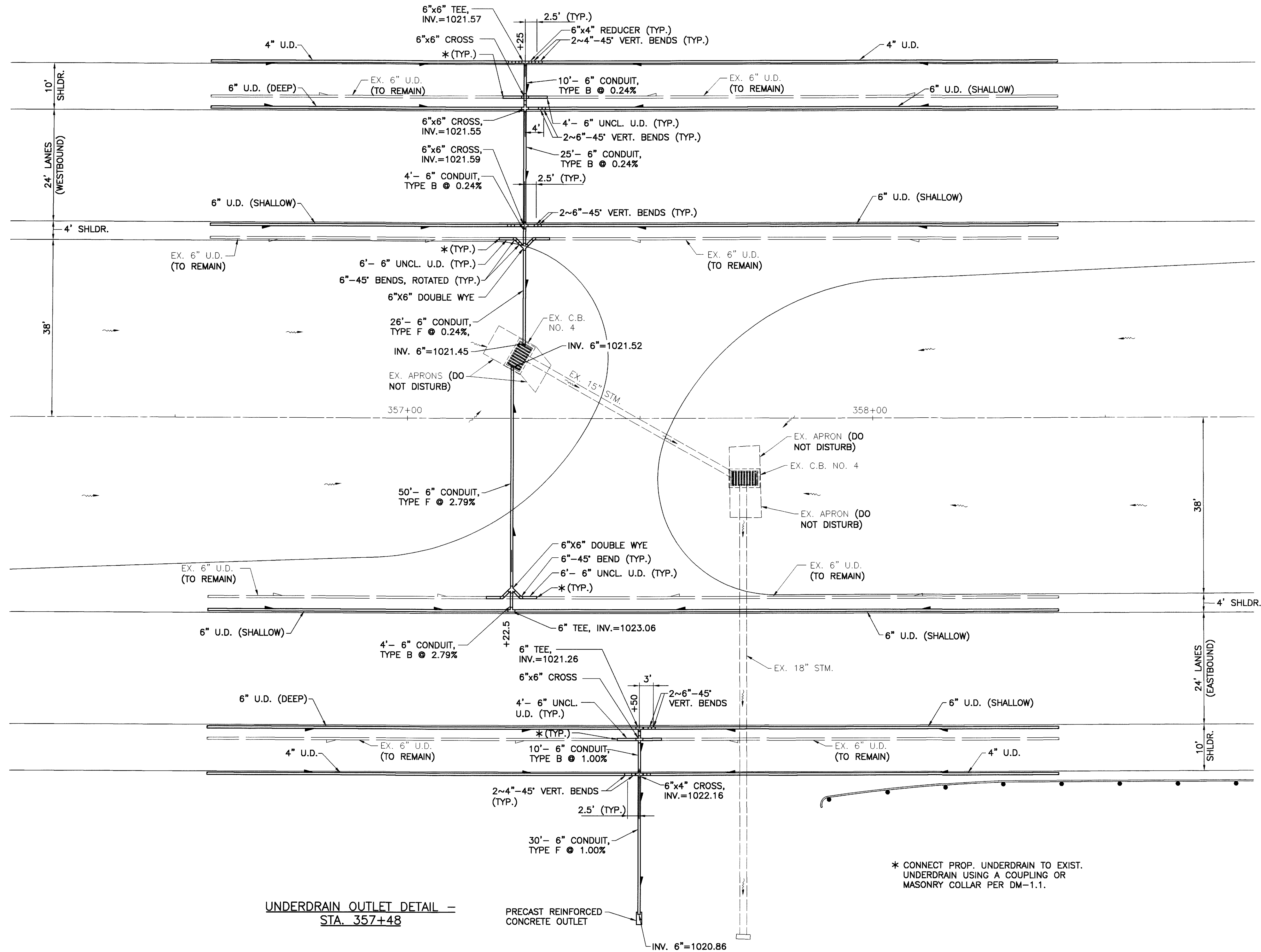


DATE: 04/17/03  
 CAD FILE: DRAIN.DTLSS  
 OPERATOR: CAF/BBK/MCC  
 PLOT SCALE: 1"=1'



UNDERDRAIN OUTLET DETAIL -  
 STA. 357+48

\* CONNECT PROP. UNDERDRAIN TO EXIST.  
 UNDERDRAIN USING A COUPLING OR  
 MASONRY COLLAR PER DM-1.1.

CALCULATED: RLA  
 CHECKED: MRD

HORIZONTAL SCALE  
 1" = 10 FEET

UNDERDRAIN OUTLET DETAILS

MAH - 76 - 3.08

**RECONNECTION OF EXISTING UNDERDRAINS**

THE FOLLOWING QUANTITIES HAVE BEEN INCLUDED IN THE GENERAL SUMMARY FOR USE AS DIRECTED BY THE ENGINEER TO RECONNECT EXISTING UNDERDRAINS ENCOUNTERED DURING CONSTRUCTION OF PROPOSED UNDERDRAIN OUTLETS IN ACCORDANCE WITH THE DETAILS SHOWN ON SHEETS 197-202:

- ITEM 202 - PIPE REMOVED 500 FT.
- ITEM 605 - 6" UNCLASSIFIED PIPE UNDERDRAINS WITH FABRIC WRAP 550 FT.

FOR INFORMATION ONLY:

- 6"- 45° BEND : 80
- 6"x6"- TEE : 45
- 6"x6"- CROSS : 10
- 6"x6"- 45° WYE : 45
- 6"x6"- DOUBLE WYE : 6
- 6"- COUPLING : 110
- 6"- END CAP : 80

**NEW OUTLET FOR EXISTING UNDERDRAINS**

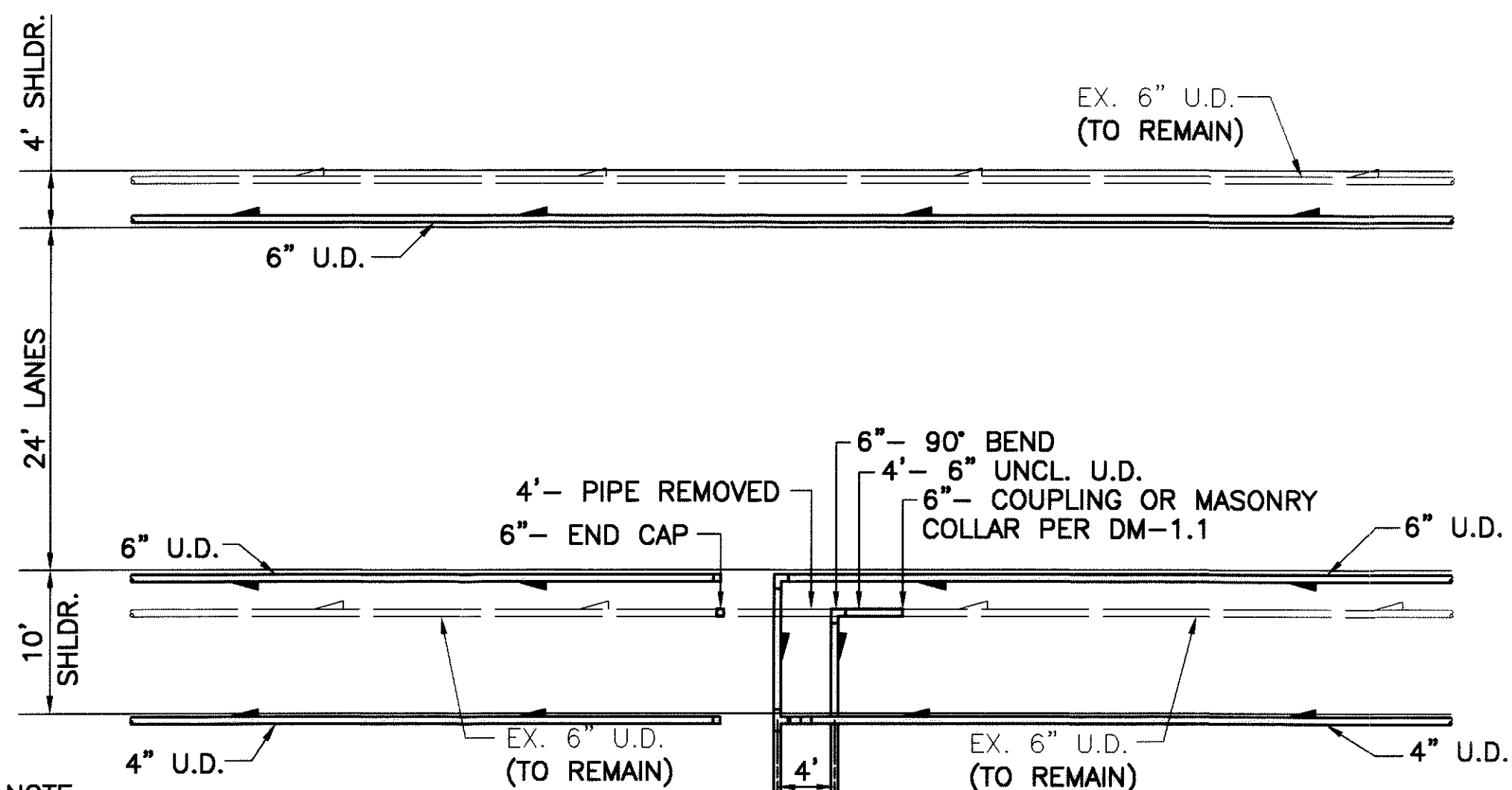
IF AN EXISTING UNDERDRAIN CANNOT BE CONNECTED TO A PROPOSED UNDERDRAIN OUTLET AS PROVIDED FOR IN THE RECONNECTION OF EXISTING UNDERDRAIN NOTE, AN OUTFALL SHALL BE PROVIDED AS INDICATED ON THE DETAILS SHOWN BELOW.

THE FOLLOWING QUANTITIES HAVE BEEN INCLUDED IN THE GENERAL SUMMARY FOR USE AS DIRECTED BY THE ENGINEER:

- ITEM 202 - PIPE REMOVED 288 FT.
- ITEM 603 - 6" CONDUIT, TYPE B 720 FT.
- ITEM 603 - 6" CONDUIT, TYPE F 1,680 FT.
- ITEM 604 - PRECAST REINFORCED CONCRETE OUTLET 48 EACH
- ITEM 605 - 6" UNCLASSIFIED PIPE UNDERDRAINS WITH FABRIC WRAP 288 FT.

FOR INFORMATION ONLY:

- 6"- 90° BEND : 48
- 6"x6" TEE : 24
- 6" COUPLING : 48



**NOTE:**

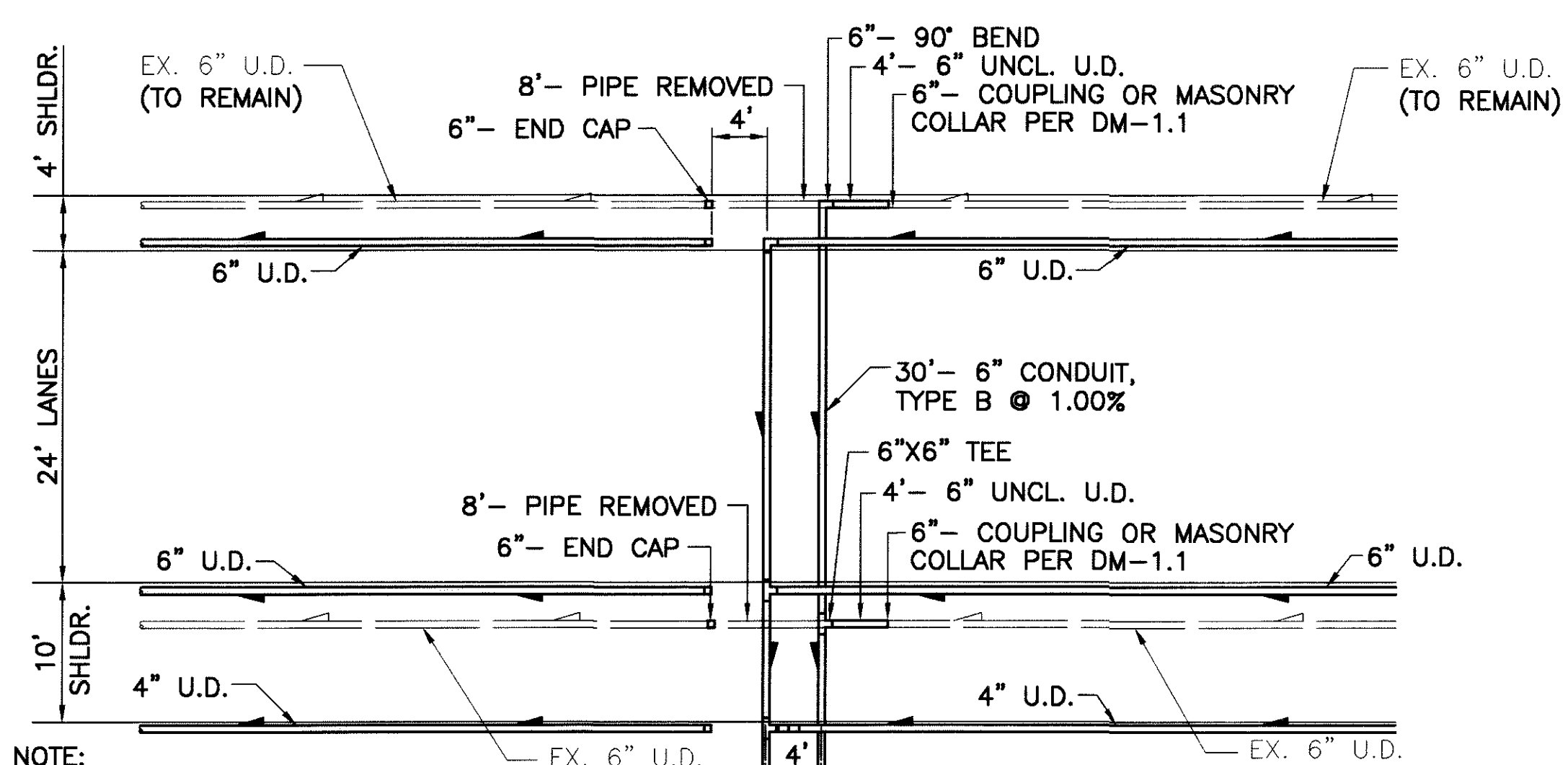
FOR A PROPOSED UNDERDRAIN OUTLET IN A SUMP, TWO NEW OUTLETS FOR EXISTING UNDERDRAIN, ONE ON EITHER SIDE OF THE OUTLET FOR NEW UNDERDRAIN, MAY BE REQUIRED.

**NEW OUTLET FOR EXISTING UNDERDRAIN  
OUTSIDE SHOULDER**

**EXISTING UNDERDRAIN REMOVED**

THE FOLLOWING QUANTITY HAS BEEN CARRIED TO THE GENERAL SUMMARY FOR USE IN REMOVING EXISTING UNDERDRAINS AT LOCATIONS TO BE DETERMINED BY THE ENGINEER:

- ITEM 202 - PIPE REMOVED 2,000 FT.



**NOTE:**

FOR A PROPOSED UNDERDRAIN OUTLET IN A SUMP, TWO NEW OUTLETS FOR EXISTING UNDERDRAIN, ONE ON EITHER SIDE OF THE OUTLET FOR NEW UNDERDRAIN, MAY BE REQUIRED.

**NEW OUTLET FOR EXISTING UNDERDRAINS  
INSIDE AND OUTSIDE SHOULDERS**

CALCULATED: RLA  
CHECKED: MRD

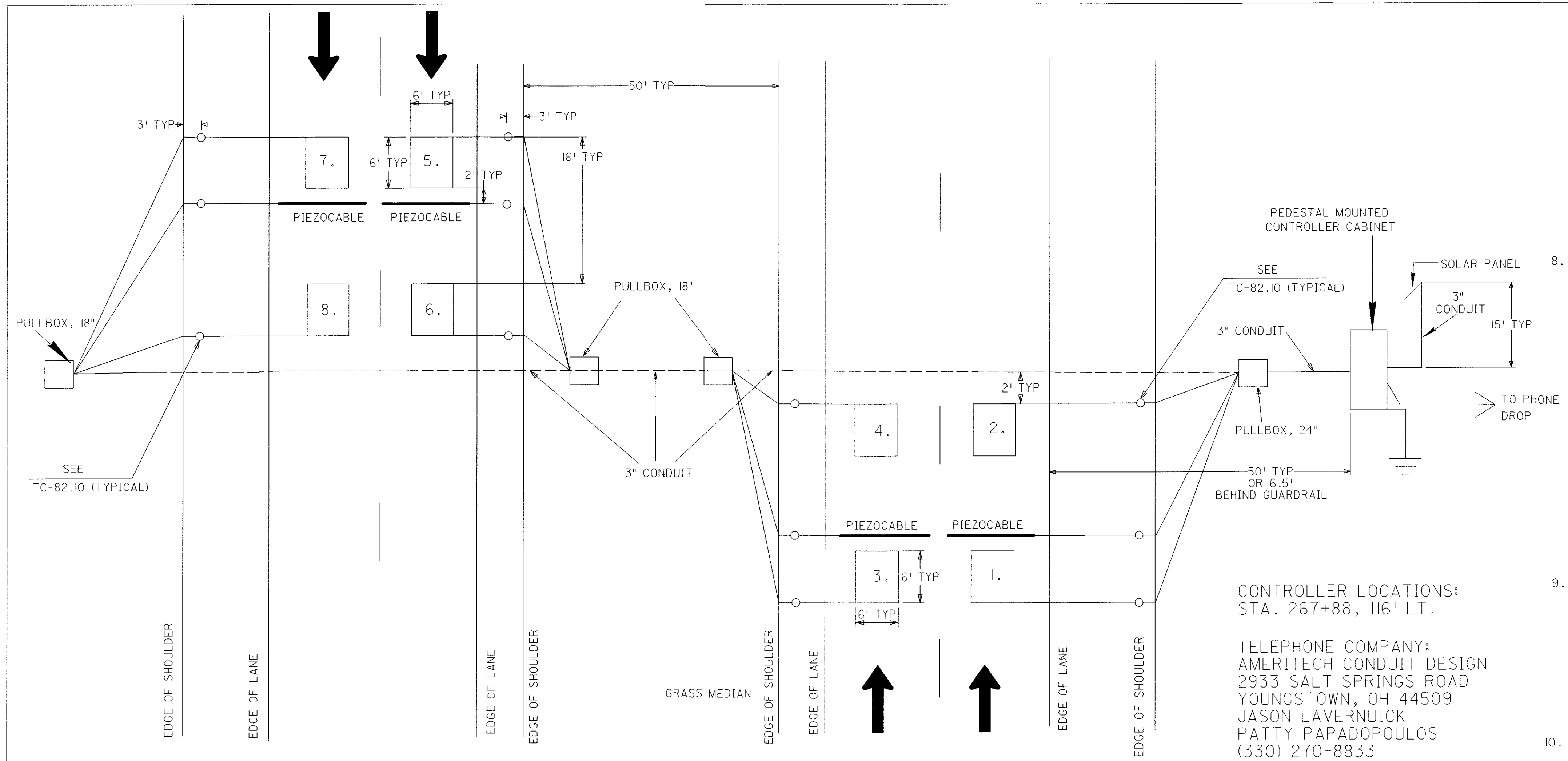
0 5 10 20  
HORIZONTAL SCALE  
1" = 10 FEET

UNDERDRAIN OUTLET DETAILS AND NOTES

MAH - 76 - 3.08

SHEET NO.	LOCATION	STATION		SIDE	CODE	SIZE	630																			
		EXIST.	PROP.				SIGN, FLAT SHEET, TYPE G	SIGN, EXTRUSHEET, TYPE G	GROUND MOUNTED SUPPORT, NO. 2 POST	GROUND MOUNTED SUPPORT, NO. 3 POST	GROUND MOUNTED SUPPORT, NO. 4 POST	GROUND MOUNTED SUPPORT, NO. 6 POST	GROUND MOUNTED SUPPORT, S4 x 7.7 BEAM	GROUND MOUNTED SUPPORT, W10 x 12 BEAM	GROUND MOUNTED SUPPORT, W8 x 18 BEAM	GROUND MOUNTED SUPPORT, W10 x 22 BEAM	GROUND MOUNTED SUPPORT, W12 x 30 BEAM	ONE WAY SUPPORT, NO. 3 POST	BREAKAWAY BEAM CONNECTION	GROUND MOUNTED BEAM SUPPORT FOUNDATION	REMOVAL OF GROUND MOUNTED SIGN AND STORAGE	REMOVAL OF GROUND MOUNTED MAJOR SIGN AND STORAGE	REMOVAL OF GROUND MOUNTED POST SUPPORT AND DISPOSAL	REMOVAL OF GROUND MOUNTED BEAM SUPPORT AND DISPOSAL		
							SQ. FT.	SQ. FT.	FT.	FT.	FT.	FT.	FT.	FT.	FT.	FT.	FT.	FT.	FT.	FT.	EACH	EACH	EACH	EACH	EACH	EACH
209	I-76	167+72	167+72	LT	GEP-84 GE	84" X 24" 204" X 144"		14 204																		
		181+51	181+25	RT	IM-39-36 M-5-36-2	36" x 18" 36" x 36"	4.5 9			15.6											2	1				
		185+91	185+82	CL	R-123-36 R-19-24	36" x 36" 24" x 30"	9 5			14.5											2	1				
		186+30	186+38	CL	R-123-36 R-19-24	36" x 36" 24" x 30"	9 5			14.5											2	1				
			185+90	LT	GEP-84 GB	84" x 24" 204" X 144"		14 204						60.9		2	2									
		189+07	189+00	RT	R-10-48 R-9A-48	48" x 60" 48" x 60"	20 20			33.5 46.5										1		2				
		186+00	198+00	LT	GEP-84 GCR	84" x 24" 156" X 36"		14 39					40.1			2	2			2		2				
			198+00	RT	N-97-144 GJ	144" x 12" 204" X 60"	12									2	2			1		2				
		200+68	200+68	LT	N-41-12	12" x 36"	3				12									1	1					
209		200+68	200+68	RT	N-41-12	12" x 36"	3				12									1	1					
210		215+56	215+75	LT	GEP-84 GB	84" x 24" 204" X 144"		14 204						56.8		2	2			3		2				
					GSC-1-120	120" x 24"		20																		
		253+55	253+48	LT	N-41-12	12" x 36"	3				12									1	1					
		253+67	253+48	RT	N-41-12	12" x 36"	3				12									1	1					
			256+00	RT	GEP-84 GB	84" X 24" 168" X 144"		14 168						53.3		2	2			1						
210																										
211		267+67	267+75	RT	GEP-84 GC	84" X 24" 288" X 84"		14 168					64.0			3	3			2		4				
			268+75	LT	GJ	156" X 60"		65					38.7			2	2									
		275+50		RT																1		2				
		279+46	278+00	LT	R-10-48 R-9A-48	48" x 60" 48" x 60"	20 20					31.9 32.5				2	2			1		2				
		280+46	281+00	RT	GEP-84 GB	84" x 24" 168" X 144"		14 168						58.3		2	2				1	2				
		281+53	281+47	CL	R-123-36 R-19-24	36" x 36" 24" x 30"	9 5			14.5										2	1					
		281+96	282+04	CL	R-123-36 R-19-24	36" x 36" 24" x 30"	9 5			14.5										2	1					
		285+47		RT																1		2				
		290+55	288+00	LT	IM-40-36 M-5-36-2	36" X 18" 36" X 36"	4.5 9			15.6										2	1	2				
		301+34	301+30	RT	GEP-84 GE	84" X 24" 168" X 144"		14 168						57.8		2	2			1		2				
		306+28	306+28	LT	N-41-12	12" X 36"	3				12									1	1					
		306+28	306+28	RT	N-41-12	12" X 36"	3				12									1	1					
		309+81	310+00	RT	GF	72" X 60"		30				34.7				2	2			1		2				
211		311+06	312+00	LT	W-49R-48	48" X 48"	16			33.4										1	1					
212		326+82	326+82	RT	W-49R-48	48" X 48"	16			33.4										1	1					
		329+08	328+83	LT	GF	72" X 60"		30								2	2			1		2				
		337+50	337+60	LT	GEP-84 GE	84" X 24" 168" X 144"		14 168				33.6		58.9		2	2			2		2				
			349+50	RT	IM-39-36 M-5-36-2	36" X 18" 36" X 36"	4.5 9			15.6																
			357+00	LT	GEP-84 GB	84" X 24" 168" X 144"		14 168						56.1		2	2									
		356+98	357+20	CL	R-123-36 R-19-24	36" X 36" 24" X 30"	9 5			14.5										2	1					
		358+00	357+77	CL	R-123-36 R-19-24	36" X 36" 24" X 30"	9 5			14.5										2	1					
		359+08	359+08	LT	N-41-12	12" X 36"	3				12									1	1					
212	I-76	359+08	359+08	RT	N-41-12	12" X 36"	3				12									1	1					
SUBTOTALS THIS SHEET							272.5	2,029.0	96.0	153.8	46.8	80.0	132.7	118.1	64.0	0	465.6	0	33	33	26	19	19	30		





**NOTES**  
(continued)

8. THE PIEZOCABLE SENSOR SHALL BE MADE BY MEASUREMENT SPECIALITIES AND BE A ROADTRAX BRASS LINGUINI (BL) CLASS I AXLE SENSOR OR EQUIVALENT. THE SENSOR WITH A LENGTH 1' SHORTER THAN THE ONSITE LANE WIDTH SHALL BE CENTERED IN THE LANE. PAYMENT WILL BE AT THE CONTRACT UNIT PRICE PER EACH ITEM SIGNALIZATION, MISC.: PIEZOCABLE AXLE SENSOR, CLASS I AND SHALL INCLUDE ALL MATERIAL, LABOR, TOOLS, EQUIPMENT AND INCIDENTALS NECESSARY FOR EACH INSTALLATION, IN PLACE COMPLETE AND ACCEPTED. THE PIEZOCABLE LEAD-IN CABLE IS ORDERED IN DIFFERENT LENGTHS AS PART OF SENSOR AND SHALL NOT BE SPLICED. INCLUDED WITH THIS ITEM SHALL BE PAVEMENT CUTTING OF SLOTS, PLACEMENT OF LEAD-IN WIRE, AND THE APPLICATION OF EPOXY OR SEALANT AS RECOMMENDED BY SENSOR MANUFACTURER. CONDUIT, DRILLING, TRENCHING, BACKFILLING, AND SURFACE RESTORATION FROM THE EDGE OF THE PAVEMENT TO THE PULLBOX SHALL ALSO BE INCLUDED.
9. CABLE AND WIRE SHALL BE IDENTIFIED IN ACCORDANCE WITH 632.05. IDENTIFICATION SHALL INCLUDE THE DIRECTION OF TRAVEL (i.e., NB, EB) AND THE LOOP NUMBER AS SHOWN. NORTH AND EAST ARE THE PREVAILING DIRECTION OF TRAVEL. EACH LOOP AND PIEZO CABLE SHALL HAVE A SEPARATE LEAD-IN CABLE ROUTED TO THE CONTROLLER CABINET TERMINAL BLOCK AND TAGGED. ONE FOOT OF EXTRA CABLE SHALL REMAIN IN THE CABINET AFTER THE CONNECTION, WITH NO OBSTRUCTION TO THE TERMINAL BLOCK CONNECTIONS.
10. PIEZOCABLES SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURERS INSTRUCTIONS AND ENSURE THAT THE COMPLETE CURING OF EPOXY OR SEALANT TAKES PLACE PRIOR TO OPENING THE LANE TO TRAFFIC. (EG: WINTER GRADE EPOXY)
11. THE ALUMINUM CABINET SHALL BE A POLE MOUNTED NEMA SIZE 3 AS SHOWN ON PLAN SHEET. THE REFERRED LOCATION SHALL BE 50' FROM THE CLOSEST LANE. ALLOWANCES SHALL BE MADE FOR A VIEW OF ALL LANES IF POSSIBLE. AS A MINIMUM, THE CABINET SHALL BE 30' FROM THE CLOSEST LANE. IF PLACED BEHIND A GUARDRAIL, THE CABINET TO GUARDRAIL CLEARANCE MUST BE AT LEAST 6.5'. THE CABINET SHALL NOT BE PLACED IN A DITCH OR ANY AREA SUBJECT TO FLOODING.
12. CABINET WORK PAD SHALL BE 3 FOOT BY 4 FOOT BY 6 INCHES DEEP AND SHALL BE LEVEL. THE WORK PAD SHALL BE POURED SIMULTANEOUSLY WITH THE CABINET FOUNDATION SO THEY WILL FORM ONE UNIT.
13. REFERENCE IS MADE TO STANDARD DRAWING HL-30.11 FOR DETAILS OF DRAINING PULLBOXES. UNDERDRAINS FOR PULLBOXES 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'.
14. ALL ITEMS SHALL CONFORM TO C&M SPECIFICATIONS 625, 725, 632, 732, 633 AND 733, UNLESS OTHERWISE SPECIFIED.
15. THE SOLAR PANEL SHALL BE INSTALLED ON THE POLE. SOLAR PANEL OUTPUT CABLE SHALL BE SECURED AND ROUTED TO THE INSIDE OF THE CABINET FOR CONNECTION TO THE TERMINAL BLOCK. SOLAR PANEL SHALL BE MOUNTED AT A 45° ANGLE FACING SOUTH UNIMPEDED BY ANY OBSTACLES.
16. SOLAR PANEL SHALL BE A 50 WATT - 12 VOLT SYSTEM WITH MOUNTING HARDWARE, APPROPRIATE REGULATOR, CABLES. CONTRACTOR SHALL PROVIDE ALL MATERIALS, LABOR, TOOLS, EQUIPMENT, AND INCIDENTALS NECESSARY FOR EACH INSTALLATION, IN PLACE COMPLETE AND ACCEPTED.
17. IF APPROPRIATE, THE PULL BOX COVERS IN THE ASPHALT SHOULDER SHALL BE A HEAVY DUTY FRAME AND LID (NEENAH R-6686 OR APPROVED EQUAL). THIS ITEM SHALL INCLUDE ALL COSTS OF LABOR, MATERIALS AND EQUIPMENT NECESSARY TO INSTALL EACH ITEM 625 - PULL BOX, 725.08, 18 & 24 IN. AS PER PLAN
18. ATR BACK PANEL IS MANUFACTURED BY PEEK TRAFFIC INC PART NO. 82-1344, LP16L/16P

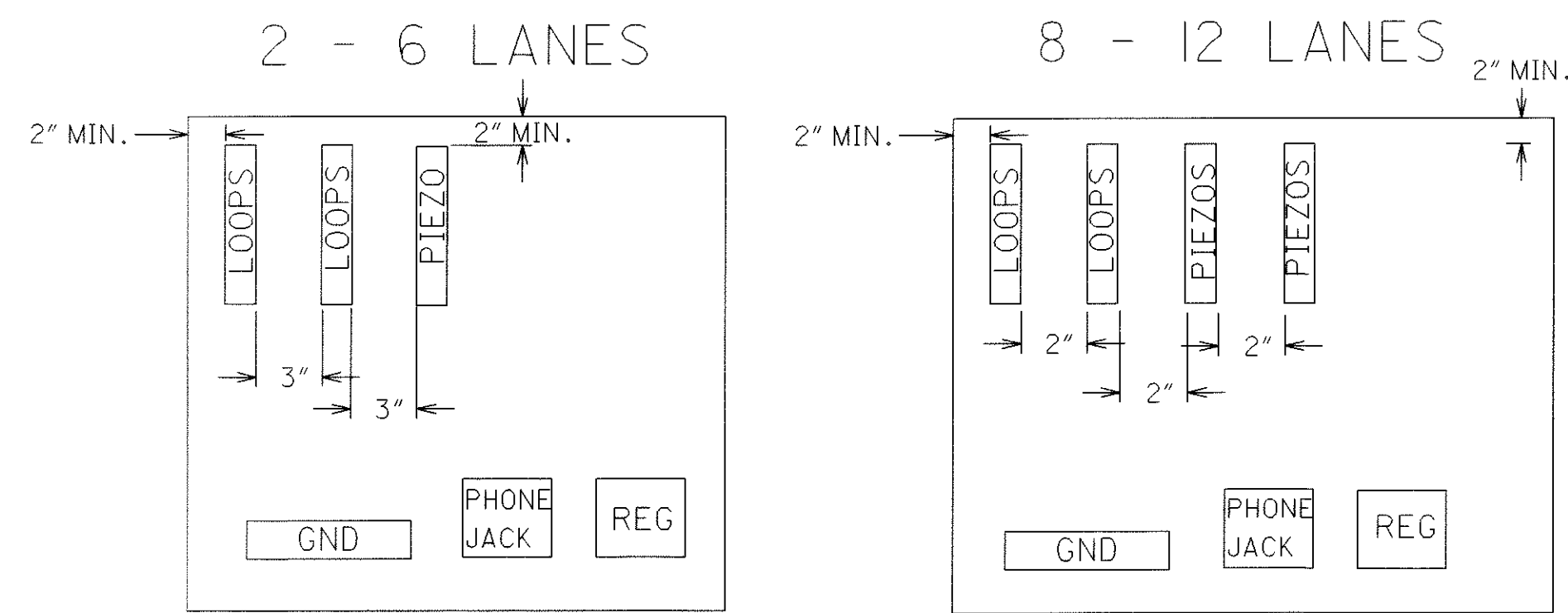
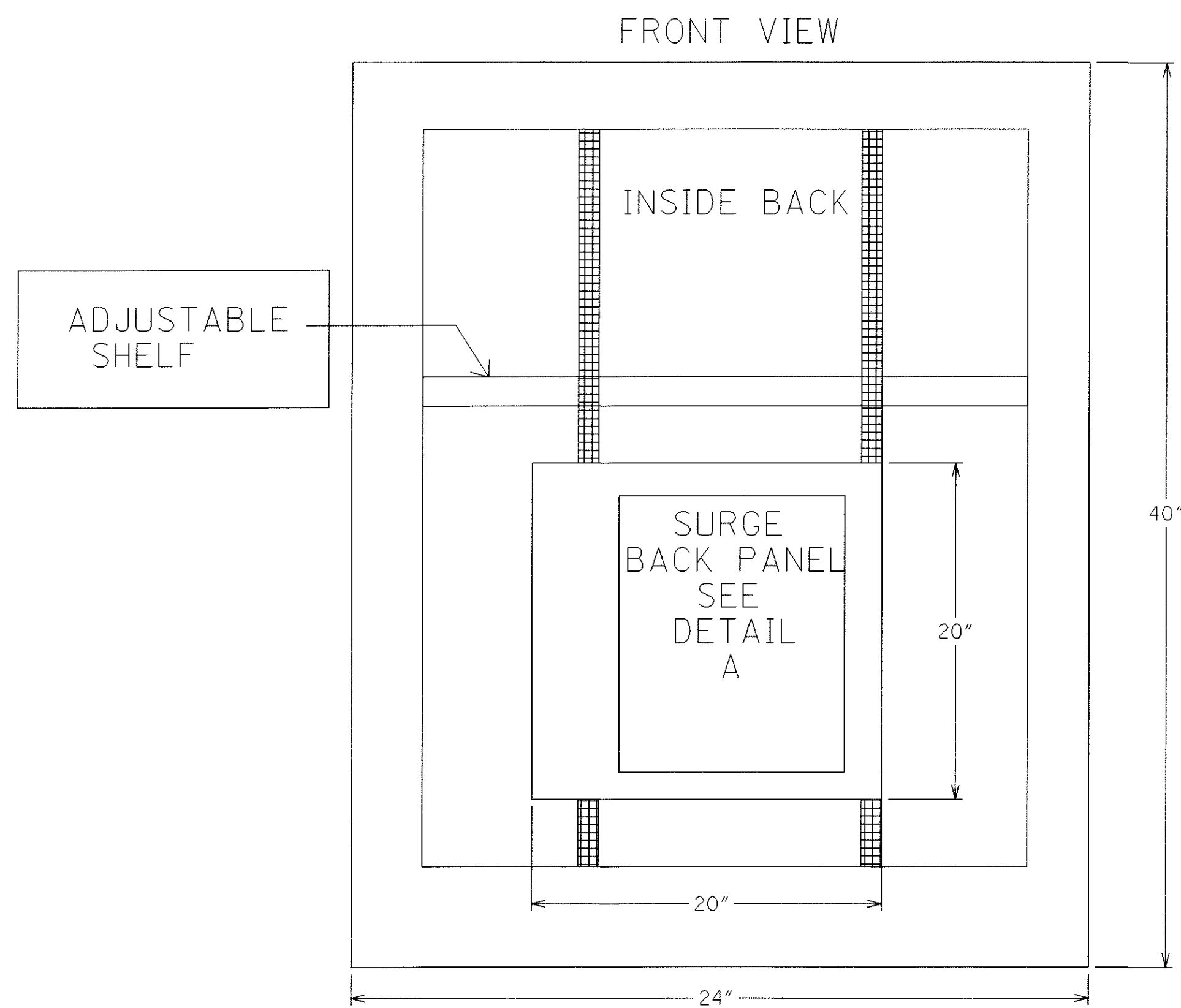
**NOTES**

1. CONTRACTOR SHALL CONTACT THE OFFICE OF TECH. SERVICES AT 614-466-3727 FIVE (5) WORKING DAYS PRIOR TO THE SCHEDULED SITE INSTALLATION.
2. ALL SENSORS ARE TO BE TESTED BY TECHNICAL SERVICES PERSONNEL AFTER THE INSTALLATION IS COMPLETE SO AS TO VERIFY THAT THE STATION IS UP AND OPERATING PROPERLY. IF THE ELECTRONIC EQUIPMENT DOES NOT PERFORM PROPERLY BECAUSE OF A POORLY INSTALLED SENSOR, THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REPLACEMENT OF THE FAULTY SENSOR(S), AS SOON AS POSSIBLE AT THEIR OWN COST.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLING AND TESTING THE PHONE DROP INSIDE OF THE CONTROLLER CABINET. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CHARGES INCURRED PRIOR TO THE TRANSFER OF THE TELEPHONE ACCOUNT. THE CONTRACTOR SHALL COORDINATE WITH ODOT, TELECOMMUNICATIONS, MR. MIKE WIGGINS ( 614-466-4452 ) TO TRANSFER THE TELEPHONE ACCOUNT AND THE BILLING RESPONSIBILITY FROM THE CONTRACTOR TO ODOT. PAYMENT WILL BE AT THE CONTRACT UNIT PRICE PER EACH ITEM 632 PHONE DROP AND SHALL INCLUDE ALL MATERIAL, LABOR, TOOLS, EQUIPMENT, INCIDENTALS AND PAYMENT OF ALL PHONE COMPANY FEES NECESSARY FOR EACH INSTALLATION, IN PLACE COMPLETE AND ACCEPTED.
4. ALL LOOPS SHALL BE 6' X 6'. LOOPS SHALL BE SPACED 16' FROM LEADING EDGE TO LEADING EDGE. INSTALLATION OF LOOPS SHALL CONFORM TO TC-82.10 EXCEPT THAT LOOPS SHALL BE INSTALLED WITH FOUR (4) TURNS, AND HAVE A MINIMUM EPOXY OR SEALANT COVER OF 3 INCHES FOR ASPHALT OR -3/4 INCH FOR CONCRETE.
5. ADJACENT LOOPS (TRANSVERSE AND LONGITUDINAL) SHALL BE INSTALLED IN OPPOSITE DIRECTIONS, i.e., LOOP 1 AND LOOP 4, CLOCKWISE LOOP 2 AND LOOP 3 COUNTERCLOCKWISE.
6. LOOPS AND PIEZOCABLES SHALL BE CUT IN THE SURFACE ASPHALT COURSE. THEY SHALL NOT BE INSTALLED BETWEEN THE INTERMEDIATE AND SURFACE COURSES.
7. LOOP INDUCTANCE READING SHALL BE BETWEEN 70 AND 300 MICROHENRIES. THE LOOP INDUCTANCE BETWEEN TWO LOOPS IN THE SAME LANE SHALL BE WITHIN 20 MICROHENRIES OF EACH OTHER.

**AUTOMATIC TRAFFIC RECORDER INSTALLATION  
4 LANE CLASS SECTION  
GRASS MEDIAN**

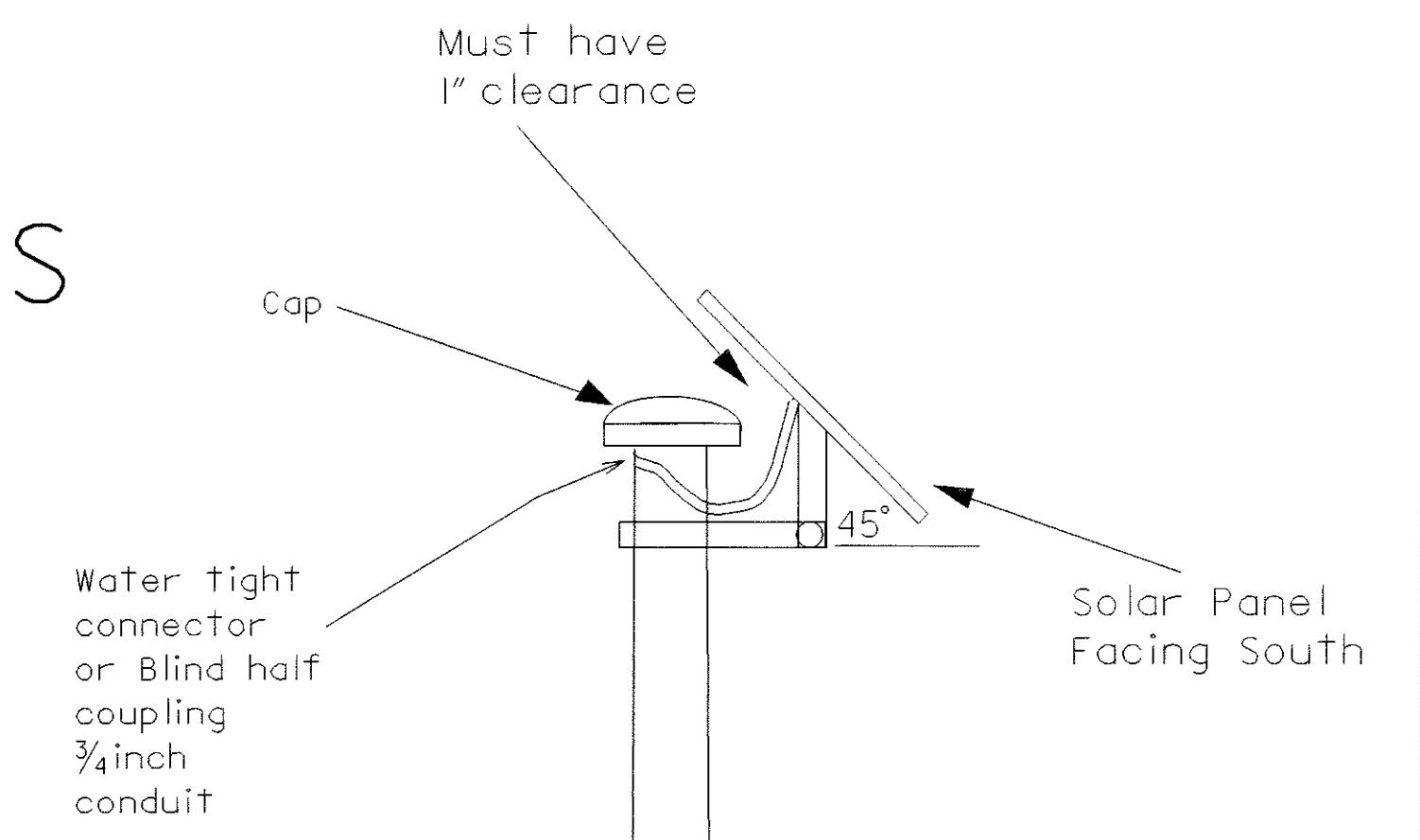
ITEM	ITEM EXT.	TOTAL	UNIT	DESCRIPTION
603	00400	80	FT.	4" CONDUIT, TYPE E
625	25500	198	FT.	CONDUIT, 3", 725.04
625	29000	198	FT.	TRENCH
625	30700	3	EACH	PULL BOX, 725.08, 18"
625	30706	1	EACH	PULL BOX, 725.08, 24"
625	32000	1	EACH	GROUND ROD
632	26501	8	EACH	DETECTOR LOOP, AS PER PLAN
632	63000	1	EACH	PHONE DROP
632	64020	1	EACH	PEDESTAL FOUNDATION
632	65200	1132	FT.	LOOP DETECTOR LEAD-IN CABLE
632	89800	1	EACH	PEDESTAL, 3', TRANSFORMER BASE
632	90020	2	EACH	REMOVAL OF MISCELLANEOUS TRAFFIC SIGNAL ITEM: AUTOMATIC TRAFFIC RECORDER
632	90400	4	EACH	SIGNALIZATION, MISC.: PIEZOCABLE AXLE SENSOR CLASS I (11' IN LENGTH)
633	70500	12	SQ. FT.	CONTROLLER WORK PAD
633	99000	1	EACH	CABINET NEMA 3 WITH SURGE PANEL, AS PER PLAN
633	99000	1	EACH	CONTROLLER ITEM, MISC.: SOLAR PANEL

# DETAIL A DIFFERENT TERMINAL BLOCKS FOR CLASSIFICATION INSTALLATIONS

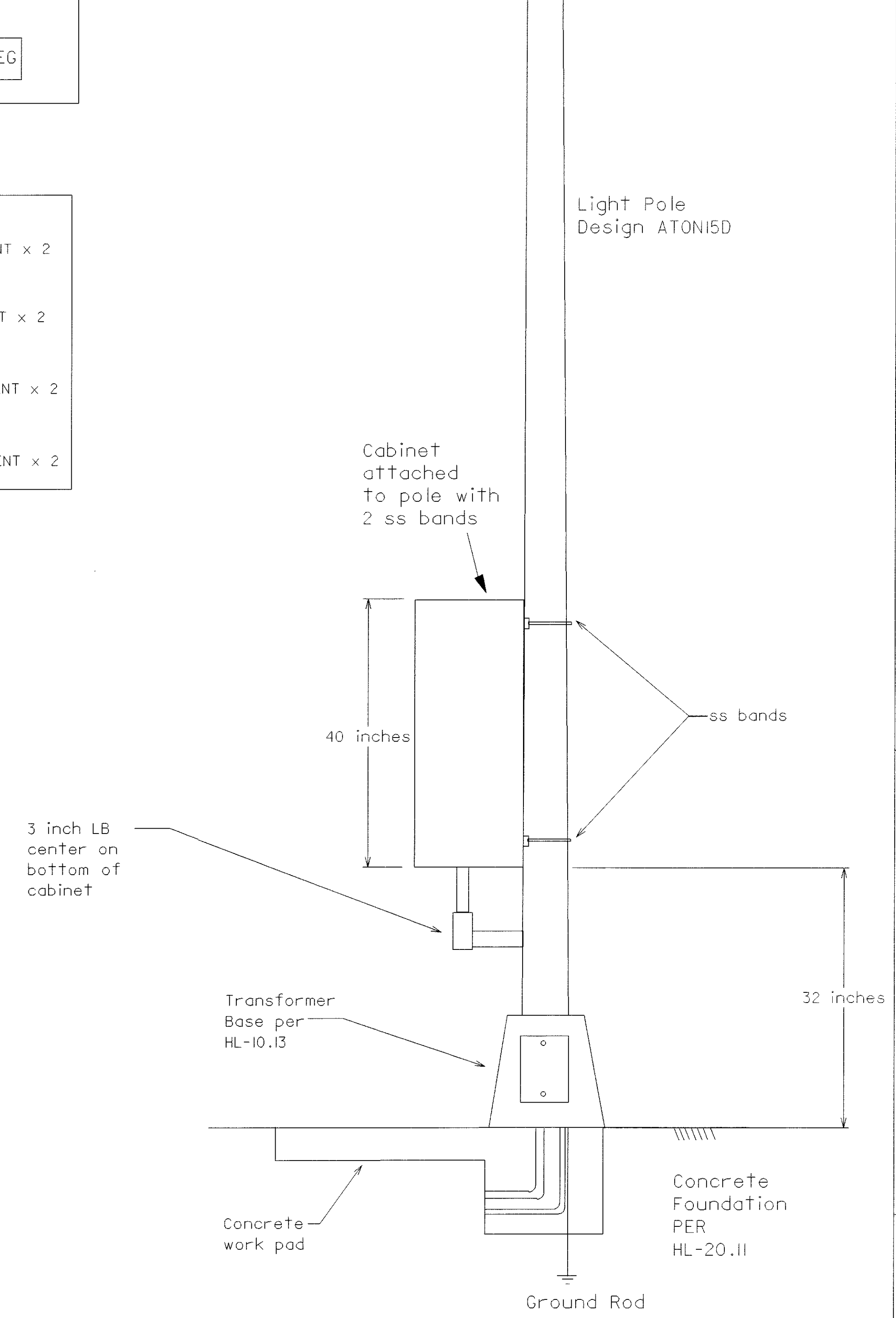


### TERMINAL BLOCK DETAILS

- 2 LNS - 4 LOOPS - BEAU TYPE 78008 TERMINAL STRIP OR EQUIVALENT
- 2 LNS - 4 LOOPS & 4 PIEZOS - BEAU TYPE 78008 TERMINAL STRIP OR EQUIVALENT x 2
- 4 LNS - 8 LOOPS - BEAU TYPE 78016 TERMINAL STRIP OR EQUIVALENT
- 4 LNS - 8 LOOPS & 8 PIEZOS - BEAU TYPE 78016 TERMINAL STRIP OR EQUIVALENT x 2
- 6 LNS - 12 LOOPS - BEAU TYPE 78024 TERMINAL STRIP OR EQUIVALENT
- 6 LNS - 12 LOOPS & 12 PIEZOS - BEAU TYPE 78024 TERMINAL STRIP OR EQUIVALENT x 2
- 8 LNS - 16 LOOPS - BEAU TYPE 78024 TERMINAL STRIP OR EQUIVALENT x 2
- 8 LNS - 16 LOOPS & 16 PIEZOS - BEAU TYPE 78024 TERMINAL STRIP OR EQUIVALENT x 2



- ### NOTES
1. THE ALUMINUM CABINET SHALL BE A SIZE 3 AS SHOWN IN TABLE 7.3-1 OF THE NEMA STANDARD PUBLICATION No TS 2-1992. THE NOMINAL DIMENSIONS ARE: 24 INCHES WIDE BY 40 INCHES HIGH BY 15 INCHES DEEP. IT SHALL BE SHEET ALUMINUM AS DETAILED IN SECTION 7.2.2.1 OR CAST ALUMINUM DETAILED IN SECTION 7.2.2.2. IT SHALL ALSO CONFORM TO SECTIONS: 7.4, 7.5 EXCEPT FOR 7.5.7, 7.6 WITH ONE SHELF, 7.7.3, 7.8.3 SIZE 5, 7.8.4.
    - A. IT SHALL BE EQUIPPED WITH TWO ADJUSTABLE "C" CHANNELS MOUNTED ON EACH OF THE THREE INTERIOR SIDES FOR THE PURPOSE OF MOUNTING TERMINAL STRIP PANELS AND SHELVING. FURNISH THE CABINETS WITH ONE ADJUSTABLE SHELF WHICH WILL NOT SAG WHEN LOADED WITH THE WIM ELECTRONICS. DESIGN THE SHELVING TO ALLOW FOR THE PASSAGE OF AIR. PLACE NO EQUIPMENT ON THE BOTTOM OF THE CABINET.
    - B. MOUNT A GROUNDING STRIP TO THE TERMINAL STRIP PANEL ON THE CABINET WALL FOR CONNECTION OF ALL COMMON CONDUCTORS WITH THE STRIP GROUNDING TO THE GROUND ROD.
    - C. INSTALL THE HOUSING CABINET AS TO ALLOW ALL EQUIPMENT TO STAND IN AN UPRIGHT POSITION WITH ALL EQUIPMENT AND DEVICES CAPABLE OF BEING REMOVED BY PULLING STRAIGHT OUT AND NOT TURNING SIDEWAYS AND WITHOUT RELOCATING OR DISCONNECTING ONE DEVICE TO REMOVE ANOTHER DEVICE.
    - D. THE CONTRACTOR SHALL COMPLETELY WIRE UP ALL CONNECTIONS TO THE TERMINAL BLOCKS OF THE BACK PANEL USING SOLDERED SPADE TYPE CONNECTORS. PROVIDE THAT ALL HOUSING CABINET WIRING AND TERMINALS ARE CLEARLY MARKED AND LABELED AS SHOWN ON DETAIL A. PROVIDE THAT WIRING IS LACED OR BOUND TOGETHER WITH SELF-LOCKING NYLON TIE-WRAPS. MAKE A LOOP NUMBERING DIAGRAM WITH CORRESPONDING TERMINAL NUMBERS FOR EACH SITE AND STORE IN A PLASTIC WEATHER PROOF ENVELOPE IN THE ENCLOSURE. PROVIDE A DUPLICATE DIAGRAM TO THE ODOT PROJECT INSPECTOR.
    - E. INSTALL ALL HOUSING CABINETS SO AS TO WITHSTAND ALL WEATHER CONDITIONS AND PREVENT THE INTRUSION OF REPTILES, RODENTS, AND INSECTS.
    - F. THE CABINET SHALL INCLUDE A VENT, BUT NO FAN.
    - G. MOUNTING FACILITIES SHALL INCLUDE ONE SURGE PROTECTED BACK PANEL.
    - H. TERMINAL STRIPS MOUNTED VERTICALLY ON BACK PANEL 2" FROM TOP AND SIDES EQUIDISTANTLY SPACED FOR 2 LANE APPLICATIONS. SOLAR PANEL AND GROUND BAR TO BE MOUNTED 2" FROM BOTTOM AND LEFT OF BACK PANEL FOR ALL APPLICATIONS. 4-6 LANE APPLICATIONS TO HAVE ONE ROW OF TWO TERMINAL STRIPS MOUNTED HORIZONTALLY 2" FROM TOP AND SIDES OF BACK PLATE AND ONE ROW OF TWO TERMINAL STRIPS MOUNTED 8" FROM TOP 2" FROM AND SIDES BACK PLATE EQUIDISTANTLY SPACED. 8 LANE APPLICATIONS TO HAVE TWO ROWS OF THREE TERMINAL BLOCKS W/ 1ST ROW 2" FROM TOP AND SIDES OF BACK PLATE AND SECOND ROW 8" FROM TOP AND 2" FROM SIDES OF BACK PLATE EQUIDISTANTLY SPACED.
    - I. LOCKS KEYED TO STATE MASTER #2.
  2. THE CABINET SHALL BE ORIENTED SO THAT THE DOOR OPENS AWAY FROM THE ROADWAY, SO THAT THE FIELD TECHNICIAN CAN OBSERVE TRAFFIC WHILE WORKING ON THE SYSTEM.
  3. FOR WIM INSTALLATIONS PROVIDE ONE WIM BACKPANEL MANUFACTURED BY PEEK TRAFFIC INC., PART NUMBER 82-1344, MODEL NUMBER LP 16L/16P.



DATE  
8/14/01

POLE AND CABINET DETAILS

MAH - 76 - 3.08

206  
243

DATE : 5/07/03  
 CAD FILE : STRIPE\_SUBSUM  
 OPERATOR : CAF/BBK/MCC  
 PLOT SCALE : 1=1

SHEET NO.	LOCATION	STATION		SIDE	646																
					EDGE LINE (WHITE)	EDGE LINE (YELLOW)	LANE LINE	CENTER LINE	CHANNELIZING LINE	STOP LINE	TRANSVERSE LINE										
					MILE	MILE	MILE	MILE	FT.	FT.	FT.										
		FROM	TO																		
218	I-76	140+50.00	141+40.00	EB	0.02	0.02	0.02														
218-219		141+40.00	367+00.00	WB & EB	8.55	8.55	8.55														
218		159+70.64	162+95.92	WB					651		347										
218		162+95.92	164+85.00	WB			0.04														
220		302+15.83	305+03.83	WB			0.05														
220		305+03.83	306+47.83	WB	0.03				144												
220		306+47.83	310+91.92	WB	0.08	0.08															
221		329+48.47	332+27.68	WB					560		300										
221		332+27.68	334+55.00	WB			0.04														
218		157+80.97	162+36.88	EB	0.09	0.09															
218		162+36.88	163+80.88	EB	0.03				144												
218		163+80.88	166+68.88	EB			0.05														
220		304+76.03	306+52.61	EB			0.03														
220		306+52.61	309+33.79	EB					564		300										
221		327+94.25	331+83.03	EB	0.07	0.07															
221		331+83.03	333+27.03	EB	0.03				144												
221	I-76	333+27.03	336+15.03	EB			0.05														
220	BAILEY ROAD RAMP A	309+29.48	320+13.00	EB	0.21	0.21				42											
221	BAILEY ROAD RAMP B	318+70.81	327+96.47	EB	0.18	0.18															
221	BAILEY ROAD RAMP C	318+57.45	329+49.32	WB	0.21	0.21				42											
220	BAILEY ROAD RAMP D	310+93.94	320+29.93	WB	0.18	0.18															
218	S.R. 534 RAMP B	149+02.51	159+71.12	WB	0.21	0.21				64											
218	S.R. 534 RAMP D	149+11.32	157+82.51	EB	0.17	0.17															
174-175	NEWTON FALLS RD.	47+50.00	52+83.68	☺				0.101													
176-177	DUCK CREEK RD.	47+00.00	53+24.43	☺				0.118													
SUBTOTALS					10.06	9.97	8.83	0.219	2,207	148	947										
TOTALS CARRIED TO GENERAL SUMMARY					20.03		8.83	0.22	2,207	148	947										

CALCULATED:  
 EMC  
 CHECKED:  
 RAK

PAVEMENT MARKING SUB-SUMMARY

MAH - 76 - 3.08

207  
 243

RAISED PAVEMENT MARKER, INSTALLATION ONLY

THE DEPARTMENT WILL SUPPLY THE RPM CASTINGS WITH THE YELLOW/YELLOW, ONE-WAY WHITE, WHITE/RED AND YELLOW/RED RETRO-REFLECTORS INSTALLED IN THE CASTINGS FOR ITEM 621, RAISED PAVEMENT MARKER, INSTALLATION ONLY. THE CONTRACTOR SHALL FURNISH ALL OTHER MATERIAL REQUIRED TO COMPLETE THIS ITEM.

THE CONTRACTOR WILL BE INFORMED AT THE PRE-CONSTRUCTION CONFERENCE AS TO THE LOCATION IN COLUMBUS OF THE DEPARTMENT SUPPLIED RPM MATERIALS. WHEN SPECIFIED, ADDITIONAL RPM MATERIALS WILL BE STORED WITHIN THE DISTRICT FOR USE ON THIS PROJECT. THE CONTRACTOR SHALL PICK UP DEPARTMENT SUPPLIED MATERIALS AT THE SPECIFIED LOCATION(S) FOR TRANSPORT TO THE WORK SITE OR TO THE CONTRACTOR'S STORAGE FACILITY. AN AUTHORIZATION FOR PICK-UP FORM IS GIVEN IN SUPPLEMENTAL SPECIFICATION 1082 DATED JANUARY 11, 2000. THE CONTRACTOR SHALL NOTIFY THE DISTRICT AND/OR THE PARTIES LISTED ON THE AUTHORIZATION FORM IN WRITING AT LEAST 5 WORKING DAYS PRIOR TO PICK-UP OF DEPARTMENT SUPPLIED MATERIALS. THE MATERIALS SHALL BE STORED WITHOUT DAMAGE OR CONTAMINATION WITH FOREIGN MATTER. A DEDUCTION IN THE AMOUNT OF THE ACTUAL COST TO THE DEPARTMENT SHALL BE MADE FOR THE MATERIALS DAMAGED BY THE CONTRACTOR OR FOR CASTINGS RECEIVED BY THE CONTRACTOR WHICH WERE NOT INSTALLED OR WERE NOT RETURNED TO THE DEPARTMENT.

RPM REMOVED FOR STORAGE, AS PER PLAN

IN ADDITION TO THE REQUIREMENTS OF 202.10, THE CONTRACTOR SHALL DELIVER THE REMOVED MARKERS TO THE ODOT DISTRICT OFFICE AT 705 OAKWOOD STREET, RAVENNA, OH 44266. THE CONTRACTOR SHALL CONTACT THE DISTRICT (LUKE NAGLE, 330-297-0801 EXT 329) TWO WORKING DAYS PRIOR TO THE DELIVERY.

NOTE:

RAISED PAVEMENT MARKERS SUPPLIED BY THE DEPARTMENT SHALL BE THE HIGH PROFILE TYPE.

CALCULATED:  
RAK  
CHECKED:  
MRD

RPM REPLACEMENT / REMOVAL

STANDARD CONSTRUCTION DWG.

TC-65.10	10-19-01	TC-65.12	10-19-01
TC-65.11	10-19-01		

LOCATION				ITEM 202	ITEM 621				REMARKS
COUNTY	ROUTE	CENTER LINE LOG MILES		RPM REMOVED FOR STORAGE, AS PER PLAN	INSTALLATION ONLY				
		FROM	TO		RPM WITH YELLOW/YELLOW REFLECTOR	RPM WITH WHITE/RED REFLECTOR	RPM WITH ONE-WAY WHITE REFLECTOR	RPM WITH YELLOW/RED REFLECTOR	
MAH	76	2.66	3.05	36			36		I-76 EASTBOUND & WESTBOUND LANE LINE (RESURFACING SECTION)
MAH	76	3.05	6.95	344			344		I-76 EASTBOUND & WESTBOUND LANE LINE
						15		14	S.R. 534 RAMP B - DECEL. LANE
						4		17	S.R. 534 RAMP D - ACCEL. LANE
						13		14	BAILEY RD. RAMP A - DECEL LANE
						4		17	BAILEY RD. RAMP B - ACCEL. LANE
						13		14	BAILEY RD. RAMP C - DECEL. LANE
						4		18	BAILEY RD. RAMP D - ACCEL. LANE
TOTAL				380		53	380	94	TOTALS CARRIED TO GENERAL SUMMARY

RAISED PAVEMENT MARKER SUB-SUMMARY

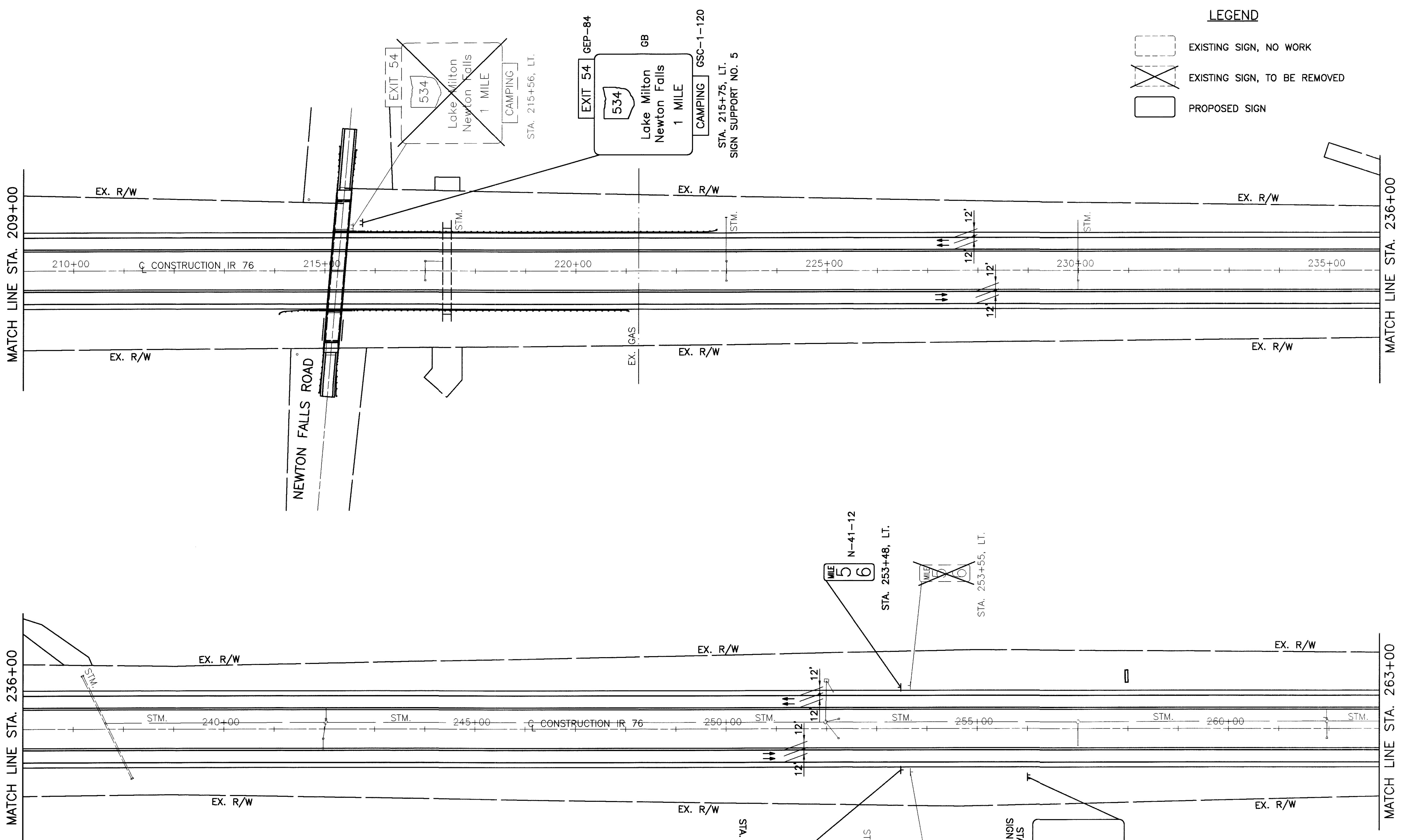
MAH - 76 - 3.08

208  
243




DATE : 4/30/03  
CAD FILE : ODOT\_RPM\_SUBSUM  
OPERATOR : MWD  
PLOT SCALE : 1"=1'







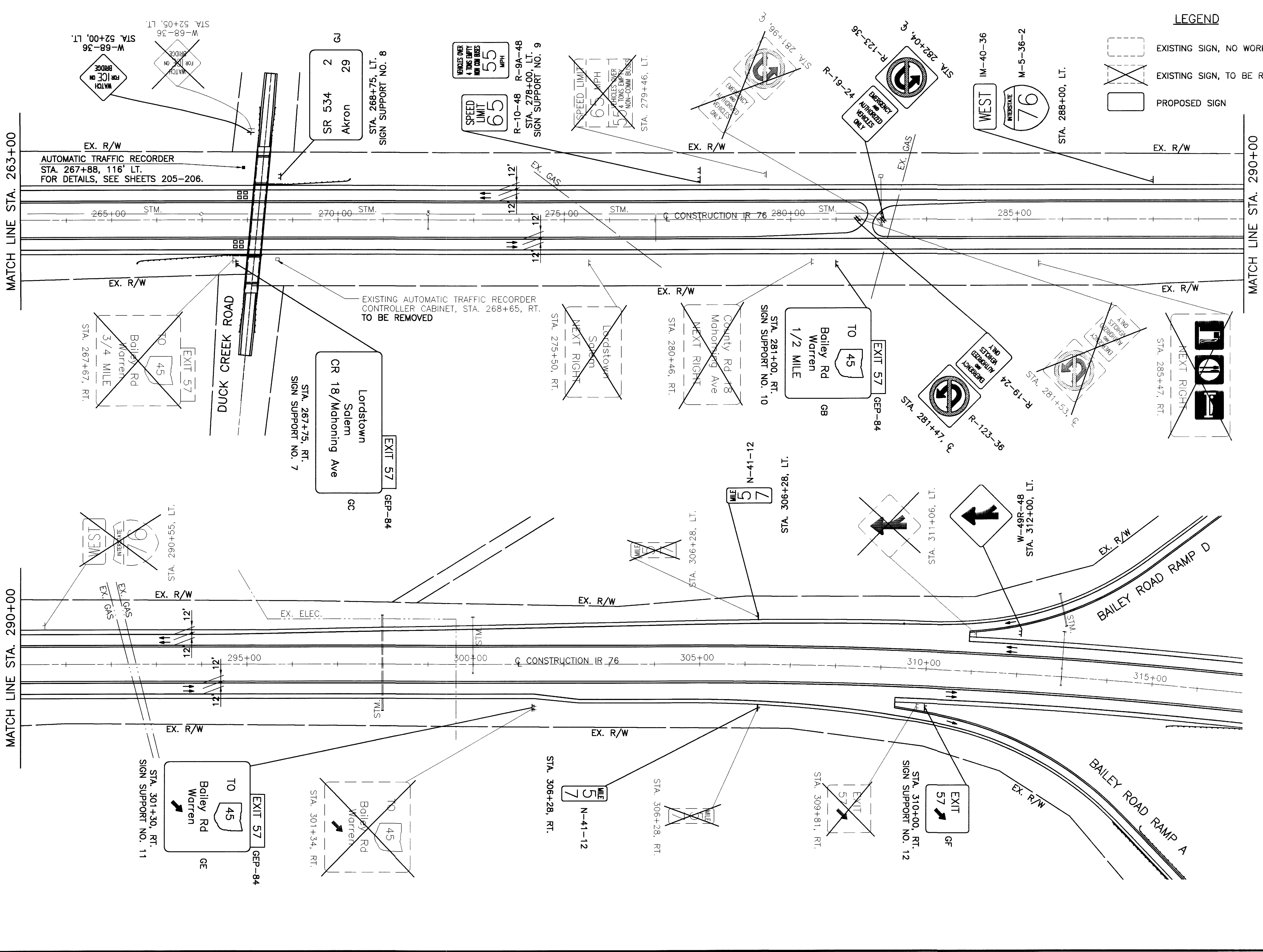
**LEGEND**

-  EXISTING SIGN, NO WORK
-  EXISTING SIGN, TO BE REMOVED
-  PROPOSED SIGN

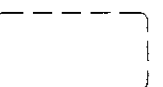
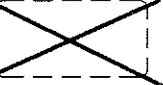

HORIZONTAL SCALE  
 1" = 100 FEET


SIGNING PLAN  
 STA. 209+00 TO STA. 263+00

MAH - 76 - 3.08



**LEGEND**

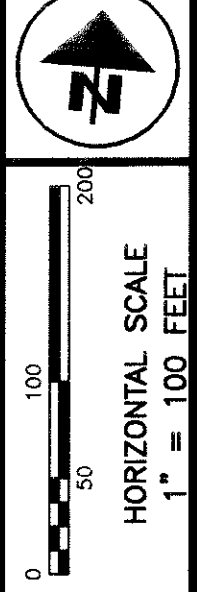
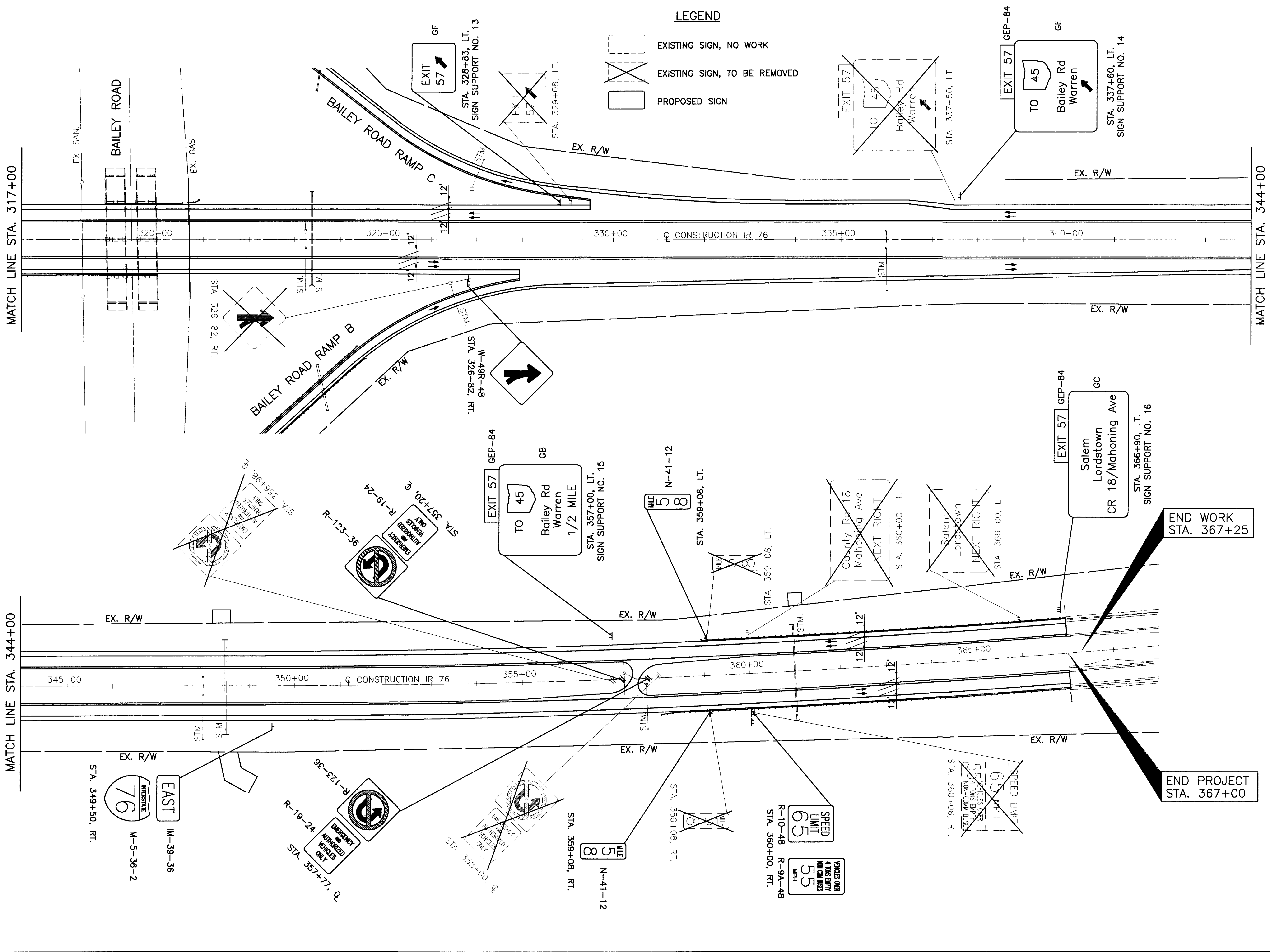
-  EXISTING SIGN, NO WORK
-  EXISTING SIGN, TO BE REMOVED
-  PROPOSED SIGN



HORIZONTAL SCALE  
 1" = 100 FEET

**SIGNING PLAN**  
 STA. 263+00 TO STA. 317+00

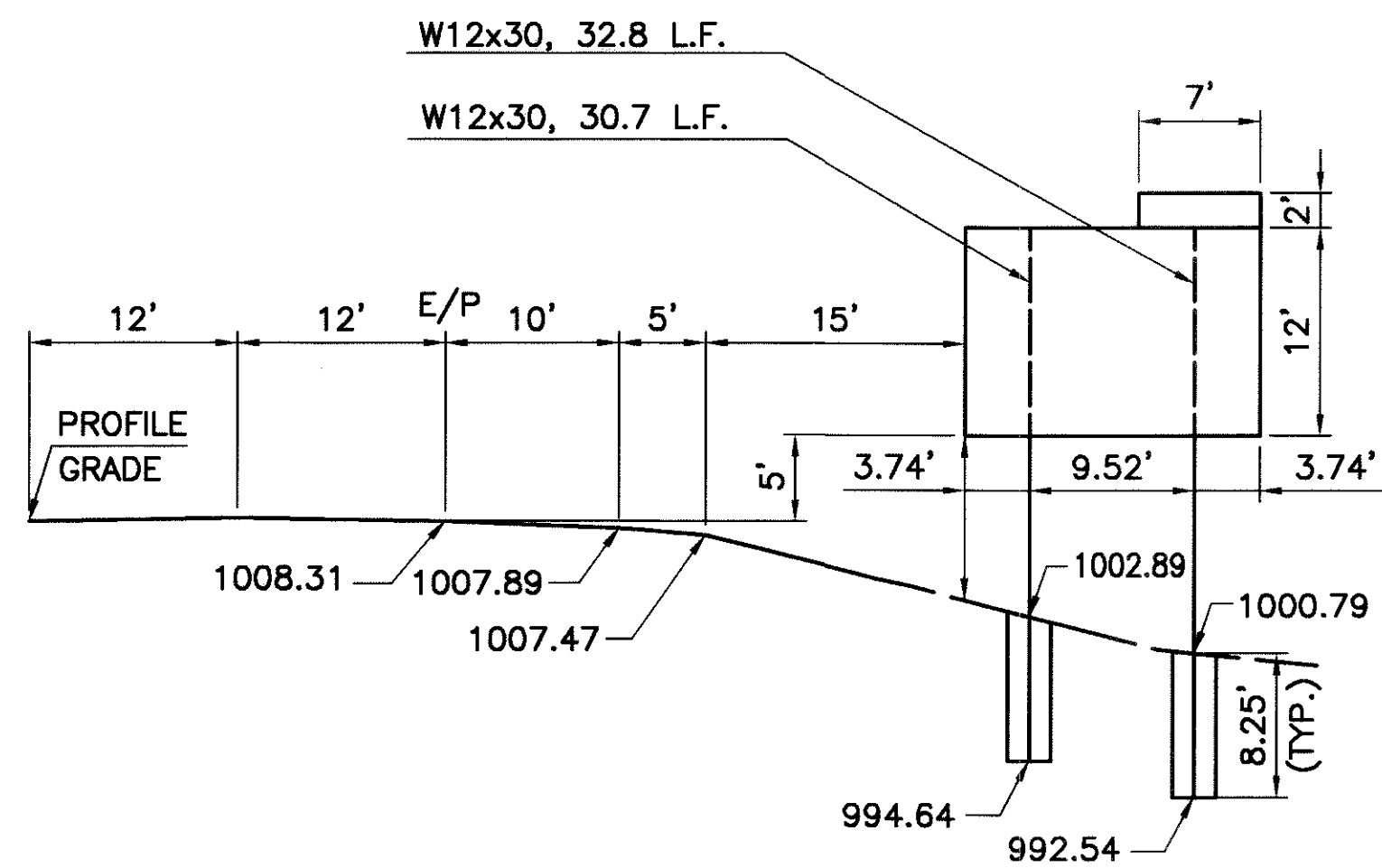
MAH - 76 - 3.08



SIGNING PLAN  
 STA. 317+00 TO STA. 369+00

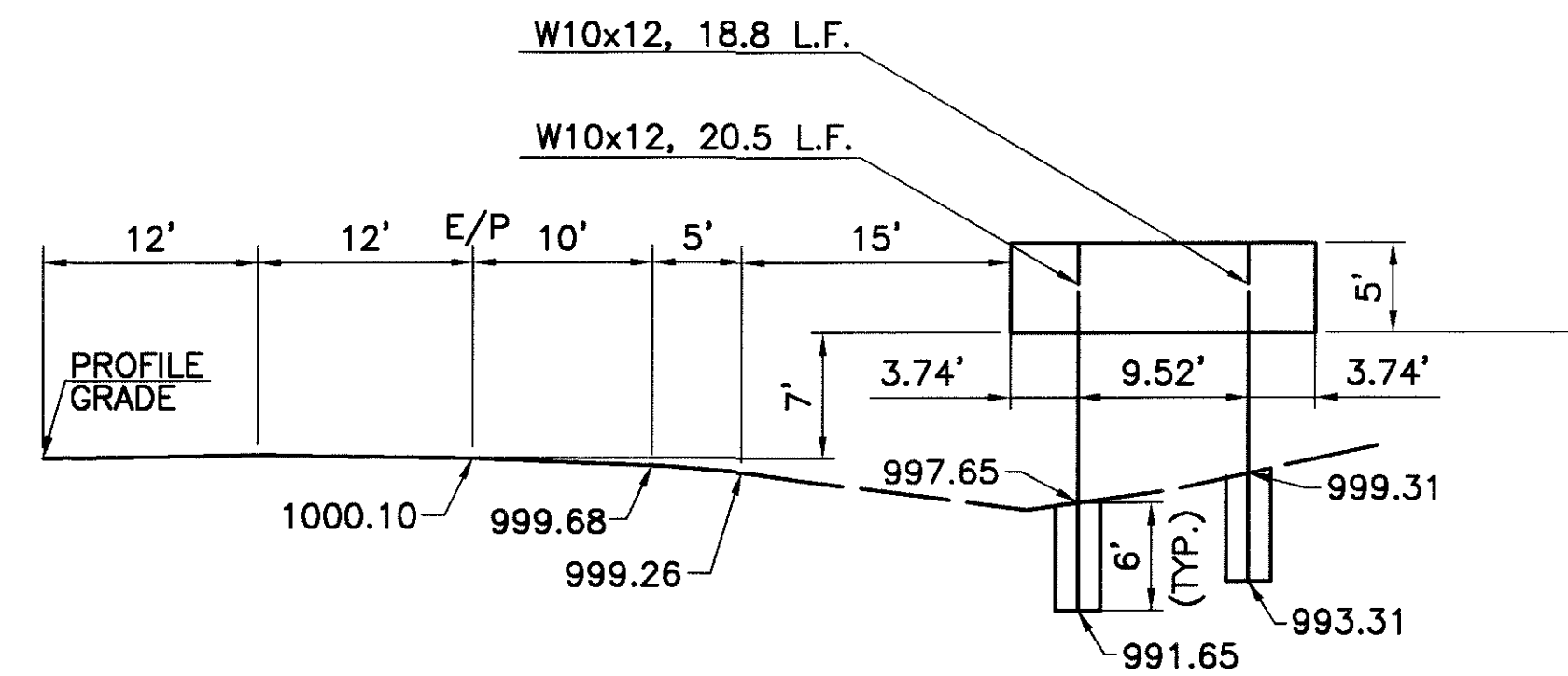
MAH - 76 - 3.08





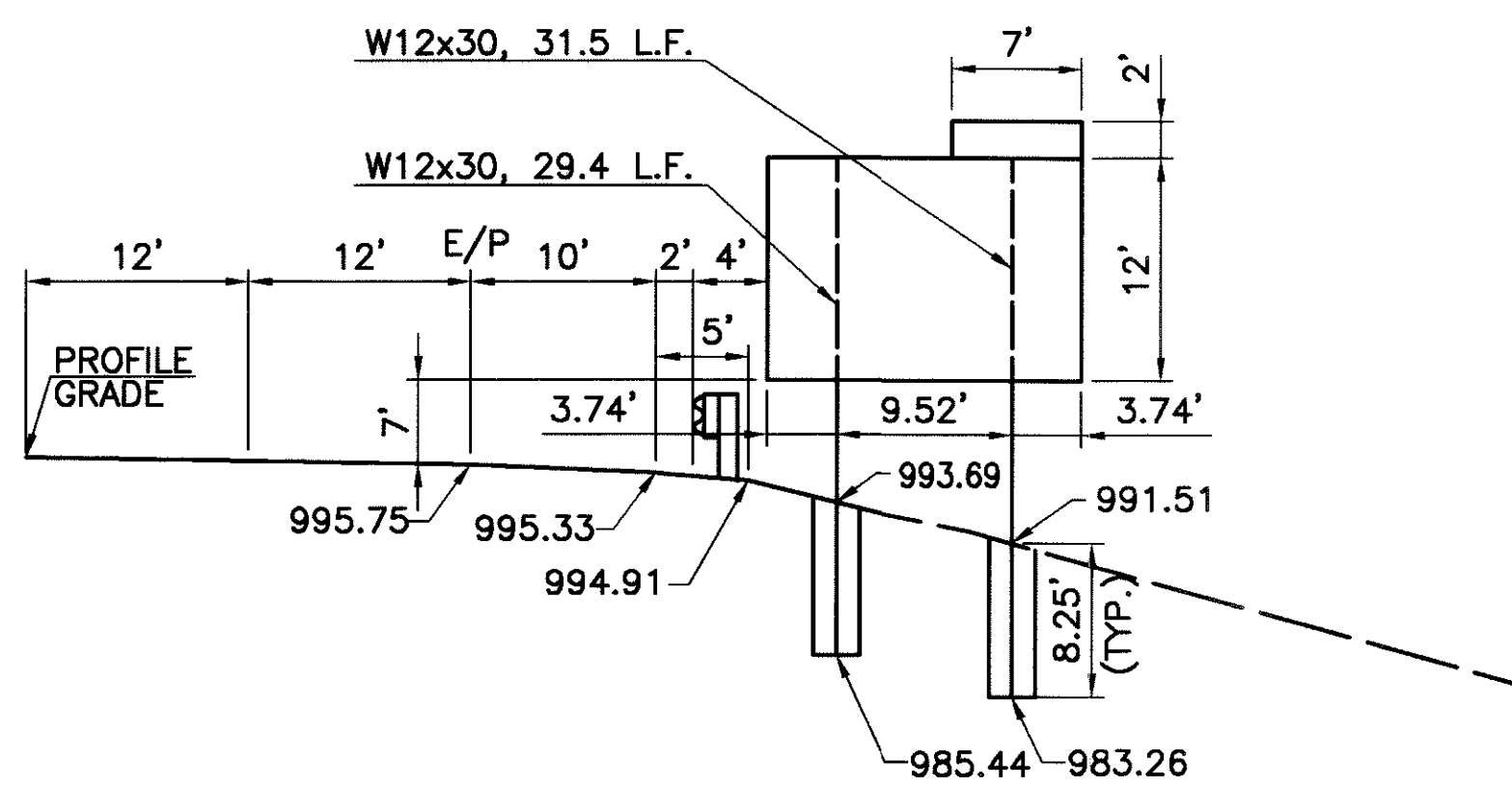
GROUND MOUNTED SIGN SUPPORT NO. 1

W.B. STA. 167+72, LT.



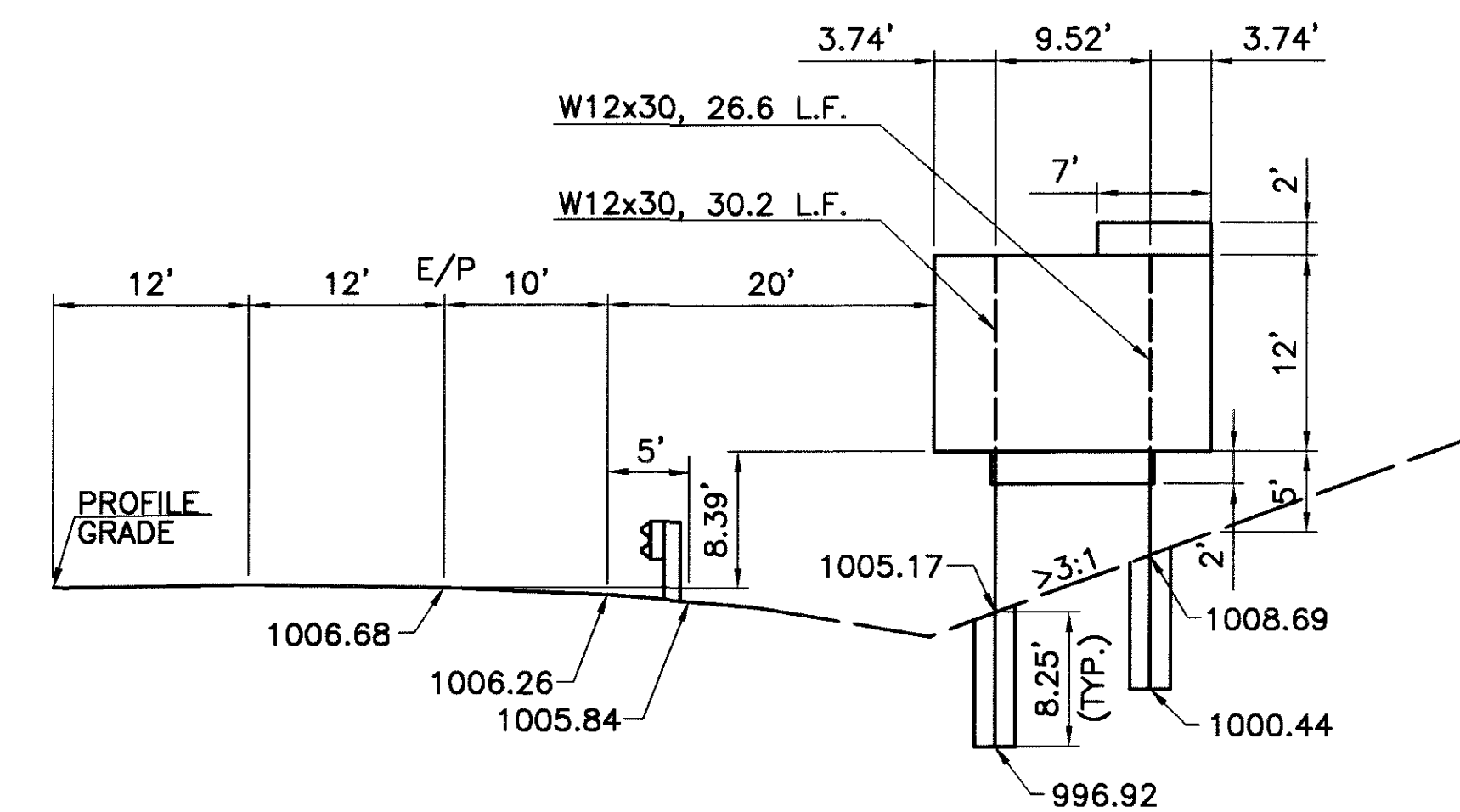
GROUND MOUNTED SIGN SUPPORT NO. 4

E.B. STA. 198+00, RT.



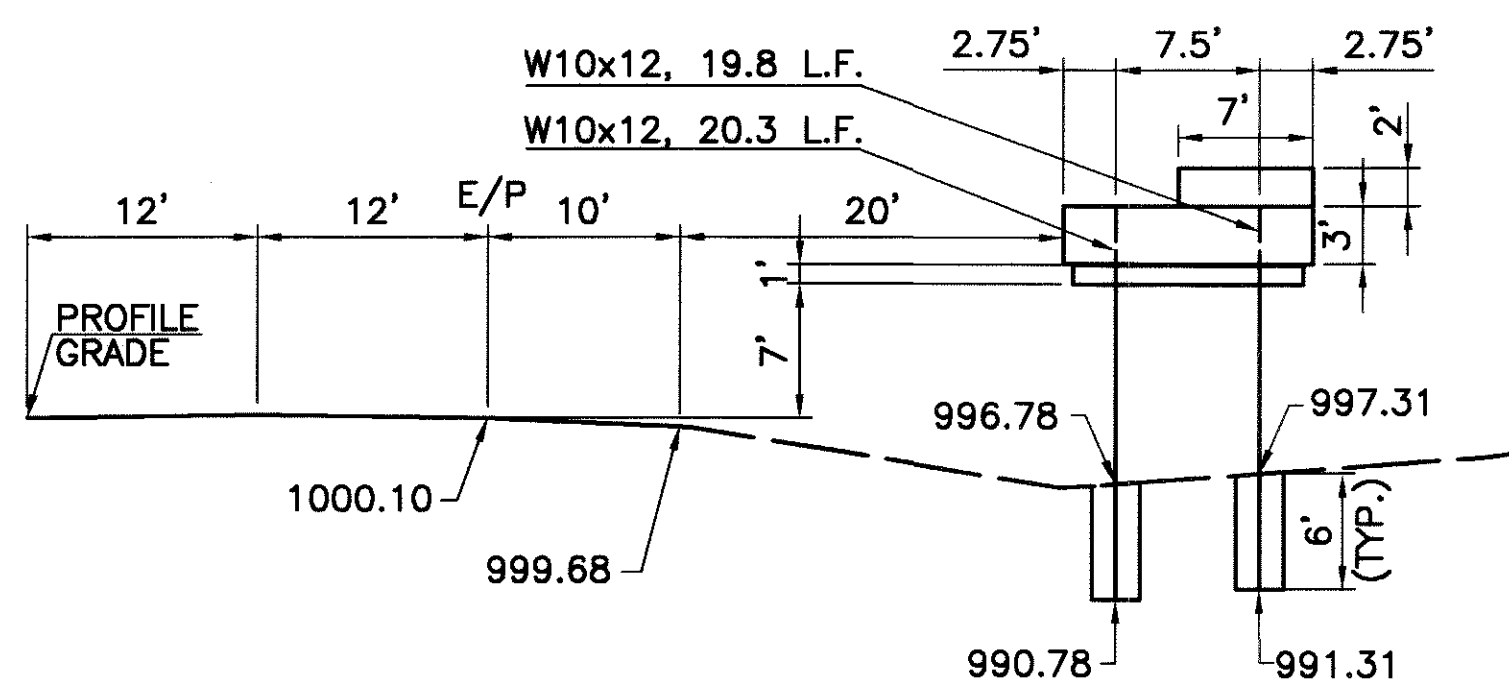
GROUND MOUNTED STATION NO. 2

W.B. STA. 185+90, LT.



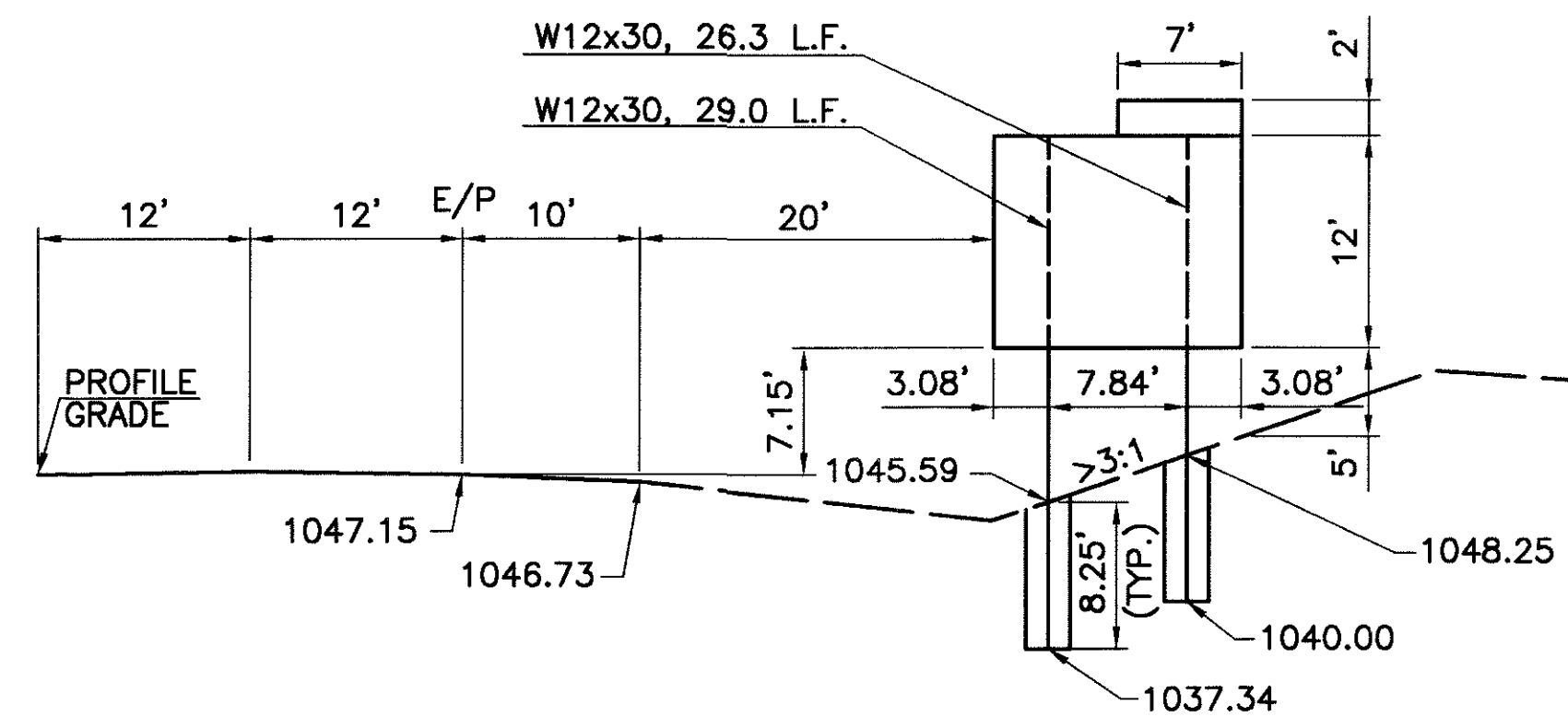
GROUND MOUNTED SIGN SUPPORT NO. 5

W.B. STA. 215+75, LT.



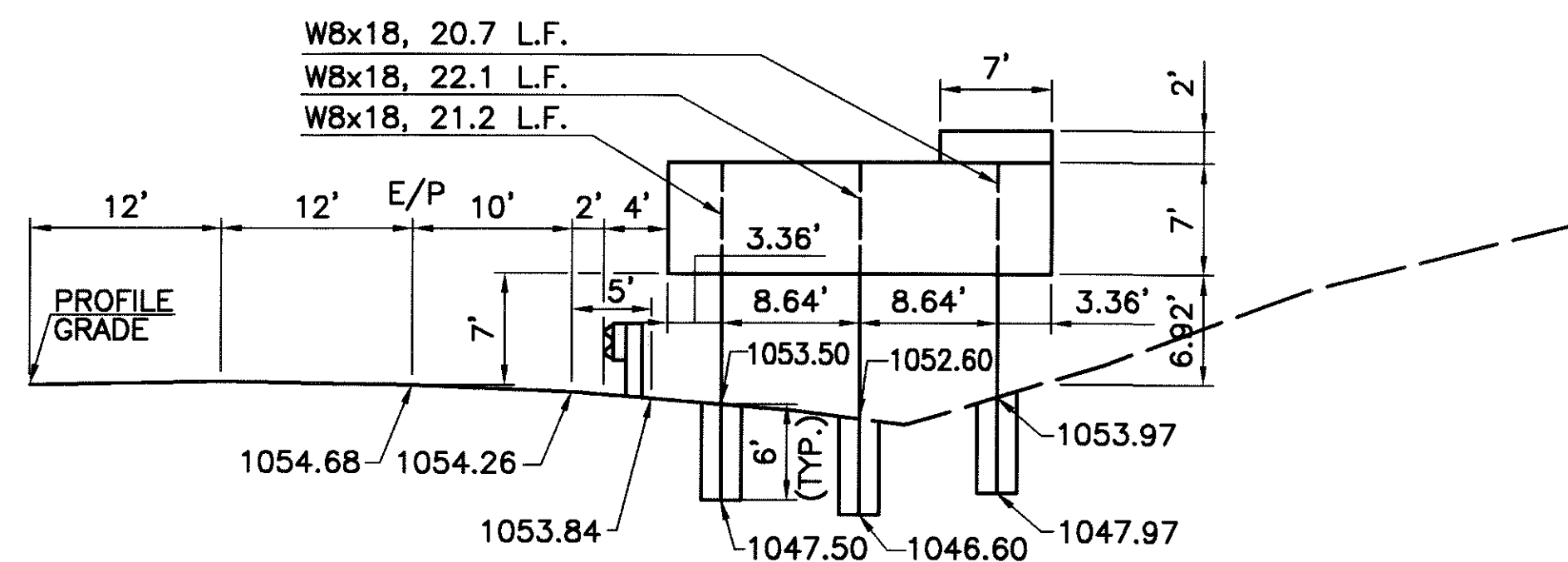
GROUND MOUNTED SIGN SUPPORT NO. 3

W.B. STA. 198+00, LT.

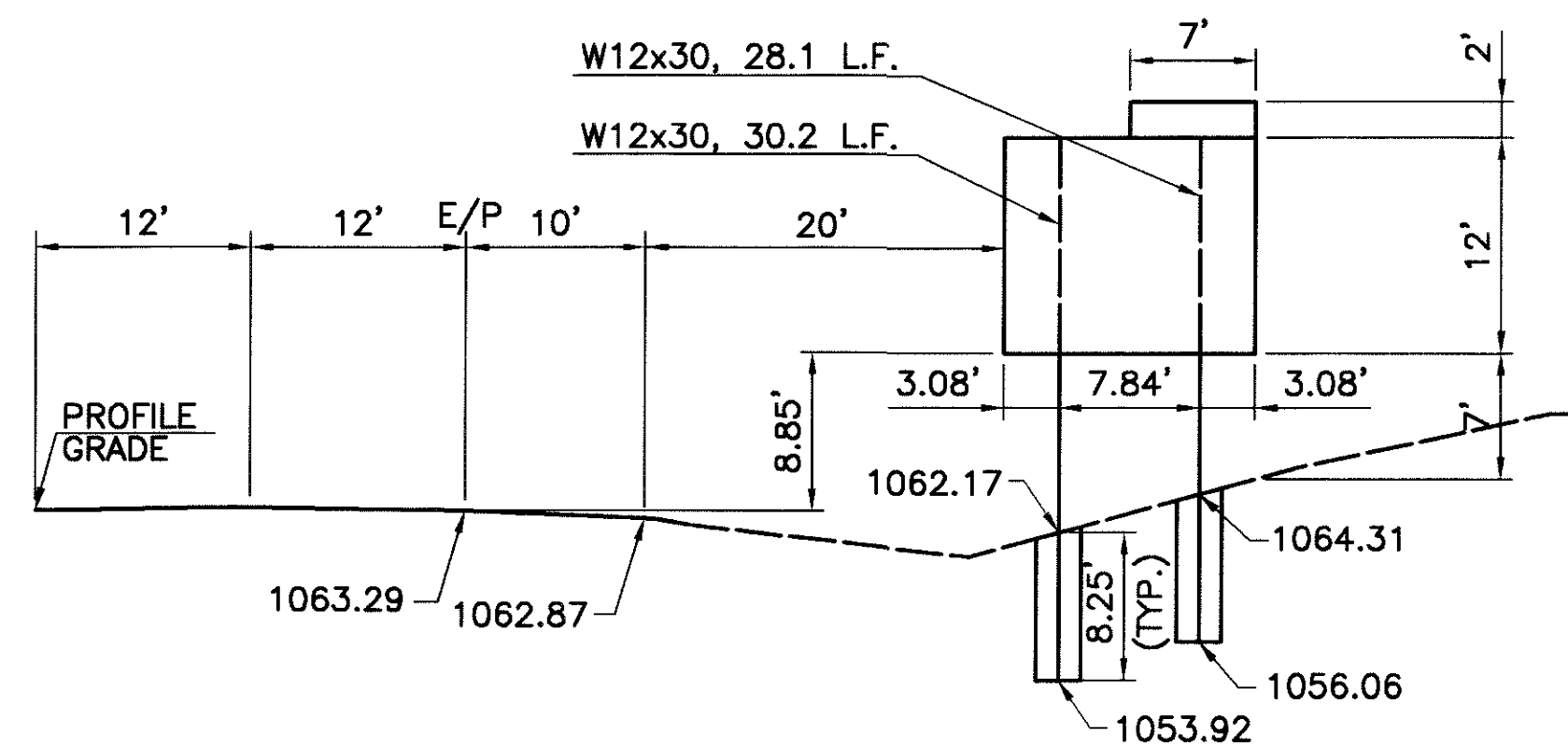


GROUND MOUNTED SIGN SUPPORT NO. 6

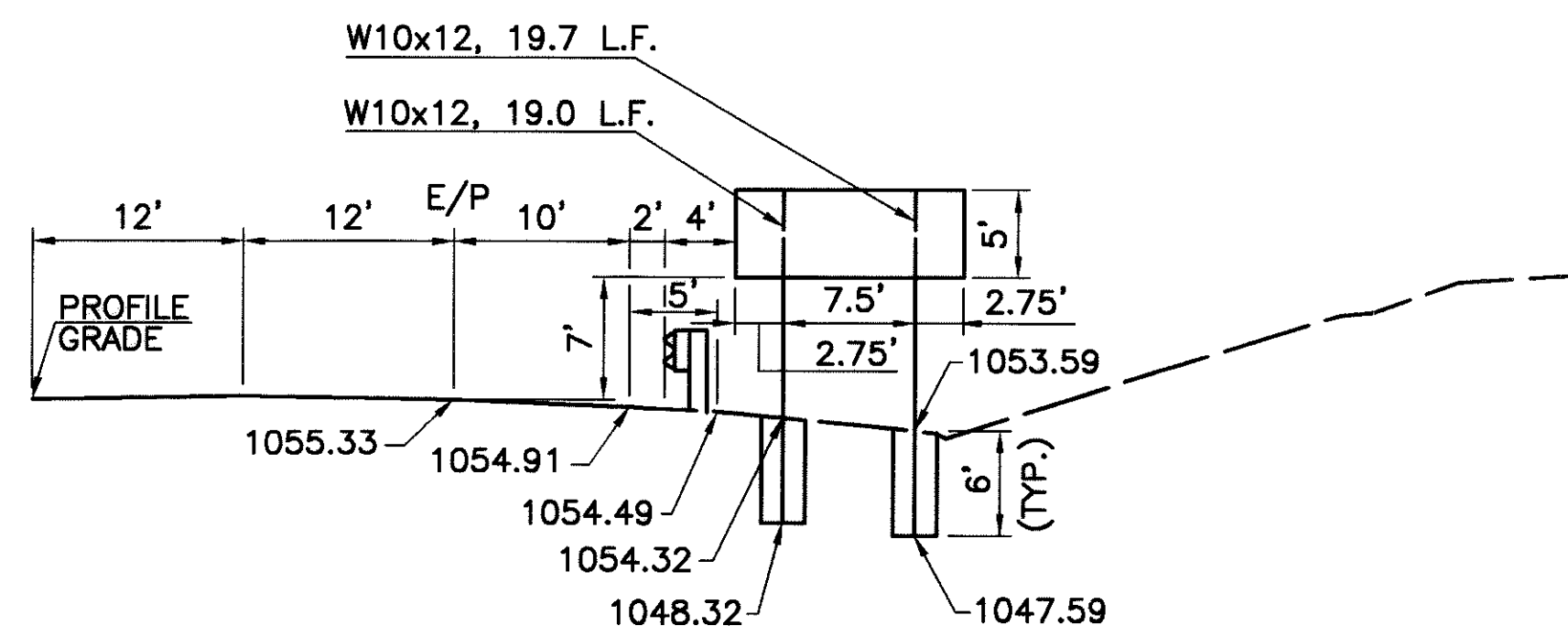
E.B. STA. 256+00, RT.



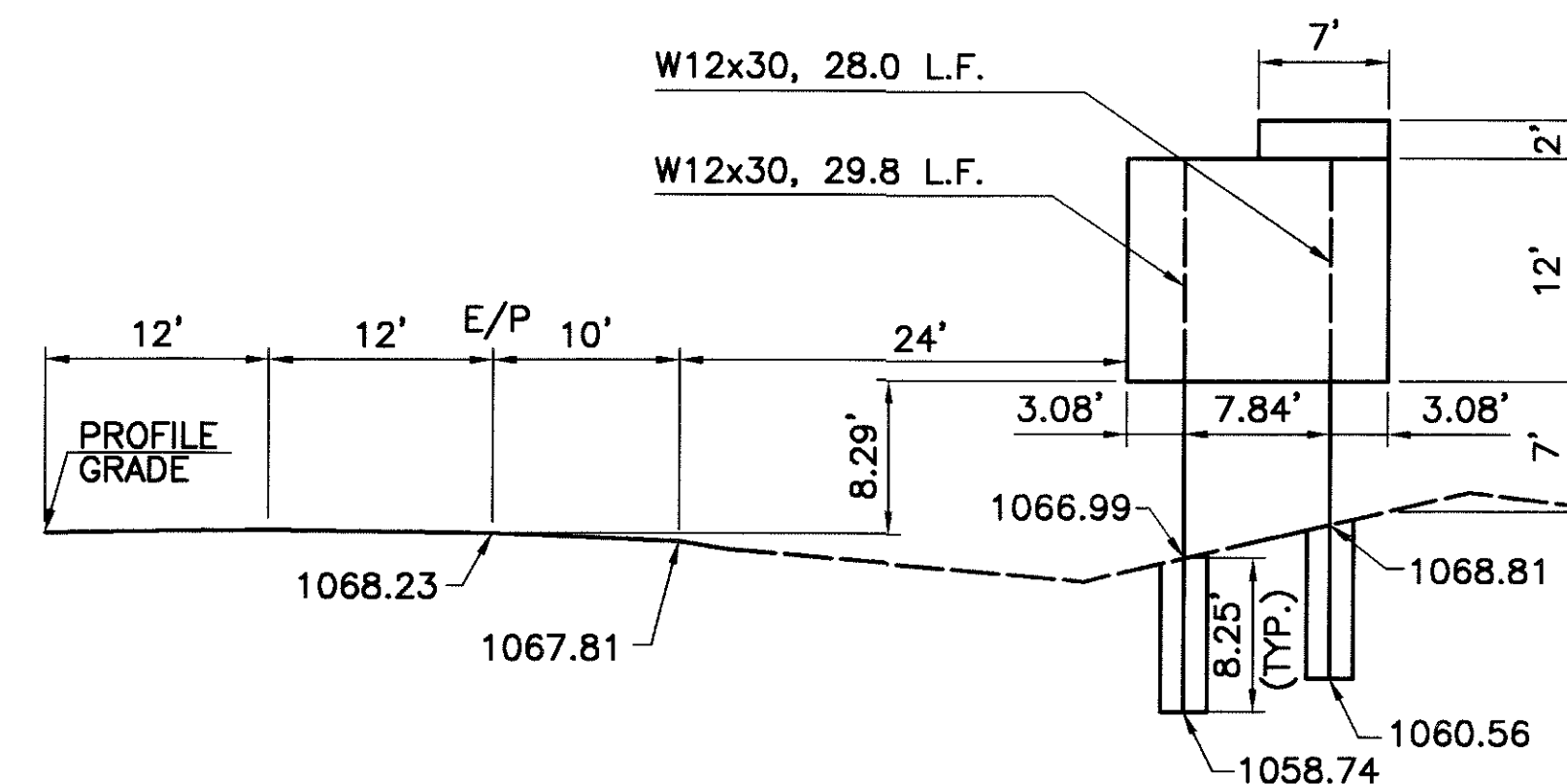
**GROUND MOUNTED SIGN SUPPORT NO. 7**  
E.B. STA. 267+75, RT.



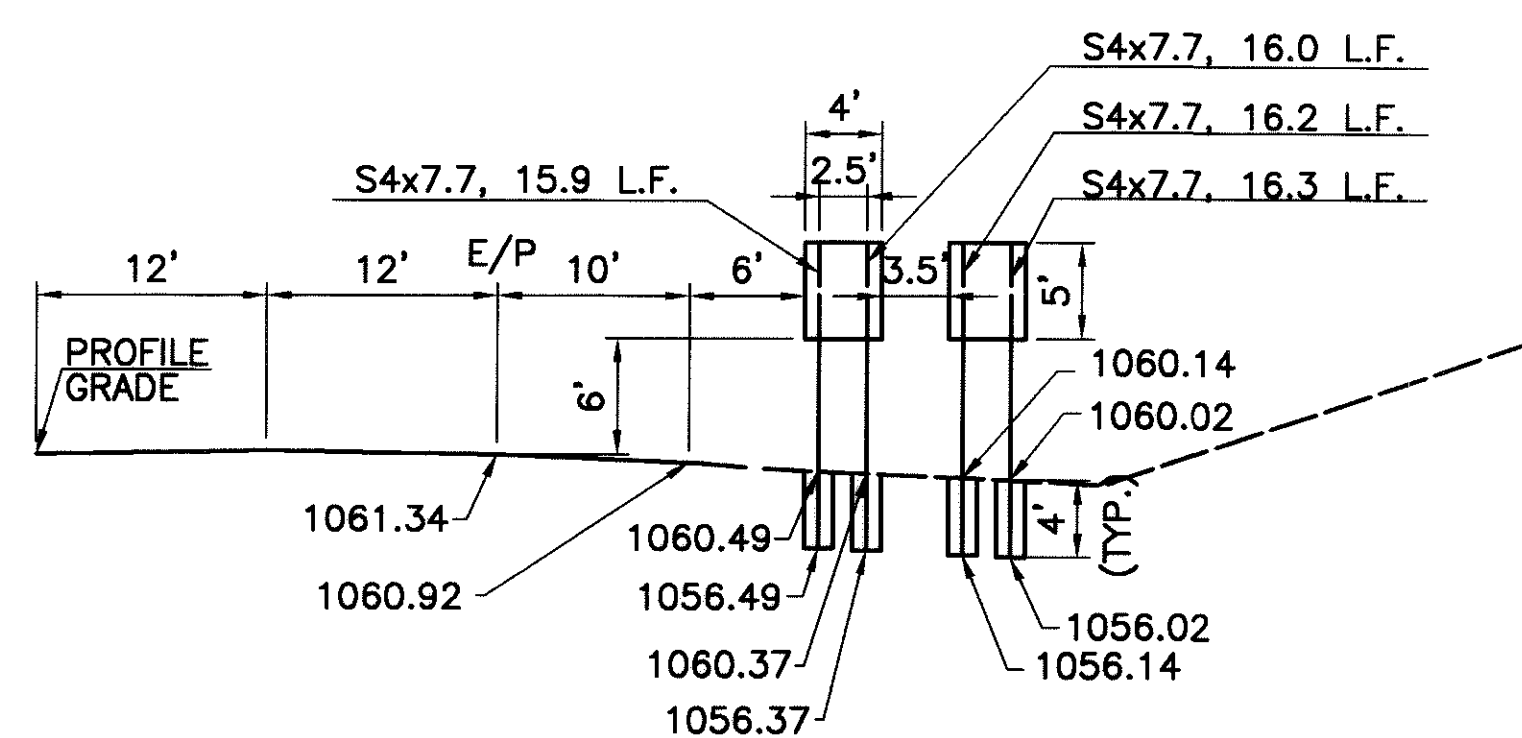
**GROUND MOUNTED SIGN SUPPORT NO. 10**  
E.B. STA. 281+00, RT.



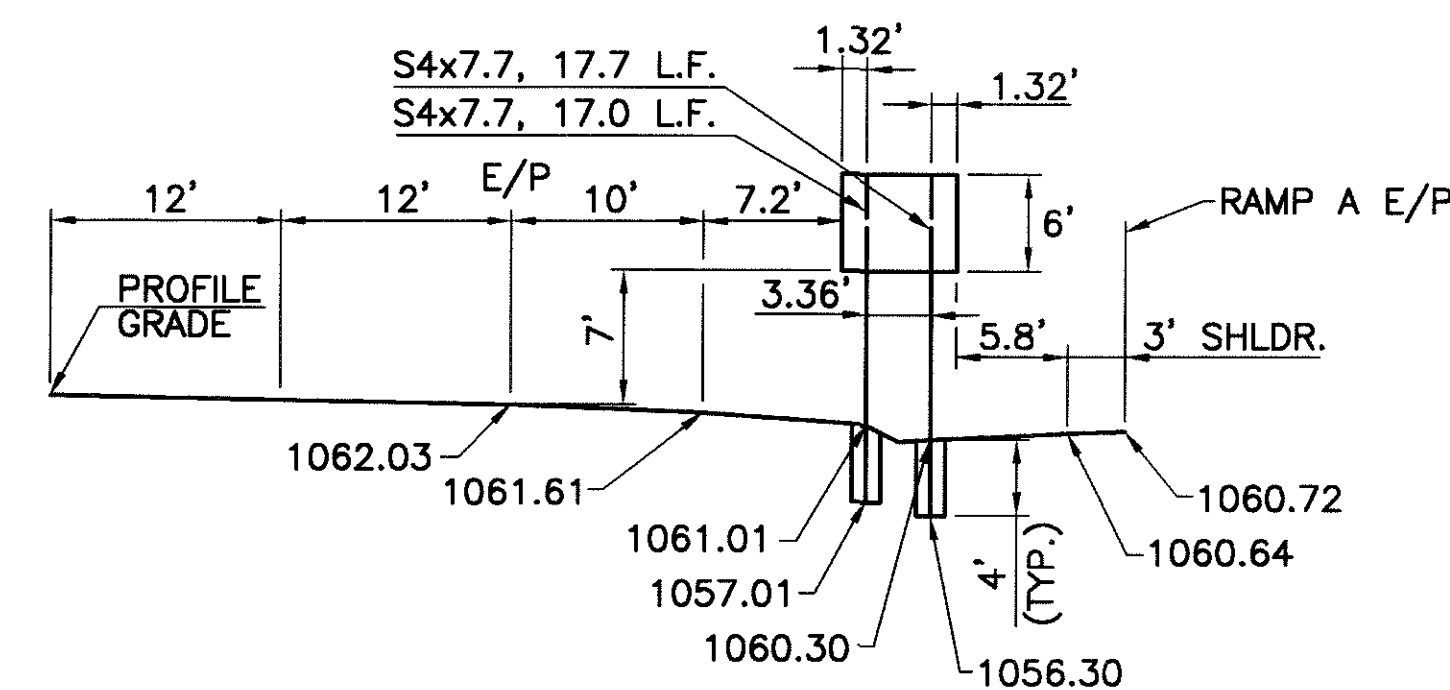
**GROUND MOUNTED SIGN SUPPORT NO. 8**  
W.B. STA. 268+75, LT.



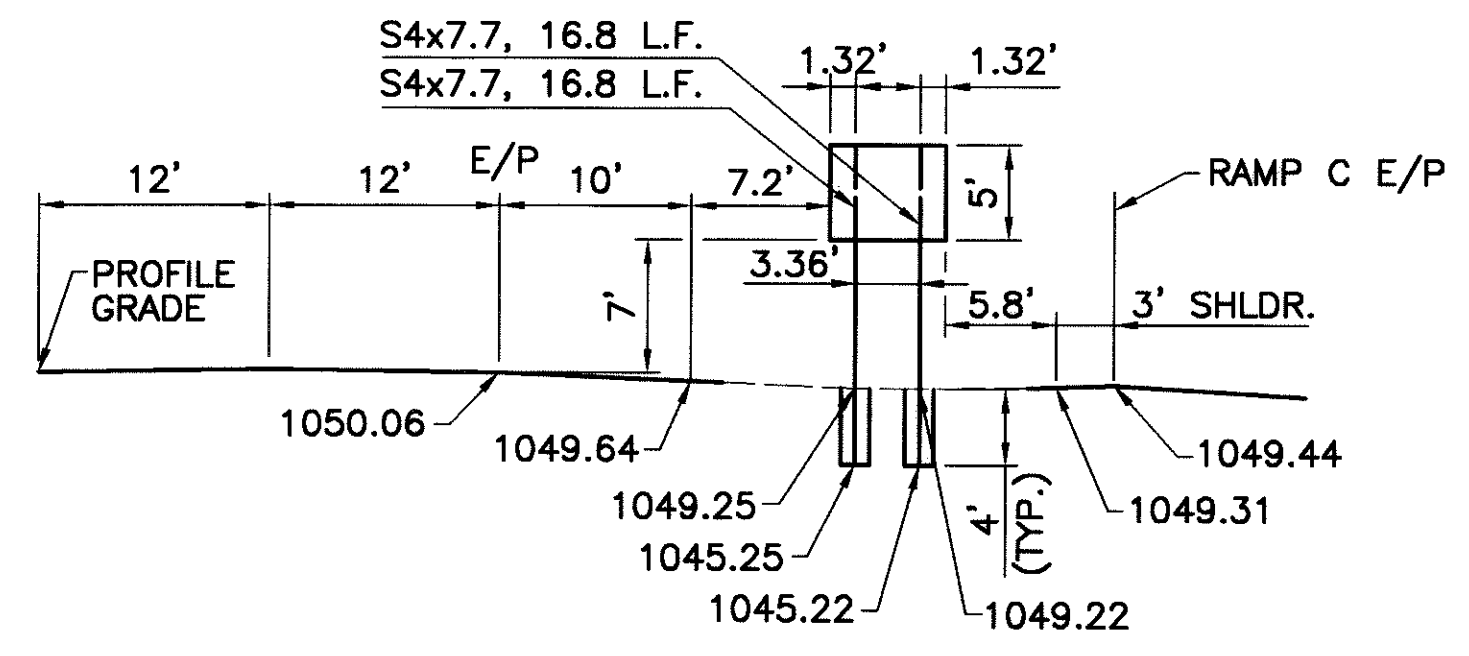
**GROUND MOUNTED SIGN SUPPORT NO. 11**  
E.B. STA. 301+30, RT.



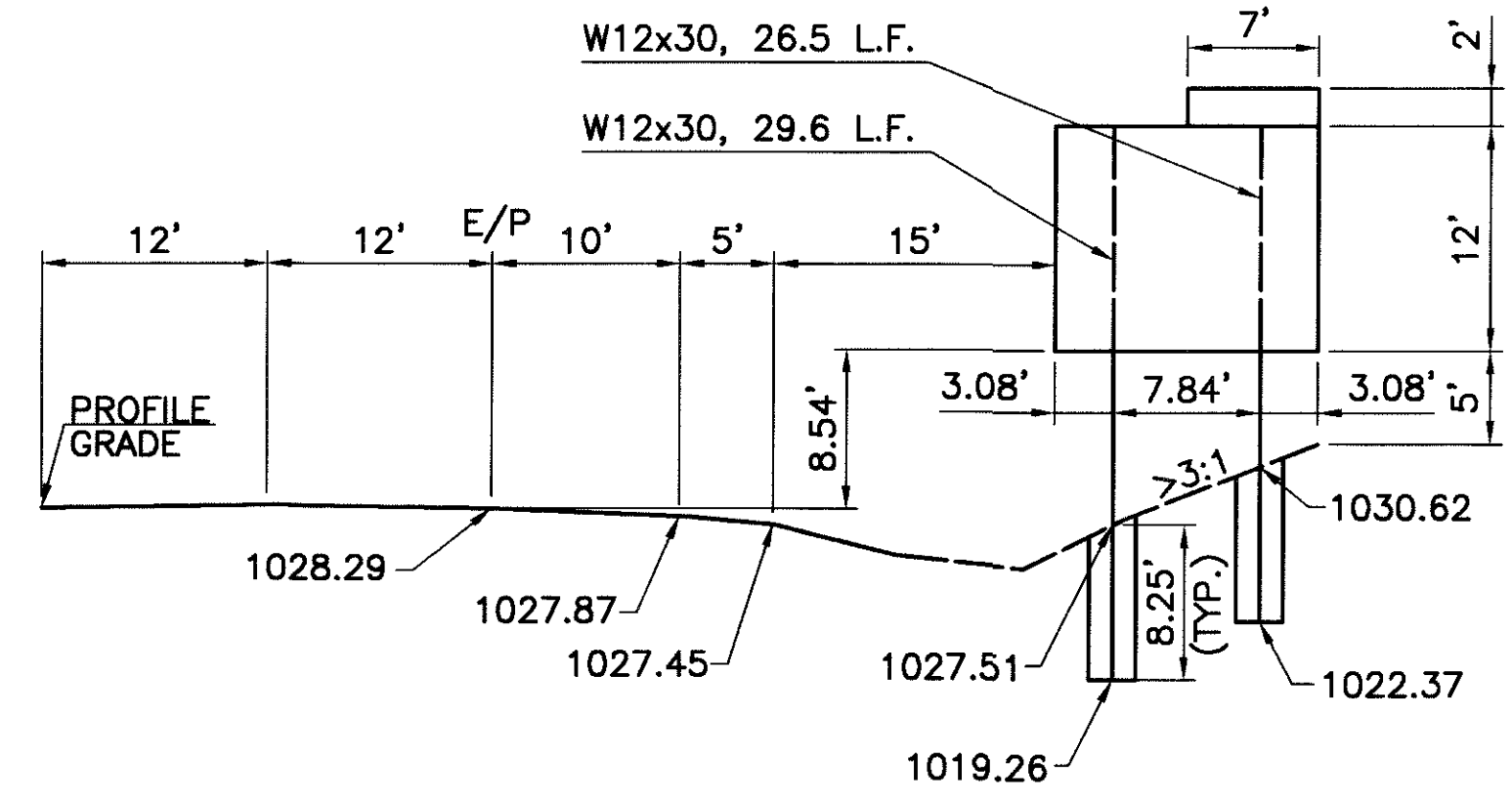
**GROUND MOUNTED SIGN SUPPORT NO. 9**  
W.B. STA. 278+00, LT.



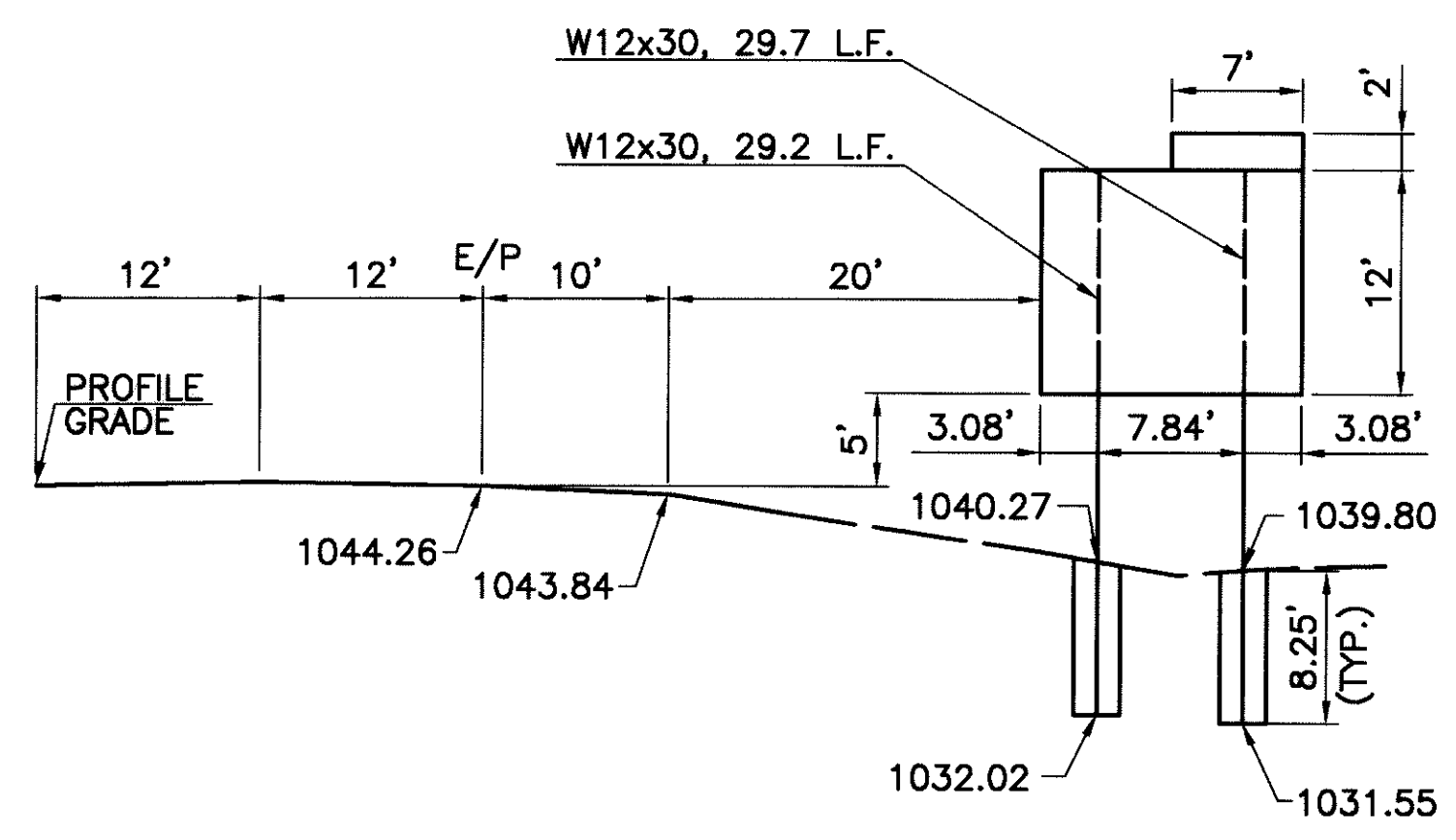
**GROUND MOUNTED SIGN SUPPORT NO. 12**  
E.B. STA. 310+00, RT.



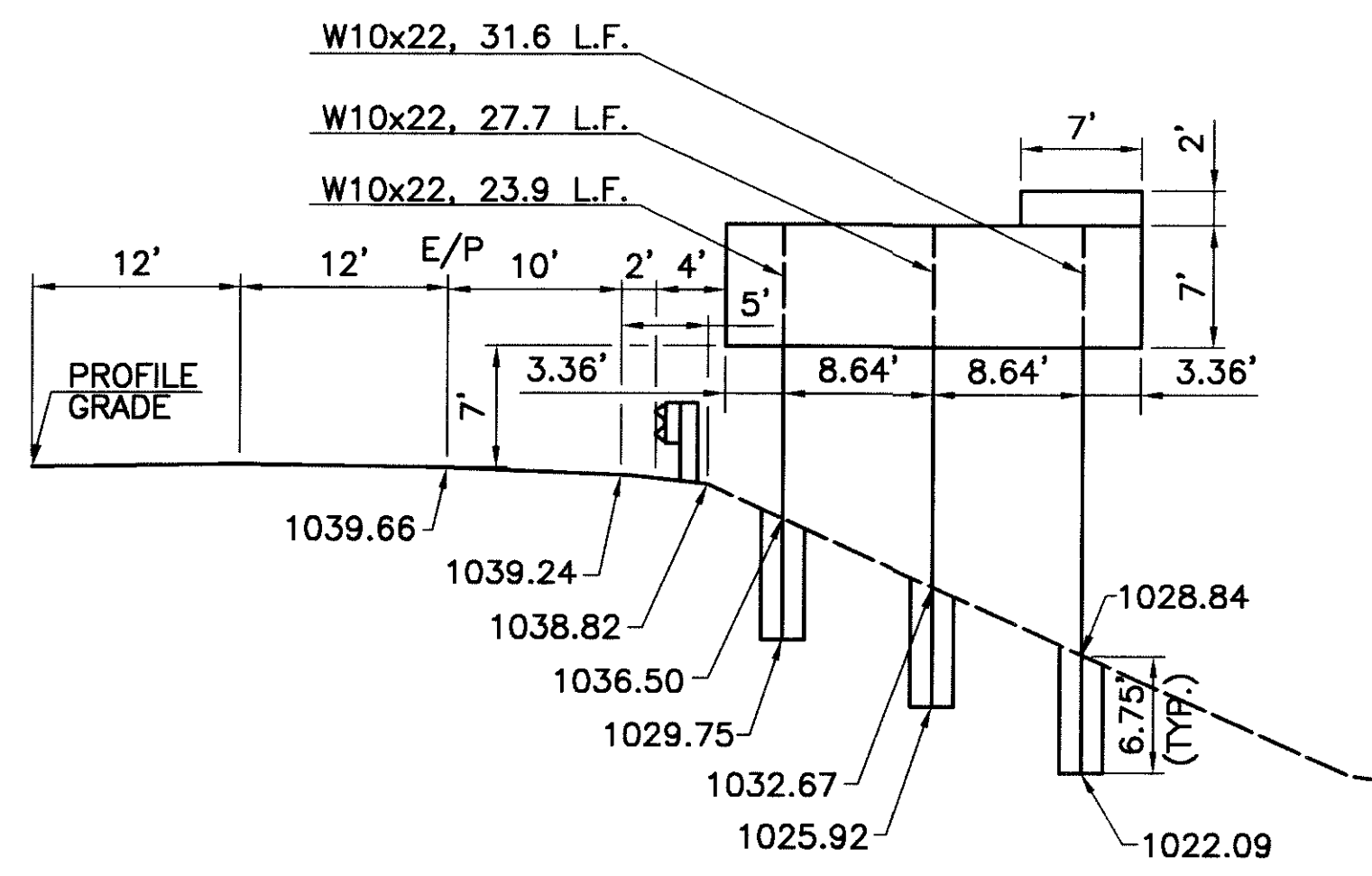
**GROUND MOUNTED SIGN SUPPORT NO. 13**  
W.B. STA. 328+83, LT.



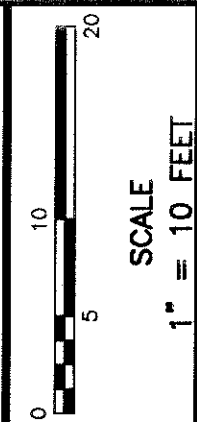
**GROUND MOUNTED SIGN SUPPORT NO. 15**  
W.B. STA. 357+00, LT.



**GROUND MOUNTED SIGN SUPPORT NO. 14**  
W.B. STA. 337+60, LT.



**GROUND MOUNTED SIGN SUPPORT NO. 16**  
W.B. STA. 366+90, LT.

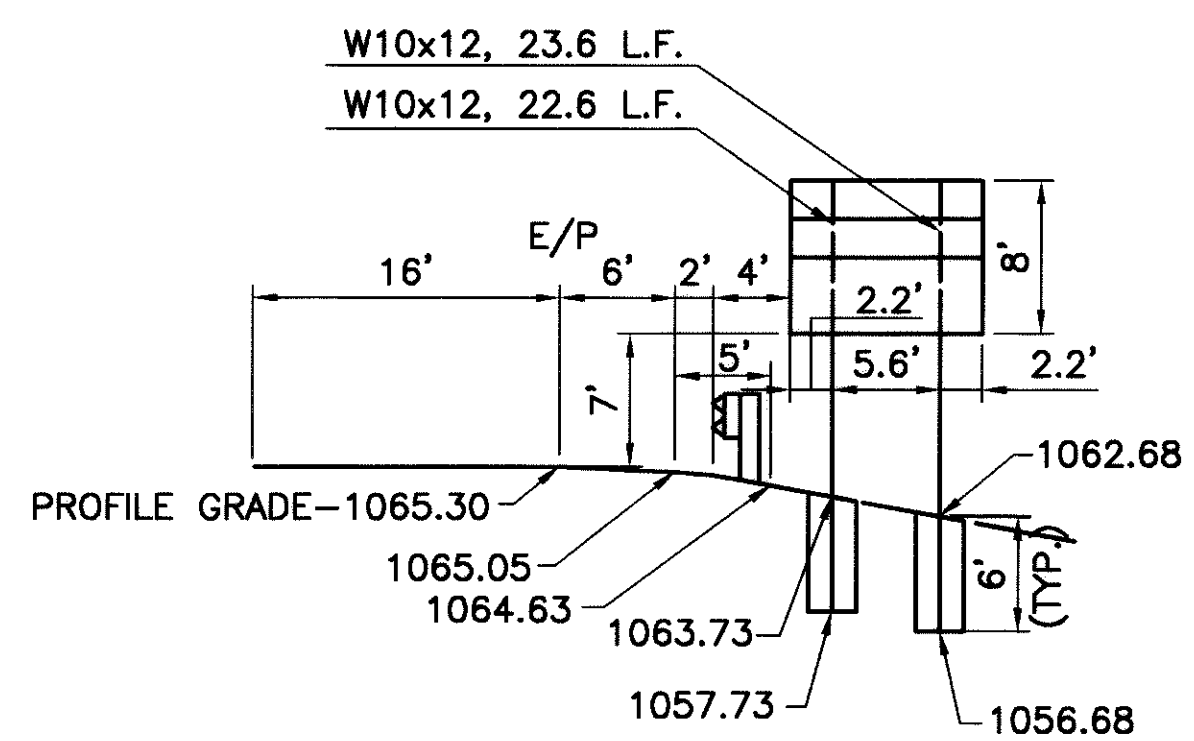


SIGN SUPPORT DETAILS

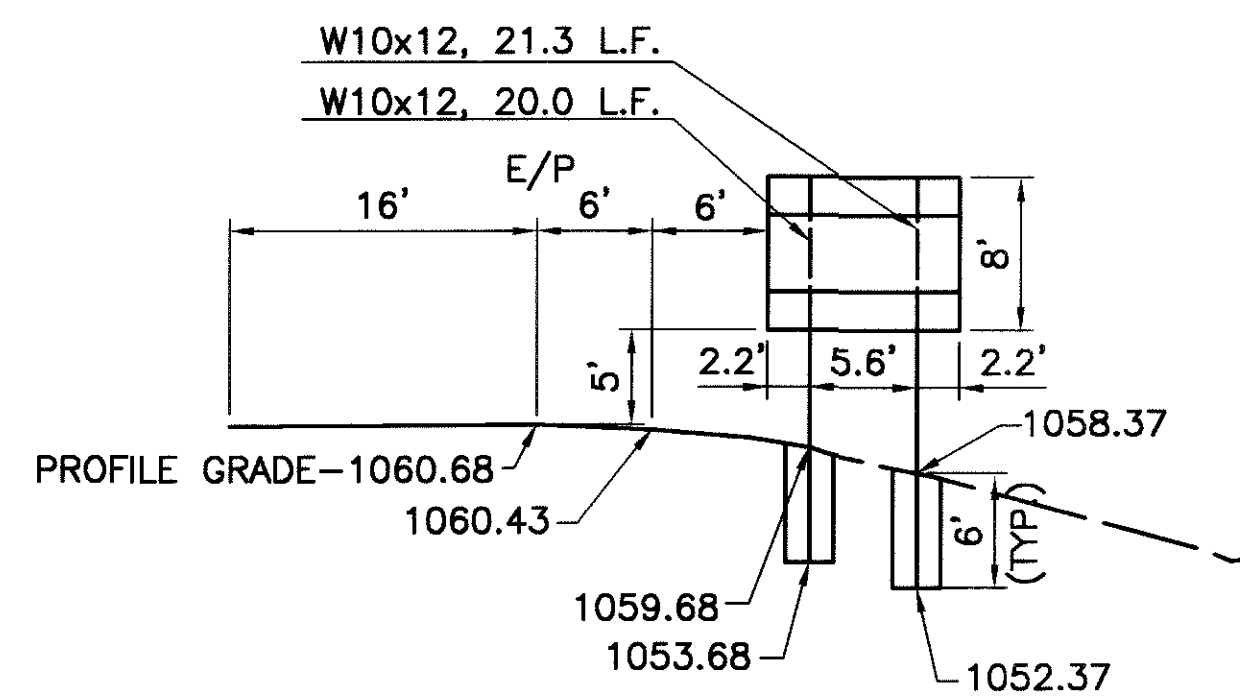
MAH - 76 - 3.08

DATE : 06/11/02  
CAD FILE : Support\_dtl\_13to16  
OPERATOR : BRK/CAF/MCC  
PLOT SCALE : 1"=10'

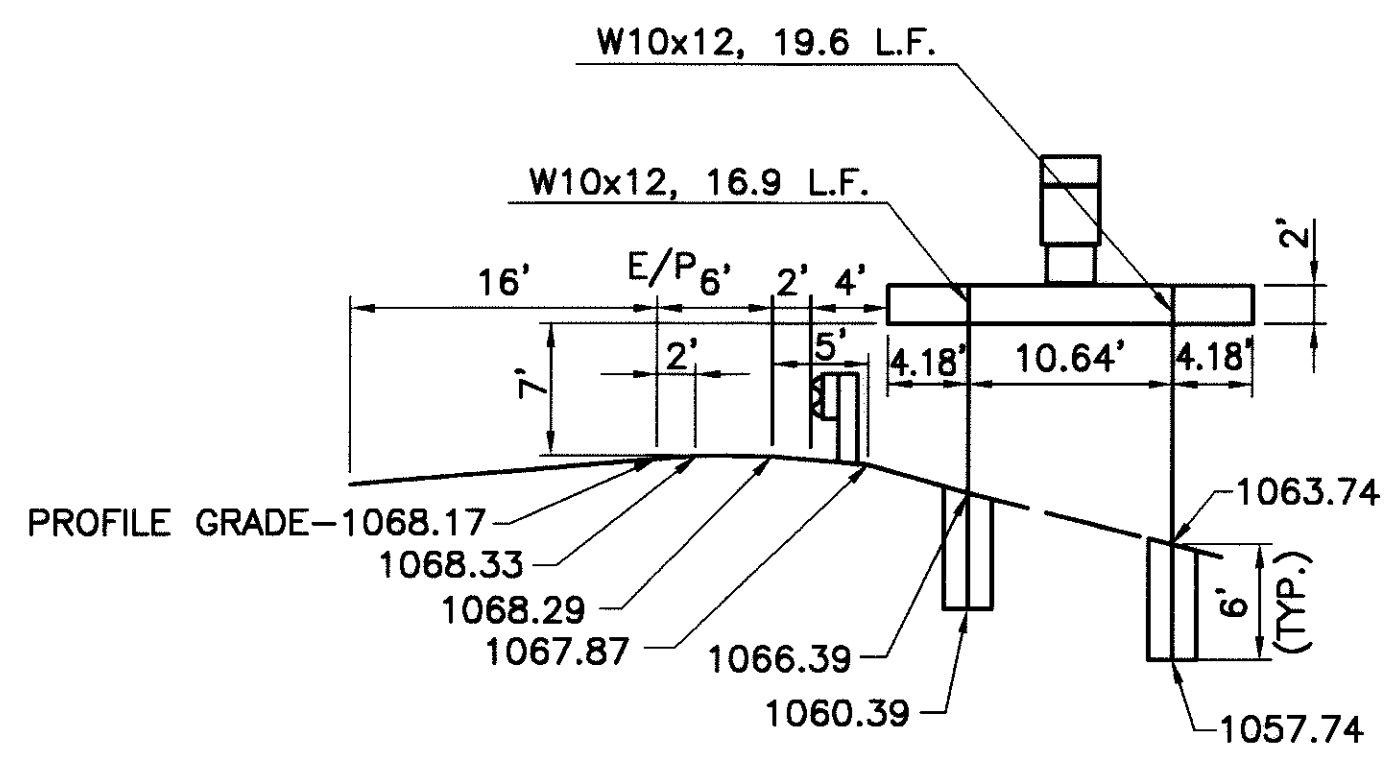




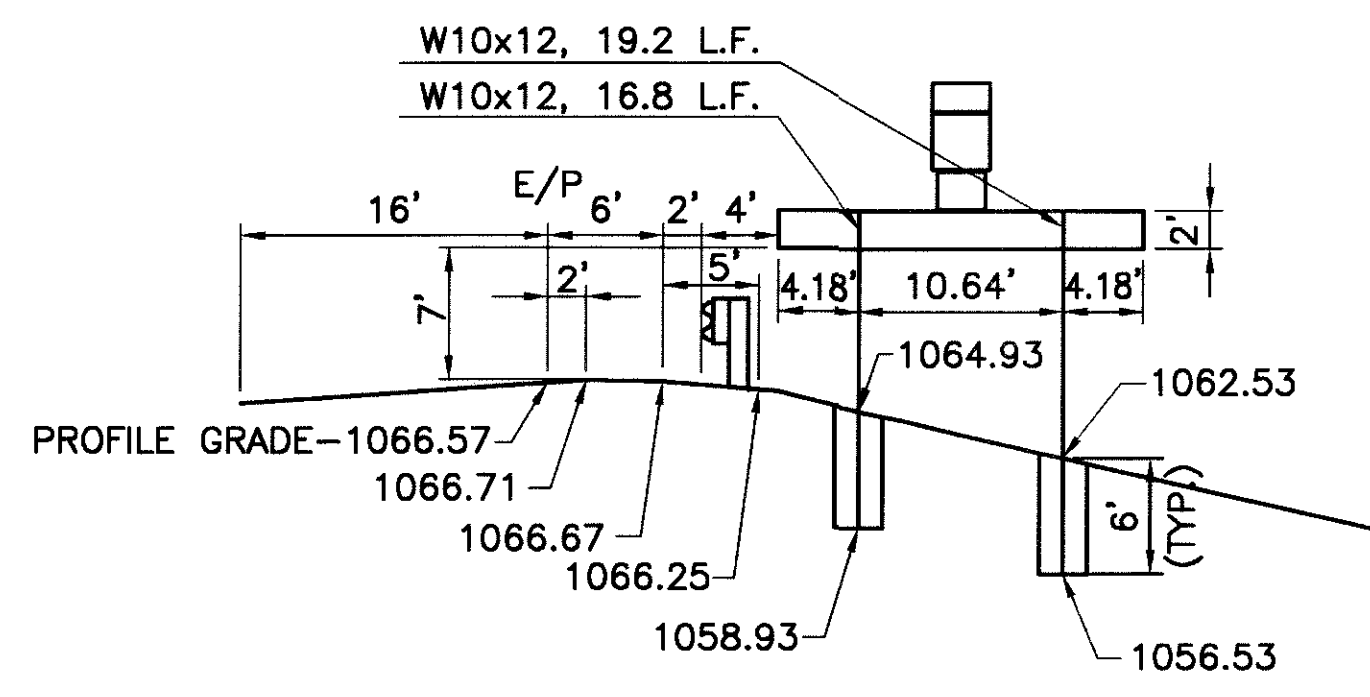
GROUND MOUNTED SIGN SUPPORT NO. 17  
BAILEY ROAD RAMP A STA. 316+00, RT.



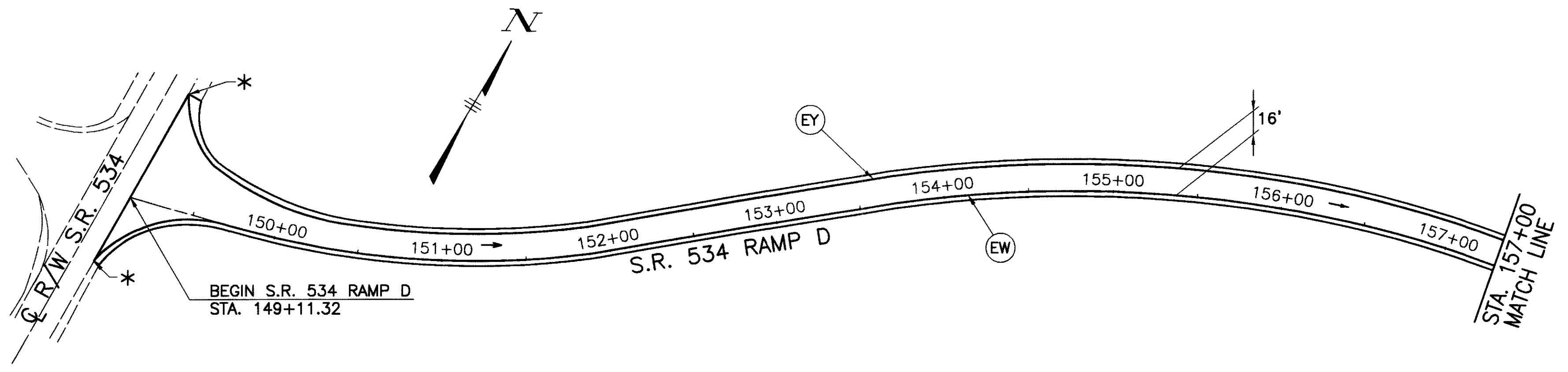
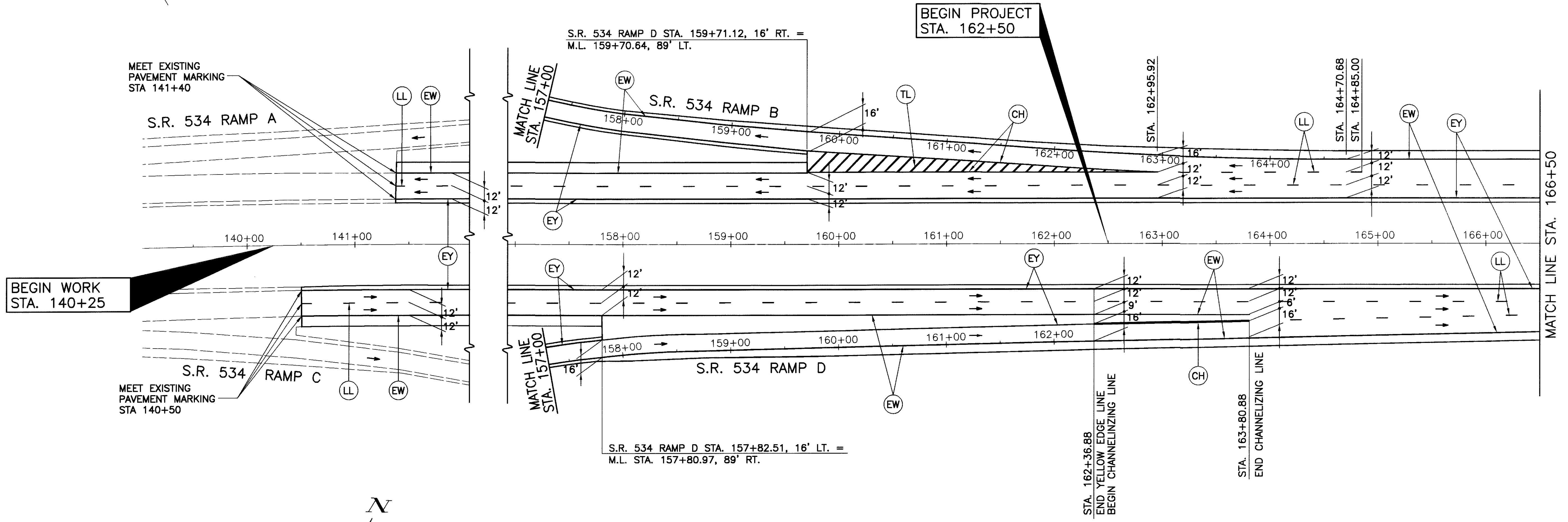
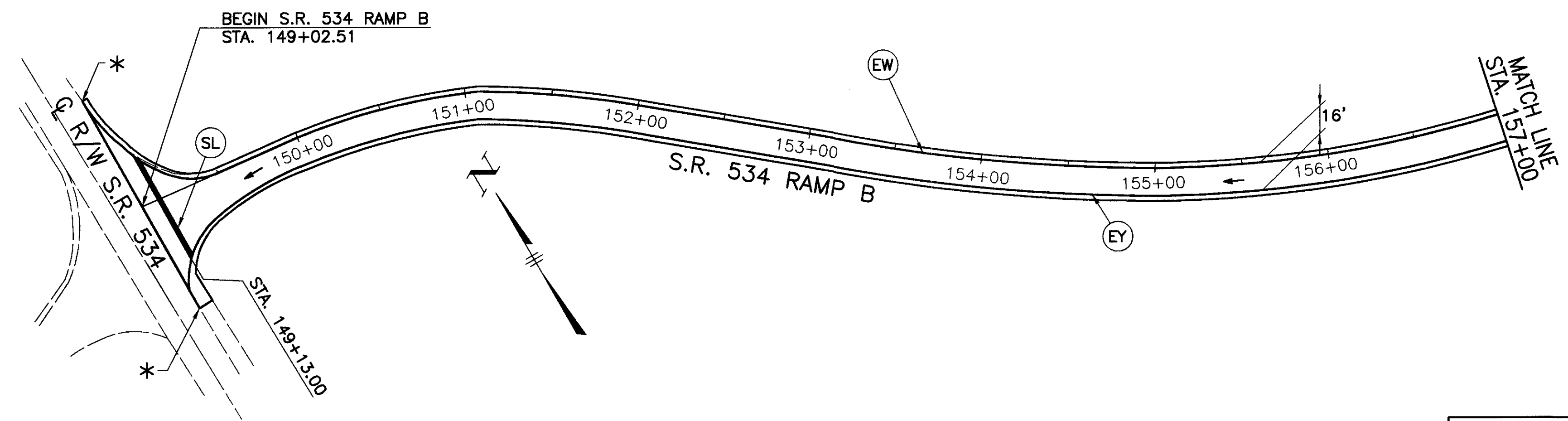
GROUND MOUNTED SIGN SUPPORT NO. 19  
BAILEY ROAD RAMP C STA. 323+07, LT.



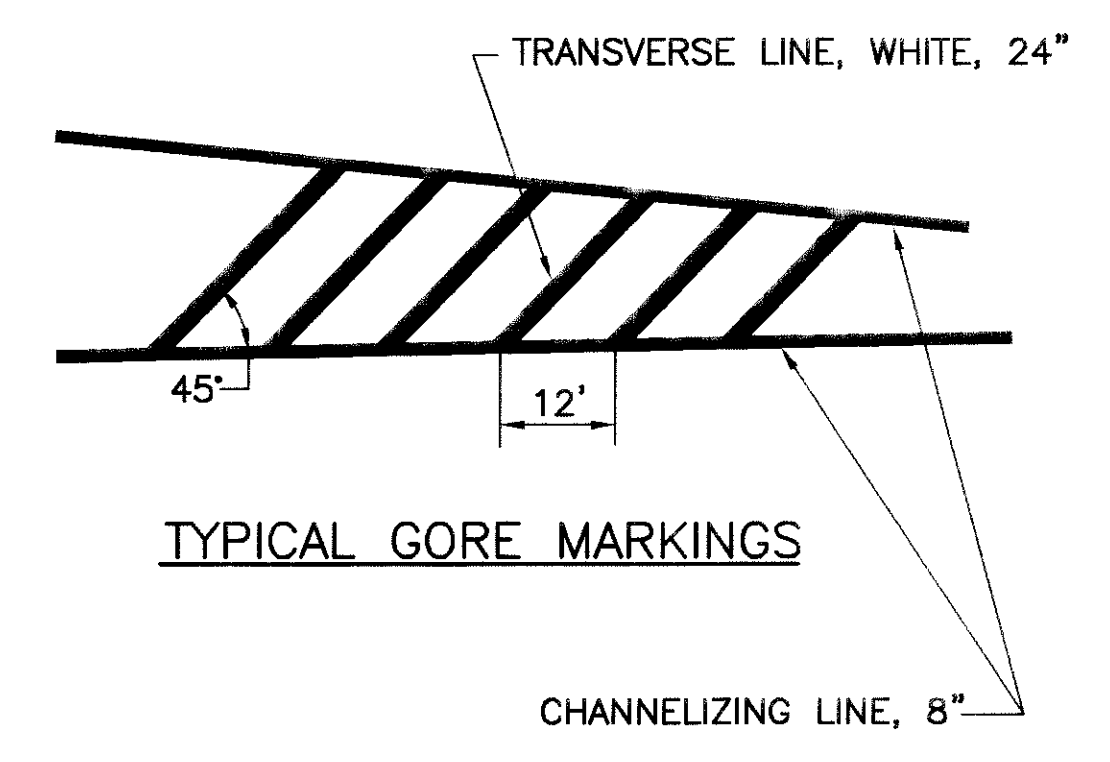
GROUND MOUNTED SIGN SUPPORT NO. 18  
BAILEY ROAD RAMP A STA. 318+01, RT.



GROUND MOUNTED SIGN SUPPORT NO. 20  
BAILEY ROAD RAMP C STA. 320+97, LT.



- LEGEND**
- (EW) EDGE LINE, WHITE
  - (EY) EDGE LINE, YELLOW
  - (LL) LANE LINE
  - (CH) CHANNELIZING LINE
  - (TL) TRANSVERSE LINE, WHITE
  - (SL) STOP LINE
- \* - MEET EXISTING S.R. 534 EDGE LINE



DATE : 04/15/03  
CAD FILE : MAH\_ML STRIPE4  
OPERATOR : CAF/BBK/MCC  
PLOT SCALE : 1:1

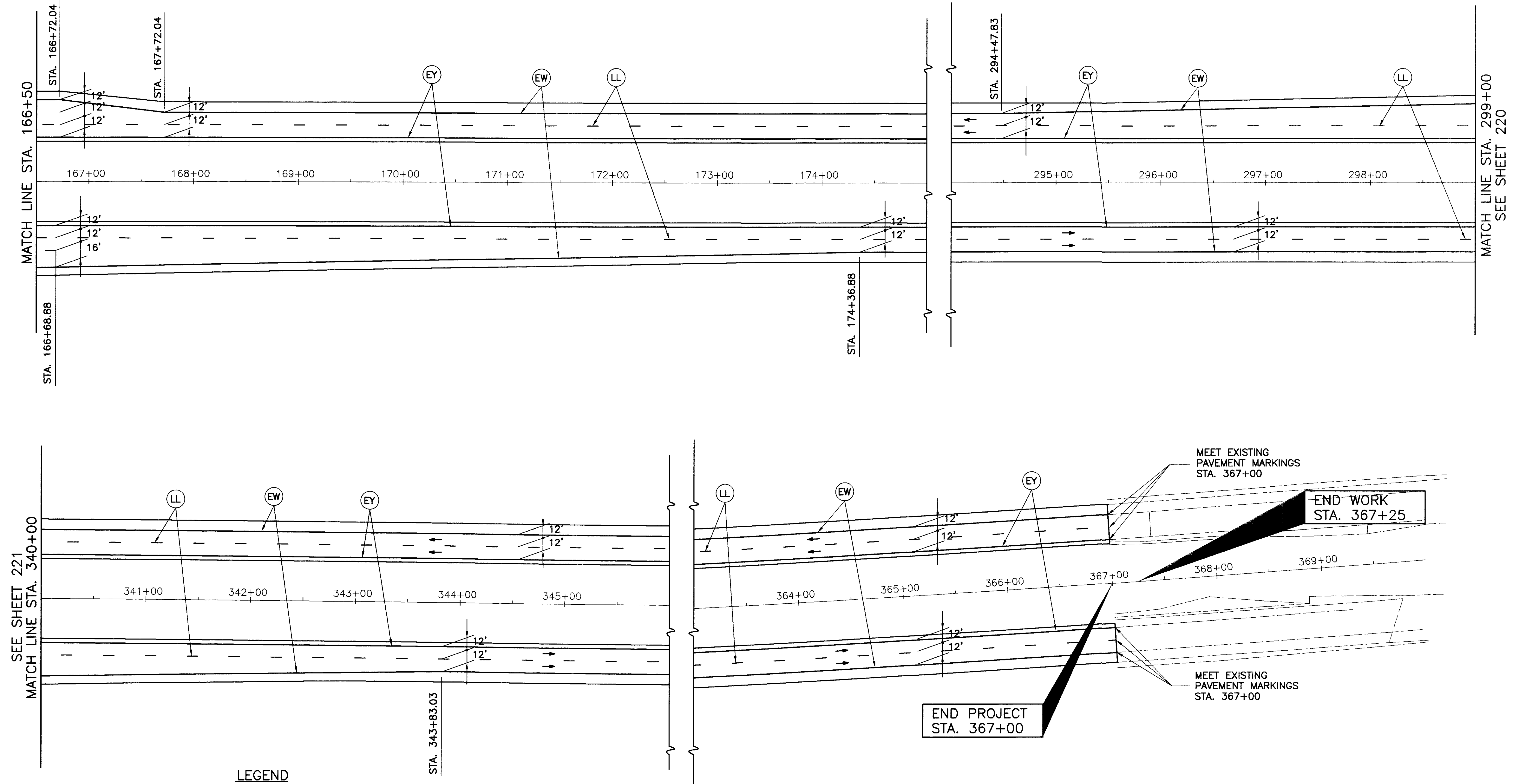
DATE : 06/11/02  
 CAD FILE : STRIPE1  
 OPERATOR : DAY/BBK/MCC  
 PLOT SCALE : 1:1



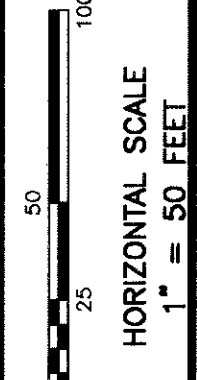
PAVEMENT MARKING PLAN  
 STA. 166+50 TO STA. 299+00 & STA. 340+00 TO STA. 370+00

MAH - 76 - 3.08

219  
 243



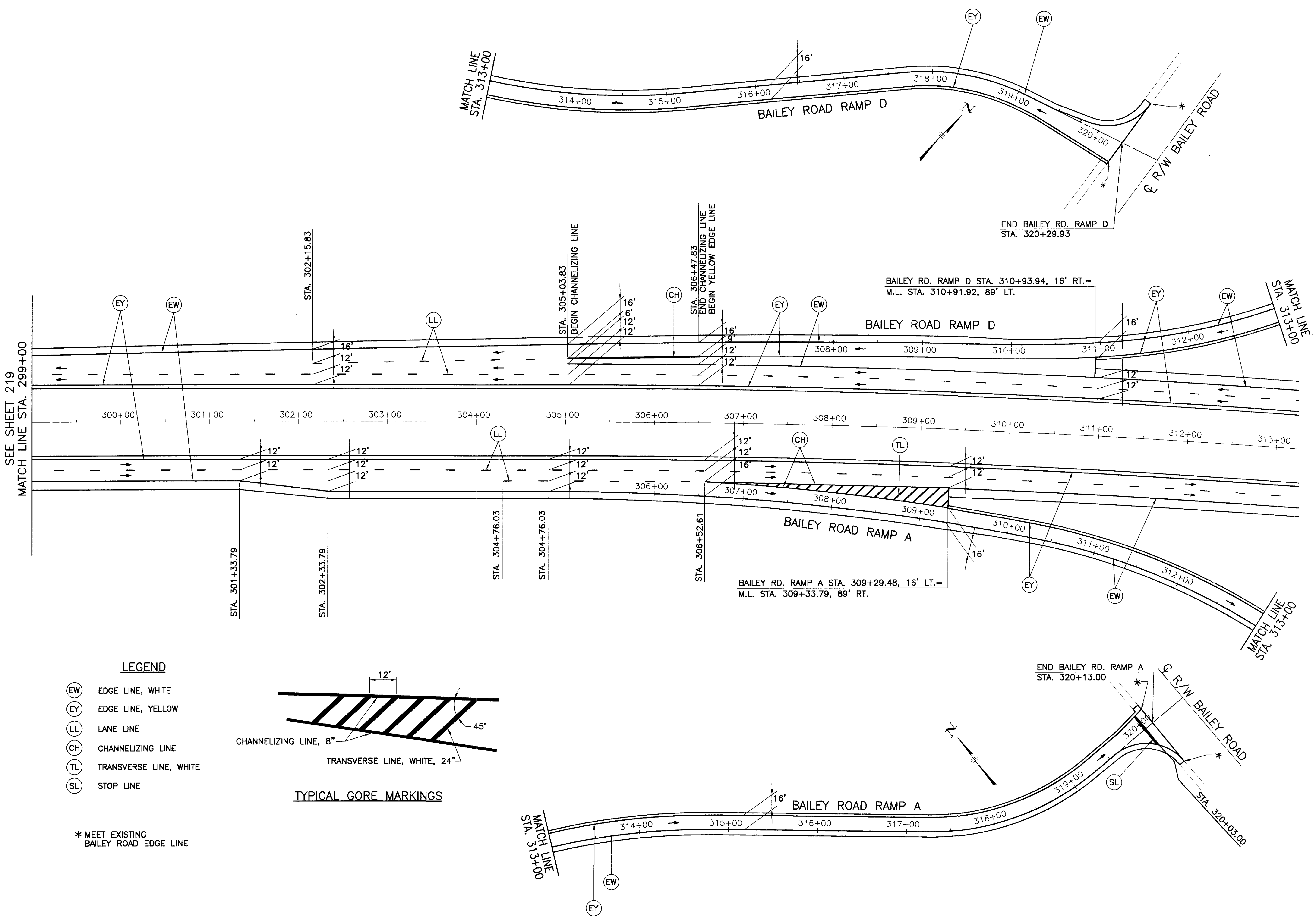
- LEGEND**
- (EW) EDGE LINE, WHITE
  - (EY) EDGE LINE, YELLOW
  - (L) LANE LINE
  - (CH) CHANNELIZING LINE
  - (TL) TRANSVERSE LINE, WHITE
  - (SL) STOP LINE



PAVEMENT MARKING PLAN  
STA. 299+00 TO STA. 313+00

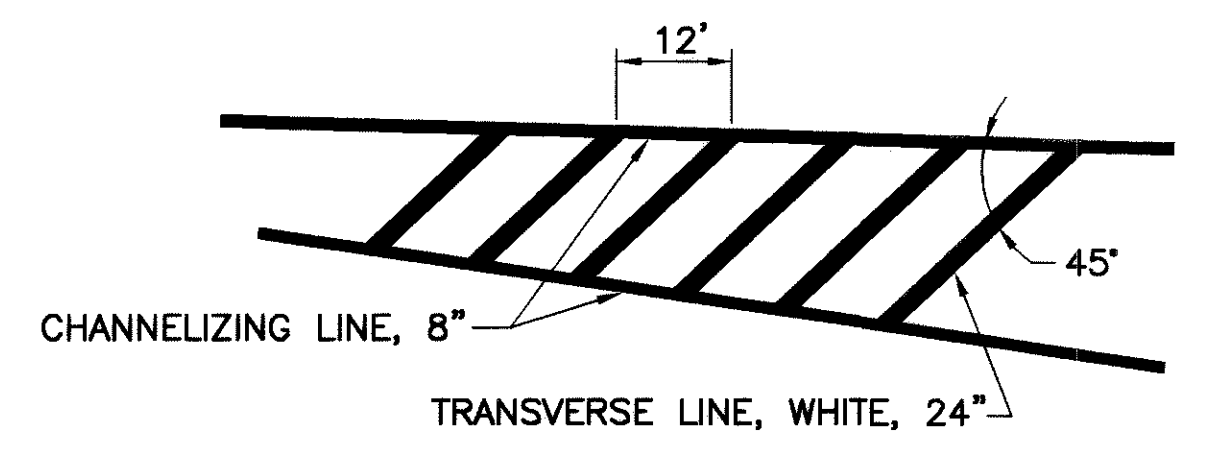
MAH - 76 - 3.08

220  
243



**LEGEND**

- (EW) EDGE LINE, WHITE
- (EY) EDGE LINE, YELLOW
- (LL) LANE LINE
- (CH) CHANNELIZING LINE
- (TL) TRANSVERSE LINE, WHITE
- (SL) STOP LINE

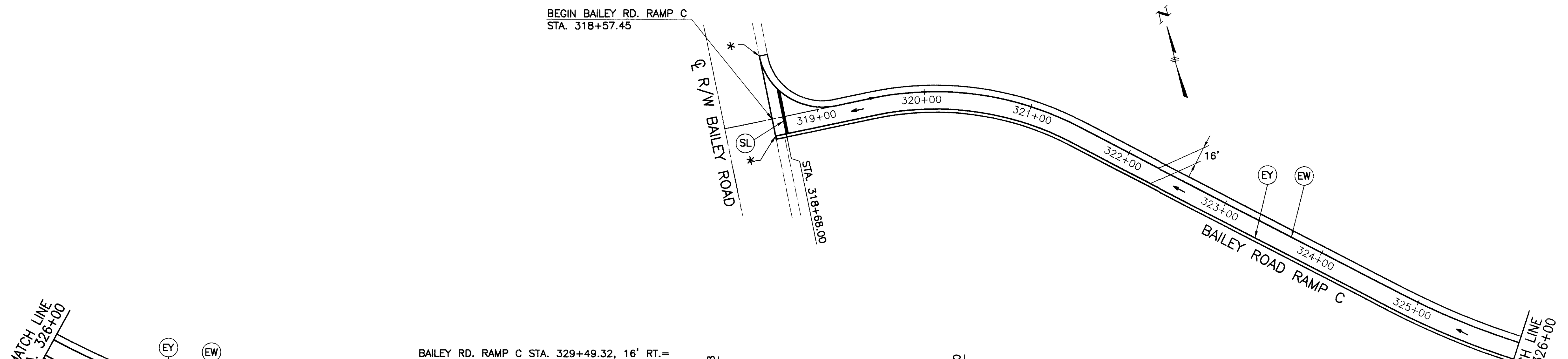


TYPICAL GORE MARKINGS

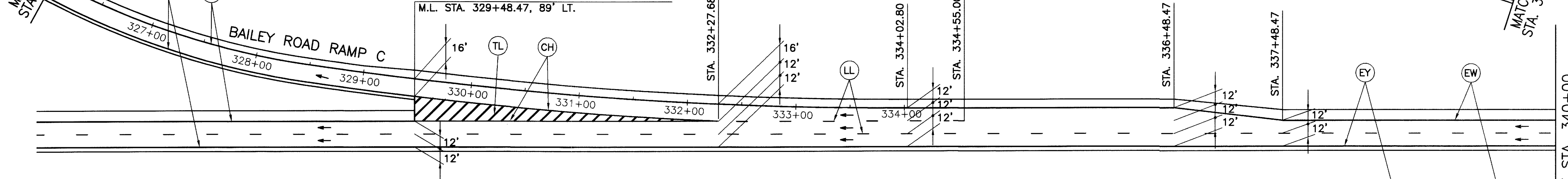
\* MEET EXISTING  
BAILEY ROAD EDGE LINE

DATE : 06/12/02  
CAD FILE : MAH\_STRIP2  
OPERATOR : MPB/BBK/MCC  
PLOT SCALE : 1:1

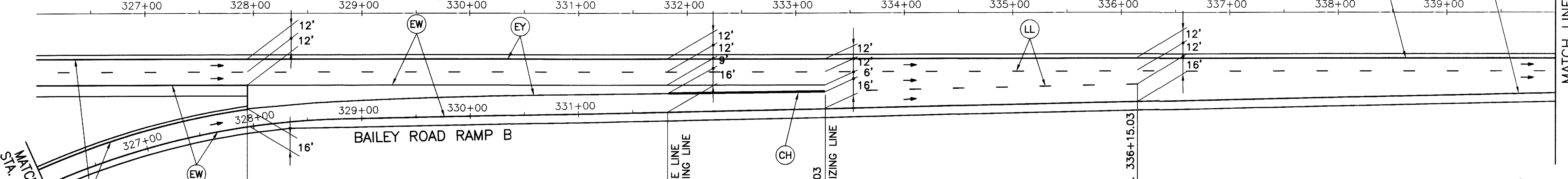
BEGIN BAILEY RD. RAMP C  
STA. 318+57.45



BAILEY RD. RAMP C STA. 329+49.32, 16' RT.=  
M.L. STA. 329+48.47, 89' LT.



BAILEY ROAD RAMP B

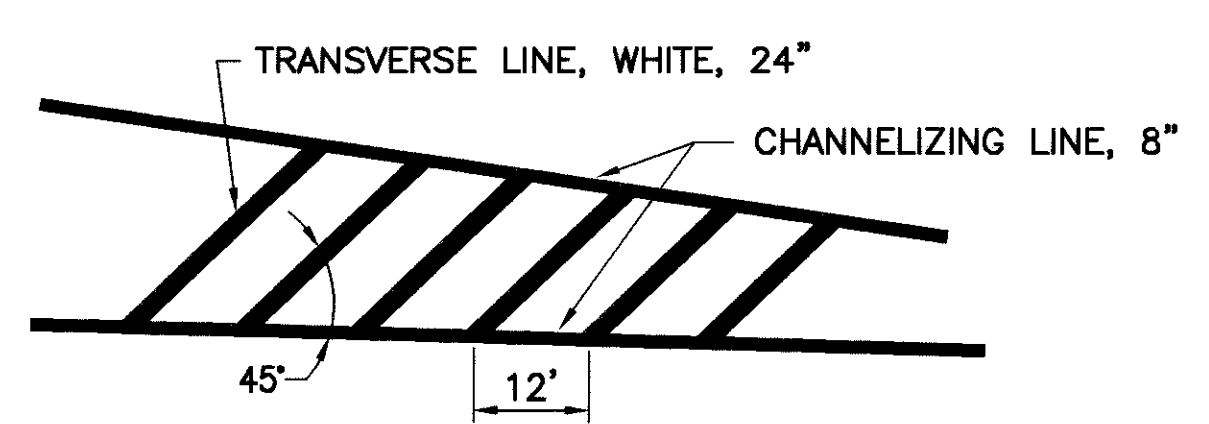


BAILEY RD. RAMP B STA. 327+96.47, 16' LT.=  
M.L. STA. 327+94.25, 89' RT.

**LEGEND**

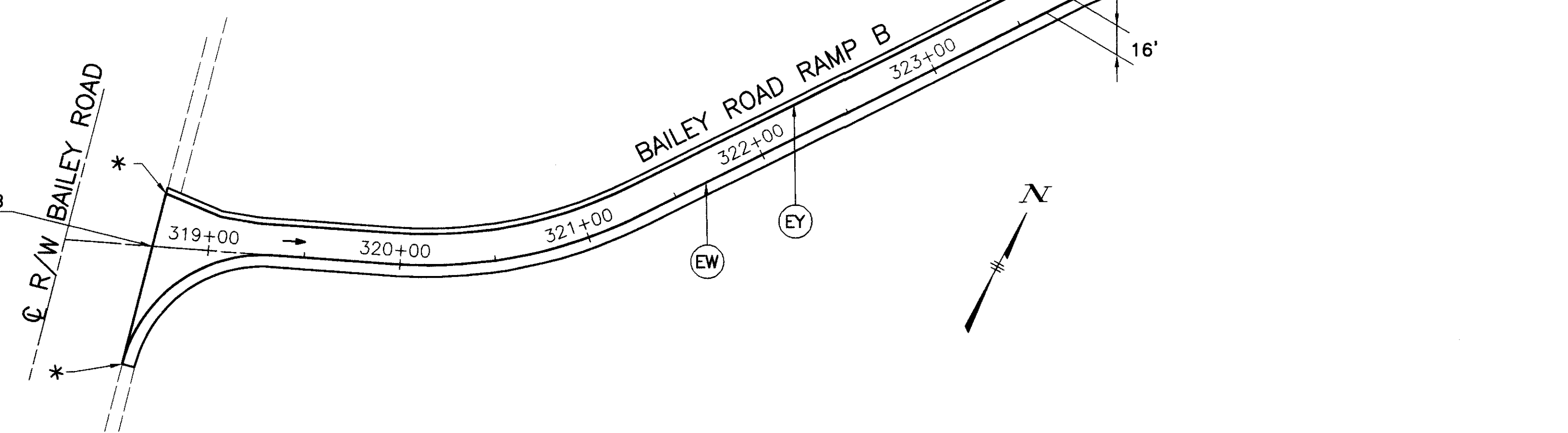
- (EW) EDGE LINE, WHITE
- (EY) EDGE LINE, YELLOW
- (LL) LANE LINE
- (CH) CHANNELIZING LINE
- (TL) TRANSVERSE LINE, WHITE
- (SL) STOP LINE

\* MEET EXISTING  
BAILEY ROAD EDGE LINE

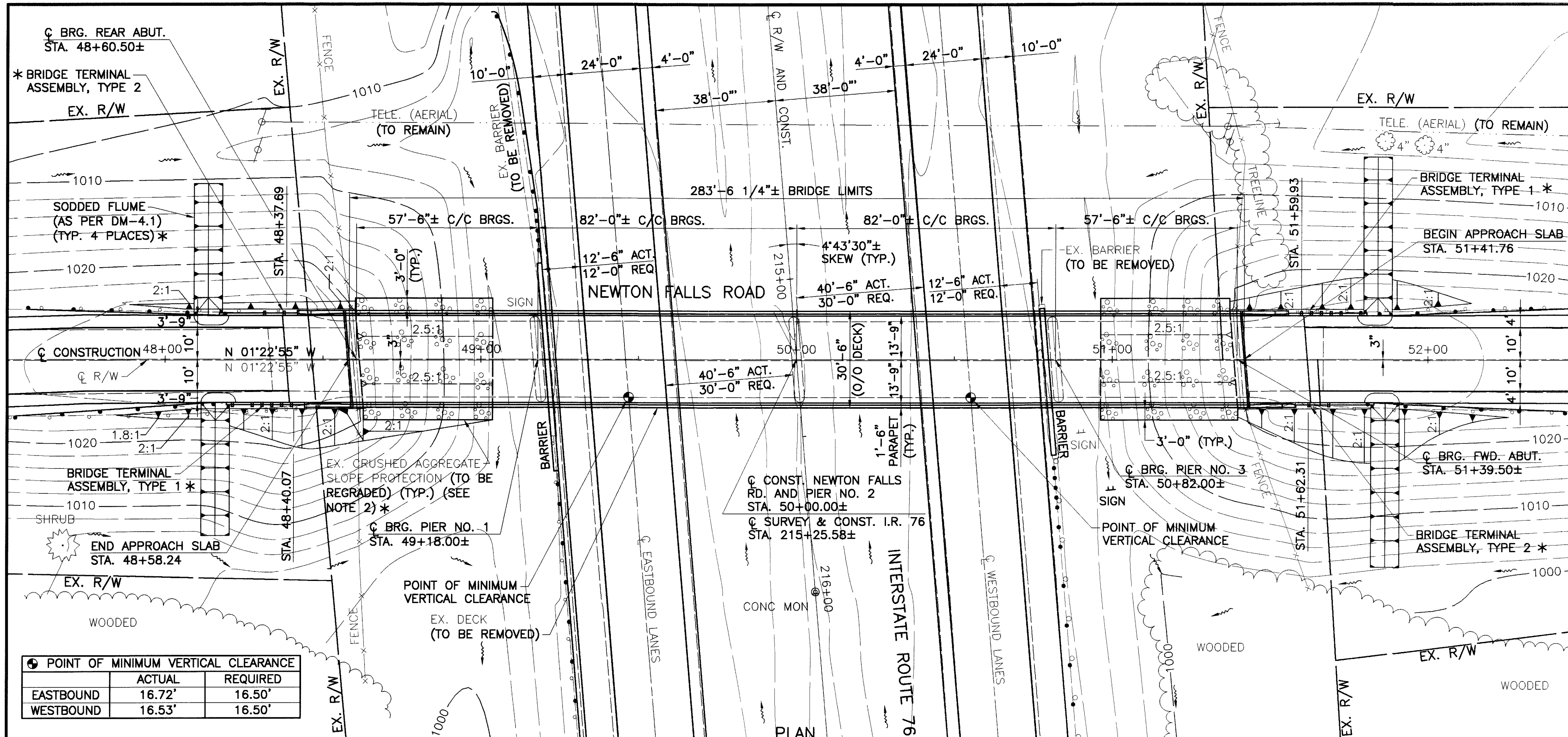


TYPICAL GORE MARKINGS

BEGIN BAILEY RD. RAMP B  
STA. 318+70.81



DATE : 10/17/02  
 CAD FILE : MAH\_ML\_STRIPES  
 OPERATOR : MFB/BBK/JMC  
 PLOT SCALE : 1:1



POINT OF MINIMUM VERTICAL CLEARANCE		
	ACTUAL	REQUIRED
EASTBOUND	16.72'	16.50'
WESTBOUND	16.53'	16.50'

- NOTES**
- EARTHWORK LIMITS SHOWN ARE APPROXIMATE. ACTUAL SLOPES SHALL CONFORM TO PLAN CROSS SECTIONS.
  - THE EXISTING CRUSHED AGGREGATE SLOPE PROTECTION SHALL BE REGRADED AS DIRECTED BY THE ENGINEER. SEE ROADWAY GENERAL NOTES.



\* TO BE INCLUDED WITH ROADWAY QUANTITIES FOR PAYMENT

**BENCHMARK NO. 5**  
 CONCRETE MONUMENT WITH CENTERED 1/2" REBAR FOUND ON CENTERLINE OF INTERSTATE ROUTE 76.  
 STA. 204+99.56, 0.00' LT. ELEV. = 1003.99

**BENCHMARK NO. 6**  
 CONCRETE MONUMENT WITH CENTERED 1/2" REBAR FOUND ON CENTERLINE OF INTERSTATE ROUTE 76.  
 STA. 215+99.40, 0.04' LT. ELEV. = 1008.58

**DESIGN DESIGNATION**

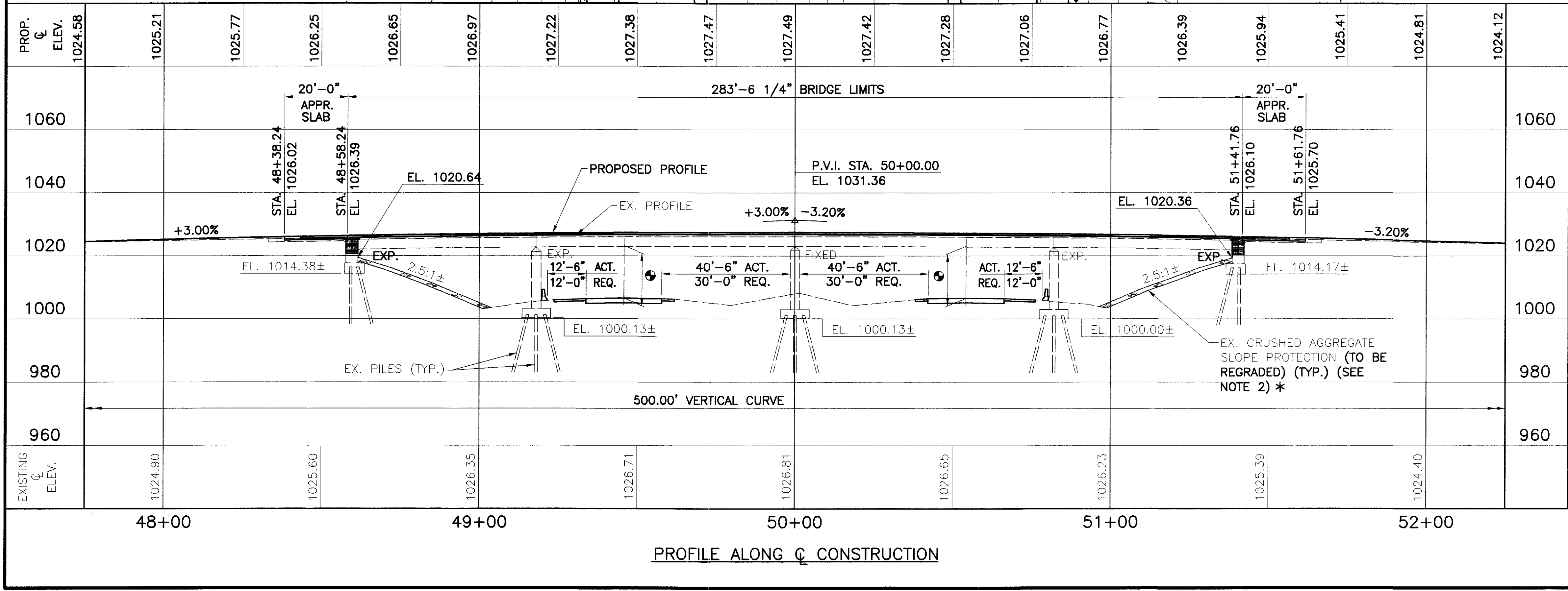
CURRENT ADT (2002):	380
DESIGN ADT (2022):	460
DESIGN ADTT (2022):	14

**EXISTING STRUCTURE**

TYPE: CONTINUOUS STEEL BEAM WITH REINFORCED CONCRETE DECK ON REINFORCED CONCRETE ABUTMENTS AND CAP AND COLUMN PIERS ON PILING  
 SPANS: 57'-6"±, 82'-0"±, 82'-0"± AND 57'-6"± C/C BEARINGS  
 ROADWAY: 24'-0"± F/F CURB  
 ALIGNMENT: TANGENT  
 SKEW: 4'43'30"± R.F.  
 LOADING: CF-130  
 WEARING SURFACE: CONCRETE  
 APPROACH SLABS: 25'-0"± (AS-1-67)  
 BUILT: 1967  
 CONDITION: FAIR  
 STRUCTURE FILE NO.: 5002826

**PROPOSED STRUCTURE**

PROPOSED WORK: EXISTING CONTINUOUS STEEL BEAM WITH NEW REINFORCED CONCRETE COMPOSITE DECK ON MODIFIED SEMI-INTEGRAL REINFORCED CONCRETE ABUTMENTS AND EXISTING CONCRETE PIERS  
 SPANS: 57'-6"±, 82'-0"±, 82'-0"± AND 57'-6"± C/C BEARINGS  
 ROADWAY: 27'-6" TOE/TOE PARAPET  
 ALIGNMENT: TANGENT  
 SKEW: 4'43'30"± R.F.  
 WEARING SURFACE: MONOLITHIC CONCRETE  
 APPROACH SLABS: 20'-0" (AS-1-81)  
 LOADING: HS20-44 AND ALTERNATE MILITARY LOADING  
 CROWN: 3/16" PER FOOT SLOPE  
 LONGITUDE: N 81° 55' 30"  
 LATITUDE: W 41° 06' 17"



DATE: 04/09/03  
 CAD FILE: 0408-SITE  
 OPERATOR: MPB/CAF  
 SCALE: 1"=20'

DESIGN AGENCY: FINKBEINER, PETTIS & STROUT, INC.  
 520 S. MAIN STREET, SUITE 2400  
 AKRON, OHIO 44311-1010

DATE: 5/03  
 REVIEWED: D.L.G.  
 STRUCTURE FILE NO.: 5002826

DESIGNED: C.A.F.  
 CHECKED: F.J.G.

MAHoning COUNTY  
 STA. 48+58.24  
 TO STA. 51+41.76

**SITE PLAN**  
 BRIDGE NO. MAH-76-0408  
 NEWTON FALLS ROAD OVER INTERSTATE ROUTE 76

**MAH - 76 - 3.08**

1 / 11  
 222  
 243

ESTIMATED QUANTITIES

CALC. BY: C.A.F. DATE: 12/01  
 CHKD. BY: R.K.Z. DATE: 12/01

AS  
PER  
PLAN

ITEM	ITEM EXT.	TOTAL	UNIT	DESCRIPTION	ABUTS.	PIERS	SUPER	GEN'L.	SHEET
202	11201		LUMP	PORTIONS OF STRUCTURE REMOVED, AS PER PLAN				LUMP	2, 5
503	11100		LUMP	COFFERDAMS, CRIBS AND SHEETING				LUMP	
503	21301		LUMP	UNCLASSIFIED EXCAVATION, AS PER PLAN				LUMP	3, 5
509	10000	88,676	POUND	EPOXY COATED REINFORCING STEEL	7,075		81,601		
510	10000	40	EACH	DOWEL HOLES WITH NONSHRINK, NONMETALLIC GROUT	40				
511	45500	18	CU.YD.	CLASS C CONCRETE, ABUTMENT	4				
511	50000	275	CU.YD.	CLASS HP CONCRETE, BRIDGE DECK			275		8
511	50100	66	CU.YD.	CLASS HP CONCRETE, BRIDGE DECK (PARAPET)			74		
511	50200	8	CU.YD.	CLASS HP CONCRETE, SUBSTRUCTURE	14				
511	52000		LUMP	CLASS HP CONCRETE, TEST SLAB				LUMP	
511	52500		LUMP	CLASS HP CONCRETE, TESTING				LUMP	
513	20000	2,076	EACH	WELDED STUD SHEAR CONNECTORS			2,076		
514	00100		LUMP	SURFACE PREPARATION OF EXISTING STRUCTURAL STEEL				LUMP	
514	00200		LUMP	FIELD PAINTING OF EXISTING STRUCTURAL STEEL, PRIME COAT				LUMP	
514	00300		LUMP	FIELD PAINTING OF EXISTING STRUCTURAL STEEL, INTERMEDIATE COAT				LUMP	
514	00400		LUMP	FIELD PAINTING OF EXISTING STRUCTURAL STEEL, FINISH COAT				LUMP	
514	00504	47	MANHR.	GRINDING FINES, TEARS, SLIVERS ON EXISTING STRUCTURAL STEEL			47		
516	14021	80	FEET	SEMI-INTEGRAL ABUTMENT EXPANSION JOINT SEAL, AS PER PLAN	80				3, 6
516	44201	8	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE) (10"x16"x3 1/8"), AS PER PLAN	8				8
516	47001		LUMP	JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE, AS PER PLAN				LUMP	3
516	46701	12	EACH	RESET BEARING, AS PER PLAN		12			2, 9
518	21200	36	CU.YD.	POROUS BACKFILL WITH FILTER FABRIC	36				
518	40000	57	FEET	6" PERFORATED CORRUGATED PLASTIC PIPE	57				
518	40011	65	FEET	6" NON-PERFORATED CORRUGATED PLASTIC PIPE, INCLUDING SPECIALS, AS PER PLAN	65				5, 6, 7
519	11101	28	SQ.FT.	PATCHING CONCRETE STRUCTURE, AS PER PLAN		28			3, 4
526	15000	125	SQ.YD.	REINFORCED CONCRETE APPROACH SLAB, (T=13")				125	
843	50000	55	SQ.FT.	PATCHING CONCRETE STRUCTURE WITH TROWELABLE MORTAR		55			
864	10100	880	SQ.YD.	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)	54	196	630		

**ITEM 516 - RESET BEARING, AS PER PLAN:**

THIS ITEM SHALL INCLUDE ALL WORK NECESSARY TO PROPERLY ALIGN BRIDGE PIER BEARINGS, REPLACEMENT OF ANY DAMAGED SHEET LEAD (711.21), INSTALLATION OF ANY NECESSARY STEEL SHIMS OF THE SAME SIZE AS THE BEARINGS TO PROVIDE A SNUG FIT, AND REPOSITIONING OF THE BASE PLATE SO THE BEARINGS ARE VERTICALLY ALIGNED AT 60 DEGREES F. THE CONTRACTOR SHALL BE SURE THAT ALL BEARINGS ARE SHIMMED ADEQUATELY AND THAT NO BEAMS AND/OR BEARING DEVICES ARE "FLOATING". ALL SHIMS SHALL BE OF ASTM A36 STEEL. ALL WORK SHALL BE TO THE SATISFACTION OF THE ENGINEER. PAYMENT FOR ALL THE ABOVE DESCRIBED LABOR AND MATERIALS WILL BE MADE AT THE CONTRACT PRICE BID FOR ITEM 516, RESET BEARING, AS PER PLAN.

**ITEM 509. EPOXY COATED REINFORCING STEEL:**

ALL REINFORCING STEEL SHALL HAVE A MINIMUM OF 2 INCHES OF CONCRETE COVER UNLESS OTHERWISE NOTED.

**CUT LINE CONSTRUCTION JOINT PREPARATION:**

SAW CUT BOUNDARIES OF PROPOSED CONCRETE REMOVALS 1 INCH DEEP. REMOVE CONCRETE TO A ROUGH SURFACE. LEAVE THE EXISTING REINFORCING STEEL, IF REQUIRED IN THE PLANS, IN PLACE. INSTALL DOWEL BARS IF SPECIFIED. PRIOR TO CONCRETE PLACEMENT ABRASIVELY CLEAN JOINT SURFACES AND EXISTING EXPOSED REINFORCEMENT TO REMOVE LOOSE AND DISINTEGRATED CONCRETE AND LOOSE RUST. THOROUGHLY CLEAN THE JOINT SURFACE AND EXPOSED REINFORCEMENT OF ALL DIRT, DUST, RUST OR OTHER FOREIGN MATERIAL BY THE USE OF WATER, AIR UNDER PRESSURE, OR OTHER METHODS THAT PRODUCE SATISFACTORY RESULTS. EXISTING REINFORCING STEEL DOES NOT HAVE TO HAVE A BRIGHT STEEL FINISH BUT REMOVE ALL PACK AND LOOSE RUST. THOROUGHLY DRENCH EXISTING CONCRETE SURFACES WITH CLEAN WATER AND ALLOW TO DRY TO A DAMP CONDITION BEFORE PLACING CONCRETE.

# STRUCTURAL GENERAL NOTES

**REFERENCE SHALL BE MADE TO STANDARD DRAWINGS:**

AS-1-81 REVISED 07-19-02 BR-1 REVISED 07-19-02  
 SICD-1-96 REVISED 07-19-02 RB-1-55 REVISED 02-02-59

**AND TO SUPPLEMENTAL SPECIFICATIONS:**

843 DATED 04-19-02 864 DATED 07-11-00

**DESIGN SPECIFICATIONS:**

THIS STRUCTURE CONFORMS TO "STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES" ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS, 17th EDITION, 2002 AND THE O.D.O.T. BRIDGE DESIGN MANUAL.

**DESIGN LOADING:**

HS20-44 AND ALTERNATE MILITARY LOADING.  
 FUTURE WEARING SURFACE OF 60 P.S.F.

**DESIGN DATA:**

**SUPERSTRUCTURE:**  
 CLASS HP CONCRETE - COMPRESSIVE STRENGTH 4500 P.S.I.

**SUBSTRUCTURE:**  
 CLASS C CONCRETE - COMPRESSIVE STRENGTH 4000 P.S.I.  
 CLASS HP CONCRETE - COMPRESSIVE STRENGTH 4000 P.S.I.

**REINFORCING STEEL:**  
 ASTM A615, A616 OR A617, GRADE 60, MINIMUM YIELD STRENGTH 60,000 P.S.I.

**STRUCTURAL STEEL (LOAD PLATE):**  
 ASTM A572/A709 GRADE 50, YIELD STRENGTH 50,000 P.S.I.

**DECK PROTECTION METHOD:**

EPOXY COATED REINFORCING STEEL, TOP AND BOTTOM MAT  
 2 1/2" CONCRETE COVER

SEALING OF CONCRETE SURFACES, (EPOXY-URETHANE)

**MONOLITHIC WEARING SURFACE:**

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

**ITEM 202. PORTIONS OF STRUCTURE REMOVED, AS PER PLAN:**

DESCRIPTION: THIS WORK CONSISTS OF THE REMOVAL OF CONCRETE DECKS INCLUDING SIDEWALKS, PARAPETS, RAILINGS, DECK JOINTS AND OTHER APPURTENANCES FROM STEEL SUPPORTING SYSTEMS (BEAMS, GIRDERS, CROSS FRAMES, ETC.). THE PROVISIONS OF ITEM 202 APPLY EXCEPT AS SPECIFIED BY THE FOLLOWING NOTES. PERFORM WORK CAREFULLY DURING DECK REMOVALS TO PROTECT PORTIONS OF SUCH SYSTEMS THAT ARE TO BE SALVAGED AND INCORPORATED INTO THE PROPOSED STRUCTURE. IN THIS RESPECT, THE USE OF EXPLOSIVES, HEADACHE BALLS AND/OR HOE RAM TYPE OF EQUIPMENT IS PROHIBITED.

RAILING: ALUMINUM RAILING SHALL BECOME THE PROPERTY OF THE OHIO DEPARTMENT OF TRANSPORTATION, DISTRICT 4. CONTRACTOR SHALL REMOVE AND DELIVER TO THE FOLLOWING ADDRESS:

OHIO DEPARTMENT OF TRANSPORTATION  
 DISTRICT 4  
 705 OAKWOOD STREET  
 RAVENNA, OHIO 44266

PROTECTION OF TRAFFIC: PRIOR TO DEMOLITION OF ANY PORTIONS OF THE EXISTING SUPERSTRUCTURE, SUBMIT PLANS FOR THE PROTECTION OF TRAFFIC (VEHICULAR, PEDESTRIAN, BOAT, ETC.) ADJACENT TO AND/OR UNDER THE STRUCTURE TO THE DIRECTOR AT LEAST 30 DAYS BEFORE CONSTRUCTION BEGINS. THESE PLANS SHALL INCLUDE PROVISIONS FOR DEVICES AND STRUCTURES THAT MAY BE NECESSARY TO ENSURE SUCH PROTECTION. MAINTAIN TEMPORARY VERTICAL CLEARANCES SPECIFIED ON THE PLANS OR IN THE PROPOSAL AT ALL TIMES EXCEPT AS OTHERWISE APPROVED BY THE DIRECTOR.

PROTECTION OF STEEL SUPPORT SYSTEMS: BEFORE DECK SLAB CUTTING IS PERMITTED, DRAW THE OUTLINE OF PRIMARY STEEL MEMBERS IN CONTACT WITH THE BOTTOM OF THE DECK ON THE SURFACE OF THE DECK. DRILL SMALL DIAMETER PILOT HOLES 2 INCHES OUTSIDE THESE LINES TO CONFIRM THE LOCATION OF FLANGE EDGES. DECK CUTS OVER OR WITHIN 2 INCHES OF FLANGE EDGES SHALL NOT EXTEND LOWER THAN THE BOTTOM LAYER OF DECK SLAB REINFORCING STEEL. CUTS MADE OUTSIDE 2 INCHES OF FLANGE EDGES MAY EXTEND THE FULL DEPTH OF THE DECK. PERFORM WORK CAREFULLY DURING CUTTING OF THE DECK SLAB, TO AVOID DAMAGING STEEL MEMBERS THAT ARE TO BE INCORPORATED INTO THE PROPOSED STRUCTURE.

PROTECTION OF PRESTRESSED CONCRETE SUPPORT SYSTEMS: BEFORE DECK SLAB CUTTING IS PERMITTED, DRAW THE OUTLINE OF PRIMARY PRESTRESSED CONCRETE MEMBERS IN CONTACT WITH THE BOTTOM OF THE DECK ON THE SURFACE OF THE DECK. DRILL SMALL DIAMETER PILOT HOLES 2 INCHES OUTSIDE THESE LINES TO CONFIRM THE LOCATION OF THE EDGES OF THOSE MEMBERS. DECK CUTS OVER OR WITHIN 2 INCHES OF FLANGE EDGES SHALL NOT EXTEND LOWER THAN THE BOTTOM LAYER OF DECK SLAB REINFORCING STEEL. CUTS MADE OUTSIDE 2 INCHES OF FLANGE EDGES MAY EXTEND THE FULL DEPTH OF THE DECK. PERFORM WORK CAREFULLY DURING CUTTING OF THE DECK SLAB TO AVOID DAMAGING PRESTRESSED CONCRETE MEMBERS THAT ARE TO BE INCORPORATED INTO THE PROPOSED STRUCTURE.

REMOVAL METHODS: THE CONTRACTOR MAY REMOVE CONCRETE BY CUTTING AND BY MEANS OF HAND OPERATED PNEUMATIC HAMMERS EMPLOYING POINTED OR BLUNTED CHISEL TYPE TOOLS. FOR REMOVALS OVER BRIDGE MEMBERS (PRESTRESSED BOX BEAM, I-BEAM, STEEL BEAM, STEEL GIRDER, ETC.), THE CONTRACTOR MAY USE A HAMMER HEAVIER THAN 35 POUNDS BUT NOT TO EXCEED 90 POUNDS UNLESS APPROVED BY THE ENGINEER. REMOVAL METHODS OVER BRIDGE MEMBERS SHALL ENSURE ADEQUATE DEPTH CONTROL AND PREVENT NICKING OR GOUGING THE PRIMARY STEEL MEMBERS.

DECK REMOVALS: DUE TO THE POSSIBLE PRESENCE OF WELDED ATTACHMENTS TO EXISTING STRUCTURAL STEEL (FINISHING MACHINE, SCUPPER AND FORM SUPPORTS, ETC.), PERFORM WORK CAREFULLY DURING DECK REMOVAL TO AVOID DAMAGING STRINGERS WHICH ARE TO REMAIN. REPLACE OR REPAIR STRINGERS DAMAGED BY THE REMOVAL OPERATIONS AT NO COST TO THE PROJECT. SUBMIT PROPOSED REPAIRS, DEVELOPED BY AN OHIO REGISTERED PROFESSIONAL ENGINEER, IN WRITING TO THE DIRECTOR AT LEAST 20 DAYS BEFORE PERFORMING REPAIR WORK.

DECK REMOVAL - COMPOSITE DECK DESIGNS- STEEL SUPERSTRUCTURES: DUE TO THE PRESENCE OF WELDED STUDS TO THE EXISTING STRUCTURAL STEEL, SUBMIT A DETAILED PROCEDURE OF THE DECK REMOVAL TO THE DIRECTOR AT LEAST 30 DAYS BEFORE CONSTRUCTION BEGINS. THE PROCEDURE SHALL INCLUDE ALL DETAILS, EQUIPMENT AND METHODS TO BE USED FOR REMOVAL OF THE CONCRETE OVER THE FLANGES AND AROUND THE STUDS. REPLACE OR REPAIR STEEL AND STUDS DAMAGED BY THE REMOVAL OPERATIONS AT NO COST TO THE PROJECT. SUBMIT PROPOSED REPAIRS, DEVELOPED BY AN OHIO REGISTERED PROFESSIONAL ENGINEER, IN WRITING TO THE DIRECTOR AT LEAST 20 DAYS BEFORE PERFORMING REPAIR WORK.

DECK REMOVALS - COMPOSITE DECK DESIGNS - PRESTRESSED SUPERSTRUCTURES: DUE TO THE PRESENCE OF COMPOSITE REINFORCING STEEL BETWEEN THE DECK AND THE PRESTRESSED BEAM FLANGES, SUBMIT A DETAILED PROCEDURE OF THE DECK REMOVAL TO THE DIRECTOR AT LEAST 30 DAYS BEFORE CONSTRUCTION BEGINS. THE PROCEDURE SHALL INCLUDE ALL DETAILS, EQUIPMENT AND METHODS OF REMOVAL OVER THE PRESTRESSED BEAMS AND AROUND THE COMPOSITE REINFORCING STEEL. REPLACE OR REPAIR PRESTRESSED MEMBERS AND COMPOSITE REINFORCING DAMAGED BY THE REMOVAL OPERATIONS AT NO COST TO THE PROJECT. SUBMIT PROPOSED REPAIRS, DEVELOPED BY AN OHIO REGISTERED PROFESSIONAL ENGINEER, IN WRITING TO THE DIRECTOR AT LEAST 20 DAYS BEFORE PERFORMING REPAIR WORK.

EXTRANEOUS MEMBERS: EXISTING EXTRANEOUS MEMBERS (I.E., FINISHING MACHINE AND FORM SUPPORTS, ETC.), AND THE SUPPORT FOR SCUPPERS AND BULB ANGLES WHICH ARE TO BE REMOVED) ATTACHED BY WELDED CONNECTION TO THE DESIGNATED TENSION PORTIONS OF THE TOP FLANGES OF EXISTING STEEL MEMBERS AND GRIND THE FLANGE SURFACES GROUND SMOOTH. CAREFULLY GRIND PARALLEL TO THE FLANGES.

LOADING LIMITATIONS: NO PART OF THE STRUCTURE SHALL BE SUBJECTED TO UNIT STRESSES THAT EXCEED 136.5% OF ALLOWABLE UNIT STRESSES AS DEFINED IN THE AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES DUE EITHER TO DEMOLITION, ERECTION OR CONSTRUCTION METHODS, OR TO THE USE OR MOVEMENT OF DEMOLITION OR ERECTION EQUIPMENT ON OR ACROSS THE STRUCTURE. SUBMIT STRUCTURAL ANALYSIS COMPUTATIONS, BY A OHIO REGISTERED PROFESSIONAL ENGINEER, SHOWING THE ALLOWABLE STRESSES AND THE MAXIMUM STRESSES PRODUCED BY THE REMOVAL METHODS OR EQUIPMENT TO THE DIRECTOR AT LEAST 20 DAYS BEFORE CONSTRUCTION BEGINS.

MEASUREMENT AND PAYMENT: THE DEPARTMENT WILL MEASURE THE QUANTITY OF REMOVALS ON A LUMP SUM BASIS. THE DEPARTMENT WILL PAY FOR THE ACCEPTED QUANTITIES OF REMOVALS AT THE CONTRACT PRICE FOR ITEM 202, AS PER PLAN NOTE.

DATE: 04/09/03  
 CAD FILE: 0408\_OJAN  
 OPERATOR: CAF/MPB  
 SCALE: 1"=1'

DESIGN AGENCY: FINKBEINER, PETTIS & STROUT, INC.  
 520 S. MAIN STREET, SUITE 2400  
 AKRON, OHIO 44311-1010  
 DATE: 5/03  
 REVIEWED: D.L.G.  
 DRAWN: C.A.F.  
 DESIGNED: R.K.Z.  
 CHECKED: F.J.G.  
 STRUCTURE FILE NO.: 5002826  
 ESTIMATED QUANTITIES AND STRUCTURAL GENERAL NOTES  
 BRIDGE NO. MAH-76-0408  
 NEWTON FALLS ROAD OVER INTERSTATE ROUTE 76  
 MAH - 76 - 3.08  
 2/11  
 223  
 243

# STRUCTURAL GENERAL NOTES

## ITEM 516. JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE, AS PER PLAN:

GENERAL: THIS WORK CONSISTS OF RAISING OR RE-POSITIONING EXISTING STRUCTURES TO THE DIMENSIONS AND REQUIREMENTS DEFINED IN THE PROJECT PLANS.

SUBMITTAL REQUIREMENTS: AN OHIO REGISTERED ENGINEER SHALL PREPARE, SEAL AND DATE PLANS FOR A JACKING SYSTEM, INCLUDING ANY TEMPORARY OR PERMANENT SUPPORTS, SUFFICIENT TO PERFORM THE WORK DESCRIBED IN THE PLANS. SUBMIT THREE SETS OF THESE PLANS TO THE DIRECTOR FOR APPROVAL AT LEAST THIRTY (30) DAYS BEFORE ACTUAL WORK IS TO BEGIN.

JACKING SUBMITTALS SHALL INCLUDE AT LEAST THE FOLLOWING:

1. THE SIGNATURE AND NUMBER, OR PROFESSIONAL SEAL, OF THE OHIO REGISTERED PROFESSIONAL ENGINEER WHO PREPARED THE SUBMITTAL.
2. CALCULATIONS AND ANALYSES OF THE STRUCTURE TO DETERMINE AND DEFINE THE ACTUAL LOADING APPLIED AT THE JACKING POINTS.
3. A DRAWING SHOWING THE PHYSICAL AND DIMENSIONAL POSITIONS OF THE JACKS WITH RESPECT TO THE STRUCTURE INCLUDING CLEARANCES AND CENTER OF LIFT.
4. A SCHEMATIC LAYOUT OF JACKS, CHECK VALVES, PUMPS WITH 3 WAY RETRACTOR VALVE, PRESSURE GAGES, FLOW CONTROL VALVES, ETC. IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS. ALL JACKS FOR EACH ABUTMENT OR PIER SHALL BE CONNECTED TOGETHER. ALL JACKS AT EACH ABUTMENT OR PIER SHALL BE THE SAME SIZE.
5. ANALYSIS AND CALCULATIONS OF THE STRESSES INDUCED OR CREATED IN THE STRUCTURE AND ANY TEMPORARY OR PERMANENT SUPPORTS. DESIGN CALCULATIONS FOR ANY TEMPORARY OR PERMANENT SUPPORTS.
6. PHYSICAL DIMENSIONS, MATERIALS, AND FABRICATION DETAILS OF ANY TEMPORARY OR PERMANENT SUPPORTS. HORIZONTAL AND VERTICAL MOVEMENT RESTRAINT SHALL BE PROVIDED.
7. A STEP BY STEP PROCEDURE DETAILING ALL STEPS IN THE JACKING OPERATION.
8. METHOD OF ATTACHMENT TO STRUCTURAL MEMBERS. WELDING TO TENSION AREAS WILL NOT BE PERMITTED.

JACKING SYSTEM REQUIREMENTS: THE ENTIRE SYSTEM INCLUDING JACKS SHALL HAVE 20% MORE CAPACITY THAN REQUIRED BASED ON CALCULATED LOADS. FOR LIFTS GREATER THAN 1 INCH, JACKS SHALL HAVE LOCKING NUTS TO POSITIVELY LOCK AND SUPPORT THE STRUCTURE DURING THE LIFT. JACKS SHALL HAVE A SWIVEL LOAD CAP, A DOMED PISTON HEAD OR SOME OTHER DEVICE TO PROTECT AGAINST THE EFFECTS OF SIDE LOAD ON THE JACK. DO NOT USE JACKS ALONE TO SUPPORT LOADS EXCEPT DURING THE ACTUAL JACKING OPERATION. USE TEMPORARY SUPPORTS, BLOCKING OR OTHER METHODS APPROVED BY THE DIRECTOR. DO NOT USE SINGLE ACTING RAMS WITH NO OVER-TRAVEL PROTECTION SYSTEM. HAVE SPARE EQUIPMENT AVAILABLE ON SITE IN ORDER TO PROCEED WITH THE JACKING IN THE EVENT OF BREAKDOWN. PROVIDE A LIST OF SPARE EQUIPMENT TO THE ENGINEER.

JACKING OPERATION REQUIREMENTS: AT A MINIMUM, A JACKING OPERATION SHALL LIFT ALL BEAMS AT ONE ABUTMENT OR PIER SIMULTANEOUSLY. THE ONLY EXCEPTION IS THE SITUATION WHERE THE WORK INVOLVES REPLACING OR REHABILITATING INDIVIDUAL BEARINGS; NO PERMANENT SHIMMING IS REQUIRED AND THE HEIGHT OF THE LIFT SHALL NOT EXCEED 1/4 INCH. THE MAXIMUM DIFFERENTIAL JACKING HEIGHT BETWEEN ADJACENT ABUTMENTS OR PIERS SHALL BE 1 INCH OR LESS. IF THIS 1 INCH LIMIT IS TO BE EXCEEDED, PROVIDE CALCULATIONS SHOWING THAT THE SUPERSTRUCTURE COMPONENTS WILL NOT BE TEMPORARILY STRESSED BEYOND ALLOWABLE STRESSES AND THAT NO PERMANENT STRESSES WILL BE INDUCED IN THE COMPONENTS AFTER THEY OBTAIN THEIR FINAL POSITION. IF, DURING THE JACKING OPERATIONS, CRACKING OF THE CONCRETE SUPERSTRUCTURE, SEPARATION OF THE CONCRETE DECK FROM THE STEEL STRINGERS, OR OTHER DAMAGE TO THE STRUCTURE IS VISUALLY OBSERVED, IMMEDIATELY CEASE THE JACKING OPERATION AND INSTALL SUPPORTS TO THE SATISFACTION OF THE ENGINEER. ANALYZE THE DAMAGE AND SUBMIT A METHOD OF CORRECTION TO THE ENGINEER FOR APPROVAL. EPOXY INJECT ALL BEAMS THAT SEPARATE FROM THE DECK FOR THE DISTANCE OF THE SEPARATION IN ACCORDANCE WITH ODOT'S PROPOSAL NOTE "CONCRETE REPAIR BY EPOXY INJECTION". THE DEPARTMENT WILL NOT PAY FOR THE COST OF THIS EPOXY INJECTION OR OTHER REQUIRED REPAIRS. THE BRIDGE BEARINGS SHALL BE FULLY SEATED AT ALL CONTACT AREAS. IF FULL SEATING IS NOT ATTAINED, SUBMIT A REPAIR PLAN TO THE ENGINEER. THE DEPARTMENT WILL NOT PAY FOR THE REPAIR COSTS TO ENSURE FULL SEATING ON BEARINGS.

METHOD OF MEASUREMENT: THE DEPARTMENT WILL MEASURE THIS WORK ON A LUMP SUM BASIS.

BASIS OF PAYMENT: THE DEPARTMENT WILL PAY FOR THE ACCEPTED QUANTITIES AT THE CONTRACT PRICE FOR ITEM 516, JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE, AS PER PLAN.

## INSPECTION OF EXISTING STRUCTURAL STEEL:

THE ENGINEER WILL VISUALLY INSPECT ALL EXISTING BUTT-WELDED SPLICES AND/OR TOP FLANGE COVER PLATE FILLET WELDS TO ENSURE THE WELDS, PLATES AND BEAMS OR GIRDERS ARE FREE OF DEFECTS OR CRACKS. IF NECESSARY, REMOVE ALL DECK SLAB HAUNCH FORMS IMMEDIATELY ADJACENT TO SUCH WELDS THAT MAY INTERFERE WITH THE ENGINEER'S INSPECTION. THE INSPECTION WILL NOT TAKE PLACE UNTIL THE TOP FLANGES ARE CLEANED ACCORDING TO 511.10, BUT IT WILL NOT BE DONE BEFORE THE DECK SLAB REINFORCEMENT IS INSTALLED. THE DEPARTMENT WILL PAY FOR THE COST ASSOCIATED WITH THIS INSPECTION WITH ITEM 511, CLASS HP CONCRETE, BRIDGE DECK. THE ENGINEER WILL REPORT ALL CRACKS FOUND TO THE OFFICE OF CONSTRUCTION ADMINISTRATION, BRIDGE CONSTRUCTION SPECIALIST, ALONG WITH SPECIFIC INFORMATION ON LOCATION OF CRACKS, LENGTH, AND DEPTH SO AN EVALUATION AND REPAIR OR REPLACEMENT RECOMMENDATION CAN BE MADE.

## ITEM 519. PATCHING CONCRETE STRUCTURES, AS PER PLAN:

PRIOR TO THE SURFACE CLEANING SPECIFIED IN 519.04 AND WITHIN 24 HOURS OF PLACING PATCHING MATERIAL, BLAST CLEAN ALL SURFACES TO BE PATCHED INCLUDING THE EXPOSED REINFORCING STEEL. ACCEPTABLE METHODS INCLUDE HIGH-PRESSURE WATER BLASTING WITH OR WITHOUT ABRASIVES IN THE WATER, ABRASIVE BLASTING WITH CONTAINMENT, OR VACUUM ABRASIVE BLASTING.

## STRUCTURAL VERTICAL CLEARANCE:

THIS BRIDGE SHALL BE SURVEYED TO DETERMINE THE ACTUAL FINAL VERTICAL CLEARANCE OF THE BRIDGE OVER THE FEATURE INTERSECTED. THE SURVEY SHALL BE PERFORMED BY A SURVEYOR REGISTERED BY THE STATE OF OHIO. THE SURVEY SHALL BE ACCURATE TO 1/100 OF A FOOT, (0.01 FT.) AND BE MADE AT THE LOW POINT OF THE STRUCTURE ABOVE EVERY SHOULDER AND LANE LINE AND SHALL INCLUDE MOMENT PLATES, SPLICE PLATES, BOLT HEADS, OR ANY OTHER ATTACHED MEMBER OR FIXTURE.

A SKETCH SHALL BE PRODUCED SHOWING THE BRIDGE NUMBER, DATE SURVEYED AND SURVEYOR AS WELL AS DIRECTIONAL NORTH, THE FEATURE INTERSECTED, THE SHOULDER AND LANE LINES, DIRECTION OF TRAFFIC AND EACH CLEARANCE POINT. THE LOWEST CLEARANCE FOR EACH DIRECTION SHALL BE CLEARLY NOTED. THE SKETCH SHALL BE SIGNED AND SEALED BY THE SURVEYOR. THE SKETCH AND SURVEY FIELD NOTES SHALL BE SUBMITTED TO THE DISTRICT HIGHWAY MANAGEMENT ADMINISTRATOR FOR INCLUSION INTO THE STATE BRIDGE INVENTORY SYSTEM. PAYMENT CONSIDERED INCIDENTAL TO ITEM 516, JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE, AS PER PLAN.

## ABBREVIATIONS:

N.F. = NEAR FACE	CONST. = CONSTRUCTION
F.F. = FAR FACE	P.E.J.F. = PREFORMED EXPANSION JOINT
E.F. = EACH FACE	FILLER
EL. = ELEVATION	C.P.P. = CORRUGATED PLASTIC PIPE
TYP. = TYPICAL	MIN. = MINIMUM
STA. = STATION	EA. = EACH
FWD. = FORWARD	DIA. = DIAMETER
SPA. = SPACING	EQUAL. = EQUALLY
BOTT. = BOTTOM	EX. = EXISTING
ABUT. = ABUTMENT	BRG. = BEARING
APPR. = APPROACH	STD. = STANDARD
DWG. = DRAWING	HMWM = HIGH MOLECULAR WEIGHT
ACT. = ACTUAL	METHACRYLATE
REQ. = REQUIRED	HPC = HIGH PERFORMANCE CONCRETE

## CONCRETE PARAPETS:

AS SOON AS A CONCRETE SAW CAN BE OPERATED WITHOUT DAMAGING THE FRESHLY PLACED CONCRETE, SAWCUT 1 1/4" DEEP CONTROL JOINTS INTO THE PERIMETER OF THE CONCRETE PARAPET STARTING AND ENDING AT THE ELEVATION OF THE CONCRETE DECK. PLACE THE SAWCUTS AT A MINIMUM OF 6 FEET AND A MAXIMUM OF 10 FEET CENTERS. USE AN EDGE GUIDE, FENCE OR JIG TO ENSURE THAT THE CUT JOINT IS STRAIGHT, TRUE, AND ALIGNED ON ALL FACES OF THE PARAPET. THE JOINT WIDTH SHALL BE THE WIDTH OF THE SAW BLADE, A NOMINAL WIDTH OF 1/4 INCH. SEAL THE PERIMETER OF THE DEFLECTION CONTROL JOINT TO A MINIMUM DEPTH OF 1 INCH WITH A POLYURETHANE OR POLYMERIC MATERIAL CONFORMING TO ASTM C920, TYPE S. LEAVE THE BOTTOM 1/2 INCH OF THE INSIDE AND OUTSIDE FACE UNSEALED TO ALLOW WATER TO ESCAPE.

## ITEM 516 SEMI-INTEGRAL ABUTMENT EXPANSION JOINT SEAL, AS PER PLAN:

INSTALL A 3 FOOT WIDE NEOPRENE SHEET AT LOCATIONS SHOWN IN THE PLANS. SECURE THE NEOPRENE SHEETING TO THE CONCRETE WITH 1 1/4" X #10 GAGE (LENGTH X SHANK DIAMETER) GALVANIZED BUTT HEAD SPIKES THROUGH A 1 INCH OUTSIDE DIAMETER, #10 GAGE GALVANIZED WASHER. MAXIMUM FASTENER SPACING IS 9 INCHES. USE OF OTHER SIMILAR GALVANIZED DEVICES, WHICH WILL NOT DAMAGE EITHER THE NEOPRENE OR THE CONCRETE WILL BE SUBJECT TO THE APPROVAL OF THE ENGINEER.

CENTER THE NEOPRENE STRIPS ON ALL JOINTS. FOR HORIZONTAL JOINTS, SECURE THE HORIZONTAL NEOPRENE STRIP BY USING A SINGLE LINE OF FASTENERS, STARTING AT 6 INCHES, +/-, FROM THE TOP OF THE NEOPRENE STRIP. FOR THE VERTICAL JOINTS SECURE THE VERTICAL NEOPRENE STRIP BY USING A SINGLE VERTICAL LINE OF FASTENERS, STARTING AT 6 INCHES, +/-, FROM THE VERTICAL EDGE OF THE NEOPRENE STRIP NEAREST TO THE CENTERLINE OF THE ROADWAY. FOR VERTICAL JOINTS, INSTALL 2 ADDITIONAL FASTENERS AT 6 INCHES, CENTER TO CENTER, ACROSS THE TOP OF THE NEOPRENE STRIP ON THE SAME SIDE OF THE VERTICAL JOINT AS THE SINGLE VERTICAL ROW OF FASTENERS IS LOCATED.

THE VERTICAL NEOPRENE STRIPS SHOULD COMPLETELY OVERLAP THE HORIZONTAL STRIPS. LAP LENGTHS OF THE HORIZONTAL STRIPS THAT ARE NOT VULCANIZED OR ADHESIVE BONDED, SHALL BE AT LEAST 1 FOOT IN LENGTH, OR 6 INCHES IN LENGTH IF THE LAP IS VULCANIZED OR ADHESIVE BONDED. NO LAPS ARE ACCEPTABLE IN VERTICALLY INSTALLED NEOPRENE STRIPS.

THE NEOPRENE SHEETING SHALL BE 3/32" THICK GENERAL PURPOSE, HEAVY DUTY NEOPRENE SHEET WITH NYLON FABRIC REINFORCEMENT. THE SHEETING SHALL BE "FAIRPRENE NUMBER NN-0003", BY E.I. DUPONT DE NEMOURS AND COMPANY, INC., "WINGPRENE" BY THE GOODYEAR TIRE AND RUBBER COMPANY, OR AN APPROVED ALTERNATE. THE NEOPRENE SHEETING SHALL CONFORM TO THE FOLLOWING:

DESCRIPTION OF TEST	ASTM METHOD	REQUIREMENT
THICKNESS, INCHES	D 751	0.094 +/- 0.01
BREAKING STRENGTH, GRAB LBS, MINIMUM	D 751	700 X 700
ADHESIVE STRIP 1" WIDE X 2" LONG, LBS. MINIMUM	D 751	9
BURST STRENGTH, PSI MINIMUM	D 751	1400
HEAT AGING 70 HR. 212°F, 180° BEND WITHOUT CRACKING	D 2136	NO CRACKING OF COATING
LOW TEMPERATURE BRITTLENESS 1 HR., -40°F, BEND AROUND 1/4" MANDREL	D 2136	NO CRACKING OF COATING

METHOD OF MEASUREMENT: THE DEPARTMENT WILL MEASURE THE TOTAL LENGTH OF JOINT TO BE SEALED BY THE NUMBER OF FEET.

BASIS OF PAYMENT: THE DEPARTMENT WILL PAY FOR ACCEPTED QUANTITIES AT THE CONTRACT PRICE FOR ITEM 516, SEMI-INTEGRAL ABUTMENT EXPANSION JOINT SEAL, AS PER PLAN.

## ITEM 503. UNCLASSIFIED EXCAVATION, AS PER PLAN:

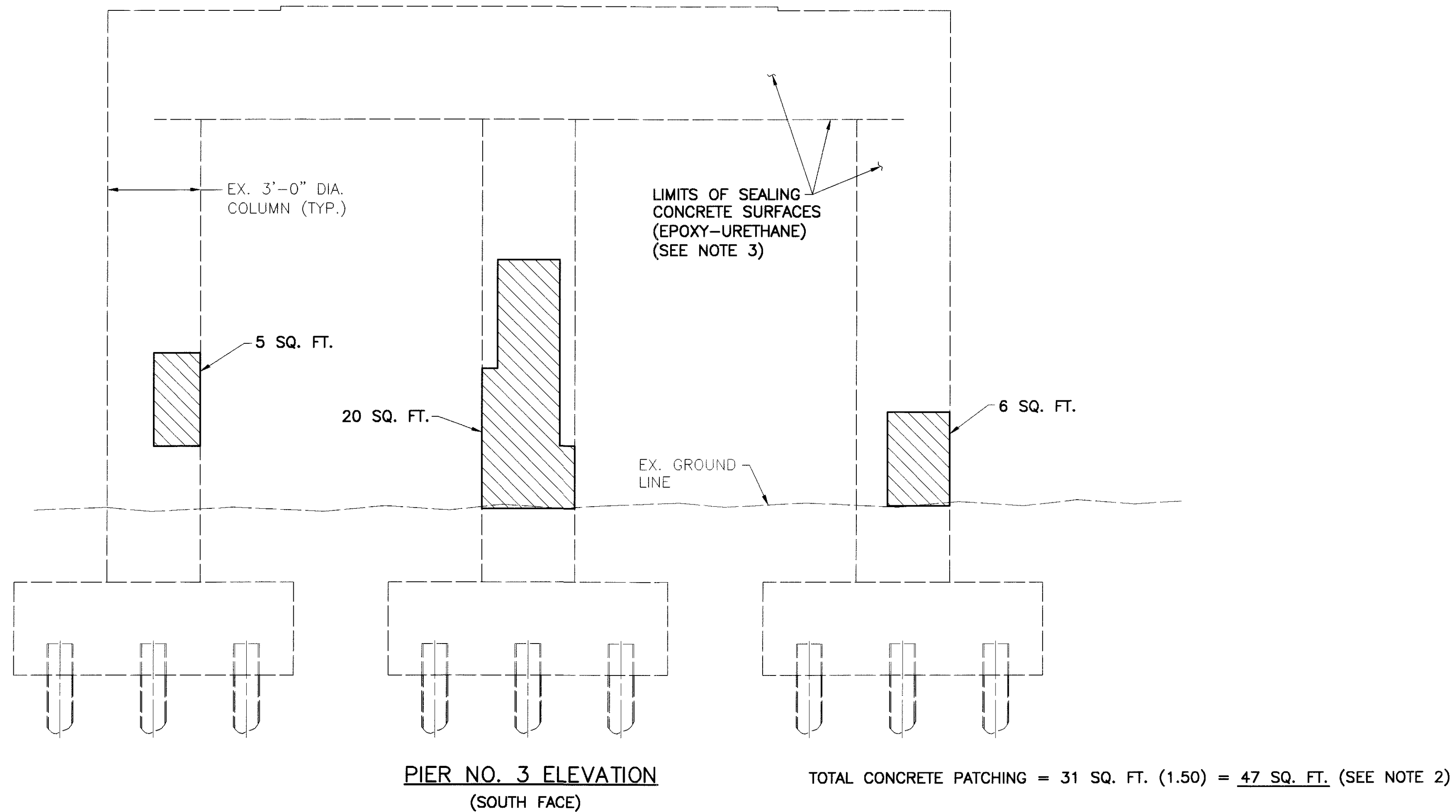
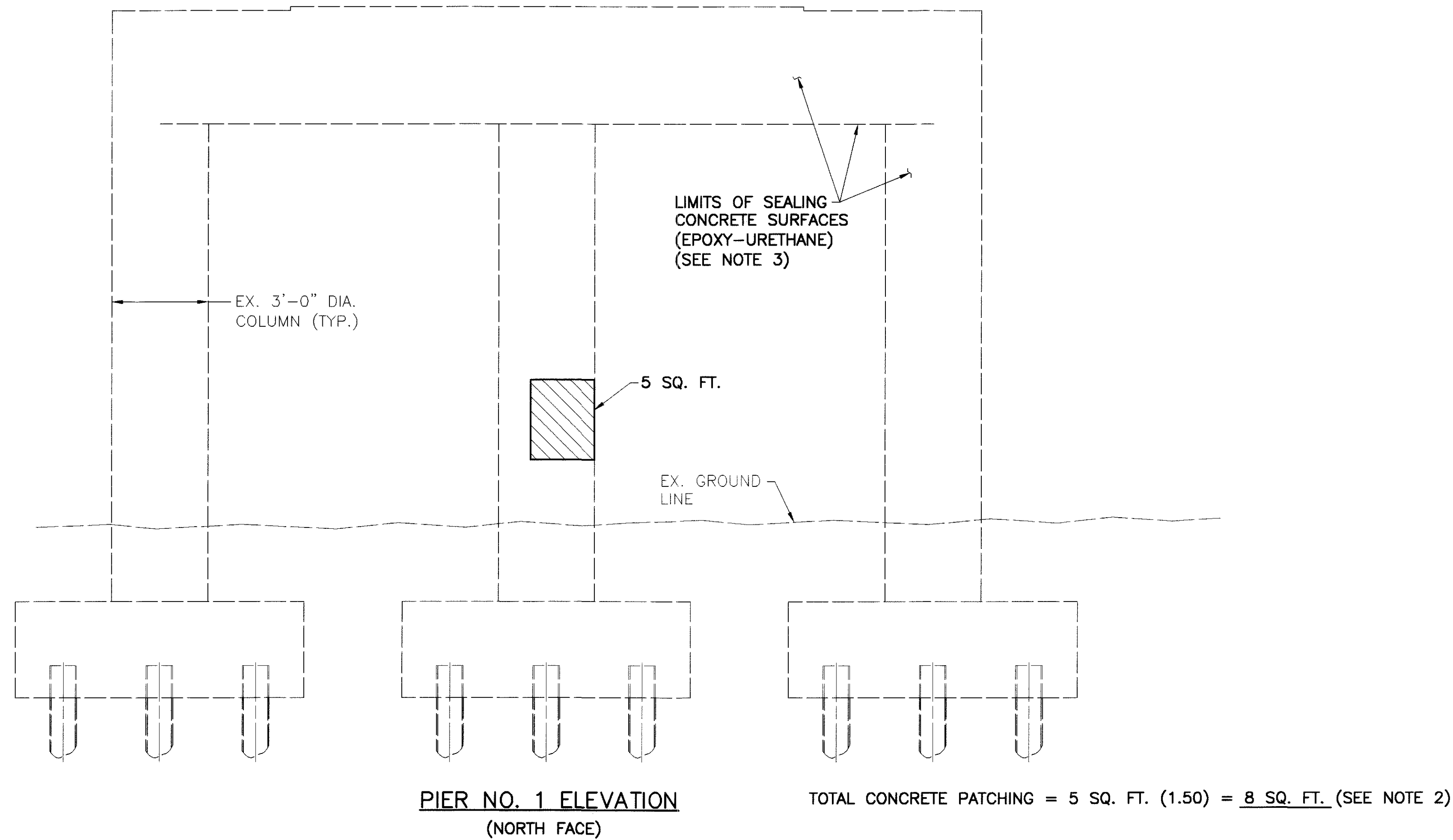
THE BACKFILL MATERIAL BEHIND THE ABUTMENTS SHALL BE TYPE B GRANULAR MATERIAL, 703.16.C, PLACED AND COMPACTED IN 6 INCH LIFTS.

## 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 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 513.04.

BASE CONTRACT BID PRICES UPON A RECOGNITION OF THE UNCERTAINTIES DESCRIBED ABOVE AND UPON A PREBID EXAMINATION OF THE EXISTING STRUCTURE. HOWEVER, THE DEPARTMENT WILL PAY FOR ALL PROJECT WORK BASED UPON ACTUAL DETAILS AND DIMENSIONS WHICH HAVE BEEN VERIFIED IN THE FIELD.

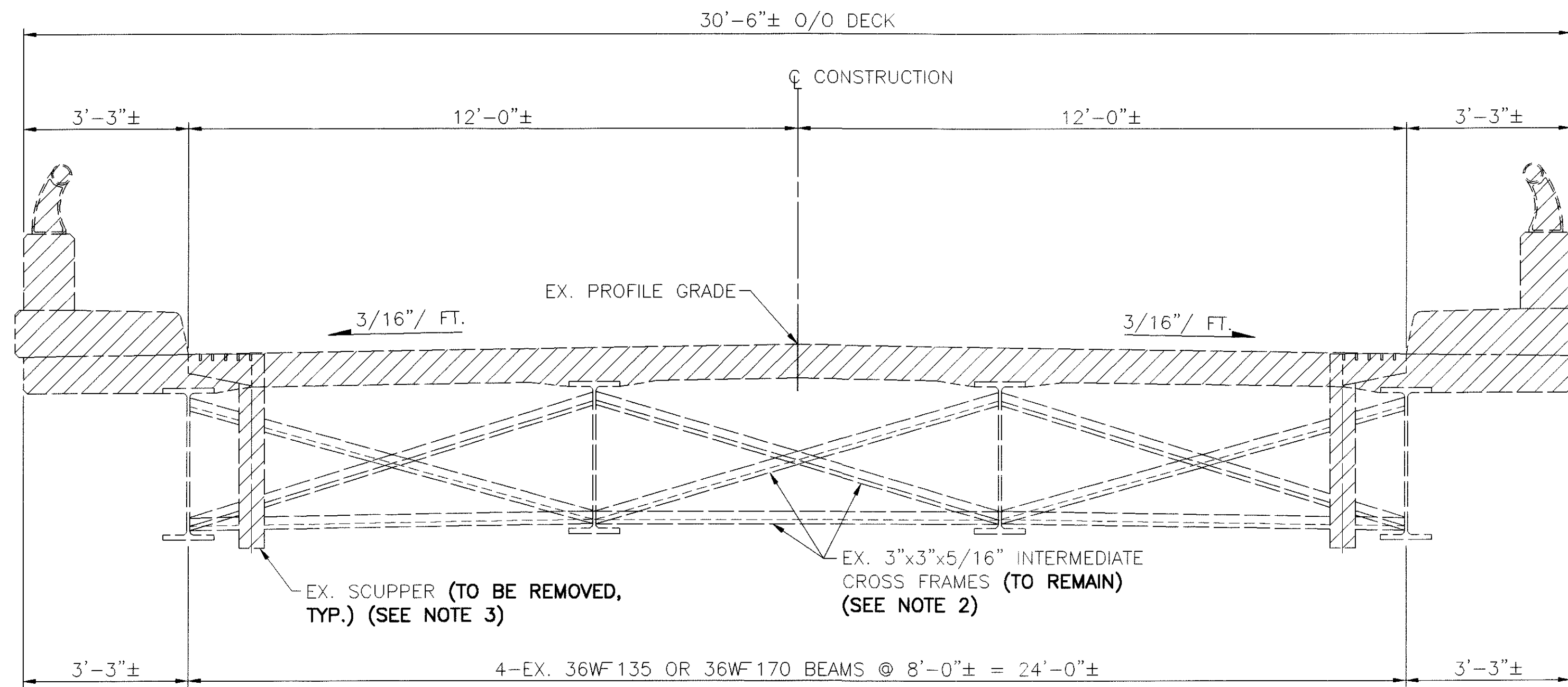




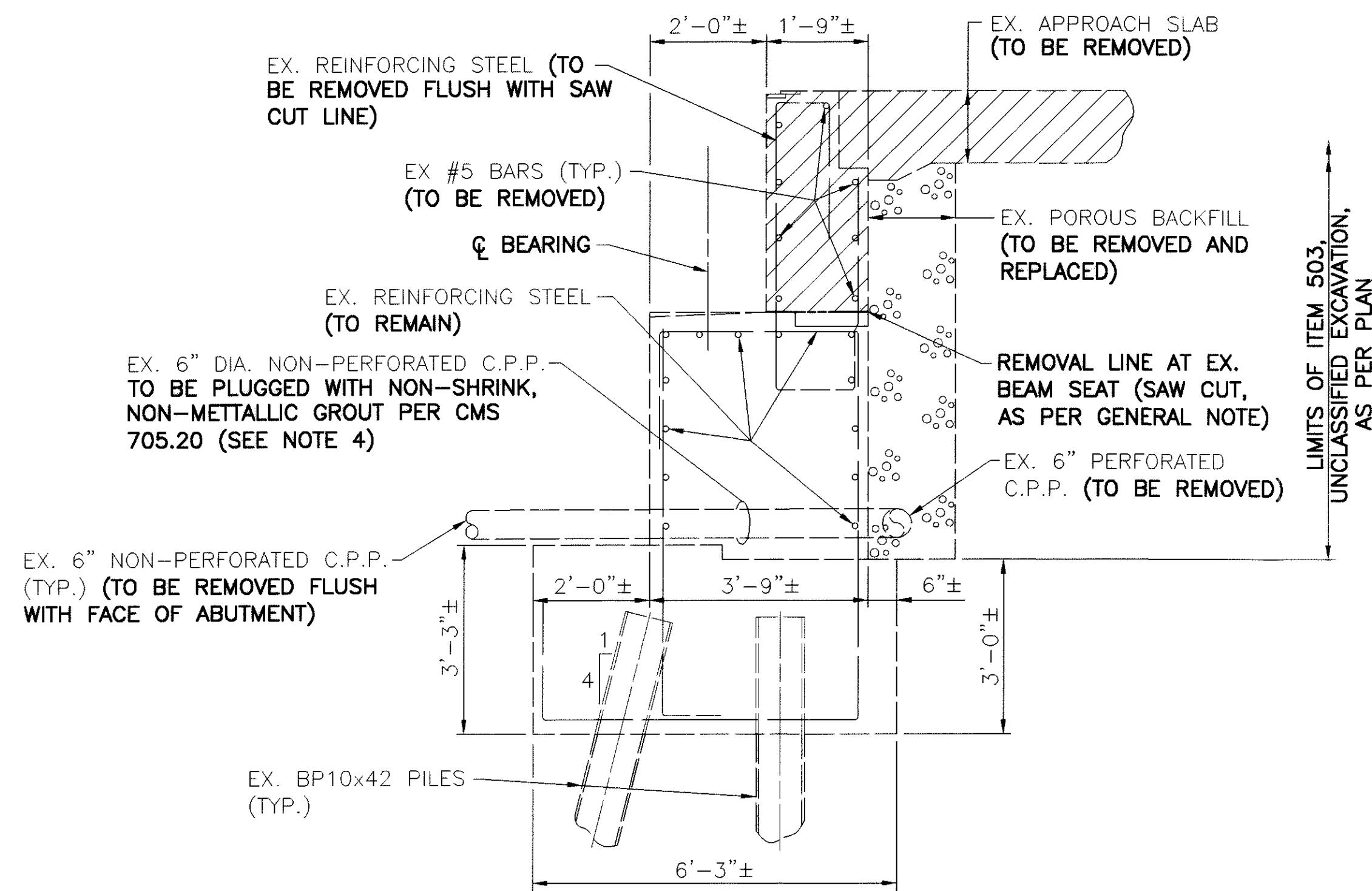
NOTES

- ① THE AREAS OF REPAIR SHOWN ARE APPROXIMATE AND ARE BASED ON A FIELD INSPECTION COMPLETED IN AUGUST, 2000. FINAL DETERMINATION OF THE AREAS TO BE REPAIRED WILL BE MADE BY THE ENGINEER AT THE TIME OF CONSTRUCTION.
- ② THE TOTAL CONCRETE PATCHING AREA INDICATED ON THE DETAILS HAS BEEN INCREASED BY 50% TO ACCOUNT FOR ANY FURTHER DETERIORATION THAT MAY HAVE OCCURED SINCE THE FIELD INSPECTION.
- ③ SEAL ALL THE EXPOSED SURFACES OF PIERS 1, 2 AND 3 EXCEPT FOR THE TOP OF EACH PIER CAP.
- ④ ITEM 519, PATCHING CONCRETE STRUCTURE, AS PER PLAN, SHOULD BE USED WHERE THE REPAIR DEPTH IS THREE (3) INCHES OR GREATER, OTHERWISE ITEM 843, PATCHING CONCRETE STRUCTURE WITH TROWELABLE MORTAR SHALL BE USED.

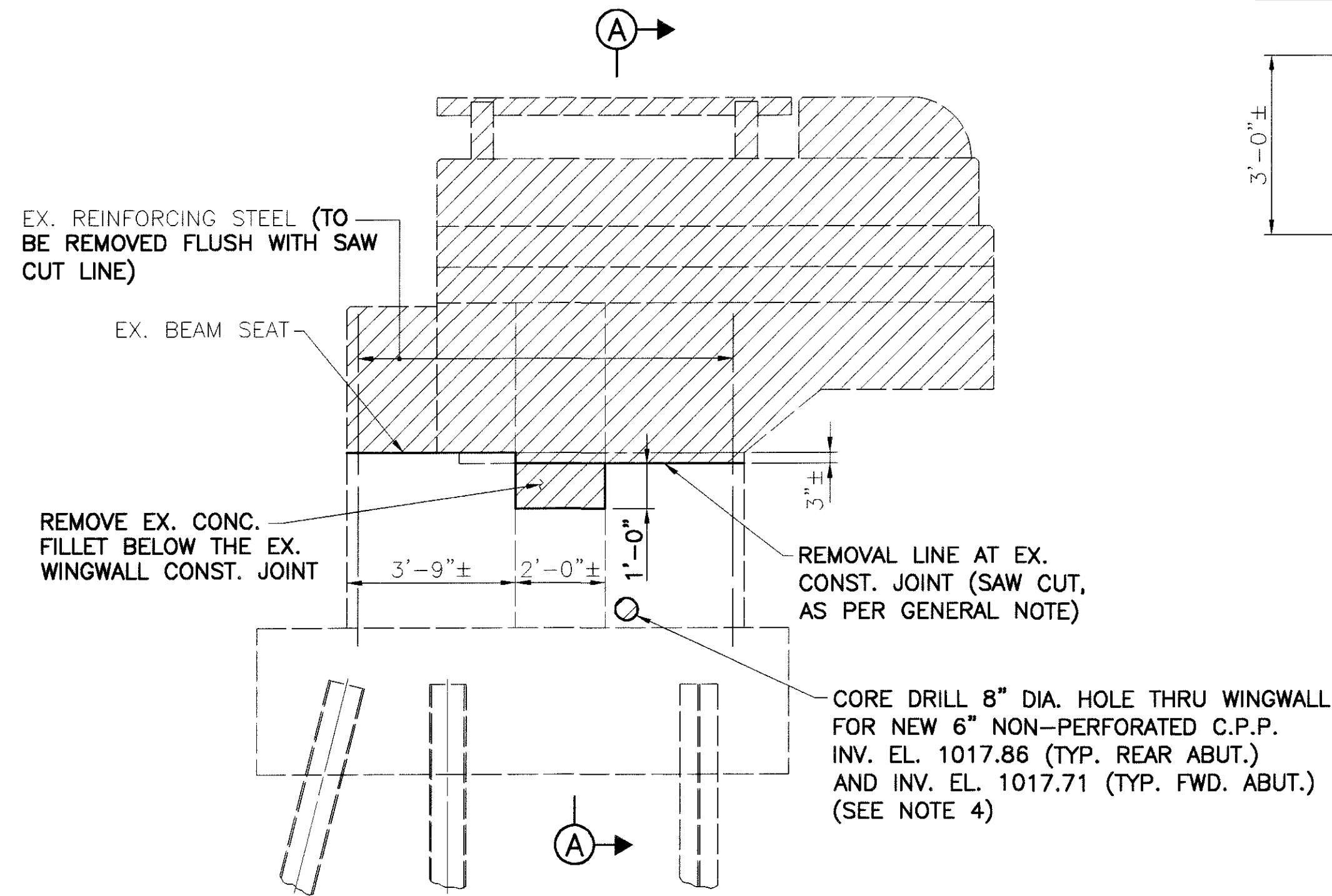
- AREAS TO BE PATCHED AS PER ITEM 519 OR ITEM 843.



EXISTING TRANSVERSE SECTION



EXISTING ABUTMENT SECTION



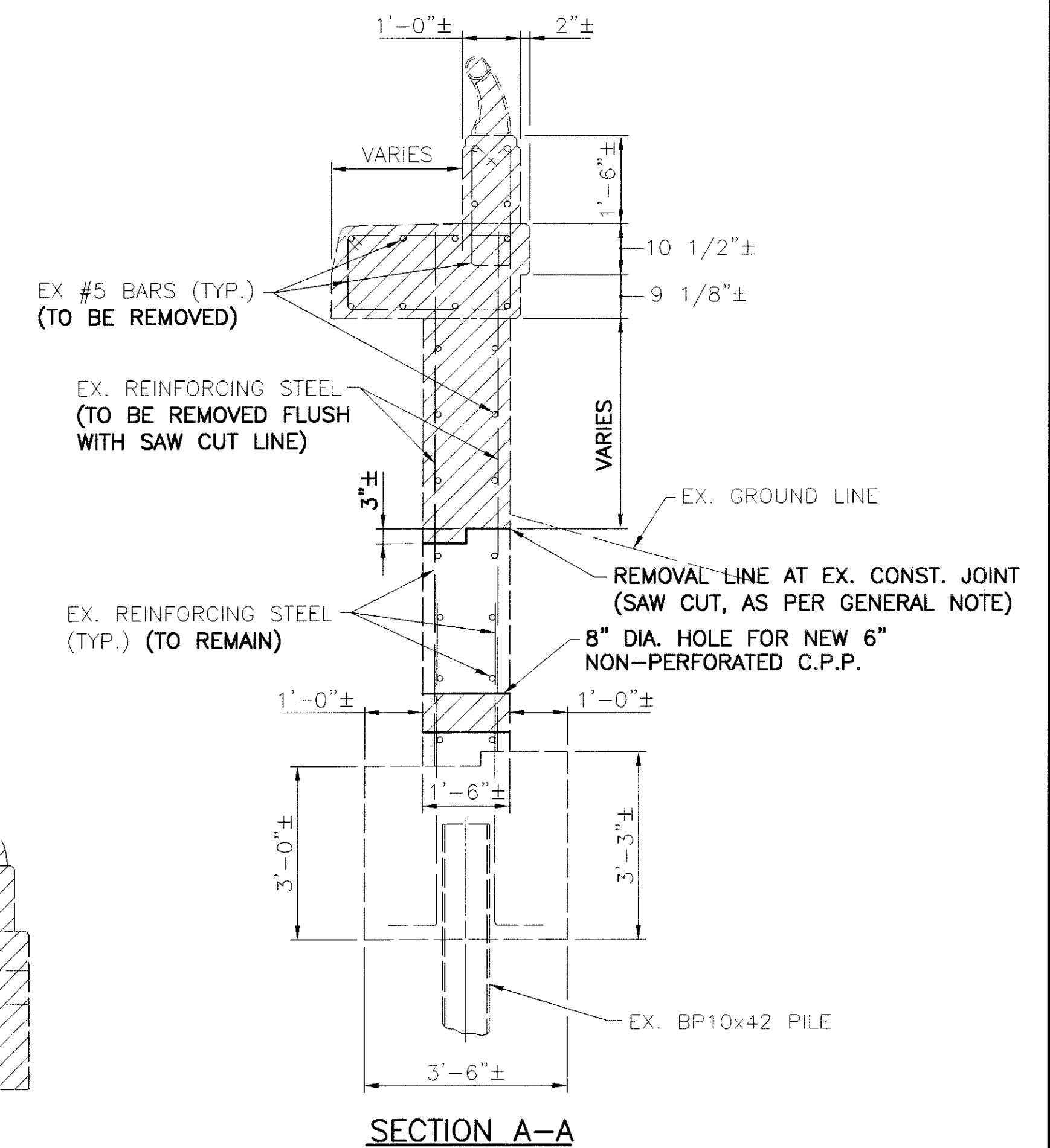
EXISTING WINGWALL SECTION

NOTES

- ① FOR STRUCTURE REMOVAL NOTES SEE SHEET 2 / 11 .
- ② END CROSS FRAMES TO BE REMOVED.
- ③ REMOVE ENTIRE SCUPPER ASSEMBLY AND BULB ANGLE, INCLUDING ATTACHMENTS TO EXISTING BEAM. GRIND SMOOTH ANY EXISTING WELDS BY WHICH THE SCUPPER WAS ATTACHED TO THE BEAM. PAYMENT FOR THIS WORK SHALL BE INCLUDED WITH ITEM 202, PORTIONS OF STRUCTURE REMOVED, AS PER PLAN.
- ④ INCLUDE WITH ITEM 518, 6" NON-PERFORATED C.P.P. INCLUDING SPECIALS, AS PER PLAN FOR PAYMENT.

LEGEND

- AREAS OF THE EXISTING STRUCTURE TO BE REMOVED



SECTION A-A

DATE: 6/13/02  
 CAD FILE: 0408\_DEMO  
 OPERATOR: MPB/CAF  
 PLOT SCALE: 1=1

DESIGN AGENCY  
 FINKBEINER, PETTIS & STROUT, INC.  
 520 S. MAIN STREET, SUITE 2400  
 AKRON, OHIO 44311-1010

DATE  
 5/03  
 REVIEWED  
 D.L.G.  
 STRUCTURE FILE NO.  
 5002826

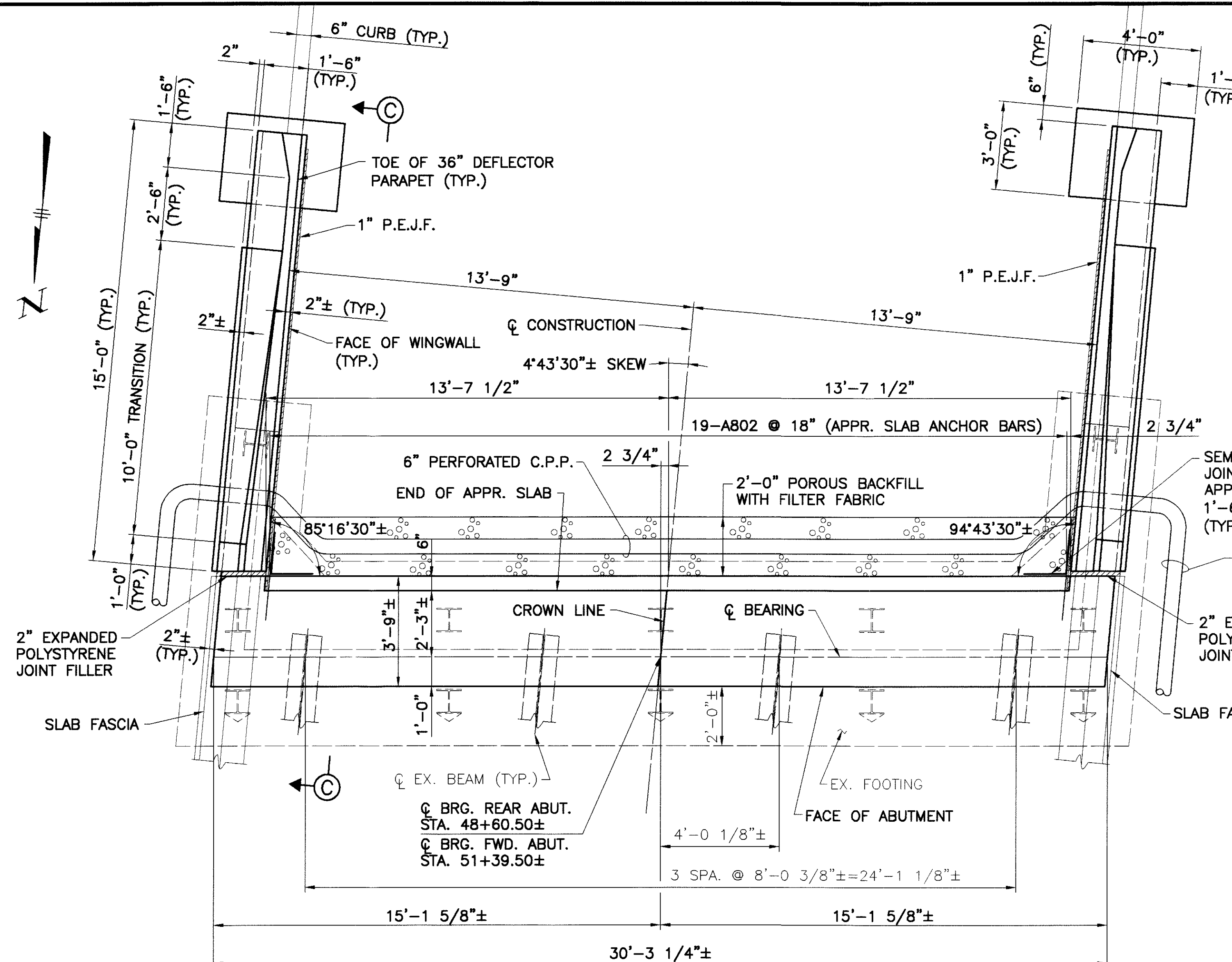
DRAWN  
 C.A.F.  
 DESIGNED  
 R.K.Z.  
 CHECKED  
 F.J.G.

DEMOLITION DETAILS  
 BRIDGE NO. MAH-76-0408  
 NEWTON FALLS ROAD OVER INTERSTATE ROUTE 76

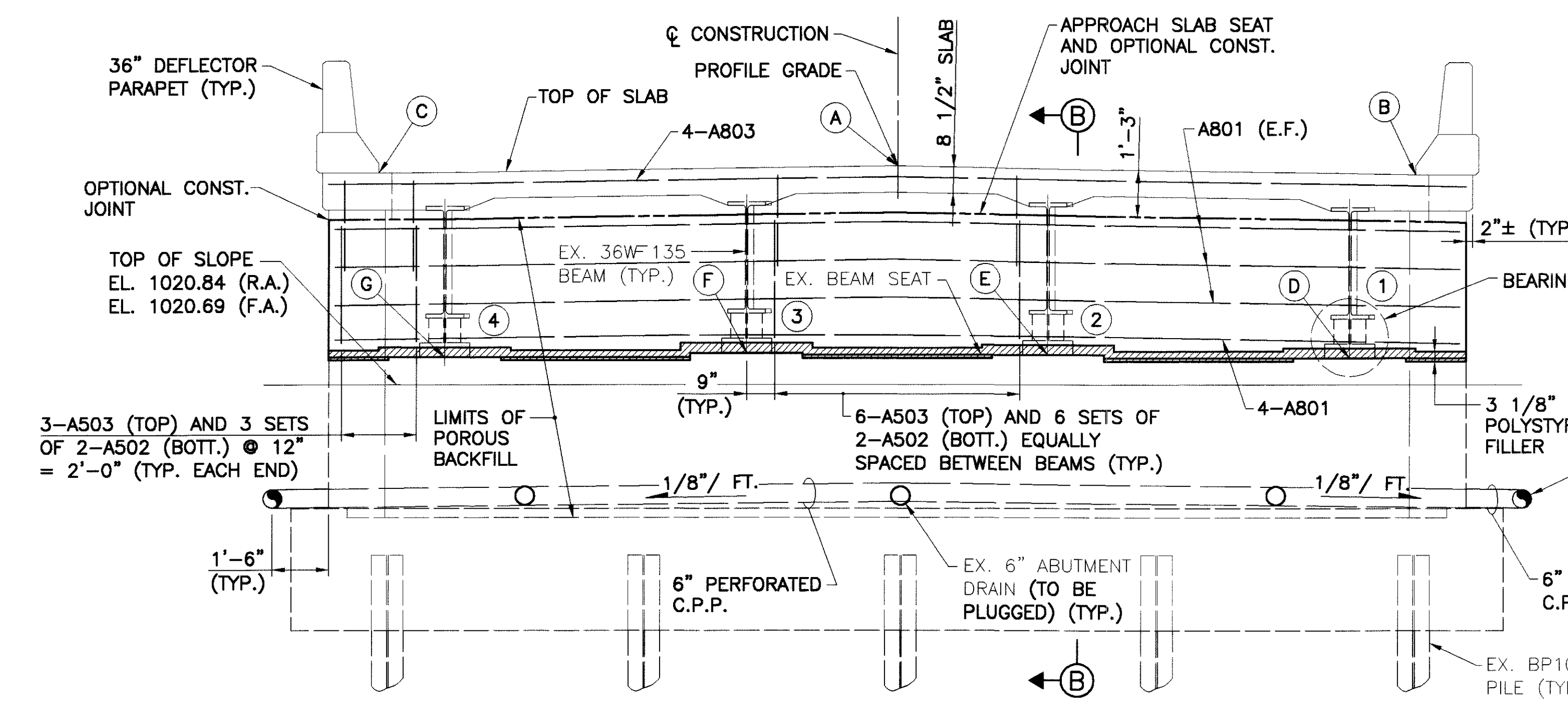
MAH - 76 - 3.08

5 / 11

226  
 243



**PLAN**  
NOTE: REAR ABUTMENT DETAILS ARE SHOWN, FORWARD ABUTMENT DETAILS OPPOSITE HAND.

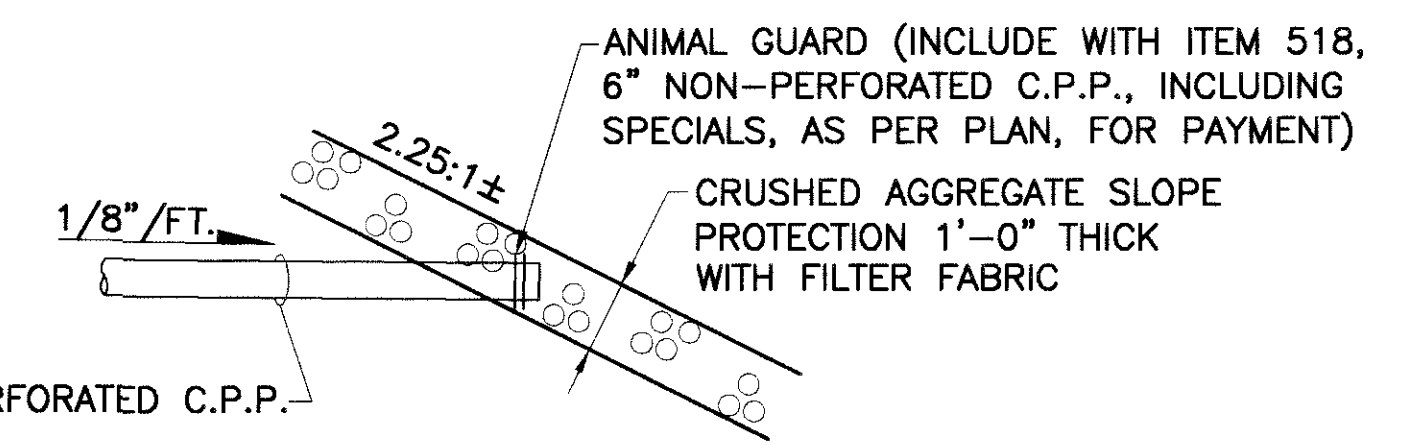


**ELEVATION**  
NOTE: REAR ABUTMENT DETAILS ARE SHOWN, FORWARD ABUTMENT DETAILS ARE OPPOSITE HAND.

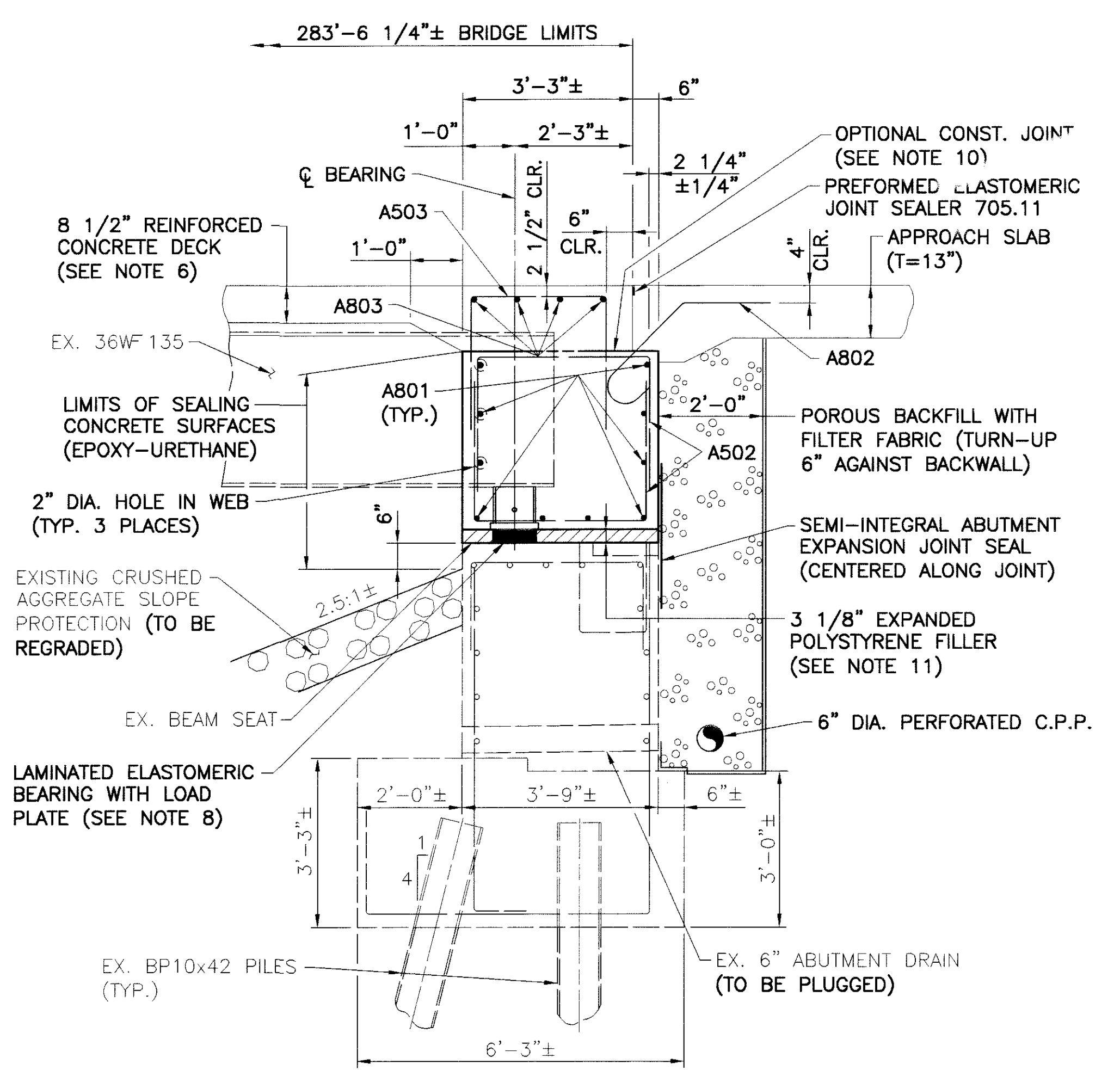
- NOTES**
- MINIMUM BAR LAP IS AS FOLLOWS:  
#5 BAR = 30"
  - POROUS BACKFILL WITH FILTER FABRIC, 2'-0" THICK SHALL EXTEND UP TO THE PLANE OF THE SUBGRADE, AND Laterally TO THE WINGWALLS. FILTER FABRIC SHALL CONFORM WITH 712.09, TYPE A.
  - FOR VIEW C-C, WINGWALL AND PARAPET TRANSITION DETAILS AND NOTES SEE SHEET 7/11.
  - PROVIDE A 1" CHAMFER ON ALL EXPOSED CONCRETE.
  - FOR TRANSVERSE SECTION, PARAPET REINFORCING AND ADDITIONAL NOTES, SEE SHEET 9/11.
  - FOR SLAB PLAN AND ADDITIONAL DETAILS AND NOTES, SEE SHEET 10/11.
  - PERFORMED EXPANSION JOINT FILLER IS TO BE INCLUDED IN BID ITEM 526, REINFORCED CONCRETE APPROACH SLAB FOR PAYMENT.
  - FOR SUPERSTRUCTURE AND BEARING DETAILS AND NOTES SEE SHEET 8/11.
  - ELEVATIONS SHOWN ARE TAKEN AT THE CENTERLINE OF ABUTMENT BEARINGS.
  - ABUTMENT DIAPHRAGM CONCRETE, STEEL, SUPERSTRUCTURE: THE CONCRETE ENCASING STRUCTURAL STEEL MEMBERS SUPPORTED IN SEMI-INTEGRAL TYPE ABUTMENTS MAY BE PLACED BEFORE THE ACTUAL DECK CONCRETE IS PLACED. IF THE CONTRACTOR CHOOSES THIS OPTION THE CONCRETE SHALL HAVE HAD AT LEAST 48 HOURS OF SET TIME BEFORE DECK CONCRETE IS PLACED.
  - EXPANDED POLYSTYRENE JOINT FILLER TO BE INCLUDED WITH ITEM 511, CLASS HP CONCRETE, BRIDGE DECK FOR PAYMENT.

**ELEVATION TABLE**

LOCATION	A	B	C	D	E	F	G
REAR ABUT.	1026.43	1026.19	1026.23	1021.34±	1021.43±	1021.48±	1021.37±
FWD. ABUT.	1026.15	1025.95	1025.91	1021.19±	1021.33±	1021.35±	1021.23±



**DRAIN OUTLET DETAIL**



**SECTION B-B**

DATE: 6/13/02  
CAD FILE: 0408\_ABUTT  
OPERATOR: CAF/MPB  
PLOT SCALE: 1"=1'

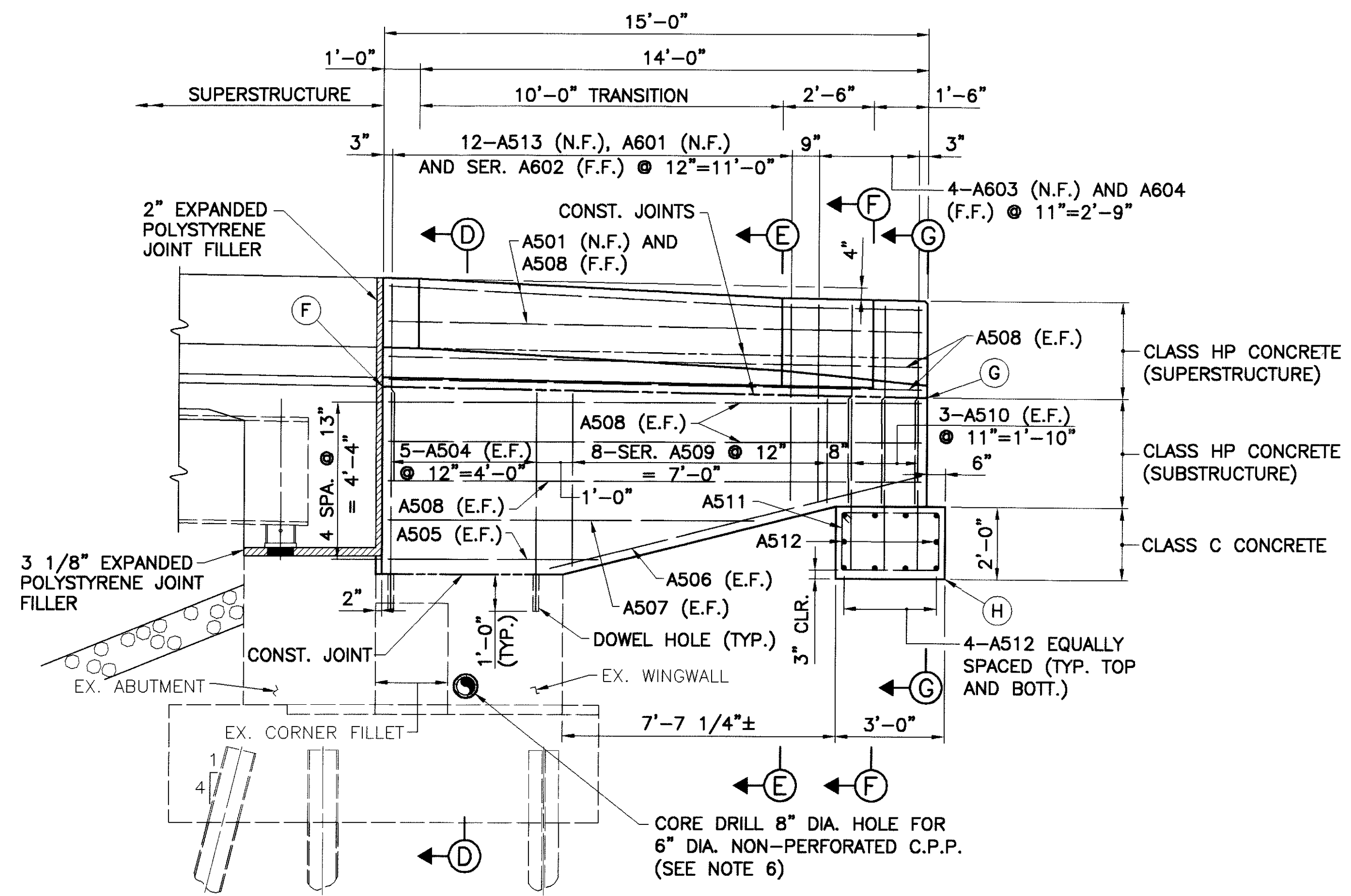
DESIGN AGENCY: FINKBEINER, PETTIS & STROUT, INC.  
520 S. MAIN STREET, SUITE 2400  
AKRON, OHIO 44311-1010

DATE: 5/03  
REVIEWED: D.L.G.  
DRAWN: C.A.F.  
DESIGNED: R.K.Z.  
CHECKED: F.J.G.

STRUCTURE FILE NO.: 5002826

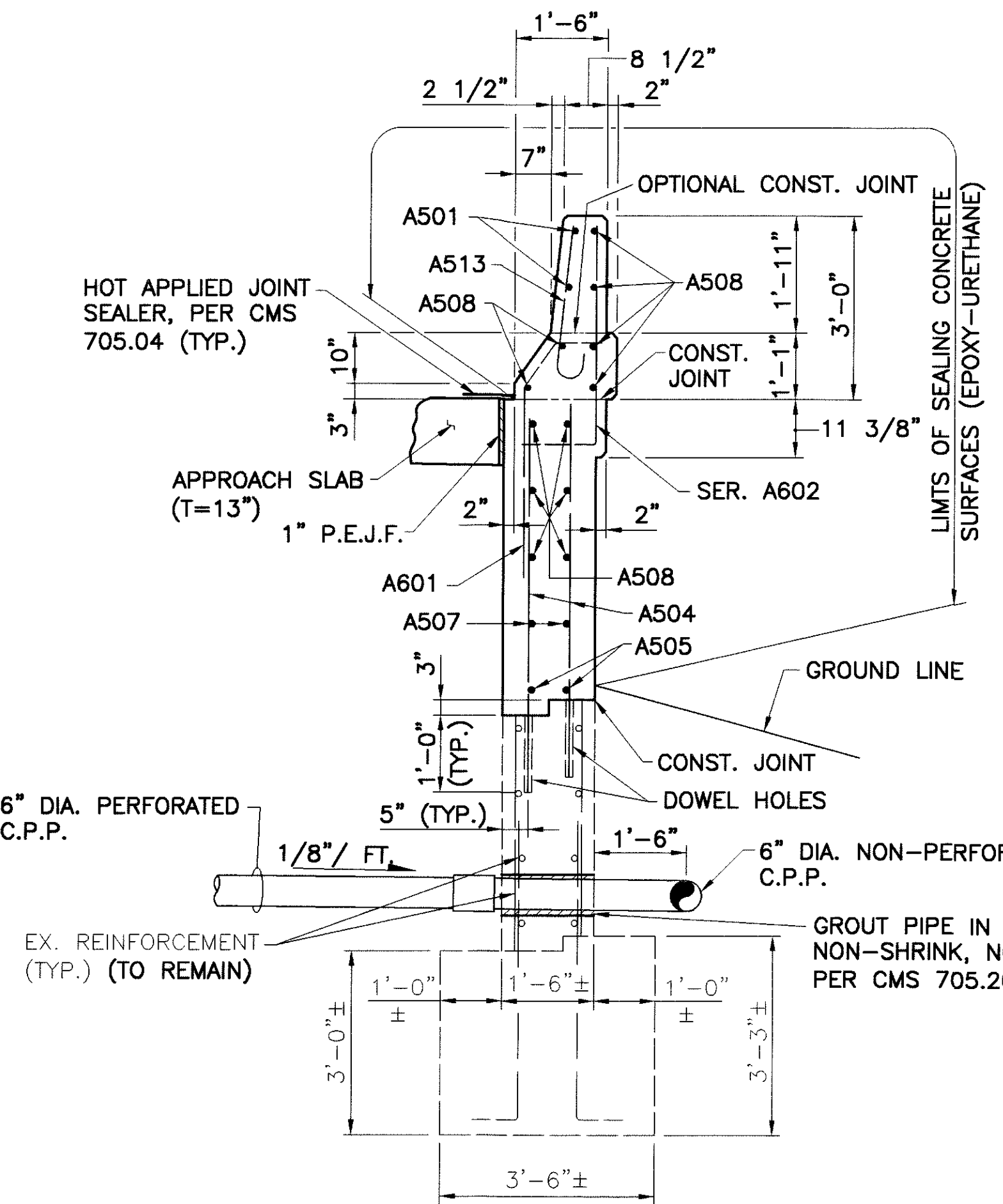
ABUTMENT DETAILS  
BRIDGE NO. MAH 76-0408  
NEWTON FALLS ROAD OVER TERSTATE ROUTE 76

MAH - 76 - 3.08  
6/11  
227  
243

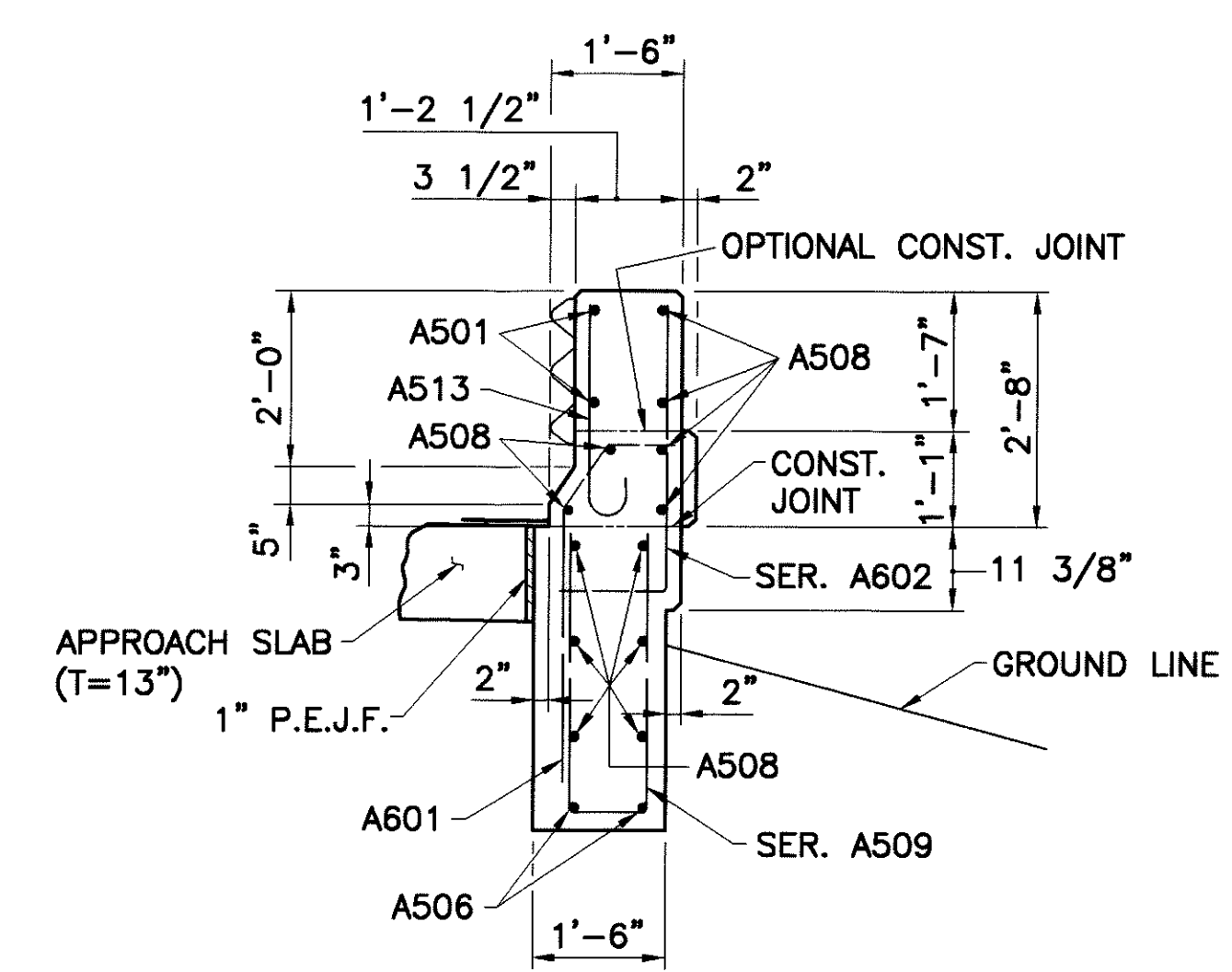


VIEW C-C

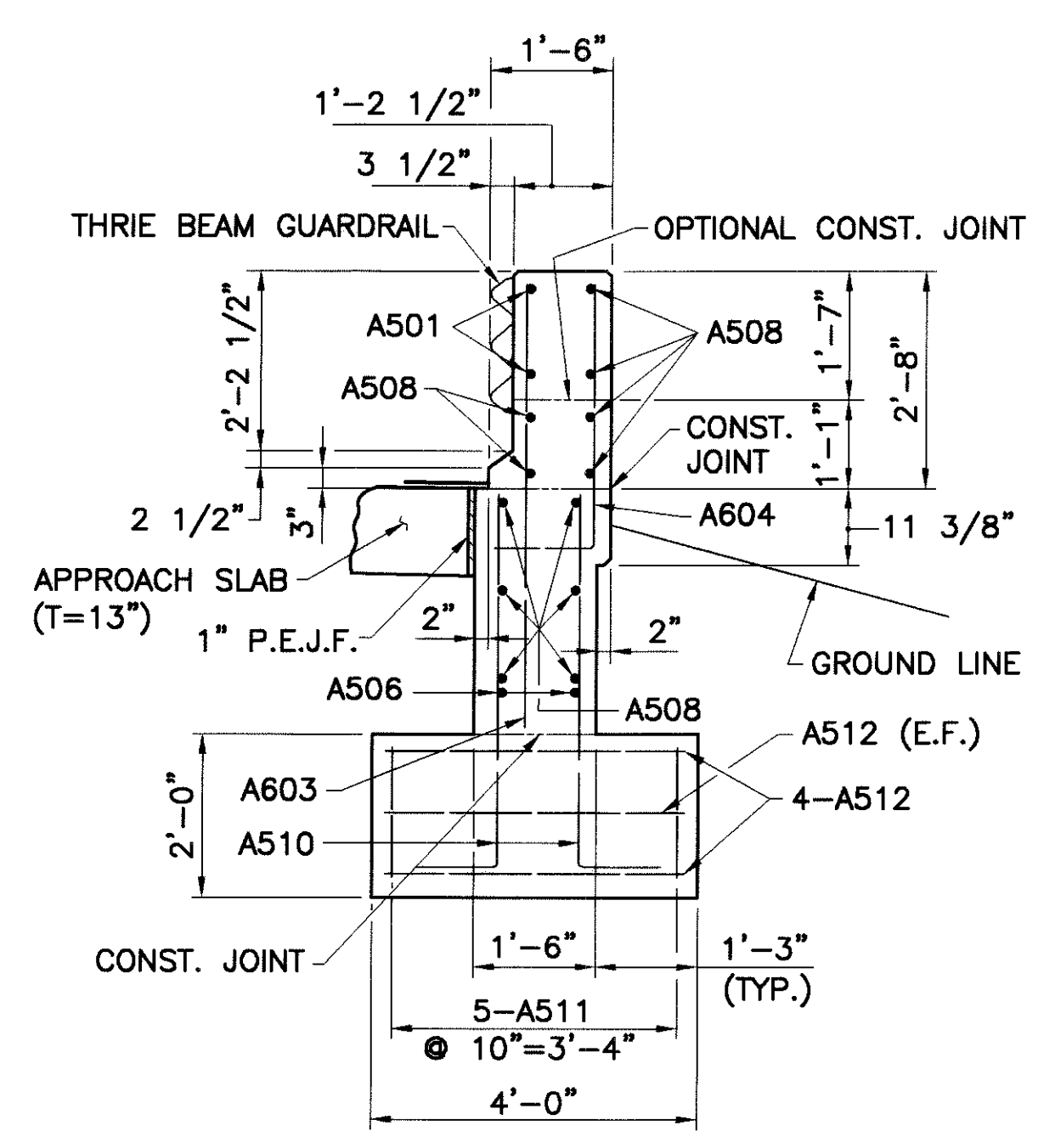
(EAST WINGWALL SHOWN, WEST WINGWALL SIMILAR)



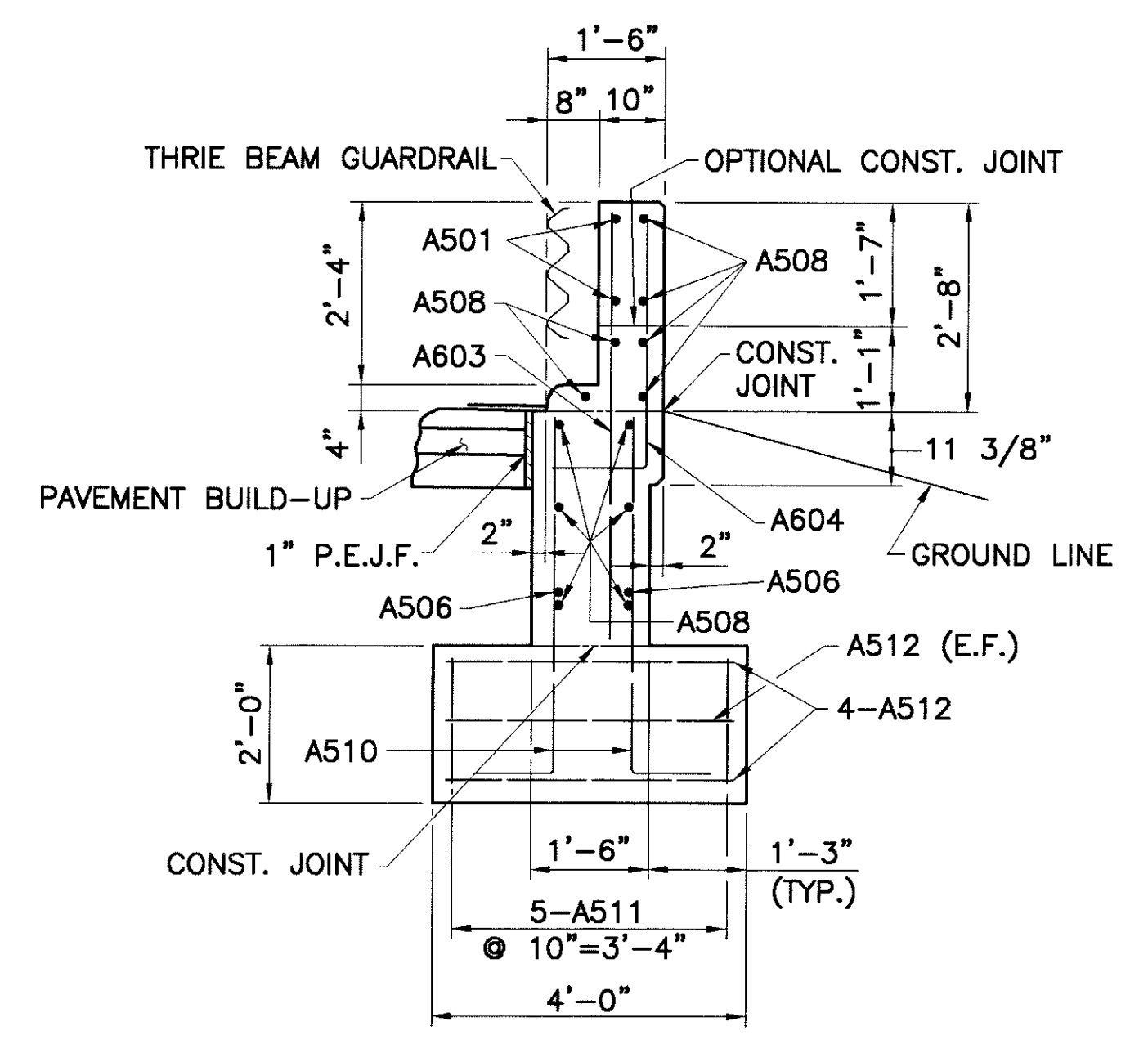
SECTION D-D



SECTION E-E



SECTION F-F



SECTION G-G

- NOTES**
- MINIMUM BAR LAPS ARE AS FOLLOWS:  
#5 BAR = 30" #6 BAR = 36"
  - FOR ABUTMENT PLAN AND ELEVATION, AND ADDITIONAL DETAILS AND NOTES SEE SHEET 6/11.
  - PROVIDE A 1" CHAMFER ON ALL EXPOSED CONCRETE.
  - FOR APPROACH SLAB DETAILS SEE SHEET 10/11.
  - FOR ADDITIONAL SUPERSTRUCTURE DETAILS SEE SHEETS 9/11 AND 10/11.
  - INCLUDE WITH ITEM 518, 6" NON-PERFORATED C.P.P. INCLUDING SPECIALS, AS PER PLAN FOR PAYMENT.

ELEVATION TABLE			
LOCATION	F	G	H
REAR, LEFT	1026.16	1025.89	1020.89
REAR, RIGHT	1026.20	1025.93	1020.93
FORWARD, LEFT	1025.91	1025.62	1020.62
FORWARD, RIGHT	1025.87	1025.58	1020.58

DATE: 6/13/02  
CAD FILE: 0408\_ABUT2  
OPERATOR: CAF/MPS  
PLOT SCALE: 1/1

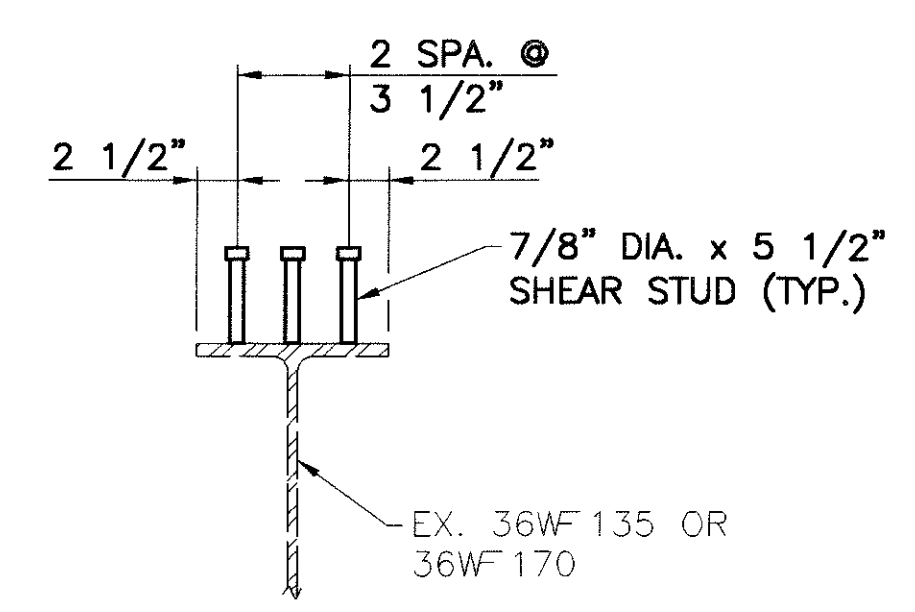
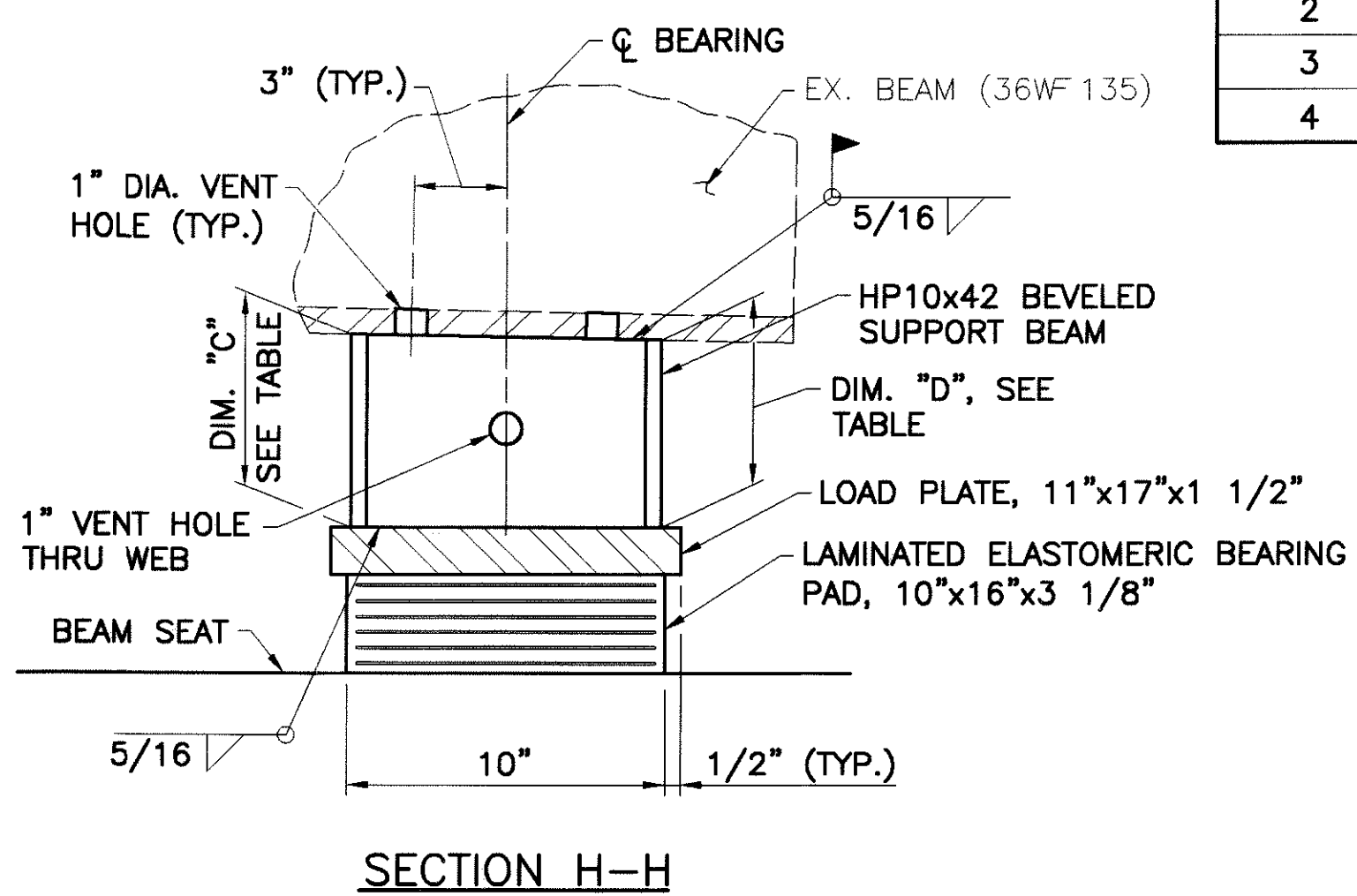
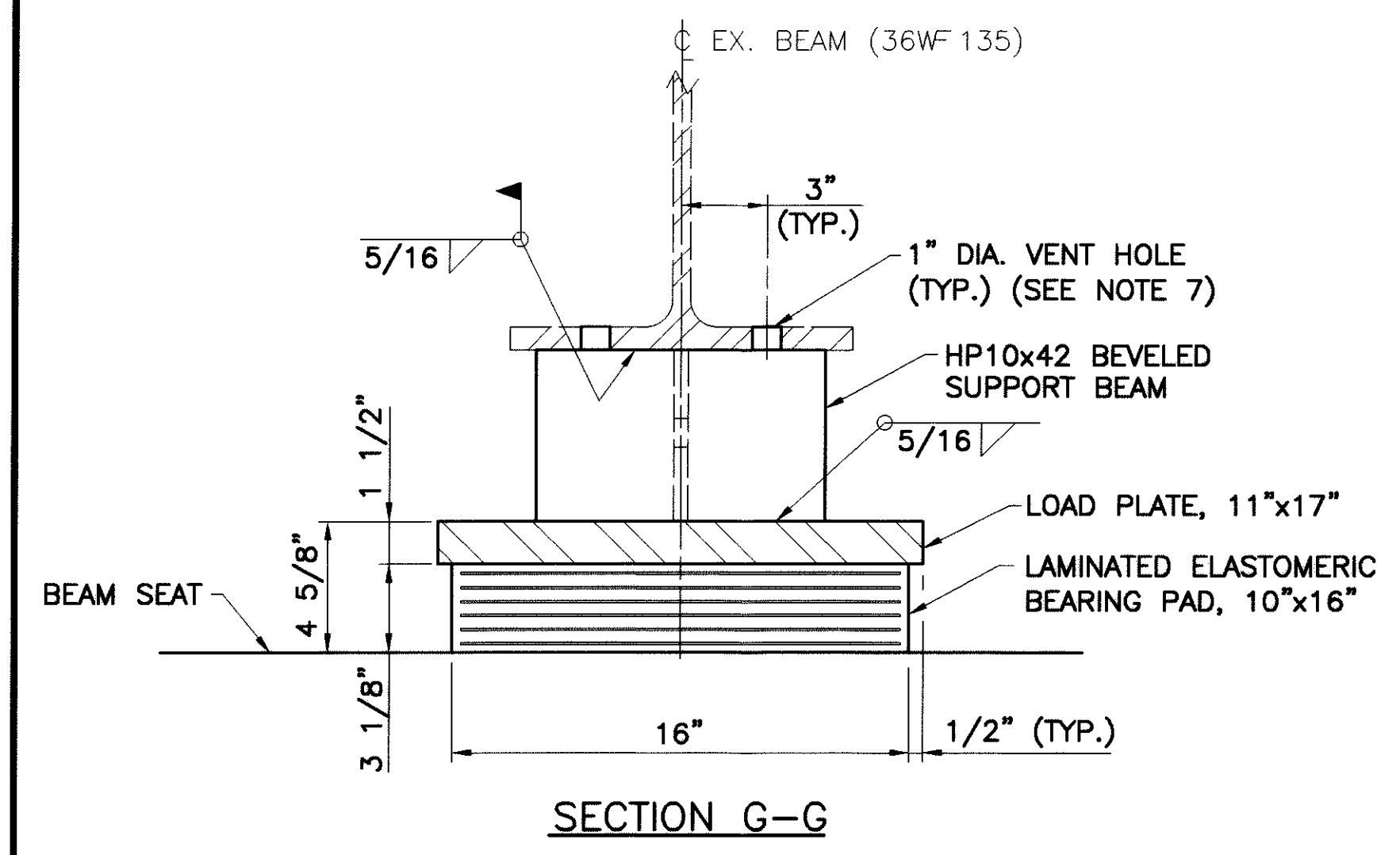
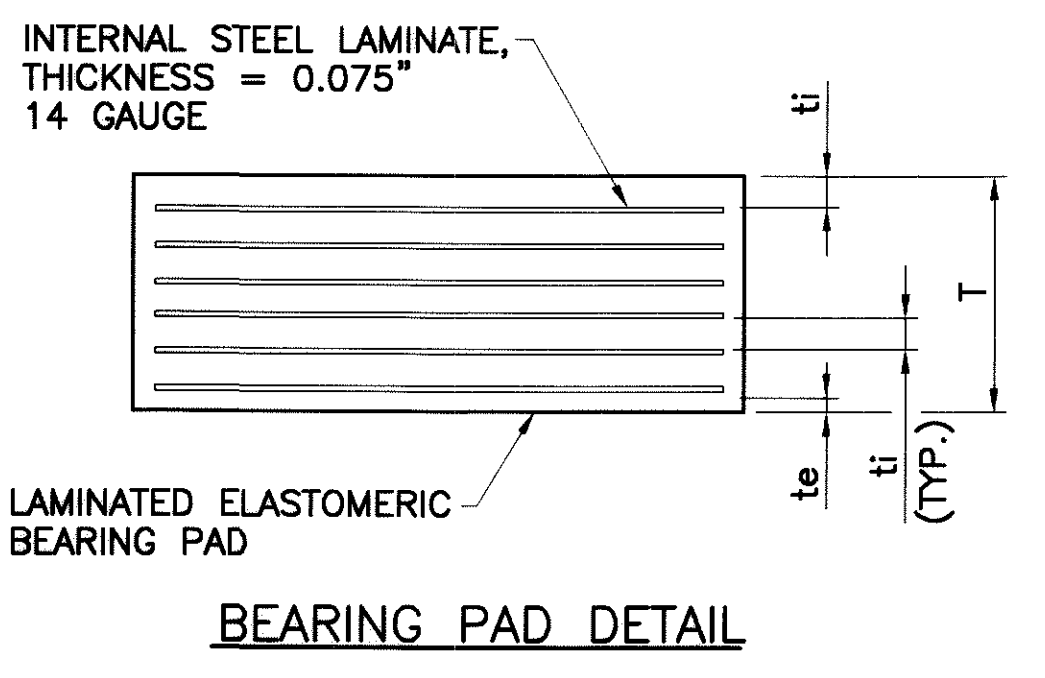
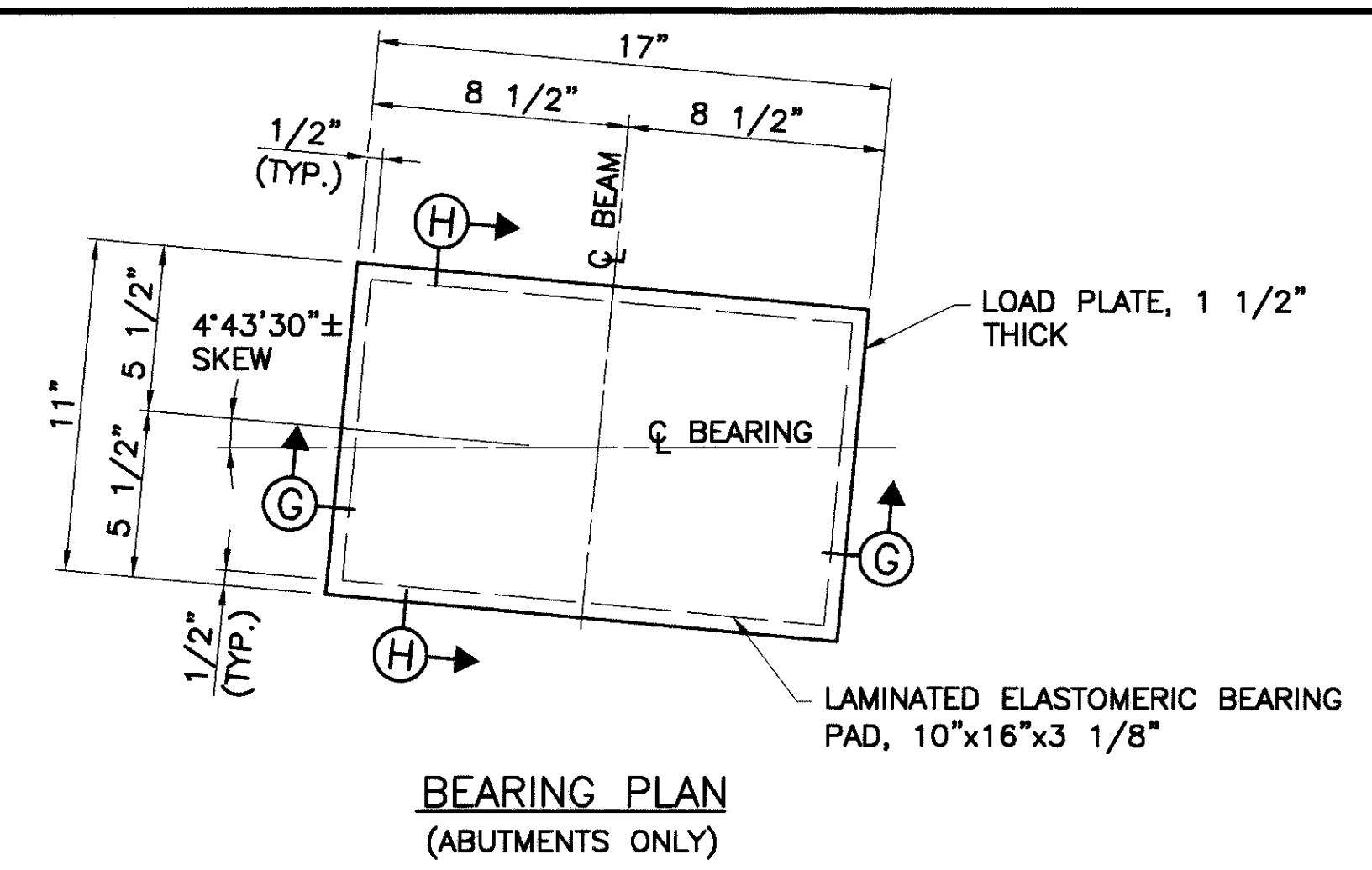
**NOTES**

- LOAD PLATES: THE STEEL LOAD PLATE SHALL BE ASTM 572, GRADE 50, AND HP10x42 BEVELED SUPPORT BEAM SHALL BE A36 STEEL.  
  
THE STEEL LOAD PLATE SHALL BE BONDED BY VULCANIZATION TO THE ELASTOMER DURING THE MOLDING PROCESS. WELDING OF THE LOAD PLATE TO THE HP10x42 BEVELED SUPPORT BEAM SHALL BE CONTROLLED SO THAT THE PLATE TEMPERATURE AT THE ELASTOMER BONDED SURFACE DOES NOT EXCEED 300°F AS DETERMINED BY THE USE OF PYROMETRIC STICKS OR OTHER TEMPERATURE MONITORING DEVICES.
- ELASTOMERIC BEARINGS SHALL COMPLY WITH ITEM 516 AND AASHTO STANDARD SPECIFICATION FOR HIGHWAY BRIDGES, SECTION 18, BEARING DEVICES, DIVISION II, CONSTRUCTION, ARTICLES 18.4.5.1 AND 18.5.6.2. BEARINGS SHALL BE GRADE 3, 50 DUROMETER ELASTOMER, AND SHALL BE SUBJECTED TO THE LOAD TESTING REQUIREMENTS DEFINED IN ARTICLE 18.7.4.5 OF THE AASHTO DOCUMENT LISTED ABOVE. BEARINGS WERE DESIGNED UNDER SECTION 14.6.6 OF SECTION 14, BEARINGS, DIVISION I, DESIGN. TESTING SHALL BE INCLUDED IN ITEM 516, ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE, AS PER PLAN FOR PAYMENT.
- ALL MATERIALS, LABOR AND INCIDENTALS NECESSARY TO FURNISH AND INSTALL LAMINATED ELASTOMERIC BEARINGS, LOAD PLATES AND HP10x42 BEVELED SUPPORT BEAMS SHALL BE INCLUDED IN ITEM 516, ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE, AS PER PLAN FOR PAYMENT.
- FOR SLAB PLAN AND ADDITIONAL SUPERSTRUCTURE DETAILS AND NOTES SEE SHEETS 10/11 AND 11/11.
- 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 1/4" FOR THICKNESSES UP TO 3/4", AND 5/16" FOR GREATER THAN 3/4" THICK.
- WELDED STUD SHEAR CONNECTORS SHALL CONFORM TO AASHTO 10.38.2 AND ITEM 513, WELDED STUD SHEAR CONNECTORS, AND SHALL BE INCLUDED UNDER ITEM 513 FOR PAYMENT. MINOR FIELD ADJUSTMENTS MAY BE NECESSARY IN ORDER TO KEEP THE STUD SHEAR CONNECTORS FROM BEING POSITIONED ON THE EXISTING BOLTED SPLICE PLATES AS DIRECTED BY THE ENGINEER.
- 1" DIAMETER VENT HOLES AND 2" DIAMETER HOLES FOR THE #8 REINFORCING BARS IN THE BEAM ENDS SHALL BE FIELD DRILLED. FLAME CUTTING OF HOLES IS NOT PERMITTED. FIELD DRILLING SHALL BE INCLUDED WITH ITEM 511, CLASS HP CONCRETE, BRIDGE DECK FOR PAYMENT.
- FIELD PAINTING OF EXISTING STEEL, SYSTEM OZEU: THE SURFACE AREA PAY QUANTITY IS BASED ON THE SURFACE AREA OF THE MAIN MEMBERS INCREASED BY 5 PERCENT TO ACCOUNT FOR THE AREA OF CROSSFRAMES, BEARINGS, AND OTHER STRUCTURAL STEEL INCIDENTALS TO BE CLEANED AND PAINTED.

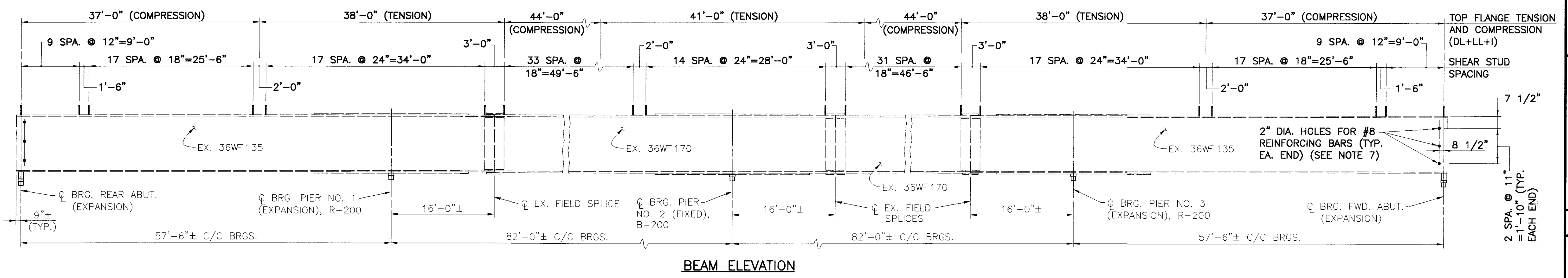
BEARING DATA						
50 DUROMETER						
SIZE		(THICKNESS)	$t_i$	$t_e$	NUMBER OF $t_i$	NUMBER OF STEEL LAMINATES
L	W	"DIM. T"				
10"	16"	3.13"	0.4"	0.28"	6	6

**ABUTMENTS:**  
 DEAD LOAD = 65.9 (KIPS/PAD)  
 LIVE LOAD (W/O IMPACT) = 46.6 (KIPS/PAD) } DESIGN LOAD=112.5 (KIPS/PAD)

BEAM NO.	DIMENSION "C"		DIMENSION "D"	
	REAR	FORWARD	REAR	FORWARD
1	7 3/4"	6 5/8"	7 1/2"	6 3/8"
2	8 5/16"	6 5/16"	8 1/16"	6 1/16"
3	7 13/16"	5 7/8"	7 9/16"	5 5/8"
4	7 3/4"	5 11/16"	7 1/2"	5 7/16"



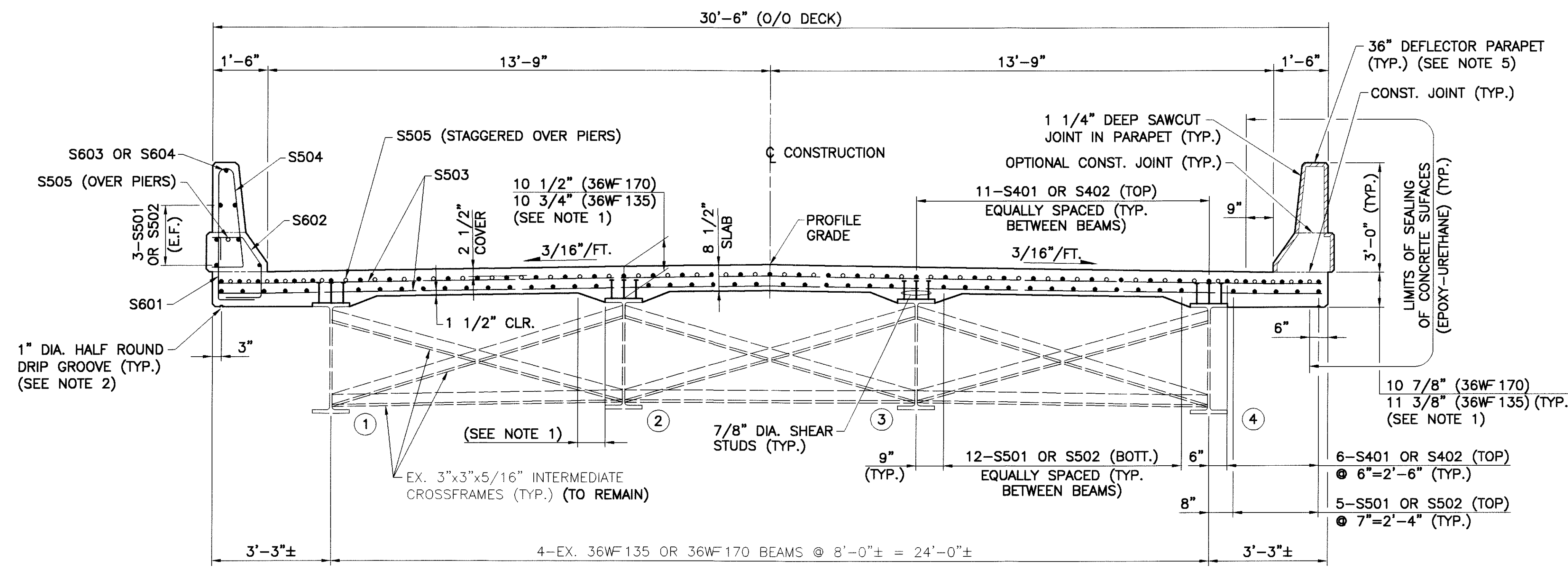
DESCRIPTION	SPAN NO. 1						SPAN NO. 2						SPAN NO. 3						SPAN NO. 4			
	REAR ABUT. BRG.	1/4	1/2	3/4	PIER NO. 1 BRG.	FIELD SPLICE	1/4	1/2	3/4	PIER NO. 2 BRG.	FIELD SPLICE	1/4	1/2	3/4	FIELD SPLICE	PIER NO. 3 BRG.	1/4	1/2	3/4	FWD. ABUT. BRG.		
DEFLECTION DUE TO SLAB	0	1/4"	1/4"	1/16"	0	1/4"	5/16"	1/2"	1/4"	0	3/16"	1/4"	1/2"	5/16"	1/4"	0	1/16"	1/4"	1/4"	0		
DEFLECTION DUE TO COMPOSITE DEAD LOAD	0	1/16"	1/16"	0	0	1/16"	1/16"	1/8"	1/16"	0	1/16"	1/16"	1/8"	1/16"	1/16"	0	0	1/16"	1/16"	0		
TOTAL DEFLECTION	0	5/16"	5/16"	1/16"	0	5/16"	3/8"	5/8"	5/16"	0	1/4"	5/16"	5/8"	3/8"	5/16"	0	1/16"	5/16"	5/16"	0		



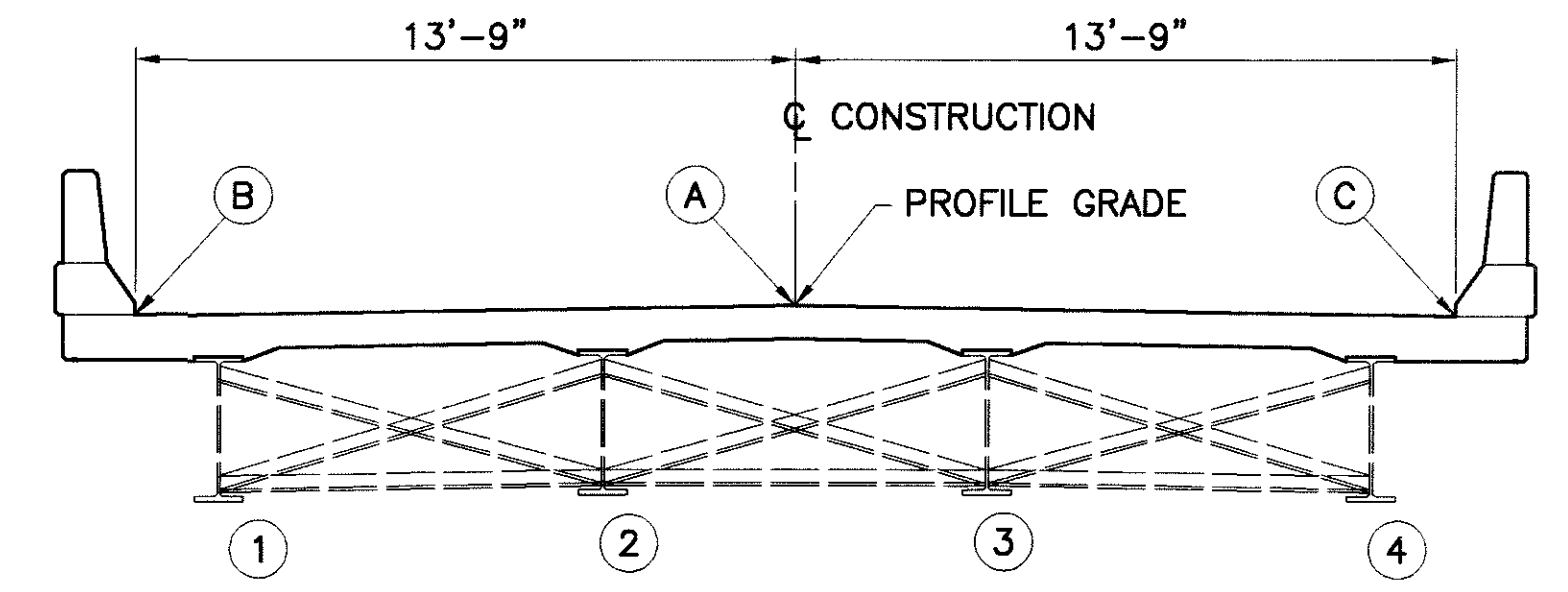
DATE: 6/13/02  
 CAD FILE: 0408-BEAM  
 OPERATOR: CAF/WFB  
 PLOT SCALE: 1=1

NOTES

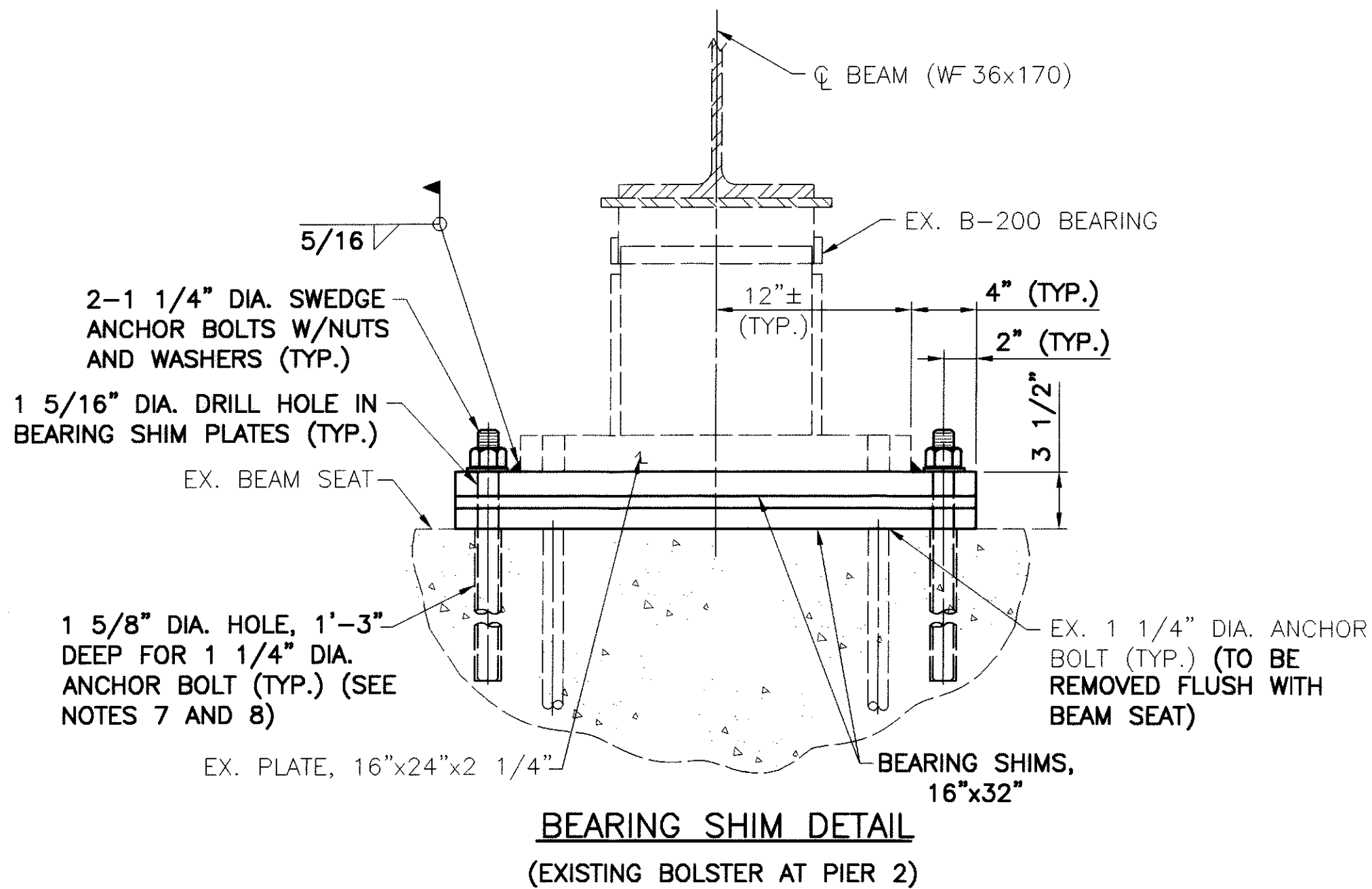
- ① DECK SLAB DEPTH FOR CONCRETE QUANTITY: THE ESTIMATED QUANTITY OF DECK SLAB CONCRETE IS BASED ON THE CONSTANT DECK THICKNESS, AS SHOWN, PLUS THE QUANTITY OF CONCRETE THAT FORMS EACH BEAM HAUNCH. THE ESTIMATE ASSUMES A CONSTANT HAUNCH THICKNESS OF 2 INCHES AND A CONSTANT HAUNCH WIDTH OUTSIDE THE EDGE OF EACH BEAM FLANGE OF 9 INCHES. DEVIATE FROM THIS HAUNCH THICKNESS AS NECESSARY TO PLACE THE DECK SURFACE AT THE FINISHED GRADE. THE ALLOWABLE TOLERANCE FOR THE HAUNCH WIDTH OUTSIDE THE EDGE OF EACH BEAM FLANGE IS ± 3 INCHES.
- ② DRIP GROOVES SHALL TERMINATE 2'-6" FROM THE FACE OF ABUTMENTS.
- ③ SCREED ELEVATIONS SHOWN ARE FOR THE DECK SLAB SURFACE PRIOR TO CONCRETE PLACEMENT. ALLOWANCE HAS BEEN MADE FOR ANTICIPATED CALCULATED DEAD LOAD DEFLECTIONS.
- ④ FOR DECK SLAB PLAN AND ADDITIONAL DETAILS AND NOTES, SEE SHEET 10 / 11 .
- ⑤ FOR NOTES AND ADDITIONAL DETAILS FOR THE 36" DEFLECTOR PARAPET, SEE ODOT STANDARD DRAWING BR-1, SHEET 1 OF 2.
- ⑥ FOR BEAM AND SHEAR STUD DETAILS SEE SHEET 8 / 11 .
- ⑦ ANCHOR BOLTS SHALL BE GROUTED IN PLACE USING A NON-SHRINK EPOXY GROUT IN ACCORDANCE WITH CMS 510 AND, CMS 705.20.
- ⑧ ALL MATERIAL, LABOR AND INCIDENTALS NECESSARY TO FURNISH AND INSTALL BEARING SHIMS AND ANCHOR BOLTS SHALL BE INCLUDED WITH ITEM 516, RESET BEARING, AS PER PLAN FOR PAYMENT.



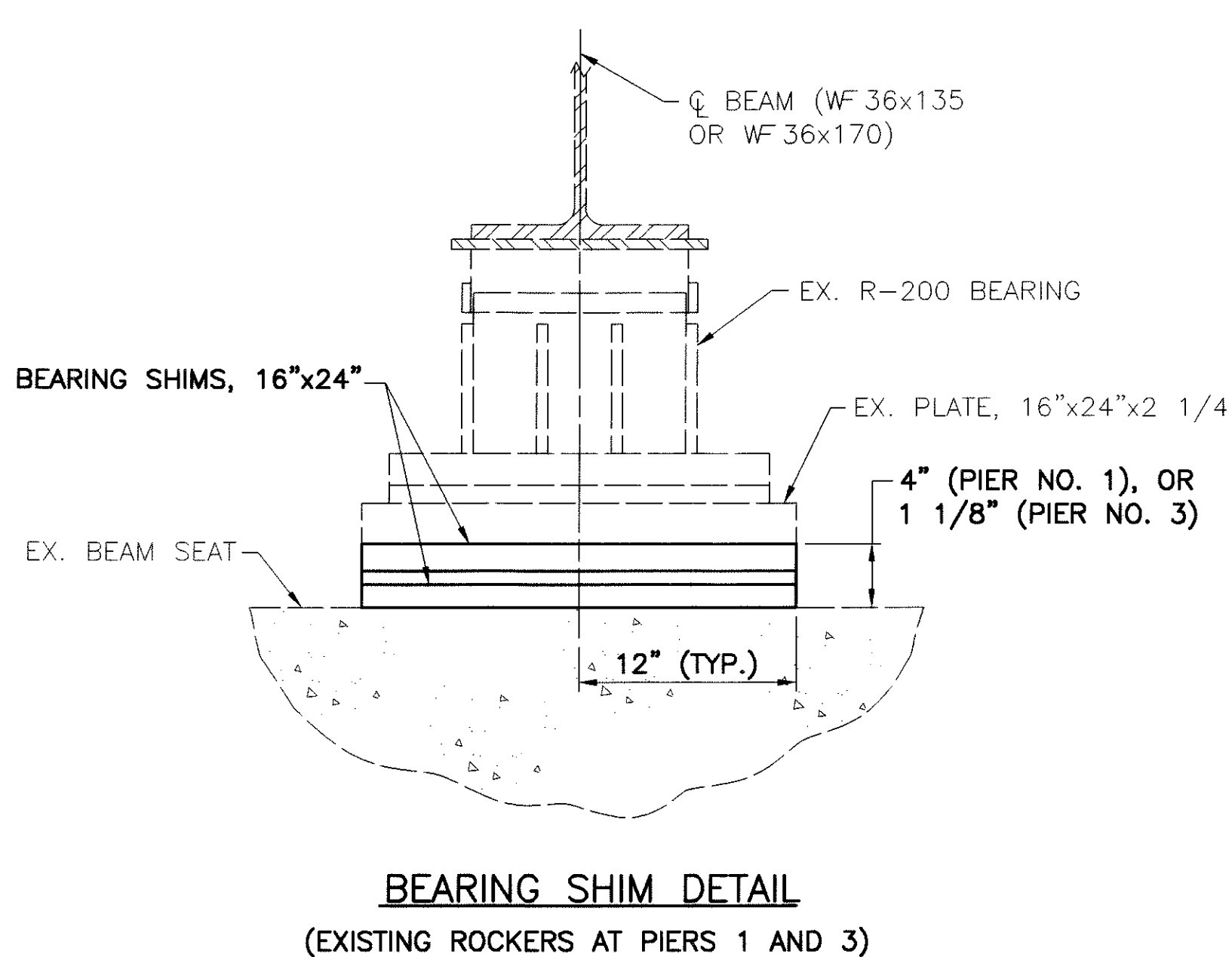
TRANSVERSE SECTION



TRANSVERSE SECTION



BEARING SHIM DETAIL (EXISTING BOLSTER AT PIER 2)

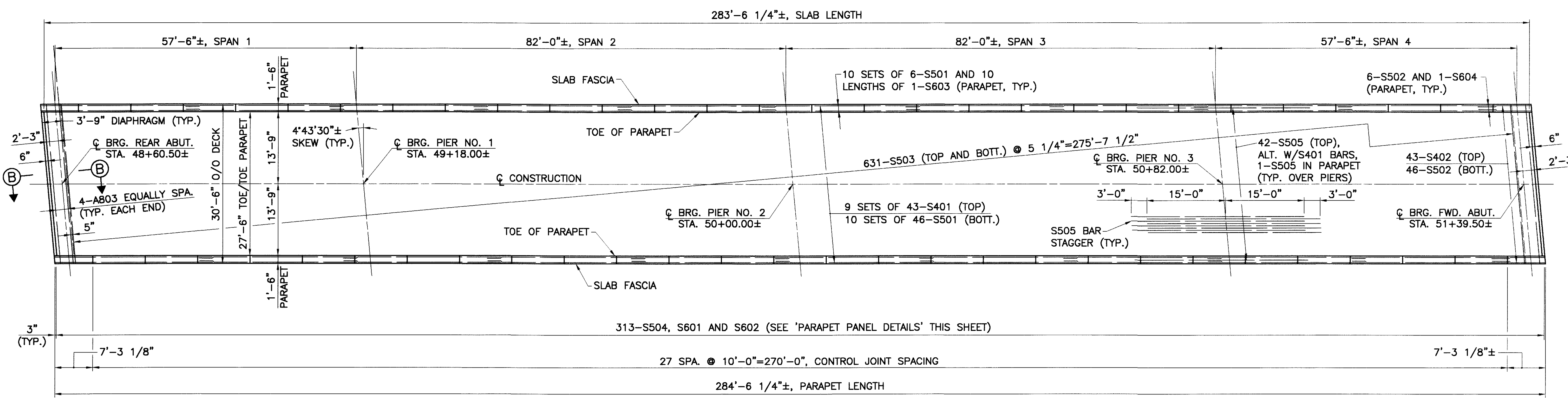


BEARING SHIM DETAIL (EXISTING ROCKERS AT PIERS 1 AND 3)

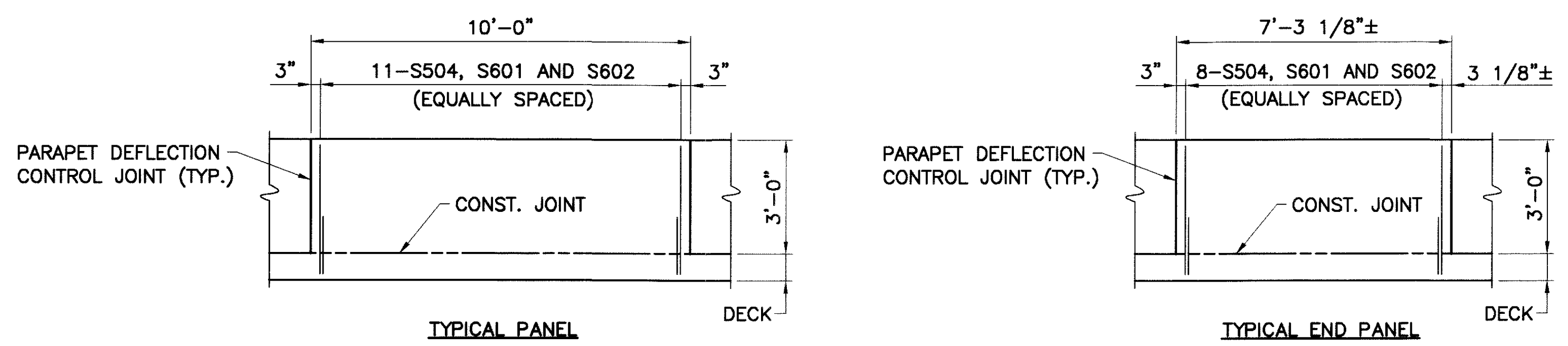
DESCRIPTION	POINTS			BEAMS			
	A	B	C	1	2	3	4
☉ BRG. REAR ABUT.	1026.43	1026.19	1026.23	1026.22	1026.36	1026.37	1026.26
1/4 POINT	1026.68	1026.44	1026.48	1026.47	1026.61	1026.62	1026.50
1/2 POINT	1026.87	1026.64	1026.67	1026.67	1026.81	1026.81	1026.70
3/4 POINT	1027.02	1026.80	1026.82	1026.83	1026.96	1026.97	1026.85
☉ BRG. PIER NO. 1	1027.16	1026.93	1026.96	1026.96	1027.09	1027.10	1026.98
FIELD SPLICE	1027.32	1027.10	1027.11	1027.13	1027.26	1027.26	1027.14
1/4 POINT	1027.36	1027.14	1027.15	1027.17	1027.30	1027.30	1027.18
1/2 POINT	1027.50	1027.28	1027.28	1027.30	1027.43	1027.43	1027.31
3/4 POINT	1027.52	1027.30	1027.31	1027.33	1027.46	1027.46	1027.34
☉ BRG. PIER NO. 2	1027.50	1027.28	1027.28	1027.31	1027.43	1027.43	1027.31
FIELD SPLICE	1027.49	1027.27	1027.27	1027.30	1027.42	1027.42	1027.30
1/4 POINT	1027.48	1027.27	1027.26	1027.30	1027.42	1027.42	1027.29
1/2 POINT	1027.41	1027.21	1027.19	1027.23	1027.35	1027.35	1027.22
3/4 POINT	1027.24	1027.03	1027.01	1027.06	1027.18	1027.17	1027.04
FIELD SPLICE	1027.19	1026.98	1026.96	1027.01	1027.13	1027.12	1026.99
☉ BRG. PIER NO. 3	1027.00	1026.79	1026.77	1026.82	1026.94	1026.93	1026.80
1/4 POINT	1026.83	1026.63	1026.60	1026.66	1026.77	1026.76	1026.63
1/2 POINT	1026.65	1026.45	1026.42	1026.48	1026.59	1026.58	1026.45
3/4 POINT	1026.43	1026.23	1026.19	1026.25	1026.37	1026.36	1026.22
☉ BRG. FORWARD ABUT.	1026.15	1025.95	1025.91	1025.98	1026.09	1026.08	1025.94

DATE: 6/13/02  
 CAD FILE: 0408-TRANS  
 OPERATOR: CAF/MFB  
 PLOT SCALE: 1:1

DESIGN AGENCY: FINKBEINER, PETTIS & STROUT, INC.  
 520 S. MAIN STREET, SUITE 2400  
 AKRON, OHIO 44311-1010  
 DATE: 5/03  
 REVIEWED: D.L.G.  
 DRAWN: C.A.F.  
 DESIGNED: R.K.Z.  
 CHECKED: F.J.G.  
 STRUCTURE FILE NO.: 5002826  
 TRANSVERSE SECTION AND SCREED TABLE  
 BRIDGE NO. MAH-76-0408  
 NEWTON FALLS ROAD OVER INTERSTATE ROUTE 76  
 MAH - 76 - 3.08  
 9 / 11  
 230  
 243

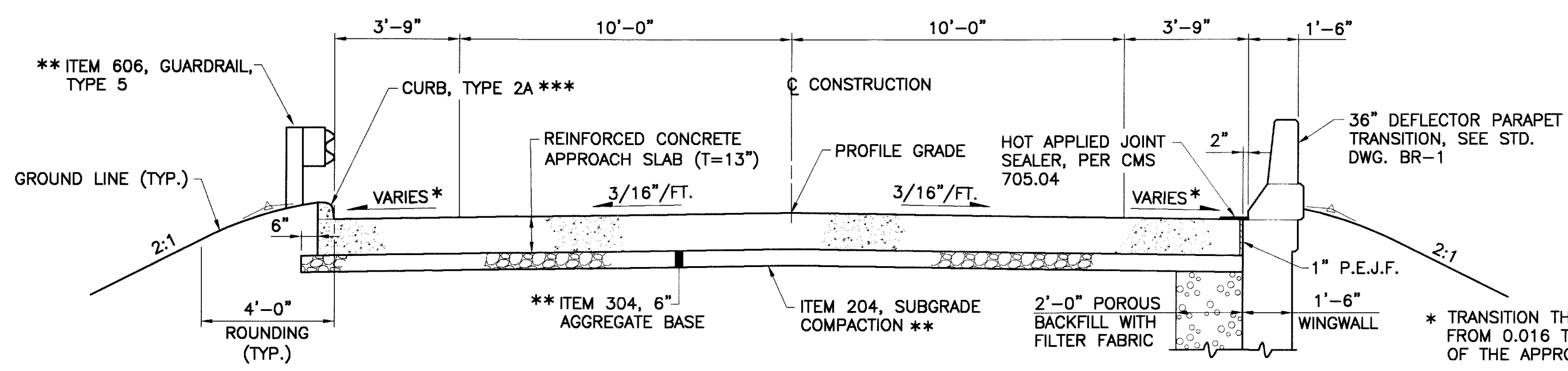


**SLAB PLAN**



**NOTES**

- ① MINIMUM BAR LAPS ARE AS FOLLOWS:  
 #4 BARS = 24"  
 #5 BARS = 30"  
 #6 BARS = 36"
- ② FOR BEAM DETAILS AND NOTES SEE SHEET **8 / 11**.
- ③ TRANSVERSE CONSTRUCTION JOINTS SHALL NOT BE PERMITTED IN THE DECK SLAB.
- ④ FOR TRANSVERSE SECTION INCLUDING LONGITUDINAL BAR SPACING, PARAPET DETAILS, AND SCREED ELEVATION TABLE AND ADDITIONAL NOTES, SEE SHEET **9 / 11**.
- ⑤ THE CONTRACTOR SHALL TAKE SPECIAL CARE TO SPACE BARS AT LEAST 2" FROM THE CONTROL JOINT SAWCUT.
- ⑥ FOR SECTION B-B AND ADDITIONAL DIAPHRAGM DETAILS, AND NOTES SEE SHEET **6 / 11**.
- ⑦ HOT APPLIED JOINT SEALER AND 1" P.E.J.F. TO BE INCLUDED WITH ITEM 526, REINFORCED CONCRETE APPROACH SLAB FOR PAYMENT.
- ⑧ FOR ADDITIONAL APPROACH SLAB DETAILS AND NOTES, AND REINFORCING SEE O.D.O.T. STANDARD DRAWING AS-1-81, SHEETS 1 THRU 3.



**APPROACH SLAB TYPICAL SECTION**

\* TRANSITION THE SHOULDER CROSS SLOPE FROM 0.016 TO 0.042 WITHIN THE LENGTH OF THE APPROACH SLAB.  
 \*\* INCLUDE WITH ROADWAY QUANTITIES FOR PAYMENT.  
 \*\*\* CURB LIMITS:  
 STA. 48+38.24 TO 48+43.24 LT. AND RT.  
 STA. 51+56.76 TO 51+61.76 LT. AND RT.

REINFORCING SCHEDULE												
MARK	REAR ABUT.	FWD. ABUT.	TOTAL REQ'D.	LENGTH	TYPE	DIMENSIONS						WEIGHT LBS.
						A	B	C	D	E	INCR.	
<b>ABUTMENTS</b>												
A501	4	4	8	14'-8"	8	10'-10"						122
A502	48	48	96	8'-8"	2	3'-5"	2'-9"					868
A503	24	24	48	7'-10"	2	2'-7"	2'-9"					392
A504	20	20	40	5'-9"	ST.							240
A505	4	4	8	5'-9"	ST.							48
A506	4	4	8	10'-6"	ST.							88
A507	4	4	8	10'-1"	ST.							84
A508	24	24	48	14'-8"	ST.							734
SERIES	2 SETS	2 SETS	4 SETS	6'-5"	2	1'-0"	2'-10"					275
A509	OF 8	OF 8	OF 8	TO 10'-1"		TO 4'-8"				5/8"		
A510	12	12	24	5'-6"	1	1'-0"	4'-8"					138
A511	10	10	20	9'-0"	9	2'-8"	1'-7"					188
A512	20	20	40	3'-8"	ST.							153
A513	24	24	48	3'-0"	4	2'-5"						150
A601	24	24	48	4'-5"	3	3'-0"						318
SERIES	2 SETS	2 SETS	4 SETS	4'-5"	1	1'-4"	3'-3"					330
A602	OF 12	OF 12	OF 12	TO 4'-9"		TO 3'-7"				3/8"		
A603	8	8	16	5'-5"	ST.							130
A604	8	8	16	4'-6"	1	1'-4"	3'-4"					108
A801	10	10	20	29'-11"	ST.							1,598
A802	19	19	38	4'-7"	7	2'-3"						465
A803	4	4	8	30'-3"	ST.							646
THE TOTAL WEIGHT OF ABUTMENT REINFORCEMENT HAS BEEN CARRIED TO ESTIMATED QUANTITIES SHEET 2 / 11											7,075	

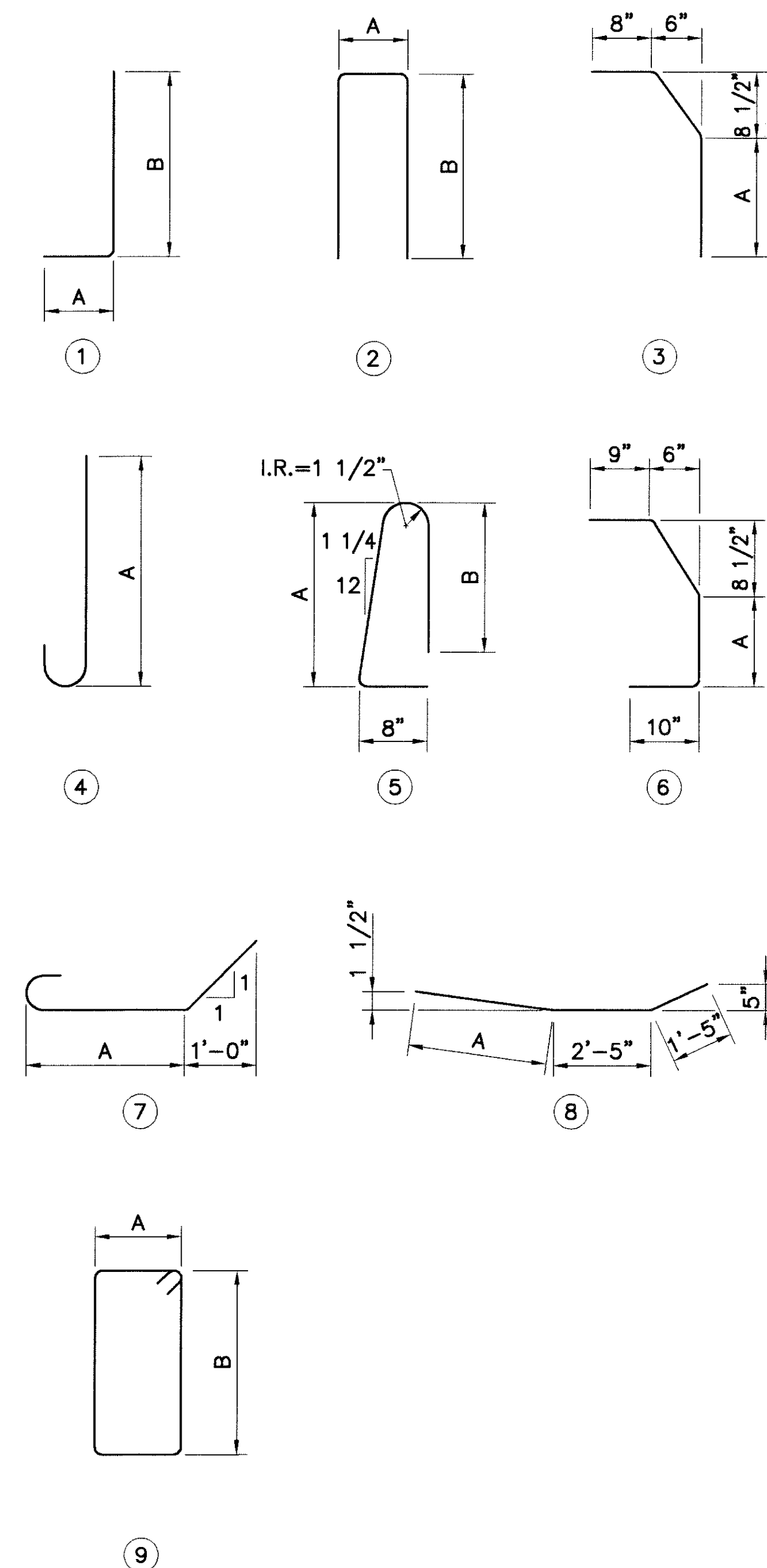
REINFORCING SCHEDULE											
MARK	TOTAL REQ'D.	LENGTH	TYPE	DIMENSIONS						WEIGHT LBS.	
				A	B	C	D	E	INCR.		
<b>SUPERSTRUCTURE</b>											
S401	387	30'-0"	ST.								7,755
S402	43	32'-2"	ST.								924
S501	580	30'-0"	ST.								18,148
S502	58	8'-8"	ST.								524
S503	1,262	30'-1"	ST.								39,598
S504	626	6'-0"	5	2'-9"	2'-6"						3,918
S505	132	33'-0"	ST.								4,543
S601	626	2'-5"	1	11"	1'-8"						2,272
S602	626	3'-2"	6	1'-0"							2,977
S603	20	30'-0"	ST.								901
S604	2	13'-8"	ST.								41
THE TOTAL WEIGHT OF SUPERSTRUCTURE REINFORCEMENT HAS BEEN CARRIED TO ESTIMATED QUANTITIES SHEET 2 / 11											81,601

**NOTES**

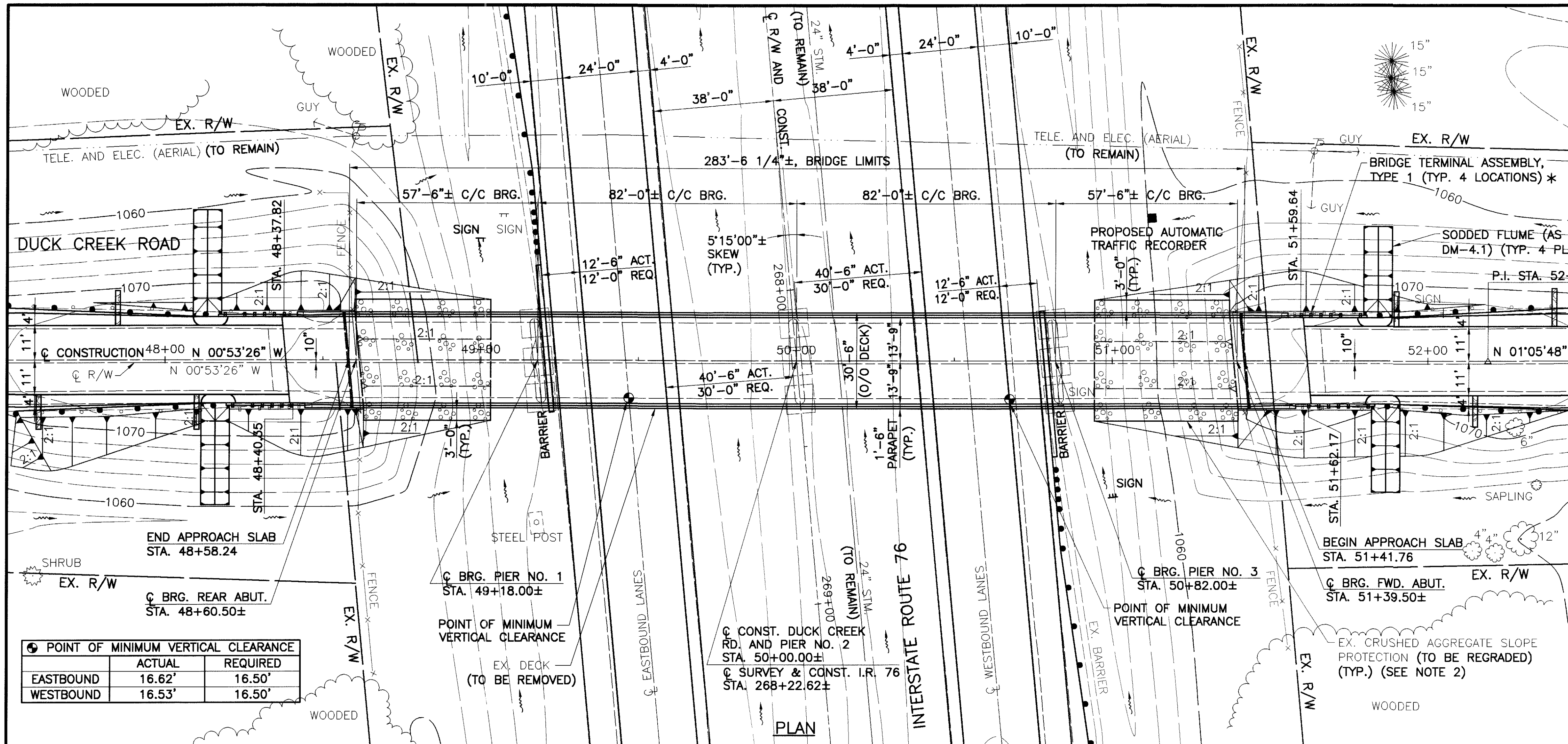
- ALL REINFORCING BARS SHALL BE EPOXY COATED.
- THE BAR SIZE NUMBER IS SPECIFIED ON THE PLANS IN THE BAR MARK COLUMN. THE FIRST DIGIT WHERE THREE DIGITS ARE USED, INDICATES THE BAR SIZE NUMBER. FOR EXAMPLE, P601 IS A NO. 6 BAR. BAR DIMENSIONS SHOWN ARE OUT TO OUT UNLESS OTHERWISE INDICATED. "R" INDICATES INSIDE RADIUS, UNLESS OTHERWISE NOTED. "STD." WRITTEN IN PLACE OF A DIMENSION, INDICATES A STANDARD BEND AT THE END OF THE BAR.

**BAR MARK LEGEND:**

A = ABUTMENT S = SUPERSTRUCTURE







**NOTES**

- ① EARTHWORK LIMITS SHOWN ARE APPROXIMATE. ACTUAL SLOPES SHALL CONFORM TO PLAN CROSS SECTIONS.
- ② THE EXISTING CRUSHED AGGREGATE SLOPE PROTECTION SHALL BE REGRADED AS DIRECTED BY THE ENGINEER. SEE ROADWAY GENERAL NOTES.



\* TO BE INCLUDED WITH ROADWAY QUANTITIES FOR PAYMENT

**BENCHMARK NO. 9**  
 CONCRETE MONUMENT WITH CENTERED 1/2" REBAR FOUND ON CENTERLINE OF INTERSTATE ROUTE 76. STA. 264+99.16, 0.12' LT. ELEV. = 1054.66

**BENCHMARK NO. 10**  
 CONCRETE MONUMENT WITH CENTERED 1/2" REBAR FOUND ON CENTERLINE OF INTERSTATE ROUTE 76. STA. 272+99.16, 0.06' LT. ELEV. = 1059.52

**DESIGN DESIGNATION**

CURRENT ADT (2002):	780
DESIGN ADT (2022):	920
DESIGN ADTT (2022):	28

**EXISTING STRUCTURE**

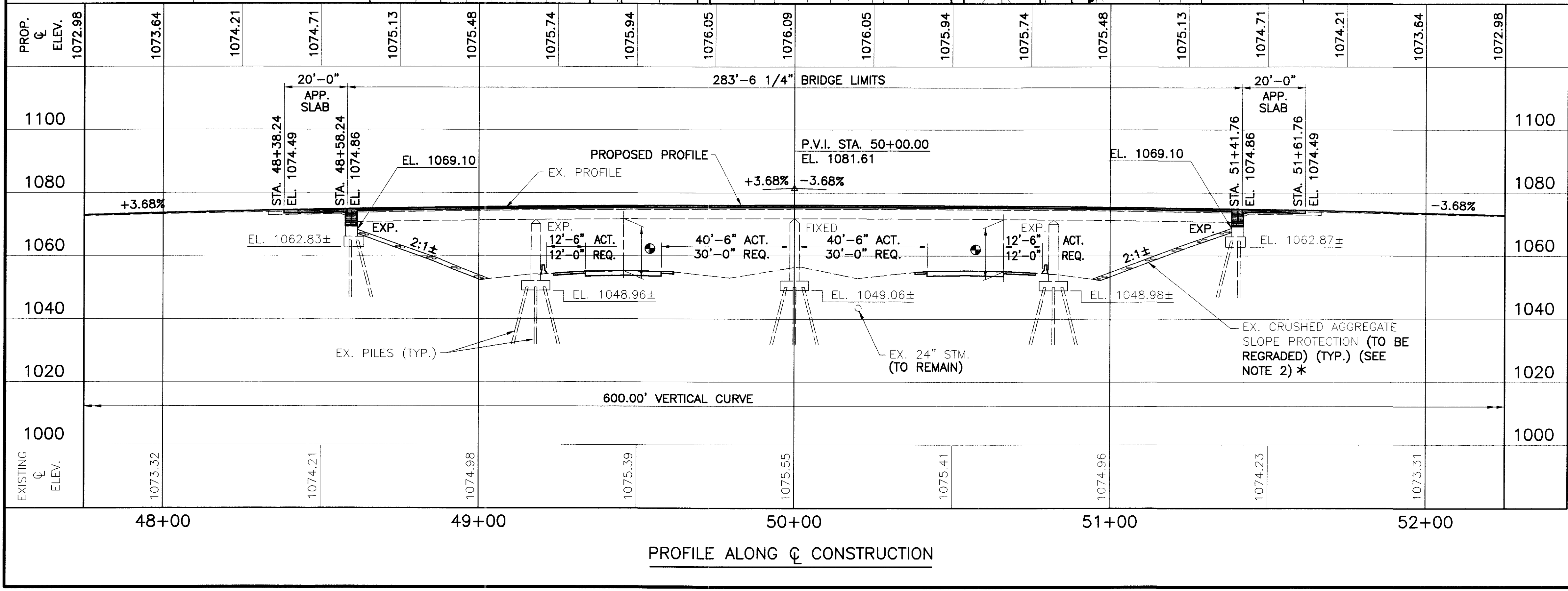
TYPE: CONTINUOUS STEEL BEAM WITH REINFORCED CONCRETE DECK ON REINFORCED CONCRETE ABUTMENTS AND CAP AND COLUMN PIERS ON PILING  
 SPANS: 57'-6"±, 82'-0"±, 82'-0"± AND 57'-6"± C/C BEARINGS  
 ROADWAY: 24'-0"± F/F CURBS  
 ALIGNMENT: TANGENT  
 SKEW: 5'15'00"± R.F.  
 LOADING: CF-130  
 WEARING SURFACE: CONCRETE  
 APPROACH SLABS: 25'-0"± (AS-1-67)  
 BUILT: 1967  
 CONDITION: FAIR  
 STRUCTURE FILE NO.: 5002885

**PROPOSED STRUCTURE**

PROPOSED WORK: EXISTING CONTINUOUS STEEL BEAM WITH NEW REINFORCED CONCRETE COMPOSITE DECK ON MODIFIED SEMI-INTEGRAL REINFORCED CONCRETE ABUTMENTS AND EXISTING CONCRETE PIERS  
 SPANS: 57'-6"±, 82'-0"±, 82'-0"± AND 57'-6"± C/C BEARINGS  
 ROADWAY: 27'-6" TOE/TOE PARAPET  
 ALIGNMENT: TANGENT  
 SKEW: 5'15'00"± R.F.  
 WEARING SURFACE: MONOLITHIC CONCRETE  
 APPROACH SLABS: 20'-0" (AS-1-81)  
 LOADING: HS20-44 AND ALTERNATE MILITARY  
 CROWN: 3/16" PER FOOT SLOPE  
 LONGITUDE: N 80° 54' 21"  
 LATITUDE: W 41° 06' 22"

**POINT OF MINIMUM VERTICAL CLEARANCE**

	ACTUAL	REQUIRED
EASTBOUND	16.62'	16.50'
WESTBOUND	16.53'	16.50'



PROFILE ALONG C CONSTRUCTION

DATE: 05/01/03  
 CAD FILE: 0508-SITE  
 OPERATOR: MPB/CAF  
 SCALE: 1"=20'

DESIGN AGENCY: FINKBEINER, PETTIS & STROUT, INC.  
 520 S. MAIN STREET, SUITE 2400  
 AKRON, OHIO 44311-1010  
 DATE: 5/03  
 REVIEWED: D.L.G.  
 STRUCTURE FILE NO.: 5002885  
 DRAWN: C.A.F.  
 CHECKED: R.B.B.  
 MAHONING COUNTY  
 STA. 48+58.24  
 TO STA. 51+41.76  
 SITE PLAN  
 BRIDGE NO. MAH-76-0508  
 DUCK CREEK ROAD OVER INTERSTATE ROUTE 76  
 MAH - 76 - 3.08  
 1 / 11  
 233  
 243

ESTIMATED QUANTITIES

CALC. BY: C.A.F. DATE: 12/01  
 CHKD. BY: R.K.Z. DATE: 12/01

AS  
PER  
PLAN

ITEM	ITEM EXT.	TOTAL	UNIT	DESCRIPTION	ABUTS.	PIERS	SUPER	GEN'L.	SHEET
202	11201		LUMP	PORTIONS OF STRUCTURE REMOVED, AS PER PLAN				LUMP	2, 5
503	11100		LUMP	COFFERDAMS, CRIBS AND SHEETING				LUMP	
503	21301		LUMP	UNCLASSIFIED EXCAVATION, AS PER PLAN				LUMP	3, 5
509	10000	88,694	POUND	EPOXY COATED REINFORCING STEEL	7,093		81,601		
510	10000	40	EACH	DOWEL HOLES WITH NONSHRINK, NONMETALLIC GROUT	40				
511	45500	18	CU.YD.	CLASS C CONCRETE, ABUTMENT	4				
511	50000	274	CU.YD.	CLASS HP CONCRETE, BRIDGE DECK			274		8
511	50100	66	CU.YD.	CLASS HP CONCRETE, BRIDGE DECK (PARAPET)			74		
511	50200	8	CU.YD.	CLASS HP CONCRETE, SUBSTRUCTURE	14				
511	52000		LUMP	CLASS HP CONCRETE, TEST SLAB				LUMP	
511	52500		LUMP	CLASS HP CONCRETE, TESTING				LUMP	
513	20000	2,076	EACH	WELDED STUD SHEAR CONNECTORS			2,076		
514	00100		LUMP	SURFACE PREPARATION OF EXISTING STRUCTURAL STEEL				LUMP	
514	00200		LUMP	FIELD PAINTING OF EXISTING STRUCTURAL STEEL, PRIME COAT				LUMP	
514	00300		LUMP	FIELD PAINTING OF EXISTING STRUCTURAL STEEL, INTERMEDIATE COAT				LUMP	
514	00400		LUMP	FIELD PAINTING OF EXISTING STRUCTURAL STEEL, FINISH COAT				LUMP	
514	00504	47	MANHR.	GRINDING FINES, TEARS, SLIVERS ON EXISTING STRUCTURAL STEEL			47		
516	14021	80	FEET	SEMI-INTEGRAL ABUTMENT EXPANSION JOINT SEAL, AS PER PLAN	80				3, 6
516	44201	8	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE) (10"x16"x3 1/8"), AS PER PLAN	8				8
516	47001		LUMP	JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE, AS PER PLAN				LUMP	3
516	46701	12	EACH	RESET BEARING, AS PER PLAN		12			2, 9
518	21200	36	CU.YD.	POROUS BACKFILL WITH FILTER FABRIC	36				
518	40000	57	FEET	6" PERFORATED CORRUGATED PLASTIC PIPE	57				
518	40011	65	FEET	6" NON-PERFORATED CORRUGATED PLASTIC PIPE, INCLUDING SPECIALS, AS PER PLAN	65				5, 6, 7
519	11101	87	SQ.FT.	PATCHING CONCRETE STRUCTURE, AS PER PLAN		87			3, 4
526	15000	125	SQ.YD.	REINFORCED CONCRETE APPROACH SLAB, (T=13")				125	
843	50000	173	SQ.FT.	PATCHING CONCRETE STRUCTURE WITH TROWELABLE MORTAR		173			
864	10100	884	SQ.YD.	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)	87	202	595		

ITEM 516 -- RESET BEARING, AS PER PLAN:

THIS ITEM SHALL INCLUDE ALL WORK NECESSARY TO PROPERLY ALIGN BRIDGE PIER BEARINGS, REPLACEMENT OF ANY DAMAGED SHEET LEAD (711.21), INSTALLATION OF ANY NECESSARY STEEL SHIMS OF THE SAME SIZE AS THE BEARINGS TO PROVIDE A SNUG FIT, AND REPOSITIONING OF THE BASE PLATE SO THE BEARINGS ARE VERTICALLY ALIGNED AT 60 DEGREES F. THE CONTRACTOR SHALL BE SURE THAT ALL BEARINGS ARE SHIMMED ADEQUATELY AND THAT NO BEAMS AND/OR BEARING DEVICES ARE "FLOATING". ALL SHIMS SHALL BE OF ASTM A36 STEEL. ALL WORK SHALL BE TO THE SATISFACTION OF THE ENGINEER. PAYMENT FOR ALL THE ABOVE DESCRIBED LABOR AND MATERIALS WILL BE MADE AT THE CONTRACT PRICE BID FOR ITEM 516, RESET BEARING, AS PER PLAN.

ITEM 509. EPOXY COATED REINFORCING STEEL:

ALL REINFORCING STEEL SHALL HAVE A MINIMUM OF 2 INCHES OF CONCRETE COVER UNLESS OTHERWISE NOTED.

CUT LINE CONSTRUCTION JOINT PREPARATION:

SAW CUT BOUNDARIES OF PROPOSED CONCRETE REMOVALS 1 INCH DEEP. REMOVE CONCRETE TO A ROUGH SURFACE. LEAVE THE EXISTING REINFORCING STEEL, IF REQUIRED IN THE PLANS, IN PLACE. INSTALL DOWEL BARS IF SPECIFIED. PRIOR TO CONCRETE PLACEMENT ABRASIVELY CLEAN JOINT SURFACES AND EXISTING EXPOSED REINFORCEMENT TO REMOVE LOOSE AND DISINTEGRATED CONCRETE AND LOOSE RUST. THOROUGHLY CLEAN THE JOINT SURFACE AND EXPOSED REINFORCING OF ALL DIRT, DUST, RUST OR OTHER FOREIGN MATERIAL BY THE USE OF WATER, AIR UNDER PRESSURE, OR OTHER METHODS THAT PRODUCE SATISFACTORY RESULTS. EXISTING REINFORCING STEEL DOES NOT HAVE TO HAVE A BRIGHT STEEL FINISH BUT REMOVE ALL PACK AND LOOSE RUST. THOROUGHLY DRENCH EXISTING CONCRETE SURFACES WITH CLEAN WATER AND ALLOW TO DRY TO A DAMP CONDITION BEFORE PLACING CONCRETE.

# STRUCTURAL GENERAL NOTES

REFERENCE SHALL BE MADE TO STANDARD DRAWINGS:

AS-1-81 REVISED 07-19-02 BR-1 REVISED 07-19-02  
 SICD-1-96 REVISED 07-19-02 RB-1-55 REVISED 02-02-59

AND TO SUPPLEMENTAL SPECIFICATIONS:

843 DATED 04-19-02 864 DATED 07-11-00

DESIGN SPECIFICATIONS:

THIS STRUCTURE CONFORMS TO "STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES" ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS, 17th EDITION, 2002 AND THE O.D.O.T. BRIDGE DESIGN MANUAL.

DESIGN LOADING:

HS20-44 AND ALTERNATE MILITARY LOADING.  
 FUTURE WEARING SURFACE OF 60 P.S.F.

DESIGN DATA:

SUPERSTRUCTURE:  
 CLASS HP CONCRETE - COMPRESSIVE STRENGTH 4500 P.S.I.  
 SUBSTRUCTURE:  
 CLASS C CONCRETE - COMPRESSIVE STRENGTH 4000 P.S.I.  
 CLASS HP CONCRETE - COMPRESSIVE STRENGTH 4000 P.S.I.  
 REINFORCING STEEL:  
 ASTM A615, A616 OR A617, GRADE 60, MINIMUM YIELD STRENGTH 60,000 P.S.I.  
 STRUCTURAL STEEL (LOAD PLATE):  
 ASTM A572/A709 GRADE 50, YIELD STRENGTH 50,000 P.S.I.

DECK PROTECTION METHOD:

EPOXY COATED REINFORCING STEEL, TOP AND BOTTOM MAT  
 2 1/2" CONCRETE COVER

SEALING OF CONCRETE SURFACES, (EPOXY-URETHANE)

MONOLITHIC WEARING SURFACE:

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

ITEM 202. PORTIONS OF STRUCTURE REMOVED, AS PER PLAN:

DESCRIPTION: THIS WORK CONSISTS OF THE REMOVAL OF CONCRETE DECKS INCLUDING SIDEWALKS, PARAPETS, RAILINGS, DECK JOINTS AND OTHER APPURTENANCES FROM STEEL SUPPORTING SYSTEMS (BEAMS, GIRDERS, CROSS FRAMES, ETC.). THE PROVISIONS OF ITEM 202 APPLY EXCEPT AS SPECIFIED BY THE FOLLOWING NOTES. PERFORM WORK CAREFULLY DURING DECK REMOVALS TO PROTECT PORTIONS OF SUCH SYSTEMS THAT ARE TO BE SALVAGED AND INCORPORATED INTO THE PROPOSED STRUCTURE. IN THIS RESPECT, THE USE OF EXPLOSIVES, HEADACHE BALLS AND/OR HOE RAM TYPE OF EQUIPMENT IS PROHIBITED.

RAILING: ALUMINUM RAILING SHALL BECOME THE PROPERTY OF THE OHIO DEPARTMENT OF TRANSPORTATION, DISTRICT 4. CONTRACTOR SHALL REMOVE AND DELIVER TO THE FOLLOWING ADDRESS:

OHIO DEPARTMENT OF TRANSPORTATION  
 DISTRICT 4  
 705 OAKWOOD STREET  
 RAVENNA, OHIO 44266

PROTECTION OF TRAFFIC: PRIOR TO DEMOLITION OF ANY PORTIONS OF THE EXISTING SUPERSTRUCTURE, SUBMIT PLANS FOR THE PROTECTION OF TRAFFIC (VEHICULAR, PEDESTRIAN, BOAT, ETC.) ADJACENT TO AND/OR UNDER THE STRUCTURE TO THE DIRECTOR AT LEAST 30 DAYS BEFORE CONSTRUCTION BEGINS. THESE PLANS SHALL INCLUDE PROVISIONS FOR DEVICES AND STRUCTURES THAT MAY BE NECESSARY TO ENSURE SUCH PROTECTION. MAINTAIN TEMPORARY VERTICAL CLEARANCES SPECIFIED ON THE PLANS OR IN THE PROPOSAL AT ALL TIMES EXCEPT AS OTHERWISE APPROVED BY THE DIRECTOR.

PROTECTION OF STEEL SUPPORT SYSTEMS: BEFORE DECK SLAB CUTTING IS PERMITTED, DRAW THE OUTLINE OF PRIMARY STEEL MEMBERS IN CONTACT WITH THE BOTTOM OF THE DECK ON THE SURFACE OF THE DECK. DRILL SMALL DIAMETER PILOT HOLES 2 INCHES OUTSIDE THESE LINES TO CONFIRM THE LOCATION OF FLANGE EDGES. DECK CUTS OVER OR WITHIN 2 INCHES OF FLANGE EDGES SHALL NOT EXTEND LOWER THAN THE BOTTOM LAYER OF DECK SLAB REINFORCING STEEL. CUTS MADE OUTSIDE 2 INCHES OF FLANGE EDGES MAY EXTEND THE FULL DEPTH OF THE DECK. PERFORM WORK CAREFULLY DURING CUTTING OF THE DECK SLAB, TO AVOID DAMAGING STEEL MEMBERS THAT ARE TO BE INCORPORATED INTO THE PROPOSED STRUCTURE.

PROTECTION OF PRESTRESSED CONCRETE SUPPORT SYSTEMS: BEFORE DECK SLAB CUTTING IS PERMITTED, DRAW THE OUTLINE OF PRIMARY PRESTRESSED CONCRETE MEMBERS IN CONTACT WITH THE BOTTOM OF THE DECK ON THE SURFACE OF THE DECK. DRILL SMALL DIAMETER PILOT HOLES 2 INCHES OUTSIDE THESE LINES TO CONFIRM THE LOCATION OF THE EDGES OF THOSE MEMBERS. DECK CUTS OVER OR WITHIN 2 INCHES OF FLANGE EDGES SHALL NOT EXTEND LOWER THAN THE BOTTOM LAYER OF DECK SLAB REINFORCING STEEL. CUTS MADE OUTSIDE 2 INCHES OF FLANGE EDGES MAY EXTEND THE FULL DEPTH OF THE DECK. PERFORM WORK CAREFULLY DURING CUTTING OF THE DECK SLAB TO AVOID DAMAGING PRESTRESSED CONCRETE MEMBERS THAT ARE TO BE INCORPORATED INTO THE PROPOSED STRUCTURE.

REMOVAL METHODS: THE CONTRACTOR MAY REMOVE CONCRETE BY CUTTING AND BY MEANS OF HAND OPERATED PNEUMATIC HAMMERS EMPLOYING POINTED OR BLUNTED CHISEL TYPE TOOLS. FOR REMOVALS OVER BRIDGE MEMBERS (PRESTRESSED BOX BEAM, I-BEAM, STEEL BEAM, STEEL GIRDER, ETC.), THE CONTRACTOR MAY USE A HAMMER HEAVIER THAN 35 POUNDS BUT NOT TO EXCEED 90 POUNDS UNLESS APPROVED BY THE ENGINEER. REMOVAL METHODS OVER BRIDGE MEMBERS SHALL ENSURE ADEQUATE DEPTH CONTROL AND PREVENT NICKING OR GOUGING THE PRIMARY STEEL MEMBERS.

DECK REMOVALS: DUE TO THE POSSIBLE PRESENCE OF WELDED ATTACHMENTS TO EXISTING STRUCTURAL STEEL (FINISHING MACHINE, SCUPPER AND FORM SUPPORTS, ETC.), PERFORM WORK CAREFULLY DURING DECK REMOVAL TO AVOID DAMAGING STRINGERS WHICH ARE TO REMAIN. REPLACE OR REPAIR STRINGERS DAMAGED BY THE REMOVAL OPERATIONS AT NO COST TO THE PROJECT. SUBMIT PROPOSED REPAIRS, DEVELOPED BY AN OHIO REGISTERED PROFESSIONAL ENGINEER, IN WRITING TO THE DIRECTOR AT LEAST 20 DAYS BEFORE PERFORMING REPAIR WORK.

DECK REMOVAL - COMPOSITE DECK DESIGNS- STEEL SUPERSTRUCTURES: DUE TO THE PRESENCE OF WELDED STUDS TO THE EXISTING STRUCTURAL STEEL, SUBMIT A DETAILED PROCEDURE OF THE DECK REMOVAL TO THE DIRECTOR AT LEAST 30 DAYS BEFORE CONSTRUCTION BEGINS. THE PROCEDURE SHALL INCLUDE ALL DETAILS, EQUIPMENT AND METHODS TO BE USED FOR REMOVAL OF THE CONCRETE OVER THE FLANGES AND AROUND THE STUDS. REPLACE OR REPAIR STEEL AND STUDS DAMAGED BY THE REMOVAL OPERATIONS AT NO COST TO THE PROJECT. SUBMIT PROPOSED REPAIRS, DEVELOPED BY AN OHIO REGISTERED PROFESSIONAL ENGINEER, IN WRITING TO THE DIRECTOR AT LEAST 20 DAYS BEFORE PERFORMING REPAIR WORK.

DECK REMOVALS - COMPOSITE DECK DESIGNS - PRESTRESSED SUPERSTRUCTURES: DUE TO THE PRESENCE OF COMPOSITE REINFORCING STEEL BETWEEN THE DECK AND THE PRESTRESSED BEAM FLANGES, SUBMIT A DETAILED PROCEDURE OF THE DECK REMOVAL TO THE DIRECTOR AT LEAST 30 DAYS BEFORE CONSTRUCTION BEGINS. THE PROCEDURE SHALL INCLUDE ALL DETAILS, EQUIPMENT AND METHODS OF REMOVAL OVER THE PRESTRESSED BEAMS AND AROUND THE COMPOSITE REINFORCING STEEL. REPLACE OR REPAIR PRESTRESSED MEMBERS AND COMPOSITE REINFORCING DAMAGED BY THE REMOVAL OPERATIONS AT NO COST TO THE PROJECT. SUBMIT PROPOSED REPAIRS, DEVELOPED BY AN OHIO REGISTERED PROFESSIONAL ENGINEER, IN WRITING TO THE DIRECTOR AT LEAST 20 DAYS BEFORE PERFORMING REPAIR WORK.

EXTRANEOUS MEMBERS: EXISTING EXTRANEOUS MEMBERS (I.E., FINISHING MACHINE AND FORM SUPPORTS, ETC., AND THE SUPPORT FOR SCUPPERS AND BULB ANGLES WHICH ARE TO BE REMOVED) ATTACHED BY WELDED CONNECTION TO THE DESIGNATED TENSION PORTIONS OF THE TOP FLANGES OF EXISTING STEEL MEMBERS AND GRIND THE FLANGE SURFACES GROUND SMOOTH. CAREFULLY GRIND PARALLEL TO THE FLANGES.

LOADING LIMITATIONS: NO PART OF THE STRUCTURE SHALL BE SUBJECTED TO UNIT STRESSES THAT EXCEED 136.5% OF ALLOWABLE UNIT STRESSES AS DEFINED IN THE AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES DUE EITHER TO DEMOLITION, ERECTION OR CONSTRUCTION METHODS, OR TO THE USE OR MOVEMENT OF DEMOLITION OR ERECTION EQUIPMENT ON OR ACROSS THE STRUCTURE. SUBMIT STRUCTURAL ANALYSIS COMPUTATIONS, BY AN OHIO REGISTERED PROFESSIONAL ENGINEER, SHOWING THE ALLOWABLE STRESSES AND THE MAXIMUM STRESSES PRODUCED BY THE REMOVAL METHODS OR EQUIPMENT TO THE DIRECTOR AT LEAST 20 DAYS BEFORE CONSTRUCTION BEGINS.

MEASUREMENT AND PAYMENT: THE DEPARTMENT WILL MEASURE THE QUANTITY OF REMOVALS ON A LUMP SUM BASIS. THE DEPARTMENT WILL PAY FOR THE ACCEPTED QUANTITIES OF REMOVALS AT THE CONTRACT PRICE FOR ITEM 202, AS PER PLAN NOTE.

DESIGN AGENCY: FINKBEINER, PETTIS & STROUT, INC.  
 520 S. MAIN STREET, SUITE 2400  
 AKRON, OHIO 44311-1010

DATE: 5/03  
 REVIEWED: D.L.G.  
 DRAWN: C.A.F.  
 DESIGNED: R.K.Z.

STRUCTURE FILE NO.: 5002885

ESTIMATED QUANTITIES AND STRUCTURAL GENERAL NOTES  
 BRIDGE NO. MAH-76-0508  
 DUCK CREEK ROAD OVER INTERSTATE ROUTE 76

MAH - 76 - 3.08

2 / 11

234  
 243

# STRUCTURAL GENERAL NOTES

## ITEM 516. JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE, AS PER PLAN:

GENERAL: THIS WORK CONSISTS OF RAISING OR RE-POSITIONING EXISTING STRUCTURES TO THE DIMENSIONS AND REQUIREMENTS DEFINED IN THE PROJECT PLANS.

SUBMITTAL REQUIREMENTS: AN OHIO REGISTERED ENGINEER SHALL PREPARE, SEAL AND DATE PLANS FOR A JACKING SYSTEM, INCLUDING ANY TEMPORARY OR PERMANENT SUPPORTS, SUFFICIENT TO PERFORM THE WORK DESCRIBED IN THE PLANS. SUBMIT THREE SETS OF THESE PLANS TO THE DIRECTOR FOR APPROVAL AT LEAST THIRTY (30) DAYS BEFORE ACTUAL WORK IS TO BEGIN.

JACKING SUBMITTALS SHALL INCLUDE AT LEAST THE FOLLOWING:

1. THE SIGNATURE AND NUMBER, OR PROFESSIONAL SEAL, OF THE OHIO REGISTERED PROFESSIONAL ENGINEER WHO PREPARED THE SUBMITTAL.
2. CALCULATIONS AND ANALYSES OF THE STRUCTURE TO DETERMINE AND DEFINE THE ACTUAL LOADING APPLIED AT THE JACKING POINTS.
3. A DRAWING SHOWING THE PHYSICAL AND DIMENSIONAL POSITIONS OF THE JACKS WITH RESPECT TO THE STRUCTURE INCLUDING CLEARANCES AND CENTER OF LIFT.
4. A SCHEMATIC LAYOUT OF JACKS, CHECK VALVES, PUMPS WITH 3 WAY RETRACTOR VALVE, PRESSURE GAGES, FLOW CONTROL VALVES, ETC. IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS. ALL JACKS FOR EACH ABUTMENT OR PIER SHALL BE CONNECTED TOGETHER. ALL JACKS AT EACH ABUTMENT OR PIER SHALL BE THE SAME SIZE.
5. ANALYSIS AND CALCULATIONS OF THE STRESSES INDUCED OR CREATED IN THE STRUCTURE AND ANY TEMPORARY OR PERMANENT SUPPORTS. DESIGN CALCULATIONS FOR ANY TEMPORARY OR PERMANENT SUPPORTS.
6. PHYSICAL DIMENSIONS, MATERIALS, AND FABRICATION DETAILS OF ANY TEMPORARY OR PERMANENT SUPPORTS. HORIZONTAL AND VERTICAL MOVEMENT RESTRAINT SHALL BE PROVIDED.
7. A STEP BY STEP PROCEDURE DETAILING ALL STEPS IN THE JACKING OPERATION.
8. METHOD OF ATTACHMENT TO STRUCTURAL MEMBERS. WELDING TO TENSION AREAS WILL NOT BE PERMITTED.

JACKING SYSTEM REQUIREMENTS: THE ENTIRE SYSTEM INCLUDING JACKS SHALL HAVE 20% MORE CAPACITY THAN REQUIRED BASED ON CALCULATED LOADS. FOR LIFTS GREATER THAN 1 INCH, JACKS SHALL HAVE LOCKING NUTS TO POSITIVELY LOCK AND SUPPORT THE STRUCTURE DURING THE LIFT. JACKS SHALL HAVE A SWIVEL LOAD CAP, A DOMED PISTON HEAD OR SOME OTHER DEVICE TO PROTECT AGAINST THE EFFECTS OF SIDE LOAD ON THE JACK. DO NOT USE JACKS ALONE TO SUPPORT LOADS EXCEPT DURING THE ACTUAL JACKING OPERATION. USE TEMPORARY SUPPORTS, BLOCKING OR OTHER METHODS APPROVED BY THE DIRECTOR. DO NOT USE SINGLE ACTING RAMS WITH NO OVER-TRAVEL PROTECTION SYSTEM. HAVE SPARE EQUIPMENT AVAILABLE ON SITE IN ORDER TO PROCEED WITH THE JACKING IN THE EVENT OF BREAKDOWN. PROVIDE A LIST OF SPARE EQUIPMENT TO THE ENGINEER.

JACKING OPERATION REQUIREMENTS: AT A MINIMUM, A JACKING OPERATION SHALL LIFT ALL BEAMS AT ONE ABUTMENT OR PIER SIMULTANEOUSLY. THE ONLY EXCEPTION IS THE SITUATION WHERE THE WORK INVOLVES REPLACING OR REHABILITATING INDIVIDUAL BEARINGS; NO PERMANENT SHIMMING IS REQUIRED AND THE HEIGHT OF THE LIFT SHALL NOT EXCEED 1/4 INCH. THE MAXIMUM DIFFERENTIAL JACKING HEIGHT BETWEEN ADJACENT ABUTMENTS OR PIERS SHALL BE 1 INCH OR LESS. IF THIS 1 INCH LIMIT IS TO BE EXCEEDED, PROVIDE CALCULATIONS SHOWING THAT THE SUPERSTRUCTURE COMPONENTS WILL NOT BE TEMPORARILY STRESSED BEYOND ALLOWABLE STRESSES AND THAT NO PERMANENT STRESSES WILL BE INDUCED IN THE COMPONENTS AFTER THEY OBTAIN THEIR FINAL POSITION. IF, DURING THE JACKING OPERATIONS, CRACKING OF THE CONCRETE SUPERSTRUCTURE, SEPARATION OF THE CONCRETE DECK FROM THE STEEL STRINGERS, OR OTHER DAMAGE TO THE STRUCTURE IS VISUALLY OBSERVED, IMMEDIATELY CEASE THE JACKING OPERATION AND INSTALL SUPPORTS TO THE SATISFACTION OF THE ENGINEER. ANALYZE THE DAMAGE AND SUBMIT A METHOD OF CORRECTION TO THE ENGINEER FOR APPROVAL. EPOXY INJECT ALL BEAMS THAT SEPARATE FROM THE DECK FOR THE DISTANCE OF THE SEPARATION IN ACCORDANCE WITH ODOT'S PROPOSAL NOTE "CONCRETE REPAIR BY EPOXY INJECTION". THE DEPARTMENT WILL NOT PAY FOR THE COST OF THIS EPOXY INJECTION OR OTHER REQUIRED REPAIRS. THE BRIDGE BEARINGS SHALL BE FULLY SEATED AT ALL CONTACT AREAS. IF FULL SEATING IS NOT ATTAINED, SUBMIT A REPAIR PLAN TO THE ENGINEER. THE DEPARTMENT WILL NOT PAY FOR THE REPAIR COSTS TO ENSURE FULL SEATING ON BEARINGS.

METHOD OF MEASUREMENT: THE DEPARTMENT WILL MEASURE THIS WORK ON A LUMP SUM BASIS.

BASIS OF PAYMENT: THE DEPARTMENT WILL PAY FOR THE ACCEPTED QUANTITIES AT THE CONTRACT PRICE FOR ITEM 516, JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE, AS PER PLAN.

## INSPECTION OF EXISTING STRUCTURAL STEEL:

THE ENGINEER WILL VISUALLY INSPECT ALL EXISTING BUTT-WELDED SPLICES AND/OR TOP FLANGE COVER PLATE FILLET WELDS TO ENSURE THE WELDS, PLATES AND BEAMS OR GIRDERS ARE FREE OF DEFECTS OR CRACKS. IF NECESSARY, REMOVE ALL DECK SLAB HAUNCH FORMS IMMEDIATELY ADJACENT TO SUCH WELDS THAT MAY INTERFERE WITH THE ENGINEER'S INSPECTION. THE INSPECTION WILL NOT TAKE PLACE UNTIL THE TOP FLANGES ARE CLEANED ACCORDING TO 511.10, BUT IT WILL NOT BE DONE BEFORE THE DECK SLAB REINFORCEMENT IS INSTALLED. THE DEPARTMENT WILL PAY FOR THE COST ASSOCIATED WITH THIS INSPECTION WITH ITEM 511, CLASS HP CONCRETE, BRIDGE DECK. THE ENGINEER WILL REPORT ALL CRACKS FOUND TO THE OFFICE OF CONSTRUCTION ADMINISTRATION, BRIDGE CONSTRUCTION SPECIALIST, ALONG WITH SPECIFIC INFORMATION ON LOCATION OF CRACKS, LENGTH, AND DEPTH SO AN EVALUATION AND REPAIR OR REPLACEMENT RECOMMENDATION CAN BE MADE.

## STRUCTURAL VERTICAL CLEARANCE:

THIS BRIDGE SHALL BE SURVEYED TO DETERMINE THE ACTUAL FINAL VERTICAL CLEARANCE OF THE BRIDGE OVER THE FEATURE INTERSECTED. THE SURVEY SHALL BE PERFORMED BY A SURVEYOR REGISTERED BY THE STATE OF OHIO. THE SURVEY SHALL BE ACCURATE TO 1/100 OF A FOOT, (0.01 FT.) AND BE MADE AT THE LOW POINT OF THE STRUCTURE ABOVE EVERY SHOULDER AND LANE LINE AND SHALL INCLUDE MOMENT PLATES, SPLICE PLATES, BOLT HEADS, OR ANY OTHER ATTACHED MEMBER OR FIXTURE.

A SKETCH SHALL BE PRODUCED SHOWING THE BRIDGE NUMBER, DATE SURVEYED AND SURVEYOR AS WELL AS DIRECTIONAL NORTH, THE FEATURE INTERSECTED, THE SHOULDER AND LANE LINES, DIRECTION OF TRAFFIC AND EACH CLEARANCE POINT. THE LOWEST CLEARANCE FOR EACH DIRECTION SHALL BE CLEARLY NOTED. THE SKETCH SHALL BE SIGNED AND SEALED BY THE SURVEYOR. THE SKETCH AND SURVEY FIELD NOTES SHALL BE SUBMITTED TO THE DISTRICT HIGHWAY MANAGEMENT ADMINISTRATOR FOR INCLUSION INTO THE STATE BRIDGE INVENTORY SYSTEM. PAYMENT CONSIDERED INCIDENTAL TO ITEM 516, JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE, AS PER PLAN.

## ABBREVIATIONS:

N.F. = NEAR FACE	CONST. = CONSTRUCTION
F.F. = FAR FACE	P.E.J.F. = PREFORMED EXPANSION JOINT
E.F. = EACH FACE	FILLER
EL. = ELEVATION	C.P.P. = CORRUGATED PLASTIC PIPE
TYP. = TYPICAL	MIN. = MINIMUM
STA. = STATION	EA. = EACH
FWD. = FORWARD	DIA. = DIAMETER
SPA. = SPACING	EQUAL = EQUALLY
BOTT. = BOTTOM	EX. = EXISTING
ABUT. = ABUTMENT	BRG. = BEARING
APPR. = APPROACH	STD. = STANDARD
DWG. = DRAWING	HMWM = HIGH MOLECULAR WEIGHT
ACT. = ACTUAL	METHACRYLATE
REQ. = REQUIRED	HPC = HIGH PERFORMANCE CONCRETE

## 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 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 513.04.

BASE CONTRACT BID PRICES UPON A RECOGNITION OF THE UNCERTAINTIES DESCRIBED ABOVE AND UPON A PREBID EXAMINATION OF THE EXISTING STRUCTURE. HOWEVER, THE DEPARTMENT WILL PAY FOR ALL PROJECT WORK BASED UPON ACTUAL DETAILS AND DIMENSIONS WHICH HAVE BEEN VERIFIED IN THE FIELD.

## ITEM 516 SEMI-INTEGRAL ABUTMENT EXPANSION JOINT SEAL AS PER PLAN:

INSTALL A 3 FOOT WIDE STRIP, 3/32" THICK, GENERAL PURPOSE, HEAVY DUTY NEOPRENE SHEET WITH NYLON FABRIC REINFORCEMENT AT LOCATIONS SHOWN IN THE PLANS. SECURE THE 3 FOOT WIDE NEOPRENE SHEETING TO THE CONCRETE WITH 1 1/4" X #10 GAGE (LENGTH X SHANK DIAMETER) GALVANIZED BUTTON HEAD SPIKES THROUGH A 1 INCH OUTSIDE DIAMETER, #10 GAGE GALVANIZED WASHER. MAXIMUM FASTENER SPACING IS 9 INCHES. OTHER SIMILAR GALVANIZED DEVICES WHICH WILL NOT DAMAGE EITHER THE NEOPRENE OR THE CONCRETE MAY BE USED SUBJECT TO THE APPROVAL OF THE ENGINEER.

CENTER THE NEOPRENE STRIPS ON ALL JOINTS. FOR HORIZONTAL JOINTS, SECURE THE HORIZONTAL NEOPRENE STRIP BY USING A SINGLE LINE OF FASTENERS, STARTING AT 6 INCHES, +/-, FROM THE TOP OF THE NEOPRENE STRIP. FOR THE VERTICAL JOINTS SECURE THE VERTICAL NEOPRENE STRIP BY USING A SINGLE VERTICAL LINE OF FASTENERS, STARTING AT 6 INCHES, +/-, FROM THE VERTICAL EDGE OF THE NEOPRENE STRIP NEAREST TO THE CENTERLINE OF THE ROADWAY. FOR VERTICAL JOINTS, INSTALL 2 ADDITIONAL FASTENERS AT 6 INCHES, CENTER TO CENTER, ACROSS THE TOP OF THE NEOPRENE STRIP ON THE SAME SIDE OF THE VERTICAL JOINT AS THE SINGLE VERTICAL ROW OF FASTENERS IS LOCATED.

THE VERTICAL NEOPRENE STRIPS SHOULD COMPLETELY OVERLAP THE HORIZONTAL STRIPS. LAPS IN THE LENGTH OF THE HORIZONTAL STRIPS DUE TO MATERIAL MANUFACTURING SHALL BE AT LEAST 1 FOOT IN LENGTH, IF NOT VULCANIZED OR ADHESIVE BONDED, OR 6 INCHES IN LENGTH IF THE LAP IS VULCANIZED OR ADHESIVE BONDED. NO LAPS ARE ACCEPTABLE IN VERTICALLY INSTALLED NEOPRENE STRIPS.

THE NEOPRENE SHEETING SHALL BE 3/32" THICK GENERAL PURPOSE, HEAVY DUTY NEOPRENE SHEET WITH NYLON FABRIC REINFORCEMENT. THE SHEETING SHALL BE "FAIRPRENE NUMBER NN-0003", BY E.I. DUPONT DE NEMOURS AND COMPANY, INC., "WINGPRENE" BY THE GOODYEAR TIRE AND RUBBER COMPANY, OR AN APPROVED ALTERNATE. THE NEOPRENE SHEETING SHALL CONFORM TO THE FOLLOWING:

DESCRIPTION OF TEST	ASTM METHOD	REQUIREMENT
THICKNESS, INCHES	D 751	0.094 +/- .01
BREAKING STRENGTH, GRAB WXF, LBS, MINIMUM	D 751	700 X 700
ADHESIVE STRIP 1" x 2" LONG, LBS. MINIMUM	D 751	9
BURST STRENGTH (MULLEN) PSI, MINIMUM	D 751	1400
HEAT AGING 70 HR. 212°F, 180 BEND WITHOUT CRACKING	D 2136	NO CRACKING OF COATING
LOW TEMPERATURE BRITTLINESS 1 HOUR AT -40°F, BEND AROUND 1/4" MANDREL	D 2136	NO CRACKING OF COATING

PAYMENT FOR LABOR, MATERIALS AND INSTALLATION OF THESE ITEMS SHALL BE INCLUDED IN ITEM 516 SEMI-INTEGRAL ABUTMENT EXPANSION JOINT SEAL, AS PER PLAN.

## ITEM 503. UNCLASSIFIED EXCAVATION, AS PER PLAN:

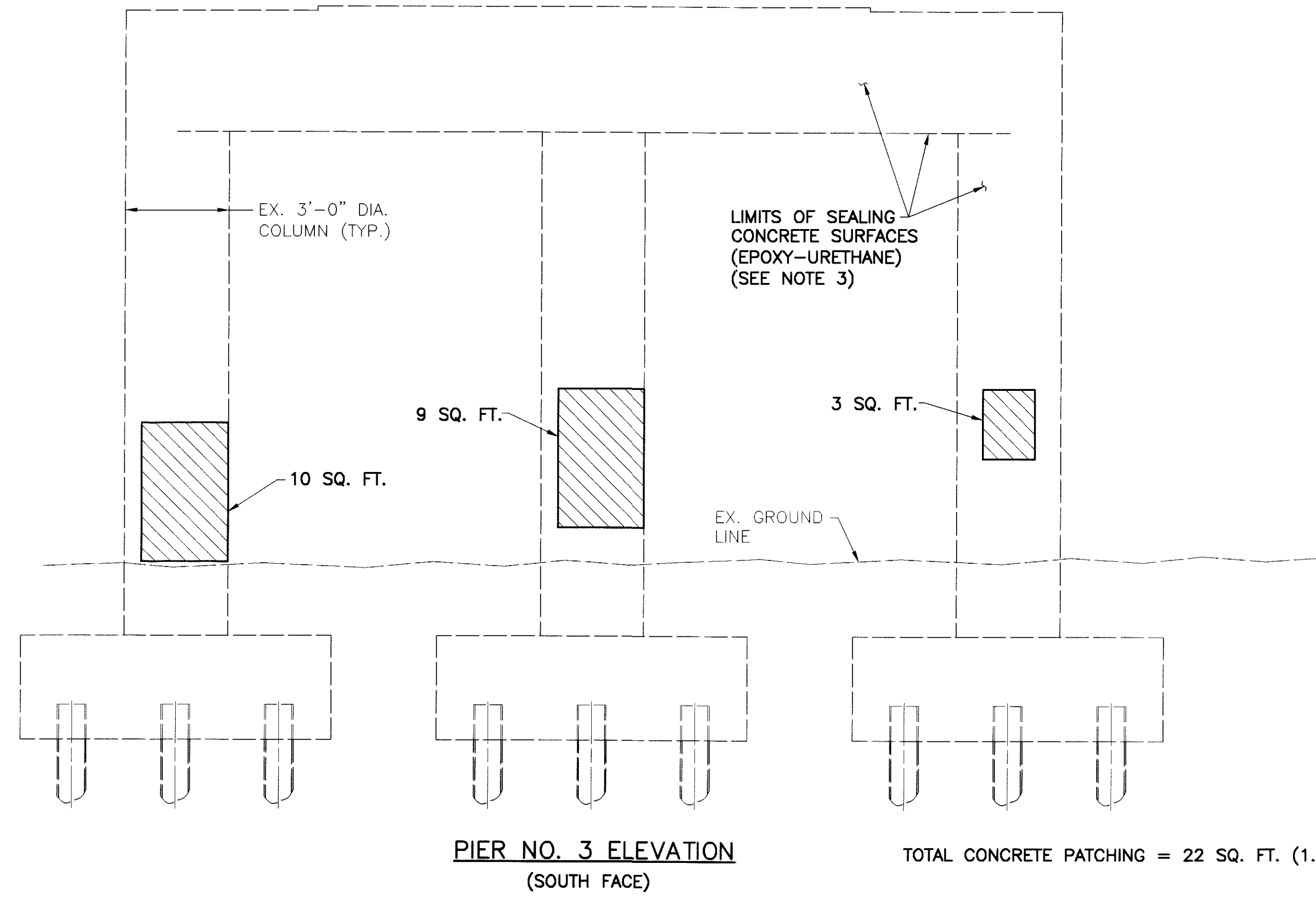
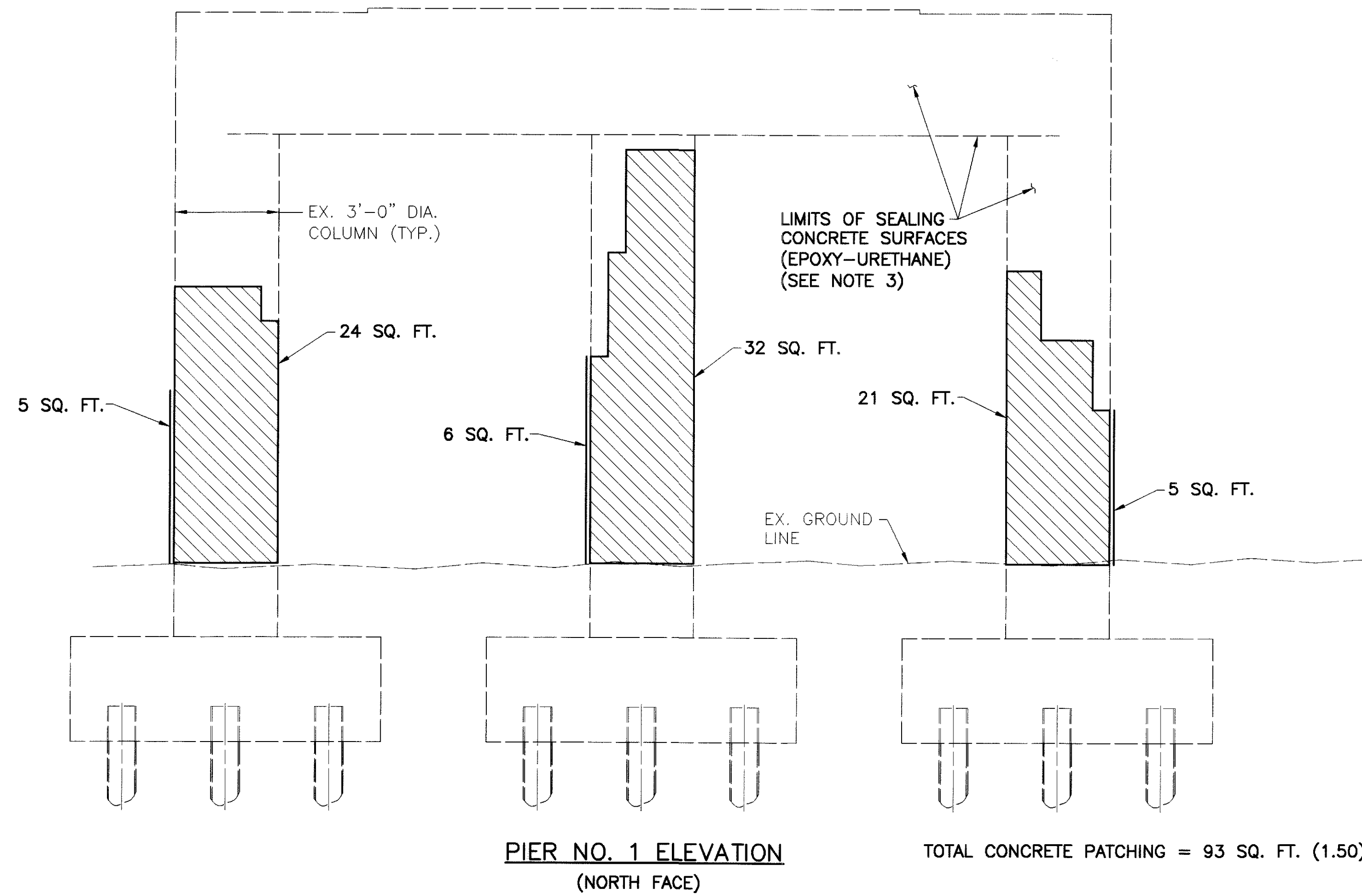
THE BACKFILL MATERIAL BEHIND THE ABUTMENTS SHALL BE TYPE B GRANULAR MATERIAL, 703.16.C, PLACED AND COMPACTED IN 6 INCH LIFTS.

## ITEM 519. PATCHING CONCRETE STRUCTURES, AS PER PLAN:

PRIOR TO THE SURFACE CLEANING SPECIFIED IN 519.04 AND WITHIN 24 HOURS OF PLACING PATCHING MATERIAL, BLAST CLEAN ALL SURFACES TO BE PATCHED INCLUDING THE EXPOSED REINFORCING STEEL. ACCEPTABLE METHODS INCLUDE HIGH-PRESSURE WATER BLASTING WITH OR WITHOUT ABRASIVES IN THE WATER, ABRASIVE BLASTING WITH CONTAINMENT, OR VACUUM ABRASIVE BLASTING.

## CONCRETE PARAPETS:

AS SOON AS A CONCRETE SAW CAN BE OPERATED WITHOUT DAMAGING THE FRESHLY PLACED CONCRETE, SAWCUT 1 1/4" DEEP CONTROL JOINTS INTO THE PERIMETER OF THE CONCRETE PARAPET STARTING AND ENDING AT THE ELEVATION OF THE CONCRETE DECK. PLACE THE SAWCUTS AT A MINIMUM OF 6 FEET AND A MAXIMUM OF 10 FEET CENTERS. USE AN EDGE GUIDE, FENCE OR JIG TO ENSURE THAT THE CUT JOINT IS STRAIGHT, TRUE, AND ALIGNED ON ALL FACES OF THE PARAPET. THE JOINT WIDTH SHALL BE THE WIDTH OF THE SAW BLADE, A NOMINAL WIDTH OF 1/4 INCH. SEAL THE PERIMETER OF THE DEFLECTION CONTROL JOINT TO A MINIMUM DEPTH OF 1 INCH WITH A POLYURETHANE OR POLYMERIC MATERIAL CONFORMING TO ASTM C920, TYPE S. LEAVE THE BOTTOM 1/2 INCH OF THE INSIDE AND OUTSIDE FACE UNSEALED TO ALLOW WATER TO ESCAPE.



**NOTES**

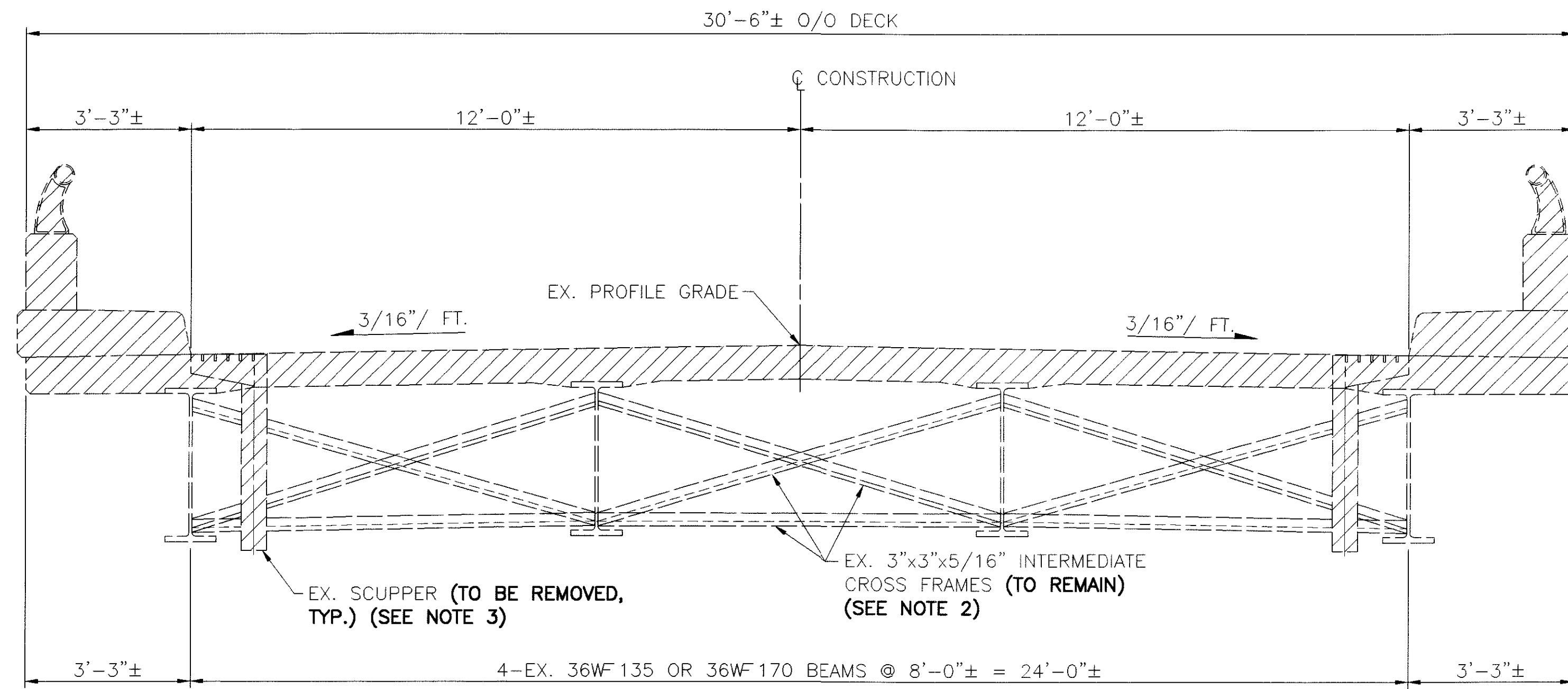
- ① THE AREAS OF REPAIR SHOWN ARE APPROXIMATE AND ARE BASED ON A FIELD INSPECTION COMPLETED IN AUGUST, 2000. FINAL DETERMINATION OF THE AREAS TO BE REPAIRED WILL BE MADE BY THE ENGINEER AT THE TIME OF CONSTRUCTION.
- ② THE TOTAL CONCRETE PATCHING AREA INDICATED ON THE DETAILS HAS BEEN INCREASED BY 50% TO ACCOUNT FOR ANY FURTHER DETERIORATION THAT MAY HAVE OCCURED SINCE THE FIELD INSPECTION.
- ③ SEAL ALL THE EXPOSED SURFACES OF PIERS 1, 2 AND 3 EXCEPT FOR THE TOP OF EACH PIER CAP.
- ④ ITEM 519, PATCHING CONCRETE STRUCTURE, AS PER PLAN, SHOULD BE USED WHERE THE REPAIR DEPTH IS THREE (3) INCHES OR GREATER, OTHERWISE ITEM 843, PATCHING CONCRETE STRUCTURE WITH TROWELABLE MORTAR SHALL BE USED.

- AREAS TO BE PATCHED AS PER ITEM 519 OR ITEM 843.

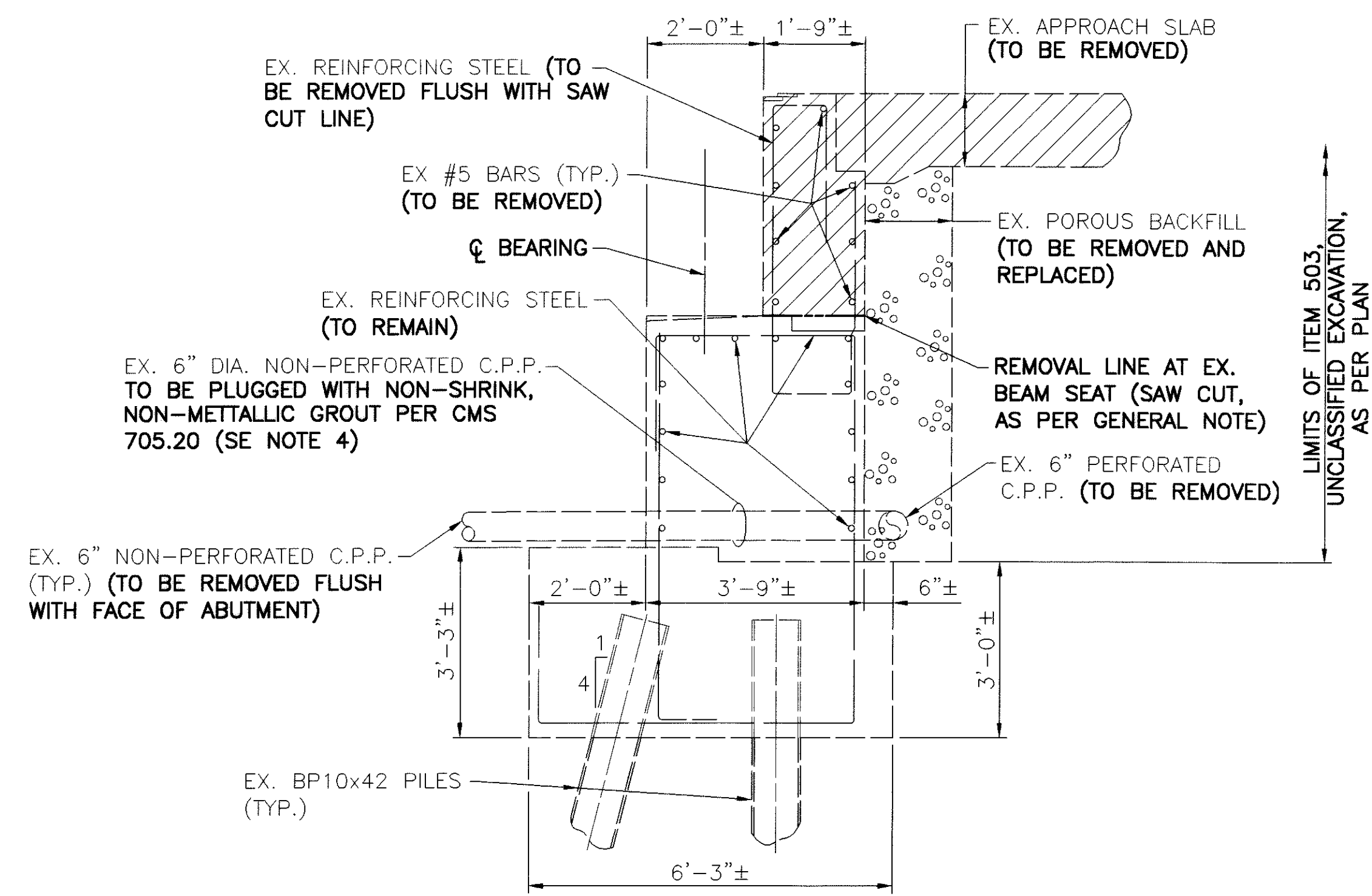
DATE: 05/01/03  
CAD FILE: 0508\_REPAIR  
OPERATOR: CAF  
PLOT SCALE: 1"=1'

REPAIR DETAILS		BRIDGE NO. MAH-76-0508	DUCK CREEK ROAD OVER INTERSTATE ROUTE 76
MAH - 76 - 3.08	4 / 11	DESIGN AGENCY: FINKBEINER, PETTIS & STROUT, INC. 520 S. MAIN STREET, SUITE 2400 AKRON, OHIO 44311-1010	
DESIGNED R.K.Z.	CHECKED R.B.B.	DRAWN C.A.F.	REVISED
		REVIEWED D.L.G.	STRUCTURE FILE NO. 5002885
		DATE 5/03	

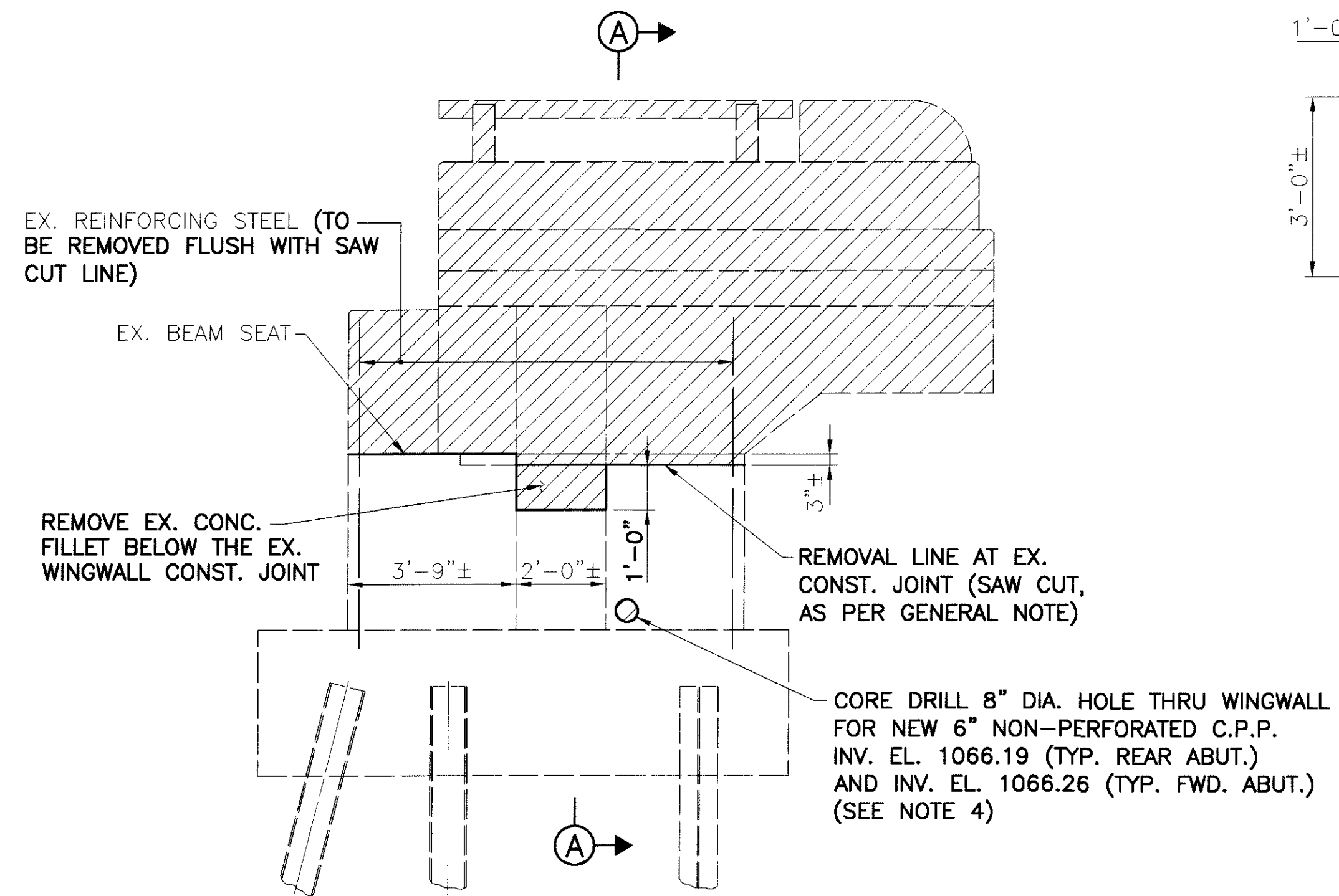
236  
243



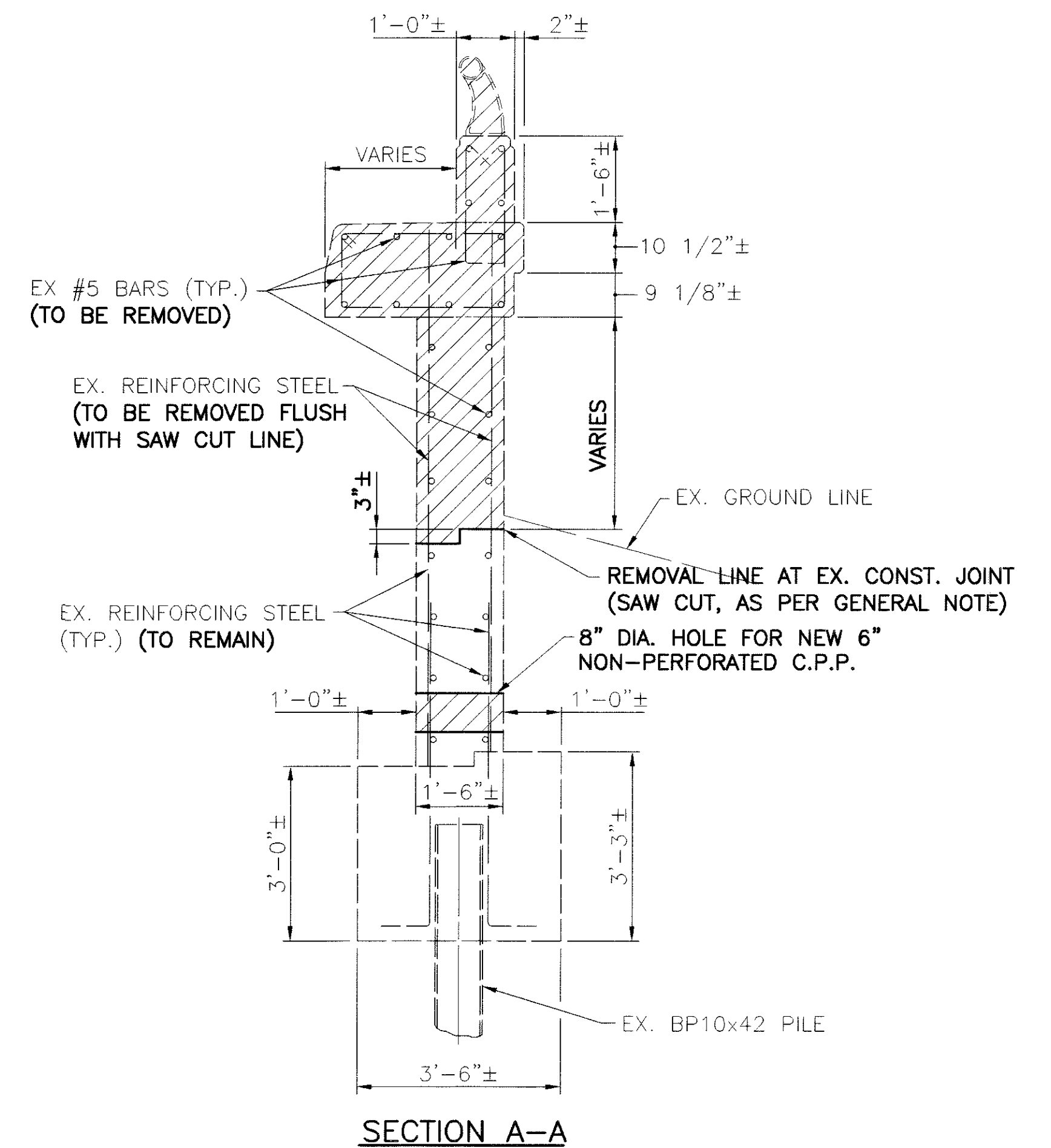
**EXISTING TRANSVERSE SECTION**



**EXISTING ABUTMENT SECTION**



**EXISTING WINGWALL SECTION**



**SECTION A-A**

**NOTES**

- ① FOR STRUCTURE REMOVAL NOTES SEE SHEET 2 / 11 .
- ② END CROSS FRAMES TO BE REMOVED.
- ③ REMOVE ENTIRE SCUPPER ASSEMBLY AND BULB ANGLE, INCLUDING ATTACHMENTS TO EXISTING BEAM. GRIND SMOOTH ANY EXISTING WELDS BY WHICH THE SCUPPER WAS ATTACHED TO THE BEAM. PAYMENT FOR THIS WORK SHALL BE INCLUDED WITH ITEM 202, PORTIONS OF STRUCTURE REMOVED, AS PER PLAN.
- ④ INCLUDE WITH ITEM 518, 6" NON-PERFORATED C.P.P. INCLUDING SPECIALS, AS PER PLAN FOR PAYMENT.

**LEGEND**

- AREAS OF THE EXISTING STRUCTURE TO BE REMOVED

DATE: 05/01/03  
 CAD FILE: 0508\_DEMO  
 OPERATOR: MPB/CAF  
 PLOT SCALE: 1"=1'

DESIGN AGENCY  
 FINKBEINER, PETTIS & STROUT, INC.  
 520 S. MAIN STREET, SUITE 2400  
 AKRON, OHIO 44311-1010

DATE: 5/03  
 D.L.G.  
 STRUCTURE FILE NO. 5002885

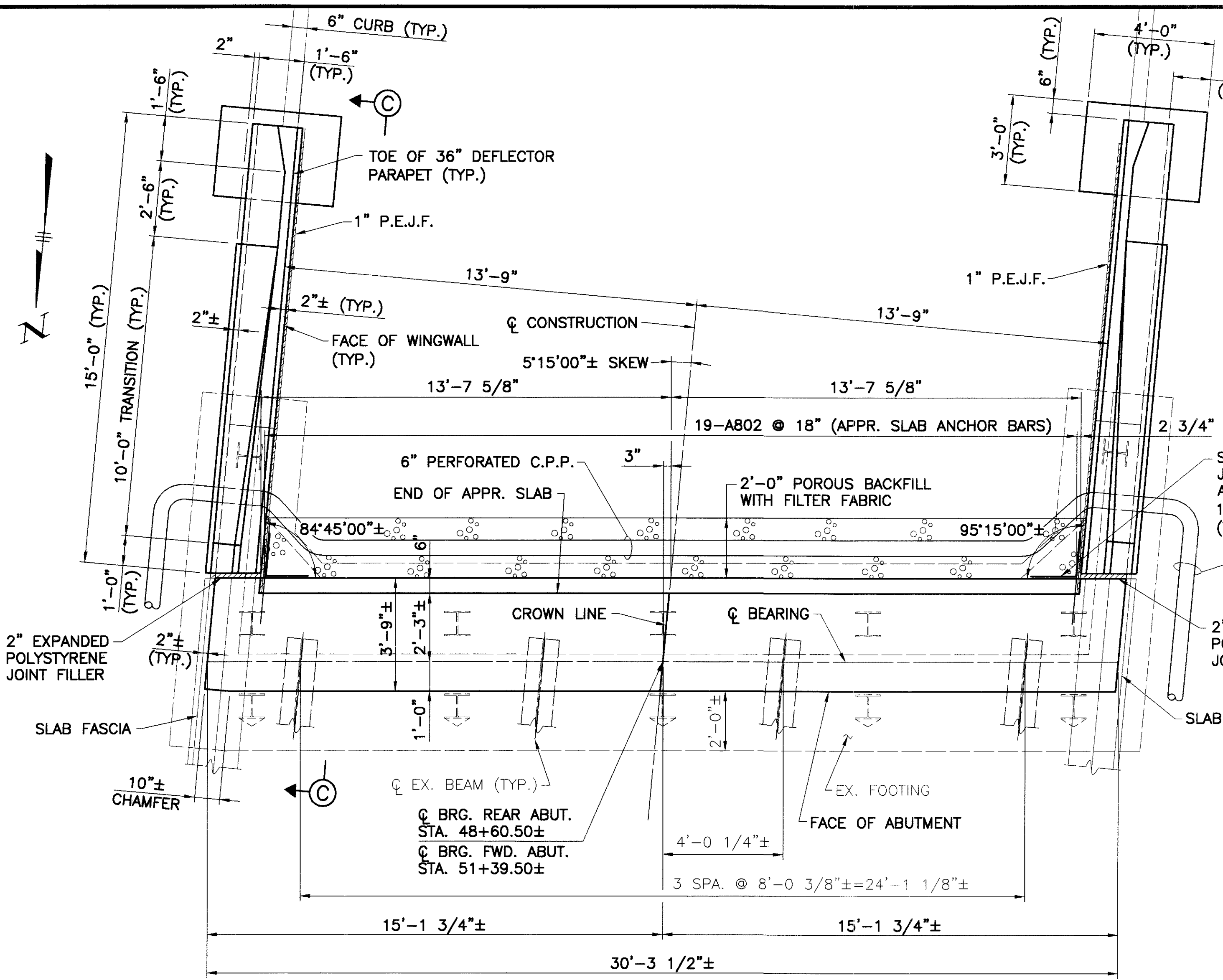
DRAWN: C.A.F.  
 CHECKED: R.B.B.

DESIGNED: R.K.Z.  
 CHECKED: R.B.B.

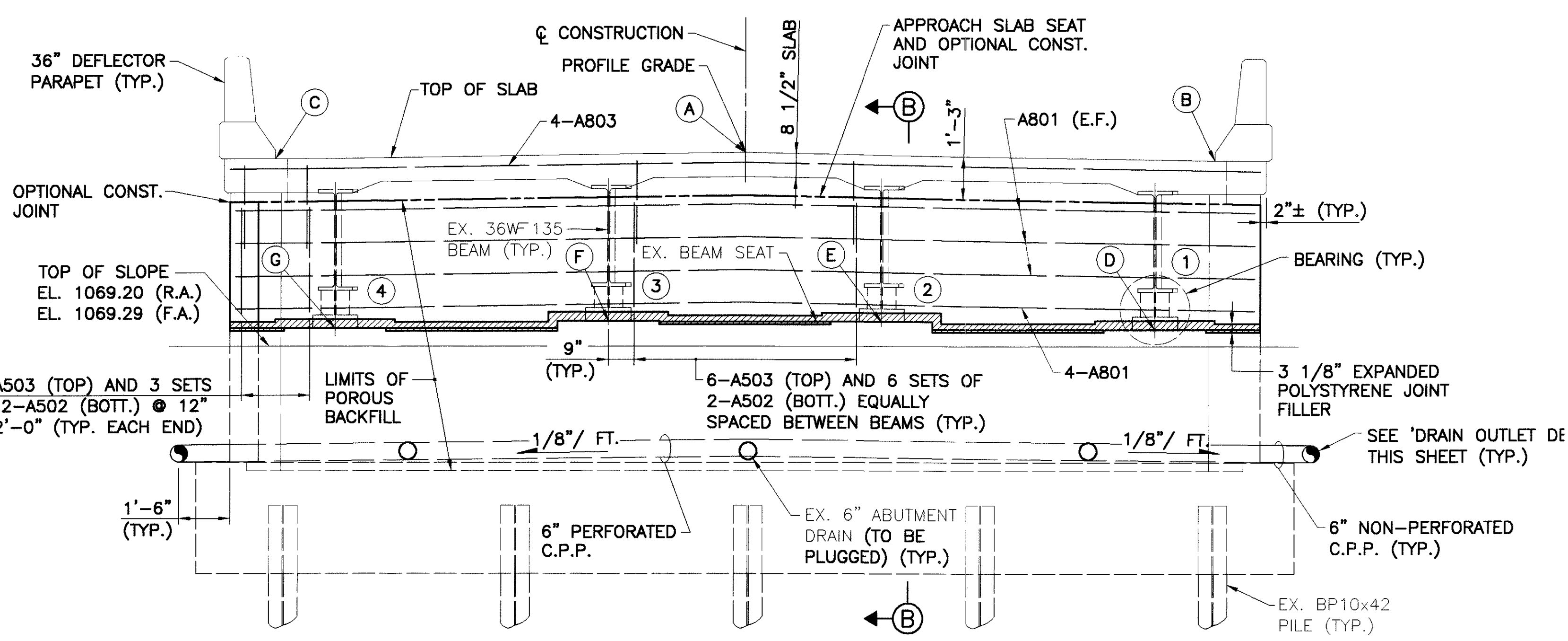
DEMOLITION DETAILS  
 BRIDGE NO. MAH-76-0508  
 DUCK CREEK ROAD OVER INTERSTATE ROUTE 76

MAH - 76 - 3.08

5 / 11  
 237  
 243



**PLAN**  
NOTE: REAR ABUTMENT DETAILS ARE SHOWN, FORWARD ABUTMENT DETAILS ARE SIMILAR.

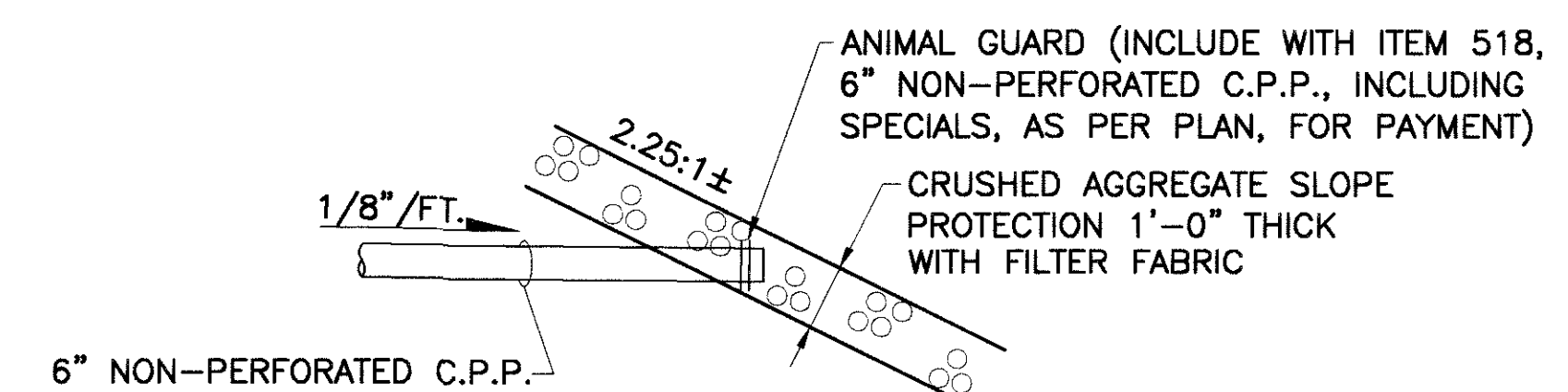


**ELEVATION**  
NOTE: REAR ABUTMENT DETAILS ARE SHOWN, FORWARD ABUTMENT DETAILS ARE SIMILAR.

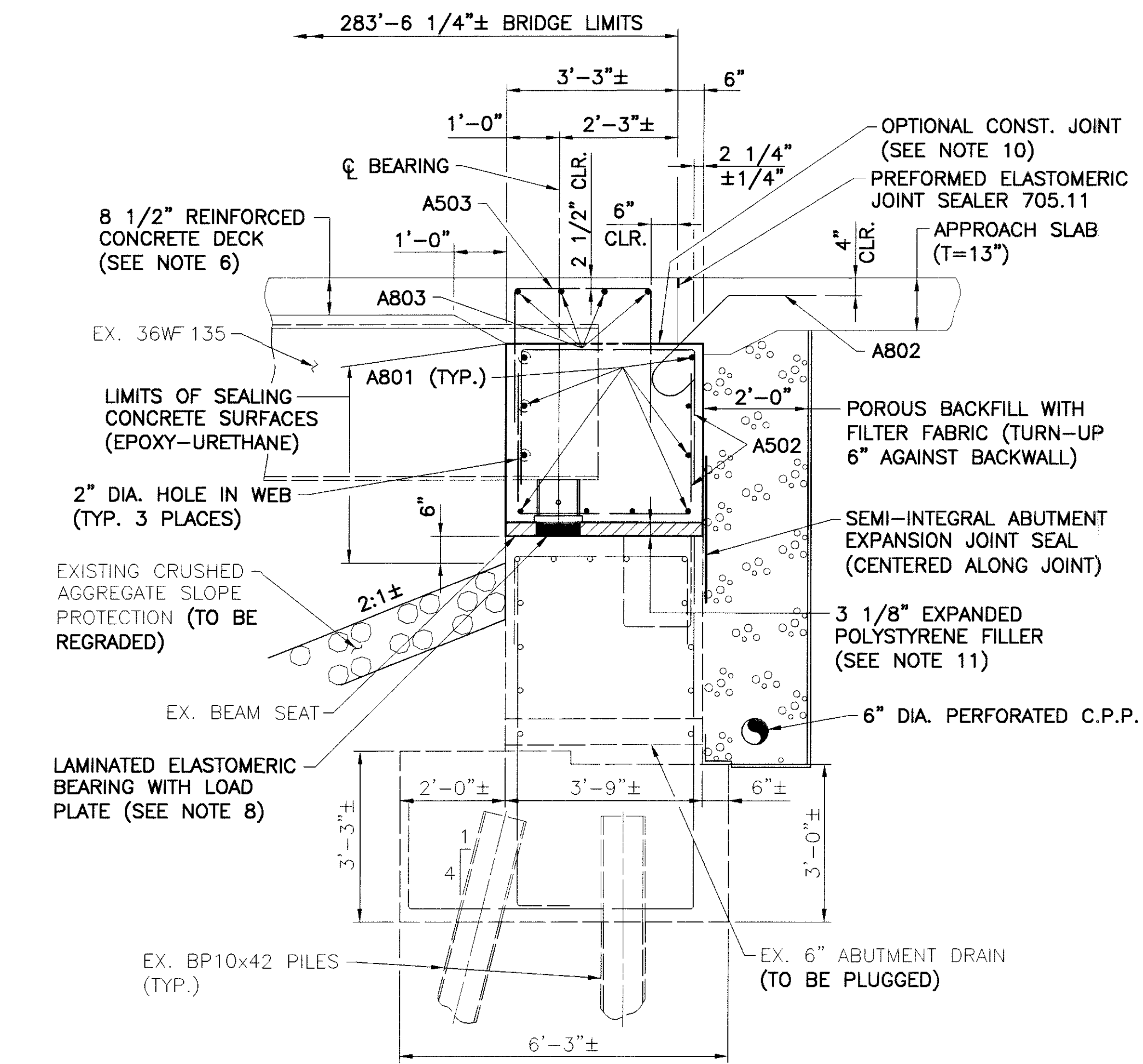
**NOTES**

- ① MINIMUM BAR LAP IS AS FOLLOWS:  
#5 BAR = 30"
- ② POROUS BACKFILL WITH FILTER FABRIC, 2'-0" THICK SHALL EXTEND UP TO THE PLANE OF THE SUBGRADE, AND LATERALLY TO THE WINGWALLS. FILTER FABRIC SHALL CONFORM WITH 712.09, TYPE A.
- ③ FOR VIEW C-C, WINGWALL AND PARAPET TRANSITION DETAILS AND NOTES SEE SHEET 7/11.
- ④ PROVIDE A 1" CHAMFER ON ALL EXPOSED CONCRETE.
- ⑤ FOR TRANSVERSE SECTION, PARAPET REINFORCING AND ADDITIONAL NOTES, SEE SHEET 9/11.
- ⑥ FOR SLAB PLAN AND ADDITIONAL DETAILS AND NOTES, SEE SHEET 10/11.
- ⑦ PREFORMED EXPANSION JOINT FILLER IS TO BE INCLUDED IN BID ITEM 526, REINFORCED CONCRETE APPROACH SLAB FOR PAYMENT.
- ⑧ FOR SUPERSTRUCTURE AND BEARING DETAILS AND NOTES SEE SHEET 8/11.
- ⑨ ELEVATIONS SHOWN ARE TAKEN AT THE CENTERLINE OF ABUTMENT BEARINGS.
- ⑩ ABUTMENT DIAPHRAGM CONCRETE, STEEL, SUPERSTRUCTURE: THE CONCRETE ENCASING STRUCTURAL STEEL MEMBERS SUPPORTED IN SEMI-INTEGRAL TYPE ABUTMENTS MAY BE PLACED BEFORE THE ACTUAL DECK CONCRETE IS PLACED. IF THE CONTRACTOR CHOOSES THIS OPTION THE CONCRETE SHALL HAVE HAD AT LEAST 48 HOURS OF SET TIME BEFORE DECK CONCRETE IS PLACED.
- ⑪ EXPANDED POLYSTYRENE JOINT FILLER TO BE INCLUDED WITH ITEM 511, CLASS HP CONCRETE, BRIDGE DECK FOR PAYMENT.

ELEVATION TABLE							
LOCATION	A	B	C	D	E	F	G
REAR ABUT.	1074.66	1074.90	1074.70	1069.70±	1069.93±	1069.95±	1069.74±
FWD. ABUT.	1074.66	1074.90	1074.70	1069.79±	1069.89±	1069.88±	1069.77±



**DRAIN OUTLET DETAIL**



**SECTION B-B**

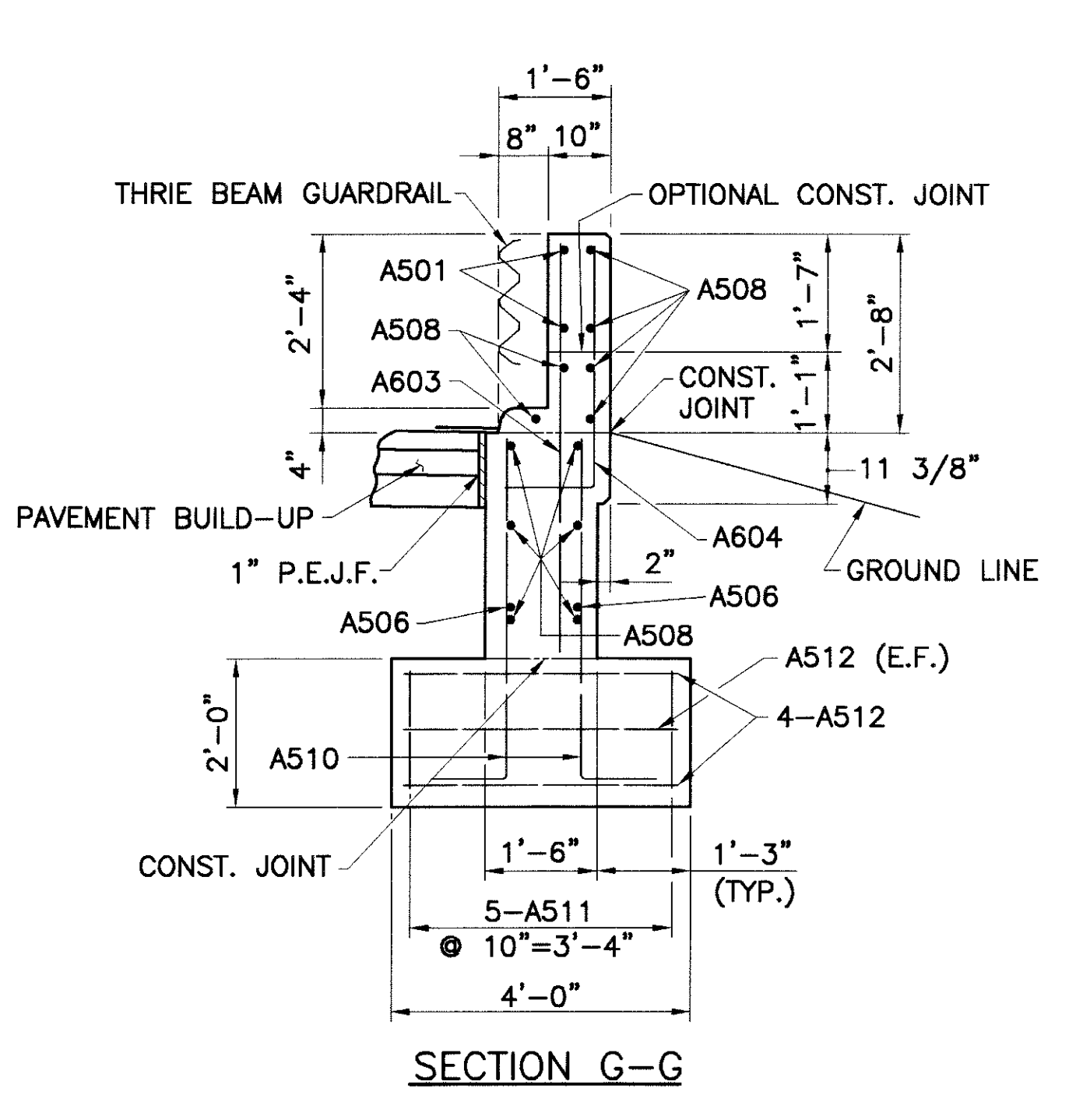
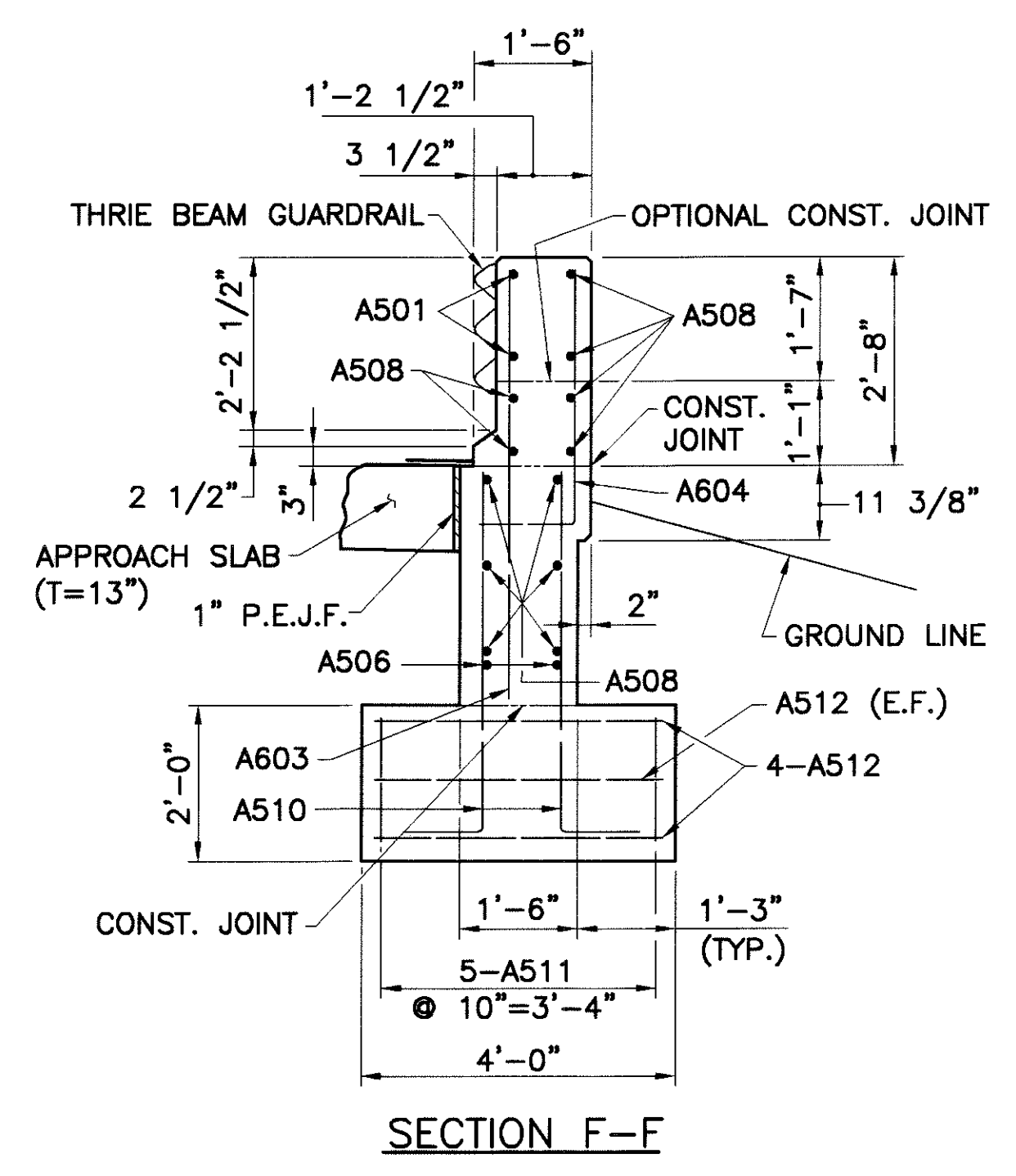
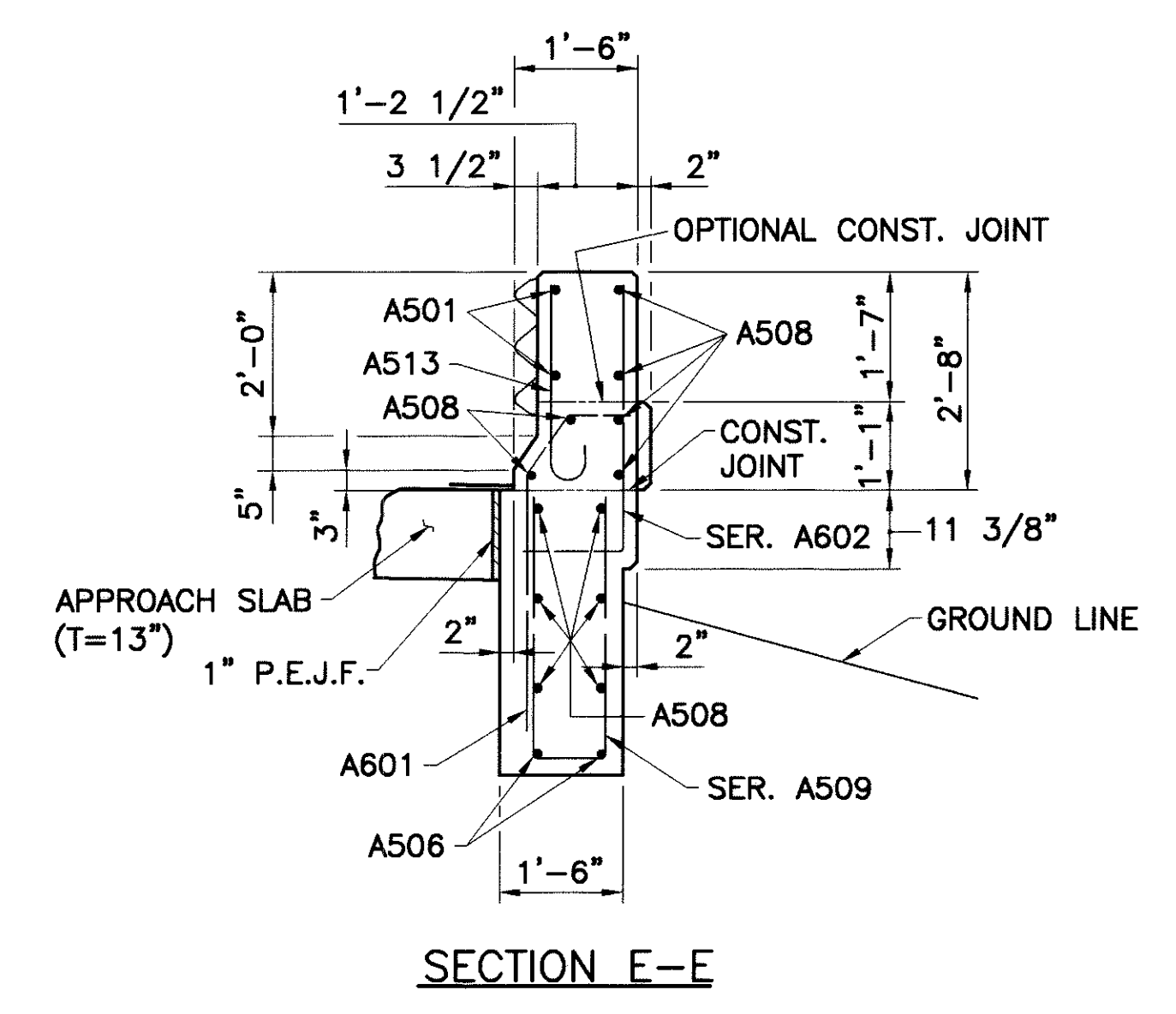
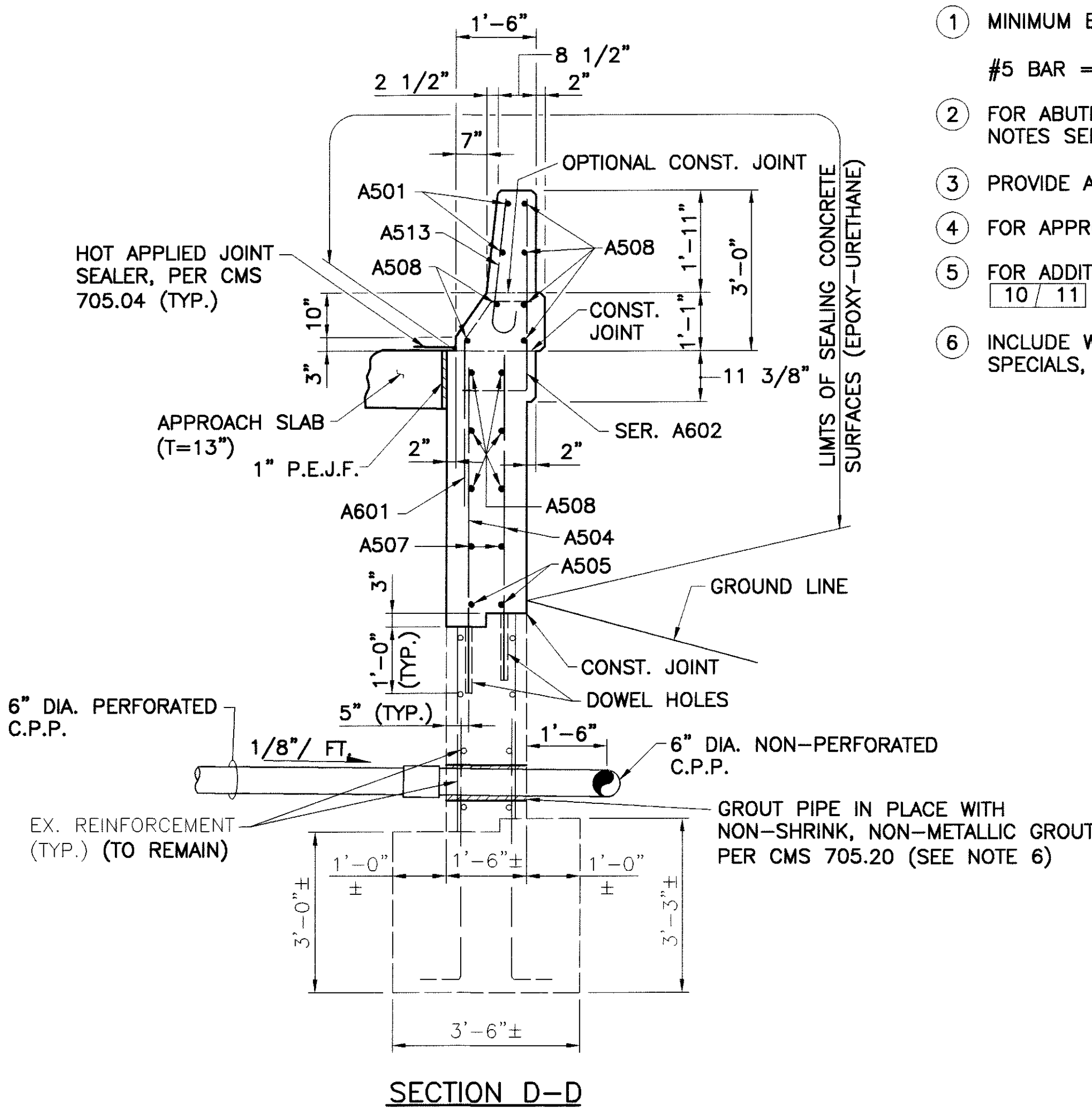
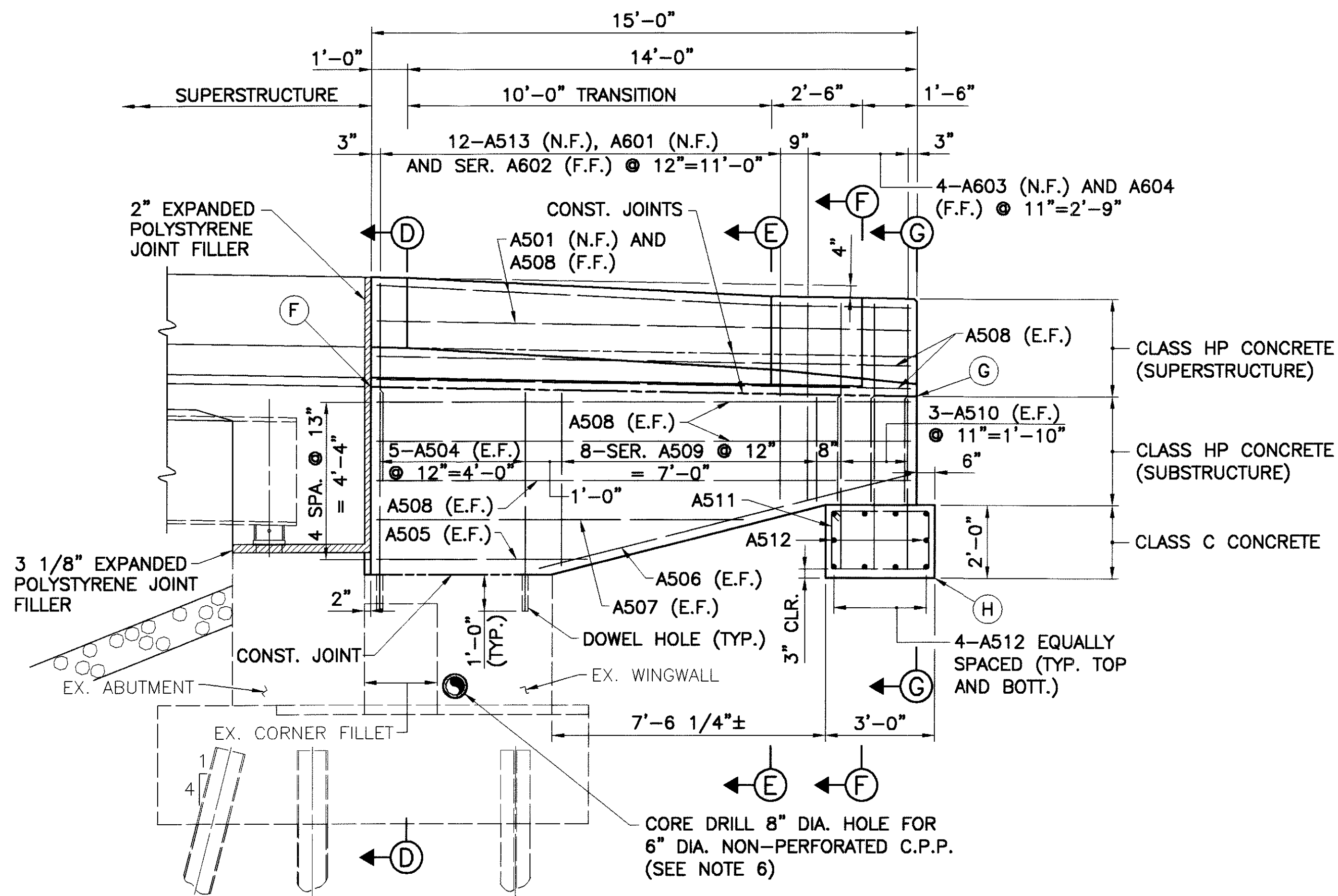
DATE: 05/01/03  
CAD FILE: 0508-ABUT1  
OPERATOR: CAF  
PLOT SCALE: 1"=1'

DESIGN AGENCY: FINKBEINER, PETTIS & STROUT, INC.  
 520 S. MAIN STREET, SUITE 2400  
 AKRON, OHIO 44311-1010  
 DATE: 5/03  
 REVIEWED: D.L.G.  
 DRAWN: C.A.F.  
 DESIGNED: R.K.Z.  
 CHECKED: R.B.B.  
 STRUCTURE FILE NO.: 5002885  
 ABUTMENT DETAILS  
 BRIDGE NO. MAH-76-0508  
 DUCK CREEK ROAD OVER INTERSTATE ROUTE 76  
 MAH - 76 - 3.08  
 6/11  
 238  
 243

NOTES

- ① MINIMUM BAR LAPS ARE AS FOLLOWS:  
#5 BAR = 30" #6 BAR = 36"
- ② FOR ABUTMENT PLAN AND ELEVATION, AND ADDITIONAL DETAILS AND NOTES SEE SHEET 6 / 11 .
- ③ PROVIDE A 1" CHAMFER ON ALL EXPOSED CONCRETE.
- ④ FOR APPROACH SLAB DETAILS SEE SHEET 10 / 11 .
- ⑤ FOR ADDITIONAL SUPERSTRUCTURE DETAILS SEE SHEETS 9 / 11 AND 10 / 11 .
- ⑥ INCLUDE WITH ITEM 518, 6" NON-PERFORATED C.P.P. INCLUDING SPECIALS, AS PER PLAN FOR PAYMENT.

ELEVATION TABLE			
LOCATION	F	G	H
REAR, LEFT	1074.62	1074.33	1069.33
REAR, RIGHT	1074.66	1074.38	1069.38
FORWARD, LEFT	1074.62	1074.33	1069.33
FORWARD, RIGHT	1074.66	1074.38	1069.38



DATE: 05/01/03  
CAD FILE: 0508-ABUT2  
OPERATOR: CAF  
PLOT SCALE: 1"=1'

DESIGN AGENCY: FINKBEINER, PETTIS & STROUT, INC.  
520 S. MAIN STREET, SUITE 2400  
AKRON, OHIO 44311-1010

DATE: 5/03  
REVIEWED: D.L.G.  
DRAWN: C.A.F.  
DESIGNED: R.K.Z.  
CHECKED: R.B.B.

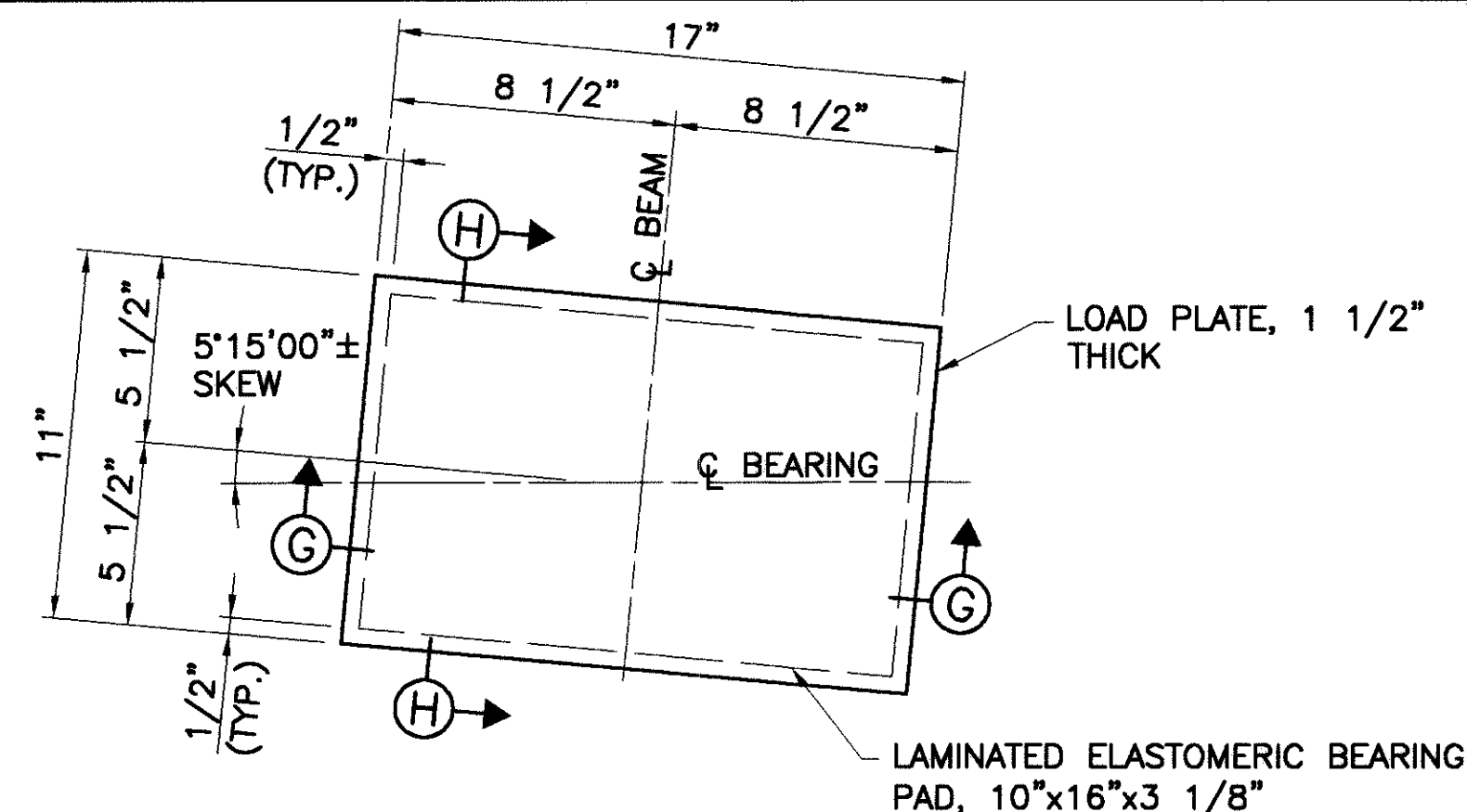
5002885

ABUTMENT DETAILS  
BRIDGE NO. MAH-76-0508  
DUCK CREEK ROAD OVER INTERSTATE ROUTE 76

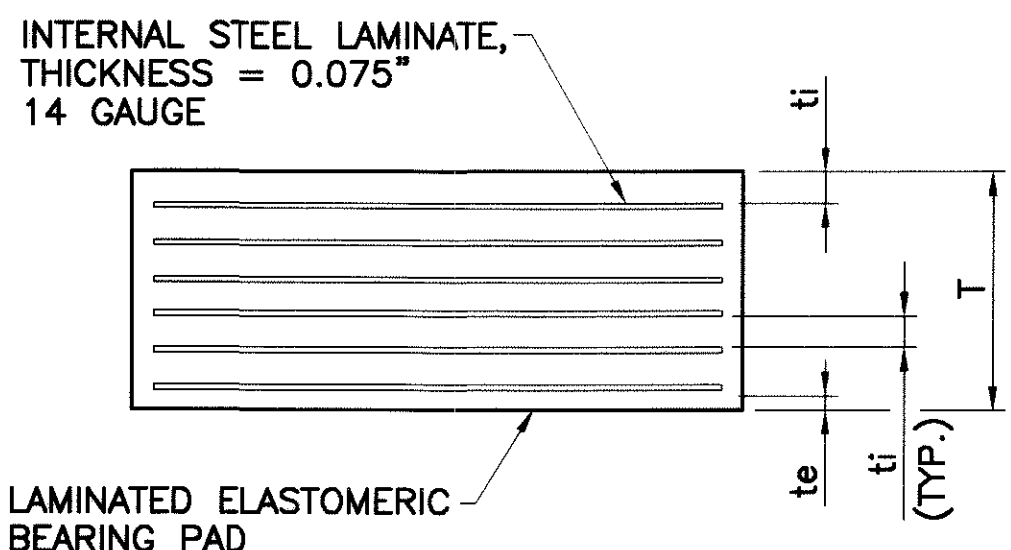
MAH - 76 - 3.08

7 / 11

239  
243



**BEARING PLAN**  
(ABUTMENTS ONLY)

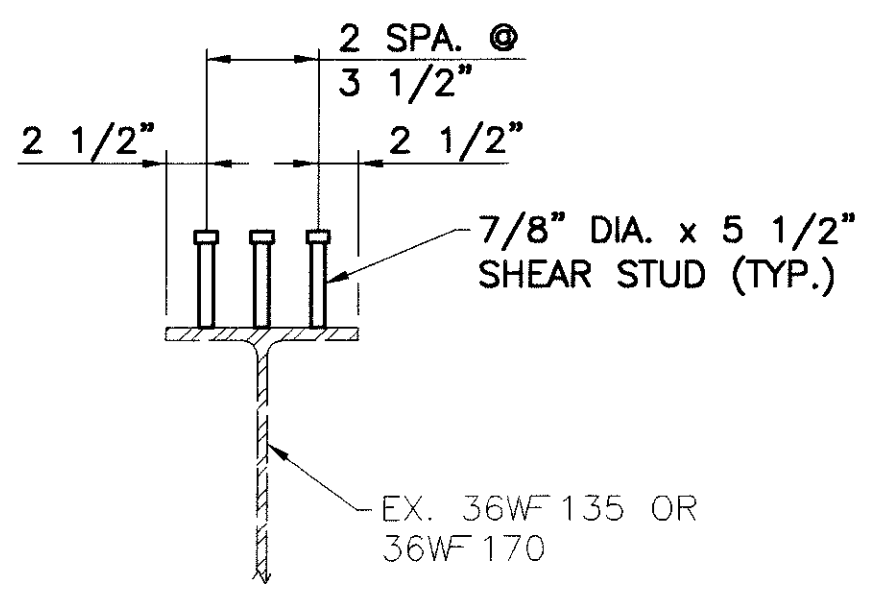


**BEARING PAD DETAIL**

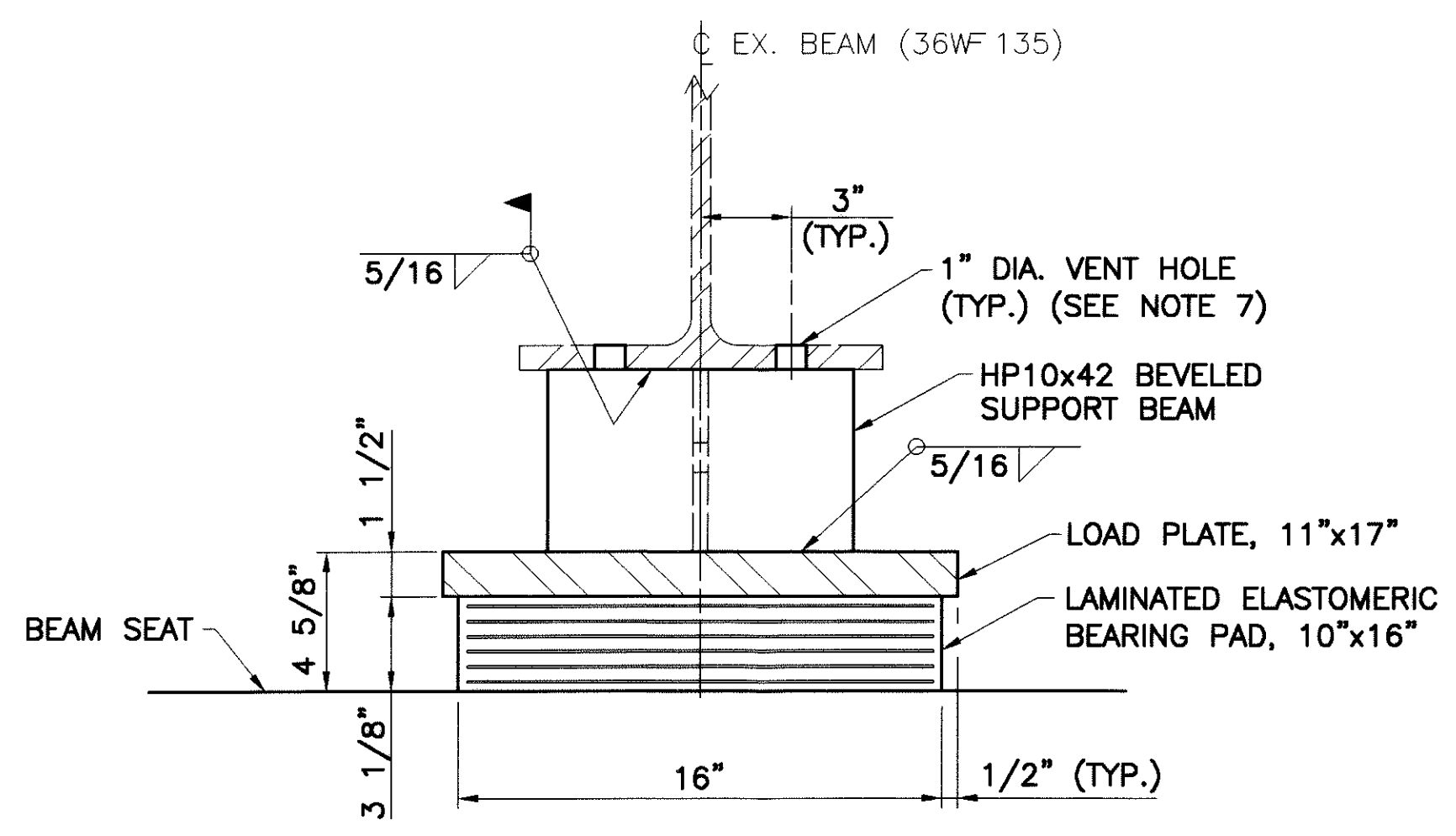
BEARING DATA						
50 DUROMETER						
SIZE	(THICKNESS) "DIM. T"	t <sub>i</sub>	t <sub>e</sub>	NUMBER OF t <sub>i</sub>	NUMBER OF STEEL LAMINATES	
10"	16"	3.13"	0.40"	0.28"	6	6

**ABUTMENTS:**  
 DEAD LOAD = 65.9 (KIPS/PAD)  
 LIVE LOAD (W/O IMPACT) = 46.6 (KIPS/PAD) } DESIGN LOAD=112.5 (KIPS/PAD)

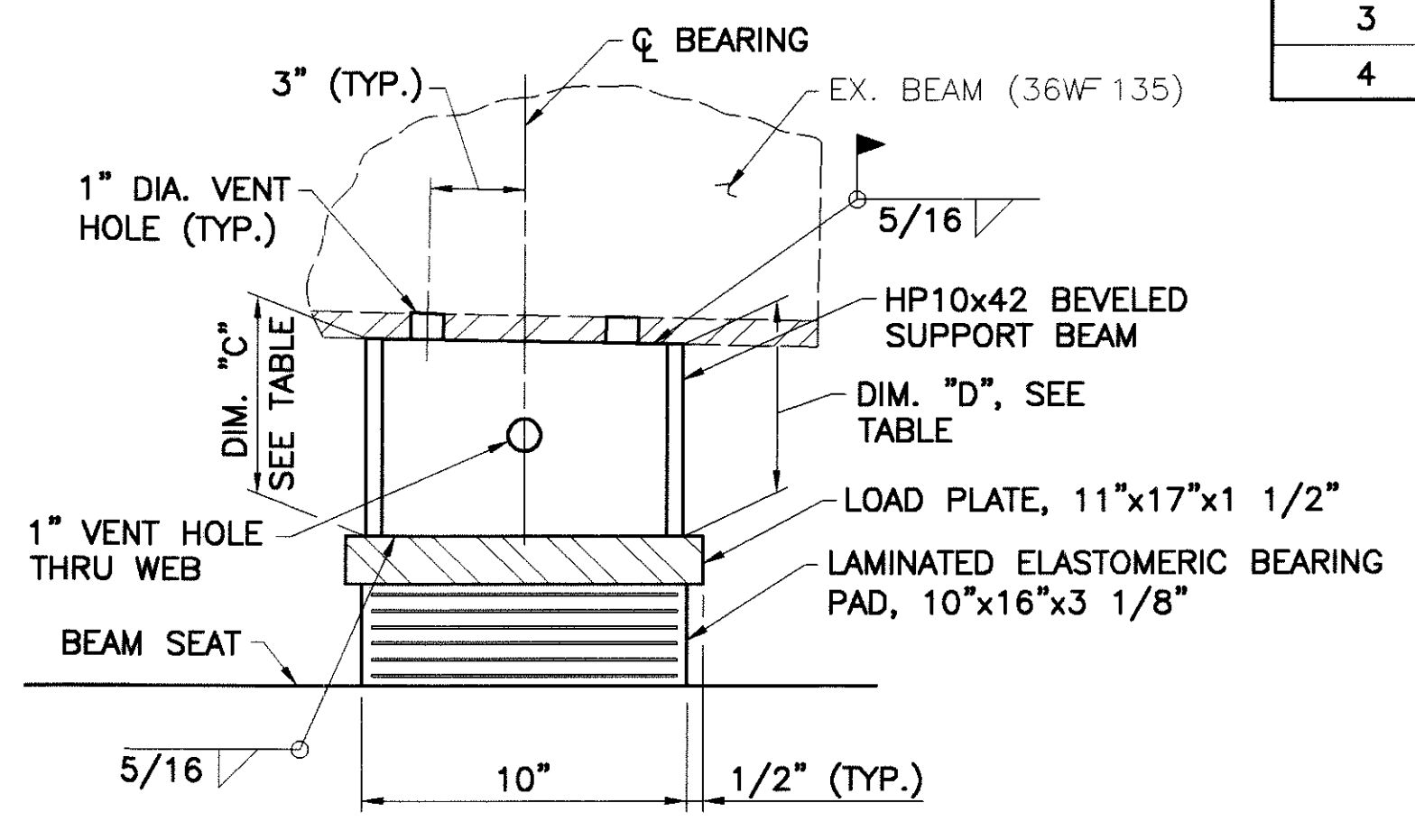
BEAM NO.	DIMENSION "C"		DIMENSION "D"	
	REAR	FORWARD	REAR	FORWARD
	1	9 1/16"	8 1/2"	8 11/16"
2	8"	8 5/8"	7 1/2"	8 1/4"
3	7 7/8"	8 9/16"	7 1/2"	8 3/16"
4	9 1/16"	8 1/4"	8 11/16"	7 7/8"



**SHEAR STUD CONNECTOR DETAIL**

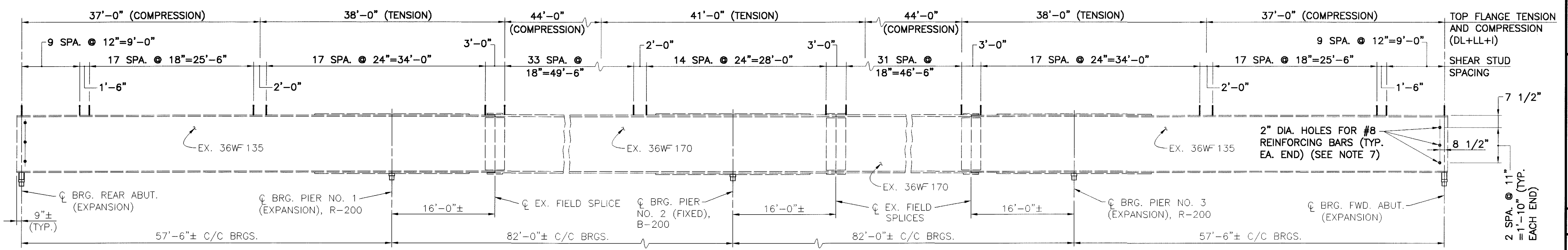


**SECTION G-G**



**SECTION H-H**

DESCRIPTION	DEFLECTION TABLE (EXISTING BEAMS)																			
	SPAN NO. 1					SPAN NO. 2					SPAN NO. 3					SPAN NO. 4				
	REAR ABUT. BRG.	1/4	1/2	3/4	PIER NO. 1 BRG.	FIELD SPLICE	1/4	1/2	3/4	PIER NO. 2 BRG.	FIELD SPLICE	1/4	1/2	3/4	FIELD SPLICE	PIER NO. 3 BRG.	1/4	1/2	3/4	FWD. ABUT. BRG.
DEFLECTION DUE TO SLAB	0	1/4"	1/4"	1/16"	0	1/4"	5/16"	1/2"	1/4"	0	3/16"	1/4"	1/2"	5/16"	1/4"	0	1/16"	1/4"	1/4"	0
DEFLECTION DUE TO COMPOSITE DEAD LOAD	0	1/16"	1/16"	0	0	1/16"	1/16"	1/8"	1/16"	0	1/16"	1/16"	1/8"	1/16"	1/16"	0	0	1/16"	1/16"	0
TOTAL DEFLECTION	0	5/16"	5/16"	1/16"	0	5/16"	3/8"	5/8"	5/16"	0	1/4"	5/16"	5/8"	3/8"	5/16"	0	1/16"	5/16"	5/16"	0



**BEAM ELEVATION**

**NOTES**

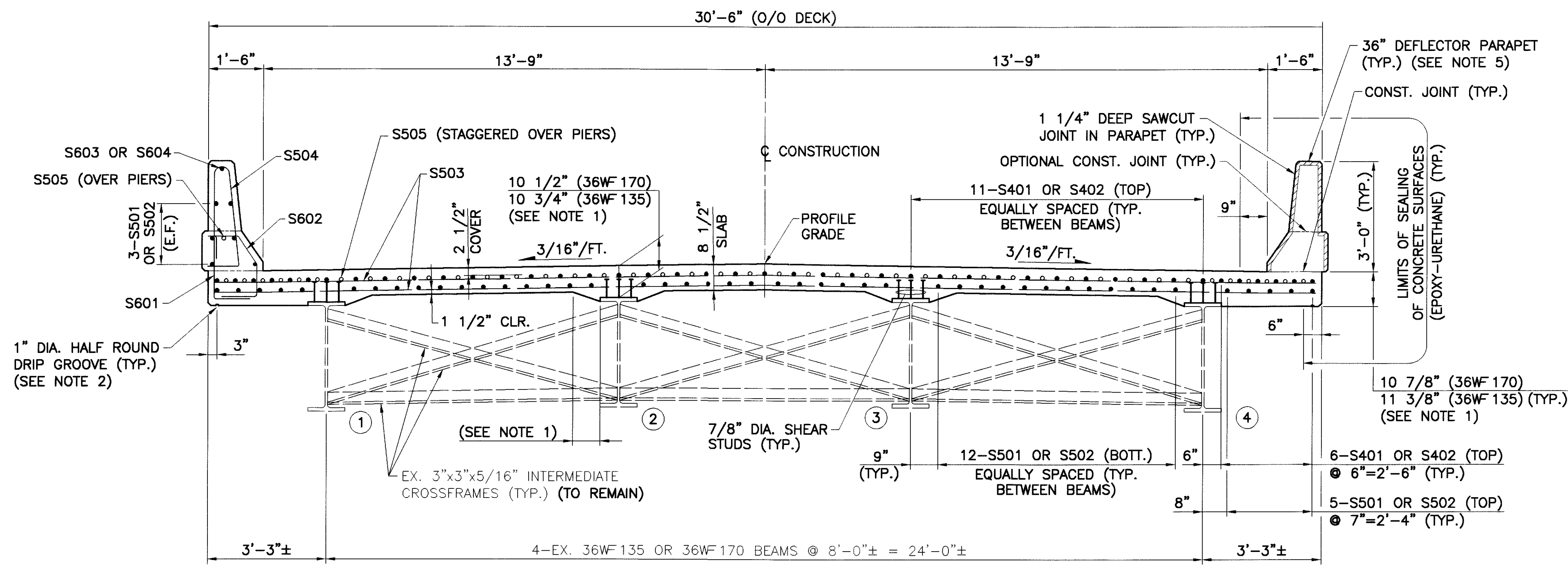
- LOAD PLATES: THE STEEL LOAD PLATE SHALL BE ASTM 572, GRADE 50, AND HP10x42 BEVELED SUPPORT BEAM SHALL BE A36 STEEL.  
  
THE STEEL LOAD PLATE SHALL BE BONDED BY VULCANIZATION TO THE ELASTOMER DURING THE MOLDING PROCESS. WELDING OF THE LOAD PLATE TO THE HP10x42 BEVELED SUPPORT BEAM SHALL BE CONTROLLED SO THAT THE PLATE TEMPERATURE AT THE ELASTOMER BONDED SURFACE DOES NOT EXCEED 300°F AS DETERMINED BY THE USE OF PYROMETRIC STICKS OR OTHER TEMPERATURE MONITORING DEVICES.
- ELASTOMERIC BEARINGS SHALL COMPLY WITH ITEM 516 AND AASHTO STANDARD SPECIFICATION FOR HIGHWAY BRIDGES, SECTION 18, BEARING DEVICES, DIVISION II, CONSTRUCTION, ARTICLES 18.4.5.1 AND 18.5.6.2. BEARINGS SHALL BE GRADE 3, 50 DUROMETER ELASTOMER, AND SHALL BE SUBJECTED TO THE LOAD TESTING REQUIREMENTS DEFINED IN ARTICLE 18.7.4.5 OF THE AASHTO DOCUMENT LISTED ABOVE. BEARINGS WERE DESIGNED UNDER SECTION 14.6.6 OF SECTION 14, BEARINGS, DIVISION I, DESIGN. TESTING SHALL BE INCLUDED IN ITEM 516, ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE, AS PER PLAN FOR PAYMENT.
- ALL MATERIALS, LABOR AND INCIDENTALS NECESSARY TO FURNISH AND INSTALL LAMINATED ELASTOMERIC BEARINGS, LOAD PLATES AND HP10x42 BEVELED SUPPORT BEAMS SHALL BE INCLUDED IN ITEM 516, ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE, AS PER PLAN FOR PAYMENT.
- FOR SLAB PLAN AND ADDITIONAL SUPERSTRUCTURE DETAILS AND NOTES SEE SHEETS 10/11 AND 11/11.
- 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 1/4" FOR THICKNESSES UP TO 3/4", AND 5/16" FOR GREATER THAN 3/4" THICK.
- WELDED STUD SHEAR CONNECTORS SHALL CONFORM TO AASHTO 10.38.2 AND ITEM 513, WELDED STUD SHEAR CONNECTORS, AND SHALL BE INCLUDED UNDER ITEM 513 FOR PAYMENT. MINOR FIELD ADJUSTMENTS MAY BE NECESSARY IN ORDER TO KEEP THE STUD SHEAR CONNECTORS FROM BEING POSITIONED ON THE EXISTING BOLTED SPLICE PLATES AS DIRECTED BY THE ENGINEER.
- 1" DIAMETER VENT HOLES AND 2" DIAMETER HOLES FOR THE #8 REINFORCING BARS IN THE BEAM ENDS SHALL BE FIELD DRILLED. FLAME CUTTING OF HOLES IS NOT PERMITTED. FIELD DRILLING SHALL BE INCLUDED WITH ITEM 511, CLASS HP CONCRETE, BRIDGE DECK FOR PAYMENT.
- FIELD PAINTING OF EXISTING STEEL, SYSTEM OZEU: THE SURFACE AREA PAY QUANTITY IS BASED ON THE SURFACE AREA OF THE MAIN MEMBERS INCREASED BY 5 PERCENT TO ACCOUNT FOR THE AREA OF CROSSFRAMES, BEARINGS, AND OTHER STRUCTURAL STEEL INCIDENTALS TO BE CLEANED AND PAINTED.

DATE: 05/01/03  
 CAD FILE: 0508-BEAM  
 OPERATOR: CAF  
 PLOT SCALE: 1"=1'

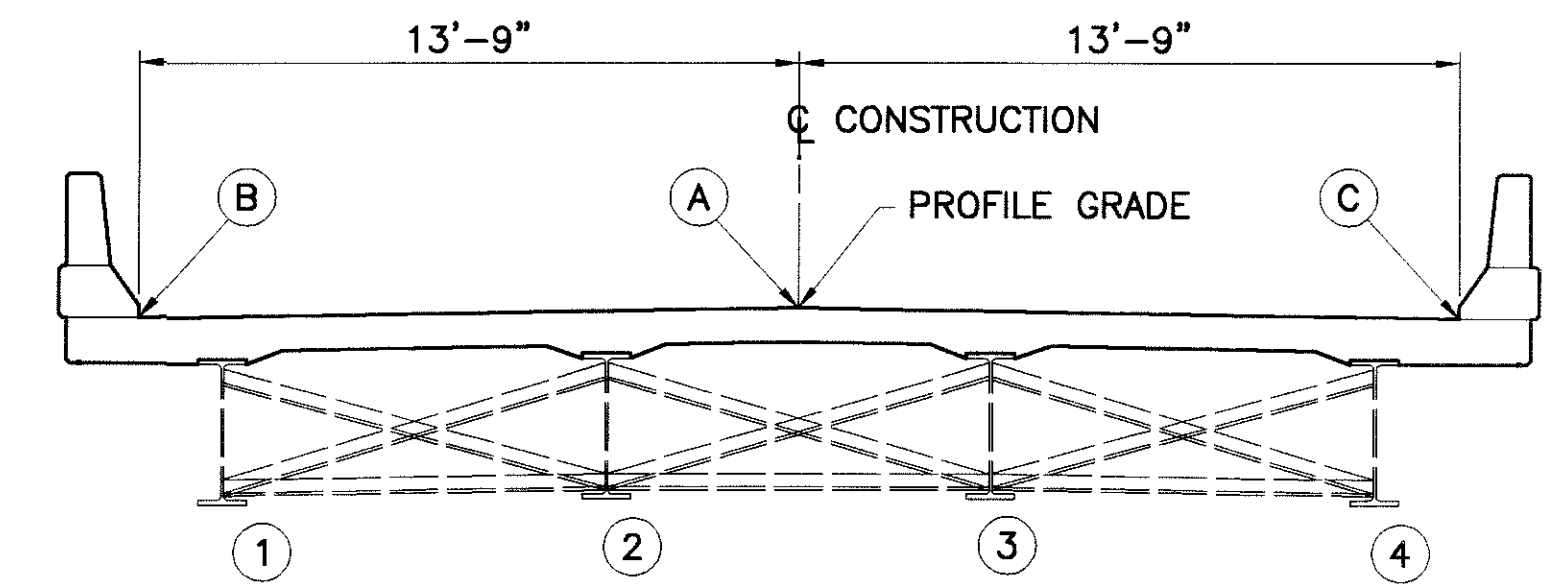


**NOTES**

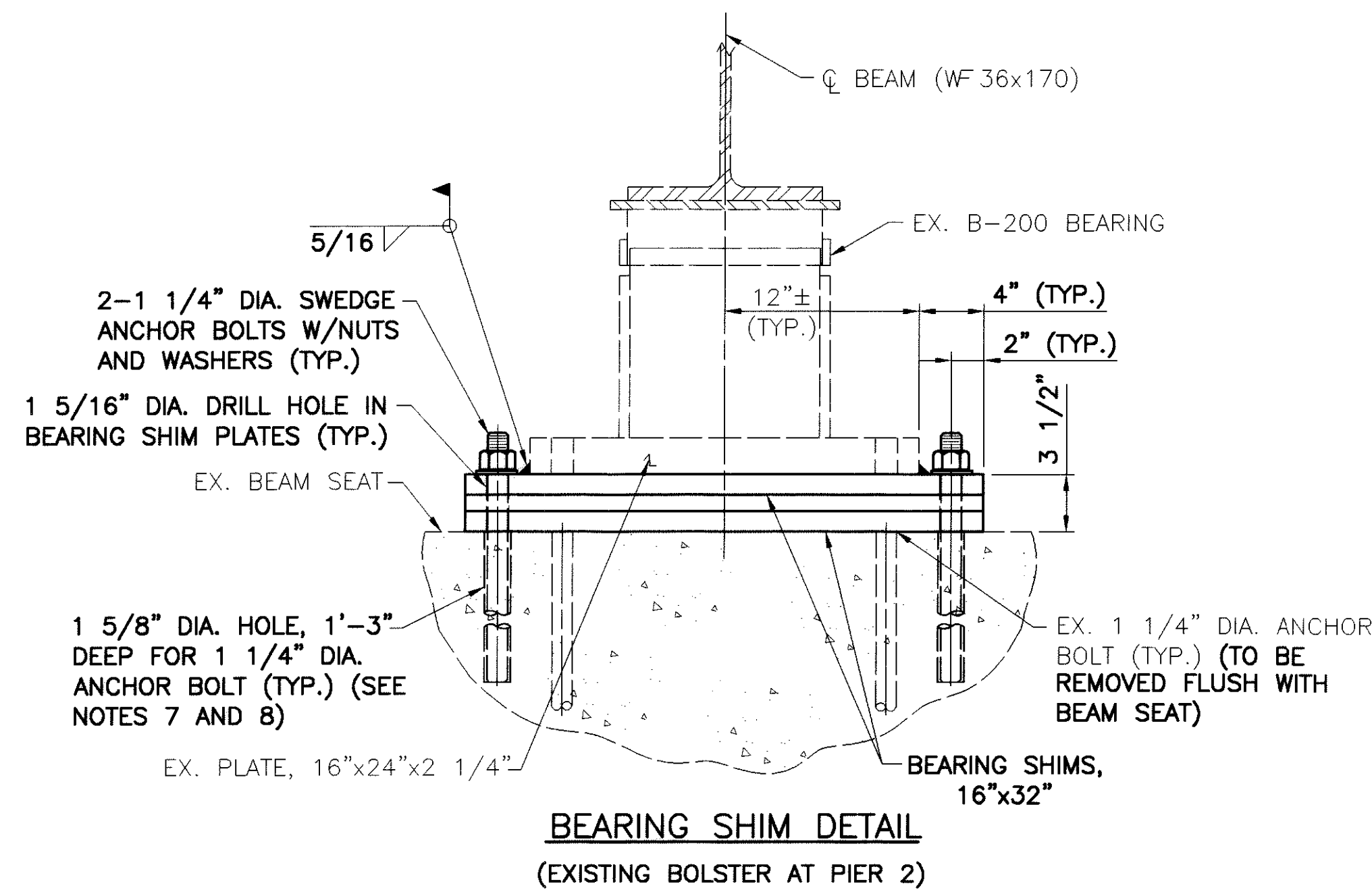
- ① DECK SLAB DEPTH FOR CONCRETE QUANTITY: THE ESTIMATED QUANTITY OF DECK SLAB CONCRETE IS BASED ON THE CONSTANT DECK THICKNESS, AS SHOWN, PLUS THE QUANTITY OF CONCRETE THAT FORMS EACH BEAM HAUNCH. THE ESTIMATE ASSUMES A CONSTANT HAUNCH THICKNESS OF 2 INCHES AND A CONSTANT HAUNCH WIDTH OUTSIDE THE EDGE OF EACH BEAM FLANGE OF 9 INCHES. DEVIATE FROM THIS HAUNCH THICKNESS AS NECESSARY TO PLACE THE DECK SURFACE AT THE FINISHED GRADE. THE ALLOWABLE TOLERANCE FOR THE HAUNCH WIDTH OUTSIDE THE EDGE OF EACH BEAM FLANGE IS ± 3 INCHES.
- ② DRIP GROOVES SHALL TERMINATE 2'-6" FROM THE FACE OF ABUTMENTS.
- ③ SCREED ELEVATIONS SHOWN ARE FOR THE DECK SLAB SURFACE PRIOR TO CONCRETE PLACEMENT. ALLOWANCE HAS BEEN MADE FOR ANTICIPATED CALCULATED DEAD LOAD DEFLECTIONS.
- ④ FOR DECK SLAB PLAN AND ADDITIONAL DETAILS AND NOTES, SEE SHEET 10 / 11 .
- ⑤ FOR NOTES AND ADDITIONAL DETAILS FOR THE 36" DEFLECTOR PARAPET, SEE ODOT STANDARD DRAWING BR-1, SHEET 1 OF 2.
- ⑥ FOR BEAM AND SHEAR STUD DETAILS SEE SHEET 8 / 11 .
- ⑦ ANCHOR BOLTS SHALL BE GROUTED IN PLACE USING A NON-SHRINK EPOXY GROUT IN ACCORDANCE WITH CMS 510 AND, CMS 705.20.
- ⑧ ALL MATERIAL, LABOR AND INCIDENTALS NECESSARY TO FURNISH AND INSTALL BEARING SHIMS AND ANCHOR BOLTS SHALL BE INCLUDED WITH ITEM 516, RESET BEARING, AS PER PLAN FOR PAYMENT.



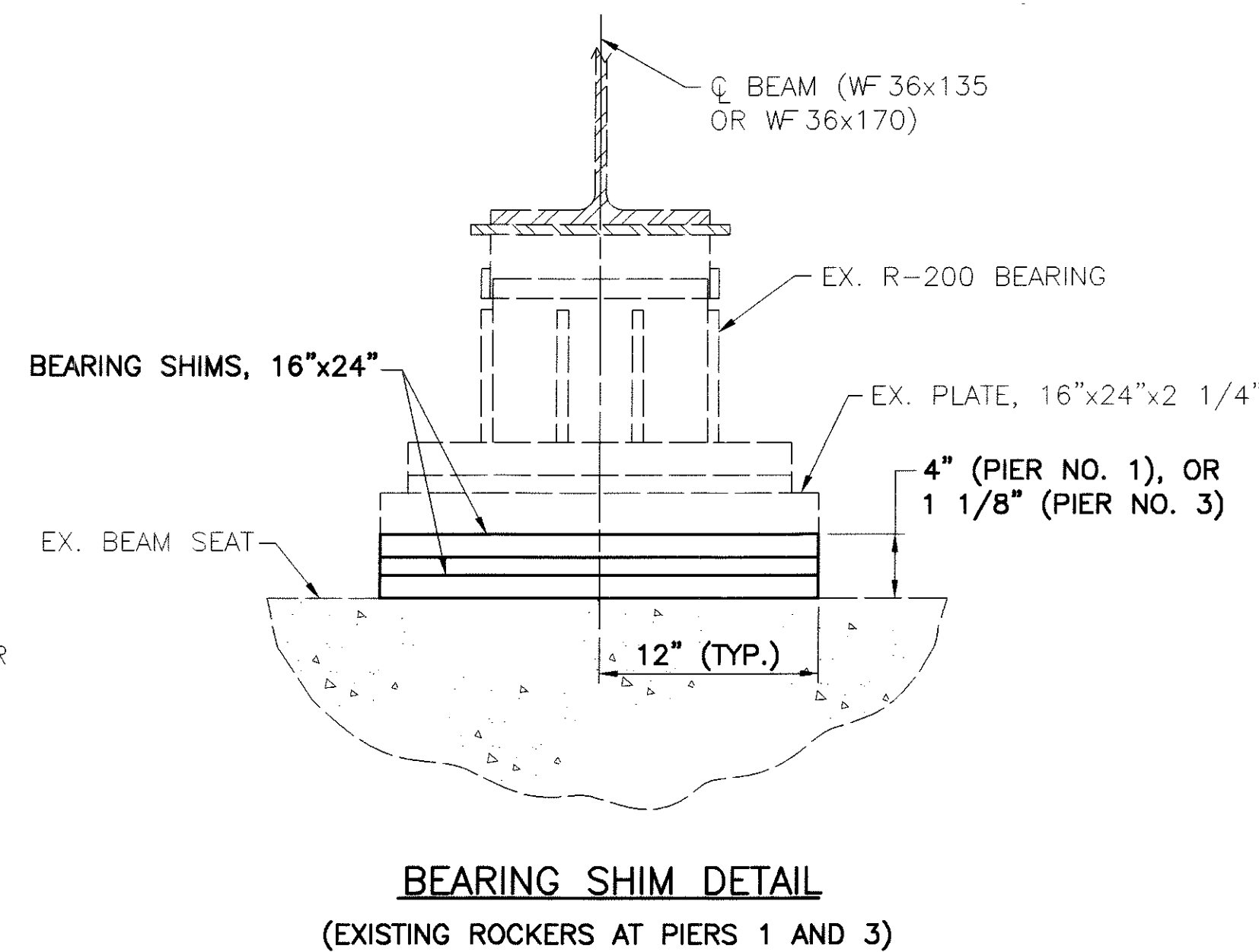
**TRANSVERSE SECTION**



**TRANSVERSE SECTION**



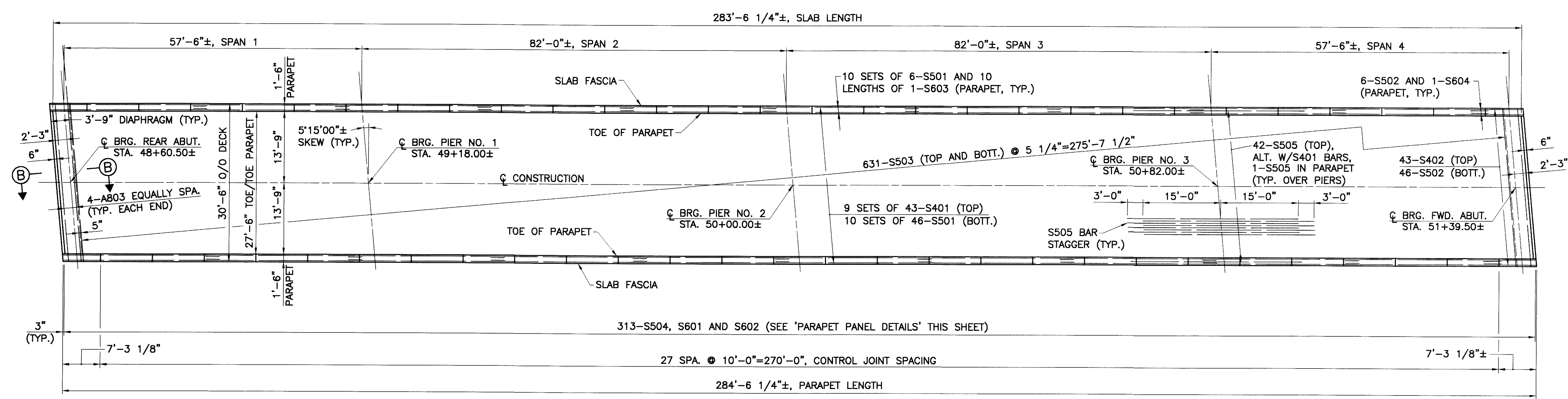
**BEARING SHIM DETAIL**  
(EXISTING BOLSTER AT PIER 2)



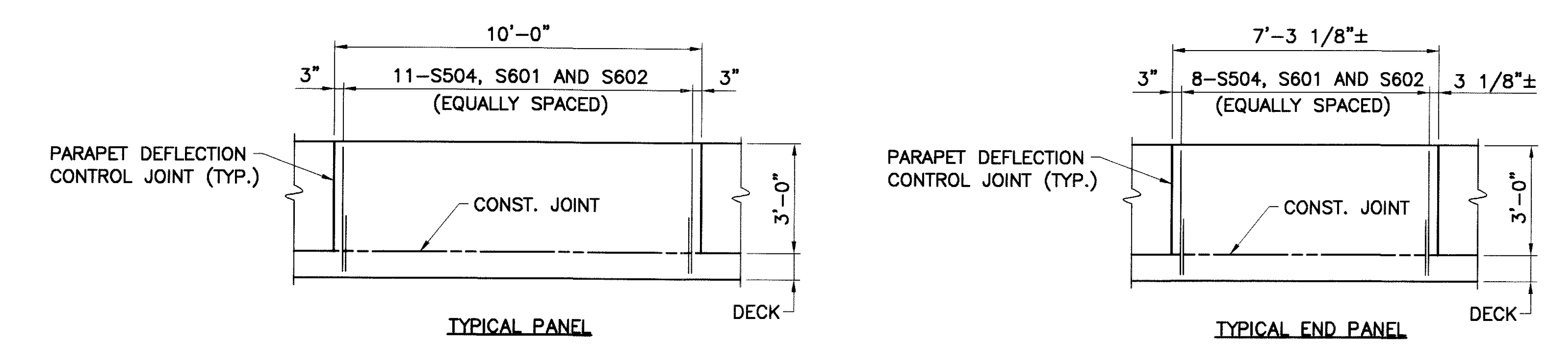
**BEARING SHIM DETAIL**  
(EXISTING ROCKERS AT PIERS 1 AND 3)

DESCRIPTION	POINTS			BEAMS			
	A	B	C	1	2	3	4
CL BRG. REAR ABUT.	1074.90	1074.66	1074.70	1074.69	1074.83	1074.84	1074.73
1/4 POINT	1075.13	1074.90	1074.93	1074.95	1075.09	1075.10	1074.99
1/2 POINT	1075.35	1075.12	1075.15	1075.16	1075.30	1075.31	1075.19
3/4 POINT	1075.52	1075.29	1075.32	1075.33	1075.46	1075.47	1075.35
CL BRG. PIER NO. 1	1075.68	1075.45	1075.48	1075.48	1075.61	1075.62	1075.50
FIELD SPLICE	1075.82	1075.60	1075.62	1075.66	1075.79	1075.79	1075.67
1/4 POINT	1075.87	1075.64	1075.66	1075.70	1075.83	1075.84	1075.72
1/2 POINT	1076.00	1075.78	1075.79	1075.86	1075.99	1075.99	1075.87
3/4 POINT	1076.07	1075.86	1075.86	1075.91	1076.03	1076.03	1075.91
CL BRG. PIER NO. 2	1076.09	1075.88	1075.88	1075.90	1076.03	1076.03	1075.90
FIELD SPLICE	1076.07	1075.86	1075.86	1075.91	1076.04	1076.03	1075.91
1/4 POINT	1076.06	1075.85	1075.85	1075.91	1075.99	1075.99	1075.91
1/2 POINT	1076.00	1075.79	1075.78	1075.87	1075.84	1075.83	1075.86
3/4 POINT	1075.86	1075.65	1075.63	1075.72	1075.62	1075.61	1075.70
FIELD SPLICE	1075.82	1075.62	1075.60	1075.67	1075.79	1075.79	1075.66
CL BRG. PIER NO. 3	1075.68	1075.48	1075.45	1075.50	1075.62	1075.61	1075.48
1/4 POINT	1075.52	1075.32	1075.29	1075.35	1075.47	1075.46	1075.33
1/2 POINT	1075.35	1075.15	1075.12	1075.19	1075.31	1075.30	1075.16
3/4 POINT	1075.13	1074.93	1074.90	1074.99	1075.10	1075.09	1074.95
CL BRG. FORWARD ABUT.	1074.90	1074.70	1074.66	1074.73	1074.84	1074.83	1074.69

DESIGN AGENCY: FINKBEINER, PETTIS & STROUT, INC.  
 520 S. MAIN STREET, SUITE 2400  
 AKRON, OHIO 44311-1010  
 DATE: 5/03  
 REVIEWED: D.L.G.  
 DRAWN: C.A.F.  
 DESIGNED: R.K.Z.  
 CHECKED: R.B.B.  
 STRUCTURE FILE NO.: 5002885  
 TRANSVERSE SECTION AND SCREED TABLE  
 BRIDGE NO. MAH-76-0508  
 DUCK CREEK ROAD OVER INTERSTATE ROUTE 76  
 MAH - 76 - 3.08  
 9 / 11  
 241  
 243

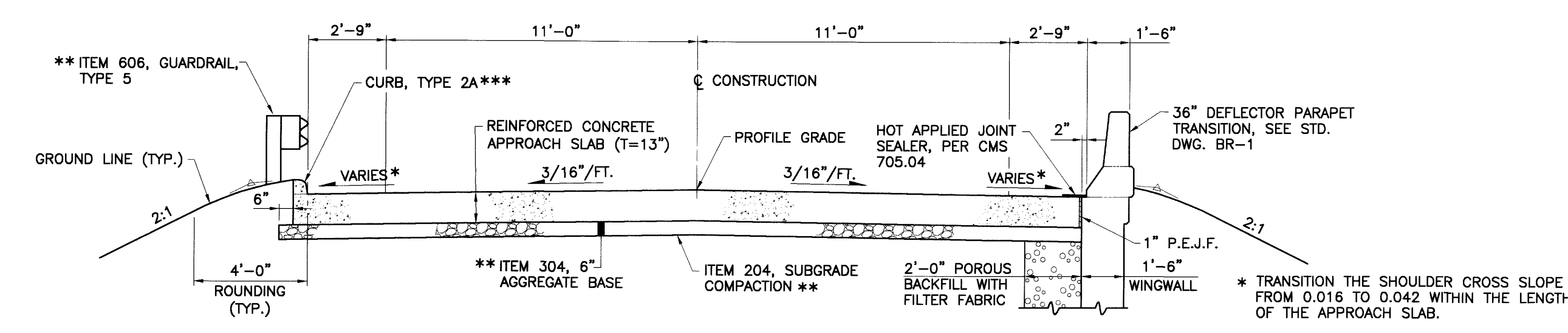


**SLAB PLAN**



**PARAPET PANEL DETAILS**

(HORIZONTAL REINFORCING NOT SHOWN)  
(SEE NOTE 4)



**APPROACH SLAB TYPICAL SECTION**

STA. 48+38.24 TO STA. 48+58.24 = 20.00 FEET  
STA. 51+41.76 TO STA. 51+61.76 = 20.00 FEET

**NOTES**

- ① MINIMUM BAR LAPS ARE AS FOLLOWS:  
#4 BARS = 24"  
#5 BARS = 30"  
#6 BARS = 36"
- ② FOR BEAM DETAILS AND NOTES SEE SHEET 8 / 11 .
- ③ TRANSVERSE CONSTRUCTION JOINTS SHALL NOT BE PERMITTED IN THE DECK SLAB.
- ④ FOR TRANSVERSE SECTION INCLUDING LONGITUDINAL BAR SPACING, PARAPET DETAILS, AND SCREED ELEVATION TABLE AND ADDITIONAL NOTES, SEE SHEET 9 / 11 .
- ⑤ THE CONTRACTOR SHALL TAKE SPECIAL CARE TO SPACE BARS AT LEAST 2" FROM THE CONTROL JOINT SAWCUT.
- ⑥ FOR SECTION B-B AND ADDITIONAL DIAPHRAGM DETAILS, AND NOTES SEE SHEET 6 / 11 .
- ⑦ HOT APPLIED JOINT SEALER AND 1" P.E.J.F. TO BE INCLUDED WITH ITEM 526, REINFORCED CONCRETE APPROACH SLAB FOR PAYMENT.
- ⑧ FOR ADDITIONAL APPROACH SLAB DETAILS AND NOTES, AND REINFORCING SEE O.D.O.T. STANDARD DRAWING AS-1-81, SHEETS 1 THRU 3.

\* TRANSITION THE SHOULDER CROSS SLOPE FROM 0.016 TO 0.042 WITHIN THE LENGTH OF THE APPROACH SLAB.  
\*\* INCLUDE WITH ROADWAY QUANTITIES FOR PAYMENT.  
\*\*\* CURB LIMITS:  
STA. 48+38.24 TO 48+43.24 LT. AND RT.  
STA. 51+56.76 TO 51+61.76 LT. AND RT.

DATE: 05/05/03  
CAD FILE: 0509-SLAB  
OPERATOR: CAC  
PLOT SCALE: 1"=1'

DESIGNED R.K.Z.	CHECKED R.B.B.	DRAWN C.A.F.	REVISED	DATE 5/03	DESIGN AGENCY FINKBEINER, PETTIS & STROUT, INC. 520 S. MAIN STREET, SUITE 2400 AKRON, OHIO 44311-1010
SLAB PLAN			D.L.G.	STRUCTURE FILE NO. 5002885	
BRIDGE NO. MAH-76-0508 DUCK CREEK OVER INTERSTATE ROUTE 76					
MAH - 76 - 3.08					
10 / 11					
242 243					

REINFORCING SCHEDULE

MARK	REAR ABUT.	FWD. ABUT.	TOTAL REQ'D.	LENGTH	TYPE	DIMENSIONS						WEIGHT LBS.
						A	B	C	D	E	INCR.	
<b>ABUTMENTS</b>												
A501	4	4	8	14'-8"	8	10'-10"						122
A502	48	48	96	8'-9"	2	3'-2"	2'-11"					876
A503	24	24	48	7'-10"	2	2'-7"	2'-9"					392
A504	20	20	40	6'-0"	ST.							250
A505	4	4	8	5'-9"	ST.							48
A506	4	4	8	10'-6"	ST.							88
A507	4	4	8	10'-1"	ST.							84
A508	24	24	48	14'-8"	ST.							734
SERIES	2 SETS	2 SETS	4 SETS	6'-5"	2	1'-0"	2'-10"					275
A509	OF 8	OF 8	OF 8	TO 10'-1"		TO 4'-8"				5/8"		
A510	12	12	24	5'-6"	1	1'-0"	4'-8"					138
A511	10	10	20	9'-0"	9	2'-8"	1'-7"					188
A512	20	20	40	3'-8"	ST.							153
A513	24	24	48	3'-0"	4	2'-5"						150
<b>ABUTMENTS</b>												
A601	24	24	48	4'-5"	3	3'-0"						318
SERIES	2 SETS	2 SETS	4 SETS	4'-5"	1	1'-4"	3'-3"					330
A602	OF 12	OF 12	OF 12	TO 4'-9"		TO 3'-7"				3/8"		
A603	8	8	16	5'-5"	ST.							130
A604	8	8	16	4'-6"	1	1'-4"	3'-4"					108
<b>ABUTMENTS</b>												
A801	10	10	20	29'-11"	ST.							1,598
A802	19	19	38	4'-7"	7	2'-3"						465
A803	4	4	8	30'-3"	ST.							646
THE TOTAL WEIGHT OF ABUTMENT REINFORCEMENT HAS BEEN CARRIED TO ESTIMATED QUANTITIES SHEET <u>2 / 11</u>												7,093

REINFORCING SCHEDULE

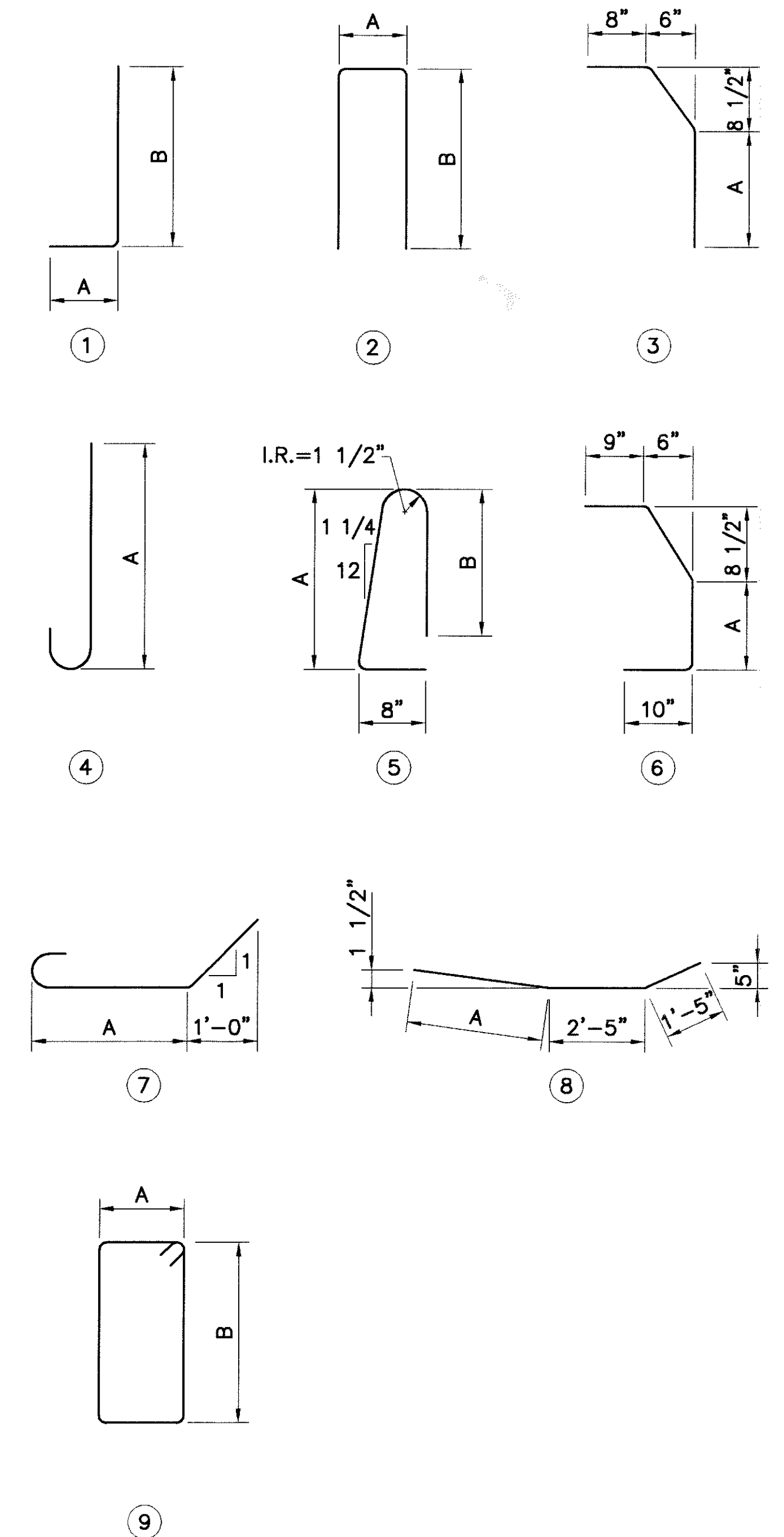
MARK	TOTAL REQ'D.	LENGTH	TYPE	DIMENSIONS						WEIGHT LBS.		
				A	B	C	D	E	INCR.			
<b>SUPERSTRUCTURE</b>												
S401	387	30'-0"	ST.							7,755		
S402	43	32'-2"	ST.							924		
S501	580	30'-0"	ST.							18,148		
S502	58	8'-8"	ST.							524		
S503	1,262	30'-1"	ST.							39,598		
S504	626	6'-0"	5	2'-9"	2'-6"					3,918		
S505	132	33'-0"	ST.							4,543		
S601	626	2'-5"	1	11"	1'-8"					2,272		
S602	626	3'-2"	6	1'-0"						2,977		
S603	20	30'-0"	ST.							901		
S604	2	13'-8"	ST.							41		
THE TOTAL WEIGHT OF SUPERSTRUCTURE REINFORCEMENT HAS BEEN CARRIED TO ESTIMATED QUANTITIES SHEET <u>2 / 11</u>												81,601

NOTES

- ALL REINFORCING BARS SHALL BE EPOXY COATED.
- THE BAR SIZE NUMBER IS SPECIFIED ON THE PLANS IN THE BAR MARK COLUMN. THE FIRST DIGIT WHERE THREE DIGITS ARE USED, INDICATES THE BAR SIZE NUMBER. FOR EXAMPLE, P601 IS A NO. 6 BAR. BAR DIMENSIONS SHOWN ARE OUT TO OUT UNLESS OTHERWISE INDICATED. "R" INDICATES INSIDE RADIUS, UNLESS OTHERWISE NOTED. "STD." WRITTEN IN PLACE OF A DIMENSION, INDICATES A STANDARD BEND AT THE END OF THE BAR.

BAR MARK LEGEND:

A = ABUTMENT S = SUPERSTRUCTURE



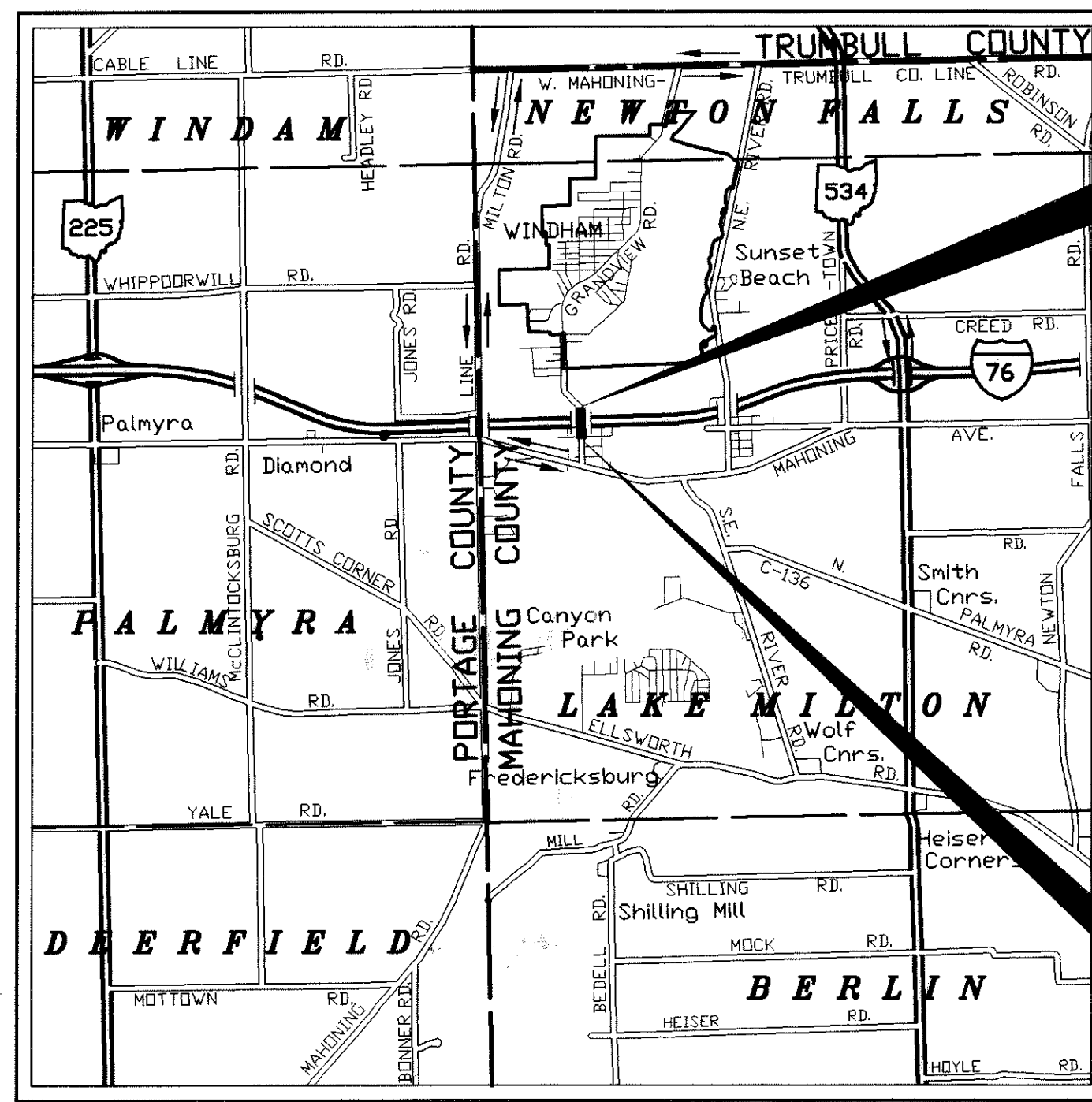
DESIGN AGENCY: FINKBEINER, PETTIS & STROUT, INC.  
 520 S. MAIN STREET, SUITE 2400  
 AKRON, OHIO 44311-1010  
 DATE: 5/03  
 REVIEWED: D.L.G.  
 DRAWN: C.A.F.  
 DESIGNED: R.K.Z.  
 CHECKED: R.B.B.  
 STRUCTURE FILE NO.: 5002885  
 REINFORCING STEEL LIST  
 BRIDGE NO. MAH-76-0508  
 DUCK CREEK ROAD OVER INTERSTATE ROUTE 76  
 MAH - 76 - 3.08  
 11 / 11  
 243  
 243

DATE: 05/05/03  
 CAD FILE: 0508-REBAR  
 DRAWN BY: CAF  
 PLOT SCALE: 1=1

STATE OF OHIO  
DEPARTMENT OF TRANSPORTATION

# MAH-76-00.67 (GRANDVIEW ROAD) PART 2

MILTON TOWNSHIP  
MAHONING COUNTY  
FOR PART 1, SEE MAH-76-3.08



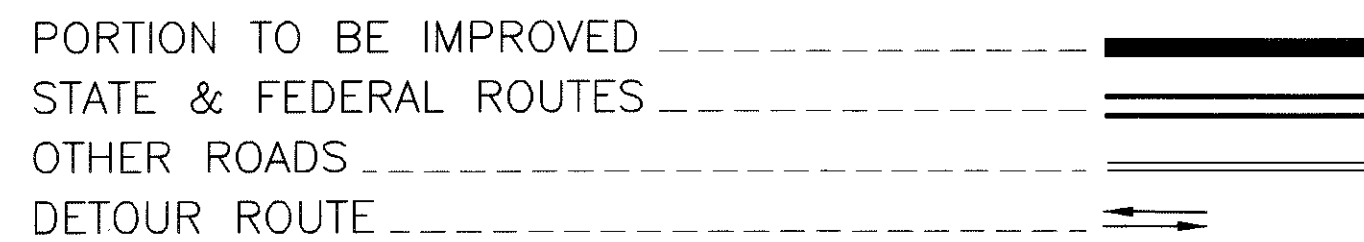
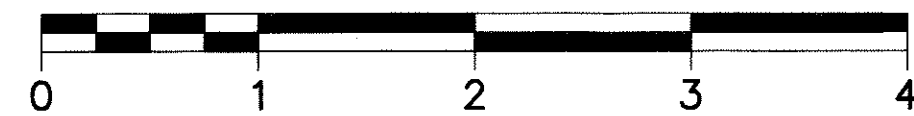
END PROJECT  
STA. 52+50.00

BEGIN PROJECT  
STA. 47+25.00

LOCATION MAP

LATITUDE: 41° 06' 01"  
LONGITUDE: 80° 59' 22"

SCALE IN MILES



DESIGN DESIGNATION

CURRENT ADT (2002)	4,230
DESIGN YEAR ADT (2022)	5,350
DESIGN HOURLY VOLUME (2022)	535
PEAK HOUR FACTOR, K	10%
DIRECTIONAL DISTRIBUTION, D	55%
TRUCKS (24 HOUR B&C)	3%
DESIGN SPEED	35 MPH
LEGAL SPEED	35 MPH

DESIGN FUNCTIONAL CLASSIFICATION  
RURAL LOCAL ROAD

DESIGN EXCEPTIONS

DESIGN FEATURE	APPROVAL DATE	SHEET NOS.
GRADED SHOULDER WIDTH		9-10
BRIDGE WIDTH		9
STOPPING SIGHT DISTANCE (HORIZONTAL ISD)		9

**UNDERGROUND UTILITIES**  
TWO WORKING DAYS  
BEFORE YOU DIG  
CALL 1-800-362-2764 (TOLL FREE)  
OHIO UTILITIES PROTECTION SERVICE  
NON-MEMBERS  
MUST BE CALLED DIRECTLY

PLANS PREPARED BY:  
FINKBEINER, PETTIS & STROUT, INC.  
Consulting Engineers  
520 SOUTH MAIN STREET, SUITE 2400  
AKRON, OHIO 44311-1010



INDEX OF SHEETS:

TITLE SHEET	1
TYPICAL SECTIONS	2
GENERAL NOTES	3
DETOUR PLAN	4
MAINTENANCE OF TRAFFIC NOTES	5
GENERAL SUMMARY	6-7
PAVEMENT CALCULATIONS	8
PLAN & PROFILE	9-10
CROSS SECTIONS	11-13
INTERSECTION DETAILS	14
TRAFFIC CONTROL	15
STRUCTURES	16-28

PART 2 PROJECT DESCRIPTION

THIS PROJECT CONSISTS OF THE FOLLOWING ELEMENTS: REHABILITATION OF THE EXISTING STRUCTURE OVER I.R. 76 AT GRANDVIEW ROAD, INCLUDING RAISING AND REPLACING THE CONCRETE DECK, NEW CONCRETE APPROACH SLABS, PAINTING OF STRUCTURAL STEEL, INSTALLING VANDAL PROTECTION FENCE, FULL DEPTH ASPHALT PAVEMENT REPLACEMENT AND GUARDRAIL INSTALLATION.

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

2002 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.

ENGINEER'S SEAL	STANDARD CONSTRUCTION DRAWINGS				SUPPLEMENTAL SPECIFICATIONS
 DENNIS GONNANO E-57218 PROFESSIONAL ENGINEER	SEE PART 1				SEE PART 1
	ENGINEER'S SIGNATURE <i>Dennis Gonnano</i> DATE 6/5/03				

APPROVED   
DATE 6-20-03 DISTRICT DEPUTY DIRECTOR

APPROVED   
DATE 6-27-03 DIRECTOR, DEPARTMENT OF TRANSPORTATION

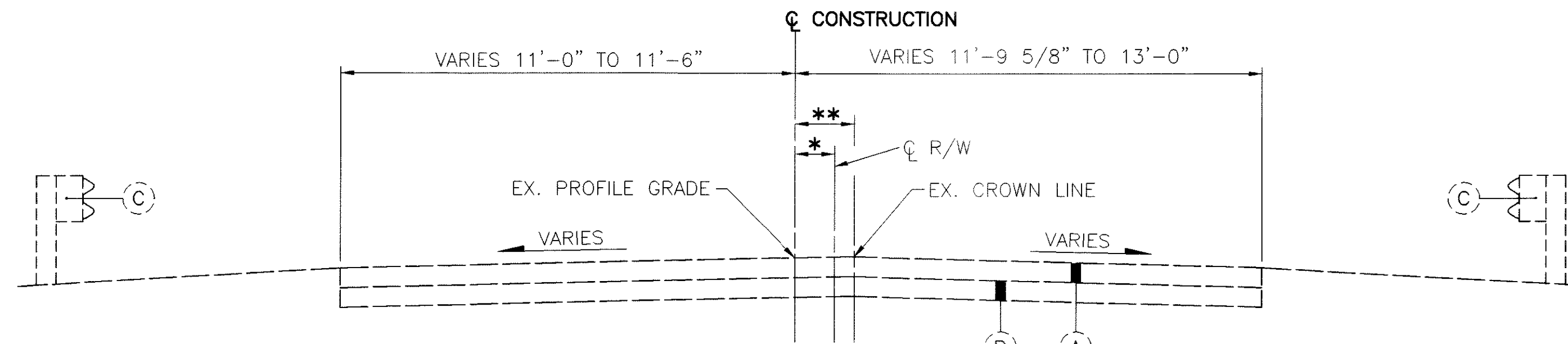
FEDERAL PROJECT NO.  
E 034 (805)

PID NO.  
18696

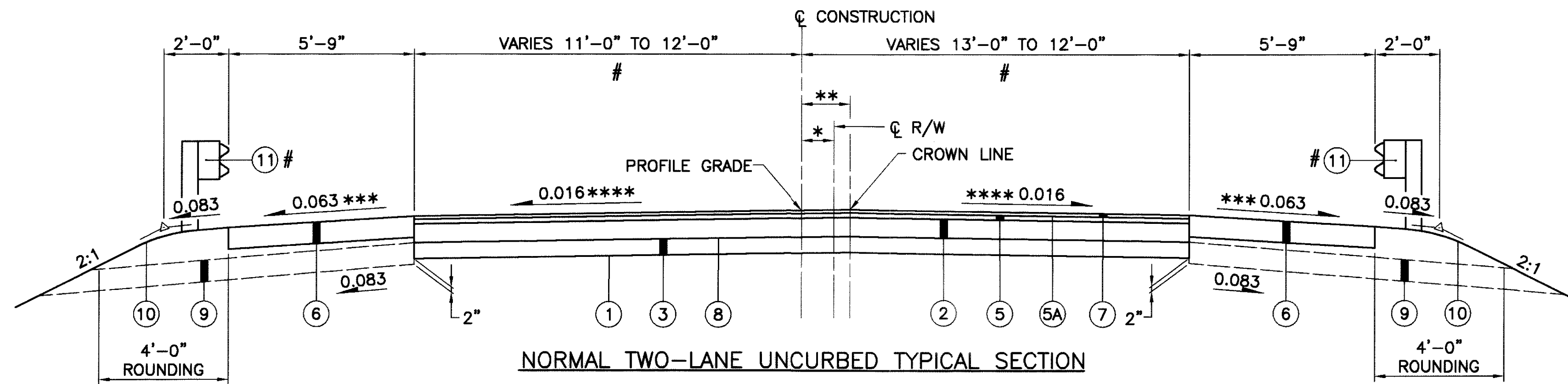
CONSTRUCTION PROJECT NO.

RAILROAD INVOLVEMENT  
NONE

MAH - 76 - 00.67  
(GRANDVIEW ROAD)

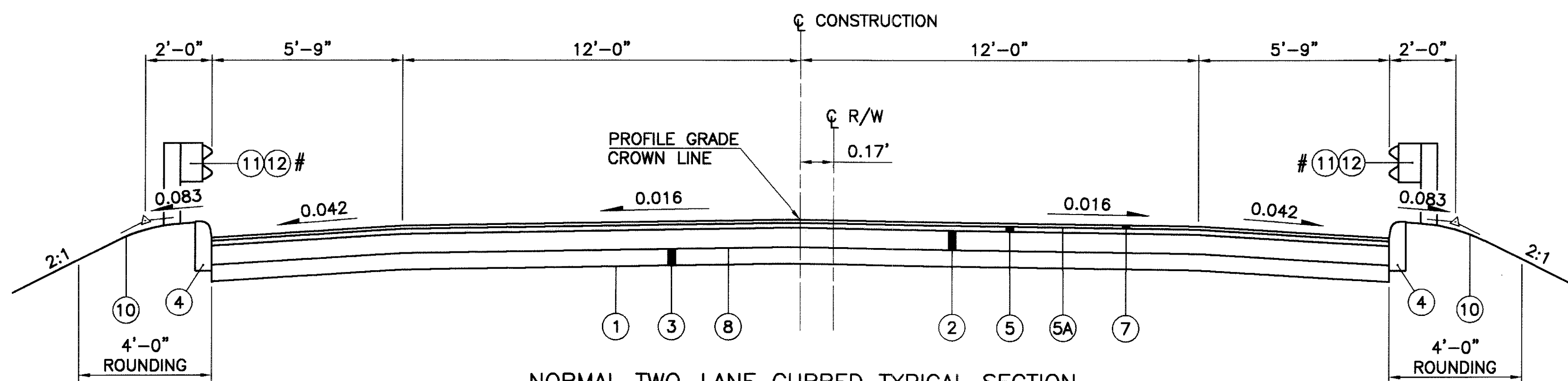


**EXISTING TYPICAL SECTION**  
STA. 47+25.00 TO STA. 52+50.00



**NORMAL TWO-LANE UNCURBED TYPICAL SECTION**

STA. 47+25.00 TO STA. 48+56.00 = 131.00 FT.  
STA. 51+44.00 TO STA. 52+50.00 = 106.00 FT.



**NORMAL TWO-LANE CURBED TYPICAL SECTION**

STA. 48+56.00 TO STA. 48+67.25 = 11.25 FT.  
STA. 51+32.75 TO STA. 51+44.00 = 11.25 FT.

**LEGEND:**

- ① ITEM 204 - SUBGRADE COMPACTION
- ② ITEM 301 - 7" ASPHALT CONCRETE BASE, PG64-22
- ③ ITEM 304 - 6" AGGREGATE BASE
- ④ ITEM 609 - CURB, TYPE 6
- ⑤ ITEM 448 - 1 3/4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, PG64-22
- ⑤A ITEM 407 - TACK COAT FOR INTERMEDIATE COURSE @ 0.04 GAL./S.Y.
- ⑥ ITEM 411 - 8" STABILIZED CRUSHED AGGREGATE
- ⑦ ITEM 448 - 1 1/4" ASPHALT CONCRETE SURFACE COURSE, TYPE 1, PG64-22
- ⑧ ITEM 408 - PRIME COAT @ 0.40 GAL./S.Y.
- ⑨ ITEM 605 - AGGREGATE DRAINS
- ⑩ ITEM 659 - SEEDING AND MULCHING
- ⑪ ITEM 606 - GUARDRAIL, TYPE 5
- ⑫ ITEM 606 - BRIDGE TERMINAL ASSEMBLY, TYPE 1 OR TYPE 2

- (A) EXISTING ASPHALT CONCRETE (t=±6")
- (B) EXISTING SUBBASE (t=±6")
- (C) EXISTING GUARDRAIL

\* VARIES FROM 0.65' TO 0.17'

\*\* CROWN LINE VARIES 1.72' RT. TO 0.00' RT. FROM STA. 47+25.00 TO STA. 47+75.00.  
CROWN LINE VARIES 0.00' RT. TO 1.22' RT. FROM STA. 51+77.53 TO STA. 52+50.00.

\*\*\* TRANSITION THE AGGREGATE SHOULDER CROSS SLOPE FROM 0.042 TO 0.063 WITHIN THE FIRST 10' FROM THE CURB.

\*\*\*\* TRANSITION THE EXISTING PAVEMENT CROSS SLOPE TO THE PROPOSED PAVEMENT CROSS SLOPE WITHIN THE FIRST 50' OF PROPOSED PAVEMENT.

# FOR LIMITS SEE PLAN AND PROFILE SHEETS 9-10.

**ROUNDING**

THE ROUNDING AT SLOPE BREAKPOINTS SHOWN ON THE TYPICAL SECTIONS APPLY TO ALL CROSS-SECTIONS EVEN THOUGH OTHERWISE SHOWN.

**UTILITIES**

LISTED BELOW ARE ALL THE UTILITIES LOCATED WITHIN THE PROJECT CONSTRUCTION LIMITS TOGETHER WITH THEIR RESPECTIVE OWNERS.

DOMINION EAST OHIO (NATURAL GAS) 1165 WEST RAYEN AVENUE YOUNGSTOWN, OH 44502-1394  
DOMINIC ROZZO (330)742-8138  
OHIO EDISON COMPANY (ELECTRIC) 730 SOUTH AVENUE YOUNGSTOWN, OH 44502  
BILL SPEECE (330)740-7635

TIME WARNER CABLE (CABLE) 755 WICK AVENUE YOUNGSTOWN, OH 44505  
JIM MANNING (330)747-2550, EXT. 5358  
SPRINT (TELEPHONE) 3801 ELM ROAD N.E. WARREN, OH 44483  
RODNEY HARRIS (330) 841-1404

SANITARY ENGINEERING DEPARTMENT OF MAHONING COUNTY (SANITARY) 761 INDUSTRIAL ROAD YOUNGSTOWN, OH 44509-2998  
TOM LaPRESTA (330)793-5514  
MAHONING COUNTY WATER PLANT (WATER) 1673 RED DOG LANE LAKE MILTON, OH 44429-9713  
LOU CAMPANA (330)654-4841

THE LOCATION OF THE UNDERGROUND UTILITIES SHOWN ON THE PLANS ARE AS OBTAINED FROM THE OWNERS AS REQUIRED BY SECTION 153.64 O.R.C.

**CONTINGENCY QUANTITIES**

THE CONTRACTOR SHALL NOT ORDER MATERIALS OR PERFORM WORK FOR ITEMS DESIGNATED BY PLAN NOTE TO BE USED "AS DIRECTED BY THE ENGINEER" UNLESS AUTHORIZED BY THE ENGINEER. THE ACTUAL WORK LOCATIONS AND QUANTITIES USED FOR SUCH ITEMS SHALL BE INCORPORATED INTO THE FINAL CHANGE ORDER GOVERNING COMPLETION OF THIS PROJECT.

**CONSTRUCTION NOISE**

ACTIVITIES AND LAND USE ADJACENT TO THIS PROJECT MAY BE AFFECTED BY CONSTRUCTION NOISE. IN ORDER TO MINIMIZE ANY ADVERSE CONSTRUCTION NOISE IMPACTS, ANY POWER-OPERATED CONSTRUCTION-TYPE DEVICE SHALL NOT BE OPERATED BETWEEN THE HOURS OF 11:00 PM AND 6:00 AM. IN ADDITION, ANY SUCH DEVICE SHALL NOT BE OPERATED AT ANY TIME IN SUCH A MANNER THAT THE NOISE CREATED SUBSTANTIALLY EXCEEDS THE NOISE CUSTOMARILY AND NECESSARILY ATTENDANT TO THE REASONABLE AND EFFICIENT PERFORMANCE OF SUCH EQUIPMENT.

**WORK LIMITS**

THE WORK LIMITS SHOWN ON THESE PLANS ARE FOR PHYSICAL CONSTRUCTION ONLY. THE INSTALLATION AND OPERATION OF ALL TEMPORARY TRAFFIC CONTROL AND TEMPORARY TRAFFIC CONTROL DEVICES REQUIRED BY THESE PLANS SHALL BE PROVIDED BY THE CONTRACTOR WHETHER INSIDE OR OUTSIDE THESE WORK LIMITS.

**EROSION CONTROL**

ITEMS 601 AND 660 ARE PROVIDED IN THE PLANS FOR EROSION CONTROL. ROCK OF A STABLE NATURE SHALL NOT BE REMOVED IN ORDER TO PLACE ANY OF THESE ITEMS AND TURF OF A STABLE NATURE SHALL NOT BE REMOVED IN ORDER TO PLACE 660. THE ENGINEER SHALL CHECK AND NON-PERFORM QUANTITIES OR ADJUST LOCATIONS AND QUANTITIES OF THESE ITEMS WHERE INDICATED BY FIELD CONDITIONS DURING CONSTRUCTION. IN ADDITION, THESE ITEMS SHALL MEET THE REQUIREMENTS OF 108.04.

**CLEARING AND GRUBBING**

ALTHOUGH THERE ARE NO TREES OR STUMPS SPECIFICALLY MARKED FOR REMOVAL WITHIN THE LIMITS OF THE 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 INCLUDED IN THE LUMP SUM PRICE BID FOR ITEM 201, CLEARING AND GRUBBING.

**ITEM 601 - CRUSHED AGGREGATE SLOPE PROTECTION**

THIS ITEM IS TO BE USED UNDER THE BRIDGE OVERPASSES AT NEWTON FALLS ROAD AND DUCK CREEK ROAD, IN ORDER TO REGRADE THE EXISTING CRUSHED AGGREGATE SLOPE PROTECTION TO GRADE, AS DIRECTED BY THE ENGINEER. A CONTINGENCY QUANTITY IS PROVIDED BELOW AND IS CARRIED TO THE GENERAL SUMMARY:

601, CRUSHED AGGREGATE SLOPE PROTECTION 60 SQ. YD.

**PROTECTION OF RIGHT-OF-WAY LANDSCAPING**

THE CONTRACTOR SHALL CONSTRICT ALL OF HIS/HER ACTIVITIES, EQUIPMENT STORAGE, AND STAGING TO WITHIN THE CONSTRUCTION LIMITS. UNLESS OTHERWISE IDENTIFIED IN THE PLANS OR PROPOSAL, THE CONSTRUCTION LIMITS ARE IDENTIFIED AS 30 FEET FROM THE EDGE OF PAVEMENT. SHOULD THE CONTRACTOR WISH TO USE ANY AREA OUTSIDE THESE LIMITS, A REQUEST IN WRITING MUST BE SUBMITTED TO THE PROJECT ENGINEER. THE DOCUMENT SUBMITTED MUST CLEARLY IDENTIFY THE AREA THAT THE CONTRACTOR PLANS TO USE AND EXPLAIN THE PROPOSED USE AND RESTORATION OF THE AREA. THE ENGINEER SHALL APPROVE THE REQUEST IN WRITING BEFORE THE CONTRACTOR HAS PERMISSION TO USE THE AREA. PRIOR TO BEGINNING WORK, THE CONTRACTOR, SUPERINTENDENT, OR HIS REPRESENTATIVE, THE PROJECT ENGINEER, AND A REPRESENTATIVE OF THE MAINTAINING AGENCY SHALL REVIEW AND RECORD ALL LANDSCAPING ITEMS WITHIN THE RIGHT OF WAY (BOTH WITHIN AND OUTSIDE THE CONSTRUCTION LIMITS). A RECORD OF THIS REVIEW WILL BE KEPT IN THE PROJECT ENGINEER'S FILES. PRIOR TO FINAL ACCEPTANCE, A FINAL REVIEW OF LANDSCAPING ITEMS WILL BE MADE. ANY ITEMS DAMAGED BEYOND THE CONSTRUCTION LIMITS AS DEFINED ABOVE WILL BE REPLACED IN KIND OR AS DIRECTED BY THE PROJECT ENGINEER.

**DATE OF COMPLETION**

IN ADDITION TO THE REQUIREMENTS OF SECTION 108.02 OF THE OHIO DEPARTMENT OF TRANSPORTATION'S CONSTRUCTION AND MATERIAL SPECIFICATIONS, AND IN CONSIDERATION OF THE DEPARTMENT'S INTENTION TO PROVIDE THE AWARDED CONTRACTOR WITH A MORE FLEXIBLE TIME FRAME FOR PERFORMING REQUIRED CONSTRUCTION ACTIVITIES, THE AWARDED CONTRACTOR FOR THIS PROJECT SHALL BE GIVEN A DATE FOR PROJECT COMPLETION IN ACCORDANCE WITH THE FOLLOWING:

ALL CONSTRUCTION WORK ON THE PROJECT SHALL BE COMPLETED ON OR BEFORE THE \_\_\_\_\_ DAY FOLLOWING THE DATE \_\_\_\_\_ OF THE DISTRICT HIGHWAY MANAGEMENT ADMINISTRATOR'S (OR DESIGNEE'S) WRITTEN AUTHORIZATION TO PROCEED WITH THE CONSTRUCTION ACTIVITIES, BUT NO LATER THAN THE COMPLETION DATE INDICATED IN THE PROPOSAL.

THEREFORE, THE AWARDED CONTRACTOR HAS A WINDOW OF TIME IN WHICH TO CONSTRUCT THIS PROJECT. FAILURE TO COMPLETE ALL CONSTRUCTION ACTIVITIES, ONCE INITIATED, EITHER WITHIN THIS WINDOW OF TIME OR BY THE DATE GIVEN FOR COMPLETION SHALL RESULT IN A BREACH OF CONTRACT BY THE AWARDED CONTRACTOR.

**CONVERSION OF STANDARD CONSTRUCTION DRAWINGS**

THE METRIC STANDARD DRAWINGS REFERENCED IN THIS PLAN SHALL BE CONVERTED TO ENGLISH UNITS USING THE SI (METRIC) TO ENGLISH CONVERSION FACTORS PROVIDED IN SECTION 109.02 OF THE 2002 CONSTRUCTION AND MATERIALS SPECIFICATIONS. CONVERSION SHALL BE APPROPRIATELY PRECISE AND SHALL REFLECT STANDARD INDUSTRY ENGLISH VALUES WHERE SUITABLE.

**ITEM 619 - FIELD OFFICE, TYPE B, AS PER PLAN**

IN ADDITION TO THE APPURTENANCES SPECIFIED BY ITEM 619, THE CONTRACTOR SHALL PROVIDE A PHOTOCOPY MACHINE CAPABLE OF REDUCTION, ENLARGEMENT AND HANDLING PAPER OUTPUT SIZES UP TO AND INCLUDING 11"x17".

**ELEVATION DATUM**

ALL ELEVATIONS ARE BASED ON NAVD88 DATUM.

**ITEM 626 - BARRIER REFLECTOR, TYPE A2 AND ITEM 626 - BARRIER REFLECTOR, TYPE B2**

THESE ITEMS CONSIST OF PROVIDING BARRIER REFLECTORS, TYPE A2 AND TYPE B2 ON PROPOSED GUARDRAIL AND CONCRETE BARRIER.

BARRIER REFLECTORS, TYPE A2, SHALL BE BOLTED TO THE GUARDRAIL.

THE FOLLOWING ESTIMATED QUANTITIES FOR BARRIER REFLECTORS REQUIRED ARE PROVIDED BELOW AND ARE CARRIED TO THE GENERAL SUMMARY.

626, BARRIER REFLECTOR, TYPE A2 15 EACH  
626, BARRIER REFLECTOR, TYPE B2 6 EACH

**ITEM 407 - TACK COAT FOR INTERMEDIATE COURSE**

THE RATE OF APPLICATION OF THE 407, TACK COAT FOR INTERMEDIATE COURSE SHALL BE SUBJECT TO ADJUSTMENTS AS DIRECTED BY THE ENGINEER. FOR ESTIMATING PURPOSES ONLY, THE PLAN QUANTITIES INDICATE AN AVERAGE RATE OF:

407, TACK COAT FOR INTERMEDIATE COURSE 0.04 GAL. PER SQ. YD.

**ITEM SPECIAL - AS-BUILT CONSTRUCTION PLANS**

PROCEDURE: THE CONTRACTOR SHALL ARRANGE FOR THE PREPARATION OF AS-BUILT PLANS, UNDER THE DIRECTION OF A PROFESSIONAL ENGINEER (PE) OR PROFESSIONAL SURVEYOR (PS) REGISTERED IN THE STATE OF OHIO. THE PE/PS SHALL BE IDENTIFIED FOR THE APPROVAL OF THE ENGINEER PRIOR TO BEGINNING WORK ON THE PROJECT. TWO COMPLETE FULL SIZE SETS OF PRINTS WILL BE FURNISHED TO THE CONTRACTOR. ONE SET IS TO BE USED IN THE FIELD TO COLLECT AS-BUILT INFORMATION. THE SECOND SET SHALL REMAIN IN THE FIELD OFFICE AS A FINAL RECORD. DATA FROM THE FIELD SET SHALL BE TRANSCRIBED ONTO THE OFFICE SET AS SOON AS CHANGES ARE MADE.

CHANGES SHALL BE RECORDED AND DATED IN RED INDELIBLE INK (FELT TIPPED PENS AND MARKERS WILL NOT BE PERMITTED) ON THE OFFICE SET. WHERE APPROPRIATE, THE CHANGE OR EXTRA WORK ORDER NUMBER SHALL BE SHOWN ADJACENT TO THE CHANGES. THE PE/PS IN CHARGE OF THE OFFICE SET SHALL CERTIFY THE CORRECTNESS OF THE AS-BUILT PLAN AND, WHEN THE PLAN IS COMPLETED, SHALL SIGN, DATE AND SEAL THE TITLE SHEET OF THE OFFICE PLAN SET.

BOTH SETS OF AS-BUILT PLANS SHALL BE DELIVERED TO THE ENGINEER UPON COMPLETION OF THE WORK. THE ENGINEER WILL COMPARE THE OFFICE SET TO THE FIELD SET TO DETERMINE ACCURACY AND ACCEPTABILITY OF THE FINAL PLAN. ACCEPTANCE OF THESE PLANS IS REQUIRED PRIOR TO THE WORK BEING ACCEPTED AND THE FINAL ESTIMATE BEING APPROVED UNDER 109.12. THE ENGINEER WILL DELIVER THE APPROVED PLANS TO THE DISTRICT PRODUCTION ADMINISTRATOR.

SCOPE OF PLAN COVERAGE: THE FOLLOWING SHALL BE SHOWN ON THE AS-BUILT PLANS -

REVISIONS WHICH RESULT IN A CHANGE OF LOCATION, MATERIAL, TYPE OR SIZE OF ANY WORK.

PAVEMENTS, FOUNDATIONS OR OTHER MAJOR OBSTRUCTIONS DISCOVERED AND REMAINING IN PLACE WHICH ARE NOT SHOWN, OR DO NOT CONFORM TO LOCATIONS, OR DEPTHS SHOWN ON THE PLANS. UNDERGROUND FEATURES SHALL BE SHOWN ON THE AS-BUILT PLAN IN TERMS OF STATION, OFFSET AND DEPTH TO THE KNOWN LIMITS OF THE ITEM. AERIAL UTILITIES SHALL BE SHOWN ON THE PLANS IN TERMS OF STATION, OFFSET AND POLE NUMBER.

ITEMS WHICH ALLOW A MATERIAL OPTION UNDER THE SPECIFICATIONS (I.E., CULVERT, CONDUITS).

EACH SHEET WITH REVISIONS APPEARING ON THEM SHALL BE MARKED "REVISED".

CONTROL OF THE WORK: THE FIELD PLAN AND OFFICE PLAN SHALL BE AVAILABLE FOR REVIEW BY THE ENGINEER, UPON REQUEST. PAYMENT FOR ALL OF THE ABOVE WORK SHALL BE INCLUDED IN THE LUMP SUM PRICE BID FOR ITEM SPECIAL, AS-BUILT CONSTRUCTION PLANS. PAYMENT WILL BE MADE AS FOLLOWS: 25% UPON APPROVAL OF THE CONTRACTOR'S AS-BUILT PLANS, 50% UPON DELIVERY OF BOTH PLANS TO THE ENGINEER AND 25% UPON ACCEPTANCE OF THE PLANS BY THE ENGINEER.

**CONNECTION BETWEEN EXISTING AND PROPOSED GUARDRAIL**

WHEN IT IS NECESSARY TO SPLICE PROPOSED GUARDRAIL TO EXISTING GUARDRAIL, ONLY THE EXISTING GUARDRAIL SHALL BE CUT, DRILLED, OR PUNCHED. THE CONNECTION SHALL BE MADE USING A "W-BEAM RAIL SPLICE" AS SHOWN IN AASHTO M 180. PAYMENT SHALL BE INCLUDED IN THE CONTRACT PRICE FOR THE RESPECTIVE GUARDRAIL ITEMS.

**SEEDING AND MULCHING**

THE FOLLOWING QUANTITIES ARE PROVIDED IN THE GENERAL SUMMARY TO PROMOTE GROWTH AND CARE OF PERMANENT SEEDED AREAS:

659, SEEDING AND MULCHING 387 SQ. YD.  
659, SOIL ANALYSIS TEST 2 EACH  
659, TOPSOIL 43 CU. YD.  
659, COMMERCIAL FERTILIZER 0.05 TON  
659, LIME 0.08 ACRE  
659, WATER 2 M GAL.  
659, MOWING 1 M SQ. FT.  
659, INTER-SEEDING 19 SQ. YD.  
659, REPAIR SEEDING AND MULCHING 19 SQ. YD.

SEEDING AND MULCHING SHALL BE APPLIED TO ALL AREAS OF EXPOSED SOIL BETWEEN THE RIGHT-OF-WAY LINES, AND WITHIN THE CONSTRUCTION LIMITS FOR AREAS OUTSIDE THE RIGHT-OF-WAY LINES CALVERED BY WORK AGREEMENT OR SLOPE EASEMENT. QUANTITY CALCULATIONS FOR SEEDING AND MULCHING, ARE BASED ON THESE LIMITS.

**ITEM 606 - ANCHOR ASSEMBLY, TYPE E-98**

THIS ITEM SHALL CONSIST OF FURNISHING AND INSTALLING EITHER OF THE FOLLOWING GUARDRAIL END TERMINALS.

- 1) THE ET-2000 (1997) MANUFACTURED BY TRINITY INDUSTRY, 1170 N. STATE STREET, GIRARD, OHIO 44420 (TELEPHONE: 330-545-4373).

THE LENGTH OF THE ET-2000 (1997) SYSTEM IS CONSIDERED TO BE 50'-0", INCLUSIVE OF TWO 25'-0" LONG RAIL ELEMENTS. INSTALLATION SHALL BE AT LOCATIONS SPECIFIED IN THE PLANS, IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS AS DETAILED ON THE FOLLOWING PRE-APPROVED SHOP DRAWINGS:

DWG. #	DRAWING NAME	DWG./REV. DATE	ODOT APPROVAL DATE
SSS265M	ET-2000 (1997) PLAN, ELEVATION & SECTIONS	6/20/97	3/6/98
SS142	ET2000 PLUS 50'-0" PLAN, ELEVATION & SECTION 25'-0" RAIL, SLEEVE W/PL POSTS 1-4	4/12/00	7/31/00
SS141	ET2000 PLUS PLAN, ELEVATION & SECTION 25'-0" RAIL, HBA POSTS 1-4	2/29/00	7/31/00
SS158	ET2000 PLUS 50'-0" WITH 12'-6" PANELS & HBA POSTS 1-4 PLAN, ELEVATION & SECTION	5/22/00	7/31/00

- 2) THE SKT-350 MANUFACTURED BY ROAD SYSTEMS, INC., 2516 MALLORY LANE, STOW, OH 44224 (TELEPHONE: 330-346-0721).

THE LENGTH OF THE SKT-350 SYSTEM IS CONSIDERED TO BE 50'-0", INCLUSIVE OF FOUR 12'-6" LONG RAIL ELEMENTS. INSTALLATION SHALL BE AT THE LOCATIONS SPECIFIED IN THE PLANS, IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS AS DETAILED ON THE FOLLOWING PRE-APPROVED SHOP DRAWINGS:

DWG. #	DRAWING NAME	DWG./REV. DATE	ODOT APPROVAL DATE
SKT-4M	SEQUENTIAL KINKING TERMINAL (SKT-350) ASSEMBLY WITH 4 FOUNDATION TUBES	12/11/97	3/6/98

THE FACE OF THE TYPE E-98 IMPACT HEAD SHALL BE COVERED WITH A SHEET OF TYPE G REFLECTIVE SHEETING, PER CMS 730.19, APPROXIMATELY 18"x18".

REFER TO THE MANUFACTURER'S INSTRUCTION REGARDING THE INSTALLATION OF, AND THE GRADING AROUND, THE FOUNDATION TUBES AND GROUND STRUT. THE TOP OF ANY FOUNDATION TUBE SHOULD BE LESS THAN 4-INCHES ABOVE THE GROUND. THE PLACEMENT OF THE FOUNDATION TUBES SHOULD BE AN APPROPRIATE DEPTH BELOW THE LEVEL LINE IN ORDER TO MAINTAIN THE FINISHED GUARDRAIL HEIGHT OF 27-3/4-INCHES FROM THE EDGE OF THE SHOULDER.

ON-SITE GRADING IS REQUIRED IF THE TOP OF THE FOUNDATION TUBES OR TOP OF THE GROUND STRUT DOES PROJECT MORE THAN 4-INCHES ABOVE THE GROUND LINE.

PAYMENT FOR THE ABOVE WORK SHALL BE MADE AT THE UNIT BID PRICE FOR ITEM 606, ANCHOR ASSEMBLY, TYPE E-98, EACH, AND SHALL INCLUDE ALL LABOR, TOOLS, EQUIPMENT, AND MATERIALS NECESSARY TO CONSTRUCT A COMPLETE AND FUNCTIONAL ANCHOR ASSEMBLY SYSTEM, INCLUDING ALL RELATED TRANSITIONS, REFLECTIVE SHEETING, HARDWARE, GRADING, EMBANKMENT AND EXCAVATION NOT SEPARATELY SPECIFIED, AS REQUIRED BY THE MANUFACTURER.

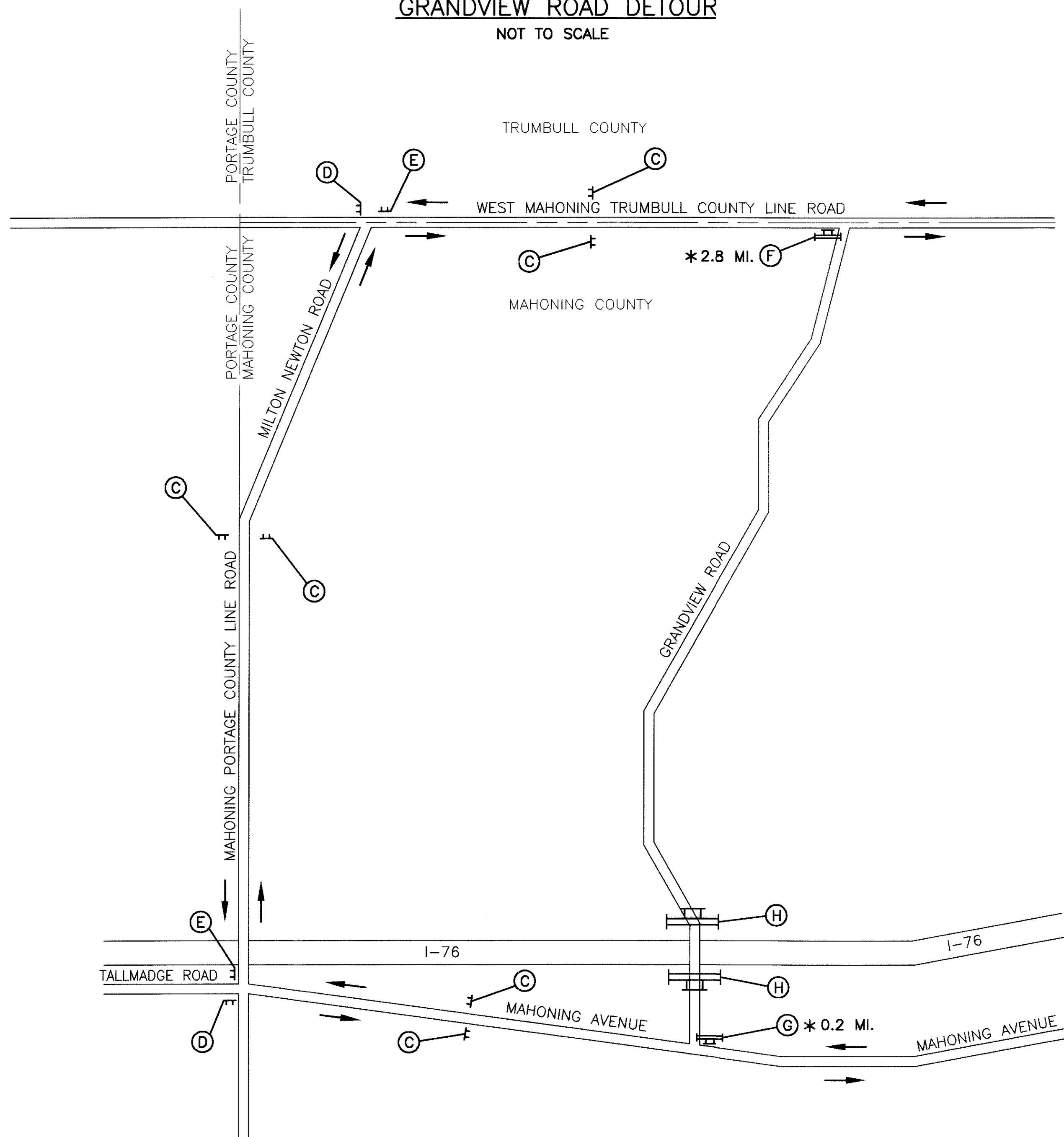
**ITEM 204 - PROOF ROLLING**

THE FOLLOWING ESTIMATED QUANTITY FOR THIS ITEM HAS BEEN CARRIED TO THE GENERAL SUMMARY FOR USE AS DIRECTED BY THE ENGINEER:

204, PROOF ROLLING 1 HOUR

**GRANDVIEW ROAD DETOUR**

NOT TO SCALE

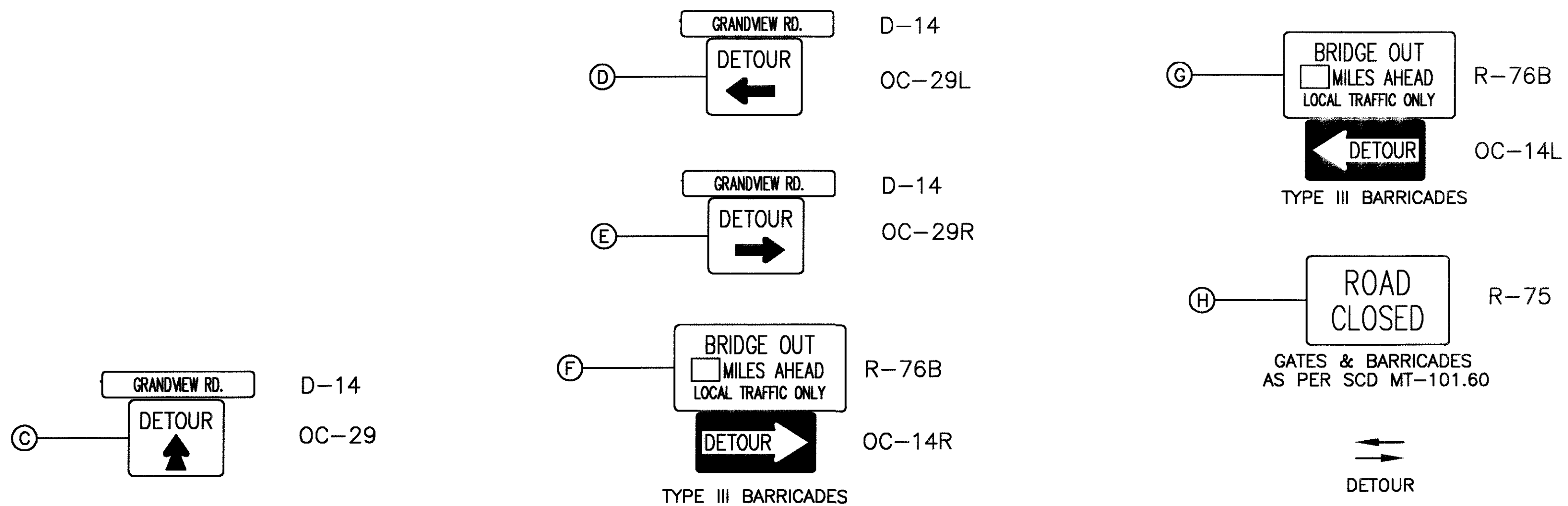


**NOTES:**

1. ALL DETOUR SIGNING IS INCLUDED UNDER ITEM 614 - DETOUR SIGNING.
2. THE MAXIMUM LENGTH OF TIME FOR THE DETOUR ROUTE TO BE IN EFFECT SHALL BE NINETY (90) CONSECUTIVE DAYS.

\* NUMBER SHOWN IS TO GO IN THE BLANK OF R-76B SIGN.

**LEGEND**



DATE : 06/07/02  
 CAD FILE : GR\_VIEW\_DETOUR  
 OPERATOR : EMC/DMF/GAF  
 PLOT SCALE : 1"=1'

**ITEM 614 - MAINTAINING TRAFFIC**

THIS ITEM SHALL CONSIST OF MAINTENANCE OF TRAFFIC ON EXISTING MAINLINE I-76 IN ACCORDANCE WITH THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS, THE CONSTRUCTION AND MATERIAL SPECIFICATIONS (CMS) AND THE FOLLOWING:

1. A MINIMUM OF ONE ELEVEN FOOT LANE IN EACH DIRECTION SHALL BE MAINTAINED ON I-76 DURING CONSTRUCTION OF THE BRIDGE.
2. THE CONTRACTOR SHALL INFORM THE DISTRICT OFFICE (330) 297-0801, EXT. 209, EIGHTEEN (18) DAYS PRIOR TO THE BEGINNING OF WORK.
3. ONLY DURING OFF-PEAK PERIODS (i.e.. ANY PERIOD OTHER THAN 7-9 AM AND 3-6 PM) SHALL THE CONTRACTOR INSTALL AND SUBSEQUENTLY RESET ALL TRAFFIC CONTROL NECESSARY FOR MAINTAINING TRAFFIC DURING EACH CONSTRUCTION PHASE.
4. CONES SHALL NOT BE ACCEPTABLE TRAFFIC CONTROL DEVICES FOR LANE RESTRICTIONS OR LANE REDUCTIONS THAT ARE IN OPERATION ONE-HALF HOUR AFTER SUNSET OR ONE-HALF HOUR BEFORE SUNRISE. ALL NIGHTTIME LANE RESTRICTIONS SHALL REQUIRE DRUMS OR BARRICADES AT A MAXIMUM SPACING OF FIFTY (50) FEET.
5. THE CONTRACTOR SHALL FURNISH, ERECT, MAINTAIN AND SUBSEQUENTLY REMOVE ALL FLAGS, BARRICADES, SIGNS, SIGN SUPPORTS AND FURNISH AND MAINTAIN ALL FLAGGERS, WATCHERS AND INCIDENTALS RELATED THERETO. THE ABOVE ITEMS SHALL BE UTILIZED IN CONFORMANCE WITH THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES, CURRENT EDITION, LATEST REVISION.
6. NO FULL DEPTH BRIDGE REPAIR SHALL BE PERFORMED OVER AN OPEN LANE. A SAFETY NET OR PLATFORM SHALL BE REQUIRED TO PROTECT THE ROADWAY DURING THE REMOVAL OF THE EXISTING CONCRETE PARAPET AND DECK. THE CONTRACTOR SHALL PROVIDE A SAFETY NET OR PLATFORM OF SUITABLE STRENGTH ON THE UNDERSIDE OF THE DECK. THE DESIGN OF THE NET OR PLATFORM SHALL CONFORM WITH OSHA REQUIREMENTS AND THE APPROVAL OF THE ENGINEER AND SHALL REMAIN IN PLACE UNTIL THE WORK HAS BEEN COMPLETED AND ACCEPTED OR AS DIRECTED BY THE ENGINEER. THE CONTRACTOR SHALL SUBMIT A DEMOLITION PLAN AND SAFETY NET OR PLATFORM DESIGN 10 DAYS PRIOR TO COMMENCING ANY DEMOLITION FOR APPROVAL BY THE ENGINEER. THE SUBMITTAL SHALL BE IN WRITING TO THE DISTRICT CONSTRUCTION ENGINEER WITH A COPY TO THE PROJECT ENGINEER.

ALL WORK AND TRAFFIC CONTROL DEVICES SHALL BE IN ACCORDANCE WITH 614 AND OTHER APPLICABLE PORTIONS OF THE SPECIFICATIONS, AS WELL AS THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES, CURRENT EDITION, LATEST REVISION. PAYMENT FOR ALL LABOR, EQUIPMENT, AND MATERIALS SHALL BE INCLUDED IN THE LUMP SUM CONTRACT PRICE BID FOR ITEM 614, MAINTAINING TRAFFIC, UNLESS SEPARATELY ITEMIZED IN THE PLAN. THE FOLLOWING QUANTITY HAS BEEN CARRIED TO THE GENERAL SUMMARY:

614, MAINTAINING TRAFFIC	LUMP SUM
--------------------------	----------

**MAINTENANCE OF TRAFFIC AND DETOUR DURING CONSTRUCTION**

DURING BRIDGE CONSTRUCTION AND PAINTING, I-76 TRAFFIC SHALL BE MAINTAINED AS PER SCD MT-95.30, AND GRANDVIEW ROAD TRAFFIC SHALL BE DETOURED AS SHOWN ON SHEET 4.

**NOTICE OF CLOSURE SIGNS (OC-60A)**

NOTICE OF CLOSURE SIGNS SHALL BE ERECTED BY THE CONTRACTOR AT LEAST ONE WEEK IN ADVANCE OF THE SCHEDULED ROAD CLOSURE. THE SIGNS SHALL BE ERECTED ON THE RIGHT HAND SIDE OF THE ROAD FACING TRAFFIC. THEY SHALL BE PLACED SO AS TO NOT INTERFERE WITH THE VISIBILITY OF ANY OTHER TRAFFIC CONTROL SIGNS. ON ROADWAYS, THEY SHOULD BE ERECTED AT THE POINT OF CLOSURE.

PAYMENT FOR PROVIDING, ERECTING, MAINTAINING AND REMOVING SIGNS AND SIGN SUPPORTS SHALL BE INCLUDED IN THE LUMP SUM BID FOR ITEM 614, MAINTAINING TRAFFIC.

**DUST CONTROL**

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

616, WATER	1 M GAL.
------------	----------

**LANE CLOSURE RESTRICTIONS (I-76 UNDER GRANDVIEW ROAD ONLY)**

MONDAY-THURSDAY:

ONE LANE OF TRAFFIC MAY BE CLOSED FROM 8PM-8AM.

FRIDAY-SUNDAY:

ONE LANE OF TRAFFIC MAY BE CLOSED FROM 8PM-7AM.

HOLIDAYS:

NO WORK SHALL BE PERFORMED AND ALL EXISTING LANES SHALL BE OPEN TO TRAFFIC DURING THE FOLLOWING DESIGNATED HOLIDAYS OR EVENTS:

CHRISTMAS	NEW YEARS
MEMORIAL DAY	FOURTH OF JULY
LABOR DAY	THANKSGIVING

THE PERIOD OF TIME THAT THE LANES ARE TO BE OPEN DEPENDS ON THE DAY OF THE WEEK ON WHICH THE HOLIDAY OR EVENT FALLS. THE FOLLOWING SCHEDULE SHALL BE USED TO DETERMINE THIS PERIOD:

DAY OF THE WEEK	TIME ALL LANES MUST BE OPEN TO TRAFFIC
SUNDAY	12:00N FRIDAY-12:00N MONDAY
MONDAY	12:00N FRIDAY-12:00N TUESDAY
TUESDAY	12:00N MONDAY-12:00N WEDNESDAY
WEDNESDAY	12:00N TUESDAY-12:00N THURSDAY
THURSDAY	12:00N WEDNESDAY-12:00N MONDAY
FRIDAY	12:00N THURSDAY-12:00N MONDAY
SATURDAY	12:00N FRIDAY-12:00N MONDAY

NO EXTENSIONS OF TIME SHALL BE GRANTED FOR DELAYS IN MATERIAL DELIVERIES, UNLESS SUCH DELAYS ARE INDUSTRY-WIDE, OR FOR LABOR STRIKES, UNLESS SUCH STRIKES ARE AREA-WIDE.

SHOULD THE CONTRACTOR FAIL TO MEET ANY OF THESE REQUIREMENTS, THE CONTRACTOR SHALL BE ASSESSED LIQUIDATED DAMAGES IN ACCORDANCE WITH CMS 108.07.

**DETOUR NOTIFICATION**

THE CONTRACTOR SHALL ADVISE THE ODOT DISTRICT OFFICE (330-297-0801 EXT. 339) EIGHTEEN (18) DAYS IN ADVANCE OF WHEN THE DETOUR ROUTE SHOULD BE IN EFFECT. ALL WORK ZONE DEVICES REQUIRED SHALL BE FURNISHED, ERECTED, MAINTAINED, AND SUBSEQUENTLY REMOVED BY THE CONTRACTOR. THE FOLLOWING QUANTITY HAS BEEN CARRIED TO THE GENERAL SUMMARY:

614, DETOUR SIGNING	LUMP SUM
---------------------	----------

**DETOUR DURATION**

THE MAXIMUM LENGTH OF TIME FOR THE DETOUR ROUTE TO BE IN EFFECT SHALL BE NINETY (90) CONSECUTIVE DAYS. CONSTRUCTION WORK MAY BE PERFORMED BEFORE AND AFTER THE DETOUR LIMITATION DATES, BUT THERE SHALL BE NO RESTRICTIONS (LANE WIDTH REDUCTIONS, TEMPORARY ROADWAYS, OR ONE WAY TRAFFIC) TO THROUGH OR LOCAL TRAFFIC. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO SCHEDULE AND PERFORM THE CONSTRUCTION WORK WITHIN THE DETOUR LIMITATION TIME. THE FAILURE OF THE CONTRACTOR TO MEET THE DETOUR LIMITATION DATES WILL CAUSE SEPARATE LIQUIDATED DAMAGES OF \$500.00 PER CALENDAR DAY OF OVERRUN OF DETOUR LIMITATION TIME TO BE ASSESSED. THE CONTRACTOR WILL COMPLY WITH ALL PROVISIONS OF 108.07 OF THE DEPARTMENT OF TRANSPORTATION CONSTRUCTION AND MATERIAL SPECIFICATIONS.

**WINTER TRAFFIC LIMITATIONS**

ALL EXISTING LANES SHALL BE OPEN TO TRAFFIC BETWEEN NOVEMBER 15 AND APRIL 1. NOVEMBER 14 SHALL BE CONSIDERED TO CONSTITUTE AN INTERIM COMPLETION DATE AND LIQUIDATED DAMAGES AS SPECIFIED IN CMS 108.07 SHALL BE ASSESSED FOR EACH CALENDAR DAY THAT THE ROADWAY REMAINS CLOSED TO TRAFFIC BEYOND THE SPECIFIED LIMIT. THE CONTRACTOR MAY CLOSE LANES PRIOR TO APRIL 1 WITH WRITTEN APPROVAL FROM THE DISTRICT CONSTRUCTION ENGINEER.

**STOPPAGE OF MAINLINE TRAFFIC**

ANY TIME TRAFFIC MUST BE COMPLETELY STOPPED ON A FREEWAY OR INTERSTATE, IT SHALL BE DONE IN THE FOLLOWING MANNER:

THE COMPLETE TRAFFIC STOPPAGE ON ALL LANES OF ANY DIRECTIONAL ROADWAY SHALL BE NO MORE THAN 10 MINUTES IN ANY ONE CONSECUTIVE 30 MINUTE PERIOD.

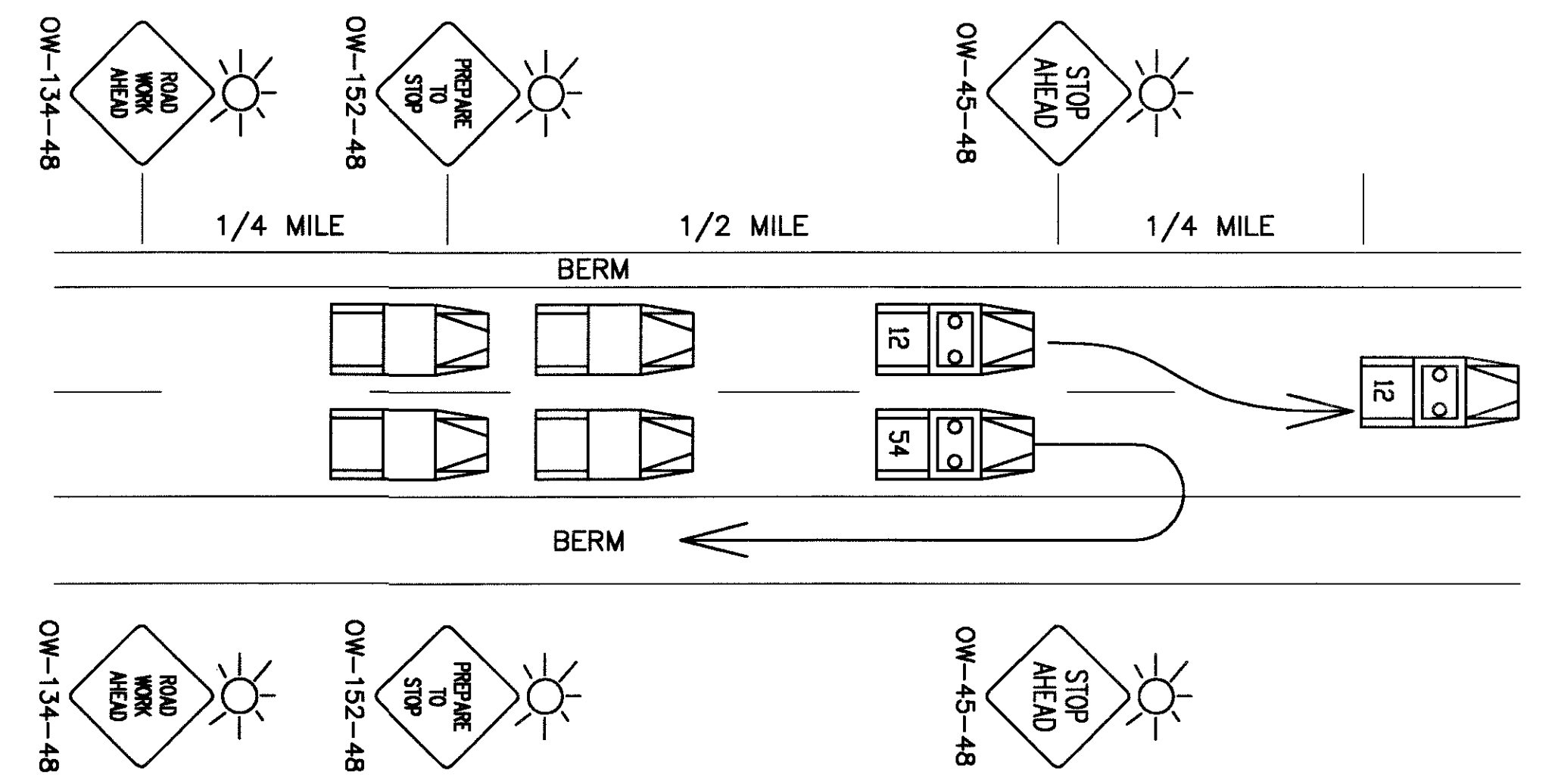
A MINIMUM OF TWO (2) LAW ENFORCEMENT OFFICERS (LEO) WITH PATROL CARS SHALL BE USED TO PACE MOTORISTS TO A STOP. THERE SHALL BE ONE LEO FOR EACH LANE ON THE FREEWAY.

AFTER TRAFFIC HAS BEEN SLOWED, ONE (1) PATROL CAR SHALL TRAVEL ALONG THE ROADWAY SHOULDER 500 FEET BEHIND THE BACKUP OF STOPPED VEHICLES. WHERE STOPPAGE OCCURS IN THE VICINITY OF FREEWAY ENTRANCES, THE CONTRACTOR SHALL PLACE FLAGGERS ON THE RAMPS TO STOP TRAFFIC. PATROL CARS SHALL HAVE FLASHING BEACONS TO PROVIDE ADEQUATE VISIBILITY TO APPROACHING MOTORISTS.

THE CONTRACTOR/PERMITEE SHALL ERECT AND MAINTAIN "ROAD WORK AHEAD" (OW-134-48), "PREPARE TO STOP" (OW-152-48), AND "STOP AHEAD" (OW-45-48) SIGNS. EACH SIGN SHALL BE EQUIPPED WITH A TYPE B FLASHING BARRICADE WARNING LIGHT IN ACCORDANCE WITH SECTION 7G-6 OF THE ODOTCD. PATROL CARS AND SIGN SHALL BE LOCATED IN ACCORDANCE WITH THE DETAIL BELOW.

A PORTABLE CHANGEABLE MESSAGE SIGN, TYPE TO BE ON ODOT'S PRE-APPROVED LIST, SHALL BE PLACED 1.5 TO 2 MILES IN ADVANCE OF THE CLOSURE OR AS DIRECTED BY THE ENGINEER.

THE CONTRACTOR SHALL NOTIFY THE ENGINEER/PERMIT OFFICE AND THE ODOT PUBLIC INFORMATION OFFICE, 330-297-0801, EXT. 211, THREE (3) DAYS PRIOR TO ANY MAINLINE TRAFFIC STOPPAGE.



**ITEM 614 - LAW ENFORCEMENT OFFICER WITH PATROL CAR**

IN ADDITION TO THE REQUIREMENTS OF CMS 614 AND THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (OMUTCD), A UNIFORMED LAW ENFORCEMENT OFFICER (AND OFFICIAL PATROL CAR WITH WORKING TOP MOUNTED EMERGENCY FLASHING LIGHTS) SHALL BE PROVIDED FOR CONTROLLING TRAFFIC FOR THE FOLLOWING TASKS:

- \* FOR LANE CLOSURES OF I.R. 76: DURING INITIAL SETUP PERIODS, TEAR DOWN PERIODS, SUBSTANTIAL SHIFTS OF A CLOSURE POINT OR WHEN NEW LANE CLOSURE ARRANGEMENTS ARE INITIATED.
- \* DURING THE ENTIRE ADVANCE PREPARATION AND CLOSURE SEQUENCE WHERE COMPLETE BLOCKAGE OF TRAFFIC ALONG I.R. 76 IS REQUIRED.

LAW ENFORCEMENT OFFICERS (LEO'S) SHOULD NOT BE USED WHERE THE ODOT INTENDS THAT FLAGGERS BE USED. THE LEO'S ARE CONSIDERED TO BE EMPLOYED BY THE CONTRACTOR AND THE CONTRACTOR SHALL BE RESPONSIBLE FOR THEIR ACTIONS. ALTHOUGH THEY ARE EMPLOYED BY THE CONTRACTOR, THE PROJECT ENGINEER SHALL HAVE CONTROL OVER THEIR PLACEMENT. THE OFFICIAL PATROL CAR SHALL BE A PUBLIC SAFETY VEHICLE AS REQUIRED BY THE OHIO REVISED CODE. THE CONTRACTOR SHALL MAKE ARRANGEMENTS FOR THESE SERVICES WITH:

OHIO HIGHWAY PATROL  
500 SOUTH BROAD STREET  
CANFIELD, OHIO 44406-1607  
(330) 533-6866

LAW ENFORCEMENT OFFICERS WITH PATROL CAR REQUIRED BY THE TRAFFIC MAINTENANCE TASKS ABOVE SHALL BE PAID FOR ON A UNIT PRICE (HOURLY) BASIS UNDER ITEM 614, LAW ENFORCEMENT OFFICER WITH PATROL CAR. THE FOLLOWING ESTIMATED QUANTITY HAS BEEN CARRIED TO THE GENERAL SUMMARY:

614, LAW ENFORCEMENT OFFICER WITH PATROL CAR	20 HOURS
--	----------

THE HOURS PAID SHALL INCLUDE MINIMUM SHOW-UP TIME REQUIRED BY THE LAW ENFORCEMENT AGENCY INVOLVED.

IF THE CONTRACTOR WISHES TO UTILIZE LEO'S FOR FLAGGING AND TRAFFIC CONTROL OTHER THAN FOR THAT REQUIRED IN THESE PLANS, THEY MAY DO SO AT THEIR OWN EXPENSE. PAYMENT FOR THE EXCESS ABOVE CONTRACT REQUIREMENTS WILL BE INCLUDED UNDER ITEM 614, MAINTAINING TRAFFIC.



DATE : 06/19/02  
 CAD FILE : G:\view\_gen\_sum1.dwg  
 OPERATOR : SSR/CAF  
 PLOT SCALE : 1"=1'

SHEET NUMBER										ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.	
3	8	10	13													
										<b>R O A D W A Y</b>						
LUMP										201	11000	LUMP		CLEARING AND GRUBBING		
	133									202	22900	133	SQ YD	APPROACH SLAB REMOVED		
		531								202	38000	531	FT	GUARDRAIL REMOVED		
		89								202	75000	89	FT	FENCE REMOVED		
			545							203	10000	545	CU YD	EXCAVATION		
			15							203	20000	15	CU YD	EMBANKMENT		
	1,272									204	10000	1,272	SQ YD	SUBGRADE COMPACTION		
1										204	45000	1	HOUR	PROOF ROLLING		
		475								606	13000	475	FT	GUARDRAIL, TYPE 5		
		1								606	22010	1	EACH	ANCHOR ASSEMBLY, TYPE E-98	3	
		1								606	26500	1	EACH	ANCHOR ASSEMBLY, TYPE T		
		2								606	35000	2	EACH	BRIDGE TERMINAL ASSEMBLY, TYPE 1		
		2								606	35100	2	EACH	BRIDGE TERMINAL ASSEMBLY, TYPE 2		
		89								607	15000	89	FT	FENCE, TYPE 47		
		2								625	32000	2	EACH	GROUND ROD		
										<b>E R O S I O N   C O N T R O L</b>						
60										601	20000	60	SQ YD	CRUSHED AGGREGATE SLOPE PROTECTION	3	
2										659	00100	2	EACH	SOIL ANALYSIS TEST		
43										659	00300	43	CU YD	TOPSOIL		
387										659	10000	387	SQ YD	SEEDING AND MULCHING		
19										659	14000	19	SQ YD	REPAIR SEEDING AND MULCHING		
19										659	15000	19	SQ YD	INTER-SEEDING		
0.05										659	20000	0.05	TON	COMMERCIAL FERTILIZER		
0.08										659	31000	0.08	ACRE	LIME		
2										659	35000	2	M GAL	WATER		
1										659	40000	1	M SQ FT	MOWING		
		135								660	20000	135	SQ YD	SODDING REINFORCED		
										832	10000	1	EACH	STORM WATER POLLUTION PREVENTION PLAN		
										832	20000	LUMP		EROSION CONTROL		
										<b>D R A I N A G E</b>						
		1								604	34500	1	EACH	MANHOLE ADJUSTED TO GRADE		
	161									605	31100	161	FT	AGGREGATE DRAINS		
										<b>P A V E M E N T</b>						
	187									301	46000	187	CU YD	ASPHALT CONCRETE BASE, PG64-22		
	187									304	20000	187	CU YD	AGGREGATE BASE		
	38									407	14000	38	GALLON	TACK COAT FOR INTERMEDIATE COURSE		
	384									408	10000	384	GALLON	PRIME COAT		
	67									411	10000	67	CU YD	STABILIZED CRUSHED AGGREGATE		
	47									448	46050	47	CU YD	ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, PG64-22		
	33									448	47020	33	CU YD	ASPHALT CONCRETE SURFACE COURSE, TYPE 1, PG64-22		
	45									609	26000	45	FT	CURB, TYPE 6		

GENERAL SUMMARY

MAH - 76 - 00.67  
(GRANDVIEW ROAD)





BEGIN PROJECT  
STA. 47+25.00

BEGIN WORK  
STA. 47+20.00

POINT OF MINIMUM VERTICAL CLEARANCE		
	ACTUAL	REQUIRED
EASTBOUND	16.80'	16.50'
WESTBOUND	16.57'	16.50'

- FOR ESTIMATED QUANTITIES,  
SEE SHEET 10.

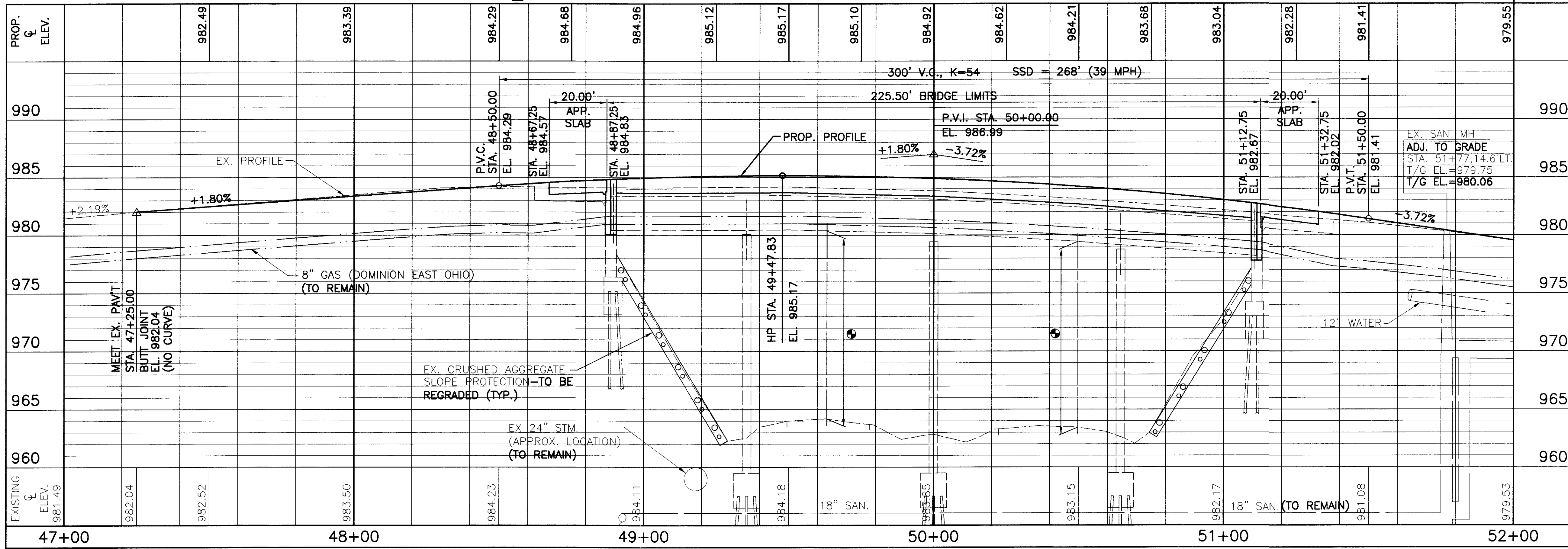
STA. 51+77.53  
CONST. GRANDVIEW RD.=  
STA. 10+00.00  
CONST. PINE DR.

BENCHMARK NO. 1  
STA. 51+61.86, 71.6' RT.  
TOP BOLT OF FIRE HYDRANT  
LOCATED N.E. OF BRIDGE ALONG  
PINE DRIVE.  
ELEV. = 981.88

BENCHMARK NO. 2  
STA. 45+79.89, 79.7' LT.  
N.E. CORNER OF CONCRETE STOOP  
RES. #554 LOCATED S.W. OF  
BRIDGE.  
ELEV. = 979.28

LEGEND

- AGGREGATE DRAIN
- \* CONNECT TO EXISTING GUARDRAIL
- \*\* STATIONS INDICATE THE FIRST GUARDRAIL POST FROM THE END OF THE BRIDGE PARAPET
- # CONNECT FENCE TO BRIDGE WITH AN ABUTMENT CONNECTION AS PER SCD GR-3.1.
- ## GUARDRAIL POSTS NEAREST TO EXISTING 8" GAS MAIN ARE TO BE BORED AND ENCASED IN CONCRETE PER SCD GR-1.1.
- ### FOR PULL BOX AND CONDUIT DETAILS, SEE BRIDGE SHEETS [7/13] AND [12/13].
- † CURB, TYPE 6



PLAN AND PROFILE - GRANDVIEW RD.  
STA. 47+00 TO STA. 52+00

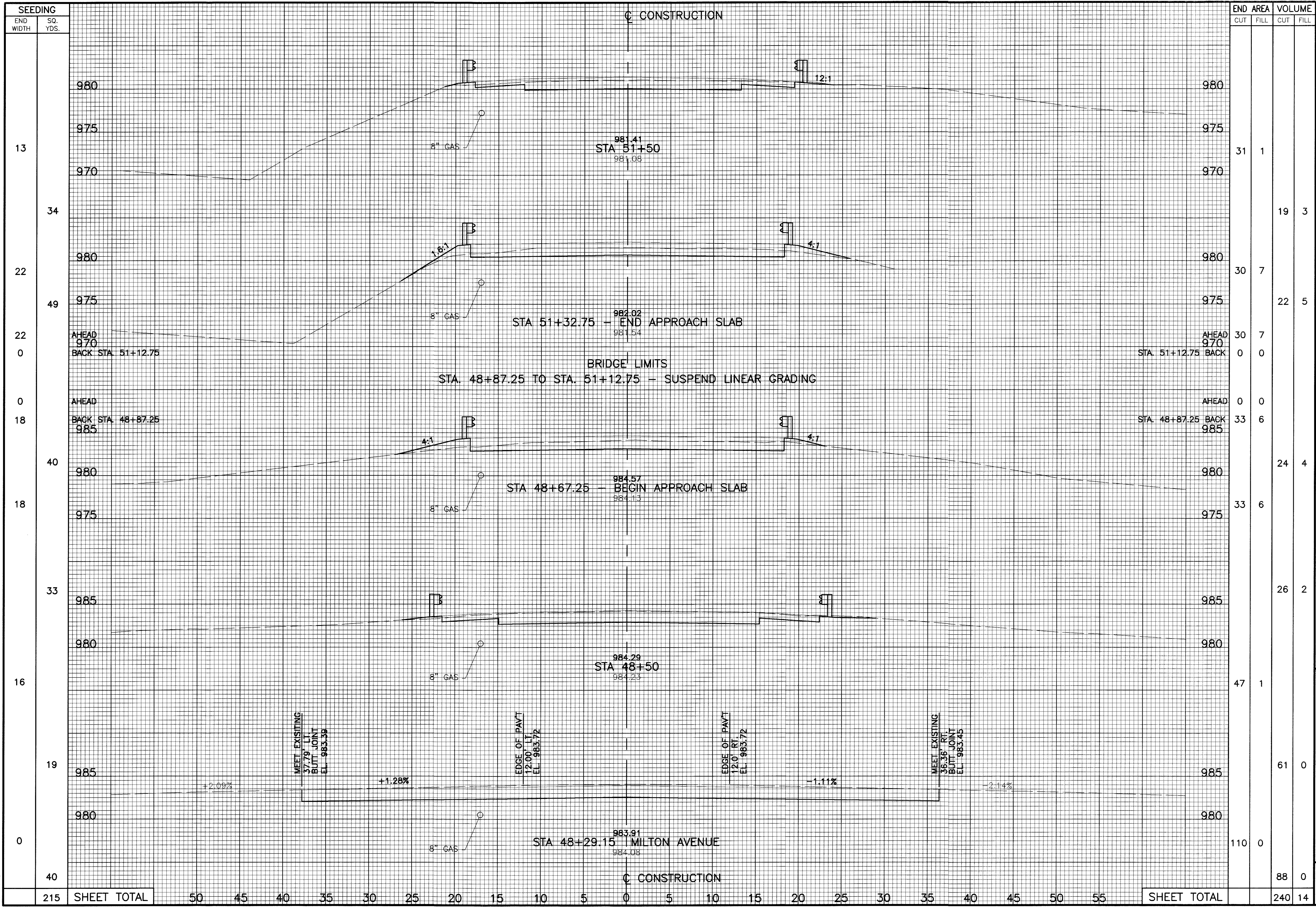
MAH - 76 - 00.67  
(GRANDVIEW ROAD)

DATE: 6/14/02  
CAD FILE: GRAND\_PP1  
OPERATOR: MFB/DWF/CAF  
PLOT SCALE: 1:11





DATE : 06/07/02  
 CAD FILE : GRAND\_XSEC02  
 OPERATOR : MFB/CAF/BBN/MCC  
 PLOT SCALE : 1" = 1'



SEEDING	END AREA		VOLUME		CALCULATED	CHECKED																						
	CUT	FILL	CUT	FILL																								
13			31	1																								
34				19	3																							
22			30	7																								
49				22	5																							
22			30	7																								
0			0	0																								
0			0	0																								
18			33	6																								
40				24	4																							
18			33	6																								
33				26	2																							
16			47	1																								
19				61	0																							
0			110	0																								
40				88	0																							
215	SHEET TOTAL		50	45	40	35	30	25	20	15	10	5	0	5	10	15	20	25	30	35	40	45	50	55	SHEET TOTAL		240	14

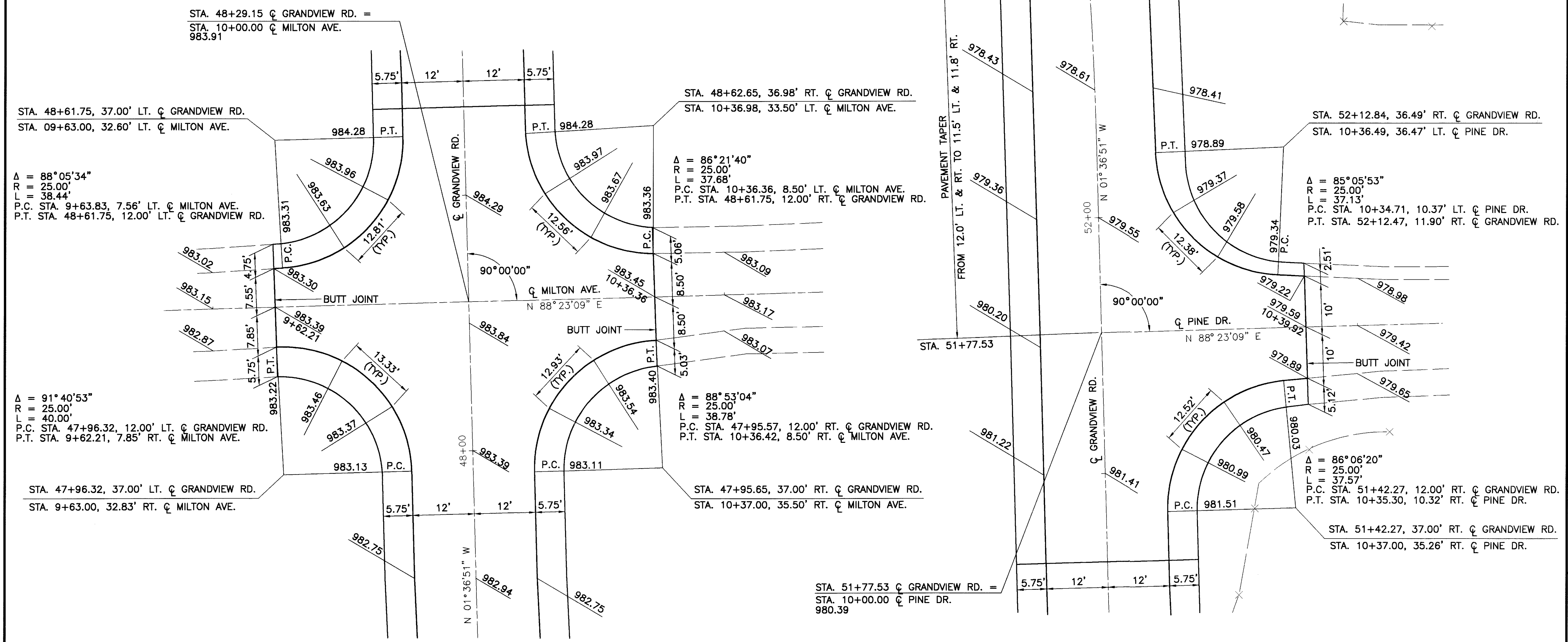
CROSS SECTION SHEET  
 STA. 48+29.15 TO STA. 51+50

MAH - 76 - 00.67  
 (GRANDVIEW ROAD)

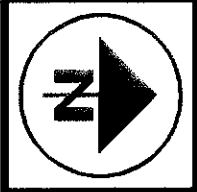
12  
 28







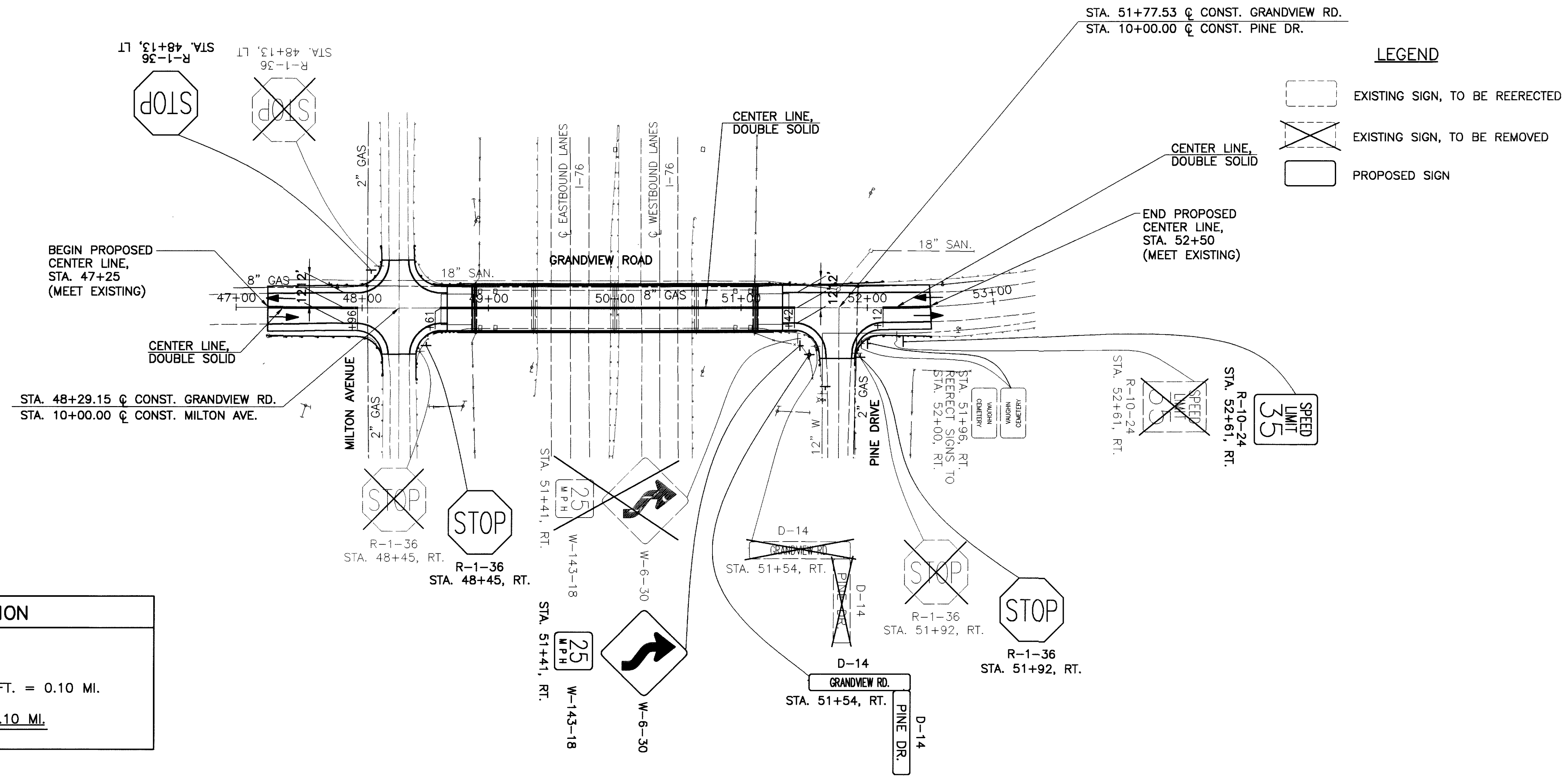
NOTE : ALL ELEVATIONS ARE PAVEMENT ELEVATIONS



CALCULATED: RAK  
 CHECKED: M/RD  
 HORIZONTAL SCALE  
 1" = 50 FEET

TRAFFIC CONTROL PLAN

MAH - 76 - 00.67  
 (GRANDVIEW ROAD)



- LEGEND**
- EXISTING SIGN, TO BE REERECTED
  - EXISTING SIGN, TO BE REMOVED
  - PROPOSED SIGN

**PAVEMENT MARKING CALCULATION**

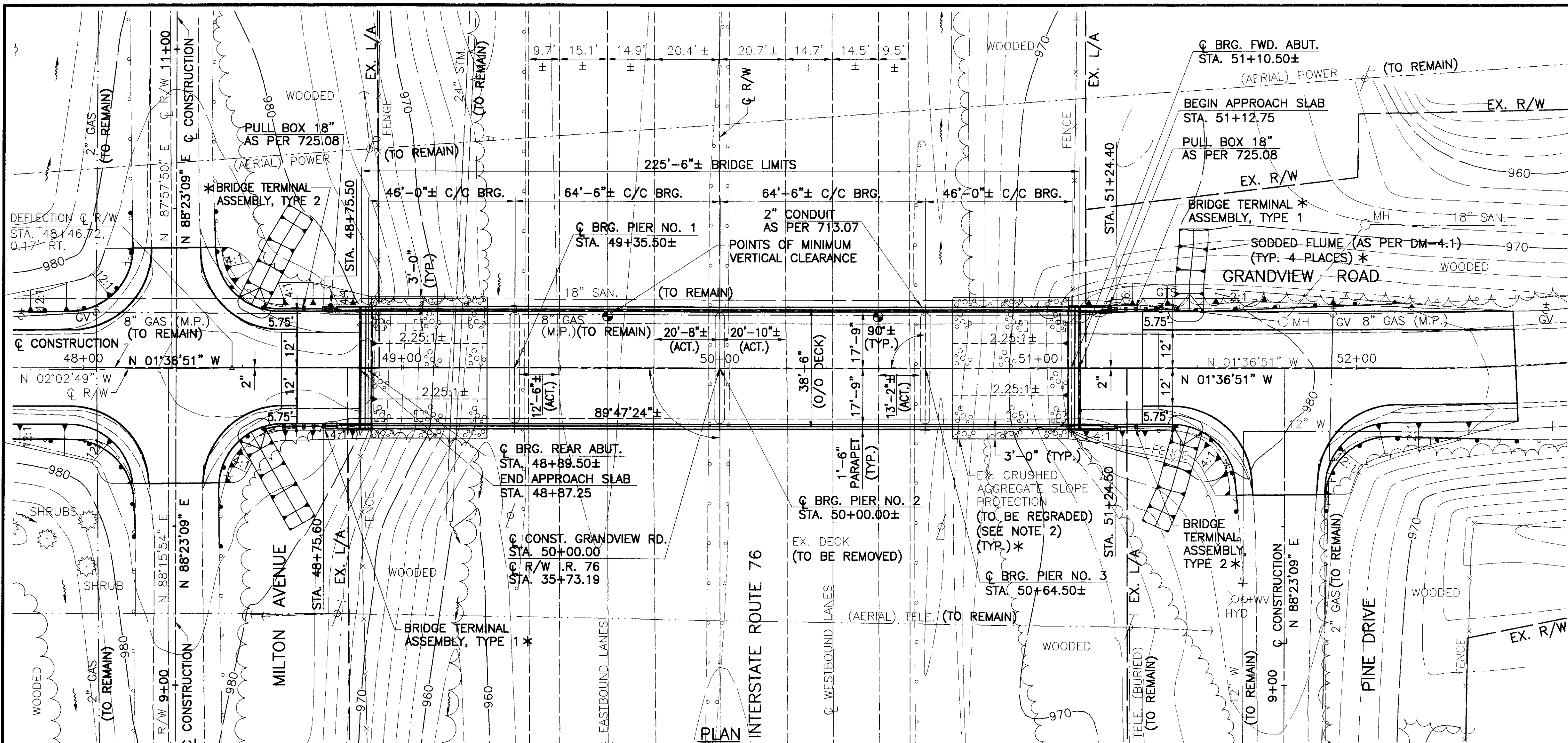
ITEM 646 - CENTER LINE  
 STA. 47+25.00 TO STA. 52+50.00 = 525 FT. = 0.10 MI.  
 TOTAL CARRIED TO GENERAL SUMMARY = 0.10 MI.

**GROUND MOUNTED SIGN SUB-SUMMARY**

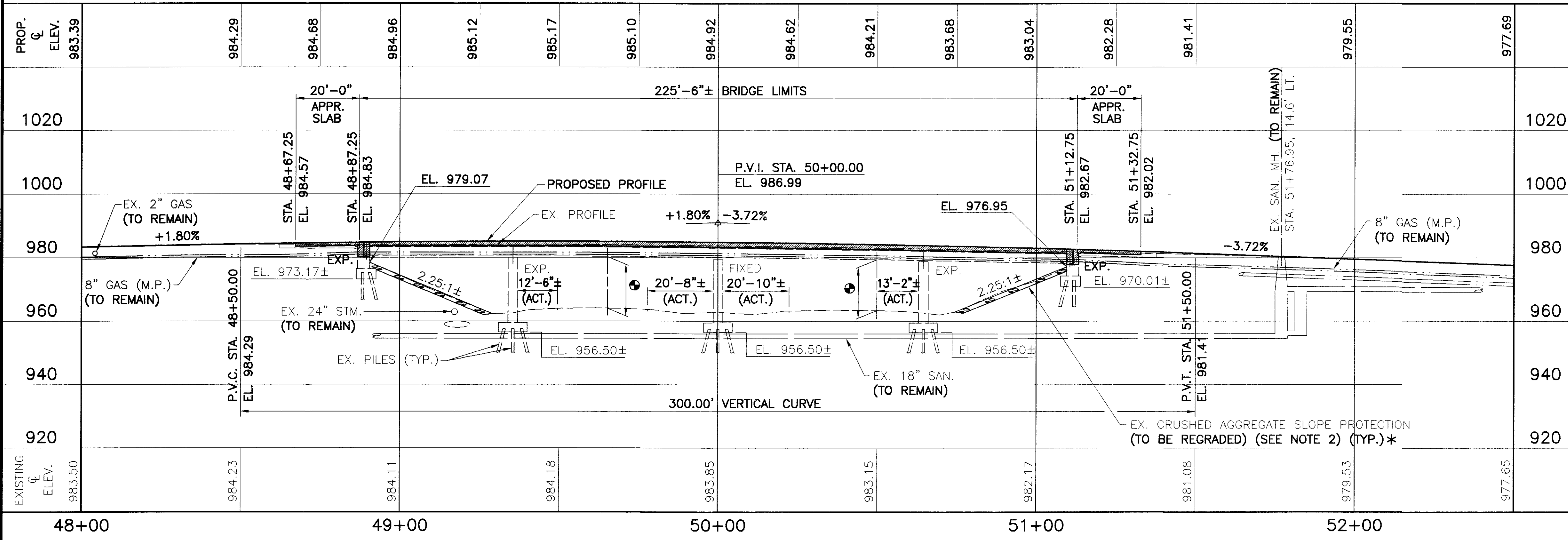
STATION		SIDE	CODE	SIZE	630						
EXIST.	PROP.				SIGN, FLAT SHEET, TYPE G	SIGN, DOUBLE FACED, STREET NAME	STREET NAME SIGN SUPPORT, NO. 2 POST	GROUND MOUNTED SUPPORT, NO. 3 POST	REMOVAL OF GROUND MOUNTED SIGN AND STORAGE	REMOVAL OF GROUND MOUNTED SIGN AND REERECTION	REMOVAL OF GROUND MOUNTED POST SUPPORT AND DISPOSAL
					SQ. FT.	EACH	FT.	FT.	EACH	EACH	EACH
48+13	48+13	LT	R-1-36	36" X 36"	9.0			12.5	1		1
48+45	48+45	RT	R-1-36	36" X 36"	9.0			12.5	1		1
51+41	51+41	RT	W-6-30	30" X 30"	6.25			13.6	2		1
			W-143-18	18" X 18"	2.25						
51+54	51+54	RT	D-14	VAR. X 8"		2	12		2		1
51+92	51+92	RT	R-1-36	36" X 36"	9.0			12.5	1		1
51+96	52+00	RT	PRIVATELY OWNED	18" X 12"				10.5		2	1
52+61	52+61	RT	R-10-24	24" X 30"	5.0			13.0	1		1
<b>TOTALS CARRIED TO GENERAL SUMMARY SHEET 7</b>					40.5	2	12	74.6	8	2	7

DATE : 06/07/02  
 CAD FILE : GR\_VIEW\_SS  
 OPERATOR : BBN/CAF  
 PLOT SCALE : 1"=1'

DATE: 6/14/02  
 CAD FILE: 0667 SITE  
 OPERATOR: CAF/MPB  
 SCALE: 1"=20'



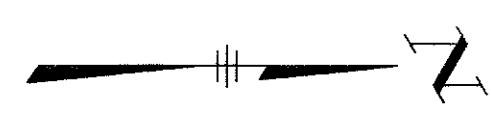
PLAN



PROFILE ALONG  $\phi$  CONSTRUCTION

NOTES

- EARTHWORK LIMITS SHOWN ARE APPROXIMATE. ACTUAL SLOPES SHALL CONFORM TO PLAN CROSS SECTIONS.
- THE EXISTING CRUSHED AGGREGATE SLOPE PROTECTION SHALL BE REGRADED AS DIRECTED BY THE ENGINEER. SEE ROADWAY GENERAL NOTES SHEET 3.



	ACTUAL	REQUIRED
EASTBOUND	16.80'	16.50'
WESTBOUND	16.57'	16.50'

\* TO BE INCLUDED WITH ROADWAY QUANTITIES FOR PAYMENT

**BENCHMARK NO. 1**  
 TOP BOLT OF FIRE HYDRANT LOCATED N.E. OF BRIDGE ALONG PINE DRIVE.  
 STA. 51+61.86, 71.6' RT. ELEV. = 981.88

**BENCHMARK NO. 2**  
 N.E. CORNER OF CONCRETE STOOP @ RES. #554 LOCATED S.W. OF BRIDGE.  
 STA. 45+79.89, 79.7' LT. ELEV. = 979.28

DESIGN DESIGNATION

CURRENT ADT (2002):	4,230
DESIGN ADT (2022):	5,350
DESIGN ADTT (2022):	161

EXISTING STRUCTURE

TYPE: CONTINUOUS STEEL BEAM WITH REINFORCED CONCRETE DECK ON REINFORCED CONCRETE ABUTMENTS AND CAP AND COLUMN PIERS ON PILING  
 SPANS: 46'-0"±, 64'-6"±, 64'-6"± AND 46'-0"± C/C BEARINGS  
 ROADWAY: 30'-0"± F/F CURB  
 ALIGNMENT: TANGENT  
 SKEW: NONE  
 LOADING: CF-400  
 WEARING SURFACE: MONOLITHIC CONCRETE  
 APPROACH SLABS: 25'-0"± (AS-1-54)  
 BUILT: 1964  
 CONDITION: FAIR  
 STRUCTURE FILE NO.: 5002672

PROPOSED STRUCTURE

PROPOSED WORK: EXISTING CONTINUOUS STEEL BEAM WITH NEW REINFORCED CONCRETE COMPOSITE DECK ON MODIFIED SEMI-INTEGRAL REINFORCED CONCRETE ABUTMENTS AND EXISTING CONCRETE PIERS  
 SPANS: 46'-0"±, 64'-6"±, 64'-6"± AND 46'-0"± C/C BEARINGS  
 ROADWAY: 35'-6" TOE/TOE PARAPET  
 ALIGNMENT: TANGENT  
 SKEW: NONE  
 WEARING SURFACE: MONOLITHIC CONCRETE  
 APPROACH SLABS: 20'-0" (AS-1-81)  
 LOADING: HS20-44 AND ALTERNATE MILITARY  
 CROWN: 3/16" PER FOOT SLOPE  
 LONGITUDE: N 80° 59' 22"  
 LATITUDE: W 41° 06' 01"

DESIGN AGENCY: FINKBEINER, PETTIS & STROUT, INC.  
 520 S. MAIN STREET, SUITE 2400  
 AKRON, OHIO 44311-1010

DATE: 5/03  
 REVIEWED: D.L.G.  
 DRAWN: M.P.B.  
 CHECKED: R.K.Z.  
 STRUCTURE FILE NO.: 5002672

MAHoning COUNTY  
 STATION 48+87.25 TO STATION 51+12.75

SITE PLAN  
 BRIDGE NO. MAH-76-0067  
 GRANDVIEW ROAD OVER INTERSTATE ROUTE 76

MAH-76-00.67  
 (GRANDVIEW ROAD)

1/13  
 16  
 28

ESTIMATED QUANTITIES

CALC. BY: C.A.F. DATE: 12/01  
 CHKD. BY: R.K.Z. DATE: 12/01

AS  
PER  
PLAN

ITEM	ITEM EXT.	TOTAL	UNIT	DESCRIPTION	ABUTS.	PIERS	SUPER	GEN'L.	SHEET
202	11201		LUMP	PORTIONS OF STRUCTURE REMOVED, AS PER PLAN				LUMP	2, 5
503	11100		LUMP	COFFERDAMS, CRIBS AND SHEETING				LUMP	
503	21301		LUMP	UNCLASSIFIED EXCAVATION, AS PER PLAN				LUMP	3, 5
509	10000	87,592	POUND	EPOXY COATED REINFORCING STEEL	6,665	2,540	78387		
510	10000	340	EACH	DOWEL HOLES WITH NONSHRINK, NONMETALLIC GROUT	40	300			
511	42500	12	CU.YD.	CLASS C CONCRETE, PIER CAPS		12			
511	50000	280	CU.YD.	CLASS HP CONCRETE, BRIDGE DECK			280		
511	50100	57	CU.YD.	CLASS HP CONCRETE, BRIDGE DECK (PARAPET)			57		
511	50200	8	CU.YD.	CLASS HP CONCRETE, SUBSTRUCTURE	8				
511	52000		LUMP	CLASS HP CONCRETE, TEST SLAB				LUMP	
511	52500		LUMP	CLASS HP CONCRETE, TESTING				LUMP	
513	20000	2,040	EACH	WELDED STUD SHEAR CONNECTORS			2,040		
514	00100		LUMP	SURFACE PREPARATION OF EXISTING STRUCTURAL STEEL				LUMP	
514	00200		LUMP	FIELD PAINTING OF EXISTING STRUCTURAL STEEL, PRIME COAT				LUMP	
514	00300		LUMP	FIELD PAINTING OF EXISTING STRUCTURAL STEEL, INTERMEDIATE COAT				LUMP	
514	00400		LUMP	FIELD PAINTING OF EXISTING STRUCTURAL STEEL, FINISH COAT				LUMP	
514	00504	45	MANHR.	GRINDING FINS, TEARS, SLIVERS ON EXISTING STRUCTURAL STEEL			45		
516	14021	96	FEET	SEMI-INTEGRAL ABUTMENT EXPANSION JOINT SEAL, AS PER PLAN	96				3, 6
516	44101	10	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE) (10 1/2"x17"x2 1/2"), AS PER PLAN		10			10
516	44101	5	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE) (10 1/2"x18"x2"), AS PER PLAN		5			10
516	44201	10	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE) (10"x16"x3 1/8"), AS PER PLAN	10				9
516	47001		LUMP	JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE, AS PER PLAN				LUMP	3
516	46701	12	EACH	RESET BEARING, AS PER PLAN		12			2, 9
518	21200	46	CU.YD.	POROUS BACKFILL WITH FILTER FABRIC	46				
518	40000	75	FEET	6" PERFORATED CORRUGATED PLASTIC PIPE	75				
518	40011	66	FEET	6" NON-PERFORATED CORRUGATED PLASTIC PIPE, INCLUDING SPECIALS, AS PER PLAN	66				5, 6, 7
519	11101	24	SQ.FT.	PATCHING CONCRETE STRUCTURE, AS PER PLAN		24			3, 4
526	15000	160	SQ.YD.	REINFORCED CONCRETE APPROACH SLAB, (T=13")				160	
843	50000	47	SQ.FT.	PATCHING CONCRETE STRUCTURE WITH TROWELABLE MORTAR	47				
864	10100	837	SQ.YD.	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)	69	293	475		

**ITEM 503. UNCLASSIFIED EXCAVATION, AS PER PLAN:**

THE BACKFILL MATERIAL BEHIND THE ABUTMENTS SHALL BE TYPE B GRANULAR MATERIAL, 703.16.C, PLACED AND COMPACTED IN 6 INCH LIFTS.

**ITEM 509. EPOXY COATED REINFORCING STEEL:**

ALL REINFORCING STEEL SHALL HAVE A MINIMUM OF 2 INCHES OF CONCRETE COVER UNLESS OTHERWISE NOTED.

**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 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 513.04.

BASE CONTRACT BID PRICES UPON A RECOGNITION OF THE UNCERTAINTIES DESCRIBED ABOVE AND UPON A PREBID EXAMINATION OF THE EXISTING STRUCTURE. HOWEVER, THE DEPARTMENT WILL PAY FOR ALL PROJECT WORK BASED UPON ACTUAL DETAILS AND DIMENSIONS WHICH HAVE BEEN VERIFIED IN THE FIELD.

# STRUCTURAL GENERAL NOTES

**REFERENCE SHALL BE MADE TO STANDARD DRAWINGS:**

AS-1-81 REVISED 07-19-02 BR-1 REVISED 07-19-02  
 SICD-1-96 REVISED 07-19-02

**AND TO SUPPLEMENTAL SPECIFICATIONS:**

843 DATED 04-19-02 864 DATED 07-11-00

**DESIGN SPECIFICATIONS:**

THIS STRUCTURE CONFORMS TO "STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES" ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS, 17th EDITION, 2002 AND THE O.D.O.T. BRIDGE DESIGN MANUAL.

**DESIGN LOADING:**

HS20-44 AND THE ALTERNATE MILITARY LOADING.  
 FUTURE WEARING SURFACE OF 60 P.S.F.

**DESIGN DATA:**

**SUPERSTRUCTURE:**  
 HIGH PERFORMANCE CONCRETE - COMPRESSIVE STRENGTH 4500 P.S.I.

**SUBSTRUCTURE:**  
 HIGH PERFORMANCE CONCRETE - COMPRESSIVE STRENGTH 4000 P.S.I.

**REINFORCING STEEL:**  
 ASTM A615, A616 OR A617, GRADE 60, MINIMUM YIELD STRENGTH 60,000 P.S.I.

**STRUCTURAL STEEL (LOAD PLATE):**  
 ASTM A572/A709 GRADE 50, YIELD STRENGTH 50,000 P.S.I.

**DECK PROTECTION METHOD:**

EPOXY COATED REINFORCING STEEL, TOP AND BOTTOM MAT  
 2 1/2" CONCRETE COVER  
 SEALING OF CONCRETE SURFACES, (EPOXY-URETHANE)

**MONOLITHIC WEARING SURFACE:**

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

**ITEM 202. PORTIONS OF STRUCTURE REMOVED, AS PER PLAN:**

DESCRIPTION: THIS WORK CONSISTS OF THE REMOVAL OF CONCRETE DECKS INCLUDING SIDEWALKS, PARAPETS, RAILINGS, DECK JOINTS AND OTHER APPURTENANCES FROM STEEL SUPPORTING SYSTEMS (BEAMS, GIRDERS, CROSS FRAMES, ETC.). THE PROVISIONS OF ITEM 202 APPLY EXCEPT AS SPECIFIED BY THE FOLLOWING NOTES. PERFORM WORK CAREFULLY DURING DECK REMOVALS TO PROTECT PORTIONS OF SUCH SYSTEMS THAT ARE TO BE SALVAGED AND INCORPORATED INTO THE PROPOSED STRUCTURE. IN THIS RESPECT, THE USE OF EXPLOSIVES, HEADACHE BALLS AND/OR HOE RAM TYPE OF EQUIPMENT IS PROHIBITED.

RAILING: ALUMINUM RAILING SHALL BECOME THE PROPERTY OF THE OHIO DEPARTMENT OF TRANSPORTATION, DISTRICT 4. CONTRACTOR SHALL REMOVE AND DELIVER TO THE FOLLOWING ADDRESS:

OHIO DEPARTMENT OF TRANSPORTATION  
 DISTRICT 4  
 705 OAKWOOD STREET  
 RAVENNA, OHIO 44266

PROTECTION OF TRAFFIC: PRIOR TO DEMOLITION OF ANY PORTIONS OF THE EXISTING SUPERSTRUCTURE, SUBMIT PLANS FOR THE PROTECTION OF TRAFFIC (VEHICULAR, PEDESTRIAN, BOAT, ETC.) ADJACENT TO AND/OR UNDER THE STRUCTURE TO THE DIRECTOR AT LEAST 30 DAYS BEFORE CONSTRUCTION BEGINS. THESE PLANS SHALL INCLUDE PROVISIONS FOR DEVICES AND STRUCTURES THAT MAY BE NECESSARY TO ENSURE SUCH PROTECTION. MAINTAIN TEMPORARY VERTICAL CLEARANCES SPECIFIED ON THE PLANS OR IN THE PROPOSAL AT ALL TIMES EXCEPT AS OTHERWISE APPROVED BY THE DIRECTOR.

PROTECTION OF STEEL SUPPORT SYSTEMS: BEFORE DECK SLAB CUTTING IS PERMITTED, DRAW THE OUTLINE OF PRIMARY STEEL MEMBERS IN CONTACT WITH THE BOTTOM OF THE DECK ON THE SURFACE OF THE DECK. DRILL SMALL DIAMETER PILOT HOLES 2 INCHES OUTSIDE THESE LINES TO CONFIRM THE LOCATION OF FLANGE EDGES. DECK CUTS OVER OR WITHIN 2 INCHES OF FLANGE EDGES SHALL NOT EXTEND LOWER THAN THE BOTTOM LAYER OF DECK SLAB REINFORCING STEEL. CUTS MADE OUTSIDE 2 INCHES OF FLANGE EDGES MAY EXTEND THE FULL DEPTH OF THE DECK. PERFORM WORK CAREFULLY DURING CUTTING OF THE DECK SLAB, TO AVOID DAMAGING STEEL MEMBERS THAT ARE TO BE INCORPORATED INTO THE PROPOSED STRUCTURE.

PROTECTION OF PRESTRESSED CONCRETE SUPPORT SYSTEMS: BEFORE DECK SLAB CUTTING IS PERMITTED, DRAW THE OUTLINE OF PRIMARY PRESTRESSED CONCRETE MEMBERS IN CONTACT WITH THE BOTTOM OF THE DECK ON THE SURFACE OF THE DECK. DRILL SMALL DIAMETER PILOT HOLES 2 INCHES OUTSIDE THESE LINES TO CONFIRM THE LOCATION OF THE EDGES OF THOSE MEMBERS. DECK CUTS OVER OR WITHIN 2 INCHES OF FLANGE EDGES SHALL NOT EXTEND LOWER THAN THE BOTTOM LAYER OF DECK SLAB REINFORCING STEEL. CUTS MADE OUTSIDE 2 INCHES OF FLANGE EDGES MAY EXTEND THE FULL DEPTH OF THE DECK. PERFORM WORK CAREFULLY DURING CUTTING OF THE DECK SLAB TO AVOID DAMAGING PRESTRESSED CONCRETE MEMBERS THAT ARE TO BE INCORPORATED INTO THE PROPOSED STRUCTURE.

REMOVAL METHODS: THE CONTRACTOR MAY REMOVE CONCRETE BY CUTTING AND BY MEANS OF HAND OPERATED PNEUMATIC HAMMERS EMPLOYING POINTED OR BLUNTED CHISEL TYPE TOOLS. FOR REMOVALS OVER BRIDGE MEMBERS (PRESTRESSED BOX BEAM, I-BEAM, STEEL BEAM, STEEL GIRDER, ETC.), THE CONTRACTOR MAY USE A HAMMER HEAVIER THAN 35 POUNDS BUT NOT TO EXCEED 90 POUNDS UNLESS APPROVED BY THE ENGINEER. REMOVAL METHODS OVER BRIDGE MEMBERS SHALL ENSURE ADEQUATE DEPTH CONTROL AND PREVENT NICKING OR GOUGING THE PRIMARY STEEL MEMBERS.

DECK REMOVALS: DUE TO THE POSSIBLE PRESENCE OF WELDED ATTACHMENTS TO EXISTING STRUCTURAL STEEL (FINISHING MACHINE, SCUPPER AND FORM SUPPORTS, ETC.), PERFORM WORK CAREFULLY DURING DECK REMOVAL TO AVOID DAMAGING STRINGERS WHICH ARE TO REMAIN. REPLACE OR REPAIR STRINGERS DAMAGED BY THE REMOVAL OPERATIONS AT NO COST TO THE PROJECT. SUBMIT PROPOSED REPAIRS, DEVELOPED BY AN OHIO REGISTERED PROFESSIONAL ENGINEER, IN WRITING TO THE DIRECTOR AT LEAST 20 DAYS BEFORE PERFORMING REPAIR WORK.

DECK REMOVAL - COMPOSITE DECK DESIGNS- STEEL SUPERSTRUCTURES: DUE TO THE PRESENCE OF WELDED STUDS TO THE EXISTING STRUCTURAL STEEL, SUBMIT A DETAILED PROCEDURE OF THE DECK REMOVAL TO THE DIRECTOR AT LEAST 30 DAYS BEFORE CONSTRUCTION BEGINS. THE PROCEDURE SHALL INCLUDE ALL DETAILS, EQUIPMENT AND METHODS TO BE USED FOR REMOVAL OF THE CONCRETE OVER THE FLANGES AND AROUND THE STUDS. REPLACE OR REPAIR STEEL AND STUDS DAMAGED BY THE REMOVAL OPERATIONS AT NO COST TO THE PROJECT. SUBMIT PROPOSED REPAIRS, DEVELOPED BY AN OHIO REGISTERED PROFESSIONAL ENGINEER, IN WRITING TO THE DIRECTOR AT LEAST 20 DAYS BEFORE PERFORMING REPAIR WORK.

DECK REMOVALS - COMPOSITE DECK DESIGNS - PRESTRESSED SUPERSTRUCTURES: DUE TO THE PRESENCE OF COMPOSITE REINFORCING STEEL BETWEEN THE DECK AND THE PRESTRESSED BEAM FLANGES, SUBMIT A DETAILED PROCEDURE OF THE DECK REMOVAL TO THE DIRECTOR AT LEAST 30 DAYS BEFORE CONSTRUCTION BEGINS. THE PROCEDURE SHALL INCLUDE ALL DETAILS, EQUIPMENT AND METHODS OF REMOVAL OVER THE PRESTRESSED BEAMS AND AROUND THE COMPOSITE REINFORCING STEEL. REPLACE OR REPAIR PRESTRESSED MEMBERS AND COMPOSITE REINFORCING DAMAGED BY THE REMOVAL OPERATIONS AT NO COST TO THE PROJECT. SUBMIT PROPOSED REPAIRS, DEVELOPED BY AN OHIO REGISTERED PROFESSIONAL ENGINEER, IN WRITING TO THE DIRECTOR AT LEAST 20 DAYS BEFORE PERFORMING REPAIR WORK.

EXTRANEOUS MEMBERS: EXISTING EXTRANEOUS MEMBERS (I.E., FINISHING MACHINE AND FORM SUPPORTS, ETC., AND THE SUPPORT FOR SCUPPERS AND BULB ANGLES WHICH ARE TO BE REMOVED) ATTACHED BY WELDED CONNECTION TO THE DESIGNATED TENSION PORTIONS OF THE TOP FLANGES OF EXISTING STEEL MEMBERS AND GRIND THE FLANGE SURFACES GROUND SMOOTH. CAREFULLY GRIND PARALLEL TO THE FLANGES.

LOADING LIMITATIONS: NO PART OF THE STRUCTURE SHALL BE SUBJECT TO UNIT STRESSES THAT EXCEED 136.5% OF ALLOWABLE UNIT STRESSES AS DEFINED IN THE AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES DUE EITHER TO DEMOLITION, ERECTION OR CONSTRUCTION METHODS, OR TO THE USE OR MOVEMENT OF DEMOLITION OR ERECTION EQUIPMENT ON OR ACROSS THE STRUCTURE. SUBMIT STRUCTURAL ANALYSIS COMPUTATIONS, BY AN OHIO REGISTERED PROFESSIONAL ENGINEER, SHOWING THE ALLOWABLE STRESSES AND THE MAXIMUM STRESSES PRODUCED BY THE REMOVAL METHODS OR EQUIPMENT TO THE DIRECTOR AT LEAST 20 DAYS BEFORE CONSTRUCTION BEGINS.

MEASUREMENT AND PAYMENT: THE DEPARTMENT WILL MEASURE THE QUANTITY OF REMOVALS ON A LUMP SUM BASIS. THE DEPARTMENT WILL PAY FOR THE ACCEPTED QUANTITIES OF REMOVALS AT THE CONTRACT PRICE FOR ITEM 202, AS PER PLAN NOTE.

DATE: 05/05/03  
 CAD FILE: 0067-01JAN  
 OPERATOR: MPB/CAF  
 PLOT SCALE: 1"=1'

DESIGN AGENCY: FINKBEINER, PETTIS & STROUT, INC.  
 520 S. MAIN STREET, SUITE 2400  
 AKRON, OHIO 44311-1010

DATE: 5/03  
 REVIEWED: D.L.G.  
 DRAWN: M.P.B.  
 DESIGNED: R.K.Z.  
 CHECKED: F.G.J.

ESTIMATED QUANTITIES AND STRUCTURAL GENERAL NOTES  
 BRIDGE NO. MAH-76-0067  
 GRANDVIEW ROAD OVER INTERSTATE ROUTE 76

MAH - 76 - 00.67  
 (GRANDVIEW ROAD)

2 / 13

17  
 28

# STRUCTURAL GENERAL NOTES

## ITEM 516 JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE, AS PER PLAN:

GENERAL: THIS WORK CONSISTS OF RAISING OR RE-POSITIONING EXISTING STRUCTURES TO THE DIMENSIONS AND REQUIREMENTS DEFINED IN THE PROJECT PLANS.

SUBMITTAL REQUIREMENTS: AN OHIO REGISTERED ENGINEER SHALL PREPARE, SEAL AND DATE PLANS FOR A JACKING SYSTEM, INCLUDING ANY TEMPORARY OR PERMANENT SUPPORTS, SUFFICIENT TO PERFORM THE WORK DESCRIBED IN THE PLANS. SUBMIT THREE SETS OF THESE PLANS TO THE DIRECTOR FOR APPROVAL AT LEAST THIRTY (30) DAYS BEFORE ACTUAL WORK IS TO BEGIN.

JACKING SUBMITTALS SHALL INCLUDE AT LEAST THE FOLLOWING:

1. THE SIGNATURE AND NUMBER, OR PROFESSIONAL SEAL, OF THE OHIO REGISTERED PROFESSIONAL ENGINEER WHO PREPARED THE SUBMITTAL.
2. CALCULATIONS AND ANALYSES OF THE STRUCTURE TO DETERMINE AND DEFINE THE ACTUAL LOADING APPLIED AT THE JACKING POINTS.
3. A DRAWING SHOWING THE PHYSICAL AND DIMENSIONAL POSITIONS OF THE JACKS WITH RESPECT TO THE STRUCTURE INCLUDING CLEARANCES AND CENTER OF LIFT.
4. A SCHEMATIC LAYOUT OF JACKS, CHECK VALVES, PUMPS WITH 3 WAY RETRACTOR VALVE, PRESSURE GAGES, FLOW CONTROL VALVES, ETC. IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS. ALL JACKS FOR EACH ABUTMENT OR PIER SHALL BE CONNECTED TOGETHER. ALL JACKS AT EACH ABUTMENT OR PIER SHALL BE THE SAME SIZE.
5. ANALYSIS AND CALCULATIONS OF THE STRESSES INDUCED OR CREATED IN THE STRUCTURE AND ANY TEMPORARY OR PERMANENT SUPPORTS. DESIGN CALCULATIONS FOR ANY TEMPORARY OR PERMANENT SUPPORTS.
6. PHYSICAL DIMENSIONS, MATERIALS, AND FABRICATION DETAILS OF ANY TEMPORARY OR PERMANENT SUPPORTS. HORIZONTAL AND VERTICAL MOVEMENT RESTRAINT SHALL BE PROVIDED.
7. A STEP BY STEP PROCEDURE DETAILING ALL STEPS IN THE JACKING OPERATION.
8. METHOD OF ATTACHMENT TO STRUCTURAL MEMBERS. WELDING TO TENSION AREAS WILL NOT BE PERMITTED.

JACKING SYSTEM REQUIREMENTS: THE ENTIRE SYSTEM INCLUDING JACKS SHALL HAVE 20% MORE CAPACITY THAN REQUIRED BASED ON CALCULATED LOADS. FOR LIFTS GREATER THAN 1 INCH, JACKS SHALL HAVE LOCKING NUTS TO POSITIVELY LOCK AND SUPPORT THE STRUCTURE DURING THE LIFT. JACKS SHALL HAVE A SWIVEL LOAD CAP, A DOMED PISTON HEAD OR SOME OTHER DEVICE TO PROTECT AGAINST THE EFFECTS OF SIDE LOAD ON THE JACK. DO NOT USE JACKS ALONE TO SUPPORT LOADS EXCEPT DURING THE ACTUAL JACKING OPERATION. USE TEMPORARY SUPPORTS, BLOCKING OR OTHER METHODS APPROVED BY THE DIRECTOR. DO NOT USE SINGLE ACTING RAMS WITH NO OVER-TRAVEL PROTECTION SYSTEM. HAVE SPARE EQUIPMENT AVAILABLE ON SITE IN ORDER TO PROCEED WITH THE JACKING IN THE EVENT OF BREAKDOWN. PROVIDE A LIST OF SPARE EQUIPMENT TO THE ENGINEER.

JACKING OPERATION REQUIREMENTS: AT A MINIMUM, A JACKING OPERATION SHALL LIFT ALL BEAMS AT ONE ABUTMENT OR PIER SIMULTANEOUSLY. THE ONLY EXCEPTION IS THE SITUATION WHERE THE WORK INVOLVES REPLACING OR REHABILITATING INDIVIDUAL BEARINGS; NO PERMANENT SHIMMING IS REQUIRED AND THE HEIGHT OF THE LIFT SHALL NOT EXCEED 1/4 INCH. THE MAXIMUM DIFFERENTIAL JACKING HEIGHT BETWEEN ADJACENT ABUTMENTS OR PIERS SHALL BE 1 INCH OR LESS. IF THIS 1 INCH LIMIT IS TO BE EXCEEDED, PROVIDE CALCULATIONS SHOWING THAT THE SUPERSTRUCTURE COMPONENTS WILL NOT BE TEMPORARILY STRESSED BEYOND ALLOWABLE STRESSES AND THAT NO PERMANENT STRESSES WILL BE INDUCED IN THE COMPONENTS AFTER THEY OBTAIN THEIR FINAL POSITION. IF, DURING THE JACKING OPERATIONS, CRACKING OF THE CONCRETE SUPERSTRUCTURE, SEPARATION OF THE CONCRETE DECK FROM THE STEEL STRINGERS, OR OTHER DAMAGE TO THE STRUCTURE IS VISUALLY OBSERVED, IMMEDIATELY CEASE THE JACKING OPERATION AND INSTALL SUPPORTS TO THE SATISFACTION OF THE ENGINEER. ANALYZE THE DAMAGE AND SUBMIT A METHOD OF CORRECTION TO THE ENGINEER FOR APPROVAL. EPOXY INJECT ALL BEAMS THAT SEPARATE FROM THE DECK FOR THE DISTANCE OF THE SEPARATION IN ACCORDANCE WITH ODOT'S PROPOSAL NOTE "CONCRETE REPAIR BY EPOXY INJECTION". THE DEPARTMENT WILL NOT PAY FOR THE COST OF THIS EPOXY INJECTION OR OTHER REQUIRED REPAIRS. THE BRIDGE BEARINGS SHALL BE FULLY SEATED AT ALL CONTACT AREAS. IF FULL SEATING IS NOT ATTAINED, SUBMIT A REPAIR PLAN TO THE ENGINEER. THE DEPARTMENT WILL NOT PAY FOR THE REPAIR COSTS TO ENSURE FULL SEATING ON BEARINGS.

METHOD OF MEASUREMENT: THE DEPARTMENT WILL MEASURE THIS WORK ON A LUMP SUM BASIS.

BASIS OF PAYMENT: THE DEPARTMENT WILL PAY FOR THE ACCEPTED QUANTITIES AT THE CONTRACT PRICE FOR ITEM 516, JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE, AS PER PLAN.

## INSPECTION OF EXISTING STRUCTURAL STEEL:

THE ENGINEER WILL VISUALLY INSPECT ALL EXISTING BUTT-WELDED SPLICES AND/OR TOP FLANGE COVER PLATE FILLET WELDS TO ENSURE THE WELDS, PLATES AND BEAMS OR GIRDERS ARE FREE OF DEFECTS OR CRACKS. IF NECESSARY, REMOVE ALL DECK SLAB HAUNCH FORMS IMMEDIATELY ADJACENT TO SUCH WELDS THAT MAY INTERFERE WITH THE ENGINEER'S INSPECTION. THE INSPECTION WILL NOT TAKE PLACE UNTIL THE TOP FLANGES ARE CLEANED ACCORDING TO 511.10, BUT IT WILL NOT BE DONE BEFORE THE DECK SLAB REINFORCEMENT IS INSTALLED. THE DEPARTMENT WILL PAY FOR THE COST ASSOCIATED WITH THIS INSPECTION WITH ITEM 511, CLASS HP CONCRETE, BRIDGE DECK. THE ENGINEER WILL REPORT ALL CRACKS FOUND TO THE OFFICE OF CONSTRUCTION ADMINISTRATION, BRIDGE CONSTRUCTION SPECIALIST, ALONG WITH SPECIFIC INFORMATION ON LOCATION OF CRACKS, LENGTH, AND DEPTH SO AN EVALUATION AND REPAIR OR REPLACEMENT RECOMMENDATION CAN BE MADE.

## ITEM 519. PATCHING CONCRETE STRUCTURES, AS PER PLAN:

PRIOR TO THE SURFACE CLEANING SPECIFIED IN 519.04 AND WITHIN 24 HOURS OF PLACING PATCHING MATERIAL, BLAST CLEAN ALL SURFACES TO BE PATCHED INCLUDING THE EXPOSED REINFORCING STEEL. ACCEPTABLE METHODS INCLUDE HIGH-PRESSURE WATER BLASTING WITH OR WITHOUT ABRASIVES IN THE WATER, ABRASIVE BLASTING WITH CONTAINMENT, OR VACUUM ABRASIVE BLASTING.

## CUT LINE CONSTRUCTION JOINT PREPARATION:

SAW CUT BOUNDARIES OF PROPOSED CONCRETE REMOVALS 1 INCH DEEP. REMOVE CONCRETE TO A ROUGH SURFACE. LEAVE THE EXISTING REINFORCING STEEL, IF REQUIRED IN THE PLANS, IN PLACE. INSTALL DOWEL BARS IF SPECIFIED. PRIOR TO CONCRETE PLACEMENT ABRASIVELY CLEAN JOINT SURFACES AND EXISTING EXPOSED REINFORCEMENT TO REMOVE LOOSE AND DISINTEGRATED CONCRETE AND LOOSE RUST. THOROUGHLY CLEAN THE JOINT SURFACE AND EXPOSED REINFORCEMENT OF ALL DIRT, DUST, RUST OR OTHER FOREIGN MATERIAL BY THE USE OF WATER, AIR UNDER PRESSURE, OR OTHER METHODS THAT PRODUCE SATISFACTORY RESULTS. EXISTING REINFORCING STEEL DOES NOT HAVE TO HAVE A BRIGHT STEEL FINISH BUT REMOVE ALL PACK AND LOOSE RUST. THOROUGHLY DRENCH EXISTING CONCRETE SURFACES WITH CLEAN WATER AND ALLOW TO DRY TO A DAMP CONDITION BEFORE PLACING CONCRETE.

## STRUCTURAL VERTICAL CLEARANCE:

THIS BRIDGE SHALL BE SURVEYED TO DETERMINE THE ACTUAL FINAL VERTICAL CLEARANCE OF THE BRIDGE OVER THE FEATURE INTERSECTED. THE SURVEY SHALL BE PERFORMED BY A SURVEYOR REGISTERED BY THE STATE OF OHIO. THE SURVEY SHALL BE ACCURATE TO 1/100 OF A FOOT, (0.01 FT.) AND BE MADE AT THE LOW POINT OF THE STRUCTURE ABOVE EVERY SHOULDER AND LANE LINE AND SHALL INCLUDE MOMENT PLATES, SPLICE PLATES, BOLT HEADS, OR ANY OTHER ATTACHED MEMBER OR FIXTURE.

A SKETCH SHALL BE PRODUCED SHOWING THE BRIDGE NUMBER, DATE SURVEYED AND SURVEYOR AS WELL AS DIRECTIONAL NORTH, THE FEATURE INTERSECTED, THE SHOULDER AND LANE LINES, DIRECTION OF TRAFFIC AND EACH CLEARANCE POINT. THE LOWEST CLEARANCE FOR EACH DIRECTION SHALL BE CLEARLY NOTED. THE SKETCH SHALL BE SIGNED AND SEALED BY THE SURVEYOR. THE SKETCH AND SURVEY FIELD NOTES SHALL BE SUBMITTED TO THE DISTRICT HIGHWAY MANAGEMENT ADMINISTRATOR FOR INCLUSION INTO THE STATE BRIDGE INVENTORY SYSTEM. PAYMENT CONSIDERED INCIDENTAL TO ITEM 516, JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE, AS PER PLAN.

## ITEM 509 REINFORCING STEEL REPLACEMENT OF EXISTING REINFORCING STEEL, AS PER PLAN:

REPLACE ALL EXISTING REINFORCING BARS DEEMED BY THE ENGINEER TO BE UNUSABLE BECAUSE OF CORROSION. THE DEPARTMENT WILL MEASURE THE REPLACEMENT REINFORCING STEEL BY THE NUMBER OF POUNDS ACCEPTED IN PLACE.

REPLACE ALL EXISTING REINFORCING STEEL BARS WHICH ARE TO BE INCORPORATED INTO THE NEW WORK AND ARE DEEMED, BY THE ENGINEER, TO BE MADE UNUSABLE BY CONCRETE REMOVAL OPERATIONS WITH NEW EPOXY COATED REINFORCING STEEL OF THE SAME SIZE AT NO COST TO THE DEPARTMENT.

## ITEM 516 SEMI-INTEGRAL ABUTMENT EXPANSION JOINT SEAL, AS PER PLAN:

INSTALL A 3 FOOT WIDE NEOPRENE SHEET AT LOCATIONS SHOWN IN THE PLANS. SECURE THE NEOPRENE SHEETING TO THE CONCRETE WITH 1 1/4" X #10 GAGE (LENGTH X SHANK DIAMETER) GALVANIZED BUTTON HEAD SPIKES THROUGH A 1 INCH OUTSIDE DIAMETER, #10 GAGE GALVANIZED WASHER. MAXIMUM FASTENER SPACING IS 9 INCHES. USE OF OTHER SIMILAR GALVANIZED DEVICES, WHICH WILL NOT DAMAGE EITHER THE NEOPRENE OR THE CONCRETE WILL BE SUBJECT TO THE APPROVAL OF THE ENGINEER.

CENTER THE NEOPRENE STRIPS ON ALL JOINTS. FOR HORIZONTAL JOINTS, SECURE THE HORIZONTAL NEOPRENE STRIP BY USING A SINGLE LINE OF FASTENERS, STARTING AT 6 INCHES, +/-, FROM THE TOP OF THE NEOPRENE STRIP. FOR THE VERTICAL JOINTS SECURE THE VERTICAL NEOPRENE STRIP BY USING A SINGLE VERTICAL LINE OF FASTENERS, STARTING AT 6 INCHES, +/-, FROM THE VERTICAL EDGE OF THE NEOPRENE STRIP NEAREST TO THE CENTERLINE OF THE ROADWAY. FOR VERTICAL JOINTS, INSTALL 2 ADDITIONAL FASTENERS AT 6 INCHES, CENTER TO CENTER, ACROSS THE TOP OF THE NEOPRENE STRIP ON THE SAME SIDE OF THE VERTICAL JOINT AS THE SINGLE VERTICAL ROW OF FASTENERS IS LOCATED.

THE VERTICAL NEOPRENE STRIPS SHOULD COMPLETELY OVERLAP THE HORIZONTAL STRIPS. LAP LENGTHS OF THE HORIZONTAL STRIPS THAT ARE NOT VULCANIZED OR ADHESIVE BONDED, SHALL BE AT LEAST 1 FOOT IN LENGTH, OR 6 INCHES IN LENGTH IF THE LAP IS VULCANIZED OR ADHESIVE BONDED. NO LAPS ARE ACCEPTABLE IN VERTICALLY INSTALLED NEOPRENE STRIPS.

THE NEOPRENE SHEETING SHALL BE 3/32" THICK GENERAL PURPOSE, HEAVY DUTY NEOPRENE SHEET WITH NYLON FABRIC REINFORCEMENT. THE SHEETING SHALL BE "FAIRPRENE NUMBER NN-0003", BY E.I. DUPONT DE NEMOURS AND COMPANY, INC., "WINGPRENE" BY THE GOODYEAR TIRE AND RUBBER COMPANY, OR AN APPROVED ALTERNATE. THE NEOPRENE SHEETING SHALL CONFORM TO THE FOLLOWING:

DESCRIPTION OF TEST	ASTM METHOD	REQUIREMENT
THICKNESS, INCHES	D 751	0.094 +/- 0.01
BREAKING STRENGTH, GRAB LBS, MINIMUM	D 751	700 X 700
ADHESIVE STRIP 1" WIDE X 2" LONG, LBS. MINIMUM	D 751	9
BURST STRENGTH, PSI MINIMUM	D 751	1400
HEAT AGING 70 HR. 212°F, 180° BEND WITHOUT CRACKING	D 2136	NO CRACKING OF COATING
LOW TEMPERATURE BRITTLINESS 1 HR., -40°F, BEND AROUND 1/4" MANDREL	D 2136	NO CRACKING OF COATING

IN LIEU OF THE NEOPRENE SHEETING THE CONTRACTOR MAY SUPPLY TYPE 3 MEMBRANE, 711.29.

METHOD OF MEASUREMENT: THE DEPARTMENT WILL MEASURE THE TOTAL LENGTH OF JOINT TO BE SEALED BY THE NUMBER OF FEET.

BASIS OF PAYMENT: THE DEPARTMENT WILL PAY FOR ACCEPTED QUANTITIES AT THE CONTRACT PRICE FOR ITEM 516, SEMI-INTEGRAL ABUTMENT EXPANSION JOINT SEAL, AS PER PLAN.

## UTILITY LINES:

THE UTILITIES SHALL BORE ALL EXPENSE INVOLVED IN RELOCATING THE AFFECTED UTILITY LINES. THE CONTRACTOR AND UTILITIES ARE TO COOPERATE BY ARRANGING THEIR WORK IN SUCH A MANNER THAT INCONVENIENCE TO EITHER WILL BE HELD TO A MINIMUM.

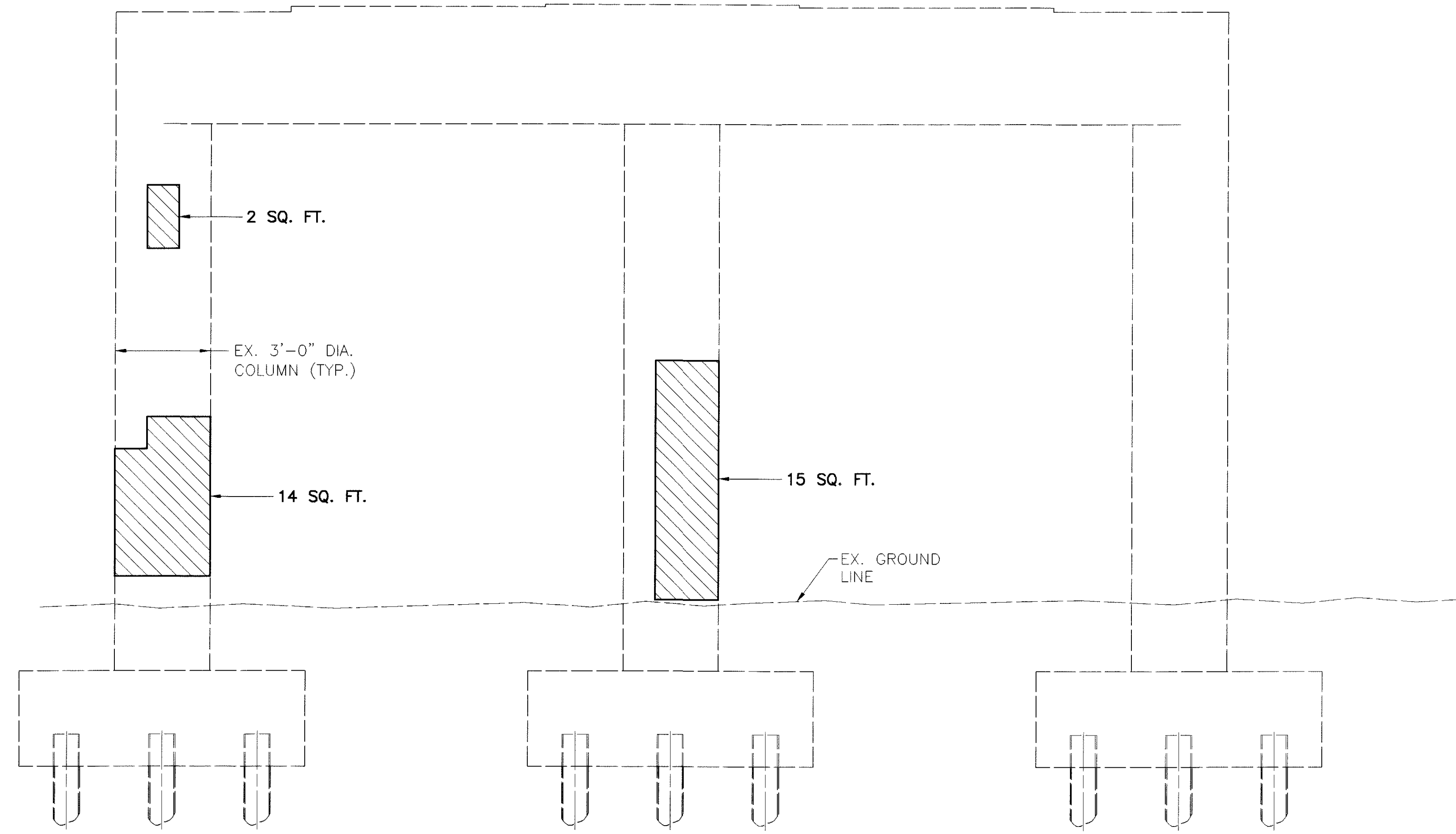
## CONCRETE PARAPETS:

AS SOON AS A CONCRETE SAW CAN BE OPERATED WITHOUT DAMAGING THE FRESHLY PLACED CONCRETE, SAWCUT 1 1/4" DEEP CONTROL JOINTS INTO THE PERIMETER OF THE CONCRETE PARAPET STARTING AND ENDING AT THE ELEVATION OF THE CONCRETE DECK. PLACE THE SAWCUTS AT A MINIMUM OF 6 FEET AND A MAXIMUM OF 10 FEET CENTERS. USE AN EDGE GUIDE, FENCE OR JIG TO ENSURE THAT THE CUT JOINT IS STRAIGHT, TRUE, AND ALIGNED ON ALL FACES OF THE PARAPET. THE JOINT WIDTH SHALL BE THE WIDTH OF THE SAW BLADE, A NOMINAL WIDTH OF 1/4 INCH. SEAL THE PERIMETER OF THE DEFLECTION CONTROL JOINT TO A MINIMUM DEPTH OF 1 INCH WITH A POLYURETHANE OR POLYMERIC MATERIAL CONFORMING TO ASTM C920, TYPE S. LEAVE THE BOTTOM 1/2 INCH OF THE INSIDE AND OUTSIDE FACE UNSEALED TO ALLOW WATER TO ESCAPE.

## ABBREVIATIONS:

N.F. = NEAR FACE	CONST. = CONSTRUCTION
F.F. = FAR FACE	P.E.J.F. = PREFORMED EXPANSION JOINT FILLER
E.F. = EACH FACE	C.P.P. = CORRUGATED PLASTIC PIPE
EL. = ELEVATION	MIN. = MINIMUM
TYP. = TYPICAL	EA. = EACH
STA. = STATION	DIA. = DIAMETER
FWD. = FORWARD	EQUAL. = EQUALLY
SPA. = SPACING	EX. = EXISTING
BOTT. = BOTTOM	BRG. = BEARING
ABUT. = ABUTMENT	STD. = STANDARD
APPR. = APPROACH	HMWM = HIGH MOLECULAR WEIGHT METHACRYLATE
DWG. = DRAWING	HPC = HIGH PERFORMANCE CONCRETE
ACT. = ACTUAL	

DATE: 05/23/02  
 CAD FILE: 0667\_REPAIR  
 OPERATOR: MPB/CAP  
 PLOT SCALE: 1"=1'



PIER NO. 3 ELEVATION  
 (SOUTH FACE)

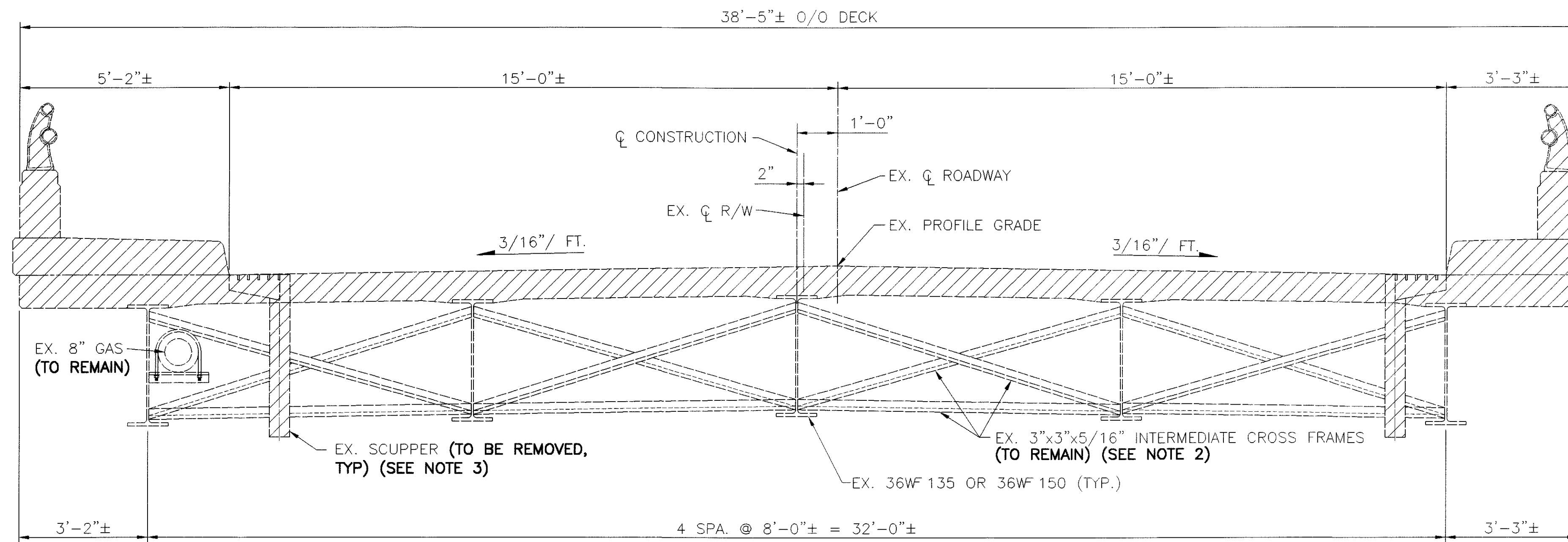
TOTAL CONCRETE PATCHING = 31 SQ. FT. (1.50) = 47 SQ. FT. (SEE NOTE 2)

NOTES

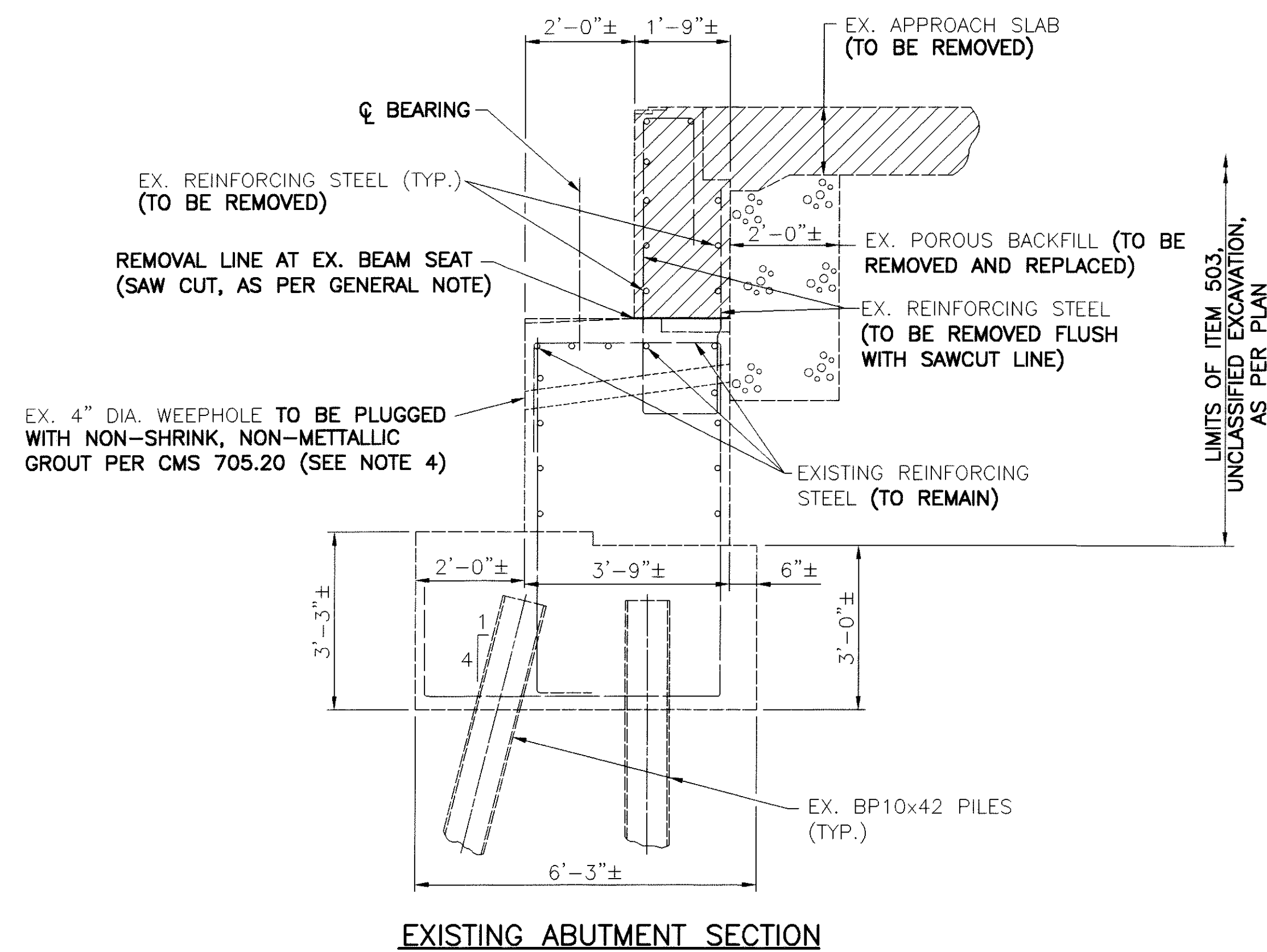
- ① THE AREAS OF REPAIR SHOWN ARE APPROXIMATE AND ARE BASED ON A FIELD INSPECTION COMPLETED IN AUGUST, 2000. FINAL DETERMINATION OF THE AREAS TO BE REPAIRED WILL BE MADE BY THE ENGINEER AT THE TIME OF CONSTRUCTION.
- ② THE TOTAL CONCRETE PATCHING AREA INDICATED ON THE DETAILS HAS BEEN INCREASED BY 50% TO ACCOUNT FOR ANY FURTHER DETERIORATION THAT MAY HAVE OCCURED SINCE THE FIELD INSPECTION.
- ③ SEAL ALL THE EXPOSED SURFACES OF PIERS 1, 2 AND 3 EXCEPT FOR THE TOP OF EACH PIER CAP.
- ④ ITEM 519, PATCHING CONCRETE STRUCTURE, AS PER PLAN, SHOULD BE USED WHERE THE REPAIR DEPTH IS THREE (3) INCHES OR GREATER, OTHERWISE ITEM 843, PATCHING CONCRETE STRUCTURE WITH TROWELABLE MORTAR SHALL BE USED.

- AREAS TO BE PATCHED AS PER ITEM 519 OR ITEM 843.

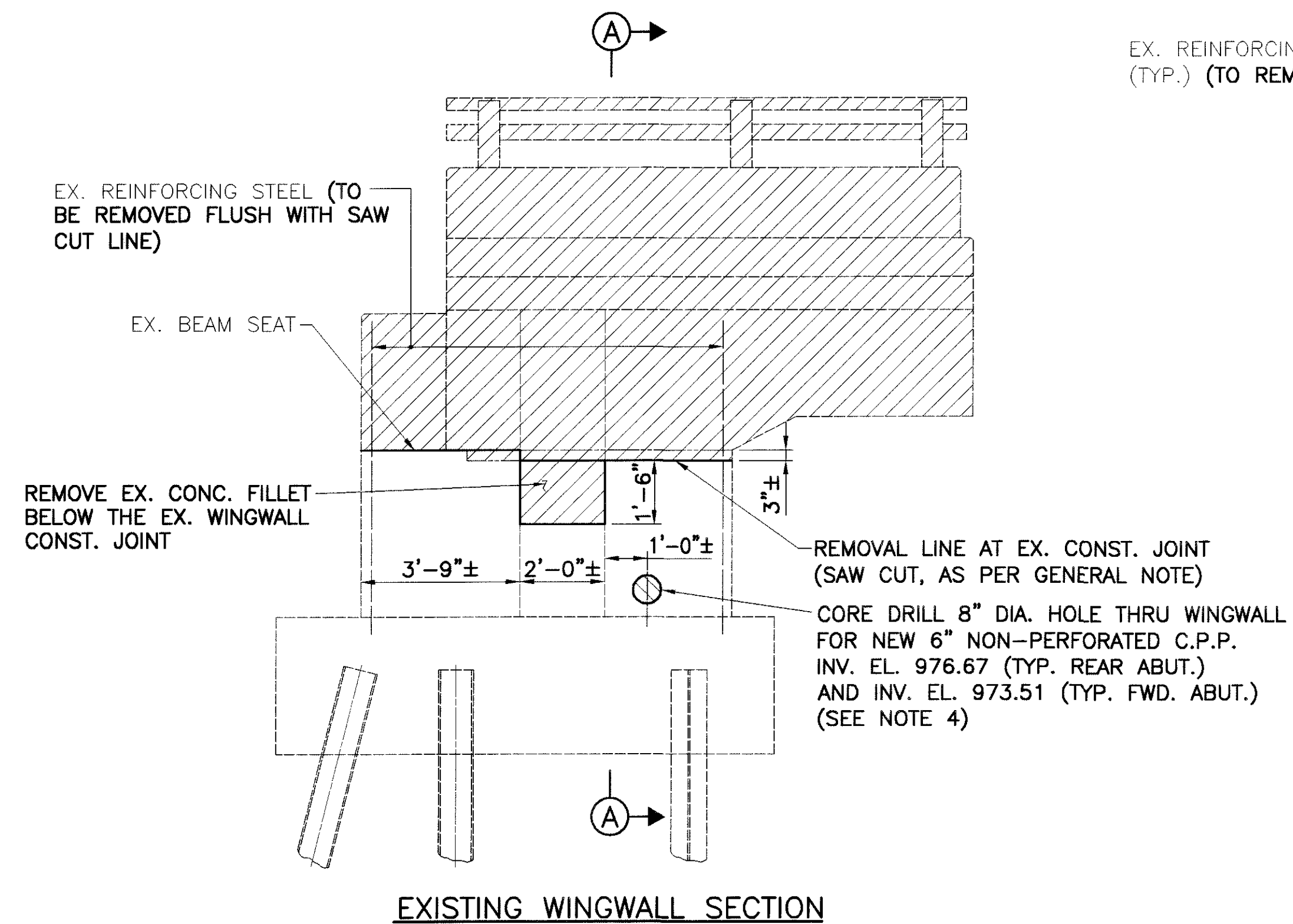
REPAIR DETAILS		BRIDGE NO. MAH-76-0067		DESIGN AGENCY
MAH - 76 - 00.67		(GRANDVIEW ROAD)		FINKBEINER, PETTIS & STROUT, INC.
4 / 13		19		520 S. MAIN STREET, SUITE 2400
28		5002672		AKRON, OHIO 44311-1010
DESIGNED	DRAWN	REVIEWED	DATE	
R.K.Z.	M.P.B.	D.L.G.	5/03	
CHECKED	REVISED	STRUCTURE FILE NO.		
F.J.G.		5002672		



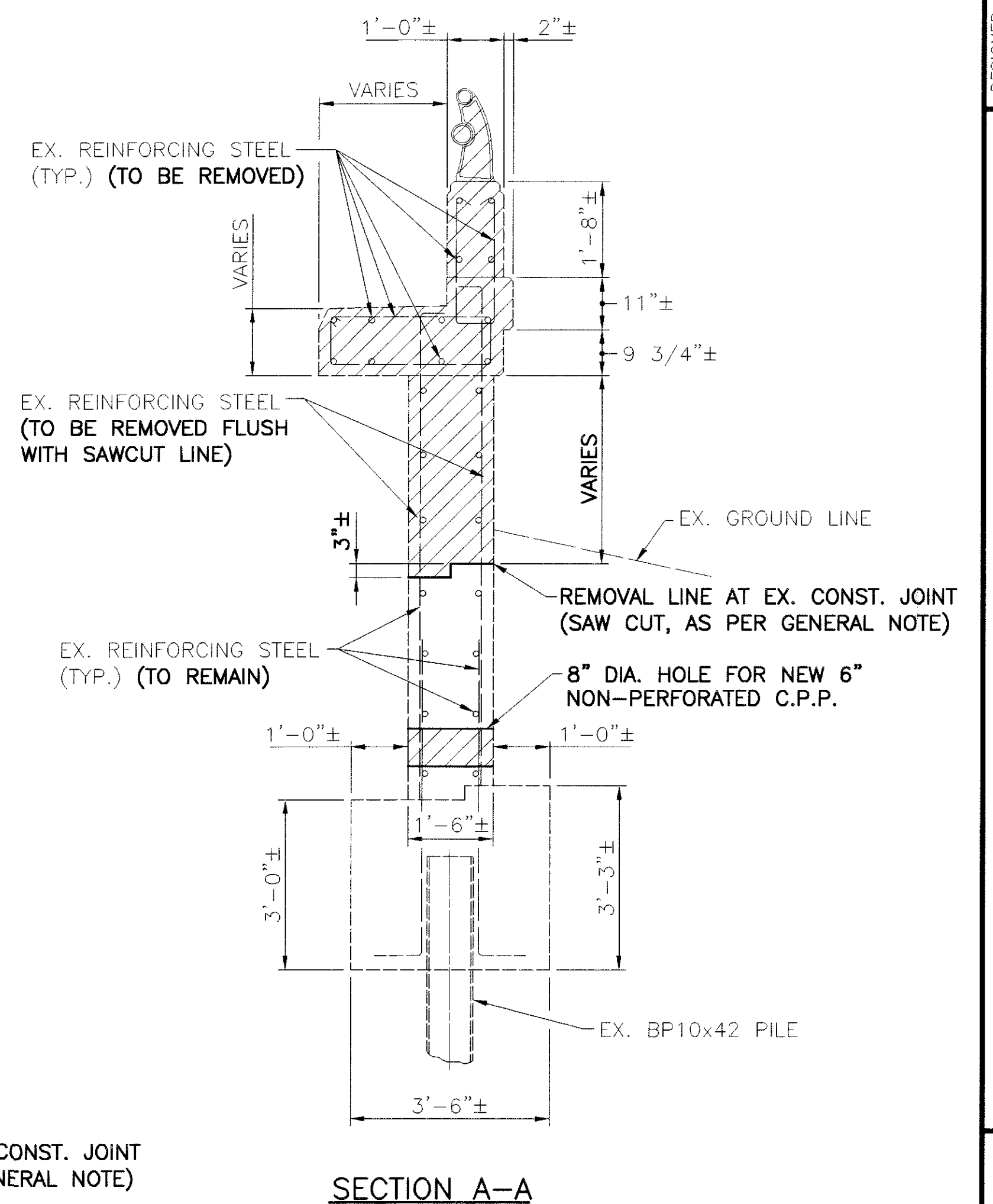
EXISTING TRANSVERSE SECTION



EXISTING ABUTMENT SECTION



EXISTING WINGWALL SECTION



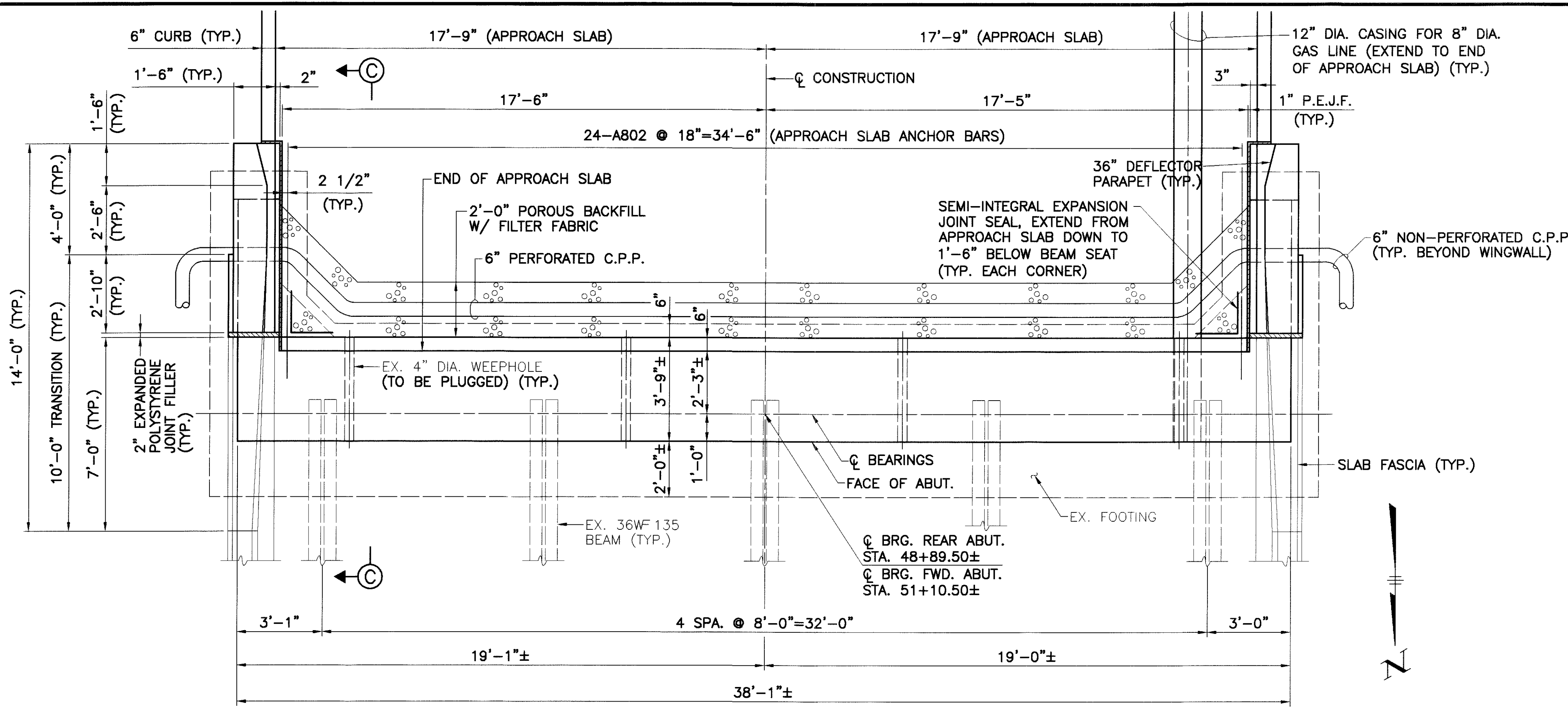
SECTION A-A

NOTES

- ① FOR REMOVAL NOTES SEE SHEET 2/13 AND 3/13 .
- ② END CROSS FRAMES TO BE REMOVED.
- ③ REMOVE ENTIRE SCUPPER AND BULB ANGLE ASSEMBLY INCLUDING ATTACHMENTS TO EXISTING BEAM. GRIND SMOOTH ANY EXISTING WELDS BY WHICH THE SCUPPER WAS ATTACHED TO THE BEAM. PAYMENT FOR THIS WORK SHALL BE INCLUDED WITH ITEM 202, PORTIONS OF STRUCTURE REMOVED, AS PER PLAN.
- ④ INCLUDE WITH ITEM 518, 6" NON-PERFORATED C.P.P. INCLUDING SPECIALS, AS PER PLAN FOR PAYMENT.

LEGEND

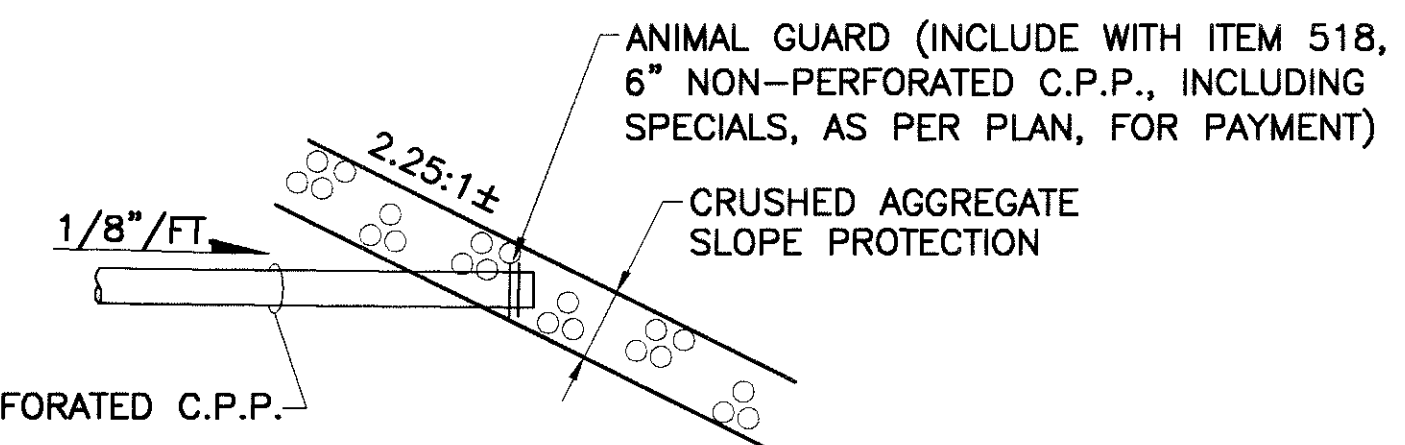
AREAS OF THE EXISTING STRUCTURE TO BE REMOVED



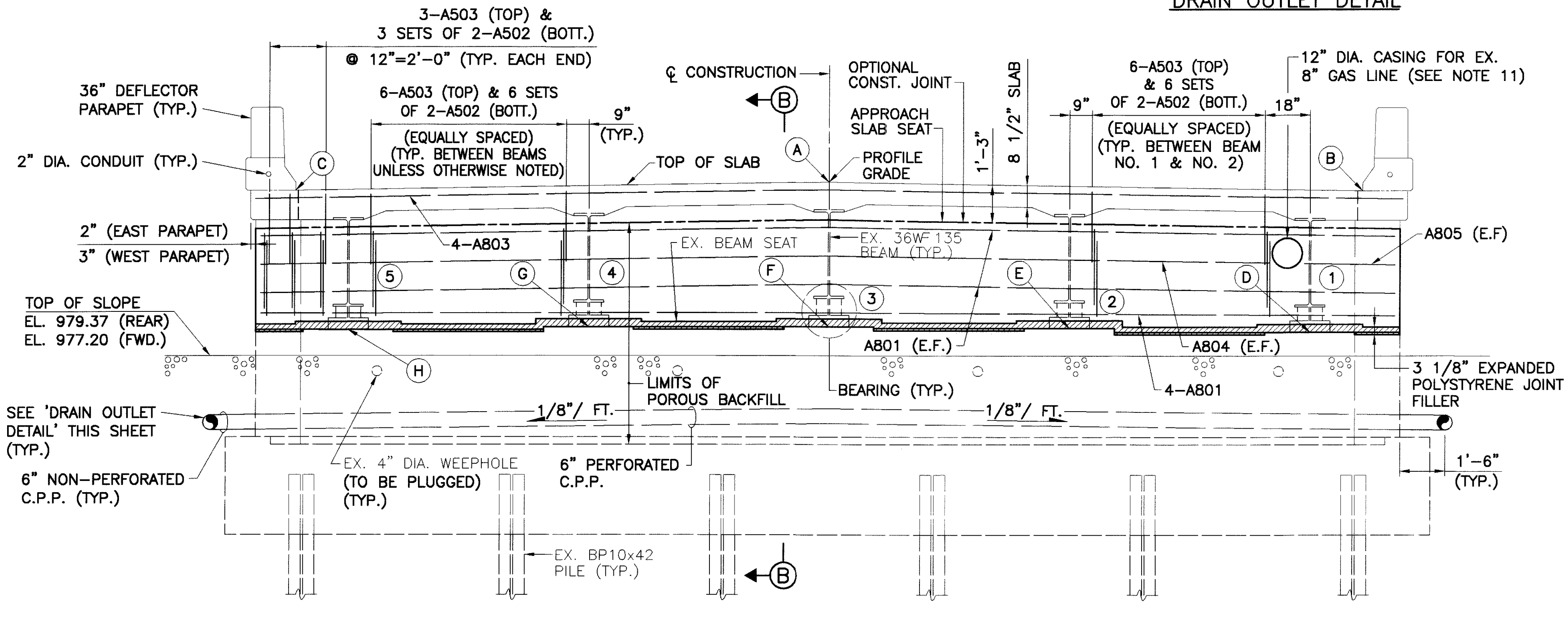
**PLAN**  
(REAR ABUTMENT SHOWN, FORWARD ABUTMENT OPPOSITE)

ELEVATION TABLE								
ABUTMENT	A	B	C	D	E	F	G	H
REAR	984.86	984.58	984.58	979.87±	980.00±	980.05±	980.04±	979.95±
FORWARD	982.74	982.46	982.46	977.70±	977.80±	977.94±	977.84±	977.72±

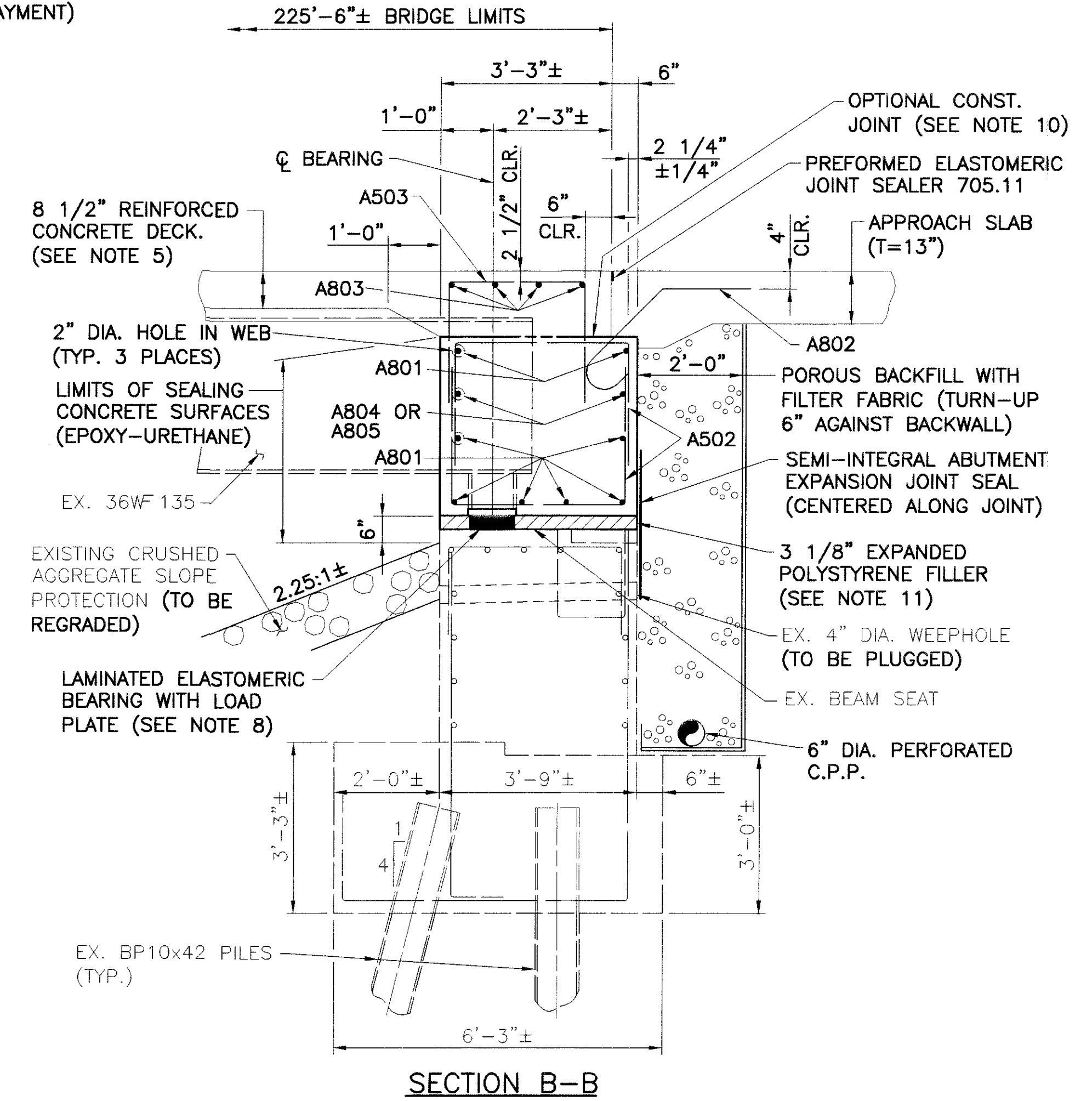
NOTE: ELEVATIONS SHOWN AT CL BEARING.



**DRAIN OUTLET DETAIL**



**ELEVATION**  
(REAR ABUTMENT SHOWN, FORWARD ABUTMENT OPPOSITE)



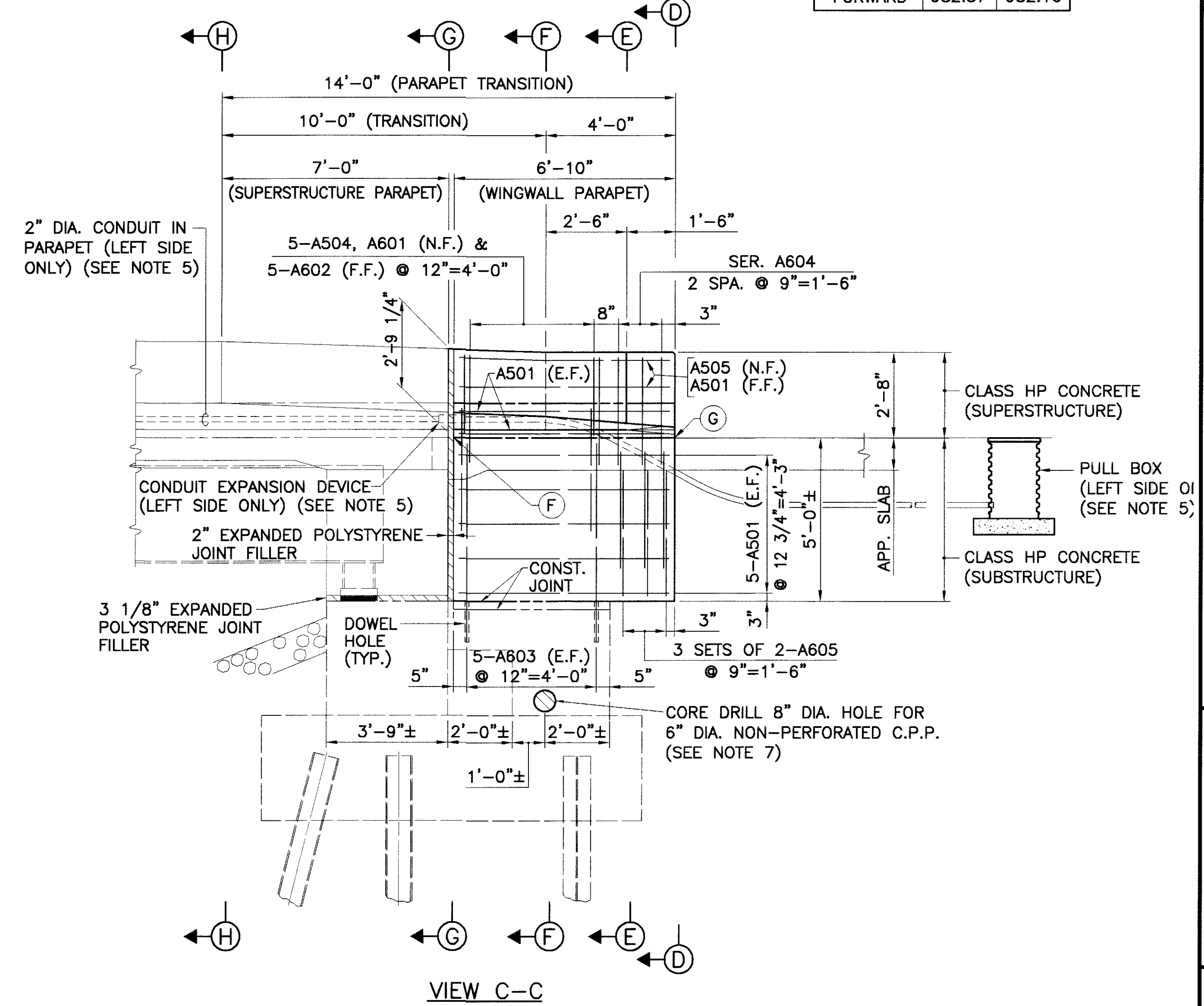
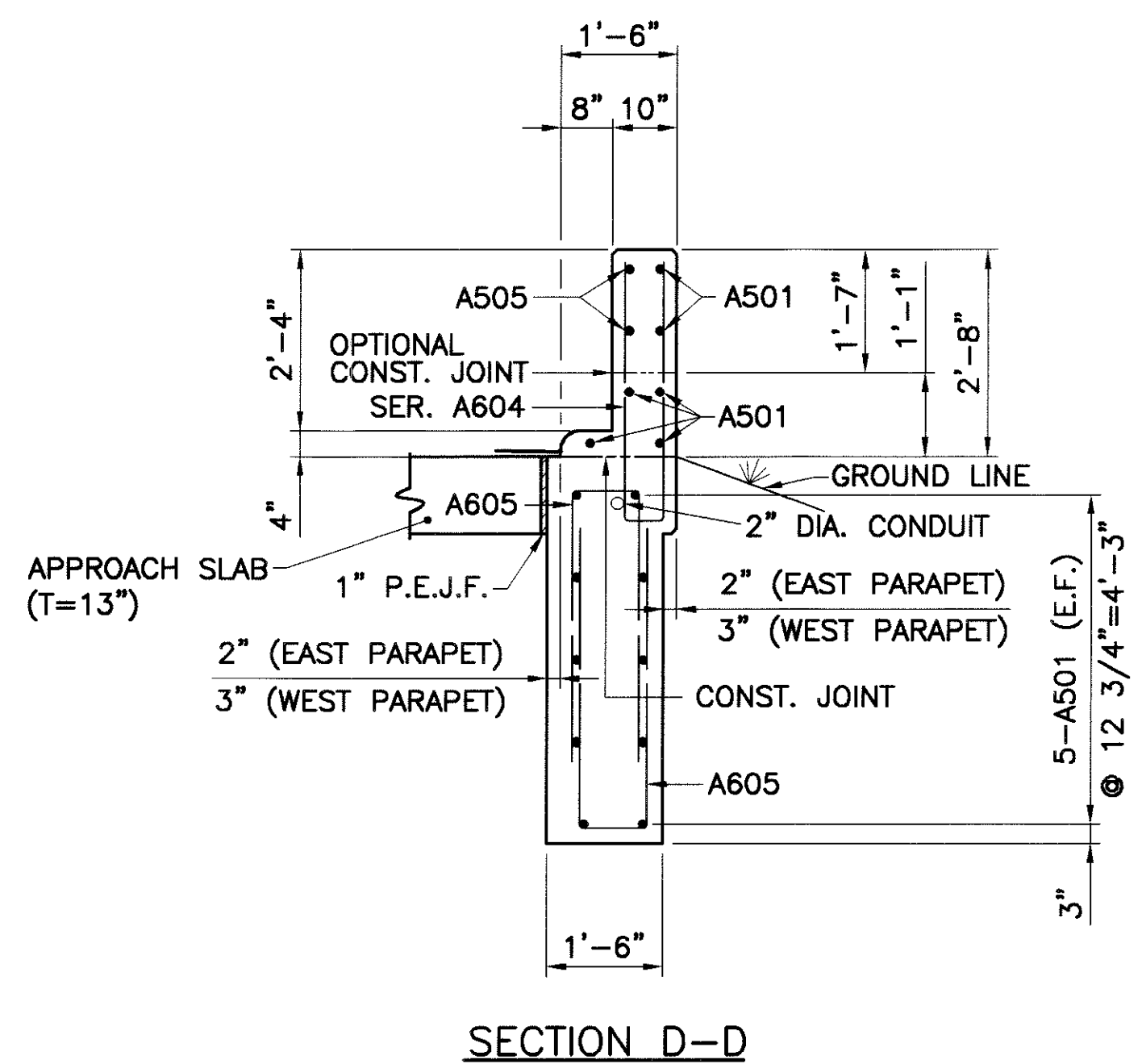
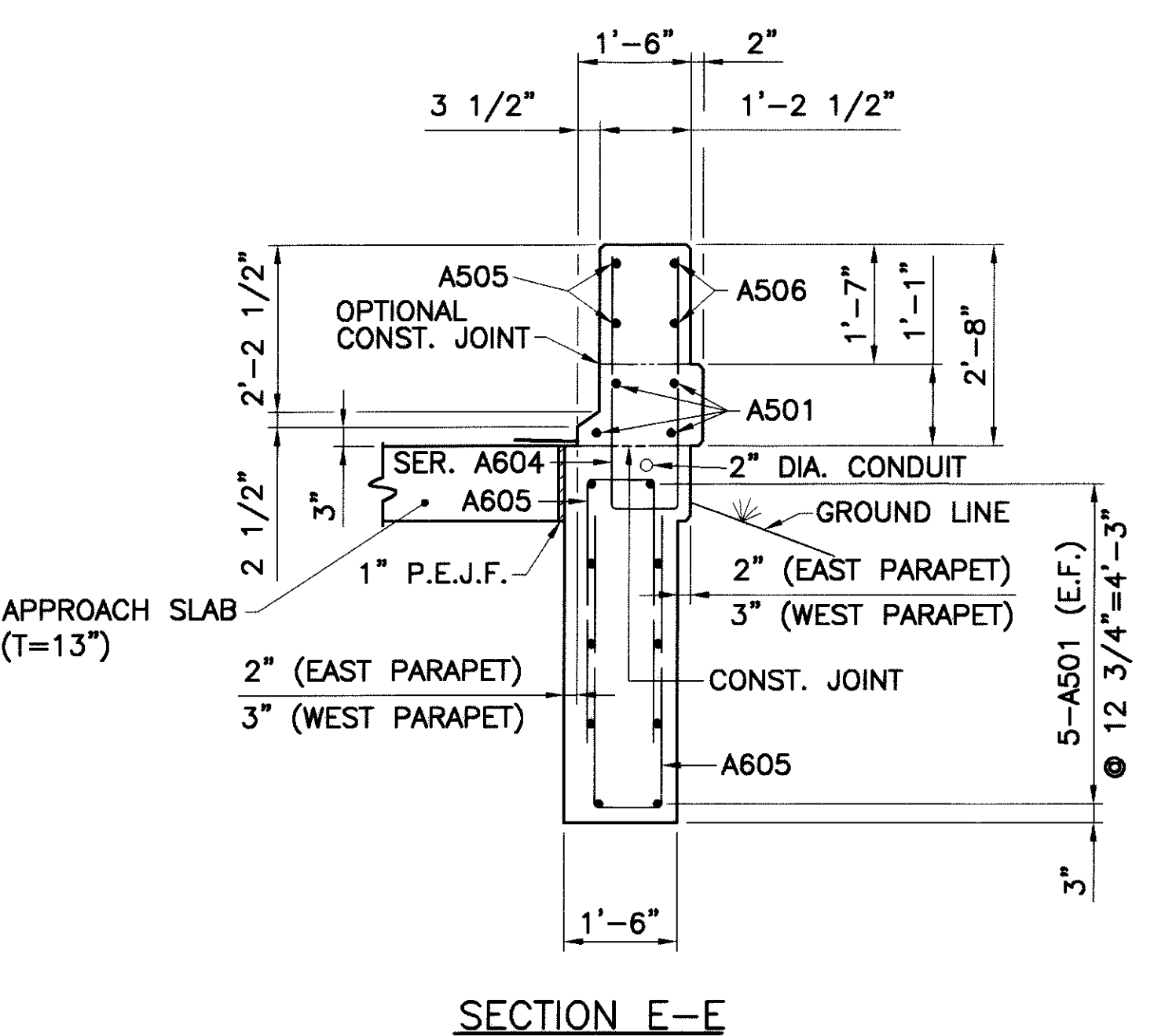
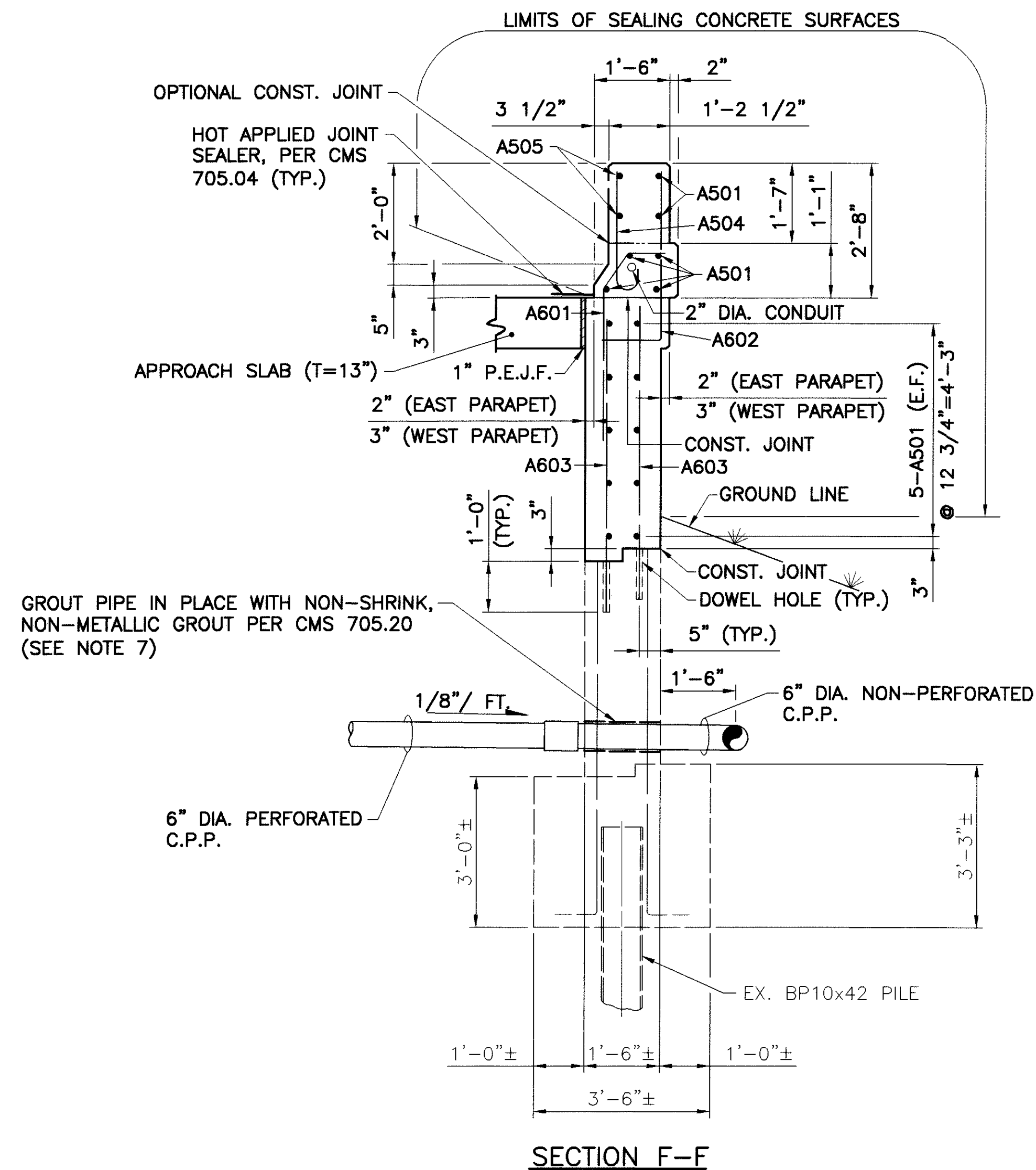
**SECTION B-B**

- NOTES**
- MINIMUM BAR LAP IS AS FOLLOWS:  
#5 BAR = 30"  
#8 BAR = 45"
  - POROUS BACKFILL WITH FILTER FABRIC, 2'-0" THICK SHALL EXTEND UP TO THE PLANE OF THE SUBGRADE, AND Laterally TO THE WINGWALLS. FILTER FABRIC SHALL CONFORM WITH 712.09, TYPE A.
  - FOR VIEW C-C, WINGWALL AND PARAPET TRANSITION DETAILS AND NOTES SEE SHEET 7 / 13 .
  - PROVIDE A 1" CHAMFER ON ALL EXPOSED CONCRETE.
  - FOR TRANSVERSE SECTION, PARAPET REINFORCING AND ADDITIONAL NOTES, SEE SHEET 11 / 13 .
  - FOR SLAB PLAN AND ADDITIONAL DETAILS AND NOTES, SEE SHEET 12 / 13 .
  - PREFORMED EXPANSION JOINT FILLER IS TO BE INCLUDED IN BID ITEM 526, REINFORCED CONCRETE APPROACH SLAB FOR PAYMENT.
  - FOR BEARING DETAILS AND NOTES SEE SHEET 9 / 13 .
  - ELEVATIONS SHOWN ARE TAKEN AT THE CENTERLINE OF ABUTMENT BEARINGS.
  - ABUTMENT DIAPHRAGM CONCRETE, STEEL, SUPERSTRUCTURE: THE CONCRETE ENCASED STRUCTURAL STEEL MEMBERS SUPPORTED IN SEMI-INTEGRAL TYPE ABUTMENTS MAY BE PLACED BEFORE THE ACTUAL DECK CONCRETE IS PLACED. IF THE CONTRACTOR CHOOSES THIS OPTION THE CONCRETE SHALL HAVE HAD AT LEAST 48 HOURS OF SET TIME BEFORE DECK CONCRETE IS PLACED.
  - EXPANDED POLYSTYRENE JOINT FILLER AND 12" DIA. CASING FOR GAS LINE SHALL BE INCLUDED WITH ITEM 511, CLASS HP CONCRETE, BRIDGE DECK FOR PAYMENT.

DATE: 6/14/02  
CAD FILE: 0067-ABUT\_01  
OPERATOR: MPB/GAF  
PLOT SCALE: 1=1



DATE: 6/14/02  
 CAD FILE: 0067-ABUT\_02  
 OPERATOR: MPB/CAF  
 PLOT SCALE: 1"=1'

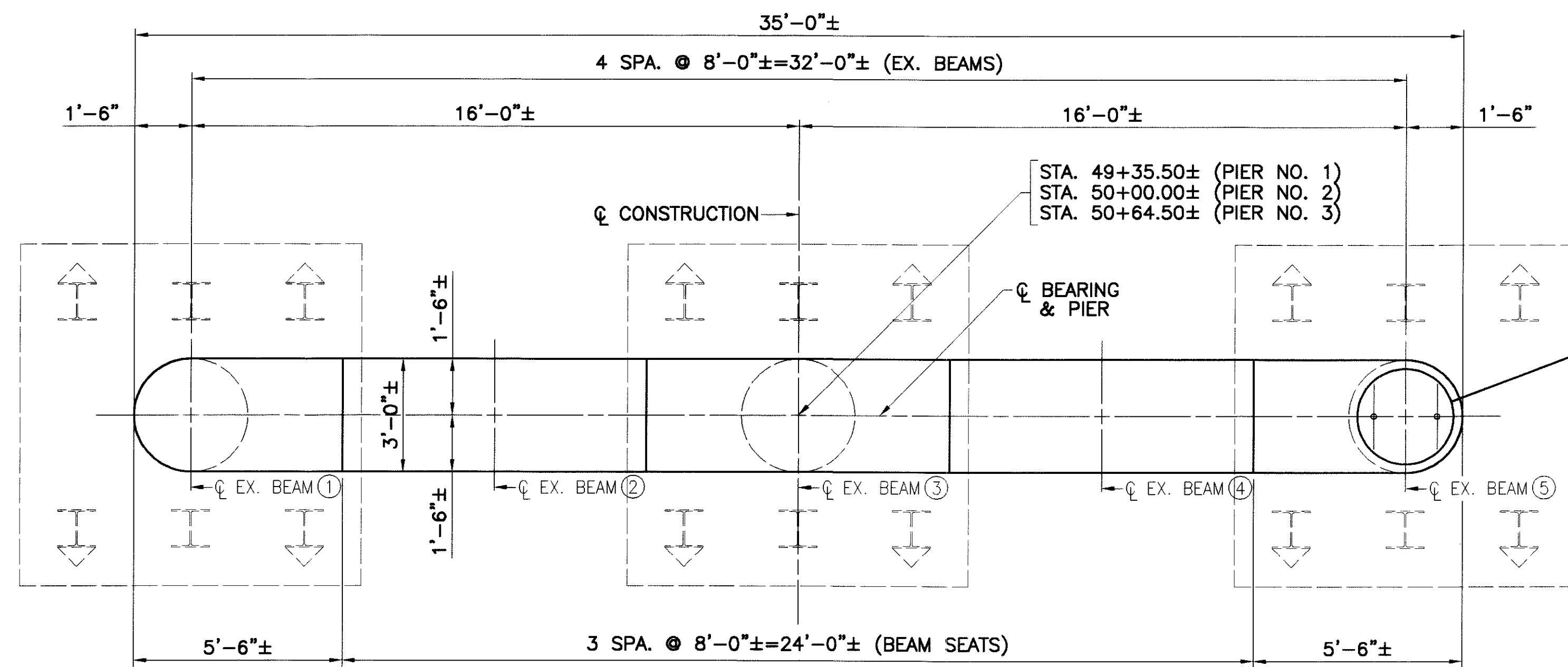


NOTES

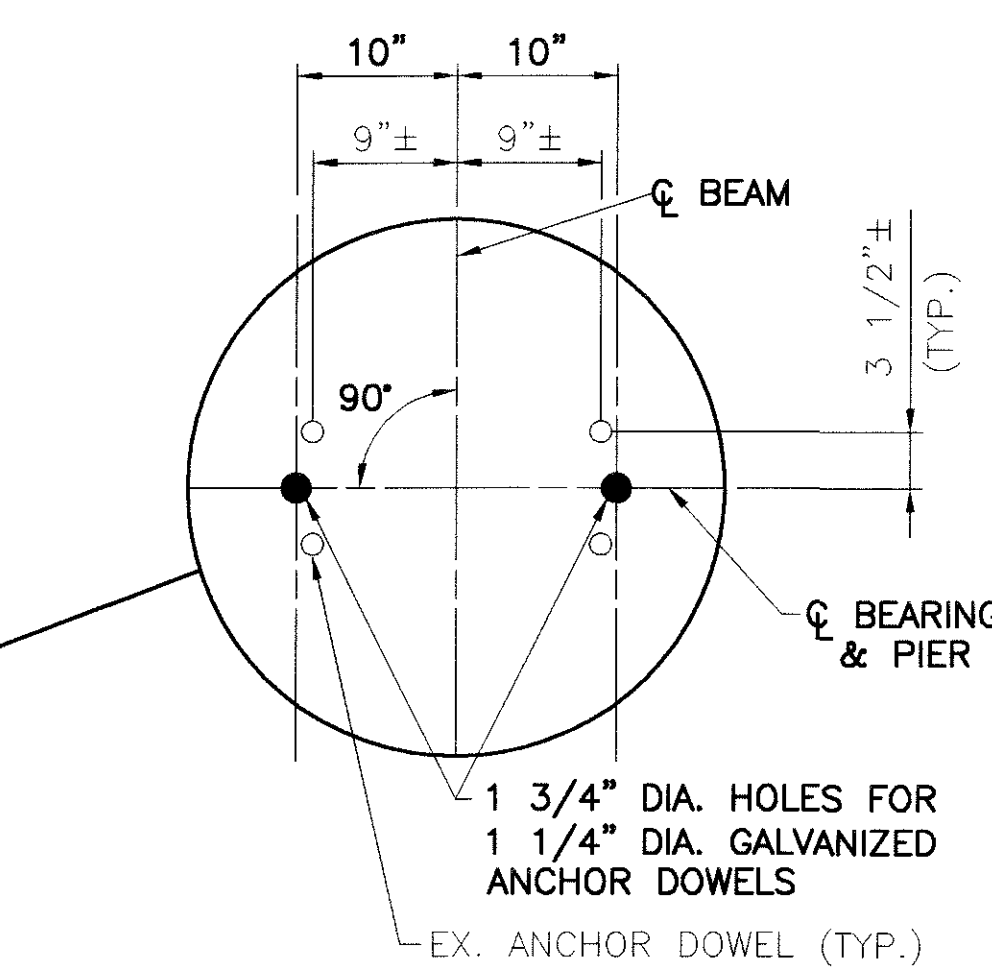
- ① MINIMUM BAR LAPS ARE AS FOLLOWS:  
 #5 BAR = 30" #6 BAR = 36"
- ② FOR ABUTMENT PLAN AND ELEVATION, AND ADDITIONAL DETAILS AND NOTES SEE SHEET 6 / 13 .
- ③ PROVIDE A 1" CHAMFER ON ALL EXPOSED CONCRETE.
- ④ FOR ADDITIONAL SUPERSTRUCTURE DETAILS SEE SHEETS 11 / 13 AND 12 / 13 .
- ⑤ FOR PULL BOX AND CONDUIT DETAILS AND NOTES, SEE O.D.O.T. STANDARD DRAWINGS HL-30.11M AND HL-30.31. PAYMENT FOR LABOR, MATERIALS AND INSTALLATION OF THESE ITEMS SHALL BE INCLUDED IN ROADWAY ITEM 625, PULL BOX, 725.08, 18".
- ⑥ FOR SECTION G-G AND H-H SEE SHEET 12 / 13 .
- ⑦ INCLUDE WITH ITEM 518, 6" NON-PERFORATED C.P.P. INCLUDING SPECIALS, AS PER PLAN FOR PAYMENT.
- ⑧ FOR APPROACH SLAB DETAILS SEE SHEET 11 / 13 .

ELEVATION TABLE		
ABUTMENT	F	G
REAR	984.54	984.47
FORWARD	982.37	982.16

DESIGN AGENCY: FINKBEINER, PETTIS & STROUT, INC.  
 520 S. MAIN STREET, SUITE 2400  
 AKRON, OHIO 44311-1010  
 DATE: 5/03  
 REVIEWED: D.L.L.G.  
 DRAWN: M.P.B.  
 DESIGNED: R.K.Z.  
 CHECKED: F.J.G.  
 STRUCTURE FILE NO.: 5002672  
 ABUTMENT DETAILS  
 BRIDGE NO. MAH-76-0067  
 GRANDVIEW ROAD OVER INTERSTATE ROUTE 76  
 MAH-76-00.67  
 (GRANDVIEW ROAD)  
 7 / 13  
 22  
 28



PLAN



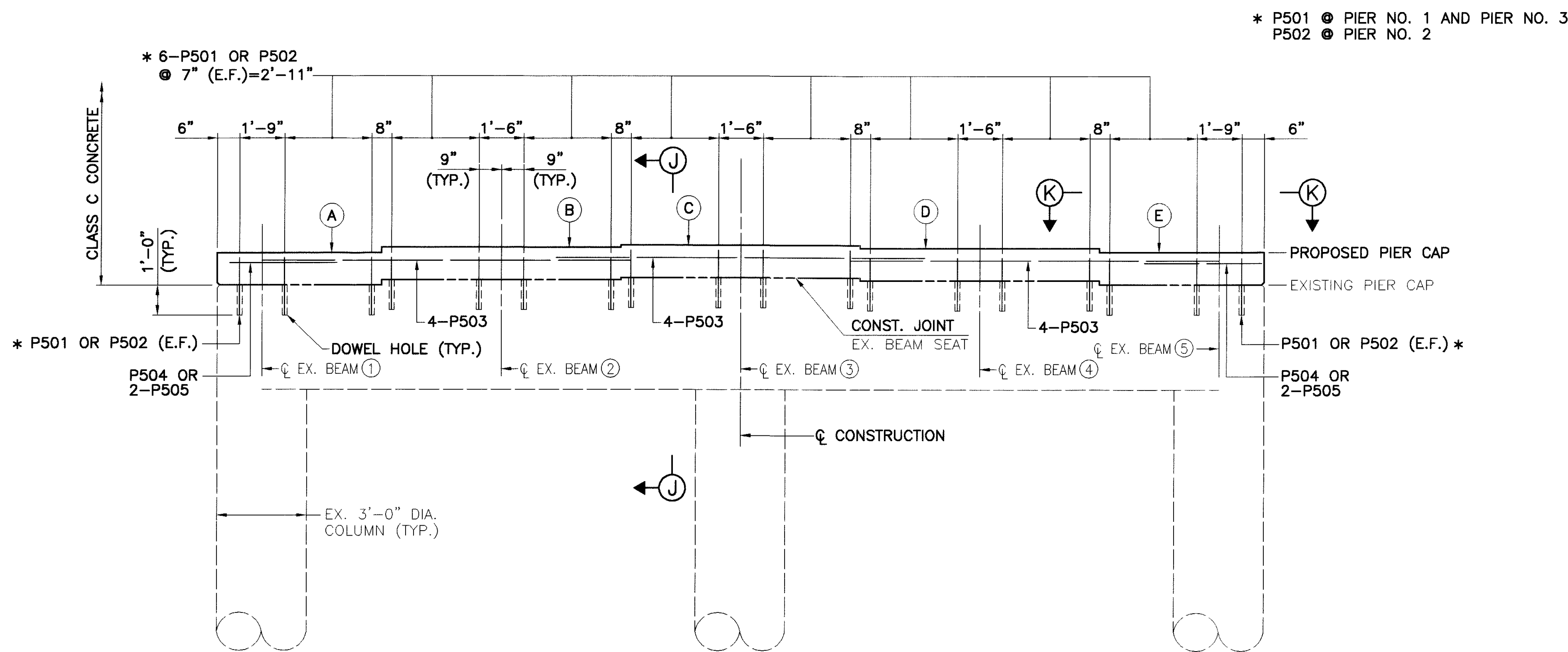
BEARING ANCHOR ROD LOCATION  
 (TYPICAL ALL BEAMS AT PIER NO. 2 ONLY)

NOTES:

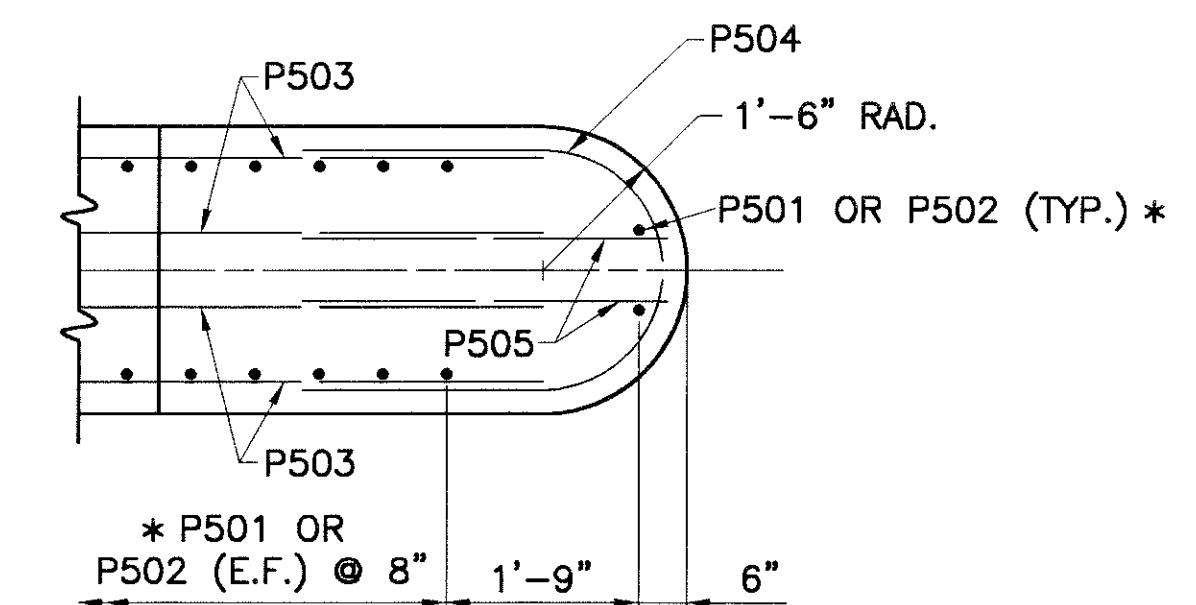
- ① EXISTING REINFORCING IN THE PIER CAP SHALL BE POSITIVELY LOCATED USING NONDESTRUCTIVE TESTING EQUIPMENT AND MARKED PRIOR TO DRILLING OF DOWEL HOLES. DOWEL HOLES SHALL BE SPACED TO AVOID INTERFERENCE WITH EXISTING REINFORCING.
- ② FOR ADDITIONAL BEARING DETAILS AND NOTES SEE SHEET 10 / 13 .
- ③ EXISTING ANCHOR BOLTS SHALL BE CUT SO THAT BOLTS REMAIN 3" BELOW TOP OF NEW CAP
- ④ MINIMUM BAR LAPS ARE AS FOLLOWS:  
 #5 BAR = 30"
- ⑤ SEAL ALL THE EXPOSED SURFACES OF PIERS 1, 2 AND 3 EXCEPT FOR THE TOP OF EACH PIER CAP.
- ⑥ REINFORCING IS TYPICAL FOR ALL PIERS UNLESS NOTED OTHERWISE.

PROPOSED ELEVATION TABLE					
	A	B	C	D	E
PIER NO. 1	980.67	980.79	980.92	980.82	980.70
PIER NO. 2	980.46	980.59	980.71	980.62	980.49
PIER NO. 3	979.43	979.55	979.68	979.58	979.46

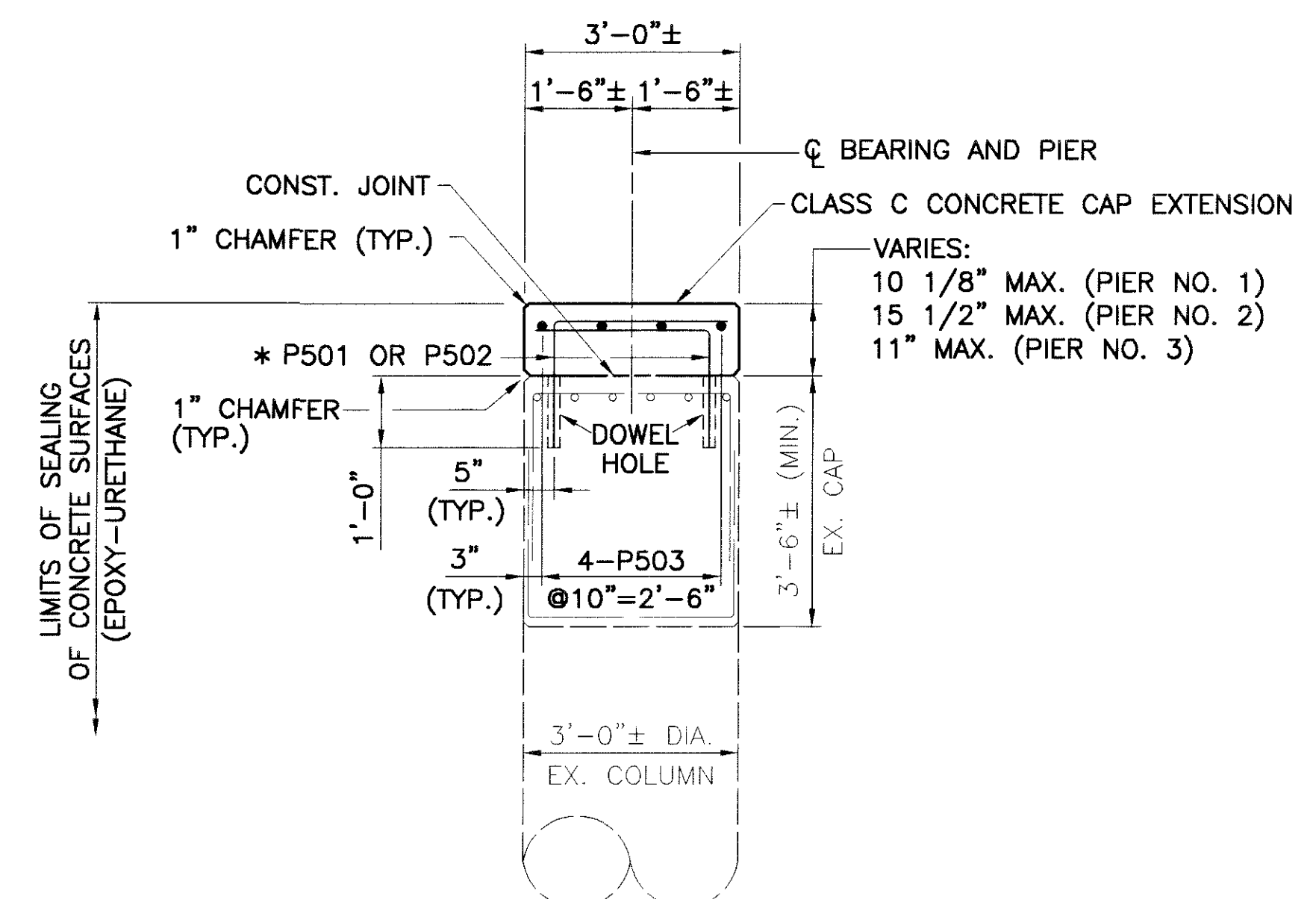
EXISTING ELEVATION TABLE					
	A	B	C	D	E
PIER NO. 1	979.85	979.95	980.08	979.99	979.88
PIER NO. 2	979.18	979.30	979.43	979.33	979.23
PIER NO. 3	978.53	978.66	978.77	978.69	978.60



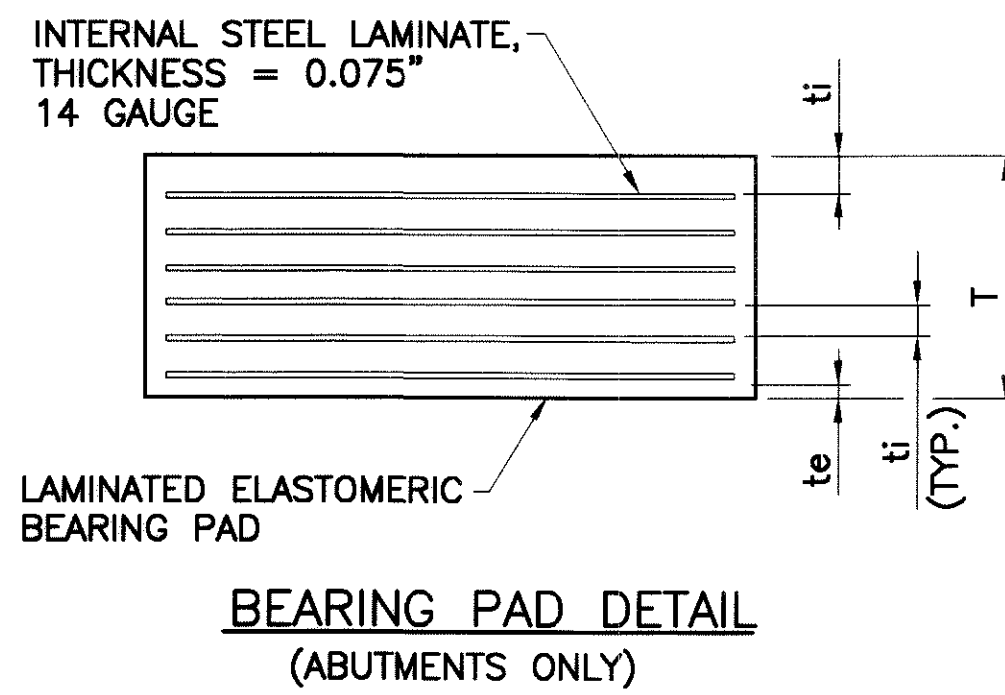
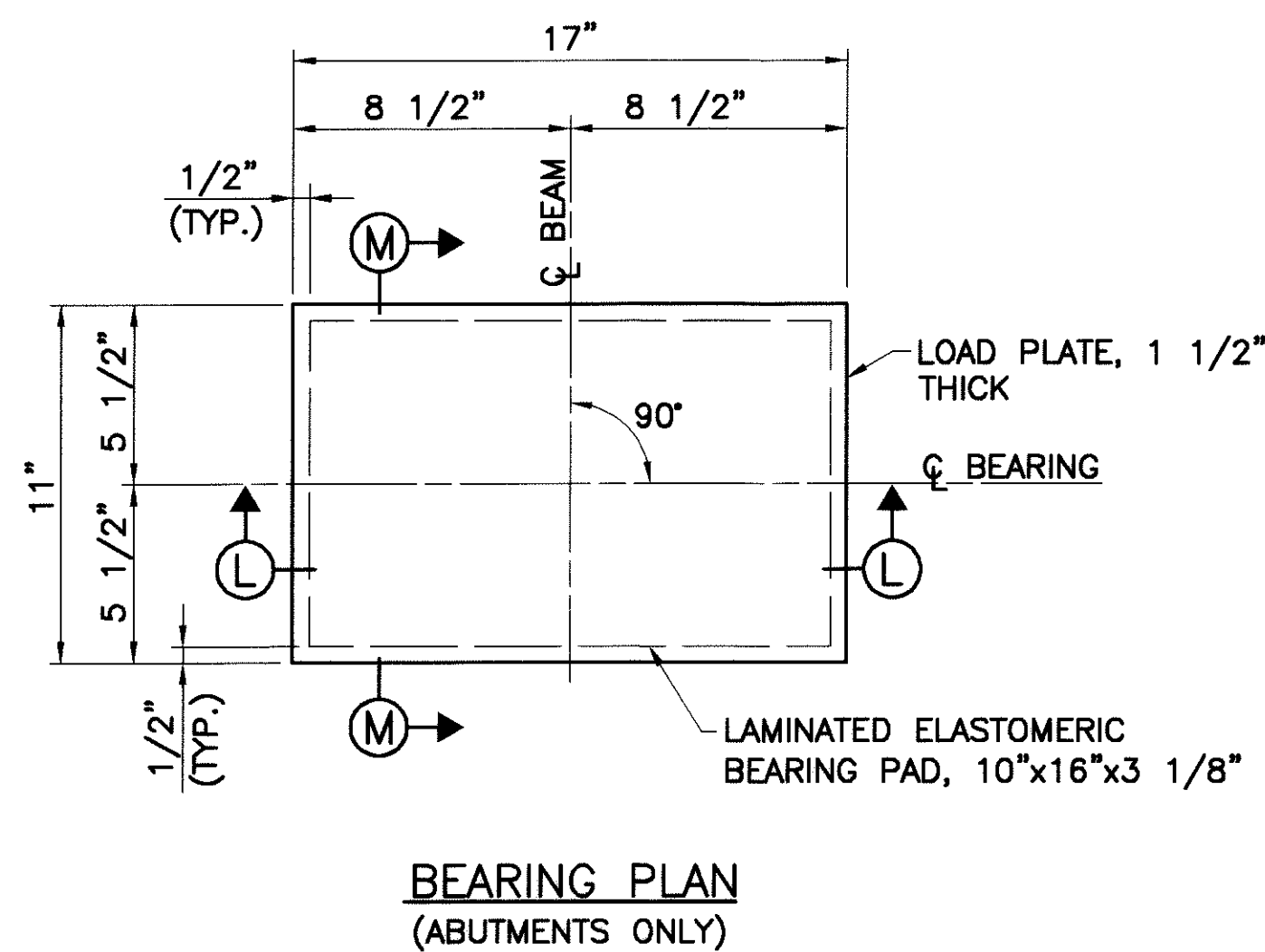
ELEVATION



VIEW K-K



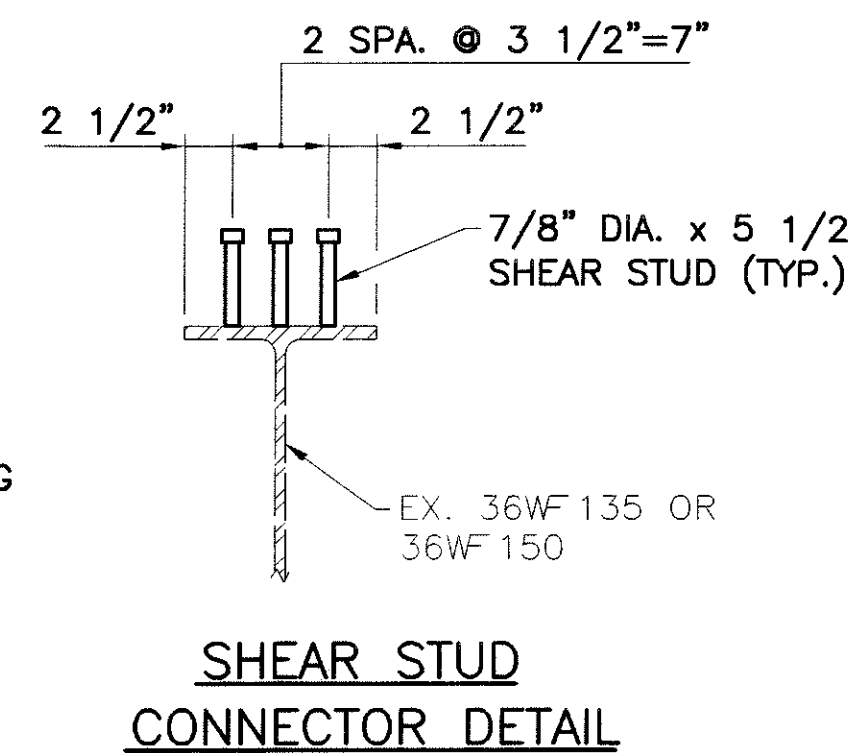
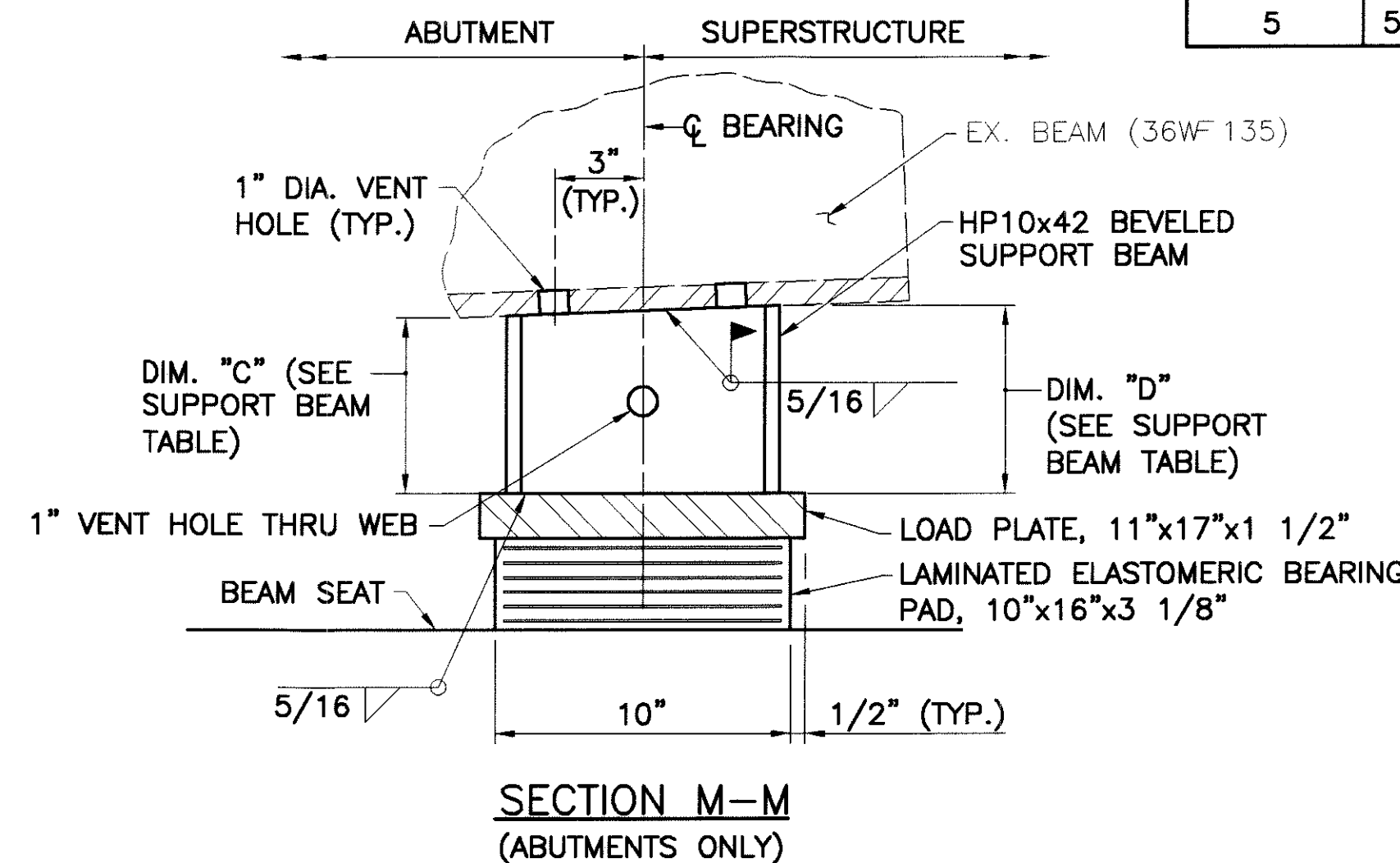
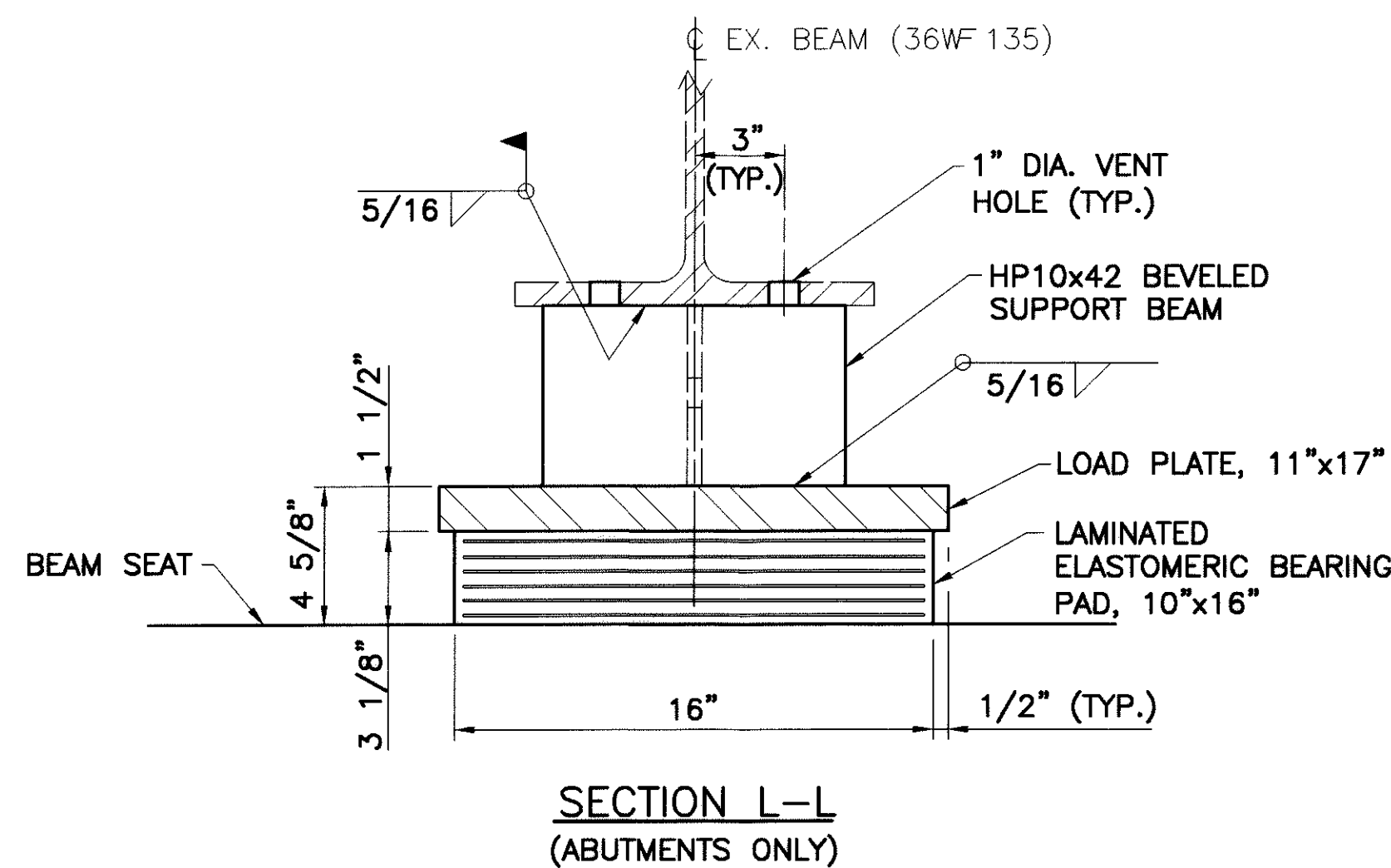
SECTION J-J



BEARING DATA							
50 DUROMETER							
LOCATION	SIZE		(THICKNESS) "DIM. T"	t <sub>i</sub>	t <sub>e</sub>	NUMBER OF t <sub>i</sub>	NUMBER OF STEEL LAMINATES
	L	W					
ABUTMENTS	10"	16"	3.13"	0.40"	0.28"	6	6

ABUTMENTS:  
 DEAD LOAD = 61.20 (KIPS/PAD)  
 LIVE LOAD (W/O IMPACT) = 44.30 (KIPS/PAD)  
 DESIGN LOAD=105.5 (KIPS/PAD)

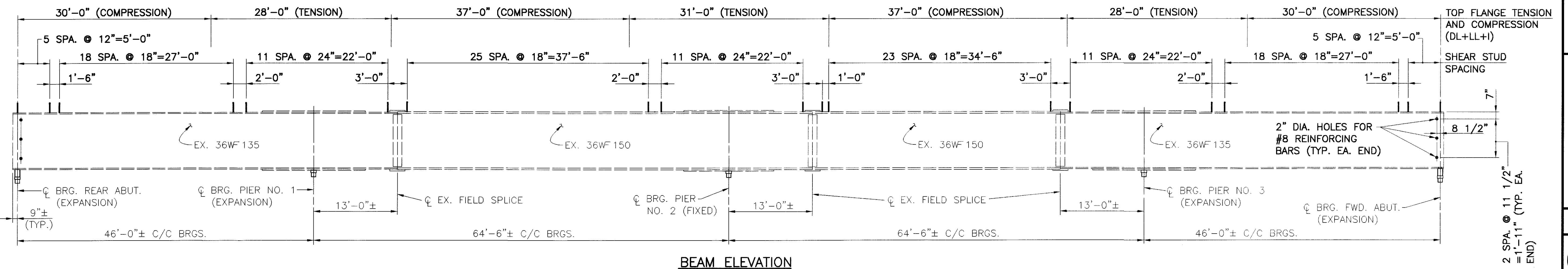
BEAM NO.	DIMENSION "C"		DIMENSION "D"	
	REAR	FORWARD	REAR	FORWARD
1	5 3/4"	6 1/2"	6"	6 1/2"
2	5 11/16"	6 5/8"	5 13/16"	6 3/4"
3	6 5/8"	6 1/2"	6 3/4"	6 3/4"
4	5 5/8"	6 1/2"	5 3/4"	6 1/2"
5	5 3/16"	6 1/2"	5 5/16"	6 3/4"



NOTES

- LOAD PLATES: THE STEEL LOAD PLATE SHALL BE ASTM 572, GRADE 50, AND HP10x42 BEVELED SUPPORT BEAM SHALL BE A36 STEEL.  
 THE STEEL LOAD PLATE SHALL BE BONDED BY VULCANIZATION TO THE ELASTOMER DURING THE MOLDING PROCESS. WELDING OF THE LOAD PLATE TO THE HP10x42 BEVELED SUPPORT BEAM SHALL BE CONTROLLED SO THAT THE PLATE TEMPERATURE AT THE ELASTOMER BONDED SURFACE DOES NOT EXCEED 300°F AS DETERMINED BY THE USE OF PYROMETRIC STICKS OR OTHER TEMPERATURE MONITORING DEVICES.
- ELASTOMERIC BEARINGS SHALL COMPLY WITH ITEM 516 AND AASHTO STANDARD SPECIFICATION FOR HIGHWAY BRIDGES, SECTION 18, BEARING DEVICES, DIVISION II, CONSTRUCTION, ARTICLES 18.4.5.1 AND 18.5.6.2. BEARINGS SHALL BE GRADE 3, 50 DUROMETER ELASTOMER, AND SHALL BE SUBJECTED TO THE LOAD TESTING REQUIREMENTS DEFINED IN ARTICLE 18.7.4.5 OF THE AASHTO DOCUMENT LISTED ABOVE. BEARINGS WERE DESIGNED UNDER SECTION 14.6.6 OF SECTION 14, BEARINGS, DIVISION I, DESIGN. TESTING SHALL BE INCLUDED IN ITEM 516, ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE, AS PER PLAN FOR PAYMENT.
- ALL MATERIALS, LABOR AND INCIDENTALS NECESSARY TO FURNISH AND INSTALL LAMINATED ELASTOMERIC BEARINGS, LOAD PLATES AND HP10x42 BEVELED SUPPORT BEAMS SHALL BE INCLUDED IN ITEM 516, ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE, AS PER PLAN FOR PAYMENT.
- FOR SLAB PLAN AND ADDITIONAL SUPERSTRUCTURE DETAILS AND NOTES SEE SHEETS 11/13 AND 12/13.
- 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 1/4" FOR THICKNESSES UP TO 3/4", AND 5/16" FOR GREATER THAN 3/4" THICK.
- WELDED SHEAR STUD CONNECTORS SHALL CONFORM TO AASHTO 10.38.2 AND ITEM 513, WELDED STUD SHEAR CONNECTORS, AND SHALL BE INCLUDED UNDER ITEM 513 FOR PAYMENT. MINOR FIELD ADJUSTMENTS MAY BE NECESSARY TO POSITION THE WELDED SHEAR STUDS FROM BEING POSITIONED ON THE EXISTING BOLTED SPLICE PLATES AS DIRECTED BY THE ENGINEER.
- 1" DIAMETER VENT HOLES AND 2" DIAMETER HOLES FOR THE #8 REINFORCING BARS IN THE BEAM ENDS SHALL BE FIELD DRILLED. FLAME CUTTING OF HOLES IS NOT PERMITTED. FIELD DRILLING SHALL BE INCLUDED WITH ITEM 511, CLASS HP CONCRETE, BRIDGE DECK FOR PAYMENT.
- FIELD PAINTING OF EXISTING STEEL, SYSTEM OZEU: THE SURFACE AREA PAY QUANTITY IS BASED ON THE SURFACE AREA OF THE MAIN MEMBERS INCREASED BY 5 PERCENT TO ACCOUNT FOR THE AREA OF CROSSFRAMES, BEARINGS, AND OTHER STRUCTURAL STEEL INCIDENTALS TO BE CLEANED AND PAINTED.
- FOR PIER BEARING DETAILS SEE SHEET 10/13.

DESCRIPTION	SPAN NO. 1						SPAN NO. 2						SPAN NO. 3						SPAN NO. 4			
	REAR ABUT. BRG.	1/4	1/2	3/4	PIER NO. 1 BRG.	FIELD SPLICE	1/4	1/2	3/4	PIER NO. 2 BRG.	FIELD SPLICE	1/4	1/2	3/4	FIELD SPLICE	PIER NO. 3 BRG.	1/4	1/2	3/4	FWD. ABUT. BRG.		
DEFLECTION DUE TO SLAB	0	1/8"	1/8"	1/16"	0	1/8"	1/8"	1/4"	1/8"	0	1/8"	1/8"	1/4"	1/8"	1/8"	0	1/16"	1/8"	1/8"	0		
DEFLECTION DUE TO COMPOSITE DEAD LOAD	0	0	0	0	0	0	0	1/16"	0	0	0	0	1/16"	0	0	0	0	0	0	0		
TOTAL DEFLECTION	0	1/8"	1/8"	1/16"	0	1/8"	1/8"	5/16"	1/8"	0	1/8"	1/8"	5/16"	1/8"	1/8"	0	1/16"	1/8"	1/8"	0		



DATE: 05/23/02  
 CAD FILE: 0067\_BEAM\_01  
 OPERATOR: MPB/CAF  
 PLOT SCALE: 1"=1'

DESIGN AGENCY:  
 FINKBEINER, PETTIS & STROUT, INC.  
 520 S. MAIN STREET, SUITE 2400  
 AKRON, OHIO 44311-1010

DATE: 5/03  
 REVIEWED: D.L.G.  
 DRAWN: M.P.B.  
 DESIGNED: R.K.Z.

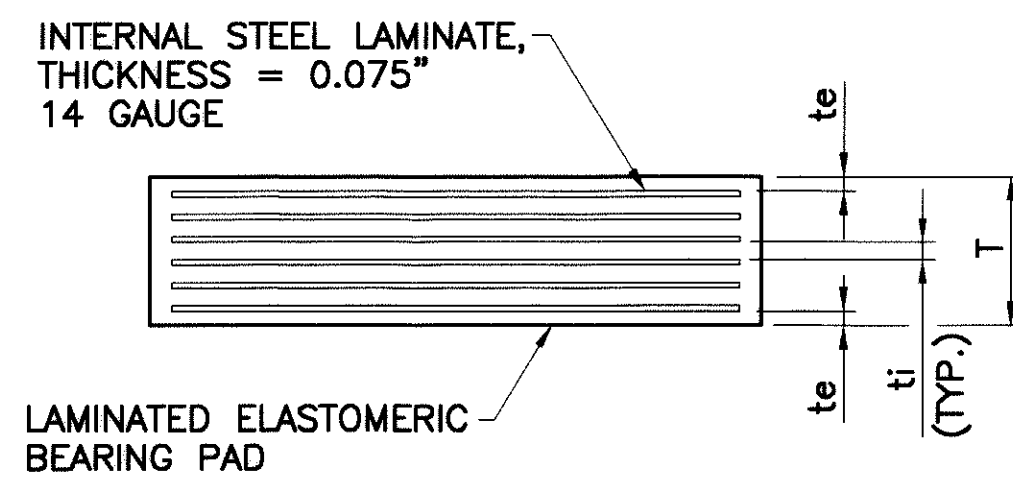
STRUCTURE FILE NO.: 5002672  
 REVISED: F.J.G.

SUPERSTRUCTURE AND BEARING DETAILS  
 BRIDGE NO. MAH-76-0067  
 GRANDVIEW ROAD OVER INTERSTATE ROUTE 76

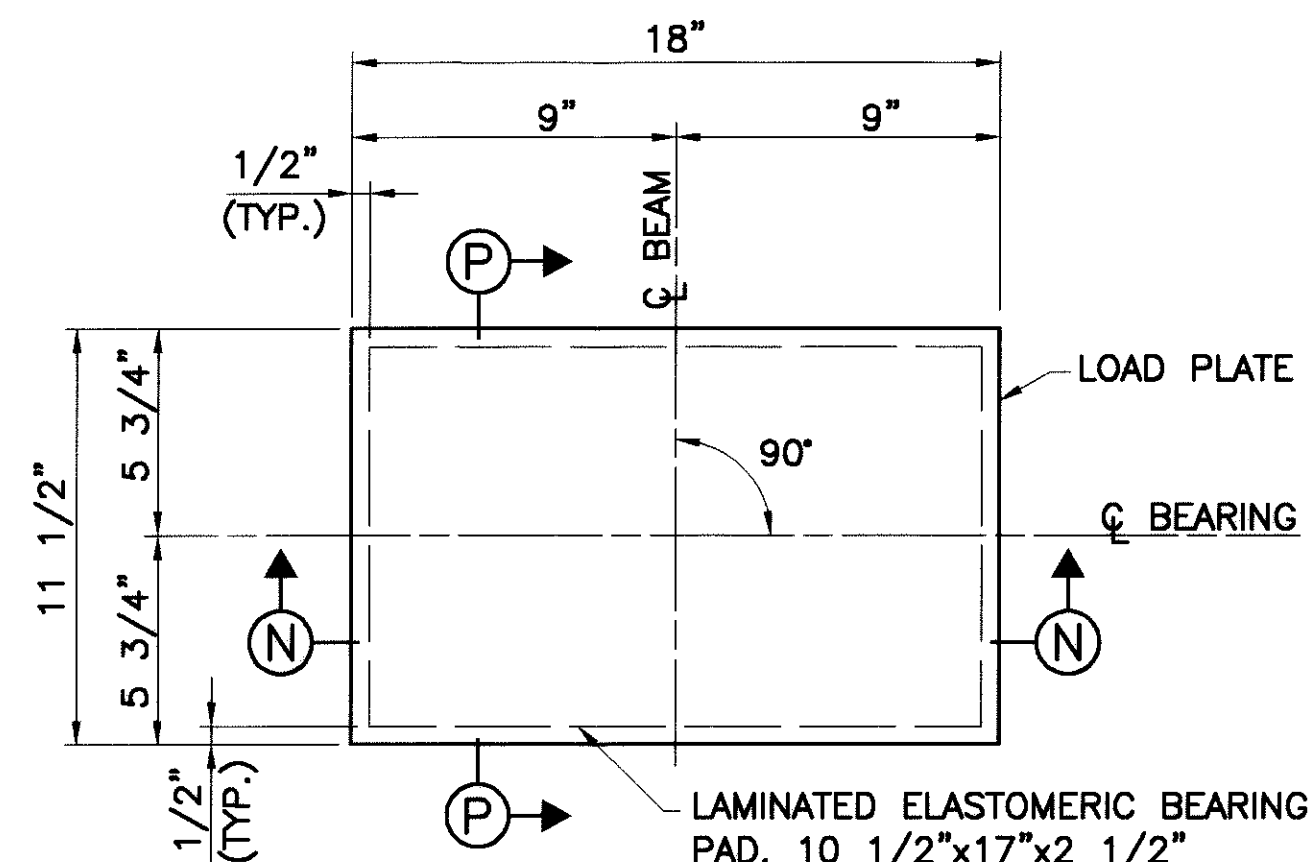
MAH-76-00.67  
 (GRANDVIEW ROAD)

9/13

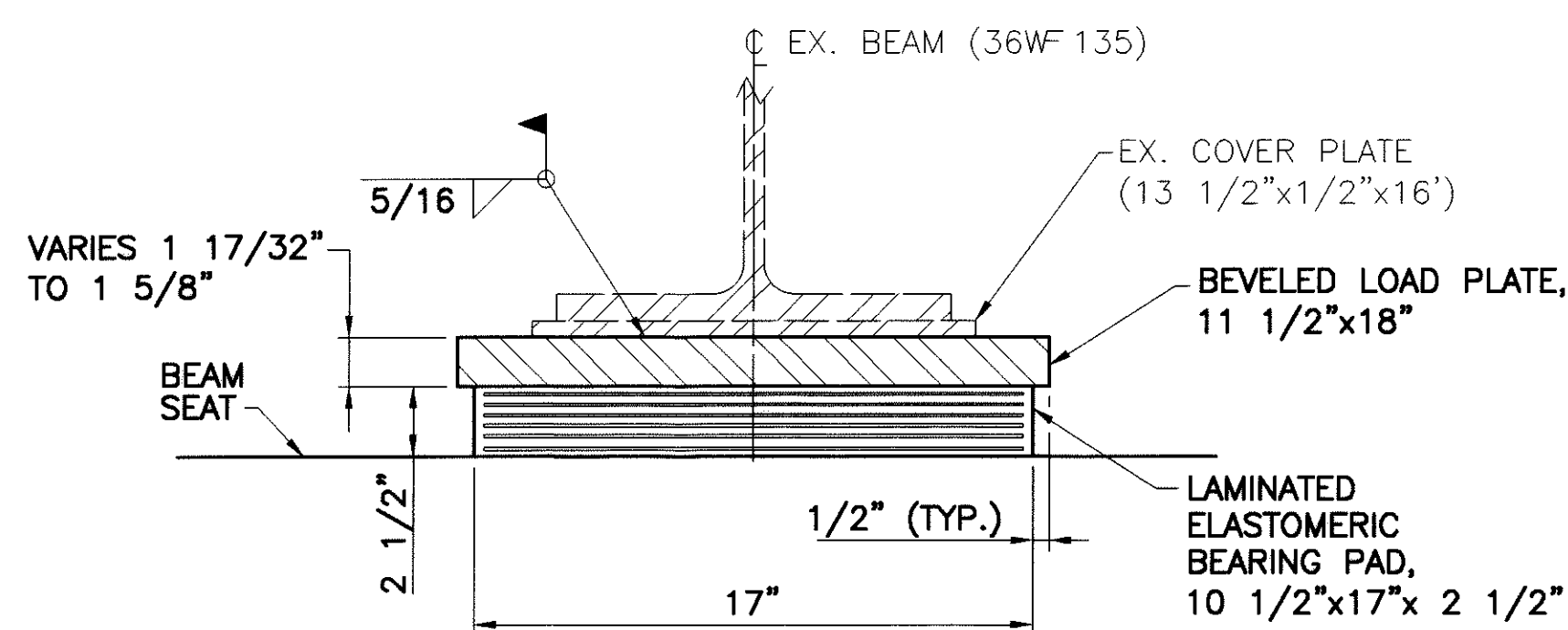
24  
 28



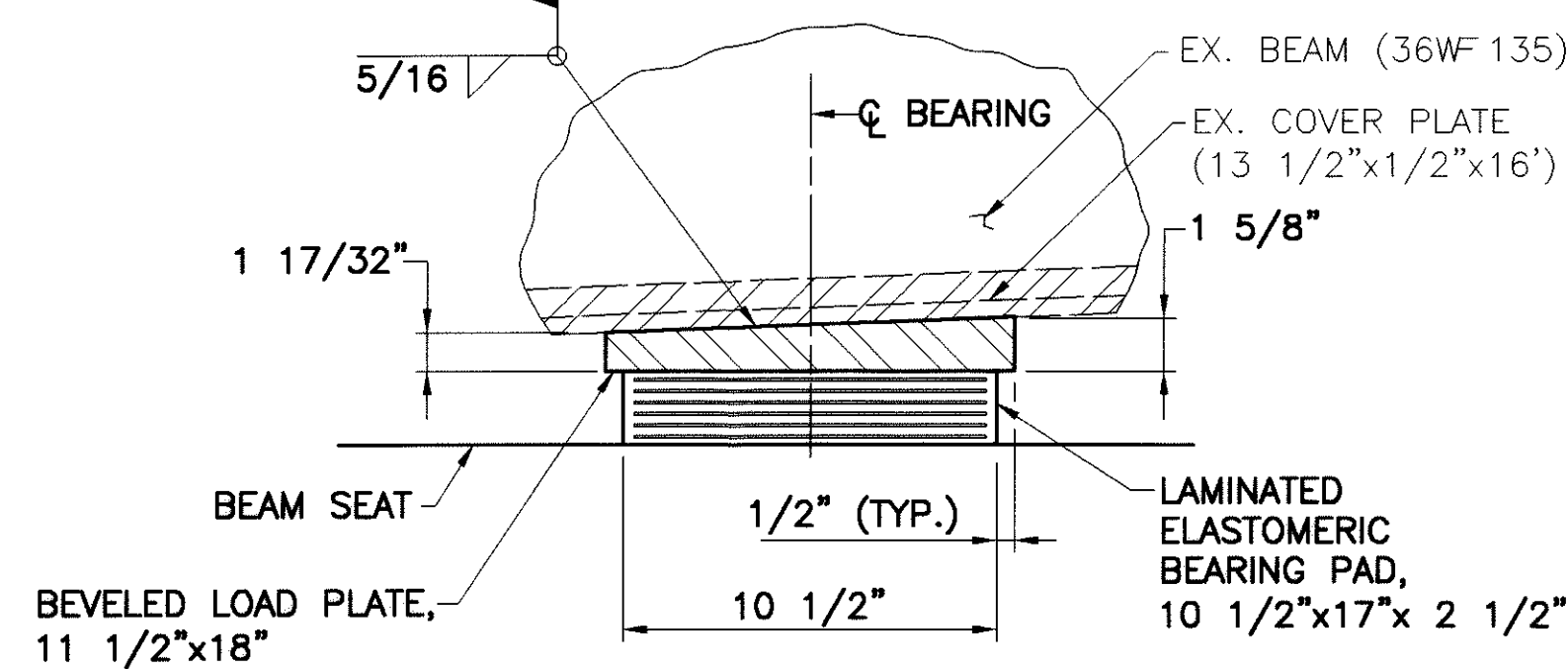
**BEARING PAD DETAIL**  
(PIER NO. 1 & PIER NO. 3 ONLY)



**BEARING PLAN**  
(PIER NO. 1 & PIER NO. 3 ONLY)

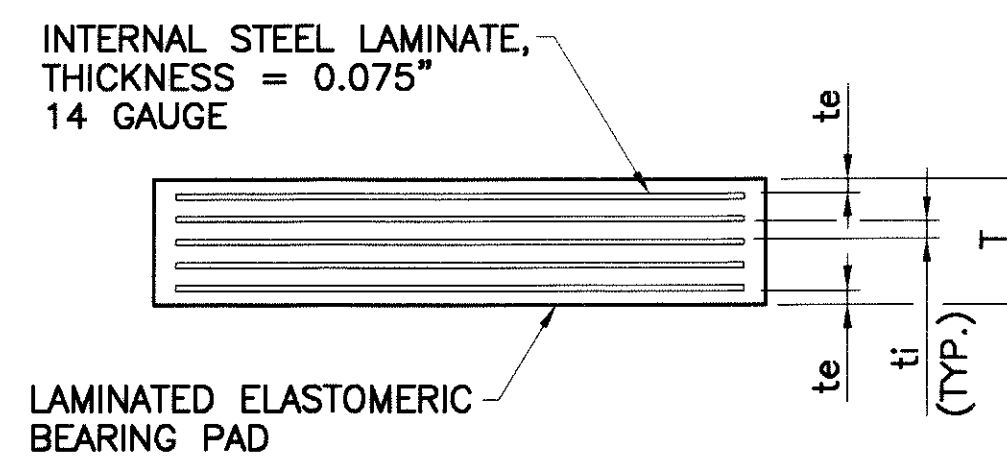


**SECTION N-N**  
(PIER NO. 1 & PIER NO. 3 ONLY)

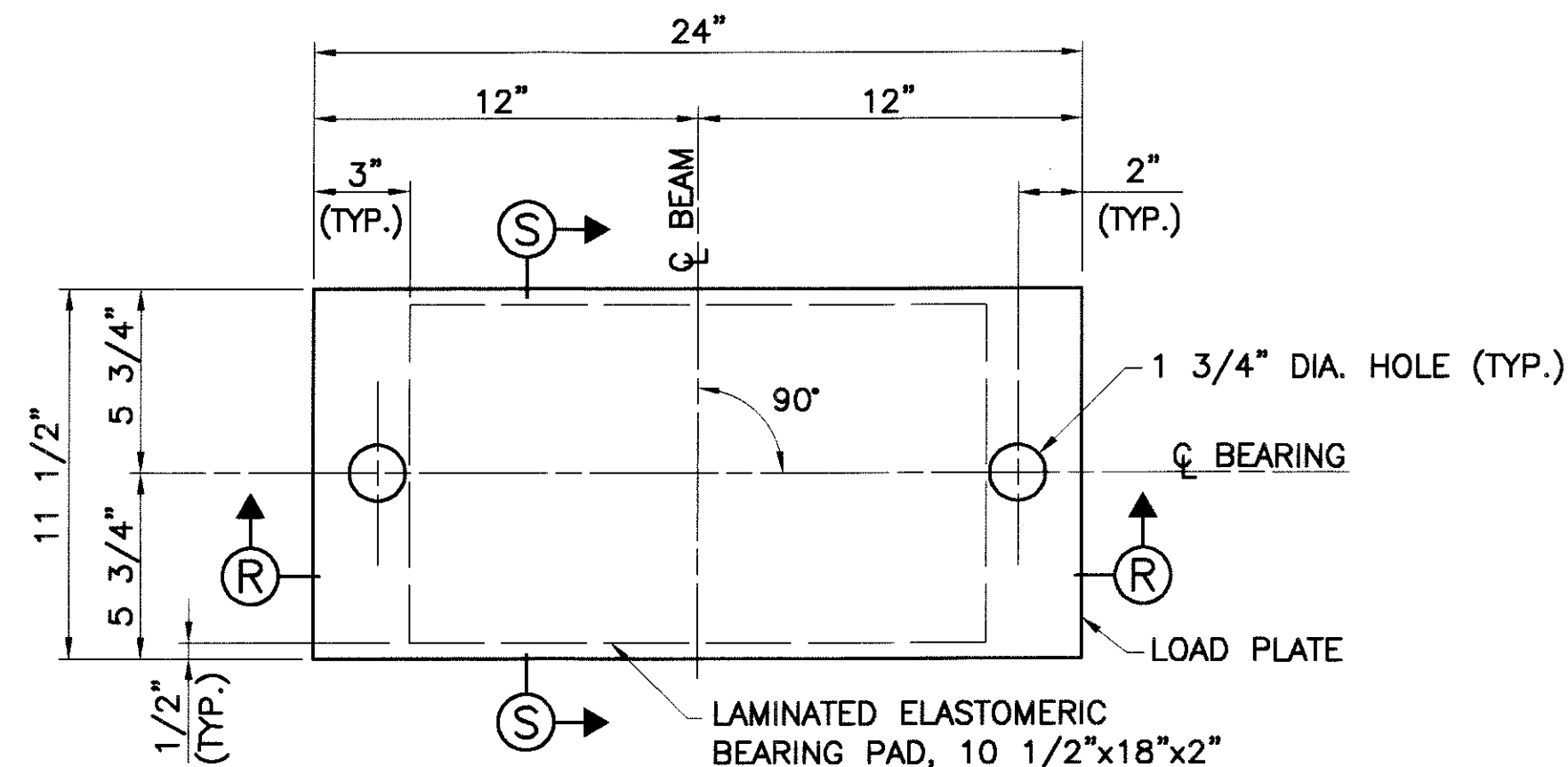


**SECTION P-P**  
(PIER NO. 1 & PIER NO. 3 ONLY)

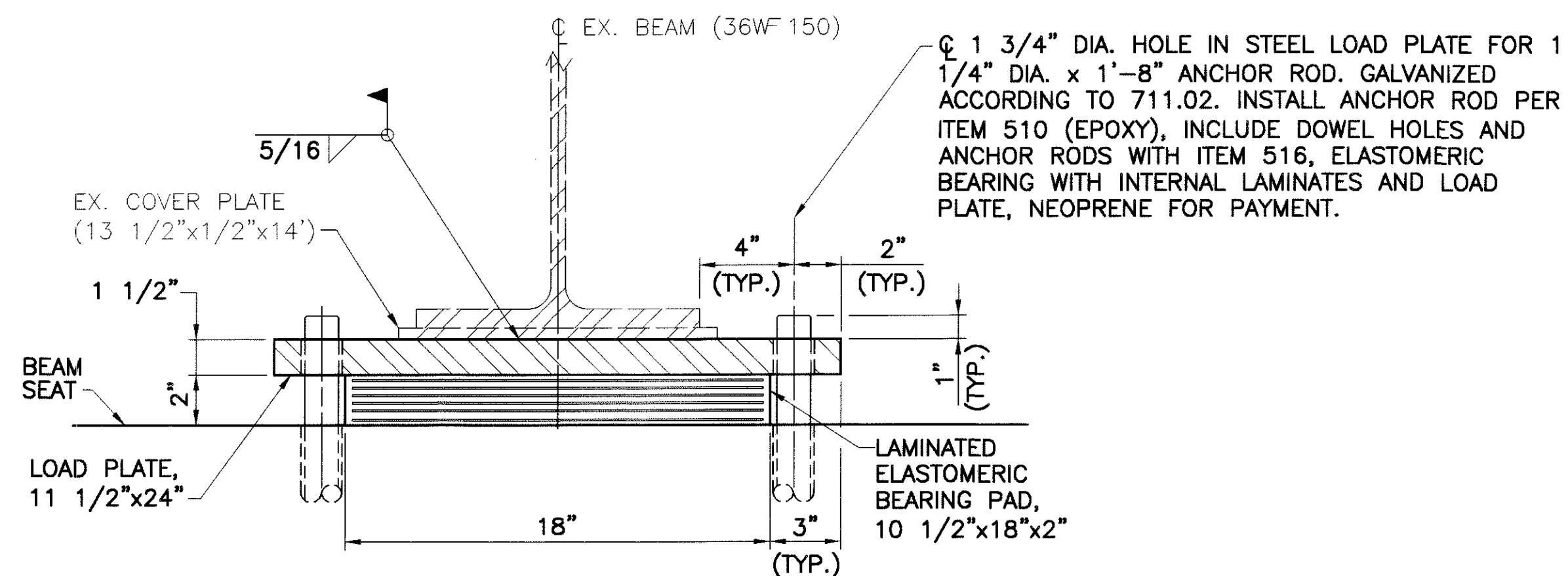
UPSTATION PIER NO. 1  
UPSTATION PIER NO. 3



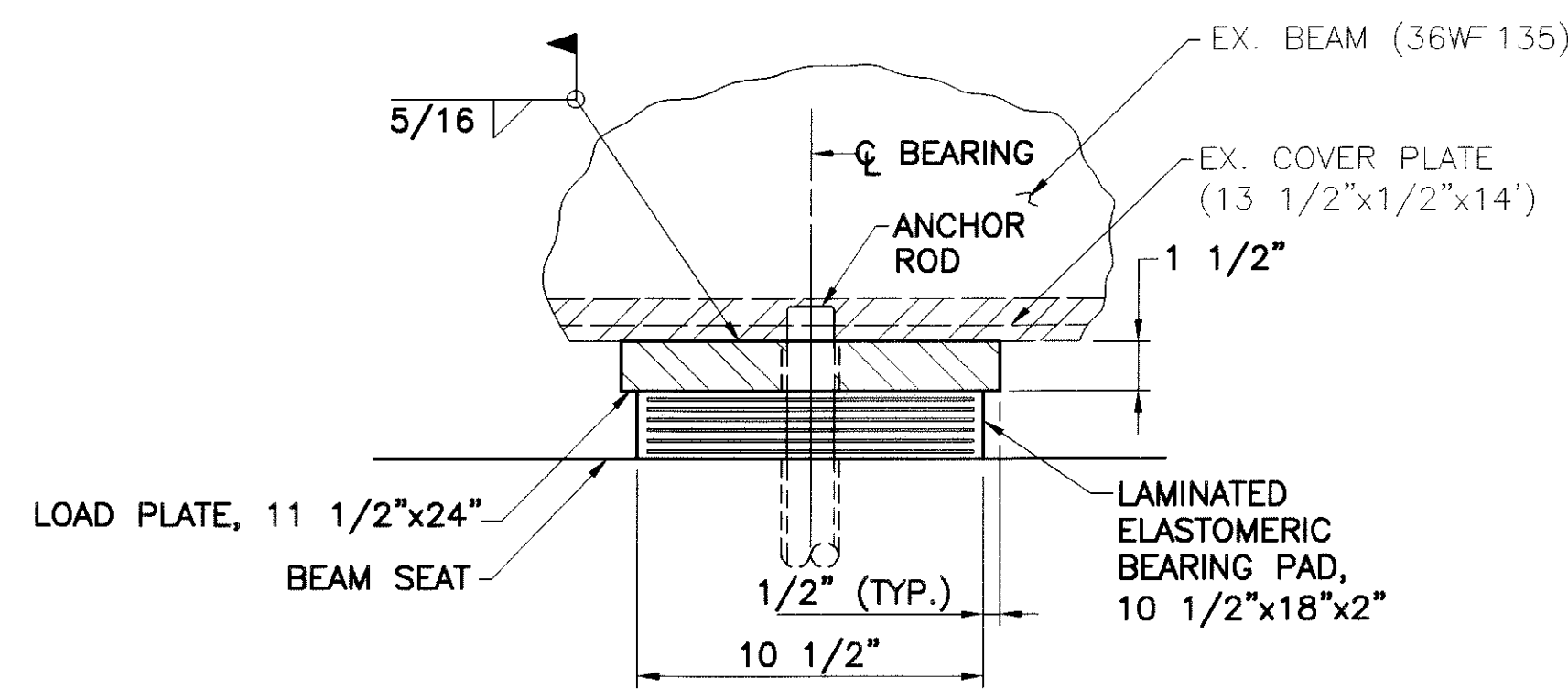
**BEARING PAD DETAIL**  
(PIER NO. 2 ONLY)



**BEARING PLAN**  
(PIER NO. 2 ONLY)



**SECTION R-R**  
(PIER NO. 2 ONLY)



**SECTION S-S**  
(PIER NO. 2 ONLY)

UPSTATION PIER NO. 2

**NOTE**

- FOR ADDITIONAL BEARING DETAILS AND NOTES SEE SHEET 9 / 13 .
- FOR BEARING ANCHOR ROD LOCATION DETAILS AND NOTES FOR PIER NO. 2 SEE SHEET 8 / 13 .

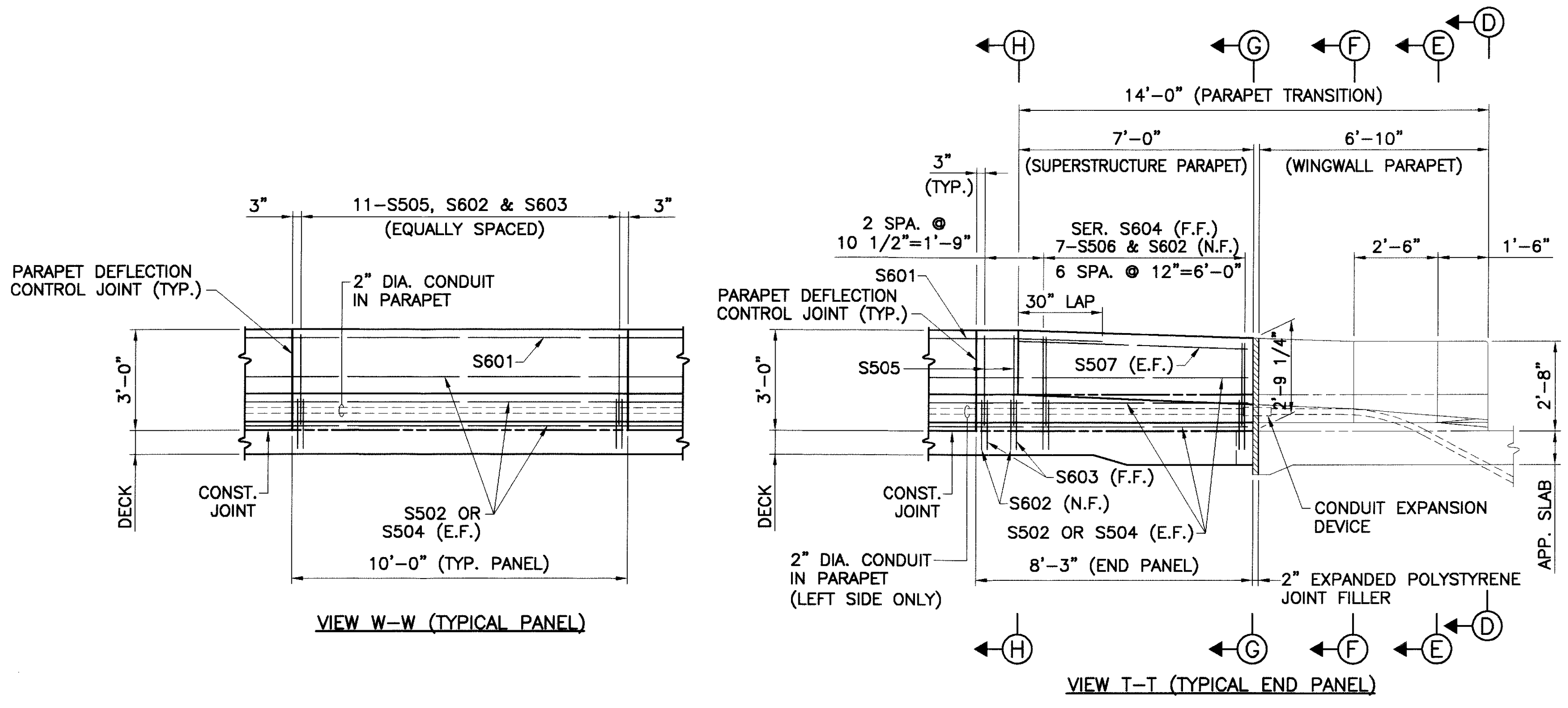
BEARING DATA							
50 DUROMETER							
LOCATION	SIZE		(THICKNESS) "DIM. T"	t <sub>i</sub>	t <sub>e</sub>	NUMBER OF t <sub>i</sub>	NUMBER OF STEEL LAMINATES
	L	W					
PIER NO.1 & PIER NO. 3	10.5"	17"	2.43"	0.31"	0.217"	5	6
PIER NO. 2	10.5"	18"	1.94"	0.29"	0.203"	4	5

**PIER NO. 1 & PIER NO. 3:**  
 DEAD LOAD = 104.9 (KIPS/PAD)  
 LIVE LOAD (W/O IMPACT) = 54.0 (KIPS/PAD)  
 DESIGN LOAD=158.9 (KIPS/PAD)

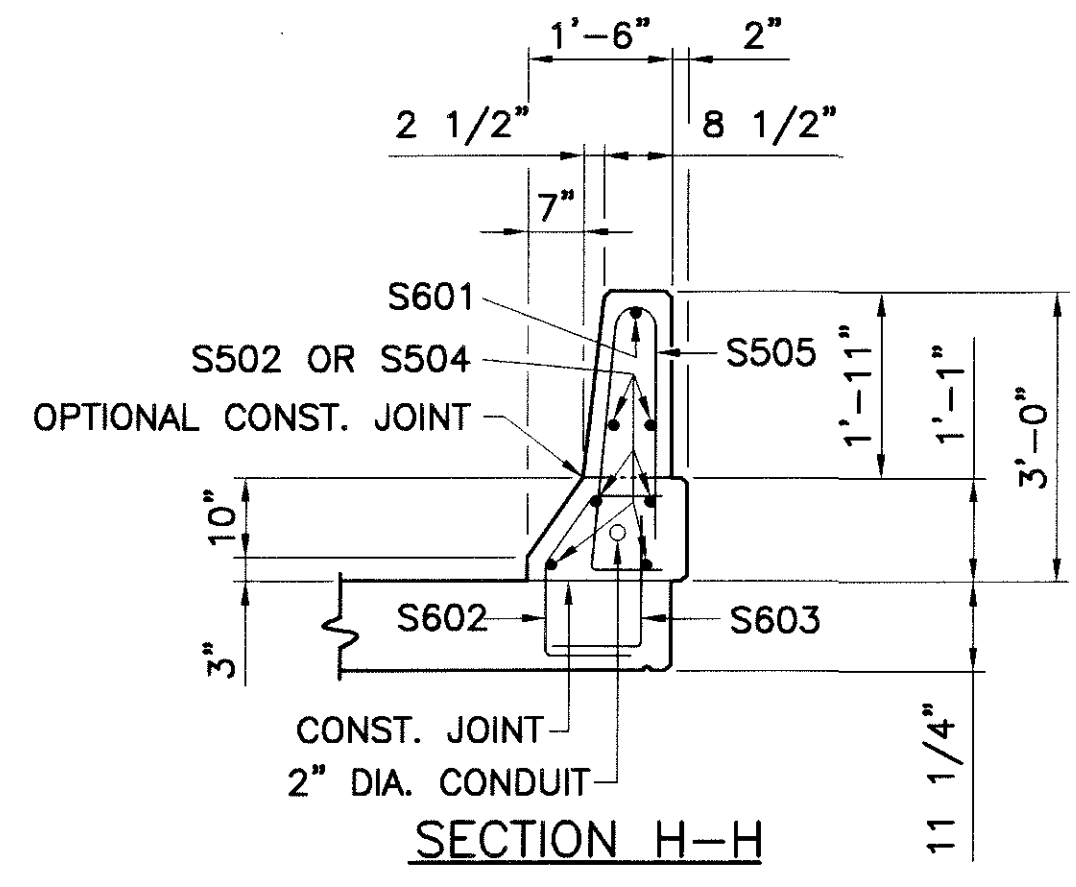
**PIER NO. 2:**  
 DEAD LOAD = 114.3 (KIPS/PAD)  
 LIVE LOAD (W/O IMPACT) = 53.3 (KIPS/PAD)  
 DESIGN LOAD=167.6 (KIPS/PAD)



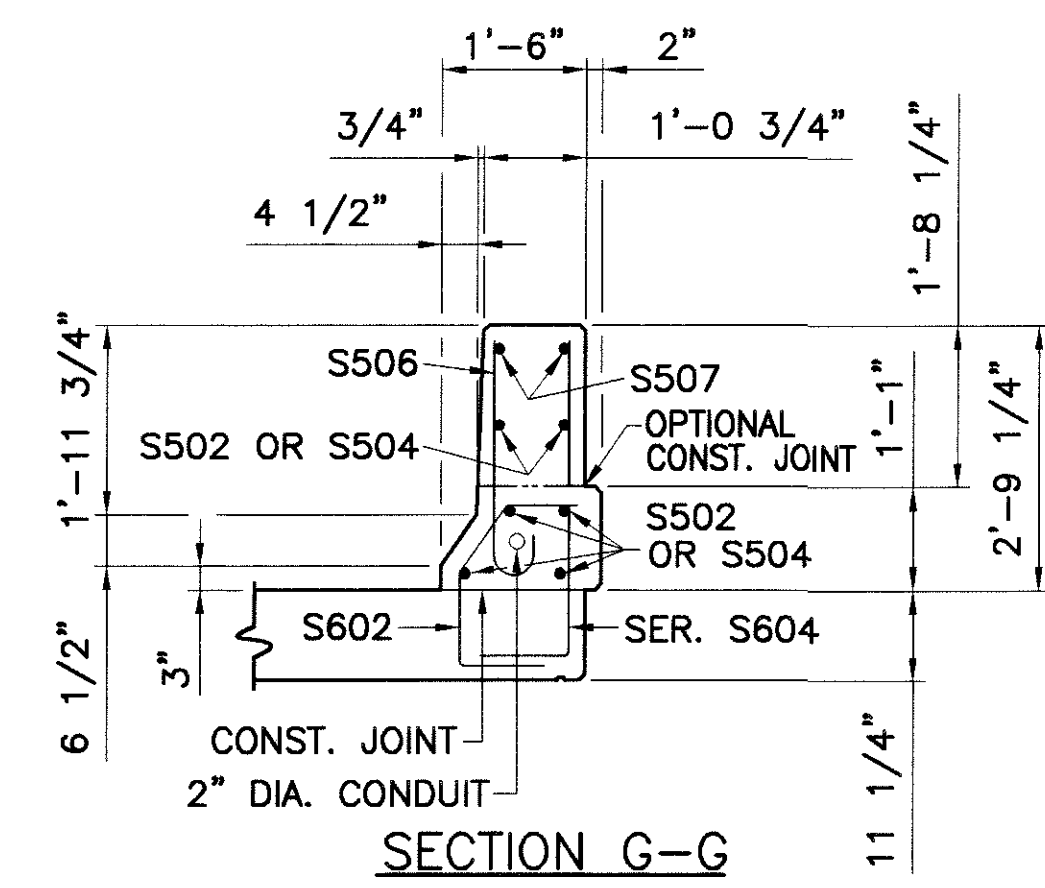
DATE: 6/14/02  
 CAD FILE: 0067-SLAB  
 OPERATOR: MPB/CAF  
 PLOT SCALE: 1"=1'



**PARAPET PANEL DETAILS**  
 (SEE NOTE 4)



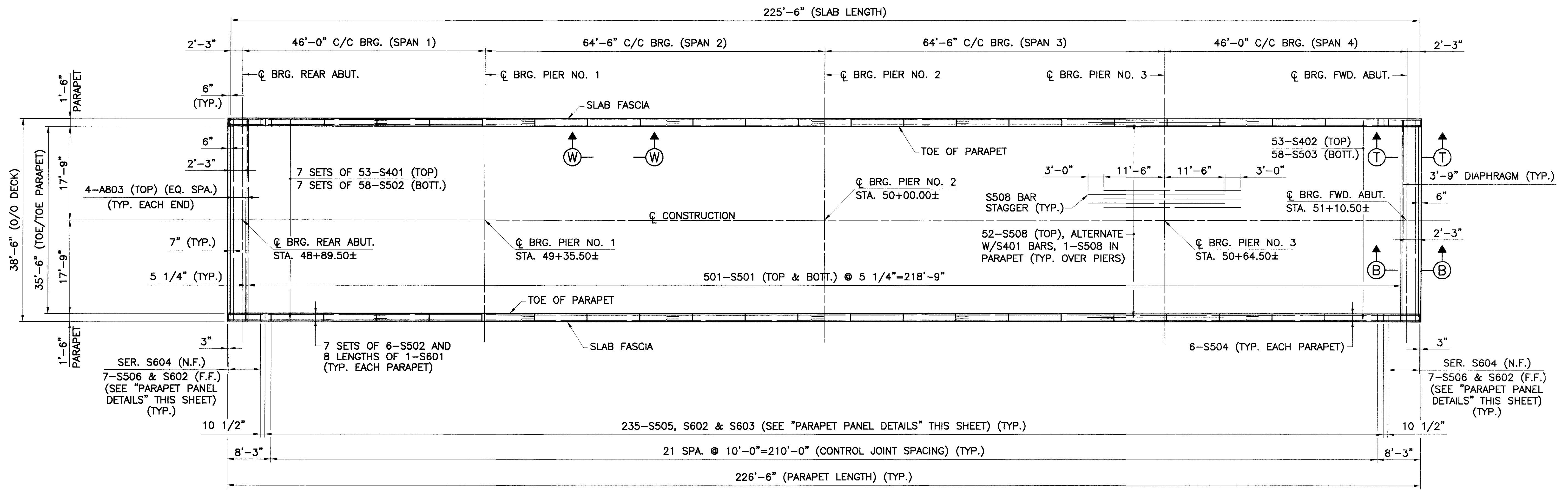
**SECTION H-H**



**SECTION G-G**

**NOTES**

- ① MINIMUM BAR LAPS ARE AS FOLLOWS:  
 #4 BARS = 24"  
 #5 BARS = 30"  
 #6 BARS = 36"  
 #8 BARS = 45"
- ② FOR BEAM DETAILS AND NOTES SEE SHEET 9 / 13 .
- ③ TRANSVERSE CONSTRUCTION JOINTS SHALL NOT BE PERMITTED IN THE DECK SLAB.
- ④ FOR TRANSVERSE SECTION INCLUDING LONGITUDINAL BAR SPACING, PARAPET DETAILS, AND SCREED ELEVATION TABLE AND ADDITIONAL NOTES, SEE SHEET 11 / 13 .
- ⑤ THE CONTRACTOR SHALL TAKE SPECIAL CARE TO SPACE BARS AT LEAST 2" FROM THE CONTROL JOINT SAWCUT.
- ⑥ FOR SECTION B-B AND ADDITIONAL DIAPHRAGM DETAILS, AND NOTES SEE SHEET 6 / 13 .
- ⑦ FOR WINGWALL PARAPET DETAILS, SEE SHEET 7 / 13 .
- ⑧ PAYMENT FOR 2" DIA. CONDUIT AND EXPANSION DEVICE SHALL BE INCLUDED WITH ROADWAY ITEM 625, CONDUIT, 2", 725.05.



**SLAB PLAN**

DESIGN AGENCY: FINKBEINER, PETTIS & STROUT, INC.  
 520 S. MAIN STREET, SUITE 2400  
 AKRON, OHIO 44311-1010  
 DATE: 5/03  
 D.L.G. (DESIGNED), M.P.B. (DRAWN), R.K.Z. (CHECKED), F.J.G. (DESIGNED)  
 STRUCTURE FILE NO.: 5002672  
 SLAB PLAN  
 BRIDGE NO. MAH-76-0067  
 GRANDVIEW ROAD OVER INTERSTATE ROUTE 76  
 MAH - 76 - 00.67  
 (GRANDVIEW ROAD)  
 12 / 13  
 27  
 28

REINFORCING SCHEDULE (ABUTMENTS)

MARK	REAR ABUT.	FWD. ABUT.	TOTAL REQ'D.	LENGTH	TYPE	DIMENSIONS						WEIGHT LBS.
						A	B	C	D	E	INCR.	
A501	32	32	64	6'-6"	ST							434
A502	60	60	120	8'-6"	2	3'-1"	3'-0"					1,064
A503	30	30	60	7'-6"	2	2'-7"	2'-7"					469
A504	10	10	20	3'-0"	4	2'-5"						63
A505	4	4	8	10'-8"	8	6'-10"						89
A601	10	10	20	4'-11"	3	1'-4"						148
A602	10	10	20	4'-1"	1	3'-1"	3'-5"					123
A603	20	20	40	6'-1"	ST							366
SERIES A604	2 SETS OF 3	2 SETS OF 3	4 SETS OF 3	6'-3" TO 6'-7"	2	6" TO 10"	3'-3"				2"	116
A605	12	12	24	10'-9"	2	1'-2"	5'-2"					388
A801	8	8	16	37'-9"	ST							1,613
A802	24	24	48	4'-7"	7	2'-3"						587
A803	4	4	8	38'-1"	ST							815
A804	2	2	4	33'-6"	ST							358
A805	2	2	4	3'-0"	ST							32

THE TOTAL WEIGHT OF ABUTMENT REINFORCEMENT HAS BEEN CARRIED TO ESTIMATED QUANTITIES SHEET 2 / 13 6,665

REINFORCING SCHEDULE (SUPERSTRUCTURE)

MARK	TOTAL REQ'D.	LENGTH	TYPE	DIMENSIONS						WEIGHT LBS.
				A	B	C	D	E	INCR.	
S401	371	30'-0"	ST							7,435
S402	53	29'-2"	ST							1,033
S501	1002	38'-1"	ST							39,888
S502	490	30'-0"	ST							15,332
S503	58	32'-8"	ST							1,946
S504	12	33'-8"	ST							422
S505	470	6'-0"	5	2'-6"	2'-9"					2,942
S506	28	3'-0"	4	2'-5"						88
S507	8	6'-8"	ST							56
S508	162	26'-0"	ST							4,393
S601	16	30'-3"	ST							727
S602	498	3'-0"	6	9"						2,244
S603	470	2'-5"	1	11"	1'-8"					1,706
SERIES S604	4 SETS OF 7	4'-0" TO 4'-4"	1	11"	3'-3" TO 3'-7"				11/16"	175

THE TOTAL WEIGHT OF SUPERSTRUCTURE REINFORCEMENT HAS BEEN CARRIED TO ESTIMATED QUANTITIES SHEET 2 / 13 78,387

REINFORCING SCHEDULE (PIERS)

MARK	PIER NO. 1	PIER NO. 2	PIER NO. 3	TOTAL REQ'D.	LENGTH	TYPE	DIMENSIONS						WEIGHT LBS.
							A	B	C	D	E	INCR.	
P501	100		100	200	6'-2"	1	1'-10"	2'-5"				1,286	
P502		100		100	6'-7"	1	2'-3"	2'-5"				687	
P503	12	12	12	36	12'-4"	ST						463	
P504	2	2	2	6	8'-11"	9	2'-8"	3'-10"				56	
P505	4	4	4	12	3'-10"	ST						48	

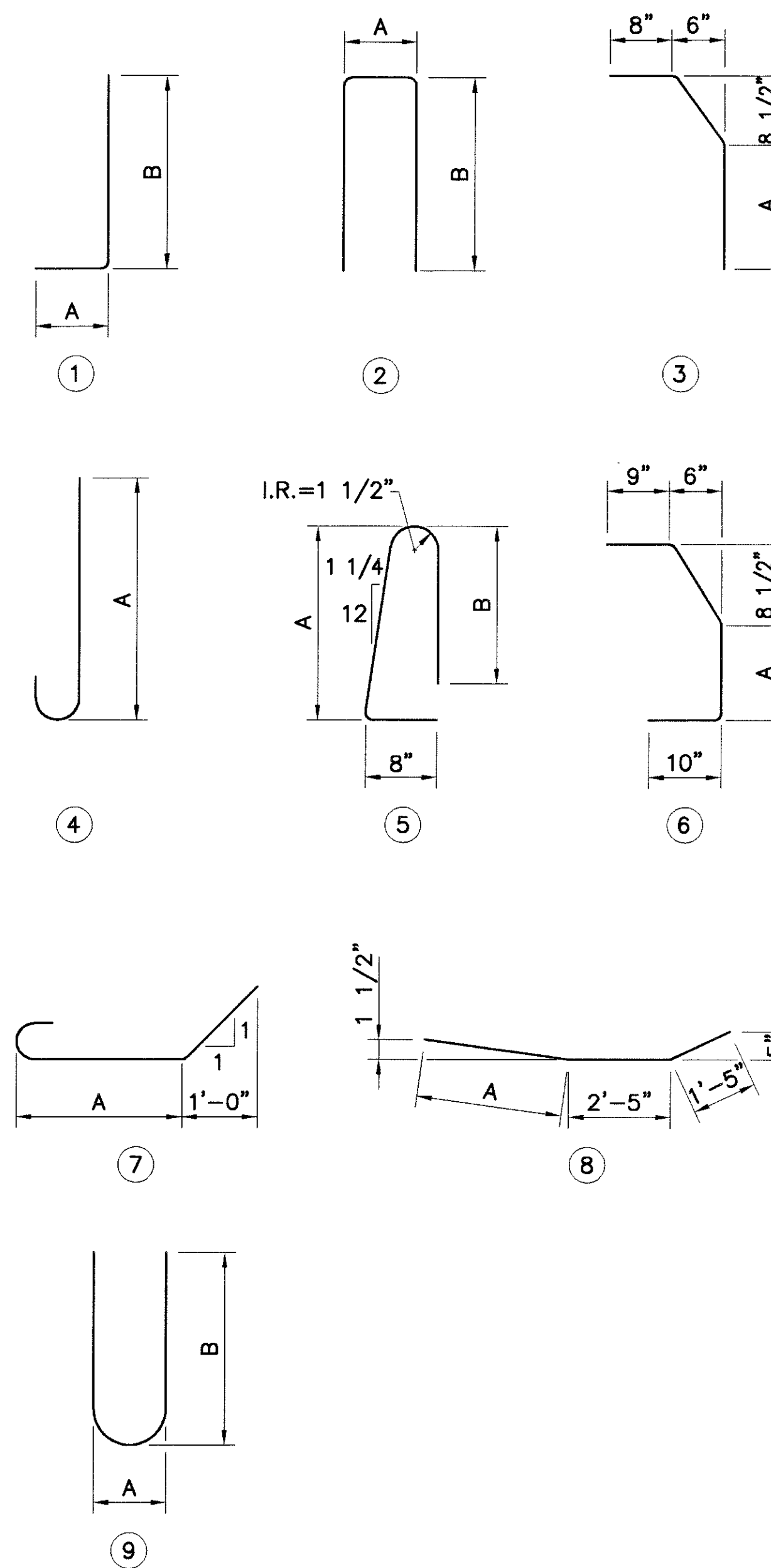
THE TOTAL WEIGHT OF PIER REINFORCEMENT HAS BEEN CARRIED TO ESTIMATED QUANTITIES SHEET 2 / 13 2,540

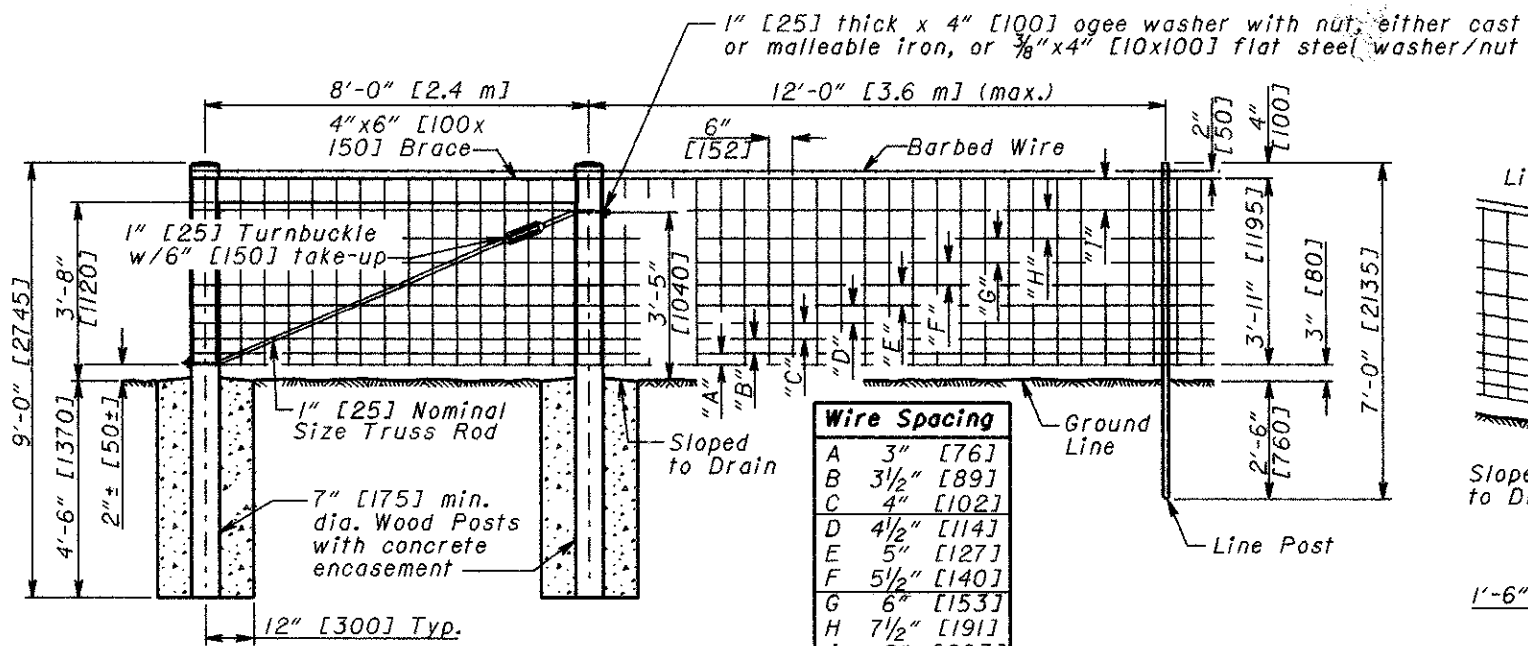
NOTES

- ALL REINFORCING BARS SHALL BE EPOXY COATED.
- THE BAR SIZE NUMBER IS SPECIFIED ON THE PLANS IN THE BAR MARK COLUMN. THE FIRST DIGIT WHERE THREE DIGITS ARE USED, INDICATES THE BAR SIZE NUMBER. FOR EXAMPLE, P601 IS A NO. 6 BAR. BAR DIMENSIONS SHOWN ARE OUT TO OUT UNLESS OTHERWISE INDICATED. "R" INDICATES INSIDE RADIUS, UNLESS OTHERWISE NOTED. "STD." WRITTEN IN PLACE OF A DIMENSION, INDICATES A STANDARD BEND AT THE END OF THE BAR.

BAR MARK LEGEND

A = ABUTMENT P = PIER S = SUPERSTRUCTURE

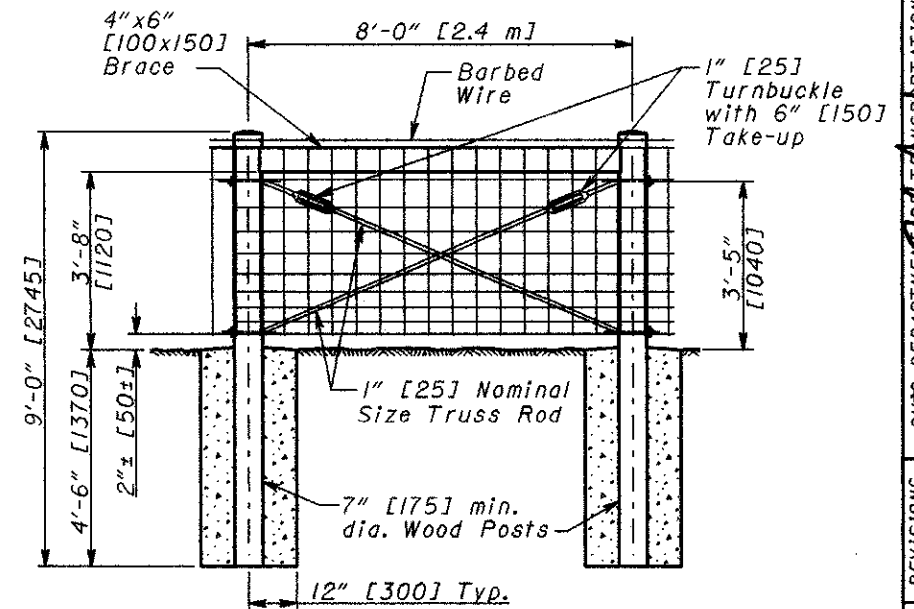




Wire Spacing	
A	3" [76]
B	3 1/2" [89]
C	4" [102]
D	4 1/2" [114]
E	5" [127]
F	5 1/2" [140]
G	6" [153]
H	7 1/2" [191]
I	8" [203]

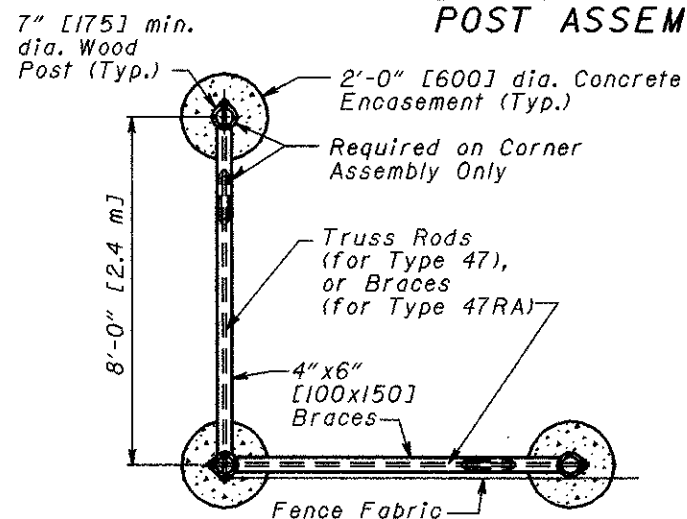
END OR CORNER POST ASSEMBLY

LINE POST IN A DIP SECTION

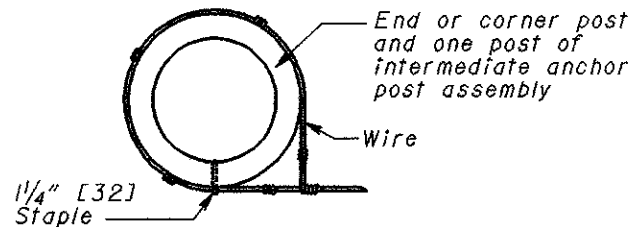


INTERMEDIATE ANCHOR POST ASSEMBLY

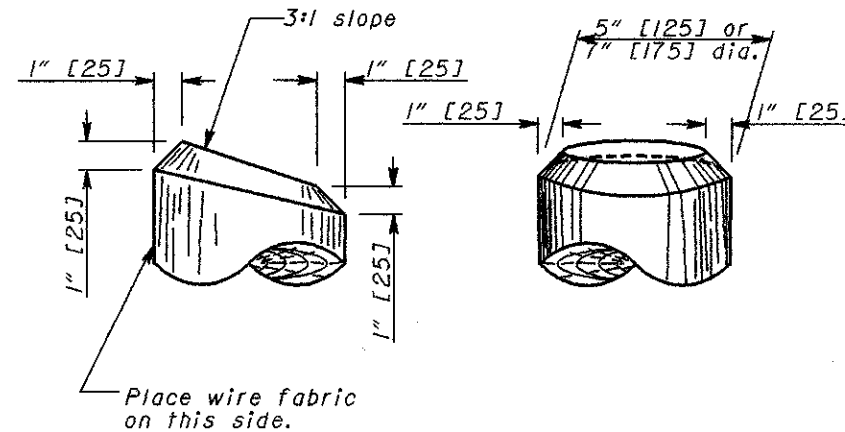
**TYPE 47 FENCE**



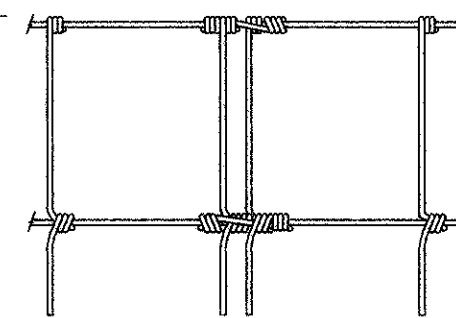
END OR CORNER POST ASSEMBLY PLAN VIEW



METHOD OF FASTENING FENCE



TOP OF POSTS



WIRE FENCE SPLICE

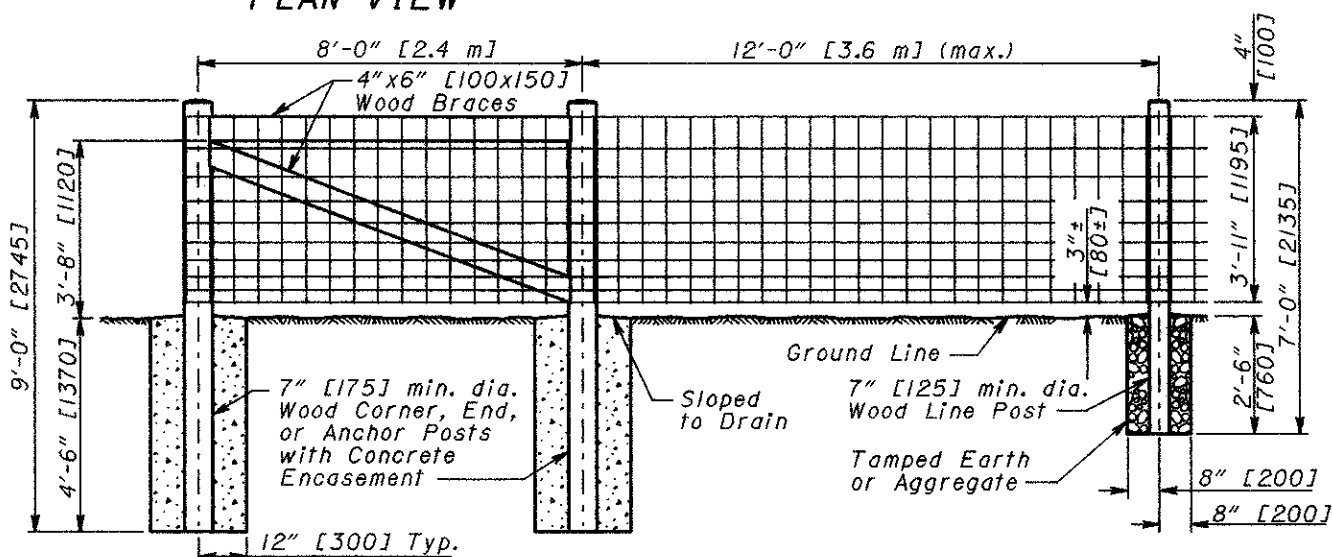
**NOTES**

**BRACES:** Wood braces shall be set in notches in the posts and fastened with 16d nails.

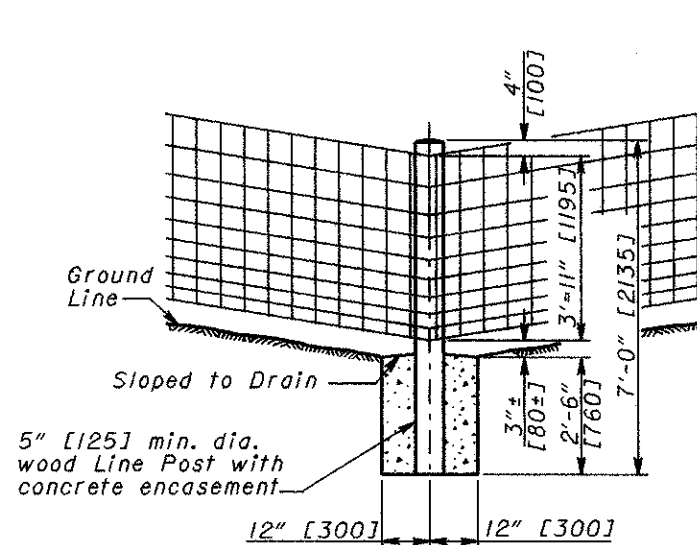
**POSTS:** Concrete encasement and tamped earth or aggregate shall be omitted when wood posts are driven to grade, except for line posts in a dip section. Posts set or driven to within 1" [25] of grade need not be trimmed.

**FABRIC:** Other methods for splicing wire fence may be used in lieu of the method shown, when approved by the Engineer.

**TYPE 47RA FENCE:** Type 47RA shall be used to fence rest areas. Where Types 47 and 47RA intersect at a corner, the corner assembly shall have all wood braces. Fence shall be paid for as Item 607 - Fence, Type 47RA.



CORNER, END, OR ANCHOR POST ASSEMBLY

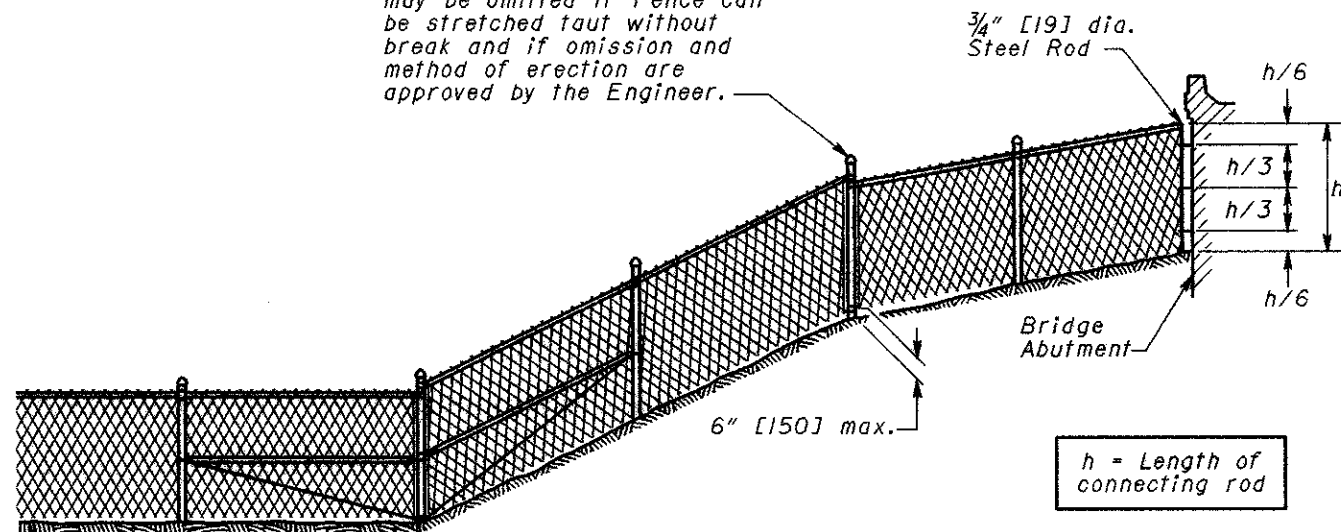


LINE POST IN A DIP SECTION

**TYPE 47RA FENCE**

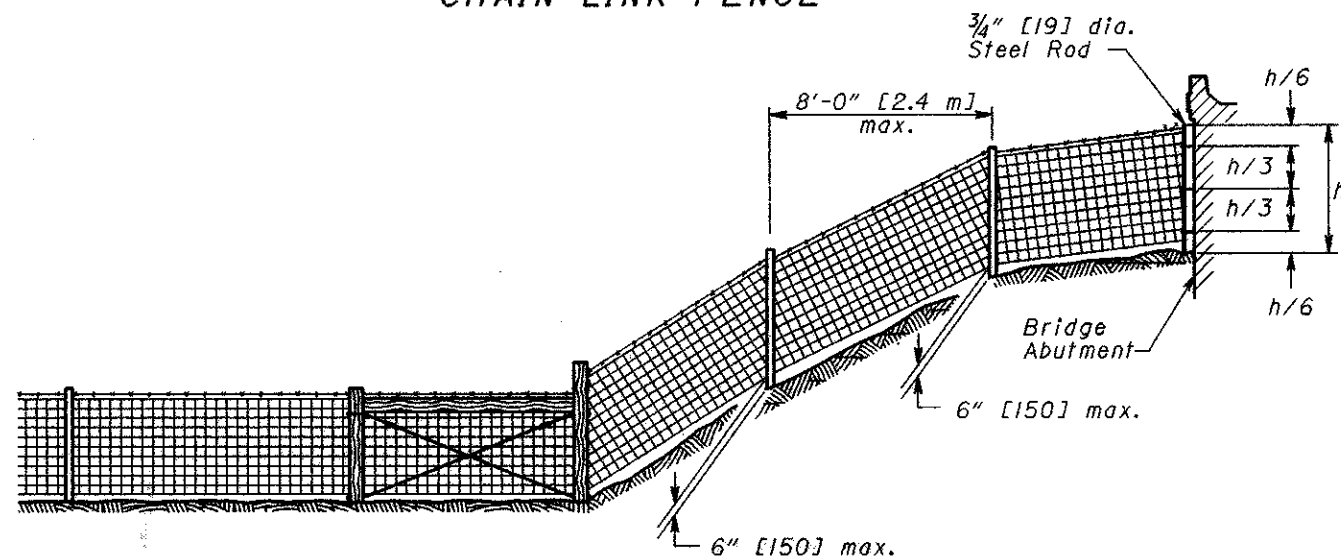


Break in Fence at this Post may be omitted if Fence can be stretched taut without break and if omission and method of erection are approved by the Engineer.

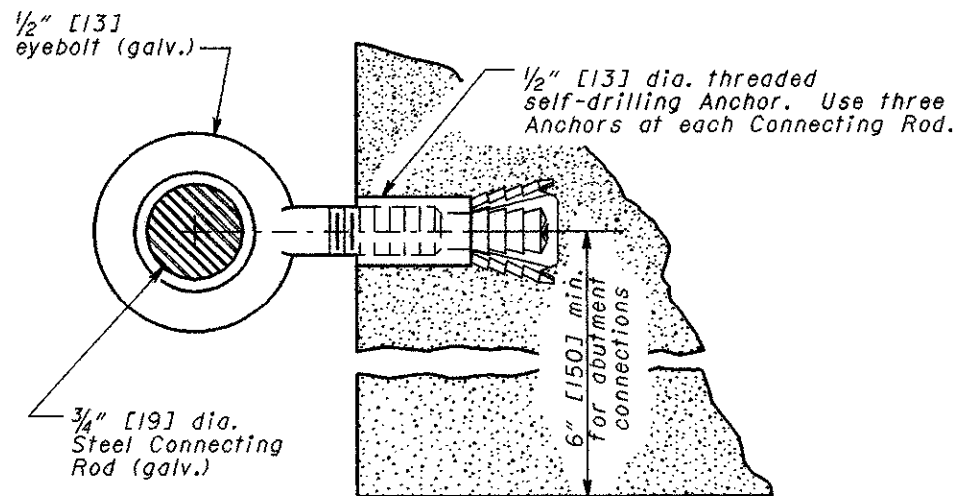


CHAIN LINK FENCE

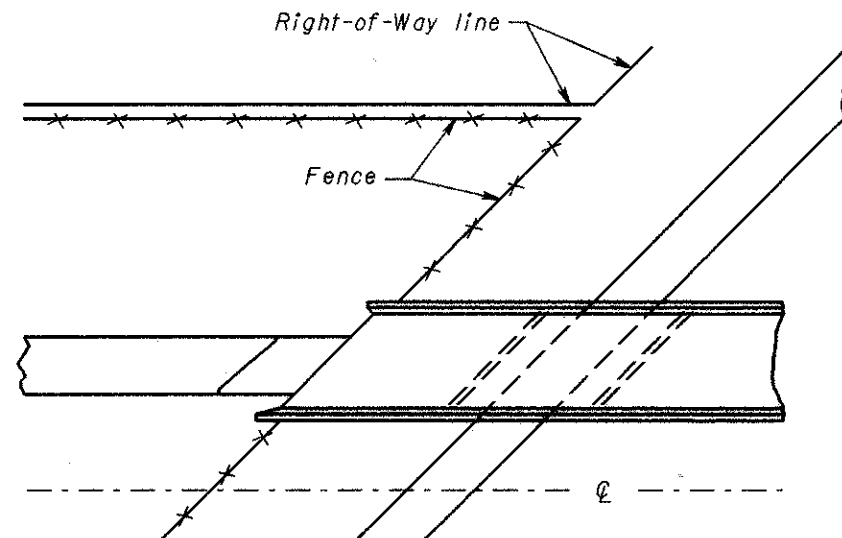
$h$  = Length of connecting rod



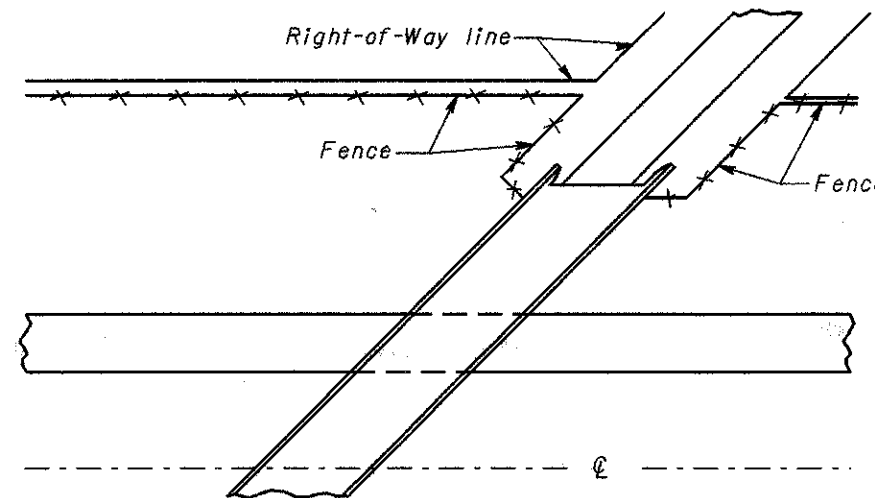
WOVEN WIRE FENCE



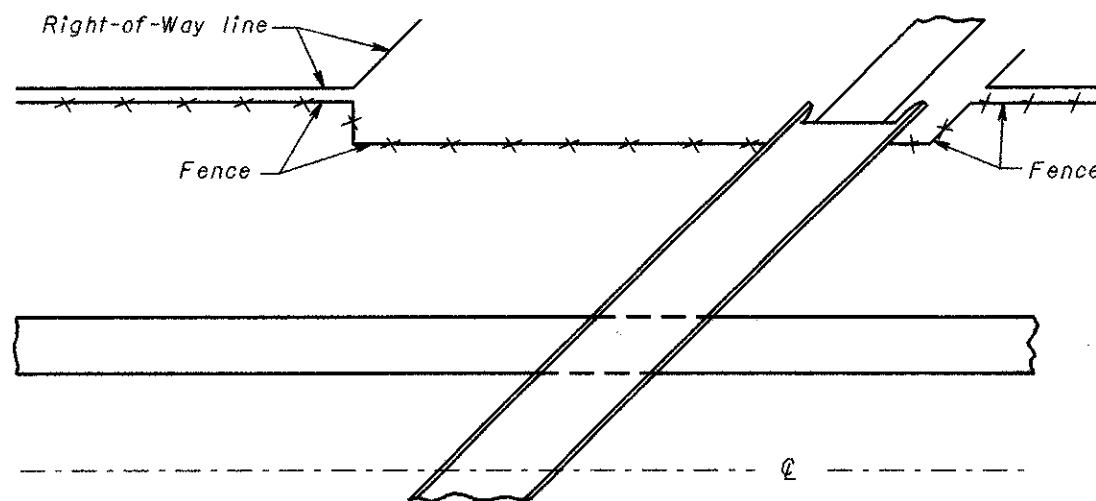
ABUTMENT CONNECTION



FENCE ARRANGEMENT AT FREEWAY OVERPASS



FENCE ARRANGEMENT CROSS ROAD ON ORIGINAL PROFILE



FENCE ARRANGEMENT CROSS ROAD ON HIGH FILL

NOTES

**GENERAL:** Details shown hereon shall be used with SCD F-1.I and SCD F-2.I.

**ABUTMENT CONNECTION:** The cost of furnishing and installing connecting rods, eyebolts, and anchors shall be included in the unit price bid per Linear Foot [Meter] of fence. Where needed to clear deck projections or other irregularities, the shaft length of the eyebolt may vary.

**ANCHORS:** Self-drilling anchors shall conform to CMS 712.01. Threaded steel inserts may be cast-in-place when the structure is constructed instead of using self-drilling anchors.

**EYEBOLTS:** The steel shall be in accordance with ASTM A 489, except that the bend test is waived. The eyebolt shall be galvanized in accordance with ASTM A 153.

**CLEARANCE:** On embankments approaching bridges, the clearance of the lower fence wires may vary from 0 to 6" [150].

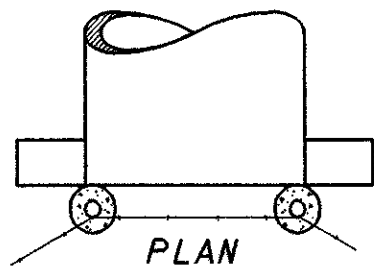
THIS DRAWING REPLACES F-3.I.M DATED 4-21-95.

STANDARD ROADWAY CONSTRUCTION DRAWING  
FENCE DETAILS AT BRIDGES

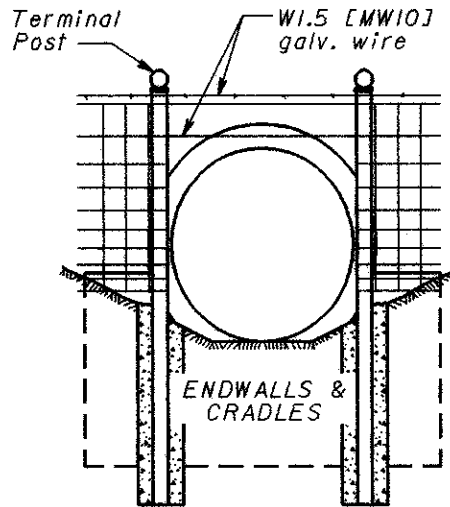
NUMBER  
F-3.I

STDS. ENGR.  
M. Evans  
REVISIONS  
ROADWAY DESIGN ENGINEER  
DATE

ONTARIO DEPARTMENT OF TRANSPORTATION  
REVISIONS  
DATE

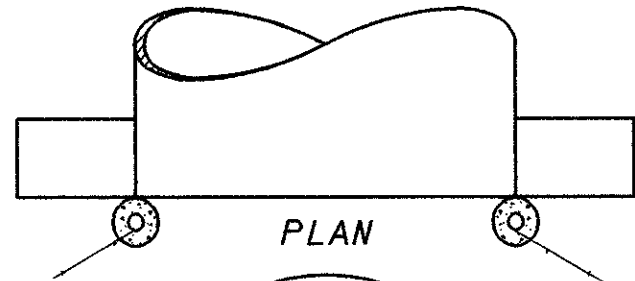


PLAN

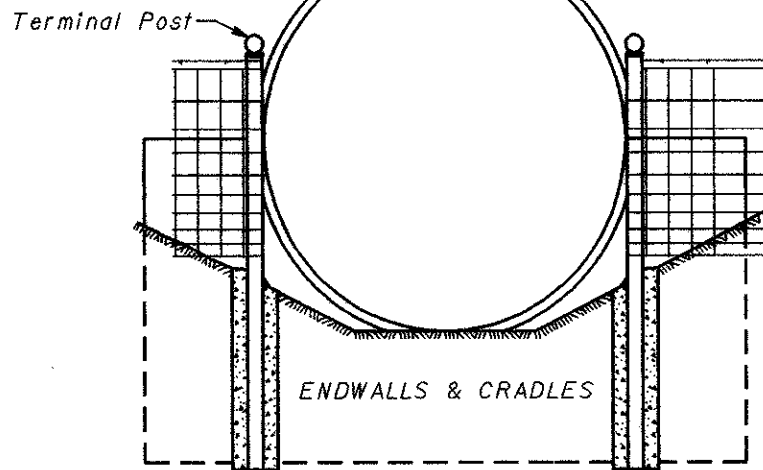


ENDWALLS & CRADLES

48", 54" & 60" [1200, 1350, and 1500] diameters  
TYPE A

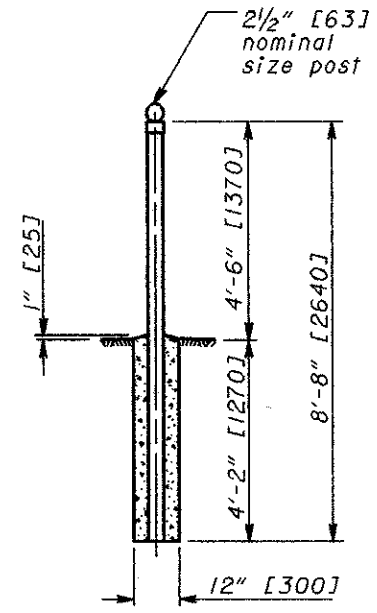


PLAN



ENDWALLS & CRADLES

66" [1650] diameter and larger  
TYPE B



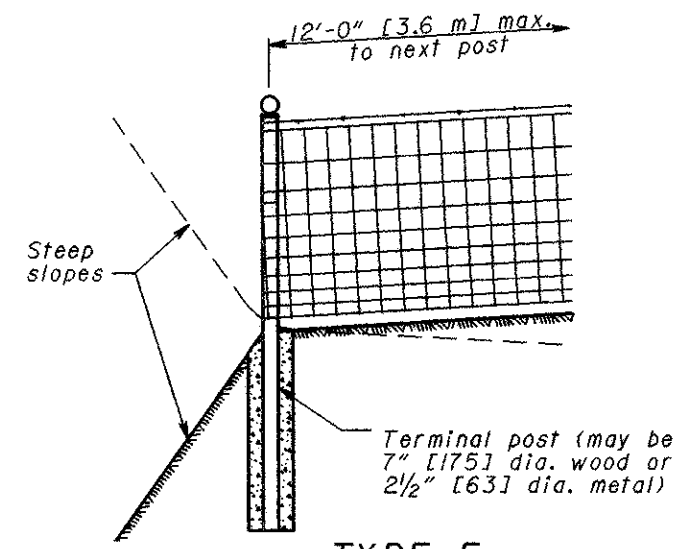
TERMINAL POST

**NOTES**

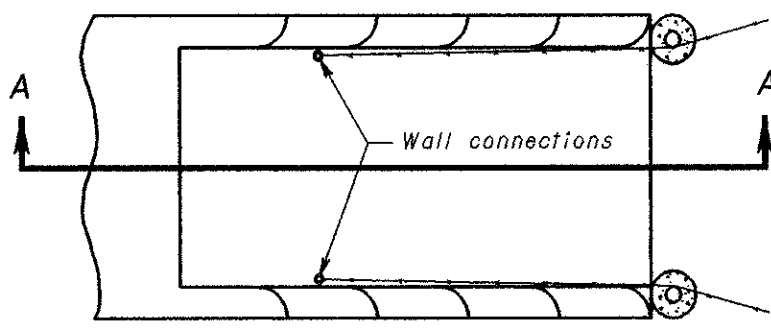
**FENCE TYPE:** Fence terminals shown on this drawing apply to Type 47 fence as detailed, however, the same designs may be used in the construction of all types of fence if modified for differences in basic design such as anchor assembly, height of fence, length of panel, or any other variance that would affect the terminal design.  
Cost of furnishing and installing connecting rods, eyebolts and anchors for wall connections shall be included in the unit price bid per meter of fence.

**ANCHORS:** Self-drilling anchors shall conform to CMS 712.01. Threaded steel inserts may be cast-in-place when the structure is constructed, instead of using self-drilling anchors.

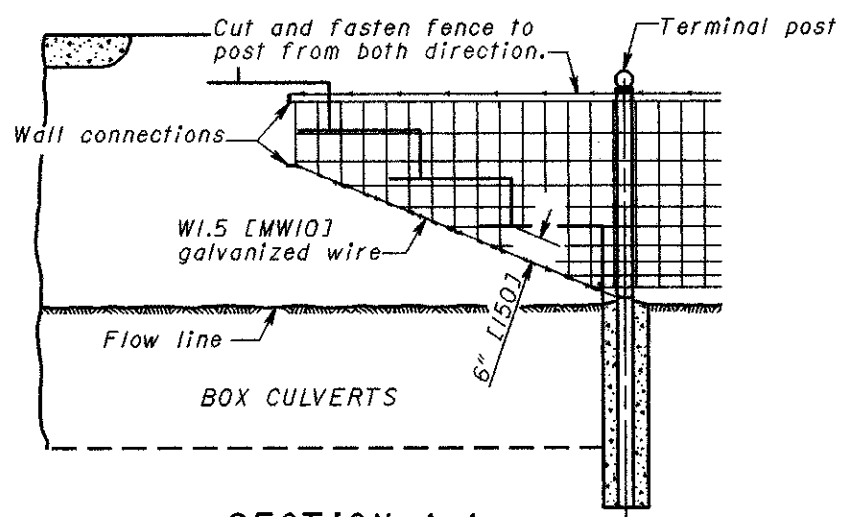
**EYEBOLT:** The steel shall be in accordance with ASTM A 489, except that the bend test is waived. The eyebolt shall be galvanized in accordance with ASTM A 153.



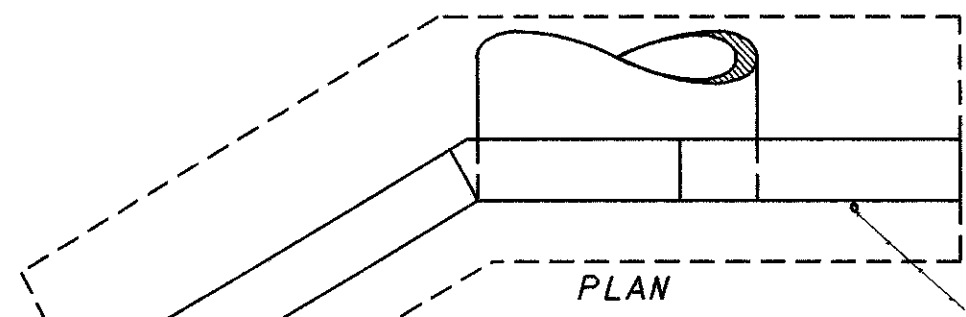
TYPE E



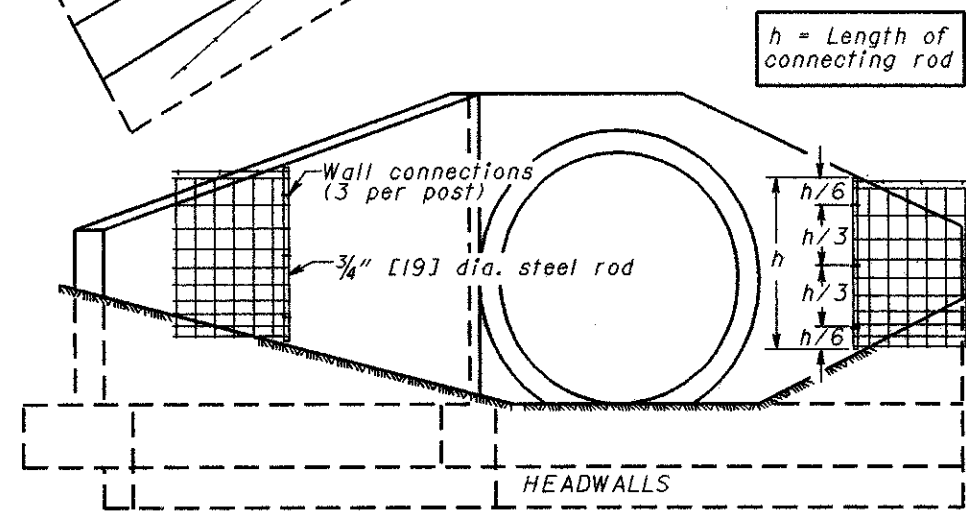
PLAN



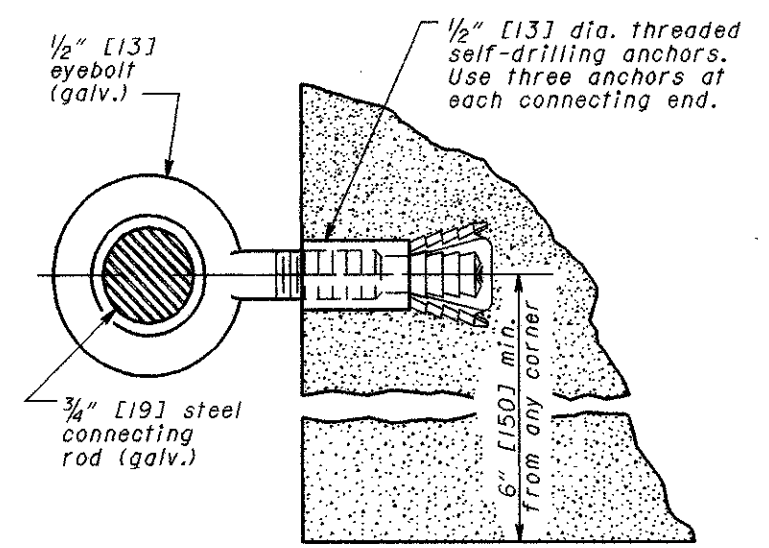
SECTION A-A  
TYPE C



PLAN



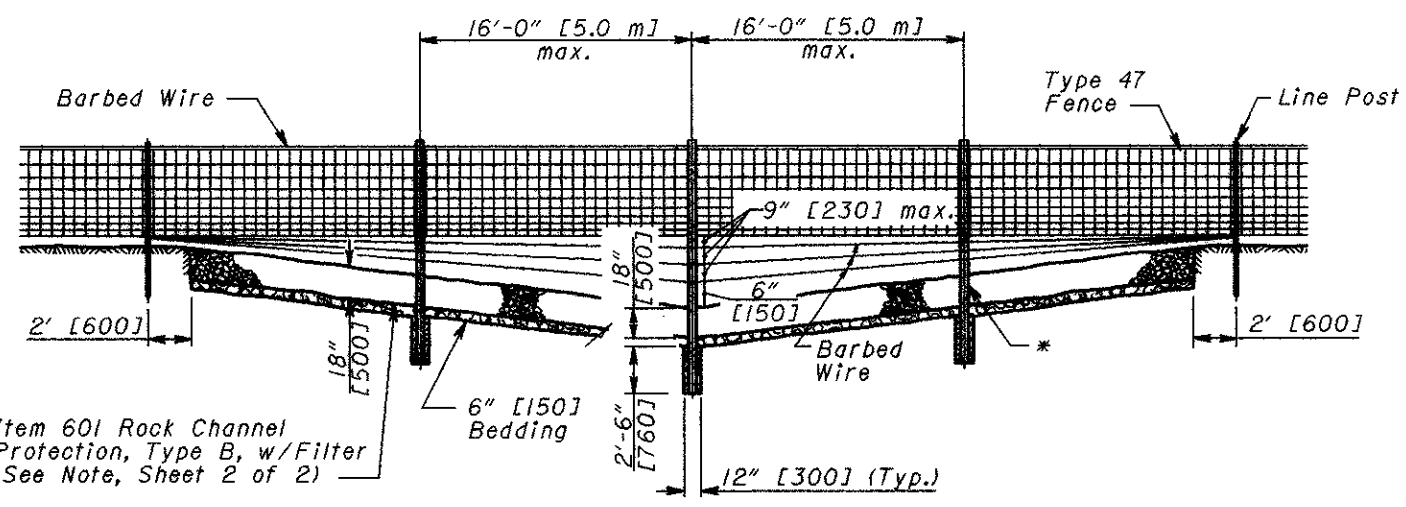
ELEVATION  
TYPE D



WALL CONNECTION

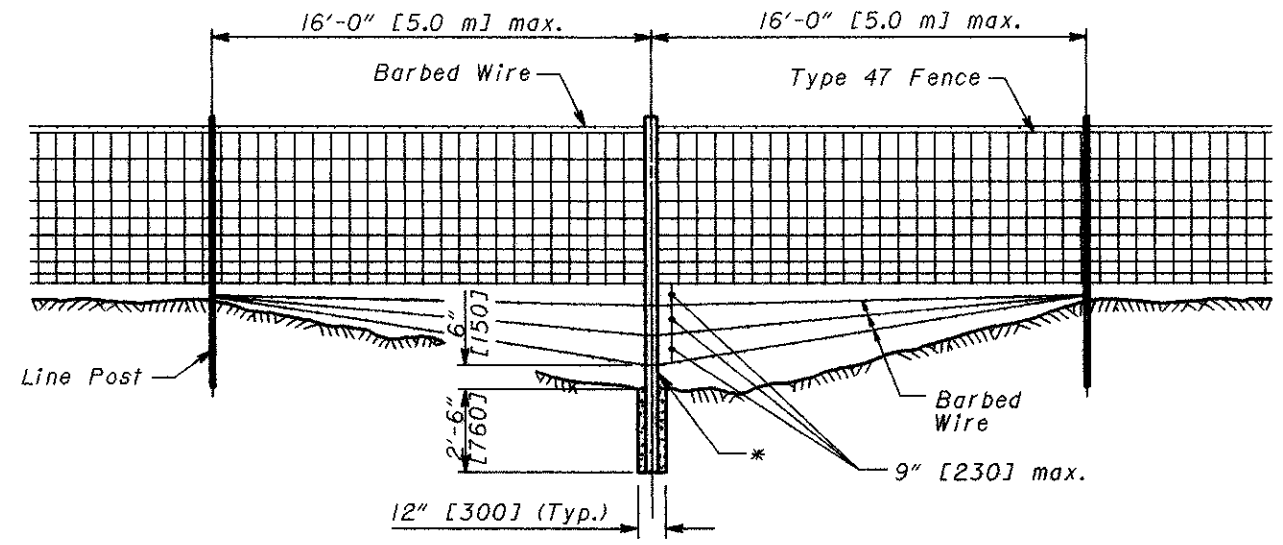
THIS DRAWING REPLACES F-3.3M DATED 4-21-95.

NUMBER F-3.3	STANDARD ROADWAY CONSTRUCTION DRAWING FENCE TERMINALS	ROADWAY ENGINEERING SERVICES	All metric dimensions (in brackets [ ]) are in millimeters unless otherwise noted.	STOS. ENGR. M. EVANS	REVISIONS	OHIO DEPARTMENT OF TRANSPORTATION DATE 7-28-00
				D. Focke	ROADWAY DESIGN ENGINEER	



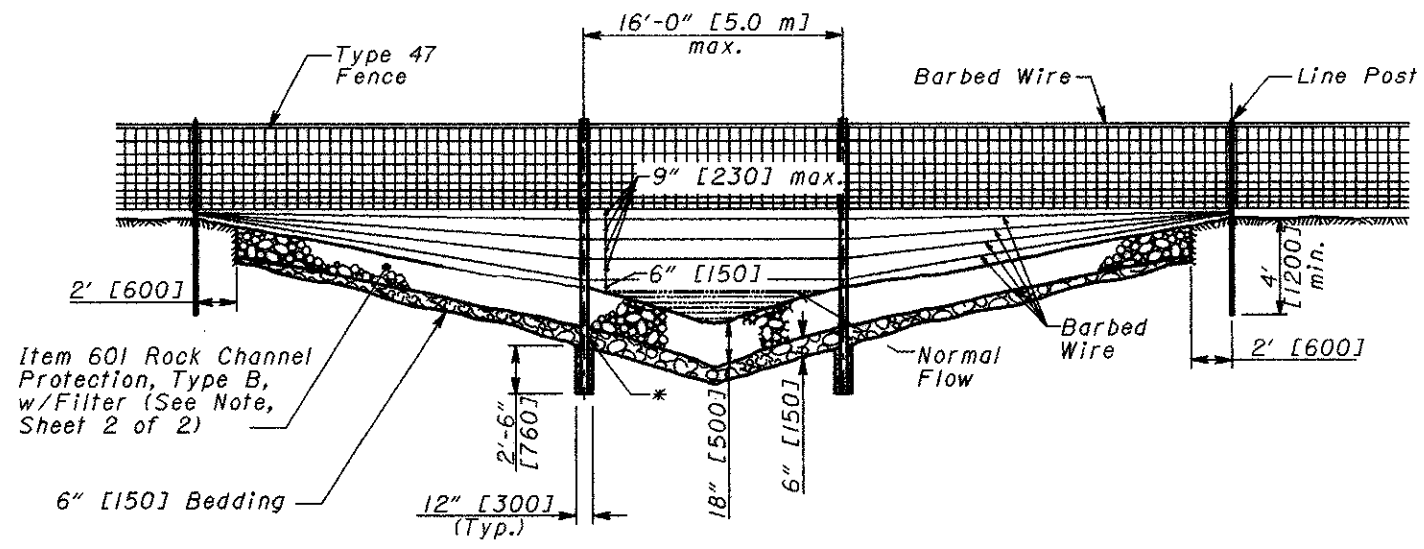
CROSSING TYPE 1

Item 601 Rock Channel Protection, Type B, w/Filter (See Note, Sheet 2 of 2)



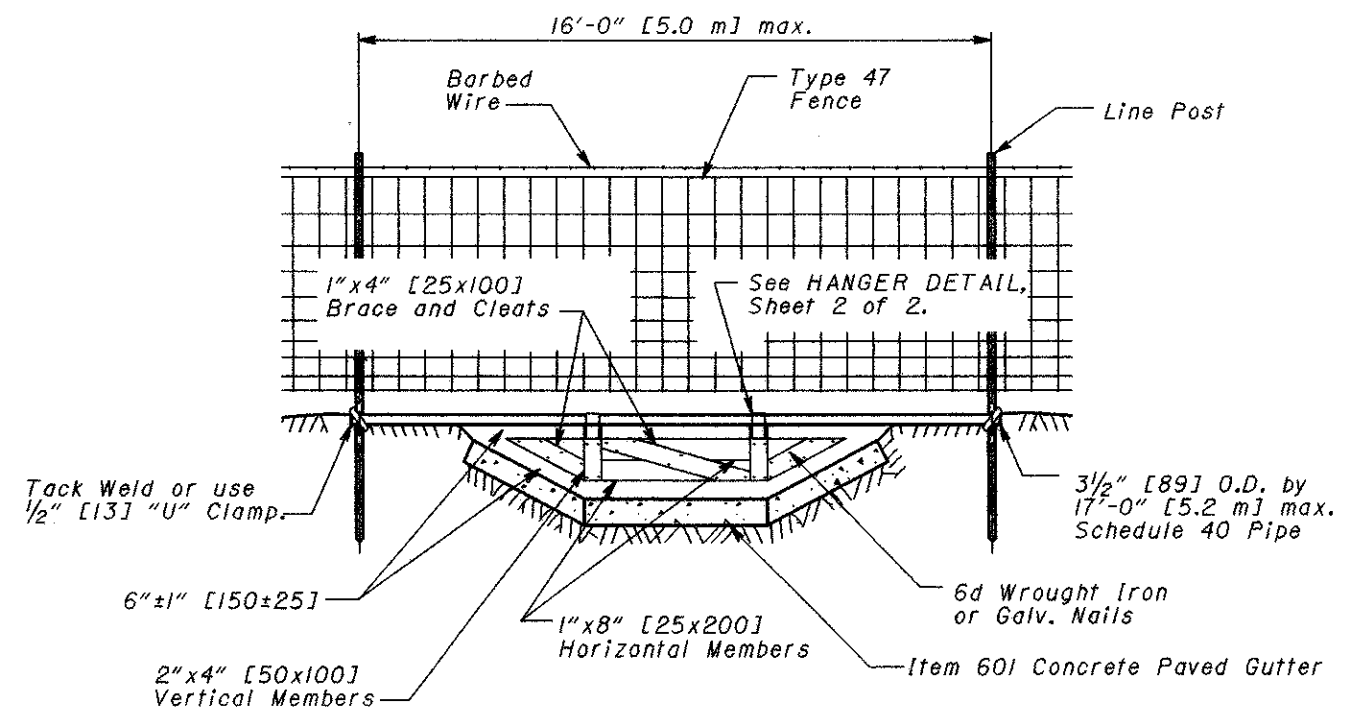
CROSSING TYPE 3

\* Extra length Posts shall be 2 1/2" [63] dia. Steel Pipe or 3"x3"x1/4" [75x75x6.4] Angle, galvanized and set in Concrete.



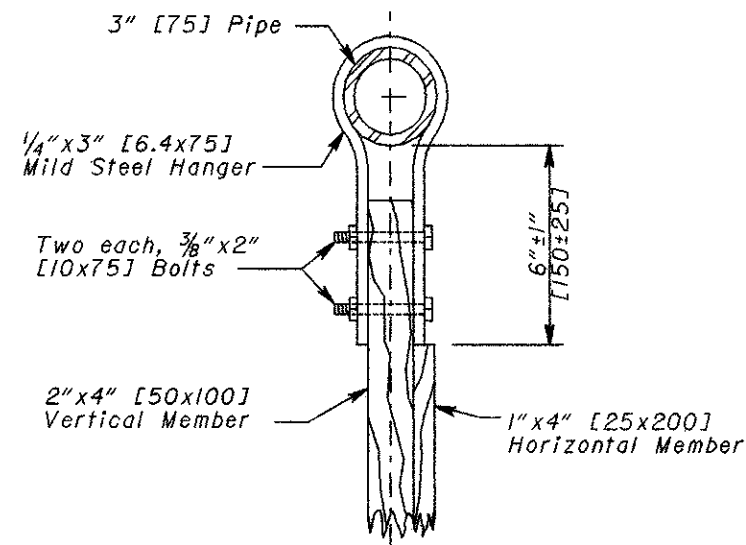
CROSSING TYPE 2

Item 601 Rock Channel Protection, Type B, w/Filter (See Note, Sheet 2 of 2)



CROSSING TYPE 4

THIS DRAWING REPLACES F-3.4M DATED 4-8-97.  
 STANDARD ROADWAY CONSTRUCTION DRAWING  
 ROADWAY ENGINEERING SERVICES  
 FENCE DETAILS  
 NUMBER F-3.4  
 1/2  
 ALL metric dimensions (in brackets [ ]) are in millimeters unless otherwise noted.  
 STDS. ENGR. M. EVANS  
 DRAWN D. Focke  
 REVISIONS  
 TRANSPORTATION  
 DATE



**HANGER DETAIL**

See CROSSING TYPE 4 Detail, Sheet 1 of 2.

**NOTES**

**FENCE DETAILS:** Details shown on this drawing apply to standard Type 47 Fence as detailed; however, the same designs may be used in the construction of all types of Fence if modified for differences in basic design, such as anchor assembly, height of fence, length of panel, or other variances that would affect the design.

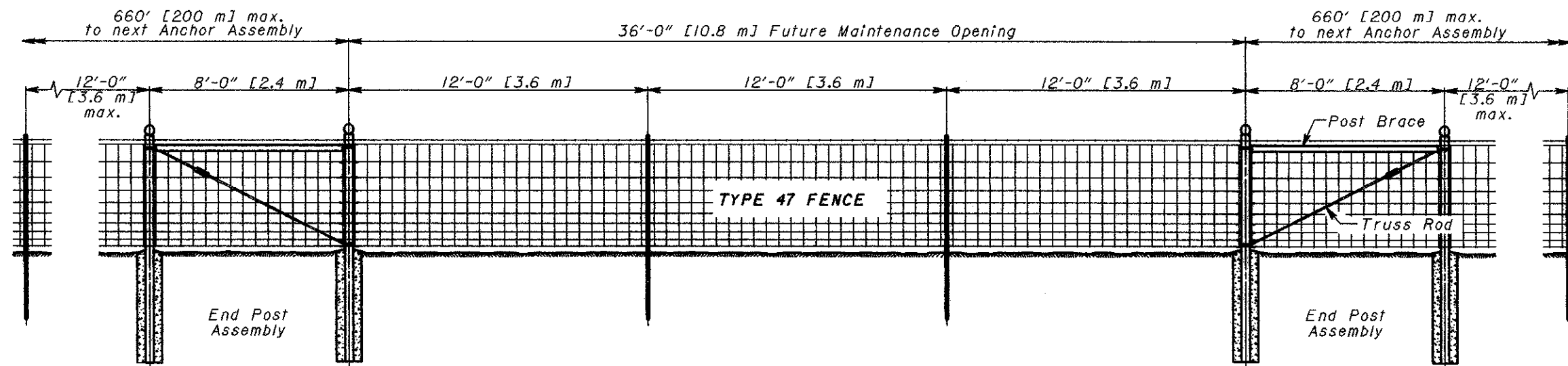
**CROSSINGS:** Types 1, 2, or 3, shall be provided at earth side ditches and streams served by culverts smaller than 48" [1200] in rise. A Type 4 crossing shall be provided where fence crosses a paved channel that is over 18" [0.5 m] deep. (For Crossing Types, see Sheet 1 of 2.)

**TYPE 2 CROSSING:** This Type (Sheet 1 of 2) is shown crossing a live stream, but it may also be used for intermittent flow channels. For a live stream crossing, the barbed wire may be deleted or its spacing varied, when directed by the Engineer, to prevent or reduce the collection of debris.

**ROCK CHANNEL PROTECTION:** Rock shall consist of 18" [0.5 m] of Item 601 - Rock Channel Protection, Type B, with Filter, unless otherwise shown on the plans or determined by the Engineer. It shall be placed 6' [1.8 m] wide (2' [0.6 m] outside the fence and 4' [1.2 m] inside the fence), and shall be paid for as Item 601 - Rock Channel Protection, Type —, w/Filter.

**CONCRETE ENCASEMENT:** When no rock channel protection is required, the 2'-6" [760] depth of concrete encasement shall be measured from the bottom of the channel.

**MAINTENANCE OPENING:** Barbed wire and fence fabric in the opening shall be separate from the approach wire fabric, and shall be installed after the wire and fabric have been stretched and fastened on both approaches.



**FUTURE MAINTENANCE OPENING**

THIS DRAWING REPLACES F-3.4M DATED 4-8-97.

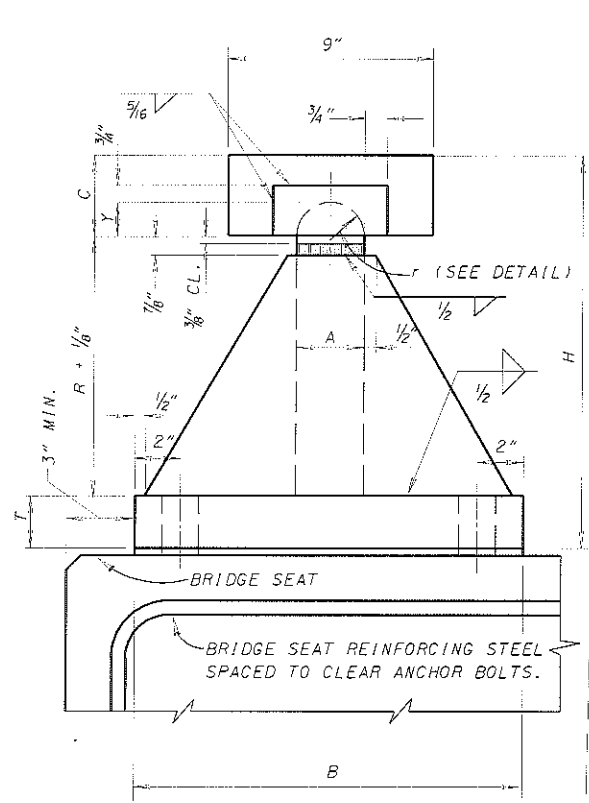
STANDARD ROADWAY CONSTRUCTION DRAWING

FENCE DETAILS

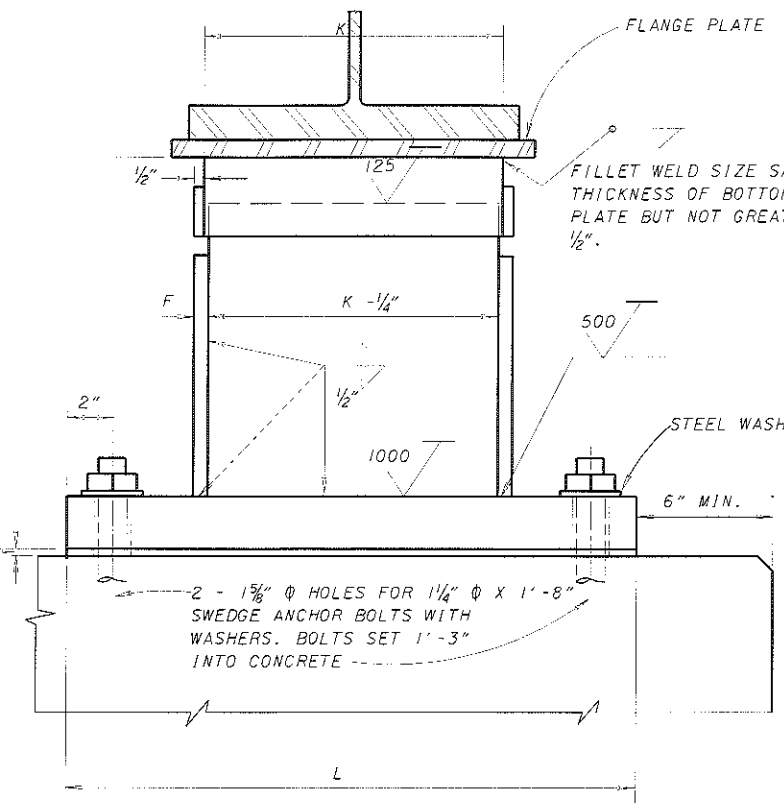
NUMBER  
F-3.4

2 / 2

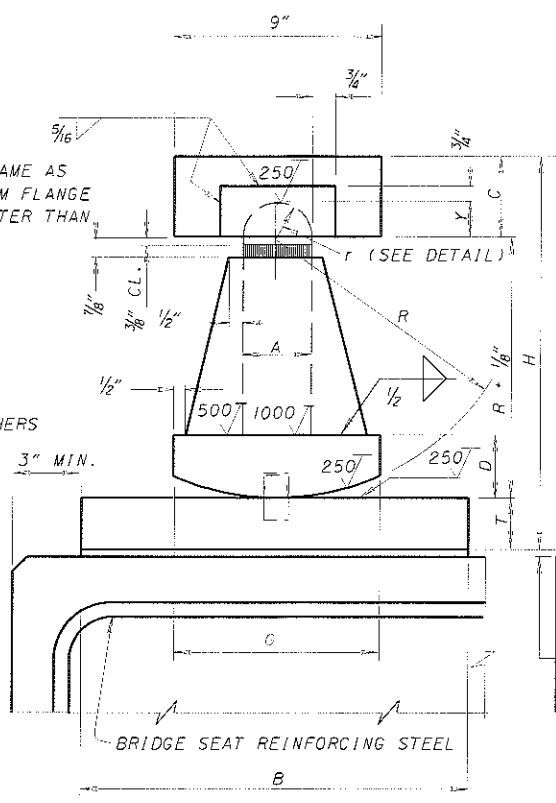
ROADWAY ENGINEERING SERVICES  
 All metric dimensions (in brackets [ ]) are in millimeters unless otherwise noted.  
 STOS. ENGR. M. EVANS  
 DRAWN D. FOCKE  
 REVISIONS  
 0490 DEPARTMENT OF TRANSPORTATION  
 Highway Design Engineer  
 DATE



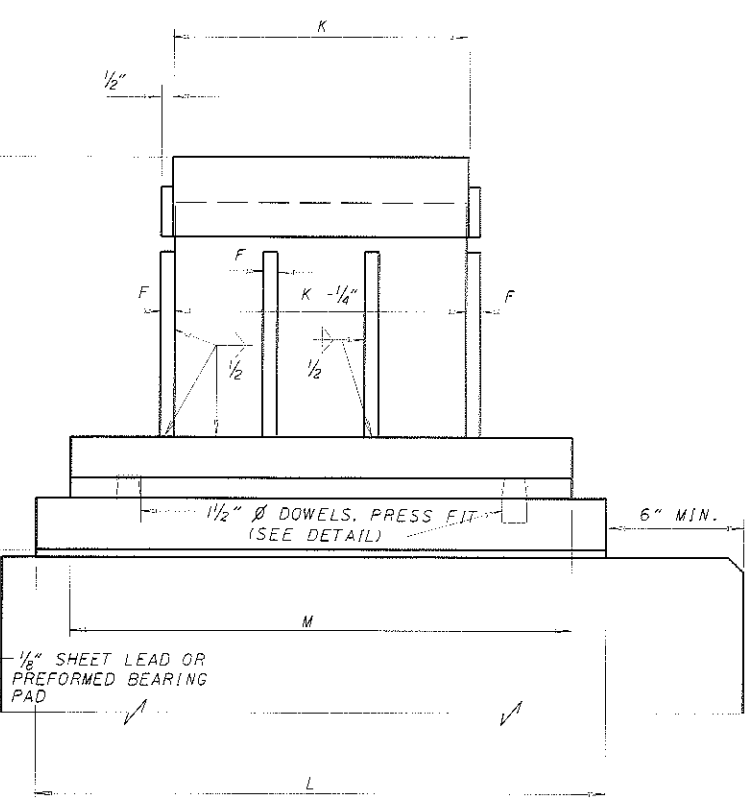
**STRUCTURAL STEEL BOLSTER**  
SEE TABLE BELOW FOR ADDITIONAL DIMENSIONS.



1/8" SHEET LEAD OR PRE-FORMED BEARING PAD

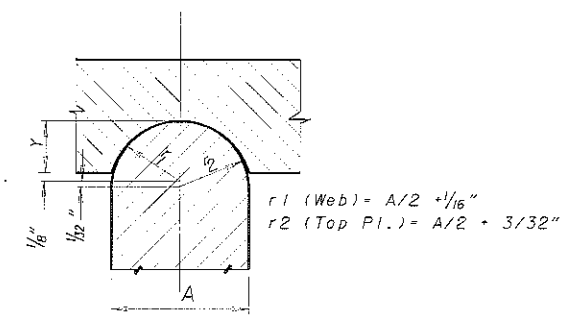


**STRUCTURAL STEEL ROCKER**  
SEE TABLE BELOW FOR ADDITIONAL DIMENSIONS

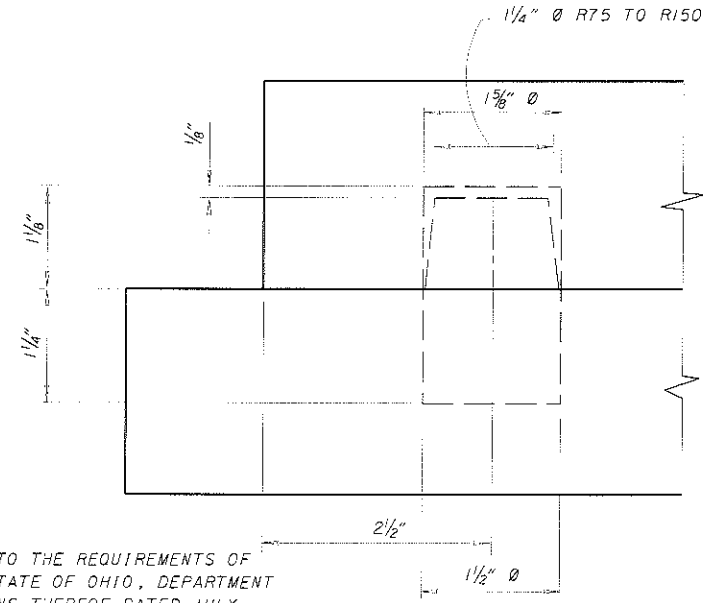


Bolster No.	Rocker No.	Dimensions (inches)													WEIGHT EACH (LB.)		Maximum Load (lb.)	
		A	B	C	D	F	G	H	K	L	M	R	T	Y	Bolster	Rocker		
	R-75	2 1/2	8	2 1/2	1 3/4	1/2	7	9 5/8	9	18	16	5 1/2	1 1/2	1 3/16		205	75,000	
B-100	R-100	2 1/2	10	2 1/2	2	1/2	7 1/2	10 5/8	9	19	17	6 1/2	1 1/2	1 3/16		225	250	100,000
B-125	R-125	3	11	3	2	1/2	8	12 1/8	10 1/2	20	18	7 1/2	1 1/2	1 7/16		295	315	125,000
B-150	R-150	3	12	3	2 1/4	1/2	8 1/2	13 3/8	11 1/2	22	19	8 1/2	1 3/4	1 7/16		360	400	150,000
B-175	R-175	3	14	3 1/2	2 1/2	1/2	9	15 1/8	12	23	20	9 1/2	2	1 7/16		455	505	175,000
B-200	R-200	3	16	3 1/2	2 3/4	5/8	9	16 3/8	12	24	21	10 1/2	2 1/4	1 7/16		540	605	200,000
B-225	R-225	3	17	3 1/2	2 3/4	5/8	9	16 3/8	13	25	22	11	2 1/4	1 7/16		590	665	225,000
B-250	R-250	3 1/2	18	3 1/2	2 3/4	3/4	10	17 3/8	13	26	23	11 1/2	2 1/2	1 11/16		695	775	250,000
B-275	R-275	3 1/2	19	3 1/2	3 1/4	3/4	12	18 3/8	14	27	24	12	2 3/4	1 11/16		800	945	275,000
B-300	R-300	3 1/2	20	3 1/2	3 1/4	3/4	12	19 1/8	14	28	25	12 1/2	3	1 11/16		895	1050	300,000

WEIGHTS GIVEN ARE FOR ONE ROCKER OR BOLSTER COMPLETE (INCLUDING SHEET LEAD, ANCHOR BOLTS AND WASHERS).



**TOP BEARING DETAIL**



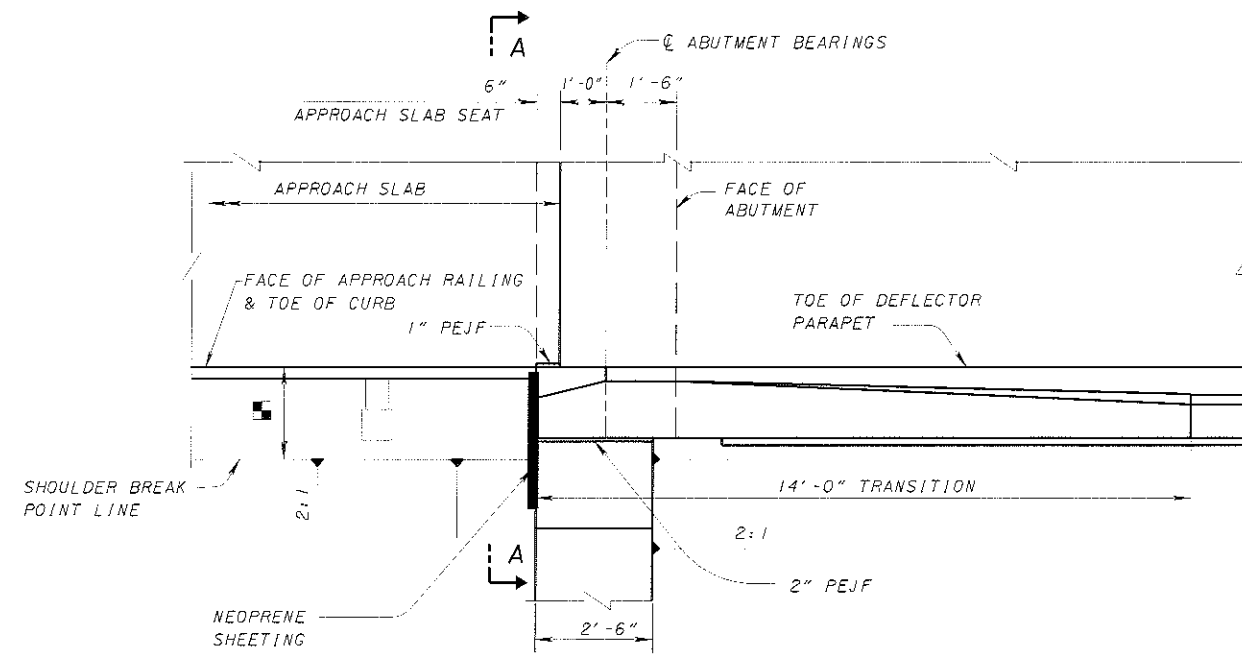
**DOWEL DETAIL**

DESIGN SPECIFICATIONS: THIS STANDARD DRAWING CONFORMS TO THE REQUIREMENTS OF "DESIGN SPECIFICATIONS FOR HIGHWAY STRUCTURES" OF THE STATE OF OHIO, DEPARTMENT OF HIGHWAYS, DATED OCTOBER 1, 1951, TOGETHER WITH REVISIONS THEREOF DATED JULY 15, 1952, APRIL 1, 1954 AND FEBRUARY 1, 1955.

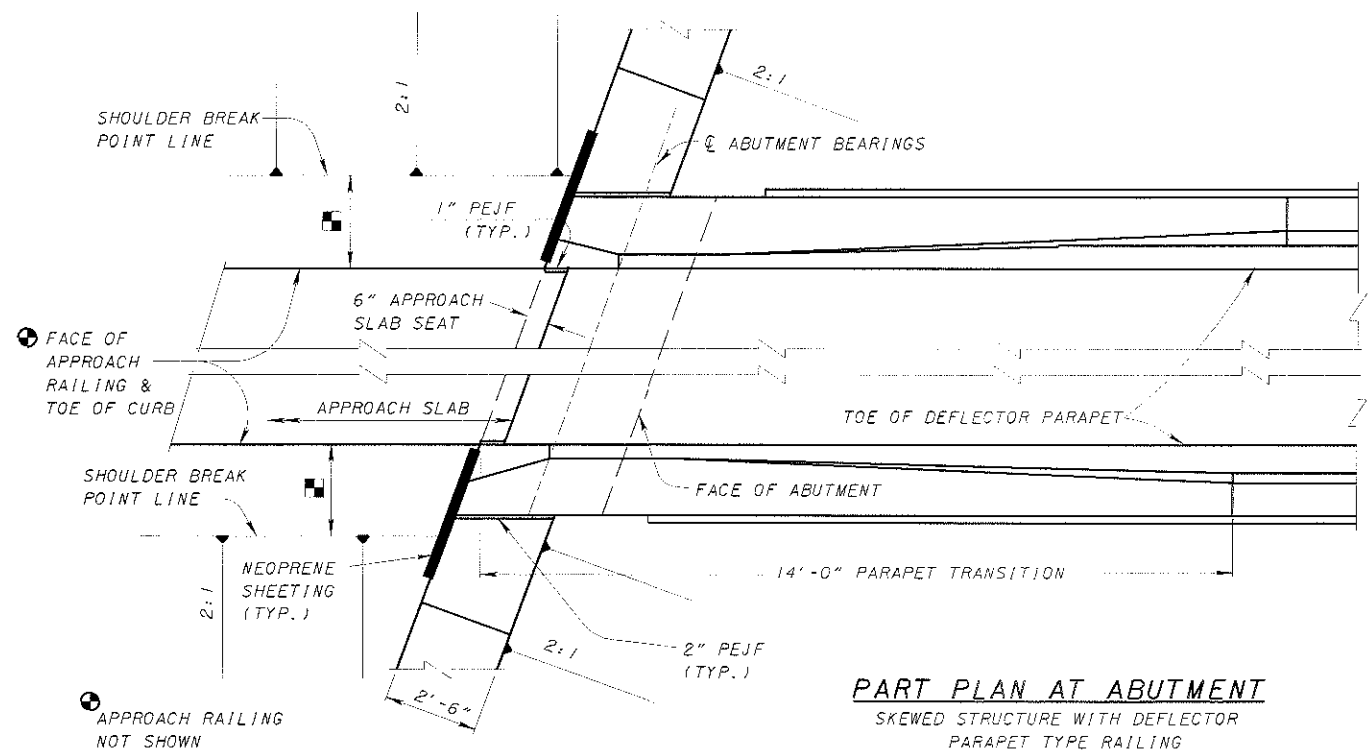
LIMITATION: THIS ROCKER AND BOLSTER DESIGN SHALL NOT BE USED WHERE THE ANTICIPATED MOVEMENT IS IN EXCESS OF 2 INCHES.

DESIGN AGENCY: OFFICE OF STRUCTURAL ENGINEERING  
 STATE OF OHIO DEPARTMENT OF TRANSPORTATION  
 DATE: 3-1-55  
 ENGINEER OF BRIDGES: [Signature]  
 REVISIONS: 2-2-59  
 CHECKED: JAM  
 DESIGNED: JFF  
 REVIEWED: LMW  
 DRAWN: JFF  
 RB-1-55

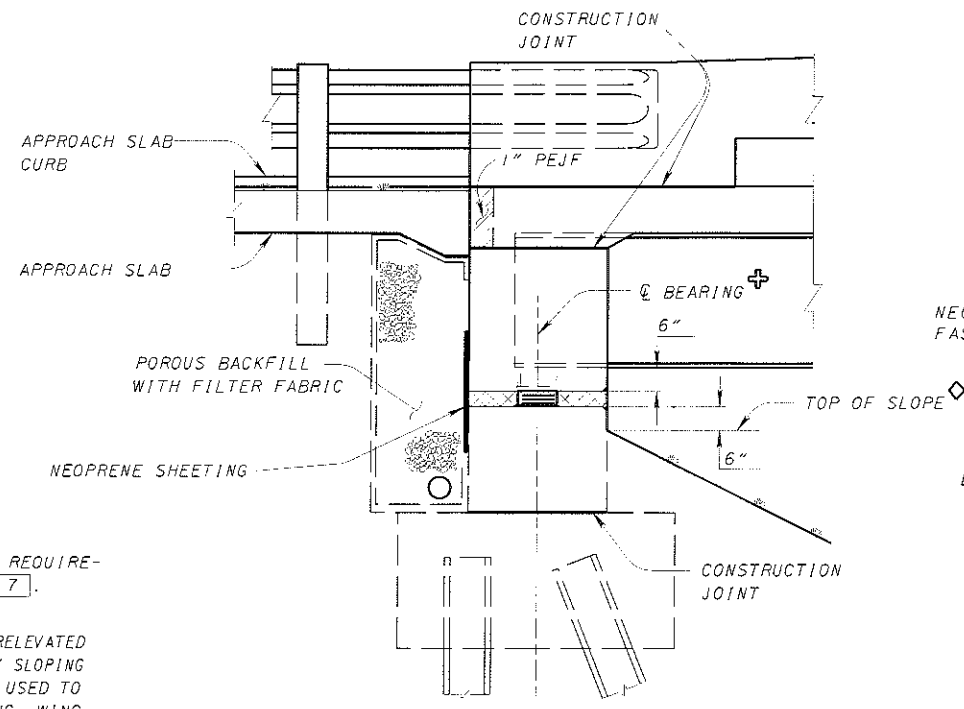
STANDARD ROCKERS AND BOLSTERS FOR STEEL BEAM AND GIRDER BRIDGES REACTIONS 75,000 LB. TO 300,000 LB.



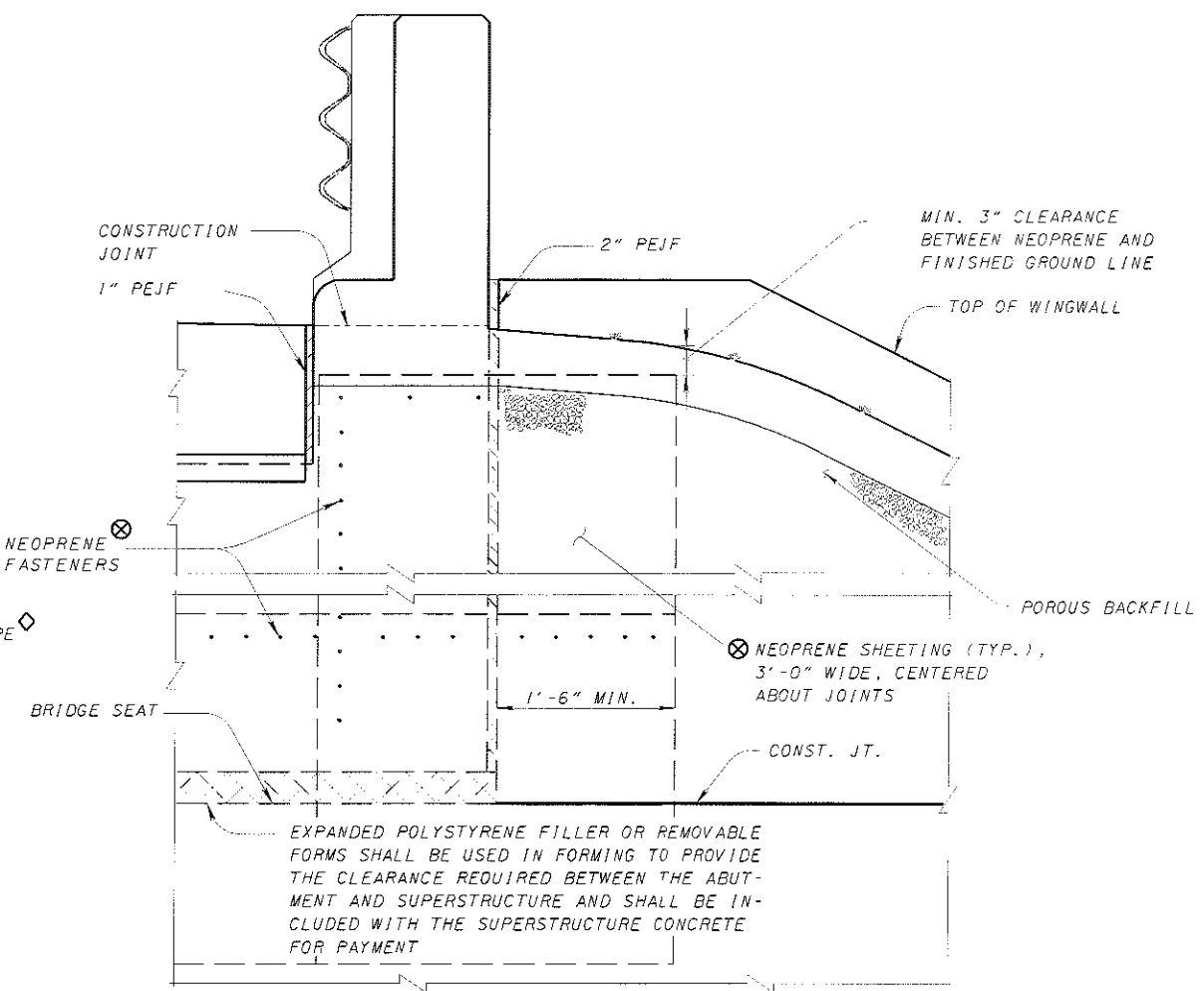
**PART PLAN AT ABUTMENT**  
 SQUARE STRUCTURE WITH DEFLECTOR  
 PARAPET TYPE RAILING  
 (BR-1 SHOWN, SBR-1-99 SHALL BE SIMILAR)



**PART PLAN AT ABUTMENT**  
 SKEWED STRUCTURE WITH DEFLECTOR  
 PARAPET TYPE RAILING  
 (BR-1 SHOWN, SBR-1-99 SHALL BE SIMILAR)



**ELEVATION**



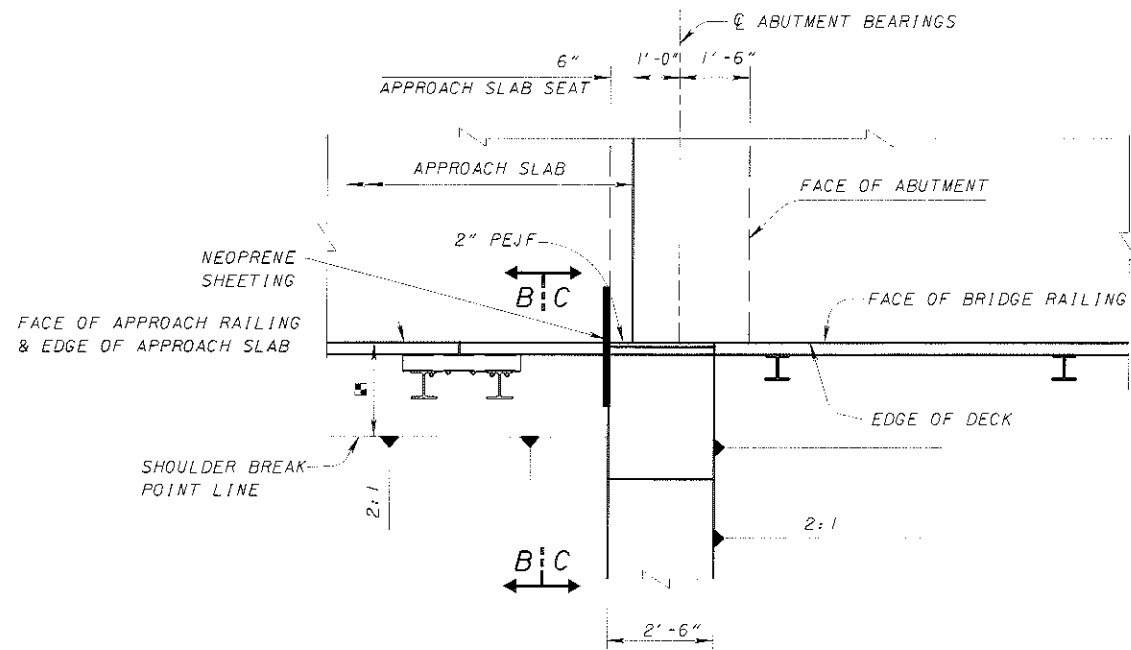
**SECTION A-A**

- ⊕ FOR BEARING RETAINER REQUIREMENTS SEE SHEET 6 / 7.
- ◇ TOP OF SLOPE: ON SUPERELEVATED STRUCTURES, A LATERALLY SLOPING "TOP OF SLOPE" MAY BE USED TO AVOID EXCESSIVELY LONG WING WALL LENGTHS.
- SEE ROADWAY TYPICAL SECTION.

EXPANDED POLYSTYRENE FILLER OR REMOVABLE FORMS SHALL BE USED IN FORMING TO PROVIDE THE CLEARANCE REQUIRED BETWEEN THE ABUTMENT AND SUPERSTRUCTURE AND SHALL BE INCLUDED WITH THE SUPERSTRUCTURE CONCRETE FOR PAYMENT

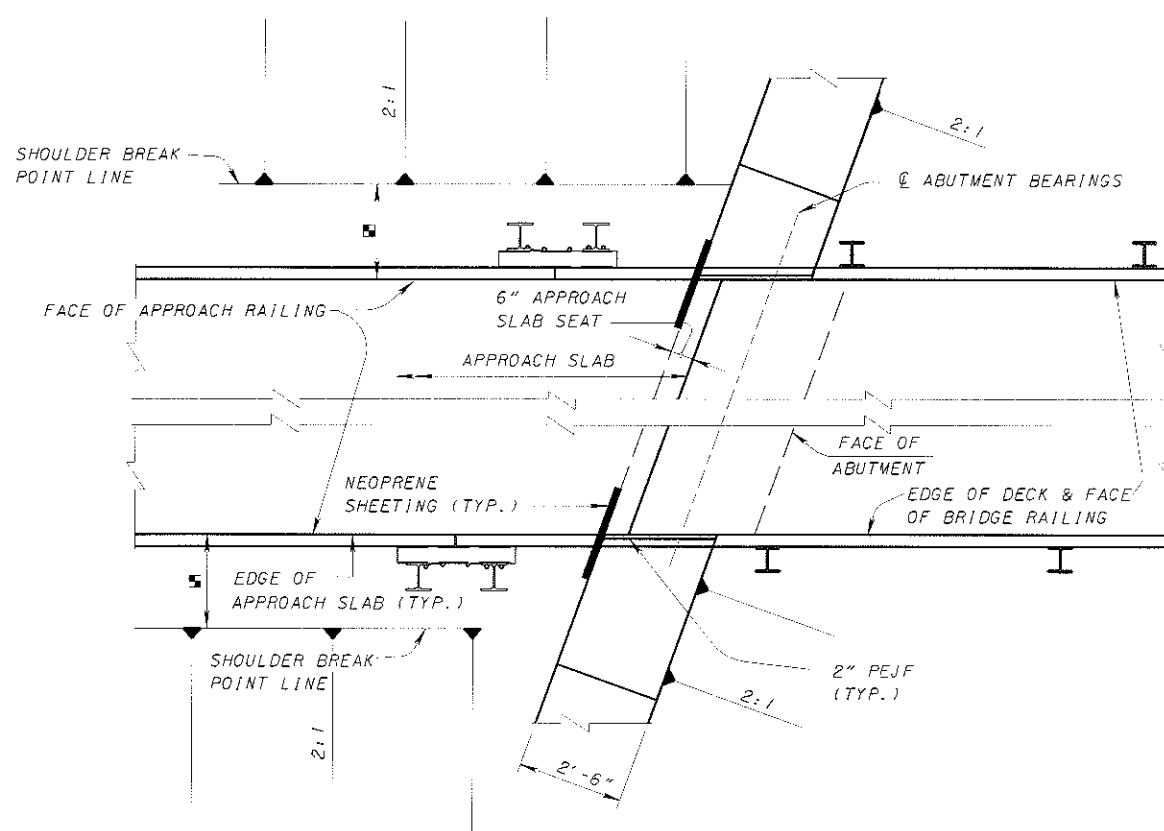
⊗ SEE PROJECT PLANS FOR ADDITIONAL NEOPRENE SHEETING PLACEMENT REQUIREMENTS.

DESIGN AGENCY	OFFICE OF	STRUCTURAL ENGINEERING
STATE OF OHIO DEPARTMENT OF TRANSPORTATION	DATE	
ADMINISTRATOR	2-12-97	
REVISIONS	CHECKED	REVIEWED
04-20-01	MRG/JJS	LMW
07-19-02	WLF	WLF
STANDARD	DESIGNED	DRAWN
SEMI-INTEGRAL CONSTRUCTION DETAILS FOR STEEL BEAM AND GIRDER BRIDGES ON RIGID ABUTMENTS	WLF	WLF
	SICD-1-96	



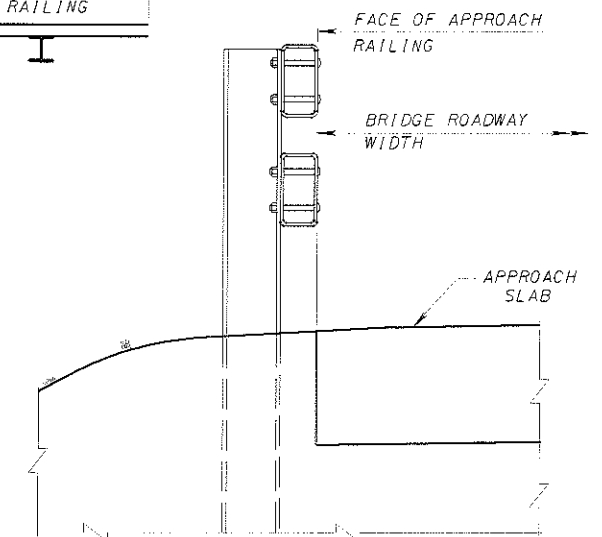
**PART PLAN AT ABUTMENT**

SQUARE STRUCTURE WITH TWIN STEEL TUBE BRIDGE RAILING

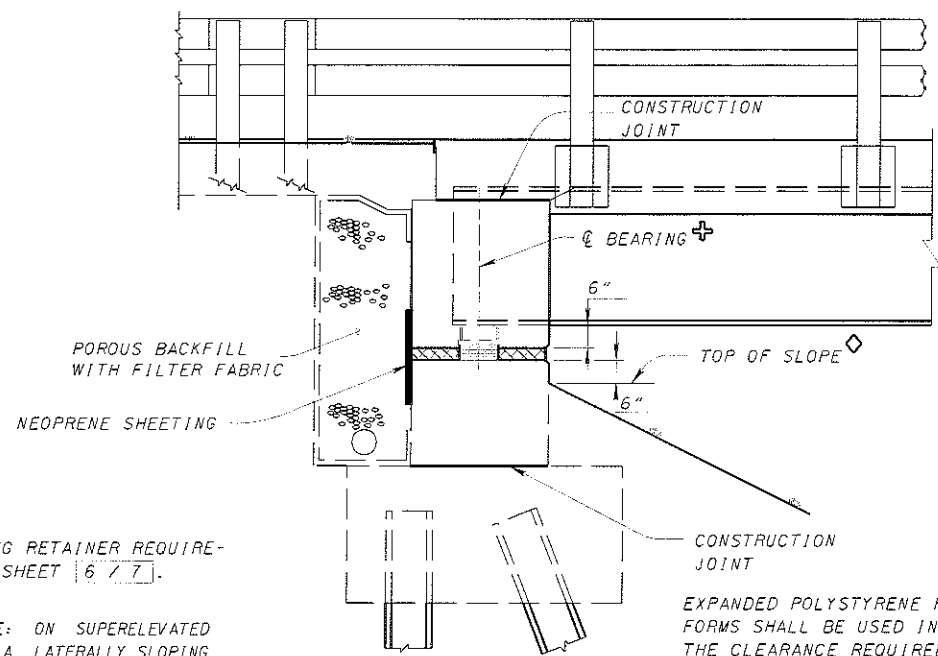


**PART PLAN AT ABUTMENT**

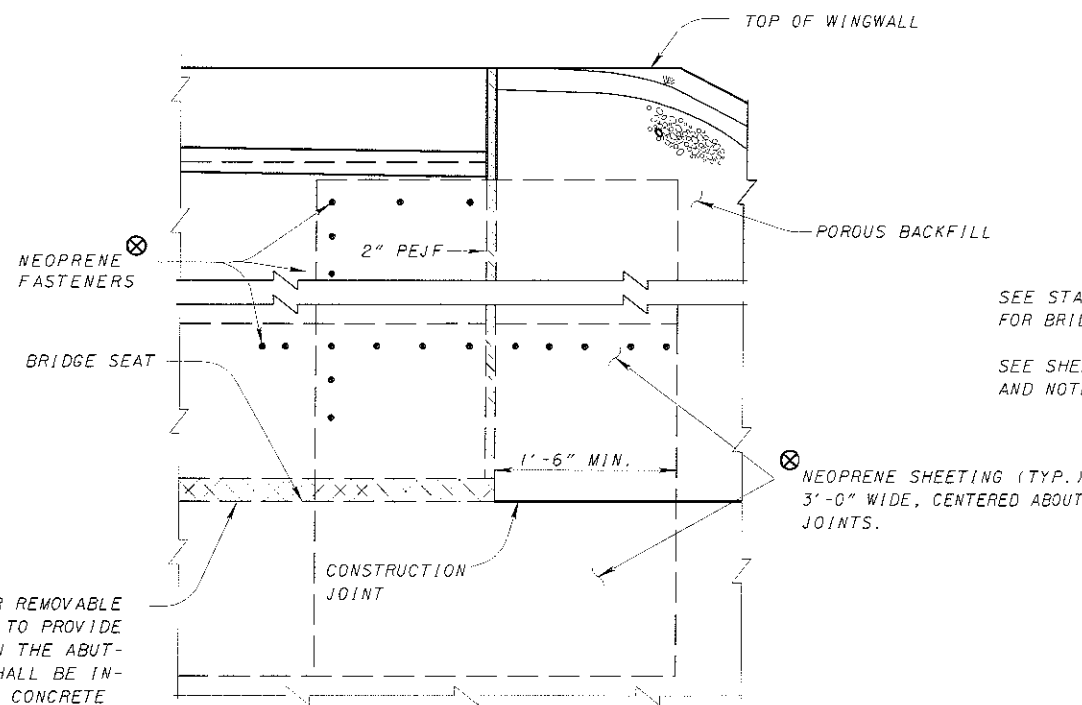
SKEWED STRUCTURE WITH TWIN STEEL TUBE BRIDGE RAILING



**SECTION B-B**



**ELEVATION**



**SECTION C-C**

⊕ FOR BEARING RETAINER REQUIREMENTS SEE SHEET 677.

◇ TOP OF SLOPE: ON SUPERELEVATED STRUCTURES, A LATERALLY SLOPING "TOP OF SLOPE" MAY BE USED TO AVOID EXCESSIVELY LONG WING WALL LENGTHS.

■ SEE ROADWAY TYPICAL SECTION.

EXPANDED POLYSTYRENE FILLER OR REMOVABLE FORMS SHALL BE USED IN FORMING TO PROVIDE THE CLEARANCE REQUIRED BETWEEN THE ABUTMENT AND SUPERSTRUCTURE AND SHALL BE INCLUDED WITH THE SUPERSTRUCTURE CONCRETE FOR PAYMENT

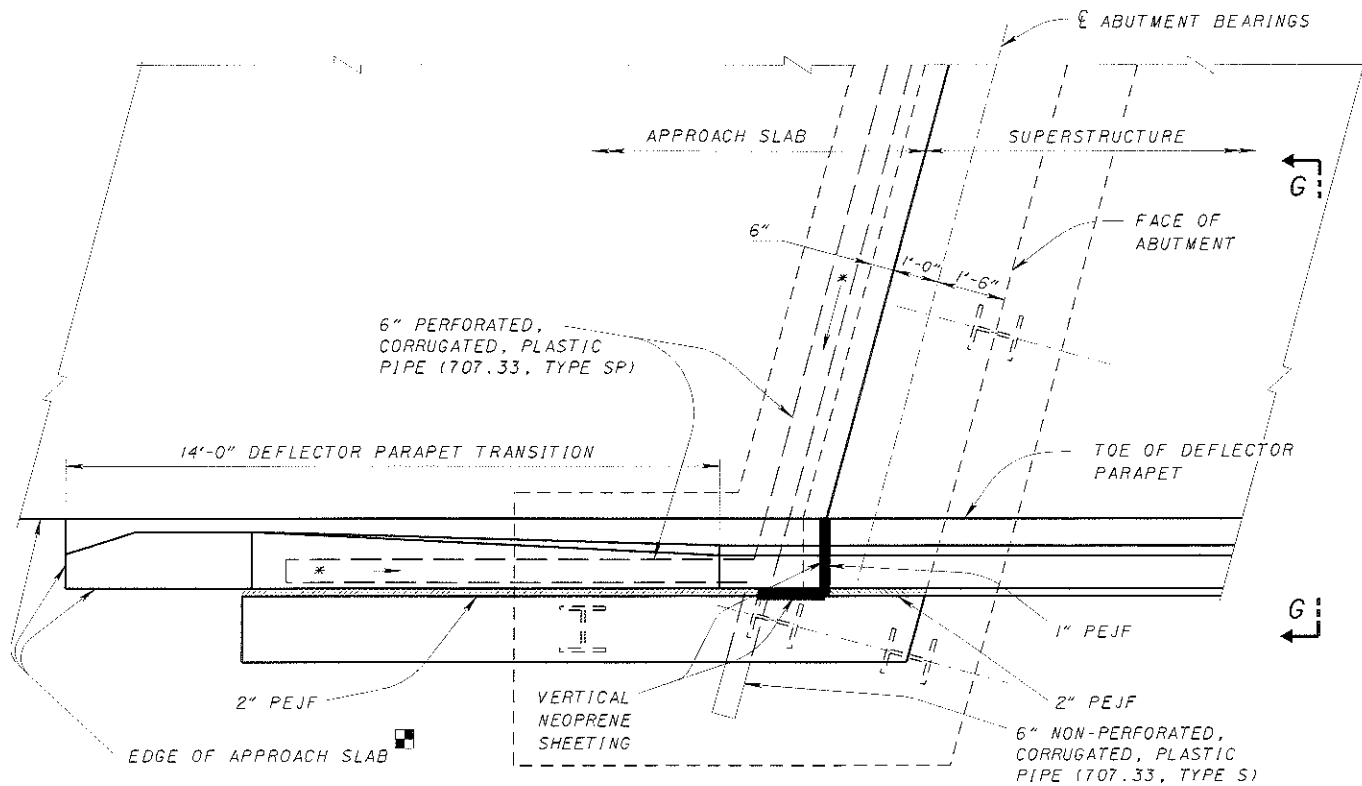
SEE STANDARD BRIDGE DRAWING TST-1-99 FOR BRIDGE TERMINAL ASSEMBLIES.

SEE SHEET 177 FOR ADDITIONAL DETAILS AND NOTES.

⊗ SEE PROJECT PLANS FOR ADDITIONAL NEOPRENE SHEETING PLACEMENT REQUIREMENTS.

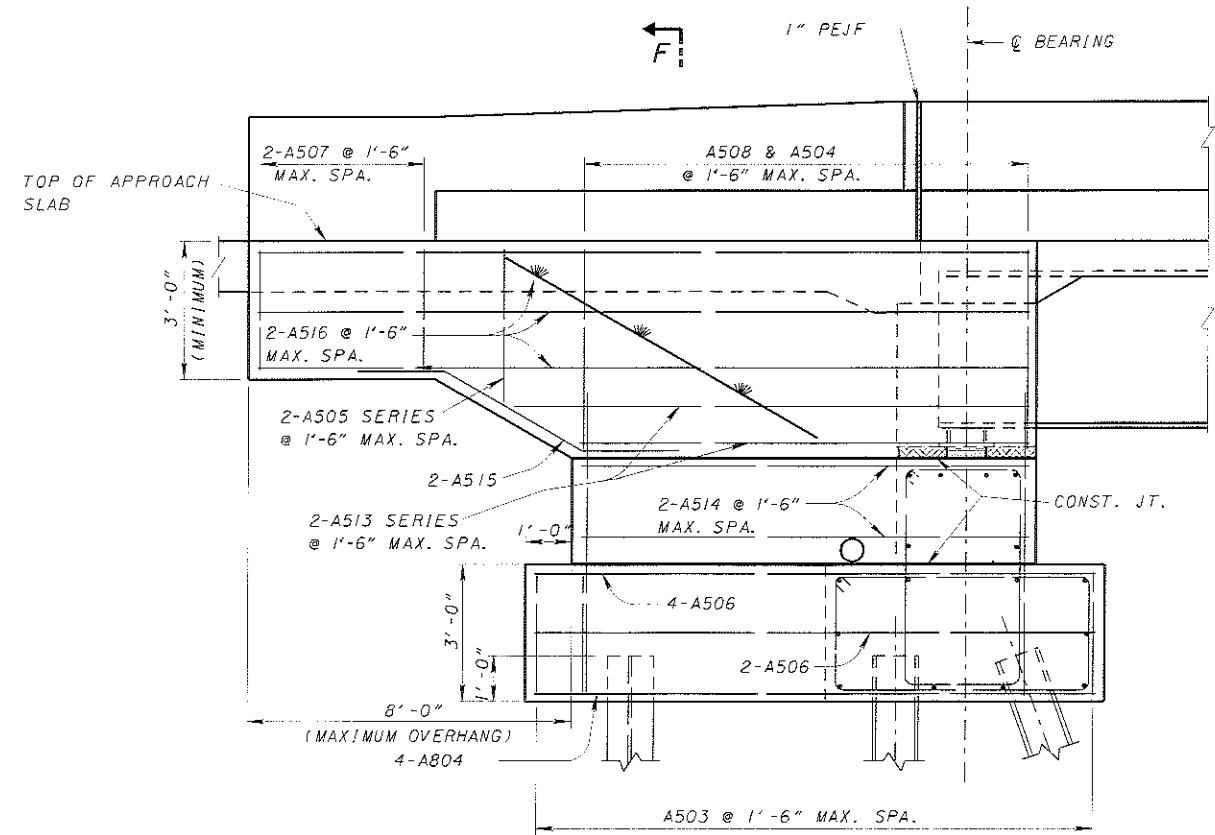






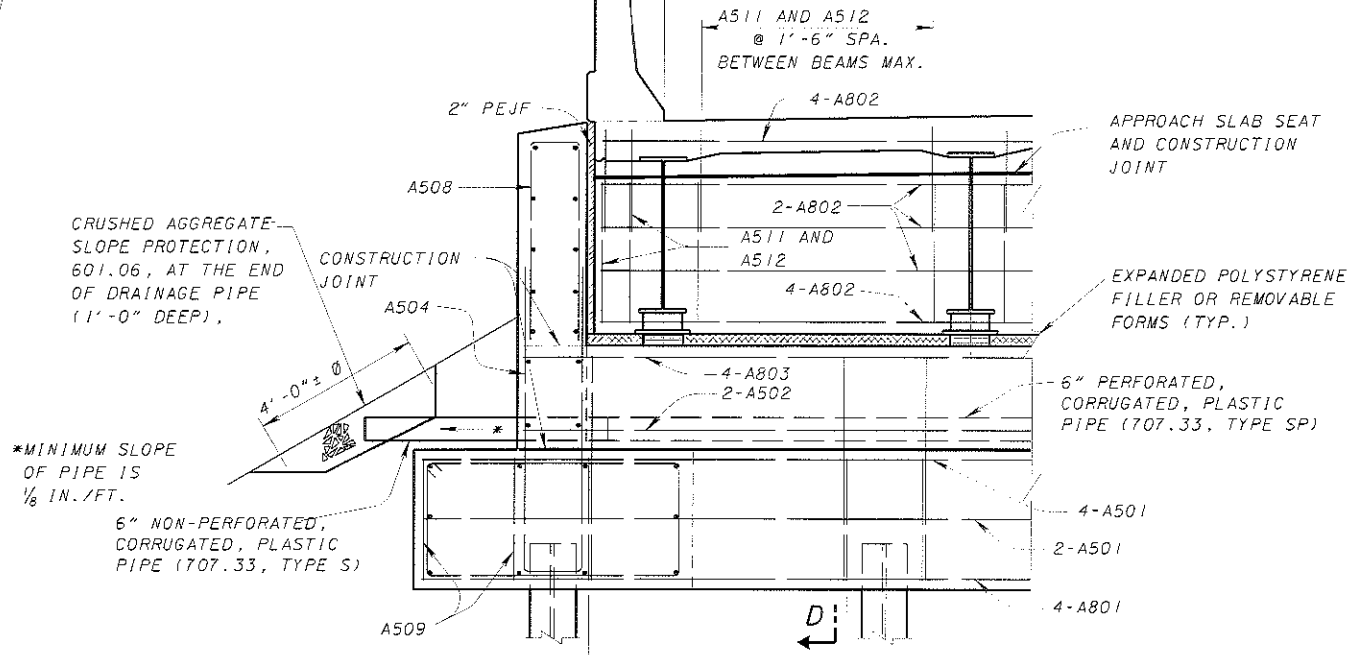
**PART PLAN**

■ SPECIAL DESIGN OF APPROACH SLAB MAY BE REQUIRED



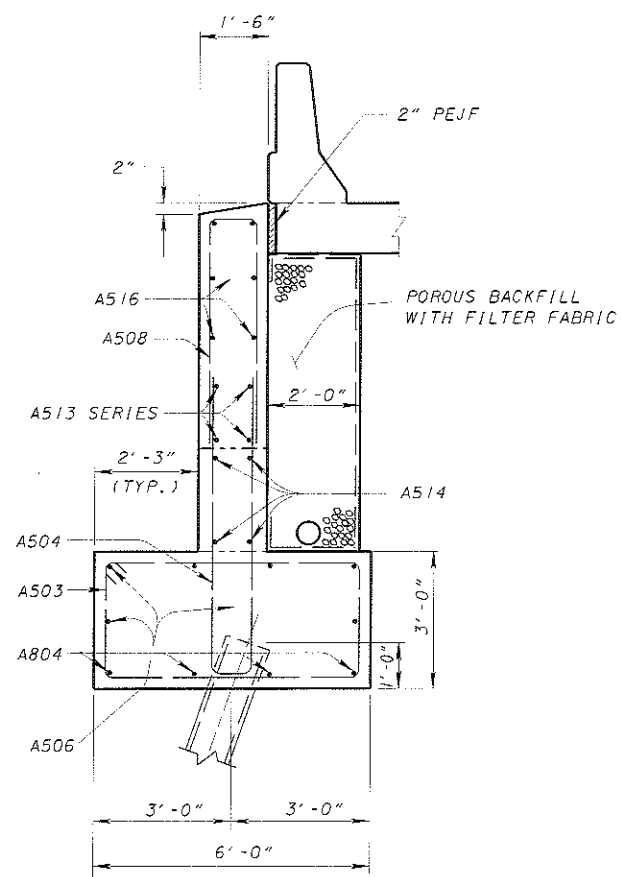
**ELEVATION**

NOTE:  
REINFORCING STEEL SHOWN IS MINIMUM.  
DESIGNER SHALL PROVIDE THE REINFORCEMENT  
REQUIRED FOR THE INDIVIDUAL STRUCTURE.

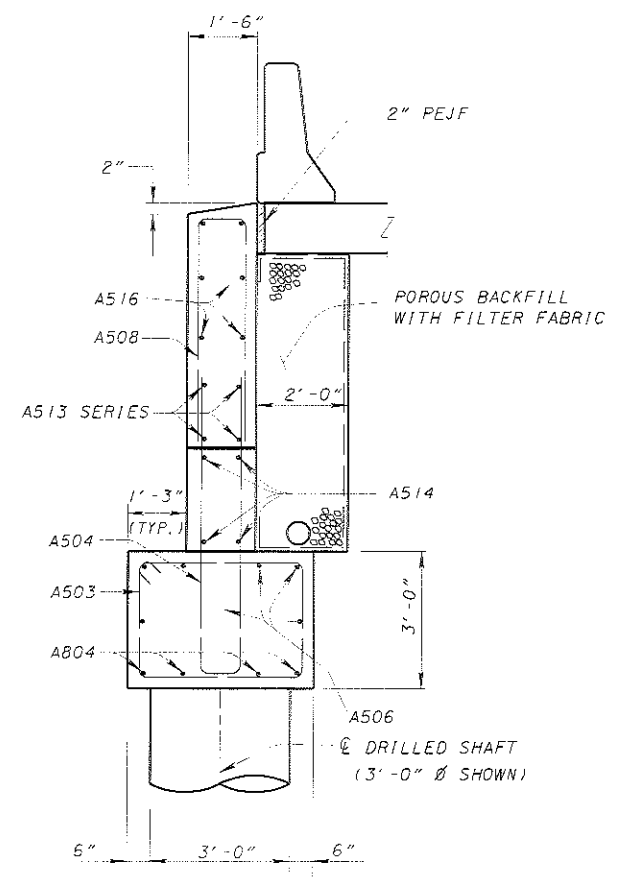


**VIEW G-G**

NOTE:  
FOR SECTION D-D  
SEE SHEET 3/7

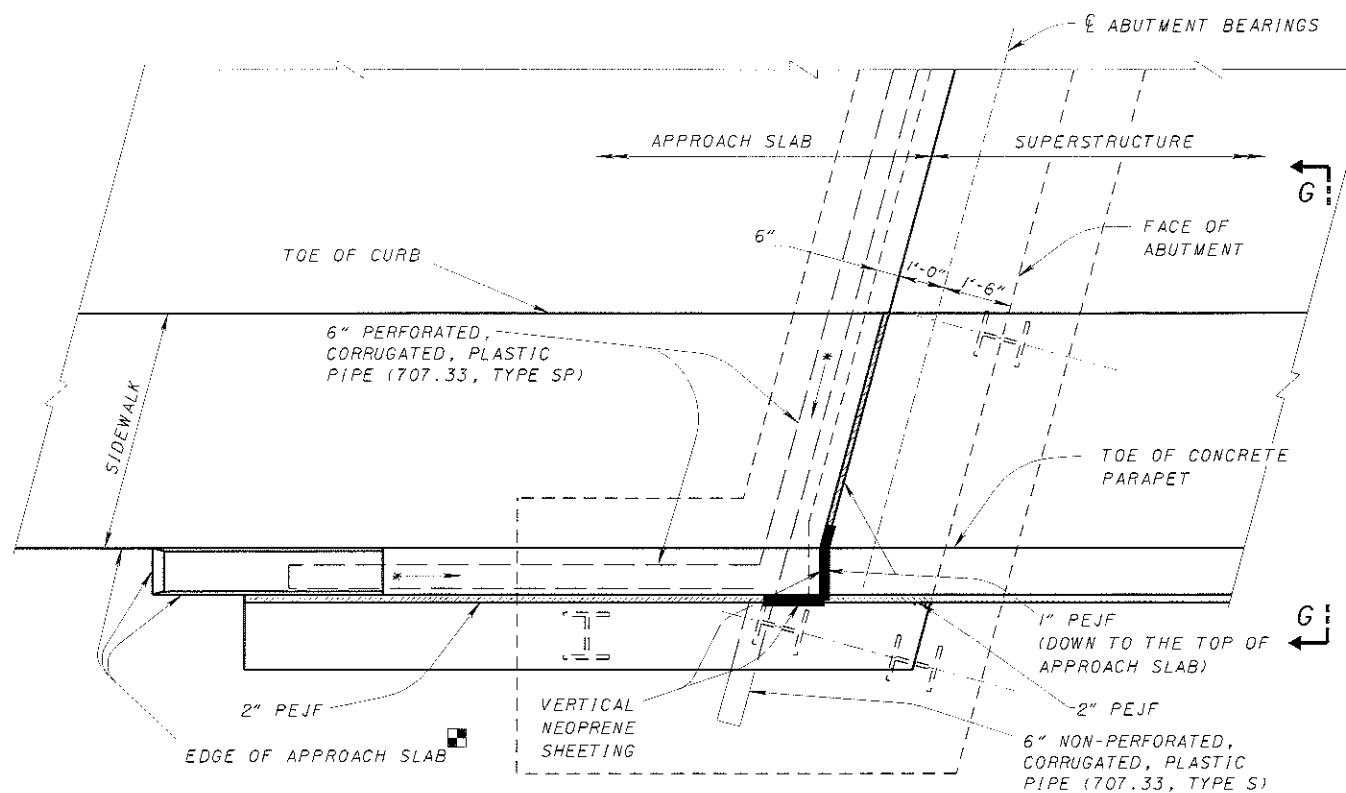


**SECTION F-F  
(ON PILES)**



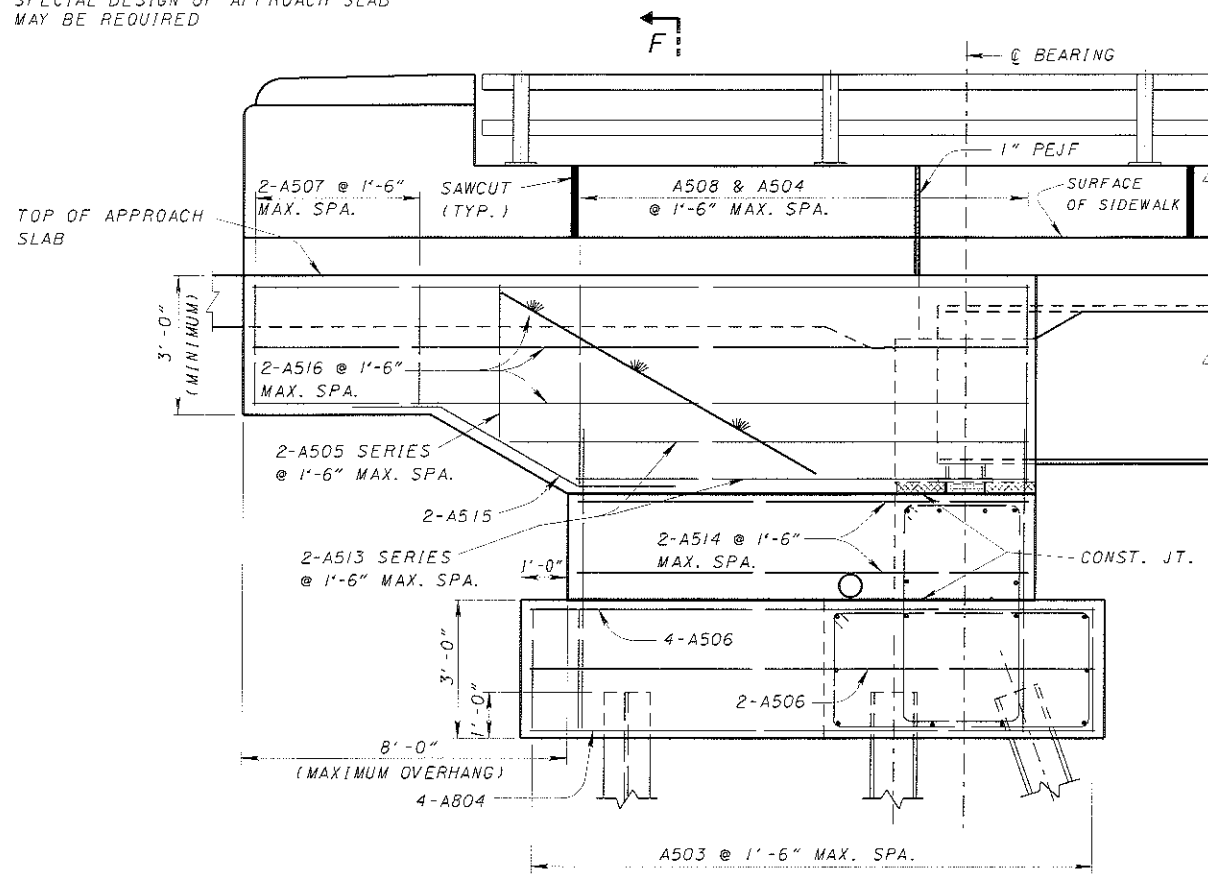
**SECTION F-F  
(ON DRILLED SHAFTS)**

DESIGN AGENCY	OFFICE OF	DATE
STATE OF OHIO DEPARTMENT OF TRANSPORTATION	BRAD TAGGELL	2-12-97
	ADMINISTRATOR	
REVISIONS	DESIGNED	DRAWN
04-20-01	WLF	WLF
07-19-02		
CHECKED	REVIEWED	
MFG/JIS	LAW	
SICD-1-96		
STANDARD	SEMI-INTEGRAL CONSTRUCTION DETAILS	
	FOR STEEL BEAM AND GIRDER BRIDGES	
	ON RIGID ABUTMENTS	
4	7	



**PART PLAN**  
STEEL TUBE & POSTS NOT SHOWN

■ SPECIAL DESIGN OF APPROACH SLAB  
MAY BE REQUIRED



**ELEVATION**

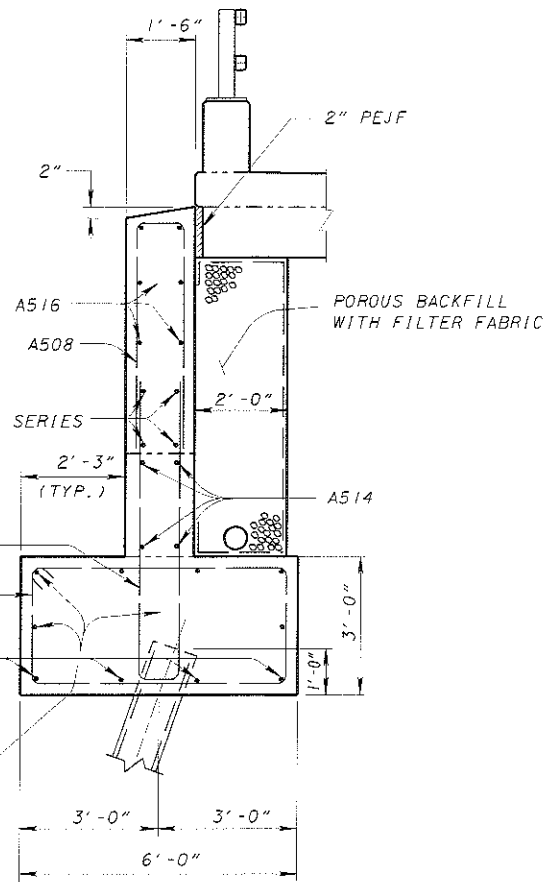
NOTE:  
REINFORCING STEEL SHOWN IS MINIMUM.  
DESIGNER SHALL PROVIDE THE REINFORCEMENT  
REQUIRED FOR THE INDIVIDUAL STRUCTURE.

\*MINIMUM SLOPE  
OF PIPE IS  
1/8 IN./FT.

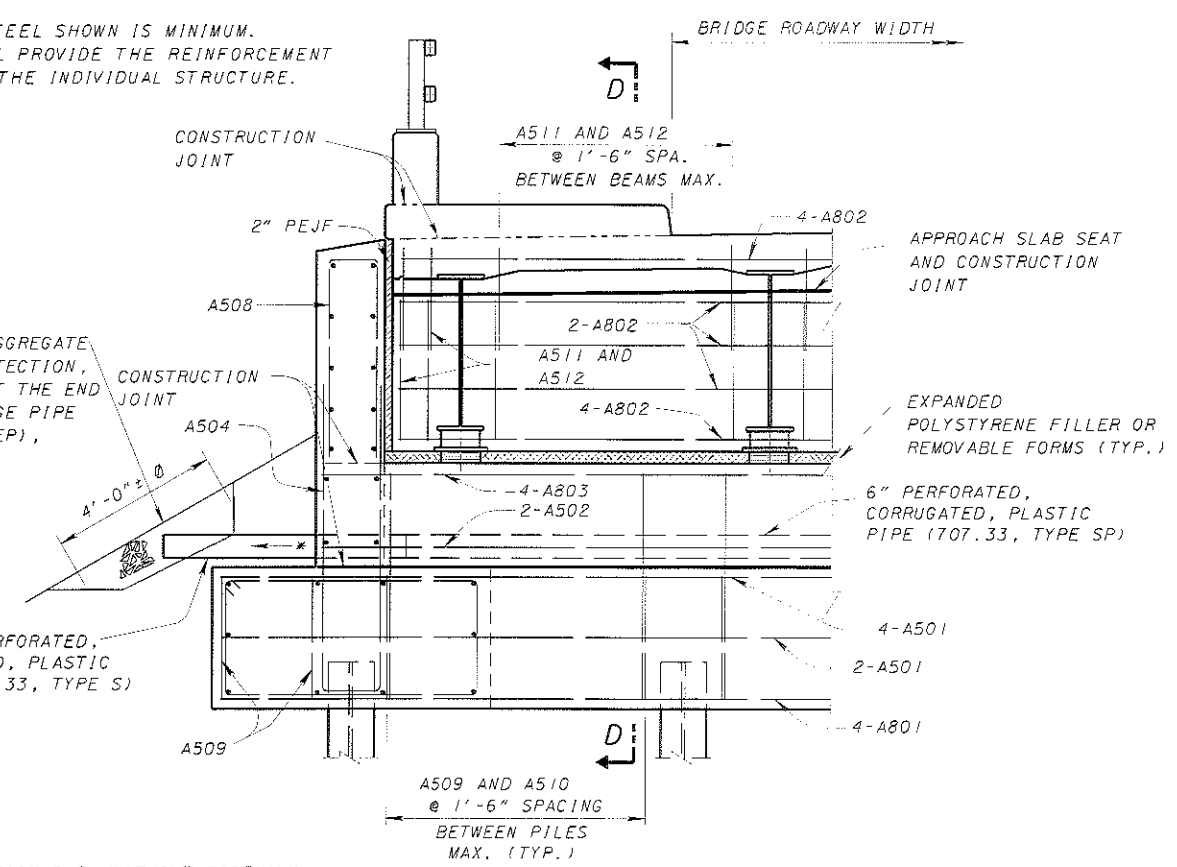
CRUSHED AGGREGATE  
SLOPE PROTECTION,  
601.06, AT THE END  
OF DRAINAGE PIPE  
(1'-0" DEEP),

6" NON-PERFORATED,  
CORRUGATED, PLASTIC  
PIPE (707.33, TYPE S)

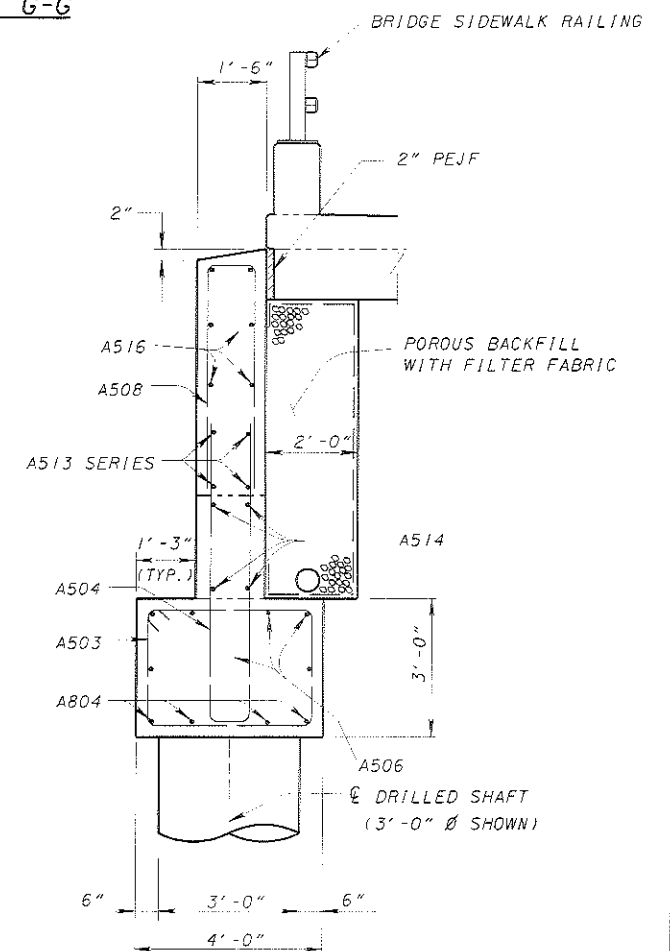
NOTE:  
FOR SECTION D-D, WITHOUT SIDEWALK,  
SEE SHEET 3/7



**SECTION F-F**  
(ON PILES)

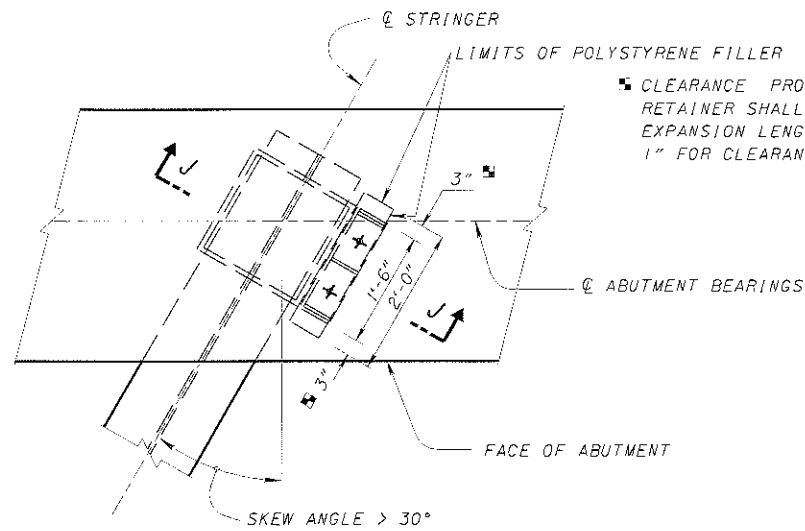


**VIEW G-G**



**SECTION F-F**  
(ON DRILLED SHAFTS)

DESIGN AGENCY OFFICE OF STRUCTURAL ENGINEERING	DATE 2-12-97
STATE OF OHIO DEPARTMENT OF TRANSPORTATION ADMINISTRATOR Brad Triggell	DATE 2-12-97
CHECKED MRC/JJS	REVIEWED LMW
DESIGNED WLF	DRAWN WLF
REVISIONS 04-20-01 07-19-02	STANDARD SICD-1-96
SEMI-INTEGRAL CONSTRUCTION DETAILS FOR STEEL BEAM AND GIRDER BRIDGES ON RIGID ABUTMENTS	
5 / 7	



CLEARANCE PROVIDED FROM EACH END OF BEARING RETAINER SHALL BE 3" WHICH ALLOWS FOR MAXIMUM EXPANSION LENGTH OF 250'-0" PLUS AN ADDITIONAL 1" FOR CLEARANCE.

**BEARING RETAINER FOR  
30° < SKEW ANGLE ≤ 45°**

PLACE RETAINER ASSEMBLY ON ACUTE ANGLE SIDE OF BEARINGS.

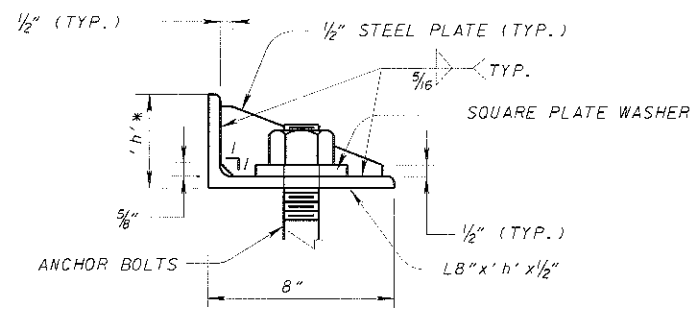
**NOTE:**

HP STEEL SHAPE INCLUDED WITH ELASTOMERIC BEARING FOR PAYMENT.

1 1/2" DIAMETER X 12" LONG ANCHOR BOLTS WITH NUT AND 4" X 4" X 1/2" SQUARE PLATE WASHER WITH 1 3/8" DIAMETER HOLES, TO BE FIELD DRILLED AND GROUTED WITH AN EPOXY NON-SHRINKING GROUT, 705.20, IN 1 3/4" X 10" DEEP HOLES.

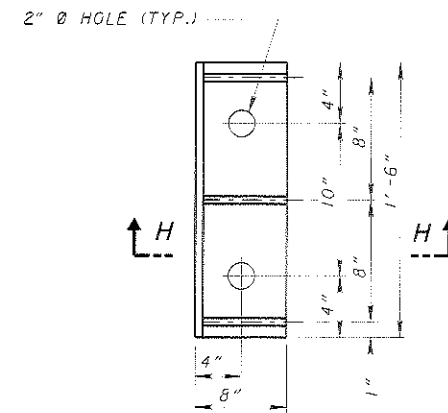
REINFORCING STEEL IN THE VICINITY OF THE BEARING RETAINER SHALL BE ACCURATELY PLACED TO AVOID INTERFERENCE WITH THE DRILLING OF BEARING RETAINER ANCHOR HOLES.

SEE NOTES ON SHEET 7/7 FOR ADDITIONAL REQUIREMENTS.



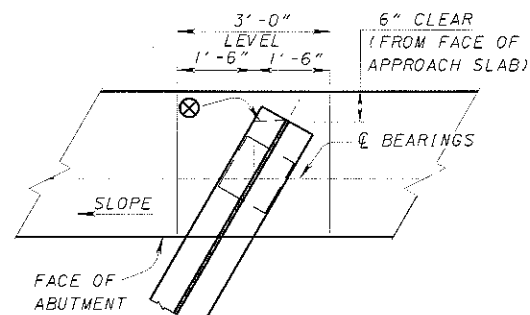
\* DIMENSION 'h' VARIES AND SHALL BE EQUAL TO ELASTOMERIC BEARING HEIGHT + LOAD PLATE THICKNESS BUT SHALL NOT BE LESS THAN 4".

**SECTION H-H**



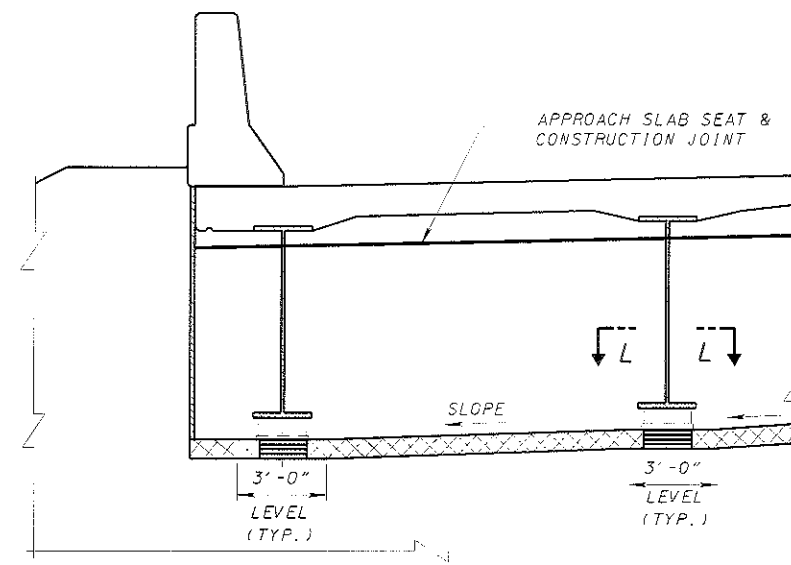
**BEARING RETAINER ASSEMBLY**

SEE SHEET [777] FOR PLACEMENT INSTRUCTIONS

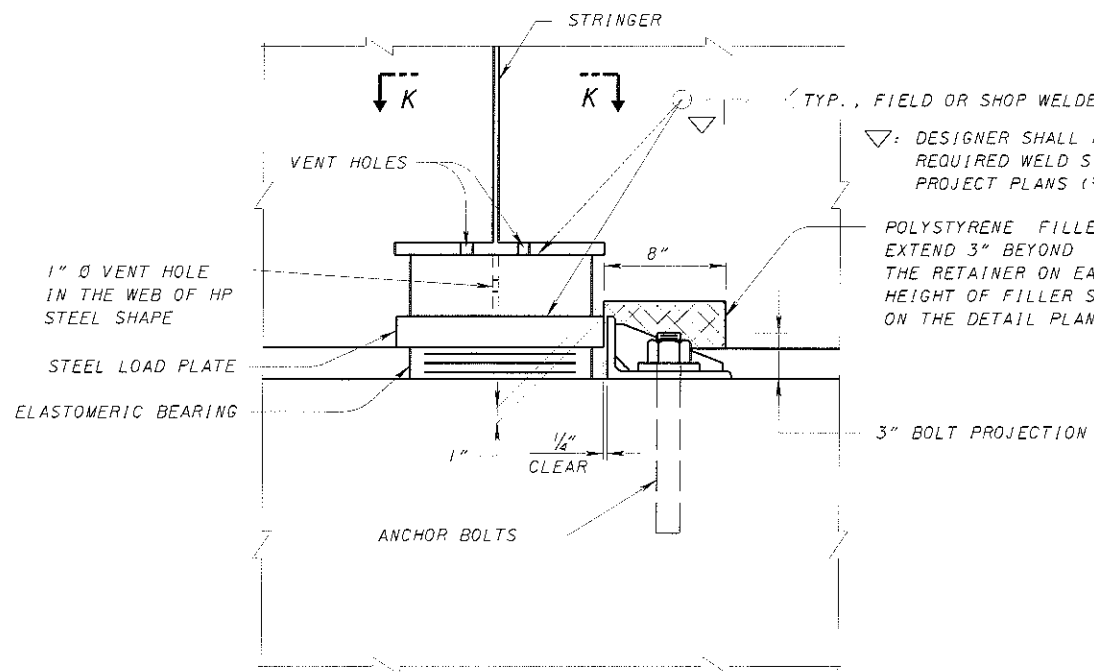


**SECTION L-L**

⊗ CLIP ONLY THE TOP FLANGE TO MAINTAIN THE CLEARANCE



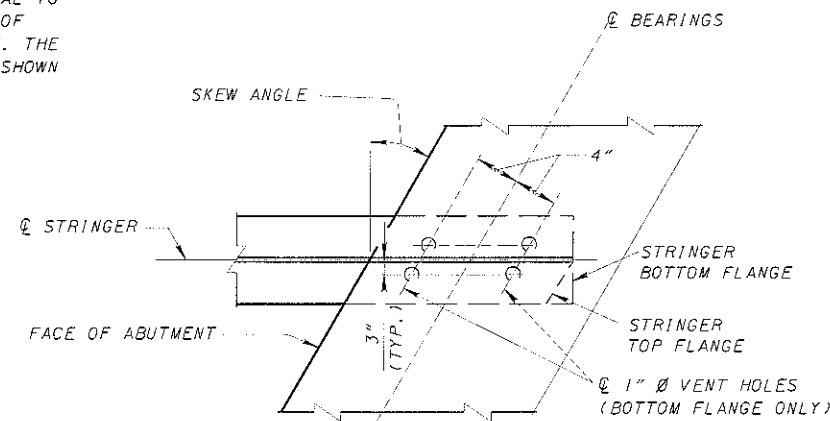
**PART ELEVATION OF BEAM SEAT**



**SECTION J-J**

▽: DESIGNER SHALL PROVIDE THE REQUIRED WELD SIZE IN THE PROJECT PLANS (3/16" MIN.).

POLYSTYRENE FILLER MATERIAL TO EXTEND 3" BEYOND THE END OF THE RETAINER ON EACH SIDE. THE HEIGHT OF FILLER SHALL BE SHOWN ON THE DETAIL PLANS.



**SECTION K-K**

DESIGN AGENCY	OFFICE OF	STRUCTURAL ENGINEERING
STATE OF OHIO DEPARTMENT OF TRANSPORTATION	2-12-97	DATE
ADMINISTRATOR	Brad Fogell	
CHECKED	REVIEWED	SICD-1-96
MRG/JJS	L/MW	
DESIGNED	DRAWN	
WLF	WLF	
REVISIONS	04-20-01	
	07-19-02	
STANDARD	SEMI-INTEGRAL CONSTRUCTION DETAILS FOR STEEL BEAM AND GIRDER BRIDGES ON RIGID ABUTMENTS	
6	7	

REINFORCING STEEL FOR STRAIGHT WINGWALL ABUTMENTS

MARK	LENGTH	TYPE	A	B	C	BENDING DIAGRAMS
A801	*	STR				<p>TYPE 1</p> <p>TYPE 2</p> <p>TYPE 3 SEE STANDARD BRIDGE DWG. AS-1-81.</p> <p>TYPE 4</p> <p>* DIMENSIONS VARY</p>
A802	*	STR				
A803	*	STR				
A501	*	STR				
A502	*	STR				
A503	*	STR				
A504	*	STR				
A505	*	STR				
A506	*	4	*	*	*	
A507	SERIES BAR	1	2'-2"	*		
A508	*	1	2'-2"	*		
A509	*	2	*	2'-7"		
A510	*	2	2'-8"	*		
A511	*	2	2'-8"	*		
A512	*	1	1'-10"	*		
A513	*	STR				
D801	*	3				

GENERAL:

DETAILS SHOWN ARE TYPICAL FOR A STEEL BEAM OR GIRDER BRIDGE WITH ELASTOMERIC BEARINGS.

**LIMITATIONS:** THESE ABUTMENT DETAILS ARE INTENDED FOR USE ON STRAIGHT ALIGNMENT STRUCTURES WITH SKEWS NOT GREATER THAN 45 DEGREES, A BRIDGE EXPANSION LENGTH UP TO 250'-0" AND/OR A TOTAL LENGTH OF 400'-0" FOR SKEWS GREATER THAN 45 DEGREES, A SPECIAL DESIGN SHALL BE PERFORMED AS THE ABUTMENT BEAM SEATS SHOWN ON THESE PLANS, WOULD NEED TO BE SPECIFICALLY DESIGNED FOR THAT SKEW TO ACCOMMODATE THE BEARING RETAINER ASSEMBLIES.

**SEMI-INTEGRAL** ABUTMENT DETAILS CAN BE USED ON WALL TYPE ABUTMENTS, SPILL THRU TYPE ABUTMENTS ON TWO OR MORE ROWS OF PILES, SPREAD FOOTING TYPE ABUTMENTS FOUNDED ON ROCK, OR ABUTMENTS ON DRILLED SHAFTS. THIS ABUTMENT DESIGN SHOULD NOT BE USED ON NEW STRUCTURES WITH SPREAD FOOTINGS FOUNDED ON SOIL OR EXISTING STRUCTURES WHERE SPREAD FOOTINGS ON SOIL ARE EXPECTED TO CONTINUE TO HAVE SETTLEMENT.

**HOLE LOCATIONS:** THE DESIGNER SHALL DETAIL THE HOLE LOCATIONS IN THE PROJECT PLANS. FIELD CUTTING OF THE HOLES IN THE FIELD WILL NOT BE PERMITTED.

BEARING RETAINERS:

**GENERAL:** RETAINERS ARE REQUIRED FOR ANY BRIDGE STRUCTURE WITH A SKEW GREATER THAN 30 DEGREES. NEW AND REHABILITATED BRIDGE STRUCTURES WITHOUT PHASED CONSTRUCTION REQUIRE TWO RETAINER ASSEMBLIES AT EACH ABUTMENT, ONE LOCATED AT EACH OF THE OUTSIDE (FASCIA) BEAM LINES. STRUCTURES THAT REQUIRE PHASED CONSTRUCTION SHALL HAVE RETAINER ASSEMBLIES LOCATED AT EACH OF THE OUTSIDE BEAM LINES FOR THE FIRST PHASE OF CONSTRUCTION AND ADDITIONAL RETAINER ASSEMBLIES LOCATED AT THE NEW OUTSIDE BEAM OF EACH ADDITIONAL PHASE OF CONSTRUCTION.

**CONSTRUCTION PROCEDURE:** FIELD DRILL ANCHOR BOLT HOLES. INSTALL ANCHOR BOLTS AND PLACE EPOXY GROUT AFTER THE ERECTION OF STRUCTURAL STEEL BEAMS. WHEN DRILLING HOLES, TAKE PRECAUTIONS TO AVOID INTERFERING WITH REINFORCING STEEL. POSITION AND TIGHTEN THE RETAINER AND INSTALL A BLOCK OF POLYSTYRENE FILLER MATERIAL, DIMENSIONED AS SHOWN ON SHEET 6 OF 7, OVER THE TOP OF THE RETAINER ASSEMBLY BEFORE THE CONCRETE PLACEMENT FOR THE BEAM END ENCASMENT.

**MATERIALS:** THE STEEL RETAINER ASSEMBLY AND THE SQUARE PLATE WASHER SHALL BE THE SAME GRADE OF STEEL AS THE MAIN STRUCTURAL MEMBERS. ANCHOR BOLTS AND NUTS SHALL BE ASTM A325. STEEL RETAINER ASSEMBLIES SHALL HAVE THE SAME PROTECTIVE COATING AS THE MAIN STRUCTURAL STEEL ANCHOR BOLTS, NUTS AND SQUARE PLATE WASHERS SHALL BE GALVANIZED ACCORDING TO 711.02. THE THREAD LENGTH REQUIREMENTS OF ASTM A325 MAY BE WAIVED. THE GROUT SHALL BE A NON-SHRINK, EPOXY GROUT MEETING THE REQUIREMENTS OF 705.20.

THE COSTS FOR FURNISHING AND INSTALLING THE STEEL RETAINER ASSEMBLIES, INCLUDING THE POLYSTYRENE, WILL BE INCLUDED FOR PAYMENT IN THE UNIT PRICE BID FOR THE ELASTOMERIC BEARINGS.

**STEEL LOAD PLATE AND THE HP SHAPE (SUPPORT MEMBER):** THE DESIGNER SHALL SPECIFY THE STEEL MATERIAL FOR THE LOAD PLATE AND THE HP SHAPE SUPPORT MEMBER TO BE THE SAME GRADE OF STEEL AS THE MAIN STRUCTURAL MEMBERS. THE BEARINGS SHALL BE FURNISHED AND INSTALLED ACCORDING TO 516. THE DESIGNER SHALL SHOW ALL BEARING DETAILS, INCLUDING NOTES, IN THE PROJECT PLANS. THE HP SHAPE IS CONSIDERED A COMPONENT OF THE BEARING.

REINFORCING STEEL FOR U-TYPE ABUTMENT

MARK	LENGTH	TYPE	A	B	C	BENDING DIAGRAMS
A801	*	STR				<p>TYPE 1</p> <p>TYPE 2</p> <p>TYPE 3 SEE STANDARD BRIDGE DWG. AS-1-81.</p> <p>TYPE 4</p> <p>* DIMENSIONS VARY</p>
A802	*	STR				
A803	*	STR				
A804	*	STR				
A501	*	STR				
A502	*	STR				
A503	*	2	*	2'-7"		
A504	*	1	1'-2"	*		
A505	SERIES BAR	1	1'-2"	*		
A506	*	STR				
A507	*	1	1'-2"	*		
A508	*	1	1'-2"	*		
A509	*	2	*	2'-7"		
A510	*	2	2'-8"	*		
A511	*	2	2'-8"	*		
A512	*	1	1'-10"	*		
A513	SERIES BAR	STR				
A514	*	STR				
A515	*	4	*	*	*	
A516	*	STR				
D801	*	3				

DESIGN AGENCY  
OFFICE  
OF  
STRUCTURAL ENGINEERING

STATE OF OHIO DEPARTMENT OF TRANSPORTATION  
ADMINISTRATOR  
Brad Fingell  
DATE  
2-12-97

REVIEWED  
LWJ  
CHECKED  
MRG/JJS  
DESIGNED  
WLF  
DRAWN  
WLF  
SICD-1-96

REVISIONS  
04-20-01  
07-19-02

STANDARD  
SEMI-INTEGRAL CONSTRUCTION DETAILS  
FOR STEEL BEAM AND GIRDER BRIDGES  
ON RIGID ABUTMENTS