



CUY-90-14.90

PID 77332/85531

APPENDIX EX-02

**Abbey Avenue Viaduct Plans
(Reference Document)**

State of Ohio
Department of Transportation
Jolene M. Molitoris, Director

**Innerbelt Bridge
Construction Contract Group 1 (CCG1)**

CONVENTIONAL SIGNS

- Center Line
- Existing R/W
- Proposed R/W
- Property Line
- Existing Fence Line
- New Fence
- Existing Storm Sewer
- Proposed Storm Sewer
- Existing Water Manhole
- Reset Existing Manhole
- Existing Manhole
- Proposed Manhole
- Railroad
- Railroad Pole
- Guardrail (Existing)
- Guardrail (New)
- Tree
- Reset Existing Catch Basins
- Existing Catch Basins Removed
- Proposed Catch Basins
- General Pole
- Power Pole
- Light Pole
- Telephone Pole
- Vent Pipe
- Fire Hydrant Existing
- Valves Label for Utility
- Sign
- Overhead Cables
- Water Line
- Gas Line
- Sanitary Sewer
- Stump

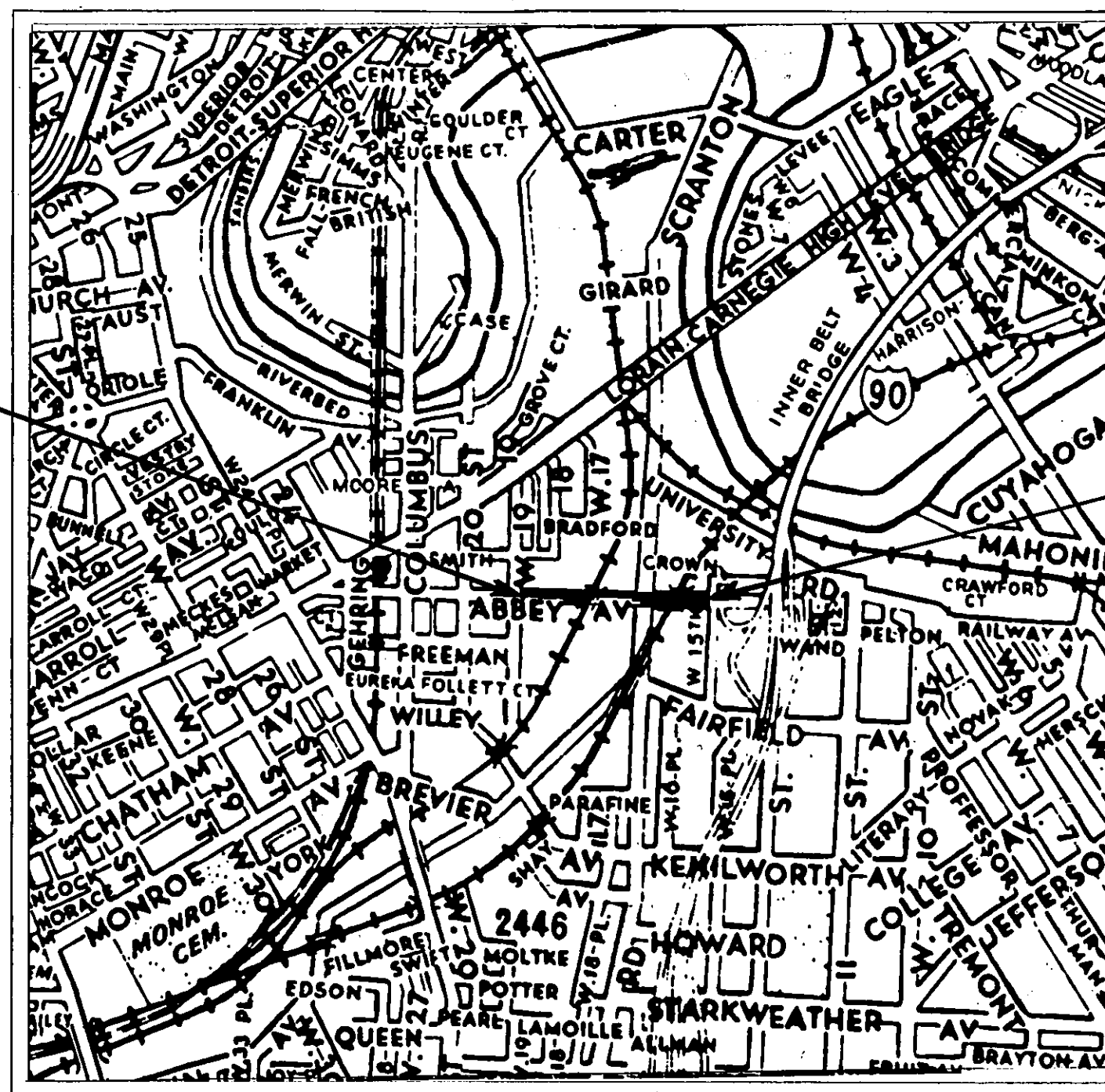
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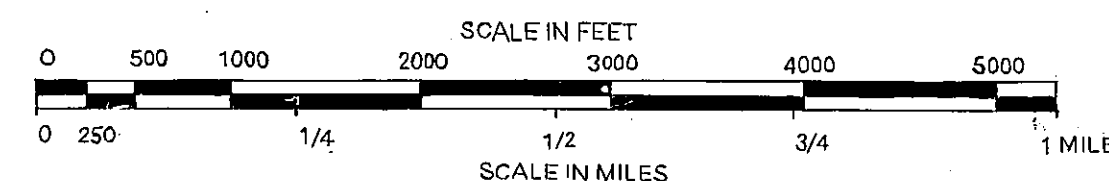
ABBEY AVENUE VIADUCT

OVER CONRAIL, NORFOLK SOUTHERN CORPORATION AND SCRANTON ROAD

CUYAHOGA COUNTY CITY OF CLEVELAND



LOCATION MAP



PORTION TO BE IMPROVED

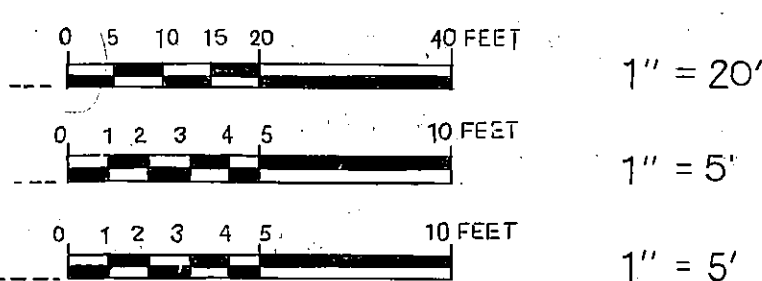
STATE ROADS

OTHER ROADS

PLAN- HORIZONTAL

PLAN- VERTICAL

CROSS SECTIONS



UNDERGROUND UTILITIES

TWO WORKING DAYS BEFORE YOU DIG

CALL...800-362-2764 (TOLL FREE)

OHIO UTILITIES PROTECTION SERVICE

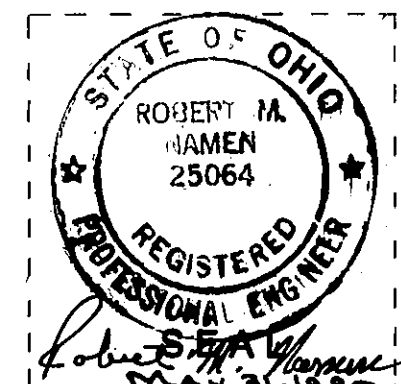
NON-MEMBERS MUST BE CALLED DIRECTLY

LINE DATA

ABBAY AVENUE VIADUCT	
Begin Project	STA. 8+04.57
End Project	STA. 21+00.00
Length of Project	1295.43 LIN. FT. = 0.245 MILES
Begin Work	STA. 7+60.56
End Work	STA. 21+26.47
Length of Work	1365.91 LIN. FT. = 0.259 MILES

DESIGN DESIGNATION

1990 A.D.T.	7000
2010 A.D.T.	10000
D.H.V.	710
D. (Direction Distribution)	55%
T. (Percent B&C Trucks)	13%
V. (Design Speed)	35 MPH
Design Exceptions	None



STANDARD CONSTRUCTION DRAWING						SUPPLEMENTAL SPECS.		CITY STANDARD DRAWINGS	
DWG. No.	DATE	DWG. No.	DATE	DWG. No.	DATE	SPEC. NO.	DATE	DWG. No.	DATE
BP-1	6-1-65	GR-1	1-11-85	TC-83.10	1-20-84	836	11-12-85	CB-1	
BP-2	1-11-85	GR-2B	2-5-82	HL-10.13	5-1-87	849	12-24-85	A-37	
BP-4	10-1-87	GR-3	1-21-85	HL-20.11	5-1-87	853	6-26-78		
BP-5	10-1-87	GR-4	2-5-82	HL-20.14	5-1-87	956	6-26-78		
BP-6	10-1-87	MC-4	7-26-76	HL-30.11	5-1-87	839	12-21-87		
BP-7	10-1-87	MH-1	12-18-84	HL-30.31	5-1-87	802	5-04-88		
BP-10	1-30-84	MH-3	12-18-84	HL-40.10	5-1-87				
BP-11	1-30-84	CB-2-2A & B	5-1-79	HL-50.11	5-1-87				
BP-12	10-1-87	CB-3A	5-1-79	HL-50.21	5-1-87				
SD-1-69	6-12-69	AS-1-81	11-27-81	HL-60.11	5-1-87				
(SHEET 1, 2 & 3 OF 4)		BR-1	5-29-79	HL-60.31	5-1-87				

1989 SPECIFICATIONS

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

Approved _____
 Date _____ Director of Public Service,
 City of Cleveland

Approved _____
 Date _____ District Deputy Director of Transportation

Approved _____
 Date _____ Engineer, Bureau of Bridges and
 Structural Design

Approved _____
 Date _____ Chief Engineer, Planning and Design

Approved _____
 Date _____ Director, Department of Transportation

Plan Prepared By:

OSBORN ENGINEERING CO./PSB TECH., INC.
 CONSULTING ENGINEERS
 666 EUCLID AVENUE CLEVELAND, OHIO 44114

DEPARTMENT OF TRANSPORTATION
 FEDERAL HIGHWAY ADMINISTRATION

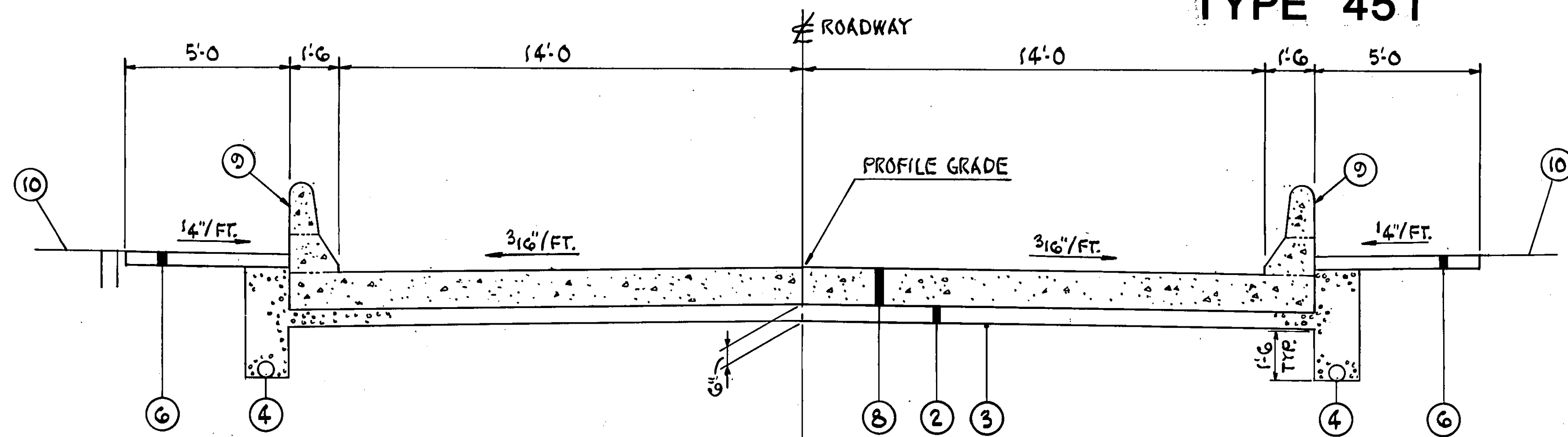
APPROVED: _____
 DIVISION ADMINISTRATOR

DATE _____

V:001M

TYPICAL SECTIONS

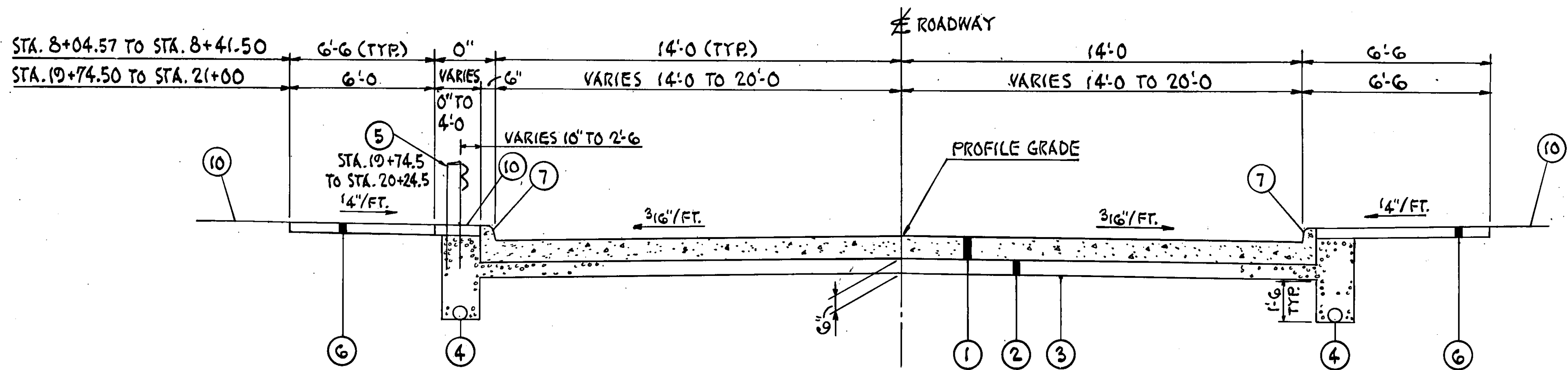
TYPE 451



APPROACH SLAB SECTION (T=13")

STA. 8+41.50 TO STA. 8+61.50 = 20 LIN. FT.
 STA. 19+54.50 TO STA. 19+74.50 = 20 LIN. FT.
 TOTAL = 40 LIN. FT.

(1) SEE SHEET 11 OF 37 FOR MAINTENANCE OF TRAFFIC NOTE AT EXISTING DRIVES BEING REPLACED.



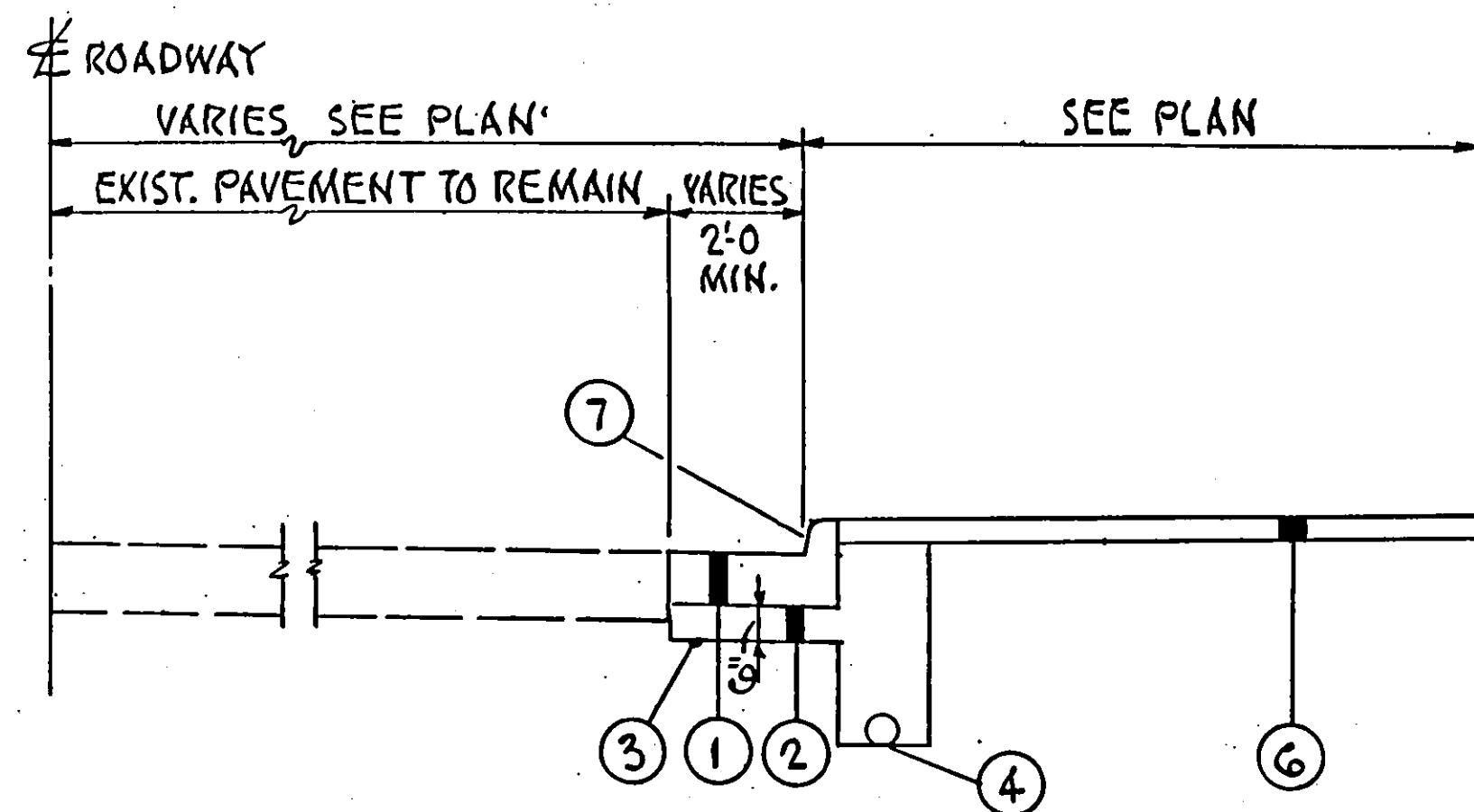
NORMAL SECTION

STA. 8+04.57 TO STA. 8+41.50 = 36.93 LIN. FT.
 STA. 19+74.50 TO STA. 21+00 = 125.50 LIN. FT. (1)
 TOTAL = 162.43 LIN. FT.

LEGEND

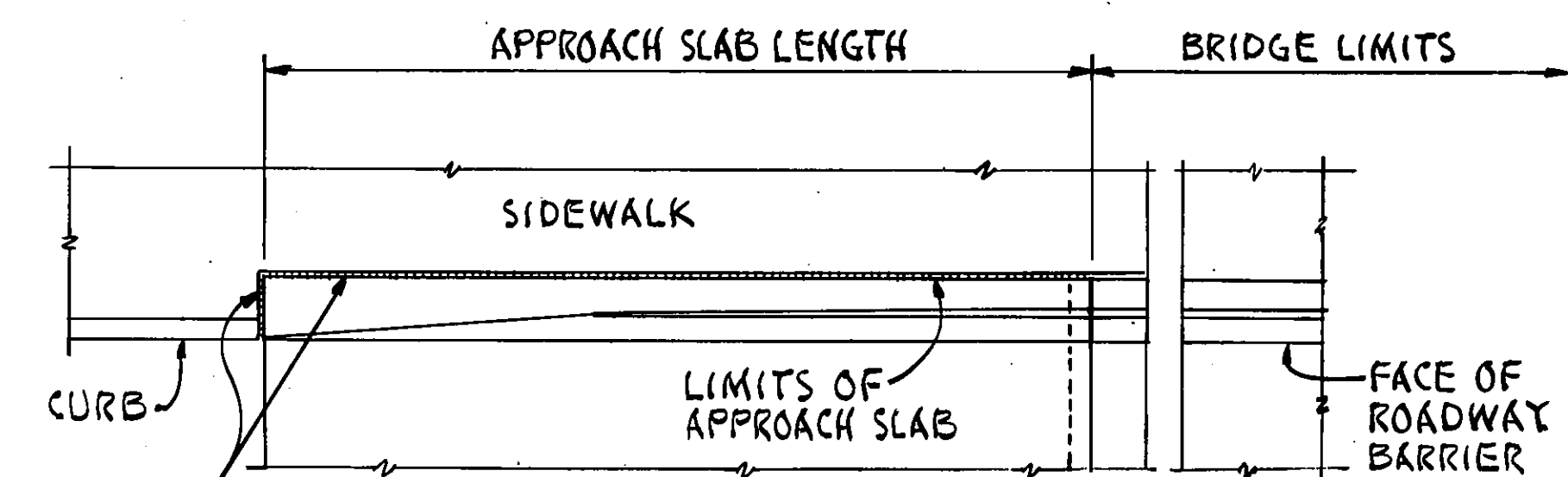
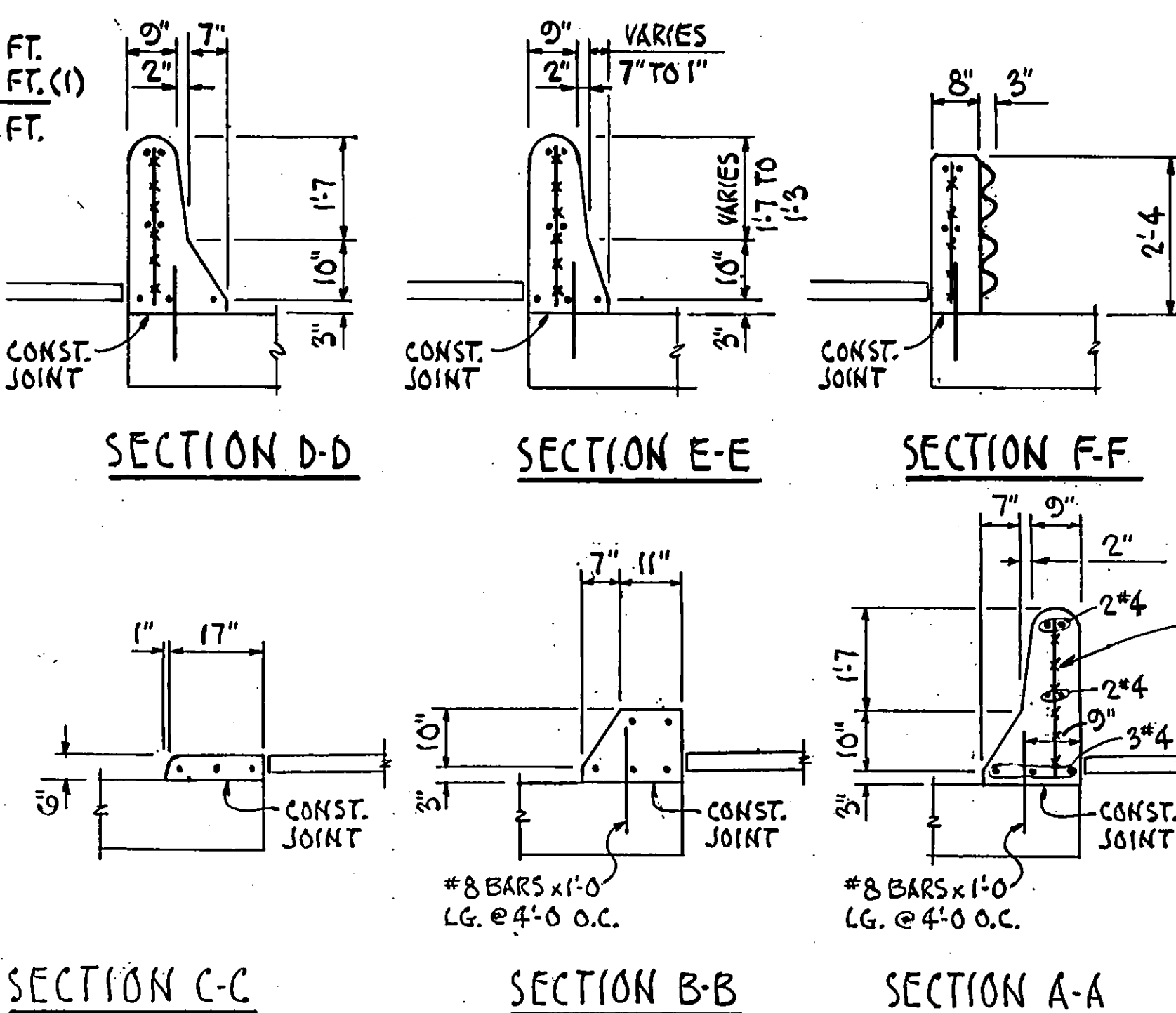
- ① ----- ITEM 451, 9" REINFORCED CONCRETE PAVEMENT
- ② ----- ITEM 310, SUBBASE, TYPE I, GRADING A
- ③ ----- ITEM 203, SUBGRADE COMPACTION
- ④ ----- ITEM 605, 6" SHALLOW PIPE UNDERDRAINS, AS PER PLAN
- ⑤ ----- ITEM 606, GUARDRAIL, TYPE 5
- ⑥ ----- ITEM 608, 4" CONCRETE WALK
- ⑦ ----- ITEM 609, TYPE 2-A CURB
- ⑧ ----- ITEM 611, REINFORCED CONCRETE APPROACH SLABS, (T=13")
- ⑨ ----- ITEM 622, CONCRETE BARRIER AS PER PLAN
- ⑩ ----- ITEM 660, SODDING

NOTE A-CONCRETE INSERT ASSEMBLIES AS SHOWN ON STD. DWGS. GR-1 AND GR-3 SHALL BE PROVIDED FOR THE ATTACHMENT OF GUARDRAIL TERMINAL CONNECTORS AND SHALL BE INCLUDED FOR PAYMENT WITH ITEM 622, CONCRETE BARRIER.



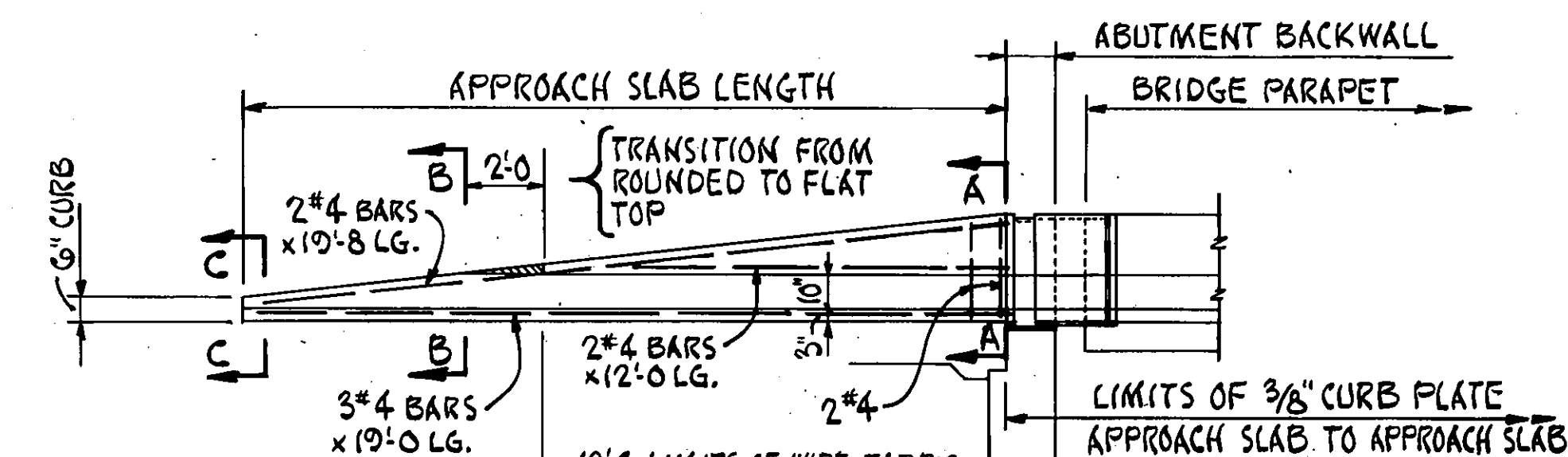
PARTIAL CURB SECTION

LEFT STA. 8+04.53
 RIGHT STA. 7+80.52 TO STA. 8+04.53

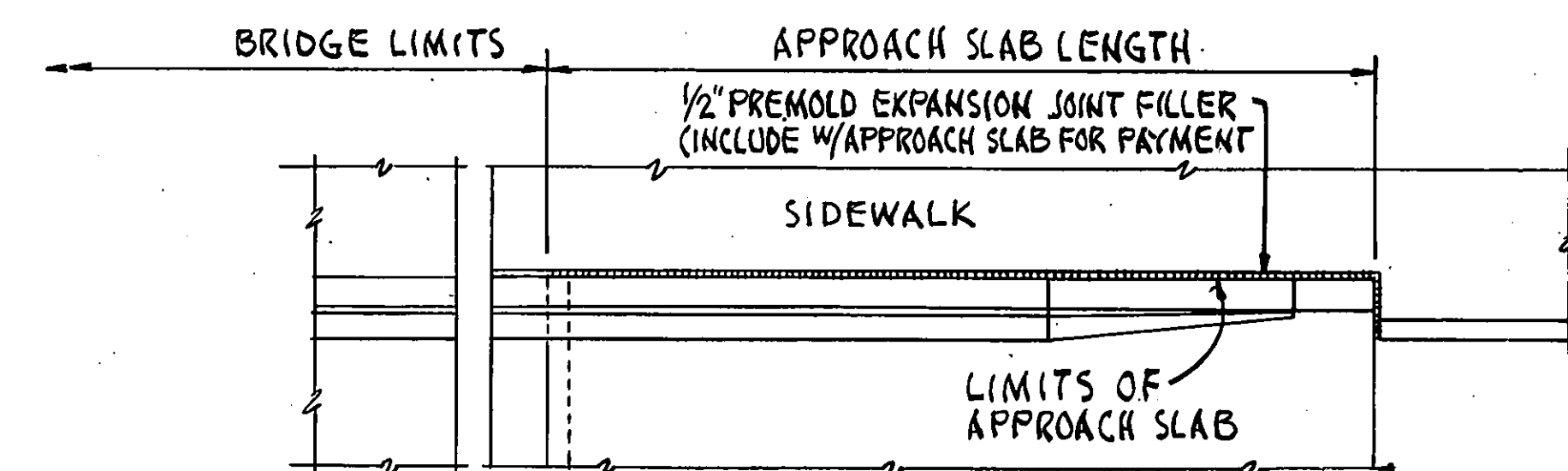


PLAN AT END TERMINAL (TYPICALLY)

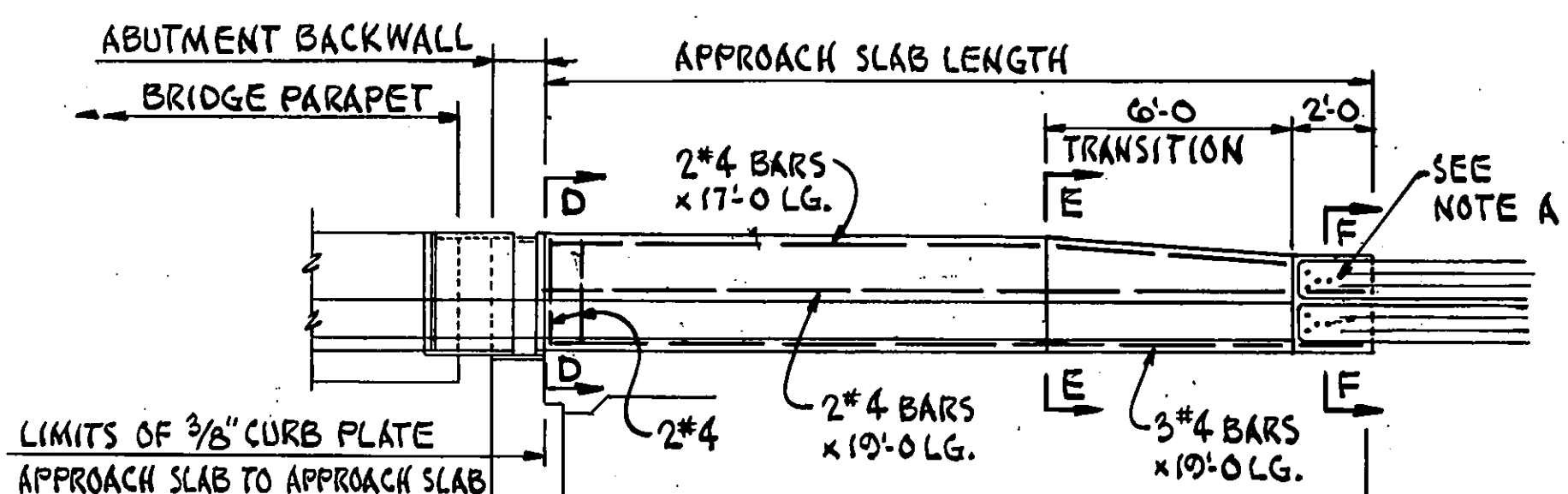
1/2" PREMOLD EXPANSION JOINT FILLER (INCLUDE WITH APPROACH SLAB FOR PAYMENT)



ELEVATION AT END TERMINAL (TYPICALLY)

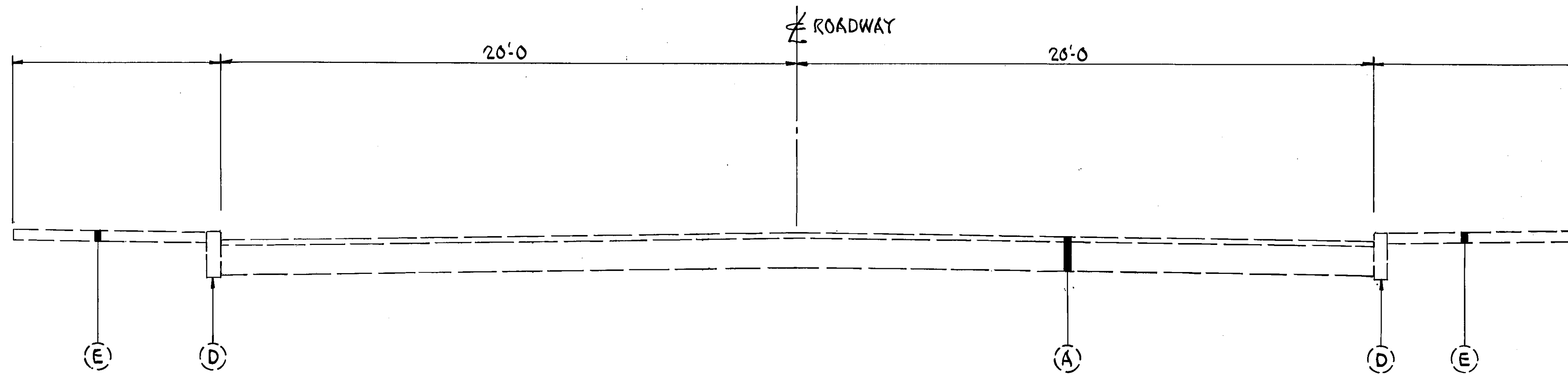


PLAN AT END TERMINAL (FORWARD ABUT. LEFT SIDE)



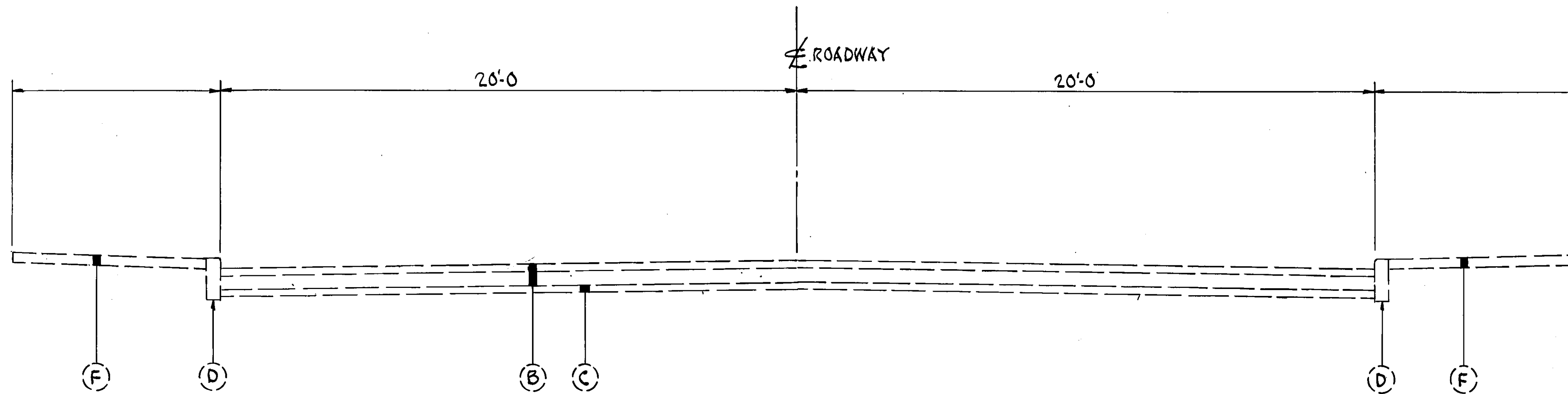
ELEVATION AT END TERMINAL (FORWARD ABUT. LEFT SIDE)

EXISTING TYPICAL SECTIONS



EXISTING APPROACH SLAB SECTION

STA. 8+41.50 TO STA. 8+61.50 = 20 LIN. FT.
 STA. 19+54.50 TO STA. 19+74.50 = 20 LIN. FT.
 TOTAL = 40 LIN. FT.



EXISTING ROADWAY SECTION

STA. 8+04.57 TO STA. 8+41.50 = 36.97 LIN. FT.
 STA. 19+74.50 TO STA. 21+00 = 125.50 LIN. FT.
 TOTAL = 162.47 LIN. FT.

LEGEND:

EXISTING ROADWAY ITEMS TO BE REMOVED UNDER ITEM 202

- (A) --- 13" APPROACH SLAB WITH 2" ASPHALT WEARING COURSE.
- (B) --- 6" PAVING BRICK W/2" ASPHALT WEARING COURSE.
- (C) --- 3" SAND CUSHION.
- (D) --- TYPE 6 CONCRETE CURB.
- (E) --- 4" REINFORCED APPROACH SIDEWALK
- (F) --- 4" CONCRETE SIDEWALK

GENERAL NOTES

GENERAL

ITEM 619-FIELD OFFICE: - THE CONTRACTOR SHALL PROVIDE A SUITABLE FIELD OFFICE HAVING A MINIMUM OF 300 SQ. FT. OF FLOOR SPACE. PAYMENT SHALL BE AT THE LUMP SUM PRICE BID FOR ITEM 619, FIELD OFFICE.

DATUM: - ALL ELEVATIONS ARE BASED ON U.S.G.S. DATUM.

CONTINGENCY QUANTITIES:

THE CONTRACTOR SHALL NOT ORDER MATERIAL OR PERFORM WORK FOR PLAN ITEMS SET UP TO BE USED "AS DIRECTED BY THE ENGINEER" UNLESS AUTHORIZED BY THE ENGINEER. THE ACTUAL WORK LOCATIONS AND QUANTITIES USED AT THE ENGINEERS DISCRETION SHALL BE MADE A MATTER OF RECORD BY INCORPORATION IN THE FINAL CHANGE ORDER GOVERNING COMPLETION OF THIS PROJECT.

LOCATION OF GUARDRAIL:

THE LOCATIONS OF GUARDRAIL RUNS, AS SHOWN IN THESE PLANS, ARE SUBJECT TO ADJUSTMENT PRIOR TO FINAL ACCEPTANCE. THE ENGINEER SHALL BE SATISFIED THAT ALL INSTALLATIONS WILL AFFORD MAXIMUM PROTECTION FOR TRAFFIC.

RIGHT OF WAY

ALL WORK ON THIS PROJECT IS TO BE PERFORMED WITHIN THE EXISTING RIGHT OF WAY

ITEM 616. DUST CONTROL

THE CONTRACTOR SHALL FURNISH AND APPLY WATER FOR DUST CONTROL PURPOSES AS DIRECTED BY THE ENGINEER. THE FOLLOWING QUANTITY HAS BEEN INCLUDED IN THE GENERAL SUMMARY FOR DUST CONTROL PURPOSES.

ITEM 616, WATER 50 M-GAL

SODDING:

QUANTITIES FOR SODDING ARE CALCULATED FOR THE SOIL AREAS BETWEEN THE WORK LIMITS, AS SHOWN ON THE CROSS SECTIONS AND OVER THE PIER EXCAVATIONS.

WATERING PERMANENT SODDED AREAS:

THE FOLLOWING ESTIMATED QUANTITY IS TO BE USED AS DIRECTED BY THE ENGINEER TO TO CARE FOR THE SODDED AREAS, AS PER 659.08.

ITEM 659-WATER = 1.50 M-GALS.

CLEARING AND GRUBBING:

ALTHOUGH THERE ARE NO TREES AND/OR STUMPS SPECIFICALLY MARKED FOR REMOVAL WITHIN THE LIMITS OF THIS PROJECT, A LUMP SUM QUANTITY HAS BEEN INCLUDED IN THE GENERAL SUMMARY FOR ITEM 201-CLEARING AND GRUBBING, ALL PROVISIONS AS SET FORTH IN THE SPECIFICATIONS UNDER THIS ITEM SHALL BE FOLLOWED AND ALL COSTS SHALL BE INCLUDED IN THE LUMP SUM BID PRICE FOR ITEM 201-CLEARING AND GRUBBING.

ROUNDING OF CORNERS SHOWN ON CROSS SECTIONS:

THE ROUNDED CORNERS SHOWN ON THE TYPICAL SECTIONS APPLY TO ALL CROSS SECTIONS EVEN THOUGH OTHERWISE SHOWN ON THESE PLANS.

UNDERGROUND UTILITIES: - THE LOCATIONS OF THE UNDERGROUND UTILITIES SHOWN ON THE PLANS ARE AS OBTAINED FROM THE OWNERS OF THE UTILITY AS REQUIRED BY SECTION 153.64 ORC.

UTILITY OWNERSHIP: - THE FOLLOWING IS A LIST OF THE OWNERS OF UTILITIES KNOWN TO BE WITH IN THE AREA OF THE PROJECT

CLEVELAND ELECTRIC ILLUMINATING CO.
P.O. BOX 5000
CLEVELAND, OHIO 44113
216-662-9800

CLEVELAND PUBLIC POWER
1201 LAKESIDE AVENUE
CLEVELAND, OHIO 44114
216-664-3922

OHIO BELL TELEPHONE
1020 BOLIVAR ROAD
CLEVELAND, OHIO 44115
216-822-6291

EAST OHIO GAS COMPANY
P.O. BOX 5759
CLEVELAND, OHIO 44101
216-432-6803

CITY OF CLEVELAND
DIVISION OF WATER
1201 LAKESIDE AVENUE
CLEVELAND, OHIO 44114
216-271-4264

AT+T
8333 WEYMOUTH ROAD
MEDINA, OHIO
1-800-362-2764

ITEM 614. MAINTAINING TRAFFIC

THE CONTRACTOR SHALL MAINTAIN TRAFFIC AT ALL TIMES TO ONE OF THE COMMERCIAL DRIVES TO THE SOUTH OF ABBAY AVENUE AND TO THE WEST OF WEST 15TH STREET USING THE PROCEDURE DETAILED ON SHEET 11 OF 37. IN PHASE ONE THE EXISTING EAST DRIVE AND THE EXISTING SOUTH HALF OF ABBAY AVENUE SHALL BE UTILIZED AND IN PHASE TWO THE NEW WEST DRIVE AND THE NEW NORTH HALF OF ABBAY AVENUE SHALL BE UTILIZED AS SHOWN ON THE PLANS.

TEMPORARY SOIL EROSION AND SEDIMENT CONTROL

THE FOLLOWING ESTIMATED QUANTITIES ARE TO BE USED AS DIRECTED BY THE ENGINEER, FOR TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES:

207	STRAW OR HAY BALES	50 EACH
659	COMMERCIAL FERTILIZER	0.01 TON
659	WATER	1.0 M-GAL
660	SODDING AS PER PLAN	50 SQ. YD.

ITEM 608 - 4" CONCRETE WALK, AS PER PLAN

TRANSVERSE EXPANSION JOINTS SHALL CONSIST OF 1/2" WIDE, 705.03 PREFORMED FILLER. EXPANSION JOINTS SHALL BE CONSTRUCTED AT INTERVALS OF NOT MORE THAN 25 FEET UNLESS OTHERWISE DIRECTED BY THE ENGINEER. THEY SHALL BE PLACED AT THE GROOVED DIVISION LINES AND SHALL BE TRULY NORMAL TO THE GRADE. THE COST OF THE MATERIAL AND LABOR ASSOCIATED WITH THIS WORK IS INCLUDED IN CONTRACT UNIT BID PRICE FOR ITEM 608, 4" CONCRETE WALK AS PER PLAN

ITEM 660, SODDING, AS PER PLAN

THE PREPARATION OF SODDED AREAS SHALL INCLUDE TWO (2) INCHES OF TOPSOIL FURNISHED AND PLACED BENEATH THE SOD IN ACCORDANCE WITH ITEM 653 EXCEPT THAT IGNITION TEST SAMPLING WILL NOT BE REQUIRED

PAYMENT FOR PREPARING AND PLACING SODDED AREAS. INCLUDING THE TWO INCHES OF TOPSOIL BENEATH THE SOD, WILL BE PAID FOR AT THE CONTRACT UNIT PRICE BID PER SQUARE YARD FOR ITEM 660, SODDING, AS PER PLAN

DRAINAGE

ITEM SPECIAL- CLEAN EXISTING UNDERGROUND SEWER SYSTEMS 18" AND UNDER

CLEANOUT SHALL CONSIST OF REMOVING DIRT AND DEBRIS FROM THE SEWER SYSTEMS AS DEFINED BY THE LIMITS SHOWN ON THE PLANS. (SHEETS 6 THRU 8)

AFTER THE DIRT AND DEBRIS ARE REMOVED, THE SYSTEMS SHALL BE FLUSHED TO THE SATISFACTION OF THE ENGINEER.

THE NUMBER OF LINEAR FEET OF UNDERGROUND SEWER SYSTEMS SHOWN IN THE PLANS (LINEAR FEET FOR ALL PIPES 18" DIAMETER AND UNDER) ARE APPROXIMATELY THE MAXIMUM NUMBER OF LINEAR FEET OF PIPE THAT MIGHT REQUIRE CLEANOUT. ONLY THOSE PORTIONS OF THE SYSTEMS DESIGNATED BY THE ENGINEER SHALL BE CLEANED OUT.

CLEANOUT OF THE UNDERGROUND SEWER SYSTEMS WILL BE PAID FOR AT THE CONTRACT UNIT PRICE BID PER LINEAR FOOT FOR ITEM SPECIAL- CLEAN EXISTING UNDERGROUND SEWER SYSTEMS 18" AND UNDER. THIS PRICE SHALL BE PAYMENT IN FULL FOR ALL MATERIAL, EQUIPMENT AND LABOR NECESSARY TO COMPLETE THE WORK TO THE SATISFACTION OF THE ENGINEER. NO SEPARATE PAYMENT SHALL BE MADE TO THE CONTRACTOR TO COVER ANY COST FOR CLEANING DRAINAGE STRUCTURES WITHIN THE SYSTEM OF UNDERGROUND SEWERS.

SPECIFICATIONS FOR THE CLEANING OF EXISTING SEWERS

EQUIPMENT REQUIRED

(A) THE CONTRACTOR SHALL PROVIDE ALL EQUIPMENT AND SUPPLIES NECESSARY TO PROGRESS THE WORK TO COMPLETION IN A WORKMANLIKE MANNER IN THE ALLOTTED TIME. THE CLEANING METHODS UTILIZED MAY CONSIST OF RODDING, BUCKETING, BRUSHING, JET FLUSHING, BEE LINING, OR LIMING, OR ANY COMBINATION THEREOF.

DISPOSAL OF DEBRIS

(A) ALL DEBRIS, SAND, GRAVEL, AND OTHER MATERIALS WHICH WOULD RESTRICT FLOW SHALL BE REMOVED FROM THE SEWER SEGMENT BEING CLEANED AND HAULED AND DISPOSED OF BY THE CONTRACTOR TO A DISPOSAL SITE. FLUSHING OF SAID MATERIALS FROM SEWER SEGMENT TO SEWER SEGMENT SHALL NOT BE PERMITTED. THE CONTRACTOR SHALL BE REQUIRED TO CLEAN AND PROPERLY DISPOSE OF ALL MATERIAL REMOVED FROM THE SEWER SEGMENT WHICH IS SPILLED OR OTHERWISE DEPOSITED UPON THE GROUND. SAID CLEAN-UP SHALL BE DONE WITH DISPATCH AND PROMPTNESS SO AS NOT TO CAUSE UNSIGHTLINESS OR A NUISANCE.

RESPONSIBILITIES OF THE CONTRACTOR

(A) ELECTRICITY: THE CONTRACTOR SHALL PROVIDE ALL ELECTRICITY.

(B) WATER: THE CONTRACTOR SHALL MAKE PROVISIONS FOR TRANSPORTING FLUSHING WATER REQUIRED AT THE SITE AND SHALL PAY ALL COST FOR SUCH WATER.

(C) PROTECTION OF CONTRACTOR'S EQUIPMENT: THE CONTRACTOR SHALL ASSUME ENTIRE RESPONSIBILITY FOR THE PROTECTION AND SAFEKEEPING OF HIS OWN EQUIPMENT AND MATERIAL UNTIL THE JOB IS COMPLETED. AT THE TERMINATION OF HIS WORK AND FINAL ACCEPTANCE BY THE ENGINEER, THE CONTRACTOR SHALL REMOVE ALL OF HIS MATERIALS FROM THE PREMISES.

(D) CONTRACTOR TO EXAMINE SITE: THE CONTRACTOR SHALL INFORM HIMSELF OF THE CONDITIONS UNDER WHICH THE WORK IS TO BE PERFORMED, THE SITE OF THE WORK, AND ALL OTHER RELEVANT MATTERS CONCERNING THE WORK TO BE PERFORMED PRIOR TO EXECUTION OF THIS CONTRACT. THE CONTRACTOR WILL NOT BE ALLOWED ANY EXTRA COMPENSATION BY REASON OF ANY MATTER FOR NOT COMPLYING WITH THE PRECEDING PRIOR TO ENTERING INTO THIS CONTRACT.

(E) PROVISION OF GUARDS AND WARNING SIGNS: THE CONTRACTOR MUST PROVIDE ALL LEGAL AND NECESSARY GUARDS, RAILINGS, LIGHTS, WARNING SIGNS, FLAGMAN, ETC., DURING THE PROGRESS OF THE WORK FOR WHICH HE IS RESPONSIBLE. THE CONTRACTOR SHALL ARRANGE HIS WORK SO THAT HE WILL CAUSE A MINIMUM AMOUNT OF INTERFERENCE WITH MUNICIPAL OPERATION. ITEM SPECIAL, CLEAN EXISTING UNDERGROUND SEWER SYSTEMS, UNDER 18" DIA. WILL BE PAID FOR UNDER A LINEAR FOOT BASIS FOR THE ACTUAL AMOUNT OF SEWER CLEANED FOR THE 817 L.F. OF EXISTING UNDERGROUND SEWER LINES UNDER 18" DIA BEING REUSED IN THIS CONTRACT.

THE FOLLOWING ESTIMATED QUANTITIES ARE INCLUDED TO REPLACE ANY BROKEN OR UNUSABLE PIECES OF CONDUIT FOUND AFTER CLEANING OPERATION AS DIRECTED BY THE ENGINEER.

ITEM 603, 12" CONDUIT TYPE B, 706.01, 706.02 & 706.08 = 50 LIN. FT.
ITEM 603, 12" CONDUIT TYPE C, 706.01, 706.02 & 706.08 = 50 LIN. FT.
ITEM 603, 15" CONDUIT TYPE C, 706.01, 706.02 & 706.08 = 50 LIN. FT.
ITEM 603, 18" CONDUIT TYPE C, 706.01, 706.02 & 706.08 = 50 LIN. FT.
ITEM 603, 6" TYPE F CONDUIT, AS PER PLAN

PIPE MATERIAL FOR THE TYPE F CONDUIT SHALL BE 707.17 NON PERFORATED, ASTM 3034 PS 45 MIN.

ITEM 605, SHALLOW PIPE UNDERDRAIN, AS PER PLAN

ALL GRANULAR FILTER MATERIAL FOR THIS ITEM SHALL BE LIMITED TO NO. 8 DURABLE NATURAL AGGREGATE.

ITEM 202, CATCH BASIN REMOVED, AS PER PLAN

THE CASTING SHALL BE CAREFULLY REMOVED AND STORED WITHIN THE RIGHT OF WAY FOR SALVAGE BY CITY OF CLEVELAND FORCES.

PAYMENT FOR ALL OF THE ABOVE SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 202, CATCH BASIN REMOVED, AS PER PLAN.

ITEM 605, SHALLOW PIPE UNDERDRAIN, 707.01 TYPE III OR 707.21 TYPE III, AS PER PLAN

ALL GRANULAR FILTER MATERIAL FOR THIS ITEM SHALL BE LIMITED TO NO. 8 DURABLE NATURAL AGGREGATE.

GENERAL SUMMARY

FOR INFORMATION ONLY

CUYAHOGA COUNTY
 ABBEY AVENUE VIADUCT

ITEM	SHEET NUMBER												ITEM EXTENSION	ITEM	QUANT.	UNIT	DESCRIPTION	REMARKS
	3	4	5	6	7	8	9	10	11	12								
201													11000	201	LUMP	ROADWAY		
202				38		38							30700	202	76	L.F.	CLEARING AND GRUBBING	
202				37.5		37.5							38000	202	75	L.F.	CONCRETE BARRIER REMOVED	
202				315		963							23000	202	1278	S.Y.	GUARDRAIL REMOVED	
202										26			35100	202	26	L.F.	PAVEMENT REMOVED	
202				1227		2266							30000	202	3493	S.F.	PIPE REMOVED, 24" AND UNDER	
202				156		228							32000	202	384	L.F.	WALK REMOVED	
202										3			58101	202	3	EA.	CURB REMOVED	
202				60		60							75000	202	120	L.F.	CATCH BASIN REMOVED, AS PER PLAN	SEE SHEET 3
202				58									202	202	58	S.Y.	FENCE REMOVED	
203				84									12000	203	84	C.Y.	DRIVE REMOVED	
203				135									20000	203	135	C.Y.	EXCAVATION NOT INCLUDING EMBANKMENT CONSTRUCTION	
203				829									50000	203	829	S.Y.	EMBANKMENT	
606													25000	606	1	EA.	SUBGRADE COMPACTION	
606													30000	606	1	EA.	ANCHOR ASSEMBLY, TYPE A	
606													13000	606	25	L.F.	BRIDGE TERMINAL ASSEMBLY, TYPE A	
608				2		25							51000	608	2	EA.	GUARDRAIL, TYPE 5	
608				786		1192							10001	608	1973	S.F.	CURB RAMP, TYPE 2	
																	4" CONCRETE WALK, AS PER PLAN	SEE SHEET 3
																	EROSION CONTROL	
207	50												70000	207	50	EA.	STRAW OR HAY BALES	
601				620									20000	601	620	S.Y.	CRUSHED AGGREGATE SLOPE PROTECTION	
616	50												10000	616	50	M. GAL.	WATER	
659				0.29									30000	659	0.29	TON	AGRICULTURAL LIMING	
659	2.5												35000	659	2.5	M. GAL.	WATER	
659	0.01			0.06									20000	659	0.07	TON	COMMERCIAL FERTILIZER	
660	50			633									30001	660	683	S.Y.	SODDING, AS PER PLAN	SEE SHEET 3
																	PAVEMENT	
310				138									12000	310	138	C.Y.	SUBBASE, TYPE II, GRADING A	
451				646									14000	451	646	S.Y.	9" REINFORCED CONCRETE PAVEMENT	
452										107			12000	452	107	S.Y.	8" PLAIN CONCRETE PAVEMENT	
609				125		252							14000	609	377	L.F.	CURB, TYPE 2-A	
611				69		69							15000	611	138	S.Y.	REINFORCED CONCRETE APPROACH SLAB (T=13")	
622				40		40								622	80	L.F.	CONCRETE BARRIER, AS PER PLAN	SEE SHEET 2
SPEC				29		40							30000	SPEC	69	L.F.	PRESSURE RELIEF JOINT, TYPE A	
																	TRAFFIC CONTROL	
621				0.25									20100	621	0.25	MILE	CENTER LINE	
621				34									40100	621	34	L.F.	STOP LINE	
																	DRAINAGE	
603	50												07600	603	50	L.F.	18" CONDUIT TYPE C, 706.01, 706.02 OR 706.08	
603	50												06100	603	50	L.F.	15" CONDUIT TYPE C, 706.01, 706.02 OR 706.08	
603	50									78			04600	603	128	L.F.	12" CONDUIT TYPE C, 706.01, 706.02 OR 706.08	
603	50									56			04400	603	106	L.F.	12" CONDUIT TYPE B, 706.01, 706.02 OR 706.08	
603										60			01501	603	60	L.F.	6" CONDUIT TYPE F, AS PER PLAN	SEE SHEET 3
604										2			34500	604	2	EA.	MANHOLE ADJUSTED TO GRADE	
604										3			30101	604	3	EA.	MANHOLE NO. 1, AS PER PLAN	
604										4			00300	604	4	EA.	CATCH BASIN, CITY OF CLEVELAND NO. 1	
604										3			04500	604	3	EA.	CATCH BASIN, NO. 2-2 B	
605										432			11101	605	432	L.F.	6" SHALLOW PIPE UNDERDRAIN, AS PER PLAN	SEE SHEET 3
SPEC	817													SPEC	817	L.F.	CLEAN EXIST. UNDERGROUND SEWER SYSTEMS 18" AND UNDER	SEE SHEET 3
614													11001	614	LUMP	MAINTAINING TRAFFIC, AS PER PLAN	SEE SHEET 3 AND 11	
619													10000	619	LUMP	FIELD OFFICE		
623													10000	623	LUMP	CONSTRUCTION LAYOUT STAKES		
624													10000	624	LUMP	MOBILIZATION		
605										71				605	71	L.F.	6" SHALLOW PIPE UNDERDRAIN, 707.01 TYPE III OR 707.21 TYPE III, AS PER PLAN	SEE SHEET 3
																	STRUCTURES	
																	SEE SHEET 16 OF 37, FOR STRUCTURE QUANTITIES	
																	LIGHTING	
																	SEE SHEET 37A OF 37, FOR LIGHTING QUANTITIES	

CALCULATIONS

ITEM 202, WALK REMOVED

REAR APPROACH- LEFT SIDE

STA. 8+07.07 - STA. 8+16.87 = $(9.8' \times \pi) / 4 = 76.0$ S.F.
 STA. 8+16.87 - STA. 8+42.50 = $10.2' \times 25.63' = 261.4$ S.F.
 STA. 8+42.50 - STA. 8+61.50 = $(10.2' + 7.2') / 2 \times 19.0' = 165.3$ S.F.
 TOTAL = 502.7 S.F. (SEE SHEET 6)

REAR APPROACH-RIGHT SIDE

STA. 7+83.06 - STA. 7+92.16 = $(9.1' \times \pi) / 4 = 65.0$ S.F.
 STA. 7+92.16 - STA. 8+61.50 = $9.5' \times 69.37' = 658.7$ S.F.
 TOTAL = 723.7 S.F. (SEE SHEET 6)

FORWARD APPROACH- LEFT SIDE

STA. 19+54.50 - STA. 19+56.83 = $2.33 \times 5.17 / 2 = 5.9$ S.F.
 STA. 19+56.83 - STA. 20+13.91 = $57.08' \times (5.1' + 8.8') / 2 = 396.7$ S.F.

STA. 20+13.91 - STA. 21+00 = $11.0' \times 86.09' = 947.0$ S.F.
 TOTAL = 1349.6 S.F. (SEE SHEET 8)

FORWARD APPROACH-RIGHT SIDE

STA. 19+54.50 - STA. 19+71.50 = $17.0' \times (7.8' + 10.0') / 2 = 151.3$ S.F.

STA. 19+71.50 - STA. 21+00 = $10.0' \times 128.5' = 1285.0$ S.F.
 DEDUCT 22' AT EACH OF 2 DRIVES = $(32' \times 20.0') \times 10 \times 2 = 520.0$ S.F.
 TOTAL = 963.3 S.F. (SEE SHEET 8)

ITEM 202, CURB REMOVED

REAR APPROACH- LEFT SIDE

STA. 8+06.57 - STA. 8+26.57 = $(20' R \times \pi \times 2) / 4 = 31.4$ L.F.
 STA. 8+26.57 - STA. 8+61.5 = 34.9 L.F.
 TOTAL = 66.3 L.F. (SEE SHEET 6)

REAR APPROACH-RIGHT SIDE

STA. 7+82.56 - STA. 8+02.56 = $(20' R \times \pi \times 2) / 4 = 31.4$ L.F.
 STA. 8+02.56 - STA. 8+61.5 = 58.9 L.F.
 TOTAL = 90.3 L.F. (SEE SHEET 6)

FORWARD APPROACH- LEFT SIDE

STA. 19+54.50 - STA. 21+00.00 = 145.5 L.F. (SEE SHEET 8)

FORWARD APPROACH-RIGHT SIDE

STA. 19+54.50 - STA. 21+00.00 = 145.5 L.F.
 DEDUCT 32' EACH AT 2 DRIVES = -64.0 L.F.
 TOTAL = 81.5 L.F. (SEE SHEET 8)

ITEM 202, DRIVE REMOVED

STA. 19+99 TO 20+30 (DRIVE 1)
 $(20' + 31') / 2 \times 10' / 9 = 28.3$ S.Y.
 STA. 20+35 TO 20+68 (DRIVE 2)
 $(20' + 33') / 2 \times 10' / 9 = 29.4$ S.Y.
 TOTAL = 57.7 S.Y.
 USE 58 S.Y. (SEE SHEET 4)

ITEM 202-PAVEMENT REMOVED

REAR APPROACH- RIGHT

STA. 8+04.57 - STA. 8+61.5 = $56.9' \times 40' / 9 = 253.0$ S.Y.
 AT RIGHT CURB $((20' \times 20') - (\pi \times 20^2 / 4)) / 9 = 9.5$ S.Y.
 TOTAL = 262.5 S.Y. (SEE SHEET 6)

REAR APPROACH- LEFT

STA. 7+80.56 - STA. 8+04.57 = $24.01' \times 16' / 9 = 42.7$ S.Y.
 AT LEFT CURB $((20' \times 20') - (\pi \times 20^2 / 4)) / 9 = 9.5$ S.Y.
 TOTAL = 52.2 S.Y. (SEE SHEET 6)

FORWARD APPROACH

STA. 19+54.50 - STA. 21+00.00 = $145.5' \times 40' / 9 = 646.7$ S.Y.
 REAR AND FORWARD APPROACH TOTAL = 963.2 S.Y. (SEE SHEET 8)

ITEM 451-REINFORCED CONCRETE PAVEMENT

REAR APPROACH

STA. 8+04.57 - STA. 8+41.5 = $36.93' \times 29' / 9 = 119.0$ S.Y.

AT LEFT AND RIGHT CURBS

10' OF STRAIGHT CURB = $(6' \times 2.5' + 4' \times 2.5') / 9 = 2.8$ S.Y.
 $((22' \times 19.5') - (\pi \times 19.5^2 / 4)) / 9 = 14.5$ S.Y.
 $((27' \times 24.5') - (\pi \times 24.5^2 / 4)) / 9 = 21.1$ S.Y.
 REAR APPROACH TOTAL = 157.4 S.Y.

FORWARD APPROACH

STA. 19+74.50 - STA. 21+00.00 = $125.5' \times (29' + 41') / 9 = 488.1$ S.Y.

REAR AND FORWARD APPROACH TOTAL (1) = 645.5 S.Y.

USE 646 SQ. YD. (SEE SHEET 4)

ITEM 608, 4" CONCRETE WALK

REAR APPROACH- LEFT SIDE

STA. 8+07.07 - STA. 8+31.57 = $(24.5' \times \pi) / 4 = 167.9$ S.F.
 $(188.6 + 55 + 44.0 + 63.7 + 17) ** = 59.6$ S.F.
 STA. 8+31.57 - STA. 8+41.50 = $6.0' \times 9.93' = 59.6$ S.F.
 STA. 8+41.50 - STA. 8+61.00 = $5.0' \times 19.5' = 97.5$ S.F.
 TOTAL = 325.0 S.F. (SEE SHEET 6)

** PLANIMETER AREAS

REAR APPROACH-RIGHT SIDE

STA. 7+83.06 - STA. 8+02.1 = $(19.5' \times \pi) / 4 = 127.3$ S.F.
 $(27.0 + 12.0 + 130.0 + 2.2) ** = 127.3$ S.F.
 STA. 8+02.16 - STA. 8+41.50 = $6.0' \times 39.34' = 236.0$ S.F.
 STA. 8+41.50 - STA. 8+61.00 = $5.0' \times 19.5' = 97.5$ S.F.

TOTAL = 460.8 S.F. (SEE SHEET 6)

FORWARD APPROACH- LEFT SIDE

STA. 19+55.00 - STA. 19+74.5 = $50' \times 19.5' = 97.5$ S.F.
 STA. 19+74.5 - STA. 20+75.0 = $100.5' \times 6.0' = 603.0$ S.F.
 STA. 20+75.0 - STA. 21+00.0 = $25.0' \times 6.0' = 150.0$ S.F.

TOTAL = 850.5 (SEE SHEET 8)

FORWARD APPROACH- RIGHT SIDE

STA. 19+55.00 - STA. 19+74.5 = $19.5' \times 5.0' = 97.5$ S.F.
 STA. 19+74.5 - STA. 19+84.0 = $9.5' \times 5.5' = 52.25$
 STA. 19+84.0 - STA. 19+92.22 = $8.22 / 2 \times 5.5 = 22.60$
 172.35 (SEE SHEET 8)
 STA. 20+71.83 - STA. 20+82 = $10.17 / 2 \times 5.5 = 27.97$
 STA. 20+82.0 - STA. 21+00.0 = $18 \times 5.5 = 99.00$
 124.47 (SEE SHEET 8)

* - SODDING AT EXCAVATION
 AT NEW PIERS = 42 SQ. YD. EACH

ITEM 609, TYPE 2A CURB

REAR APPROACH- LEFT SIDE

STA. 8+07.07 (39' TO 40' LEFT) = 1.0 L.F.
 STA. 8+07.07 - STA. 8+32.07 = $(25' R \times \pi \times 2) / 4 = 38.5$ L.F.
 STA. 8+32.07 - STA. 8+41.5 = 9.4 L.F.
 TOTAL = 48.9 L.F. (SEE SHEET 6)

REAR APPROACH-RIGHT SIDE

STA. 7+82.56 (34' TO 40' RIGHT) = 6.0 L.F.
 STA. 7+82.56 - STA. 8+02.56 = $(20' R \times \pi \times 2) / 4 = 30.9$ L.F.
 STA. 8+02.56 - STA. 8+41.5 = 38.9 L.F.
 TOTAL = 75.8 L.F. (SEE SHEET 6)

FORWARD APPROACH- LEFT SIDE

STA. 19+74.50 - STA. 20+75.00 = $100.5 / \cos 2.74^\circ = 100.6$
 STA. 20+75.00 - STA. 21+00.01 = 25.0 L.F.
 125.6 L.F. (SEE SHEET 8)
 FORWARD APPROACH-RIGHT SIDE
 STA. 19+74.50 - STA. 21+00.00 = $125.5 / \cos 2.74^\circ = 125.6$ L.F. (SEE SHEET 8)

ITEM 611- REINFORCED CONCRETE APPROACH SLAB

STA. 8+41.50 - STA. 8+61.50 = $20.0' \times 31' / 9 = 68.9$ S.Y. (SEE SHEET 6)
 STA. 19+54.50 - STA. 19+74.50 = $20.0' \times 31' / 9 = 68.9$ S.Y. (SEE SHEET 8)

ITEM 203-SUBGRADE COMPACTION

AREA FROM 9" RIGID PAVEMENT (1) = 645.6 SQ. YDS.
 AREA FROM APPROACH SLABS (4) = 137.8 SQ. YDS.
 AREA FROM EXTRA 1.0' EDGE STRIP (5) = 46.2 SQ. YDS.
 TOTAL (6) = 829.6 SQ. YDS. (SEE SHEET 4)

EXTRA 1' WIDE STRIP AT EDGE OF RIGID PAVEMENT AND APPROACH SLABS (5)

$(40.0' \text{ L.F. @ APPROACH SLABS} + 283.4' \text{ L.F. @ CURBS} + 92.5' \text{ L.F. @ DRIVES}) \times 1.0' / 9 = 46.2$ SQ. YDS

ITEM 310-6" SUBBASE, TYPE II, GRADING A

AREA FROM SUBGRADE COMPACTION (6) = 829.6 SQ. YDS (SEE SHEET 4)

$829.6 \text{ SQ. YDS} \times 9 \times (6' / 12) / 27 = 138.3$ CU. YDS. (SEE SHEET 4)

ITEM 621-CENTER LINES

(7) 0.25 MILES
 (7) STA. 8+04.53 - STA. 21+00.00 = 1295.47 L.F. / 5280 = 0.25 MILE
 (SEE SHEET 4)

ITEM 621- STOP LINES

14 LIN. FT. (WEST APPROACH)
 20 LIN. FT. (EAST APPROACH)
 34 LIN. FT. (TOTAL) (SEE SHEET 4)

ITEM 659-COMMERCIAL FERTILIZER

FROM SODDING = $(633.0 \text{ SQ. YDS.} \times 20 \text{ LBS.}) \times 9 / 2000 = 0.06$ TON (SEE SHT. 4)
 1000 SQ. FT.

ITEM 659-AGRICULTURAL LIMING

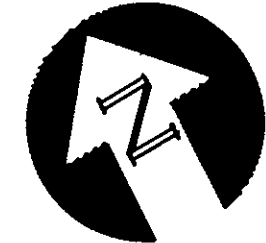
FROM SODDING = $(633.0 \text{ SQ. YDS.} \times 100 \text{ LBS.}) \times 9 / 2000 = 0.29$ TON (SEE SHT. 4)
 1000 SQ. FT.

60I-CRUSHED AGGREGATE

SLOPE PROTECTION
 STA. 8+65.9 TO STA. 9+74.0 = $108.1' / \cos 18.43^\circ \times 49' / 9 = 620$ SQ. YDS. (SEE SHEET 4)

ITEM 203 - EARTHWORK & ITEM 660 SODDING

SHEET NO.	STATION		EXCAVATION CU. YDS.	EMBANKMENT CU. YDS.	SODDING SQ. YDS.
	FROM	TO			
6	9+75.50	11+25.50			84*
7	12+75.50	15+75.50			126*
8	17+01.00	18+26.50			84*
9	8+04.57	8+61.50	37	35	104
10	19+54.50	21+00	98	49	235
	TOTAL		135	84	633

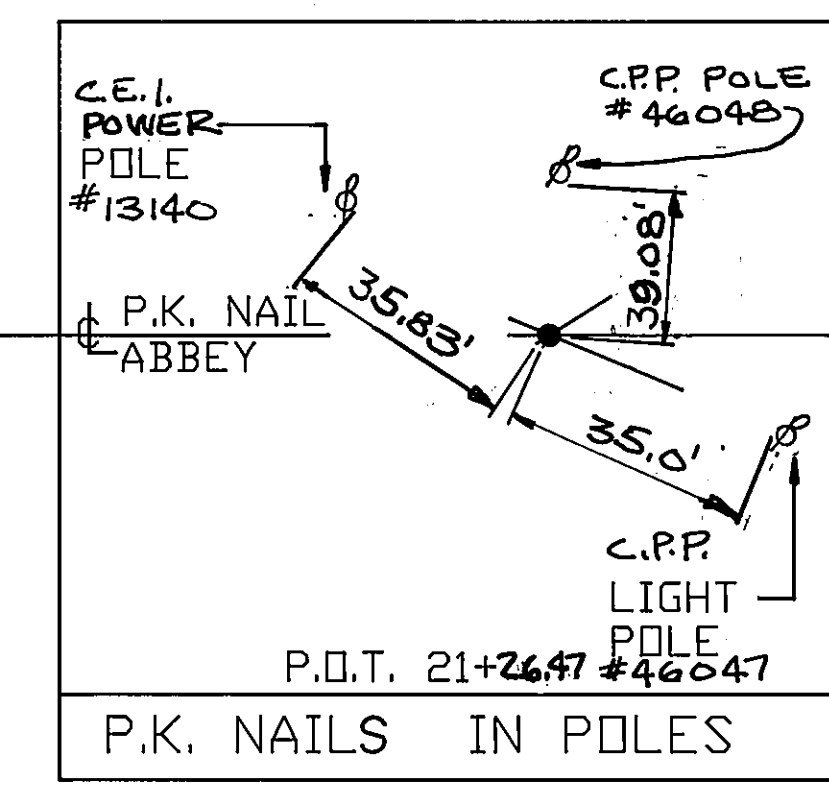
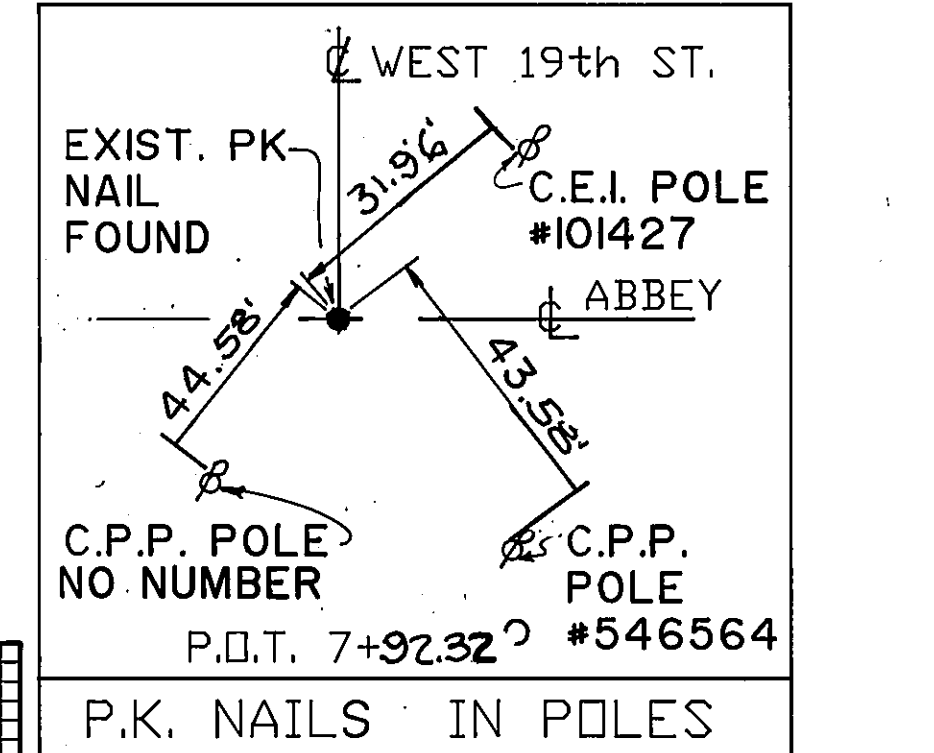


CALC. GB	DHID	7
DATE 5/90		37
CHK'D JB	FHWA REGION 5	
DATE 5/90		

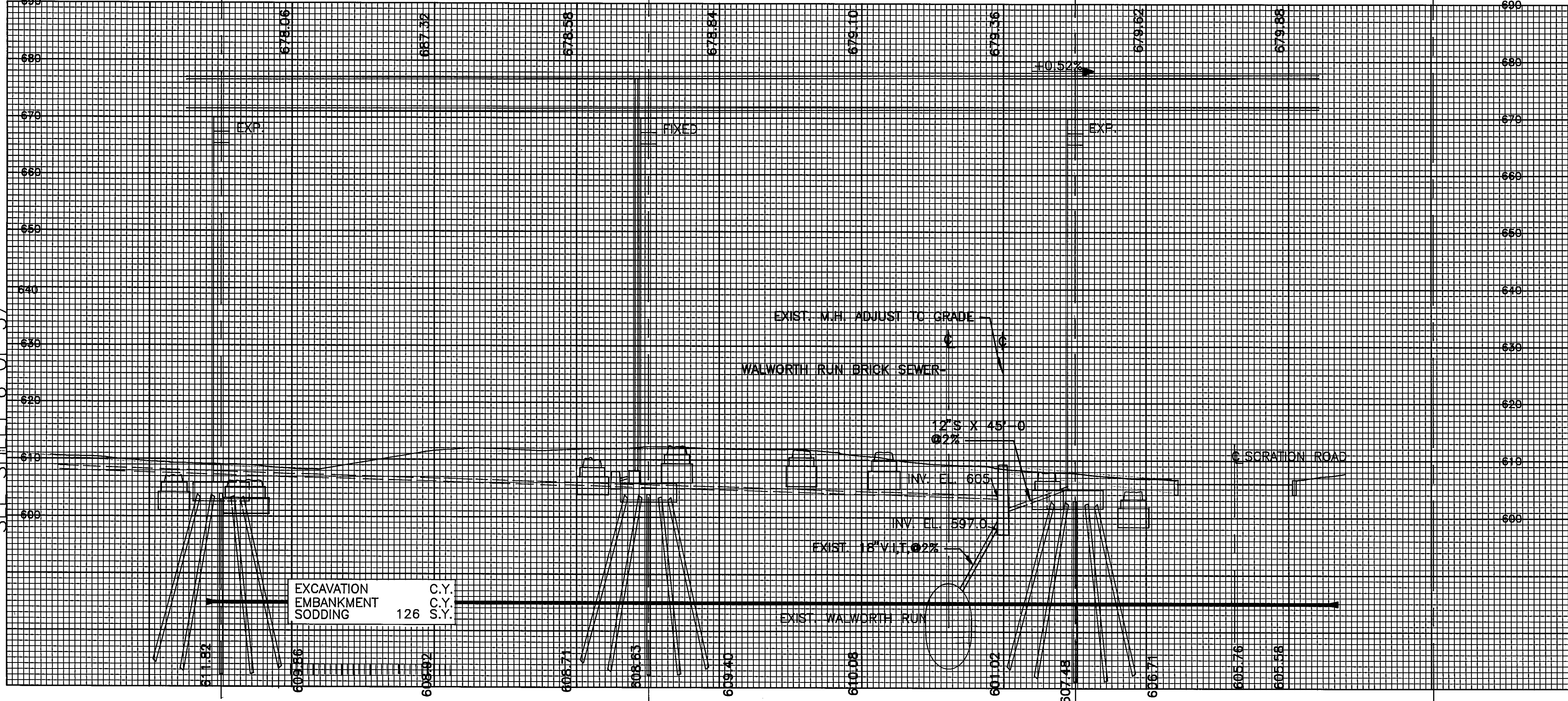
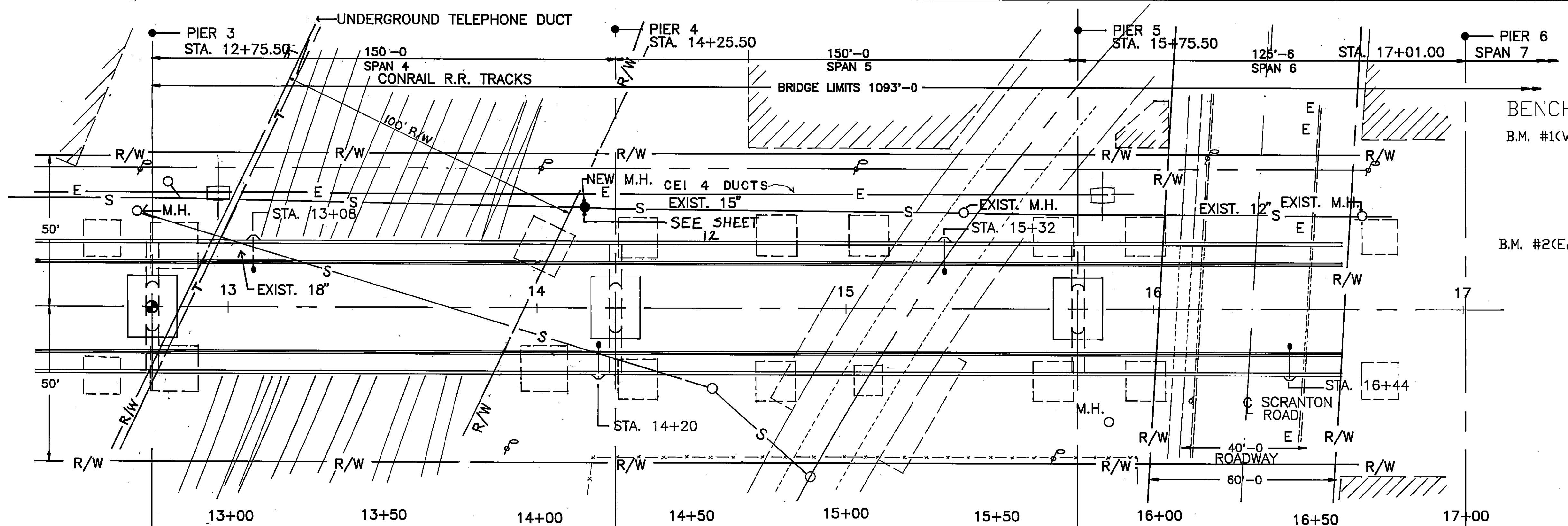
BENCHMARK
 CUYAHOGA COUNTY
 ABBEY AVENUE VIADUCT

B.M. #1(WEST) - DM-264 AT THE INTERSECTION OF LORAIN ROAD AND WEST 25TH STREET 48.50' SOUTH OF CENTER LINE OF THE LORAIN ROAD 38.55' EAST OF THE CENTER LINE OF THE WEST 25TH ELEVATION=683.191'

B.M. #2(EAST) - DM -1079 AT THE INTERSECTION OF CLARK AVENUE AND WEST 14TH STREET 28.00' NORTH OF THE CENTER LINE OF CLARK AVENUE 41.12' EAST OF WEST 14TH STREET. ELEVATION=683.539'



NOTE: DRAINAGE LOCATIONS AND QUANTITIES ON SHEET 12.

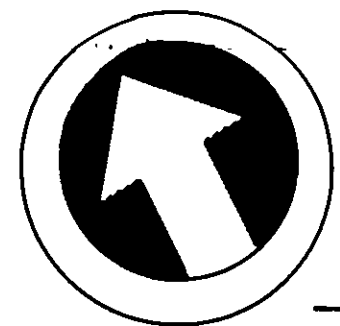


EXCAVATION	C.Y.
EMBANKMENT	C.Y.
SODDING	S.Y.
126	

MATCH LINE STA. 12+63
SEE SHEET 6 OF 37

MATCH LINE STA. 16+65.00
SEE SHEET 8 OF 37

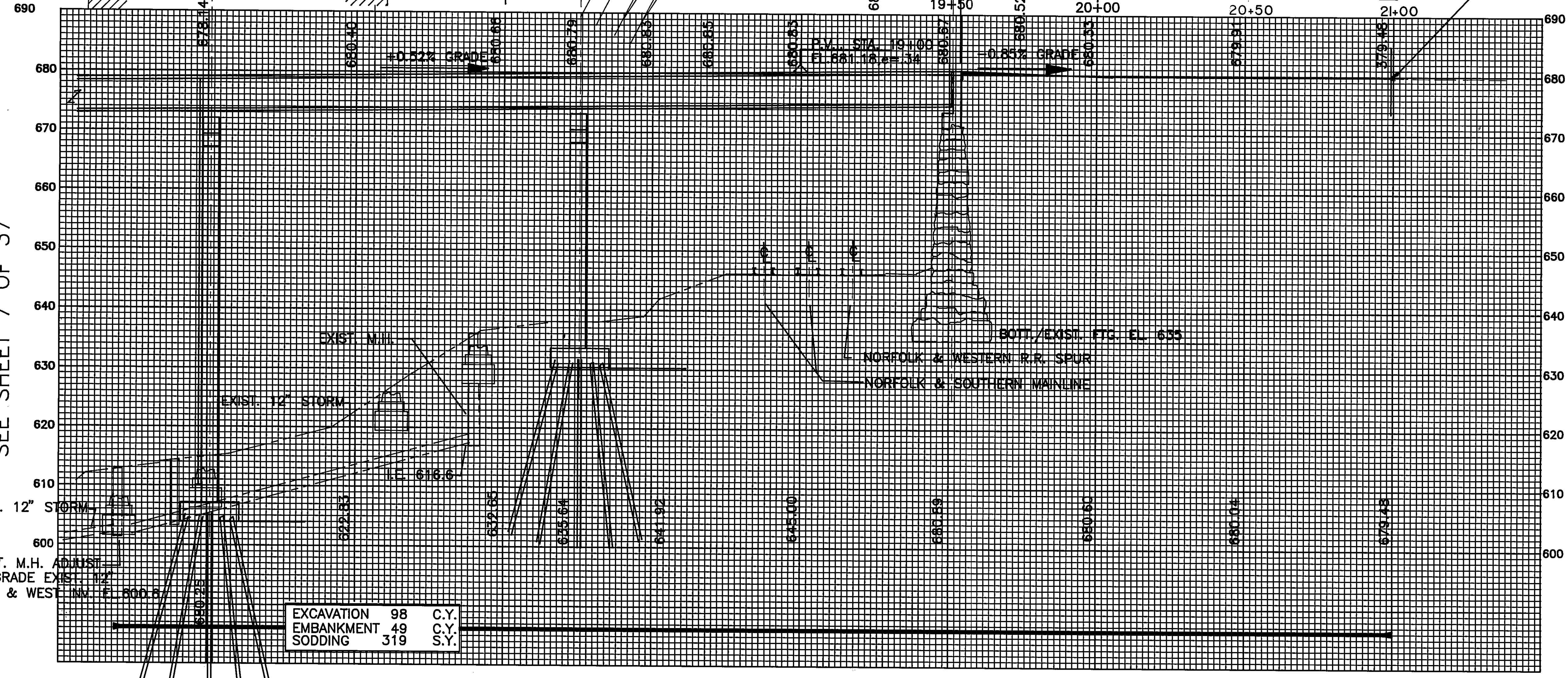
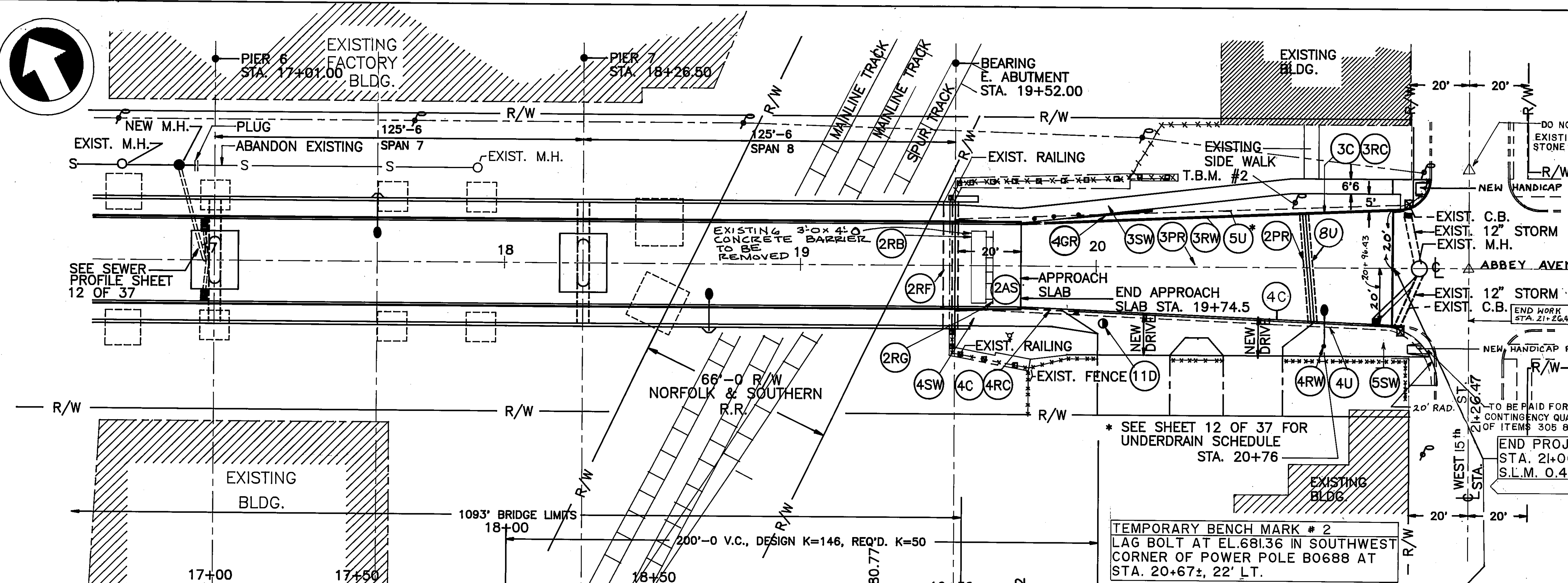
PLAN & PROFILE STA. 12 + 63 TO 16 + 65



DATE 5/90
 DATE 5/90
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DHID
 FHWA REGION 5

CUYAHOGA COUNTY
 ABBEY AVENUE VIADUCT



EXCAVATION	98	C.Y.
EMBANKMENT	49	C.Y.
SODDING	319	S.Y.

REF. NO.	STATION		SIDE	BRIDGE TERMINAL ASSEMBLY TYPE A	GUARDRAIL TYPE "5"	ANCHOR ASSEMBLY TYPE A	CONCRETE WALK	CURB TYPE 2A	REINFORCED CONCRETE APPROACH SLAB (T=13')	SEPECIAL CURB RAMP TYPE 2
	FROM	TO								
4GR	19+54.5	20+04.5	LT.	1	25	1				
3SW	19+54.5	21+12.97	LT.				925			
4SW	19+54.5	20+00.5	RT.				172			
5SW	20+73	21+14.97	RT.				400			
3C	19+74.5	21+13.47	LT.							142
4C	19+74.5	21+15.47	RT.							157
3CR	21+06	21+12	LT.							
4CR	21+09	21+15	RT.							
2AS	19+54.5	19+74.5	CL							69
2PR	20+81	20+83.5	CL							40
TOTAL				1	25	1	1194			252
TOTAL				1	25	1	1194			252

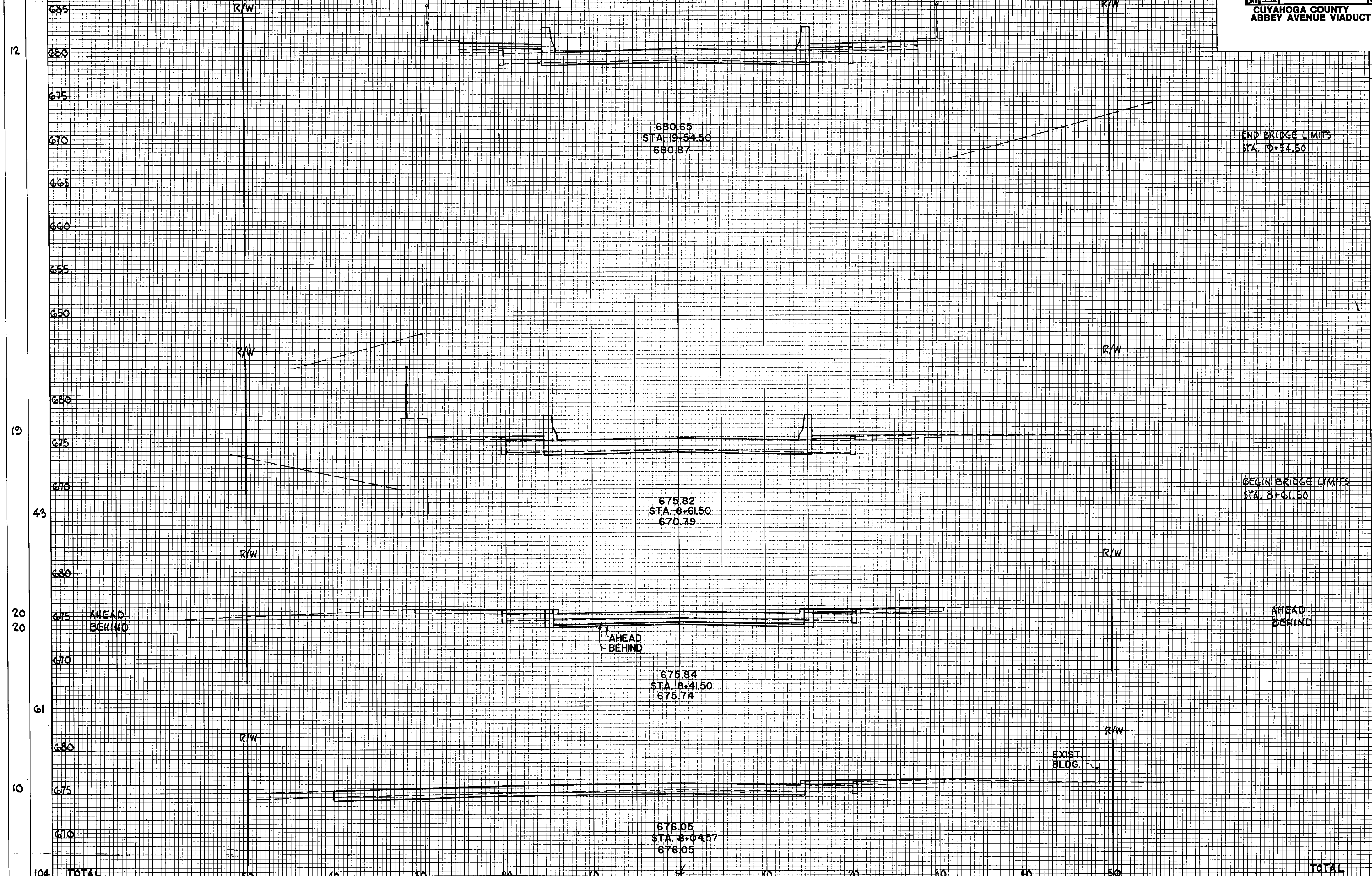
REF. NO.	STATION		SIDE	PAVEMENT WALK REMOVED	CURB REMOVED	CONCRETE BARRIER REMOVED	FENCE REMOVED	GUARDRAIL REMOVED
	FROM	TO						
3PR	19+54.5	21+00	CL	963				
3RW	19+54.5	21+00	LT.					
4RW	19+54.5	21+00	RT.					
3RC	19+54.5	21+13.47	LT.	1405	162			
4RC	19+54.5	21+15.47	RT.	1095	115			
2RB	19+62	19+62	CL			38	60	
2RF	19+55	19+55	CL					37.5
2RG	19+65	19+65	CL					37.5
TOTAL				963	2266	38	60	37.5

MATCH LINE STATION 16+65.00
SEE SHEET 7 OF 37

SODDING
END WIDTH SQ. YDS

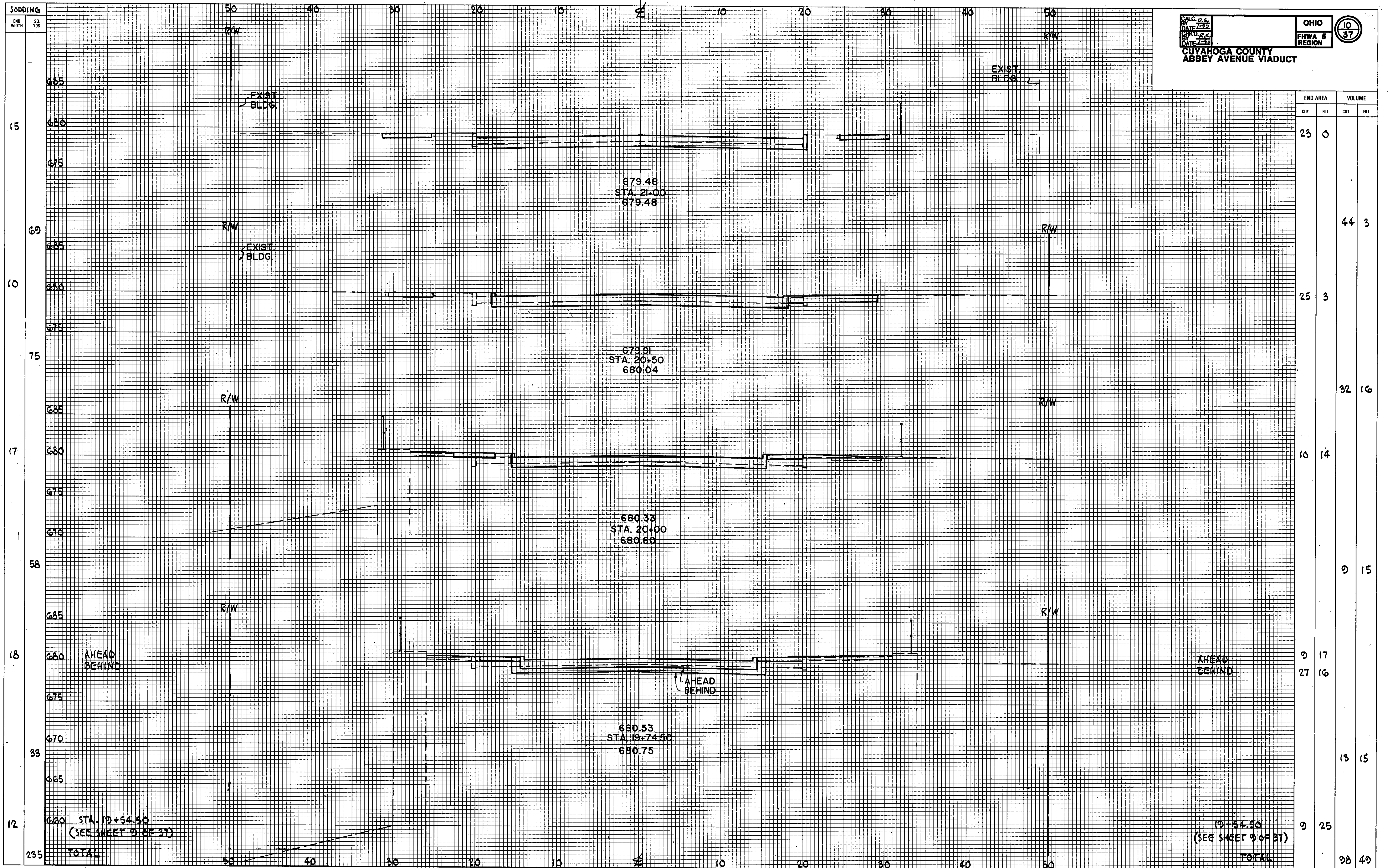
OHIO
FHWA 5 REGION
9
37

CUYAHOGA COUNTY
ABBAY AVENUE VIADUCT



END AREA	VOLUME	
	CUT	FILL
0	25	
0	22	
12	14	
24	16	
4	20	
	25	21
22	10	
104	TOTAL	37 35

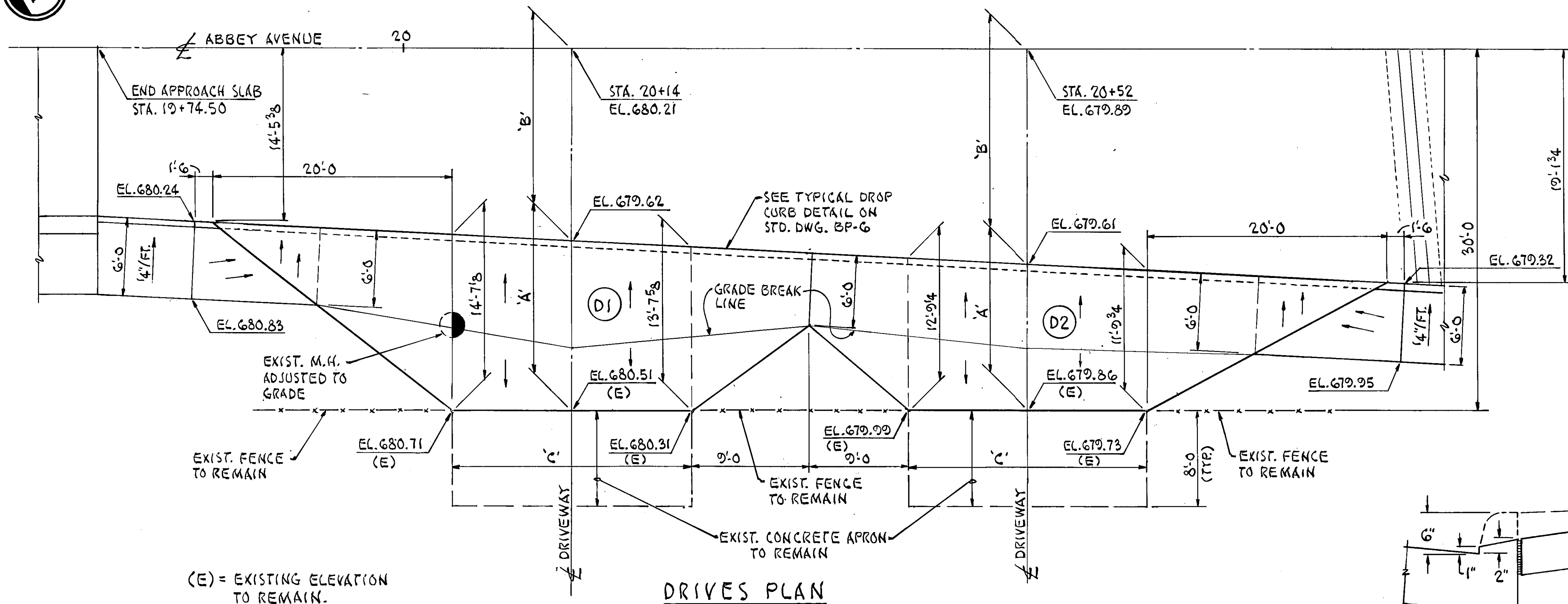
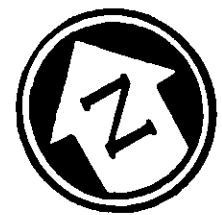
CROSS SECTIONS STA. 8+04.57 TO STA. 19+54.50



CALC. P.S.
 DATE 1-30
 CHKD. R.L.
 DATE 1-30
 OHIO
 FHWA 5
 REGION
 10
 37

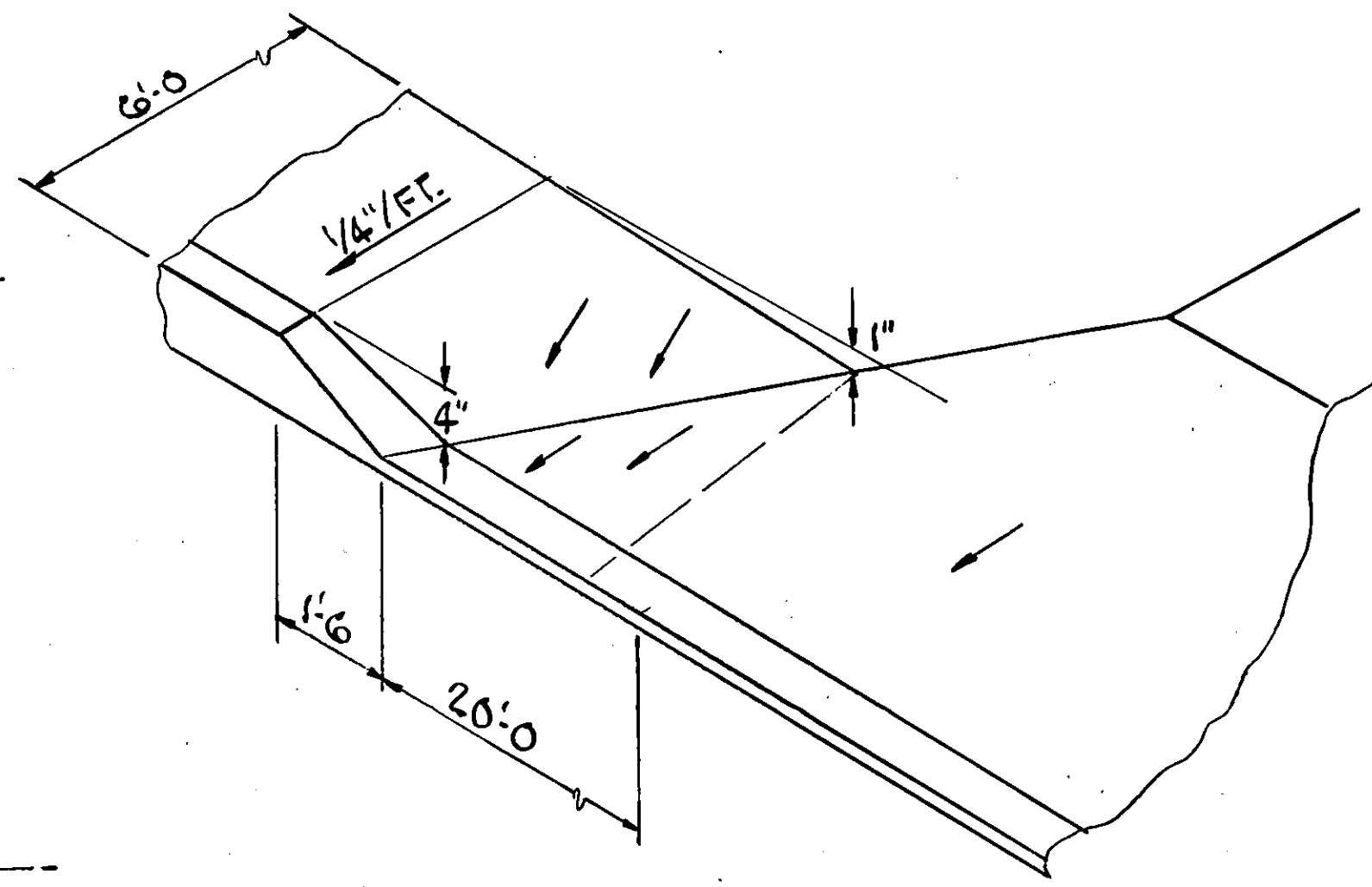
CUYAHOGA COUNTY
 ABBEY AVENUE VIADUCT

CROSS SECTIONS STA. 19+74.50 TO STA. 21+00.00

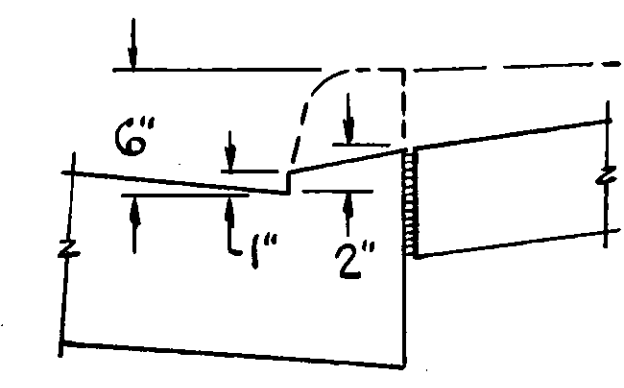


(E) = EXISTING ELEVATION TO REMAIN.

DRIVES PLAN



ISOMETRIC VIEW OF DRIVEWAY CORNER



DETAIL 1

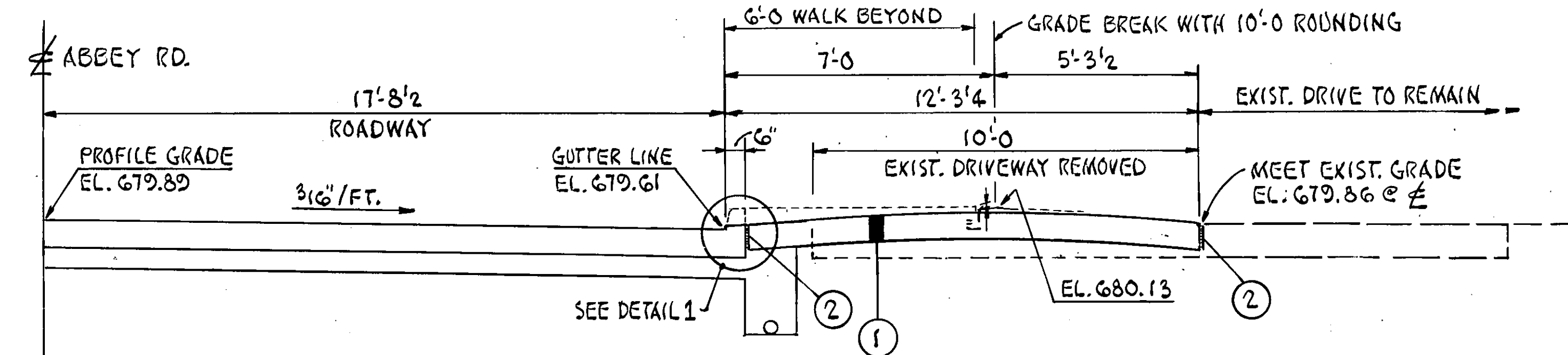
NO. OF DRIVE STATION	SIDE OF	DRIVE TYPE	DRIVE USE	DIMENSIONS			ITEM 452
				DRIVE LENGTH @ ± 'A'	ROAD WIDTH @ ± 'B'	DRIVE WIDTH @ ± 'C'	
D1	20+14	RT.	TYPE 1 COMM.	14.11'	15.89'	20'-0"	8" PLAIN CONCRETE PAVEMENT SQ. YD. 57
D2	20+52	RT.	TYPE 1 COMM.	12.29'	17.71'	20'-0"	50
							107

LEGEND:

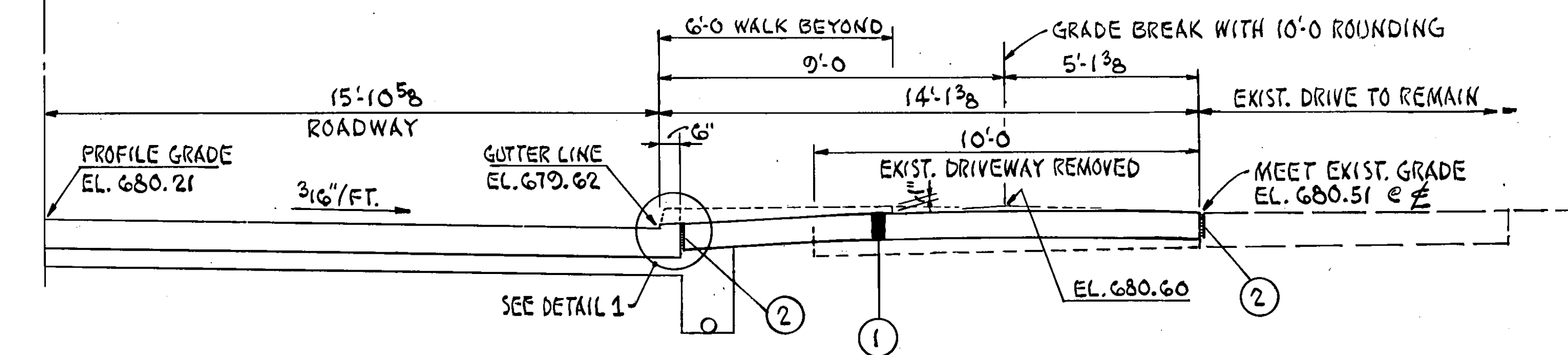
- ① ----- ITEM 452, 8" PLAIN CONCRETE PAVEMENT
 - ② ----- 1" PREFORMED EXPANSION JOINT FILLER
- 705.03 INCLUDE WITH ITEM 452, 8" PLAIN CONCRETE PAVEMENT FOR PAYMENT.

TRAFFIC MAINTENANCE NOTE

1. ONE OF THE ABOVE DRIVES SHALL REMAIN OPEN AT ALL TIMES WITH CONSTRUCTION BEING DONE IN THE FOLLOWING 2 PHASES.
2. PHASE I - EXISTING DRIVE D2 TO REMAIN IN OPERATION WITH THE EXISTING PAVEMENT BEING SAWCUT 1'-0" SOUTH OF THE CENTERLINE AND WEST OF STATION 20+33 AND THE PAVEMENT NORTH OF THE SAWCUT REMOVED. NEW PAVEMENT WILL BE PLACED NORTH OF THE CENTERLINE AND WEST OF STATION 20+33 AS SHOWN ON THE PLANS.
3. PHASE II - REMOVE THE BALANCE OF THE EXISTING PAVEMENT MAINTAINED IN PHASE I ONCE TRAFFIC HAS BE SWITCHED TO THE NORTH LANE AND NEW DRIVE D1. INSTALL THE BALANCE OF THE ROADWAY AND DRIVE D2.

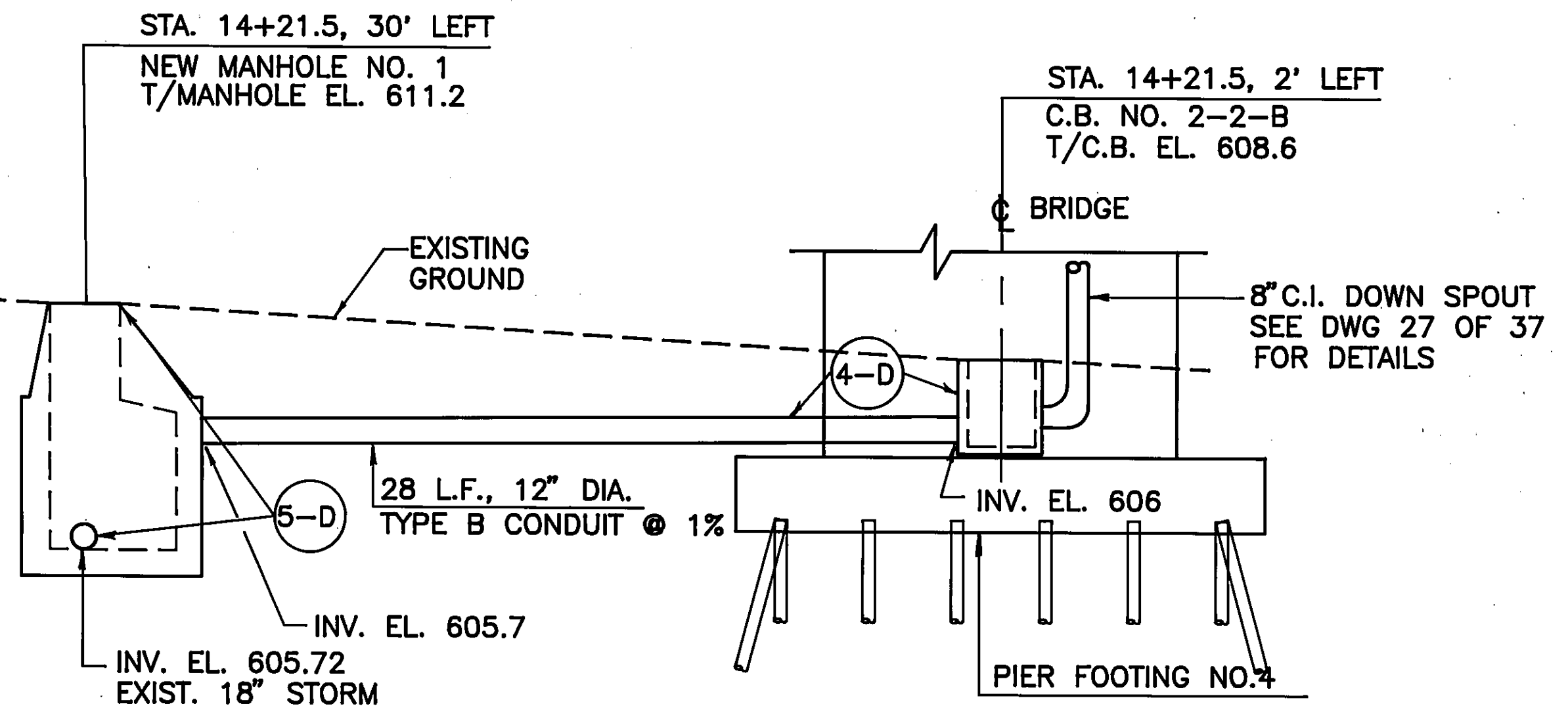


DRIVE D2 PROFILE (STA. 20+52)

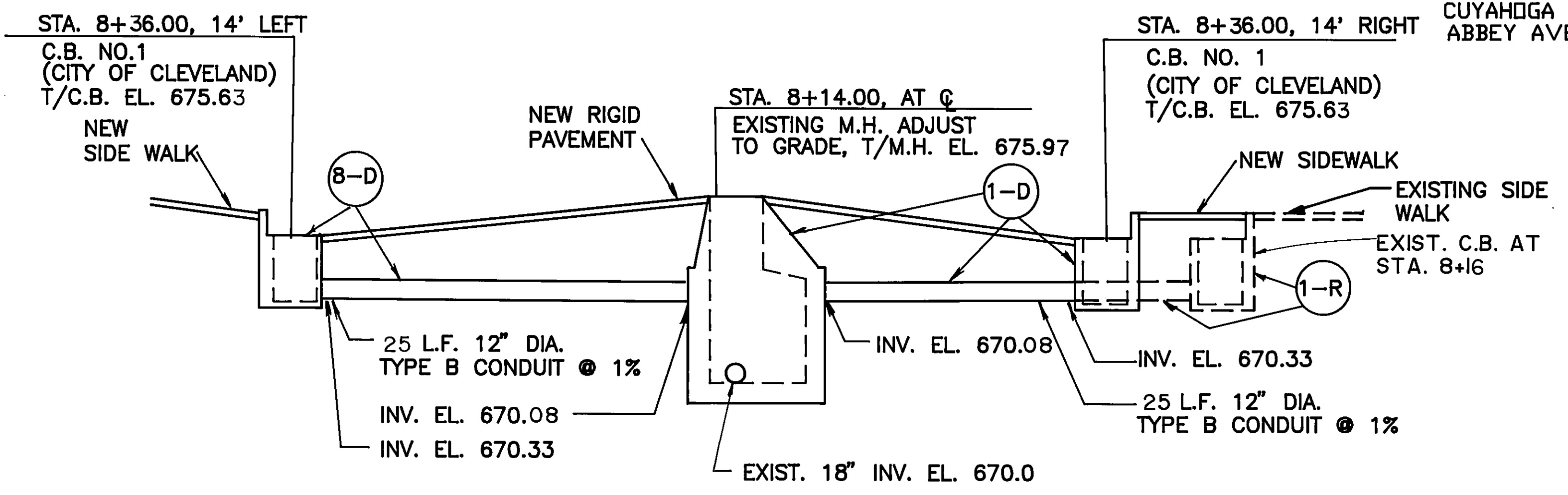


DRIVE D1 PROFILE (STA. 20+14)

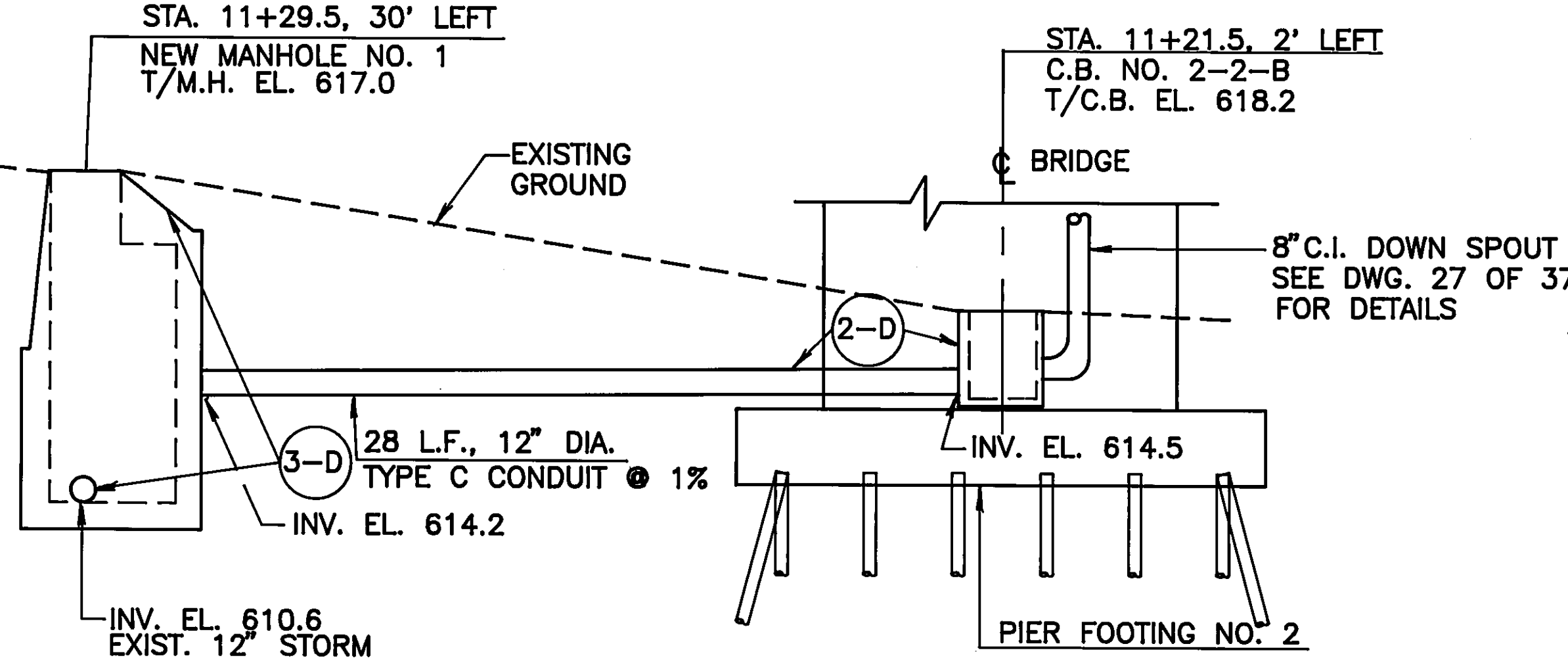
DRIVEWAY DETAILS



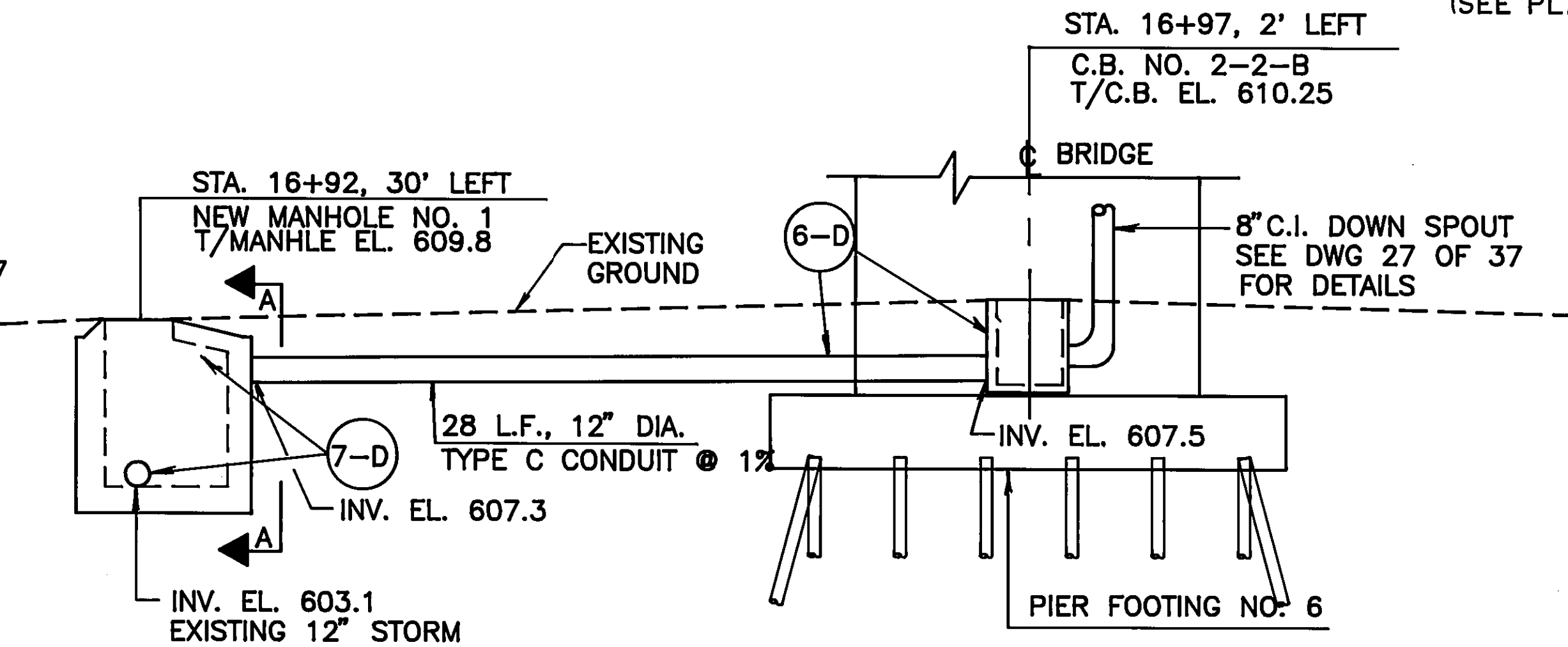
SEWER PROFILE STA. 14+21.5 (SEE PLAN SHEET 7 OF 37)



SEWER PROFILE, STA. 8+14 TO STA. 8+36 (SEE PLAN SHEET 6 OF 37)

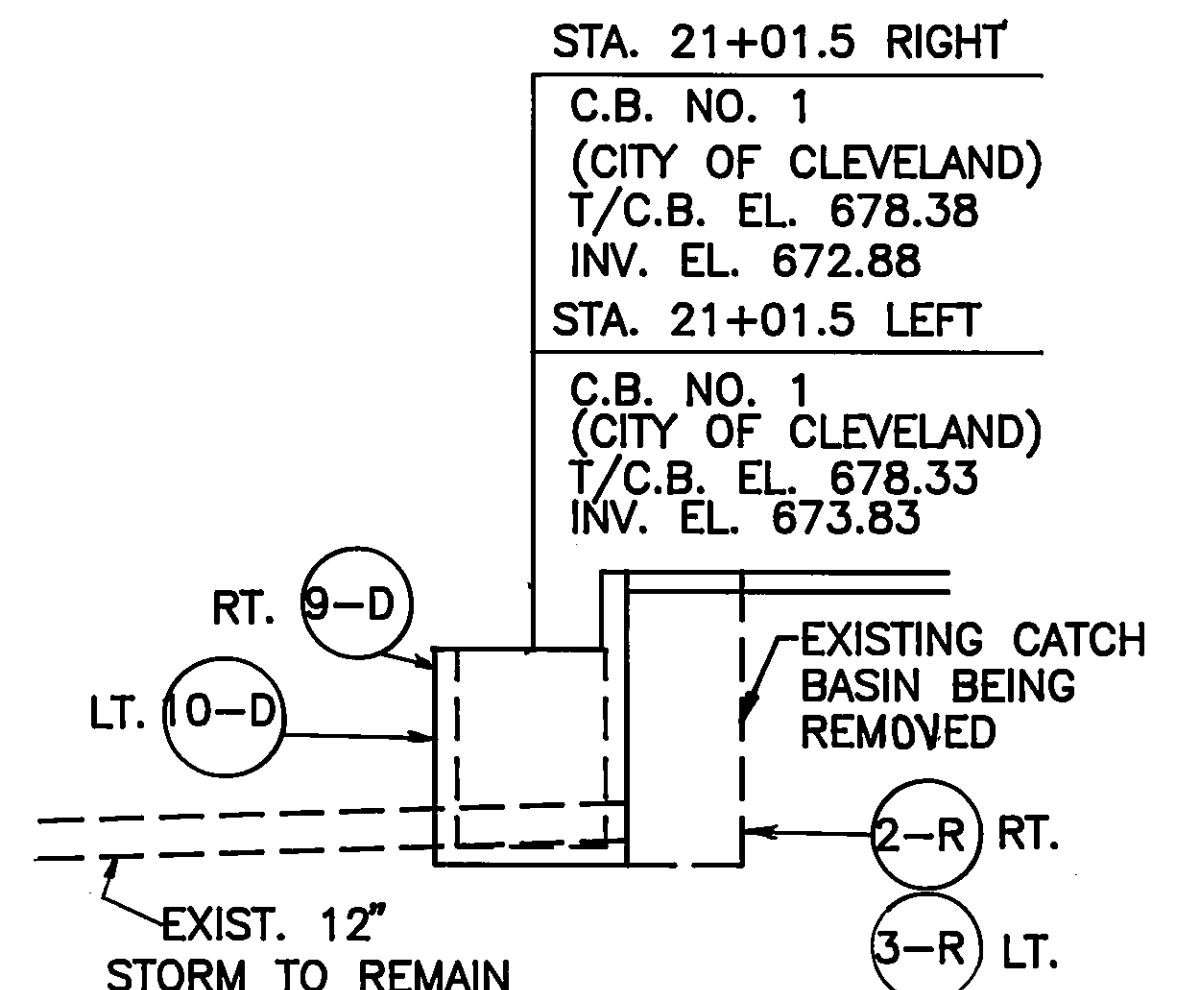


SEWER PROFILE STA. 11+29.5 (SEE SHEET 6 OF 37)



SEWER PROFILE STA. 16+92 (SEE PLAN SHEET 8 OF 37)

REF. NO.	DRAINAGE								REMOVAL AND UNDER DRAINS										
	STATION		SIDE	603		604		NO. 1	NO. 1	NO. 1	NO. 1	STATION		SIDE	202		605	603	605
	FROM	TO		12" DIA. CONDUIT TYPE B, 706.01, 706.02, OR 706.08	L.F.	12" DIA. CONDUIT TYPE C, 706.01, 706.02, OR 706.08	L.F.					EA.	EA.		EA.	EA.	FROM	TO	PIPE REMOVED 24" & UNDER
1-D	8+14	8+36	RT	25							1-R	8+14	8+16	RT	17				
2-D	11+21.5	11+21.5	LT		28				1		2-R	21+01.5		RT		1			
3-D	11+21.5	11+21.5	LT			1					3-R	21+01.5		LT		1			
4-D	14+21.5	14+21.5	LT	28							7-U	8+29	8+31.5*	LT					30
5-D	14+21.5	14+21.5	LT			1					8-U	20+81	20+82.5*	LT					41
6-D	16+92	16+92	LT		28				1		1-U	7+81.2	8+14	RT			55	10	
7-D	16+92	16+92	LT			1					2-U	8+14	8+61.5	RT			37	10	
8-D	8+14	8+36	LT	25							3-U	8+05.17	8+14	LT			33	10	
9-D	21+01.5		RT								4-U	19+54.5	21+15.47	RT			166	10	
10-D	21+01.05		LT								5-U	19+54.5	21+13.47	LT			151	10	
11-D	19+94		RT					1			6-U	8+14	8+61.5	LT			37	10	
TOTAL				78	56	3	2	4	3	TOTAL					17	3	432	60	71



SEWER PROFILE STA. 21+01.5 RT. (AS SHOWN)
 SEWER PROFILE STA. 21+01.5 LT. (OPPOSITE HAND)

* VALVE BOX PROBABLY LOCATED UNDER EX. CONC. BARRIER AT EAST END OF BRIDGE

* UNDER DRAINS AT TYPE A PRESSURE RELIEF JOINTS ARE TO BE TIED INTO NEW CURB UNDERDRAINS.



**CUYAHOGA COUNTY
ABBEY AVENUE VIADUCT**

MINIMUM VERTICAL RAILROAD CLEARANCES			
LOCATION	STATION	SIDE	CLEARANCE
CONRAIL RAILROAD	13+44.50	SOUTH	61.97'
CONRAIL RAILROAD	13+58.50	SOUTH	62.70'

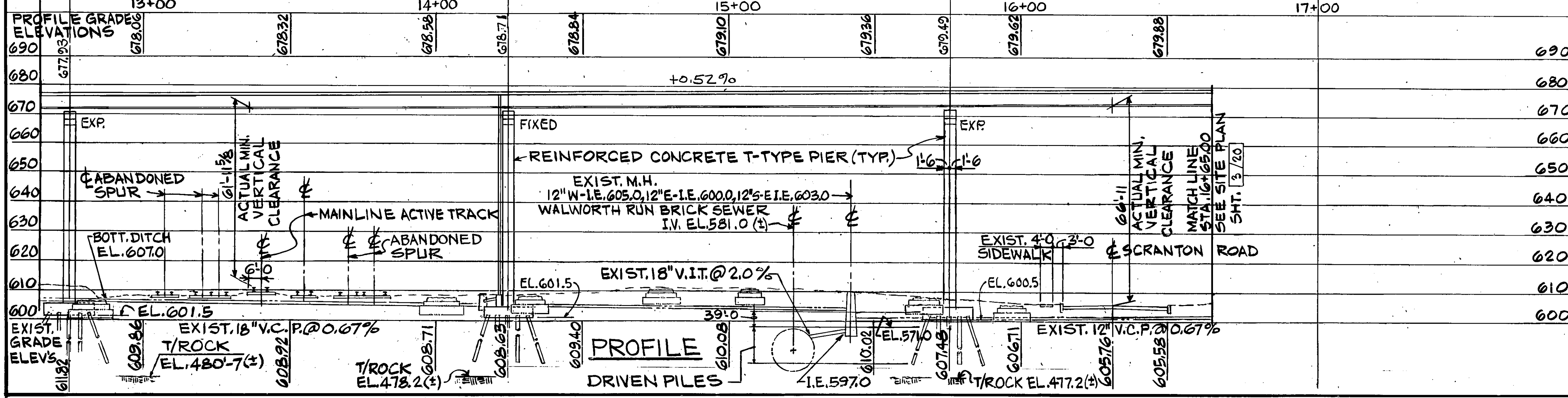
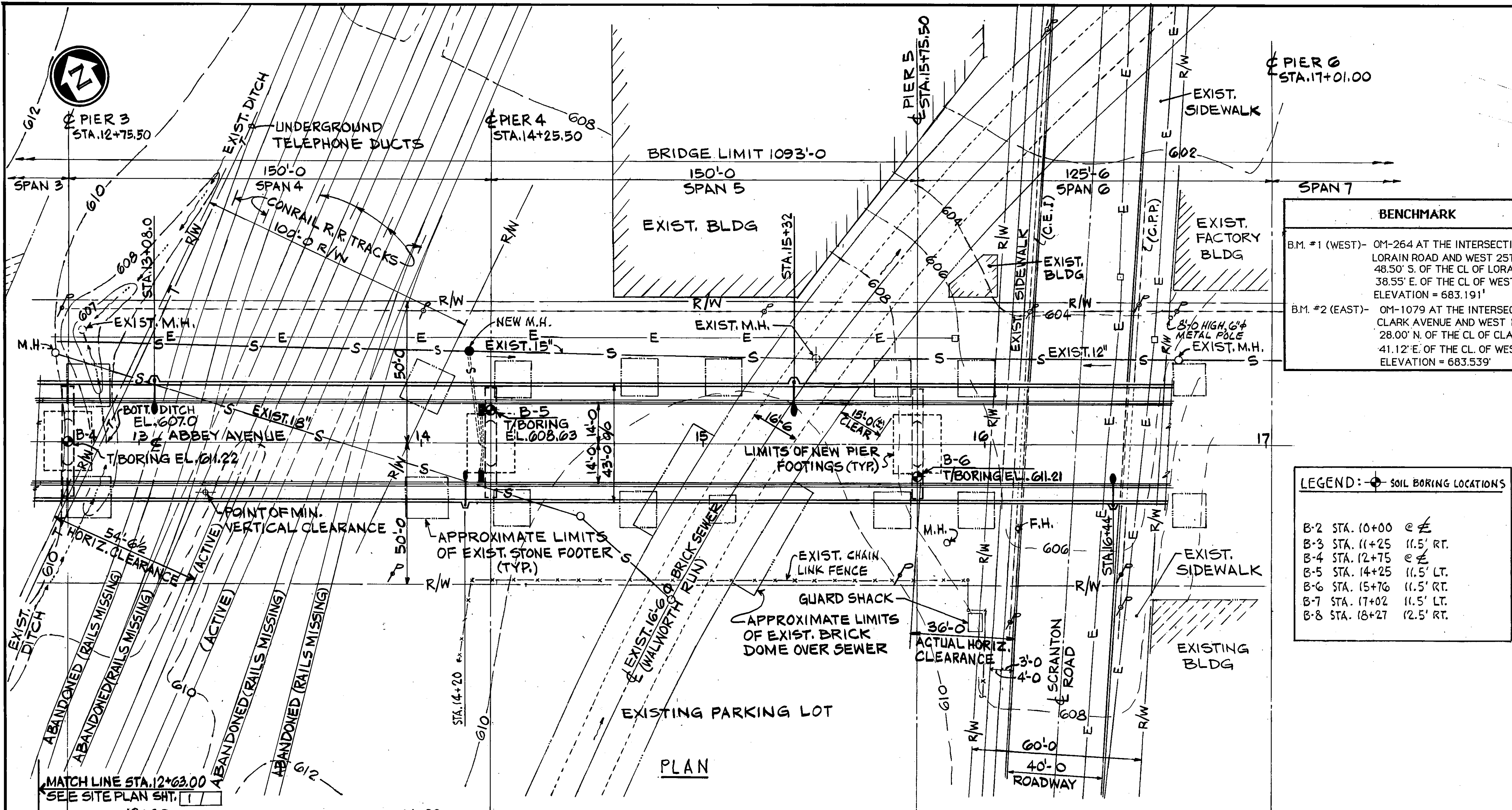
BENCHMARK

B.M. #1 (WEST)- 0M-264 AT THE INTERSECTION OF LORAIN ROAD AND WEST 25TH STREET 48.50' S. OF THE CL OF LORAIN ROAD 38.55' E. OF THE CL OF WEST 25TH ST. ELEVATION = 683.191'

B.M. #2 (EAST)- 0M-1079 AT THE INTERSECTION OF CLARK AVENUE AND WEST 14TH STREET 28.00' N. OF THE CL OF CLARK AVENUE 41.12' E. OF THE CL OF WEST 14TH ST. ELEVATION = 683.539'

LEGEND: - SOIL BORING LOCATIONS

B-2 STA. 10+00 @ E
 B-3 STA. 11+25 11.5' RT.
 B-4 STA. 12+75 @ E
 B-5 STA. 14+25 11.5' LT.
 B-6 STA. 15+76 11.5' RT.
 B-7 STA. 17+02 11.5' LT.
 B-8 STA. 18+27 12.5' RT.



THE OSBORN ENGINEERING COMPANY CONSULTING ENGINEERS CLEVELAND, OHIO 44114 2/20

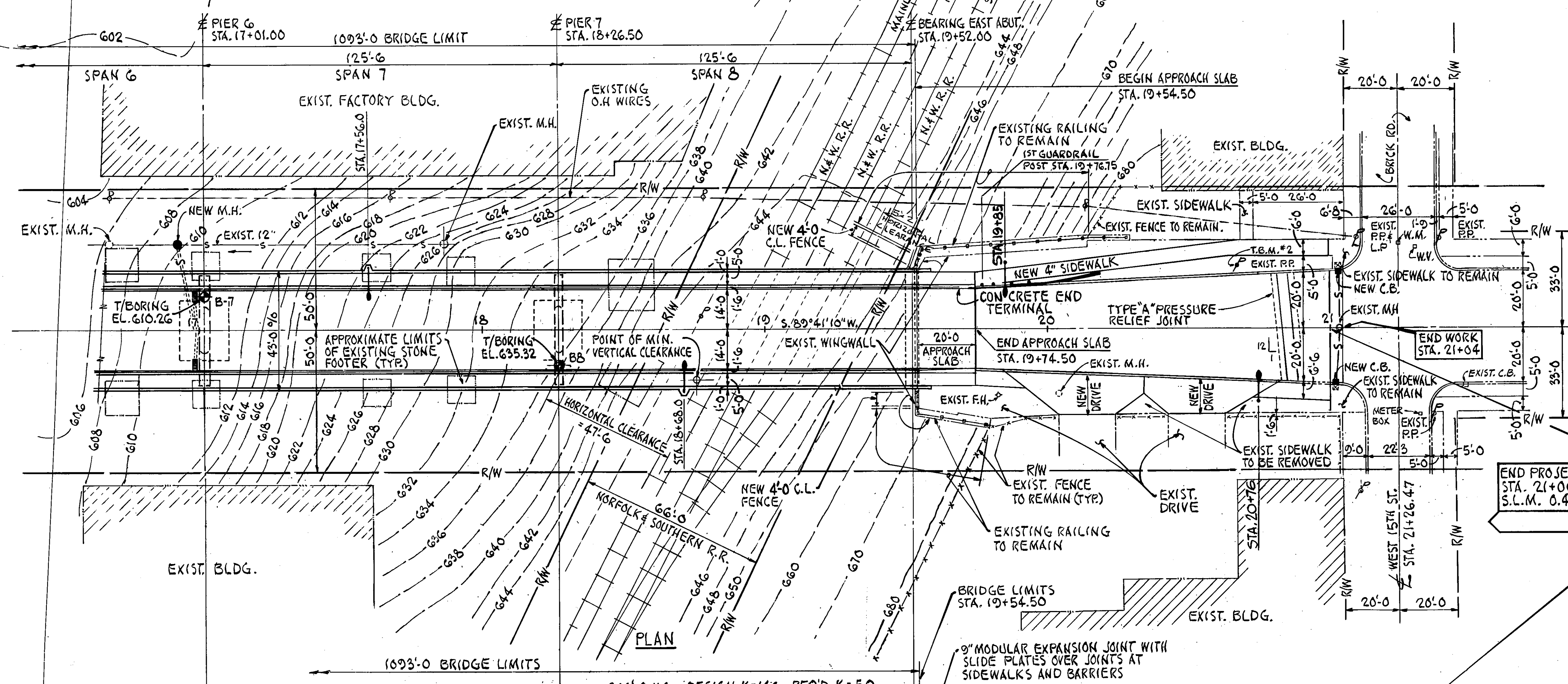
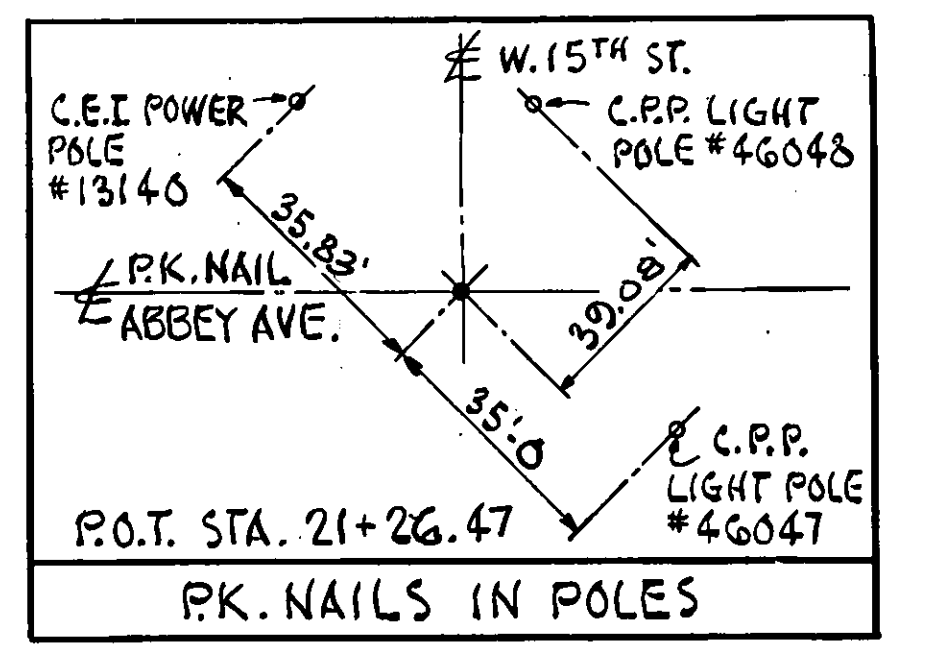
SITE PLAN (SHEET 2)
 CITY OF CLEVELAND BRIDGE NO. 1:001M
 ABBEY AVENUE VIADUCT OVER CONRAIL,
 N. & S. R.R. AND SCRANTON ROAD
 CUYAHOGA COUNTY

STA. 8+61.50
 TO STA. 19+54.50

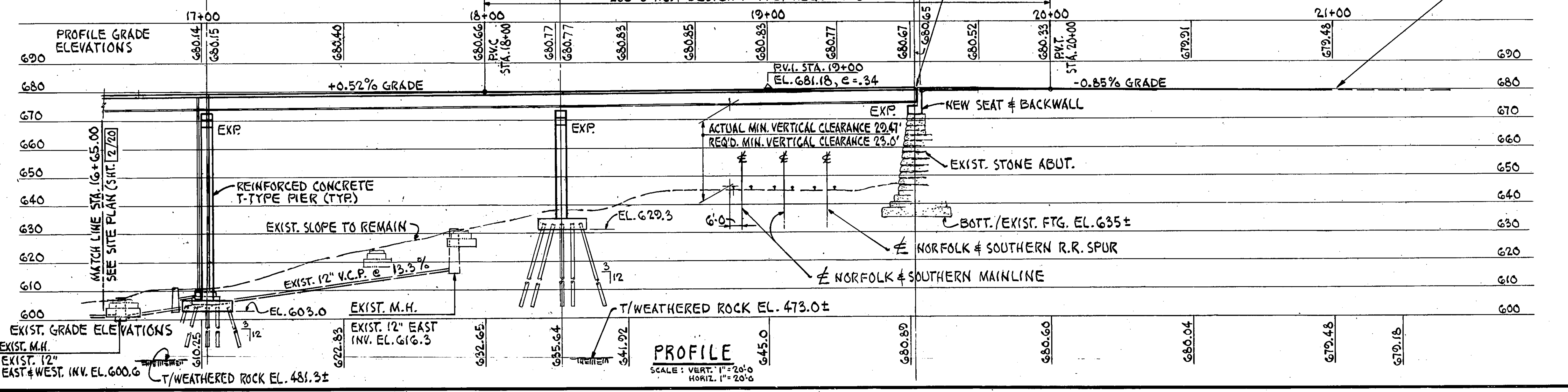
PRESENT TOPOGRAPHY	PROPOSED TOPOGRAPHY			
SURVEYED OSBORN ENG.	DRAWN E.D.	DESIGNED L.H.	DRAWN E.P.	CHECKED JRS
				REVIEWED D.S.



CUYAHOGA COUNTY
 ABBEY AVENUE VIADUCT



TEMPORARY BENCH MARK #2
 LAG BOLT AT EL. 681.36 IN
 SOUTH WEST CORNER OF POWER
 POLE B0688 AT STA. 20+67±, 22' LT.



THE OSBORN ENGINEERING COMPANY				3	20
CONSULTING ENGINEERS					
CLEVELAND, OHIO 44114					
SITE PLAN (SHEET 3)					
CITY OF CLEVELAND BRIDGE NO. 1:001M					
ABBAY AVENUE VIADUCT OVER CONRAIL,					
N. & S. R.R. AND SCRANTON ROAD					
CUYAHOGA COUNTY					
STA. 8+61.50					
TO STA. 19+54.50					
PRESENT TOPOGRAPHY		DESIGNED DRAWN		CHECKED REVIEWED	
SURVEYED	DRAWN	OSBORN	ED.	LH	LBEL
JRS	D.S.				

PROFILE
 SCALE: VERT. 1"=20'-0"
 HORIZ. 1"=20'-0"

ESTIMATED QUANTITIES FOR INFORMATION ONLY

ITEM	ITEM EXT.	TOTAL	UNIT	DESCRIPTION	ABUTS.	PIERS	SUPER.	GEN.
202	11200	LUMP SUM	LUMP	PORTIONS OF STRUCTURES REMOVED	LUMP			
503	11100	LUMP SUM	LUMP	COFFERDAMS, CRIBS AND SHEETING				LUMP
503	21100	885	CU. YDS.	UNCLASSIFIED EXCAVATION	3	882		
505	11100	LUMP SUM	LUMP	PILE DRIVING EQUIPMENT MOBILIZATION			LUMP	
506	11101	1	EACH	STATIC LOAD TEST, AS PER PLAN		1		
506	12201	1	EACH	SUBSEQUENT STATIC LOAD TEST, AS PER PLAN		1		
507	42200	11,940	LIN. FT.	14"Ø CAST-IN-PLACE REINFORCED CONCRETE PILES (OVER 1000 LF TOTAL)		11,940		
507	92200	129	LIN. FT.	PREBORED HOLES		129		
509	15400	233,880	LBS.	REINFORCING STEEL, GRADE 60 (OVER 2000,000 TOTAL LBS.)		233,880		
509	15800	398,264	LBS.	EPOXY COATED REINFORCING STEEL, GRADE 60	9,800		388,464	
510	12200	310	LIN. FT.	DOWEL HOLES	310			
511	31504	1,899	CU. YDS.	CLASS S CONCRETE, SUPERSTRUCTURE (ON BEAMS OR GIRDERS WITH SIDEWALKS AND/OR MEDIAN CURB)			1,899	
511	42000	734	CU. YDS.	CLASS C CONCRETE, PIER ABOVE FOOTINGS (T TYPE)		734		
511	45700	114	CU. YDS.	CLASS C CONCRETE, ABUTMENT (REPAIR OR RECONSTRUCT)	114			
511	46500	367	CU. YDS.	CLASS C CONCRETE, FOOTING		367		
512	44400	103	SQ. YDS.	TYPE "B" WATERPROOFING	103			
513	12300	1,726,467	LBS.	STRUCTURAL STEEL, A588 AISC CATEGORY III (BUILT UP GIRDER)			1,726,467	
513	15500	18,700	LBS.	STRUCTURAL STEEL (A36), CURB PLATES (AISC CERTIFICATION NOT REQUIRED)			18,700	
513	20000	10,365	EACH	WELDED STUD SHEAR CONNECTORS			10,365	
514	01501	LUMP SUM	LUMP	FIELD PAINTING OF NEW STRUCTURAL STEEL SYSTEM A, AS PER PLAN			LUMP	
516	12401	80	LIN. FT.	STRUCTURAL EXPANSION JOINTS INCLUDING ELASTOMERIC COMPRESSION SEALS AND STEEL EXTRUSIONS			80	
516	13600	138	SQ. FT.	1" PREFORMED EXPANSION JOINT FILLER	138			
517	74501	2,198	LIN. FT.	RAILING, CONCRETE, AS PER PLAN	20		2,178	
518	12300	6	EACH	SCUPPERS, INCLUDING SUPPORTS (FOR GIRDER BRIDGE)		6		
518	21101	51	CU. YDS.	POROUS BACKFILL, AS PER PLAN	51			
518	41100	85	LIN. FT.	6" PERFORATED, HELICAL CORRUGATED STEEL PIPE, 707.01	85			
518	41200	17	LIN. FT.	6" NON-PERFORATED, HELICAL CORRUGATED STEEL PIPE INCLUDING SPECIALS, 707.01	17			
518	43300	158	LIN. FT.	6" PIPE DOWNSPOUT, INCLUDING SPECIALS		158		
518	51100	174	LIN. FT.	8" PIPE DOWNSPOUT, INCLUDING SPECIALS		174		
523	11100	9	HOUR	DYNAMIC LOAD TESTS		9		
607	20100	2,198	LIN. FT.	6'-0" HIGH FENCE TYPE CL, AS PER PLAN	10		2,188	
607	20100	22	LIN. FT.	4'-0" HIGH FENCE TYPE CL, AS PER PLAN	22			
625				SEE SHEET 37 FOR LIGHTING SUMMARY				
SPECIAL	67502	42,796	SQ. FT.	SEALING OF CONCRETE SURFACES (EPOXY), (SEE PROPOSAL NOTE)	1,109		41,687	
SPECIAL	00200	LUMP SUM	LUMP	REPOINTING JOINTS AT EXISTING STONE ABUTMENTS	LUMP			
SPECIAL	00200	* 44	SQ. FT.	PATCHING STONE MASONRY ABUTMENTS	44			

* QUANTITY OF ITEM SPECIAL, PATCHING STONE MASONRY ABUTMENTS HAS BEEN INCREASED TO INCLUDE A CONTINGENCY QUANTITY OF 25 SQ. FT. FOR ADDITIONAL WORK AS DIRECTED BY THE ENGINEER.

GENERAL NOTES

- REFERENCE SHALL BE MADE TO STANDARD DRAWINGS:
AS-1-81 DATED 11-27-81
BR-1 DATED 5-29-79
SD-1-69 DATED 6-12-69
AND TO SUPPLEMENTAL SPECIFICATIONS:
836 DATED 11-12-85
849 DATED 12-24-85
853 DATED 6-26-78
956 DATED 6-26-78
- DESIGN SPECIFICATIONS: THIS STRUCTURE CONFORMS TO "STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES" ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS, 1983, INCLUDING THE 1984 THRU 1988 INTERIM SPECIFICATIONS AND THE OHIO "SUPPLEMENT" TO THESE SPECIFICATIONS.
- 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.
STRUCTURAL STEEL - ASTM A588 - UNIT STRESS 27,000 P.S.I.
STRUCTURAL STEEL - ASTM A36 - UNIT STRESS 20,000 P.S.I.
- DECK PROTECTION METHOD: EPOXY COATED REINFORCING STEEL, TOP AND BOTTOM MAT.
MONOLITHIC WEARING SURFACE IS ASSUMED, FOR DESIGN PURPOSES, TO BE 1" THICK.
- EXISTING STRUCTURE VERIFICATION: DETAILS AND DIMENSIONS SHOWN ON THESE PLANS PERTAINING TO THE EXISTING STRUCTURE HAVE BEEN OBTAINED FROM PLANS OF THE EXISTING STRUCTURE AND/OR FROM FIELD OBSERVATIONS AND MEASUREMENTS. 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 SECTIONS 102.05, 105.02 AND 513.02.

CONTRACT BID PRICES SHALL BE BASED UPON A RECOGNITION OF THE UNCERTAINTIES DESCRIBED ABOVE AND UPON A PRE-BID 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.

CALC. BY: RCK DATE: 1-90 CHECKED BY: JRS DATE: 1-90	OHIO F.H.W.A. REGION 5	16 37
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CUYAHOGA COUNTY
 ABBEY AVENUE VIADUCT

- PILE DESIGN LOADS: THE DESIGN LOAD FOR THE PIER PILES IS 70 TONS PER PILE.

PILE WALL THICKNESS: THE RESPONSIBILITY OF CHOOSING AND PROVIDING A SATISFACTORY PILE WALL THICKNESS FOR THIS PROJECT SHALL BE BORNE BY THE CONTRACTOR EXCEPT THAT THE PILE WALL THICKNESS SHALL NOT BE LESS THAN 0.250 INCHES. IF A PILE WALL THICKNESS GREATER THAN 0.250 INCHES IS NECESSARY TO RESIST THE PILE INSTALLATION DRIVING STRESS, THE CONTRACTOR SHALL MAKE THIS DETERMINATION AND SHALL FURNISH A PILE WITH AN ACCEPTABLE WALL THICKNESS. IF MONOTUBE PILES ARE USED, MONOTUBE PILES SHALL HAVE A MINIMUM WALL THICKNESS OF 0.200 INCHES. THE CONTRACTOR MAY FURNISH A PILE WITH A WALL THICKNESS OF LESS THAN 0.250 INCHES (SUCH AS A MANDREL DRIVEN PILE) PROVIDED THAT REINFORCING STEEL IS FURNISHED FOR THE TOP PORTION OF EACH PILE AS FOLLOWS: THE REINFORCING STEEL SHALL BE 30 FEET IN LENGTH AND SHALL CONSIST OF A CAGE CONSTRUCTED WITH FOUR NUMBER SIX BARS TIED WITH A NUMBER THREE SPIRAL HAVING A SIX INCH PITCH AND THREE CLOSURE TURNS AT EACH END OF THE CAGE, THE CLEARANCE SHALL BE TWO INCHES.

PILE HAMMER: THE PILE HAMMER USED TO INSTALL THE CAST-IN-PLACE REINFORCED CONCRETE PILES SHALL HAVE A STATE'S ENERGY RATING OF NOT LESS THAN 20,000 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 OF PROCEDURES FOR STRUCTURES" TO OBTAIN THE STATE'S ENERGY RATING.

- MAINTENANCE OF TRAFFIC: TWO LANES OF TRAFFIC WITH A MINIMUM HORIZONTAL WIDTH OF 26'-0" AND A MINIMUM VERTICAL CLEARANCE OF 13'-8" SHALL BE MAINTAINED ON SCRANTON ROAD AT ALL TIMES, EXCEPT DURING ERECTION OF STEEL OVER SCRANTON ROAD W/PRIOR APPROVAL.
- ITEM 202 - PORTIONS OF STRUCTURES REMOVED: THIS WORK SHALL INCLUDE THE REMOVAL AND DISPOSAL OF PORTIONS OF THE EXISTING MASONRY ABUTMENTS TO THE LIMITS SHOWN ON THE PLANS, INCLUDING EXCAVATION INCIDENTAL TO THE ABOVE.

REMOVAL OF THE SPECIFIED PORTIONS OF THE MASONRY SHALL BE DONE WITH SUFFICIENT CARE AND EFFORT TO MINIMIZE DAMAGE TO STONE MASONRY THAT IS TO REMAIN, AND TO INSURE A SUFFICIENT SUPPLY OF STONE MASONRY FOR REUSE IN ITEM SPECIAL - STONE MASONRY REPAIR AND RESETTling. ATTENTION IS CALLED TO ODOT CMS 202.02 REGARDING SALVAGEABLE MATERIAL.

THE OSBORN ENGINEERING COMPANY 4/20
 CONSULTING ENGINEERS
 CLEVELAND, OHIO 44116

ESTIMATED QUANTITIES AND GENERAL NOTES						
ABBAY AVENUE VIADUCT OVER CONRAIL, N. & S.R.R. AND SCRANTON ROAD CITY OF CLEVELAND, BRIDGE NO. 1:001M CLEVELAND, CUYAHOGA COUNTY, OHIO						
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISION

GENERAL NOTES

CUYAHOGA COUNTY
ABBEY AVENUE VIADUCT

THE FOLLOWING MAJOR ITEMS ARE INCLUDED:

ITEM	APPROXIMATE QUANTITY
ABUTMENTS CONCRETE AND STONE MASONRY	165 CU. YD.

PAYMENT FOR THE WORK DESCRIBED SHALL BE INCLUDED IN THE PRICE BID FOR ITEM 202 - PORTIONS OF STRUCTURES REMOVED.

10. ITEM 506 - STATIC LOAD TEST, AS PER PLAN AND SUBSEQUENT STATIC LOAD TEST, AS PER PLAN: THE CONTRACTOR SHALL PERFORM A STATIC LOAD ON ONE OF THE INITIALLY INSTALLED PIER PILES OR ON A PILE INSTALLED NEAR A PIER LOCATION. THE INSTALLED LENGTHS OF THE PILES TO BE LOAD TESTED SHALL NOT BE MORE THAN THE PLAN ESTIMATED PAY LENGTHS. THE STATIC LOAD TEST SHALL BE CONDUCTED AS PER ITEM 506 EXCEPT AS MODIFIED HEREIN. THE STATIC LOAD SHALL BE APPLIED TO THE PILE AS SOON AS PRACTICAL. AFTER THE TESTED PILE IS UNLOADED THE CONTRACTOR SHALL WAIT 14 DAYS AND THEN RECONDUCT THE LOAD TEST BY THE SAME PROCEDURES UTILIZED FOR THE INITIAL LOAD TEST. THIS PROCEDURE IS TO MEASURE THE 14 DAY SET-UP RESISTANCE THAT CAN BE DEVELOPED. NOTE THAT PAYMENT FOR A STATIC LOAD TEST INCLUDES THE APPLICATION OF THE LOAD TO EACH PILE AT THE TWO (2) SPECIFIED TIMES.

THE CONTRACTOR SHALL FURNISH THE DIRECTOR (ATTENTION: BUREAU OF BRIDGES) A COPY OF A TYPED REPORT DESCRIBING THE PROCEDURES AND RESULTS OF THE STATIC LOAD TEST. PAYMENT FOR THIS REPORT IS CONSIDERED INCIDENTAL TO THE COST OF THE STATIC LOAD TESTS.

11. ITEM 516 - STRUCTURAL EXPANSION JOINTS INCLUDING ELASTOMERIC COMPRESSION SEALS AND STEEL EXTRUSIONS

REFERENCE SHALL BE MADE TO SUPPLEMENTAL SPECIFICATION 849 FOR INSTALLATION PROCEDURES, MATERIAL REQUIREMENTS AND MANUFACTURING CONTROL.

MATERIALS: A36 WITH PAINT AS SPECIFIED FOR THE MAIN STRUCTURAL STEEL, EXCEPT THAT SYSTEM B SHALL BE USED WHEN THE MAIN STRUCTURAL STEEL IS TO REMAIN UNPAINTED. NO SHOP COAT IS REQUIRED. FIELD PAINT SHALL CONSIST OF TWO PRIME COATS FOR SYSTEM B, AND ONE FINISH COAT.

MEASUREMENT FOR PAY PURPOSES SHALL BE BASED ON THE SEALED LENGTH OF JOINTS MEASURED HORIZONTALLY ALONG THE JOINT CENTERLINES. PAYMENT PER LINEAR FOOT FOR ITEM 516, "STRUCTURAL EXPANSION JOINTS INCLUDING ELASTOMERIC COMPRESSION SEALS AND STEEL EXTRUSIONS" INCLUDES ALL LABOR, MATERIALS AND EQUIPMENT NECESSARY TO COMPLETE THE JOINT IN PLACE INCLUDING THE JOINT ARMOR, STEEL PLATES, ANCHORING DEVICES, SUPPORT BARS, BEAM SUPPORT, SUPPORT BOXES AND NEOPRENE SEALS.

12. ITEM 518-POROUS BACKFILL, AS PER PLAN: TO ENSURE THAT ANY FINE SOIL PARTICLES INCLUDED WITHIN THE EMBANKMENT TO BE PLACED BEHIND THE REAR AND FORWARD ABUTMENT DO NOT MIGRATE INTO AND THROUGH THE VOIDS OF THE POROUS BACKFILL MATERIAL LOCATED BEHIND THE ABUTMENTS, FILTER FABRIC, 712.09 TYPE A, SHALL BE PLACED BETWEEN THE 518 POROUS BACKFILL MATERIAL AND THE 203 EMBANKMENT MATERIAL TO THE LIMITS AS SHOWN IN THE PLANS. PAYMENT FOR THE FILTER FABRIC SHALL BE INCLUDED IN THE UNIT PRICE BID PER CUBIC YARD FOR THE ITEM 518 POROUS BACKFILL, AS PER PLAN, WHICH SHALL INCLUDE ALL LABOR, MATERIALS, EQUIPMENT AND INCIDENTALS NECESSARY TO COMPLETE THIS WORK.

13. ITEM SPECIAL - SEALING CONCRETE SURFACES: THE FOLLOWING CONCRETE SURFACES SHALL BE SEALED WITH AN EPOXY SEALER IN ACCORDANCE WITH DETAIL SPECIFICATION D-7

- A. EXPOSED FACES OF ABUTMENT BACKWALLS, ABUTMENT BRIDGE SEATS AND ONE FOOT DOWN THE FACE OF ABUTMENT SEAT
- B. NINE INCH GUTTER, INSIDE FACE, TOP, AND OUTSIDE FACE OF PARAPET, TOP OF SIDEWALK, INSIDE FACE, TOP AND OUTSIDE FACE OF BARRIER, DECK FASCIA AND SIX INCH UNDERDECK RETURN.
- C. PIER SEATS AND VERTICAL FACES OF PIERS, INCLUDING SLOPED UNDERSIDES OF T-TYPE CAPS, FROM 1'0" BELOW FINISHED GRADE UPWARDS TO TOPS OF PIERS.

14. ITEM SPECIAL - REPOINTING JOINTS AT EXISTING STONE ABUTMENTS: ALL JOINTS AND CRACKS AT EXISTING STONE ABUTMENTS ABOVE THE EXISTING GROUND LINED AS SHOWN ON SHEETS 19 AND 20 OF 37 OF THE PLANS AND ON THE EXPOSED WINGWALLS NOT SHOWN SHALL BE CLEANED AND REPOINTED AS SPECIFIED HEREIN.

- A. PRIOR TO BEGINNING REPOINTING WORK ON THE ABUTMENTS, THE CONTRACTOR SHALL PERFORM A THOROUGH INSPECTION OF THE JOINTS AND CRACKS TO BE REPOINTED.
- B. ALL LOOSE STONE OR MORTAR IN THE JOINTS AND CRACKS TO BE REPOINTED SHALL BE REMOVED TO THE SATISFACTION OF THE ENGINEER.
- C. AFTER LOOSE MATERIAL IS REMOVED, THE JOINTS AND CRACKS SHALL BE THOROUGHLY CLEANED WITH BY AN AIR BLAST.
- D. THE EXISTING JOINTS AND CRACKS SHALL BE HAND FILLED TO THE FACE OF THE EXISTING STONE USING A NON-SHRINK GROUT SUCH AS FIVE STAR GROUT AS MANUFACTURED BY THE U.S. GROUT COMPANY, OLD GREENWICH, CONN. 06870 OR ANOTHER APPROVED GROUT CONFORMING TO ASTM C827. ALL SURFACES SHALL BE PROPERLY POINTED AFTER PLACEMENT OF THE GROUT.

- E. "ITEM SPECIAL - REPOINTING JOINTS AT EXISTING STONE ABUTMENTS" IS A LUMP SUM ITEM AND INCLUDES INSPECTION, REMOVAL OF LOOSE MATERIALS, CLEANING, BLASTING, GROUTING AND POINTING OF ALL EXISTING JOINTS AND CRACKS ABOVE-GROUND LINE AT THE EXISTING ABUTMENTS AND WINGWALLS. ALL LABOR, MATERIAL AND EQUIPMENT SPECIFIED HEREIN TO PERFORM THIS WORK SHALL BE INCLUDED.

15. ITEM SPECIAL, PATCHING STONE MASONRY ABUTMENTS - ALL STONE MASONRY PATCHING WORK AS SHOWN ON SHEET 20 OF 37 OF THE PLANS OR AS DIRECTED BY THE ENGINEER DURING CONSTRUCTION SHALL BE PERFORMED IN ACCORDANCE WITH ODOT SPECIFICATION ITEM 519 AND THE MODIFICATIONS AND ADDITIONS DESCRIBED HEREIN.

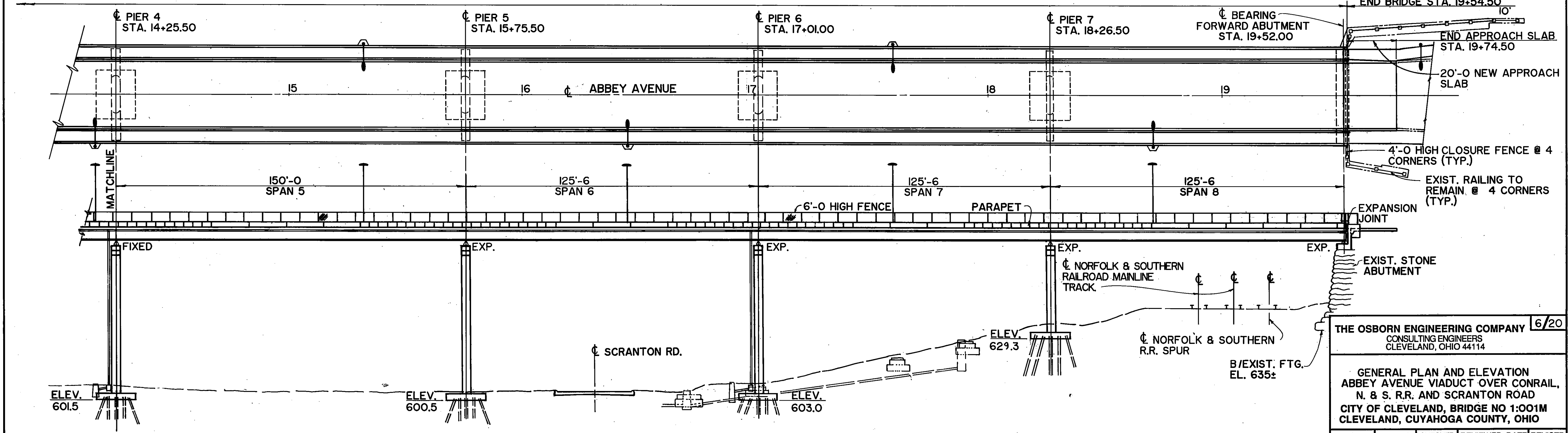
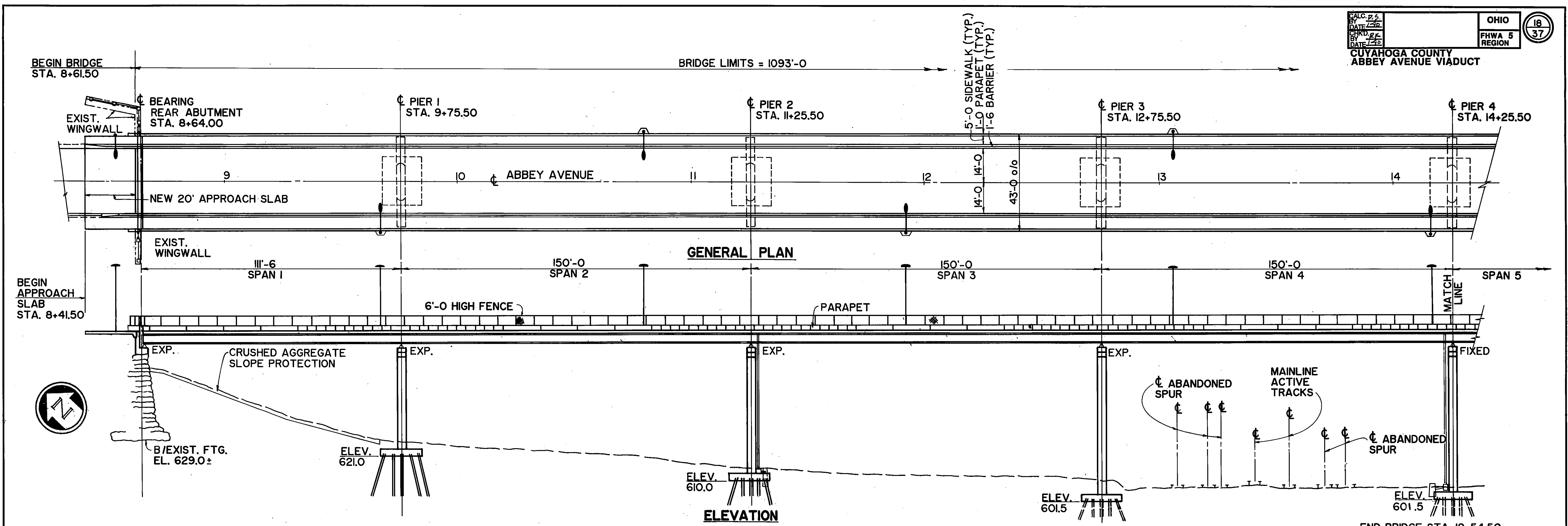
- A. CLASS C CONCRETE SHALL BE USED AS REPLACEMENT CONCRETE FOR PATCHES.
- B. PRIOR TO BEGINNING PATCHING WORK ON THE ABUTMENTS, THE CONTRACTOR SHALL PERFORM A THOROUGH INSPECTION OF SURFACES TO BE PATCHED. THE AREAS TO BE PATCHED SHALL BE MARKED ACCORDING TO THE PLANS WITH THE APPROVAL OF THE ENGINEER. THE ENGINEER MAY MODIFY THESE AREAS AS REQUIRED AND SHALL AUTHORIZE THE AREAS TO BE PATCHED.
- C. THE AREAS OUTLINED SHALL FIRST BE SAW-CUT TO A MAXIMUM DEPTH OF 3/4" AND ALL UNSOUND STONE SHALL BE REMOVED WITH A CHIPPING HAMMER UNDER THE DIRECTION OF THE ENGINEER TO A MINIMUM DEPTH OF 6".
- D. THE SURFACE TO BE PATCHED SHALL BE THOROUGHLY CLEANED BY SANDBLASTING FOLLOWED BY AN AIR BLAST.
- E. INSTALL NO. 4 DOWELS AT 18" ON CENTER WITH 1'-0" EMBEDMENT INTO SOUND STONE AND EXTENDING TO WITHIN 2" OF THE VERTICAL FINISH FACE OF CONCRETE. A MINIMUM OF TWO DOWELS PER PATCH SHALL BE USED. THE WIRE MESH SPECIFIED IN THE C.M.S. SHALL BE TIED TO THE DOWELS. IMMEDIATELY PRIOR TO PLACING THE CONCRETE PATCH MATERIAL, THE NEWLY EXPOSED STONE SURFACES SHALL BE CLEANED WITH AN AIR BLAST.
- F. PLACED THE CONCRETE AS SPECIFIED IN SPECIFICATION ITEM 519.
- G. ITEM SPECIAL - PATCHING STONE MASONRY ABUTMENTS SHALL BE PAID FOR ON A SQUARE FOOT BASIS AND INCLUDE ALL LABOR, MATERIAL AND EQUIPMENT SPECIFIED HEREIN AND IN THE C.M.S. TO CLEAN AND PREPARE THE EXISTING STONE SURFACES, INSTALL DOWELS AND REINFORCING STEEL AND PATCH THE DETERIORATED AREAS INDICATED ON THE PLANS OR AS DIRECTED BY THE ENGINEER FOR ALL PATCHES UP TO 12" DEEP. ANY PATCHES DEEPER THAN 12" SHALL BE CONSIDERED EXTRA WORK.

THE OSBORN ENGINEERING COMPANY 5/20
CONSULTING ENGINEERS
CLEVELAND, OHIO 44116

GENERAL NOTES

ABBEY AVENUE VIADUCT OVER CONRAIL,
N. & S.R.R. AND SCRANTON ROAD
CITY OF CLEVELAND, BRIDGE NO. 1:001M
CLEVELAND, CUYAHOGA COUNTY, OHIO

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED

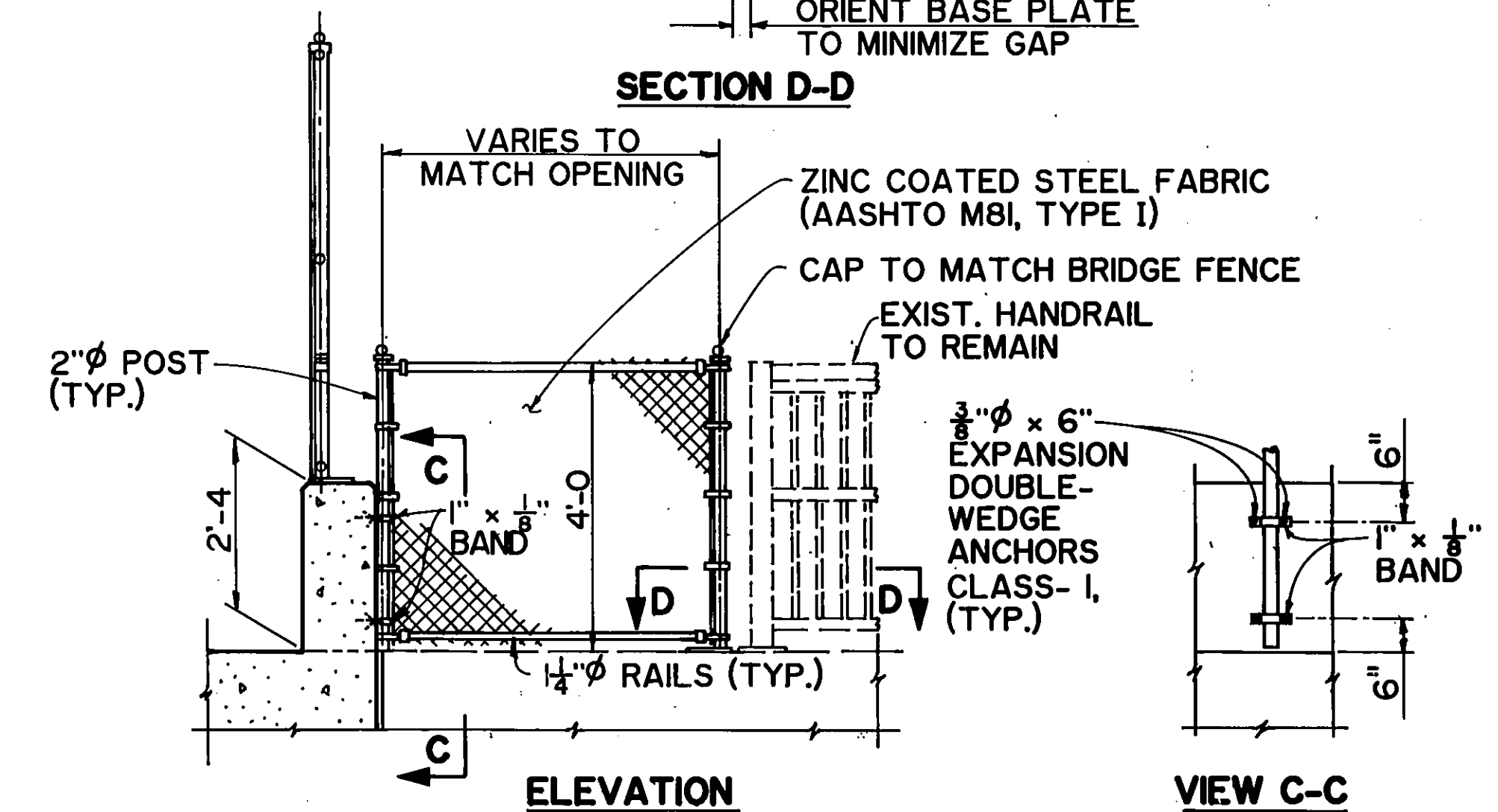
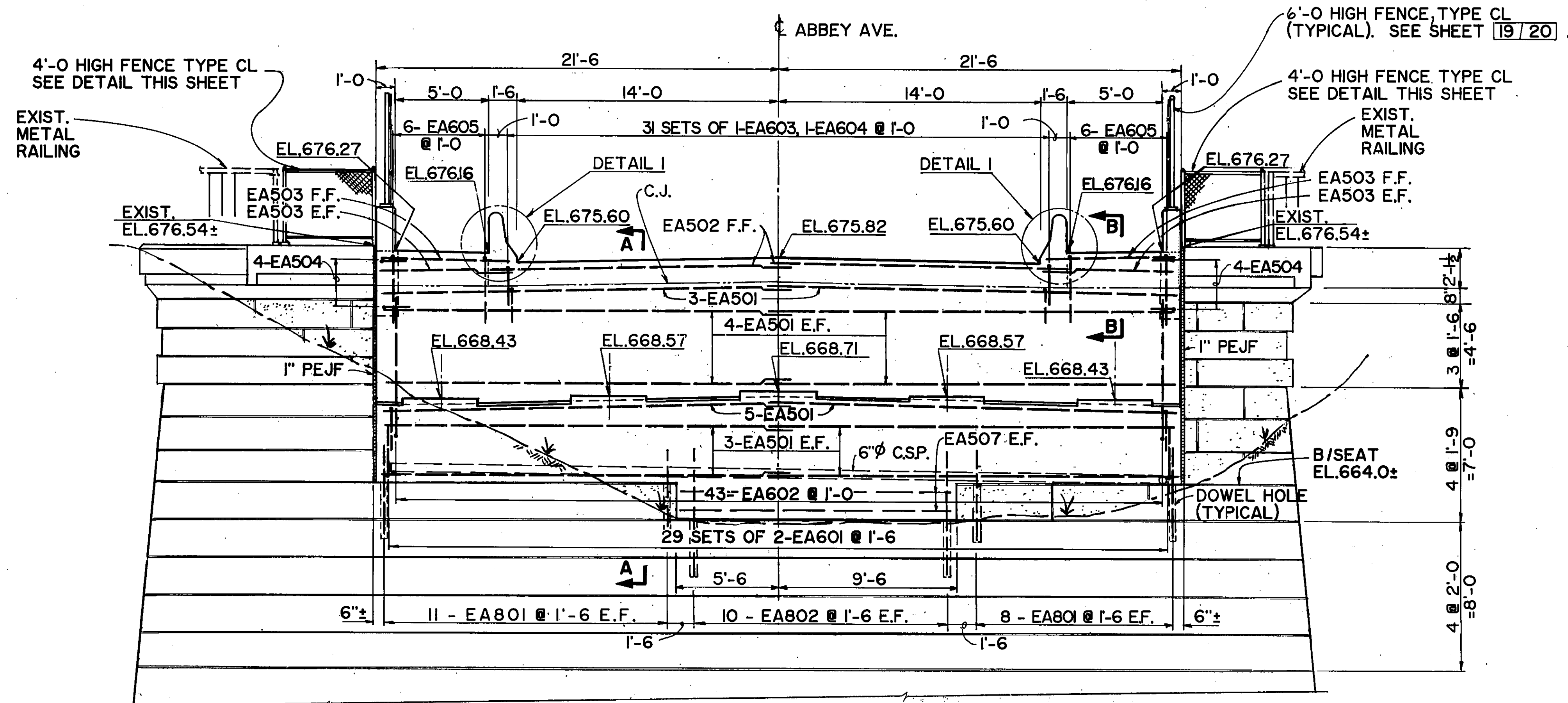
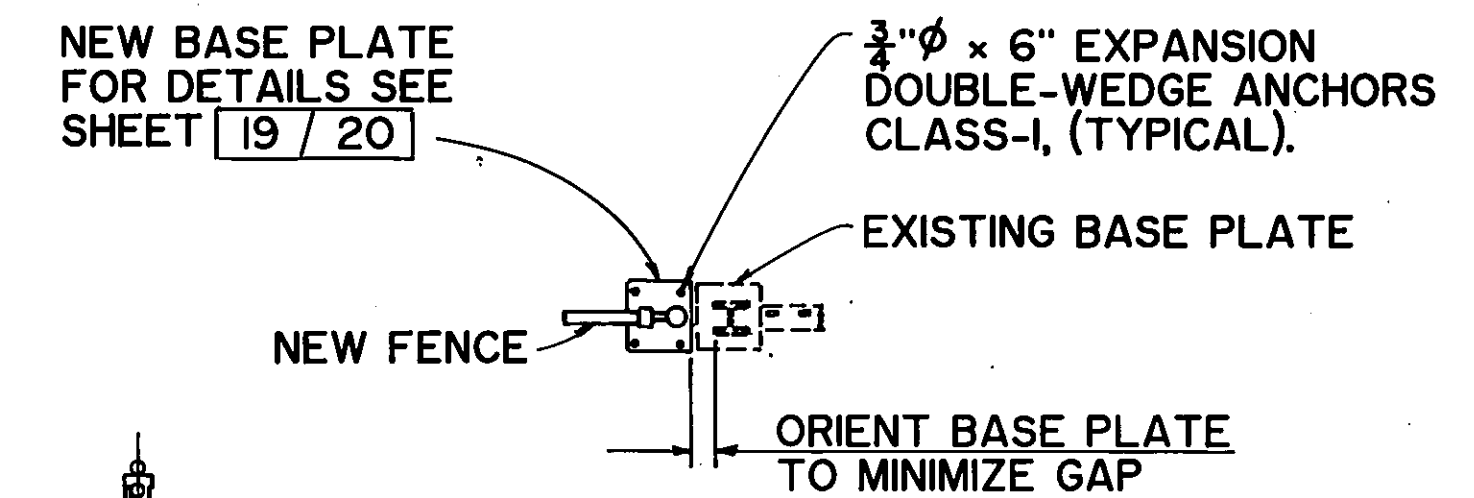
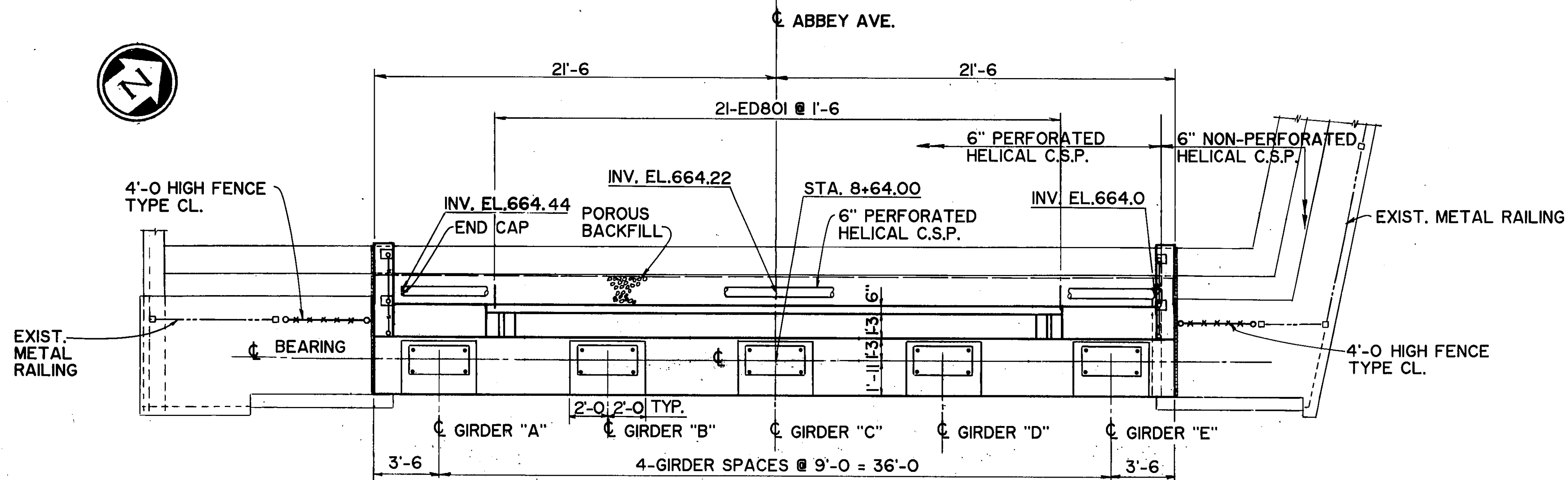


THE OSBORN ENGINEERING COMPANY 6/20 CONSULTING ENGINEERS CLEVELAND, OHIO 44114				
GENERAL PLAN AND ELEVATION ABBEY AVENUE VIADUCT OVER CONRAIL, N. & S. R.R. AND SCRANTON ROAD CITY OF CLEVELAND, BRIDGE NO 1:001M CLEVELAND, CUYAHOGA COUNTY, OHIO				
DESIGNED	DRAWN	CHECKED	REVIEWED DATE	REVISED
L.H.	T.W.	J.R.S.	D.S. 9-22-89	

ABBAY AVENUE VIADUCT

NOTES:

- FOR ADDITIONAL NOTES SEE SHEET 8/20.
- FOR SECTIONS A-A & B-B SEE SHEET 9/20.
- FOR WINGWALL DETAILS SEE SHEET 9/20.
- FOR DETAIL I SEE SHEET 8/20.



TYPICAL 4'-0 HIGH FENCE TYPE CL DETAILS

FOR NOTES SEE ITEM 607-4'-0 OR 6'-0 HIGH FENCE TYPE CL, AS PER PLAN SHEET 19/20.

LAP LENGTH

#5 1'-4

ABBREVIATIONS

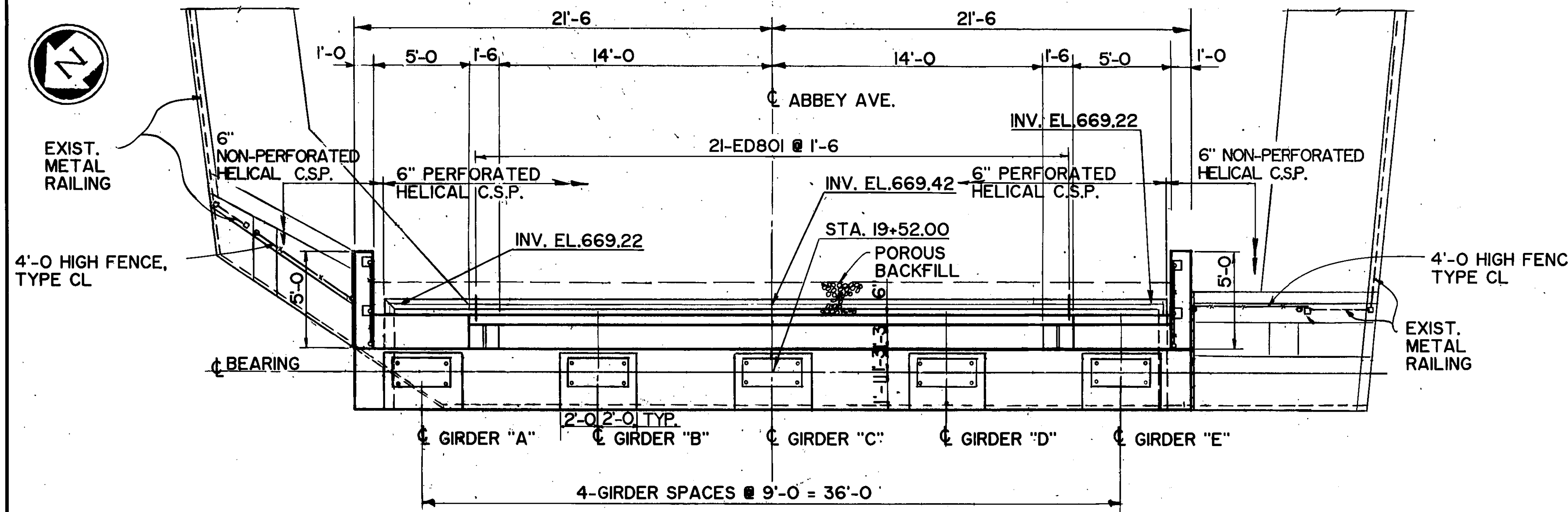
- E.F. EACH FACE
- F.F. FAR FACE
- C.J. CONSTRUCTION JOINT
- C.S.P. CORRUGATED STEEL PIPE
- PEJF PREMOLDED EXPANSION JOINT FILLER
- EL. ELEVATION

THE OSBORN ENGINEERING COMPANY 7/20
CONSULTING ENGINEERS
CLEVELAND, OHIO 44114

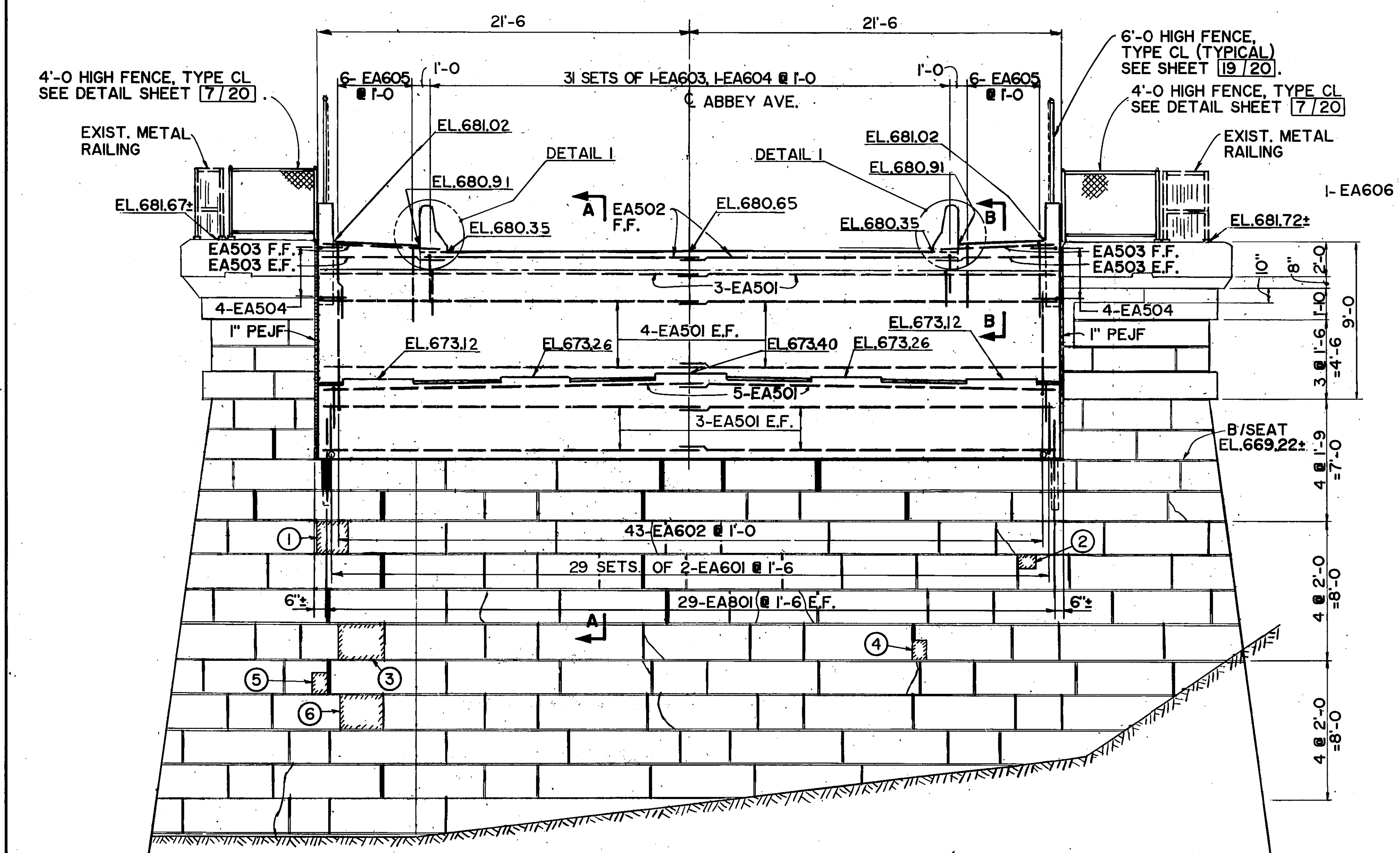
REAR ABUTMENT PLAN AND ELEVATION

ABBAY AVENUE VIADUCT OVER CONRAIL,
N. & S. R.R. AND SCRANTON ROAD
CITY OF CLEVELAND, BRIDGE NO 1:001M
CLEVELAND, CUYAHOGA COUNTY, OHIO

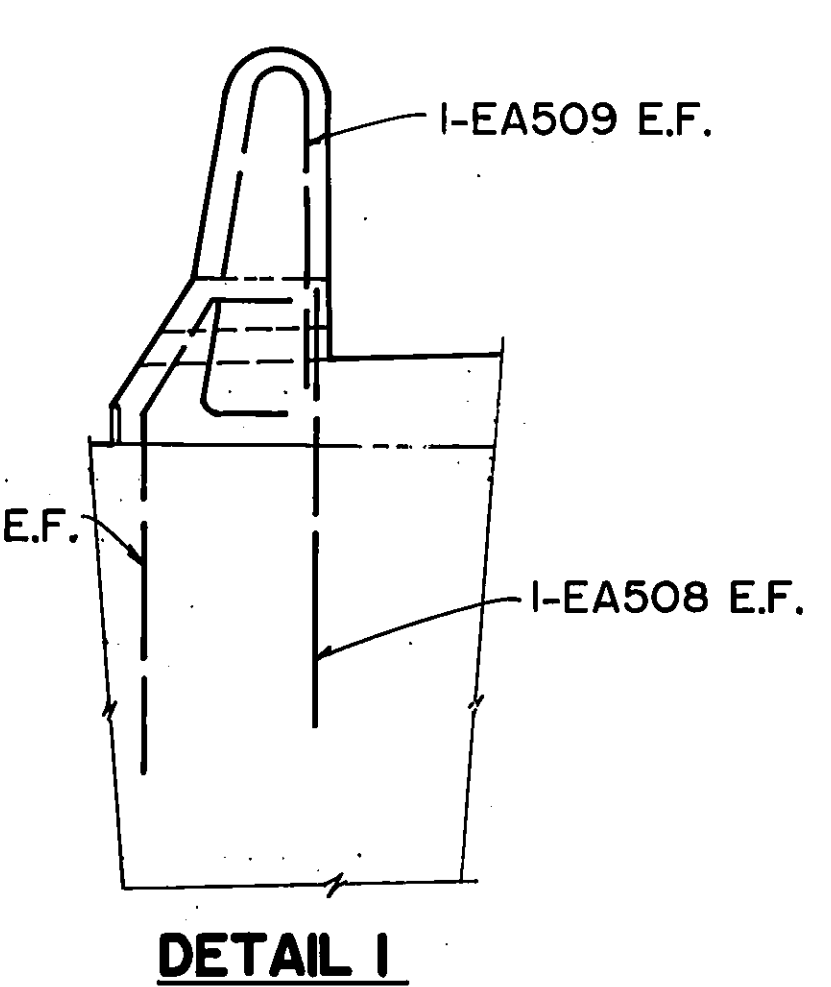
DESIGNED	DRAWN	CHECKED	REVIEWED	DATE	REVISED
L.H.	B.F.G.	JRS	D.S.	4-22-89	



PLAN



ELEVATION



DETAIL I

10. ALL EXISTING JOINTS AND CRACKS IN STONE ABUTMENTS AND WINGWALLS SHALL BE REPAIRED. SEE GENERAL NOTES FOR ITEM SPECIAL- REPOINTING JOINTS AT EXISTING STONE ABUTMENTS.

NOTES:

- BACKWALL CONCRETE: IN ADDITION TO THE PROVISIONS OF 510.8, 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.
- BEARING ANCHORS: AT THE OPTION OF THE CONTRACTOR, BEARING ANCHORS (OR FORMED HOLES), LOCATED AND SUPPORTED BY TEMPLATES, MAY BE CAST IN PLACE.
- 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.
- POROUS BACKFILL: POROUS BACKFILL SHALL BE ACCORDING TO 518.02 AND SHALL NOT BE RESTRICTED TO GRAVEL. IT SHALL EXTEND FROM THE B/SEAT ELEVATION SHOWN ON THE ABUTMENT ELEVATIONS UP TO THE PLANE OF THE SUBGRADE AND Laterally TO THE ENDS OF THE CONCRETE SEAT. FILTER FABRIC SHALL BE PLACED BETWEEN THE POROUS BACKFILL AND THE APPROACH FILL. IT SHALL TURN UNDER THE BOTTOM OF THE POROUS BACKFILL AND RETURN UP 6 INCHES AGAINST THE BACK FACE OF THE ABUTMENT. THE FABRIC SHALL CONFORM TO 712.09 TYPE A, AND BE INCLUDED WITH ITEM 518 POROUS BACKFILL AS PER PLAN FOR PAYMENT.
- EXPANSION JOINT DETAILS SEE SHEET 16/20.
- REINFORCING BAR SCHEDULE SEE SHEET 20/20.
- SEE GENERAL NOTES FOR ITEM SPECIAL-PATCHING STONE MASONRY ABUTMENTS.
- FOR SECTIONS A-A AND B-B AND WINGWALL DETAILS SEE SHEET 9/20
- FOR ABUTMENT DEMOLITION DETAILS SEE SHEET 9/20

ABBREVIATIONS

- E.F. EACH FACE
- F.F. FAR FACE
- EL. ELEVATION
- PEJF PREFORMED EXPANSION JOINT FILLER
- C.S.P. CORRUGATED STEEL PIPE

LAP LENGTHS

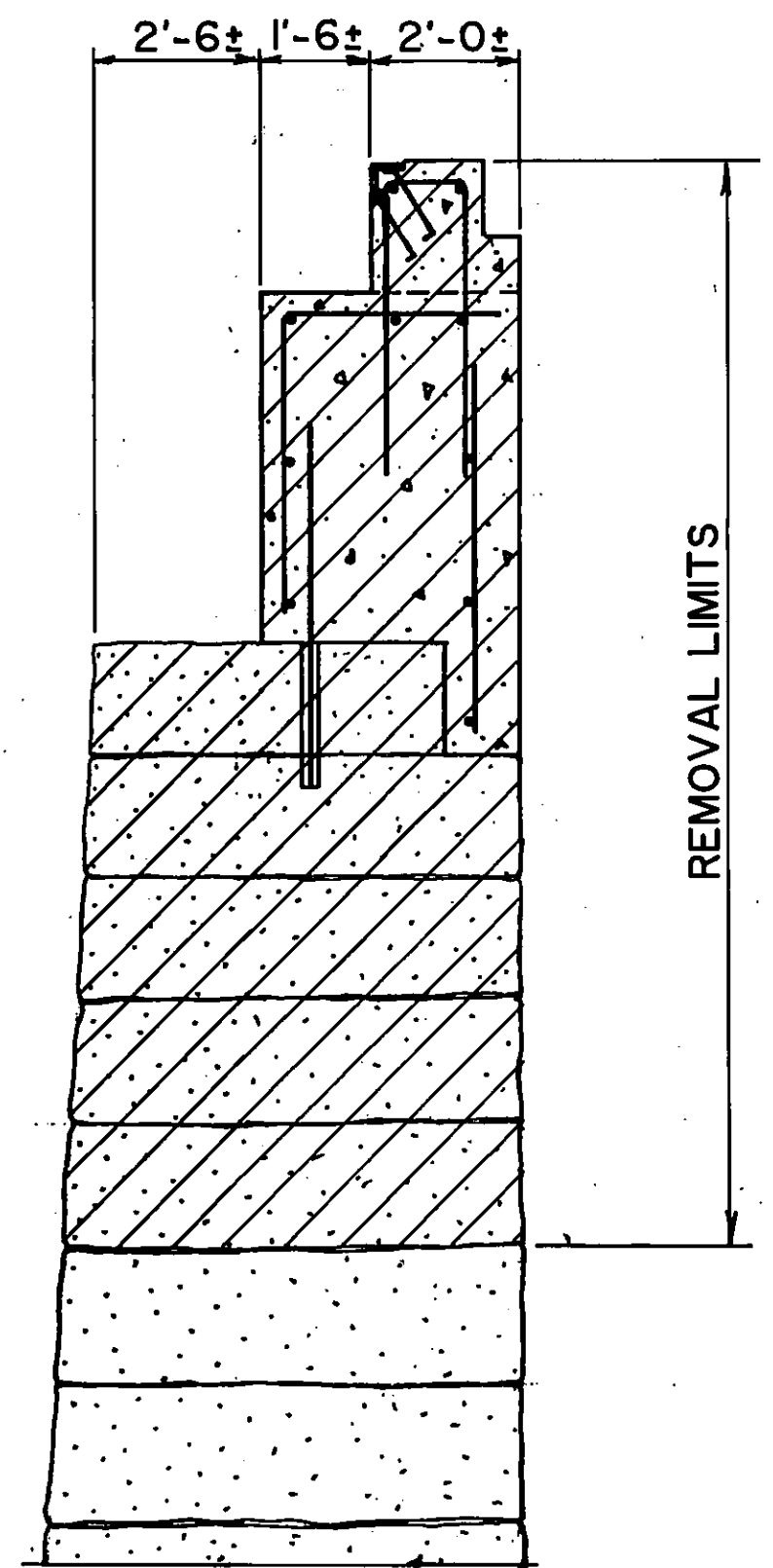
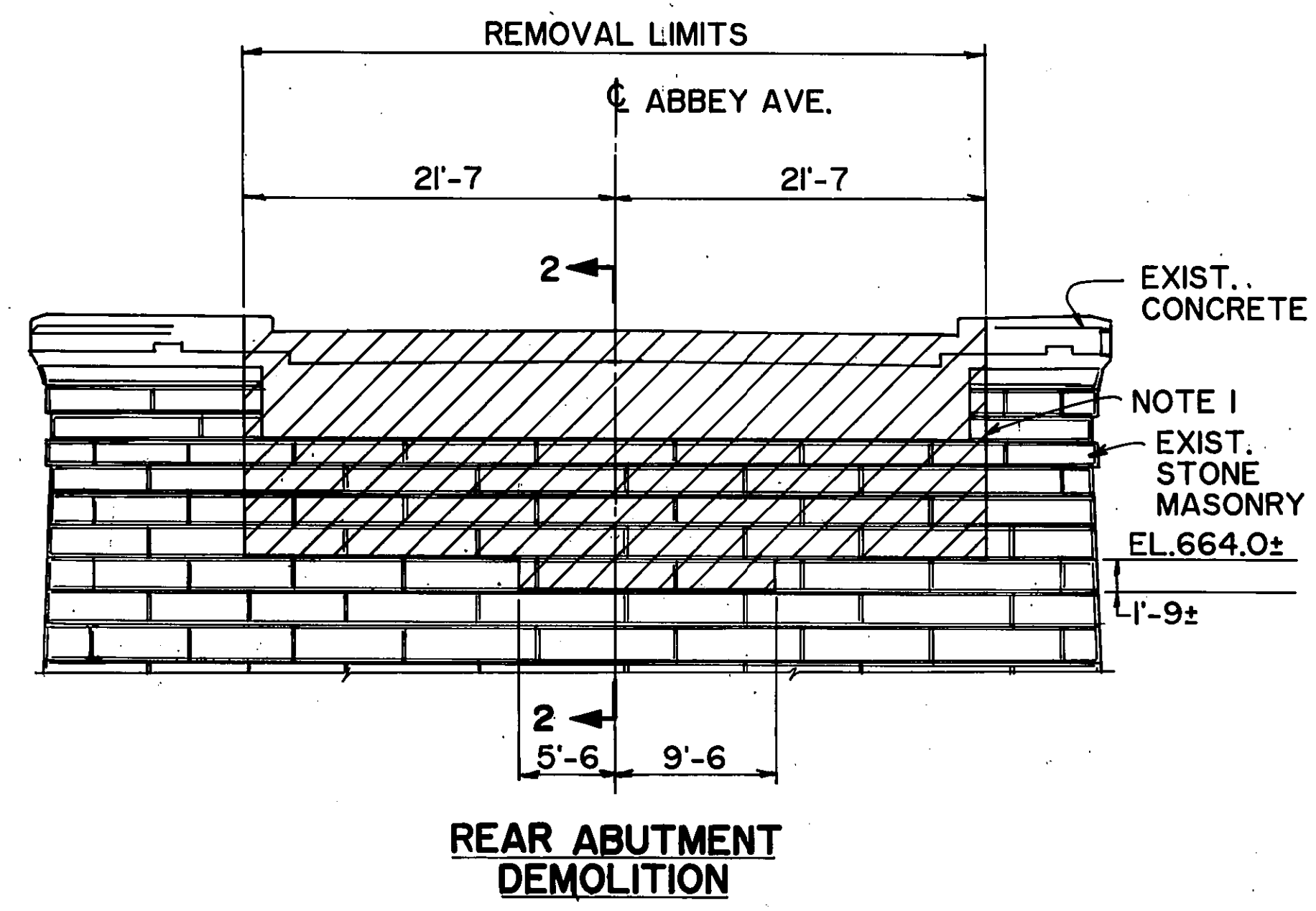
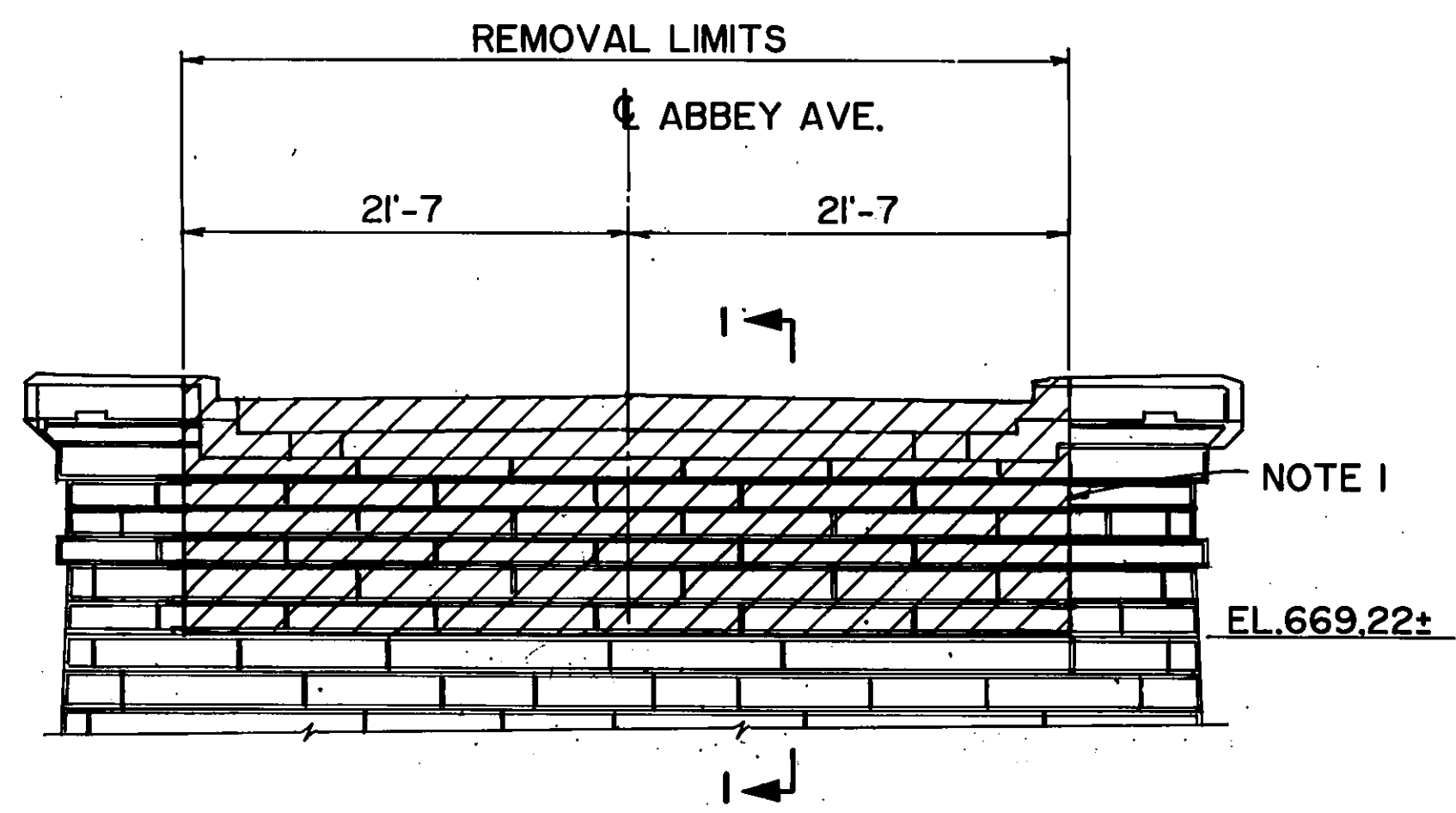
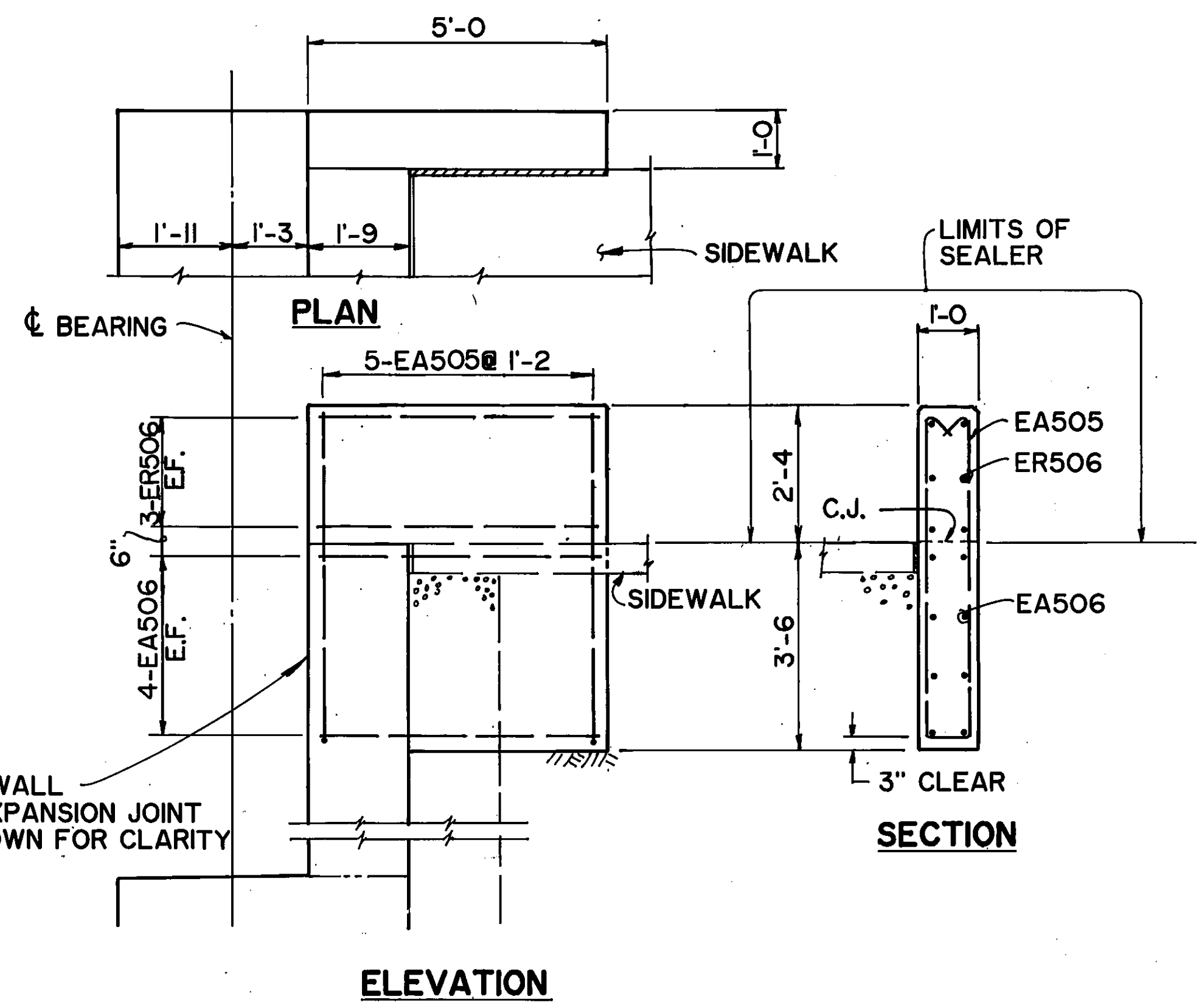
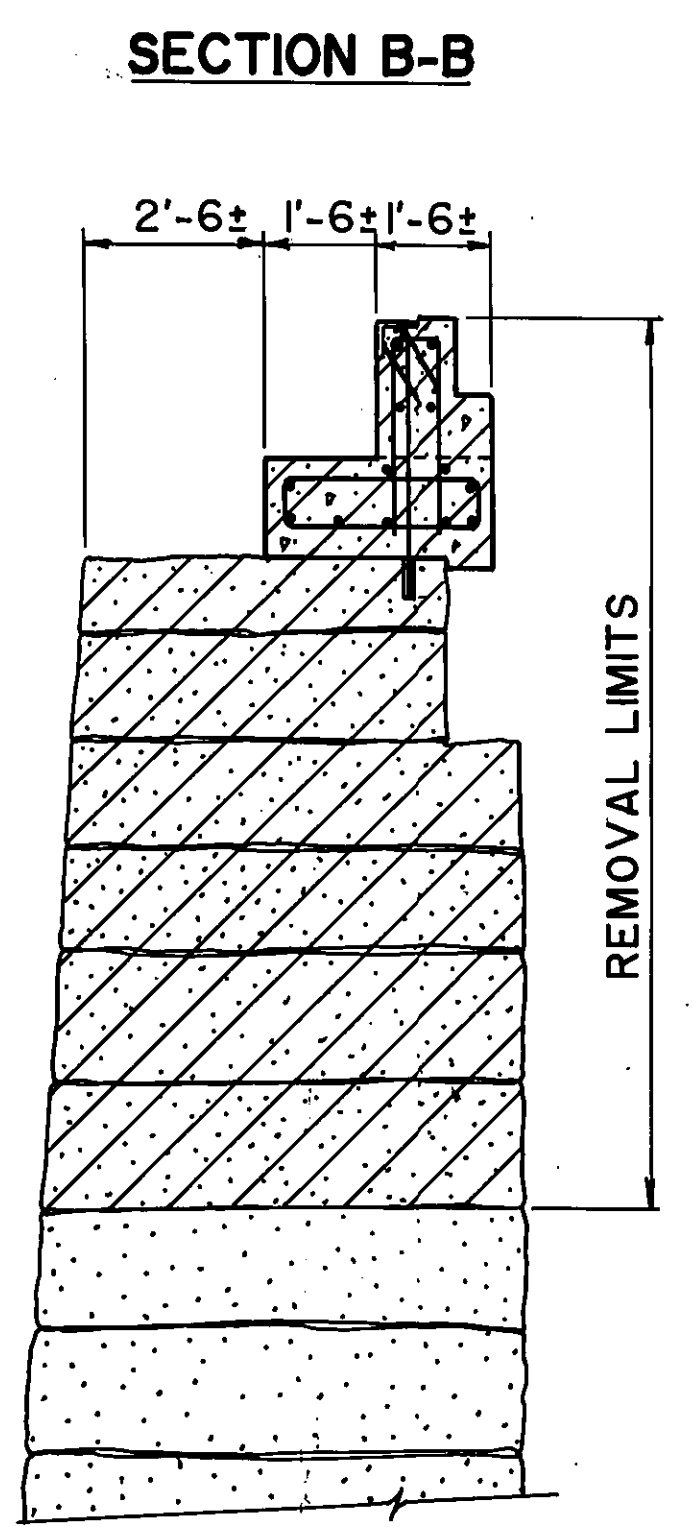
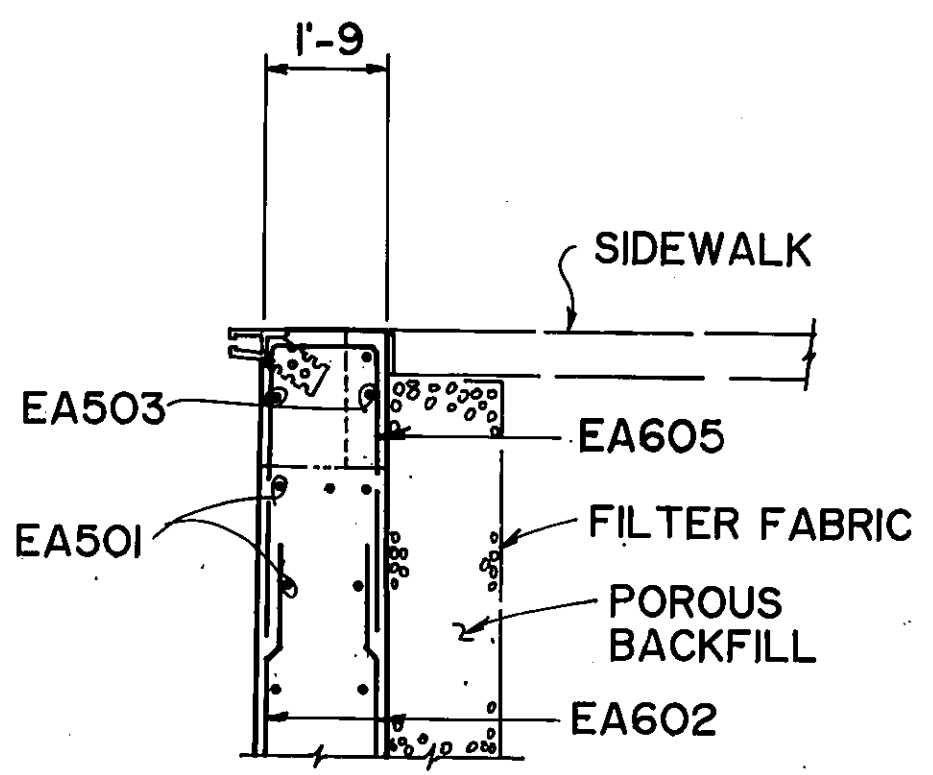
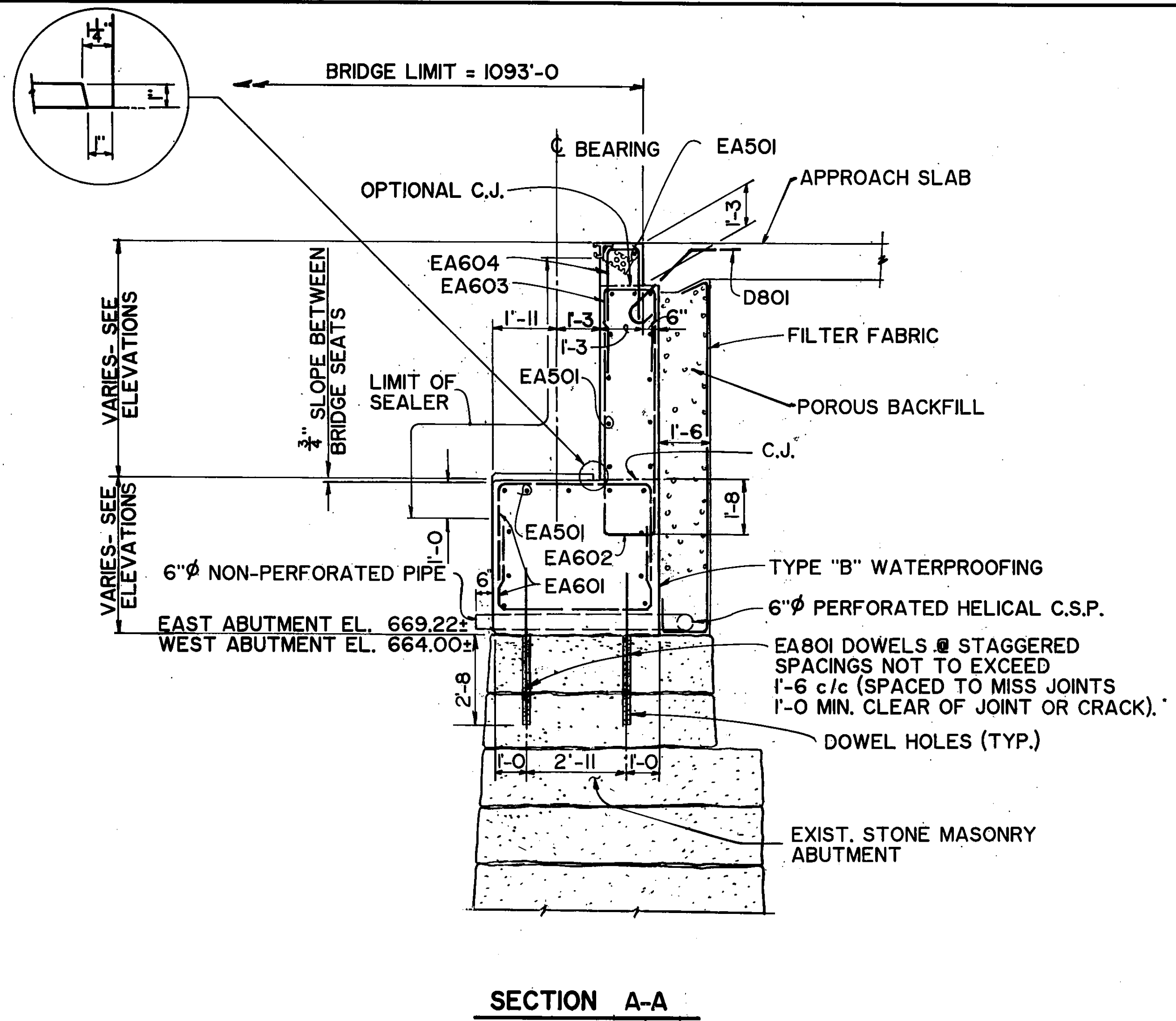
#5 1'-4

LEGEND

- AREAS TO BE PATCHED
- CRACKS IN STONE

REPAIR TO STONE ABUTMENTS	
	AREA (SQ. FT.)
1	2'-0 x 2'-0 = 4.0
2	1'-0 x 1'-0 = 1.0
3	2'-9 x 2'-0 = 5.5
4	1'-0 x 1'-0 = 1.0
5	1'-0 x 2'-0 = 2.0
6	2'-9 x 2'-0 = 5.5
TOTAL = 19.0	

THE OSBORN ENGINEERING COMPANY 8/20
 CONSULTING ENGINEERS
 CLEVELAND, OHIO 44114
**FORWARD ABUTMENT
 PLAN & ELEVATION**
 ABBEY AVENUE VIADUCT OVER CONRAIL,
 N. & S. R.R. AND SCRANTON ROAD
 CITY OF CLEVELAND, BRIDGE NO 1-001M
 CLEVELAND, CUYAHOGA COUNTY, OHIO
 DESIGNED: [] DRAWN: [] CHECKED: [] REVIEWED DATE: [] REVISED: []
 L.H. J.W. JRS D.S. 4-22-89



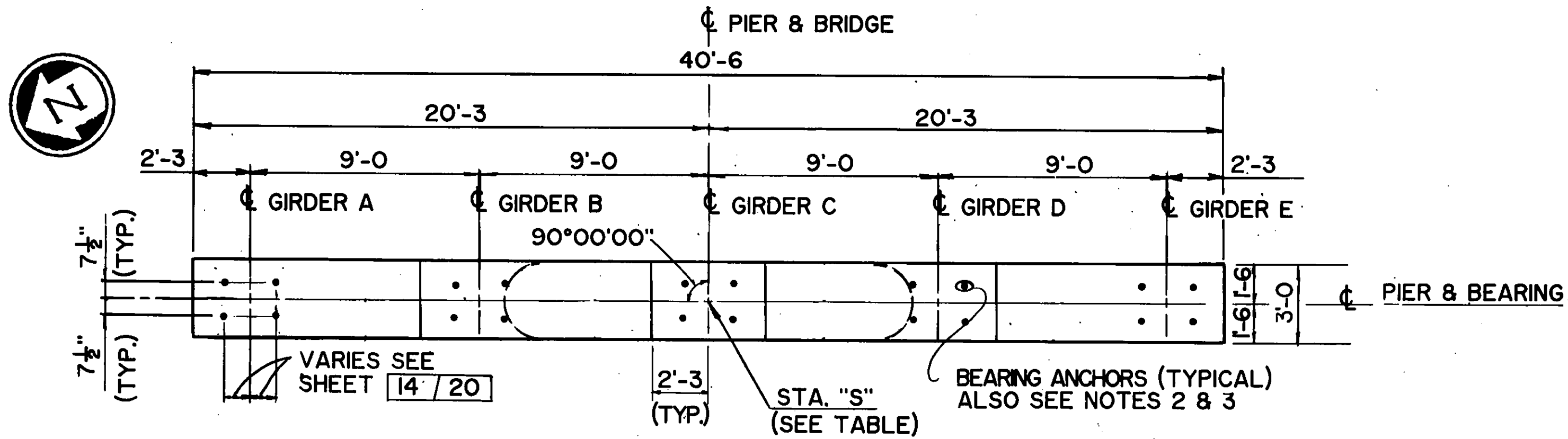
- NOTES**
1. REMOVE EXISTING ABUTMENT CONCRETE AND STONE TO LIMITS SHOWN (ITEM 202).
 2. ALL CONCRETE AND LONGITUDINAL REINFORCING STEEL IN WINGWALLS ABOVE THE SIDEWALK SURFACE ARE INCLUDED WITH ITEM 517 FOR PAYMENT.
 3. FOR ABUTMENT DETAILS SEE SHEETS 7/20 AND 8/20.

THE OSBORN ENGINEERING COMPANY 9/20
 CONSULTING ENGINEERS
 CLEVELAND, OHIO 44114

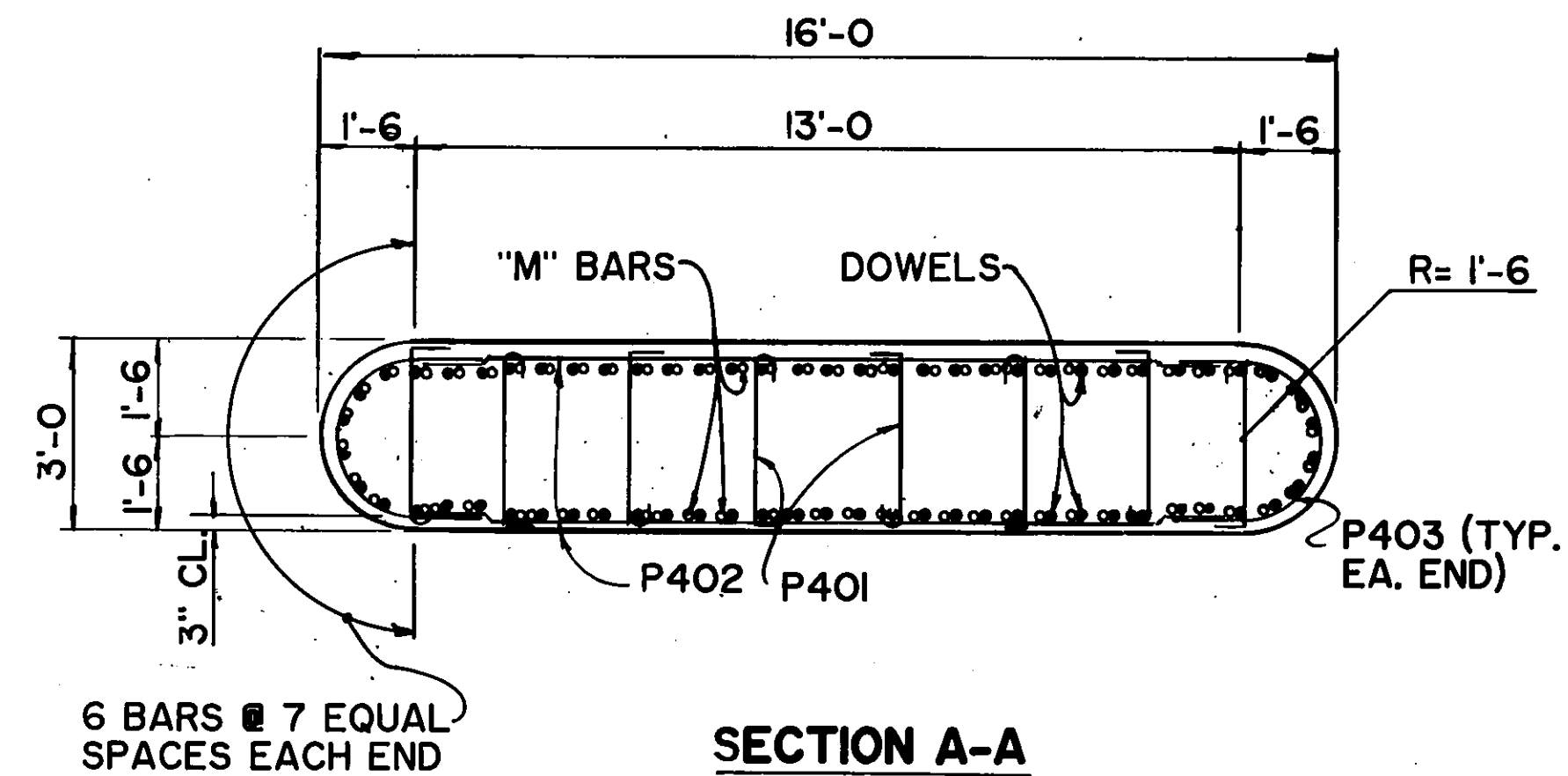
ABUTMENT AND DEMOLITION DETAILS

ABBAY AVENUE VIADUCT OVER CONRAIL,
 N. & S. R.R. AND SCRANTON ROAD
 CITY OF CLEVELAND, BRIDGE NO 1:001M
 CLEVELAND, CUYAHOGA COUNTY, OHIO

DESIGNED	DRAWN	CHECKED	REVIEWED	DATE	REVISED
L.H.	B.F.G.	JRS	D.S.	4-22-85	



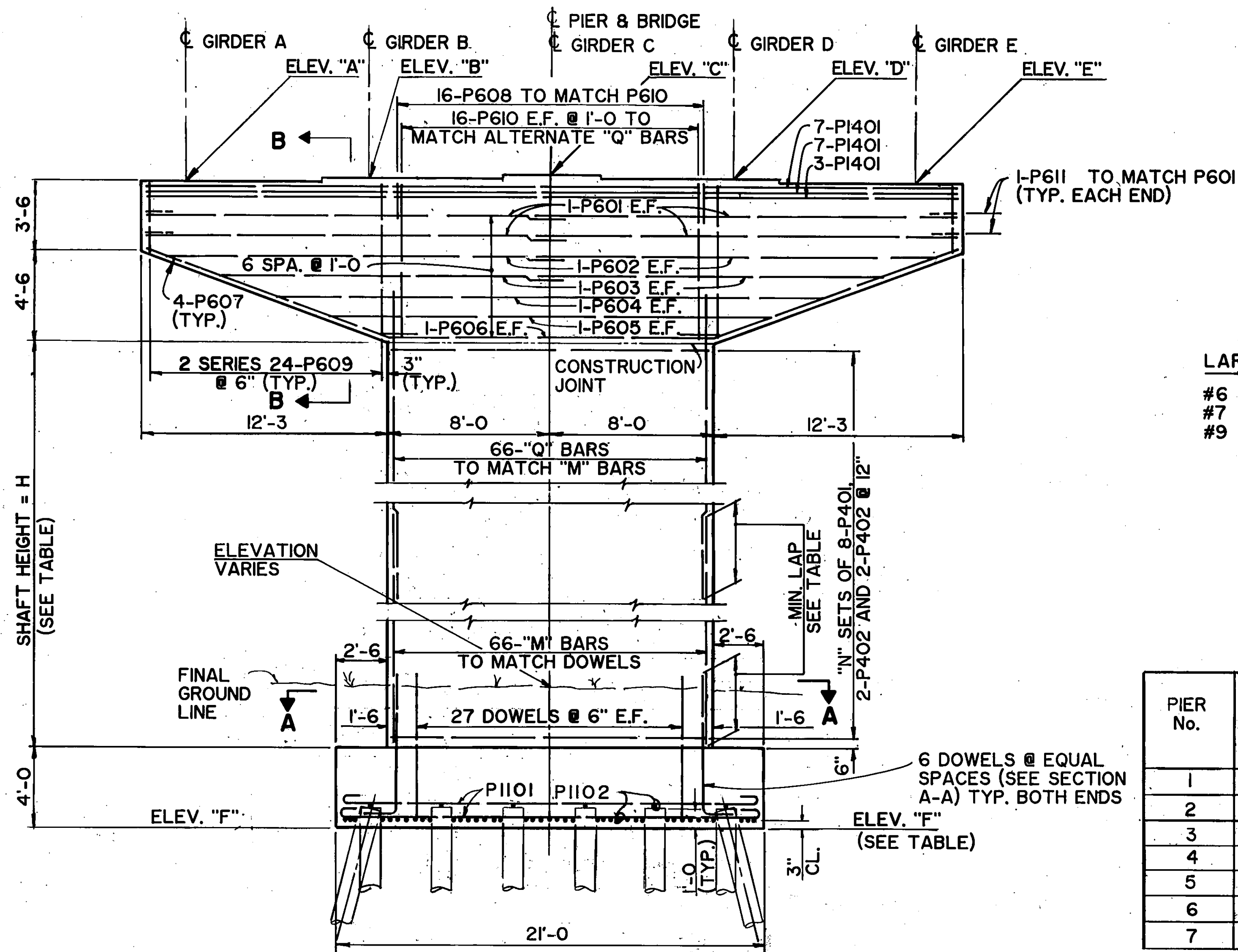
PLAN



SECTION A-A

NOTES:

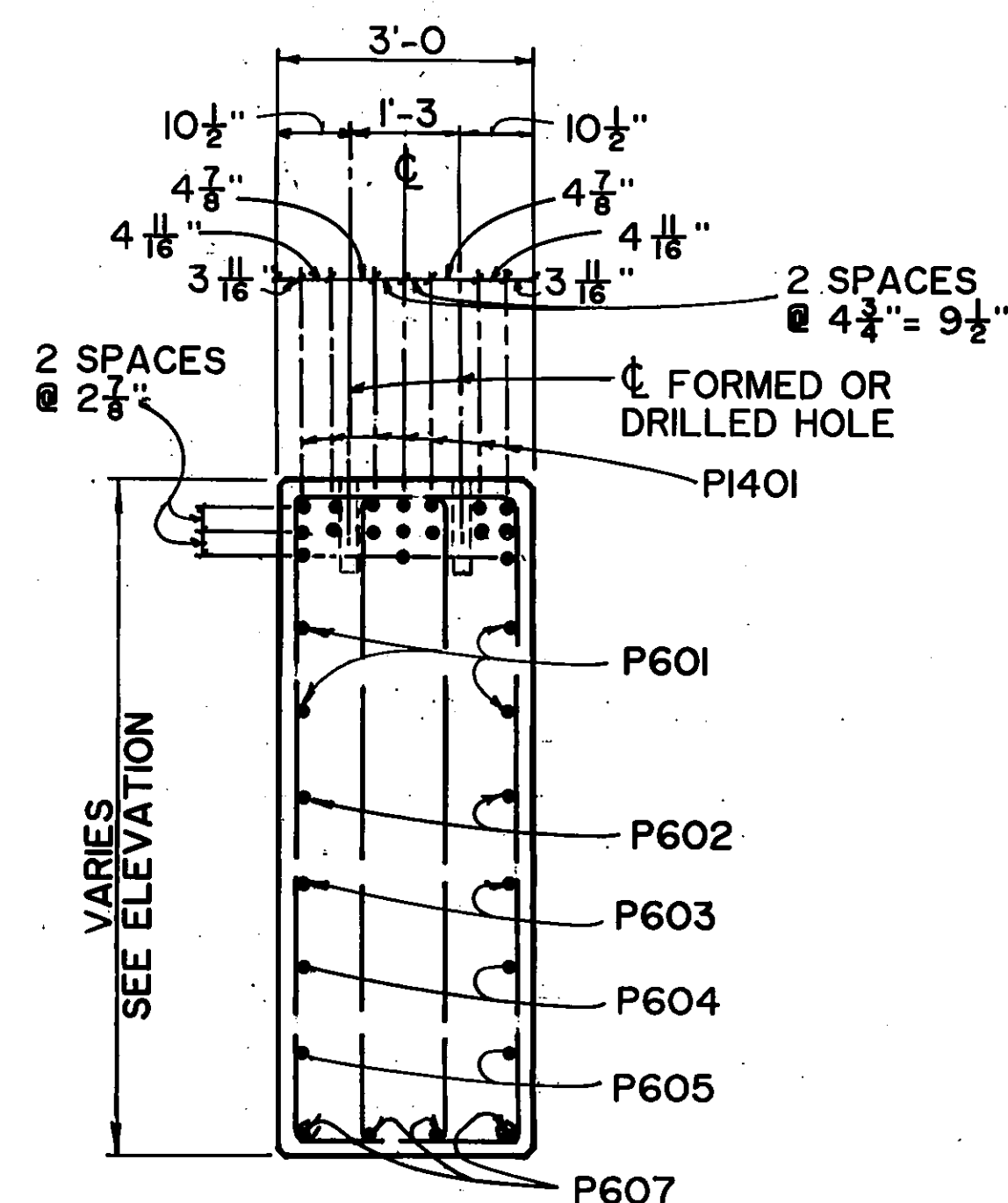
- CAP STIRRUPS SHALL BE PLACED WITH THE HOOKS ON THE BOTTOM.
- BRIDGE SEAT REINFORCING: REINFORCING STEEL IN THE VICINITY OF THE BRIDGE SEAT SHALL BE ACCURATELY PLACED TO AVOID INTERFERENCE WITH THE DRILLING OF THE BEARING ANCHOR HOLES OR THE PRE-SETTING OF BEARING ANCHORS.
- BEARING ANCHORS: AT THE OPTION OF THE CONTRACTOR, BEARING ANCHORS (OR FORMED HOLES), LOCATED AND SUPPORTED BY TEMPLATES, MAY BE CAST IN PLACE.
- FOR REINFORCEMENT BAR SCHEDULE SEE SHEET 20/20
- FOR BEARING DETAILS SEE SHEET 14/20
- FOR FOOTING DETAILS AND PILE LOCATIONS SEE SHEET 11/20
- SEALING OF CONCRETE SURFACES: PIER SEATS AND VERTICAL FACES, EXCLUDING SLOPED UNDERSIDES OF CAPS, SHALL BE SEALED WITH EPOXY SEALER FROM 1'-0" BELOW FINAL GROUND LINE UPWARDS TO TOPS OF PIERS.



ELEVATION

LAP LENGTHS

#6	17"
#7	31"
#9	51"



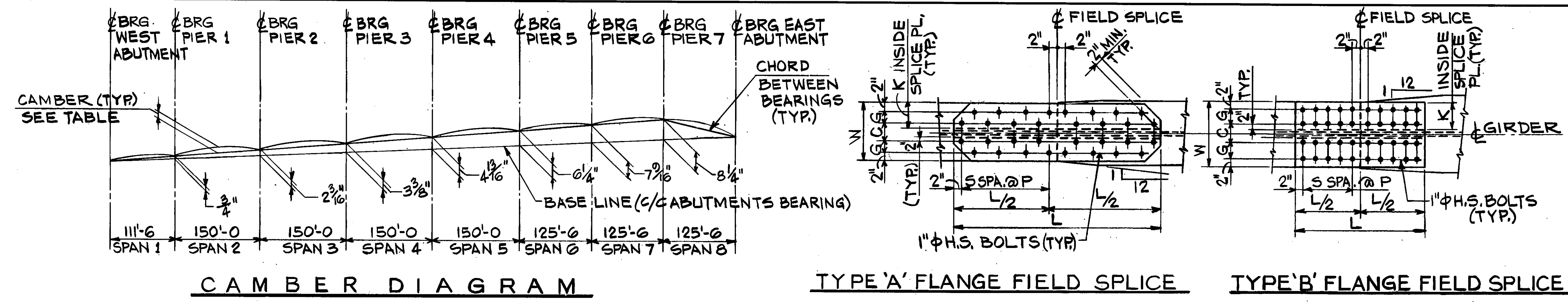
SECTION B-B

PIER No.	BEARING PIER STATION "S"	PIER SEAT ELEVATION			BOTTOM OF FOOTING ELEVATION	PIER SHAFT				
		"A" OR "E"	"B" OR "D"	"C"		"F"	HEIGHT	REBAR COUNT	"M"	"Q"
1	9+75.50	668.86	669.01	669.15	621.0	35'-10 1/4	37	P702	P703	P701
2	11+25.50	669.65	669.79	669.93	610.0	47'-7 3/4	48	P702	P704	P701
3	12+75.50	670.43	670.57	670.71	601.5	56'-11	57	P902	P903	P901
4	14+25.50	672.10	672.24	672.38	601.5	58'-7 1/4	59	P902	P904	P901
5	15+75.50	671.98	672.12	672.26	600.5	59'-5 3/4	60	P902	P905	P901
6	17+01.00	672.69	672.83	672.97	603.0	57'-8 1/4	58	P902	P906	P901
7	18+26.50	673.26	673.40	673.54	629.3	31'-11 1/2	32	P702	P705	P701

THE OSBORN ENGINEERING COMPANY 10/20
 CONSULTING ENGINEERS
 CLEVELAND, OHIO 44114

PIER PLANS
 ELEVATIONS & DETAILS
 ABBEY AVENUE VIADUCT OVER CONRAIL,
 N. & S. R.R. AND SCRANTON ROAD
 CITY OF CLEVELAND, BRIDGE NO 1:001M
 CLEVELAND, CUYAHOGA COUNTY, OHIO

DESIGNED	DRAWN	CHECKED	REVIEWED	DATE	REVISED
HGS	BFG	JRS	D.S.	9-22-89	



- NOTES:
- 1) NEGATIVE VALUES FOR ADJUSTMENTS FOR VERTICAL CURVE INDICATE ADJUSTMENT ABOVE THE CHORD.
 - 2) DEFLECTIONS AND CAMBERS ARE GIVEN TO THE NEAREST 1/16 INCH.
 - 3) FOR ADDITIONAL NOTES SEE SHEET 15/20

CAMBER TABLE (CONT'D BELOW)

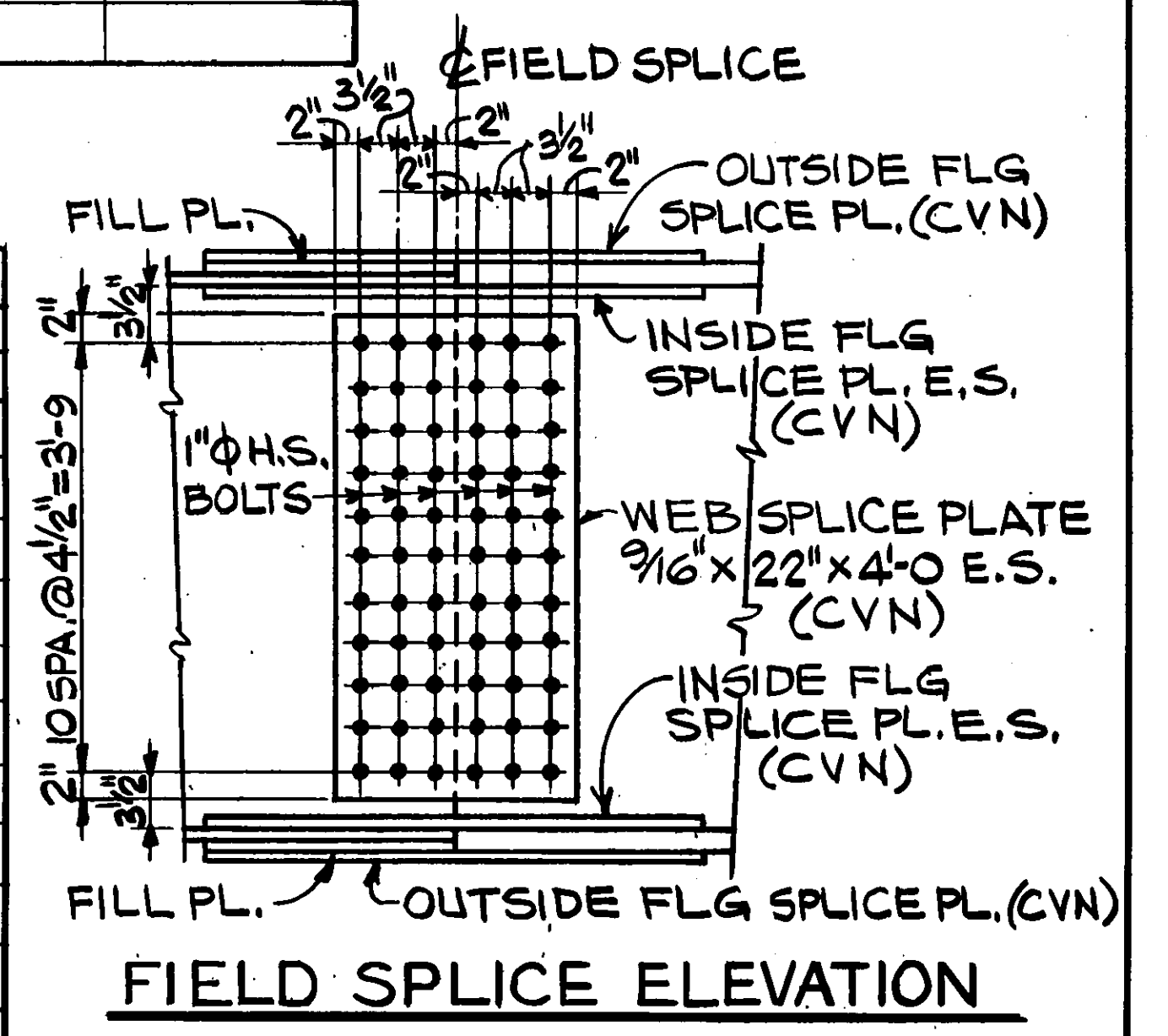
SPANS	SPAN 1				SPAN 2			SPAN 3			SPAN 4			SPAN 5			SPAN 6		
POINT ON SPAN	DEFLECTION DUE TO WEIGHT OF STEEL	DEFLECTION DUE TO REMAINING DEAD LOAD	ADJUSTMENT REQUIRED FOR VERTICAL CURVE	REQUIRED SHOP CAMBER	DEFLECTION DUE TO WEIGHT OF STEEL	DEFLECTION DUE TO REMAINING DEAD LOAD	REQUIRED SHOP CAMBER	DEFLECTION DUE TO WEIGHT OF STEEL	DEFLECTION DUE TO REMAINING DEAD LOAD	REQUIRED SHOP CAMBER	DEFLECTION DUE TO WEIGHT OF STEEL	DEFLECTION DUE TO REMAINING DEAD LOAD	REQUIRED SHOP CAMBER	DEFLECTION DUE TO WEIGHT OF STEEL	DEFLECTION DUE TO REMAINING DEAD LOAD	REQUIRED SHOP CAMBER	DEFLECTION DUE TO WEIGHT OF STEEL	DEFLECTION DUE TO REMAINING DEAD LOAD	REQUIRED SHOP CAMBER
.1	1/16"	3/4"	-3/8"	7/16"	1/16"	5/16"	3/8"	0	3/16"	3/16"	0	3/16"	3/16"	1/16"	5/16"	3/8"	0	0	0
.2	3/16"	1 3/8"	-7/16"	1 1/8"	1/8"	7/8"	1"	1/16"	1 1/16"	3/4"	1/16"	1 1/16"	3/4"	1/8"	7/8"	1"	1/16"	1/4"	5/16"
.3 OFFS.	3/16"	1 3/4"	-3/8"	1 9/16"	1/4" F.S. 2	1 5/8"	1 7/8"	3/16" F.S. 4	1 3/8"	1 9/16"	1/8" F.S. 6	1 5/16"	1 7/16"	3/16" F.S. 8	1 5/8"	1 13/16"	1/16" F.S. 10	5/8"	1 1/16"
.4	3/16"	1 13/16"	-5/16"	1 11/16"	5/16"	2 3/8"	2 11/16"	1/4"	2 1/8"	2 3/8"	1/4"	2 1/16"	2 5/16"	5/16"	2 7/16"	2 7/8"	1/8"	1"	1 1/8"
.5	3/16"	1 5/8"	-1/4"	1 9/16"	3/8"	2 1/16"	3 1/16"	5/16"	2 1/2"	2 11/16"	5/16"	2 3/8"	2 1/16"	3/8"	2 5/16"	3 5/16"	3/16"	1 3/16"	1 3/8"
.6	1/8"	1 1/4"	-3/16"	1 3/16"	5/16"	2 5/16"	2 5/8"	1/4"	2 3/16"	2 7/16"	1/4"	2"	2 1/4"	3/8"	2 1/16"	3 1/16"	3/16"	1 1/8"	1 5/16"
.7 OFFS.	1/16" F.S. 1	3/4"	-1/8"	1 1/16"	3/16" F.S. 3	1 1/2"	1 11/16"	3/16" F.S. 5	1 7/16"	1 5/8"	3/16" F.S. 7	1 1/4"	1 7/16"	1/4" F.S. 9	1 7/8"	2 1/8"	1/8" F.S. 11	7/8"	1"
.8	0	5/16"	-1/8"	3/16"	1/8"	3/4"	7/8"	1/16"	3/4"	1 3/16"	1/16"	5/8"	1 1/16"	1/8"	1 1/16"	1 3/16"	1/16"	1/2"	9/16"
.9	0	1/16"	-1/16"	0	1/16"	1/4"	5/16"	0	1/4"	1/4"	0	1/8"	1/8"	1/16"	7/16"	1/2"	0	3/16"	3/16"

CAMBER TABLE (CONT'N)

SPANS	SPAN 7				SPAN 8			
POINT ON SPAN	DEFLECTION DUE TO WEIGHT OF STEEL	DEFLECTION DUE TO REMAINING DEAD LOAD	ADJUSTMENT REQUIRED FOR VERTICAL CURVE	REQUIRED SHOP CAMBER	DEFLECTION DUE TO WEIGHT OF STEEL	DEFLECTION DUE TO REMAINING DEAD LOAD	ADJUSTMENT REQUIRED FOR VERTICAL CURVE	REQUIRED SHOP CAMBER
.1	0	1/16"	1/16"	1/8"	1/8"	9/16"	5/8"	1 5/16"
.2	0	5/16"	1/16"	3/8"	1/4"	1 3/8"	1 1/8"	2 3/4"
.3 OFFS.	1/16" F.S. 12	5/8"	1/8"	1 3/16"	3/16" F.S. 14	2 5/16"	1 7/16"	4 1/8"
.4	1/16"	1 3/16"	1/8"	1"	1/2"	3 1/16"	1 5/8"	5 3/16"
.5	1/16"	1 3/16"	1/8"	1"	9/16"	3 1/2"	1 11/16"	5 3/4"
.6	0	5/8"	3/16"	1 3/16"	9/16"	3 9/16"	1 5/8"	5 3/4"
.7 OFFS.	0 F.S. 13	5/8"	1/4"	7/8"	1/2"	3 3/16"	1 7/16"	5 1/8"
.8	-1/16"	0	-1/4"	3/16"	3/8"	2 3/8"	1 1/16"	3 13/16"
.9	-1/16"	-1/8"	3/16"	0	3/16"	1 5/16"	5/8"	2 1/8"

FLANGE SPLICE TYPES AND DIMENSIONS

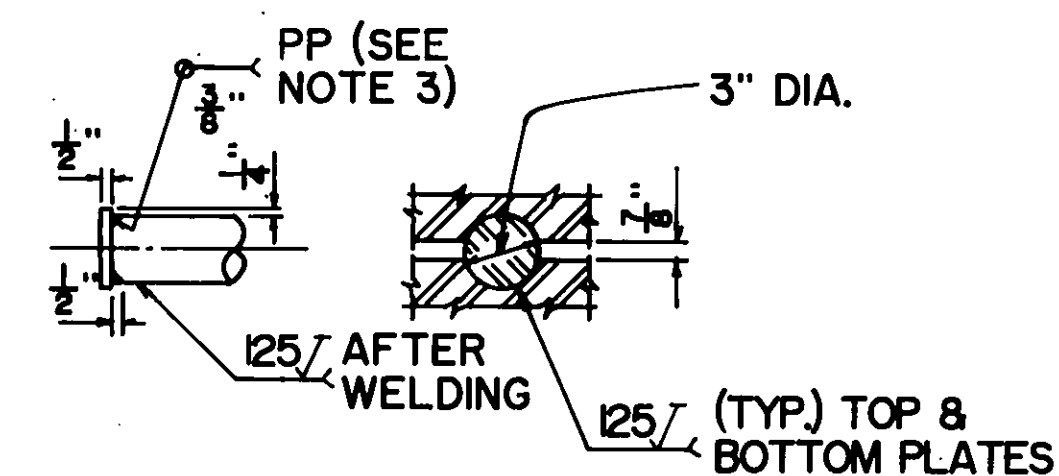
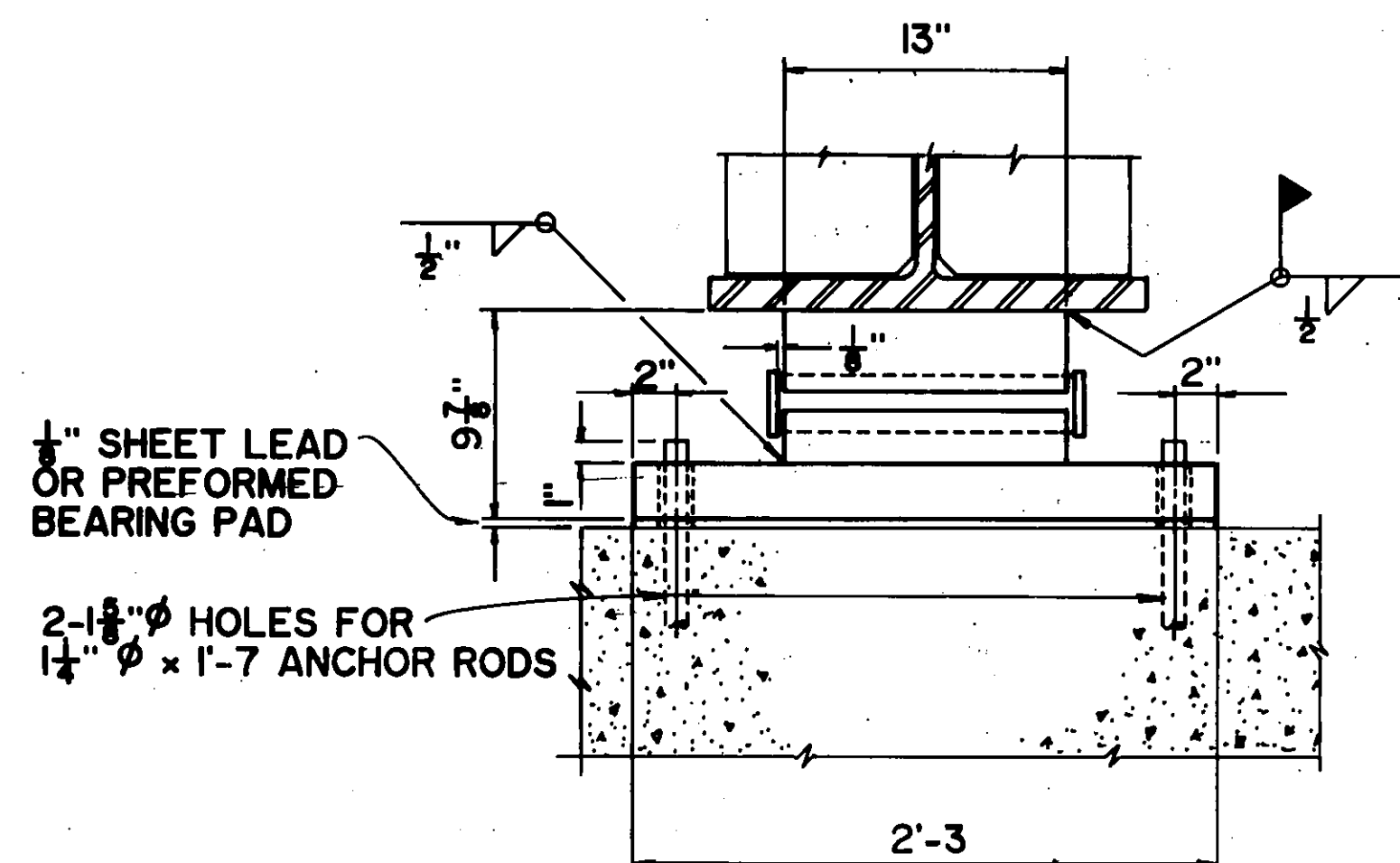
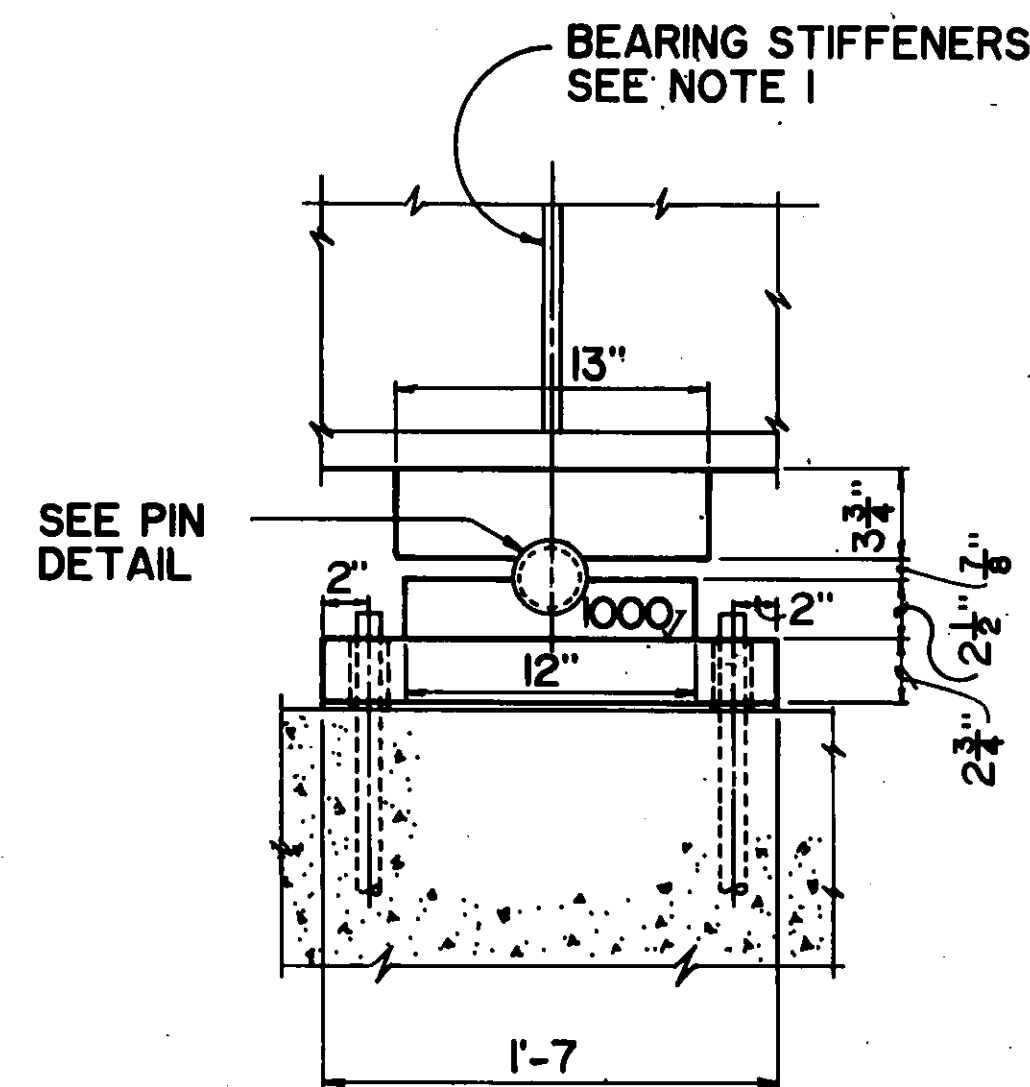
FIELD SPLICE	FLANGE TYPE	K	W	C	G	P	S	L	FILL PLATE		SPLICE PL. THICKNESS		
									THICKNESS	LENGTH	INSIDE	OUTSIDE	
F.S. 1	TOP	A	5 1/2"	1'-0"	5"	1 1/2"	4 1/4"	5	4'-2 1/2"	1/2"	2'-1 1/4"	1/2"	3/8"
	BOTTOM	B	10 1/2"	2'-0"	7"	6 1/2"	3 1/2"	6	4'-2"	1/4"	2'-1"	5/8"	1/2"
F.S. 2, F.S. 5, F.S. 6 & F.S. 9	TOP	A	5 1/2"	1'-0"	5"	1 1/2"	4 1/4"	7	5'-7 1/2"	1/2"	2'-9 3/4"	1/2"	3/8"
	BOTTOM	B	10 1/2"	2'-0"	7"	6 1/2"	3 1/2"	6	4'-2"	1/4"	2'-1"	5/8"	1/2"
F.S. 3, F.S. 4, F.S. 7 & F.S. 8	TOP	A	5 1/2"	1'-0"	5"	1 1/2"	4 1/4"	7	5'-7 1/2"	3/8"	2'-9 3/4"	1/2"	3/8"
	BOTTOM	B	10 1/2"	2'-0"	7"	6 1/2"	3 1/2"	6	4'-2"	3/8"	2'-1"	5/8"	1/2"
F.S. 10 & F.S. 13	TOP	A	5 1/2"	1'-0"	5"	1 1/2"	4 1/4"	5	4'-2 1/2"	1/2"	2'-1 1/4"	1/2"	3/8"
	BOTTOM	B	8 1/2"	1'-8"	7"	4 1/2"	3 1/2"	4	3'-0"	1/4"	1'-0"	5/8"	1/2"
F.S. 11 & F.S. 12	TOP	A	5 1/2"	1'-0"	5"	1 1/2"	4 1/4"	5	4'-2 1/2"	3/4"	2'-1 1/4"	1/2"	3/8"
	BOTTOM	B	8 1/2"	1'-8"	7"	4 1/2"	3 1/2"	4	3'-0"	1/2"	1'-0"	5/8"	1/2"
F.S. 14	TOP	A	6"	1'-2"	6"	2"	4 1/4"	7	5'-7 1/2"	1/2"	2'-9 3/4"	1/2"	3/8"
	BOTTOM	B	9 1/2"	1'-10"	7"	5 1/2"	3 1/2"	7	4'-9"	1/4"	2'-4 1/2"	5/8"	1/2"



THE OSBORN ENGINEERING COMPANY 13/20
CONSULTING ENGINEERS
CLEVELAND, OHIO 44114

**CAMBER TABLE 8
FIELD SPLICE DETAILS**
ABBEY AVENUE VIADUCT OVER CONRAIL,
N. & S. R.R. AND SCRANTON ROAD
CITY OF CLEVELAND, BRIDGE NO 1:001M
CLEVELAND, CUYAHOGA COUNTY, OHIO

DESIGNED	DRAWN	CHECKED	REVIEWED DATE	REVISED
HGS	E.D.	JRS	D.S., 9-22-89	

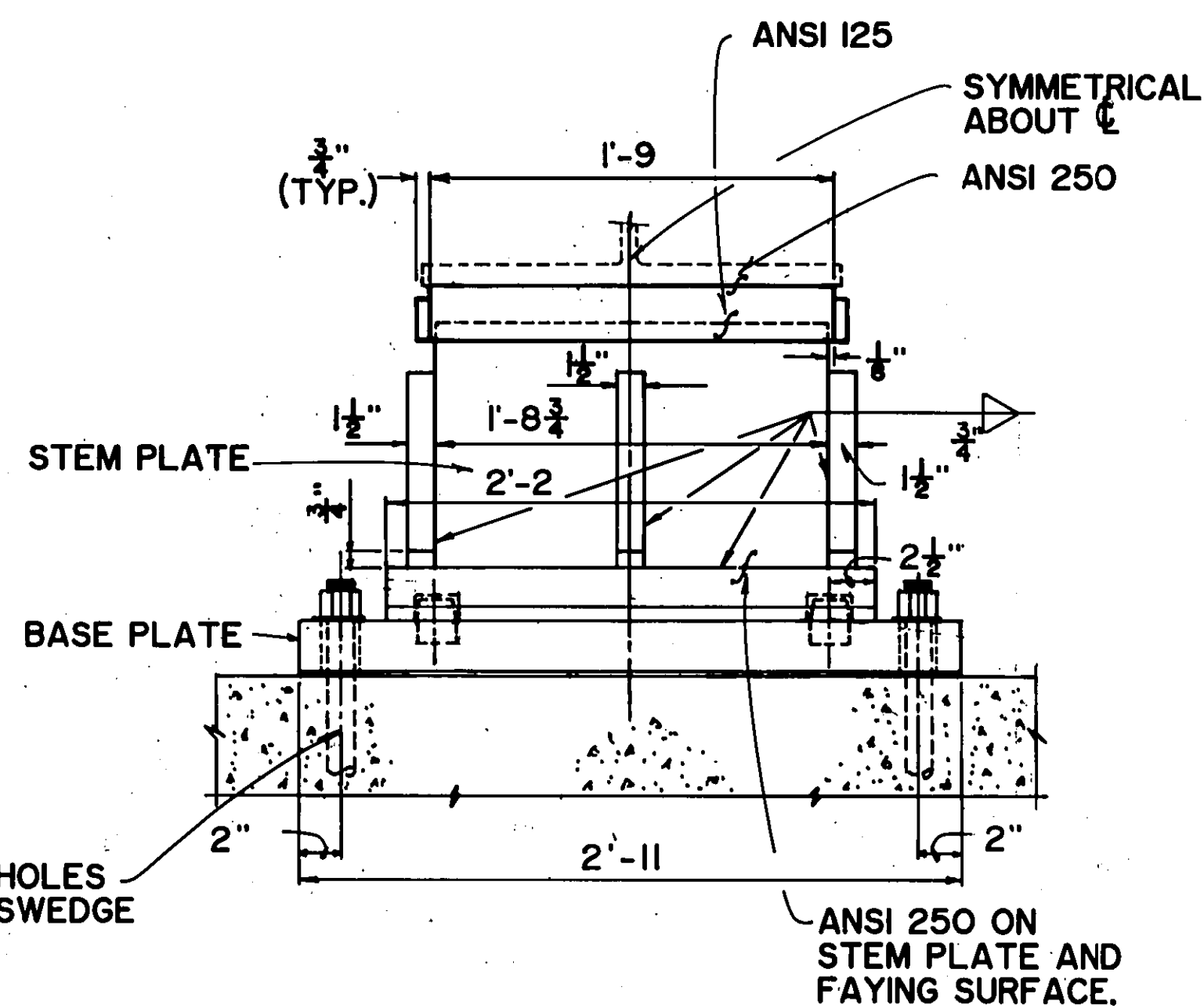
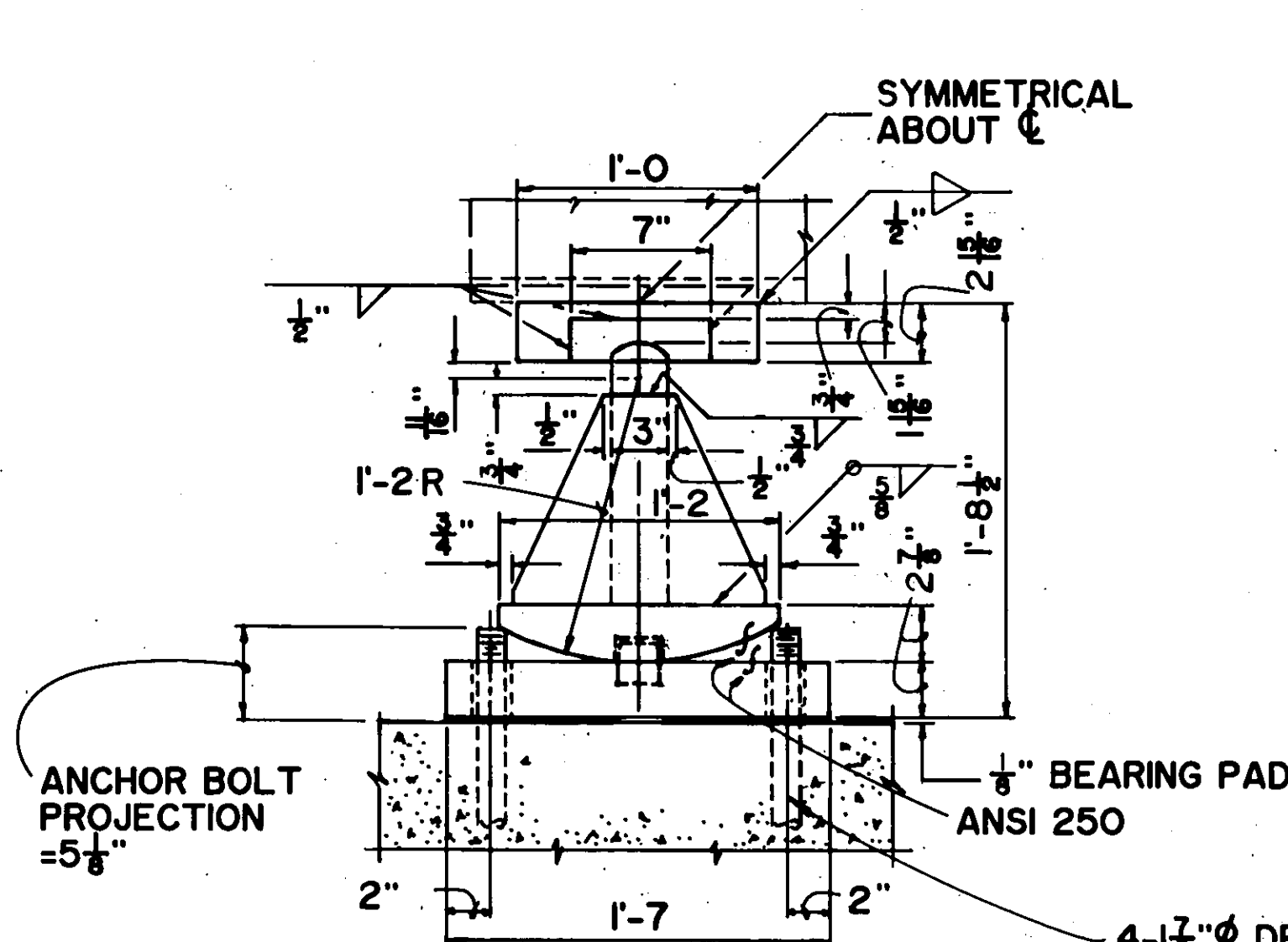


BEARING PIN DETAIL

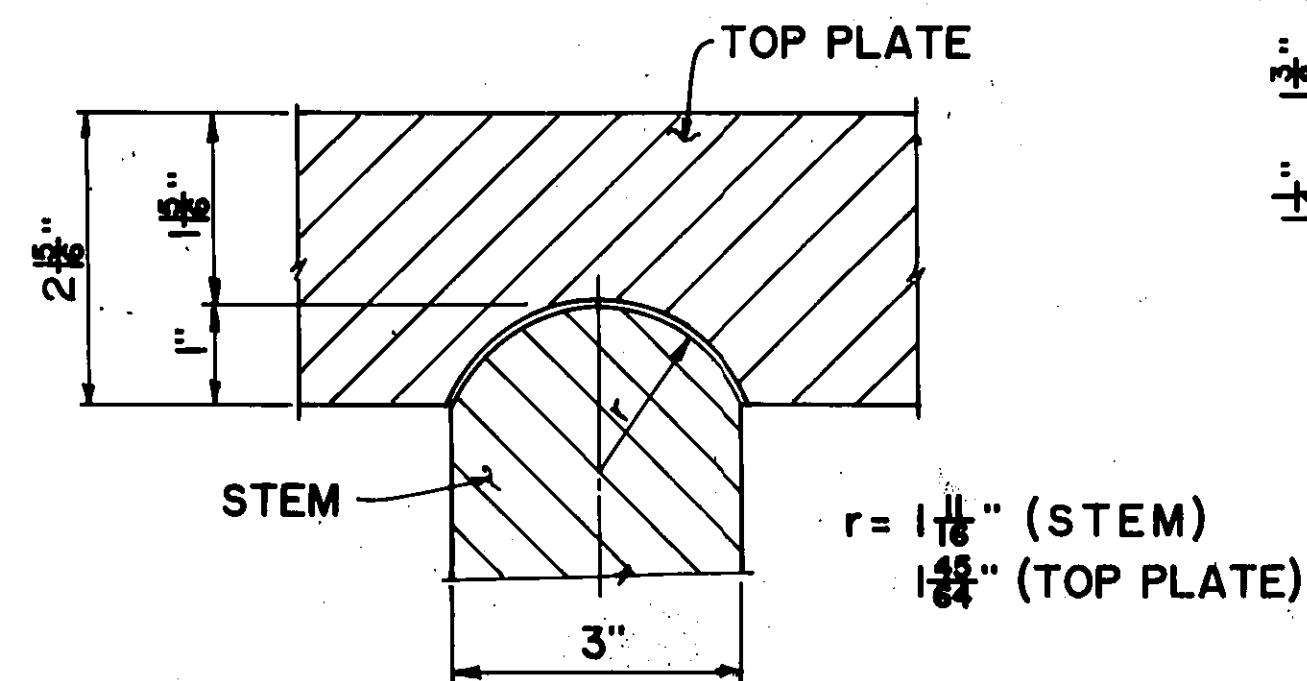
NOTES:

- FIXED BEARINGS:** THE PLATE ELEMENTS AND BEARING PINS SHALL BE A588. BEARING PINS MAY BE FABRICATED FROM ONE PIECE OF STOCK OR FROM ROD STOCK AND PLATES, WELDED AS SHOWN.
- EXPANSION BEARINGS:** ALL MATERIALS FOR EXPANSION BEARINGS EXCLUDING PINTLES, ANCHOR BOLTS, NUTS AND WASHERS SHALL BE A588. PINTLES SHALL BE A449, MACHINED TO A DRIVING FIT. ANCHOR BOLTS, NUTS AND WASHERS SHALL BE A307. CHAMFER ANCHOR BOLTS PRIOR TO THREADING.
- SURFACE FINISH:** A 500 FINISH OR SMOOTHER SHALL BE USED WHERE NOT OTHERWISE NOTED. RADIAL SURFACES ON ROCKER SHALL BE MACHINE FINISHED AFTER WELDING. ALL SURFACES MARKED "/>

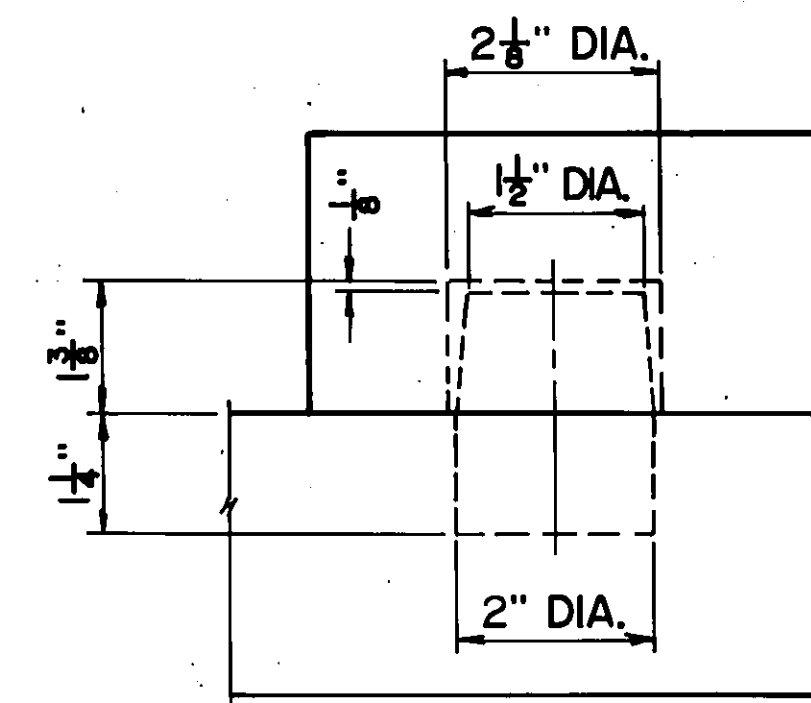
TYPICAL FIXED BEARING
 AT PIER 4 ONLY
 BEARING WEIGHT = 773 LBS. EACH



TYPICAL EXPANSION BEARING
 AT ABUTMENTS AND PIERS EXCEPT PIER 4
 BEARING WEIGHT = 1425 LBS. EACH

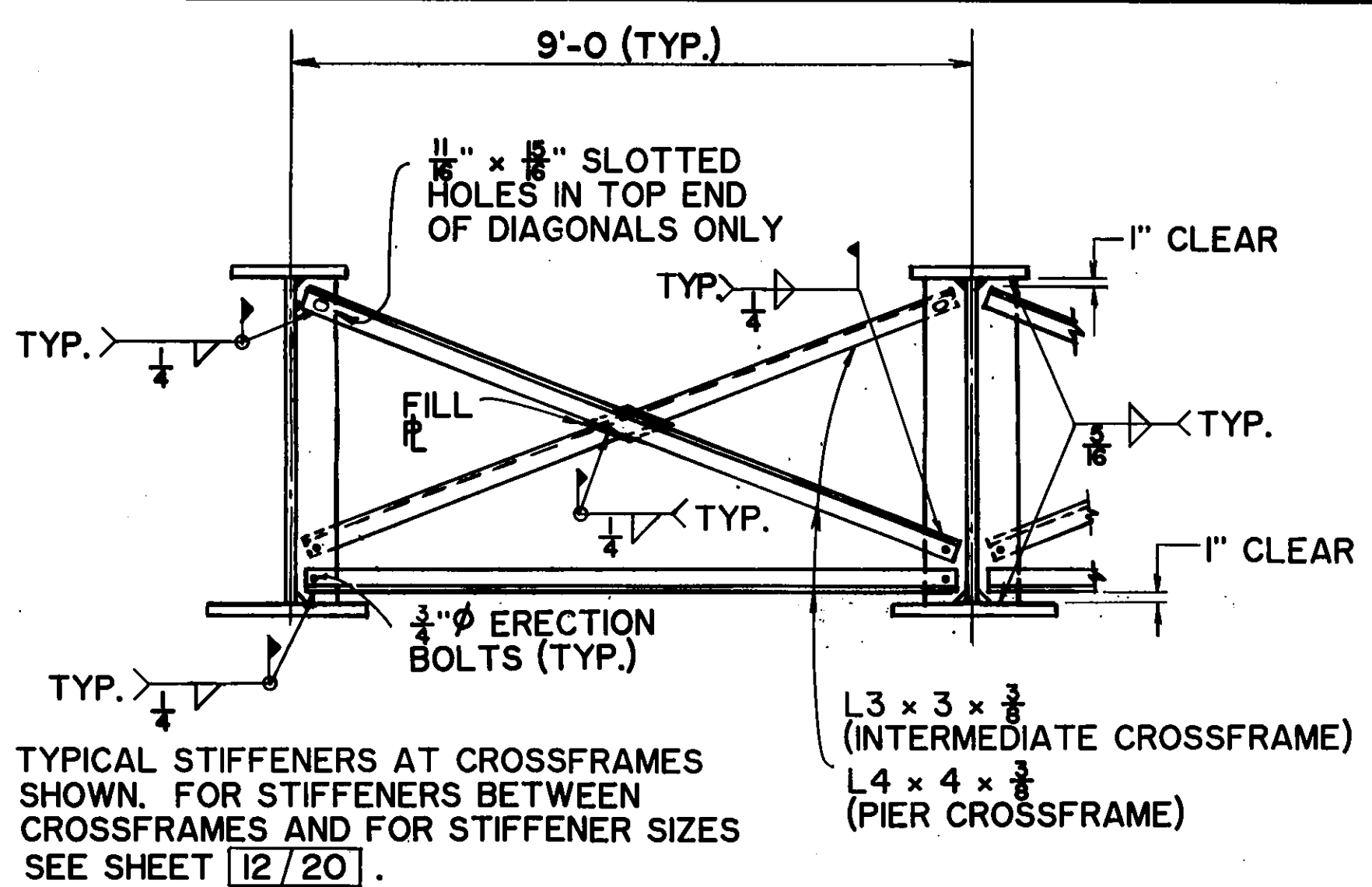


TOP BEARING DETAIL

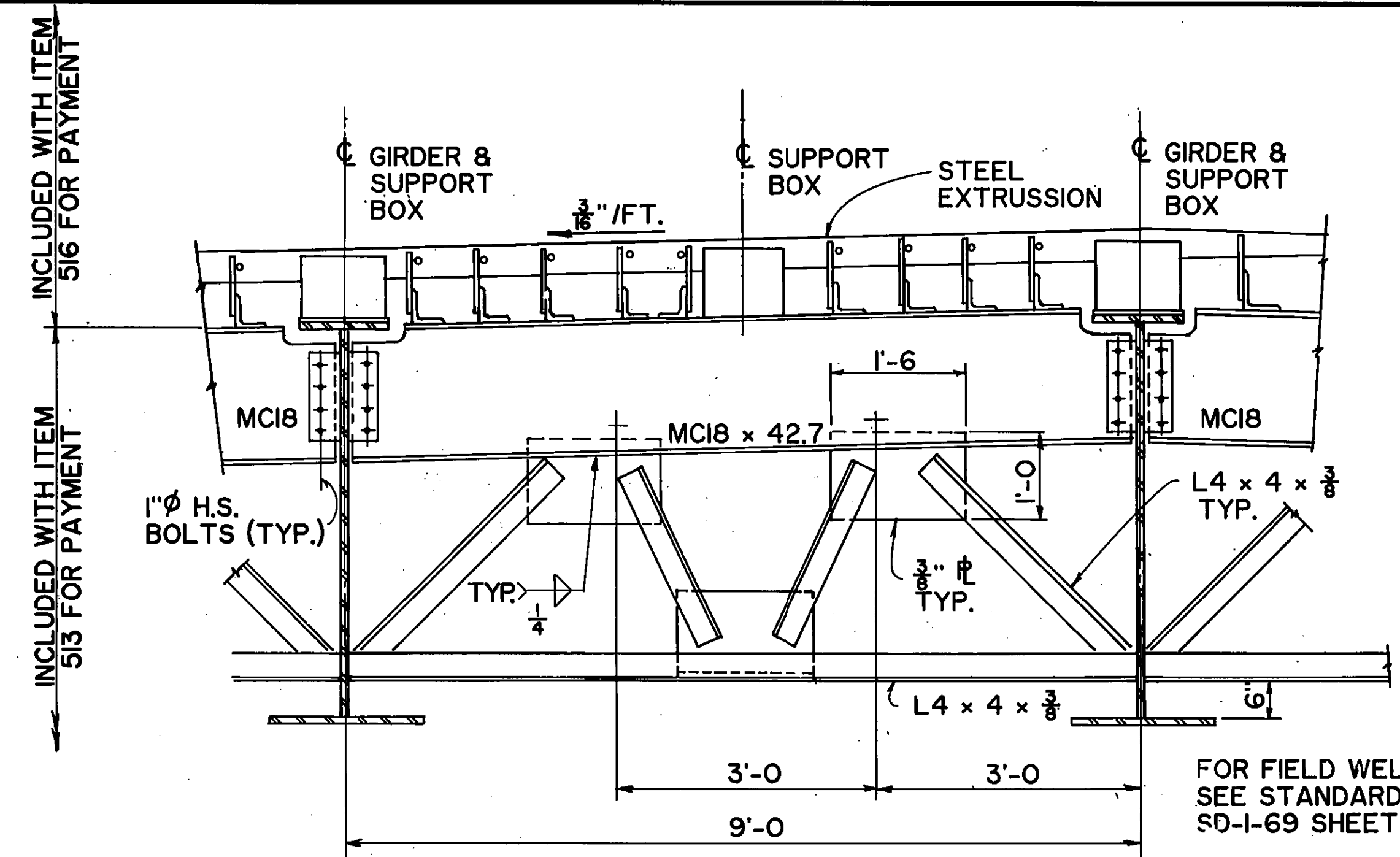


PINTLE DETAIL

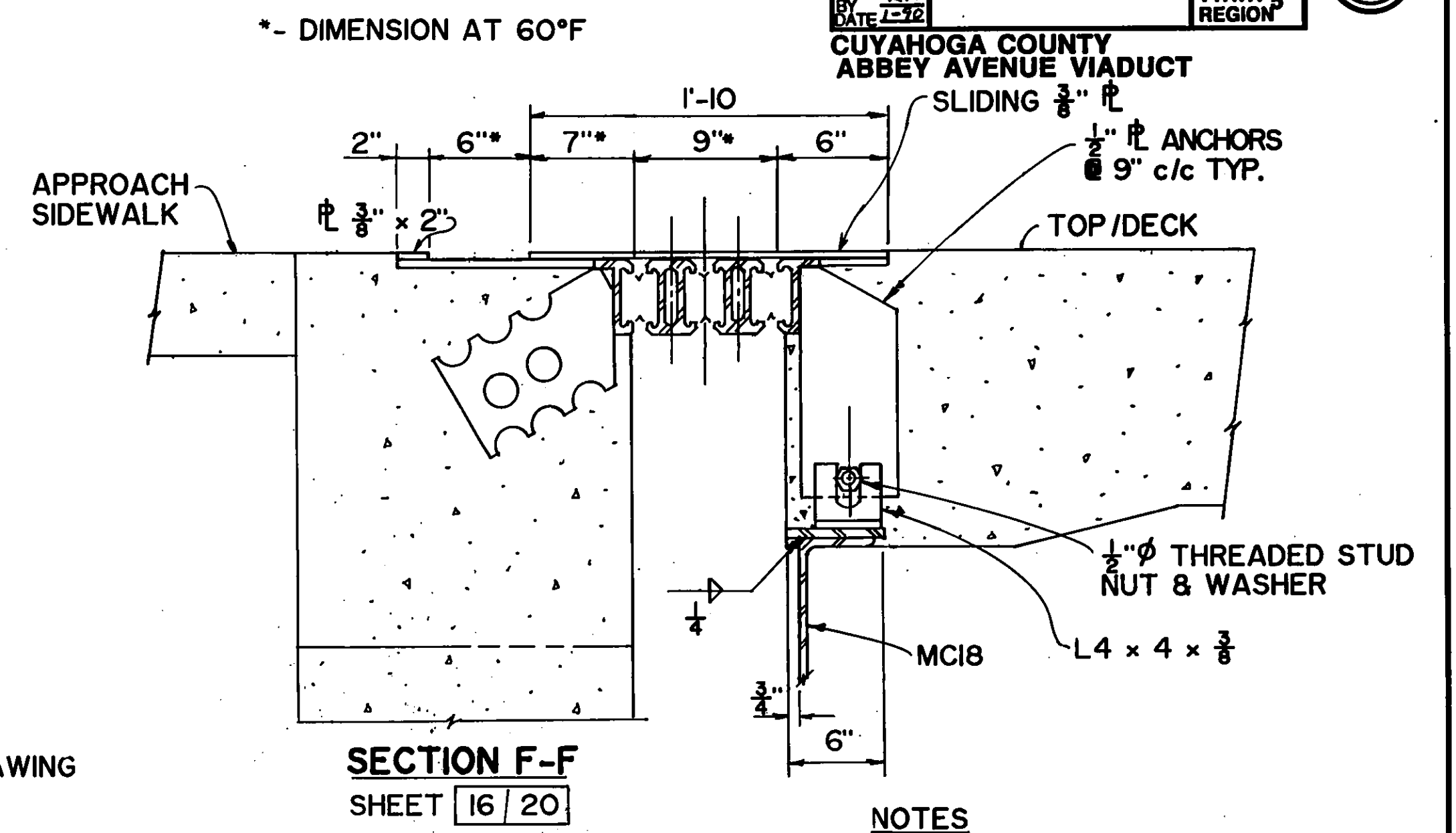
THE OSBORN ENGINEERING COMPANY 14/20 CONSULTING ENGINEERS CLEVELAND, OHIO 44114				
BEARING DETAILS ABBEY AVENUE VIADUCT OVER CONRAIL, N. & S. R.R. AND SCRANTON ROAD CITY OF CLEVELAND, BRIDGE NO 1:001M CLEVELAND, CUYAHOGA COUNTY, OHIO				
DESIGNED	DRAWN	CHECKED	REVIEWED DATE	REVISED
HGS	BFG	JRS	D.S. 9-22-89	



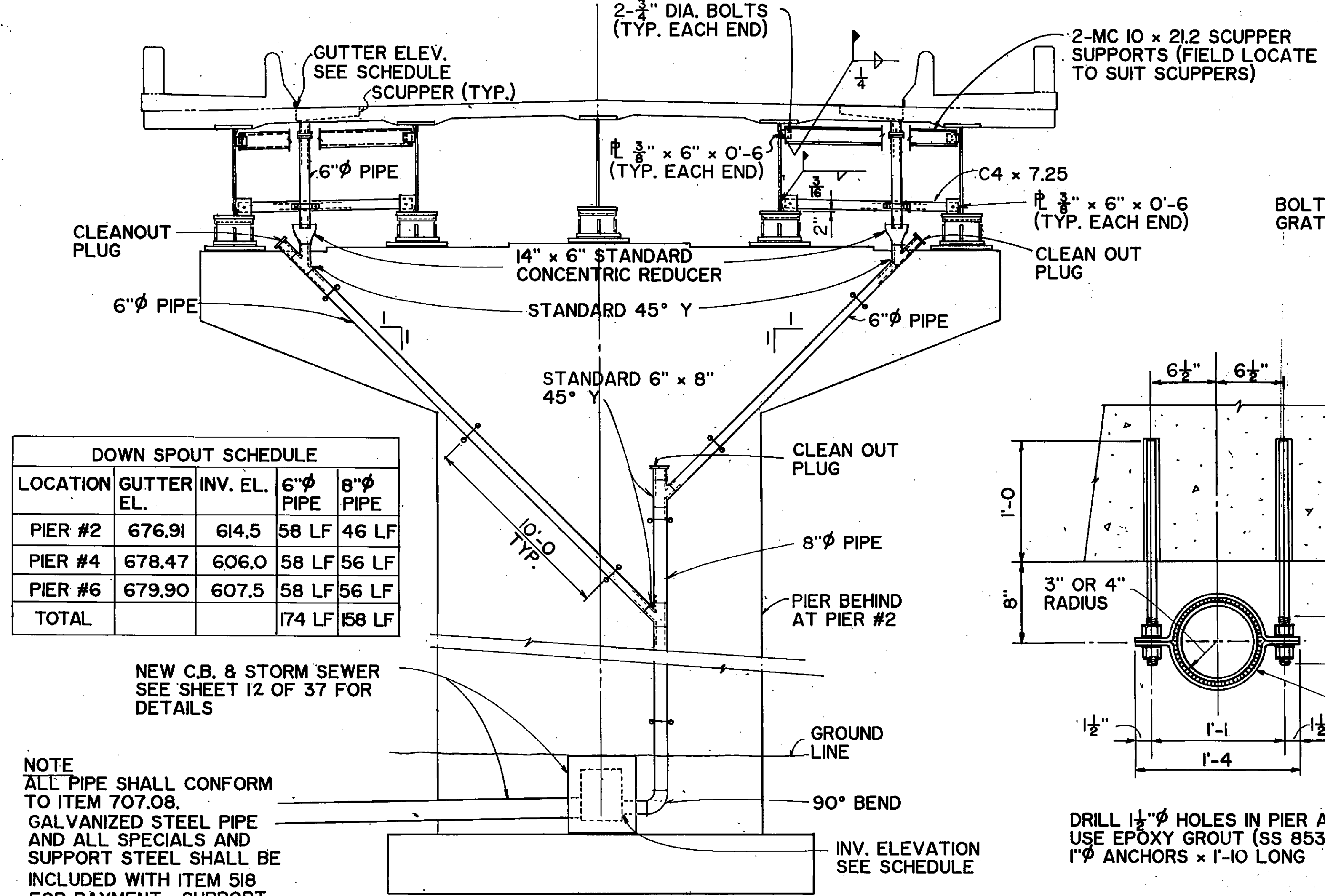
TYPICAL INTERMEDIATE & PIER CROSSFRAME DETAIL



TYPICAL END CROSSFRAME DETAIL



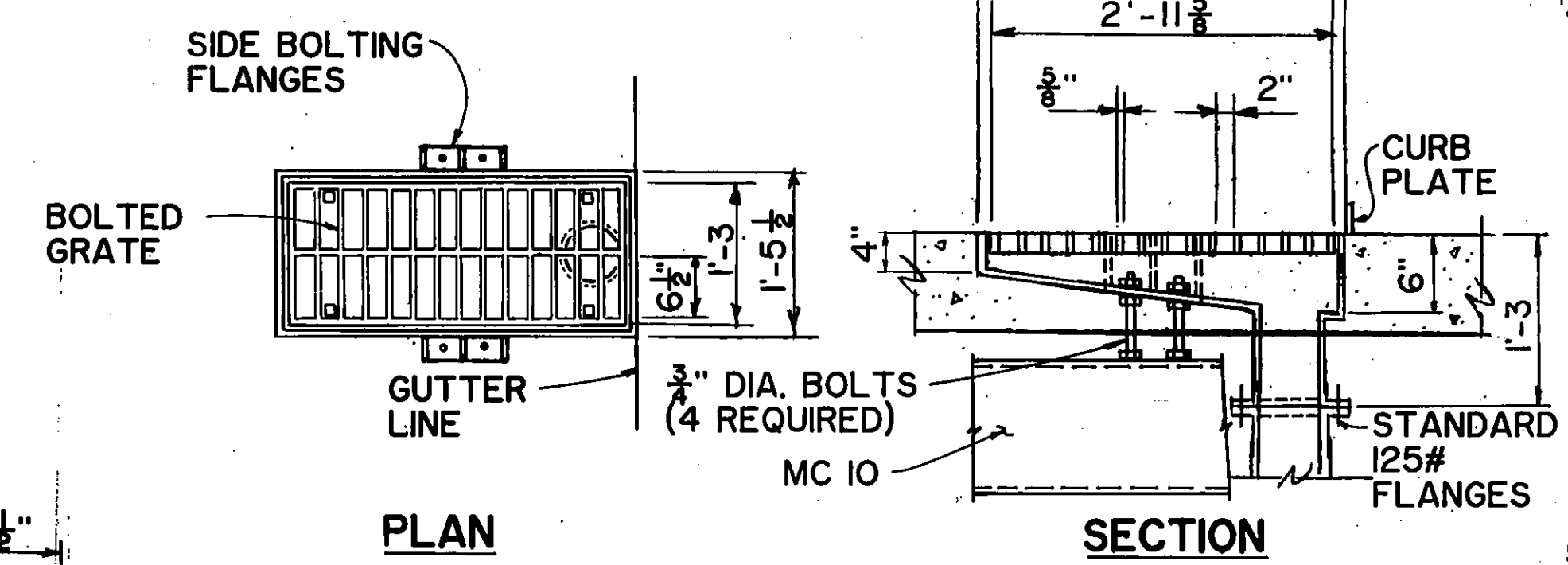
- HIGH STRENGTH BOLTS SHALL BE ONE-INCH DIAMETER ASTM A325 UNLESS OTHERWISE NOTED.
- THE BOLTS SHALL BE PLACED WITH THEIR HEADS ON THE OUTSIDE FACE OF THE EXTERIOR BEAMS AND ON THE BOTTOM OF THE FLANGES.
- WHERE A SHAPE OR PLATE IS DESIGNATED (CVN) THE MATERIAL SHALL MEET SPECIFIED MINIMUM NOTCH TOUGHNESS REQUIREMENTS AS SPECIFIED IN 710.1 OF CMS.
- PARTIAL PAINTING OF A588 STEEL: AN 8 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 708.18 EXCEPT THAT THE COLOR SHALL CLOSELY APPROACH FEDERAL STANDARD No. 595a-20045 OR 20059. SUCH PARTIAL PAINTING OF A588 STEEL SHALL BE PAID FOR UNDER ITEM 514- FIELD PAINTING OF NEW STRUCTURAL STEEL, SYSTEM A, AS PER PLAN.
- FOR A588 STEEL LEFT UNPAINTED, SEE CMS 513.221 FOR CLEANING REQUIREMENTS.
- 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 2" LONG, AND BE NOT SMALLER THAN THE MINIMUM SIZE REQUIRED BY AASHTO REQUIREMENTS.
- FOR FRAMING PLAN AND GIRDER ELEVATIONS SEE SHEET 12/20.
- FOR CAMBER DIAGRAM AND FIELD SPLICE DETAILS SEE SHEET 13/20.
- FOR BEARING DETAILS SEE SHEET 14/20.



DOWN SPOUT SCHEDULE				
LOCATION	GUTTER EL.	INV. EL.	6" PIPE	8" PIPE
PIER #2	676.91	614.5	58 LF	46 LF
PIER #4	678.47	606.0	58 LF	56 LF
PIER #6	679.90	607.5	58 LF	56 LF
TOTAL			174 LF	158 LF

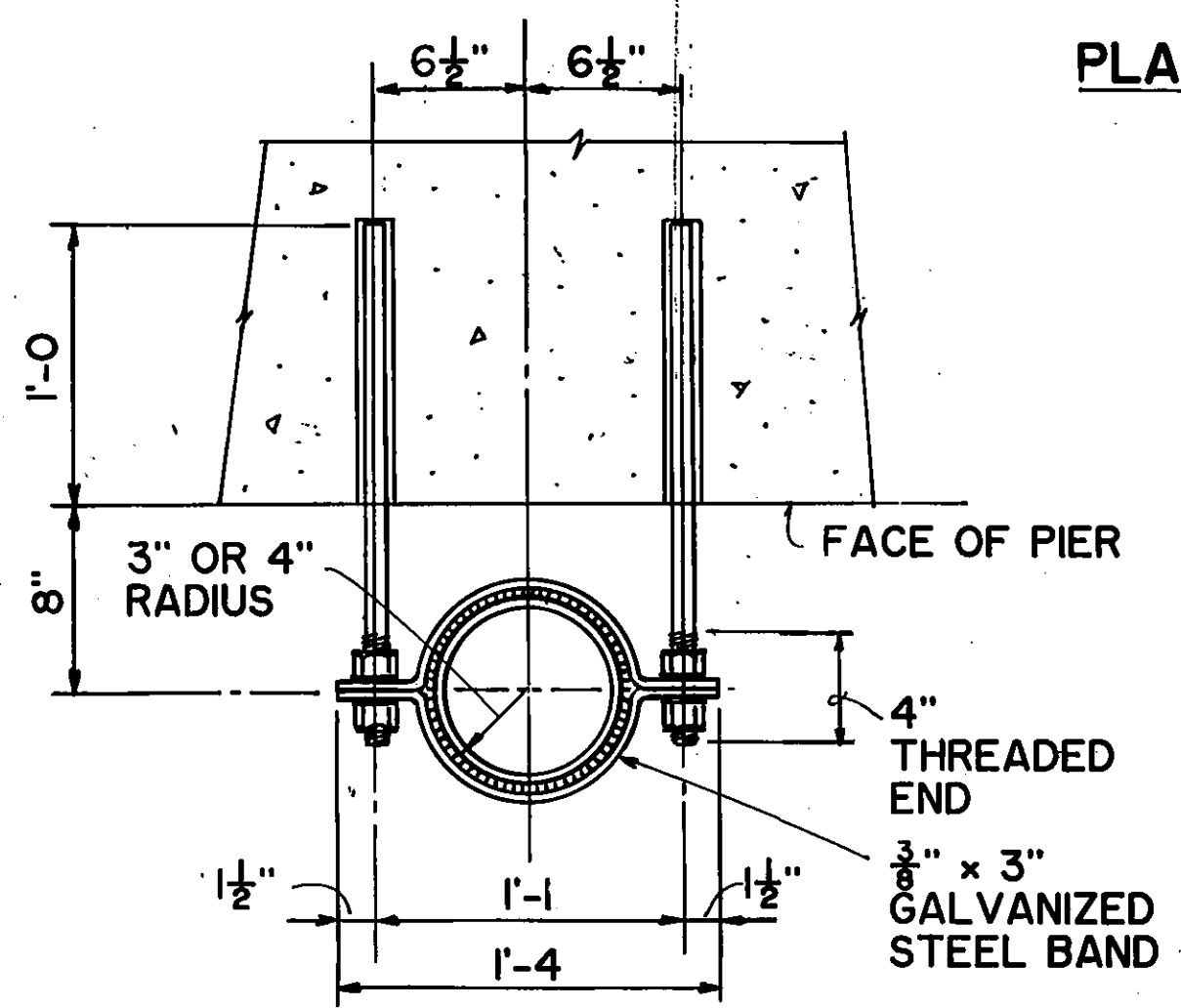
NOTE
 ALL PIPE SHALL CONFORM TO ITEM 707.08.
 GALVANIZED STEEL PIPE AND ALL SPECIALS AND SUPPORT STEEL SHALL BE INCLUDED WITH ITEM 518 FOR PAYMENT. SUPPORT STEEL SHALL BE A588 UNPAINTED.

TYPICAL DECK DRAINAGE ARRANGEMENT AT PIERS # 4 AND 6 (AS SHOWN) AND PIER # 2 (AS NOTED)



SCUPPER DETAILS

SCUPPER TO BE TYPE R-4014-C BY NEENAH FOUNDRY COMPANY, BOX 729, NEENAH, WI. 54956 OR APPROVED EQUAL w/ BOLTED COVER



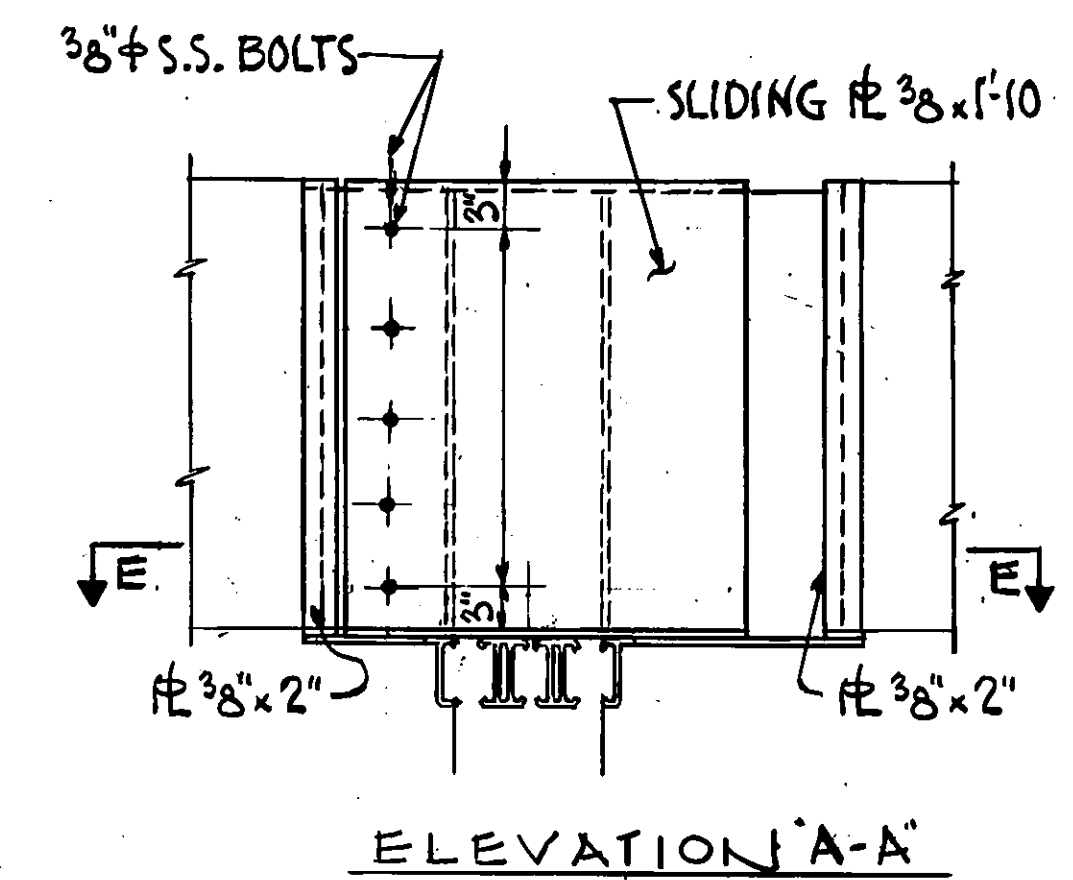
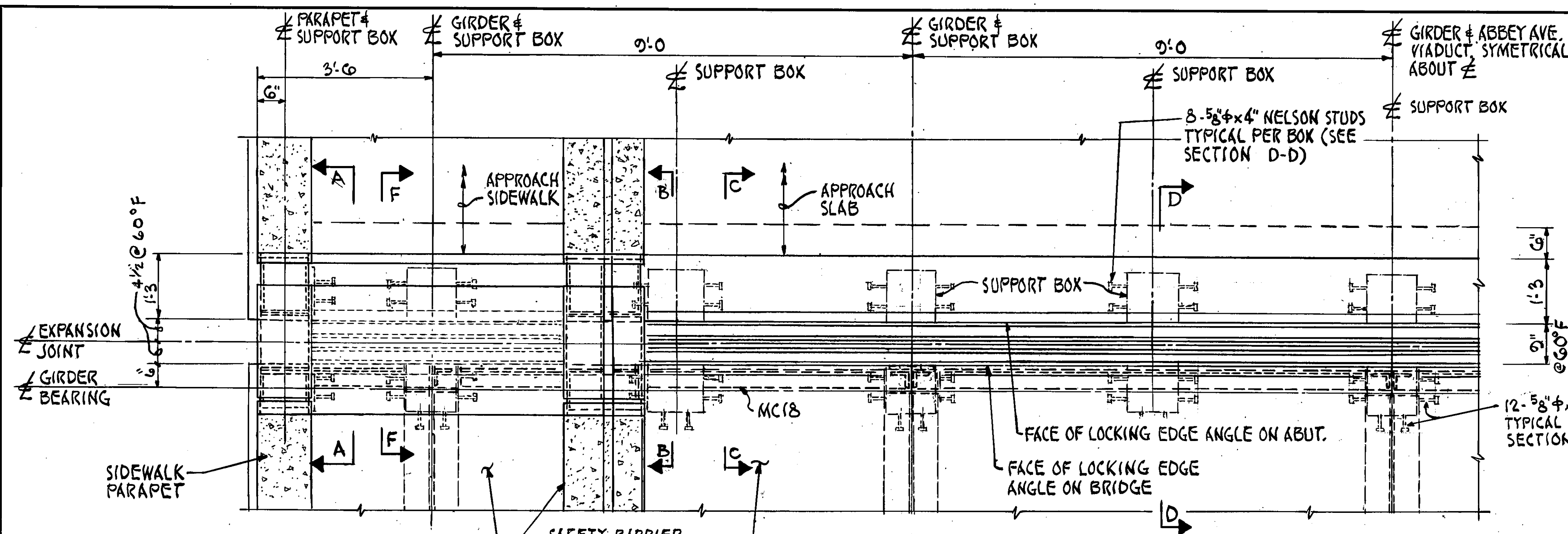
DRILL 1 1/2" HOLES IN PIER AND USE EPOXY GROUT (SS 853) AT 1" ANCHORS x 1'-10 LONG

TYPICAL PIPE HANGER DETAIL

THE OSBORN ENGINEERING COMPANY 15/20
 CONSULTING ENGINEERS
 CLEVELAND, OHIO 44114

CROSS FRAME AND DRAINAGE DETAILS
 ABBEY AVENUE VIADUCT OVER CONRAIL,
 N. & S. R.R. AND SCRANTON ROAD
 CITY OF CLEVELAND, BRIDGE NO 1:001M
 CLEVELAND, CUYAHOGA COUNTY, OHIO

DESIGNED	DRAWN	CHECKED	REVIEWED	DATE	REVISED
HGS	BFG	JRS	D.S.	9-22-89	

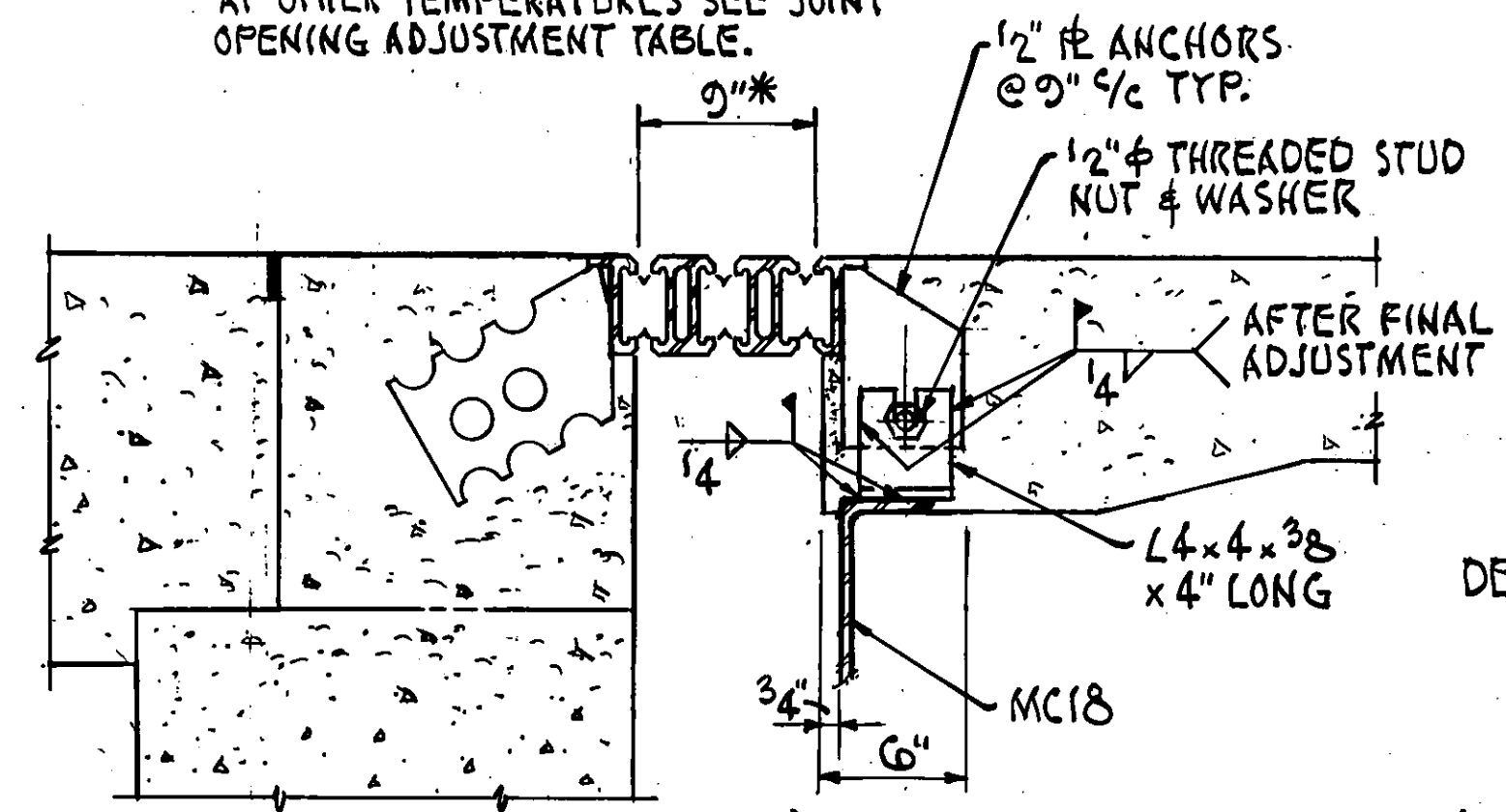
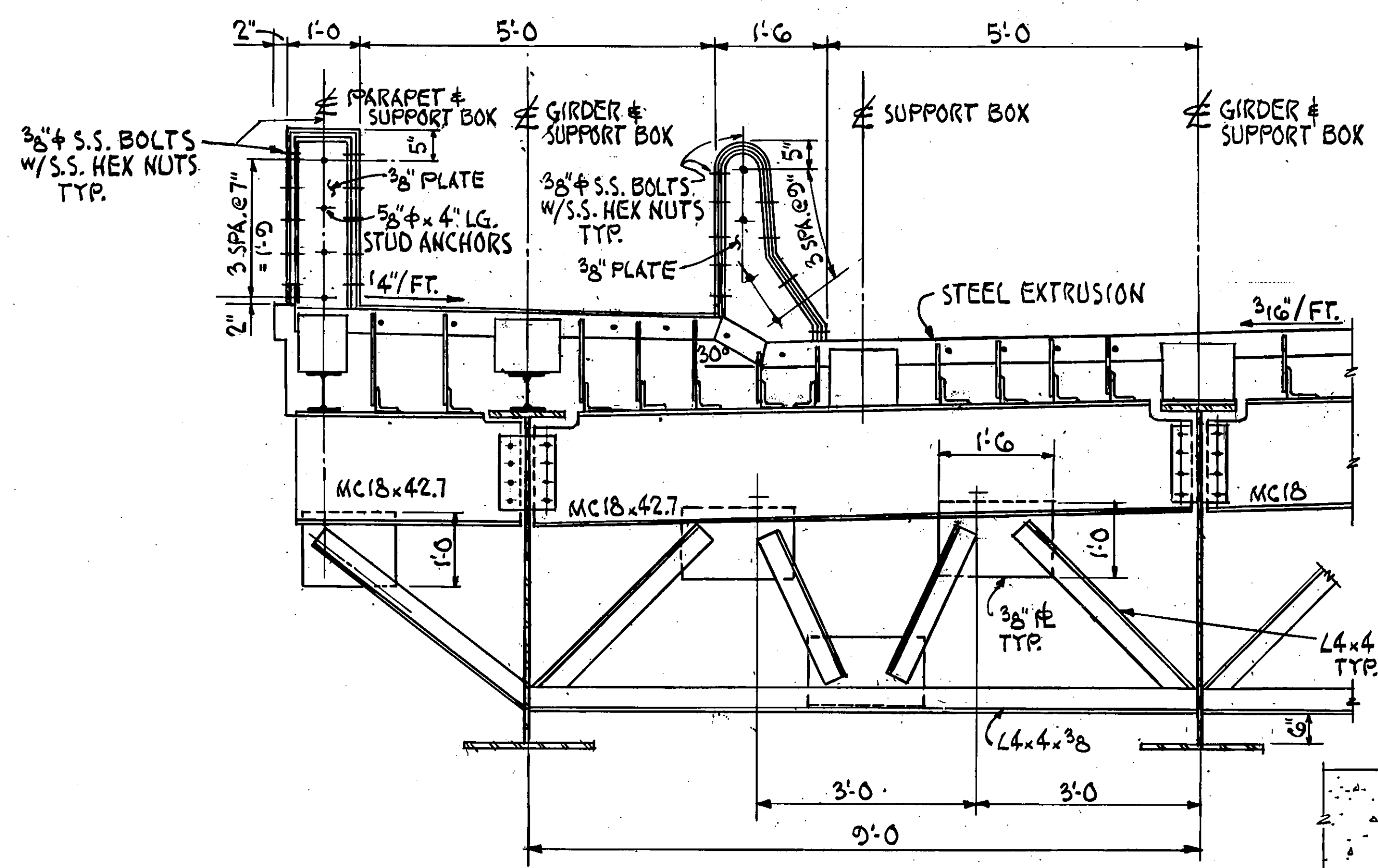
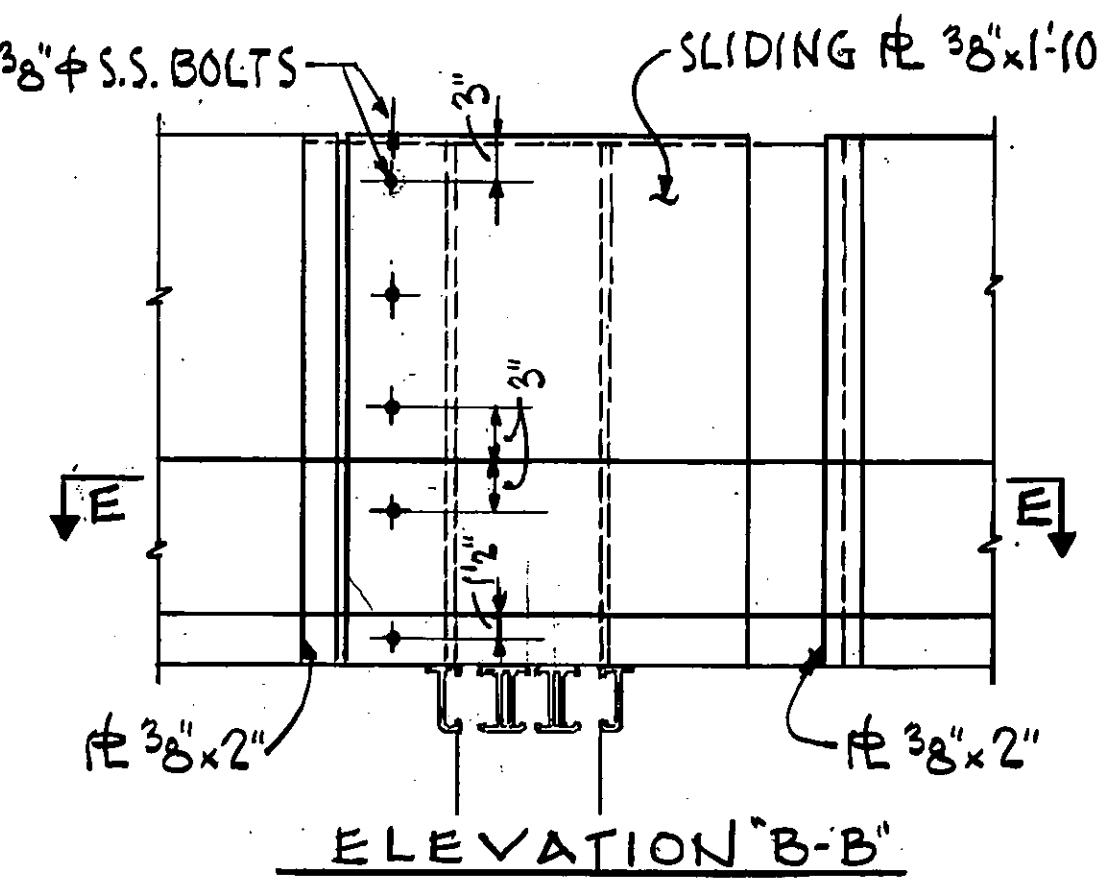


- NOTES:
- 1) THE MODULAR EXPANSION JOINT SHALL BE CAPABLE OF CARRYING HS20-44 LOADING PLUS 100% IMPACT.
 - 2) THE MANUFACTURER OF THE EXPANSION JOINT SHALL SUBMIT DESIGN CALCULATIONS SHOWING THAT THE JOINT CAN MEET THE IMPACT REQUIREMENT.
 - 3) FOR SECTION F-F, SEE SHEET 15/20
 - 4) FOR ADDITIONAL NOTES, SEE GENERAL NOTES, SHEET 5/20
 - 5) ALL EXPANSION JOINT STEEL SHALL BE A36 PAINTED SYSTEM B LIGHT GRAY, INCLUDING PARAPET AND BARRIER SLIDING PLATES.

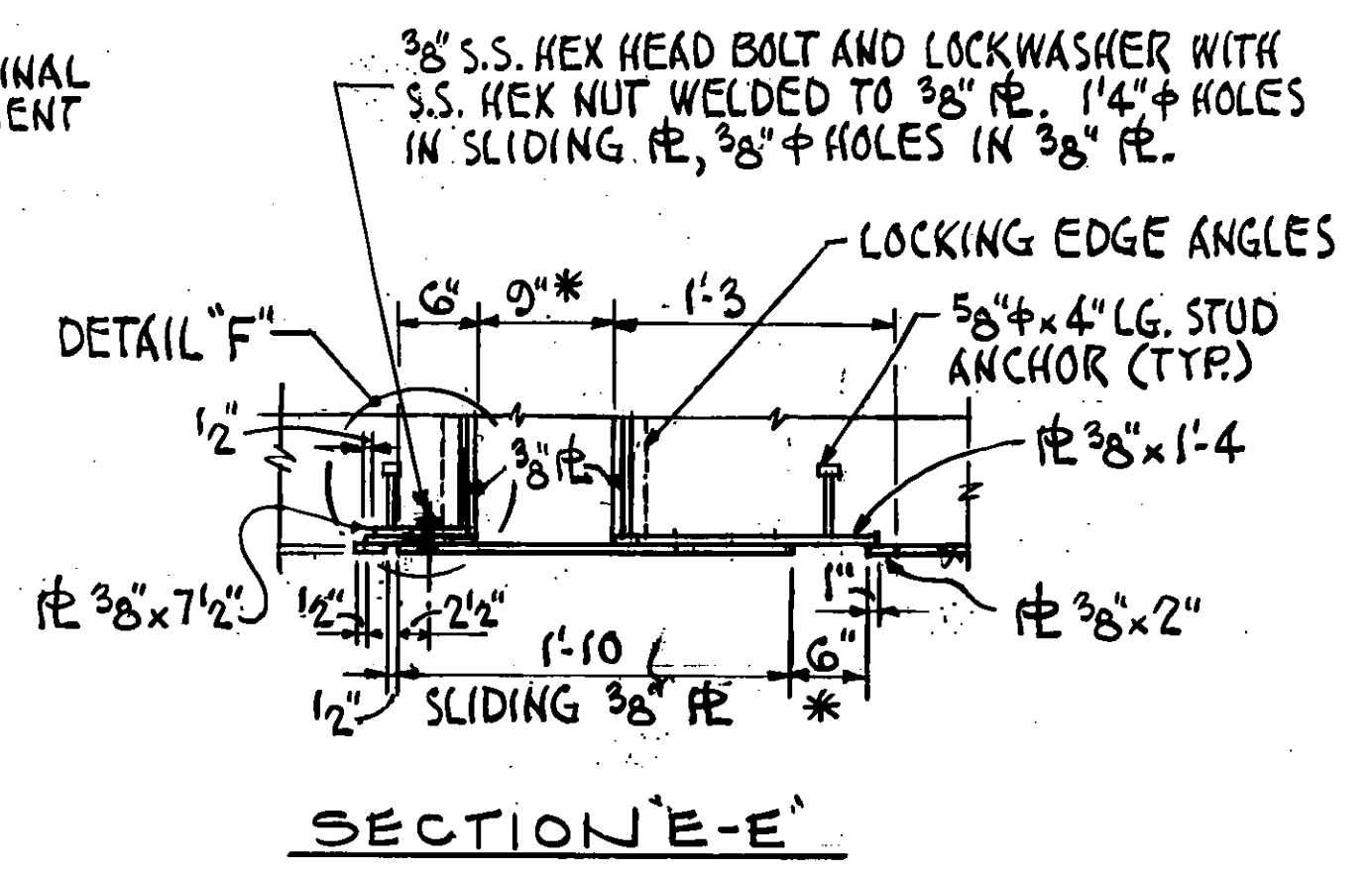
JOINT OPENING ADJUSTMENT TABLE

LOCATION	TEMP.	30°F	40°F	50°F	60°F	70°F	80°F	90°F
WEST ABUT.		10 5/16"	9 7/8"	9 7/16"	9"	8 7/16"	8 1/2"	7 11/16"
EAST ABUT.		10 1/4"	9 3/8"	9 1/16"	9"	8 9/16"	8 3/16"	7 3/4"

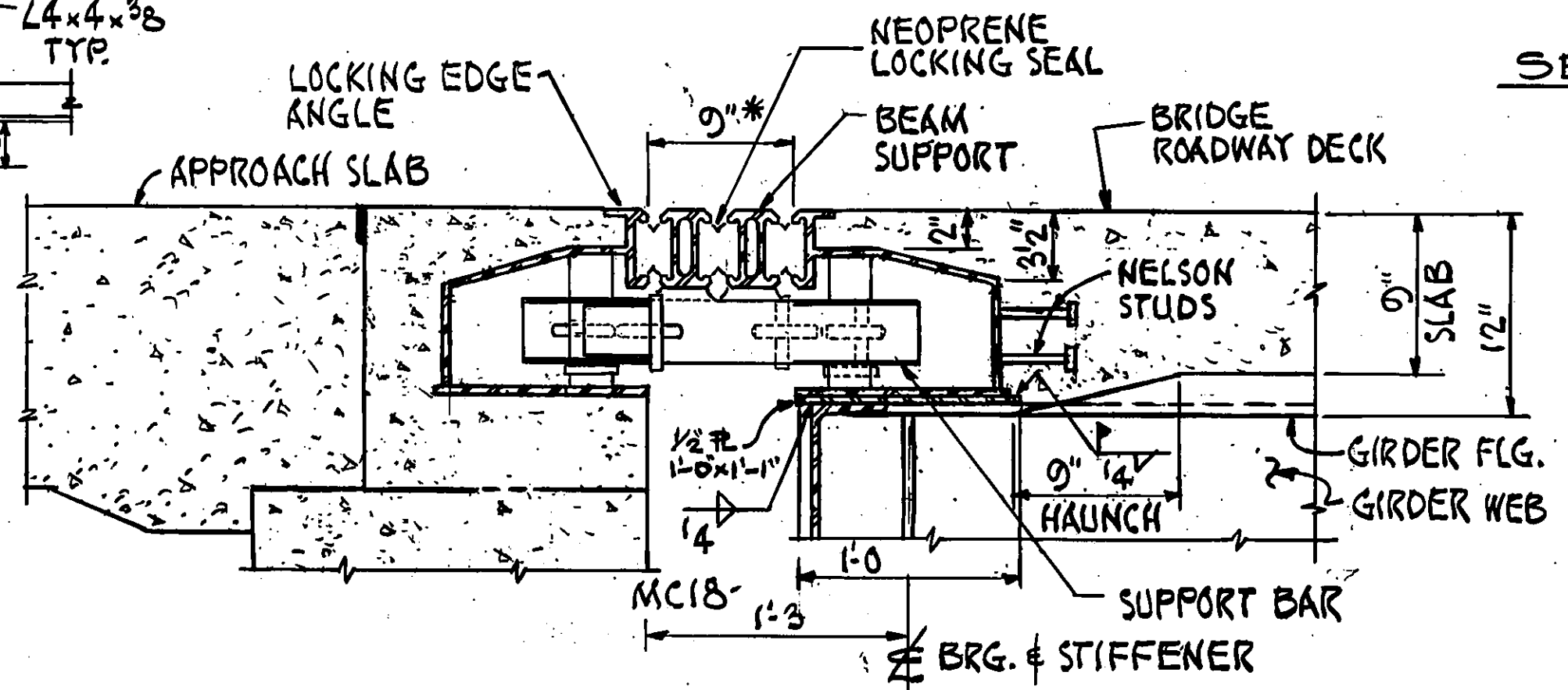
* - DIMENSION AT 60°F - FOR DIMENSIONS AT OTHER TEMPERATURES SEE JOINT OPENING ADJUSTMENT TABLE.



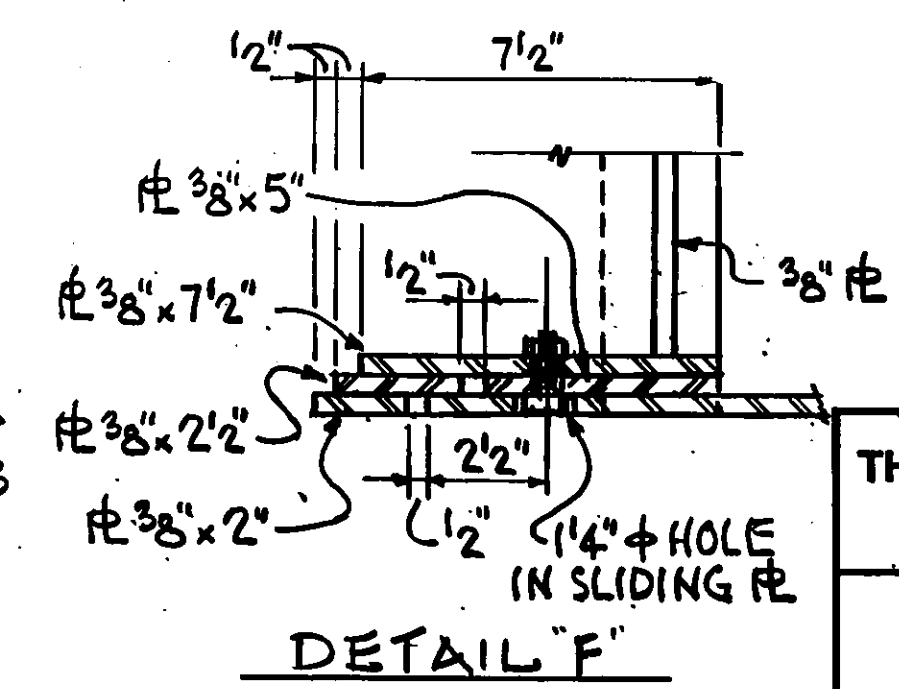
SECTION C-C TYPICAL BETWEEN SUPPORT BOXES.



SECTION E-E



SECTION D-D TYPICAL AT SUPPORT BOXES



DETAIL F

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

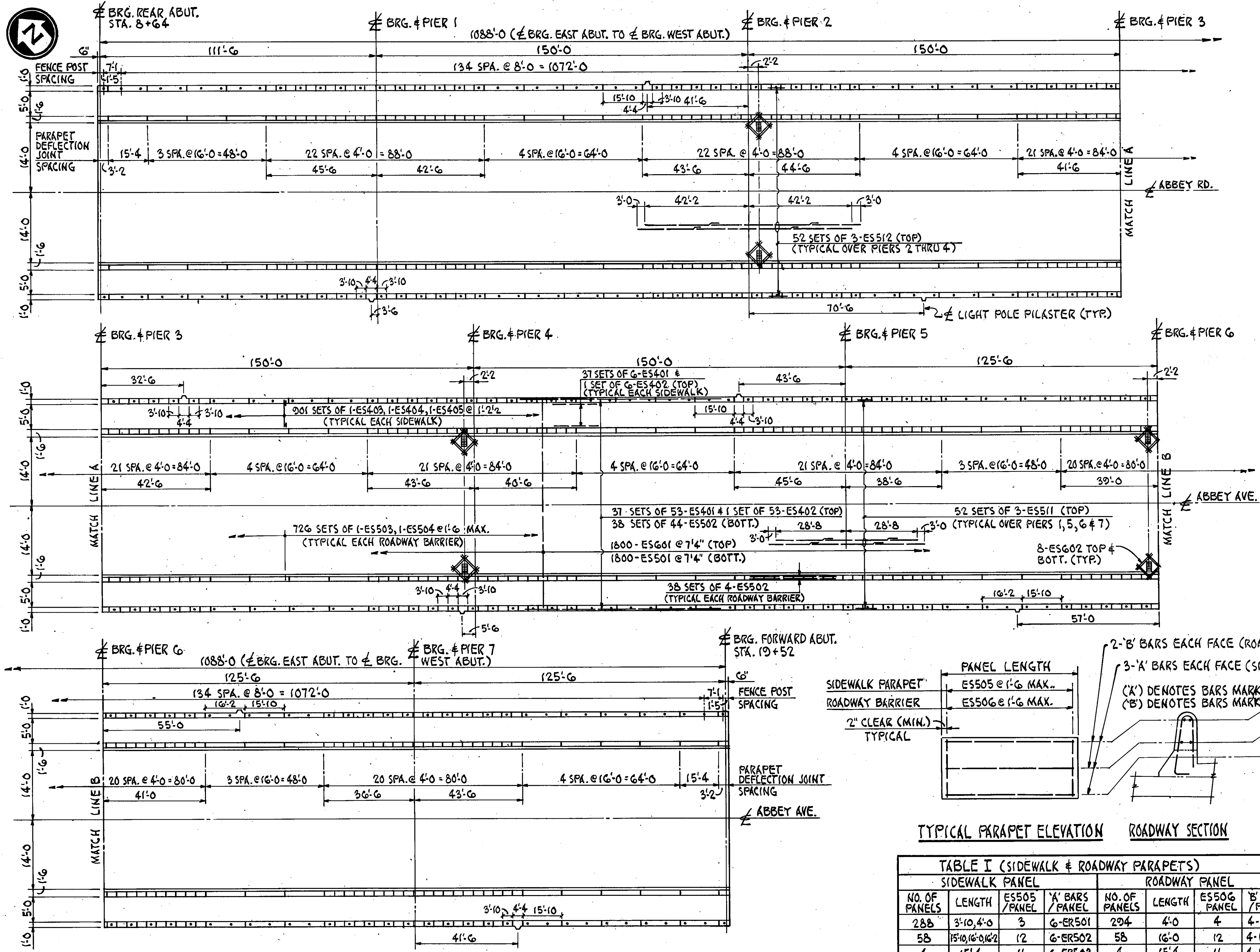
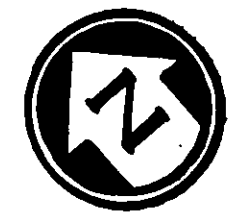
JOINTS IN END DAM ARMOR: TRANSVERSE JOINTS IN ARMOR SHALL HAVE COMPLETE PENETRATION BUTT WELDS. WELDS IN CONTACT WITH SEALS SHALL BE GROUND FLUSH.

EXPANSION JOINTS SHALL BE WABO MAURER TYPE D900 WITH NEOPRENE LOCKING SEALS, OR APPROVED ALTERNATE.

THE OSBORN ENGINEERING COMPANY 16/20
 CONSULTING ENGINEERS
 CLEVELAND, OHIO 44114

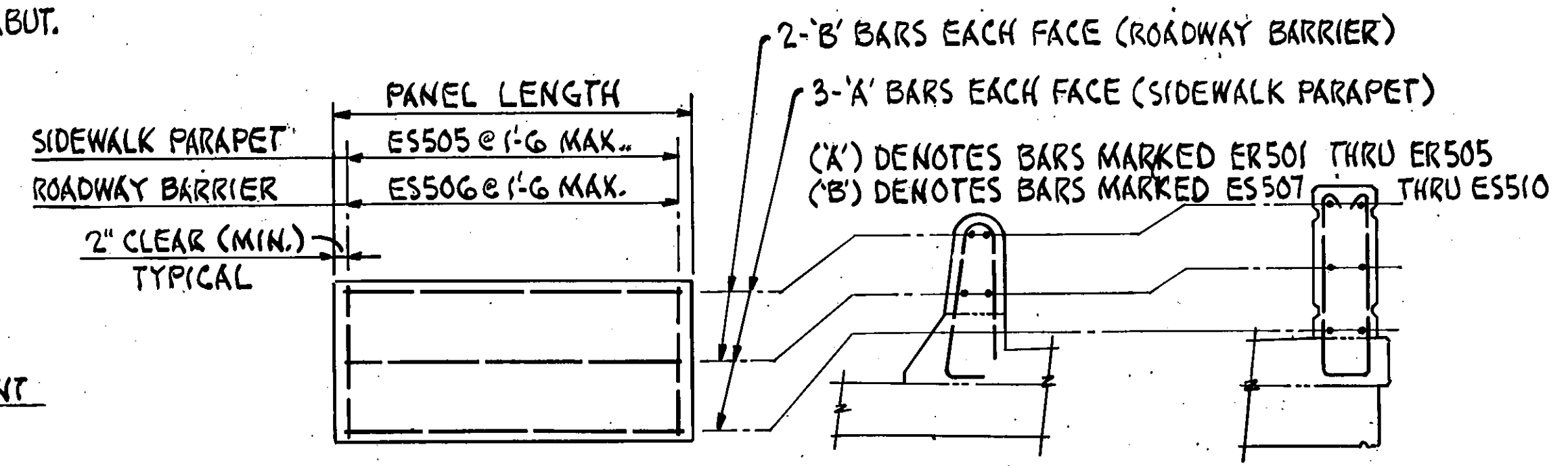
EXPANSION JOINT DETAILS
 ABBEY AVENUE VIADUCT OVER CONRAIL,
 N. & S. R.R. AND SCRANTON ROAD
 CITY OF CLEVELAND, BRIDGE NO 1:001M
 CLEVELAND, CUYAHOGA COUNTY, OHIO

DESIGNED	DRAWN	CHECKED	REVIEWED	DATE	REVISED
BGS	E.D	JRS	D.S.	9-22-89	



- NOTES:
1. THE PREFORMED EXPANSION JOINT FILLER IN THE RAILING PARAPET DEFLECTION JOINTS MAY BE EITHER 1/4" GRAY SPONGE RUBBER OR 1/4" GRAY CELLULAR POLYVINYL CHLORIDE (P.V.C.) SPONGE. THE FILLER SHALL MEET THE REQUIREMENTS OF AASHTO M-153, TYPE I, EXCEPT THAT THE DENSITY OF P.V.C. SPONGE SHALL NOT BE LESS THAN 20 LBS. PER CUBIC FEET. THE DEFLECTION JOINT SHALL EXTEND FROM TOP OF PARAPET TO FIRST CONSTRUCTION JOINT. FOR DETAILS SEE TYPICAL SECTION, SHEET 19/20
 2. PARAPETS SHALL BE PLACED IN ALTERNATE SECTIONS BY THE USE OF BULKHEADS. CLOSING SECTIONS SHALL BE PLACED AFTER REMOVAL OF THE BULKHEADS AND AFTER PLACEMENT OF THE JOINT MATERIAL.
 3. FOR REINFORCEMENT SCHEDULE, SEE SHEET 20/20
 4. FOR FENCE, CURB PLATE, PARAPET AND LIGHT POLE PILASTER DETAILS, SEE SHEET 19/20
 5. FOR EXPANSION JOINT DETAILS, SEE SHEET 16/20
 6. FOR TYPICAL BRIDGE SECTION, SEE SHEET 18/20
 7. FOR LENGTH OF LONGITUDINAL REINFORCEMENT PARAPET ('A'-BARS) SEE SHEET 20/20

LAP LENGTHS	
BAR SIZE	LAP
4	1'-0"
5	1'-4"



TYPICAL PARAPET ELEVATION ROADWAY SECTION SIDEWALK SECTION

TABLE I (SIDEWALK & ROADWAY PARAPETS)							
SIDEWALK PANEL				ROADWAY PANEL			
NO. OF PANELS	LENGTH	ES505 / PANEL	'A' BARS / PANEL	NO. OF PANELS	LENGTH	ES506 / PANEL	'B' BARS / PANEL
288	3'-10, 4'-0	3	6-ER501	294	4'-0	4	4-ES507
58	15'-10, 16'-0, 16'-2	12	6-ER502	58	16'-0	12	4-ES508
4	15'-4	11	6-ER503	4	15'-4	11	4-ES509
4	3'-2	3	6-ER504	4	3'-2	3	4-ES510
6	4'-4	4	6-ER505				

THE OSBORN ENGINEERING COMPANY 17/20
 CONSULTING ENGINEERS
 CLEVELAND, OHIO 44114

DECK SLAB PLAN
 ABBEY AVENUE VIADUCT OVER CONRAIL,
 N. & S. R.R. AND SCRANTON ROAD
 CITY OF CLEVELAND, BRIDGE NO. 1:001M
 CLEVELAND, CUYAHOGA COUNTY, OHIO

DESIGNED	DRAWN	CHECKED	REVIEWED	DATE	REVISED
JRS	LBELL	JRS	D.S.	9-22-89	

DECK SCREED ELEVATIONS

SPANS	SPAN 1			SPAN 2			SPAN 3			SPAN 4			SPAN 5			SPAN 6			SPAN 7			SPAN 8		
POINT ON SPAN	111'-0"			150'-0"			150'-0"			150'-0"			150'-0"			125'-6"			125'-6"			125'-6"		
	ELEVATION			ELEVATION			ELEVATION			ELEVATION			ELEVATION			ELEVATION			ELEVATION					
	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C
CBRG	675.50	675.62	675.84	676.04	676.16	676.38	676.82	676.94	677.16	677.60	677.72	677.94	678.38	678.50	678.72	679.15	679.27	679.49	679.81	679.93	680.15	680.43	680.55	680.77
.1	675.59	675.71	675.93	676.15	676.26	676.48	676.92	677.03	677.25	677.70	677.81	678.03	678.48	678.60	678.82	679.23	679.35	679.57	679.89	680.00	680.22	680.52	680.64	680.86
.2	675.69	675.81	676.03	676.27	676.39	676.61	677.04	677.15	677.37	677.82	677.93	678.15	678.61	678.73	678.95	679.31	679.43	679.65	679.97	680.09	680.31	680.61	680.73	680.95
.3	675.78	675.90	676.12	676.41	676.53	676.75	677.17	677.29	677.51	677.95	678.07	678.29	678.75	678.87	679.09	679.41	679.53	679.75	680.06	680.18	680.40	680.70	680.82	681.04
.4	675.85	675.97	676.18	676.56	676.67	676.89	677.31	677.43	677.65	678.09	678.21	678.42	678.91	679.02	679.24	679.51	679.63	679.85	680.14	680.26	680.48	680.76	680.88	681.10
.5	675.89	676.01	676.23	676.65	676.77	676.99	677.42	677.54	677.76	678.19	678.31	678.53	678.92	679.14	679.36	679.59	679.71	679.93	680.21	680.32	680.54	680.79	680.91	681.13
.6	675.91	676.03	676.25	676.71	676.82	677.04	677.48	677.59	677.81	678.24	678.36	678.57	679.08	679.19	679.41	679.65	679.77	679.99	680.26	680.37	680.59	680.78	680.89	681.11
.7	675.93	676.05	676.27	676.71	676.83	677.05	677.49	677.61	677.82	678.25	678.37	678.59	679.08	679.20	679.42	679.70	679.81	680.03	680.29	680.41	680.63	680.71	680.83	681.05
.8	675.95	676.07	676.29	676.73	676.85	677.07	677.51	677.63	677.85	678.28	678.39	678.61	679.10	679.21	679.43	679.73	679.85	680.07	680.33	680.45	680.67	680.60	680.72	680.94
.9	675.99	676.11	676.33	676.77	676.88	677.10	677.54	677.66	677.88	678.32	678.43	678.65	679.12	679.23	679.45	679.77	679.89	680.11	680.38	680.49	680.71	680.46	680.57	680.79
CBRG	676.04	676.16	676.38	676.82	676.94	677.16	677.60	677.72	677.94	678.38	678.50	678.72	679.15	679.27	679.49	679.81	679.93	680.15	680.43	680.55	680.77	680.28	680.40	680.62

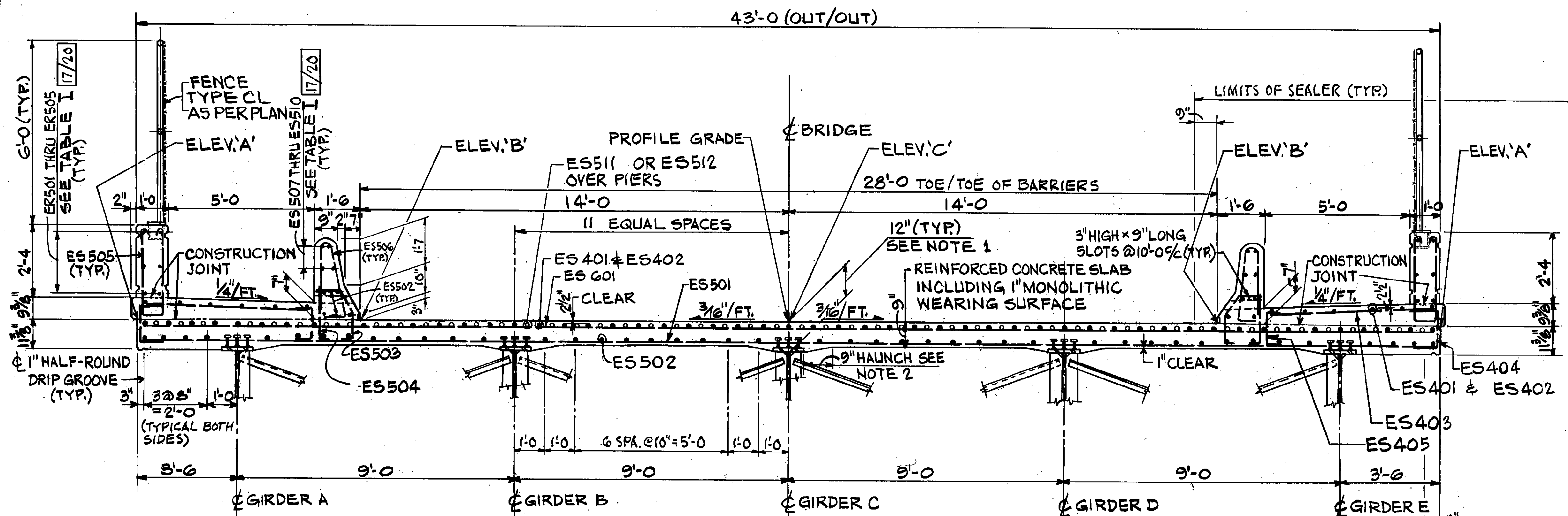
CALC. BY: _____
 DATE: 1-18
 CHKD. BY: _____
 DATE: 1-18

OHIO
 FHWA 5
 REGION

30
 37

CUYAHOGA COUNTY
 ABBEY AVENUE VIADUCT

- NOTES:
1. THIS IS THE DESIGN DIMENSION. THE QUANTITY OF DECK 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.
 2. A HAUNCH WIDTH OF 9" SHALL BE USED FOR COMPUTING QUANTITY OF CONCRETE. HOWEVER, THE HAUNCH WIDTH MAY VARY BETWEEN 6" AND 12" PROVIDED THAT THE SLOPE SHALL BE NOT MORE THAN 1:4 FOR A HAUNCH LESS THAN 9" WIDTH.
 3. DECK SCREED ELEVATIONS SHOWN ARE THOSE REQUIRED BEFORE ANY CONCRETE IS PLACED. PROPER ALLOWANCE HAS BEEN MADE FOR THE DEAD LOAD DEFLECTIONS CAUSED BY THE WEIGHT OF CONCRETE.
 4. FOR BARRIER AND PARAPET JOINT SPACING AND LONGITUDINAL REINFORCEMENT, SEE SHEET 17/20
 5. FOR FENCE DETAILS, SEE SHEET 19/20
 6. PROVIDE 3, 2" LIGHTING CONDUITS IN EACH PARAPET FOR LOCATIONS, SEE SHEET 19/20
 7. (24) TYPE "B" BARRIER REFLECTORS ARE TO BE MOUNTED AS PER ODOT SUPPLEMENTAL SPECIFICATION 802-(12) REFLECTORS EACH SIDE



TYPICAL BRIDGE SECTION

THE OSBORN ENGINEERING COMPANY 18/20
 CONSULTING ENGINEERS
 CLEVELAND, OHIO 44114

**TYPICAL CROSS SECTION
 & SCREED ELEVATIONS**
 ABBEY AVENUE VIADUCT OVER CONRAIL,
 N. & S. R.R. AND SCRANTON ROAD
 CITY OF CLEVELAND, BRIDGE NO 1:001M
 CLEVELAND, CUYAHOGA COUNTY, OHIO

DESIGNED	DRAWN	CHECKED	REVIEWED	DATE	REVISED
JRS	E.P.	JRS	D.S.	1-22-89	

NOTE:
ALL CONCRETE AND LONGITUDINAL REINFORCING STEEL IN THE PARAPET ABOVE THE SIDEWALK SURFACE ARE INCLUDED WITH ITEM 517 FOR PAYMENT.

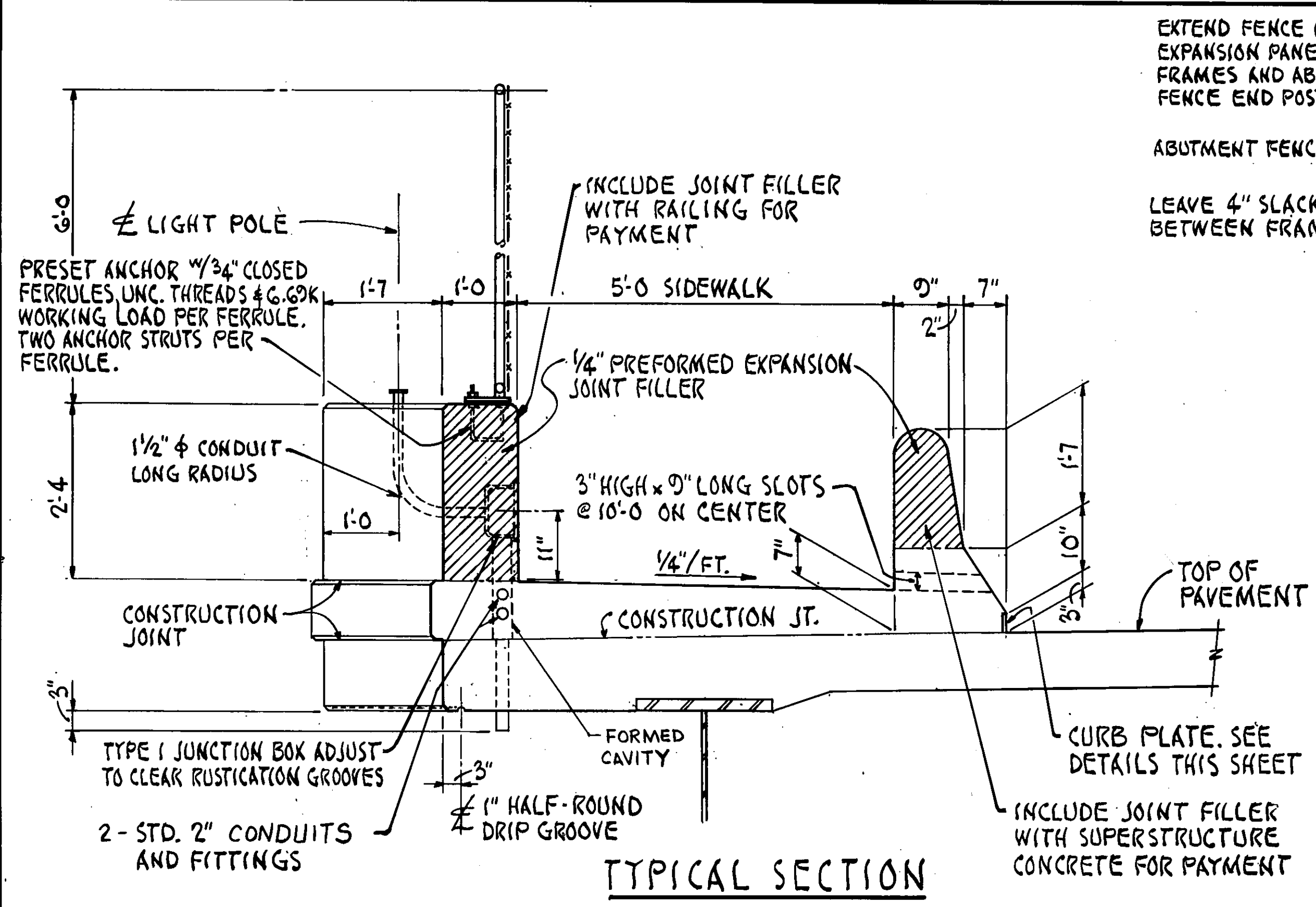
ALL CONCRETE AND REINFORCING STEEL IN THE BARRIER ARE TO BE INCLUDED WITH THEIR APPROPRIATE ITEM UNDER EITHER ABUTMENTS OR SUPERSTRUCTURE.

PREFORMED EXPANSION JOINT FILLER IN THE PARAPET AND BARRIER DEFLECTION JOINTS MAY BE EITHER 1/4" GRAY SPONGE RUBBER OR 1/4" GRAY CELLULOSIC POLY VINYL CHLORIDE (PVC) SPONGE. IF RUBBER IS USED IT SHALL MEET THE REQUIREMENTS OF AASHTO M-153. CONCRETE PARAPETS ABOVE THE UPPER CONSTRUCTION JOINT SHALL BE PLACED IN ALTERNATE SECTIONS BY THE USE OF BULKHEADS. CLOSING SECTIONS SHALL BE PLACED AFTER REMOVAL OF BULKHEADS AND AFTER PLACEMENT OF EXPANSION JOINT FILLER. EXPOSED EDGES OF THE FILLER SHALL BE FLUSH WITH THE SURFACE OF CONCRETE AND SHALL BE FREE OF MORTAR.

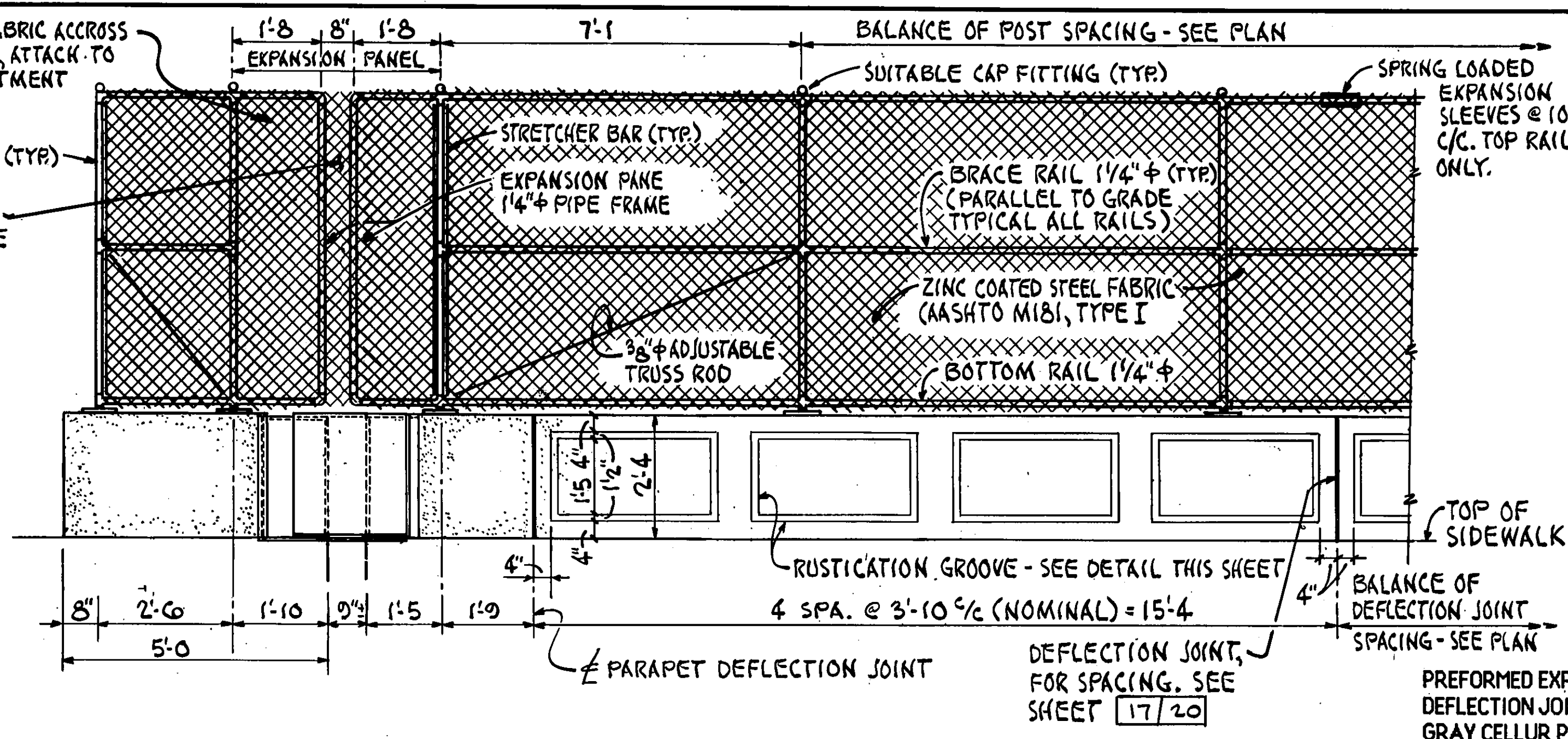
ITEM 607-4'-0" HIGH FENCE, TYPE CL, AS PER PLAN AND 6'-0" HIGH FENCE, TYPE CL, AS PER PLAN. THESE ITEMS INCLUDE THE FURNISHING OF ALL MATERIALS, LABOR EQUIPMENT AND INCIDENTAL NECESSARY TO COMPLETE THE RESPECTIVE FENCING. TENSION BANDS SHALL BE A MINIMUM OF 12 GAUGE STEEL BY 7/8 INCHES WIDE ASSEMBLED WITH 5/16 INCH DIAMETER BY 1 1/4 INCH GALVANIZED OR CADMIUM PLATED BOLTS. ONE TENSION BAND SHALL BE REQUIRED FOR EACH FOOT OF FABRIC HEIGHT. FENCE POSTS AND ANCHOR BOLTS SHALL BE VERTICAL. RAILS SHALL BE PARALLEL TO GRADE. THE FABRIC AND RAILS SHALL BE FREE TO EXPAND OR CONTRACT ACROSS BRIDGE EXPANSION JOINTS. MATERIALS AND WORKMANSHIP SHALL MEET THE REQUIREMENT OF ITEM 607 EXCEPT THAT ALUMINUM ALLOY POSTS AND BASE PLATES SHALL NOT BE USED. FABRIC TIES SHALL BE SPACED 14 INCH C/C MAXIMUM ON LINE OR END POSTS AND 23 INCH C/C MAXIMUM ON ALL RAILS. ALL POSTS AND PIPE SIZES ARE NOTED IN TERMS OF THE NOMINAL INSIDE DIAMETER OF STANDARD WEIGHT PIPE, SCHEDULE 40. STRETCHER BARS AND MISCELLANEOUS HARDWARE SHALL BE THAT OF THE CHAIN LINK FENCE INDUSTRY STANDARD. BASE PLATES AND MISCELLANEOUS BRACKETS FOR STEEL POSTS MAY BE OF ANY COMMERCIAL WELDABLE STEEL HAVING A YIELD STRENGTH OF NOT LESS THAN 33,000 P.S.I. ZINC COATED STEEL FABRIC (AASHTO M-181, TYPE I) SHALL BE USED. POST STEEL SHALL HAVE A MINIMUM YIELD STRENGTH OF 30 KSI.

PAYMENT: PAYMENT FOR THE FENCE SHALL BE MADE AT THE UNIT PRICE BID FOR ITEM 607, 4'-0" HIGH FENCE, TYPE CL, AS PER PLAN AND 6'-0" HIGH FENCE, TYPE CL, AS PER PLAN. THIS PRICE SHALL INCLUDE ALL FENCE MATERIAL, FENCE POST ANCHOR PLATES AND ANCHORS AND ALL LABOR, EQUIPMENT AND INCIDENTALS NECESSARY TO COMPLETE THE FENCING. FENCE SHALL CONFORM TO 710.03 EXCEPT AS MODIFIED ON THIS SHEET. PAYMENT LENGTH WILL BE THE OVERALL LENGTH OF THE FENCE. PAYMENT FOR CURB PLATE SHALL BE INCLUDED WITH ITEM 513. CURB PLATES SHALL BE PAINTED PER ITEM 514, SYSTEM B.

PAYMENT FOR THE CURB PLATE SHALL BE INCLUDED WITH ITEM 513, STRUCTURAL STEEL, A36, CATEGORY 1. CURB PLATES SHALL BE PAINTED PER ITEM 514, SYSTEM B.



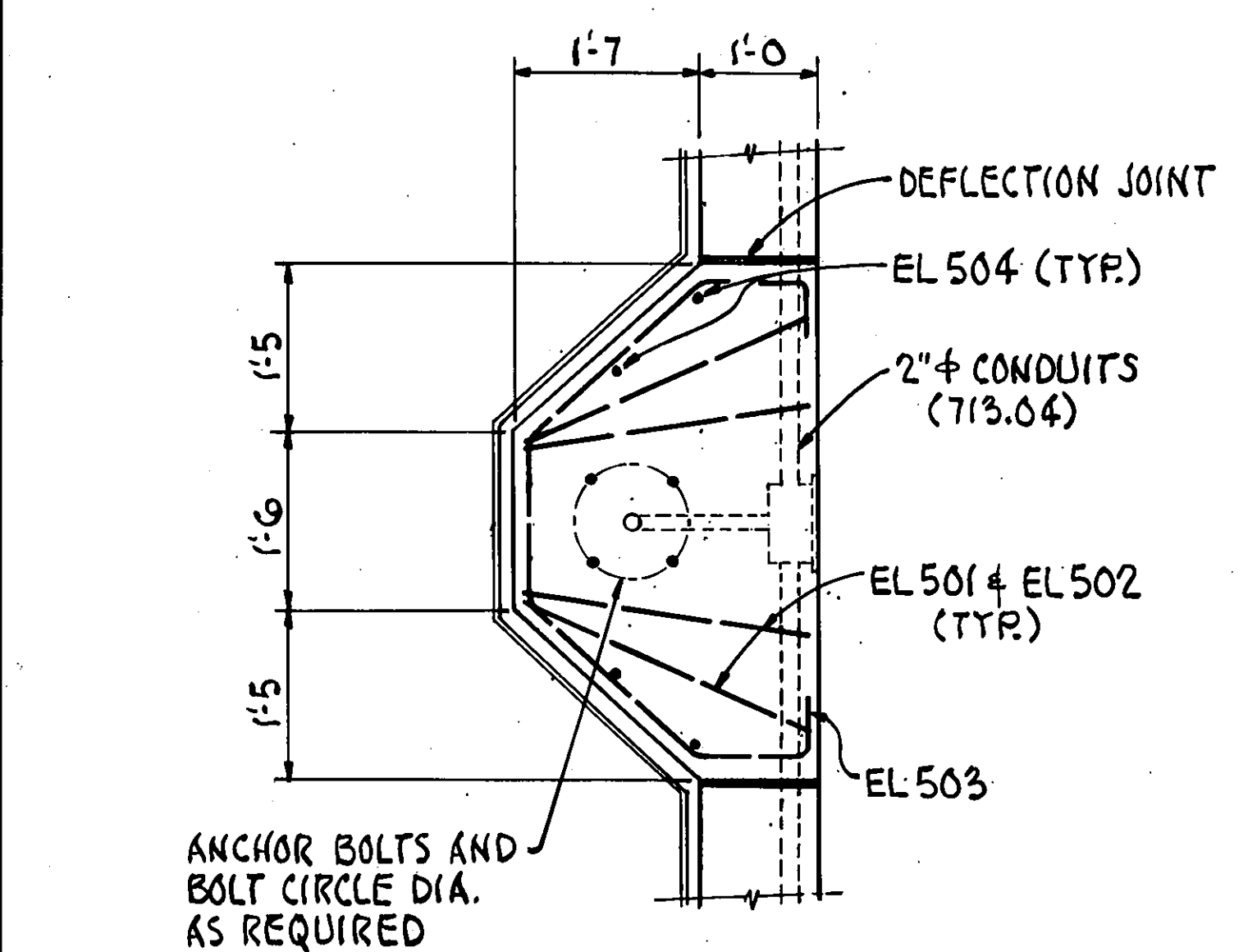
TYPICAL SECTION



GUARDRAIL ATTACHMENT

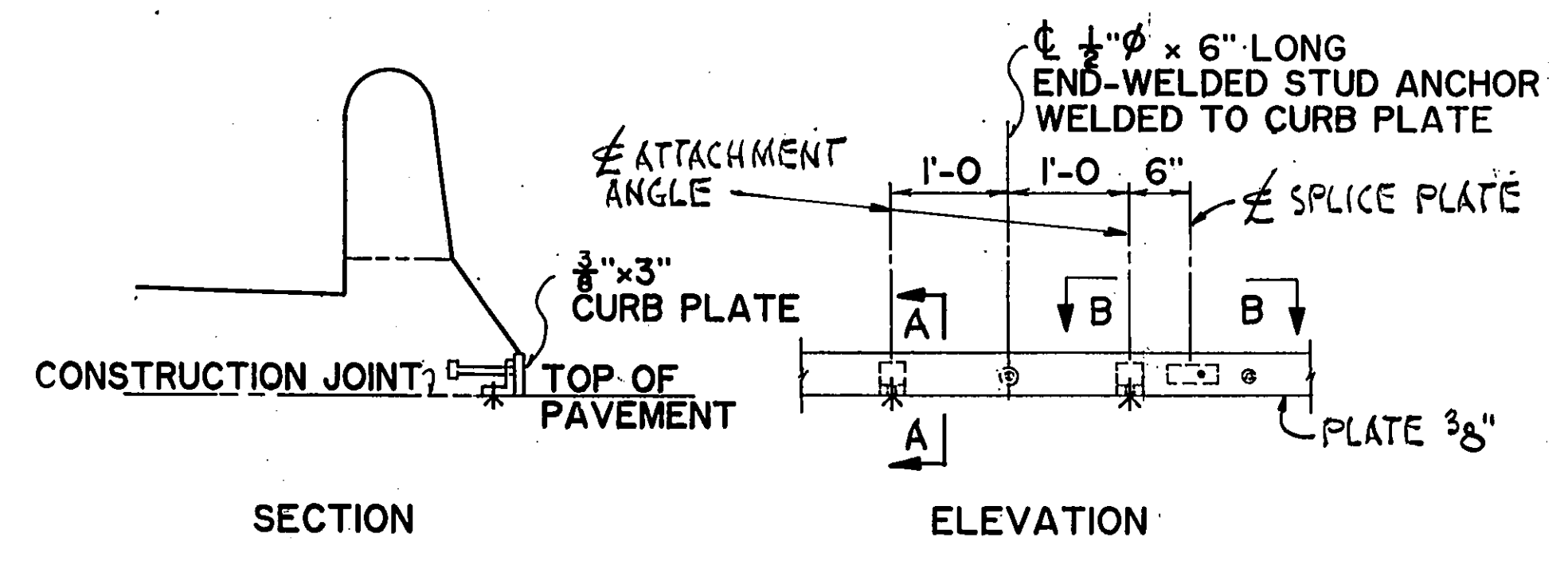
6'-0" HIGH FENCE DETAILS

END POST 2 1/2" φ
LINE POST 2" φ
ALL PIPE SHALL BE SCHEDULE 40 ~ NOMINAL DIAMETER SHOWN.



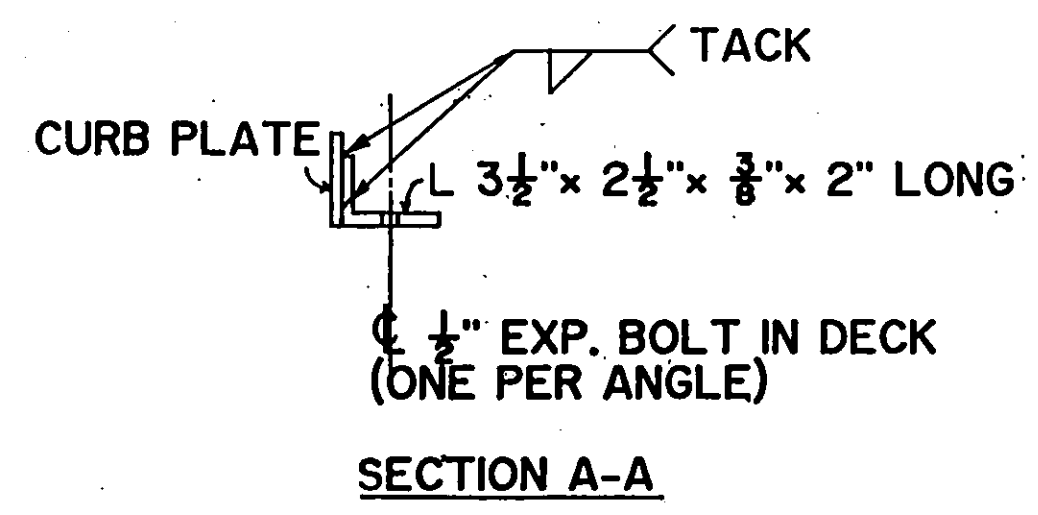
PLAN AT LIGHT POLE PILASTER

NOTE: FOR ADDITIONAL LIGHT POLE PILASTER AND LIGHTING DETAILS, SEE STANDARD DRAWING HL-20.14

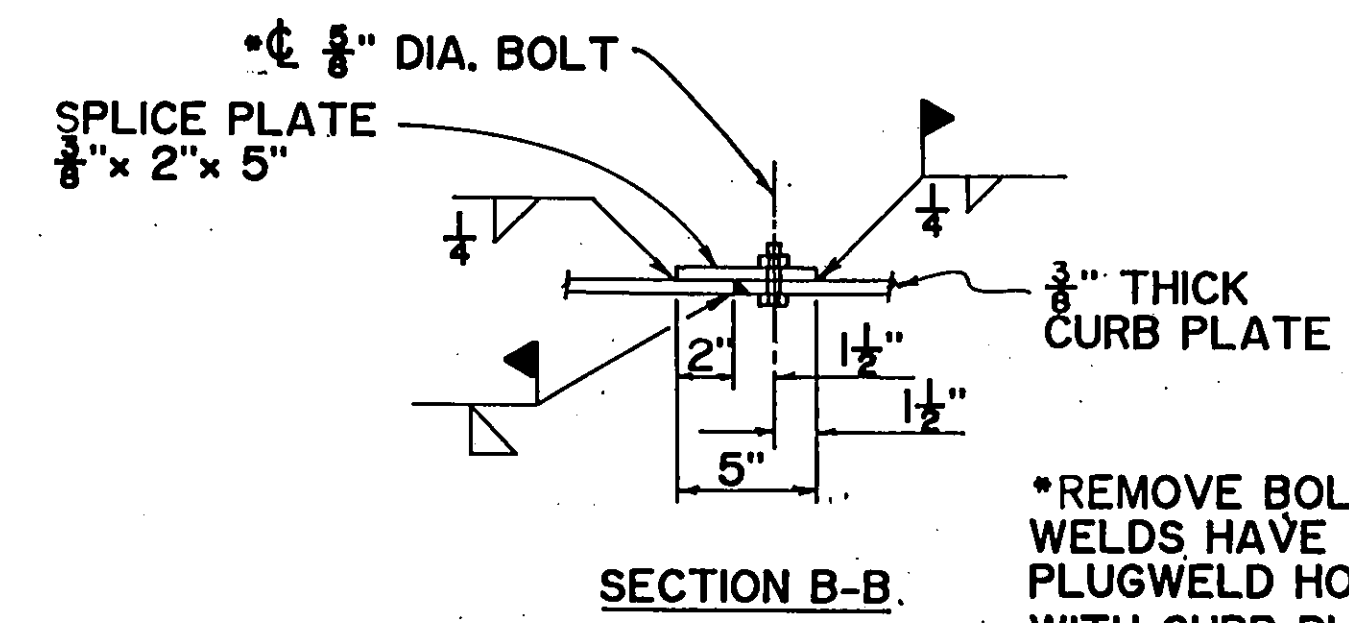


CURB PLATE DETAILS

NOTE: LIMITS OF CURB PLATES SHALL EXTEND FROM END OF REAR APPROACH SLAB TO BEGINNING OF FORWARD APPROACH SLAB. CURB PLATE, SPLICE PLATE AND ATTACHMENT ANGLE SHALL BE A36 STEEL.

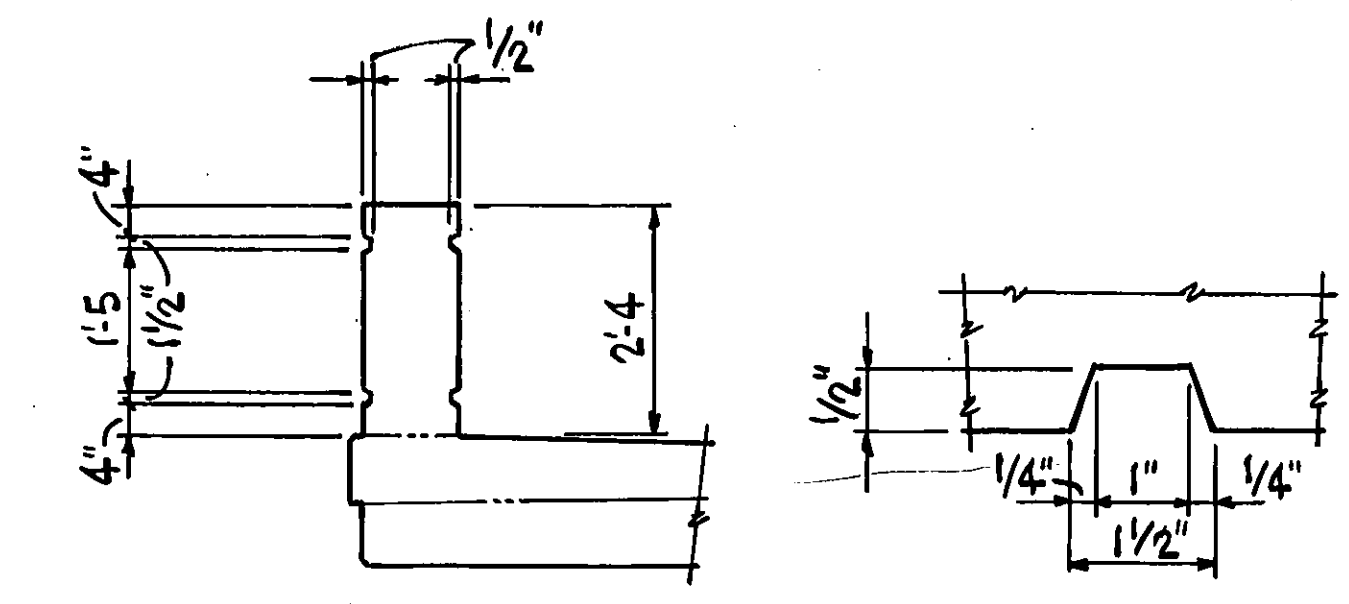


SECTION A-A

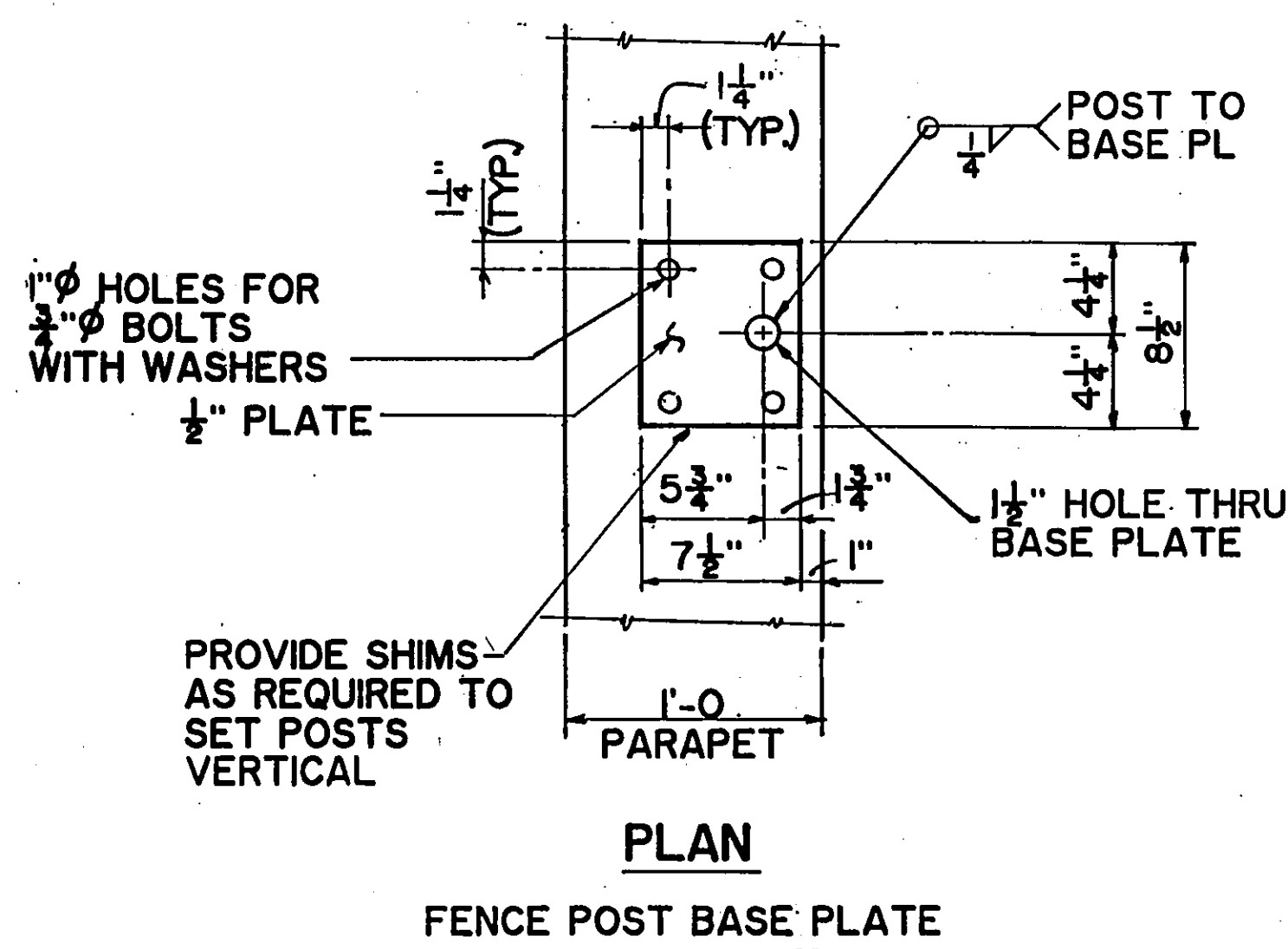


SECTION B-B

*REMOVE BOLTS AFTER FIELD WELDS HAVE BEEN COMPLETED. PLUGWELD HOLES FLUSH WITH CURB PLATE.



RUSTICATION GROOVE DETAIL

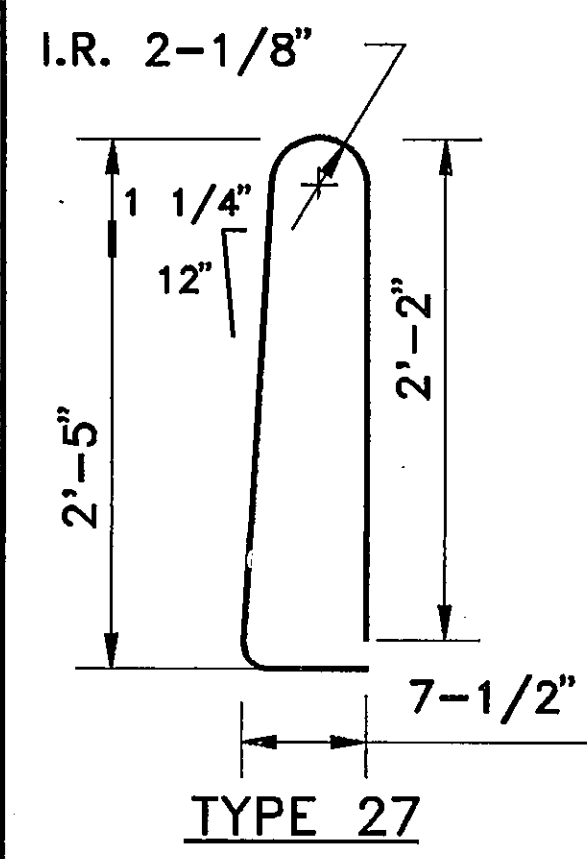


PLAN

FENCE POST BASE PLATE

THE OSBORN ENGINEERING COMPANY 19/20 CONSULTING ENGINEERS CLEVELAND, OHIO 44114			
PARAPET, FENCE & CURB PLATE DETAILS			
ABBAY AVENUE VIADUCT OVER CONRAIL, N. 8 S. R.R. AND SCRANTON ROAD CITY OF CLEVELAND, BRIDGE NO 1:001M CLEVELAND, CUYAHOGA COUNTY, OHIO			
DESIGNED	DRAWN	CHECKED	REVIEWED DATE
JRS	LBELL	JRS	D.S. 9-22-89

MARK	NO.	LENGTH	TYPE	SERIES INCR.	WEIGHT (LBS.)	A	B	C	D	ABUTMENT	
										REAR ABUT.	FORWARD ABUT.
ABUTMENTS											
EA801	96	4-8	STR		1196					38	58
EA802	20	6-5	STR		343					20	-
EA601	116	9-5	1		1641	4-7	2-7			58	58
EA602	86	14-5	1		1862	1-5	6-8			43	43
EA603	62	5-9	1		535	1-5	2-4			31	31
EA604	62	5-5	1		504	0-11	2-5			31	31
EA605	24	9-9	1		351	1-5	4-4			12	12
EA606	8	3-9	9		45	0-9	0-6	2-5	8 1/2	4	4
EA501	88	22-0	STR		2019					44	44
EA502	4	16-4	STR		68					2	2
EA503	12	7-0	STR		88					6	6
EA504	16	3-9	2		63	2-0	2-0			8	8
EA505	20	12-2	18		254	0-8	5-5			10	10
EA506	32	4-6	STR		150					16	16
EA507	4	14-8	STR		61					4	-
EA508	8	3-0	STR		25					4	4
EA509	8	5-3	27		44					4	4
ED801	42	4-11	14		551	2-7				21	21
TOTAL COATED BARS					=	9,800					

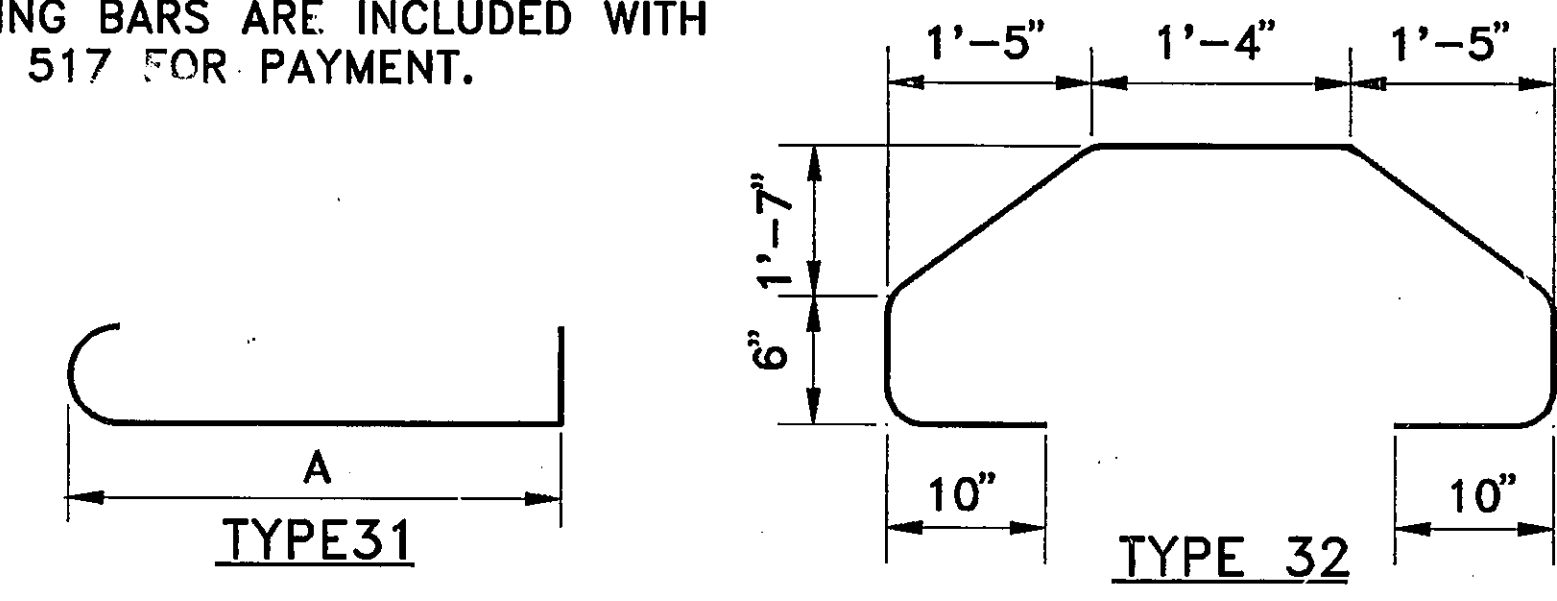


MARK	NO.	LENGTH	TYPE	SERIES INCR.	WEIGHT (LBS.)	A	B	C	D	PIER						
										1	2	3	4	5	6	7
PIERS																
P1401	119	40-2	STR		36,566					17	17	17	17	17	17	17
P1101	273	23-8	16		34,327	20-6				39	39	39	39	39	39	39
P1102	329	20-2	16		35,251	17-0				47	47	47	47	47	47	47
P901	264	9-4	2		8,378	8-0	1-7					66	66	66	66	
P902	264	30-0	STR		26,928							66	66	66	66	
P903	66	33-8	STR		7,555							66	66	66	66	
P904	66	35-4	STR		7,929								66	66	66	
P905	66	36-3	STR		8,135									66	66	
P906	66	34-5	STR		7,723										66	
P701	198	7-4	2		2,968	6-4	1-2			66	66					66
P702	198	30-0	STR		12,141					66	66					66
P703	66	10-0	STR		1,349					66	66					
P704	66	21-10	STR		2,945											
P705	66	6-2	STR		832											66
P601	56	20-10	STR		1,752					8	8	8	8	8	8	8
P602	28	19-5	STR		817					4	4	4	4	4	4	4
P603	28	16-8	STR		701					4	4	4	4	4	4	4
P604	14	26-6	STR		557					2	2	2	2	2	2	2
P605	14	21-0	STR		442					2	2	2	2	2	2	2
P606	14	15-7	STR		328					2	2	2	2	2	2	2
P607	56	14-6	4		1,220	13-1	1-5	1-0	4 7/16	8	8	8	8	8	8	8
P608	112	5-2	1		869	2-8	1-5			16	16	16	16	16	16	16
P609	28#24	11-3/19-11		4 1/2	17,075	3-3 7/7	2-0			4#24	4#24	4#24	4#24	4#24	4#24	4#24
P610	224	7-10	STR		2,636					32	32	32	32	32	32	32
P611	28	5-0	1		210	2-6	1-5			4	4	4	4	4	4	4
P401	2,808	3-7	31		6,721	2-6				296	384	456	472	480	464	256
P402	702	13-0	STR		6,096					74	96	114	118	120	116	64
P403	702	5-11	17		2,775	2-6	2-3		1-3	74	96	114	118	120	116	64
TOTAL UNCOATED BARS					=	233,880										

MARK	NO.	LENGTH	TYPE	SERIES INCR.	WEIGHT (LBS.)	A	B	C	D	SUPERSTRUCTURE	
										REAR ABUT.	FORWARD ABUT.
SUPERSTRUCTURE											
ES601	1800	42-8	STR		115354						
ES602	96	7-0	STR		1,009						
ES501	1800	42-8	STR		80,102						
ES502	1976	30-0	STR		61,829						
ES503	1452	3-2	13		4,796	10 1/2	0-9	0-6	8 1/2		
ES504	1452	2-4	2		3,534	10 1/2	1-7				
ES505	1640	7-2	18		12,259	0-7	3-0				
ES506	1928	5-3	27		10,557						
ES507	1176	3-6	STR		4,293						
ES508	232	15-6	STR		3,751						
ES509	16	14-10	STR		258						
ES510	16	2-8	STR		43						
ES511	624	21-0	STR		13,667						
ES512	468	30-0	STR		14,644						
ES401	2405	30-0	STR		48,196						
ES402	65	14-8	STR		637						
ES403	1802	5-8	STR		6,821						
ES404	1802	2-6	1		3,009	1-4	0-8				
ES405	1802	2-2	1		2,608	1-0	0-8				
EL501	36	3-10	1		144	2-1	1-0				
EL502	36	8-6	1		319	2-1	3-4				
EL503	63	7-9	32		509						
EL504	36	3-4	STR		125						
TOTAL COATED BARS					=	388,464					

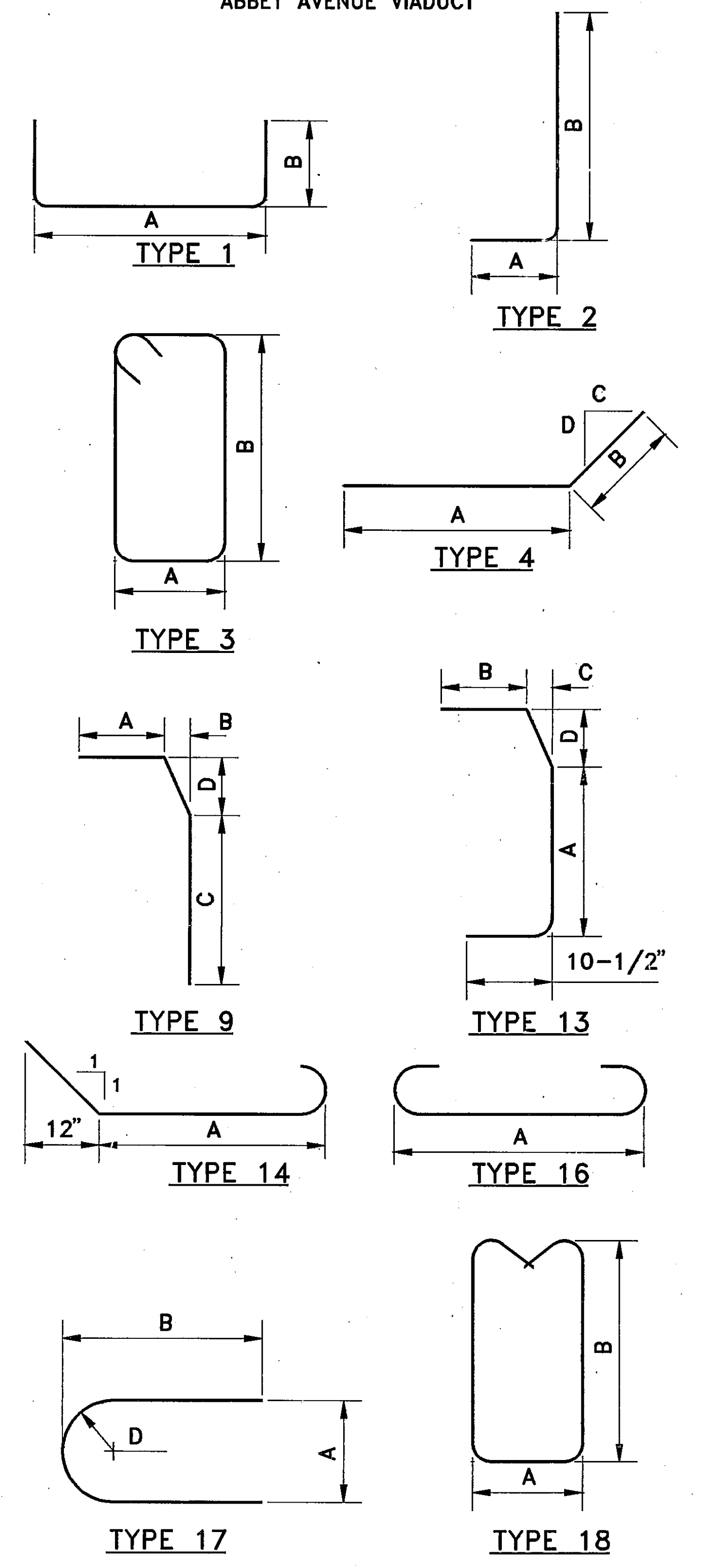
RAILING BARS											
ER501	1728	3-6	STR								
ER502	348	15-6	STR								
ER503	24	14-10	STR								
ER504	24	2-8	STR								
ER505	36	3-10	STR								
ER506	24	4-6	STR								

NOTE:
RAILING BARS ARE INCLUDED WITH ITEM 517 FOR PAYMENT.



- NOTES
- FOR 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.
 - ALL BAR DIMENSIONS ARE GIVEN OUT-TO-OUT.
 - "E" PREFIX INDICATES BAR IS TO BE EPOXY COATED.
 - ABBREVIATION: # DENOTES SERIES OF.

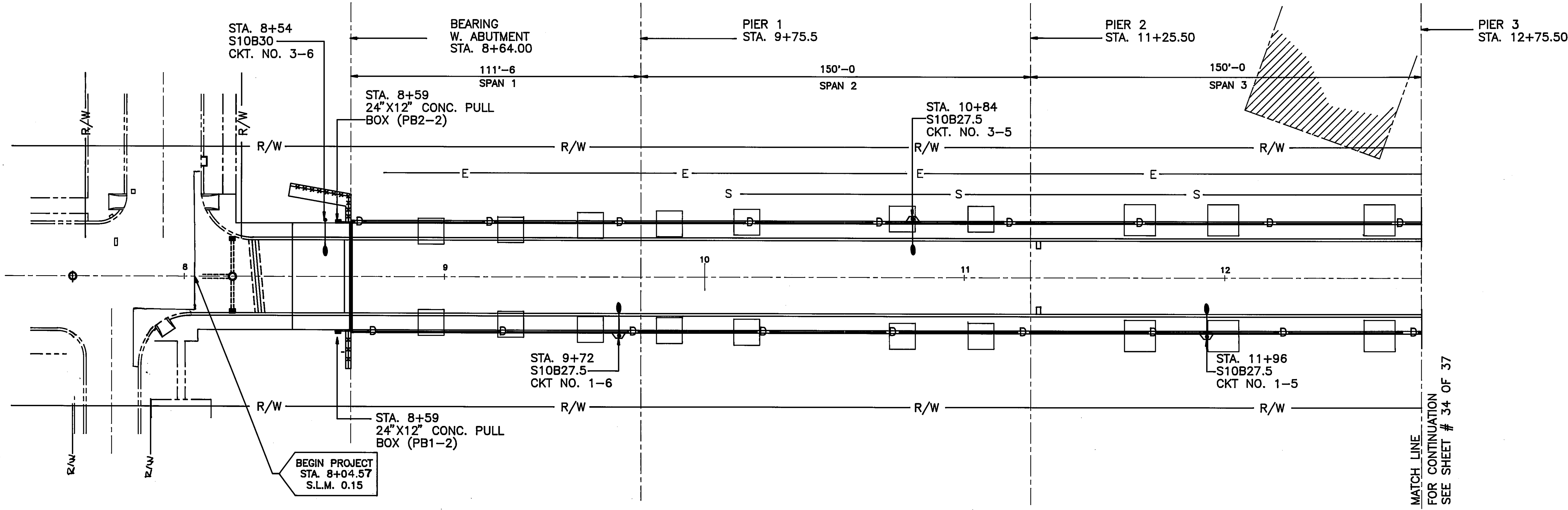
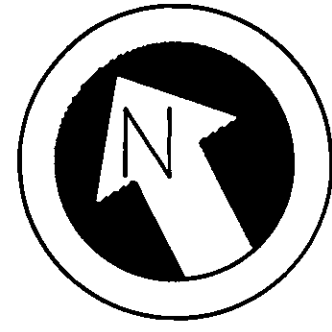
CUYAHOGA COUNTY
ABBEY AVENUE VIADUCT



THE OSBORN ENGINEERING COMPANY 20/20
CONSULTING ENGINEERS
CLEVELAND, OHIO 44116

REINFORCEMENT SCHEDULE
ABBEY AVENUE VIADUCT OVER CONRAIL,
N. & S. R.R. AND SCRANTON ROAD
CITY OF CLEVELAND BRIDGE NO. 1:001M
CLEVELAND, CUYAHOGA COUNTY, OHIO

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
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LIGHTING PLAN

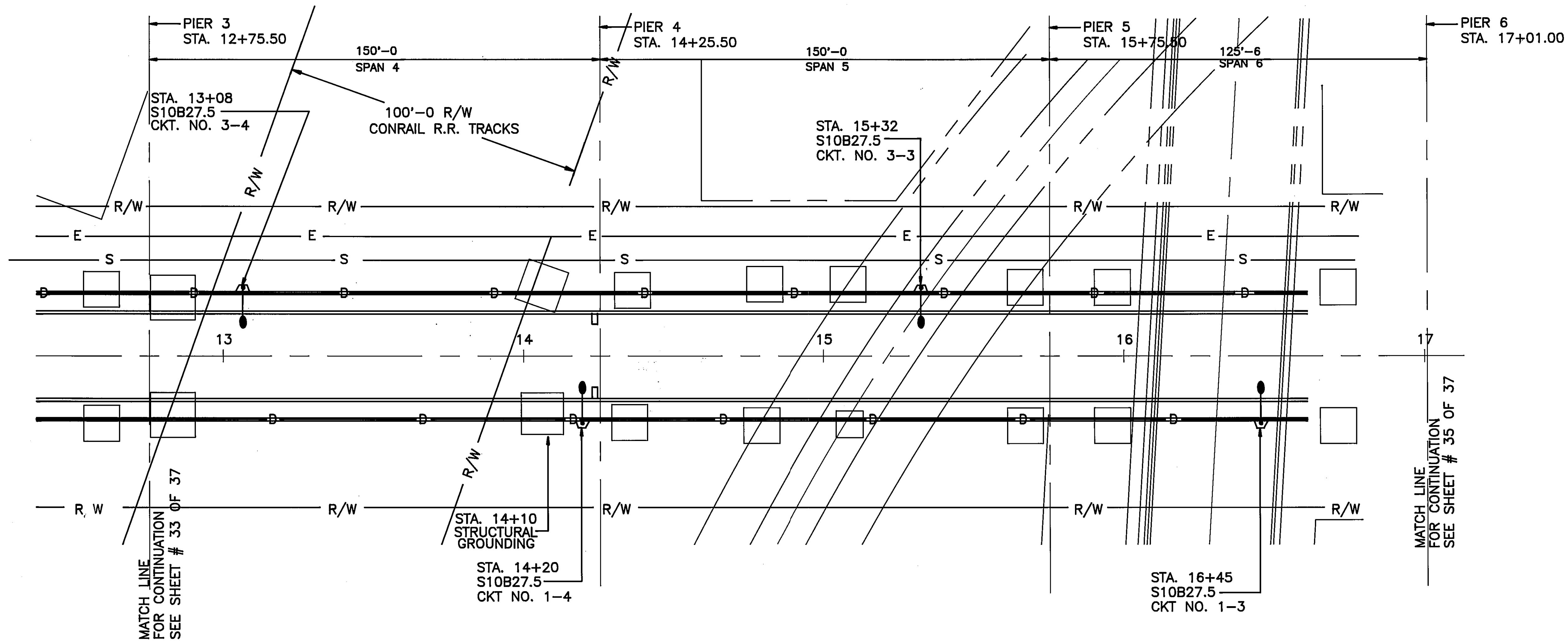
0' 10' 20' 30' 40'
SCALE

LEGEND

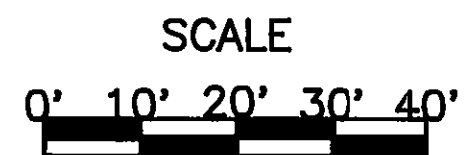
- PROPOSED PULL BOX
- 250 WATT HIGH PRESSURE SODIUM W/PHOTOCELL
- D — PROPOSED 2-2" CONDUIT WITH 3-#4 WIRE AWG 5000 VOLTS DISTRIBUTION CABLE
POLES ARE S10B27.5 AND S10B30 AS PER PLAN.
- CPP POWER POLE

MATCH LINE
FOR CONTINUATION
SEE SHEET # 34 OF 37

THE OSBORN ENGINEERING COMPANY 1/6				
PSB TECH., INC. ENGINEERS AND PLANNERS CLEVELAND, OHIO 44114				
LIGHTING PLAN SHEET 1 ABBAY AVENUE VIADUCT OVER THE CONRAIL AND NORFOLK AND SOUTHERN R.R. CITY OF CLEVELAND, BRIDGE NO 1:001M CLEVELAND, CUYAHOGA COUNTY, OHIO				
DESIGNED H.L.	DRAWN H.P.	CHECKED G.B.	REVIEWED DATE D.S. 9/22/89	REVISED



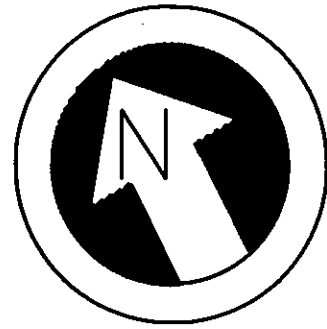
LIGHTING PLAN



LEGEND

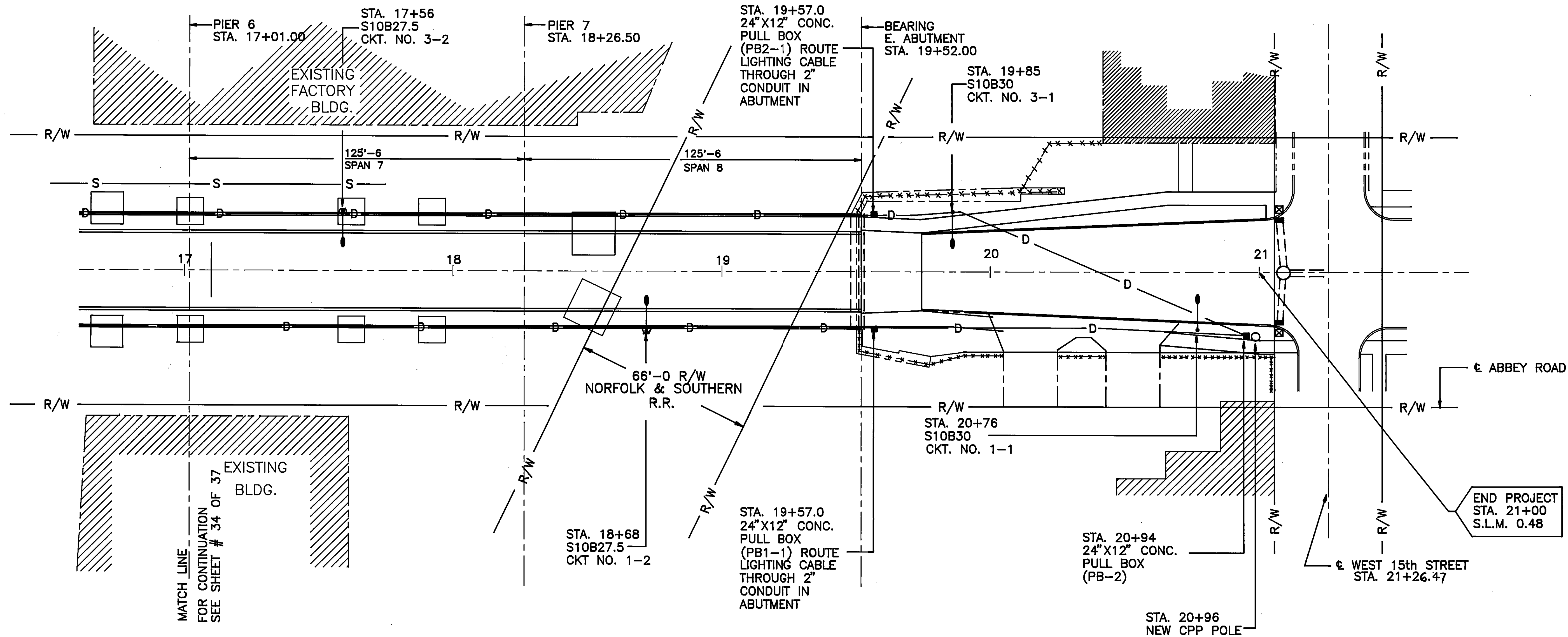
- PROPOSED PULL BOX
- PROPOSED 250 WATT HIGH PRESSURE SODIUM W/PHOTOCELL
- D — PROPOSED 2-2" CONDUIT WITH 3-#4 WIRE AWG 5000 VOLTS DISTRIBUTION CABLE
- POLES ARE S10B27.5 AND S10B30 AS PER PLAN.

THE OSBORN ENGINEERING COMPANY 2/6				
PSB TECH., INC. ENGINEERS AND PLANNERS CLEVELAND, OHIO 44114				
LIGHTING PLANS SHEET 2 ABBEY AVENUE VIADUCT OVER THE CONRAIL AND NORFOLK AND SOUTHERN R.R. CITY OF CLEVELAND, BRIDGE NO 1:001M CLEVELAND, CUYAHOGA COUNTY, OHIO				
DESIGNED H.L.	DRAWN H.P.	CHECKED G.B.	REVIEWED DATE J.S. 9/22/89	REVISED



CALC. BY GB DATE 5/90	OHIO 35 37
CHK'D BY JB DATE 5/90	FHWA REGION 5 3 6

CUYAHOGA COUNTY
 ABBEY AVENUE VIADUCT



MATCH LINE
 FOR CONTINUATION
 SEE SHEET # 34 OF 37

LEGEND

- PROPOSED PULL BOX
- 250 WATT HIGH PRESSURE W/PHOTOCELL
- D— PROPOSED 2-2" CONDUIT WITH 3-#4 WIRE AWG 5000 VOLTS DISTRIBUTION CABLE
- CPP POWER POLE

LIGHTING PLAN

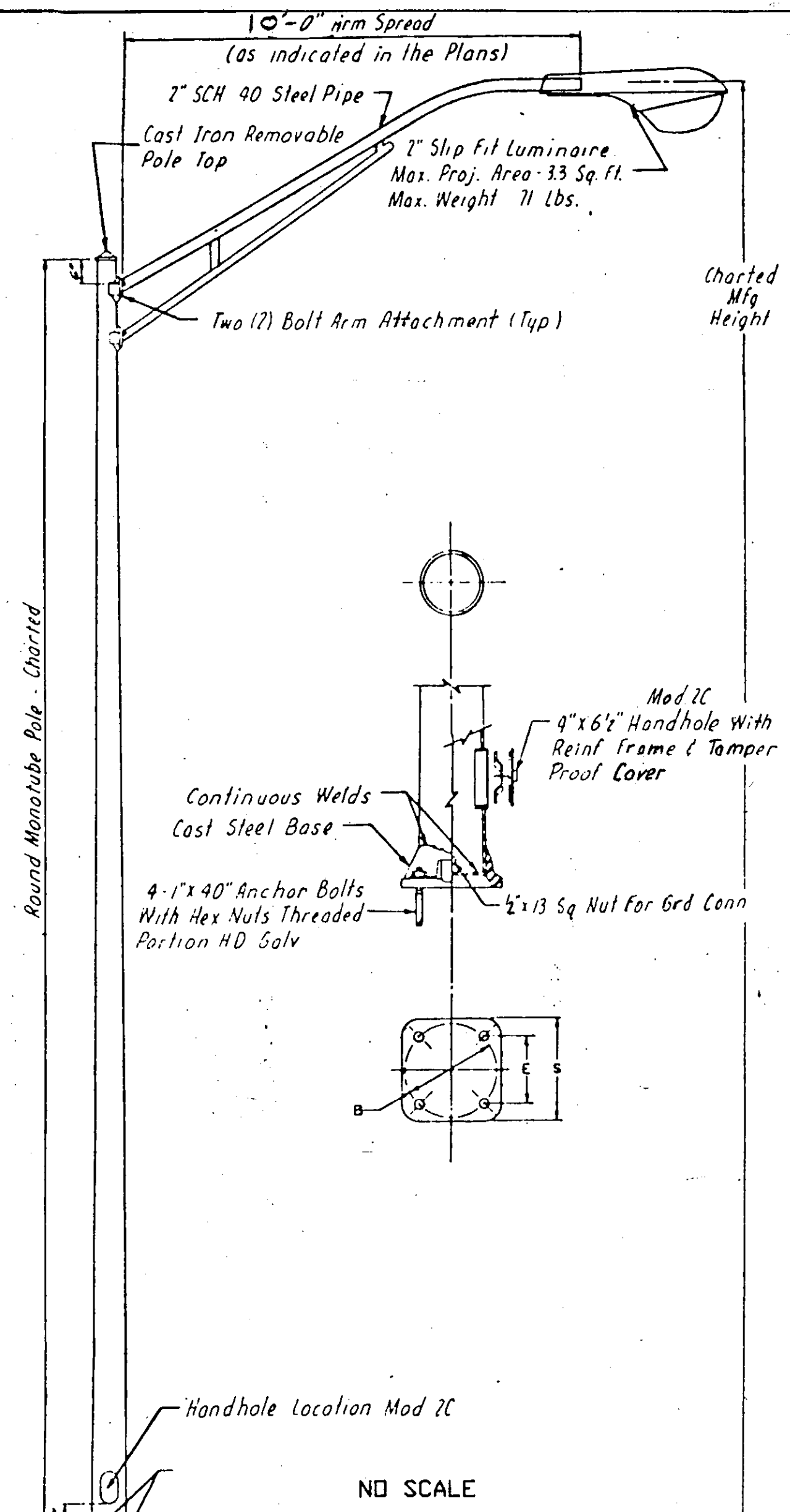
SCALE
 0' 10' 20' 30' 40'

STA. 20+96
 NEW CPP POLE
 WITH 120/240 V. TRANSFORMER AND POWER SOURCE PROVIDED BY C.P.P.
 C.P.P. WILL PROVIDE THE CONNECTION BETWEEN THE NEW TRANSFORMER AND THE DISCONNECT SWITCH.
 CONTRACTOR TO PROVIDE THE METER BASE, DISCONNECT SWITCH AND CONTROL CENTER
 MOUNTED ON A NEW POLE PROVIDED BY C.P.P. UNDER ITEM 625 POWER SERVICE AS PER PLAN.

THE OSBORN ENGINEERING COMPANY 3/6
 PSB TECH., INC. ENGINEERS AND PLANNERS
 CLEVELAND, OHIO 44114

LIGHTING PLANS SHEET 3
 ABBEY AVENUE VIADUCT OVER THE
 CONRAIL AND NORFOLK AND SOUTHERN R.R.
 CITY OF CLEVELAND, BRIDGE NO 1101M
 CLEVELAND, CUYAHOGA COUNTY, OHIO

DESIGNED H.L.	DRAWN H.P.	CHECKED G.B.	REVIEWED DATE D.S. 9/22/89	REVISED
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NO SCALE
 LIGHT POLE DESIGN S10B30, AS PER PLAN

MTG. H.T. (FT.)	CATALOG NO. 1	SHAFT SIZE	BASE (IN.)	BOLT CIRCLE (IN.)	THK (IN.)	BOLT PROJ. (IN.)	ANCHOR BOLT (FT.)	SHIPPING WT.(Lbs.)
30'-0"	STS-3018	7.0X3.5X25'-0"	10.5	9.5-10.5	1	2.25	1X40	328

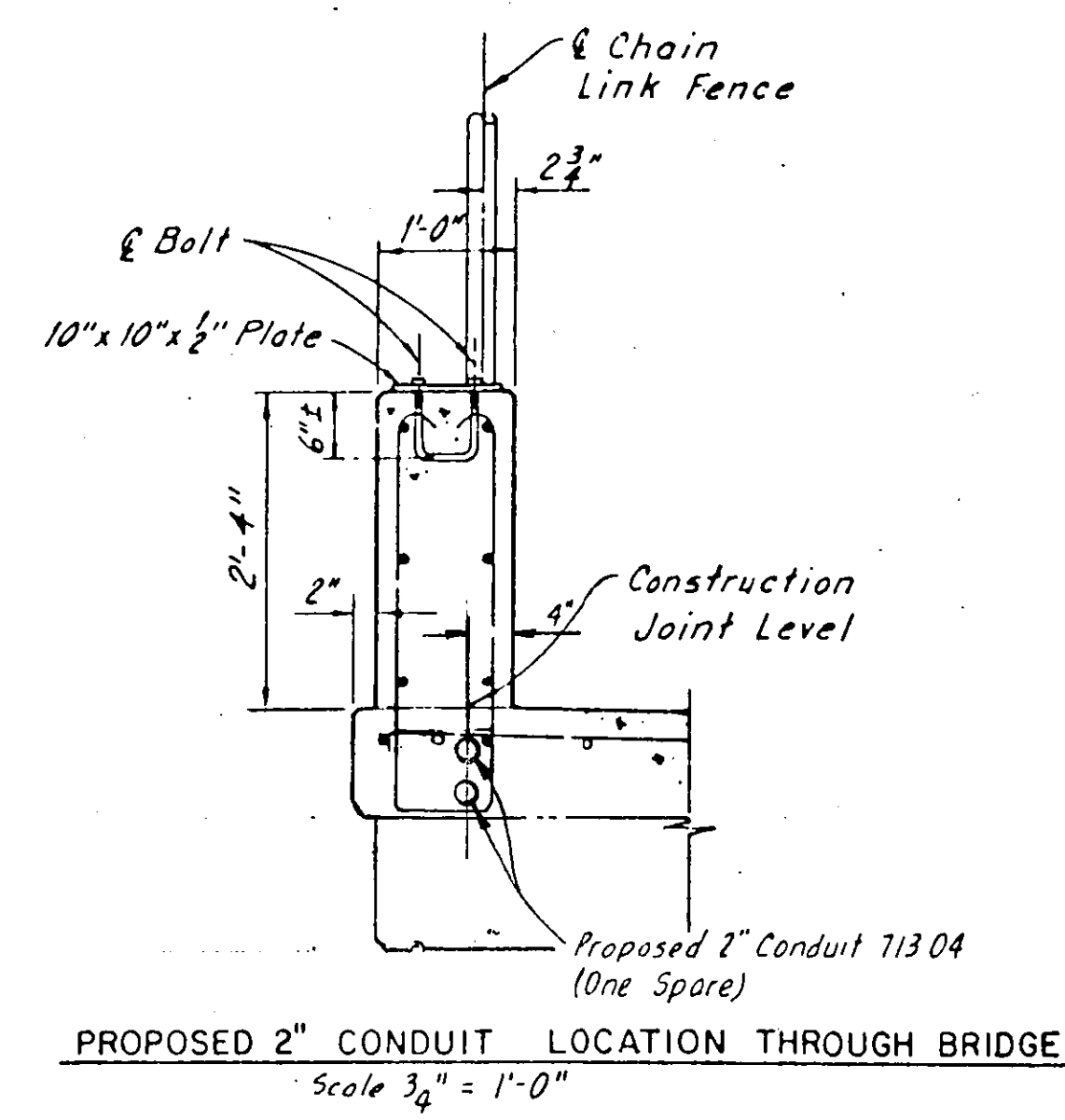
LIGHT POLE DESIGN S10B27.3, AS PER PLAN

MTG. H.T. (FT.)	CATALOG NO. 1	SHAFT SIZE	BASE (IN.)	BOLT CIRCLE (IN.)	THK (IN.)	BOLT PROJ. (IN.)	ANCHOR BOLT (FT.)	SHIPPING WT.(Lbs.)
27'-6"	STS-27.518	7.0X3.5X22'-6"	10.5	9.5-10.5	1	2.25	1X40	310

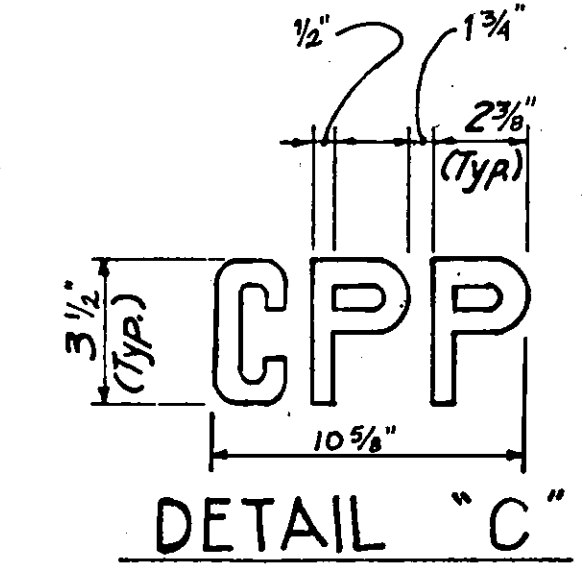
LIGHT STANDARD SHALL CONFORM TO THE SPECIFICATIONS HEREIN AND SHALL BE SIMILAR TO THE UNITED LIGHTING STANDARDS, INC. SHOWN ON THIS DRAWING.

THE STEEL SHAFT OF THE POLE SHALL BE ROUND AND FABRICATED FROM NOT LESS THAN #11 GAUGE SAE 1015 STEEL. THE SHAFT SHALL HAVE ONLY ONE LONGITUDINAL, AUTOMATICALLY, ELECTRICALLY WELDED JOINT. ONLY ONE LENGTH OF STEEL SHALL BE USED. AFTER COLD FORMING AND WELDING, THE TAPPER STEEL SHALL BE COLD ROLLED ON A MANDREL WITH SUFFICIENT PRESSURE TO INCREASE THE YIELD STRENGTH TO A MINIMUM OF 48,000 P.S.I. AND TO FLATTEN THE WELD. TO INSURE THAT THE THROAT OF THE WELD IS EQUAL TO THE FULL WALL THICKNESS, THE LONGITUDINAL WELDS SHALL NOT BE GROUNDED. THE TUBE PRODUCED SHALL BE OF TRUE TAPER ROUND MONOTUBE POLE. IF THE SHAFT IS FORMED BY MEANS OF BRAKE OR OTHER PROCESS WHICH DOES NOT UTILIZE COLD ROLLING ON A MANDREL TO INSURE FULL THICKNESS DIMENSION IN THE THROAT OF THE WELD, IT SHALL BE FABRICATED FROM STEEL SHEET HAVING A THICKNESS OF NOT LESS THAN #7 MANUFACTURE'S STANDARD GAUGE. TUBE SHALL BE WELDED TO CAST STEEL BASE CONFORMING TO ASTM A-27 GRADE 65-35(HEAT TREATED)

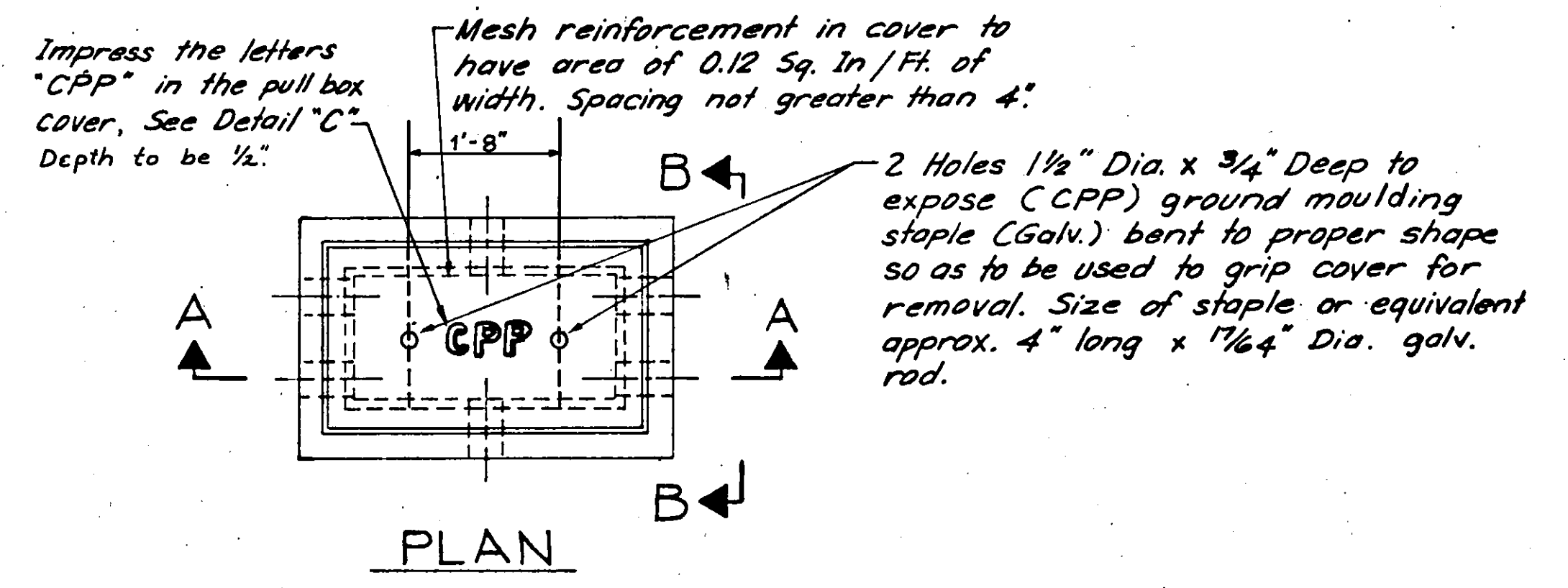
THE BRACKET ARM ASSEMBLY SHALL CONSIST OF AN UPPER AND LOWER MEMBER SECURELY JOINED BY MEANS OF VERTICAL STRUT OR STRUTS. THE UPPER AND LOWER MEMBERS SHALL BE STEEL PIPE OF 2" I.P.S. OR LARGER (AS REQUIRED BY THE DESIGN NUMBER SPECIFIED). THE POLE END OF BOTH MEMBERS SHALL HAVE A STEEL FITTING WELDED TO IT, WHICH WILL PERMIT THE POSITIONING OF THE ARM ON THE PLATE OF THE POLE HELD ONLY BY THE GRAVITY, WHILE THE ARM IS SECURED TO THE POLE BY CAP SCREWS.



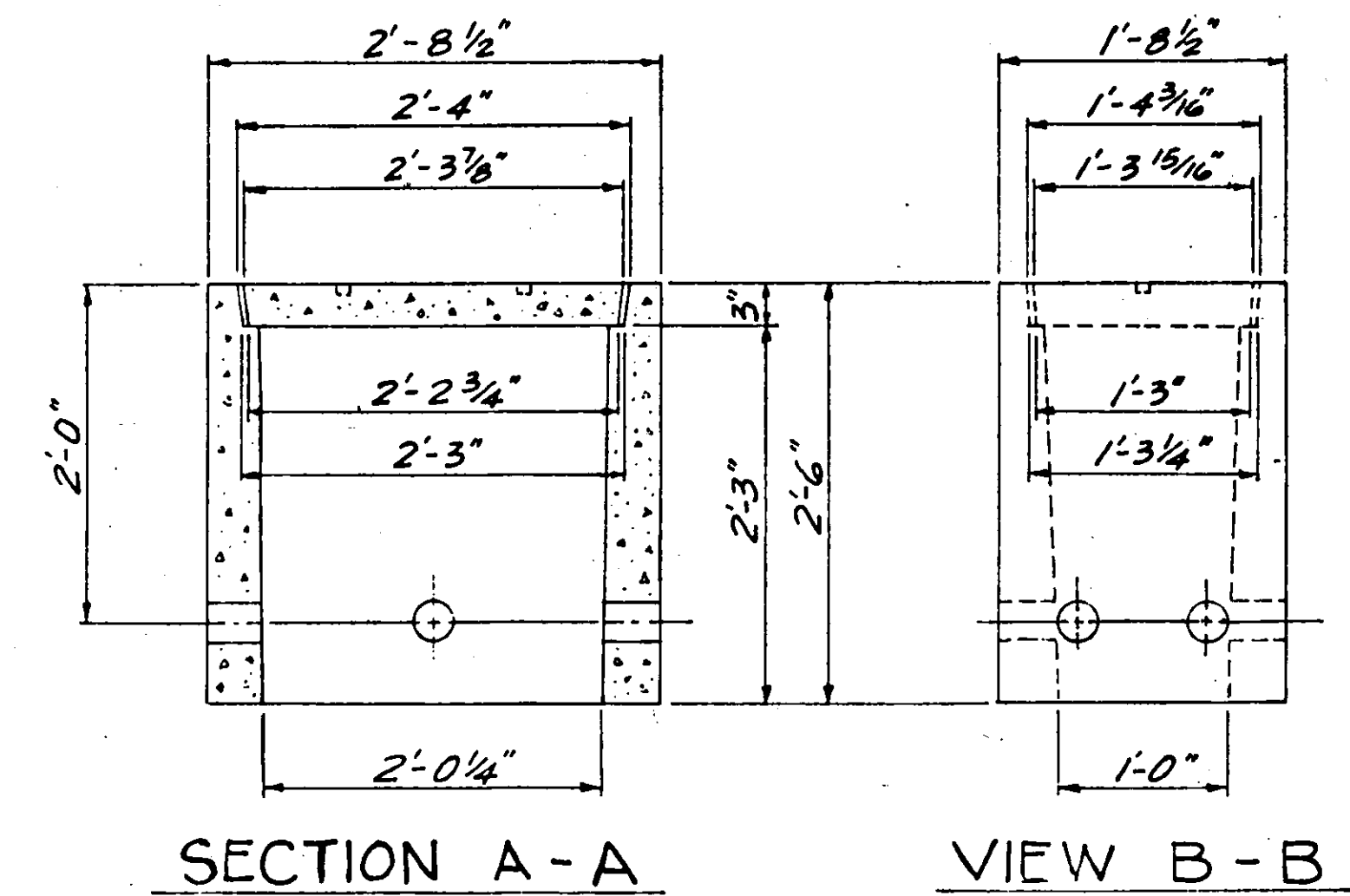
PROPOSED 2" CONDUIT LOCATION THROUGH BRIDGE
 Scale 3/4" = 1'-0"



DETAIL "C"



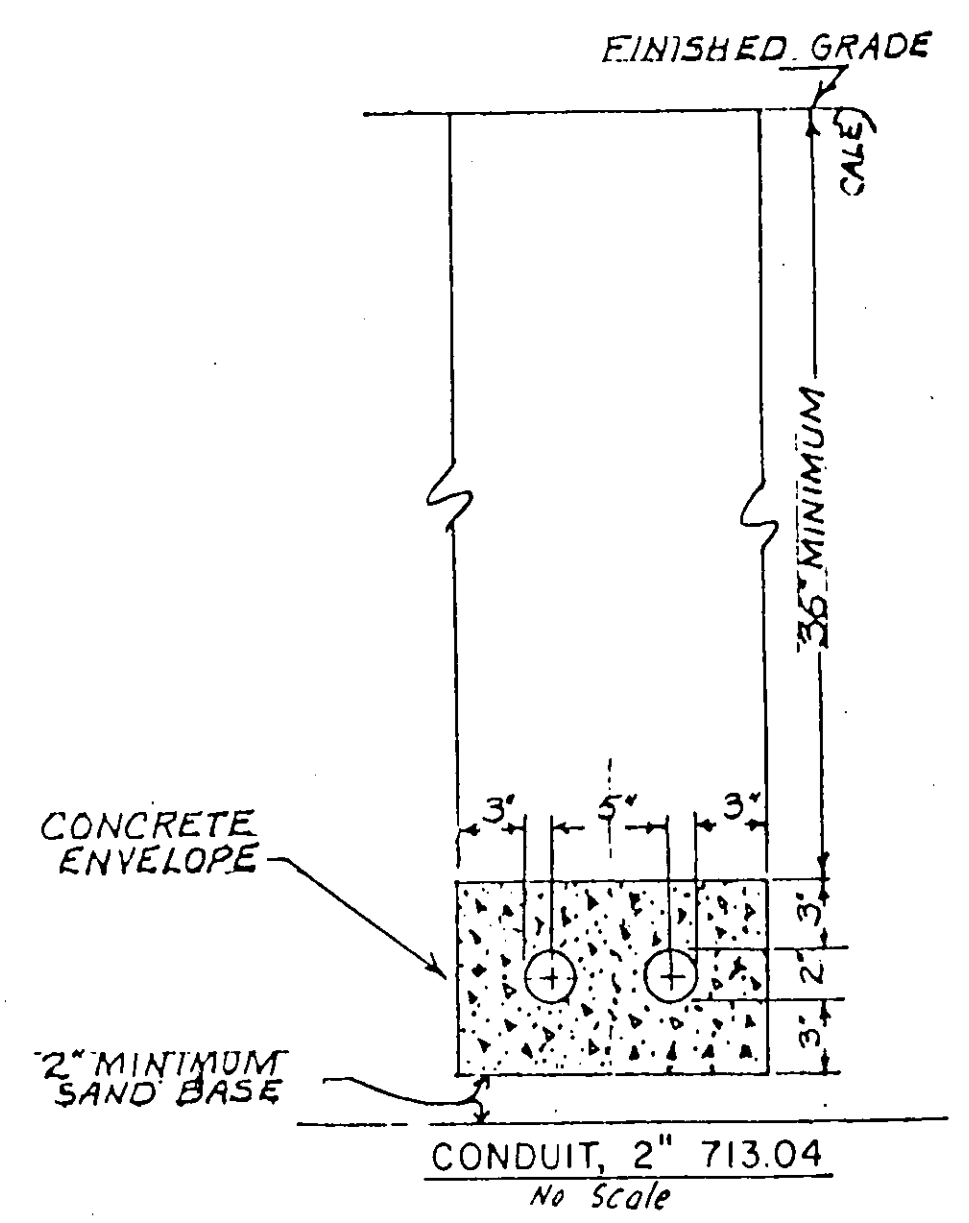
PLAN



SECTION A-A

VIEW B-B

PRECAST CONCRETE PULLBOX



- NOTES:
- 1.) THE CONTRACTOR SHALL FURNISH 2-2" CONDUITS, 713.04 (ONE SPARE CONDUIT)
 - 2.) ALL BENDS WILL HAVE A MINIMUM 36" CENTERLINE RADIUS
 - 3.) A MAXIMUM OF 2-90 BENDS EITHER VERTICAL OR HORIZONTAL PER RUN.
 - 4.) A MINIMUM OF 2" SAND BASE FREE OF STONES, ETC. BENEATH THE CONCRETE ENVELOPE.
 - 5.) A MINIMUM 3" CONCRETE ENVELOPE ON ALL SIDES OF THE CONDUIT.
 - 6.) A MINIMUM 36" BETWEEN TOP OF CONCRETE ENVELOPE AND FINISHED GRADE.
 - 7.) COST OF CONCRETE AND SAND BASE TO BE INCLUDED WITH THE UNIT PRICE BID PER LINEAR FOOT OF CONDUIT, 2" 713.04.
 - 8.) CONCRETE SHALL BE CLASS C.

ITEM 625 PULL BOX, 713.08, 24", AS PER PLAN
 THIS ITEM SHALL INCLUDE FURNISHING AND INSTALLING THE PULL BOX AS DETAILED ON THIS SHEET AT LOCATIONS SHOWN ON THE PLANS. SEE NOTE 8 FOR CONCRETE STRENGTH. ALSO INCLUDED IN THIS ITEM IS 5 L.F. FOREA. PULL BOX UNDER DRAIN INSTALLED IN ACCORDANCE WITH G03 AT EACH PULL BOX AND OUTLETTED AS DIRECTED BY THE ENGINEER.

MESH REINFORCEMENT TO BE PER 509.02, GRADE 60.

CALC. BY: GB DATE 5/90		OHIO	37
CHK'D BY: JB DATE 5/90		FHWA REGION 5	37
			6
			6

CUYAHOGA COUNTY
 ABBEY AVENUE VIADUCT

LIGHTING NOTES

SPECIFICATIONS:

THESE NOTES ARE SUPPLEMENTAL TO ITEMS 625 AND 713 OF THE STATE OF OHIO DEPARTMENT OF TRANSPORTATION CONSTRUCTION AND MATERIAL SPECIFICATIONS.

REFERENCE SHALL BE MADE TO STANDARD DRAWINGS LISTED ON THE TITLE SHEET OF THESE PLANS.

625.03-GENERAL

THE POWER SUPPLYING AGENCY FOR THE BRIDGE LIGHTING ON THIS PROJECT IS:

CLEVELAND PUBLIC POWER
 1201 LAKESIDE AVENUE
 CLEVELAND, OHIO 44114
 PHONE: (216) 664-3922

THE ABBEY AVENUE VIADUCT LIGHTING CIRCUITRY IS DESIGNED ON THE BASIS OF A 5% MAXIMUM VOLTAGE DROP WITH A NO. 4 CIRCUIT CABLE. POWER FOR THE THIS VIADUCT WILL BE PROVIDED FROM A NEW POLE, INSTALLED BY THE POWER SUPPLYING AGENCY. THIS POLE WILL BE LOCATED NEAR THE SOUTHEAST CORNER OF WEST 15TH STREET.

THE CONTRACTOR SHALL CONTACT CLEVELAND PUBLIC POWER FOR ADDITIONAL INFORMATION AS TO EXACT TIME AND PERIOD FOR MAKING THE TAPPING TO THE NEARBY CIRCUIT AND POLE LOCATION. THE PROPOSED LIGHTING SHALL BE 240 VOLTS, THREE WIRE, GROUNDING NEUTRAL LINE.

UNDERGROUND UTILITIES:

THE LOCATIONS OF THE UNDERGROUND UTILITIES SHOWN ON THE PLANS ARE AS OBTAINED FROM THE OWNERS OF THE UTILITY AS REQUIRED BY SECTION 153.64 DRC.

UTILITY MODIFICATION:

AT LEAST TWO WORKING DAYS PRIOR TO COMMENCING CONSTRUCTION OPERATION IN AN AREA WHICH MAY INVOLVE UNDERGROUND UTILITY FACILITIES, THE CONTRACTOR SHALL NOTIFY THE PROJECT ENGINEER, THE REGISTERED UTILITY PROTECTION SERVICE AND THE OWNERS OF EACH UNDERGROUND UTILITY FACILITY SHOWN IN THE PLANS. THE OWNER OF THE UNDERGROUND UTILITY FACILITY SHALL, WITHIN FORTY EIGHT HOURS, EXCLUDING SATURDAYS, SUNDAYS AND LEGAL HOLIDAYS, AFTER NOTICE IS RECEIVED, STAKE, MARK, OR OTHERWISE DESIGNATE THE LOCATION OF THE UNDERGROUND UTILITY FACILITIES IN THE CONSTRUCTION AREA IN SUCH A MANNER AS TO INDICATE THEIR COURSE TOGETHER WITH APPROPRIATE DEPTH AT WHICH THEY ARE INSTALLED. THE MARKING OR LOCATING SHALL BE COORDINATED TO STAY APPROXIMATELY TWO DAYS AHEAD OF THE PLANNED CONSTRUCTION.

ESTIMATED QUANTITIES:

SPECIFIC LOCATIONS AND USAGE OF ESTIMATED QUANTITIES SET UP ON THIS PLAN TO BE USED "AS DIRECTED BY ENGINEER" SHALL BE MADE A MATTER OF RECORD BY INCORPORATION INTO THE FINAL CHANGE ORDER GOVERNING COMPLETION OF THIS PROJECT. ESTIMATED QUANTITIES OF MATERIALS SHALL NOT BE ORDERED FOR DELIVERY TO THE PROJECT UNLESS AUTHORIZED BY THE ENGINEER.

UNDERDRAINS FOR THE PULL BOXES:

REFERENCE IS MADE TO STANDARD DRAWING HL-30.11 FOR DETAILS OF DRAINING OF THE PULL BOXES. UNDERDRAINS FOR THE PULL BOXES SHALL BE USED AS DIRECTED BY THE ENGINEER AND SHALL BE PROVIDED WHERE THE LENGTH REQUIRED FOR A SATISFACTORY OUTLET DOES NOT EXCEED APPROXIMATELY 20 FEET. A CONTINGENCY QUANTITY OF 80 LINEAR FEET OF ITEM 603, 4" CONDUIT TYPE "E" IS INCLUDED IN THE LIGHTING GENERAL SUMMARY FOR THIS PURPOSE.

UTILITY OWNERSHIP

CITY OF CLEVELAND
 DEPARTMENT OF PUBLIC UTILITIES
 DIVISION OF WATER AND HEAT
 1201 LAKESIDE AVENUE
 CLEVELAND, OHIO 44114
 PHONE: (216) 664-3065

OHIO BELL TELEPHONE COMPANY
 5755 GRANGER ROAD
 ROOM 201
 INDEPENDENCE, OHIO 44131
 PHONE: (216) 822-6037

CITY OF CLEVELAND
 DEPARTMENT OF PUBLIC UTILITIES
 DIVISION OF WATER POLLUTION CONTROL
 1835 LAKESIDE AVENUE
 CLEVELAND, OHIO 44114
 PHONE: (216) 664-2513
 CLEVELAND PUBLIC POWER
 1201 LAKESIDE AVENUE
 CLEVELAND, OHIO 44114
 PHONE: (216) 664-3922

CLEVELAND ELECTRIC ILLUMINATING COMPANY
 THE ILLUMINATING BUILDING
 55 PUBLIC SQUARE
 CLEVELAND, OHIO 44113
 PHONE: (216) 622-8900

EAST OHIO GAS COMPANY
 1201 EAST 55TH STREET
 CLEVELAND, OHIO 44103
 PHONE: (216) 361-2753

CITY OF CLEVELAND
 DIVISION OF ENGINEERING AND CONSTRUCTION
 CITY HALL - ROOM 518
 CLEVELAND, OHIO 44114
 PHONE: (216) 664-2381

625.07-713.11 LUMINAIRES:

STYLE B LUMINAIRES SHALL HAVE SINGLE RATED 240V, 250 WATT, INTEGRAL CONSTANT WATTAGE ISOLATION TYPE BALLASTS FOR THE WITH HIGH PRESSURE SODIUM LAMPS AND SHALL BE GENERAL ELECTRIC M400, CROUSE-HINDS DVM, AMERICAN 25/26, OR EQUAL APPROVED BY THE ENGINEER. LUMINAIRES SHALL HAVE PHOTOCELLS.

ITEM 625-CABLE SPLICING KIT:

THIS ITEM SHALL CONSIST OF PROVIDING AND INSTALLING AN APPROVED CABLE SPLICING KIT AS DESCRIBED IN PARAGRAPH 5 OF SECTION 713.15 OF THE ODOT CONSTRUCTION AND MATERIAL SPECIFICATIONS. THE COST OF ALL MATERIALS, LABOR, AND EQUIPMENT NECESSARY FOR THIS ITEM SHALL BE INCLUDED IN THE UNIT PRICE BID FOR EACH "ITEM 625-CABLE SPLICING KIT".

POWER CONNECTION:

THE CONTRACTOR SHALL CONNECT THE ELECTRICAL CABLE TO THE POWER SOURCE AT LOCATION SHOWN IN THE PLANS. THE COST OF THE POWER CONNECTING, WEATHERHEAD, CONDUIT RISER AND OTHER EQUIPMENT NEEDED TO COMPLETE THE WORK IS INCIDENTAL AND SHALL BE INCLUDED IN THE UNIT PRICE BID PER LINEAR FOOT OF ITEM 625, DISTRIBUTION CABLE.

713.14-LAMPS

HIGH PRESSURE SODIUM LAMPS SHALL BE GENERAL ELECTRIC "LUCALUX", WESTINGHOUSE "CERAMALUX", SYLVANIA "LUMALUX" OR EQUAL APPROVED BY THE ENGINEER.

PLASTIC CAUTION TAPE:

THE LOCATION OF THE UNDERGROUND DUCT CABLE OR NON-METALLIC CONDUIT, WHEN INSTALLED IN LOCATIONS OTHER THAN THE NORMAL OR ALTERNATE TRENCH ALIGNMENT SHOWN ON STANDARD CONSTRUCTION DRAWING HL-1, SHALL BE MARKED BY THE USE OF A CONTINUOUS IDENTIFYING TAPE SHALL BE AN INERT MATERIAL, APPROXIMATELY 6" WIDE, COMPOSED OF POLYETHYLENE PLASTIC, HIGHLY RESISTANT TO ALKALIS, ACID OR OTHER CHEMICAL COMPONENTS LIKELY TO BE ENCOUNTERED IN SOILS. THE TAPE SHALL BE BRIGHT YELLOW IDENTIFYING PRINTING "ELECTRIC" IN BLACK LETTERS, ONE SIDE ONLY. TAPES SHALL BE SUPPLIED IN CONTINUOUS ROLLS WITH THE IDENTIFYING LETTERING REPEATED TRENCH WITH ONE STRIP PLACED APPROXIMATELY DOWN THE CENTERLINE AND APPROXIMATELY 8" TO 12" BELOW THE FINAL FINISHED GRADE. THE TAPE SHALL BE PLACED IN THE TRENCH WITH THE PRINTED SIDE UP AND SHALL BE ESSENTIALLY PARALLEL WITH THE FINISHED SURFACE. THE CONTRACTOR SHALL TAKE NECESSARY PRECAUTIONS TO INSURE THAT THE TAPE IS NOT PULLED, DISTORTED, OR OTHERWISE MISPLACED IN COMPLETING THE TRENCH BACKFILL. TAPE SHALL BE ALLEN SYSTEM'S, TERRA TAPE, OR EQUAL APPROVED BY THE ENGINEER. PAYMENT SHALL BE INCLUDED IN THE UNIT PRICE BID PER LINEAR FOOT FOR ITEM 625 TRENCH.

ITEM 625-LIGHT POLE ANCHOR BOLTS FOR BRIDGES AND RETAINING WALLS:

ANCHOR BOLTS FOR MOUNTING LIGHT POLES ON BRIDGE AND RETAINING WALLS SHALL CONFORM TO THE REQUIREMENTS OF 713.01 AND DETAILS SHOWN ON THE PLANS AND STANDARD DRAWINGS, FOR THE RESPECTIVE POLES TO BE PLACED THEREON.

PAYMENT SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ONE POLE, AND THIS PAYMENT SHALL CONSTITUTE FULL COMPENSATION FOR FURNISHING AND PLACING THE BOLTS.

CONDUIT ON STRUCTURE:

FOR ABBEY AVENUE STRUCTURE, EXPANSION FITTING FOR CONDUIT INSTALLED ON THE STRUCTURE SHALL BE OZ TYPE AX, CROUSE-HINDS TYPE XJ-4, OR EQUAL AS APPROVED BY THE ENGINEER. EACH EXPANSION FITTING SHALL HAVE A COPPER EXTERNAL BONDING JUMPER.

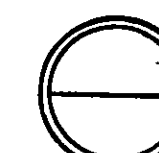
HIGH VOLTAGE TEST:

A HIGH VOLTAGE DIRECT CURRENT TEST, AS DESCRIBED IN SUPPLEMENTAL SPECIFICATION 1003, SHALL BE PERFORMED ON ALL DISTRIBUTION CABLE, AND DUCT CABLE SYSTEMS TO BE INSTALLED ON THIS PROJECT. THE TEST SHALL NOT BE PERFORMED UNTIL AFTER ALL NEW CONSTRUCTION, SUCH AS GUARDRAIL, FENCE, DELINEATOR POSTS, SIGN SUPPORTS, ETC., IN THE IMMEDIATE VICINITY OF THE LOCATION OF THE CABLE RUN BEING TESTED, HAS BEEN COMPLETED.

POWER CONNECTION:

THE CONTRACTOR SHALL CONNECT THE ELECTRICAL CABLES TO THE POWER SOURCE AT THE LOCATION SHOWN IN THE PLANS. THE COST OF THE POWER-CONNECTING, WEATHERHEAD, CONDUIT RISER AND OTHER EQUIPMENT NEEDED TO COMPLETE THE WORK IS INCIDENTAL AND SHALL BE INCLUDED IN THE UNIT PRICE PER LINEAR FOOT OF ITEM 625, DISTRIBUTION CABLE.

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STRUCTURE SUBSURFACE INVESTIGATION

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GENERAL INFORMATION

Drive sample / Press sample / Core borings

Drive sample borings are made by means of a mechanically-powered rotary-type drilling machine, employing a 2" O.D., 1-3/8" I.D. split spoon sampler, at 2.5 and/or 5-foot depth intervals, driven by means of a 140 lb. drop hammer with a free fall of 30". The number of blows required to drive the sampler 18" is considered the standard penetration test.

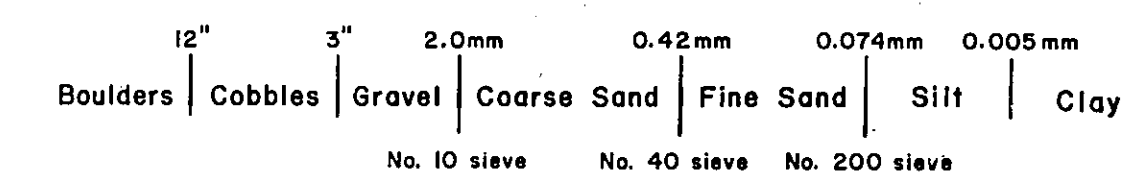
Drive/press borings are made by means of a mechanically-powered rotary-type drilling machine, employing a 2" O.D., 1-3/8" I.D. split spoon sampler, and 3" O.D. thin wall press sampler. The press sampler is advanced by continuous uniform pressure, applied by the drilling machine.

Core borings are made by means of a mechanically-powered rotary-type drilling machine, employing a NXM core barrel with industrial diamond cutting head.

The boring log sheets display a graphic plot of the information obtained including depth and elevation of the sample, type of sample, the standard penetration test readings in three 6-inch increments, depth and elevation of press samples; field number assigned to sample, sample description - based on laboratory tests utilizing the Casagrande AC classification system - and gradation, plasticity and moisture determinations. Results of strength and consolidation testing, if performed on undisturbed samples, will appear graphically on separate enclosures. Rock samples are displayed on the log sheets including depth and elevation of the sample, amount of recovery and a visual classification based on type, color, degree of hardness, grain size, deterioration, bedding, acid reaction and other qualifying factors.

At depths where materials are bouldery or gravelly to the extent that the sampler can not be utilized, a wash sample is procured and visually classified, in order to determine the general characteristics of the material. These samples are not considered sufficiently representative to warrant laboratory testing.

PARTICLE SIZE DEFINITIONS



NOTE - ALL AVAILABLE SOIL AND BEDROCK INFORMATION WHICH CAN BE CONVENIENTLY SHOWN ON THE STRUCTURE FOUNDATION INVESTIGATION SHEETS HAS BEEN SO REPORTED. ADDITIONAL SUBSURFACE INVESTIGATIONS MAY HAVE BEEN MADE TO STUDY SOME SPECIAL ASPECT OF THE PROJECT. COPIES OF THIS DATA, IF ANY, MAY BE INSPECTED IN THE DISTRICT DEPUTY DIRECTOR'S OFFICE, THE BUREAU OF TESTS AT 1600 WEST BROAD STREET, THE PAVEMENT AND SOILS SECTION OF THE BUREAU OF LOCATION AND DESIGN OR IN THE BRIDGE BUREAU AT 25 SOUTH FRONT STREET.

LEGEND

- AUGER BORING LOCATION - PLAN VIEW
- PRESS AND/OR DRIVE SAMPLE AND/OR CORE BORING LOCATION - PLAN VIEW
- TR** TOP OF ROCK
- CAPPED PILE
- FOOTING
- FOOTING ON PILE
- HORIZONTAL BAR ON BORING LOG INDICATES THE DEPTH THE SAMPLE WAS TAKEN
- X/Y/Z** FIGURES BESIDE THE BORING LOG IN PROFILE INDICATE THE NUMBER OF BLOWS FOR STANDARD PENETRATION TEST
 X = NO. OF BLOWS FOR FIRST 6"
 Y = NO. OF BLOWS FOR SECOND 6"
 Z = NO. OF BLOWS FOR THIRD 6"
- INDICATES FREE WATER ELEVATION
- INDICATES STATIC WATER ELEVATION

SYMBOLS OF ROCK TYPES

- COAL
- WEATHERED MUDSTONE
- MUDSTONE
- WEATHERED SHALE
- SHALE
- CLAYSTONE
- SILTSTONE
- WEATHERED SANDSTONE
- SANDSTONE
- LEACHED DOLOMITE
- DOLOMITE
- LEACHED LIMESTONE
- LIMESTONE
- BOULDERS or COBBLES

GEOLOGY OF THE SITE

THE PROJECT SITE LIES ON THE GLACIATED, FLAT, LAKE PLAIN PHYSIOGRAPHIC PROVINCE AND LIES JUST SOUTH OF THE CUYAHOGA RIVER. THE WISCONSIN ICE SHEET PASSED OVER THIS AREA. THE GLACIAL MATERIAL AT THE SITE CONSISTS OF LACUSTRINE (LAKE) DEPOSITS WHICH ARE COMPOSED OF SILT AND CLAY, COMMONLY LAMINATED. THIS MATERIAL RANGES IN DEPTH FROM 5 TO 50 FEET AND IS COMMONLY UNDERLAIN BY GLACIAL TILL.

BEDROCK IN THIS VICINITY CONSISTS OF SHALES BELONGING TO THE DEVONIAN AGE OHIO SHALE FORMATION.

EXPLORATION

THE EXPLORATION CONSISTED OF SEVEN (7) DRIVE SAMPLE-CORE BORINGS, MADE BY MEANS OF A MECHANICALLY-POWERED HOLLOW STEM AUGER MOUNTED ON A MOBILE PLATFORM, PERFORMED BETWEEN MAY, 1986 AND FEBRUARY, 1987.

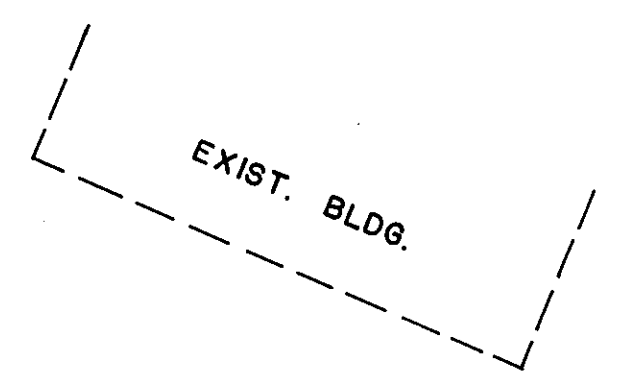
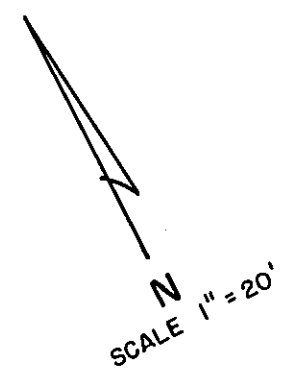
INVESTIGATIONAL FINDINGS

THE TEST BORINGS DISCLOSED ALTERNATING LAYERS OF SANDY SILT AND SANDS UNDERLAIN BY SILTY CLAY. SHALE BEDROCK WAS ENCOUNTERED BENEATH THE SILTY CLAY AT ELEVATIONS RANGING FROM 489 TO 472. FOR SPECIFIC CONDITIONS AT VARIOUS DEPTHS, REFER TO THE INDIVIDUAL TEST BORING LOGS WHICH FORM A PART OF THIS REPORT.

SUBSURFACE INVESTIGATION
 ABBEY AVENUE VIADUCT
 OVER THE CONRAIL & NORFOLK & SOUTHERN RAILROADS
 CUYAHOGA COUNTY, OHIO

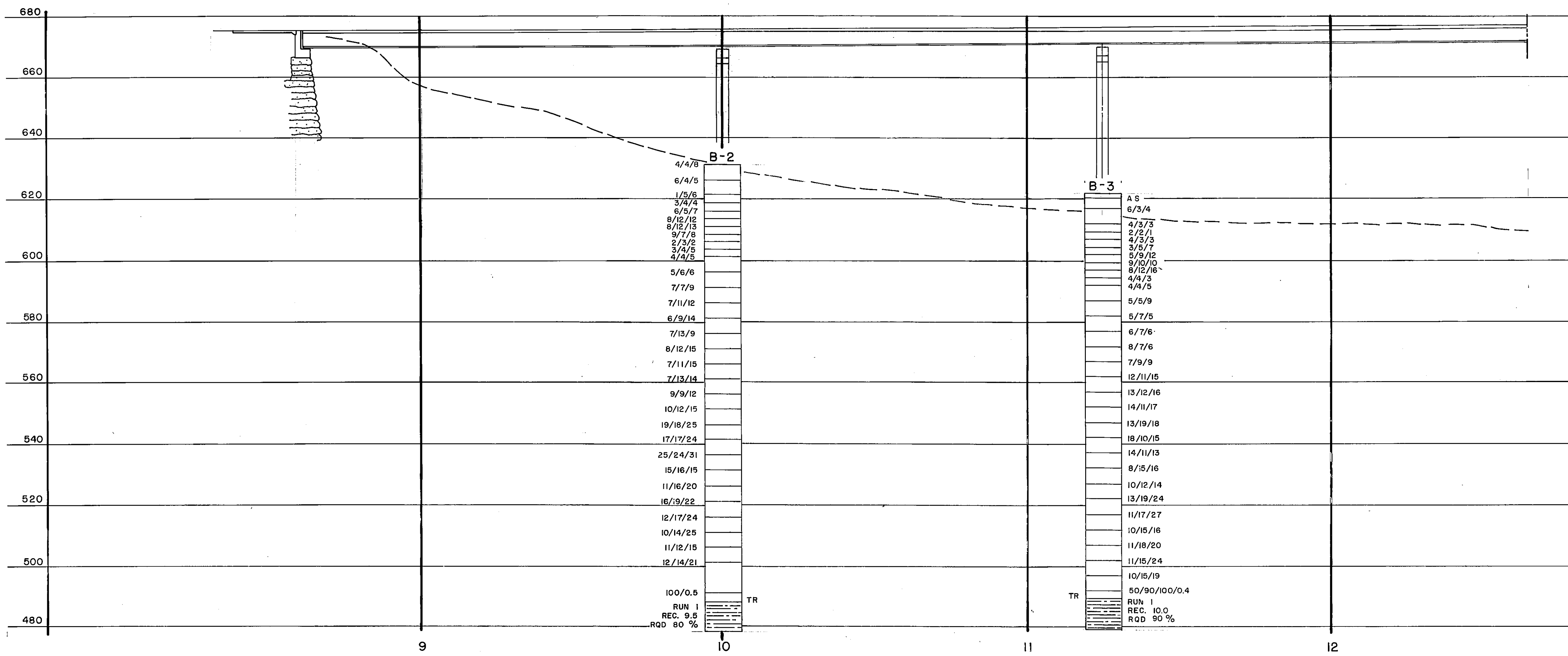
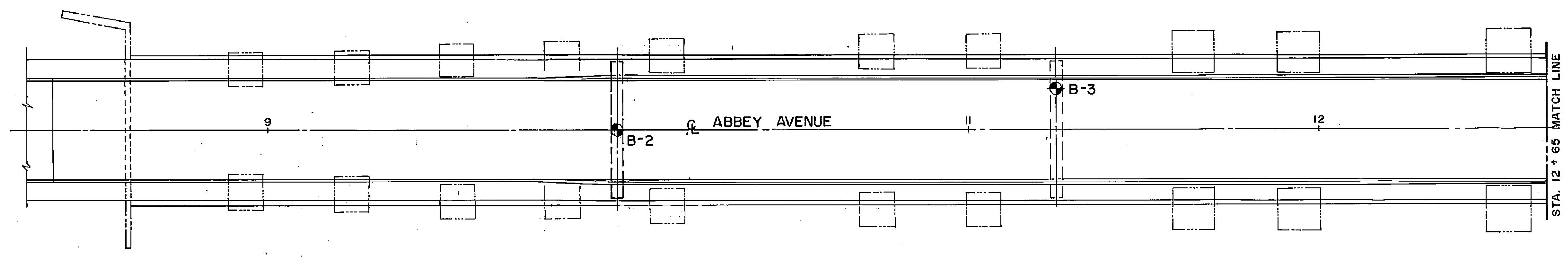
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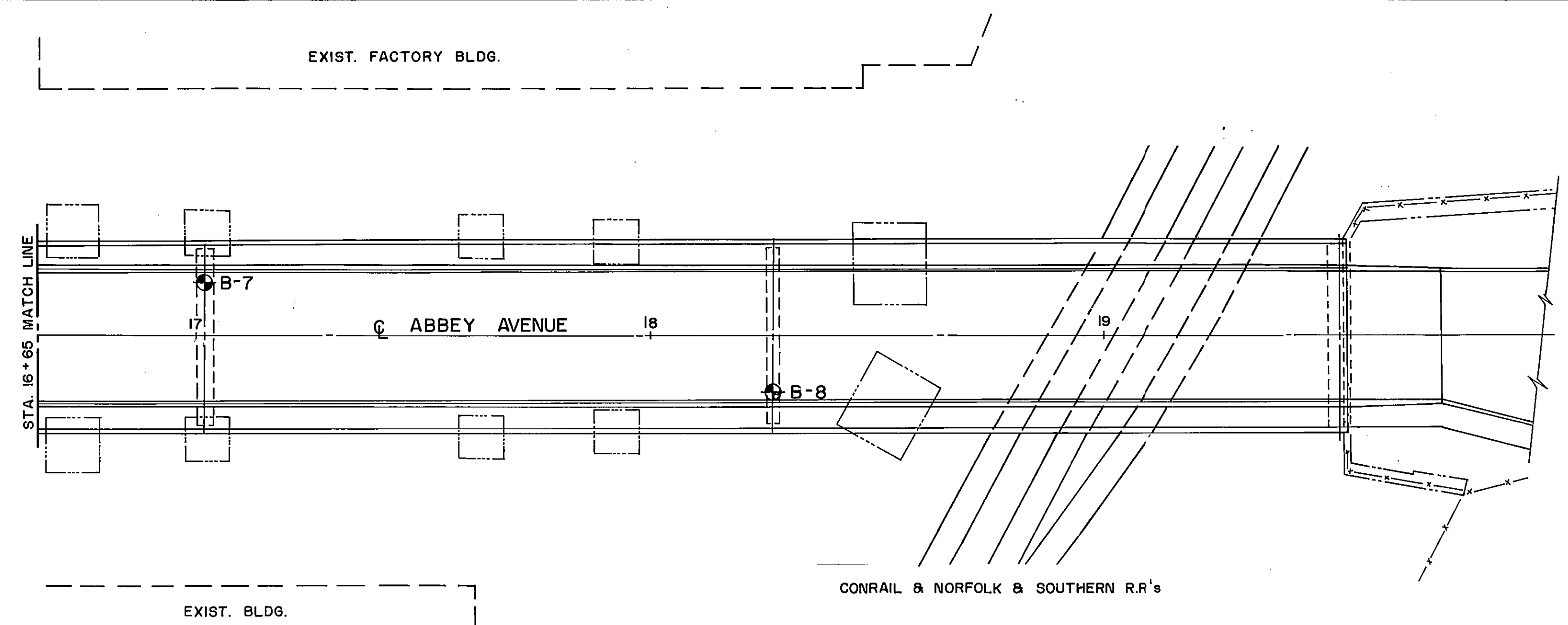
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SUBSURFACE INVESTIGATION
ABBEE AVENUE VIADUCT
 OVER THE CONRAIL & NORFOLK & SOUTHERN RAILROADS
 CUYAHOGA COUNTY, OHIO

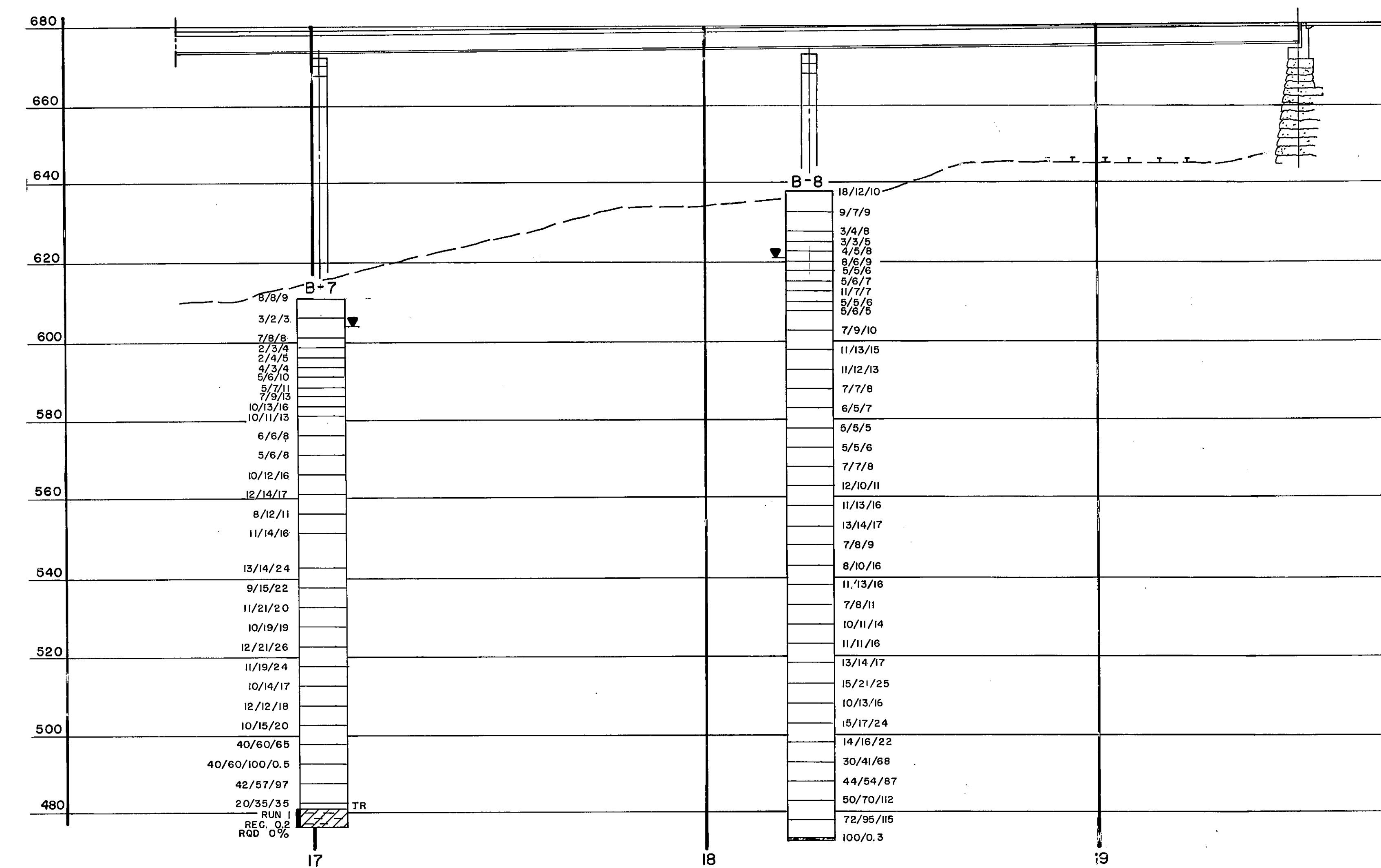
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SUBSURFACE INVESTIGATION
ABBAY AVENUE VIADUCT
 OVER THE CONRAIL & NORFOLK & SOUTHERN RAILROADS
 CUYAHOGA COUNTY, OHIO

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 216-666-2200

56478

LOG OF BORING

Date Started 1-22-87 Sampler Type Split Spoon Dia. 2.0 Water Elev. ---
 Date Completed 1-22-87 Casing Length -- Dia. ---
 Boring No. B-2 Station & Offset Sta. 10 + 00 g Surface Elev. 627.67

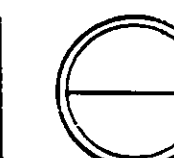
ELEV.	DEPTH	STD. PEN. (N)	REC. FT.	LOSS FT.	DESCRIPTION	SAMPLE NO.	SAMPLE TYPE	PHYSICAL CHARACTERISTICS										SHTL CLASS.		
								% AGG.	% C. SAND	% F. SAND	% SILT	% CLAY	LL	P.L.	P.I.	W.C.				
631.7	0					1	SS													
	5	4-4-8	0.4		Medium dense to loose, gray SAND, some silt, wet.	2	SS													
	10	1-5-6	1.0			3	SS													
621.4		3-4-4	1.4		Stiff, gray SILT, little clay, trace sand, moist to wet.	4	SS													
615.9		6-5-7	1.2		Stiff, gray SILTY CLAY, moist.	5	SS													
615.2		8-12-12	1.5			6	SS													
	20	8-12-13	1.4			7	SS													
		9-7-8	1.5		Very stiff to stiff, gray SILT, trace clay, moist.	8	SS													
	25	2-3-2	1.5			9	SS													
		3-4-5	1.5			10	SS													
602.8		4-4-5	1.5			11	SS													
	35	5-6-6	1.5			12	SS													
	40	7-7-9	1.5			13	SS													
	45	7-11-12	1.5			14	SS													
		6-9-14	1.4		Stiff to very stiff, gray SILTY CLAY, moist.	15	SS													
	55	7-13-9	1.5			16	SS													
	60	8-12-15	1.5			17	SS													
	65	7-11-15	1.5			18	SS													
	70	7-13-14	1.5			19	SS													

LOG OF BORING

Date Started 1-22-87 Sampler Type Split Spoon Dia. 2.0 Water Elev. ---
 Date Completed 1-22-87 Casing Length -- Dia. ---
 Boring No. B-2 (Cont.) Station & Offset Sta. 10 + 00 g Surface Elev. 627.67

ELEV.	DEPTH	STD. PEN. (N)	REC. FT.	LOSS FT.	DESCRIPTION	SAMPLE NO.	SAMPLE TYPE	PHYSICAL CHARACTERISTICS										SHTL CLASS.		
								% AGG.	% C. SAND	% F. SAND	% SILT	% CLAY	LL	P.L.	P.I.	W.C.				
561.7	0																			
	75	9-9-12	1.4		SAME AS ABOVE	20	SS													
	80	10-12-15	1.5			21	SS													
549.2		19-18-25	1.5			22	SS													
	90	17-17-24	1.5			23	SS													
	95	25-24-31	1.5			24	SS													
	100	15-16-15	1.5			25	SS													
	105	11-16-20	1.5			26	SS													
	110	16-19-22	1.5		Hard, gray SILTY CLAY, trace sand, moist.	27	SS													
	115	12-17-24	1.5			28	SS													
	120	10-14-25	1.4			29	SS													
	125	11-12-15	1.5			30	SS													
	130	12-14-21	1.5			31	SS													
	135																			
	140	100/0.5	0.5			32	SS													

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SUBSURFACE INVESTIGATION
 ABBEY AVENUE VIADUCT
 OVER THE CONRAIL & NORFOLK & SOUTHERN RAILROADS
 CUYAHOGA COUNTY, OHIO

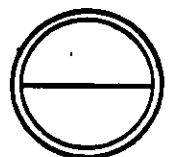
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 AKRON, OH 44321
 216-666-2200

LOG OF BORING

Date Started 1-13-87 Sampler Type Split Spoon Dia. 2.0 Water Elev. ---
 Date Completed 1-13-87 Casing Length -- Dia. ---
 Boring No. B-3 Station & Offset Sta. 11 + 25 11.5' LT. Surface Elev. 617.43

FWWA REGION	STATE	PROJECT



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LOG OF BORING

Date Started 1-22-87 Sampler Type Split Spoon Dia 2.0 Water Elev. ---
 Date Completed 1-22-87 Casing Length -- Dia ---
 Boring No. B-2 (Cont.) Station & Offset Sta. 10 + 00 G Surface Elev. 627.67

ELEV.	DEPTH	STD. PEN. (N)	REC. Ft.	LOSS Ft.	DESCRIPTION	SAMPLE NO.	SAMPLE TYPE	PHYSICAL CHARACTERISTICS								SHTL CLASS.	
								% AGG.	% C. SAND	% F. SAND	% SILT	% CLAY	L.L.	P.L.	P.I.		W.C.
491.7	0				SAME AS ABOVE												
488.7	145	RQD 80%	9.5	0.5	Gray SILTY SHALE, slightly altered, firm, thin bedded, micaceous.	Run 1	NXM										
478.7					TERMINATION DEPTH 153.0 FEET												

ELEV.	DEPTH	STD. PEN. (N)	REC. Ft.	LOSS Ft.	DESCRIPTION	SAMPLE NO.	SAMPLE TYPE	PHYSICAL CHARACTERISTICS								SHTL CLASS.	
								% AGG.	% C. SAND	% F. SAND	% SILT	% CLAY	L.L.	P.L.	P.I.		W.C.
622.4	0				TOPSOIL	1	A.S.										
617.4	5	6-3-4	1.2			2	SS										
	10	4-3-3	1.3		Medium stiff, black SANDY SILT, little organics, wet.	3	SS										
609.9		2-2-1	1.5			4	SS										
	15	4-3-3	1.3		Soft to medium stiff, brown SANDY SILT, trace clay, trace gravel, moist.	5	SS										
604.9		3-5-7	1.5			6	SS										
	20	5-9-12	1.5		Stiff, brown and black mottled CLAYEY SILT some sand, trace gravel, moist.	7	SS										
602.4						8	SS										
	25	8-12-16	1.3		Very stiff, brown and gray mottled SANDY SILT, little clay, moist.	9	SS										
598.7						10	SS										
	30	4-4-5	0.9		Very stiff to stiff, gray SILT, little clay, moist.	11	SS										
	35	5-5-9	1.5			12	SS										
582.4						13	SS										
	40	5-7-5	1.5			14	SS										
	45	6-7-6	1.3			15	SS										
	50	8-7-6	1.4			16	SS										
	55	7-9-9	1.5		Stiff to very stiff, gray SILTY CLAY, trace sand, moist.	17	SS										
	60	12-11-15	1.4			18	SS										
	65	13-12-16	1.1			19	SS										
	70	14-11-17	1.5														

SUBSURFACE INVESTIGATION
 ABBEY AVENUE VIADUCT
 OVER THE CONRAIL & NORFOLK & SOUTHERN RAILROADS
 CUYAHOGA COUNTY, OHIO

R & R International, Inc.
 GEOTECHNICAL ENGINEERS - GEOLOGISTS

LOG OF BORING

Date Started 1-13-87 Sampler Type Split Spoon Dia. 2.0 Water Elev. ---
 Date Completed 1-13-87 Casing Length -- Dia. ---
 Boring No. B-3 (Cont.) Station & Offset Sta. 11 + 25 11.5' LT. Surface Elev. 617.43

FHWA REGION	STATE	PROJECT

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ELEV.	DEPTH	STD. PEN. (N)	REC. FT.	LOSS FT.	DESCRIPTION	SAMPLE NO.	SAMPLE TYPE	PHYSICAL CHARACTERISTICS											SHTL CLASS.		
								% AGG.	% C. SAND	% F. SAND	% SILT	% CLAY	L.L.	P.L.	P.I.	W.C.					
552.4	0																				
	75	13-19-18	1.5		SAME AS ABOVE	20	SS														
	80	18-10-15	1.5			21	SS														
	85	14-11-13	1.5			22	SS														
	90	8-15-16	1.5			23	SS														
	95	10-12-14	1.3			24	SS														
524.9	100	13-19-24	1.2		Hard, gray <u>SILTY CLAY</u> , trace sand, moist.	25	SS														
	105	11-17-27	1.5			26	SS														
	110	10-15-16	1.2			27	SS														
	115	11-18-20	1.4			28	SS														
	120	11-15-24	1.5			29	SS														
	125	10-15-19	1.4			30	SS														
	130	50-90-100/ 0.4	0.4			31	SS														
489.9	135	100 90%	10.0	0.0		Gray <u>SILTY SHALE</u> , slightly altered, firm, thin bedded, micaceous.	Run 1	NXM													
	140																				

LOG OF BORING

Date Started 1-13-87 Sampler Type Split Spoon Dia. 2.0 Water Elev. ---
 Date Completed 1-13-87 Casing Length -- Dia. ---
 Boring No. B-3 (Cont.) Station & Offset Sta. 11 + 25 11.5' LT. Surface Elev. 617.43

ELEV.	DEPTH	STD. PEN. (N)	REC. FT.	LOSS FT.	DESCRIPTION	SAMPLE NO.	SAMPLE TYPE	PHYSICAL CHARACTERISTICS											SHTL CLASS.		
								% AGG.	% C. SAND	% F. SAND	% SILT	% CLAY	L.L.	P.L.	P.I.	W.C.					
482.4	0																				
479.4					SAME AS ABOVE																
					TERMINATION DEPTH 142.5 FEET																

SUBSURFACE INVESTIGATION
 ABBEY AVENUE VIADUCT
 OVER THE CONRAIL & NORFOLK & SOUTHERN RAILROADS
 CUYAHOGA COUNTY, OHIO



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 GEOTECHNICAL ENGINEERS - GEOLOGISTS

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 AKRON, OH 44321
 216-666-2200

LOG OF BORING

Date Started 12-31-86 Sampler Type Split Spoon Dia. 2.0 Water Elev. ---
 Date Completed 12-31-86 Casing Length -- Dia. ---
 Boring No. B-4 Station & Offset Sta. 12 + 75 6 Surface Elev. 611.2

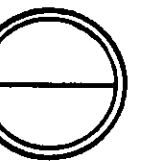
ELEV.	DEPTH	STD. PEN. (N)	REC. FT.	LOSS FT.	DESCRIPTION	SAMPLE NO.	SAMPLE TYPE	PHYSICAL CHARACTERISTICS								SHTL CLASS.			
								% AGG.	% C. SAND	% F. SAND	% SILT	% CLAY	L.L.	P.L.	P.I.		W.C.		
617.2	0																		
	4-9-11	0.9			Very stiff, gray to black SANDY SILT, little clay, little cinders, trace gravel, moist (Fill).	1	SS												
614.2																			
	5	4-4-4	1.1		Loose, gray to black SILTY SAND, little gravel, wet.	2	SS												
609.2																			
	10	1-2-1	1.2		Soft, black SILT, trace clay, trace sand, moist.	3	SS												
605.2																			
	15	2-1-1	1.2			4	SS												
	2-2-2	1.0				5	SS												
	20	W.O.H.-1	1.1			6	SS												
	10-15-15	0.8				7	SS												
	25	10-10-10	1.1			8	SS												
	15-15-16	1.4			Loose, gray SILTY SAND, moist.	9	SS												
	30	4-4-4	1.2			10	SS												
	35	3-3-3	0.9			11	SS												
	40	2-3-5	1.1			12	SS												
576.1																			
	45	7-9-8	1.5			13	SS												
	50	10-15-17	0.8			14	SS												
	55	9-9-15	1.4		Stiff to very stiff, gray SILTY CLAY, trace gravel, moist.	15	SS												
	60	8-9-10	1.5			16	SS												
	65	9-10-11	1.0			17	SS												
	70	10-12-10	1.4			18	SS												
						19	SS												

LOG OF BORING

Date Started 12-31-86 Sampler Type Split Spoon Dia. 2.0 Water Elev. ---
 Date Completed 12-31-86 Casing Length -- Dia. ---
 Boring No. B-4 (Cont.) Station & Offset Sta. 12 + 75 6 Surface Elev. 611.2

ELEV.	DEPTH	STD. PEN. (N)	REC. FT.	LOSS FT.	DESCRIPTION	SAMPLE NO.	SAMPLE TYPE	PHYSICAL CHARACTERISTICS								SHTL CLASS.			
								% AGG.	% C. SAND	% F. SAND	% SILT	% CLAY	L.L.	P.L.	P.I.		W.C.		
547.2	0																		
	75	15-15-15	1.2		SAME AS ABOVE	20	SS												
	80	10-14-14	0.0			21	SS												
534.7																			
	85	10-14-20	0.4			22	SS												
	90	15-15-20	1.5			23	SS												
	95	15-18-22	1.2			24	SS												
	100	16-19-21	1.5			25	SS												
	105	16-18-20	1.5			26	SS												
	110	12-16-16	1.4		Hard, gray SILTY CLAY, trace sand, moist.	27	SS												
	115	14-17-22	0.0			28	SS												
	120	53-55-75	0.9			29	SS												
	125	30-60-75	1.3			30	SS												
	130																		
480.7																			
	ROD 75'		4.4	0.6	Gray SILTY SHALE, slightly altered, firm, thin bedded, micaceous.	Run	NXM												
	140																		

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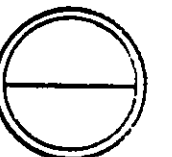
SUBSURFACE INVESTIGATION
 ABBEY AVENUE VIADUCT
 OVER THE CONRAIL & NORFOLK & SOUTHERN RAILROADS
 CUYAHOGA COUNTY, OHIO

R & R International, Inc.
 GEOTECHNICAL ENGINEERS • GEOLOGISTS

LOG OF BORING

Date Started 5-2-86 Sampler Type Split Spoon Dia. 2.0 Water Elev. 598.9
 Date Completed 5-2-86 Casing Length -- Dia. ---
 Boring No. B-5 Station & Offset Sta. 14 + 25 11.5' LT. Surface Elev. 608.63.

FHWA REGION	STATE	PROJECT



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LOG OF BORING

Date Started 12-31-86 Sampler Type Split Spoon Dia. 2.0 Water Elev. ---
 Date Completed 12-31-86 Casing Length -- Dia. ---
 Boring No. B-4 (Cont.) Station & Offset Sta. 12 + 75 € Surface Elev. 511.2

ELEV.	DEPTH	STD. PEN. (N)	REC. Ft.	LOSS Ft.	DESCRIPTION	SAMPLE NO.	SAMPLE TYPE	PHYSICAL CHARACTERISTICS										SHTL CLASS.	
								% AGG.	% C. SAND	% F. SAND	% SILT	% CLAY	L.L.	P.L.	P.I.	W.C.			
477.2	0																		
475.7					SAME AS ABOVE														
					TERMINATION DEPTH 141.5 FEET														
	145																		

ELEV.	DEPTH	STD. PEN. (N)	REC. Ft.	LOSS Ft.	DESCRIPTION	SAMPLE NO.	SAMPLE TYPE	PHYSICAL CHARACTERISTICS										SHTL CLASS.	
								% AGG.	% C. SAND	% F. SAND	% SILT	% CLAY	L.L.	P.L.	P.I.	W.C.			
613.4	0				ROADBASE, bricks, rock fragments, organics, damp.	1	SS												
610.9	5	16-14-13	1.3			2	SS												
	10	3-2-3	1.0			3	SS												
	15	2-2-2	1.5		Loose, brown SAND, trace gravel, trace silt, some organics, little coal fragments, wet.	4	SS												
	20	4-2-2	0.9			5	SS												
	25	2-5-4	1.2			6	SS												
595.5	30	1-1-1	1.4			7	SS												
	35	2-4-4	1.3		Loose, brown and gray SILTY SAND, wet. NOTE: Little rock fragments encountered at 22.5 feet.	8	SS												
	40	2-2-2	1.1			9	SS												
	45	2-1-1	1.4			10	SS												
588.2	50	6-5-7	1.5		Very loose to loose, gray GRAVELLY SAND, wet.	11	SS												
	55	3-3-3	1.3		Soft, gray SANDY SILT, wet.	12	SS												
584.9 584.4	60					13	SS												
	65					14	SS												
	70					15	SS												
	75	16-25-15	1.5		Medium stiff, gray SANDY SILT, wet.	16	SS												
577.9 576.9	80				Loose, gray GRAVELLY SAND, little silt, wet.	17	SS												
	85	5-3-6	1.5			18	SS												
	90	4-3-5	1.5			19	SS												
	95	10-10-22	1.4			20	ST	0.0	0.4	6.2	65.3	28.1	24.1	18.2	5.9	20.7		A-4b	
	100	12-15-18	1.5		Hard, gray CLAYEY SILT, trace sand, trace gravel, moist to wet.	21	SS												
	105	15-18-22	1.3			22	SS												
	110	15-17-19	1.5			23	SS												
	115	15-19-22	1.3			24	SS												

SUBSURFACE INVESTIGATION
 ABBEY AVENUE VIADUCT
 OVER THE CONRAIL & NORFOLK & SOUTHERN RAILROADS
 CUYAHOGA COUNTY, OHIO

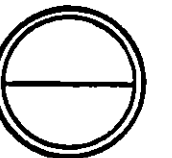
R & R International, Inc.
 GEOTECHNICAL ENGINEERS - GEOLOGISTS

3675 COPLEY ROAD
 AKRON, OH 44321
 216-666-2200

LOG OF BORING

Date Started 5-2-86 Sampler Type Split Spoon Dia. 2.0 Water Elev. 598.9
 Date Completed 5-2-86 Casing Length -- Dia. ---
 Boring No. B-5 (Cont.) Station & Offset Sta. 14 + 25 11.5' LT. Surface Elev. 608.63

FWWA REGION	STATE	PROJECT



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ELEV.	DEPTH	STD. PEN. (N)	REC. FI.	LOSS FI.	DESCRIPTION	SAMPLE NO.	SAMPLE TYPE	PHYSICAL CHARACTERISTICS										SHTL CLASS.		
								% AGG.	% C. SAND	% F. SAND	% SILT	% CLAY	L.L.	P.L.	P.I.	W.C.				
543.4	0																			
	75	20-20-20	1.4			20	SS													
	80	20-25-25	1.5			21	SS													
	85	13-16-25	1.5			22	SS													
	90	13-21-24	0.9		SAME AS ABOVE	23	SS													
	95	10-16-25	0.5			24	SS													
	100	6-12-13	0.0			25	SS													
	105	7-17-18	1.4			26	SS													
499.4	110																			
	115																			
	120																			
	125																			
	130				Gray, extremely altered SILTY SHALE.															
478.2	135	RQD 58%	4.9	0.1		Run 1	NXM													
	140																			

LOG OF BORING

Date Started 5-2-86 Sampler Type Split Spoon Dia 2.0 Water Elev. 598.9
 Date Completed 5-2-86 Casing Length -- Dia ---
 Boring No. B-5 (Cont.) Station & Offset Sta. 14 + 25 11.5' LT. Surface Elev. 608.63

ELEV.	DEPTH	STD. PEN. (N)	REC. FI.	LOSS FI.	DESCRIPTION	SAMPLE NO.	SAMPLE TYPE	PHYSICAL CHARACTERISTICS										SHTL CLASS.			
								% AGG.	% C. SAND	% F. SAND	% SILT	% CLAY	L.L.	P.L.	P.I.	W.C.					
473.4	0																				
473.2						Run 2	NXM														
	145				Gray SILTY SHALE, moderately to slightly altered, firm, thin bedded, micaceous.																
	146.7				TERMINATION DEPTH 146.7 FEET																

SUBSURFACE INVESTIGATION
 ABBEY AVENUE VIADUCT
 OVER THE CONRAIL & NORFOLK & SOUTHERN RAILROADS
 CUYAHOGA COUNTY, OHIO

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 GEOTECHNICAL ENGINEERS • GEOLOGISTS

LOG OF BORING

Date Started 5-3-86 Sampler Type Split Spoon Dia. 2.0 Water Elev. 595.2
 Date Completed 5-3-86 Casing Length -- Dia. ---
 Boring No. B-6 Station & Offset Sta. 15 + 76 11.5' RT. Surface Elev. 611.2

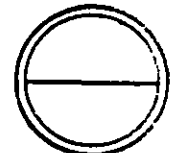
ELEV.	DEPTH	STD. PEN. (N)	REG. FT.	LOSS FT.	DESCRIPTION	SAMPLE NO.	SAMPLE TYPE	PHYSICAL CHARACTERISTICS										SHTL CLASS.		
								% AGG.	% C.SAND	% F.SAND	% SILT	% CLAY	L.L.	P.L.	P.I.	W.C.				
612.2	0	10-7-7	1.2		ROADBASE, brick, rock fragments, some organics, moist (fill).	1	SS													
606.2 605.7	5	7-7-6	1.3		Stiff, gray CLAYEY SILT, trace gravel, trace rock fragments, wet.	2	SS													
	10	11-100/0.5	1.3		Medium dense, black SILTY SAND, little coal fragments, wet.	3	SS													
	15	5-5-7	0.2			4	SS													
594.7		4-6-5	1.5		Medium dense, brown SILTY SAND, wet.	5	SS													
592.2	20	4-5-6	1.4		Medium dense, gray SILTY SAND, little clay, some coal fragments, wet.	6	SS													
		6-6-8	0.7			7	SS													
588.7	25	4-7-7	1.5			8	SS													
	30	5-5-7	1.4			9	SS													
			2.0			10	ST	3.0	3.3	6.1	36.8	50.8	23.2	16.0	7.2	21.2				A-4a
	35	5-6-5	1.5			11	SS													
	40	4-5-6	1.5			12	SS													
	45	6-7-10	1.4		Stiff to hard, gray SANDY SILT, some clay, wet.	13	SS													
	50	13-16-18	1.5			14	SS													
	55	13-20-18	1.3			15	SS													
	60	12-16-20	1.5			16	SS													
	65	11-10-10	1.4			17	SS													
	70	15-20-25	1.5																	

LOG OF BORING

Date Started 5-3-86 Sampler Type Split Spoon Dia. 2.0 Water Elev. 595.2
 Date Completed 5-3-86 Casing Length -- Dia. ---
 Boring No. B-6 (Cont.) Station & Offset Sta. 15 + 76 11.5' RT. Surface Elev. 611.2

ELEV.	DEPTH	STD. PEN. (N)	REG. FT.	LOSS FT.	DESCRIPTION	SAMPLE NO.	SAMPLE TYPE	PHYSICAL CHARACTERISTICS										SHTL CLASS.		
								% AGG.	% C.SAND	% F.SAND	% SILT	% CLAY	L.L.	P.L.	P.I.	W.C.				
542.2	0																			
	75	13-13-13	1.4			18	SS													
	80	8-9-14	1.5		SAME AS ABOVE	19	SS													
	85	10-14-14	1.3			20	SS													
	90	9-12-16	1.3			21	SS													
518.7		5-7-12	1.2			22	SS													
	95																			
		8-9-11	0.9			23	SS													
	100																			
		9-13-15	0.9			24	SS													
	105																			
		10-12-13	1.3		Very stiff to hard, SILTY CLAY, trace sand, moist.	25	SS													
	110																			
		10-18-30	1.5			26	SS													
	115																			
		11-14-22	1.4			27	SS													
	120																			
488.7		23-52-85	1.5			28	SS													
	125																			
		28-49-83	1.5		Hard, gray CLAYEY SILT, trace sand, moist.	29	SS													
	130																			
		50/0.0	0.0			30	SS													
477.2	135	ROD 85%	9.2	0.8		Run 1	NM													
	140																			

FHWA REGION	STATE	PROJECT



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SUBSURFACE INVESTIGATION
 ABBEY AVENUE VIADUCT
 OVER THE CONRAIL & NORFOLK & SOUTHERN RAILROADS
 CUYAHOGA COUNTY, OHIO



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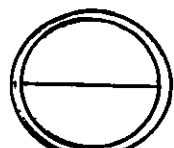
GEOTECHNICAL ENGINEERS - GEOLOGISTS

3675 COPLEY ROAD
 AKRON, OH 44321
 216-866-2200

LOG OF BORING

Date Started 7-5-86 Sampler Type Split Spoon Dia. 2.0 Water Elev. 604.3
 Date Completed 7-5-86 Casing Length -- Dia. ---
 Boring No. B-7 Station & Offset Sta. 17 + 02 11.5' LT. Surface Elev. 610.26

FHWA REGION	STATE	PROJECT



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LOG OF BORING

Date Started 5-3-86 Sampler Type Split Spoon Dia. 2.0 Water Elev. 595.2
 Date Completed 5-3-86 Casing Length -- Dia. ---
 Boring No. B-6 (Cont.) Station & Offset Sta. 15 + 76 11.5' RT. Surface Elev. 611.2

ELEV.	DEPTH	STD. PEN. (N)	REC. Ft.	LOSS Ft.	DESCRIPTION	SAMPLE NO.	SAMPLE TYPE	PHYSICAL CHARACTERISTICS										SHTL CLASS.	
								% AGG.	% C. SAND	% F. SAND	% SILT	% CLAY	L.L.	P.L.	P.I.	W.C.			
472.2	0																		
467.2					Gray SILTY SHALE, slightly altered, firm, thin bedded, micaceous.														
					TERMINATION DEPTH 145.0 FEET														

ELEV.	DEPTH	STD. PEN. (N)	REC. Ft.	LOSS Ft.	DESCRIPTION	SAMPLE NO.	SAMPLE TYPE	PHYSICAL CHARACTERISTICS										SHTL CLASS.		
								% AGG.	% C. SAND	% F. SAND	% SILT	% CLAY	L.L.	P.L.	P.I.	W.C.				
611.3	0																			
		8-8-9	1.0		Medium dense, black SAND, little gravel, little cinders, trace organics, moist (F11).	1	SS													
608.3	5	3-2-3	1.3		Loose to medium dense, brown SILTY SAND, little gravel, wet.	2	SS													
601.3	10	7-8-8	1.0			3	SS													
		2-3-4	0.7			4	SS													
		2-4-5	1.4			5	SS													
		4-3-4	1.0			6	SS													
		5-6-10	0.8			7	SS													
		5-7-11	1.4			8	SS													
		7-9-13	1.4			9	SS													
		10-13-16	1.0			10	SS													
		10-11-13	1.1			11	SS													
			2.0		Stiff to hard, gray SANDY SILT, some clay, wet.															
		5-6-8	0.5			12	ST	0.3	0.3	0.9	38.4	60.1	26.9	17.5	9.4	25.2				A-4a
		5-6-8	1.4			13	SS													
		10-12-16	0.5			14	SS													
		12-14-17	0.6			15	SS													
556.3	55	8-12-11	1.4			16	SS													
			2.0				ST	0.0	0.1	2.8	55.4	41.7	26.8	17.5	9.3	26.8				A-4b
		11-14-16	0.6			17	SS													
					Hard, gray SILT, some clay, wet.															
		13-14-24	1.5			18	SS													
						70														

SUBSURFACE INVESTIGATION
 ABBEY AVENUE VIADUCT
 OVER THE CONRAIL & NORFOLK & SOUTHERN RAILROADS
 CUYAHOGA COUNTY, OHIO



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 216-666-2200

LOG OF BORING

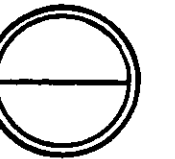
Date Started 7-5-86 Sampler Type Split Spoon Dia. 2.0 Water Elev. 604.3
 Date Completed 7-5-86 Casing Length --- Dia. ---
 Boring No. B-7 (Cont.) Station & Offset Sta. 17 + 02 11.5' LT. Surface Elev. 610.26

ELEV.	DEPTH	STD. PEN. (N)	REC. FI.	LOSS FI.	DESCRIPTION	SAMPLE NO.	SAMPLE TYPE	PHYSICAL CHARACTERISTICS										SHTL. CLASS.		
								% AGG.	% C. SAND	% F. SAND	% SILT	% CLAY	L.L.	P.L.	P.I.	W.C.				
541.3	0																			
	9-15-22	1.5			SAME AS ABOVE	19	SS													
	11-21-20	1.5				20	SS													
	10-19-19	1.4				21	SS													
	12-21-26	1.5				22	SS													
	11-19-24	1.5				23	SS													
	10-14-17	1.5				24	SS													
	12-12-18	1.5				25	SS													
	10-15-20	1.5			Hard, gray SILTY CLAY, trace gravel, moist.	26	SS													
	40-60-65	1.5				27	SS													
	40-60-100/0.5	1.3				28	SS													
	42-57-97	1.5				29	SS													
	20-35-35	1.5				30	SS													
481.3	130	0.2	4.8		Gray SILTY SHALE, extremely altered, friable.	Run 1	NXM													
476.3	135				TERMINATION DEPTH 135.0 FEET															

LOG OF BORING

Date Started 2-19-87 Sampler Type Split Spoon Dia. 2.0 Water Elev. 621.0
 Date Completed 2-23-87 Casing Length --- Dia. ---
 Boring No. B-8 Station & Offset Sta. 18 + 27 12.5' RT. Surface Elev. 635.3

FHWA REGION	STATE	PROJECT



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ELEV.	DEPTH	STD. PEN. (N)	REC. FI.	LOSS FI.	DESCRIPTION	SAMPLE NO.	SAMPLE TYPE	PHYSICAL CHARACTERISTICS										SHTL. CLASS.		
								% AGG.	% C. SAND	% F. SAND	% SILT	% CLAY	L.L.	P.L.	P.I.	W.C.				
638.3	0	18-12-10	1.3		Medium dense, black SAND AND GRAVEL, little silt, moist.	1	SS													
633.3	5	9-7-9	1.4			2	SS													
	10	3-4-8	1.3		Medium dense to loose, brown SILTY SAND, moist to wet.	3	SS													
		3-3-5	1.2			4	SS													
624.3	15	4-5-8	1.5		Stiff, gray SANDY SILT, wet to moist.	5	SS													
		8-6-9	1.3			6	SS													
618.3	20	5-5-6	1.4		Stiff, gray SILTY CLAY, trace sand, moist.	7	SS													
615.8		5-6-7	1.2			8	SS													
	25	11-7-7	1.5		Stiff, gray SANDY SILT, trace clay, moist.	9	SS													
610.8		5-5-6	1.4			10	SS													
	30	5-6-5	1.5			11	SS													
	35	7-9-10	1.4			12	SS													
	40	11-13-15	1.5			13	SS													
	45	11-12-13	1.5			14	SS													
	50	7-7-8	1.5		Stiff to very stiff, gray SILTY CLAY, trace to little sand, moist.	15	SS													
	55	6-5-7	1.4			16	SS													
	60	5-5-5	1.5			17	SS													
	65	5-5-6	1.5			18	SS													
	70	7-7-8	1.5			19	SS													

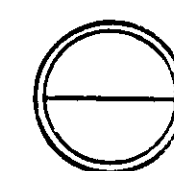
SUBSURFACE INVESTIGATION
 ABBEY AVENUE VIADUCT
 OVER THE CONRAIL & NORFOLK & SOUTHERN RAILROADS
 CUYAHOGA COUNTY, OHIO

R & R International, Inc.
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LOG OF BORING

Date Started 2-19-87 Sampler Type Split Spoon Dia. 2.0 Water Elev. 621.0
 Date Completed 2-23-87 Casing Length -- Dia. ---
 Boring No. B-8 (Cont.) Station & Offset Sta. 18 + 27 12.5' RT. Surface Elev. 635.3

FHWA REGION	STATE	PROJECT



SOIL PROFILE

14
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ELEV.	DEPTH	STD. PEN. (N)	REC. FT.	LOSS FT.	DESCRIPTION	SAMPLE NO.	SAMPLE TYPE	PHYSICAL CHARACTERISTICS								SHTL. CLASS.		
								% AGG.	% C.SAND	% F.SAND	% SILT	% CLAY	L.L.	P.L.	P.I.		W.C.	
568.3	0																	
	75	12-10-11	1.3			20	SS											
	80	11-13-16	1.5			21	SS											
	85	13-14-17	1.3			22	SS											
	90	7-8-9	1.5		SAME AS ABOVE	23	SS											
	95	8-10-16	1.5			24	SS											
	100	11-13-16	1.4			25	SS											
533.3	105	7-8-11	1.3			26	SS											
	110	10-11-14	1.5			27	SS											
	115	11-11-16	1.3			28	SS											
	120	13-14-17	1.5		Very stiff to hard, gray CLAY, little silt, moist.	29	SS											
	125	15-21-25	1.5			30	SS											
	130	10-13-16	1.4			31	SS											
	135	15-17-24	1.5			32	SS											
	140	14-16-22	1.4			33	SS											

LOG OF BORING

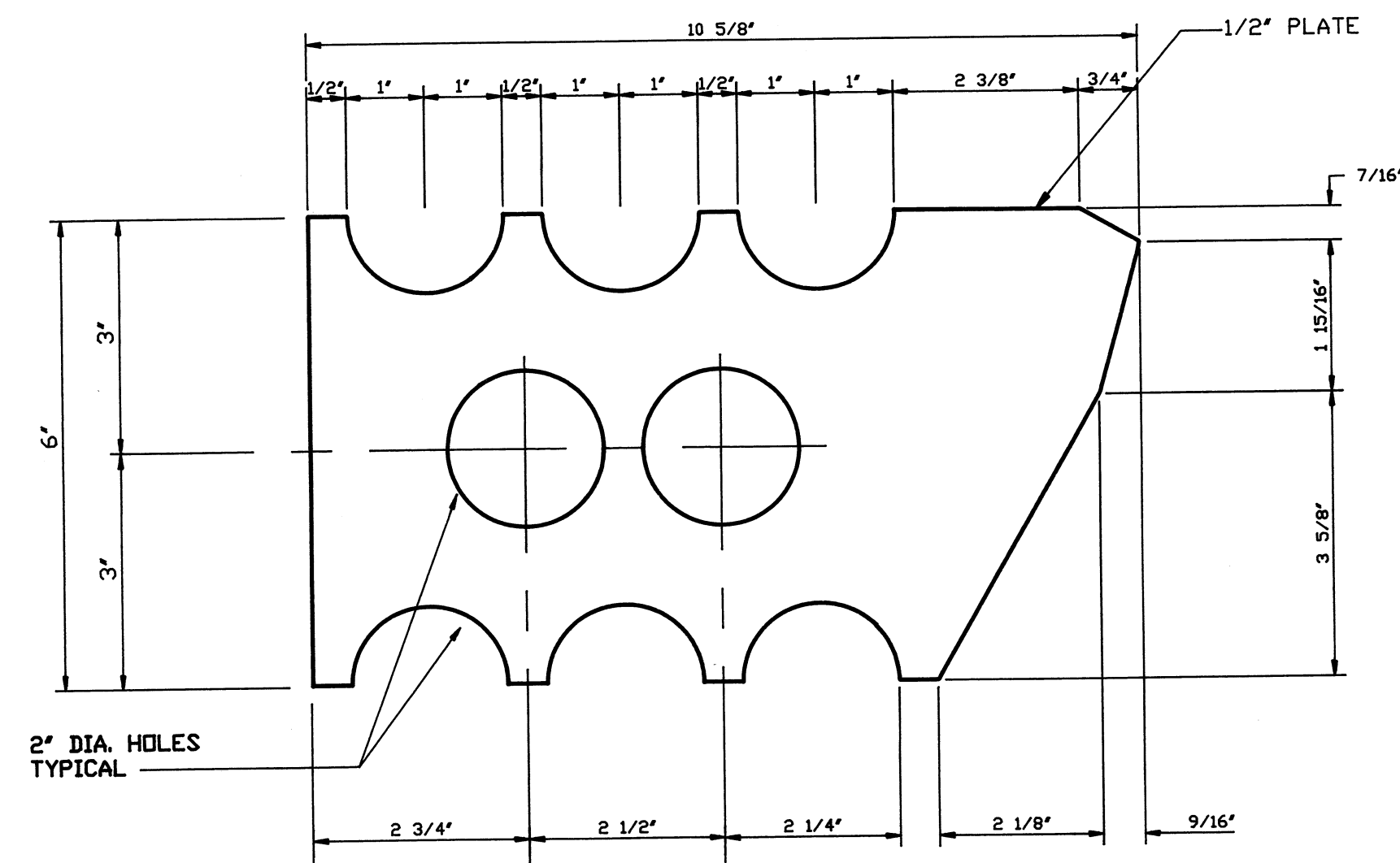
Date Started 2-19-87 Sampler Type Split Spoon Dia. 2.0 Water Elev. 621.0
 Date Completed 2-23-87 Casing Length -- Dia. ---
 Boring No. B-8 (Cont.) Station & Offset Sta. 18 + 27 11.5' RT. Surface Elev. 635.3

ELEV.	DEPTH	STD. PEN. (N)	REC. FT.	LOSS FT.	DESCRIPTION	SAMPLE NO.	SAMPLE TYPE	PHYSICAL CHARACTERISTICS								SHTL. CLASS.		
								% AGG.	% C.SAND	% F.SAND	% SILT	% CLAY	L.L.	P.L.	P.I.		W.C.	
498.3	0																	
	145	30-41-68	1.5			34	SS											
	150	44-54-87	0.9			35	SS											
	155	50-70-112	0.5		SAME AS ABOVE	36	SS											
	160	72-95-115	0.0			37	SS											
473.3 473.0	165	100/0.3	0.3		Gray, extremely altered SILTY SHALE.	38	SS											
					TERMINATION DEPTH 165.3 FEET													

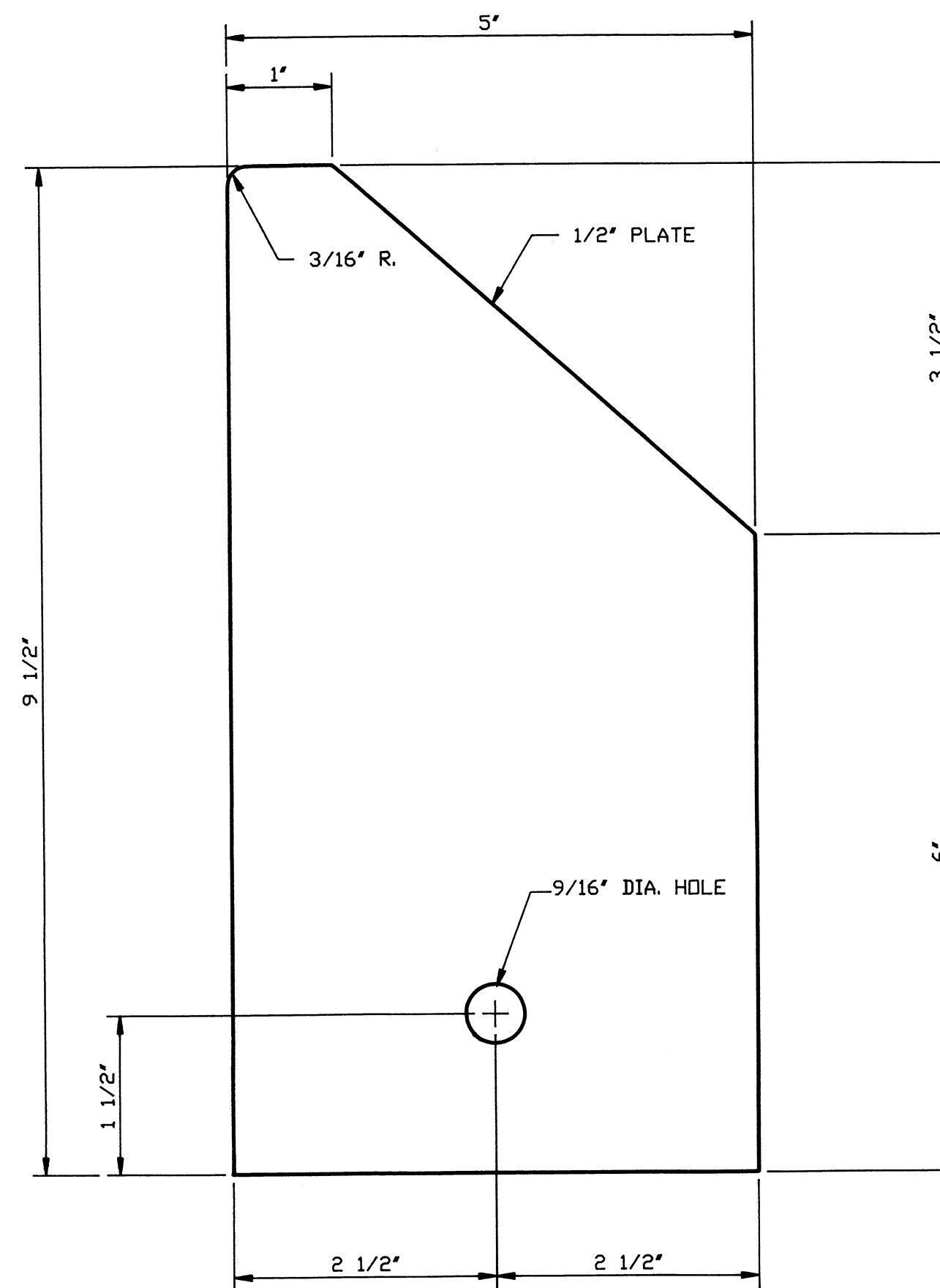
SUBSURFACE INVESTIGATION
 ABBEY AVENUE VIADUCT
 OVER THE CONRAIL & NORFOLK & SOUTHERN RAILROADS
 CUYAHOGA COUNTY, OHIO

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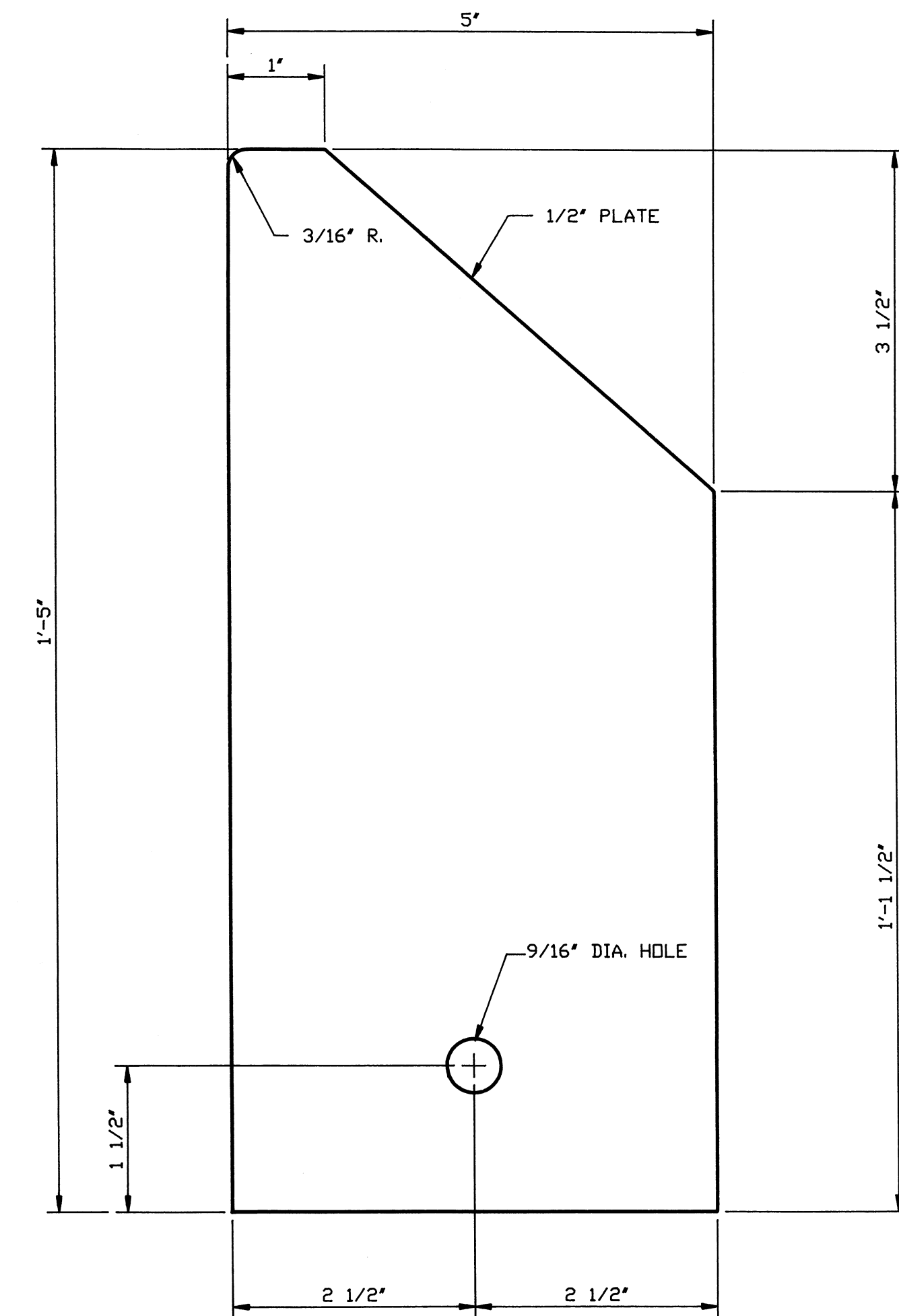
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 AKRON, OH 44321
 216-866-2200



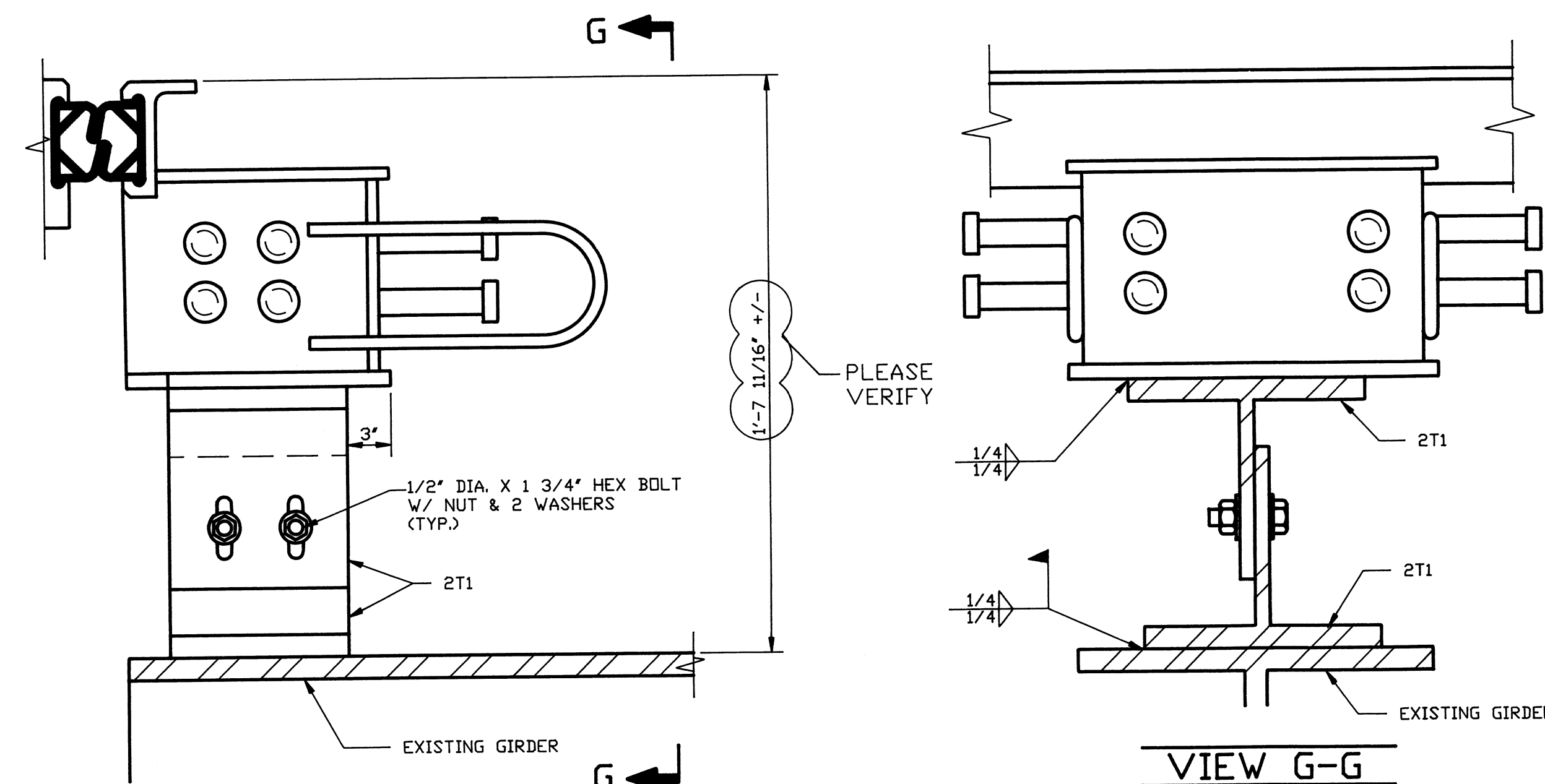
DETAIL - 2P1



DETAIL - 2P2

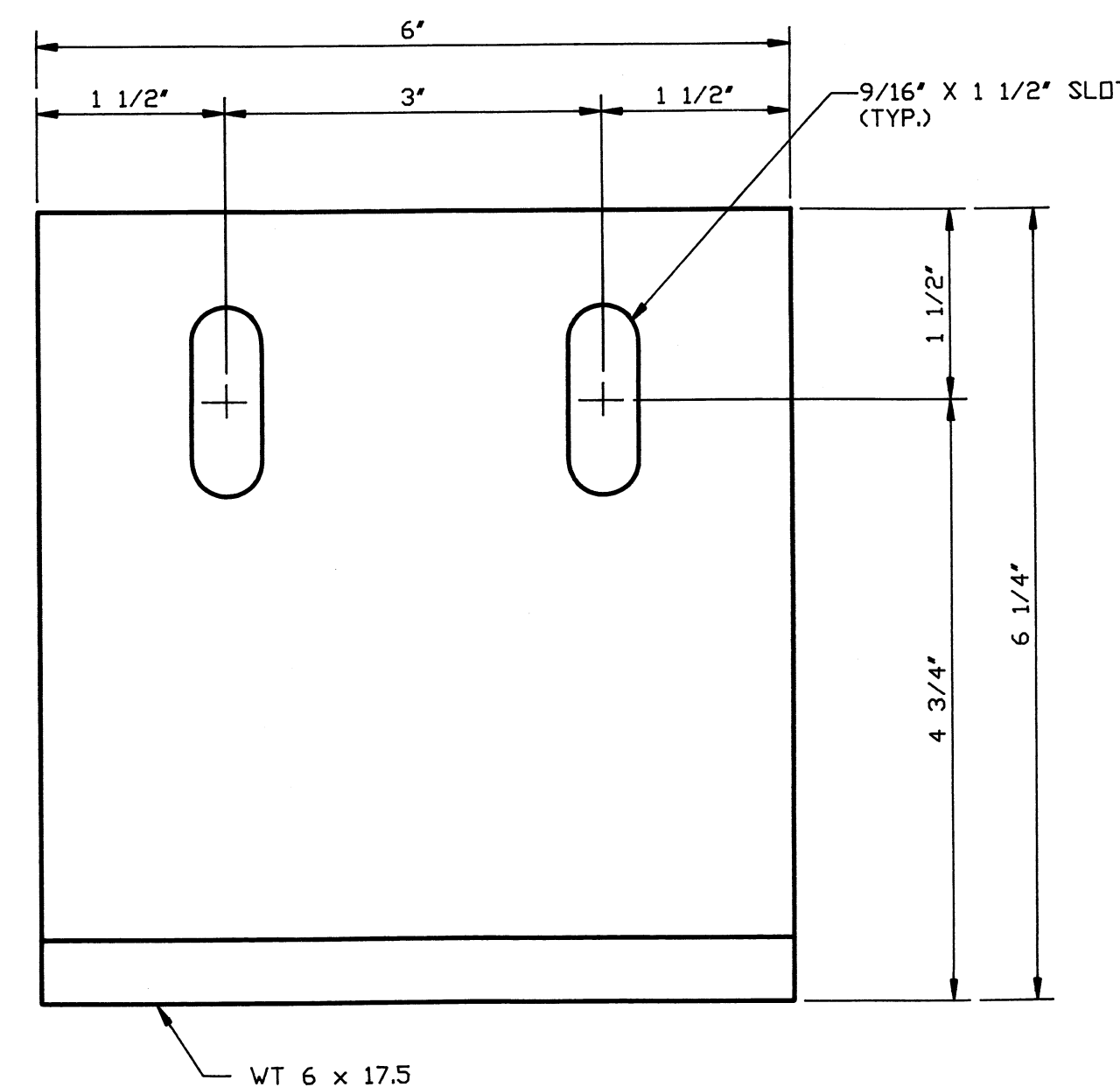


DETAIL - 2P3

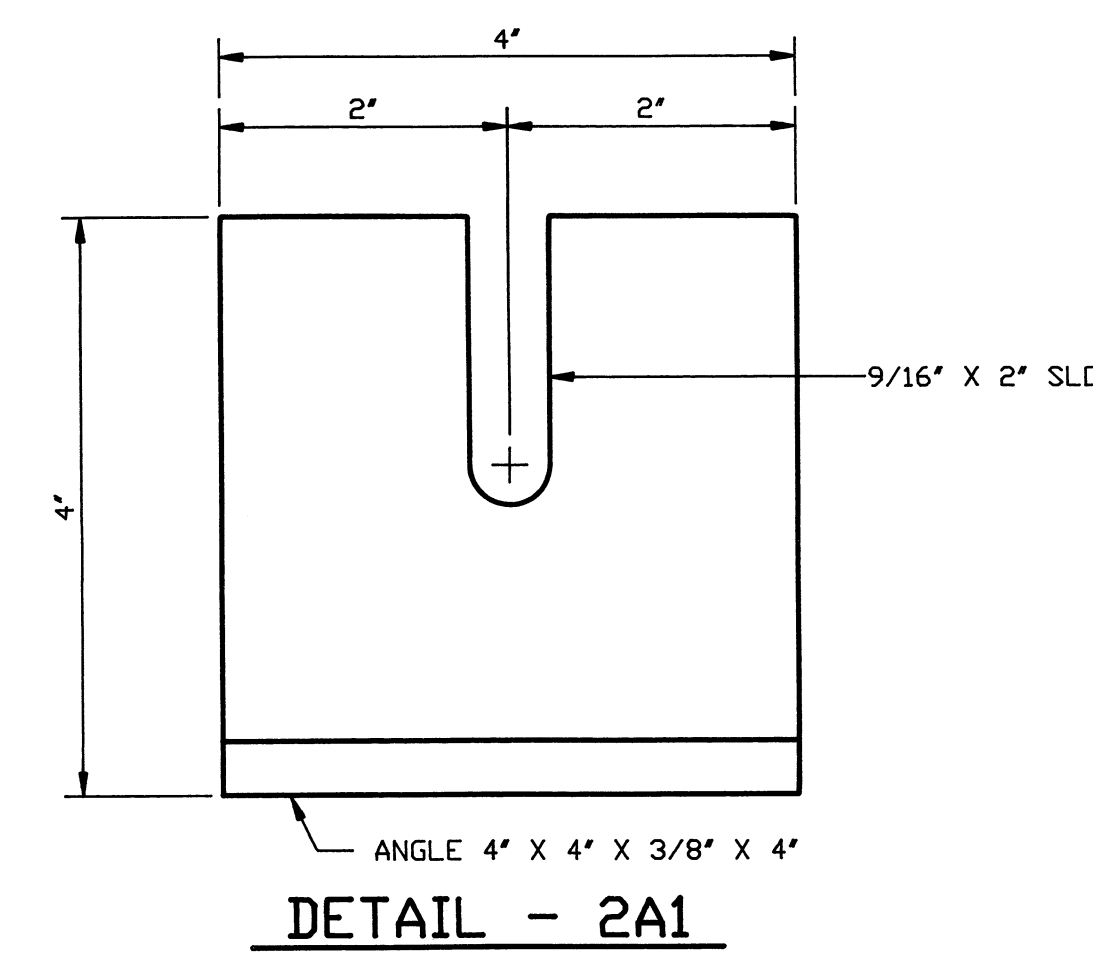


SECTION F

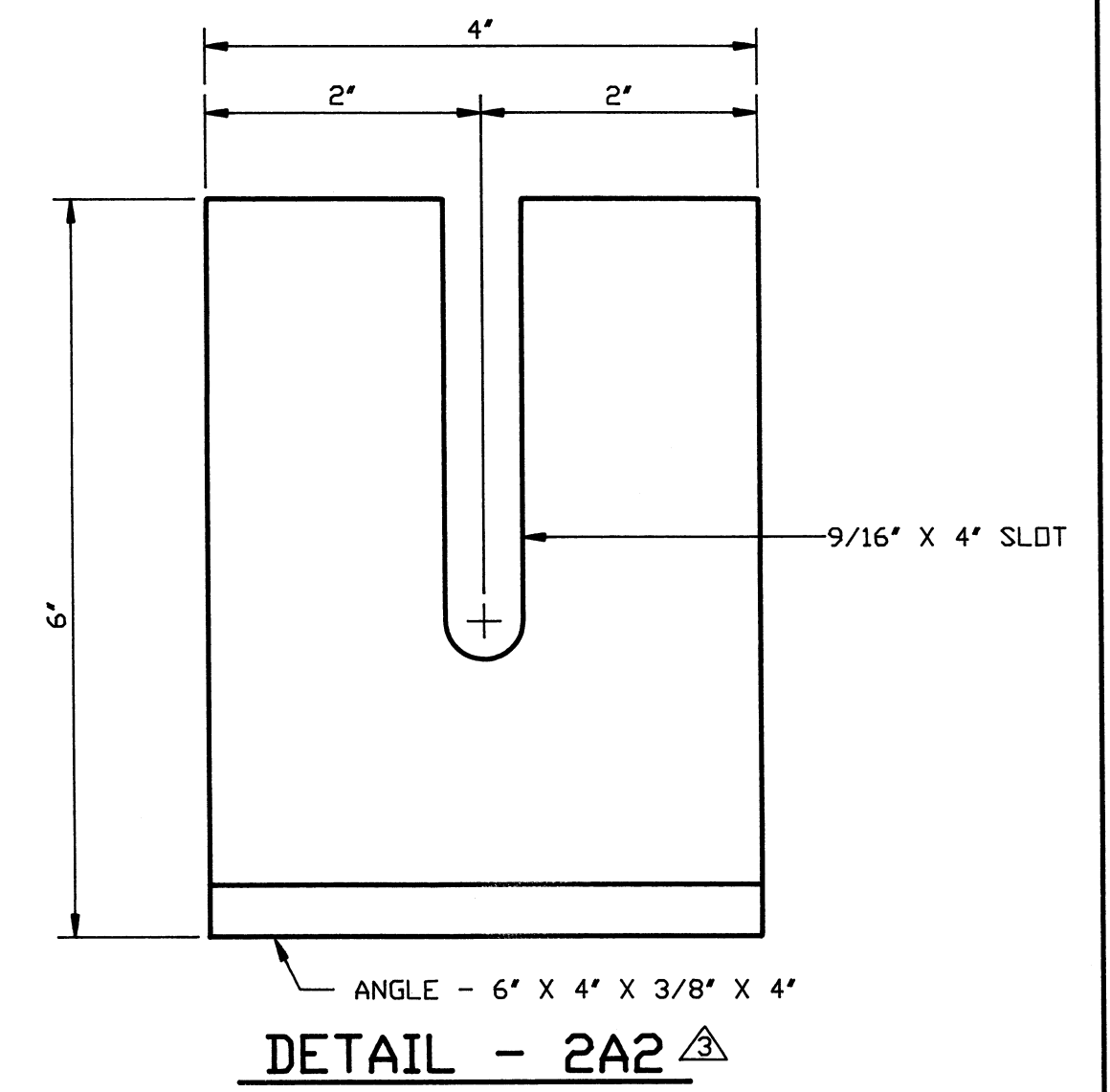
VIEW G-G



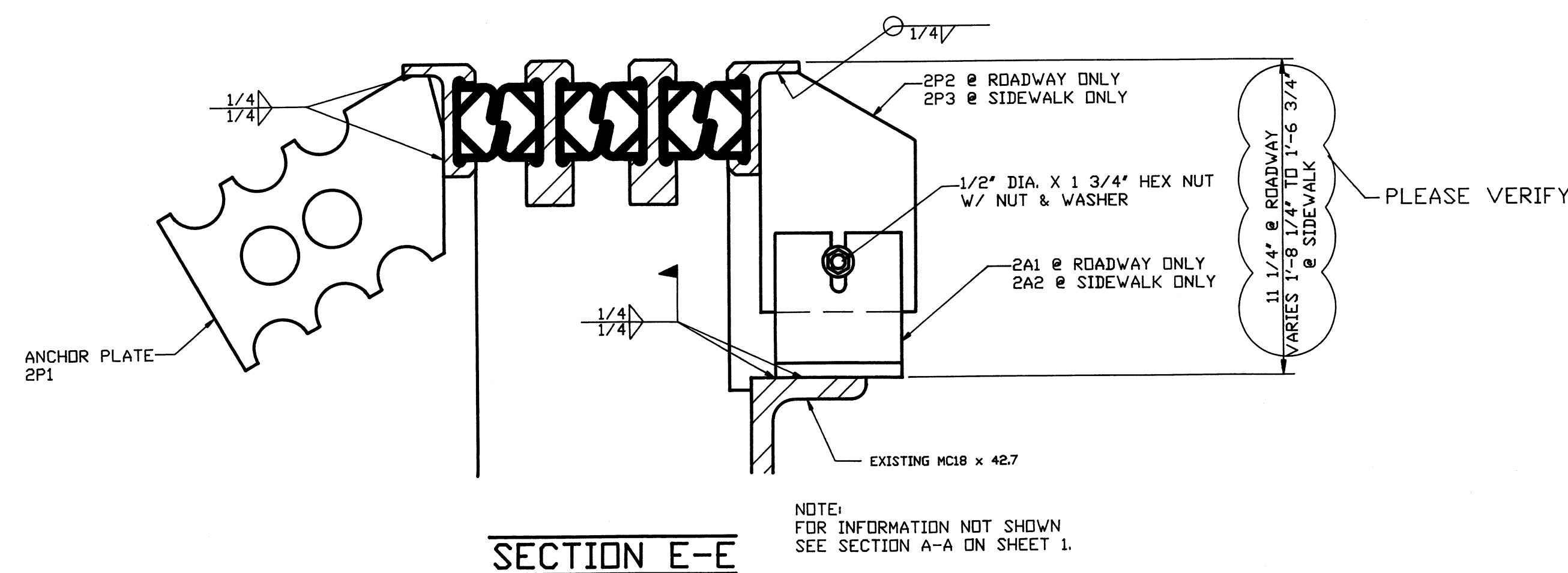
WT 6 x 17.5
DETAIL - 2T1



DETAIL - 2A1



DETAIL - 2A2

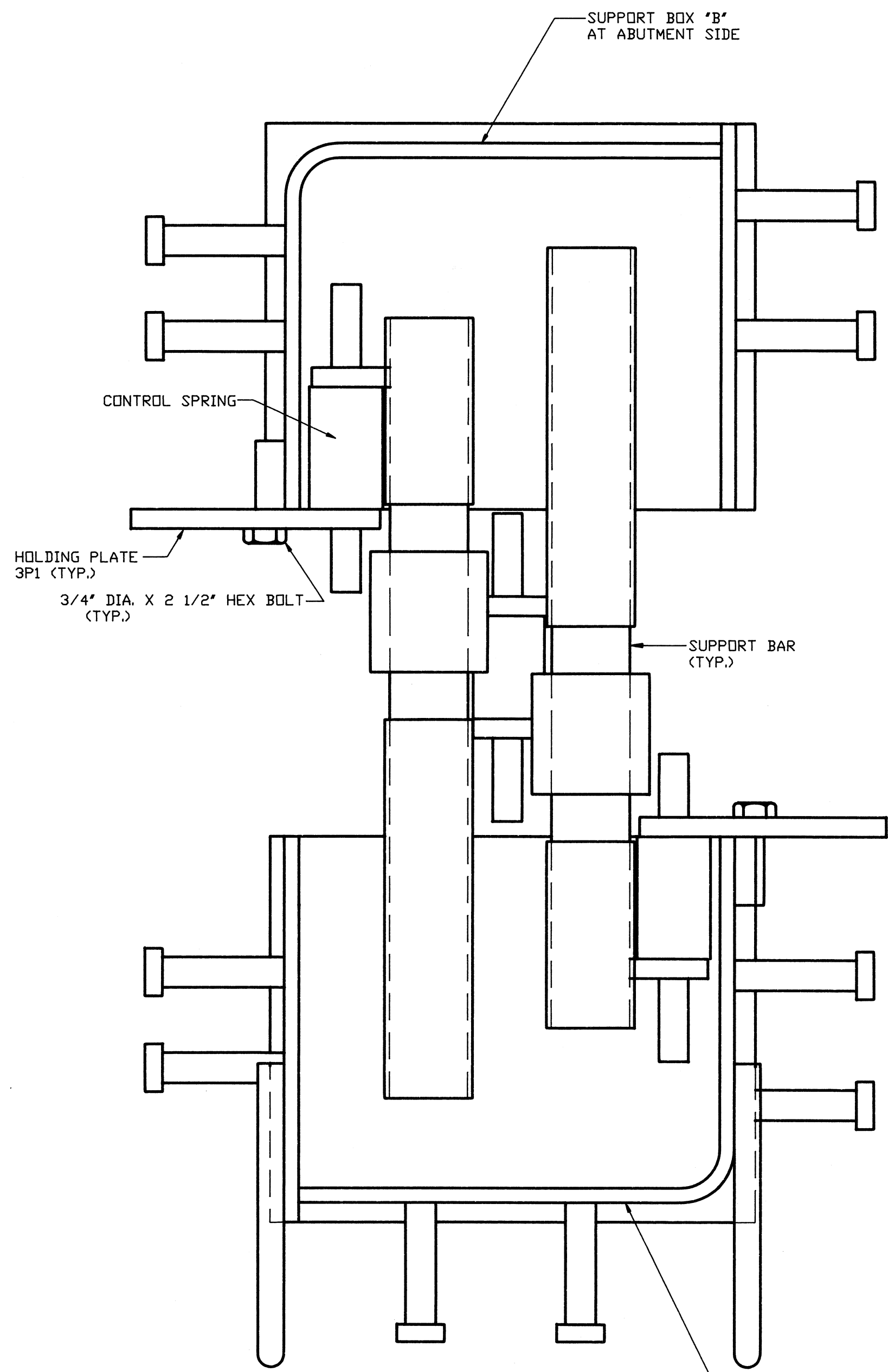


SECTION E-E

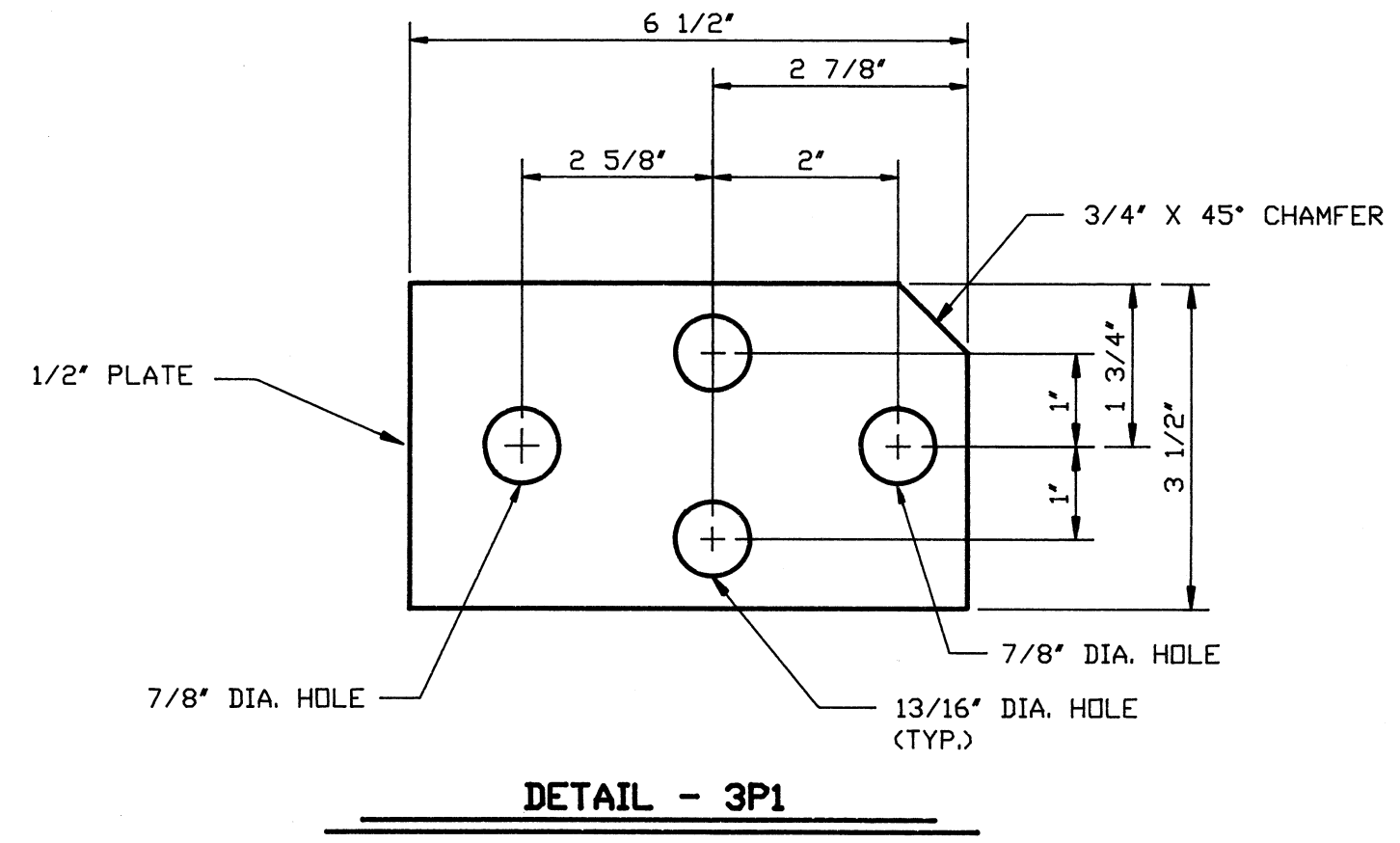
NOTE:
FOR INFORMATION NOT SHOWN
SEE SECTION A-A ON SHEET 1.

4			
3	REVISED ANGLE NUMBER	JJ	7-15-91
2	REVISED 2P1	JJ	6-13-91
1			
NO.	DESCRIPTION	NAME	DATE
REVISIONS			
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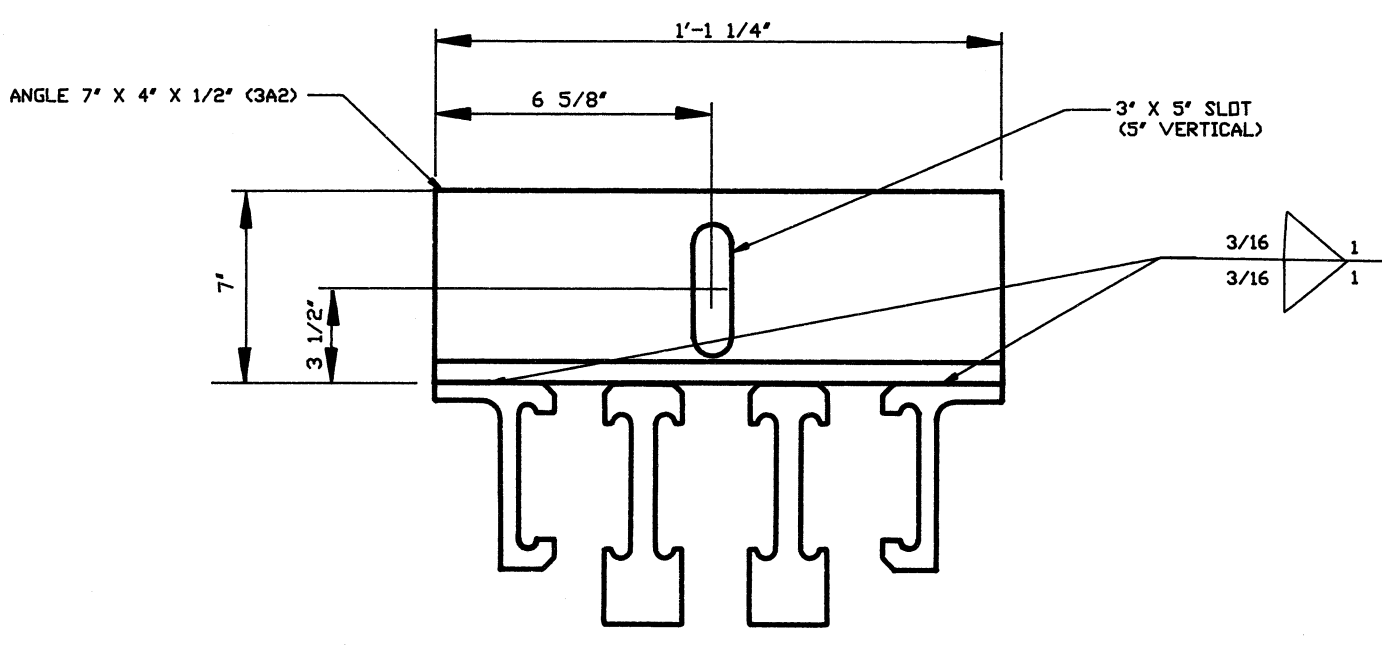
		DETAILED BY: JMJ	DATE: 6-4-91
PROJECT: ABBEY AVE. VIADUCT OVER CONRAIL, N. & S. R.R. AND SCRANTON ROAD CLEVELAND, OHIO		CHECKED BY: JJ	DATE: 6-13-91
95 Phoenix Drive Amherst, N.Y. 14228 TEL: (716) 691-7566 FAX: (716) 691-9839		SCALE: NONE	VBA JOB NO.: 25015
TITLED: WBA D-900 MODULAR EXP. JT. DETAILS		SHEET NO.: 2 OF 4	DRAWING NO.: A-13598



SUPPORT BOX PLAN VIEW
(THIS IS A TEMPORARY DEVICE)

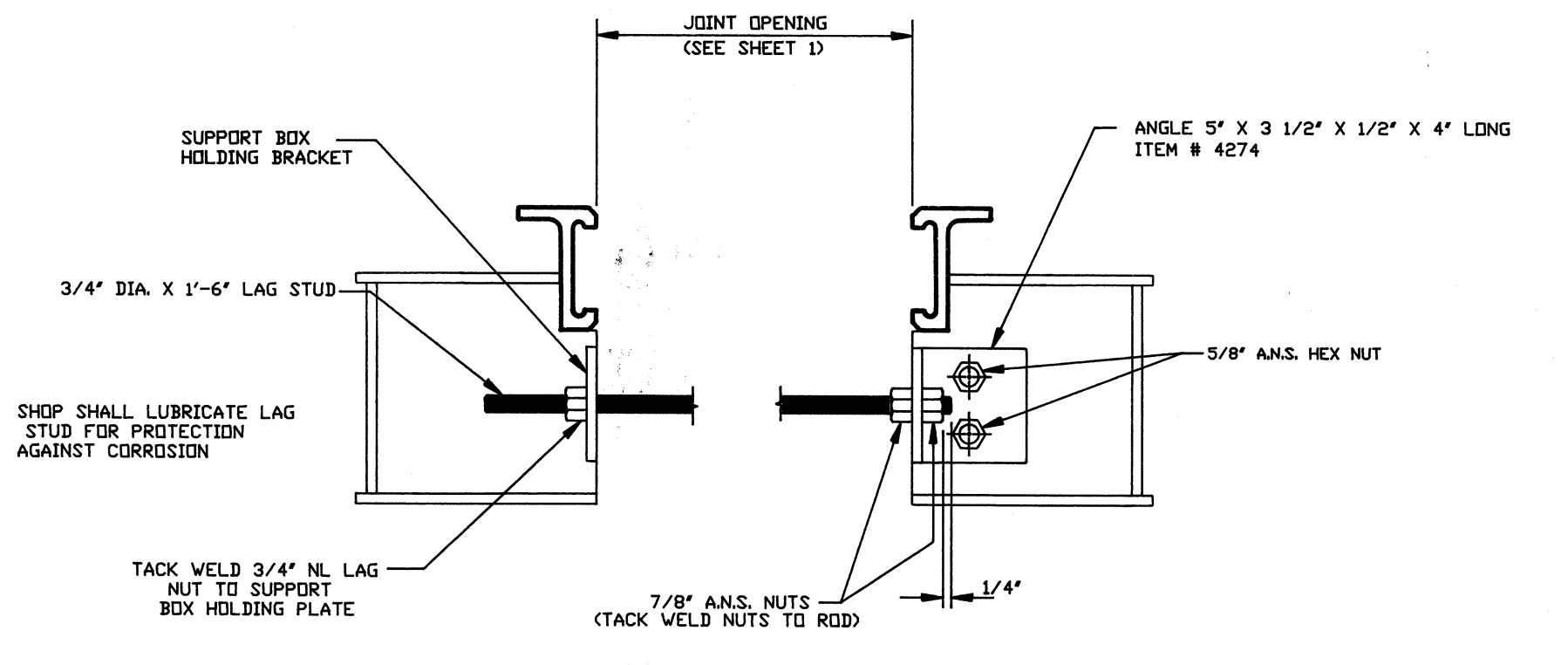


DETAIL - 3P1



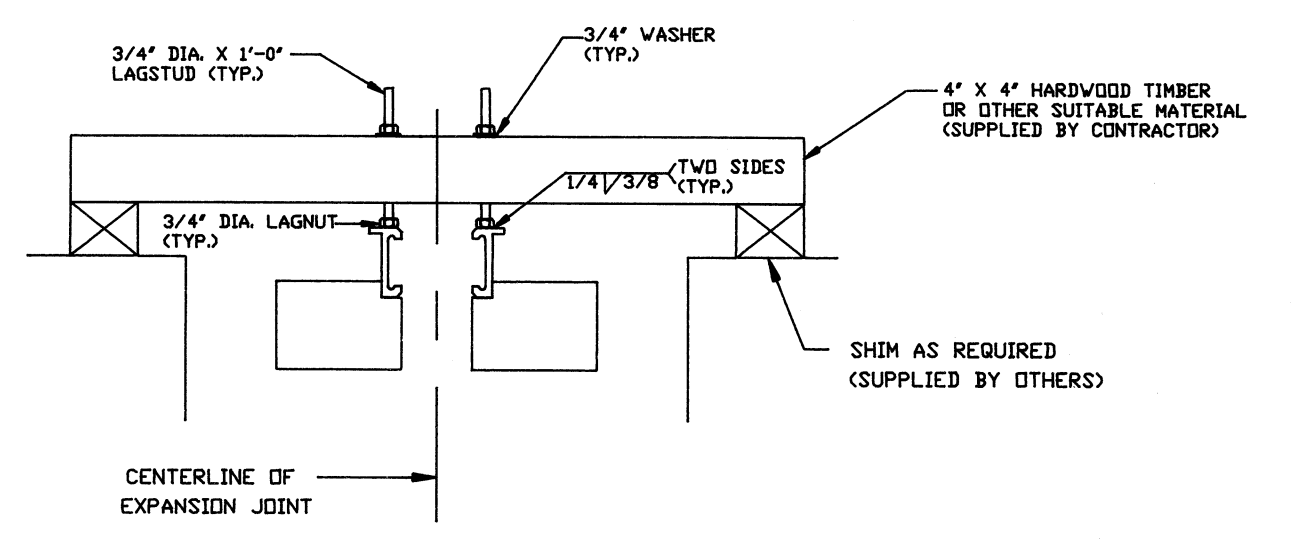
LIFTING DEVICE ASSEMBLY
(THIS IS A TEMPORARY DEVICE)

- NOTE:
- LIFTING ANGLES SHALL BE PLACED BY THE FABRICATOR TO ACHIEVE A LEVEL LIFT FOR PLACEMENT.
 - THE CONTRACTOR SHALL REMOVE AFTER THE JOINT IS SET IN BLOCKOUT PRIOR TO PRESETTING OF JOINT.
 - THE CONTRACTOR SHALL REMOVE BY GRINDING WELDS SMOOTH.



PRESTRESS DEVICE ASSEMBLY
(THIS IS A TEMPORARY DEVICE)

- PRESTRESS DEVICES SHALL BE LOCATED AT EVERY SUPPORT BOX.
- PRESTRESS DEVICES SHALL BE SHIP INSTALLED ON EACH JOINT. REMOVE PRESTRESS WHEN JOINT IS SET. THREADED STUDS SUPPLIED ON ALL BOXES.

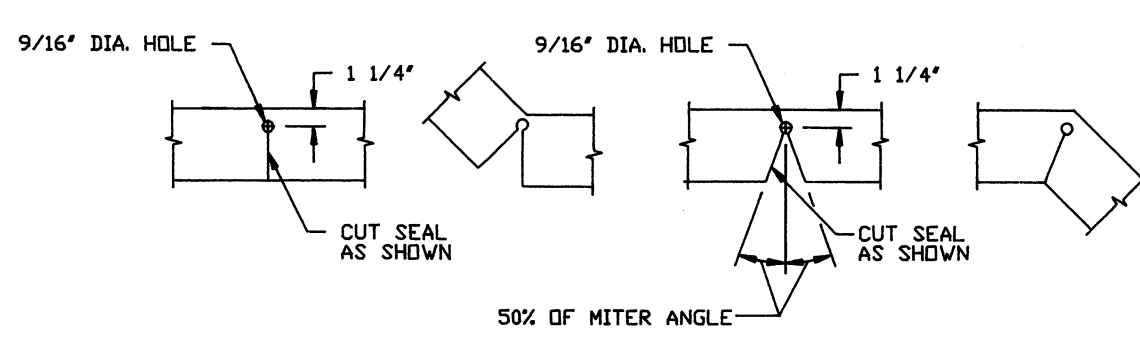
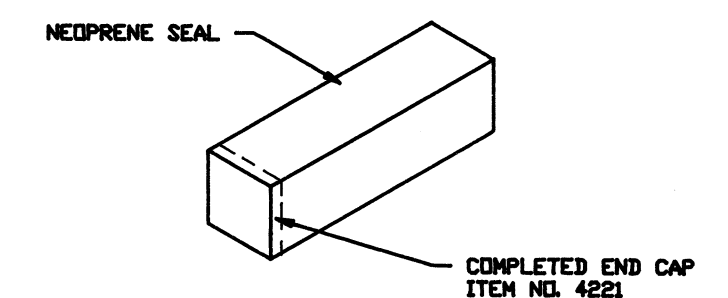


LEVELING ASSEMBLY

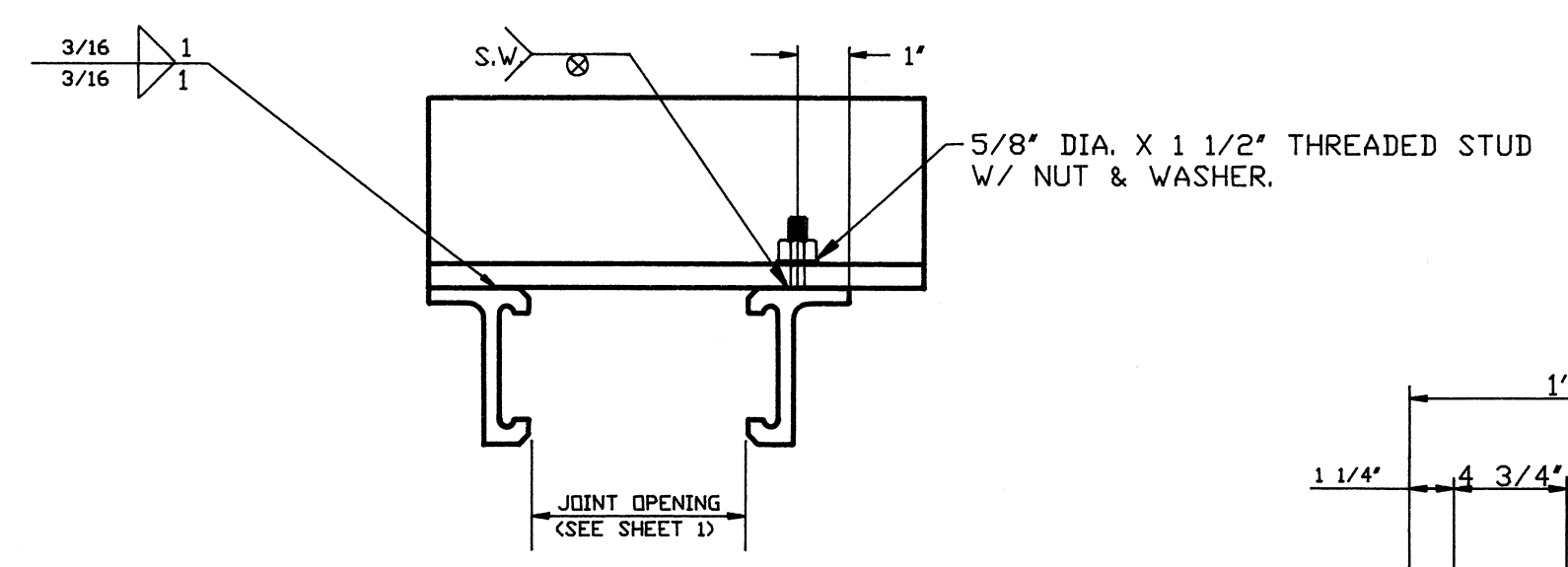
- NOTE:
- LEVELING NUTS SHALL BE LOCATED AT EVERY OTHER SUPPORT BOX IN ROADWAY AREA AND AT EACH BOX IN THE SIDEWALK AREA.
 - LEVELING NUTS SHALL BE SHIP INSTALLED PARALLEL TO THE EXPANSION JOINT SUPPORT BARS.
 - CONTRACTOR SHALL REMOVE LEVELING NUTS WHEN JOINT IS SET AND GRIND WELDS SMOOTH.
 - CONTRACTOR SHALL MATCH DRILL THE TIMBER WITH THE 3/4\"/>

PROCEDURE FOR END CAPPING NEOPRENE SEAL

- CLEAN SEAL ENDS WITH A SUITABLE SOLVENT CLEANER SUCH AS TOLUENE.
- TRIM SPONGE AND/ OR COPE SEAL TO SECURE END CAP.
- APPLY PRIMA-LUB ADHESIVE TO ADHERE END CAP IN PLACE.

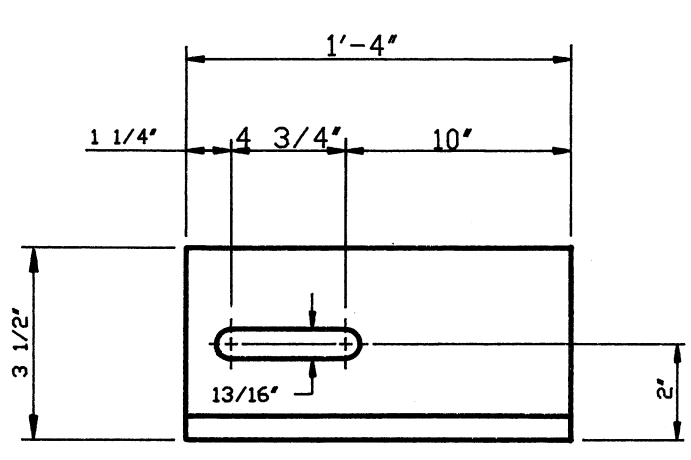


SEAL TREATMENTS
NTS

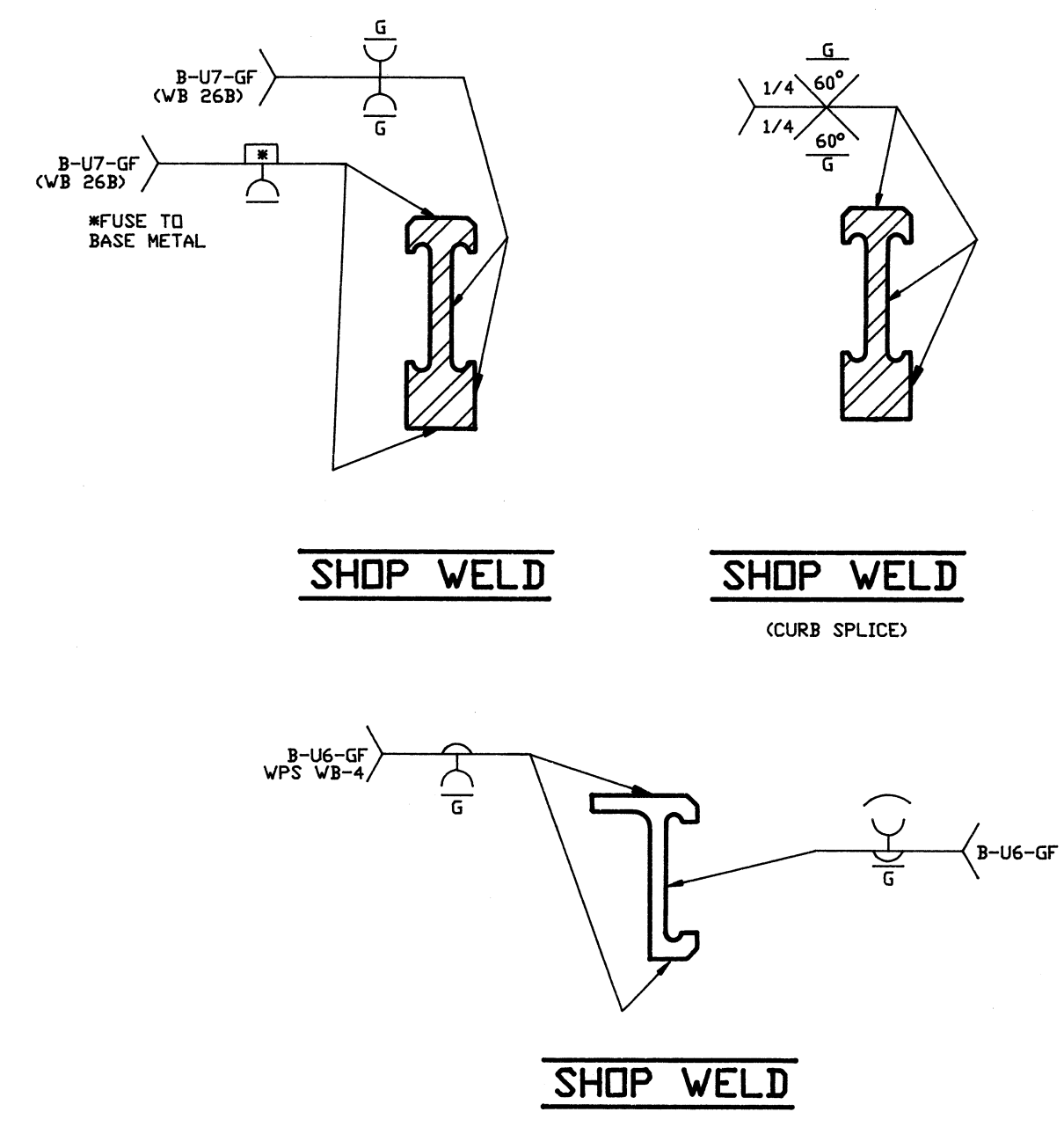


SHIPPING CLAMP ASSEMBLY
(THIS IS A TEMPORARY DEVICE)

- NOTE:
- SHIPPING CLAMPS SHALL BE SPACED DIRECTLY BETWEEN SUPPORT BOXES, PARALLEL TO THE CENTERLINE OF THE SUPPORT BOX, AND BETWEEN END OF JOINT AND FIRST BOX.
 - EACH SHIPPING CLAMP ASSEMBLY SHALL INCLUDE:
 - (1) ANGLE 3 1/2\"/>
 - CONTRACTOR TO REMOVE SHIPPING CLAMPS WHEN JOINT IS SET AND GRIND WELDS SMOOTH.



3A1 DETAIL
3 1/2\"/>



NO.	DESCRIPTION	NAME	DATE
4			
3			
2			
1			

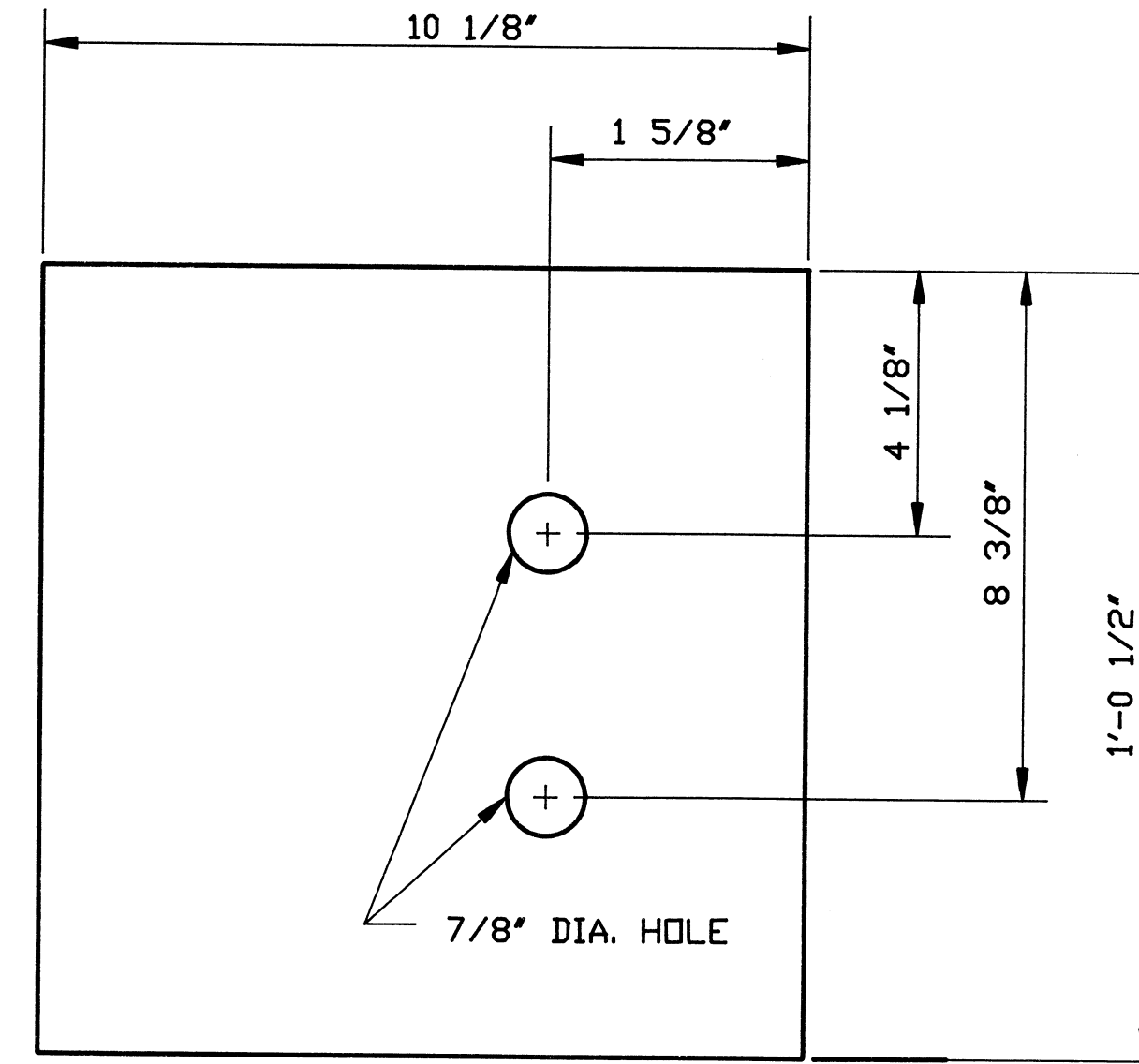
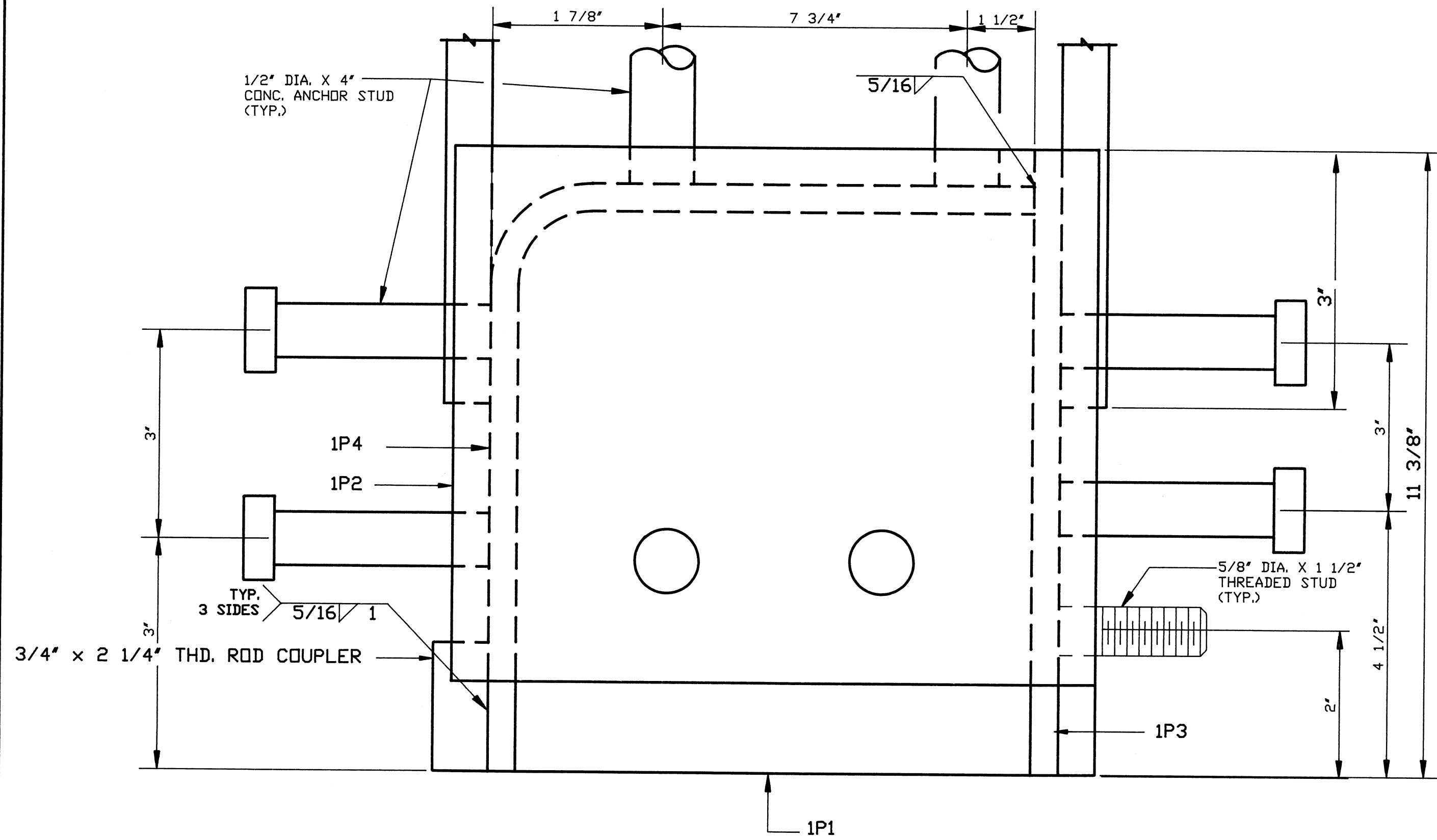
REVISIONS

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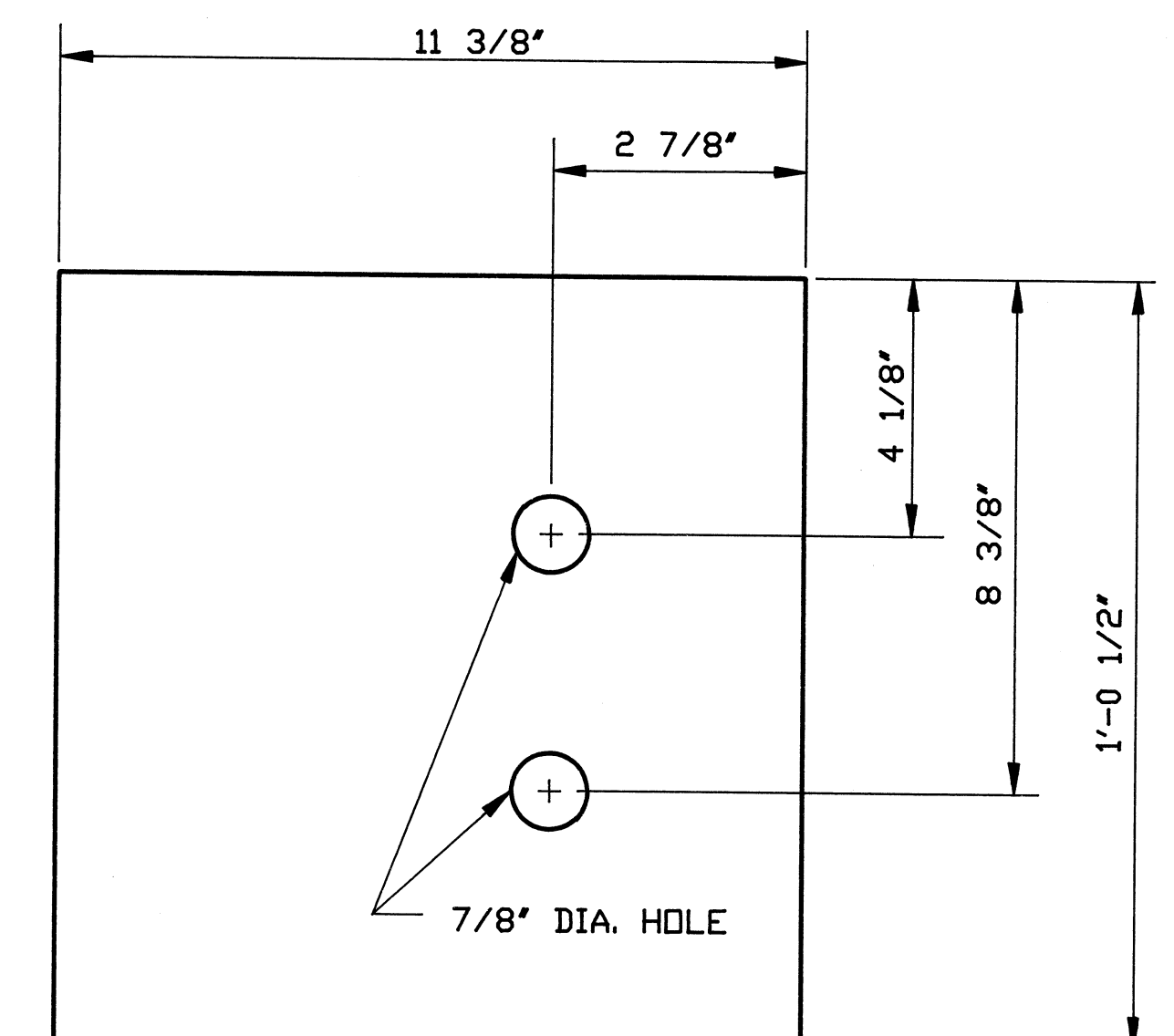
		DETAILED BY: JMJ CHECKED BY: JJ	DATE: 6-6-91 DATE: 6-13-91
PROJECT: ABBEY AVE. VIADUCT OVER CONRAIL, N. & S. R.R. AND SCRANTON ROAD CLEVELAND, OHIO		SCALE: NONE	VBA JOB NO.: 25015
TITLE: WBA D-900 MODULAR EXP. JT. DETAILS		SHEET NO.: 3 OF 4	DRAWING NO.: A-13598

LEV	PART NO.	QUANTITY	U/M	DESCRIPTION	MATERIAL
0	MOD25015AA03	1.000	EA	D900 SUPPORT BOX 'A'	<X
1	3540	52.000	LB	PLATE 3/8 A36	
1	MOD25015AA03AA	1.000	PK	SUPPORT BOX HDWRE PARTS	<U
2	4317	2.000	EA	MOD COMP BOX LOOP ANC	
2	7010	2.000	EA	THD STUD 5/8X1 1/2 AW NP 108	
2	8085	2.000	EA	NUT 3/4 X 2 1/4 H COUPLER ZP	A563
2	4590	12.000	EA	CONC. ANCHOR 5/8" X 4 A108	

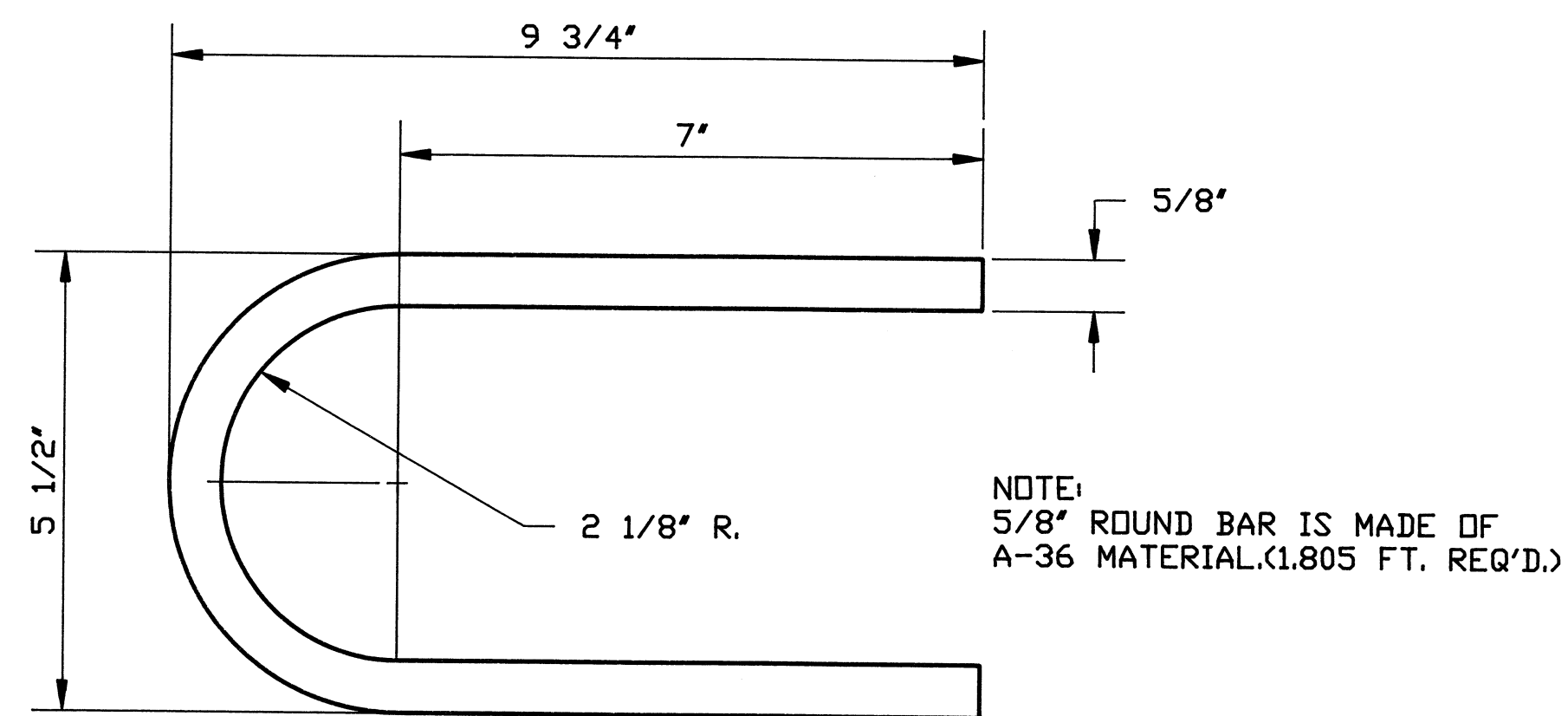
***** END OF STRUCTURED BILL OF MATERIALS*****



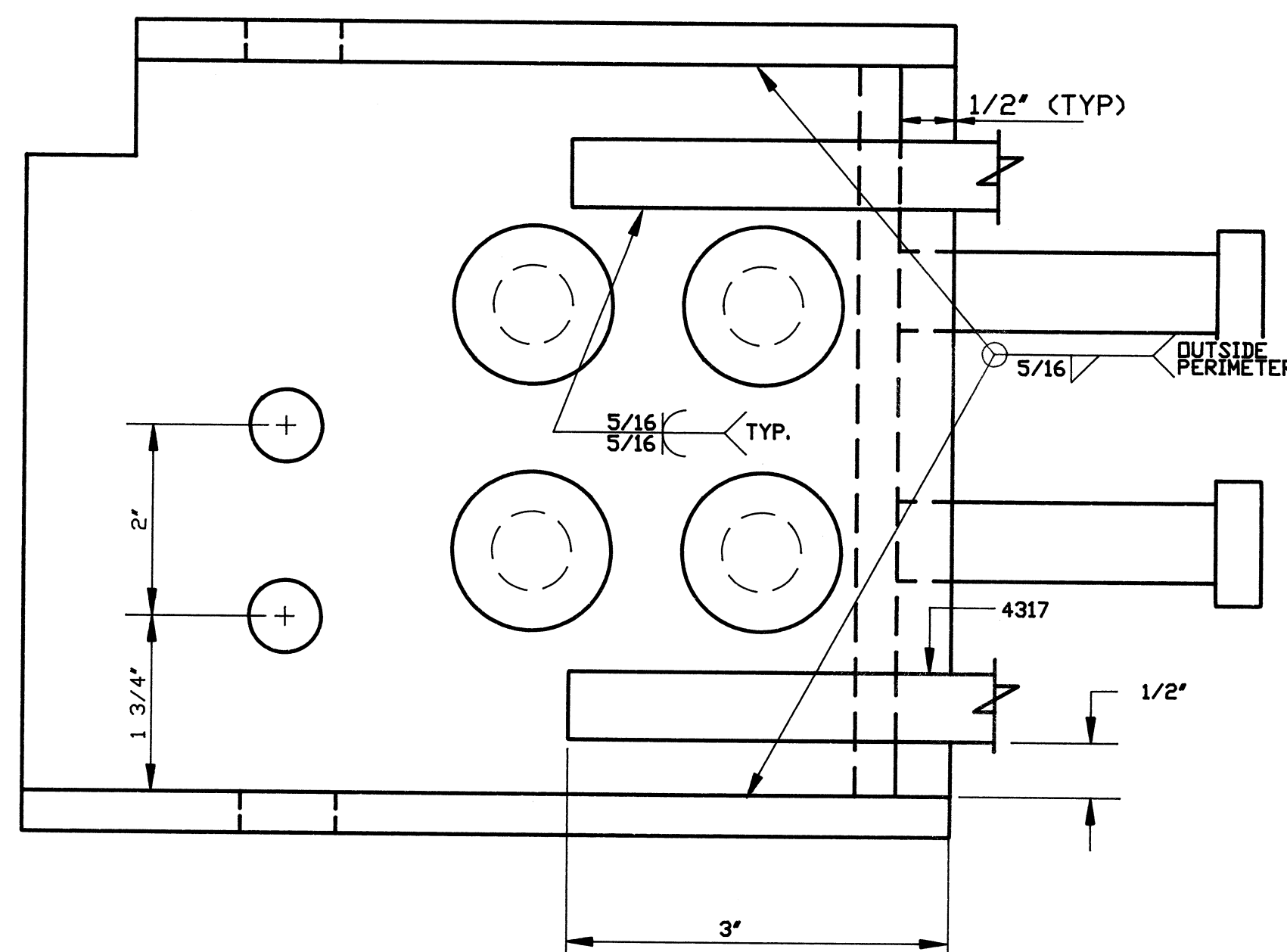
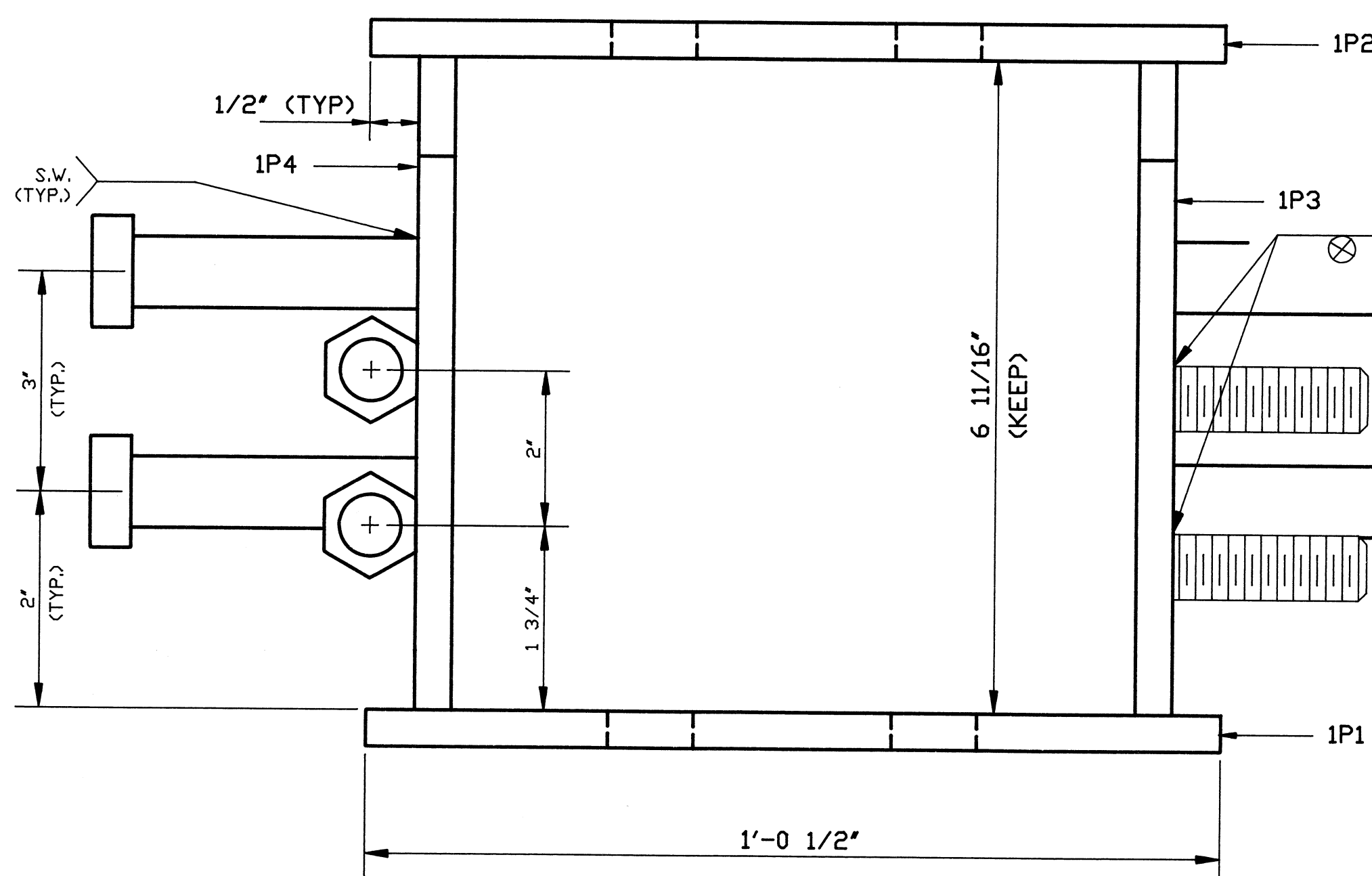
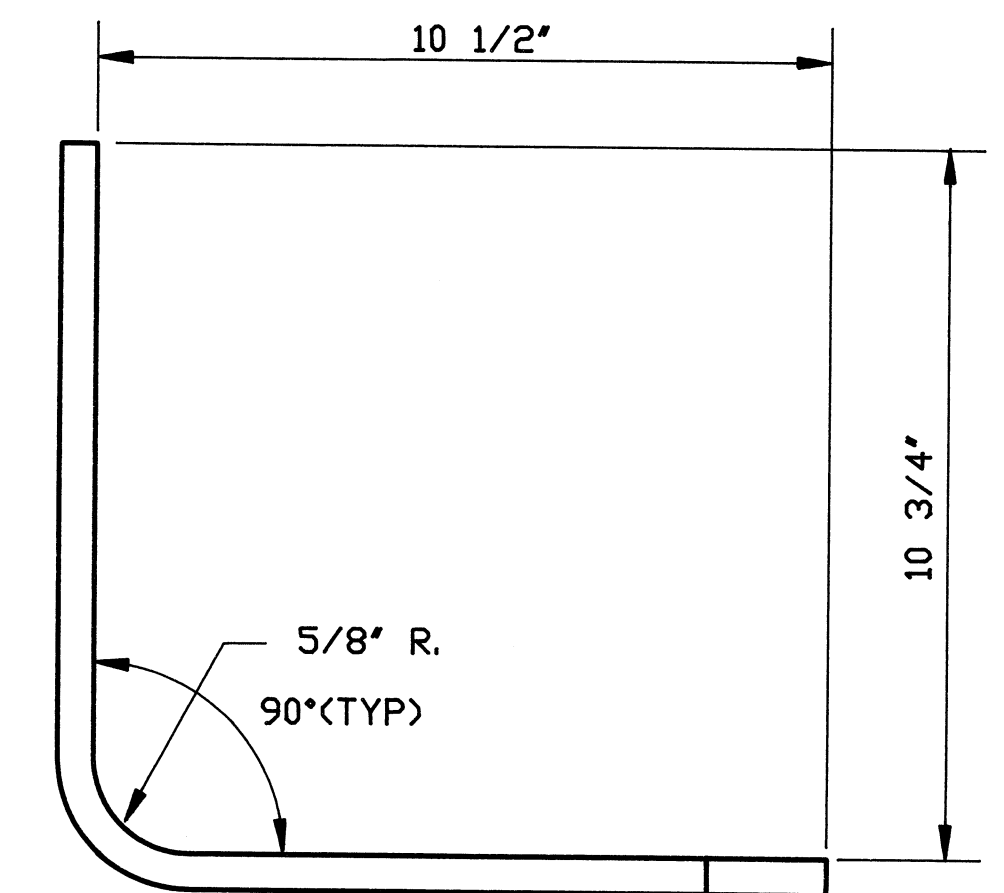
DETAIL - 1P2



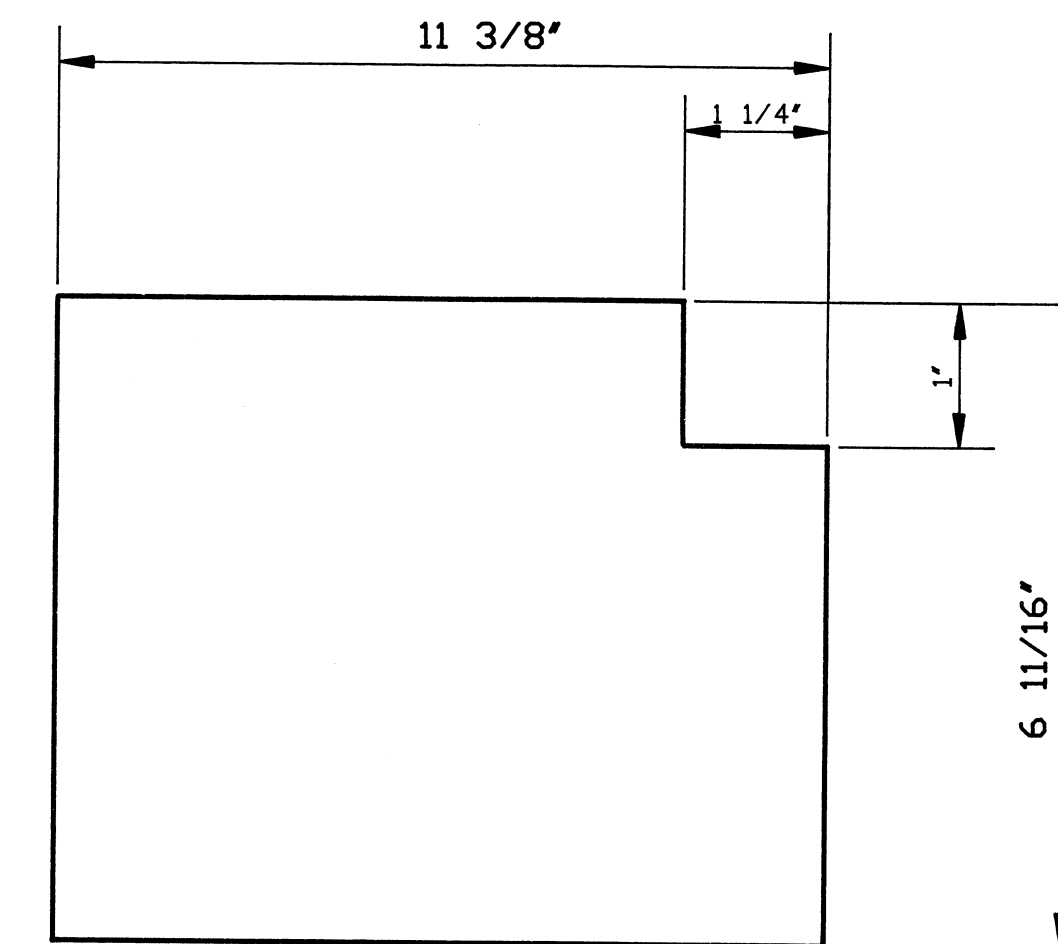
DETAIL - 1P1



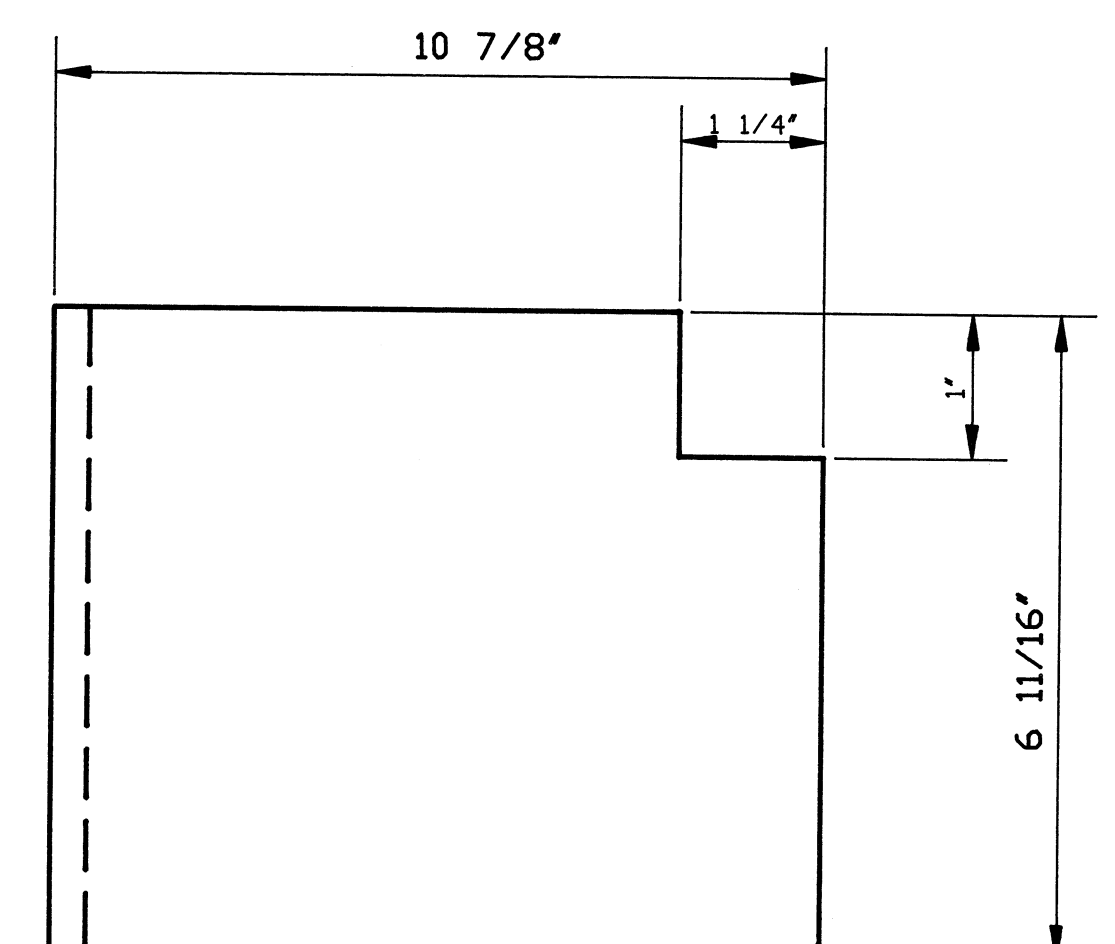
MOD. COMP. BOX LOOP ANCHOR
ITEM# 4317



SUPPORT BOX ASSEMBLY



DETAIL - 1P3



DETAIL - 1P4
DEVELOPED LENGTH = 1'-9 5/16"

SHEET NUMBER:
ITEM DESIGNATION:
ITEM NUMBER:

MARK SYSTEM

NO.	DESCRIPTION	NAME	DATE
4			
3			
2			
1			

REVISIONS

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Watson Bowman & Co.

95 Pineview Drive Amherst, N.Y. 14201 TEL. (716) 691-7566 FAX (716) 691-9239

PROJECT: ABBEY AVE. VIADUCT OVER CONRAIL, N. & S. R.R. AND SCRANTON ROAD CLEVELAND, OHIO

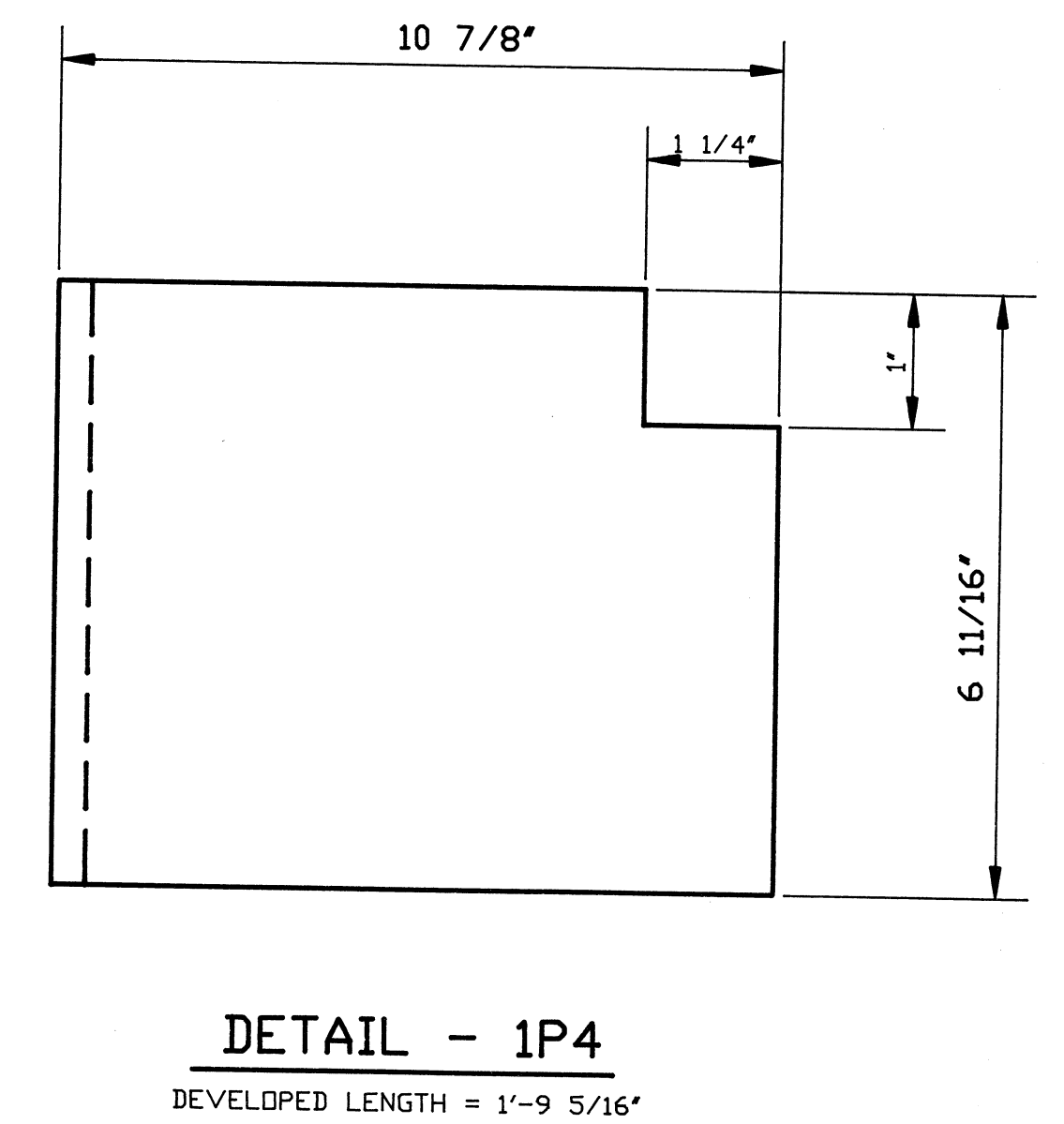
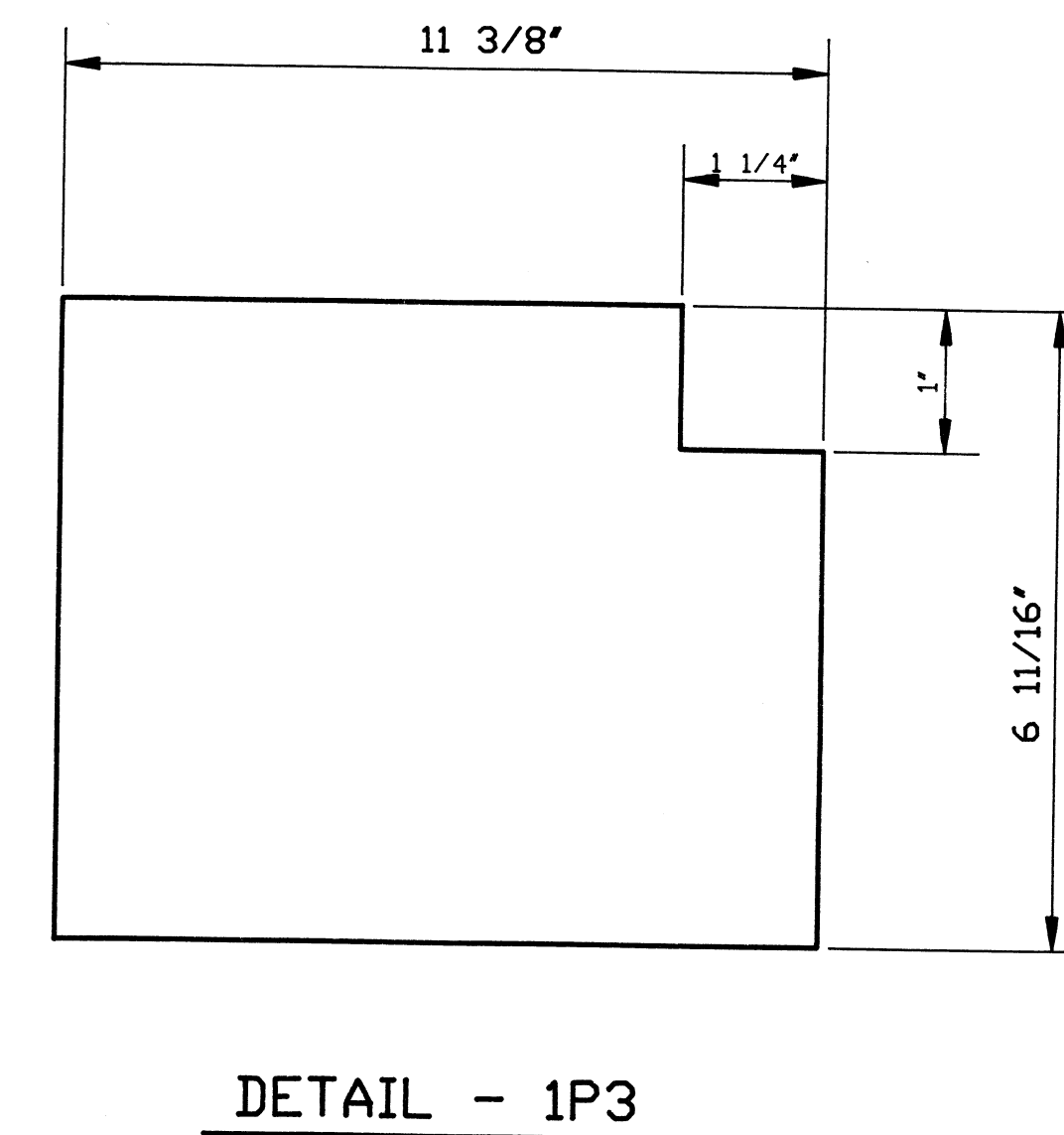
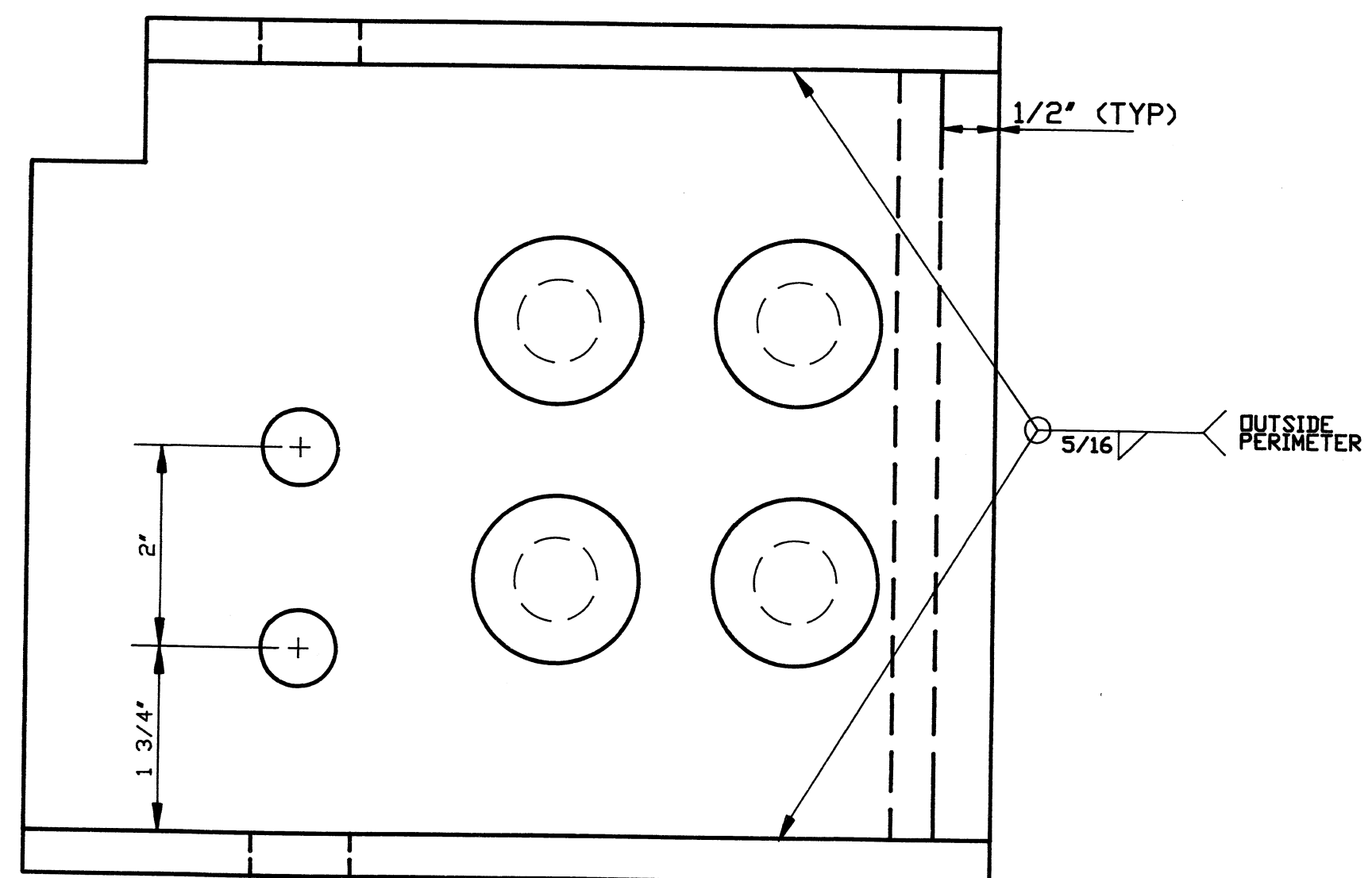
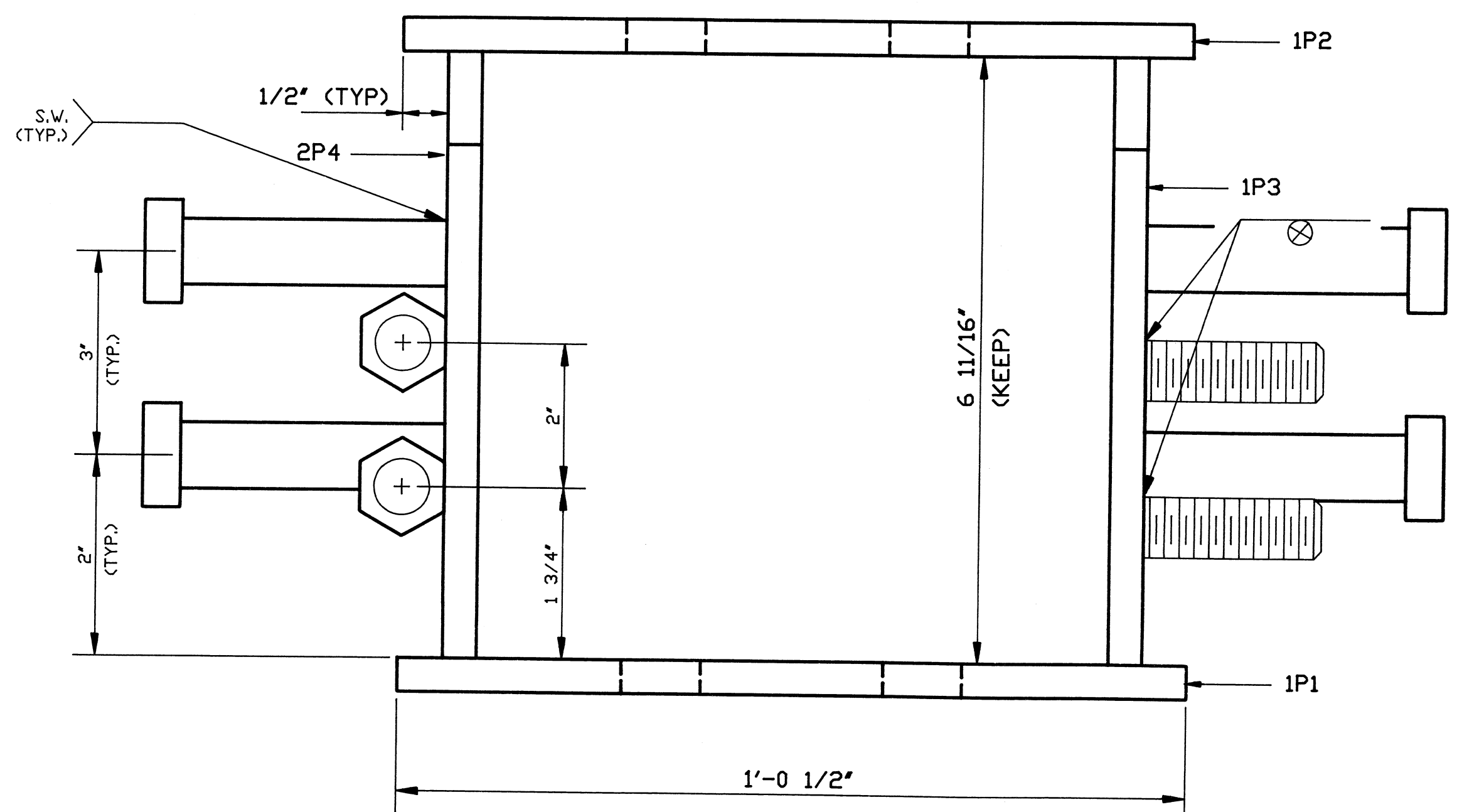
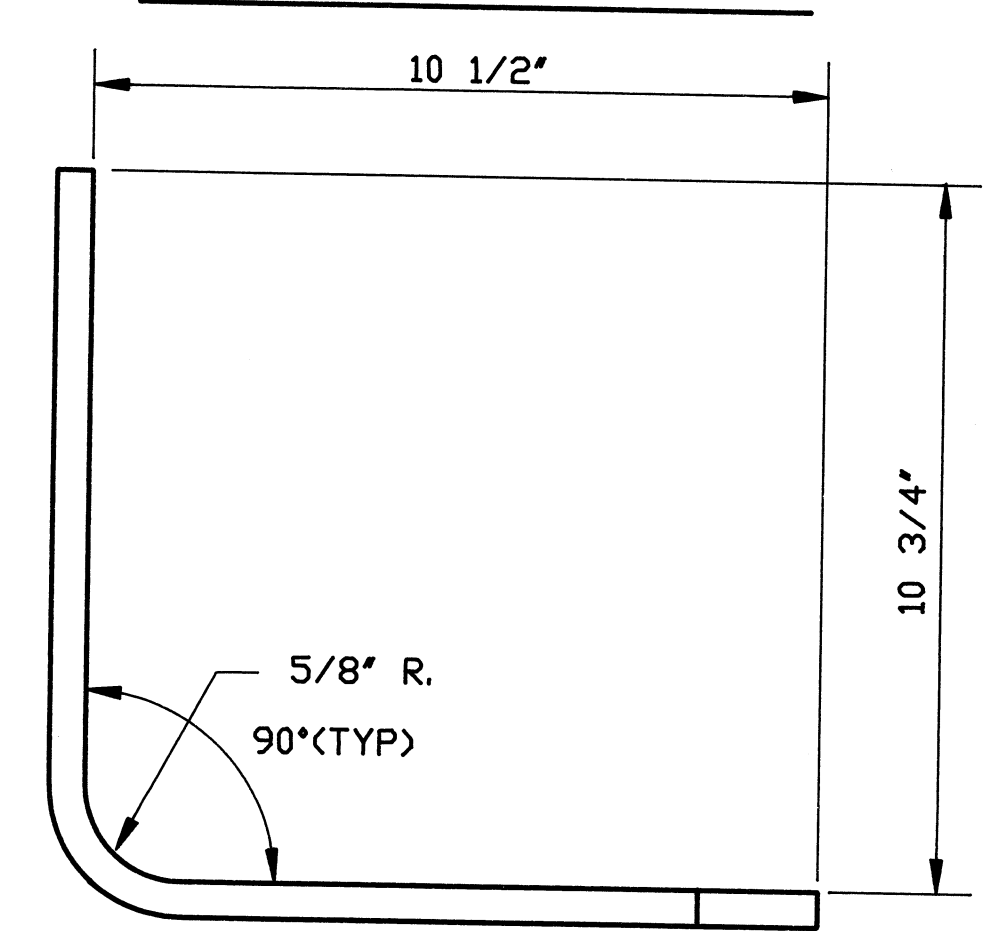
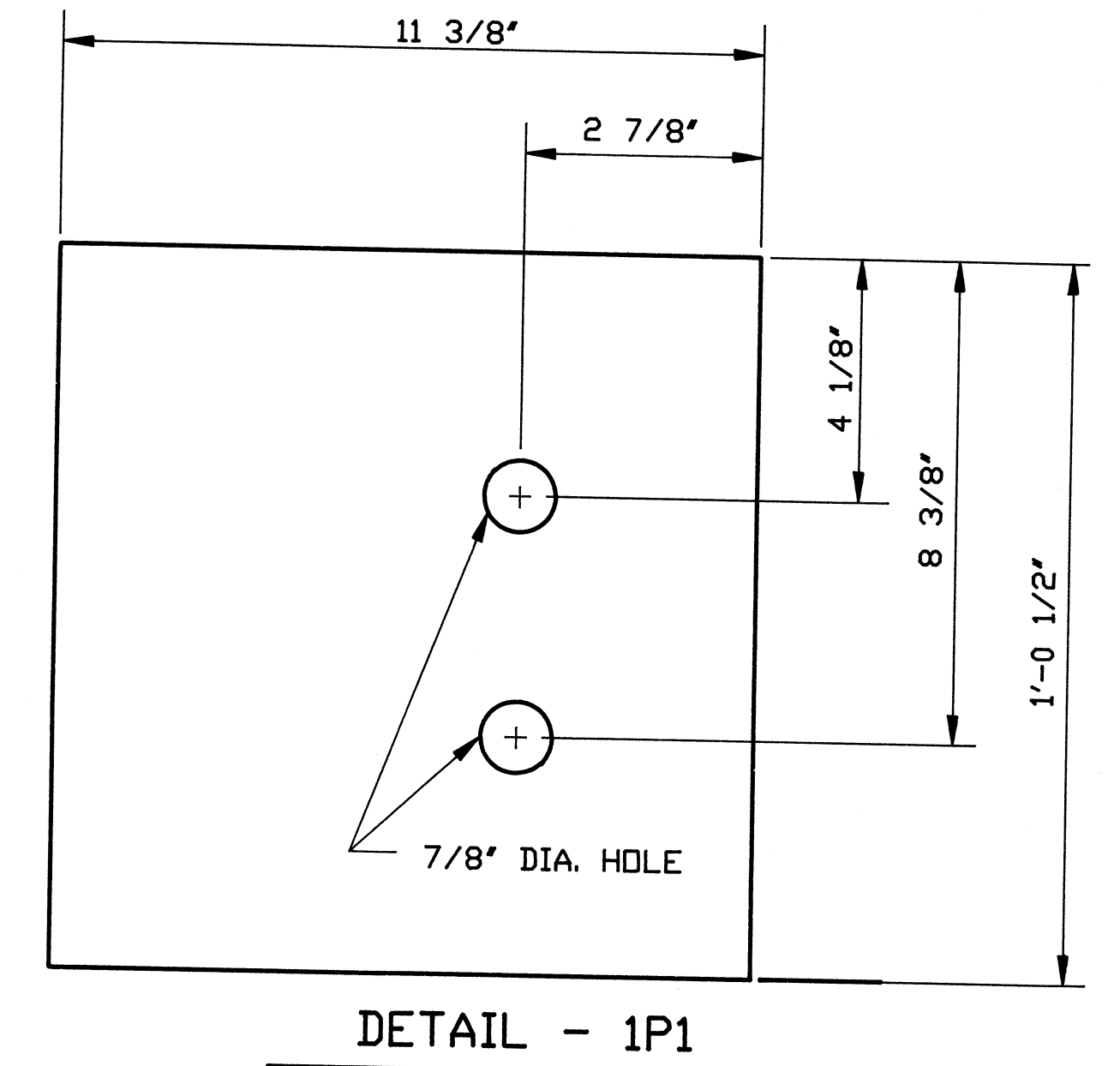
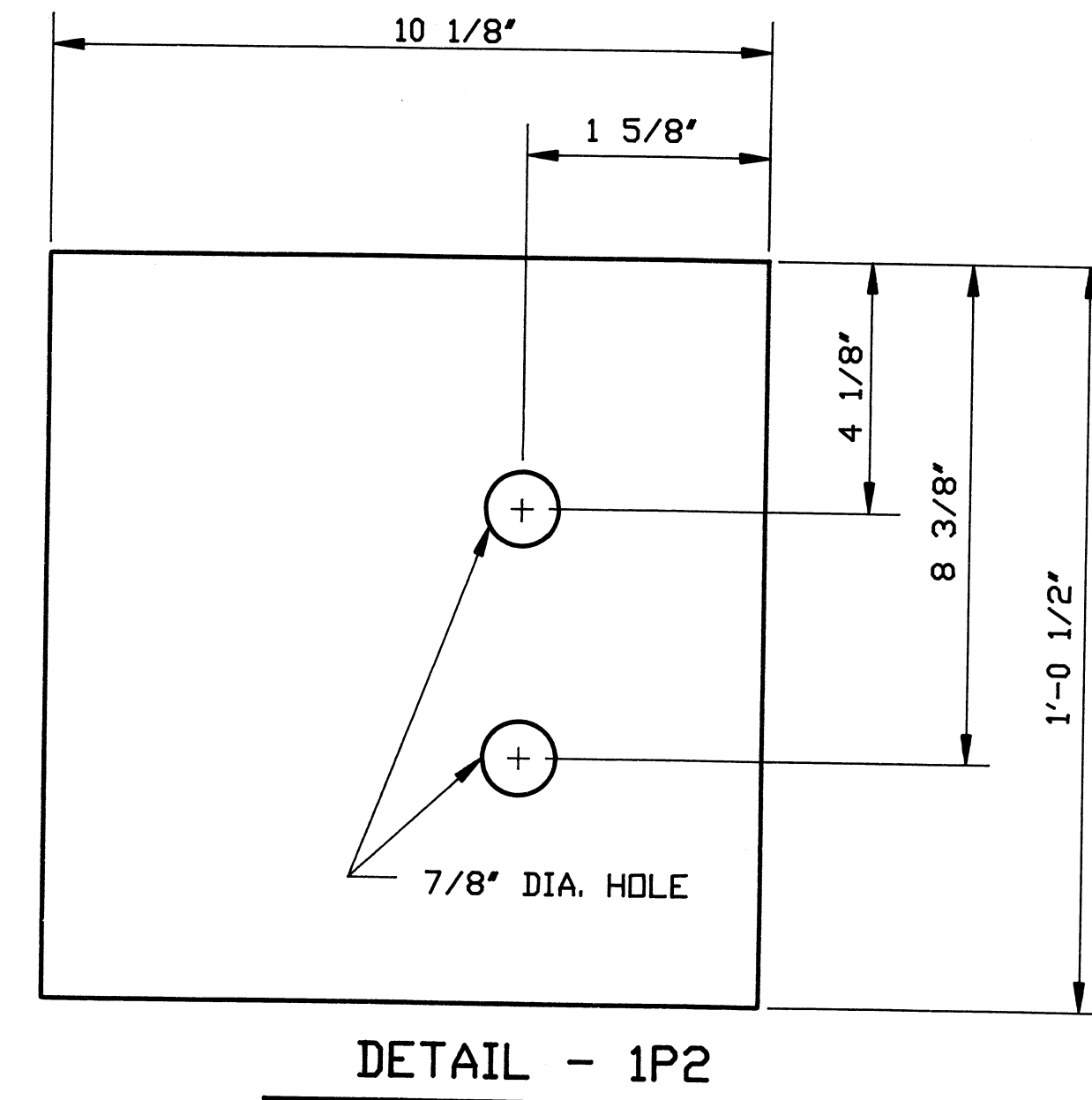
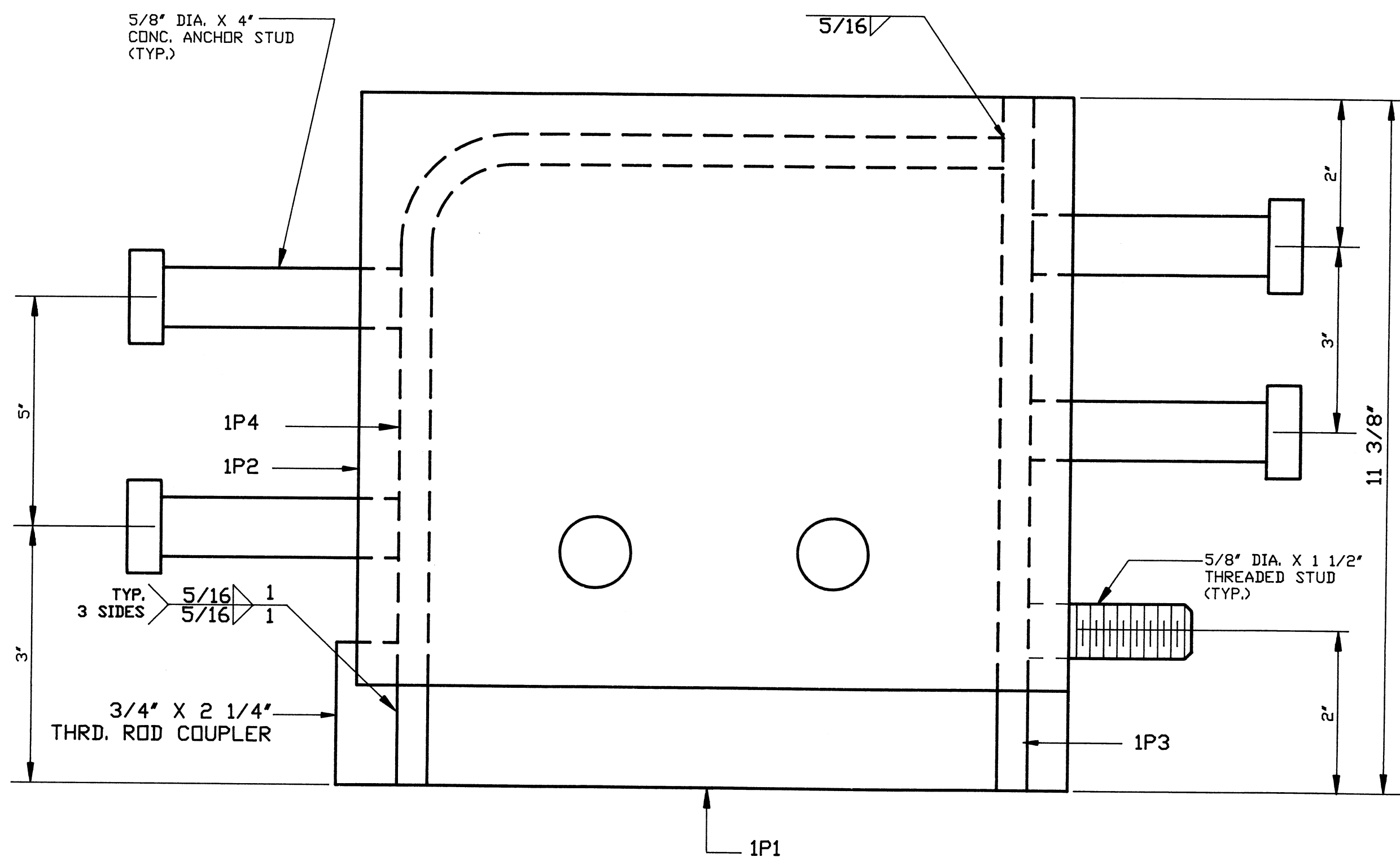
TITLE: SUPPORT BOX 'A' DETAILS FOR MOD25015AA

DETAILED BY: JMJ	DATE: 6-4-91
CHECKED BY: JJ	DATE: 6-4-91
SCALE: NTS	VBA JOB NO: 25015
SHEET NO: 1 OF 1	DRAWING NO: A-13607

MOD25015AA04 QTY REQD: 1 EA STRUCTURED BILL OF MATERIALS DWG NO.A-13606

LEV	PART NO.	QUANTITY	U/M	DESCRIPTION	MATERIAL
0	MOD25015AA04	1.000	EA	D900 SUPPRT BOX 'B'	CX
1	3540	52.000	LB	PLATE 3/8 A36	
1	MOD25015AA04AAA	1.000	PK	SUPPRT BDX HDWRE PARTS	CU
2	7010	2.000	EA	THD STUD 5/8X1 1/2 AW NP 108	
2	8085	2.000	EA	NUT 3/4 X 2 1/4 H COUPLER ZP	A563
2	4590	8.000	EA	CDNC. ANCHOR 5/8" X 4 A108	

***** END OF STRUCTURED BILL OF MATERIALS*****



SUPPORT BOX ASSEMBLY

MARK SYSTEM

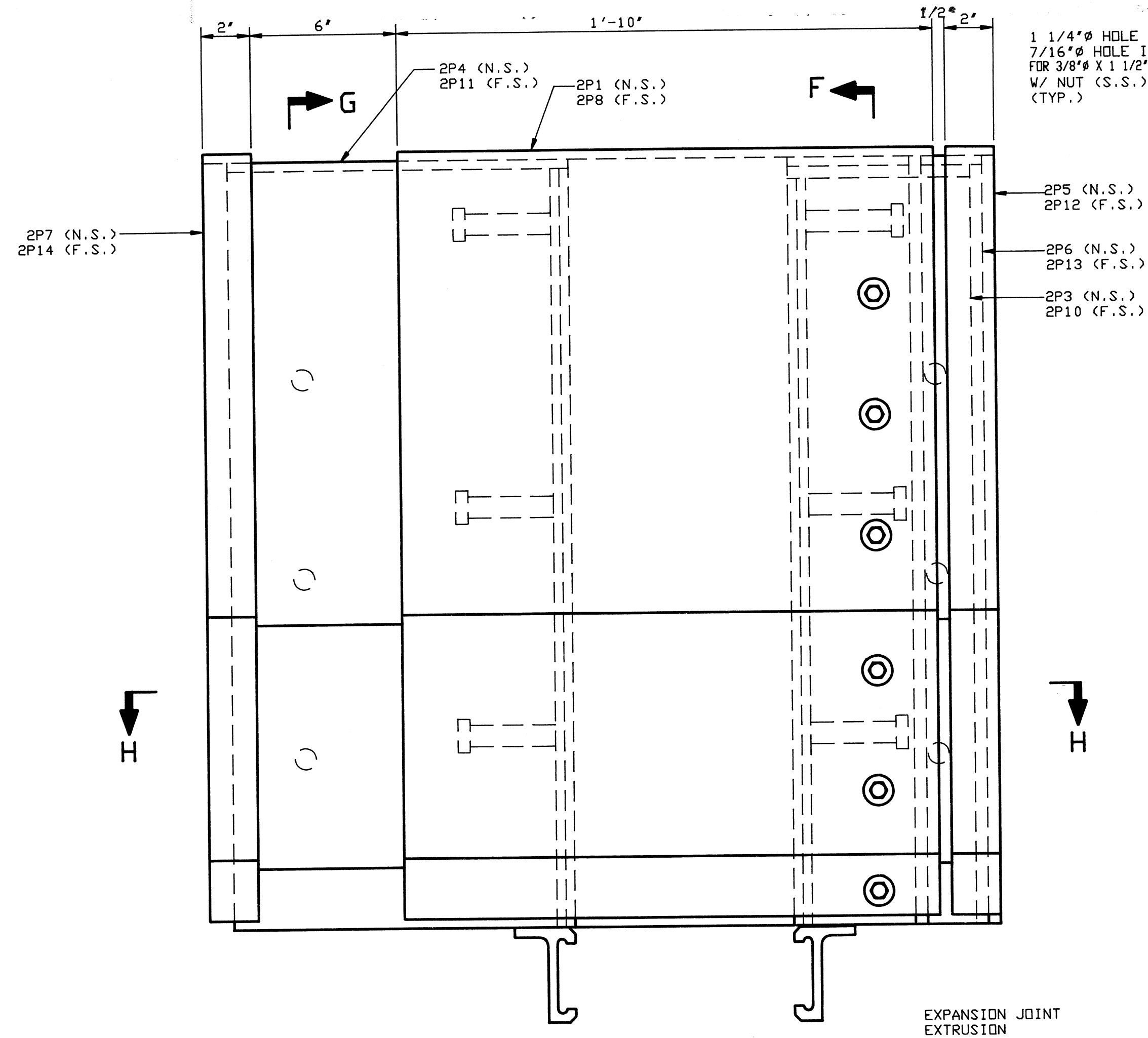
4	SHEET NUMBER
3	ITEM DESIGNATION
2	ITEM NUMBER
1	

NO.	DESCRIPTION	NAME	DATE
4			
3			
2			
1			

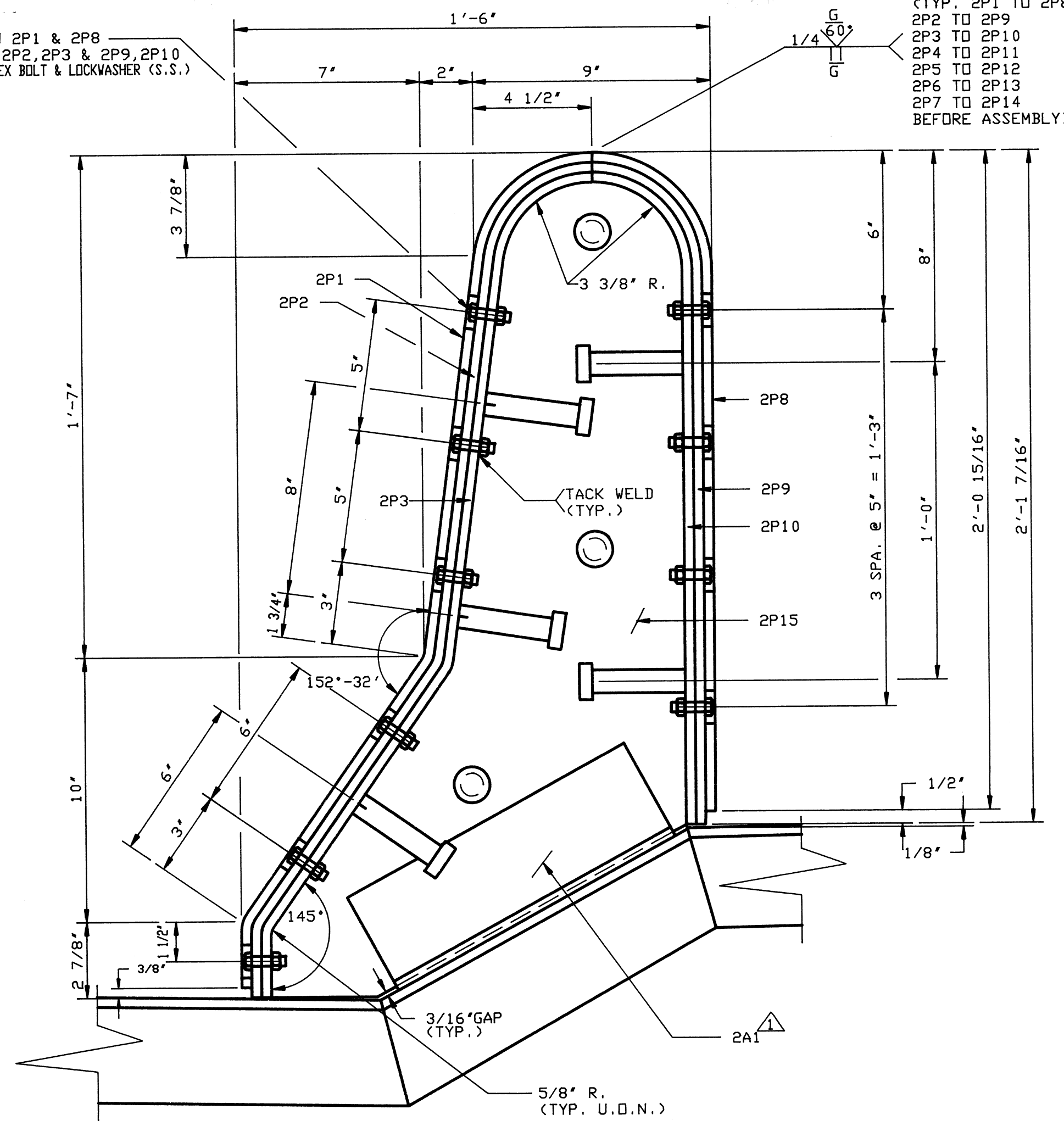
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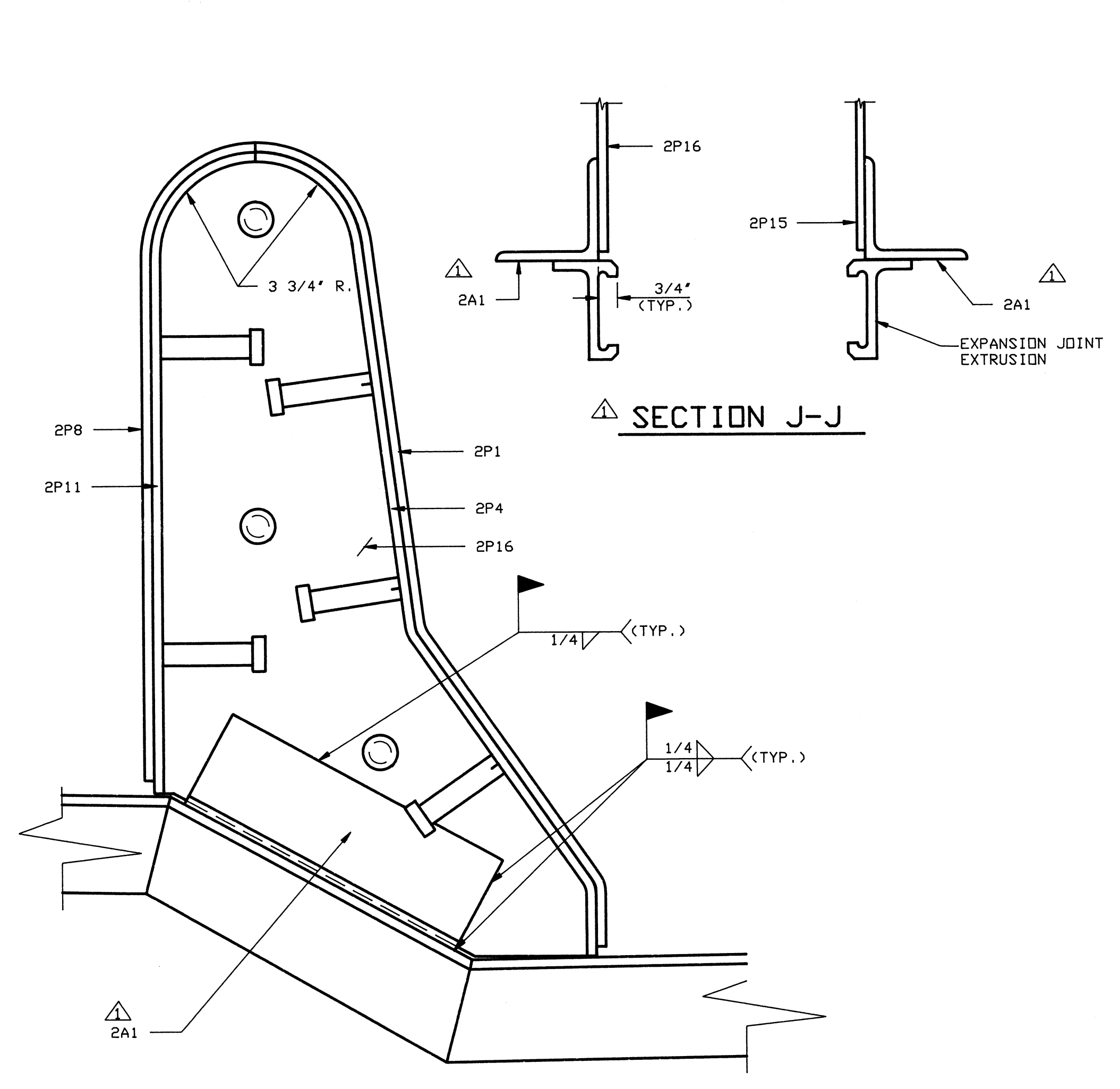
		DETAILED BY: JMJ CHECKED BY: JJ	DATE: 6-4-91 DATE: 6-4-91
95 Pineview Drive Amherst, N.Y. 14120 TEL. (716) 691-7566 FAX (716) 691-9839		PROJECT: ABBEY AVE. VIADUCT OVER CONRAIL, N. & S. R.R. AND SCRANTON ROAD CLEVELAND, OHIO	SCALE: NTS VBA JOB NO.: 25015
TITLED: SUPPORT BOX 'B' DETAILS FOR MOD25015AA		SHEET NO.: 1 OF 1	DRAWING NO.: A-13606



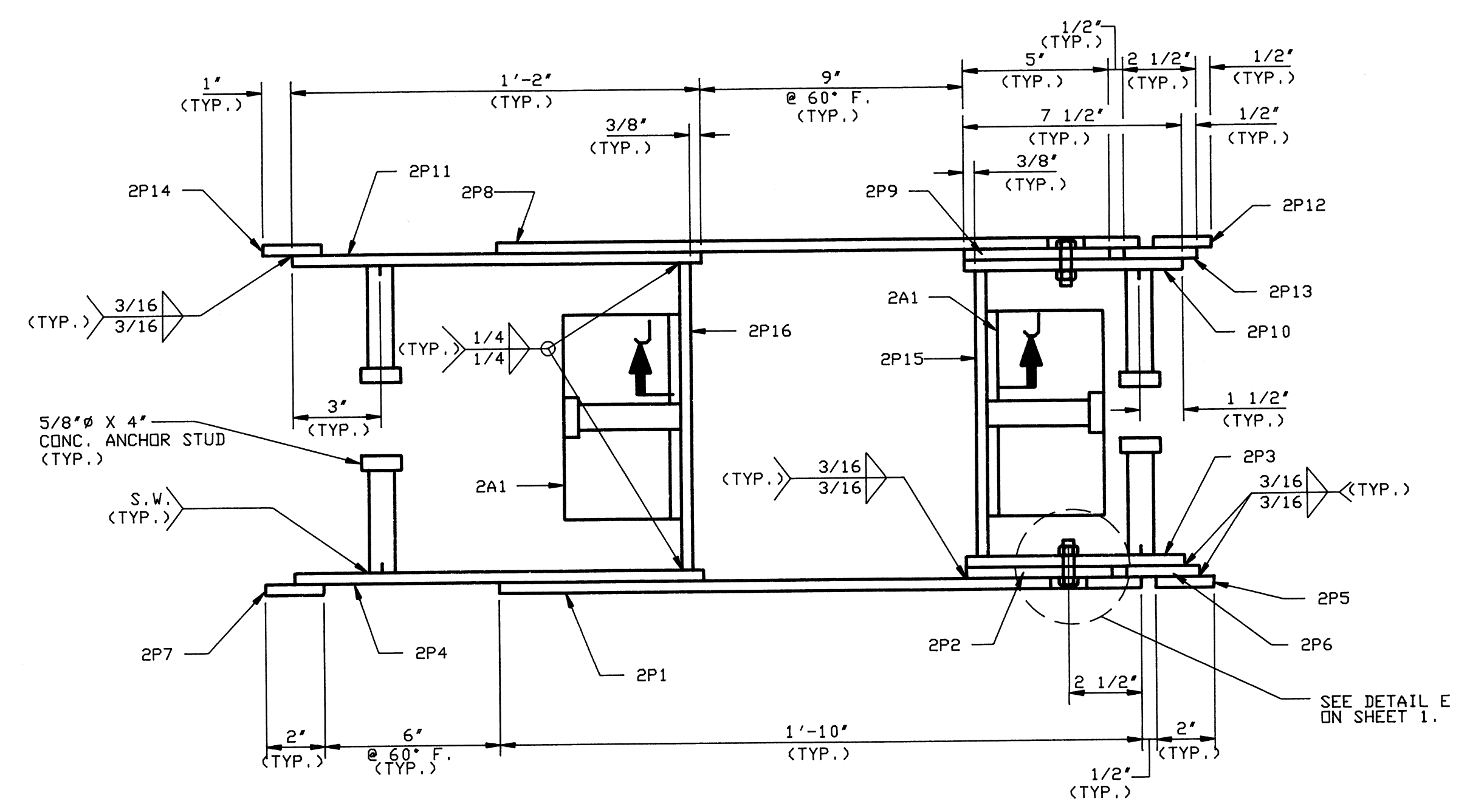
ELEVATION SLI25015AC - 4 REQ'D



SECTION F



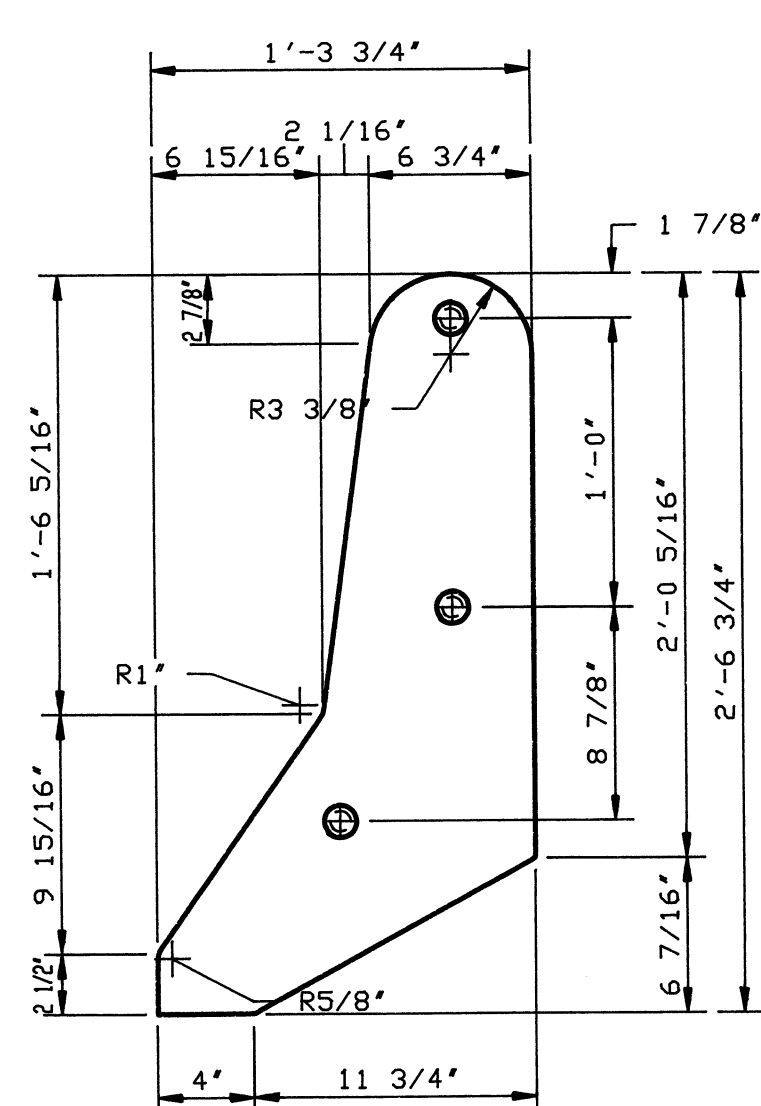
SECTION G



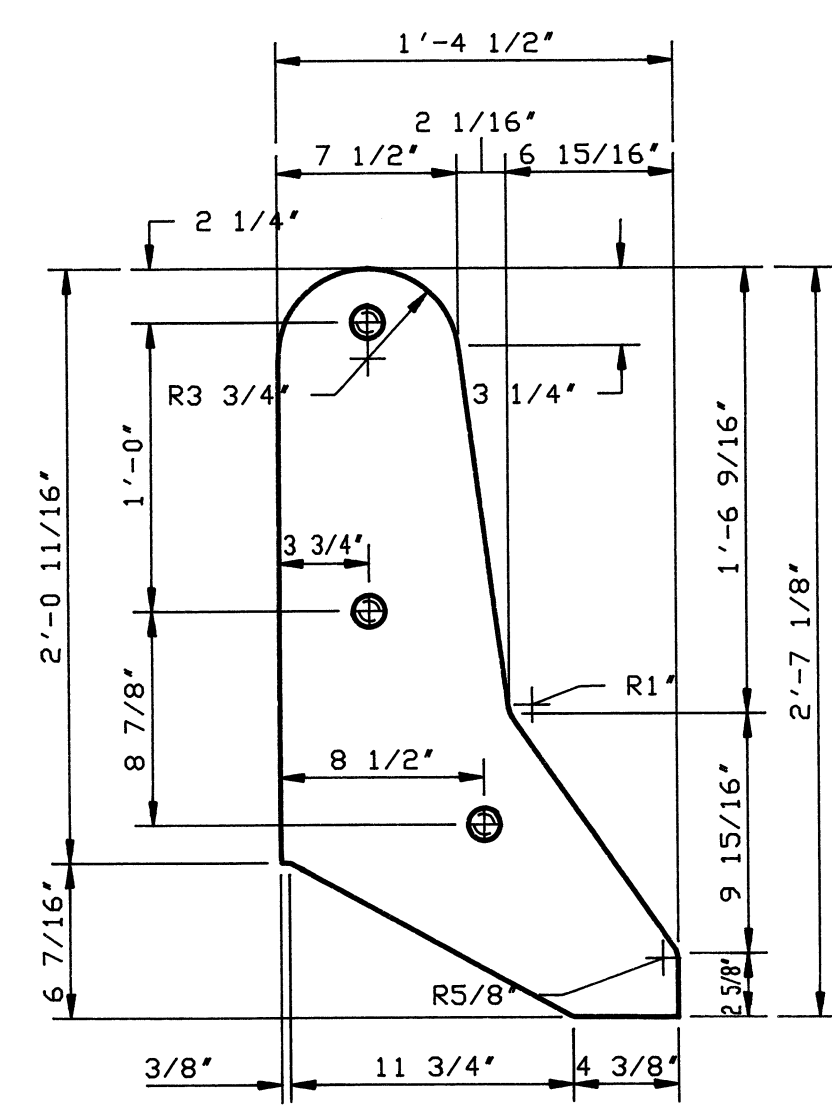
SECTION H-H

PLATE LIST*	
MARK	DESCRIPTION
2P1	PLATE - 3/8" X 1'-10" X 3'-6 1/16"
2P2	PLATE - 3/8" X 5" X 3'-5 7/8"
2P3	PLATE - 3/8" X 7 1/2" X 3'-5 5/16"
2P4	PLATE - 3/8" X 1'-2" X 3'-5 7/8"
2P5	PLATE - 3/8" X 2" X 3'-6 1/16"
2P6	PLATE - 3/8" X 2 1/2" X 3'-5 7/8"
2P7	PLATE - 3/8" X 2" X 3'-6 1/16"
2P8	PLATE - 3/8" X 1'-10" X 2'-9 3/16"
2P9	PLATE - 3/8" X 5" X 2'-9 1/8"
2P10	PLATE - 3/8" X 7 1/2" X 2'-8 9/16"
2P11	PLATE - 3/8" X 1'-2" X 2'-9 1/8"
2P12	PLATE - 3/8" X 2" X 2'-9 3/16"
2P13	PLATE - 3/8" X 2 1/2" X 2'-9 1/8"
2P14	PLATE - 3/8" X 2" X 2'-9 3/16"
2P15	PLATE - 3/8" X 1'-3 3/4" X 2'-6 3/4"
2P16	PLATE - 3/8" X 1'-4 1/2" X 2'-7 1/8"
2A1	ANGLE - 4" X 4" X 3/8" X 1'-0"

* ALL BENT PLATES INCLUDE AN EXTRA 6" FOR BENDING PURPOSES.



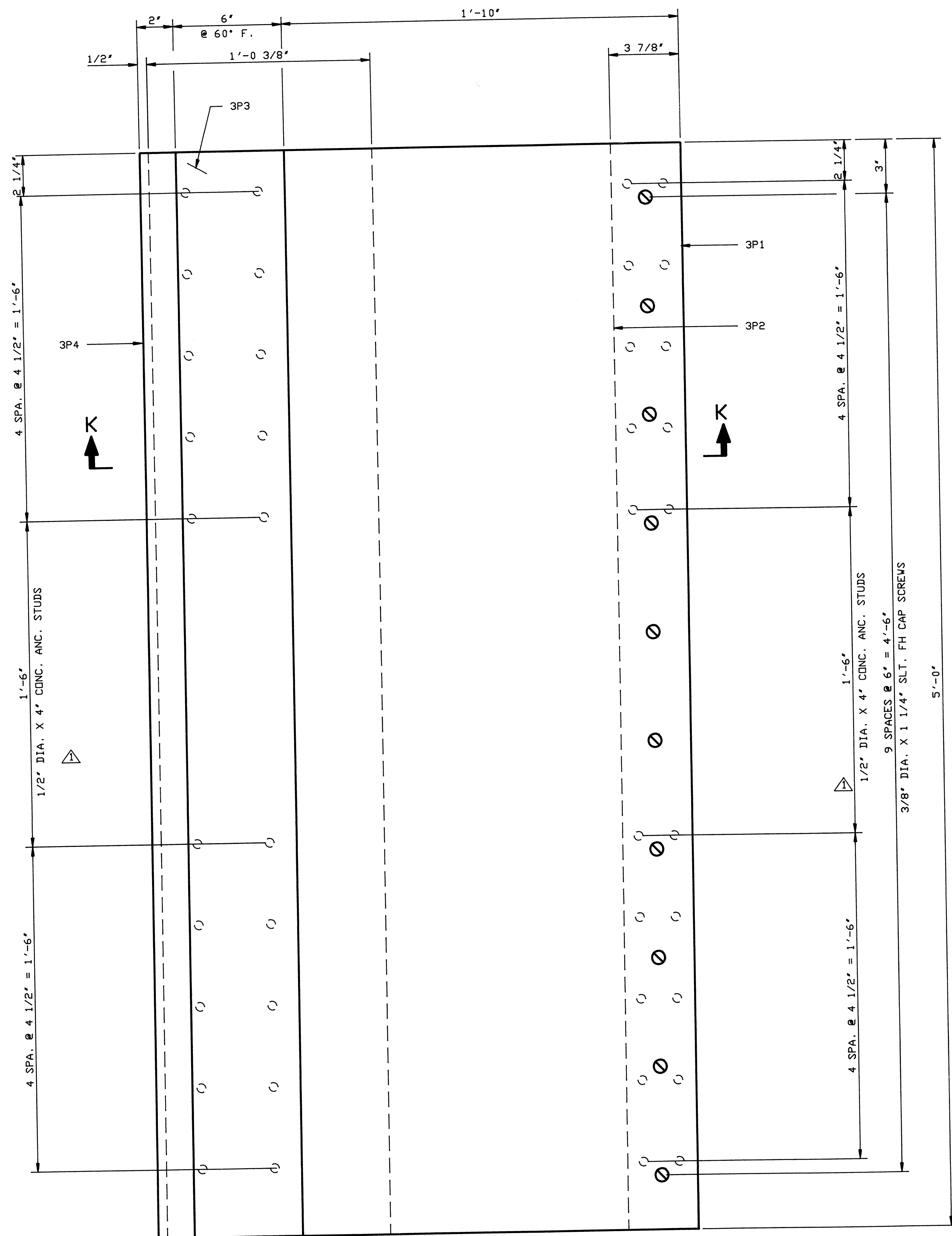
2P15 - DETAIL



2P16 - DETAIL

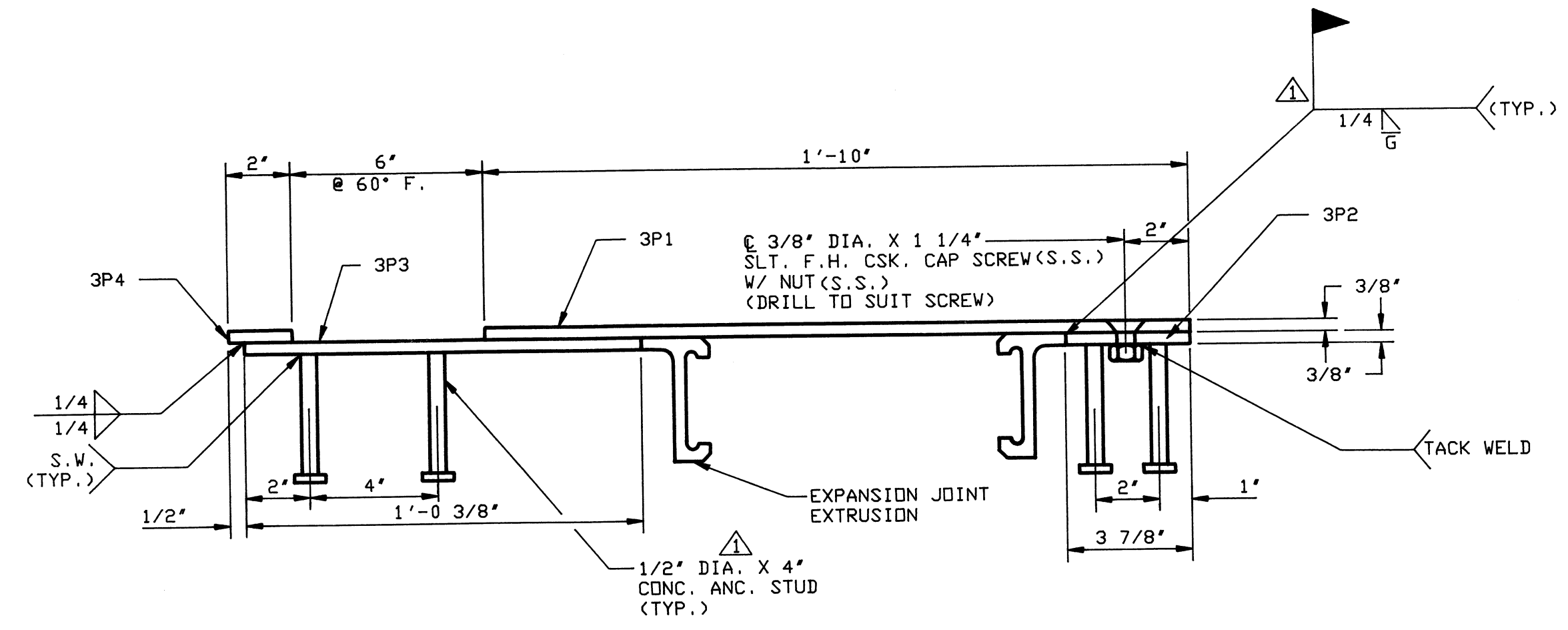
4					
3					
2					
1	REVISED ANGLE PIECE NUMBERS REMOVED STRUCTURED BILL	JMJ	7-9	95 PINEVIEW DRIVE AMHERST, N.Y. 14228	TEL. (716) 691-7566 FAX (716) 691-9239
NO.	DESCRIPTION	NAME	DATE	PROJECT	ABBAY AVE. VIADUCT OVER CONRAIL, N. & S. R.R. AND SCRANTON ROAD CLEVELAND, OHIO
<p>REVISIONS</p> <p>THIS DRAWING AND THE DESIGN, DETAILS AND/OR ENGINEERING INFORMATION CONTAINED HEREIN ARE THE PROPRIETARY PROPERTY OF WATSON ENGINEERING AND ARE NOT TO BE REPRODUCED OR USED EXCEPT FOR THE PURPOSE FOR WHICH THEY HAVE BEEN FURNISHED. ALL RIGHTS OF DESIGN AND INVENTION ARE HEREBY RESERVED.</p>					
				<p>DATE: 6-10-91</p> <p>DATE: 6-13-91</p> <p>SCALE: 3" = 1'</p> <p>SHEET NO: 2 OF 3</p> <p>DRAWING NO: A-13627</p>	

NOTE: SIDEWALK SLIDER PLATES NOT SHOWN FOR CLARITY.



PLAN VIEW SLI25015AD - 4 REQ'D

NOTE:
SIDEWALK PARAPET & SAFETY BARRIER
NOT SHOWN FOR CLARITY.



SECTION K-K

4											
3											
2											
1	REVIS	REVISED ANCHOR STUDS & ADDED FIELD WELD	JMJ	7-9-91							
<p>REVISIONS</p> <p>THIS DRAWING AND THE DESIGN DETAILS AND/OR ENGINEERING INFORMATION CONTAINED HEREIN ARE THE PROPRIETARY PROPERTY OF WATSON BOYMAN AND ARE NOT TO BE REPRODUCED OR USED EXCEPT FOR THE PURPOSE FOR WHICH THEY HAVE BEEN FURNISHED. ALL RIGHTS OF DESIGN AND INVENTION ARE HEREBY RESERVED.</p>											
<p>PROJECT: ABBEY AVE. VIADUCT OVER CONRAIL, N. & S. R.R. AND SCRANTON ROAD CLEVELAND, OHIO</p>						<p>DATE: 6-10-91</p>			<p>DATE: 6-13-91</p>		
<p>TITLE: SLIDER PLATE DETAILS</p>						<p>SCALE: 3' = 1'</p>			<p>VBA JOB NO: 25015</p>		
<p>3 OF 3</p>						<p>SHEET NO:</p>			<p>DRAWING NO: A-13627</p>		