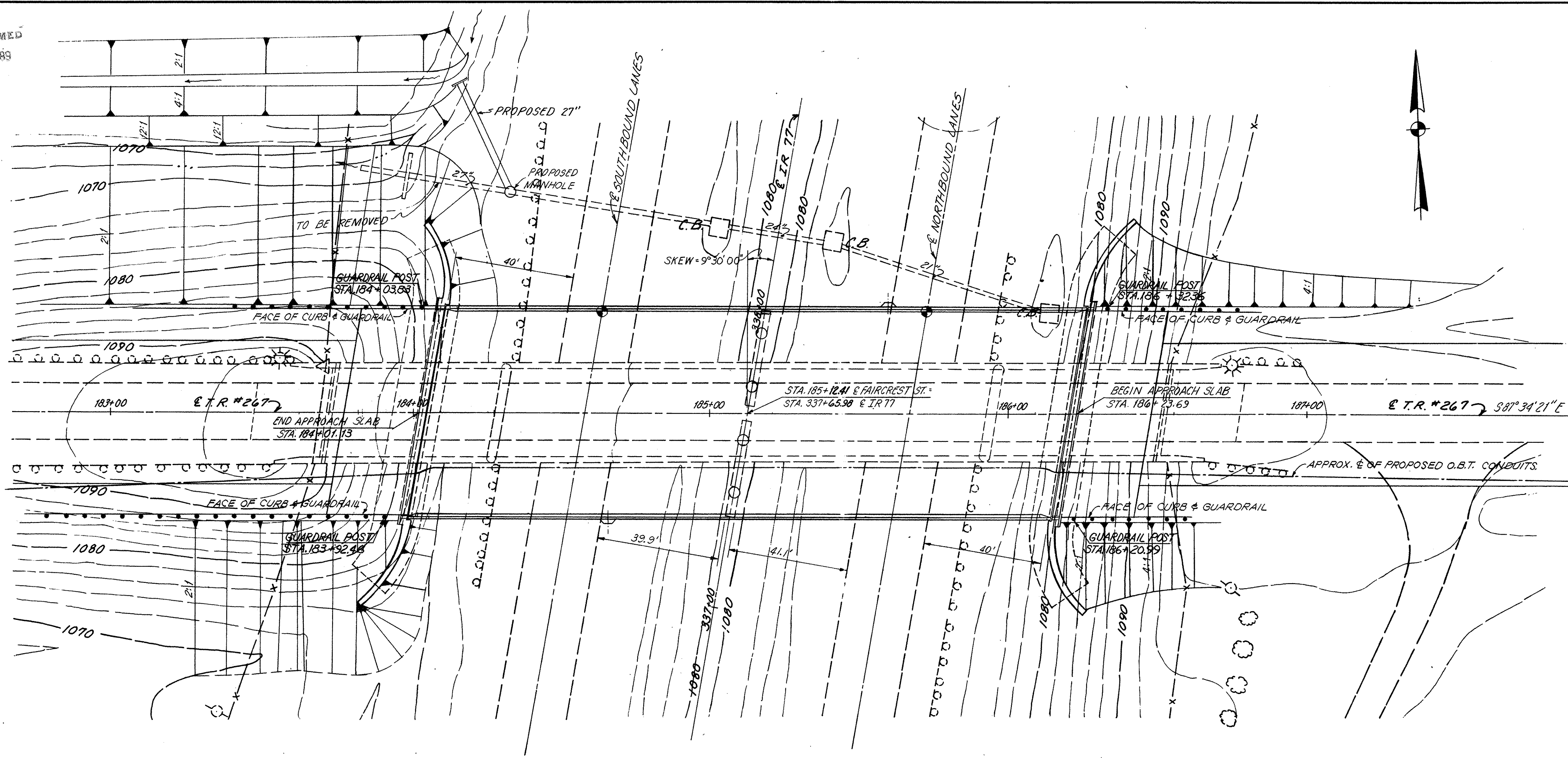


TRUCK MICROFILMED
1001 OCT 10 1989

REGION	STATE	PROJECT	
5	OHIO		

139
158

STARK COUNTY
STA - 77-640



- NOTE:
- ESTIMATED PAY LENGTH FOR HP12 x 53 PILES IS 28' AT REAR ABUTMENT.
 - ESTIMATED PAY LENGTH FOR 48" Ø DRILLED SHAFT IS 27' AT PIER.
 - EARTHWORK LIMITS SHOWN ARE APPROXIMATE. ACTUAL SLOPES SHALL CONFORM TO PLAN CROSS SECTIONS.

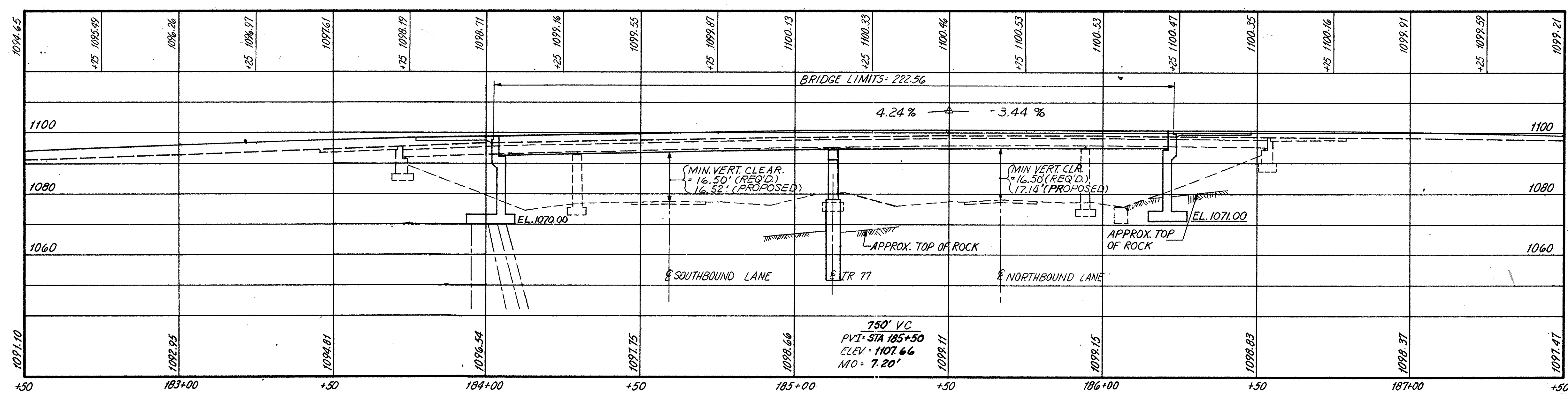
EXISTING STRUCTURE

TYPE: CONTINUOUS STEEL BEAM WITH REINFORCED CONCRETE DECK AND SUBSTRUCTURE.
SPANS: 58'-0"-83'-0"-83'-0"-58'-0" c/c BRGS
ROADWAY: 28'-0" F/F OF 2'-3" SAFETY CURBS
SKEW: 9°-29'-42" L.F.
LOAD FREQUENCY: CF 130 (57)
APPROACH SLAB: 25'-0" LG. (AS-1-54)
ALIGNMENT: TANGENT
SUPERELEVATION: NONE
WEARING SURFACE: 3/4" MONOLITHIC
AVERAGE DAILY TRAFFIC: 1975 - 1360
SLOPE PROTECTION: 1-10, 12" CRUSHED AGGREGATE

PROPOSED STRUCTURE

TYPE: CONTINUOUS STEEL GIRDER WITH COMPOSITE REINFORCED CONCRETE DECK AND REINFORCED CONCRETE SUBSTRUCTURES
SPANS: 2 @ 108'-5 7/8" c/c BEARINGS
ROADWAY: 68'-0" F/F PARAPETS
SKEW: 9° 30' 00" L.F.
DESIGN LOADING: HS 20-44 (CASE II) AND THE ALTERNATE MILITARY
APPROACH SLAB: 25'-0" LONG (AS-1-81)
ALIGNMENT: TANGENT
SUPERELEVATION: NONE
WEARING SURFACE: MONOLITHIC CONC.
AVERAGE DAILY TRAFFIC: 10,990 (2005)
AVERAGE DAILY TRUCK TRAFFIC: 1,099 (2005)

NOTE: ● = POINT OF MINIMUM VERTICAL CLEARANCE.



1 / 12

MOSURE AND SYRAKIS CO., LTD.
CONSULTING ENGINEERS AND PLANNERS
YOUNGSTOWN, OHIO

SITE PLAN

BRIDGE N° STA-77-0640
UNDER
FAIRCRESS STREET

STARK COUNTY STATE OF OHIO

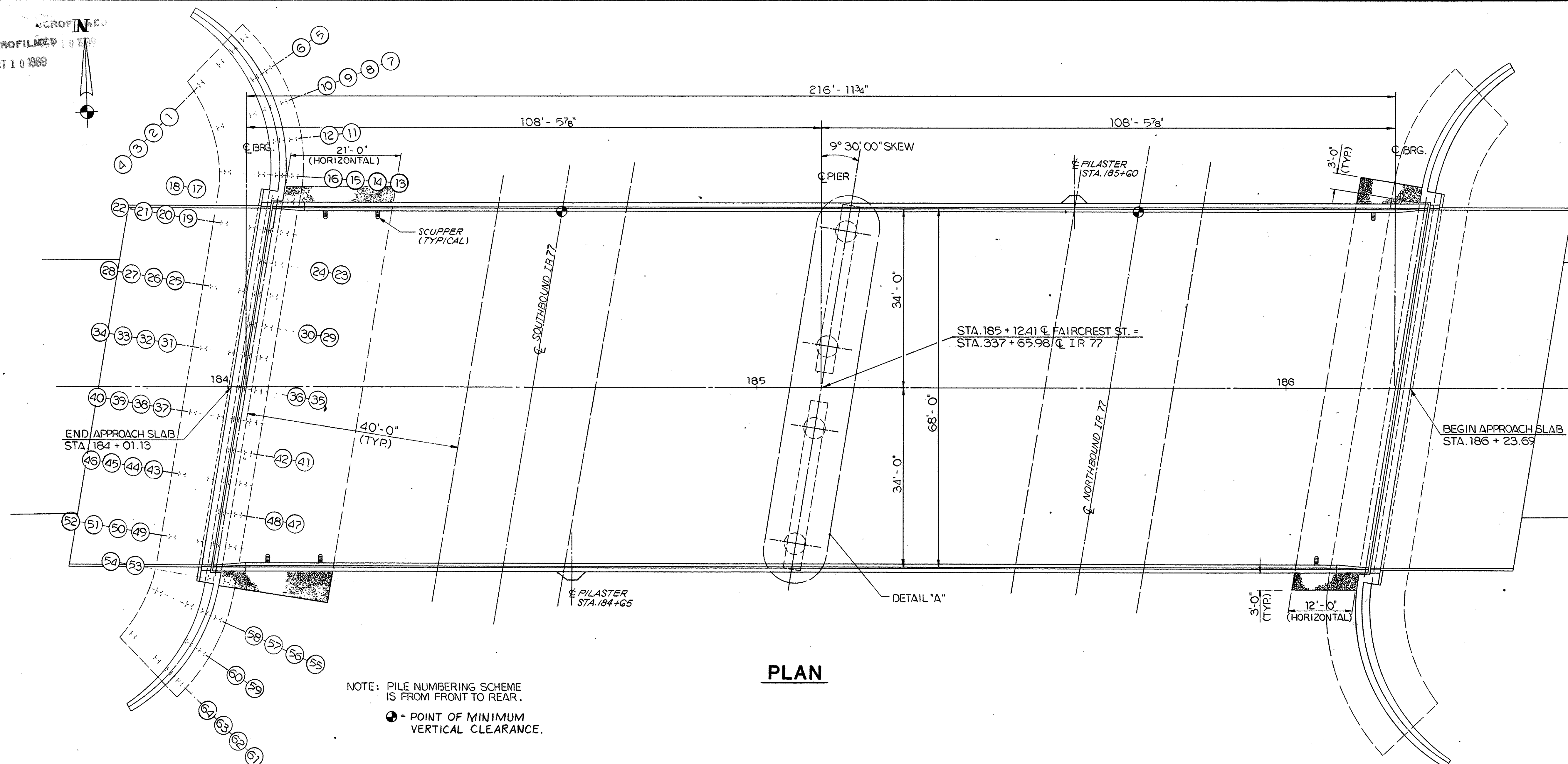
DESIGNED	DRAWN	CALC.	CHECKED	APPROVED
W.H.	J.L.	D.S.	D.J.P.	T.F.M.
11/83	11/83	11/83	6/85	6/85

4200P IN 10
MICROFILMED 10
OCT 10 1989

FHWA REGION	STATE	PROJECT	
5	OHIO		

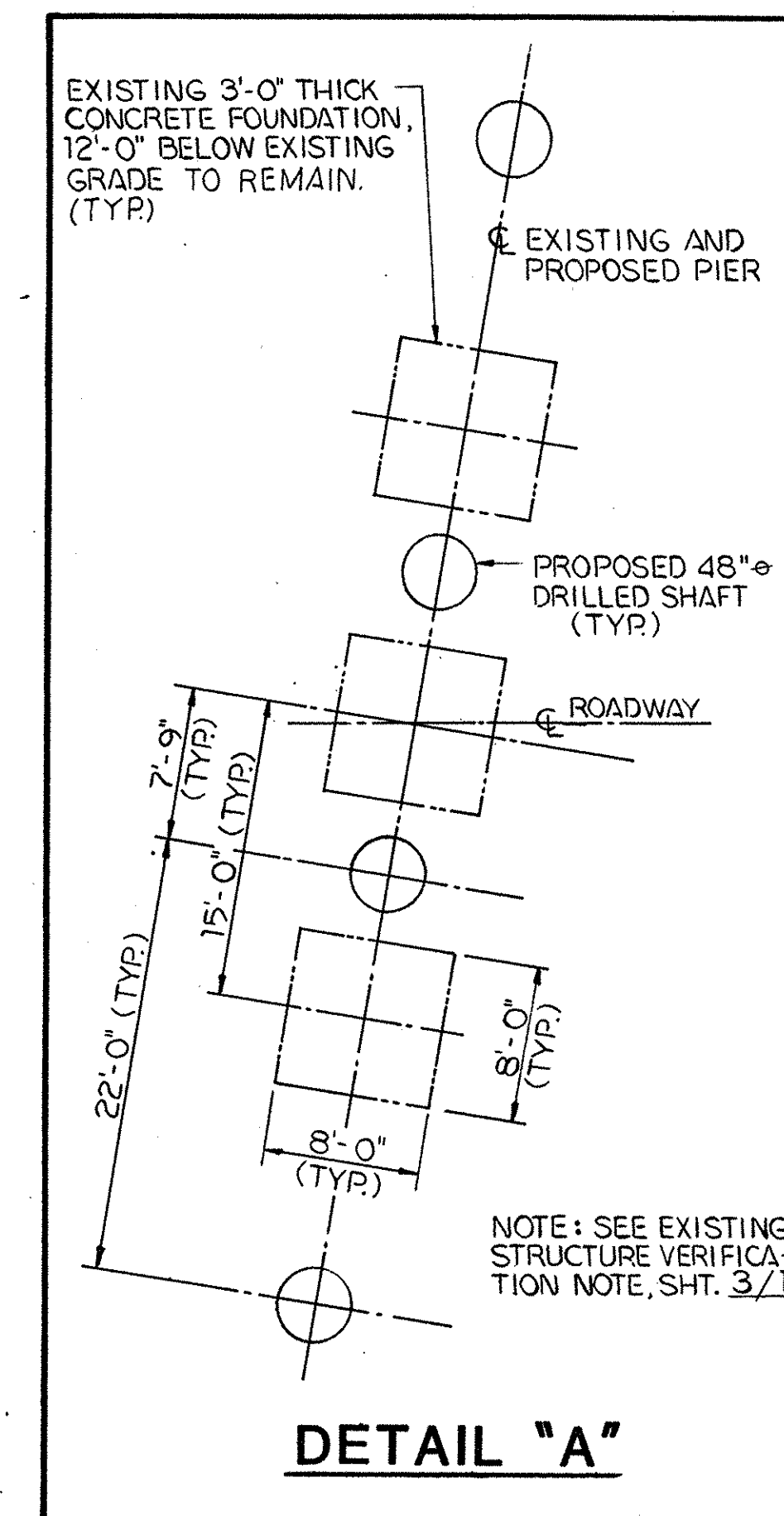
140
158

STARK COUNTY
STA-77-640

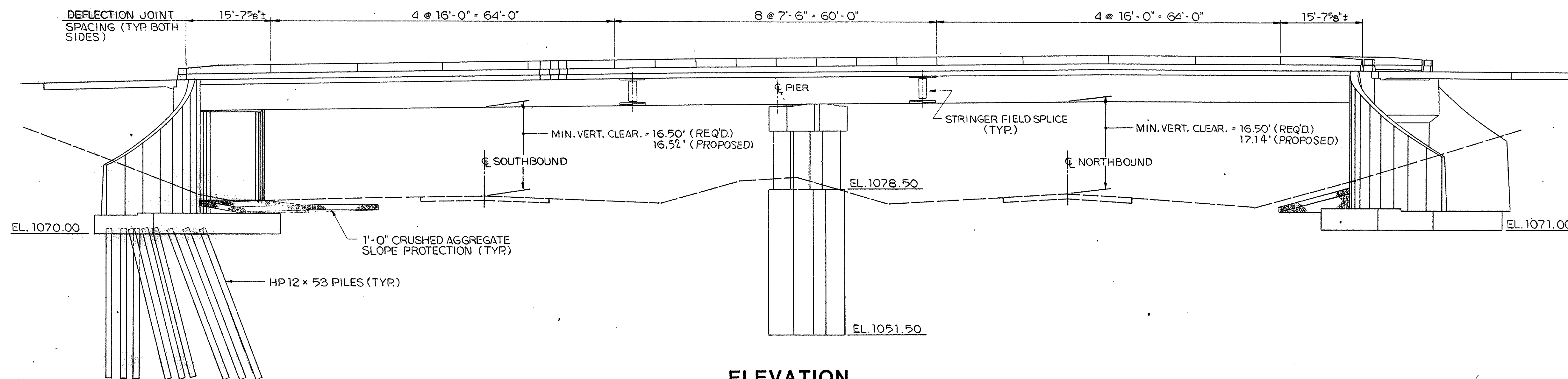


PLAN

NOTE: PILE NUMBERING SCHEME
IS FROM FRONT TO REAR.
● = POINT OF MINIMUM
VERTICAL CLEARANCE.



DETAIL "A"



ELEVATION

MOSURE AND SYRAKIS CO., LTD.
CONSULTING ENGINEERS AND PLANNERS
YOUNGSTOWN, OHIO

GENERAL PLAN AND ELEVATION

BRIDGE NO. STA-77-OG 40
UNDER
FAIRCREST STREET

STARK COUNTY STATE OF OHIO

DESIGNED DJP	DRAWN AM	CALC. DJP	CHECKED WH	REVIEWED TFM
10/84	10/84	~	6/85	6/85

DOI: 10.1002/for

142A
158

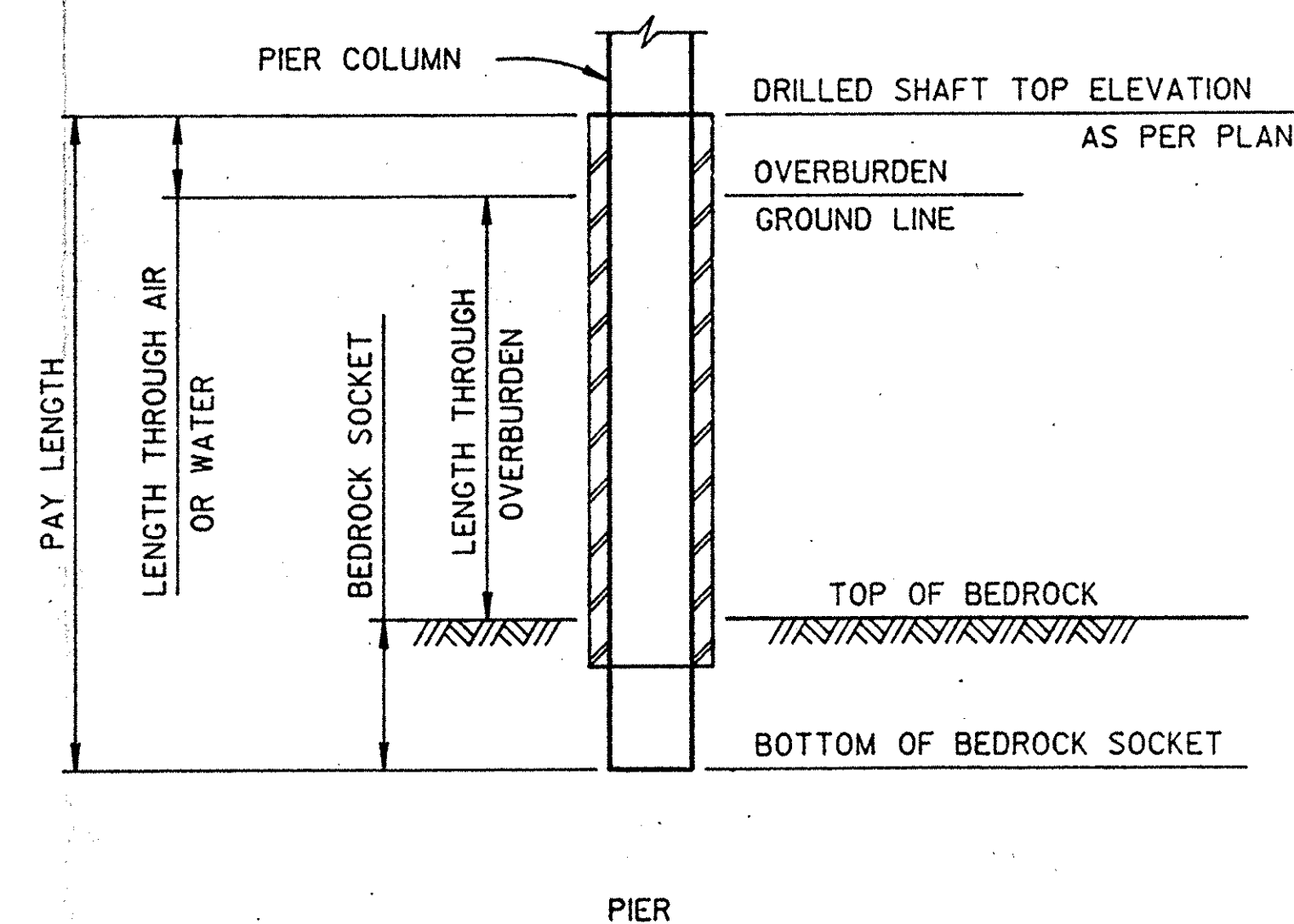
STARK COUNTY
STA-77 -06.40

PROJECT NO. _____	GENERAL CONTRACTOR _____	TYPE & MODEL OF DRILLING MACHINERY _____	TYPE OF CONCRETE PUMP _____	COST PER LINEAL FOOT _____
	DRILLING CONTRACTOR _____	MAX. CONTINUOUS TORQUE _____ FT.-LB.	HOSE DIAMETER _____ INCHES	TYPE OF ROCK _____
	PROJECT ENGINEER _____	CROWD (MAX. CONTINUOUS DOWNWARD FORCE) _____ LBS.	CAPACITY _____ CU. FT./MIN.	

[illegible]

LOCATION AND EXTENT OF CAVITIES

COMMENTS ON WATER CONDITION (I.E. FLOW VOLUME, HYDROSTATIC HEAD, WHERE
ENCOUNTERED, ETC.)



WHEN INSPECTION RECORD IS COMPLETED
SUBMIT A COPY TO BUREAU OF BRIDGES
ATTN: FOUNDATION ENGINEER

THIS SHEET IS TO BE USED ONLY FOR
RECORDING "AS-BUILT" INFORMATION

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
BUREAU OF BRIDGES AND STRUCTURAL DESIGN

DRILLED SHAFTS
INSPECTION RECORD
BRIDGE NO. STA-77-0640
UNDER
FAIRCRESS STREET

STARK COUNTY STATE OF OHIO

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
CKT	152r		RLE	WJJ	7-15-85	

NOT RECORDED
OCT 10 1989

GENERAL NOTES

FHWA REGION	STATE	PROJECT	
5	OHIO		

141
158

STARK COUNTY
STA-77-640

STANDARD DRAWINGS AND SUPPLEMENTAL SPECIFICATIONS

REFERENCE SHALL BE MADE TO STANDARD DRAWING(S):

EXJ-2-81 REVISED 4-2-84
BR-1 DATED 5-29-79
FB-1-82 DATED 5-10-82
RB-1-55 REVISED 2-2-85
AS-1-81 DATED 11-27-81
SD-1-69 DATED 6-12-69
HL-4 DATED 1-21-76
HL-5 DATED 9-6-73

AND TO SUPPLEMENTAL SPECIFICATIONS(S):

824 DATED 10-8-82
836 DATED 3-12-75
849 DATED 10-19-81

DESIGN SPECIFICATIONS

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

DESIGN LOADING

DESIGN LOADING - HS20-44 CASE II AND THE ALTERNATE MILITARY LOADING.

DESIGN STRESSES

CONCRETE CLASS S - COMPRESSIVE STRENGTH 4500 P.S.I.
CONCRETE CLASS C - COMPRESSIVE STRENGTH 4000 P.S.I.
REINFORCING STEEL - ASTM A615, A616, A617 - GRADE 60 MINIMUM YIELD STRENGTH 60,000 P.S.I.
SPIRAL REINFORCEMENT MAY BE PLAIN BARS, ASTM A82 OR A615.
STRUCTURAL STEEL ASTM A588 - YIELD STRENGTH 50,000 P.S.I.

DECK PROTECTION METHOD

EPOXY COATED REINFORCING STEEL, TOP MAT ONLY WITH 3" CONCRETE COVER.

MONOLITHIC WEARING SURFACE

MONOLITHIC WEARING SURFACE IS ASSUMED, FOR DESIGN PURPOSES, TO BE 1" THICK.

CONSTRUCTION AND MATERIAL SPECIFICATIONS:

STATE OF OHIO, DEPARTMENT OF TRANSPORTATION,
DATED JANUARY 1, 1985.

EMBANKMENT CONSTRUCTION

BEFORE THE BACKWALL IS CONSTRUCTED THE EMBANKMENT SHALL BE PLACED UP TO THE LEVEL OF THE SUBGRADE WITH A 1:1 SLOPE FROM THE BRIDGE SEAT. PAYMENT FOR BACKFILL AND NEW EMBANKMENT, 503, 10, REQUIRED IN EXCESS OF 503, 518 AND 203 QUANTITIES SHALL BE INCLUDED IN THE PRICE BID FOR ITEM 203 EMBANKMENT.

PILES

PILES SHALL BE DRIVEN TO REFUSAL ON BEDROCK. REFUSAL SHALL BE CONSIDERED AS ATTAINED BY PENETRATING SOFT BEDROCK WITH A MINIMUM RESISTANCE OF 20 BLOWS PER INCH, OR REFUSAL SHALL BE CONSIDERED AS ATTAINED AFTER THE PILE HAS CONTACTED HARD BEDROCK AND THE PILE HAS THEN RECEIVED AT LEAST 20 BLOWS.

THE DESIGN LOAD IS 70 TONS PER PILE FOR THE REAR ABUTMENT PILES.

PILE HAMMER

THE PILE HAMMER USED TO INSTALL THE STEEL "H" BEARING PILES SHALL HAVE A STATE'S ENERGY RATING OF NOT LESS THAN 15000 FOOT-POUNDS. THIS REQUIREMENT DOES NOT RELIEVE THE CONTRACTOR FROM 108,05 WHICH STATES THAT THE CONTRACTOR IS TO PROVIDE SUFFICIENT EQUIPMENT FOR PROSECUTING THE REQUIRED WORK. REFER TO "ODOT'S MANUAL FOR PROCEDURES FOR STRUCTURES" TO OBTAIN THE STATE'S ENERGY RATING.

FOUNDATION BEARING PRESSURE

THE FORWARD ABUTMENT FOOTING, AS DESIGNED, PRODUCES A MAXIMUM BEARING PRESSURE OF 3.5 TONS PER SQUARE FOOT.

FOOTINGS

FOOTINGS SHALL BE PLACED IN BEDROCK AT THE ELEVATION SHOWN.

PROTECTION OF CONCRETE SURFACES

THE PROTECTIVE COATING SHALL BE APPLIED TO CONCRETE SURFACES EXTENDING VERTICALLY FROM THE BEAM SEATS TO FINISHED GRADE AND Laterally TO 3'-0" BEYOND THE EXTERIOR GIRDERS. COVERAGE SHALL INCLUDE THE ABUTMENT BREASTWALLS AND THE ENTIRE EXPOSED PORTIONS OF THE PIER.

MAINTENANCE OF TRAFFIC

A MINIMUM VERTICAL CLEARANCE OF 14'-6" AND A MINIMUM WIDTH OF 12'-0" SHALL BE MAINTAINED IN EACH DIRECTION ON I-77 AT ALL TIMES.

WHEN ERECTING THE STRUCTURAL STEEL, THE CONTRACTOR MAY CLOSE THE APPROPRIATE PAIR OF LANES ON I-77 FOR A MAXIMUM OF 15 MINUTES PER GIRDER. ALL QUEUED TRAFFIC SHALL CLEAR THE WORK ZONE BEFORE A SECOND STOPPAGE IS PERMITTED.

CLOSING OF I-77 SHALL OCCUR ONLY AT TIMES SHOWN ON SHT. No. 3.

IN ADDITION, THE CONTRACTOR WILL BE PERMITTED TO CLOSE ONE (1) LANE ON I-77 FOR THE PURPOSE OF USING THE ROADWAY FOR THE PURPOSE OF ERECTING STRUCTURAL STEEL.

TRAFFIC ON I-77 SHALL BE PROTECTED FROM FALLING DEBRIS DURING CONSTRUCTION.

ESTIMATE OF QUANTITIES

ITEM	TOTAL	UNIT	DESCRIPTION	PIER	SUPERST.	ABUT.	GENERAL
202	LUMP	SUM	STRUCTURES REMOVED				L.S.
503	673	C.Y.	UNCLASSIFIED EXCAVATION			673	
503	766	C.Y.	UNCLASSIFIED EXCAVATION, INCLUDING SHALE			766	
505	LUMP	SUM	PILE DRIVING EQUIPMENT MOBILIZATION				L.S.
507	1,790	L.F.	STEEL PILES, HP 12 x 53, AS PER PLAN.			1,790	
509	156,955	LB.	REINFORCING STEEL, GRADE 60	12,545	46,726	97,684	
511	498	C.Y.	CLASS C CONCRETE, ABUTMENT FOOTINGS			498	
511	563	C.Y.	CLASS C CONCRETE, ABUTMENT ABOVE FOOTINGS.			563	
511	488	C.Y.	CLASS S CONCRETE, SUPERSTRUCTURE (SEE PROPOSAL NOTE).		488		
511	43	C.Y.	CLASS C CONCRETE, PIER CAPS AND COLUMNS.	43			
* 513	445,100	LB.	STRUCTURAL STEEL (A588, AISC CATEGORY III) (SEE PROPOSAL NOTE).		445,100		
513	3,312	E.A.	WELDED STUD SHEAR CONNECTORS		3,312		
514	L.S.	L.S.	PARTIAL PAINTING OF A588 STEEL, SYSTEM A, AS PER PLAN				
516	142	L.F.	STRUCTURAL EXPANSION JTS. INCLUDING 6" ELASTOMERIC COMPRESSION SEAL		142		
516	201	S.F.	1" PREFORMED EXPANSION JOINT FILLER			201	
516	138	L.F.	6" PVC WATERSTOP, AS PER PLAN			138	
518	306	C.Y.	POROUS BACKFILL			306	
518	6	E.A.	SCUPPERS, INCLUDING SUPPORTS		6		
601	328	S.Y.	CRUSHED AGGREGATE SLOPE PROTECTION			328	
625			SEE SHEET 125/158 FOR LIGHTING SUMMARY.				
824	73,017	LB.	EPOXY COATED REINFORCING STEEL, GRADE 60.		73,017		
SPECIAL	108	L.F.	48" Ø DRILLED SHAFTS	108			
SPECIAL	3,871	S.F.	PROTECTION OF CONCRETE SURFACES (SEE PROPOSAL NOTE).	1,362		2,509	
SPECIAL	444	S.Y.	SEALING OF CONCRETE SURFACES (SEE PROPOSAL NOTE).		444		

* INCLUDES 1100 LBS. OF STRUCTURAL STEEL TO BE PAID FOR BY THE OHIO BELL TELEPHONE COMPANY (SEE SHT. 9/12). CONTRACTOR SHALL SUPPLY, FABRICATE, AND ERECT THE ANGLE REQUIRED TO SUPPORT THE TELEPHONE CONDUIT.

REMOVAL OF EXISTING STRUCTURE

WHEN NO LONGER NEEDED TO MAINTAIN TRAFFIC, THE EXISTING STRUCTURE SHALL BE REMOVED. STRUCTURAL STEEL SHALL BE CAREFULLY DISMANTLED AND PILED ALONG THE RIGHT-OF-WAY FOR DISPOSAL BY THE STATE'S FORCES. SUBSTRUCTURE UNITS SHALL BE REMOVED TO 1'-0" BELOW PROPOSED GRADE.

WHEN REMOVING EXISTING STRUCTURE, THE CONTRACTOR SHALL BE PERMITTED TO CLOSE ONE (1) LANE ON I-77 FOR THE PURPOSE OF USING THE ROADWAY FOR REMOVING THE EXISTING STRUCTURAL STEEL.

TRAFFIC ON I-77 SHALL BE PROTECTED FROM DEBRIS AT ALL TIMES.

UTILITY LINES

UTILITY LINES: ALL EXPENSE INVOLVED IN INSTALLING THE AFFECTED UTILITY LINES SHALL BE BORNE BY THE OWNER. THE CONTRACTOR AND OWNER ARE REQUESTED TO COOPERATE BY ARRANGING THEIR WORK IN SUCH A MANNER THAT INCONVENIENCE TO EITHER WILL BE HELD TO A MINIMUM.

SEE SHT. Nos. 3/158 AND 7/158 FOR CLOSING TIME AND OTHER DETAILS

EXISTING STRUCTURE VERIFICATION

DETAILS AND DIMENSIONS SHOWN ON THESE PLANS PERTAINING TO THE EXISTING PIER FOUNDATIONS HAVE BEEN OBTAINED FROM PLANS OF THE EXISTING STRUCTURE. CONSEQUENTLY, THEY ARE INDICATIVE OF THE EXISTING STRUCTURE AND THE PROPOSED WORK BUT THEY SHALL BE CONSIDERED TENTATIVE AND APPROXIMATE. THE CONTRACTOR IS REFERRED TO CMS SECTION 102.05.

CONTRACT BID PRICES SHALL BE BASED UPON A RECOGNITION OF THE UNCERTAINTIES DESCRIBED ABOVE AND UPON A PREBID EXAMINATION OF THE EXISTING STRUCTURE BY THE CONTRACTOR. HOWEVER, ALL PROJECT WORK SHALL BE BASED UPON ACTUAL DETAILS AND DIMENSIONS WHICH HAVE BEEN VERIFIED BY THE CONTRACTOR IN THE FIELD.

3 / 12

MOSURE AND SYRAKIS CO. LTD. CONSULTING ENGINEERS AND PLANNERS YOUNGSTOWN, OHIO				
GENERAL NOTES & EST. OF QUANTITIES				
BRIDGE No. STA-77-06 40 UNDER FAIRCRESS STREET				
STARK COUNTY STATE OF OHIO				
DESIGNED —	DRAWN A.M.	CALC. D.J.P.	CHECKED W.H.	REVIEWED T.F.M.
—	10/84	—	6-85	6/85

ITEM SPECIAL - DRILLED SHAFTS

DESCRIPTION

THIS ITEM SHALL CONSIST OF FURNISHING AND INSTALLING DRILLED SHAFTS OF THE TYPE AND SIZE CALLED FOR BY THE PLANS. THE CONTRACTOR SHALL FURNISH ALL LABOR, MATERIALS, AND APPURTENANCES REQUIRED TO COMPLETE THE WORK AS SPECIFIED. THE LENGTH(S) OF THE DRILLED SHAFTS SHOWN IN THESE PLANS HAS BEEN ESTIMATED FROM THE AVAILABLE SUBSURFACE INFORMATION. THE CONTRACTOR IS EXPECTED TO FURNISH THE PROPOSED DRILLED SHAFTS AS PER THESE PLAN REQUIREMENTS WITH THE UNDERSTANDING THAT THE ESTIMATED LENGTH SHOWN ON THE PLANS MAY BE DIFFERENT FROM THE ACTUAL LENGTH DETERMINED TO BE NECESSARY AT THE TIME OF CONSTRUCTING THE DRILLED SHAFTS.

THE LIMITS OF EACH DRILLED SHAFT SHALL BE DEFINED AT THE TOP BY THE PLAN ELEVATION AND AT THE BOTTOM BY THE ELEVATION OF THE BOTTOM OF THE BEDROCK SOCKET.

A CASING MAY BE NECESSARY FOR EACH PIER DRILLED SHAFT. CASINGS MAY BE REMOVED PROVIDED ALL PLAN REQUIREMENTS ARE SATISFIED.

CONTRACTOR QUALIFICATION

THE CONTRACTOR SHALL SUBMIT INFORMATION TO DOCUMENT THAT HIS PERSONNEL ARE EXPERIENCED IN THE CONSTRUCTION OF DRILLED SHAFTS OF THE TYPE AND SIZE DESCRIBED BY THE PLANS. THIS INFORMATION SHALL BE SUBMITTED AT THE PRECONSTRUCTION CONFERENCE.

DEVIATION FROM PLAN

THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE COSTS INVOLVED WHEN MAKING CORRECTIONS TO HIS UNAUTHORIZED DEVIATIONS FROM THE PLANS. THE DIRECTOR SHALL DECIDE WHEN CORRECTIONS ARE NECESSARY.

IF A DRILLED SHAFT(S) IS CONSTRUCTED OUTSIDE OF THE PLAN TOLERANCES, THE CONTRACTOR MAY BE SUBJECT TO REDUCED PAYMENT AS DETERMINED BY THE DIRECTOR.

CASING

THE CASINGS SHALL BE MADE OF STEEL AND SHALL BE WATER TIGHT AND SHALL BE OF AMPLE STRENGTH TO WITHSTAND HANDLING STRESSES AND EXTERNAL SUBSURFACE PRESSURES. THE CASINGS SHALL BE SEATED INTO THE BEDROCK, THUS ATTEMPTING TO SEAL OFF INCOMING WATER, AND THE CASING LENGTH SHALL BE AS NECESSARY TO CONSTRUCT EACH DRILLED SHAFT.

THE DIAMETER OF THE FURNISHED CASING(S) SHALL BE LARGE ENOUGH TO ALLOW THE CONSTRUCTION OF A BEDROCK SOCKET WHICH HAS A DIAMETER THAT IS EQUAL TO OR GREATER THAN THE PLAN DIAMETER.

EXCAVATION

EXCAVATION FOR THE DRILLED SHAFTS SHALL BE PERFORMED BY ROTARY DRILLING METHODS USING PRACTICAL METHODS AND MACHINERY ACCEPTABLE TO THE ENGINEER. WHEN OBJECTS SUCH AS LARGE BOULDERS ARE ENCOUNTERED, THEY SHALL BE REMOVED. BLASTING METHODS MAY BE USED ONLY AFTER RECEIVING PERMISSION FROM THE ENGINEER AND WHEN USED SHALL BE SO CONDUCTED AS TO AVOID DISTURBANCE OF THE BEDROCK FORMATION BELOW AND OUTSIDE THE LIMITS OF THE PROPOSED DRILLED SHAFT EXCAVATIONS. THE CONTRACTOR SHALL CARRY LIABILITY INSURANCE AND SHALL COMPLY WITH ALL APPLICABLE FEDERAL, STATE AND LOCAL REGULATIONS GOVERNING THE USE OF EXPLOSIVES. THE DRILLED SHAFTS SHALL PENETRATE INTO SOLID BEDROCK.

DEWATERING

THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTROLLING ANY INCOMING WATER TO THE EXTENT THAT THE SHAFT EXCAVATION IS MAINTAINED DRY ENOUGH FOR PERFORMANCE OF THE REQUIRED INSPECTION OPERATION. THE PREFERRED METHOD OF CONSTRUCTION IS TO PLACE THE CONCRETE IN A CLEAN DRY EXCAVATION. THE CONTRACTOR IS EXPECTED TO MAKE A REASONABLE ATTEMPT TO SEAL WATER OUT OF THE DRILLED SHAFT EXCAVATION.

BOTTOM CLEANOUT

THE BOTTOM OF THE DRILLED SHAFT EXCAVATION SHALL BE AS CLEAN AS PRACTICABLE (NO MORE THAN ONE HALF INCH OF LOOSE MATERIAL ON THE BOTTOM) PRIOR TO CONCRETE PLACEMENT. DRILLING SPOILS THAT ADHERE TO THE VERTICAL SIDES OF THE BEDROCK SOCKET ARE TO BE REMOVED.

APPROVAL BEFORE CONCRETE PLACEMENT

THE CONTRACTOR SHALL SUBMIT TO THE PROJECT ENGINEER A WRITTEN REPORT OF STEPS AND PROCEDURES THAT HE PROPOSES TO FOLLOW WHEN PLACING AND MONITORING THE CONCRETE PLACEMENT. CONCRETE SHALL NOT BE PLACED IN ANY DRILLED SHAFT EXCAVATION WITHOUT PRIOR APPROVAL FROM THE ENGINEER. THE DRILLED SHAFT EXCAVATION SHALL BE INSPECTED IMMEDIATELY BEFORE THE CONCRETE IS PLACED. A LIGHT POWERFUL ENOUGH TO THOROUGHLY INSPECT THE SIDES, BOTTOM AND REINFORCING STEEL CAGE OF THE DRILLED SHAFT IS REQUIRED. NO CONCRETE SHALL BE PLACED DURING INCLEMENT WEATHER CONDITIONS WHICH PROHIBIT A THOROUGH INSPECTION.

CONCRETE PLACEMENT

THE CONCRETE FOR THE DRILLED SHAFTS SHALL BE PLACED AS PER S11 EXCEPT AS MODIFIED BY THE PLANS. THE CONCRETE PLACEMENT OPERATION SHOULD BE CONTINUOUS FROM START TO FINISH. THE CONCRETE FOR THE BEDROCK SOCKET SHALL BE PLACED AGAINST THE INSITU BEDROCK AND SHALL BE PLACED PROMPTLY AFTER THE FINAL INSPECTION OF THE SHAFT. IF PRACTICABLE, THE CONCRETE SHALL BE PLACED IN A CLEAN DRY EXCAVATION. CARE SHALL BE TAKEN TO ENSURE THAT CONCRETE IS NOT BEING PLACED IN MOVING WATER. THE CONCRETE CAN BE PLACED IN A DRY DRILLED SHAFT EXCAVATION BY THE FREE FALL METHOD PROVIDED THE CONCRETE FALLS TO ITS FINAL POSITION THROUGH AIR WITHOUT STRIKING THE SIDES OF THE HOLE. THE REINFORCING STEEL CAGE, OR ANY OTHER OBSTRUCTION, THE FREE FALL METHOD ALLOWS THE CONCRETE TO BE DROPPED FROM THE TOP THROUGH A CENTERING CHUTE TO THE CONCRETE'S FINAL POSITION.

IF THE ENGINEER DETERMINES THAT DEWATERING IS NOT PRACTICABLE, THE CONTRACTOR WILL BE GIVEN PERMISSION TO PLACE THE CONCRETE UNDER WATER. TO PLACE CONCRETE UNDER WATER, THE DRILLED SHAFT EXCAVATION SHALL BE FILLED WITH WATER TO SUCH A DEPTH THAT ALL WATER MOTION HAS CEASED. THE CONCRETE SHALL THEN BE PLACED BY MEANS OF A CONCRETE PUMP. THE CONCRETE PUMP PIPE SHALL HAVE A DIAMETER THAT IS NOT LESS THAN 4 INCHES. THE CONCRETE PUMP EQUIPMENT SHALL BE SO ARRANGED THAT NO VIBRATIONS RESULT WHICH MIGHT DAMAGE FRESHLY PLACED CONCRETE. PIPES CARRYING CONCRETE FROM THE PUMP TO THE SHAFT SHOULD BE LAID OUT WITH A MINIMUM NUMBER OF BENDS. THE PIPE USED TO CONVEY THE CONCRETE TO THE BOTTOM OF THE DRILLED SHAFT EXCAVATION SHALL BE ANCHORED TO THE STEEL CASING TO PREVENT THE PIPE FROM UNDULATING DURING THE INITIAL PLACEMENT OF THE CONCRETE.

THE PUMPING EQUIPMENT SHALL BE SUITABLE IN KIND AND ADEQUATE IN CAPACITY FOR THE WORK REQUIRED. THE USE OF ALUMINUM PIPE AS A CONVEYANCE FOR THE CONCRETE WILL NOT BE PERMITTED. AN ADEQUATE QUANTITY OF GROUT MORTAR OR CONCRETE WITH COARSE AGGREGATE OMITTED SHALL BE PUMPED THROUGH THE EQUIPMENT AHEAD OF THE SPECIFICATION CONCRETE TO PROVIDE LUBRICATION TO THE PUMPING SYSTEM. THE CONCRETE USED FOR LUBRICATION SHALL NOT BE PLACED IN THE SHAFT. THE LUBRICATION PROCESS WILL NOT BE REPEATED AS LONG AS THE PUMPING OPERATIONS ARE CONTINUOUS. THE OPERATION OF THE PUMP SHALL BE SUCH THAT A CONTINUOUS STREAM OF CONCRETE WITHOUT AIR POCKETS IS PRODUCED. IN ORDER TO PREVENT THE CONTAMINATION OF THE CONCRETE PLACED INITIALLY AT THE BOTTOM OF THE SHAFT, THE OUTLET END OF THE PUMPING PIPE SHALL BE SEALED WITH A DIAPHRAGM OR PLUG THAT IS FLUSHED OUT WHEN THE HYDROSTATIC PRESSURE FROM THE COLUMN OF CONCRETE EXCEEDS THAT OF THE WATER IN THE SHAFT. THE INITIAL RATE OF CONCRETE PLACEMENT MUST BE CAREFULLY CONTROLLED SO AS NOT TO LIFT OR DISPLACE THE CAGE OF REINFORCING STEEL. THE CONVEYING SYSTEM SHALL BE WATER TIGHT AND THE OUTLET END SHALL ALWAYS REMAIN WELL BELOW THE TOP OF THE FRESHLY PLACED CONCRETE. THE PREFERRED CONCRETE PLACEMENT PROCEDURE IS TO MAINTAIN THE OUTLET END OF THE PUMPING SYSTEM AT APPROXIMATELY 10 FEET BELOW THE TOP OF THE FRESH CONCRETE. WHEN THE CONCRETE REACHES THE TOP OF THE DRILLED SHAFT COLUMN ALL LAITANCE SHALL BE REMOVED.

ALTERNATE CONSTRUCTION METHODS

THE CONTRACTOR MAY PROPOSE ALTERNATE CONSTRUCTION METHODS WHICH WILL BE APPROVED OR REJECTED BY THE DIRECTOR.

TOLERANCES

THE CONTRACTOR SHALL LOCATE AND CONSTRUCT THE TOP CENTER OF THE PIER DRILLED SHAFTS WITHIN A ONE-INCH RADIUS OF THE POSITION INDICATED BY THE PLANS. THE PIER SHAFTS ARE TO BE INSTALLED VERTICALLY AND MUST BE WITHIN 1.0 PERCENT OF PLUMB FOR THE TOTAL LENGTH OF THE DRILLED SHAFT.

CONCRETE

CONCRETE FOR ALL DRILLED SHAFTS SHALL BE CLASS S CONCRETE AND SHALL BE IN ACCORDANCE WITH S11, EXCEPT AS MODIFIED AND SUPPLEMENTED HEREIN. THE REQUIRED SLUMP IS SIX (6) INCHES, PLUS OR MINUS ONE-HALF INCH. THE MAXIMUM WATER TO CEMENT RATIO SHALL BE 0.50. IF CONCRETE IS PLACED UNDER WATER, THE REQUIREMENT OF ADDING 10 PERCENT MORE CEMENT TO THE CONCRETE MIX SHALL BE WAIVED. THE TOP 5 TO 10 FEET OF THE DRILLED SHAFTS ARE REQUIRED TO BE VIBRATED. ONLY A MINIMAL VIBRATORY EFFORT IS NECESSARY. SPECIAL CARE SHALL BE TAKEN NOT TO OVER-VIBRATE THE DRILLED SHAFT CONCRETE.

IF THE CASINGS FOR THE DRILLED SHAFTS ARE TO BE WITHDRAWN, THE CONCRETE SHALL NOT BE VIBRATED UNTIL THE CASING IS COMPLETELY REMOVED AND THE SHAFT TOP IS FORMED TO THE PLAN CROSS-SECTION. THE CONTRACTOR SHALL FURNISH A PRECONSTRUCTED TOP FORM FOR USE IN ACCURATELY CONFINING THE CONCRETE AT THE TOP OF THE DRILLED SHAFT WHEN THE CASING IS REMOVED.

REINFORCING STEEL

REINFORCING STEEL SHALL MEET THE REQUIREMENTS OF 509. THE REINFORCING STEEL SHALL BE GRADE 60. THE SPIRAL REINFORCING STEEL MAY BE PLAIN BARS ASTM A82 OR A615. THE REINFORCING STEEL SHALL BE COMPLETELY ASSEMBLED PRIOR TO PLACEMENT AND THE LENGTH SHALL BE AS NECESSARY TO CONSTRUCT EACH DRILLED SHAFT. SEE PLAN SHEETS FOR DETAILS OF REINFORCING STEEL.

INSPECTION

THE CONTRACTOR SHALL PROVIDE AND MAINTAIN SUITABLE MEANS FOR ACCESS AND SAFE DESCENT INTO ALL DRILLED SHAFT EXCAVATIONS THAT ARE PROTECTED BY A CASING AND HAVE A DIAMETER THAT IS LARGE ENOUGH TO ALLOW A PERSON TO SAFELY ENTER AND PERFORM THE REQUIRED INSPECTION. ACCESS CAN BE PROVIDED BY A POSITIVE FORWARD AND REVERSE HYDRAULIC WINCH OR A POWER-UP AND POWER-DOWN HOIST ON A CRANE. THE METHOD CHOSEN FOR ENTERING AND LEAVING THE SHAFT SHALL BE CONVENIENT, SAFE AND NOT UNCOMFORTABLE FOR THE USER. THE CONTRACTOR SHALL ALSO PROVIDE PROTECTIVE CLOTHING FOR USE BY THOSE MAKING AN INSPECTION OF THE SHAFT.

AN INSPECTION RECORD CHART HAS BEEN INCLUDED WITH THE PLANS ON SHEET 4A OF AND SHALL BE COMPLETED BY THE ENGINEER. THE CONTRACTOR SHALL PROVIDE ALL NECESSARY EQUIPMENT NEEDED TO OBTAIN THE MEASUREMENTS FOR COMPLETING THE CHART AND THE CONTRACTOR SHALL ASSIST THE ENGINEER IN OBTAINING THESE MEASUREMENTS. MEASUREMENTS SHALL BE OBTAINED PRIOR TO PLACING CONCRETE. WHEN THE INSPECTION RECORD CHART IS COMPLETED, THE PROJECT ENGINEER SHALL SUBMIT A COPY TO THE BUREAU OF BRIDGES. ATTENTION: FOUNDATION ENGINEER.

THE ENGINEER SHOULD OBTAIN PHOTOGRAPHS OF THE CONTRACTOR'S CONSTRUCTION PROCEDURES.

SAFETY PROVISIONS

THE CONTRACTOR SHALL HAVE AT THE JOB SITE ALL EQUIPMENT AND MATERIALS NEEDED TO PROVIDE SAFE CONSTRUCTION AND INSPECTION OF THE DRILLED SHAFTS AS REQUIRED BY CITY, STATE AND FEDERAL SAFETY REQUIREMENTS.

SAFETY PROVISIONS SHALL INCLUDE, BUT NOT BE LIMITED TO, THE REQUIREMENTS SPECIFIED BY THE PLANS, SPECIAL PROVISIONS, AND PROPOSAL.

THE CONTRACTOR SHALL PROVIDE CONTINUOUS SURVEILLANCE OF ALL PERSONS IN THE PIER DRILLED SHAFT EXCAVATION. AT ALL TIMES WHEN A PERSON IS IN THE DRILLED SHAFT EXCAVATION, PROVISION SHALL BE MADE FOR PUMPING FRESH AIR TO SAID PERSON. ALL LIGHTING SHALL BE WITH ELECTRIC LIGHTS. MECHANICAL EQUIPMENT USED INSIDE THE SHAFT SHALL BE OPERATED BY AIR OR ELECTRICITY. THE USE OF GASOLINE ENGINES OR OTHER TYPES OF EQUIPMENT PRODUCING FUMES THAT MAY ENTER THE EXCAVATION WILL NOT BE PERMITTED. THE CONTRACTOR SHALL PROVIDE GAS DETECTION AND OXYGEN ANALYZERS, AND SHALL TEST THE DRILLED SHAFT EXCAVATION ATMOSPHERE QUALITATIVELY THROUGHOUT THE COLUMN'S ENTIRE LENGTH AND ASSURE THAT THE QUANTITIES OF GASES AND OXYGEN PRESENT ARE IN SAFE AMOUNT AND SAFE PROPORTIONS PRIOR TO PERMITTING ANY PERSON TO ENTER THE SHAFT.

METHOD OF MEASUREMENT

THE TOTAL LENGTH OF EACH DRILLED SHAFT TO BE PAID FOR SHALL BE THE COMPLETED AND ACCEPTED LENGTH. MEASURED ALONG THE AXIS OF THE DRILLED SHAFT FROM THE BOTTOM OF THE BEDROCK SOCKET TO THE PROPOSED TOP ELEVATION, AS PER PLAN. THE REINFORCING STEEL THAT PROJECTS FROM THE DRILLED SHAFT INTO THE PIER COLUMN OR THE ABUTMENT FOOTING AS SPECIFIED BY THE PLANS IS INCLUDED WITH THE DRILLED SHAFT FOR PAYMENT BUT SHALL NOT BE INCLUDED IN THE MEASURED LENGTH OF THE DRILLED SHAFT.

BASIS OF PAYMENT

PAYMENT FOR FURNISHING AND INSTALLING DRILLED SHAFTS WILL BE MADE AT THE CONTRACT UNIT PRICE PER LINEAR FOOT OF ACCEPTED SHAFTS AS PER ITEM SPECIAL DRILLED SHAFTS WHICH SHALL INCLUDE ALL LABOR, MATERIALS, AND EQUIPMENT NECESSARY TO COMPLETE THE ITEM AS SPECIFIED.

DESIGN PARAMETERS

THE DESIGN LOAD TO BE SUPPORTED BY EACH DRILLED SHAFT IS 175 TONS AT THE PIER, WHICH IS ASSUMED TO BE RESISTED BY SHAFT ADHESION WITHIN A PORTION OF THE BEDROCK SOCKET AND ALSO BY SHAFT END BEARING PRESSURE. THE ALLOWABLE BEDROCK SOCKET ADHESION IS ONE TON PER SQUARE FOOT WHICH IS ASSUMED TO ACT ALONG THE BOTTOM 14.5 FEET OF THE BEDROCK SOCKET. THE ALLOWABLE END BEARING PRESSURE IS 20 TONS PER SQUARE FOOT.

FHWA REGION	STATE	PROJECT	
5	OHIO		

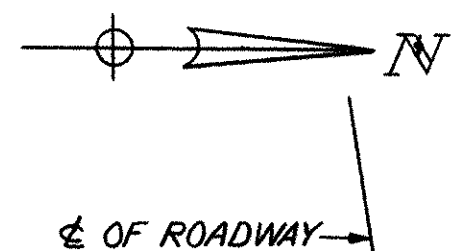
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STARK COUNTY
STA-77 -6.40

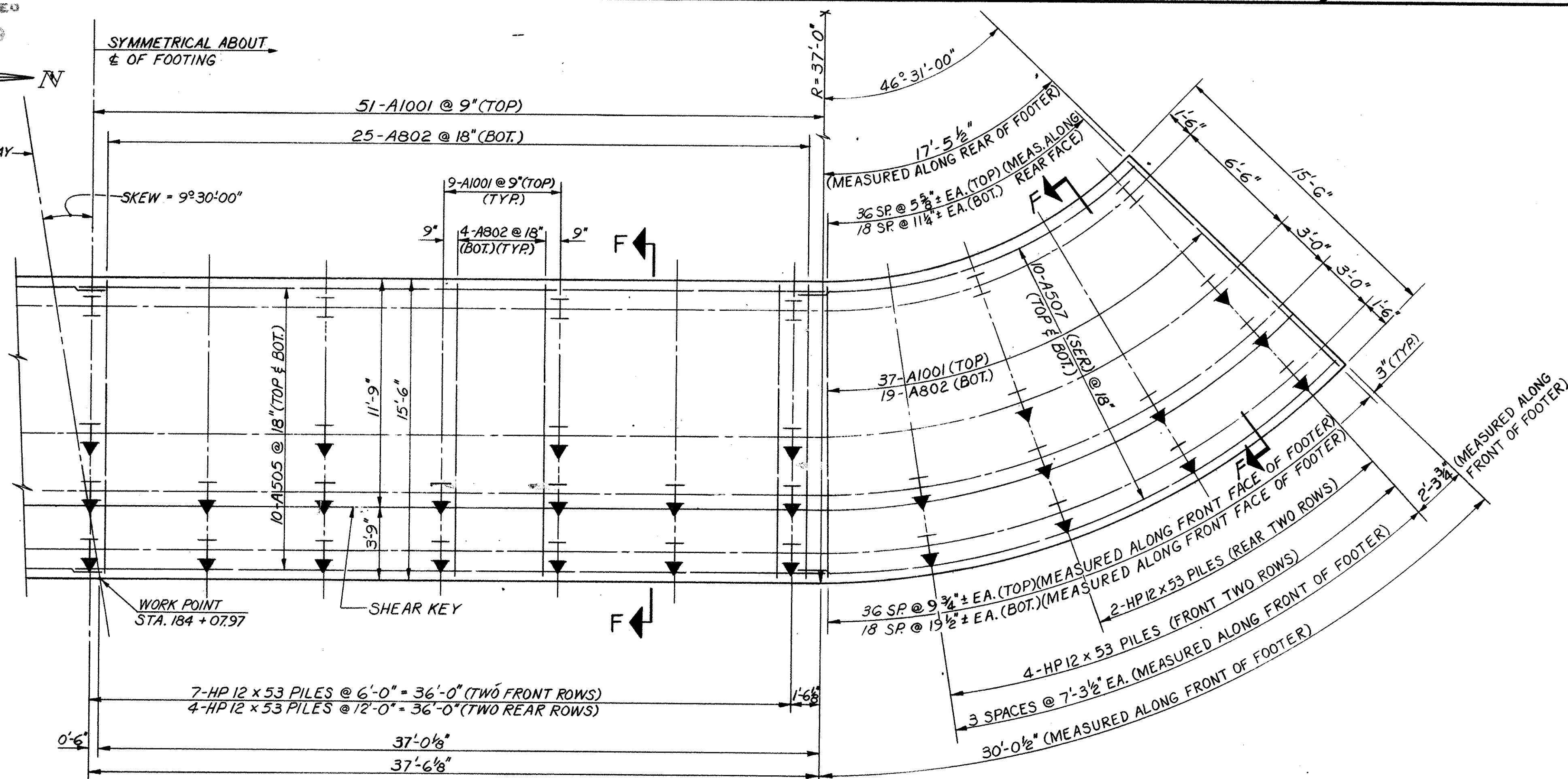


STATE OF OHIO DEPARTMENT OF TRANSPORTATION BUREAU OF BRIDGES AND STRUCTURAL DESIGN						4/12
DRILLED SHAFT SPECIFICATIONS						
BRIDGE NO. STA-77-0640 UNDER FAIRCRESS STREET						
STARK COUNTY						
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	JATE	REVISED
CKT	RLP		RLP	WJJ	1-23 -85	

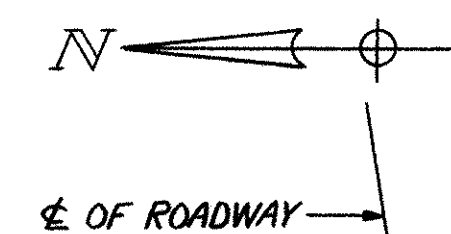
MICROFILMED
OCT 10 1988
OCT 10 1988



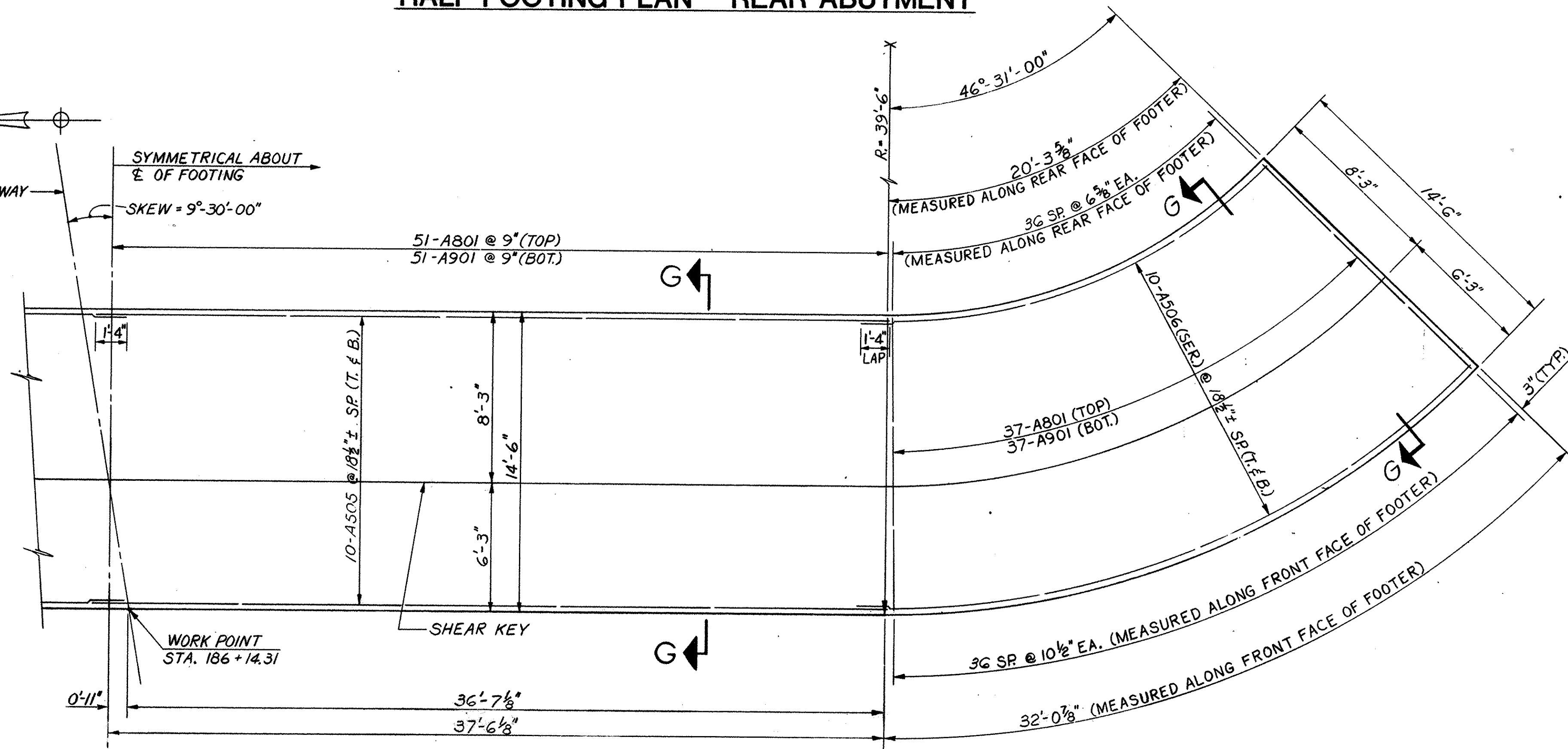
SYMMETRICAL ABOUT
E OF FOOTING



HALF FOOTING PLAN - REAR ABUTMENT



SYMMETRICAL ABOUT
E OF FOOTING

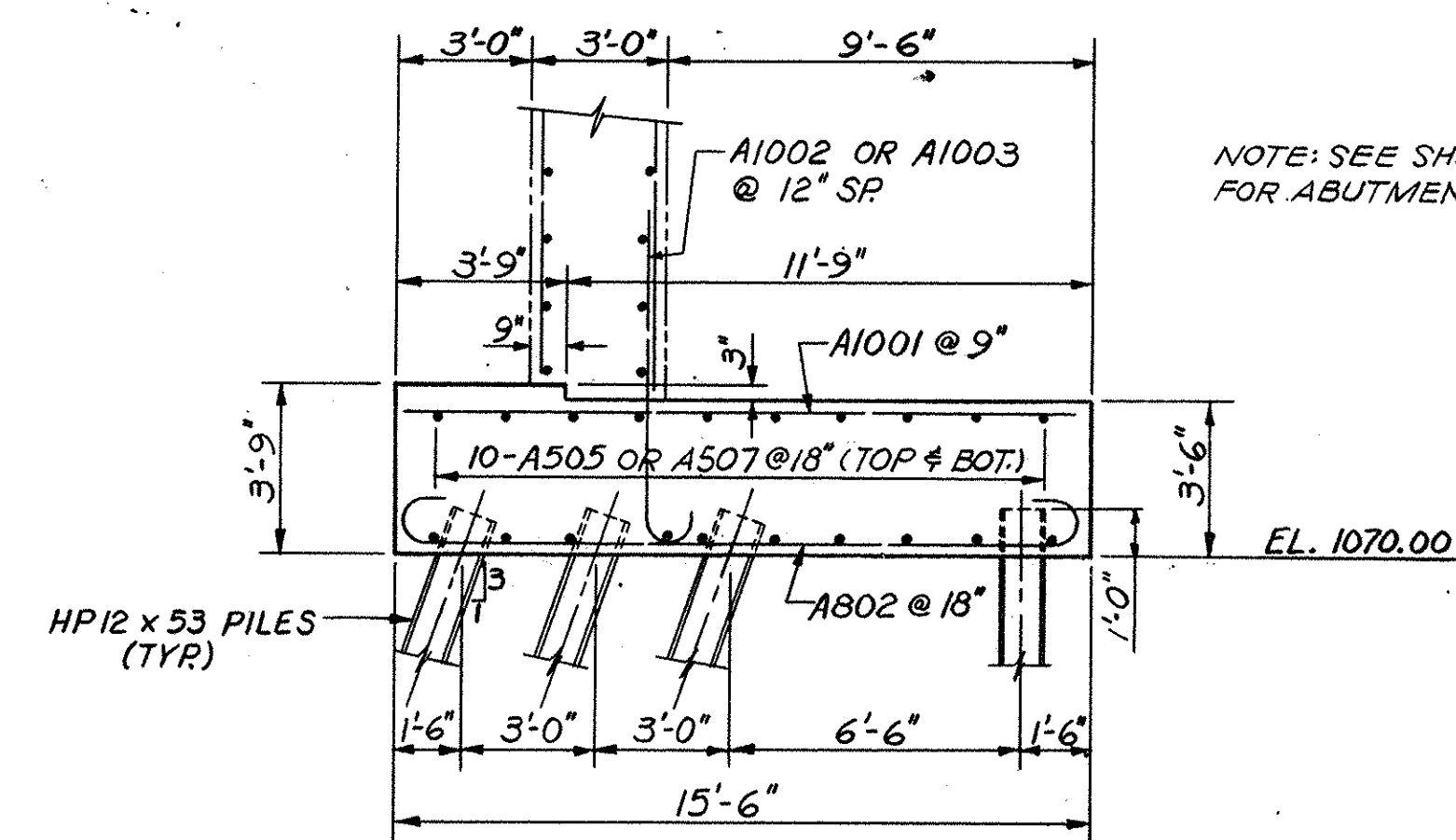


HALF FOOTING PLAN - FORWARD ABUTMENT

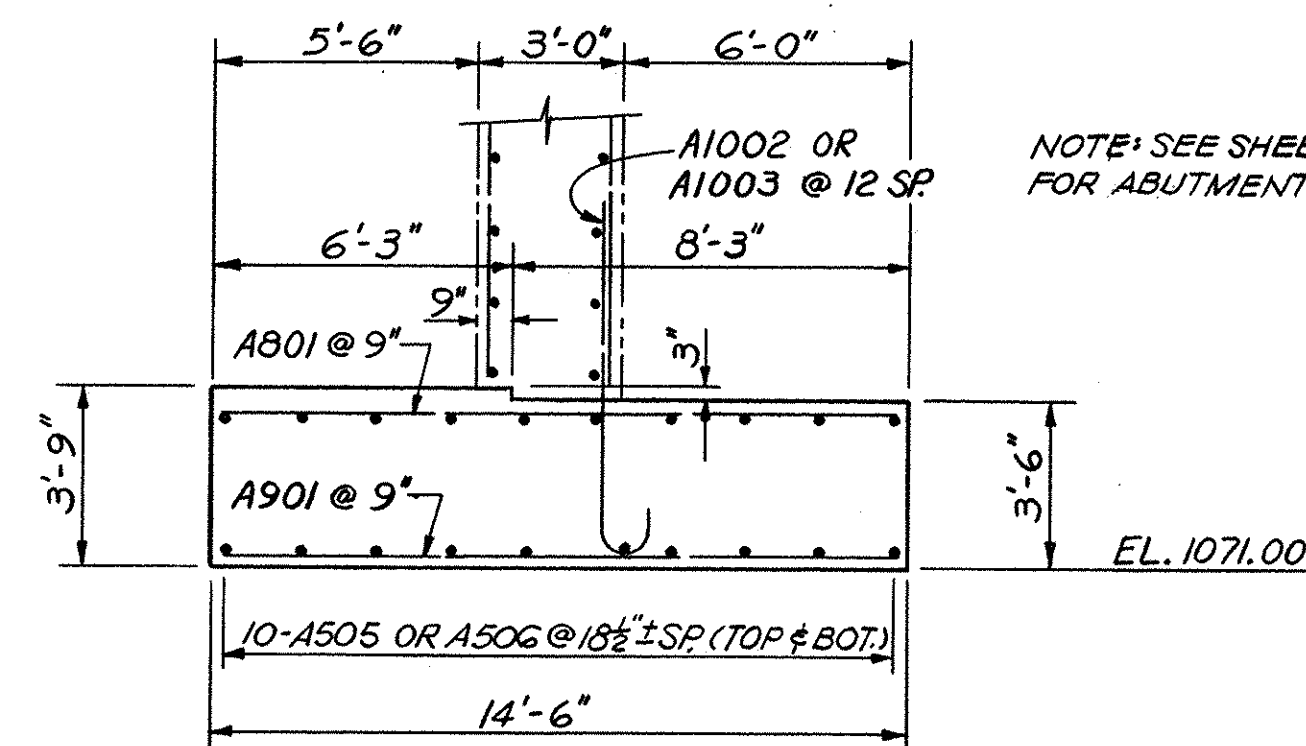
FHWA REGION	STATE	PROJECT	
5	OHIO		

STARK COUNTY
STA-77-640

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SECTION F-F



SECTION G-G

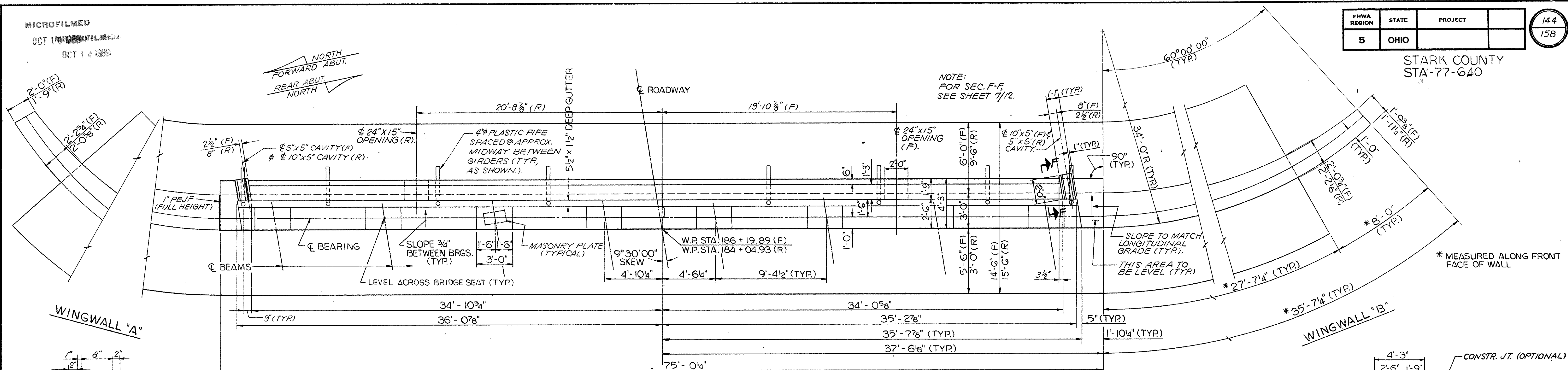
NOTE:

INDICATES PILE LOCATION & DIRECTION OF
BATTER (1:3) IF APPLICABLE. ALL PILES SHALL
BE HP 12 x 53. SEE GENERAL PLAN FOR
NUMBERING SCHEME.

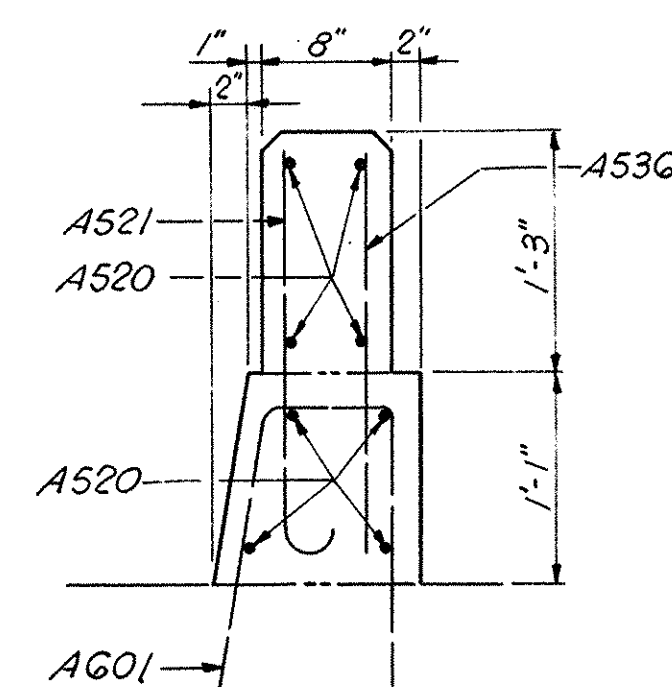
ALL FOOTING REINFORCING STEEL SHALL HAVE
3" CLEARANCE FROM ALL CONCRETE SURFACES.

MOSURE AND SYRAKIS CO. LTD. CONSULTING ENGINEERS AND PLANNERS YOUNGSTOWN, OHIO				
FOUNDATION PLANS & DETAILS				
BRIDGE NO. STA-77-06 40 UNDER FAIRCREST STREET				
STARK COUNTY STATE OF OHIO				
DESIGNED D.P.	DRAWN R.M.	CALC. D.P.	CHECKED W.H.	REVIEWED T.F.M.
10/84	10/84	~	6/85	6/85

STARK COUNTY
STA-77-640



FORWARD ABUTMENT PLAN
(REAR ABUTMENT PLAN - OPPOSITE HAND)



DETAIL 'B'

NOTES :

BACKWALL CONCRETE: IN ADDITION TO THE PROVISIONS OF 511.08, BACKWALL CONCRETE ABOVE THE OPTIONAL CONSTRUCTION JOINT AT THE APPROACH SLAB SEAT SHALL NOT BE PLACED UNTIL AFTER THE DECK CONCRETE IN THE SPAN ADJACENT TO THE ABUTMENT HAS BEEN PLACED.

POROUS BACKFILL: POROUS BACKFILL, 2 FT. THICK, SHALL EXTEND UP TO THE PLANE OF THE SUBGRADE AND Laterally TO THE ENDS OF THE WINGWALLS.

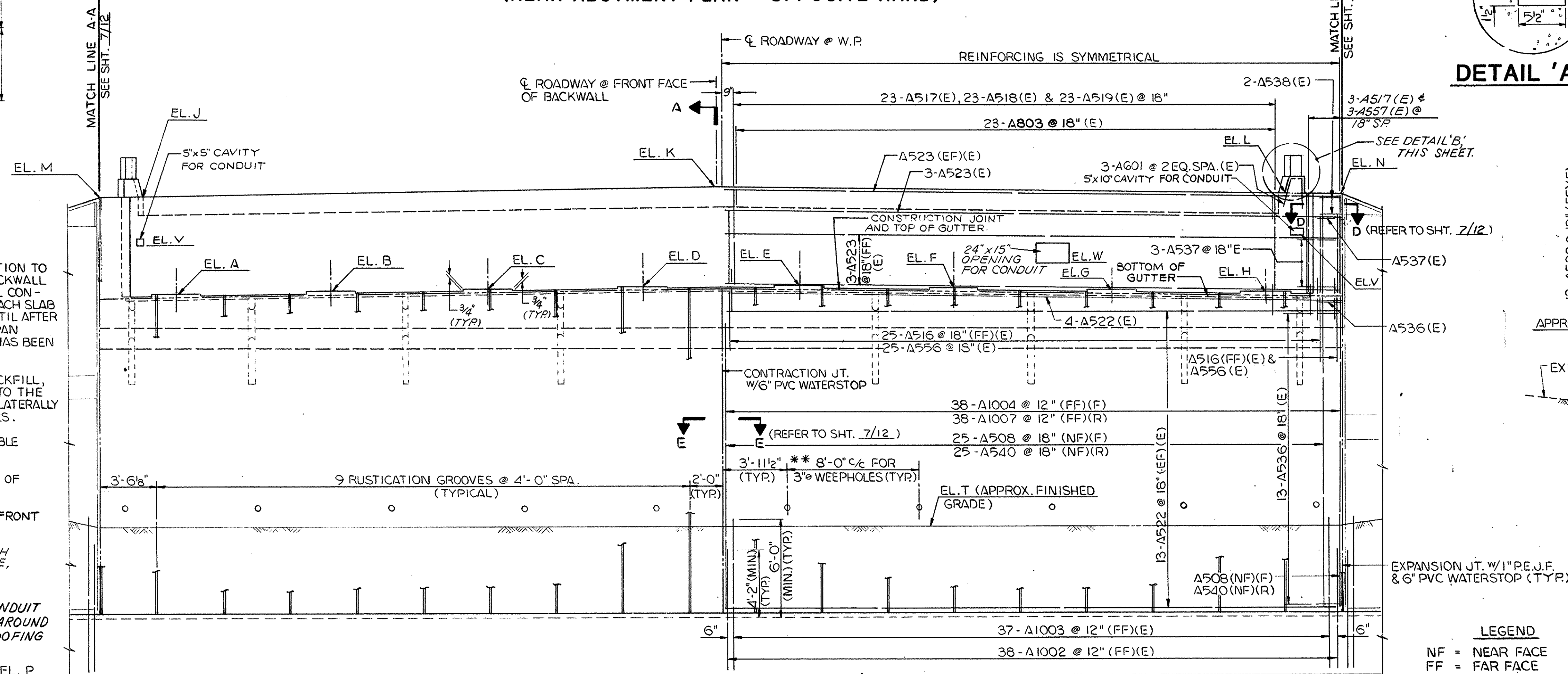
REFER TO SHEET 7/12 FOR TABLE
OF ELEVATIONS.

ELEVATIONS A THRU H ARE AT E OF BEARING

ELEVATIONS J, K AND L ARE AT FRONT
FACE OF BACKWALL.

4"Ø DRAINPIPE INCLUDED WITH
ITEM 511, CLASS C CONCRETE,
ABUTMENT ABOVE FOOTING,
FOR PAYMENT.

OPENING FOR TELEPHONE CONDUIT
SHALL BE FILLED W/GROUT AROUND
CONDUIT. TYPE A WATERPROOFING
SHALL BE APPLIED TO
BACKFACE OF BACKWALL EL. P
@ OPENING FOR TELE-
PHONE CONDUIT. INCL. WITH 51.
FOR PAYMENT.



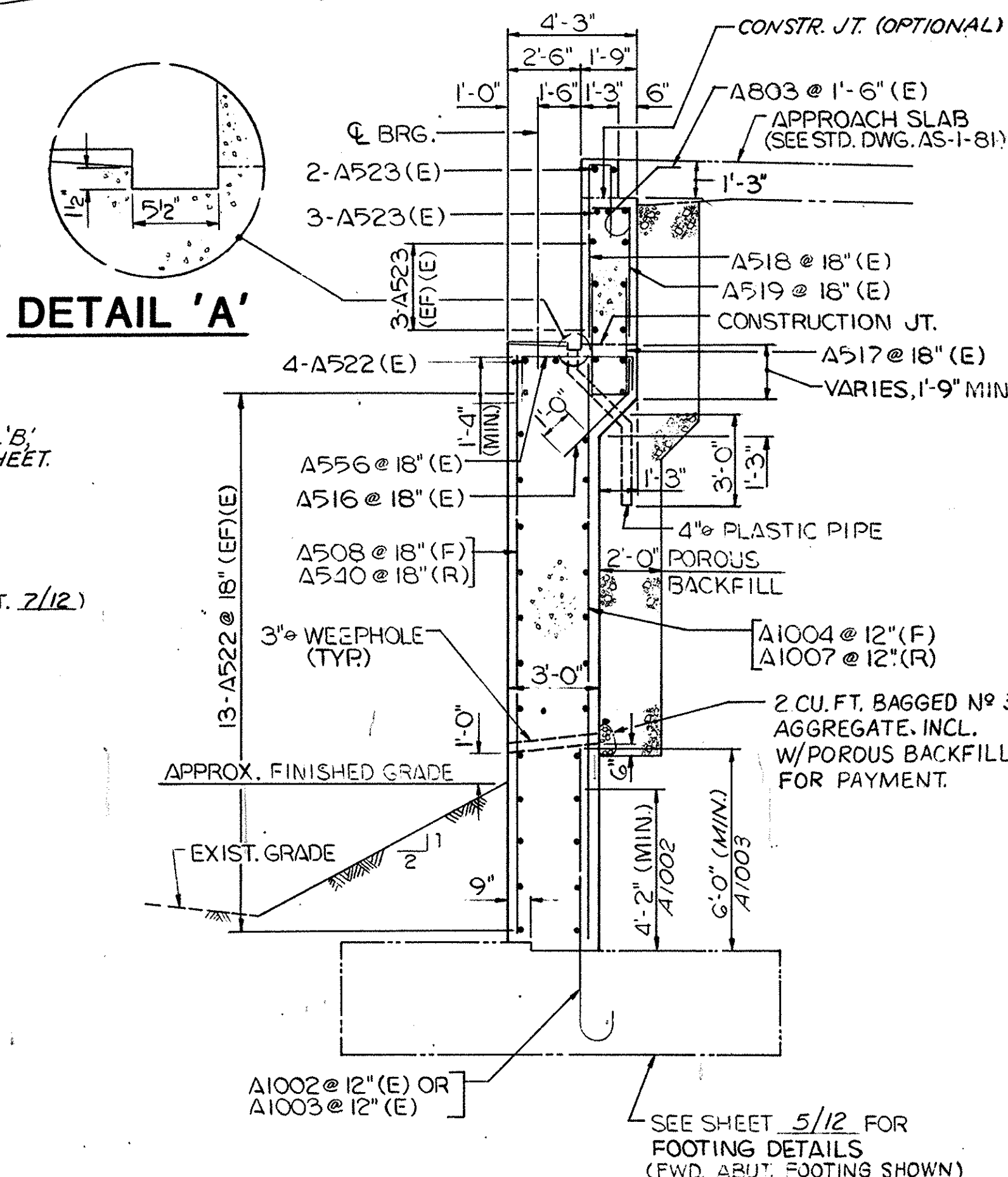
FORWARD ABUTMENT ELEVATION
(BEAR ABUTMENT ELEVATION - OPPOSITE HAND)

** ADJUST WEEPHOLES AS REQUIRED TO CLEAR REINFORCING, MAINTAINING 1'-0" MINIMUM CLEARANCE ABOVE FINISHED GRADE.

LEGEND

NF = NEAR FACE
FF = FAR FACE
EF = EACH FACE
R = REAR ABUTMENT ONLY
F = FORWARD ABUTMENT ONLY
E = EACH ABUTMENT

DETAIL 'A'



SECTION A-A

MOSURE AND SYRAKIS CO., LTD.
CONSULTING ENGINEERS AND PLANNERS
YOUNGSTOWN, OHIO

ABUTMENT PLAN AND ELEVATION

BRIDGE NO. STA-77-0640

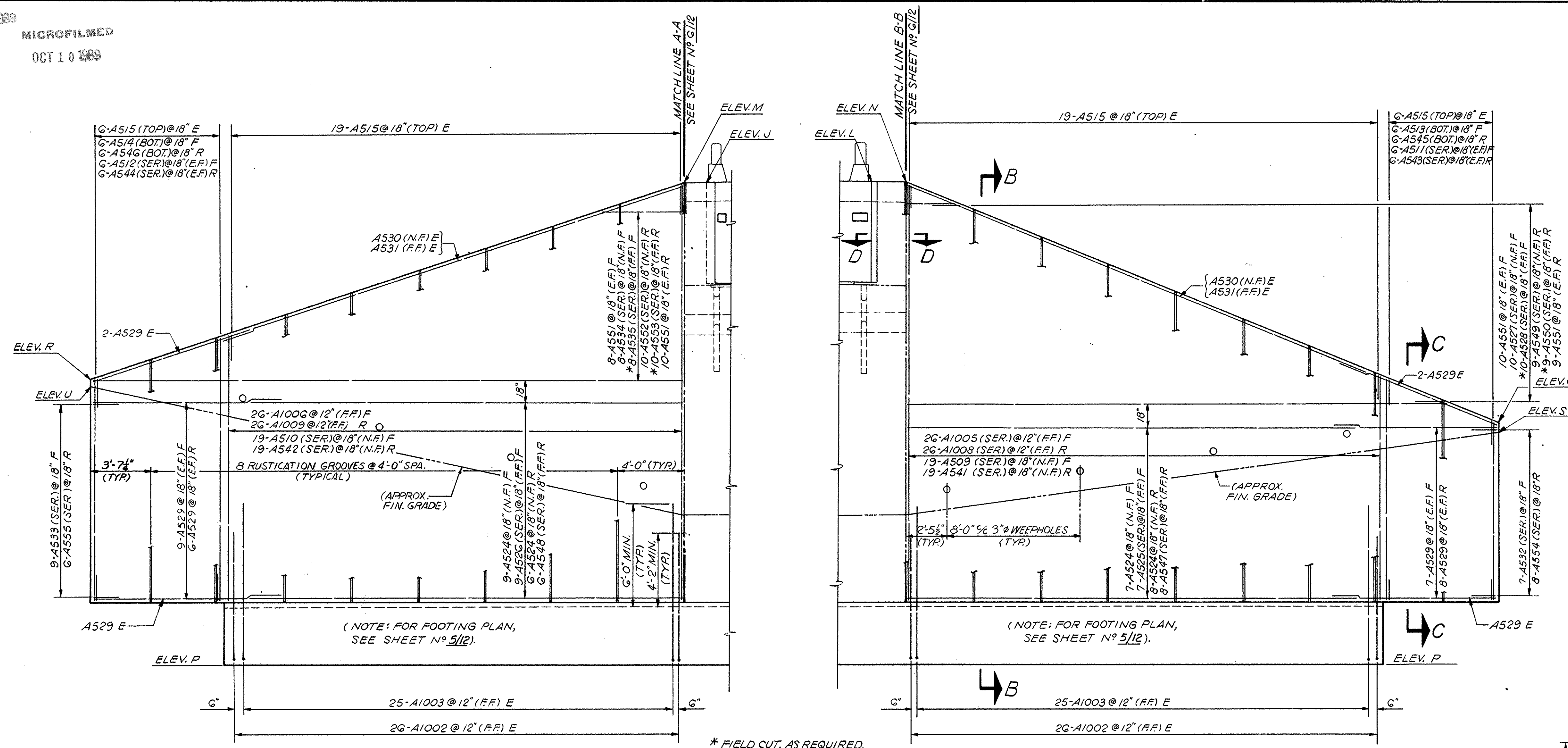
UNDER

FAIRCREST STREET

STARK COUNTY STATE OF OHIO

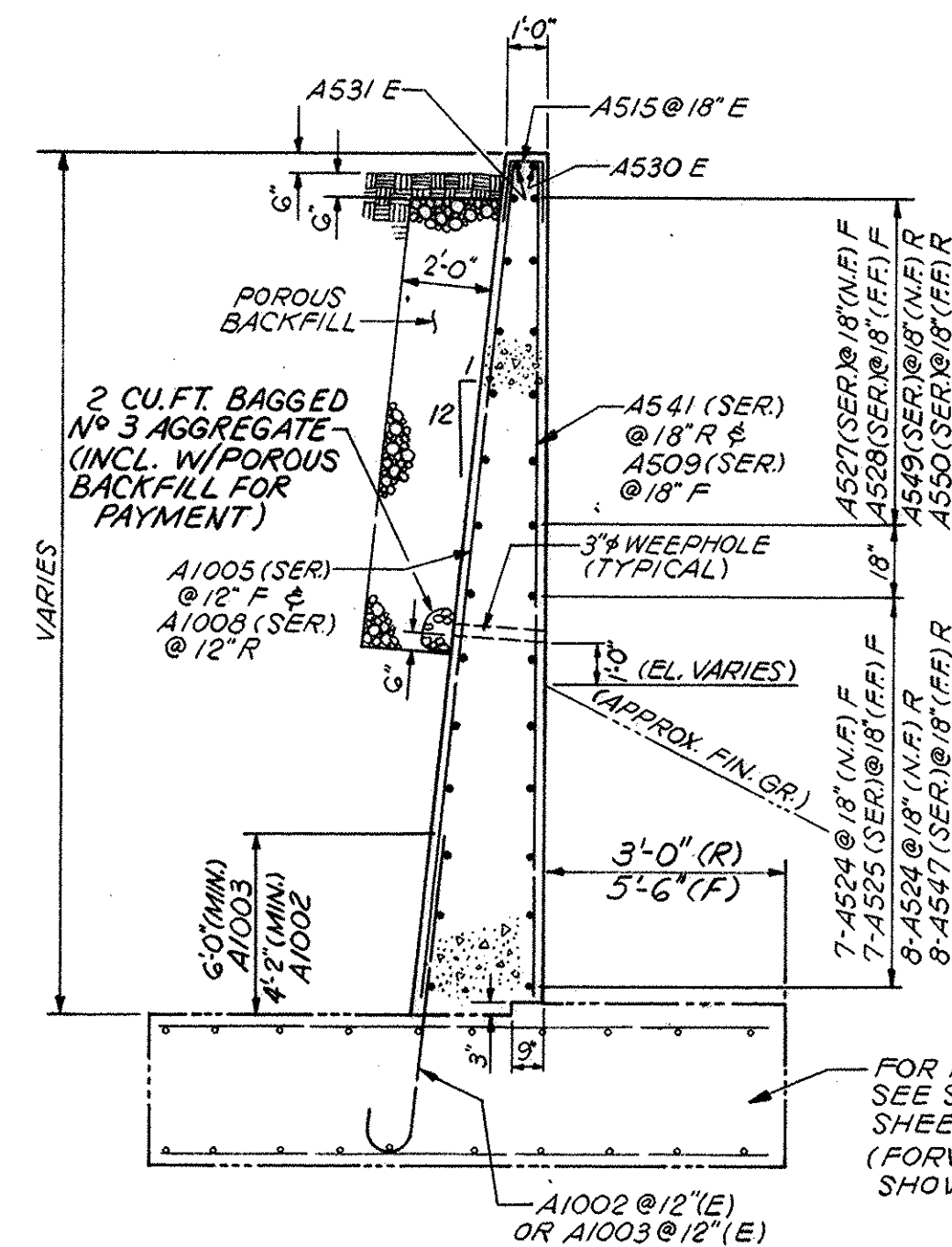
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10-84	10/84	~	G-85	6/85

STARK COUNTY
STA-77-640

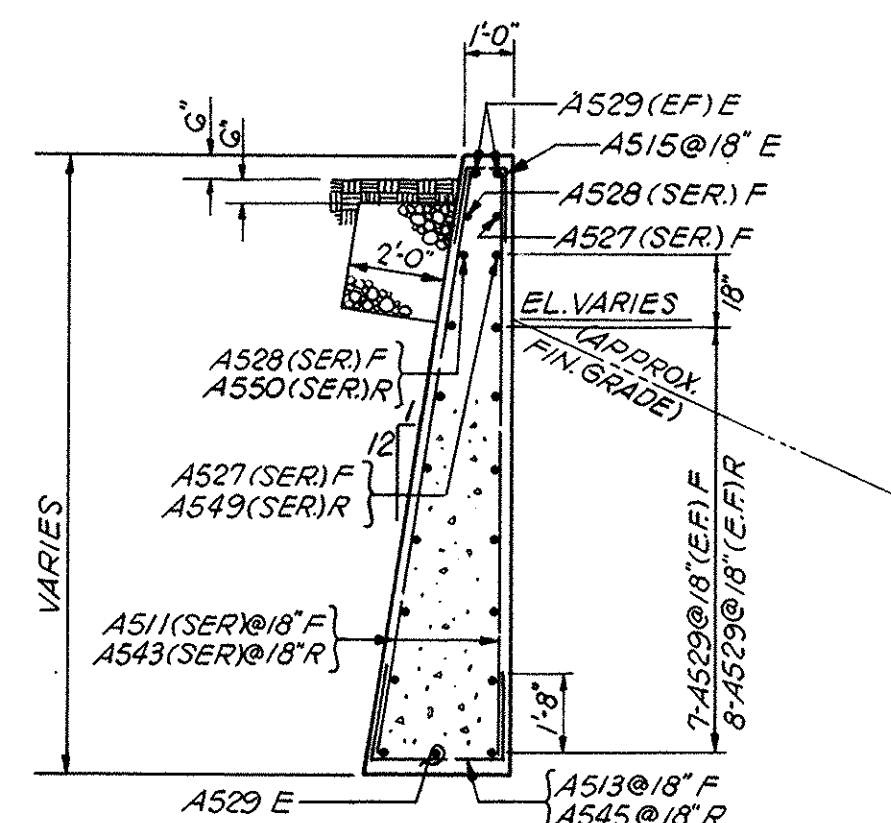


ELEVATION - WINGWALL A
(DEVELOPED VIEW)

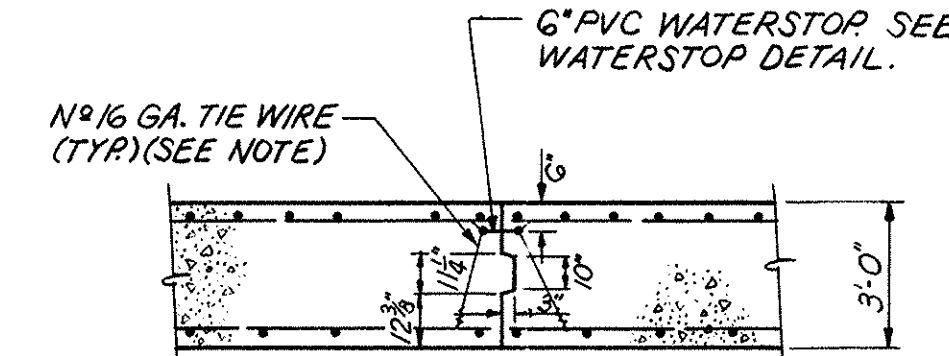
ELEVATION – WINGWALL B
(DEVELOPED VIEW)



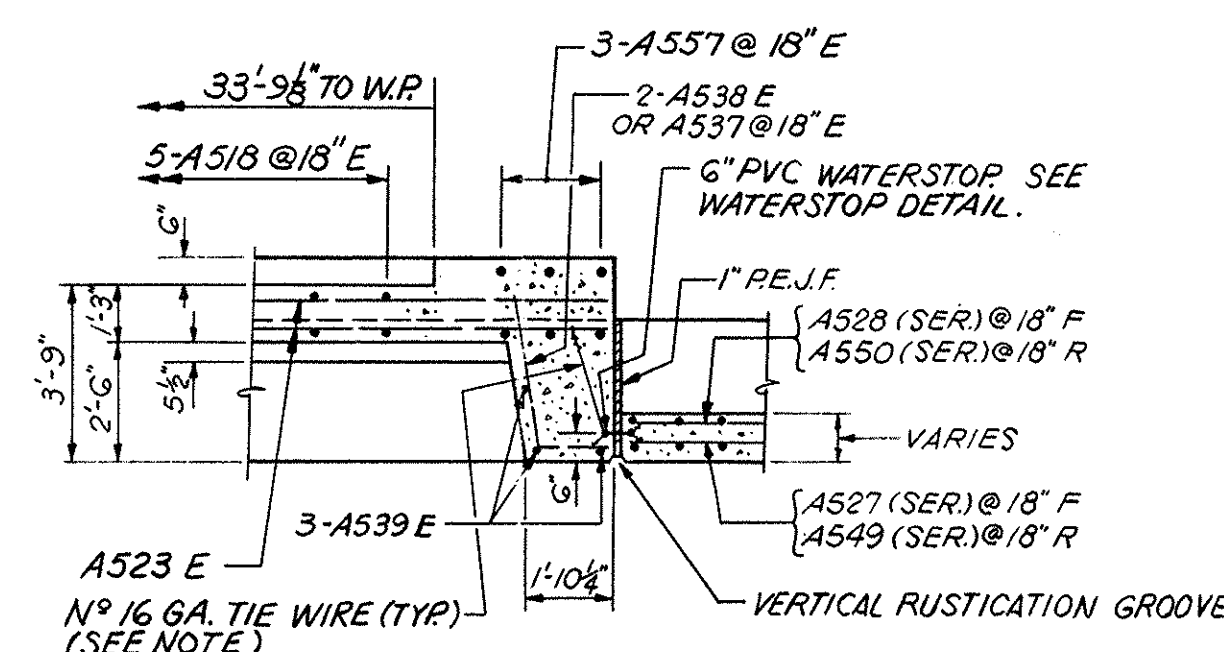
SECTION B-B



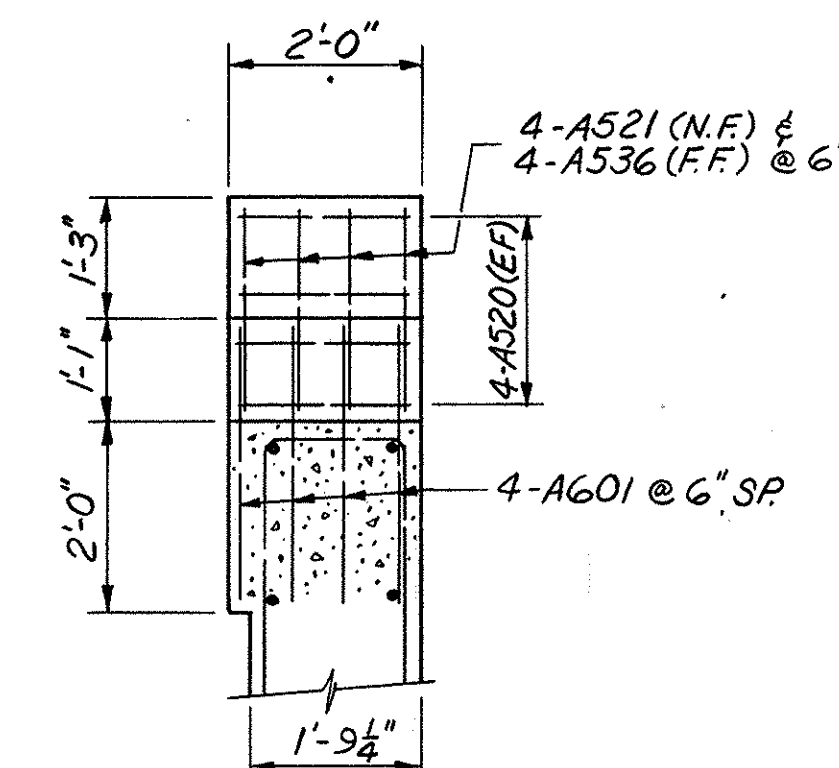
SECTION C-C



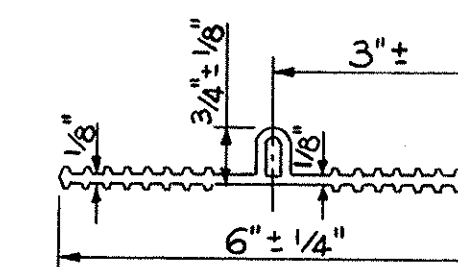
SECTION E-E
(FOR LOCATION, SEE SHEET No 6/12)



SECTION D-D



SECTION F-F
(SEE SH'T. 6/12 FOR LOCATION)



WATERSTOP DETAIL

NOTE: FOR THE FIRST POUR, THE WATERSTOP SHOULD BE HELD SECURELY IN PLACE BY THE USE OF SPLIT FORMS AND TIE-WIRES. FOR THE SECOND POUR, SECURE THE FREE END OF WATERSTOP IN PROPER POSITION WITH TIE-WIRES. ALTERNATE METHODS, AS APPROVED BY THE ENGINEER, MAY BE USED TO INSURE THE CORRECT POSITIONING OF THE WATERSTOP

LOCATION	REAR ABUT.	FWD. ABUT.
A	1092.11	1093.90
B	1092.29	1094.05
C	1092.46	1094.20
D	1092.64	1094.35
E	1092.67	1094.36
F	1092.55	1094.21
G	1092.44	1094.08
H	1092.31	1093.93
J	1093.11	1099.93
K	1098.75	1100.48
L	1098.33	1099.97
M	1098.14	1099.92
N	1098.36	1099.96
P	1070.00	1071.00
Q	1085.30	1084.65
R	1082.86	1087.43
S	1084.30	1084.15
T	1077.00	1080.00
U	1081.86	1086.93
V	1096.68	1097.50
W	1094.29	1095.94

NOTE

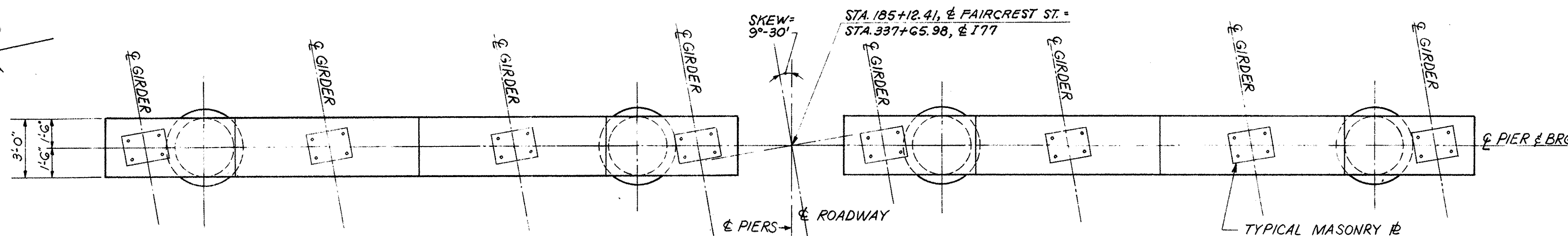
- **VERTICAL REINFORCING BAR SPACING FOR THE CURVED WINGWALL'S SHALL BE AS FOLLOWS:**
 1. **THE 18" SPACING IS MEASURED ALONG THE FRONT FACE OF WALL AT THE TOP OF FOOTING.**
 2. **THE 12" SPACING IS MEASURED ALONG THE REAR FACE OF WALL AT THE TOP OF FOOTING.**
- **ADJUST WEEPHOLES AS REQUIRED TO CLEAR REINFORCING, MAINTAINING 1'-0" MIN. CLEARANCE ABOVE FINISHED GRADE.**
- **FORWARD ABUTMENT FOOTING SHOWN. SEE SHEET NO. 5/12 FOR REAR ABUTMENT FOOTING DETAILS.**

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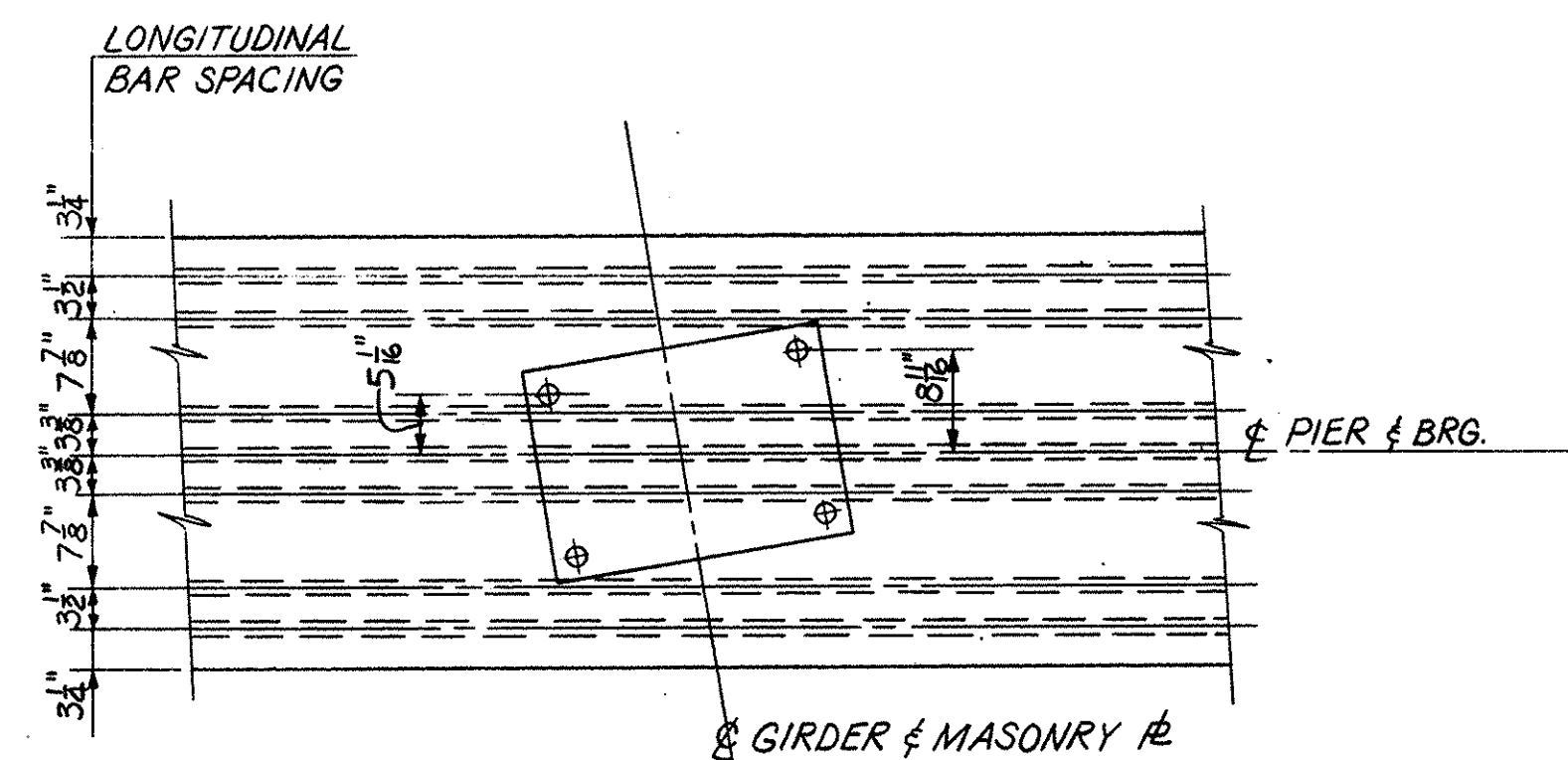
FHWA REGION	STATE	PROJECT
5	OHIO	

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STARK COUNTY
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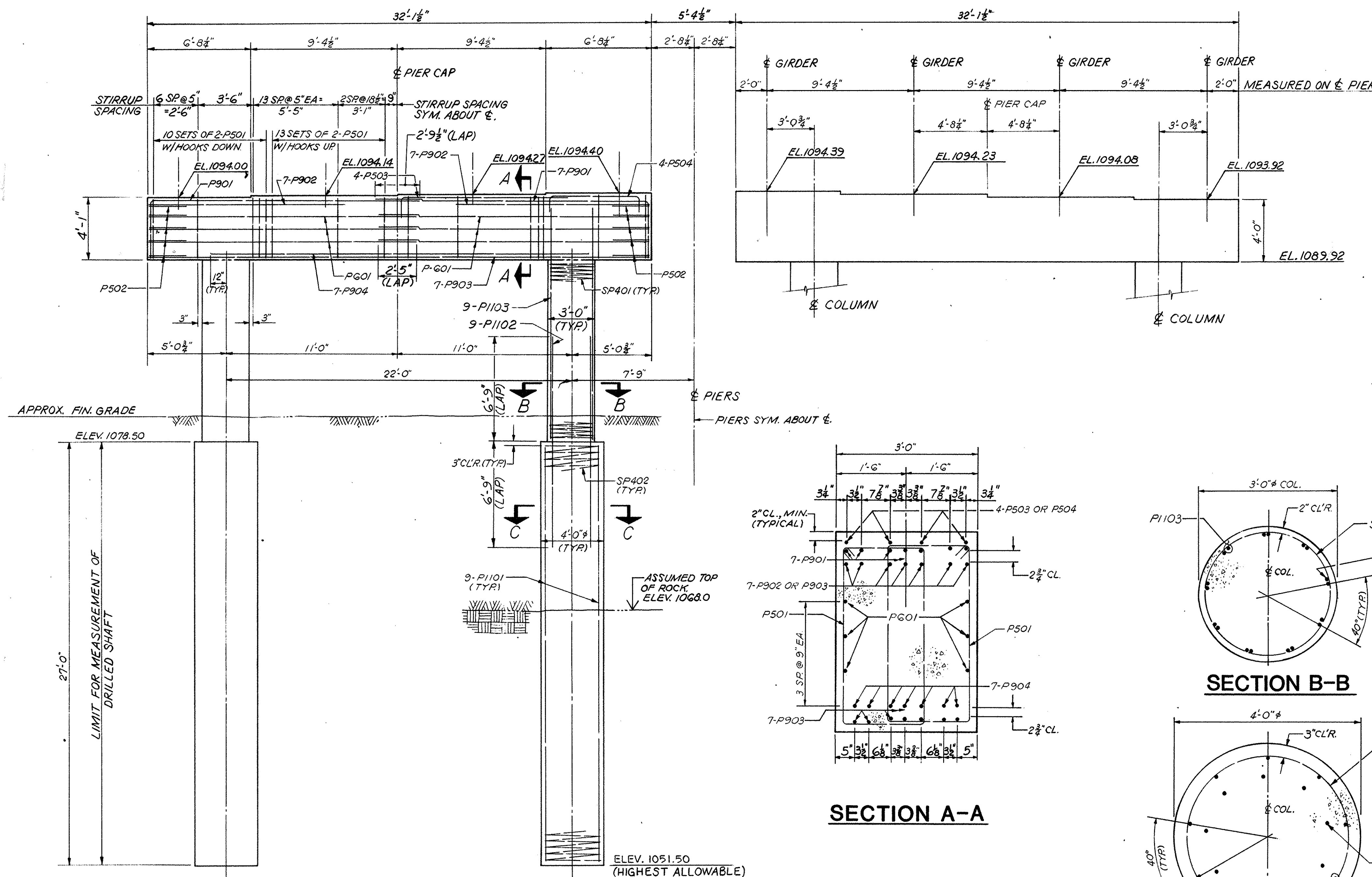
PLAN VIEW



DETAIL 1

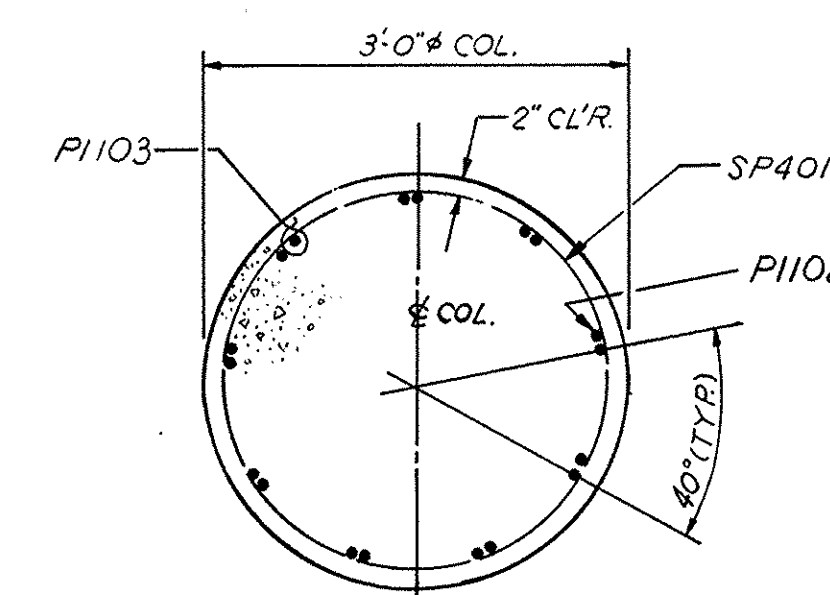
NOTE:

1. BRIDGE SEAT REINFORCING: REINFORCING STEEL IN THE VICINITY OF THE BRIDGE SEAT SHALL BE ACCURATELY PLACED TO AVOID INTERFERENCE WITH THE DRILLING OF BEARING ANCHOR HOLES OR THE PRE-SETTING OF BEARING ANCHORS.
2. BEARING ANCHORS: AT THE OPTION OF THE CONTRACTOR, BEARING ANCHORS (OR FORMED HOLES), LOCATED AND SUPPORTED BY TEMPLATES, MAY BE CAST IN PLACE.

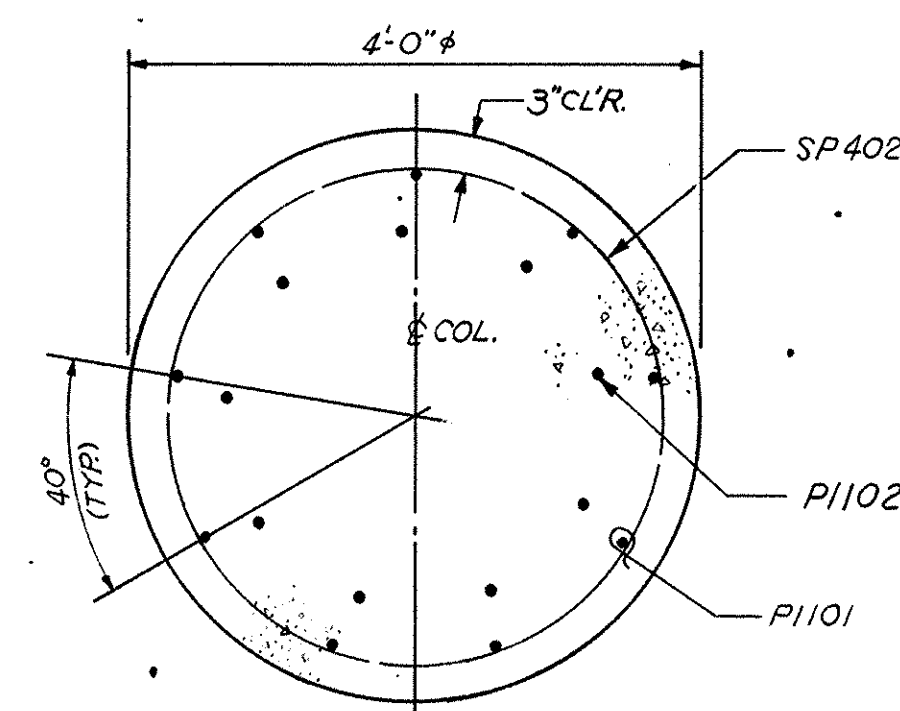


WEST ELEVATION - TWIN PIERS

SECTION A-A



SECTION B-B



SECTION C-C
(48" DRILLED SHAFT)

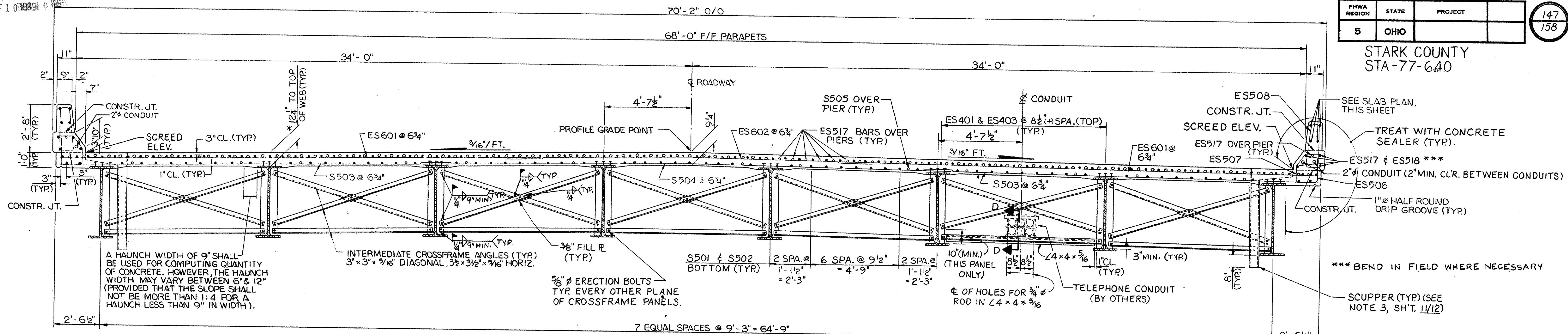
MOSURE AND SYRAKIS CO., LTD.
CONSULTING ENGINEERS AND PLANNERS
YOUNGSTOWN, OHIO

PIER DETAILS
BRIDGE N° STA-77-0640
UNDER
FAIRCRESS STREET

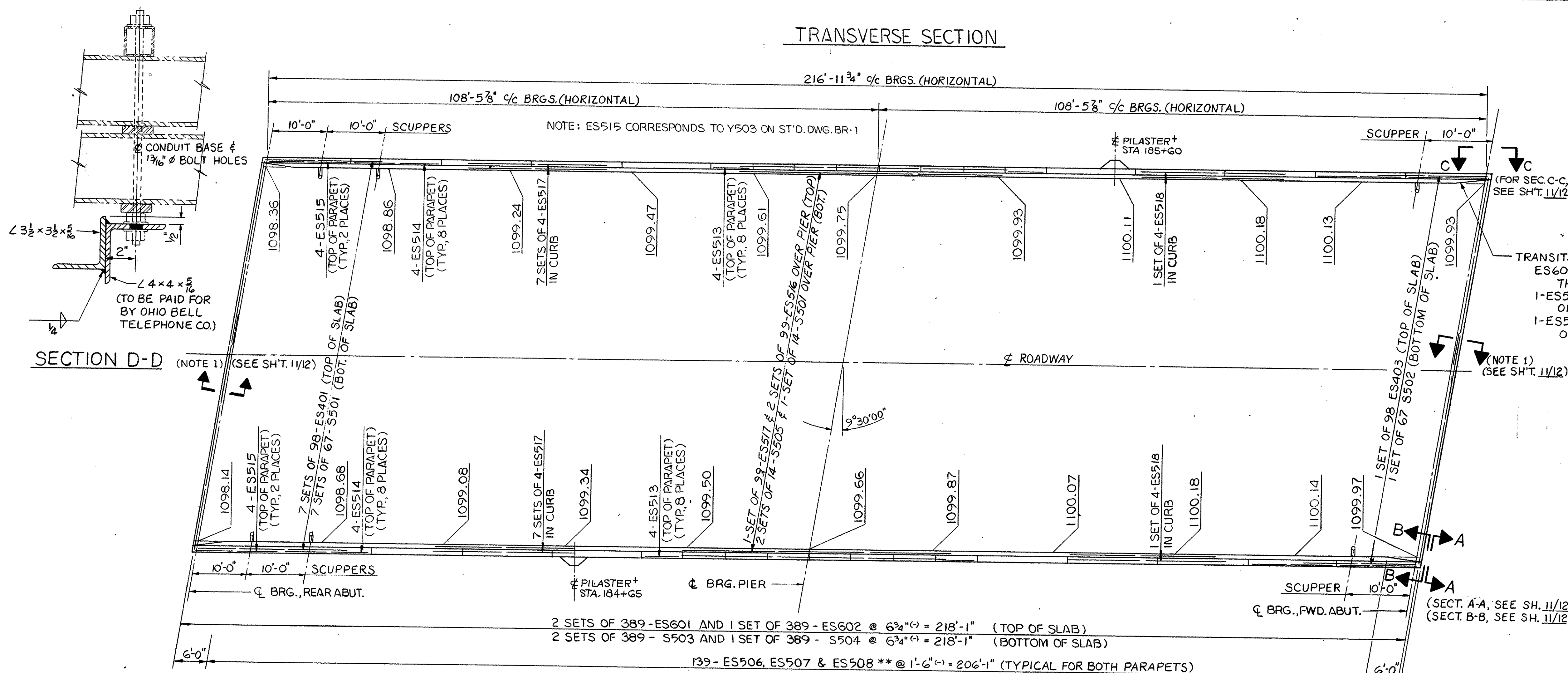
STARK COUNTY STATE OF OHIO

DESIGNED	DRAWN	CALC.	CHECKED	REVIEWED
HS	JMO	HS	WH	TFM
10/84	10/84	—	6/85	6/85

STARK COUNTY
STA-77-640



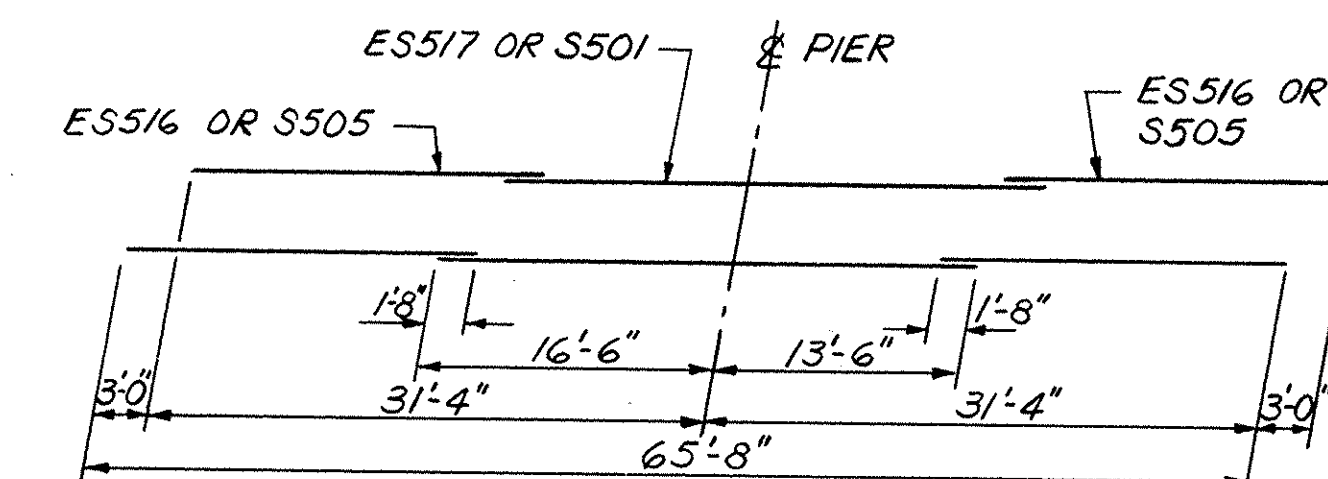
TRANSVERSE SECTION



* THIS IS THE DESIGN DIMENSION. THE QUANTITY OF CONCRETE TO BE PAID FOR SHALL BE BASED UPON THIS DIMENSION, EVEN THOUGH DEVIATION FROM IT MAY BE NECESSARY BECAUSE THE TOP FLANGE OF THE GIRDER MAY NOT HAVE THE EXACT CAMBER OR CONFORMATION REQUIRED TO PLACE IT PARALLEL TO THE FINISHED GRADE. DEDUCTION SHALL BE MADE FOR VOLUME OF ENCASED STEEL PLATES AS PER 511.18.

+ FOR PILASTER DETAILS, SEE STD. DWG. HL-4. THE REBARS MARKED E-L505 THROUGH E-L508 ON THE REINFORCING STEEL LIST (SH'T. 12/12) ARE IDENTICAL TO THOSE MARKED L505 THROUGH L-508 ON STD. DWG. HL-4.

TRANSITION EACH SIDE & END (SEE OHIO STD. DWG. BR-1).
ES603 THROUGH ES607 BARS IN PLACE OF Y601
THROUGH Y605 ON OHIO STD. BRIDGE DWG. BR-1.
1-ES509 & 4-ES510 SERIES BARS IN PLACE OF Y504
ON OHIO STD. BRIDGE DWG. BR-1.
1-ES511 & 4-ES512 SERIES BARS IN PLACE OF Y505
ON OHIO STD. BRIDGE DWG. BR-1.



STAGGER DIAGRAM
FOR ES516, ES517, S501 & S505
OVER PIER

$$\boxed{9 / 12}$$

MOSURE AND SYRAKIS CO., LTD.
CONSULTING ENGINEERS AND PLANNERS
YOUNGSTOWN, OHIO

BRIDGE N^o STA-77-06 40
UNDER
FAIRCREST STREET

STARK COUNTY STATE OF OHIO

DESIGNED HGS	DRAWN AM	CALC. HGS	CHECKED WH	REVIEWED TFM
10-84	10/84	~	6/85	6/85

ERECTION BOLTS; HOLE DIAMETER IN THE CROSSFRAMES AND CROSSFRAME CONNECT. RS SHALL BE RESPECTIVELY $\frac{1}{16}$ " AND $\frac{1}{4}$ " LARGER THAN THE DIAMETER OF THE ERECTION BOLTS. UNLESS REPLACED BY PERMANENT HIGH STRENGTH BOLTS, ERECTION BOLTS SHALL REMAIN IN PLACE. LOCK WASHERS SHALL BE FURNISHED FOR OTHER THAN FULLY TORQUED HIGH STRENGTH ERECTION BOLTS. BOLTS SHALL BE FURNISHED AS PART OF 513.

IN LIEU OF ERECTION BOLTS AND AT THE OPTION OF THE CONTRACTOR, ALTERNATE MEANS OF TEMPORARY BRACING MAY BE USED, SUBJECT TO THE APPROVAL OF THE DIRECTOR (501.06)

SLAE

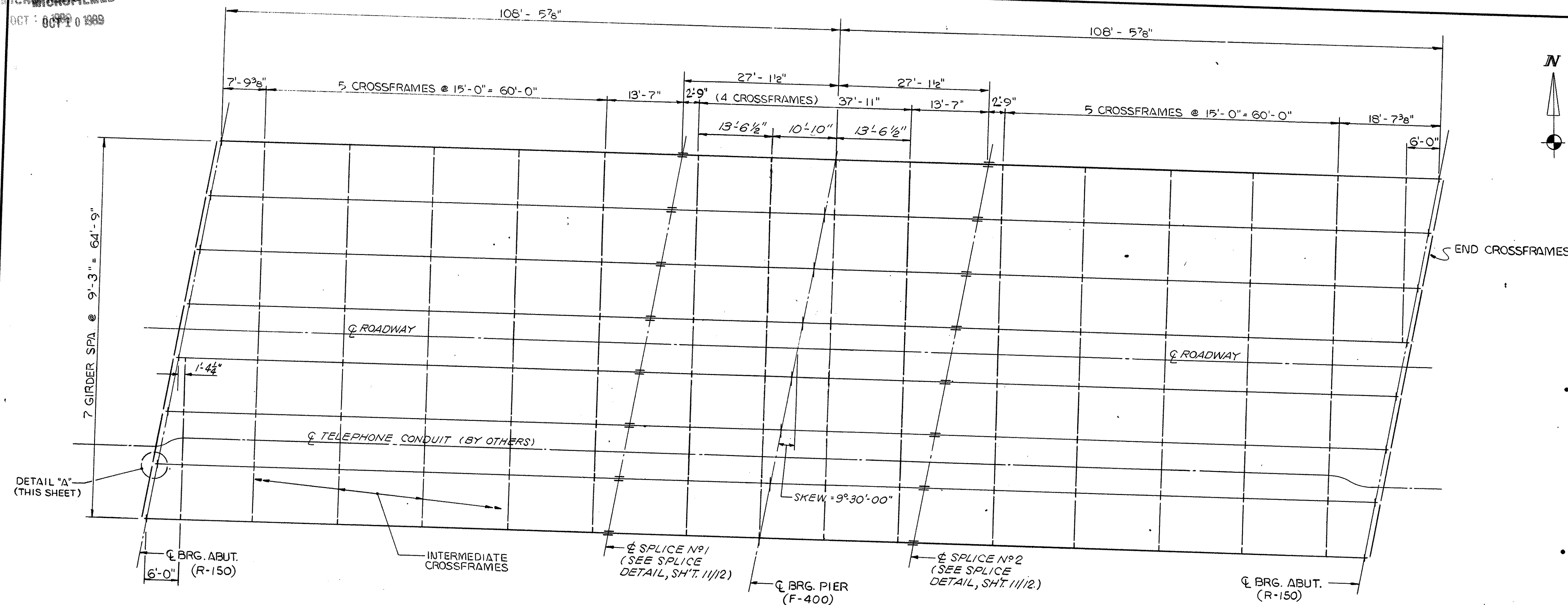
** EXCEPT WHERE NECESSARY
TO CLEAR PARAPET JT.

SEE OHIO ST'D.
BRIDGE DWG. NO. BR-1
(TYP. EA. SIDE & END)

NOTE: ELEVATIONS SHOWN AT GUTTER LINES
ARE SCREED ELEVATIONS AT FIFTH
POINT OF SPANS AND ARE ELEVATIONS
BEFORE CONCRETE IS PLACED.

SLAB PLAN & SCREED ELEVATIONS

STARK COUNTY
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NOTES:

• PARTIAL PAINTING OF A588 STEEL: A 7.0 FOOT LENGTH OF THE ENDS OF GIRDERS ADJACENT TO ABUTMENTS, AND ALL CROSSFRAMES AND OTHER A588 STEEL WITHIN THESE LIMITS SHALL BE PAINTED. PAINT SHALL BE 514, SYSTEM A. THE PRIME COAT SHALL BE 708.17. THE TOP COAT SHALL BE 708.17 EXCEPT THAT THE COLOR SHALL CLOSELY APPROACH FEDERAL STANDARD NO. 5950 - 20045 OR 20059. (WHICH SHOULD BE THE COLOR OF THE WEATHERED STEEL.)

• IN LIEU OF A588 STEEL, A36 STEEL GALVANIZED, MAY BE FURNISHED FOR BEARINGS, EXCEPT FOR UPPER PLATE ELEMENT OF BEARINGS. THIS A36 STEEL SHALL BE INCLUDED WITH THE A588 STEEL QUANTITY FOR PAYMENT. BEARINGS AT ABUTMENT SHALL BE PAINTED TO MATCH END OF GIRDERS.

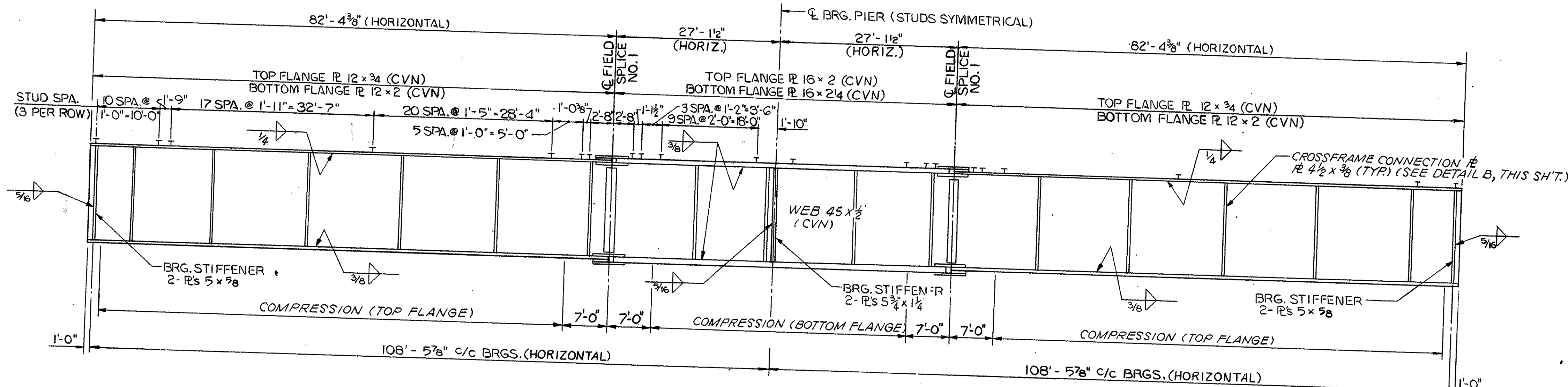
• REFER TO STANDARD DRAWING SD-1-69, SHEET NO. 1 FOR END CROSSFRAME DETAILS, EXCEPT FOR END DAM DETAILS. REFER TO STANDARD DRAWING EXJ-2-81, SHEET NO. 1.

• REFER TO STANDARD DRAWINGS FB-1-82 AND RB-1-55 FOR BEARING DEVICE DETAILS.

• ALL SPLICE PLATES (EXCEPT FILLER PLATES) MUST MEET (CVN) REQUIREMENTS.

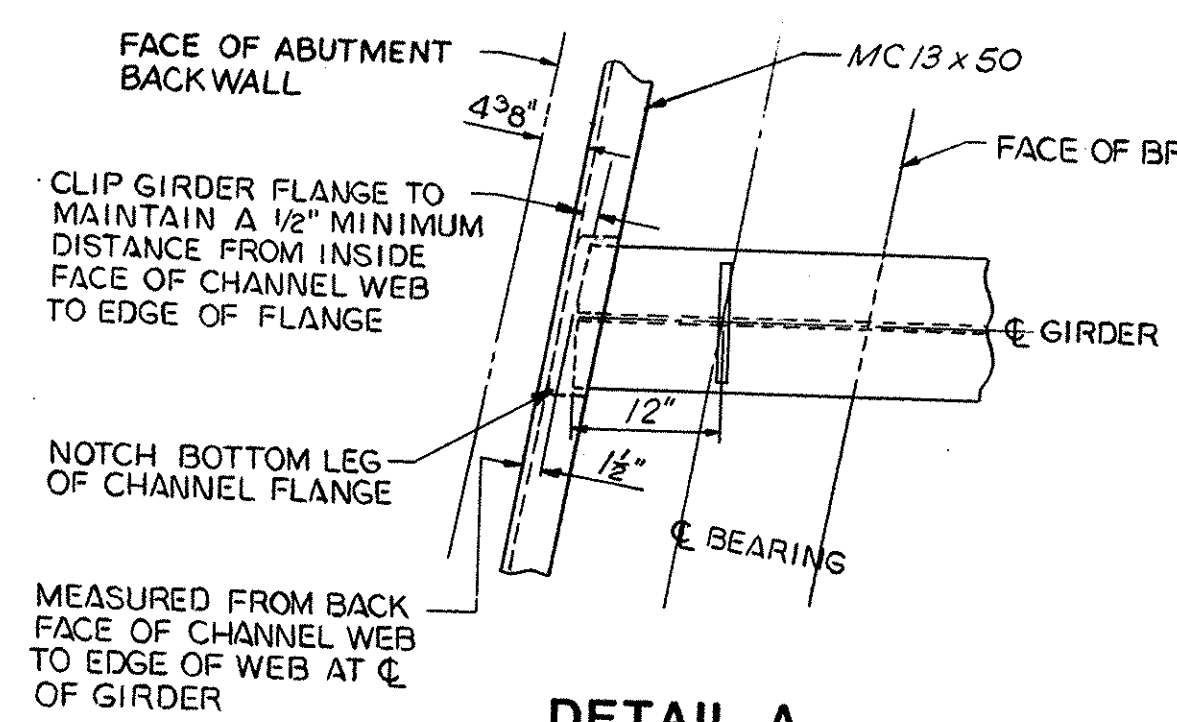
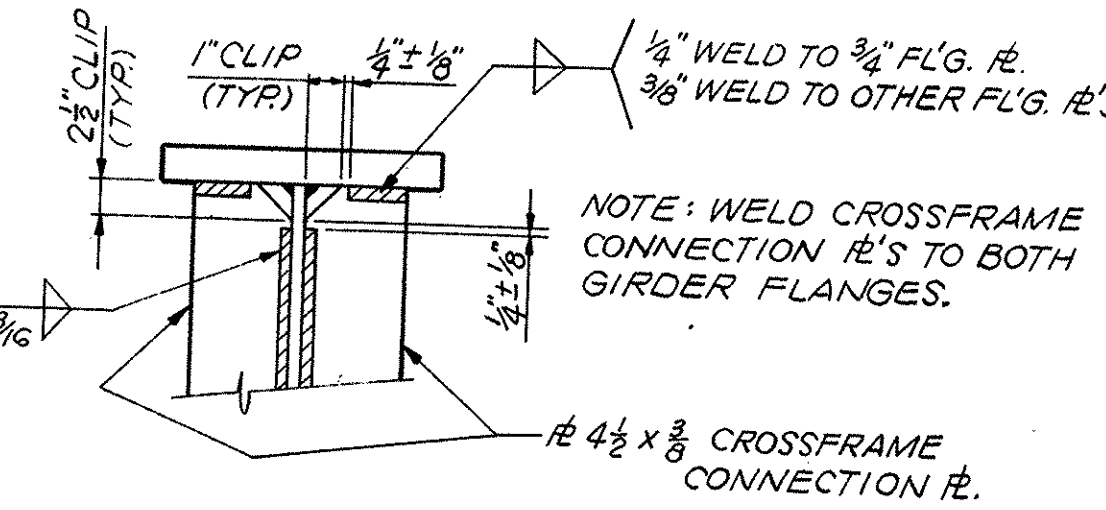
• WHERE A SHAPE OR PLATE IS DESIGNATED (CVN), THE MATERIAL SHALL MEET SPECIFIED MINIMUM NOTCH TOUGHNESS REQUIREMENTS AS SPECIFIED IN 71.01 OF STATE OF OHIO CONSTRUCTION AND MATERIAL SPECIFICATIONS.

• WELDED ATTACHMENT OF SUPPORTS FOR CONCRETE DECK FINISHING MACHINE MAY BE MADE TO AREAS OF THE FASCIA STRINGER FLANGES DESIGNATED "COMPRESSION". ATTACHMENTS SHALL NOT BE MADE TO AREAS DESIGNATED "TENSION". FILLET WELDS TO COMPRESSION FLANGES SHALL BE NOT CLOSER THAN 1" FROM EDGE OF FLANGE, BE NOT MORE THAN 12" LONG, AND BE NOT SMALLER THAN THE MINIMUM SIZE REQUIRED BY AASHTO.



GIRDER ELEVATION

NOTE: TYPICAL INTERIOR GIRDER SHOWN. FOR EXTERIOR GIRDER, CONNECTION PLATES ARE ON INSIDE FACE ONLY.



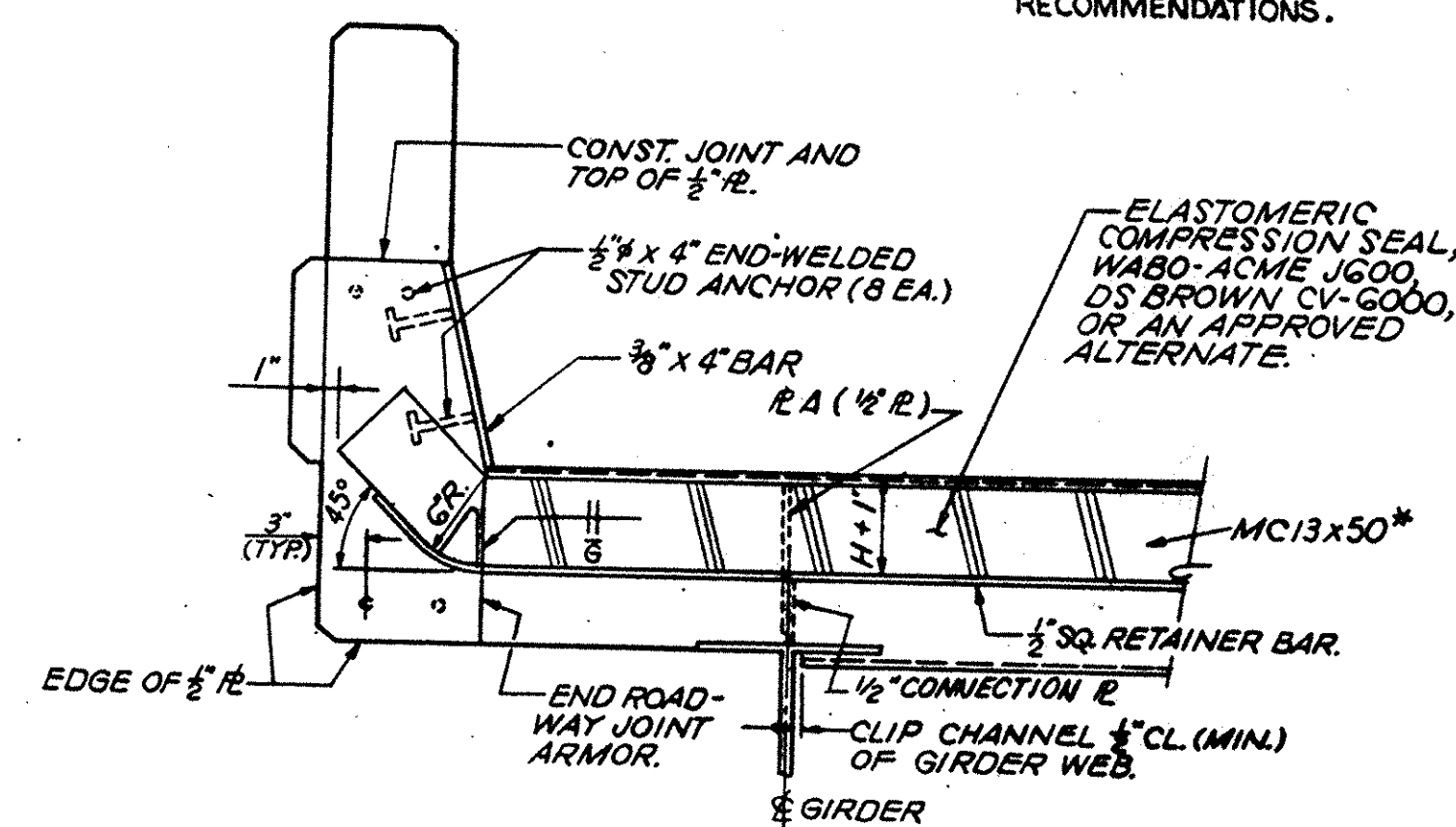
MICROFILMED
OCT 10 1989
OCT 10 1989

FHWA REGION	STATE	PROJECT	
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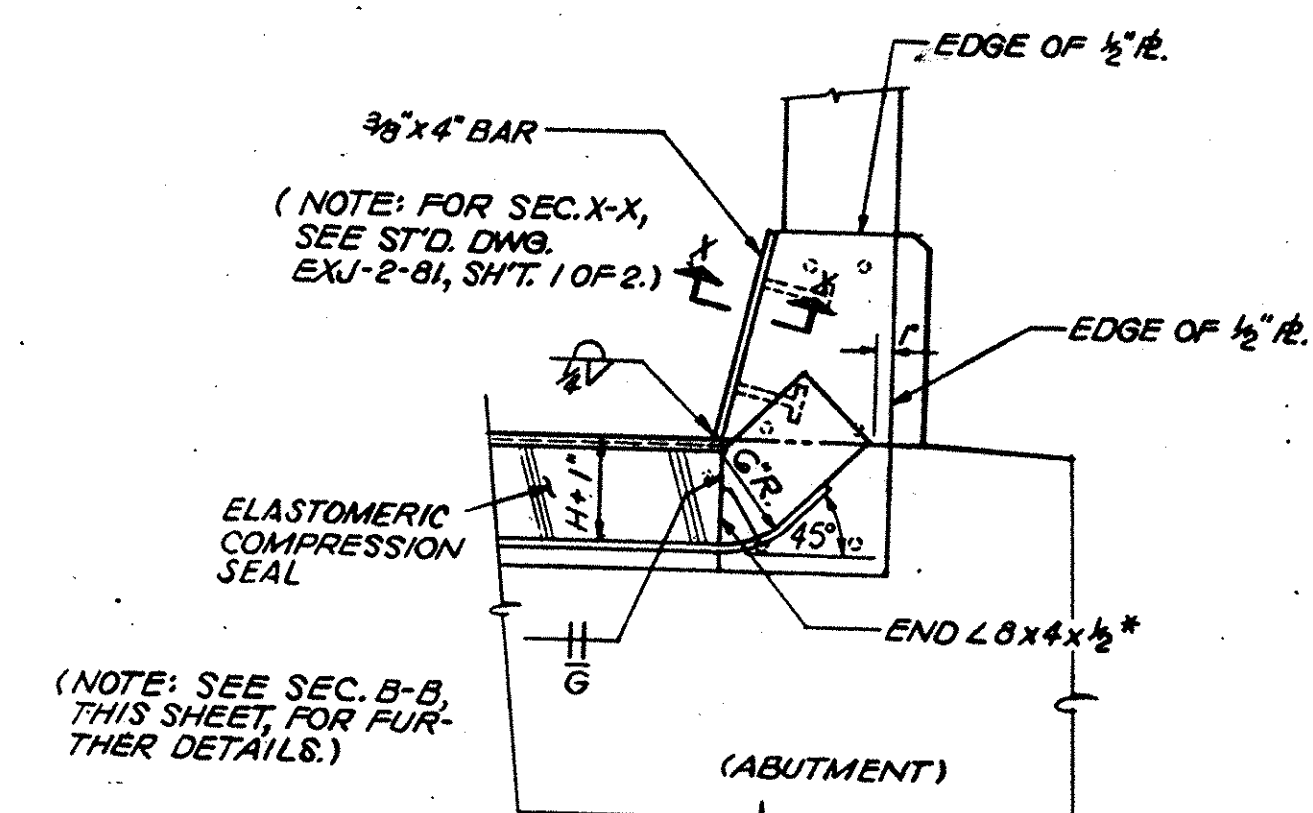
STARK COUNTY
STA-77-G40

NOTE: DRILL AND CUT SEAL TO ACCOMMODATE BENDING AS PER MANUFACTURERS RECOMMENDATIONS.



SECTION B-B

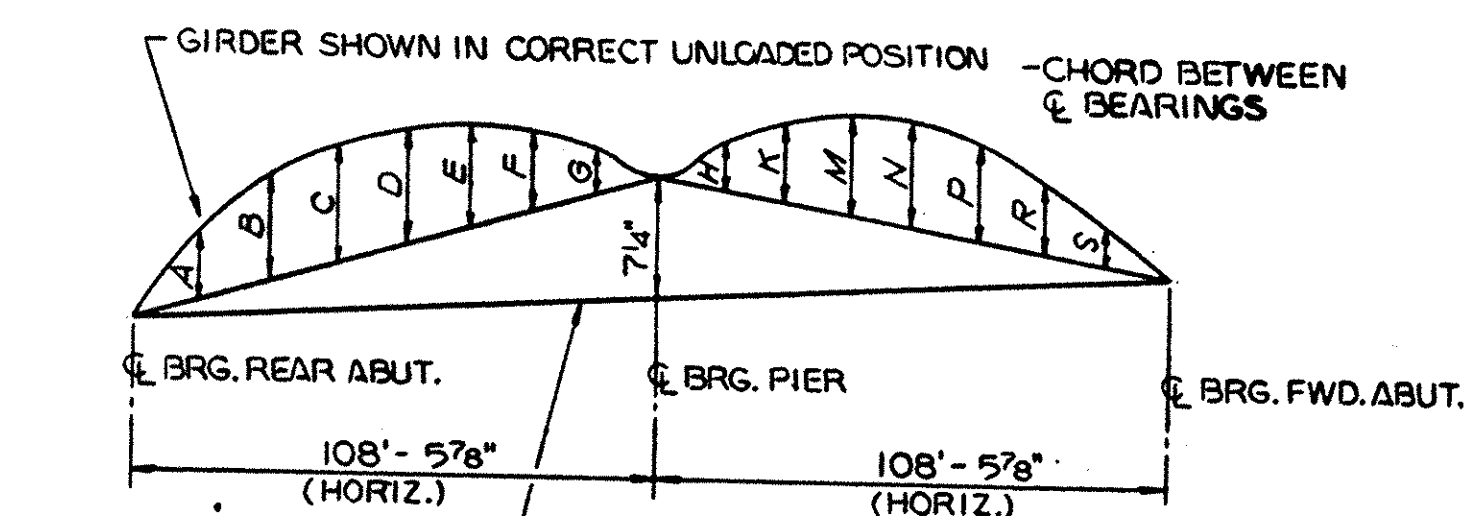
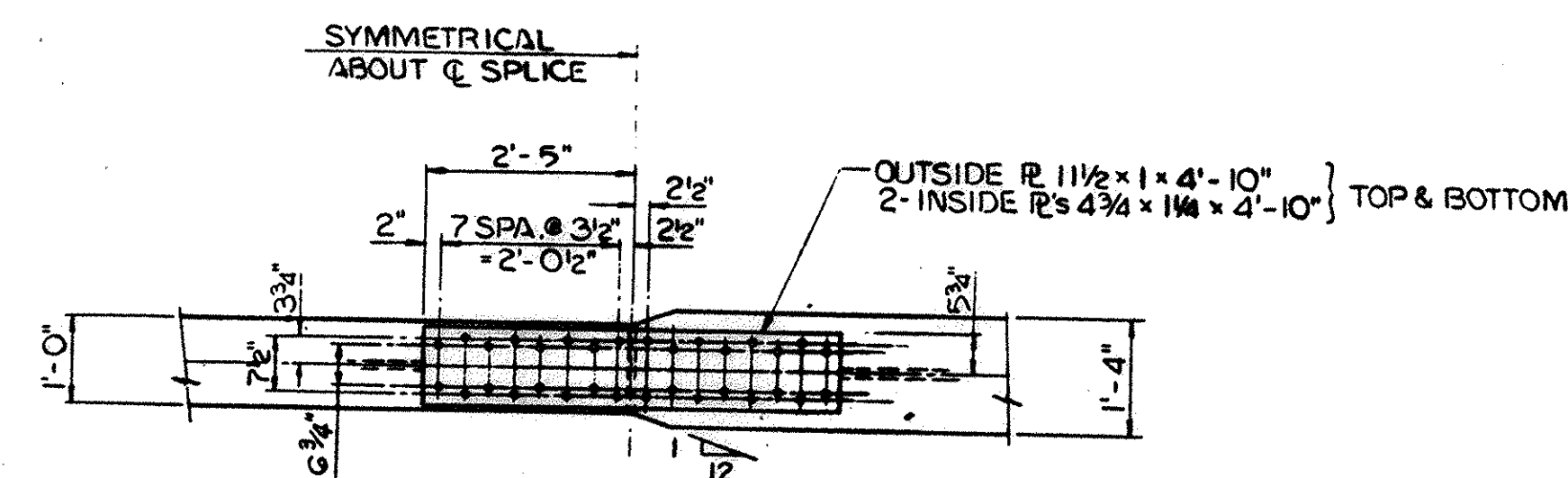
(FOR LOCATION, SEE SHEET No. 9/12)



SECTION A-A

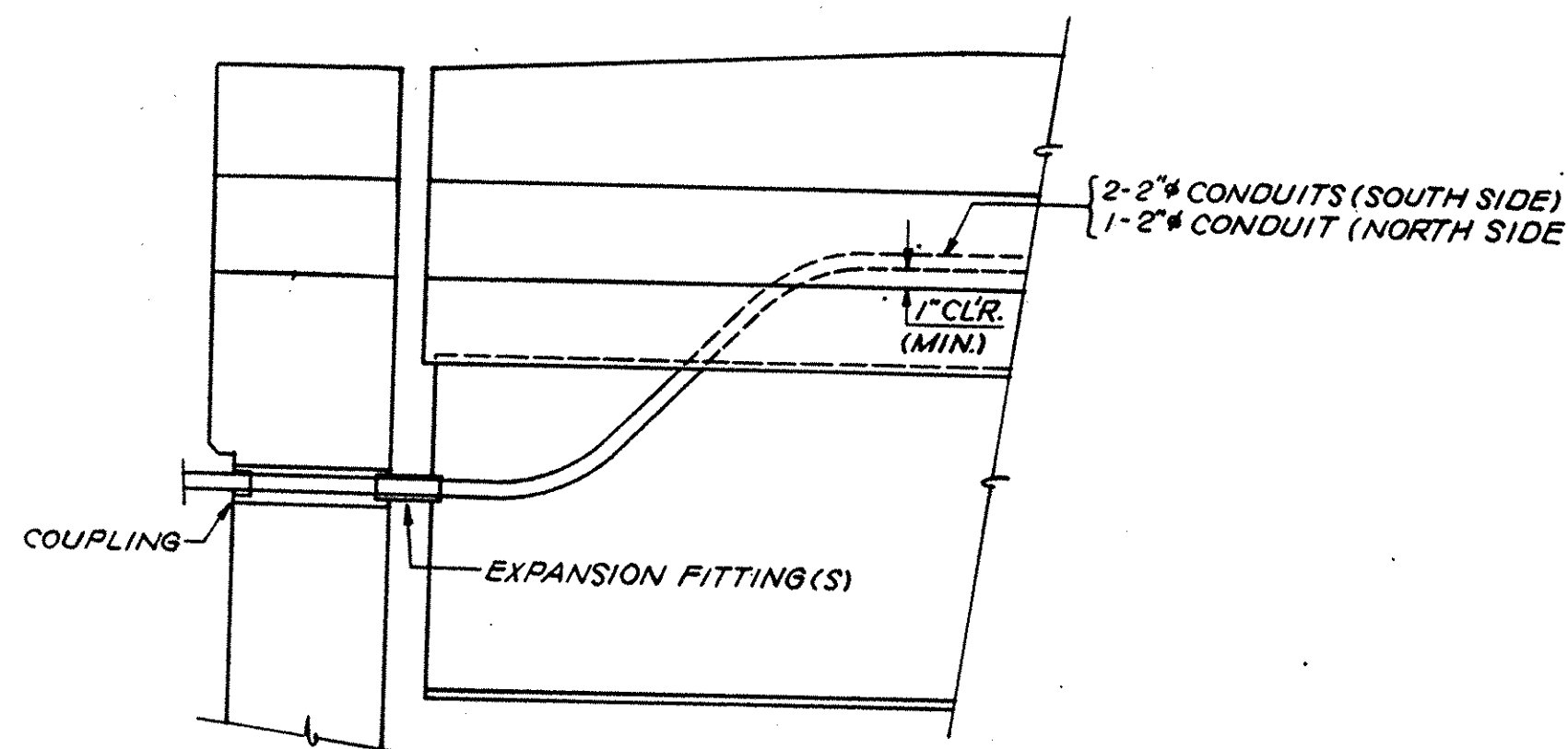
(FOR LOCATION, SEE SHEET No. 9/12)

NOTE: FOR ADDITIONAL DETAILS ON SECTION A-A & B-B, SEE STD. DWG. EXJ-2-81.



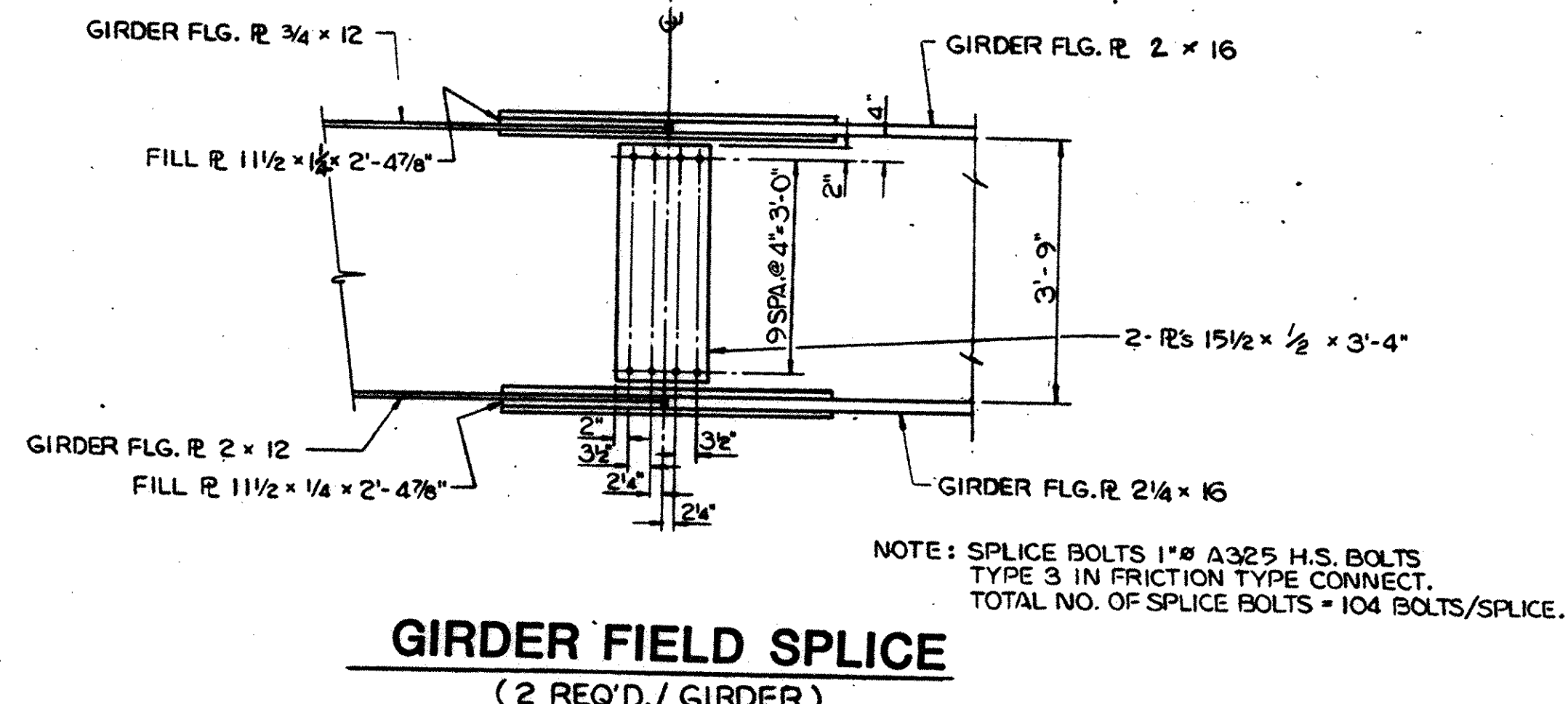
LAYOUT DIAGRAM

CAMBER & DEFLECTION TABLE (ALL GIRDERS)																
SPAN		SPAN No 1								SPAN No 2						
LOCATION	1/4 PT. A	1/4 PT. B	3/4 PT. C	3/4 PT. D	3/4 PT. E	3/4 PT. F	3/4 PT. G	3/4 PT. H	3/4 PT. I	3/4 PT. J	3/4 PT. K	3/4 PT. M	3/4 PT. N	3/4 PT. P	3/4 PT. R	3/4 PT. S
DEFLECTION DUE TO WEIGHT OF STEEL	3/16	5/16	3/8	5/16	5/16	1/8	1/16	1/16	1/8	5/16	5/16	3/8	5/16	3/16		
DEFLECTION DUE TO REMAINING NON-COMP. D.L.	1 1/16	1 1/16	1 15/16	1 7/8	1 9/16	3/4	1/4	1/4	3/4	1 3/16	1 7/8	1 5/16	1 1/16	1 1/16		
DEFLECTION DUE TO COMPOSITE D.L.	1/16	1/8	1/8	1/8	1/8	1/16	1/16	1/16	1/8	1/8	1/8	1/8	1/8	1/16		
ADJUSTMENT REQUIRED FOR VERTICAL CURVE	15/16	1 3/8	1 3/4	1 13/16	1 5/8	1 3/8	3/16	3/16	1 3/8	1 5/8	1 13/16	1 3/4	1 3/8	15/16		
REQUIRED SHOP CAMBER	2 1/4	3 1/2	4 3/16	4 1/8	3 5/8	2 5/16	15/16	15/16	2 5/16	3 3/8	4 1/8	4 3/16	3 1/2	2 1/4		



VIEW C-C

(FOR LOCATION, SEE SHEET 9/12)



GIRDER FIELD SPLICE

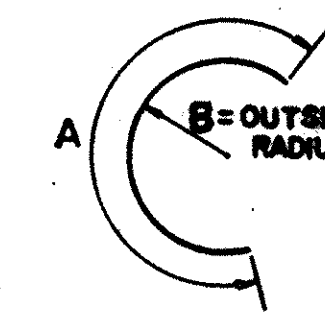
(2 REQ'D./ GIRDER)

NOTE 1
SEE STD. DWG EXJ-2-81 WITH ROADWAY GRADIENT OF 2% OR LESS EXCEPT THAT THE COMPRESSION SEAL SHALL BE D.S. BROWN CV-6000, WABO-ACME J 600 OR EQUAL WITH THE DIMENSION "A" SET TO 4 3/8" ± D (SEE TABLE ON SHT. 2/2 FOR D) AND THE END DAM SHALL BE A MC 13 X 50 IN PLACE OF THE MC 12 X 45. SEE DETAIL A SHT. 10/12 FOR RELATIONSHIP BETWEEN CHANNEL & END OF GIRDER & REQUIRED CUT IN CHANNEL FLANGE. USE SYSTEM A PAINT, TO MATCH THAT USED ON THE ENDS OF THE GIRDERS.

NOTE 2
INSTALLATION OF SEAL: DURING INSTALLATION OF THE SUPPORT/ARMOR FOR THE SUPERSTRUCTURE SIDE OF THE EXPANSION JOINT SEAL, THE SEATING OF BEAMS ON BEARINGS SHALL BE CAREFULLY OBSERVED TO ASSURE THAT POSITIVE BEARING IS MAINTAINED. PROPER VERTICAL FIT OF THE SUPPORT/ARMOR ON THE BEAMS SHALL BE ACHIEVED BY POSITIONING OF THE BEVEL FILL PLATES RATHER THAN BY CLAMPING FORCE.

NOTE 3
SCUPPERS SHALL BE IN ACCORDANCE WITH STD. DWG. SD-1-69 EXCEPT FOR THE FOLLOWING MODIFICATIONS:
1. THE SCUPPER PIPES SHALL EXTEND 8" BELOW THE BOTTOM OF THE EXTERIOR GIRDERS INSTEAD OF THE 2" SHOWN.
2. THE DEPTH OF THE BOX SHALL BE 8" INSTEAD OF THE 7 1/2" SHOWN. THE NUMBER OF 1 1/2" X 1/2" BARS SHALL BE 8 SPACED @ 2 7/8" RESULTING IN A DISTANCE OF 1-11" FROM THE FACE OF CURB LINE TO THE CL OF THE 6" STD. PIPE OUTLET.
3. THE NET SCUPPER OPENING IS 128 SQ. IN. INSTEAD OF THE 89.0 SQ. IN. SHOWN.

DESIGNED					CHECKED				
HGS	AM	HGS	WH	TFM	HGS	WH	TFM	HGS	TFM
10/84	10/84	—	G/85	G/85	10/84	10/84	—	G/85	G/85



TYPE 13

TYPE 16

REINFORCING STEEL SAMPLES; Refer to CMS Sections 106.03, 700, 709.01 through 709.05 and 709.08. Sufficient additional reinforcing steel shall be provided for sampling. Random samples shall be replaced in the structures by the additional steel, spliced in accordance with 509.08.