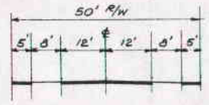
FED. RD.	STATE	PROJECT	
2	OHIO		

1/7

SUM-18-9.23



TYPICAL SECTION
EXISTING HILLCREST ST.

AKRON EXP'WAY ℄ CURVE DATA

P.I. STA. 252+03.64
Δ = 17°-36'-26" LT.
Dc = 1°-15'
R = 4583.66'
L = 1408.58'
T = 709.88'
E = 54.65
P.C. STA. 244+93.76
P.T. STA. 259+02.34

FOUNDATION SOUNDINGS

FOUNDATION DESIGN AND FOUNDATION QUANTITIES ARE BASED ON A STUDY OF SOIL BORINGS TAKEN BY THE STATE HIGHWAY DEPARTMENT FOR SUM-18-9.23. THIS BORING INFORMATION APPEARS ON THE CONTRACT DRAWINGS FOR SUM-18-9.23, BUT THE STATE DOES NOT GUARANTEE THE ACCURACY THEREOF.

PROPOSED STRUCTURE

TYPE: CONTINUOUS STEEL BEAM WITH REINFORCED CONCRETE DECK AND SUBSTRUCTURE.
SKEW: 14°-31'-15" RF. TO LOCAL TANGENT
SPANS: 51'-0"-85'-0"-76'-0"-46'-0" ℄/℄ BEARINGS
ALIGNMENT: STRAIGHT
LOADING: 85 PSF LIVE LOAD
SUPERELEVATION: NONE
SLOPE PROTECTION: I-10 CRUSHED AGGREGATE

© VERTICAL CLEARANCE:
DESIGN = 15.00'
ACTUAL = 15.21'

• EXISTING ℄ PROFILE ELEVATIONS
• PROPOSED ℄ BRIDGE ELEVATIONS

CITY OF AKRON, OHIO
DEPARTMENT OF PUBLIC SERVICE
BUREAU OF ENGINEERING

SUBMITTED _____ CITY ENGINEER

APPROVED Robert E Hoyt DIRECTOR OF PUBLIC SERVICE

16060

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
BUREAU OF BRIDGES

BEISWENGER & HOCH, Consulting Engineers
AKRON, OHIO

SITE PLAN

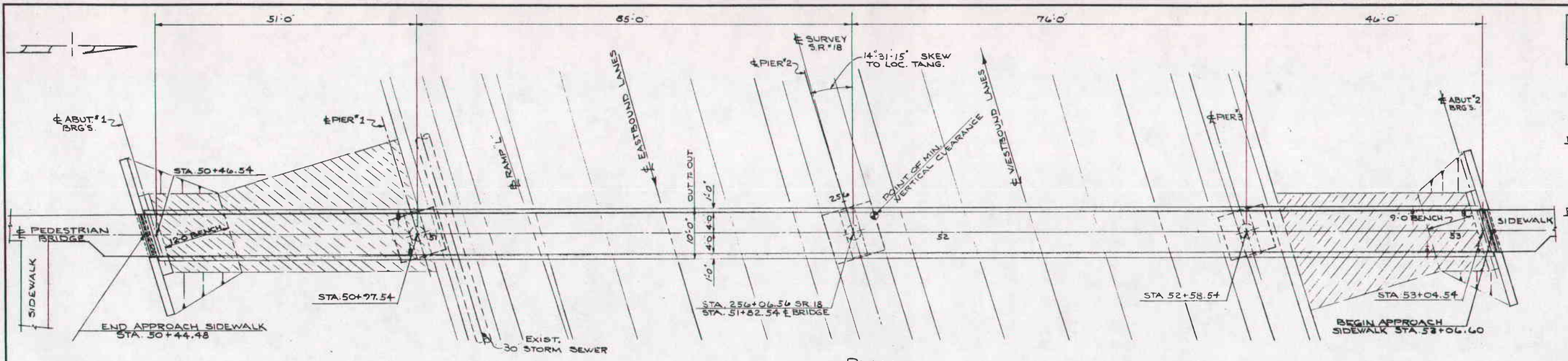
BRIDGE NO. SUM-18-0939
PEDESTRIAN BRIDGE
UNDER HILLCREST STREET
AKRON EXP'WAY PART 13 SUMMIT COUNTY
STA. 256+06.56

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
RDH	KENNESSY		RDH	RDH	8/7/63	10-29-63

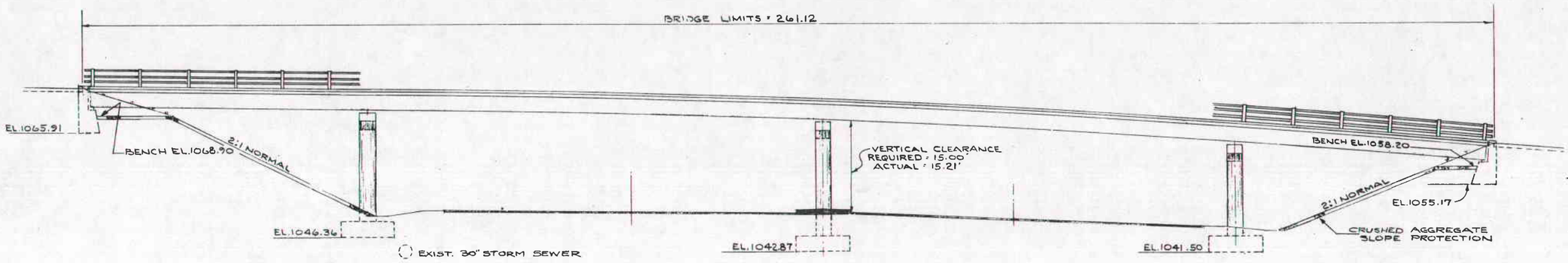
A-7200

FED. RD.	STATE	PROJECT	
2	OHIO		

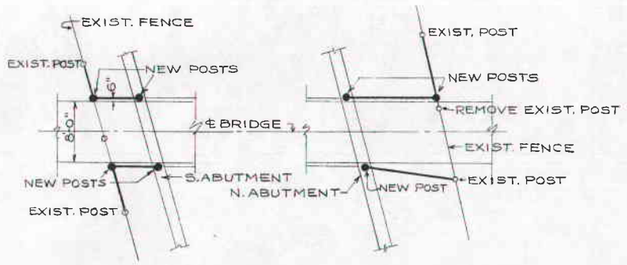
SUM-18-9.23



— PLAN —



— ELEVATION —



REVISION TO RIGHT OF WAY FENCE
ITEM 173
SCALE 1" = 10'

— GENERAL NOTES —

DESIGN SPECIFICATIONS: THIS STRUCTURE CONFORMS TO THE REQUIREMENTS OF "DESIGN SPECIFICATIONS FOR HIGHWAY STRUCTURES" OF THE STATE OF OHIO, DEPARTMENT OF HIGHWAYS, DATED 9-1-57, TOGETHER WITH CURRENT REVISIONS THEREOF.

EXCAVATION QUANTITY: FOR THE ABUTMENTS, IN ADDITION TO THAT OUTLINED IN SEC. E-2.09, INCLUDES THE REMOVAL OF MATERIAL BOUNDED BY THE PROPOSED BENCH, BY THE FRONT VERTICAL PLANE DESCRIBED IN SEC. E-2.09 AND BY THE FINISHED SLOPE OF THE CUT.

FOUNDATION BEARING PRESSURE: PIER FOOTINGS ARE DESIGNED FOR A MAXIMUM BEARING PRESSURE OF 2.5 TONS PER SQ. FT. AND ABUT. FOOTINGS FOR 1 TON PER SQ. F.T.

CONTINUOUS BEAM SPLICES: IF BEAMS HAVING DEPTHS DIFFERING BY MORE THAN 1/8" ARE TO BE SPLICED BY BUTT WELDING, THE DEPTH OF THE SMALLER-DEPTH BEAM SHALL BE INCREASED BY SPLITTING THE WEB LONGITUDINALLY AT A DISTANCE OF 1½ BELOW THE BOTTOM OF THE TOP FLANGE AND FOR A DISTANCE SUFFICIENT TO ALLOW THE FLANGE TO BE BENT UP AT A SLOPE OF NOT MORE THAN 3/8 PER FOOT, AFTER WHICH THE SPLIT IN THE WEB SHALL BE COMPLETELY WELDED WITH FULL DEPTH PENETRATION AND GROUND FLUSH.

CONCRETE DECK PLACING: IN ORDER TO FACILITATE WATER CURING OF THE CONCRETE OF THE DECK SLAB, THE PLACING OF CONCRETE SHALL PROGRESS UPGRADE. THE SLAB MAY BE PLACED IN SECTIONS, BETWEEN TRANSVERSE CONSTRUCTION JOINTS WHICH ARE PARALLEL TO TRANSVERSE REINFORCING STEEL AND ARE LOCATED NEAR THE CENTER OF ANY SPAN.

REFERENCE SHALL BE MADE TO STANDARD DRAWINGS:
CSB: 2-56 SHT. #2 REVISED 2-2-59
FSB: 1-62 REVISED 1-15-63

— GENERAL NOTES - CONT'D. —

THE REQUIREMENTS OF SEC. S-1.22, RUBBED FINISHED, SHALL APPLY TO THE FOLLOWING EXPOSED CONCRETE SURFACES: THE ENTIRE SUPERSTRUCTURE EXCEPT THE TOP AND BOTTOM SURFACES OF SLAB, THE ENTIRE SURFACE OF PIERS AND ABUTMENTS EXCEPT BRIDGE SEATS, BACKWALLS AND THE FACE OF SPILL THROUGH ABUTMENTS BETWEEN OUTSIDE BEAMS

POROUS BACKFILL: 2 FT. THICK, FULL LENGTH OF ABUTMENT AND WINGS SHALL EXTEND UP TO THE UNDERSIDE OF THE SIDEWALK OR TO THE FINISHED GROUND SURFACE.

BRIDGE SEAT REINFORCING: SPECIAL CARE SHALL BE TAKEN IN PLACING REINFORCING STEEL IN THE VICINITY OF THE BRIDGE SEAT SO AS TO AVOID INTERFERENCE WITH THE DRILLING OF ANCHOR BAR HOLES

PIER Nº 1 FOOTING: EXTREME CARE MUST BE TAKEN DURING THE CONSTRUCTION OF PIER Nº 1 FOOTING IN ORDER NOT TO DISTURB THE EXISTING 30" STORM SEWER

CONTINUOUS BEAM SHOP ASSEMBLY: REFERENCE PARAGRAPH 4, SEC. S-7.12 OF THE CONSTRUCTION AND MATERIAL SPECIFICATIONS, IF ROLLED BEAMS ARE FIELD SPLICED ONLY AT SUPPORTS; FOR THE PURPOSE OF CHECKING THE FIT-UP OF WELD JOINT PREPARATION, ONLY TWO ADJACENT BEAMS NEED BE SHOP ASSEMBLED AT A TIME IN THEIR CORRECT, UNLOADED POSITIONS. ALL BEAMS SHALL BE ASSEMBLED AND MATCH MARKED.

BEAM WEB WELDS: BUTT-WELDS IN WEBS OF BEAMS MAY HAVE CONVEX REINFORCEMENT IN ACCORDANCE WITH SECT. S-7.22. FINISHING FLUSH BY GRINDING IS NOT NECESSARY.

FINANCING FOR BRIDGE: IS TO BE BORNE 100% BY THE CITY OF AKRON

□ · INCLUDES 6x6-9/4 MESH REINFORCING & INCIDENTALS TO CONSTRUCTING NEW SIDEWALK TO MATCH WITH EXISTING SIDEWALK

— ESTIMATED QUANTITIES —

ITEM	TOTAL	UNIT	DESCRIPTION	SUPER.	ABUTS.	PIERS	GEN.
E-2	176	CU.YDS.	UNCLASSIFIED EXCAVATION		103	73	
S-1	46	CU.YDS.	CLASS "C" CONC. SUPERSTRUCTURE	46			
S-1	39	CU.YDS.	CLASS "E" CONC. ABUTMENTS		39		
S-1	20	CU.YDS.	CLASS "C" CONC. PIERS ABOVE FOOTINGS			20	
S-1	29	CU.YDS.	CLASS "E" CONC. PIER FOOTINGS			29	
S-4	13,828	LBS.	REINFORCING STEEL	4,428	2,121	7279	

ITEM	TOTAL	UNIT	DESCRIPTION	SUPER.	ABUTS.	PIERS	GEN.
S-7	67,091	LBS.	STRUCTURAL STEEL	67,091			
S-8	67,091	LBS.	FIELD PAINTING OF STRUCTURAL STL.	67,091			
S-14	521.46'	LIN.FT.	3 TUBE ALUMINUM RAILING, SUPPORT AND ANCHOR BOLTS.	521.46'			

ITEM	TOTAL	UNIT	DESCRIPTION	SUPER	ABUTS	PIERS	GEN.
S-29	21	CU.YDS.	POROUS BACKFILL		21		
S-29	6	EACH	SCUPPERS	6			
I-10	210	SQ.YDS.	CRUSHED AGGREGATE SLOPE PROTECTION		210		
I-13	188	SQ.FT.	6" THK. CONCRETE SIDEWALK □				188
I-13	419	SQ.FT.	4" THK. CONCRETE SIDEWALK.				419
I-15	110	Lin.ft.	GUARD RAIL, STEEL BEAM STANDARD TYPE (DEEP)				110
I-15	100	Lin.ft.	GUARD RAIL PIER PROTECTION				100
172		LUMP	REMOVE AND REPLACE MEDIAN STRIP				LUMP
173		LUMP	REVISION TO RIGHT OF WAY FENCE				LUMP
							16060

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
BUREAU OF BRIDGES

BEISWENGER & HOCH, Consulting Engineers
AKRON, OHIO

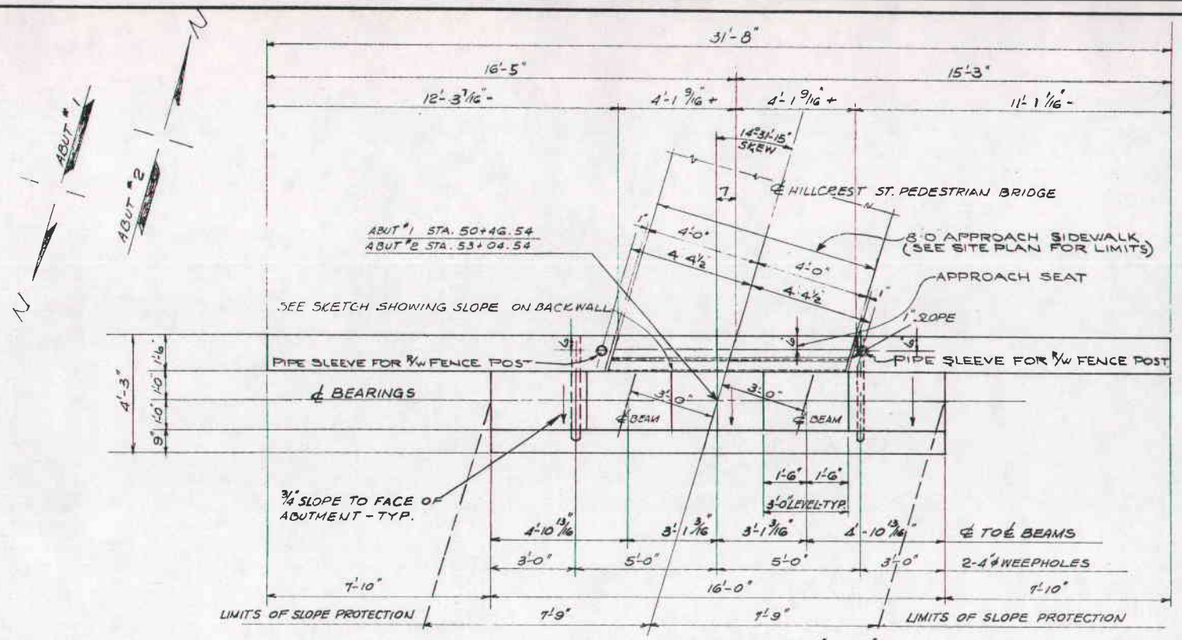
GENERAL PLAN & ELEVATION
BRIDGE Nº SUM-18-0939
PEDESTRIAN BRIDGE
UNDER HILLCREST STREET
AKRON EXP'WAY, PART-13 SUMMIT COUNTY
STA. 256+06.56

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
RDH	JNP		RDH	R.D.H.	8/3/63	10-29-63

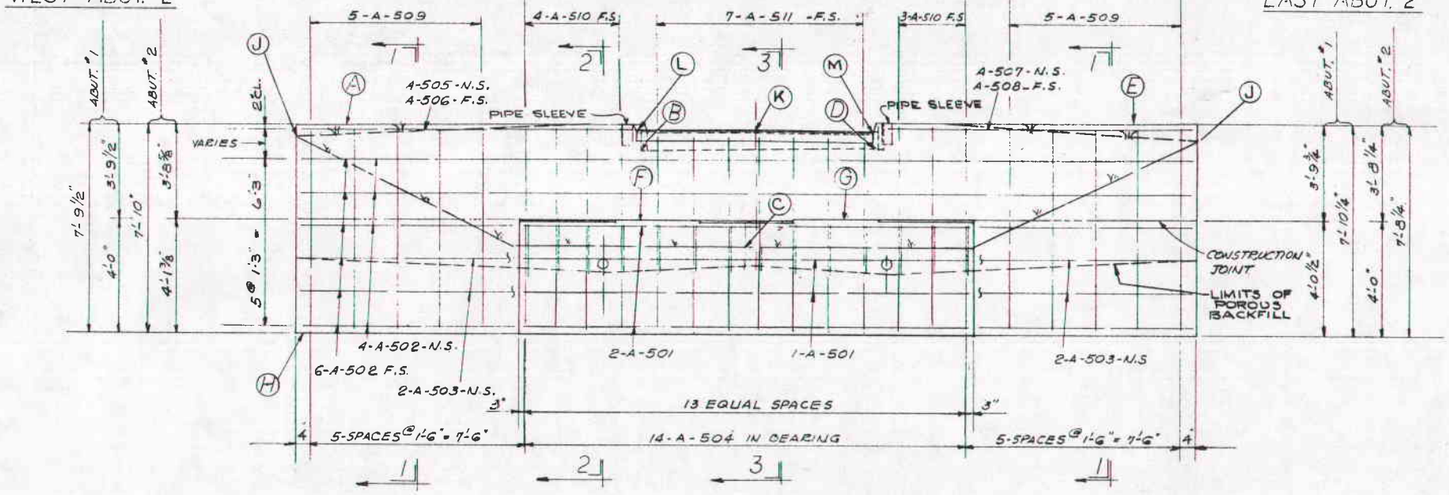
FED. RD.	STATE	PROJECT	
2	OHIO		

SUM-18-9.23

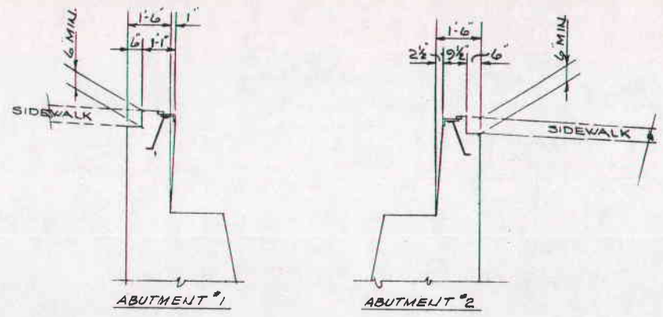
3/7



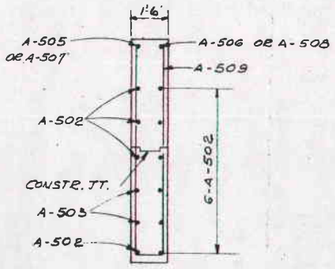
PLAN OF ABUTMENT #1 & #2



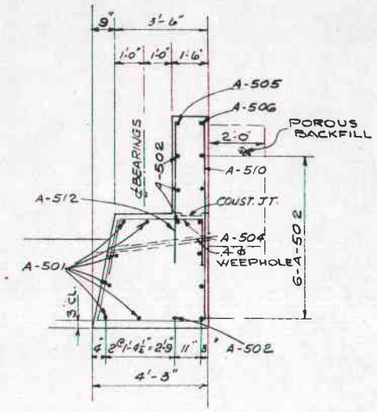
ELEVATION



SKETCH SHOWING SLOPE ON BACKWALL



SECTION 1-1



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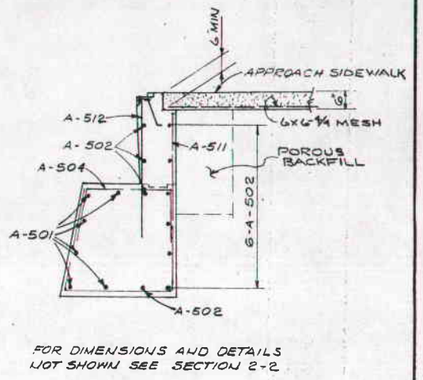


FOR DIMENSIONS AND DETAILS NOT SHOWN SEE SECTION 2-2

SECTION 3-3

ELEVATION TABLE

	A	B	C	D	E	F	G	H	J	L*	M*	K*
ABUTMENT #1	1073.70	1072.95	1068.90	1073.01	1073.76	1069.91	1069.95	1065.91	1073.20	1073.38	1073.44	1073.45
ABUTMENT #2	1063.00	1062.25	1058.20	1062.11	1062.86	1059.28	1059.17	1055.17	1062.40	1062.68	1062.54	1062.65

* INDICATES ELEVATIONS GIVEN TO HEEL OF L

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
BUREAU OF BRIDGES

BEISWENGER & HOCH, Consulting Engineers
AKRON, OHIO

ABUTMENT DETAILS

BRIDGE Nº SUM-18-0939
PEDESTRIAN BRIDGE
UNDER HILLCREST STREET
AKRON EXP'WAY, PART-13 · SUMMIT COUNTY
STA. 256+06.56

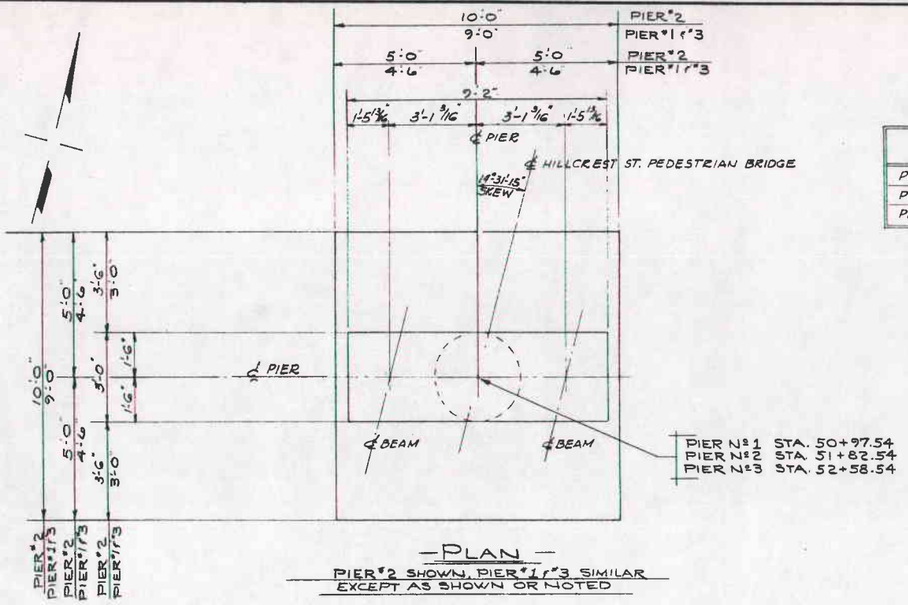
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
RDH.	JK		RDH	R.D.H.	8/9/63	10-29-63

16060
A-7202

FED. RD.	STATE	PROJECT	
2	OHIO		

4/7

SUM - 18 - 9.23

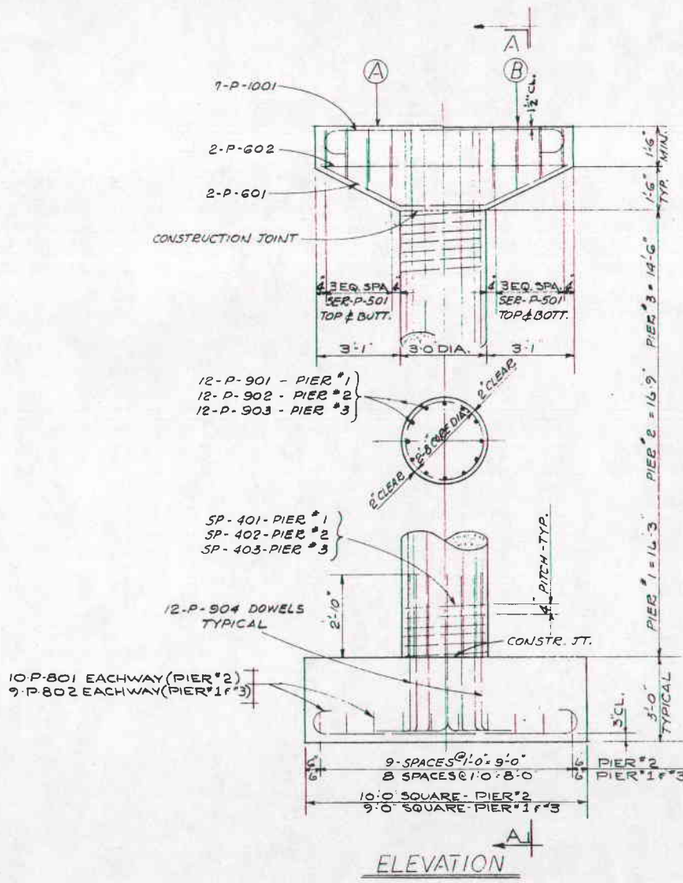


— PLAN —

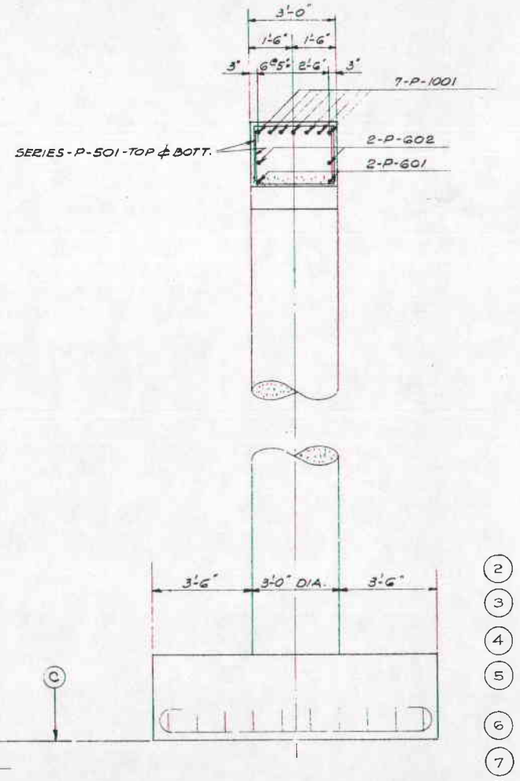
PIER #2 SHOWN, PIER #1 & #3 SIMILAR EXCEPT AS SHOWN OR NOTED

ELEVATION TABLE

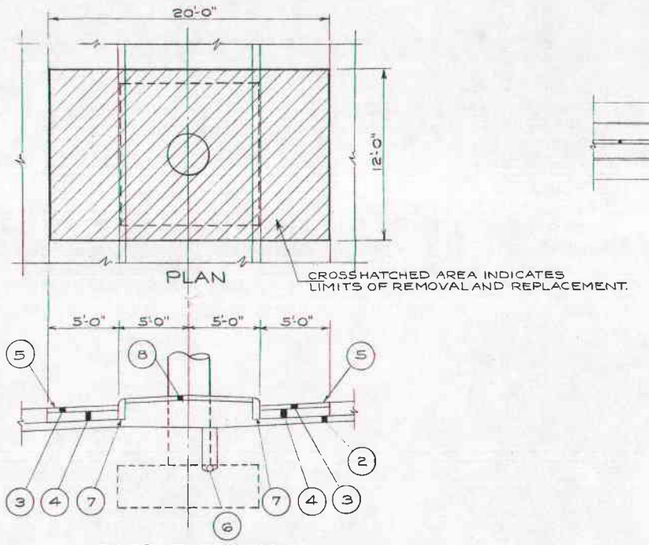
	A	B	C
PIER #1	1068.65	1068.61	1046.36
PIER #2	1065.69	1065.62	1042.87
PIER #3	1062.09	1062.00	1041.50



ELEVATION



SECTION A-A



PART ELEVATION
PIER No. 2

(2) I-22 SUBBASE (VARIABLE DEPTH) GRADING "A" OR "B"

(3) B-21 3" WATERPROOFED AGGREGATE BASE COURSE

(4) B-112 5" POROUS BASE COURSE

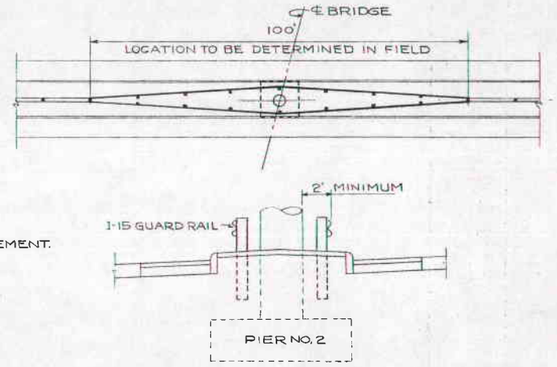
(5) T-31 BITUMINOUS SURFACE TREATMENT, ONE APPLICATION, SEC. M 5.2 RC-3 OR M 5.3 MC-5

(6) I-1 6" PIPE CLASS 1-3

(7) I-12 STANDARD TYPE 6 CONCRETE CURB

(8) I-21 4" STANDARD TYPE 1 PORTLAND CEMENT CONCRETE MEDIAN PAVEMENT, CLASS C CONCRETE

NOTE: THESE ITEMS ARE TO BE REMOVED WITHIN THE LIMITS SHOWN ON THE PLAN, DURING CONSTRUCTION OF PIER NO. 2. AFTER THE PIER IS COMPLETED THEY SHALL BE REPLACED AS ORIGINALLY CONSTRUCTED. PAYMENT FOR REMOVAL AND REPLACEMENT SHALL BE MADE UNDER ITEM 172, REMOVE AND REPLACE MEDIAN PAVEMENT.



PIER PROTECTION DETAILS

NOTE: ALL REINFORCING STEEL SHALL HAVE A MIN. COVER OF 2" CONCRETE UNLESS OTHERWISE NOTED.

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
BUREAU OF BRIDGES

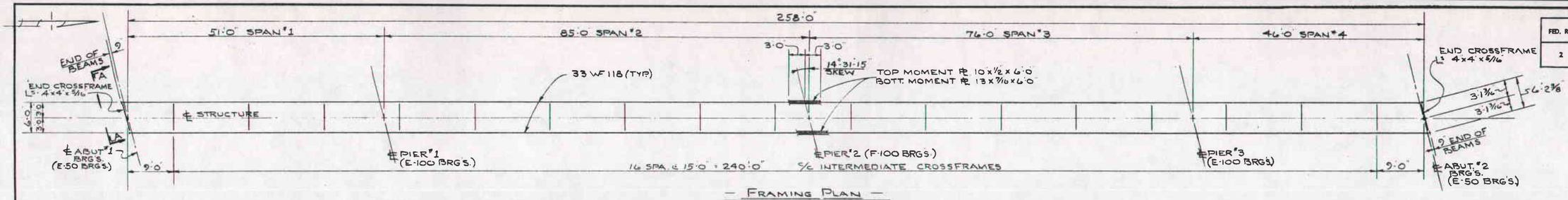
BEISWENGER & HOCH, Consulting Engineers
AKRON, OHIO

PIER DETAILS

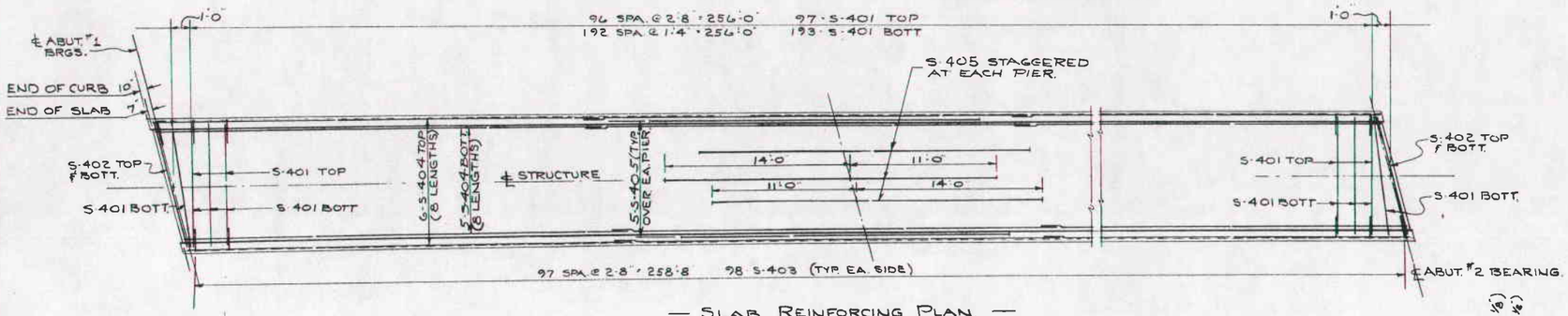
BRIDGE № SUM-18-0939
PEDESTRIAN BRIDGE
UNDER HILLCREST STREET
AKRON EXP'WAY, PART-13 SUMMIT COUNTY
STA. 256+06.56

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
RDH	JK		RDH	R.D.H.	9/3/63	

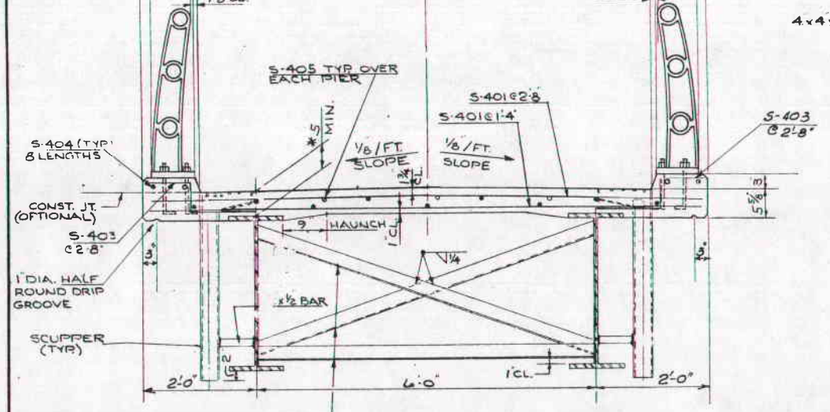
16060
A-7203



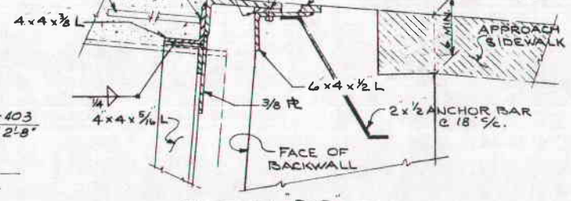
— FRAMING PLAN —



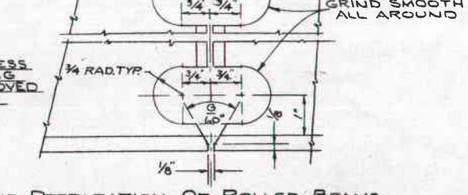
— SLAB REINFORCING PLAN —



— TRANSVERSE SECTION —

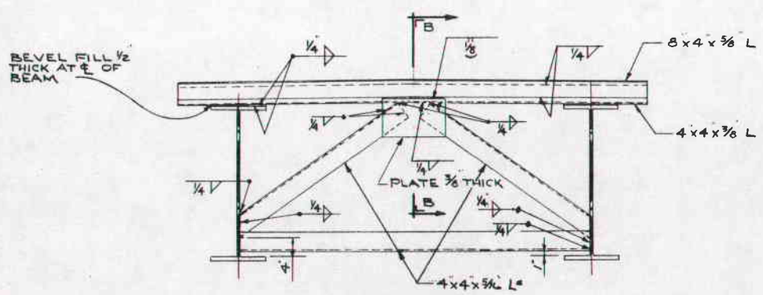


— SECTION B-B —



ANY ROUGHNESS FROM BURNING SHALL BE REMOVED BY GRINDING

END PREPARATION OF ROLLED BEAMS FOR FIELD WELDING



— SECTION A-A —

— DEFLECTION AND CAMBER —

LOCATION	SPAN #1	SPAN #2	SPAN #3	SPAN #4
DEFLECTION DUE TO WEIGHT OF STEEL	0.018"	0.256"	0.146"	0.015"
DEFLECTION DUE TO REMAINING DEAD LOAD	0.059"	0.826"	0.470"	0.048"
CONVEXITY REQUIRED FOR VERTICAL CURVE	0.000"	2.140"	1.740"	0.620"
SUM OF DEFLECTION AND CONVEXITY	0.077"	3.222"	2.356"	0.683"
REQUIRED CAMBER	0	3 1/4"	2 3/8"	0

BEAM SPLICE WELDING PROCEDURE:

1. RAISE BEAMS AT PIER #3 - 3/8"
2. BUTT-WELD BEAM FLANGES AND WEB AT PIER #2 USING THE FOLLOWING SEQUENCE: MAKE ONE PASS ON EACH FLANGE, THEN TWO ON THE WEB; REPEAT, USING ONE PASS AT EACH LOCATION, UNTILL WELDS ARE COMPLETED.
3. WELD TOP & BOTTOM FLANGE MOMENT PLATES AT PIER #2
4. LOWER BEAMS AT PIER #3
5. RAISE BEAMS 1" AT ABUTMENT #1
6. MAKE SPLICE AT PIER #1 USING SAME PROCEDURE AS IN STEP #2.
7. RAISE BEAMS 5/8" AT ABUTMENT #2
8. MAKE SPLICE AT PIER #3 USING SAME PROCEDURE AS IN STEP #2
9. LOWER BEAM ENDS AT ABUT. #1 AND ABUT. #2 INTO FINAL POSITION

* SLAB THICKNESS: THIS IS A NOMINAL DIMENSION INCLUDING 1/4" MONOLITHIC WEARING SURFACE. THE QUANTITY OF DECK CONCRETE TO BE PAID FOR SHALL BE BASED ON THIS DIMENSION, EVEN THOUGH DEVIATION FROM IT MAY BE NECESSARY BECAUSE THE TOP FLANGE OF THE BEAM MAY NOT HAVE THE EXACT CAMBER OR CONFORMATION REQUIRED TO PLACE IT PARALLEL TO THE FINISHED GRADE.

DECK SLAB HAUNCH: THE HAUNCH IN THE DECK SLAB ADJACENT TO THE TOP OF STEEL BEAMS, WHICH IS SHOWN AS 9" WIDE, MAY VARY FROM THIS DIMENSION BETWEEN THE LIMITS OF 6" AND 12", EXCEPT THAT THE MAXIMUM SLOPE SHALL NOT EXCEED 3 INCHES PER FOOT. PAYMENT FOR DECK SLAB CONCRETE SHALL BE BASED ON THE 9" WIDTH.

WELDING: WELDING OF STRUCTURAL STEEL SHALL BE CLASS "A" EXCEPT AS OTHERWISE SHOWN. WELDS SHOWN AS FIELD WELDS MAY, AT THE OPTION OF THE CONTRACTOR, BE MADE IN THE SHOP.

FED. RD.	STATE	PROJECT	
2	OHIO		

SUM-18-9.23

5/7

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
BUREAU OF BRIDGES

BEISWENGER & HOCH, Consulting Engineers
AKRON, OHIO

FRAMING PLAN & SLAB DETAILS

BRIDGE N° SUM 18 0939
PEDESTRIAN BRIDGE
UNDER HILLCREST STREET
AKRON EXPWAY PART 13 SUMMIT COUNT
STA. 256+06.56

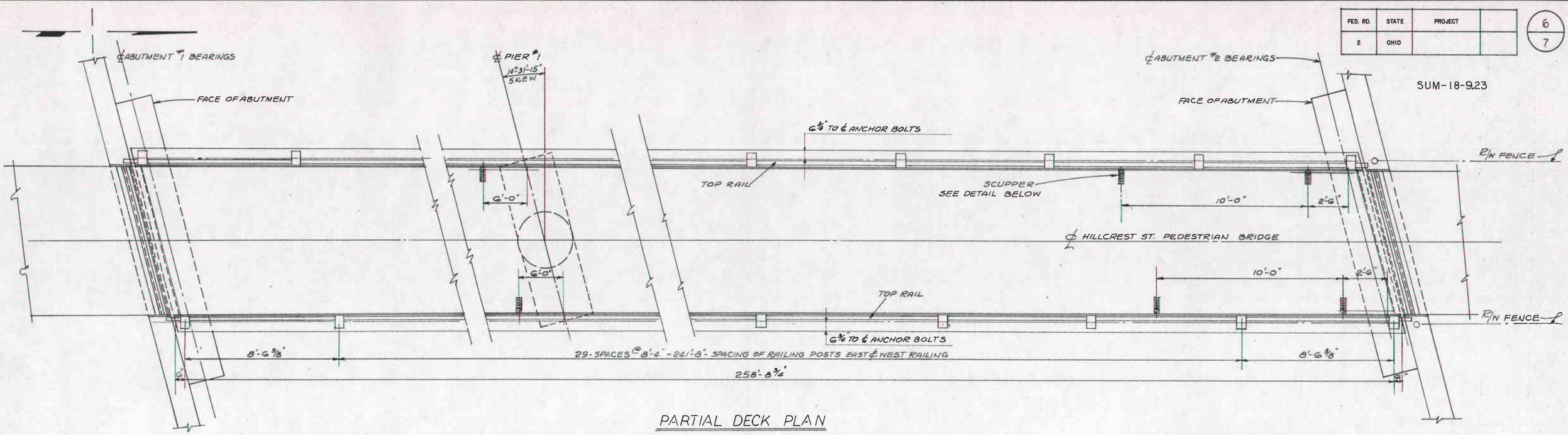
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISE
RDH	JNP		RDH	R.D.H.	8/21/63	10-29-

16060
A-7204

FED. RD.	STATE	PROJECT	
2	OHIO		

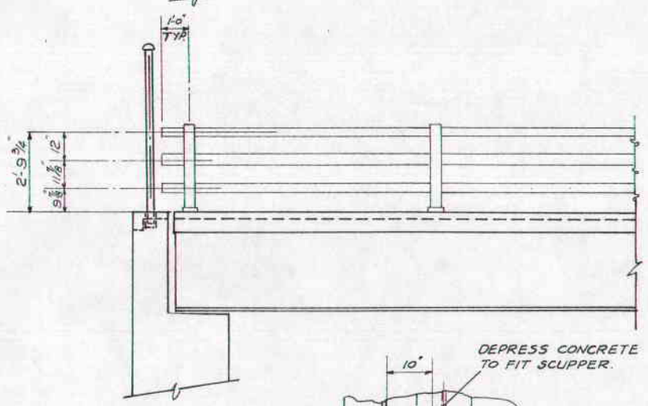
6
7

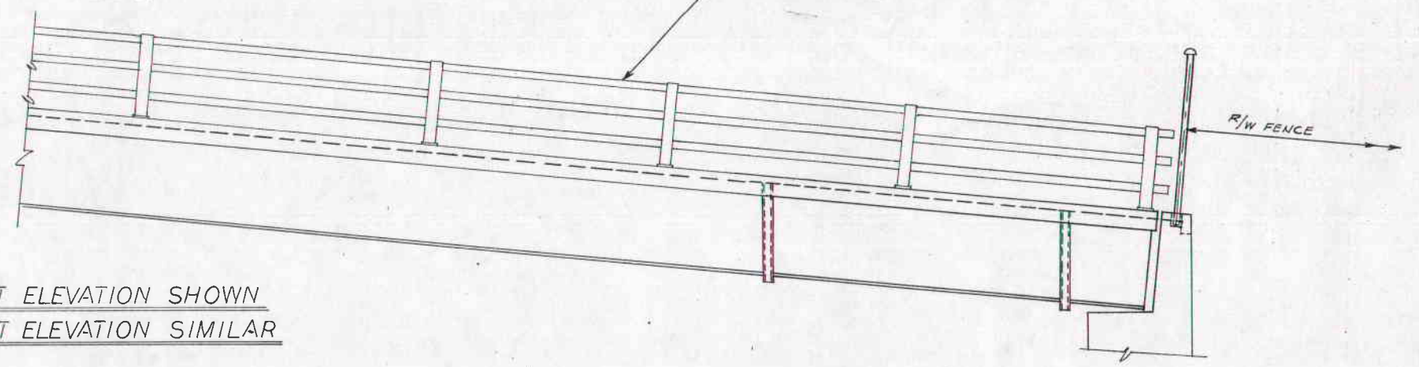
SUM-18-9.23



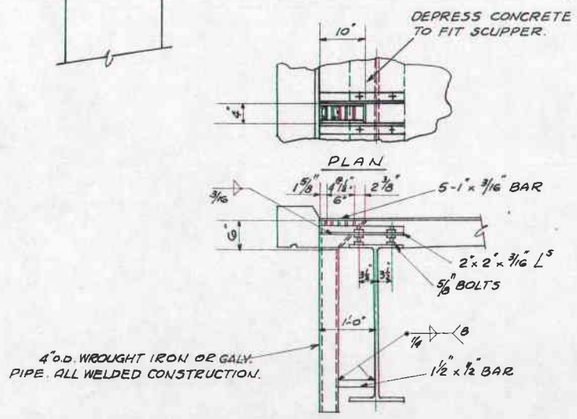
PARTIAL DECK PLAN

Top Rail 4½" O.D. x ⅝" wall
2 Bottom Rails 4" O.D. x ³⁄₁₆" wall
~~3'-0" WALL~~ - 3-TUBE ALUMINUM RAILING SHALL BE CONTINUOUS THRU FIRST POST AT EACH END OF SUPERSTRUCTURE.





EAST ELEVATION SHOWN
WEST ELEVATION SIMILAR



SCUPPER DETAIL

FABRICATE FROM ³⁄₁₆ THICK STEEL, ALL WELDED CONSTRUCTION.

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
BUREAU OF BRIDGES

BEISWENGER & HOCH, Consulting Engineers
AKRON, OHIO

RAILING & DRAINAGE DETAILS

BRIDGE NO SUM-18-0939
PEDESTRIAN BRIDGE
UNDER HILLCREST STREET
AKRON EXP'WAY, PART-13. SUMMIT COUNTY
STA. 256+06.56.

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
R.D.H.	JK		R.D.H.	R.D.H	8/9/63.	10/29/63

16060
A-7205