00
PIER 2	983.53	983.36	983.20	983.03	982.86	975.86	956.00
PIER 3	984.28	984.11	983.95	983.78	983.62	976.62	956.00



ELEVATION PIERS #1 & 2



FOOTING PLAN PIERS 1, 2 & 3

"B" indicates bottom face
"T" indicates top face

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

PIER DETAILS

BRIDGE NO. WAY-21-0143R
U.S. 21 OVER B & O R.R.

WAYNE CO. STA. 74+57.44
SEC. WAY-21 STA. 77+91.35

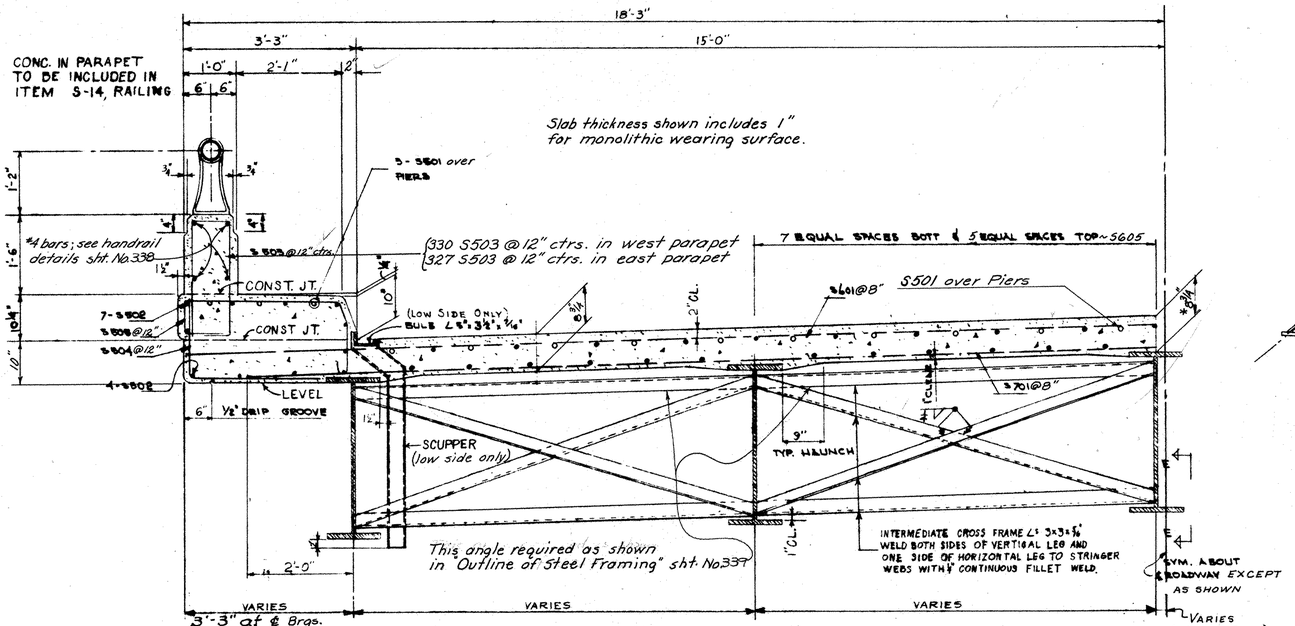
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
A.B.	J.N.	N.L.D.	E.S.M. J.A.E. J.M.	L.N.R. BFG	10-5-60	

MICROFILMED
OCT 11 1985

FED. RD DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

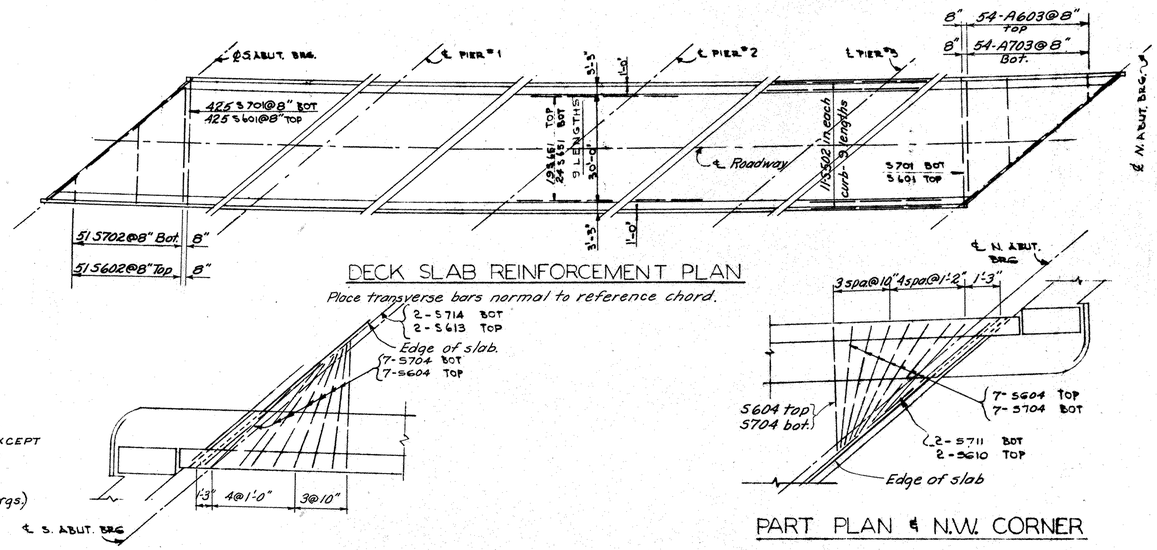
336

STA.-21-11.49
WAY-21-0.00



TRANSVERSE HALF SECTION

ALL TRANSVERSE DIMENSIONS ARE RADIAL

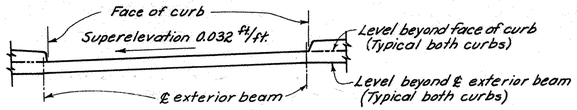


DECK SLAB REINFORCEMENT PLAN

Place transverse bars normal to reference chord.

PART PLAN ℄ S.E. CORNER

PART PLAN ℄ N.W. CORNER



* This is the nominal dimension. The quantity of deck concrete to be paid for shall be based on this dimension, even though deviation from it may be necessary because the top flange of the beam may not have the exact camber or conformation required to place it parallel to the finished grade.

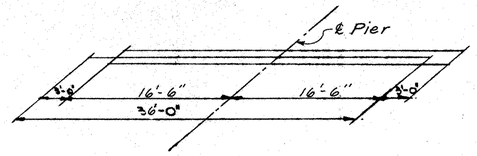
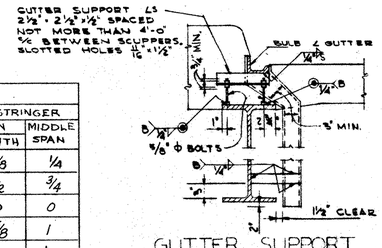


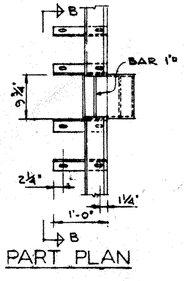
DIAGRAM SHOWING STAGGER OF S501 BARS OVER PIERS

DEFLECTIONS	INTERIOR STRINGER			FASCIA STRINGER		
	END SPAN		MIDDLE	END SPAN		MIDDLE
	NORTH	SOUTH	SPAN	NORTH	SOUTH	SPAN
DEFLECTION DUE TO WEIGHT OF STEEL	1/8	1/8	1/4	1/8	1/8	1/4
DEFLECTION DUE TO REMAINING DEAD LOAD	1/2	1/2	3/4	1/2	1/2	3/4
CONCAVITY REQUIRED FOR VERTICAL CURVE	-7/16	0	0	-7/16	0	0
SUM OF DEFLECTION AND CONCAVITY	3/16	5/8	1	3/16	5/8	1
REQUIRED CAMBER	0	0	1	0	0	1

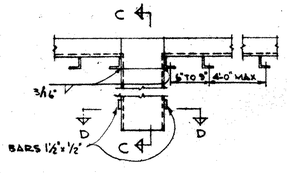
WHERE NO CAMBER IS CALLED FOR, THE BEAMS SHALL BE PLACED WITH THE NATURAL CAMBER UP.



GUTTER SUPPORT AND SCUPPER

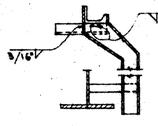


PART PLAN

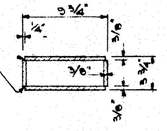


SECTION B-B

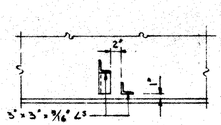
MOMENT PLATE SIZES		
LOCATION		
PIERS 1 & 3	TOP ℄	15" x ⅝" x 24'-0"
	BOTT. ℄	18" x 1 1/16" x 24'-0"
PIER 2	TOP ℄	15" x ⅝" x 30'-0"
	BOTT. ℄	18" x 1 1/16" x 30'-0"



SECTION C-C



SECTION D-D



SECTION E-E

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

SUPERSTRUCTURE DETAILS

BRIDGE NO. WAY-21-0143 R
U.S.21 OVER B & O R.R.

WAYNE CO. STA. 74+57.44
SEC. WAY-21 77+91.35

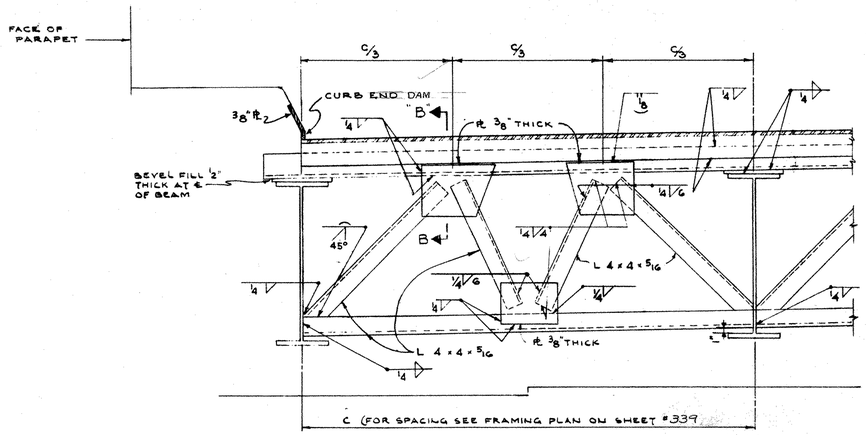
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
J.A.E.	G.S.	J.D.P.	R.S. J.M.	BFG L.N.R.	10-5-60	

MICROFILMED
OCT 11 1985

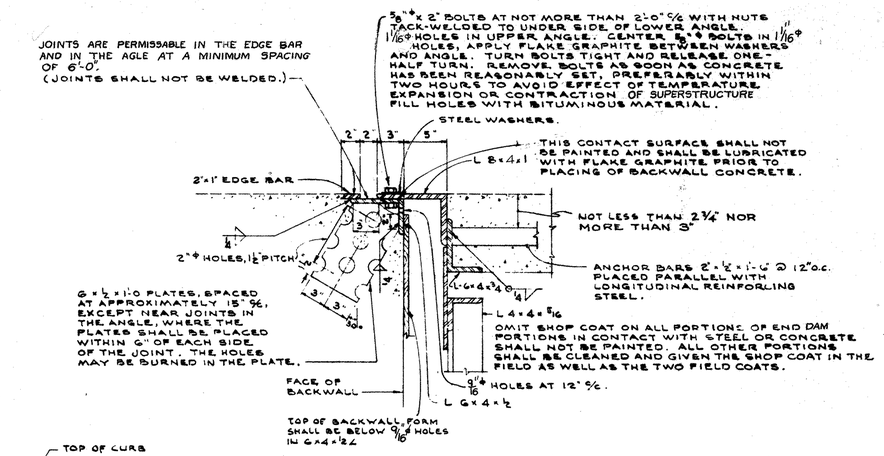
FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

337

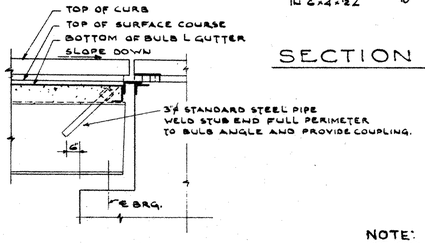
STA.-21-11.49
WAY-21-0.00



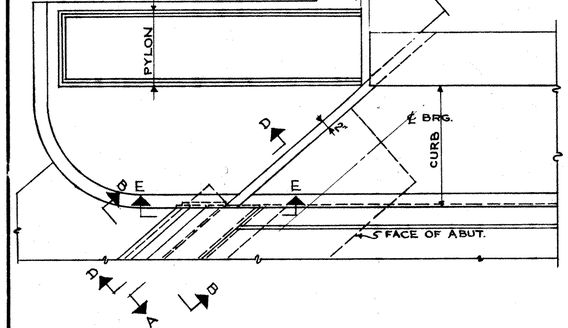
SECTION "A-A"



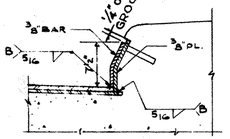
SECTION "B-B"



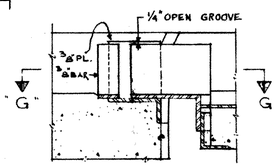
TYPICAL SECTION FOR GRADE SLOPING DOWN TO END FINISH



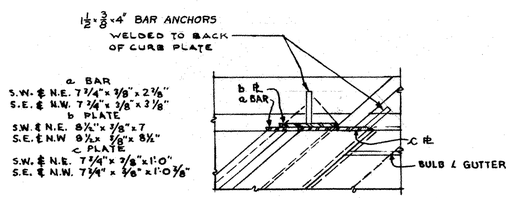
PARTIAL PLAN AT ABUTMENT



SECTION "D-D"

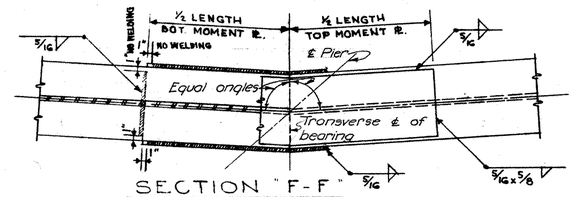


SECTION "E-E"

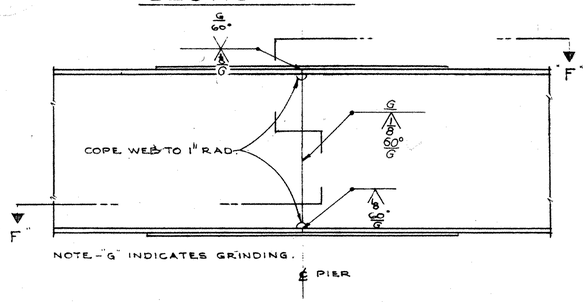


SECTION "G-G"

NOTE:
FOR SIZE OF MOMENT PLATE SEE SHT. 336



SECTION "F-F"



BEAM SPLICE DETAILS

BEAM SPLICE WELDING PROCEDURE:
1. RAISE END OF BEAM AT PIER #2 - 3 3/4"
*2. BUTT WELD THE BEAM FLANGES AND WEB AT PIER #1
3. WELD THE BOTTOM AND TOP MOMENT PLATES.
4. LOWER BEAM TO FINAL POSITION AT PIER #2
5. RAISE END OF BEAM AT PIER #3 3 3/4"
*6. BUTT WELD BEAM FLANGES AND WEB AT PIER #2
7. WELD THE BOTTOM AND TOP MOMENT PLATES
8. LOWER BEAM AT PIER #3
9. RAISE END OF BEAM AT ABUTMENT 2"
*10. BUTT WELD BEAM FLANGES AND WEB AT PIER #3
11. WELD BOTTOM AND TOP MOMENT PLATES
12. LOWER BEAM AT ABUTMENT TO FINAL POSITION.
* MAKE TWO PASSES ON EACH FLANGE, THEN TWO ON THE WEB; REPEAT, USING ONE PASS AT EACH LOCATION, UNTIL WELDS ARE COMPLETED.

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

SUPERSTRUCTURE DETAILS

BRIDGE NO. WAY-21-0143R
U.S. 21 OVER B. & O. R.R.
WAYNE CO.
STA. 74+57.44
77+91.35

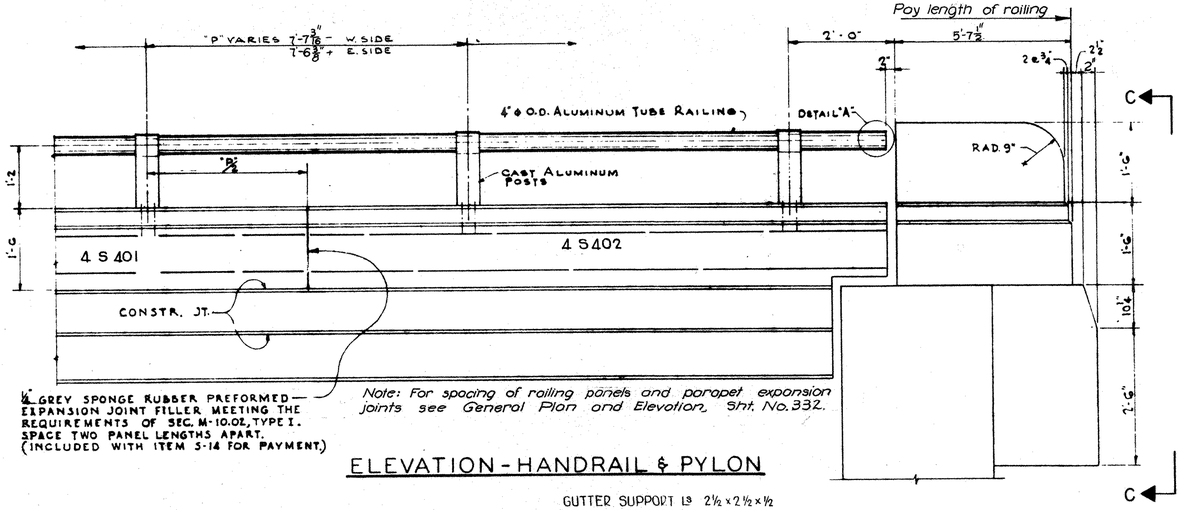
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
J.A.E. CPD	J.N. CPD	G.P.G.	N.S.W. E.S.M. J.N.	L.N.R. B.P.G.	10-5-60	

FED RD DIVISION	STATE	PROJECT	TYPE FUNDS
2	OH 10		

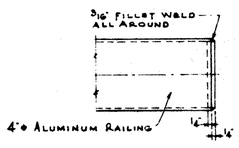
338

MICROFILMED OCT 21 1985

STA. - 21 - 11.49
WAY - 21 - 0.00



ELEVATION - HANDRAIL & PYLON



DETAIL A

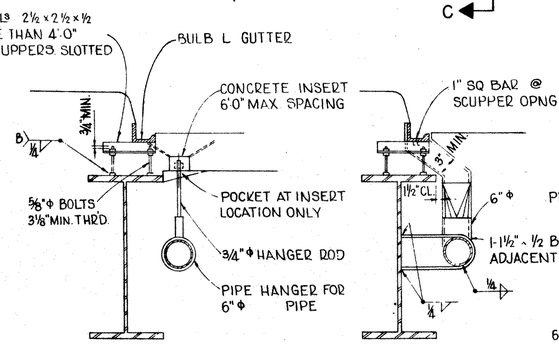
~ NOTES ~

FINISH: The extreme outer surface of cast railing posts shall be given a 60 grit finish.

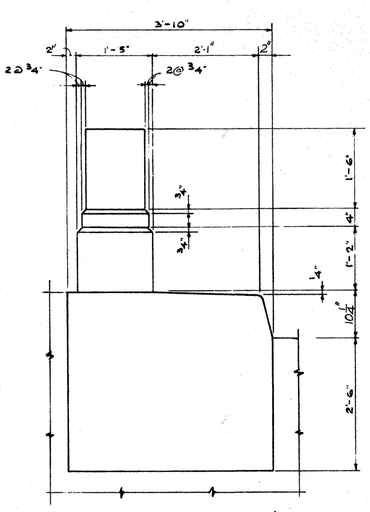
SHIMS shall be provided under the railing posts, where necessary, to assist in vertical aligning. They shall be of aluminum alloy, 2 3/8" x 1/16" ϕ, and shall be slotted for anchor bolts to permit insertion after the posts are in place.

SET SCREWS shall be furnished with each casting and shall be included in the unit price bid per linear foot of railing.

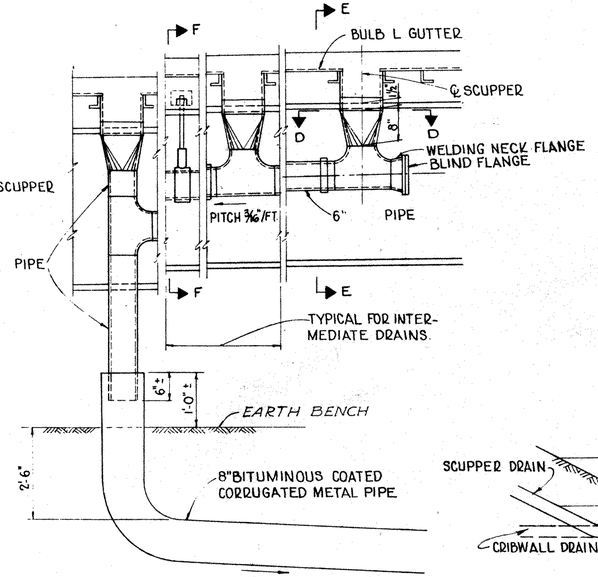
ANCHOR BOLTS shall be aluminum with a head or nut at the lower end. They shall be 1'-0" long and shall have a minimum diameter of 0.62" at the root of the thread. Bolts shall be anodized.



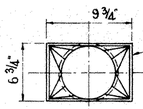
SECTION F-F



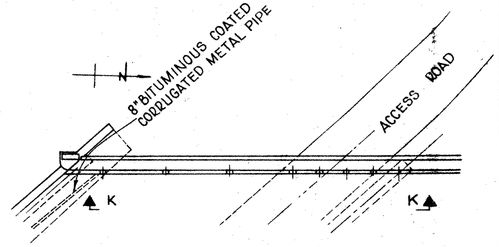
VIEW C-C



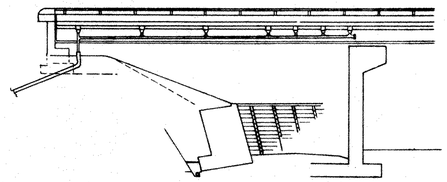
COLLECTOR PIPE DETAILS (SOUTHWEST CORNER ONLY)



VIEW D-D

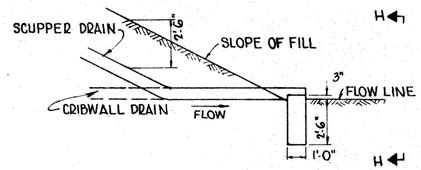


PLAN SHOWING DRAINAGE AT S.W. CORNER OF STRUCTURE

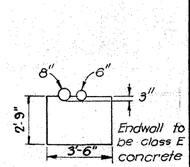


SECTION K-K

Note: 6" ϕ pipe shall be wrought iron or galvanized steel. Joint shall be made by welding before galvanizing or by use of Victaulic couplings or approved equivalent. Galvanizing shall conform to Sec. M-7.4(d) except that on straps and bolts for mounting pipe, the galvanizing called for in Sec. M-10.30 may be used.

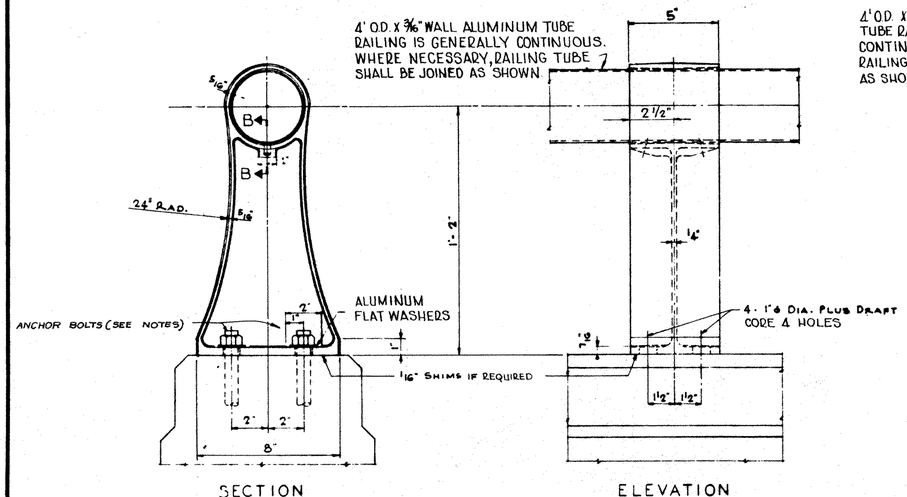


SECTION AT END OF PIPES

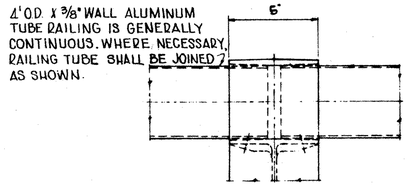


VIEW H-H

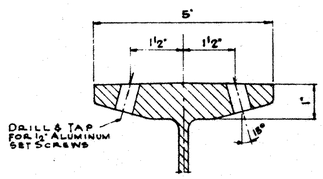
Endwall shall be included with Item S-29, 8" ϕ pipe, for payment.



HANDRAIL DETAILS



TYPICAL PIPE JOINT



SECTION B-B

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

HANDRAIL AND PYLON DETAILS

BRIDGE NO. WAY-21-0143R
U.S. 21 OVER B & O. R.R.
WAYNE CO.
STA. 74 + 57.44
77 + 91.35

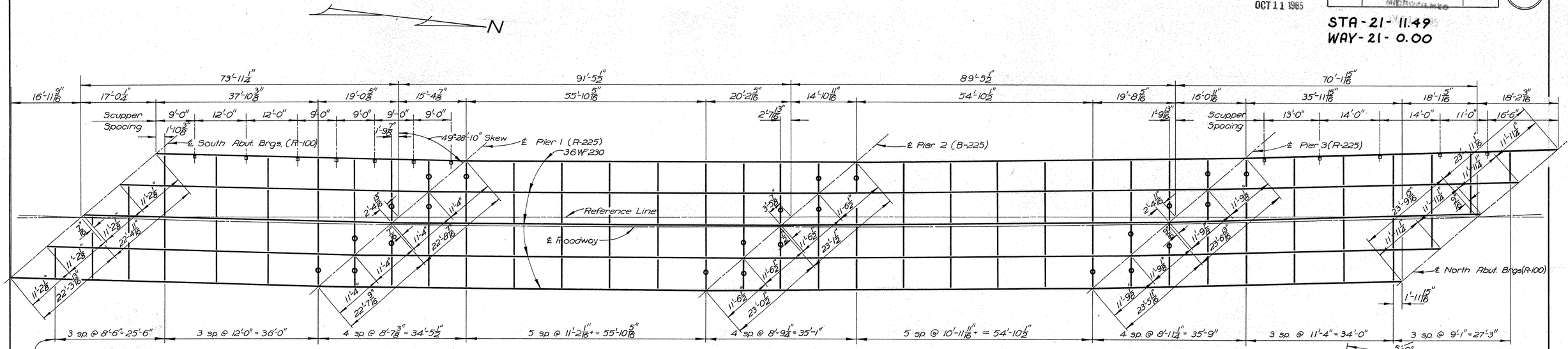
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
M.C.	R.N.	G.P.G.	J.M.	L.N.R. DPG	10-5-60	
M.R.						

MICROFILMED
OCT 11 1985

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

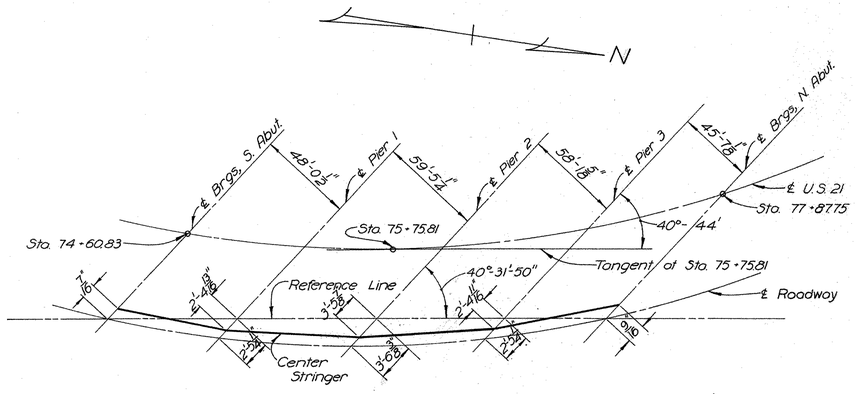
339

STA - 21 - 11.49
WAY - 21 - 0.00



~ OUTLINE OF STEEL FRAMING ~

"℄" indicates additional top crossframes at piers. (See Transverse Half Section, Sheet No. 336)



~ LAYOUT DIAGRAM ~

PRECAST REINFORCED CONCRETE CELLULAR RETAINING WALL: The existing "Permacrete Tri-Crib units" shall be carefully removed as shown on the plans and to whatever extent is necessary to provide proper splicing of the proposed wall to the existing wall. All "Tri-Crib units" removed, if considered in satisfactory condition by the Engineer, shall be used in constructing the proposed extension to the retaining wall. Payment for the removal and subsequent incorporation of existing "Tri-Crib units" into the proposed wall shall be included in the lump sum bid for Item S-22, "Removal of portions of existing precast reinforced concrete cellular retaining wall, as per plan." Units that are damaged during removal shall be replaced in accordance with Sect. S-22.

~ SECTION A-A ~

Curve the face of the crib wall to conform to the edge of the access road.

~ ELEVATION - SOUTH WALL EXTENSION ~

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

SUPERSTRUCTURE DETAILS & CRIBWALL DETAILS

BRIDGE No. WAY-21-0143R
U.S. 21 OVER B & O R.R.
STA. 74 + 57.44
STA. 77 + 91.57
WAYNE COUNTY

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
C.P.B.	C.P.B.	G.P.G.	J.M.	D.F.G. A.J.T.	10-5-60	

MICROFILMED
OCT 11 1985

FED. RD. DIVISION	STATE	PROJECT		
2	OHIO			

340

STA-21-11.49
WAY-21-0.00

REINFORCING STEEL LIST

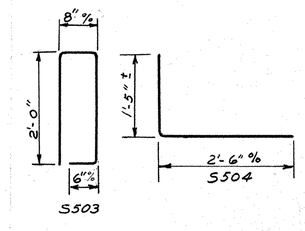
Mark	No.	Length	Weight	Shp.
Superstructure				
S701	425	34'-0"	29,536	S
S702	One Series of 51	5'-5" to 34'-10"	2,098	S
S703	One Series of 54	5'-5" to 34'-8"	2,212	S
S704	14	6'-0"	172	S
S601	425	36'-0"	22,981	S
S602	One Series of 51	6'-4" to 35'-9"	1,612	S
S603	One Series of 54	6'-4" to 35'-7"	1,700	S
S604	14	6'-0"	126	S
S605	387	38'-0"	22,088	S
S501	78	36'-0"	2,929	S
S502	198	37'-10"	7,813	S
S503	657	4'-9"	3,255	B
S504	657	3'-9"	2,570	B
S505	657	4'-3"	2,912	B
S401	160	14'-9"	*	S
S402	16	12'-10"	*	S

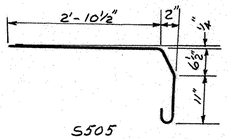
Vary by 7 1/16"
Vary by 6 5/8"
Vary by 7 1/16"
Vary by 6 5/8"

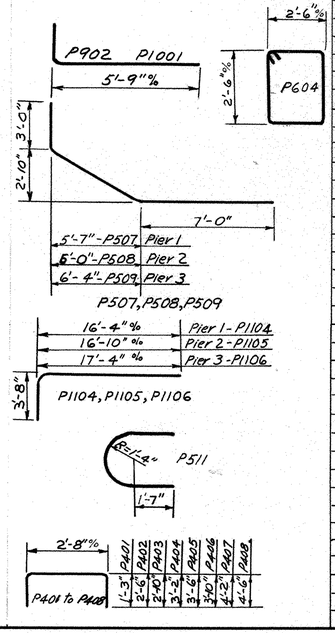
*Bars are included with Railing for payment.

Piers				
P1101	8	25'-10"	1,098	S
P1102	8	26'-3"	1,116	S
P1103	8	26'-8"	1,133	S
P1104	6	19'-8"	627	B
P1105	6	20'-2"	643	B
P1106	6	20'-8"	659	B
P1001	72	6'-10"	2,117	B
P901	12	28'-0"	1,142	S
P902	120	6'-9"	2,754	B
P903	96	8'-6"	2,774	S
P801	72	11'-0"	2,115	S
P802	48	15'-0"	1,922	S
P701	24	13'-6"	662	S
P702	144	11'-0"	3,238	S
P703	24	10'-2"	499	S

Bending Diagrams

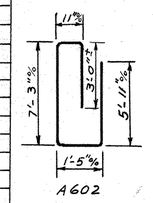


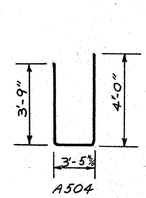




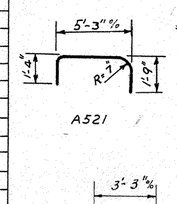
Mark	No.	Length	Weight	Shp.
P601	40	13'-0"	781	S
P602	96	8'-6"	1,226	S
P603	120	14'-6"	2,613	S
P604	12	10'-6"	189	B
P605	40	9'-8"	581	S
P606	40	10'-6"	631	S
P501	8	24'-11"	208	S
P502	8	25'-4"	211	S
P503	8	25'-9"	215	S
P504	4	22'-6"	94	S
P505	4	22'-11"	96	S
P506	4	23'-4"	97	S
P507	10	16'-4"	170	B
P508	10	16'-8"	174	B
P509	10	17'-0"	177	B
P510	152	10'-6"	1,665	S
P511	152	7'-5"	1,176	B
P401	45	5'-0"	150	B
P402	16	7'-6"	80	B
P403	12	8'-2"	65	B
P404	12	8'-10"	71	B
P405	12	9'-6"	76	B
P406	12	10'-2"	81	B
P407	12	10'-10"	87	B
P408	78	11'-6"	599	B

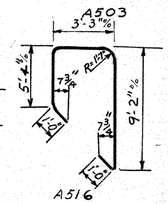
Bending Diagrams

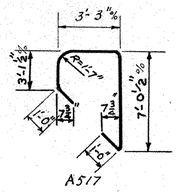


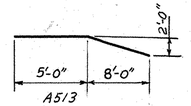


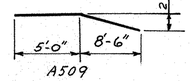












Mark	No.	Length	Weight	Shp.	Number South	Number North
Abutments						
A701	4	12'-6"	102	S		4
A702	4	11'-10"	97	S		4
A703	4	13'-6"	110	S	4	
A601	20	7'-4"	220	S	10	10
A602	93	17'-11"	2,503	B	45	48
A603	3	12'-2"	55	S		3
A604	3	11'-6"	52	S		3
A605	3	13'-2"	59	S	3	
A501	118	5'-6"	677	S	58	60
A502	10	30'-9"	321	S		10
A503	220	4'-2"	956	B	106	114
A504	110	10'-11"	1,252	B	53	57
A505	28	28'-11"	844	S		28
A506	9	12'-10"	120	S	9	
A507	11	11'-2"	128	S		11
A508	24	9'-4"	234	S	10	14
A509	2	13'-9"	29	B	2	
A511	12	5'-10"	73	S	5	7
A512	4	10'-0"	42	S	2	2
A513	2	13'-3"	28	B		2
A514	9	11'-10"	111	S		9
A515	39	3'-0"	122	S	17	22
A516	8	19'-1"	159	B	4	4
A517	8	14'-9"	123	B	4	4
A518	8	3'-6"	29	S	4	4
A519	32	4'-3"	142	S	16	16
A520	8	5'-3"	*	S	4	4
A521	8	8'-0"	*	B	4	4
A525	10	28'-10"	301	S	10	
A526	28	27'-2"	793	S	28	
A529	15	8'-9"	137	S	15	
A530	4	9'-11"	41	S	2	2
A531	4	9'-7"	40	S	2	2
A532	4	9'-3"	39	S	2	2
A533	4	8'-11"	37	S	2	2
A534	4	8'-7"	36	S	2	2
A535	4	8'-3"	34	S	2	2
A536	4	7'-11"	33	S	2	2

*Bars are included with Railing for payment.

Replacement Bars				
RE1101	1	7'-6"	—	S
RE1001	1	7'-2"	—	S
RE901	1	6'-10"	—	S
RE801	1	6'-6"	—	S
RE701	2	6'-3"	—	S
RE601	3	5'-11"	—	S
RE501	1	5'-7"	—	S
RE401	1	5'-3"	—	S

Notes:
REPLACEMENT BARS: If reinforcing bars are fabricated from stock which has previously been tested and approved by the Ohio Highway Testing Laboratory, test samples as provided in Sec. 5-4.02 need not be furnished and replacement bars will not be required.

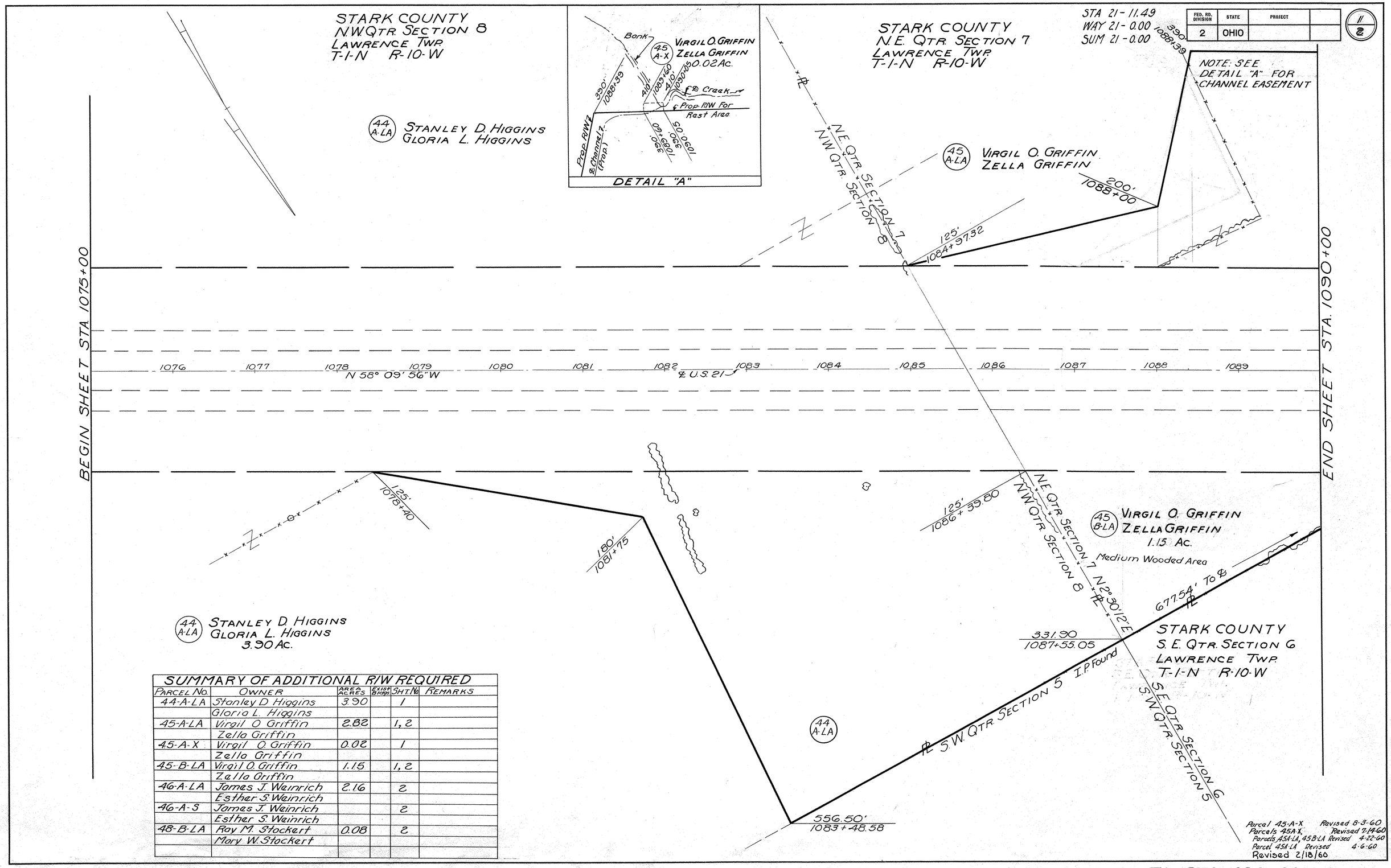
BAR SIZE is indicated in the bar mark. The first digit where three digits are used, and the first two digits where four are used, indicate the bar size number. For example, A700 is a No. 7 size bar and A1014 is a No. 10 size.

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

REINFORCING STEEL LIST

BRIDGE NO. WAY-21-0143R
U.S. 21 OVER B. & O. R.R.
WAYNE COUNTY STA. 74+57.44
STA. 77+91.57

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
CPD	CPD	N.L.D.	J.M.	BPG A.J.T.	10-5-60	



SUMMARY OF ADDITIONAL R/W REQUIRED

PARCEL NO.	OWNER	AREA ACRES	EXIST. BLDGS.	SHT. NO.	REMARKS
44-A-LA	Stanley D Higgins	3.90		1	
	Gloria L. Higgins				
45-A-LA	Virgil O Griffin	2.82		1, 2	
	Zella Griffin				
45-A-X	Virgil O. Griffin	0.02		1	
	Zella Griffin				
45-B-LA	Virgil O. Griffin	1.15		1, 2	
	Zella Griffin				
46-A-LA	James J. Weinrich	2.16		2	
	Esther S. Weinrich				
46-A-S	James J. Weinrich			2	
	Esther S. Weinrich				
48-B-LA	Ray M. Stockert	0.08		2	
	Mary W. Stockert				

RIGHT OF WAY SHEET STA. 1075+00 TO STA. 1090+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

342
342

Sta. 21 -11.49
Way. 21 -0.00
Sum. 21 -0.00

Stark County
N.E. Qtr. Section 7
Lawrence Twp.
T-1-N R-10-W

Begin Sheet Sta. 1090+00

End Sheet Sta. 1105+00

℄ Creek

LA

390' 1091+56.09

46 AS

S 79° 54' 04" W 31'

390' 1093+85

390' 1093+60.5

46 ALA
James J. Weinrich
Esther S. Weinrich
2.16 Ac.

45 ALA
Virgil O. Griffin
Zella Griffin
2.82 Ac.

N 0° 55' 52" E

59° 05' 48"

125' 1093+14.32

Heavy Wooded Area

125' 1095+68.30

48 BLA

LA

174.42' 1096+64.88

N.E. Qtr. Section 7
S.E. Otr. Section 6

N 87° 29' 48" W

49 LA
Jonathan G. Lester
Jonathan W. Lester
Ruth L. Messenger

125' 1096+91.40

LA R/W

180' 1104+40

1091 1092 1093 1094 1095 1096 1097 1098 1099 1100 1101 1102 1103 1104

N 58° 09' 56" W

℄ U.S. 21

LA R/W

125' 1091+23.16

125' 1098+25.54

125' 1104+00

135' 1105+00

48 BLA
Ray M. Stockert
0.08 Ac.

Stark County
S.E. Qtr. Section
Lawrence Twp.
T-1-N R-10-N

Revised Parcel 46-A-S 5/25/62
Parcel 46-A-S Revised 7/19/60
Parcel 45-A-LA, 45-B-LA Revised 4/22/60
Parcel 45-A-LA, 46-A-LA Revised 4/6/60
Revised 2/18/60

NOTE: This sheet has been retraced from original print. May 25, 1962

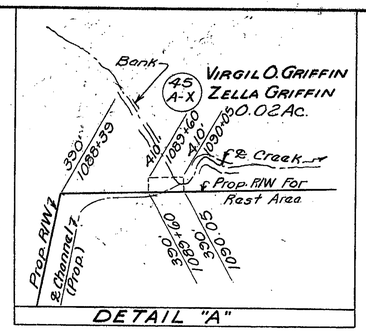
RIGHT of WAY SHEET STA. 1090+00 to STA. 1105+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

1/2

STARK COUNTY
N.W.QTR. SECTION 8
LAWRENCE TWP.
T-1-N R-10-W

(44 A-LA) STANLEY D. HIGGINS
GLORIA L. HIGGINS



STARK COUNTY
N.E. QTR. SECTION 7
LAWRENCE TWP.
T-1-N R-10-W

STA 21-11.49
WAY 21-0.00
SUM 21-0.00

NOTE: SEE DETAIL "A" FOR CHANNEL EASEMENT

(45 A-LA) VIRGIL O. GRIFFIN
ZELLA GRIFFIN

200'
1088+00

125'
1084+57.52

N.E. QTR. SECTION 7
NW QTR. SECTION 8

BEGIN SHEET 1 STA. 1075+00

1076 1077 1078 1079 1080 1081 1082 1083 1084 1085 1086 1087 1088 1089

N 58° 09' 56" W

℄ U.S. 21

END SHEET STA. 1090+00

125'
1078+40

180'
1081+75

(44 A-LA) STANLEY D. HIGGINS
GLORIA L. HIGGINS
3.90 Ac.

125'
1086+35.80

N.E. QTR. SECTION 7
NW QTR. SECTION 8

(45 B-LA) VIRGIL O. GRIFFIN
ZELLA GRIFFIN
1.15 Ac.
Medium Wooded Area

677.54' To ℄

N 22° 30' 12" E

331.90
1087+55.05

STARK COUNTY
S.E. QTR. SECTION 6
LAWRENCE TWP.
T-1-N R-10-W

(44 A-LA)

℄ S.W. QTR. SECTION 5 I.P. Found

S.E. QTR. SECTION 6
S.W. QTR. SECTION 5

556.50'
1083+48.58

SUMMARY OF ADDITIONAL R/W REQUIRED

PARCEL NO.	OWNER	AREA ACRES	EXIST BLDGS.	SHT. NO.	REMARKS
44-A-LA	Stanley D Higgins	3.90		1	
	Gloria L. Higgins				
45-A-LA	Virgil O Griffin	2.82		1, 2	Release of 45-A-LA, 45-B-LA, & 45-A-X to Raymond E. Perry by Deed Instrument No. 200511040074459 on 11-4-2005 (B.W.H. 8-6-07)
	Zella Griffin				
45-A-X	Virgil O. Griffin	0.02		1	
	Zella Griffin				
45-B-LA	Virgil O. Griffin	1.15		1, 2	
	Zella Griffin				
46-A-LA	James J. Weinrich	2.16		2	
	Esther S. Weinrich				
46-A-3	James J. Weinrich			2	
	Esther S. Weinrich				
48-B-LA	Ray M. Stockert	0.08		2	
	Mary W. Stockert				

Parcel 45-A-X Revised 8-3-60
Parcels 45A-X, Revised 7-14-60
Parcels 45A-LA, 45B-LA Revised 4-22-60
Parcel 45A-LA Revised 4-6-60
Revised 2/18/60

RIGHT OF WAY SHEET STA 1075+00 TO STA 1090+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

342
342

Sta. 21 -11.49
Way. 21 -0.00
Sum. 21 -0.00

Stark County
N.E. Qtr. Section 7
Lawrence Twp.
T-1-N R-10-W

Begin Sheet Sta. 1090+00

End Sheet Sta. 1105+00

℄ Creek

LA

390' 1091+56.09

46 AS

S 79° 56' 04" W 97'

390' 1093+85

390' 1093+60.5

45 ALA

Virgil O. Griffin
Zella Griffin
2.82 Ac.

N 0° 55' 52" E

59° 05' 48"

125' 1093+14.32

46 ALA

James J. Weinrich
Esther S. Weinrich
2.16 Ac.

LA

Heavy Wooded Area

125' 1095+68.30

48 BLA

174.42' 1096+64.88

N.E. Qtr. Section 7
S.E. Qtr. Section 6

N 87° 29' 48" W

125' 1096+91.40

49 LA

Jonathan G. Lester
Jonathan W. Lester
Ruth L. Messenger

LA R/W

180' 1104+40

1091 1092 1093 1094 1095 1096 1097 1098 1099 1100 1101 1102 1103 1104

N 58° 09' 56" W

℄ U.S. 21

LA R/W

125' 1091+23.16

125' 1098+25.54

125' 1104+00

135' 1105+00

48 BLA

Ray M. Stockert

0.08 Ac.

Release of 45-A-LA, 45-B-LA, and 45-A-X to Raymond E. Perry by Deed Instrument No. 200511040074459 on 11-4-2005 (B.W.H. 8-6-2007).

Stark County
S.E. Qtr. Section
Lawrence Twp.
T-1-N R-10-N

Revised Parcel 46-A-S 5/23/62
Parcel 46-A-S Revised 7/19/60
Parcel 45-A-LA, 45-A-LA Revised 6/22/60
Parcel 45-A-LA, 46-A-LA Revised 4/6/60
Revised 2/18/60

NOTE: This sheet has been retraced from original print. May 25, 1962

RIGHT of WAY SHEET STA. 1090+00 to STA. 1105+00

SOIL PROFILE
STARK COUNTY - CITY OF MASSILLON
STA. - 21 - 11.49
WAY - 21 - 0.00
SUM - 21 - 0.00

1/19

MICROFILMED
OCT 11 1985

NOTE: THE INFORMATION SHOWN BY THIS SUBGRADE PROFILE WAS SECURED FOR THE USE OF THE STATE OF OHIO AND IS NOT TO BE CONSTRUED AS A PART OF THE PLANS GOVERNING THE THE CONSTRUCTION OF THE PROJECT

LEGEND FOR PROJECT - AVERAGE RESULTS OF TESTS - 37 SAMPLES TESTED

	H.R.B. CLASS	OHIO CLASS	% AGGR.	% C-SAND	% F-SAND	% SILT	% CLAY	% FINER #200	LIQUID LIMIT	PLASTICITY INDEX	WATER CONTENT	SAMPLES TESTED
GRAVEL AND/OR STONE FRAGMENTS	A-1-a	A-1-a	64	12	10			14			8	1
GRAVEL AND/OR STONE FRAGMENTS WITH SAND	A-1-b	A-1-b	55	17	11			17			10	3
GRAVEL AND/OR STONE FRAG. WITH SAND & SILT	A-2-4(0)	A-2-4	36	15	19	8	22	30	25	6	17	5
FINE SAND	A-3	A-3	13	9	71			7			6	1
COARSE & FINE SAND		A-3a	10	26	38			26			14	4
SANDY SILT	A-4(4)	A-4a	11	10	25	21	33	54	25	7	20	17
SILT	A-4(8)	A-4b	6	3	6	85	0	85	20	0	24	1
SILT & CLAY	A-6(5)	A-6a	14	9	21	15	41	56	35	11	29	1
CLAY	A-7-6(13)	A-7-6	2	6	16	16	60	76	41	22	23	1
ORGANIC MATERIAL OR PEAT					*(Classified by Visual Inspection)*						50	3

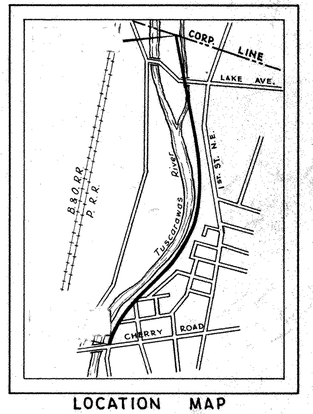
AUGER BORING PLOTTED TO VERTICAL SCALE ONLY

AUGER BORING - PLAN VIEW

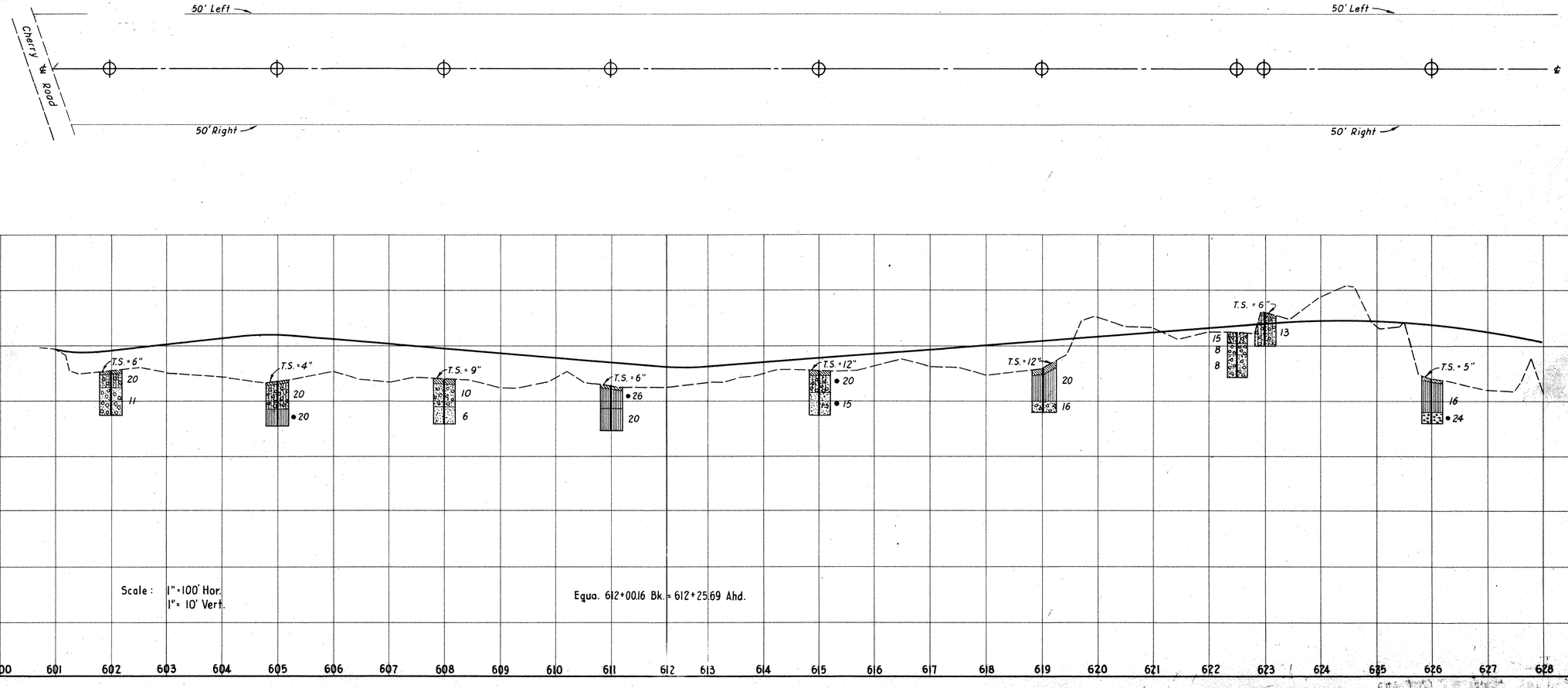
MOISTURE CONTENT NEARLY EQUAL TO OR GREATER THAN THE LIQUID LIMIT - 3

TOP SOIL. T.S.= X"= APPROX. DEPTH

NOTE: FIGURES BESIDE BORINGS INDICATE MOISTURE CONTENT IN PERCENT.



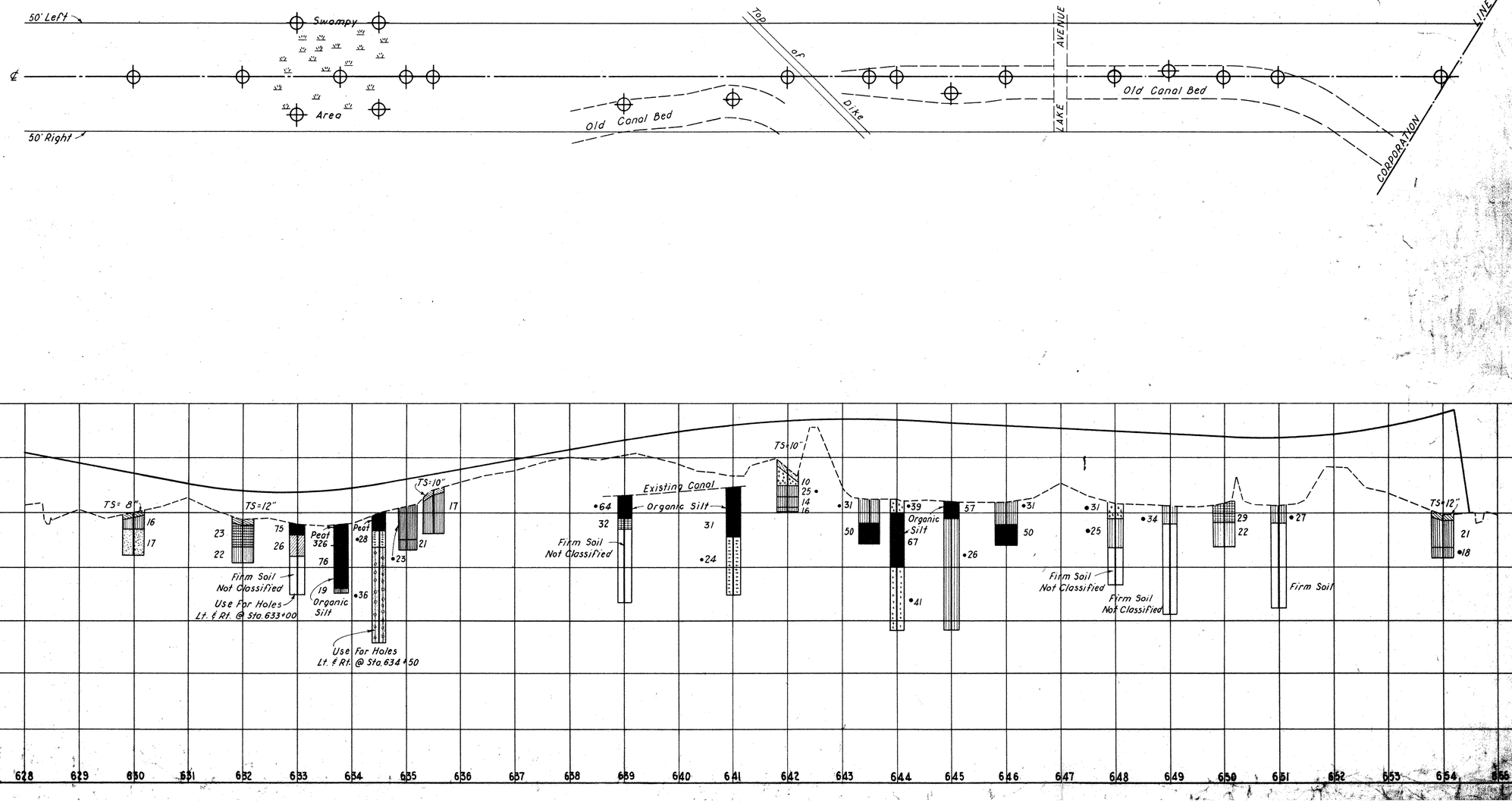
LOCATION MAP



SOIL PROFILE

STARK COUNTY-CITY OF MASSILLON
STA.-21-11.49
WAY-21-0.00
SUM-21-0.00

2/19



MICROFILMED
OCT 11 1985

SOIL PROFILE
STA-21-11.49
WAY-21-0.00 SUM-21-0.00
STATE HIGHWAY TESTING AND RESEARCH LABORATORY
O. S. U. CAMPUS, COLUMBUS, OHIO

3/19

LEGEND FOR PROJECT – AVERAGE RESULTS OF TESTS – 348 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 &/OR STONE FRAGMENTS	A-1-a	A-1-a	65	15	10	5	5	N.P.	N.P.	13	10
GRAVEL &/OR STONE FRAGMENTS WITH SAND	A-1-b	A-1-b	43	21	19	10	7	N.P.	N.P.	11	18
COARSE & FINE SAND	A-3	A-3a	8	21	48	12	11	N.P.	N.P.	12	16
GRAVEL &/OR STONE FRAGMENTS WITH SAND, SILT	A-2-4	A-2-4	41	15	17	16	11	24	6	13	20
GRAVEL &/OR STONE FRAGMENTS WITH SAND, SILT & CLAY	A-2-6	A-2-6	42	16	12	12	11	32	13	14	6
SANDY SILT	A-4	A-4a	15	7	19	35	24	25	7	14	145
SILT	A-4	A-4b	1	2	10	58	29	27	7	22	38
SILT & CLAY	A-6	A-6a	9	4	11	39	37	31	12	17	54
CLAY	A-6	A-6b	3	2	7	40	48	37	17	21	16
ELASTIC CLAY	A-7-5	A-7-5	5	3	8	39	45	58	25	32	5
CLAY	A-7-6	A-7-6a	1	1	9	44	45	43	20	26	8
TOP SOIL						VISUAL CLASSIFICATION					
BERM MATERIAL						VISUAL CLASSIFICATION					
PEAT OR ORGANIC MATERIAL											
SANDSTONE											
SHALE											
AUGER BORING PLOTTED TO VERTICAL SCALE ONLY											
AUGER BORING – PLAN VIEW											
MOISTURE CONTENT NEARLY EQUAL TO OR GREATER THAN THE LIQUID LIMIT.											
SWAMP GRASS & ROOTS											

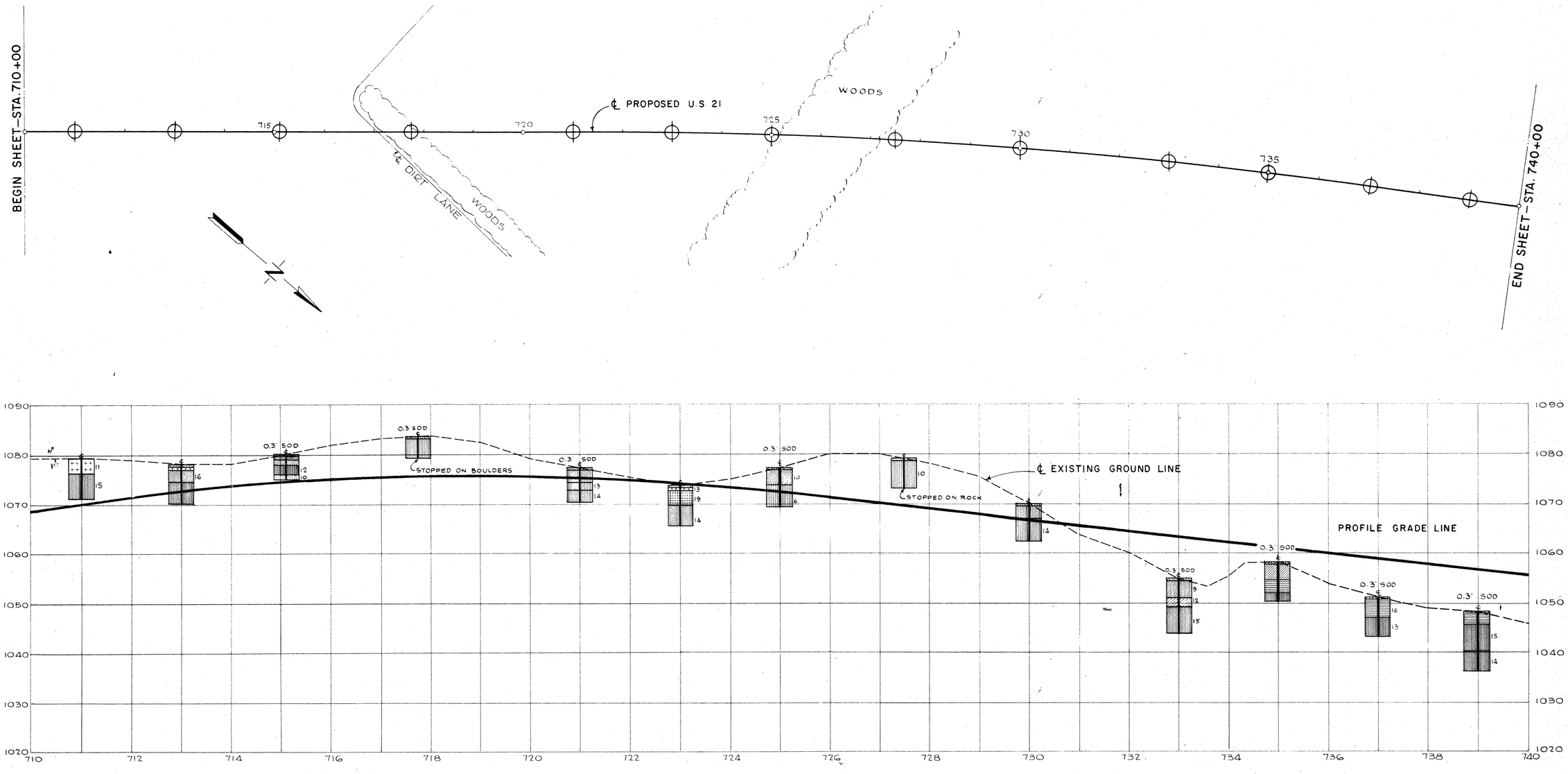
NOTES:
1. FIGURES BESIDE BORINGS INDICATE MOISTURE IN PERCENT.
2. U.S.S. IMMEDIATELY ABOVE THE BORING INDICATES THE THICKNESS OF UNSATISFACTORY SUBGRADE SOIL.
3. SAMPLES TESTED – LABORATORY NUMBERS.
   26221 – 26346, 26540 – 26599
   27447 – 27456, 28143 – 28184
   28384 – 28413, 31905 – 31984
   SOME OF THESE WERE WEATHERED SHALES, SANDSTONE, OR ORGANIC AND ARE NOT INCLUDED IN ABOVE TABLE.

PREPARED AND RECOMMENDED BY
CHARLES E. DE LEUW
CONSULTING ENGINEER
CHICAGO ILLINOIS

SOIL PROFILE

STA - 21 - 11.49
WAY-21-0.00 SUM-21-0.00
STATE HIGHWAY TESTING AND RESEARCH LABORATORY
O.S.U. CAMPUS, COLUMBUS, OHIO

4/19



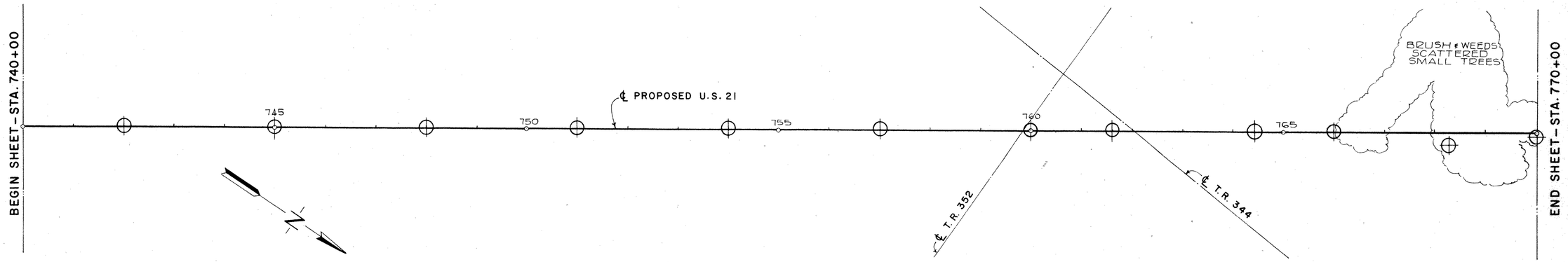
PREPARED AND RECOMMENDED
BY
CHARLES E. DE LEUW
CONSULTING ENGINEER
CHICAGO ILLINOIS

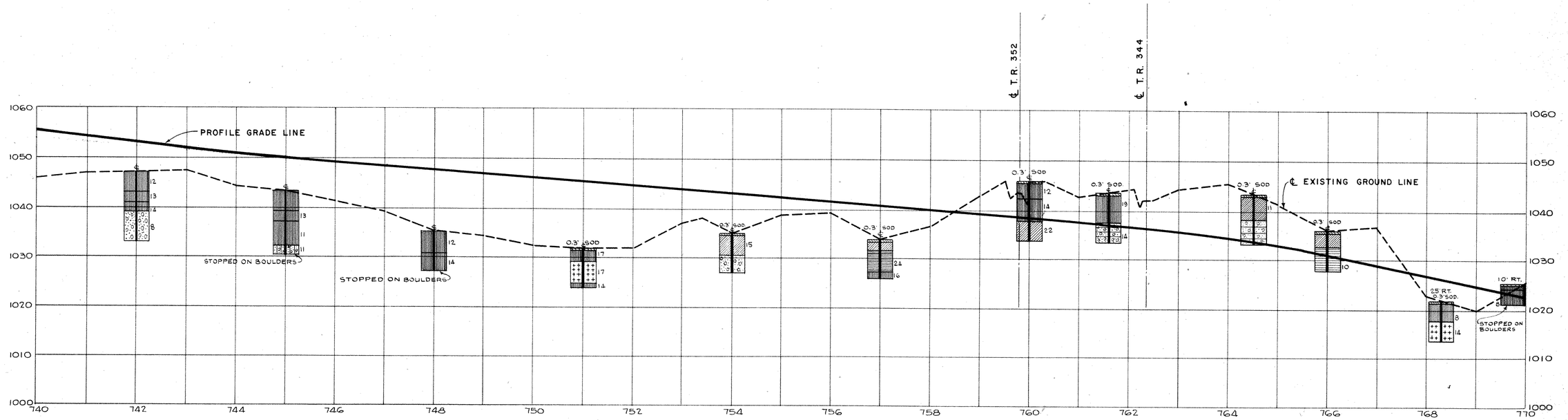
STA. 710+00 TO STA. 740+00

SOIL PROFILE

STA - 21 - 11.49
WAY-21-0.00 SUM-21-0.00
STATE HIGHWAY TESTING AND RESEARCH LABORATORY
O. S. U. CAMPUS, COLUMBUS, OHIO

5/19





PREPARED AND RECOMMENDED BY
CHARLES E. DE LEUW
CONSULTING ENGINEER
CHICAGO ILLINOIS

STA. 740+00 TO STA. 770+00

SOIL PROFILE

STA - 21 - 11.49
WAY-21-0.00 SUM-21-0.00
STATE HIGHWAY TESTING AND RESEARCH LABORATORY
O.S.U. CAMPUS, COLUMBUS, OHIO

6/19

BEGIN SHEET - STA. 770+00

END SHEET - STA. 800+00

℄ PROPOSED U.S. 21

℄ LANE 2

℄ STREAM 1

℄ STREAM 2

WOODS

WOODS

SWAMP

℄ EXISTING GROUND LINE

PRESENT PROFILE GRADE LINE

FUTURE PROFILE GRADE LINE - N.B. LANE

0.3' SOD

STOPPED ON BOULDERS

PREPARED AND RECOMMENDED
BY
CHARLES E. DE LEUW
CONSULTING ENGINEER
CHICAGO ILLINOIS

STA. 770+00 TO STA. 800+00

SOIL PROFILE

STA-21-11.49
WAY-21-0.00 SUM-21-0.00
STATE HIGHWAY TESTING AND RESEARCH LABORATORY
O.S.U. CAMPUS, COLUMBUS, OHIO

7/19

BEGIN SHEET-STA. 800+00

℄ GRAVEL LANE

805

810

SMALL TREES & BRUSH

HEAVY WOODS

℄ RAVINE

℄ STREAM

815

END RAVINE

℄ DIRT LOGGING RD.

820

11° DIA.
7° DIA.
POSSIBLE FILLED IN SHAFTS

ABANDONED QUARRY

℄ STREAM

825

℄ PROPOSED U.S. 21

END SHEET-STA. 830+00

PRESENT PROFILE GRADE LINE

℄ EXISTING GROUND LINE

FUTURE PROFILE GRADE LINE-N.B. LANE

0.3' SOD

CORE BORING

℄ STREAM

GLACIAL TILL

Gravel, sand, cobbles, & sandstone boulders in brown clay.

% LOSS-ROCK CORE
Med. firm, gr. & br., slightly micaceous, fine grained.

GRAY SANDY SHALE

CORE BORING
% LOSS
Gr. clay, moist, plastic, with shale fragments.

Dk. gr. & br., slightly siliceous, very broken, very soft to soft.

Black carbonaceous shale, siliceous, soft to med. firm, broken at top.

Black carbonaceous shale, siliceous, firm.

Dk. gr. to bk., siliceous, in part carbonaceous, hard, firm.

Sandstone boulders & clay.
% LOSS-ROCK CORE
8 Soft, gr. to Br.

STA. 820+00 - 100' LT. EL. 1015.1

% LOSS-ROCK CORE
- Lt. gr., med. firm, thin bedded.
- Dk. gr. to black, firm to soft, broken.
- Gr., med. firm to friable, argillaceous.
- Br., med. firm, Siliceous.
- Gr., siliceous, in part carbonaceous, firm to med. firm.

STA. 823+00
75' LT.
EL. 1010

% LOSS-ROCK CORE
- Med. firm to friable, gr. & br., micaceous.
- Gr. siliceous, firm.

STA. 813+00
30' LT.
EL. 998.5

STA. 815+00
20' RT.
EL. 966.5

1010 1000 990 980 970 960 950 940

800 802 804 806 808 810 812 814 816 818 822 826 828 830

PREPARED AND RECOMMENDED
BY
CHARLES E. DE LEUW
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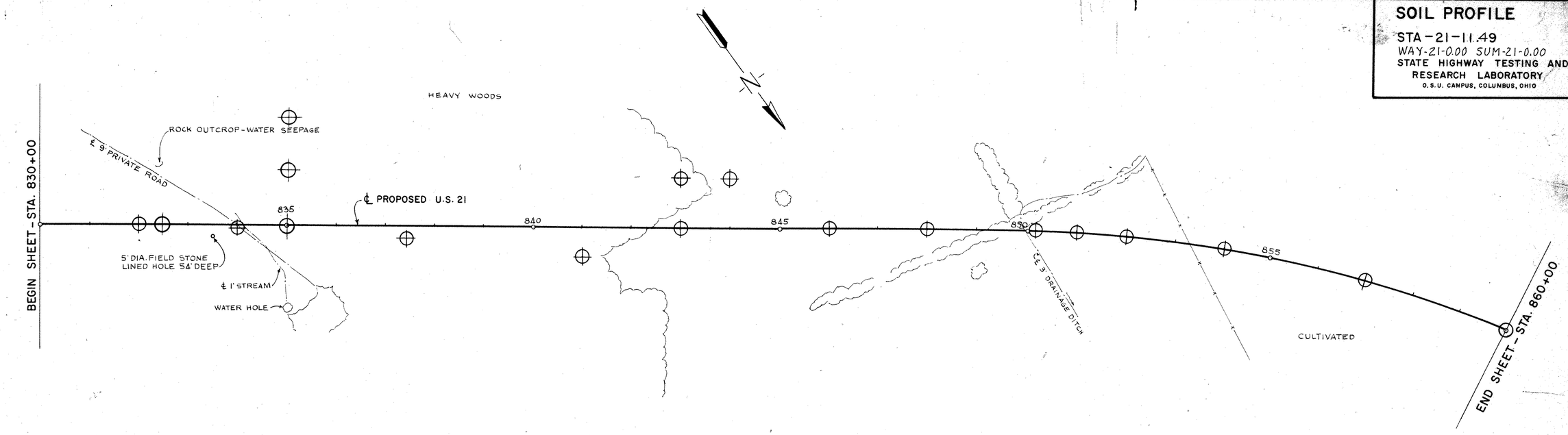
CHICAGO ILLINOIS

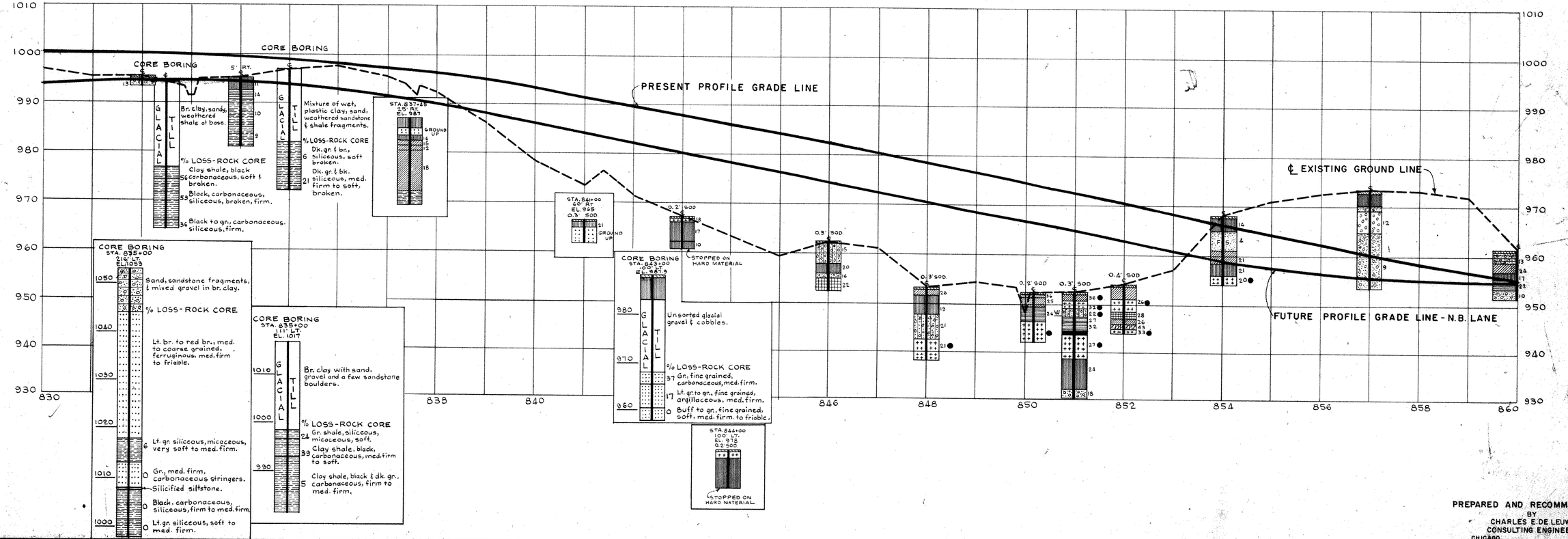
STA. 800+00 TO STA. 830+00

SOIL PROFILE

STA-21-11.49
WAY-21-0.00 SUM-21-0.00
STATE HIGHWAY TESTING AND RESEARCH LABORATORY
O.S.U. CAMPUS, COLUMBUS, OHIO

8 / 19





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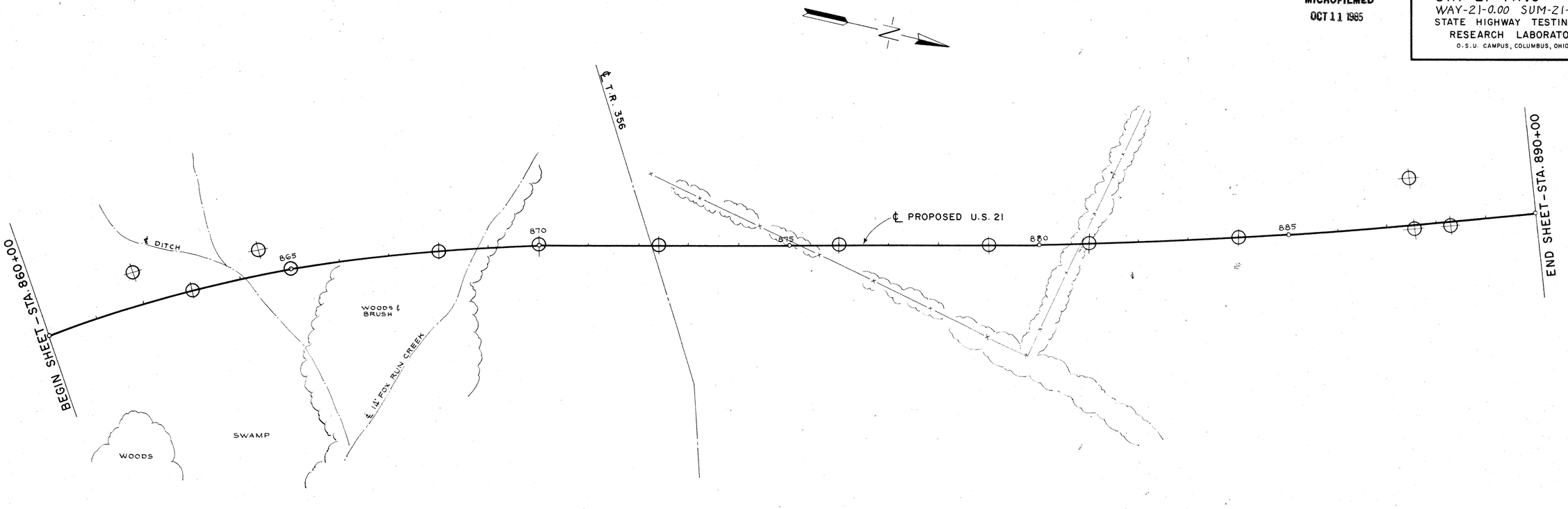
CHICAGO ILLINOIS

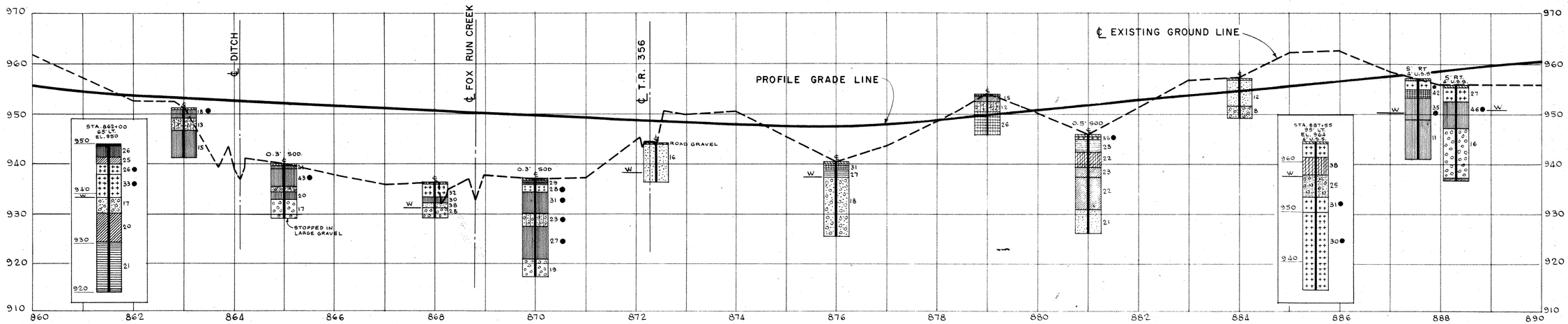
MICROFILMED
OCT 11 1985

SOIL PROFILE

STA-21-11.49
WAY-21-0.00 SUM-21-0.00
STATE HIGHWAY TESTING AND RESEARCH LABORATORY
O.S.U. CAMPUS, COLUMBUS, OHIO

9/19





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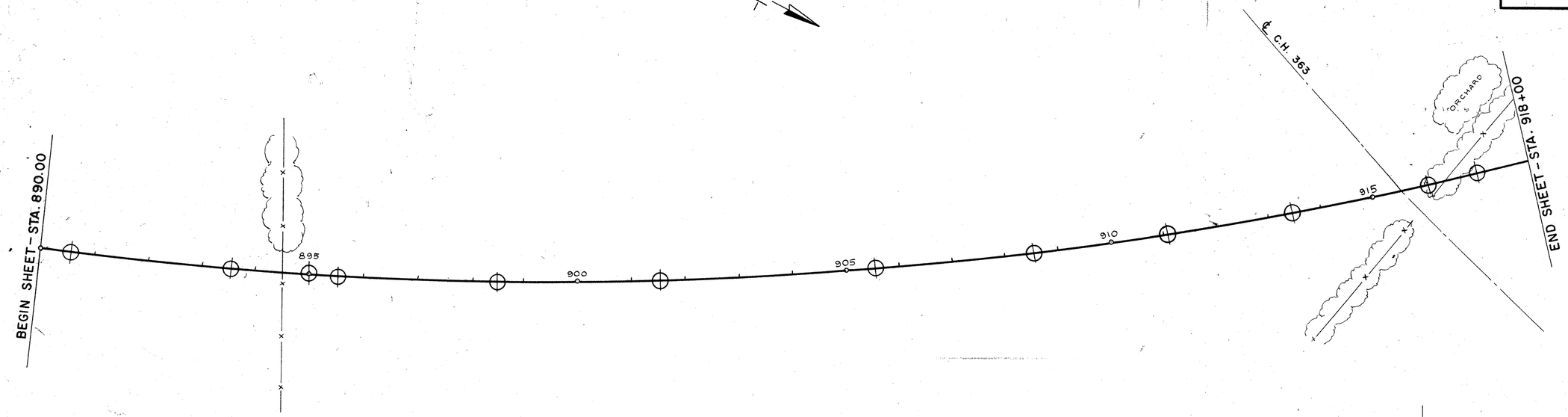
BY
CHARLES E. DE LEUW
CONSULTING ENGINEER
CHICAGO ILLINOIS

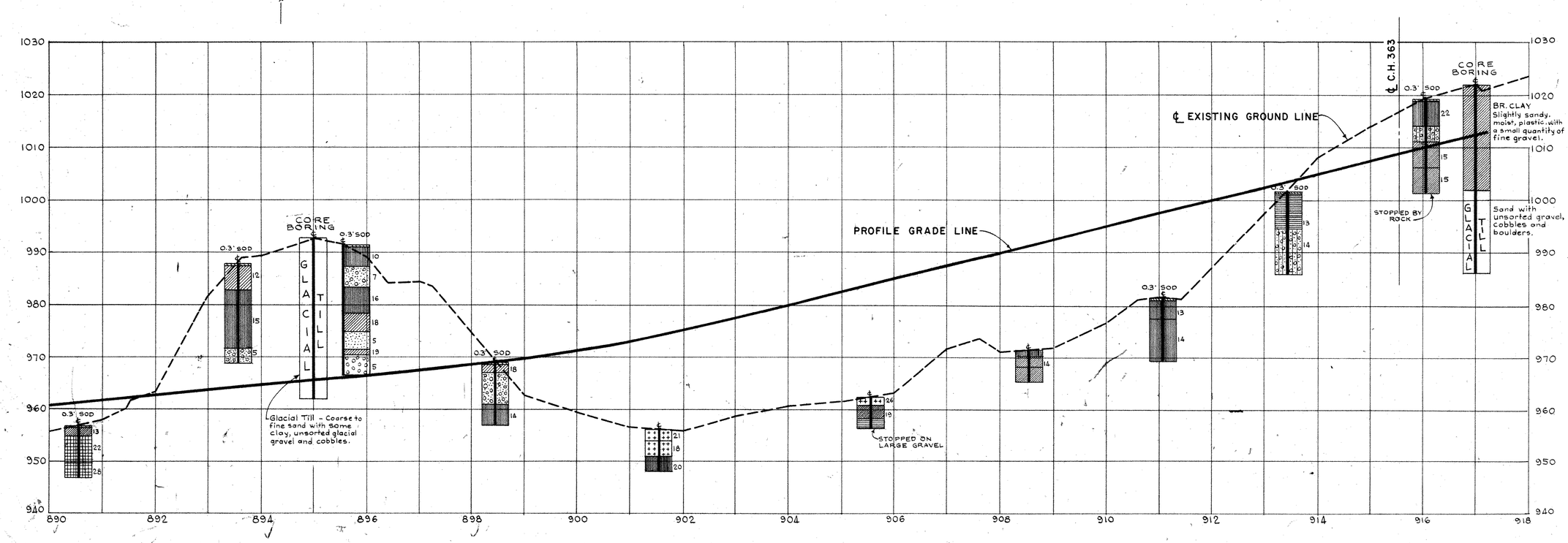
STA. 860+00 TO STA. 890+00

SOIL PROFILE

STA. - 21 - 11.49
WAY-21-0.00 SUM-21-0.00
STATE HIGHWAY TESTING AND RESEARCH LABORATORY
O.S.U. CAMPUS, COLUMBUS, OHIO

10/19





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BY
CHARLES E. DE LEUW
CONSULTING ENGINEER
CHICAGO ILLINOIS

STA. 890+00 TO STA. 918+00

SOIL PROFILE

STA - 21 - 11.49
WAY - 21 - 0.00
SUM - 21 - 0.00

STATE HIGHWAY TESTING AND RESEARCH LABORATORY
O.S.U. CAMPUS, COLUMBUS, OHIO

11/19

Note: The information shown by this subgrade profile was secured for the use of the State of Ohio and is not to be construed as a part of the plans governing the construction of the project.

MICROFILMED
OCT 11 1985

LEGEND FOR PROJECT - AVERAGE RESULTS OF TESTS — 503 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 &/OR STONE FRAGMENTS	A-1-a	A-1-a									
GRAVEL &/or STONE FRAGMENTS WITH SAND	A-1-b	A-1-b	45	14	20	11	11	NP	NP	13	6
COARSE & FINE SAND	A-3	A-3a	13	11	50	13	14	NP	NP	17	22
GRAVEL &/or STONE FRAGMENTS WITH SAND & SILT	A-2-4	A-2-4	33	11	27	16	14	NP	NP	12	22
GRAVEL &/or STONE FRAGMENTS WITH SAND, SILT & CLAY	A-2-6	A-2-6	43	16	15	13	13	29	15	14	1
SANDY SILT	A-4	A-4a	13	8	24	31	24	20	6	14	329
SILT	A-4	A-4b	2	2	8	57	31	23	6	21	38
SILT & CLAY	A-6	A-6a	6	4	12	38	41	32	13	20	56
CLAY	A-6	A-6b	5	4	16	37	38	35	17	22	12
ELASTIC CLAY	A-7-5	A-7-5	0	1	1	43	56	64	31	70	4
CLAY	A-7-6	A-7-6a	0	1	5	41	53	47	25	33	13

TOP SOIL — VISUAL CLASSIFICATION

BERM MATERIAL — VISUAL CLASSIFICATION

PEAT OR ORGANIC MATERIAL

SANDSTONE

SHALE

SWAMP GRASS & ROOTS.

AUGER BORING PLOTTED TO VERTICAL SCALE ONLY

AUGER BORING - PLAN VIEW

MOISTURE CONTENT NEARLY EQUAL TO OR GREATER THAN THE LIQUID LIMIT.

NOTE:

FIGURES BESIDE BORINGS INDICATE MOISTURE IN PERCENT
U.S.S. IMMEDIATELY ABOVE THE BORING INDICATES THE THICKNESS OF UNSATISFACTORY SUBGRADE SOIL.
SAMPLES TESTED - LABORATORY NUMBERS.

17931 - 18003
18269 - 18354
18672 - 18819
19371 - 19511
19947 - 20003

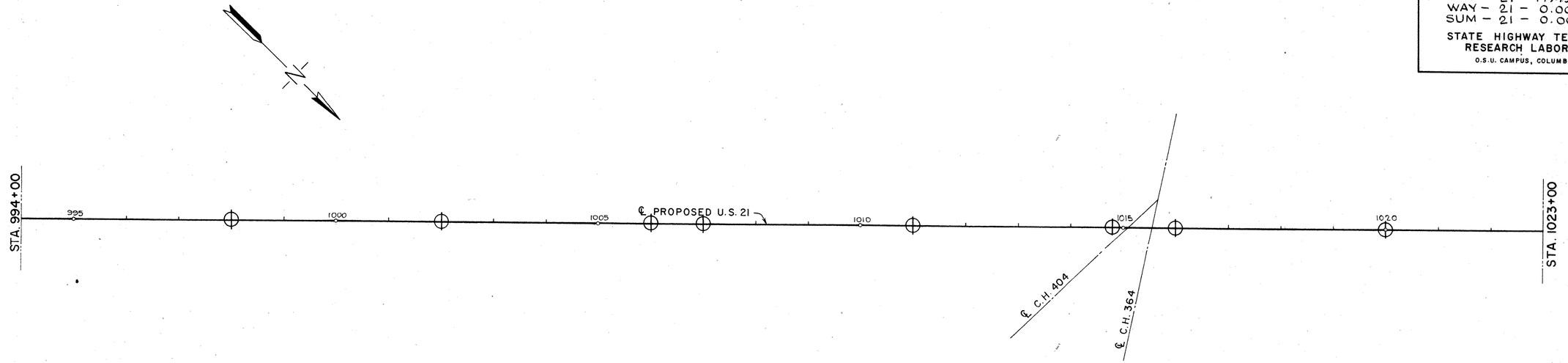
PREPARED AND RECOMMENDED
BY
CHARLES E. DE LEUW
CONSULTING ENGINEER
CHICAGO ILLINOIS

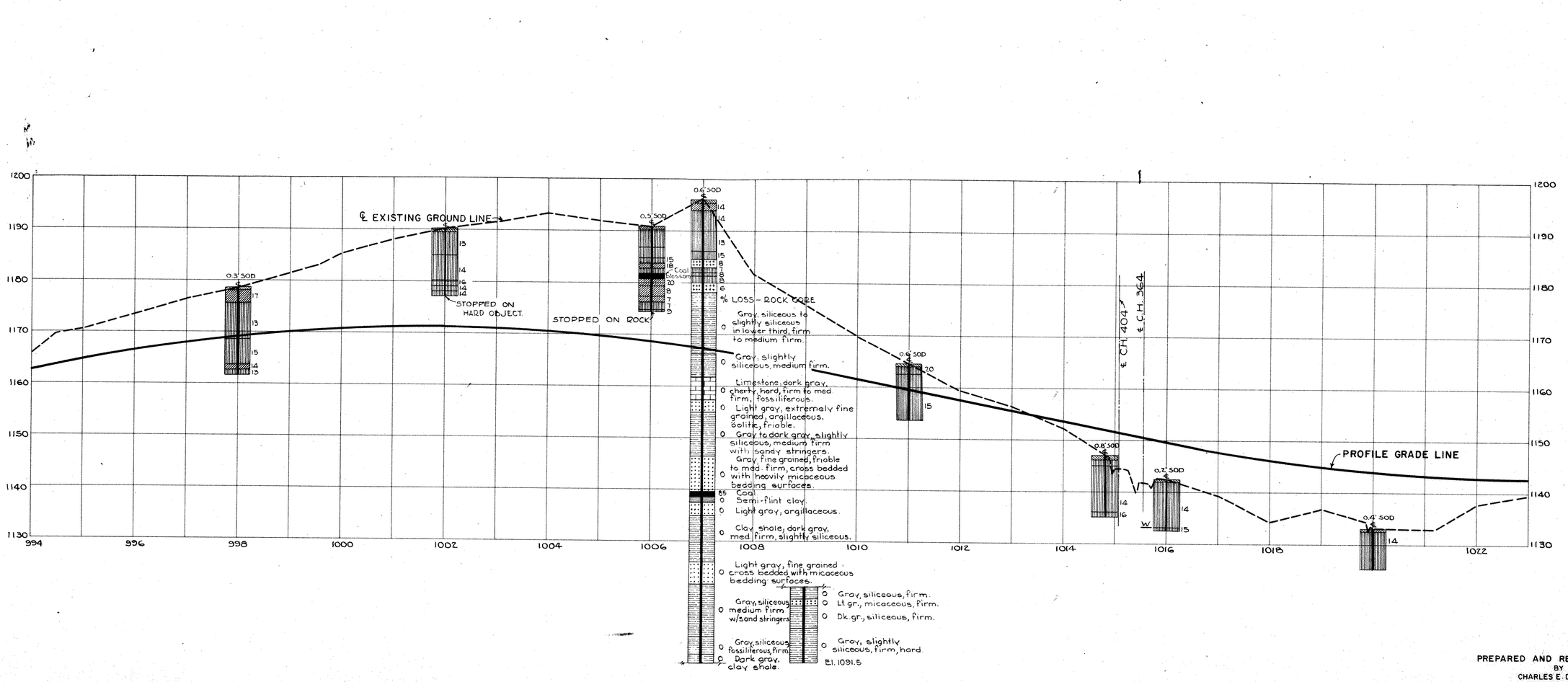
SOIL PROFILE

STA - 21 - 11.49
WAY - 21 - 0.00
SUM - 21 - 0.00

12/19

STATE HIGHWAY TESTING AND RESEARCH LABORATORY
O.S.U. CAMPUS, COLUMBUS, OHIO





PREPARED AND RECOMMENDED BY
CHARLES E. DE LEUW
CONSULTING ENGINEER
CHICAGO ILLINOIS

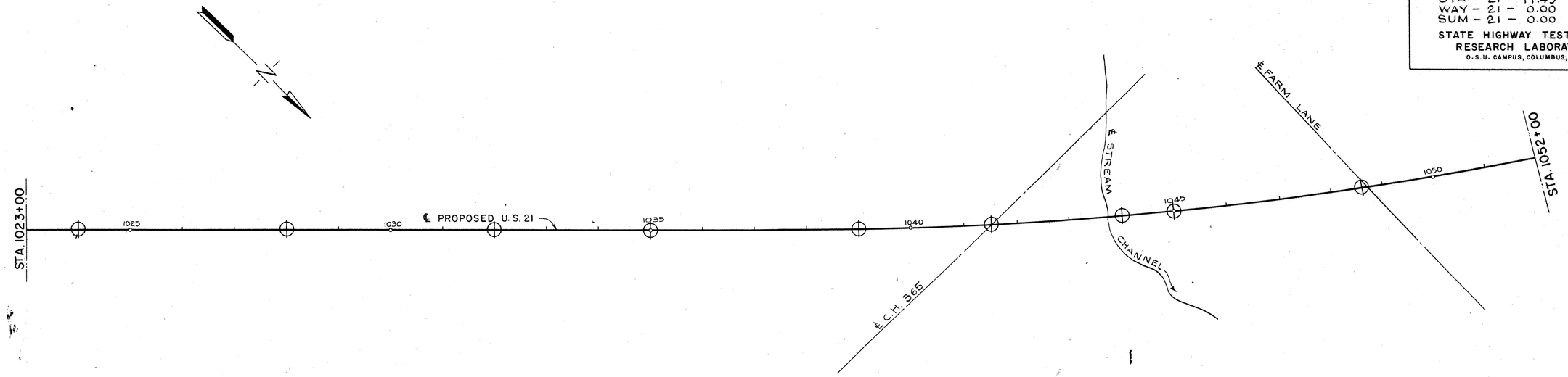
STA 994+00 TO STA 1023+00

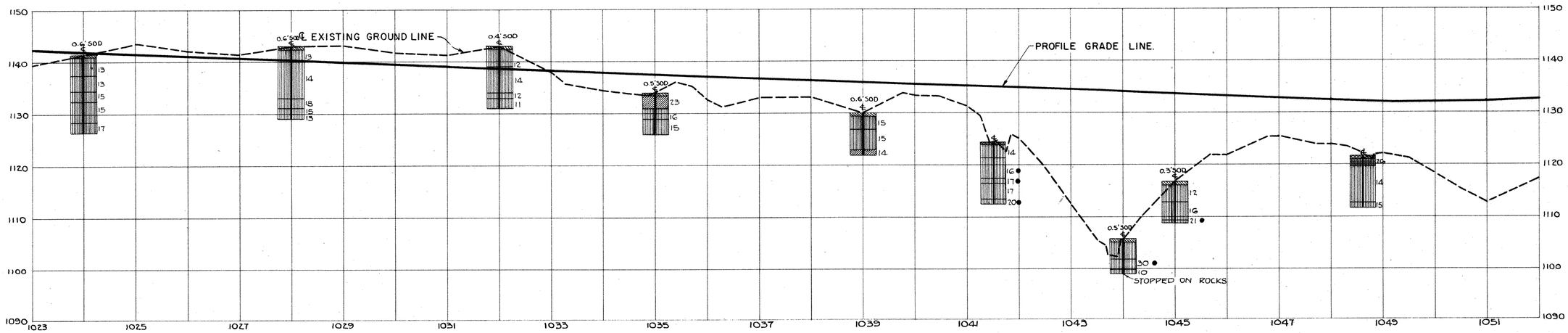
SOIL PROFILE

STA - 21 - 11.49
WAY - 21 - 0.00
SUM - 21 - 0.00

STATE HIGHWAY TESTING AND RESEARCH LABORATORY
O.S.U. CAMPUS, COLUMBUS, OHIO

13/19





PREPARED AND RECOMMENDED
BY
CHARLES E. DE LEUW
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CHICAGO ILLINOIS

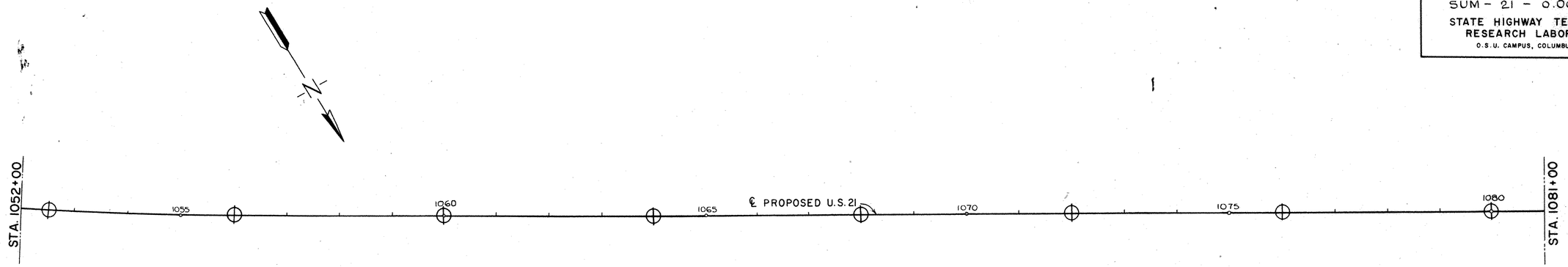
STA. 1023+00 TO STA. 1052+00

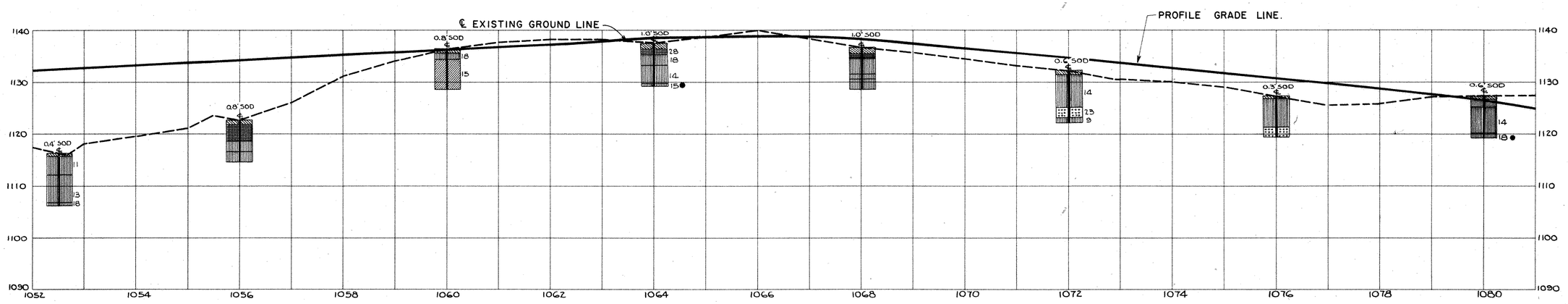
SOIL PROFILE

STA - 21 - 11.49
WAY - 21 - 0.00
SUM - 21 - 0.00

STATE HIGHWAY TESTING AND RESEARCH LABORATORY
O.S.U. CAMPUS, COLUMBUS, OHIO

14/19





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BY
CHARLES E. DE LEUW
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CHICAGO ILLINOIS

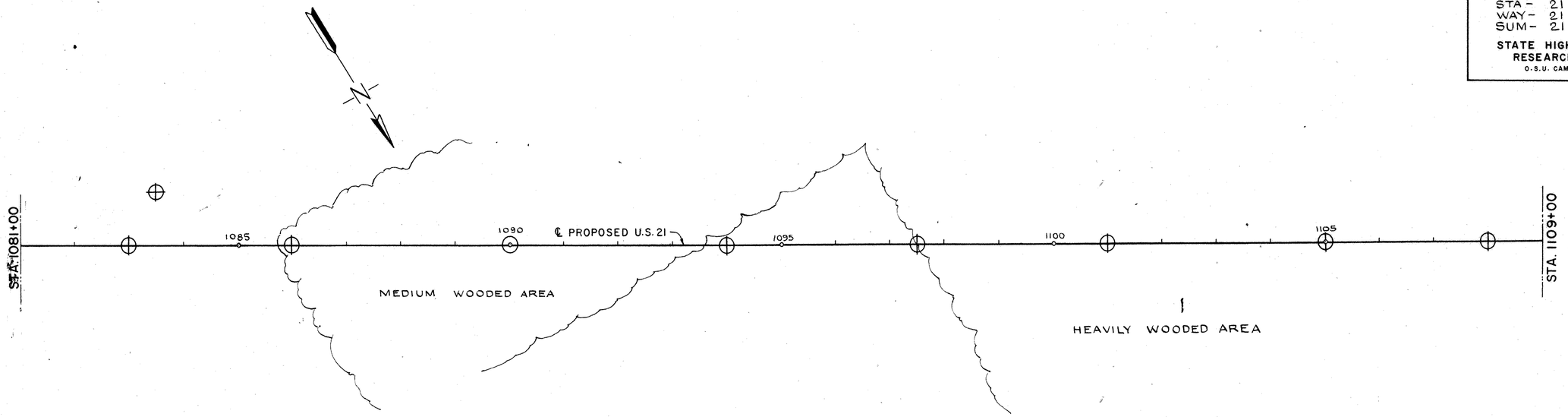
STA. 1052+00 TO STA. 1081+00

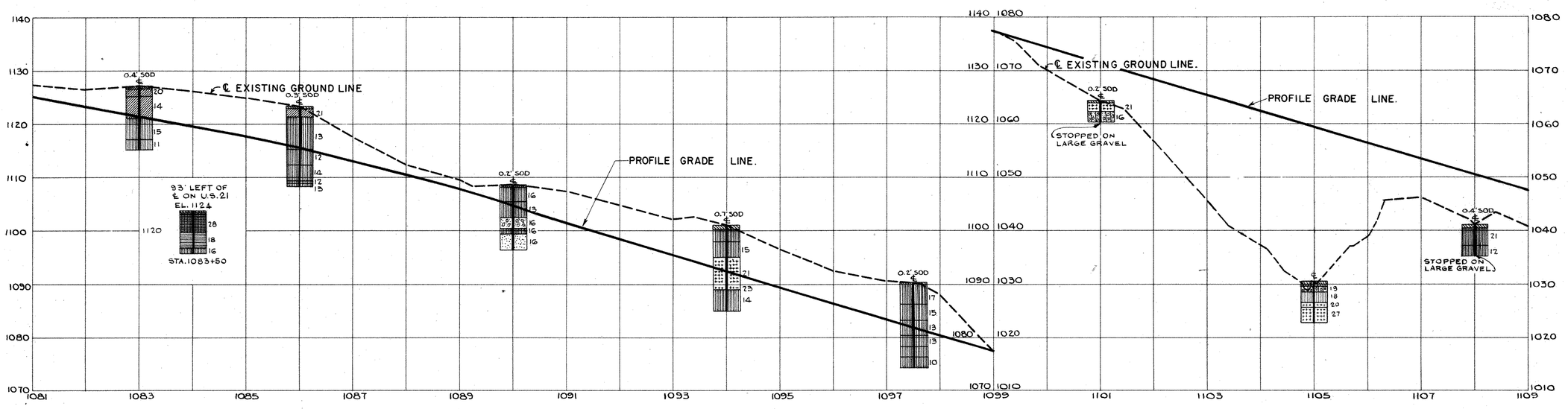
SOIL PROFILE

STA - 21 - 11.49
WAY - 21 - 0.00
SUM - 21 - 0.00

STATE HIGHWAY TESTING AND RESEARCH LABORATORY
O.S.U. CAMPUS, COLUMBUS, OHIO

15/19





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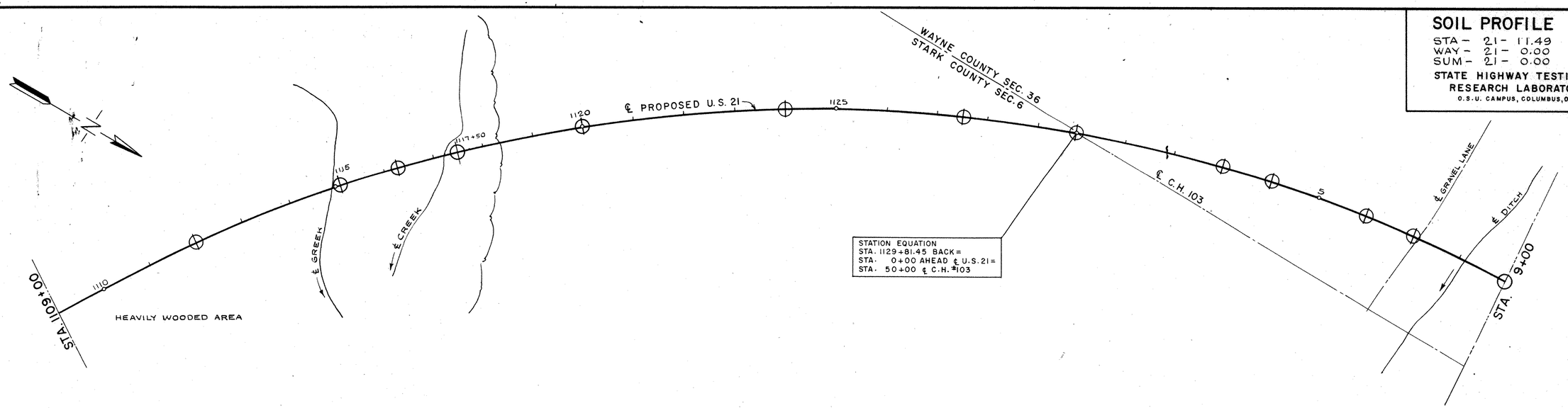
STA. 1081+00 TO STA. 1109+00

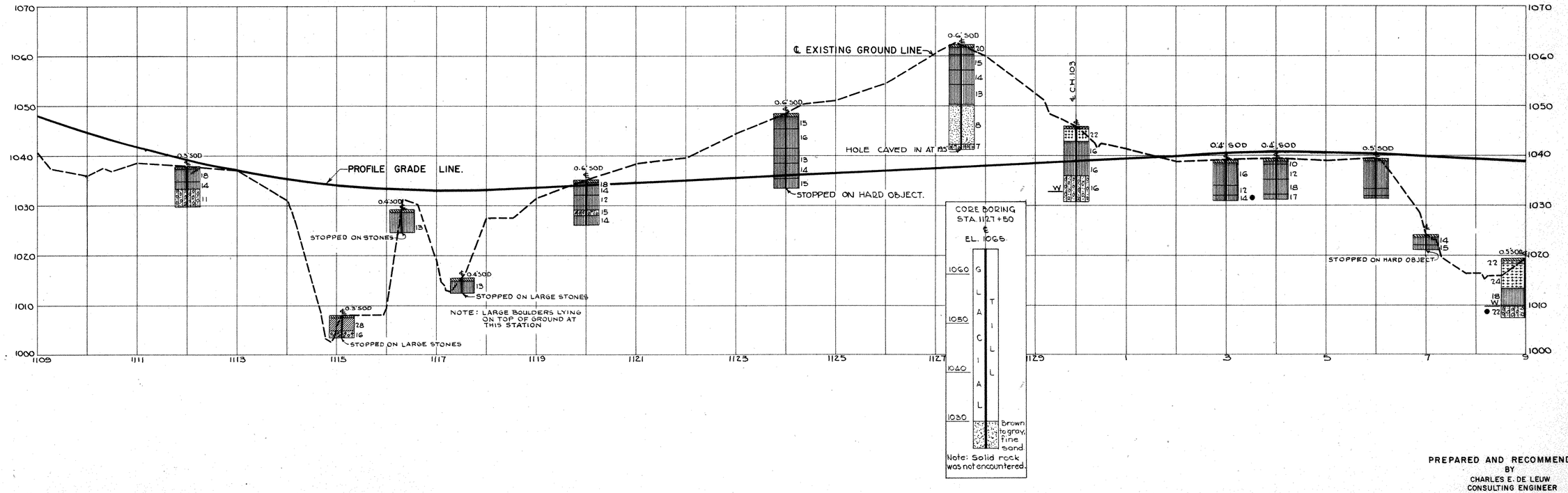
SOIL PROFILE

STA - 21 - 11.49
WAY - 21 - 0.00
SUM - 21 - 0.00

STATE HIGHWAY TESTING AND RESEARCH LABORATORY
O.S.U. CAMPUS, COLUMBUS, OHIO

16/19





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CHICAGO ILLINOIS

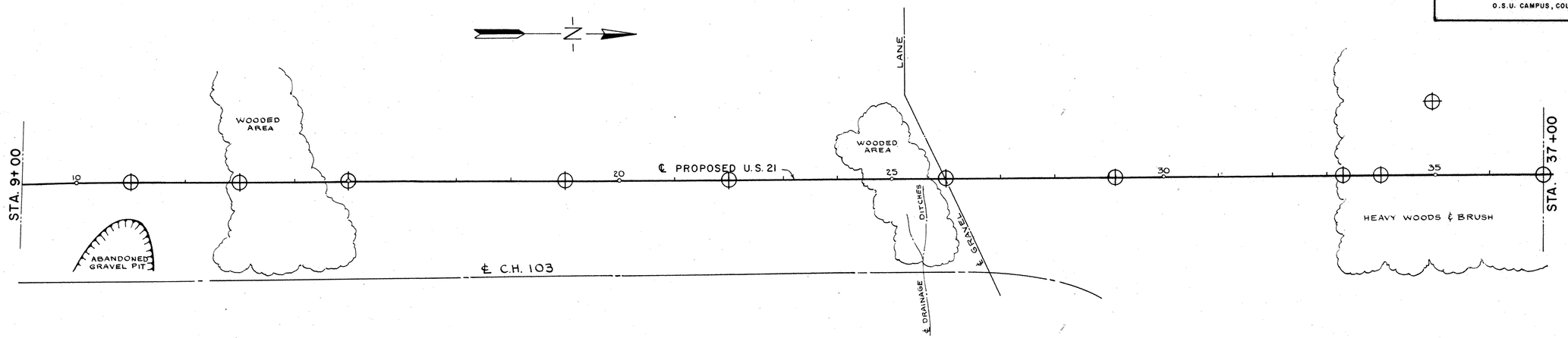
STA. 1109+00 TO STA. 9+00

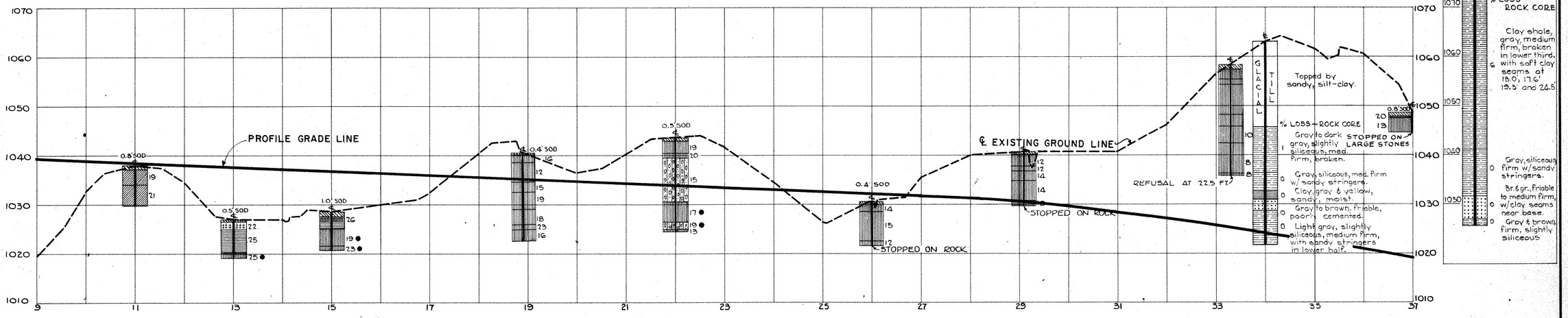
SOIL PROFILE

STA - 21 - 11.49
WAY - 21 - 0.00
SUM - 21 - 0.00

17/19

STATE HIGHWAY TESTING AND RESEARCH LABORATORY
O.S.U. CAMPUS, COLUMBUS, OHIO





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STA. 9+00 TO STA. 37+00

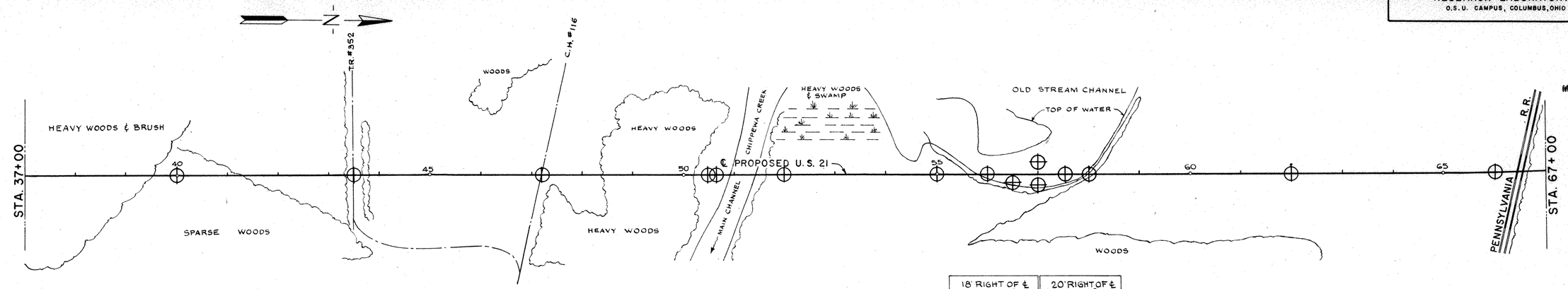
SOIL PROFILE

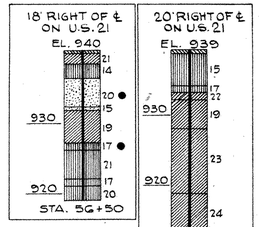
STA - 21 - 11.49
WAY - 21 - 0.00
SUM - 21 - 0.00

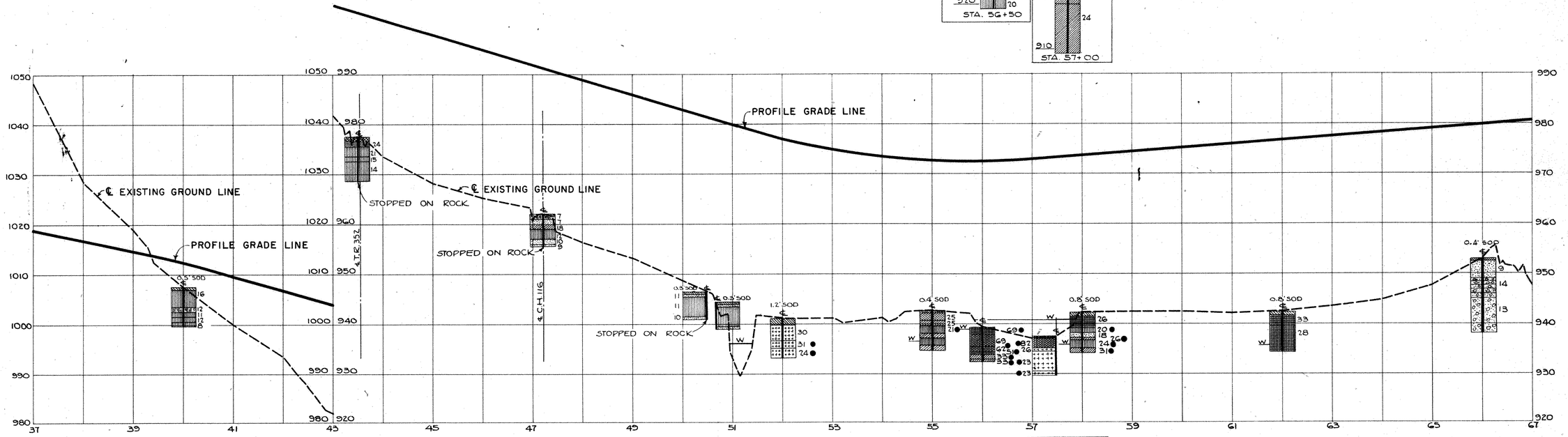
STATE HIGHWAY TESTING AND RESEARCH LABORATORY
O.S.U. CAMPUS, COLUMBUS, OHIO

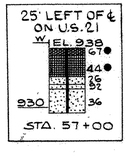
18/19

MICROFILMED
OCT 11 1985









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STA. 37+00 TO STA. 67+00

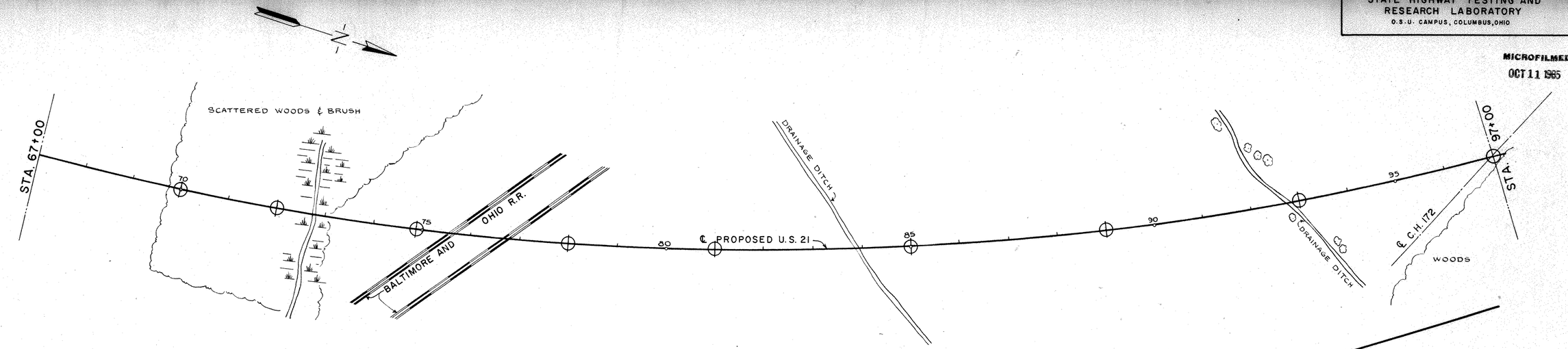
SOIL PROFILE

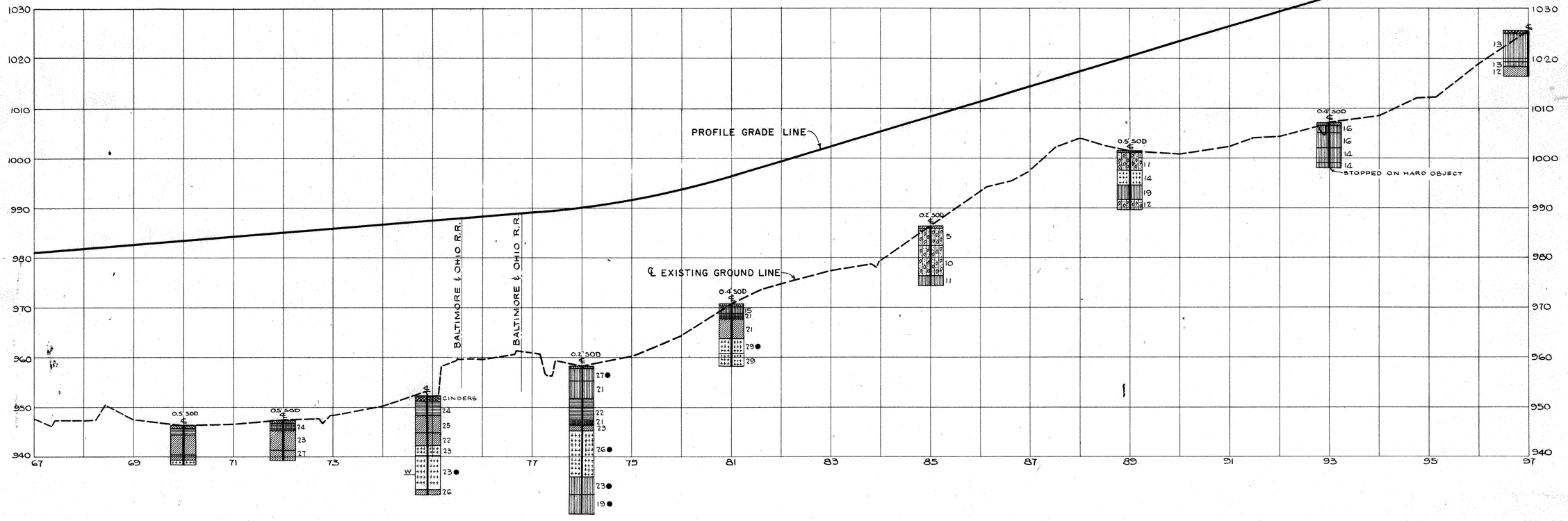
STA - 21 - 11.4
WAY - 21 - 0.0
SUM - 21 - 0.0

STATE HIGHWAY TESTING AND RESEARCH LABORATORY
O.S.U. CAMPUS, COLUMBUS, OHIO

19
19

MICROFILMED
OCT 11 1965





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STA. 67+00 TO STA. 97+00