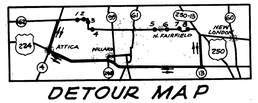

DETOUR MAP

DETOURS.....

STATE OF OHIO
DEPARTMENT OF HIGHWAYS

JAN 15 1964
GROUND PHOTOLAB

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	STATE	

1 / 03

HURON COUNTY
HUR-162-(1.50)(2.56)(2.67)(4.10)(11.87)(14.41)(16.93)(17.37)
PART 1 THROUGH 8

HUR-162-(1.50)(2.56)(2.67)(4.10)(11.87)(14.41)(16.93)(17.37)

NORWICH, FAIRFIELD AND FITCHVILLE TOWNSHIPS
HURON COUNTY

MICROFILMED
DEC 19 1986

CONVENTIONAL SIGNS

STATE LINE.....
COUNTY LINE.....
TOWNSHIP LINE.....
SECTION LINE.....
CENTER LINE.....
CORPORATION LINE.....
FENCE LINE.....
GUARD RAIL (EXISTING).....
GUARD RAIL (PROPOSED).....
RAILROAD.....
POWER POLES.....
TELEPHONE POLES.....
TREES AND STUMPS (EXISTING).....
TREES AND STUMPS (TO BE REMOVED).....

INDEX OF SHEETS

TITLE SHEET.....1
TYPICAL SECTIONS.....2-3
SUPERELEVATION TABLE.....3
GENERAL NOTES AND DETAILS.....4
GENERAL SUMMARY.....5
PLAN AND PROFILE.....6-12
CROSS SECTIONS.....13-34
CHANNEL CROSS SECTIONS.....35-45
DRAINAGE.....46-47, 69-72
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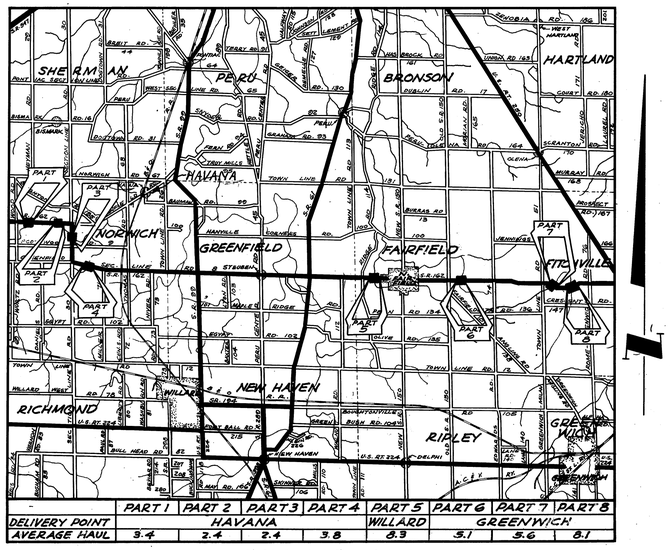
LINE DATA

HUR-162-	-(1.50) PART 1	-(2.56) PART 2	-(2.67) PART 3	-(4.10) PART 4	-(11.87) PART 5	-(14.41) PART 6	-(16.93) PART 7	-(17.37) PART 8
	STA.	STA.	STA.	STA.	STA.	STA.	STA.	STA.
Begin Work (or Resume)	78+75	134+50	140+50	215+75	626+50	759+50	893+00	916+50
Begin Project (or Resume)	79+50	135+25	140+80	216+25	626+80	760+75	894+00	917+00
End Project (or Suspend)	82+25	136+27	144+95	224+40	636+20	765+20	901+50	926+75
End Work (or Suspend)	83+00	137+00	145+25	225+00	636+50	765+50	902+00	926+75
Net Length of Project	275 L.F.	102 L.F.	415 L.F.	815 L.F.	940 L.F.	445 L.F.	750 L.F.	975 L.F.
Net Length of Work	425 L.F.	250 L.F.	475 L.F.	925 L.F.	1000 L.F.	600 L.F.	900 L.F.	1025 L.F.

TOTAL NET LENGTH OF PROJECT = 4717 LIN.FT. or 0.893 MI.
TOTAL NET LENGTH OF WORK = 5600 LIN.FT. or 1.060 MI.



LOCATION MAP
SCALE IN MILES

0 1 2 3 4

PORTION TO BE IMPROVED.....
STATE ROADS.....
OTHER ROADS.....

SCALE

PLAN.....1" = 50'
PROFILE: HORIZONTAL.....1" = 50'
PROFILE: VERTICAL.....1" = 5'

1959 SPECIFICATIONS

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

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

I HEREBY APPROVE THESE PLANS AND DECLARE THAT THE MAKING OF THIS IMPROVEMENT WILL REQUIRE THE CLOSING TO TRAFFIC OF THE HIGHWAY, EXCEPT AS NOTED ON SHEET 4, AND THAT DETOURS WILL BE PROVIDED AS INDICATED ON THE PLANS.

APPROVED E. L. Sohm
DATE 10-28-60 DIVISION DEPUTY DIRECTOR

No RR
BRV 12-13-60
APPROVED Guy E. Keppler
DATE 12-29-60 DEPUTY DIRECTOR OF PLANNING & PROGRAMMING

APPROVED D. K. Drennan A&F
DATE 12-2-60 ENGINEER OF BRIDGES

APPROVED W. Drennan
DATE 12-14-60 ENGINEER OF LOCATION AND DESIGN

APPROVED C. W. McCaughey
DATE 12-14-60 DEPUTY DIRECTOR OF DESIGN & CONSTRUCTION

APPROVED A. M. Berry
DATE 12-29-60 FIRST ASSISTANT DIRECTOR

APPROVED E. A. Preston
DATE 12-29-60 DIRECTOR OF HIGHWAYS

Sheets 50, 52, 55, 61, 62, 63, 67 & 68 revised 3-10-61.
Sheets 54, 55, 60 & 67 revised 3-15-61.

FILE NO.	HURON COUNTY-HUR-162-(1.50)(2.56)(2.67)(4.10)(11.87)(14.41)(16.93)(17.37)
181-H	DATE OF LETTING
	CONTRACT NO.

SUPPLEMENTAL PRINTS OF STANDARD CONSTRUCTION DRAWINGS

DWG. NO.	DATE	DWG. NO.	DATE	DWG. NO.	DATE
L-3	4-1-50	L-1	4-1-50		
RI-1	7-15-58	L-3-A	4-1-50		
G-7.07	6-1-56	I-14 G	1-22-52		
I-15, No. 2A	8-17-60	SP-53	11-25-58		
T-35	1-2-56	I-1, 2, 3, 4 & 5	4-24-58		
AS-1-54	12-1-54	I-15 No. 1	5-21-59		
		DR-1	1-3-55		

SUPPLEMENTAL SPECIFICATIONS

S-105	8-12-60
S-101	12-2-59

JAN 15 1964
GROUND PHOTOLAB

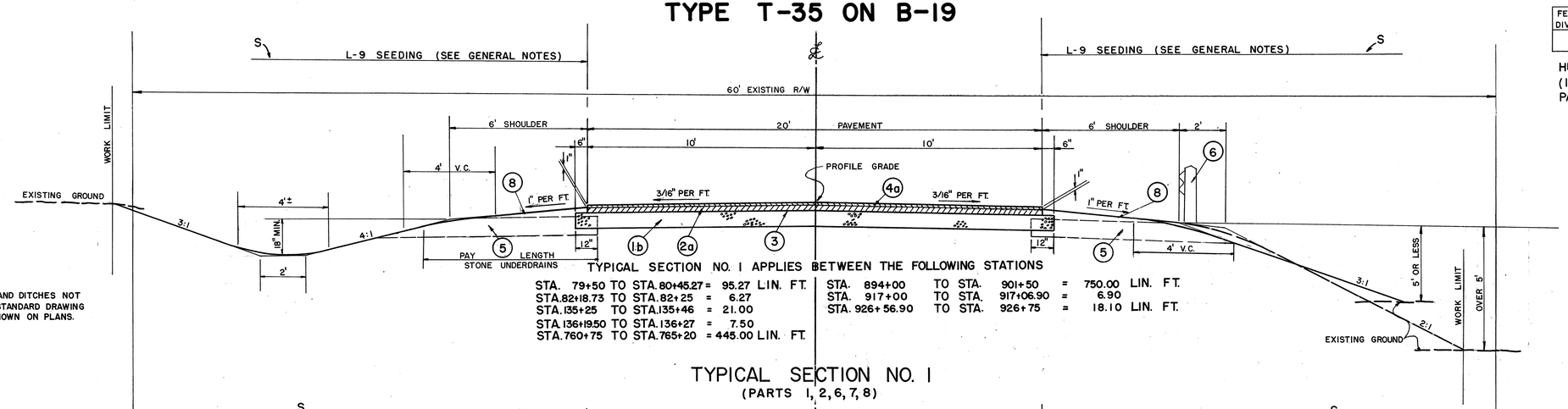
6035-1-6

TYPE T-35 ON B-19

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

2/80

HUR.-162-(1.50)(2.56)(2.67)(4.10)
(11.87)(14.41)(16.93)(17.37)
PARTS 1 TO 8

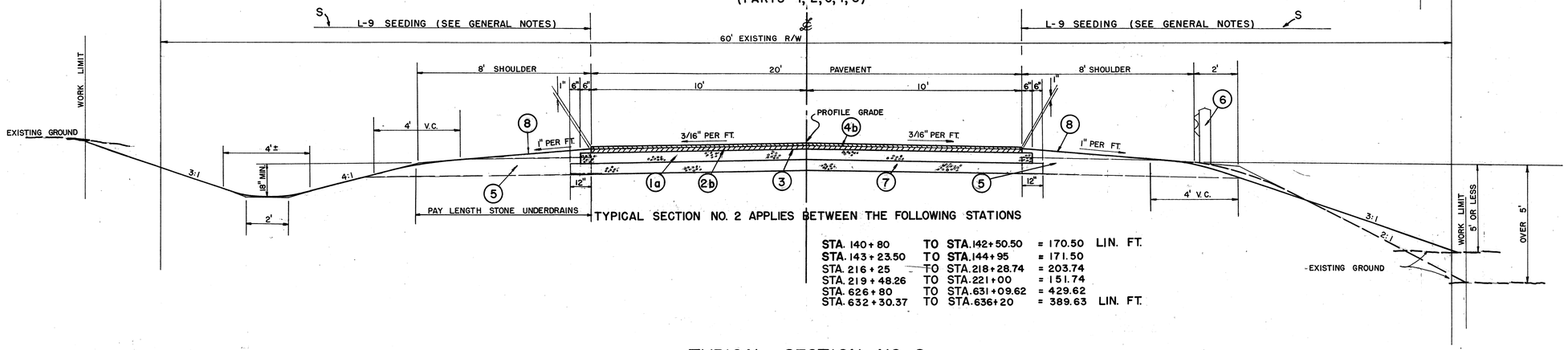


NOTE: DETAILS OF SHOULDERS, SLOPES AND DITCHES NOT SHOWN ARE TO CONFORM WITH STANDARD DRAWING NO. R1-1 UNLESS OTHERWISE SHOWN ON PLANS.

TYPICAL SECTION NO. 1 APPLIES BETWEEN THE FOLLOWING STATIONS

STA. 79+50 TO STA. 80+45.27 = 95.27 LIN. FT.
STA. 82+18.73 TO STA. 82+25 = 6.27
STA. 135+25 TO STA. 135+46 = 21.00
STA. 136+19.50 TO STA. 136+27 = 7.50
STA. 760+75 TO STA. 765+20 = 445.00 LIN. FT.
STA. 894+00 TO STA. 901+50 = 750.00 LIN. FT.
STA. 917+00 TO STA. 917+06.90 = 6.90
STA. 926+56.90 TO STA. 926+75 = 18.10 LIN. FT.

TYPICAL SECTION NO. 1
(PARTS 1, 2, 6, 7, 8)



TYPICAL SECTION NO. 2 APPLIES BETWEEN THE FOLLOWING STATIONS

STA. 140+80 TO STA. 142+50.50 = 170.50 LIN. FT.
STA. 143+23.50 TO STA. 144+95 = 171.50
STA. 216+25 TO STA. 218+28.74 = 203.74
STA. 219+48.26 TO STA. 221+00 = 151.74
STA. 626+80 TO STA. 631+09.62 = 429.62
STA. 632+30.37 TO STA. 636+20 = 389.63 LIN. FT.

TYPICAL SECTION NO. 2
(PARTS 3, 4 & 5)

L E G E N D

(1a) ITEM B-19 6" AGGREGATE BASE COURSE
(1b) ITEM B-19 8" AGGREGATE BASE COURSE
(2a) ITEM B-35 *1" ASPHALTIC CONCRETE LEVELING COURSE (85-100)
(2b) ITEM B-35 *1 3/4" ASPHALTIC CONCRETE LEVELING COURSE (85-100)
(3) ITEM T-30 BITUMINOUS PRIME COAT: SEC. M-5.7, RT-2 OR RT-3, APPLIED AT THE RATE OF 0.40 GAL. PER SQ. YD.
(4a) ITEM T-35 *1" ASPHALTIC CONCRETE SURFACE COURSE, TYPE "C" (85-100)
(4b) ITEM T-35 *1 1/4" ASPHALTIC CONCRETE SURFACE COURSE, TYPE "C" (85-100)
(5) ITEM 1-9 STONE UNDERDRAINS, NO. 2, AS REQUIRED
(6) ITEM 1-15 STEEL BEAM GUARD RAIL (DEEP).
(7) ITEM 1-22 SUBBASE (6" THICK)
(8) ITEM L-9 SEEDING AND PROTECTING

*Thicknesses shown are "designed" thicknesses as described in Sections T-35.01 and B-35.01.

6035-1-8

T. C. BIEBESHEIMER ENGINEERING CO.
CIVIL ENGINEERS AND SURVEYORS
TOLEDO, OHIO MONROE, MICHIGAN

TYPICAL SECTIONS

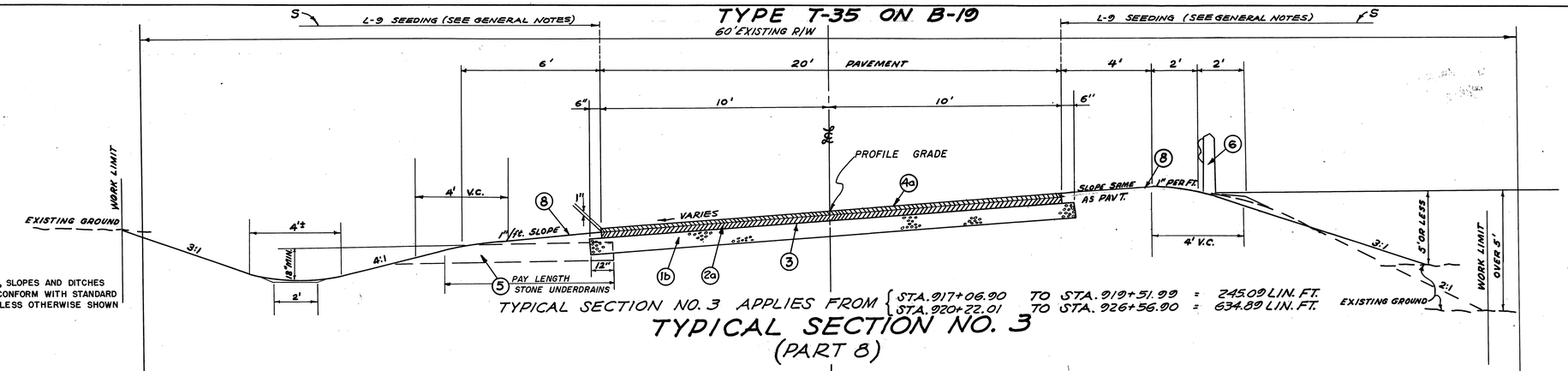
DESIGN	TRACED	CHECKED	REVIEWED	DATE	REVISED
	HW. DH	L.M.			

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

3/80

HUR.-162-(04.10)(17.37)(1.50)(2.56)(2.67)
PARTS 4 & 8 (11.87)(14.41)(16.93)

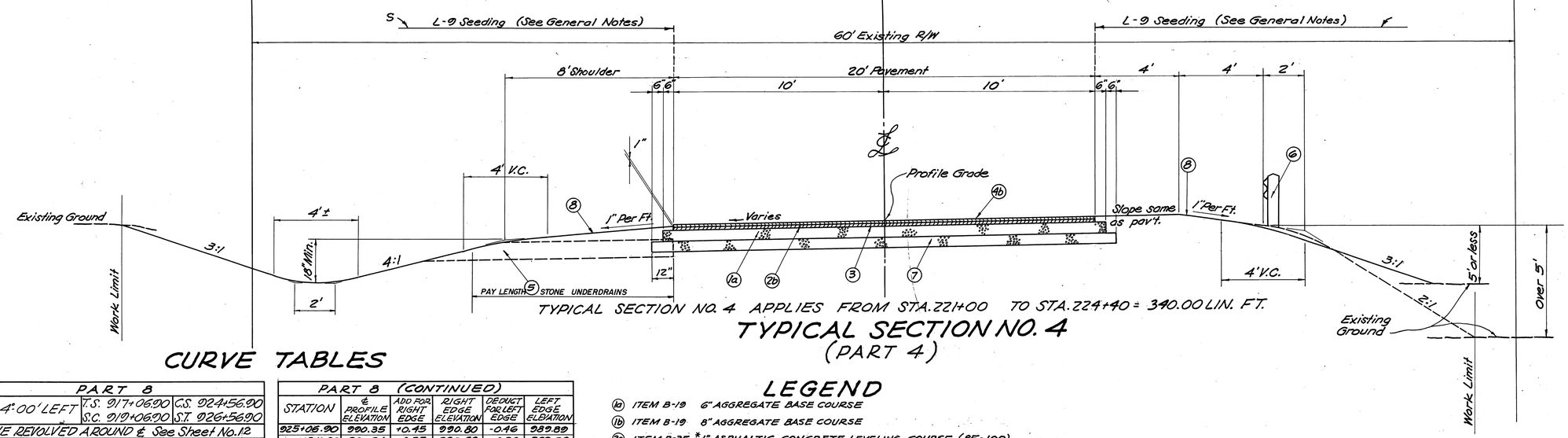
TYPE T-35 ON B-19



NOTE: DETAILS OF SHOULDERS, SLOPES AND DITCHES NOT SHOWN ARE TO CONFORM WITH STANDARD DRAWING NO. RI-1 UNLESS OTHERWISE SHOWN ON PLANS.

TYPICAL SECTION NO. 3 APPLIES FROM { STA. 917+06.90 TO STA. 919+51.99 = 245.09 LIN. FT.
STA. 920+22.01 TO STA. 926+56.90 = 634.89 LIN. FT.

TYPICAL SECTION NO. 3
(PART 8)



TYPICAL SECTION NO. 4 APPLIES FROM STA. 221+00 TO STA. 224+40 = 340.00 LIN. FT.

TYPICAL SECTION NO. 4
(PART 4)

CURVE TABLES

PART 8					
D = 4°00' LEFT		T.S. 917+06.90 S.C. 919+06.90		C.S. 924+56.90 S.T. 926+56.90	
CURVE REVOLVED AROUND ℄ See Sheet No. 12					
STATION	℄ PROFILE ELEVATION	ADD FOR RIGHT EDGE	RIGHT EDGE ELEVATION	DEDUCT FOR LEFT EDGE	LEFT EDGE ELEVATION
T.S. 917+06.90	986.26	-0.16	986.10	-0.16	986.10
+31.90	985.90	-0.06	985.84	-0.16	985.74
+56.90	985.60	+0.04	985.64	-0.16	985.44
+81.90	985.34	+0.14	985.48	-0.16	985.18
918+06.90	985.13	+0.25	985.38	-0.26	984.87
+31.90	984.98	+0.35	985.33	-0.36	984.62
+56.90	984.89	+0.45	985.34	-0.46	984.43
+81.90	984.84	+0.55	985.39	-0.56	984.28
S.C. 919+06.90	984.86	+0.64	985.50	-0.64	984.22
+31.90	984.88	+0.66	985.54	-0.66	984.22
+56.90	984.90	UNIFORM SUPER ELEVATION = +0.66	985.56	UNIFORM SUPER ELEVATION = -0.66	984.24
+81.90	984.92		985.58		984.26
920+06.90	984.94		985.60		984.28
+31.90	984.96		985.62		984.30
+56.90	984.98		985.64		984.32
+81.90	985.00		985.66		984.34
921+06.90	985.08		985.74		984.42
+31.90	985.23		985.89		984.57
+56.90	985.45		986.11		984.79
+81.90	985.74		986.40		985.08
922+06.90	986.11		986.77		985.45
+31.90	986.55		987.21		985.89
+56.90	987.06		987.72		986.40
+81.90	987.64		988.30		986.98
923+06.91	988.19		988.85		987.53
+31.90	988.68		989.34		988.02
+56.90	989.10		989.76		988.44
+81.90	989.47		990.13		988.81
924+06.90	989.77		990.43		989.11
+31.90	990.01	+0.66	990.67	-0.66	989.35
C.S. +56.90	990.19	+0.64	990.83	-0.64	989.55
+81.90	990.30	+0.55	990.85	-0.56	989.74

PART 8 (CONTINUED)					
STATION	℄ PROFILE ELEVATION	ADD FOR RIGHT EDGE	RIGHT EDGE ELEVATION	DEDUCT FOR LEFT EDGE	LEFT EDGE ELEVATION
925+06.90	990.35	+0.45	990.80	-0.46	989.89
+31.90	990.34	+0.35	990.69	-0.36	989.98
+56.90	990.26	+0.25	990.51	-0.26	990.00
+81.90	990.13	+0.14	990.27	-0.16	989.97
926+06.90	989.93	+0.04	989.97	-0.16	989.77
+31.90	989.67	-0.06	989.61	-0.16	989.51
S.T. +56.90	989.33	-0.16	989.17	-0.16	989.17

PART 4					
D = 1°00' LEFT		BEGIN TRANSITION - 221+00 P.C. - 222+00		P.T. - 224+00 END TRANSITION - 225+00	
CURVE REVOLVED AROUND ℄ See Sheet No. 8					
STATION	℄ PROFILE ELEVATION	ADD FOR RIGHT EDGE	RIGHT EDGE ELEVATION	DEDUCT FOR LEFT EDGE	LEFT EDGE ELEVATION
221+00	849.96	-0.16	849.80	-0.16	849.80
+25	850.31	-0.08	850.23	-0.16	850.15
+50	850.75	0.00	850.75	-0.16	850.59
+75	851.24	+0.08	851.32	-0.16	851.08
P.C. 222+00	851.78	+0.17	851.95	-0.17	851.61
+25	852.39	+0.17	852.56	-0.17	852.22
+50	853.06	+0.17	853.23	-0.17	852.89
+75	853.76	+0.17	853.93	-0.17	853.59
223+00	854.46	+0.17	854.63	-0.17	854.29
+25	855.16	+0.17	855.33	-0.17	854.99
+50	855.86	+0.17	856.03	-0.17	855.69
+75	856.56	+0.17	856.73	-0.17	856.39
P.T. 224+00	857.26	+0.17	857.43	-0.17	857.09
+25	857.96	+0.08	858.04	-0.16	857.80
+50	858.66	0.00	858.66	-0.16	858.50
+75	859.36	-0.08	859.28	-0.16	859.20
225+00	859.82	-0.16	859.66	-0.16	859.66

LEGEND

- (1a) ITEM B-19 6" AGGREGATE BASE COURSE
- (1b) ITEM B-19 8" AGGREGATE BASE COURSE
- (2a) ITEM B-35 *1" ASPHALTIC CONCRETE LEVELING COURSE (85-100)
- (2b) ITEM B-35 *1 3/4" ASPHALTIC CONCRETE LEVELING COURSE (85-100)
- (3) ITEM T-30 BITUMINOUS PRIME COAT: SEC M-5.7, RT-2 OR RT-3; APPLIED AT THE RATE OF 0.40 GAL. PER SQ. YD.
- (4a) ITEM T-35 *1" ASPHALTIC CONCRETE SURFACE COURSE, TYPE "C" (85-100)
- (4b) ITEM T-35 *1 1/4" ASPHALTIC CONCRETE SURFACE COURSE, TYPE "C" (85-100)
- (5) ITEM I-9 STONE UNDERDRAINS, NO. 2, AS REQUIRED
- (6) ITEM I-15 STEEL BEAM GUARD RAIL (DEEP)
- (7) ITEM I-22 SUBBASE (6" THICK)
- (8) ITEM L-9 SEEDING AND PROTECTING

*Thicknesses shown are "designed" thicknesses as described in Sections T-35.01 and B-35.01.

6035-4,8

T. C. BIEBESHEIMER ENGINEERING CO.
CIVIL ENGINEERS AND SURVEYORS
TOLEDO, OHIO MONROE, MICHIGAN

TYPICAL SECTIONS & SUPERELEVATION TABLES

DESIGN	TRACED	CHECKED	REVIEWED	DATE	REVISED
	BD.	LM			

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

4
80

HUR.-162-(1.50)(2.56)(2.67)(4.10)
(11.87)(14.41)(16.93)(17.37)

PARTS 1 THROUGH 8

MICROFILMED
DEC 19 1986

GENERAL NOTES (BRIDGES INCLUDED)

PRECAST, PRESTRESSED CONCRETE BRIDGE BEAMS: SHALL CONFORM IN ALL RESPECTS TO SUPPLEMENTAL SPECIFICATION NO. S-105.

CONCRETE: SHALL BE CLASS "E" IN ABUTMENTS, AND CLASS "C" IN PIER CAPS.

POROUS BACKFILL: SHALL EXTEND UPWARD TO APPROACH SLAB AND TO THE SURFACE OF THE EARTH SHOULDERS, AND OUTWARD TO SURFACES OF EMBANKMENT SLOPES. EXCAVATION THEREFOR, IN EXCESS OF THAT REQUIRED FOR CONSTRUCTION OF THE FOOTINGS, SHALL BE CONSIDERED PAID FOR IN THE PRICE BID PER CUBIC YARD FOR POROUS BACKFILL.

WATERPROOFING: TYPE "C" WATERPROOFING SHALL BE APPLIED IN ACCORDANCE WITH ITEM S-3.07 TO ENTIRE UPPER SURFACE OF THE PRESTRESSED BEAMS, AFTER ERECTION OF THE BEAMS AND BEFORE PLACING THE BITUMINOUS WEARING SURFACE.

BRIDGE RAILING: BRIDGE GUARD RAILING SHALL BE PAINTED WHITE IN ACCORDANCE WITH SECTION I-15.07 OF THE CONSTRUCTION AND MATERIAL SPECIFICATIONS. GALVANIZED POSTS AND ANCHOR BOLTS SHALL NOT BE PAINTED. PRICE PER LINEAR FOOT OF RAILING (S-14) INCLUDES GUARD RAILING, POSTS, ANCHOR BOLTS, CONNECTIONS, GALVANIZING AND PAINTING.

SPECIFICATIONS: "CONSTRUCTION AND MATERIAL SPECIFICATIONS" OF THE STATE OF OHIO, DEPARTMENT OF HIGHWAYS SHALL GOVERN ALL THE PHASES OF THE WORK INCLUDED IN THESE PLANS. PARAGRAPH, ITEM AND SECTION NUMBERS SHOWN HEREIN ALL REFER TO THESE SPECIFICATIONS. ANY NOTES OR REQUIREMENTS CONTAINED HEREIN WHICH DO NOT REFER TO PARTICULAR STATE SPECIFICATIONS SHALL BE CONSIDERED SUPPLEMENTARY TO THE STATE SPECIFICATIONS.

DESIGN SPECIFICATIONS: THESE PLANS CONFORM TO THE REQUIREMENTS OF "DESIGN SPECIFICATIONS FOR HIGHWAY STRUCTURES" OF THE STATE OF OHIO, DEPARTMENT OF HIGHWAYS, DATED SEPTEMBER 1, 1957, TOGETHER WITH REVISIONS THEREOF DATED FEBRUARY 21, 1958.

REMOVAL OF EXISTING STRUCTURES: WHEN NO LONGER NEEDED TO MAINTAINED TRAFFIC, EXISTING STRUCTURES SHALL BE REMOVED IN ACCORDANCE WITH SEC. S-24. AND MATERIALS DISPOSED OF AS PROVIDED BY SEC. S-24.03, EXCEPT FOR STEEL STRINGERS IN EXISTING BRIDGES ON PARTS 1, 4 AND 5 OF THE PROJECT.
THE STEEL STRINGERS SHALL BE NEATLY PILED BY THE SIDE OF THE ROAD FOR PICK-UP BY STATE FORCES.
NOT REQUIRE

PILES: ABUTMENT PILES ON PARTS 1 AND 3 OF THE PROJECT SHALL BE 12BP53 AND SHALL BE DRIVEN WITH A HAMMER OF NOT LESS THAN 11,000 FT. LBS. PER BLOW TO FIRM CONTACT WITH SHALE. IF THE LENGTH OF PENETRATION IS APPROXIMATELY EQUAL TO THE DEPTH OF SHALE ACCORDING TO THE LOG OF SOIL BORINGS, THE FIRM CONTACT SHALL BE CONSIDERED AS ATTAINED WHEN THE CAPACITY ACCORDING TO THE FORMULA IN SEC. S-18.05 IS NOT LESS THAN THE FOLLOWING VALUE FOR A PILE HAMMER OF THE INDICATED ENERGY RATING.

51 TONS PER PILE USING A 11,000 FT. LB. HAMMER
45 TONS PER PILE USING A 15,000 FT. LB. OR GREATER HAMMER

PILES ON PARTS 2 & 4 OF THE PROJECT SHALL BE 12" DIA. CAST IN PLACE CONCRETE. CASINGS SHALL BE OF THE TYPE THAT IS LEFT IN PLACE AND SHALL HAVE A THICKNESS OF METAL NOT LESS THAN NO. 7 GAUGE. PILES ON BRIDGES HUR.-162-0257 (PART 2) AND HUR.-162-0414 (PART 4) SHALL BE DRIVEN TO A MINIMUM BEARING CAPACITY OF 35 TONS.

APPROACH SLABS: APPROACH SLABS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STANDARD DRAWING AS-1-54 AS REVISED DECEMBER 1, 1954.

EXCAVATION QUANTITY: EXCAVATION QUANTITIES FOR BRIDGES NO. HUR.-162-0154 AND HUR.-162-0414 ON PARTS 1 AND 4 RESPECTIVELY, IN ADDITION TO THAT OUTLINED IN SEC. E-2.09, INCLUDE REMOVAL OF MATERIAL BOUNDED BY THE PROPOSED BENCH, BY THE FRONT VERTICAL PLANE DESCRIBED IN SEC. E-2.09, AND BY THE FINISHED SLOPE OF THE CUT.

FOUNDATION BEARING PRESSURE: PIER FOOTINGS FOR BRIDGE NO. HUR.-162-0154 (PART 1) ARE DESIGNED FOR A MAXIMUM BEARING PRESSURE OF 7 TONS PER SQUARE FOOT.

WEARING SURFACE ON APPROACH SLABS: REINFORCED CONCRETE APPROACH SLABS SHALL HAVE A WEARING SURFACE CONSISTING OF 2 1/2" ASPHALTIC CONCRETE, ITEM T-35, TYPE "C", (85-100), LAID IN TWO 1 1/4" COURSES. A TACK COAT (ITEM T-30) USED FOR THE ROADWAY SHALL BE APPLIED TO THE SURFACE OF THE CONCRETE SLABS AT THE RATE OF 0.10 GALS. PER SQ. YD.

CALCULATIONS: ALL CALCULATIONS ARE ON FILE IN THE DIVISION OFFICE.

SANITARY: NO DRAINS, EITHER EXISTING OR PROPOSED CARRYING DOMESTIC WASTE SHALL BE CONNECTED TO ANY PORTION OF THE PROPOSED DRAINAGE SYSTEM OF THIS PROJECT.

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) FT. CENTERS IN ROWS NOT MORE THAN TWO (2) FT. 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.

DESIGN SPEED: = 50 M.P.H.

EXISTING RAILROAD BRIDGE ABUTMENTS: REMOVAL OF EXISTING RAILROAD BRIDGE ABUTMENTS AT THE SITE OF BRIDGE NO. HUR.-162-1196 (PART 5) SHALL BE INCLUDED IN THE LUMP SUM BID FOR REMOVAL OF EXISTING STRUCTURE.

CHANNEL EXCAVATION: Estimated quantities for Item E-3, Channel Excavation on Part 8 have been determined from topographic information shown on the structure site plan. Pay quantities for this item will be determined at the time of construction by the method of average end areas as provided in Item E-3.

FIELD OFFICE: THE CONTRACTOR SHALL PROVIDE TWO SUITABLE FIELD OFFICES IN ACCORDANCE WITH SEC. S-0.01(b), HAVING MINIMUM FLOOR AREAS OF 150 SQ. FT. EACH. ONE SUCH OFFICE SHALL BE USED IN THE CONSTRUCTION OF PARTS 1 THROUGH 4 INCLUSIVE AND THE SECOND OFFICE SHALL BE USED WITH PARTS 5 THROUGH 8 INCLUSIVE. SPECIFIC LOCATION OF EACH OFFICE SHALL BE APPROVED BY THE ENGINEER. THE CONTRACTOR SHALL HAVE TELEPHONES INSTALLED AND MAINTAINED IN EACH OFFICE DURING THE CONSTRUCTION OF THIS PROJECT.

UTILITIES: ANY AND ALL WORK REQUIRED FOR THE ADJUSTMENT OF PUBLIC OR PRIVATE UTILITIES WILL BE DONE BY AND AT THE EXPENSE OF THEIR RESPECTIVE OWNERS UNLESS OTHERWISE SHOWN ON THESE PLANS.

I-9 STONE UNDERDRAINS NO. 2: A QUANTITY OF STONE UNDERDRAINS NO. 2 TO BE USED AS DIRECTED BY THE ENGINEER HAS BEEN ESTIMATED ON THIS PROJECT AT APPROXIMATELY 50 FT. INTERVALS LEFT AND RIGHT. THE CONTRACTOR SHALL GRADE, FINISH, SEED AND MULCH THE SLOPES SO AS NOT TO IMPEDE THE FREE DRAINAGE OF THE UNDERDRAINS. THE QUANTITY SHALL BE USED IN ITS ENTIRETY.

REMOVAL OF TREES AND STUMPS: SHALL BE PAID FOR BY A LUMP SUM BID. THE NUMBER OF TREES AND STUMPS SHOWN IN THE FOLLOWING TABLE IS FOR ESTIMATING PURPOSES ONLY. SIZES UNDER 12" ARE NOT LISTED. THE STATE DOES NOT GUARANTEE THE ACCURACY OF THE FOLLOWING TABLE.

SIZE	12"-18"		18"-24"		24"-30"		30"-36"		36"-42"		42"-48"		OVER 48"			
	TREES	STUMPS	TREES	STUMPS	TREES	STUMPS	TREES	STUMPS	TREES	STUMPS	TREES	STUMPS	TREES	STUMPS		
PART 1	5	3	4		1											
PART 2	5		3						1							
PART 3					2		1									
PART 4			2		1											
PART 5																
PART 6																
PART 7			1													
PART 8			1													

SEEDING: QUANTITIES FOR SEEDING ARE CALCULATED FOR THE SOIL AREAS BETWEEN CONSTRUCTION LIMITS AS SHOWN ON THE CROSS-SECTIONS BY THE SYMBOL S. AREAS TO BE SEEDED OR SODDED SHALL BE FERTILIZED USING A COMMERCIAL FERTILIZER HAVING A FORMULA OF 12-12-12 AND SEEDED WITH THE FOLLOWING MIXTURE.

75% KY. 31 FESCUE, 20% KY. BLUEGRASS, 5% ALSIKE CLOVER

THE RATE OF APPLICATION OF FERTILIZER SHALL BE 20 LBS. PER 1000 SQ. FT. OF AREA TO BE SEEDED OR SODDED.

PAVEMENT REMOVAL: REMOVAL OF RIGID PAVEMENT AND BASE SHALL BE INCLUDED AS ITEM E-8. REMOVAL OF NON-RIGID PAVEMENT SHALL BE PAID FOR AS ITEM E-1.

ROADWAY CROWN: SHALL CONFORM TO BRIDGE ROADWAY CROWN AT BRIDGE LIMITS AND TO EXISTING PAVEMENT CROWN AT BEGINNING AND END OF WORK.

GUARD RAIL: SHALL BE CONNECTED TO BRIDGE RAILING, WITH DIFFERENCE, IF ANY, IN HEIGHT AND HORIZONTAL LOCATION WORKED OUT IN ACCORDANCE WITH THE PLANS.

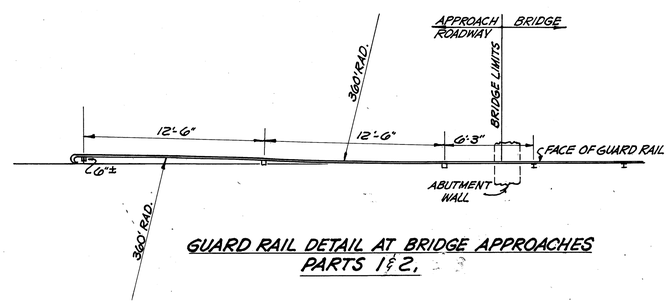
SUBGRADE COMPACTION: THE SUBGRADE FOR DRIVES AND MAILBOX TURNOUTS PAVED WITH B-19 OR T-35 ON B-19 MATERIAL SHALL BE COMPACTED FOR A DEPTH OF SIX (6) INCHES TO THE DENSITY REQUIREMENTS SHOWN IN TABLE III, ITEM E-1. PAYMENT FOR SUBGRADE COMPACTION, AS SPECIFIED ABOVE, SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM E-1, ROADWAY EXCAVATION.

MAINTENANCE OF TRAFFIC: ACCESS TO ALL PROPERTY ABUTTING THE ROAD WITHIN THE LIMITS OF WORK MUST BE PRESERVED AT ALL TIMES. ONLY ONE PART OF THE PROJECT, OUT OF EACH OF THE FOLLOWING PAIRS, SHALL BE CLOSED TO TRAFFIC AT ANY TIME DURING THE PROGRESS OF THE WORK: PART 1 OR PART 2; PART 7 OR PART 8.

THE FOLLOWING ESTIMATED QUANTITIES ARE INCLUDED IN THE GENERAL SUMMARY FOR MAINTAINING TRAFFIC AS DIRECTED BY THE ENGINEER.

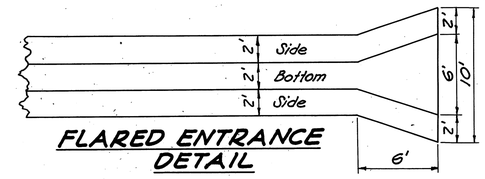
130 C.Y. T-10 TRAFFIC COMPACTED SURFACE COURSE FOR MAINTAINING TRAFFIC.
2.6 TON M-10 CALCIUM CHLORIDE FURNISHED AND APPLIED FOR MAINTAINING TRAFFIC.

CHANNEL EMBANKMENT: MATERIAL ACQUIRED FROM EXCAVATION OF THE NEW CHANNELS WILL BE USED TO FILL THE OLD CHANNELS TO THE LINES INDICATED ON THE CHANNEL SECTIONS. CARE SHALL BE TAKEN TO PROVIDE PROPER DRAINAGE THROUGHOUT THE FILL AREA. PAYMENT FOR THE ABOVE DESCRIBED WORK SHALL BE INCLUDED IN THE UNIT PRICE BID FOR CHANNEL EXCAVATION, ITEM E-3.

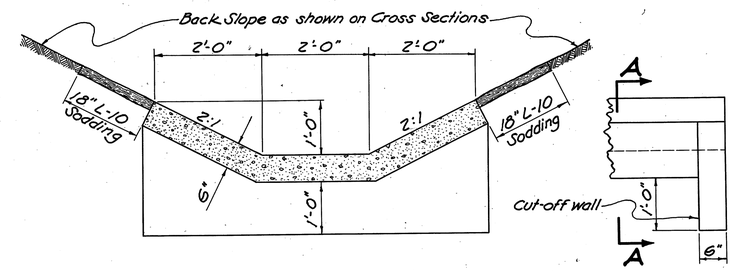


GUARD RAIL DETAIL AT BRIDGE APPROACHES
PARTS 1 & 2.

QUANTITY SUB-SUMMARY							
SHEET NO.	37	54	58	43	45	70	SUB TOTAL
L-9 Fertilizer	0.03	0.03	0.04	0.09	0.03		0.22 Ton
L-9 Seeding	314	304	412	945	299		2274 Sq.Yd.
T-35 Surface Course						5	5 Cu.Yd.
E-2 Structure Exc.						290	290 Cu.Yd.
E-3 Channel Exc.						250	250 Cu.Yd.

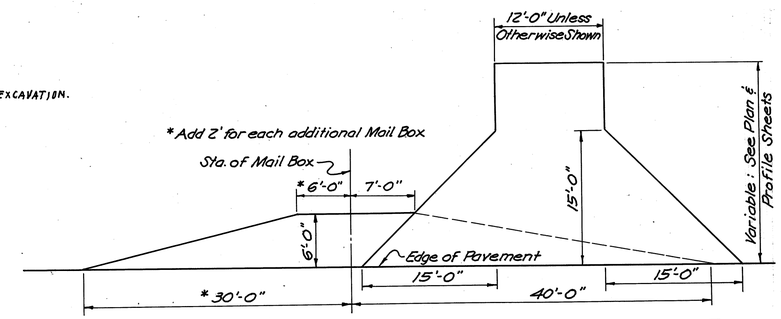


FLARED ENTRANCE DETAIL



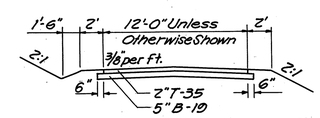
SECTION A-A SIDE VIEW

STANDARD NO. 1 PAVED GUTTER (MODIFIED)

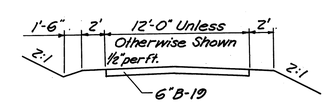


PLAN TYPICAL DRIVE AND MAIL BOX TURNOUT

Where feasible drives shall be combined with Mail Box Turnouts, as shown.
Quantities to be adjusted by the Engineer.



TYPICAL DRIVE SECTION
T-35 on B-19



TYPICAL AGGREGATE DRIVE

6035-1-8

T. C. BIEBESHEIMER ENGINEERING CO.
CIVIL ENGINEERS AND SURVEYORS
TOLEDO, OHIO MONROE, MICHIGAN

GENERAL NOTES AND DETAILS

DESIGN	TRACED	CHECKED	REVIEWED	DATE	REVISED
	W.D.H.	LM			

GENERAL SUMMARY

FROM SHEET NUMBER												ITEM	PLAN TOTAL	UNIT	DESCRIPTION
CALC.	4	46 PART 6	47 PART 7	6 (PART 1)	6 (PART 2)	7 (PART 3)	8 (PART 4)	9 (PART 5)	10 (PART 6)	11 (PART 7)	12 (PART 8)				
															ROADWAY
				464	253	741	540	2611	256	756	425	E-1	6,046	CU. YD.	ROADWAY EXCAVATION, METHOD A, AS PER PLAN
				544	224	543	5033	1240	1364	3810	874	E-1	13,641	CU. YD.	EMBANKMENT, METHOD A
11,512												E-1	11,512	SQ. YD.	COMPACTED SUBGRADE
								1180				E-8	1180	SQ. YD.	REMOVAL & DISPOSAL OF EXISTING PAVEMENT
	LUMP											E-9	LUMP	LUMP	REMOVAL OF TREES & STUMPS
84												E-11	84	M.GAL.	WATER
	130											T-10	130	CU. YD.	TRAFFIC COMPACTED SURFACE COURSE FOR MAINTAINING TRAFFIC
	2.6											M-10	2.6	TON	CALCIUM CHLORIDE FURNISHED AND APPLIED FOR MAINTAINING TRAFFIC
				190.58	115.50	116.5	811.0	158.50	287.50	962.50	110.0	I-15	2752.08	LIN. FT.	GUARD RAIL STEEL BEAM STANDARD TYPE (DEEP)
	2274			2405	1510	2153	5262	6274	2783	4985	5714	L-9	33,360	SQ. YD.	SEEDING & PROTECTING, AS PER PLAN
	0.22			0.22	0.14	0.10	0.47	0.56	0.25	0.45	0.51	L-9	3.01	TONS	COMMERCIAL FERTILIZER (12-12-12)
				95								L-10	95	SQ. YD.	SODDING, AS PER PLAN
															DRAINAGE
	290	26	36									E-2	352	CU. YD	EXCAVATION FOR STRUCTURES
	250	60	150									E-3	460	CU. YD	CHANNEL EXCAVATION
							30			28	88	I-1	146	LIN. FT.	12" PIPE FOR DRIVEWAYS, SEC. M-6.4 (a)
		50	35									I-10	85	CU. YD.	DUMPED ROCK CHANNEL PROTECTION
				108	72	240	432	456	216	342	360	I-9	2226	LIN. FT.	STONE UNDERDRAINS NO. 2
				106								I-14	106	LIN. FT.	PAVED GUTTER, STANDARD TYPE 1, MODIFIED AS PER PLAN
		19	18									S-1	37	CU. YD.	CLASS "E" CONCRETE FOR ENDWALLS
		72										S-28	72	LIN. FT.	8'-7" × 5'-11" SECTIONAL CORRUGATED METAL STRUCTURE, SEC. M-6.4(a), 10-10 GA.
			72									S-28	72	LIN. FT.	13'-5" × 8'-3" SECTIONAL CORRUGATED METAL STRUCTURE, SEC. M-6.4(a), 8-5 GA.
															PAVEMENT
1878				74	73	23	54	23	77	83	37	B-19	2322	CU. YD.	AGGREGATE BASE COURSE
338				9	9	6	12	6	9	9		B-35	398	CU. YD.	ASPHALTIC CONCRETE LEVELING COURSE (85-100)
67												T-30	67	GAL.	BITUMINOUS TACK COAT, SEC. M-5.5, MS-2 or RS-1 or SEC. M-5.2, RC-1, RC-2 or RC-3, as per SEC. T-30.02
3632				126	124	50	90	48	131	124		T-30	4325	GAL.	BITUMINOUS PRIME COAT, SEC. M-5.7, RT-2 or RT-3
327	5			9	9	4	8	4	9	9	4	T-35	388	CU. YD.	ASPHALTIC CONCRETE SURFACE COURSE, TYPE "C" (85-100)
666												I-7	666	SQ. YD.	REINFORCED CONCRETE APPROACH SLABS (T = 13")
756						24	43	24				I-22	847	CU. YD.	SUBBASE

FROM SHEET NUMBER											ITEM	PLAN TOTAL	UNIT	DESCRIPTION
CALC.			49 (PART 1)	54 (PART 2)	58 (PART 3)	62 (PART 4)	66 (PART 5)	46 (PART 6)	47 (PART 7)	70 (PART 8)				
														STRUCTURES OVER 20' SPAN
														HUR-162-0154, See Sheet #49
														HUR-162-0414, See Sheet #62
														HUR-162-1196, See Sheet #66
														HUR-162-0257, See Sheet #54
														HUR-162-0271, See Sheet #58
														DRAINAGE CONTINUED
										LUMP	E-2	LUMP	SUM	COFFERDAMS, CRIBS AND SHEETING
										69	S-1	69	CU. YD.	CLASS "E" CONCRETE FOR ABUTMENT WALLS
										58	S-1	58	CU. YD.	CLASS "E" CONCRETE FOR ABUTMENT FOOTINGS
										9	S-3	9	SQ. YD.	WATERPROOFING TYPE "B"
										73	S-3	73	SQ. YD.	WATERPROOFING TYPE "C"
										19	S-3	19	LIN. FT.	WATERPROOFING, PREMOLDED SEALING STRIP
										4437	S-4	4437	LB.	REINFORCING STEEL
										40	S-9	40	SQ. FT.	¼" PREFORMED EXPANSION JOINT FILLER
										6	S-9	6	SQ. FT.	½" PREFORMED EXPANSION JOINT FILLER
										40	S-14	40	LIN. FT.	RAILING (TYPE-I-15.13) WITH GALVANIZED STEEL POST & STUDS
								LUMP	LUMP	LUMP	S-24	LUMP	SUM	REMOVAL OF EXISTING STRUCTURE
										65	S-29	65	CU. YD.	POROUS BACKFILL
										11	S-105	11	EACH	PRESTRESSED CONCRETE MEMBERS, AS PER PLAN

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	HUR-162-(1.50)(2.56)(2.67)(4.10)(11.87)(14.41)(16.93)(17.37) PARTS 1 THROUGH 8

5 / 80

GENERAL SUMMARY

6635-1-8

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

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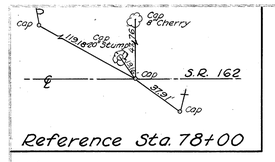
MICROFILMED DEC 19 1986

SEC. 162- (01.50) (02.56)(2.67)(4.10)(11.87)
PARTS 1 & 2 (14.41)(16.93)(17.37)

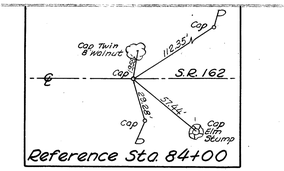
EXISTING BRIDGE DATA
NOTE: See Sheet No. 53

PROPOSED STRUCTURE
NOTE: See Sheet No. 53

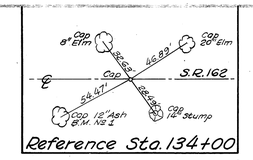


Reference Sta. 78+00

SITE BENCH MARK NO. 2
SPIKE IN E. SIDE WALNUT TREE. STA. 80+31.20, 60' LEFT. ELEV. 841.31

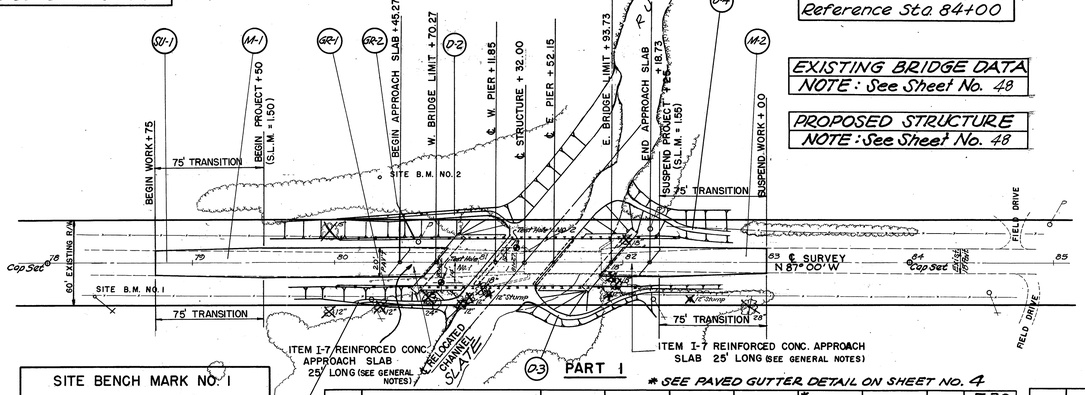


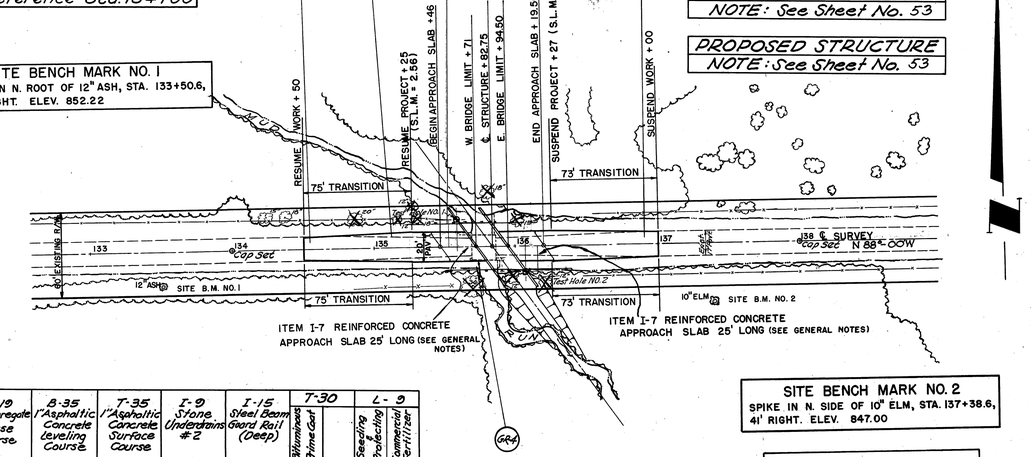
Reference Sta. 84+00



Reference Sta. 134+00

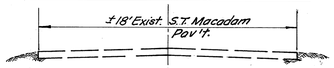
SITE BENCH MARK NO. 1
SPIKE IN N. ROOT OF 12" ASH, STA. 133+50.6, 24' RIGHT. ELEV. 852.22





SITE BENCH MARK NO. 1
SPIKE IN N. SIDE OF TELEPHONE POLE. STA. 78+31.50, 22' RIGHT. ELEV. 844.91

STATION	L-9 Seeding Protecting S. Y.	L-9 Commercial Fertilizer TON
78+75 - 79+50 (Rt & Lt)	2405	0.22

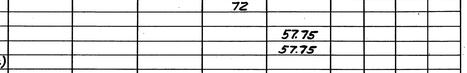


TYPICAL SECTION OF ADJOINING PAVEMENT

PART 1

* SEE PAVED GUTTER DETAIL ON SHEET NO. 4

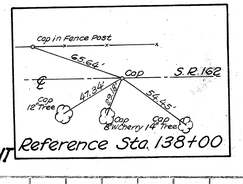
REF. NO.	STATION	B-19 8" Aggregate Base Course	B-35 1" Asphaltic Concrete Leveling Course	T-35 1" Asphaltic Concrete Surface Course	I-9 Stone Underdrains # 2	* I-14 Stand. # 1 Paved Gutter Modified as per plan	I-15 Steel Beam Guard Rail (Deep)	L-10 Sodding	T-30 Bituminous Prime Coat
		CU. YD.	CU. YD.	CU. YD.	LIN. FT.	LIN. FT.	LIN. FT.		GAL.
M-1	78+75 - 79+50	37.1	4.4	4.4					63
M-2	82+25 - 83+00	37.1	4.4	4.4					63
SU-1	78+75 - 83+00				108				
GR-1	80+02.71 - 82+08.96						82.79		
GR-2	80+05.15 - 82+36.40						101.79		
D-1	80+30 - 80+75 W=6							31	
D-2	80+80 - 81+17 W=6'							28	
D-3	81+40 - 82+10					* 70		24	
D-4	82+07 - 82+35					* 36		12	
	TOTALS	74.2	8.8	8.8	108	106	190.58	95	126



TYPICAL SECTION OF ADJOINING PAVEMENT

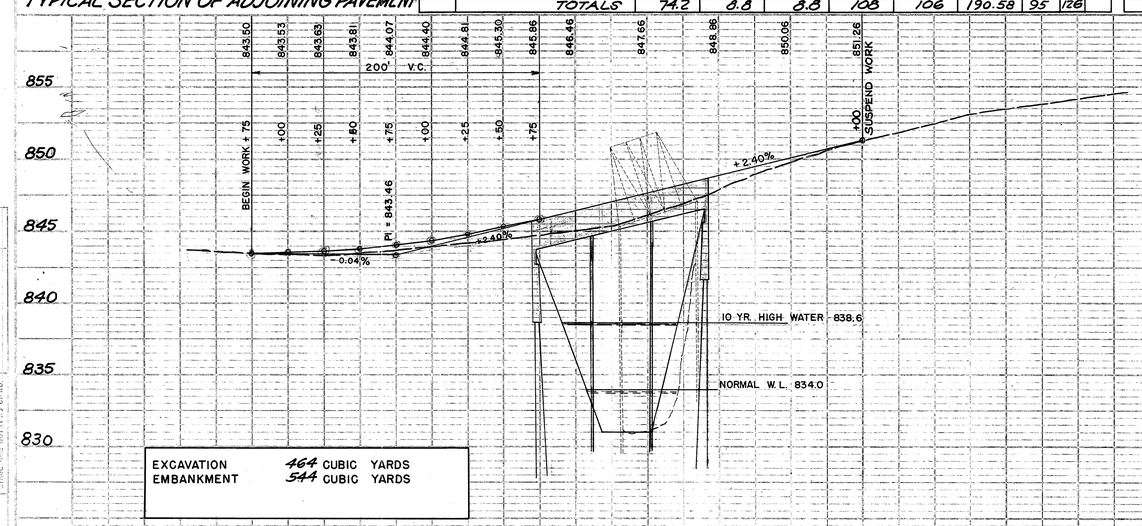
PART 2

SITE BENCH MARK NO. 2
SPIKE IN N. SIDE OF 10" ELM, STA. 137+38.6, 41' RIGHT. ELEV. 847.00

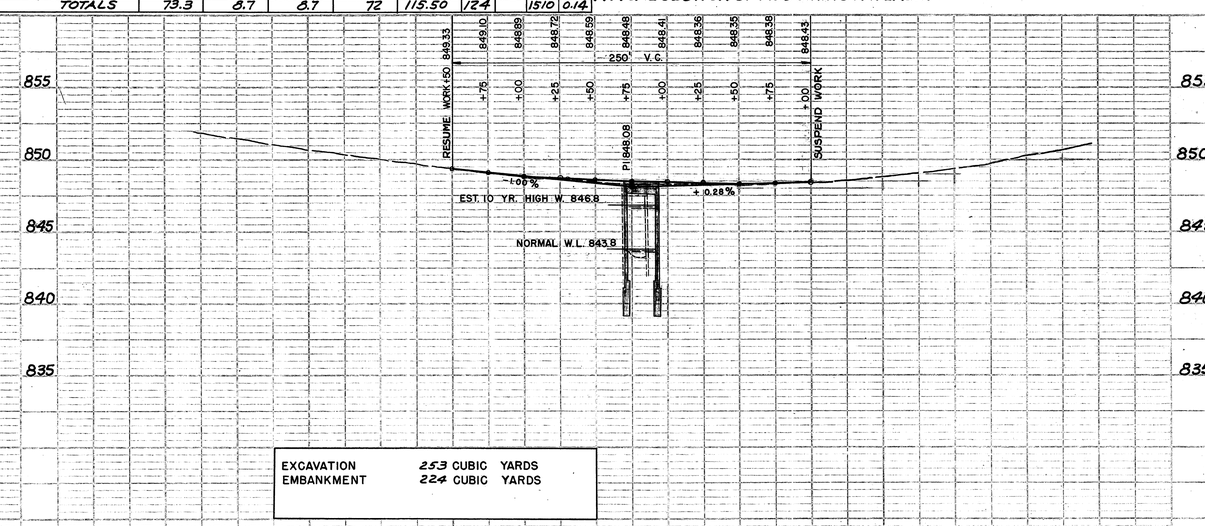


Reference Sta. 138+00

REF. NO.	STATION	B-19 8" Aggregate Base Course	B-35 1" Asphaltic Concrete Leveling Course	T-35 1" Asphaltic Concrete Surface Course	I-9 Stone Underdrains # 2	I-15 Steel Beam Guard Rail (Deep)	T-30 Bituminous Prime Coat	L-9 Seeding Protecting	L-9 Commercial Fertilizer
		CU. YD.	CU. YD.	CU. YD.	LIN. FT.	LIN. FT.	GAL.	S.Y.	TON
M-3	134+50 - 135+25	37.1	4.4	4.4			62		
M-4	136+27 - 137+00	36.2	4.3	4.3			62		
SU-2	134+50 - 137+00				72				
GR-3	135+30.52-136+11.76					57.75			
GR-4	135+53.75-136+35.00					57.75			
	134+50 -137+00 (Rt & Lt.)								
								1510	0.14
	TOTALS	73.3	8.7	8.7	72	115.50	124	1510	0.14



EXCAVATION 464 CUBIC YARDS
EMBANKMENT 544 CUBIC YARDS



EXCAVATION 253 CUBIC YARDS
EMBANKMENT 224 CUBIC YARDS

S.R. 162 - STA. 78+00 TO 85+00 STA. 132+00 TO 139+00

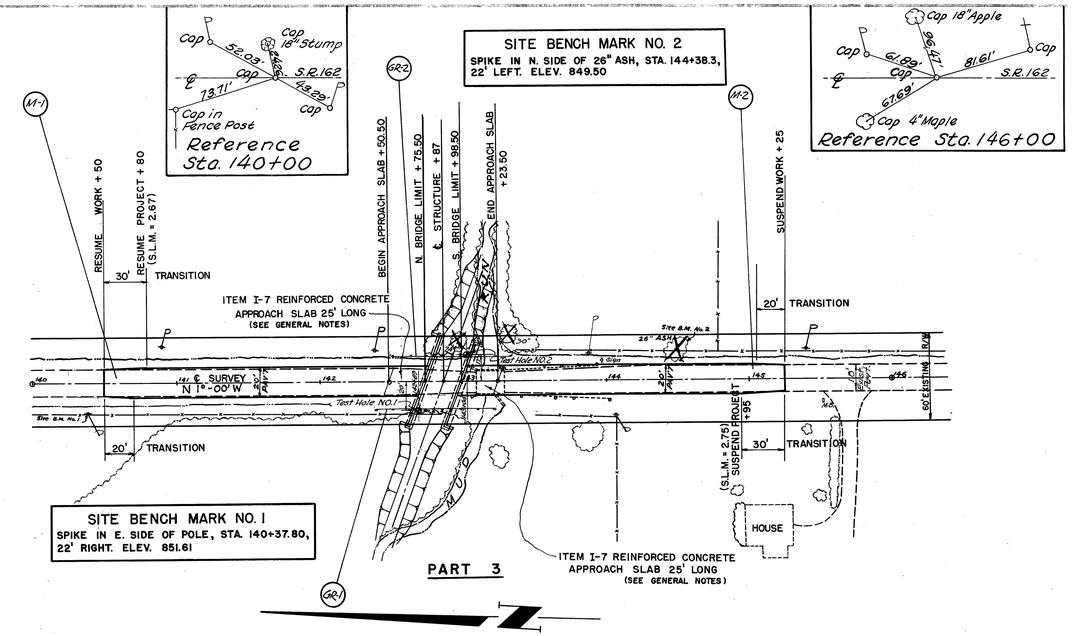
6035-1.2

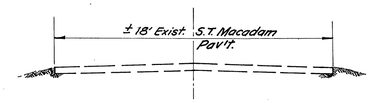
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

7/80

SEC. HUR.-162-(02.67)(1.50)(2.56)(4.10)(11.87)
PART 3 (14.41)(16.93)(17.37)

MICROFILMED
DEC 19 1986



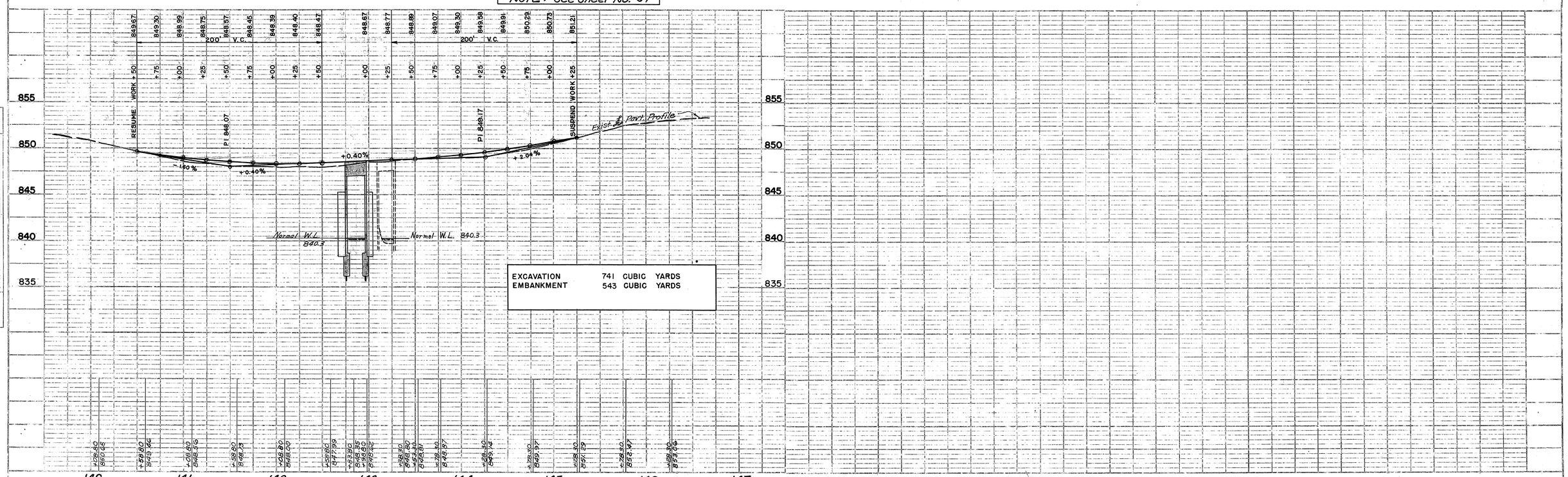


TYPICAL SECTION OF ADJOINING PAVEMENT

REF. NO.	STATION	B-19 6" Aggregate Base Course	B-35 1½" Asphaltic Concrete Leveling Course	T-35 1½" Asphaltic Concrete Surface Course	I-9 Stone Underdrains #2	I-15 Steel Beam Guard Rail (Deep)	I-22 Subbase 6" Thick	L-9 Seeding & Protecting	L-9 Commercial Fertilizer	T-30 Bituminous Prime Coat		
		CU. YD	CU. YD.	CU. YD.	LIN. FT.	LIN. FT.	CU. YD.	S.Y.	TON	GAL		
M-1	140+50 - 140+80	11.2	3.1	2.2			11.8			25		
M-2	144+95 - 145+25	11.2	3.1	2.2			11.8			25		
SU-1	140+50 - 145+25				240							
GR-1	142+39.77 - 143+21.04					58.25						
GR-2	142+52.95 - 143+34.22					58.25						
	140+50 - 145+25 (Rt. & Lt.)							2153	·19			
	TOTALS	22.4	6.2	4.4	240	116.5	23.6	2153	·19	50		

EXISTING BRIDGE DATA
NOTE: See Sheet No. 57

PROPOSED STRUCTURE
NOTE: See Sheet No. 57



EXCAVATION	741	CUBIC YARDS
EMBANKMENT	543	CUBIC YARDS

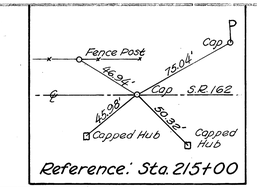
6035-3

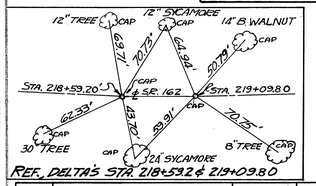
S. R. 162 - STA. 140+00 TO 147+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

8/80

SEC. HUR.-162-(04.10)(1.50)(2.56)(2.67)(11.87)
PART 4 (14.41)(16.93)(17.37)



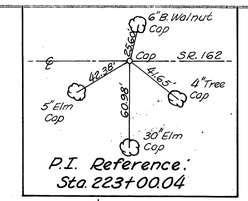


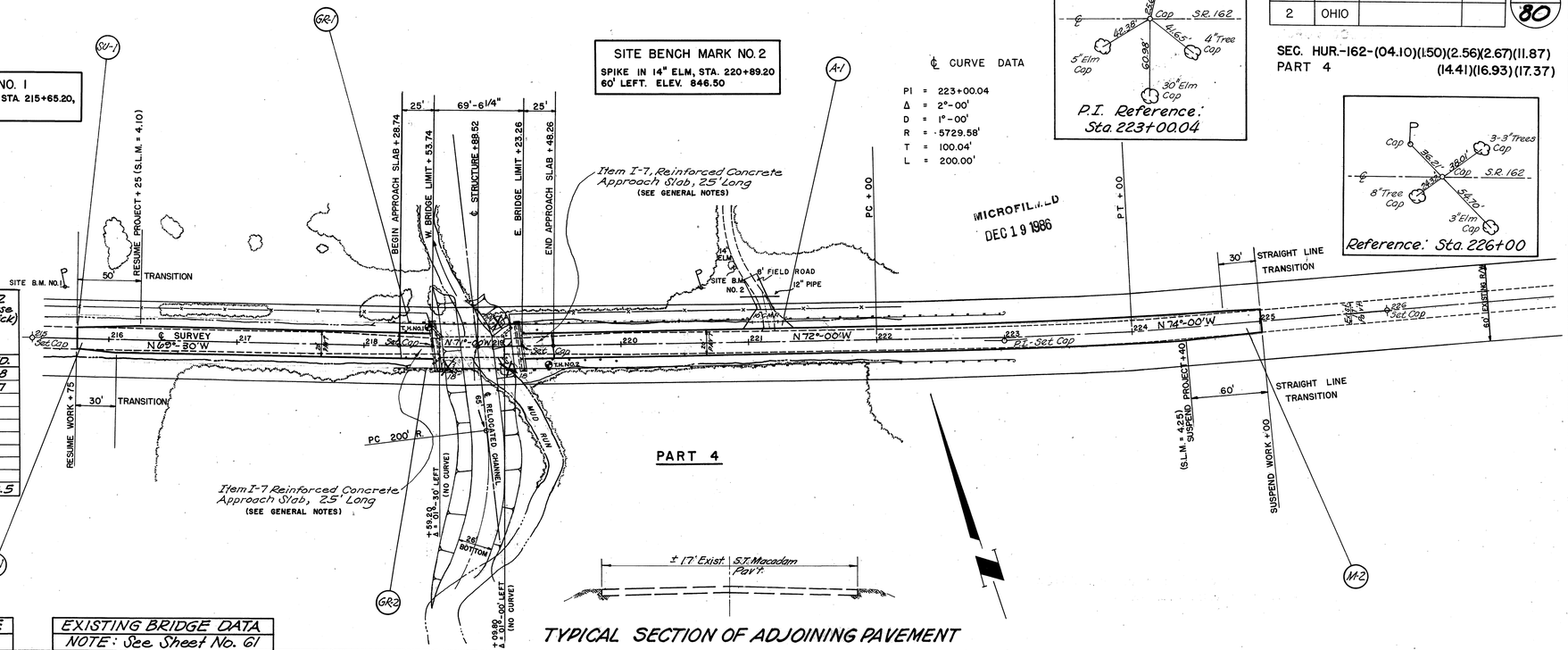
SITE BENCH MARK NO. 1
SPIKE IN S. FACE POWER POLE, STA. 215+65.20, 39.3' LEFT. ELEV. 854.58

SITE BENCH MARK NO. 2
SPIKE IN 14" ELM, STA. 220+89.20 60' LEFT. ELEV. 846.50

℄ CURVE DATA

PI = 223+00.04
Δ = 2°-00'
D = 1°-00'
R = 5729.58'
T = 100.04'
L = 200.00'



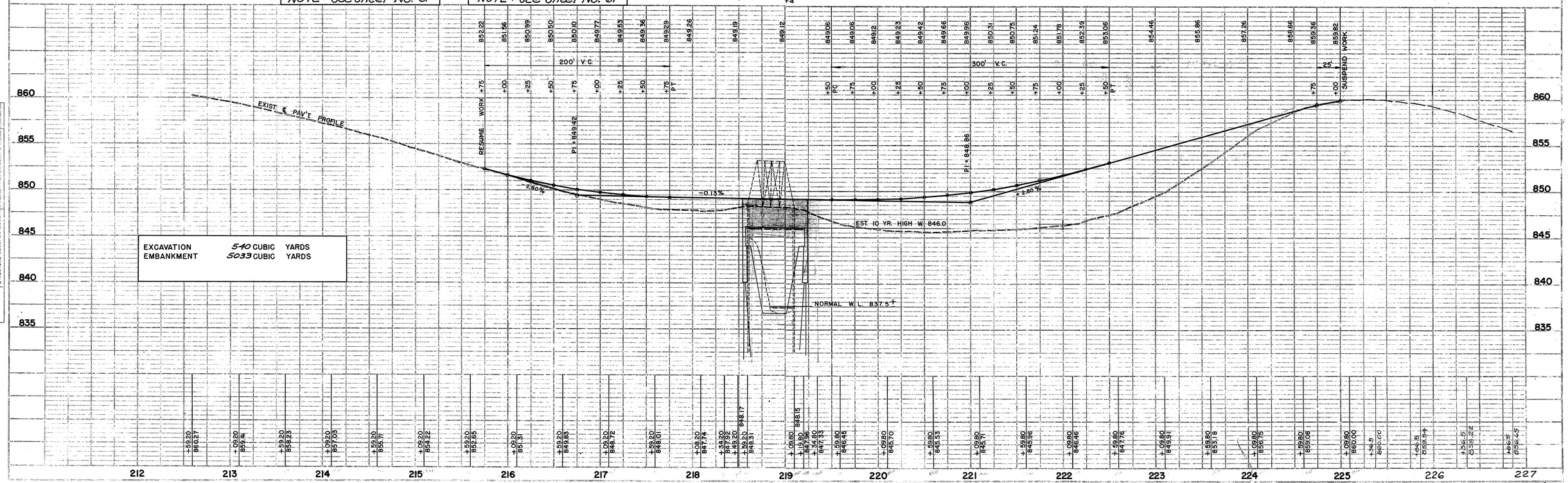


REF. NO.	STATION	B-19 6" Aggregate Base Course	B-35 1½" Asphaltic Concrete Leveling Course	T-35 1½" Asphaltic Concrete Surface Course	I-1 12" Pipe for Driveway	I-9 Stone Underdrains #2	I-15 Steel Beam Guard Rail (Deep)	I-22 Subbase (6" Thick)
		CU. YD	CU. YD.	CU. YD.	LIN. FT.	LIN. FT.	LIN. FT.	CU. YD.
M-1	215+75 - 216+25	18.8	5.2	3.7				19.8
M-2	224+40 - 225+00	22.6	6.2	4.5				23.7
A-1	221+15, Lt., L=40'	13			30			
SU-1	215+75 - 225+00					432		
GR-1	218+23.77 - 222+98.70						405.50	
GR-2	218+28.21 - 223+03.23						405.50	
	TOTALS	54.4	11.4	8.2	30	432	811.00	43.5

	STATION	L-9 Seeding & Protecting	L-9 Commercial Fertilizer	T-30 Bitum Prime Coat	
		S. Y.	TON	GAL	
	215+75-225+00(Rt.&Lt.)	5262	0.47		
M-1	215+75-216+25			41	
M-2	224+40-225+00			49	
	TOTALS			90	

PROPOSED STRUCTURE
NOTE: See Sheet No. 61

EXISTING BRIDGE DATA
NOTE: See Sheet No. 61



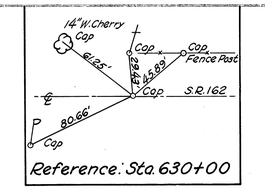
EXCAVATION	540 CUBIC YARDS
EMBANKMENT	5033 CUBIC YARDS

S. R. 162 - STA. 212+00 TO 227+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

9/80

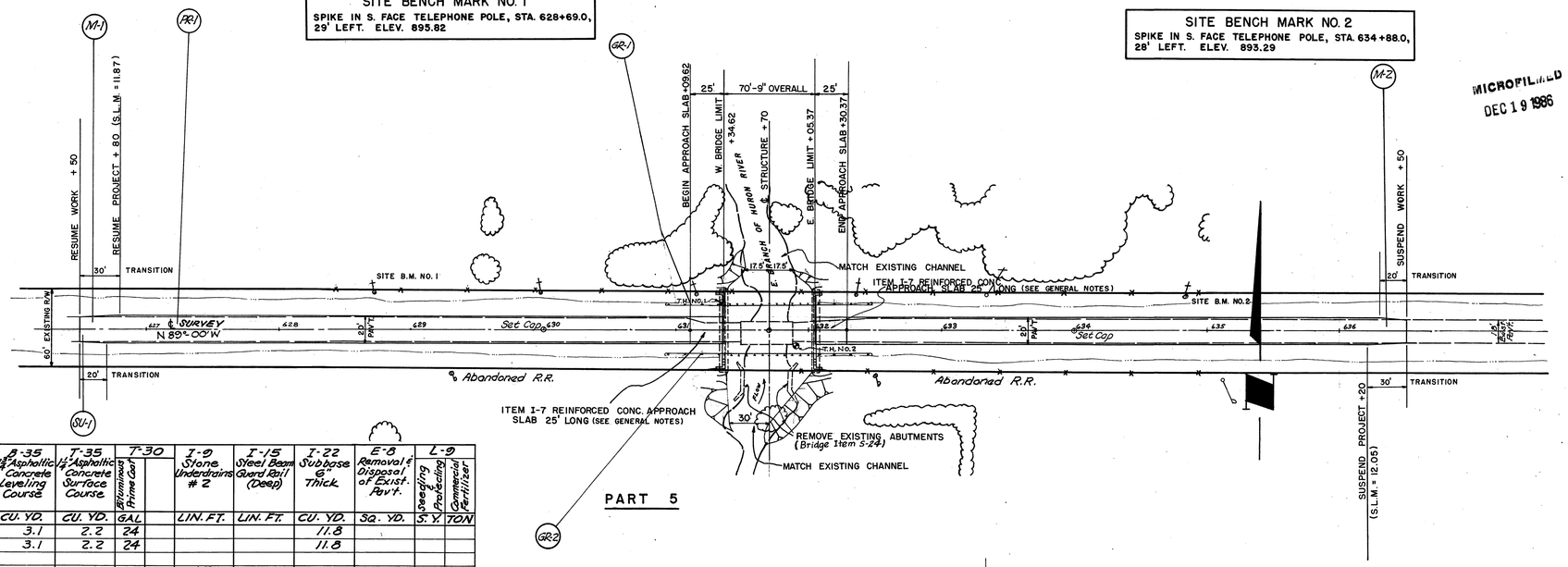
SEC. HUR.- 162-(11.87)(1.50)(2.56)(2.67)(4.10)
PART 5 (14.41)(16.93)(17.37)



SITE BENCH MARK NO. 1
SPIKE IN S. FACE TELEPHONE POLE, STA. 628+69.0, 29' LEFT. ELEV. 895.82

SITE BENCH MARK NO. 2
SPIKE IN S. FACE TELEPHONE POLE, STA. 634+88.0, 28' LEFT. ELEV. 893.29

MICROFILMED
DEC 19 1986

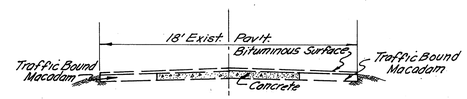


PART 5

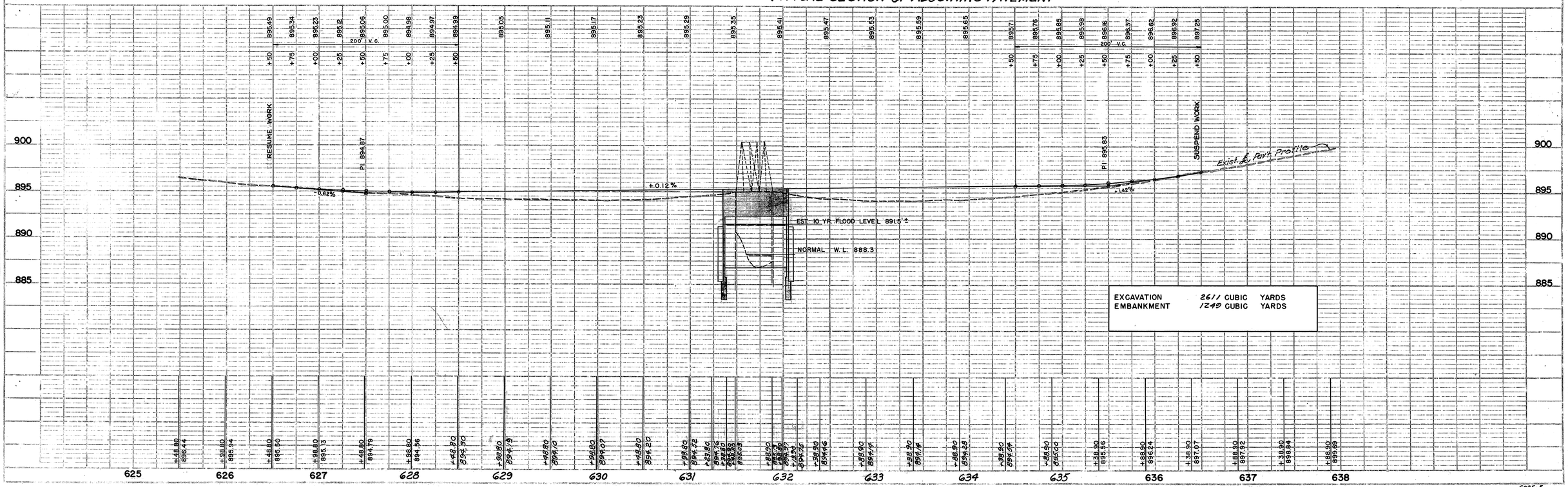
REF. NO.	STATION	B-19 6" Aggregate Base Course	B-35 1½" Asphaltic Concrete Leveling Course	T-35 1½" Asphaltic Concrete Surface Course	T-30 Bituminous Prime Coat		I-9 Stone Underdrains #2	I-15 Steel Beam Guard Rail (Deep)	I-22 Subbase 6" Thick	E-8 Removal & Disposal of Exist. Pav't.	L-9 Seeding Protecting	L-9 Commercial Fertilizer
		CU. YD.	CU. YD.	CU. YD.	GAL		LIN. FT.	LIN. FT.	CU. YD.	SQ. YD.	S.Y.	TON
M-1	626+50 - 626+80	11.2	3.1	2.2	24				11.8			
M-2	636+20 - 636+50	11.2	3.1	2.2	24				11.8			
SU-1	626+50 - 636+50						456					
GR-1	630+95.00-632+45.00							79.25				
GR-2	630+95.00-632+45.00							79.25				
PR-1	626+50 - 636+50									1180		
	626+50-636+50 (Rt. & Lt.)										627.4	0.56
	TOTALS	22.4	6.2	4.4	48		456	158.50	23.6	1180	627.4	0.56

EXISTING BRIDGE DATA
NOTE: See Sheet No. 65

PROPOSED STRUCTURE
NOTE: See Sheet No. 65



TYPICAL SECTION OF ADJOINING PAVEMENT



EXCAVATION	2611 CUBIC YARDS
EMBANKMENT	1240 CUBIC YARDS

S.R. 162 - STA. 625+00 TO 638+00

6035-5

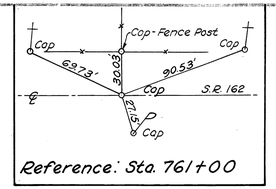
PLAN — SURVEYED / PLOTTED / ALIGNMENT (MEDIAN) / RT. OF WAY CHECKED / NOTE BOOK / NO. / BY / DATE

PROFILE — SURVEYED / PLOTTED / GRADES CHECKED / STRUCTURE NOTATIONS / NOTE BOOK / NO. / BY / DATE

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

10/80

SEC. HUR-162-(14.41)(1.50)(2.56)(2.67)(4.10)
PART 6 (11.87)(16.93)(17.37)

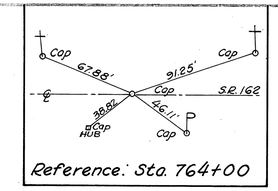


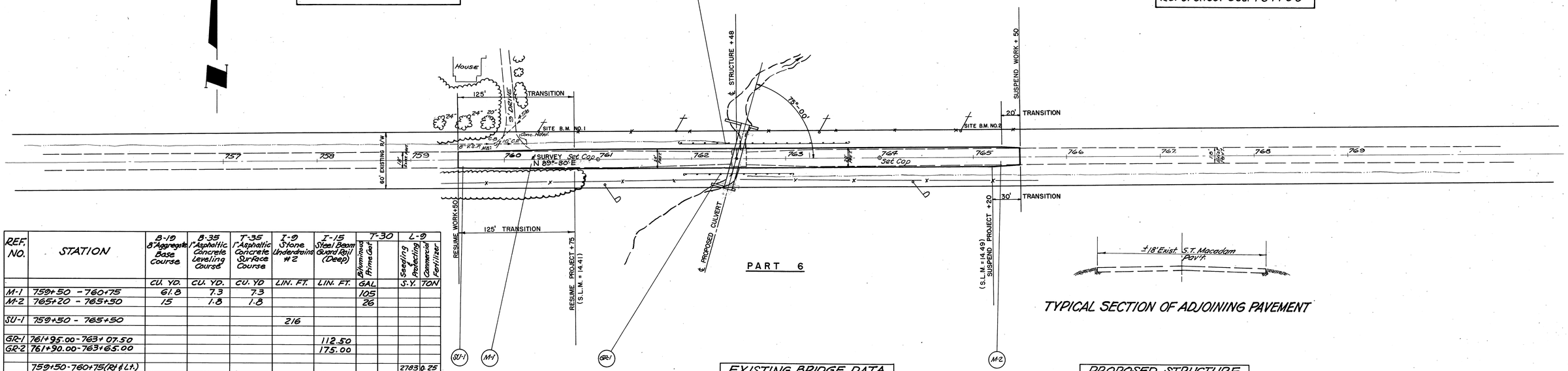
SITE BENCH MARK NO. 1

SPIKE IN S. FACE OF POLE, STA. 760+36.7, 29' LEFT.
ELEV. 959.25

SITE BENCH MARK NO. 2

SPIKE IN S. FACE OF POLE, STA. 764+87.2, 27.3' LEFT.
ELEV. 954.74



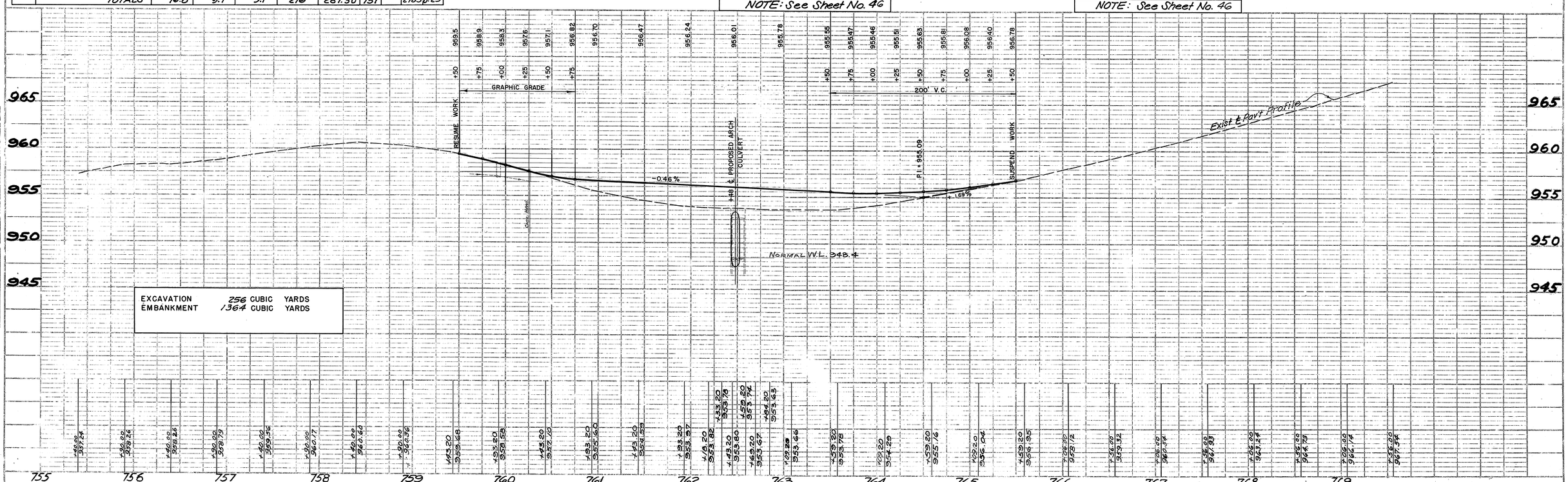


REF. NO.	STATION	B-19 8" Aggregate Base Course	B-35 1" Asphaltic Concrete Leveling Course	T-35 1" Asphaltic Concrete Surface Course	I-9 Stone Underdrains #2	I-15 Steel Beam Guard Rail (Deep)	T-30 Bituminous Prime Coat		L-9 Seeding & Protecting	Commercial Fertilizer
		CU. YD.	CU. YD.	CU. YD	LIN. FT.	LIN. FT.	GAL		S.Y.	TON
M-1	759+50 - 760+75	61.8	7.3	7.3			105			
M-2	765+20 - 765+50	15	1.8	1.8			26			
SU-1	759+50 - 765+50				216					
GR-1	761+95.00 - 763+07.50					112.50				
GR-2	761+90.00 - 763+65.00					175.00				
	759+50 - 760+75 (Rt & Lt.)								2783	0.25
	TOTALS	76.8	9.1	9.1	216	287.50	131		2783	0.25

TYPICAL SECTION OF ADJOINING PAVEMENT

EXISTING BRIDGE DATA
NOTE: See Sheet No. 46

PROPOSED STRUCTURE
NOTE: See Sheet No. 46



EXCAVATION	256	CUBIC YARDS
EMBANKMENT	1364	CUBIC YARDS

6035-6

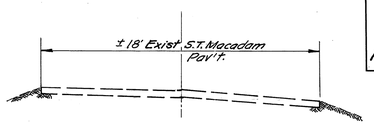
S.R. 162 STA 755+50 TO 769+56

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

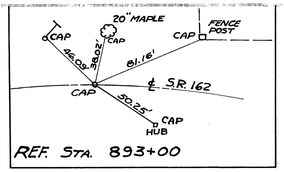
11/80

SEC. HUR.- 162-(16.93)(1.50)(2.56)(2.67)(4.10)
PART 7 (11.87)(14.41)(17.37)

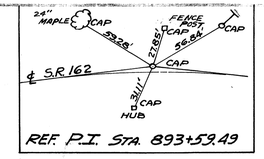
MICROFILMED
DEC 19 1986

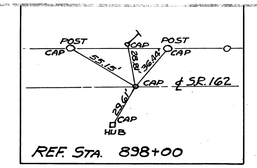


TYPICAL SECTION OF ADJOINING PAVEMENT

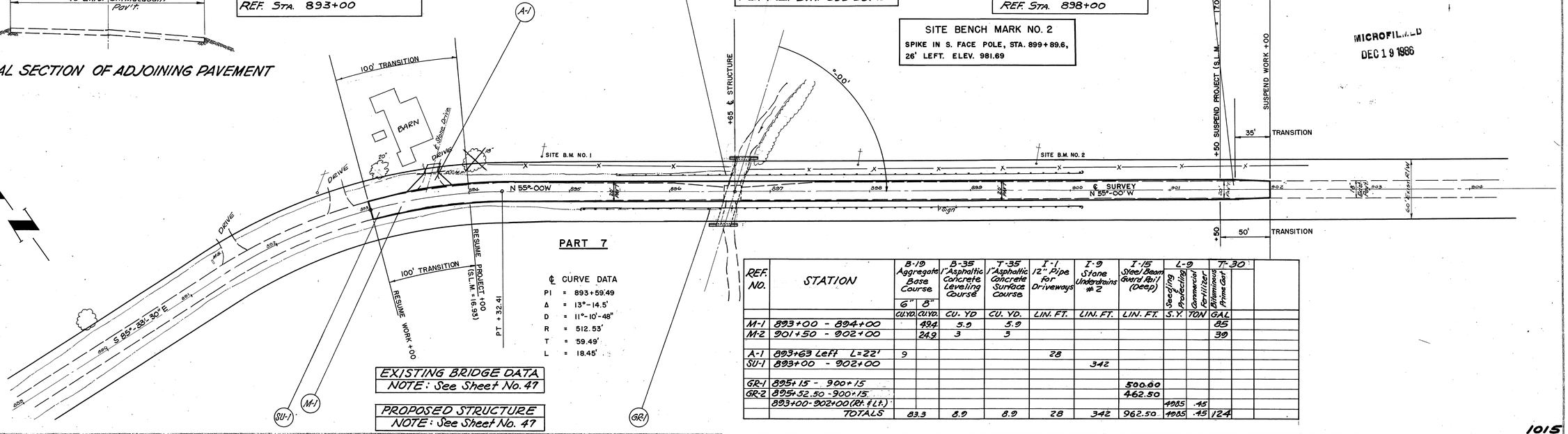


SITE BENCH MARK NO. 1
SPIKE IN S. FACE POLE, STA. 894+78.4, 40' LEFT. ELEV. 981.69





SITE BENCH MARK NO. 2
SPIKE IN S. FACE POLE, STA. 899+89.6, 26' LEFT. ELEV. 981.69



PART 7

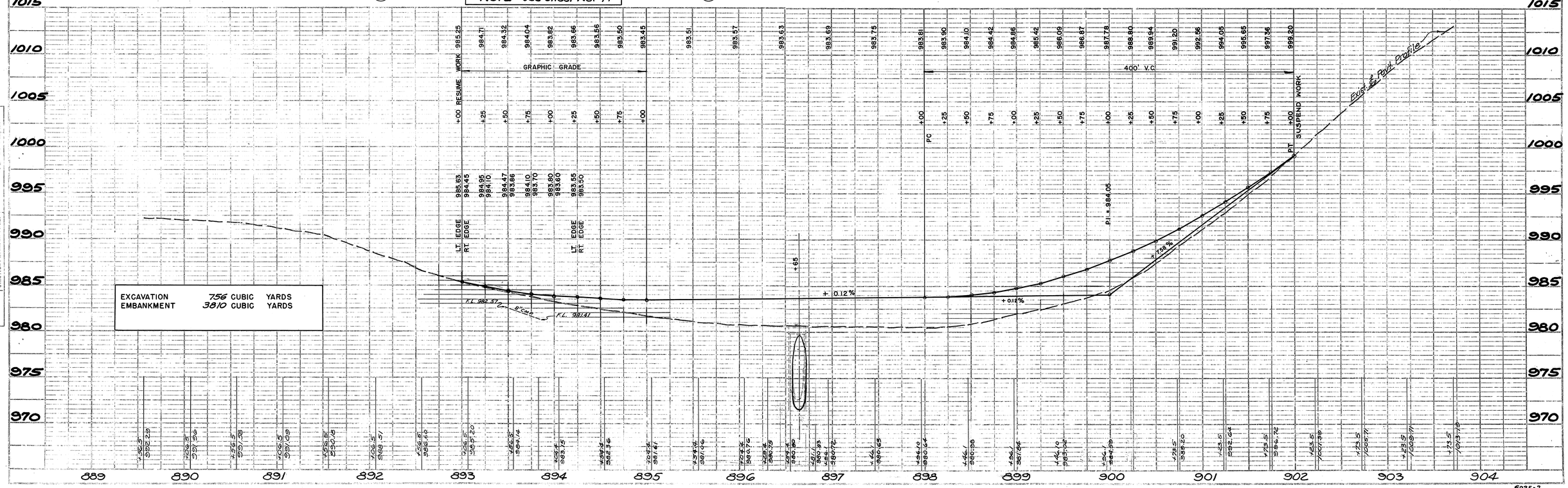
℄ CURVE DATA

PI = 893+59.49
Δ = 13°-14.5'
D = 11°-10'-48"
R = 512.53'
T = 59.49'
L = 18.45'

EXISTING BRIDGE DATA
NOTE: See Sheet No. 47

PROPOSED STRUCTURE
NOTE: See Sheet No. 47

REF. NO.	STATION	B-19 Aggregate Base Course 6"	B-19 Aggregate Base Course 8"	B-35 1" Asphaltic Concrete Leveling Course	T-35 1" Asphaltic Concrete Surface Course	I-1 12" Pipe for Driveways	I-9 Stone Underdrains #2	I-15 Steel Beam Guard Rail (Deep)	L-9 Seeding Protecting	L-9 Commercial Fertilizer	T-30 Bituminous Prime Coat	
		CU.YD.	CU.YD.	CU. YD	CU. YD.	LIN. FT.	LIN. FT.	LIN. FT.	S.Y.	TON	GAL	
M-1	893+00 - 894+00		49.4	5.9	5.9						85	
M-2	901+50 - 902+00		24.9	3	3						39	
A-1	893+63 Left L=22'	9				28						
SU-1	893+00 - 902+00						342					
GR-1	895+15 - 900+15							500.60				
GR-2	895+52.50 - 900+15							462.50				
	893+00-902+00 (Rt. & Lt.)								4985	.45		
	TOTALS	83.3		8.9	8.9	28	342	962.50	4985	.45	124	



S.R. 162 STA. 889+00 TO 904+00

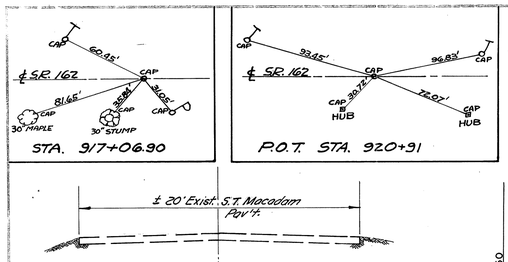
6035-7

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

12/80

SEC. HUR.-162-(17.37)(1.50)(2.56)(2.67)(4.10)(11.87)(14.41)(16.93)
PART 8

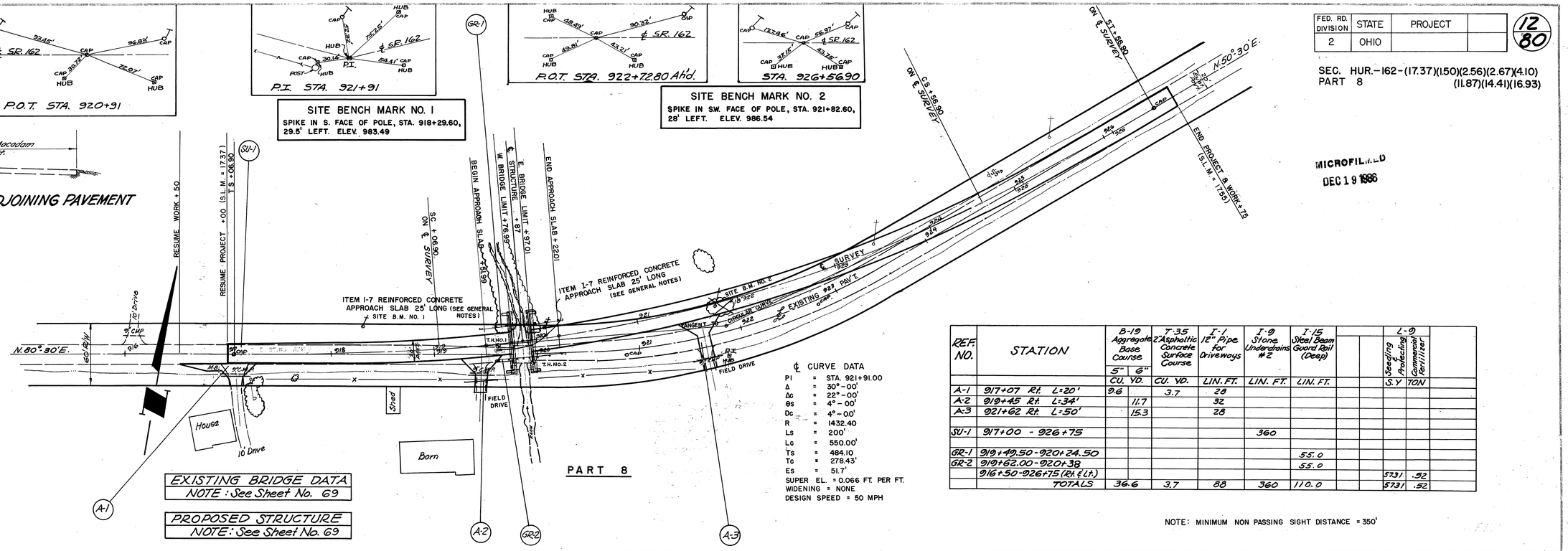
MICROFILMED
DEC 19 1986



SITE BENCH MARK NO. 1
SPIKE IN S. FACE OF POLE, STA. 918+29.60, 29.5' LEFT. ELEV. 983.49

SITE BENCH MARK NO. 2
SPIKE IN SW. FACE OF POLE, STA. 921+82.60, 28' LEFT. ELEV. 986.54

TYPICAL SECTION OF ADJOINING PAVEMENT



EXISTING BRIDGE DATA
NOTE: See Sheet No. 69

PROPOSED STRUCTURE
NOTE: See Sheet No. 69

PART 8

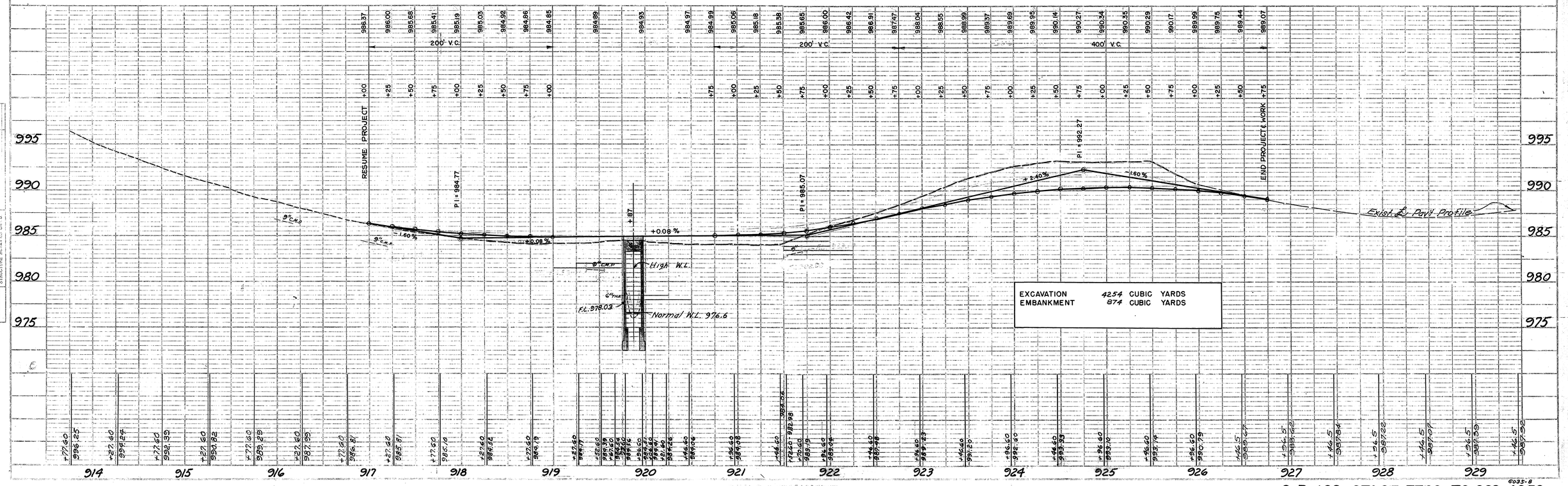
℄ CURVE DATA

PI	=	STA. 921+91.00
Δ	=	30°-00'
Δc	=	22°-00'
θs	=	4°-00'
Dc	=	4°-00'
R	=	1432.40
Ls	=	200'
Lc	=	550.00'
Ts	=	484.10
Tc	=	278.43'
Es	=	51.7'

SUPER EL. = 0.066 FT. PER FT.
WIDENING = NONE
DESIGN SPEED = 50 MPH

REF. NO.	STATION	B-19 Aggregate Base Course 5" CU. YD.	B-19 Aggregate Base Course 6" YD.	T-35 Asphaltic Concrete Surface Course CU. YD.	I-1 12" Pipe for Driveways LIN. FT.	I-9 Stone Underdrains #2 LIN. FT.	I-15 Steel Beam Guard Rail (Deep) LIN. FT.			L-9 Seeding & Protecting S.Y.	L-9 Commercial Fertilizer TON	
A-1	917+07 Rt. L=20'	9.6		3.7	28							
A-2	919+45 Rt. L=34'		11.7		32							
A-3	921+62 Rt. L=50'		15.3		28							
SU-1	917+00 - 926+75					360						
GR-1	919+49.50-920+24.50						55.0					
GR-2	919+62.00-920+38						55.0					
	916+50-926+75 (Rt. & Lt.)									5731	.52	
	TOTALS	36.6		3.7	88	360	110.0			5731	.52	

NOTE: MINIMUM NON PASSING SIGHT DISTANCE = 350'



EXCAVATION	4254	CUBIC YARDS
EMBANKMENT	874	CUBIC YARDS

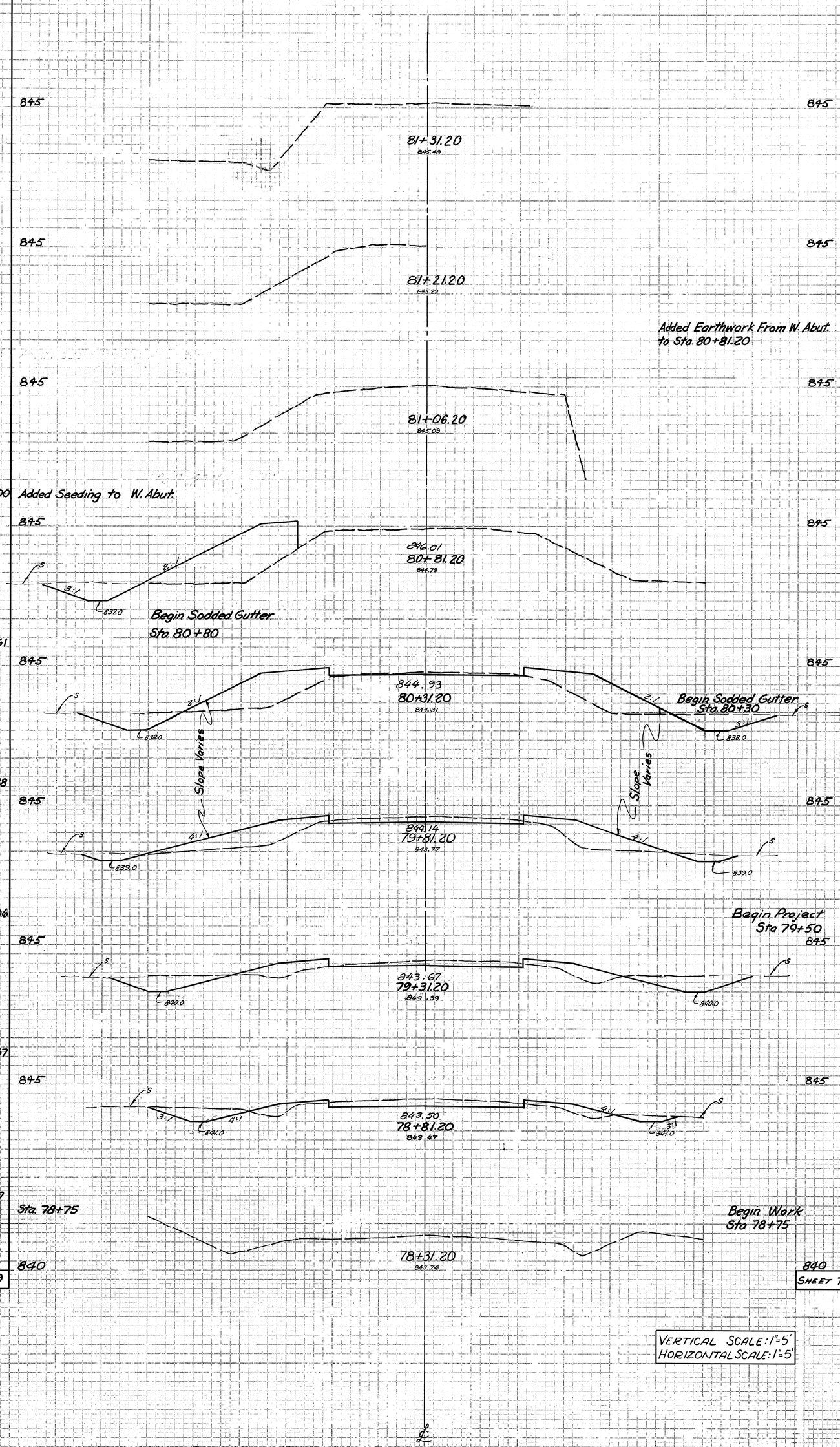
PLAN — SURVEYED / PLOTTED / GRADES CHECKED / R.O.W. CHECKED / STRUCTURE DETAILS WITH R.O.W. CHECKED — NOTE BOOK NO. — BY — DATE

PROFILE — SURVEYED / PLOTTED / GRADES CHECKED / STRUCTURE DETAILS WITH — NOTE BOOK NO. — BY — DATE

6035-8

S. R. 162 - STA. 913+77.60 TO 929+46.50

Seeding L.F.	Seeding S.Y.	End Area Cu. Yds. Cut	End Area Cu. Yds. Fill	Cut	Fill
				3	10
	200				
32		12	57		
				31	115
	261				
62		22	67		
	328			36	107
56		17	49		
	306			47	63
54		34	19		
	267			56	28
42		26	11		
	117			37	10
0		14	0		
14.79		Sheet Total		210	333



VERTICAL SCALE: 1"=5'
HORIZONTAL SCALE: 1"=5'

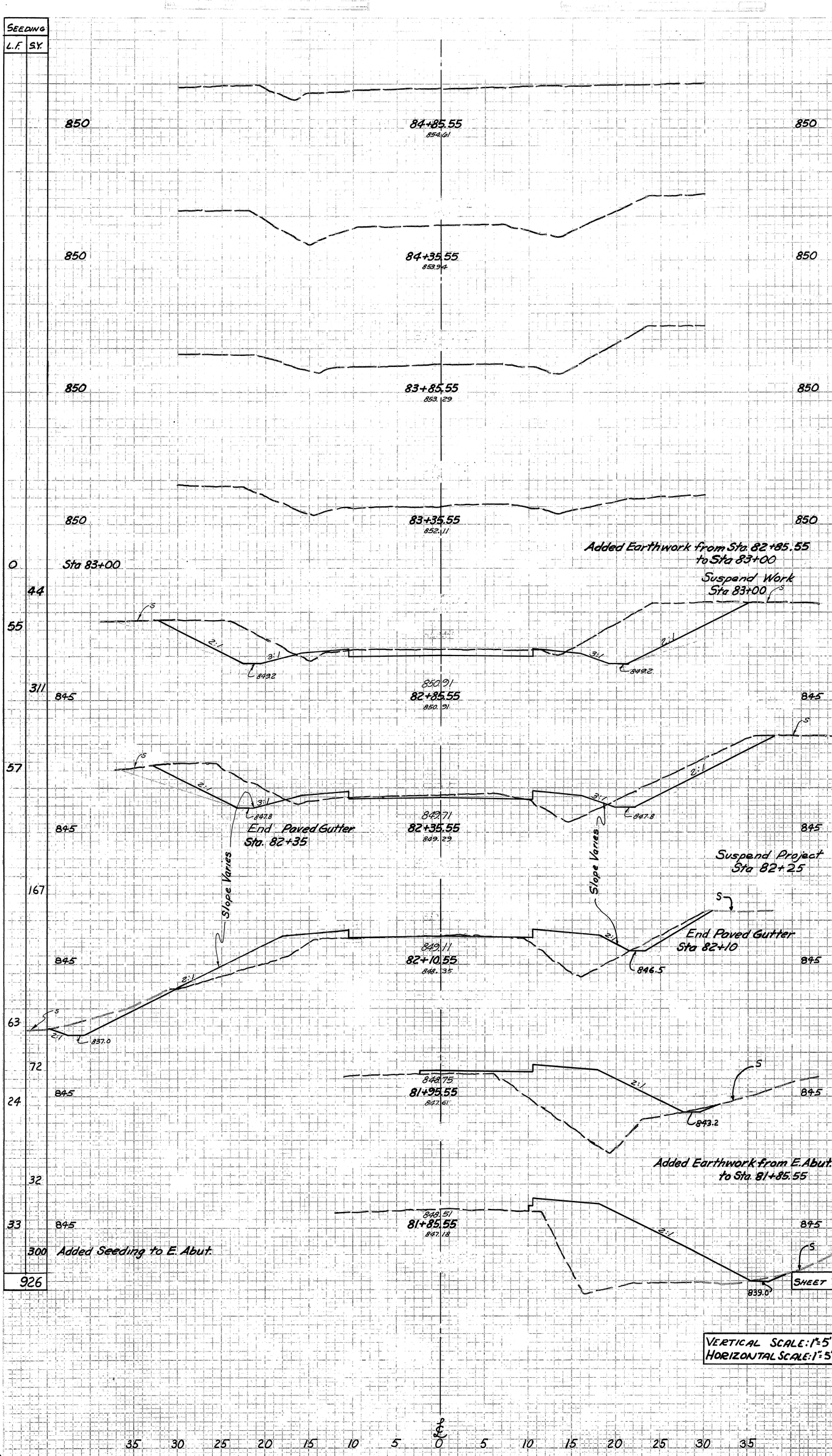
S.R. 162 - STA. 78+31.20 TO 81+31.20

SEC. HUR.-162-(01.50)(2.56)(2.67)(4.10)(11.87)
PART I
(14.4)(16.93)(17.37)

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

13/80

6035-1


SEEDING
L.F. S.Y.
END AREA CU. YDS.
CUT FILL CUT FILL
850
84+85.55
854.61
84+35.55
853.94
83+85.55
853.29
83+35.55
852.11
Added Earthwork from Sta. 82+85.55 to Sta 83+00
16 0
Sta 83+00
36 1
Suspend Work Sta 83+00
119 4
850.91
82+85.55
850.91
172 24
845
67 22
849.71
82+35.55
849.29
End Paved Gutter Sta. 82+35
Slope Varies
Suspend Project Sta 82+25
40 38
19 61
End Paved Gutter Sta 82+10
849.11
82+10.55
848.35
846.5
837.0
6 45
848.75
81+95.55
847.61
843.2
1 101
Added Earthwork from E. Abut. to Sta. 81+85.55
0 60
0 43
849.51
81+85.55
847.18
Added Seeding to E. Abut.
1 132
839.0
SHEET TOTAL 254 211
926
VERTICAL SCALE: 1"=5'
HORIZONTAL SCALE: 1"=5'
35 30 25 20 15 10 5 0 5 10 15 20 25 30 35
S.R. 162 - STA. 81+85.55 TO 84+85.55
SEC. HUR-162-(0.50)(2.56)(2.67)(4.10)(11.87)
PART I
(14.41)(16.93)(17.37)
FED. RD. DIVISION 2
STATE OHIO
PROJECT
14
80

Seeding L.F.	Seeding S.Y.		End Area Cu. Yds. Cut	End Area Cu. Yds. Fill	Cut	Fill
		Add for West Abutment			4	8
	400	Added Seeding to West Abut.				
26		850	19	24		
		848.50 135+69.6 848.28				
					10	11
	34	850	33	36		
36		848.54 135+59.6 848.30				
	66				21	17
43		850	43	26		
		848.61 135+44.6 848.44				
	115				39	25
		Resume Project Sta 135+25				
40		850	41	28		
		848.75 135+19.6 848.62				
	231				88	42
43		850	54	17		
		849.14 134+69.6 848.13				
	69				25	6
20		Resume Work Sta. 134+50	15	0		
		850 134+19.6 849.78				
		850 133+69.6 850.48				
		850 133+19.6 851.22				
		850 132+69.6 851.96				
	945		Sheet Total		187	110

Slope Varies

Vertical Scale: 1" = 5'
Horizontal Scale: 1" = 5'

SEC. HUR-162-(02.56)(1.50)(2.67)(4.10)(1.87)
PART 2 (14.41)(16.93)(7.37)

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

15/80

S.R. 162-STA. 132+69.6 TO 135+69.6

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

16
80

SEC. HUR.-162-(02.56)(1.50)(2.67)(4.10)(11.87)
PART 2 (14.41)(16.93)(17.37)

VERTICAL SCALE: 1"=5'
HORIZONTAL SCALE: 1"=5'

| | | |

Seeding L.F.	Seeding S.Y.		End Area Cut	End Area Fill	Cu. Yds. Cut	Cu. Yds. Fill
46		Sta 143+28.30 — Sta 143+28.30	29	94		
	96				19	68
43		850 — 848.71 — 143+08.80 (848.79) — 850	25	95		
					10	25
		850 — 848.67 — 142+98.80 (848.62) — 850	31	40		
	35	Added Seeding, S. Abut. To Sta. 142+98.80 — Added Earthwork from S. Abut. To Sta. 142+98.80			6	8
		850 — 142+83.80 (848.35) — 850				
	63	Added Seeding, Sta. 142+58.80 To N. Abut. — Added Earthwork from Sta 142+58.80 To N. Abut.			6	25
35		850 — 848.51 — 142+58.80 (847.99) — 850	15	57		
	186				31	88
		Slope Varies — Slope Varies				
32		850 — 848.39 — 142+08.80 (848.00) — 850	18	38		
	219				58	56
		Slope Varies — Slope Varies				
47		850 — 848.53 — 141+58.80 (848.13) — 850	45	23		
	283				119	37
55		850 — 848.91 — 141+08.80 (848.56) — 850	84	17		
	314	Resume Project Sta 140+80			171	25
58		850 — 849.53 — 140+58.80 (849.46) — 850	101	10		
	38				20	2
20		Resume Work Sta 140+50 — Resume Work Sta 140+50	24	0		
		850 — 140+08.80 (850.65) — 850				
1234			Sheet Total		440	334

Vertical Scale: 1"=5'
Horizontal Scale: 1"=5'

35 30 25 20 15 10 5 0 5 10 15 20 25 30 35

S.R. 162 - STA. 140+08.80 TO 143+08.80

SEC. HUR-162-(02.67)(1.50)(2.56)(4.10)(11.87)
PART 3 (14.41)(16.93)(17.37)

Fed. Division	Fed. Rd.	State	Project
2		OHIO	

17/80

6635-3

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

18
80

SEC. HUR.-162-(02.67)(1.50)(2.56)(4.10)(11.87)(14.41)(16.93)(17.37)
PART 3

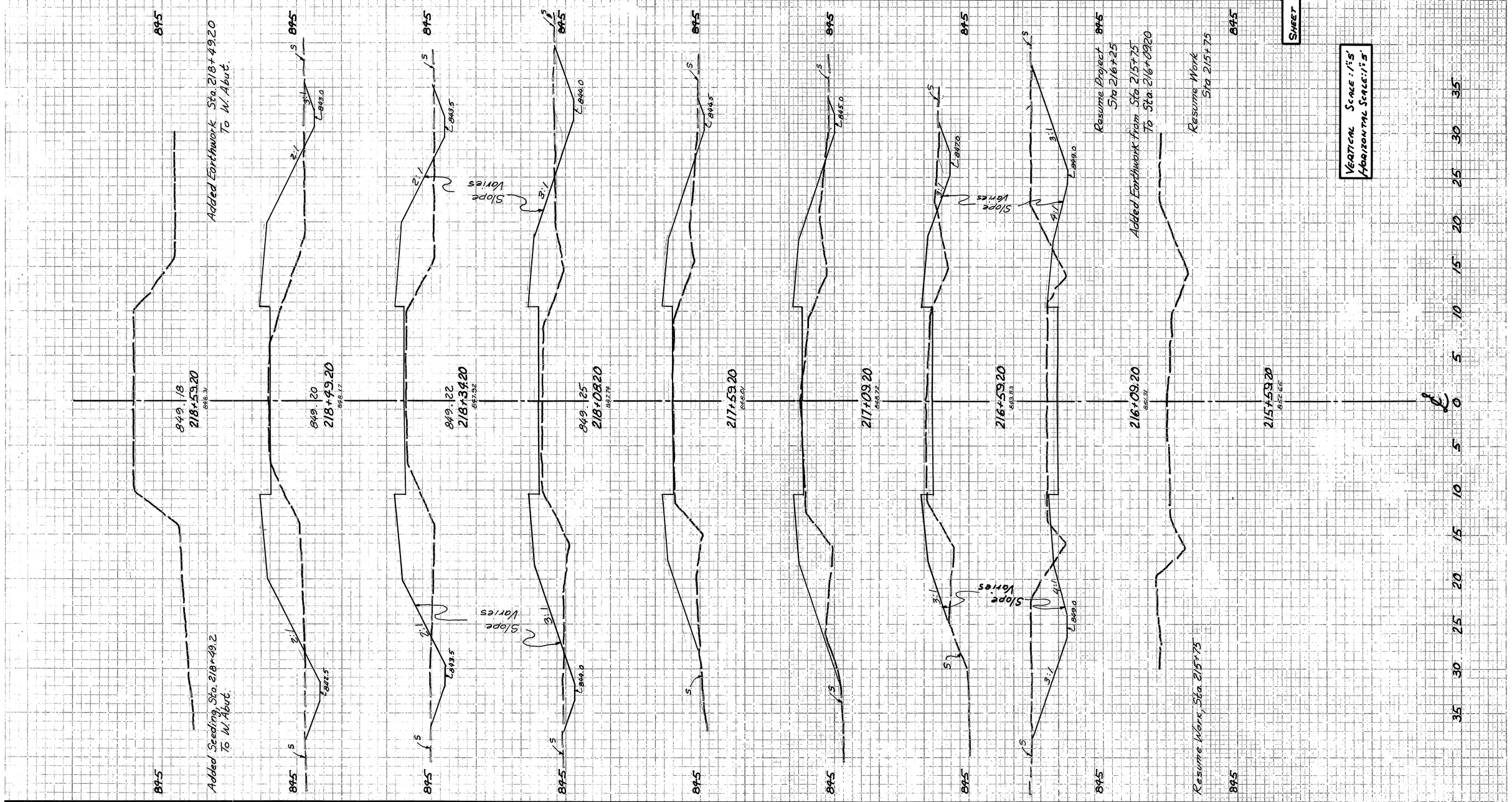
| | | |

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

19
80

SEC. HUR.-162-(04.10)(1.50)(2.56)(2.67)(11.87)
PART 4 (14.41)(16.93)(17.37)

	Cu. Yds. Cut	Cu. Yds. Fill	End Area Cut	End Area Fill
	6	16	19	107
	10	57	16	97
	21	86	28	81
	29	138	4	71
	7	134	4	74
	23	107	21	42
	131	47	120	9
	94	6	28	0
Sheet Total	321	591		

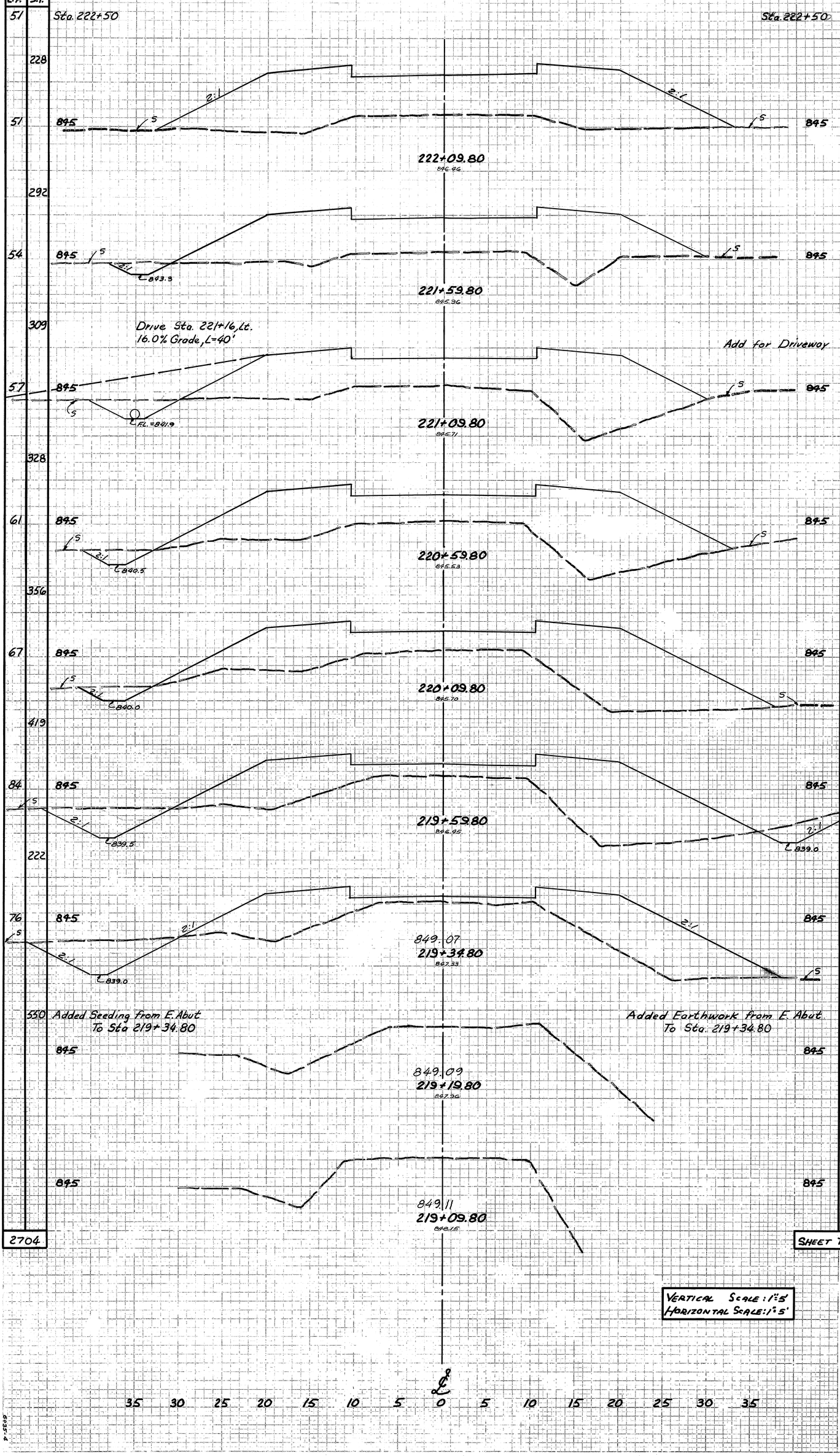


Seeding	L.F.	S.Y.
	61	100
	58	99
	63	175
	48	302
	49	269
	42	253
	60	283
	20	152
	1693	

6035-4

S.R. 162 - STA. 215+59.20 TO 218+59.20

SEEDING L.F.	SEEDING S.Y.		END AREA CUT	END AREA FILL	CU. YDS. CUT	CU. YDS. FILL
51		Sta. 222+50	0	304		
	228				0	452
51		222+09.80 (846.96)	0	303		
	292				6	517
54		221+59.80 (845.96)	7	255		
	309	Drive Sta. 221+16, Lt. 16.0% Grade, L=40'			6	479
				Add for Driveway		30
57		221+09.80 (845.71)	0	262		
	328				7	506
61		220+59.80 (845.53)	8	285		
	356				15	519
67		220+09.80 (845.70)	8	275		
	419				49	486
84		219+59.80 (846.95)	45	250		
	222				38	208
76		849.07 219+34.80 (847.33)	38	200		
	550	Added Seeding from E. Abut. To Sta 219+34.80		Added Earthwork from E. Abut. To Sta. 219+34.80	30	75
		849.09 219+19.80 (847.96)				
		849.11 219+09.80 (848.15)				
2704				SHEET TOTAL	151	3272



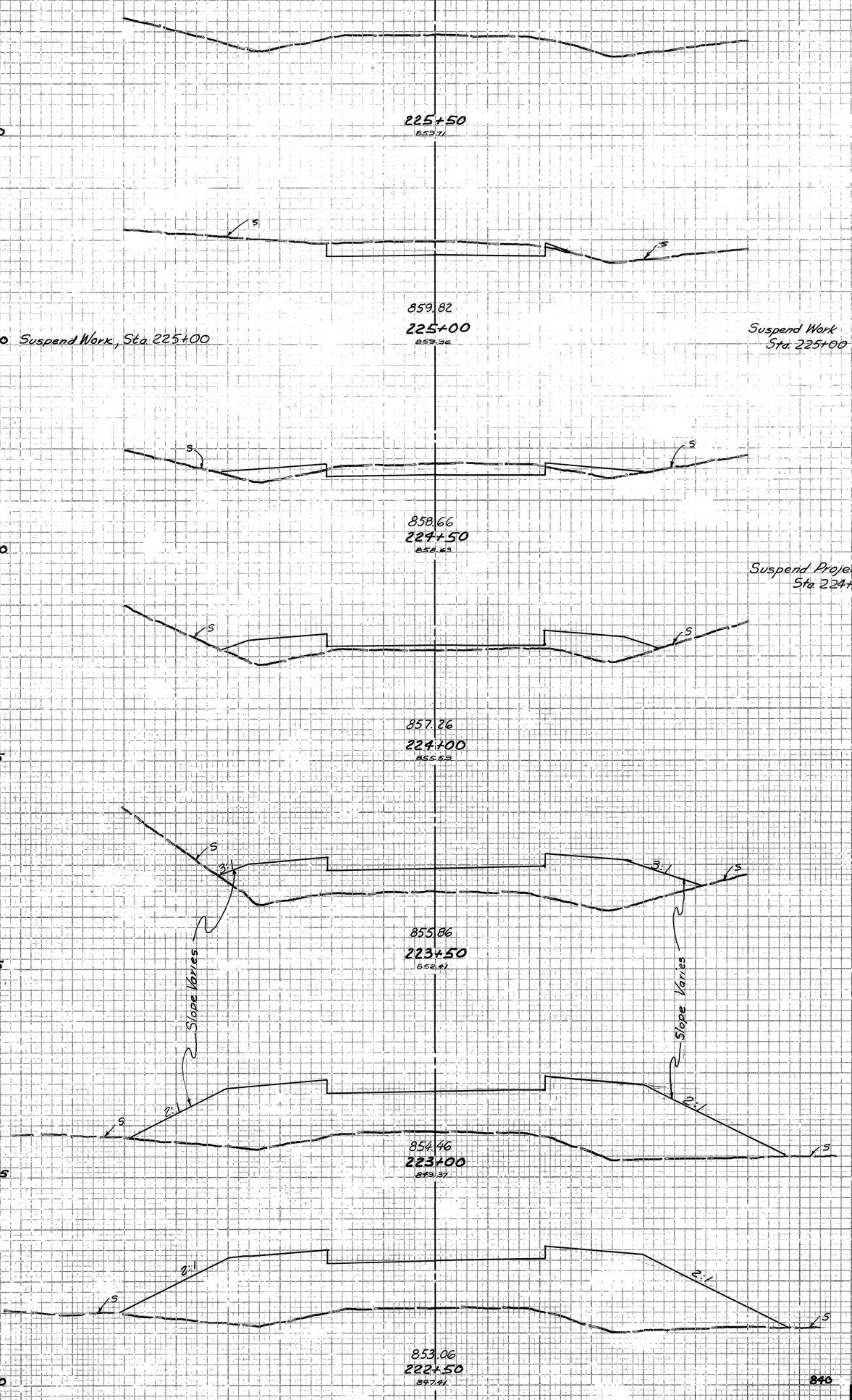
VERTICAL SCALE: 1"=5'
HORIZONTAL SCALE: 1"=5'

SEC. HUR-162-(04.10)(1.50)(2.56)(2.67)(1.87)
PART 4 (14.41)(16.93)(17.37)

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

S.R. 162-STA. 219+09.80 TO 222+09.80

Seeding L.F.	Seeding S.Y.			End Area Cut	End Area Fill	Cu Yds Cut	Cu Yds Fill
		850	225+50 (859.71)				
20		850 Suspend Work, Sta 225+00	859.82 225+00 (859.96)	850	28 0		
	122					47	14
24		850	858.66 224+50 (858.63)	850	23 15		
	139					21	57
26		845	857.26 224+00 (855.59)	845	0 47		
	158					0	167
31		845	855.86 223+50 (852.41)	845	0 133		
	225					0	387
50		845	854.46 223+00 (849.37)	845	0 285		
	281					0	545
51		840	853.06 222+50 (847.41)	840	0 304		
	925			Sheet Total		68	1170



Vertical Scale: 1" = 5'
Horizontal Scale: 1" = 5'

SEC. HUR-162-(04.10)(1.50)(2.56)(2.67)(11.87)(14.41)(16.93)(17.37)
PART 4

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

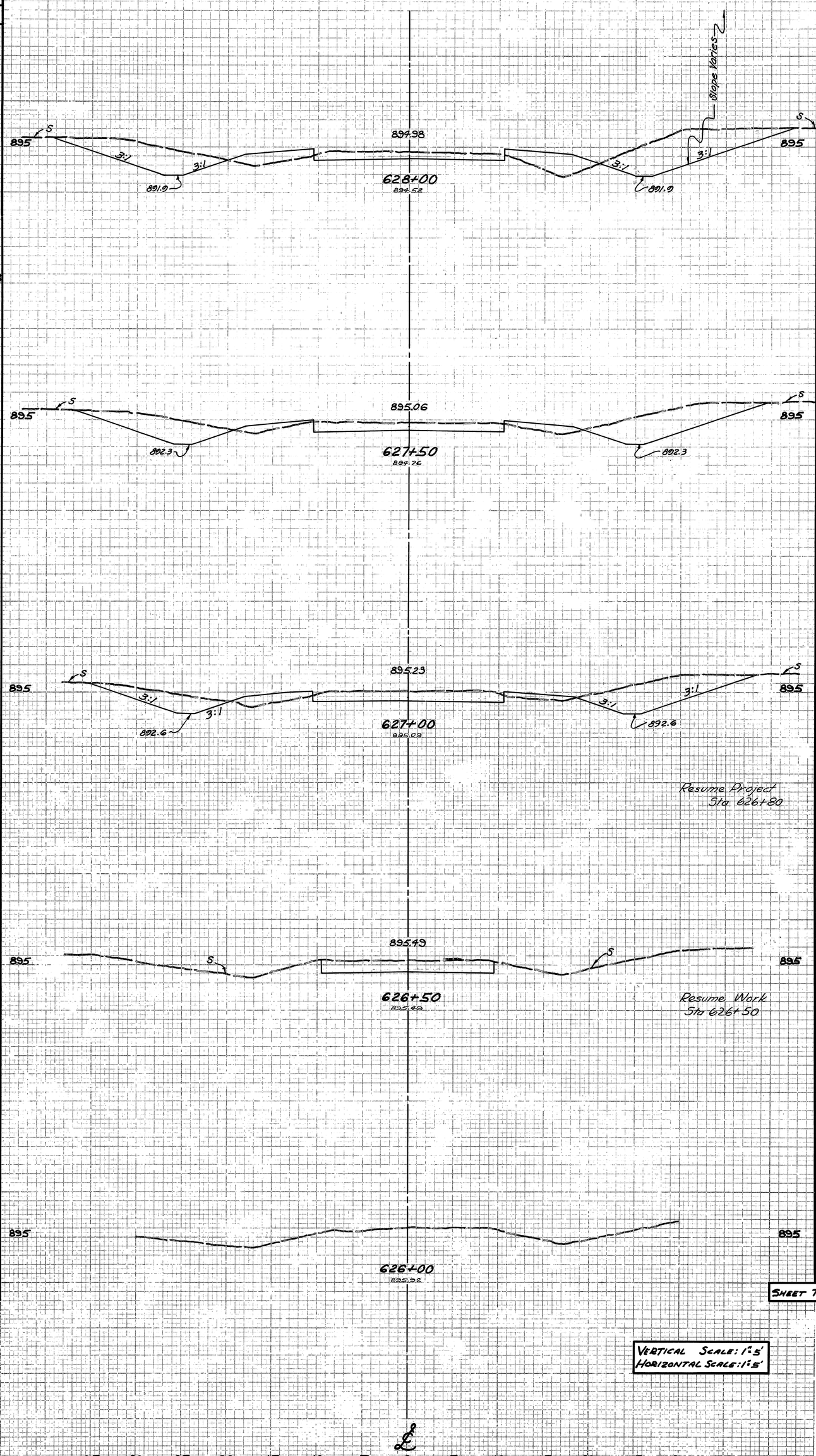
21/80

S.R 162-STA 222+50 TO 225+50

ORIGINAL SURVEY	
NOTE BOOK	SURVEYED
	PLOTTED
	TEMPLATE
	AREAS
	AREAS CHECKED

FINAL SURVEY	
NOTE BOOK	SURVEYED
	PLOTTED
	TEMPLATE
	AREAS
	AREAS CHECKED

SEEDING			END AREA		CU. YDS.	
L.F	S.Y.		CUT	FILL	CUT	FILL
67		628+00 (894.52)	100	27		
	358				174	35
62		627+50 (894.76)	88	11		
	330				150	21
60		627+00 (895.09)	84	12		
	222				102	11
20		626+50 (895.49)	26	0		
		626+00 (895.92)				
91.9			SHEET TOTAL		435	67



VERTICAL SCALE: 1" = 5'
HORIZONTAL SCALE: 1" = 5'

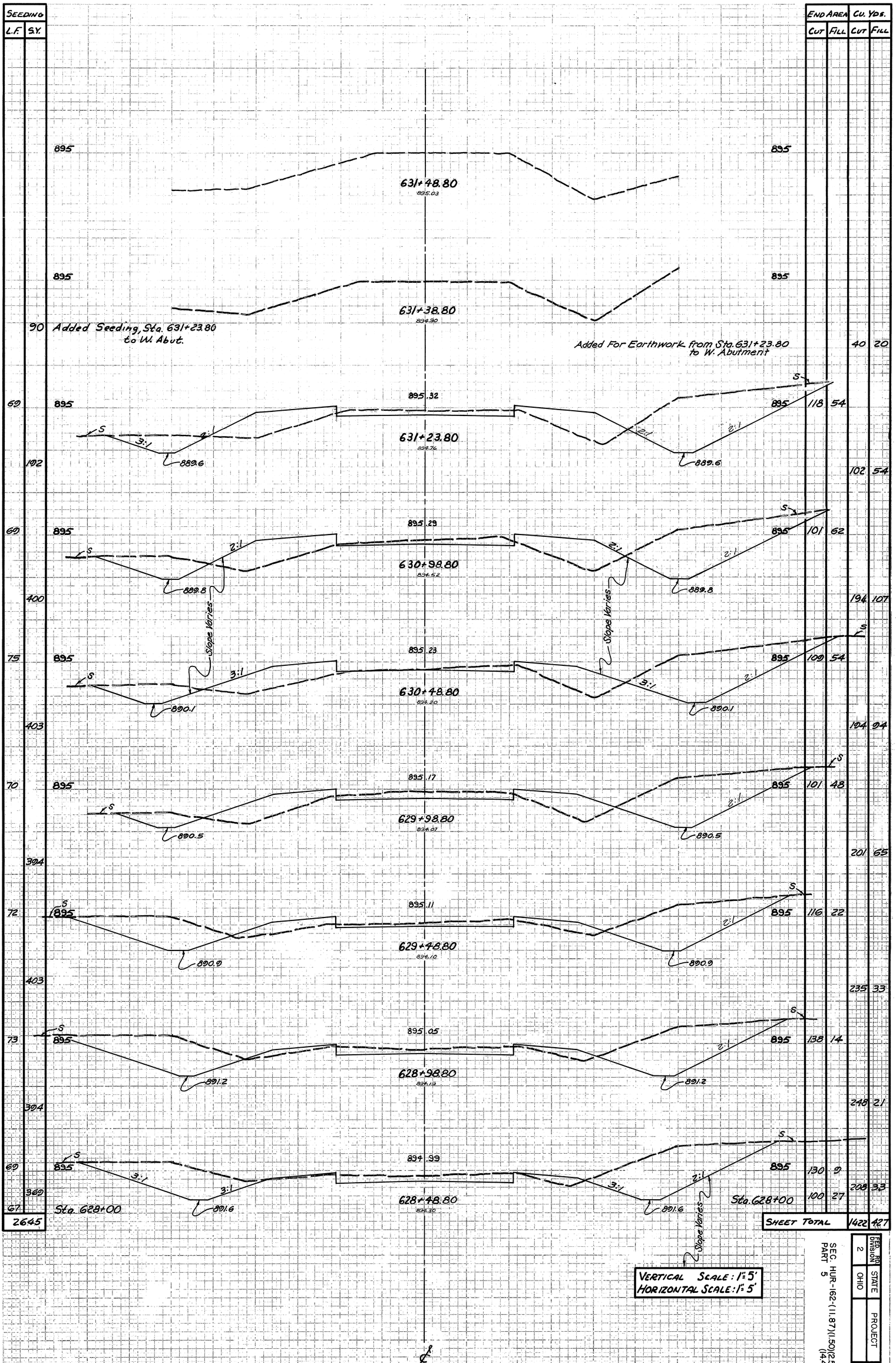
FED. DIVISION	STATE	PROJECT	
2	OHIO		

SEC. HUR-162-(11.87)(1.50)(2.56)(2.67)(14.10)
PART 5 (14.41)(16.93)(17.37)

22/80

6835-5

S.R. 162 - STA. 626+00 TO 628+00



S.R. 162-STA. 628+48.80 TO 631+48.80

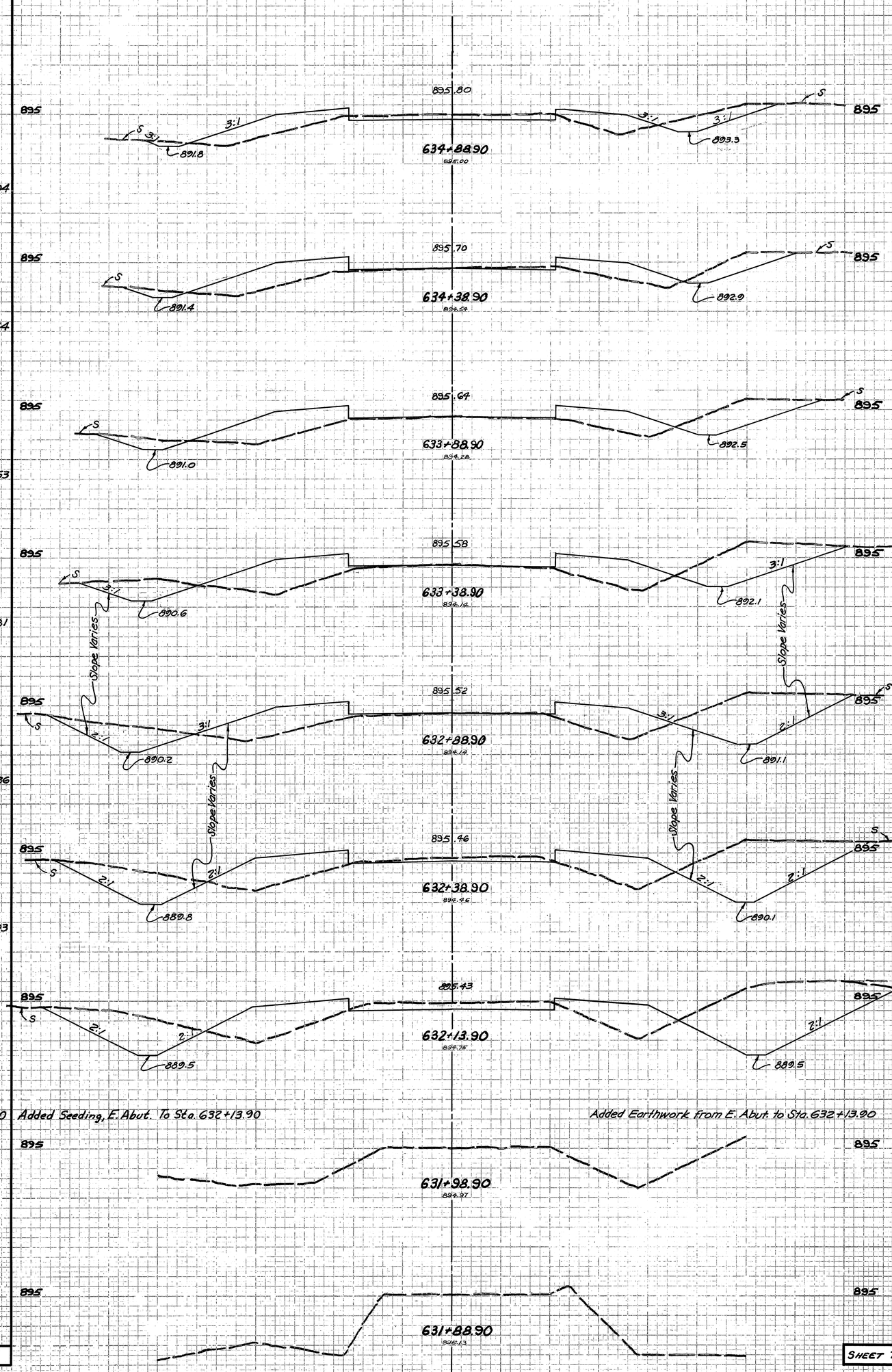
SEC. HUR-162-(11.87)(1.50)(2.56)(2.67)(4.10)
PART 5
(14.41)(16.93)(17.37)

FED. DIVISION	STATE	PROJECT
2	OHIO	

23
80

8-11-60

Seeding L.F.	Seeding S.Y.		End Area Cut	End Area Fill	Cu. Yds. Cut	Cu. Yds. Fill
52		634+88.90 (895.80)	28	36		
	204				43	76
54		634+38.90 (895.70)	18	46		
	314				44	02
50		633+88.90 (895.64)	30	53		
	353				83	99
68		633+38.90 (895.58)	60	54		
	381				124	104
60		632+88.90 (895.52)	74	58		
	386				163	107
70		632+38.90 (895.46)	102	58		
	203				112	54
76		632+13.90 (895.43)	141	50		
	70	Added Seeding, E. Abut. To Sta. 632+13.90	Added Earthwork from E. Abut. to Sta. 632+13.90		35	15
		631+98.90 (894.97)				
		631+88.90 (896.13)				
	2001		Sheet Total		604	547



Vertical Scale: 1" = 5'
Horizontal Scale: 1" = 5'

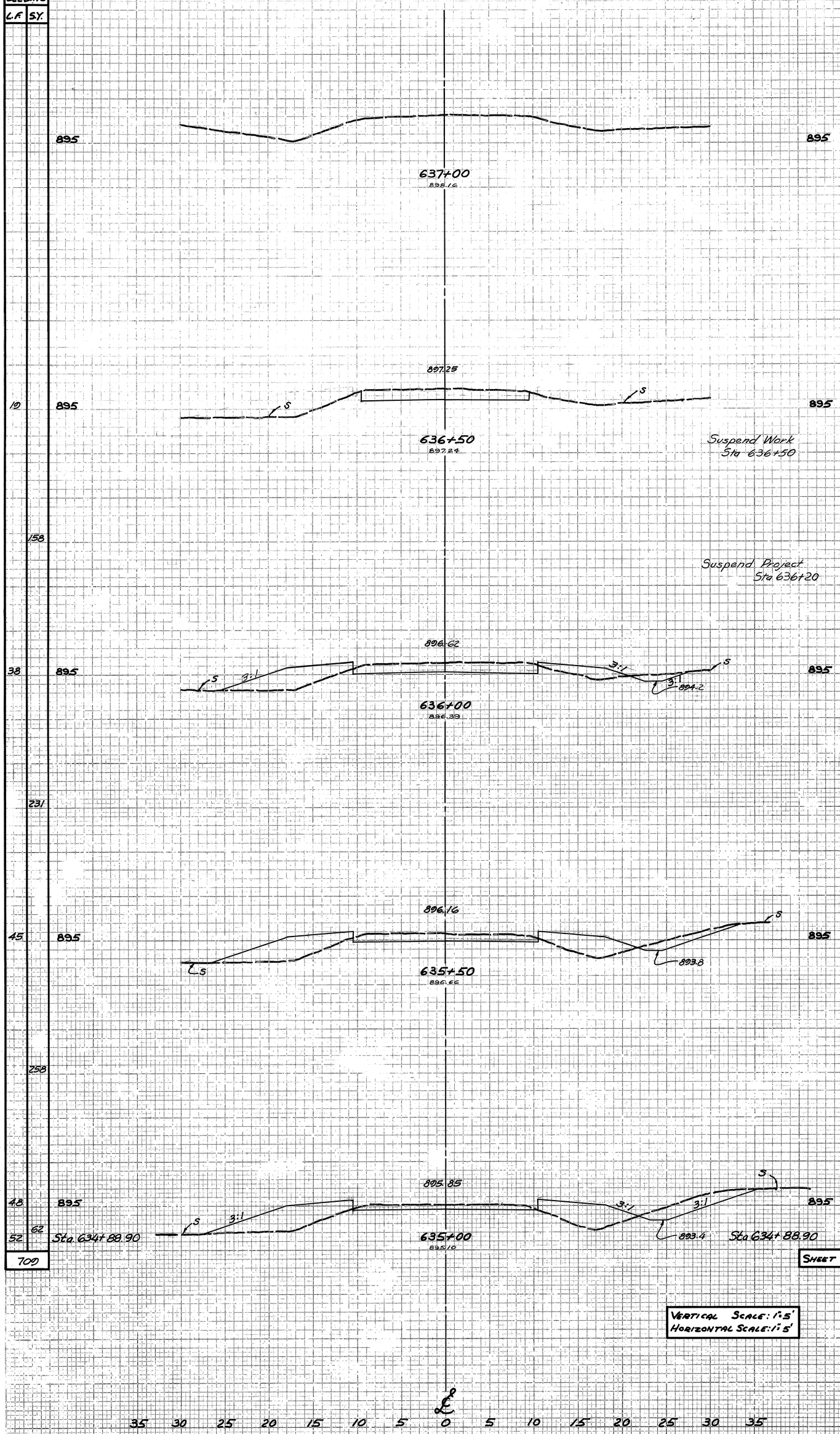
S.R. 162 - STA. 631+88.90 TO 634+88.90

SEC. HUR-162-(11.87)(.50)(2.56)(2.67)(4.10)
PART 5 ((14.41)(6.93)(17.37)

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

24
80

Seeding L.F.	Seeding S.Y.		End Area Cut	End Area Fill	Cu. Yds. Cut	Cu. Yds. Fill
		637+00 (898.16)				
10		636+50 (897.24)	23	0		
	158				45	30
38		636+00 (896.39)	26	32		
	231				48	70
45		635+50 (896.66)	26	44		
	258				46	00
48		635+00 (895.10)	24	53		
52	62	Sta. 634+88.90	28	36	11	13
	700		Sheet Total		150	208



S.R. 162 - STA. 635+00 TO 637+00

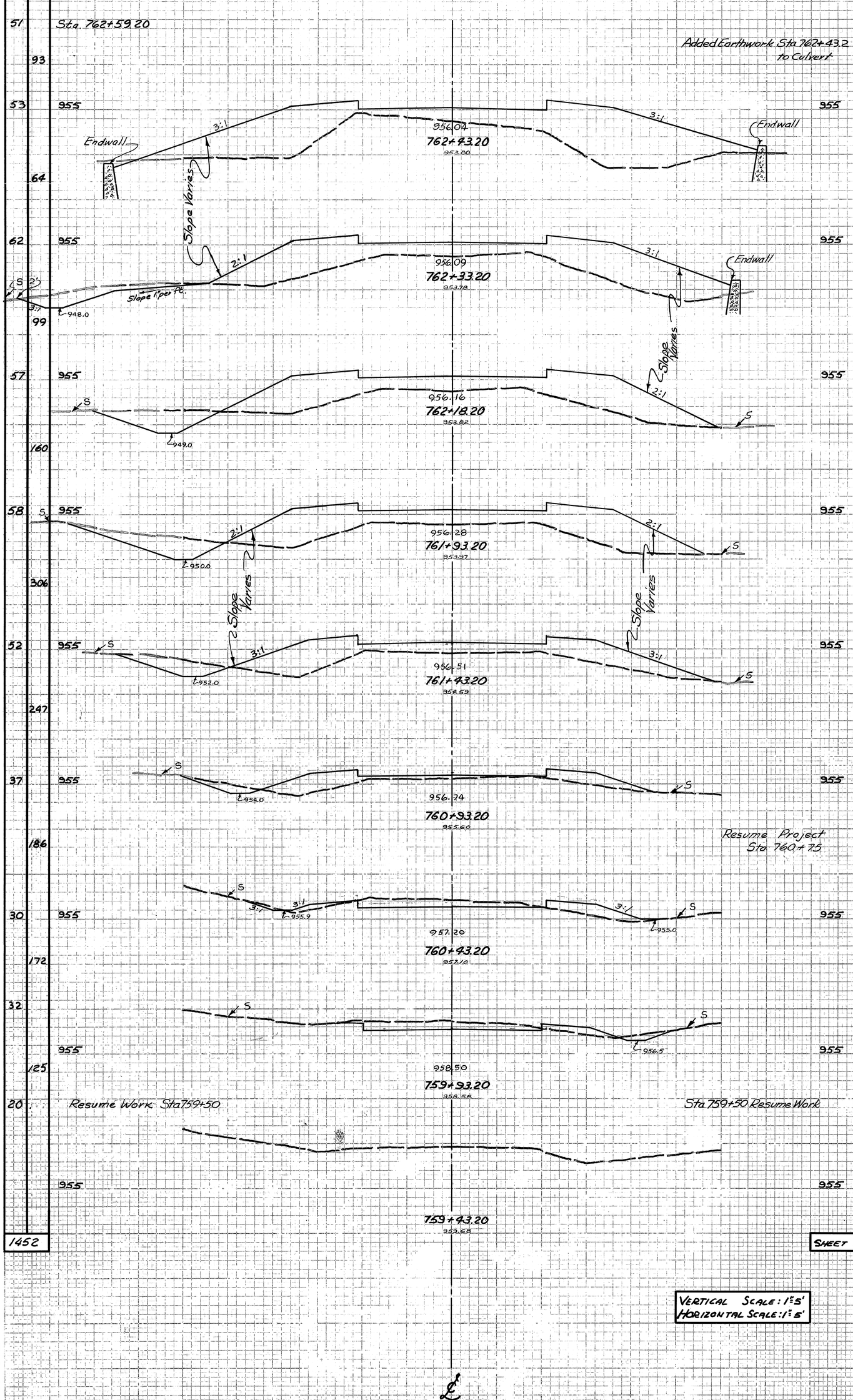
Fed. Rd. Division	State	Project
2	Ohio	

SEC. HUR-162-(11.87)(1.50)(2.56)(2.67)(4.10)(4.41)(16.93)(17.37)
PART 5

25
80

6985-5

Seeding L.F.	Seeding S.Y.	Station	End Area Cut	End Area Fill	Cu. Yds. Cut	Cu. Yds. Fill
51		Sta. 762+59.20				
	93	Added Earthwork Sta 762+43.2 to Culvert				5
53		955	0	210		
	64				3	67
62		955	17	150		
	99				11	77
57		955	22	127		
	160				21	116
58		955	23	123		
	306				33	194
52		955	13	87		
	247				17	114
37		955	5	36		
	186	Resume Project Sta 760+75			19	46
30		955	16	14		
	172				31	18
32		955	17	5		
	125				26	4
20		Resume Work Sta 759+50 — Sta 759+50 Resume Work	15	0		
		955				
1452				SHEET TOTAL	161	641



VERTICAL SCALE: 1" = 5'
HORIZONTAL SCALE: 1" = 5'

SEC. HUR-162-(14.41)X(50)(2.56)(267)(4.10)
PART 6
(11.87)(6.93)X(7.37)

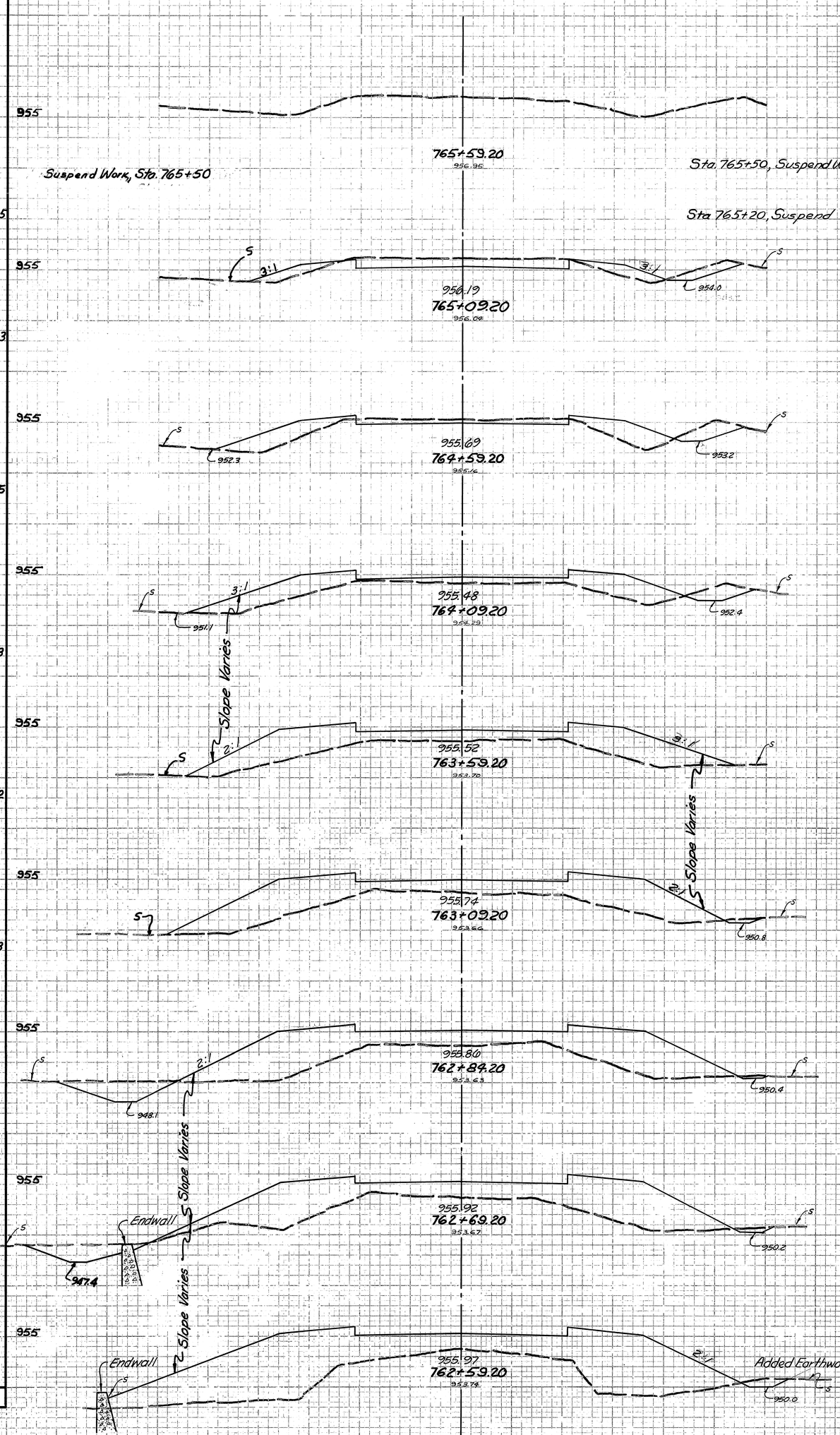
FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

26
60

S.R. 162 - STA. 759+43.20 TO 762+43.20

G038-6

Seeding L.F.	Seeding S.Y.	End Area Cut	End Area Fill	Cu. Yds. Cut	Cu. Yds. Fill
20		15	0		
	125			29	10
35		24	13		
	203			38	40
38		17	30		
	225			13	77
43		7	53		
	233			6	133
41		0	91		
	242			1	190
46		1	114		
	143			1	109
57		2	121		
	98			4	70
60		13	130		
	62			3	64
51		2	218		
					30
1331		Sheet Total		95	723



Vertical Scale: 1"=5'
Horizontal Scale: 1"=5'

S.R. 162 - STA. 762+59.20 TO 765+59.20

SEC. HUR-162-(14.41)(50)(2.56)(2.67)(4.10)
PART 6
(11.87)(16.93)(17.27)

Fed. Rd. Division	State	Project
2	OHIO	

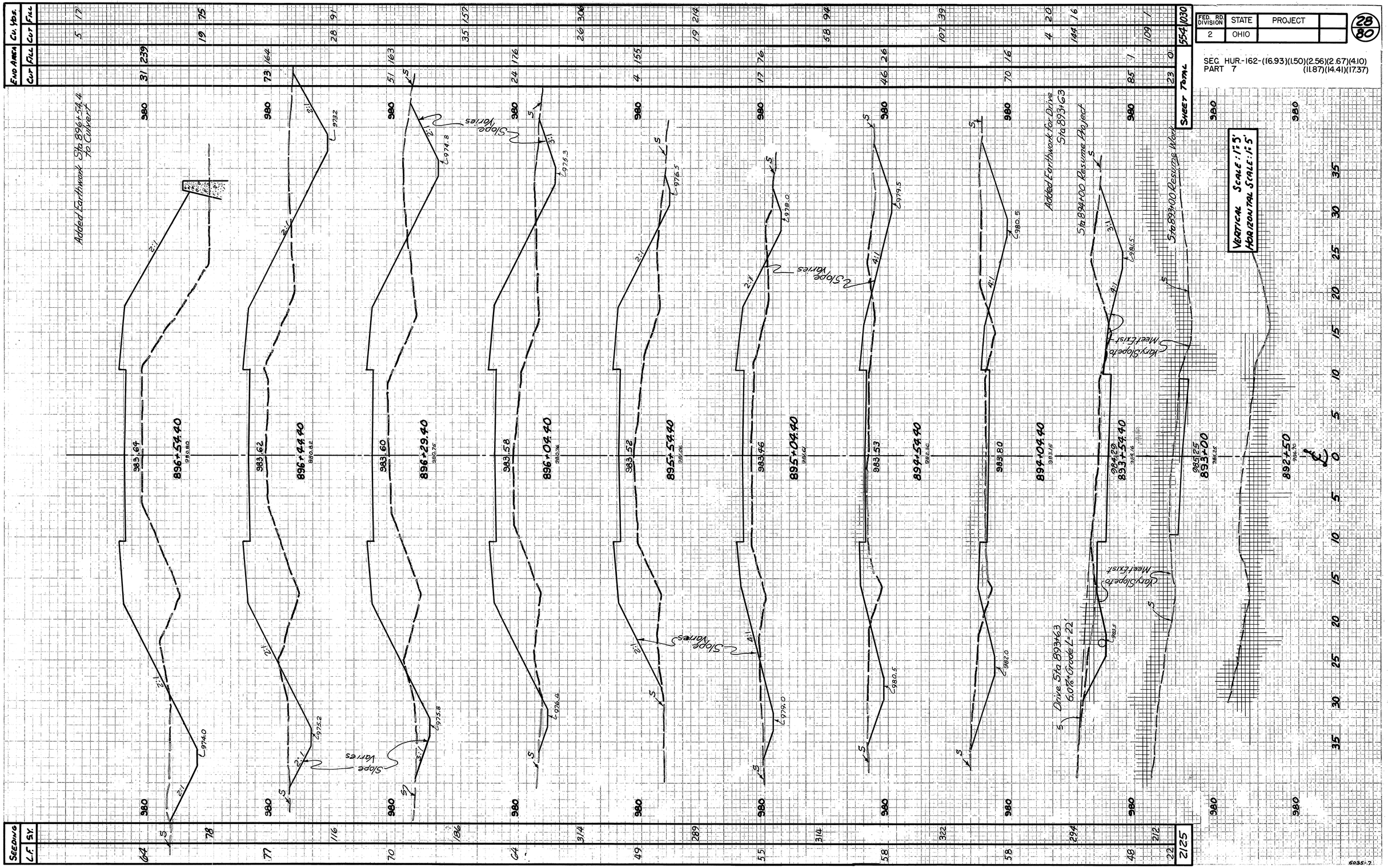
27
80

G035-6

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

28/80

SEC. HUR.-162-(16.93)(1.50)(2.56)(2.67)(4.10)(11.87)(14.41)(17.37)
PART 7



	End Area Cut	End Area Fill	Cu. Yds. Cut	Cu. Yds. Fill
980	31	239	5	17
980	73	164	19	75
980	51	163	28	91
980	24	176	35	157
980	4	155	26	306
980	17	76	19	214
980	46	26	58	94
980	70	16	107	39
980	85	1	109	1
980	23	0	554	1030
Sheet Total				

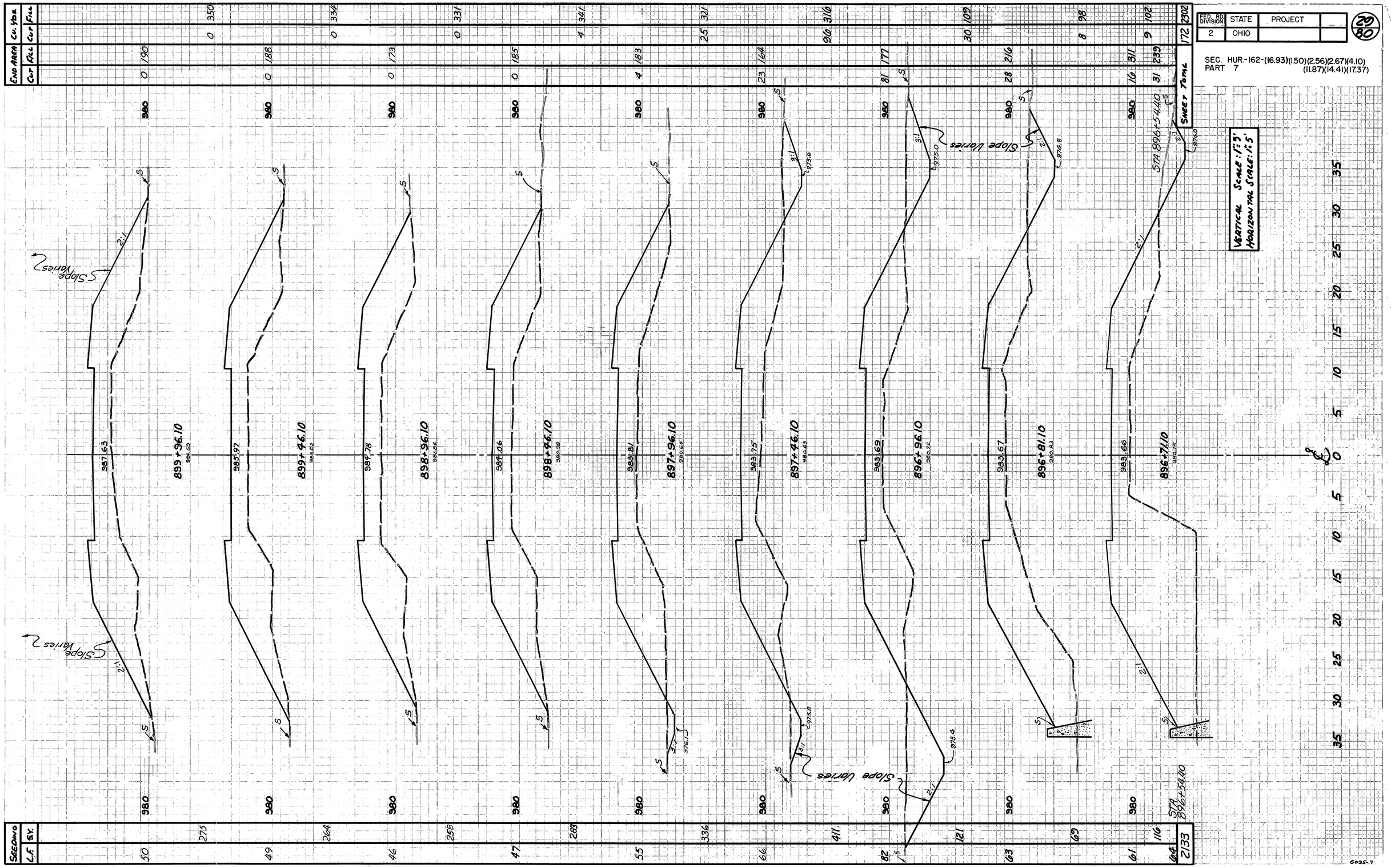
	Seeding L.F.	Seeding S.Y.
980	64	78
980	77	116
980	70	186
980	64	314
980	49	289
980	55	314
980	58	322
980	58	294
980	48	212
980	22	
	2125	

6035-7

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

29
80

SEC. HUR-162-(16.93)(1.50)(2.56)(2.67)(4.10)(11.87)(14.41)(17.37)
PART 7



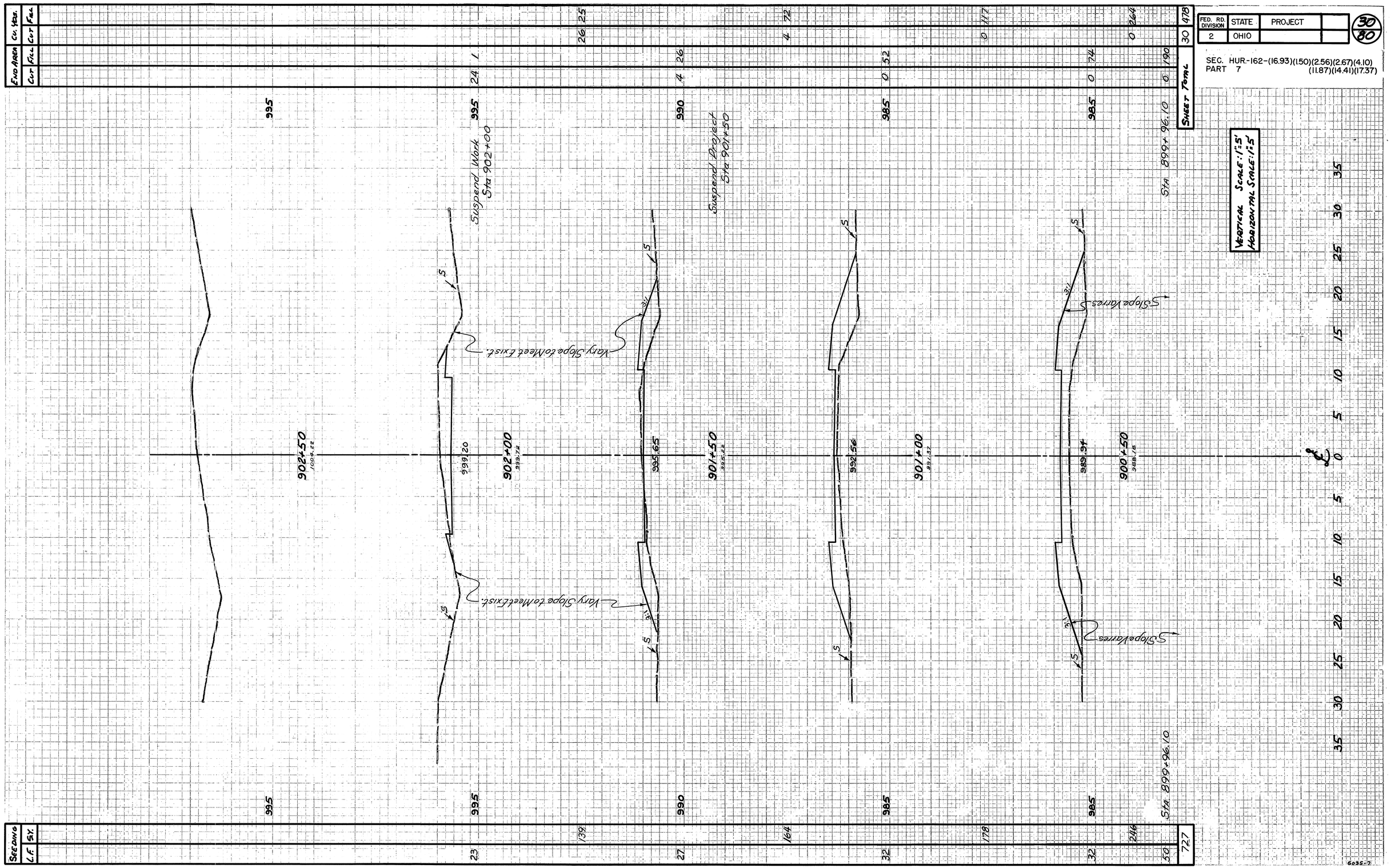
S.R. 162 - STA. 896+71.10 TO 899+96.10

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

30
80

SEC. HUR-162-(16.93)(1.50)(2.56)(2.67)(4.10)(11.87)(14.41)(17.37)
PART 7

	Cut	Fill	Cut	Fill	Cu. Yds. Cut	Cu. Yds. Fill
Sheet Total	30	190	0	264	478	



S.R. 162-STA. 900+50 TO 902+50

Seeding L.F.	Seeding S.Y.		End Area Cut	End Area Fill	Cu. Yds. Cut	Cu. Yds. Fill
		985				
		919+77.6 984.56				
	65	Added Seeding Sta. 919+67.60 to W. Abut.			15	13
		Added Earthwork, Sta. 919+67.60 To W. Abut.				
67	985	984.90 919+67.60 981.50	69	61		
		S-11' 2:1 ℄ 978.0 ℄ of Survey 2:1 3:1 ℄ 978.5 S				
	107				38	22
		Added Earthwork for Drive Sta. 919+45			12	36
		Drive Sta. 919+45, Rt. 16.0%± Grade, L=34'				
61	985	984.89 919+52.60 984.50	70	17		
		S 2:1 2:1 ℄ 979.3 FL.=978.9 S				
	154				46	33
50	985	Slope Varies 984.87 919+27.60 984.17	29	55		
		S 3:1 2:1 ℄ of Survey ℄ 979.6 S				
	250				38	93
40	985	Slope Varies 984.85 918+77.60 984.19	12	45		
		S 3:1 ℄ 981.0 S				
	211				19	64
36	985	985.01 918+27.60 984.25	9	24		
		S ℄ of Survey 982.0 S				
	189				24	40
32	985	985.38 917+77.60 985.10	17	19		
		S ℄ 982.8 S				
	181				38 / 10	32 / 4
		Added Earthwork for Drive Sta 917.07				
		Drive Sta. 917+07 Rt. 10.0%± Grade, L=20'				
33	985	985.96 917+27.60 985.81	24	16		
		S 3:1 3:1 3:1 FL.=983.6 S				
					21	8
		Resume Project Sta. 917+00	17			
	985					
	310	Added Seeding, Sta. 916+50 To Sta 917+27.6				
		916+77.60 986.81				
		Resume Work Sta. 916+50				
1467			Sheet Total		261	345

VERTICAL SCALE: 1" = 5'
HORIZONTAL SCALE: 1" = 5'

℄ Survey

35 30 25 20 15 10 5 0 5 10 15 20 25 30 35

S.R. 162 - STA. 916+77.60 TO 919+77.60

SEC. HUR-162-(17.37)(1.50)(2.56)(2.67)(14.10)
PART 8 (11.87)(14.41)(16.93)

Fed. Rd. Division	State	Project
2	Ohio	

31 / 80

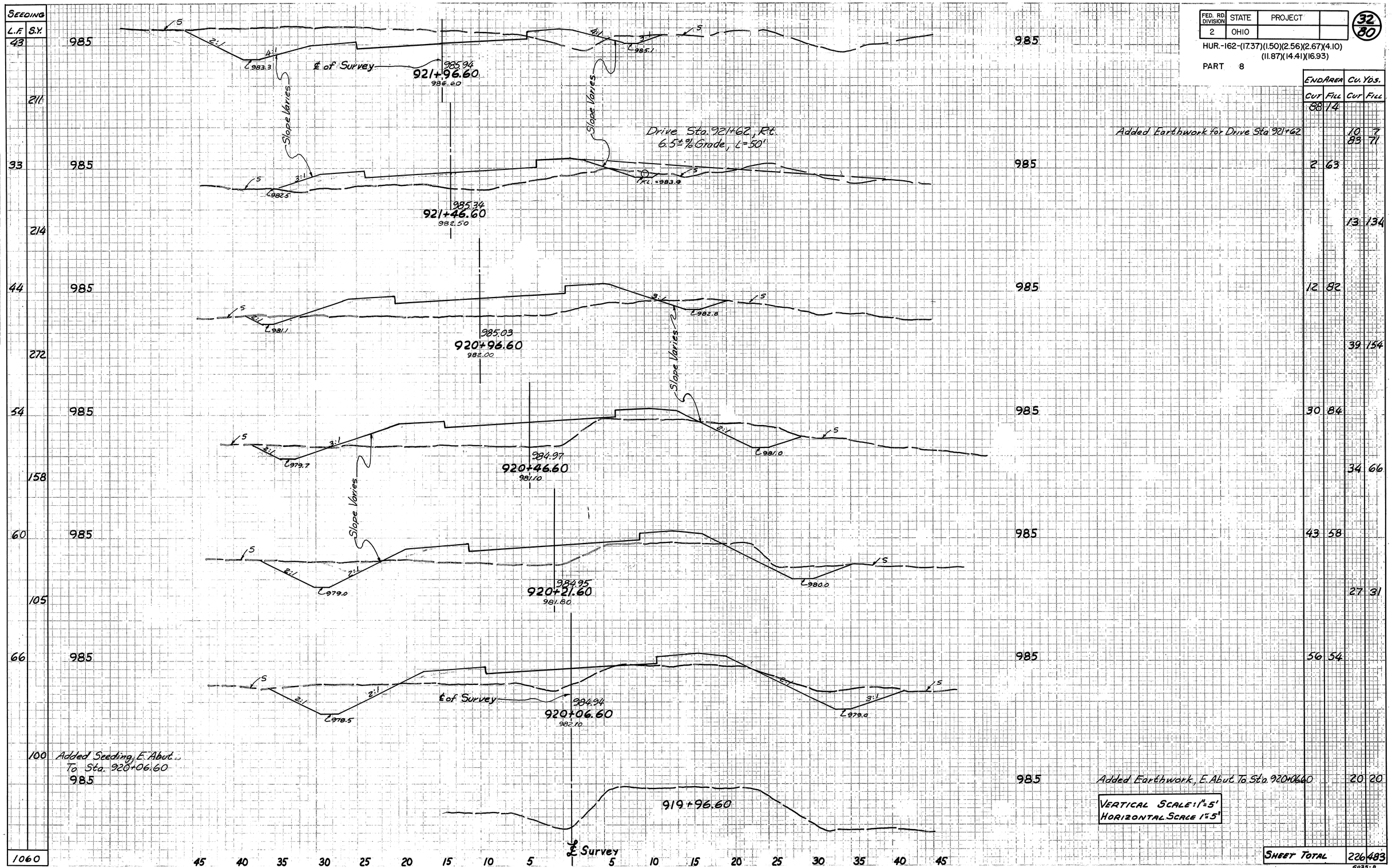
6935-8

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

32/80

HUR.-162-(17.37)(1.50)(2.56)(2.67)(4.10)(11.87)(14.41)(16.93)

PART 8



END AREA CUT	END AREA FILL	CU. YDS. CUT	CU. YDS. FILL
88	14		
		10	7
		83	71
2	63		
		13	134
12	82		
		39	154
30	84		
		34	66
43	58		
		27	31
56	54		
		20	20
SHEET TOTAL		226	483

6035-8

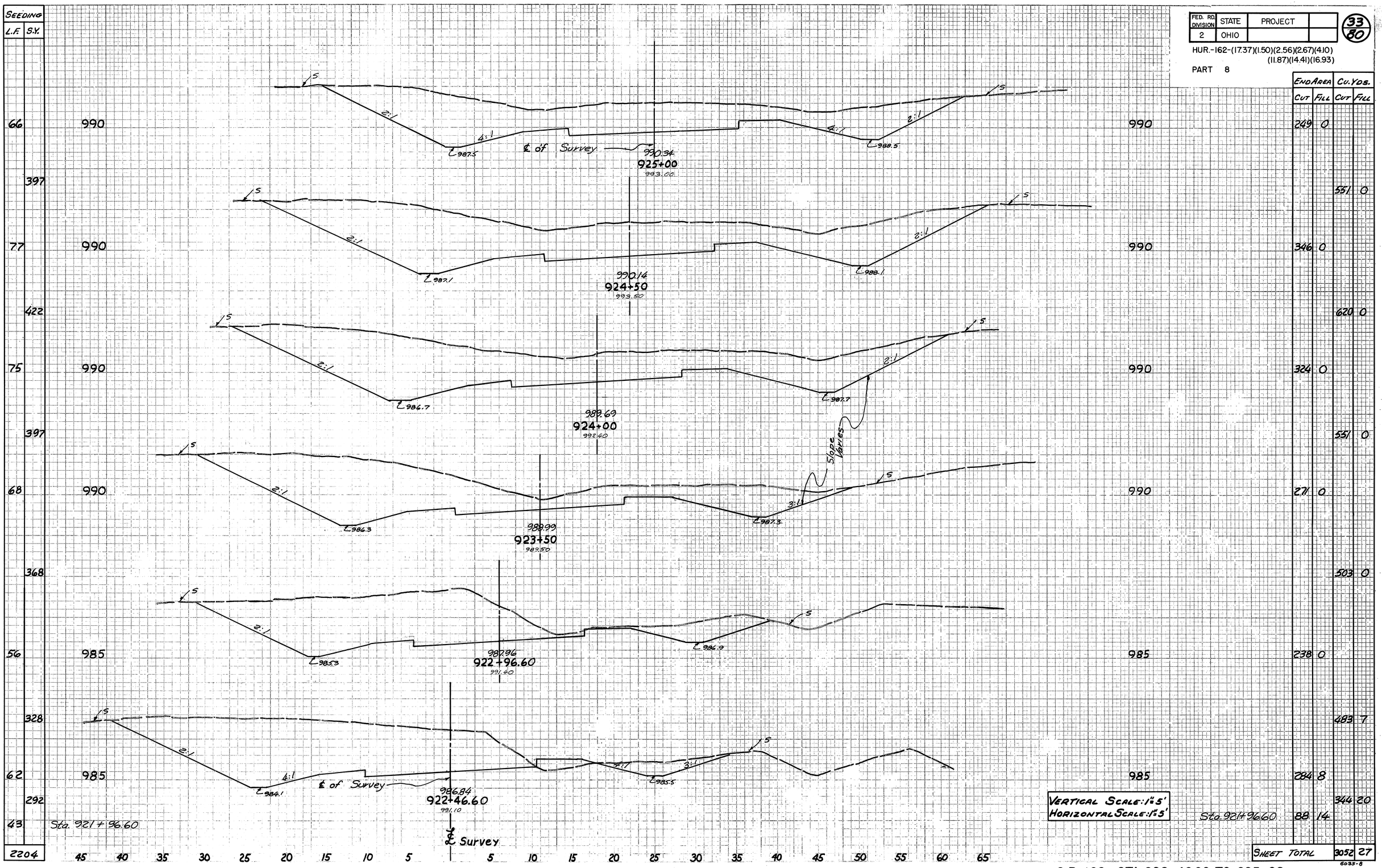
S.R. 162-STA. 919+96.60 TO 921+96.60

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

33/80

HUR.-162-(17.37)(1.50)(2.56)(2.67)(4.10)
(11.87)(14.41)(16.93)

PART 8



End Area Cut	End Area Fill	Cu. Yds. Cut	Cu. Yds. Fill
249	0		
		551	0
346	0		
		620	0
324	0		
		551	0
271	0		
		503	0
238	0		
		483	7
284	8		
		344	20
88	14		
Sheet Total		3052	27

VERTICAL SCALE: 1" = 5'
HORIZONTAL SCALE: 1" = 5'

FINAL SURVEY | ORIGINAL SURVEY

S.R. 162 STA. 922+46.60 TO 925+00

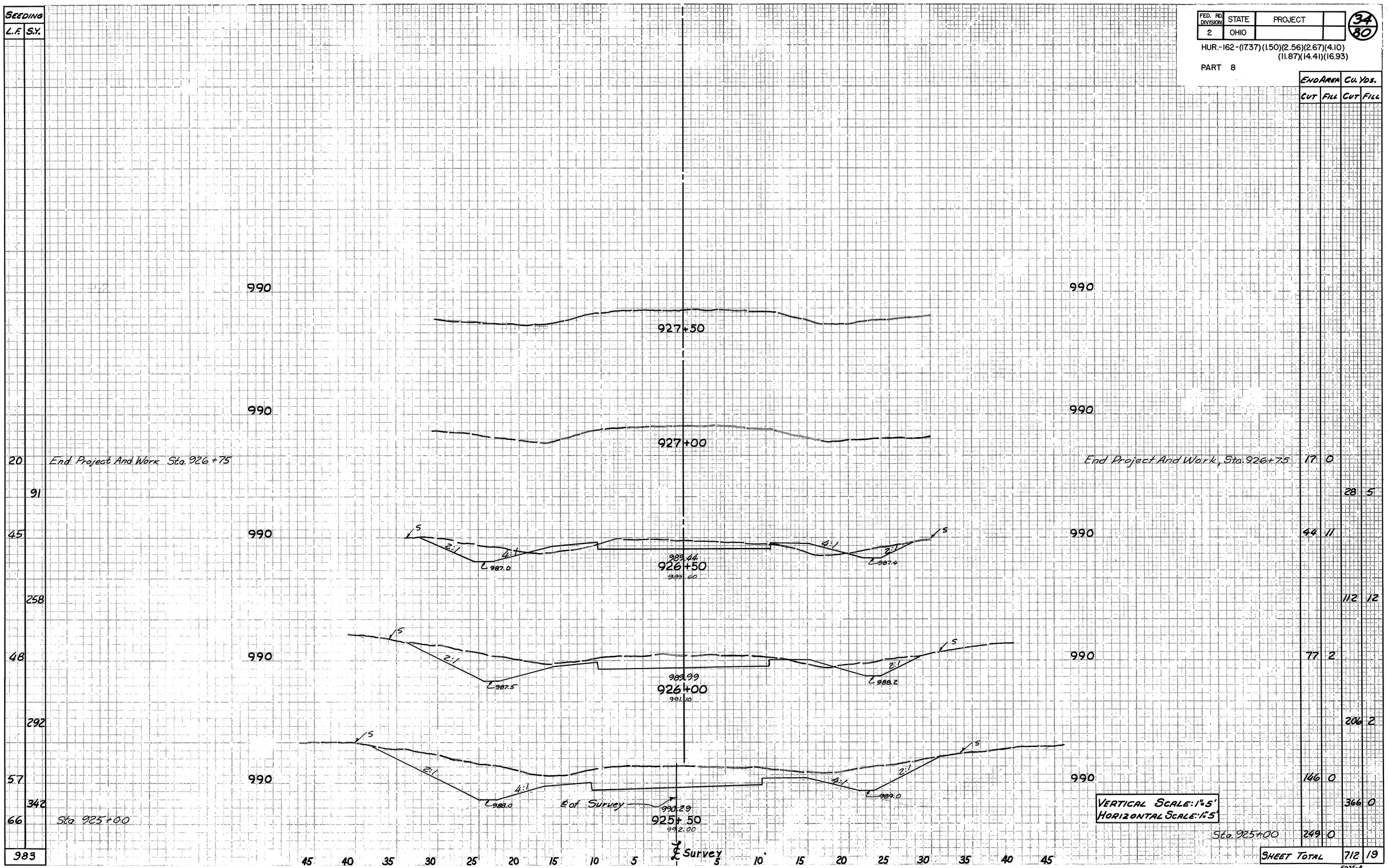
6035-8

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

34
80

HUR.-162-(17.37)(1.50)(2.56)(2.67)(4.10)
(11.87)(14.41)(16.93)

PART 8



SEEDING	
L.F.	S.Y.
20	91
45	258
48	292
57	342
66	
983	

END AREA		CU. YDS.	
CUT	FILL	CUT	FILL
17	0		
		28	5
44	11		
		112	12
77	2		
		206	2
146	0		
		366	0
249	0		
SHEET TOTAL		712	19

VERTICAL SCALE: 1" = 5'
HORIZONTAL SCALE: 1" = 5'

6035-8

S.R. 162-STA. 925+50 TO 927+50

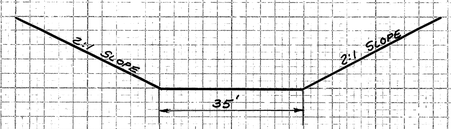
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

35
80

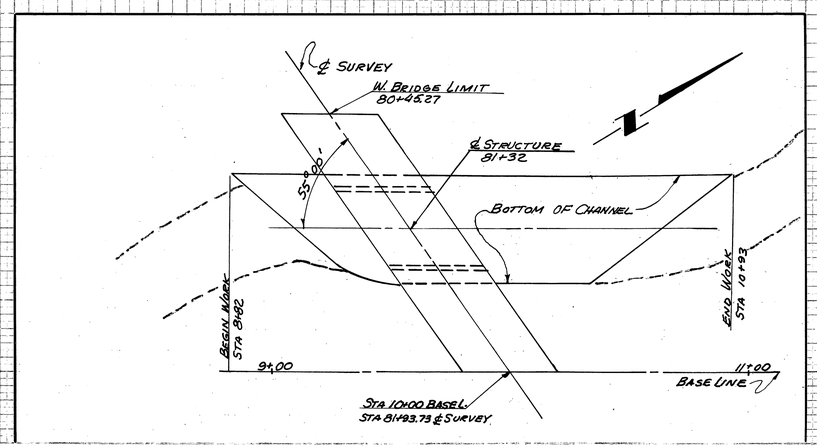
HUR-162-(01.50)(2.56)(2.67)(4.10)(11.87)(14.41)
PART I (16.93)(17.37)

End Area Cu. Yd.			
Cut	Fill	Cut	Fill
305			
		185	
95			
		44	
0			

Sheet Total 229



TYPICAL SECTION A-A



6035-1

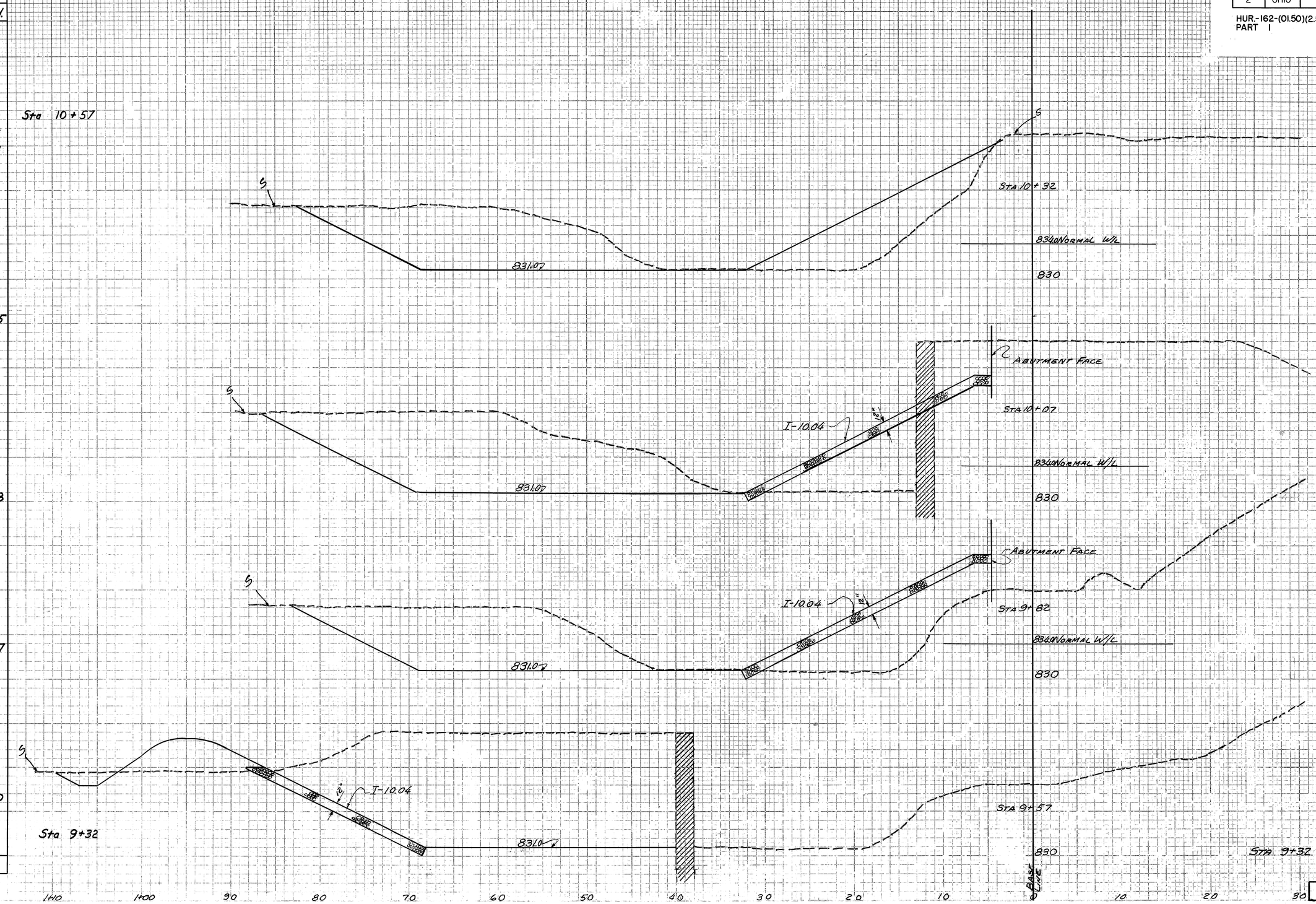
CHANNEL DETAIL & CROSS SECTIONS

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

36
80

HUR.-162-(01.50)(2.56)(2.67)(4.10)(11.87)(14.41)
PART I (16.93)(17.37)

Seeding	
L.F.	S.Y.
12	71
39	75
15	38
12	57
29	40
0	
281	



End Area Cu. Yd.			
Cut	Fill	Cut	Fill
187			
		271	
290			
		223	
191			
		313	
485			
		366	
305	0		

Sheet Total 1123

6035-1

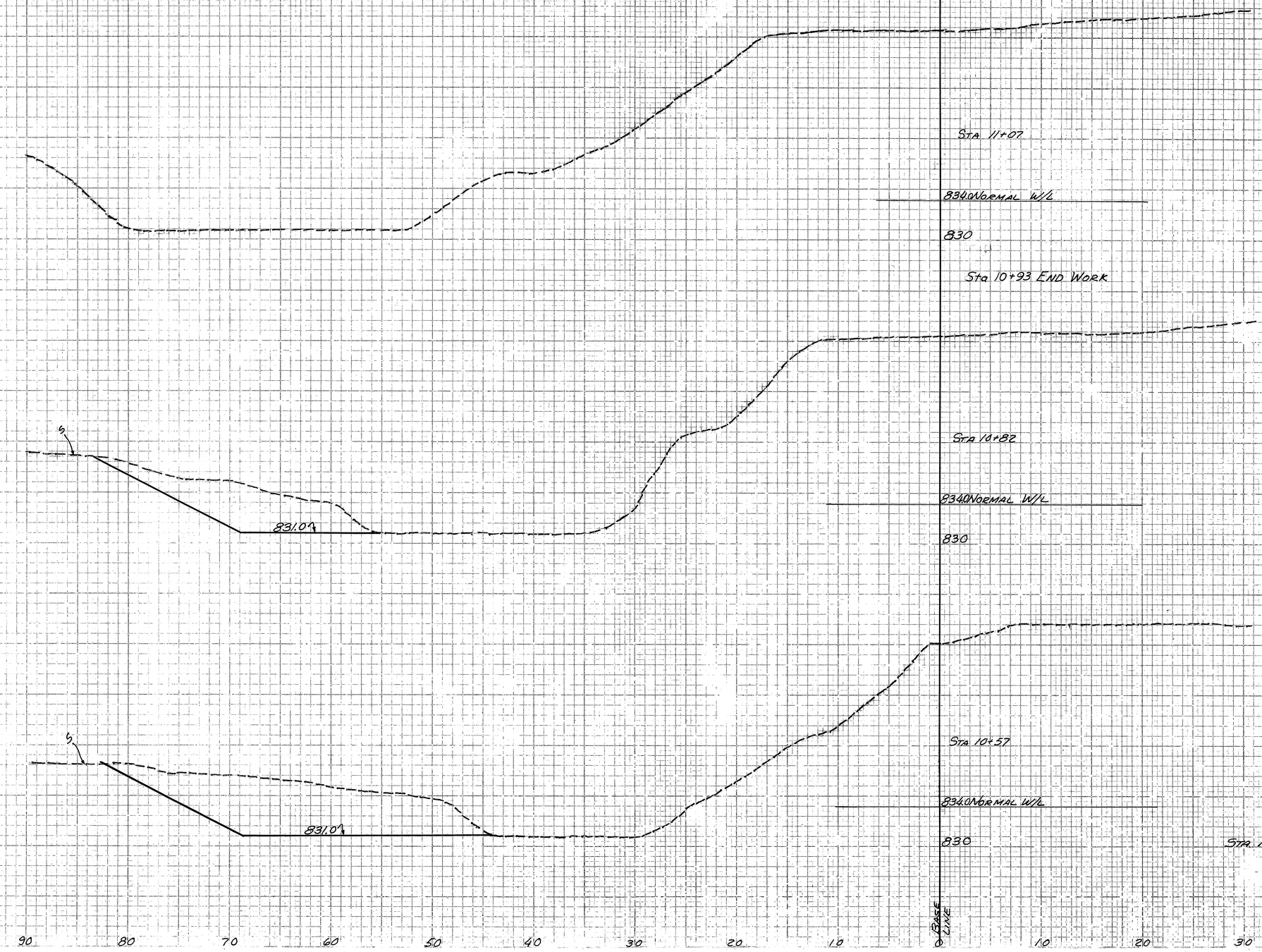
CHANNEL CROSS SECTIONS

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

37/80

SEC. HUR.-162-(01.50)(2.56)(2.67)(4.10)(11.87)(14.41)(16.93)(17.37)
PART I

Seeding	
L.F.	S.Y.
12	
	33
12	
33	



End Area Cu. Yd.			
Cut	Fill	Cut	Fill
0			
		33	
72			
		38	
140			
		151	
187			
Sheet Total		282	

Total Seeding = 31.4 SY
Fert. = 0.03 Ton } To Sheet 4

6035-1

CHANNEL CROSS SECTIONS

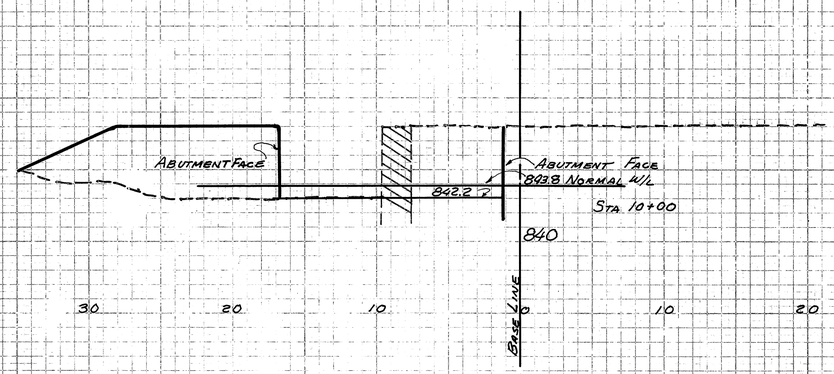
FED. RD DIVISION	STATE	PROJECT	
2	OHIO		

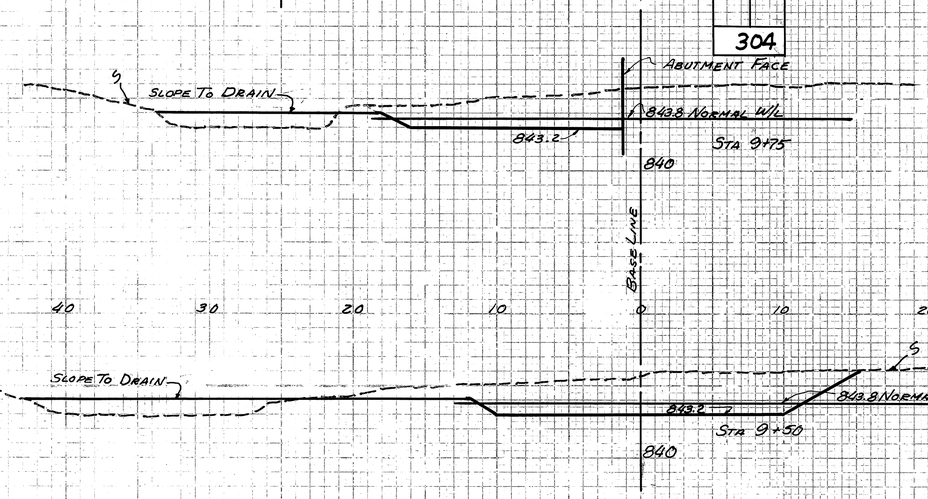
38
80

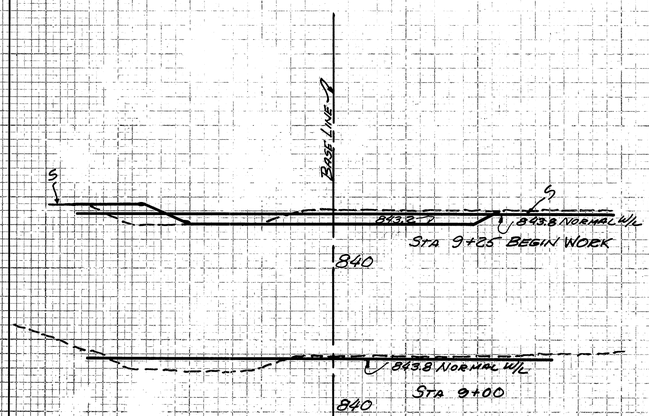
SEC. HUR-162-(02.56)(1.50)(2.67)(4.10)(11.87)(14.41)(16.93)(17.37)
PART 2

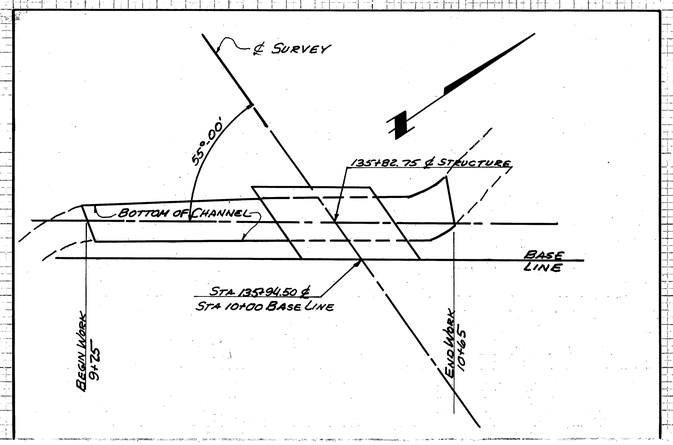
Seeding L.F.	S.Y.	
0		Sta 10+75
	22	
16		Sta 10+50
	55	
24		Sta 10+25
	33	
0		Sta 10+00
	26	
19		Sta 9+75
	83	
41		Sta 9+50
	71	
10		Sta 9+25
	14	
0		Sta 9+00
	304	

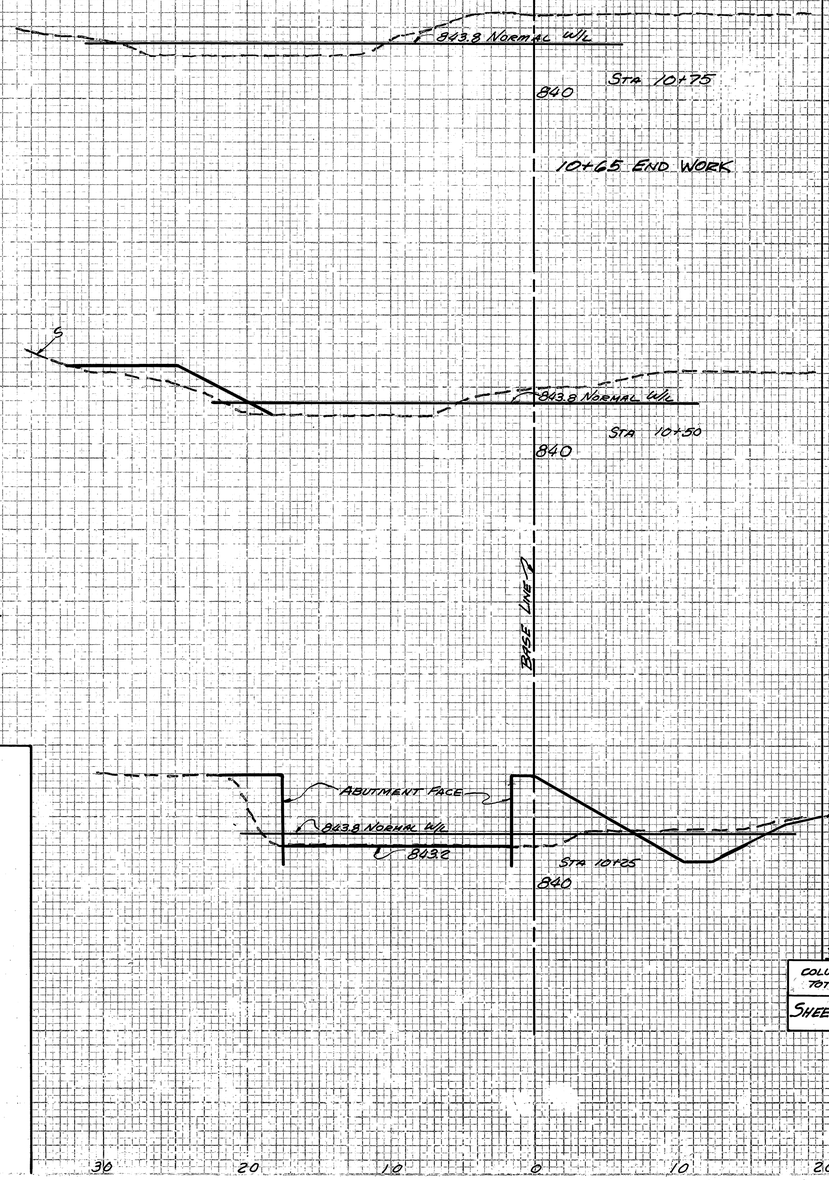
END AREA CU. YD. CUT	FILL	CUT	FILL
33			
	31		
		35	
		51	
		76	
			42
			14
			6
			0
COLUMN TOTAL		130	











END AREA CU. YDS. CUT	FILL	CUT	FILL
		0	
		0	
		0	
		7	
		15	
		22	
		33	
COLUMN TOTAL		29	
SHEET TOTAL		159	

CHANNEL DETAIL & CROSS SECTIONS

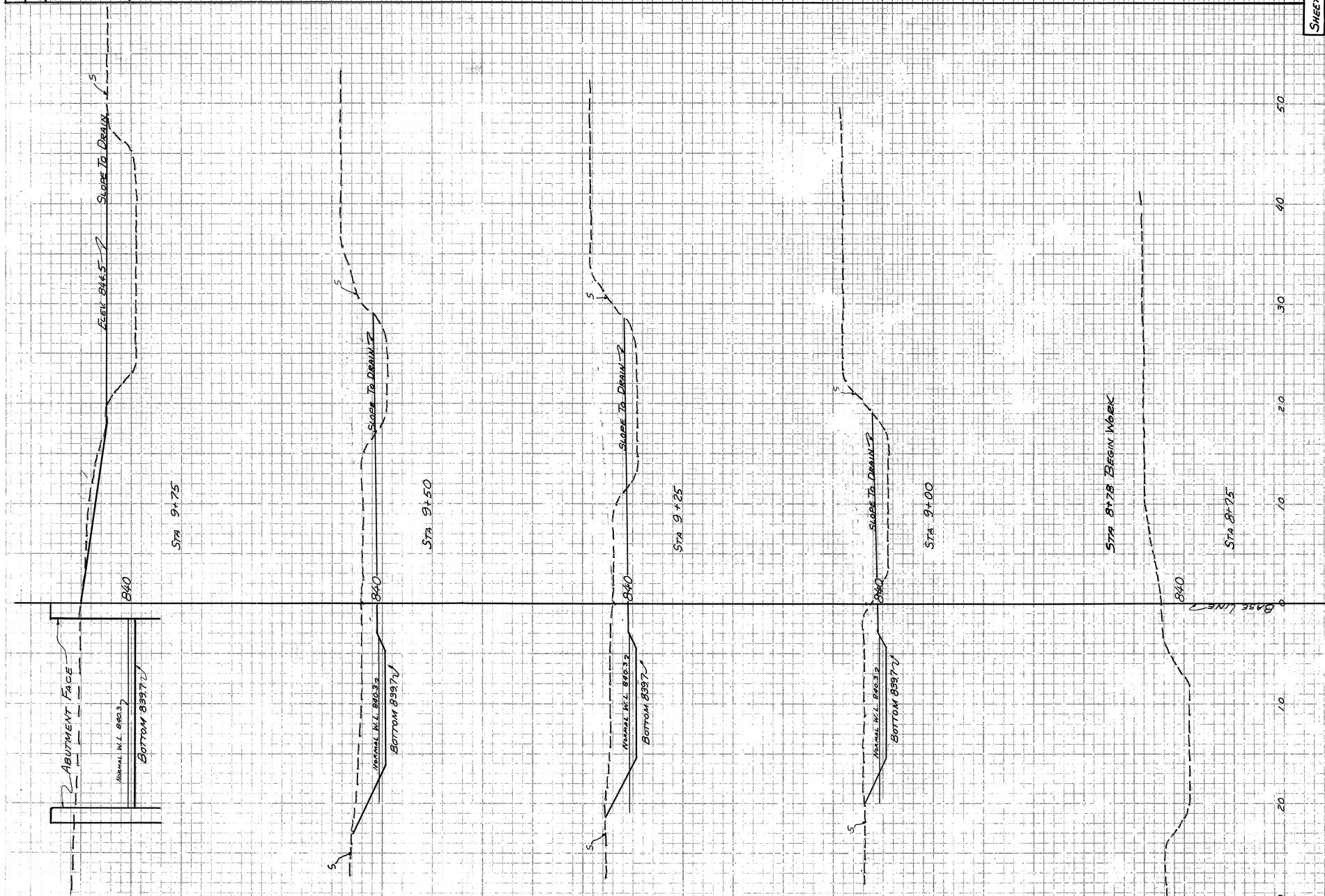
6035-2

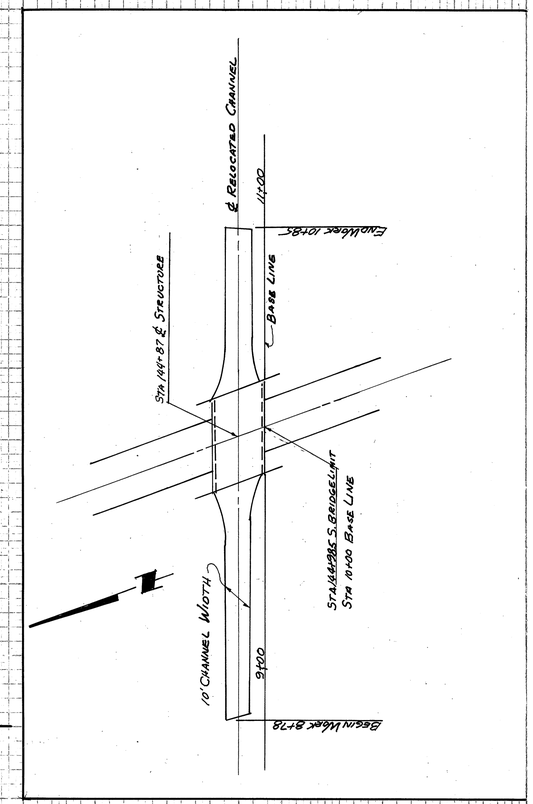
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

39/80

SEC. HUR.-162-(02.67)(1.50)(2.56)(4.10)
PART 3 (11.87)(14.41)(16.93)(17.37)

End Area Cu. Yd.	Cut	Fill	114	71	62	40	0	Sheet Total
	Cut	Fill	86	62	47	16		211





Seeding	L.F.	S.Y.
	32	104
	43	118
	42	100
	30	37
	0	
	359	

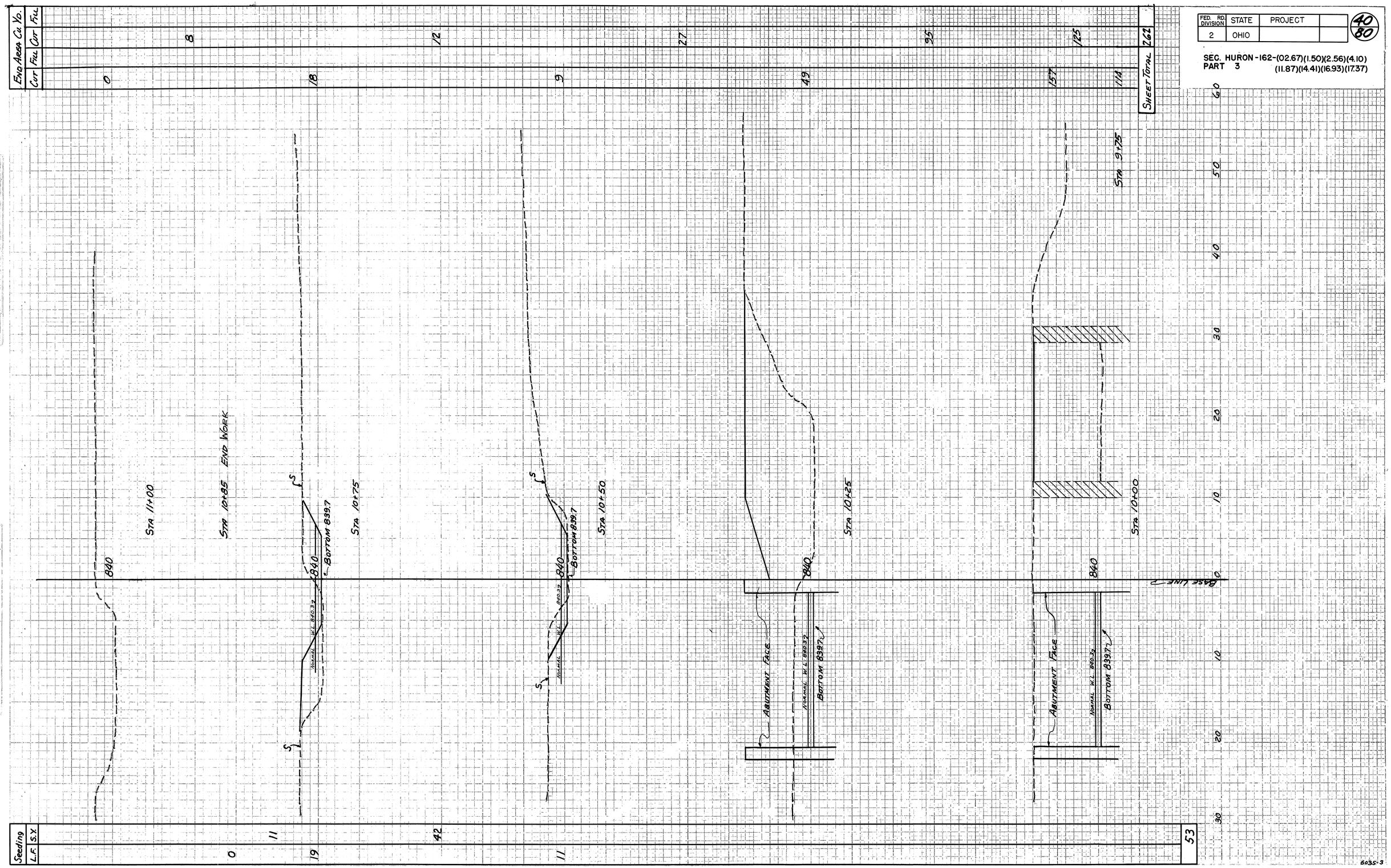
6035-3

CHANNEL DETAIL & CROSS SECTIONS

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

40
80

SEC. HURON-162-(02.67)(1.50)(2.56)(4.10)
PART 3 (11.87)(14.41)(16.93)(17.37)



CHANNEL CROSS SECTIONS

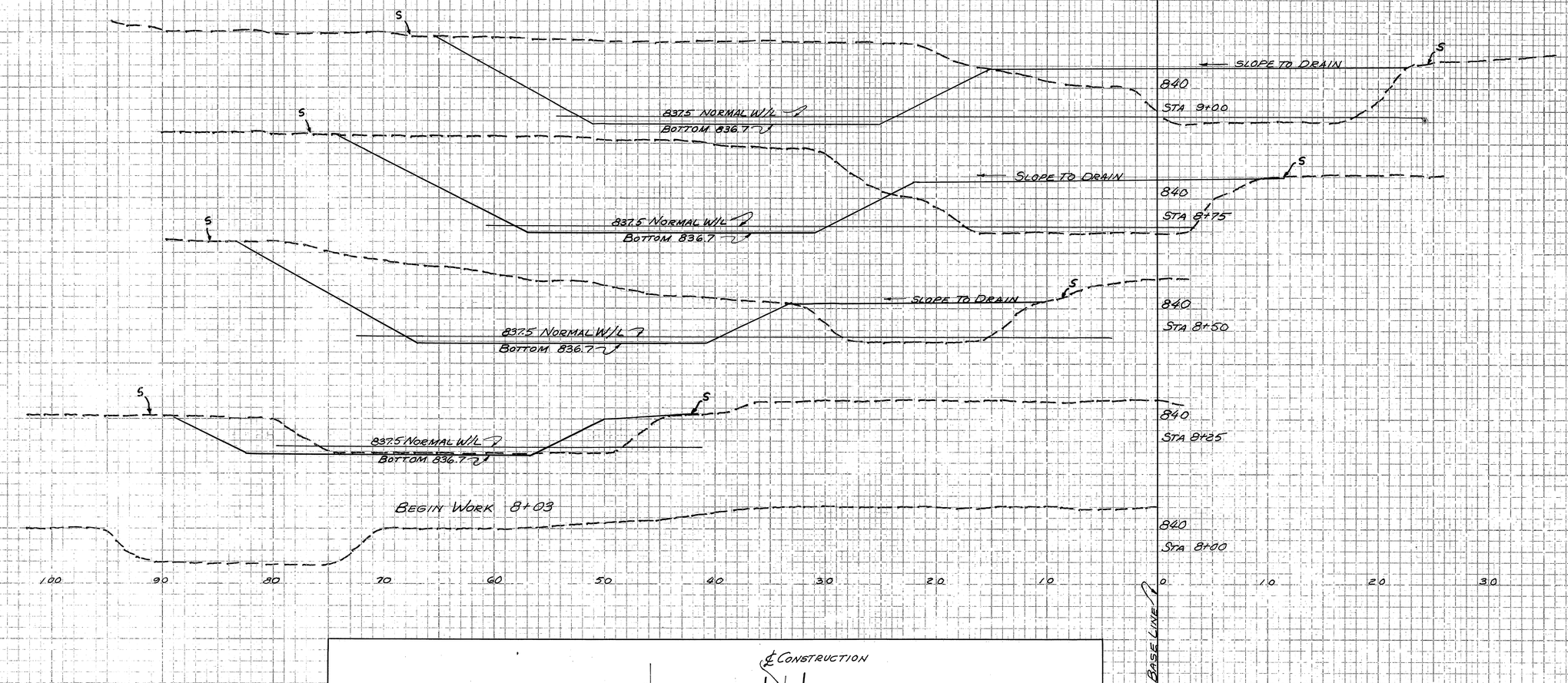
6035-3

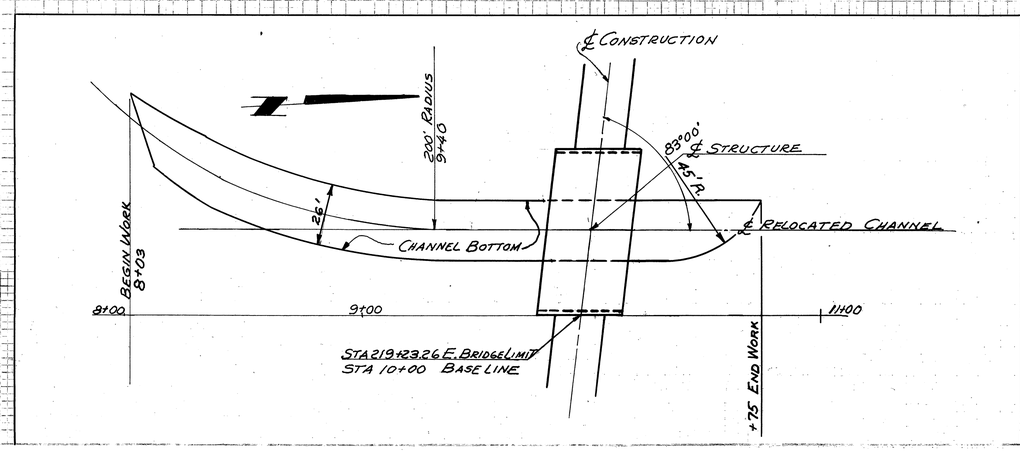
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

41
80

SEC. HUR.-162-(04.10)(1.50)(2.56)(2.67)
PART 4 (11.87)(14.41)(16.93)(17.37)

Seeding		End Area Cu. Yd			
L.F.	S.Y.	Cut	Fill	Cut	Fill
67	181			285	
63	160			314	
52	103			221	
22	27			28	
0				0	
471				Sheet Total	653





6035-A

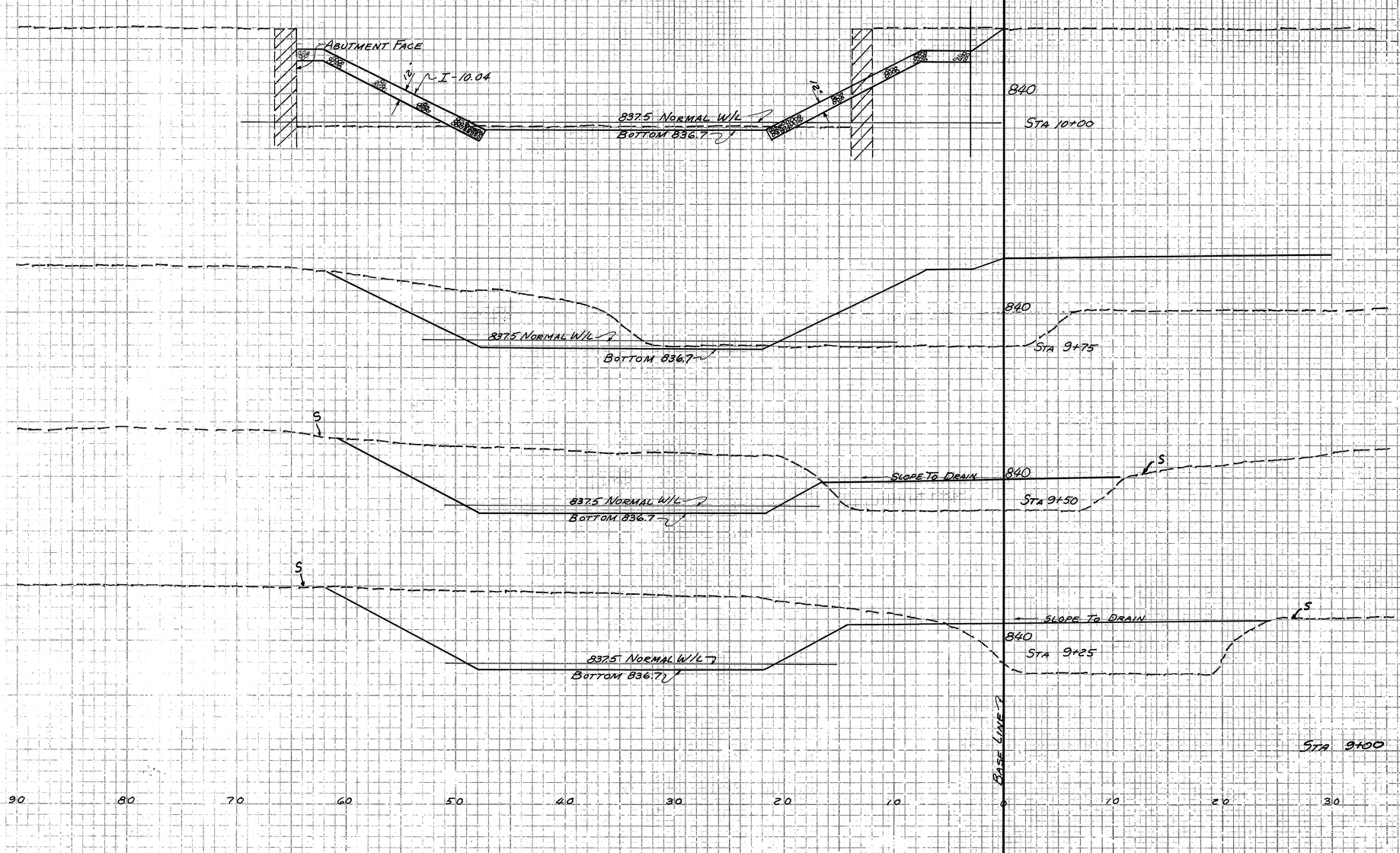
CHANNEL DETAIL & CROSS SECTIONS

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

42/80

SEC. HUR.-162-(04.10)(1.50)(2.56)(2.67)
PART 4 (11.87)(14.41)(16.93)(17.37)

Seeding L.F.	Seeding S.Y.
49	
	158
65	
	183
67	
341	



End Area Cu. Yd. Cut	Fill	Cut	Fill
36			
		61	
96			
		137	
200			
		217	
269			
		256	
285	118		
Sheet Total		671	

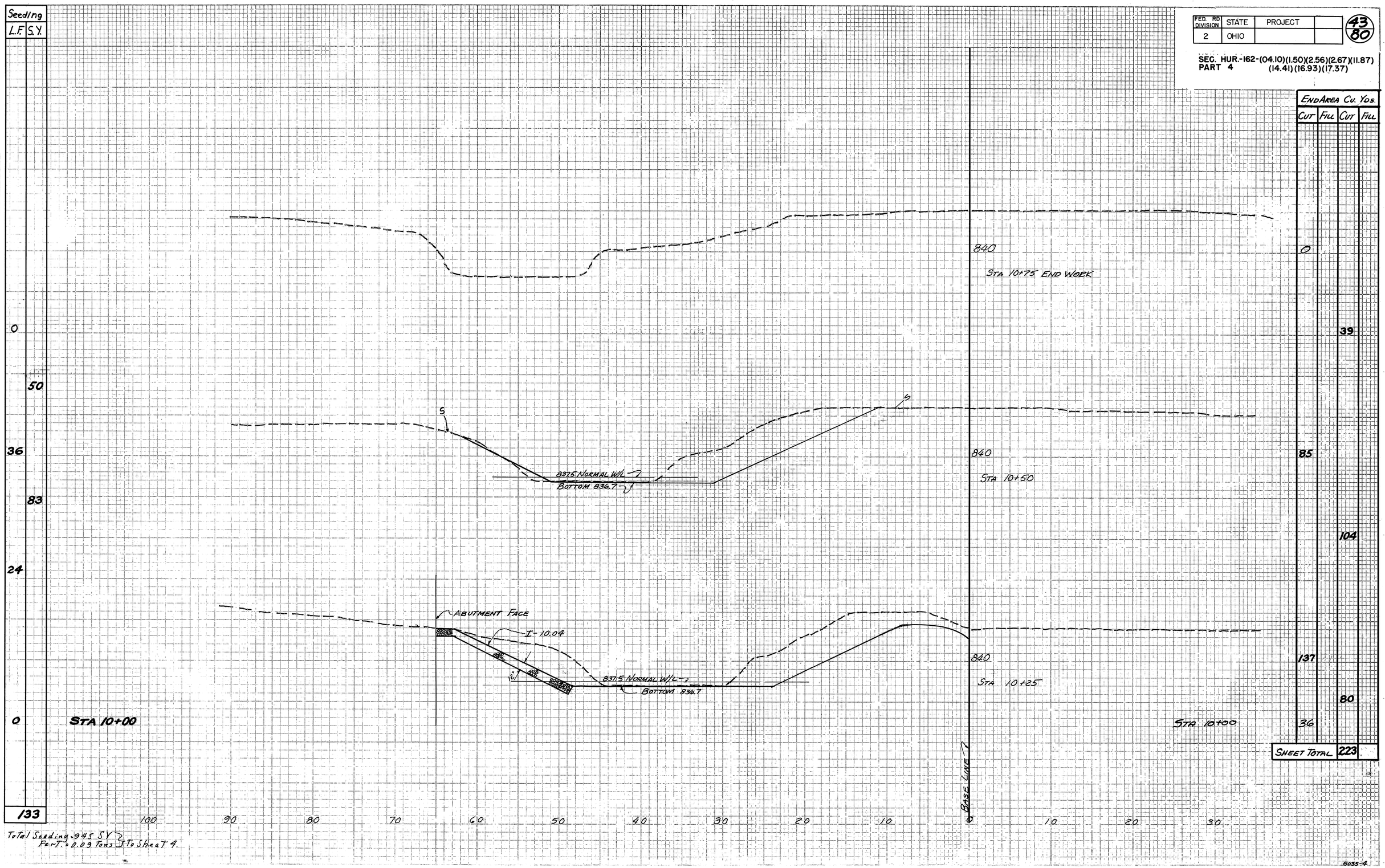
6035-4

CHANNEL CROSS SECTIONS

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

43/80

SEC. HUR.-162-(04.10)(1.50)(2.56)(2.67)(11.87)
PART 4 (14.41)(16.93)(17.37)



End Area Cu. Yds.			
Cut	Fill	Cut	Fill
0			
		39	
85			
		104	
137			
		80	
36			
Sheet Total		223	

Total Seeding 945 SY
Fert. 0.09 Tons } To Sheet 4.

CHANNEL CROSS SECTIONS

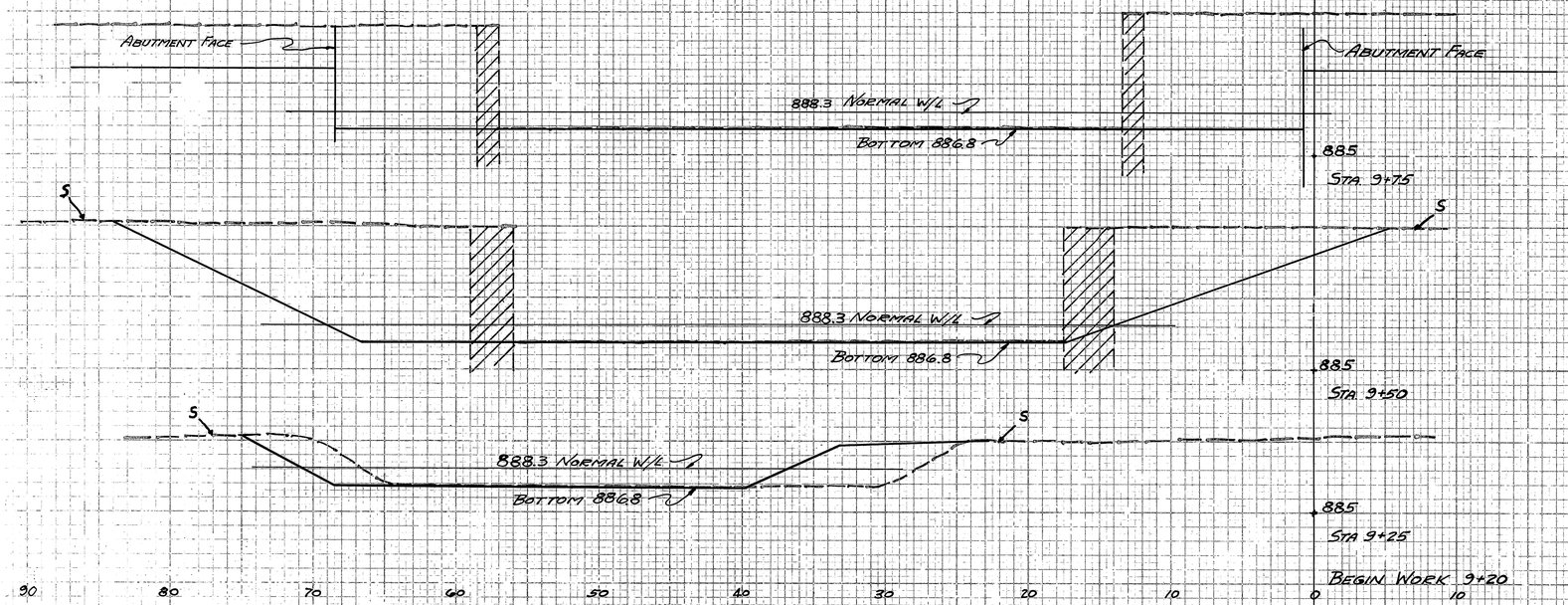
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

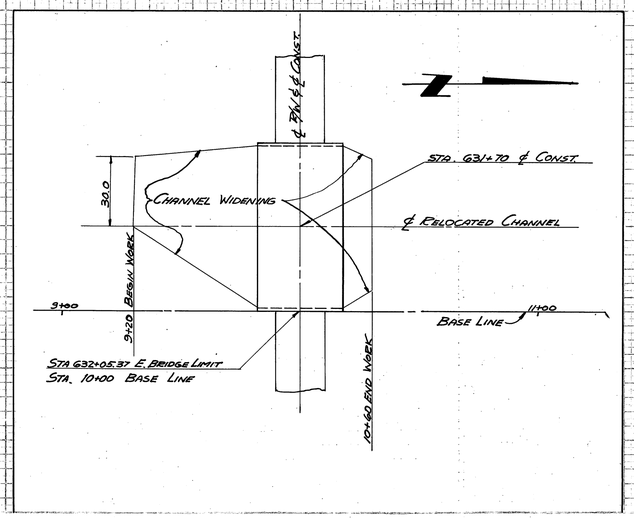
44/80

SEC. HUR.-162-(11.87)(1.50)
(2.56)(2.67)(4.10)(14.41)
(16.93)(17.37)
PART 5

Seeding L.F.	Seeding S.Y.	
50		
101		
41		Sta 9+50
88		
22		Sta 9+25
6		
0		Sta 9+20
195		

END AREA CU. YD.			
CUT	FILL	CUT	FILL
160			
		167	
200			
		100	
15			
SHEET TOTAL		267	





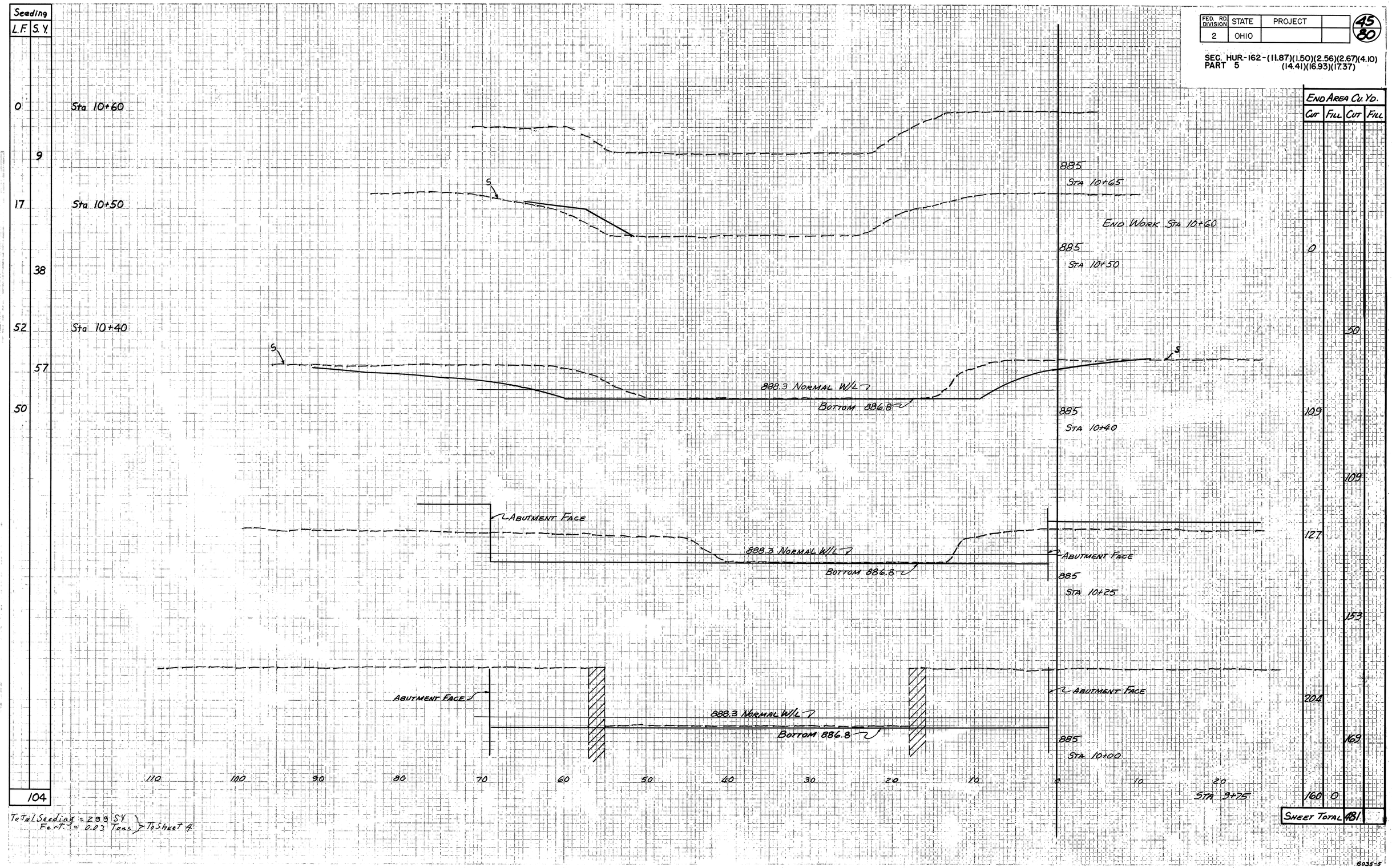
6035-5

CHANNEL DETAIL & CROSS SECTIONS

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

45/80

SEC. HUR-162-(11.87)(1.50)(2.56)(2.67)(4.10)(14.41)(16.93)(17.37)
PART 5



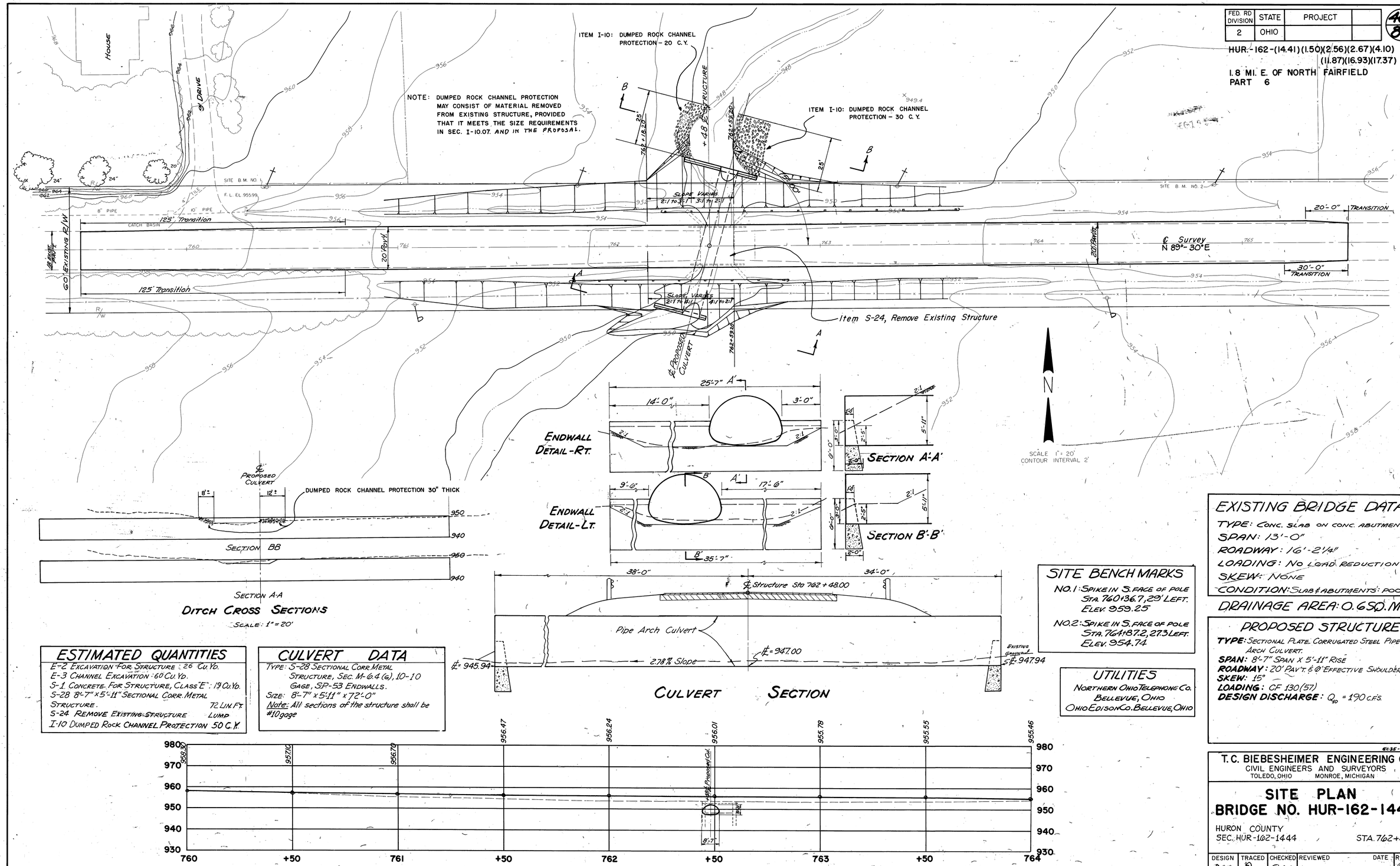
CHANNEL CROSS SECTIONS

FED. RD DIVISION	STATE	PROJECT	
2	OHIO		

46/80

HUR.-162-(14.41)(1.50)(2.56)(2.67)(4.10)(11.87)(16.93)(17.37)

1.8 MI. E. OF NORTH FAIRFIELD
PART 6



EXISTING BRIDGE DATA

TYPE: CONC. SLAB ON CONC. ABUTMENTS
SPAN: 13'-0"
ROADWAY: 16'-2¼"
LOADING: NO LOAD REDUCTION
SKEW: NONE
CONDITION: SLAB & ABUTMENTS: POOR

DRAINAGE AREA: 0.65 SQ. MI.

PROPOSED STRUCTURE

TYPE: SECTIONAL PLATE CORRUGATED STEEL PIPE ARCH CULVERT.
SPAN: 8'-7" SPAN X 5'-11" RISE
ROADWAY: 20' PAV'T. & 0' EFFECTIVE SHOULDERS
SKEW: 15°
LOADING: CF 130(57)
DESIGN DISCHARGE: Q_{50} = 190 C.F.S.

SITE BENCH MARKS

NO. 1: SPIKE IN S. FACE OF POLE STA. 760+36.7, 29' LEFT. ELEV. 959.25

NO. 2: SPIKE IN S. FACE OF POLE STA. 764+87.2, 27.3 LEFT. ELEV. 954.74

UTILITIES

NORTHERN OHIO TELEPHONE CO.
BELLEVUE, OHIO
OHIO EDISON CO. BELLEVUE, OHIO

ESTIMATED QUANTITIES

E-2 EXCAVATION FOR STRUCTURE	26 CU. YD.
E-3 CHANNEL EXCAVATION	60 CU. YD.
S-1 CONCRETE FOR STRUCTURE, CLASS "E"	19 CU. YD.
S-28 8'-7" x 5'-11" SECTIONAL CORR. METAL STRUCTURE.	72 LIN. FT.
S-24 REMOVE EXISTING STRUCTURE	LUMP
I-10 DUMPED ROCK CHANNEL PROTECTION	50 C.Y.

CULVERT DATA

TYPE: S-28 SECTIONAL CORR. METAL STRUCTURE, SEC. M-6.4 (a), 10-10 GAGE, SP-53 ENDWALLS.
SIZE: 8'-7" x 5'-11" x 72'-0"
Note: All sections of the structure shall be #10 gage

T.C. BIEBESHEIMER ENGINEERING CO.
CIVIL ENGINEERS AND SURVEYORS
TOLEDO, OHIO MONROE, MICHIGAN

SITE PLAN
BRIDGE NO. HUR-162-1444

HURON COUNTY
SEC. HUR-162-1444 STA. 762+48

DESIGN	TRACED	CHECKED	REVIEWED	DATE	REVISED
D.C.C.	JB	D.C.C.			

SITE PLAN

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

47
80

HUR.-162-(16.93)(1.50)(2.56)(2.67)(4.10)
(11.87)(14.41)(17.37)
4 MI. E. OF NORTH FAIRFIELD
PART 7

MICROFILMED
DEC 19 1986

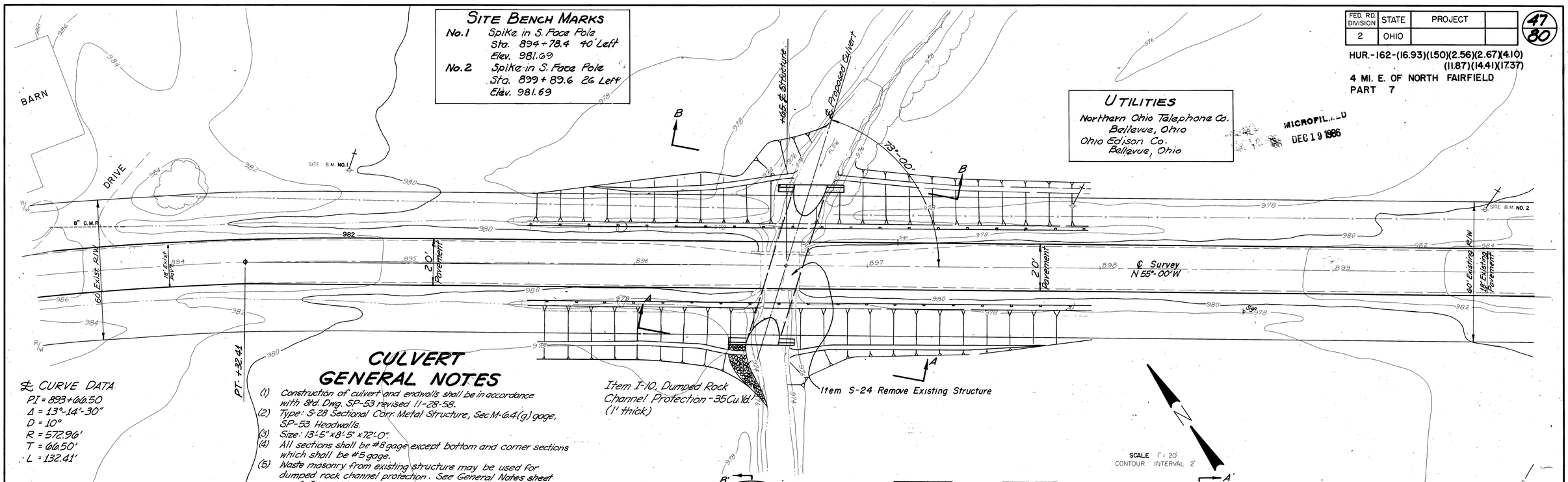
SITE BENCH MARKS

No. 1 Spike in S. Face Pole
Sta. 894+78.4 40' Left
Elev. 981.69

No. 2 Spike in S. Face Pole
Sta. 899+89.6 26 Left
Elev. 981.69

UTILITIES

Northern Ohio Telephone Co.
Bellevue, Ohio
Ohio Edison Co.
Bellevue, Ohio

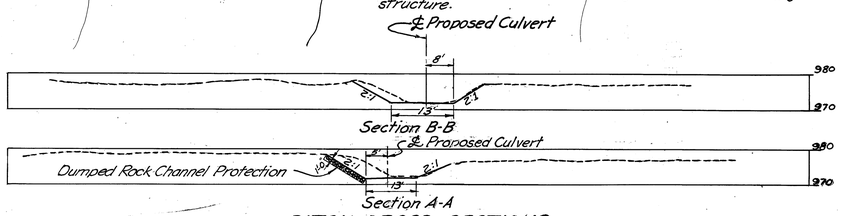


℄ CURVE DATA

PI = 893+66.50
Δ = 13°-14'-30"
D = 10°
R = 572.96'
T = 66.50'
L = 132.41'

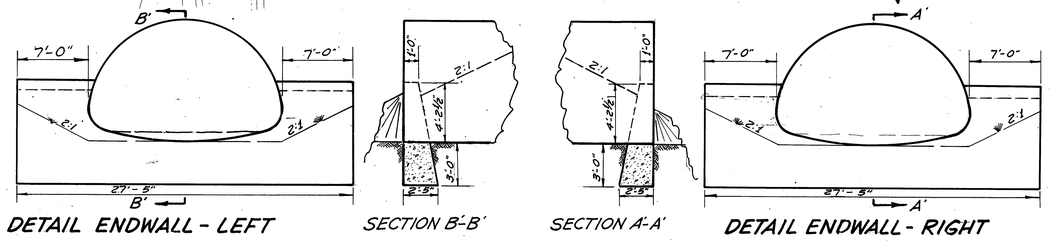
CULVERT GENERAL NOTES

(1) Construction of culvert and endwalls shall be in accordance with Std. Dwg. SP-53 revised 11-28-58.
(2) Type: S-28 Sectional Corr. Metal Structure, Sec M-6.4(g) gage, SP-53 Headwalls.
(3) Size: 13'-5" x 8'-5" x 72'-0".
(4) All sections shall be #8 gage except bottom and corner sections which shall be #5 gage.
(5) Waste masonry from existing structure may be used for dumped rock channel protection. See General Notes sheet no. 4 for additional note pertaining to removal of existing structure.



DITCH CROSS-SECTIONS

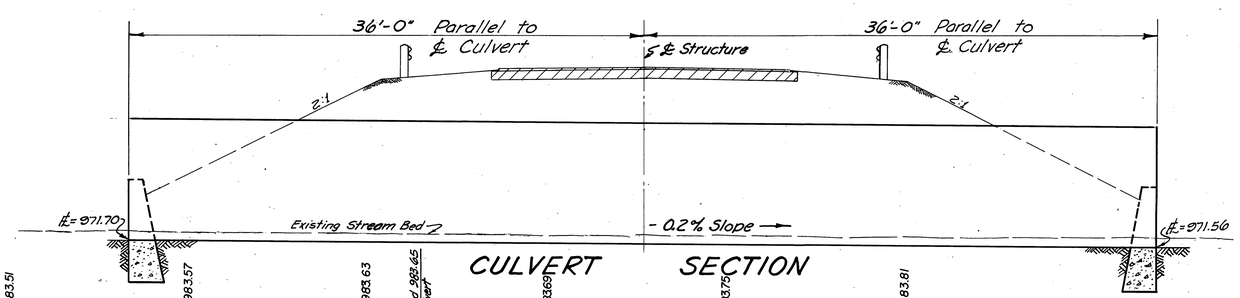
Scale: 1" = 20'



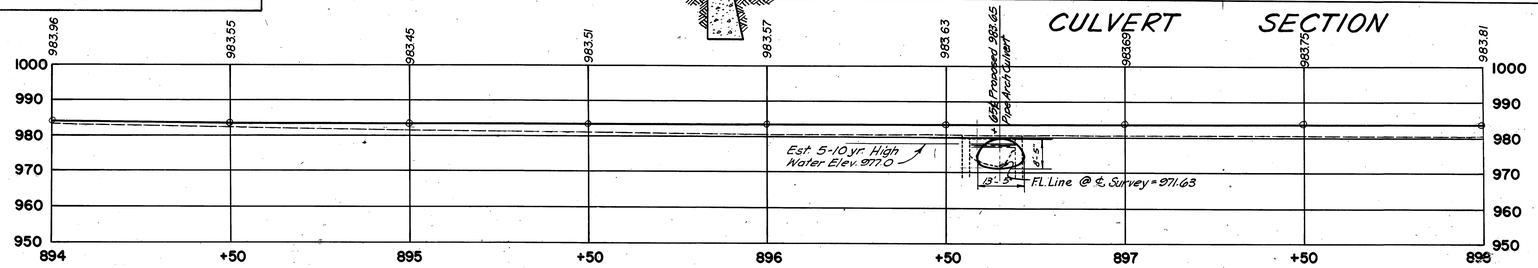
DETAIL ENDWALL - LEFT
SECTION B'-B'
SECTION A'-A'
DETAIL ENDWALL - RIGHT

ESTIMATED QUANTITIES

E-2 Excavation for Structure	36 Cu. Yd.
E-3 Channel Excavation	150 Cu. Yd.
S-1 Concrete for Structures, Class "E"	18 Cu. Yd.
S-28 13'-5" x 8'-5" Sectional Corr. Metal Structure	72 L.F.
S-24 Remove Existing Structure	Lump
I-10 Dumped Rock Channel Protection	35 Cu. Yd.



CULVERT SECTION



PROFILE ON CENTERLINE OF SURVEY

EXISTING BRIDGE DATA

TYPE: CONCRETE SLAB ON MASONRY ABUTMENT.
SPAN: 13'-5"
ROADWAY: 14'-6"
LOADING: NO LOAD REDUCTION.
SKEW: NONE.
CONDITION: SLAB & ABUTMENTS - POOR

DRAINAGE AREA = 3.9 Sq. Mi.

PROPOSED STRUCTURE

TYPE: Sectional Plate Corrugated Metal Pipe Arch Culvert.
SPAN: 13'-5" (RISE: 8'-5")
ROADWAY: 20' Pavement with 6' effective shoulders.

SKEW: 17°
DESIGN DISCHARGE: Q_{10} = 610 C.F.S.

6035-7

T. C. BIEBESHEIMER ENGINEERING CO.
CIVIL ENGINEERS AND SURVEYORS
TOLEDO, OHIO MONROE, MICHIGAN

SITE PLAN
BRIDGE NO. HUR-162-1698

HURON CO.
SEC. HUR-162-1698 STA. 896+65

DESIGN	TRACED	CHECKED	REVIEWED	DATE	REVISED
D.C.C.	JO	D.C.C.			

SITE PLAN

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

48
80

HUR.-162-(150)(2.56)(2.67)(4.10)(11.87)
(14.41)(16.93)(17.37)

11 MI. W. OF NORTH FAIRFIELD
PART I

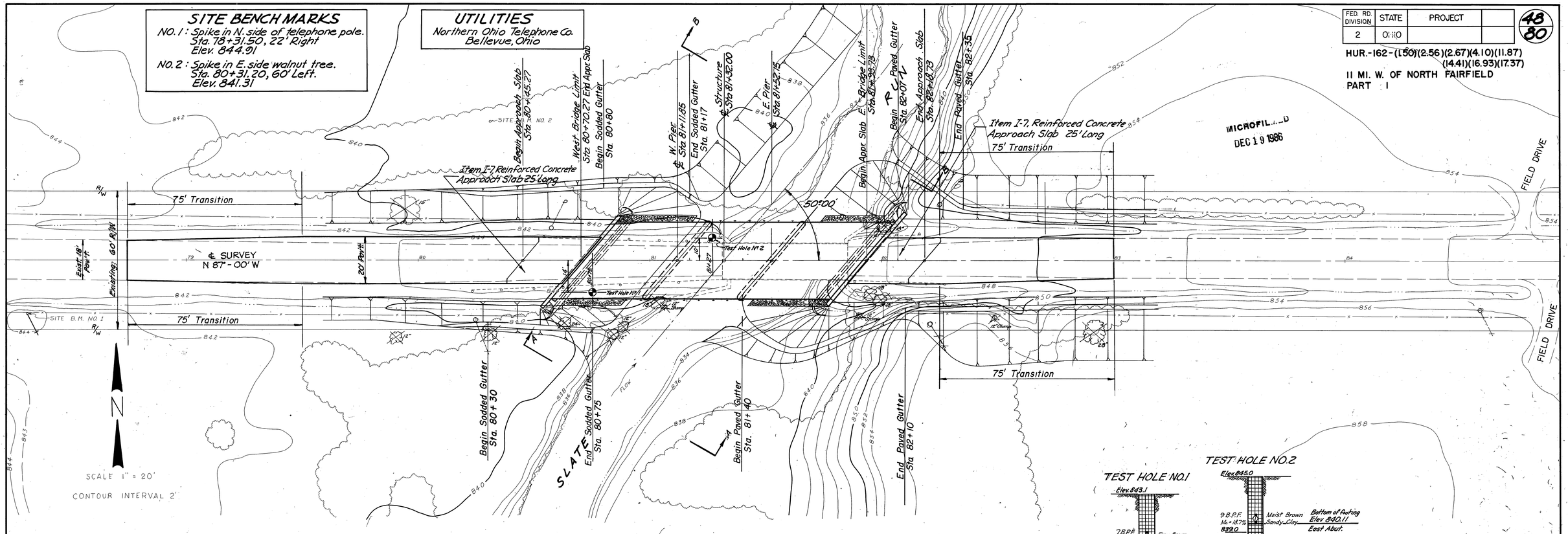
SITE BENCH MARKS

NO. 1: Spike in N. side of telephone pole. Sta. 78+31.50, 22' Right Elev. 844.91

NO. 2: Spike in E. side walnut tree. Sta. 80+31.20, 60' Left. Elev. 841.31

UTILITIES

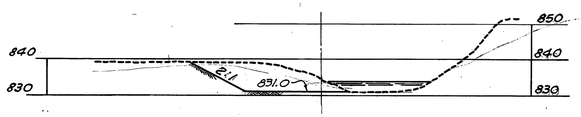
Northern Ohio Telephone Co.
Bellevue, Ohio



SCALE 1" = 20'

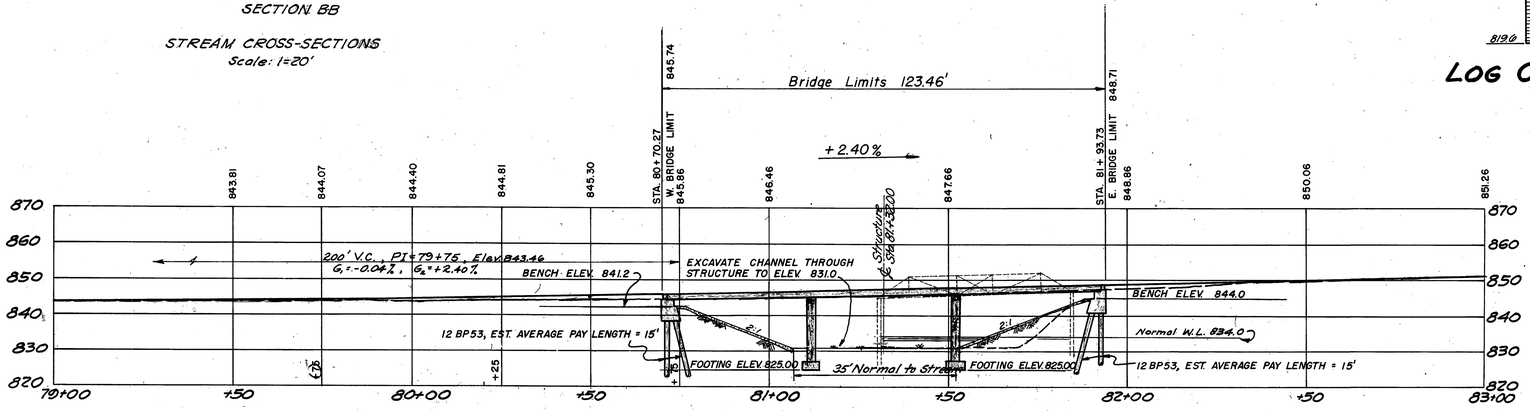
CONTOUR INTERVAL 2'

SECTION A-A

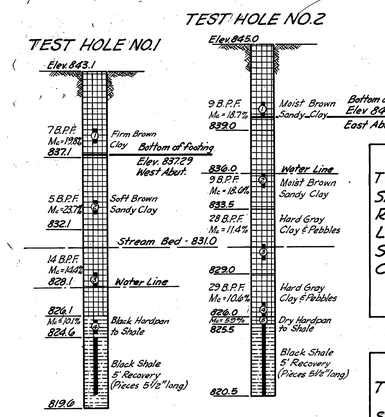


SECTION BB

STREAM CROSS-SECTIONS
Scale: 1=20'



PROFILE ON CENTERLINE OF SURVEY



LOG OF SOIL BORINGS

· LEGEND ·

B.P.F. : Standard 140# hammer blows required to drive sampling tube 1 foot with a 30" fall of the hammer

Mc : Moisture Content

NOTE: This sounding information was referred to in the design of the foundation, but the accuracy thereof is not guaranteed.

EXISTING BRIDGE DATA

TYPE: Steel low truss on masonry abutments.
SPAN: 54' Overall.
ROADWAY: 15'
LOADING: 25% reduction in legal load.
SKEW: None
CONDITION: Superstructure Fair; Abutments Poor.

DRAINAGE AREA 12.3 SQ. MI.

PROPOSED STRUCTURE

TYPE: Precast Prestressed Concrete Superstructure on Capped Pile Abutments and Solid Wall Piers
SPAN: 123'-5 1/2" Overall, Spans 40'-2 3/8", 40'-2 3/8", 40'-2 3/8"
ROADWAY: 33'-2 1/2" face to face of guard rail
SKEW: 40° L.F.
LOADING: CF 130 (57)
SURFACE: T-35 Bituminous Wearing Surface.
ALIGNMENT: Tangent
APPROACH SLABS: AS-1-54 25' long

6035-1

T. C. BIEBESHEIMER ENGINEERING CO.
CIVIL ENGINEERS AND SURVEYORS
TOLEDO, OHIO MONROE, MICHIGAN

SITE PLAN
BRIDGE NO. HUR-162-0154
OVER SLATE RUN

HURON COUNTY
SEC: HUR-162-1.50 STA. 80+70.27 81+93.73

DESIGN	TRACED	CHECKED	REVIEWED	DATE	REVISED
D.C.C.	dlo. JD	D.C.C.			

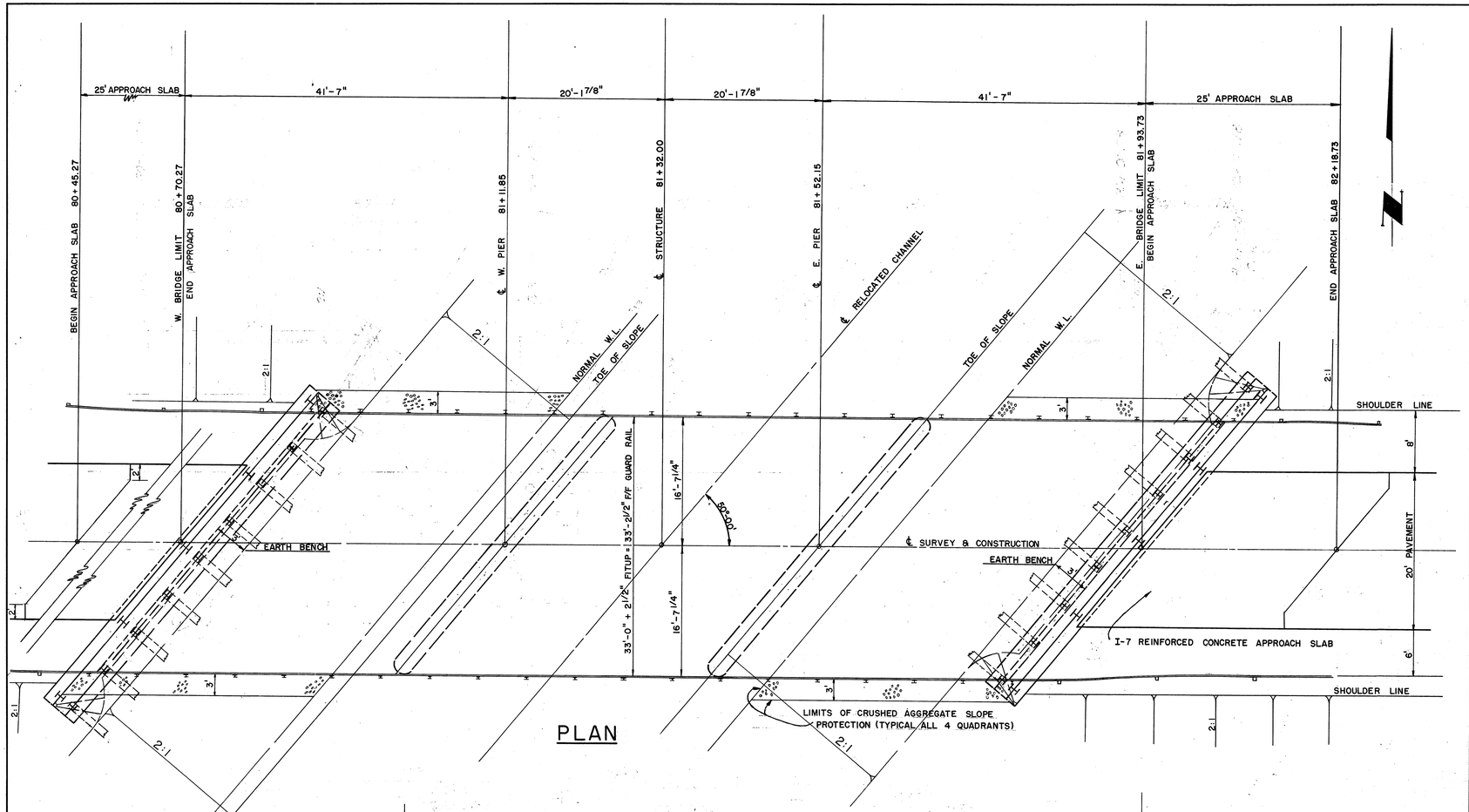
SITE PLAN

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

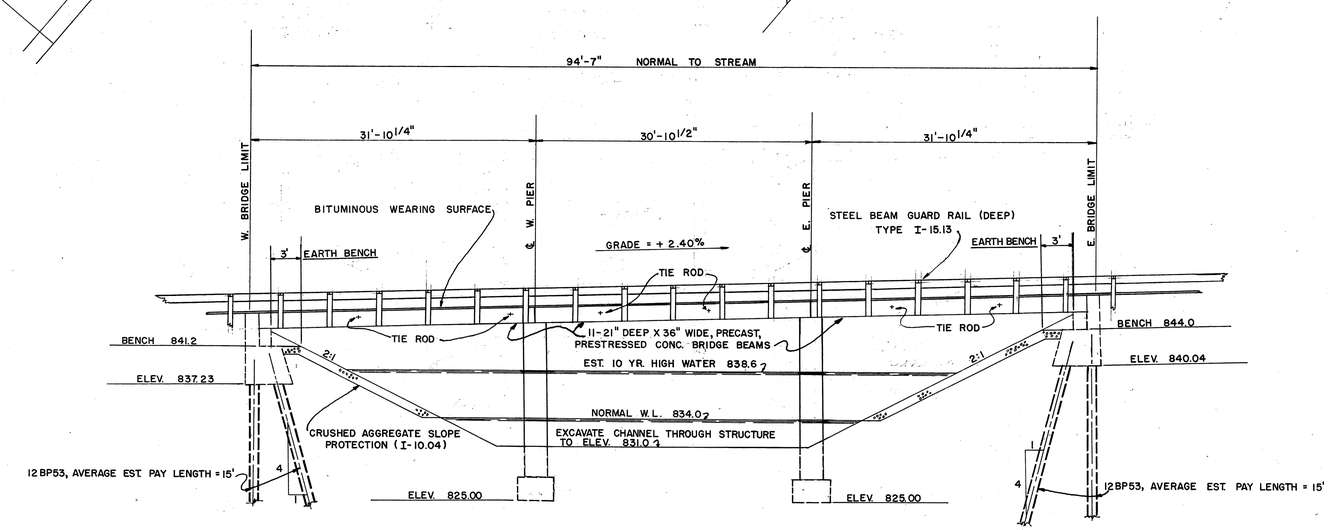
49
80

MICROFILMED
DEC 19 1986

SEC. HUR.-162-(01.50)(2.56)(2.67)(4.10)(11.87)
PART I (14.41)(16.93)(17.37)



PLAN



ELEVATION NORMAL TO STREAM

STRUCTURE OVER 20' SPAN

ITEM	DESCRIPTION	As-Built		UNIT	QUANTITY
E-2	SHALE EXCAVATION	CO.4 +7	17	CUBIC YDS	10
E-2	EXCAVATION FOR STRUCTURE, UNCLASSIFIED	CO.4 +66	261	CUBIC YDS.	175
E-2	COFFERDAMS, CRIBS & SHEETING			LUMP	SUM
E-3	CHANNEL EXCAVATION			CUBIC YDS.	1834
T-35	2 1/2" ASPHALTIC CONCRETE SURFACE COURSE TYPE "C" (85-100)			CUBIC YDS	23
S-1	CLASS "E" CONCRETE FOR ABUTMENTS			CUBIC YDS.	111
S-1	CLASS "E" CONCRETE FOR PIER WALLS			CUBIC YDS.	147
S-1	CLASS "E" CONCRETE FOR PIER FOOTINGS			CUBIC YDS.	33
S-3	WATERPROOFING, TYPE "C"			SQUARE YDS.	453
S-4	REINFORCING STEEL			LBS.	12,653
S-9	1/4" PREFORMED EXPANSION JOINT FILLER				77
S-9	1/2" PREFORMED EXPANSION JOINT FILLER			SQUARE FT.	77
S-9	1" PREFORMED EXPANSION JOINT FILLER			SQUARE FT.	155
S-14	RAILING (TYPE I-15.13) WITH GALVANIZED STEEL POSTS & STUDS			LIN. FT.	246.92
S-16	FIRST TEST PILE			LUMP	SUM
S-18	STEEL PILES 12BP53			LIN. FT.	420
S-24	REMOVAL OF EXISTING STRUCTURE			LUMP	SUM
S-29	POROUS BACKFILL			CUBIC YDS.	18
S-105	PRESTRESSED CONCRETE MEMBERS, AS PER PLAN			EACH	33
I-10	CRUSHED AGGREGATE SLOPE PROTECTION			SQUARE YDS.	210

GENERAL NOTES: See Sheet No. 4.

6035-1

T. C. BIEBESHEIMER ENGINEERING CO.
CIVIL ENGINEERS AND SURVEYORS
TOLEDO, OHIO MONROE, MICHIGAN

GENERAL PLAN & ESTIMATED QUANTITIES

BRIDGE NO. HUR-162-0154

SCALE: 1/8" = 1'-0"

DESIGN	TRACED	CHECKED	REVIEWED	DATE	REVISED
D.C.C.		D.C.C.			

Revised As-Built PEM 5/13/62

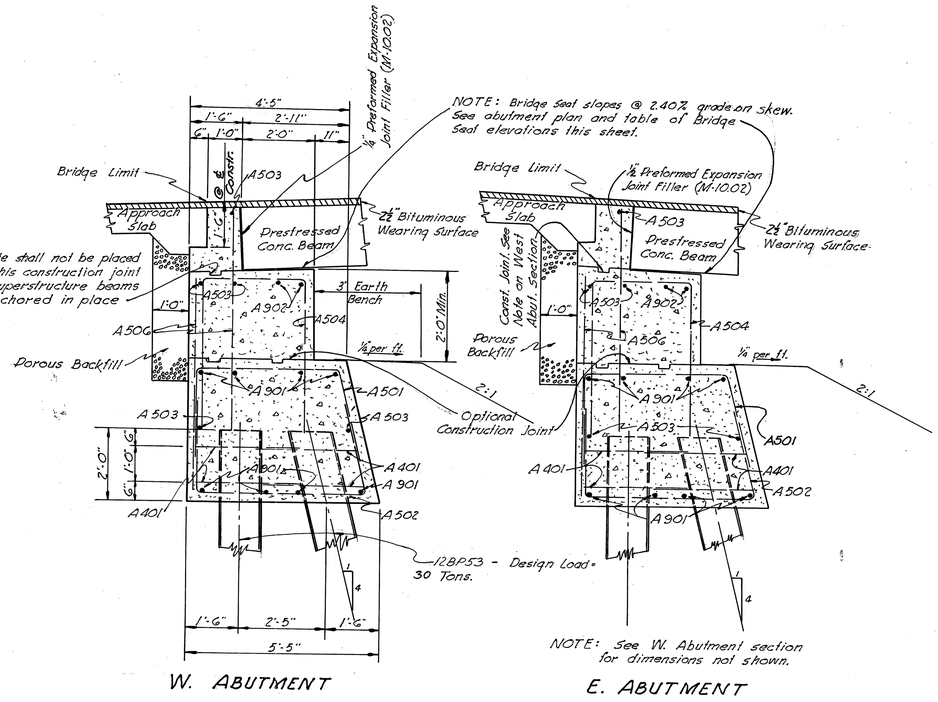
GENERAL PLAN & EST. QUANTITIES

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

50
80

SEC. HUR.-162-(01.50)(2.56)(2.67)(4.10)(11.87)
PART I (14.41)(16.93)(17.37)

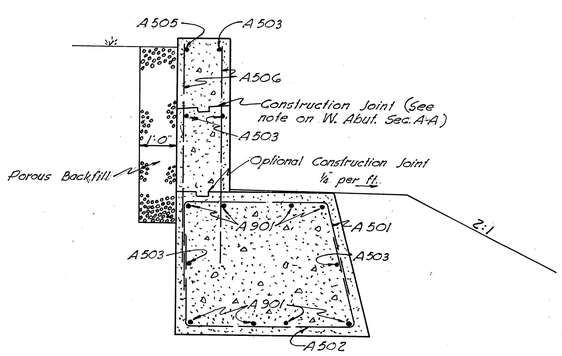
MICROFILMED
DEC 19 1986



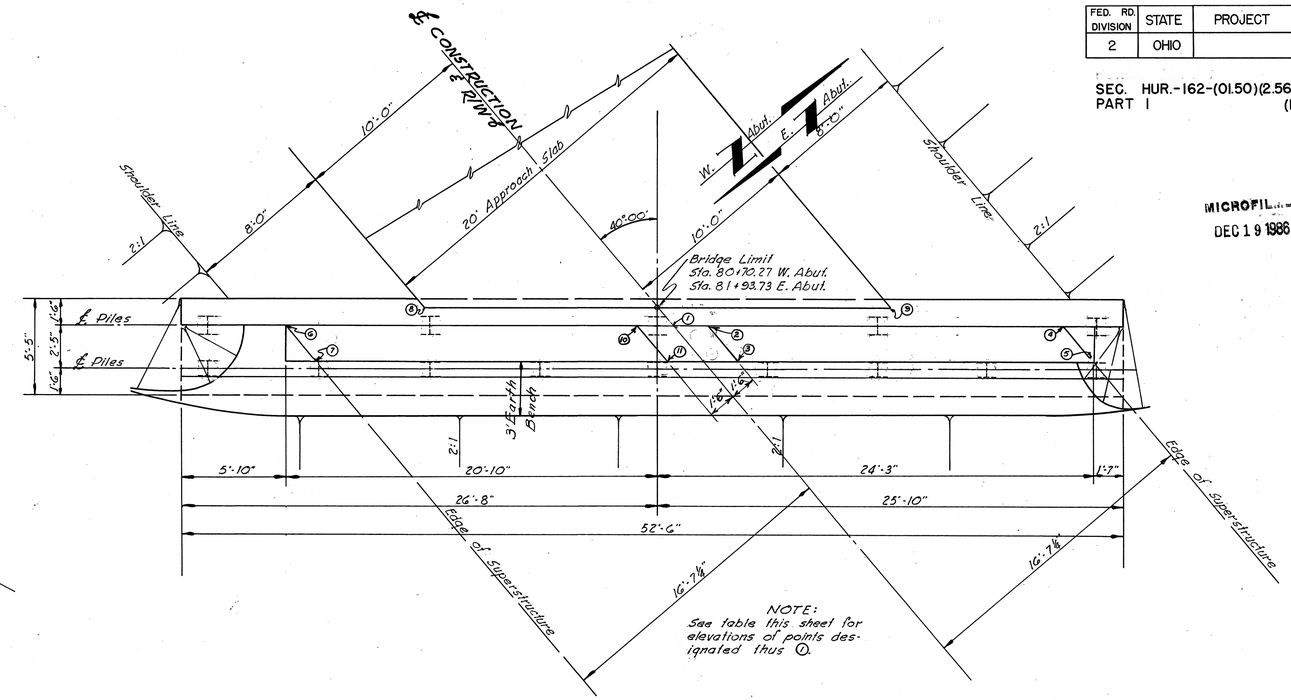
W. ABUTMENT

E. ABUTMENT

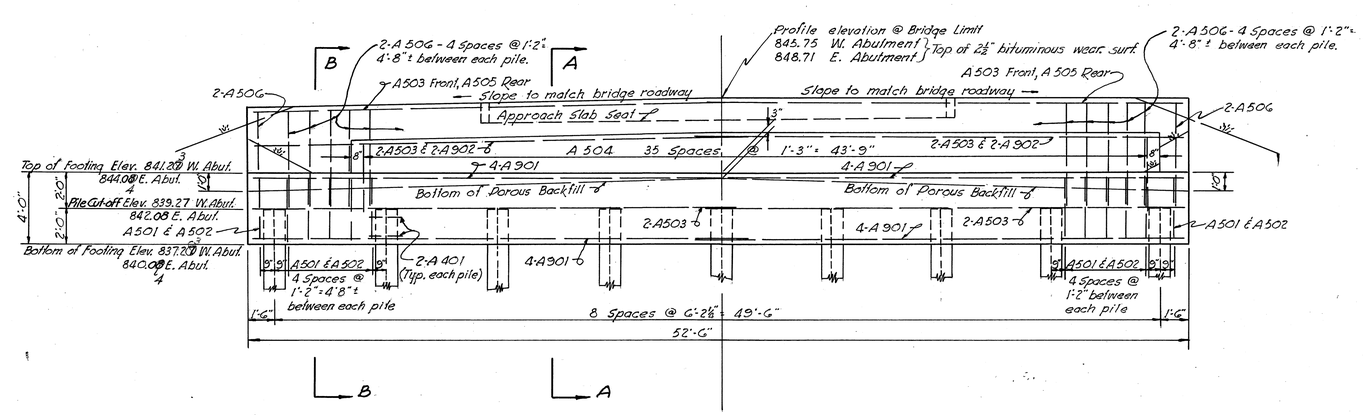
SECTION A-A



SECTION B-B



ABUTMENT PLAN



ABUTMENT ELEVATION

WEST ABUTMENT SHOWN

BRIDGE SEAT & BACKWALL ELEVATIONS		
POINT	W. ABUT.	E. ABUT.
1	845.57	848.47
2	843.81	846.65 ~~-3~~
3	843.87	846.58 ~~-6~~
4	843.87	846.10 ~~-08~~
5	843.93	846.04 ~~-2~~
6	843.23	846.70 ~~-5~~
7	843.28	846.71 ~~-69~~
8	845.19	848.58 ~~-6~~
9	845.58	848.14
10	843.75	846.71 ~~-69~~
11	843.81	846.65 ~~-3~~

6035-1

T. C. BIEBESHEIMER ENGINEERING CO.
CIVIL ENGINEERS AND SURVEYORS
TOLEDO, OHIO MONROE, MICHIGAN

ABUTMENT DETAILS

BRIDGE NO. HUR-162-0154

DESIGN	TRACED	CHECKED	REVIEWED	DATE	REVISED
D.C.C.		D.C.C.			3-10-61

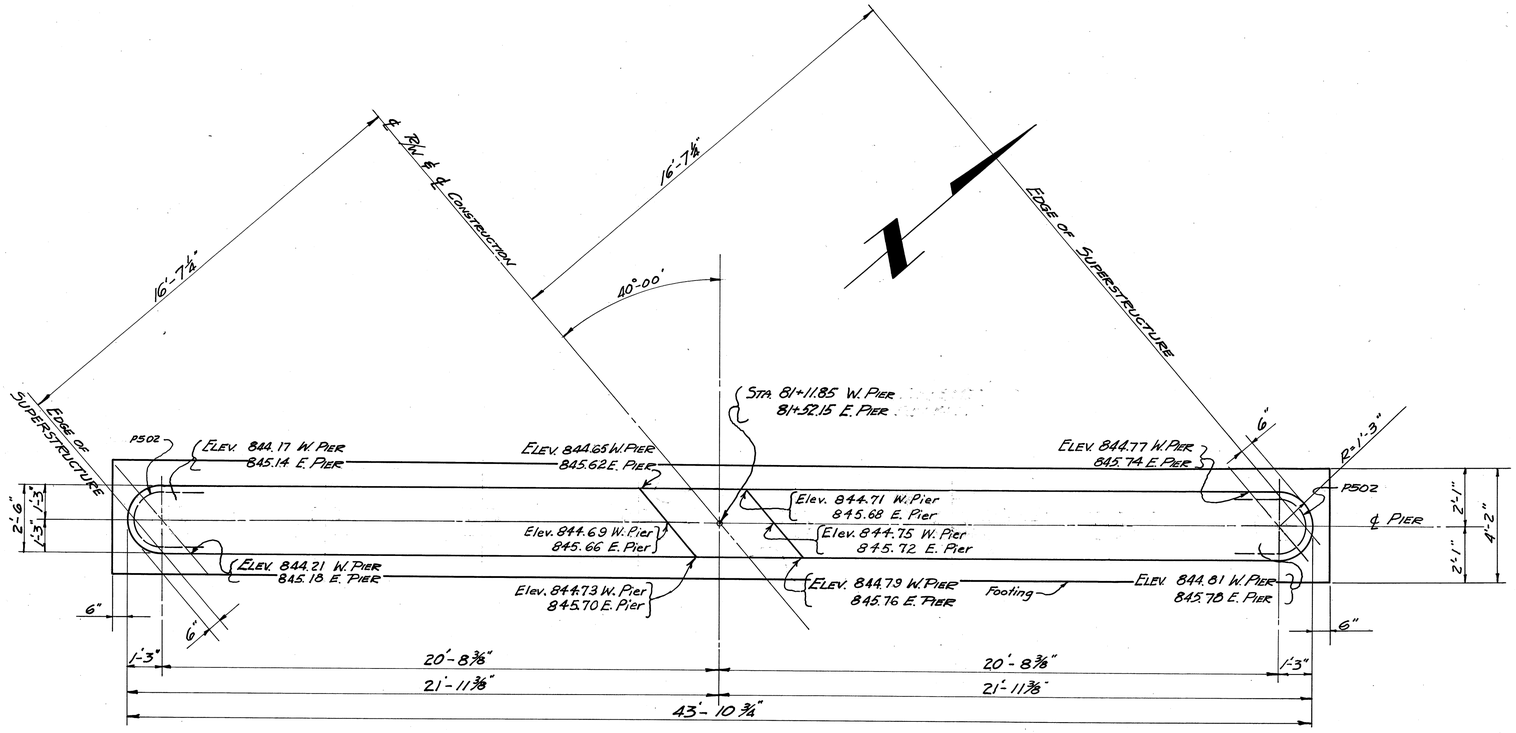
ABUTMENT DETAILS

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

51
80

SEC. HUR-162-(01.50)(2.56)(2.67)(4.10)(11.87)
PART I (14.41)(16.93)(17.37)

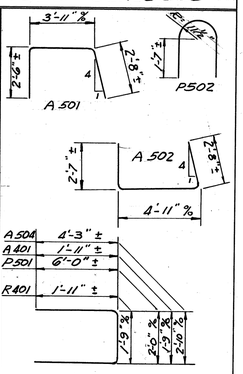
MICROFILMED
DEC 19 1986



PIER PLAN

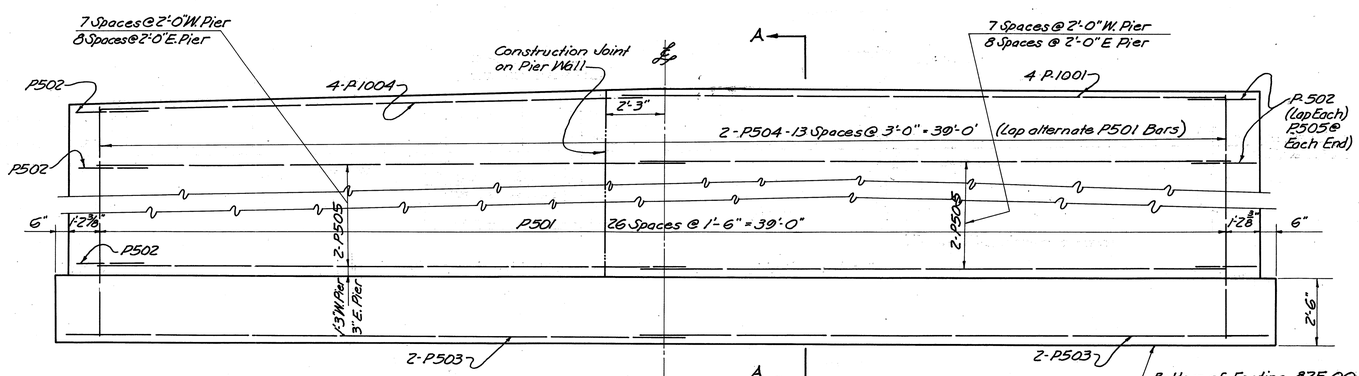
REINFORCING STEEL SCHEDULE

MARK	NO.	SIZE	LENGTH	WEIGHT	SHAPE
ABUTMENTS					
A 901	32	9	27'-9"	3019	S
A 902	8	9	23'-9"	646	S
A 501	84	5	9'-3"	811	B
A 502	84	5	10'-4"	905	B
A 503	20	5	27'-3"	568	S
A 504	72	5	11'-6"	864	B
A 505	4	5	12'-6"	52	S
A 506	168	5	6'-3"	1005	S
A 401	72	4	5'-7"	269	B
PIERS					
P 1001	16	10	22'-6"	1549	S
P 501	54	5	14'-2"	798	B
P 502	38	5	6'-4"	251	B
P 503	8	5	22'-6"	188	S
P 504	56	5	15'-0"	876	S
P 505	34	5	21'-6"	762	S
TOTAL					
REPLACEMENT BARS					
R 1001	1	10	7'-2"		S
R 901	1	9	6'-10"		S
R 701	1	7	4'-0"		S
R 501	1	5	5'-7"		S
R 401	1	4	3'-7"		B



"%" MEANS "OUT TO OUT"

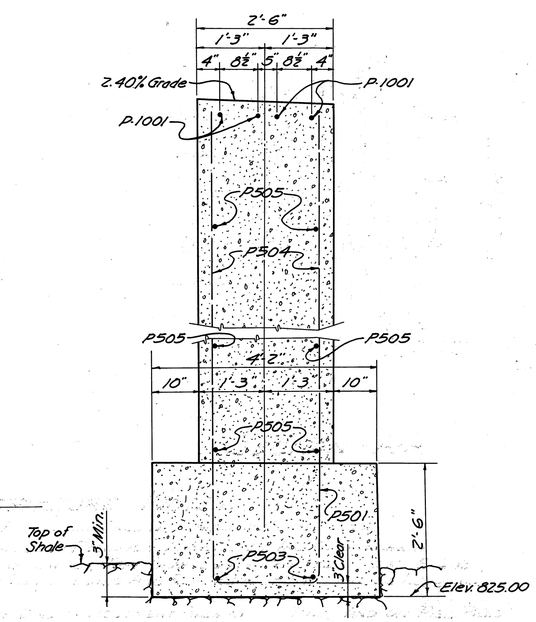
Replacement Bars: If Reinforcing Bars are Fabricated from stock which has been previously approved by the Ohio Highway Testing Laboratory. Test Samples as provided in Sec. S-9.02 need not be furnished and replacement bars will not be required.



PIER ELEVATION

Bottom of Footing 825.00

Note: Pier footing shall extend a minimum of 3" into solid shale or to the elevation shown, whichever is lower.



SECTION A-A

6035-1

T. C. BIEBESHEIMER ENGINEERING CO.
CIVIL ENGINEERS AND SURVEYORS
TOLEDO, OHIO MONROE, MICHIGAN

PIER DETAILS

BRIDGE NO. HUR-162-0154

DESIGN	TRACED	CHECKED	REVIEWED	DATE	REVISED
D.C.C.		D.C.C.			

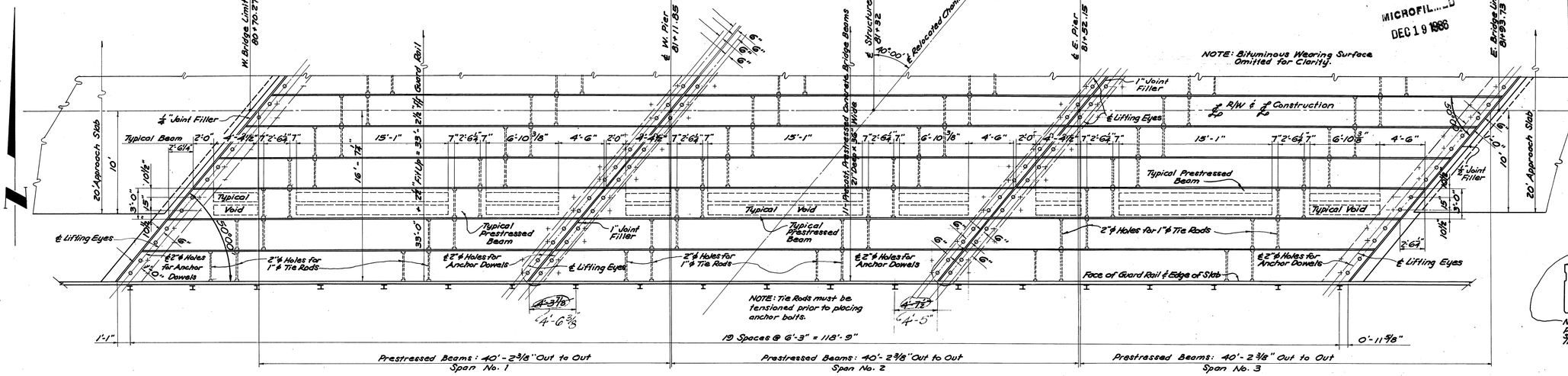
PIER DETAILS

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

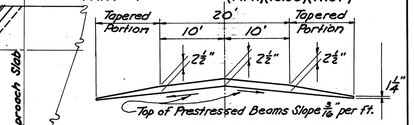
52
80

SEC. HUR.-162-(01.50)(2.56)(2.67)(4.10)(11.87)
PART I (14.41)(16.93)(17.37)

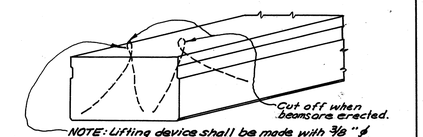
MICROFILMED DEC 19 1988



HALF PLAN OF DECK

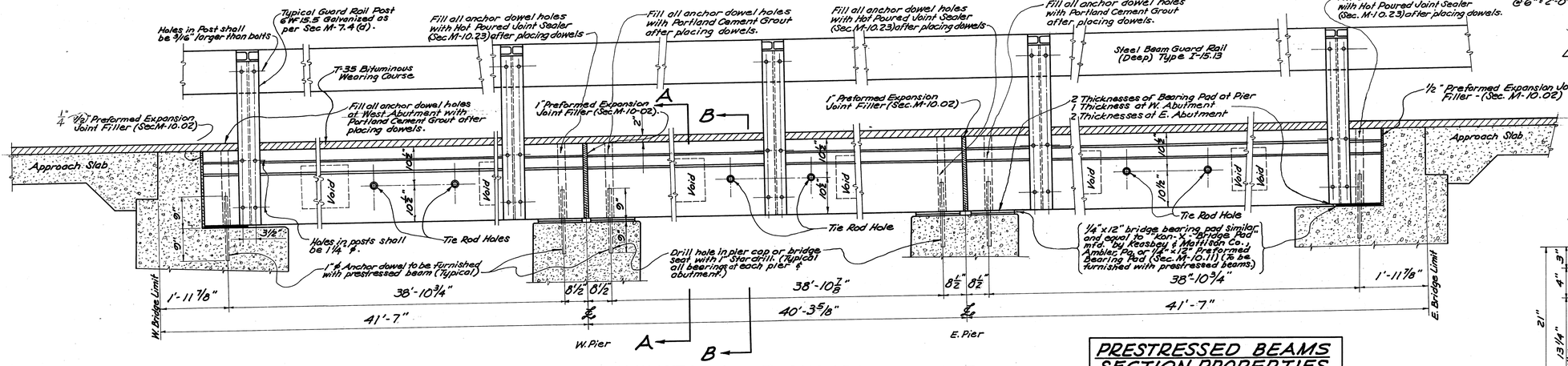


SECTION THROUGH BITUMINOUS WEARING COURSE

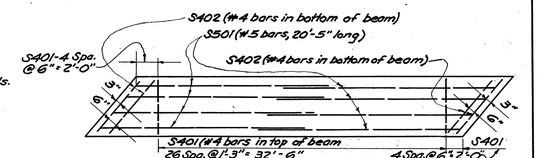


NOTE: Lifting device shall be made with 3/8" ϕ prestress strands. Minimum of 72" of strand shall be imbedded in concrete for each lifting eye.

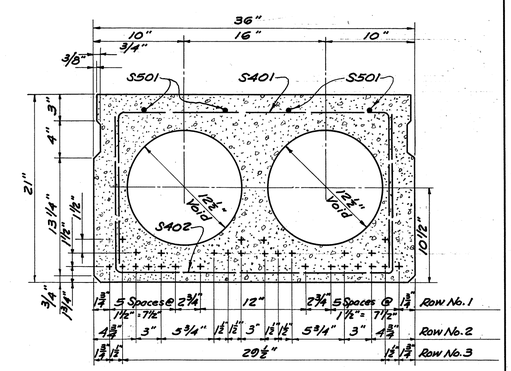
LIFTING DEVICE



ELEVATION OF SUPERSTRUCTURE



REINFORCING STEEL DETAILS (TYPICAL BEAM)



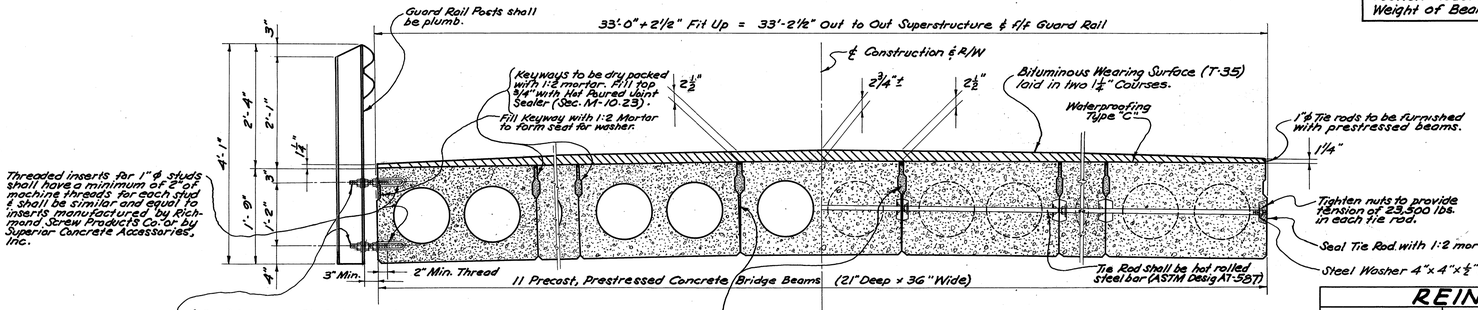
PRESTRESSED BEAM DETAIL

As = 28 - 3/8" ϕ 7 wire, stress relieved strands with total area = 2.24 sq. in.

PRESTRESSED BEAMS SECTION PROPERTIES

Net Section Area	502 in²
Net Moment of Inertia	24,977 in⁴
Section Modulus (Top)	2,356 in³
Section Modulus (Bottom)	2,402 in³
Weight of Beam	24,350 lbs

NOTE: Keyway mortar & hot poured joint sealer are included with prestressed beams for payment.



PART SECTION A-A

PART SECTION B-B

DIMENSIONAL TOLERANCES FOR PRESTRESSED BEAMS

The Engineer may reject beams not meeting any one of the following requirements and may require that such beams be removed from the site at the expense of the Contractor:

1.) Length: Overall length of any prestressed beam shall not be more than 1" longer or shorter than the "out to out" dimension shown on the plans.

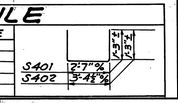
2.) Depth: Depth of any beam shall not be greater than (design depth + 1/4") nor smaller than (design depth - 1/4").

3.) Straightness: Allowable deviation from a vertical plane for either side of any prestressed beam shall not exceed 1/4" (measured in a horizontal plane).

REINFORCING STEEL SCHEDULE

NOTE: Numbers of bars and total weight apply to all 33 beams.

MARK	NO.	SIZE	LENGTH	WEIGHT	SHAPE
S401	1155	#4	5'-3"	4051	B
S402	132	#4	6'-0"	529	B
S501	264	#5	20'-5"	5623	S
TOTAL				10,203	



6035-1

T. C. BIEBESHEIMER ENGINEERING CO.
CIVIL ENGINEERS AND SURVEYORS
TOLEDO, OHIO MONROE, MICHIGAN

SUPERSTRUCTURE DETAILS

BRIDGE NO. HUR-162-0154

DESIGN	TRACED	CHECKED	REVIEWED	DATE	REVISED
D.C.C.	dW.	D.C.C.			9-10-61

PEM 9-14-62

Revised As-Built

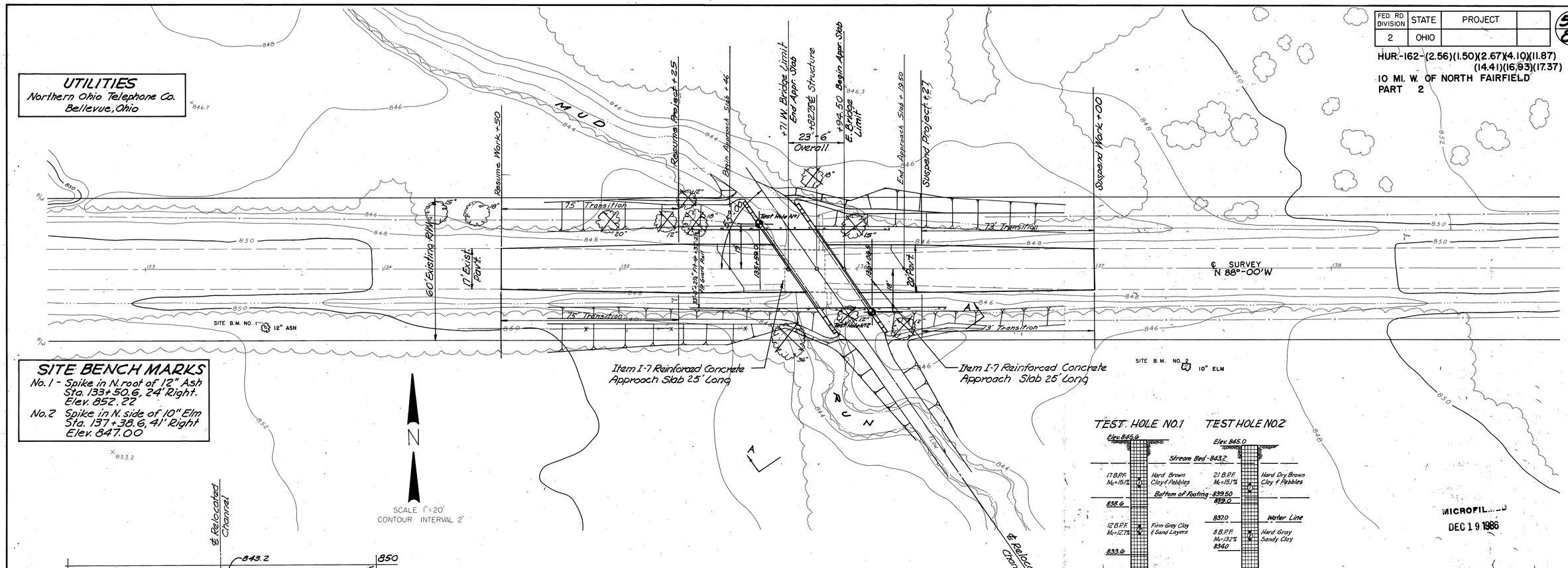
SUPERSTRUCTURE DETAILS

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

53
80

HUR-162-(2.56)(1.50)(2.67)(4.10)(11.87)
(14.41)(16.93)(17.37)
10 MI. W. OF NORTH FAIRFIELD
PART 2

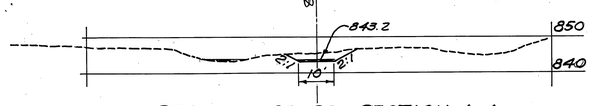
UTILITIES
Northern Ohio Telephone Co.
Bellevue, Ohio



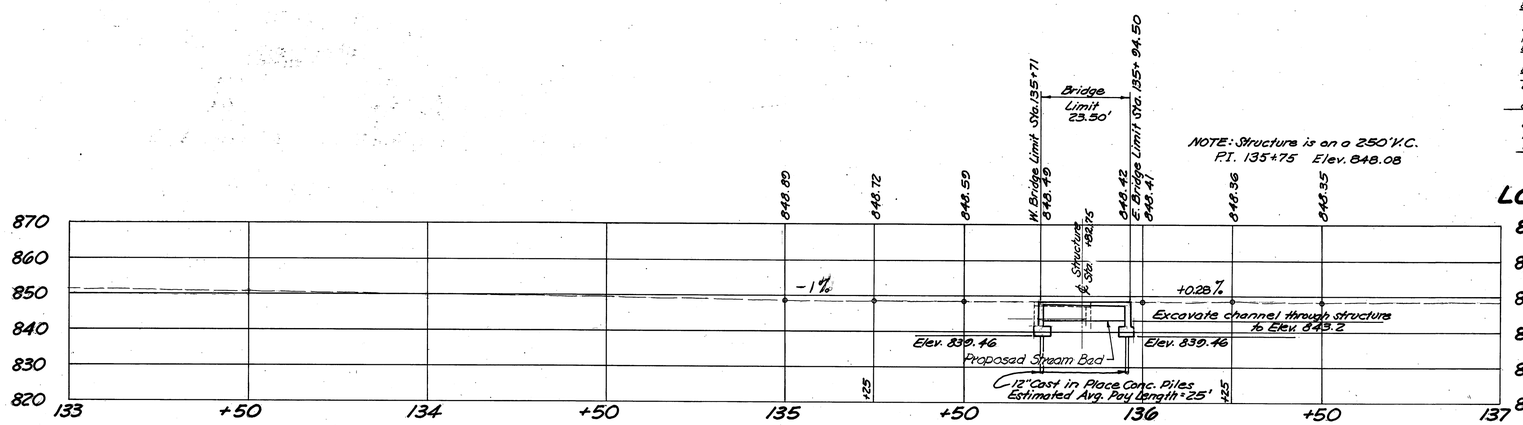
SITE BENCH MARKS
No. 1 - Spike in N. root of 12" Ash
Sta. 133+50.6, 24' Right.
Elev. 852.22
No. 2 Spike in N. side of 10" Elm
Sta. 137+38.6, 41' Right
Elev. 847.00

N

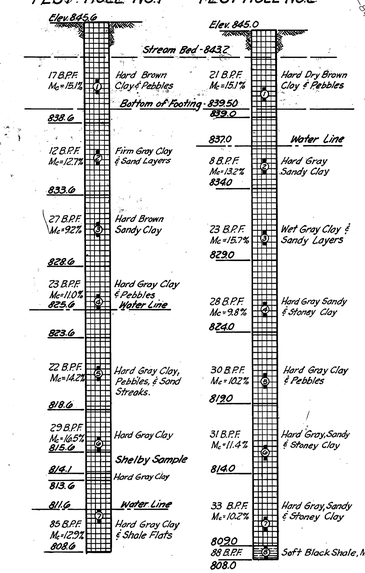
SCALE 1" = 20'
CONTOUR INTERVAL 2'



STREAM CROSS SECTION A-A
SCALE: 1" = 20'



PROFILE ON CENTERLINE OF SURVEY



LOG OF SOIL BORINGS

LEGEND
B.P.F. : Standard 140# hammer blows required to drive sampling tube 1 foot with 30" fall of hammer.
Mc : Moisture Content.

NOTE: This sounding information was referred to in the design of the foundation, but the accuracy thereof is not guaranteed.

MICROFILMED
DEC 19 1986

EXISTING BRIDGE DATA
TYPE: Concrete slab on masonry abutments
SPAN: 14' Clear, 17' Overall
ROADWAY: 15.5'
LOADING: Less than CF30
SKEW: None
CONDITION: Superstructure & Substructure Poor

DRAINAGE AREA = 1.3 SQ. MI.

PROPOSED STRUCTURE
TYPE: Precast, Prestressed Conc. Beam Superstructure on Conc. Cantilever Abutments
SPAN: 21.06' Clear, 16'-3" Normal to Stream
ROADWAY: 33'-2½" face to face guard rail
SKEW: 35° R.F.
LOADING: CF130 (57)
SURFACE: T-35 Bituminous Wearing Surface
ALIGNMENT: Tangent
APPROACH SLABS: AS-1-54 25' long.

6035-2

T. C. BIEBESHEIMER ENGINEERING CO.
CIVIL ENGINEERS AND SURVEYORS
TOLEDO, OHIO MONROE, MICHIGAN

SITE PLAN
BRIDGE NO. HUR-162-0257
OVER MUD RUN
HURON COUNTY
SEC: HUR-162-02.56 STA. 135 + 71 135 + 94.50

DESIGN	TRACED	CHECKED	REVIEWED	DATE	REVISED
D.C.C.	dw. JD	D.C.C.			

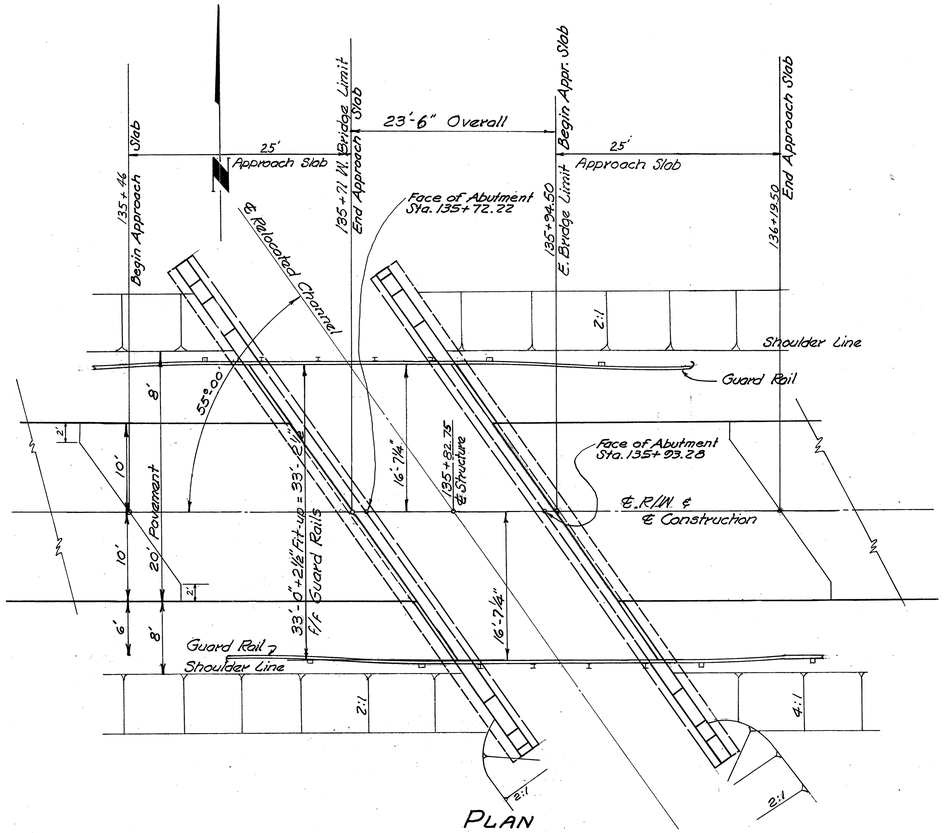
SITE PLAN

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

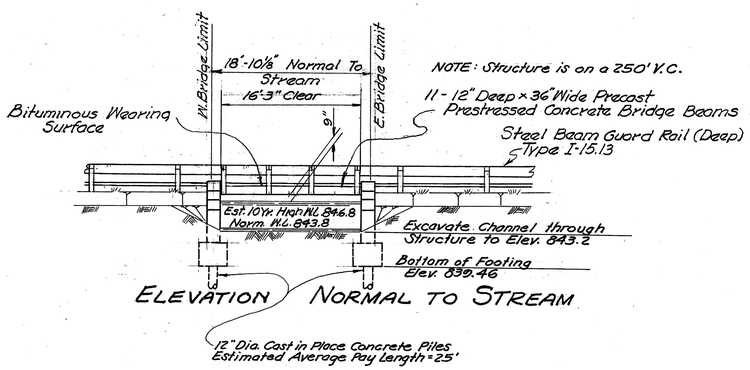
54
80

MICROFILMED
DEC 19 1986

SEC. HUR.-162-(02.56)(1.50)(2.67)(4.10)(11.87)
PART 2 (14.41)(16.93)(17.37)



PLAN



ELEVATION NORMAL TO STREAM

STRUCTURE OVER 20' SPAN

ITEM	DESCRIPTION	As-Built		UNIT	QUANTITY
E-2	EXCAVATION FOR STRUCTURE, UNCLASSIFIED	co.# -120	120	CUBIC YDS.	180
E-2	COFFERDAMS, CRIBS & SHEETING			LUMP	SUM
E-3	CHANNEL EXCAVATION	co.# 1-2-3-4-12	239	CUBIC YDS.	159
T-35	2 1/2" ASPHALTIC CONCRETE SURFACE COURSE TYPE "C" (85-100)			CUBIC YDS.	6
S-1	CLASS "E" CONCRETE FOR ABUTMENT WALLS			CUBIC YDS.	41
S-1	CLASS "E" CONCRETE FOR ABUTMENT FOOTINGS			CUBIC YDS.	46
S-3	WATERPROOFING, TYPE "B"			SQUARE YDS.	11
S-3	WATERPROOFING, TYPE "C"			SQUARE YDS	86
S-3	PREMOLDED SEALING STRIP			LIN. FT.	12
S-4	REINFORCING STEEL			LBS.	~~2626~~ 2485
S-9	1/4" PREFORMED EXPANSION JOINT FILLER			SQUARE FT.	60
S-9	3/4" PREFORMED EXPANSION JOINT FILLER			SQUARE FT.	8
S-14	RAILING (TYPE I-15.13) WITH GALVANIZED STEEL POSTS & STUDS			LIN. FT.	47
S-16	FIRST TEST PILE			LUMP	SUM
S-18	12" CAST IN PLACE CONCRETE PILES (REINFORCED)	co.# -1-2-3	486.5	LIN. FT.	600
S-24	REMOVAL OF EXISTING STRUCTURE			LUMP	SUM
S-29	POROUS BACKFILL			CUBIC YDS.	30
S-105	PRESTRESSED CONCRETE MEMBERS, AS PER PLAN			EACH	11

GENERAL NOTES: See Sheet No. 4.

6035-2

T. C. BIEBESHEIMER ENGINEERING CO.
CIVIL ENGINEERS AND SURVEYORS
TOLEDO, OHIO MONROE, MICHIGAN

GENERAL PLAN & ESTIMATED QUANTITIES

BRIDGE NO. HUR-162-0257

SCALE: 1/8" = 1'-0"

DESIGN	TRACED	CHECKED	REVIEWED	DATE	REVISED
D.C.C.		D.C.C.			3-15-61

Revised As-Built PEM 9-13-62

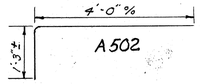
GENERAL PLAN & EST. QUANTITIES

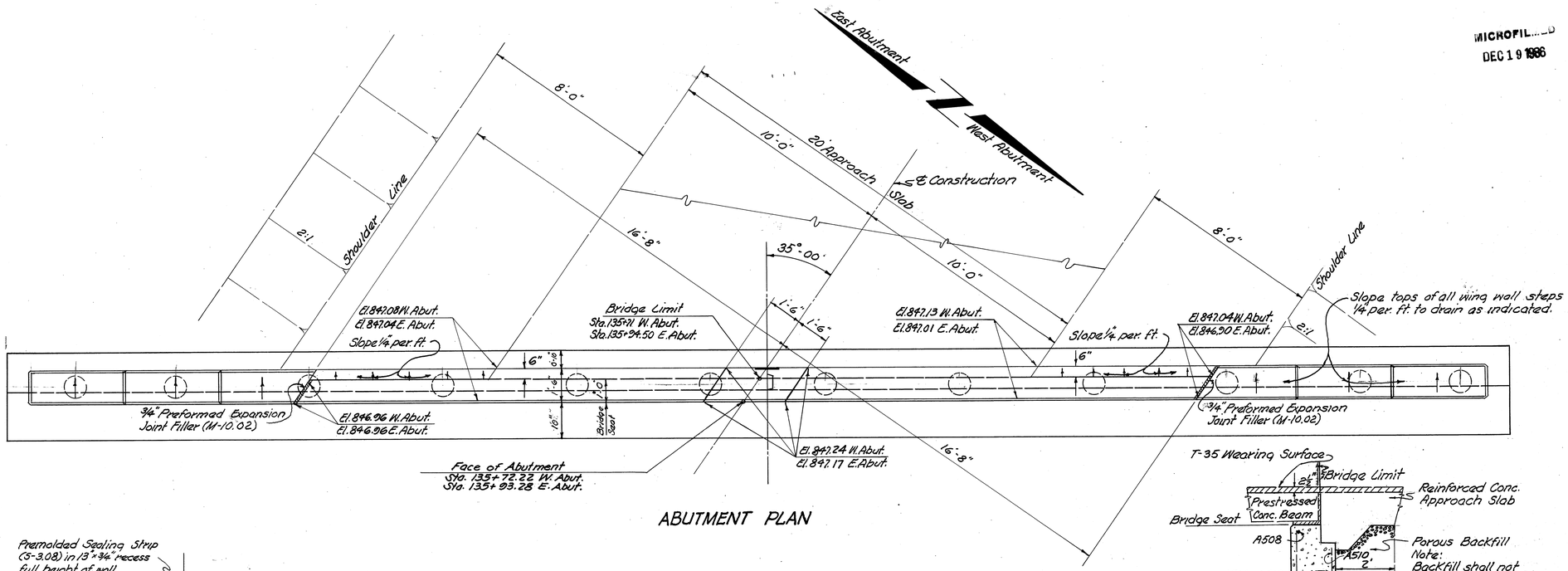
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

55
80

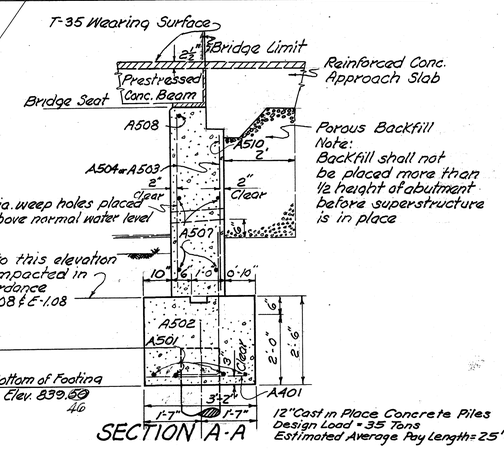
MICROFILMED
DEC 19 1986

SEC. HUR-162-(02.56)(1.50)(2.67)(4.10)(11.87)
PART 2 (14.41)(16.93)(17.37)

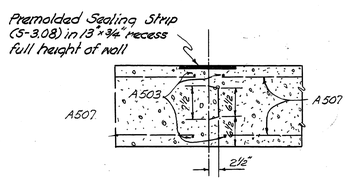




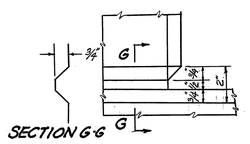
ABUTMENT PLAN



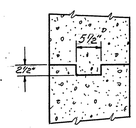
SECTION A-A



SECTION B-B
CONTRACTION JOINT DETAIL



DETAIL-E
RUSTICATION DETAIL

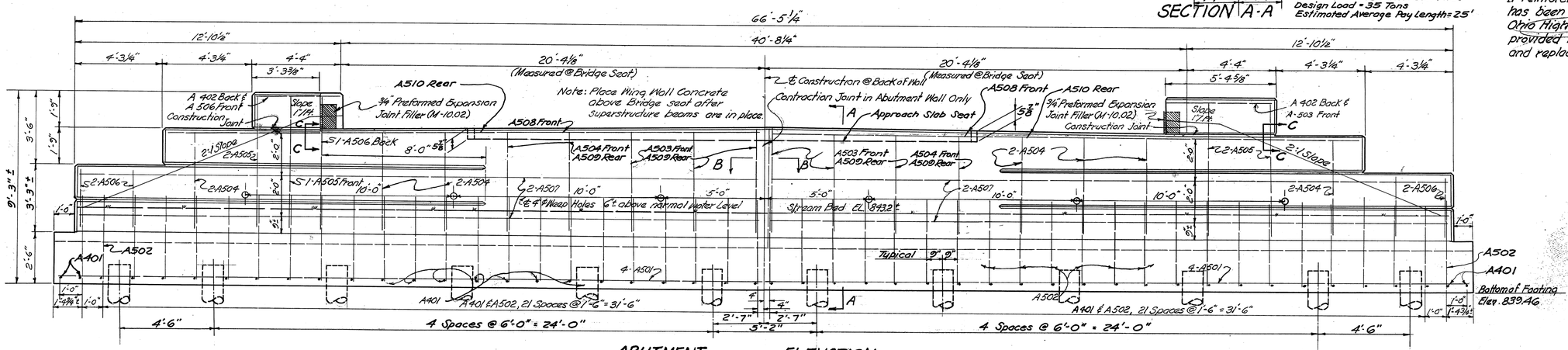


SECTION C-C
CONSTRUCTION JOINT DETAIL

REINFORCING STEEL SCHEDULE

Mark	No.	Size	Length	Weight	Shape
Footings					
A401	96	4	2'-8"	171	S
A501	16	5	34'-10"	581	S
A502	92	5	5'-4"	512	B
Walls					
A402	4	4	4'-0"	11	S
A503	14	5	4'-9"	69	S
A504	~~38~~ 34	5	4'-8"	~~175~~ 165	S
A505	~~10~~ 14	5	6'-5"	~~107~~ 94	S
A506	18	5	2'-11"	55	S
A507	16	5	32'-8"	545	S
A508	~~8~~ 4	5	28'-5"	~~237~~ 119	S
A509	18	5	4'-3"	80	S
A510	4	5	20'-0"	83	S
TOTAL WEIGHT			2485	~~2626~~	Lbs
Replacement Bars					
R401	1	4	4'-0"		S
R501	1	5	5'-7"		S

REPLACEMENT BARS:
If reinforcing bars are fabricated from stock which has been previously tested and approved by the Ohio Highway Testing Laboratory, test samples as provided in Section S-9.02 need not be furnished and replacement bars will not be required.



ABUTMENT ELEVATION

6035-2

T. C. BIEBESHEIMER ENGINEERING CO.
CIVIL ENGINEERS AND SURVEYORS
TOLEDO, OHIO MONROE, MICHIGAN

SUBSTRUCTURE DETAILS

BRIDGE NO. HUR-162-0257

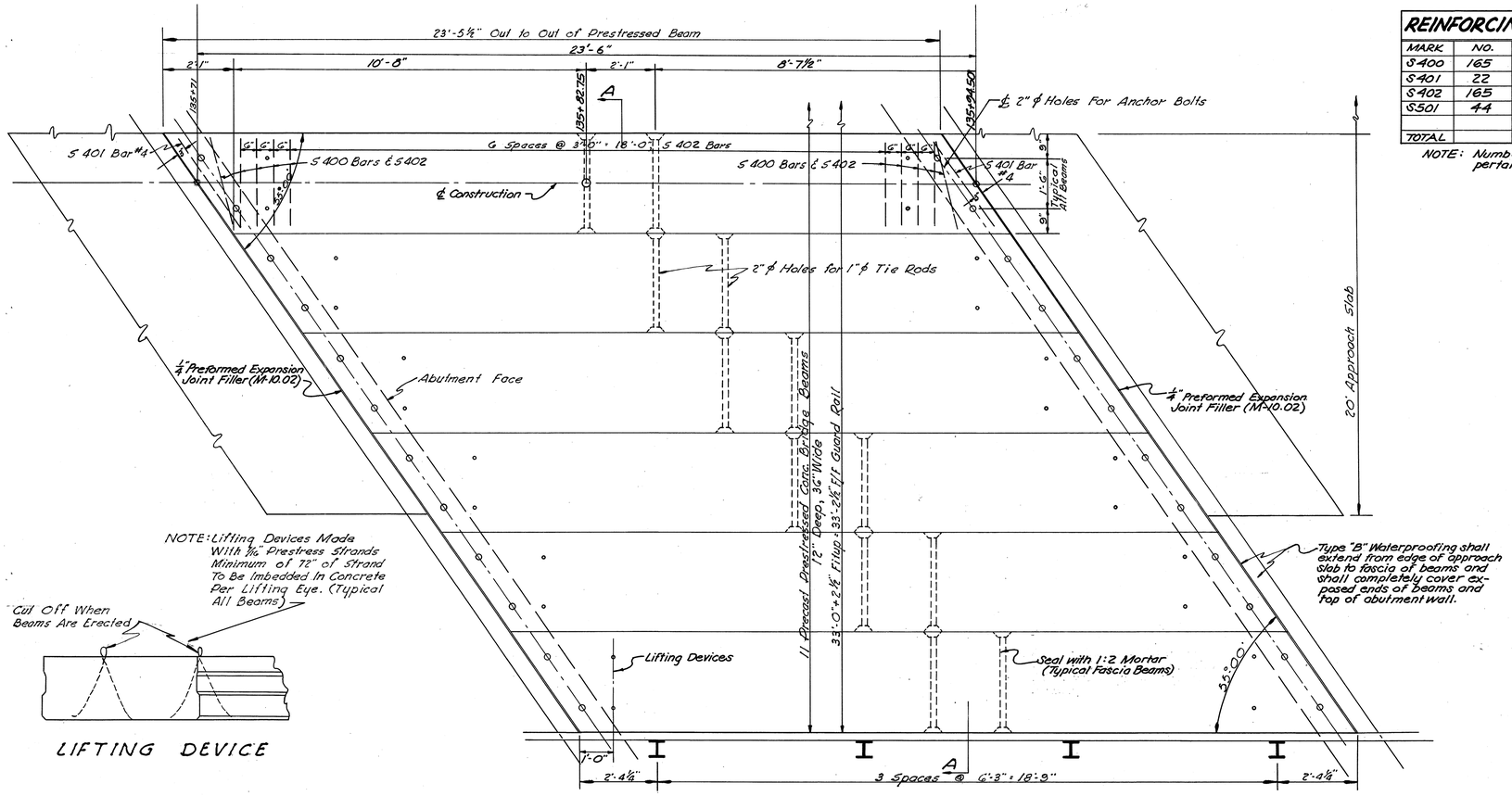
DESIGN	TRACED	CHECKED	REVIEWED	DATE	REVISED
D.C.C.		O.C.C.			3-10-61 3-15-61

SUBSTRUCTURE DETAILS

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

56/80

SEC. HUR.-162-(02.56)(1.50)(2.67)(4.10)(11.87)
PART 2 (14.41)(16.93)(17.37)



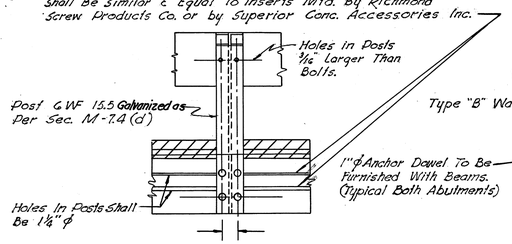
HALF PLAN OF DECK

NOTE: Lifting Devices Made With ½" Prestress Strands Minimum of 72" of Strand To Be Imbedded In Concrete Per Lifting Eye. (Typical All Beams)

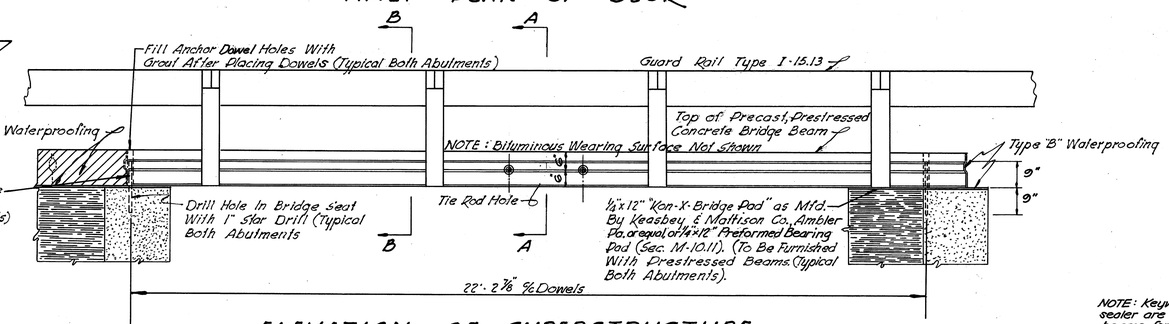
Cut Off When Beams Are Erected

LIFTING DEVICE

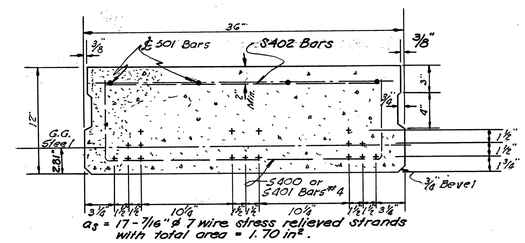
GUARD RAIL INSERTS: Inserts Shall Have a Minimum of 4" of Machine Threads for Each 1" ϕ Stud & Shall Be Similar & Equal To Inserts Mfd. By Richmond Screw Products Co. or by Superior Conc. Accessories Inc.



SECTION C-C
GUARD RAIL DETAIL



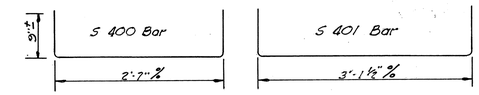
ELEVATION OF SUPERSTRUCTURE



PRESTRESSED BEAM DETAIL

REINFORCING STEEL SCHEDULE					
MARK	NO.	SIZE	LENGTH	WEIGHT	SHAPE
S400	165	#4	4'-3"	468	B
S401	22	4	4'-9"	70	B
S402	165	4	2'-9"	303	S
S501	44	#5	23'-0"	1056	S
TOTAL				1897	

NOTE: Numbers of bars and total weight pertain to 11 Beams.



MICROFILMED
DEC 19 1986

DIMENSIONAL TOLERANCES FOR PRESTRESSED BEAMS

The Engineer may reject beams not meeting any one of the following requirements and may require that such beams be removed from the site at the expense of the contractor.

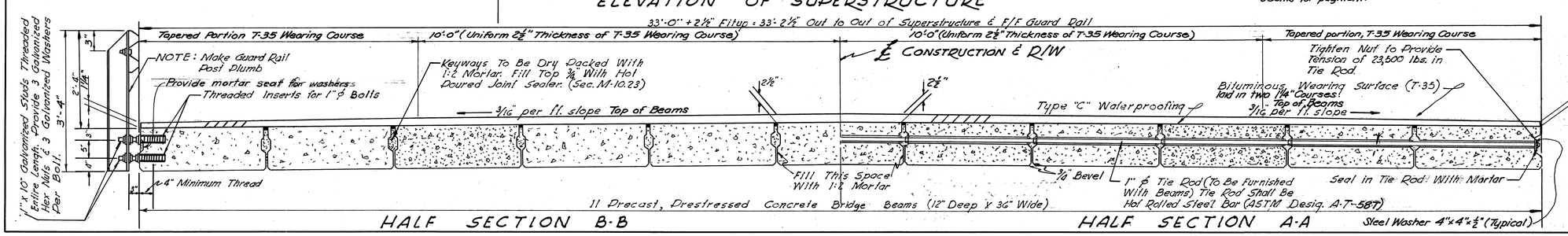
1-LENGTH: Overall length of any prestressed beam shall not be more than 1" longer or shorter than the "out to out" dimension shown on the plans.

2-DEPTH: Depth of any beam shall not be greater than (design depth + ¼") nor smaller than (design depth - ¼")

3-STRAIGHTNESS: Allowable deviation from a vertical plane for either side of any prestressed beam shall not exceed ¼" (measured in a horizontal direction.)

PRESTRESSED BEAM SECTION PROPERTIES	
Net Section Area	423.8 in²
Net Moment of Inertia	5,122 in⁴
Section Modulus (Top)	848 in³
Section Modulus (Bottom)	859 in³
Weight of Beam (Approx)	10,600 lbs.

NOTE: Keyway mortar & hot poured joint sealer are included with prestressed beams for payment.



HALF SECTION B-B HALF SECTION A-A

6035-2

T. C. BIEBESHEIMER ENGINEERING CO.
CIVIL ENGINEERS & SURVEYORS
TOLEDO, OHIO • MONROE, MICHIGAN

SUPERSTRUCTURE DETAILS

BRIDGE NO. HUR.-162-0257

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
D.C.C.			D.C.C.			

SUPERSTRUCTURE DETAILS

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

57
80

HUR.-162-(2.67)(1.50)(2.56)(4.10)(11.87)
(14.41)(16.93)(17.37)
10 MI. W. OF NORTH FAIRFIELD
PART 3

MICROFILMED
DEC 19 1986

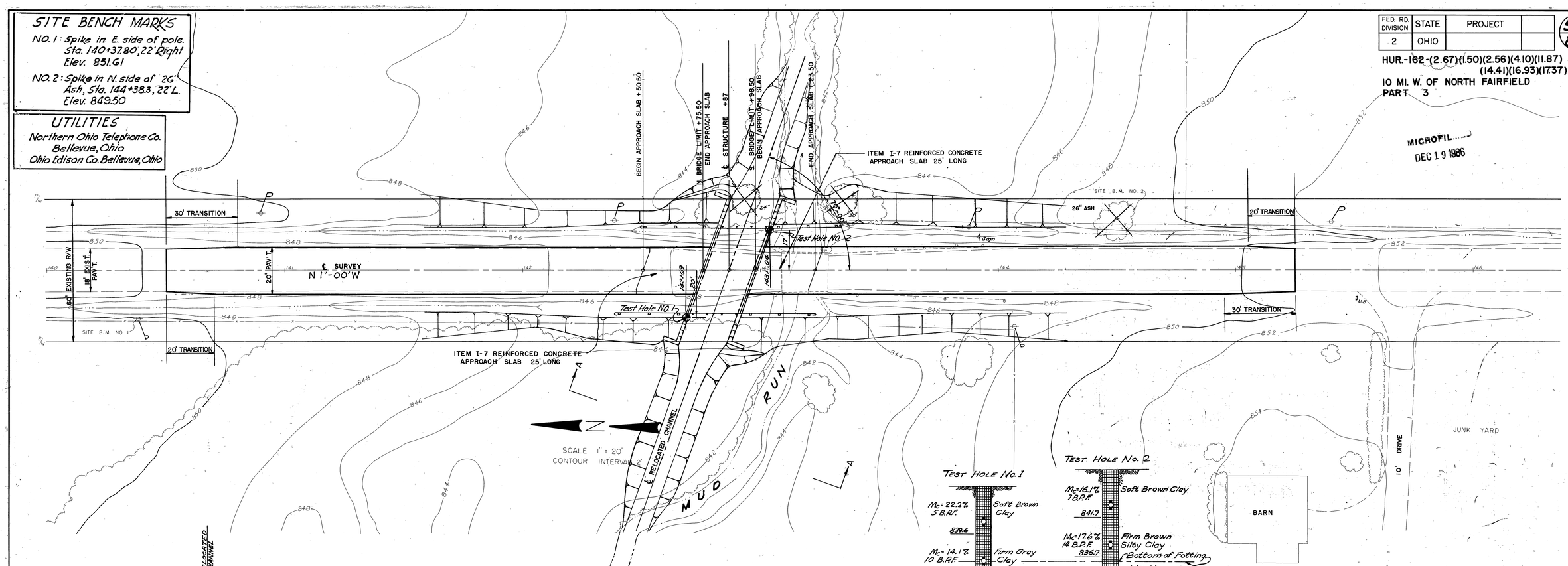
SITE BENCH MARKS

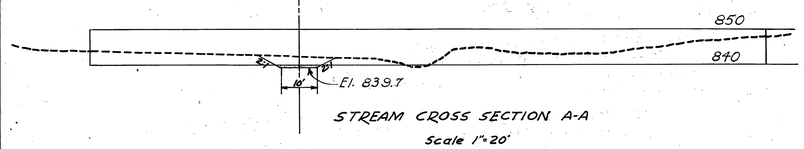
NO. 1: Spike in E. side of pole. Sta. 140+37.80, 22' Right Elev. 851.61

NO. 2: Spike in N. side of 26" Ash, Sta. 144+38.3, 22' L. Elev. 849.50

UTILITIES

Northern Ohio Telephone Co.
Bellevue, Ohio
Ohio Edison Co. Bellevue, Ohio



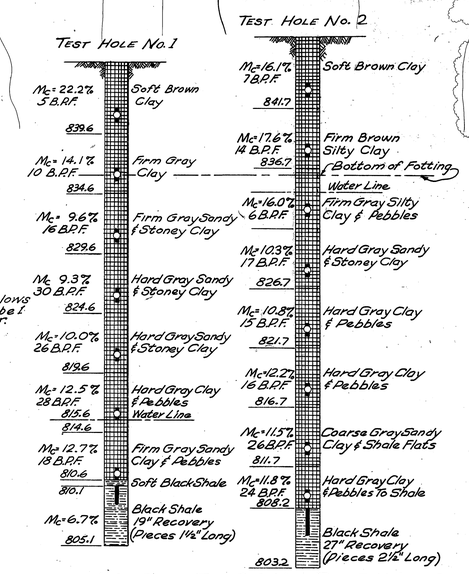


LEGEND

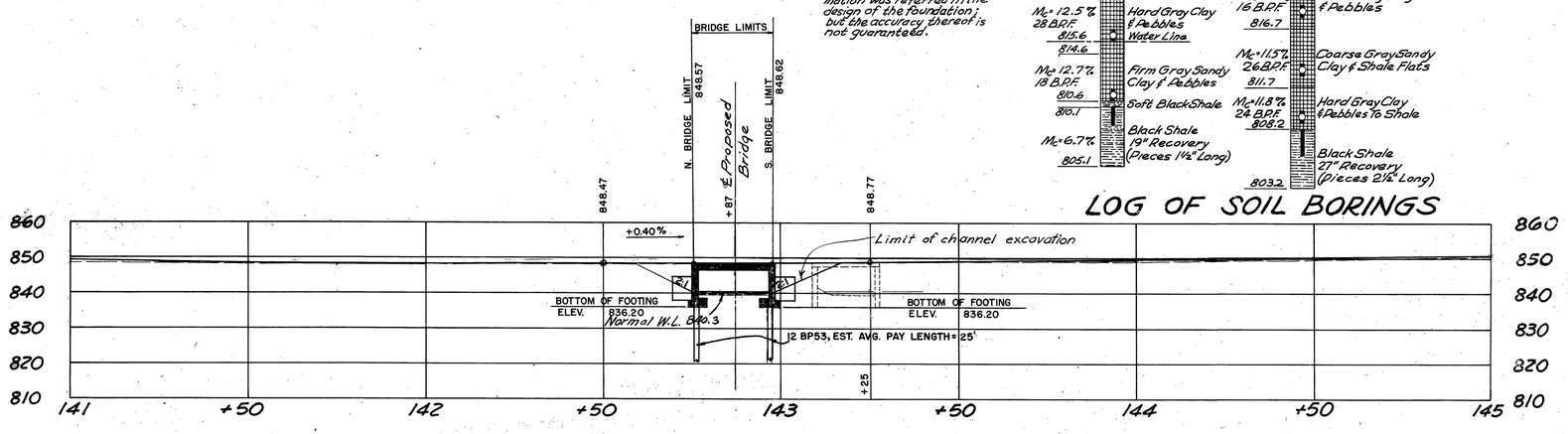
B.P.F.: Standard 140# hammer blows required to drive sampling tube 1 foot with 30" fall of hammer.

Mc: Moisture Content.

NOTE: This sounding information was referred in the design of the foundation; but the accuracy thereof is not guaranteed.



LOG OF SOIL BORINGS



PROFILE ON CENTERLINE OF SURVEY

EXISTING BRIDGE DATA

TYPE: Conc. slab on conc. & stone abutments
SPAN: 15'-9" Clear
ROADWAY: 16'
LOADING: Less than CF 30
SKEW: None
CONDITION: Slab & abutment: poor

DRAINAGE AREA 1.3 SQ. MI.

PROPOSED STRUCTURE

TYPE: Precast, Prestressed Concrete Beam. Superstructure on Concrete Cantilever Abutments
SPAN: 20.88' clear - 19'-5⅛" Normal to Stream
ROADWAY: 36'-2¾" f/f Guard Rails
SKEW: 20° L.F.
LOADING: CF 130 (57)
SURFACE: T-35 Bituminous Wearing Surface
Approach Slabs: AS-1-54 (25' Long)
ALIGNMENT: Tangent

6035-3

T. C. BIEBESHEIMER ENGINEERING CO.
CIVIL ENGINEERS AND SURVEYORS
TOLEDO, OHIO MONROE, MICHIGAN

SITE PLAN
BRIDGE NO. HUR-162-0271

OVER MUD RUN
HURON COUNTY
SEC: HUR-162-2.67
STA. 142+75.50
STA. 142+98.50

DESIGN	TRACED	CHECKED	REVIEWED	DATE	REVISED
D.C.C.		D.C.C.			

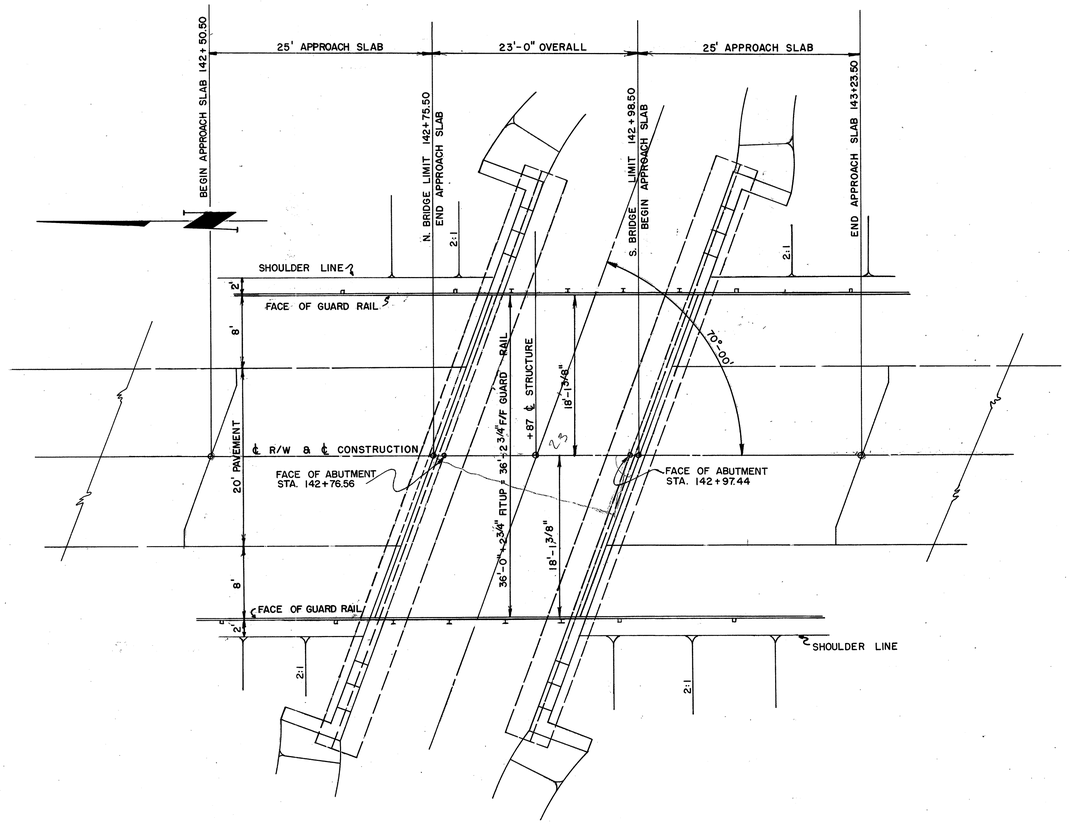
SITE PLAN

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

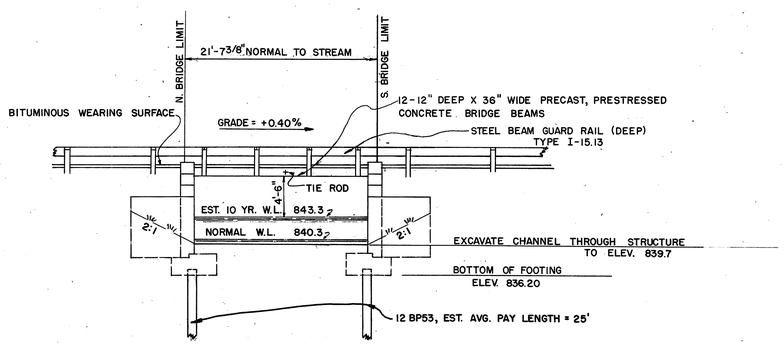
58
80

SEC. HUR- 162-(02.67)(1.50)(2.56)(4.10)(11.87)
PART 3 (14.41)(16.93)(17.37)

MICROFILMED
DEC 19 1986



PLAN



ELEVATION NORMAL TO STREAM

STRUCTURE OVER 20' SPAN

ITEM	DESCRIPTION	AS-BUILT		UNIT	QUANTITY
E-2	EXCAVATION FOR STRUCTURE, UNCLASSIFIED	CO.4 +32	217	CUBIC YDS.	185
E-2	COFFERDAMS, CRIBS, AND SHEETING			LUMP	SUM
E-3	CHANNEL EXCAVATION	CO.4 +112 CO.2 +227	588	CUBIC YDS.	473
T-35	2 1/2" ASPHALTIC CONCRETE SURFACE COURSE, TYPE "C" (85-100)			CUBIC YDS.	6
S-1	CLASS "E" CONCRETE FOR ABUTMENT WALLS			CUBIC YDS.	67
S-1	CLASS "E" CONCRETE FOR ABUTMENT FOOTINGS			CUBIC YDS.	60
S-3	WATERPROOFING, TYPE "B"			SQUARE YDS.	10
S-3	WATERPROOFING, TYPE "C"			SQUARE YDS.	92
S-3	PREMOLDED SEALING STRIP			LIN. FT.	18
S-4	REINFORCING STEEL			LBS.	4415
S-9	1/4" PREFORMED EXPANSION JOINT FILLER			SQUARE FT.	95
S-9	3/4" PREFORMED EXPANSION JOINT FILLER			SQUARE FT.	8
S-14	RAILING (TYPE I-15.13) WITH GALVANIZED STEEL POSTS & STUDS			LIN. FT.	46
S-16	FIRST TEST PILE			LUMP	SUM
S-18	STEEL PILES (12 BP53)	CO.2 +102	602	LIN. FT.	500
S-24	REMOVAL OF EXISTING STRUCTURE			LUMP	SUM
S-29	POROUS BACKFILL			CUBIC YDS.	65
S-105	PRESTRESSED CONCRETE MEMBERS, AS PER PLAN			EACH	12

GENERAL NOTES: See Sheet No. 4.

6035-3

T. C. BIEBESHEIMER ENGINEERING CO.
CIVIL ENGINEERS AND SURVEYORS
TOLEDO, OHIO MONROE, MICHIGAN

GENERAL PLAN & ESTIMATED QUANTITIES BRIDGE NO. HUR-162-0271

DESIGN	TRACED	CHECKED	REVIEWED	DATE	REVISED
D.C.C.	DH	D.C.C.			

Revised As-Built P.E.M. 9-14-62 Revised As-Built

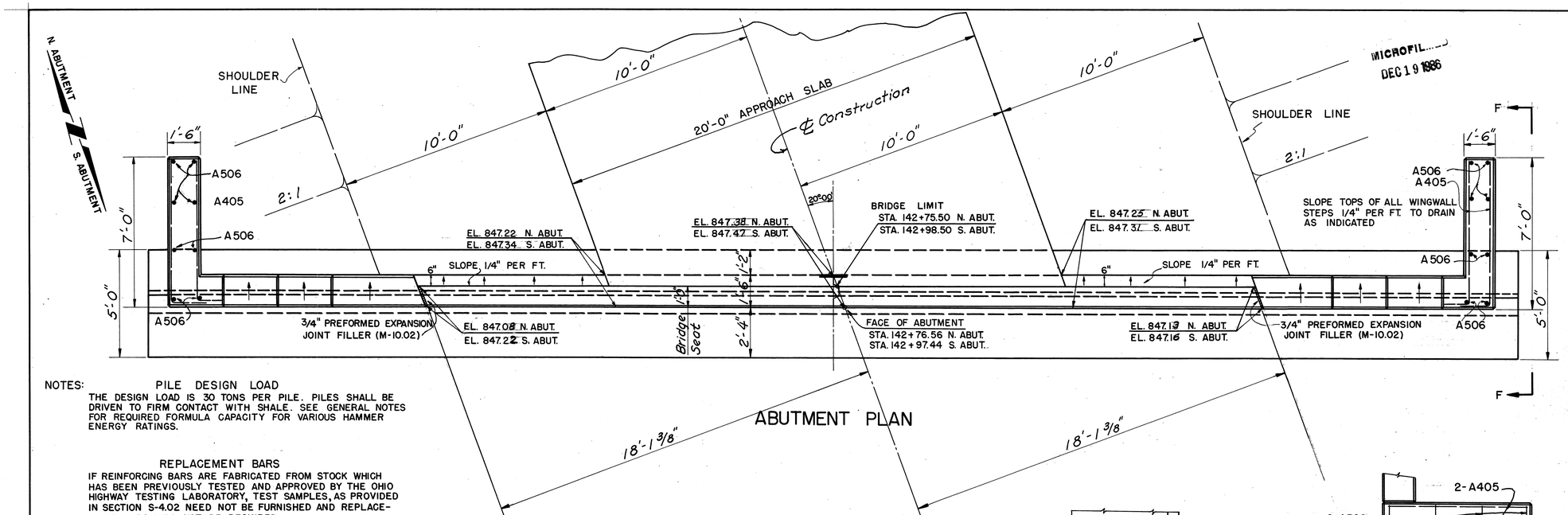
GENERAL PLAN & EST. QUANTITIES

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

59/80

SEC. HUR-162-(02.67)(1.50)(2.56)(4.10)(11.87)
PART 3 (14.41)(16.93)(17.37)

MICROFIL...
DEC 19 1986



ABUTMENT PLAN

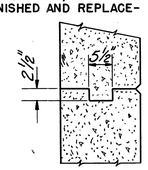
NOTES:

PILE DESIGN LOAD

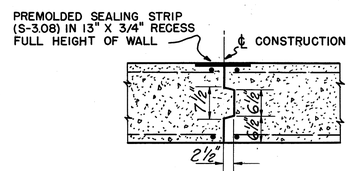
THE DESIGN LOAD IS 30 TONS PER PILE. PILES SHALL BE DRIVEN TO FIRM CONTACT WITH SHALE. SEE GENERAL NOTES FOR REQUIRED FORMULA CAPACITY FOR VARIOUS HAMMER ENERGY RATINGS.

REPLACEMENT BARS

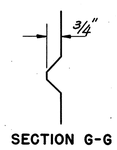
IF REINFORCING BARS ARE FABRICATED FROM STOCK WHICH HAS BEEN PREVIOUSLY TESTED AND APPROVED BY THE OHIO HIGHWAY TESTING LABORATORY, TEST SAMPLES, AS PROVIDED IN SECTION S-4.02 NEED NOT BE FURNISHED AND REPLACEMENT BARS WILL NOT BE REQUIRED



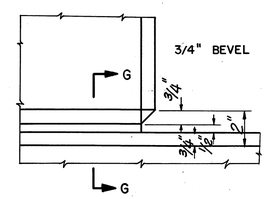
SECTION C-C
CONSTRUCTION JOINT DETAIL



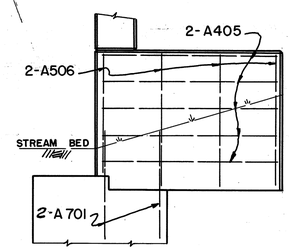
SECTION B-B
CONTRACTION JOINT DETAIL



SECTION G-G



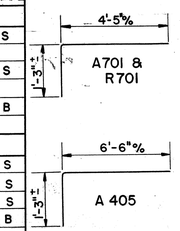
DETAIL - E
RUSTICATION DETAIL



VIEW F-F

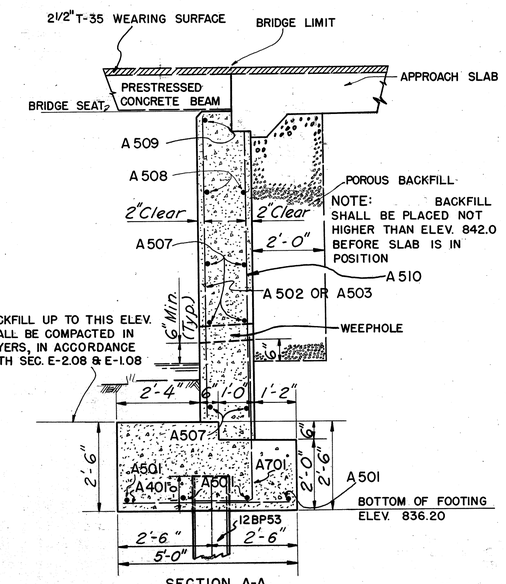
REINFORCING STEEL SCHEDULE

MARK	NO.	SIZE	LENGTH	WEIGHT	SHAPE
FOOTING					
A401	88	4	4'-6"	265	S
A501	16	5	32'-10"	548	S
A701	96	7	5'-9"	1128	B
WALLS					
A402	4	4	3'-10"	10	S
A403	4	4	3'-3"	9	S
A404	8	4	6'-4"	34	S
A405	40	4	7'-10"	209	B
A502	12	5	8'-3"	103	S
A503	44	5	8'-0"	367	S
A504	8	5	6'-8"	56	S
A505	16	5	9'-1"	152	S
A506	32	5	5'-6"	184	S
A507	24	5	30'-11"	774	S
A508	8	5	28'-4"	236	S
A509	8	5	25'-9"	215	S
A510	16	5	7'-6"	125	S
TOTAL				4415	
REPLACEMENT BARS					
R401	1	4	4'-6"		S
R501	1	5	5'-7"		S
R701	1	7	5'-9"		B

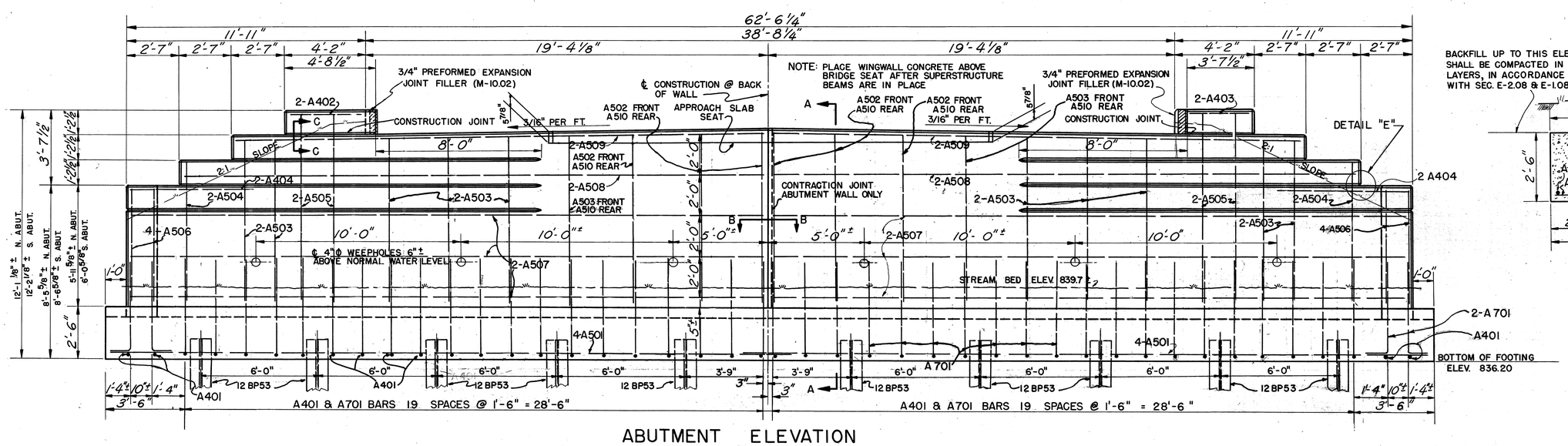


NOTE: BAR SIZE IS INDICATED BY BAR MARKS - THE FIRST DIGIT WHERE 3 DIGITS ARE USED. FOR EXAMPLE A501 IS A NUMBER 5 SIZE BAR

% MEANS "OUT TO OUT"



SECTION A-A



ABUTMENT ELEVATION

6035-3

T.C. BIEBESHEIMER ENGINEERING CO.
CIVIL ENGINEERS AND SURVEYORS
TOLEDO, OHIO MONROE, MICHIGAN

ABUTMENT DETAILS

BRIDGE NO. HUR-162-0271

DESIGN	TRACED	CHECKED	REVIEWED	DATE	REVISED
D.C.C.		D.C.C.			

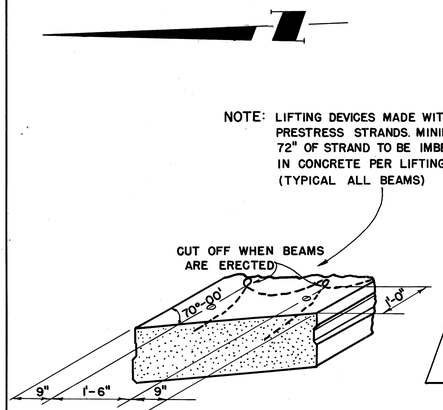
ABUTMENT DETAILS

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

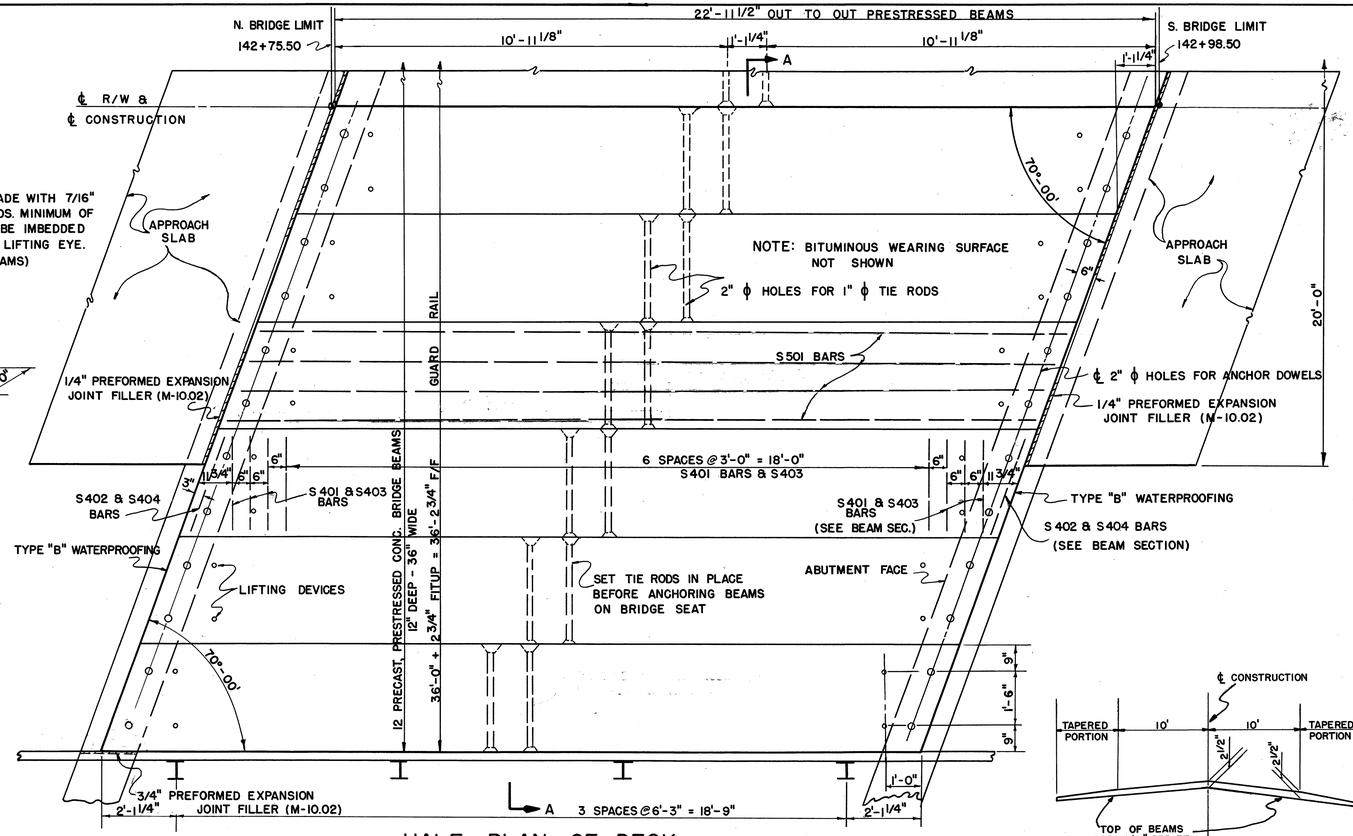
60 / 80

SEC. HUR.-162-(02.67)(1.50)(2.56)(4.10)(11.87)(14.41)(16.93)(17.37)
PART 3

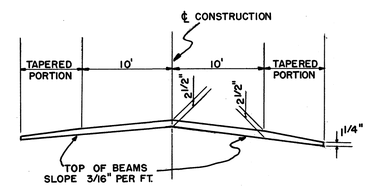
MICROFILMED
DEC 19 1986



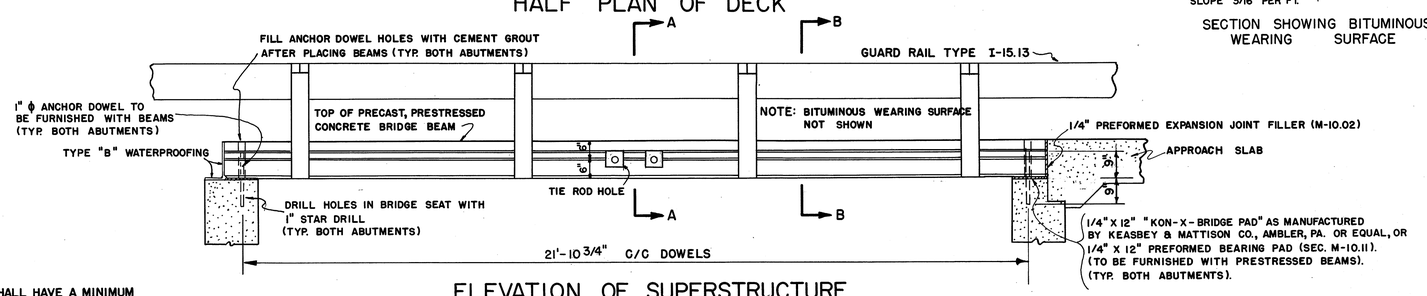
LIFTING DEVICE



HALF PLAN OF DECK

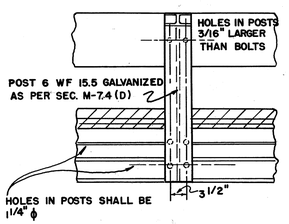


SECTION SHOWING BITUMINOUS WEARING SURFACE

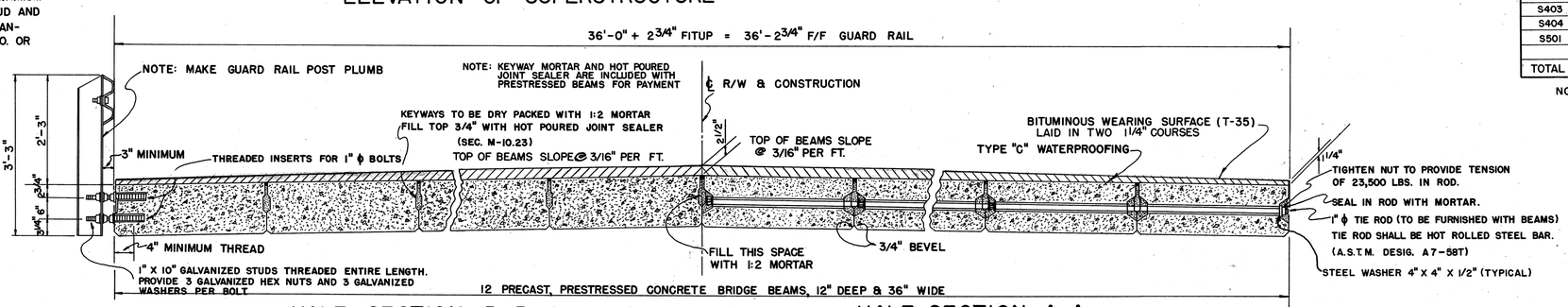


ELEVATION OF SUPERSTRUCTURE

GUARD RAIL INSERTS: INSERTS SHALL HAVE A MINIMUM OF 4" OF MACHINE THREADS FOR EACH 1" ϕ STUD AND SHALL BE SIMILAR AND EQUAL TO INSERTS MANUFACTURED BY RICHMOND SCREW PRODUCTS CO. OR BY SUPERIOR CONCRETE ACCESSORIES, INC.

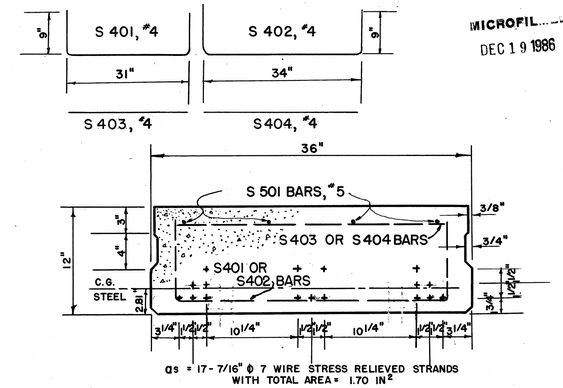


GUARD RAIL DETAIL



HALF SECTION B-B HALF SECTION A-A

REINFORCING BAR BENDING DIAGRAM



as = 17-7/16" ϕ 7 WIRE STRESS RELIEVED STRANDS WITH TOTAL AREA = 1.70 IN²

PRESTRESSED BEAM DETAIL

DIMENSIONAL TOLERANCES FOR PRESTRESSED BEAMS

THE ENGINEER MAY REJECT BEAMS NOT MEETING ANY ONE OF THE FOLLOWING REQUIREMENTS AND MAY REQUIRE THAT SUCH BEAMS BE REMOVED FROM THE SITE AT THE EXPENSE OF THE CONTRACTOR.

1. LENGTH: OVERALL LENGTH OF ANY PRESTRESSED BEAM SHALL NOT BE MORE THAN 1" LONGER OR SHORTER THAN THE "OUT TO OUT" DIMENSION SHOWN ON THE PLANS.

2. DEPTH: DEPTH OF ANY BEAM SHALL BE NOT GREATER THAN (DESIGN DEPTH + 1/4") NOR SMALLER THAN (DESIGN DEPTH - 1/4").

3. STRAIGHTNESS: ALLOWABLE DEVIATION FROM A VERTICAL PLANE FOR EITHER SIDE OF ANY PRESTRESSED BEAM SHALL NOT EXCEED 1/4" (MEASURED IN A HORIZONTAL DIRECTION).

PRESTRESSED BEAM SECTION PROPERTIES	
NET MOMENT OF INERTIA	5122 IN^4
NET SECTION AREA	423.8 IN^2
SECTION MODULUS (TOP)	848 IN^3
SECTION MODULUS (BOTTOM)	859 IN^3
WEIGHT OF BEAM	10,600 LBS.

REINFORCING STEEL SCHEDULE

MARK	NO.	SIZE	LENGTH	WEIGHT	SHAPE
S401	156	4	4'-3"	443	B
S402	24	4	4'-6"	72	B
S403	156	4	2'-7"	269	S
S404	24	4	2'-10"	45	S
S501	48	5	22'-6"	1126	S
TOTAL				1955	

NOTE: NUMBERS OF BARS AND TOTAL WEIGHT APPLY TO 12 BEAMS

6035-3

T. C. BIEBESHEIMER ENGINEERING CO.
CIVIL ENGINEERS AND SURVEYORS
TOLEDO, OHIO MONROE, MICHIGAN

SUPERSTRUCTURE DETAILS
BRIDGE NO. HUR-162-0271

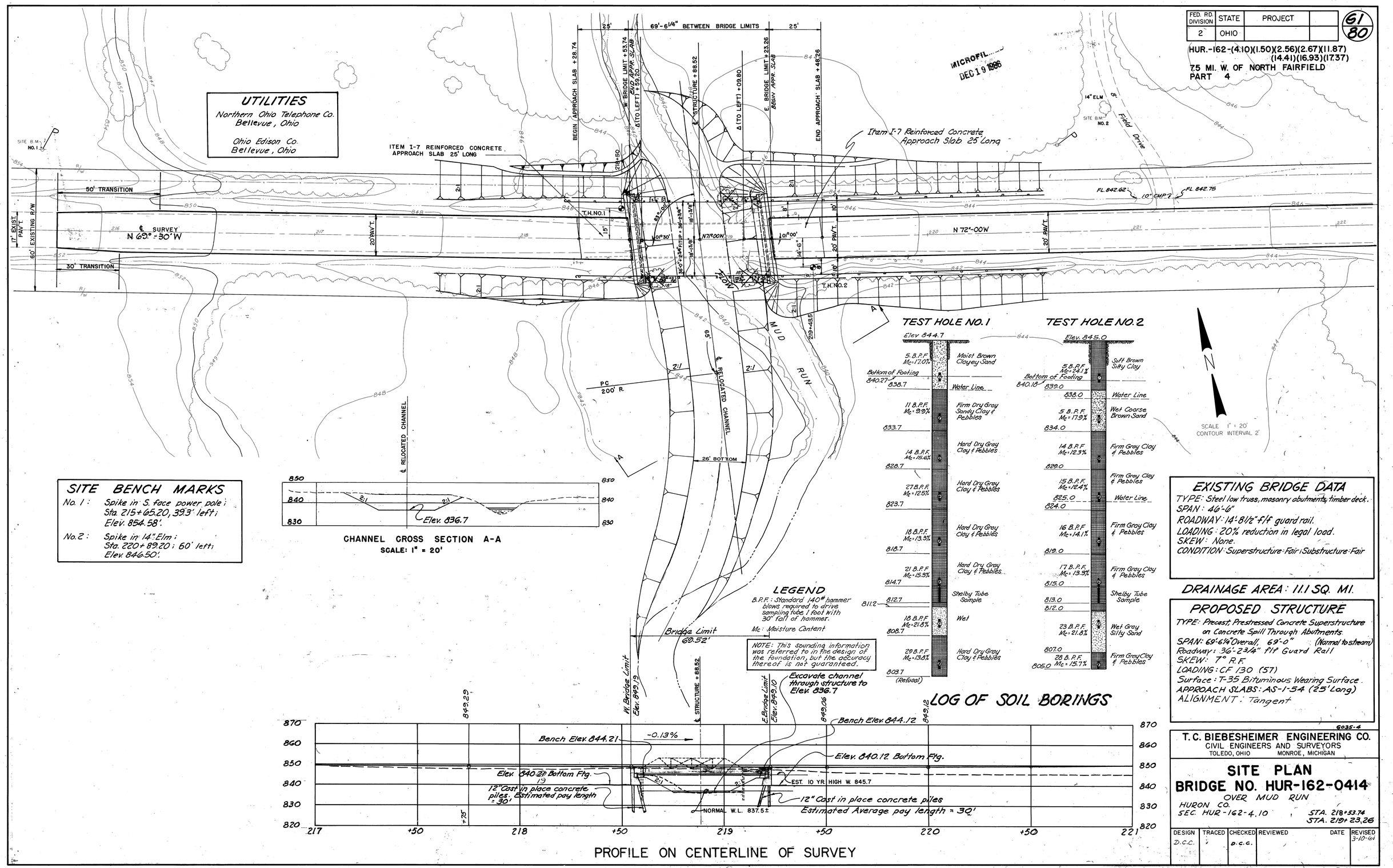
DESIGN	TRACED	CHECKED	REVIEWED	DATE	REVISED
D.C.C.		D.C.C.			

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

61
80

HUR.-162-(4.10)(1.50)(2.56)(2.67)(11.87)
(14.41)(16.93)(17.37)
7.5 MI. W. OF NORTH FAIRFIELD
PART 4

MICROFILMED
DEC 19 1996



6035-4

T.C. BIEBESHEIMER ENGINEERING CO.
CIVIL ENGINEERS AND SURVEYORS
TOLEDO, OHIO MONROE, MICHIGAN

SITE PLAN
BRIDGE NO. HUR-162-0414
OVER MUD RUN

HURON CO.
SEC. HUR-162-4.10
STA. 218+53.74
STA. 219+23.26

DESIGN	TRACED	CHECKED	REVIEWED	DATE	REVISED
D.C.C.		D.C.C.			3-10-61

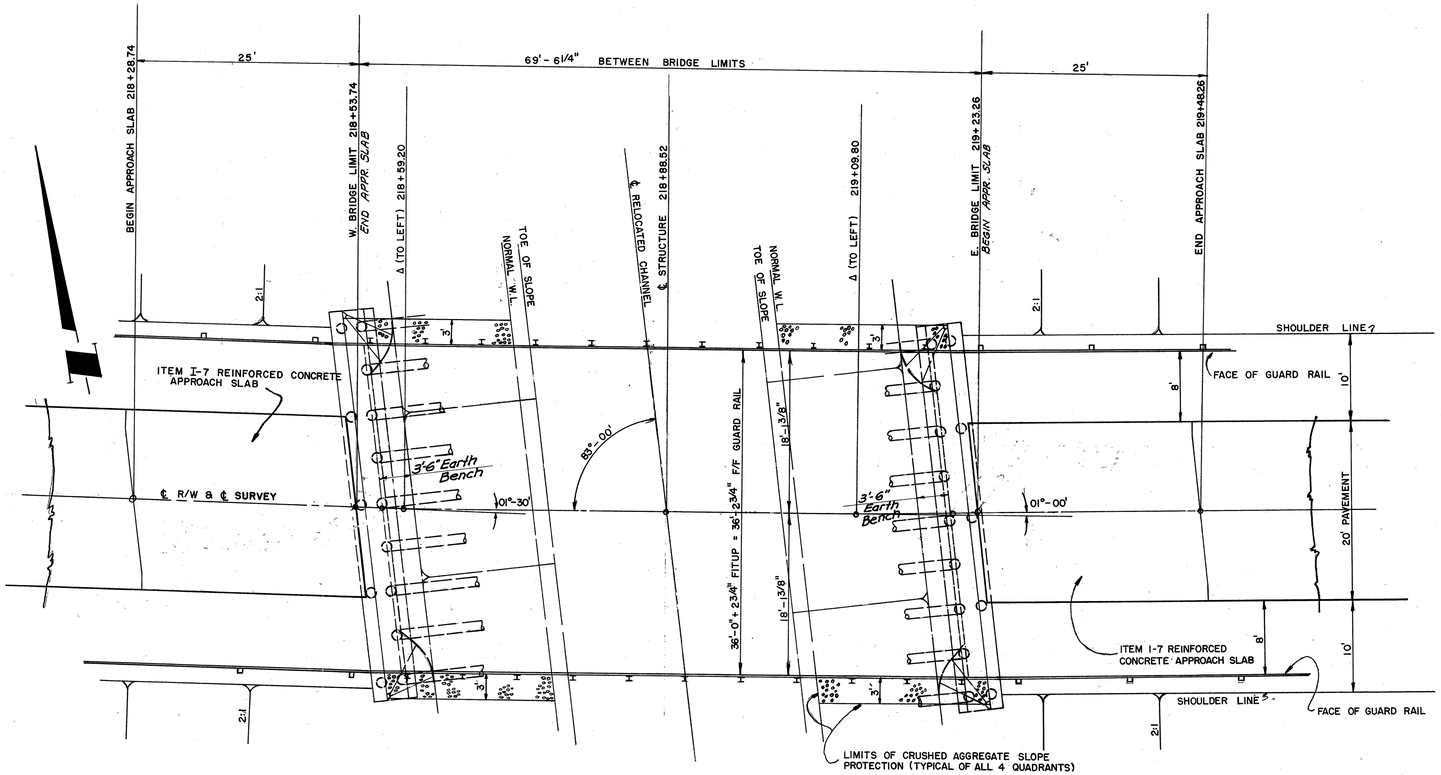
SITE PLAN

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

62/80

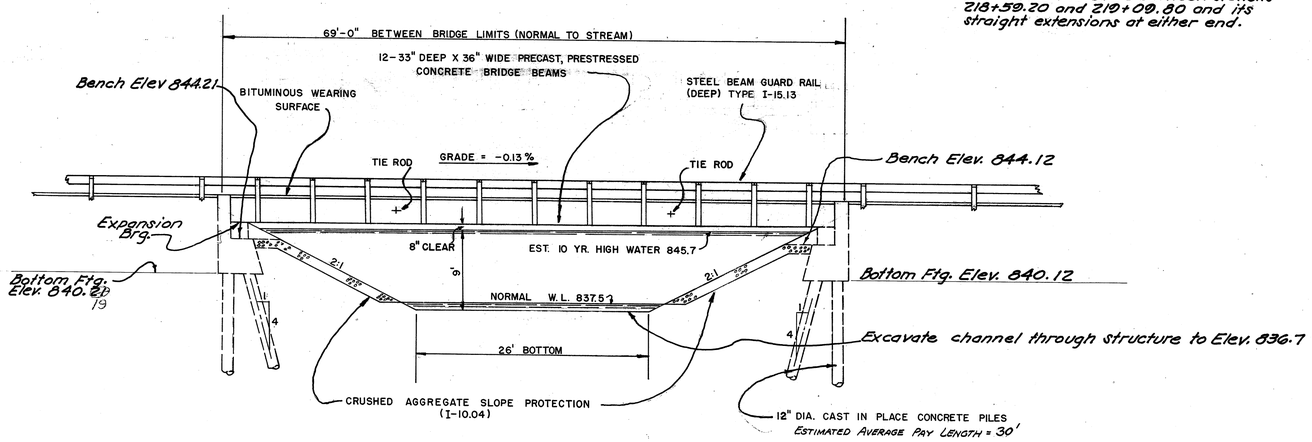
MICROFILMED DEC 19 1986

SEC. HUR.-162-(04.10)(1.50)(2.56)(2.67)(11.87)
PART 4 (14.41)(16.93)(17.37)



PLAN

NOTE: Centerline of Bridge Construction consists of the chord between stations 218+59.20 and 219+09.80 and its straight extensions at either end.



ELEVATION NORMAL TO STREAM

STRUCTURE OVER 20' SPAN

ITEM	DESCRIPTION	AS-BUILT		UNIT	QUANTITY
E-2	EXCAVATION FOR STRUCTURE, UNCLASSIFIED	CO.4 +68	140	CUBIC YDS.	72
E-3	CHANNEL EXCAVATION	CO.4 +73 CO.2 +48	1323	CUBIC YDS.	1547
T-35	2½" ASPHALTIC CONCRETE SURFACE COURSE, TYPE "C" (85-100)			CUBIC YDS.	19
S-1	CLASS "E" CONCRETE FOR ABUTMENTS			CUBIC YDS.	94
S-3	WATERPROOFING, TYPE "B"			SQUARE YDS.	15
S-3	WATERPROOFING, TYPE "C"			SQUARE YDS.	278
S-4	REINFORCING STEEL			LBS.	7083
S-9	1/4" PREFORMED EXPANSION JOINT FILLER			SQUARE FT.	270
S-14	RAILING (TYPE I-15.13) WITH GALVANIZED STEEL POSTS & STUDS			LIN. FT.	139
S-16	FIRST TEST PILE			LUMP	SUM
S-18	12" DIA. CAST IN PLACE CONCRETE PILES (REINFORCED)			LIN. FT.	840
S-24	REMOVAL OF EXISTING STRUCTURE			LUMP	SUM
S-29	POROUS BACKFILL			CUBIC YDS.	18
S-105	PRESTRESSED CONCRETE MEMBERS, AS PER PLAN			EACH	12
I-10	CRUSHED AGGREGATE SLOPE PROTECTION	CO.4 40	160	SQUARE YDS.	200

GENERAL NOTES : See Sheet No. 4.

6035-4

T. C. BIEBESHEIMER ENGINEERING CO.
CIVIL ENGINEERS AND SURVEYORS
TOLEDO, OHIO MONROE, MICHIGAN

GENERAL PLAN & ESTIMATED QUANTITIES

BRIDGE NO. HUR-162-0414

DESIGN	TRACED	CHECKED	REVIEWED	DATE	REVISED
D.C.C.		D.C.C.			3-10-61

Revised As-Built R.E.M. 9-14-62

GENERAL PLAN & EST. QUANTITIES

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

63/80

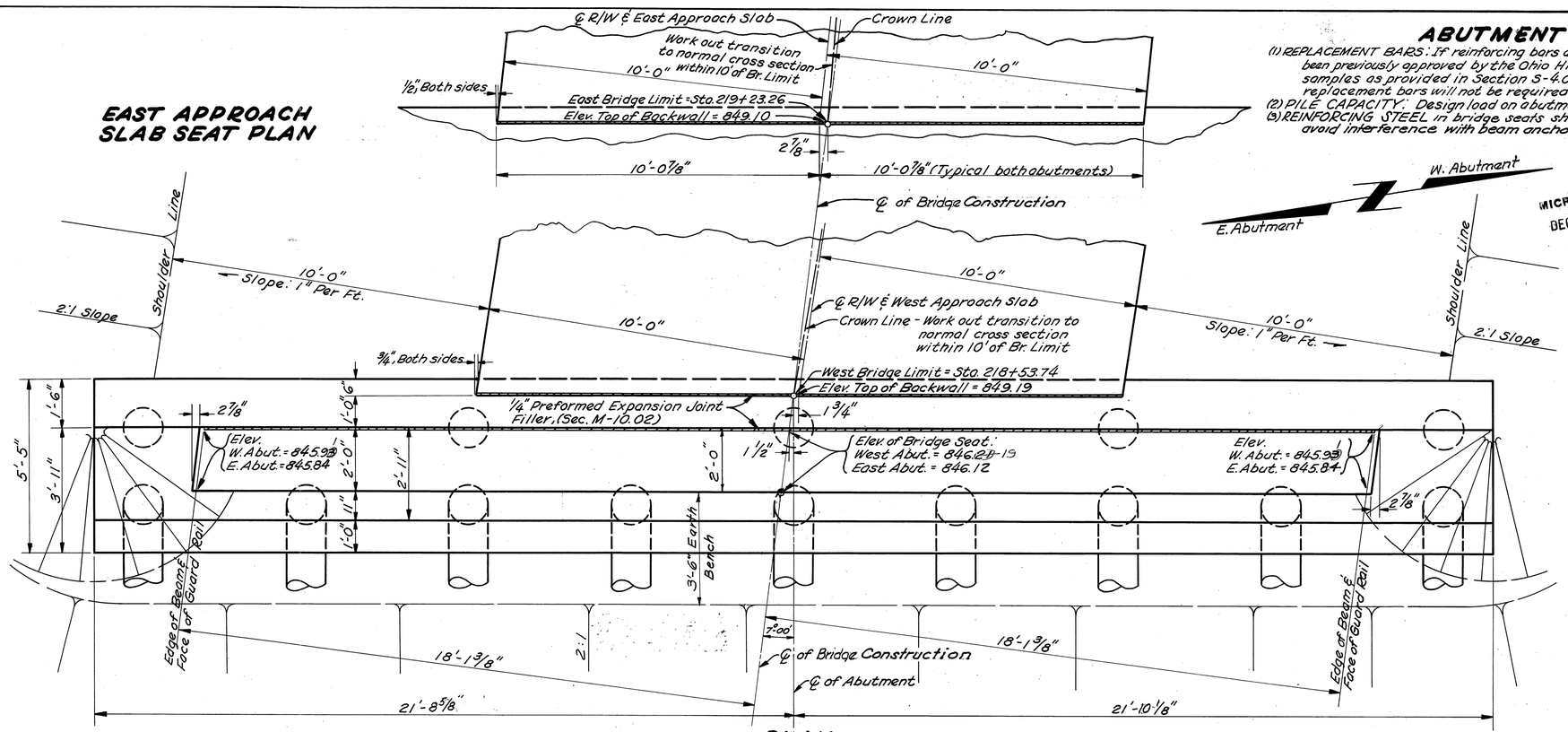
SEC. HUR.-162-(04.10)(1.50)(2.56)(2.67)(11.87)
PART 4 (14.41)(16.93)(17.37)

ABUTMENT NOTES

(1) REPLACEMENT BARS: If reinforcing bars are fabricated from stock which has been previously approved by the Ohio Highway Testing Laboratory, test samples as provided in Section S-4.02 need not be furnished and replacement bars will not be required.
(2) PILE CAPACITY: Design load on abutment piles is 35 tons.
(3) REINFORCING STEEL in bridge seats shall be placed carefully to avoid interference with beam anchor dowels.

MICROFIL... DEC 19 1986

EAST APPROACH SLAB SEAT PLAN

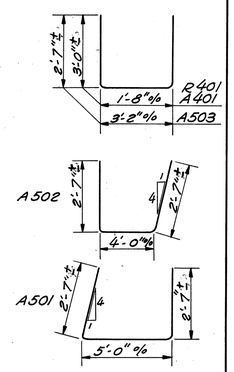


PLAN

*{2'-11 1/2" East Abut. / 3'-0" West Abut.} from Profile Grade

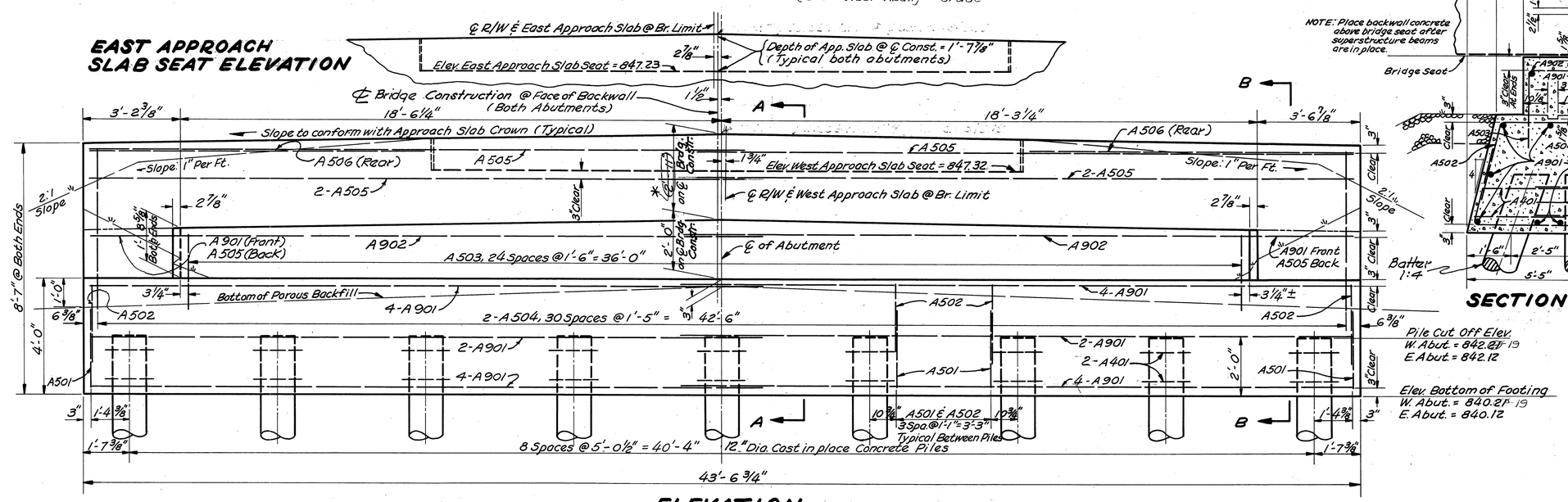
REINFORCING STEEL SCHEDULE

MARK	NO.	SIZE	LENGTH	WEIGHT	SHAPE
A401	72	4	7'-10"	376	B
A501	68	5	10'-4"	733	B
A502	68	5	9'-4"	662	B
A503	50	5	8'-6"	443	B
A504	124	5	5'-5"	701	S
A505	16	5	22'-8"	378	S
A506	4	5	11'-0"	46	S
A901	44	9	23'-3"	3478	S
A902	4	9	19'-7"	266	S
REPLACEMENT BARS					
R401	1	4	7'-10"		B
R501	1	5	5'-7"		S
R901	1	9	6'-10"		S
TOTAL				7083 LBS.	

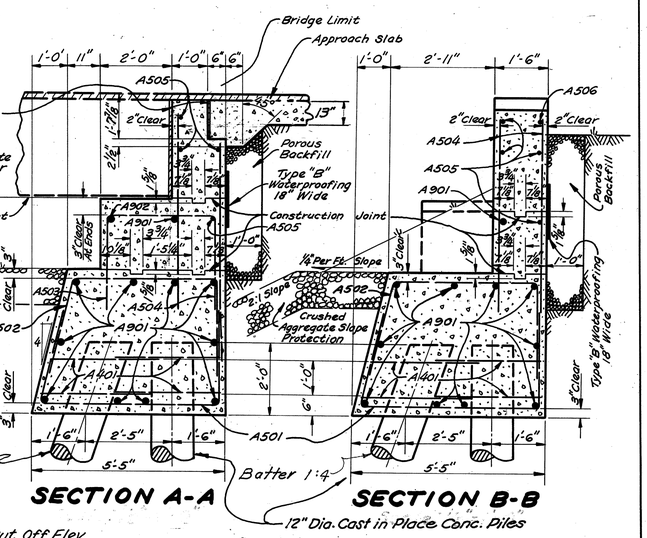


NOTE: Bar size is indicated by Bar Mark: The first digit where 3 digits are used. For example, A501 is a number 5 size bar. "o/o" means "out to out."

EAST APPROACH SLAB SEAT ELEVATION



ELEVATION



Pile Cut Off Elev.
W. Abut. = 842.21
E. Abut. = 842.12

Elev. Bottom of Footing
W. Abut. = 840.21
E. Abut. = 840.12

6035-4

T. C. BIEBESHEIMER ENGINEERING CO.
CIVIL ENGINEERS AND SURVEYORS
TOLEDO, OHIO MONROE, MICHIGAN

SUBSTRUCTURE DETAILS

BRIDGE NO. HUR.-162-0414

DESIGN	TRACED	CHECKED	REVIEWED	DATE	REVISED
D.C.C.		D.C.C.			3-16-87

SUBSTRUCTURE DETAILS

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

64
80

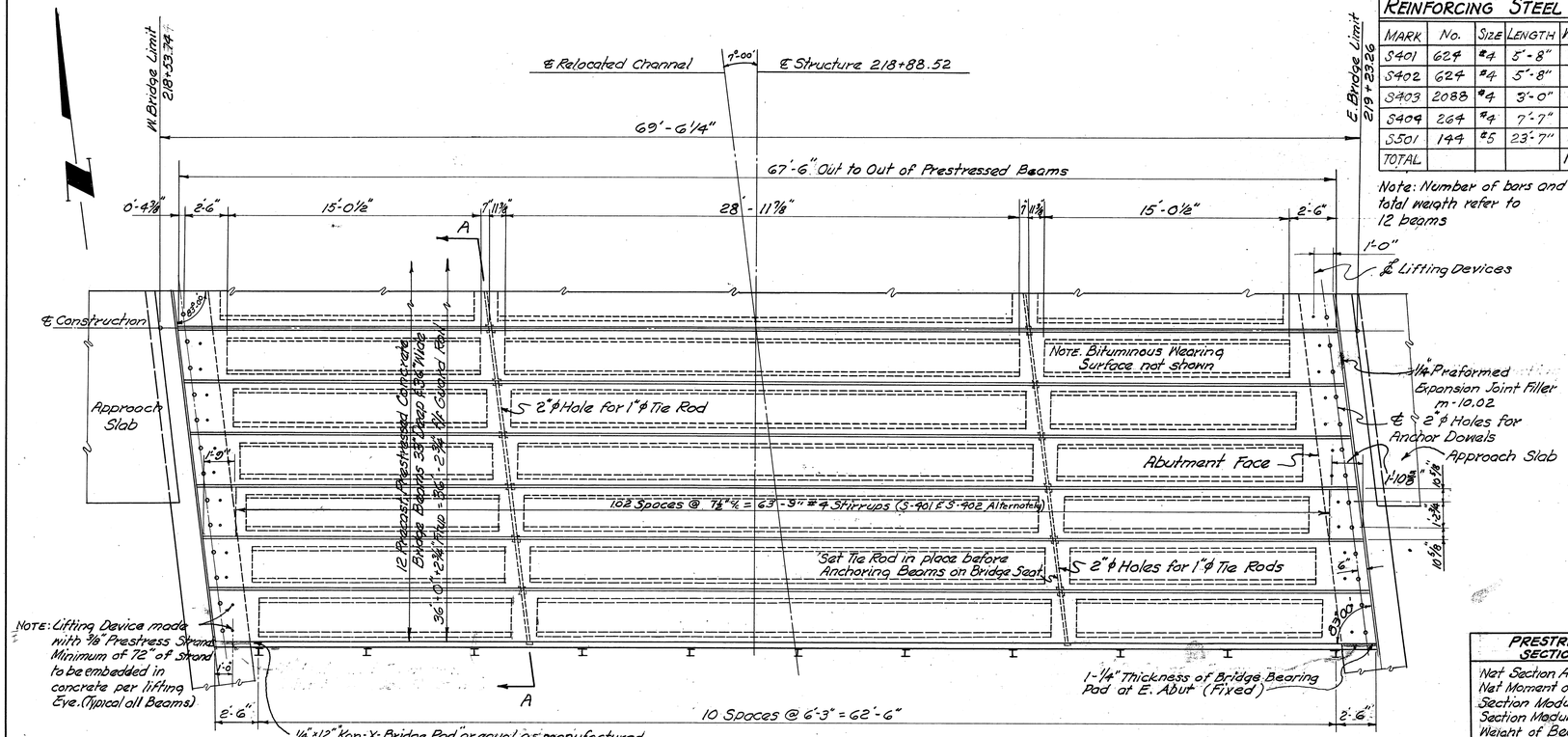
SEC. HUR.-162-(04.10)(1.50)(2.56)(2.67)(11.87)(14.41)(16.93)(17.37)
PART 4

MICROFILMED
DEC 19 1986

REINFORCING STEEL LIST

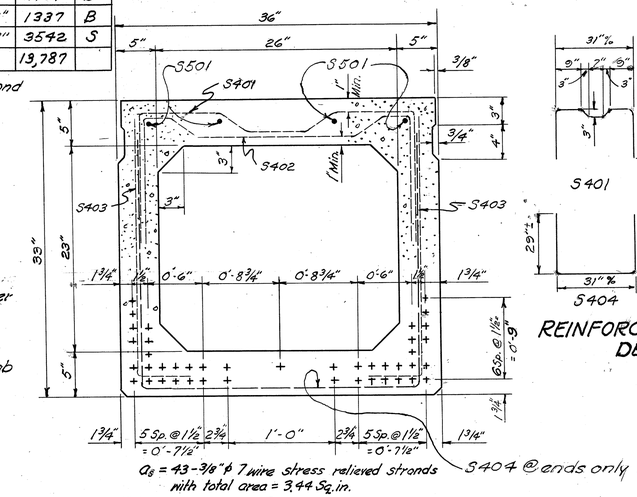
MARK	No.	SIZE	LENGTH	WEIGHT	SHAPE
S401	624	#4	5'-8"	2362	B
S402	624	#4	5'-8"	2362	B
S403	2088	#4	3'-0"	4184	B
S404	264	#4	7'-7"	1337	B
S501	144	#5	23'-7"	3542	S
TOTAL				13,787	

Note: Number of bars and total weight refer to 12 beams



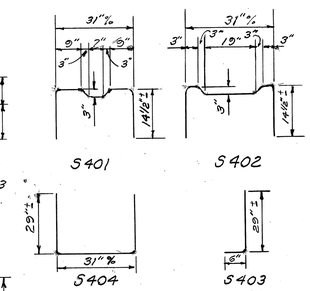
¼" x 12" Kon-X-Bridge Pad or equal as manufactured by Keasbey & Mattison Co., Ambar, Pa. or ¼" x 12" Performed Bearing Pad (Sec. M-10.11) (To be furnished with Prestressed Beam) Two thicknesses at W. Abut. (Expans.)

HALF PLAN OF DECK



a_0 = 43-3/8" ϕ 7 wire stress relieved strands with total area = 3.44 Sq. in.

PRESTRESSED BEAM DETAIL



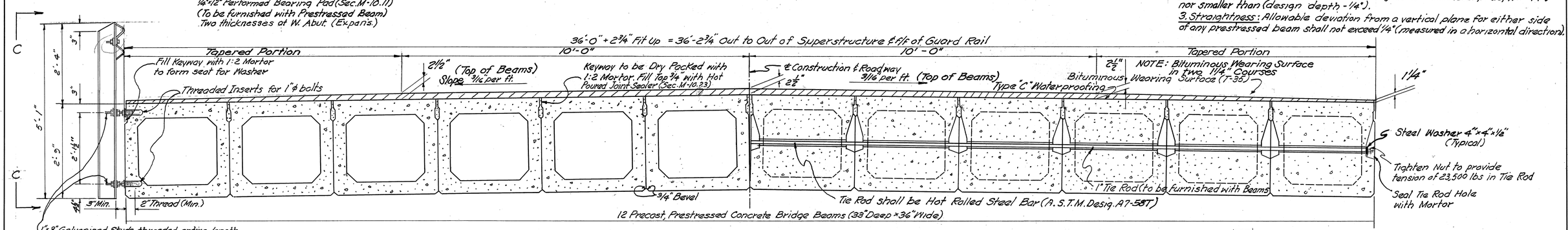
REINFORCING STEEL DETAILS

PRESTRESSED BEAM SECTION PROPERTIES	
Net Section Area	594.5 in²
Net Moment of Inertia	82,048 in⁴
Section Modulus (Top)	4,907 in³
Section Modulus (Bottom)	5,040 in³
Weight of Beam (Approx.)	48,500 lbs.

DIMENSIONAL TOLERANCES FOR PRESTRESSED BEAMS

The Engineer may reject beams not meeting any one of the following requirements and may require that such beams be removed from the site at the expense of the Contractor.

1. Length: Overall length of any prestressed beam shall not be more than 1" longer or shorter than the "out to out" dimension shown on the plans.
2. Depth: Depth of any beam shall be not greater than (design depth + ¼") nor smaller than (design depth - ¼").
3. Straightness: Allowable deviation from a vertical plane for either side of any prestressed beam shall not exceed ¼" (measured in a horizontal direction).

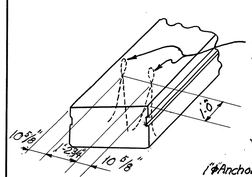


1" x 8" Galvanized Studs, threaded entire length Provide 3 Galvanized Hex. Nuts & 3 Galvanized Washers Per Bolt

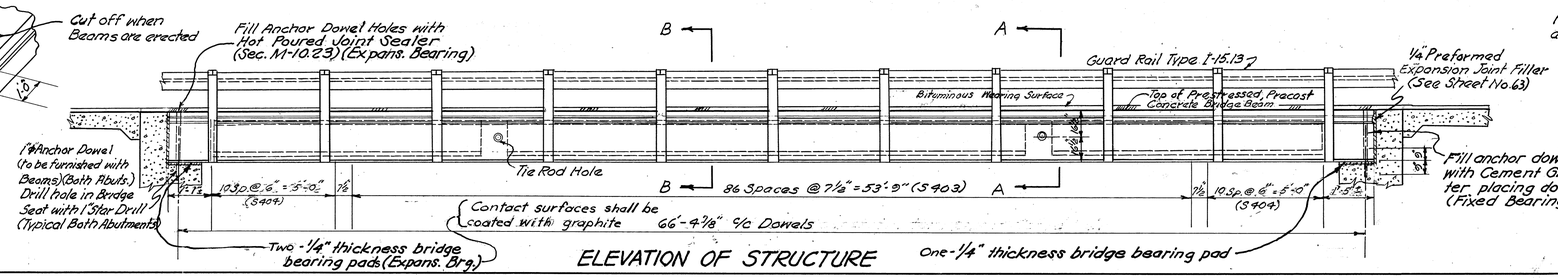
HALF SECTION B-B

NOTE: Keyway mortar & hot poured joint sealer are included with prestressed beams for payment.

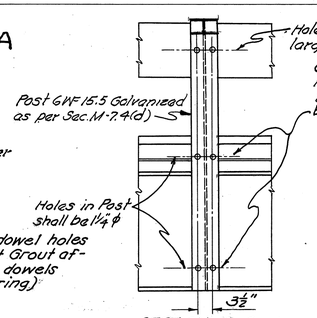
HALF SECTION A-A



LIFTING DEVICE



ELEVATION OF STRUCTURE



SECTION C-C
GUARD RAIL DETAIL

T. C. BIEBESHEIMER ENGINEERING CO.
CIVIL ENGINEERS AND SURVEYORS
TOLEDO, OHIO MONROE, MICHIGAN

SUPERSTRUCTURE DETAILS

BRIDGE NO. HUR.-162-0414

DESIGN	TRACED	CHECKED	REVIEWED	DATE	REVISED
D.C.C.		D.C.C.			

SUPERSTRUCTURE DETAILS

6035-4

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

65/80

HUR.-162-(11.87)(1.50)(2.56)(2.67)(4.10)(14.41)(16.93)(17.37)

1 MI. W. OF NORTH FAIRFIELD

PART 5

MICROFILMED DEC 19 1986

UTILITIES

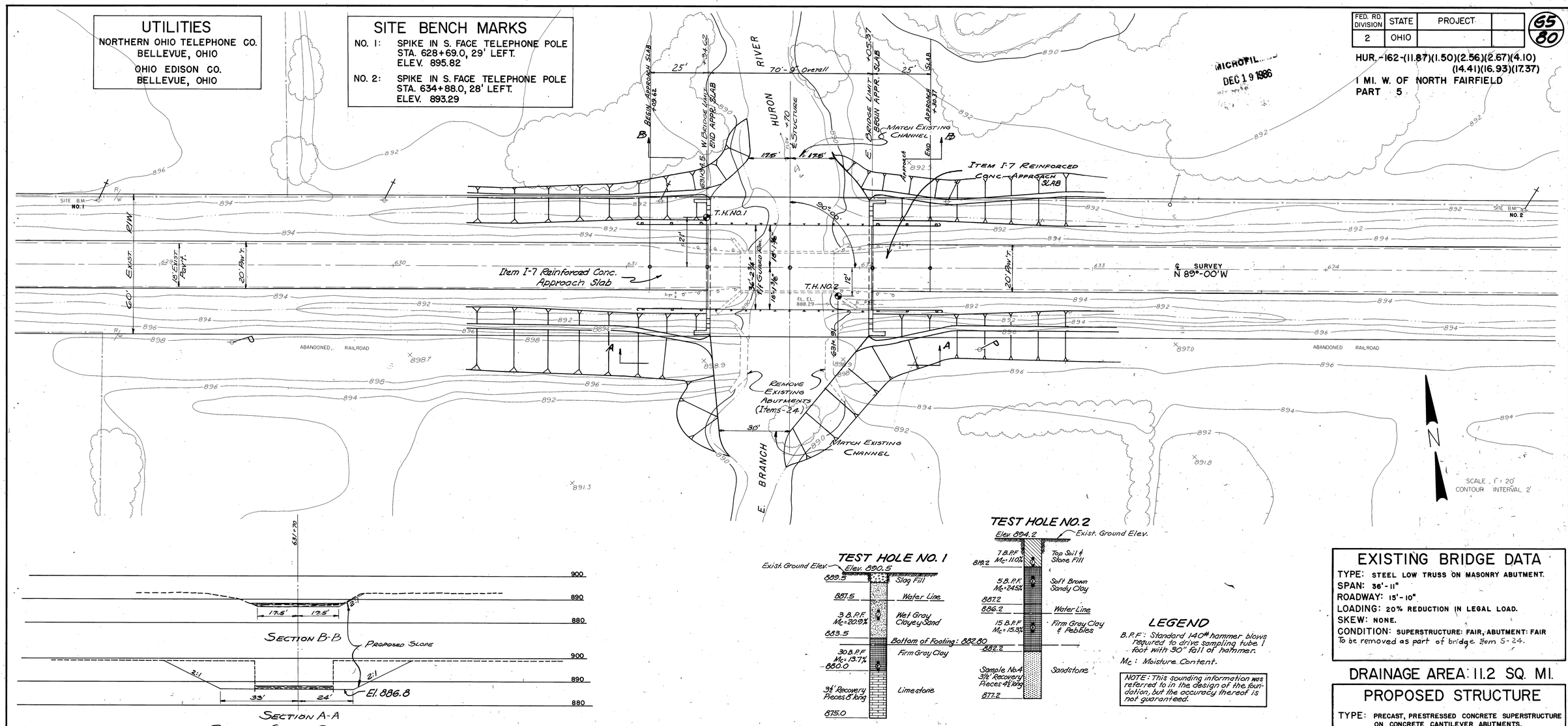
NORTHERN OHIO TELEPHONE CO.
BELLEVUE, OHIO

OHIO EDISON CO.
BELLEVUE, OHIO

SITE BENCH MARKS

NO. 1: SPIKE IN S. FACE TELEPHONE POLE STA. 628+69.0, 29' LEFT. ELEV. 895.82

NO. 2: SPIKE IN S. FACE TELEPHONE POLE STA. 634+88.0, 28' LEFT. ELEV. 893.29



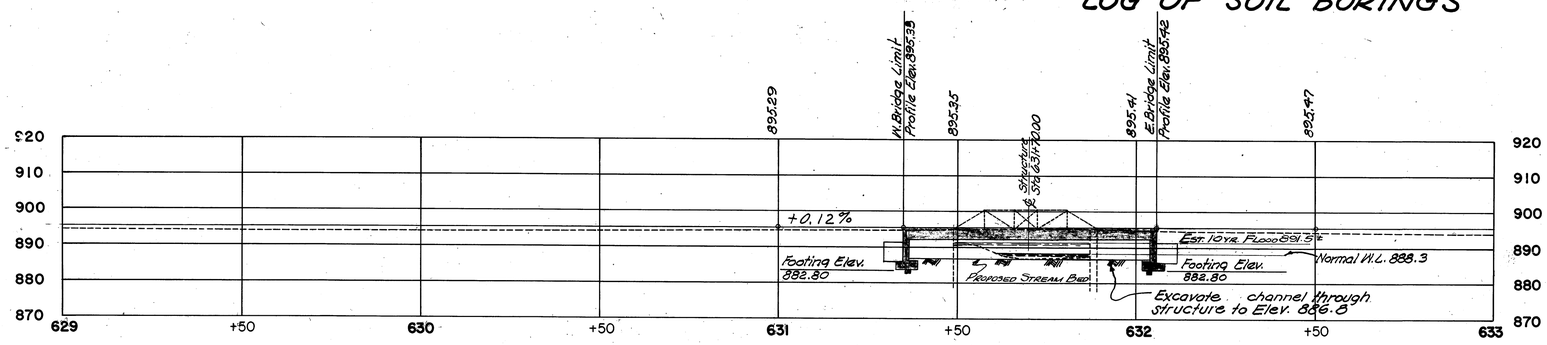
LEGEND

B.P.F.: Standard 140# hammer blows required to drive sampling tube 1 foot with 30" fall of hammer.

Mc: Moisture Content.

NOTE: This sounding information was referred to in the design of the foundation, but the accuracy thereof is not guaranteed.

LOG OF SOIL BORINGS



PROFILE ON CENTERLINE OF SURVEY

EXISTING BRIDGE DATA

TYPE: STEEL LOW TRUSS ON MASONRY ABUTMENT.
SPAN: 36'-11"
ROADWAY: 15'-10"
LOADING: 20% REDUCTION IN LEGAL LOAD.
SKEW: NONE.
CONDITION: SUPERSTRUCTURE: FAIR, ABUTMENT: FAIR
To be removed as part of bridge. Item S-24.

DRAINAGE AREA: 11.2 SQ. MI.

PROPOSED STRUCTURE

TYPE: PRECAST, PRESTRESSED CONCRETE SUPERSTRUCTURE ON CONCRETE CANTILEVER ABUTMENTS.
SPAN: 69'-8 1/2" C/C BEARINGS.
ROADWAY: 36'-2 3/4" F/F GUARD RAILS.
LOADING: CF 130 (57)
SKEW: NONE
SURFACE: T-35 BITUMINOUS WEARING SURFACE.
APPROACH SLABS: AS-1-54 (25' LONG)
ALIGNMENT: Tangent

6035-6

T.C. BIEBESHEIMER ENGINEERING CO.
CIVIL ENGINEERS AND SURVEYORS
TOLEDO, OHIO MONROE, MICHIGAN

SITE PLAN
BRIDGE NO. HUR-162-1196

OVER E. BRANCH OF HURON RIVER

HURON CO.
SEC. HUR.-162-11.87

STA. 631+34.62
STA. 632+05.37

DESIGN	TRACED	CHECKED	REVIEWED	DATE	REVISED
D.C.C.		D.C.C.			

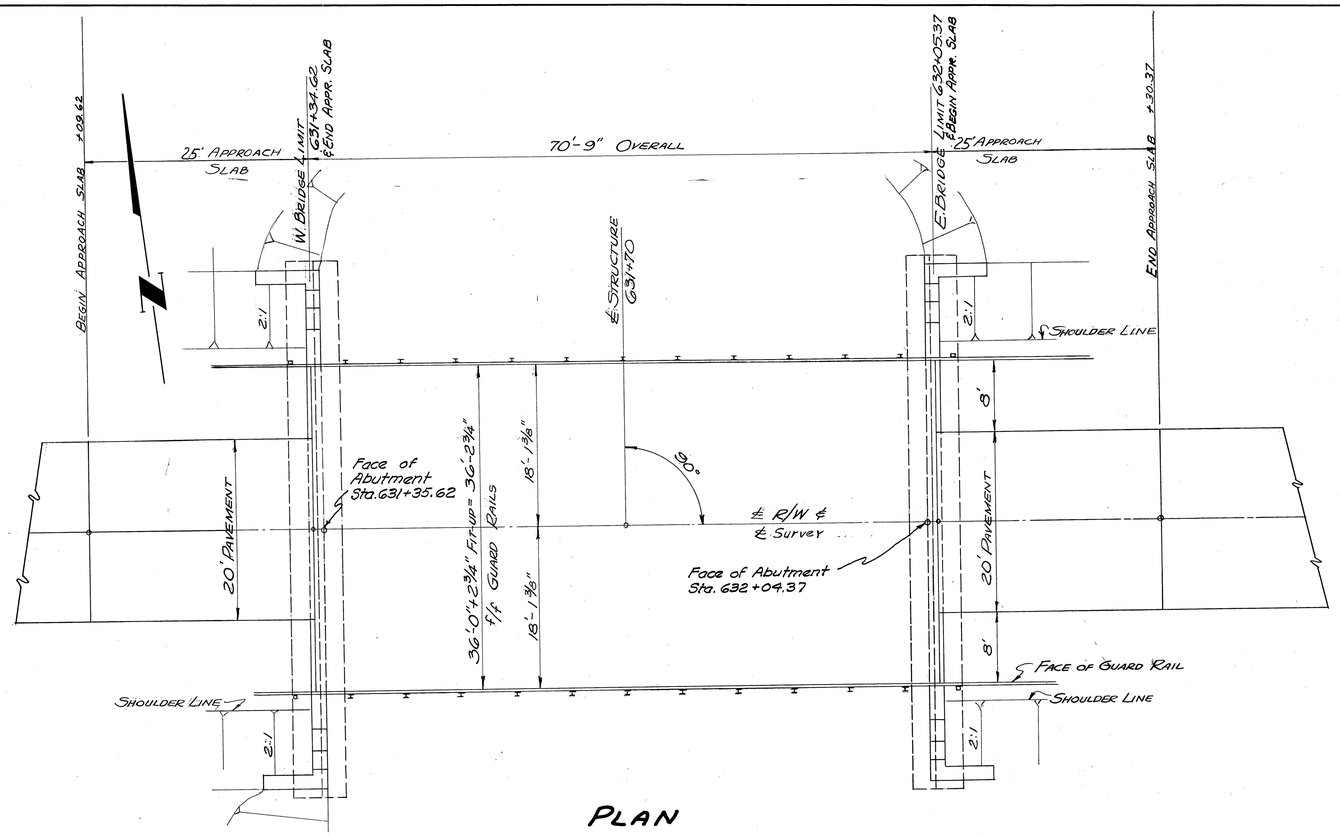
SITE PLAN

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

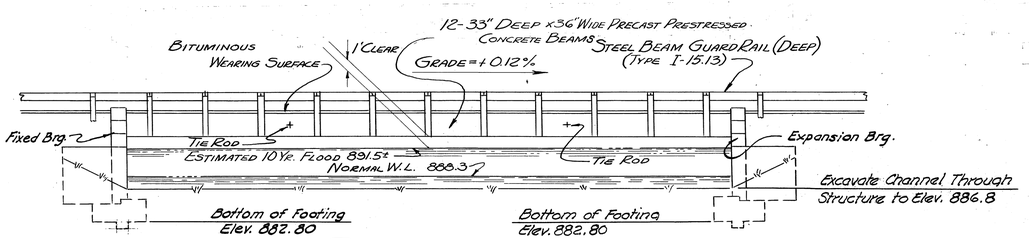
66
80

MICROFILMED
DEC 19 1986

SEC. HUR-162-(11.87)(1.50)(2.56)(2.67)(4.10)
PART 5 (14.41)(16.93)(17.37)



PLAN



ELEVATION

STRUCTURE OVER 20' SPAN

ITEM	DESCRIPTION	AS-BUILT	UNIT	QUANTITY
E-2	EXCAVATION FOR STRUCTURE, UNCLASSIFIED		CUBIC YDS.	250
E-2	COFFERDAMS, CRIBS, & SHEETING		LUMP	SUM
E-3	CHANNEL EXCAVATION	CO. 1 - 60 CO. 2 + 21 = 839	CUBIC YDS.	748
T-35	2½" ASPHALTIC CONCRETE SURFACE COURSE, TYPE "C" (85-100)		CUBIC YDS.	19
S-1	CLASS "E" CONCRETE FOR ABUTMENT WALLS		CUBIC YDS.	59
S-1	CLASS "E" CONCRETE FOR ABUTMENT FOOTINGS		CUBIC YDS.	53
S-3	WATERPROOFING, TYPE "B"		SQUARE YDS.	11
S-3	WATERPROOFING, TYPE "C"		SQUARE YDS.	283
S-3	PREMOLDED SEALING STRIP		LIN. FT.	15
S-4	REINFORCING STEEL		LBS.	~~4077~~ 4112
S-9	1/4" PREFORMED EXPANSION JOINT FILLER		SQUARE FT.	112
S-9	3/4" PREFORMED EXPANSION JOINT FILLER		SQUARE FT.	11
S-14	RAILING (TYPE I-15.13) WITH GALVANIZED STEEL POSTS & STUDS		LIN. FT.	141.50
S-24	REMOVAL OF EXISTING STRUCTURE		LUMP	SUM
S-29	POROUS BACKFILL		CUBIC YDS.	51
S-105	PRESTRESSED CONCRETE MEMBERS, AS PER PLAN		EACH.	12

GENERAL NOTES: See Sheet No. 4.

6035-5

T. C. BIEBESHEIMER ENGINEERING CO.
CIVIL ENGINEERS AND SURVEYORS
TOLEDO, OHIO MONROE, MICHIGAN

GENERAL PLAN & ESTIMATED QUANTITIES
BRIDGE NO. HUR-162-1196

DESIGN	TRACED	CHECKED	REVIEWED		DATE	REVISED
D.C.C.		D.C.C.				3-15-61

AB Revised As-Built PEM 9-14-62

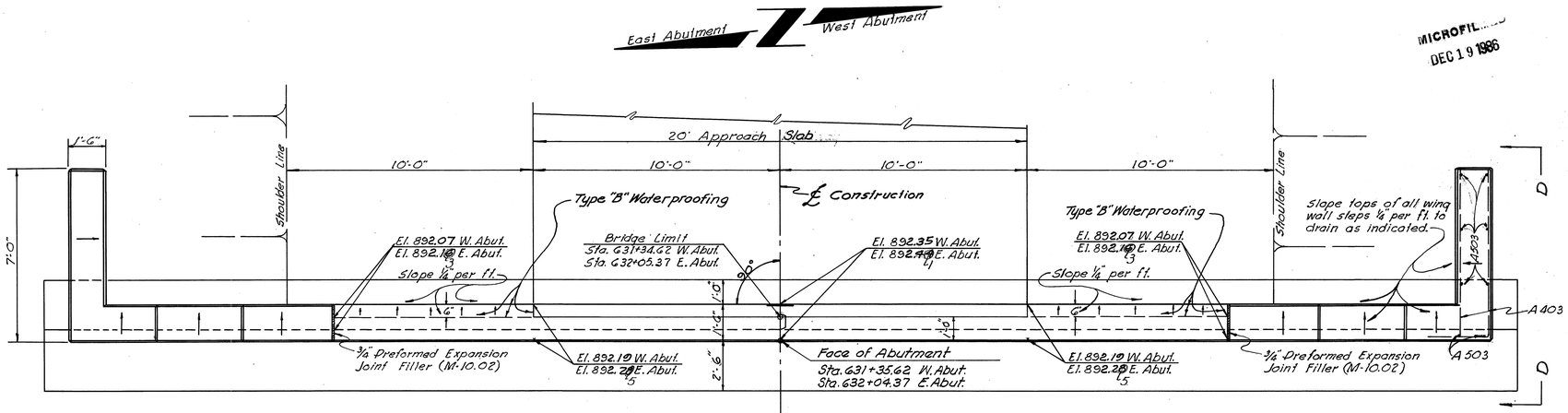
GENERAL PLAN & EST. QUANTITIES

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

HUR.-162-(11.87)(1.50)(2.56)(2.67)(4.10)
PART 5 (14.41)(16.93)(17.37)

67/80

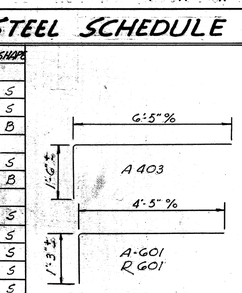
MICROFILMED DEC 19 1986



ABUTMENT PLAN

REINFORCING STEEL SCHEDULE

MARK	NO.	SIZE	LENGTH	WEIGHT	SHAPE
FOOTINGS					
A401	120	4	4'-6"	301	S
A501	16	5	30'-8"	512	S
A601	~~128~~ 132	6	5'-9"	~~1103~~ 1140	B
WALLS					
A402	8	4	3'-4"	18	S
A403	56	4	8'-0"	299	B
A502	32	5	6'-8"	223	S
A503	56	5	6'-6"	380	S
A504	16	5	9'-10"	164	S
A505	8	5	8'-3"	69	S
A506	32	5	28'-4"	946	S
TOTAL WEIGHT				~~4070~~ 4112	LBS
REPLACEMENT BARS					
R401	1	4	5'-3"	4	S
R501	1	5	6'-6"	7	S
R601	1	6	5'-9"	9	B



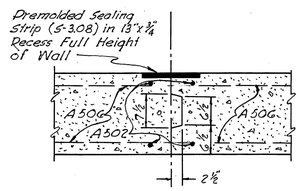
NOTE: Bar size is indicated by Bar Mark: The first digit where 3 digits are used. For example A 501 is a number 5 size bar.

% Means "Out to Out"

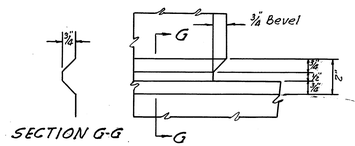
NOTES:

Foundation Bearing Pressure:
Abutment footings are designed for a maximum bearing pressure of 1.0 Tons per sq. ft.

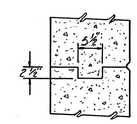
Replacement Bars:
If reinforcing bars are fabricated from stock which has been previously tested and approved by the Ohio Highway Testing Laboratory, test samples as provided in Section 5-4.02 need not be furnished and replacement bars will not be required.



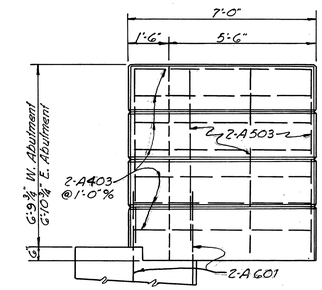
SECTION B-B
CONTRACTION JOINT DETAIL



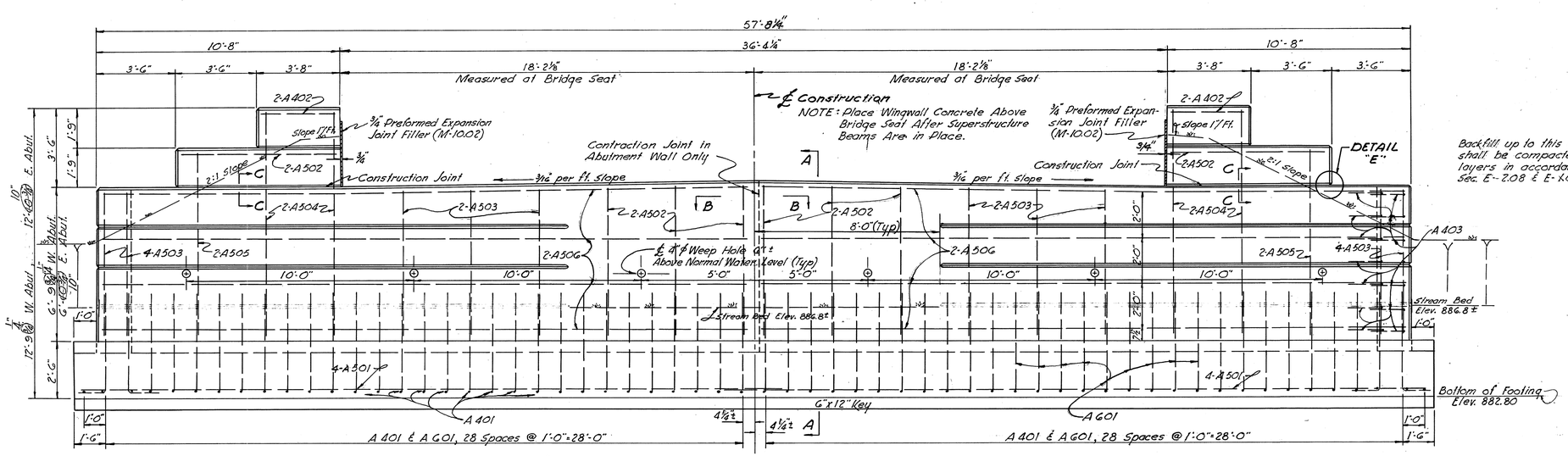
DETAIL E
RUSTICATION DETAIL



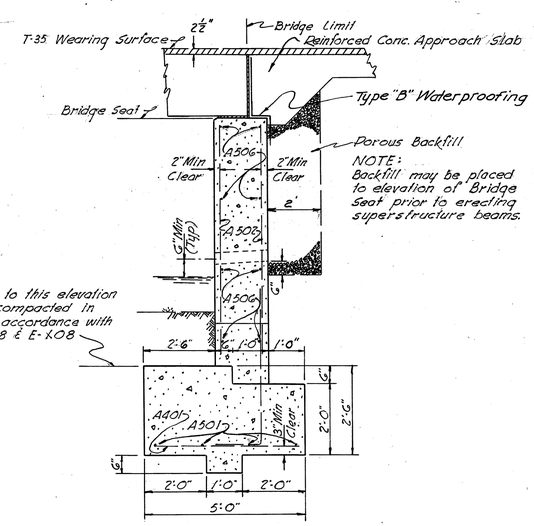
SECTION C-C
CONSTRUCTION JOINT DETAIL



VIEW D-D



ABUTMENT ELEVATION



SECTION A-A

6035-5

T. C. BIEBESHEIMER ENGINEERING CO.
CIVIL ENGINEERS AND SURVEYORS
TOLEDO, OHIO MONROE, MICHIGAN

SUBSTRUCTURE DETAILS

BRIDGE NO. HUR-162-1196

DESIGN	TRACED	CHECKED	REVIEWED	DATE	REVISED
D.C.C.		D.C.C.			2-10-61 3-15-61

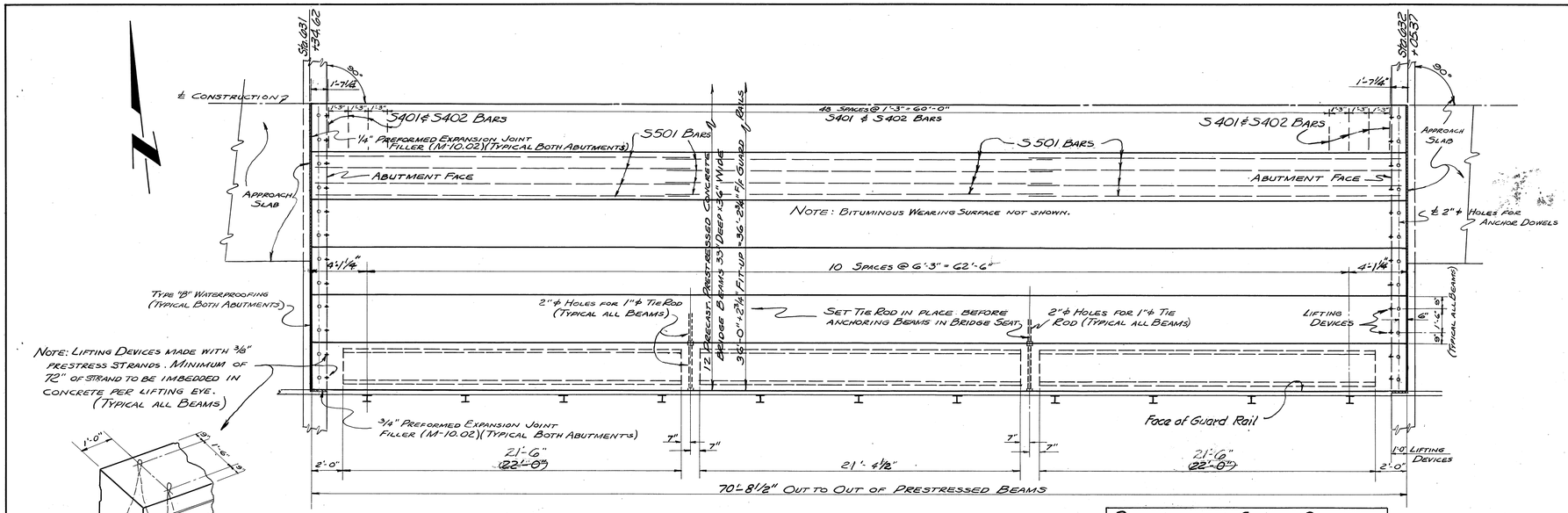
SUBSTRUCTURE DETAILS

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

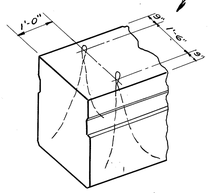
68
80

MICROFILM
DEC 19 1986

SEC. HUR-162-(11.87)(1.50)(2.56)(2.67)(4.10)
PART 5 (14.41)(16.93)(17.37)



HALF PLAN OF DECK

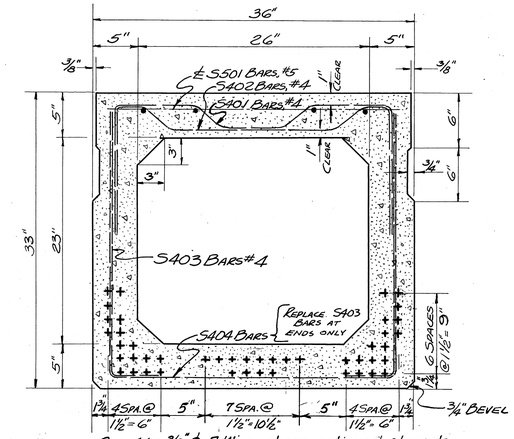


LIFTING DEVICE

REINFORCING STEEL SCHEDULE					
MARK	NO.	SIZE	LENGTH	WEIGHT	SHAPE
S401	660	#4	5'-8"	2498	B
S402	660	#4	5'-8"	2498	B
S403	2304	#4	3'-0"	4617	B
S404	192	#4	7'-7"	972	B
S501	144	#5	24'-6"	3680	S
TOTAL				14,265	

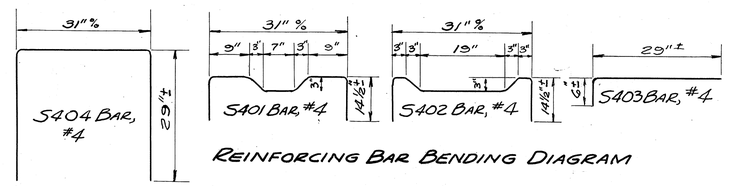
NUMBERS OF BARS & TOTAL WEIGHT PERTAIN TO 12 BEAMS

Fill anchor dowel holes with hot poured joint sealer (Sec. M-10.23) after placing dowels (Expansion Bearing)

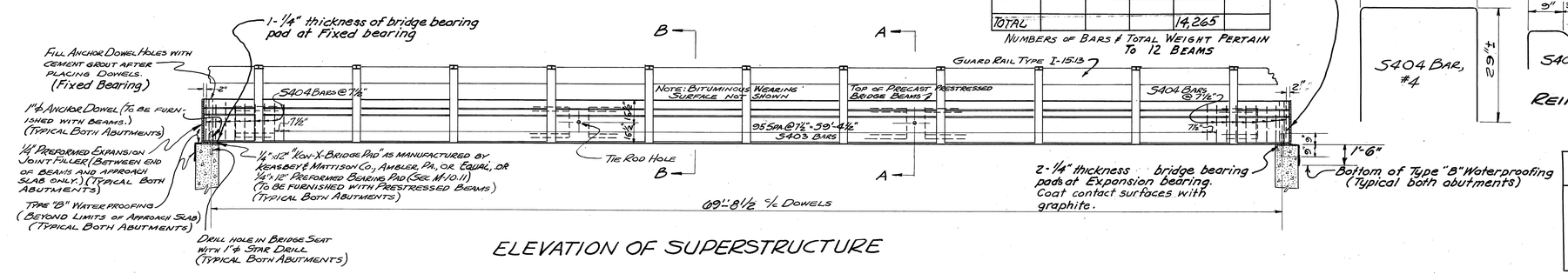


Q_s = 46 - 9/8" ϕ, 7 Wire stress relieved strands with total area = 3.68 in.²

PRESTRESSED BEAM DETAIL



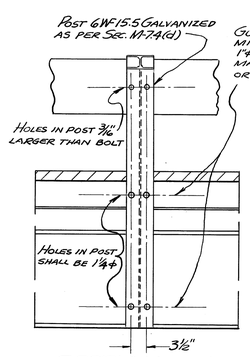
REINFORCING BAR BENDING DIAGRAM



ELEVATION OF SUPERSTRUCTURE

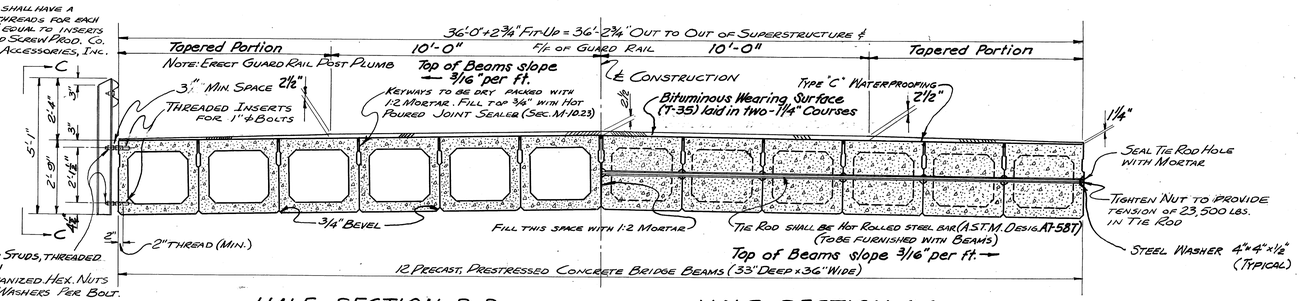
PRESTRESSED BEAM SECTION PROPERTIES		
NET SECTION AREA	594.5	IN.²
NET MOMENT OF INERTIA	82,048	IN.⁴
SECTION MODULUS (TOP)	4907	IN.³
SECTION MODULUS (BOTTOM)	5040	IN.³
WEIGHT OF BEAM (APPROX.)	49,700	LBS.

NOTE: Keyway mortar and hot packed joint sealer shall be included with prestressed beams for payment.



SECTION C-C
GUARD RAIL DETAIL

GUARD RAIL INSERTS: INSERTS SHALL HAVE A MINIMUM OF 2" OF MACHINE THREADS FOR EACH 1" ϕ STUD & SHALL BE SHALL & EQUAL TO INSERTS MANUFACTURED BY RICHMOND SCREW PROD. CO. OR BY SUPERIOR CONCRETE ACCESSORIES, INC.



HALF SECTION B-B HALF SECTION A-A

DIMENSIONAL TOLERANCES FOR PRESTRESSED BEAMS:—

THE ENGINEER MAY REJECT BEAMS NOT MEETING ANY ONE OF THE FOLLOWING REQUIREMENTS AND MAY REQUIRE THAT SUCH BEAMS BE REMOVED FROM THE SITE AT THE EXPENSE OF THE CONTRACTOR.

1. LENGTH: OVERALL LENGTH OF ANY PRESTRESSED BEAM SHALL NOT BE MORE THAN 1" LONGER OR SHORTER THAN THE "OUT TO OUT" DIMENSION SHOWN ON THE PLANS.
2. DEPTH: DEPTH OF ANY BEAM SHALL BE NOT GREATER THAN (DESIGN DEPTH + 1/4") NOR SMALLER THAN (DESIGN DEPTH − 1/4").
3. STRAIGHTNESS: ALLOWABLE DEVIATION FROM A VERTICAL PLANE FOR EITHER SIDE OF ANY PRESTRESSED BEAM SHALL NOT EXCEED 1/4" (MEASURED IN A HORIZONTAL DIRECTION).

6035-5

T. C. BIEBESHEIMER ENGINEERING CO.
CIVIL ENGINEERS AND SURVEYORS
TOLEDO, OHIO MONROE, MICHIGAN

SUPERSTRUCTURE DETAILS

BRIDGE NO. HUR-162-1196

DESIGN	TRACED	CHECKED	REVIEWED	DATE	REVISED
D.C.C.		D.C.C.			3-10-61

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

69
80

HUR.-162-(17.37)(1.50)(2.56)(2.67)(4.10)
(11.87)(14.41)(16.93)
E. OF NORTH FAIRFIELD
PART 8

MICROFIL... DEC 19 1986

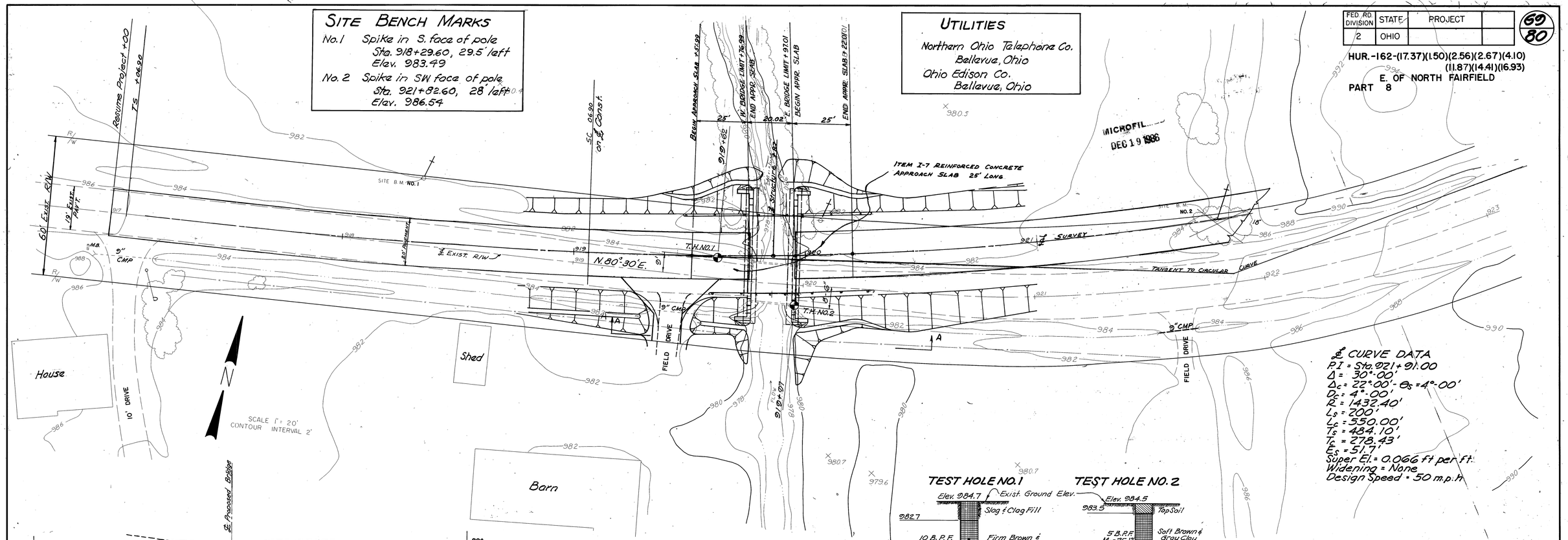
SITE BENCH MARKS

No. 1 Spike in S. face of pole
Sta. 918+29.60, 29.5' left
Elev. 983.49

No. 2 Spike in SW face of pole
Sta. 921+82.60, 28' left
Elev. 986.54

UTILITIES

Northern Ohio Telephone Co.
Bellevue, Ohio
Ohio Edison Co.
Bellevue, Ohio



℄ CURVE DATA

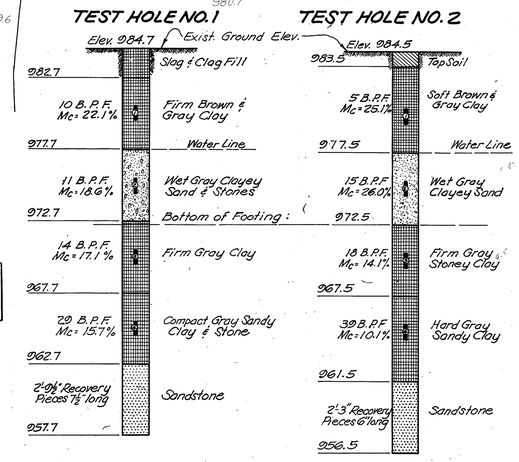
PI = Sta. 921+91.00
Δ = 30°-00'
Δ_c = 22°-00' - θ_s = 4°-00'
D_c = 4°-00'
R = 1432.40'
L_s = 200'
L_c = 550.00'
T_s = 484.10'
T_c = 278.43'
E_s = 51.71'
Super El. = 0.066 ft per ft.
Widening = None
Design Speed = 50 m.p.h.

LEGEND

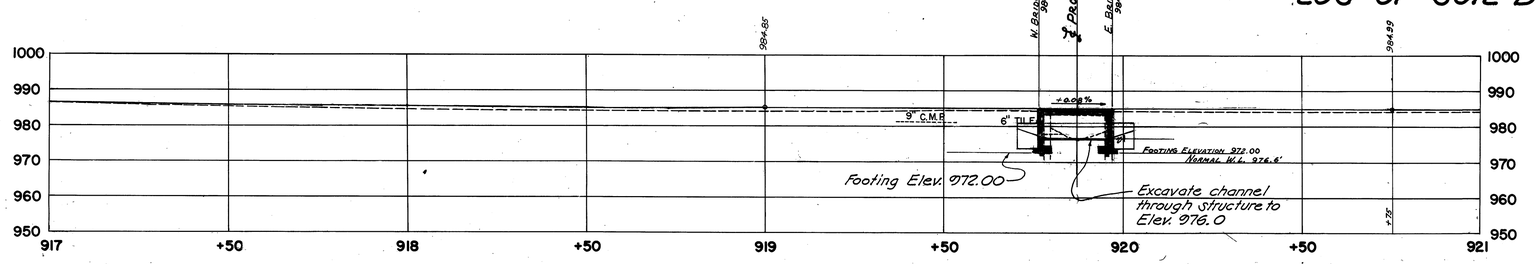
B.P.F.: Standard 140# hammer blows required to drive sampling tube 1 foot with 30" fall of hammer.

Mc: Moisture Content

NOTE: This sounding information was referred to in the design of the foundation, but the accuracy thereof is not guaranteed.



LOG OF SOIL BORINGS



PROFILE ON CENTERLINE OF SURVEY

EXISTING BRIDGE DATA

Type: Concrete Slab on Masonry Abuts.
Span: 17'-0"
Roadway: 15'-9"
Loading: No load reduction
Skew: None
Condition: Slab & Abutments: Poor

DRAINAGE AREA = 2.7 Sq. Mi.

PROPOSED STRUCTURE

Type: Precast, Prestressed Concrete Beam Superstructure on Cantilever Abuts.
Span: 20'-0" Overall - 18'-0" Clear
Roadway: 33'-2½" F/F Guard Rails
Loading: CF 130 (57)
Skew: None
Surface: T-35 Bituminous Wearing Surface
Approach Slabs: AS-1-54 (25' long)
ALIGNMENT: 4° Curve to Left

6035-8

T.C. BIEBESHEIMER ENGINEERING CO.
CIVIL ENGINEERS AND SURVEYORS
TOLEDO, OHIO MONROE, MICHIGAN

SITE PLAN
BRIDGE NO. HUR-162-1742

HURON Co.
SEC: HUR-162-17.37 STA. 919+76.99 919+97.01

DESIGN	TRACED	CHECKED	REVIEWED	DATE	REVISED
D.C.C.		D.C.C.			

SITE PLAN

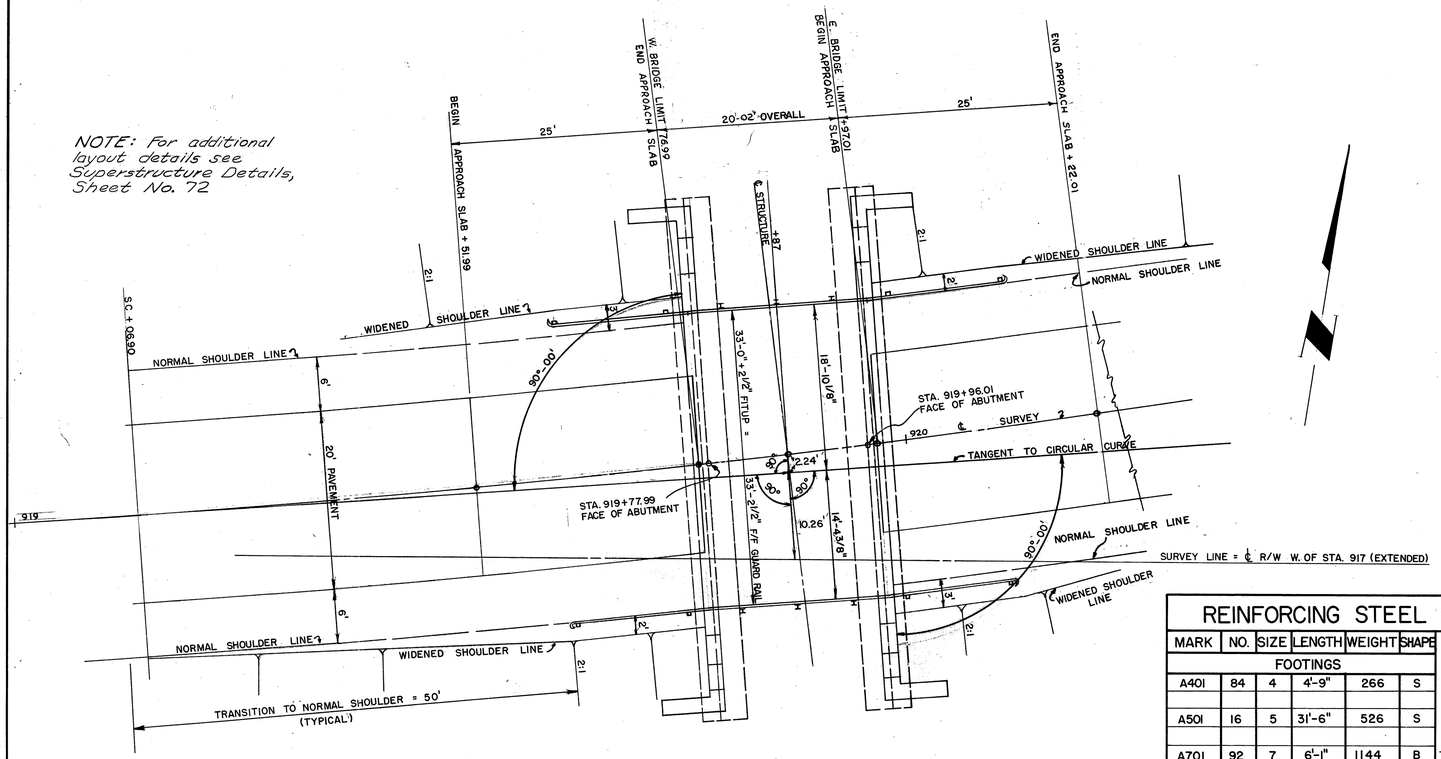
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

70/80

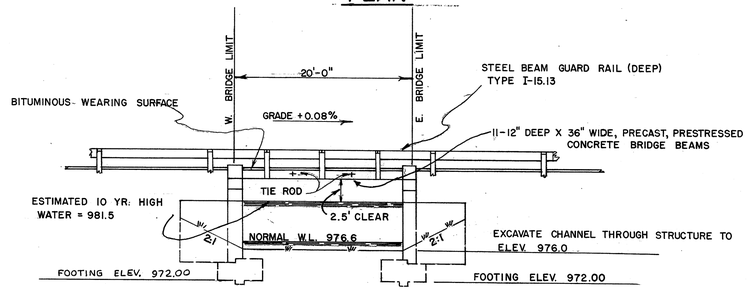
SEC. HUR.-162-(17.37)(1.50)(2.56)(2.67)(4.10)
PART 8 (11.87)(14.41)(16.93)

MICROFILM
DEC 19 1986

NOTE: For additional layout details see Superstructure Details, Sheet No. 72



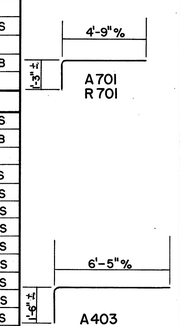
PLAN



ELEVATION NORMAL TO STREAM

REINFORCING STEEL SCHEDULE

MARK	NO.	SIZE	LENGTH	WEIGHT	SHAPE
FOOTINGS					
A401	84	4	4'-9"	266	S
A501	16	5	31'-6"	526	S
A701	92	7	6'-1"	1144	B
WALLS					
A402	8	4	4'-3"	23	S
A403	52	4	8'-0"	278	B
A502	16	5	5'-6"	92	S
A503	20	5	7'-4"	153	S
A504	4	5	7'-6"	31	S
A505	8	5	7'-8"	64	S
A506	4	5	7'-11"	33	S
A507	4	5	8'-1"	34	S
A508	8	5	8'-4"	70	S
A509	4	5	8'-6"	35	S
A510	4	5	8'-9"	36	S
A511	4	5	8'-11"	37	S
A512	4	5	9'-2"	38	S
A513	16	5	9'-4"	156	S
A514	16	5	5'-1"	85	S
A515	12	5	24'-3"	303	S
A516	16	5	27'-9"	463	S
A517	16	5	31'-2"	520	S
A518	16	5	3'-0"	50	S
TOTAL WEIGHT				4,437	LBS.
REPLACEMENT BARS					
R401	1	4	4'-9"		S
R501	1	5	5'-6"		S
R701	1	7	6'-1"		B



NOTE: BAR SIZE IS INDICATED BY BAR MARK-THE FIRST DIGIT WHERE 3 DIGITS ARE USED. FOR EXAMPLE A501 IS A NUMBER 5 SIZE BAR.

% MEANS "OUT TO OUT"

STRUCTURE UNDER 20' SPAN

ITEM	DESCRIPTION	UNIT	QUANTITY
E-2	EXCAVATION FOR STRUCTURE, UNCLASSIFIED	CUBIC YDS.	290
E-2	COFFERDAMS, CRIBS & SHEETING	LUMP	SUM
E-3	CHANNEL EXCAVATION	CUBIC YDS.	250
T-35	2 1/2" ASPHALTIC CONCRETE SURFACE COURSE, TYPE "C" (85-100)	CUBIC YDS.	5
S-1	CLASS "E" CONCRETE FOR ABUTMENT WALLS	CUBIC YDS.	69
S-1	CLASS "E" CONCRETE FOR ABUTMENT FOOTINGS	CUBIC YDS.	58
S-3	WATERPROOFING, TYPE "B"	SQUARE YDS.	9
S-3	WATERPROOFING, TYPE "C"	SQUARE YDS.	73
S-3	PREMOLDED SEALING STRIP	LIN. FT.	19
S-4	REINFORCING STEEL	LBS.	4,437
S-9	1/4" PREFORMED EXPANSION JOINT FILLER	SQUARE FT.	40
S-9	3/4" PREFORMED EXPANSION JOINT FILLER	SQUARE FT.	6
S-14	RAILING (TYPE I-15.13) WITH GALVANIZED STEEL POSTS & STUDS	LIN. FT.	40
S-24	REMOVAL OF EXISTING STRUCTURE	LUMP	SUM
S-29	POROUS BACKFILL	CUBIC YDS.	65
S-105	PRESTRESSED CONCRETE MEMBERS AS PER PLAN	EACH	11
	These Quantities Carried in Roadway General Summary		

GENERAL NOTES: See Sheet No. 4.

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-4.02 need not be furnished and replacement bars will not be required.

6035-8

T. C. BIEBESHEIMER ENGINEERING CO.
CIVIL ENGINEERS AND SURVEYORS
TOLEDO, OHIO MONROE, MICHIGAN

GENERAL PLAN & ESTIMATED QUANTITIES BRIDGE NO. HUR.-162-1742

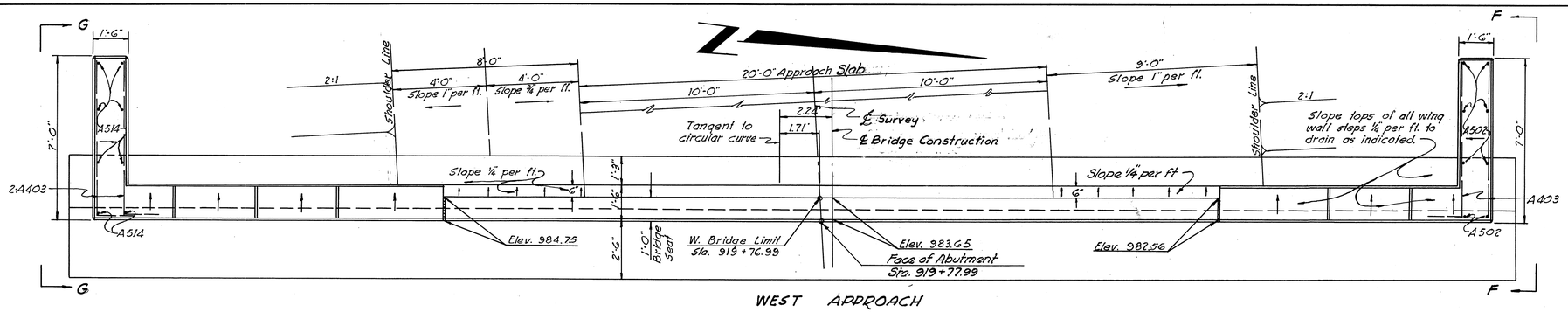
DESIGN	TRACED	CHECKED	REVIEWED	DATE	REVISED
D.C.C.	DH	D.C.C.			

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

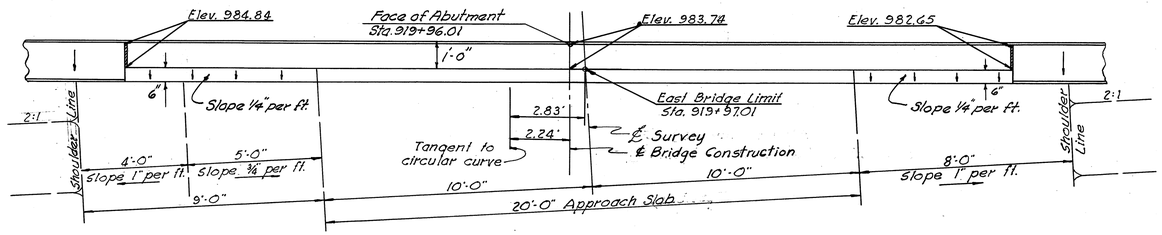
71/80

SEC. HUR.-162-(17.37)(1.50)(2.56)(2.67)(4.10)
PART 8 (11.87)(14.41)(16.93)

MICROFIL
DEC 19 1986

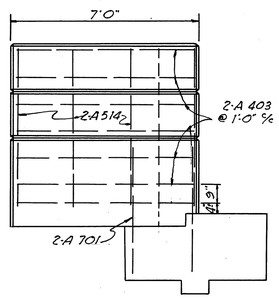


WEST APPROACH

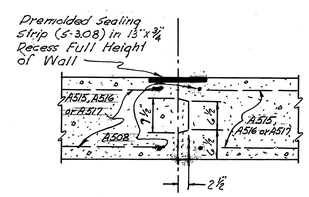


EAST APPROACH

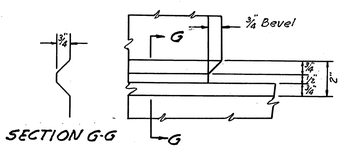
ABUTMENT PLAN



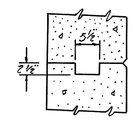
VIEW G-G



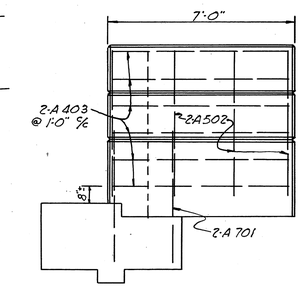
SECTION B-B
CONTRACTION JOINT DETAIL



DETAIL E
RUSTICATION DETAIL

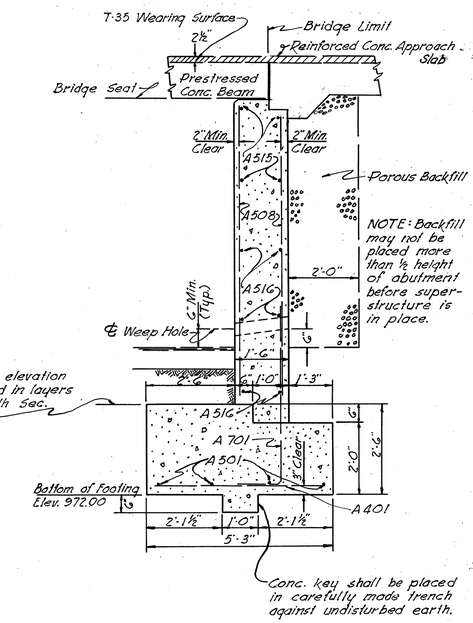


SECTION C-C
CONSTRUCTION JOINT DETAIL



VIEW F-F

NOTE: See Sheet No. 70 for reinforcing steel schedule

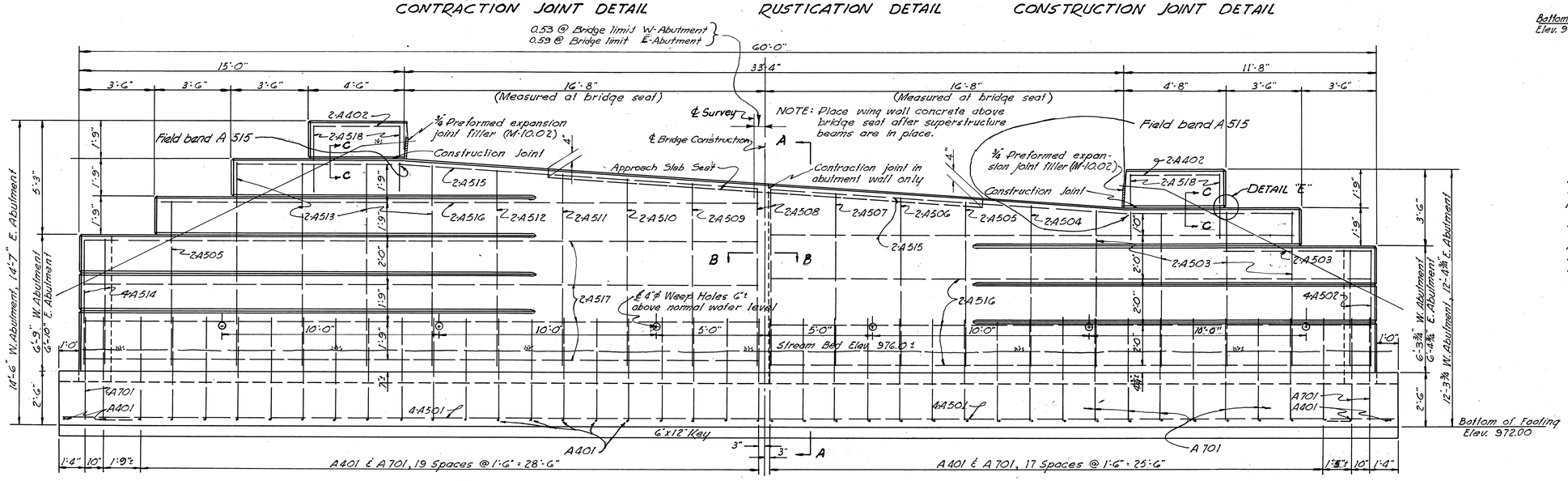


SECTION A-A

NOTES:

FOUNDATION BEARING PRESSURE:
Abutment footings are designed for a maximum bearing pressure of 1.4 Tons per sq. ft.

REPLACEMENT BARS:
If reinforcing bars are fabricated from stock which has been previously tested and approved by the Ohio Highway Testing Laboratory, test samples as provided in Sec. S-4.02 need not be furnished and replacement bars will not be required.



ABUTMENT ELEVATION

(W. Abutment shown. E. Abutment is opposite hand.)

6035-8

T. C. BIEBESHEIMER ENGINEERING CO.
CIVIL ENGINEERS AND SURVEYORS
TOLEDO, OHIO MONROE, MICHIGAN

SUBSTRUCTURE DETAILS

BRIDGE NO. HUR.-162-1742

DESIGN	TRACED	CHECKED	REVIEWED	DATE	REVISED
D.C.C.		D.C.C.			

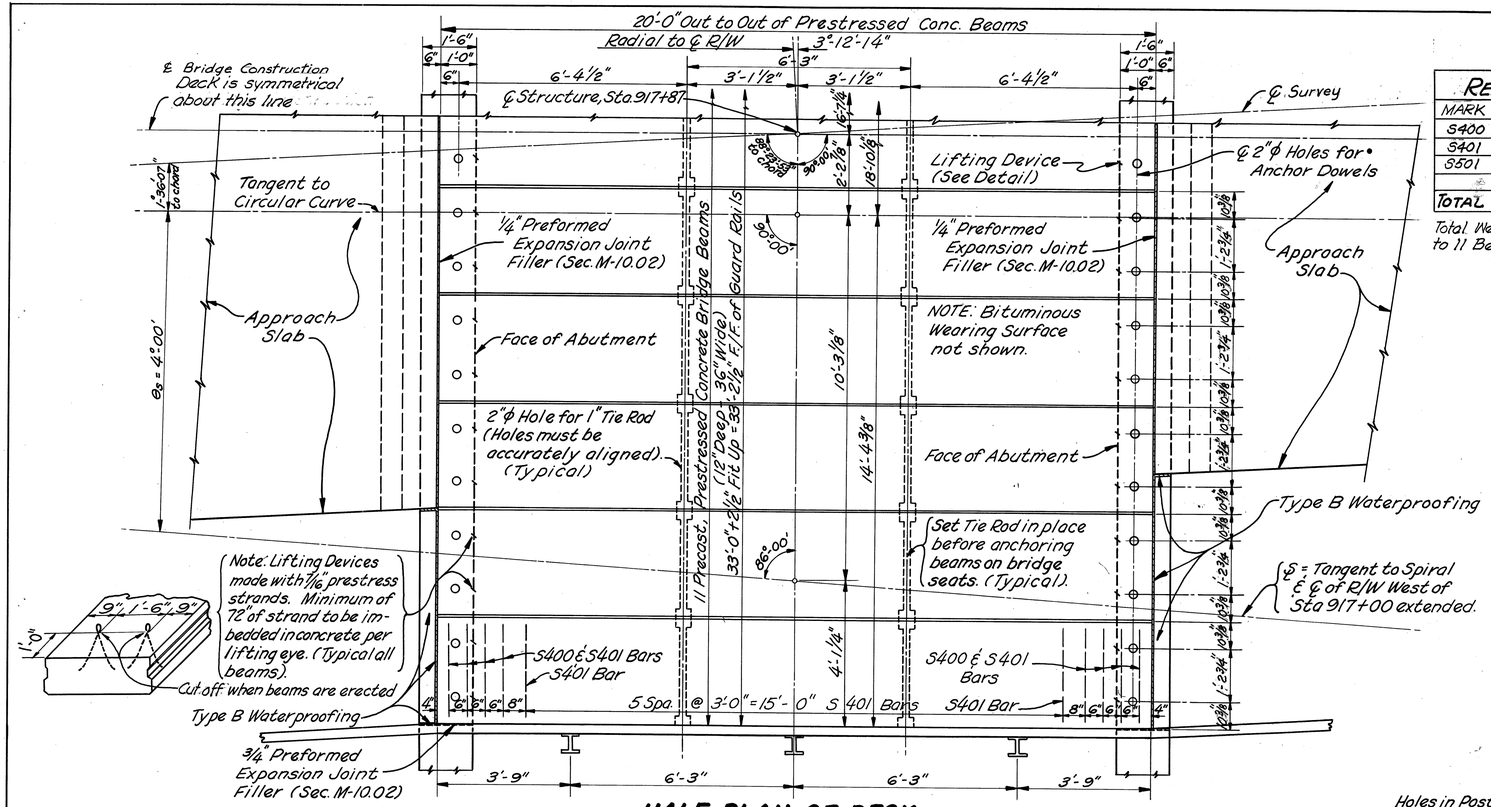
SUBSTRUCTURE DETAILS

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

72
80

SEC. HUR.-162-(17.37)(1.50)(2.56)(2.67)(4.10)(11.87)(14.41)(16.93)
PART 8

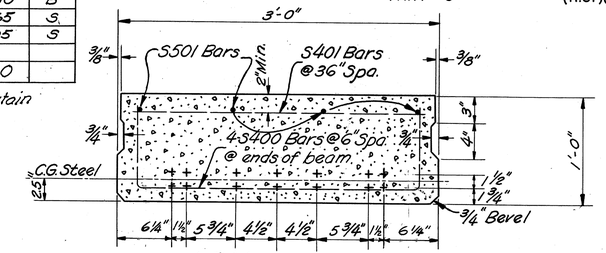
MICROFILMED
DEC 19 1986



HALF PLAN OF DECK

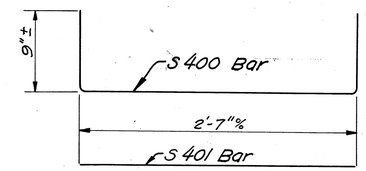
REINFORCING STEEL LIST					
MARK	NO.	SIZE	LENGTH	WEIGHT	SHAPE
S400	88	#4	4'-3"	250	B
S401	154	#4	2'-7"	265	S
S501	44	#5	19'-6"	895	S
TOTAL				1410	

Total Weight & Numbers of Bars pertain to 11 Beams.



A_s = 14-7/16" φ 7 wire stress relieved strands with Total Area = 1.40 Sq. In.

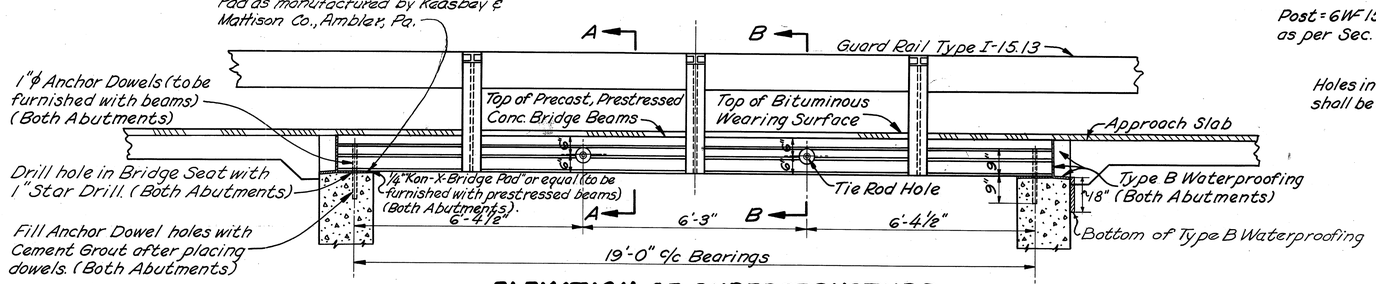
PRESTRESSED BEAM DETAIL



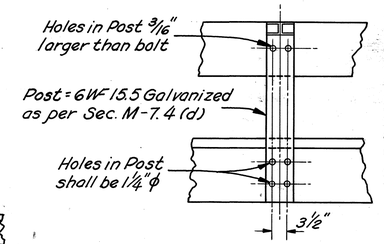
REINFORCING BAR DIAGRAM

PRESTRESSED BEAM SECTION PROPERTIES		
Net Section Area	423.8	in²
Net Moment of Inertia	5122	in⁴
Section Modulus (Top)	848	in³
Section Modulus (Bottom)	859	in³
Weight of Beam	9400	lbs.

NOTE: Bridge Bearing Pad shall be similar and equal to "Kon-X-Bridge" Pad as manufactured by Keasbey & Mattison Co., Ambler, Pa.



ELEVATION OF SUPERSTRUCTURE



Guard Rail Note: Inserts shall have a minimum of 4" of machine threads for each 1"φ stud & shall be similar & equal to inserts manufactured by Richmond Screw Products Co. or Superior Conc. Accessories Inc.

SECTION C-C GUARD RAIL DETAIL

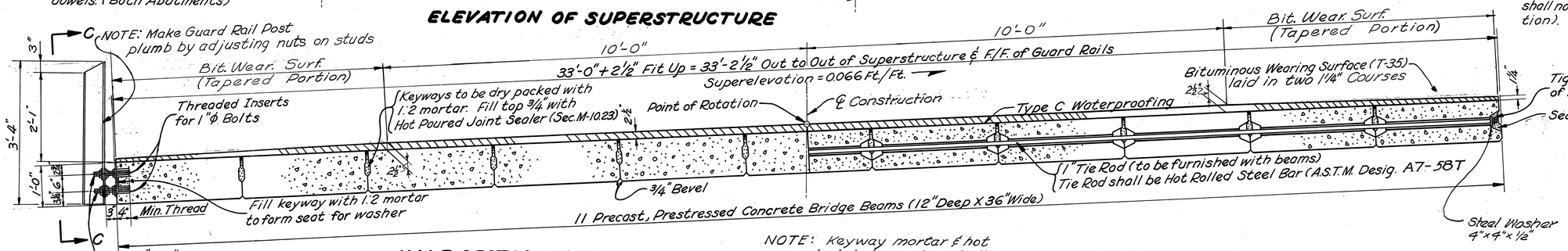
DIMENSIONAL TOLERANCES FOR PRESTRESSED BEAMS

The Engineer may reject beams not meeting any one of the following requirements and may require that such beams be removed from the site at the expense of the Contractor.

(1) Length: Overall length of any prestressed beam shall not be more than 1" longer or shorter than the "out to out" dimension shown on the plans.

(2) Depth: Depth of any beam shall not be greater than design depth + ¼", nor smaller than design depth − ¼".

(3) Straightness: Allowable deviation from a vertical plane for either side of any prestressed beam shall not exceed ¼" (measured in a horizontal direction).



HALF SECTION A-A

NOTE: Keyway mortar & hot poured joint sealer shall be included with prestressed beams for payment.

HALF SECTION B-B

G035-8

T. C. BIEBESHEIMER ENGINEERING CO.
CIVIL ENGINEERS AND SURVEYORS
TOLEDO, OHIO MONROE, MICHIGAN

SUPERSTRUCTURE DETAILS

BRIDGE NO. HUR.-162-1742

DESIGN	TRACED	CHECKED	REVIEWED	DATE	REVISED
D.C.C.	—	D.C.C.			

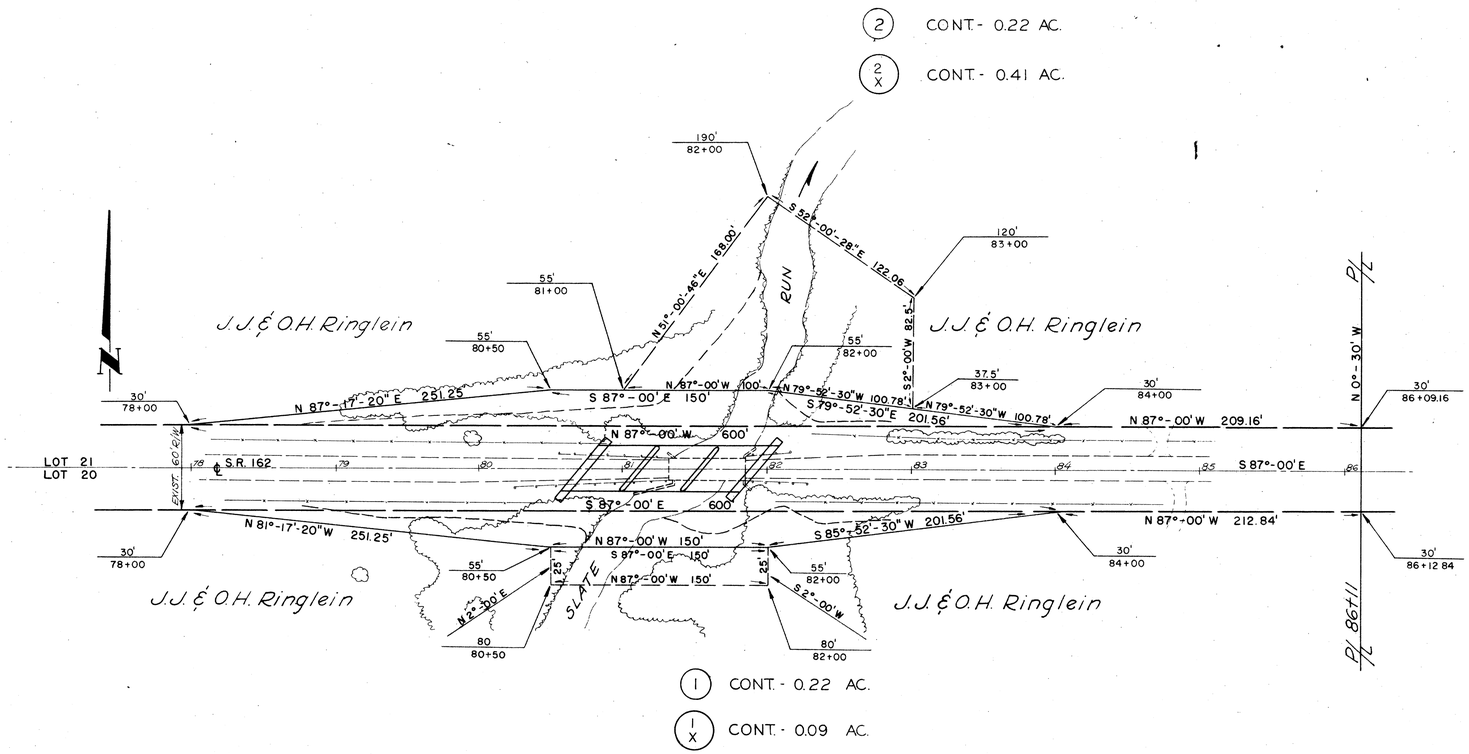
FED DIV	STATE	PROJECT	
2	OHIO		

73/80

HUR-162-(01.50)(2.56)(2.67)(4.10)(11.87)
RIGHT-OF-WAY PLAN (14.41)(16.93)(17.37)

SCALE: 1"=50'

1/1



NORWICH TWP. T.2N. R24W. SEC.3

9-28-60

HUR-162-(01.50) BR R/W 1 OF 1

RIGHT-OF-WAY

10-5-6

FED DIV.	STATE	PROJECT	
2	OHIO		

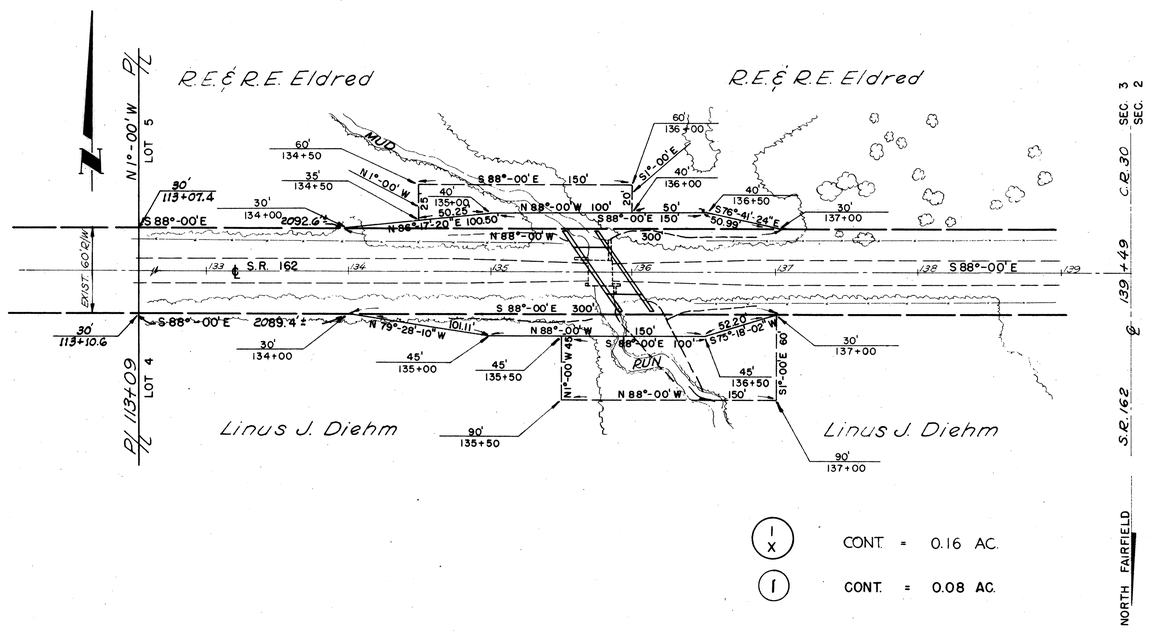
74
80

HUR-162-(1.50)(2.56)X(2.67)(4.10)X(11.87)(14.41)
RIGHT-OF-WAY PLAN (16.93)X(17.37)

1
1

(2X) CONT. = 0.07 AC.

(2) CONT. = 0.05 AC.



(1X) CONT. = 0.16 AC.

(1) CONT. = 0.08 AC.

NORWICH TWP. T.2N. R.24W. SEC. 3

9-28-60

6035-2

HUR-162-(02.56) BR. R/W 1 OF 1

RIGHT-OF-WAY

FED DIV.	STATE	PROJECT	
2	OHIO		

75/80

HUR-162-(1.50)(2.56)(2.67)(4.10)(11.87)(14.41)
RIGHT-OF-WAY PLAN (16.93)(17.37)

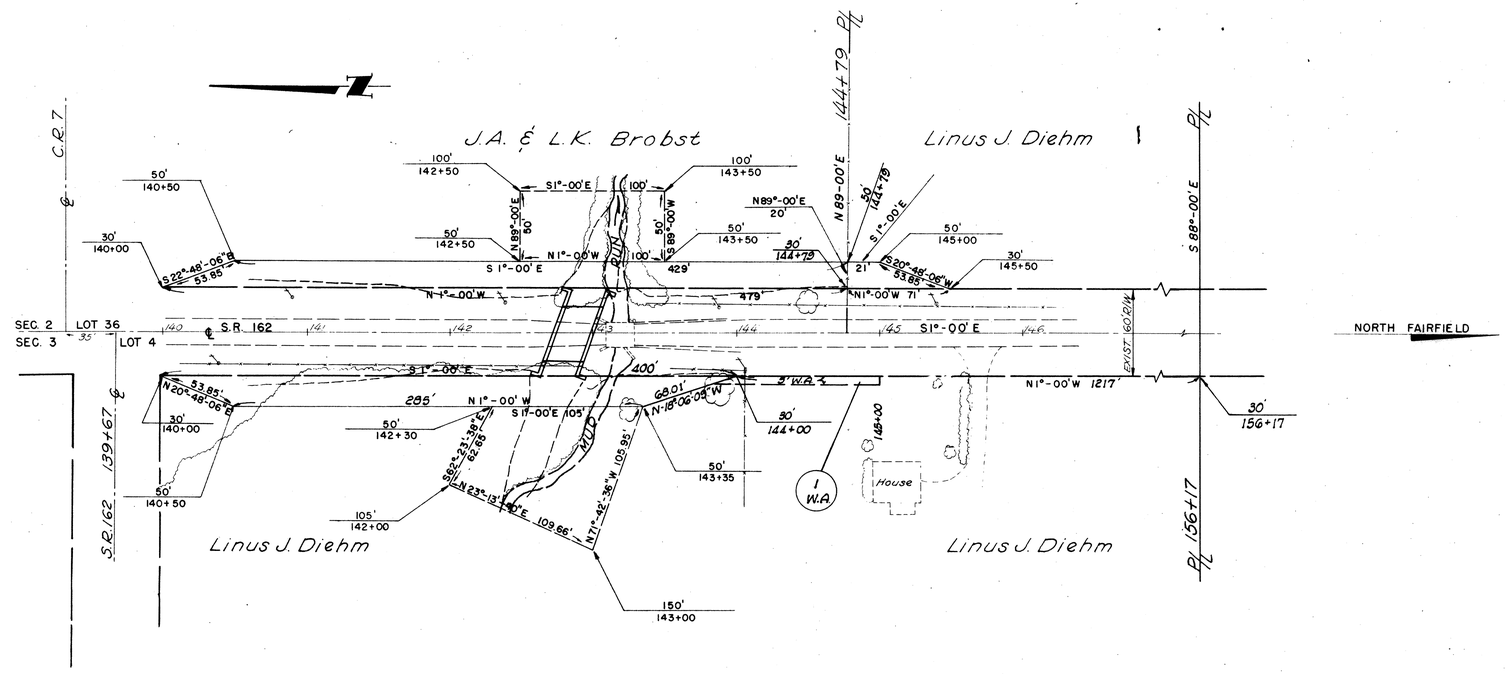
SCALE: 1" = 50'

1/1

(2) CONT. = 0.21 AC.

(2/X) CONT. = 0.12 AC.

(3) CONT. = 0.02 AC.



(1) CONT. = 0.16 AC.

(1/X) CONT. = 0.20 AC.

(1/W.A.)

NORWICH TWP. T.2N. R.24W. SEC'S. 2 & 3

Par. 1 Rev. 11-28-60 JA.
9-28-60

6035-3

RIGHT-OF-WAY

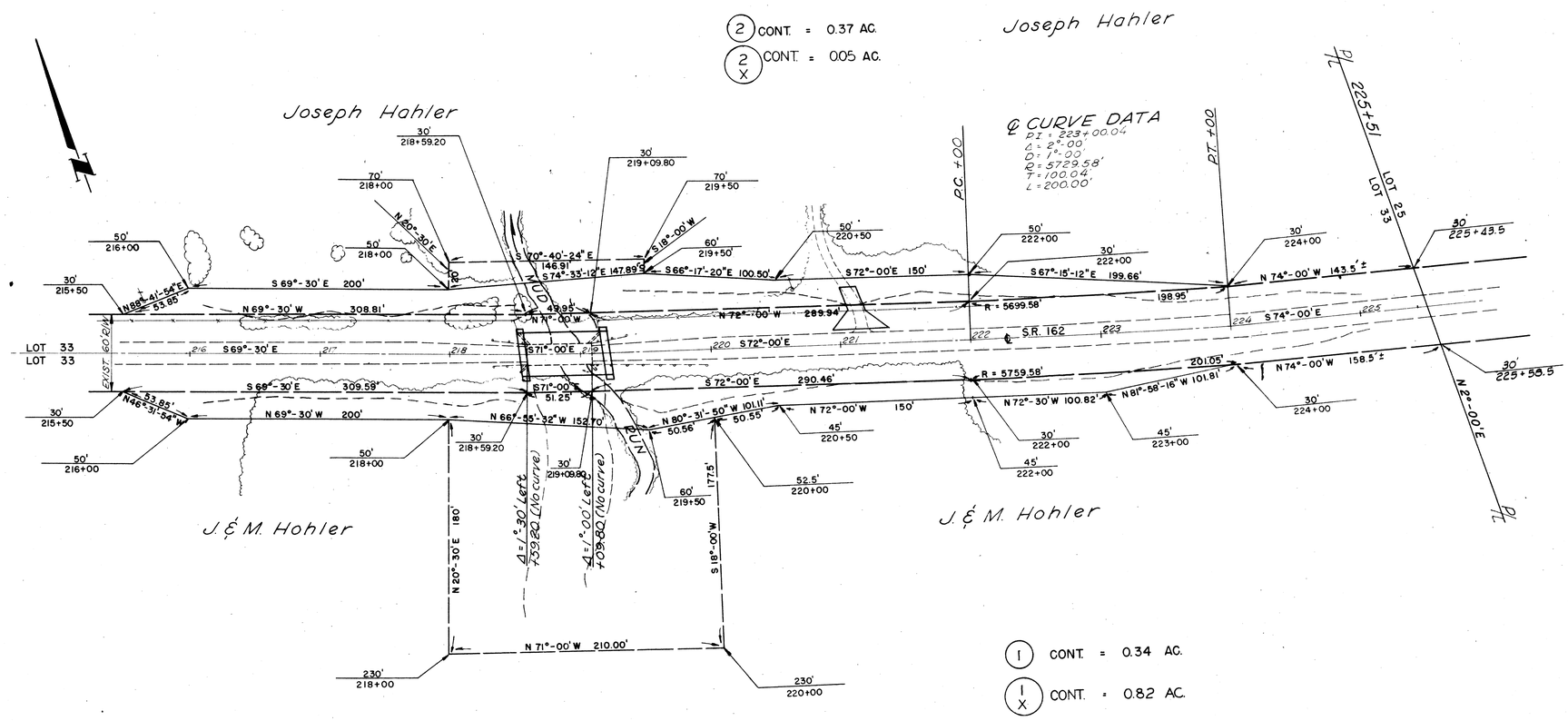
FED DIV	STATE	PROJECT	
2	OHIO		

76
80

HUR-162-(1.50)(2.56)(2.67)(4.10)(11.87)(14.41)
RIGHT-OF-WAY PLAN (16.93)(17.37)

SCALE: 1"=50'

1
1



NORWICH TWP. T.2N. R.24W. SEC. 2

9-28-60

HUR-102-(04.10) BR R/W 1 OF 1

6035-4

RIGHT-OF-WAY

10-5-60

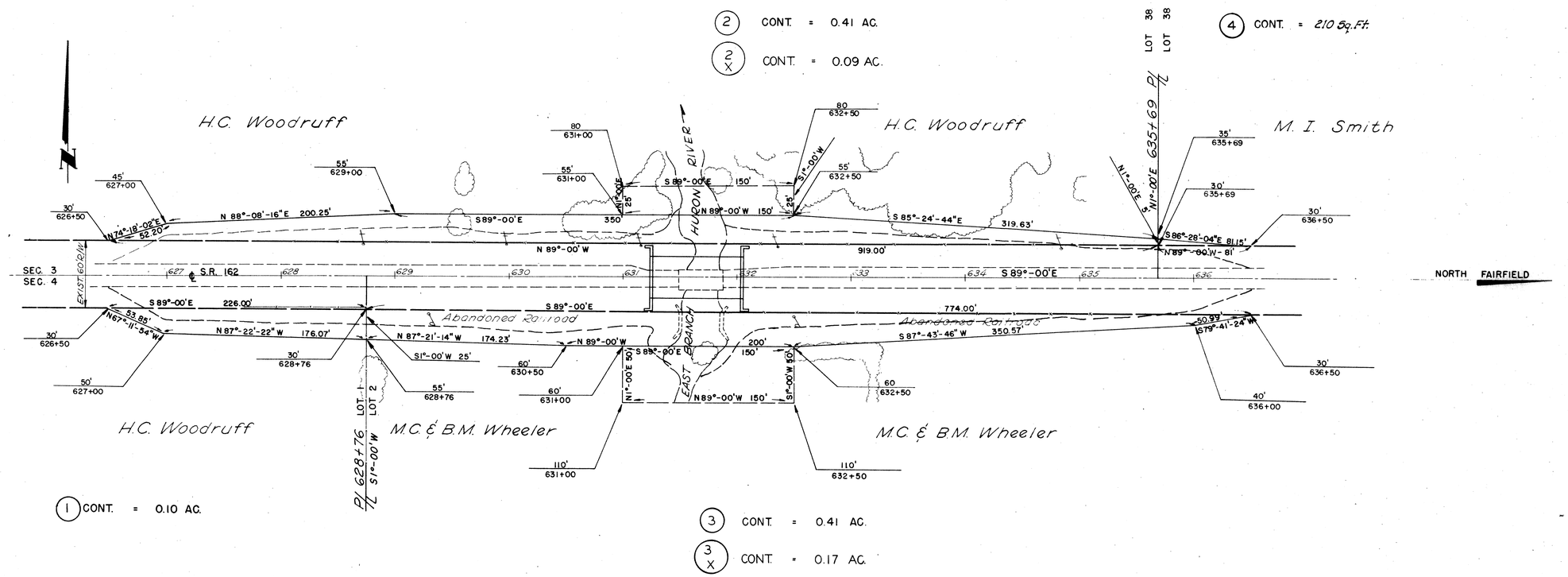
FED DIV	STATE	PROJECT	
2	OHIO		

77 / 80

HUR-162-(1.50)(2.56)(2.67)(4.10)(11.87)(14.41)
RIGHT-OF-WAY PLAN (16.93)(17.37)

SCALE: 1" = 50'

1 / 1



FAIRFIELD TWP. T.2N. R.22W. SEC'S. 3 & 4

9-28-60

6055-5

HUR-162-(11.87) BR. R/W 1 OF 1

RIGHT-OF-WAY

10-3-60

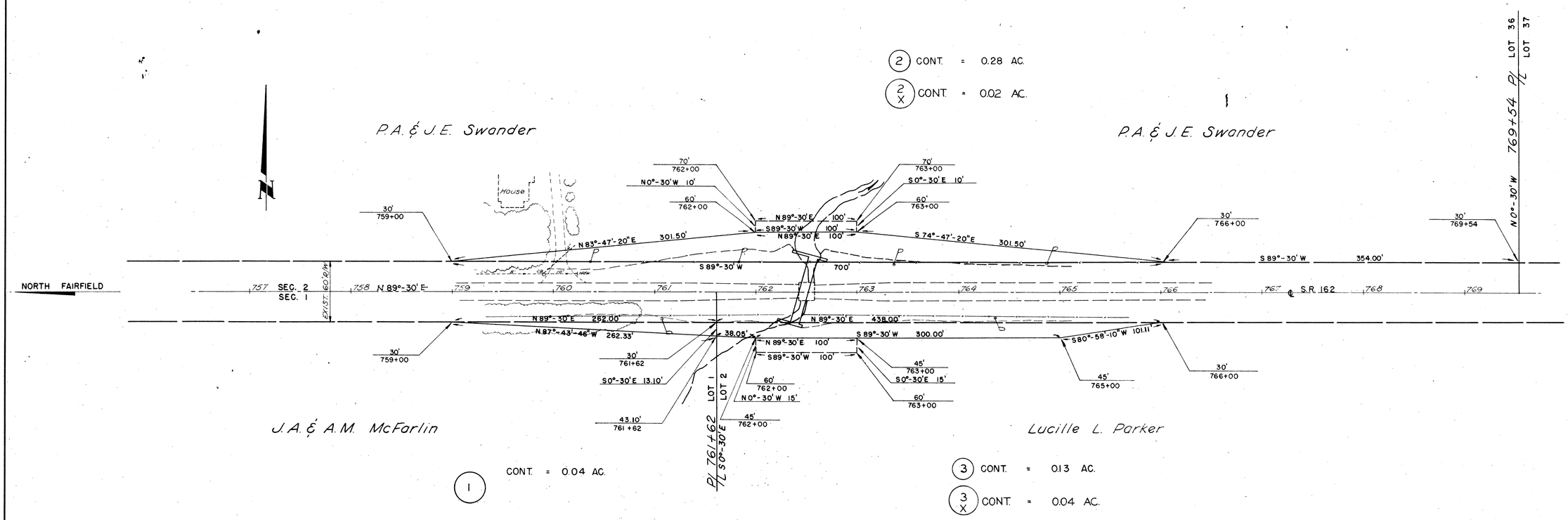
FED DIV	STATE	PROJECT	
2	OHIO		

78
80

HUR-162-(1.50)(2.56)(2.67)(4.10)(11.87)(14.41)
RIGHT-OF-WAY PLAN (16.93)(17.37)

SCALE: 1" = 50'

1
1



FAIRFIELD TWP. T.2N. R.22W. SEC'S. 1 & 2

9-28-60
6035-6

HUR-162-(14.41) BR. R/W 1 OF 1

RIGHT-OF-WAY

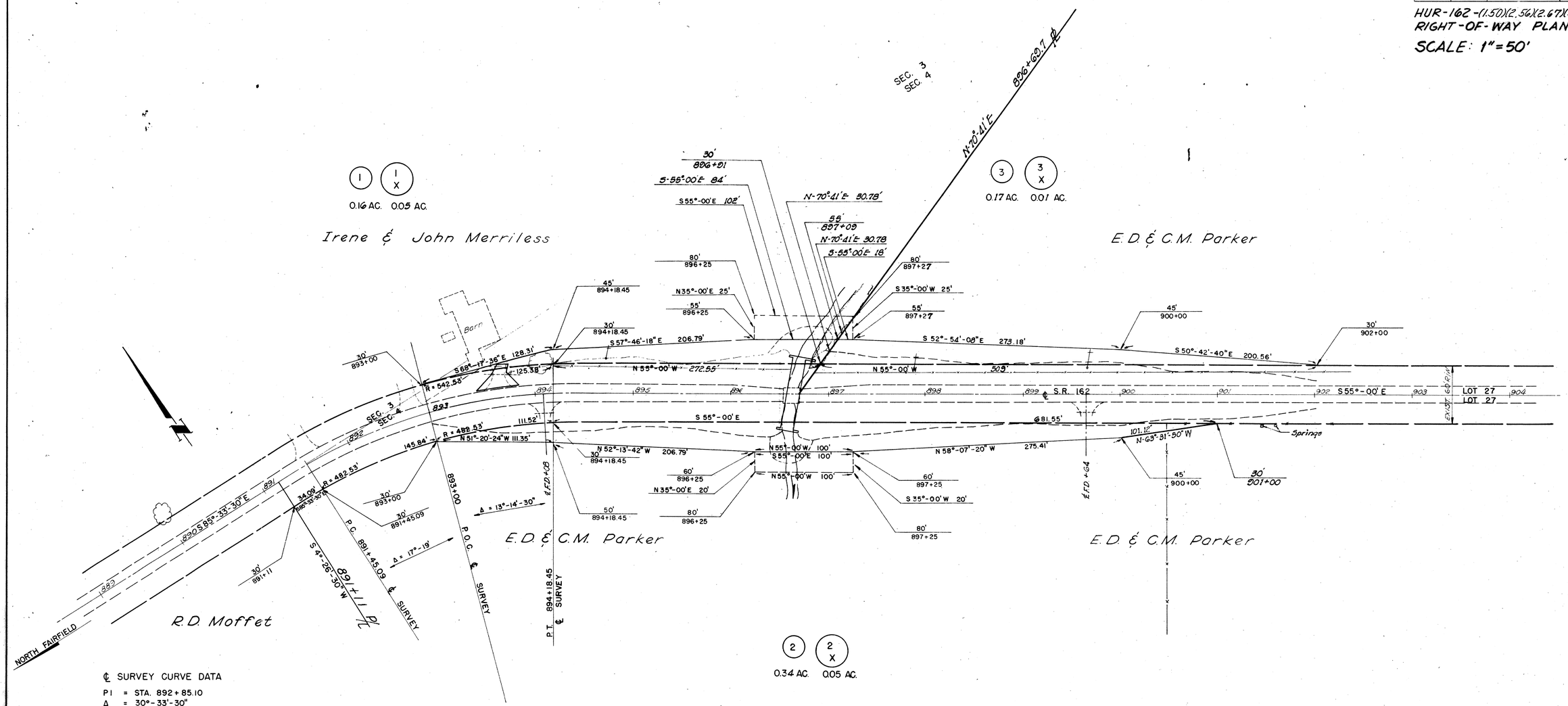
FED DIV	STATE	PROJECT	
2	OHIO		

70 / 80

HUR-162-(1.50)(2.56)(2.67)(4.10)(11.87)(14.41)
RIGHT-OF-WAY PLAN (16.93)(17.37)

SCALE: 1" = 50'

1 / 1



℄ SURVEY CURVE DATA

PI = STA. 892 + 85.10
Δ = 30°-33'-30"
D = 11°-10'-48"
R = 512.53'
L = 273.36'
T = 140.01'
E = 18.12'

FITCHVILLE TWP. T.2N. R.21 W. SEC. 4

Rev. 12-1-60 Par. 1 & 3 R/W & Ac.; Par. 2 R/W Sta. 900 to 901 & Ac.
9-28-60

HUR-162-(16.93) BR. R/W 1 OF 1

RIGHT-OF-WAY

FED DIV	STATE	PROJECT	
2	OHIO		

80/80

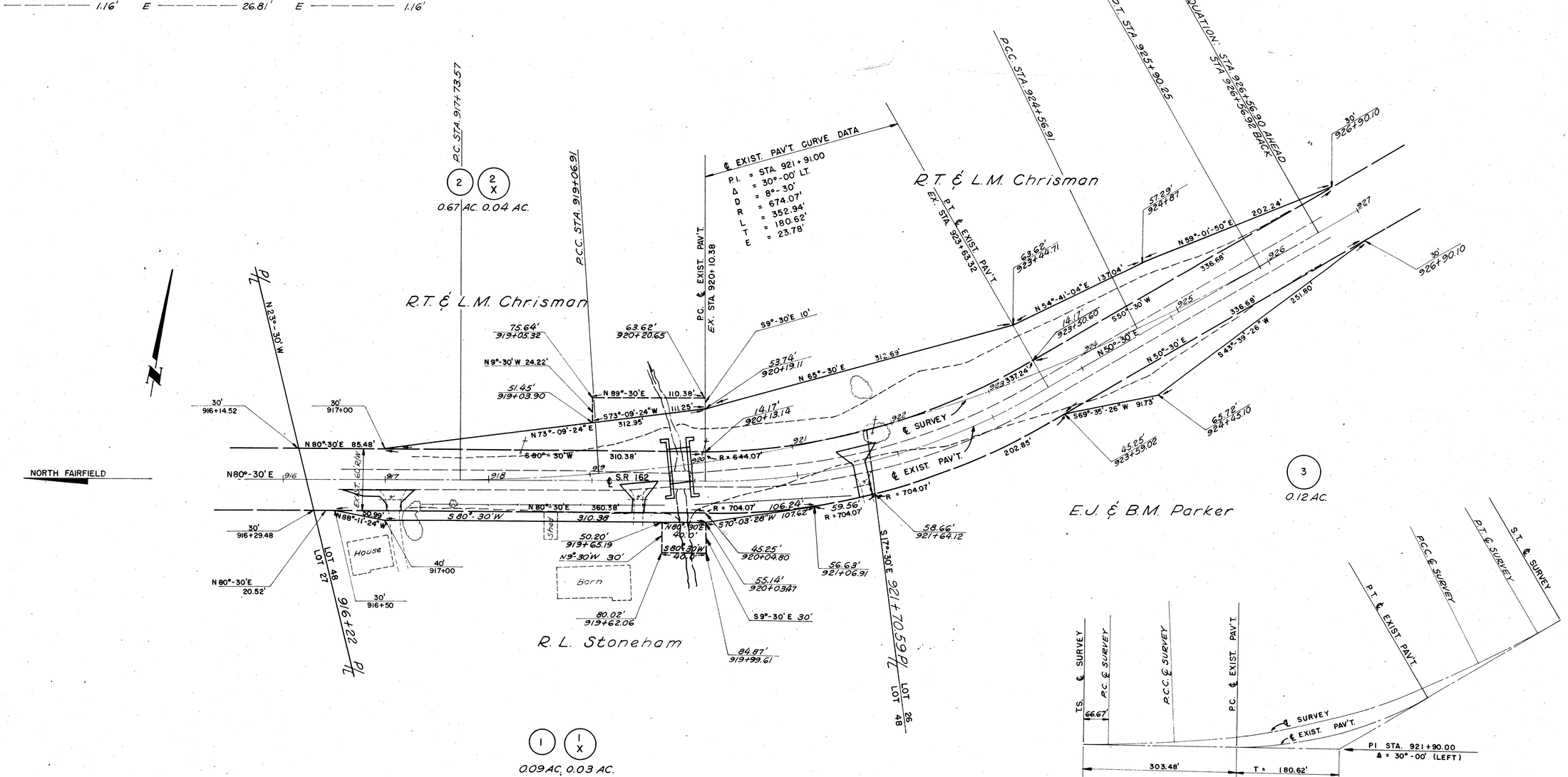
HUR-162-(1.50)(2.56)(2.67)(4.10)(1.87)(14.41)
RIGHT-OF-WAY PLAN (16.93)(17.37)

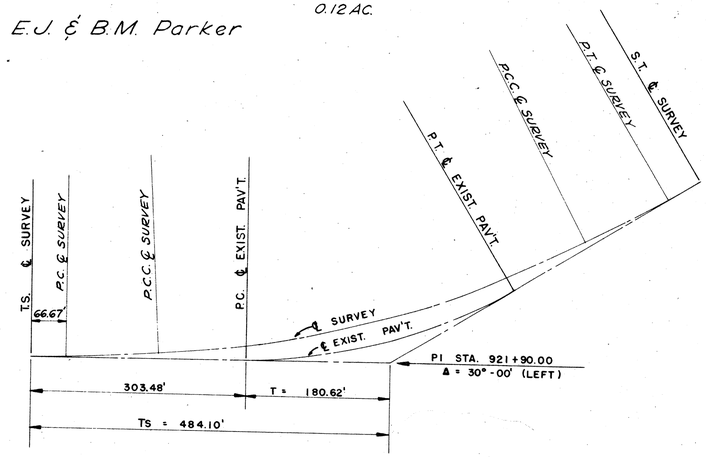
SCALE: 1" = 50'

1/1

℄ SURVEY CURVE DATA

P.C. 917 + 73.57	P.C.C. 919 + 06.91	P.C.C. 924 + 56.91
P.I. 918 + 40.27	P.I. 921 + 85.34	P.I. 925 + 23.61
P.C.C. 919 + 06.91	P.C.C. 924 + 56.91	P.T. 925 + 90.25
Δ 4°-00'	Δ 22°-00'	Δ 4°-00'
D 2.99972°	D 4°-00'	D 2.99972°
R 1910.04'	R 1432.40'	R 1910.04'
L 133.34'	L 550.00'	L 133.34'
T 66.70'	T 278.43'	T 66.70'
E 1.16'	E 26.81'	E 1.16'





DETAIL SHOWING RELATIONSHIP OF TWO PROJECT CENTERLINES
(NOT TO SCALE)

FITCHVILLE TWP. T.2N. R.21W. SEC. 4

9-28-60

HUR-162-(1737) BR. R/W 1 OF 1

RIGHT-OF-WAY

6035-8