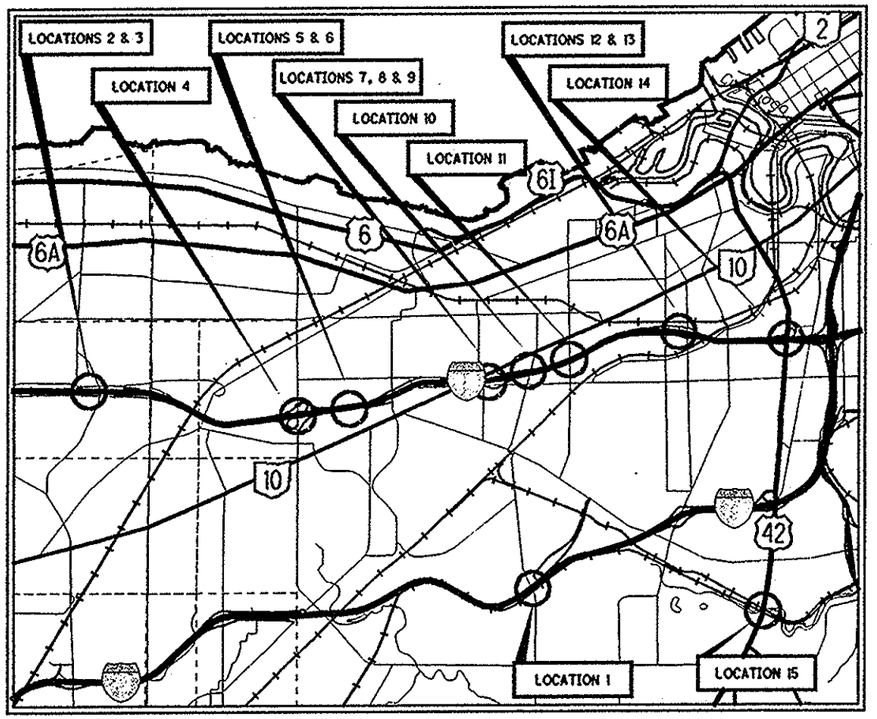
STATE OF OHIO
DEPARTMENT OF TRANSPORTATION

D12-BH-FY2009-VANDAL FENCE

PROJECT DESCRIPTION:
This project consists of installing Vandal Protection Fence and sealing of the barriers.



LATITUDE: N 41°26'53" LONGITUDE: W 81°44'09" FOR LOCATION 1
FOR OTHER LOCATIONS, SEE LOCATION MAPS

LOCATION	BRIDGE NUMBER	STRUCTURAL FILE NUMBER	CITY, TOWNSHIP, OR VILLAGE
1	CUY-71-1559	1805177	CLEVELAND
2	CUY-90-0892	1808117	CLEVELAND
3	CUY-90-0909	1808125	CLEVELAND
4	CUY-90-1062	1808249	CLEVELAND
5	CUY-90-1094	1808273	CLEVELAND
6	CUY-90-1110	1808303	CLEVELAND
7	CUY-90-1185	1808451	CLEVELAND
8	CUY-90-1201	1808478	CLEVELAND

LOCATION	BRIDGE NUMBER	STRUCTURAL FILE NUMBER	CITY, TOWNSHIP, OR VILLAGE
9	CUY-90-1214	1808486	CLEVELAND
10	CUY-90-1237	1808532	CLEVELAND
11	CUY-90-1270	1808699	CLEVELAND
12	CUY-90-1345	1807811	CLEVELAND
13	CUY-90-1361	1807846	CLEVELAND
14	CUY-90-1435	1807889	CLEVELAND
15	CUY-42-1457	1803271	CLEVELAND

INDEX OF SHEETS

2008 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.

I hereby approve these plans and declare that the making of this improvement will not require the closing to traffic of the highway and that provisions for the maintenance and safety of traffic will be as set forth on the plans and estimates.

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

PLAN PREPARED BY:
ODOT - DISTRICT TWELVE
PRODUCTION DEPARTMENT
5500 TRANSPORTATION BLVD.
GARFIELD HTS., OHIO 44125

THIS IS A MAINTENANCE PROJECT

PROJECT EARTH DISTURBED AREA = N/A (MAINT. PROJECT)
ESTIMATED CONTRACTOR EARTH DISTURBED AREA = N/A (MAINT. PROJECT)
NOTICE OF INTENT EARTH DISTURBED AREA = N/A (MAINT. PROJECT)

ENGINEER OF RECORD

STATE OF OHIO
Natalie R. Benedictis-Conley
E-63855
REGISTERED PROFESSIONAL ENGINEER

D.R. Benedictis-Conley

STANDARD CONSTRUCTION DRAWINGS

		TC-41.20	01/19/01	MT-95.50	09/05/06	
VPF-1-90	07/19/02	TC-52.10	01/19/07			
		TC-52.20	01/19/07	MT-97.10	09/05/06	
		MT-35.10	04/20/01	MT-105.10	10/18/02	
				MT-105.11	10/18/02	
		MT-95.30	09/05/06	MT-110.20	10/18/02	
		MT-95.31	09/05/06			
		MT-95.32	09/05/06			

SUPPLEMENTAL SPECIFICATIONS

800	01/16/09
832	04/25/06

SPECIAL PROVISIONS

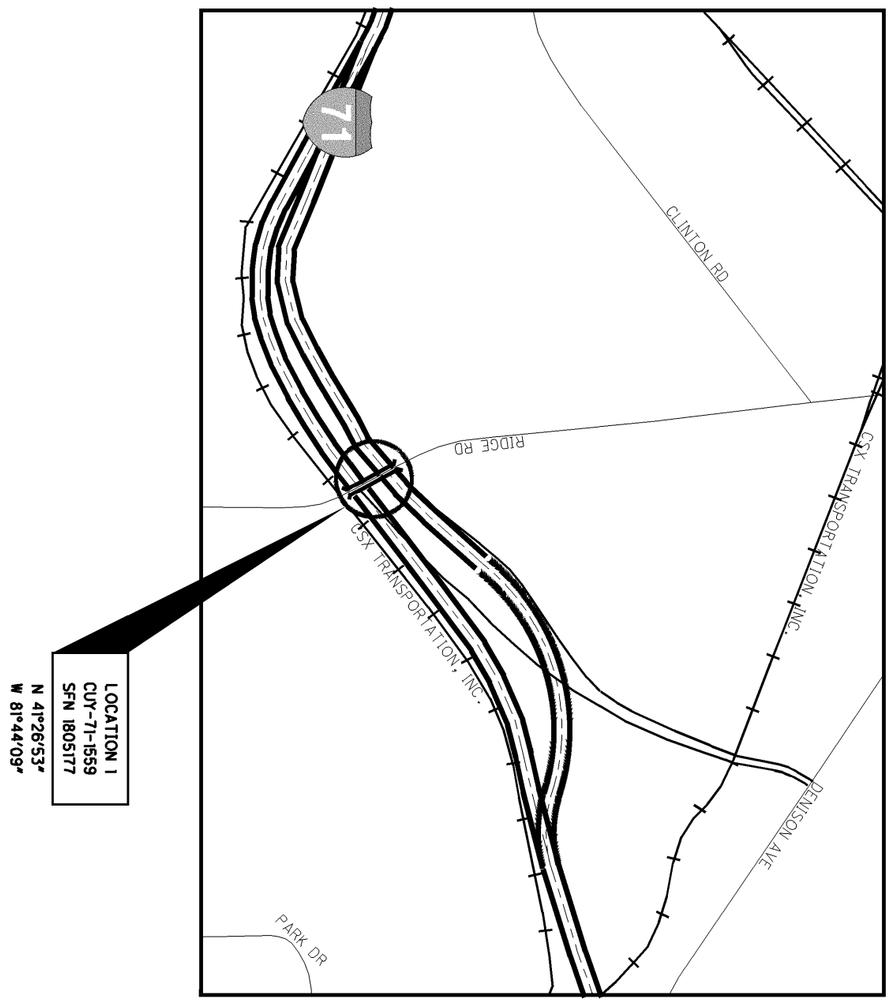
By MOK, PE

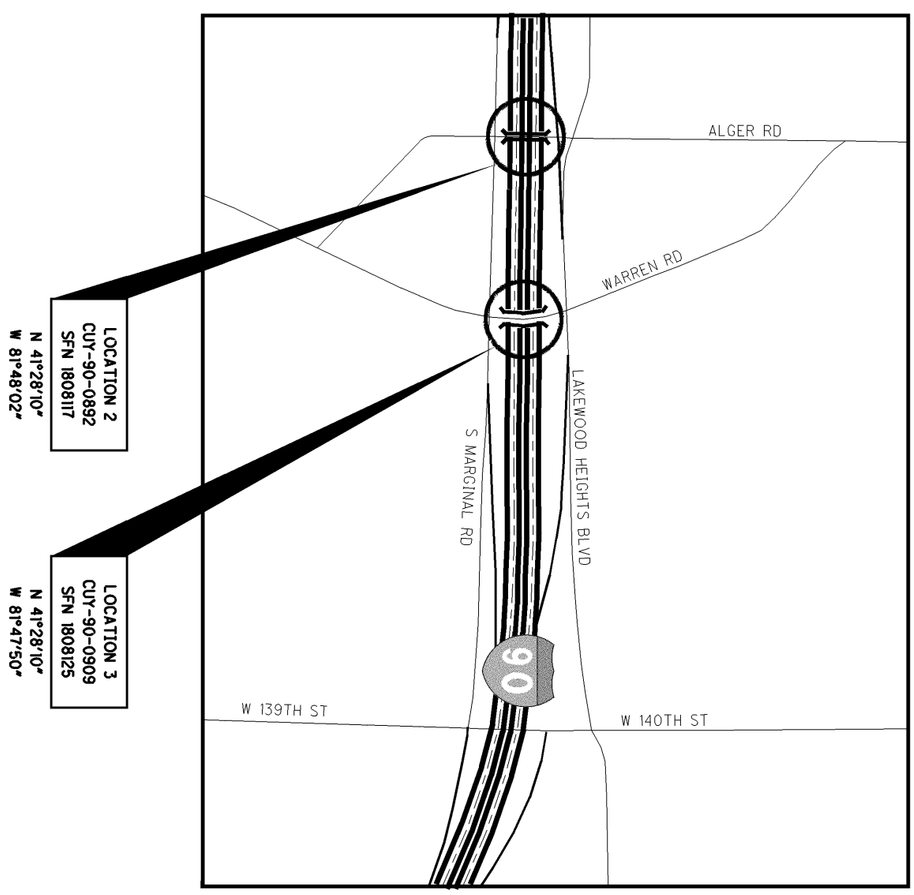
Approved Benita G. Tenwen, P.E.
Date 01/26/09 District Deputy Director of Transportation

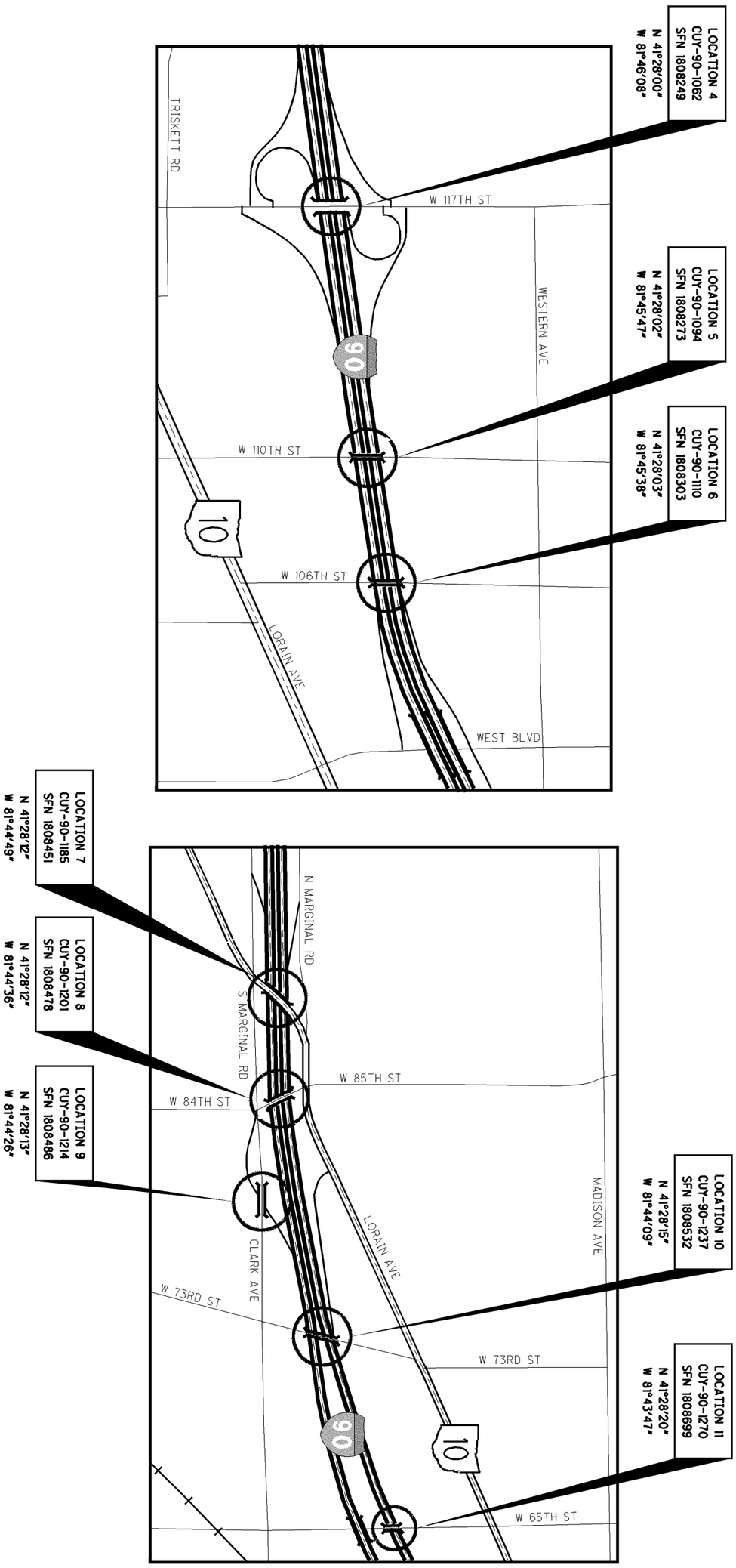
Approved Lalene M. Mollohan
Date 2-4-09 Director, Department of Transportation

FEDERAL PROJECT NO. NON-FEDERAL
PID NO. 83561
CONSTRUCTION PROJECT NO.
RAILROAD INVOLVEMENT NS / CSX
D12-BH-FY2009 FENCE
1 / 18

D12 - VA-BH-FY2009-VANDAL FENCE
090241 PID - 83561
Dist 12 4/15/2009


71
CLINTON RD
RIDGE RD
CSX TRANSPORTATION, INC.
CSX TRANSPORTATION, INC.
DENISON AVE
PARK DR
LOCATION 1
CUY-71-1559
SFN 1805177
N 41°26'53"
W 81°44'09"

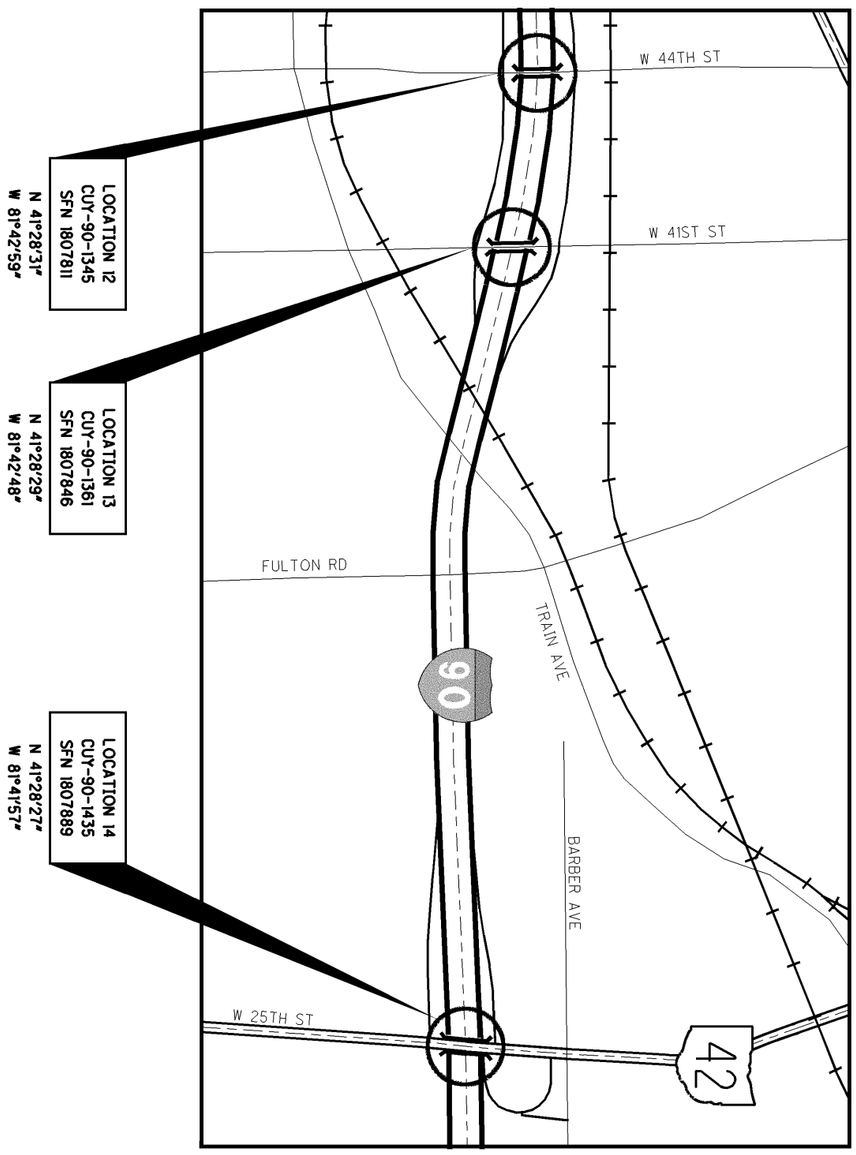

ALGER RD
WARREN RD
LAKEWOOD HEIGHTS BLVD
S MARGINAL RD
90
W 139TH ST
W 140TH ST
LOCATION 2
CUY-90-0892
SFN 1808117
N 41°28'10"
W 81°48'02"
LOCATION 3
CUY-90-0909
SFN 1808125
N 41°28'10"
W 81°47'50"

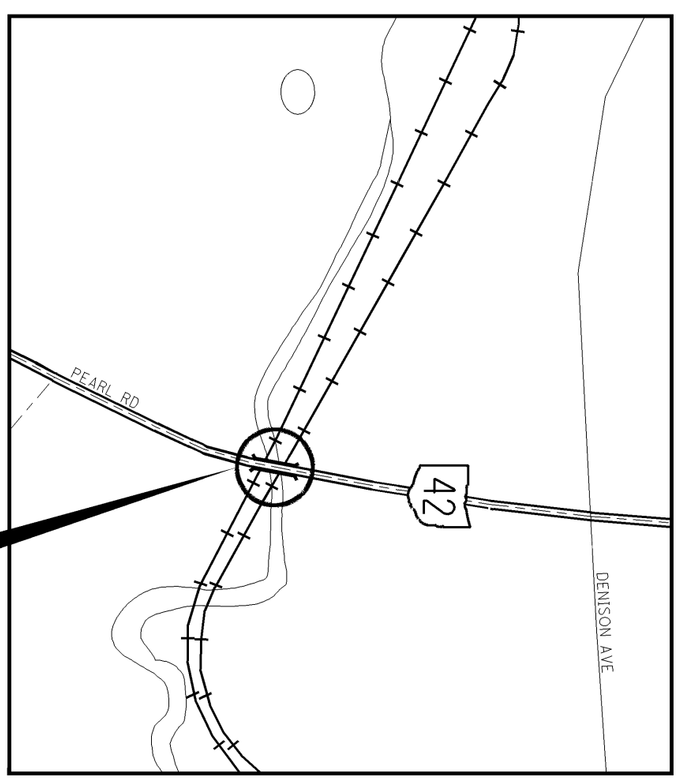


D12-BH-FY2009
FENCE

LOCATION MAPS

CALCULATED EJK
CHECKED NRC


W 44TH ST
W 41ST ST
FULTON RD
TRAIN AVE
BARBER AVE
W 25TH ST
90
42
LOCATION 12
CUY-90-1345
SFN 1807811
N 41°28'31"
W 81°42'59"
LOCATION 13
CUY-90-1361
SFN 1807846
N 41°28'29"
W 81°42'48"
LOCATION 14
CUY-90-1435
SFN 1807889
N 41°28'27"
W 81°41'57"


PEARL RD
42
DENISON AVE
LOCATION 15
CUY-42-1457
SFN 1803271
N 41°28'40"
W 81°42'11"

PROJECT DESCRIPTION

THIS PROJECT CONSISTS OF VANDAL PROTECTION FENCE INSTALLATION AND SEALING OF CONCRETE SURFACES.

REFER TO STANDARD BRIDGE DRAWINGS

LISTED ON TITLE SHEET

AND TO SUPPLEMENTAL SPECIFICATIONS

LISTED ON TITLE SHEET

AND TO PROPOSAL NOTES

STEEL PRICE ADJUSTMENT NOTE

DESIGN SPECIFICATIONS

THE STRUCTURES CONFORM TO "STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES" ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS, 17TH EDITION, 2002 AND THE ODOT BRIDGE DESIGN MANUAL.

RIGHT OF WAY

ALL WORK IS TO BE PERFORMED WITHIN THE EXISTING RIGHT OF WAY OR EASEMENTS OR WITHIN STATE PROPERTY.

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 SECTIONS 102.05, 105.02, AND 513.04 OF THE 2008 CONSTRUCTION AND MATERIAL SPECIFICATIONS.

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

THE EXISTING STRUCTURE PLANS MAY BE REVIEWED AT THE:

OHIO DEPARTMENT OF TRANSPORTATION
DISTRICT 12 OFFICE
5500 TRANSPORTATION BOULEVARD
GARFIELD HEIGHTS, OH 44125

COOPERATION BETWEEN CONTRACTORS

THE CONTRACTOR SHALL COOPERATE AND COORDINATE HIS/HER OPERATIONS WITH THE CONTRACTORS ON OTHER PROJECTS THAT MAY BE IN FORCE DURING THE LIFE OF THE CONTRACT. NO WAIVER OF ANY PROVISIONS OF 105.08 OF THE 2008 CONSTRUCTION AND MATERIAL SPECIFICATIONS IS INTENDED.

UTILITY OWNERSHIP

THE NATURE OF THE WORK REQUIRED BY THIS PROJECT WILL NOT AFFECT ANY KNOWN UTILITIES IN THE WORK AREAS.

LIMITATION OF OPERATIONS

THE CONTRACTOR'S ACTIVITIES AND WORK SCHEDULE SHALL BE CONSTRAINED BY THE FOLLOWING LIMITATION:

MAINTENANCE OF TRAFFIC RESTRICTIONS (REFER TO THE MAINTENANCE OF TRAFFIC SHEETS IN THIS PLAN).

EXISTING DIMENSIONS

ALL DIMENSIONS ARE ±. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING THE EXISTING FENCE LENGTHS, POST SPACING AND DIMENSIONS OF THE EXISTING BASE PLATES AND OTHER HARDWARE PRIOR TO ORDERING OR INSTALLING NEW VANDAL PROTECTION FENCE.

GENERAL FENCE REPAIR/REPLACEMENT NOTES

THE CONTRACTOR SHALL ONLY REMOVE THE PORTION OF FENCE THAT CAN BE REPLACE/REPAIRED WITHIN THAT DAY'S OPERATION.

THE CONTRACTOR MUST MAINTAIN PEDESTRIAN TRAFFIC ACROSS THE STRUCTURE AT ALL TIMES.

THE CONTRACTOR MAY CLOSE THE SIDEWALK IF PERMITTED BY THE PROJECT ENGINEER. THE CLOSURE SHALL BE PER THE STANDARD DRAWING MT-110.20.

THE CONTRACTOR SHOULD BE AWARE THAT SOME STRUCTURES HAVE SIGNS ON/NEAR THEM AND THEY WILL NEED TO AVOID COVERING OR DAMAGING THE SIGNS.

ITEM 202-FENCE REMOVED, AS PER PLAN "A"

THIS ITEM IS USED FOR:
LOCATION 1 – CUY-71-1559

THE CONTRACTOR SHALL REMOVE AND DISPOSE OF THE EXISTING FENCE FABRIC. CARE SHALL BE TAKEN TO NOT DAMAGE THE EXISTING POSTS, BASE PLATES AND HARDWARE THAT IS TO REMAIN.

PAYMENT FOR ALL OF THE ABOVE SHALL BE AT THE UNIT PRICE BID PER FOOT FOR ITEM 202-FENCE REMOVED, AS PER PLAN "A" AND SHALL INCLUDE ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS NECESSARY TO COMPLETE THE ABOVE WORK.

CALCULATED FLK
CHECKED NRC

GENERAL NOTES

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I:\PROJECTS\pid83561\dgn\83561_gen notes.dgn 26-JAN-2009 9:13AM fkonopko

ITEM 202-FENCE REMOVED, AS PER PLAN "B"

THE CONTRACTOR SHALL REMOVE AND DISPOSE OF ALL FENCE AND INCIDENTAL HARDWARE EXCEPT FOR THE POSTS. THE POSTS SHALL BE CUT TO THE LIMITS SHOWN IN THE PLAN.

PAYMENT FOR ALL OF THE ABOVE SHALL BE AT THE UNIT PRICE BID PER FOOT FOR ITEM 202–FENCE REMOVED, AS PER PLAN "B" AND SHALL INCLUDE ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS NECESSARY TO COMPLETE THE ABOVE WORK.

ITEM 512-SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)

THE COLOR OF THE FINISH COAT SHALL BE AS INDICATED ON THE BRIDGE DATA SHEET.

ITEM SPECIAL-URETHANE TOP COAT SEALER

THE CONTRACTOR SHALL REFER TO CMS 512 FOR REQUIREMENTS, WITH THE FOLLOWING EXCEPTIONS:

(512.03E AND 512.03F) THE EXISTING URETHANE TOP COAT SHALLNOT BE REMOVED. THE REQUIREMENT FOR A "SURFACE THAT FEELS LIKE 100 GRIT SANDPAPER" IS WAIVED FOR THIS NOTE. USE ONLY A WATER BLAST AT 7000 PSI TO PREPARE THE SURFACE. DO NOT REPAIR SPALLED AND STRUCTURALLY UNSOUND AREAS.

THE COLOR OF THE FINISH COAT SHALL BE AS INDICATED ON THE BRIDGE DATA SHEET.

PAYMENT FOR ALL OF THE ABOVE SHALL BE AT THE UNIT PRICE BID PER SQUARE YARD FOR ITEM SPECIAL – URETHANE TOP COAT SEALER AND SHALL INCLUDE ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS NECESSARY TO COMPLETE THE ABOVE WORK.

ITEM 514 – FIELD PAINTING, MISC.: PAINT EXISTING FENCE POSTS, RAILS, AND APPURTENANCES

THIS ITEM IS USED FOR:
LOCATION 1 – CUY-71-1559

THIS ITEM SHALL CONSIST OF PAINTING ALL ELEMENTS OF THE EXISTING FENCE EXCEPT THE FABRIC. CMS 514.04 AND 514.07 SHALL APPLY TO THIS ITEM.

SURFACE PREPARATION:

1. VISIBLE DEPOSITS OF OIL, GREASE OR OTHER MATERIALS THAT MAY INTERFERE WITH COATING ADHESION SHALL BE REMOVED IN ACCORDANCE WITH SSPC-SP1 SOLVENT CLEANING. THIS CAN BE ACCOMPLISHED USING, DEVOE COATINGS, DEVPREP 88 HEAVY DUTY CLEANER. APPLY THE SOLUTION WITH BRUSH, ROLLER OR LOW PRESSURE SPRAY. IF SURFACE IS HOT, WET BEFORE APPLYING CLEANER SOLUTION. MODERATE SCRUBBING WILL AID IN PERFORMANCE AND SPEED OF CLEANING. ALLOW CLEANER TO REMAIN FOR FIVE TO TEN MINUTES, BUT DO NOT ALLOW THE SURFACE TO DRY. RINSE WITH LARGE AMOUNTS OF CLEAN WATER. IF PROTECTED, THIS CAN ALSO BE ACCOMPLISHED WITH A POWER WASHER (1500 PSI MINIMUM). A THOROUGH RINSING IS VERY IMPORTANT BECAUSE ALL OF THE DEVPREP 88 CLEANER MUST BE REMOVED. DO NOT ALLOW THE CLEANER TO DRY ON THE SURFACE.

2. THEN CONTINUE THE SURFACE PREPARATION WITH SSPC-SP2 HAND TOOL CLEANING TO REMOVES ALL LOOSE MILL SCALE, LOOSE RUST, AND ANY OTHER LOOSE DETRIMENTAL FOREIGN MATTER. HAND TOOL CLEANING CAN BE ACCOMPLISHED WITH HAND WIRE BRUSHING, HAND ABRADING, OR HAND SCRAPING.

3. AFTER HAND TOOL CLEANING AND PRIOR TO PAINTING, REMOVE DIRT, DUST, OR SIMILAR CONTAMINANTS FROM THE SURFACE. THE ACCEPTABLE METHOD WOULD BE BY BLOW OFF WITH CLEAN DRY AIR. FOLLOW COMPLETELY ALL REQUIREMENTS OF SSPC-SP1 SOLVENT CLEANING AND SSPC-SP2 HAND TOOL CLEANING METHODS.

PRODUCTS AND APPLICATION:

1. AREAS WHICH ARE NOT TO BE PAINTED SHALL BE COVERED SO THAT SPILLAGE DOES NOT OCCUR ON THESE AREAS.

2. APPLY 1 COAT OF EPOXY MASTIC, SUCH AS DEVOE COATINGS, BAR RUST 231 MULTI-PURPOSE EPOXY MASTIC OR APPROVED EQUAL BY BRUSH, ROLLER OR IF ALLOWED BY SPRAY APPLICATION AT 3.0-5.0 MILS DFT. STRIPE COATING IS REQUIRED AROUND ALL ATTACHMENTS, BOLTS, WELDS, AND SHARP EDGES. AREAS WHICH ARE NOT TO BE PAINTED SHALL BE COVERED SO THAT SPILLAGE DOES NOT OCCUR ON THESE AREAS. REFER TO MANUFACTURER'S RECOMMENDATIONS FOR ANY OTHER APPLICATION REQUIREMENTS.

3. APPLY 1 COAT OF URETHANE GLOSS ENAMEL SUCH AS DEVOE COATINGS, DEVTHANE 379UVA ALIPHATIC URETHANE GLOSS ENAMEL OR APPROVED EQUAL IN THE COLOR BLACK BY BRUSH, ROLLER, OR IF ALLOWED BY SPRAY APPLICATION AT 2.0-3.0 MILS DFT. STRIPE COATING IS REQUIRED AROUND ALL ATTACHMENTS, BOLTS, WELDS, AND SHARP EDGES. REFER TO MANUFACTURER'S RECOMMEDATIONS FOR ANY OTHER APPLICATION REQUIREMENTS.

PAYMENT FOR ALL OF THE ABOVE SHALL BE AT THE UNIT PRICE BID PER FOOT FOR ITEM 514 – FIELD PAINTING, MISC.: PAINT EXISTING FENCE POSTS, RAILS, AND APPURTENANCES AND SHALL INCLUDE ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS NECESSARY TO COMPLETE THE ABOVE WORK.

ITEM 519-PATCHING CONCRETE STRUCTURE, AS PER PLAN

THIS ITEM IS INTENDED TO BE USED TO REPAIR THE AREA NECESSARY FOR PROPER FENCE INSTALLATION. THIS ITEM IS USED FOR:
LOCATION 14 – CUY-90-1435

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.

ALL EQUIPMENT, LABOR, AND MATERIALS TO PERFORM THE ABOVE WORK SHALL BE INCLUDED IN PAYMENT UNDER ITEM 519 – PATCHING CONCRETE STRUCTURE, AS PER PLAN.

ITEM 607-VANDAL PROTECTION FENCE, 6' STRAIGHT, COATED FABRIC, AS PER PLAN

THIS ITEM SHALL BE USED TO INSTALL NEW VANDAL PROTECTION FENCE PER THE DETAILS SHOWN IN THE PLANS.

AT LOCATIONS WHERE THE EXISTING FENCE SPANS ACROSS THE EXPANSION JOINT, DO NOT INSTALL LINE RAILS AND EXPANSION JOINT SLEEVES; HOWEVER, THE FABRIC SHALL REMAIN CONTINUOUS ACROSS THE EXPANSION JOINT.

THE FENCE, FENCE FABRIC, RAILS, POSTS, PLATES, TIEWIRES, NUTS, BOLTS, ANCHOR BOLTS, CAULK AND ANY ADDITIONAL VISIBLE HARDWARE WHALL BE COATED BLACK.

CALCULATED FLK
CHECKED NRC

GENERAL NOTES

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AT LOCATIONS WHERE THE EXISTING RIGHT-OF-WAY FENCE IS CONNECTED TO THE EXISTING FENCE ON THE STRUCTURE, THE CONTRACTOR SHALL RECONNECT THE EXISTING RIGHT-OF-WAY FENCE TO THE NEWLY INSTALLED VANDAL PROTECTION FENCE. THIS WORK IS INCLUDED IN THIS ITEM.

PAYMENT FOR ALL OF THE ABOVE SHALL BE AT THE UNIT PRICE BID PER FOOT FOR ITEM 607 – VANDAL PROTECTION FENCE, 6' STRAIGHT, COATED FABRIC, AS PER PLAN AND SHALL INCLUDE ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS NECESSARY TO COMPLETE THE ABOVE WORK.

ITEM 607-FENCE, MISC.: VANDAL PROTECTION FABRIC, COATED

THIS ITEM IS USED FOR:
LOCATION 1 – CUY-71-1559

THE CONTRACTOR SHALL INSTALL NEW VANDAL PROTECTION FABRIC PER STANDARD DRAWING VPF-1-90. THE PVC COATING SHALL BE BLACK AND MATCH THE NEWLY PAINTED POSTS.

PAYMENT FOR ALL OF THE ABOVE SHALL BE AT THE UNIT PRICE BID PER FOOT FOR ITEM 607– FENCE, MISC.: VANDAL PROTECTION FABRIC, COATED AND SHALL INCLUDE ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS NECESSARY TO COMPLETE THE ABOVE WORK.

ITEM 607-FENCE, MISC.: INSTALL NEW LINE RAIL

THIS ITEM IS USED FOR:
LOCATION 15 – CUY-42-1457

THE CONTRACTOR SHALL REPLACE THE MISSING SECTIONS OF LINE RAIL WITH A NEW ALUMINUM LINE RAIL THAT IS COMPATIBLE WITH THE EXISTING FENCE. ANY ADDITIONAL HARDWARE REQUIRED FOR INSTALLATION TO THE EXISTING FENCE IS INCLUDED IN THIS ITEM.

PAYMENT FOR ALL OF THE ABOVE SHALL BE AT THE UNIT PRICE BID PER FOOT FOR ITEM 607– FENCE, MISC.: INSTALL NEW LINE RAIL WHICH SHALL INCLUDE ALL LABOR, EQUIPMENT, MATERIALS, DISPOSAL AND INCIDENTALS NECESSARY TO COMPLETE THE ABOVE WORK.

ITEM 607-FENCE, MISC.: ACCESS OPENING AND COVER AT LIGHT POLE

THIS ITEM IS USED FOR:
LOCATION 15 – CUY-42-1457

PROVIDE ACCESS HOLES AND COVER PLATES AT ALL LIGHT POLE LOCATIONS IN ACCORDANCE WITH STANDARD CONSTRUCTION DRAWING VPF-1-90. THE COVERS AND ALL INCIDENTAL HARDWARE REQUIRED FOR INSTALLATION IN THE EXISTING FENCE IS INCLUDED IN THIS ITEM.

PAYMENT FOR ALL OF THE ABOVE SHALL BE AT THE UNIT PRICE BID PER EACH FOR ITEM 607– FENCE, MISC.: ACCESS OPENING AND COVER AT LIGHT POLE WHICH SHALL INCLUDE ALL LABOR, EQUIPMENT, MATERIALS, DISPOSAL AND INCIDENTALS NECESSARY TO COMPLETE THE ABOVE WORK.

ITEM 607-FENCE, MISC.: REPAIR OR REPLACE EXISTING TRUSS ROD

THIS ITEM IS USED FOR:
LOCATION 15 – CUY-42-1457

RECONNECT OR REPLACE THE EXISTING TRUSS RODS AT THE EXPANSION JOINT LOCATIONS AND BRIDGE ENDS WITH ALUMINUM PARTS COMPATIBLE WITH THE EXISTING CHAIN LINK FENCE. ADDITIONAL HARDWARE MAY BE REQUIRED FOR THIS WORK.

PAYMENT FOR ALL OF THE ABOVE SHALL BE AT THE UNIT PRICE BID PER EACH FOR ITEM 607 – FENCE, MISC.: REPAIR OR REPLACE EXISTING TRUSS ROD WHICH SHALL INCLUDE ALL LABOR, EQUIPMENT, MATERIALS, DISPOSAL AND INCIDENTALS NECESSARY TO COMPLETE THE ABOVE WORK.

ITEM 607-FENCE, MISC.: REPLACE LOOP CAPS

THIS ITEM IS USED FOR:
LOCATION 15 – CUY-42-1457

THE CONTRACTOR SHALL REMOVE AND DISPOSE OF ANY EXISTING LOOP CAPS PER CMS 202. THE EXISTING TOP LINE RAIL IS TO REMAIN AND SHOULD BE USED WITH THE NEW LOOP CAPS. RECONNECT THE EXISTING TOP LINE RAIL TO THE EXISTING FENCE FABRIC IF NECESSARY.

PAYMENT FOR ALL OF THE ABOVE SHALL BE AT THE UNIT PRICE BID PER EACH FOR ITEM 607– FENCE, MISC.: REPLACE LOOP CAPS WHICH SHALL INCLUDE ALL LABOR, EQUIPMENT, MATERIALS, DISPOSAL AND INCIDENTALS NECESSARY TO COMPLETE THE ABOVE WORK.

ITEM 607-FENCE, MISC.: REPLACE EXTRUDED POST

THIS ITEM IS USED FOR:
LOCATION 15 – CUY-42-1457

AT THE POST LOCATION, THE CONTRACTOR IS PERMITTED TO DETACH A PORTION OF THE FENCE FABRIC NECESSARY TO PERFORM THIS WORK.

REMOVE THE EXISTING POST THAT HAS SLIPPED OUT OF THE ORIGINAL SLEEVE. FILL THE EXISTING HOLES WITH NONSHRINK, NONMETALLIC GROUT. INSTALL A BASE PLATE, ADD NEW FENCE POST AND RECONNECT THE EXISTING FENCE PER DETAILS IN THE PLAN. IF ANY ADDITIONAL PATCHING IS REQUIRED FOR THE DOWELING OF ANCHOR BOLTS BY THE ENGINEER, IT SHALL BE INCLUDED IN THIS ITEM.

PAYMENT FOR ALL OF THE ABOVE SHALL BE AT THE UNIT PRICE BID PER EACH FOR ITEM 607– FENCE, MISC.: REPLACE EXTRUDED POST WHICH SHALL INCLUDE ALL LABOR, EQUIPMENT, MATERIALS, DISPOSAL AND INCIDENTALS NECESSARY TO COMPLETE THE ABOVE WORK.

ITEM 607-FENCE, MISC.: REPAIR FENCE FABRIC

THIS ITEM IS USED FOR:
LOCATION 15 – CUY-42-1457

REPAIR ANY OPEN AREAS OF THE FENCE FABRIC WITH ALUMINUM FABRIC WITH THE SAME FENCE OPENING SIZE AND WIRE DIAMETER.

PAYMENT FOR ALL OF THE ABOVE SHALL BE AT THE UNIT PRICE BID PER SQUARE FOOT FOR ITEM 607 – FENCE, MISC.: REPAIR FENCE FABRIC WHICH SHALL INCLUDE ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS NECESSARY TO COMPLETE THE ABOVE WORK.

LOCATION / BRIDGE NO.																ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	GENERAL						
CUY-71-1559 1805177 Ridge Rd	CUY-90-0892 1808117 Alger Rd	CUY-90-0909 1808125 Warren Rd	CUY-90-1062 1808249 West 117th St	CUY-90-1094 1808273 West 110th St	CUY-90-1110 1808303 West 106th St	CUY-90-1185 1808451 US-10 (Lorain Blvd)	CUY-90-1201 1808478 W 84th St - W 85th St	CUY-90-1214 1808486 Clark Ave	CUY-90-1237 1808532 West 73rd St	CUY-90-1270 1808639 West 65th St	CUY-90-1345 1807811 West 44th St	CUY-90-1361 1807846 West 41st St	CUY-90-1435 1807889 US-42 (West 25th St)	CUY-42-1457 1803271 US-42 (West 25th St) over Big Creek							
															LUMP	201	11000	LUMP		CLEARING AND GRUBBING	
1572																202	75001	1572	FT	FENCE REMOVED, AS PER PLAN A	5, 11
	502	589	470	437	448	636	457	503	566	393	364	378	437			202	75001	6180	FT	FENCE REMOVED, AS PER PLAN B	6, 12
											146	151	173			512	10100	470	SQ YD	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)	9
585	197	229	185	173	177	247	181	198	221	147						SPEC	512E71500	2540	SQ YD	URETHANE TOP COAT SEALER	9
1572																514	27710	1572	FT	FIELD PAINTING, MISC.: PAINT EXISTING FENCE POSTS, RAILS, AND APPURTENANCES	
													5			519	11101	5	SQ FT	PATCHING CONCRETE STRUCTURE, AS PER PLAN	6, 9
	502	589	470	437	448	636	457	503	566	393	364	378	437			607	39901	6180	FT	VANDAL PROTECTION FENCE, 6' STRAIGHT, COATED FABRIC, AS PER PLAN	6, 12
1572																607	98000	1572	FT	FENCE, MISC.: VANDAL PROTECTION FABRIC, COATED	
														26		607	98000	26	FT	FENCE, MISC.: INSTALL NEW LINE RAIL	
														17		607	98100	17	EACH	FENCE, MISC.: INSTALL LIGHT POLE ACCESS OPENING AND COVER	
														28		607	98100	28	EACH	FENCE, MISC.: REPAIR OR REPLACE EXISTING TRUSS ROD	
														376		607	98100	376	EACH	FENCE, MISC.: REPLACE EXISTING LOOP CAPS	
														12		607	98100	12	EACH	FENCE, MISC.: REPLACE EXTRUDED POST	
														19		607	98300	19	SQ FT	FENCE, MISC.: REPAIR FENCE FABRIC	
															LUMP	614	11000	LUMP		MAINTAINING TRAFFIC	
															50	614	11100	50	HOUR	LAW ENFORCEMENT OFFICER WITH PATROL CAR	
															4	614	18601	4	SIGN-MO	PORTABLE CHANGEABLE MESSAGE SIGN, AS PER PLAN	16
															6	619	16010	6	MONTH	FIELD OFFICE, TYPE B	
															LUMP	624	10000	LUMP		MOBILIZATION	
															1000	832	30000	1000	EACH	EROSION CONTROL	

CALCULATED E.JK
CHECKED NRC

GENERAL SUMMARY

D12-BH-FY2009
FENCE

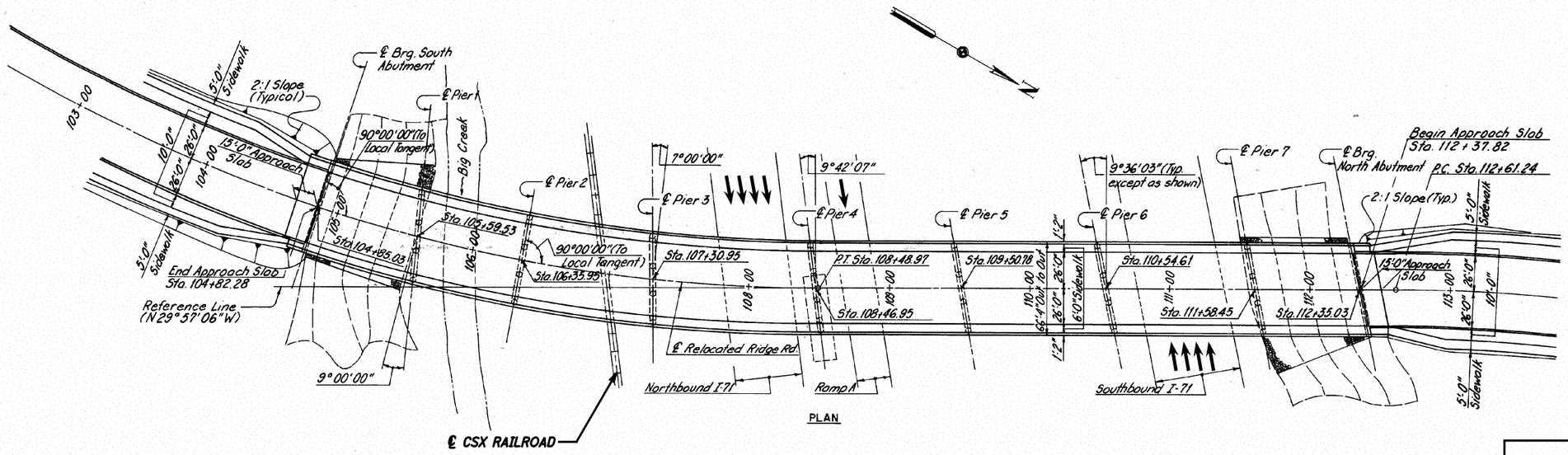
8
18

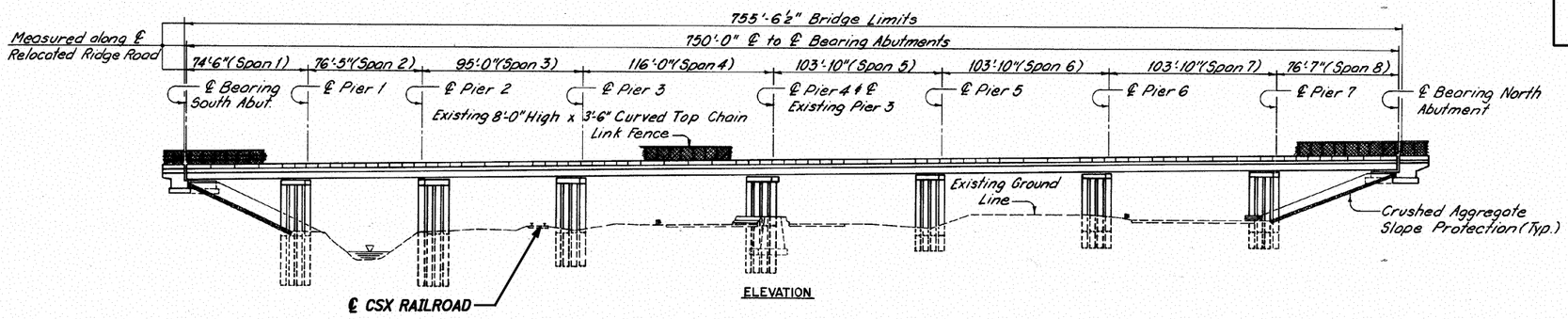
LOCATION	BRIDGE NUMBER SFN DESCRIPTION	STRUCTURE TYPE	STRUCTURE LIMITS	ROADWAY WIDTH (f/f curbs)	LANES ON	LANES UNDER	PROPOSED WORK (* Fence and Sealing Details can be found on sheet 12)	LENGTH OF EXISTING AND PROPOSED FENCE	SEALER Federal Color No. 595b-
1	CUY-71-1559 1805177 Ridge Rd. over IR-71 and CSX	8 Span Continuous Steel Beam	756' ◊	52' - 0" ◊	4	9	Refer to plan sheets for work at this location.	769' - 8" ◊ Left 801' - 9 1/2" ◊ Right	27778 (Light Neutral, semigloss)
2	CUY-90-0892 1808117 Alger Rd. over IR-90	2 Span Continuous Steel Beam	255' ◊	28' - 0" ◊	2	8	- Replace existing bridge fence * - Reconnect proposed bridge fence with existing R/W fence. - Seal portions of concrete parapet with Urethane *	249' - 2 3/8" ◊ Left 252' - 7 3/4" ◊ Right	27722 (Buff, semigloss)
3	CUY-90-0909 1808125 Warren Rd. over IR-90	2 Span Continuous Steel Beam	298' ◊	64' - 0" ◊	5	8	- Replace existing bridge fence * - Reconnect proposed bridge fence with existing R/W fence. - Seal portions of concrete parapet with Urethane *	294' - 5" ◊ Left 294' - 1 1/4" ◊ Right	27722 (Buff, semigloss)
4	CUY-90-1062 1808249 W. 117th St. over IR-90	3 Span Continuous Steel Beam	239' ◊	84' - 0" ◊ (w/ 4' - 0" ◊ median)	6	10	- Replace existing bridge fence * - Reconnect proposed bridge fence with existing R/W fence. - Seal portions of concrete parapet with Urethane *	234' - 11" ◊ Left 234' - 11" ◊ Right	27722 (Buff, semigloss)
5	CUY-90-1094 1808273 W. 110th St. over IR-90	3 Span Continuous Steel Beam	222' ◊	28' - 0" ◊	2	10	- Replace existing bridge fence * - Reconnect proposed bridge fence with existing R/W fence. - Seal portions of concrete parapet with Urethane *	218' - 3 1/2" ◊ Left 218' - 3 1/2" ◊ Right	27722 (Buff, semigloss)
6	CUY-90-1110 1808303 W. 106th St. over IR-90	3 Span Continuous Steel Beam	228' ◊	28' - 0" ◊	2	10	- Replace existing bridge fence * - Reconnect proposed bridge fence with existing R/W fence. - Seal portions of concrete parapet with Urethane *	224' - 1 1/4" ◊ Left 224' - 1 1/4" ◊ Right	27722 (Buff, semigloss)
7	CUY-90-1185 1808451 US-10/Lorain Ave. over IR-90	3 Span Continuous Steel Beam	321' ◊	54' - 0" ◊	4	10	- Replace existing bridge fence * - Seal portions of concrete parapet with Urethane *	312' - 11 3/8" ◊ Left 322' - 7 3/8" ◊ Right	27722 (Buff, semigloss)
8	CUY-90-1201 1808478 W. 84th St./W. 85th St. Connector over IR-90	3 Span Continuous Steel Beam	234' ◊	52' - 0" ◊	4	8	- Replace existing bridge fence * - Seal portions of concrete parapet with Urethane *	228' - 6" ◊ Left 228' - 6" ◊ Right	27722 (Buff, semigloss)
9	CUY-90-1214 1808486 Clark Ave. over IR-90	3 Span Continuous Steel Beam	223' ◊	52' - 0" ◊	4	2	- Replace existing bridge fence * - Seal portions of concrete parapet with Urethane *	255' - 2 1/4" ◊ Left 248' - 3 1/8" ◊ Right	27722 (Buff, semigloss)
10	CUY-90-1237 1808532 W. 73rd St. over IR-90	3 Span Continuous Steel Beam	287' ◊	36' - 0" ◊	2	11	- Replace existing bridge fence * - Seal portions of concrete parapet with Urethane *	283' - 2 1/4" ◊ Left 283' - 2 1/4" ◊ Right	27722 (Buff, semigloss)
11	CUY-90-1270 1808699 W. 65th St. over IR-90 WB	3 Span Continuous Steel Beam	196' ◊	40' - 0" ◊	2	4	- Replace existing bridge fence * - Seal portions of concrete parapet with Urethane *	196' - 5 1/4" ◊ Left 196' - 5 1/4" ◊ Right	27722 (Buff, semigloss)
12	CUY-90-1345 1807811 W. 44th St. over IR-90	2 Span Continuous Steel Beam	186' ◊	36' - 0" ◊	2	8	- Replace existing bridge fence * - Seal portions of concrete parapet with Epoxy-Urethane *	181' - 11" ◊ Left 181' - 11" ◊ Right	27722 (Buff, semigloss)
13	CUY-90-1361 1807846 W. 41st St. over IR-90	2 Span Continuous Steel Beam	193' ◊	40' - 0" ◊	3	8	- Replace existing bridge fence * - Seal portions of concrete parapet with Epoxy-Urethane *	189' - 0" ◊ Left 189' - 0" ◊ Right	27722 (Buff, semigloss)
14	CUY-90-1435 1807889 US-42/W. 25th St. over IR-90	2 Span Continuous Steel Beam	222' ◊	48' - 0" ◊	4	9	- Patch existing parapet at Northeast Corner - Replace existing bridge fence * - Seal portions of concrete parapet with Epoxy-Urethane *	218' - 3" ◊ Left 218' - 3" ◊ Right	27722 (Buff, semigloss)
15	CUY-42-1457 1803271 US-42/W. 25th St. over Big Creek, NSC and CSX	18 Span Continuous Steel Beam	1714' ◊	52' - 0" ◊	4	RR	Refer to plan sheets for work at this location.	n/a	n/a

CALCULATED EJK
CHECKED NRC

BRIDGE DATA SHEET

D12-BH-FY2009
FENCE





PROPOSED WORK:

- Remove existing fence fabric
- Paint existing posts, line rails, and remaining hardware
- Install new black-coated VPF fabric, including light pole access covers
- Seal top and inside face of barrier with urethane

PLAN AND ELEVATION VIEWS ARE TAKEN FROM ORIGINAL PLANS AND SHOULD BE USED FOR INFORMATIONAL PURPOSES.

ALL DIMENSIONS ARE "±".

DO ONLY WORK LISTED UNDER PROPOSED WORK.

DESIGN AGENCY
Ohio Dept. of Transportation
District 12

DESIGNED	DRAWN	REVIEWED	DATE
EJK/NRC	EJK	KJW	01/09
CHECKED		REVISED	STRUCTURE FILE NUMBER
			1805177

GENERAL PLAN
Bridge No. CUY-71-1559
Ridge Road over IR-71 & CSX RR

D12 BH FY2009
PID No. 83561

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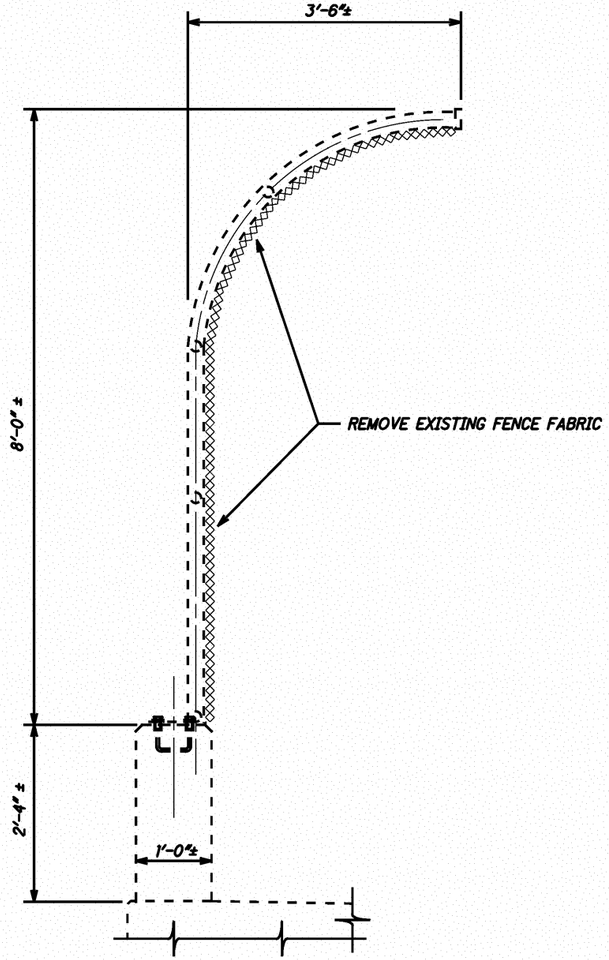
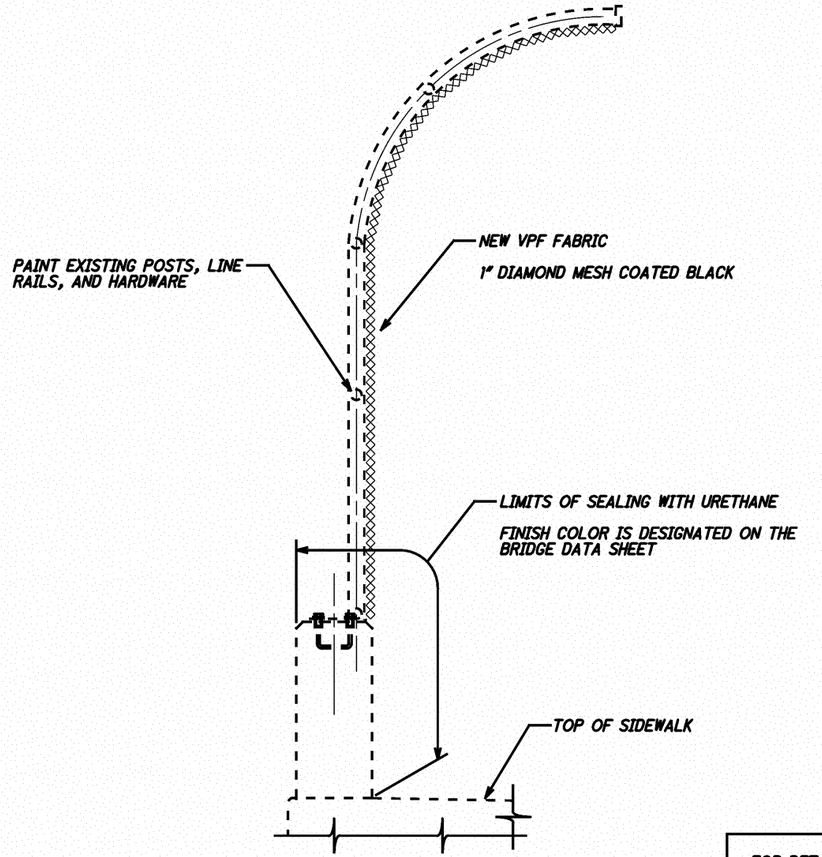


EXISTING TYPICAL SECTION



PROPOSED TYPICAL SECTION

FOR DETAILS NOT SHOWN, REFER TO STANDARD DRAWING NO. VPF-1-90

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DESIGN AGENCY
Ohio Dept. of Transportation
District 12

DESIGNED	DRAWN	REVIEWED	DATE
EJK/NRC	EJK	KJW	01/09
CHECKED	REVISED	STRUCTURE FILE NUMBER	1805177

FENCE DETAILS
Bridge No. CUY-71-1559
Ridge Road over IR-71 & CSX RR

D12-BH-FY2009
PID No. 83561

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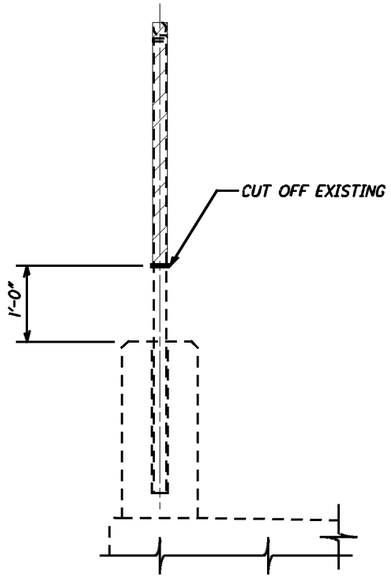
ITEM 202 - FENCE REMOVED, AS PER PLAN



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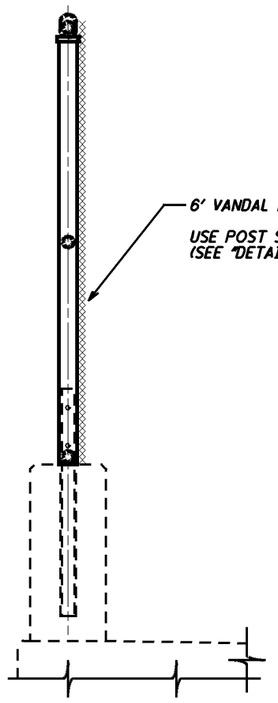
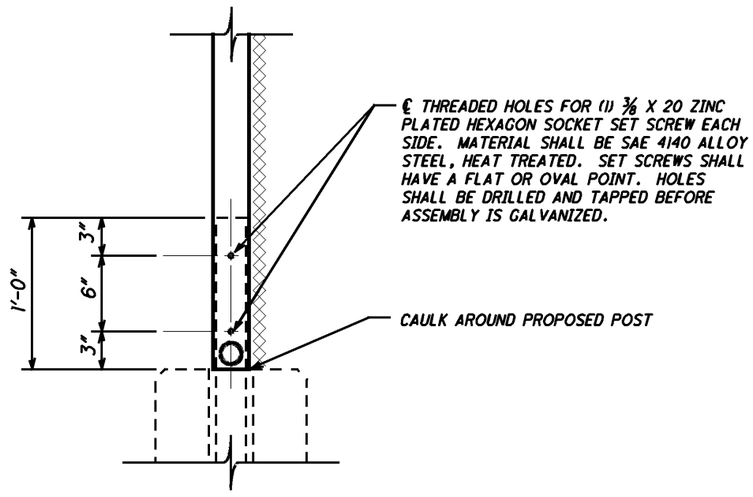
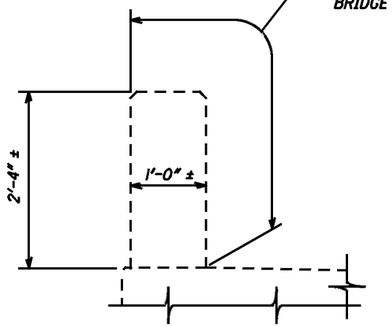


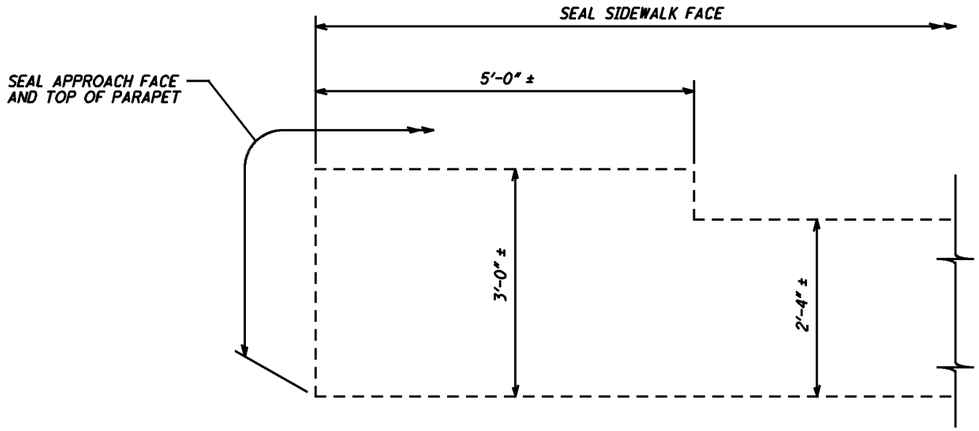
PROPOSED TYPICAL SECTION



DETAIL A



SEALING LIMITS



SEALING LIMITS PARTIAL ELEVATION

DESIGN AGENCY
Ohio Dept. of Transportation
District 12

DESIGNED EJK/NRC
DRAWN EJK
REVIEWED KJW
DATE 01/09
CHECKED
REVISED
STRUCTURE FILE NUMBER VARIES

FENCE REPLACEMENT AND SEALING DETAILS

For Locations 2 - 14

D12 BH FY2009
PID No. 83561

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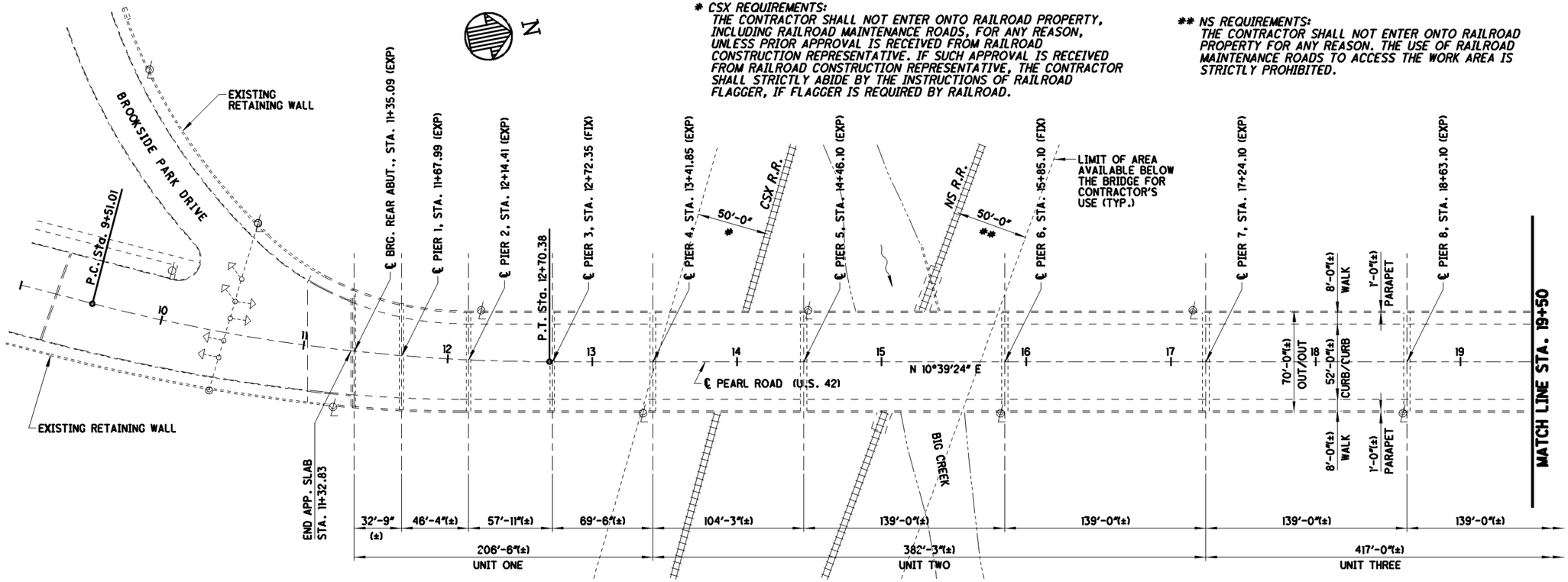
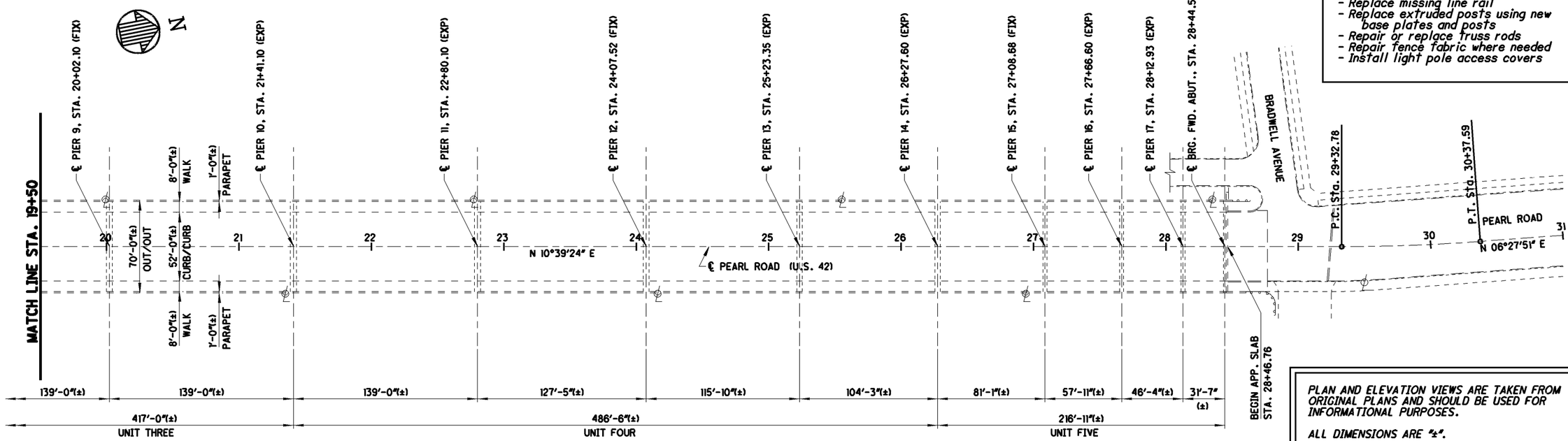
* CSX REQUIREMENTS:
THE CONTRACTOR SHALL NOT ENTER ONTO RAILROAD PROPERTY, INCLUDING RAILROAD MAINTENANCE ROADS, FOR ANY REASON, UNLESS PRIOR APPROVAL IS RECEIVED FROM RAILROAD CONSTRUCTION REPRESENTATIVE. IF SUCH APPROVAL IS RECEIVED FROM RAILROAD CONSTRUCTION REPRESENTATIVE, THE CONTRACTOR SHALL STRICTLY ABIDE BY THE INSTRUCTIONS OF RAILROAD FLAGGER, IF FLAGGER IS REQUIRED BY RAILROAD.

** NS REQUIREMENTS:
THE CONTRACTOR SHALL NOT ENTER ONTO RAILROAD PROPERTY FOR ANY REASON. THE USE OF RAILROAD MAINTENANCE ROADS TO ACCESS THE WORK AREA IS STRICTLY PROHIBITED.



GENERAL PLAN



GENERAL PLAN

PROPOSED WORK:

REPAIR PORTIONS OF THE EXISTING FENCE:
- *Replace all loop caps*
- *Replace missing line rail*
- *Replace extruded posts using new base plates and posts*
- *Repair or replace truss rods*
- *Repair fence fabric where needed*
- *Install light pole access covers*

PLAN AND ELEVATION VIEWS ARE TAKEN FROM ORIGINAL PLANS AND SHOULD BE USED FOR INFORMATIONAL PURPOSES.

ALL DIMENSIONS ARE "±".

DO ONLY WORK LISTED UNDER PROPOSED WORK.

DESIGN AGENCY: Ohio Dept. of Transportation, District 12

DESIGNED	DRAWN	REVIEWED	DATE
E.J.K./NRC	E.J.K.	K.J.W.	01/09
CHECKED	REVISED	STRUCTURE FILE NUMBER	1803271

GENERAL PLAN (1)
Bridge No. CUY-42-1457
US-42 over Big Creek, NSC, & CSX

D12 BH FY2009
PID No. 83561

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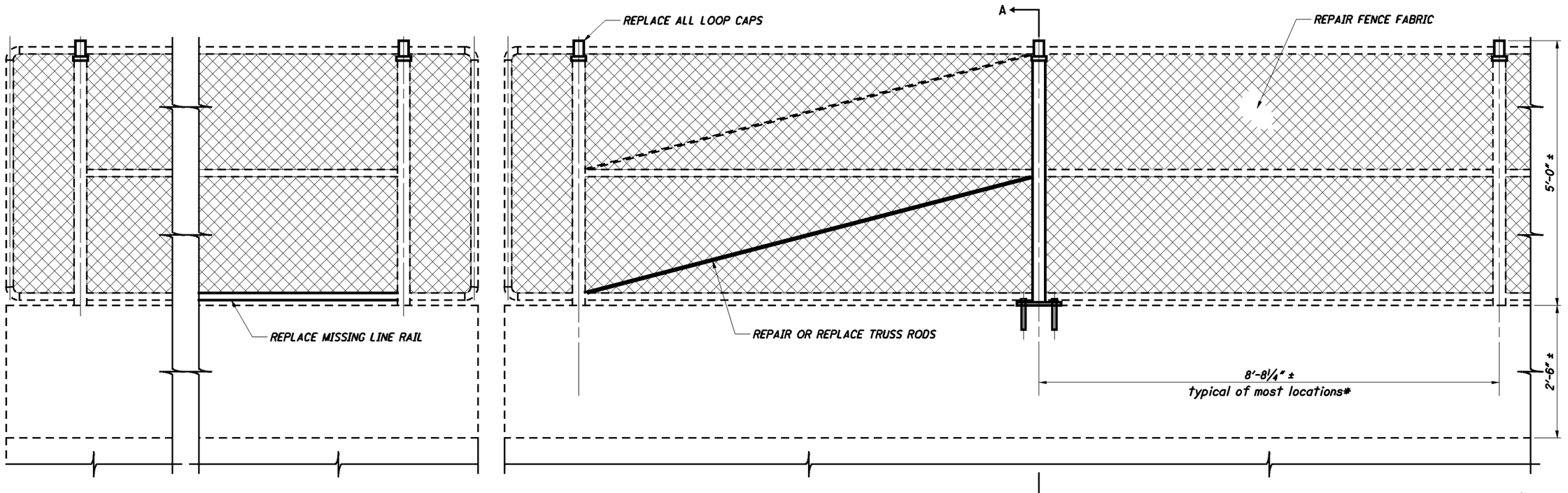
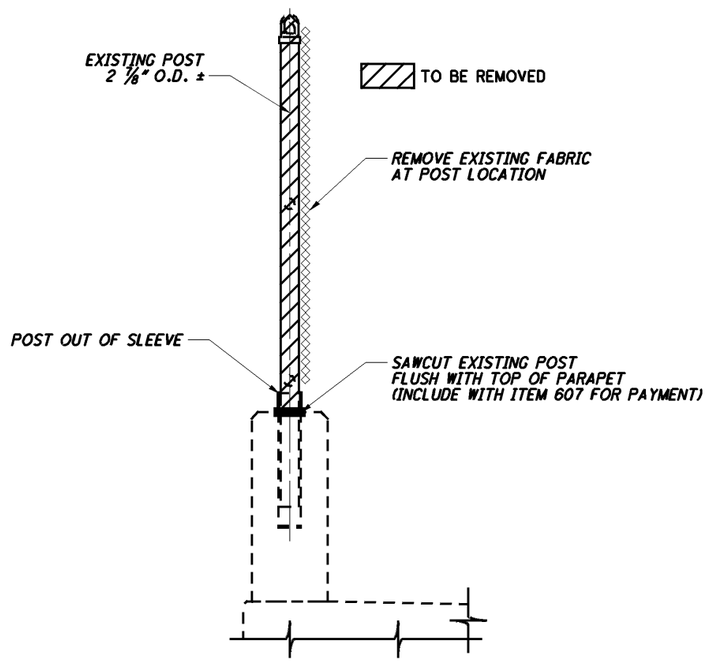
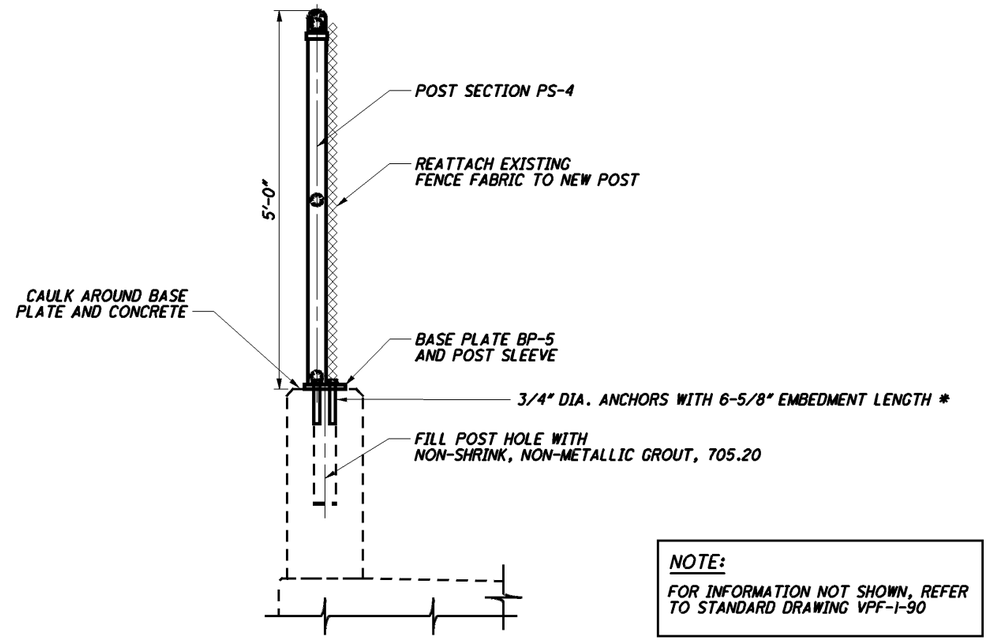


TYPICAL SECTION



EXISTING TYPICAL SECTION A-A

(FOR POST REPLACEMENT)



PROPOSED TYPICAL SECTION A-A

(FOR POST REPLACEMENT)

NOTE:

FOR INFORMATION NOT SHOWN, REFER TO STANDARD DRAWING VPF-1-90

* - OR AS RECOMMENDED BY THE MANUFACTURER

DESIGN AGENCY
Ohio Dept. of Transportation
District 12

DESIGNED	DRAWN	REVIEWED	DATE
EJK/NRC	EJK	KJW	01/09
CHECKED	REVISED	STRUCTURE FILE NUMBER	1803271

FENCE REPAIR DETAILS
Bridge No. CUY-42-1457
US-42 over Big Creek, NSC, & CSX

D12 BH FY2009
PID No. 83561

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ITEM 614 - MAINTAINING TRAFFIC

GENERALLY THE CONTRACTOR SHALL CONDUCT HIS OPERATIONS AS TO MAKE THE PROPOSED REPAIR WITH A MINIMUM OF HAZARD, DELAY AND INCONVENIENCE TO THE MOTORISTS USING THE HIGHWAY AFFECTED BY THE WORK DONE UNDER THIS CONTRACT. IN ADDITION TO THE CONSTRUCTION AND MATERIAL SPECIFICATIONS, THE FOLLOWING SPECIFIC PROVISIONS ARE MANDATORY.

I. NOTIFICATION

SINCE FUNCTIONAL TRAFFIC CONTROL IS A MAJOR CONCERN ON THIS PROJECT, IT IS ESSENTIAL THAT THE MOTORING PUBLIC BE ADEQUATELY FOREWARNED OF FUTURE LANE CLOSURES AND TRAFFIC CONSTRICTIONS. THEREFORE, THE CONTRACTOR MUST SUBMIT A WRITTEN SCHEDULE TO THE ENGINEER, RESPONSIBLE LAW ENFORCEMENT AGENCIES, CITY ENGINEER'S OFFICE, AND THE ODOT PUBLIC INFORMATION OFFICE (216-584-2007) INDICATING THE LOCATIONS AND DATES OF THE LANE CLOSURES AT LEAST 3 DAYS PRIOR TO THE IMPLEMENTATION OF ANY SUCH CLOSURES. USE PORTABLE CHANGEABLE MESSAGE SIGNS TO ALERT MOTORISTS 3 DAYS PRIOR TO THE IMPLEMENTATION OF ANY CHANGES SUCH AS LANE CLOSURES OR OTHER RESTRICTIONS.

II. LANE CLOSURE RESTRICTIONS

1. LANE CLOSURES MAY ONLY BE IMPLEMENTED AT THE TIMES PERMITTED BY THE "DISTRICT 12 PERMITTED LANE CLOSURE TIMES" LIST WHICH IS LOCATED ON THE ODOT WEB SITE:

   www.dot.state.oh.us/districts/D12/HighwayManagement/Pages/PermittedLaneClosures.aspx

   THE LATEST REVISION AT 14 DAYS PRIOR TO THE BID DATE SHALL BE IN EFFECT FOR THIS PROJECT.

2. ANY ROADWAY NOT LISTED IN THE "DISTRICT 12 PERMITTED LANE CLOSURE TIMES" SHALL NOT HAVE ANY WEEKDAY CLOSURES FROM 7:00AM - 9:00AM OR 3:00PM - 6:00 PM.

3. UNLESS OTHERWISE NOTED, EXIT AND ENTRANCE RAMP LANES SHALL REMAIN OPEN AT ALL TIMES AND EXHIBIT A MINIMUM WIDTH OF TEN (10) FEET.

4. NO LANE OR SHOULDER CLOSURES SHALL BE IN PLACE WHEN NO WORK IS BEING PERFORMED.

5. MAINTENANCE OF TRAFFIC SHALL FOLLOW THE INSTRUCTION OF THE STANDARD CONSTRUCTION DRAWINGS LISTED ON THE TITLE SHEET AND THE LATEST REVISION OF THE OMUTCD.

6. PEDESTRIAN TRAFFIC SHALL BE PERMITTED AND ACCOMMODATED ON AT LEAST ONE SIDE OF THE STRUCTURE AT ALL TIMES.

NOTWITHSTANDING THE ABOVE, NO LANE CLOSURES SHALL OCCUR DURING THE PERIOD BEGINNING AT 12:00 NOON ON THE DAY PRECEDING AND CONTINUING UNTIL 12:00 A.M. ON THE DAY FOLLOWING LEGAL HOLIDAYS AND HOLIDAY WEEKENDS SUCH AS MEMORIAL DAY, FOURTH OF JULY, AND LABOR DAY. FURTHERMORE, NO LANE CLOSURES ARE TO BE IMPLEMENTED OR IN PLACE DURING INCREASED TRAFFIC VOLUMES CAUSED BY SPECIAL EVENTS OR WHEN THE ENGINEER DEEMS THE CLIMATOLOGICAL CONDITIONS TOO HAZARDOUS.

III. MAINTENANCE OF TRAFFIC SYSTEMS

1. WHEN REQUIRED

   WHENEVER ANY PART OF THE TRAVELED SURFACE IS BEING WORKED UPON OR IS OTHERWISE NOT SUITABLE FOR SAFE AND CONVENIENT USE BY VEHICLES, TRAFFIC CONTROL DEVICES SUFFICIENT TO PROTECT SUCH AREAS TO ASSURE THE SAFE AND CONVENIENT PASSAGE OF VEHICULAR TRAFFIC SHALL BE INSTALLED AND MAINTAINED. SUCH TRAFFIC CONTROL DEVICES AND THE MANNER IN WHICH THEY ARE USED SHALL BE CONSISTENT WITH THESE PLANS AND THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS, HEREINAFTER REFERRED TO AS THE "MANUAL". THE TRAFFIC CONTROL DEVICE SYSTEM SHALL CONSTITUTE THE MINIMUM PROVISIONS FOR TRAFFIC CONTROL FOR EACH PARTICULAR SITUATION. WHENEVER THE ENGINEER DEEMS IT NECESSARY ESPECIALLY WHERE A GRADE, CURVE, OR MERGE CONDITIONS EXISTS, HE MAY DIRECT THAT ADDITIONAL OR ALTERNATIVE DEVICES BE USED.

2. CONDITIONS

   DURING ALL PARTS OF THIS PROJECT FLAGGERS, SIGNING, BARRICADES, FLASHING ARROWS, ETC. SHALL BE LOCATED AS INDICATED IN THE "MANUAL" OR AS SHOWN IN THE STANDARD DRAWINGS. TWO-WAY TRAFFIC SHALL BE MAINTAINED ON ONE LANE AT LEAST 10' WIDE AT ALL TIMES.

3. ADVANCE WARNING SIGNS

   ALL ADVANCE WARNING SIGNS FOR ANY CONDITION WHICH RESTRICTS TRAFFIC SHALL BE ERECTED BEFORE ANY SUCH RESTRICTION IS PUT INTO EFFECT. ALL SUCH SIGNS SHALL BE COVERED OR REMOVED FROM THE VIEW OF TRAFFIC WHENEVER THEY ARE NOT APPLICABLE.

4. FLAGGERS

   AT LEAST TWO FLAGGERS ARE REQUIRED FOR EACH CLOSURE. THE CONTRACTOR SHALL FURNISH ADDITIONAL FLAGGERS AS DIRECTED BY THE ENGINEER.

5. PROTECTION OF PUBLIC

   PERSONAL CARS SHALL NOT BE PARKED WITHIN THE RIGHT OF WAY.

6. FAILURE TO COMPLY

   IF THERE IS ANY FAILURE TO COMPLY WITH PROVISIONS FOR TRAFFIC CONTROL SET OUT IN THESE PLANS AND NOTES, OR WITH THE PROVISIONS OF THE "MANUAL", THE HIGHWAY IN THE VICINITY OF THE WORK AREA SHALL NOT BE CONSIDERED IN A CONDITION FOR THE SAFE AND CONVENIENT USE BY THE TRAVELING PUBLIC. ANY FAILURE TO KEEP THE HIGHWAY, IN THE VICINITY OF THE WORK AREA, IN A CONDITION FOR THE SAFE AND CONVENIENT USE BY THE TRAVELING PUBLIC SHALL BE CONSIDERED A BREACH OF THIS CONTRACT. WORK SHALL BE SUSPENDED UNTIL THE CONTRACTOR COMPLIES WITH THE PROVISIONS OF THE AFOREMENTIONED ITEMS.

IV. MAINTENANCE OF TRAFFIC MATERIALS

1. SIGNS

   SIGN DIMENSIONS AND SPECIFICATIONS, INCLUDING LETTER SIZES ARE TO BE AS PROVIDED IN THE "MANUAL", OR IN DESIGN DRAWINGS PROVIDED BY THE DEPARTMENT OF TRANSPORTATION. THE SIGNS SHALL BE SUBJECT TO APPROVAL OF THE ENGINEER PRIOR TO THE START OF THE PROJECT.

CALCULATED FLK CHECKED NRC

MAINTENANCE OF TRAFFIC NOTES

D12-BH-FY2009 FENCE

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2. SIGN SUPPORT

SIGN SUPPORTS SHALL BE OF SUFFICIENT SIZE AND MASS AS TO SUPPORT THE SIGNS AT THE APPROPRIATE HEIGHT. SUPPORTS SHALL BE AS SHOWN ON THE STANDARD DRAWINGS.

3. FLASHING ARROW REQUIREMENT

WHENEVER ANY PART OF THE TRAVELED SURFACE IS CLOSED, THE MOTORISTS SHALL BE WARNED AND DIRECTED BY THE CONTRACTOR THROUGH THE USE OF ONE FLASHING ARROW PANEL FOR EACH LANE CLOSED. THE CONTRACTOR SHALL REFER TO STANDARD DRAWING MT-35.10 AND THE PROVISIONS SET FORTH IN THE "MANUAL" FOR ALL INFORMATION REGARDING FURNISHING, MAINTAINING, AND USE OF FLASHING ARROW PANELS. PAYMENT FOR THE ABOVEMENTIONED ITEMS SHALL BE INCLUDED IN THE LUMP SUM BID FOR ITEM 614 - MAINTAINING TRAFFIC.

4. DRUMS

DRUMS SHALL BE IN ACCORDANCE WITH PERTINENT SECTIONS OF THE "MANUAL". ALL COSTS FOR INSTALLING, MAINTAINING, AND SUBSEQUENT REMOVAL OF SAID DRUMS IS TO BE INCLUDED IN THE LUMP SUM BID PRICE FOR ITEM 614 - MAINTAINING TRAFFIC.

5. CONES

CONES, IF UTILIZED, ARE TO BE LOCATED AS SHOWN IN THE "MANUAL" AND THE STANDARD DRAWINGS.

6. FLASHERS

FLASHERS SHALL BE 12 VOLT BATTERY-OPERATED MODELS WITH 7 INCH DIAMETER YELLOW LENSES ILLUMINATED BY RAPID INTERMITTENT FLASHERS OF SHORT DURATION AND ARE TO BE PLACED ON ALL SIGNS AT ALL TIMES AS REQUIRED BY THE "MANUAL" AND THE STANDARD CONSTRUCTION DRAWINGS.

V. PAYMENT

PAYMENT FOR PROVIDING, ERECTING, MAINTAINING AND REMOVING TEMPORARY MAINTENANCE OF TRAFFIC CONTROL DEVICES SHALL BE MADE UNDER THE LUMP SUM PRICE BID FOR ITEM 614 - MAINTAINING TRAFFIC.

ITEM 614 – LAW ENFORCEMENT OFFICER WITH PATROL CAR

IN ADDITION TO THE REQUIREMENTS OF ITEM 614 AND THE LATEST EDITION OF 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: DURING INITIAL SET-UP PERIODS, TEAR DOWN PERIODS, SUBSTANTIAL SHIFTS OF A CLOSURE OR WHEN NEW LANE CLOSURE ARRANGEMENTS ARE INITIATED.
- WHEN DIRECTED BY THE ENGINEER.

LAW ENFORCEMENT OFFICERS (L.E.O.'S) SHOULD NOT BE USED WHERE THE OMUTCD 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.

LAW ENFORCEMENT OFFICERS WITH PATROL CARS 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 QUANTITIES HAVE BEEN CARRIED TO THE GENERAL SUMMARY:

ITEM 614 - LAW ENFORCEMENT OFFICER WITH PATROL CAR.....5**0 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, HE MAY DO SO AT HIS OWN EXPENSE.

CONSTRUCTION TRAFFIC

ALL CONSTRUCTION TRAFFIC SHALL USE ACCEPTABLE TRUCK ROUTES TO ACCESS THE CONSTRUCTION AREA. USE OF LOCAL RESIDENTIAL STREETS IS STRICTLY PROHIBITED UNLESS ALLOWED IN WRITING BY THE LOCAL ENFORCEMENT AUTHORITY.

EQUIPMENT AND MATERIAL STORAGE

IN ORDER TO PROVIDE FOR THE SAFETY OF THE TRAVELING PUBLIC THE CONTRACTOR'S ATTENTION IS DIRECTED TO 614.03. IN ADDITION THE FOLLOWING PROVISIONS SHALL APPLY:

1. ANY REMOVED ITEMS SHALL NOT BE STORED ON THE RIGHT OF WAY FOR MORE THAN THIRTY (30) DAYS.
2. THE STORAGE OF EQUIPMENT, MATERIALS, AND VEHICLES WITHIN THE HIGHWAY RIGHT OF WAY WILL BE PERMITTED. THE NUMBER OF AREAS AND EXACT LOCATIONS SHALL BE APPROVED BY THE ENGINEER.
3. ALL DISTURBED AREAS SHALL BE RETURNED TO THEIR ORIGINAL CONDITION AT NO EXPENSE TO THE STATE.

CONTRACTORS EQUIPMENT AND OPERATION

ALL VEHICLES AND EQUIPMENT MUST BE EQUIPPED WITH AT LEAST ONE FLASHING, ROTATING, OR OSCILLATING AMBER LIGHT THAT IS VISIBLE IN ALL DIRECTIONS OF TRAFFIC FOR AT LEAST ONE QUARTER MILE, DAY OR NIGHT.

UNLESS BEHIND CONCRETE BARRIER, THE CONTRACTOR'S EQUIPMENT SHALL BE OPERATED IN THE DIRECTION OF TRAFFIC ONLY.

ITEM 614 - PORTABLE CHANGEABLE MESSAGE SIGNS, AS PER PLAN

THE CONTRACTOR SHALL FURNISH, INSTALL, MAINTAIN AND REMOVE, WHEN NO LONGER NEEDED, A CHANGEABLE MESSAGE SIGN, ON SITE, FOR THE DURATION OF THE PROJECT. THE SIGN SHALL BE OF A TYPE SHOWN ON A LIST OF APPROVED PCMS UNITS MAINTAINED BY THE DIRECTOR (OFFICE OF MATERIALS MANAGEMENT).

CALCULATED FLK CHECKED NRC

MAINTENANCE OF TRAFFIC NOTES

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THE APPROVED LIST OF PORTABLE CHANGEABLE MESSAGE SIGNS CAN BE FOUND ON THE ODOT WEBSITE BY CLICKING ON THE SERVICES MENU, THEN CLICKING ON MATERIALS MANAGEMENT. THE LIST CONTAINS CLASS A AND B UNITS WITH MINIMUM LEGIBILITY DISTANCES OF 475 FT. AND 650 FT. RESPECTIVELY.

EACH SIGN SHALL BE TRAILER-MOUNTED AND EQUIPPED WITH A FUNCTIONAL DIMMING MECHANISM, TO DIM THE SIGN DURING DARKNESS, AND A TAMPER AND VANDAL PROOF ENCLOSURE.

EACH SIGN SHALL BE PROVIDED WITH APPROPRIATE TRAINING AND OPERATION INSTRUCTIONS TO ENABLE ON-SITE PERSONNEL TO OPERATE AND TROUBLESHOOT THE UNIT.

THE SIGN SHALL ALSO BE CAPABLE OF BEING POWERED BY AN ELECTRICAL SERVICE DROP FROM A LOCAL UTILITY COMPANY.

PCMS TRAILERS SHOULD BE DELINEATED ON A PERMANENT BASIS BY AFFIXING RETROREFLECTIVE MATERIAL, IN A CONTINUOUS LINE ON THE FACE OF THE TRAILER AS SEEN BY ONCOMING ROAD USERS.

PLACEMENT, OPERATION, MAINTENANCE AND ALL ACTIVATION OF THE SIGNS BY THE CONTRACTOR SHALL BE AS DIRECTED BY THE ENGINEER. THE PCMS SHALL BE LOCATED IN A HIGHLY VISIBLE POSITION YET PROTECTED FROM TRAFFIC. THE CONTRACTOR SHALL, AT THE DIRECTION OF THE ENGINEER, RELOCATE THE PCMS TO IMPROVE VISIBILITY OR ACCOMMODATE CHANGED CONDITIONS. WHEN NOT IN USE, THE PCMS SHALL BE TURNED OFF. ADDITIONALLY, WHEN NOT IN USE FOR EXTENDED PERIODS OF TIME, THE PCMS SHALL BE TURNED, FACING AWAY FROM ALL TRAFFIC, AND SHALL DISPLAY ONE OR MORE TYPE G YELLOW RETROREFLECTIVE SHEETING SURFACES OF 9-INCH BY 15-INCH MINIMUM SIZE FACING TRAFFIC.

THE ENGINEER SHALL BE PROVIDED ACCESS TO EACH SIGN UNIT AND SHALL BE PROVIDED WITH APPROPRIATE TRAINING AND OPERATION INSTRUCTIONS TO ENABLE ODOT PERSONNEL TO OPERATE AND TROUBLESHOOT THE UNIT, AND TO REVISE SIGN MESSAGES, IF NECESSARY. THE CONTRACTOR SHALL IMPLEMENT A SYSTEM WHEREBY CHANGEABLE MESSAGES WILL BE IMPLEMENTED WITHIN __1__ HOURS FOLLOWING TELEPHONE NOTIFICATION FROM THE PROJECT ENGINEER TO A DESIGNATED PHONE.

ALL MESSAGES TO BE DISPLAYED ON THE SIGN WILL BE PROVIDED BY THE ENGINEER. A LIST OF ALL REQUIRED PRE-PROGRAMMED MESSAGES WILL BE GIVEN TO THE CONTRACTOR AT THE PROJECT PRECONSTRUCTION CONFERENCE. THE SIGN SHALL HAVE THE CAPABILITY TO STORE UP TO 99 MESSAGES. MESSAGE MEMORY OR PRE-PROGRAMMED DISPLAYS SHALL NOT BE LOST AS A RESULT OF POWER FAILURES TO THE ON-BOARD COMPUTER.

THE SIGN LEGEND SHALL BE CAPABLE OF BEING CHANGED IN THE FIELD. THREE-LINE PRESENTATION FORMATS WITH UP TO SIX MESSAGE PHASES SHALL BE SUPPORTED. PCMS FORMAT SHALL PERMIT THE COMPLETE MESSAGE FOR EACH PHASE TO BE READ AT LEAST TWICE.

THE PCMS SHALL CONTAIN AN ACCURATE CLOCK AND PROGRAMMING LOGIC WHICH WILL ALLOW THE SIGN TO BE ACTIVATED, DEACTIVATED OR MESSAGES CHANGED AUTOMATICALLY AT DIFFERENT TIMES OF THE DAY FOR DIFFERENT DAYS OF THE WEEK.

THE PCMS UNIT SHALL BE MAINTAINED IN GOOD WORKING ORDER BY THE CONTRACTOR IN ACCORDANCE WITH THE PROVISIONS OF CMS 614.07. THE CONTRACTOR SHALL, PRIOR TO ACTIVATING THE UNIT, MAKE ARRANGEMENTS, WITH AN AUTHORIZED SERVICE AGENT FOR THE PCMS, TO ASSURE PROMPT SERVICE IN THE EVENT OF FAILURE. ANY FAILURE SHALL NOT RESULT IN THE SIGN BEING OUT OF SERVICE FOR MORE THAN 12 HOURS, INCLUDING WEEKENDS. FAILURE TO COMPLY MAY RESULT IN AN ORDER TO STOP WORK AND OPEN ALL TRAFFIC LANES AND/OR IN THE DEPARTMENT TAKING APPROPRIATE ACTION TO SAFELY CONTROL TRAFFIC.

THE ENTIRE COST TO CONTROL TRAFFIC, ACCRUED BY THE DEPARTMENT DUE TO THE CONTRACTOR'S NONCOMPLIANCE, WILL BE DEDUCTED FROM MONEYS DUE, OR TO BECOME DUE THE CONTRACTOR ON HIS CONTRACT.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR 24-HOUR-PER-DAY OPERATION AND MAINTENANCE OF THESE SIGNS ON THE PROJECT FOR THE DURATION OF THE PHASES WHEN THE PLAN REQUIRES THEIR USE.

PAYMENT FOR THE ABOVE DESCRIBED ITEM SHALL BE AT THE CONTRACT UNIT PRICE. PAYMENT SHALL INCLUDE ALL LABOR, MATERIALS, EQUIPMENT, FUELS, LUBRICATING OILS, SOFTWARE, HARDWARE AND INCIDENTALS TO PERFORM THE ABOVE DESCRIBED WORK.

THERE SHALL BE ONE PORTABLE CHANGEABLE MESSAGE SIGN FOR 4 MONTHS.

ITEM 614, PORTABLE CHANGEABLE MESSAGE SIGN, AS PER PLAN ....**4 SIGN-MONTH**

CONTINUOUS ACCESS

THE CONTRACTOR SHALL MAINTAIN SAFE AND ADEQUATE DRIVEWAYS AND WALKWAYS IN ORDER TO PROVIDE CONTINUOUS ACCESS FOR PEDESTRIANS, PASSENGER VEHICLES, TRUCKS, AND SAFETY EQUIPMENT TO ALL ADJOINING PROPERTIES. THE COST FOR ALL MATERIALS, EQUIPMENT AND LABOR NECESSARY TO PROVIDE CONTINUOUS ACCESS SHALL BE INCLUDED IN THE LUMP SUM PRICE BID FOR ITEM 614 - MAINTAINING TRAFFIC.

MAINTENANCE OF TRAFFIC SCHEME

THE CONTRACTOR SHALL DEVISE A SIMPLE MAINTENANCE OF TRAFFIC SCHEME, WHICH SHALL BE STAMPED BY A PROFESSIONAL ENGINEER (SCHEME MAY BE A HAND SKETCH) AND PRESENTED TO THE DISTRICT WORK ZONE SAFETY ENGINEER AND PROJECT ENGINEER FOR ACCEPTANCE AT LEAST TWO WEEKS PRIOR TO IMPLEMENTATION. IN GENERAL, THE METHODS FOR MAINTAINING TRAFFIC THAT THE CONTRACTOR PROPOSES TO USE FOR CONDUCTING THE REQUIRED WORK IN A SAFE AND EFFICIENT MANNER, SUPPORTED BY HAND SKETCHES AS NECESSARY. THE MAINTENANCE OF TRAFFIC SCHEME SHALL BE IN CONFORMANCE WITH THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES, LATEST REVISION, THE REFERENCES STANDARD CONSTRUCTION DRAWINGS, THE ATTACHED MAINTENANCE OF TRAFFIC SHEETS, AND THE SPECIFICATIONS. THE CONTRACTOR SHALL NOT COMMENCE WORK UNTIL THE MAINTENANCE OF TRAFFIC SCHEME HAS BEEN APPROVED.

ALL WORK SHALL BE CONDUCTED FROM WITHIN A ONE OR TWO (1 OR 2) LANE CLOSURE USING DRUMS ACCORDING TO THE RESTRICTIONS AND THE CONCEPTS PRESENTED IN MT-95.30 AND ASSOCIATED STANDARD CONSTRUCTION DRAWINGS MT-98.12 THRU MT-98.16 (SEE TITLE SHEET), AND THESE PLANS.

IF DURING THE PROJECT THE ENGINEER DETERMINES THAT THE APPROVED MAINTENANCE OF TRAFFIC PLAN IS NOT PERFORMING AS DESIRED, THE WORK SHALL BE SUSPENDED UNTIL THE PROBLEM IS RESOLVED TO THE SATISFACTION OF THE ENGINEER AND THE MAINTENANCE OF TRAFFIC PLAN IS REVISED ACCORDINGLY. ANY COSTS OR DELAYS INCURRED AS A RESULT OF THE FAILURE OF THE SATISFACTION OF THE ENGINEER SHALL BE THE FULL RESPONSIBILITY OF THE CONTRACTOR.

DURING NON-WORKING HOURS, ALL LANES SHALL BE IN FULL OPERATION WITH ALL TRAFFIC CONTROL SIGNS, EXCEPT OW-124 (ROAD CONSTRUCTION AHEAD) SIGNS, REMOVED OR COVERED AND ALL CHANNELIZING DEVICES REMOVED FROM THE PAVEMENT SURFACES. CHANNELIZING DEVICES MAY BE STORED OR DEPLOYED TEMPORARILY ADJACENT TO THE SHOULDER TO MINIMIZE THE NIGHTLY TRAFFIC CONTROL SET-UP TIME.

CALCULATED FLK CHECKED NRC

MAINTENANCE OF TRAFFIC NOTES

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WORKSITE TRAFFIC SUPERVISOR

THE CONTRACTOR SHALL EMPLOY, SUBJECT TO THE APPROVAL OF THE ENGINEER/SUPERVISOR, A CERTIFIED WORKSITE TRAFFIC SUPERVISOR (WTS). THE WTS SHALL BE CERTIFIED FROM ONE OF THE FOLLOWING ORGANIZATIONS:

1. AMERICAN TRAFFIC SAFETY SERVICE ASSOCIATION (ATSSA), PHONE NUMBER 1-800-272-8772, CERTIFIED TRAFFIC CONTROL SUPERVISOR (TCS).

2. NATIONAL HIGHWAY INSTITUTE, DESIGN AND OPERATION OF WORK ZONE TRAFFIC CONTROL, PHONE NUMBER 1-703-235-0528.

3. THE OHIO CONTRACTORS ASSOCIATION, TRAFFIC CONTROL SUPERVISOR (OCA/TCS) WORK ZONE CLASS, ONLY IF TAKEN AFTER MAY 5, 2004, PHONE NUMBER 1-614-599-7915.

4. OHIO LABORERS' TRAINING, TRAFFIC CONTROL SUPERVISORS CLASS, PHONE NUMBER 1-740-599-7915.

THE WTS POSITION IS ESTABLISHED FOR THE PURPOSE OF SUPERVISING THE INSTALLATION OF THE WORK ZONE, MONITORING IT AND CORRECTING ANY DEFICIENCIES IN THE WORK ZONE. THE WTS SHALL OVERSEE ALL OPERATIONS THAT AFFECT THE MOVEMENT OF VEHICULAR AND PEDESTRIAN TRAFFIC THROUGH THE WORK ZONE.

THE WTS SHALL BE PRESENT WHEN THE CONTRACTOR OR SUBCONTRACTOR INSTALLS A TRAFFIC RESTRICTION, LANE CLOSURE, ETC. IN LIEU OF THE WTS BEING PRESENT WHEN A SUBCONTRACTOR HAS A TRAFFIC CONTROL ZONE IN PLACE THE SUBCONTRACTOR MAY USE HIS OWN PERSONNEL THAT IS A CERTIFIED WTS. THE CONTRACTOR AND SUBCONTRACTOR MUST PRESENT A COPY OF HIS WTS CERTIFICATE TO THE PROJECT ENGINEER.

A WTS MUST BE PRESENT FOR ANY CLOSURE OR TRAFFIC RESTRICTION THAT TAKES PLACE ON THE PROJECT. THE WTS MAY BE A PART OF THE WORKING CREW AND MUST BE IN CHARGE OF SETTING UP THE WORK ZONE. AFTER THE WORK ZONE IS IN PLACE THE WTS MAY RESUME OTHER DUTIES NOT RELATED TO WORK ZONE TRAFFIC CONTROL. IF THE RESTRICTIONS ARE SHORT TERM, THE WTS SHALL MONITOR THE ZONE FOR COMPLIANCE. TRAFFIC CONTROL WILL BE THE WTS'S MAIN DUTY DURING IMPLEMENTATION OF THE WORK ZONES. THE WTS SHALL HAVE THE AUTHORITY TO HAVE THE DEFICIENCIES CORRECTED AS SOON AS POSSIBLE. THE WTS SHALL PROVIDE THE PROJECT ENGINEER A SKETCH OF THE (TCP) TRAFFIC CONTROL PLAN EVERY DAY THERE IS TO BE A SHORT TERM TRAFFIC RESTRICTION, LANE CLOSURE, ETC. THIS TCP SHALL SHOW HOW THE WORK ZONES ARE TO BE IMPLEMENTED.

A 24-HOUR PHONE NUMBER SHALL BE MADE AVAILABLE TO THE PROJECT ENGINEER/SUPERVISOR IN ORDER TO CONTACT THE WTS. THE WTS SHALL HAVE A PAGER AND/OR CELL PHONE NUMBER PROVIDED TO THE PROJECT ENGINEER.

FAILURE OF THE CONTRACTOR TO COMPLY WITH ANY OF THE ABOVE, SHALL CONSTITUTE CAUSE FOR THE PROJECT ENGINEER / SUPERVISOR TO DEDUCT $500.00 PER DAY FROM MONEY DUE THE CONTRACTOR NOT AS A PENALTY BUT AS A LIQUIDATED DAMAGE.

PAYMENT FOR THE WTS SHALL BE INCLUDED UNDER THE LUMP SUM ITEM 614 – MAINTAINING TRAFFIC.

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WATERWORK NOTES

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(B) THE PRESTRESSED CONCRETE CYLINDER STRAIGHT PIPE SHALL, IN GENERAL, BE SIXTEEN (16) OR TWENTY(20) FEET IN LENGTH BUT BENDS, TEES AND OTHER FITTINGS AND CLOSURE PIECES MAY BE MADE IN SHORTER LENGTHS. THE NOMINAL THICKNESS OF THE CORE AND THE NOMINAL THICKNESS OF THE MORTAR COATING SHALL NOT BE LESS THAN THAT GIVEN IN THE FOLLOWING TABLE:

NOMINAL I.D.	CORE THICKNESS	MINIMUM MORTAR COATING OVER WIRE
30"	1-7/3"	1-1/4"

THE PRESTRESSED CONCRETE CYLINDER PIPE SHALL CONSIST OF A CORE FORMED BY A CONTINUOUS ARC-WELDED STEEL CYLINDER WITH STEEL JOINT RINGS WELDED TO ITS ENDS, LINED WITH CONCRETE, WRAPPED UNDER TENSION WITH A WIRE OF HIGH TENSILE STRENGTH AND COATED WITH A DENSE COVERING OF CEMENT MORTAR. EACH PIPE SHALL BE CONSTRUCTED WITH A SELF-CENTERING EXPANSION JOINT, SEALED WITH A RUBBER GASKET, AND CAPABLE OF CARING FOR EARTH SETTLEMENT AND EXTREMES OF TEMPERATURE. THE PIPE LINE SHALL BE COMPLETE, INCLUDING ALL STRAIGHT PIPE, BEVEL END PIPE, BENDS, TEES, SPECIAL END PIPE AND ANY AND ALL OTHER FITTINGS WHICH ARE REQUIRED FOR THE PROPER COMPLETION OF THE WORK AS SHOWN ON THE DRAWINGS OR AS DIRECTED. PIPE SHALL BE THE PRODUCT OF A WELL-KNOWN AND REPUTABLE MANUFACTURER AND OF THE TYPE WHICH HAS BEEN SUCCESSFULLY USED IN SIMILAR OR EQUIVALENT INSTALLATIONS ELSEWERE. THE ENDS OF PIPE SHALL BE AT RIGHT ANGLES TO THE PIPE AXIS. PIPES MAY BE BEVELED TO FORM CURVES. MAXIMUM ALLOWABLE BEVEL ANGLE SHALL BE SUCH AS MANUFACTURED AS STANDARD BEVELS. THE CONCRETE LINING OF THE STEEL CYLINDER SHALL BE FORMED BY CENTRIFUGAL, VERTICAL, OR OTHER APPROVED CASTING METHOD. PROPORTIONS OF CEMENT, FINE AND COARSE AGGREGATE AND WATER USED IN MIXING THE CONCRETE SHALL BE AS SPECIFIED IN AWWA C301-72. A MINIMUM OF 7 BAGS OF CEMENT SHALL BE USED PER CUBIC YARD OF CONCRETE. COMPRESSIVE STRENGTH OF THE CONCRETE SHALL BE AS SPECIFIED IN AWWA C301-72. CONCRETE SHALL ATTAIN A MINIMUM COMPRESSIVE STRENGTH OF 3000 PSI IN SEVEN DAYS AND 4500 PSI IN 28 DAYS.

(C) THE PIPE SHALL BE REINFORCED WITH A STEEL CYLINDER. THE STEEL FOR CYLINDERS SHALL MEET THE REQUIREMENTS OF SEC. 2.7 OF AWWA C301-72 EXCEPT THAT THE MINIMUM YIELD POINT SHALL BE 30,000 PSI AND CYLINDERS SHALL BE NOT LESS THAN 10 GAUGE, U.S. STANDARD. WHERE THE PIPES ARE DESIGNED FOR SPECIAL CONDITIONS OR FOR HIGH OPERATING PRESSURES, THE CYLINDER MAY BE MADE FROM HOT-ROLLED SHEETS OF SPECIAL ALLOY STEEL HAVING HIGHER ELASTIC LIMIT AND ULTIMATE STRENGTH THAN THOSE SPECIFIED. IN SUCH CASE, THE SHEETS SHALL BE OF GOOD WELDING QUALITY AND SHALL CONFORM TO THE STEEL MANUFACTURER'S PUBLISHED SPECIFICATIONS FOR THE SPECIAL GRADE OF STEEL BEING SUPPLIED. EACH COMPLETED CYLINDER WITH JOINT RINGS WELDED TO IT SHALL BE SUBJECTED TO A HYDROSTATIC TEST BY CLOSING THE ENDS OF THE JOINT RINGS, FILLING WITH WATER IN CONTACT AT ALL POINTS WITH WELDS, AND RAISING THE WATER PRESSURE TO STRESS THE CYLINDER TO A FIBRE STRESS OF 25,000 POUNDS PER SQUARE INCH. WHILE UNDER PRESSURE TEST, ALL WELDS SHALL BE THOROUGHLY INSPECTED. IF ANY LEAKS ARE FOUND, THEY SHALL BE REPAIRED AND THE CYLINDER SHALL BE RETESTED. THE FINISHED CYLINDER WITH JOINT RINGS ATTACHED SHALL BE WATER TIGHT UNDER THE REQUIRED TEST PRESSURE. ARC WELDING SHALL BE AN APPROVED PROCESS AND TEST WELDS SHALL BE FURNISHED FROM THE WORK AS REQUIRED. THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER DETAILED DESIGNS AND SHALL RECEIVE HIS APPROVAL BEFORE THE CONSTRUCTION OF ANY PIPE.

(D) THE HIGH TENSILE WIRE USED FOR CIRCUMFERENTIAL REINFORCEMENT SHALL BE OF HARD-DRAWN STEEL SPRING WIRE CONFORMING TO ASTM DESIGNATION A227. THE CIRCUMFERENTIAL REINFORCEMENT PROPERTIES MAY BE INCREASED BY THE MANUFACTURER UPON APPROVAL BY THE ENGINEER. TEST REPORTS WILL BE REQUIRED BEFORE APPROVAL. THE AVERAGE GROSS WRAPPING STRESS OF THE HIGH TENSILE WIRE SHALL NOT EXCEED SEVENTY-FIVE (75) PERCENT OF THE MINIMUM ULTIMATE TENSILE STRENGTH OF THE WIRE, AND CENTERLINE SPACING OF THE WIRE SHALL NOT EXCEED 1-1/2 INCHES FOR LINES CYLINDER PIPE WITH WIRE OF NO. 6 GAUGE U.S.S. THE MAXIMUM CENTERLINE SPACING OF WIRE LARGER THAN NO. 6 GAUGE SHALL BE 1 INCH. NO CIRCUMFERENTIAL WIRE SHALL BE LESS THAN NO. 6 GAUGE. THE WIRE SHALL BE PLACED DIRECTLY AGAINST THE STEEL CYLINDER OF THE CORE AND SHALL BE WRAPPED SPIRALLY, EVENLY AND UNDER CONSTANT TENSION. THE WIRE SHALL BE ANCHORED AT THE ENDS OF THE PIPE BY MECHANICAL DEVICES OF SUFFICIENT STRENGTH TO MAINTAIN THE STRESS IN THE WIRE. THE THICKNESS OF THE STEEL CYLINDERS AND DIAMTER OF WIRE USED, AS WELL AS THE CENTERLINE SPACING AT WHICH THE CIRCUMFERENTIAL WIRE IS PLACED AND THE TENSION UNDER WHICH THE WIRE IS WOUND AROUND THE LINED CYLINDER, SHALL BE SUCH THAT THE ZERO COMPRESSION PRESSURE BE AT LEAST 50 POUNDS PLUS 1-1/4 TIMES THE STATIC PRESSURE. WHERE THE COVER OVER THE PIPE EXCEEDS EIGHT (8) FEET, THE DESIGN SHALL BE MODIFIED TO WITHSTAND THE ADDITIONAL EXTERNAL LOADING.

(E) EACH LENGTH OF PIPE SHALL BE PROVIDED WITH BELL AND SPIGOT ENDS FORMED BY STEEL JOINT RINGS SECURELY WELDED TO THE STEEL CYLINDER. THE SPIGOT RING SHALL BE LINED BY THE CONCRETE OF THE CORE AND THE BELL RING SHALL BE PROTECTED ON ITS EXTERIOR SURFACE BY THE CEMENT MORTAR COATING. PORTIONS OF THE JOINT RINGS WHICH WILL BE EXPOSED AFTER THE PIPE IS MANUFACTURED SHALL BE PROTECED FROM CORROSION BY METALIZING A MINIMUM OF 0.003" THICK FOR 20" AND SMALLER PIPE, AND 0.002" THICK FOR 24" AND LARGER PIPE. THE SPIGOT RING SHALL HAVE A GROOVE FOR THE PURPOSE OF RECEIVING, HOLDING AND PROTECTING THE GASKET, AND THE JOINT SURFACES SHALL BE OF SUCH SHAPE AND DIMENSION THAT THE JOINTS SHALL BE SELF-CENTERING WHEN THE PIPES ARE LAID SO THAT THE GASKET SHALL NOT BE REQUIRED TO SUPPORT THE WEIGHT OF THE ADJOINING PIPES. THE JOINT SHALL BE SEALED BY A RUBBER GASKET IN SUCH A WAY THAT THE JOINT SHALL REMAIN TIGHT UNDER ALL CONDITIONS OF SERVICE INCLUDING EXPANSION, CONTRACTION AND NORMAL SETTLEMENT. THE WELDING OF THE JOINT RINGS TO THE CYLINDER PIPE SHALL CONSIST OF AT LEAST ONE FULL CONTINUOUS WELD FOR PIPE SECTIONS THAT ARE PROPERLY TESTED HYDRAULICALLY FOR STRENGTH AND WATER TIGHTNESS. FOR PIPE SECTIONS THAT HAVE TO BE CUT TO BE FITTED UP TO MAKE BENDS, SUCH CONSTRUCTION SHALL HAVE DOUBLE CONTINUOUS WELDS, LIKEWISE, ANY SPECIAL CONSTRUCTION SUCH AS FOR OUTLETS OR FOR PIPE HAVING SPECIAL ENDS SHALL HAVE DOUBLE CONTINOUS WELDS.

(F) THE GASKET SHALL BE MADE OF RUBBER OF SPECIAL COMPOSITION MEETING THE REQUIREMENTS OF SEC. 2.11 OF AWWA C301-72 AND HAVING A TEXTURE TO ASSURE A WATER-TIGHT AND PERMANENT SEAL. THE GASKET SHALL BE AN ENDLESS RING OF APPROPRIATE CROSS SECTION AND OF SUCH SIZE AS TO COMPLETELY FILL THE RECESS BETWEEN THE BELL AND SPIGOT SURFACES AND ADEQUATELY PRODUCE A WATER-TIGHT SEAL WHEN THE PIPES ARE LAID.

(G) FITTINGS OR SPECIALS CONFORMING TO TYPE B REQUIREMENTS OF SEC.4.3 OF AWWA STANDARD C301-72 SHALL BE FURNISHED AND INSTALLED AS SHOWN ON THE DRAWINGS OR AS REQUIRED, AND SHALL INCLUDE SPECIALS WITH BELL END, SPIGOT END, FLANGED END, AND VICTAULIC END OUTLETS WITH ACCESS MANHOLES, AIR COCKS, PITOMETER, AND DRAIN CONNECTIONS, ANCHOR RINGS, BENDS, TEST HEADS, CLOSURE PIECES, BEVEL AND PIPE, JOINT HARDNESSES, ETC. THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER DETAILED DESIGNS AND SHALL RECEIVE HIS APPROVAL BEFORE THE CONSTRUCTION OF ANY SUCH SPECIALS.

(H) SPECIAL PIECES, SUCH AS TEES, WYES, OR BRANCH OPENINGS, SHALL ALSO BE OF CYLINDER CONSTRUCTION. IN ALL CASES THE REINFORCEMENT SHALL ADEQUATELY COMPENSATE FOR THE OPENINGS IN THE PIPE WALL. IF THE SPECIAL PIECE IS PRESTRESSED, THEN THE AREA OF THE STEEL IN THE CYLINDER AND CAGE, IN ADDITION TO THE COMPENSATING REINFORCEMENT PREVIOUSLY MENTIONED, SHALL BE NOT LESS THAN THAT FOR THE ADJOINING PRESTRESSED STRAIGHT PIPE. IF THE SPECIAL PIECE IS NOT PRESTRESSED, THEN THE ADDITIONAL AREA OF THE STEEL IN THE CYLINDER AND CAGE SHALL BE NOT LESS THAN THAT FOR THE ADJOINING STRAIGHT PIPE IF SUCH STRAIGHT PIPE WERE DESIGNED AS CONCRETE CYLINDER PIPE. STEEL THICKNESS SHALL BE NOT LESS THAN 5/16 INCHES.

(I) THE OPENINGS IN THE SPECIAL MAY BE FORMED BY STEEL RINGS OR CASTINGS OF SUITABLE DESIGN SECURELY WELDED TO THE CYLINDER AND REINFORCING CAGE. ALL BENDS AND SPECIAL PIECES SHALL BE PROVIDED WITH JOINT RINGS CORRESPONDING TO THOSE IN THE STRAIGHT PIPE.

(J) ON VERTICAL AND HORIZONTAL BENDS AND STRAIGHT PIPE WITHIN TIED JOINTS, THE THICKNESS OF THE CYLINDER SHALL BE SUCH THAT THE RESULTANT OF THE LONGITUDINAL AND CIRCUMFERENTIAL STRESS SHALL BE NOT MORE THAN SIXTEEN THOUSAND (16,000) PSI AT THE TEST PRESSURE, OR TWELVE THOUSAND FIVE HUNDRED (12,500) PSI OF THE WORKING PRESSURE.

(K) CAST STEEL SADDLE AND FORGINGS OR THE EQUIVALENT IN FABRICATED STEEL PLATES SHALL BE WELDED TO THE STEEL CYLINDER FOR MANHOLE AND PIPE CONNECTIONS AND FOR DRAIN, PITOMETER, AND AIR COCK CONNECTIONS, AND SHALL BE DRILLED AND TAPPED AND PROVIDED WITH TWO (2") INCH MALLEABLE IRON PLUGS.

(L) CLOSURE PIECES OF FOLLOWER RING TYPE WHICH CAN BE CUT IN THE FIELD TO FIT REQUIRED MEASUREMENTS SHALL BE PROVIDED AS ARE NECESSARY FOR THE PROPER CONSTRUCTION OF THE WATER MAIN. CLOSURE PIECES ARE TO BE AVOIDED WHERE POSSIBLE WITHIN "TIED DISTANCES" BUT WHEN SO REQUIRED, THEY SHALL BE FITTED WITH LOCKING DEVICES EQUIVALENT TO THOSE PROVIDED FOR REGULAR PIPE AND FITTINGS WITHIN "TIED DISTANCES." MEASUREMENTS FOR LENGTHS OF CLOSURE PIECES WILL BE MADE IN THE FIELD AFTER ADJACENT PIPE SECTIONS ARE IN PLACE IN THE TRENCH. TESTING BULKHEADS SHALL BE FURNISHED AND INSTALLED FOR TESTING ANY COMPLETED SECTIONS OF THE CONCRETE CYLINDER PIPE MAIN AS MAY BE REQUIRED, BUT PROPER CARE MUST BE TAKEN IN THEIR USE TO PREVENT OPENING OF ADJACENT OR NEARBY PIPE JOINTS.

(M) ALL FORGED OR ROLLED STEEL PIPE FLANGES SHALL CONFORM TO "STANDARD SPECIFICATIONS FOR FORGED OR ROLLED STEEL PIPE FLANGES, FORGED FITTINGS, AND VALVES AND PARTS FOR GENERAL SERVICE." ASTM DESIGNATION A181-61T, GRADE 1.

(N) ALL STEEL FOR CASTINGS SHALL CONFORM TO THE SPECIFICATIONS FOR GRADE 70-36 STEEL CASTINGS, AS GIVEN IN THE "STANDARD SPECIFICATIONS FOR MILD-TO-MEDIUM STRENGTH CARBON STEEL CASTINGS FOR GENERAL INDUSTRIAL USE." ASTM DESIGNATION A27-62.

(O) ALL STEEL FORGINGS SHALL CONFORM TO "STANDARD SPECIFICATIONS FOR CARBON-STEEL FORGINGS," ASTM DESIGNATION A235-62T, CLASS C.

(P) ALL STRUCTURAL STEEL SHALL CONFORM TO "TENTATIVE SPECIFICATIONS FOR STEEL FOR BRIDGES AND BUILDINGS," ASTM DESIGNATION A7-61T, OR TO "SPECIFICATIONS FOR LOW AND INTERMEDIATE TENSILE STRENGTH CARBON STEEL PLATES OF STRUCTURAL QUALITY." ASTM DESIGNATION A283-58, GRADE C.

(Q) ALL CAST IRON PIPE AND FITTINGS INCLUDED IN THE INSTALLATION OF "PRESTRESSED CONCRETE CYLINDER PIPE AND FITTINGS" SHALL BE AS SPECIFIED UNDER "CAST IRON AND DUCTILE IRON PIPE AND FITTINGS."

(R) TEST, INSPECTION, REPORTS AND ANAYLSES OF TESTS OF SAMPLES FOR ALL MATERIALS USED SHALL BE FURNISHED IN ACCORDANCE WITH THE "TESTS, INSPECTION AND REPORTS" CLAUSE OF THIS SPECIFICATION.

(S) MANUFACTURER'S DESIGN CALCULATIONS WILL BE REQUIRED.

(T) A DETAILED, TABULATED LAYING SCHEDULE ALONG WITH A PLAN AND PROFILE LAYOUT WILL BE REQUIRED.

(U) IN ADDITION TO MINIMUM COATING OVER WIRES AND EPOXY RESIN SURFACE SEALER, MOISTURE INSENSITIVE PER ASTM D-638, ASTM-E-84, CLASS "A" FIRE RESISTANT WITH 100% SOLID TENSILE STRENGTH CURED OF 3,000 PSI, OF 6 MILLS THICKNESS. FDA AND USDA APPROVED OF HIGH BUILD-CONCRETE GRAY ALL SHOP APPLIED, JOINTS SHALL HAVE FIELD APPLICATION.

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EACH PIPE AND SPECIAL SHALL HAVE CONSPICUOUSLY PAINTED IN BLACK ON THE INSIDE, A SERIAL NUMBER FOR THE PURPOSE OF IDENTIFICATION. SERIAL NUMBERS SHALL AGREE WITH LISTS TO BE FURNISHED TO THE ENGINEER. THE TOP CENTER LINE OF ALL SPECIAL FITTINGS AND EACH PIPE THAT HAS A BEVELED END SHALL HAVE A WHITE RING PAINTED IN THE SHOP AROUND THE MARK BOTH ON THE INSIDE AND OUTSIDE OF THE PIPE.

TYPICAL FIELD JOINTS FOR CONCRETE PIPE:

THE CONTRACTOR SHALL MAKE ALL TYPICAL FIELD JOINTS AND WELDED TIED JOINTS AS DETAILED ON THE DRAWINGS. THE ANNULAR RECESSES AT THE JOINT, BOTH INSIDE AND OUTSIDE OF THE PIPE SHALL BE FILLED WITH CEMENT MORTAR MIXED IN A PROPORTION OF NOT LESS THAN ONE PART OF CEMENT TO TWO PARTS OF SAND. "HARDNESSED" TIED JOINTS CONSISTING OF A MECHANICAL CLAMP TYPE DEVICE MAY BE USED WHERE TIED JOINTS ARE INTENDED. SEE (5) FOR SPECIAL COATING. ALL JOINTS SHALL BE ELECTRICALLY BONDED THAT ARE NOT WELDED TIED. ELECTROLYSIS TEST STATIONS SHALL BE PROVIDED AS SHOWN IN PLANS.

PRESSURE TESTING

WHERE REQUIRED TO PROPERLY RESTRAIN THE PIPE FOR PRESSURE TEST AS SPECIFIED THE CONTRACTOR SHALL PROVIDE SUFFICIENT "TEST DISTANCE" ALONG THE PIPE TO PREVENT MOVEMENT OR FAILURE DURING TEST. THE COST THEREOF SHALL BE INCLUDED IN THE ITEM IN WHICH IT IS USED. PIPE SHALL BE TESTED IN ACCORDANCE WITH THE "TESTING MAINS" CLAUSE OF THIS SPECIFICATION.

APPROVED JANUARY 12, 1978

William J. Lawrence
DESIGN REVIEW ENGINEER

REVISIONS

LOW SERVICE DISTRICT

DEPARTMENT OF PUBLIC UTILITIES
DIVISION OF WATER AND HEAT
CLEVELAND, OHIO

SUBJECT WATERWORK NOTES

DRAWN G.A.D. | SCALE NONE
CHECKED R.W.H. | DATE 7-19-77

No. SM 1971

WATERWORK NOTES

F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

43
50

CUYAHOGA COUNTY
CUY.-6A-0.41

7
12

SHOP COATING AND PAINTING

(A) THE EXPOSED SURFACE OF THE STEEL ENDS OF SPIGOT, BELL, VICTAULIC OR FLANGED STEEL OUTLET CONNECTIONS AND THE FLANGED ENDS OF CONCRETE PIPE, ETC., SHALL BE CLEANED, PRIMED AND ENAMELED INSIDE AND OUTSIDE IN ACCORDANCE WITH THE AWWA SPECIFICATIONS C203-73. THE COATING MAY BE APPLIED BY BRUSH OR SPRAY, ALL COATINGS SHALL BE APPLIED IN THE SHOP BEFORE SHIPMENT. THE OUTSIDE COATING SHALL STOP AGAINST THE FLANGES AT ENDS OF PIPE SECTIONS.
(B) GALVANIZED PIPE ENDS FOR RUBBER GASKET JOINTS ARE NOT TO BE COATED.
(C) ALL FINISHED SURFACES SHALL BE COATED WITH WHITE LEAD AND TALLOW AND NOT PRIMED.
(D) AFTER ERECTION, ALL EXPOSED OR DAMAGED COATINGS ON SURFACES BURIED UNDER GROUND AND ALL BOLTS ON FLANGES AND VICTUALIC COUPLINGS SHALL BE CLEANED AND PAINTED WITH THREE FIELD COATS OF COAL TAR PITCH PAINT EQUAL TO INERTOL 66 OR KOPPERS BITUMASTIC 50 OR APPROVED EQUAL.

TRANSPORTATION AND DELIVERY

(A) THE CONTRACTOR SHALL TRANSPORT, DELIVER AND DISTRIBUTE ALONG THE LINE OF THE WORK, THE PIPE, SPECIALS AND APPURTENANCES.
(B) PIPE SHALL BE LOADED FOR SHIPMENT UPON SUITABLE CARS OR TRUCKS WHICH SHALL BE PROVIDED WITH WOODEN SKIDS. IN LOADING AND UNLOADING THE PIPE, MORE THAN ORDINARY CARE MUST BE TAKEN TO PREVENT ANY INJURY TO THE CONCRETE CYLINDER PIPE, STEEL AND PIPE ENDS AND PROTUBERANT STEEL CONNECTIONS. SUCH WORK MUST BE DONE SLOWLY WITH THE PIPE AT ALL TIMES UNDER PERFECT CONTROL, AND UNDER NO CONDITION SHALL THE PIPE BE DROPPED.
(C) IN DISTRIBUTING THE PIPE IN THE FIELD, EACH PIPE MUST BE PLACED AS NEARLY AS POSSIBLE TO THE POINT WHERE IT IS TO BE LAID, AND FACING IN THE PROPER DIRECTION. SUITABLE SKIDS OR BLOCKS MUST ALSO BE LEFT UNDER EACH PIPE, AND THE PIPE SECURELY WEDGED IN PLACE TO PREVENT ITS BEING MOVED UNTIL REQUIRED. A STEEL CABLE SLING SHALL BE USED FOR ROLLING OR LIFTING PIPE. NO IRON CHAINS SHALL BE USED. PIPE WHICH HAS BEEN IMPROPERLY DISTRIBUTED AND WHICH MUST BE MOVED LONGITUDINALLY ALONG THE TRENCH SHALL BE RELOADED ON A WAGON, OR LIFTED AND SWUNG BY A DERRICK OR MOVED BY SUCH MEANS AS MAY BE SATISFACTORY TO THE ENGINEER.
(D) IF, IN THE PROCESS OF MANUFACTURE, TRANSPORTATION, OR HANDLING, ANY CONCRETE PIPE OR SPECIAL RECEIVES ANY INDENTATION OR DEFORMATION TO THE CONCRETE, STEEL ENDS OR CONNECTIONS, THE REMOVAL OF WHICH WILL IN ANY DEGREE INJURE IT, SUCH PIPE OR SPECIAL SHALL BE REJECTED AND REPLACED AT THE CONTRACTOR'S EXPENSE.
(E) PIPE WHICH IS PLACED IN STORAGE, STREETS OR DRIVES MUST BE SO ARRANGED AS NOT TO CAUSE UNDUE INCONVENIENCE TO TRAFFIC AND MUST BE PROTECTED SUFFICIENTLY TO PREVENT INJURY TO THE CONCRETE CYLINDER PIPE, AND THE COATING OF THE STEEL ENDS AND CONNECTIONS.

MATERIALS DATA WITH PROPOSAL

EACH BIDDER SHALL SUBMIT WITH HIS PROPOSAL, AND IN THE FORM PROVIDED, THE INFORMATION CALLED FOR BELOW:

1. NAME OF PIPE MANUFACTURER AND LOCATION OF PLANT.
2. NAME OF COUPLING MANUFACTURER AND LOCATION OF PLANT.
3. PIPE COATING AND LINING DATA.

DRAWINGS

(A) THE CONTRACTOR SHALL SUBMIT TO THE DIRECTOR FOR APPROVAL, DUPLICATE PRINTS OF ALL SHOP DRAWINGS FOR CONCRETE PIPE, FITTINGS, AND SPECIALS, AND MISCELLANEOUS DETAILS, SUCH AS AIR COCK AND DRAIN FORGINGS, CASTINGS, ETC.
(B) THE CONTRACTOR SHALL ALSO FURNISH AN ASSEMBLY PLAN FOR THE ENTIRE LENGTH OF THE PIPE LINE FOR WHICH CONCRETE PIPE IS FURNISHED UNDER THE APPROPRIATE ITEMS. THIS ASSEMBLY PLAN SHALL ALSO SHOW THE CORRECT LOCATION OF ALL FITTINGS FURNISHED AND ITEMIZED LAYING SCHEDULE.
(C) ONE PRINT OF EACH OF THE DRAWINGS SUBMITTED WILL BE RETURNED WITH THE CRITICISMS OR APPROVAL OF THE DIRECTOR. IN CASE THE DRAWINGS ARE NOT APPROVED, THE CONTRACTOR SHALL AGAIN SEND FOR APPROVAL DUPLICATE REVISED PRINTS OF THE DRAWINGS TO TAKE CARE OF THE CRITICISMS NOTED AND AFTER THE DRAWINGS HAVE BEEN FINALLY APPROVED, THE CONTRACTOR SHALL AGAIN FURNISH TO THE DIRECTOR, THREE TRACINGS ON MYLAR OR REPRODUCIBLE CLOTH TRACING OF EACH DRAWING. NO WORK SHALL BE DONE IN THE SHOP UNTIL AFTER THE DRAWINGS HAVE BEEN FINALLY APPROVED. ALL DRAWINGS SHALL BE ON COMPOSITE SHEETS 24"X36", NO SMALLER TRACINGS WILL BE ACCEPTED.
(D) THE APPROVAL OF THE DRAWINGS BY THE DIRECTOR SHALL NOT RELIEVE THE CONTRACTOR OF ANY OF HIS OBLIGATIONS IN CONNECTION WITH THIS CONTRACT.

EXPERIENCE QUALIFICATIONS

ALL BIDDERS WILL BE REQUIRED TO SHOW TO THE SATISFACTION OF THE DIRECTOR THAT THE TYPE AND SIZE OF PIPE AND FITTINGS HE PROPOSES TO FURNISH, WILL BE MADE BY A MANUFACTURER WHOSE PIPE HAS BEEN SUCCESSFULLY USED FOR LIKE WORK OUTSIDE OF THE BUILDER'S WORKS FOR A PERIOD OF NOT LESS THAN FIVE (5) YEARS.

MEASUREMENT

THE NUMBER OF LINEAR FEET OF WATER MAIN TO BE PAID FOR UNDER PRESTRESSED CONCRETE CYLINDER PIPE SHALL BE THE ACTUAL NUMBER OF LINEAR FEET FURNISHED AND PLACED IN ACCORDANCE WITH THESE SPECIFICATIONS AS MEASURED ALONG THE AXIS OF THE MAIN, INCLUDING FITTINGS AND VALVES CONNECTED UP IN PLACE.

PAYMENT

THE UNIT PRICE STIPULATED TO BE PAID FOR EACH LINEAR FOOT OF "ITEM SPECIAL - WATER MAIN" CLASSIFIED AS TO SIZE SHALL CONSTITUTE FULL COMPENSATION FOR THE FURNISHING, LAYING, PAINTING AND INSPECTION AND TESTING OF PRESTRESSED CONCRETE PIPE, CONCRETE CYLINDER FITTINGS, CAST IRON PIPE AND FITTINGS, VICTAULIC AND DRESSER COUPLINGS, CONCRETE PIERS AND ANCHORS, EXCAVATION, SHEETING AND SHORING, BACKFILLING, SAND BACKFILLING, SEEDING AND SODDING, SIDEWALK REPLACEMENT, AND THE TEMPORARY AND PERMANENT REPAVING FOR THE ABOVE MAIN AND FOR SERVICE CONNECTION CHANGES BY THE CITY WATER DEPARTMENT, AND THE FURNISHING OF ALL LABOR, MATERIALS, TOOLS, APPLIANCES AND EQUIPMENT TO COMPLETE THE WORK AS SPECIFIED OR AS SHOWN. THE CLORINATION OF THE NEWLY LAID WATER MAINS BY THE CITY OF CLEVELAND, DIVISION OF WATER, IS DESCRIBED UNDER ADDITIONAL WORK PART C, CHLORINATION.

2-INCH GALVANIZED BLACK IRON AND BRASS PIPE FOR FLUSHING CONNECTIONS

WORK INCLUDED

THE CONTRACTOR SHALL FURNISH ALL THE MATERIALS FOR AND SHALL PROPERLY CONNECT IN PLACE AT THE LOCATIONS SHOWN ON THE DRAWINGS OR AS ORDERED, ALL 2-INCH EXTRA STRONG BRASS PIPE AND FITTINGS, AND ALL 2-INCH EXTRA STRONG GALVANIZED BLACK IRON PIPE AND FITTINGS RESPECTIVELY, WHICH ARE NECESSARY FOR THE PROPER COMPLETION OF THE WORK INCLUDED UNDER THIS CONTRACT. SEE "ADDITIONAL WORK" PARAGRAPHS (A) THROUGH (D) SHEET NO. 2.

BRASS PIPE AND FITTINGS

ALL BRASS PIPE AND FITTINGS SHALL BE EXTRA STRONG 2-INCH PIPE SIZE AND SHALL CONFORM TO A.S.T.M SPECIFICATIONS B43-42. FITTINGS SHALL BE EXTRA STRONG WEIGHT AND SHALL HAVE SOUND WELL-FITTING THREADS.

GALVANIZED BLACK IRON PIPE AND FITTINGS

ALL GALVANIZED BLACK IRON PIPE, NIPPLES AND COUPLINGS SHALL BE EXTRA STRONG BLACK IRON PIPE A.S.T.M. DESIGNATION A120. THE FITTINGS SHALL BE BEADED AND OF EXTRA HEAVY WEIGHT MALLEABLE IRON. ALL PIPE AND FITTINGS SHALL BE HOT DIPPED ZINC COATED INSIDE AND OUTSIDE, AND SHALL HAVE SOUND WELL-FITTING THREADS.

ERECTION

ALL PIPE SHALL BE CAREFULLY PLACED TO THE PROPER LINES AND GRADES, AND SHALL BE CONNECTED UP, UNLESS OTHERWISE SHOWN, WITH SCREW FITTINGS. SCREW JOINTS SHALL BE MADE TIGHT WITH A GRAPHITE PASTE AND SCREWED HOME. A LIBERAL NUMBER OF UNIONS SHALL BE USED TO PERMIT THE READY REMOVAL OF ANY SECTION.

PAYMENT

ALL OF THIS WORK SHALL BE INCLUDED WITH THE UNIT PRICE BID FOR THE PARTICULAR ITEM FLUSHED, AND NO EXTRA COMPENSATION SHALL BE MADE FOR HAULING AND PLACING PLUGS, CLAMPS, VALVES, ROADWAY BOXES, PRESURE BACKING AND APPURTENANCES, AND FOR THE FURNISHING OF ALL LABOR, EQUIPMENT, TOOLS AND MATERIALS REQUIRED TO COMPLETE THIS ITEM OF WORK.

ABANDON METER VAULT

THIS WORK SHALL CONSIST OF THE REMOVAL OF ALL PIPE AND VALVES AND FITTINGS WITHIN THE WALLS OF THE METER VAULT BEFORE BACKFILLING AS PER 814.08. THE TOP OF THE VAULT SHALL BE REMOVED AND THE WALLS SHALL BE REMOVED TO A MINIMUM DEPTH OF 3 BELOW SUBGRADE. ALL PIPE, VALVES AND FITTINGS SHALL BECOME THE PROPERTY OF THE CONTRACTOR.

BASIS OF PAYMENT SHALL BE THE CONTRACT LUMP SUM PRICE BID FOR: "METER VAULT ABANDONED," WHICH PRICE SHALL BE FULL COMPENSATION FOR REMOVAL AND DISPOSAL OF ALL ITEMS INCLUDING EXCAVATION AND BACKFILLING REQUIRED TO COMPLETE THIS ITEM OF WORK.

NOTE: THIS ITEM OF WORK MUST BE COORDINATED WITH THE RELOCATION OF THE METERS WHICH IS A PART OF PROJECT CUY-6A/254DA-0.37/0.20.

APPROVED JANUARY 12, 1978

William J. Lamont
DESIGN REVIEW ENGINEER

REVISIONS	

LOW SERVICE DISTRICT

DEPARTMENT OF PUBLIC UTILITIES
DIVISION OF WATER AND HEAT
CLEVELAND, OHIO

SUBJECT WATERWORK NOTES

DRAWN G.A.D. | SCALE NONE
CHECKED R.W.H. | DATE 7-19-77 | No. SM 1972

WATERWORK NOTES

F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

44/50

CUYAHOGA COUNTY
CUY.-6A-0.41

8/12

CONSTRUCTION PROCEDURE FOR 30" WATER MAIN

1. THE CONTRACTOR SHALL FURNISH ALL SHOP DRAWINGS, INSTALLATION DRAWING AND INSTALLATION SCHEDULE TO THE DIRECTOR OF PUBLIC UTILITIES, CITY OF CLEVELAND, AND THE ENGINEER FOR APPROVAL BEFORE CONSTRUCTION OF WATER MAIN ON THE BRIDGE.

2. CONSTRUCT THE WATER MAIN AS PER PLAN WITH ALL VICTAULIC COUPLINGS LOOSELY JOINED AND PIPE SUPPORT BRACKETS APPROXIMATED FOR TEMPERATURE CORRECTION.

3. AFTER THE BRIDGE DECK INCLUDING SIDEWALKS AND WEARING SURFACE ARE POURED THE FIXED PIPE SUPPORT BRACKET AT THE CENTER POINT OF THE BRIDGE SHALL BE TIGHTENED FIRST AND THE VICTAULIC COUPLINGS AND PIPE SUPPORT BRACKETS SHALL BE ADJUSTED FOR SPACING AND TEMPERATURE SYMETRICALLY ABOUT THE FIXED SUPPORT BRACKET BEFORE TIGHTENING. THE PIPE SUPPORT BRACKETS REQUIRING SHIMS MUST BE CHECKED FOR CLEARANCE WITH THE GUIDE BOLTS. THE PIPE SUPPORT BRACKETS SHALL BE CENTRALLY LOCATED WITH THE PIPE FULL OF WATER AND THE TEMPERATURE 60°F.

4. TEST AND CHLORINATE THE WATER MAIN.

NOTE: IF THE WATER MAIN WORK UNDER PROJECT CUY-6A/254DA-0.37/0.20 IS CONSTRUCTED CONCURRENTLY, IT MAYBE TESTED AND CHLORINATED AT THE SAME TIME. EACH CONTRACTOR SHALL BE RESPONSIBLE FOR HIS AREA OF WORK. IF THE ADJOINING WATER MAIN WORK IS DONE AT A LATER DATE, HE SHALL INCLUDE THE BRIDGE AREA IN HIS TEST SECTION. THE RETEST OF THE BRIDGE AREA SHALL BE PREFORMED BY THE ADJOINING PROJECT CONTRACTOR, HOWEVER, THIS SHALL NOT RELEAVE THE BRIDGE CONTRACTOR OF A FAILURE IN HIS AREA OF WORK.

NOTE: IT SHOULD ALSO BE NOTED THAT WATER SERVICE THRU THE LAKEWOOD METER VAULT SHALL BE MAINTAINED AS WELL AS THE DISTRIBUTION LINES IN SLOANE AVENUE AND BRIDGE APPROACH DURING THE CONSTRUCTION OF THIS WATER MAIN.

APPROVED JANUARY 12 19 78

William J. Lucente
DESIGN REVIEW ENGINEER

REVISIONS	

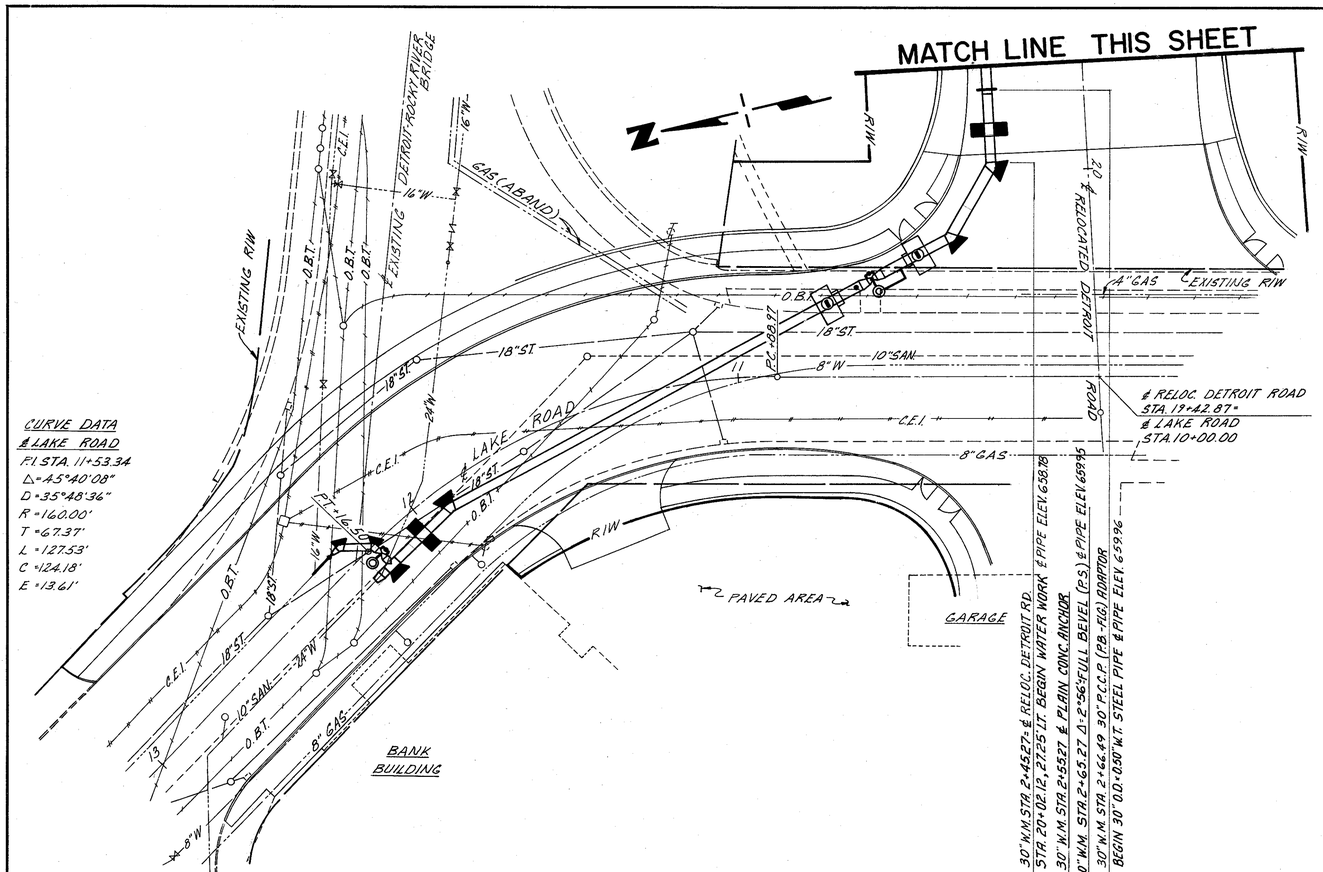
LOW SERVICE DISTRICT

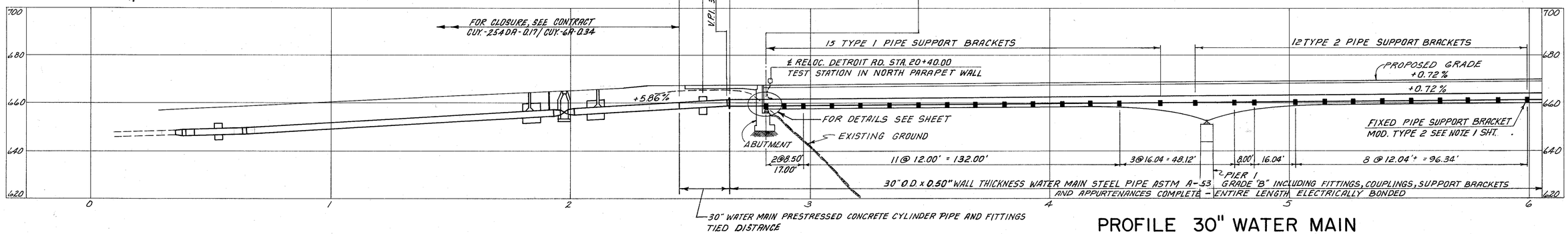
DEPARTMENT OF PUBLIC UTILITIES
DIVISION OF WATER AND HEAT
CLEVELAND, OHIO

SUBJECT WATERWORK NOTES

DRAWN G.A.D. | SCALE NONE
CHECKED R.W.H. | DATE 7-19-77

No. SM 1973





PROFILE 30" WATER MAIN

SUMMARY OF QUANTITIES

ITEM	DESCRIPTION	TOTAL	UNIT
SPECIAL	30" WATER MAIN PRESTRESSED CONCRETE CYLINDER PIPE AND FITTINGS	21	LIN. FT.
SPECIAL	30" O.D. x 0.50" W.T. WATER MAIN STEEL PIPE ASTM A-53 GRADE "B" INCLUDING FITTINGS, COUPLINGS, SUPPORT BRACKETS AND APPURTENANCES COMPLETE	341	LIN. FT.
SPECIAL	30" PLAIN ANCHOR	1	EACH

APPROVED JANUARY 12, 1978

William Schwartz
DESIGN REVIEW ENGINEER

REVISIONS

LOW SERVICE DISTRICT

DEPARTMENT OF PUBLIC UTILITIES
DIVISION OF WATER AND HEAT
CLEVELAND, OHIO

SUBJECT 30" WATER MAIN ON BRIDGE NO. CUY-6A-041
RELOC. DETROIT RD. OVER ROCKY RIVER

DRAWN T. M. J. | SCALE 1"=20'
CHECKED R.W.H. | DATE 7-11-77

No. SM 1974

F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

46/50

10/12

CUYAHOGA COUNTY

CUY.-6A-0.41

0 10 20 30 40 50 100

SCALE IN FEET

ADACHE ASSOCIATES INC.
CALC. BY R.W.H. DATE 8-5-77
CHKD. BY T.M.J. DATE 9-1-77

STRUCTURAL MEMBERS BENEATH THE PIPE SUPPORT BRACKETS ARE INCLUDED WITH THE BRIDGE QUANTITIES. LOCATION OF STIFFENERS ON GIRDERS 1 AND 2 CONTROL THE CROSS-MEMBER LOCATION AND MUST BE VARIFIED BEFORE DETAILING AND DETERMINING THE LAYING SCHEDULE. FOR DETAILS OF PIPE SUPPORT BRACKETS AND CLEARANCE REQUIREMENTS SEE SHEET 11 .

BEGIN SHEET W. STA.6+06.08

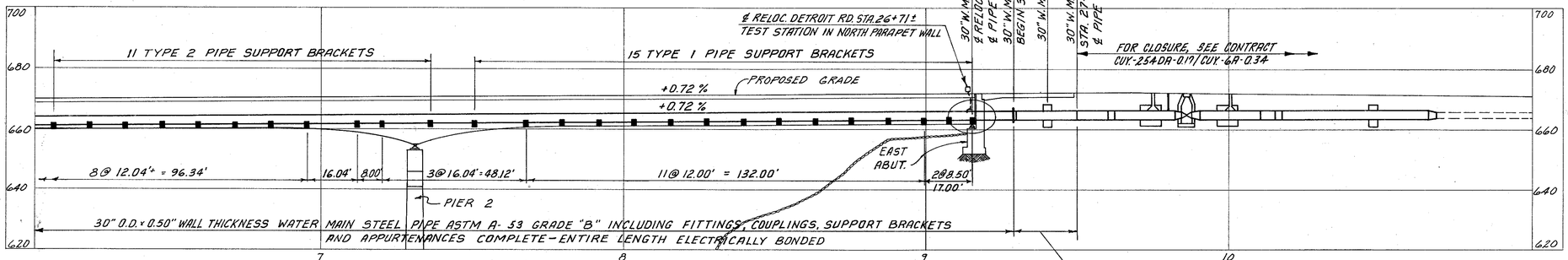
CITY OF ROCKY RIVER
CITY OF LAKEWOOD

EXISTING R/W
O.B.T.
16'W
C.E.I.
℄ EXISTING DETROIT-ROCKY RIVER BRIDGE
(TO BE ABANDONED)
16'W
AERIAL
EXISTING R/W
42"SAN.
GIRDER #1
GIRDER #2
℄ RELOCATED DETROIT ROAD
R/W
℄ BEARING PIER 2 STA. 24+88.00
AERIAL
R/W
36"SAN.
℄ RELOC. DETROIT RD. STA. 26+71± TEST STATION IN NORTH PARAPET WALL
VALVE M.H. (TO BE ABANDONED)
24"W
12"W
12"ST.
6"W
METER VAULT ABANDON AS PER PLAN
90°00'00" (TYPICAL)
P.C. 134.44
℄ BEARING EAST ABUT.
℄ SLOANE AVENUE (CONSTRUCTION)
℄ SLOANE AVENUE (EXISTING)
12"SAN. & 12"ST.
4"GAS
℄ RELOC. DETROIT ROAD STA. 27+83.86 = ℄ PARK DR. & SLOANE AVE. STA. 10+02.75
℄ RELOCATED DETROIT ROAD
PARK DRIVE
12"SAN. & 24"ST.
6"GAS
R/W
EXISTING R/W
℄ CONCRETE PARKING

CURVE DATA

℄ RELOCATED DETROIT ROAD
P.I. STA. 27+99.78
Δ = 13° 10' 07.5"
D = 4° 00' 00"
R = 1432.40
T = 165.34
L = 329.22

30"W.M. STA. 9+15.65 ℄ RELOC. DETROIT RD. PROJ. STA. 26+73.63 ℄ PIPE ELEV. 664.63
30"W.M. STA. 9+29.63 BEGIN 30" P.CCP. (FLG-PB.) ADAPTOR
30"W.M. STA. 9+40.39 ℄ PLAIN CONC. ANCHOR
30"W.M. STA. 9+50.39 = ℄ RELOC. DETROIT RD. STA. 27+05.83, 29.06'LT. END WATER WORK
℄ PIPE ELEV. 664.08



PROFILE 30" WATER MAIN

SUMMARY OF QUANTITIES

ITEM	DESCRIPTION	QUANTITY	UNIT
SPECIAL	30" O.D. x 0.50" WALL THICKNESS WATER MAIN STEEL PIPE ASTM A-53 GRADE "B" INCLUDING FITTINGS, COUPLINGS, SUPPORT BRACKETS AND APPURTENANCES	323	LIN. FT.
SPECIAL	30" WATER MAIN PRESTRESSED CONCRETE CYLINDER PIPE AND FITTINGS	21	LIN. FT.
SPECIAL	METER VAULT ABANDON AS PER PLAN	1	EACH
SPECIAL	30" PLAIN ANCHOR	1	EACH

APPROVED JANUARY 12, 19 78

William A. Sweeney
DESIGN REVIEW ENGINEER

REVISIONS

LOW SERVICE DISTRICT

DEPARTMENT OF PUBLIC UTILITIES
DIVISION OF WATER AND HEAT
CLEVELAND, OHIO

SUBJECT 30" WATER MAIN ON BRIDGE NO. CUY.-6A-0.41 RELOC. DETROIT RD. OVER ROCKY RIVER

DRAWN T.M.J. SCALE 1"=20"
CHECKED R.W.H. DATE 7-11-77

No. SM 1975

F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

47
50

11
12

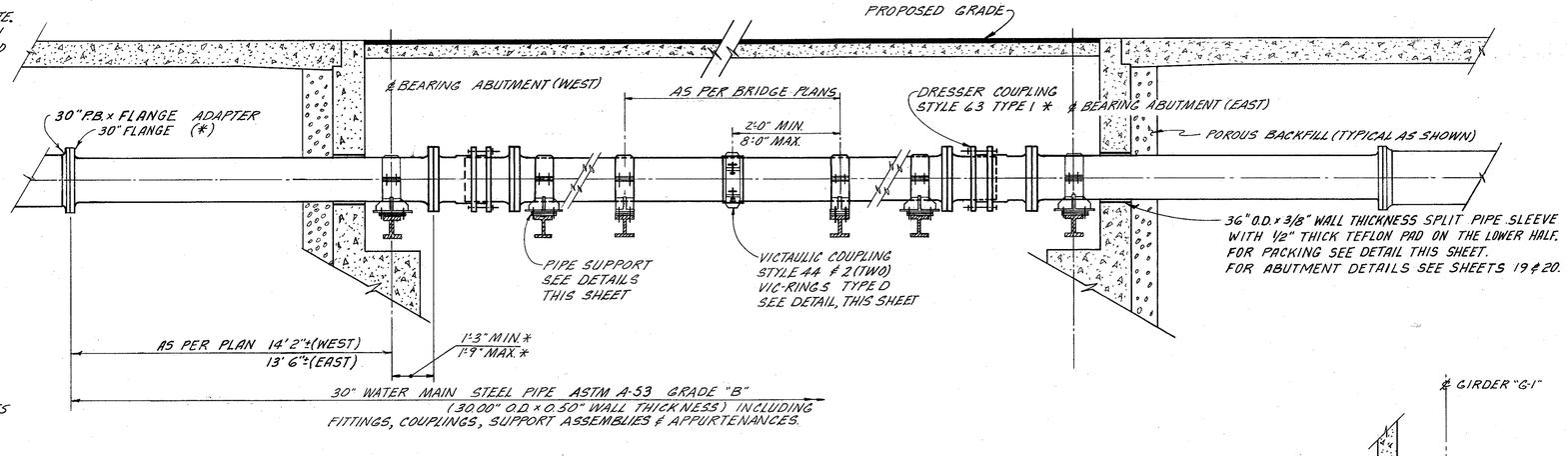
CUYAHOGA COUNTY
CUY.-254DA-0.20
CUY.-6A-0.37

NOTES: 1) A FIXED TYPE PIPE SUPPORT BRACKET SHALL BE PROVIDED AT ℄ DETROIT RD. STA. 23+55.50 (27.25' LEFT), WATER MAIN STA. 5+98.15. THE FIXED TYPE BRACKET SHALL BE SIMILIAR TO THE TYPE 2 PIPE SUPPORT BRACKET WITH THE FOLLOWING CHANGES. A LUBRITE PLATE WILL NOT BE USED. USE 1" THICK BASE PLATE INSTEAD OF THE ½" THICK BASE PLATE & ½" THICK LUBRITE PLATE. 6 - 13/16" ϕ HOLES SHALL BE PROVIDED IN THE BASE PLATE IN LIEU OF THE SLOTTED HOLES. 6 - 7/8" ϕ, 2¾" LONG A325 TYPE 3 BOLTS SHALL BE USED INSTEAD OF THE SHOULDER BOLTS.

2) THE CONTRACTOR SHALL FURNISH ALL SHOP DRAWINGS, INSTALLATION DRAWINGS AND INSTALLATION SCHEDULE TO THE DIRECTOR OF PUBLIC UTILITIES, CITY OF CLEVELAND AND TO THE DIRECTOR OF THE OHIO DEPARTMENT OF TRANSPORTATION FOR APPROVAL. EACH PIPE LENGTH SHALL HAVE A MINIMUM OF 2 SUPPORTS.

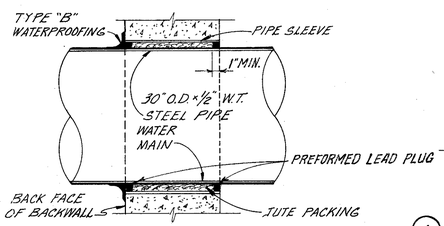
3) SHIMS SHALL BE ADDED OR DELETED TO IMPROVE THE FIT AT EACH VITUALIC OR DRESSER COUPLING. HOWEVER IF ADDITIONAL SHIMS ARE USED, LONGER SHOULDER BOLTS WILL BE REQUIRED TO INSURE A 1/16" MINIMUM CLEARANCE REQUIREMENT.

4) ASTM A 588 STEEL SHALL BE USED TO FABRICATE PIPE SUPPORT BRACKETS



PROFILE AT ENDS OF STRUCTURE

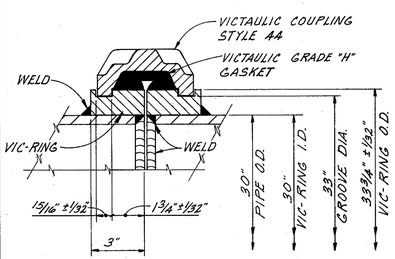
* INDICATES TYPICAL AT BOTH ABUTMENTS



SLEEVE PACKING DETAIL

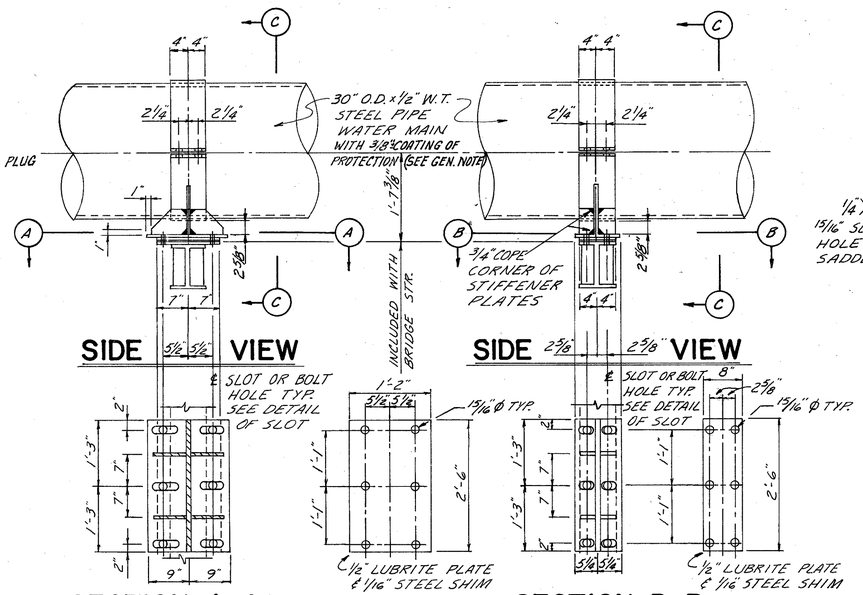
NOT TO SCALE

WEST ABUTMENT SHOWN, EAST ABUTMENT OPPOSITE HAND



VICTAULIC COUPLING & VIC-RING DETAIL

NOT TO SCALE

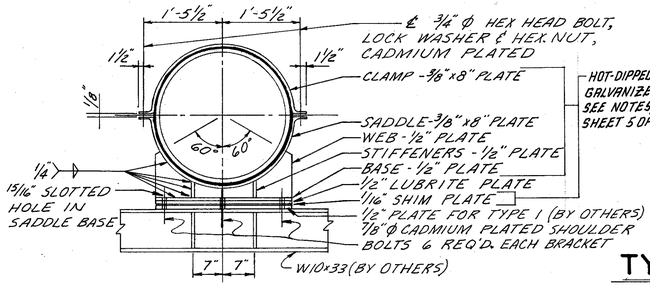


SECTION A-A TYPE 1

SIDE VIEW

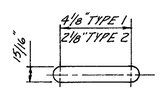
SECTION B-B TYPE 2

PIPE SUPPORT BRACKET TYPE 1 & 2 DETAILS

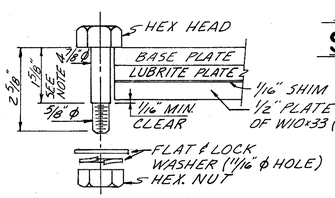


SECTION C-C

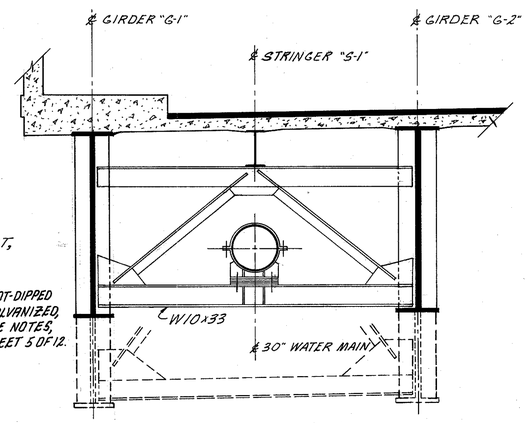
TYPE 1 SHOWN
TYPE 2 SIMILIAR



BASE PLATE SLOT DETAIL



CADMIUM PLATED SHOULDER BOLT DETAIL



TYPICAL SECTION THRU BRIDGE

DASHED LINES INDICATE SECTION IN HAUNCHED PORTION OF GIRDERS.
TO COMPENSATE FOR ADDITIONAL ½" PLATE, TOP OF W10x33 BEAM UNDER TYPE 1 PIPE SUPPORT BRACKETS SHALL BE LOCATED ½" LOWER THAN TOP OF W10x33 BEAM UNDER TYPE 2 BRACKETS.

0 1 2 3 4 5 10 20
SCALE IN FEET

APPROVED JANUARY 12, 19 78

William J. Inscore
DESIGN REVIEW ENGINEER

REVISIONS

LOW SERVICE DISTRICT
DEPARTMENT OF PUBLIC UTILITIES
DIVISION OF WATER AND HEAT
CLEVELAND, OHIO

SUBJECT WATER MAIN CONNECTION & SUPPORT DETAILS

DRAWN T.M.T. SCALE NONE
CHECKED R.W.H. DATE 8-31-77

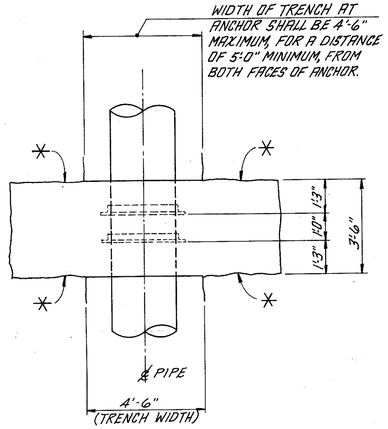
No. SM 1976

F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

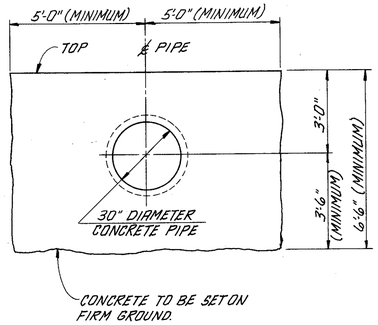
CUYAHOGA COUNTY
CUY.-6A-0.41

48/50

12/12



PLAN

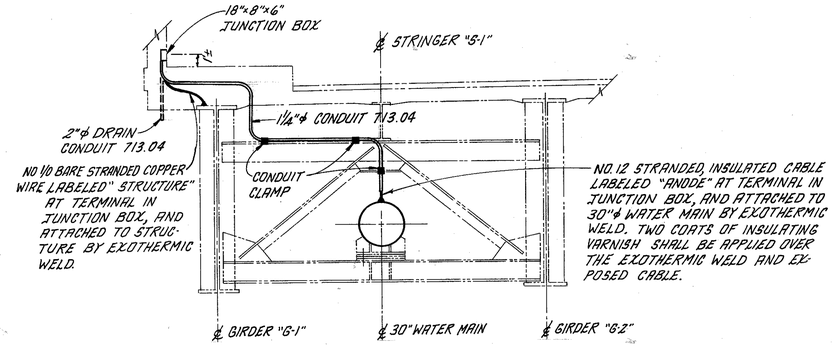


ELEVATION

PLAIN CONCRETE ANCHOR

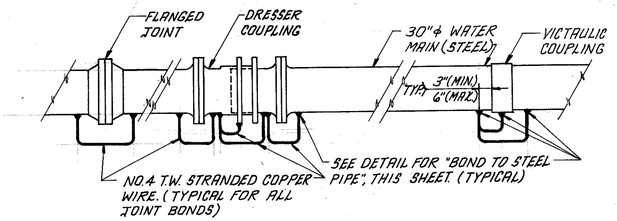
NOTES: CARE MUST BE TAKEN TO PRESERVE THE SIDES OF EXCAVATION AT ANCHOR.

AREAS DENOTED WITH AN ASTERISK (*) SHALL NOT BE EXCAVATED UNTILL READY TO POUR CONCRETE, SO AS TO HAVE FIRM SOIL FOR ANCHOR BEARING.



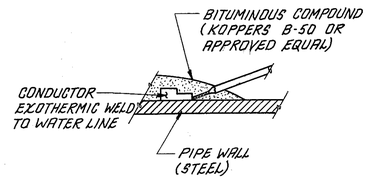
TYPICAL TEST STATION

NOTE: FOR DETAILS NOT SHOWN, SEE STANDARD CONSTRUCTION DRAWING HL-A & HL-7.



TYPICAL ELECTRICAL BONDING AT PIPE JOINTS

NOT TO SCALE



BOND TO STEEL PIPE

NOT TO SCALE

APPROVED JANUARY 12, 19 78

William J. Lovejoy
DESIGN REVIEW ENGINEER

REVISIONS	

LOW SERVICE DISTRICT

DEPARTMENT OF PUBLIC UTILITIES
DIVISION OF WATER AND HEAT
CLEVELAND, OHIO

SUBJECT WATERWORK DETAILS

DRAWN T.M.J. SCALE AS NOTED
CHECKED R.W.H. DATE 8-31-77

No. SM 1977

G-H

S

DESIGN DESIGNATION	
CURRENT YEAR (1970) A. D. T.	14,500
DESIGN YEAR (1993) A. D. T.	15,000
D.H.V.	1,250
D (DIRECTIONAL DISTRIBUTION)	60%
T (PERCENT B & C TRUCKS)	3%
V (DESIGN SPEED)	40 M.P.H.

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION

BRM-IA 30 (2)
℄ ISSUE 1

F.H.W.A. REGION	STATE	PROJECT	
5	OHIO	BRM-IA 30(2)	

1/50

CUYAHOGA COUNTY
CUY.-6A-0.41

CONVENTIONAL SIGNS

COUNTY LINE
TOWNSHIP LINE
CORPORATION LINE
CENTER LINE
PROPERTY LINE — R. — R.
EXISTING R/W LINE — R/W —
EXISTING LA LINE — LA — LA —
RIGHT OF WAY LINE — R/W —
LIMITED ACCESS RIGHT OF WAY ONLY — LA-R/W — LA-R/W —
TEMPORARY EASEMENT
CONSTRUCTION LIMITS — CONSTRUCTION LIMITS —
FENCE LINE (EXISTING, PROPOSED) — x — x — xx —
GUARD RAIL (EXISTING, PROPOSED)
RAILROAD
POLE LINE (POWER, TELEPHONE)
UNDERGROUND UTILITIES (GAS, WATER) — G —, — W —
" " " (TELEPHONE, POWER) — T —, — E —
SEWERS (SANITARY, STORM) — SAN. —, — ST. —
EXISTING TREES & STUMPS (EXIST, REMOVED)

INDEX OF SHEETS

Sheet 24/50 Added shop splices - approved 10-14-78 RVH

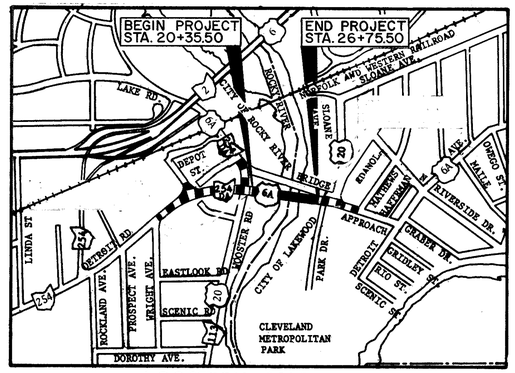
LINE DATA

BEGIN PROJECT	STA. 20+35.50	
END PROJECT	STA. 26+75.50	
TOTAL		640.00 LIN. FT. OR 0.121 MILES
BEGIN WORK	STA. 20+00.00	
END WORK	STA. 27+60.00	
TOTAL		760.00 LIN. FT. OR 0.143 MILES

CUY - 6A - 0.41

DETROIT-ROCKY RIVER BRIDGE

CITY OF LAKEWOOD
CITY OF ROCKY RIVER
CUYAHOGA COUNTY



LOCATION MAP
400 0 400 800 1200
SCALE IN FEET

STATE HIGHWAYS
FEDERAL HIGHWAY
OTHER ROADS
FUTURE IMPROVEMENTS
PORTION TO BE IMPROVED

SCALES

PLAN	1" = 20'	
PROFILE HORIZONTAL	1" = 20'	
PROFILE VERTICAL	1" = 5' OR 1" = 10'	
CROSS SECTION	1" = 5'	

GRAPHIC SCALES
20 10 0 20 — 1"=20'
10 5 0 10 — 1"=10'
5 0 5 — 1"=5'

STATE OF OHIO
Steven V. Ciuni
28363
Willis G. Lynn
26415
REGISTERED PROFESSIONAL ENGINEER

WE, THE COMMISSIONERS OF CUYAHOGA COUNTY, IN FORMAL SESSION HEREBY APPROVE THESE PLANS. WE AGREE TO MAINTAIN THE PROJECT IN A MANNER SATISFACTORY TO THE DIRECTOR, DEPARTMENT OF TRANSPORATION, STATE OF OHIO, OR HIS DULY AUTHORIZED REPRESENTATIVE AND WILL MAKE AMPLE PROVISIONS EACH YEAR FOR SUCH MAINTAINENCE. DONE UNDER AUTHORITY OF SECTIONS 5555.02 ET. SEQ. AND 5535.01 OF THE REVISED CODE OF OHIO.

BOARD OF COMMISSIONERS
CUYAHOGA COUNTY

DATE _____ Robert B. Swanay
Dennis J. Kucinich

1977 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.

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

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

APPROVED DATE Jan. 24, 1978 — Ronald A. Stidhume, COUNTY ENGINEER

APPROVED DATE 2-1-78 — Thomas M. Frail, DISTRICT DEPUTY DIRECTOR OF TRANSPORTATION

APPROVED DATE 6-16-78 — Robert B. Pfeifer, ENGINEER, BUREAU OF BRIDGES AND STRUCTURAL DESIGN

APPROVED DATE 6-27-78 — R. E. Gatlin, CHIEF ENGINEER, PLANNING AND DESIGN

APPROVED DATE 6-27-78 — David L. Weir, DIRECTOR, DEPARTMENT OF TRANSPORTATION

SUPPLEMENTAL SPECIFICATIONS			
NUMBER	DATE	NUMBER	DATE
S 625	1-11-74	805	1-13-77
S 713	1-11-74	853	6-26-78
808	1-1-71	956	6-26-78
836	3-12-75		
903	1-1-69		
1001	1-3-77		

STANDARD CONSTRUCTION DRAWINGS									
DRAWING NO.	DATE	DRAWING NO.	DATE	DRAWING NO.	DATE	DRAWING NO.	DATE	DRAWING NO.	DATE
				HL-1	9-6-73				
BP-1	6-1-65	HW-4	1-1-70	HL-3	7-27-73			RB-1-55	2-2-59
				HL-4	1-21-76				
		L-1	6-1-73	HL-5	9-6-73				
		MC-3	6-1-73	HL-6	3-22-77			SD-1-69, SHT. 3	6-12-69
		MC-4	7-26-76	HL-7	1-21-76				
				HL-10	1-21-76				

00668

FILE NO.	CUYAHOGA COUNTY DATE OF LETTING CONTRACT NO.

PLANS PREPARED BY
ADACHE ASSOCIATES INC. · ENGINEERS
6325 YORK RD. · PARMA HGTS., OHIO 44130

DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
APPROVED:

DIVISION ADMINISTRATOR — DATE

F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

2
50

CUYAHOGA COUNTY
CUY.-6A-0.41

SCHEMATIC PLAN

0 50 100 200 300 400 500
SCALE IN FEET

N

BEGIN PROJECT
STA. 20+35.50
BRM-IA 30 (2)

END PROJECT
STA. 26+75.50
BRM-IA 30 (2)

STA. 14+57.41
=℄ DEPOT ST. STA. 10+00.00

STA. 19+42.87
=℄ WOOSTER RD. & LAKE RD.
STA. 10+00.00

BEGIN WORK
STA. 20+00.00

STA. 20+35.50
BRIDGE LIMITS 640.00'
STA. 23+62.59
BRIDGE NUMBER CUY.-6A-0041
STA. 26+70.50

END WORK
STA. 27+60.00

STA. 27+83.86
=℄ PARK DR. & RELOC.
SLOANE AVE. STA. 10+02.75

SECTION 24
SECTION 23

℄ DETROIT-ROCKY RIVER BRIDGE
℄ RELOCATED DETROIT ROAD
℄ DEPOT ST.
℄ LAKE ROAD
℄ DETROIT ROAD
℄ WEST 192 ST.
℄ WRIGHT AVE.
℄ EASTLOOK ROAD
℄ WOOSTER ROAD
℄ SLOANE AVE.
℄ EDANOLA DRIVE
℄ RIVERSIDE DRIVE
℄ MATHEWS AVENUE
℄ RAFFERMAT CT.
℄ BRIDGE APPROACH
℄ PARK DRIVE
℄ GRABER DRIVE
℄ DETROIT AVENUE EXTENSION
℄ GRIDLEY STREET
℄ RIO STREET
℄ SCENIC STREET
PARK ROAD
ROCKY RIVER
CITY OF ROCKY RIVER
CITY OF LAKEWOOD
PORT OF LAKEWOOD

℄ CURVE DATA
℄ RELOC. DETROIT ROAD
P.I. STA.15+56.58
△= 48° 04' 12"
D = 6° 00' 00"
R = 954.93'
T = 425.86'
L = 801.16'
E = 90.66'

℄ CURVE DATA
℄ RELOC. DETROIT ROAD
P.I. STA.27+99.78
△= 13° 10' 07.5"
D = 4° 00' 00"
R = 1432.40'
T = 165.34'
L = 329.22'
E = 9.51'

SCHEMATIC PLAN

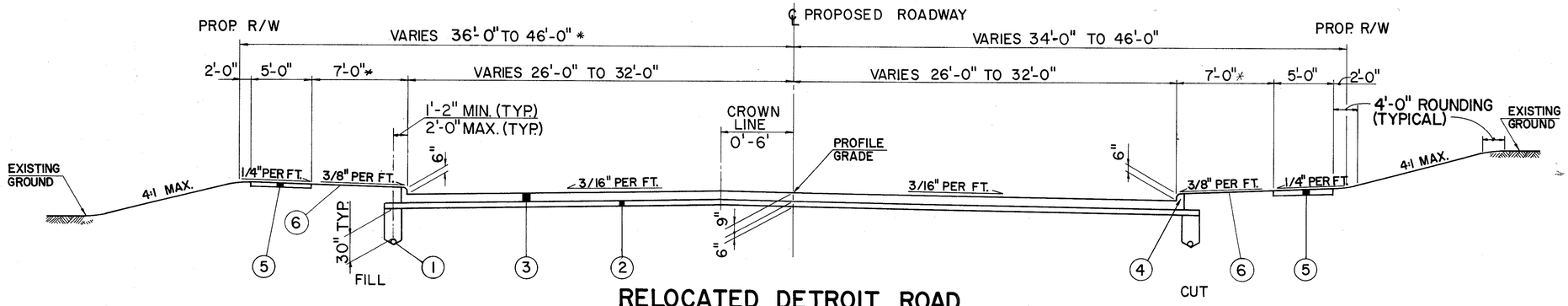
FHWA REGION	STATE	PROJECT	
5	OHIO		

3
50

CUYAHOGA COUNTY
CUY.-6A-0.41

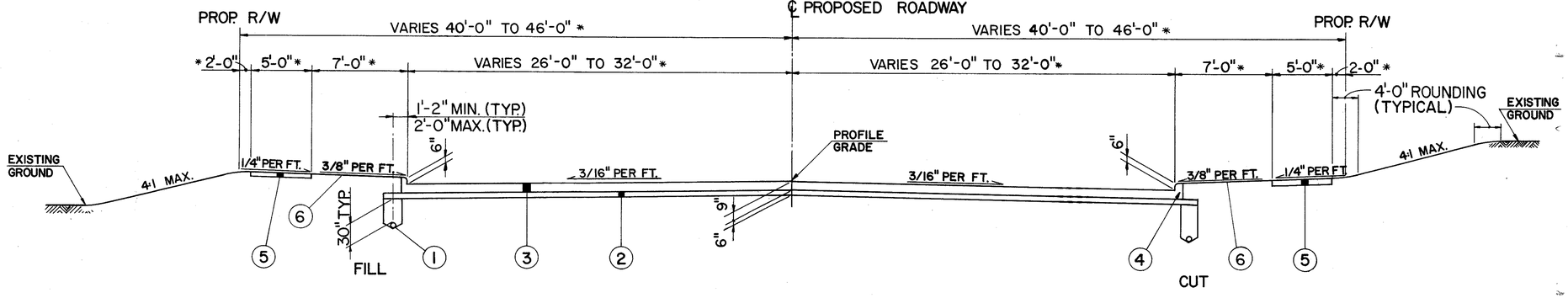
TYPICAL SECTIONS

TYPE 451



RELOCATED DETROIT ROAD

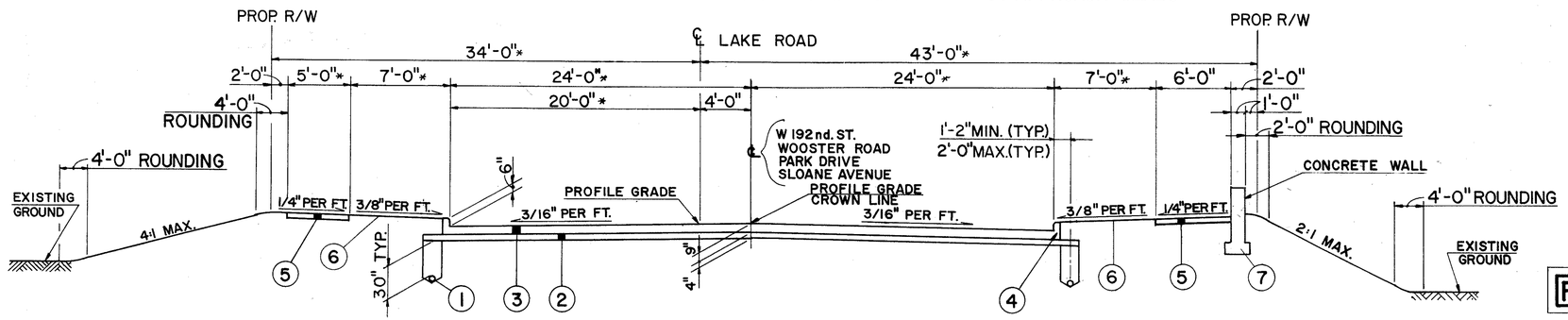
STA. 11+30.72 TO STA. 13+10.72 CROWN LINE VARIES 0' TO 6'
STA. 13+10.72 TO STA. 18+00.00
STA. 18+00.00 TO STA. 19+31.89 CROWN LINE VARIES 6' TO 0'

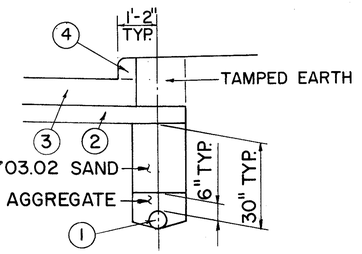


RELOCATED DETROIT ROAD

STA. 10+00 TO STA. 11+30.72
STA. 19+31.89 TO STA. 20+05.50
STA. 27+05.53 TO STA. 30+32.97

STRUCTURE NO.-CUY. 6A 00.41
STA. 20+35.50 TO STA. 26+75.50
30' APPROACH SLABS





TYPICAL UNDERDRAIN DETAIL

LEGEND

(1)	ITEM 605	6" PIPE UNDERDRAINS, AS PER PLAN
(2)	ITEM 310	SUBBASE GRADING A, AS PER PLAN
(3)	ITEM 451	9" REINFORCED CONCRETE PAVEMENT
(4)	ITEM 609	CURB, STANDARD TYPE 2A
(5)	ITEM 608	4" CONCRETE SIDEWALK
(6)	ITEM 660	SODDING
(7)		CONCRETE WALL

* VARIABLE DIMENSIONS, SEE PLAN DETAILS.

NOTES

1. CROSS SECTIONS SHALL GOVERN OVER TYPICAL SECTIONS, WHERE VARIABLE CONDITIONS ARE ENCOUNTERED IN SLOPES.
2. CUT AND FILL SECTIONS ARE INTERCHANGEABLE FOR EITHER SIDE OF ROADWAY.
3. PAVEMENT DETAILS SHALL GOVERN OVER TYPICAL SECTIONS.

FOR INFORMATION ONLY

WEST 192nd STREET
STA. 10+32.94 TO STA. 11+03.12

WOOSTER ROAD
STA. 8+00.00 TO STA. 9+67.94

LAKE ROAD
STA. 10+32.06 TO STA. 13+00.00

PARK DRIVE
STA. 7+85.56 TO STA. 9+71.62

SLOANE AVENUE
STA. 10+35.15 TO STA. 11+75.67

FHWA REGION	STATE	PROJECT	
5	OHIO		

4
50

CUYAHOGA COUNTY

CUY.-6A-0.41

GENERAL NOTES

WATERING AND MOWING PERMANENT SEEDED AREAS:
THE FOLLOWING ESTIMATED QUANTITIES ARE TO BE USED AS DIRECTED BY THE ENGINEER TO PROMOTE GROWTH AND TO CARE FOR THE PERMANENT SEEDED AREAS, AS PER 659.09.

ITEM 659 - WATER	ROCKY RIVER	LAKEWOOD
659 - WATER	0.32 M. GALS.	1.03 M. GALS.
659 - MOWING	0.24 M. SQ. FT	0.08 M. SQ. FT.

STRUCTURES OVER ROCKY RIVER

THE CONTRACTOR SHALL OBSERVE THE FOLLOWING CONDITIONS DURING THE CONSTRUCTION OF THE PROPOSED STRUCTURE OVER ROCKY RIVER.

1. PROPER CONSTRUCTION METHODS SHALL BE UTILIZED TO MINIMIZE LOCAL EROSION AND SILTATION, PARTICULARLY DURING THE EXCAVATION AT THE BRIDGE PIERS.
2. ALL THE AREAS ALONG THE BANK DISTURBED BY CONSTRUCTION OPERATIONS SHALL BE SEEDED, RIPRAPPED AND PROTECTED FROM SUBSEQUENT EROSION PROCESSES.
3. THE CONTRACTOR SHALL TAKE SPECIAL CARE TO AVOID ANY SPILLAGE OF OILS, FUELS, OR ANY OTHER TYPES OF POLLUTANTS WHILE WORKING WITHIN OR ALONG THE BANKS OF WATERWAY. SPECIFIC PLANS SHOULD BE FORMULATED IN ADVANCE OF CONSTRUCTION TO CONTAIN SUCH SPILLS IN THE EVENT OF ANY CONTINGENCY.
4. THE CONTRACTOR SHALL ESTABLISH AND CARRY OUT A PROGRAM FOR IMMEDIATE REMOVAL OF DEBRIS DURING THE CONSTRUCTION OPERATIONS OF THE NEW BRIDGE IN ORDER TO PREVENT THE ACCUMULATION OF **UNSIGHTLY**, DELETERIOUS, AND/OR POTENTIALLY POLLUTED MATERIALS IN THE WATERWAY.
5. THE CONTRACTOR SHALL OBTAIN THE PERMISSION AND APPROVAL OF THE COMMANDER NINTH COAST GUARD DISTRICT AND THE U.S. ARMY CORPS OF ENGINEERS CONCERNING THE PROPOSED METHOD AND SCHEDULE FOR ANY TEMPORARY STRUCTURES **AND OBSTRUCTIONS TO NAVIGATION THAT WILL BE PLACED IN THE WATER AND USED TO CONSTRUCT THE NEW BRIDGE.**

LIMIT OF OPERATIONS

THE CONTRACTOR IS HEREBY ADVISED THAT HE SHALL LIMIT HIS OPERATIONS TO PARCELS 19, 20 & 28 OF THE RIGHT-OF-WAY PLANS AS PROVIDED UNDER PROJECT CUY 254-DA-0.17 AND 6A-0.34. RIGHT-OF-WAY PLAN SHEETS 7 AND 8 ARE INCLUDED IN THIS PLAN AS SHEETS **49** AND **50** . IF ADDITIONAL RIGHT-OF-WAY IS REQUIRED FOR ACCESS, STORAGE OF MATERIALS AND/OR EQUIPMENT, OR OPERATIONS, THE CONTRACTOR SHALL OBTAIN WRITTEN PERMISSION FROM THE AFFECTED PROPERTY OWNERS.

SEQUENCE OF OPERATIONS

THE CONTRACTOR SHALL REMOVE PORTIONS OF THE EXISTING BRIDGE TO PERMIT CONSTRUCTION OF THE NEW BRIDGE, APPROACH ROADWAYS AND UTILITIES.

TRAFFIC

TWO LANES OF TRAFFIC SHALL BE MAINTAINED, ONE (1) IN EACH DIRECTION OF 10' MINIMUM WIDTH ACROSS THE EXISTING BRIDGE AND ON WOOSTER ROAD AND PARK DRIVE AT ALL TIMES DURING CONSTRUCTION OF THE NEW FACILITIES.

ACCESS TO PIER 2 ON THE LAKEWOOD SIDE OF THE RIVER **WILL BE PERMITTED ON PARK DRIVES FROM THE DETROIT ROAD ENTRANCE ONLY. HOWEVER, THE ROADWAY SHALL BE MAINTAINED AND LEFT IN AS GOOD OR BETTER CONDITION AS WHEN WORK IS INITIATED.**

AN ESTIMATED QUANTITY OF 100 CU. YDS. OF ITEM 404, BITUMINOUS CONCRETE FOR MAINTAINING TRAFFIC . . . . . IS PROVIDED IN THE GENERAL SUMMARY TO BE APPLIED AT LOCATIONS WHERE DIRECTED AND IN THE AMOUNTS SPECIFIED BY THE ENGINEER.

GENERAL

ITEM 619 FIELD OFFICE

THE CONTRACTOR SHALL PROVIDE A MINIMUM OF 800 SQ. FT. OF FLOOR SPACE FOR THE FIELD OFFICE AND IN ADDITION TO THE REQUIREMENTS OF ITEM 619, SHALL PROVIDE AND MAINTAIN SANITARY PROVISIONS AS PER 107.06. ALL THE ABOVE IS INCLUDED IN THE LUMP SUM PRICE BID FOR ITEM 619 "FIELD OFFICE".

ROUNDING OF CORNERS SHOWN ON CROSS SECTIONS

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

UNDERGROUND UTILITIES

THE LOCATIONS OF THE UNDERGROUND UTILITIES SHOWN ON THE PLANS HAVE BEEN OBTAINED BY DILIGENT FIELD CHECKS AND SEARCHES OF AVAILABLE RECORDS. IT IS BELIEVED THAT THEY ARE ESSENTIALLY CORRECT, BUT THE STATE OF OHIO DOES NOT GUARANTEE THEIR ACCURACY OR COMPLETENESS.

ESTIMATED QUANTITIES

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

ELEVATION DATUM

ALL ELEVATIONS ARE BASED ON "U.S.C.G.S." DATUM.

ROADWAY

REMOVAL OF EXISTING PIPE

THE REMOVAL OF ALL EXISTING PIPE DRAINS WHICH WOULD NORMALLY BE REMOVED IN VARIOUS EXCAVATION ITEMS SHALL BE INCLUDED FOR PAYMENT IN THE UNIT PRICES BID FOR THE RESPECTIVE EXCAVATION ITEMS, UNLESS OTHERWISE ITEMIZED IN THE PLANS.

REMOVAL OF TREES AND STUMPS

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

SIZES	ROCKY RIVER	LAKEWOOD
18" (12"-24")	15	10
30" (24"-36")	1	1
48" (36"-60")	--	--
60" & OVER	--	--

THE ABOVE ESTIMATE IS APPROXIMATE AND THE STATE OF OHIO RESERVES THE RIGHT TO ORDER THE REMOVAL OF ADDITIONAL TREES OR STUMPS OUTSIDE OF THE LIMITS OF CONSTRUCTION BUT WITHIN THE RIGHT-OF-WAY AND/OR EASEMENT LINES. PAYMENT FOR THE REMOVAL OF THESE ADDITIONAL TREES OR STUMPS SHALL BE INCLUDED IN THE LUMP SUM PRICE BID FOR ITEM 201, "CLEARING AND GRUBBING". **TRIMMING OF ANY TREES TO MEET THE CLEARANCE REQUIREMENTS AS PER NOTES ON SHEETS 6,7 & 8 SHALL BE INCLUDED IN THIS LUMP SUM ITEM.**

NON-RIGID PAVEMENT REMOVAL

REMOVAL AND DISPOSAL OF EXISTING NON-RIGID PAVEMENT, UNLESS OTHERWISE INDICATED ON THESE PLANS, SHALL BE MEASURED AND PAID FOR AS ITEM 203 EXCAVATION NOT INCLUDING EMBANKMENT CONSTRUCTION.

RIGID PAVEMENT REMOVAL

EXISTING RIGID PAVEMENT, SIDEWALK, CURB, AND PARKING ISLANDS SHALL BE REMOVED UNDER ITEM 202 WHEN IT IS LOCATED LESS THAN THREE (3) FEET BELOW THE PROPOSED PAVEMENT SUBGRADE IN PROPOSED PAVEMENT AREAS OR LESS THAN THREE (3) FEET BELOW THE PROPOSED FINISHED SURFACE IN AREAS OUTSIDE THE PROPOSED PAVEMENT.

RESTORATION OF AREA PIERS 1 AND 2

PIER 1 IS IN A GRAVELED BOAT STORAGE AND PARKING AREA. THIS AREA SHALL BE BACKFILLED TO 98% DENSITY AND CAPPED WITH A 6" MINIMUM LAYER OF ITEM 304 TO MEET THE EXISTING CONTOURS OR AS DIRECTED BY THE ENGINEER. 125 CUBIC YARDS OF ITEM 304 IS PROVIDED FOR IN THE PLAN FOR THIS PURPOSE.

PIER 2 IS ON THE EDGE OF A GRAVEL DRIVE AND BOTTOM OF THE VALLEY BANK. THE GRAVEL DRIVE SHALL BE BACKFILLED TO 98% DENSITY AND CAPPED WITH A 6" MINIMUM LAYER OF ITEM 304 AGGREGATE. THE VALLEY BANK SHALL BE RESTORED TO ELIMINATE AN EXISTING DEPRESSION AND MEET THE GROUND LINE ON EITHER SIDE. THE PLAN INDICATES TENTATIVE CONTOUR LINES FOR REGRADING THE SITE. PIER EXCAVATION MAYBE USED FOR THIS PURPOSE IF THE MATERIAL MEETS THE REQUIREMENTS OF 203.08. **ACCESS ALONG THE PIER SHALL BE MAINTAINED.**

THE FOLLOWING QUANTITIESARE INCLUDED IN THE PLAN FOR PIER 2. ITEM 304 AGGREGATE 75 CUBIC YARDS, ITEM 659 SEEDING AND MULCHING 500 SQUARE YARDS.

ITEM 659, SEEDING

QUANTITIES FOR SEEDING ARE CALCULATED FOR THE SOIL AREAS BETWEEN LINES TEN (10) FEET OUTSIDE THE WORK LIMITS, AS SHOWN ON THE CROSS SECTIONS, OR TO THE RIGHT-OF-WAY LINE IF SUCH LINE IS LESS THAN (10) FEET FROM THE WORK LIMITS.

AGRICULTURAL LIMING, AS PER PLAN

THE LOCATION AND NEED FOR AGRICULTURAL LIMING WILL BE DETERMINED BY LABORATORY TESTS, AFTER ROUGH GRADING OPERATIONS HAVE BEEN PERFORMED. QUANTITIES OF AGRICULTURAL LIMING, AS SHOWN ON THE PLANS, ARE SUFFICIENT FOR THE ENTIRE PROJECT, BUT WILL BE NONPERFORMED FOR THE AREAS WHERE TESTS SHOW THAT THE LIMING IS NOT REQUIRED.

WATER POLLUTION, SOIL EROSION AND SILTATION CONTROL

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

		ROCKY RIVER	LAKEWOOD
207	TEMPORARY SEEDING AND MULCHING	100 SQ. YD	100 SQ. YD.
659	WATER	**10** M GAL.	**10** M. GAL.
207	TEMPORARY SLOPE DRAINS	100 LIN. FT.	100 LIN. FT.
207	TEMPORARY BENCHES, **DIKES**, DAMS AND SEDIMENT BASINS	50 CU. YD.	50 CU. YD.
659	MOWING	2 M. SQ. FT.	2 M. SQ. FT.
659	COMMERCIAL FERTILIZER (12-12-12)	0.05 TON	0.10 TON
659	REPAIR SEEDING AND MULCHING	50 SQ. YD.	50 SQ. YD.

DRAINAGE

ITEM SPECIAL 16" SLEEVE IN DOCK WALL

THIS ITEM OF WORK SHALL CONSIST OF THE EXCAVATION FOR THE CUTTING OF THE EXISTING PILE WALL, FURNISHING A 16" O.D. STEEL SLEEVE AND WELDING IT INTO THE HOLE CUT TO THE LINE AND GRADE AS SHOWN ON THE PLAN OR AS DIRECTED BY THE ENGINEER. PAYMENT FOR THIS WORK SHALL BE LUMP SUM FOR ITEM SPECIAL " 16" SLEEVE IN DOCK WALL" AND SHALL INCLUDE ALL LABOR, MATERIAL AND EQUIPMENT NECESSARY TO DO THE WORK.

LIGHTING AND TRAFFIC CONTROL

THIS WORK SHALL CONSIST OF FURNISHING AND INSTALLING ELECTRICAL OR TRAFFIC CONTROL CONDUITS, JUNCTION BOXES, POLE BASES WITH ANCHOR BOLTS, STRUCTURE GROUNDING SYSTEM AS PER PLAN OR AS SPECIFIED BY STANDARD CONSTRUCTION DRAWINGS HL-4 AND HL-7 AND SUPPLEMENTAL SPECIFICATIONS S625.

COOPERATION WITH UTILITY COMPANIES

THE CONTRACTOR IS ADVISED THAT THROUGHOUT THESE PLANS THE UTILITY COMPANIES HAVE BEEN CALLED UPON TO PERFORM NECESSARY ADJUSTMENTS OF PUBLIC OR PRIVATE UTILITY FIXTURES, PIPE LINES AND OTHER APPURTENANCES WITHIN OR ADJACENT TO THE LIMITS OF CONSTRUCTION. THE CONTRACTOR SHALL COOPERATE WITH THE UTILITY COMPANIES IN ACCORDANCE WITH 105.06 TO ARRANGE A MUTUALLY ACCEPTABLE WORK SCHEDULE. SUBJECT TO THE APPROVAL OF THE ENGINEER.

THE FOLLOWING IS A LIST OF THE VARIOUS UTILITY COMPANIES AFFECTED BY THIS CONTRACT.

CLEVELAND ELECTRIC ILLUMINATING COMPANY
55 PUBLIC SQUARE, CLEVELAND, OHIO

EAST OHIO GAS COMPANY
1201 EAST 55TH STREET, CLEVELAND, OHIO

OHIO BELL TELEPHONE COMPANY
320 WEST SUPERIOR AVENUE, CLEVELAND, OHIO

DEPARTMENT OF WATER AND SEWER
1201 LAKESIDE AVENUE, CLEVELAND, OHIO

COMPENSATION FOR THE ABOVE COOPERATION SHALL BE INCIDENTAL TO THE VARIOUS PAY ITEMS INCLUDED WITHIN THIS PROJECT.

FOR GENERAL NOTES PERTAINING TO WATER WORK, SEE SHEET NO. **38-44**.
FOR GENERAL NOTES PERTAINING TO BRIDGE STRUCTURE, SEE SHEET NO. **15-18**.

ADACHE ASSOCIATES, INC.
CALC. BY: R.W.H. DATE: 8-15-77
CHKD. BY: T.M.J. DATE: 8-17-77

F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

5/50

CUYAHOGA COUNTY
CUY - 6A - 0.41

SUMMARY OF TABLES

SHEET NO.	ITEM / DESCRIPTION / LOCATION	202 PIPE REMOVED 15" & UNDER LIN. FT.	202 MANHOLE REMOVED EACH	203 EXCAVATION CU. YD.	203 EMBANKMENT CU. YD.	601 ROCK CHANNEL PROTECTION TYPE B/BED. CU. YD.	602 CONCRETE MASONRY CU. YD.	603 12" CONDUIT TYPE B, 706.01, 706.02 OR 706.08 LIN. FT.	603 12" CONDUIT TYPE F LIN. FT.	659 SEEDING AND MULCHING SQ. YD.	SPECIAL 16" SLEEVE IN DOCK WALL LUMP
	ROCKY RIVER										
4	GENERAL NOTES										
6	STA. 20+00 - 21+00			465	85					300	
7	STA. 21+00 - 25+00					2	0.21		24		
	TOTAL ROCKY RIVER			465	85	2	0.21		24	300	
	LAKEWOOD										
4	GENERAL NOTES									500	
7	STA. 21+00 - 25+00							37			LUMP
8	STA 25+00 - 27+25	50	1	517	163					454	
	TOTAL LAKEWOOD	50	1	517	163			37		954	LUMP

CALCULATIONS

ITEM 659 AGRICULTURAL LIMING

ROCKY RIVER: AREA OF ITEM 659 "SEEDING AND MULCHING" x FACTOR = 300 S.Y. x 9 x 100/1000 x 1/2000 = 0.135 TON USE 0.15 TON
LAKEWOOD: AREA OF ITEM 659 "SEEDING AND MULCHING" x FACTOR = 954 S.Y. x 9 x 100/1000 x 1/2000 = 0.429 TON USE 0.45 TON

ITEM 659 COMMERCIAL FERTILIZER (12-12-12)

ROCKY RIVER:
AREA OF ITEM 659 "SEEDING AND MULCHING" x FACTOR = 300 S.Y. x 9 x 20/1000 x 1/2000 = 0.027 TON
AREA OF ITEM 659 "REPAIR SEEDING AND MULCHING" x FACTOR = 50 S.Y. x 9 x 15/1000 x 1/2000 = 0.003 TON
AREA OF ITEM 659 "TEMPORARY SEEDING AND MULCHING" x FACTOR = 100 S.Y. x 9 x 10/1000 x 1/2000 = 0.005 TON
TOTAL = 0.035 TON USE 0.05 TON

LAKEWOOD:
AREA OF ITEM 659 "SEEDING AND MULCHING" x FACTOR = 954 S.Y. x 9 x 20/1000 x 1/2000 = 0.086 TON
AREA OF ITEM 659 "REPAIR SEEDING AND MULCHING x FACTOR = 50 S.Y. x 9 x 15/1000 x 1/2000 = 0.003 TON
AREA OF ITEM 659 "TEMPORARY SEEDING AND MULCHING x FACTOR = 100 S.Y. x 9 x 10/1000 x 1/2000 = 0.005 TON
TOTAL = 0.094 TON USE 0.10 TON

TYPE CODE X031
(UNLESS OTHERWISE SHOWN)

75%-Federal
12.5%-State
12.5%-County (Issue1)

GENERAL SUMMARY

ITEM	ROCKY RIVER	LAKE-WOOD		TOTAL	UNIT	DESCRIPTION	SHEET
						ROADWAY	
202	LUMP			LUMP	LUMP	PARCEL - NO. 19WD; REMOVAL OF ONE FRAME SHED, ONE INCLINED BOAT LIFT, ONE BOAT LAUNCH PLATFORM, ONE WOOD STEPS.	
201	LUMP	LUMP		LUMP	LUMP	CLEARING AND GRUBBING	
202		410		410	SQ. YD.	PAVEMENT REMOVED	10
202		270		270	SQ. FT.	SIDEWALK REMOVED	10
202		190		190	LIN. FT.	CURB REMOVED	10
202		33		33	CU. YD.	CONCRETE WALL REMOVED	10
202		240		240	SQ. FT.	CONCRETE ISLAND REMOVED	10
202		50		50	LIN. FT.	PIPE REMOVED, 15" & UNDER	5
202		1		1	EACH	MANHOLE REMOVED	5
203	465	517		982	CU. YD.	EXCAVATION, NOT INCLUDING EMBANKMENT CONSTRUCTION	5
203	85	163		248	CU. YD.	EMBANKMENT	5
304	125	75		200	CU. YD.	AGGREGATE BASE	4
404		100		100	CU. YD.	BITUMINOUS CONCRETE FOR MAINTAINING TRAFFIC	4
						EROSION CONTROL	
						TYPE CODE Y-005	
601	2			2	CU. YD.	ROCK CHANNEL PROTECTION TYPE B WITH BEDDING	5
659	300	954		1,254	SQ. YD.	SEEDING AND MULCHING	5
659	50	50		100	SQ. YD.	REPAIR SEEDING AND MULCHING	4
659	0.15	0.45		0.60	TON	AGRICULTURAL LIMING, AS PER PLAN	5
659	0.05	0.10		0.15	TON	COMMERCIAL FERTILIZER (12-12-12)	5
207	100	100		200	SQ. YD.	TEMPORARY SEEDING AND MULCHING	4
659	10.32	11.03		21.35	M. GAL	WATER	4
659	2.08	2.24		4.32	M. SQ. FT.	MOWING	4
207	100	100		200	LIN. FT.	TEMPORARY SLOPE DRAINS	4
207	50	50		100	CU. YD.	TEMPORARY BENCHES, DIKES, DAMS AND SEDIMENT BASINS	4
						DRAINAGE	
602	0.21			0.21	CU. YD.	CONCRETE MASONRY	5
603		37		37	LIN. FT.	12" CONDUIT TYPE B, 706.01, 706.02 or 706.08	5
603	24			24	LIN. FT.	12" CONDUIT TYPE F	5
SPECIAL		LUMP		LUMP	LUMP	16" SLEEVE IN DOCK WALL	5
						TRAFFIC CONTROL AND LIGHTING	
625	685	680		1365	LIN. FT.	2" CONDUIT, S 713.04	12
625	330	315		645	LIN. FT.	4" CONDUIT, S 713.04	12
625	3	3		6	EACH	JUNCTION BOX	12
625	2	2		4	SETS	ANCHOR BOLTS	12
625	1	1		2	SETS	ANCHOR BOLTS, COMBINATION POLE	12
625	LUMP	LUMP		LUMP	LUMP	STRUCTURE GROUNDING	12
614	LUMP	LUMP		LUMP	LUMP	MAINTAINING TRAFFIC	4
619	LUMP	LUMP		LUMP	LUMP	FIELD OFFICE	4
623	LUMP	LUMP		LUMP	LUMP	CONSTRUCTION LAYOUT STAKES	

FOR BRIDGE QUANTITIES, SEE SHEET 14
FOR WATER WORK QUANTITIES, SEE SHEET 37

F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

6 / 50

CUYAHOGA COUNTY
CUY.-6A-0.41

BEGIN WORK CUY-6A-0.41 STA. 20+00.00

BEGIN PROJECT CUY-6A-0.41 STA. 20+35.50

BRM-IA 30 (2)

BEGIN SHEET STA. 17+00

END SHEET STA. 21+00

RELOCATED DETROIT ROAD

BLDG. #1512

2 STY. BR. OFFICE & STORE

1 STY. BR STORAGE

3 STY. BR. STORE

CANOPY (TO REMAIN)

CANOPY (TO BE REMOVED)

C.B.

ASPHALT PARKING

MEET EXISTING WITH BUTT JOINT

CONCRETE WALL

PLATE TYPE GUARD RAIL

STA. 16+90.3 TO STA. 18+70.3 REPLACE EXISTING ASPH. CONC. WITH 2" ITEM 404 & 7" ITEM 304

STA. 18+36.41, 47' LT. END CONC. WALL

CABLE TYPE GUARDRAIL

CONST. LIMIT

1 STORY CONCRETE BLOCK GARAGE

1 STORY BRICK OFFICE BLDG.

SHRUBS

CONC. WALK

GUARDRAIL

ASPHALT DRIVE

GRAVEL PARKING

2½ STORY FRAME RES.

BRUSH & SMALL TREES

HEAVY BRUSH & SCATTERED TREES

REMOVE BOARDWALK

REMOVE INCLINED BOAT LIFT

STA. 19+42.87 ℄ RELOC. DETROIT RD. STA. 10+00.00 ℄ WOOSTER RD. ℄ LAKE RD.

S 79° 57' 45.5" E

STA. 20+05.50 BEGIN APPROACH SLAB

BENCH 30:1

2-12" TREES 1-18" TREE

CONST. LIMIT

℄ WOOSTER ROAD

℄ DETROIT RD.

℄ REF P.T. STA. 19+31.89

℄ REF STA. 19+42.87

℄ REF STA. 20+40.54

RELOC. DETROIT RD. 71.40' 45° 50' I.P. 50'

MICROFILMED DEC 15 1982

FOR WATER MAIN DETAILS & QUANTITIES SEE SHTS 37, 47 & 48

℄ CURVE DATA ℄ RELOC. DETROIT RD.
P.I. STA. 15+56.58
Δ = 48°04'12"
D = 6°00'00"
R = 954.93'
T = 425.86'
L = 801.16'
E = 90.66'

ADACHE ASSOCIATES, INC. CALC BY A.T.D. DATE 6/78 CHKD. BY A.H.H. DATE 6/78

NOTE: DISTURBANCE AND/OR REMOVAL OF VEGETATION OUTSIDE THE CONSTRUCTION LIMIT AND UNDER THE STRUCTURE SHALL BE HELD TO A MINIMUM. THE TOPS OF TREES REMAINING UNDER THE STRUCTURE SHALL BE TRIMMED AS REQUIRED TO CLEAR THE BOTTOM OF THE GIRDERS BY TEN (10) FEET

FOR BRIDGE DETAILS SEE SHEETS 13 THRU 36

STA. 20+00	TO STA. 21+00	
EXCAVATION	465	CU. YD.
EMBANKMENT	85	CU. YD.
SEEDING	300	SQ. YD.

BEGIN EARTHWORK QUANTITIES CUY-6A-0.41

EXISTING GROUND
PROPOSED GRADE

+0.76%

SUBGRADE PROVIDED UNDER PROJECT CUY-6A-0.41

BRIDGE LIMITS 640.00

18" ST. ℄ DETROIT RD.

18" SAN ℄ DETROIT RD.

ESTIMATED QUANTITIES

REF NO.	STATION TO STATION	SIDE

TOTALS TO SHEET

DETROIT ROAD PLAN & PROFILE STA. 17+00 TO STA. 21+00

F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

7
50

CUYAHOGA COUNTY
CUY.-6A-0.41

HUB & TACK
312.12'
274.97'
105°
DETROIT RD
℄ RELOC.
HUB & TACK

℄ REF. STA. 22+44.95

CONC. DOCK CAP
D.H.
HUB & TACK SET
285.7'
16.40'
45°
23.7'
28.74'
℄ RELOC. DETROIT ROAD

℄ REF. STA. 24+84.43

ADACHE ASSOCIATES, INC.
CALC. BY A.H.H. DATE 6/82
CHKD. BY A.H.H. DATE 6/82

FOR WATER MAIN PLAN AND DETAILS, SEE SHEETS 45 THRU 48.

FOR BRIDGE DETAILS AND QUANTITIES SEE SHEETS 13 THRU 36.

BEGIN SHEET STA. 21+00

END SHEET STA. 25+00

667263 ℄

△ 581.50

WOODEN STEPS

R/W

FENCE TO REMAIN

R/W

FR. SHED

INCLINED BOAT LIFT

HEAVY BRUSH
SCATTERED TREES
6" TO 12" - 17
12" TO 18" - 13

1 STORY FRAME SHED

D-1

ROCK CHANNEL PROTECTION TYPE B 6'+4'+1.5'

12"

8"

℄ GRAVEL AREA

STA. 22+23.00 ℄ PIER #1

STA. 22+58.87

WOOD STEPS

℄ RELOCATED DETROIT ROAD

22 23 S 79°57' 45.5" E 24

NOTE: FOR RESTORATION OF GRAVEL AREA AROUND PIER-1, SEE GENERAL NOTES.

CRANE PLATFORM W/ ROOF

BOAT LAUNCH PLATFORM

WOOD CRIB DOCK WALL

R/W

NOTE: THE CONTRACTOR MAY, IF NECESSARY, CLEAR AND USE THE FOLLOWING VALLEY SLOPE AREAS FOR ACCESS TO THE PIERS: WEST ABUTMENT TO PIER 1: AREA BETWEEN THE PROPOSED BRIDGE AND THE NORTHERLY RIGHT-OF-WAY LINE, EAST ABUTMENT TO PIER 2: AREA BETWEEN THE PROPOSED BRIDGE AND THE SOUTHERLY RIGHT-OF-WAY OR AERIAL LINE.
CLEARING OF OTHER VALLEY SLOPE AREAS FOR ACCESS TO THE PIERS WILL NOT BE PERMITTED.

CRANE
WOOD

DEDICATED DOCK LINE VOL. 21, PG. 6 & 8

ROCKY RIVER FLOW

CITY OF ROCKY RIVER
CITY OF LAKEWOOD

SEC. 24
SEC. 23

R/W

668.43 ℄

C.B.

AERIAL

BOAT DOCK TO REMAIN

STEEL SHEET PILE WITH CONCRETE CAP DOCK WALL

675.82

D-2

STA. 24+88.00 ℄ PIER #2

STA. 23+62.59

SEE DETAIL

STA. 24+66.31

NOTE: FOR RESTORATION OF GRAVEL AREA AND SLOPE AROUND PIER-2, SEE GENERAL NOTES.

℄ GRAVEL AREA

DEDICATED DOCK LINE VOL. 21, PG. 5 & 6

BOAT DOCK TO REMAIN

1/4"
16" I.D. × 1/4" STEEL SLEEVE 6' LONG
12" TYPE "B" PIPE 706.01, 706.02 OR 706.08
JUTE SEAL 706.11
EXISTING WALE 2 6"×3½" 15.7#
EXIST. 1" ø TIE RODS 10.5' C-C
CENTER ON JOINT
DETAIL

1/4"
16" I.D. × 1/4" STEEL SLEEVE
12" TYPE "B" PIPE
JUTE SEAL
SECTION A-A

21 22 23 24 25

668.08 668.44 668.80 669.16 669.52 669.88 670.24 670.60 670.76

675 670 665 660 610 600 590

BRIDGE LIMIT 640.00'

℄ STA. 22+23-PIER #1

+0.72%

℄ STA. 24+88-PIER #2

PROPOSED GRADE

MAXIMUM RECORDED HIGH WATER ELEVATION 583.8 JANUARY 1959

MATCH LINE ROADWAY QUANTITIES

MATCH LINE BRIDGE QUANTITIES

EXISTING GROUND LINE

BANK @ 28° ± LEFT

12" ℄ 575.96, 8" ø ℄ 576.46

8" STEEL PIPE

STD. HW-4

STD. MC-4 CONC. COLLAR

24' @ 4.0% 12" TYPE F CONDUIT

12" ℄ 575.00

STA. 21+00	TO STA. 25+00	
EXCAVATION	0	CU. YD.
EMBANKMENT	0	CU. YD.
SEEDING	0	SQ. YD.

582.55 577.15 577.50 578.60 578.58 580.80

+51 +23 +45 +56 +78 +84

MATCH LINE ROADWAY QUANT.
MATCH LINE BRIDGE QUANT.
GROUND LINE 30' ± LT.
EXISTING GROUND @ ℄ LINE
8" STEEL PIPE
NORMAL WATER SURFACE ELEV. 572 ± ?
12" ℄ 572.5
37' @ 4.0% 12" TYPE B CONDUIT 706.02 OR 706.08
STD. MC-4 CONC. COLLAR
12" ℄ 573.33
8" ø 12" ℄ 574.48

ESTIMATED QUANTITIES

REF NO.	STATION TO STATION	SIDE	601 ROCK CHANNEL PROTECTION TYPE B C.Y.	602 CONC. MASONRY C.Y.	603 12" TYPE B 706.01, 706.02 OR 706.08 L.F.	603 12" TYPE F L.F.	SEE SHT. NO.
	(ROCKY RIVER)						
TOTALS TO SHEET 5			2	0.21		24	
D-1	22+20 - 22+50	LT.	2	0.21		24	
D-2	24+52 - 24+89	LT.			37		
	(LAKEWOOD)						
TOTALS TO SHEET 5					37		
						SPECIAL 16" SLEEVE IN DOCK WALL	LUMP

DETROIT ROAD PLAN & PROFILE STA. 21+00 TO STA. 25+00

F.H.W.A. REGION	STATE	PROJECT		8 / 50
5	OHIO			

CUYAHOGA COUNTY
CUY.- 6A-0.41

OLD STONE F.D.N.

MICROFILMED DEC 15 1982

RELOC. DETROIT RD. I.P. SET

℄ REF. P.C. STA. 26+34.44

CONC. CURB D.H.&V. SLOANE AVE. EX. BRIDGE P.I. P.K. P.K. SET BK. TAN. P.I. TAN. 45° CONC. CURB D.H.&V.

F. P.I. STA. 27+99.77

FOR LIMIT OF ROADWAY REMOVAL ITEMS & BRIDGE DEMOLITION SEE SHTS. 10 & 11
NOTE: REGRADING OF EXIST. BRIDGE APPROACH INCLUDED WITH BRIDGE DEMOLITION.

END PROJECT CUY-6A-0.41 STA. 26+75.50

EXISTING DETROIT-ROCKY RIVER BRIDGE S 67°40'37"E

BRM-IA 30 (2)

BEGIN SHEET STA. 25+00

END WORK CUY.-6A-0.41 STA. 27+60.00

END SHEET STA. 27+00

RELOCATED DETROIT ROAD ℄ S 79°57'45.5" E 26

CONSTRUCTION LIMIT — AERIAL — R/W

STONE F.D.N. — S.M.H. — CONC. F.D.N. — 30:1 BENCH

METER VAULT TO BE ABAND. — REMOVE — METER VAULT TO BE ABAND.

CONC. I.S. — CREMONE AVENUE — C.E.I. M.H.

STA. 27+05.53 END APPROACH SLAB

℄ PARK DRIVE — TO BE ABD. — TO BE ABD. — TO BE ABD.

WALK — CONC. ISLAND — W.M.H. — 24"W — 6"W — RELOCATED SLOANE AVENUE — EXISTING SLOANE AVENUE

FIRE ALARM BOX — S.M.H. — CONC. WALK — SIG. CONTROL — CONST. LIMIT R/W — 6" CONC. — 6" UNDERDRAIN TO REMAIN — PT. — O.B.T. — 2 DUCTS — 6 DUCTS — 1 DUCT — 5 DUCT

℄ RELOC. DETROIT RD. STA. 27+83.86
℄ PARK DR. & SLOANE AVE. STA. 10+02.75

6 DUCTS — 12"W — BRIDGE APPROACH RIGHT OF WAY — 12" S.A.N. & 24" S.T. — 2 C.E.I. M.H.S — 6" CONC. — 2 DUCTS — 6" WALK — R/W — CONST. LIMIT

GEOD. MON. NO. 1734 — O.B.T. MH. — 2 DUCTS — 6" CONC. — 6" WALK

2 CONCRETE PARKING — 6 STORY BRICK APARTMENT

N 25°08'44"E ℄ RELOCATED SLOANE AVENUE — N 20°19'41"E ℄ EXISTING SLOANE AVENUE

℄ 3/4455 — ℄ 205495 — ℄ 100465 — ℄ 602359 — ℄ 610000

B.M. C.R.G.S. O.M. 1437
52' E. OF ℄ SLOANE AVE. PRODUCED S. & 25' S. OF ℄ DETROIT AVE. - EL. 672.258

FOR WATER MAIN DETAILS & QUANTITIES SEE SHTS. 37 & 46 THRU 48.

FOR RESTORATION OF SLOPE AROUND PIER-2, SEE GENERAL NOTES.

NOTE: DISTURBANCE AND/OR REMOVAL OF VEGETATION OUTSIDE THE CONSTRUCTION LIMIT AND UNDER THE STRUCTURE SHALL BE HELD TO A MINIMUM. TOPS OF TREES REMAING UNDER THE STRUCTURE SHALL BE TRIMMED AS REQUIRED TO CLEAR THE BOTTOM OF THE GIRDERS BY TEN (10) FEET MINIMUM.

LIGHT WOODS & BRUSH { 6" TO 12" - 15; 12" TO 18" - 5; 18" TO 24" - 2; 24 TO 36" - 1 }

ADACHE ASSOCIATES, INC. CALC. BY R.C.T. DATE 6-82
CHKD. BY R.W.H. DATE 6-82

CURVE DATA

℄ RELOC. DETROIT RD.
P.I. STA 27+99.78
Δ = 13°10'07.5"
D = 4°00'00"
T = 165.34'
R = 1432.40'
L = 329.22'
E = 9.51'

℄ PARK DRIVE
P.I. STA 8+68.29
Δ = 30°50'03"
D = 19°05'55"
T = 82.73'
R = 300.00'
L = 161.45'
E =

25 26 27 28 29

BRIDGE LIMIT 640.30 — STA. 26+70.50 BRIDGE LIMIT — STA. 27+03.53 END APPROACH SLAB

PROPOSED GRADE — SUBGRADE PROVIDED UNDER PROJECT CUY-6A-0.41 — EXISTING GRADE

+0.72% — -0.52% — PI ELEV. 673.49 STA. 28+50 — SMH. RIM ELEV. 673.02 STA. 28+52 U/I.C.

+06.01 6"ℝ 668.5 — D1 45° @ 0.24% — D2 36° @ 0.24% — +06.02 6"ℝ 666.76 — 12" ST. — 6" W&L — +38.02 6"ℝ 667.01

+43.01 6"ℝ 668.39 — 12" ST. — 2 C.E.I. DUCTS @ ℄ — 6 TELE. DUCTS @ ℄

+17.03 6"ℝ 667.96 — 6" U/D TO REMAIN — +75.03 6"ℝ 668.46 D5 @ 0.24% — +100.03 6"ℝ 668.40 — 24" ST. — 12" S.A.N. — 200' V.C.

658.00 — 30:1 BENCH — EXIST. 36" S.A.N. ℄ 583.0 — END EARTHWORK QUANTITIES CUY-6A-0.41

Ex. E. 24" ℄ 662.26

STA. 25+00	TO STA. 27+25	
EXCAVATION	517	CU. YD.
EMBANKMENT	163	CU. YD.
SEEDING	454	SQ. YD.

ESTIMATED QUANTITIES

REF NO.	STATION TO STATION	SIDE	MANHOLE REMOVED EA.	PIPE REMOVED 15"ℰ UNDER LF
D1	26+75 — 27+25	LT.	1	30
			1	30
TOTALS TO SHEET 5				

DETROIT ROAD PLAN & PROFILE STA. 25+00 TO STA. 29+00

SEEDING		ADACHE ASSOCIATES INC.
END WIDTH	SQ. YDS.	CALC. BY: D.J.N. DATE: 5-13-76 CHKD. BY: R.W.H DATE: 6-8-76

FH.W.A. REGION	STATE	PROJECT	
5	OHIO		

9
50

CUYAHOGA COUNTY
CUY-6A-0.41

	END AREA		VOLUME	
	CUT	FILL	CUT	FILL
	4	46		
A.H.	66	5		
BK.	14	48		
	50	65		
			37	68
AH	29	81		
			(480)	(955)
			(465)	(885)
BK.	38	33		
			10	106
	37	41		

70 60 50 40 30 20 10 0 10 20 30 40 50 60

675
670
665
675
670
665
675
670
665
670
665
660
670
665
660

STA 11+75 SLOANE RD.
END 659 SEEDING LT.

MATCH LINE SLOANE AVE.

673.04
STA. 28+00
672.62

MATCH LINE SLOANE AVE. AH.

MATCH LINE PARK DR.

STA 7+85 PARK DR.
END 659 SEEDING RT.

R/W 110 100 90 80 70

SWALE @ 1.00

670 670

672.16
STA. 27+50
671.8

MATCH LINE BRIDGE DEM. PLAN 28' LT. NORMAL TO CURB LINE

LIMIT 659 SEEDING ROADWAY PLAN

MATCH LINE PARK DR. AH.

STA 27+35
RESUME EARTHWORK
CUY-254DA-0.20
CUY-6A-0.37
R/W END EARTHWORK
CUY-6A-0.41

4:1 NOR.

STA 27+00
FOR EAST ABUTMENT
STA 26+40 TO STA 27+00

STA 26+40
RESUME EARTHWORK

R/W 95 85 75 65

SWALE @ 0.75

STA 25+75 RESUME
659 SEEDING

672.40
STA. 27+00
671.56

STA 26+00 RESUME
659 SEEDING RT.

MATCH LINE WOOSTER RD. BK.

STA 20+60 SUSPEND
659 SEEDING RT.

STA 20+60
SUSPEND EARTHWORK

R/W
659 SEEDING

LIMIT

4:1 NOR.

STA 20+50 SUSPEND
659 SEEDING
R/W

MATCH LINE 100' LT. ± LIMIT 659 SEEDING BRIDGE DEM. PLAN

4:1 NOR.

MATCH LINE LAKE RD. BK.

FOR WEST ABUTMENT
STA 20+00 TO STA 20+60
BEGIN EARTHWORK CUY-6A-0.41

SUSPEND EARTHWORK
CUY-254DA-0.20
CUY-6A-0.37

667.36
STA. 20+00
666.01

STA 19+80 RESUME
659 SEEDING RT.
PARCEL 19WD

MATCH LINE WOOSTER RD.

667.00
STA. 19+50
665.45

STA 19+20 SUSPEND
659 SEEDING LT.
PARCEL 15WD

STA 19+00 SUSPEND
659 SEEDING RT.
PARCEL 8T-2

STA 19+00

RT. SIDE PARCEL 19WD - 7+11.11 @ 1.19 = 142 S.Y.
PARCEL 19T - 4+37.89 @ 1.19 = 67 S.Y.
PARCEL 20T - 14+01.89 @ 1.19 = 16 S.Y.
LT. SIDE PARCEL 19WD - 40+18.19 @ 1.19 = 60 S.Y.

RT. SIDE 12D+11.19 @ 1.19 = 227 S.Y. ⊛
LT. SIDE 12D+11.19 @ 1.19 = 227 S.Y. ⊛

⊛⊛ QUANTITIES FOR CUY-6A-0.41 PROJECT

STA 27+00.50 END PROJECT CUY-6A-041
STA 20+35.50 BEGIN PROJECT CUY-6A-0.41

NOTE: NO EARTHWORK IS PROVIDED FOR AT PIER 1 OR PIER 2

FINAL SURVEY	
	SURVEYED
	PLOTTED
NOTE BOOK	TEMPLATE
	AREAS
NO.	AREAS CHECKED

ORIGINAL SURVEY	
	SURVEYED
	PLOTTED
NOTE BOOK	TEMPLATE
	AREAS
NO.	AREAS CHECKED

DATE
BY

RELOC. DETROIT ROAD

PLATE 3 CROSS SECTION B P R STANDARD
DIEBOLD-OETTINGER CO. - CHICAGO - NEW YORK

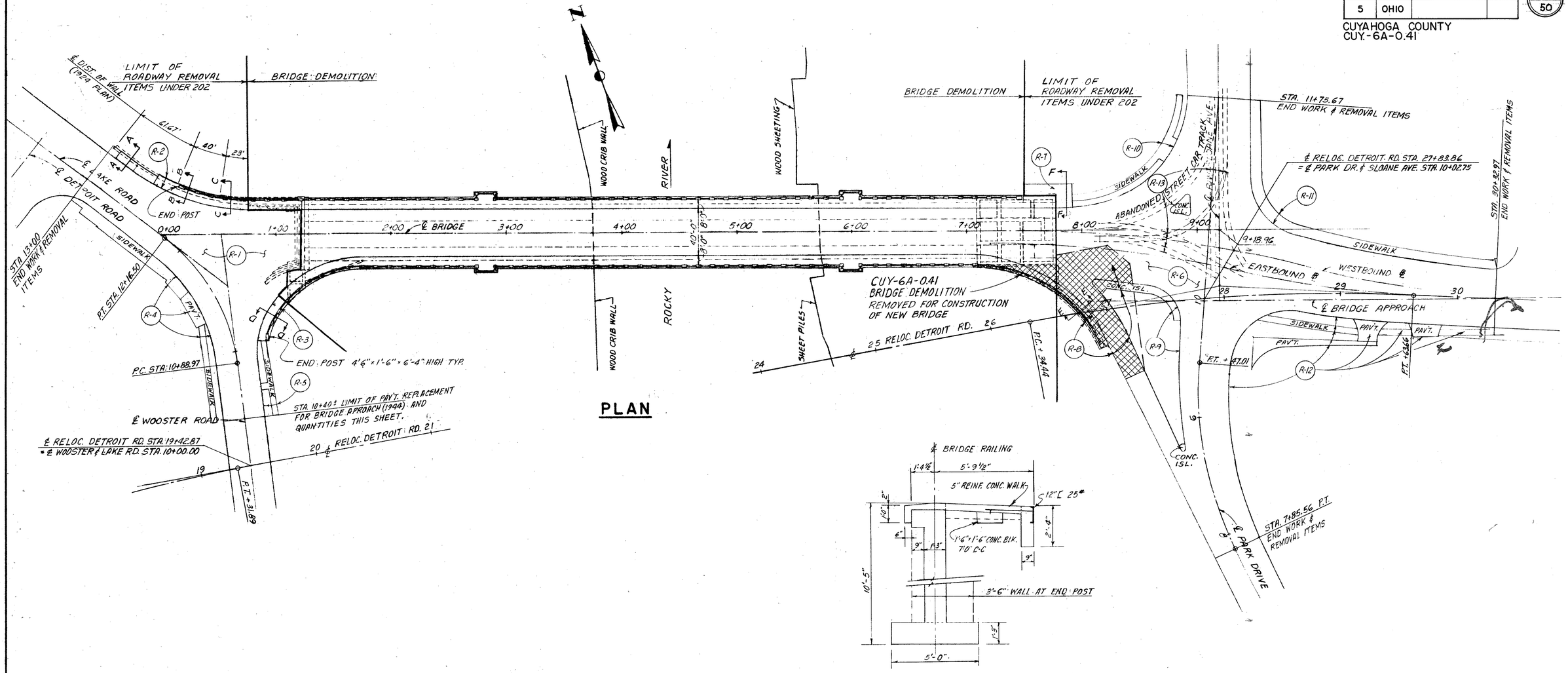
Printed in U. S. A.
The ARKWRIGHT Tracing Cloth

CROSS SECTIONS STA.19+50, STA.20+00 & STA.27+00 TO STA.28+00

F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

10
50

CUYAHOGA COUNTY
CUY.-6A-0.41



PLAN

SECTION E-E

SUMMARY OF QUANTITIES (ITEM 202)

	REFERENCE NUMBER	WEARING COURSE AND PAVEMENT REMOVED	CURB REMOVED	SIDEWALK REMOVED	CONCRETE ISLAND REMOVED	WALL REMOVED	
LAKEWOOD		SQ. YD.	LIN. FT.	SQ. FT.	SQ. FT.	CU. YD.	
	R-8	410 *	190 *	270 *	240 *	33 *	

* - QUANTITY CARRIED TO GENERAL SUMMARY, SEE SHEET 5.

NOTES: THE FOLLOWING CONSTRUCTION PLANS WERE USED TO DEVELOP SECTION E-E AND QUANTITES IN THIS PLAN.

DETROIT AVENUE VIADUCT	1908
WEST APPROACH FLARES	1924
SOUTHEAST TURNOUTS	1931
NEW SIDEWALK AND RAILING	1936
REPAVING OF BRIDGE AND APPROACHES	1944
BRIDGE APPROACH IMPROVEMENT, LAKEWOOD	1966

THE VOLUME OF WALL REMOVED INCLUDES ALL POSTS, RAILING, SIDEWALK, CAP, STEM AND BASE.

THE SIDEWALK REMOVED ITEM SHALL INCLUDED THE ANCHOR BLOCKS AND ANY PREVIOUS SIDEWALK WHICH LIES BENEATH IT.

ADACHE ASSOCIATES INC., ENGINEERS
CLEVELAND, OHIO 44142

EXISTING DETROIT-ROCKY RIVER BRIDGE

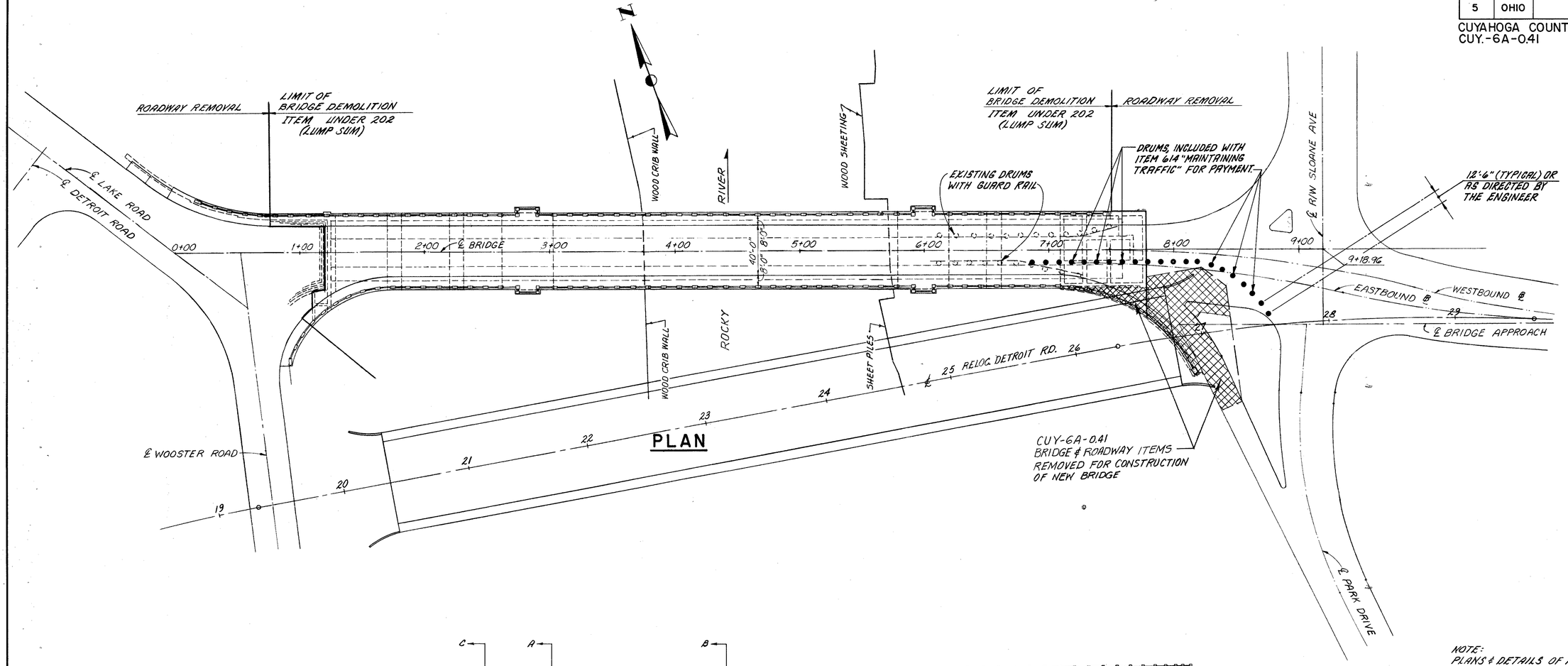
ROADWAY REMOVAL ITEMS AT BRIDGE APPROACHES

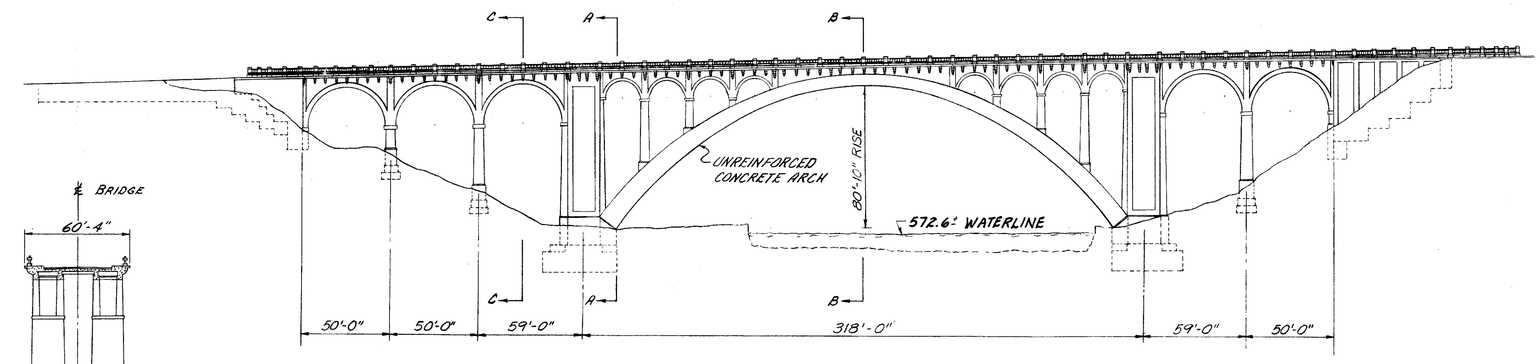
DESIGNED	DRAWN	CHECKED	REVIEWED	DATE	REVISED
R.W.H.	R.W.H.	L.E.D.			

F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

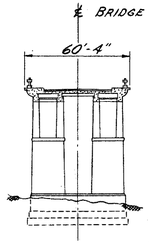
11
50

CUYAHOGA COUNTY
CUY.-6A-0.41

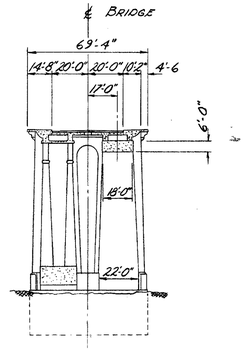




ELEVATION



SECTION C-C



HALF SECTIONS A-A & B-B

NOTE:
PLANS & DETAILS OF THE EXISTING BRIDGE AND MODIFICATIONS ARE AVAILABLE THROUGH THE CUYAHOGA COUNTY ENGINEERS OFFICE AT CLEVELAND, OHIO.

ADACHE ASSOCIATES INC., ENGINEERS
CLEVELAND, OHIO 44142

DETROIT-ROCKY RIVER BRIDGE
EXISTING BRIDGE
DEMOLITION PLAN

DESIGNED	DRAWN	CHECKED	REVIEWED	DATE	REVISED
R.W.H.	J.T.O.	L.E.D.			

FHWA REGION	STATE	PROJECT	
5	OHIO		

12
50

CUYAHOGA COUNTY

CUY.-6A-0.41

BEGIN PROJECT
CUY-6A-0.41
STA. 20+35.50

END PROJECT
CUY-6A-0.41
STA. 26+75.50

400-1A-02
℄ DETROIT ROAD STA. 19+05, 42.44' LT.
• ℄ LAKE ROAD STA. 10+39.51, 41.62' LT.
COMBINATION POLE "A"

400-1A-01
℄ DETROIT ROAD STA. 19+05.63, 57.54' RT.
• ℄ WOOSTER ROAD STA. 9+40, 31.95' LT.
COMBINATION POLE "C"

400-1A-04
℄ DETROIT ROAD STA. 19+86.16, 57.40' LT.
• ℄ LAKE ROAD STA. 10+60, 39.60' RT.
COMBINATION POLE "B"

400-1A-03
℄ DETROIT ROAD STA. 19+90.39, 52' RT.
• ℄ WOOSTER ROAD STA. 9+43.51, 49.51' RT.
COMBINATION POLE "D"

400-1A-05, 20+90.00
A-12B-35

400-1A-06, 23+00.00
COMBINATION POLE (T.C.)

400-1A-07, 21+96.75
A-12B-35

400-2A-02
℄ DETROIT ROAD STA. 27+25, 51.43' LT.
• ℄ SLOANE AVENUE STA. 10+42.81, 68.19' LT.
COMBINATION POLE "E" (T.C.)

400-2A-03, 25+14.25
A-12B-35

400-2A-05
℄ DETROIT ROAD STA. 27+42.93, 57.38' RT.
• ℄ PARK DRIVE STA. 9+40, 29.68' LT.
COMBINATION POLE "G" (T.C.)

400-2A-06, 26+16.00
A-12B-35

400-2A-07, 24+08.00
COMBINATION POLE (T.C.)

400-2A-01
℄ DETROIT ROAD STA. 28+39.31, 82.11' LT.
• ℄ SLOANE AVENUE STA. 10+92, 45.02' RT.
COMBINATION POLE "F" (T.C.)
2250-2B-CONTROLLER CABINET (POLE MOUNTED)

400-2A-04
℄ DETROIT ROAD STA. 28+25, 41.69' RT.
• ℄ PARK DRIVE STA. 9+67.36, 46.14' RT.
COMBINATION POLE

C.E.I. POLE #205495
SERVICE POLE CONNECTION (L.)
(SEE SHT. 2 FOR DETAIL)

C.E.I. POLE #300976
SERVICE POLE CONNECTION
(SEE SHT. 2 FOR DETAIL)

℄ LAKE ROAD
N 13° 38' 01" E

℄ WOOSTER ROAD
N 13° 38' 01" E

℄ RELOCATED DETROIT ROAD
STA. 19+42.87
= ℄ WOOSTER ROAD ℄
℄ LAKE ROAD
STA. 10+00.00

P.T. STA. 19+31.89

℄ DETROIT RD.
STA. 20+05, 37.5' LT.
P.B. - 4, 24" (T.C.)
P.B. - 1A-02 (2 VII B)

℄ RELOCATED DETROIT ROAD
S 79° 57' 45.5" E

℄ PIER-1
STA. 22+23.00

℄ PIER-2
STA. 24+88.00

P.C. STA. 26+34.44

STRUCTURE GROUNDING SYSTEM AS PER STD. DWG. HL-7

LIMIT OF CONDUIT INCLUDED WITH THIS PROJECT (SEE NOTE 2)

2" ℄ CONDUIT, FOR EXACT LOCATION IN PARAPET SEE STD. DWG. HL-7 (TYPICAL AS SHOWN)

℄ WOOSTER RD. STA. 9+54± 50' RT.
SIGNAL CONTROL CENTER
PEDESTAL MOUNTED (T.C.)
2250-1B-CONTROLLER CABINET
P.B. - 1A-01 (2- VII C)

90° 00' 00" SKEW (TYPICAL)

REFER TO STD. DWG. HL-5 FOR "CONDUIT THROUGH OPEN JOINT AT ABUTMENT" AND "CONDUIT THROUGH WINGWALL". (TYPICAL)

℄ RELOCATED DETROIT ROAD
STA. 27+83.86
℄ PARK DRIVE ℄
℄ SLOANE AVENUE
STA. 10+02.75

℄ SLOANE AVENUE
℄ N 25° 08' 44" E

℄ PARK DRIVE

COMMON TRENCH (T.C.)

2" DUCT (L.)
3" ℄ DUCT (T.C.) ℄
COMMON TRENCH (T.C.)

3" ℄ DUCT (L.)
3" ℄ DUCT (T.C.)
COMMON TRENCH (T.C.)

3" ℄ DUCT (L.)
4" ℄ DUCT
COMMON TRENCH (T.C.)

2" ℄ DUCT (L.)
3" ℄ DUCT ℄
COMMON TRENCH (T.C.)

3" ℄ DUCT ℄ COMMON TRENCH (T.C.)
3" ℄ DUCT (L.)

2" ℄ DUCT (L.)

2" ℄ 4" ℄

2" DUCT
4" DUCT (T.C.)

2" DUCT (L.)

3" ℄ DUCT (L.)
4" ℄ DUCT
COMMON TRENCH (T.C.)

3" ℄ DUCT (L.)
3" ℄ DUCT (T.C.)
COMMON TRENCH (T.C.)

2" ℄ DUCT (L.)

2" ℄ DUCT (L.)
4" ℄ DUCT (T.C.)
COMMON TRENCH (T.C.)

STR. 23+62.59

CITY OF ROCKY RIVER
CITY OF LAKEWOOD

MATCH LINE

19 20 21 22 23 24 25 26 27 10 28

0 10 20 30 40 50 100
SCALE IN FEET

NOTES

1. THIS PROJECT SHALL PROVIDE FOR THE FUTURE INSTALLATION OF LIGHTING AND TRAFFIC CONTROL (T.C.) ITEMS ON THE BRIDGE. THE FOLLOWING ITEMS ARE INCLUDED FOR THIS PURPOSE:

ITEM	DESCRIPTION	ROCKY RIVER	LAKE WOOD	UNIT
625	2" CONDUIT S-713.04	685	680	LIN. FT.
625	4" CONDUIT S-713.04 (T.C.)	330	315	LIN. FT.
625	JUNCTION BOX	3	3	EACH
625	ANCHOR BOLT	2	2	SETS
625	ANCHOR BOLT (T.C.)	1	1	SETS
625	STRUCTURE GROUNDING	LUMP	LUMP	LUMP

2. THE LIMIT OF THE CONDUIT IN THIS PROJECT SHALL INCLUDE THE COUPLINGS AS PROVIDED AS PER THE STANDARD CONSTRUCTION DRAWING HL-5. THE CONDUIT END AT THE ABUTMENT OR WINGWALL SHALL BE CAPPED. PULL WIRES SHALL BE PROVIDED IN EACH LENGTH OF CONDUIT. EXPANSION FITTINGS FOR CONDUIT ON STRUCTURES SHALL BE OF TYPE AX, CROUSE-HINDS TYPE XJ-4, APPLETON TYPE XJ-4 OR EQUAL APPROVED BY THE ENGINEER. EACH EXPANSION FITTING SHALL HAVE A COPPER EXTERNAL BONDING JUMPER.

LIGHT POLE IDENTIFICATION

CIRCUIT NUMBER
POLE NUMBER
STATION
1A-01, 20+90.00
A-12B-35
NOMINAL MOUNTING HEIGHT
BRACKET ARM LENGTH
"A" FOR ANCHOR

3. ANCHOR BOLTS FOR MOUNTING LIGHT POLES ON BRIDGES SHALL CONFORM TO THE REQUIREMENTS OF 713.01 AND DETAILS SHOWN ON THE PLANS AND STANDARD DRAWINGS. FOR PLAN DETAILS SEE SHEETS 32 AND 33.

PAYMENT SHALL BE MADE AT THE UNIT PRICE BID FOR EACH SET OF THE SIZE REQUIRED AND NECESSARY TO INSTALL ONE POLE, AND THIS PAYMENT SHALL CONSTITUTE FULL COMPENSATION FOR FURNISHING AND PLACING THE BOLTS.

SPECIFICATIONS

THESE NOTES ARE SUPPLEMENTAL TO ITEMS 625 AND 713 OF THE STATE OF OHIO DEPARTMENT OF TRANSPORTATION CONSTRUCTION AND MATERIAL SPECIFICATIONS. REFERENCE SHALL BE MADE TO STANDARD CONSTRUCTION DRAWINGS LISTED ON THE TITLE SHEET OF THESE PLANS.

PLAN SPECIFICATION REFERENCES

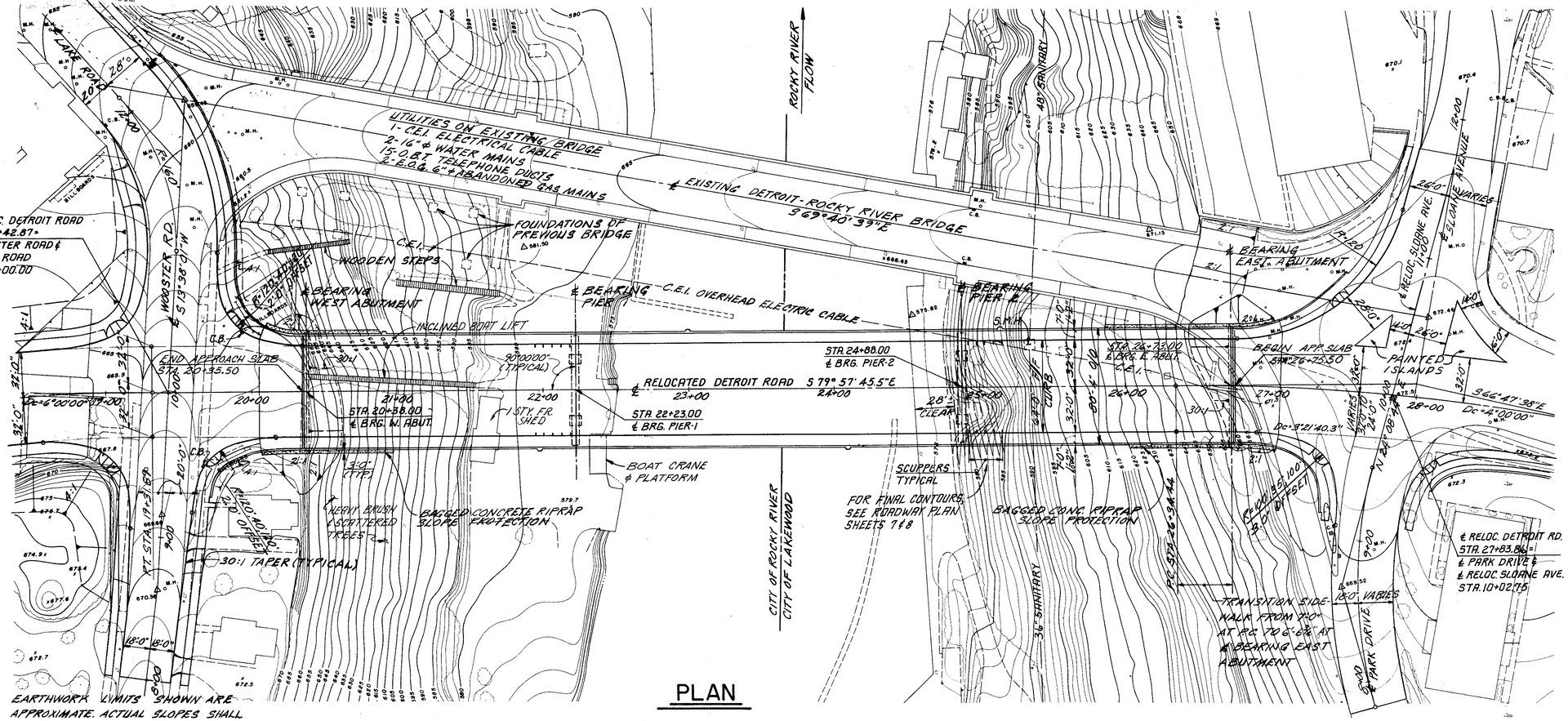
REFERENCES TO ITEM 625 AND 713 IN THESE PLANS SHALL BE CONSIDERED TO READ AS RESPECTIVE REFERENCES TO ITEMS S625 AND S713.

TRAFFIC CONTROL AND LIGHTING PLAN

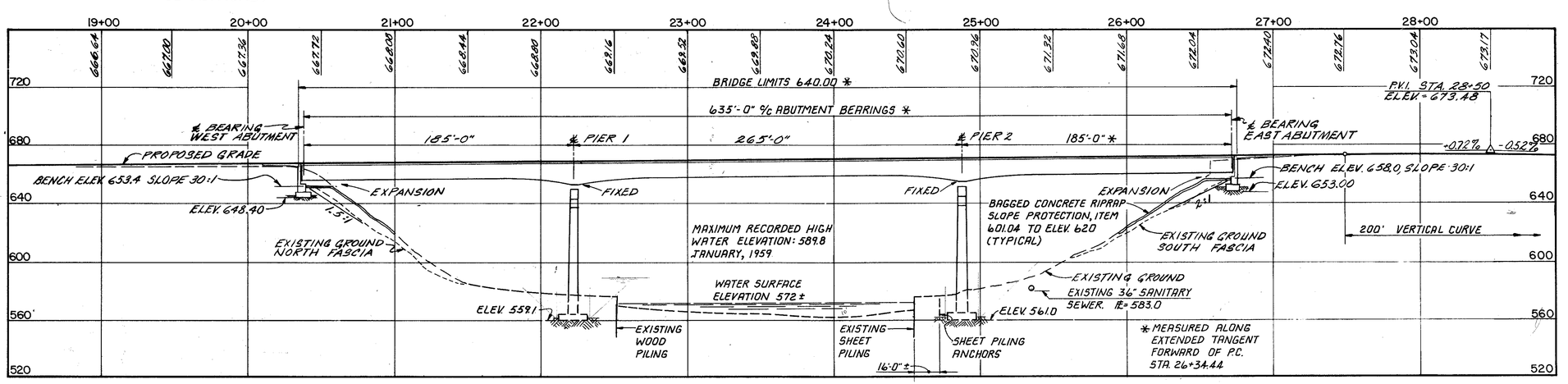
F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

13
50

CUYAHOGA COUNTY
CUY.-6A-0.41



PLAN



PROFILE ALONG ℄ RELOCATED DETROIT ROAD

VERTICAL CURVE DATA

P.V.I. STA. 28+50.00	V.C. = 200'
ELEV. = 673.48	G_1 = +0.72 %
CORR. = -0.3'	G_2 = -0.52 %
P/G = 673.17	

HORIZONTAL CURVE DATA ℄ RELOC. DETROIT RD.

P.I. STA. 27+99.78	L = 329.22'
Δ = 13° 10' 07.5"	C = 328.49'
Dc = 4° 00' 00"	T = 165.34
R = 1432.40'	

RIGHT CURB TRANSITION (32.00' TO 24.00')

P.I. STA. 28+31.20 (32.00' RT.)	
Δ = 13° 10' 07.5"	L = 391.79'
Dc = 3° 21' 40.3"	C = 390.92'
R = 1704.62'	T = 196.76'

TRAFFIC DATA

A.D.T. (1993)	15,000
A.D.T.T. (1993)	450

NOTE: FOR LOCATIONS OF EXISTING UTILITIES IN BRIDGE APPROACH AREAS, SEE ROADWAY PLAN AND PROFILE SHEETS 6, 7 & 8.

UTILITIES ON PROPOSED STRUCTURE: 30"ϕ WATERMAIN, 8"ϕ GASMAIN, 4-5" I.D. C.E.I. ELECTRICAL DUCTS AND 16-4"ϕ O.B.T. TELEPHONE DUCTS.

EXISTING STRUCTURE

TYPE: MULTIPLE, OPEN SPANDREL, CONCRETE ARCHES, WITH REINFORCED CONCRETE DECK

SPANS: 50'-0", 50'-0", 59'-0", 318'-0", 59'-0" & 50'-0" 586'-0" F/F ABUTMENTS

ROADWAY: 40'-0" F/F CURBS, 61'-0" OUT/OUT

SKEW: 0° 00' 00"

ABUTMENT TYPE: GRAVITY (WEST) CELLULAR (EAST)

PROPOSED STRUCTURE

TYPE: CONTINUOUS STEEL GIRDER WITH FLOOR SYSTEM, REINFORCED CONCRETE DECK AND SUBSTRUCTURE.

SPANS: 185'-0", 265'-0", 185'-0" ℄ BEARINGS

ROADWAY: 64'-0" F/F CURBS, 7'-0" SIDEWALKS, 80'-4" O/O

LOADING: HS20-44, CASE II AND ALTERNATE MILITARY LOADING

SKEW: 0° 00' 00"

SURFACE COURSE: 2¾" ASPHALT CONCRETE

ALIGNMENT: TANGENT

SUPERELEVATION: NONE (NORMAL CROWN)

APPROACH SLABS: RS-1-72 (30'-0" LONG) MODIFIED

A.D.T.T.: (1993) 450

1/24

ADACHE ASSOCIATES INC., ENGINEERS
CLEVELAND, OHIO 44130

DETROIT-ROCKY RIVER BRIDGE

SITE PLAN

BRIDGE NO. CUY-6A-0041
U.S.R. 6A OVER ROCKY RIVER
CUYAHOGA COUNTY STA. 20+35.50 TO STA. 26+75.50

DESIGNED	DRAWN	CHECKED	REVIEWED	DATE	REVISED
L.E.D.	TMJ	L.E.D.	Z.D.H.	12-9-77	

F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

14
50

CUYAHOGA COUNTY
CUY.-6A-0.41

75%-Federal
12.5%-State
12.5%-County
(Issue-1)

(Except as noted.)

ESTIMATED QUANTITIES

	ITEM	UNIT	TOTAL	ROCKY RIVER	LAKEWOOD	DESCRIPTION	ABUTMENTS	PIERS	SUPER.	GENERAL		
	202	LUMP SUM	LUMP SUM		LUMP SUM	PORTIONS OF STRUCTURE REMOVED **				LUMP SUM		
*	402	CU. YD.	219	112	107	ASPHALT CONCRETE-INTERMEDIATE COURSE, AS PER PLAN			219			
*	407	GAL.	450	230	220	RUBBERIZED ASPHALT TACK COAT, AS PER PLAN			450			
	503	LUMP SUM	LUMP SUM			COFFERDAMS, CRIBS AND SHEETING				LUMP SUM		
	503	CU. YD.	2,553	1,310	1,243	UNCLASSIFIED EXCAVATION	620	1,933				
	503	CU. YD.	439	258	181	SHALE EXCAVATION	256	183				
	509	LBS.	689,058	347,984	341,074	REINFORCING STEEL	44,134	339,772	305,152			
	511	CU. YD.	1,914	978	936	CLASS C CONCRETE, SUPERSTRUCTURE			1,914			
	511	CU. YD.	992	496	496	CLASS C CONCRETE, PIER CAPS AND COLUMNS		992				
	511	CU. YD.	334	167	167	CLASS C CONCRETE, ABUTMENTS, ABOVE FOOTINGS	334					
	511	CU. YD.	704	352	352	CLASS C CONCRETE, FOOTINGS	126	578				
	511	SQ. FT.	8,869	4,534	4,335	CLASS C CONCRETE, SIDEWALK WEARING COURSE, AS PER PLAN			8,869			
*	512	SQ. YD.	4,495	2,298	2,197	CONCRETE DECK WATERPROOFING, AS PER PLAN			4,495			
	512	LIN. FT.	78	39	39	PREMOLDED SEALING STRIP	78					
	513	LBS.	27,000	13,800	13,200	STRUCTURAL STEEL, ASTM-A36			27,000			
	513	LBS.	2,551,800 *	1,304,400	1,247,400	STRUCTURAL STEEL, ASTM-A588			2,551,800			
	514	LBS.	27,000	13,800	13,200	FIELD PAINTING OF STRUCTURAL STEEL, ASTM-A36			27,000			
	516	SQ. FT.	118	59	59	1" PREFORMED EXPANSION JOINT FILLER	118					
	517	LIN. FT.	1,395.66	712.04	683.62	RAILING (CONCRETE PARAPET WITH ALUMINUM ALLOY FABRIC C.L. FENCE 710.03)	123.66		1,272			
	518	CU. YD.	166	83	83	POROUS BACKFILL	166					
	518	LIN. FT.	140	70	70	6" PERFORATED, HELICAL CORRUGATED STEEL PIPE, 707.01	140					
	518	LIN. FT.	34	18	16	6" NON-PERFORATED, HELICAL CORRUGATED STEEL PIPE, INCLUDING SPECIALS, 707.01	34					
	518	EACH	20	10	10	SCUPPERS, INCLUDING SUPPORTS			20			
	518	LIN. FT.	445	220	225	8" COLLECTOR SYSTEM (GALVANIZED STEEL)		293	152			
*	518	LIN. FT.	1264	646	618	SUBDRAINAGE FOR WEARING SURFACE COURSE, AS PER PLAN			1264			
	SPECIAL	LBS.	272,088	139,037	133,051	EPOXY COATED REINFORCING STEEL (SEE PROPOSAL NOTE)			272,088			
	601	SQ. YD.	1,493	653	840	BAGGED CONCRETE RIPRAP SLOPE PROTECTION, AS PER PLAN				1,493		
*	805	CU. YD.	125	64	61	RUBBERIZED SAND-ASPHALT SURFACE COURSE, AS PER PLAN			125			
	808	UNITS	1914	978	936	CHEMICAL ADMIXTURE FOR CONCRETE, TYPE A, B OR D			1,914			
	SPECIAL	LIN. FT.	160	80	80	EXPANSION JOINT, WABOFLEX MODEL SR6.5A OR TRANSFLEX MODEL 650			160			
	SPECIAL	SQ. FT.	9,703	4,853	4,850	VINYL RESIN PROTECTIVE COATING OF CONCRETE SURFACES	659	9,044				
	SPECIAL	SQ. FT.	3,177	1,542	1,635	3R-CLEAR GUARD PROTECTIVE COATING OF CONCRETE SURFACES		3,177				
	5625					FOR LIGHTING SUMMARY, SEE SHEET 5						

*- TOTAL INCLUDES 38,890 LBS. TO BE PAID BY OHIO BELL TELEPHONE COMPANY TO THE STATE OF OHIO AND 81 LBS. TO BE PAID BY EAST OHIO GAS COMPANY TO THE STATE OF OHIO.

** PORTIONS OF STRUCTURE REMOVED REFERS TO THE PORTION OF THE EXISTING DETROIT-ROCKY RIVER BRIDGE TO BE REMOVED TO FACILITATE CONSTRUCTION OF THE PROPOSED STRUCTURE, SEE BRIDGE DEMOLITION PLANS, SEE SHEETS 10 & 11.

EXCAVATION ABOVE THE BENCHES IN FRONT OF THE ABUTMENTS IS INCLUDED IN ITEM 203 "EXCAVATION, NOT INCLUDING EMBANKMENT CONSTRUCTION", SEE ROADWAY PLAN, SHEETS 5 AND 9 FOR QUANTITIES.

* No Federal Participation in these Items.
50% State 50% County (Issue 1)

2/24

ADACHE ASSOCIATES INC., ENGINEERS
CLEVELAND, OHIO 44142

DETROIT-ROCKY RIVER BRIDGE

ESTIMATED QUANTITIES

BRIDGE NO. CUY-6A-0041
U.S.R. 6A. OVER ROCKY RIVER
CUYAHOGA COUNTY
STA. 20+35.50 TO STA. 26+75.50

DESIGNED	DRAWN	CHECKED	REVIEWED	DATE	REVISED
L.E.D.	TMJ	S.V.C.	R.D.H.	12-29-77	7-18-78

GENERAL NOTES

REFERENCE SHALL BE MADE TO STANDARD DRAWINGS:

ROCKER AND BOLSTER DETAILS	RB - 1-55	DATED 2-2-59
SUPERSTRUCTURE DETAILS	SD-1-69 SHEET 3 OF 4	DATED 6-12-69
HIGHWAY LIGHTING: POLE BASE DETAILS	HL-3	DATED 7-27-73
STRUCTURE LIGHTING I	HL-4	DATED 1-21-76
STRUCTURE LIGHTING II	HL-5	DATED 9-6-73
STRUCTURE GROUNDING	HL-7	DATED 1-21-76

SUPPLEMENTAL SPECIFICATIONS:

808 CHEMICAL ADMIXTURE FOR CONCRETE, TYPE A, B OR D	DATED 1-1-71
836 CONCRETE CURING AND PROTECTIVE MEMBRANE	DATED 3-12-75
903 RUBBER COMPOUND	DATED 1-1-69
805 RUBBERIZED SAND-ASPHALT	DATED 1-13-77

DESIGN SPECIFICATIONS: THIS STRUCTURE CONFORMS TO "STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES" ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS, 1973, INCLUDING THE 1974, 1975, AND 1976 INTERIM SPECIFICATIONS AND THE OHIO "SUPPLEMENT" TO THESE SPECIFICATIONS.

DESIGN DATA:

DESIGN LOADING	- HS20-44 CASE II AND THE ALTERNATE MILITARY LOADING.
CONCRETE CLASS C	- UNIT STRESS 1200 P.S.I. FOR SUPERSTRUCTURE UNIT STRESS 1333 P.S.I. FOR SUBSTRUCTURE
STRUCTURAL STEEL	- ASTM A588 - UNIT STRESS 27,000 P.S.I. ALL STRUCTURAL STEEL EXCEPT CURB PLATES PARAPET SLIDING PLATES AND SCUPPERS. - ASTM A36 - UNIT STRESS 20,000 P.S.I. CURB PLATES, PARAPET SLIDING PLATES AND SCUPPERS.
REINFORCING STEEL	- ASTM A615, A616 OR A617 - UNIT STRESS 20,000 P.S.I.

FOUNDATION BEARING PRESSURE: ABUTMENT AND PIER FOOTINGS ARE DESIGNED FOR A MAXIMUM BEARING PRESSURE OF 5 TONS PER SQUARE FOOT.

ABUTMENT FOOTINGS SHALL EXTEND A MINIMUM OF 3 INCHES INTO BEDROCK OR TO THE ELEVATION SHOWN, WHICHEVER IS LOWER.

PIER FOOTINGS: SHALL EXTEND A MINIMUM OF 3 INCHES INTO BEDROCK. IF NECESSARY, THE FOOTINGS SHOULD BE LOWERED. HOWEVER, IF THE LOW POINT OF THE SURFACE OF THE BEDROCK OCCURS 2 FEET OR MORE ABOVE PLAN ELEVATION, THE FOOTINGS MAY BE RAISED, AFTER APPROVAL BY THE DIRECTOR, BUT TO AN ELEVATION NOT HIGHER THAN 570.0 FOR PIER 1 AND 566.0 FOR PIER 2. STEPPING OF INDIVIDUAL FOOTINGS WILL NOT BE PERMITTED. BOTH FOOTINGS OF A PIER SHALL BE LOCATED AT THE SAME ELEVATION.

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

MAINTENANCE OF TRAFFIC: TRAFFIC SHALL BE MAINTAINED ON EXISTING DETROIT-ROCKY RIVER BRIDGE AND APPROACH ROADWAYS AS INDICATED ON THE ROADWAY PLANS, GENERAL NOTES, SHEET 4.

EXISTING SHEET PILE BULKHEAD: CONTRACTOR SHALL USE SPECIAL CARE IN CONSTRUCTION OF PIER 2 SO AS NOT TO DAMAGE THE EXISTING SHEET PILE BULKHEAD AND BULKHEAD ANCHOR SYSTEM LOCATED ON THE EAST SIDE OF THE ROCKY RIVER. THE CONTRACTOR SHALL REPAIR, AT HIS OWN EXPENSE, ANY DAMAGE DONE TO TO THE BULKHEAD AND/OR ANCHOR SYSTEM.

BEARING DEVICES: BEARING DEVICES SHALL BE SET IN ACCORDANCE WITH ITEM 516.05. PIERS 1 AND 2 ARE FIXED PIERS. THE FIXED BEARINGS AT THE PIERS SHALL BE SO PLACED THAT WHEN THE BRIDGE IS COMPLETED AND AT 60°F. THE CENTERLINE OF THE BEARINGS WILL ALIGN WITH BOTH GIRDER BEARING STIFFENERS AND THE PIER CENTERLINES OF BEARINGS. IF THE STRUCTURAL STEEL IS ERECTED AT TEMPERATURES OTHER THAN 60°F, ADJUSTMENTS WILL BE REQUIRED TO INSURE CORRECT LONGITUDINAL ALIGNMENT OF THE BEARINGS. THE METHOD OF ADJUSTMENT USED SHALL BE APPROVED BY THE DIRECTOR.

PAINTING OF STRUCTURAL STEEL: STRUCTURAL STEEL SHALL NOT BE PAINTED EXCEPT AS NOTED ELSEWHERE IN THE PLANS AND EXCEPT FOR THE FOLLOWING ITEMS WHICH SHALL BE PAINTED IN ACCORDANCE WITH ITEM 514:

1) CURB PLATES 2) PARAPET SLIDING PLATES

ARMOR ANGLES, PARAPET SLIDING PLATES AND SCUPPERS:
STEEL BAR STOCK UTILIZED FOR ARMOR ANGLE ANCHORS, PARAPET SLIDING PLATES AND SCUPPERS MAY BE ANY WELDABLE GRADE OF LOW OR MILD CARBON STEEL AVAILABLE COMMERCIALLY. THIS MATERIAL SHALL BE EXCLUDED FROM THE REQUIREMENTS OF 501.07 FOR TEST REPORTS.

ITEM 401 - PLANT MIX PAVEMENTS - GENERAL, AS PER PLAN:
THESE SPECIFICATIONS SUPPLEMENT THE GENERAL REQUIREMENTS APPLICABLE TO ALL TYPES OF PLANT MIX BITUMINOUS PAVEMENTS AS SET FORTH IN 401 PLANT MIX PAVEMENTS - GENERAL, IN THE CONSTRUCTION AND MATERIAL SPECIFICATIONS OF WHICH ALL APPLICABLE PROVISIONS SHALL APPLY UNLESS MODIFIED HEREIN:

MATERIALS: THE BITUMINOUS MATERIAL SHALL BE AN AC-20, MEETING AASHO M226 EXCEPT THAT THE PENETRATION AT 25°C (77°F), 100 G, 5 SEC. SHALL NOT BE LESS THAN 60. THE COARSE AGGREGATE FOR AN ASPHALT CONCRETE COURSE SHALL BE CRUSHED CARBONATE STONE OR CRUSHED AIR-COOLED SLAG, AND SHALL MEET THE REQUIREMENTS OF 703.05.
WEATHER LIMITATIONS: THE CONTRACTOR'S FIELD REPRESENTATIVE SHALL KEEP THE PLANT INFORMED OF UNFAVORABLE WEATHER CONDITIONS. IF, IN THE OPINION OF THE ENGINEER, THE WEATHER CONDITIONS ARE SUCH THAT THEY DO NOT WARRANT A SATISFACTORY PERFORMANCE OF THE WORK, HE SHALL NOTIFY THE CONTRACTOR'S FIELD REPRESENTATIVE TO STOP DELIVERY. THE PLANT, IMMEDIATELY UPON RECEIPT OF THE NOTIFICATION, SHALL STOP THE LOADING OF THE ASPHALT CONCRETE. IF THE WEATHER IS SUCH THAT STEAMING AND OTHER CONDITIONS OCCUR WHICH, IN THE OPINION OF THE ENGINEER, PREVENT PROPER SPREADING AND FINISHING, OR WILL CAUSE STRIPPING, THE ASPHALT CONCRETE ON TRUCKS ALREADY ON THE PROJECT OR IN TRANSIT SHALL NOT BE SPREAD.

NO ASPHALT CONCRETE SHALL BE PLACED WHEN THE AIR TEMPERATURES ARE BELOW THOSE STATED IN SECTION 401.05 EXCEPT BY SPECIFIC PERMISSION OF THE ENGINEER. IF THE ENGINEER GRANTS THIS PERMISSION IT WILL BE ONLY UNDER CERTAIN SPECIFIC RIGID REQUIREMENTS PERTAINING TO SPREADING, FINISHING, COMPACTING, BONDING, AND TEMPERATURE CONTROL.

JOINTS: LONGITUDINAL AND TRANSVERSE JOINTS, IN ANY COURSE, SHALL BE SO CONSTRUCTED THAT THEY WILL BE OFFSET A MINIMUM OF 4" FROM THE JOINT IN THE COURSE BELOW IT.

ITEM 402 ASHPALT CONCRETE - INTERMEDIATE COURSE, AS PER PLAN
DESCRIPTION: ALL APPLICABLE PROVISIONS OF "ITEM 402 ASPHALT CONCRETE" AS SET FORTH IN THE CONSTRUCTION AND MATERIAL SPECIFICATIONS SHALL APPLY EXCEPT AS MODIFIED HEREIN.

COMPOSITION: COARSE AGGREGATE (NO. 57) AND FINE AGGREGATE SHALL BE COMBINED IN SUCH PROPORATIONS THAT THE RESULTING BLEND SHALL BE AS DIRECTED BY THE LABORATORY BUT WITHIN THE FOLLOWING LIMITS.

SIEVE	TOTAL PASSING-% BY WT.
1-1/2 INCH	100
1 INCH	95-100
1/2 INCH	50-80
NO. 4	25-60
NO. 6	20-52
NO. 50	3-20
NO. 200	0-5

BITUMEN CONTENT SHALL BE AS DIRECTED BY THE LABORATORY WITHIN THE FOLLOWING LIMITS;

BITUMEN (PERCENT OF TOTAL MIX) 4.0 to 8.5

BASIS OF PAYMENT: PAYMENT FOR ACCEPTED QUANTITIES, COMPLETE IN PLACE, WILL BE MADE AT THE CONTRACT PRICE FOR:

ITEM	UNIT	DESCRIPTION
402	CUBIC YARD	ASPHALT CONCRETE-INTERMEDIATE COURSE, AS PER PLAN

ITEM 407, RUBBERIZED ASPHALT TACK COAT, AS PER PLAN

DESCRIPTION: THE TACK COAT SHALL CONSIST OF A BLEND OF BITUMINOUS MATERIAL AND RUBBER COMPOUND.

UNLESS OTHERWISE NOTED HEREIN OR ON THE PLANS, ITEM 407 OF THE CONSTRUCTION AND MATERIALS SPECIFICATIONS OF THE STATE OF OHIO DEPARTMENT OF TRANSPORTATION SHALL APPLY.

MATERIALS: THE BITUMINOUS MATERIAL SHALL BE AN ASPHALT EMULSION MEETING THE REQUIREMENTS OF 702.04, TYPE SS-1 OR MS-2 OR RS-1 OR RS-2, AS DIRECTED BY THE ENGINEER.

THE RUBBER COMPOUND SHALL BE A SYNTHETIC LATEX IN THE LIQUID FORM AND SHALL MEET THE REQUIREMENTS OF OHIO STATE DEPARTMENT OF TRANSPORTATION SUPPLEMENTAL SPECIFICATIONS 903.

PREPARATION OF THE BLEND: THE RUBBER COMPOUND SHALL BE ADDED TO THE ASPHALT EMULSION IN THE DISTRIBUTOR IN THE RATIO OF 95± 0.3 RESIDUAL ASPHALT TO 5± 0.3 PERCENT RUBBER SOLIDS BY WEIGHT. IT SHALL THEN BE CIRCULATED THROUGH THE DISTRIBUTOR UNTIL A UNIFORM MIXTURE IS OBTAINED. A TECHNICAL REPRESENTATIVE OF THE RUBBER COMPOUND MANUFACTURER SHALL BE PRESENT SO THAT HE CAN OBSERVE THE MIXING OF THE ASPHALT EMULSION AND RUBBER COMPOUND.

PREPARATION OF SURFACE: THE SURFACE TO BE TREATED SHALL BE PREPARED IN ACCORDANCE WITH 407.04.

APPLICATION OF BITUMINOUS MATERIAL: THE RUBBERIZED ASPHALT EMULSION SHALL BE APPLIED AT THE RATE OF 0.10 GALLON PER SQUARE YARD AND IN ACCORDANCE WITH 407.05.

BASIS OF PAYMENT: PAYMENT FOR ACCEPTED QUANTITIES COMPLETE IN PLACE WILL BE MADE AT THE CONTRACT UNIT PRICE FOR:

ITEM	UNIT	DESCRIPTION
407	GALLONS	RUBBERIZED TACK COAT, AS PER PLAN

ITEM 511, CONCRETE SIDEWALK WEARING COURSE, AS PER PLAN
ALL APPLICABLE PROVISIONS OF ITEM 511 AS SET FORTH IN THE CONSTRUCTION AND MATERIAL SPECIFICATIONS SHALL APPLY, UNLESS MODIFIED HEREIN, AND THE FOLLOWING SHALL BE CONSIDERED AS SUPPLEMENTAL TO THE PROVISIONS SET FORTH THEREIN.

DESCRIPTION: THIS WORK SHALL CONSIST OF CONSTRUCTING A PORTLAND CEMENT CONCRETE SIDEWALK WEARING COURSE IN REASONABLY CLOSE CONFORMITY WITH LINES, GRADES, AND DIMENSIONS SHOWN ON THE PLANS OR ESTABLISHED BY THE ENGINEER.

MATERIALS: THE MATERIALS SHALL CONFORM TO THE FOLLOWING:

CONCRETE (CLASS C)	499
REINFORCING STEEL	709.10
JOINT SEALER	705.01 OR 705.02
CURING COMPOUND MATERIALS	451.02 & SPECIAL
PRIMER COAT	512.04
TYPE A WATERPROOFING	512.05 AS MODIFIED BELOW

ADACHE ASSOCIATES INC., ENGINEERS
CLEVELAND, OHIO 44142

DETROIT-ROCKY RIVER BRIDGE
GENERAL NOTES
BRIDGE NO. CUY-6A-0041
U.S.R. 6A. OVER ROCKY RIVER
CUYAHOGA COUNTY STA. 20+35.50 TO STA. 26+75.50

DESIGNED	DRAWN	CHECKED	REVIEWED	DATE	REVISED
L.E.D.	G.A.D. T.W.	R.W.H.	R.D.H.	12-29-77	

GENERAL NOTES

PLACING AND FINISHING: THE CONCRETE SHALL BE DEPOSITED IN A SINGLE LAYER. IT SHALL BE STRUCK OFF WITH A TEMPLATE AND SMOOTHED WITH A FLOAT TO PRODUCE A SANDY TEXTURE. NO PLASTERING WILL BE PERMITTED. THE SURFACE SHALL BE DIVIDED INTO EQUALLY SPACED BLOCKS WITH TRANSVERSED JOINTS APPROXIMATELY 5'-0" ON CENTER. ALL TRANSVERSE AND LONGITUDINAL JOINTS SHALL BE CONSTRUCTED AS DETAILED ON THE DRAWINGS AND SHALL BE FILLED WITH JOINT SEALER IN ACCORDANCE WITH 516.04. THE SURFACE SHALL HAVE A TRANSVERSE SLOPE OF 1/4 INCH PER FOOT, WITH THE LOW SIDE ADJACENT TO THE ROADWAY. THE REINFORCING SHALL BE 6 X 6 - 6/6 WELDED WIRE FABRIC PLACED IN ACCORDANCE WITH 509.

CURING: EXPOSED SURFACES OF THE CONCRETE SIDEWALK WEARING COURSE SHALL BE CURED AS REQUIRED IN 451.10, USING THE CURING COMPOUND SPECIFIED IN MATERIALS ABOVE. WHEN THE WEATHER CONDITIONS ARE SUCH THAT IT IS IMPRACTICAL TO USE THE CURING COMPOUND, OTHER MEANS FOR CURING CONCRETE MAY BE USED, HOWEVER AFTER CONDITIONS BECOME FAVORABLE, THE CURING COMPOUND SHALL THEN BE APPLIED. RESIN BASE CURING COMPOUNDS WILL NOT BE PERMITTED.

WATERPROOFING: THE BASE SLAB FOR THE CONCRETE SIDEWALK WEARING COURSE SHALL BE WATERPROOFED AS REQUIRED IN 512 EXCEPT THAT ONLY ONE COAT OF TYPE A WATERPROOFING OF NOT LESS THAN 1/2 GALLON OF ASPHALT OR PITCH PER SQUARE YARD SHALL BE APPLIED OVER THE PRIMER COAT.

METHOD OF MEASUREMENT: THE SIDEWALK WEARING COURSE WILL BE MEASURED BY THE SQUARE FEET OF FINISHED SURFACE, COMPLETE AND ACCEPTED IN PLACE.

BASIS OF PAYMENT: THE ACCEPTED QUANTITIES OF CONCRETE SIDEWALK WEARING COURSE WILL BE PAID FOR AT THE CONTRACT UNIT PRICE, COMPLETE AND IN PLACE. REINFORCING STEEL, JOINTS AND JOINT MATERIALS, CURING COMPOUND, WATERPROOFING, AND OTHER RELATED MISCELLANEOUS ITEMS WILL NOT BE PAID FOR SEPARATELY, BUT THE COST THEREOF SHALL BE INCLUDED IN THE COST OF THE CONCRETE SIDEWALK WEARING COURSE OF WHICH THEY ARE A PART.

PAYMENT WILL BE MADE AT CONTRACT PRICE FOR:

ITEM	UNIT	DESCRIPTION
511	SQUARE FEET	CLASS C CONCRETE SIDEWALK WEARING COURSE, AS PER PLAN

ITEM 512 - CONCRETE DECK WATERPROOFING AS PER PLAN

ALL APPLICABLE PROVISIONS OF ITEM 512 AS SET FORTH IN THE CONSTRUCTION AND MATERIAL SPECIFICATIONS SHALL APPLY, UNLESS MODIFIED HEREIN, AND THE FOLLOWING SHALL BE CONSIDERED AS SUPPLEMENTAL TO THE PROVISIONS SET FORTH THEREIN.

DESCRIPTION: THIS ITEM CONSISTS OF FURNISHING THE NECESSARY LABOR, MATERIAL AND EQUIPMENT REQUIRED TO APPLY TWO COATS OF AN APPROVED RUBBER SEALING COMPOUND WATERPROOFING IN ACCORDANCE WITH THESE SPECIFICATIONS. THE MATERIAL SHALL BE APPLIED WITH SUITABLE BRUSHES. CARE SHALL BE TAKEN TO PREVENT DRIPPING OR RUNNING OF THE MATERIAL BEYOND THE AREAS TO BE WATERPROOFED. CONCRETE SURFACES NOT COVERED WITH THE WATERPROOFING SHALL BE PROTECTED FROM THE SPILLING OR OTHERWISE MARRING THE SURFACE WITH THE MATERIAL.

MATERIALS: THE MATERIALS USED SHALL BE A NON-AQUEOUS ONE-PART NON-BITUMINOUS SOLUTION OF UNCURED PIGMENTED VIRGIN NITRILE RUBBER AND RESINS SEALING COMPOUND AND A SUITABLE THINNER WHICH WILL FORM AN ELASTIC AND ADHESIVE COATING RESISTANT TO SALT, WATER, GASOLINE AND PETROLEUM OILS AS MANUFACTURED BY THE FOLLOWING COMPANIES AND MEETING ALL ASPECTS OF THESE SPECIFICATIONS.

MANUFACTURER	PRODUCT
FIRESTONE TIRE AND RUBBER COMPANY	RUBBER SEALING COMPOUND - RUB-R-ROAD COMPOUND NO. R-526 THINNER - RUB-R-ROAD THINNER NO. R-607
GOODYEAR TIRE AND RUBBER COMPANY	RUBBER SEALING COMPOUND - PLIOPAVE L-30 THINNER-METHYL ETHYL KETONE

ADDITIONAL REQUIREMENTS:

SPECIFIC GRAVITY	0.89 TO 0.93 INCL.
*COLOR	LIGHT GREY OR TAN
VISCOSITY (BROOKFIELD, 77°F. CPS)	750 TO 2000 INCL.
FLASH POINT	25°F. PLUS
SOLIDS CONTENT, (% BY WEIGHT)	24 TO 27 INCL.

* THE MATERIAL SHALL BE SHADED IN SUCH A MANNER THAT WILL GIVE ADEQUATE CONTRAST BETWEEN THE FIRST COAT AND SECOND COAT TO ASSURE THAT ALL AREAS OF THE DECK HAVE BEEN PROPERLY COATED WITH THE SECOND COAT.

TEST CERTIFICATE: THE CONTRACTOR SHALL PROVIDE A CERTIFIED LABORATORY TEST REPORT FROM A RELIABLE TESTING LABORATORY INDICATING THAT THE MATERIAL HE PROPOSES TO FURNISH WILL MEET THE REQUIREMENTS OF THESE SPECIFICATIONS. IN ADDITION, HE SHALL SUBMIT IN WRITING EVIDENCE THAT THIS MATERIAL HAS BEEN USED FOR SEALING AND WATERPROOFING CONCRETE SURFACES ON STRUCTURES AND HAS PERFORMED SATISFACTORILY FOR AT LEAST 5 YEARS.

THE MANUFACTURER SHALL ALSO SUBMIT A QUART SAMPLE OF THE RUBBER SEALING COMPOUND AND A QUART SAMPLE OF THE THINNER TO THE TESTING LABORATORY OF THE OHIO DEPARTMENT OF TRANSPORTATION AT LEAST ONE MONTH PRIOR TO THE TIME IT IS EXPECTED TO BE USED.

THE DIRECTOR RESERVES THE RIGHT TO USE ANY ADDITIONAL INFORMATION OR PERFORM ANY TESTS DEEMED NECESSARY TO DETERMINE WHETHER OR NOT THE RUBBER SEALING COMPOUND CONFORMS TO THE REQUIREMENTS OF THIS SPECIFICATION AND IS SUITABLE FOR THE PURPOSE INTENDED.

PREPARATION OF SURFACE: SURFACES TO BE WATERPROOFED SHALL HAVE ALL PROJECTIONS DRESSED OFF, AND THE OUTSIDE FILM OF CEMENT, TOGETHER WITH ALL DIRT REMOVED WITH WIRE BRUSHES AND THEN WASHED OFF WITH CLEAR WATER. IF ANY GREASE OR OIL IS PRESENT ON THE CONCRETE SURFACE, IT SHALL BE REMOVED BY SCRAPING AND WASHING WITH A SUITABLE SOLVENT AND/OR MURIATIC ACID AND THEN THOROUGHLY FLUSHED WITH CLEAR WATER. NO PRIMER COAT IS REQUIRED. THE PREPARED SURFACE SHALL BE KEPT CLEAN OF ALL FOREIGN MATERIAL UNTIL THE WATERPROOFING IS APPLIED.

APPLICATION OF WATERPROOFING: THE CONCRETE SHALL BE THOROUGHLY DRY BEFORE THE RUBBER SEALING COMPOUND IS APPLIED. THE MINIMUM AIR TEMPERATURE SHALL BE NOT LESS THAN 50°F. THE TEMPERATURE OF THE SURFACE TO BE WATERPROOFED SHALL ALSO BE OBSERVED AND REPORTED TO THE ENGINEER. THE ENGINEER SHALL DETERMINE IF THE SURFACE TEMPERATURE IS APPROPRIATE TO RECEIVE THE WATERPROOFING MATERIAL. THE WATERPROOFING MATERIAL SHALL NOT BE HEATED AND PRECAUTIONS SHALL BE TAKEN TO AVOID FIRE HAZARD WHEN USING THE MATERIALS.

(A) FIRST COAT - THE MATERIAL USED SHALL BE A 50/50 MIXTURE OF THE RUBBER SEALING COMPOUND AND THINNER. IT SHALL BE APPLIED UNIFORMALLY AT THE MINIMUM RATE OF 0.10 GAL. PER SQUARE YARD USING SUITABLE BRUSHES AND PERMITTED TO CURE FOR AT LEAST TWO HOURS AND UNTIL FREE FROM TACKINESS OR ANY TENDENCY TO STICK TO SHOES BEFORE APPLYING THE SECOND COAT.

(B) SECOND COAT - THE MATERIAL USED SHALL BE THE RUBBER SEALING COMPOUND UNDILUTED. IT SHALL BE APPLIED UNIFORMLY AT THE MINIMUM RATE OF 0.15 GAL. PER SQUARE YARD USING SUITABLE BRUSHES. THE WATERPROOFING SHALL BE PERMITTED TO CURE OVERNIGHT. NO TRAFFIC OR FURTHER WORK SHALL BE PERMITTED ON THE WATERPROOFED DECK UNTIL THE END OF THE REQUIRED CURING PERIOD AND UNTIL, IN THE OPINION OF THE ENGINEER, THE CURED MEMBRANE HAS ACQUIRED SUFFICIENT STRENGTH TO SUPPORT NECESSARY EQUIPMENT WITHOUT RUPTURING.

(C) PATCH COAT - IF THE SURFACE IS NOT SATISFACTORY AFTER APPLICATION OF THE SECOND COAT, DUE TO BUBBLES, HOLES, OR INSUFFICIENT THICKNESS, OR THE CURED MEMBRANE IS DAMAGED FOR ANY REASON, ADDITIONAL SEALING COMPOUND SHALL BE APPLIED AS DIRECTED BY THE ENGINEER.

THE CONTRACTOR SHALL AVOID PLACING ANY UNNECESSARY EQUIPMENT OR STORE ANY MATERIALS ON THE CURED MEMBRANE. HE SHALL PROCEED WITH THE APPLICATION OF THE TACK COAT AND ASPHALTIC WEARING COURSE ON THE ROADWAY PORTION OF THE DECK AS SOON AS PRACTICABLE WITHOUT ANY UNNECESSARY DELAYS.

MANUFACTURER'S REPRESENTATIVE: THE RUBBER SEALING COMPOUND MANUFACTURER'S TECHNICAL REPRESENTATIVE SHALL BE NOTIFIED IN ORDER THAT HE CAN PROVIDE THE ENGINEER WITH RECOMMENDED PROCEDURES AND HE SHALL ALSO BE PRESENT DURING THE INITIAL INSTALLATION OF THE WATERPROOFING AND SUBSEQUENT APPLICATION OF THE TACK COAT AND WEARING SURFACE.

METHOD OF MEASUREMENT: THE QUANTITY OF RUBBER SEALING COMPOUND WATERPROOFING TO BE PAID FOR SHALL BE THE NUMBER OF SQUARE YARDS COMPLETE AND ACCEPTED IN PLACE.

BASIS OF PAYMENT: THE WATERPROOFING MEASURED AS ABOVE PROVIDED SHALL BE PAID FOR AT THE CONTRACT UNIT PRICE PER SQUARE YARD, WHICH PRICE SHALL BE PAYMENT IN FULL FOR FURNISHING ALL MATERIALS, LABOR AND EQUIPMENT FOR PREPARING THE CONCRETE SURFACE AND APPLYING THE COATINGS AT THE REQUIRED RATE.

PAYMENT WILL BE MADE AT CONTRACT PRICES FOR:

ITEM	UNITS	DESCRIPTION
512	SQUARE YARDS	CONCRETE DECK WATERPROOFING, AS PER PLAN.

ITEM 518, SUBDRAINAGE FOR WEARING SURFACE COURSE, AS PER PLAN

THE SUBDRAINAGE SYSTEM SHALL CONSIST OF 1" Ø PVC PIPE TUBES, CONFORMING TO THE DIMENSIONAL AND MARKING REQUIREMENTS OF 711.29, THROUGH THE DECK AND A LONGITUDINAL CONDUCTOR. THE PVC PIPE AND FITTINGS SHALL BE SCHEDULE 40.

THE PIPE TUBES SHALL BE PLACED VERTICALLY IN THE SLAB AND DEPRESSED 1/4 INCH BELOW THE TOP OF THE SLAB. THEY SHALL BE PLACED WITH CENTER OF TUBES 1 INCH FROM FACE OF CURBS AND SPACED AT APPROXIMATELY 6 FOOT INTERVALS. A TUBE SHALL BE PLACED WITHIN 1-1/2 FEET OF EACH EXPANSION JOINT. THE TUBES SHALL BE EXTENDED AND SUPPORTED BELOW THE DECK AS SHOWN ON THE PLANS. THE PIPE SHALL BE EXTENDED OR LOCATED IN SUCH A MANNER AS TO CAUSE DISCHARGE TO FALL CLEAR OF BRIDGE SEATS AND STRUCTURAL MEMBERS.

AFTER THE DECK HAS BEEN WATERPROOFED, A STEEL ANGLE, 1-1/2 X 1-1/2 X 1/4 INCHES, GALVANIZED PER 711.02, SHALL BE PLACED OVER THE PLASTIC TUBES, WITH BOTH LEGS DOWN, AND FORMING A WATER COURSE FOR THE FULL LENGTH OF THE BRIDGE. THIS ELEMENT MAY BE PLACED IN CONVENIENT LENGTHS WITH BUTT JOINTS. CARE SHALL BE TAKEN TO AVOID DISPLACING THE ANGLES AS THE SURFACE COURSE IS PLACED.

MEASUREMENT: SUBDRAINAGE FOR WEARING SURFACE COURSE SHALL BE MEASURED AS THE LENGTH OF THE LONGITUDINAL CONDUCTOR. THE PRICE PER LINEAR FOOT OF SUCH DRAINAGE SYSTEM SHALL INCLUDE ALL TUBES, FITTINGS, CLAMPS, GALVANIZED STEEL ANGLES AND LABOR NECESSARY TO COMPLETE THE ITEM.

BASIS OF PAYMENT: PAYMENT WILL BE MADE AT CONTRACT PRICES FOR:

ITEM	UNIT	DESCRIPTION
518	LINEAL FOOT	SUBDRAINAGE FOR WEARING SURFACE COURSE, AS PER PLAN

ADACHE ASSOCIATES INC., ENGINEERS
CLEVELAND, OHIO 44142

DETROIT-ROCKY RIVER BRIDGE

GENERAL NOTES

BRIDGE NO. CUY-6A-004!

U.S.R. 6A. OVER ROCKY RIVER
CUYAHOGA COUNTY STA. 20+35.50 TO STA. 26+75.50

DESIGNED	DRAWN	CHECKED	REVIEWED	DATE	REVISED
L.E.D.	G.A.D. TMD	R.W.H.	R.D.H.	12-29-77	

GENERAL NOTES

F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

CUYAHOGA COUNTY
CUY.-6A-0.41

17
50

ITEM 601, BAGGED CONCRETE RIPRAP SLOPE PROTECTION, AS PER PLAN

SLOPE PROTECTION SHALL BE AS SPECIFIED IN ITEM 601.04 (2) EXCEPT AS SHOWN IN THE PLANS.

METHOD OF MEASUREMENT: BAGGED CONCRETE RIPRAP SLOPE PROTECTION, AS PER PLAN WILL BE MEASURED BY THE SQUARE YARD OF FINISHED SURFACE COMPLETE IN PLACE.

BASIS OF PAYMENT: PAYMENT FOR ACCEPTED QUANTITIES COMPLETE IN PLACE WILL BE MADE AT CONTRACT UNIT PRICE BID FOR:

ITEM	UNIT	DESCRIPTION
601	SQUARE YARDS	BAGGED CONCRETE RIPRAP SLOPE PROTECTION, AS PER PLAN

ITEM 805 RUBBERIZED SAND-ASPHALT-SURFACE COURSE, AS PER PLAN

DESCRIPTION: THIS WORK CONSISTS OF CONSTRUCTING A SURFACE COURSE OF RUBBERIZED SAND-ASPHALT MIXED IN A CENTRAL PLANT, SPREAD AND COMPACTED ON A PREPARED SURFACE IN ACCORDANCE WITH THESE SPECIFICATIONS AND IN REASONABLY CLOSE CONFORMITY WITH THE LINES, GRADES AND TYPICAL SECTIONS SHOWN ON THE PLANS OR ESTABLISHED BY THE ENGINEER.

THE GENERAL PLANT MIX PAVEMENT SPECIFICATIONS, 401, AS PER PLAN, SHALL APPLY WITH DEVIATIONS AS FOLLOWS:

COMPOSITION: RUBBERIZED SAND-ASPHALT SHALL BE COMPOSED OF A MIXTURE OF AGGREGATE, ASPHALT CEMENT, RUBBER COMPOUND, AND MINERAL FILLER IF REQUIRED. THE GRADUATION OF THE AGGREGATE OR AGGREGATE BLEND SHALL BE WITHIN THE FOLLOWING LIMITS:

SIEVE NO.	TOTAL PASSING, % BY WT.
3/8"	100
4	95-100
8	90-100
16	80-100
30	60-90
50	30-65
100	10-30
200	3-10

THE COMBINED ASPHALT CEMENT AND RUBBER SOLIDS CONTENT SHALL BE AS DIRECTED BY THE LABORATORY WITHIN THE FOLLOWING LIMITS:

ASPHALT CEMENT AND RUBBER SOLIDS (PERCENT OF TOTAL MIX), 7 TO 10.

THE QUANTITY OF ASPHALT CEMENT AND RUBBER COMPOUND SHALL BE AS REQUIRED TO PRODUCE A COMPOSITION OF 95 PLUS OR MINUS 0.3 PERCENT ASPHALT CEMENT TO 5 PLUS OR MINUS 0.3 PERCENT RUBBER SOLIDS BY WEIGHT.

THE FINISHED MIX SHALL CONTAIN NO MATERIALS OTHER THAN THE APPROVED AGGREGATE, ASPHALT CEMENT AND RESIDUAL RUBBER SOLIDS.

MATERIALS: AGGREGATE SHALL MEET THE QUALITY REQUIREMENTS FOR NATURAL SAND, FINE AGGREGATE, 703.05. THE PARTICLES SHALL BE CLEAN, UNCOATED AND NOT LESS THAN 50 PERCENT SILICON DIOXIDE BY WEIGHT.

MINERAL FILLER..... 703.07
ASPHALT CEMENT..... 702.01 AC 10 OR AC 20
AS DIRECTED BY THE ENGINEER. WHEN AC 20 IS USED THE PENETRATION AT 25°C (77°F) 100g, 5SEC. SHALL NOT BE LESS THAN 60
RUBBER COMPOUND..... 903 STATE SUPPLEMENTAL

THE RUBBER SOLIDS CONTENT OF THE RUBBER COMPOUND SHALL BE CERTIFIED IN TRIPLICATE TO THE LABORATORY PRIOR TO START OF PRODUCTION.

MIXING PLANTS: MEANS SHALL BE PROVIDED FOR PROPORTIONING THE RUBBER COMPOUND, AND THE MINERAL FILLER IF REQUIRED, INTO THE MIXER.

MIXING: THE SAND SHALL BE MIXED DRY FOR NOT LESS THAN 10 SECONDS. MINERAL FILLER, IF USED, SHALL THEN BE SPREAD UNIFORMLY OVER THE SAND AND DRY MIXING CONTINUED FOR ANOTHER 10 SECONDS. ASPHALT CEMENT SHALL THEN BE ADDED IN AN EVENLY SPREAD SHEET OVER THE FULL LENGTH OF THE MIXER BOX AND THE MIXING CONTINUED FOR A PERIOD OF NOT LESS THAN 10 SECONDS AND AT LEAST UNTIL THE AGGREGATE IS COMPLETELY COATED WITH BITUMEN. RUBBER COMPOUND SHALL THEN BE ADDED TO THE COATED AGGREGATE AND THE MIXING CONTINUED FOR A PERIOD OF NOT LESS THAN 50 SECONDS. THE LENGTH OF DRY MIXING AND WET MIXING PERIODS MAY VARY, BUT UNDER NO CIRCUMSTANCES SHALL THE TOTAL MIXING TIME OR INTERVAL OF TIME BETWEEN THE OPENING OF THE WEIGHT BOX GATE AND THE OPENING OF THE MIXER GATE BE LESS THAN 80 SECONDS. THE RUBBER COMPOUND SHALL BE SO DISPERSED IN THE ASPHALT OF THE PAVING MIXTURE THAT THERE WILL BE NO REMAINING BLACK RUBBERY PARTICLES VISIBLE TO THE NAKED EYE WHEN THE MIXTURE IS TESTED IN ACCORDANCE WITH METHOD 1012 ON FILE IN THE OFFICE OF THE DIRECTOR OF HIGHWAYS, STATE OF OHIO. A TECHNICAL REPRESENTATIVE OF THE RUBBER COMPOUND MANUFACTURER SHALL BE PRESENT SO THAT HE CAN OBSERVE THE MIXING OF THE ASPHALT EMULSION AND RUBBER COMPOUND.

SPREADING AND FINISHING: THE MIXTURE SHALL BE SPREAD IN ACCORDANCE WITH THE THICKNESS SPECIFIED IN THE CONTRACT, OR AS SHOWN ON THE PLANS.

TRAFFIC SHALL NOT BE PERMITTED ON THE COMPACTED MIXTURE UNTIL IT HAS COOLED SUFFICIENTLY TO PREVENT GLAZING AS DETERMINED BY THE ENGINEER.

SPREADING AND SURFACE TOLERANCES: THE COMPLETED SURFACE COURSE WILL BE CHECKED WITH STRAIGHT-EDGES AND/OR ROLLING STRAIGHTEDGES BY THE ENGINEER. THE VARIATION OF THE SURFACE COURSE FROM THE TESTING EDGE OF THE 10-FOOT STRAIGHTEDGE SHALL NOT EXCEED 1/4 INCH. VARIATIONS IN EXCESS OF SLOPE OR SURFACE TOLERANCES SHALL BE CORRECTED BY REMOVAL OF MIXTURE TO NEAT LINES AND REPLACEMENT OR BY SURFACE GRINDING IN A MANNER SATISFACTORY TO THE ENGINEER.

METHOD OF MEASUREMENT: CONVERSION WEIGHT TO CUBIC YARDS SHALL BE 3650#.

BASIS OF PAYMENT: PAYMENT FOR ACCEPTED QUANTITIES, COMPLETE IN PLACE, WILL BE MADE AT THE CONTRACT PRICE FOR:

ITEM	UNIT	DESCRIPTION
805	CUBIC YARD	RUBBERIZED SAND-ASPHALT-SURFACE COURSE, AS PER PLAN

STEEL REINFORCED ELASTOMERIC EXPANSION JOINTS

DESCRIPTION: THIS WORK SHALL INCLUDE FURNISHING AND INSTALLING STEEL REINFORCED ELASTOMERIC EXPANSION JOINTS FOR THE BRIDGE DECK, CURBS AND SIDEWALKS IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS. THE FINISHED JOINTS SHALL BE IN CONFORMITY WITH THE LINES AND GRADES SHOWN ON THE PLANS OR ESTABLISHED BY THE ENGINEER. THE SEALS SHALL BE FURNISHED IN THE FORM OF PRE-FABRICATED UNITS. CURB AND GUTTER UNITS USED SHALL BE PREFABRICATED "L" SHAPED UNITS SO THAT A BUTT JOINT AT THE CURB GUTTERLINE WILL NOT BE REQUIRED. *The Roadway Joints within 6' of the Curb Line shall be shop vulcanized, under heat and pressure. All field joints shall be tongue and groove mating, bonded as per the Elastomeric Bonding Procedure Note on Sheet 6/24.*

MATERIALS:

GENERAL - THE ELASTOMERIC EXPANSION JOINTS SHALL CONSIST OF AN INTEGRALLY MOLDED UNIT OF ELASTOMER AND BONDED METAL COMPONENTS, CAST UNDER PRESSURE AND HEAT, WITH THE OPTION OF PROVIDING AN INTEGRALLY MOLDED AND BONDED ALUMINUM ARMORED WEARING SURFACE.
NOTE: The upper reinforcing plates shall clear field butt joints by 1½" (min.).
THE ELASTOMERIC EXPANSION JOINT USED SHALL BE ONE OF THE FOLLOWING TYPES AND MODELS:

MANUFACTURER	ELASTOMERIC EXPANSION JOINT-TYPE & MODEL
GENERAL TIRE & RUBBER COMPANY	TRANSFLEX - MODEL 650
WATSON BOWMAN ASSOCIATES, INC.	WABOFLEX - MODEL SR 6.5A

ELASTOMER - THE ELASTOMER PORTION OF THE ELASTOMERIC EXPANSION JOINT SHALL BE OF THE COMPOUND KNOWN AS NEOPRENE, WHICH SHALL HAVE THE FOLLOWING PHYSICAL PROPERTIES IN ACCORDANCE WITH ASTM METHOD D15, PART B.

PHYSICAL PROPERTIES:

HARDNESS, DUROMETER A, ASTM D2240	45± 5 POINTS
TENSILE STRENGTH, MINIMUM P.S.I. ASTM D412	1800 P.S.I. MINIMUM
ELONGATION AT BREAK, MINIMUM PERCENT	400% MINIMUM
COMPRESSION SET, 22 HOURS AT 158°F ASTM D395 METHOD B	20% MAXIMUM
LOW TEMPERATURE ASTM D746	NOT BRITTLE AT -40°
OZONE RESISTANCE, EXPOSURE TO 100 PPHM OZONE FOR 70 HOURS AT 100°F. SAMPLE UNDER 20% STRAIN ASTM D1149	NO CRACKS
OIL DETERIORATION, VOLUME INCREASE AFTER IMMERSION IN ASTM OIL #3 FOR 70 HOURS AT 212°F. ASTM D471	120% MAXIMUM

ADHESION - THE NEOPRENE TO METAL BOND REQUIREMENTS SHALL BE AS FOLLOWS:

BOND MADE DURING VULCANIZATION ASTM D429, 40 POUNDS PER INCH MINIMUM.

OTHER MATERIALS - OTHER MATERIALS USED IN MANUFACTURING AND INSTALLING THE JOINTS SHALL MEET THE FOLLOWING REQUIREMENTS:

STRUCTURAL STEEL	ASTM A570, GRADE C OR ASTM A36
ALUMIMUM ARMOR WEARING SURFACE	ASTM 6061-T6 EXTRUSION
ANCHOR BOLTS	ASTM A325 TYPE 3
POLYURETHANE SEALANT	FEDERAL SPECIFICATION TT-S 00230

TOLERANCE - TOLERANCE REQUIREMENTS SHALL BE IN ACCORDANCE WITH ARTICLE 2.25.4 OF THE "STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES" ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS.

CONSTRUCTION METHODS:

PREPARATION OF THE JOINTS - EXPANSION JOINTS SHALL BE OF THE MATERIALS AND SIZE SPECIFIED ON THE PLANS. THE EXPANSION JOINTS SHALL BE FASTENED TO THE STRUCTURE BY STEEL BOLTS THREADED THROUGH THE STEEL ARMORED JOINTS AND EMBEDED IN THE CONCRETE SLAB, ABUTMENT BACKWALLS, AND SIDEWALKS AS SHOWN ON THE PLANS. BOLTS IN THE STEEL ARMORED JOINTS SHALL BE ACCURATELY LOCATED AS SHOWN ON THE ELASTOMERIC JOINT MANUFACTURER'S CERTIFIED SHOP DRAWINGS APPROVED BY THE DIRECTOR. IMMEDIATELY BEFORE PLACEMENT OF THE SEALANT, THE JOINT ARMOR SHALL BE THOROUGHLY CLEANED BY ABRASIVE BLASTING, POWER BRUSHING, COMPRESSED AIR OR OTHER MEANS SO THAT IT IS FREE FROM RUST, CONCRETE, DUST, OIL, GREASE OR OTHER FOREIGN MATERIALS.

INSTALLATION - A MANUFACTURER'S REPRESENTATIVE OF THE ELASTOMERIC EXPANSION JOINT PRODUCT FURNISHED SHALL BE PRESENT AT THE SITE AT THE TIME OF INSTALLATION FOR THE PURPOSE OF ADVISING THE CONTRACTOR AND THE ENGINEER AS TO APPROPRIATE INSTALLATION PROCEDURES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROPERLY SEALED INSTALLATION OF THE JOINT MATERIAL UNDER THE DIRECTION OF THE MANUFACTURER'S REPRESENTATIVE AND SHALL REPORT IN WRITING TO THE DIRECTOR ANY EXCEPTION TAKEN TO PROCEDURES AS RECOMMENDED BY THE REPRESENTATIVE.

BEFORE INSTALLATION IS STARTED, THE CONTRACTOR SHALL DETERMINE HOW THE UNITS SHALL BE PLACED. A BUTT JOINT SHALL BE PROVIDED AT EACH BREAK IN PAVEMENT CROSS SLOPE AND NO ROADWAY SECTION SHALL BE CUT SO THAT IT HAS FEWER THAN 2 BOLTS ON EITHER SIDE. CUTTING OF JOINT MATERIAL SHALL BE AVOIDED WHENEVER POSSIBLE.

5/24

ADACHE ASSOCIATES INC., ENGINEERS
CLEVELAND, OHIO 44142

DETROIT-ROCKY RIVER BRIDGE

GENERAL NOTES

BRIDGE NO. CUY-6A-0041

U.S.R. 6A. OVER ROCKY RIVER
CUYAHOGA COUNTY STA. 20+35.50 TO STA. 26+75.50

DESIGNED	DRAWN	CHECKED	REVIEWED	DATE	REVISED
L.E.D.	G.A.D. T.M.J.	R.W.H.	L.E.D. H.	12-29-77	7-18-78

GENERAL NOTES

F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

18
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CUYAHOGA COUNTY
CUY.-6A-0.41

ALL SURFACES (CONCRETE, METAL AND NEOPRENE) SHALL BE DRY IMMEDIATELY PRIOR TO AND DURING THE INSTALLATION OF THE ELASTOMERIC JOINT SEAL AND DURING APPLICATION OF THE POLYURETHANE SEALANT. THE SIDES AND BOTTOM SURFACES OF THE SEAL SEGMENTS THAT WILL CONTACT THE SURFACES OF THE JOINT SEAL DEPRESSION SHALL BE THOROUGHLY WIRE BRUSHED IN ORDER TO IMPROVE THE BONDING CHARACTERISTICS OF THE POLYURETHANE SEALANT.

THE LOCATION OF THE FIRST SEGMENT INSTALLED IN EACH OF THE EXPANSION JOINTS SHALL BE AS RECOMMENDED BY THE MANUFACTURER. THE SEGMENTS SHALL BE EXPANDED OR COMPRESSED AS REQUIRED. THE SEGMENT SHALL BE PLACED ON A BEDDING OF POLYURETHANE SEALANT OR POLYISOBUTYLENE-BASED SEALANT TAPE AS RECOMMENDED BY THE JOINT MANUFACTURER. ADJUST SEGMENTS UNTIL THE ANCHOR BOLTS PROTRUDE THROUGH CENTERS OF THE MOUNTING SLOTS AND INSTALL GALVANIZED STEEL WASHERS (BOTTOM), LOCK WASHERS (TOP) AND NUTS. TIGHTEN NUTS TO A TORQUE OF 100 FOOT-POUNDS. THE LAST BOLT IN THE SEGMENT SHALL HAVE ONLY TIGHT FIT UNTIL ABUTTING SEGMENT IS INSTALLED. PRIOR TO RELEASE OF THE SEGMENT FROM ITS EXPANDED OR COMPRESSED POSITION, ALL GALVANIZED WASHERS, LOCK WASHERS AND NUTS WITHIN THE SEGMENT SHALL BE INSTALLED AND THE NUTS TORQUED AS SPECIFIED. RETIGHTEN ALL NUTS TO THE REQUIRED TORQUE AFTER WAITING A PERIOD OF AT LEAST ONE HOUR FOLLOWING THE INITIAL INSTALLATION.

SUCCESSIVE JOINT SEAL SEGMENTS SHALL BE BONDED TOGETHER AS DESCRIBED IN THE ELASTOMERIC BONDING PROCEDURE NOTE.

THE JOINT BETWEEN THE SEAL SEGMENT AND THE SIDES OF THE JOINT DEPRESSION SHALL BE SEALED WITH POLYURETHANE SEALANT UNDER PRESSURE TO INSURE THAT ALL JOINT VOIDS ARE FILLED. EXCESS SEALANT SHALL BE REMOVED BEFORE IT HAS SET.
AFTER INSTALLATION OF THE SEAL SEGMENT, INCLUDING RETIGHTENING OF ANCHOR BOLT NUTS THE CONTRACTOR SHALL, WIRE BRUSH THE ANCHOR BOLT CAVITIES AND CAVITY PLUGS AND CLEAN THE CAVITIES, CAVITY PLUGS AND EXPOSED PORTIONS OF THE ANCHOR BOLTS AND NUTS. AFTER COMPLETION OF WIRE BRUSHING AND CLEANING, SEALANT SHALL BE INSERTED IN THE CAVITIES AND APPLIED TO EDGES OF THE CAVITY PLUGS. THE CAVITY PLUGS SHALL THEN BE FORCED INTO PLACE AND THE BLEEDER HOLES FILLED WITH SEALANT. REMOVE EXCESS SEALANT FROM THE ELASTOMERIC SURFACE.

THE INSTALLATION OF EACH SEGMENT SHALL BE COMPLETED, INCLUDING THE INSERTATION OF CAVITY PLUGS AND CLEANING, PRIOR TO OR DURING THE INSTALLATION OF SUCCESSIVE SEGMENTS DURING PERIODS OF IMPENDING PRECIPITATION.

THE CONTRACTOR SHALL COMPLETE THE INSTALLATION OF ALL SEGMENTS OF EACH DECK JOINT IN THE MANNER AND SEQUENCE NOTED ABOVE AND SHOWN ON THE PLANS.

CERTIFICATION: THE CONTRACTOR SHALL FURNISH TO THE DIRECTOR CERTIFIED COPIES OF THE MANUFACTURER'S TEST REPORTS AND A CERTIFICATION BY THE MANUFACTURER THAT THE SEALS FURNISHED CONFORM TO ALL REQUIREMENTS SHOWN ON THE PLANS AND AS STIPULATED HEREIN.

SHOP DRAWINGS OF THE ELASTOMERIC EXPANSION JOINTS WILL BE REQUIRED IN ACCORDANCE WITH ITEM 501.05 SHOP DRAWINGS.

MEASUREMENT: PAYMENT FOR ACCEPTED QUANTITIES SHALL BE BASED ON THE ACTUAL NUMBER OF LINEAL FEET OF ELASTOMERIC EXPANSION JOINTS MEASURED IN PLACE HORIZONTALLY ALONG THE CENTERLINE TOP SURFACE OF THE JOINT AND VERTICALLY ALONG THE CENTERLINE OF THE EXPOSED SURFACE AT THE CURBS, COMPLETE AND IN PLACE.

THE STEEL PORTIONS OF THE STRUCTURAL JOINTS INCLUDING ANCHOR BOLTS, NUTS AND HARDWARE, BUT EXCLUDING REINFORCEMENT BONDED TO OR WITHIN THE ELASTOMERIC EXPANSION JOINT DURING MANUFACTURE, SHALL BE INCLUDED IN ITEM 513, STRUCTURAL STEEL, FOR PAYMENT.

BASIS OF PAYMENT: PAYMENT WILL BE MADE AT CONTRACT PRICE FOR:

ITEM	UNIT	DESCRIPTION
SPECIAL	LINEAL FT.	EXPANSION JOINT, TRANSFLEX MODEL 650 OR WABOFLEX MODEL SR 6.5A

VINYL RESIN PROTECTIVE COATING OF CONCRETE SURFACES:
ALL VISIBLE SURFACES OF THE ABUTMENTS AND ALL PIER SURFACES ABOVE ELEVATIONS INDICATED IN THE PLANS WHICH WILL BE EXPOSED TO RUST-LADEN WATER FROM CORROSION RESISTANT STEEL DURING INITIAL WEATHERING SHALL RECEIVE A CLEAR VINYL RESIN COATING TO PROTECT AGAINST ABSORPTIVE STAINING. THE COATING SHALL BE APPLIED AFTER THE CONCRETE HAS RECEIVED A FINAL SURFACE FINISH INCLUDING ANY GROUT CLEANING OR RUBBING AND BEFORE THE ERECTION OF THE STRUCTURAL STEEL.
WATERPROOF MEMBRANE CURING COMPOUND AND CONCRETE CURING AND PROTECTIVE MEMBRANE, SUPPLEMENTAL SPECIFICATION 836, SHALL NOT BE USED ON THE SURFACES COATED WITH CLEAR PROTECTIVE COATING. SUCH SURFACES SHALL BE WATER CURED OR, AT THE CONTRACTOR'S OPTION, TWO FULL COATS OF CLEAR PROTECTIVE COATING, EACH APPROXIMATELY 1-1/3 MILS DRY FILM THICKNESS, MAY BE APPLIED TO ACT AS A COMBINATION CURING COMPOUND AND ANTISTAINING AGENT.

THE AGENT SHALL BE APPLIED BY BRUSH OR ROLLER, OR BY SPRAYING, SO THAT THE SURFACE OF THE CONCRETE IS COMPLETELY AND UNIFORMLY COATED AT THE RATE OF ONE GALLON PER 200 SQUARE FEET. THIS RATE OF APPLICATION WILL PROVIDE A DRY FILM THICKNESS OF 1-1/3 MILS. IF RUNNING OR SAGGING OCCURS, THE MATERIAL SHALL BE APPLIED IN TWO OR MORE COATS OF APPROXIMATELY EQUAL THICKNESS. NOT LESS THAN 10 MINUTES SHALL ELAPSE BETWEEN APPLICATIONS. WHEN APPLIED BY SPRAYING, THE COATING MATERIAL MAY BE THINNED WITH NOT MORE THAN 10% TOLUENE.

THE COMPOSITION OF THE CLEAR VINYL RESIN PROTECTIVE COATING SHALL BE AS FOLLOWS:

	PERCENT BY WEIGHT
*VINYL RESIN	25.0 MIN.
METHYL ETHYL KETONE SOLVENT	37.0 MIN.
TOLUENE SOLVENT	37.0 MIN.

*THE RESIN SHALL BE A VINYL CHLORIDE-ACETATE COPOLYMER CONTAINING 86% VINYL CHLORIDE AND 14% VINYL ACETATE. THE VISCOSITY OF 22% BY WEIGHT SOLUTION OF RESIN IN A SOLVENT, CONSISTING OF EQUAL PARTS OF METHYL ISOBUTYL KETONE AND TOLUENE, SHALL BE 250-500 CENTIPOISES OF 77°F. THE RESIN SHALL BE UNION CARBIDE'S VYHH GRADE, OR APPROVED EQUAL.

COATING PROPERTIES:	WEIGHT PER GALLON OF 77°F., LB.	7.6 MIN.
	CONSISTENCY, VISCOSITY AT 77°F., KU	60-70
	COLOR	CLEAR AND COLORLESS
	DRYING TIME, HR.	1/2 MAX.

MEASUREMENT: VINYL RESIN PROTECTIVE COATING OF CONCRETE SURFACES WILL BE MEASURED BY THE SQUARE FEET OF CONCRETE SURFACE TO WHICH THE PROTECTIVE COATING HAS BEEN APPLIED.

BASIS OF PAYMENT: PAYMENT WILL BE MADE AT THE CONTRACT PRICES FOR

ITEM	UNIT	DESCRIPTION
SPECIAL	SQUARE FEET	VINYL RESIN PROTECTIVE COATING OF CONCRETE SURFACES

3R CLEAR GUARD PROTECTIVE COATING OF CONCRETE SURFACE

ALL VISIBLE PIER COLUMN SURFACES BELOW THE ELEVATION INDICATED IN THE PLANS SHALL RECEIVE A COATING OF CLEAR, COLORLESS, FLAT FINISH, 3R CLEAR GUARD MANUFACTURED BY 3R INDUSTRIES, INC. AND DISTRIBUTED BY THE SHERWIN-WILLIAMS COMPANY. THE COATING SHALL BE APPLIED AFTER THE CONCRETE HAS RECEIVED A FINAL SURFACE FINISH INCLUDING ANY GROUT CLEANING OR RUBBING AND BEFORE THE ERECTION OF THE STRUCTURAL STEEL. ADDITIONAL PREPARATION OF THE SURFACE SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS FOR COATING CONCRETE SURFACES WITH 3R CLEAR GUARD.

WATERPROOF MEMBRANE CURING COMPOUND AND CONCRETE CURING AND PROTECTIVE MEMBRANE, SUPPLEMENTAL SPECIFICATION 836, SHALL NOT BE USED ON THE SURFACES TO BE COATED WITH 3R CLEAR GUARD. SUCH SURFACES SHALL BE WATER CURED.

3R CLEAR GUARD SHALL BE APPLIED BY BRUSH OR ROLLER, OR BY AIRLESS SPRAYER SO THAT THE SURFACE OF THE CONCRETE IS COMPLETELY AND UNIFORMLY COATED. TWO FULL COATS SHALL BE APPLIED WITH EACH COAT HAVING A DRY FILM THICKNESS OF 1 MIL. NOT LESS THAN ONE HOUR SHALL ELAPSE BETWEEN APPLICATIONS. AMBIENT TEMPERATURE AT THE TIME OF APPLICATION SHALL NOT BE LESS THAN 50°F. THINNING OF THE 3R CLEAR GUARD, IF NECESSARY, SHALL BE WITH CLEAR POTABLE WATER.

MEASUREMENT: 3R CLEAR GUARD PROTECTIVE COATING OF CONCRETE SURFACES WILL BE MEASURED BY THE SQUARE FEET OF CONCRETE SURFACE TO WHICH THE COATING HAS BEEN APPLIED.

BASIS OF PAYMENT: PAYMENT WILL BE MADE AT THE CONTRACT PRICE FOR:

ITEM	UNIT	DESCRIPTION
SPECIAL	SQUARE FEET	3R CLEAR GUARD PROTECTIVE COATING OF CONCRETE SURFACES.

SHOP DRAWINGS: AFTER ALL STEEL FABRICATION IS COMPLETED, THE FABRICATOR SHALL FURNISH A 35 MILLIMETER MICROFILM COPY OF EACH SHOP DRAWINGS MOUNTED ON A 3-1/4" X 7-3/8" APERTURE CARD. THE CARD SHALL BE IMPRINTED WITH THE BRIDGE AND PROJECT NUMBER, FABRICATOR'S NAME, DRAWING NUMBER AND DETAILS SHOWN ON THE DRAWING (GIRDERS, BEAMS, CROSSFRAMES, ETC.).

APPROACH SLABS: MODIFY AS-1-72 BY INCREASING THE COVER OVER THE TOP BARS TO 3".

JOINT SEALS: TYPE B WATERPROOFING MAY BE USED IN LIEU OF PREMOLDED SEALING STRIP.

MECHANICAL CONNECTOR TEST SPECIMENS MUST BE PROVIDED AS DESCRIBED ON SHEET 24/24.

ELASTOMERIC BONDING PROCEDURE

To bond two elastomeric surfaces together the following procedure shall be used:
Surface Preparation. Remove all dirt, debris and oily material with clean cloths. Dry the surfaces. Not more than 7 days prior to adhesive bonding apply a thin ($\frac{1}{8}$" minimum thickness) coating of cyclizing paste.* Allow paste to remain on the surfaces for between 25 and 40 minutes. Wash paste from surfaces with clean water.
Adhesive Application. Apply a flexible epoxy adhesive (Sikastix 360 or an approved equal) liberally and uniformly to both prepared surfaces, but only to surfaces which are dry and warmer than 45°F, and which are maintained above 45°F until adhesive has cured.

Assembly. Force both surfaces together and maintain pressure until adhesive has cured. After assembly remove excess adhesive from exterior surfaces adjacent to bonded joint

*Cyclizing Paste is a mixture of one pound of HiSil and six pounds of concentrated sulfuric acid (18 molar). To mix the paste, add HiSil to the acid slowly while stirring the mixture to achieve a smooth viscous paste.

Warning. Since concentrated sulfuric acid is very corrosive and HiSil is an extremely fine, non-toxic powder; rubber gloves, glasses and respirator should be worn by those mixing the paste, and gloves and glasses worn by those using the paste.

6/24

ABACHE ASSOCIATES INC., ENGINEERS
CLEVELAND, OHIO 44142
DETROIT-ROCKY RIVER BRIDGE
GENERAL NOTES
BRIDGE NO. CUY-6A-0041
U.S.R. 6A. OVER ROCKY RIVER
CUYAHOGA COUNTY STA. 20+35.50 TO STA. 26+75.50

DESIGNED	DRAWN	CHECKED	REVIEWED	DATE	REVISED
L.E.D.	G.A.D. T.M.O.	R.W.H.	E.D.H.	12-29-77	7-18-78

FHWA REGION	STATE	PROJECT	
5	OHIO		

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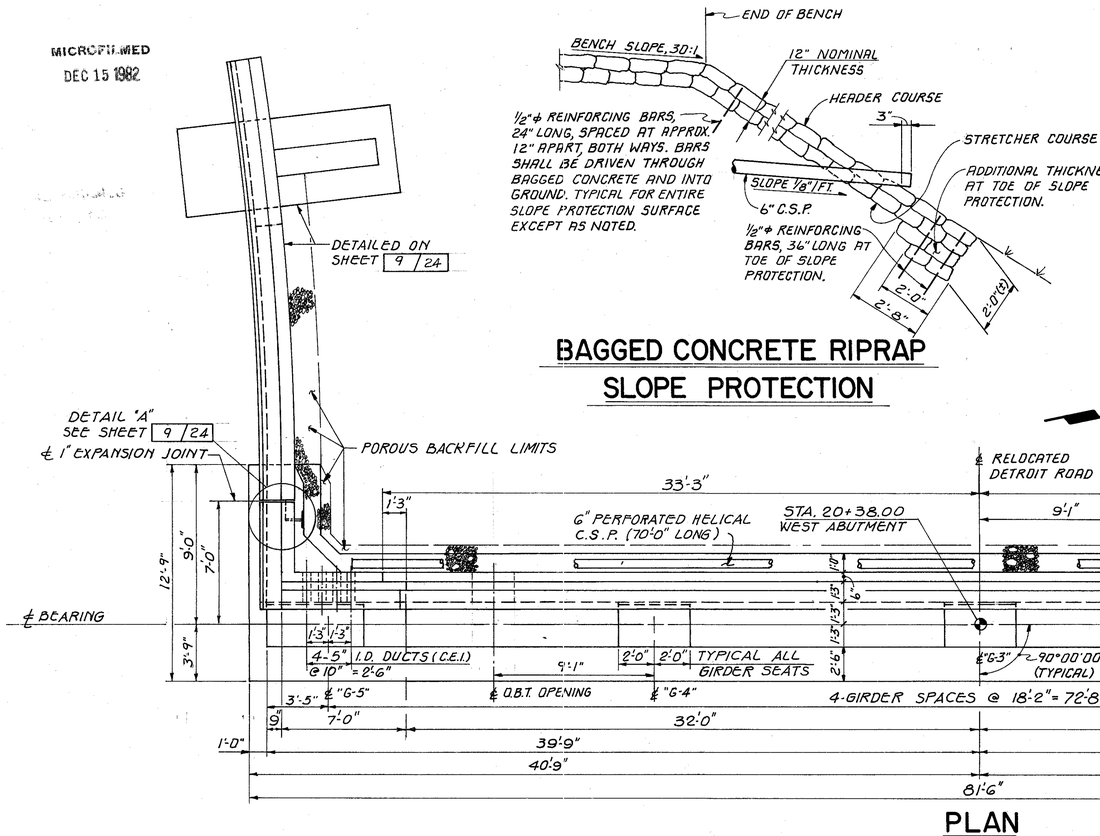
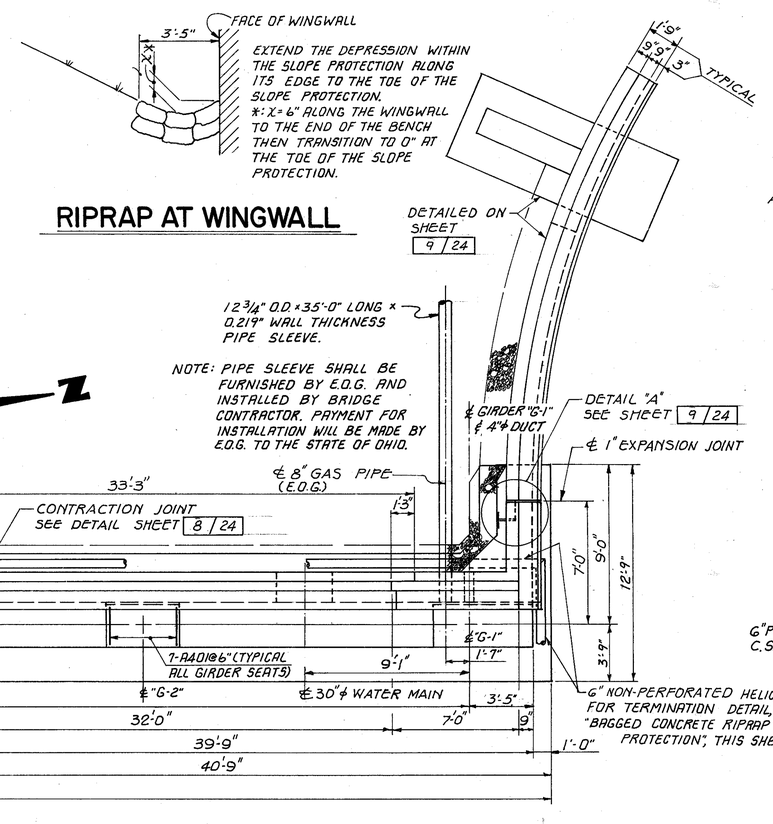
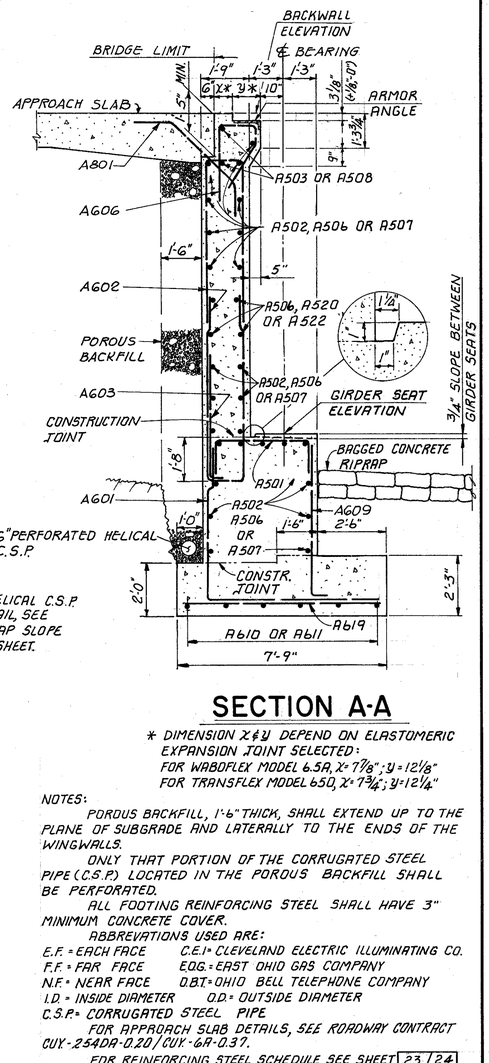
CUYAHOGA COUNTY
CUY.-6A-0.41



BAGGED CONCRETE RIPRAP SLOPE PROTECTION

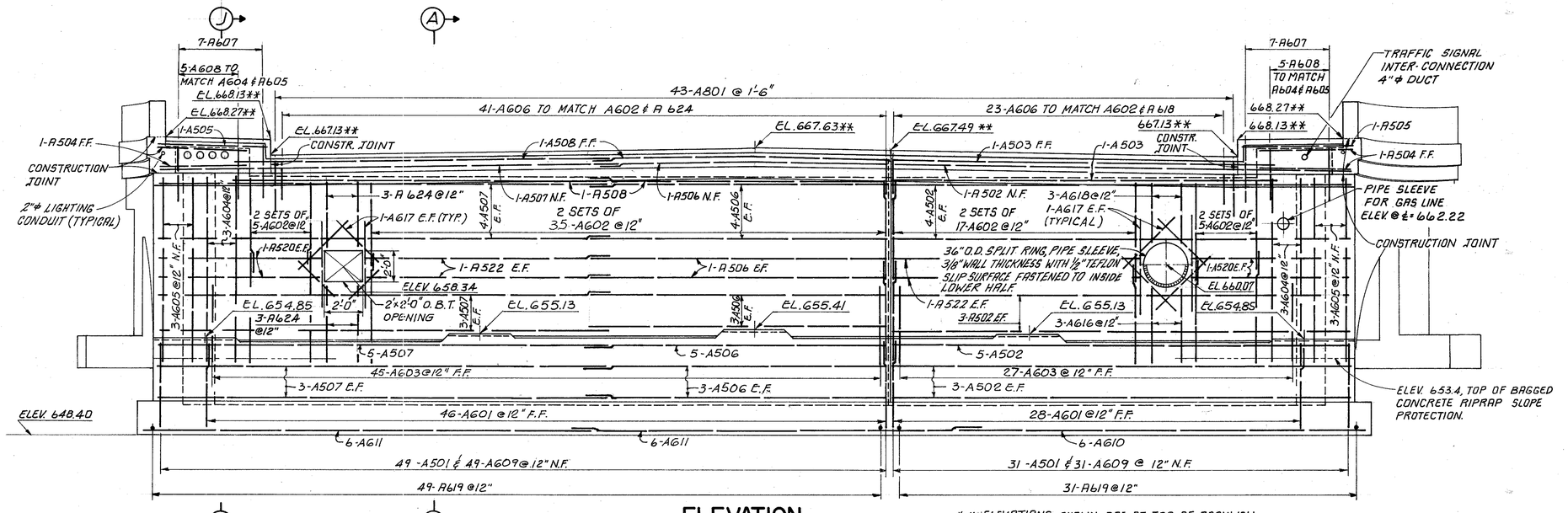


RIPRAP AT WINGWALL



SECTION A-A

* DIMENSION X & Y DEPEND ON ELASTOMERIC EXPANSION JOINT SELECTED:
FOR WABOFLEX MODEL 6.5A, X = 7 7/8"; Y = 12 1/8"
FOR TRANSFLEX MODEL 650, X = 7 3/4"; Y = 12 1/4"



ELEVATION

** ELEVATIONS SHOWN ARE AT TOP OF BACKWALL, 3 1/8" ABOVE ARMOR ANGLE.

NOTES:

POROUS BACKFILL, 1'-6" THICK, SHALL EXTEND UP TO THE PLANE OF SUBGRADE AND LATERALLY TO THE ENDS OF THE WINGWALLS.

ONLY THAT PORTION OF THE CORRUGATED STEEL PIPE (C.S.P.) LOCATED IN THE POROUS BACKFILL SHALL BE PERFORATED.

ALL FOOTING REINFORCING STEEL SHALL HAVE 3" MINIMUM CONCRETE COVER.

ABBREVIATIONS USED ARE:

E.F. = EACH FACE
F.F. = FAR FACE
N.F. = NEAR FACE
I.D. = INSIDE DIAMETER
C.S.P. = CORRUGATED STEEL PIPE
C.E.I. = CLEVELAND ELECTRIC ILLUMINATING CO.
E.O.G. = EAST OHIO GAS COMPANY
O.B.T. = OHIO BELL TELEPHONE COMPANY
O.D. = OUTSIDE DIAMETER

FOR APPROACH SLAB DETAILS, SEE ROADWAY CONTRACT CUY-254DA-0.20 / CUY-6A-0.37.

FOR REINFORCING STEEL SCHEDULE, SEE SHEET 23 / 24

FOR ELASTOMERIC EXPANSION JOINT SEAL AND ARMOR ANGLE DETAILS, SEE SHEET 19 / 24

FOR SECTION J-J, ADDITIONAL NOTES AND DETAILS, SEE SHEET 8 / 24

7 / 24

ADACHE ASSOCIATES INC., ENGINEERS
CLEVELAND, OHIO 44142

DETROIT-ROCKY RIVER BRIDGE

WEST ABUTMENT

BRIDGE NO. CUY-6A-0041
U.S.R. 6A. OVER ROCKY RIVER
CUYAHOGA COUNTY
STA. 20+35.50 TO STA. 26+75.50

DESIGNED	DRAWN	CHECKED	REVIEWED	DATE	REVISED
N.K.	TMJ NK.	L.E.D. S.V.C.	R. D. H.	12-21-77	

F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

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CUYAHOGA COUNTY
CUY.- 6A-0.41

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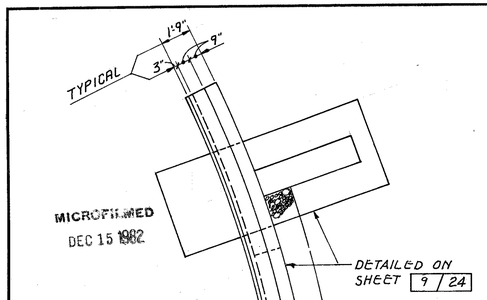
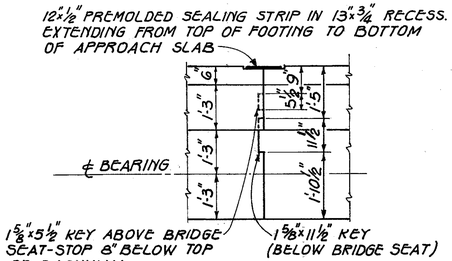
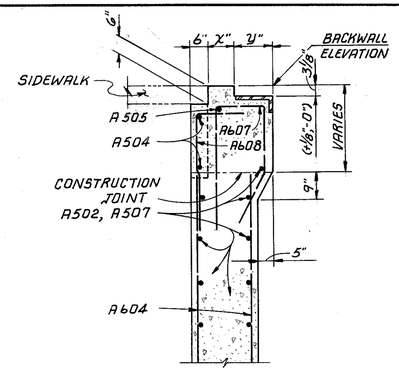
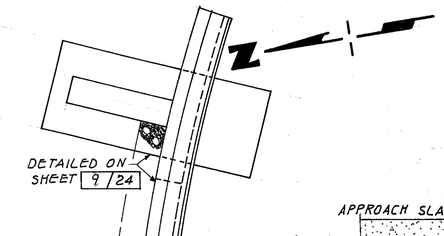


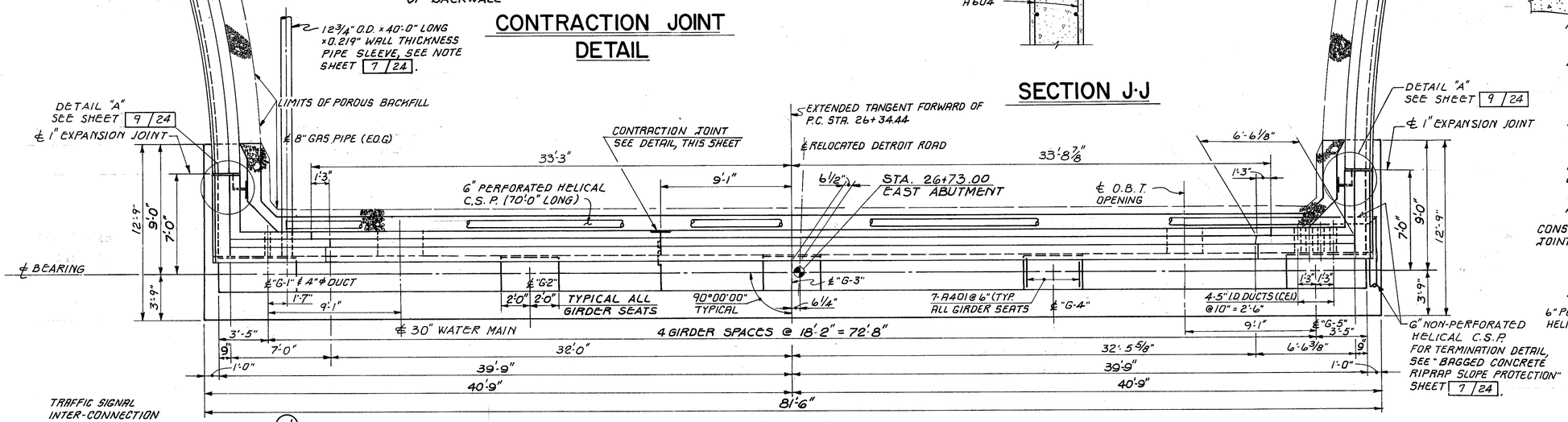


CONTRACTION JOINT DETAIL

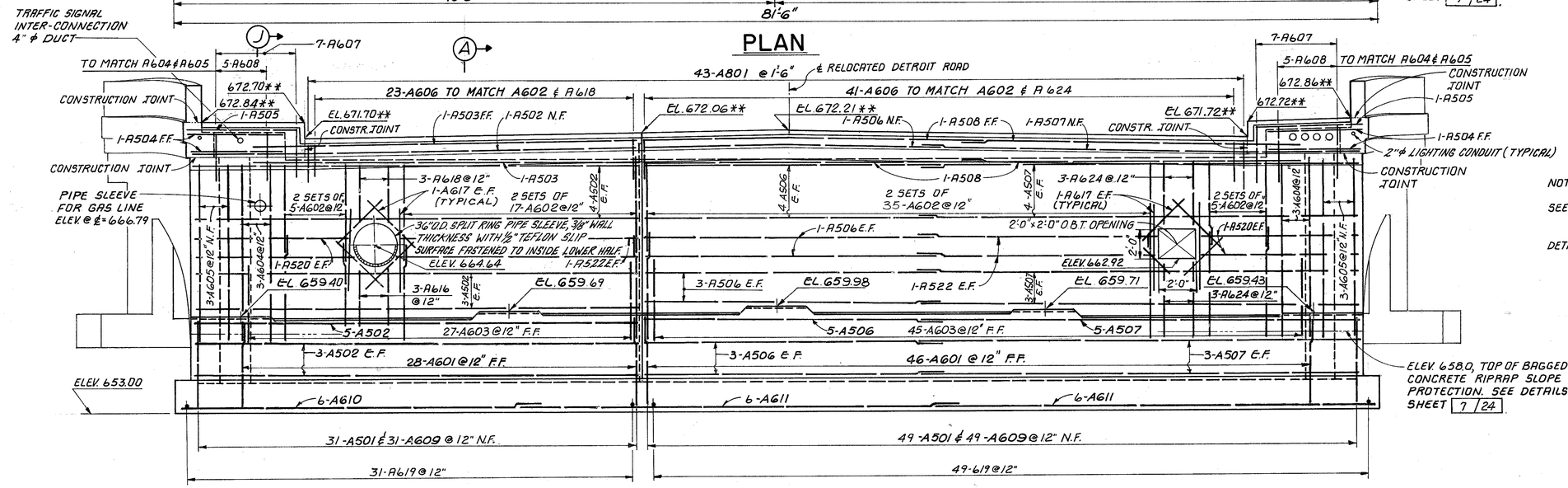


SECTION J-J



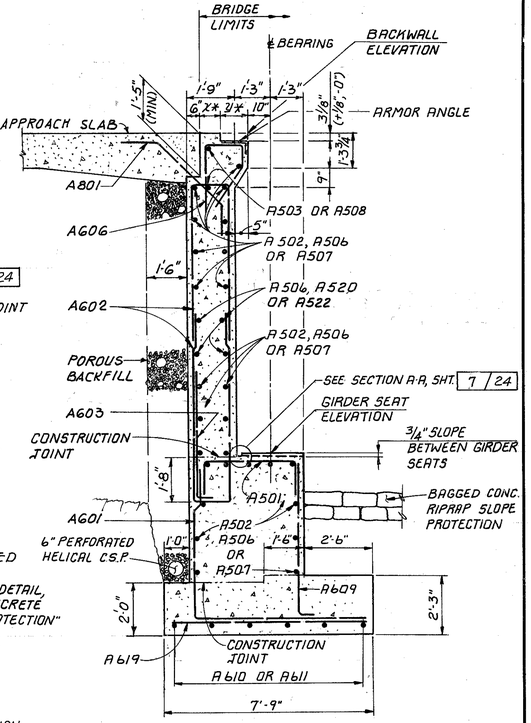


PLAN



ELEVATION

** ELEVATIONS SHOWN ARE AT TOP OF BACKWALL, 3/8" ABOVE ARMOR ANGLE.



SECTION A-A

* DIMENSION X & Y DEPEND ON ELASTOMERIC JOINT SELECTED.
FOR WABOFLEX MODEL 6.5A, X=7 7/8" ; Y=12 1/8"
FOR TRANSFLEX MODEL 650, X=7 3/4" ; Y=12 1/4"

NOTES:
FOR ADDITIONAL NOTES, DETAILS AND WINGWALL DETAILS, SEE SHEETS 7 / 24 AND 9 / 24.

FOR PARAPET SLIDING PLATE DETAILS AND CURB PLATE DETAILS, SEE SHEET 21 / 24.

8 / 24

ADACHE ASSOCIATES INC., ENGINEERS
CLEVELAND, OHIO 44142

DETROIT-ROCKY RIVER BRIDGE

EAST ABUTMENT

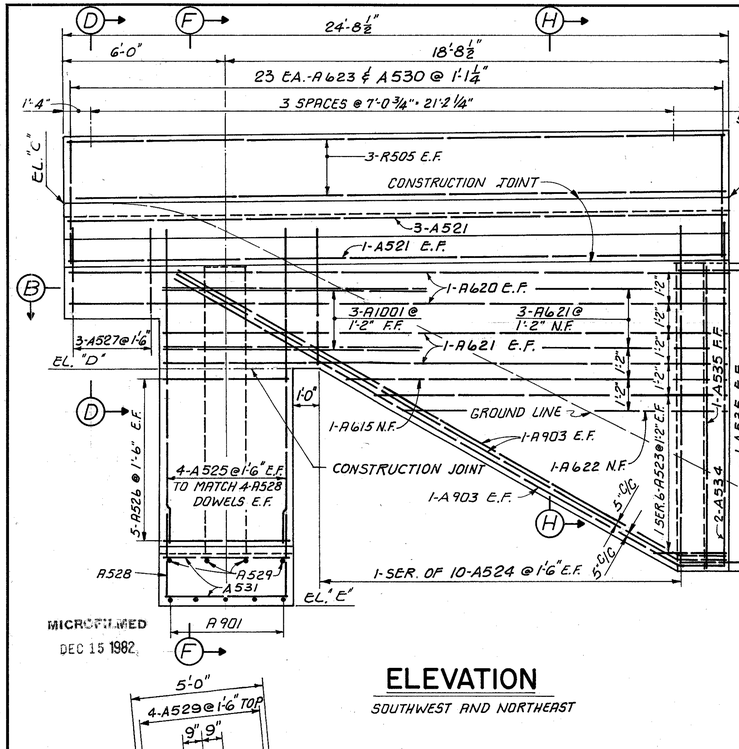
BRIDGE NO. CUY-6A-0041
U.S.R. 6A OVER ROCKY RIVER
CUYAHOGA COUNTY STA. 20+35.50 TO STA. 26+75.50

DESIGNED	DRAWN	CHECKED	REVIEWED	DATE	REVISED
N.K.	T.M.J. N.K.	E.D. S.V.C.	E.D.H.	12-29-77	

FHWA REGION	STATE	PROJECT	
5	OHIO		

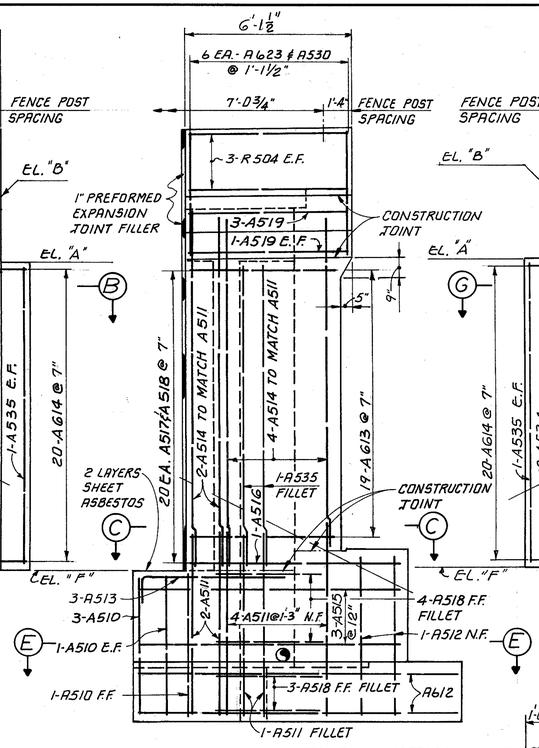
21
50

CUYAHOGA COUNTY
CUY.- 6A - 0.41



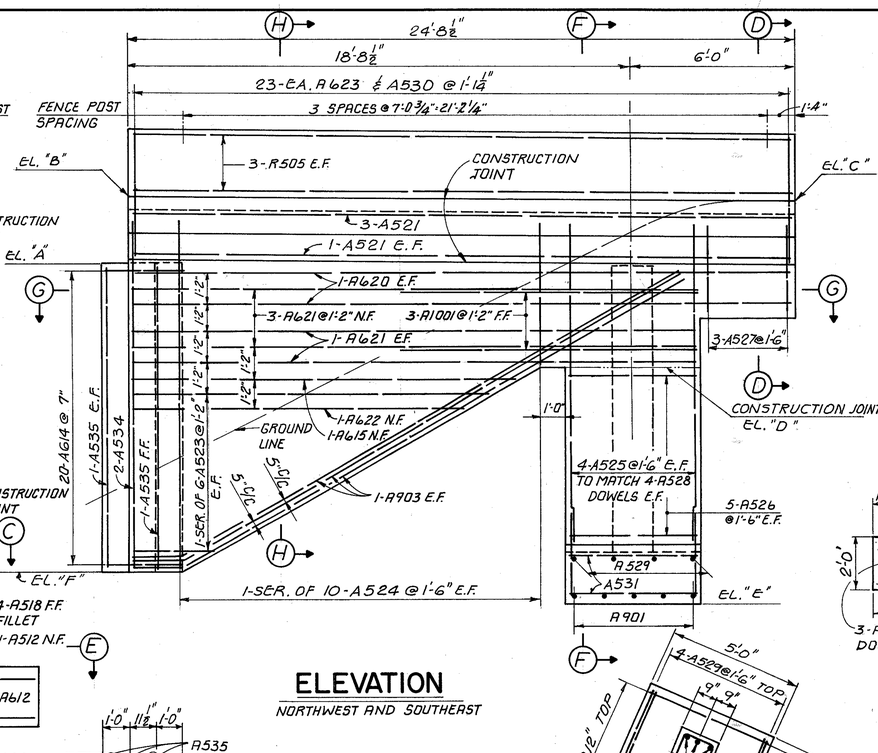
ELEVATION

SOUTHWEST AND NORTHEAST



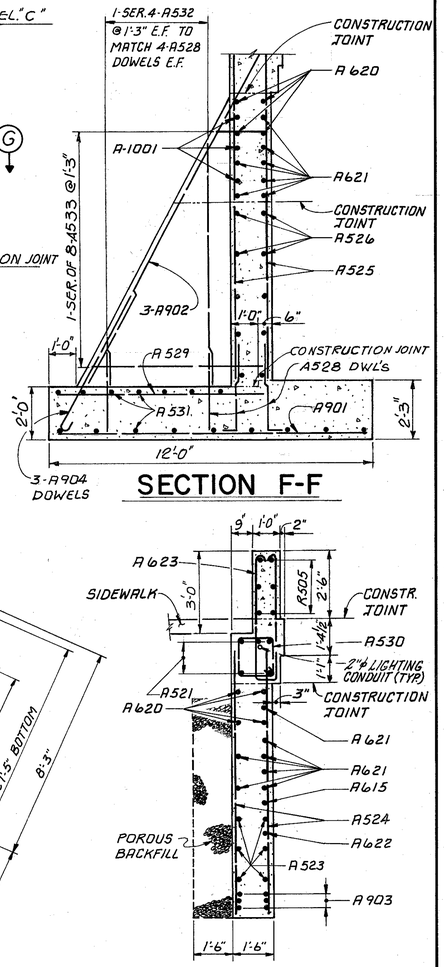
ABUTMENT END VIEW

SOUTHWEST AND NORTHEAST SHOWN
NORTHWEST AND SOUTHEAST OPPOSITE HAND

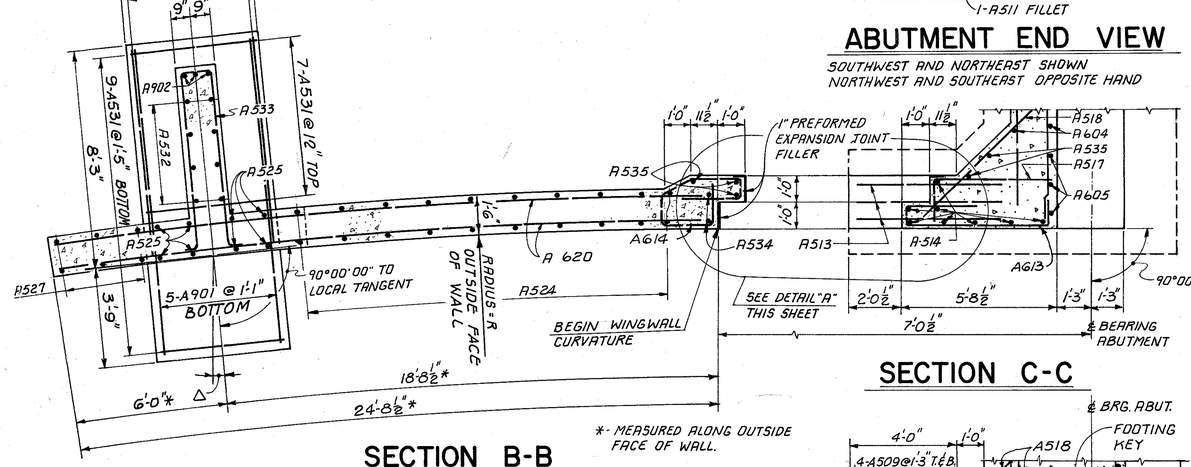


ELEVATION

NORTHWEST AND SOUTHEAST

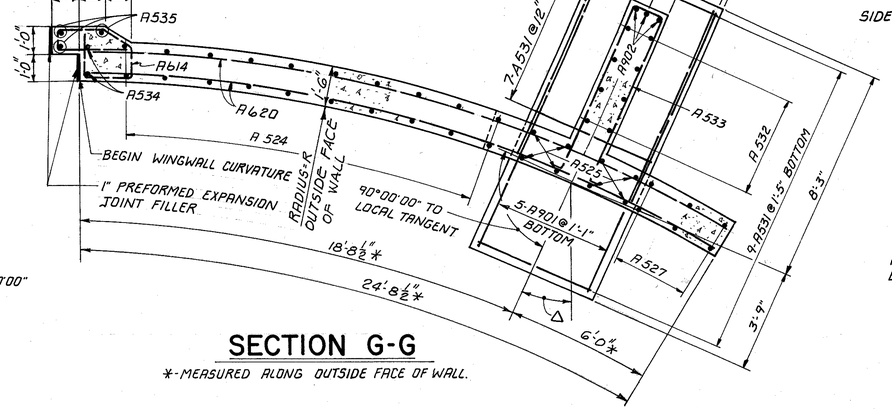


SECTION F-F



SECTION B-B

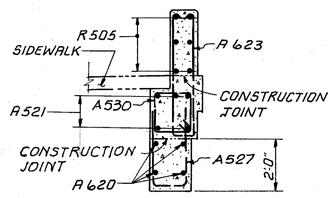
SECTION C-C



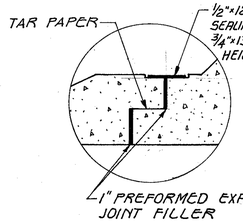
SECTION G-G

*-MEASURED ALONG OUTSIDE FACE OF WALL.

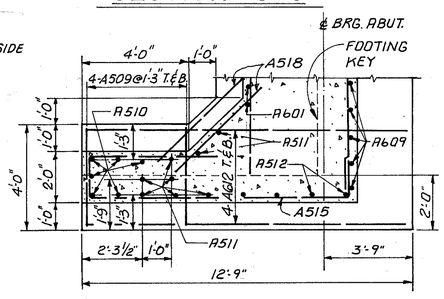
SECTION H-H



SECTION D-D



DETAIL "A"



SECTION E-E

LOCATION		RADIUS R	ANGLE Δ	ELEVATION A	B	C	D	E	F
EAST ABUTMENT	NORTHEAST WINGWALL	54'-1¼"	19°51'22"	670.43	672.89	673.04	666.40	657.50	658.78
	SOUTHEAST WINGWALL	76'-11¼"	13°57'48"	670.44	672.90	673.11	666.40	657.50	658.78
WEST ABUTMENT	NORTHWEST WINGWALL	46'-7½"	23°02'28"	665.77	668.23	667.98	661.80	653.00	654.18
	SOUTHWEST WINGWALL	166'-2¾"	6°27'46"	665.77	668.23	668.06	661.80	653.00	654.18

NOTES: WINGWALL REINFORCING STEEL SHALL BE FIELD BENT AS REQUIRED. PAYMENT FOR FIELD BENDING SHALL BE INCLUDED WITH ITEM 509 (REINFORCING STEEL).

SHEET ASBESTOS PACKING (ITEM 711.22) SHALL BE INCLUDED WITH ITEM 511 (CLASS "C" CONCRETE, ABUTMENTS ABOVE FOOTING) FOR PAYMENT.

FOR FENCE DETAILS, SEE SHEET 20/24.

FOR WEST AND EAST ABUTMENT, PLAN AND ELEVATION SEE SHEETS 7/24 AND 8/24 RESPECTIVELY.

FOR ADDITIONAL NOTES, SEE SHEET 7/24.

PROVIDE 2" ℄ LIGHTING CONDUIT IN ALL ABUTMENT WINGWALLS AS PER STD. DWGS. HL-4 & HL-5. SEE SECTION H-H, THIS SHEET, FOR LOCATION.

MICROFILMED DEC 15 1982

9/24

ADACHE ASSOCIATES INC., ENGINEERS
CLEVELAND, OHIO 44142

DETROIT-ROCKY RIVER BRIDGE

WINGWALL DETAILS

BRIDGE NO. CUY-6A-0041
U.S.R. 6A. OVER ROCKY RIVER
CUYAHOGA COUNTY STA. 20+35.50 TO STA. 26+75.50

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F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

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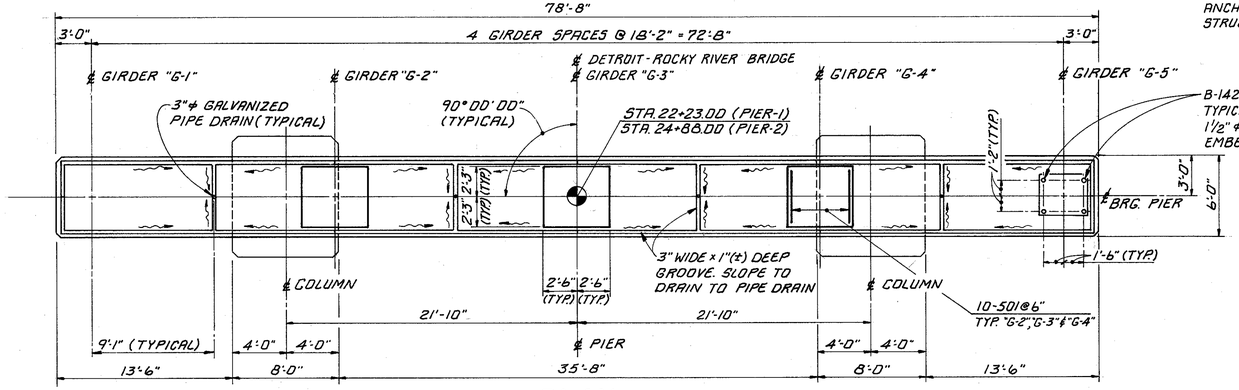
50

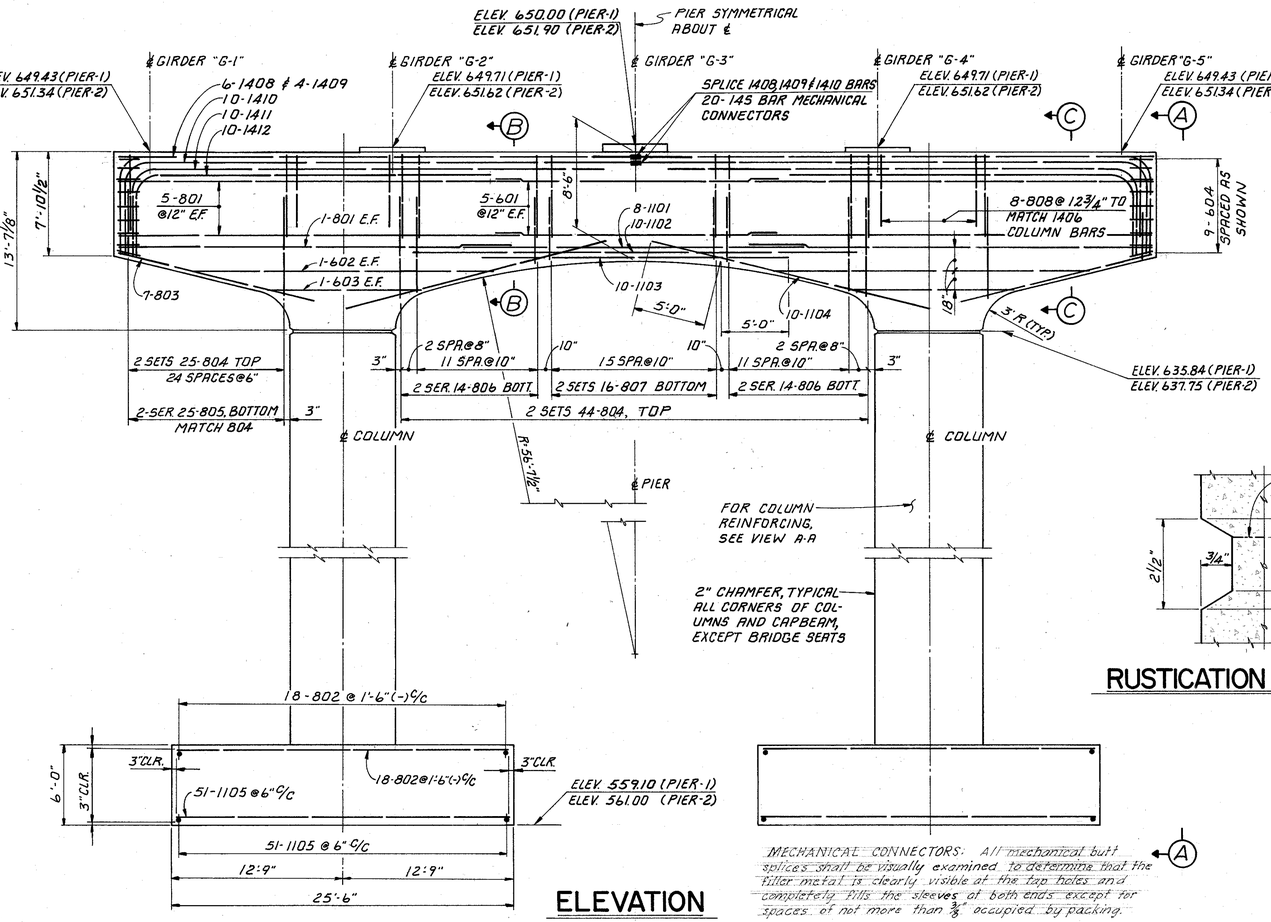
CUYAHOGA COUNTY
CUY.-6A-0.41

NOTE: HOLES FOR BEARING ANCHOR BOLTS MAY BE EITHER FORMED OR DRILLED. REINFORCING STEEL IN THE VICINITY OF OF THE BRIDGE SEATS SHALL BE ACCURATELY PLACED TO AVOID INTERFERENCE WITH THE FORMING OR DRILLING OF BEARING ANCHOR HOLES. ANCHOR BOLTS SHALL BE SET AFTER THE STRUCTURAL STEEL IS ERECTED.



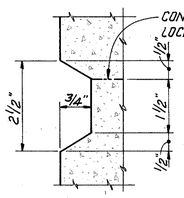
PLAN

B-1425 ANCHOR BOLT SPACING TYPICAL AT ALL GIRDERS. 1½" ϕ x 2'-1" SWEDGE ANCHOR BOLTS EMBEDDED 1'-6" INTO CONCRETE.

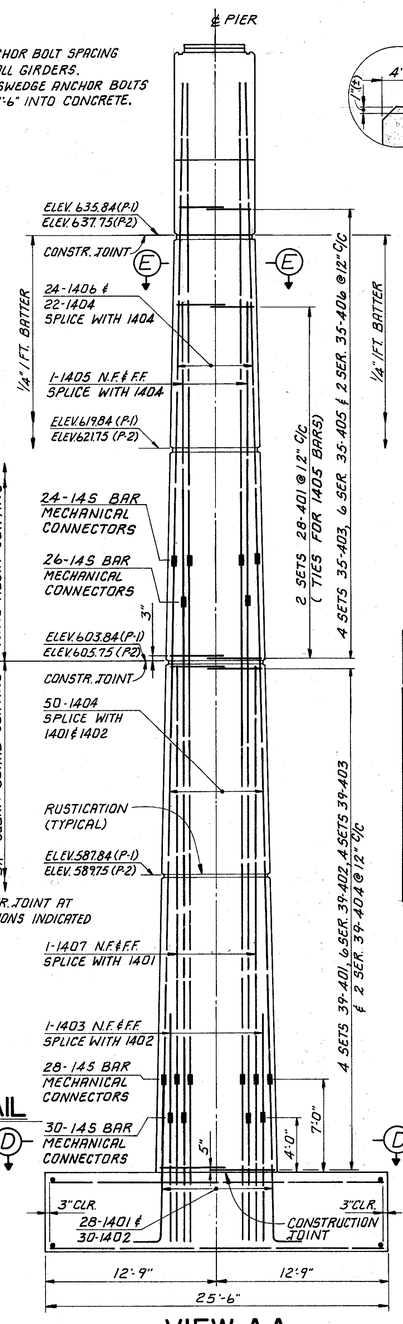


ELEVATION

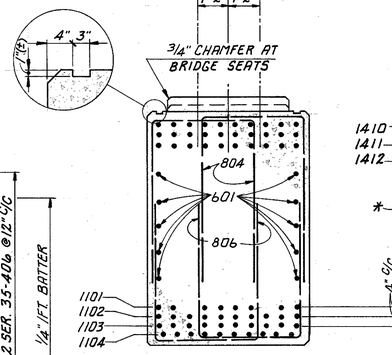
MECHANICAL CONNECTORS: All mechanical butt splices shall be visually examined to determine that the filler metal is clearly visible at the tap holes and completely fills the sleeves of both ends except for spaces of not more than ¾" occupied by packing.



RUSTICATION DETAIL



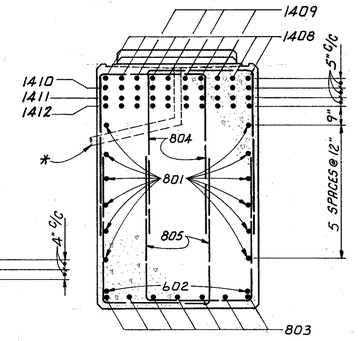
VIEW A-A



SECTION B-B

FOR REINFORCING CALLOUTS NOT SHOWN, SEE SECTION C-C.

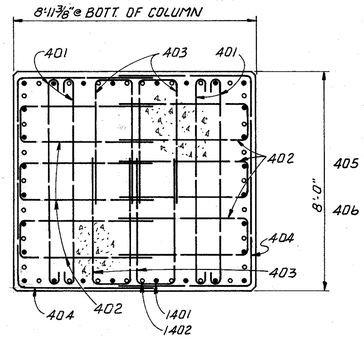
PIPE DRAIN NOT SHOWN.



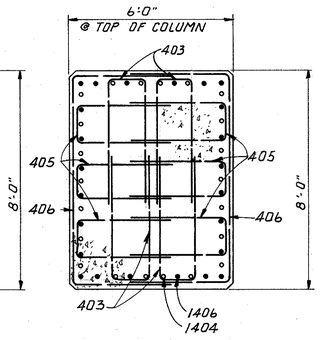
SECTION C-C

* 3"ϕ GALVANIZED PIPE DRAIN. CONNECT TO 8" ϕ SCUPPER DOWNSPOUT PIPE ON FACE OF PIER CAP.

NOTE: 3"ϕ GALVANIZED PIPE DRAINS, INCLUDING SPECIALS SHALL BE INCLUDED WITH ITEM 511, CLASS "C" CONCRETE, PIER CAPS AND COLUMNS, FOR PAYMENT.



SECTION D-D



SECTION E-E

NOTES: FOR REINFORCING STEEL LIST AND BAR BENDING DIAGRAMS SEE SHEETS 23/24 AND 24/24.

THE PREFIX "1P" & "2P" SHALL BE ADDED TO ALL REINFORCING BAR MARKS IN PIERS 1 & 2 RESPECTIVELY.

ABBREVIATION USED: E.F.=EACH FACE, N.F.=NEAR FACE, F.F.=FAR FACE, SER.=SERIES, TYP.=TYPICAL, P-1=PIER-1, P-2=PIER-2

PROVIDE STRUCTURE GROUNDING IN BOTH COLUMNS OF PIERS 1 AND 2 AS PER STD. DWG. HL-7.

FOR DECK DRAINAGE DETAILS, SEE SHEET 22/24.

EMBANKMENT AROUND PIER 2 SHALL MEET PROPOSED CONTOURS AS SHOWN ON SHEETS 7 & 8 ON THE ROADWAY PLAN, PLAN & PROFILE SHEETS AND SHALL BE INCLUDED WITH ITEM 503 "UNCLASSIFIED EXCAVATION" FOR PAYMENT.

10/24

ADACHE ASSOCIATES INC., ENGINEERS
CLEVELAND, OHIO 44142

DETROIT-ROCKY RIVER BRIDGE

PIER DETAILS

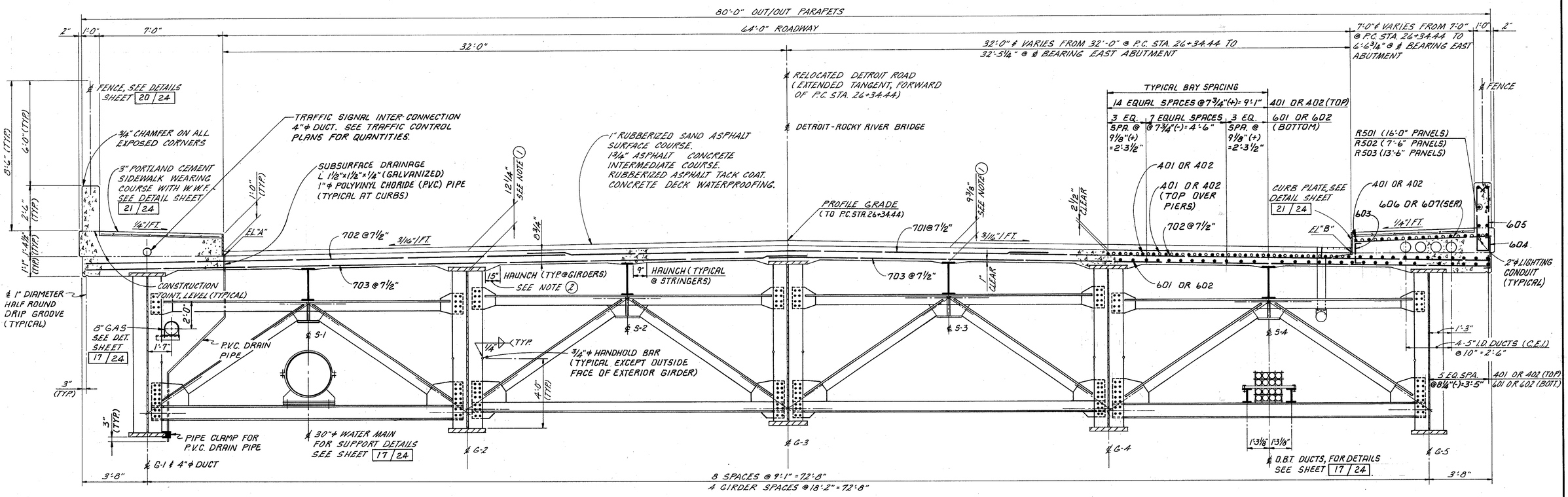
BRIDGE NO. CUY-6A.-0041
U.S.R. 6A. OVER ROCKY RIVER
CUYAHOGA COUNTY STA. 20+35.50 TO STA. 26+75.50

DESIGNED	DRAWN	CHECKED	REVIEWED	DATE	REVISED
L.E.D	TMJ	SVC L.E.D.	R.D.H.	12-29-77	7-16-18

F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

23
50

CUYAHOGA COUNTY
CUY.-6A-0.41



TRANSVERSE SECTION

NOTES:

(1) DECK SLAB DEPTH: THE DISTANCE SHOWN FROM THE TOP OF THE DECK SLAB TO THE TOP OF GIRDER WEB AND FROM THE TOP OF THE DECK SLAB TO THE TOP OF BEAM FLANGE ARE DESIGN DIMENSIONS. THE QUANTITY OF DECK CONCRETE TO BE PAID FOR SHALL BE BASED UPON THESE DIMENSIONS, EVEN THOUGH DEVIATION FROM THEM MAY BE NECESSARY BECAUSE THE TOP FLANGE OF THE GIRDER OR BEAM MAY NOT HAVE THE EXACT CAMBER OR CONFORMATION REQUIRED TO PLACE THEM PARALLEL TO THE FINISHED GRADE. DEDUCTION SHALL BE MADE FOR VOLUME OF ENCASED STEEL PLATES AS PER 511.18. FOR GIRDERS G-1 & G-5 THE DEPTH IS MEASURED FROM THE EXTENSION OF THE 3/16" / FT. CROSS SLOPE TO THE TOP OF THE GIRDER WEB.

(2) HAUNCH WIDTHS SHOWN SHALL BE USED FOR COMPUTING QUANTITY OF CONCRETE. HOWEVER, THE HAUNCH WIDTH FOR THE GIRDERS MAY VARY BETWEEN 12" AND 18" PROVIDED THAT THE SLOPE SHALL NOT BE LESS THAN 1:4 FOR A HAUNCH LESS THAN 15" IN WIDTH. THE HAUNCH WIDTH FOR THE STRINGERS MAY VARY BETWEEN 6" AND 12".

(3) DECK REINFORCING BARS: AT THE CONTRACTOR'S OPTION, A PORTION (NOT TO EXCEED 25%) OF THE UPPER LONGITUDINAL BARS (401 OR 402) IN THE DECK SLAB MAY BE PLACED BENEATH THE UPPER TRANSVERSE BARS FOR SUPPORT OF THE TOP MAT.

(4) ELEVATIONS SHOWN ARE ON THE TOP OF THE CONCRETE AND ARE THOSE WHICH ARE REQUIRED BEFORE THE CONCRETE IS PLACED. PROPER ALLOWANCE HAS BEEN MADE FOR DEAD LOAD DEFLECTIONS CAUSED BY THE WEIGHT OF THE CONCRETE AND ASPHALT SURFACE COURSE. SEE THIS SHEET FOR PAVEMENT ELEVATION TABLE.

(5) THE PREFIX "S" SHALL BE ADDED TO ALL REINFORCING BAR MARKS IN THE SUPERSTRUCTURE UNLESS SHOWN OTHERWISE.

(6) TRANSVERSE DECK REINFORCING BARS SHALL BE FIELD BENT AS REQUIRED. FIELD BENDING SHALL BE INCLUDED WITH ITEM 509, REINFORCING STEEL FOR PAYMENT.

(7) CONCRETE SHALL BE PLACED SYMMETRICALLY ABOUT THE LONGITUDINAL CENTER LINE OF THE DECK. NO LONGITUDINAL CONSTRUCTION JOINTS WILL BE PERMITTED.

(8) FOR SCUPPER SUPPORT DETAILS, SEE SHEET 22 | 24

(9) FOR FRAMING PLAN AND DECK SLAB PLAN, SEE SHEETS 12 | 24 AND 20 | 24 RESPECTIVELY.

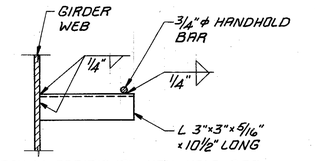
(10) PROVIDE 2" ϕ LIGHTING CONDUIT UNDER BOTH PARAPETS PER STANDARD DRAWING HL-19.

(11) FOR LOCATION OF WATER MAIN ELECTROLYSIS TEST STATIONS, SEE WATERWORK PLAN.

PAVEMENT ELEVATIONS

SEE TRANSVERSE SECTION AND NOTE (4)

LOCATION	EL. "A"	EL. "B"		LOCATION	EL. "A"	EL. "B"	
℄ BRG. ABUT. (WEST)	666.90	666.90		℄ BRG. PIER-2	670.14	670.14	
20+50	667.04	667.04		25+00	670.22	670.22	
20+75	667.30	667.30		25+25	670.41	670.41	
21+00	667.51	667.51		25+50	670.65	670.65	
21+25	667.67	667.67		25+75	670.89	670.89	
21+50	667.80	667.80		26+00	671.11	671.11	
21+75	667.92	667.92		26+25	671.28	671.28	
22+00	668.06	668.06		26+50	671.39	671.40	
℄ BRG. PIER-1	668.24	668.24		℄ BRG. ABUT. (EAST)	671.46	671.48	
22+25	668.26	668.26					
22+50	668.49	668.49					
22+75	668.71	668.71					
23+00	669.07	669.07					
23+25	669.33	669.33					
23+50	669.55	669.55					
23+75	669.71	669.71					
24+00	669.83	669.83					
24+25	669.90	669.90					
24+50	669.98	669.98					
24+75	670.08	670.08					



PROVIDE ADDITIONAL HANDHOLD BAR SUPPORTS BETWEEN TRANSVERSE STIFFENERS TO LIMIT SPAN OF BAR TO 6'-3" MAXIMUM.

ADDITIONAL HANDHOLD BAR SUPPORT

11 | 24

ADACHE ASSOCIATES INC., ENGINEERS
CLEVELAND, OHIO 44142

DETROIT-ROCKY RIVER BRIDGE
TRANSVERSE SECTION
BRIDGE NO. CUY-6A-0041
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CUYAHOGA COUNTY
STA. 20+35.50 TO STA. 26+75.50

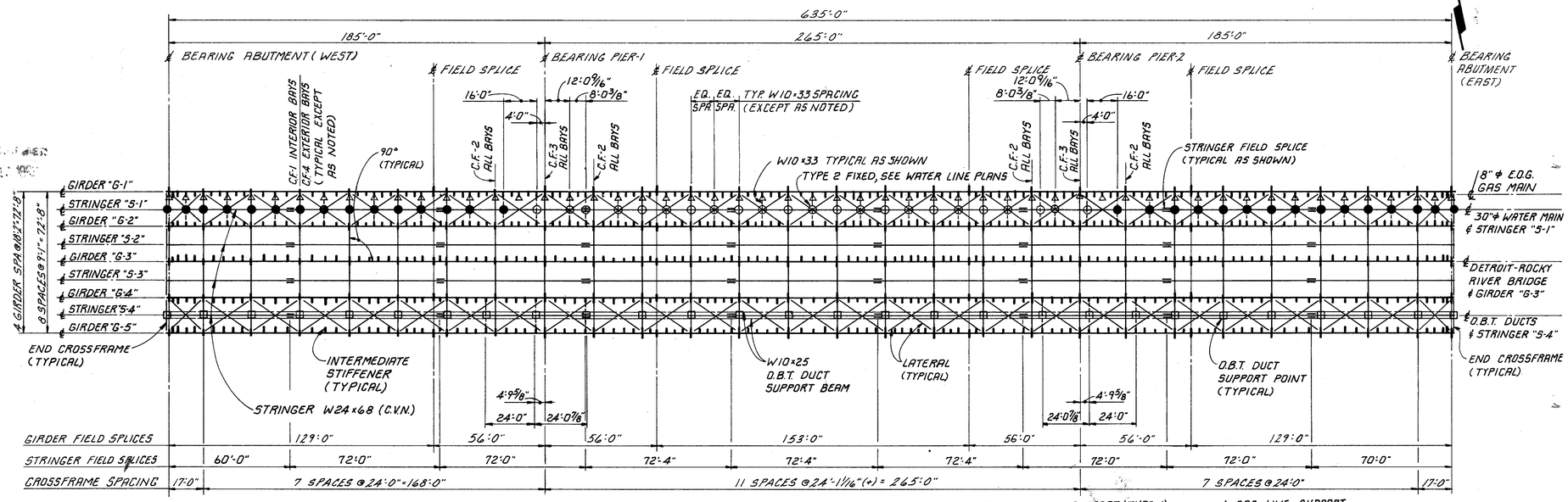
DESIGNED	DRAWN	CHECKED	REVIEWED	DATE	REVISED
L.E.D.	TMJ	NK L.E.D.	R.D.H.	12-29-77	

NOTE: STEEL ERECTION- DURING THE ERECTION OF THE CROSSFRAMES CARE SHALL BE TAKEN TO INSURE THAT GIRDERS, BEARING PARTS AND BRIDGE SEATS REMAIN IN BEARING CONTACT.

FH.W.A. REGION	STATE	PROJECT	
5	OHIO		

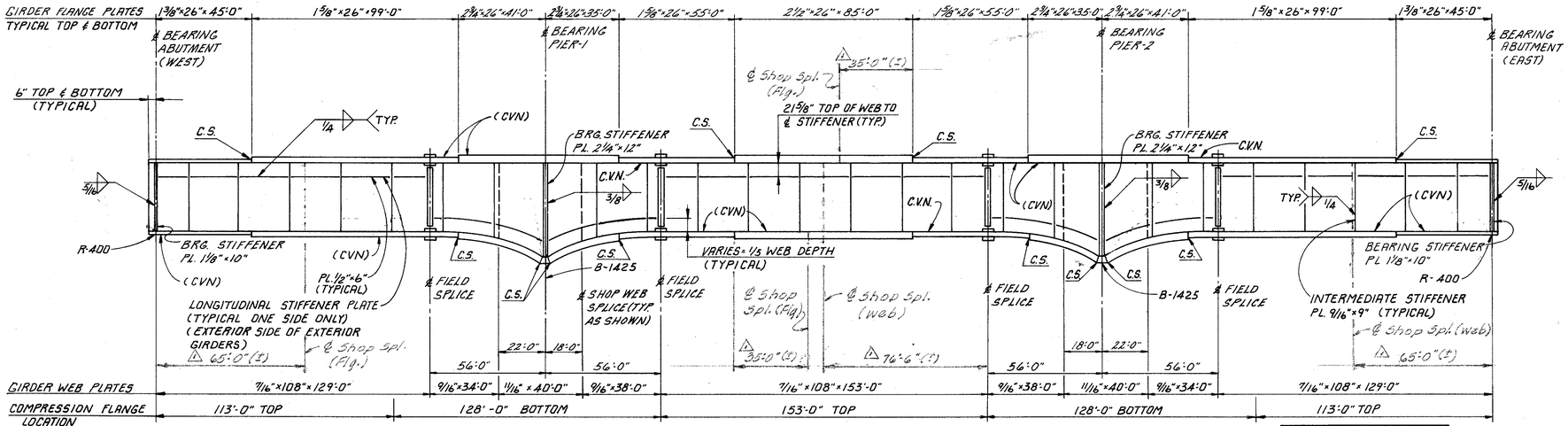
24/50

CUYAHOGA COUNTY
CUY.-6A-0.41



FRAMING PLAN

● WATER LINE SUPPORT (TYPE-1)
○ WATER LINE SUPPORT (TYPE-2) UNLESS NOTED
△ GAS LINE SUPPORT
□ TELEPHONE DUCT BANK SUPPORT



TYPICAL GIRDER ELEVATION

INTERMEDIATE STIFFENERS SHOWN ONLY AT CROSSFRAMES

WELD SIZE WEB TO FLANGE, INTERMEDIATE STIFFENER TO FLANGE	
FLANGE PLATE THICKNESS	FILLET WELD SIZE
1 3/8"	5/16"
1 5/8"	3/8"
2 1/2"	1/2"
2 3/4"	1/2"

NOTES:

TOP AND BOTTOM GIRDER FLANGE PLATES ARE TO BE THE SAME. GIRDER WEB PLATES AND FLANGE PLATES SHALL BE SPLICED AT POINTS SHOWN ON THE GIRDER ELEVATION AND DETAILS. ADDITIONAL SHOP SPLICES IN THE WEBS AND FLANGES, AS REQUIRED BY AVAILABLE PLATE LENGTHS, WILL BE PERMITTED. THE LOCATIONS AND DETAILS OF ALL ADDITIONAL SPLICES SHALL BE SUBMITTED TO THE DIRECTOR FOR APPROVAL PRIOR TO ORDERING OF MATERIALS. COMPLETE PENETRATION BUTT WELDS SHALL BE USED FOR ALL GIRDER FLANGE AND WEB SPLICES EXCEPT FIELD SPLICES. GRINDING OF WELDS WILL NOT BE REQUIRED EXCEPT AS INDICATED.

CS - INDICATES BUTT WELD FOR THE DESIGNATED FLANGE IS SUBJECT TO COMPRESSIVE STRESS ONLY.

CP - INDICATES COMPLETE PENETRATION WELDS.

INTERMEDIATE STIFFENERS SHALL BE PLACED AS SHOWN ON THE FRAMING PLAN EQUALLY SPACED BETWEEN CROSSFRAMES OR BETWEEN CROSSFRAMES AND GIRDER FIELD SPLICE STIFFENERS EXCEPT THE FIRST TWO STIFFENERS ADJACENT TO THE ABUTMENT BEARING STIFFENERS SHALL BE ONE-HALF OF THIS SPACING.

INTERMEDIATE STIFFENERS SHALL BE PLACED IN PAIRS AT THE CROSSFRAMES AND THE FIELD SPLICES. INTERMEDIATE STIFFENERS AT OTHER LOCATIONS SHALL BE SINGLE STIFFENERS PLACED ON THE SIDES OF THE GIRDER WEBS AS INDICATED ON THE FRAMING PLAN. SINGLE INTERMEDIATE STIFFENERS SHALL HAVE A TIGHT FIT WITH THE TENSION FLANGE AND SHALL BE WELDED ON BOTH SIDES OF THE STIFFENER TO THE COMPRESSION FLANGE WITH FILLET WELD, OF SIZE INDICATED IN TABLE.

INTERMEDIATE STIFFENERS PLACED IN PAIRS SHALL HAVE A TIGHT FIT WITH THE TENSION FLANGE AND MAY HAVE EITHER A TIGHT FIT OR BE WELDED ON BOTH SIDES OF THE STIFFENER TO THE COMPRESSION FLANGE WITH FILLET WELD, OF SIZE INDICATED IN TABLE.

BEARING STIFFENERS AT THE ABUTMENTS AND PIERS SHALL BE PLACED IN PAIRS ON ALL GIRDERS.

BEARING STIFFENERS AT THE ABUTMENTS AND AT THE PIERS SHALL BE VERTICAL, BUT ALL OTHER TRANSVERSE STIFFENERS SHALL BE PERPENDICULAR TO THE TOP FLANGE.

FOR ADDITIONAL NOTES SEE SHEET 13/84

△1 Approved 10-24-78 RVH.

12/24

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FRAMING PLAN

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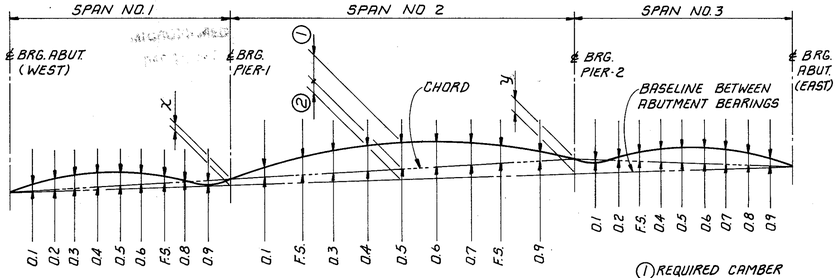
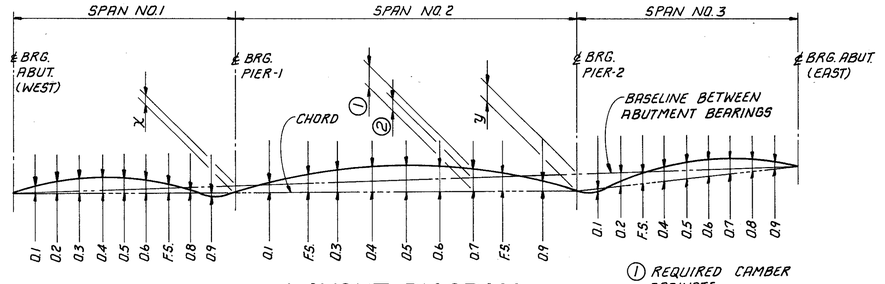


LAYOUT DIAGRAM
GIRDERS "G-1", "G-2" & "G-3"

① REQUIRED CAMBER ORDINATE

② ORDINATE BETWEEN CHORD AND BASELINE



LAYOUT DIAGRAM
GIRDERS "G-4" & "G-5"

① REQUIRED CAMBER ORDINATE

② ORDINATE BETWEEN CHORD AND BASELINE

DEFLECTION AND CAMBER

GIRDER	SPANS	SPAN NO.1									x	SPAN NO. 2									y	SPAN NO. 3								
	POINTS	0.1	0.2	0.3	0.4	0.5	0.6	F.S.	0.8	0.9		0.1	F.S.	0.3	0.4	0.5	0.6	0.7	F.S.	0.9		0.1	0.2	F.S.	0.4	0.5	0.6	0.7	0.8	0.9
"G-1" GIRDER	DEFLECTION DUE TO WEIGHT OF STEEL **	1/4"	7/16"	9/16"	9/16"	1/2"	5/16"	3/16"	0"	0"		1/4"	11/16"	1 1/8"	1 1/2"	1 9/16"	1 1/2"	1 1/8"	1 1/16"	1/4"		0"	0"	3/16"	5/16"	1/2"	9/16"	9/16"	7/16"	1/4"
	DEFLECTION DUE TO REMAINING DEAD LOAD	7/8"	1 1/2"	1 7/8"	1 15/16"	1 5/8"	1 1/8"	1/2"	1/16"	-1/8"		1 11/16"	2 3/16"	3 7/16"	4 1/2"	4 7/8"	4 1/2"	3 7/16"	2 3/16"	1 11/16"		-1/8"	1/16"	1/2"	1 1/8"	1 5/8"	1 15/16"	1 7/8"	1 1/2"	7/8"
	ADJUSTMENT FOR HORIZONTAL CURVE	—	—	—	—	—	—	—	—	—		—	—	—	—	—	—	—	—	—		0"	1/16"	1/16"	1/16"	1/16"	1/8"	1/8"	1/8"	1/16"
	REQUIRED SHOP CAMBER	1 1/8"	1 15/16"	2 7/16"	2 1/2"	2 1/8"	1 7/16"	11/16"	1/16"	-1/8"		1 15/16"	2 7/8"	4 9/16"	6"	6 9/16"	6"	4 9/16"	2 7/8"	1 15/16"		-1/8"	1/8"	3/4"	1 1/2"	2 3/16"	2 5/8"	2 9/16"	2 1/16"	1 3/16"
	ORDINATE BETWEEN CHORD AND BASELINE	0"	0"	0"	0"	0"	1/16"	1/16"	1/16"	1/16"	1/16"	1/16"	1/16"	1/16"	1/16"	1/16"	1/16"	1/8"	1/8"	1/8"	1/8"	1/8"	1/8"	1/16"	1/16"	1/16"	1/16"	1/16"	0"	0"
"G-2" GIRDER	DEFLECTION DUE TO WEIGHT OF STEEL *	1/4"	1/2"	9/16"	9/16"	1/2"	5/16"	3/16"	0"	0"		1/4"	3/4"	1 3/16"	1 9/16"	1 11/16"	1 9/16"	1 3/16"	3/4"	1/4"		0"	0"	3/16"	5/16"	1/2"	9/16"	9/16"	1/2"	1/4"
	DEFLECTION DUE TO REMAINING DEAD LOAD	3/4"	1 3/8"	1 3/4"	1 3/4"	1 1/2"	1"	7/16"	1/16"	-1/8"		5/8"	2"	3 1/8"	4 1/16"	4 7/16"	4 1/16"	3 1/8"	2"	5/8"		-1/8"	1/16"	7/16"	1"	1 1/2"	1 3/4"	1 3/4"	1 3/8"	3/4"
	ADJUSTMENT FOR HORIZONTAL CURVE	—	—	—	—	—	—	—	—	—		—	—	—	—	—	—	—	—	—		0"	0"	1/16"	1/16"	1/16"	1/16"	1/8"	1/8"	1/16"
	REQUIRED SHOP CAMBER	1"	1 7/8"	2 5/16"	2 5/16"	2"	1 5/16"	5/8"	1/16"	-1/8"		7/8"	2 3/4"	4 5/16"	5 5/8"	6 1/8"	5 5/8"	4 5/16"	2 3/4"	7/8"		-1/8"	1/16"	11/16"	1 3/8"	2 1/16"	2 3/8"	2 7/16"	2"	1 1/16"
	ORDINATE BETWEEN CHORD AND BASELINE	0"	0"	0"	0"	0"	0"	0"	1/16"	1/16"	1/16"	1/16"	1/16"	1/16"	1/16"	1/16"	1/16"	1/16"	1/16"	1/16"	1/8"	1/16"	1/16"	1/16"	1/16"	1/16"	1/16"	0"	0"	0"
"G-3" GIRDER	DEFLECTION DUE TO WEIGHT OF STEEL	3/16"	3/8"	7/16"	7/16"	3/8"	1/4"	1/8"	0"	0"		3/16"	9/16"	15/16"	1 3/16"	1 5/16"	1 3/16"	15/16"	9/16"	3/16"		0"	0"	1/8"	1/4"	3/8"	7/16"	7/16"	3/8"	3/16"
	DEFLECTION DUE TO REMAINING DEAD LOAD	3/4"	1 3/8"	1 3/4"	1 3/4"	1 1/2"	1"	7/16"	1/16"	-1/8"		5/8"	2"	3 1/8"	4 1/16"	4 7/16"	4 1/16"	3 1/8"	2"	5/8"		-1/8"	1/16"	7/16"	1"	1 1/2"	1 3/4"	1 3/4"	1 3/8"	3/4"
	ADJUSTMENT FOR HORIZONTAL CURVE	—	—	—	—	—	—	—	—	—		—	—	—	—	—	—	—	—	—		0"	0"	0"	1/16"	1/16"	1/16"	1/16"	1/16"	1/16"
	REQUIRED SHOP CAMBER	1 5/16"	1 3/4"	2 3/16	2 3/16	1 7/8"	1 1/4"	9/16"	1/16"	-1/8"		1 3/16"	2 9/16"	4 1/16"	5 1/4"	5 3/4"	5 1/4"	4 1/16"	2 9/16"	1 3/16"		-1/8"	1/16"	9/16"	1 9/16"	1 15/16"	2 1/4"	2 1/4"	1 13/16"	1"
	ORDINATE BETWEEN CHORD AND BASELINE	0"	0"	0"	0"	0"	0"	0"	0"	0"	0"	0"	1/16"	1/16"	1/16"	1/16"	1/16"	1/16"	1/16"	1/16"	1/16"	1/16"	1/16"	1/16"	1/16"	1/16"	1/16"	0"	0"	0"
"G-4" GIRDER	DEFLECTION DUE TO WEIGHT OF STEEL †	1/4"	7/16"	1/2"	1/2"	7/16"	1/4"	1/8"	0"	0"		3/16"	5/8"	1 1/16"	1 3/8"	1 1/2"	1 3/8"	1 1/16"	5/8"	3/16"		0"	0"	1/8"	1/4"	7/16"	1/2"	1/2"	7/16"	1/4"
	DEFLECTION DUE TO REMAINING DEAD LOAD	3/4"	1 3/8"	1 3/4"	1 3/4"	1 1/2"	1"	7/16"	1/16"	-1/8"		5/8"	2"	3 1/8"	4 1/16"	4 7/16"	4 1/16"	3 1/8"	2"	5/8"		-1/8"	1/16"	7/16"	1"	1 1/2"	1 3/4"	1 3/4"	1 3/8"	3/4"
	ADJUSTMENT FOR HORIZONTAL CURVE	—	—	—	—	—	—	—	—	—		—	—	—	—	—	—	—	—	—		0"	0"	-1/16"	-1/16"	-1/16"	-1/16"	-1/8"	-1/8"	-1/16"
	REQUIRED SHOP CAMBER	1"	1 13/16"	2 1/4"	2 1/4"	1 15/16"	1 1/4"	9/16"	1/16"	-1/8"		1 3/16"	2 5/8"	4 3/16"	5 7/16"	5 15/16"	5 7/16"	4 3/16"	2 5/8"	1 3/16"		-1/8"	1/16"	1/2"	1 3/16"	1 7/8"	2 3/16"	2 1/8"	1 1/16"	15/16"
	ORDINATE BETWEEN CHORD AND BASELINE	0"	0"	0"	0"	0"	0"	0"	1/16"	1/16"	1/16"	1/16"	1/16"	1/16"	1/16"	1/16"	1/16"	1/16"	1/16"	1/8"	1/8"	1/16"	1/16"	1/16"	1/16"	1/16"	1/16"	0"	0"	0"
"G-5" GIRDER	DEFLECTION DUE TO WEIGHT OF STEEL †	3/16"	3/8"	1/2"	1/2"	7/16"	1/4"	1/8"	0"	0"		3/16"	9/16"	1"	1 1/4"	1 3/8"	1 1/4"	1"	9/16"	3/16"		0"	0"	1/8"	1/4"	7/16"	1/2"	1/2"	3/8"	3/16"
	DEFLECTION DUE TO REMAING DEAD LOAD	7/8"	1 1/2"	1 7/8"	1 15/16"	1 5/8"	1 1/8"	1/2"	1/16"	-1/8"		1 11/16"	2 3/16"	3 7/16"	4 1/2"	4 7/8"	4 1/2"	3 7/16"	2 3/16"	1 11/16"		-1/8"	1/16"	1/2"	1 1/8"	1 5/8"	1 15/16"	1 7/8"	1 1/2"	7/8"
	ADJUSTMENT FOR HORIZONTAL CURVE	—	—	—	—	—	—	—	—	—		—	—	—	—	—	—	—	—	—		0"	-1/16"	-1/16"	-1/16"	-1/16"	-1/8"	-1/8"	-1/8"	-1/8"
	REQUIRED SHOP CAMBER	1 1/16"	1 7/8"	2 3/8"	2 7/16"	2 1/16"	1 3/8"	5/8"	1/16"	-1/8"		7/8"	2 3/4"	4 7/16"	5 3/4"	6 1/4"	5 3/4"	4 7/16"	2 3/4"	7/8"		-1/8"	0"	9/16"	1 5/16"	2"	2 5/16"	2 1/4"	1 3/4"	1 5/16"
	ORDINATE BETWEEN CHORD AND BASELINE	0"	0"	0"	0"	0"	1/16"	1/16"	1/16"	1/16"	1/16"	1/16"	1/16"	1/16"	1/16"	1/16"	1/8"	1/8"	1/8"	1/8"	1/8"	1/8"	1/8"	1/16"	1/16"	1/16"	1/16"	0"	0"	0"

** INCLUDES DEFLECTION DUE TO WEIGHT OF WATER AND GAS LINES.

* INCLUDES DEFLECTION DUE TO WEIGHT OF WATER LINE.

† INCLUDES DEFLECTION DUE TO WEIGHT OF TELEPHONE DUCTS

F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

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CUYAHOGA COUNTY
CUY.-6A-0.41

NOTES:

FOR DETAILS OF 3/4" Ø HANDHOLD BAR SEE SHEET 11/24

WELDED ATTACHMENTS FOR FINISHING MACHINE SUPPORTS MAY BE INSTALLED ON THE TOP FLANGE OF THE EXTERIOR GIRDERS THROUGHOUT THE GIRDER LENGTH. ATTACHMENT DETAILS SHALL NOT EMPLOY FILLET WELDS LONGER THAN 2 INCHES. THE FILLET WELDS SHALL NOT BE CLOSER THAN 1 INCH FROM EDGE OF FLANGE.

LONGITUDINAL STIFFENER PLATES SHALL BE PLACED ON **ONLY ONE** SIDE OF THE GIRDER WEBS, AND SHALL BE PLACED ON THE SIDES OF THE GIRDER WEBS OPPOSITE THE SIDES HAVING SINGLE INTERMEDIATE TRANSVERSE STIFFENERS. THEY SHALL BE PLACED ON THE EXTERIOR SIDE OF THE EXTERIOR GIRDERS. THE LONGITUDINAL STIFFENER PLATES SHALL BE PLACED IN SEGMENTS BETWEEN TRANSVERSE STIFFENERS OR BETWEEN TRANSVERSE STIFFENERS AND WEB SPLICE PLATES LOCATED ON THE SAME SIDE OF THE GIRDER WEB. THE ENDS OF THE LONGITUDINAL STIFFENERS SHALL BE 1/2" MINIMUM CLEAR OF TRANSVERSE STIFFENERS AND WEB SPLICE PLATES EXCEPT AT LOCATIONS OF TRANSVERSE STIFFENERS USED FOR CROSSFRAME CONNECTIONS. SEE DETAIL, SHEET 14/24 FOR CLEARANCE AT **TRANSVERSE STIFFENERS** USED FOR CROSSFRAME CONNECTIONS.

W24x68 STRINGERS NEED NOT BE SHOP ASSEMBLED FOR DRILLING OR REAMING OF FIELD SPLICES AS REQUIRED BY 513.20 OF THE CONSTRUCTION AND MATERIAL SPECIFICATIONS PROVIDED THAT CHECK ASSEMBLIES OF FINISHED COMPONENTS ARE MADE AS DIRECTED BY THE INSPECTOR.

WHERE "(CVN)" FOLLOWS A SHAPE OR PLATE SIZE DESIGNATION, THE MATERIAL SHALL MEET SPECIFIED MINIMUM NOTCH TOUGHNESS REQUIREMENTS. THE FABRICATOR SHALL SUBMIT TO THE DIRECTOR A PROCEDURE DESIGNED FOR POSITIVE IDENTIFICATION OF MATERIAL THROUGH ALL PHASES OF FABRICATION. NO MATERIAL SHALL BE FABRICATED UNTIL THE DIRECTOR HAS APPROVED THE PROCEDURE.

CHARPY TESTS: SEE ITEM 711.01, "STRUCTURAL STEEL".

FOR TRANSVERSE SECTION SEE SHEET 11/24
FOR ADDITIONAL GIRDER DETAILS SEE SHEET 14/24
FOR CROSSFRAME DETAILS SEE SHEET 15/24
FOR ROCKER AND BOLSTER DETAILS SEE SHEET 18/24

13/24

ADACHE ASSOCIATES INC., ENGINEERS
CLEVELAND, OHIO 44142

DETROIT-ROCKY RIVER BRIDGE

DEFLECTION AND CAMBER

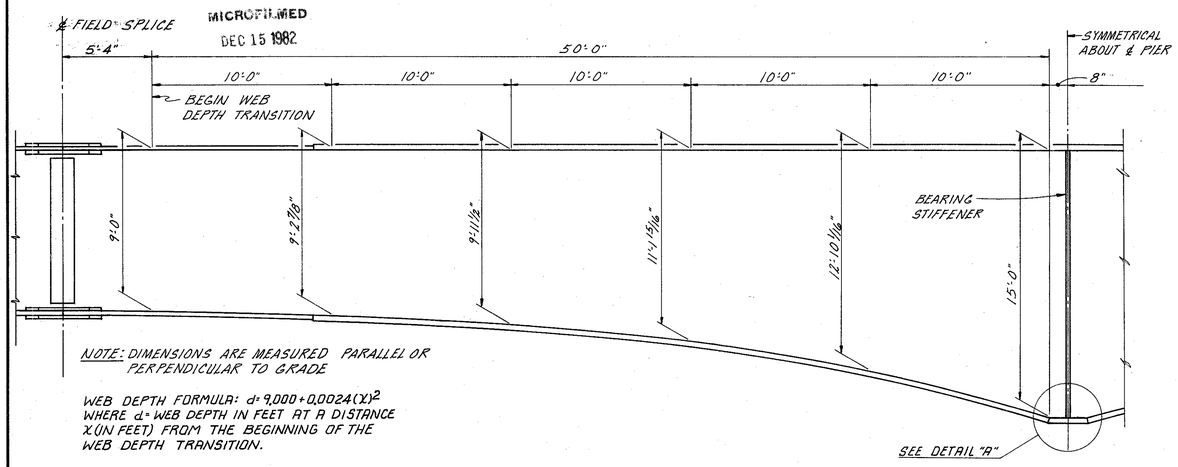
BRIDGE NO. CUY.-6A.-0041
U.S.R. 6A. OVER ROCKY RIVER
CUYAHOGA COUNTY STA. 20+35.50 TO STA. 26+75.50

DESIGNED	DRAWN	CHECKED	REVIEWED	DATE	REVISED
L.E.D.	TMJ	R.W.H.	R.D.H.	12-29-77	

F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

26
50

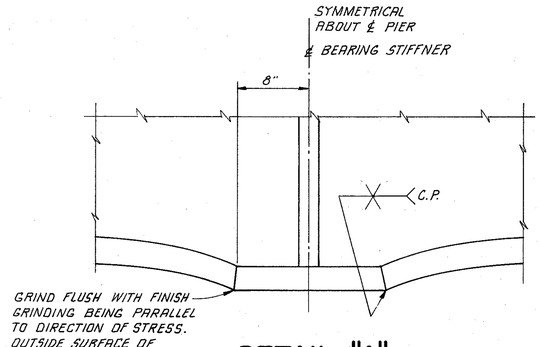
CUYAHOGA COUNTY
CUY.- 6A - 0.41



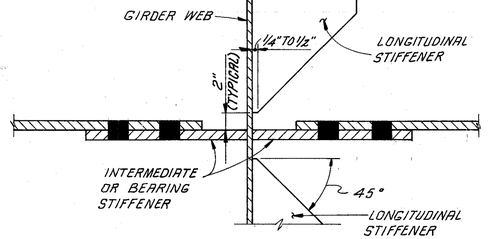
NOTE: DIMENSIONS ARE MEASURED PARALLEL OR PERPENDICULAR TO GRADE

WEB DEPTH FORMULA: $d = 9.000 + 0.0024(X)^2$
WHERE d = WEB DEPTH IN FEET AT A DISTANCE X (IN FEET) FROM THE BEGINNING OF THE WEB DEPTH TRANSITION.

GIRDER WEB TRANSITION DETAIL

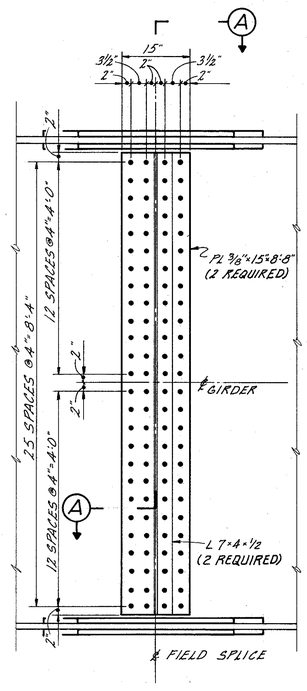


DETAIL "A"

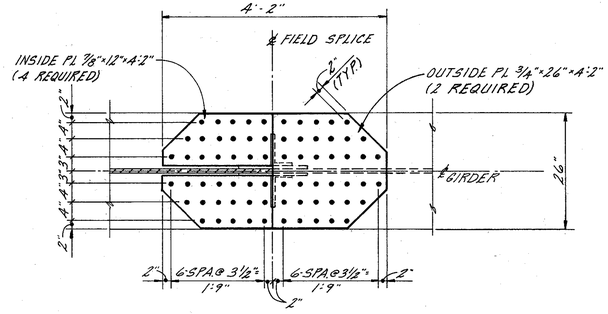


LONGITUDINAL STIFFENER AT TRANSVERSE STIFFENER WITH CROSSFRAME

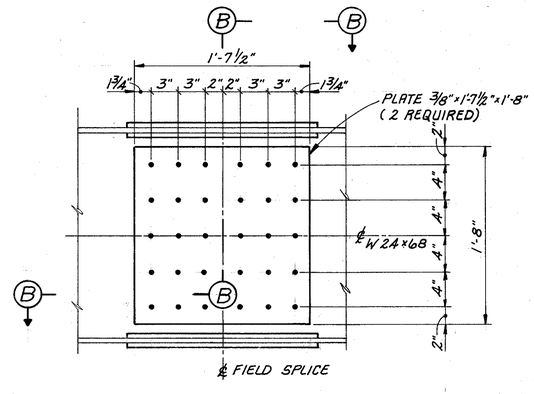
(INTERIOR GIRDER)



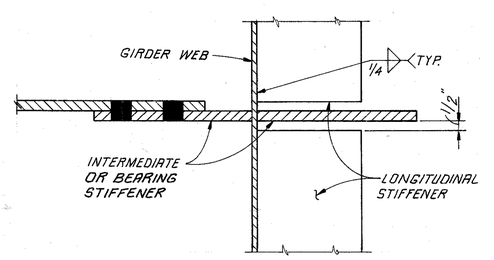
TYPICAL GIRDER WEB FIELD SPLICE



SECTION A-A

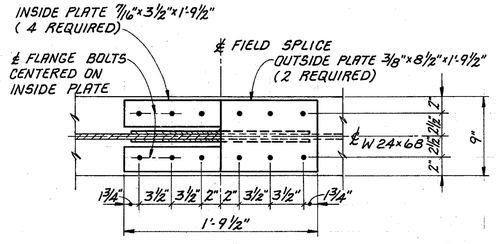


TYPICAL STRINGER WEB FIELD SPLICE



LONGITUDINAL STIFFENER AT TRANSVERSE STIFFENER

(EXTERIOR GIRDER)



SECTION B-B

NOTES: ALL BOLTS SHALL BE 1" ϕ ASTM-A325, TYPE 3 BOLTS, UNLESS NOTED OTHERWISE.

THE BOLTS SHALL BE PLACED WITH THEIR HEADS ON THE OUTSIDE FACE OF THE EXTERIOR GIRDERS AND ON THE BOTTOM OF ALL FLANGE PLATES.

ALL GIRDER AND STRINGER FIELD SPLICE PLATES SHALL MEET SPECIFIED MINIMUM NOTCH TOUGHNESS REQUIREMENTS (CVN).

14/24

ADACHE ASSOCIATES INC., ENGINEERS
CLEVELAND, OHIO 44142

DETROIT-ROCKY RIVER BRIDGE

GIRDER & STRINGER DETAILS

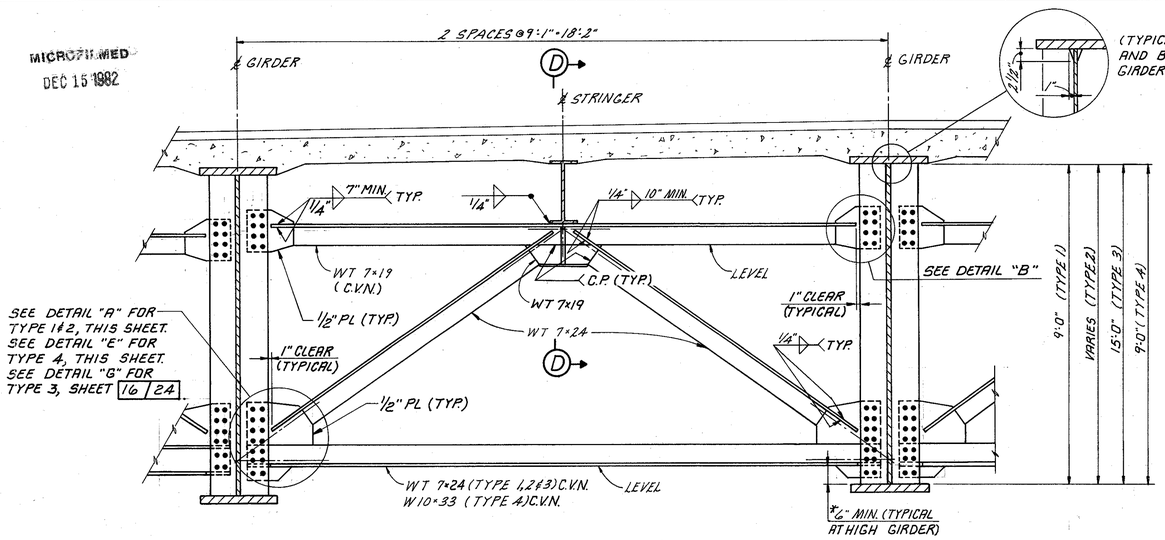
BRIDGE NO. CUY-6A-0041
U.S.R. 6A. OVER ROCKY RIVER
CUYAHOGA COUNTY STA. 20+35.50 TO STA. 26+75.50

DESIGNED	DRAWN	CHECKED	REVIEWED	DATE	REVISED
L.E.D.	TMJ	NK L.E.D.	R.D.H.	12-23-77	

F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

27
50

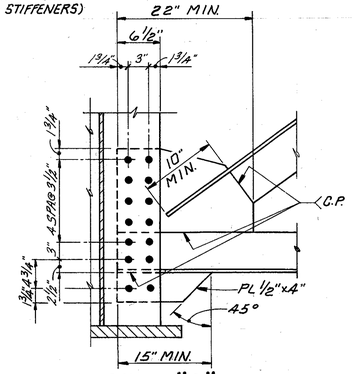
CUYAHOGA COUNTY
CUY.-6A-0.41



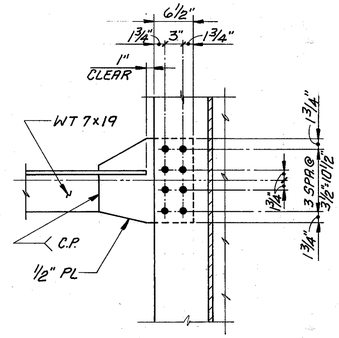
TYPE 1,2,3 & 4 CROSSFRAME

TYPE 1 SHOWN, TYPES 2,3 & 4 SIMILAR

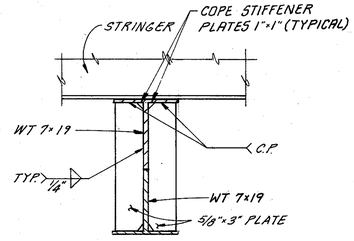
*TO COMPENSATE FOR THE ADDITIONAL 1/2" PLATE UNDER TYPE 1 WATERLINE SUPPORT BRACKET, THE TOP OF W10×33 UNDER THE TYPE 1 WATERLINE SUPPORT BRACKET SHALL BE 1/2" LOWER THAN TOP OF W10×33 UNDER TYPE 2 WATERLINE SUPPORT BRACKET.



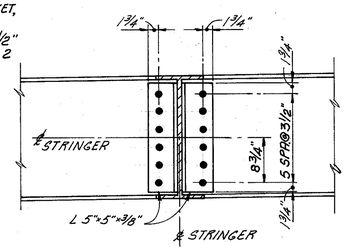
DETAIL "A"



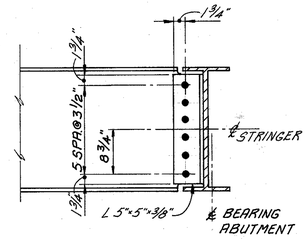
DETAIL "B"



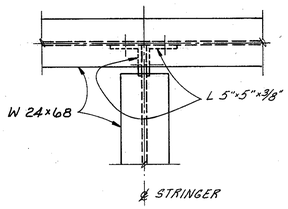
SECTION D-D



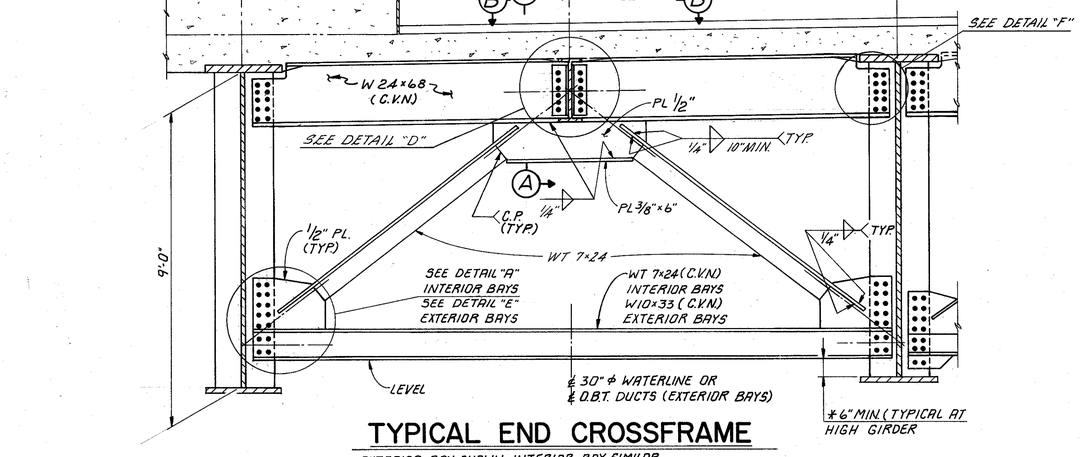
DETAIL "D"



SECTION A-A

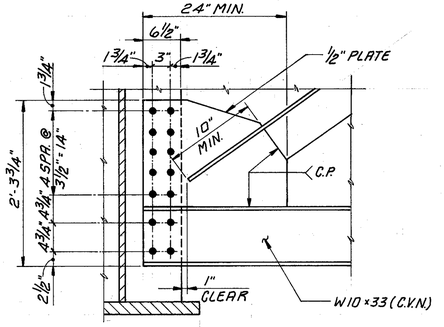


VIEW B-B

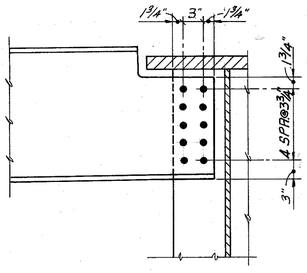


TYPICAL END CROSSFRAME

EXTERIOR BAY SHOWN, INTERIOR BAY SIMILAR
(LATERAL BRACING CONNECTION PLATES NOT SHOWN)



DETAIL "E"



DETAIL "F"

NOTES: ALL BOLTS ARE 1" ϕ ASTM-A325, TYPE 3 HIGH STRENGTH BOLTS, UNLESS NOTED OTHERWISE.

CROSSFRAME GUSSET PLATES SHALL FIT FLUSH WITH GIRDER STIFFENERS. TO ASSURE FLUSH FIT, GUSSET PLATE WELDS SHALL BE GROUND SMOOTH WITHIN THE AREA OF CONTACT BETWEEN THE GUSSET PLATES AND THE GIRDER STIFFENERS.

FOR WATERLINE SUPPORTS AND O.B.T. SUPPORT DETAILS, SEE SHEET 17 | 24

FOR FRAMING PLAN SEE SHEET 12 | 24

FOR EXPANSION JOINT DETAILS, SEE SHEET 19 | 24

C.P. INDICATES COMPLETE PENETRATION WELD.

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ADACHE ASSOCIATES INC., ENGINEERS
CLEVELAND, OHIO 44142

DETROIT-ROCKY RIVER BRIDGE
CROSSFRAME DETAILS
BRIDGE NO. CUY-6A-0041
U.S.R. 6A. OVER ROCKY RIVER
CUYAHOGA COUNTY
STA. 20+35.50 TO STA. 26+75.50

DESIGNED	DRAWN	CHECKED	REVIEWED	DATE	REVISED
L.E.D.	TMJ	S.V.C. L.E.D.	R.D.H.	12-29-77	

FHWA REGION	STATE	PROJECT	
5	OHIO		

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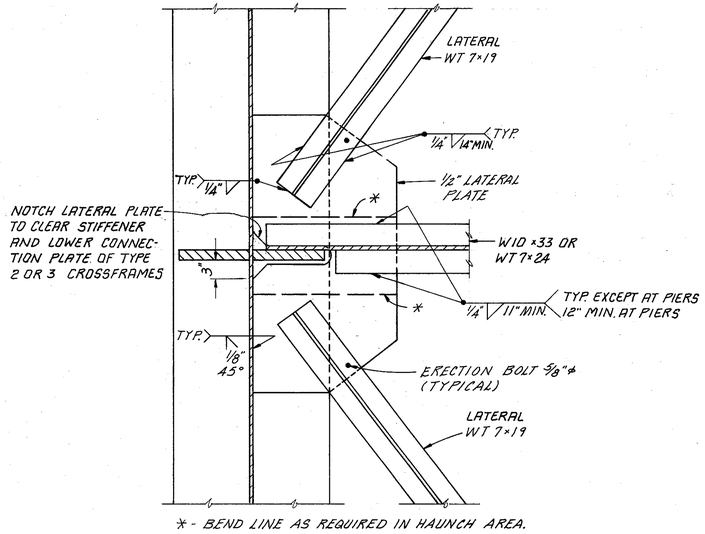
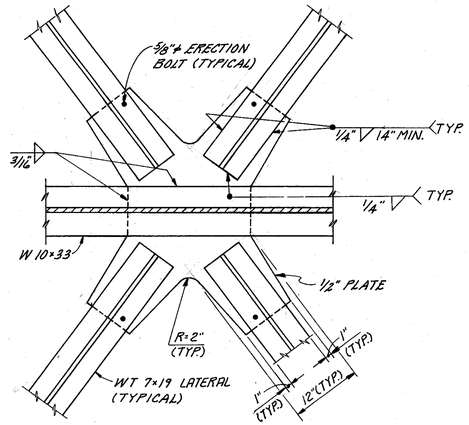
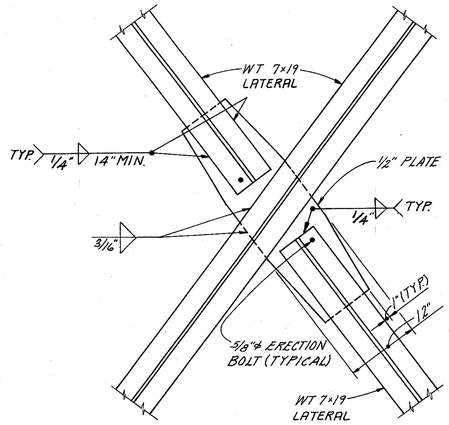
CUYAHOGA COUNTY
CUY.-6A-0.41



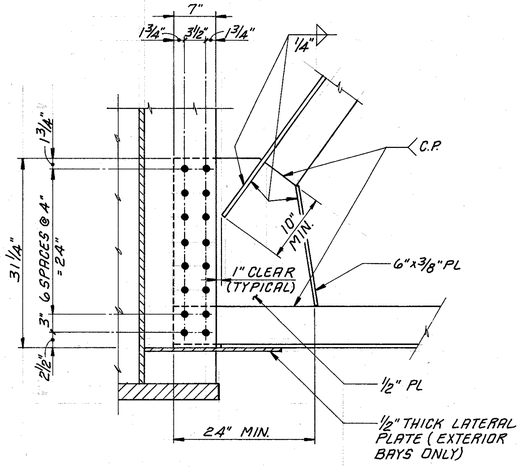
LATERAL BRACING CONNECTION AT CROSSFRAME



LATERAL BRACING CONNECTION AT MID-PANEL WITH WATER MAIN SUPPORT

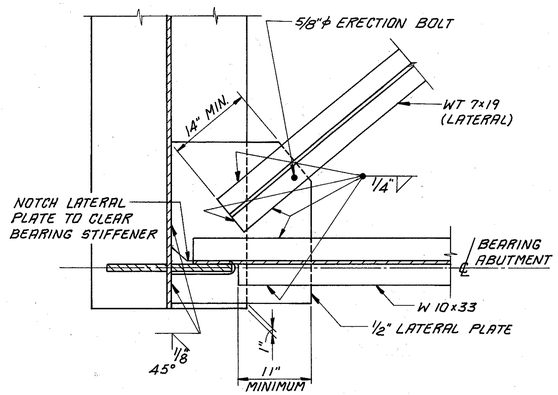


LATERAL BRACING CONNECTION AT MID-PANEL

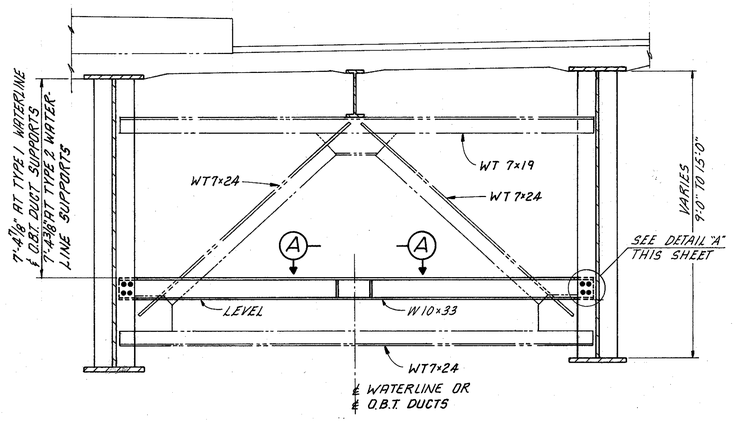


DETAIL "G"

FOR LOCATION OF DETAIL "G", SEE SHEET 15/24.



LATERAL BRACING CONNECTION AT ABUTMENT

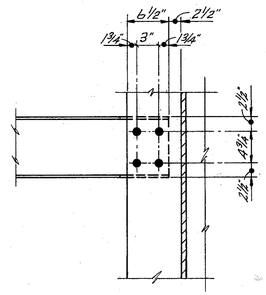


WATERLINE AND O.B.T. DUCT SUPPORT IN GIRDER HAUNCH

FOR VIEW A-A, SEE SHEET 17/24.

SEE FRAMING PLAN FOR LOCATIONS, SHEET 12/24.

TELEPHONE DUCT SUPPORT MEMBER IN GIRDER HAUNCH LENGTH IS SIMILAR.



DETAIL "A"

16/24

ADACHE ASSOCIATES INC., ENGINEERS
CLEVELAND, OHIO 44142

DETROIT-ROCKY RIVER BRIDGE

LATERAL BRACING DETAILS

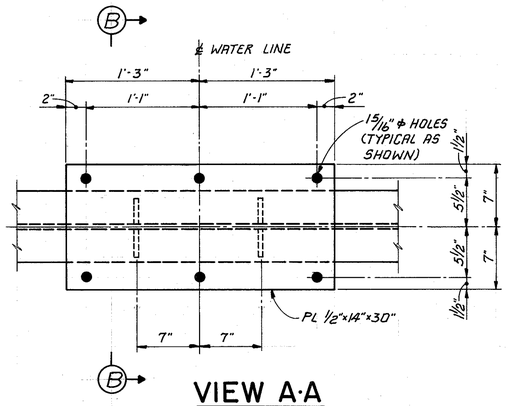
BRIDGE NO. CUY-6A-0041
U.S.R. 6A. OVER ROCKY RIVER
CUYAHOGA COUNTY STA. 20+35.50 TO STA. 26+75.50

DESIGNED	DRAWN	CHECKED	REVIEWED	DATE	REVISED
L.E.D.	TMJ	S.V.C. L.E.D.	R.D.H.	12-29-77	7-18-78

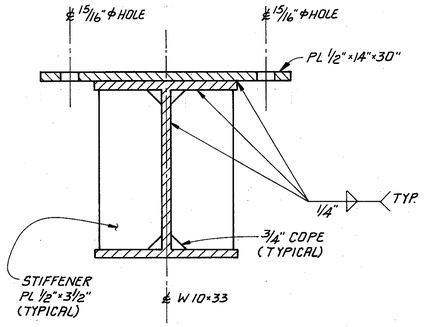
FHWA REGION	STATE	PROJECT	
5	OHIO		

29
50

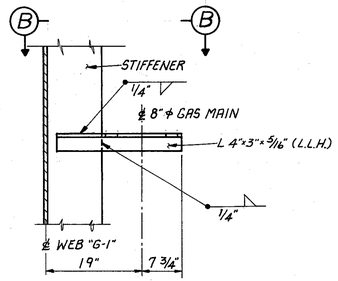
CUYAHOGA COUNTY
CUY.-6A-0.41



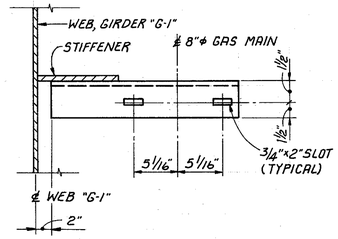
VIEW A·A



SECTION B·B



ELEVATION



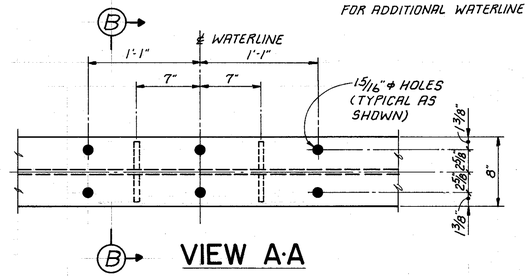
VIEW B·B

TYPE 1 WATERLINE SUPPORT

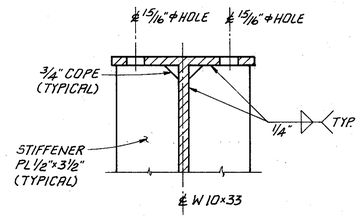
FOR LOCATIONS SEE FRAMING PLAN, SHEET 12/24.

FOR LOCATION OF VIEW A-A, SEE SHEET 16/24.

FOR ADDITIONAL WATERLINE DETAILS, SEE WATERWORK PLANS.



VIEW A·A



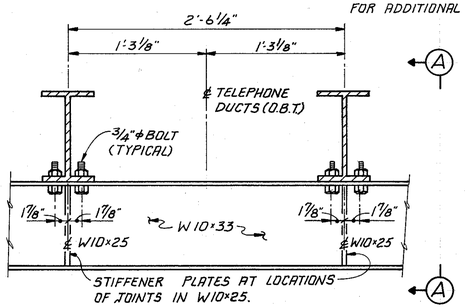
SECTION B·B

TYPE 2 WATERLINE SUPPORT

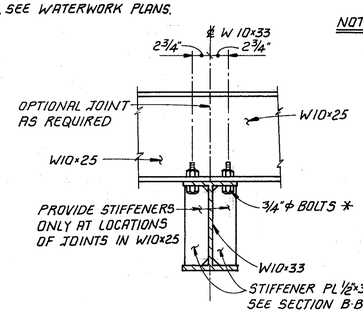
FOR LOCATIONS SEE FRAMING PLAN, SHEET 12/24.

FOR LOCATION OF VIEW A-A, SEE SHEET 16/24.

FOR ADDITIONAL WATERLINE DETAILS, SEE WATERWORK PLANS.



DETAIL



SECTION A·A

NOTES: AT ABUTMENT CROSSFRAMES EXTEND W10×25 STRINGERS 4" BEYOND ℄ W 10×33.

FOR ADDITIONAL TELEPHONE DUCT BANK DETAILS AND THE LOCATION OF HOLES FOR ATTACHING THE DUCT SUPPORT RACKS TO THE TOP FLANGES OF W10×25 STRINGERS, REFER TO OHIO BELL TELEPHONE COMPANY DRAWINGS.

*-4 BOLTS REQUIRED AT OPTIONAL JOINT LOCATIONS. 2 BOLTS REQUIRED ON ONLY ONE SIDE W10×33 WHEN W10×25 IS CONTINUOUS OVER W10×33.

FOR LOCATION OF CONNECTIONS (W10×25 STRINGERS TO W10×33 CROSSFRAME MEMBERS) SEE FRAMING PLAN, SHEET 12/24.

TELEPHONE SUPPORT STRINGER (O.B.T.)

8"ϕ GAS MAIN SUPPORT DETAILS (E.O.G.)

FOR GAS MAIN SUPPORT LOCATIONS, SEE TRANSVERSE SECTION AND FRAMING PLAN, SHEETS 11/24 AND 12/24 RESPECTIVELY.

FOR ADDITIONAL DETAILS OF GAS MAIN, REFER TO EAST OHIO GAS CO. DRAWINGS.

17/24

ADACHE ASSOCIATES INC., ENGINEERS
CLEVELAND, OHIO 44142

DETROIT-ROCKY RIVER BRIDGE

UTILITY SUPPORT DETAILS

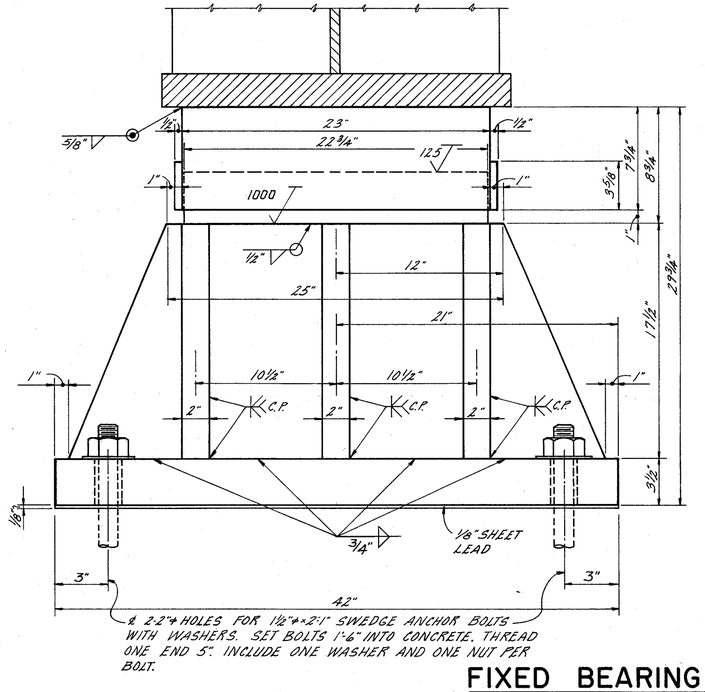
BRIDGE NO. CUY-6A-0041
U.S.R. 6A. OVER ROCKY RIVER
CUYAHOGA COUNTY STA. 20+35.50 TO STA. 26+75.50

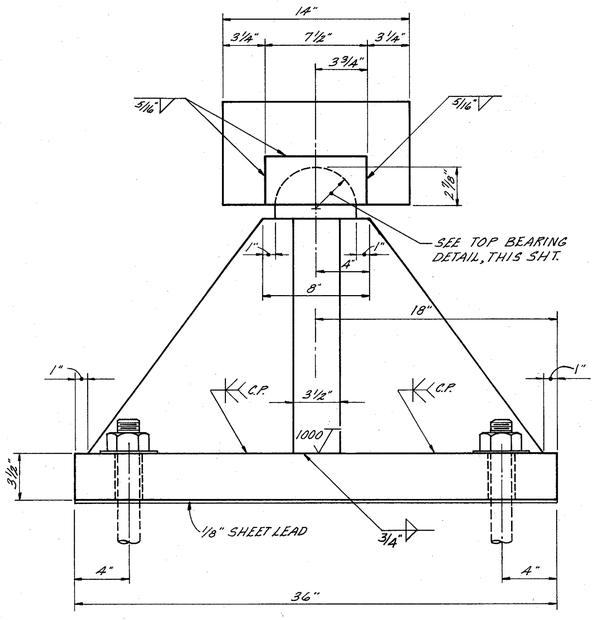
DESIGNED	DRAWN	CHECKED	REVIEWED	DATE	REVISED
L.E.D.	TMJ	S.V.C. L.E.D.	J.A.A.	12-29-77	

F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

30
50

CUYAHOGA COUNTY
CUY.-6A-0.41



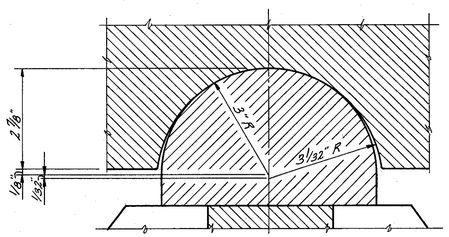


NOTES: FILL SPACE AROUND ANCHOR BOLTS WITH MOLTEN LEAD BEFORE PLACING NUTS.

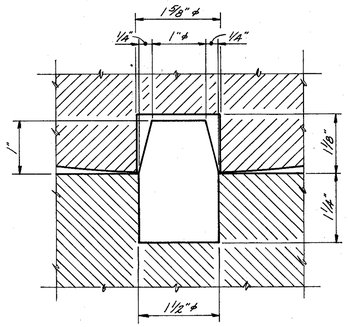
ALL BASE PLATES SHALL BE SCRIBED WITH LONGITUDINAL AND TRANSVERSE CENTER LINES.

FIXED BEARING AT PIERS

BOLSTER B-1425



TOP BEARING DETAIL



DOWEL DETAIL

ABUTMENT ROCKER DIMENSIONS (INCHES)															
ROCKER NO.	NO. REQD.	A	B	C	D	F	G	H	K	L	M	R	T	Y	WEIGHT EA. (LBS.)
R-400	10	3 1/2	24	4	3 1/2	1	12	22 1/8	16	32	27	14 1/2	3 1/2	1 11/16	1,498

NOTE: FOR DIMENSION LOCATIONS AND ROCKER DETAILS, SEE OHIO STANDARD DRAWING RB-1-55, REVISED 2-2-59. DOWELS IN ROCKERS SHALL BE MODIFIED AS SHOWN IN DOWEL DETAIL, THIS SHEET.

18 / 24

ADACHE ASSOCIATES INC., ENGINEERS
CLEVELAND, OHIO 44142

DETROIT-ROCKY RIVER BRIDGE

ROCKER & BOLSTER DETAILS

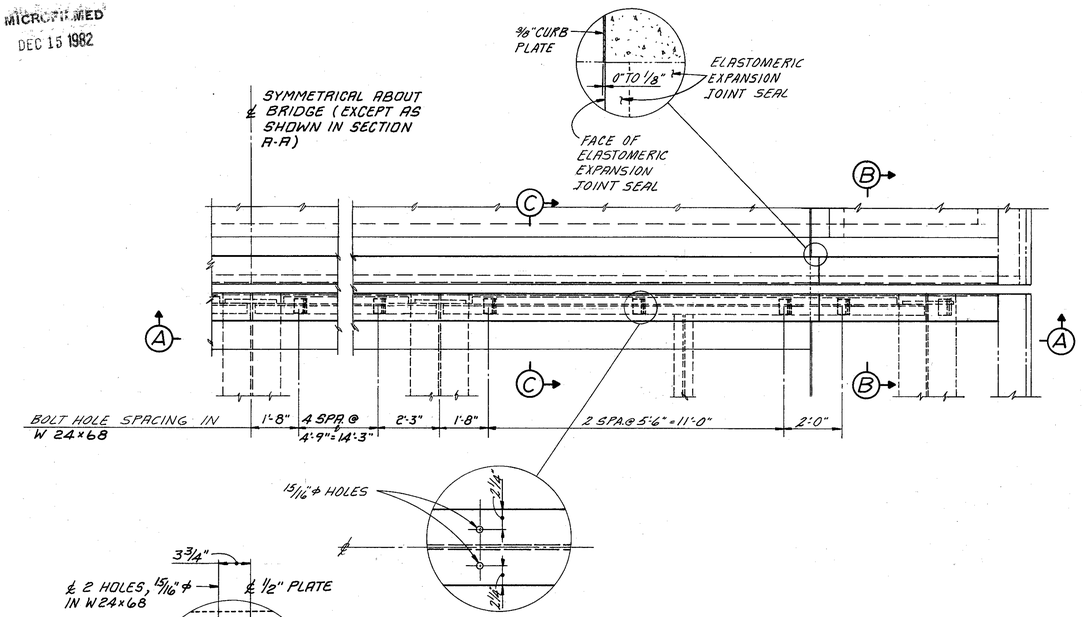
BRIDGE NO. CUY-6A-0041
U.S.R. 6A. OVER ROCKY RIVER
CUYAHOGA COUNTY
STA. 20+35.50 TO STA. 26+75.50

DESIGNED	DRAWN	CHECKED	REVIEWED	DATE	REVISED
L.E.D.	TMJ	SVC L.E.D	R.D.H.	12-29-77	

F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

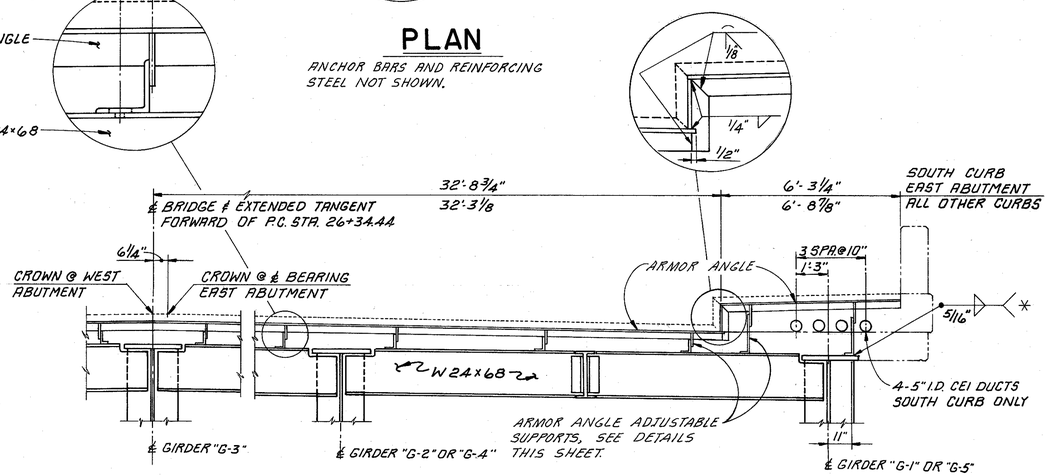
31/50

CUYAHOGA COUNTY
CUY.-6A-0.41



PLAN

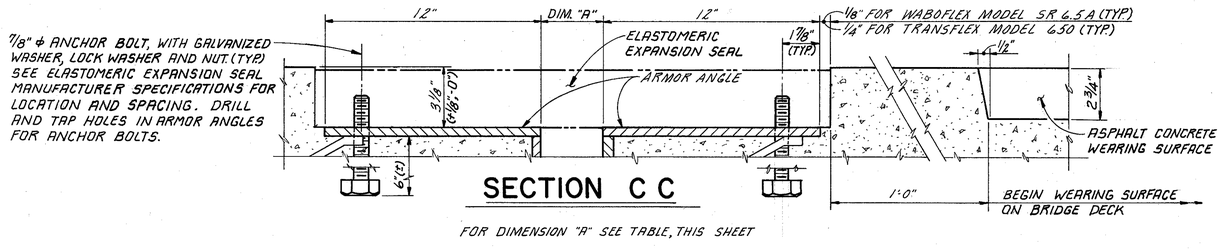
ANCHOR BARS AND REINFORCING STEEL NOT SHOWN.



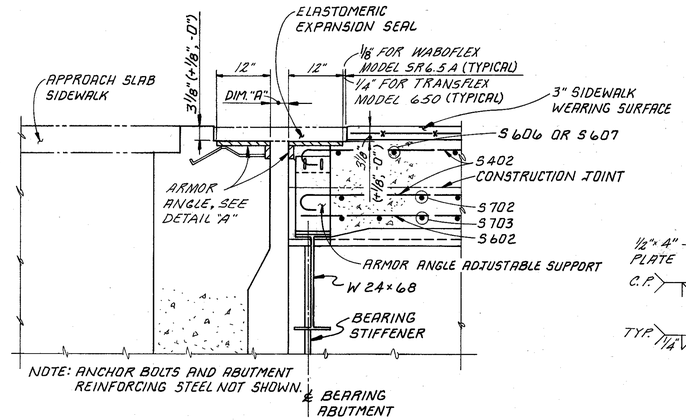
NOTE: ANCHOR BARS AND REINFORCING STEEL NOT SHOWN.

✳ - TYPICAL FOR SUPPORT MOUNTED ON EXTERIOR GIRDER FLANGE.

SECTION A-A

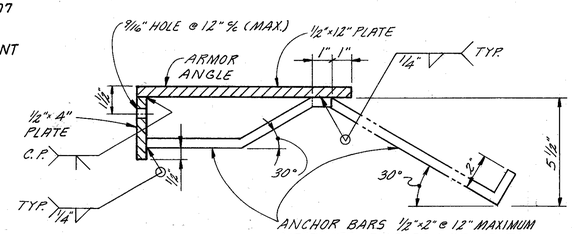


FOR DIMENSION "A" SEE TABLE, THIS SHEET



NOTE: ANCHOR BOLTS AND ABUTMENT REINFORCING STEEL NOT SHOWN.

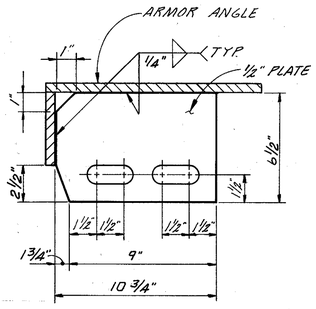
SECTION B-B



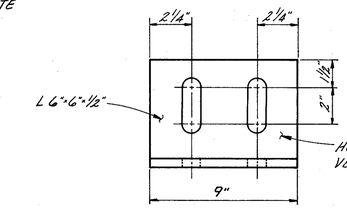
ANCHOR BARS ½"×2" @ 12" MAXIMUM ALTERNATE CENTERS (SPACE TO CLEAR LONGITUDINAL REINFORCING STEEL AND ANCHOR BOLTS) TYPICAL.

DETAIL "A"

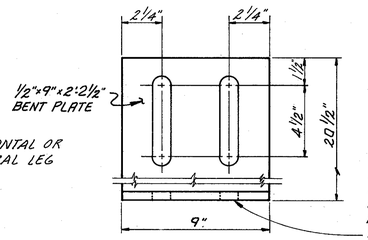
TYPICAL FOR ABUTMENT & DECK ARMOR ANGLES



PLATE



ROADWAY SUPPORT



HORZONTAL LEG SHALL HAVE SLOTTED HOLES AS SHOWN ON THE ROADWAY SUPPORT, EXCEPT FOR SUPPORTS MOUNTED ON EXTERIOR GIRDER FLANGES.

SIDEWALK SUPPORT

ARMOR ANGLE ADJUSTABLE SUPPORTS

NOTES

EACH MEMBER OF THE ARMOR ANGLE ADJUSTABLE SUPPORTS SHALL BE PROVIDED WITH SLOTS 15/16" WIDE × LENGTH AS SHOWN, TO FACILITATE ⅞" ϕ BOLTS WITH HEX NUTS & WASHERS.

THE CONTRACTOR SHALL EXERCISE CARE IN PLACING THE ARMOR ANGLE ASSEMBLIES PARALLEL TO THE LONGITUDINAL GRADE AND THE TRANSVERSE SLOPES.

THE METHOD OF SUPPORTING THE ARMOR ANGLE ASSEMBLIES ON THE ABUTMENT SHALL BE SUBMITTED BY THE CONTRACTOR, TO THE DIRECTOR FOR APPROVAL PRIOR TO PLACING THE BACKWALL CONCRETE.

FOR CONSTRUCTION AND MATERIAL SPECIFICATIONS FOR THE REINFORCED ELASTOMERIC EXPANSION JOINT SEALS, SEE GENERAL NOTES, SHEETS 5/24 AND 6/24.

WELDED BUTT JOINTS IN THE ARMOR ANGLES WILL BE REQUIRED AT THE APEX OF THE ROADWAY. WELDS SHALL GROUND SMOOTH ON THE SURFACE TO WHICH THE ELASTOMERIC EXPANSION SEAL WILL BE ATTACHED.

FOR PARAPET SLIDING PLATE DETAILS, SEE SHEET 21/24.

FOR DECK AND SIDEWALK REINFORCING DETAILS, SEE TRANSVERSE SECTION AND SLAB PLAN, SHEETS 11/24 AND 20/24 RESPECTIVELY.

ARMOR ANGLE ASSEMBLIES, ADJUSTABLE SUPPORTS, ANCHOR BARS AND HARDWARE SHALL BE INCLUDED WITH ITEM 513, STRUCTURAL STEEL, FOR PAYMENT.

FOR END CROSSFRAME DETAILS, SEE SHEET 15/24.

ALL BOLTS SHALL BE ASTM-A325, TYPE 3.

ARMOR ANGLE ON THE ABUTMENT BACKWALL SHALL BE DISCONTINUOUS AT AT THE BACKWALL CONTRACTION JOINT. THE SEGMENTS OF THE ARMOR ANGLE AT THE CONTRACTION JOINT SHALL BE CLOSELY BUTTED, BUT SHALL NOT BE WELDED.

DIMENSION "A"

TEMP. DEGREES F.	DIM. "A"	TEMP. DEGREES F.	DIM. "A"
110°	2¾"	40°	4½"
100°	3"	30°	4¾"
90°	3¼"	20°	5"
80°	3½"	10°	5¼"
70°	3¾"	0°	5½"
60°	4"	-10°	5¾"
50°	4¼"	-20°	6"

19/24

ADACHE ASSOCIATES INC., ENGINEERS
CLEVELAND, OHIO 44142

DETROIT-ROCKY RIVER BRIDGE

EXPANSION JOINT DETAILS

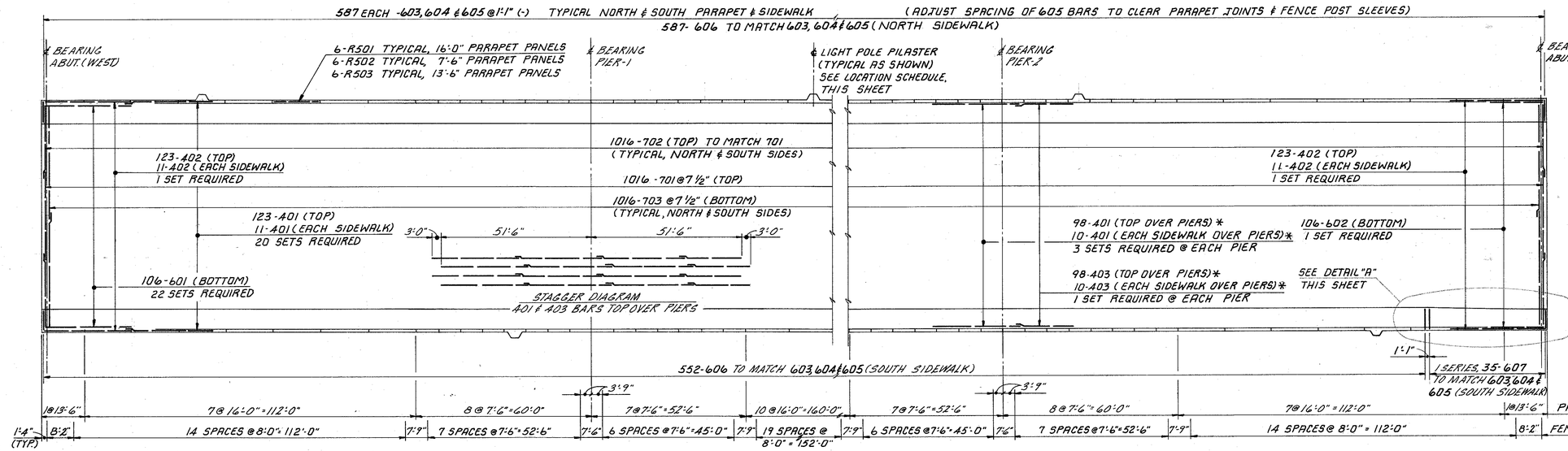
BRIDGE NO. CUY-6A-0041
U.S.R. 6A. OVER ROCKY RIVER
CUYAHOGA COUNTY STA. 20+35.50 TO STA. 26+75.50

DESIGNED	DRAWN	CHECKED	REVIEWED	DATE	REVISED
L.E.D.	TMJ	L.E.D.	R.D.H.	12-29-77	

FHWA REGION	STATE	PROJECT	
5	OHIO		

32
50

CUYAHOGA COUNTY
CUY.-6A-0.41



NOTES:

REINFORCING BAR LAPPED SPLICES: ALL SPLICES SHALL BE LAPPED 30 BAR DIAMETERS (MINIMUM).

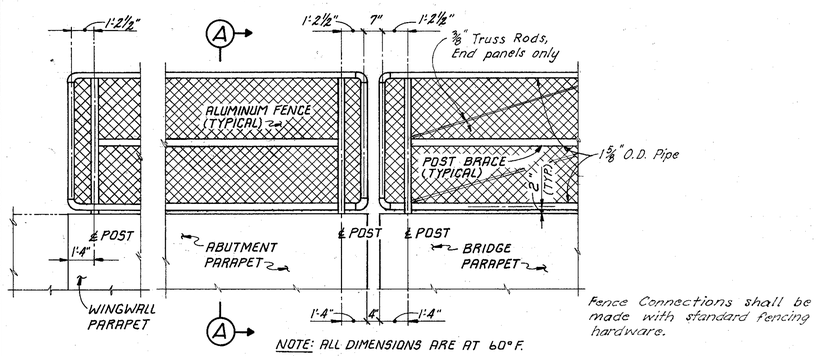
THE PREFIX "S" SHALL BE ADDED TO ALL REINFORCING BAR MARKS IN THE SUPERSTRUCTURE UNLESS NOTED OTHERWISE.

* - TYPICAL, PIERS 1 & 2.

+ - TYPICAL, NORTH & SOUTH RAILINGS

FOR REINFORCING BAR SCHEDULE, SEE SHEET 24/24

SLAB PLAN



Fence Connections shall be made with standard fencing hardware.

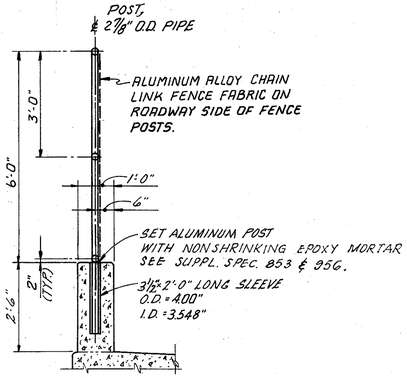
NOTE: ALL DIMENSIONS ARE AT 60° F.

FENCE OPEN-JOINT DETAIL

NOTES: PAYMENT FOR PARAPET AND FENCE SHALL BE MADE AT THE CONTRACT UNIT PRICE FOR ITEM 517, RAILING (CONCRETE PARAPET WITH ALUMINUM ALLOY FABRIC CHAIN LINK FENCE, SEC. 710.03) PAYMENT LENGTH SHALL BE THE OVERALL LENGTH OF THE PARAPETS. CONCRETE, SLEEVES, PREFORMED SPONGE FILLER AND LONGITUDINAL REINFORCING STEEL IN THE PARAPETS SHALL BE INCLUDED WITH ITEM 517 FOR PAYMENT. ALL OTHER REINFORCING STEEL IN THE PARAPETS SHALL BE INCLUDED WITH ITEM 509 FOR PAYMENT.

FOR PARAPET SLIDING PLATE DETAILS, SEE SHEET 21/24.

FOR TRANSVERSE SECTION, SEE SHEET 11/24.



SECTION A-A

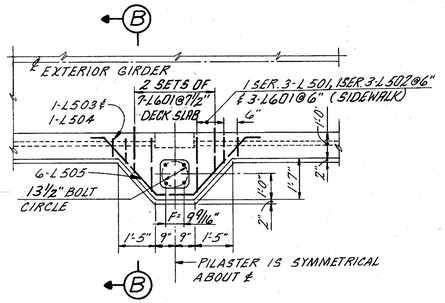
CONCRETE PARAPETS SHALL BE PLACED IN ALTERNATE SECTIONS BY THE USE OF BULKHEADS. CLOSING SECTIONS SHALL BE PLACED AFTER REMOVAL OF THE BULKHEADS AND AFTER PLACEMENT OF THE SPONGE FILLER.

SPONGE FILLER SHALL BE FLUSH WITH THE SURFACE OF CONCRETE AND EXPOSED EDGES SHALL BE FREE OF MORTAR.

FOR EXPANSION JOINT DETAILS AT ABUTMENTS, SEE SHEET 19/24.

FOR SCUPPER LOCATIONS AND DETAILS, SEE SHEET 22/24.

FOR CURB PLATE DETAILS, SEE SHEET 21/24.



LIGHT POLE PILASTER (TYPE A)

NOTES:

FOR LOCATION OF CONDUIT IN THE STRUCTURE, ADDITIONAL LIGHTING DETAILS AND LIGHTING QUANTITIES SEE LIGHTING PLANS.

FOR LIGHT POLE PILASTER LOCATIONS SEE SCHEDULE THIS SHEET.

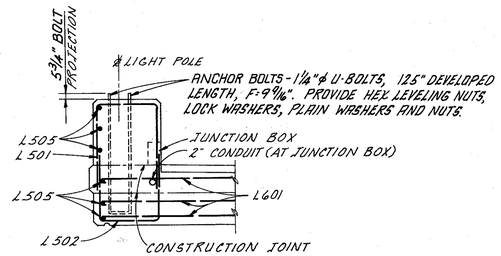
LIGHT POLE PILASTER REINFORCING IS INCLUDED FOR PAYMENT WITH SUPERSTRUCTURE REINFORCING; SEE REINFORCING SCHEDULE FOR WEIGHT SUMMARY.

CONCRETE FOR LIGHT POLE PILASTER ABOVE THE PARAPET JOINT IS INCLUDED FOR PAYMENT WITH ITEM 517, BRIDGE RAILING (CONCRETE PARAPET WITH ALUMINUM CHAIN LINK FENCE, SEC. 710.03).

FOR LIGHT POLE PILASTER DETAILS NOT SHOWN, SEE STD. DWG. HL-4 & HL-19.

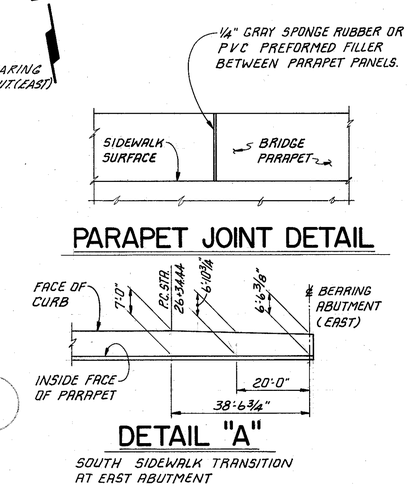
FOR TYPE B LIGHT POLE PILASTER DETAILS, SEE SHEET 21/24

LIGHT POLE PILASTER LOCATION SCHEDULE		
STATION	SIDE	TYPE
20+90	NORTH	A
23+00	NORTH	B
25+14.25	NORTH	A
21+96.75	SOUTH	A
24+08	SOUTH	B
26+16	SOUTH	A



NOTE: NORMAL SIDEWALK, PARAPET & SLAB REINFORCING NOT SHOWN: NORMAL REINFORCING IS CONTINUOUS THROUGH PILASTER EXCEPT WHERE PREVENTED BY JUNCTION BOX & CAVITY BELOW JUNCTION BOX. FIELD CUT REINFORCING BARS AS REQUIRED.

SECTION B-B



20/24

ADACHE ASSOCIATES INC., ENGINEERS
CLEVELAND, OHIO 44142

DETROIT-ROCKY RIVER BRIDGE

DECK SLAB PLAN

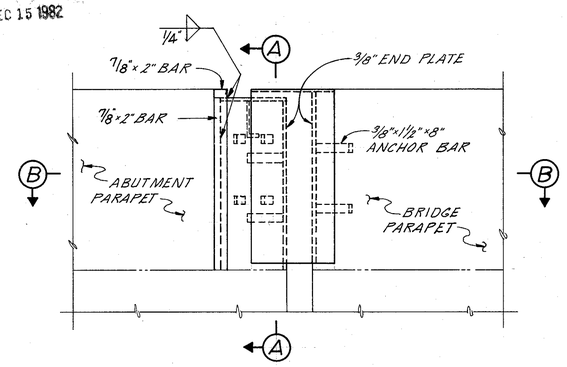
BRIDGE NO. CUY-6A-0041
U.S.R. 6A. OVER ROCKY RIVER
CUYAHOGA COUNTY STA. 20+35.50 TO STA. 26+75.50

DESIGNED	DRAWN	CHECKED	REVIEWED	DATE	REVISED
L.E.D. TMJ	TMJ	L.E.D.	R.D.W.	12-23-77	7-18-78

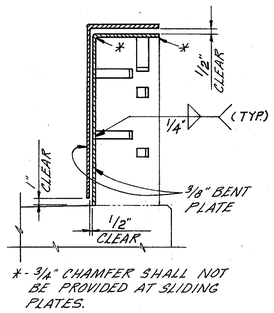
F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

33
50

CUYAHOGA COUNTY
CUY.-6A-0.41

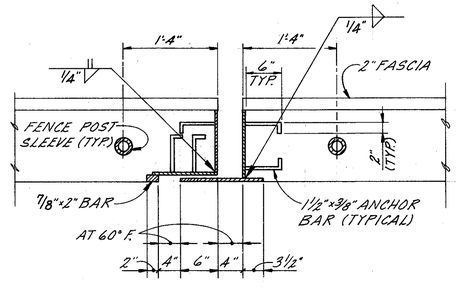


ELEVATION



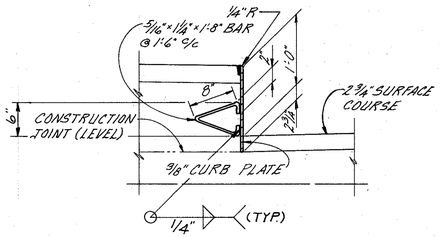
*- 3/4" CHAMFER SHALL NOT BE PROVIDED AT SLIDING PLATES.

SECTION - A-A



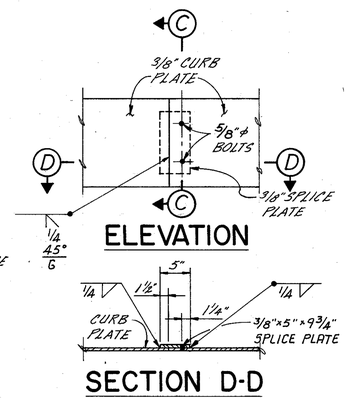
SECTION B-B

PARAPET SLIDING PLATE DETAILS



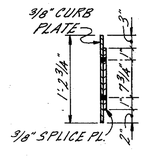
CURB PLATE DETAIL

SUBSURFACE DRAINAGE AND REINFORCING STEEL NOT SHOWN.



ELEVATION

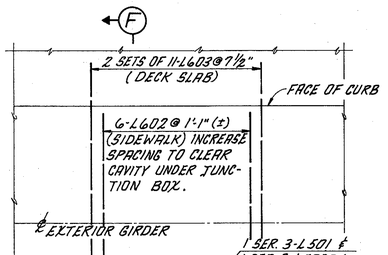
SECTION D-D



SECTION C-C

NOTE:
REMOVE BOLTS AFTER FIELD WELDS HAVE BEEN COMPLETED. PLUG HOLES FLUSH WITH CURB PLATE.

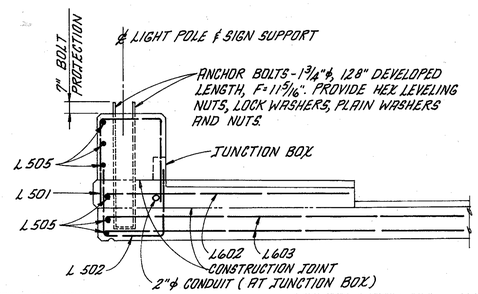
CURB PLATE SPLICE DETAILS



LIGHT POLE PILASTER (TYPE B)

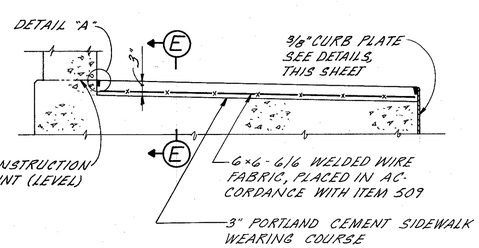
FOR DIMENSIONS NOT SHOWN, SEE LIGHT PILASTER (TYPE A) SHEET 20 | 24.

FOR NOTES, SEE SHEET 20 | 24.

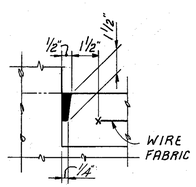


NOTE: NORMAL SIDEWALK, PARAPET AND SLAB REINFORCING NOT SHOWN: NORMAL REINFORCING IS CONTINUOUS THROUGH PILASTER EXCEPT WHERE PREVENTED BY JUNCTION BOX AND CAVITY BELOW JUNCTION BOX. FIELD CUT REINFORCING BARS AS REQUIRED.

SECTION F-F

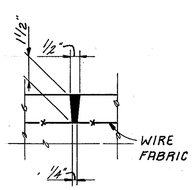


SIDEWALK WEARING COURSE DETAIL



DETAIL "A"

LONGITUDINAL SIDEWALK JOINT, USE THIS DETAIL OPPOSITE HAND AT CURB.



SECTION E-E

TRANSVERSE SIDEWALK JOINT, PLACE JOINTS AT 5'-0" ℄ MAXIMUM.

JOINTS SHALL BE ITEM 705.01 (HOT APPLIED JOINT SEALER) TO BE INCLUDED WITH ITEM 511 (CLASS 'C' CONCRETE, SIDEWALK WEARING COURSE) FOR PAYMENT.

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ADACHE ASSOCIATES INC., ENGINEERS
CLEVELAND, OHIO 44142

DETROIT-ROCKY RIVER BRIDGE

MISCELLANEOUS DETAILS

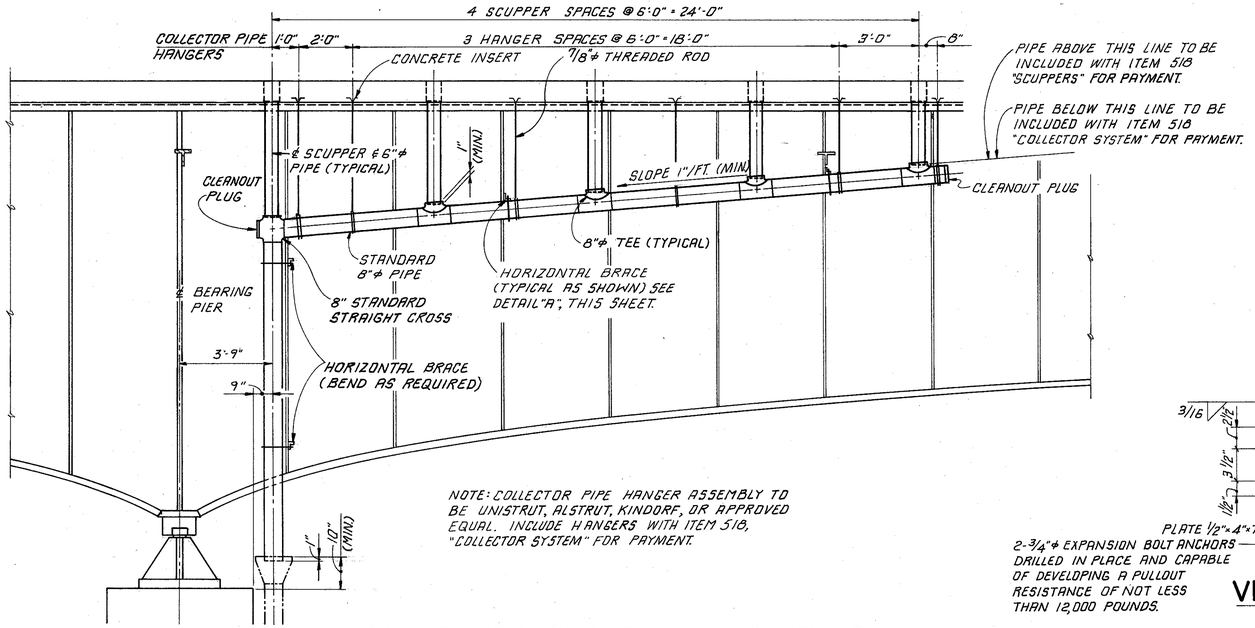
BRIDGE NO. CUY-6A-0041
U.S.R. 6A. OVER ROCKY RIVER
CUYAHOGA COUNTY STA. 20+35.50 TO STA. 26+75.50

DESIGNED	DRAWN	CHECKED	REVIEWED	DATE	REVISED
TMJ	TMJ	L.E.D.	RSH	12-27-77	

F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

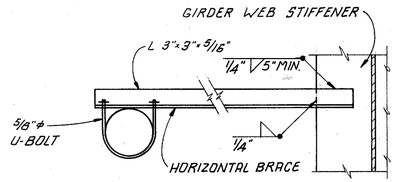
34
50

CUYAHOGA COUNTY
CUY.-6A-0.41



NOTE: COLLECTOR PIPE HANGER ASSEMBLY TO BE UNISTRUT, ALSTRUT, KINDORF, OR APPROVED EQUAL. INCLUDE HANGERS WITH ITEM 518, "COLLECTOR SYSTEM" FOR PAYMENT.

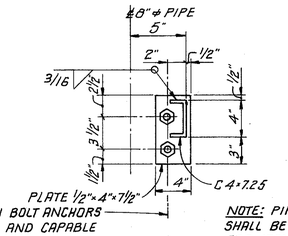
COLLECTOR SYSTEM IN END SPANS



NOTE: THIS BRACE IS FOR LATERAL STABILITY ONLY.

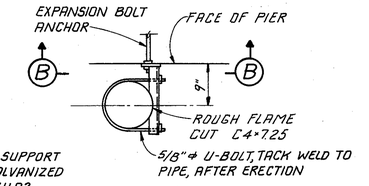
DETAIL "A"

FOR PAYMENT INCLUDE WITH ITEM 518 "COLLECTOR SYSTEM".



2-3/4"ϕ EXPANSION BOLT ANCHORS DRILLED IN PLACE AND CAPABLE OF DEVELOPING A PULLOUT RESISTANCE OF NOT LESS THAN 12,000 POUNDS.

VIEW B-B

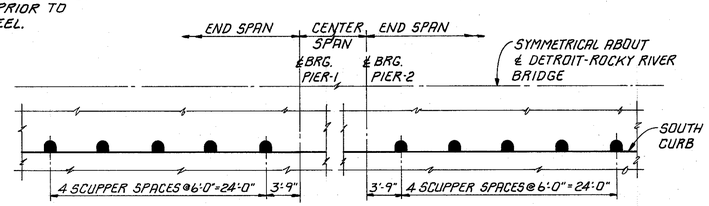


NOTE: PIPE SUPPORT SHALL BE GALVANIZED PER ITEM 711.02

PLAN

PIPE SUPPORT DETAIL

PIPE SUPPORTS SHALL BE AT 5'-0" ℄c MAXIMUM SPACING.
FOR PAYMENT INCLUDE WITH ITEM 518 "COLLECTOR SYSTEM".



SCUPPER LOCATION PLAN

NOTES:

THE 8"ϕ COLLECTOR SYSTEM INCLUDING PIPE, FITTINGS, HORIZONTAL BRACES, SUPPORTS AND ACCESSORIES SHALL BE PAID FOR AT THE UNIT BID PRICE FOR ITEM 518 "COLLECTOR SYSTEM".

FOR SCUPPER DETAILS AND METHOD OF SUPPORTING SCUPPERS DURING CONSTRUCTION, REFER TO OHIO STANDARD DRAWING SD-1-69, SHEET 3 OF 4.

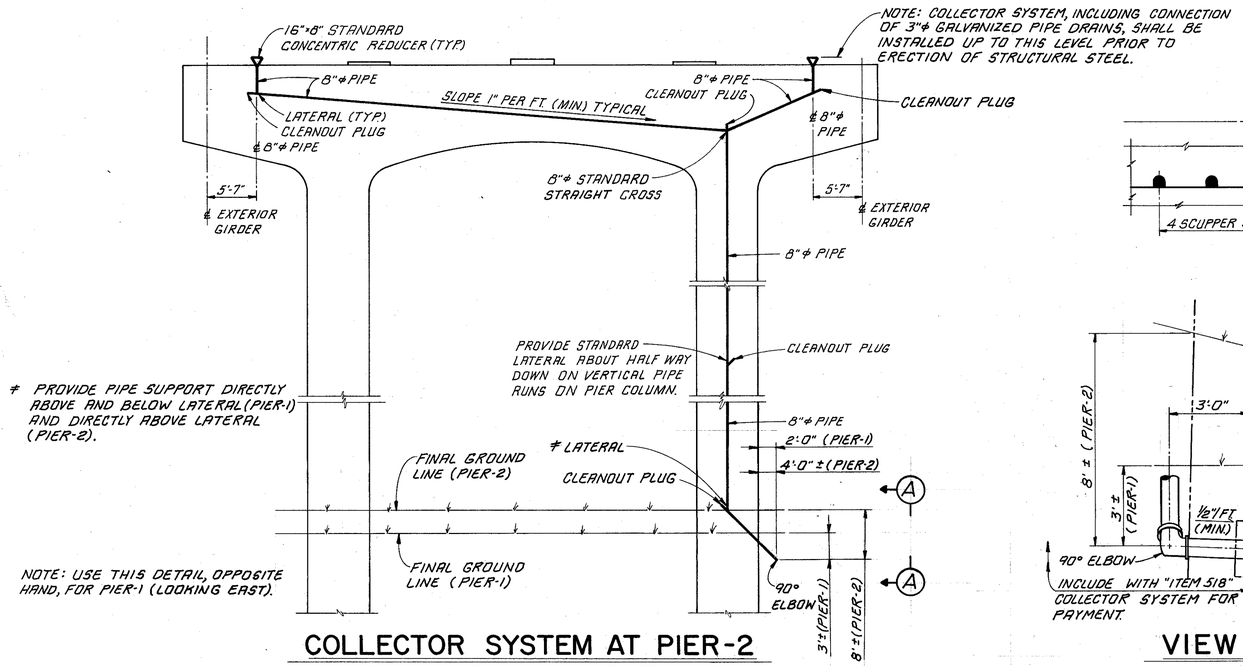
U-BOLTS FOR HORIZONTAL BRACES AND PIPE SUPPORTS SHALL BE 5/8"ϕ GALVANIZED U-BOLTS AND SHALL BE FURNISHED WITH HEX NUTS AND LOCK WASHERS.

HORIZONTAL BRACES SHALL BE ASTM-A588 STEEL, UNPAINTED.

SEE SHEET 10 24 FOR 3"ϕ GALVANIZED PIPE DRAINS TO 8"ϕ COLLECTOR SYSTEM PIPE ON FACE OF PIER CAPS.

TOP OF SCUPPERS SHALL BE PLACED 1/4" BELOW PROPOSED SURFACE OF RUBBERIZED SAND ASPHALT SURFACE COURSE.

PROVIDE 1"ϕ HOLE IN SIDES OF SCUPPERS AT LOCATION OF SUBDRAINAGE FOR WEARING SURFACE COURSE LONGITUDINAL CONDUCTORS.

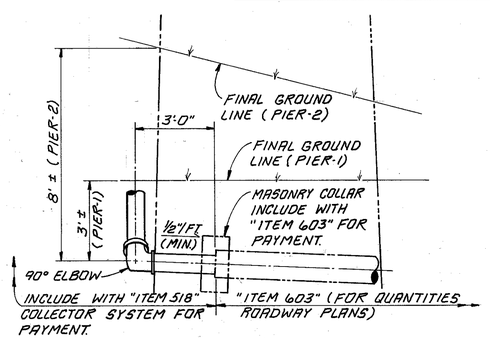


NOTE: COLLECTOR SYSTEM, INCLUDING CONNECTION OF 3"ϕ GALVANIZED PIPE DRAINS, SHALL BE INSTALLED UP TO THIS LEVEL PRIOR TO ERECTION OF STRUCTURAL STEEL.

PROVIDE PIPE SUPPORT DIRECTLY ABOVE AND BELOW LATERAL (PIER-1) AND DIRECTLY ABOVE LATERAL (PIER-2).

NOTE: USE THIS DETAIL, OPPOSITE HAND, FOR PIER-1 (LOOKING EAST).

COLLECTOR SYSTEM AT PIER-2
LOOKING WEST



VIEW A-A

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ADACHE ASSOCIATES INC., ENGINEERS
CLEVELAND, OHIO 44142

DETROIT-ROCKY RIVER BRIDGE

DECK DRAINAGE DETAILS

BRIDGE NO. CUY-6A-0041
U.S.R. 6A. OVER ROCKY RIVER
CUYAHOGA COUNTY
STA. 20+35.50 TO STA. 26+75.50

DESIGNED	DRAWN	CHECKED	REVIEWED	DATE	REVISED
TMJ	TMJ	L.E.D.	E.D.H.	12-29-77	

REINFORCING STEEL LIST

F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

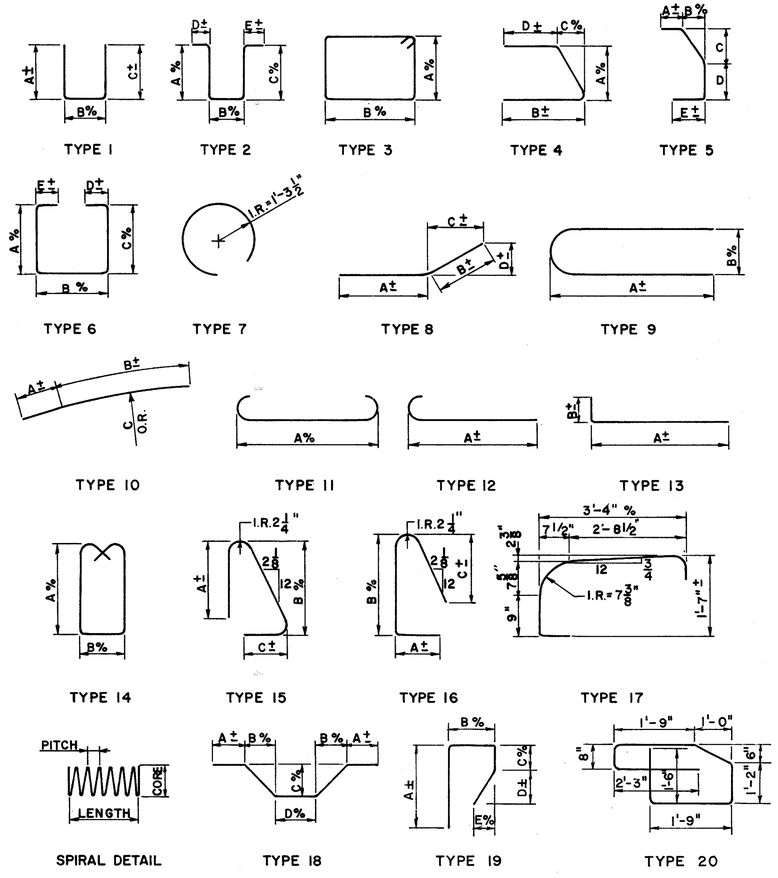
35/50

CUYAHOGA COUNTY
CUY.-6A-0.41

MARK	NO.	LENGTH	WEIGHT	TYPE	A	B	C	D	E	SHAPE	LOCATION	
					ABUTMENT						WEST ABUT.	EAST ABUT.
A401	70	4'-5"	206	1	1'-3"	2'-2"	1'-3"			BT.	35	35
A501	160	7'-10"	1,308	1	2'-1"	3'-11"	2'-1"			BT.	80	80
A502	52	30'-4"	1,646							ST.	26	26
A503	4	25'-9"	108							ST.	2	2
A504	8	5'-11"	50							ST.	4	4
A505	4	7'-2"	30							ST.	2	2
A506	60	20'-1"	1,256							ST.	30	30
A507	52	30'-0"	1,628							ST.	26	26
A508	8	23'-0"	192							ST.	4	4
A509	32	6'-3"	208	1	1'-6"	3'-6"	1'-6"			BT.	16	16
A510	24	6'-1"	152	13	5'-4"	10½"				BT.	12	12
A511	40	8'-6"	355	13	7'-9"	10½"				BT.	20	20
A512	8	6'-9"	56	13	6'-0"	10½"				BT.	4	4
A513	12	7'-6"	94	13	6'-0"					BT.	6	6
A514	32	13'-0"	434							ST.	16	16
A515	12	18'-10"	236	6	6'-0"	1'-8"	9'-11"	1'-7"	0"	BT.	6	6
A516	4	12'-5"	52	6	2'-7"	0'-8"	7'-11"	1'-7"	0"	BT.	2	2
A517	80	5'-11"	494	13	4'-4"	1'-8"				BT.	40	40
A518	108	6'-0"	676							ST.	54	54
A519	20	5'-9"	120							ST.	10	10
A520	16	11'-0"	184							ST.	8	8
A521	20	24'-5"	509							ST.	10	10
A522	16	16'-6	275							ST.	8	8
A523	8	3'-0" TO	404							ST.	4 SERIES	4 SERIES
	SERIES	13'-2"									OF 6	OF 6
	OF 6	INC. 2'-0⅞										
A524	8	5'-7" TO	782							ST.	4 SERIES	4 SERIES
	SERIES	13'-2"									OF 10	OF 10
	OF 10	INC. 10⅛										
A525	32	12'-3"	408							ST.	16	16
A526	40	4'-8"	194							ST.	20	20
A527	12	8'-1"	102	1	3'-7"	1'-2"	3'-7"			BT.	6	6
A528	64	4'-4"	289	13	3'-7"	10½"				BT.	32	32
A529	16	8'-0"	134							ST.	8	8
A530	116	6'-6"	786	3	1'-7"	1'-5"				BT.	58	58
A531	64	4'-6"	300							ST.	32	32
A532	8	2'-1" TO	184							ST.	4 SERIES	4 SERIES
	SERIES	9'-0"									OF 4	OF 4
	OF 4	INC. 2'-3⅜										
A533	4	5'-11" TO	356	2	1'-9 TO	1'-2"	1'-9 TO	10½"	10½"	BT.	2 SERIES	2 SERIES
	SERIES	15'-5"			6'-6"		6'-6"				OF 8	OF 8
	OF 8	INC. 1'-4⅛										
A534	8	13'-2"	110							ST.	4	4
A535	20	11'-3"	235							ST.	10	10
A601	148	12'-1"	2,686	13	6'-4"	5'-11"				BT.	74	74
A602	248	15'-7"	5,806	1	7'-3"	1'-5"	7'-3"			BT.	124	124
A603	144	6'-0"	1,298	13	5'-2"	1'-0"				BT.	72	72
A604	12	26'-1"	470	1	12'-6"	1'-5"	12'-6"			BT.	6	6
A605	12	13'-4"	240	13	12'-6"	1'-0"				BT.	6	6
A606	128	6'-2"	1,186	19	2'-8"	1'-4"	9"	1'-7"	10½"	BT.	64	64
A607	28	7'-10"	330	19	3'-4"	1'-4"	1'-9"	1'-7"	10½"	BT.	14	14
A608	20	5'-2"	156	13	4'-0"	1'-4"				BT.	10	10
A609	160	6'-9"	1,622	13	5'-11"	1'-0"				BT.	80	80
A610	12	24'-10"	448							ST.	6	6
A611	24	30'-0"	1,082							ST.	12	12
A612	32	12'-3"	588							ST.	16	16
A613	76	10'-5"	1,189	6	1'-11"	5'-4"	8"	3'-0"	0"	BT.	38	38
A614	80	9'-5"	1,132	20						BT.	40	40
A615	4	14'-2"	85							ST.	2	2
A616	6	12'-1"	109	1	5'-6"	1'-5"	5'-6"			BT.	3	3
A617	48	6'-0"	433							ST.	24	24
A618	6	9'-1"	82	1	4'-0"	1'-5"	4'-0"			BT.	3	3
A619	160	7'-3"	1742							ST.	80	80

MARK	NO.	LENGTH	WEIGHT	TYPE	A	B	C	D	E	SHAPE	LOCATION	
					ABUTMENT CONTD.						WEST ABUT.	EAST ABUT.
A620	16	24'-5"	587							ST.	8	8
A621	28	20'-11"	880							ST.	14	14
A622	4	12'-2"	73							ST.	2	2
A623	116	10'-9"	1,873	14	4'-7"	8"				BT.	58	58
A624	12	11'-1"	200	1	5'-0"	1'-5"	5'-0"			BT.	6	6
A801	86	5'-7"	1,282	21	3'-6"	1'-6½"	8½"			BT.	43	43
A901	20	10'-6"	714							ST.	10	10
A902	12	14'-7"	595							ST.	6	6
A903	24	22'-5"	1,829	8	20'-9"	1'-9"	1'-6"	10½"		BT.	12	12
A904	12	7'-3"	296	12	6'-0"					BT.	6	6
A1001	12	11'-0"	568							ST.	6	6
	TOTAL		44,134									
					PIER 1							
1P401	424	8'-8"	2,455	11	7'-8"					BT.		
1P402	12	9'-5" TO	3,178	1	4'-2" TO	1'-4"	4'-2" TO			BT.		
	SER.	10'-11"			4'-11"		4'-11"					
	39	INC. ½"										
1P403	592	10'-1"	3,988	1	4'-6"	1'-4"	4'-6"			BT.		
1P404	4	15'-9" TO	1,719	1	4'-2" TO	7'-8"	4'-2" TO			BT.		
	SER	17'-3"			4'-11"		4'-11"					
	OF 34	INC. ½"										
1P405	12	8'-1" TO	2,455	1	3'-6" TO	1'-4"	3'-6" TO			BT.		
	SER	9'-5"			4'-2"		4'-2"					
	35	INC ½"										
1P406	4	14'-5" TO	1,411	1	3'-6" TO	7'-8"	3'-6" TO			BT.		
	SER	15'-9"			4'-2"		4'-2"					
	35	INC ½"										
1P501	30	6'-11"	216	1	1'-6"	4'-2"	1'-6"			BT.		
1P601	10	22'-0"	330							ST.		
1P602	4	25'-0"	150							ST.		
1P603	4	12'-9"	77							ST.		
1P604	18	10'-2"	275	1	2'-5"	5'-8"	2'-5"			BT.		
1P801	24	30'-6"	1,954							ST.		
1P802	72	25'-0"	4,806							ST.		
1P803	14	15'-8"	586							ST.		
1P804	188	16'-1"	8,073	1	6'-3"	3'-11"	6'-3"			BT.		
1P805	4	13'-1" TO	4,294	1	4'-9 TO	3'-11"	4'-9 TO			BT.		
	SERIES	19'-1"			7'-9"		7'-9"					
	OF 25	INC. 3"										
1P806	4	13'-11 TO	2,442	1	5'-2" TO	3'-11"	5'-2" TO			BT.		
	SERIES	18'-9"			7'-7"		7'-7"					
	OF 14	INC. 4⅞										
1P807	32	13'-7"	1,161	1	5'-0"	3'-11"	5'-0"			BT.		
1P808	16	15'-10"	676	1	5'-3"	5'-8"	5'-3"			BT.		
1P1101	8	25'-6"	1,084							ST.		
1P1102	10	33'-6"	1,780							ST.		
1P1103	10	23'-0"	1,222							ST.		
1P1104	20	20'-6"	2,178							ST.		
1P1105	204	25'-0"	27,096							ST.		
1P1401	56	14'-8"	4,283	13	12'-6"	2'-7"				BT.		
1P1402	60	11'-8"	5,355	13	9'-6"	2'-7"				BT.		
1P1403	8	8'-1"	495							ST.		
1P1404	144	39'-0"	42,962							ST.		
1P1405	8	22'-9"	1,392							ST.		
1P1406	48	36'-0"	13,219							ST.		
1P1407	8	31'-7"	1,933							ST.		

BENDING DIAGRAMS



NOTES

SUFFICIENT ADDITIONAL REINFORCING STEEL SHALL BE PROVIDED FOR SAMPLING. RANDOM SAMPLES SHALL BE REPLACED IN THE STRUCTURES BY THE ADDITIONAL STEEL, SPLICED IN ACCORDANCE WITH 509.08.

BAR SIZE IS INDICATED IN THE BAR MARK. THE FIRST DIGIT WHERE THREE DIGITS ARE USED, AND THE FIRST TWO DIGITS WHERE FOUR ARE USED. INDICATE THE BAR SIZE NUMBER. FOR EXAMPLE, A700 IS A NO. 7 SIZE BAR AND A1014 IS A NO. 10 SIZE BAR.

23/24

ADACHE ASSOCIATES INC., ENGINEERS
CLEVELAND, OHIO 44142

DETROIT-ROCKY RIVER BRIDGE
REINFORCING STEEL LIST
BRIDGE NO. CUY-6A-0041
U.S.R. 6A OVER ROCKY RIVER
CUYAHOGA COUNTY
STA. 20+35.50 TO STA. 26+75.50

DESIGNED	DRAWN	CHECKED	REVIEWED	DATE	REVISED
	D.J.N.	T.M.J.	R.D.K.	12-29-77	

REINFORCING STEEL LIST

MARK	NO.	LENGTH	WEIGHT	TYPE	A	B	C	D	E	SHAPE	LOCATION
					PIER 1 CONT'D						
1P1408	12	45'-5"	4,169	22	39'-1"	7'-3"				BT.	
1P1409	8	39'-1"	2,392							ST.	
1P1410	20	44'-7"	6,821	22	38'-8"	6'-10"				BT.	
1P1411	20	41'-6"	6,350	22	36'-0"	6'-5"				BT.	
1P1412	20	32'-1"	4,909	22	27'-0"	6'-0"				BT.	
	TOTAL		169,886								
					PIER 2						
2P401	424	8'-8"	2,455	11	7'-8"					BT.	
2P402	12	9'-5" TO	3,178	1	4'-2" TO	1'-4"	4'-2" TO			BT.	
	SERIES	10'-11"			4'-11"		4'-11"				
	39	INC. 1/2"									
2P403	392	10'-1"	3,988	1	4'-6"	1'-4"	4'-6"			BT.	
2P404	4	15'-9" TO	1,719	1	4'-2" TO	7'-8"	4'-2" TO			BT.	
	SERIES	17'-3"			4'-11"		4'-11"				
	OF 34	INC. 1/2"									
2P405	12	8'-1" TO	2,455	1	3'-6" TO	1'-4"	3'-6" TO			BT.	
	SERIES	9'-5"			4'-2"		4'-2"				
	OF 35	INC. 1/2"									
2P406	4	14'-5" TO	1,411	1	3'-6" TO	7'-8"	3'-6" TO			BT.	
	SERIES	15'-9"			4'-2"		4'-2"				
	OF 35	INC. 1/2"									
2P501	30	6'-11"	216	1	1'-6"	4'-2"	1'-6"			BT.	
2P601	10	22'-0"	330							ST.	
2P602	4	25'-0"	150							ST.	
2P603	4	12'-9"	77							ST.	
2P604	18	10'-2"	275	1	2'-5"	5'-8"	2'-5"			BT.	
2P801	24	30'-6"	1,954							ST.	
2P802	72	25'-0"	4,806							ST.	
2P803	14	15'-8"	586							ST.	
2P804	188	16'-1"	8,073	1	6'-3"	3'-11"	6'-3"			BT.	
2P805	4	13'-1" TO	4,294	1	4'-9" TO	3'-11"	4'-9" TO			BT.	
	SERIES	19'-1"			7'-9"		7'-9"				
	OF 25	INC. 3"									
2P806	4	13'-11" TO	2,442	1	5'-2" TO	3'-11"	5'-2" TO			BT.	
	SERIES	18'-9"			7'-7"		7'-7"				
	OF 14	INC. 4 1/8"									
2P807	32	13'-7"	1,161	1	5'-0"	3'-11"	5'-0"			BT.	
2P808	16	15'-10"	676	1	5'-3"	5'-8"	5'-3"			BT.	
2P1101	8	25'-6"	1,084							ST.	
2P1102	10	33'-6"	1,780							ST.	
2P1103	10	23'-0"	1,222							ST.	
2P1104	20	20'-6"	2,178							ST.	
2P1105	204	25'-0"	27,096							ST.	
2P1401	56	14'-8"	6,283	13	12'-6"	2'-7"				BT.	
2P1402	60	11'-8"	5,355	13	9'-6"	2'-7"				BT.	
2P1403	8	8'-1"	495							ST.	
2P1404	144	39'-0"	42,962							ST.	
2P1405	8	22'-9"	1,392							ST.	
2P1406	48	36'-0"	13,219							ST.	
2P1407	8	31'-7"	1,933							ST.	
2P1408	12	45'-5"	4,169	22	39'-1	7'-3"				BT.	
2P1409	8	39'-1"	2,392							ST.	
2P1410	20	44'-7"	6,821	22	38'-8"	6'-10"				BT.	
2P1411	20	41'-6"	6,350	22	36'-0"	6'-5"				BT.	
2P1412	20	32'-1"	4,909	22	27'-0"	6'-0"				BT.	
	TOTAL		169,886								

MARK	NO.	LENGTH	WEIGHT	TYPE	A	B	C	D	E	SHAPE	LOCATION
					SUPERSTRUCTURE						
*S401	3,608	30'-0"	72,304							ST.	
*S402	290	31'-6"	6,102	12	31'-0"					BT.	
S403	236	19'-9"	3,114							ST.	
S601	2,332	30'-0"	105,080							ST.	
S602	106	17'-10"	2,839							ST.	
*S603	1174	3'-1"	5,437	1	1'-0"	1'-5"	1'-0"			BT.	
S604	1174	3'-5"	6,025	1	1'-0"	1'-9"	1'-0"			BT.	
S605	1174	8'-7"	15,135	14	3'-6"	8"				BT.	
*S606	1139	7'-10"	13,401							ST.	
*S607	1	7'-10" TO	401							ST.	
	SERIES	7'-5"									
	35	INC. 1/8"+									
*S701	1016	30'-0"	62,301							ST.	
*S702	2032	27'-0"	112,142							ST.	
S703	2032	40'-11"	169,944							ST.	
	SUBTOTAL		302,137								
		*	3,015								
	TOTAL		305,152	(PLAIN)							
	TOTAL		272,088	(EPOXY COATED)							

* EPOXY COATED BARS

* ADD FOR LIGHT POLE PILASTER REINF. 3,015 LBS.

MARK	NO.	LENGTH	WEIGHT	TYPE	A	B	C	D	E	SHAPE	LOCATION
					LIGHT POLE PILASTERS						
											TYPE A	TYPE B
L501	12	7'-3" TO	294	1	3'-3"	1'-0" TO	3'-3"			BT.	8 SERIES	4 SERIES
	SERIES	8'-4"				2'-1"					OF 3	OF 3
	OF 3	INC. 4 1/2										
L502	12	6'-5" TO	264	1	2'-10"	1'-0" TO	2'-10"			BT.	8 SERIES	4 SERIES
	SERIES	7'-6"				2'-1"					OF 3	OF 3
	OF 3	INC. 6 1/2										
L503	12	6'-11"	84	1	3'-3"	8"	3'-3"			BT.	8	4
L504	12	6'-1"	78	1	2'-10"	8"	2'-10"			BT.	8	4
L505	36	8'-7"	324	18	1'-0"	1'-10 1/2"	2'-2"	1'-2"		BT.	24	12
L601	80	7'-0"	841	12	6'-4"					BT.	80	
L602	12	8'-4"	150	12	7'-8"					BT.		12
L603	44	14'-10	980	12	14'-2"					BT.		44
	TOTAL		3,015									

MARK	NO.	LENGTH	WEIGHT	TYPE	A	B	C	D	E	SHAPE	LOCATION		
					RAILING *						WEST ABUTMENT	EAST ABUTMENT	SUPER-STRUCTURE
R501	288	15'-8"	4,706							ST.			288
R502	360	7'-2"	2,691							ST.			360
R503	24	13'-2"	330							ST.			24
R504	24	5'-10"	146							ST.	12	12	
R505	24	24'-5"	612							ST.	12	12	
	TOTAL		8,485										

* RAILING REINFORCING BARS SHALL BE INCLUDED WITH ITEM 517 FOR PAYMENT

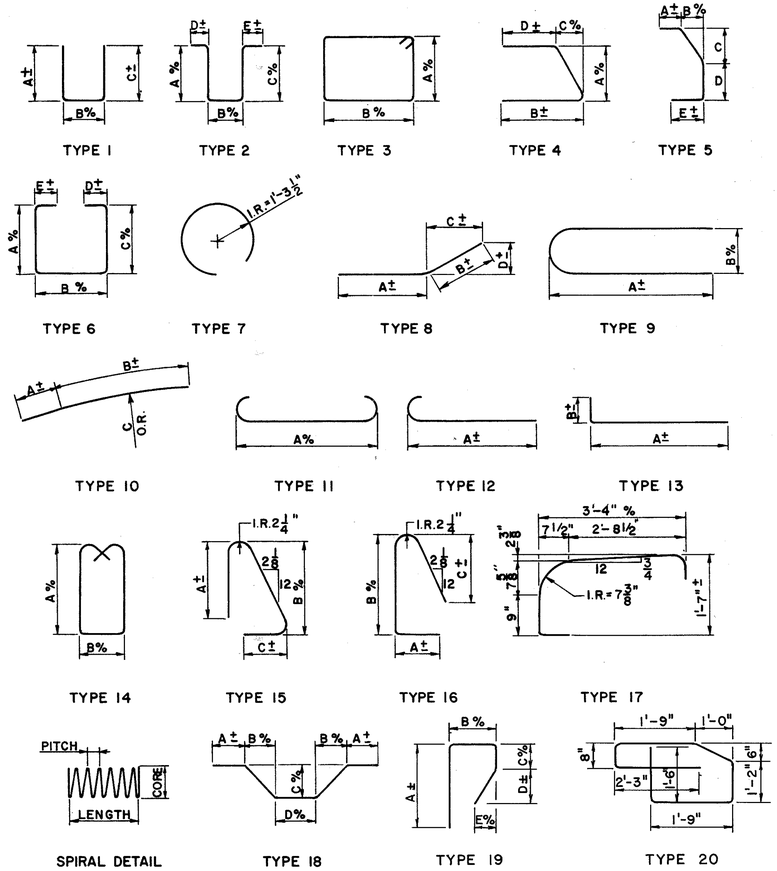
TENSION TESTS FOR MECHANICAL CONNECTORS (for No. 14S reinforcing bars)
One test specimen, made in the field, shall be provided for each 50 mechanical connections made. Test specimens shall be made by the men engaged in the work using the approved splicing procedure, with the No. 14S bars placed in the same relative position and under the same conditions as those represented by the specimens. Tension tests will be performed on the specimens in accordance with ASTM E8, using a gage length that spans the extremities of the sleeve.

F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

36/50

CUYAHOGA COUNTY
CUY.-6A-0.41

BENDING DIAGRAMS



NOTES

SUFFICIENT ADDITIONAL REINFORCING STEEL SHALL BE PROVIDED FOR SAMPLING. RANDOM SAMPLES SHALL BE REPLACED IN THE STRUCTURES BY THE ADDITIONAL STEEL, SPLICED IN ACCORDANCE WITH 509.08.

BAR SIZE IS INDICATED IN THE BAR MARK. THE FIRST DIGIT WHERE THREE DIGITS ARE USED, AND THE FIRST TWO DIGITS WHERE FOUR ARE USED. INDICATE THE BAR SIZE NUMBER. FOR EXAMPLE, A700 IS A NO. 7 SIZE BAR AND A1014 IS A NO. 10 SIZE BAR.

24/24

ADACHE ASSOCIATES INC., ENGINEERS
CLEVELAND, OHIO 44142

DETROIT-ROCKY RIVER BRIDGE
REINFORCING STEEL LIST
BRIDGE NO. CUY-6A-0041
U.S.R. 6A OVER ROCKY RIVER
CUYAHOGA COUNTY STA. 20+35.50 TO STA. 26+75.50

DESIGNED	DRAWN	CHECKED	REVIEWED	DATE	REVISED
	D.J.N.	T.M.J.	R.D.N. 12-29-77		7-18-78

WATERWORK GENERAL PLAN

0 50 100 200 300 400 500

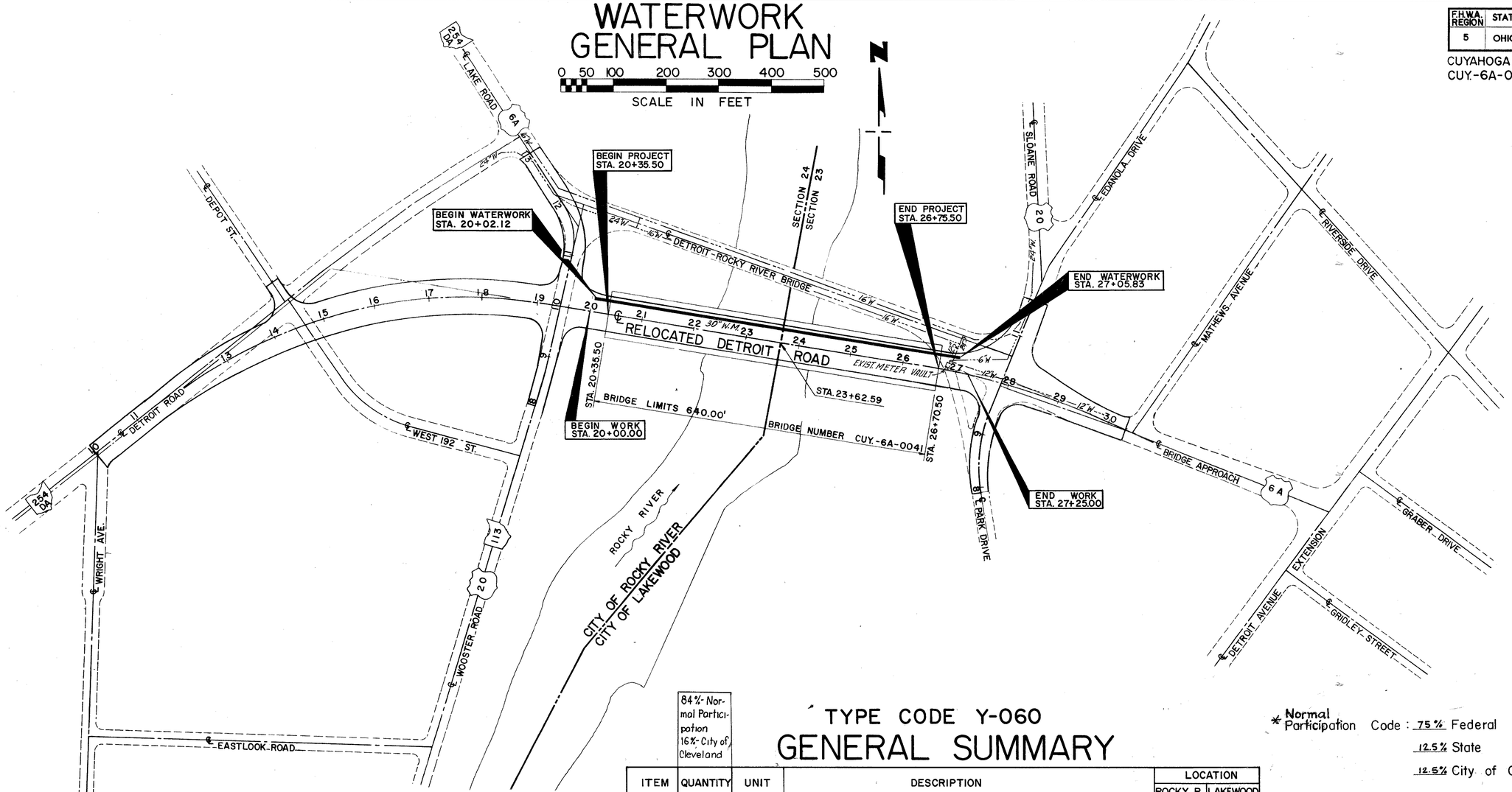
SCALE IN FEET

F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

37/50

1/12

CUYAHOGA COUNTY
CUY.-6A-0.41



INDEX OF SHEETS

84%- Normal Participation 16%- City of Cleveland

TYPE CODE Y-060
GENERAL SUMMARY

ITEM	QUANTITY	UNIT	DESCRIPTION	LOCATION	
				ROCKY R. SHT. 9	LAKEWOOD SHT. 10
SPECIAL	42 *	LIN. FT.	30" WATER MAIN PRESTRESSED CONCRETE CYLINDER PIPE AND FITTINGS	21	21
SPECIAL	664 *	LIN. FT.	30" O.D. x 0.50" WALL THICKNESS WATER MAIN STEEL PIPE ASTM A-53 GRADE "B" INCLUDING FITTINGS, COUPLINGS, SUPPORT BRACKETS AND APPURTENANCES COMPLETE	341	323
SPECIAL	1 *	EACH	METER VAULT ABANDON		1
SPECIAL	2 *	EACH	30" PLAIN ANCHOR	1	1

* Normal Participation Code : 75 % Federal
12.5 % State
12.5 % City of Cleveland

APPROVED JANUARY 12, 1978

DIRECTOR OF PUBLIC UTILITIES

COMMISSIONER OF WATER AND HEAT

DESIGN REVIEW ENGINEER

REVISIONS	

LOW SERVICE DISTRICT
DEPARTMENT OF PUBLIC UTILITIES
DIVISION OF WATER AND HEAT
CLEVELAND, OHIO

SUBJECT WATERWORK - GENERAL PLAN

DRAWN T.M.J. SCALE 1" = 100'
CHECKED R.W.H. DATE 7-19-77

No. SM 1966

WATERWORK NOTES

F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

CUYAHOGA COUNTY
CUY.-6A-0.41

38/50

2/12

SCOPE OF WORK

THE WORK CONTEMPLATED UNDER THIS CONTRACT COMPRISES THE FURNISHING AND INSTALLING OF EXTRA STRONG WELDED STEEL PIPE WITH ALL APPURTENANCES, COMPLETE IN ALL DETAILS, TESTED AND READY FOR OPERATION. THE CONTRACTOR SHALL DO ALL THE WORK AND FURNISH ALL THE LABOR AND MATERIALS NECESSARY FOR THE PROPER AND FINAL COMPLETION OF THIS CONTRACT IN THE MANNER AND UNDER THE CONDITIONS HEREIN SPECIFIED AND PROVIDED, AND IN ACCORDANCE WITH THE CONTRACT DRAWINGS. THIS LENGTH OF WATER MAIN SHALL BE CONNECTED TO THE RELOCATED WATER MAIN BY THE ADJOINING CONTRACT WORK. THE ENDS OF THE WATER MAIN SHALL BE MARKED AND PROTECTED UNTIL THE ADJOINING WATER WORK FOR THE 30" WATER MAIN IS STARTED.

DEFINITIONS

WHEREVER IN THESE SPECIFICATIONS OR IN OTHER CONTRACT DOCUMENTS THE FOLLOWING TERMS OR PRONOUNS IN PLACE OF THEM ARE USED, THE INTENT AND MEANING SHALL BE INTERPRETED AS FOLLOWS:

THE STATE

THE STATE IS THE STATE OF OHIO ACTING THROUGH ITS AUTHORIZED REPRESENTATIVE

THE ENGINEER

THE ENGINEER IS DIVISION DEPUTY DIRECTOR OR DIVISION ENGINEER, THE DIVISION CONSTRUCTION ENGINEER OR THE DIVISION MAINTENANCE ENGINEER OR THE PROJECT ENGINEER ASSIGNED TO ADMINISTER THE CONTRACT.

THE CITY

THE CITY IS THE DIRECTOR, DEPARTMENT OF PUBLIC UTILITIES OF THE CITY OF CLEVELAND.

STATUS OF CITY INSPECTOR

INSPECTORS AS DESIGNATED BY THE DIRECTOR OF PUBLIC UTILITIES SHALL BE AUTHORIZED TO INSPECT ALL WORK DONE AND MATERIALS FURNISHED. SUCH INSPECTION MAY EXTEND TO ALL OR ANY PART OF THE WATER-WORKS, AND TO THE PREPARATION OR MANUFACTURE OF THE MATERIALS TO BE USED IN THE WATERWORKS. THE CITY INSPECTORS AS DESIGNATED BY THE DIRECTOR OF PUBLIC UTILITIES SHALL MAKE WORK INSTRUCTIONS THROUGH THE PROJECT ENGINEER.

ACCESS TO WORK AND PLACE OF MANUFACTURE

THE CONTRACTOR SHALL NOTIFY THE ENGINEER AND DIRECTOR OF PUBLIC UTILITIES, AT LEAST SEVEN (7) DAYS PRIOR TO THE COMMENCEMENT OF THE MANUFACTURE OF ANY MATERIALS, OF THE TIME AND PLACE WHERE THE MANUFACTURE IS TO COMMENCE, IN ORDER THAT A REPRESENTATIVE OF THE ENGINEER AND DIRECTOR MAY BE PRESENT TO INSPECT THE MANUFACTURE. THE CONTRACTOR SHALL PROVIDE, WITHOUT CHARGE OR EXPENSE TO THE STATE AND CITY, ALL NECESSARY ASSISTANCE TO THE ENGINEER AND DIRECTOR WHEN REQUIRED FOR IN-SPECTION OR VERIFICATION OF WORK DONE.

DIMENSIONS, DETAILED DRAWINGS & ELEVATIONS

(A) - FIGURED DIMENSIONS ON DRAWINGS SHALL TAKE PRECEDENCE OVER MEASUREMENTS BY SCALE, AND DETAILED DRAWINGS ARE TO TAKE PRECEDENCE OVER GENERAL DRAWINGS AND SHALL BE CONSIDERED AS EXPLANATORY OF THEM AND NOT AS INDICATING EXTRA WORK. IF HOWEVER , ANY OF THE DETAILED DRAWINGS SHOW MORE ELABORATE OR EXPENSIVE WORK THAN IS SPECIFIED AND INDICATED BY THE CONTRACT DRAWINGS, NOTICE THEREOF MUST BE GIVEN TO THE ENGINEER BY THE CONTRACTOR WITHIN TEN (10) DAYS AFTER THE RECEIPT OF SUCH DETAILED DRAWINGS IN ORDER THAT THE DRAWINGS MAY BE AMENDED OR THE ADDITIONAL EXPENSE ON ACCOUNT OF SUCH WORK MAY BE ADJUSTED AND AUTHORIZED. IF THE ENGINEER DOES NOT RECEIVE SUCH NOTICE FROM THE CON-TRACTOR WITHIN THEN (10) DAYS AFTER DETAILED DRAWINGS HAVE BEEN RECEIVED BY HIM, IT IS HEREBY AGREED THAT THE CONTRACTOR ACCEPTS THE DRAWINGS AND WILL EXECUTE THEM WITHOUT CLAIM FOR EXTRA COMPEN-SATION.

FLOODS & FREEZING WEATHER

PROPER FACILITIES SHALL BE PROVIDED FOR PROTECTING THE WORK FROM DAMAGE BY RAIN OR FROST, AND WORK DONE IN FREEZING WEATHER SHALL BE DONE IN SUCH MANNER AS THE ENGINEER MAY APPROVE.

ADDITIONAL WORK

(A) - ATTENTION IS CALLED TO THE FACT THAT THE WORK OF THIS CONTRACT INCLUDES CERTAIN PERFORMANCES AS INCIDENTAL TO THE ITEMIZED REQUIREMENTS HEREOF AND THOUGH NOT EXCLUSIVE, ARE AS FOLLOWS: TO TEST THE INSTALLATION, SAND BACKFILL SHALL BE PLACED UNDER PROPOSED PAVEMENT FOR THE PERFORMANCES HEREIN DESCRIBED AND FOR OTHER INCIDENTAL PERFORMANCES OF LIKE NATURE. THE STATE WILL MAKE NO SPECIFIC OR SEPARATE PAYMENT OR ALLOWANCE, BUT THE COST THEREOF SHALL BE INCLUDED IN THE PRICES STIPULATED TO BE PAID FOR THE VARIOUS ITEMS OF THE WORK TO BE DONE UNDER THIS CONTRACT.

(B) - PRELIMINARY FLUSHING; ALL DIRT AND FOREIGN MATTER SHALL BE REMOVED FROM THE NEW WATER MAIN BY A THOROUGH FLUSHING OR BY OTHER APPROVED MEANS. THIS SHALL BE DONE AFTER THE PRESSURE TEST AND BEFORE BACKFILLING.

(C) - CHLORINATION: FOLLOWING PRELIMINARY FLUSHING, THE NEWLY LAID WATER PIPE SHALL BE CHLORINATED. THE PROCESS OF CHLORINATING, THE METHOD OF PROCEDURE, THE CHLORINATING AGENT, AND THE RATE OF APPLICATION SHALL BE DETERMINED BY THE ENGINEER. THE CITY WILL FURNISH THE NECESSARY TAPS AT THE ENDS OF THE WATER MAIN SECTIONS TO BE CHLORINATED. NO CHARGE WILL BE ASSESSED THE CONTRACTOR FOR ANY MATERIAL, LABOR, TOOLS, EQUIPMENT, AND INCIDENTALS FURNISHED BY THE CITY OF CLEVELAND, DIVISION OF WATER, FOR THE CHLORINATION AND THE SAMPLING OF THE WATER. THE CONTRACTOR SHALL FURNISH THE NECESSARY LABOR FOR EXCAVATING AND BACKFILLING WHICH WILL BE REQUIRED FOR THE IN-STALLATION OF TAPS FOR INJECTING THE CHLORINE SOLUTION, OPERATING PUMPS AND FLUSHING MAINS.

(D) - FINAL FLUSHING AND TEST: FOLLOWING CHLORINATION, ALL TREATED WATER SHALL BE THOROUGHLY FLUSHED FROM THE NEWLY LAID PIPE AT ITS EXTREMITIES UNTIL THE REPLACEMENT WATER THROUGHOUT ITS LENGTH SHALL, UPON TEST, BOTH CHEMICALLY AND BACTERIOLOGICALLY, BE PROVEN EQUAL TO THE WATER QUALITY SERVED THE PUBLIC FROM THE EXISTING WATER SUPPLY SYSTEM.

(E) - FOR THE PERFORMANCES DESCRIBED IN PARAGRAPHS A,B,C, AND D. THE STATE WILL MAKE NO SPECIFIC OR SEPARATE PAYMENT OR ALLOWANCES, BUT THE COST THEREOF SHALL BE INCLUDED IN THE PRICES STIPULATED TO BE PAID FOR EACH LINEAR FOOT OF PIPE FURNISHED AND INSTALLED. THE ENGINEER MAY INCORPORATE THE WORK PRESCRIBED IN PARAGRAPHS C AND D WITH THAT OF THE ADJOINING CONTRACT WATER WORK.

MAINTENANCE OF SERVICE AND CONNECTING RELOCATED MAINS

THE CONTRACTOR SHALL STRICTLY FOLLOW THE SEQUENCE OF CONSTRUCTION SHOWN ON THE PLANS. THE CONTRACTOR SHALL MAINTAIN ALL EXISTING WATER MAINS UNTIL THE NEW MAINS OR TEMPORARY WATER MAINS ARE READY FOR SERVICE.

THE CONTRACTOR SHALL TAKE SUITABLE PRECAUTIONS TO ASSURE MINIMUM INTERUPTION TO SERVICE BY HAND TUNNELING TO AVOID DAMAGING EXISTING WATER MAINS OR BY USING TEMPORARY OFFSETS TO MAINTAIN. SERVICE.

IN THE EVENT TEMPORARY OFFSETS OR WATER MAINS ARE USED, THE CONTRACTOR SHALL MAKE SUCH CONNECTIONS AT A TIME DESIGNATED BY THE CITY. PRIOR TO SHUTTING DOWN THE EXISTING MAINS, THE CONTRACTOR SHALL TAKE SUITABLE PRECAUTIONS TO ASSURE A MINIMUM INTERUPTION TO SERVICE, INCLUDING THE FOLLOWING:

1. PERFORM ALL NECESSARY EXCAVATION INCLUDING BELL HOLES EXPOSING THE EXISTING MAIN SUFFICIENTLY FOR THE OPERATION OF THE PIPE SAW BY THE CITY.
2. REMOVE THE CAP OR PLUG FROM THE END OF THE NEW MAIN.
3. SWAB THE INSIDE OF ALL PIPES, BENDS AND SLEEVES TO BE USED IN CONNECTION THOROUGHLY WITH A CHLORINE SOLUTION OF AT LEAST 100 P.P.M.
4. MAKE-UP AS MUCH OF THE CONNECTION AS POSSIBLE OUTSIDE THE DITCH TO ELIMINATE THE NEED FOR CAULKING MOST OF THE NECESSARY JOINTS DURING THE SHUTDOWN. BY CAREFUL MEASUREMENT ALL PIPE CUTS CAN BE MADE BY THE CONTRACTOR PRIOR TO SHUTTING DOWN.
5. HAVE SUFFICIENT MANPOWER AND EQUIPMENT ON THE SITE TO PERFORM THE OPERATION IN A MINIMUM OF TIME.

PAINTING

(A) - IT IS THE INTENTION OF THESE SPECIFICATIONS TO PROVIDE THAT ALL METAL WORK SUBJECT TO CORROSION SHALL BE SATISFACTORILY PROTECTED BY A DURABLE COATING OF PAINT OR OTHER APPROVED MATERIAL AND THAT ALL METAL SURFACES NOT BURIED IN EARTH, OR IN CONCRETE, SHALL BE LEFT CLEAN AND WELL PAINTED AT THE COMPLETION OF THE CONTRACT. UNLESS OTHERWISE SPECIFIED, THE PROTECTION SHALL BE AT LEAST THAT GIVEN BY THREE (3) COATS OF APPROVED PAINT, THE FIRST COAT IS TO BE APPLIED AT THE SHOP BEFORE THE METAL HAS RUSTED AND AFTER ALL GREASE, DIRT AND SCALE HAS BEEN REMOVED. BOLTS AND NUTS SHALL NOT BE SHOP COATED, BUT SHALL RECEIVE THREE (3) COATS OF APPROVED PAINT AFTER INSTALLATION.

(B) - ALL METAL WORK WHICH HAS NOT BEEN COATED BEFORE THE ARRIVAL ON THE JOB SHALL BE GIVEN A TEMPORARY PROTECTIVE COATING OF SUCH A NATURE, AS TO PERMIT THE READY ADHERENCE OF FUTURE COATINGS. THE TEMPORARY COATING SHALL BE A GOOD GRADE ASPHALTIC PAINT OR OTHER APPROVED MATERIAL. THIS TEM-PORARY PROTECTION SHALL APPLY PARTICULARLY TO THE FOLLOWING MATERIAL, AND ELSEWHERE WHEN IN THE OPINION OF THE ENGINEER, SUCH PROTECTION IS NECESSARY.

DRESSER TYPE COUPLINGS
VICTAULIC TYPE COUPLINGS
VALVE BOXES AND COVERS
TEST STATION BOXES AND COVERS

(C) - ALL SURFACES OF METAL WHICH WILL BE IN CONTACT AFTER ASSEMBLING SHALL BE PAINTED, AT LEAST ONE COAT, BEFORE ASSEMBLING. THE FINAL COAT OF PAINT ON ALL EXPOSED WORK SHALL BE GIVEN SHORTLY BEFORE THE COMPLETION OF THE CONTRACT.

(D) - WHERE PAINTING CLAUSES APPEAR HEREINAFTER, THEY SHALL TAKE PRECEDENCE OVER THIS SECTION, EXCEPT THAT TEMPORARY PROTECTION HEREIN DESCRIBED MAY BE REQUIRED.

(E) - ALL OF THIS WORK SHALL BE INCLUDED IN THE PRICE BID FOR THE PARTICULAR ITEM REQUIRING THE PAINTING.

TESTS, INSPECTION AND REPORTS

NOT WITHSTANDING THE REQUIREMENTS OF ANY OTHER PROVISIONS OF THESE SPECIFICATIONS, THE CONTRACTOR SHALL ARRANGE FOR AND PAY ALL COSTS INVOLVED FOR SHOP INSPECTION OF ALL MATERIALS FURNISHED, MANUFACTURE OF ALL PIPE, VALVES, FITTINGS, ETC., FIELD AND SHOP WELDS AND WELDING, AND FURNISH TO THE STATE AND THE CITY COPIES OF ALL SHOP, FABRICATION, MANUFACTURE AND OTHER RELATED INSPECTION REPORTS OF MATERIALS FURNISHED. THIS INSPECTION SHALL BE DONE BY A RECOGNIZED INSPECTION LABORATORY APPROVED BY THE CITY.

IN THE CASE OF ANY ITEM NOT SPECIFICALLY MENTIONED IN THE "WATERWORK NOTES", THE STATE OF OHIO DEPARTMENT OF TRANSPORTATION "CONSTRUCTION AND MATERIAL SPECIFICATIONS - JAN. 1, 1977" SHALL GOVERN.

WEIGHTS, MEASURES AND PLANIMETER

(A) - TO AID THE DIRECTOR IN DETERMINING ALL QUANTITIES OF METAL WORK, CAST IRON PIPE WORK AND OTHER MATERIALS TO BE PAID FOR UNDER THE UNIT PRICE ITEMS, THE CONTRACTOR SHALL, WHENEVER SO REQUESTED, PROVIDE SCALES, EQUIPMENT AND ASSISTANCE FOR WEIGHING OR FOR MEASURING ANY OF THE MATERIALS.

(B) - IT IS UNDERSTOOD AND AGREED THAT A "TON" SHALL MEAN THE SHORT TON OF TWO THOUSAND (2,000) POUNDS.

(C) - FOR ESTIMATING QUANTITIES IN WHICH COMPUTATION OF AREAS BY GEOMETRIC METHODS WOULD BE COMPARATIVELY LABORIOUS, IT IS AGREED THAT THE PLANIMETER SHALL BE CONSIDERED AN INSTRUMENT OF PRECISION ADAPTED TO THE MEASUREMENT OF SUCH AREAS.

(D) - WEIGHTS AND MEASURES OF QUANTITY FOR PAYMENT WILL BE THE ACTUAL WEIGHT OR ACTUAL MEASURE, AND NO SPECIAL OR TRADE OR SO-TERMED CUSTOMARY ALLOWANCES WILL BE MADE.

APPROVED JANUARY 12, 1978

William J. Swegert
DESIGN REVIEW ENGINEER

REVISIONS	

LOW SERVICE DISTRICT

DEPARTMENT OF PUBLIC UTILITIES
DIVISION OF WATER AND HEAT
CLEVELAND, OHIO

SUBJECT WATERWORK NOTES

DRAWN G.A.D.	SCALE NONE	No. SM 1967
CHECKED R.W.H.	DATE 7-19-77	

WATERWORK NOTES

FHWA REGION	STATE	PROJECT	
5	OHIO		

39
50

CUYAHOGA COUNTY
CUY.-6A-0.41

3
12

WORK TO BE DONE BY THE CITY

(A) - THE CITY WATER DEPARTMENT WILL MAKE ALL CHANGES REQUIRED, INCLUDING TAPPING, IN THE LOCATION OF EXISTING HOUSE SERVICE CONNECTIONS AND METERS BUT THE CONTRACTOR SHALL FURNISH ALL MATERIALS. NO CHARGE WILL BE ASSESSED THE CONTRACTOR FOR LABOR, TOOLS, EQUIPMENT AND INCIDENTALS FURNISHED BY THE CITY OF CLEVELAND DIVISION OF WATER.
(B) - THE CITY WATER DEPARTMENT WILL INSTALL ALL TAPPING SLEEVES AND VALVES. BUT THE CONTRACTOR SHALL SUPPLY THE TAPPING SLEEVES AND VALVES AND LEAD. THE CONTRACTOR SHALL FURNISH ALL AIR COMPRESSORS REQUIRED FOR THE WORK AND DO ALL OTHER WORK NECESSARY FOR THE INSTALLATION. NO CHARGE WILL BE ASSESSED THE CONTRACTOR FOR THE LABOR AND INSTALLATION COST INCIDENTAL TO THE WORK PERFORMED BY THE CITY OF CLEVELAND DIVISION OF WATER.
(C) - IN LOCATIONS WHERE BRANCH SLEEVES AND VALVES CANNOT BE INSTALLED, THE CONTRACTOR WILL BE REQUIRED TO CUT IN TEES AND SLEEVE IN THE REMAINDER OF THE CUT SECTION OF THE EXISTING MAIN. TO SPEED UP THIS OPERATION. IT IS CALLED TO THE CONTRACTOR'S ATTENTION THAT THE WATER DEPARTMENT HAS ON HAND AT HARVARD YARDS MOTOR OPERATED PIPE CUTTERS WHICH ARE AVAILABLE FOR CUTTING PIPE BY CITY FORCES AT THE FOLLOWING RATES. THESE PRICES INCLUDE COST OF LABOR, USE OF PIPE CUTTING MACHINE, AND TRUCK. THE CONTRACTOR SHALL DO ALL NECESSARY EXCAVATION, BACKFILLING AND REPAVING AND ALL AIR COMPRESSOR EQUIPMENT SHALL BE FURNISHED BY THE CONTRACTOR.

SIZE OF PIPE	COST PER CUT
6", 8", 12", 16", 24"	$50.00

CHANGES IN WATER PIPE

(A)- IN SUCH LOCATIONS AS MAY BE INDICATED ON THE CONTRACT DRAWINGS OR AS ORDERED BY THE ENGINEER TO CHANGE THE LOCATION OF HOUSE CONNECTIONS, SUCH CHANGES WILL BE MADE AS WORK TO BE DONE BY THE CITY. THE CONTRACTOR SHALL NOTIFY THE CITY IN AMPLE TIME TO PERMIT THE CITY TO MAKE SUCH CHANGES AND AVOID UNNECESSARY DELAY IN THE COMPLETION OF THE WORK. THE CONTRACTOR SHALL ALSO COOPERATE WITH THE CITY IN MAKING THESE CHANGES AND SHALL DO ALL EXCAVATING, BACKFILLING, SEEDING, SODDING, REPAVING AND FURNISH ALL MATERIALS AS MAY BE REQUIRED. PAYMENT FOR THE WORK PREFORMED BY THE CONTRACTOR WILL BE AT THE UNIT PRICE BID FOR THE APPROPRIATE SERVICE CONNECTIONS. SEE WORK TO BE DONE BY THE CITY.

(B) - WHEREVER IT BECOMES NECESSARY, IN THE OPINION OF THE ENGINEER, TO CHANGE THE LOCATION OR ELEVATION OF WATER MAINS AND HYDRANTS AND WHERE CONNECTIONS ARE TO BE MADE BETWEEN EXISTING DISTRIBUTION MAINS AND WATER MAINS UNDER THIS CONTRACT, THE CONTRACTOR SHALL REMOVE AND DISPOSE OF ALL EXISTING WATER LINE MATERIALS REQUIRED TO MAKE THE CONNECTION, AND SHALL FURNISH AND INSTALL COMPLETE, ALL THE CAST IRON OR DUCTILE IRON PIPE, PRESTRESSED CONCRETE CYLINDER PIPE, FITTINGS AND VALVES TO MAKE THE CONNECTIONS INDICATED, EXCEPT TAPPING SLEEVES AND VALVES WHICH WILL BE INSTALLED BY THE CITY. THE CONTRACTOR SHALL ALSO FURNISH ALL NECESSARY LABOR, MATERIALS, TOOLS, AND EQUIPMENT AND MAKE THE EXCAVATION, BACKFILL AND REPAVING FOR SUCH CONNECTIONS. PAYMENT FOR THIS WILL BE INCLUDED IN PRICE BID UNDER APPROPRIATE ITEM FOR SIZE OF WATER MAIN OR CONNECTION TO BE INSTALLED. ALL PIPES, VALVES AND APPURTENANCES REMOVED SHALL BECOME THE PROPERTY OF THE CONTRACTOR. (SEE WORK TO BE DONE BY THE CITY).

EXCAVATION

(A) - THE CONTRACTOR SHALL REMOVE ALL EXISTING STRUCTURES, ROADWAYS, DRIVEWAYS AND OTHER SIMILAR MATERIALS AND MAKE TO THE LINE AND GRADES GIVEN, ALL EXCAVATION NECESSARY FOR THE PROPER CONSTRUCTION OF THE WATER MAIN, PIPE CONNECTIONS AND APPURTENANT STRUCTURES, INCLUDING TUNNEL AND SHAFT EXCAVATION. THE EXCAVATION SHALL INCLUDE THE REMOVAL, HANDLING, REHANDLING AND DISPOSAL OF MATERIALS ENCOUNTERED IN THE WORK AND SHALL INCLUDE ALL PUMPING, BAILING, DRAINING, SHEETING AND BRACING. MOREOVER, THE CONTRACTOR MUST ASSUME ALL RESPONSIBILITY FOR ANY ADDED EXPENSE OR OTHER LIABILITY WHICH MAY ARISE BY MEANS OF QUICKSAND, OBSTACLES OR CONDITIONS FORESEEN OR UNFORESEEN AND ENCOUNTERED IN THE WORK OF THIS CONTRACT.

(B) - TRENCHES SHALL IN EVERY CASE BE OF SUFFICIENT WIDTH TO PERMIT SOLID PACKING OF REFILL UNDER AND AROUND PIPES, AND SATISFACTORY CONSTRUCTION OF ALL APPURTENANCES AND FOR SUCH SHEETING AND BRACING, PUMPING AND DRAINING AS MAY BE NECESSARY.
(C) - THE TRENCH SHALL BE DUG TO THE ALIGNMENT AND DEPTH REQUIRED AND ONLY SO FAR IN ADVANCE OF PIPE LAYING AS THE ENGINEER SHALL PERMIT. THE TRENCH SHALL BE SO BRACED AND DRAINED THAT WORKMEN MAY WORK THEREIN SAFELY AND EFFICIENTLY. IT IS ESSENTIAL THAT THE DISCHARGE FROM

(D) - THE TRENCH WIDTH MAY VARY WITH AND DEPEND UPON THE DEPTH OF TRENCH AND THE NATURE OF THE EXCAVATED MATERIAL ENCOUNTERED, BUT IN ANY CASE SHALL BE OF AMPLE WIDTH TO PERMIT THE PIPE TO BE LAID AND JOINTED PROPERLY AND OF THE BACKFILL TO BE PLACED AND COMPACTED PROPERLY. THE MINIMUM WIDTH OF UNSHEETED TRENCH SHALL BE EIGHTEEN (18) INCHES AND FOR PIPE TEN (10) INCHES OR LARGER, AT LEAST TWELVE (12) INCHES LARGER THAN THE OUTSIDE DIAMETER OF THE PIPE FOR CONCRETE PIPE AND EIGHTEEN(18) INCHES LARGER THAN THE OUTSIDE DIAMETER OF THE PIPE FOR CAST IRON AND STEEL PIPE. EXCEPT BY CONSENT OF THE ENGINEER, THE MAXIMUM CLEAR WIDTH OF TRENCH SHALL BE NOT MORE THAN TWO (2) FEET GREATER THAN THE OUTSIDE PIPE DIAMETER. WHEN SHEETING AND BRACING IS USED, THE TRENCH WIDTH SHALL BE INCREASED ACCORDINGLY.

(E) - THE TRENCH, UNLESS OTHERWISE SPECIFIED, SHALL HAVE A FLAT BOTTOM CONFORMING TO THE GRADE TO WHICH THE PIPE IS TO BE LAID. THE PIPE SHALL BE LAID UPON SOUND SOIL CUT TRUE AND EVEN, SO THAT THE BARREL OF THE PIPE WILL HAVE A BEARING FOR ITS FULL LENGTH.
(F) - ANY PART OF THE TRENCH EXCAVATED BELOW GRADE SHALL BE CORRECTED WITH APPROVED MATERIAL, THOROUGHLY COMPACTED.
(G) - WHEN THE UNCOVERED TRENCH BOTTOM AT SUBGRADE IS SOFT AND IN THE OPINION OF THE ENGINEER CANNOT SUPPORT THE PIPE, A FURTHER DEPTH AND OR WIDTH SHALL BE EXCAVATED AND REFILLED TO PIPE FOUNDATION GRADE AS REQUIRED UNDER (F), OR OTHER APPROVED MEANS SHALL BE ADOPTED TO ASSURE A FIRM FOUNDATION FOR THE PIPE.
(H) - LEDGE ROCK, BOULDERS, LARGE STONES, AND SHALE SHALL BE REMOVED TO PROVIDE A CLEARANCE OF AT LEAST SIX (6) INCHES BELOW ALL PARTS OF THE PIPE, VALVES, OR FITTINGS, AND TO A CLEAR WIDTH OF SIX (6) INCHES ON EACH SIDE OF ALL CONCRETE PIPE AND NINE (9) INCHES ON EACH SIDE OF ALL CAST IRON AND STEEL PIPE.
(I) - EXCAVATION BELOW SUBGRADE IN ROCK, SHALE OR IN BOULDERS SHALL BE REFILLED TO SUBGRADE WITH APPROVED MATERIAL, THOROUGHLY COMPACTED.

(J) - BELL HOLES OF AMPLE DIMENSIONS SHALL BE DUG IN EARTH TRENCHES AT EACH JOINT TO PERMIT THE JOINTING TO BE MADE PROPERLY. ADEQUATE CLEARANCE FOR PROPERLY JOINTING PIPE LAID IN ROCK SHALL BE PROVIDED AT BELL HOLES.
(K) - THE USE OF EXCAVATING MACHINERY WILL BE PERMITTED EXCEPT IN PLACES WHERE OPERATION OF SAME WILL CAUSE DAMAGE TO TREES, BUILDINGS, OR EXISTING STRUCTURES ABOVE OR BELOW GROUND, IN WHICH CASE HAND METHODS SHALL BE EMPLOYED.
(L) - TREES, FENCES, POLES AND ALL OTHER PROPERTY SHALL BE PROTECTED UNLESS THEIR REMOVAL IS AUTHORIZED. ANY PROPERTY DAMAGED SHALL BE SATISFACTORILY RESTORED BY THE CONTRACTOR.
(M) - HYDRANTS UNDER PRESSURE, VALVE PIT COVERS, VALVE BOXES, CURB STOP BOXES, FIRE OR POLICE CALL BOXES, OR OTHER UTILITY CONTROLS SHALL BE LEFT UNOBSTRUCTED AND ACCESSIBLE DURING THE CONSTRUCTION PERIOD.
(N) - THE CONTRACTOR SHALL MAINTAIN ALL EXCAVATIONS IN GOOD ORDER DURING THE CONSTRUCTION, SO AS NOT TO HINDER OR INJURE THE PIPE LAYING, MASONRY OR OTHER WORK, HE SHALL TAKE ALL REASONABLE PRECAUTIONS TO PREVENT MOVEMENT OF THE SIDES OF SUCH EXCAVATION, AND SHALL REMOVE AT HIS OWN EXPENSE ANY MATERIAL SLIDING INTO THE EXCAVATION.

REMOVAL OF EXCAVATED MATERIAL

THIS ITEM SHALL BE AS SPECIFIED IN SECTION 203.05 OF THE STATE OF OHIO, DEPARTMENT OF TRANSPORTATION CONSTRUCTION AND MATERIAL SPECIFICATIONS DATED JANUARY 1, 197 .

LAYING PIPE

(A) - PROPER IMPLEMENTS, TOOLS, AND FACILITIES, SATISFACTORY TO THE ENGINEER SHALL BE PROVIDED AND USED BY THE CONTRACTOR FOR THE SAFE AND CONVENIENT PROSECUTION OF THE WORK. ALL PIPE, FITTINGS AND VALVES SHALL BE CAREFULLY LOWERED INTO THE TRENCH OR BRIDGE STRUCTURE PIECE BY PIECE BY MEANS OF DERRICK, PROPER SLINGS, AND OTHER SUITABLE TOOLS OR EQUIPMENT, IN SUCH MANNER AS TO PREVENT DAMAGE TO PIPE OR COATING. UNDER NO CIRCUMSTANDES SHALL PIPE OR ACCESSORIES BE DROPPED OR DUMPED INTO THE TRENCH OR BUMPED INTO THE STRUCTURE. IF ANY DEFECTIVE PIECE IS DISCOVERED WHILE PIPE IS SUSPENDED FOR AFTER BEING LAID, A NEW PIECE SHALL BE FURNISHED AND INSTALLED BY THE CONTRACTOR AT THE SITE OF THE WORK.
(B) - ALL FOREIGN MATTER OR DIRT SHALL BE REMOVED FROM THE INSIDE OF THE PIPE BEFORE IT IS LOWERED INTO ITS POSITION IN THE TRENCH, OR STRUCTURE AND IT SHALL BE KEPT CLEAN BY APPROVED MEANS DURING AND AFTER LAYING.
(C) - AT TIMES WHEN PIPE LAYING IS NOT IN PROGRESS, THE OPEN ENDS OF PIPE SHALL BE CLOSED BY APPROVED MEANS, AND NO TRENCH WATER OR RAIN WATER SHALL BE PERMITTED TO ENTER THE PIPE. NO PIPE SHALL BE LAID IN WATER OR WHEN THE TRENCH CONDITIONS OR THE WEATHER IS UNSUITABLE FOR SUCH WORK, EXCEPT BY PERMISSION OF THE ENGINEER.

(D) -WHEREVER NECESSARY TO DEFLECT PIPE FROM A STRAIGHT LINE, EITHER IN THE VERTICAL OR HORIZONTAL PLACE TO AVOID OBSTRUCTIONS TO PLUMB STEMS, OR FOR OTHER REASONS. THE DEGREE OF DEFLECTION SHALL BE APPROVED BY THE ENGINEER.

(E) - BEFORE LAYING CAST IRON, DUCTILE IRON OR STEEL PIPE ALL LUMPS, BLISTERS AND EXCESS COAL TAR COATING SHALL BE REMOVED FROM THE BELL AND SPIGOT ENDS OF EACH PIPE, THE PIPE ENDS SHALL THEN BE KEPT CLEAN UNTIL JOINTS ARE MADE.
(F) - PREPARATION OF PIPE ENDS FOR STEEL PIPE SHALL BE IN ACCORDANCE WITH THE A.W.W.A.SPECIFICATIONS C 201-66 AND C 202-64 OR LATEST REVISIONS THEREOF, FOR ELECTRIC FUSION WELDED STEEL WATER PIPE.
(G) - BEFORE LAYING CONCRETE PIPE, THE PIPE ENDS SHALL BE MADE SMOOTH WITH EMERY CLOTH, FILE OF OTHER APPROVED MEANS, WIRE BRUSHED AND WIPED UNTIL CLEAN AND DRY, PIPE ENDS SHALL BE KEPT CLEAN UNTIL JOINTS ARE MADE. AFTER CLEANING AND DRYING, ALL CONTACT SURFACES OF THE GASKETS AND STEEL JOINT RINGS SHALL BE COATED WITH AN APPROVED FLAX SOAP BEFORE ENTERING THE SPIGOT AND INTO THE SOCKET. IMMEDIATELY AFTER THE JOINT IS PULLED TOGETHER THE PIPE SHALL BE BLOCKED WITH WOOD BLOCKING. A SURCINGLE SHALL BE INSTALLED AROUND THE JOINT AND PIPE SHALL BE SECURED THERE WITH EARTH OR SAND AS REQUIRED. CAREFULLY TAMPED UNDER AND ON EACH SIDE OF IT UP TO THE SPRING LINE OF PIPE INCLUDING THE BELL HOLES. ALL BLOCKING SHALL BE REMOVED WHEN BACKFILL HAS REACHED THE SPRING LINE OF PIPE.
(H) - (1) - BLOCKING: IF ORDERED BY THE DIRECTOR, PIPE SHALL BE LAID ON WOOD BLOCKING AND HELD IN CORRECT ALIGNMENT BY WOOD WEDGES PLACED TRANSVERSELY TO THE LINE OF PIPE. BLOCKING AND WEDGES SHALL BE CUT FROM SOUND LUMBER.

(2) - DIMENSION SCHEDULE: BLOCKING AND WEDGES SHALL VARY IN SIZE WITH THE PIPE DIAMETER AND THE NATURE OF THE FOUNDATION MATERIAL AND THE SIZES SHALL CONFORM TO THE FOLLOWING SCHEDULE OF DIMENSIONS:

SIZE OF PIPE	BLOCKING	WEDGES
6" AND 8"	2" x 10" x 24"	4" x 4" x 10"
12", AND 16"	2" x 20" x 30"	4" x 4" x 10"
24" AND 30"	3" x 20" x 36"	4" x 4" x 12"

APPROVED JANUARY 12, 1978

William Rheiner
DESIGN REVIEW ENGINEER

REVISIONS	

LOW SERVICE DISTRICT

DEPARTMENT OF PUBLIC UTILITIES
DIVISION OF WATER AND HEAT
CLEVELAND, OHIO

SUBJECT WATERWORK NOTES

DRAWN G.A.D. | SCALE NONE:
CHECKED R.W.H. | DATE 7-19-77 | No. SM 1968

WATERWORK NOTES

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(3) - NUMBER OF BLOCKS: PIPE 12 FEET LONG SHALL BE SUPPORTED ON TWO BLOCKS WITH THE CENTER OF EACH BLOCK PLACED 30 INCHES FROM THE JOINT. PIPE 16 AND/OR 18 FEET LONG SHALL BE SUPPORTED BY THREE BLOCKS AND PIPE 20 FEET LONG BY FOUR BLOCKS. THE BLOCKS IN EACH INSTANCE BEING PLACED 30 INCHES FROM THE JOINT.

FLOATING

THE CONTRACTOR SHALL TAKE EVERY PRECAUTION AGAINST THE FLOATING OF THE PIPE DUE TO WATER COMING INTO THE TRENCH, OR THROUGH CAVING IN, FLUSHING OR PUDDLING. IN CASE OF SUCH FLOATING THE CONTRACTOR SHALL REPLACE THE PIPE AT HIS OWN EXPENSE, AND MAKE WHOLLY GOOD ANY INJURY OR DAMAGE WHICH MAY HAVE RESULTED.

TESTING MAINS

(A) - ALL PIPES, VALVES, FITTINGS, ETC., SHALL BE LAID IN SUCH A MANNER AS TO LEAVE ALL JOINTS WATERTIGHT. AFTER THE PIPE IS LAID, AND BEFORE BACKFILLING IS PLACED AROUND THE JOINTS, SUCH LENGTHS OF THE WATER MAIN AS THE ENGINEER MAY DETERMINE SHALL BE TESTED UNDER A HYDROSTATIC PRESSURE OF SEVENTY-FIVE (75) POUNDS PER SQUARE INCH ABOVE THE STATIC PRESSURE, BUT NOWHERE LESS THAN 200 POUNDS PER SQUARE INCH.
(B) - THE TEST SHALL BE UNDER THE DIRECTION OF THE ENGINEER AND DIRECTOR OF PUBLIC UTILITIES OR HIS DESIGNATE. THE CONTRACTOR MAY OBTAIN WATER FOR TESTING BY OBSERVING THE RULES AND REGULATIONS ENFORCED IN THE MUNICIPALITIES OR TOWNSHIPS IN WHICH THE WORK IS BEING DONE. THE CITY WILL FURNISH A PRESSURE GAGE FOR MEASURING THE PRESSURE ON THE WATER MAIN, BUT THE CONTRACTOR SHALL FURNISH A SUITABLE PUMP, PIPES, TEST HEADS AND ALL APPLIANCES, LABOR, FUEL, AND OTHER APPURTENANCES NECESSARY TO MAKE THESE TESTS.
(C) - THE TEST PRESSURE SHALL BE MAINTAINED FOR A SUFFICIENT LENGTH OF TIME TO ALLOW FOR A THOROUGH EXAMINATION OF JOINTS AND ELIMINATION OF LEAKAGE WHERE NECESSARY. THE PIPE LINES SHALL BE MADE ABSOLUTELY TIGHT UNDER THE TEST PRESSURE.
(D) - AFTER A SECTION OF THE WATER MAIN HAS BEEN TESTED, THE CONTRACTOR SHALL DRAIN SAME. IN CASE THE DRAINS ARE CONNECTED TO VALVE OR DRAIN VAULTS, THEN THE CONTRACTOR SHALL, WITHIN A REASONABLE TIME AFTER THE TEST HAS BEEN COMPLETED, PUMP ALL WATER OUT OF THE VAULTS.
(E) - IN COLD WEATHER, IMMEDIATELY AFTER TESTING A SECTION OF THE WATER MAIN, THE CONTRACTOR IS TO OPEN ALL VALVES, AIR COCKS, BYPASSES AND DRAINS AND PROPERLY DRAIN BONNETS OF ALL VALVES IN THE SECTION OF THE WATER MAIN, AND TAKE ALL OTHER PRECAUTIONS NECESSARY TO PREVENT INJURY TO WATER MAIN AND APPURTENANCES DUE TO FREEZING.
(F) - AS AN ALTERNATE FOR TESTING CONCRETE AND STEEL MAINS OTHER THAN BY THE PRECEDING METHOD, THE CONTRACTOR MAY CHOOSE THE FOLLOWING PRECEDURE:
THE WATER MAIN SHALL BE TESTED UNDER THE SAME HYDROSTATIC PRESSURE AS PREVIOUSLY NOTED. THE TEST PRESSURE SHALL BE MAINTAINED FOR A PERIOD OF TWO (2) HOURS BY PUMPING ADDITIONAL WATER INTO THE MAIN. IF NECESSARY. THE QUANTITY OF WATER THUS PUMPED INTO THE MAIN MULTIPLIED BY TWELVE (12) SHALL BE TAKEN AS THE LEAKAGE PER TWENTY-FOUR (24) HOURS.
(G) - THE PERMITTED LEAKAGE SHALL NOT EXCEED A RATE OF SEVENTY-FIVE (75) GALLONS PER TWENTY-FOUR (24) HOURS PER MILE OF PIPE PER INCH OF NOMINAL DIAMETER.
(H) - IN CALCULATING LEAKAGE, THE DIRECTOR WILL MAKE ALLOWANCE FOR ANY LEAKAGE AT THE VALVES, THE REMOVABLE BULKHEADS, ETC.

(I) - IN USING THIS METHOD OF TESTING, THE CONTRACTOR MAY BACKFILL THE PIPE EXCEPT AT LEAD JOINTS, FLANGED JOINTS, VICTAULIC COUPLINGS, AND DRAIN CONNECTION IMMEDIATELY FOLLOWING THE LAYING AND BEFORE THE ACTUAL TEST HAS BEEN MADE. IN CASE THE LEAKAGE EXCEEDS THE PERMISSIBLE AMOUNT MENTIONED ABOVE, THE CONTRACTOR SHALL FIND THE LEAK AND MAKE THE JOINTS TIGHT. THE CONTRACTOR SHALL FURNISH SUITABLE MEANS FOR DETERMINING THE QUANTITY OF WATER LOST BY LEAKAGE DURING THE TEST.
(J) - IN ORDER TO BE ABLE TO MAKE PROPER ALLOWANCE FOR LEAKAGE AT VALVES, ETC., PREVIOUSLY NOTED, ONLY SUCH SECTIONS OF WATER MAIN MAY BE SELECTED FOR TEST AS WILL HAVE SUCH VALVES, REMOVABLE BULKHEADS, ETC., ACCESSIBLE.
(K) - THE EVALUATION OF ACTUAL LEAKAGE TO STANDARD PRESSURE (150#)LEAKAGE IS CALCULATED BY THE APPLICATION OF THE RATIO DETERMINED FROM THE SQUARE ROOT OF RESPECTIVE PRESSURES, OTHER FACTORS BEING EQUAL.
(L) - PRESSURE TO BE USED FOR BOTH DESIGN AND TESTING SHALL BE MEASURED FROM ELEVATION 846 FOR RELOCATED 30" WATER MAIN.

CLOSING VALVES

THE CLOSING OF ALL GATE VALVES ON EXISTING MAINS FOR MAKING CONNECTIONS, TESTS, OR FOR ANY OTHER CAUSE SHALL BE DONE BY THE CITY AND SUFFICIENT NOTICE SHALL BE GIVEN TO THE CITY, BY THE CONTRACTOR, SO THAT THE WORK MAY BE DONE WITH A MINIMUM OF INCONVENIENCE TO THE PUBLIC AND DELAY TO THE CONTRACTOR.

EXISTING STRUCTURES REMOVED

THIS WORK SHALL CONSIST OF THE ENTIRE REMOVAL, DISPOSAL AND BACKFILLING OF ALL WATER MANHOLES, DRAIN VAULTS, FIRE VAULTS, METER VAULTS AND STRUCTURES, WHICH ARE NOT PERMITTED TO REMAIN, EXCEPT FOR THESE OBSTRUCTIONS TO BE REMOVED AND DISPOSED OF UNDER OTHER ITEMS IN THE CONTRACT.

CAVITIES LEFT BY STRUCTURE REMOVAL SHALL BE FILLED TO THE LEVEL OF THE SURROUNDING GROUND AND COMPACTED IN ACCORDANCE WITH SECTION 203 OF THE STATE HIGHWAY DEPARTMENT SPECIFICATIONS.

CASTINGS SHALL BECOME THE PROPERTY OF THE CONTRACTOR UNLESS OTHERWISE NOTED ON THE PLANS.

THE ACCEPTED QUANTITIES OF STRUCTURES REMOVED AND DISPOSED OF, WILL BE PAID FOR AT THE CONTRACT LUMP SUM PRICE BID, WHICH PRICE SHALL BE FULL COMPENSATION FOR REMOVAL, DISPOSAL, EXCAVATION AND BACKFILL INCIDENTAL TO THEIR REMOVAL.

PAYMENT WILL BE MADE AT THE CONTRACT PRICE BID FOR "ITEM SPECIAL - LUMP SUM - STRUCTURES REMOVED".

PLUGGING DEAD ENDS

STANDARD PLUGS WITH CLAMPS SHALL BE INSERTED INTO THE BELLS OF ALL DEAD ENDS OF PIPES, TEES, OR CROSSES AND SPIGOT ENDS CAPPED AND CLAMPED BY THE CONTRACTOR, ON ALL MAINS CONSTRUCTED BY HIM AND ON ALL EXISTING WATER MAINS WHERE INDICATED ON THE CONTRACT DRAWINGS. CONCRETE PIERS SHALL BE PLACED WHEN CALLED FOR ON THE CONTRACT DRAWINGS, OR ORDERED BY THE ENGINEER. THE COST OF FURNISHING THE PLUGS SHALL BE INCLUDED IN THE PER LINEAL FOOT PRICE BID FOR THE VARIOUS SIZES OF NEW WATER MAINS, AND FOR THE SIZE OF PLUG INSTALLED WHERE SHOWN ON EXISTING WATER MAIN.

TEMPORARY PLUGS

WHEN THE CONTRACTOR INSTALLS A WATER MAIN PLUG AND SUBSEQUENTLY REMOVES THE SAME PLUG UNDER PHASE CONSTRUCTION, SAID PLUG SHALL BE CLASSIFIED AS A TEMPORARY PLUG.

TEMPORARY PLUGS WILL NOT BE PAID FOR UNDER A SEPARATE PAY ITEM.

PAYMENT FOR TEMPORARY PLUGS SHALL BE INCLUDED IN THE UNIT PRICE BID FOR LINEAL FEET OF ITEM SPECIAL - WATER MAINS TYPE AND SIZE SPECIFIED ON THE PLANS.

BACKFILLING

(A) - THIS WORK INCLUDES ALL BACKFILLING, TOGETHER WITH RAMMING, PUDDLING, AND ROLLING, AS REQUIRED, THE REGRADING OF GROUNDS, THE REPLACING OF SURFACE AND SUBSURFACE STRUCTURES, THE PLACING AND MAINTAINING OF TEMPORARY SIDEWALKS, AND DRIVEWAYS, THE FURNISHING OF SUITABLE MATERIAL FOR BACKFILL, RESEEDING LAWNS AND REPLACING TREES AND SHRUBBERY DAMAGED BY THE CONTRACTOR, AND ALL APPURTENANT WORK INCIDENTAL THERETO. PAVEMENTS, CURBS, SIDEWALKS AND DRIVEWAYS WITHIN THE LIMITS OF THE WORK SHALL BE TEMPORARILY SURFACED, MAINTAINED AND FINALLY REPLACED OR REPAVED AS SET FORTH UNDER "ROAD SURFACES, SIDEWALKS, DRIVEWAYS AND CURBING".

(B) - BACKFILL, UNLESS OTHERWISE SPECIFIED, MAY BE MADE WITH MATERIAL EXCAVATED FROM THE TRENCHES, PROVIDING SAME IS SATISFACTORY TO THE ENGINEER. IF, IN THE OPINION OF THE ENGINEER, THE MATERIAL EXCAVATED IS UNSATISFACTORY, THEN THE CONTRACTOR SHALL FURNISH AT HIS OWN EXPENSE OTHER MATERIAL SUITABLE FOR BACKFILL. ALL BACKFILL SHALL BE FREE FROM SLAG, CINDERS, RUBBISH AND OTHER OBJECTIONALBE MATERIAL.

(C) - BEFORE LAYING THE PIPE, THE BOTTOM OF THE TRENCH SHALL BE BROUGHT TO THE GRADE OF THE BOTTOM OF THE PIPE EXCEPT AT FIELD JOINTS. WHEREVER THE BOTTOM OF THE TRENCH HAS BEEN EXCAVATED BELOW THE BOTTOM OF THE PIPE, THE CONTRACTOR SHALL PLACE SAND OR OTHER MATERIAL SATISFACTORY TO THE ENGINEER TO BRING THE BOTTOM OF THE TRENCH TO THE GRADE OF THE BOTTOM OF THE PIPE. THIS BED SHALL BE THOROUGHLY TAMPED BEFORE THE PIPE IS LAID.

(D) - UNLESS OTHERWISE SPECIFIED, THE BACKFILL UNDER, AROUND AND TO A DEPTH OF ONE (1) FOOT ABOVE THE TOP OF ALL PIPE SHALL BE MADE WITH MATERIAL SATISFACTORY TO THE ENGINEER, WHICH MATERIAL SHALL BE FREE FROM STONE AND OTHER OBJECTIONABLE MATERIAL NOTED ABOVE. THE CONTRACTOR MUST USE SPECIAL CARE IN PLACING THIS PORTION OF THE BACKFILL, SO AS TO AVOID INJURING, DISTORTING OR MOVING THE PIPE WHEN COMPACTING SAME. ABOVE THIS LEVEL THE BACKFILL SHALL BE MADE WITH MATERIAL SATISFACTORY TO THE ENGINEER. HOWEVER, WHERE SPECIFIED, SAND SHALL BE USED FOR THE ENTIRE PORTION OF THE BACKFILL - SEE PARAGRAPH (H).
(E) - BACKFILLING AS NOTED IN PARAGRAPH (D) SHALL BE TAMPED IN THIN LAYERS. SIMULTANEOUSLY ON EACH SIDE OF THE PIPE, AND THOROUGHLY COMPACTED SO AS TO PROVIDE A SOLID BACKING AGAINST THE EXTERNAL SURFACE OF THE PIPE.
(F) - ONLY AFTER THE BACKFILL PREVIOUSLY MENTIONED HAS BEEN SATISFACTORILY COMPACTED, MAY WORK PROCEED IN PLACING THE REMAINING BACKFILL WHICH MUST BE CAREFULLY PLACED AND COMPACTED BY TAMPING, PUDDLING, OR ROLLING. ALL PRECAUSTIONS MUST BE TAKEN TO ELIMINATE FUTURE SETTLEMENT. THE NUMBER OF MEN TAMPING SHALL BE NOT LESS THAN THE NUMBER BACKFILLING, AND ADDITIONAL MEN SHALL BE KEPT IN THE TRENCH TO SPREAD THE MATERIAL.

(G) - BACKFILLING SHALL NOT BE DONE IN FREEZING WEATHER, EXCEPT BY PERMISSION OF THE ENGINEER, AND IT SHALL NOT BE MADE WITH FROZEN MATERIAL, NOR SHALL ANY FILL BE MADE WHERE THE MATERIAL ALREADY IN THE DITCH IS FROZEN.
(H) - THE ENTIRE BACKFILL SHALL BE MADE WITH COMPACTED SAND WHERE PERMANENT PAVEMENTS, CURBS, DRIVEWAYS, OR SIDEWALKS HAVE BEEN OPENED FOR OR UNDERCUT BY THE EXCAVATION.
(I) - ALL SAND TO BE USED FOR BACKFILL SHALL BE A NATURAL BANK SAND, GRADED FROM FINE TO COARSE, NOT LUMPY OR FROZEN, AND FREE FROM SLAG, CINDERS, ASHES, RUBBISH, OR OTHER DELETERIOUS OR OBJECTIONABLE MATERIAL. IT SHALL NOT CONTAIN A TOTAL OF MORE THAN 10 PER CENT BY WEIGHT OF LOAM AND CLAY, AND ALL MATERIAL MUST BE CAPABLE OF BEING PASSED THROUGH A 3/4 INCH SIEVE. NOT MORE THAN 5 PER CENT SHALL REMAIN ON A NO. 4 SIEVE.

LIST AND INVOICES

(A) - THE CONTRACTOR SHALL FURNISH THE ENGINEER WITH THE LIST IN DUPLICATE OF PIECES IN EACH SHIPMENT OF PIPE AND SPECIALS, GIVING THE SERIAL NUMBER AND DESIGNATION OF EACH PIPE AND SPECIAL SENT AT THAT TIME.
(B) - THE MATERIAL SHALL BE SHIPPED IN SUCH SECTIONS AS THE ENGINEER MAY ORDER.

FABRICATED STEEL PIPE

(A) - WORK INCLUDED: THE CONTRACTOR SHALL FURNISH MATERIAL, LABOR, TOOLS AND EQUIPMENT FOR AND SHALL PROPERLY INSTALL AND CONNECT IN PLACE THE 30" DIAMETER FABRICATED STEEL PIPE SECTIONS ON THE STRUCTURE, AS SHOWN ON THE DRAWINGS. LAYING LENGTH SHALL BE AS SHOWN IN THE DETAIL DRAWINGS. THIS ITEM SHALL FURTHER INCLUDE ALL VICTAULIC COUPLINGS, DRESSER COUPLINGS, PIPE SUPPORTS, ELECTROLYSIS BONDING AND GROUNDING, TEST TAPS, APPURTENANCES AND SAND BACKFILL AS REQUIRED FOR THE PROPER COMPLETION OF THE WORK.

APPROVED JANUARY 13, 19 78

William J. Sweeney
DESIGN REVIEW ENGINEER

REVISIONS	

LOW SERVICE DISTRICT
DEPARTMENT OF PUBLIC UTILITIES
DIVISION OF WATER AND HEAT
CLEVELAND, OHIO

SUBJECT WATERWORK NOTES

DRAWN G.A.D. | SCALE NONE
CHECKED R.W.H. | DATE 7-19-77

No. SM 1969

WATERWORK NOTES

F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

CUYAHOGA COUNTY
CUY.-6A-0.41

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(B) - STEEL PIPE AND FITTINGS: THE STEEL PIPE SECTIONS SHALL BE SHOP FABRICATED FROM STEEL PIPE AND FITTINGS CONFORMING TO THE AWWA STANDARD FOR "FABRICATED ELECTRICALLY WELDED STEEL WATER PIPE", C201-66. SUPPLEMENTARY DETAILS ARE AS FOLLOWS:

1. PIPE AND FITTINGS SHALL BE 30" DIAMETER, EXTRA-STRONG WALL (.500" THK), A-53, GRADE B.
2. ALL STEEL USED IN THE MANUFACTURE OF THE PIPE AND FITTINGS SHALL CONFORM TO THE "STANDARD SPECIFICATIONS FOR LOW AND INTERMEDIATE TENSILE STRENGTH CARBON STEEL PLATES OF STRUCTURAL QUALITY" - ASTM DESIGNATION A-283, GRADE B.
3. THERE SHALL BE NO MORE THAN ONE (1) LONGITUDINAL JOINT AND A MINIMUM OF GIRTH JOINTS ON THE PIPE.
4. FLANGES SHALL BE FORGED STEEL, ASTM A181, GRADE I AND SHALL CONFORM TO AWWA STANDARD C207-55, CLASS E.
5. ALL BOLTS AND NUTS USED FOR FLANGES SHALL BE STAINLESS STEEL, HEXAGONAL, AMERICAN STANDARD COARSE THREAD.

(C) - HYDROSTATIC TEST: AFTER FABRICATION, THE STEEL PIPE SHALL BE HYDROSTATICALLY TESTED AT THE SHOP AT A PRESSURE OF 500 PSI. ALL LEAKS, FLAWS, OR DEFECTS DEVELOPED IN MAKING THESE TESTS SHALL BE CORRECTED TO THE SATISFACTION OF THE ENGINEER AND RETESTED OR THE ENTIRE PIECE WILL BE REJECTED.

(D) - COATINGS: THE INTERIOR SURFACE OF THE STEEL PIPE SECTIONS SHALL BE CLEANED, PRIMED AND LINED WITH COAL TAR ENAMEL (PER AWWA C203-73), AND COATED WITH WATER RESISTANT WHITEWASH FOR A DISTANCE OF THREE (3) FEET FROM EACH END.

THE EXTERIOR SURFACE OF THE STEEL PIPE SECTIONS SHALL BE CLEANED AND COATED WITH:

1. COAL-TAR PRIMER, TYPE A
2. COAL-TAR ENAMEL, TYPE A 3/32" THICK
3. FIBROUS GLASS MAT
4. COAL-TAR ENAMEL, TYPE A 1/32" THICK
5. BONDED ASBESTOS COAL-TAR SATURATED FELT WRAP
6. A COAT OF HEAVY-BODIED COAL-TAR EMULSION
7. TWO (2) COATS OF ALUMINUM PAINT

SUCH MATERIAL AND APPLICATION SHALL BE IN ACCORDANCE WITH AWWA STANDARD FOR COAL-TAR ENAMEL PROTECTIVE COATINGS FOR STEEL WATER PIPE, C203-73.

(E) - HANDLING AND LAYING PIPE: HANDLING AND LAYING OF THE STEEL PIPE SECTIONS SHALL BE IN ACCORDANCE WITH SECTION 2.14 OF AWWA STANDARD C203-73 EXCEPT THAT A "SAND SHIELD" AS COVERED IN APPENDIX A, SECTION A1.3 OF C203-73 SHALL BE PROVIDED FOR BURIED PIPE.

JOINTS

(A) - FLANGED JOINTS:

(1) - FLANGED JOINTS SHALL BE INSTALLED AS SHOWN ON THE DRAWINGS, FLANGES SHALL BE EITHER CAST STEEL, FORGED OR ROLLED STEEL, OR PROPERLY WELDED AND MACHINED FABRICATED STEEL PLATES, WELDED TO PIPE WITH TWO CONTINUOUS WELDS. THEY SHALL HAVE PLAIN FACES AND SHALL BE FACED TRUE AND SMOOTH AT RIGHT ANGLES TO THE AXIS OF THE PIPE AND SHALL BE SPOT FACED ON THE BACK. DRILLING SHALL CONFORM TO "AMERICAN 1928 STANDARD" DRILLING 125 POUND TEMPLATE. EACH BLIND FLANGE SHALL BE CAST IRON AND HAVE BOSSES TAPPED AT TOP AND BOTTOM FOR TWO (2) INCH STANDARD PIPE AND FURNISHED WITH PLUGS. ALL BOLTS FOR FLANGES AND OTHER TYPES OF BOLTING SHALL CONFORM TO THE "TENTATIVE SPECIFICATIONS FOR STEEL MACHINE BOLTS AND NUTS AND TAP BOLTS. ASTM DESIGNATION A 307-63T" GRADE-A, EXCEPT WHERE ONE OR BOTH FLANGES ARE CAST IRON, IN WHICH CASE BOLTS SHALL BE GRADE -B.

(2) - ALL BOLTS USED IN THE FINISHED WORK FOR FLANGES SHALL BE OF MEDIUM OPEN HEARTH STEEL. THE ENDS OF ALL BOLTS MUST BE FINISHED TO STANDARD RADIUS IN ACCEPTABLE MANNER. ALL SCREW THREADS SHALL BE AMERICAN STANDARD COARSE THREAD (N.C.). STUD BOLTS DOUBLE END (ROD) SHALL BE USED TO MAKE THE FLANGED JOINTS ON PIPE. ALL NUTS SHALL BE HEXAGONAL COLD PRESSED SEMI-FINISHED AND MADE OF MEDIUM OPEN HEARTH STEEL. ALL DIMENSIONS TO BE ACCORDING TO AMERICAN STANDARD HEAVY. BOLTS AND NUTS SHALL BE GALVANIZED BEFORE SHIPMENT AND NOT PRIMED. GASKETS FOR FLANGED PIPE SHALL BE FULL FACED RUBBER ONE-SIXTEENTH (1/16) INCH THICK 5X MANILA ROPE PATTERN OR OTHER APPROVED TYPE.

(B) - VICTAULIC PIPE COUPLINGS:

1. WHERE SHOWN ON THE DRAWINGS OR WHERE REQUIRED, THE CONTRACTOR SHALL FURNISH AND INSTALL VICTAULIC PIPE COUPLINGS FOR CONNECTION OF IRON, CONCRETE, OR STEEL PIPE AND FITTINGS. STEEL PIPE ENDS SHALL BE FABRICATED AND GROOVED AS INDICATED ON THE DRAWINGS. THE COUPLINGS SHALL BE ADAPTED FOR INSTALLATION ON SHOULDERED END CAST IRON SPACERS, REDUCERS AND FITTINGS AND DESIGNED FOR NOT LESS THAN THE WORKING PRESSURE NOTED ON THE CONTRACT DRAWINGS. COUPLINGS SHALL BE COMPOSED OF MALLEABLE IRON HOUSINGS HELD TOGETHER WITH STEEL BOLTS HEAT TREATED AND WITH A CONTINUOUS HOLLOW MOLDED RUBBER SEALING RING, OF SUCH TYPE THAT THE SEAL BECOMES TIGHT AS THE PRESSURE WITHIN THE PIPE INCREASES. THE JOINTS SHALL BE CONSTRUCTED AND INSTALLED AND BE EQUAL IN ALL RESPECTS TO THOSE MANUFACTURED BY THE VICTAULIC COMPANY OF AMERICA. MALLEABLE HOUSINGS SHALL CONFORM TO THE "STANDARD SPECIFICATIONS FOR MALLEABLE IRON CASTINGS, A.S.T.M. DESIGNATION A 47-61, BOLTS SHALL BE MANUFACTURED BY THE COUPLING MANUFACTURER AND SHALL BE HEAT TREATED CADMIUM PLATED STEEL BOLTS HAVING 100,000 PSI TENSILE STRENGTH.
2. ALL METAL PARTS OF THE COUPLINGS SHALL BE COATED AT THE SHOP WITH ONE COAT OF THE SAME MATERIAL AS REQUIRED FOR THE EXTERIOR SURFACE OF THE 30-INCH DIAMETER STEEL PIPE AS PER AWWA C203-73 AND MENTION UNDER (B) OF THIS ITEM.
3. ALL BOLTS AND NUTS SHALL BE OF THE SAME QUALITY AS PROVIDED FOR FLANGE JOINTS.
4. THE PIPE SHALL BE PLACED ON THE STRUCTURE BEFORE THE DECK IS POURED AND THE BOLTS AND NUTS TO BE USED IN VICTAULIC PIPE COUPLINGS WILL NOT BE INSTALLED UNTIL AFTER THE CONCRETE BRIDGE DECK HAS BEEN POURED AND PAVED WITH ASPHALT WEARING SURFACE.

(C) - EXPANSION JOINT ASSEMBLY:

1. THE CONTRACTOR SHALL PROVIDE SHOP DRAWINGS TO THE DIRECTOR OF PUBLIC UTILITIES FOR APPROVAL OF THE EXPANSION JOINT ASSEMBLY.
2. THE JOINT ASSEMBLY SHALL BE "DRESSER STYLE 63 TYPE 1" OR "ADSCO MODEL NO. S-151-1S SLIP TYPE WITH AN 8" TRAVERSE, OR EQUAL. THE JOINT ASSEMBLY SHALL INCLUDE ALL MATERIALS, CADMIUM PLATED BOLTS, NUTS AND WASHERS: WELDED NECK FLANGES A.S.A. 150# AND GASKETS. NO FIELD WELDING OF THE EXTRA-STRONG WELDED STEEL PIPE WILL BE PERMITTED.

(D) - PIPE SUPPORT ASSEMBLIES:

1. THE CONTRACTOR SHALL PROVIDE SHOP DRAWINGS TO THE DIRECTOR OF PUBLIC UTILITIES FOR APPROVAL OF THE PIPE SUPPORT ASSEMBLIES. THEY SHALL BE FABRICATED AS DETAILED IN THE WATER WORK DETAILS ON SHEET 11.
2. PIPE SUPPORT ASSEMBLIES SHALL BE COMPLETE INCLUDING ALL MATERIALS. CADMIUM PLATED SHOULDER AND CLAMP BOLTS, WASHERS AND NUTS. THE SUPPORT ASSEMBLY CLAMP, SEAT PLATE AND SHIMS SHALL ALL BE HOT DIPPED GALVANIZED AFTER FABRICATION PER A.S.T.M. A-123 LATEST REVISION. NO FIELD WELDING OF THE EXTRA-STRONG WELDED STEEL PIPE WILL BE PERMITTED.

(E) - ELECTROLYSIS BONDS AND TEST TAPS

GENERAL: UNLESS INDICATED OR SPECIFIED OTHERWISE, INSTALLATION, MATERIAL AND EQUIPMENT SHALL CONFORM TO THE SPECIFICATIONS SHOWN IN THE CONTRACT DRAWINGS AND SHALL COMPLY WITH THE NATIONAL ELECTRICAL CODE AND THE ELECTRICAL CODES OF THE STATE OF OHIO AND THE POLITICAL SUBDIVISIONS, AS APPLICABLE TO THE LOCATION IN WHICH THE WORK IS TO BE PERFORMED AND WITH THE APPROVAL OF THE ENGINEER. SEE DETAIL SHEET NO. 12.

ELECTRICAL WORK: THE WORK COVERED BY THIS SUBSECTION CONSISTS OF FURNISHING ALL LABOR, EQUIPMENT, APPLIANCES, AND MATERIALS AND IN PERFORMING ALL OPERATIONS NECESSARY FOR THE INSTALLATION OF ALL ELECTRICAL WORK COMPLETE IN STRICT ACCORDANCE WITH THIS SECTION AND THE CONTRACT DRAWINGS AND APPROVAL OF THE ENGINEER.

TERMINALS: THE TERMINALS SHALL BE CLEARLY MARKED TO SHOW POLARITY AND SHALL BE READILY ACCESSIBLE FOR TESTING. THE NEGATIVE TERMINAL SHALL BE CLEARLY OR PERMANENTLY TAGGED "STRUCTURE." THE POSITIVE TERMINAL SHALL BE CLEARLY MARKED OR PERMANENTLY TAGGED "ANODE." THE ANODE LEADS SHALL TERMINATE IN THE TERMINAL BOX AS SHOWN ON THE DRAWINGS. SUFFICIENT SLACK SHALL BE LEFT IN THE WELL HEAD TO PERMIT MOVEMENT OF THE WIRES DUE TO SOIL SETTLEMENT.

MEASUREMENT AND PAYMENT: CORROSION CONTROL AS SHOWN ON THE CONTRACT DRAWINGS WILL NOT BE MEASURED FOR PAYMENT, BUT WILL BE INCLUDED IN PAYMENT FOR RESPECTIVE WATER MAIN PIPE.

(F) SPLIT RING SLEEVE AT ABUTMENT WALLS

THIS WORK SHALL INCLUDE THE FURNISHING AND INSTALLATION OF A 36" O.D. x 3/8" WALL THICKNESS STEEL SPLIT RING SLEEVE AROUND THE 30" O.D. STEEL WATER MAIN AND THROUGH THE ABUTMENT WALLS, COMPLETE WITH THE FOLLOWING; A TEFLON PAD ATTACHED TO THE INSIDE SURFACE OF THE LOWER HALF OF THE RING, JUTE PACKING AND PREFORMED LEAD PLUGS. THIS WORK SHALL BE DONE PRIOR TO THE CONSTRUCTION OF THE ABUTMENT WALL. THE COST OF FURNISHING AND INSTALLATION OF THE SPLIT RING SLEEVES COMPLETE AS PER PLAN OR AS DIRECTED BY THE ENGINEER SHALL BE INCLUDED WITH THE UNIT PRICE BID FOR THE 30" WATER MAIN. FOR DETAILS SEE SHEET 11/12.

NOTE: THE JUTE PACKING AND LEAD PLUGS MAY BE REPLACED BY A MECHANICAL PACKING SLEEVE IF APPROVED BY THE ENGINEER AND THE CLEVELAND WATER DEPARTMENT.

BACKFILLING AND MARKING

THE CONTRACTOR SHALL PROPERLY BACKFILL AS REQUIRED AND CLEARLY MARK THE ENDS OF THE PIPE UNLESS ADJOINING WATERLINE IS CONNECTED AT SUCH TIME.

PAYMENT

PAYMENT SHALL BE MADE AT THE CONTRACT BID PRICE FOR EACH "ITEM SPECIAL-FABRICATED STEEL PIPE." PRICE AND PAYMENT SHALL CONSTITUTE FULL COMPENSATION FOR FURNISHING AND INSTALLING THE PIPE AND ALL APPURTENANCES, SAND BACKFILL AND THE FURNISHING OF ALL MATERIAL, LABOR, EQUIPMENT, TOOLS AND APPLIANCES NECESSARY TO COMPLETE THE WORK AS SHOWN ON THE PLANS AND SPECIFIED HEREIN.

PRESTRESSED CONCRETE CYLINDER PIPE

WORK INCLUDED:

THE CONTRACTOR SHALL FURNISH ALL THE MATERIALS; LABOR, TOOLS AND EQUIPMENT FOR AND SHALL PROPERLY CONSTRUCT AND CONNECT IN PLACE THE WATER MAIN AT LOCATIONS SHOWN ON THE DRAWINGS, OR AS DIRECTED, USING PRESTRESSED CONCRETE CYLINDER PIPE AND FITTINGS AND INCLUDING ALL EXCAVATION WORK, BACKFILLING, SAND BACKFILL, REPAVING, CONCRETE CYLINDER FITTINGS, CAST IRON PIPE AND FITTINGS, VICTAULIC AND DRESSER COUPLINGS, ETC., ALL AS REQUIRED FOR THE PROPER COMPLETION OF THE WORK INCLUDED UNDER THIS CONTRACT.

DEFINITIONS:

WHENEVER THE WORDS "CONCRETE PIPE" OR "PRESTRESSED CONCRETE CYLINDER PIPE" ARE USED, THEY SHALL REFER TO AND MEAN "PRESTRESSED STEEL CYLINDER REINFORCED CONCRETE PRESSURE PIPE".

PRESTRESSED CONCRETE CYLINDER PIPE AND FITTINGS

(A) ALL PIPE TO BE FURNISHED UNDER THIS ITEM SHALL BE MANUFACTURED TO CONFORM IN ALL RESPECTS TO THE AMERICAN WATER WORKS SPECIFICATIONS, DESIGNATION C301-72 AND ANY AMENDMENTS THERETO FOR PRESTRESSED CONCRETE CYLINDER PIPE, EXCEPT AS HEREIN NOTED. ALL PIPE SHALL BE PRESTRESSED CONCRETE CYLINDER PIPE DESIGNED FOR THE PRESSURES AND SERVICE HEREIN INDICATED, AND AS SHOWN ON THE DRAWINGS.

APPROVED JANUARY 12, 1978

William J. Sweeney
DESIGN REVIEW ENGINEER

REVISIONS	

LOW SERVICE DISTRICT
DEPARTMENT OF PUBLIC UTILITIES
DIVISION OF WATER AND HEAT
CLEVELAND, OHIO

SUBJECT WATERWORK NOTES

DRAWN G.A.D. SCALE NONE
CHECKED R.W.H. DATE 7-19-77

No. SM 1970