15446
S.W

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	STATE	

NATURAL RESOURCES ROAD NO. 8-1.43
ASHLAND COUNTY

30

STATE OF OHIO
DEPARTMENT OF HIGHWAYS — DEPARTMENT OF NATURAL RESOURCES

BRIDGE OVER MOHICAN RIVER
MOHICAN STATE FOREST PARK
NATURAL RESOURCES ROAD NO. 8 - 1.43

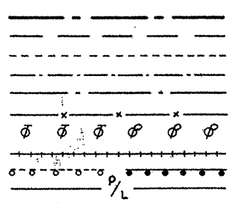
Covered Bridge

ASD-SP 58 - 0181

ASHLAND COUNTY
HANOVER TOWNSHIP

CONVENTIONAL SIGNS

COUNTY LINE
TOWNSHIP LINE
SECTION LINE
CORPORATION LINE
CENTER LINE
FENCE LINE
POLE LINE (TELEPHONE & POWER)
RAILROAD
GUARD RAIL (EXISTING & PROPOSED)
PROPERTY LINE

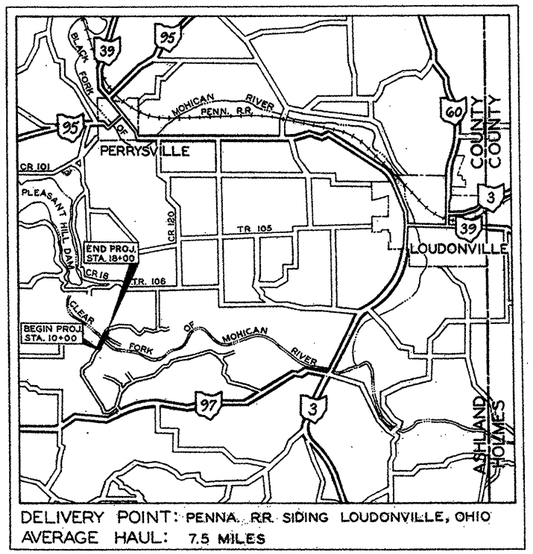


INDEX OF SHEETS

TITLE SHEET	1
TYPICAL SECTIONS	2
GENERAL NOTES	3
CALCULATIONS AND GENERAL SUMMARY	4
PLAN AND PROFILE	5-7
CROSS SECTIONS	8-14
SUPERELEVATION TABLES AND SPECIAL DETAILS	15
STRUCTURE OVER 20' SPAN	16-30

LINE DATA

BEGIN PROJECT & WORK	STA. 10+00
END PROJECT & WORK	STA. 18+00
GROSS LENGTH PROJ. & WORK	800 LIN. FT.
NET LENGTH PROJECT & WORK	800 LIN. FT. OR 0.151 MI.



DELIVERY POINT: PENNA. RR. SIDING LOUDONVILLE, OHIO
AVERAGE HAUL: 7.5 MILES

LOCATION MAP

SCALE OF MILES
0 1 2 3 4

PORTION TO BE IMPROVED
STATE HIGHWAYS
OTHER ROADS

SCALES

PLAN	1"-20'	CROSS SECTIONS	1"-5'
PROFILE HORIZONTAL	1"-20'	OTHER SHEETS AS SHOWN	
PROFILE VERTICAL	1"-2'		

1967 SPECIFICATIONS

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

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

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

APPROVED D.H. Conner
DATE 9-6-67 DIVISION DEPUTY DIRECTOR

APPROVED C.H. Abbatter
DATE 9-12-67 ENGINEER OF BRIDGES

APPROVED R.E. Catlin
DATE 9-18-67 ENGINEER OF LOCATION AND DESIGN

APPROVED R.E. Shultz
DATE 9-18-67 DEPUTY DIRECTOR OF DESIGN AND CONSTRUCTION

APPROVED
DATE DEPUTY DIRECTOR OF RIGHT OF WAY

No ROW Involved 9-13-67

APPROVED James M. Major
DATE 10-4-67 DEPUTY DIRECTOR OF PLANNING AND PROGRAMMING

APPROVED Fred E. Moor
DATE 10-4-67 DIRECTOR OF NATURAL RESOURCES

APPROVED E.W. Wilson
DATE 10-4-67 FIRST ASSISTANT DIRECTOR

APPROVED P.E. Machtin
DATE 10-4-67 DIRECTOR OF HIGHWAY

SUPPLEMENTAL PRINTS OF STANDARD CONSTRUCTION DRAWINGS					
BP-5	6-1-65	SD-1-65 Sh.1	11-8-65		
BP-6	6-1-65	FSB-1-62	1-15-63		
BP-7	1-1-66	MC-4	6-1-65		
L-1	6-1-65				
MC-1	6-1-65				
MC-3	5-1-66				

SUPPLEMENTAL SPECIFICATIONS			
808	1-13-67		
811	1-1-67		
812	1-1-67		
1001	3-21-66		

FILE Nº	ASHLAND COUNTY NATURAL RESOUCES RD. NO. 8-1.43
	DATE OF LETTING
	CONTRACT Nº

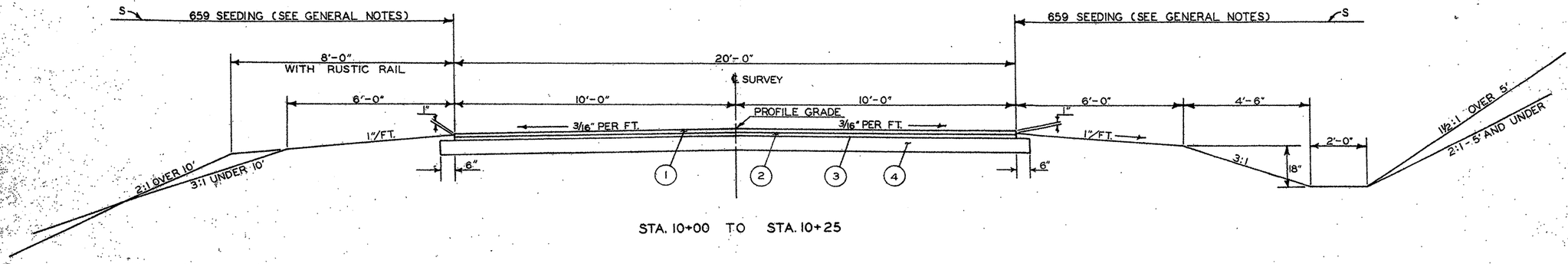
ASD-SP58-0181

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

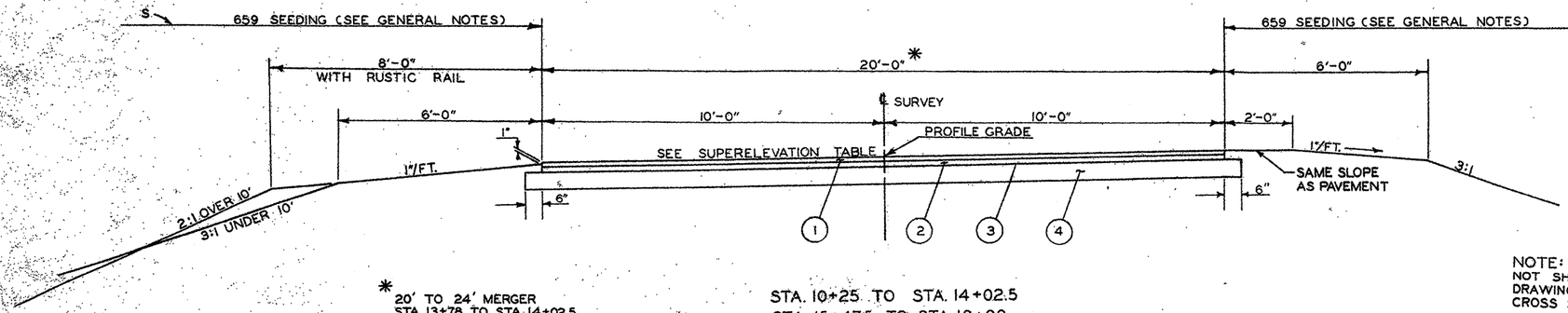
2
30

NATURAL RESOURCES RD. NO. 8-1.43
ASHLAND COUNTY

TYPICAL SECTIONS
TYPE 404 ON 304



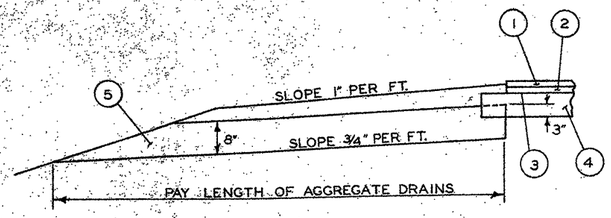
STA. 10+00 TO STA. 10+25



* 20' TO 24' MERGER
STA. 13+78 TO STA. 14+02.5
STA. 15+47.5 TO STA. 15+72

STA. 10+25 TO STA. 14+02.5
STA. 15+47.5 TO STA. 18+00

NOTE: DETAILS OF SHOULDER SLOPES AND DITCHES NOT SHOWN ARE TO CONFORM WITH STANDARD DRAWING MC-1 UNLESS OTHERWISE SHOWN ON THE CROSS SECTIONS



605 AGGREGATE DRAINS
LOCATED AS REQUIRED BY THE ENGINEER

1	404	1¼" ASPHALT CONCRETE (85-100)
2	402	1¾" ASPHALT CONCRETE (85-100)
3	408	BITUMINOUS PRIME COAT 702.09 RT-2 OR RT-3 APPLIED AT THE RATE OF 0.40 GAL. PER SQ. YD.
4	304	6" AGGREGATE BASE
5	605	AGGREGATE DRAINS

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

3
30

NATURAL RESOURCES RD. NO. 8-1.43
ASHLAND COUNTY

GENERAL NOTES

FIELD OFFICE THE CONTRACTOR SHALL, IN ADDITION TO THE REQUIREMENTS OF 105.152, PROVIDE A SUITABLE FIELD OFFICE HAVING A MINIMUM OF 150 SQ. FT. OF FLOOR SPACE. THE CONTRACTOR SHALL HAVE A TELEPHONE INSTALLED AND MAINTAINED IN THIS FIELD OFFICE DURING THE CONSTRUCTION OF THIS PROJECT. THE CONTRACTOR SHALL ALSO PROVIDE, AND MAINTAIN SANITARY PROVISIONS AS PER 107.06. ALL THE ABOVE IS INCLUDED IN THE LUMP SUM PRICE BID FOR FIELD OFFICE.

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

ROUNDING OF CORNERS SHOWN ON CROSS SECTIONS THE ROUNDED CORNERS SHOWN ON STANDARD DRAWING MC-1, SHALL APPLY TO ALL CROSS SECTIONS, EVEN THOUGH OTHERWISE SHOWN ON THESE PLANS.

SUPERELEVATION SUPERELEVATED CURVES SHALL BE BUILT WITHOUT CROWN. THE CROWN SHALL BE WORKED OUT OF THE PAVEMENT IN THE PORTION BETWEEN THE BEGINNING OF THE TRANSITION AND THE POINT WHERE THE SUPERELEVATION EQUALS TWICE THE CROWN.

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

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

SIZES	NO. TREES	NO. STUMPS
18"	67	9
30"	2	1
48"	0	0
60"	0	0

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

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

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

ITEM 605-6" UNCLASSIFIED PIPE UNDERDRAIN, 707.06 OR 707.12, AS PER PLAN 40 LF
ITEM 605-AGGREGATE DRAINS FOR SPRINGS, AS PER PLAN 6 L.F.

THE CONTRACTOR SHALL NOT ORDER MATERIALS FOR "SPRING DRAINS" UNTIL AUTHORIZED BY THE ENGINEER AND IN THE EVENT NO SPRINGS ARE ENCOUNTERED, THE ITEM SHALL BE NON-PERFORMED.

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

REMOVAL OF EXISTING PIPE THE REMOVAL OF ALL EXISTING PIPE DRAINS WITHIN THE LIMITS OF PROPOSED EXCAVATION ITEMS SHALL BE INCLUDED FOR PAVEMENT IN THE UNIT PRICES BID FOR THE RESPECTIVE EXCAVATION ITEMS, UNLESS OTHERWISE ITEMIZED IN THE PLANS.

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

605 AGGREGATE DRAINS A QUANTITY OF AGGREGATE DRAINS HAS BEEN ESTIMATED FOR THIS PROJECT TO BE USED AS REQUIRED BY THE ENGINEER WHERE WATER APPEARS TO BE A PROBLEM.

THE CONTRACTOR SHALL GRADE, FINISH, SEED AND MULCH THE SLOPES SO AS NOT TO IMPEDE DRAINAGE OF THE BASE MATERIAL. THE ACTUAL AREA OF THE OUTCROP OF THE UNDERDRAINS SHALL NOT BE SEEDED.

PAVEMENT REMOVAL OUTSIDE NORMAL CONSTRUCTION LIMITS

AFTER THE EXISTING PAVEMENT AS INDICATED ON THE PLANS HAS BEEN REMOVED, THE OLD ROADWAY SHALL BE GRADED TO THE LEVEL OF THE SURROUNDING GROUND, THE OLD DITCHES FILLED AND THE DISTURBED AREAS SLOPED TO DRAIN AND LEFT IN A NEAT CONDITION READY FOR SEEDING. SEEDING SHALL BE MEASURED AND PAID FOR IN ACCORDANCE WITH ITEM 659 SEEDING AND MULCHING. PAYMENT FOR ALL OTHER WORK REQUIRED SHALL BE INCLUDED IN THE UNIT BID PRICE FOR ITEM 203.

EROSION CONTROL ITEM 601 (RIPRAP, DUMPED ROCK AND PAVED GUTTER) IS PROVIDED IN THE PLANS FOR EROSION CONTROL. ROCK OF A STABLE NATURE WILL NOT BE REMOVED IN ORDER TO PLACE ANY OF THESE ITEMS. THE ENGINEER SHALL CHECK AND NON-PEFORMED QUANTITIES OR ADJUST LOCATIONS AND QUANTITIES FOR THESE ITEMS WHERE INDICATED BY BY FIELD CONDITIONS DURING CONSTRUCTION.

RUSTIC RAIL ALL RUSTIC RAIL REQUIRED FOR THIS PROJECT WILL BE PURCHASED AND ERECTED BY OTHERS.

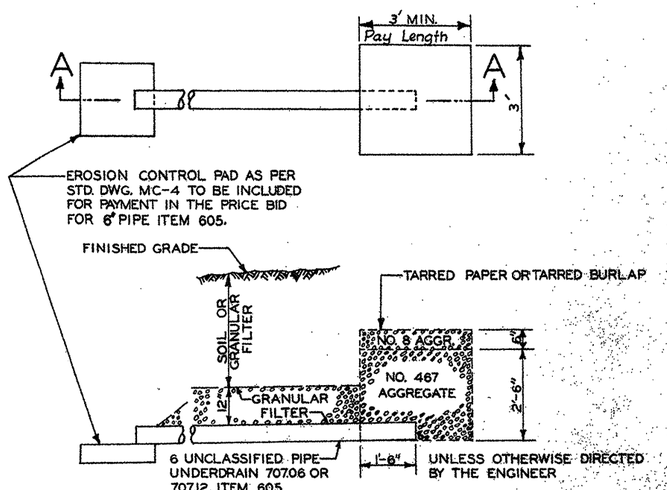
MAINTENANCE OF TRAFFIC TWO-WAY TRAFFIC SHALL BE MAINTAINED AT ALL TIMES ON NATURAL RESOURCES ROAD NO. 8, HOWEVER ONE WAY TRAFFIC WILL BE PERMITTED DURING THE PLACING OF ANY CROSS DRAINAGE FACILITIES AND DURING THE PERIOD OF TIME THAT THE CONNECTIONS ARE BEING MADE BETWEEN THE EXISTING AND NEW ROADS.

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

55% KENTUCKY 31 FESCUE
40% KENTUCKY BLUEGRASS
5% WHITE CLOVER

AREAS TO BE SEEDED OR SODDED SHALL BE FERTILIZED USING A COMMERCIAL FERTILIZER HAVING A FORMULA OF (12-12-12) APPLIED AT THE RATE OF 20 POUNDS PER 1000 SQ. FT.

SPRING DRAIN DETAIL



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

THE 6" PIPE 707.06 OR 707.12 SHALL BE COVERED WITH GRANULAR FILTER MATERIAL 605.03 (C) TO A HEIGHT OF ONE (1) FOOT ABOVE THE TOP OF THE PIPE. THE REMAINDER OF THE BACKFILL FOR THIS ITEM SHALL BE SOIL OR GRANULAR FILTER BACKFILL PLACED IN ACCORDANCE WITH 603.08.

SPRING DRAINS SHALL BE BUILT IN REASONABLY CLOSE CONFORMITY WITH THE DETAIL SHOWN ABOVE. THE LENGTHS AND EXACT LOCATIONS OF THE DRAINS SHALL BE DETERMINED BY THE ENGINEER.

SEE NOTE ON THIS SHEET.

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

4
30

NATURAL RESOURCES RD. NO. 8-1.43
ASHLAND COUNTY

CALCULATIONS

LINE	DESCRIPTION	QUANTITY
	404 1¼" ASPHALTIC CONCRETE (85-100)	
	MAIN LINE SURFACE AREA = 13075 SQ.FT. x 0.1041 ÷ 27 = 50.41 CU. YDS.	
	PARK DRIVE SURFACE AREA = 3351 SQ.FT. x 0.1041 ÷ 27 = 12.92 CU. YDS.	
	TOTAL 404 = 63.33 CU. YDS. USE	64 CU. YDS.
	402 1¾" ASPHALTIC CONCRETE (85-100)	
	MAIN LINE SURFACE AREA = 13075 SQ.FT. x 0.1459 ÷ 27 = 70.65 CU. YDS.	
	PARK DRIVE SURFACE AREA = 3351 SQ.FT. x 0.1459 ÷ 27 = 18.11 CU. YDS.	
	TOTAL 402 = 88.76 CU. YDS. USE	89 CU. YDS.
	408 BITUMINOUS PRIME COAT 702.09 RT-2 OR RT-3 @ 0.4 GAL./SQ.YD.	
	MAIN LINE SURFACE AREA = 13075 SQ.FT. ÷ 9 x 0.40 = 581.11 GAL.	
	PARK DRIVE SURFACE AREA = 3351 SQ.FT. ÷ 9 x 0.40 = 148.93 GAL.	
	TOTAL 408 = 730.04 GAL. USE	730 GAL.
	304 6" AGGREGATE BASE	
	MAIN LINE SURFACE AREA = 13174 SQ.FT. x 0.50 ÷ 27 = 243.96 CU. YDS.	
	PARK DRIVE SURFACE AREA = 3426 SQ.FT. x 0.50 ÷ 27 = 63.45 CU. YDS.	
	DRIVE LEFT OF STA. 16+26 AREA = 684 SQ.FT. x 0.50 ÷ 27 = 12.67 CU. YDS.	
	TOTAL 304 = 320.08 CU. YDS. USE	320 CU. YDS.
	605 AGGREGATE DRAINS	
	MAIN LINE STA. 10+00 TO STA. 18+00 = 800 LIN. FT. - 140 LIN. FT. FOR BRIDGE = 660 LIN. FT.	
	660 LIN. FT. ÷ 50 = 13 x 9.40 = 122.2 LIN. FT. USE	122 LIN. FT.
	203 SUBGRADE PREPARATION	
	MAIN LINE SURFACE AREA = 13075 SQ.FT. ÷ 9 = 1452.8 SQ. YDS.	
	PARK DRIVE SURFACE AREA = 3351 SQ.FT. ÷ 9 = 372.3 SQ. YDS.	
	TOTAL 203 = 1825.1 SQ. YDS. USE	1825 SQ. YDS.
	659 COMMERCIAL FERTILIZER (12-12-12)	
	TOTAL 659 SEEDING - 4570 x 9 x 20 ÷ (1000 x 2000) = 0.411 TONS USE	0.41 TONS

GENERAL SUMMARY

FROM SHEET NUMBER 3	4	5	6	7	ITEM	PLAN TOTAL	UNITS	DESCRIPTION
								ROADWAY
LUMP					201	LUMP	LUMP	CLEARING AND GRUBBING
			10		202	10	LIN. FT.	PIPE REMOVED 24" AND UNDER
		1729	2271	106	203	4106	CU. YDS.	EXCAVATION NOT INCLUDING EMBANKMENT *CONSTRUCTION, AS PER PLAN*
		844	3040	24	203	3908	CU. YDS.	EMBANKMENT
	1825				203	1825	SQ. YDS.	SUBGRADE PREPARATION
		160	505	25	606		LIN. FT.	(RUSTIC RAIL AND POST TO BE FURNISHED AND ERECTED BY OTHERS)
	041				659	041	TONS	COMMERCIAL FERTILIZER (12-12-12)
		1653	2639	278	659	4570	SQ. YDS.	SEEDING AND MULCHING, AS PER PLAN
								DRAINAGE
			18		603	18	LIN. FT.	18" CONDUIT TYPE E
			42		603	42	LIN. FT.	8" CONDUIT TYPE C WITH CLASS "B" BEDDING
			2		604	2	EACH	SPECIAL CATCH BASIN
	122				605	122	LIN. FT.	AGGREGATE DRAINS
6					605	6	LIN. FT.	AGGREGATE DRAINS FOR SPRINGS, AS PER PLAN
40					605	40	LIN. FT.	UNCLASSIFIED PIPE UNDERDRAINS, 707.06 OR 707.12, AS PER PLAN
								PAVEMENT
		15	41	8	404	64	CU. YD.	ASPHALTIC CONCRETE (85-100)
		21	57	11	402	89	CU. YD.	ASPHALTIC CONCRETE (85-100)
		175	467	88	408	730	GAL.	BITUMINOUS PRIME COAT 702.09 RT.2 OR RT.3
		73	210	37	304	320	CU. YD.	AGGREGATE BASE
			100		609	100	LIN. FT.	CONCRETE CURB, *SPECIAL TYPE*
			105		609	105	LIN. FT.	CONCRETE CURB, STANDARD TYPE 6 MODIFIED AS PER PLAN
								STRUCTURE OVER 20' SPAN
								STRUCTURE OVER MOHICAN RIVER QUANTITIES LISTED ON SHEET NO. 18
LUMP					614	LUMP	LUMP	MAINTAINING TRAFFIC
LUMP						LUMP	LUMP	FIELD OFFICE

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

6/30

NATURAL RESOURCES RD. NO. 8-1.43
ASHLAND COUNTY

P.C. STA. 12+10.97
18" BEECH 4' HIGH
20" FIR 4' HIGH
15" FIR 4' HIGH
38.48'
43.93'
49.65'

NAIL & SHINNER 20" SYC. 6' HIGH
44.5'
70.18'
79.14'
115.4'
P.I. STA. 12+97.12
I. PIN W/CAP AT BASE S. SIDE 20" FIR

NAIL & BUTTON 21.5' 15" SYC. 5' HIGH
51.75' P.T. STA. 13+80.44
54.71'
EXIST. PAVEMENT
TOP OF BANK
FLOW LINE

NAIL & BUTTON 89'± 36" SYC. 4' HIGH
87.24'
68.81'
P.C. STA. 15+57.61

P.T. STA. 17+00.73
R.R. SPIKE
P.I. STA. 16+39.19
RR. SPIKE
CAP ON I. PIN
NAIL IN E.P. 9.95'
NAIL IN E.P. 9.39'
NAIL & BUTTON 20" OAK

21.5' LT. STA. 13+45
24.5' LT. STA. 13+63
P.I. = STA. 12+97.12
Δ = 25°-25'-15" RT.
D = 15°-00'
T = 86.15'
E = 9.60'
L = 169.47'
R = 381.97'
DIRT FOOT PATH
6'
P-1
S-1
C-1
R-1
EXIST. 12" PIPE
P.T. = STA. 13+80.44
N. 18°-04'-45" E.
EXIST. SPRING OUTLET
P.C. = STA. 12+10.97
NATURAL RESOURCES RD. NO. 8
N. 44°-30'-00" E.
42.94'
24'
20'
STA. 15+49 32' LT. OUT LET ELEV. 975.64
STA. 15+49 30.5' RT. OUT LET ELEV. 976.50
P.C. = STA. 15+57.61
CENTER OF C.B. LT. STA. 15+56 ELEV. 983.80
CENTER OF C.B. RT. STA. 15+54 ELEV. 983.73
P-2
B-1
C-2
C-3
C-4
R-2
D-1
D-2
SERVICE DRIVE
SERVICE DRIVE STA. 16+26
P.T. STA. 17+00.73
N. 24°-12'-00" W.
P.I. = STA. 16+39.19
Δ = 68°-42' LT.
D = 48°-00'
T = 81.58'
E = 25.21'
L = 143.12'
R = 119.37'
FOR PARK DRIVE DETAILS SEE SHEET NO. 15
CLEAR FORK OF THE MOHICAN RIVER
PATH

NORMAL WIDTH OF PAVEMENT
PAVEMENT
TYPE 6 CURB MODIFIED
FOR DETAILS NOT SHOWN SEE STD. DWG BP-7

6 Included in the cost of catch basin, Sec 5h, 15

U.S.C. & G.S. BM. BRASS PLATE STAMPED STA. NO. 21 SOUTH ABUT. WEST SIDE OF EXISTING BRIDGE ELEV. 980.000

U.S.C. & G.S. BM. BRASS PLATE STAMPED STA. NO. 20 NORTH ABUT. WEST SIDE OF EXISTING BRIDGE ELEV. 979.762

BRIDGE LIMITS 145'
STA. 14+02.5
STA. 15+47.5
280' V.C.
150' V.C.
-0.30%
+1.00%
P.V.I. STA. 12+98 ELEV. 983.53
P.V.I. STA. 15+98 ELEV. 983.86
994
992
990
988
986
984
982
980
978
976
12+00
13+00
14+00
15+00
16+00
17+00

EXCAVATION	2271	CU. YDS.
EMBANKMENT	3040	CU. YDS.
SEEDING	2639	SQ. YDS.

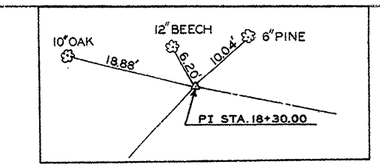
* 606: SPECIAL - RUSTIC RAIL FENCE AND POSTS TO BE FURNISHED AND PLACED BY OTHERS

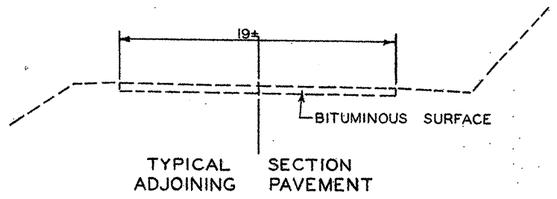
REF. NO.	STATION	6" AGGREGATE BASE 304 C.Y.	BITUMINOUS PRIME COAT 408 GAL.	ASPHALTIC CONCRETE 1¾" 402 C.Y.	ASPHALTIC CONCRETE 1¼" 404 C.Y.	SPECIAL CURB AS PER PLAN 609 L.F.	TYPE NO. 6 CURB MOD. 609 L.F.	RUSTIC RAILS AND POSTS * 606 L.F.	PIPE REMOVED 24" & UNDER 202 L.F.	18" TYPE E CONDUIT 603 L.F.	SPECIAL CATCH BASIN 604	8" CONDUIT TYPE C CLASS B BEDDING 603	CAST IRON PIPE SPECIALS 11¼° BEND	CAST IRON PIPE SPECIALS 22½° BEND	CAST IRON PIPE SPECIALS 45° BEND
P-1	12+00	74.6	178.6	21.9	15.9										
P-2	15+475	59.6	139.1	16.7	11.9										
C-1	13+78					50									
C-2	15+47.5					50									
C-3	15+85 RT.						50.7								
C-4	16+18 RT.						53.8								
R-1	12+00	14+025													
R-2	15+47	17+23						275							
S-1	13+40 RT. & 13+50 LT.							130	10	18					
D-1	16+08 RT.	15+72	835	1489	181	12.9									
D-2	16+26 LT.		226												
B-1	15+54 RT. & 15+56 LT.												2	2	2
	TOTALS		210.3	4866	56.7	407	100	1043	505	10	18				

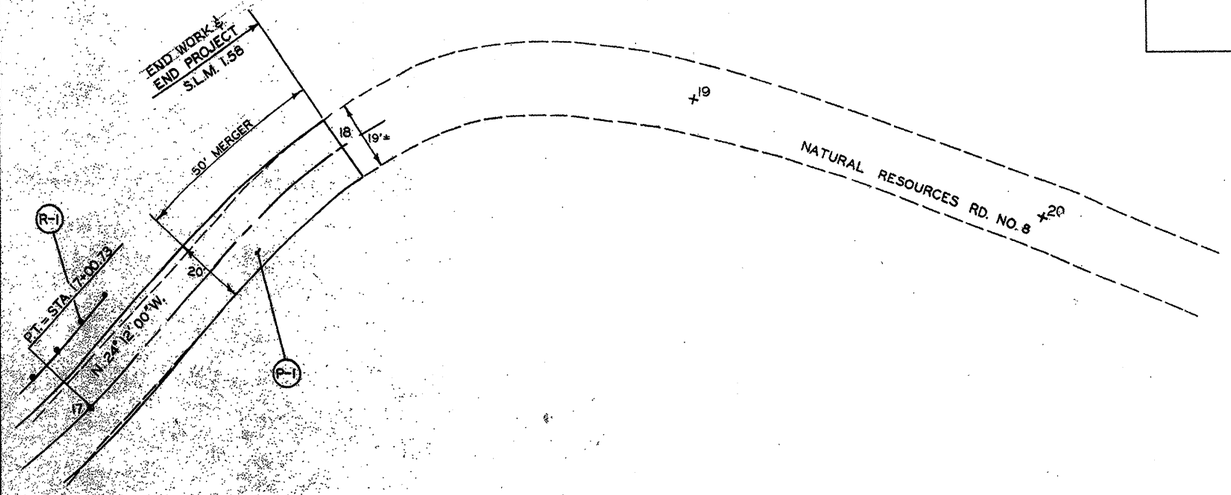
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

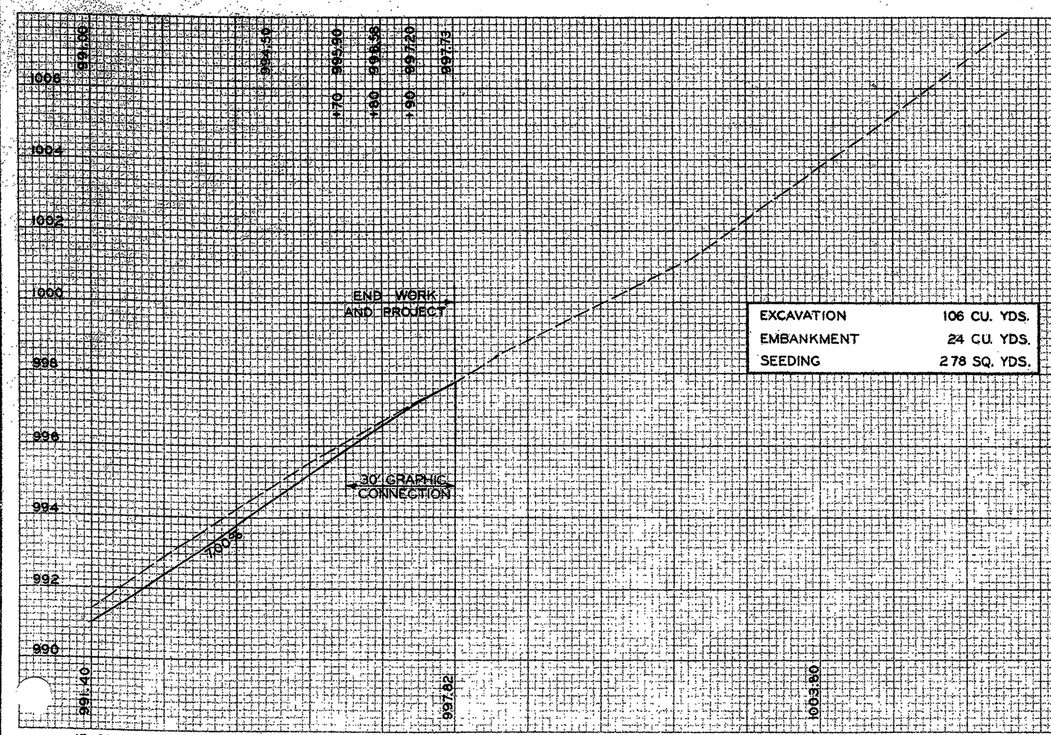
7
30

NATURAL RESOURCES RD. NO. 8 - 1.43
ASHLAND COUNTY









EXCAVATION	106 CU. YDS.
EMBANKMENT	24 CU. YDS.
SEEDING	278 SQ. YDS.

REF. NO.	STATION	304 6" AGGREGATE BASE C.Y.	408 BITUMINOUS PRIME COAT GAL.	402 1¾" ASPHALTIC CONCRETE C.Y.	404 1¾" ASPHALTIC CONCRETE C.Y.	606* RUSTIC RAILS AND POSTS LIN.FT.	
P-1	17+00	36.6	87.8	10.7	7.6	25	
R-1	17+00						
	18+25						
	TOTALS	36.6	87.8	10.7	7.6	25	

* 606 SPECIAL: RUSTIC RAIL FENCE AND POSTS TO BE FURNISHED AND PLACED BY OTHERS

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

15
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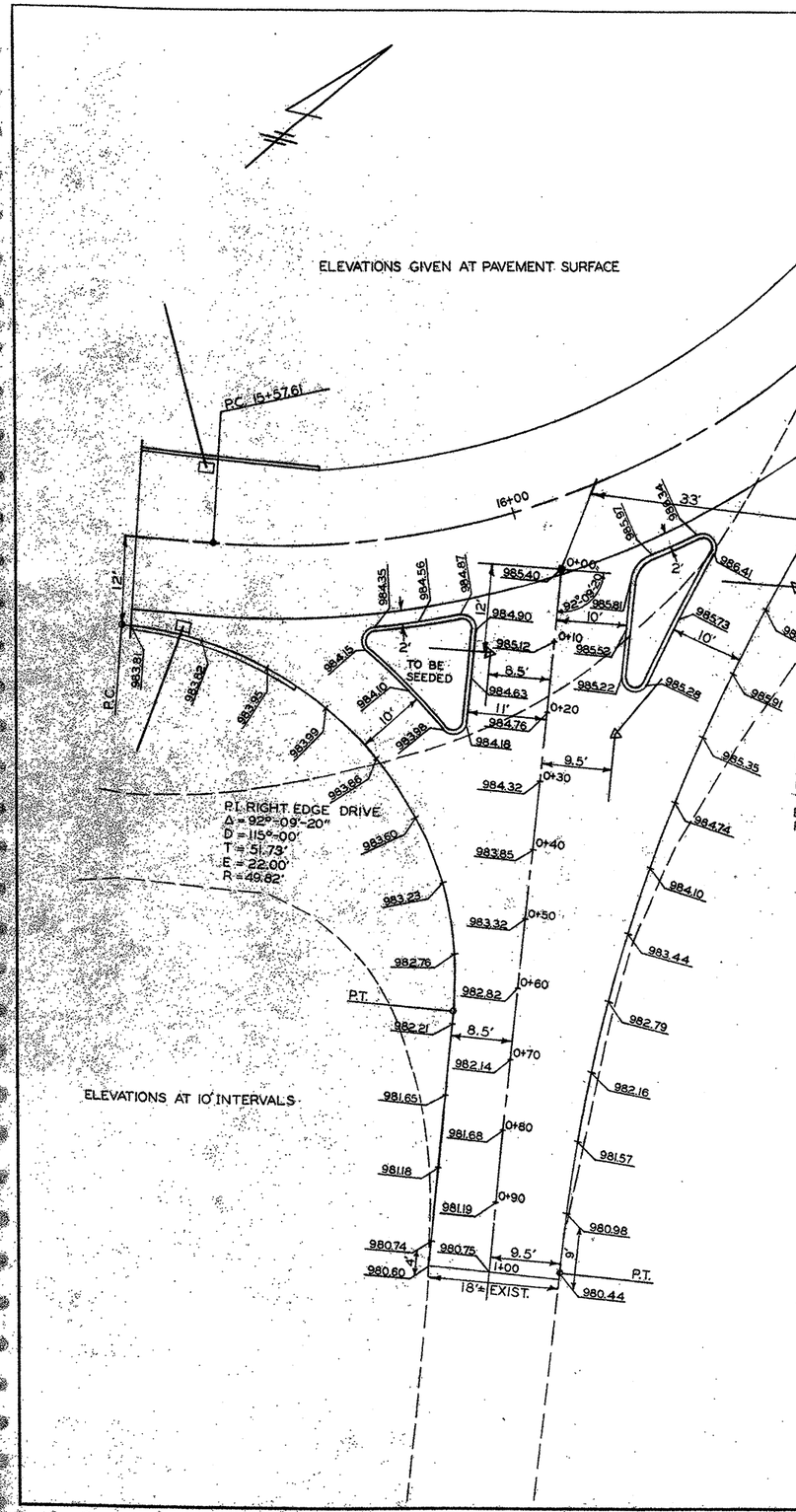
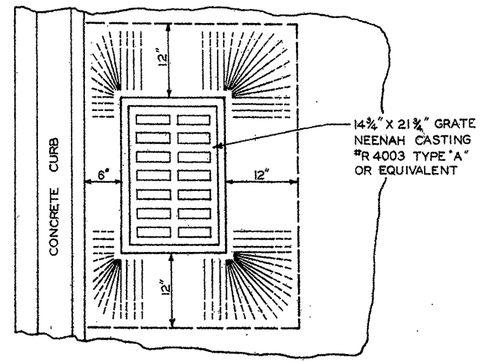
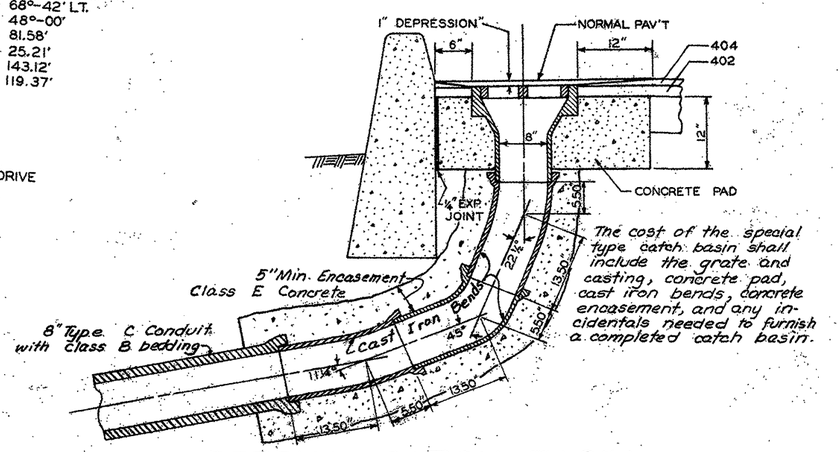
NATURAL RESOURCES RD. NO. 8-1.43
ASHLAND COUNTY





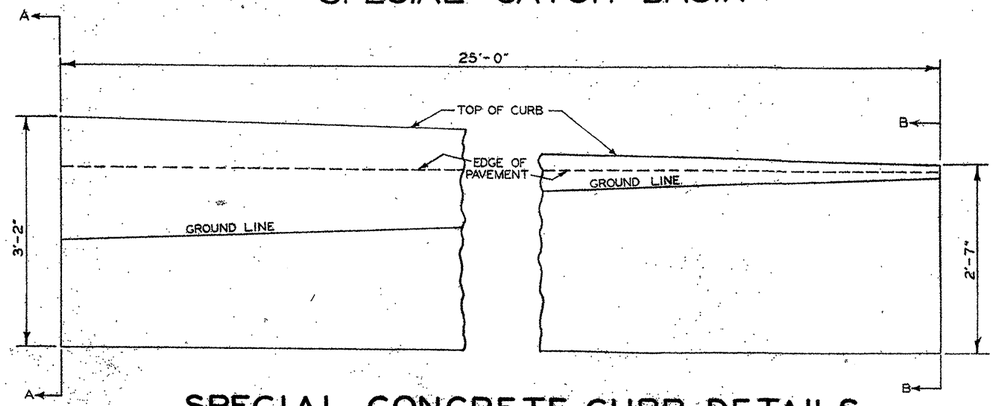


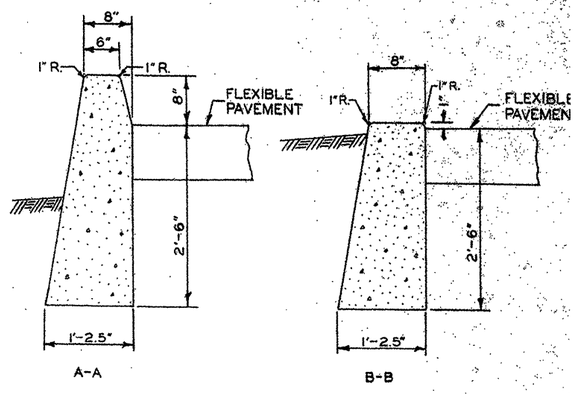
SPECIAL CATCH BASIN

SUPERELEVATION

STATION	LEFT EDGE	RIGHT EDGE	PROFILE GRADE
10+00	998.70	998.45	998.70
10+25	997.14	997.10	997.22
10+50	995.64	995.80	995.80
10+75	994.16	994.40	994.32
11+00	992.69	993.01	992.85
11+25	991.23	991.55	991.39
11+50	989.85	990.09	990.01
11+75	988.63	988.79	988.79
12+00	987.62	987.62	987.70
12+25	986.69	986.53	986.69
12+50	986.02	986.78	985.94
12+75	985.43	985.11	985.27
13+00	984.90	984.58	984.74
13+25	984.42	984.18	984.34
13+50	984.09	983.93	984.09
13+75	983.86	983.78	983.94
14+00	* 983.88	* 983.88	984.00
BRIDGE AHEAD	STA. 14+02.5		
BRIDGE BACK	STA. 15+47.5		
15+50	* 983.88	983.90	984.00
15+75	984.13	984.21	984.29
16+00	985.01	985.17	985.17
16+25	986.25	986.49	986.41
16+50	987.63	987.95	987.79
16+75	989.16	989.40	989.32
17+00	990.84	991.00	991.00
17+25	992.59	992.67	992.75
17+50	994.34	994.34	994.50
17+75	996.20	995.95	996.24
18+00	997.81	997.32	997.73

* VARIABLE PAVEMENT WIDTH





SPECIAL CONCRETE CURB DETAILS

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

16/30

NATURAL RESOURCES RD. NO. 8-1.43
ASHLAND COUNTY

U.S.C. & G.S. B.M. BRASS PLATE STAMPED STA. NO. 21 SOUTH ABUT. WEST SIDE OF EXIST. BRIDGE ELEVATION 980.000.

U.S.C. & G.S. B.M. BRASS PLATE STAMPED STA. NO. 20 NORTH ABUT. WEST SIDE OF EXIST. BRIDGE ELEVATION 979.762

EXISTING STRUCTURE
TYPE: THRU STEEL TRUSS
CLEAR SPAN: 120'-0"
ROADWAY: 14'-11"
SKEW: NONE
FLOORING: 2" x 4" WOOD PLANKS
CONDITION: POOR

MOHICAN RIVER

DRAINAGE AREA = 200 SQ. MI.

8"

FOOT PATH

18" PIPE

BERM LINE

CURB

3'-0" (TYPICAL)

1'-0" 4'-0" WALK

℄ TRUSS

CRUSHED AGGREGATE SLOPE PROTECTON

℄ PROPOSED STRUCTURE

℄ TRUSS

1'-0" 4'-0" WALK

14'-6" 14'-6"

12'-0" 12'-0"

2'-0"

11' ℄ CURB LINE

52' 14 9' Repair ℄ CURB LINE 5'

70' Repair

14+00 15+00 16+00

P.T. 13+80.44

P.C. 15+57.61

FOUNDATION INVESTIGATION LEGEND
● – CORE BORING LOCATION
• – ROD SOUNDING LOCATION

℄ EXISTING PARK ROAD

℄ EXISTING STRUCTURE

42.94'

REMOVE

SLOPE TO DRAIN

BRIDGE LIMITS – 145'-0"

1000 990 980 970 960

984.34 984.09 983.94 984.00 984.0 984.0 984.00 984.29

PROFILE GRADE

EXISTING GROUND

BRIDGE SEAT EL. 980.729

BRIDGE SEAT EL. 981.104

SLOPE PROTECTION

HIGH WATER ELEV. 969.50

NORMAL WATER ELEV. 963.4

ELEV. 968.00

ELEV. 964.00

ELEV. 968.00

ELEV. 981.00

FLOW LINE ELEV. 961.0±

14 15

PROPOSED STRUCTURE
TYPE: WOOD COVERED THRU STEEL TRUSS WITH REINF. CONCRETE DECK AND SUBSTUCTURE
SPAN: 140'-0" ℄ BRGS.
ROADWAY: 24'-0" ℄ 1'-6" CURBS WITH 4' SIDEWALK
LOADING: HS-20-44
WEARING SURFACE: 1" MONOLITHIC CONC.
APPROACH SLABS: NONE
ALIGNMENT: TANGENT
SKEW: NONE
VERTICAL CLEARANCE: 14'-4"

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION NO. 3

SITE PLAN
BRIDGE OVER THE MOHICAN RIVER

MOHICAN STATE FOREST, ASHLAND COUNTY
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF PARKS AND RECREATION

PRESENT TOPOGRAPHY		PROPOSED WORK			
SURVEYED	DRAWN	DESIGNED	DRAWN	CHECKED	REVIEWED
STATE	M.M.	DHT	RKH	JEG	WCK BFG 9-7

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

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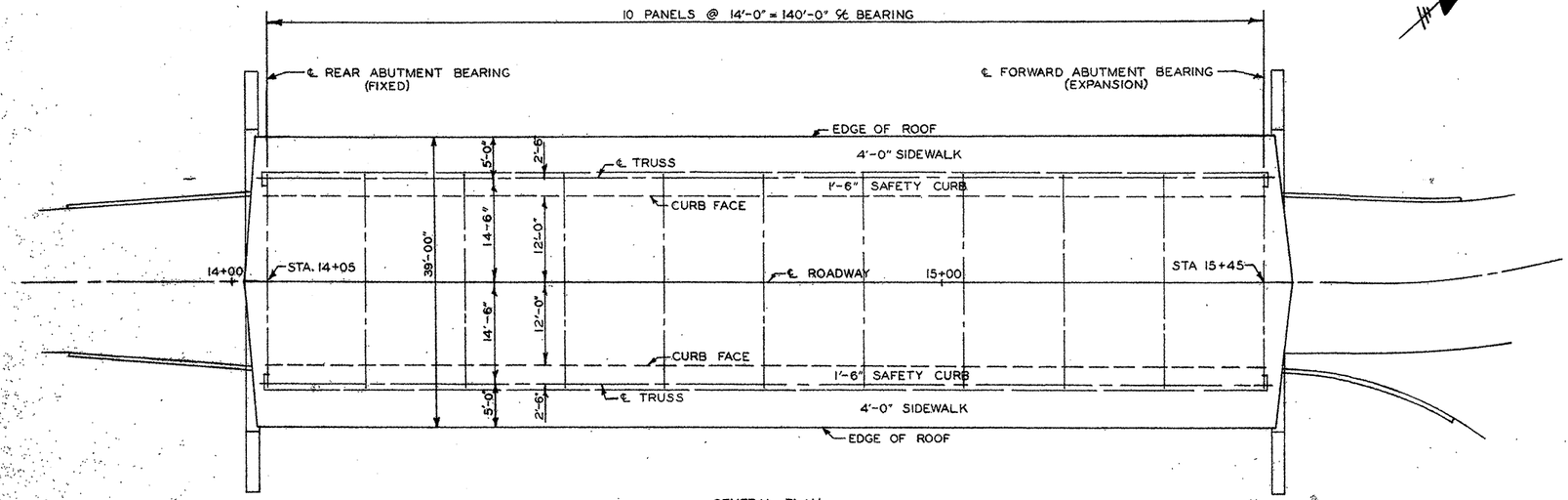
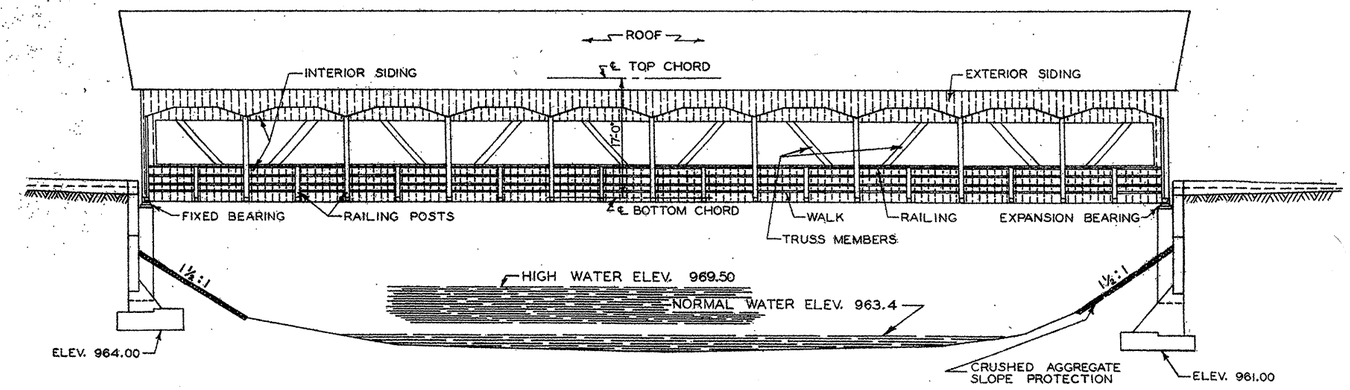
NATURAL RESOURCES RD. NO. 8-1.43
ASHLAND COUNTY



GENERAL PLAN



ELEVATION

LIST OF DRAWINGS

SHEET	TITLE
16	SITE PLAN
17	GENERAL PLAN AND ELEVATION
18	GENERAL NOTES AND ESTIMATED QUANTITIES
19	REAR ABUTMENT
20	FORWARD ABUTMENT
21	FRAMING PLAN
22	STRESS TABLES AND DEFLECTION DIAGRAMS
23	TRUSS DETAILS - 1
24	TRUSS DETAILS - 2
25	TRUSS DETAILS - 3
26	FLOOR BEAMS
27	SWAY BRACING DETAILS
28	SLAB PLAN AND REINFORCING STEEL LIST
29	TIMBER FRAMING
30	TIMBER DETAILS

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION NO. 3

GENERAL PLAN & ELEVATION

BRIDGE OVER THE MOHICAN RIVER
MOHICAN STATE FOREST, ASHLAND CO.
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF PARKS AND RECREATION

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
JEG	RKH	DCM	DHT	WCK BFG	9-7-67	

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

18/30

NATURAL RESOUCES RD. NO. 8-1.43
ASHLAND COUNTY

GENERAL NOTES

REFERENCE

REFERENCE SHALL BE MADE TO STANDARD DRAWINGS SD-1-65 SHEET 1 DATED 11-8-65; FSB-1-62 REVISED 1-15-63 AND TO SUPPLEMENTAL SPECIFICATIONS 811 AND 812 BOTH DATED 1-1-67 AND 808 DATED 1-13-67.

DESIGN SPECIFICATIONS

THIS STRUCTURE CONFORMS TO THE REQUIREMENTS OF THE A.A.S.H.O. "STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES", DATED 1965.

DESIGN DATA

DESIGN LOADING - HS 20-44
CONCRETE CLASS 'C' - BASIC UNIT STRESS 1133 P.S.I. FOR SUPERSTRUCTURE
CONCRETE CLASS 'C' - BASIC UNIT STRESS 1333 P.S.I. FOR SUBSTRUCTURE
REINFORCING STEEL - ASTM A15, A16, A160, DEFORMED, INTERMEDIATE OR HARD GRADE. BASIC UNIT STRESS 20,000 P.S.I.

REMOVAL OF EXISTING STRUCTURE

WHEN NO LONGER NEEDED TO MAINTAIN TRAFFIC THE EXISTING STRUCTURE SHALL BE REMOVED. SUITABLE WASTE MASONRY SHALL BE PLACED AS BANK PROTECTION AS DIRECTED BY THE ENGINEER.

EXCAVATION QUANTITY

EXCAVATION QUANTITY INCLUDES THE REMOVAL OF FILL MATERIAL REQUIRED FOR CONSTRUCTION OF THE ABUTMENTS.

FOOTINGS

FOOTINGS SHALL EXTEND A MINIMUM OF 3' INTO UNDISTURBED ROCK OR TO THE ELEVATION SHOWN, WHICHEVER IS LOWER.

FOUNDATION BEARING PRESSURE

ABUTMENT FOOTINGS ARE DESIGNED FOR A MAXIMUM BEARING PRESSURE OF 6.5 TONS PER SQ. FT.

MACHINE FINISH

THE CONCRETE BRIDGE DECK SHALL BE FINISHED BY THE USE OF FINISHING MACHINE.

SHOP ASSEMBLY AND CAMBER

THE STEEL TRUSSES SHALL BE CAMBERED SO THAT WHEN ERECTED AND UNDER FULL DEAD LOAD THEY WILL HAVE THEIR NORMAL OUTLINE AND ALL MEMBERS WILL HAVE THE NORMAL LENGTHS SHOWN ON THE PLANS. EACH TRUSS SHALL BE SEPARATELY AND COMPLETELY ASSEMBLED IN THE CAMBERED POSITION PRIOR TO REAMING HOLES FOR FIELD BOLTS IN THE CHORDS AND WEB MEMBERS, UNLESS AN ALTERNATE METHOD IS APPROVED IN WRITING.

CARE SHALL BE TAKEN TO KEEP THE CENTERLINES OF ALL TRUSS MEMBERS IN A PLANE AND TO SET THE WEB MEMBERS AT THEIR CORRECT GEOMETRIC ANGLE WITH THE CHORDS. IN LIEU OF THE COMPLETE ASSEMBLY OF EACH TRUSS AS SPECIFIED ABOVE, CONSIDERATION WILL BE GIVEN TO ALTERNATE PROCEDURES WHICH WILL PROVIDE FOR THE ACCURATE ASSEMBLY AND FIELD HOLE REAMING OF THE TRUSS CHORDS AND WEB MEMBERS. COMPLETE DATA REGARDING SUCH PROCEDURE SHALL BE SUBMITTED TO THE DIRECTOR FOR APPROVAL OR MODIFICATION. THIS APPROVAL MUST BE SECURED BEFORE WORK ON AN ALTERNATE METHOD COMMENCES.

ERECTION

THE CONTRACTOR MAY PROVIDE ADDITIONAL MEMBERS OR PARTS FOR ERECTION PURPOSES TO BE TEMPORARILY ATTACHED TO, BUT NOT PERMANENTLY INCORPORATED IN THE FINAL STRUCTURE. ALL SUCH PARTS SHALL BE CLASSIFIED ERECTION EQUIPMENT OR FALSEWORK AND SHALL NOT BE INCLUDED IN THE FINAL PAY QUANTITIES.

HARDWARE

ALL NAILS AND SPIKES SHALL HAVE BARBED, SERRATED OR SPIRAL SHANKS. HEADS EXPOSED TO WEATHERING SHALL BE RUST RESISTANT. THE COST OF THESE HARDWARE ITEMS IS INCLUDED IN THE BID PRICE FOR PERTINENT 521 ITEMS.

SIZES	CLINCHED MATERIAL
3d	CEDAR SHINGLES
8d	1" SHEATHING
12d	1" SIDING
8d	1" MATERIAL
30d	2" MATERIAL
60d	3" MATERIAL

STRUCTURAL STEEL

STRUCTURAL STEEL SHALL BE HIGH STRENGTH, LOW ALLOY, CORROSION RESISTANT STEEL, WITH A BASIC UNIT TENSILE DESIGN STRESS OF 27,000 P.S.I.

ASTM DESIGNATION A-242 MODIFIED WEATHERING STEEL, SUCH AS MAYARI-R, OR ASTM DESIGNATION A-441 MODIFIED BARE STEEL, SUCH AS COR-TEN.

THE STRUCTURAL STEEL MUST PROVIDE FOUR TO SIX TIMES THE RESISTANCE TO ATMOSPHERIC CORROSION OF MILD CARBON STEELS.

THE STEEL MUST BE CAPABLE OF DEVELOPING A PERMANENT, DENSE-TIGHTLY ADHERENT PROTECTIVE OXIDE COATING AS THE STEEL WEATHERS.

WELDING

THE STRENGTH, CORROSION RESISTANCE AND WEATHERED APPEARANCE OF THE WELD MUST MATCH THE BASE METAL. ELECTRODES SHALL BE LOW HYDROGEN MILD STEEL TYPE E80xx-B1 FOR A-242 STEEL OR E70XX FOR A-441 STEEL. WELDS ON SECONDARY STRESS CARRYING MEMBERS ARE SHOWN THUS: S>—\

STRUCTURAL BOLTS

STRUCTURAL BOLTS SHALL BE HIGH STRENGTH WEATHER RESISTANT STEEL, ASTM DESIGNATION A-325. BOLTS SHALL BE 7/8" DIAMETER, UNLESS OTHERWISE NOTED.

BOLTS IN FRICTION TYPE CONNECTIONS (INDICATED O, ON THE DRAWINGS) SHALL HAVE A DESIGN SHEAR VALUE OF 13.5 KSI.

BOLTS IN BEARING TYPE CONNECTIONS (INDICATED ø ON THE DRAWINGS) SHALL HAVE A DESIGN SHEAR VALUE OF 20.0 KSI. BOLTS IN THE BEARING TYPE CONNECTIONS SHALL HAVE THE THREADS EXCLUDED FROM THE SHEAR PLANES OF THE CONTACT SURFACES BETWEEN THE CONNECTED PARTS.

OPEN WEB STEEL JOISTS (14H7)

OPEN WEB STEEL JOISTS SHALL MEET THE ABOVE STRUCTURAL STEEL REQUIREMENTS AS WELL AS THE STANDARDS OF THE STEEL JOIST INSTITUTE AND THE AISC, ADOPTED IN 1965.

HANDLING CORROSION RESISTANT STEEL

CARE SHALL BE TAKEN TO KEEP THE MATERIALS CLEAN AND UNDAMAGED DURING FABRICATION, TRANSPORTING, STORING, ERECTION AND CONSTRUCTION OF THE BRIDGE. SINCE THE STRUCTURAL STEEL WILL NOT BE PAINTED, ITS BARE STATE WILL REPRESENT THE FINISH SURFACE; THEREFORE THE EXPOSED SURFACES MUST BE KEPT FREE FROM GREASE, OIL, CHALK MARKS, PAINT, CONCRETE SPLATTER AND SIMILAR SOILAGE. (USE OF ACIDS FOR CLEANING WILL NOT BE PERMITTED).

STRUCTURAL BOLTS

WOOD TO STEEL SHALL BE HIGH STRENGTH, TYPE A 325 AND HAVE A PLATE WASHER AT THE BOLT HEAD ON THE WOOD SIDE OF THE JOINT.

BRIDGE CONSTRUCTION SEQUENCE

1) CONSTRUCT ABUTMENTS UP TO THE BRIDGE SEAT ELEVATION.
2) ERECT SHOES, TRUSSES, FLOOR BEAMS AND SIDEWALK BRACKETS, INCLUDING END FINISH, FLOORBEAM STRUTS, JOIST END CONNECTIONS (ST 4 WF) AND SWAY BRACING END CONNECTIONS (CF 8 WF). SUPPORT THE TOP CHORDS OF THE TRUSSES WITH TEMPORARY GUYS.
3) CONSTRUCT REINFORCED CONCRETE DECK.
4) ERECT STEEL JOISTS, WELD TO END CONNECTION AND INSTALL BRIDGING. ERECT SWAY BRACING, INCLUDING TURNBUCKLE ASSEMBLIES AND MID POINT CONNECTIONS, AND WELD TO END CONNECTIONS.
5) INSTALL STEEL SIDEWALK POSTS AND RAILING. INSTALL TIMBER NAILERS, BLOCKS, STRUTS, ROOF TRUSSES, SIDEWALK PLANKING, SHEATHING, SIDING AND ROOF.
6) MAKE FINAL ADJUSTMENT OF SWAY BRACING TURNBUCKLES AND MID POINT CONNECTION BOLTS.
7) PLACE ABUTMENT BACKWALLS.
8) COMPLETE PROJECT EARTHWORK AND ROADWAY ITEMS.

PROTECTION AGAINST STAINING

ABUTMENT BRIDGE SEATS AND VERTICAL SURFACES, BETWEEN THE BRIDGE SEATS AND A POINT AT LEAST 18 INCHES BELOW THE FINISHED GRADE SHALL BE TREATED WITH LIQUID SILICONE COATING TO PREVENT STAINING FROM THE OXIDATION PRODUCTS OF THE WEATHERING STEEL. THE SEALANT SHALL BE "THOROCLEAR 777"(5% SILICONE) OR APPROVED EQUAL AND SHALL BE APPLIED BY BRUSHING.

TIMBER ROOFING

TIMBER ROOFING SHALL CONSIST OF 1" X 4" DENSE NO. 1 STANDARD PINE NAILER STRIP SHEATHING ON 5" CENTERS AND 5 X NO. 1 RED CEDAR SHINGLES.

TIMBER SIDING

TIMBER SIDING SHALL BE 1" FULL SIZE, 1300 f GRADE WHITE OAK, ROUGH SAWN AND RANDOM WIDTH. (4", 6" AND 8")

TIMBER FRAMING

TIMBER FRAMING INCLUDING ROOF TRUSSES, SIDING NAILERS, WALK PLANKS, FASCIAS, BRACING, ETC., SHALL BE DENSE NO. 1 STRUCTURAL PINE.

TIMBER PRESERVATIVE

ALL TIMBER, EXCEPT THE CEDAR SHINGLES SHALL BE TREATED WITH THE PENTACHLOROPHENOL - PETROLEUM SOLUTION LISTED IN THE SPECIFICATIONS, EXCEPT THAT THE REQUIREMENT FOR THE MINIMUM AMOUNT OF DRY CHEMICAL PRESERVATIVE TO BE RETAINED SHALL BE REDUCED TO 0.3 POUNDS OF PENTACHLOROPHENOL PER CUBIC FOOT OF WOOD, IN ACCORDANCE WITH SECTION 712.06.

ESTIMATED QUANTITIES

ITEM	TOTAL	UNIT	DESCRIPTION	ABUT'S	SUPER-STRUCT'RE	GENERAL
202	LUMP	SUM	EXISTING STRUCTURE REMOVED			LUMP
503	LUMP	SUM	COFFERDAMS CAISS AND SHEETING			LUMP
503	340	CU. YDS	UNCLASSIFIED EXCAVATION INCLUDING ROCK (OR SHALE)	340		
509	44,290	LBS.	REINFORCING STEEL	8834	35456	
511	181	CU. YDS	CLASS "C" CONCRETE, ABUTMENTS ABOVE FOOTINGS	181		
511	130	CU. YDS	CLASS "C" CONCRETE, SUPERSTRUCTURE		130	
511	47	CU. YDS	CLASS "C" CONCRETE, FOOTINGS	47		
513	149,500	LBS.	STRUCTURAL STEEL, INCLUDING RAILING		149500	
601	140	SQ. YDS	CRUSHED AGGREGATE SLOPE PROTECTION			140
808	130	UNITS	WATER-REDUCING, SET - RETARDING ADMIXTURE		130	
812	1,336	EACH	WELDED STUD SHEAR CONNECTORS		1336	
SPEC.	77	SQ. YDS	SILICONE COATING CONCRETE SURFACE	77		
521	6.2	M.B.M.	ROOF TRUSS TIMBER (TREATED)			6.2
521	6.3	M.B.M.	FRAMING TIMBER (TREATED)			6.3
521	4.211	SQ. FT.	SIDING TIMBER (1" FULL DEPTH) (TREATED)			4211
521	5.3	M.B.M.	ROOF SHEATHING (1" X 4") (TREATED)			5.3
SPEC.	6,658*	SQ. FT.	ROOF SHINGLES			6658

*AREA EXPOSED TO WEATHER

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION NO. 3

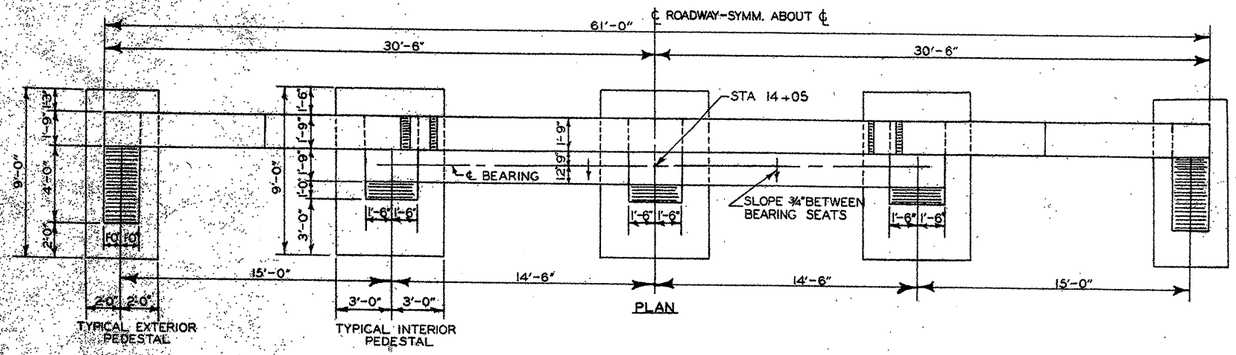
GENERAL NOTES & ESTIMATED QUANTITIES
BRIDGE OVER THE MOHICAN RIVER
MOHICAN STATE FOREST, ASHLAND CO.
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF PARKS AND RECREATION

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
JEG	RL	DCM	DHT	WCK BFG	9-7-67	

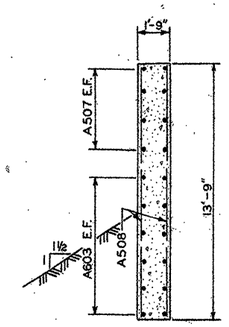
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

19
30

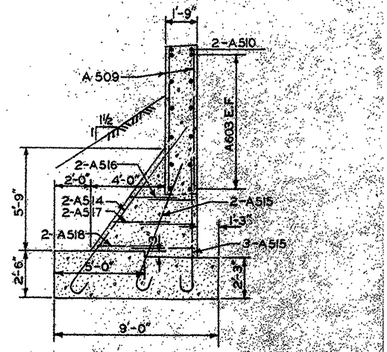
NATURAL RESOURCES ROAD NO. 8-1.43
ASHLAND COUNTY



PLAN



SECTION C-C



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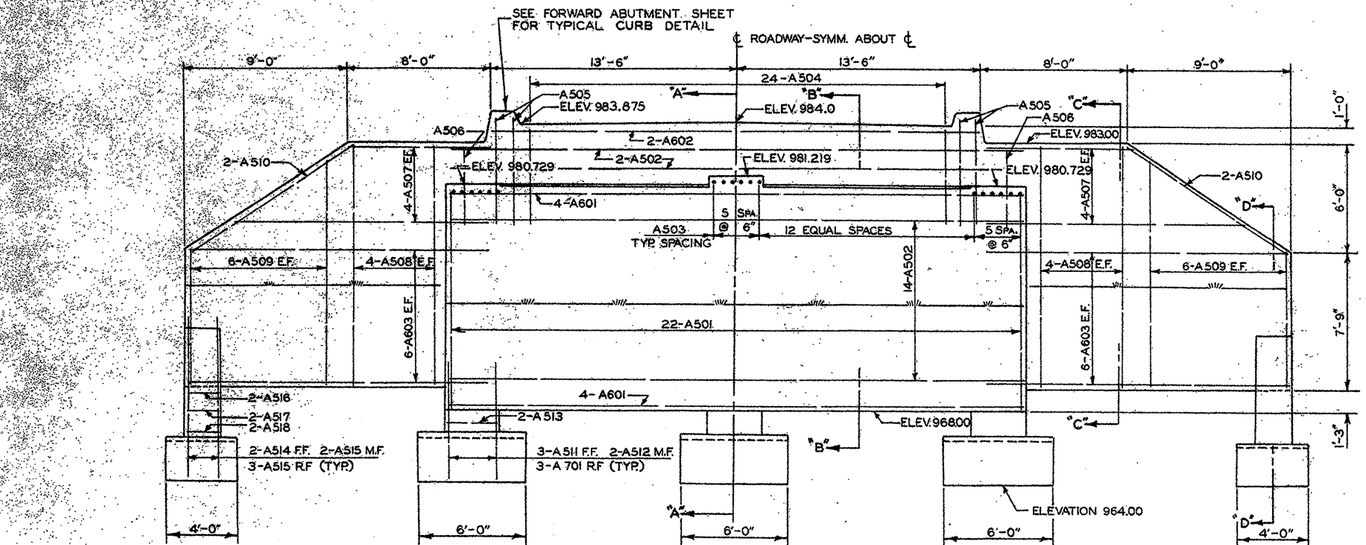
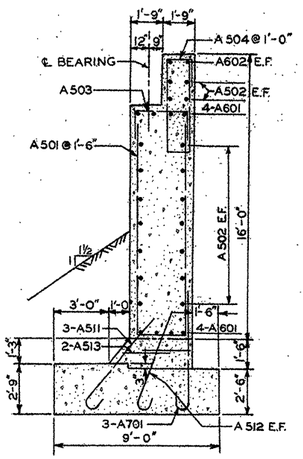
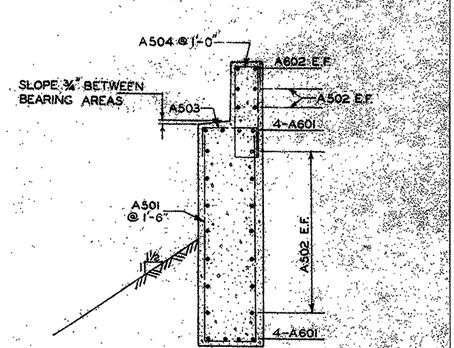


ELEVATION



SECTION A-A



SECTION B-B

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION NO. 3

REAR ABUTMENT

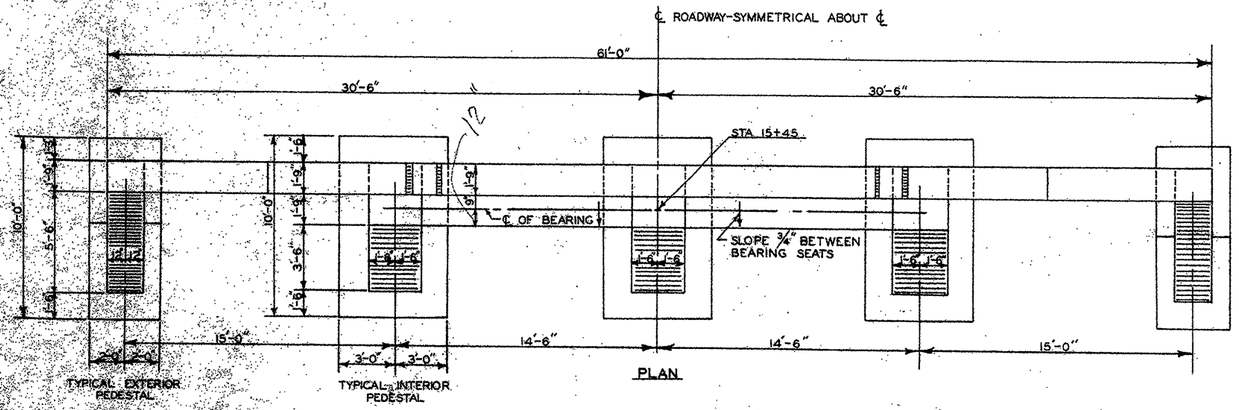
BRIDGE OVER THE MOHICAN RIVER
MOHICAN STATE FOREST, ASHLAND, CO.
DEPARTMENT OF NATURAL RESOURCE
DIVISION OF PARKS AND RECREATON

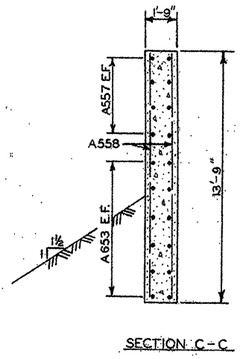
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
DHT	RKH	DCM	JEG	WCK BFG	9-7-67	

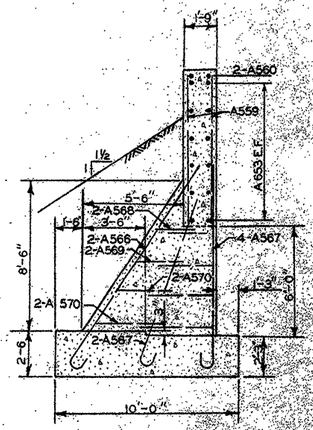
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

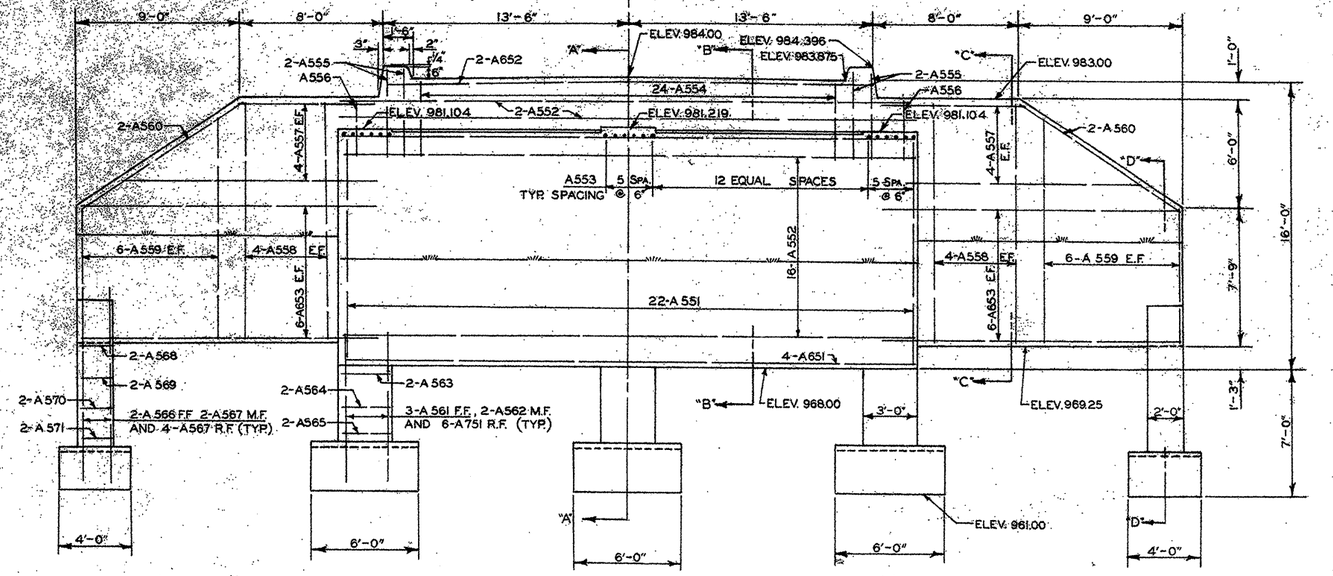
20
30

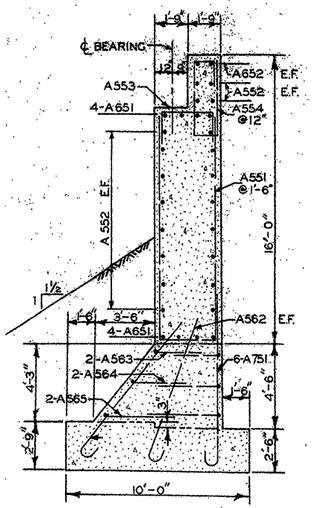
NATURAL RESOURCES RD. NO. 8-1.43
ASHLAND COUNTY

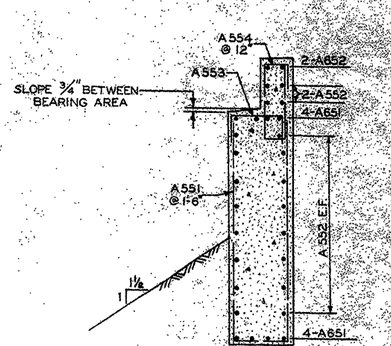












STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION NO. 3

FORWARD ABUTMENT

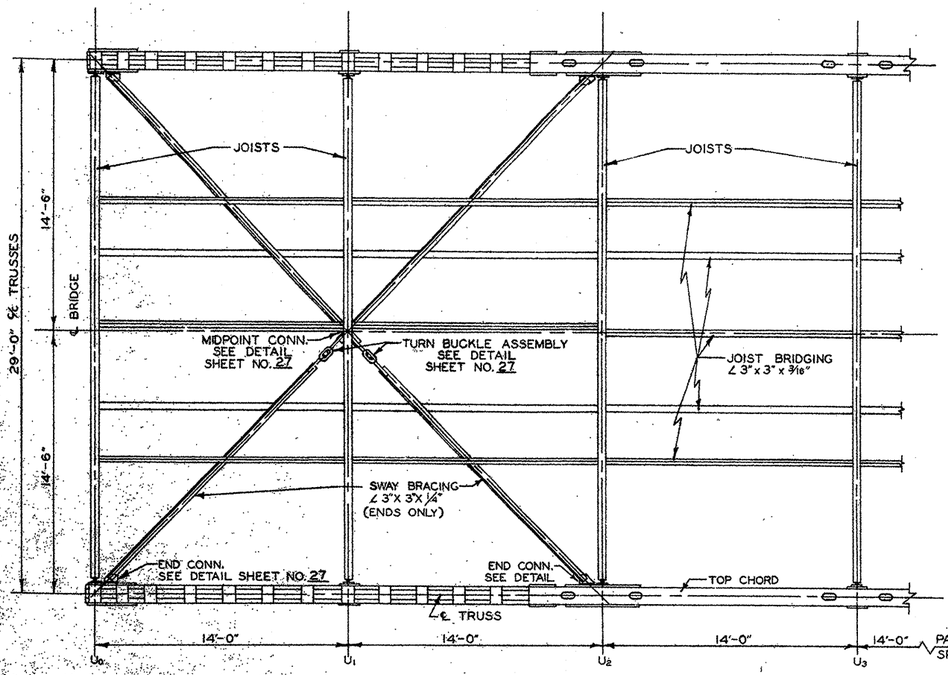
BRIDGE OVER THE MOHICAN RIVER
MOHICAN STATE FOREST, ASHLAND, CO.
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF PARKS AND RECREATION

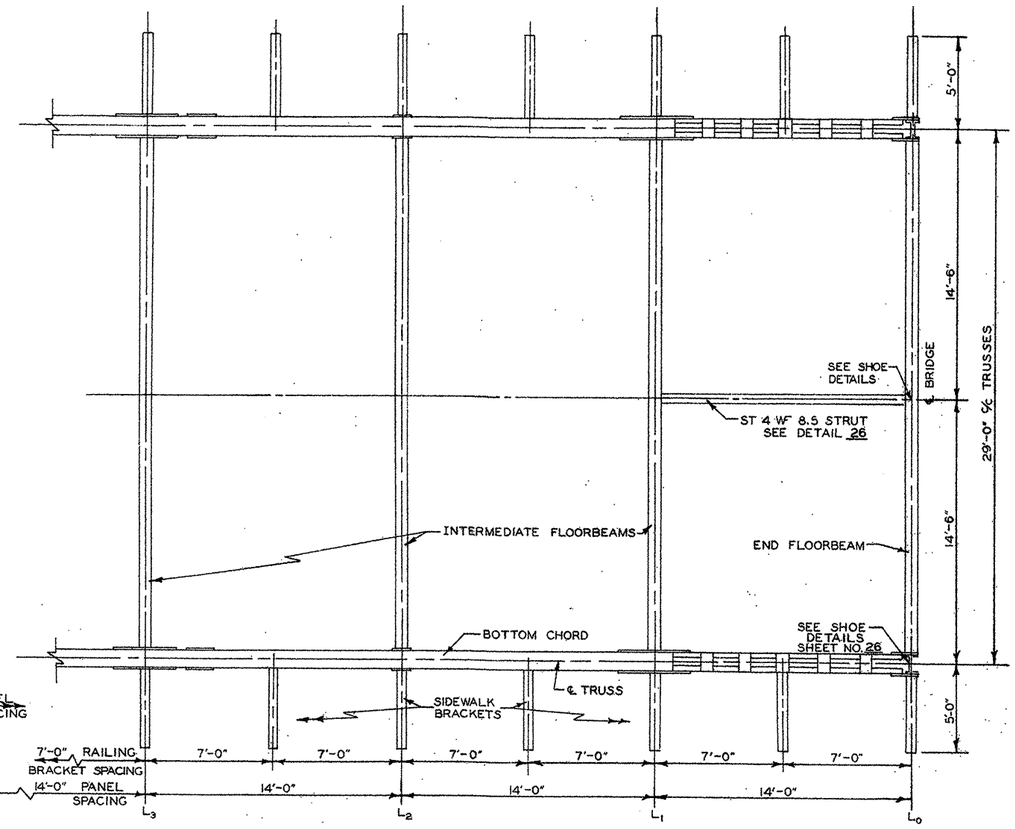
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
DHT	RKH	RL	JEG	WCK BFG	9-7-67	

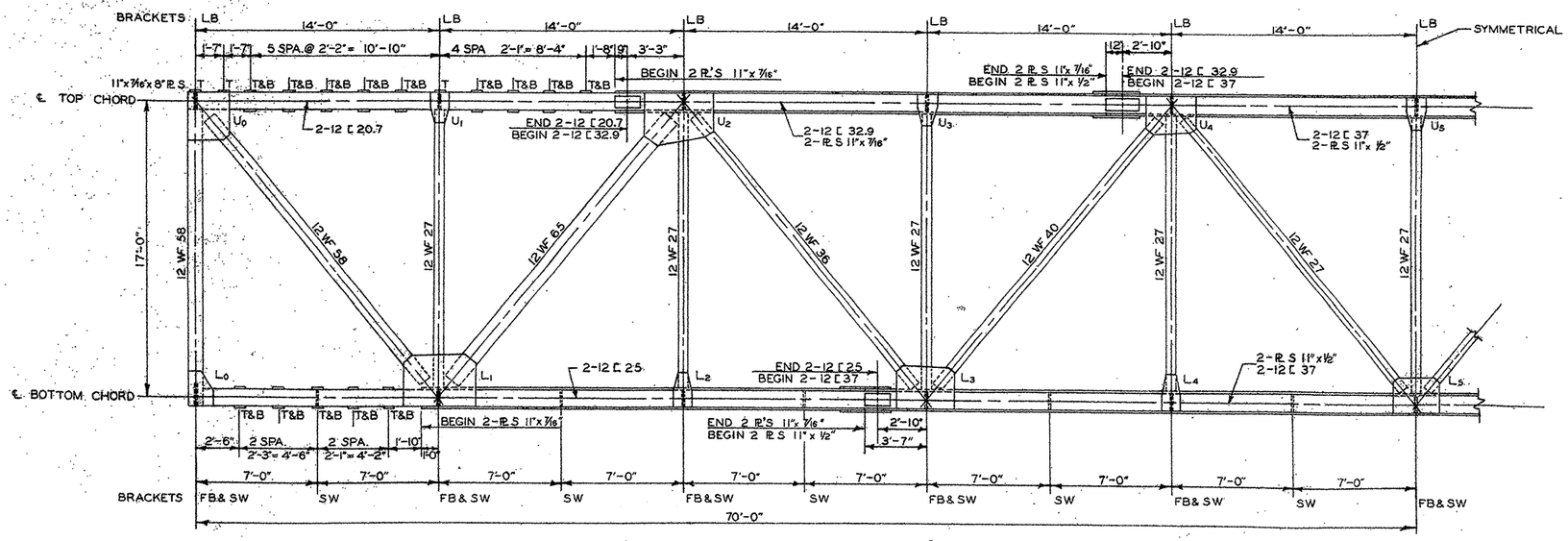
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

21
30

NATURAL RESOURCES RD. NO. 8-1.43
ASHLAND COUNTY







ABBREVIATIONS

L.B. = LATERAL BRACING
T = TOP
B = BOTTOM
SW = SIDEWALK
FB = FLOOR BEAM

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISON NO. 3

FRAMING PLAN

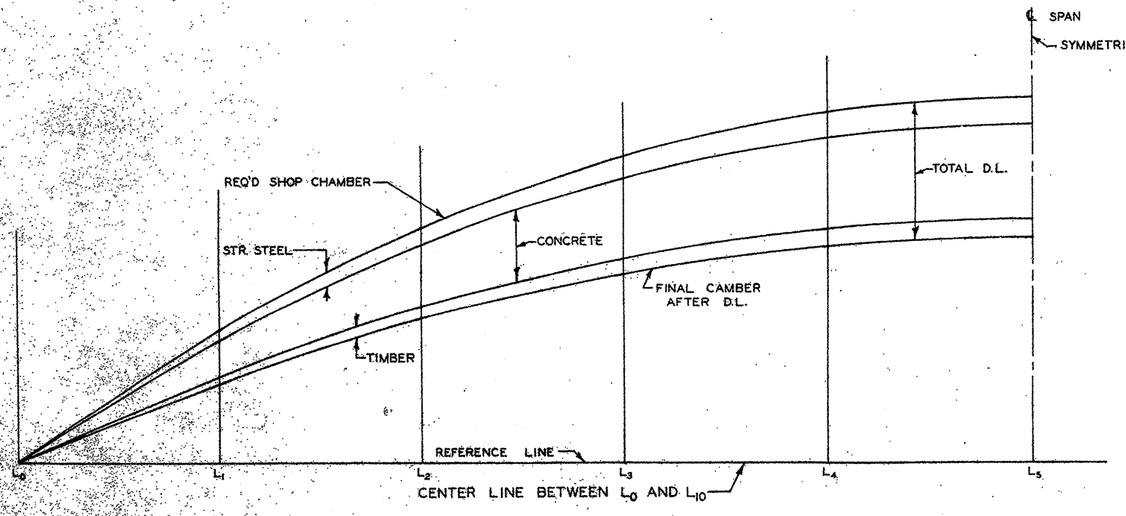
BRIDGE OVER THE MOHICAN RIVER
MOHICAN STATE FOREST, ASHLAND, CO.
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF PARKS AND RECREATION

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
DHT	Tim	RKH	JEG	WCK BFG	9-7-67	

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

22/30

NATURAL RESOURCES RD. NO. 8-1.43
ASHLAND COUNTY

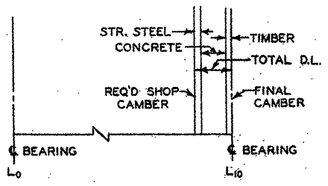


VERTICAL

PANEL LOADS

STEEL	7.1 K.
CONCRETE	26.0
TIMBER	4.8
TOTAL D.L.	37.9 K.
F.W.S.	5.0

HS 20-44



HORIZONTAL

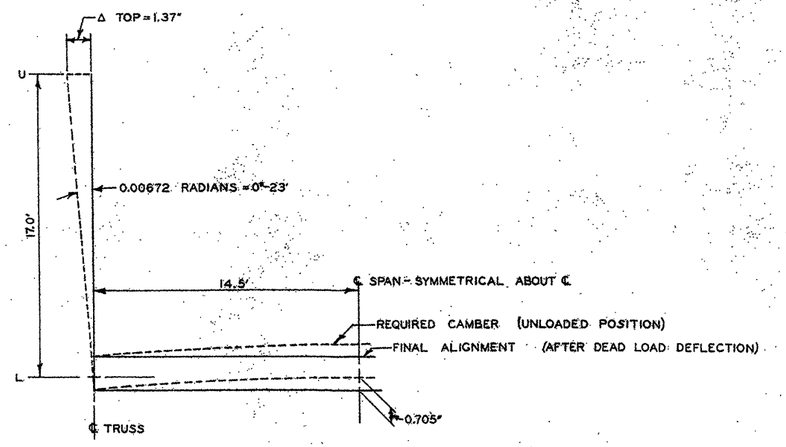
DEFLECTION DIAGRAMS

STRESS TABLE - STEEL TRUSSES

MEMBER	L (IN)	GROSS A (IN²)	$\frac{AE}{AE}$ X10⁻⁶ ($\frac{IN.}{LBS}$)	D.L. (K)	F.W.S. +½ L.L. (K)	P (K)	$\frac{PL}{AE}$ (IN)	MAX. LOAD (KIPS.)
U_0-L_0	204	17.06	0.413	-176.4	-61.7	-238.1	-0.098	-289.7
U_0-L_1	264	17.06	0.534	+221.0	+80.1	+301.1	+0.161	+367.9
$U_1-L_1, U_1-L_2, U_2-L_2, U_2-L_3$	204	7.97	0.882	-6.9	—	-6.9	-0.006	-8.9
U_2-L_1	264	19.11	0.476	-171.5	-64.7	-236.2	-0.112	-292.1
U_2-L_2, U_2-L_4	204	7.97	0.882	+31.0	+24.2	+55.2	+0.049	+84.9
U_2-L_3	264	10.59	0.861	+122.8	+49.8	+172.6	+0.148	+217.9
U_4-L_3	264	11.77	0.775	-73.6	-36.6	-110.2	-0.085	-147.1
U_4-L_5	264	7.97	1.142	+24.6	+23.5	+48.1	+0.055	+76.7
U_0-U_1, U_1-U_2	168	12.00	0.483	-140.6	-47.8	-188.4	-0.091	-226.7
U_2-U_3, U_3-U_4	168	28.00	0.207	-327.5	-111.8	-439.3	-0.091	-528.5
U_4-U_5	168	32.00	0.181	-390.0	-132.3	-522.3	-0.095	-628.5
L_0-L_1	168	12.00	0.483	—	—	—	—	—
L_1-L_2, L_2-L_3	168	24.00	0.241	+249.5	+85.4	+334.9	+0.081	+403.0
L_3-L_4, L_4-L_5	168	32.00	0.181	+374.5	+127.9	+502.4	+0.091	+604.6

MAX. LOAD = D.L. + F.W.S. + MAX. LL + IMPACT

VERTICAL DEFLECTION (INCHES)							HORIZONTAL (INCHES)		
DEFLECTIONS	L_0	L_1	L_2	L_3	L_4	L_5		L_0 (FIXED)	L_{10} → (EXPANSION)
$\sum \frac{PL}{AE} \times 10^{-6}$	0	18.9	32.6	42.7	49.0	51.0		0	13.5
DEAD LOAD									
STRUCTURAL STEEL	0	0.13	0.23	0.30	0.35	0.36		0	0.10
REINFORCED CONC.	0	0.49	0.85	1.11	1.27	1.32		0	0.35
TIMBER	0	0.09	0.16	0.21	0.23	0.25		0	0.06
TOTAL D.L.	0	0.72↑	1.24↑	1.62↑	1.85↑	1.93↑		0	0.51
REQ'D SHOP CAMBER	0	1.80↑	3.20↑	4.20↑	4.80↑	5.00↑			← 0.51
F.W.S. +½ L.L.	0	0.24↑	0.41↑	0.54↑	0.62↑	0.64↑		0	0.17
MAX. LL (ONLY)	0	0.30↑	0.50↑	0.66↑	0.76↑	0.78↑		0	0.20



INTERIOR FLOORBEAMS
DEAD LOAD CAMBER AND TRUSS ROTATION

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION NO. 3

STRESS AND DEFLECTION TABLES

BRIDGE OVER THE MOHICAN RIVER
MOHICAN STATE FOREST, ASHLAND, CO.
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF PARKS AND RECREATION

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
DHT	RKH	RL	JEG	WCK BFG	9-7-67	

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

23
30

NATURAL RESOURCES RD. NO. 8-1.43
ASHLAND COUNTY

TYP
1/4"
6 1/8"
℄ TRUSS
END DIAPHRAGM (SEE VIEW "A-A")
JOIST CONNECTION
SWAY BRACING CONNECTION
U_0
R. 11"X 7/16"X8"
CLIP L-3"X3"X 3/8"
END DIAPHRAGM
3/8" R.
ST 4 WF 12
JOIST CONNECTION NOT SHOWN
A
R.s-11"X 7/16"X8"
1 1/2" TYP
3"
3"
2-1/2" R.s
3 1/2" GAGE N.S. ONLY (JOIST CONNECTION)
1 1/2" TYP
5 1/2" GAGE
3 1/2" TYP
5 1/2" GAGE
29'-0" ℄ TRUSSES
A
14'-0" PANEL SPACING TYPICAL
VIEW A-A
TYP BOTH SIDES
1/4"
TOP & BOTTOM R.s
DIAPHRAGM (SAME AS END DIAPHRAGM)
JOIST CONNECTION
U_1
R.s-11"X 7/16"X8" T. & B.
2-12 C 20.7
12 1/4" B/B C.s
U_0-U_2
R. s-11"X 7/16"X 8"
1 1/2"
3"
3"
2-1/2" R.s
JOIST CONNECTION N. S. ONLY
1 1/2"
2-1/8" FILLS
1 1/2"
3 1/2" GAGE
℄ TOP CHORD
12 1/4"
12 WF 58
U_0-L_0
12 WF 58
U_0-L_1
12"
12 WF 27
U_1-L_1
U_2
12 WF 65
L_1-U_2
12 1/8"
22'-01/4" TYPICAL
17'-6" ℄ CHORDS TYPICAL

L 3X2X5/16 TOP RAIL
2-7/8 ϕ BOLTS BUTTON HD.
5'-0"
℄ TRUSS
29'-0" C/C TRUSSES
L 2 1/2" X 2 " X 1/4" RAILS
12 WF 58
ST 4 WF 12 POST
4-7/8 ϕ BOLTS
GUSSET R.
2-L.s 4"X 3 1/2" X 3/8"
CF 16 B 26 SIDEWALK BRACKET
R. 6 1/2" X 3/8
R. 5 1/2" X 3/8 "
END FLOORBEAM 18 WF 45
℄ BOTTOM CHORD
2 Ls 4"X 3 1/2" X 3/8"
SOLE R. (FIXED OR EXPANSION BEARING)
VIEW B-B
B
1 1/2" TYP
5 1/2" GAGE
1 1/2" TYP
2-1/2" R.S
Ls 4"X 3 1/2" X 3/8"
R.s 11"X 7/16"X8"
2-12 C 25
R.s 11"X 7/16"X8" T. & B.
℄ BOTTOM CHORD
12 1/4" B/B C.s
L_0-L_1
℄ TRUSS
5 1/2" GAGE
1 1/2" TYP
3 1/2" GAGE
2- 1/8" FILLS
5 1/2" GAGE TYP
1 1/2" TYP
2-1/2" R.s
R.s-11"X 7/16"X8"
12"
4" GAGE-FOR FLOORBEAM CONNECTION N. S. & FOR SIDEWALK CONNECTION F. S. (Ls-4"X 3 1/2" X 3/8")
END R.s
TYP 1/4"
TYP 1/4"
TYP-BOTH SIDES TOP & BOTTOM R.s
℄ BOTTOM CHORD
R.s 11"X 7/16"
DIAPHRAGM "A"
1'-10 1/2" ±
HAND HOLE 5"X 9" (BOTTOM ONLY)

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISON NO. 3

TRUSS DETAILS-1

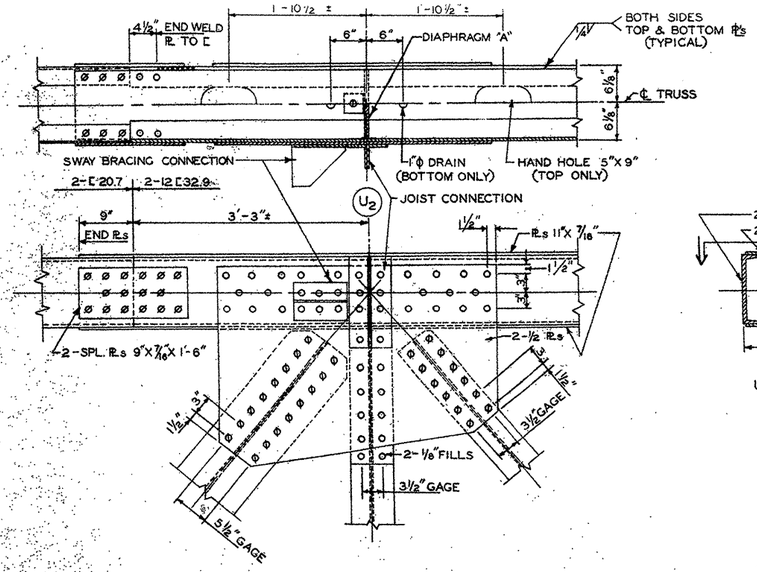
BRIDGE OVER THE MOHICAN RIVER
MOHICAN STATE FOREST, ASHLAND, CO.
DEPARTMENT OF NATURAL RESOUCES
DIVISION OF PARKS AND RECREATION

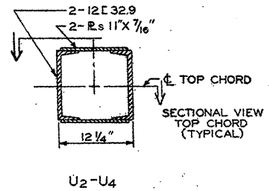
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
DHT	Tim	OCM	JEG	WCK BFG	9-7-67	

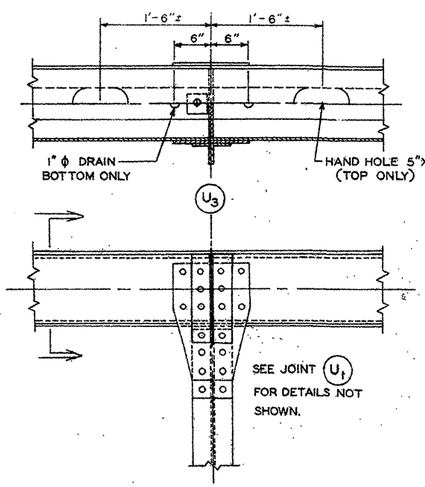
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

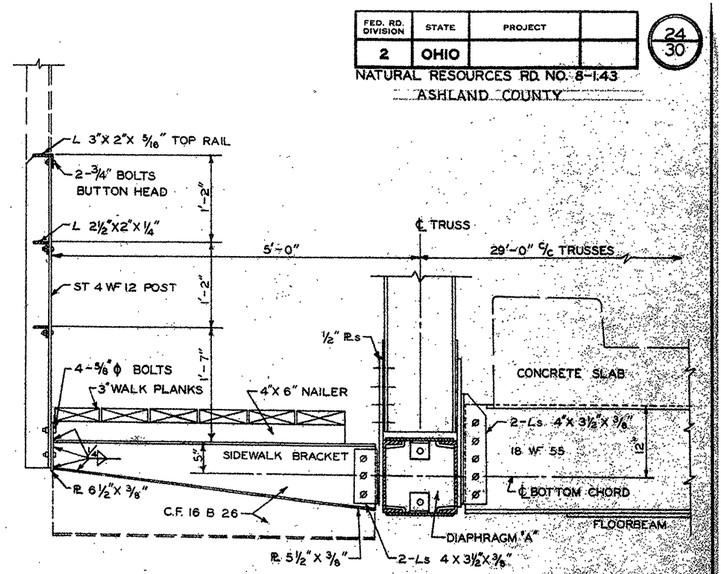
24/30

NATURAL RESOURCES RD. NO. 8-1.43
ASHLAND COUNTY

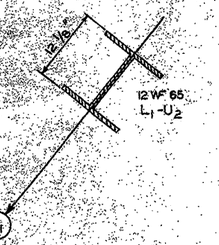


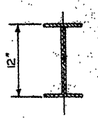


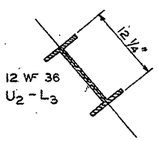


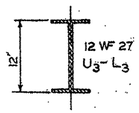


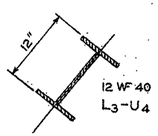
VIEW C-C

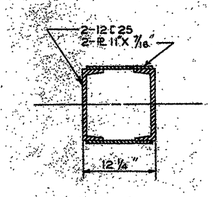


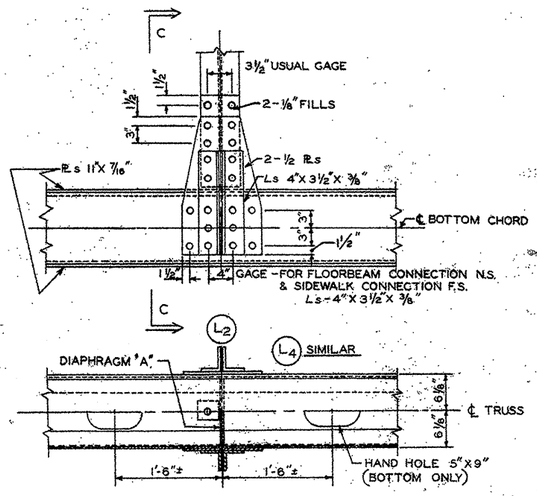


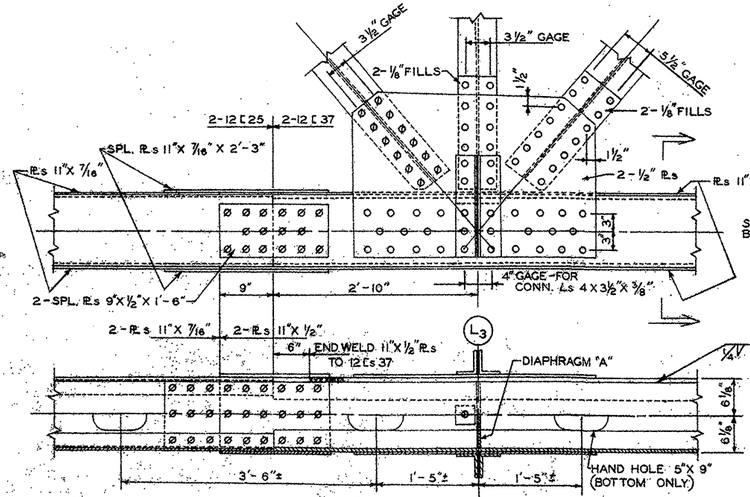


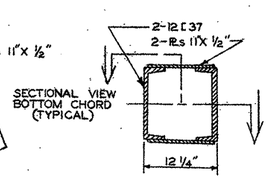












STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION NO. 3

TRUSS DETAILS-2

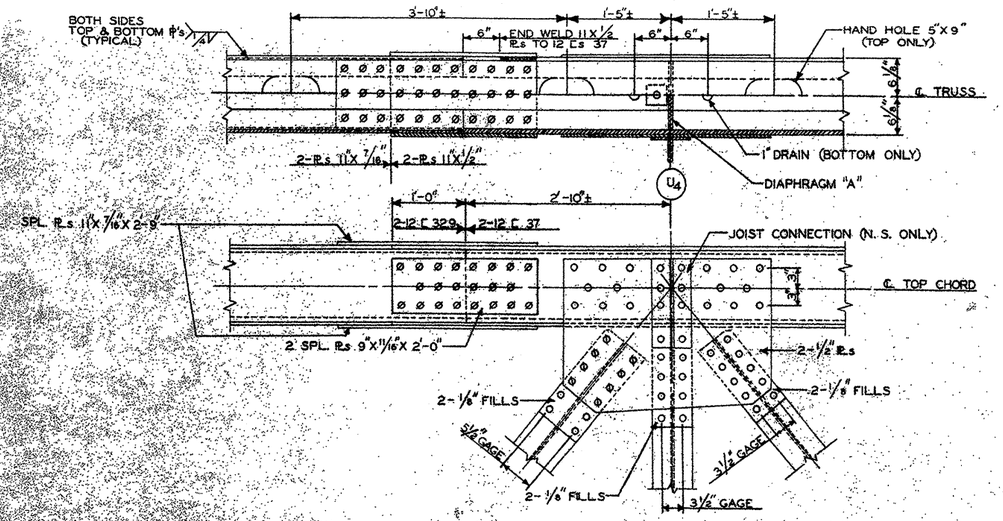
BRIDGE OVER THE MOHICAN RIVER
MOHICAN STATE FOREST, ASHLAND, CO.
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF PARKS AND RECREATION

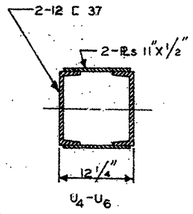
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
DHT	RKH	DCM	JEG	WCK BFG	9-7-67	

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

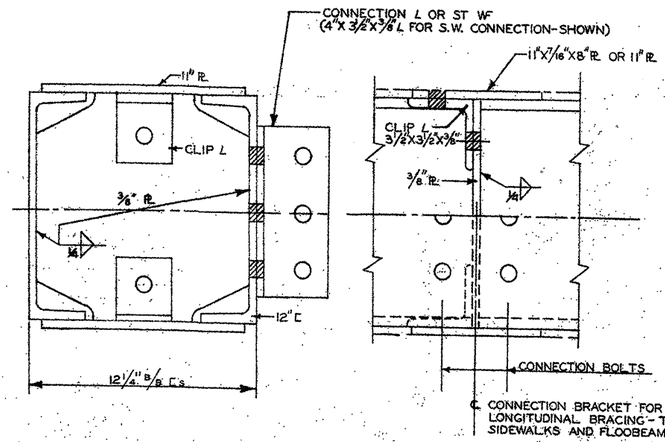
25/30

NATURAL RESOURCES RD. NO. 8-1.43
ASHLAND COUNTY



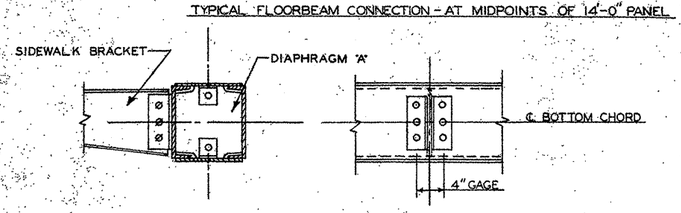


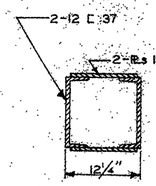
NOTE: U_5 DETAILS NOT SHOWN - SIMILAR TO U_1 AND U_3
L_4 DETAILS NOT SHOWN - SIMILAR TO L_2

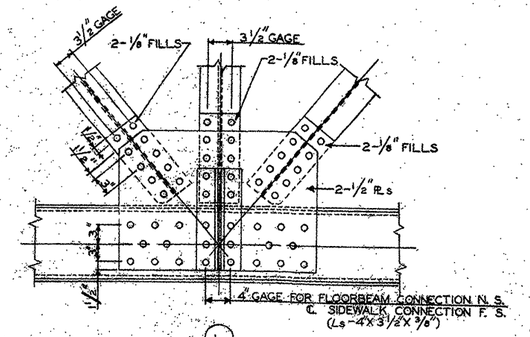


DIAPHRAGM "A" DETAIL

TYPICAL FLOORBEAM CONNECTION - AT MIDPOINTS OF 14'-0" PANEL







STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION NO. 3

TRUSS DETAILS-3

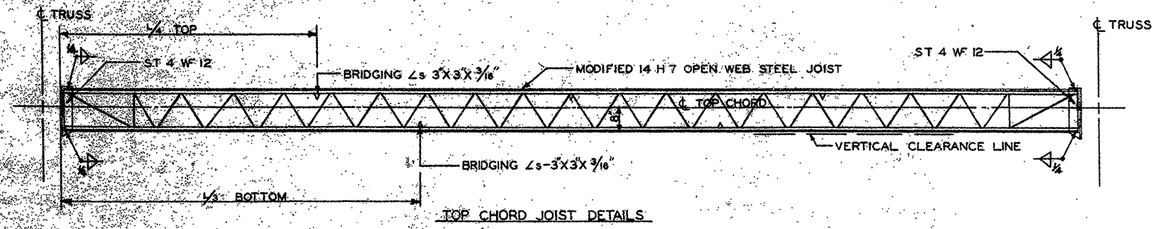
BRIDGE OVER THE MOHICAN RIVER
MOHICAN STATE FOREST, ASHLAND, CO.
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF PARKS AND RECREATION

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
DHT	RKH	RL	JEG	WCK BFG	9-7-67	

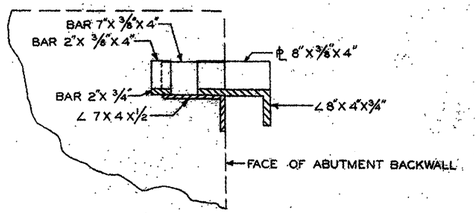
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

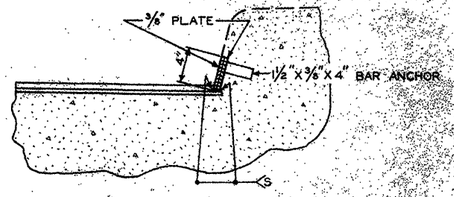
26
30

NATURAL RESOURCES RD NO. 8-1.43
ASHLAND COUNTY

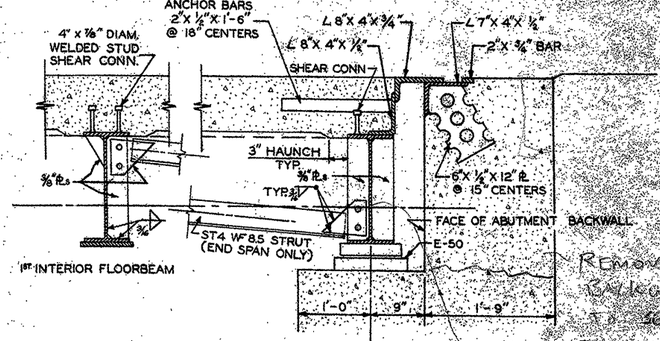


TOP CHORD JOIST DETAILS

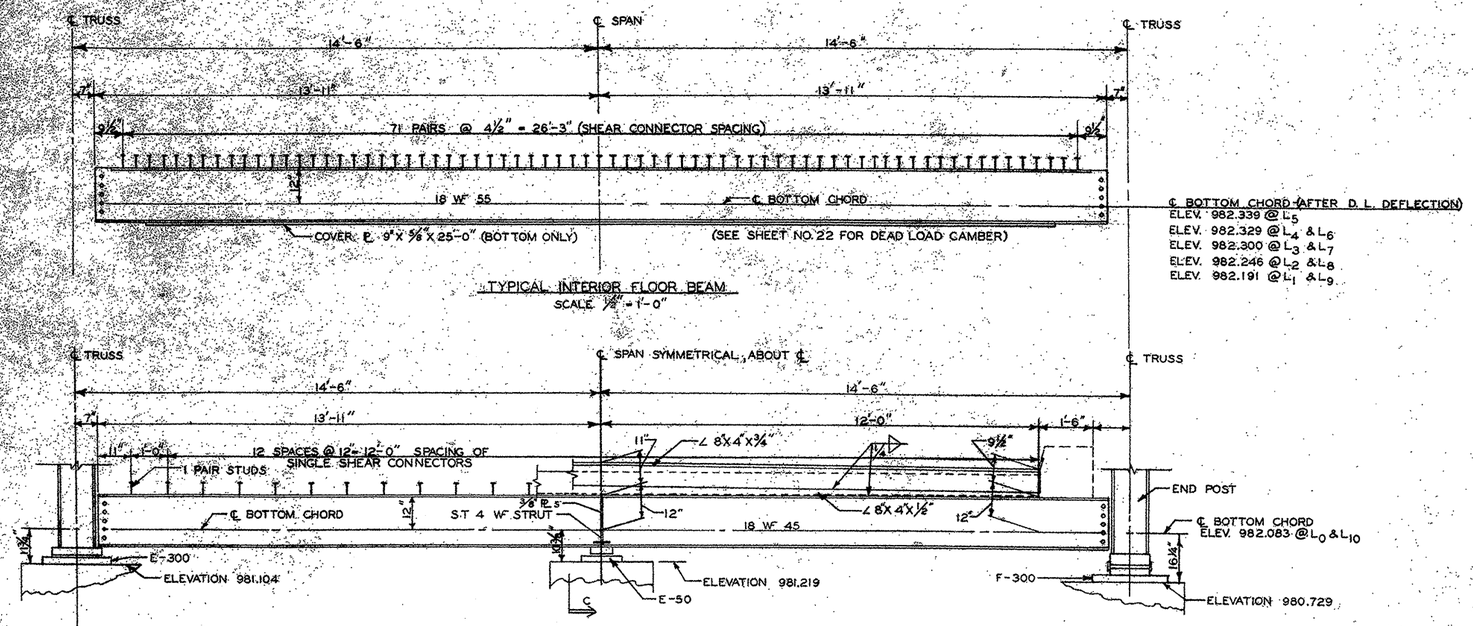




CURB PLATE DETAIL



ROADWAY END DAM DETAIL
FOR DETAILS NOT SHOWN SEE STD. DWG SD-1-65



EXPANSION SHOE
(E-300)
SOLE PL-12"X 2½"X16½"
BASE PL-15"X 2¼"X22½"

FORWARD ABUTMENT

EXPANSION SHOE
(E-50)
SOLE PL-10"X 2"X7½"
BASE PL-12"X 2"X13½"

BOTH ABUTMENTS

FIXED SHOE
F-300 MODIFIED
SOLE PL-12"X 3¾"X13"
PIN PL-8"X 2½"X13"
BASE PL-14"X 2½"X25"

REAR ABUTMENT

END FLOOR BEAMS
SCALE ½"=1'-0"

Remove Sidewalk to 20" to clear 1 Brace Beam

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION NO. 3

FLOOR BEAMS

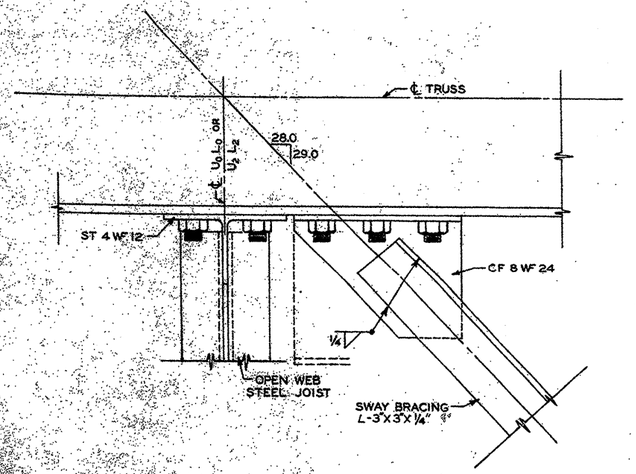
BRIDGE OVER THE MOHICAN RIVER
MOHICAN STATE FOREST, ASHLAND, CO.
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF PARKS AND RECREATION

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
DHT	Ed	RL	JEG	WCK BFG	9-7-67	

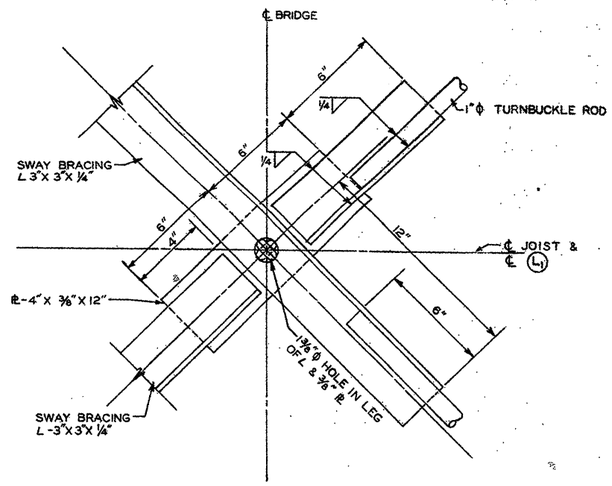
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

27
30

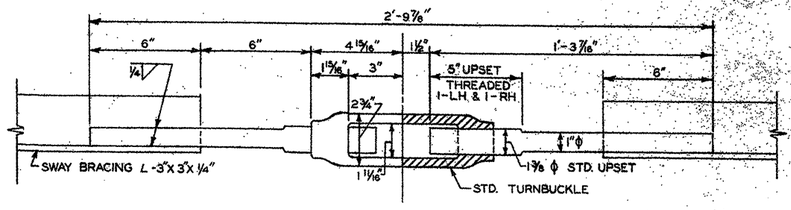
NATURAL RESOURCES RD. NO. 8-1.43
ASHLAND COUNTY



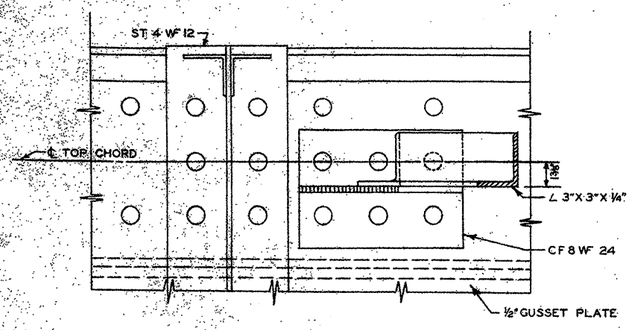
PLAN



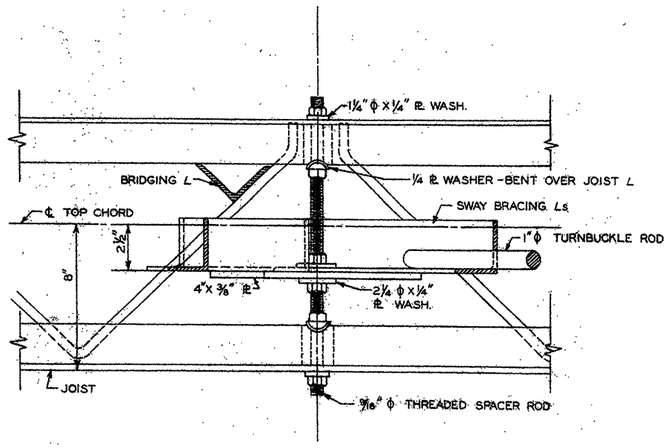
PLAN



TURNBUCKLE ASSEMBLY



END CONNECTION



MID POINT CONNECTION

NOTE: SEE FRAMING PLAN FOR LAYOUT

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION NO. 3

SWAY BRACING DETAILS

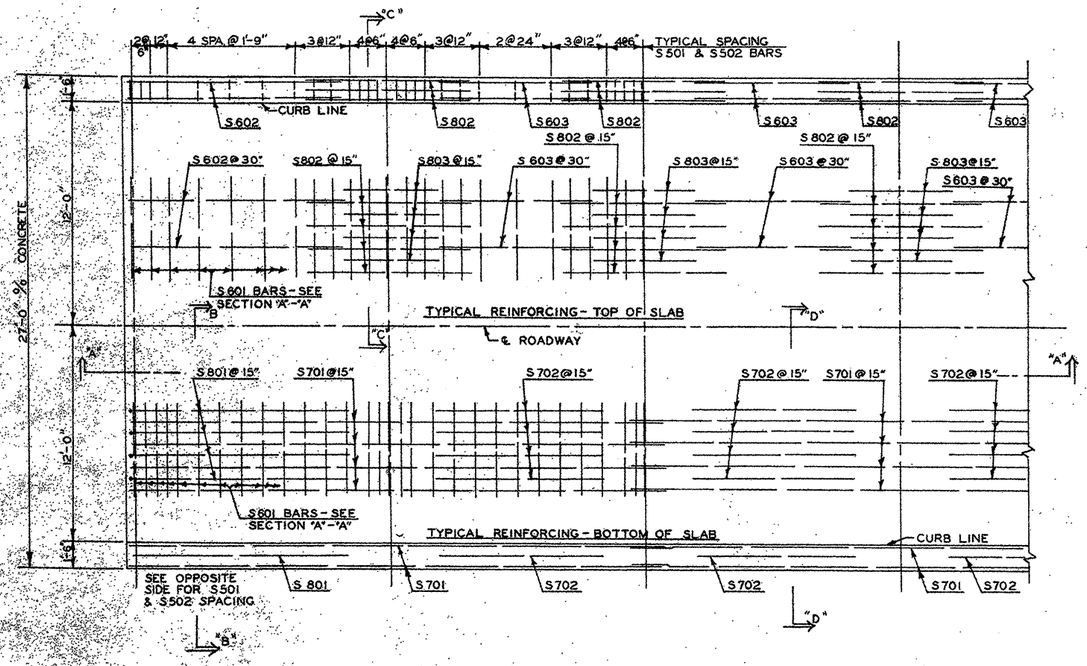
BRIDGE OVER THE MOHICAN RIVER
MOHICAN STATE FOREST, ASHLAND CO.
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF PARKS AND RECREATION

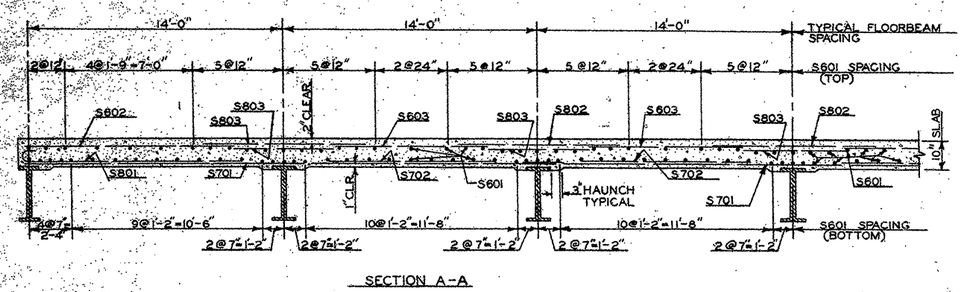
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
DHT	RKH	DCM	JEG	WCK BFG	9-7-67	

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

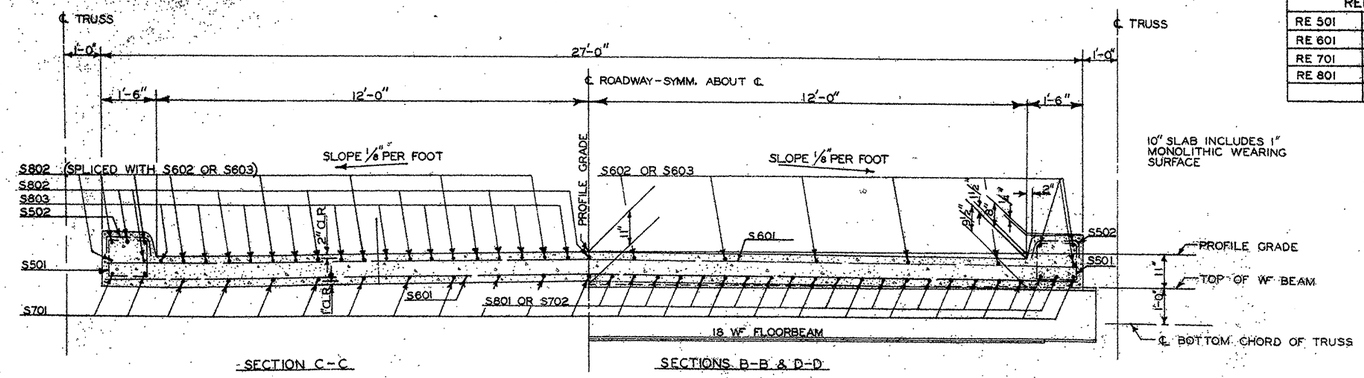
28/30

NATURAL RESOURCES RD. NO. 8-1.43
ASHLAND COUNTY





SECTION A-A



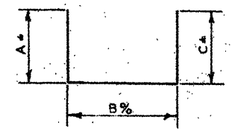
SECTION C-C

SECTIONS B-B & D-D

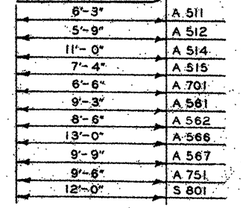
REINFORCING STEEL LIST

MARK	NO.	LENGTH	SHP	WEIGHT
REAR ABUTMENT				
A 501	22	26'-11"	B	618
A 502	18	31'-8"	S	595
A 503	40	5'-11"	B	247
A 504	24	13'-2"	B	330
A 505	4	14'-6"	B	61
A 506	2	11'-2"	B	23
A 507	16	7'-6" TO 14'-3"*	S	182
A 508	16	13'-5"	S	224
A 509	24	7'-6" TO 12'-6"*	S	250
A 510	4	10'-9"	S	45
A 511	9	6'-10"	B	64
A 512	6	6'-4"	B	40
A 513	6	7'-7"	B	47
A 514	4	11'-7"	B	48
A 515	10	7'-11"	B	83
A 516	4	6'-5"	B	27
A 517	4	7'-5"	B	31
A 518	4	8'-5"	B	35
A 601	8	31'-8"	S	381
A 602	2	26'-9"	S	80
A 603	24	16'-6"	S	595
A 701	9	7'-4"	B	135
TOTAL ——— 4141 LBS				
SUPERSTRUCTURE				
S 501	314	3'-3"	B	1064
S 502	314	1'-9"	B	573
S 601	262	26'-8"	S	10494
S 602	32	11'-9"	S	565
S 603	128	8'-6"	S	1634
S 701	115	30'-0"	S	7052
S 702	176	9'-3"	S	3328
S 801	44	13'-1"	B	1537
S 802	261	9'-3"	S	6446
S 803	180	5'-9"	S	2763
TOTAL ——— 35456 LBS				
REPLACEMENT BARS				
RE 501	1	5'-7"	S	
RE 601	1	5'-11"	S	
RE 701	1	6'-2"	S	
RE 801	1	6'-6"	S	

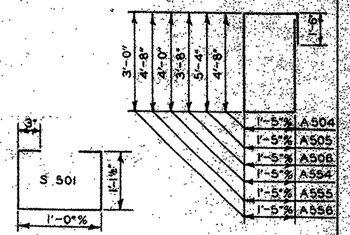
BENDING DIAGRAMS



MARK	A*	B%	C*
A 501	12'-0"	3'-2"	12'-0"
A 503	1'-6"	3'-2"	1'-6"
A 513	2'-7"	2'-8"	2'-7"
A 516	2'-6"	1'-8"	2'-6"
A 517	3'-0"	1'-8"	3'-0"
A 518	3'-6"	1'-8"	3'-6"
A 551	12'-6"	3'-2"	12'-6"
A 553	1'-6"	3'-2"	1'-6"
A 563	2'-7"	2'-8"	2'-7"
A 564	3'-3"	2'-8"	3'-3"
A 565	3'-11"	2'-8"	3'-11"
A 568	2'-4"	1'-8"	2'-4"
A 569	3'-0"	1'-8"	3'-0"
A 570	3'-7"	1'-8"	3'-7"
A 571	4'-2"	1'-8"	4'-2"
S 502	6"	1'-0"	6"



MARK	NO.	LENGTH	SHP	WEIGHT
FORWARD ABUTMENT				
A 551	22	27'-11"	B	641
A 552	20	31'-8"	S	661
A 553	40	5'-11"	B	247
A 554	24	11'-10"	B	296
A 555	4	13'-2"	B	55
A 556	2	9'-10"	B	21
A 557	16	7'-6" TO 14'-3"*	S	182
A 558	16	13'-5"	S	224
A 559	24	7'-6" TO 12'-6"*	S	250
A 560	4	10'-9"	S	45
A 561	9	9'-10"	B	92
A 562	6	9'-1"	B	57
A 563	6	7'-7"	B	47
A 564	6	8'-11"	B	56
A 565	6	10'-3"	B	64
A 566	4	13'-7"	B	57
A 567	12	10'-4"	B	129
A 568	4	6'-1"	B	25
A 569	4	7'-5"	B	31
A 570	4	8'-7"	B	36
A 571	4	9'-9"	B	41
A 651	8	31'-8"	S	381
A 652	2	26'-9"	S	80
A 653	24	16'-6"	S	595
A 751	18	10'-4"	B	380
TOTAL ——— 4693 LBS				



* VARY 4 EACH BY 2'-3"
% VARY 4 EACH BY 1'-0"

NOTES:
BAR SIZE IS INDICATED IN THE BAR MARK. THE FIRST DIGIT WHERE THREE DIGITS ARE USED, AND THE FIRST TWO DIGITS WHERE FOUR ARE USED, INDICATE THE BAR SIZE NUMBER. FOR EXAMPLE, A 701 IS A NO. 7 SIZE BAR AND A1014 IS A NO. 10 SIZE.

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION NO. 3

SLAB PLAN & REINFORCING STEEL LIST

BRIDGE OVER MOHICAN RIVER
MOHICAN STATE FOREST ASHLAND CO.
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF PARKS AND RECREATION

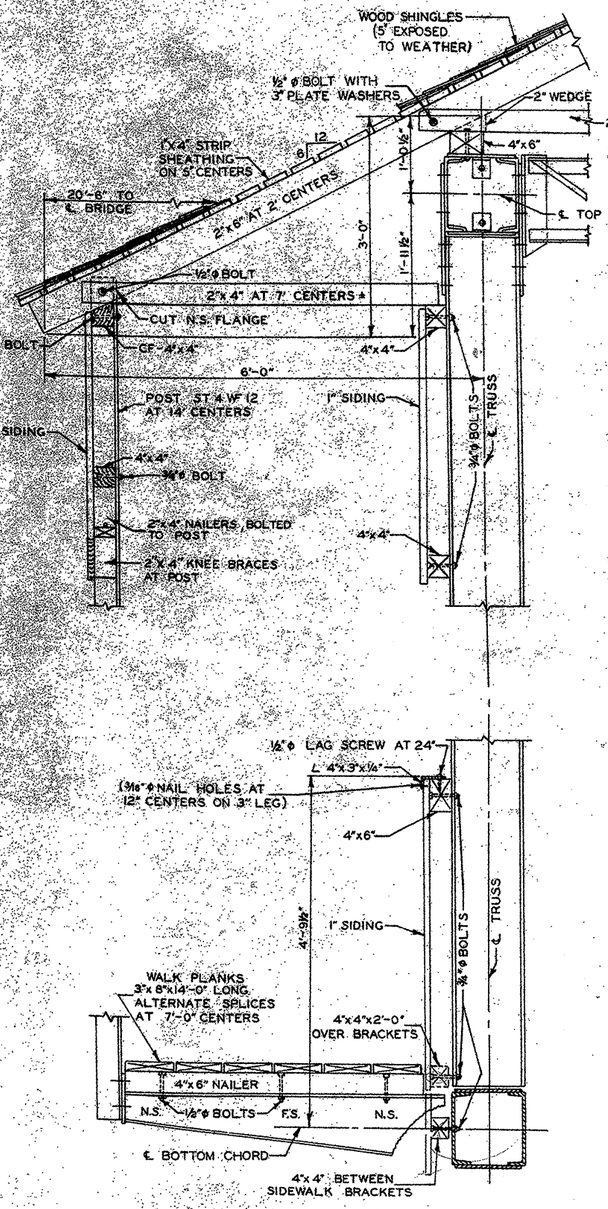
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
JEG	Ed	RKH	DHT	WCK. DFG	9-7-67	

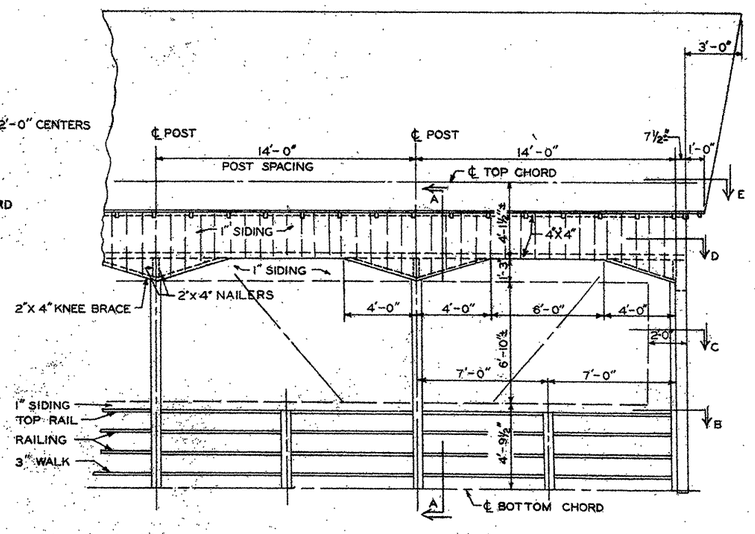
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

29/30

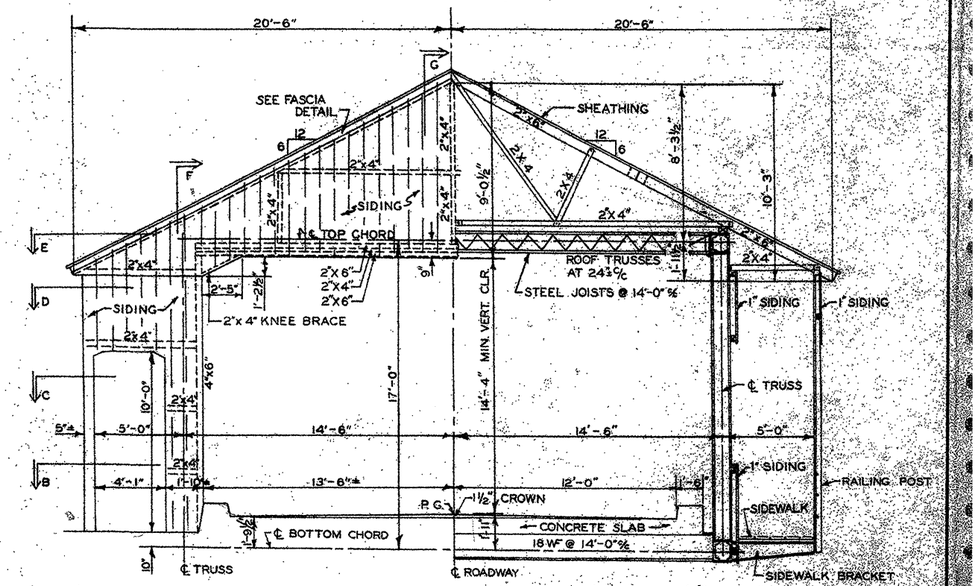
NATURAL RESOURCES RD. NO. 8-143

ASHLAND COUNTY



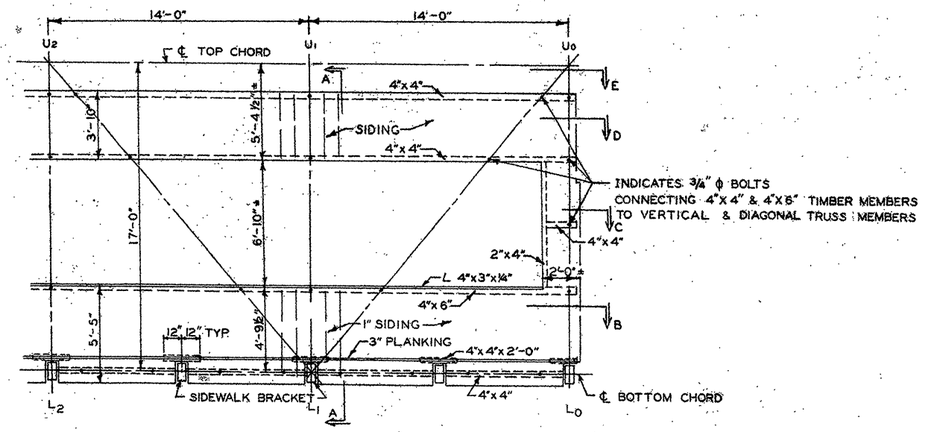


PART SIDE ELEVATION



HALF FRONT ELEVATION-HALF TYPICAL SECTION

SECTION 'A'-'A'



PART ELEVATION-INSIDE SIDING

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION NO. 3

TIMBER FRAMING

BRIDGE OVER THE MOHICAN RIVER
MOHICAN STATE FOREST ASHLAND CO
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF PARKS AND RECREATION

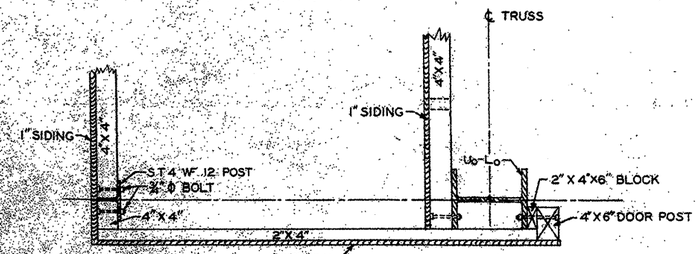
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
DHT	Tim	RKH	JEG	HCK BFG	9-7-67	

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

30/30

NATURAL RESOURCES RD. NO. 8-1.43

ASHLAND COUNTY



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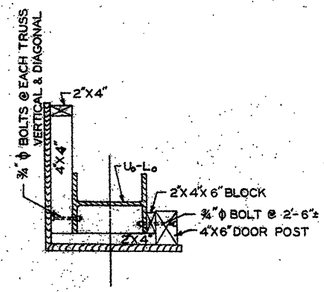
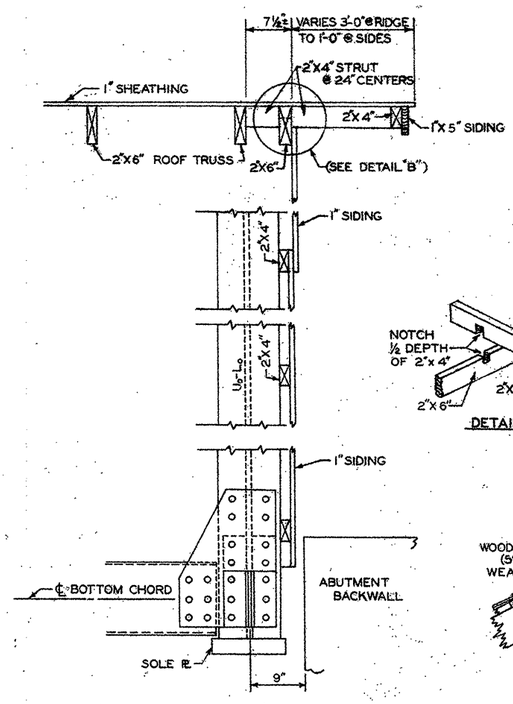


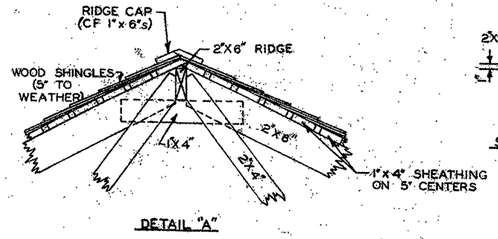
END RAILING POST

SECTION "C"

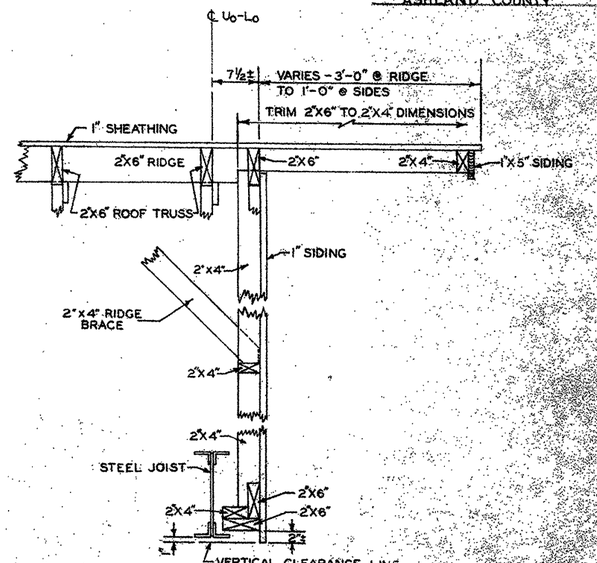


SECTION "F"

DETAIL "B"



DETAIL "A"



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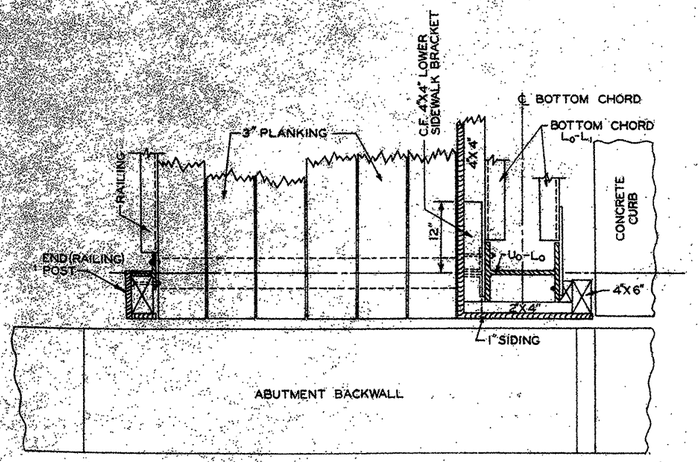
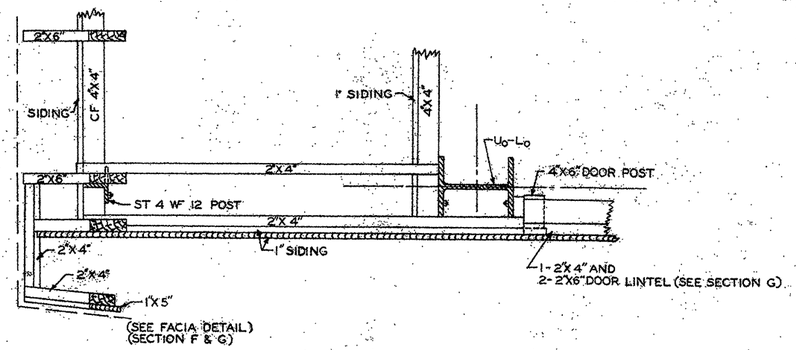
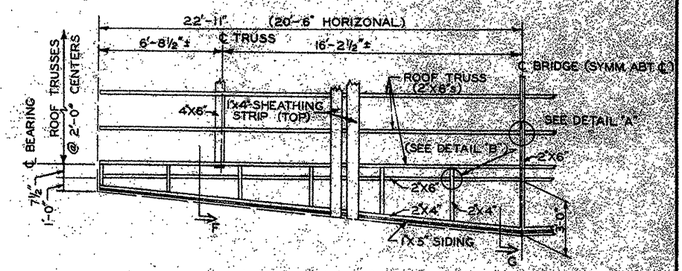


SECTION "B"



SECTION "E"



DEVELOPED PART ROOF PLAN

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION NO. 3

TIMBER DETAILS

BRIDGE OVER THE MOHICAN RIVER
MOHICAN STATE FOREST, ASHLAND, CO.
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF PARKS AND RECREATION

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
DHT	Tim	DCM	JEG	WCK DFG	9-7-67	