CUY-90-14.90

PID 77332/85531

APPENDIX EX-57

CUY-090-1524 PID 76192
(Reference Document)

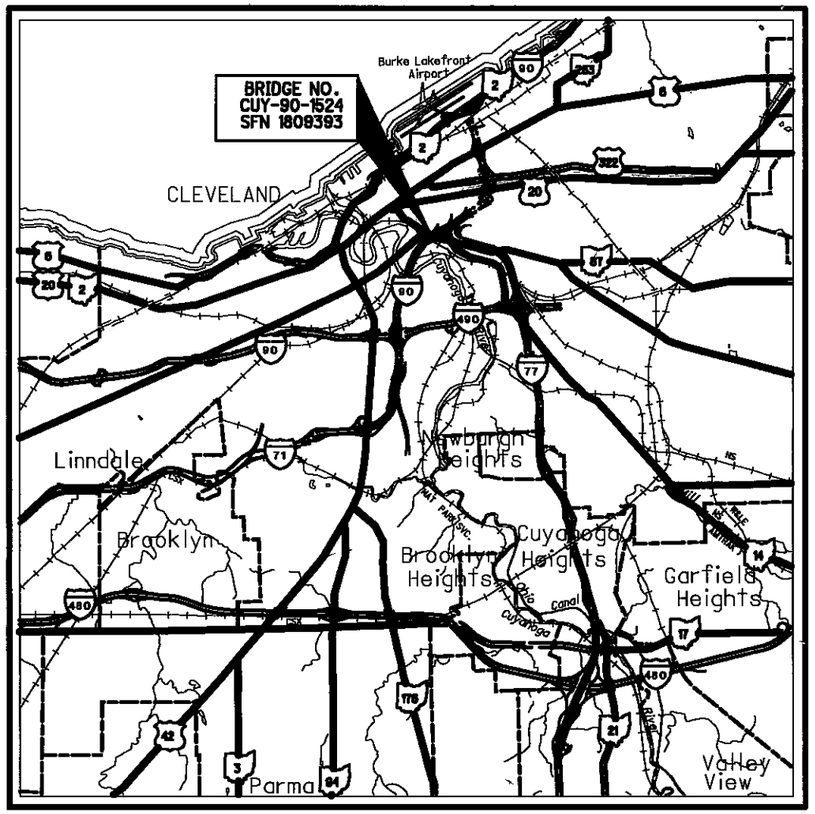
State of Ohio
Department of Transportation
Jolene M. Molitoris, Director

Innerbelt Bridge
Construction Contract Group 1 (CCG1)

Revision Date: 2007

OHIO DEPARTMENT OF TRANSPORTATION

FOR PART 2, SEE CUY-90-15.24



LOCATION MAP

LATITUDE: 41°29'37" N LONGITUDE: 81°41'02" W

CUY-90-15.99 (PART 1)

CITY OF CLEVELAND
CUYAHOGA COUNTY

IR-90 OVER THE CUYAHOGA RIVER

THIS IS A MAINTENANCE PROJECT

Project Earth Disturbed Area = N/A (Maintenance Project)
Estimated Contractor Earth Disturbed Area = N/A (Maintenance Project)
Notice of Intent Earth Disturbed Area = N/A (Maintenance Project)

INDEX OF SHEETS:

PROJECT DESCRIPTION

This project consists of replacing the right half of the IR-90 eastbound bridge deck over US-422 (Broadway Ave.) with a new reinforced concrete deck, and re-installing the existing fence onto the new parapet.

2005 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 except as noted on sheets 48 thru 50 and that provisions for the maintenance and safety will be as set forth on the plans and estimates.

Under authority of section 4511.21, division (H) of the Ohio Revised Code, the revised prima facie speed limits as indicated herein are determined to be reasonable and safe, and are hereby established for the duration of this project. The prima facie speed limit or limits hereby established shall become effective when appropriate signs giving notice thereof are erected.

Approved Brent M Tam PE
Date 4/13/07 District Deputy Director of Transportation

Approved James G Beasley Jr
Date 4-30-07 Director, Department of Transportation

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:

BURGESS & NIPLE
100 WEST ERIE STREET
PAINESVILLE, OHIO 44077

P.E. STAMP

STATE OF OHIO
ROBERT B. BRIGHT
E-052190
REGISTERED
PROFESSIONAL ENGINEER

SIGNED:
DATE: 4-10-07

STANDARD CONSTRUCTION DRAWINGS

		MT-95.50	9/05/06	TC-41.20	1/19/01	800	4/20/07
BP-3.1	7/16/04	MT-97.10	9/05/06	TC-41.40	7/16/04	832	4/25/06
BP-5.1	7/28/00	MT-97.11	9/05/06	TC-41.41	1/19/01		
		MT-98.12	4/19/02	TC-42.10	1/19/07		
		MT-98.13	4/19/02	TC-42.20	7/16/04		
RM-4.2	10/20/06	MT-98.14	4/19/02	TC-52.10	1/19/07		
		MT-98.19	10/18/02	TC-52.20	1/19/07		
		MT-99.20m	1/30/95	TC-65.10	1/21/05		
		MT-99.50	10/18/02	TC-65.11	1/21/05		
		MT-101.60	9/20/06	TC-71.10	1/19/07		
		MT-101.70	10/18/02	TC-72.20	1/21/05	**SPECIAL PROVISIONS**	
MT-35.10	4/20/01	MT-102.10	10/20/06	TC-73.10	1/19/01	ASBESTOS SURVEY	2/2/07
MT-95.30	9/05/06	MT-102.20	9/05/06				
MT-95.31	9/05/06	MT-102.30	9/05/06	EXJ-4-87	7/19/02		
MT-95.32	9/05/06	MT-105.10	10/18/02	SBR-1-99	7/19/02		
MT-95.40	10/20/06	MT-105.11	10/18/02	VPF-1-90	7/19/02		
				PCB-91	7/19/02		

CUY-90-15.99
076003
DIST 12
PID 77039
5/23/2007

FEDERAL PROJECT NO. E 040 (218)
PID NO. 77039
CONSTRUCTION PROJECT NO. CUY-90-15.99
RAILROAD INVOLVEMENT NONE
1/53

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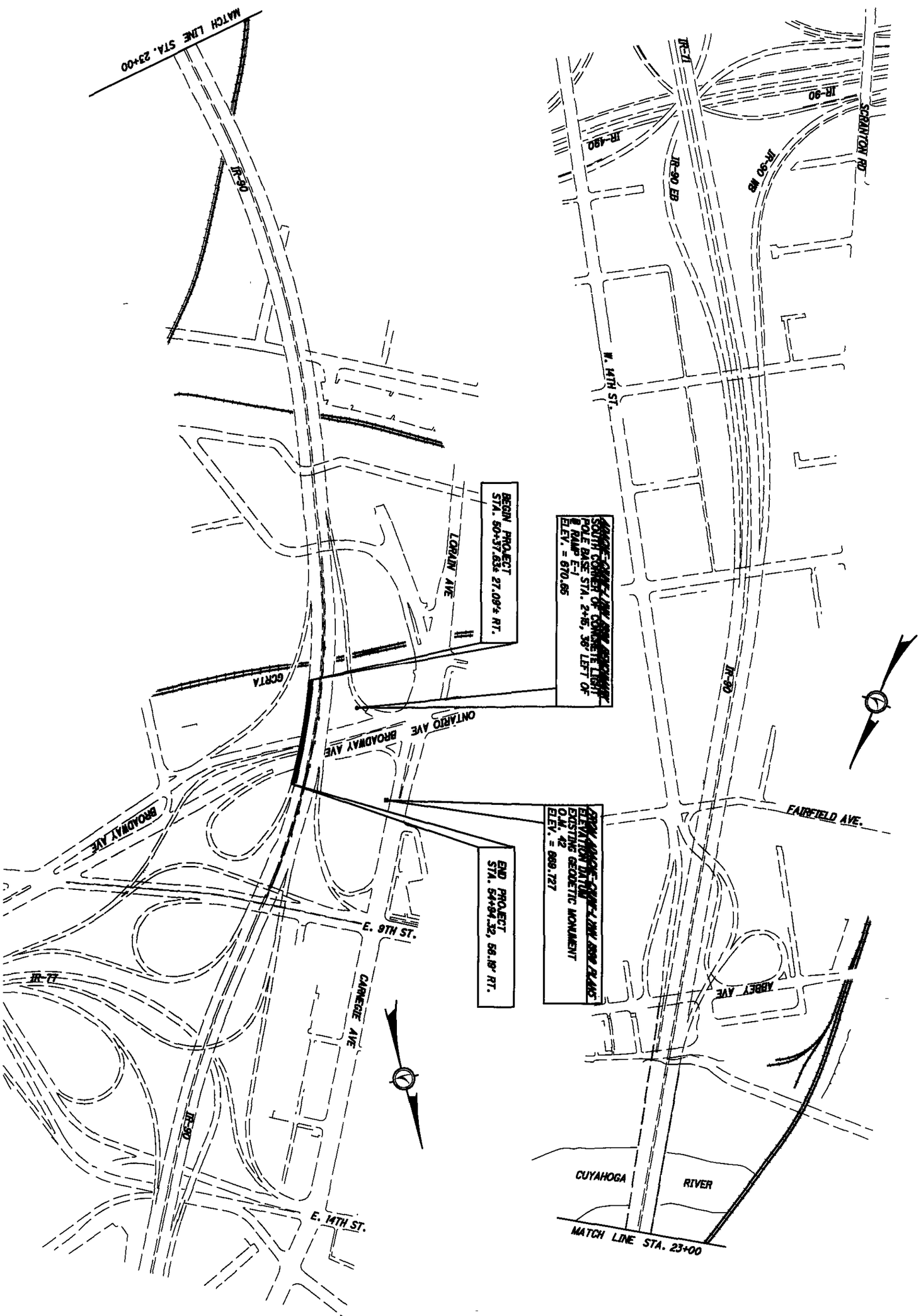

2/53	CUY-90-15.99	SCHEMATIC PLAN	CALCULATED / CHECKED	0 200 100 400 HORIZONTAL SCALE IN FEET

GENERAL NOTES

PROPOSED WORK

THE PROPOSED WORK CONSISTS OF REPLACING THE RIGHT HALF OF THE IR-90 EASTBOUND CONCRETE DECK SLAB OF THE BROADWAY AVENUE SPANS, INCLUDING A NEW BARRIER RAIL AND RELOCATING THE EXISTING FENCE ATOP THE NEW RAIL.

UTILITIES

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

AMERICAN TELEPHONE AND TELEGRAPH
229 WEST 7TH STREET
CINCINNATI, OHIO 45202
ATTN: JEFF BALINGER
(513) 784-2936

ATT COMMUNICATIONS
13630 LORAIN AVE., RM. 200
CLEVELAND, OHIO 44111
ATTN : DONNA MELNICK
(216) 476-6142

DOMINION EAST OHIO GAS
1201 EAST 55TH STREET
CLEVELAND, OHIO 44103
ATTN: MARGARET BEVEL
(216) 736-6831

THE ILLUMINATING COMPANY
6896 MILLER ROAD
BRECKSVILLE, OHIO 44141
ATTN : FRANK DIBBS
(440) 546-8748

CITY OF CLEVELAND
DIVISION OF WATER
1201 LAKESIDE AVENUE
CLEVELAND OHIO, 44114
(216) 664-2444

CITY OF CLEVELAND
DIVISION OF PUBLIC POWER
1300 LAKESIDE AVENUE
CLEVELAND OHIO, 44114
(216) 664-4245 X 115

CITY OF CLEVELAND
DIVISION OF TRAFFIC ENGINEERING
601 LAKESIDE AVENUE
CLEVELAND OHIO, 44114
ATTN: ANDY CROSS
(216) 664-3194

THE LOCATION OF THE UNDERGROUND UTILITIES ARE ONLY SHOWN FOR THE PAVING WORK ON E. 14th STREET BETWEEN ORANGE AND BROADWAY. AT ALL OTHER LOCATIONS THE ONLY WORK INVOLVES PLACING SIGNS FOR THE MAINTENANCE OF TRAFFIC.

PLANS ARE AS OBTAINED FROM THE OWNERS AS REQUIRED BY SECTION 153.64 O.R.C.

CALL OHIO UTILITIES PROTECTION SERVICE TWO (2) WORKING DAYS BEFORE YOU DIG. TOLL FREE TELEPHONE: 1-800-362-2764.

RIGHT OF WAY

ALL WORK WILL BE PERFORMED WITHIN THE EXISTING RIGHT OF WAY.

CONTINGENCY QUANTITIES

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

COOPERATION BETWEEN CONTRACTORS

THE CONTRACTOR SHALL COOPERATE AND COORDINATE HIS 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 CONSTRUCTION AND MATERIALS SPECIFICATIONS IS INTENDED.

RESTORATION AND CLEAN UP

RESTORE ALL DISTURBED AREAS TO A CONDITION EQUAL TO THAT EXISTING BEFORE THE WORK WAS STARTED PER CMS 104.04.

REMOVE ANY BROKEN GLASSWARE FOUND BY CREWS IN THE WORK AREA. DISPOSE OF ANY BROKEN GLASS IN REGULAR RUBBISH DISPOSAL UNITS. DISPOSE OF ALL REMOVED STEEL OFF THE RIGHT OF WAY. PAYMENT FOR RESTORATION WORK IS INCLUDED IN THE UNIT PRICE BID FOR THE VARIOUS ITEMS.

WORK LIMITS

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

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.

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 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.

EQUIPMENT AND MATERIAL STORAGE ALONG RAMP E-4

AFTER RAMP E-4 IS CLOSED FOR PHASE 1 AND PHASE 2 WORK, THE CONTRACTOR MAY USE THE RAMP AND INTERIOR INFIELD OF THE RAMP FOR HIS EQUIPMENT AND MATERIAL STORAGE IN ACCORDANCE WITH 614.03. ALL STORAGE MUST BE LOCATED AT LEAST 30 FEET BEYOND THE TRAVELED WAY (PHASE 1) OR BEHIND BARRIER (PHASE 2).

ITEM 619 - FIELD OFFICE, TYPE C, AS PER PLAN

IN ADDITION TO THE REQUIREMENTS AS DESCRIBED IN ITEM 619 OF THE CMS, THE FIELD OFFICE SHALL INCLUDE BROADBAND (DSL OR CABLE) INTERNET ACCESS.

TRAFFIC CONTROL

ITEM 646-EPOXY PAVEMENT MARKINGS, AS PER PLAN

THE EPOXY PAVEMENT MARKING MATERIAL FURNISHED FOR THIS PROJECT SHALL BE EPOPLEX LS-60 AS FURNISHED BY EPOPLEX, MAPLESIDE, NJ.

ITEM 646-EPOXY PAVEMENT MARKINGS - (POLYCARB) AS PER PLAN-ALTERNATE BID

THE EPOXY PAVEMENT MARKING MATERIAL SHALL BE MARK 55.4 AS FURNISHED BY POLYCARB, CLEVELAND OH. PAYMENT WILL BE AT THE NORMAL CONTRACT UNIT PRICE AS SPECIFIED IN ITEM 646.

CALCULATED DCF
DESIGNED DWL

GENERAL NOTES

REFERENCE SHALL BE MADE TO STANDARD DRAWINGS:

LISTED ON THE TITLE SHEET

AND TO SUPPLEMENTAL SPECIFICATIONS:

LISTED ON THE TITLE SHEET

AND TO PROPOSAL NOTES:

STEEL PRICE ADJUSTMENT
TEMPORARY SEDIMENT AND EROSION CONTROLS WITH PRICES

DESIGN DATA

CONCRETE CLASS HP - COMPRESSIVE STRENGTH 4500 PSI (SUPERSTRUCTURE)

REINFORCING STEEL - ASTM A615 OR A996 GRADE 60, MINIMUM YIELD STRENGTH 60,000 PSI

EXISTING STRUCTURE VERIFICATION

CONTRACT BID PRICES SHALL BE BASED UPON A RECOGNITION OF THE UNCERTAINTIES INHERENT IN REPAIR WORK AND UPON A PRE-BID EXAMINATION OF THE EXISTING STRUCTURE BY THE CONTRACTOR. ALL PROJECT WORK SHALL BE BASED ON ACTUAL DETAILS AND DIMENSIONS WHICH HAVE BEEN VERIFIED BY THE CONTRACTOR IN THE FIELD.

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 C.M.S. SECTIONS 102.05, 105.02, AND 513.04. THE ORIGINAL CONSTRUCTION PLANS OF THE EXISTING BRIDGE AND 1998 REHABILITATION PLANS ARE AVAILABLE UPON REQUEST AT THE DISTRICT 12 OFFICE OF THE OHIO DEPARTMENT OF TRANSPORTATION, GARFIELD HEIGHTS, OHIO.

CONSTRUCTION SEQUENCE

ADHERE TO THE FOLLOWING CONSTRUCTION SEQUENCE UNLESS ANOTHER HAS BEEN SUBMITTED TO AND APPROVED BY THE ENGINEER.

1. INSTALL DETOURS AND STAGE 1 MAINTENANCE OF TRAFFIC ITEMS AND SHIFT TRAFFIC.

2. REMOVE THE EXISTING BRIDGE DECK BETWEEN THE CENTER OF BEAM C AND THE CENTER OF BEAM D.

3. PLACE RESTEEL INCLUDING THREADING THE NEW REBAR INTO THE EXISTING MECHANICAL CONNECTORS. INSTALL SHEAR STUDS. PLACE FORMS AND NEW MECHANICAL CONNECTORS FOR STAGE 2, POUR NEW DECK CONCRETE TO THE LEVEL OF THE SURROUNDING CONCRETE AND EXPANSION JOINT SURFACES.

4. REMOVE STAGE 1 MAINTENANCE OF TRAFFIC AND INSTALL STAGE 2 MAINTENANCE OF TRAFFIC AND SHIFT TRAFFIC.

5. INSTALL TEMPORARY ORANGE SAFETY FENCE ACROSS SIDEWALK.

6. REMOVE THE EXISTING 6' VANDAL PROTECTION FENCE AND STORE FOR REUSE.

7. REMOVE THE REMAINDER OF THE EXISTING BRIDGE DECK AND PORTIONS OF THE EXISTING EXPANSION JOINTS AT THE PROPOSED PARAPET AS SHOWN.

8. PLACE RESTEEL, INCLUDING THE MECHANICAL CONNECTORS, AND PLACE NEW DECK CONCRETE. DO NOT DAMAGE EXISTING EXPANSION JOINTS TO REMAIN OR EXPANSION JOINT SUPPORTS. PREVENT CONCRETE FROM ENTERING THE SCUPPER DRAINS OR DRAINAGE SYSTEM.

9. FORM AND PLACE NEW CONCRETE PARAPET, RE-INSTALL 6' VANDAL PROTECTION FENCE AND REMOVE TEMPORARY ORANGE SAFETY FENCE .

10. REMOVE ALL MAINTENANCE OF TRAFFIC ITEMS, REMOVE DETOUR AND REPLACE PAVEMENT MARKINGS.

LIMITATIONS OF OPERATIONS

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

1. MAINTENANCE OF TRAFFIC LIMITATIONS

2. NO WORK WILL BE ALLOWED DURING THE MONTHS OF NOVEMBER, DECEMBER, JANUARY, FEBRUARY, MARCH OR APRIL.

ITEM 202, PORTIONS OF STRUCTURE REMOVED, AS PER PLAN

DESCRIPTION:
THIS WORK CONSISTS OF THE REMOVAL AND DISPOSAL OF CONCRETE DECKS INCLUDING SIDEWALKS, PARAPETS, RAILINGS, PORTIONS OF DECK JOINTS, THE TIMBER SUB-DECKING AND OTHER APPURTENANCES FROM STEEL SUPPORTING SYSTEMS (BEAMS, GIRDERS, CROSS FRAMES, ETC.). THE PROVISIONS OF ITEM 202 APPLY EXCEPT AS SPECIFIED BY THE FOLLOWING NOTES. PERFORM WORK CAREFULLY DURING DECK REMOVALS TO PROTECT PORTIONS OF SUCH SYSTEMS THAT ARE TO BE SALVAGED AND INCORPORATED INTO THE PROPOSED STRUCTURE. THE USE OF EXPLOSIVES, HEADACHE BALLS AND/OR HOE RAM TYPE OF EQUIPMENT IS PROHIBITED. SUBMIT CONSTRUCTION PLANS ACCORDING TO CMS 501.06.

PROTECTION OF STEEL SUPPORT SYSTEMS:
BEFORE DECK SLAB CUTTING IS PERMITTED, DRAW THE OUTLINE OF PRIMARY STEEL MEMBERS IN CONTACT WITH THE BOTTOM OF THE DECK ON THE SURFACE OF DECK. DRILL SMALL DIAMETER PILOT HOLES 2 INCHES [50 MM] OUTSIDE THESE LINES TO CONFIRM THE LOCATION OF FLANGE EDGES. DECK CUTS OVER OR WITHIN 2 INCHES [50 MM] OF FLANGE EDGES SHALL NOT EXTEND LOWER THAN THE BOTTOM LAYER OF DECK SLAB REINFORCING STEEL. CUTS MADE OUTSIDE 2 INCHES [50 MM] OF FLANGE EDGES MAY EXTEND THE FULL DEPTH OF THE DECK. PERFORM WORK CAREFULLY DURING CUTTING OF THE DECK SLAB TO AVOID DAMAGING STEEL MEMBERS THAT ARE TO BE INCORPORATED INTO THE PROPOSED STRUCTURE. REPLACE OR REPAIR STEEL MEMBERS DAMAGED BY THE DECK SLAB CUTTING OPERATIONS AT NO COST TO THE PROJECT. AT LEAST 7 DAYS BEFORE PERFORMING REPAIR WORK, SUBMIT A PROPOSED REPAIR PLAN, DEVELOPED BY AN OHIO REGISTERED PROFESSIONAL ENGINEER TO THE DIRECTOR. OBTAIN THE DIRECTOR'S APPROVAL BEFORE PERFORMING REPAIR.

REMOVAL METHODS:
THE CONTRACTOR MAY REMOVE CONCRETE BY CUTTING AND BY MEANS OF HAND OPERATED PNEUMATIC HAMMERS EMPLOYING POINTED OR BLUNTED CHISEL TYPE TOOLS. FOR REMOVALS OVER STRUCTURAL MEMBERS (PRESTRESSED BOX BEAM, I-BEAM, STEEL BEAM STEEL GIRDER, ETC), THE CONTRACTOR MAY USE A HAMMER HEAVIER THAN 35 POUNDS [16 KILOGRAMS] BUT NOT TO EXCEED 90 POUNDS [41 KILOGRAMS] UNLESS APPROVED BY THE ENGINEER. REMOVAL METHODS OVER STRUCTURAL MEMBERS SHALL ENSURE ADEQUATE DEPTH CONTROL AND PREVENT NICKING OR GOUGING THE PRIMARY STRUCTURAL MEMBERS.

DUE TO THE POSSIBLE PRESENCE OF ATTACHMENTS (E.G., FINISHING MACHINE, SCUPPER AND FORM SUPPORTS, ETC.) TO EXISTING STRUCTURAL MEMBERS, PERFORM WORK CAREFULLY DURING DECK REMOVAL TO AVOID DAMAGING STRUCTURAL MEMBERS THAT ARE TO REMAIN. REPLACE OR REPAIR STRUCTURAL MEMBERS DAMAGED BY THE REMOVAL OPERATIONS AT NO COST TO THE PROJECT. AT LEAST 7 DAYS BEFORE PERFORMING REPAIR WORK, SUBMIT A PROPOSED REPAIR PLAN, DEVELOPED BY AN OHIO REGISTERED PROFESSIONAL ENGINEER TO THE ENGINEER, OBTAIN THE ENGINEER'S APPROVAL BEFORE PERFORMING REPAIR.

EXISTING WELDED ATTACHMENTS:
REMOVE EXISTING WELDED ATTACHMENTS (E.G., FINISHING MACHINE AND FORM SUPPORTS; AND SUPPORTS FOR SCUPPERS AND BULB ANGLES WHICH ARE TO BE REMOVED) LOCATED IN THE DESIGNATED TENSION PORTIONS OF THE TOP FLANGES OF EXISTING STEEL MEMBERS AND GRIND THE FLANGE SURFACES SMOOTH. CAREFULLY GRIND PARALLEL TO THE FLANGES.

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

ITEM SPECIAL - ASBESTOS ABATEMENT

THIS ITEM OF WORK INCLUDES THE REMOVAL AND DISPOSAL OF THE TRANSITE PIPE AND ANY OTHER ASBESTOS CONTAINING MATERIALS NECESSARY TO COMPLETE THE PROPOSED WORK TO THE SATISFACTION OF THE ENGINEER.

STAGING AREAS

WHEN CLOSED THE ONTARIO STREET EXIT RAMP IS AVAILABLE FOR THE CONTRACTOR TO USE AS A STAGING AREA. IF THE CONTRACTOR WANTS TO USE AN AREA(S) FOR STAGING, REGARDLESS IF IT FALLS WITHIN THE PROJECT LIMITS OR NOT, THE CONTRACTOR IS TO CONTACT JILL POWERS AT 216-584-2196 AT DISTRICT 12 IN ORDER TO APPLY FOR A PERMIT PER SECTION 107.02 OF THE C.M.S.

IF A PERMIT IS GRANTED, ALL CONDITIONS OF THE PERMIT SHALL BE MET IN ADDITION TO THE REQUIREMENTS OF 104.04 OF THE C.M.S., AT NO ADDITIONAL COST TO THE STATE. IF THE PROJECT ENGINEER DEEMS THAT ALL THE CONDITIONS OF THE PERMIT WERE NOT MET, THEN 10% OF THE CONTRACT BID AMOUNT FOR MOBILIZATION SHALL BE WITHHELD UNTIL ALL THE CONDITIONS OF THE PERMIT ARE SATISFIED.

ITEM 513 - STRUCTURAL STEEL, MISC.: REPAIRS UNDER 50 POUNDS EACH

THIS WORK IS A CONTINGENCY ITEM AND SHALL CONSIST OF THE MISCELLANEOUS REPAIRS AND/OR REPLACEMENTS OF MEMBERS, PORTIONS OF MEMBERS OR COMPONENTS OF MEMBERS NOT OTHERWISE IDENTIFIED IN THE PLANS AND HEREIN SPECIFIED.

PAYMENT FOR ALL LABOR, EQUIPMENT, TOOLS, MATERIALS AND SERVICES INCLUDING WELDING, DRILLING AND BOLTING REQUIRED FOR REPAIRS TOTALING LESS THAN 50 POUNDS EACH AS HEREIN DESCRIBED SHALL BE MADE AT THE CONTRACT UNIT PRICE BID PER POUND FOR ITEM 513 - STRUCTURAL STEEL, MISC.: REPAIRS UNDER 50 POUNDS EACH.

A CONTINGENCY QUANTITY OF 100 POUNDS IS INCLUDED WITH ITEM 513 - STRUCTURAL STEEL, MISC.: REPAIRS UNDER 50 POUNDS EACH.

ITEM SPECIAL - ASBESTOS NOTIFICATION

AN ASBESTOS SURVEY WAS CONDUCTED ON THE INNERBELT BRIDGE AND WAS COMPLETED ON FEBRUARY 2, 2007 BY A CERTIFIED ASBESTOS HAZARD EVALUATION SPECIALIST FROM HzW ENVIRONMENTAL CONSULTANTS, INC. THE SURVEY IDENTIFIED THE ASBESTOS CONTAINING MATERIALS. A COPY OF THE SURVEY IS INCLUDED AS A SPECIAL PROVISION. THE REMOVAL AND DISPOSAL OF THIS ASBESTOS CONTAINING MATERIAL MUST COMPLY WITH THE OHIO ADMINISTRATIVE CODE, THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) REGULATIONS, AND THE NATIONAL EMISSION STANDARD FOR HAZARDOUS AIR POLLUTANTS (NESHAP) STANDARDS FOR ASBESTOS.

A COPY OF THE OHIO ENVIRONMENTAL PROTECTION AGENCY (OEPA) NOTIFICATION OF DEMOLITION AND RENOVATION FORM WITH SECTIONS I-VII AND XVI COMPLETED IS INCLUDED WITH THE BID PACKAGE. THE CONTRACTOR WILL COMPLETE SECTIONS VIII-XIII OF THE ISGNED FORM AND SUBMIT THE COMPLETED FORM TO THE LOCAL AIR AUTHORITY AT LEAST TEN (10) DAYS PRIOR TO DEMOLITION OF THE BRIDGE. THE CONTRACTOR WILL PROVIDE A COPY OF THE COMPLETED FORM TO THE ENGINEER.

THE LOCAL AIR AUTHORITY IS:

CITY OF CLEVELAND
DEPARTMENT OF PUBLIC HEALTH
DIVISION OF AIR QUALITY - ENFORCEMENT SECTION (ASBESTOS)
1962 ST. CLAIR AVENUE
CLEVELAND, OH 44114-2080

A COPY OF THE OHIO DEPARTMENT OF HEALTH NOTIFICATION FORM IS ALSO INCLUDED WITH THE BID PACKAGE. A COPY OF THIS FORM MUST BE COMPLETED AND SUBMITTED TO THE OHIO DEPARTMENT OF HEALTH AT LEAST TEN DAYS (10) PRIOR TO THE RECONSTRUCTION OF THE BRIDGES. THE CONTRACTOR WILL PROVIDE A COPY OF THE COMPLETED FORMS TO THE ENGINEER. THE ADDRESS IS:

OHIO DEPARTMENT OF HEALTH
ASBESTOS PROGRAM
246 NORTH HIGH STREET
P.O. BOX 118
COLUMBUS, OHIO4326-0118

THE CONTRACTOR WILL PROVIDE AN INDIVIDUAL TRAINED IN THE PROVISIONS OF NESHAP THAT WILL BE ON-SITE DURING REMOVAL OF THE ASBESTOS CONTAINING MATERIALS. IN ADDITION TO THE ASBESTOS CONTAINING MATERIAL IDENTIFIED IN THE ASBESTOS SURVEY REPORT, THIS INDIVIDUAL WILL ALSO, MONITOR ANY ADDITIONAL NON-VISIBLE ASBESTOS ENCOUNTERED WITHIN THE PROJECT WORK LIMITS.

THE CONTRACTOR WILL FURNISH ALL LABOR, EQUIPMENT, AND MATERIALS NECESSARY TO COMPLETE, SUBMIT, AND COMPLY WITH THE OEPA NOTIFICATION FORM AND TO REMOVE, TRANSPORT, AND DISPOSE OF THE MATERIALS CONTAINING ASBESTOS FROM WITHIN THE PROJECT WORK LIMITS. PAYMENT OF THIS WORK WILL BE INCLUDED IN THE BID LUMP SUM PRICE ITEM SPECIAL - ASBESTOS ABATEMENT.

CALCULATED | CHECKED

ITEM 509 - EPOXY COATED REINFORCING STEEL, AS PER PLAN

IN ADDITION TO THE PROVISIONS OF ITEM 509, FIELD BEND AND/ OR FIELD CUT THE REINFORCING STEEL DESIGNATED IN THE PLANS, AS NECESSARY, IN ORDER TO MAINTAIN THE REQUIRED CLEARANCES AND BAR SPACINGS. REPAIR ALL DAMAGE TO THE EPOXY COATING, AS A RESULT OF THIS WORK, ACCORDING TO 709.00.

ITEM 509 - REINFORCING STEEL, REPLACEMENT OF EXISTING REINFORCING STEEL, AS PER PLAN

THIS CONTINGENCY QUANTITY AMOUNT OF 1000 POUNDS IS INCLUDED TO PROVIDE ADDITIONAL CONNECTING REINFORCING STEEL IF DOWELING IS REQUIRED IN STAGE 1 OR IF EXISTING REINFORCING STEEL TO BE REUSED IS MISSING OR FOUND TO BE UNUSABLE. REPLACE ALL EXISTING REINFORCING BARS DEEMED BY THE ENGINEER TO BE UNUSABLE BECAUSE OF CORROSION.

THE DEPARTMENT WILL MEASURE THE REPLACEMENT REINFORCING STEEL BY THE NUMBER OF POUNDS ACCEPTED IN PLACE.

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

ITEM 510 - DOWEL HOLES WITH NON-SHRINK, NON-METALLIC GROUT, AS PER PLAN

WHEN AN EXISTING MECHANICAL CONNECTOR IS FOUND TO BE UNUSABLE DURING THE STAGE I OPERATION THE CONTRACTOR IS DIRECTED TO DOWEL INTO THE EXISTING CONCRETE NEXT TO THE UNUSABLE CONNECTOR. A CONTINGENCY QUANTITIY OF 100 DOWEL HOLES HAS BEEN INCLUDED FOR THIS WORK. THE CONTRACTOR SHALL BEAR THE COST OF REPLACING MECHANICAL CONNECTORS DAMAGED BY HIS WORK.

THIS WORK INCLUDES THE DRILLING OF THE HOLES INTO THE CONCRETE AND FURNISHING AND PLACING EPOXY GROUT INTO THE HOLES.

THE CONTRACTOR SHALL DEMONSTRATE HIS ABILITY TO DRILL THE DOWEL HOLES WITHOUT DAMAGING THE SURROUNDING CONCRETE. SHOULD SUCH DAMAGE OCCUR THE CONTRACTOR IS DIRECTED TO REPAIR THE DAMAGE AT HIS EXPENSE AND TO CORE DRILL THE REMAINING DOWEL HOLES.

PAYMENT FOR DRILLING HOLES AND FURNISHING AND PLACING MATERIALS SHALL BE INCLUDED IN THE CONTRACT BID PRICE FOR:

ITEM	UNIT	DESCRIPTON
510	EACH	DOWEL HOLES WITH NON-SHRINK, NON-METALLIC GROUT, AS PER PLAN

MECHANICAL CONNECTORS FOR REINFORCING STEEL:

AN APPROVED TYPE OF MECHANICAL CONNECTOR FOR REINFORCING BARS SHALL BE PROVIDED WHERE REQUIRED. INSTALLATION OF CONNECTORS SHALL CONFORM WITH MANUFACTURER'S RECOMMENDED PROCEDURES. IF A DOWEL BAR SPLICE TYPE OF CONNECTOR IS FURNISHED, THE MINIMUM DOWEL BAR LENGTH TO BE FURNISHED WITH THE CONNECTOR SHALL BE AS SHOWN ON THE PLAN.

CONNECTORS AND DOWEL BARS SHALL BE EPOXY COATED. COATING FOR BOTH THE CONNECTORS AND BARS SHALL CONFORM TO THE SAME SPECIFICATIONS. COATINGS WHICH HAVE BEEN DAMAGED OR WHICH OTHERWISE DO NOT MEET SPECIFICATIONS WITH RESPECT TO COLOR, CONTINUITY, AND UNIFORMITY, MAY BE REPAIRED AS DIRECTED BY THE ENGINEER OR THEY SHALL BE REPLACED WITH MATERIAL WHICH MEETS THE SPECIFICATIONS.

CONNECTOR AND DOWEL BAR EXTENSIONS SHALL CONFORM WITH ITEM 509. THE COST OF FURNISHING THE CONNECTORS AND EXTENSIONS SHALL BE INCLUDED WITH ITEM 509 - EPOXY COATED REINFORCING STEEL, AS PER PLAN.

ITEM 511 CLASS HP CONCRETE, BRIDGE DECK, AS PER PLAN
ITEM 511 CLASS HP CONCRETE, BRIDGE DECK (PARAPET), AS PER PLAN

GENERAL REQUIREMENTS.

THE PROVISIONS OF ITEM 511 SHALL APPLY EXCEPT AS NOTED BELOW.

MIX OPTIONS.

THE FOLLOWING PROPORTIONS WILL BE USED AS A STARTING MIX DESIGN.

ALL SUPERSTRUCTURE CONCRETE SHALL BE THIS MIX (HP4, AS PER PLAN). ALL OTHER STRUCTURE CONCRETE SHALL BE THIS MIX OR MIX 2 CONCRETE.

CONCRETE TABLE
QUANTITIES PER CUBIC YARD
AGGREGATES (SSD)

HP4, AS PER PLAN (GGBF SLAG + MICROSILICA)

AGGREGATE TYPE	FINE AGGRE. (LB)	* #8 COARSE AGGRE. (LB)	* #57 COARSE AGGRE. (LB)	TOTAL (LB)	CEMENT CONTENT (LB)	MICRO-SILICA (LB)	GGBF SLAG (LB)	WATER TO CEMENTITIOUS RATIO ±.01	AIR CONTENT ±2%
GRAVEL	1245	360	1315	2920	400	30	170	0.43	7
LIMESTONE	1245	360	1335	2940	400	30	170	0.43	7
SLAG	1245	315	1155	2715	400	30	170	0.43	7

* ALL COARSE AGGREGATE SHALL HAVE AN ABSORPTION OF 1.00% OR GREATER AS DEFINED PER ASTM C127. THE WEIGHTS SPECIFIED IN THE CONCRETE TABLE WERE CALCULATED FOR MATERIALS OF THE FOLLOWING BULK SPECIFIC GRAVITIES (SSD): NATURAL SAND AND GRAVEL 2.62, LIMESTONE SAND 2.68, LIMESTONE 2.65, SLAG 2.30, FLY ASH 2.65, GGBF SLAG 2.90, MICROSILICA SOLIDS 2.20, AND PORTLAND CEMENT 3.15. FOR AGGREGATES OF SPECIFIC GRAVITIES DIFFERING MORE THAN PLUS OR MINUS 0.02 FROM THESE, THE WEIGHTS IN THE TABLE WILL BE CORRECTED.

PARAPET CONSTRUCTION (FORMED AND POURED)

CURING FOR THE CONCRETE PARAPET WILL CHANGE FROM A 7 DAY WET CURE (METHOD A) TO A 24 HOUR WET CURE MEETING THE REQUIREMENTS OF (METHOD A) IMMEDIATELY FOLLOWED BY MEMBRANE CURING (METHOD B).

FORMS SHALL NOT BE REMOVED UNTIL AT LEAST 2 HOURS AFTER THE FINAL SET. DETERMINATION OF THE FINAL SET SHALL BE AS PER ASTM C268 (GILLMORE NEEDLE). TESTING SHALL BE PERFORMED BY THE CONTRACTOR AT NO COST TO THE STATE.

THE MINIMUM CONCRETE SLUMP DURING PLACEMENT OF FORMED CONCRETE PARAPETS SHALL BE 6 INCHES, WITH A MAXIMUM SLUMP OF 8 INCHES.

ANCHOR BOLTS FOR FENCE POSTS SHALL BE CAST IN PLACE.

PARAPET CONSTRUCTION (SLIP FORMED)

SLIP FORMING SHALL NOT BE PERFORMED DIRECTLY OVER AREAS WHERE THERE IS OR WILL BE VEHICULAR OR PEDESTRIAN TRAFFIC (WHICH INCLUDES RAILROADS AND WATER CRAFTS). AT THESE LOCATIONS, THE PARAPETS SHALL BE FORMED AND POURED.

THE CONTRACTOR IS ONLY ALLOWED THE OPTION OF SLIP FORMING BRIDGE PARAPETS OVER NON TRAVELED WAYS, AND ONLY AFTER THE SUCCESSFUL COMPLETION OF A TEST SECTION TWENTY FEET LONG. A MINIMUM OF 3 DAYS AFTER PLACING THE TEST SECTION, THE CONTRACTOR SHALL CORE THE TEST SECTION (A MINIMUM OF 3 CORES) AT LOCATIONS AS DIRECTED BY THE ENGINEER. APPROVAL TO SHIP FORM SHALL NOT BE GRANTED UNTIL AFTER THE CORING AND AFTER A SUCCESSFUL SLIP FORMING RESULT IS OBTAINED.

IN ADDITION TO THE REQUIREMENTS OF THE LAST PARAGRAPH OF 511.11 THE ENGINEER WILL INSPECT THE SLIP FORMED SURFACE FOR HORIZONTAL CRACKING 6 MONTHS AFTER COMPLETION OF THE SLIP FORMING OPERATION. ANY ADDITIONAL CRACKS FOUND SHALL BE REPAIRED AS PER THE SPECIFICATIONS AT NO ADDITIONAL COST TO THE STATE.

ALL ANCHOR BOLTS FOR FENCE POSTS SHALL BE CAST IN PLACE.

THE MINIMUM CONCRETE SLUMP DURING PLACEMENT OF SLIP FORMED CONCRETE PARAPETS SHALL BE 1 INCH WITH A MAXIMUM SLUMP OF 1½ INCHES.

THE WATER CEMENT RATIO FOR SLIP FORMED PARAPETS SHALL NOT BE LESS THAN THE WATER CEMENT RATIO USED FOR THE DECK CONCRETE. REDUCE SLUMP BY LIMITING THE USE OF SUPERPLASTICIZERS.

PHASE I CONCRETE
A 5-DAY CURE TIME WILL BE ALLOWED. CMS 511.19 WILL BE WAIVED, THE CONTRACTOR IS NOT REQUIRED TO USE A FINISHING MACHINE FOR THE STAGE 1 DECK. THE CONTRACTOR, AT A MINIMUM, SHALL USE A VIBRATING SCREED WITH SIMILAR CAPABILITIES OF THE FINISHING MACHINE AS SPECIFIED UNDER CMS 511.19 THE ENGINEER MUST APPROVE THE FINISHING DEVICE AND METHOD FOR THE DECK. ALSO, CMS 511.20 WILL BE WAIVED, THE CONTRACTOR WILL BE ALLOWED TO PLACE THE GROOVES WITH A TINED RAKE.

STAY IN PLACE FORMS

THE CONTRACOR IS ALLOWED TO USE STAY IN PLACE FORMS AT NO ADDITIONAL COST TO THE STATE.

CRACK CONTROL JOINTS

CRACK CONTROL JOINTS FOR BOTH SLIP FORMED AND FORMED AND POURED PARAPETS, THE CONTRACTOR SHALL CONSTRUCT 38 MM (1½") DEEP AND 6 MM (1/4") WIDE CRACK CONTROL JOINTS SPACED AT A MINIMUM OF 1830 MM (6 FT) AND A MAXIMUM OF 2440 MM (8 FT) ON CENTER AND SHALL BE CENTERED BETWEEN FENCE POSTS. THE CRACK CONTROL JOINTS SHALL BE MADE IN THE COMPLETE CIRCUMFERENCE OF THE PARAPET, STARTING AND ENDING AT THE ELEVATION OF THE TOP OF THE CONCRETE DECK. THE CONTRACTOR MAY EITHER FORM THE CRACK CONTROL JOINTS IN WITH FORM LINERS, OR, WITHIN 24 HOURS OF PLACEMENT, SAW CUT THE CRACK CONTROL JOINTS IN WITH THE USE OF AN EDGE GUIDE, FENCE, OR JIG WHICH IS REQUIRED TO ENSURE THAT THE CUT JOINT IS STRAIGHT, TRUE, AND ALIGNED ON ALLFACES OF THE PARAPET. THE ENTIRE LENGTH OF EACH CONTROL JOINT SHALL BE SEALED TO A MINIMUM DEPTH OF 38 MM (1½") WITH A CAULKING MATERIAL CONFORMING TO FEDERAL SPECIFICATION TT-S-00227E.

BASIS OF PAYMENT. PAYMENT FOR THE ABOVE COMPLETED AND ACCEPTED QUANTITIES AND WILL BE MADE AT THE CONTRACT BID PRICE FOR:

ITEM	UNITS	DESCRIPTION
511E50001	CUBIC YARDS	CLASS HP CONCRETE, BRIDGE DECK, AS PER PLAN
511E50101	CUBIC YARDS	CLASS HP CONCRETE, BRIDGE DECK (PARAPET), AS PER PLAN

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

TTHE COLOR OF THE URETHANE TOP COAT SHALL BE FEDERAL COLOR STANDARD NUMBER 595b - 17778 (LIGHT NEUTRAL - GLOSS)

ITEM SPECIAL - VANDAL PROTECTION FENCE, REMOVED AND REBUILT

THIS WORK CONSISITS OF REMOVING A PORTION OF THE EXISTING 8' VANDAL PROTECTION FENCE, STORING THE FENCE AND REBUILDING THE FENCE ON THE NEW BARRIER RAIL AS PER THESE PLANS.

THE TEMPORARY ORANGE SAFETY FENCE AND ANY ADDITIONAL POSTS, BASEPLATES, FABRIC, ANCHOR BOLTS AND ANY OTHER HARDWARE OR FENCE MODIFICATIONS NECESSARY TO COMPLETE THE WORK TO THE SATISFACTION OF THE ENGINEER SHALL BE CONSIDERED INCIDENTAL AND INCLUDE WITH THIS ITEM FOR PAYMENT.

PRICE AND PAYMENT FOR ITEM SPECIAL - VANDAL PROTECTION FENCE, REMOVED AND REBUILT SHALL INCLUDE THE COST OF ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS NECESSARY TO ACCOMPLISH THIS ITEM OF WORK TO THE SATISFACTION OF THE ENGINEER.

PAYMENT WILL BE MADE AT THE UNIT PRICE BID FOR:

ITEM	UNIT	DESCRIPTION
SPECIAL	FOOT	VANDAL PROTECTION FENCE, REMOVED AND REBUILT

GENERAL NOTES

CUY-90-15.99

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SHEET NUMBER										ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
18A	21	22	23	24	26	26A	27	39	53						
														PAVEMENT	
16										251	01000	16	SQ YD	PARTIAL DEPTH PAVEMENT REPAIR	
835										254	01000	835	SQ YD	PAVEMENT PLANING, ASPHALT CONCRETE	
142										407	13900	142	GAL	TACK COAT, 702.13	
70										448	50001	70	CU YD	ASPHALT CONCRETE, SURFACE COURSE, TYPE 1H, AS PER PLAN	18A
														MAINTENANCE OF TRAFFIC	
										614	11050	LUMP		MAINTAINING TRAFFIC (WORK SITE LIGHTING) (SEE PN 462)	
			500							614	11100	500	HOUR	LAW ENFORCEMENT OFFICER WITH PATROL CAR	
			4							614	11500	4	MONTH	WORKSITE TRAFFIC SUPERVISOR	
							4			614	12336	4	EACH	WORK ZONE IMPACT ATTENUATOR (UNIDIRECTIONAL)	
										614	12420	LUMP		DETOUR SIGNING	
				4						614	12470	4	EACH	WORK ZONE SPEED LIMIT SIGN	
				2						614	12484	2	EACH	WORK ZONE INCREASED PENALTIES SIGN	
	10									614	12510	10	EACH	REPLACEMENT SIGN	
		25								614	12600	25	EACH	REPLACEMENT DRUM	
	10									614	13000	10	CU YD	ASPHALT CONCRETE FOR MAINTAINING TRAFFIC	
		3800								614	13171	3800	FT	LINEAR DELINEATION, AS PER PLAN	22
		19								614	13350	19	EACH	OBJECT MARKER, ONE WAY	
						20				614	18000	20	EACH	MAINTAINING TRAFFIC, MISC.: TOW TRUCK SERVICE (AUTO)	26A
						10				614	18000	10	EACH	MAINTAINING TRAFFIC, MISC.: TOW TRUCK SERVICE (COMMERCIAL)	26A
					20					614	18020	20	HOUR	MAINTAINING TRAFFIC, MISC.: SIGNAL TECHNICIAN	26
					1000					614	18030	1000	FEET	MAINTAINING TRAFFIC, MISC.: RUMBLE STRIPS, AS PER PLAN	26
		21								614	18601	21	SIGN MNTH	PORTABLE CHANGEABLE MESSAGE SIGN, AS PER PLAN	22
		1.36								614	20000	1.36	MILE	WORK ZONE LANE LINE, CLASS I	
0.12		0.94								614	22000	1.06	MILE	WORK ZONE EDGE LINE, CLASS I	
							2.30			614	22200	2.30	MILE	WORK ZONE EDGE LINE, CLASS I, 740.06, TYPE I	
							3894			614	23400	3894	FT	WORK ZONE CHANNELIZING LINE, CLASS I, 740.06, TYPE I	
							824			614	24400	824	FT	WORK ZONE DOTTED LINE, CLASS I, 740.06, TYPE I	
							60			614	25400	60	FT	WORK ZONE TRANSVERSE/DIAGONAL LINE, CLASS I, 740.06, TYPE I	
							19			614	30400	19	EACH	WORK ZONE LANE ARROW, CLASS I, 740.06, TYPE I	
							6			614	31400	6	EACH	WORK ZONE WORD ON PAVEMENT, 72", CLASS I, 740.06, TYPE I	
								LUMP		615	10001	LUMP		ROADS FOR MAINTAINING TRAFFIC, AS PER PLAN	39
								185		615	25001	185	SQ YD	PAVEMENT FOR MAINTAINING TRAFFIC, CLASS B, AS PER PLAN	39
							870			622	40020	870	FT	PORTABLE CONCRETE BARRIER, 32"	
							670			622	40031	670	FT	PORTABLE CONCRETE BARRIER, 50", AS PER PLAN	23
							1400			622	40047	1400	FT	PORTABLE CONCRETE BARRIER, 50", BRIDGE MOUNTED, AS PER PLAN	23
														TRAFFIC CONTROL	
									462	630	80300	462	SQ. FT.	SIGN, TEMPORARY OVERLAY	
									11	630	89894	11	EACH	REMOVAL OF TEMPORARY OVERLAY SIGN AND DISPOSAL	
0.12									1.05	646	10001	1.17	MILE	EDGE LINE, AS PER PLAN	3
									1.30	646	10101	1.30	MILE	LANE LINE, AS PER PLAN	3
									300	646	10301	300	FT	CHANNELIZING LINE, AS PER PLAN	3
									4	646	20301	4	EACH	LANE ARROW, AS PER PLAN	3
									240	646	20501	240	FT	DOTTED LINE, 6", AS PER PLAN	3
														ALTERNATE BID	
0.12									1.05	646	10001	1.17	MILE	EDGE LINE, (POLYCARB) AS PER PLAN - ALTERNATE BID	3
									1.30	646	10101	1.30	MILE	LANE LINE, (POLYCARB) AS PER PLAN - ALTERNATE BID	3
									300	646	10301	300	FT	CHANNELIZING LINE, (POLYCARB) AS PER PLAN - ALTERNATE BID	3
									4	646	20301	4	EACH	LANE ARROW, (POLYCARB) AS PER PLAN - ALTERNATE BID	3
									240	646	20501	240	FT	DOTTED LINE, 6", (POLYCARB) AS PER PLAN - ALTERNATE BID	3
														EROSION CONTROL	
										832	30000	1000	EACH	EROSION CONTROL	
														FOR STRUCTURE GENERAL SUMMARY, SEE SHEET 7	
										614	11000	LUMP		MAINTAINING TRAFFIC	
										619	16021	9	MONTH	FIELD OFFICE, TYPE C, AS PER PLAN	3
										623	10000	LUMP		CONSTRUCTION LAYOUT STAKES	
										624	10000	LUMP		MOBILIZATION	

CALCULATED ENF
CHECKED JTP

GENERAL SUMMARY

CUY-90-15.99

...Broadway\sheets\77039GG001.dgn

GENERAL SUMMARY

ITEM	EXTENSION	TOTAL	UNIT	DESCRIPTION	ABUT.	PIERS	SUPER.	GEN.	REFERENCE SHEET	
				STRUCTURES						
202	11201	LUMP		PORTIONS OF STRUCTURE REMOVED, AS PER PLAN			LUMP		4/53	
509	10001	104,046	POUND	EPOXY COATED REINFORCING STEEL, AS PER PLAN			104,046		5/53	
509	20001	1000	POUND	REINFORCING STEEL, REPLACEMENT OF EXISTING REINFORCING STEEL, AS PER PLAN			1000		5/53	*
510	10001	100	EACH	DOWEL HOLES WITH NON-SHRINK, NON-METALLIC GROUT, AS PER PLAN			100		5/53	*
511	50001	356	CU YD	CLASS HP CONCRETE, BRIDGE DECK, AS PER PLAN			356		5/53	
511	50101	67	CU YD	CLASS HP CONCRETE, BRIDGE DECK (PARAPET), AS PER PLAN			67		5/53	
511	52000	LUMP		CLASS HP CONCRETE, TEST SLAB			LUMP			
512	10100	615	SQ YD	SEALING OF CONCRETE SURFACES, EPOXY-URETHANE			615			
513	90000	100	POUND	STRUCTURAL STEEL, MISC.: REPAIRS UNDER 50 POUNDS			100			*
SPEC.	607 40300	450	FOOT	VANDAL PROTECTION FENCE, REMOVED AND REBUILT			450			
SPEC.	690 71000	LUMP		ASBESTOS ABATEMENT				LUMP		
SPEC.	690 72000	LUMP		ASBESTOS NOTIFICATION				LUMP		

* ITEM CONTAINS CONTINGENCY QUANTITY TO BE USED AS DIRECTED BY THE ENGINEER

CALCULATED ENF
CHECKED DWL

GENERAL SUMMARY

CUY-90-15.99

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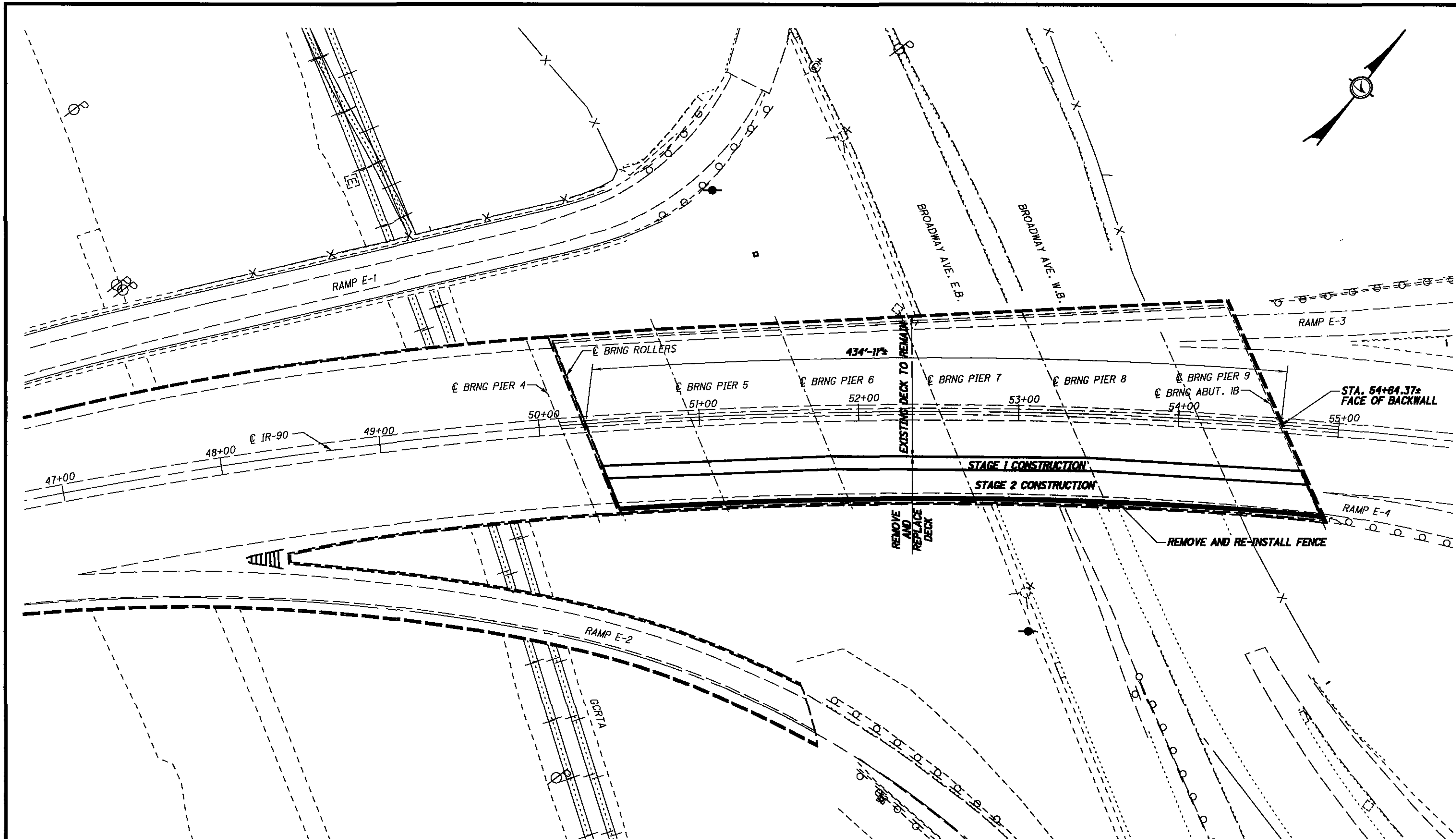

DESIGN AGENCY
BURGESS & NIPLE
100 WEST ERIE STREET PAINESVILLE, OHIO 44077

DESIGNED	DRAWN	REVIEWED	DATE
DCF	DCF	DWL	3-22-07
CHECKED	REVISED	STRUCTURE FILE NUMBER	
JAA		1808393	

STRUCTURE PLAN
BRIDGE NO. CUY-90-1524
OVER THE CUYAHOGA RIVER

CUY-90-15.99

1/11

8/53

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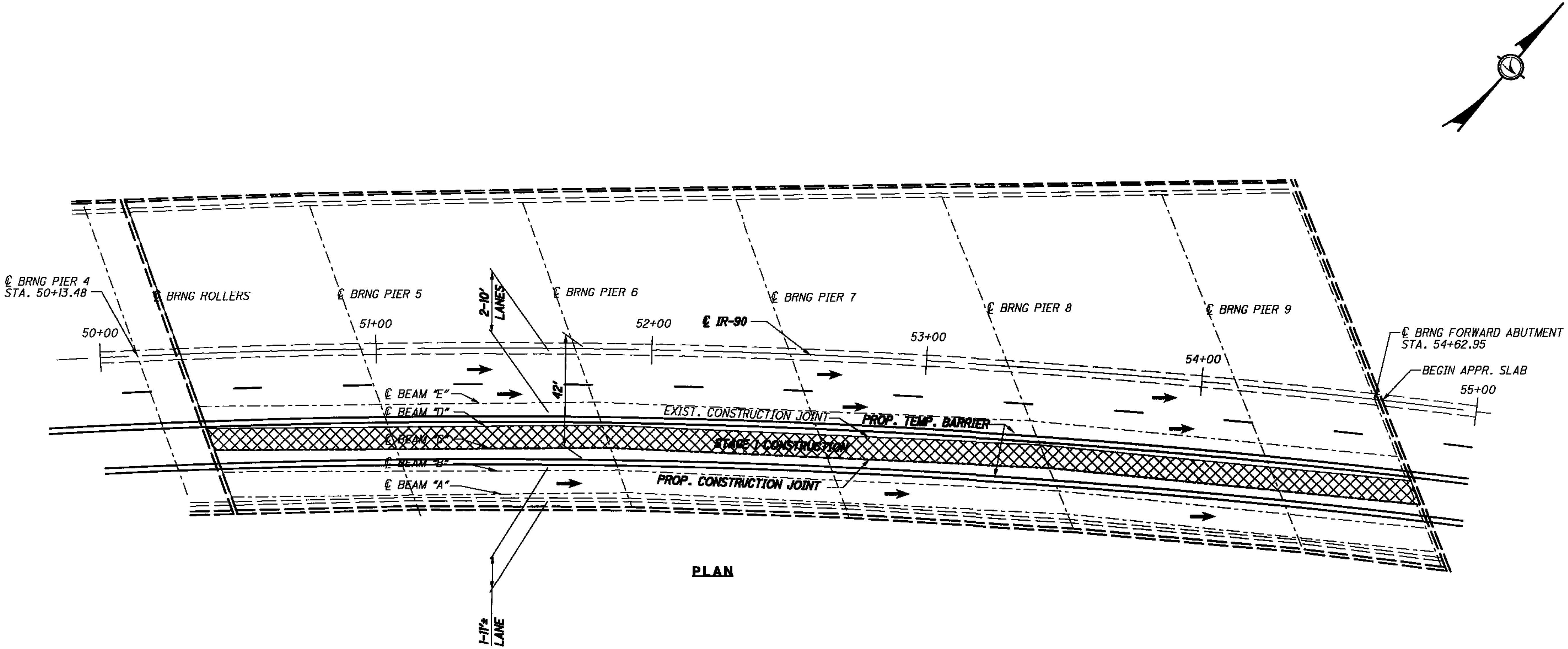
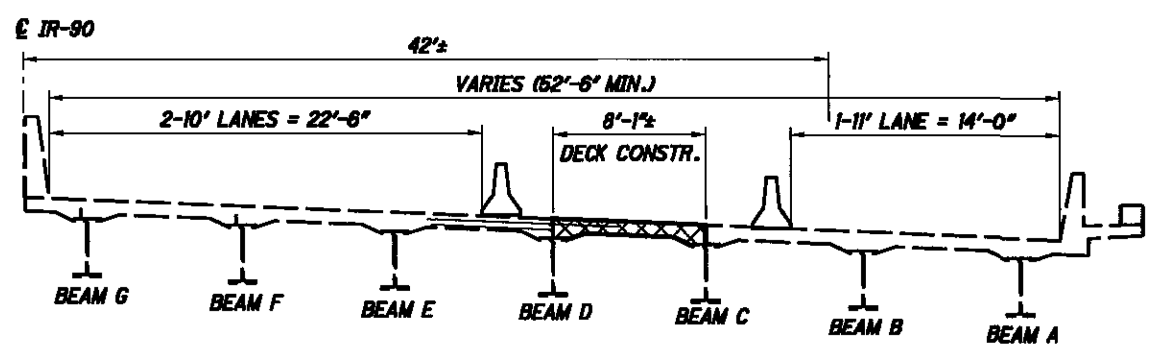


PLAN



TRANSVERSE SECTION

NOTE
FOR PORTABLE CONCRETE BARRIER DETAILS SEE STD. DRWG. PCB-91.
EACH BARRIER SEGMENT WILL REQUIRE TWO (2) ANCHORS UNLESS CLOSER THAN 12" TO THE OPEN DECK EDGE IN WHICH CASE FOUR (4) ANCHORS WILL BE REQUIRED.

DESIGN AGENCY
BURGESS & NIPLE

DESIGNED	DRAWN	REVIEWED	DATE
DCF	DCF	DWL	3-22-07
CHECKED	REVISED	STRUCTURE FILE NUMBER	
JAA		1809393	

STAGE 1 CONSTRUCTION DETAILS
BRIDGE NO. CUY-90-1524
OVER THE CUYAHOGA RIVER

CUY-90-15.99

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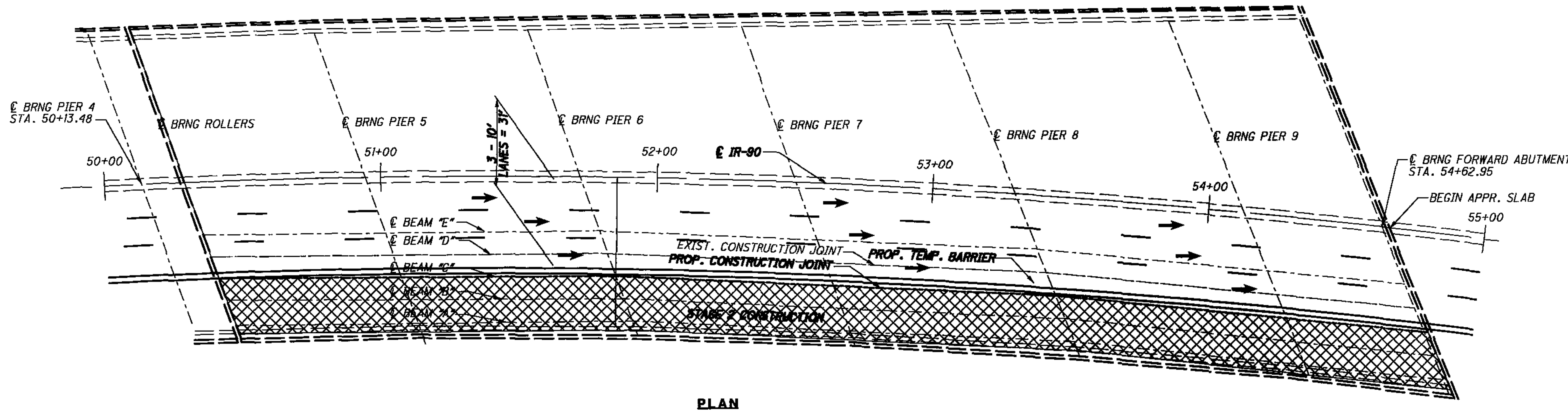
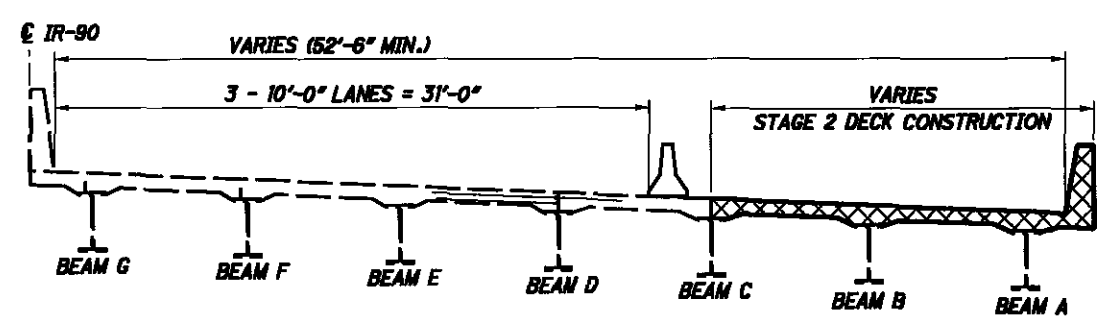


PLAN



TRANSVERSE SECTION

NOTE
FOR PORTABLE CONCRETE BARRIER DETAILS SEE STD. DRWG. PCB-91.
EACH BARRIER SEGMENT WILL REQUIRE TWO (2) ANCHORS UNLESS CLOSER THAN 12" TO THE OPEN DECK EDGE IN WHICH CASE FOUR (4) ANCHORS WILL BE REQUIRED.

DESIGN AGENCY
[redacted]
BURGESS & NIPLE
10 WEST ERIE STREET PAINESVILLE, OHIO 44077

DESIGNED	DRAWN	REVIEWED	DATE
DCF	DCF	dwl	3-23-07
CHECKED	REVISED	STRUCTURE FILE NUMBER	
JAA		1808393	

STAGE 2 CONSTRUCTION DETAILS
BRIDGE NO. CUY-90-1524
OVER THE CUYAHOGA RIVER

CUY-90-15.99

3 / 11

10 / 53

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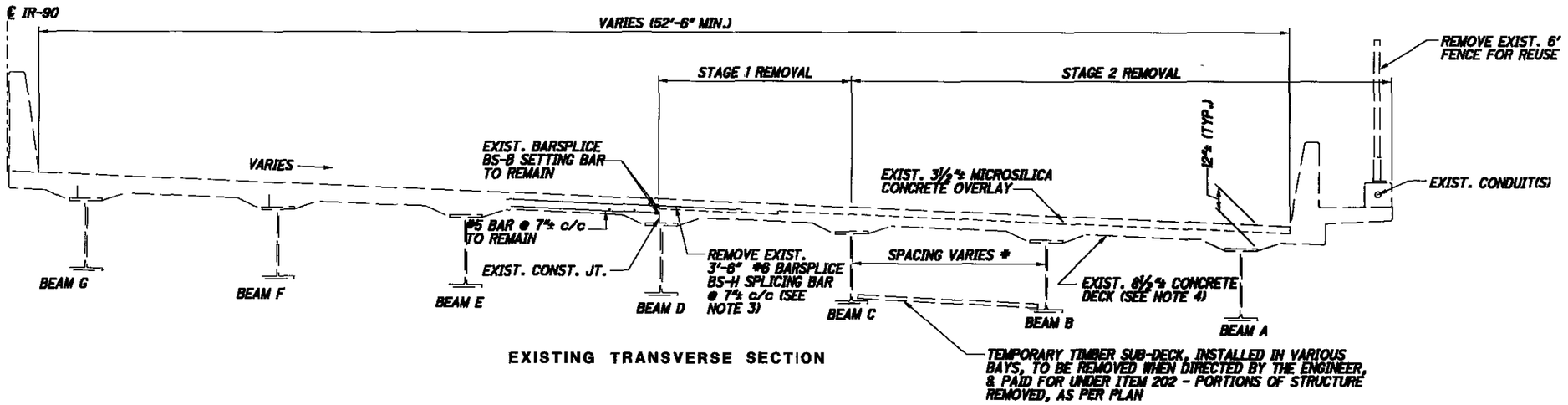
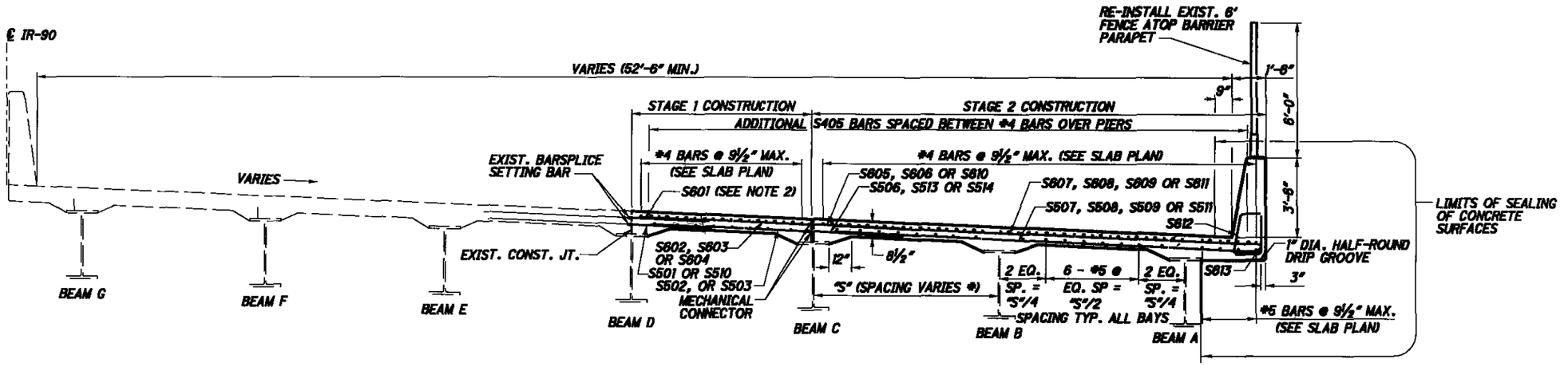


EXISTING TRANSVERSE SECTION



PROPOSED TRANSVERSE SECTION

* "S" - SPACING VARIES FROM 7'-1 1/4"± TO 8'-4 1/4"±

NOTE

1. MECHANICAL CONNECTORS SHALL BE CONSIDERED INCIDENTAL TO ITEM 509 - EPOXY COATED REINFORCING STEEL, AS PER PLAN
2. THREAD NEW NO. 6 BARS INTO EXISTING BARSPLICE BS-B SETTING BARS
3. DO NOT DAMAGE BARSPLICE BS-B SETTING BARS TO BE REUSED
4. CONTRACTOR IS HEREBY NOTIFIED THAT THE DECK IS IN POOR CONDITION AND MAY REQUIRE SPECIAL REMOVAL PROCEDURES.

LEGEND

c/c	=	CENTER TO CENTER
CONST. JT.	=	CONSTRUCTION JOINT
DIA.	=	DIAMETER
EXIST.	=	EXISTING
MAX.	=	MAXIMUM
PROP.	=	PROPOSED
TYP.	=	TYPICAL

DESIGN AGENCY
BURGESS & NIPLE
330 WEST ONE STREET PICKERINGTON, OHIO 43147

DESIGNED	DRAWN	REVIEWED	DATE
DCF	DCF	DWL	4-04-07
CHECKED	REVISED	STRUCTURE FILE NUMBER	
JAA		18006383	

TRANSVERSE SECTION
BRIDGE NO. CUY-90-1524
OVER THE CUYAHOGA RIVER

CUY-90-15.99

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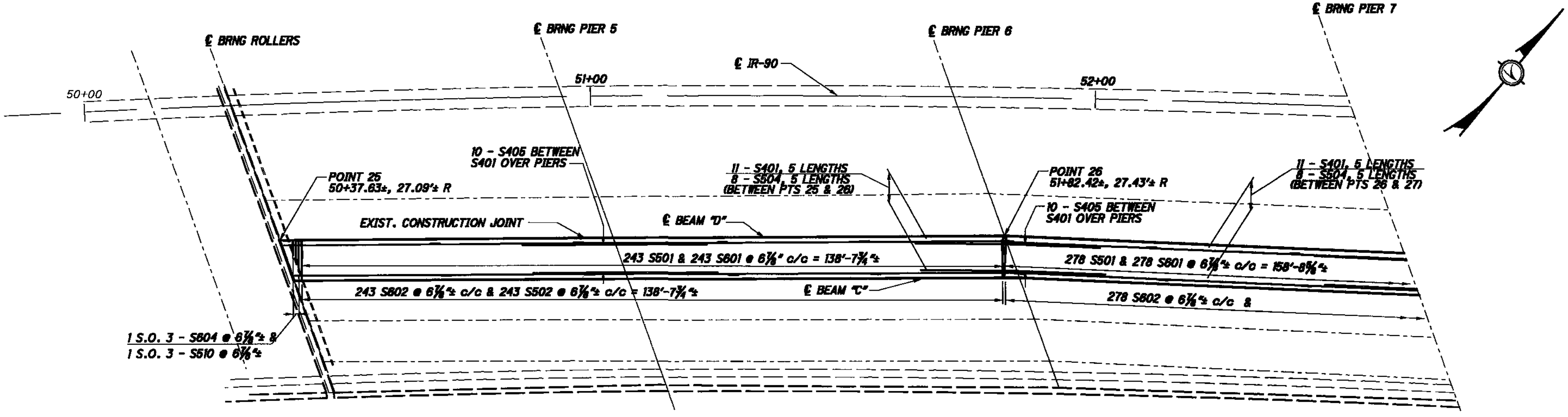
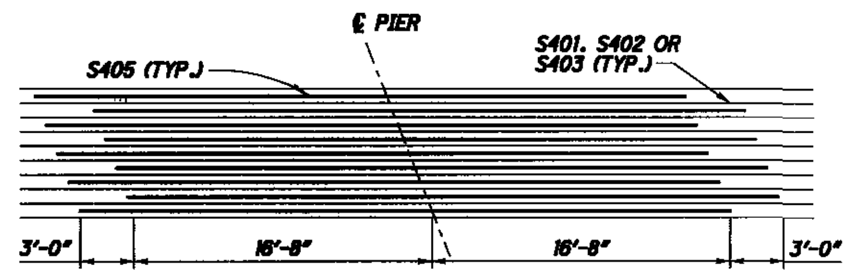
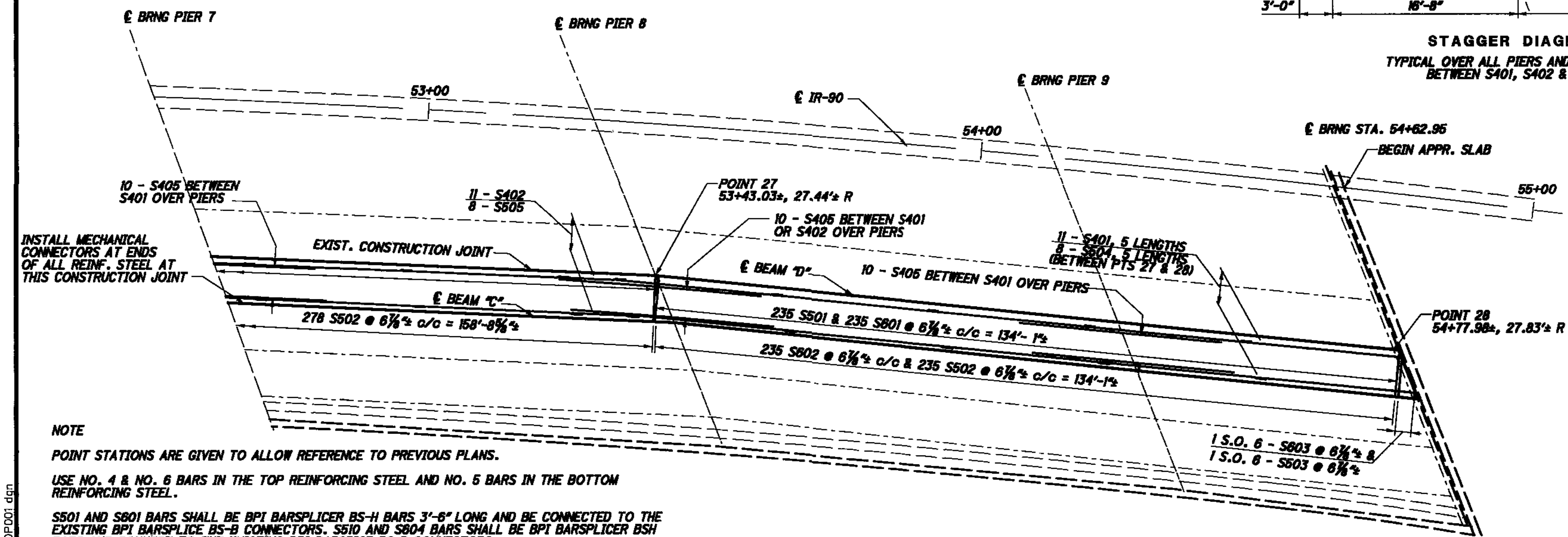




STAGGER DIAGRAM

TYPICAL OVER ALL PIERS AND SPACED EQUALLY BETWEEN S401, S402 & S403 BARS



MINIMUM LAPS

NO. 4 BARS = 20"
NO. 5 BARS = 25"
NO. 6 BARS = 29"

NOTE

POINT STATIONS ARE GIVEN TO ALLOW REFERENCE TO PREVIOUS PLANS.

USE NO. 4 & NO. 6 BARS IN THE TOP REINFORCING STEEL AND NO. 5 BARS IN THE BOTTOM REINFORCING STEEL.

S501 AND S601 BARS SHALL BE BPI BARSPLICER BS-H BARS 3'-6" LONG AND BE CONNECTED TO THE EXISTING BPI BARSPLICE BS-B CONNECTORS. S510 AND S604 BARS SHALL BE BPI BARSPLICER BSH BARS AND CONNECT TO THE EXISTING BPI BARSPICE BS-B CONNECTORS.
SEE DETAIL ON SHEET 7 / 11

THE FOLLOWING BAR MARKS SHALL HAVE MECHANICAL CONNECTORS AND CONNECT TO THEIR RESPECTIVE BARS IN STAGE 2: S602, S603, S502, & S503

LEGEND

APPR.	=	APPROACH
BRNG.	=	BEARING
c/c	=	CENTER TO CENTER
EXIST.	=	EXISTING
MAX.	=	MAXIMUM
S.O.	=	SERIES OF
SP.	=	SPACING

DESIGN AGENCY
[redacted]
BURGESS & NIPLE
100 WEST ERIE STREET PAINESVILLE, OHIO 44077

REVIEWED DWL DATE 3-23-07
STRUCTURE FILE NUMBER 1808383
DRAWN DCF REVISED
DESIGNED DCF CHECKED JAA

DECK PLAN - STAGE 1 CONSTRUCTION
BRIDGE NO. CUY-90-1524
OVER THE CUYAHOGA RIVER

CUY-90-15.99

5 / 11

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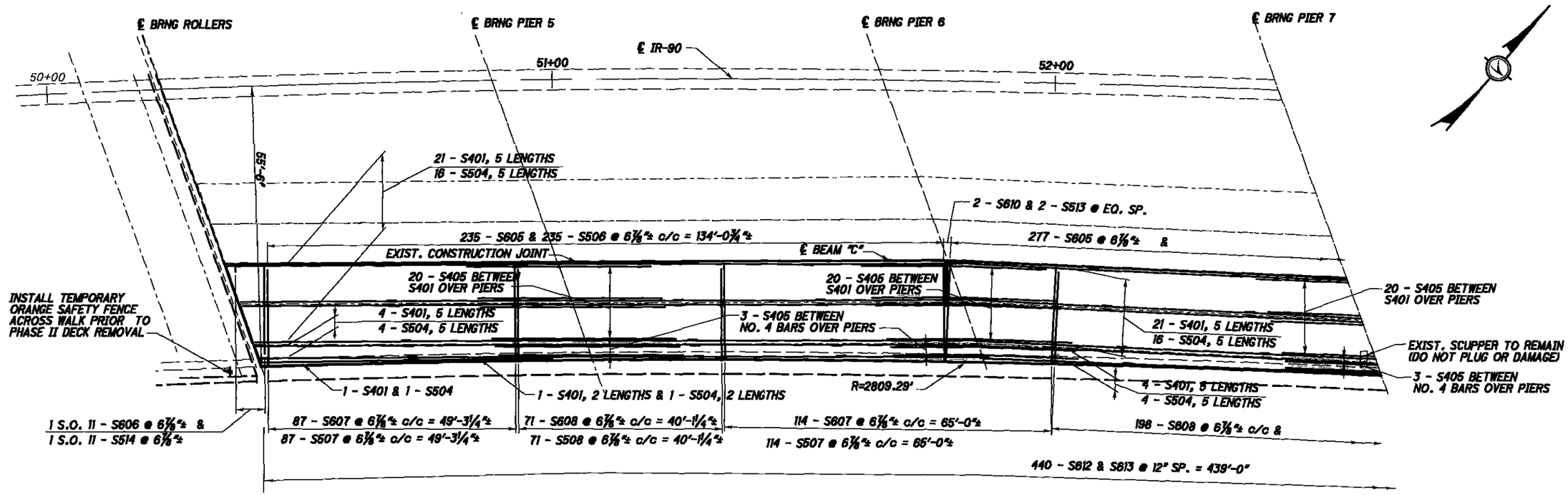

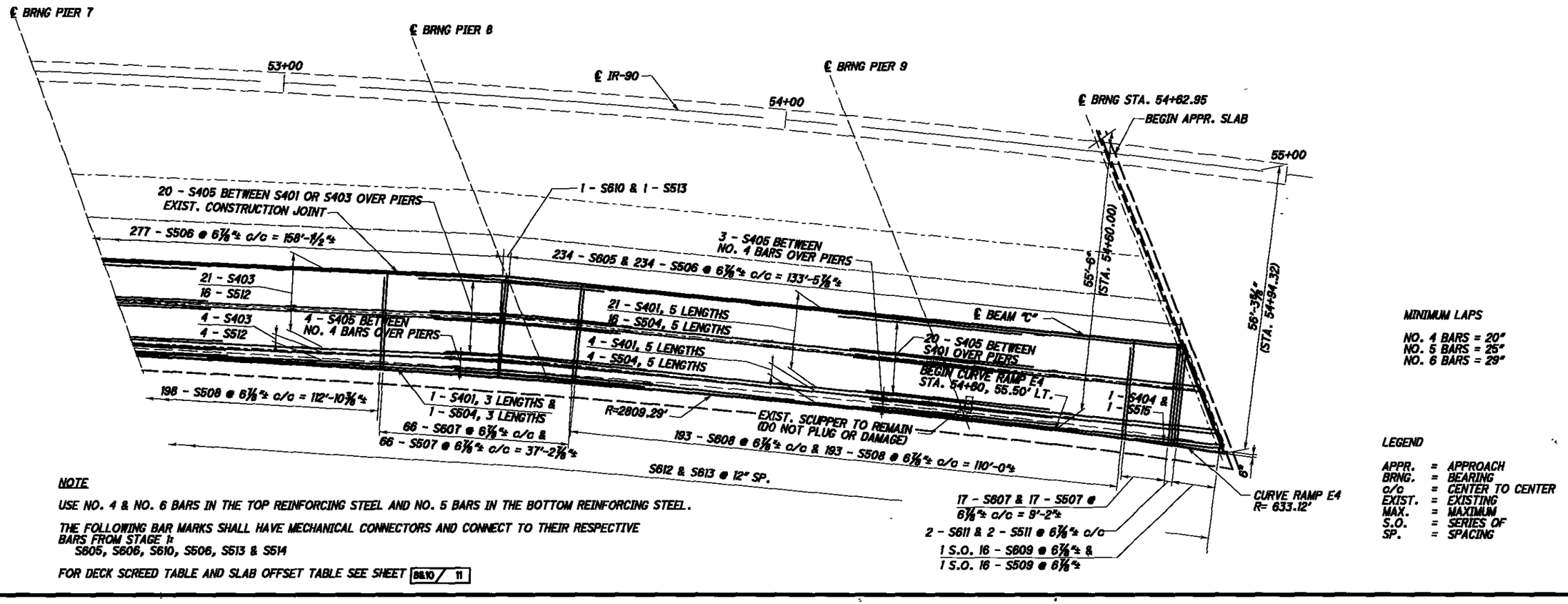

MINIMUM LAPS

NO. 4 BARS = 20"
NO. 5 BARS = 25"
NO. 6 BARS = 29"

LEGEND

APPR.	=	APPROACH
BRNG.	=	BEARING
c/c	=	CENTER TO CENTER
EXIST.	=	EXISTING
MAX.	=	MAXIMUM
S.O.	=	SERIES OF
SP.	=	SPACING

NOTE

USE NO. 4 & NO. 6 BARS IN THE TOP REINFORCING STEEL AND NO. 5 BARS IN THE BOTTOM REINFORCING STEEL.

THE FOLLOWING BAR MARKS SHALL HAVE MECHANICAL CONNECTORS AND CONNECT TO THEIR RESPECTIVE BARS FROM STAGE I:
S605, S606, S610, S506, S513 & S514

FOR DECK SCREED TABLE AND SLAB OFFSET TABLE SEE SHEET 8&10 / 11

DESIGN AGENCY
BURGESS & NIPLE
330 EAST BROAD STREET, COLUMBUS, OHIO 43215

REVIEWED dw! DATE 3-23-07
STRUCTURE FILE NUMBER 1309383
DRAWN DCF REVISED
DESIGNED DCF CHECKED JAA

DECK PLAN - STAGE 2 CONSTRUCTION
BRIDGE NO. CUY-90-1524
OVER THE CUYAHOGA RIVER

CUY-90-15.99

6 / 11

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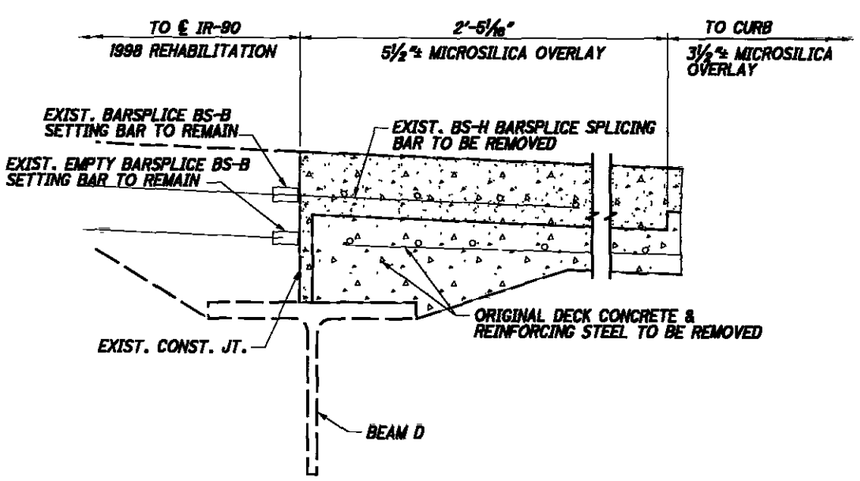
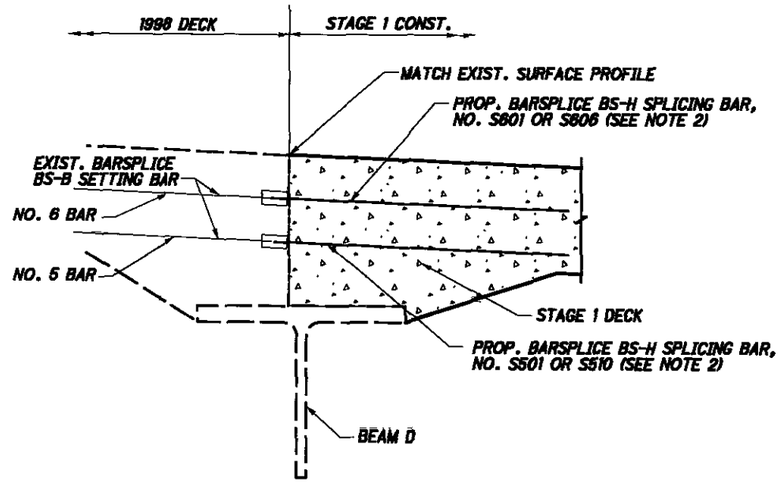
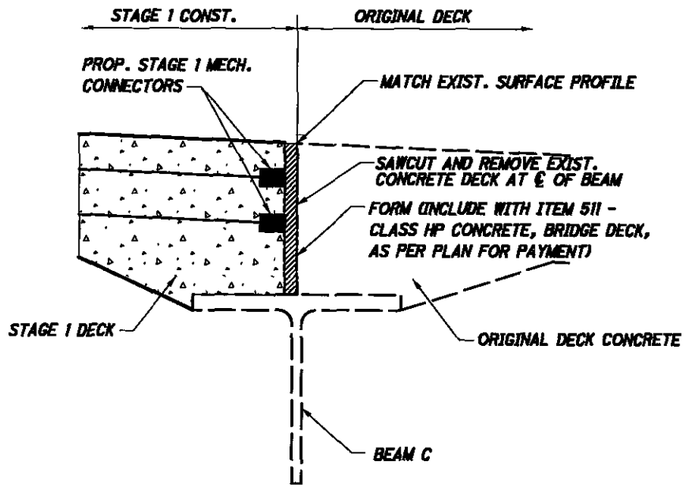


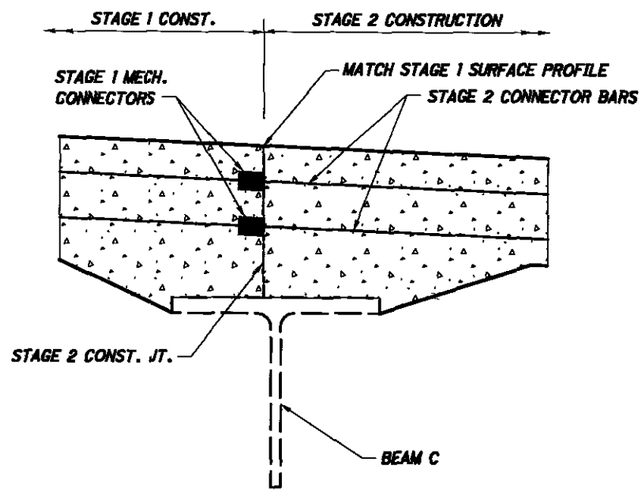
EXISTING CONSTRUCTION JOINT
BEAM D



PROPOSED CONSTRUCTION JOINT
BEAM D



PROPOSED STAGE 1 CONSTRUCTION
BEAM C



PROPOSED STAGE 2 CONSTRUCTION
BEAM C

NOTE

1. MECHANICAL CONNECTORS SHALL BE CONSIDERED INCIDENTAL TO ITEM 509 - EPOXY COATED REIFORCING STEEL, AS PER PLAN.

2. THREAD NEW BARS INTO EXISTING BARSPLICE BS-B SETTING BARS

LEGEND

c/c	=	CENTER TO CENTER
CONST.	=	CONSTRUCTION
CONST. JT.	=	CONSTRUCTION JOINT
EXIST.	=	EXISTING
MECH.	=	MECHANICAL
PEJF	=	PREFORMED EXPANSION JOINT FILLER
PROP.	=	PROPOSED

DESIGN AGENCY
BURGESS & NIPLE
8 EAST BROAD STREET | COLUMBUS, OHIO 43215

DESIGNED	DRAWN	REVIEWED	DATE
DCF	DCF	DWL	3-23-07
CHECKED	REVISED	STRUCTURE FILE NUMBER	
JAA		1809393	

DECK DETAILS
BRIDGE NO. CUY-90-1524
OVER THE CUYAHOGA RIVER

CUY-90-15.99

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DECK SCREED ELEVATION TABLE

ELEVATION LINE		℄ BRGS. PIER 4R	¼ SPAN	SPAN 1 ½ SPAN	¾ SPAN	℄ BRGS. PIER 5	¼ SPAN	SPAN 2 ½ SPAN	¾ SPAN	℄ BRGS. PIER 6	¼ SPAN	SPAN 3 ½ SPAN	¾ SPAN	℄ BRGS. PIER 7
RIGHT GUTTER EXISTING & FINAL TOP OF DECK ELEV.														
RIGHT GUTTER DECK SCREED ELEV.														
BEAM A	* ELEV. AFTER DECK REMOVAL	—				—				—				—
	* ELEV. BEFOR DECK REMOVAL	—				—				—				—
	** SURVEYED REBOUND	—				—				—				—
	*** ADJUSTED REBOUND	—				—				—				—
	FINAL TOP OF DECK ELEV.													
	**** DECK SCREED ELEV.													
BEAM B	* ELEV. AFTER DECK REMOVAL	—				—				—				—
	* ELEV. BEFOR DECK REMOVAL	—				—				—				—
	** SURVEYED REBOUND	—				—				—				—
	*** ADJUSTED REBOUND	—				—				—				—
	FINAL TOP OF DECK ELEV.													
	**** DECK SCREED ELEV.													
		℄ BRGS. PIER 8	¼ SPAN	SPAN 4 ½ SPAN	¾ SPAN	℄ BRGS. PIER 9	¼ SPAN	SPAN 5 ½ SPAN	¾ SPAN	℄ BRGS. F. A.				
BEAM A	* ELEV. AFTER DECK REMOVAL	—				—				—				
	* ELEV. BEFOR DECK REMOVAL	—				—				—				
	** SURVEYED REBOUND	—				—				—				
	*** ADJUSTED REBOUND	—				—				—				
	FINAL TOP OF DECK ELEV.													
	**** DECK SCREED ELEV.													
BEAM B	* ELEV. AFTER DECK REMOVAL	—				—				—				
	* ELEV. BEFOR DECK REMOVAL	—				—				—				
	** SURVEYED REBOUND	—				—				—				
	*** ADJUSTED REBOUND	—				—				—				
	FINAL TOP OF DECK ELEV.													
	**** DECK SCREED ELEV.													

LEGEND:

* - BOTTOM OF BEAM ELEVATION SURVEYED DURING CONSTRUCTION
** - SURVEYED REBOUND = BEAM ELEVATION BEFORE DECK REMOVAL MINUS BEAM ELEVATION AFTER DECK REMOVAL
*** - ADJUSTED REBOUND = RATIO OF PROPOSED DEAD LOAD TO EXISTING DEAD LOAD MULTIPLIED TIMES THE SURVEYED REBOUND.
**** - DECK SCREED ELEV. = ADJUSTED REBOUND ADDED TO THE FINAL TOP OF DECK ELEVATION.

$$\frac{\text{PROPOSED DEAD LOAD}}{\text{EXISTING DEAD LOAD}} = 0.778$$

SCREED ELEVATIONS:

FIELD PROCEDURES DURING PHASED CONSTRUCTION OF DECKS WITHOUT CLOSURE POURS.

1. SURVEY THE TOP SURFACE ABOVE BEAMS A AND B, AND ALONG RIGHT GUTTER LINE. SURVEY THE BOTTOM OF EXISTING BEAMS IN STAGE 2 AT THE LOCATIONS SHOWN IN THE TABLE PRIOR TO STAGE 2 DECK REMOVAL AND AGAIN AFTER STAGE 2 DECK REMOVAL.

2. COMPUTE THE AMOUNT OF SURVEYED REBOUND FOR THESE BEAMS BY SUBTRACTING THE ELEVATIONS AFTER REMOVAL FROM THE ELEVATIONS BEFORE REMOVAL.

3. COMPUTE THE ADJUSTED REBOUND FOR THESE BEAMS BY MULTIPLYING THE SURVEYED REBOUND BY THE RATIO OF THE PROPOSED DEAD LOAD TO THE EXISTING DEAD LOAD.

4. ADD THE AMOUNT OF ADJUSTED REBOUND TO THE FINAL TOP OF DECK ELEVATIONS TO OBTAIN THE DECK SCREED ELEVATIONS. USE REBOUND OF CLOSEST BEAM TO DETERMINE GUTTER DECK SCREED ELEVATION.

NOTES:

1. DECK SLAB DEPTH: THE QUANTITY OF DECK SLAB CONCRETE TO BE PAID FOR SHALL BE BASED ON THE MINIMUM REQUIRED DECK SLAB THICKNESS OF 8½ INCHES. THE QUANTITY OF CONCRETE REQUIRED FOR THE HAUNCH SHALL BE BASED ON THE DESIGN HAUNCH OF 3½ INCHES EVEN THOUGH DEVIATION FROM THAT DEPTH MAY BE NECESSARY BECAUSE THE TOP FLANGE OF THE BEAM MAY NOT BE PARALLEL TO THE FINISHED GRADE.

2. A HAUNCH WIDTH OF 12 INCHES SHALL BE USED FOR COMPUTING QUANTITY OF CONCRETE, HOWEVER, THE HAUNCH WIDTH MAY VARY BETWEEN 9 AND 15 INCHES.

3. THE COST OF SURVEYING IS CONSIDERED INCIDENTAL TO DECK CONSTRUCTIONS AND SHALL BE INCLUDED WITH ITEM 511 - CLASS HP CONCRETE, BRIDGE DECK, AS PER PLAN FOR PAYMENT.

4. THE ANTICIPATED TOTAL DECK SLAB THICKNESS AT THE CENTERLINE OF BEARING OF BEAMS IS 12"±.

5. FOR STAGE CONSTRUCTION DETAILS, SEE SHEETS 5 & 6 OF 11.

DESIGN AGENCY
BURGESS & NIPLE

DESIGNED DCF | DRAWN DCF | REVIEWED DWL | DATE 3-23-07
CHECKED JAA | REVISED | STRUCTURE FILE NUMBER 1809393

SCREED ELEVATIONS
BRIDGE NO. CUY-90-1524
OVER THE CUYAHOGA RIVER

CUY-90-15.99

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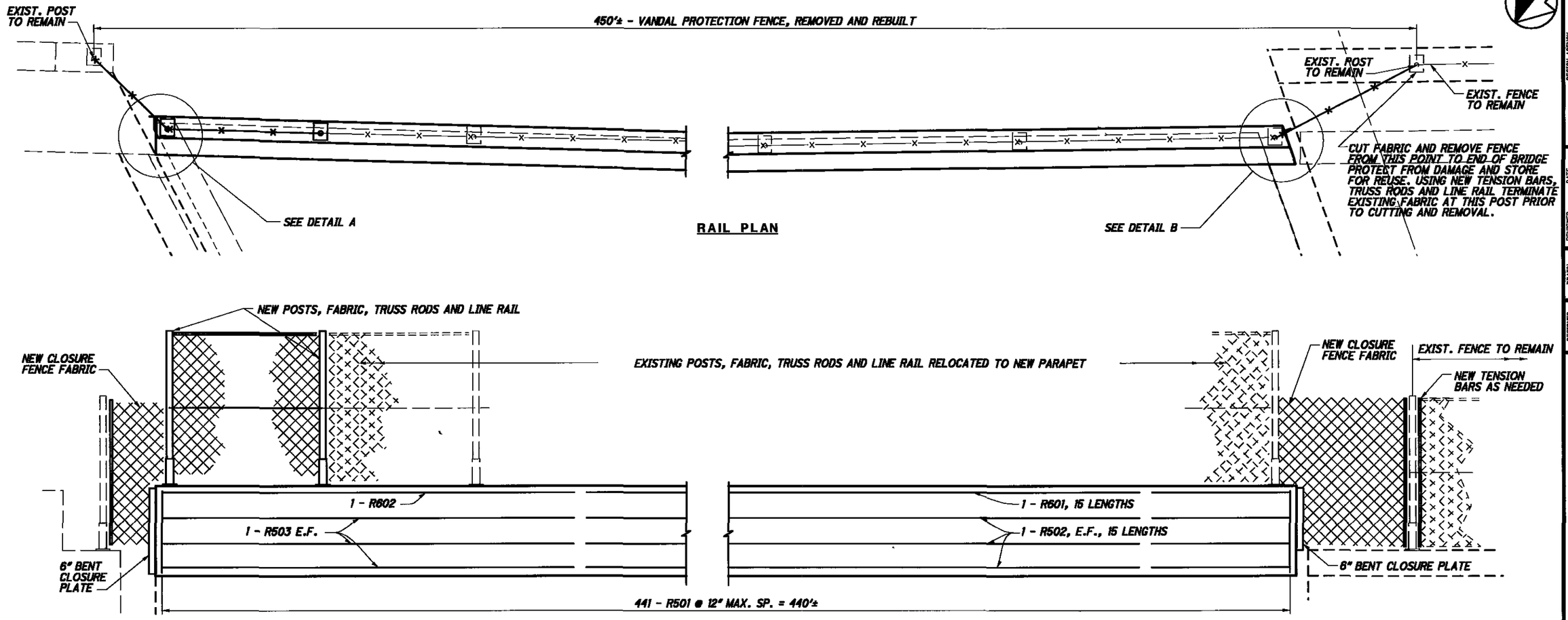
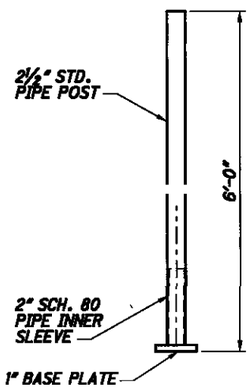


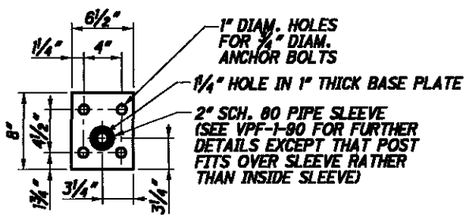
RAIL PLAN

RAIL ELEVATION

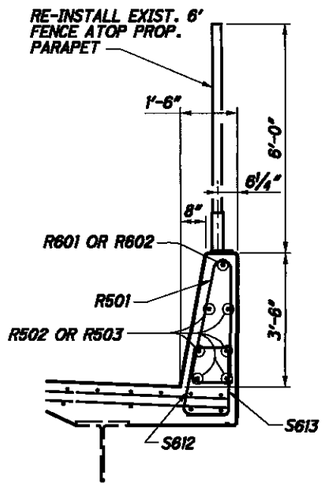


POST DETAIL

NOTE:
EXISTING POST BASE PLATES MATCH THE POST BASE PLATE DETAIL



POST BASE PLATE DETAIL



RAIL SECTION

NOTE

NEW FENCE POSTS, FABRIC, TRUSS RODS, LINE RAILS, TENSION BARS, CLOSURE PLATES, ANCHOR BOLTS AND ANY OTHER HARDWARE REQUIRED SHALL BE CONSIDERED INCIDENTAL AND INCLUDED FOR PAYMENT WITH ITEM SPECIAL - VANDAL PROTECTION FENCE, REMOVED AND REBUILT.

FOR DETAIL "A" AND DETAIL "B" SEE SHEET 10 / 11

FOR DETAILS NOT SHOWN SEE STANDARD DRAWING SBR-1-99 & VPF-1-90

MINIMUM LAPS

NO. 5 BARS = 25"
NO. 6 BARS = 29"

LEGEND

DIAM.	=	DIAMETER
E.F.	=	EACH FACE
EXIST.	=	EXISTING
MAX.	=	MAXIMUM
PROP.	=	PROPOSED
SCH.	=	SCHEDULE
STD.	=	STANDARD

DESIGN AGENCY
BURGESS & NIPLE
10 WEST BROAD STREET ZANESVILLE, OHIO 43701

DESIGNED	DRAWN	REVIEWED	DATE
DCF	DCF	DWL	4-04-07
CHECKED	REVISED	STRUCTURE FILE NUMBER	
JAA		18008393	

RAILING DETAILS
BRIDGE NO. CUY-80-1524
OVER THE CUYAHOGA RIVER

CUY-90-15.99

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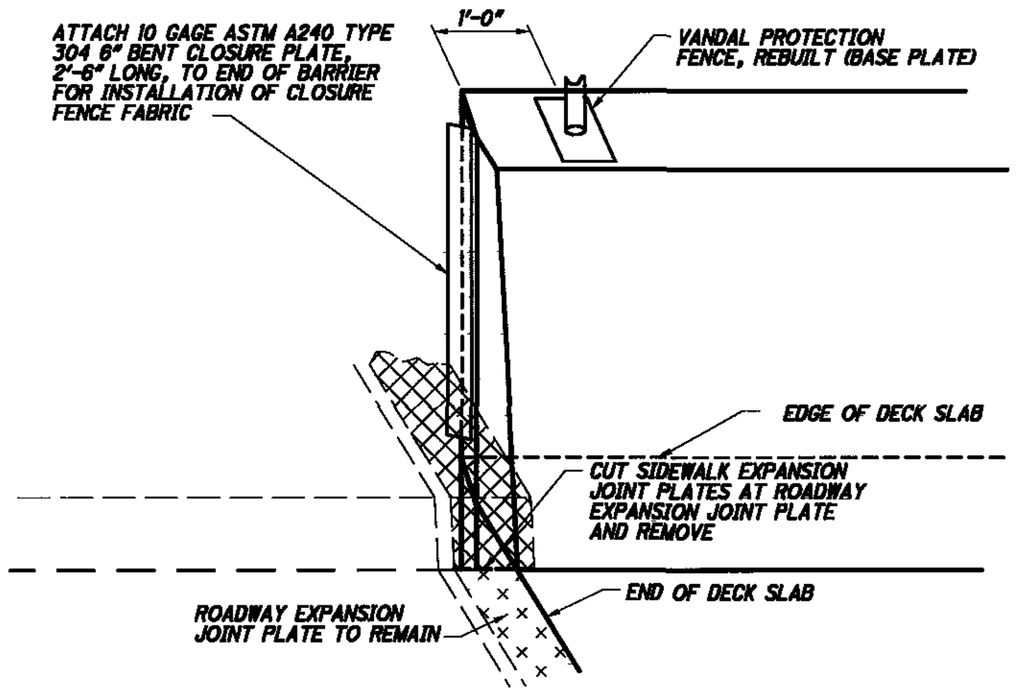
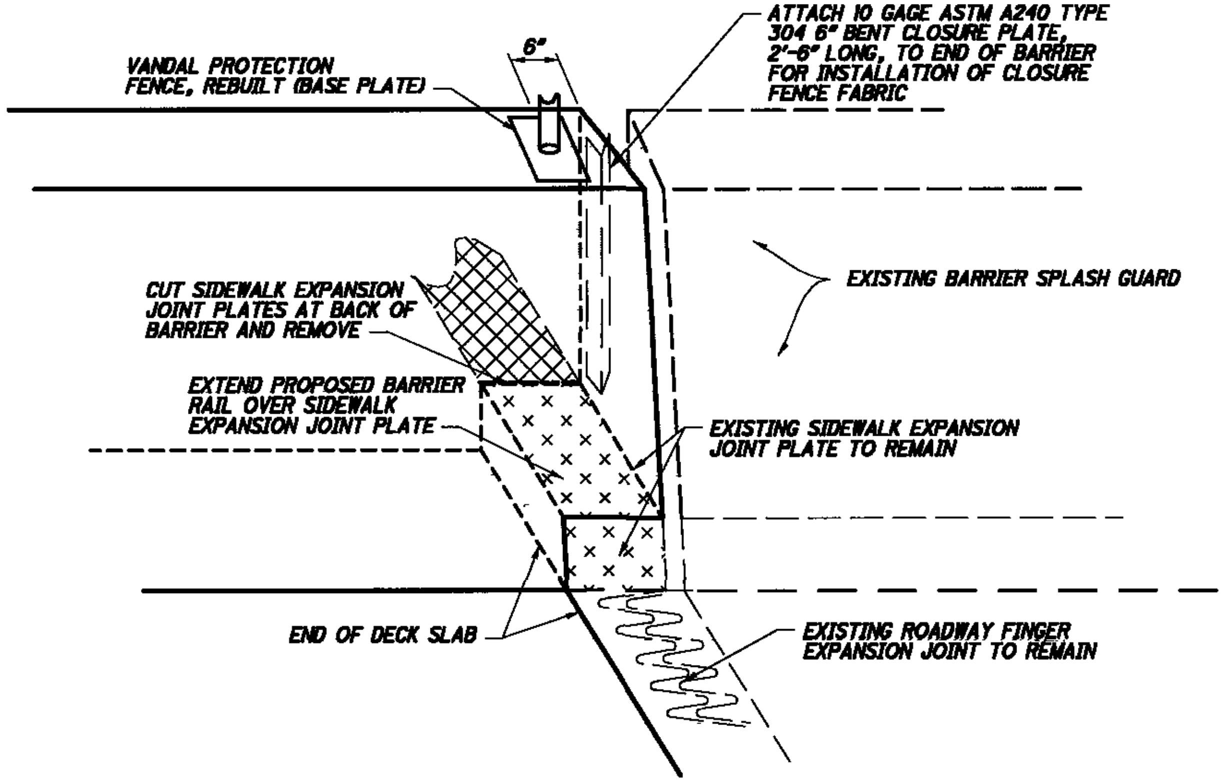


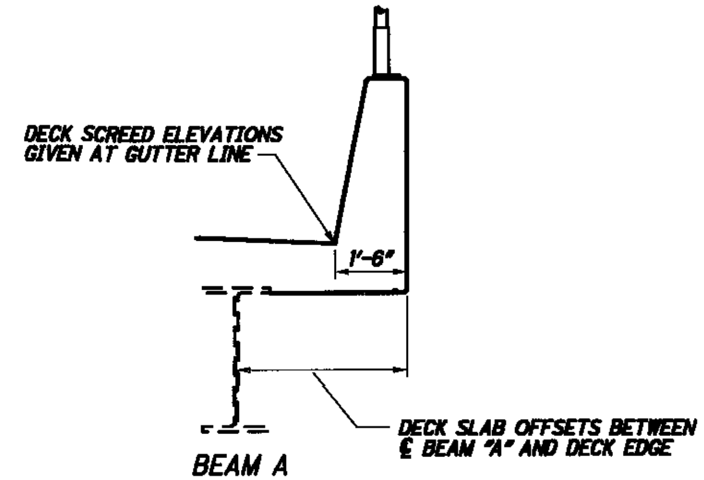
DETAIL "A"

(NORTHEAST END OF BARRIER)



DETAIL "B"

(SOUTHWEST END OF BARRIER)



DECK OFFSET TABLE

STATION ℄ IR-90	OFFSET DISTANCE
50+46.90 (℄ ROLLERS)	4'-4"±
50+50	3'-0½"±
50+75	2'-7¾"±
51+00	2'-5⅝"±
51+25	2'-6⅛"±
51+50	2'-9¼"±
51+75	3'-2¾"±
52+00	3'-5⅜"±
52+25	2'-11⅜"±
52+50	2'-7⅜"±
52+75	2'-6¼"±
53+00	2'-7¾"±
53+25	2'-11¾"±
53+50	3'-6⅜"±
53+75	3'-1⅞"±
54+00	2'-8½"±
54+25	2'-5¾"±
54+50	2'-5⅝"±
54+75	2'-9½"±
54+91.62 (℄ ABUT. BRNG)	3'-5⅞"±

NOTE

OFFSET DISTANCES CALCULATED FROM ORIGINAL PLAN DIMENSIONS AND LOCATIONS AND MAY NOT ACCURATELY PORTRAY EXISTING CONDITIONS.

WELDING ATTACHMENTS

WELDING OF ATTACHMENTS FOR SUPPORTS OF CONCRETE DECK FINISHING MACHINE TO THE TOP FLANGE IS NOT PERMITTED, EVEN IN COMPRESSION AREAS. THE CONTACTOR MAY SHOOT SHEAR CONNECTORS AT LOCATIONS OF NECESSARY SUPPORT AT ANY LOCATION ALONG THE CENTERLINE OF A FLANGE PLATE, INCLUDING TENSION AREAS. THE CONTRACTOR MAY THEN WELD ATTACHMENTS FOR SUPPORT OF THE CONCRETE FINISHING MACHINE TO THE SHEAR CONNECTORS.

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DESIGN AGENCY
BURGESS & NIPLE
100 WEST ERIE STREET PAINESVILLE, OHIO 44077

REVIEWED	DATE	STRUCTURE FILE NUMBER
DWL	4-04-07	1809393

DESIGNED	DRAWN	CHECKED	REVISED
DCF	DCF	JAA	

DECK DETAILS

BRIDGE NO. CUY-90-1524

OVER THE CUYAHOGA RIVER

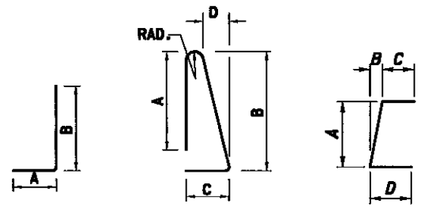
CUY-90-15.99

SUPERSTRUCTURE - DECK

MARK	NUMBER	LENGTH	WEIGHT (LBS)	TYPE	DIMENSIONS						
					A	B	C	D	E	R	INC.
S401	546	30'-0"	10941	STR							
S402	11	13'-3"	97	STR							
S403	25	14'-8"	242	STR							
S404	1	17'-9"	11	STR							
S405	166	38'-4"	4028	STR							
S501	762	3'-8"	2781	STR/M	(BARSPLICE BS-H SPLICING BAR)						
S502	762	7'-0"	5583	STR/F							
	1	1'-0"									
S503	S.O.	TO	23	STR/F							1'-1⅜"
	6	6'-6⅞"									
S504	426	30'-0"	13329	STR							
S505	6	19'-6"	182	STR							
S506	749	4'-0"	3124	STR/M							
S507	287	18'-6"	5537	STR							
S508	462	17'-6"	8432	STR							
	1	1'-4"									
S509	S.O.	TO	159	STR							1'-1⅛"
	16	17'-8⅞"									
	1	2'-10"									
S510	S.O.	TO	14	STR/M	(BARSPLICE BS-H SPLICING BAR)						1'-8"
	3	6'-2"									
S511	2	19'-5"	40	STR							
S512	20	20'-9"	432	STR							
S513	3	9'-0"	28	STR/M							
	1	1'-6"									
S514	S.O.	TO	109	STR/M							1'-7⅜"
	11	17'-7¾"									
S515	1	17'-9"	18	STR							
S601	762	3'-8"	4005	STR/M	(BARSPLICE BS-H SPLICING BAR)						
S602	762	7'-4"	8393	STR/F							
	1	1'-0"									
S603	S.O.	TO	34	STR/F							1'-1¾"
	6	6'-6⅞"									
	1	2'-10"									
S604	S.O.	TO	20	STR/M	(BARSPLICE BS-H SPLICING BAR)						1'-8"
	3	6'-2"									
S605	749	4'-0"	4499	STR/M							
	1	1'-6"									
S606	S.O.	TO	158	STR/M							1'-7⅜"
	11	17'-7¾"									
S607	287	18'-10"	8118	STR							
S608	462	17'-10"	12374	STR							
	1	1'-4"									
S609	S.O.	TO	229	STR							1'-1⅛"
	16	17'-8⅞"									
S610	3	9'-0"	40	STR/M							
S611	2	19'-5"	58	STR							
S612	443	3'-4"	2217	36	1'-8"	4"	8"	1'-1"			
S613	443	2'-8"	1774	1	1'-1"	1'-8"					
SUBTOTAL		DECK	96,989								

SUPERSTRUCTURE - PARAPET

MARK	NUMBER	LENGTH	WEIGHT (LBS)	TYPE	DIMENSIONS						
					A	B	C	D	E	R	INC.
R501	444	7'-4"	3386	2	3'-0"	3'-2"	1'-1"				2¾"
R502	90	30'-0"	2818	STR							
R503	6	21'-0"	131	STR							
R601	15	30'-0"	675	STR							
R602	1	28'-0"	39	STR							
SUBTOTAL		DECK	96,989								
SUBTOTAL		PARAPET	7,057								
TOTAL			104,046								



TYPE 1 TYPE 2 TYPE 3B

NOTES:

DUE TO POSSIBLE INCONSISTENCIES BETWEEN THE PREVIOUS PLAN AND PREVIOUS CONSTRUCTION DIMENSIONS, AND TO EXPEDITE CONSTRUCTION, ADDITIONAL BARS HAVE BEEN INCLUDED IN THE REINFORCEMENT SCHEDULE TO AID THE CONTRACTOR AND MAY OR MAY NOT BE NEEDED. ADDITIONAL BARS HAVE BEEN ADDED TO THE FOLLOWING BAR MARKS:

S501, S502, S506, S507, S601, S602, S605, S607, S612, S613 AND R501

BAR SIZE: THE BAR SIZE IS INDICATED IN THE BAR MARK. THE MARK BEGINS WITH ONE OR TWO LETTERS THAT IDENTIFY THE BAR LOCATION. THE NEXT ONE OR TWO DIGITS INDICATE THE BAR SIZE , AND THE REMAINING TWO DIGITS ARE THE SEQUENCE NUMBER.

EXAMPLE: S1001
S = SUPERSTRUCTURE BAR
10 = #10 BAR
01 = BAR SEQUENCE NUMBER 1

BAR DIMENSIONS SHOWN ARE OUT TO OUT UNLESS OTHERWISE INDICATED.

STD WRITTEN IN PLACE OF A DIMENSION INDICATES A STANDARD BEND AT THE END OF THE BAR.

STR IN THE BAR TYPE COLUMN INDICATES A STRAIGHT BAR.

/F INDICATES BAR WITH FEMALE MECHANICAL CONNECTOR

/M INDICATES BAR WITH MALE MECHANICAL CONNECTOR

R INDICATES INSIDE RADIUS, UNLESS OTHERWISE NOTED.

INC INDICATES THE LENGTH INCREMENT FOR SERIES BARS.

ALL REINFORCING STEEL TO BE EPOXY COATED.

DESIGN AGENCY
[redacted]
BURGESS & NIPLE
88 EAST BROAD STREET COLUMBUS, OHIO 43215

DESIGNED DCF
DRAWN DCF
CHECKED
REVIEWED
DATE
REVISED
STRUCTURE FILE NUMBER 1606383

REINFORCING STEEL LIST
BRIDGE NO. CUY-90-1524
OVER THE CUYAHOGA RIVER

CUY-90-15.99

11 / 11

18 / 53

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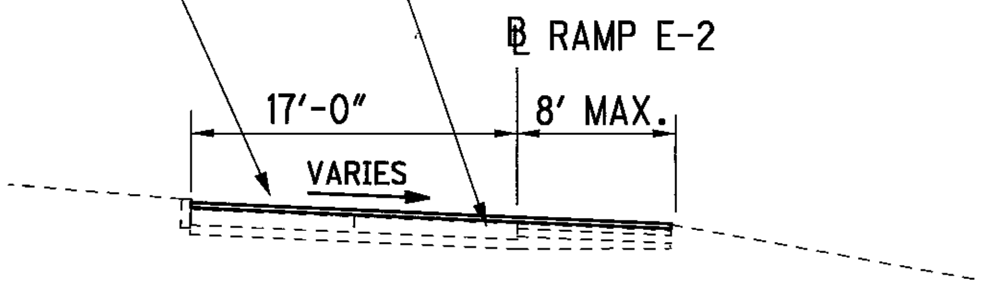
ITEM 448 - 3" ASPHALT CONCRETE SURFACE COURSE, TYPE 1H, AS PER PLAN (2-1.5" LIFTS)
ITEM 407 - TACK COAT, 702.13
ITEM 254 - PAVEMENT PLANING, ASPHALT CONCRETE (DEPTH=3")

ITEM 251 - PARTIAL DEPTH PAVEMENT REPAIR

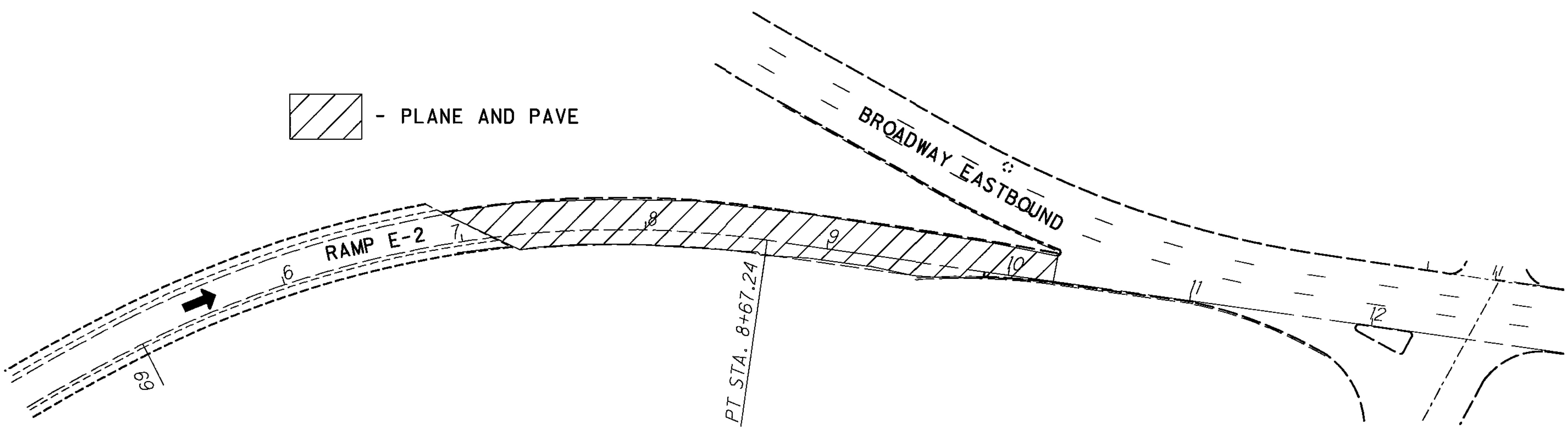


RAMP E-2
STA. 6+92 TO STA. 10+23

ESTIMATED QUANTITIES	
ITEM 251 - PARTIAL DEPTH PAVEMENT REPAIR	16 SY
ITEM 254 - PAVEMENT PLANING, ASPHALT CONCRETE	835 SY
ITEM 407 - TACK COAT, 702.13	142 GAL
ITEM 448 - ASPHALT CONCRETE, SURFACE COURSE, TYPE 1H, AS PER PLAN	70 CY
ITEM 614 - WORK ZONE EDGE LINE, CLASS 1	0.12 MI.
ITEM 646 - EDGE LINE, AS PER PLAN	0.12 MI.

ITEM 448 - ASPHALT CONCRETE SURFACE COURSE, TYPE 1H, AS PER PLAN

COARSE AGGREGATE FOR THIS ITEM SHALL BE 50 PERCENT LIMESTONE AND 50 PERCENT AIR COOLED BLAST FURNACE SLAG.



HORIZONTAL SCALE IN FEET

DESIGN AGENCY
BURGESS & NIPLE

PAVEMENT REPAIR -
RAMP E-2 (BROADWAY EXIT)

CUY-90-15.99

18A
53

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614 MAINTAINING TRAFFIC

THE PURPOSE OF THIS PROJECT IS TO REPLACE THE RIGHT TWO LANES OF THE EASTERLY PORTION OF THE IR90 EASTBOUND BRIDGE OVER BROADWAY/ONTARIO.

ALL WORK VEHICLES LICENSED TO OPERATE ON THE HIGHWAY, INCLUDING MATERIAL TRUCKS, SHALL BE EQUIPPED WITH A FLASHING, ROTATING OR OSCILLATING AMBER LIGHT VISIBLE TO ALL DIRECTIONS OF TRAFFIC A MINIMUM OF ONE-QUARTER MILE IN BRIGHT SUNLIGHT AND SHALL BE OPERATED WITH LIGHTED HEAD AND TAIL LAMPS. THE AMBER LIGHT SHALL BE IN OPERATION AT ALL TIMES WITHIN THE WORK ZONE AND WHILE TRAVELING TO AND FROM THE WORK ZONE WHENEVER THE VEHICLE SPEED IS BELOW 40 MPH. VEHICLE HAZARD LAMPS DO NOT SATISFY THIS REQUIREMENT. ALL OTHER EQUIPMENT SHALL BE EQUIPPED WITH A FLASHING, ROTATING OR OSCILLATING AMBER LIGHT VISIBLE TO ALL DIRECTIONS OF TRAFFIC A MINIMUM OF ONE-QUARTER MILE IN BRIGHT SUNLIGHT. THE AMBER LIGHT SHALL BE IN OPERATION WHILE THE EQUIPMENT IS WITHIN THE WORK ZONE.

LIGHTING USED TO ILLUMINATE THE WORK AREA SHALL BE AIMED AND SHIELDED TO PREVENT GLARE ENCROACHING INTO OPEN TRAFFIC LANES. FOR ADDITIONAL NOTES SEE THE "FLOODLIGHTING" NOTE.

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

ALL SIGNS, BARRICADES, SIGN SUPPORTS, CONES, DRUMS, FLAGGERS AND INCIDENTALS SHALL BE FURNISHED , ERECTED, MAINTAINED, AND REMOVED BY THE CONTRACTOR IN ACCORDANCE WITH THE MOST RECENT REVISION, CURRENT EDITION OF THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS (OMUTCD), EXCEPT AS NOTED WITHIN. INTERFERENCE WITH VEHICULAR TRAFFIC SHALL BE KEPT TO A MINIMUM AT ALL TIMES.

THE MAINTENANCE OF TRAFFIC DETAILS SHALL BE COORDINATED WITH THE MAINTENANCE OF TRAFFIC DETAILS OF ANY ADJACENT CONSTRUCTION PROJECTS. THE CONTRACTORS ARE REQUIRED TO COOPERATE WITH EACH OTHERS WORK ACTIVITIES DURING THE ENTIRE CONSTRUCTION PROCESS.

ALL WORK AND TRAFFIC CONTROL DEVICES SHALL BE IN ACCORDANCE WITH 614 AND OTHER APPLICABLE PORTIONS OF THE SPECIFICATIONS, AS WELL AS THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES. PAYMENT FOR ALL LABOR, EQUIPMENT AND MATERIALS SHALL BE INCLUDED IN THE LUMP SUM CONTRACT PRICE FOR ITEM 614 MAINTAINING TRAFFIC, UNLESS SEPARATELY ITEMIZED IN THE PLAN.

MAINTENANCE OF TRAFFIC OVERVIEW

IN THE BRIDGE DECK REPLACEMENT AREA, THE EXISTING FOUR LANES WILL BE REDUCED TO THREE. TO ACCOMODATE THE TRAFFIC AND MINIMIZE ANY TRAFFIC CONGESTION, ALL TRAFFIC EXITING AT THE ONTARIO EXIT WILL BE RE-ROUTED TO THE BROADWAY EXIT. TRAFFIC EXITING AT THE E. 22nd STREET EXIT FROM IR90 EASTBOUND WILL BE ENCOURAGED TO USE THE BROADWAY EXIT VIA THE USE OF ALTERNATE ROUTE SIGNAGE.

GENERAL

TRAFFIC ON IR 90, CROSSROADS AND THE RAMPS SHALL BE MAINTAINED AT ALL TIMES IN ACCORDANCE WITH THE LANE CLOSURE NOTES FOUND ON SHEET 20.

THE SEQUENCE FOR CONSTRUCTION SHALL BE PRE-PHASE 1, PHASE 1, PHASE 2. IN ANY GIVEN AREA, THE PHASE 2 TRAFFIC SHIFTS SHALL IMMEDIATELY FOLLOW PHASE 1 CONSTRUCTION.

MAINTENANCE OF TRAFFIC PHASES

PRE-PHASE 1 SHALL BE USED TO PROVIDE ADVANCE WARNING SIGNS FOR THE UPCOMING RAMP CLOSURES. IT SHALL ALSO INCLUDE THE PAVEMENT REPAIRS AT THE BOTTOM OF RAMP E-2, THE TEMPORARY PAVEMENT AT E. 14TH STREET AND THE SIGNAL MODIFICATIONS ALONG BROADWAY/ONTARIO/ORANGE. PRE-PHASE 1 WORK MUST BE COMPLETED BEFORE IMPLEMENTING THE SUBSEQUENT PHASES.

PHASES 1 & 2 REQUIRE THE RAMP CLOSURES AND DETOURS AS DETAILED IN THE PLANS.

MAINTENANCE OF TRAFFIC SHIFTS

CONSTRUCTION PHASES 1 & 2 HAVE USED STANDARD CONSTRUCTION DRAWING MT-102.10 AS A BASE, UNLESS SPECIFICALLY SHOWN OTHERWISE, ALL REQUIREMENTS OF THIS STANDARD CONSTRUCTION DRAWING SHALL BE INCORPORATED IN THE APPLICABLE CONSTRUCTION PHASES AS DETAILED IN THESE PLANS EXCEPT FOR THE FOLLOWING ITEMS:

1. NO LIGHTING IS REQUIRED.
2. OC-53-36 "MAINTAIN PRESENT LANE" SIGN IS NOT REQUIRED. *
3. OW-138-36 (DIAGONAL ARROW) SIGN IS NOT REQUIRED. *

* - THESE SIGNS MAY BE REQUIRED IN SPECIAL SITUATIONS.

TRUCK MOUNTED ATTENUATOR

WHEN THE CONTRACTOR IS SETTING LONG OR SHORT TERM WORK ZONES AND THE SHOULDERS (RIGHT OR LEFT SHOULDER) ARE LESS THAN 10 FEET IN WIDTH AND ARE ON A ROAD WITH SPEEDS 40 MPH OR HIGHER, A TRUCK MOUNTED ATTENUATOR (TMA) MUST TRAIL THE OPERATION OF SETTING THE ADVANCE WARNING SIGNS UP OR TAKING THEM DOWN. A TMA SHALL ALSO BE PROVIDED TO PROTECT THE WORKERS SETTING UP THE DRUMS OR PORTABLE CONCRETE BARRIERS. THIS SAME TRUCK MUST HAVE A TYPE B FLASHING ARROW PANEL MOUNTED ON IT FACING THE REAR OF THE TRUCK.

THE TMA MUST BRING A VEHICLE WEIGHING 1800 TO 4500 POUNDS AND TRAVELING AT 60 MPH TO A SAFE, CONTROLLED STOP, PER NCHRP 350 CRITERIA. THE MANUFACTURER'S SPECIFICATION MUST BE FOLLOWED CONCERNING THE SIZE OF THE TRUCK AND THE CONNECTIONS TO THE TMA.

TRAFFIC WIDTH REQUIREMENTS:

THE MINIMUM LANE WIDTHS ARE SHOWN IN THE MAINTENANCE OF TRAFFIC DETAILS. IF NOT SPECIFICALLY SHOWN, THEY SHALL CONSIST OF A MINIMUM 11'-0" WIDE LANE(S) PLUS 12" MINIMUM BUFFER ON EACH SIDE TO GUARDRAIL, PARAPETS, DRUMS, BARRIER OR EDGES OF PAVED SURFACES.

PHASE 1 WORK ACCESS REQUIREMENTS:

THE CONTRACTOR WILL NOT BE ALLOWED TO WORK WHILE THE RIGHT LANE IS OPEN. THIS IS NECESSARY DUE TO THE HAZARD WHICH WOULD OCCUR IF THE CONTRACTOR ATTEMPTED TO ENTER THE WORK AREA BY CROSSING THE OPEN LANE. THIS IS NOT INTENDED TO PREVENT THE CONTRACTOR FROM WORKING FROM BELOW (WHERE THIS COULD BE DONE).

SIGNAL MODIFICATIONS ALONG DETOUR ROUTE (BROADWAY / ORANGE) (E. 30th / WOODLAND)

THE SIGNAL MODIFICATIONS AT E. 9th STREET AND BROADWAY, E. 14th & ORANGE, E. 22nd STREET & ORANGE AVENUE, E. 30th STREET AND BROADWAY, E. 30th STREET AND ORANGE AVENUE, AND E. 30th STREET AND WOODLAND AVENUE, SHALL BE INSTALLED AND OPERATED AT LEAST 3 DAYS PRIOR TO IMPLEMENTION OF THE ONTARIO RAMP DETOUR. INSTALL THE "NO LEFT TURN" FROM WESTBOUND ORANGE AT E. 22nd STREET AND THE POST OFFICE DETOUR SIGNS AT LEAST 3 DAYS PRIOR TO IMPLEMENTING THE ONTARIO RAMP DETOUR INCLUDE INSTALLATION OF THE LANE CONTROL SIGNAGE SHOWN ON SHEET 47. ALSO INSTALL THE APPROPRIATE E. 14th STREET DETOUR SIGNING AND BROADWAY DETOUR SIGNING. PROVIDE AND INSTALL "SIGNAL OPERATION CHANGED" (W3-H10) SIGNS ON EVERY APPROACH TO ALL INTERSECTIONS WITH SIGNAL PHASING BEING MODIFIED. ADDITIONAL SIGNAL HEADS REQUIRED AS SHOWN IN THE PLANS MAY BE NEW OR USED EQUIPMENT. THE ADDITIONAL SIGNAL HEADS SHALL HAVE THE SAME LENS SIZE AS THE EXISTING SIGNALS AT THE INTERSECTION BEING MODIFIED. ALL COSTS FOR THE SIGNAL MODIFICATIONS, LANE CONTROL SIGNAGE, DETOUR SIGNING AND ALL INCIDENTALS SHALL BE INCLUDED UNDER ITEM 614 - MAINTAINING TRAFFIC.

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IMPLEMENTATION OF MAINTENANCE OF TRAFFIC ZONES

NO SET UPS OR TAKE DOWNS OF MAINTENANCE OF TRAFFIC ITEMS SUCH AS PAVEMENT MARKINGS, DRUMS, PCB'S, ETC., SHALL BE DONE DURING RUSH HOURS, 6 AM TO 10 AM OR 3 PM TO 7 PM. WHEN LANE CLOSURES ARE NEEDED TO PERFORM THIS WORK, THEY SHALL BE IMPLEMENTED IN ACCORDANCE WITH THE LANE CLOSURE NOTES ON THIS SHEET.

PERMITTED IR 90 LANE CLOSURES:

ALL LANE CLOSURES ON THIS PROJECT MAY ONLY BE IMPLEMENTED AT THE TIMES PERMITTED BY THE "DISTRICT 12 PERMITTED LANE CLOSURE TIMES" (P.L.C.T.) LIST, WHICH IS LOCATED ON THE ODOT WEB SITE:
www.dot.state.oh.us/dist12/workzone/laneclo.htm

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

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

IF LANE CLOSURES ARE IN PLACE OUTSIDE THE SPECIFIED TIME, LIQUIDATED DAMAGES IN THE AMOUNT OF $20.00 PER MINUTE FOR THE FIRST 30 MINUTES, THEN $50.00 PER MINUTE THEREAFTER, SHALL BE ASSESSED THE CONTRACTOR FOR EACH MINUTE THE LANE REMAINS CLOSED.

LANE CLOSURES ANALYSIS FOR ADDITIONAL LANE CLOSURE TIMES

IF THE CONTRACTOR WOULD LIKE TO CLOSE LANES OUTSIDE THE TIME PERMITTED THERE MUST FIRST BE A LANE CLOSURE ANALYSIS. A LANE CLOSURE ANALYSIS SHALL BE DONE AND DOCUMENTED IN THE FOLLOWING MANNER:

LANES MAY BE CLOSED IF THE HOURLY COUNTS (PER LANE TO REMAIN OPEN) ARE LESS THAN THE COUNTS GIVEN BELOW. IF THE ADDITIONAL HOURS ARE ON A WEEKDAY THE COUNT MUST BE DONE ON A WEEKDAY. SAME FOR A WEEKEND.

TWO HOURLY COUNTS SHALL BE DONE FOR THE ADDITIONAL TIMES THE CONTRACTOR WOULD LIKE TO CLOSE AN ADDITIONAL LANE. IF THE HOURLY COUNT (PER LANE TO REMAIN OPEN) IS UNDER 1100 VEHICLES PER HOUR (PER LANE TO REMAIN OPEN) FOR WEEKDAYS AND 1400 VEHICLES PER HOUR (PER LANE TO REMAIN OPEN) FOR WEEKENDS THEN THE CONTRACTOR MAY CLOSE A LANE DURING HOURS THAT MEET THIS CRITERIA.

THE TRAFFIC COUNTS SHALL BE TURNED INTO THE WORK ZONE TRAFFIC CONTROL ENGINEER FOR APPROVAL OF THE NEW TIMES. IF A BACK UP, (STOP AND GO TRAFFIC) OR DELAYS , (SPEEDS BELOW 40 MPH) OCCURS DURING THE NEW CLOSURE TIMES THE CONTRACTOR SHALL DO ANOTHER ANALYSIS. IF A TRAFFIC BACKUP OR DELAY OCCURS AFTER THE SECOND ANALYSIS, THE CONTRACTOR SHALL NOT CLOSE THE LANES FOR THE ADDITIONAL HOURS.

SUPPLEMENTAL PERMITTED LANE CLOSURES

FOR LANE CLOSURES NOT LISTED IN THE "DISTRICT 12 PERMITTED LANE CLOSURE TIMES" (P.L.C.T.) LIST, THE TABULATED CLOSURES LISTED IN THE ADJACENT TABLE SHALL APPLY. (THESE VALUES OVERRIDE THE PLCT)

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

LIQUIDATED DAMAGES FOR FAILURE TO RE-OPEN THE LANES AS REQUIRED SHALL BE AS NOTED IN THE TABLE.

SUPPLEMENTAL LANE CLOSURE INFORMATION

LOCATION	DIRECTION	EX. NO. LANES	WEEKDAYS			WEEKENDS			LIQUIDATED DAMAGES
			1 LANE CLOSED	2 LANES CLOSED	3 LANES CLOSED	1 LANE CLOSED	2 LANES CLOSED	3 LANES CLOSED	
IR 90	EASTBOUND WEST OF STA. 12	4	SEE (P.L.C.T.)	SEE (P.L.C.T.)	N.A.	SEE (P.L.C.T.)	SEE (P.L.C.T.)	N.A.	**
IR 90	EASTBOUND STA. 12 TO STA. 46	4	10 AM-6 AM	7 PM-6 AM	11 PM-5 AM	10 AM FRI-6 AM MON	7 PM FRI-6 AM MON	12:01 AM - 6 AM	**
IR 90	EASTBOUND STA. 46 TO STA. 55	4	10 AM-6 AM	7 PM-6 AM	11 PM-5 AM	10 AM FRI-6 AM MON	7 PM FRI-6 AM MON	12:01 AM - 6 AM	**
IR 90	EASTBOUND STA. 46 TO STA. 55	4 PHASE 1 & PHASE 2	CLOSED	7 PM-6 AM	11 PM-5 AM	CLOSED	7 PM FRI-6 AM MON	12:01 AM - 6 AM	**
IR 90	EASTBOUND STA. 55 TO STA. 69	3	7 PM-6 AM	10 PM-5 AM	N.A.	7 PM FRI-6 AM MON	12:01 AM - 6 AM	N.A.	**
RAMP E-2		1	PRE-PHASE 1 ONLY ** 8 PM-6 AM			PRE-PHASE 1 ONLY ** 8 PM-6 AM			
RAMP E-4		1	CLOSE DURING PHASES 1 & 2 ⊕			CLOSE DURING PHASES 1 & 2 ⊕			
RAMP W-1		1	7 PM-6 AM *			7 PM FRI-6 AM MON *			
BROADWAY / ONTARIO	INBOUND		9 AM-6 AM	10 AM-3 PM 7 PM-6 AM		9 AM FRI-6 AM MON	10 AM-3 PM 7 PM-6 AM		**
BROADWAY / ONTARIO	OUTBOUND	3	CLOSE AS SHOWN ON SHEET 47 6 PM-3 PM ELSEWHERE	10 AM-3 PM 7 PM-6 AM		6 PM FRI-3 PM MON	10 AM-3 PM 7 PM-6 AM		**
E. 14th ST. BROADWAY TO ORANGE	INBOUND OR OUTBOUND	2	10 AM-3 PM 7 PM-6 AM			10 AM-3 PM 7 PM-6 AM			

** - SEE RAMP E-2 DETOUR NOTE ON SHEET 21

* - ONLY CLOSE WHEN 2 OR MORE LANES ARE CLOSED ON IR90 EASTBOUND

⊕ - SEE "MAINTENANCE OF TRAFFIC OVERVIEW" NOTE ON SHEET 19.

** - IF LANE CLOSURES ARE IN PLACE OUTSIDE THE SPECIFIED TIME, LIQUIDATED DAMAGES IN THE AMOUNT OF $20.00 PER MINUTE FOR THE FIRST 30 MINUTES, THEN $50.00 PER MINUTE THEREAFTER, SHALL BE ASSESSED THE CONTRACTOR FOR EACH MINUTE THE LANE REMAINS CLOSED.

RAMP CLOSURES

TWO WEEKS PRIOR TO IMPLEMENTING ANY LONG TERM RAMP CLOSURES, SIGNS ALERTING THE MOTORISTS OF THE IMPENDING CLOSURE SHALL BE ERECTED.

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RAMP E-2 DETOUR

IMPLEMENT THE NIGHTTIME CLOSURE OF RAMP E-2 DURING PRE-PHASE 1 ONLY. THE DETOUR ROUTE SHALL BE THE ONTARIO EXIT RAMP, WESTERLY ON ONTARIO TO CARNEGIE, EAST ON CARNEGIE TO E. 9th STREET, THEN SOUTH ON E. 9th STREET, RETURNING TO BROADWAY. USE PORTABLE CHANGEABLE MESSAGE SIGNS TO PROVIDE THE DETOUR ROUTING INFORMATION.

ITEM 614, MAINTAINING TRAFFIC (LANES OPEN DURING HOLIDAYS OR SPECIAL EVENTS)

NO SET UP OR TAKE DOWN OF MAINTENANCE OF TRAFFIC ITEMS SUCH AS PAVEMENT MARKINGS, DRUMS, PCB'S, ETC., SHALL BE DONE DURING THE FOLLOWING DESIGNATED HOLIDAYS OR EVENTS:
FOURTH OF JULY NEW YEARS LABOR DAY MEMORIAL DAY THANKSGIVING
SPECIAL EVENTS WITH 20,000 SEATING OR ATTENDANCE - SEE PUBLISHED SCHEDULES FOR CLEVELAND SPORTING EVENTS. SEE SHEET 26A FOR A LIST OF KNOWN, HIGH VOLUME, EVENTS PROVIDED BY THE CITY OF CLEVELAND.

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

DAY OF THE WEEK	TIME ALL LANES MUST BE OPEN TO TRAFFIC
SUNDAY	12:00N FRIDAY THROUGH 6:00 AM MONDAY
MONDAY	12:00N FRIDAY THROUGH 6:00 AM TUESDAY
TUESDAY	12:00N MONDAY THROUGH 6:00 AM WEDNESDAY
WEDNESDAY	12:00N TUESDAY THROUGH 6:00 AM THURSDAY
THURSDAY	12:00N WEDNESDAY THROUGH 6:00 AM MONDAY
FRIDAY	12:00N THURSDAY THROUGH 6:00 AM MONDAY
SATURDAY	12:00N FRIDAY THROUGH 6:00 AM MONDAY

NO EXTENSIONS OF TIME SHALL BE GRANTED FOR DELAYS IN MATERIAL DELIVERIES, UNLESS SUCH DELAYS ARE INDUSTRY-WIDE, OR FOR LABOR STRIKES, UNLESS SUCH STRIKES ARE AREA-WIDE. SHOULD THE CONTRACTOR FAIL TO MEET ANY OF THESE REQUIREMENTS, THE CONTRACTOR SHALL BE ASSESSED LIQUIDATED DAMAGES IN ACCORDANCE WITH CMS 108.07.

IN ADDITION TO THE ABOVE REQUIREMENTS, NO SHORT TERM OR WEEKEND LANE CLOSURES MAY BE IN EFFECT FROM 2 HOURS BEFORE A SPECIAL EVENT IN THE INBOUND DIRECTION UNTIL 2 HOURS AFTER A SPECIAL EVENT.

MAINTAINING TRAFFIC - GENERAL

COORDINATION WITH ADJACENT PROJECTS

THE CONSTRUCTION AT EITHER TERMINI OF THIS PROJECT MAY REQUIRE THE CONTRACTOR TO COORDINATE CONSTRUCTION WITH AN ADJACENT CONSTRUCTION PROJECT. IF COORDINATION IS NECESSARY, THE CONTRACTORS MUST COORDINATE THEIR WORK SCHEDULES AND SUBMIT TO THE DISTRICT CONSTRUCTION ENGINEER WHO WILL ESTABLISH THE FINAL APPROVED COORDINATED WORK SCHEDULE.

FINAL PAVEMENT MARKINGS / RAISED PAV'T MARKERS

PLACEMENT OF FINAL PAVEMENT MARKINGS AND RAISED PAVEMENT MARKERS SHALL BE ACCOMPLISHED IN ACCORDANCE WITH THE "PERMITTED LANE CLOSURE" NOTE ON SHEET 20.

FINAL PAVEMENT MARKING MAY BE INSTALLED AS A MOVING OPERATION. THE CONTRACTOR SHALL PROVIDE TWO (2) TRAILING VEHICLES AS PER MT-99.20M FOLLOWING THE PAVEMENT MARKING EQUIPMENT. THE TWO (2) TRAILING VEHICLES SHALL TRAVEL 500 FEET APART WITH THE REMOTE VEHICLE TRAVELING ON THE SHOULDER (LEFT OR RIGHT AS APPLICABLE) WHERE USABLE SHOULDER IS AVAILABLE. THE FIRST TRAIL VEHICLE IN A TRAFFIC LANE SHALL BE EQUIPPED WITH A TRUCK MOUNTED ATTENUATOR MEETING NCHRP 350 REQUIREMENTS. THE INTERMEDIATE TRAILING VEHICLE SHALL TRAVEL IN THE CLOSED LANE 500 FEET BEHIND THE PAVEMENT MARKING EQUIPMENT.

TEMPORARY PAVEMENT / PAVEMENT FOR MAINTAINING TRAFFIC

THE TERMS "TEMPORARY PAVEMENT" AND "PAVEMENT FOR MAINTAINING TRAFFIC" ARE USED INTERCHANGEABLY THROUGHOUT THESE PLANS. WHENEVER "TEMPORARY PAVEMENT" IS USED, IT SHALL BE CONSIDERED TO READ "PAVEMENT FOR MAINTAINING TRAFFIC".

TRENCH FOR PAVEMENT CONSTRUCTION AT CROSS STREETS

TRENCH EXCAVATION FOR PAVEMENT CONSTRUCTION NOT PROTECTED BY PORTABLE CONCRETE BARRIER SHALL BE ADEQUATELY MAINTAINED AND PROTECTED WITH DRUMS OR BARRICADES AT ALL TIMES. THE ADJACENT TRAFFIC LANE SHALL BE CLOSED IF POSSIBLE, OTHERWISE IT SHALL BE NARROWED. PLACEMENT OF PROPOSED BASE MATERIAL SHALL FOLLOW AS CLOSELY AS POSSIBLE BEHIND EXCAVATION OPERATIONS. THE LENGTH OF WIDENING TRENCH WHICH IS OPEN AT ANY ONE TIME SHALL BE HELD TO A MINIMUM AND SHALL AT ALL TIMES BE SUBJECT TO APPROVAL OF THE ENGINEER.

PAVEMENT CONSTRUCTION SHALL BE COMPLETED TO A DEPTH OF NO MORE THAN 1½" BELOW THE EXISTING PAVEMENT PRIOR TO THE ADJACENT TRAFFIC LANE BEING RE-OPENED TO TRAFFIC. IN CASE WORK MUST BE SUSPENDED BECAUSE OF INCLEMENT WEATHER OR OTHER REASONS, THE TRENCH FOR THE UNCOMPLETED BASE WIDENING SHALL BE BACKFILLED AT THE DIRECTION OF THE ENGINEER.

ASPHALT CONCRETE FOR MAINTAINING TRAFFIC

THE FOLLOWING ITEM WILL BE USED FOR THE MAINTENANCE OF THE EXISTING PAVEMENT, SHOULDERS OR BRIDGES:

614 - ASPHALT CONCRETE FOR MAINTAINING TRAFFIC 10 CU. YARD

ITEM 614, WORK ZONE PAVEMENT MARKINGS

THE "TEMPORARY" PAVEMENT MARKING DESCRIPTIONS AND LEGENDS SHOWN THROUGHOUT THESE PLANS SHOULD BE CONSIDERED TO READ "WORK ZONE" PAVEMENT MARKINGS AS PER THE 2005 CMS. ALL 4" TEMPORARY OR WORK ZONE PAVEMENT MARKINGS SHALL BE INCREASED TO 6".

ITEM 614, WORK ZONE SIGNING

ALL WORK ZONE SIGNING SHALL UTILIZE A FLUORESCENT ORANGE BACKGROUND COLOR EXCEPT FOR REGULATORY SIGNS.

ITEM 614 - REPLACEMENT SIGN

FLAT SHEET SIGNS FURNISHED BY THE CONTRACTOR IN ACCORDANCE WITH THE REQUIREMENTS OF THE PLANS, SPECIFICATIONS AND PROPOSAL WHICH BECOME DAMAGED BY TRAFFIC FOR REASONS BEYOND THE CONTROL OF THE CONTRACTOR SHALL BE REPLACED IN KIND. REPLACEMENT SIGNS SHALL BE NEW. OTHER MATERIALS MAY BE IN USED BUT GOOD CONDITION SUBJECT TO APPROVAL BY THE ENGINEER.

PAYMENT FOR THE NEW SIGNS SHALL BE MADE USING A PRICE PER EACH FOR ITEM 614 - REPLACEMENT SIGN, AND SHALL INCLUDE THE COST OF REMOVING AND DISPOSING OF DAMAGED SIGNS, HARDWARE AND SUPPORTS, AND PROVIDING THE NECESSARY REPLACEMENT HARDWARE, SUPPORTS, ETC.

THE FOLLOWING ESTIMATED QUANTITY HAS BEEN INCLUDED IN THE GENERAL SUMMARY TO BE USED AS DIRECTED BY THE ENGINEER.

ITEM 614 - REPLACEMENT SIGN 10 EACH

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ITEM 614 - WORK ZONE PAVEMENT MARKINGS - (LANE SHIFT REMOVALS)

THE FOLLOWING ESTIMATED QUANTITY HAS BEEN CARRIED TO THE GENERAL SUMMARY FOR THE PLACEMENT OF PAVEMENT MARKINGS AFTER REMOVING THE PHASE 2 MAINTENANCE OF TRAFFIC ZONE.

	LENGTH	LOCATIONS	EDGELINE	LANELINE
BROADWAY / ORANGE / E. 14th	0.19 MILE	1 LANELINE	0.00 MILE	0.19 MILE
MAINLINE 3 LANE SECTIONS	0.24 MILE	2 EDGELINE, 2 LANELINE	0.48 MILE	0.48 MILE
MAINLINE 4 LANE SECTIONS	0.23 MILE	2 EDGELINE, 3 LANELINE	0.46 MILE	0.69 MILE
			0.94	1.36

ITEM 614 - WORK ZONE EDGE LINE, CLASS 1 0.94 MILE
ITEM 614 - WORK ZONE LANE LINE, CLASS 1 1.36 MILE

614 - PORTABLE CHANGEABLE MESSAGE SIGN, AS PER PLAN

THE CONTRACTOR SHALL FURNISH, INSTALL, MAINTAIN AND REMOVE WHEN NO LONGER NEEDED. A PORTABLE CHANGEABLE MESSAGE SIGN(S). THE PCMS SHALL BE OF A TYPE SHOWN ON A LIST OF APPROVED PCMS UNITS MAINTAINED BY THE DIRECTOR: FTP://FTP.DOT.STATE.OH.US/PUB/CONTRACTS/PURCHASE/AWARD/048-07A.PDF

NO FLIP DISC (OR VARIATION OF FLIP DISC) UNITS WILL BE ALLOWED.

CLASS A PCMS UNITS SHALL HAVE A MINIMUM LEGIBILITY DISTANCE OF 1200 FEET.
CLASS B PCMS UNITS SHALL HAVE A MINIMUM LEGIBILITY DISTANCE OF 475 FEET.

THE PORTABLE CHANGEABLE MESSAGE SIGN SHALL BE MOUNTED ON A TRAILER. THE LOCATION OF THE PCMS SHALL BE AS DIRECTED BY THE ENGINEEER. THE ENGINEER SHALL BE PROVIDED ACCESS TO EACH SIGN UNIT AND SHALL BE PROVIDED WITH APPROPRIATE TRAINING AND OPERATION INSTRUCTIONS.

AT THE DIRECTION OF THE ENGINEER THE PCMS MAY BE REMOVED FOR PERIODS OF TIMES WHEN NOT IN USE. NO PAYMENT WILL BE MADE FOR THESE TIMES (EXAMPLE: WINTER MONTHS).

PAYMENT:
THERE SHALL BE 3 CLASS A PCMS UNITS AT 4 MONTHS EACH.
THERE SHALL BE 3 CLASS B PCMS UNITS AT 3 MONTHS EACH.

PAYMENT FOR THE ABOVE DESCRIBED ITEM SHALL BE AT THE CONTRACT UNIT PRICE BID PER SIGN-MONTH FOR ALL SIGNS FURNISHED UNDER ITEM 614 PORTABLE CHANGEABLE MESSAGE SIGN AND SHALL INCLUDE ALL LABOR, MATERIALS, EQUIPMENT, FUELS, LUBRICATING OILS, SOFTWARE, HARDWARE AND INCIDENTALS TO PERFORM THE ABOVE DESCRIBED WORK, INCLUDING RELOCATION IF NECESSARY.

THE FOLLOWING ESTIMATED QUANTITIES ARE PROVIDED IN THE GENERAL SUMMARY TO BE USED AS DIRECTED BY THE ENGINEER.

ITEM 614 - PORTABLE CHANGEABLE MESSAGE SIGN, AS PER PLAN 21 SIGN MONTHS

ITEM 614, LINEAR DELINEATION, AS PER PLAN

3M - SCOTCHLITE LINEAR DELINEATION SYSTEM (LDS) SHALL BE INSTALLED ON ALL CONCRETE BARRIER, PERMANENT OR TEMPORARY, LOCATED WITHIN 5 FEET (1.5 M) OF THE EDGE OF THE TRAVEL LANE UNDER EITHER OF THE FOLLOWING CONDITIONS:

ALONG TAPERS AND TRANSITION AREAS.

ALONG CURVES WITH DEGREE OF CURVATURE GREATER THAN OR EQUAL TO 3 DEGREES.

THE LDS SHALL CONSIST OF PANELS OF DELINEATION, APPROXIMATELY 34 INCHES LONG AND 6 INCHES WIDE. PANELS SHALL BE PROVIDED AT THE RATE OF ONE PER SECTION OF PORTABLE CONCRETE BARRIER OR ONE PANEL EVERY 10 FEET (3 M), SPACED EVENLY ALONG THE LENGTH OF THE RUN. THE PANELS SHALL BE MOUNTED SUCH THAT THE TOPS OF THE PANELS ARE 26 INCHES (660 MM) FROM THE BASE OF THE CONCRETE BARRIER.

PAYMENT SHALL BE FULL COMPENSATION FOR ALL MATERIAL, LABOR, INCIDENTALS AND EQUIPMENT NECESSARY FOR FURNISHING, INSTALLING, MAINTAINING AND REMOVING 3M SCOTCHLITE LINEAR DELINEATION SYSTEM (LDS).

AN ESTIMATED QUANTITY OF 3800 LINEAR FEET OF ITEM 614 LINEAR DELINEATION, AS PER PLAN HAS BEEN PROVIDED AND CARRIED TO THE GENERAL SUMMARY. ALONG RUNS OF CONCRETE BARRIER WHERE THIS ITEM IS PROVIDED, THE QUANTITY SHALL BE MEASURED AS THE ENTIRE LENGTH OF THE RUN BEING DELINEATED, INCLUDING THE SPACES BETWEEN THE INDIVIDUAL PANELS.

CONCRETE BARRIER DELINEATION

OBJECT MARKERS SHALL BE INSTALLED ON ALL CONCRETE BARRIER, PERMANENT AND/OR TEMPORARY, 32 INCHES (0.8 M) OR LESS IN HEIGHT, LOCATED WITHIN 5 FEET (1.5 M) OF THE EDGE OF THE ADJACENT TRAVEL LANE. OBJECT MARKER SPACING SHALL BE 50 FEET (15 METERS).

PAYMENT SHALL BE FULL COMPENSATION FOR ALL MATERIAL, LABOR, INCIDENTALS AND EQUIPMENT NECESSARY FOR FURNISHING, INSTALLING, MAINTAINING AND REMOVING OBJECT MARKERS.

THE FOLLOWING ESTIMATED QUANTITIY HAS BEEN INCLUDED IN THE GENERAL SUMMARY TO BE USED AS OUTLINED ABOVE.

ITEM 614 - OBJECT MARKER, ONE-WAY (CONC. BARRIER) 19 EACH

ITEM 614 - REPLACEMENT DRUM

DRUMS FURNISHED BY THE CONTRACTOR IN ACCORDANCE WITH THE REQUIREMENTS OF THE PLANS, SPECIFICATIONS AND PROPOSAL WHICH BECOME DAMAGED BY TRAFFIC FOR REASONS BEYOND THE CONTROL OF THE CONTRACTOR SHALL BE REPLACED IN KIND. REPLACEMENT DRUMS SHALL BE NEW.

PAYMENT FOR THE NEW DRUMS SHALL BE MADE USING A PRICE PER EACH FOR ITEM 614, REPLACEMENT DRUM, AND SHALL INCLUDE THE COST OF REMOVING AND DISPOSING OF THE DAMAGED DRUM, AND PROVIDING AND MAINTAINING THE REPLACEMENT DRUM IN ACCORDANCE WITH THE CONTRACT REQUIREMENTS FOR THE ORIGINAL DRUM.

THE FOLLOWING ESTIMATED QUANTITIY HAS BEEN INCLUDED IN THE GENERAL SUMMARY TO BE USED AS DIRECTED BY THE ENGINEER.

ITEM 614 - REPLACEMENT DRUM 25 EACH

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WORKSITE TRAFFIC SUPERVISOR

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

1) AMERICAN TRAFFIC SAFETY SERVICE ASSOCIATION A.T.S.S.A., PHONE NUMBER 1-800-272-8772, CERTIFIED WORKSITE TRAFFIC SUPERVISOR (WTS)

2) THE NATIONAL SAFETY COUNCIL, TRAFFIC CONTROL ZONES SUPERVISORS COURSE PHONE NUMBER 1-800-441-5103

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

4) OCA/TCS WORK ZONE CLASS, ONLY IF TAKEN AFTER MAY 5, 2004. PHONE NUMBER 800-229-1388, TRAFFIC CONTROL SUPERVISORS TRAINING COURSE.

A CERTIFIED WTS SHALL BE PRESENT WHEN THE CONTRACTOR OR SUBCONTRACTOR INSTALLS A TRAFFIC RESTRICTION, LANE CLOSURE, ETC. THE CONTRACTOR OR SUBCONTRACTOR MUST PRESENT A COPY OF CERTIFICATES FOR ALL WTS TO THE ENGINEER. A WTS MUST BE PRESENT WHEN THE WORK ZONE IS BEING SET UP OR REMOVED.

THE WTS POSITION IS ESTABLISHED FOR THE PURPOSE OF MONITORING THE TRAFFIC CONTROL PLAN (TCP) AND CORRECTING ANY TRAFFIC CONTROL DEFICIENCIES IN THE WORK ZONE. THE WTS MUST ALSO COORDINATE WITH ALL LAW ENFORCING AGENCIES RESPONSIBLE FOR THE ROADWAY UNDER CONSTRUCTION AND RETRIEVE ALL CRASH REPORTS (OH-1) THAT OCCUR WHEN TEMPORARY TRAFFIC CONTROL DEVICES ARE IN PLACE. THE WTS SHALL OVERSEE ALL OPERATIONS THAT AFFECT THE MOVEMENT OF VEHICULAR AND PEDESTRIAN TRAFFIC THROUGH THE WORK ZONE. TRAFFIC CONTROL AND CRASH DATA EVALUATION WILL BE THE WTS MAIN RESPONSIBILITY WHEN A WORK ZONE IS IN PLACE.

DAILY, INCLUDING WEEKENDS AND HOLIDAYS, THE WTS SHALL SPEND A MINIMUM OF ONE HOUR REVIEWING THE WORK ZONE AND/OR CRASH DATA FOR DEFICIENCIES AND MAINTAINING THE WORK ZONE.

WEEKLY, THE WTS MUST RETRIEVE/COLLECT ALL CRASH REPORTS (OH-1) FROM ALL LAW ENFORCING AGENCIES, EVALUATE THE CRASHES, AND RECOMMEND SOLUTIONS TO ADDRESS ANY ISSUES WITH THE TCP THAT ARE POTENTIALLY CREATING CRASHES WITHIN THE WORK ZONE. THE WTS MUST PRESENT THESE SOLUTIONS TO THE ENGINEER FOR APPROVAL WEEKLY. UPON APPROVAL BY THE ENGINEER AND THE DISTRICT WORK ZONE TRAFFIC MANAGER (DWZTM), THE CONTRACTOR MUST IMPLEMENT THE RECOMMENDED SOLUTIONS TO THE WORK ZONE WITHIN ONE WEEK - ADDITIONAL COST TO BE PAID UNDER CONSTRUCTION AND MATERIALS SPECIFICATIONS - 109. THE WTS MUST INSPECT THE WORK ZONE AT THE BEGINNING AND THE END OF EACH WORK DAY AND ONE TIME PER WEEK DURING THE HOURS OF DARKNESS. THE FOLLOWING ITEMS SHALL BE INCLUDED, BUT NOT RESTRICTED TO, IN EACH REVIEW: TRAFFIC CONTROL DEVICE CONDITION; PLACEMENT; VISIBILITY; TRAFFIC FLOW CONDITIONS; INCIDENTS; CONGESTION POINTS; DELAYS; ADEQUACY OF ADVANCED INFORMATIONAL SIGNS BEYOND PROJECT LIMITS; INTERACTION OF WORK VEHICLES AND TRAFFIC; ACCIDENTS; PROPER STORAGE OF MATERIALS AND EQUIPMENT; CONFORMANCE WITH TCP; ADEQUACY OF TCP; CONFLICTING OR NON-CONFORMING PAVEMENT MARKINGS. THE WTS SHALL HAVE THE NECESSARY AUTHORITY TO IMMEDIATELY PERFORM ANY CORRECTIVE WORK. A RECORD OF EACH DAYS REVIEW SHALL BE GIVEN TO THE ENGINEER THE FOLLOWING WORKDAY IN WRITING AND SHALL INCLUDE ALL DEFICIENCIES AND RESOLUTIONS TO THE DEFICIENCIES. THE INSPECTION WILL BE DOCUMENTED ON THE LONG/SHORT TERM WORK ZONE REVIEW FORM PROVIDED BY ODOT. WEEKLY, THE INSPECTION FORM MUST BE ACCOMPANIED BY ALL OF THE OH-1 CRASH REPORTS AND THE PROPOSED SOLUTIONS TO ANY IDENTIFIED CRASH PROBLEMS.

IF THE RESTRICTIONS ARE SHORT TERM, THE WTS SHALL MONITOR THE ZONE FOR COMPLIANCE, DURING LANE CLOSURES; HE SHALL MAKE SURE ALL TRAFFIC CONTROL ITEMS ARE FUNCTIONING PROPERLY. TRAFFIC CONTROL AND CRASH DATA EVALUATION WILL BE THE WTS MAIN RESPONSIBILITY DURING IMPLEMENTATION OF ZONES OR SHORT TERM ZONES. THE WTS SHALL PROVIDE THE DWZTM A SKETCH OF THE TRAFFIC CONTROL PLAN (TCP) EVERYDAY THERE IS TO BE A SHORT TERM TRAFFIC RESTRICTION, LANE CLOSURE, ETC. THIS TCP SHALL SHOW HOW THE WORK ZONES ARE TO BE IMPLEMENTED.

THE WTS SHALL BE ON STANDBY 24-HOUR BASIS TO REPAIR AND/OR REPLACE DAMAGED OR MISSING TRAFFIC CONTROL DEVICES. A 24-HOUR CONTACT NUMBER(S) SHALL BE MADE AVAILABLE TO THE ENGINEER TO CONTACT THE WTS.

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

PAYMENT FOR THE WTS SHALL BE PAID FOR UNDER THE MONTHLY UNITS FOR ITEM 614 - WORKSITE TRAFFIC SUPERVISOR.

ITEM 614 - WORKSITE TRAFFIC SUPERVISOR 4 MONTHS

ITEM 614 - LAW ENFORCEMENT OFFICER WITH PATROL CAR

IN ADDITION TO THE REQUIREMENTS OF 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 AS DIRECTED AND APPROVED BY THE ENGINEER FOR THE FOLLOWING TASKS:

A) FOR LANE CLOSURES: DURING INITIAL SET-UP PERIODS, TEAR DOWN PERIODS, SUBSTANTIAL SHIFTS OF A CLOSURE POINT OR WHEN NEW LANE CLOSURE ARRANGEMENTS ARE INITIATED.
B) DURING THE ENTIRE ADVANCE PREPARATION AND CLOSURE SEQUENCE WHERE COMPLETE BLOCKAGE OF TRAFFIC IS REQUIRED.
C) DURING A TRAFFIC SIGNAL INSTALLATION.

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

ITEM 614, LAW ENFORCEMENT OFFICER WITH PATROL CAR 500 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.

ITEM 622, PORTABLE CONCRETE BARRIER, 50", AS PER PLAN
ITEM 622, PORTABLE CONCRETE BARRIER, 50", BRIDGE MOUNTED, AS PER PLAN

THIS WORK SHALL CONSIST OF FURNISHING, MAINTAINING, AND SUBSEQUENTLY REMOVING EITHER A 50-INCH PORTABLE CONCRETE BARRIER (PCB) OR A 32-INCH PCB WITH AN 18-INCH MINIMUM HEIGHT GLARE SCREEN AT THE LOCATIONS SHOWN ON THE PLANS.

THERE IS CURRENTLY NO 50-INCH PCB WHICH MEETS THE NCHRP 350 SAFETY REQUIREMENTS. USE OF EXISTING 50-INCH PCB SHALL BE PERMITTED ONLY IN ACCORDANCE WITH THE PHASE-OUT DATES SET BY FHWA. ALL EXISTING NON-COMPLIANT PCB INVENTORY MUST HAVE BEEN PURCHASED ON OR PRIOR TO OCTOBER 1, 2002 AND SHALL BE PHASED OUT BY JANUARY 1, 2008. THEREFORE IF THE CONTRACTOR CHOOSES TO PROVIDE SUCH PCB ON THE PROJECT AND THE NEED FOR THE PCB REMAINS BEYOND THE JANUARY 1, 2008 PHASE-OUT DATE, THE CONTRACTOR SHALL REMOVE AND REPLACE THE PCB WITH COMPLIANT MATERIAL ON OR BEFORE SUCH DATE.

PORTABLE CONCRETE BARRIER, 32 INCHES HIGH WITH AN 18-INCH MINIMUM HEIGHT GLARE SCREEN MAY BE USED AT THE OPTION OF THE CONTRACTOR. THE GLARE SCREEN SHALL BE CONSTRUCTED USING ONE OF THE SCREENS PROVIDED ON THE APPROVED LIST, AVAILABLE ON THE OFFICE OF MATERIAL MANAGEMENT WEB PAGE AT: HTTP://WWW.DOT.STATE.OH.US/TESTLAB/APPLISTS/MISC/GLARESCREEN.HTM.

PADDLE OR INTERMITTENT TYPE GLARE SCREENS SHALL BE DESIGNED USING A 20 DEGREE CUT-OFF ANGLE BASED ON TANGENT ALIGNMENT. THAT SPACING SHALL BE USED THROUGHOUT THE BARRIER LENGTH WITHOUT REGARD TO BARRIER CURVATURE.

THE GLARE SCREEN SYSTEM SHALL BE SECURELY FASTENED TO THE 32-INCH PORTABLE CONCRETE BARRIER USING THE HARDWARE AND PROCEDURES SPECIFIED BY THE MANUFACTURER.

PAYMENT SHALL INCLUDE ALL LABOR, MATERIAL, AND EQUIPMENT NECESSARY TO PERFORM THE WORK AND SHALL BE PAID FOR AT THE CONTRACT PRICE PER FOOT FOR ITEM 622, PORTABLE CONCRETE BARRIER, 50 INCH, (BRIDGE MOUNTED) AS PER PLAN.

CALCULATED DCF
CHECKED ENF

MAINTENANCE OF TRAFFIC
GENERAL NOTES

CUY-90-15.99

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53

...Broadway\Sheets\877039MN005.dgn

WORK ZONES INCREASED PENALTIES SIGN

R11-H5a-48 SIGNS SHALL BE FURNISHED, ERECTED, AND MAINTAINED IN GOOD CONDITION AND/OR REPLACED AS NECESSARY AND SUBSEQUENTLY REMOVED BY THE CONTRACTOR. SIGNS SHALL BE MOUNTED AT THE APPROPRIATE OFFSETS AND ELEVATIONS AS PRESCRIBED BY THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES. THEY SHALL BE MAINTAINED ON SUPPORTS MEETING CURRENT SAFETY CRITERIA.

THE SIGNS MAY BE ERECTED OR UNCOVERED NO MORE THAN FOUR HOURS BEFORE THE ACTUAL START OF WORK. THE SIGNS SHALL BE REMOVED OR COVERED NO LATER THAN FOUR HOURS FOLLOWING RESTORATION OF ALL LANES TO TRAFFIC WITH NO RESTRICTIONS, OR SOONER AS DIRECTED BY THE ENGINEER. TEMPORARY SIGN COVERING AND UNCOVERING DUE TO TEMPORARY LANE RESTORATIONS SHALL BE GUIDED BY THE FOUR-HOUR LIMITATIONS STATED ABOVE. SUCH LANE RESTORATIONS SHOULD BE EXPECTED TO REMAIN IN EFFECT FOR 30 OR MORE CONSECUTIVE CALENDAR DAYS, SUCH AS DURING WINTER SHUT-DOWNS.

(THE SIGNS ON THE MAINLINE SHALL BE DUAL MOUNTED UNLESS NOT PHYSICALLY POSSIBLE. THE FIRST SIGN SHALL BE PLACED BETWEEN THE ROAD WORK AHEAD (W20-1) SIGN AND THE NEXT SIGN IN THE SEQUENCE. SIGNS SHALL BE ERECTED ON EACH ENTRANCE RAMP AND EVERY 2 MILES (3 KILOMETERS) THROUGH THE CONSTRUCTION WORK LIMITS. SIGNS ON THE MAINLINE SHALL BE R11-H5A-48. SIGNS USED ON THE RAMPS SHALL BE R11-H5A-24. R11-H5A-24 SIGNS MAY BE USED IN THE MEDIAN IN LIEU OF R11-H5A-48 SIGNS IF IT IS NOT PHYSICALLY POSSIBLE TO PROVIDE R11-H5A-48 SIGNS IN THE MEDIAN.)

THE CONTRACTOR MAY USE SIGNS AND SUPPORTS IN USED, BUT GOOD, CONDITION PROVIDED THE SIGNS MEET CURRENT ODOT SPECIFICATIONS. SIGN FACES SHALL BE REFLECTORIZED WITH TYPE G SHEETING COMPLYING WITH THE REQUIREMENTS OF CMS 730.19.

WORK ZONES INCREASED PENALTIES SIGNS AND SUPPORTS WILL BE MEASURED AS THE NUMBER OF SIGN INSTALLATIONS, INCLUDING THE SIGN AND NECESSARY SUPPORTS. IF A SIGN AND SUPPORT COMBINATION IS REMOVED AND REERECTED AT ANOTHER LOCATION AS DIRECTED BY THE ENGINEER, IT SHALL BE CONSIDERED ANOTHER UNIT.

PAYMENT FOR ACCEPTED QUANTITIES, COMPLETE, IN PLACE WILL BE MADE AT THE CONTRACT UNIT PRICE. PAYMENT SHALL BE FULL COMPENSATION FOR ALL MATERIALS, LABOR, INCIDENTALS AND EQUIPMENT FOR FURNISHING, ERECTING, MAINTAINING, COVERING DURING SUSPENSION OF WORK AND REMOVAL OF THE SIGN AND SUPPORT.

ITEM 614, WORK ZONES INCREASED PENALTIES SIGN 2 EACH

ITEM 614, WORK ZONE SPEED LIMIT SIGN

THE CONTRACTOR SHALL FURNISH, INSTALL, MAINTAIN, COVER DURING SUSPENSION OF WORK, AND SUBSEQUENTLY REMOVE WORK ZONE SPEED LIMIT (R2-1) (50 MPH SPEED LIMIT) SIGNS AND SUPPORTS WITHIN THE WORK LIMITS IN ACCORDANCE WITH THE FOLLOWING REQUIREMENTS:

THE CONTRACTOR SHALL COVER OR REMOVE ANY EXISTING SPEED LIMIT OR MINIMUM SPEED LIMIT SIGNS WITHIN THE REDUCED SPEED ZONE. THESE SIGNS SHALL BE RESTORED DURING SUSPENSION OR TERMINATION OF THE REDUCED SPEED LIMIT. THE EXPENSE OF COVERING OR REMOVAL AND RESTORATION OF EXISTING SPEED LIMIT OR MINIMUM SPEED LIMIT SIGNS SHALL BE INCLUDED IN THE PAY ITEM FOR THE WORK ZONE SPEED LIMIT SIGNS.

THE WORK ZONE SPEED LIMIT SIGNS MAY BE ERECTED OR UNCOVERED NO MORE THAN FOUR HOURS BEFORE THE ACTUAL START OF WORK. THE SIGNS SHALL BE REMOVED OR COVERED NO LATER THAN FOUR HOURS FOLLOWING RESTORATION OF ALL LANES TO TRAFFIC WITH NO RESTRICTIONS, OR SOONER AS DIRECTED BY THE ENGINEER. TEMPORARY SIGN COVERING AND UNCOVERING DUE TO TEMPORARY LANE RESTORATIONS SHALL BE GUIDED BY THE FOUR-HOUR LIMITATIONS STATED ABOVE. SUCH LANE RESTORATIONS SHOULD BE EXPECTED TO REMAIN IN EFFECT FOR 30 OR MORE DAYS, SUCH AS DURING WINTER SHUTDOWNS.

ITEM 614, WORK ZONE SPEED LIMIT SIGN (CONTINUED)

CONSTRUCTION AND MATERIALS SPECIFICATIONS, ITEM 614, PARAGRAPH 614.02(B) INDICATES THAT THE TWO DIRECTIONS OF A DIVIDED HIGHWAY ARE CONSIDERED SEPARATE HIGHWAY SECTIONS. THEREFORE, IF THE WORK ON A MULTI-LANE DIVIDED HIGHWAY IS LIMITED TO ONLY ONE DIRECTION, SPEED REDUCTION IN THE DIRECTION OF THE WORK DOES NOT AUTOMATICALLY CONSTITUTE SPEED REDUCTION IN THE OPPOSITE DIRECTION. SPEED LIMIT REDUCTION IN THE OPPOSITE DIRECTION, IN SUCH CASE, IS APPROPRIATE ONLY IF CONDITIONS ARE EXPECTED TO HAVE AN IMPACT ON THE DIRECTIONAL TRAFFIC FLOW, AS DIRECTED BY THE ENGINEER.

THE CONTRACTOR SHALL ERECT A WORK ZONE SPEED LIMIT SIGN IN ADVANCE OF ANY LANE RESTRICTION EXPECTED TO LAST AT LEAST 30 CONSECUTIVE CALENDAR DAYS, OR AS DIRECTED BY THE ENGINEER. THE SIGN SHALL BE MOUNTED ON BOTH SIDES OF A DIRECTIONAL ROADWAY OF DIVIDED HIGHWAYS. THE FIRST WORK ZONE SPEED LIMIT SIGN SHALL BE PLACED APPROXIMATELY 500 FEET (150 METERS) IN ADVANCE OF THE LANE REDUCTION OR SHIFT TAPER OR OTHER ROADWAY OR SHOULDER RESTRICTION. ON UNDIVIDED HIGHWAYS THE SIGN SHALL BE MOUNTED ON THE RIGHT SIDE, APPROXIMATELY 250 FEET (75 METERS) IN ADVANCE OF SUCH RESTRICTIONS. THE SIGN SHALL BE REPEATED, ON THE SIDE NEAREST TRAFFIC, EVERY 1 MILE (1.6 KILOMETERS) FOR 55 MPH ZONES AND EVERY ONE-HALFMILE (0.8 KILOMETERS) FOR 50 MPH AND 45 MPH ZONES. THESE SIGNS SHALL ALSO BE ERECTED IMMEDIATELY AFTER EACH OPEN ENTRANCE RAMP WITHIN THE ZONE.

ON PROJECTS FOR WHICH THE ACTIVITY IS LIMITED TO ONE SECTION OF THE PROJECT FOR AT LEAST THIRTY DAYS AND THEN IS MOVED TO ANOTHER SECTION OF THE PROJECT UPON COMPLETION OF WORK IN THE FIRST SECTION, THE SPEED LIMIT REDUCTION SHALL BE LIMITED TO ONLY THE ACTIVE PORTION OF THE PROJECT AT THE GIVEN TIME. SIGNING FOR A SPEED LIMIT REDUCTION, AS WELL AS ALL OTHER ADVANCE CONSTRUCTION SIGNING, SHALL BE RELOCATED WHEN THE CONCENTRATION OF ACTIVITY IS RELOCATED.

ON PROJECTS FOR WHICH SPEED REDUCTION IS CALLED FOR ON MORE THAN ONE ROADWAY, THE DISPLAY OF REDUCED SPEED LIMIT SIGNING ON A GIVEN ROADWAY SHALL BE DEPENDANT ON THE SCHEDULING OF WORK ACTIVITY ON THE GIVEN ROADWAY.

REDUCED SPEED AHEAD SIGNS SHALL BE ERECTED IN ADVANCE OF THE SPEED REDUCTION, APPROXIMATELY 1250 FEET (375 METERS) ON MULTI-LANE HIGHWAYS AND 500 FEET (150 METERS) ON 2-LANE HIGHWAYS.

A SIGN(S) TO INDICATE THE RESUMPTION OF THE STATUTORY SPEED LIMIT SHALL BE ERECTED AT THE END OF ANY REDUCED SPEED ZONE, TYPICALLY AT THE POINT WHERE ROADWAY AND SHOULDER WIDTHS RETURN TO NORMAL. ON UNDIVIDED ROADWAYS, THE R2-1 (SPEED LIMIT) SIGN SHALL BE USED. ON DIVIDED HIGHWAYS WHERE THE SPEED LIMIT VARIES BY VEHICLE TYPE, THE R2-1 (SPEED LIMIT) SIGN AND THE R2-H2A (TRUCK SPEED LIMIT) SIGNS SHALL BE MOUNTED SIDE-BY-SIDE ON SEPARATE SUPPORTS. THE CONTRACTOR MAY USE SIGNS AND SUPPORTS IN USED, BUT GOOD, CONDITION PROVIDED THE SIGNS MEET CURRENT ODOT SPECIFICATIONS. SIGN FACES SHALL BE REFLECTORIZED WITH TYPE G SHEETING COMPLYING WITH THE REQUIREMENTS OF CMS 730.19.

WORK ZONE SPEED LIMIT SIGNS SHALL BE MOUNTED ON TWO ITEM 630, GROUND MOUNTED SUPPORTS, NO. 3 POSTS.

WORK ZONE SPEED LIMIT SIGNS AND SUPPORTS WILL BE MEASURED AS THE NUMBER OF SIGN INSTALLATIONS, INCLUDING THE SIGNS AND NECESSARY SUPPORTS. IF A SIGN AND SUPPORT COMBINATION IS REMOVED AND REERECTED AT ANOTHER LOCATION WITHIN THE PROJECT DUE TO CHANGES IN THE SPEED ZONE DIRECTED BY THE ENGINEER, IT SHALL BE CONSIDERED ANOTHER UNIT.

PAYMENT FOR ACCEPTED QUANTITIES, COMPLETE IN PLACE, WILL BE MADE AT THE CONTRACT UNIT PRICE. PAYMENT SHALL BE FULL COMPENSATION FOR ALL MATERIALS, LABOR, INCIDENTALS AND EQUIPMENT FOR FURNISHING, ERECTING, MAINTAINING, COVERING DURING SUSPENSION OF WORK, AND REMOVING THE SIGNS AND SUPPORTS.

ITEM 614, WORK ZONE SPEED LIMIT SIGN 4 EACH

FLOODLIGHTING

FLOODLIGHTING OF THE WORK SITE FOR OPERATIONS CONDUCTED DURING NIGHT TIME PERIODS SHALL BE ACCOMPLISHED SO THAT THE LIGHTS DO NOT CAUSE GLARE TO THE DRIVERS ON THE ROADWAY. TO ENSURE THE ADEQUACY OF THE FLOODLIGHT PLACEMENT, THE CONTRACTOR AND THE ENGINEER SHALL DRIVE THROUGH THE WORK SITE EACH NIGHT WHEN THE LIGHTING IS IN PLACE AND OPERATE PRIOR TO COMMENCING ANY WORK. IF GLARE IS DETECTED THE LIGHT PLACEMENT AND SHIELDING SHALL BE ADJUSTED TO THE SATISFACTION OF THE ENGINEER BEFORE WORK PROCEEDS.

PAYMENT FOR ALL LABOR, EQUIPMENT AND MATERIALS SHALL BE INCLUDED IN THE LUMP SUM CONTRACT PRICE FOR MAINTAINING TRAFFIC.

ITEM 614 - WORK ZONE IMPACT ATTENUATOR, (UNIDIRECTIONAL OR BIDIRECTIONAL)

THIS ITEM SHALL CONSIST OF FURNISHING AND INSTALLING EITHER OF THE FOLLOWING IMPACT ATTENUATORS:

1) THE QUADGUARD CZ, (24" WIDE 6-BAY) WORK ZONE IMPACT ATTENUATOR MANUFACTURED BY ENERGY ABSORPTION SYSTEMS, INC., 35 EAST WACKER DRIVE, CHICAGO, IL 60601 (TELEPHONE: 312-467-6750).

   THE LENGTH OF THE 6-BAY QUADGUARD CZ IS 20'-9". INSTALLATION SHALL BE AT THE LOCATIONS SPECIFIED IN THE PLANS, IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS AS DETAILED ON THE FOLLOWING PRE-APPROVED SHOP DRAWINGS:

DWG.#	DRAWING NAME	DWG./REV. DATE	ODOT APPROVAL DATE
QSCZCVR-T4	QUADGUARD CZ SYSTEM FOR CONSTRUCTION ZONES	5/13/99 Rev. J	8/27/99
35-40-10	QUADGUARD SYSTEM CONCRETE PAD, CZ, QG	11/19/97 Rev. D	8/27/99
35-40-16	QUADGUARD SYSTEM BACKUP ASSEMBLY, CZ, QG	7/30/99 Rev. F	8/27/99
354051Z	QUADGUARD CZ SYSTEM NOSE ASSEMBLY, CZ, QG, 24,30,36	5/17/99	8/27/99
35-40-18	TRANSITION ASSEMBLY, 4 OFFSET, QG	6/25/99 Rev. F	8/27/99
3540260	QUADGUARD SYSTEM PCMB ANCHOR ASSEMBLY	11/19/97 Rev. C	8/27/99

2) THE TRACC (TRINITY ATTENUATING CRASH CUSHION) MANUFACTURED BY TRINITY INDUSTRIES, 1170 N. STATE STREET, GIRARD, OHIO 44420 (TELEPHONE: 330-545-4373).

   THE TRACC IS 21'-0" LONG AND 2'-7" WIDE. INSTALLATION SHALL BE AT THE LOCATIONS SPECIFIED IN THE PLANS, IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS AS DETAILED ON THE FOLLOWING PRE-APPROVED SHOP DRAWINGS:

DWG.#	DRAWING NAME	DWG./REV. DATE	ODOT APPROVAL DATE
SS450	CRASH-CUSHION ATTENUATING TERMINAL PLAN, ELEVATION & SECTIONS	3/12/99 Rev. 1	8/27/99
SS455	TRACC TRANSITION TO W-BEAM MEDIAN BARRIER PLAN, ELEVATION & SECTIONS	2/18/99	8/27/99
SS461	TRACC TRANSITION TO CONCRETE SAFETY SHAPE BARRIER PLAN, ELEVATION & SECTIONS	6/30/99 Rev. 1	8/27/99
SS462	TRACC TRANSITION TO CONCRETE BARRIER SINGLE SLOPE PLAN, ELEVATION & SECTIONS	6/30/99	8/27/99

3) THE BARRIER SYSTEMS, INC. TAU-II IMPACT ATTENUATOR, DISTRIBUTED BY ROAD SYSTEMS INC., SALES SUPPORT, 2183 ELM TRACE, AUSTINTOWN, OH 44515 (TELEPHONE 330-799-9291)

   THE TAU-II FOR THIS NOTE IS A PARALLEL 8-BAY UNIT (24' LONG AND 35" WIDE). INSTALLATION SHALL BE AT THE LOCATIONS SPECIFIEDIN THE PLANS, IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS AS DETAILED ON THE FOLLOWING PRE-APPROVED SHOP DRAWINGS:

DWG.#	DRAWING NAME	DWG./REV. DATE	ODOT APPROVAL DATE
A040416	UNIVERAL TAU-II PARTS LIST	4/22/04	10/16/04
A040420	UNIVERSAL TAU-II FOUNDATION, FLUSH MOUNT BACKSTOP	4/28/04	10/16/04
A040105	UNIVERSAL TAU-II FOUNDATION, PCB BACKSTOP (REFERENCED ON A04020)	1/7/04	10/16/04
B040239	APPLICATION, FLUSH MOUNT BACKSTOP (TYPICAL FOR PARALLEL 60 MPH UNIT)	4/21/04	10/16/04

4) THE GREAT CZ IMPACT ATTENUATOR MANUFACTURED BY ENERGY ABSORPTION SYSTEMS, INC. THIS ATTENUATOR MAY BE USED UNTIL JANUARY 1, 2007 IF THE ITEM WAS PURCHASED BEFORE OCTOBER 1, 1998 AND IS IN THE CONTRACTOR'S INVENTORY.

THE CONTRACTOR SHALL PROVIDE A REPLACEMENT UNIT WHEN AN IMPACT IS SEVERE ENOUGH TO REQUIRE COMPLETE REPLACEMENT OF THE ATTENUATOR. THE CONTRACTOR SHALL HAVE A SPARE PARTS PACKAGE AVAILABLE ON THE PROJECT SITE AT ALL TIMES WHEN AN ATTENUATOR IS IN PLACE. THE CONTRACTOR SHALL PROVIDE A MINIMUM OF ONE COMPLETE SPARE PARTS PACKAGE FOR EVERY 1 TO 6 UNITS INSTALLED ON THE PROJECT SITE. FOR EXAMPLE, 5 INSTALLED UNITS REQUIRE 1 SPARE PARTS PACKAGE AND 7 INSTALLED UNITS REQUIRE 2 SPARE PARTS PACKAGES. WHEN BI-DIRECTIONAL DESIGNS ARE SPECIFIED, THE CONTRACTOR SHALL SUPPLY APPROPRIATE TRANSITIONS. PAYMENT FOR THE ABOVE WORK SHALL BE MADE AT THE UNIT PRICE BID FOR ITEM 614, WORK ZONE IMPACT ATTENUATOR, (UNIDIRECTIONAL OR BI-DIRECTIONAL), EACH, AND SHALL INCLUDE ALL LABOR, TOOLS, EQUIPMENT AND MATERIALS NECESSARY TO CONSTRUCT, MAINTAIN, REPAIR, REPLACE OR RELOCATE A COMPLETE AND FUNCTIONAL IMPACT ATTENUATOR SYSTEM, INCLUDING ALL RELATED BACKUPS, TRANSITIONS, LEVELING PADS, HARDWARE AND GRADING, NOT SEPARATELY SPECIFIED, AS REQUIRED BY THE MANUFACTURER.

MAINTENANCE OF TRAFFIC SIGNAL INSTALLATIONS

THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING TRAFFIC SIGNAL INSTALLATIONS WITHIN THE PROJECT ONCE THE CONTRACTOR'S OPERATIONS AFFECT THE SIGNAL CABLE WIRING FOR SIGNAL OR PEDESTRIAN HEADS (FOR TEMPORARY OR RELOCATED WIRING.) ONCE THE WIRING IS TOUCHED BY THE CONTRACTOR, IT WILL REMAIN HIS MAINTENANCE RESPONSIBILITY UNTIL THE PROPOSED SIGNAL WORK IS COMPLETE AND ACCEPTED.

THE CONTRACTOR SHALL CORRECT AS QUICKLY AS POSSIBLE ALL OUTAGES OR MALFUNCTIONS. HE SHALL PROVIDE THE MAINTAINING AGENCY AND THE ENGINEER SUCH ADDRESSES AND PHONE NUMBERS WHERE HIS MAINTENANCE FORCES CAN BE CONTACTED. THE CONTRACTOR SHALL PROVIDE ONE OR MORE PERSONS TO RECEIVE ALL CALLS AND DISPATCH THE NECESSARY MAINTENANCE FORCES TO CORRECT OUTAGES. SUCH A PERSON OR PERSONS MAY BE USED TO PERFORM OTHER DUTIES AS LONG AS PROMPT ATTENTION IS GIVEN TO THESE CALLS AND A PERSON IS READILY AVAILABLE CONTINUOUSLY 24 HOURS A DAY, 7 DAYS A WEEK. ALL LAMP OUTAGES, CABLE OUTAGES, ELECTRICAL FAILURES, EQUIPMENT MALFUNCTIONS AND MISALIGNED SIGNAL HEADS SHALL BE CORRECTED TO THE SATISFACTION OF THE ENGINEER WITH THE SIGNAL BACK TO SERVICE WITHIN FOUR HOURS AFTER THE CONTRACTOR HAS BEEN NOTIFIED OF THE OUTAGE.

IN THE EVENT SIGNALS ARE DAMAGED PRIOR TO ACCEPTANCE, ALL DAMAGED EQUIPMENT EXCEPT POLES AND CONTROL EQUIPMENT SHALL BE REPLACED BY THE CONTRACTOR TO THE SATISFACTION OF THE ENGINEER WITH THE SIGNAL BACK IN SERVICE WITHIN 8 HOURS AFTER THE CONTRACTOR'S NOTIFICATION OF THE OUTAGE. THE CONTRACTOR SHALL ARRANGE FOR FULL TRAFFIC CONTROL UNTIL THE SIGNAL IS BACK IN OPERATION.

IF POLES AND/OR CONTROL EQUIPMENT ARE DAMAGED AND MUST BE REPLACED, THE CONTRACTOR SHALL MAKE TEMPORARY REPAIRS AS NECESSARY TO BRING THE SIGNAL BACK INTO FULL OPERATION WITHIN THE ALLOWED 8-HOUR PERIOD, AND SHALL MAKE PERMANENT REPAIRS OR REPLACEMENT AS SOON THEREAFTER AS POSSIBLE.

NONE OF THE ABOVE SHALL BE CONSTRUED AS COLLECTIVE OR CONSECUTIVE OUTAGE TIME PERIODS AT ANY ONE LOCATION. THAT IS WHERE MORE THAN ONE OUTAGE OCCURS AT ANY ONE LOCATION, THEN THE ALLOTTED TIME LIMIT SHALL BE FOR THE WORST SINGLE OUTAGE.

WHERE OUTAGES ARE THE DIRECT RESULT OF A VEHICLE ACCIDENT THE RESPONSE OF THE CONTRACTOR SHALL BE AS OUTLINED ABOVE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COLLECTION OF ANY COMPENSATION FOR THIS WORK FROM THOSE PARTIES RESPONSIBLE FOR THE DAMAGE.

WHERE THE CONTRACTOR HAS FAILED TO, OR CANNOT RESPOND TO, AN OUTAGE OR SIGNAL EQUIPMENT MALFUNCTION, AT THESE LOCATIONS WITHIN HIS RESPONSIBILITY, WITHIN PERIODS AS SPECIFIED ABOVE, THE ENGINEER MAY INVOKE THE PROVISIONS OF SECTION 105.15 AND ANY SUBSEQUENT BILLINGS BY THE CLEVELAND POLICE DEPARTMENT FOR POLICE SERVICES AND MAINTENANCE SERVICES BY ODOT FORCES SHALL BE DEDUCTED FROM MONIES DUE OR TO BECOME DUE THE CONTRACTOR IN ACCORDANCE WITH PROVISIONS OF SECTION 105.15.

ANY VEHICULAR TRAFFIC SIGNAL HEAD, EITHER NEW OR EXISTING WHICH WILL BE OUT OF OPERATION SHALL BE COVERED IN THE MANNER DESCRIBED IN 632.24.

THE CONTRACTOR SHALL MAINTAIN COMPLETE RECORDS OF MALFUNCTIONS INCLUDING:
1. THE TIME OF NOTIFICATION OF MALFUNCTION.
2. THE TIME OF WORK CREW'S ARRIVAL TO CORRECT THE MALFUNCTION.
3. ACTIONS TAKEN TO CORRECT THE MALFUNCTION, INCLUDING A LIST OF PARTS REPAIRED OR REPLACED.
4. A DIAGNOSIS OF REASON FOR THE MALFUNCTION AND PROBABILITY OF REOCCURRENCE.
5. THE ASSIGNMENT OF RIGHT-OF-WAY AT THE TIME OF THE FAILURE.
6. THE TIME THE SYSTEM IS RESTORED TO FULL SERVICE.

A FULL COPY OF THESE RECORDS SHALL BE PROVIDED TO THE ENGINEER WITHIN 3 WORKING DAYS FOLLOWING THE COMPLETION OF REPAIR. THE ENGINEER SHALL FORWARD THESE RECORDS TO THE DISTRICT TRAFFIC ENGINEER FOR FUTURE REFERENCE.

ALL COSTS ASSOCIATED WITH SIGNAL MAINTENANCE AS PRESCRIBED HERE SHALL BE INCLUDED IN THE CONTRACT UNIT PRICE FOR ITEM 614 MAINTAINING TRAFFIC.

ITEM 614 MAINTAINING TRAFFIC, MISC.: SIGNAL TECHNICIAN

ON THE FIRST DAY OF IMPLEMENTATION OF TEMPORARY SIGNAL CONTROL, AND SUBSEQUENTLY WITHIN 24 HOURS OF BEING REQUESTED BY THE ENGINEER, PROVIDE AN IMSA LEVEL 3 SIGNAL TECHNICIAN CAPABLE OF PROGRAMMING THE TEMPORARY SIGNAL CONTROLLERS REQUIRED FOR THE DETOURS.

THE ENGINEER WILL INSTRUCT THE SIGNAL TECHNICIAN TO MAKE ADJUSTMENTS TO SIGNAL TIMING PARAMETERS SUCH AS CLEARANCE INTERVALS, MINIMUMS, MAXIMUMS, PASSAGE TIMES, SPLITS AND OFFSETS FOR COORDINATION PLANS, BEGIN AND END TIMES FOR COORDINATION PLANS.

FURNISH A COPY OF THE SIGNAL TECHNICIAN'S CURRENT IMSA CERTIFICATION.

METHOD OF MEASUREMENT. THE DEPARTMENT WILL MEASURE SIGNAL TECHNICIAN BY THE NUMBER OF HOURS THE SIGNAL TECHNICIAN IS PHYSICALLY ON SITE AND WORKING AT THE DIRECTION OF ENGINEER, PLUS 1 HOUR FOR TRAVEL. THE DEPARTMENT WILL PAY A MINIMUM OF 4 HOURS FOR EACH INSTANCE THAT THIS ITEM IS REQUIRED OR REQUESTED.

THE FOLLOWING QUANTITY HAS BEEN CARRIED TO THE GENERAL SUMMARY IN ORDER TO COMPLETE THIS ITEM OF WORK.

ITEM 614 MAINTAINING TRAFFIC, MISC.: SIGNAL TECHNICIAN 20 HOURS

ITEM 614 - MAINTAINING TRAFFIC, MISC.: RUMBLE STRIPS, AS PER PLAN

RUMBLE STRIPS SHALL BE PLACED TO WARN MOTORIST OF THE CONSTRUCTION ZONE AND TO REDUCE SPEED. THE RUMBLE STRIPS WILL BE PLACED AS DIRECTED BY THE ENGINEER.

THE RUMBLE STRIPS SHALL BE 4 INCHES. WIDE AND 2.50 MILS THICK IN PLACE AND SHALL TRAVERSE THE TOTAL LANE WIDTH. THERE WILL BE TWO SECTIONS OF RUMBLE STRIPS. THE RUMBLE STRIPS MAY HAVE TO GO ACROSS TWO, THREE, OR FOUR LANES OF TRAFFIC.

THE FIRST SECTION WILL START AT A LOCATION DIRECTED BY THE ENGINEER, GENERALLY AT THE START OF THE PROJECT. THERE WILL BE 10 TRANSVERSE STRIPS 6 FT. APART. THE SECOND SECTION WILL START APPROXIMATELY 90 FT. TOWARDS THE CONSTRUCTION ACTIVITY. THERE WILL BE 10 STRIPS CROSSWISE AT 4.5 FEET APART.

THE RUMBLE STRIPS SHALL BE REMOVED WHEN THEY ARE NO LONGER NEEDED AS DETERMINED BY THE ENGINEER, MATERIAL USED FOR THE RUMBLE STRIPS SHALL BE PREFORMED THERMOPLASTIC MATERIAL CALLED PREMARK , MANUFACTURED BY FLINT TRADING, INC.THOMASVILLE , NC 27360 PHONE (910) 475-6600 OR AN APPROVED EQUAL. THERMOPLASTIC IS ACCEPTABLE. THE MANUFACTURES RECOMMENDATIONS MUST BE FOLLOWED FOR INSTALLATION. THE PREMARK STRIPS ARE 125 MILS. THE PREMARK STRIPS WILL HAVE TO BE DOUBLED IN ORDER TO MEET THE THICKNESS REQUIREMENT.

BASIS OF PAYMENT

THIS ITEM WILL BE PAID FOR BY THE LINEAR FOOT AT 250 MIL THICKNESS. THIS WILL INCLUDE ALL LABOR MATERIALS AND EQUIPMENT FOR THE INSTALLATION, MAINTENANCE AND REMOVAL OF THE RUMBLE STRIPS. SHORT TERM LANE CLOSURES WILL HAVE TO BE IN PLACE FOR THE RUMBLE STRIPS TO BE PLACED.

THE MARKINGS SHALL BE REMOVED BY HIGH PRESSURE WATER BLAST ,SAND BLAST, HIGH TEMPERATURE BURNING WITH EXCESS OXYGEN OR OTHER METHODS THAT WILL NOT SCAR THE PAVEMENT.

ITEM 614 - MAINTAINING TRAFFIC, MISC.: RUMBLE STRIPS, AS PER PLAN 1000 FEET

CALCULATED
CHECKED

TRAFFIC CONTROL
GENERAL NOTES

CUY-90-15.99

ITEM 614 - MAINTAINING TRAFFIC, MISC.: TOW TRUCK SERVICE

THE CONTRACTOR SHALL PROVIDE A TOW SERVICE FOR ANY DISABLED VEHICLE WITHIN THE ROADWAY THAT AFFECTS THE FLOW OF TRAFFIC DURING ANY TEMPORARY OR PERMANENT LANE(S) CLOSURE OR RESTRICTIONS. THE INTENT IS TO REMOVE THE DISABLED VEHICLE TO A LOCATION OFF THE TRAVELED WAY.

THE TOW TRUCKS SHALL BE CAPABLE OF HANDLING A GROSS VEHICLE WEIGHT OF 18,000 POUNDS. EACH TRUCK SHALL BE EQUIPPED WITH AN AMBER CAB MOUNTED FLASHING LIGHT , TOW RIG, CUSHIONED BUMPER, AND REAR PINTLE HOOKS. FOR LARGE DISABLED TRUCKS, THE CONTRACTOR SHALL PROVIDE MORE THAN ONE TOW TRUCK, AS NEEDED. TOWING SHALL BE PROVIDED TO REMOVE DISABLED VEHICLES FROM WITHIN THE ROADWAY TO ANOTHER LOCATION OFF THE TRAVELED WAY. THIS SERVICE SHALL BE PROVIDED AT NO CHARGE TO THE OPERATORS OF THE DISABLED VEHICLES. THE OPERATORS OF THE DISABLED VEHICLES SHALL FILL OUT A FORM PROVIDED BY ODOT. THIS FORM SHALL BE SUBMITTED TO ODOT FOR PAYMENT OF THE TOW. ANY ADDITIONAL TOWING TO AN OFF SITE LOCATION SHALL BE ARRANGED BY THE POLICE OR MOTORIST, BUT SHALL NOT BE PART OF THE WORK REQUIRED UNDER THIS CONTRACT.

THE TOW TRUCK MAY BE CALLED TO THE SCENE BY THE POLICE, CONTRACTOR, ENGINEER, OR DESIGNATED ENGINEER'S OR CONTRACTOR'S REPRESENTATIVES. THE TOW TRUCK MUST RESPOND AND ARRIVE AT THE SCENE OF THE DISABLED VEHICLE NO LATER THAN TEN MINUTES AFTER THE RECEIPT OF THE CALL. IF THE TOW TRUCK CANNOT ARRIVE IN TEN MINUTES AS DEEMED BY THE PROJECT ENGINEER, THIS REQUIREMENT MAY BE WAIVED. THE CONTRACTOR MUST PROVIDE TEN MINUTES RESPONSE SERVICE EVEN THOUGH THERE MAY BE MULTIPLE DISABLED VEHICLES AT DIFFERENT LOCATIONS WITHIN THE LIMITS OF WORK. IN THE CASE OF SERIOUS VEHICULAR ACCIDENTS, THE TOW TRUCK MUST NOT REMOVE THE DISABLED VEHICLES UNTIL AUTHORIZED BY POLICE OR THE ENGINEER. THE CONTRACTOR SHALL NOT LET ANY VEHICLE REMAIN IN THE TRAVELED WAY FOR 30 MINUTES WITHOUT NOTIFYING THE TOWING SERVICE. IF THE TOWING SERVICE IS NOT NOTIFIED IN 30 MINUTES, THE CONTRACTOR SHALL ONLY BE PAID FOR ONE HALF OF THE TOW TRUCK SERVICE UNIT PRICE. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE REPRESENTATIVES TO ENSURE THE TOWING SERVICE RESPONDS WITHIN THESE GUIDELINES. THE TOWING SERVICE SHALL RESPOND TO ANY VEHICLE WITHIN THE LIMITS OF THE FIRST ADVANCED WARNING SIGNS ON THE PROJECT.

THE CONTRACTOR SHALL PROVIDE THE PHONE NUMBERS OF THE TOW TRUCK SERVICE TO THE POLICE AND ENGINEER AS SOON AS THEY BECOME AVAILABLE.

TOW TRUCK SERVICE SHALL BE MEASURED BY THE NUMBER OF TOWS THAT THE TOW TRUCK SERVICE ACTUALLY PERFORMS. THE RELOCATION OF EACH VEHICLE OFF THE TRAVELED WAY, WHETHER BY TOWING OR PUSHING SHALL BE COUNTED AS A TOW. IF TOWING IS PERFORMED BY MORE THAN ONE TOW TRUCK (AS NEEDED TO REMOVE HEAVY VEHICLES) MEASUREMENT WILL BE MADE PER EACH TOW TRUCK.

PAYMENT FOR TOW TRUCK SERVICE WILL BE MADE AT THE CONTRACT UNIT PRICE PER TOW. THIS PRICE SHALL BE FULL COMPENSATION FOR FURNISHING THE TOW TRUCK, OPERATOR, TOOLS, EQUIPMENT, INSURANCE AND ALL OTHER MATERIALS AND INCIDENTALS NECESSARY TO COMPLETE THE WORK.

THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN CARRIED TO THE GENERAL SUMMARY:

ITEM 614 - MAINTAINING TRAFFIC, MISC.: TOW TRUCK SERVICE (AUTO)	20 EACH
ITEM 614 - MAINTAINING TRAFFIC, MISC.: TOW TRUCK SERVICE (COMMERCIAL)	10 EACH

2007 HIGH VOLUME SPECIAL EVENTS

DATE	EVENT	LOCATION	KEY CONTACT PERSON	ESTIMATED ATTENDANCE
JUNE 22-24	CLEVELAND GRAND PRIX RACE	BURKE LAKEFRONT AIRPORT	STEVE LEGERSKI 619-7223	120,000-150,000
JULY 5	CLEVELAND ORCHESTRA CONCERT	PUBLIC SQUARE DOWNTOWN CLEVELAND	AMY GILL 231-7612	50,000-80,000
AUGUST 31 - SEPT 3	TASTE OF CLEVELAND	TOWER CITY AMPHITHEATER	BARRY GABEL (440) 247-2722	72,000
SEPT 1-3	CLEVELAND NATIONAL AIR SHOW	BURKE LAKEFRONT AIRPORT	DOMINIC BONACCI 781-0747	60,000-100,000

CALCULATED | CHECKED

MAINTENANCE OF TRAFFIC
GENERAL NOTES

CUY-90-15.99

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MAINTENANCE OF TRAFFIC SUBSUMMARY

CALCULATED ENF CHECKED JTP

CUY-90-15.99

PHASE	STATION TO STATION		614									622								
			WORK ZONE EDGE LINE, CLASS 1, 740.06, TYPE 1 (WHITE)	WORK ZONE EDGE LINE, CLASS 1, 740.06, TYPE 1 (YELLOW)	WORK ZONE CHANNELIZING LINE, CLASS 1, 740.06, TYPE 1	WORK ZONE DOTTED LINE, CLASS 1, 740.06, TYPE 1	WORK ZONE TRANSVERSE/ DIAGONAL LINE, CLASS 1, 740.06, TYPE 1	WORK ZONE LANE ARROW, CLASS 1, 740.06, TYPE 1	WORK ZONE WORD ON PAVEMENT, 72", CLASS 1, 740.06, TYPE 1		WORK ZONE IMPACT ATTENUATOR, UNIDIRECTIONAL	PORTABLE CONCRETE BARRIER, 32"	PORTABLE CONCRETE BARRIER, 50", AS PER PLAN		PORTABLE CONCRETE BARRIER, 50",BRIDGE MOUNTED, AS PER PLAN					
	FROM	TO	FEET	FEET	FEET	FEET	FEET	EACH	EACH		EACH	FEET	FEET		FEET					
	IR 90	EASTBOUND																		
1	43+00	44+75	175	175	525															
1	44+75	49+00	1275	425	425															
1	0+00 (E-2)	1+50 (E-2)	150																	
1	1+50 (E-2)	3+30 (E-2)	360																	
1	49+00	55+00	1200	1200	600						1		250		930					
1	55+00	58+07	614	614	307							307								
1	58+07	61+30	323	646	323	323						323								
1	61+30	62+50	360	240	120							120								
1	62+50	65+50	900	300	300															
1	65+50	68+50	300	300	600															
2	44+75	57+00	1225																	
2	48+10	57+00									2	50	420		470					
2	57+00	60+91				391														
2	60+91	65+50	459																	
2	60+91	61+30	39																	
	BROADWAY/ORANGE/E.14th																			
1 & 2	5+75(BDWY)	0+42(E.14th)		67	156			4	2		1	70								
1 & 2	0+63(E.14th)	1+83(E.14th)		85	75		60	2												
1 & 2	1+83(E.14th)	2+44(E.14th)	61	61	61			2	1											
1 & 2	2+44(E.14th)	ORANGE			79	60														
1 & 2	1+83(E.14th)	2+54(BDWY)	144	152	173	50														
1 & 2	2+54(BDWY)	1+79(BDWY)			150															
1 & 2	BROADWAY BEFORE RAMP E-2		320																	
1 & 2	ORANGE BEFORE E. 14th ST.							4	1											
1 & 2	ORANGE BEFORE E. 22nd ST.							5	1											
1 & 2	E. 14th NB BEFORE ORANGE							2	1											
TOTALS CARRIED TO GENERAL SUMMARY			7,905	4,265	3,894	824	60	19	6		4	870	670		1,400					
			= 2.30 Mi.																	

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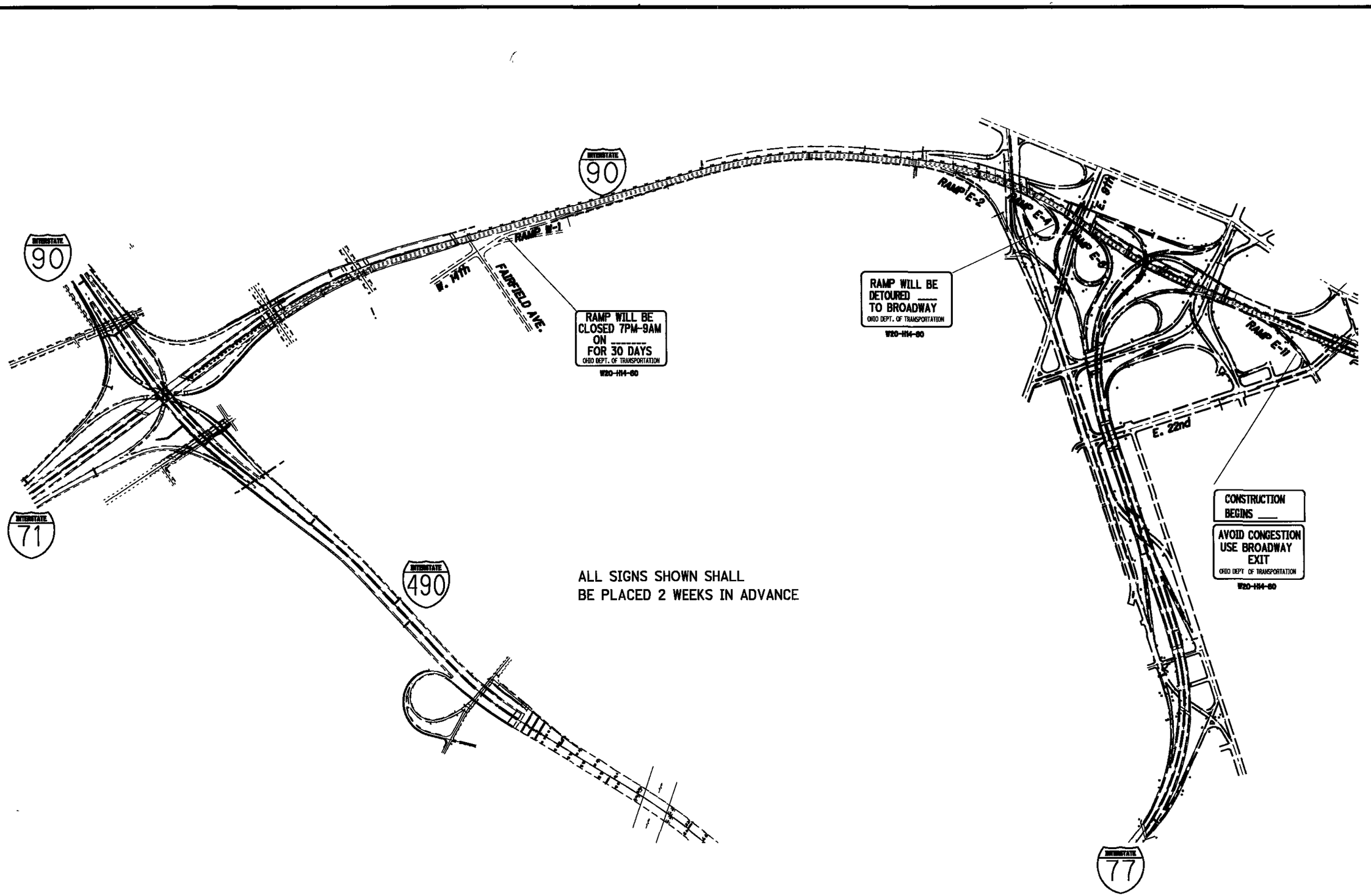

HORIZONTAL SCALE IN FEET
0 200 400 800

DESIGN AGENCY
BURGESS & NIPLE
88 EAST BROAD STREET, COLUMBUS, OHIO 43215

MAINTENANCE OF TRAFFIC - IR90 EASTBOUND
PRE-PHASE 1 SIGNAGE

CUY-90-15.99

28
53

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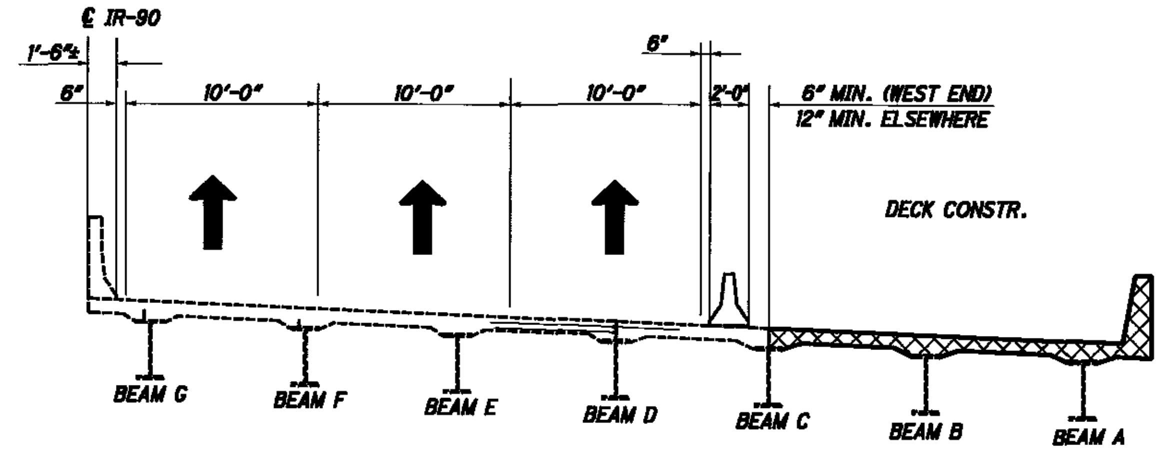
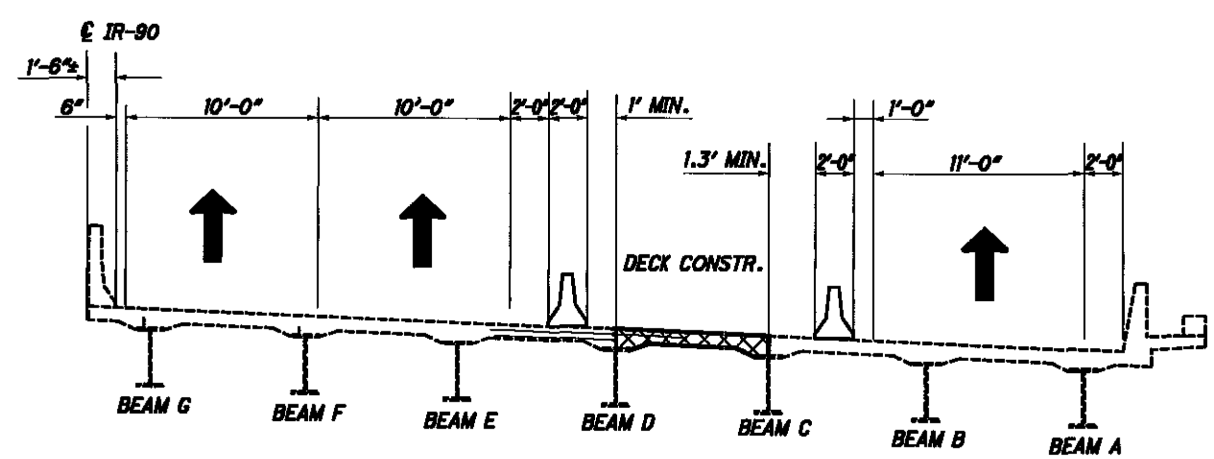


TRANSVERSE SECTION - PHASE 2



TRANSVERSE SECTION - PHASE 1

HORIZONTAL SCALE IN FEET

0 5 10

DESIGN AGENCY

BURGESS & NIPLE

MAINTENANCE OF TRAFFIC - IR90 EASTBOUND
PHASE 1 AND PHASE 2

CUY-90-15.99

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MATCH LINE - SEE BELOW

995+00

990+00

+91.72

5+00

PT Sta. 8+29.53

985+00

40+00

PT Sta. 42+45.26

KENILWORTH AVE.

LANE W-N

35+00

EAST

SOUTH
E. 9th St.
1/4 MILES

Cleveland
Browns Stadium
Convention Ctr.
Exit 171B

EXIT 171A
E. 22nd St.
ALT. ROUTE
USE BROADWAY
13'x7'-6"

EXIT 171A
E. 22nd St.
ALT. ROUTE
USE BROADWAY

13'x7'-6" BLACK
ON ORANGE OVERLAY

MATCH LINE - SEE ABOVE

5+00 6+00 7+00 8+00 9+00 10+00 11+00 12+00 13+00

MATCH LINE - SEE NEXT SHEET

MT-101.60 BARRICADE

RAMP W-1

W. 14th St.

FAIRFIELD AVE.

EAST TO

Abbey Ave.

HORIZONTAL
SCALE IN FEET
0 25 50 100

DESIGN AGENCY
BURGESS & NIPPLE
100 EAST BIG STREET PICKERINGTON, OHIO 43147

MAINTENANCE OF TRAFFIC - IR90 EASTBOUND
PHASE 1 (WHEN RAMP CLOSURE IS PERMITTED)

CUY-90-15.99

30
53

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* - PHASE 1 ONLY

SIGN DETAIL

MAINTENANCE OF TRAFFIC - IR90 EASTBOUND
PHASE 1 (AND PHASE 2)

CUY-90-15.99

31
53

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LEGEND

- 32" Portable Concrete Barrier
- Drums spaced as per MT-95.30, 1' min' offset to edge line, (provide larger offset when shown)
- Work Zone Impact Attenuator
- Area of Construction During This Phase
- Night or Weekend Construction Zone (Lane Closure Restrictions - See Sheet 20)
- (54') Offset from Centerline or Baseline
- Work Zone Edgeline or Channelizing Line, Class I, 740.06, Type 1

RAMP E-1

RAMP E-2 BROADWAY

RAMP E-3

RAMP E-4 ONTARIO

RAMP E-5

MATCH LINE - SEE BELOW

MATCH LINE - SEE PREVIOUS SHEET

MATCH LINE - SEE ABOVE

MATCH LINE - SEE NEXT SHEET

2' PCB OFFSET 50+00

1' PCB OFFSET 50+00

PC STA. 45+28.22

MEET EX. MARKINGS 43+00

P.C. @ LANE 3 MEET EX. EDGELINE 49+14.65

P.T. @ LANE 3 47+88.02

PC STA. 0+00 44+75.00, 52' RT.

P.C. @ LANE 3 44+75

@ LANE 3 CURVE DATA
Δ=7°43'46"
D=2°30'
R=2291.83'
L=309.17'

50" PCB

32" PCB

2' PCB OFFSET 56+00

1' PCB OFFSET 57+00

END PCB 1' PCB OFFSET 55+00

PT @ LANE 3 55+00

PC @ LANE 3 56+11.66

BEGIN DOTTED LINE 58+06.86

@ LANE 3 CURVE DATA
Δ=9°36'20"
D=2°30'
R=2291.83'
L=384.22'

PT STA. 59+89.20

PT @ LANE 3 60+01.43

1' PCB OFFSET MEET EX. MARKINGS

PCB OFFSET 50+00

PT STA. 69+15.59

EXIT 171B — 423 (14) WEST — Ontario St. — EXIT ONLY — 15'x9'-6"

EXIT 171A — 423 (14) EAST — Broadway — 18'x7"

EAST (90) — E 9th St (77) — SOUTH — 9'x2" OVERLAY 15'x9'-6" OVERLAY

Ontario — Broadway — 423 (14) EXITS 171A-B — 2 ROUTE SHIELDS 12"x2" EXIT OVERLAY 11"x3'-6" OVERLAY 4'x2" BLANK OVERLAY

EXIT 172C — Carnegie Ave. — ½ MILE — 18'x6'

EXIT 172B — E. 22nd St. — ¼ MILE — 14'x6'

EXIT 172A — SOUTH (77) E. 9th St. — 35 MPH — 16'x9'-6"

EAST (90) — 9'x2" BLANK OVERLAY 11'x8' OVERLAY

EXIT 172C — Carnegie Ave. — ½ MILE — 14'x8'

EXIT 172B — E. 22nd St. — ½ MILE — 12'x9'-6"

EXIT 172A — SOUTH (77) E. 9th St. — NEXT RIGHT — 19'x9'-6"

EXIT 171B — 423 (14) WEST — Ontario St. — EXIT ONLY — 19'x9'-6"

EXIT 172B — E. 22nd St. — ½ MILE

EXIT 172A — SOUTH (77) E. 9th St. — NEXT RIGHT

EXIT 171B — 423 (14) WEST — Ontario St. — CLOSED — 9'x2'6" OVERLAY

SCALE IN FEET
0 25 50 100
HORIZONTAL

BURGESS & NIPLE — ENGINEERS — ARCHITECTS — SURVEYORS — CONSTRUCTION MANAGERS — ENVIRONMENTAL SCIENTISTS — PLANNERS

MAINTENANCE OF TRAFFIC - IR90 EASTBOUND
PHASE 1

CUY-90-15.99

32
53

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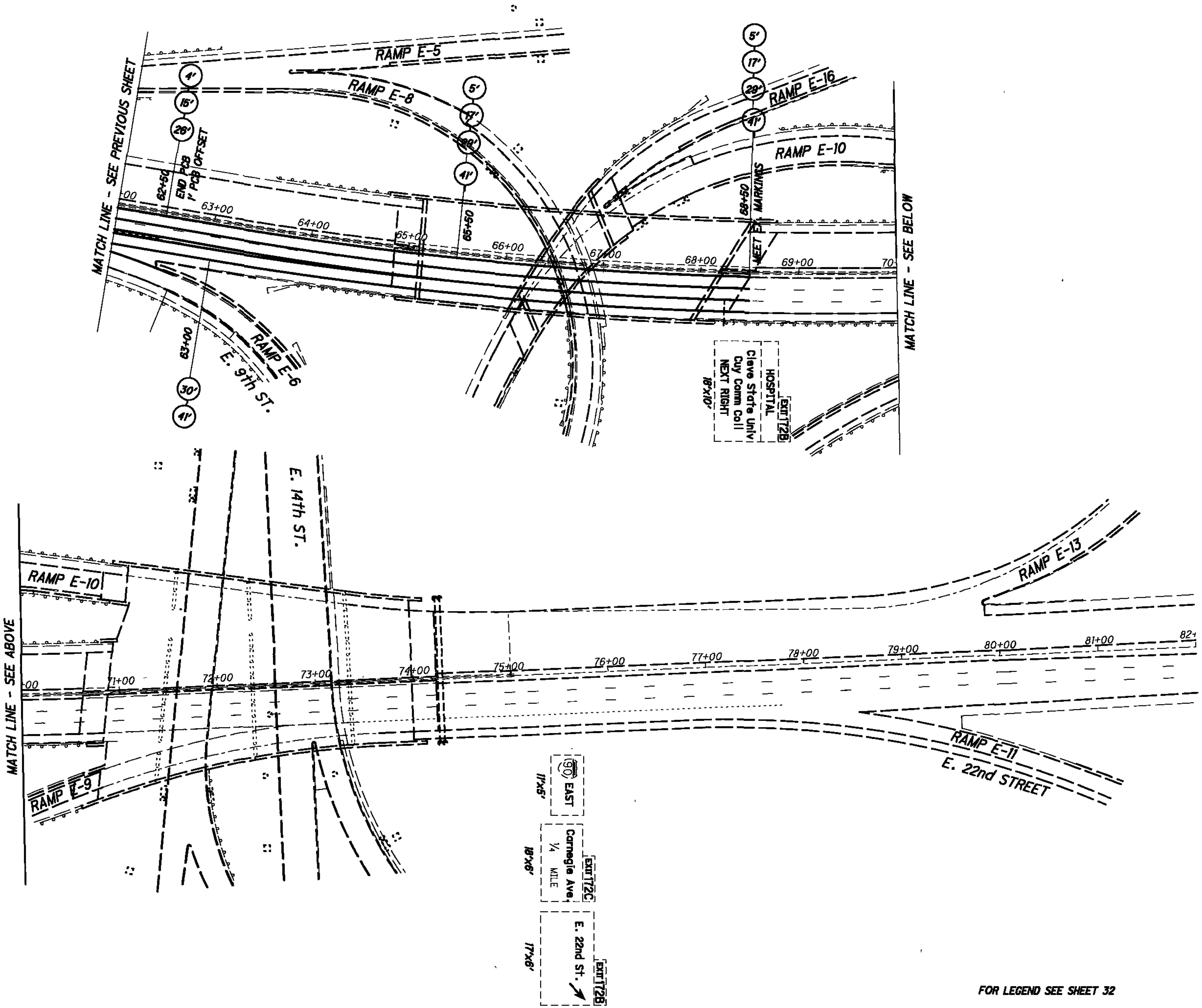

FOR LEGEND SEE SHEET 32

MAINTENANCE OF TRAFFIC - IR90 EASTBOUND
PHASE 1

HORIZONTAL SCALE IN FEET

DESIGN AGENCY
BURGESS & NIPLE

CUY-90-15.99

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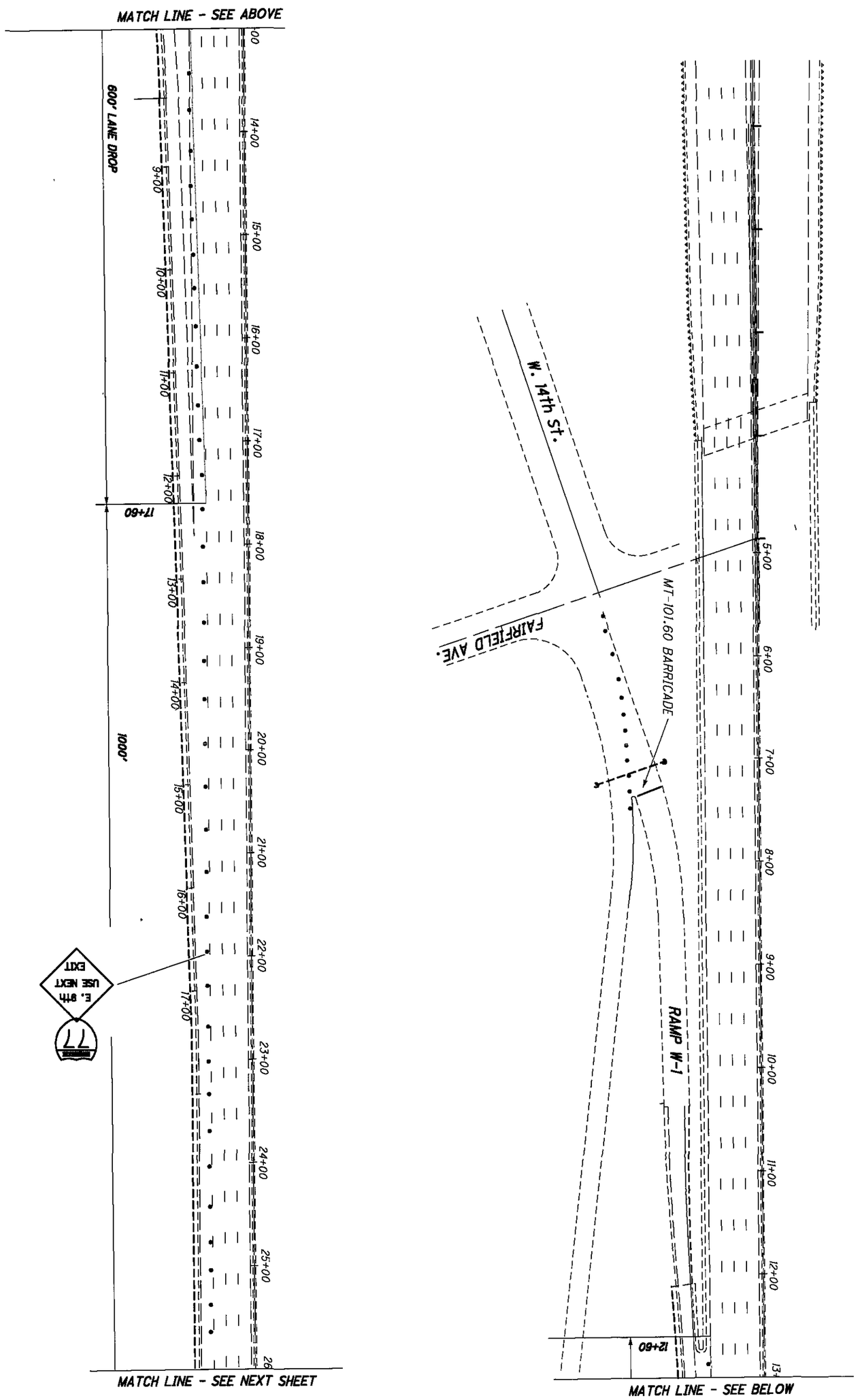

FOR LEGEND SEE SHEET 32

34/53	CUY-90-15.99	MAINTENANCE OF TRAFFIC - IR90 EASTBOUND PHASE 1 - NIGHT OR WEEKEND	DESIGN AGENCY BURGESS & NIPLE 130 WEST EDNE STREET PAINESVILLE, OHIO 44077	0 50 25 100 HORIZONTAL SCALE IN FEET

FOR LEGEND SEE SHEET 32

PROVIDE EXIT SIGNAGE AS PER MT-98.14

HORIZONTAL SCALE IN FEET
0 25 50 100

DESIGN AGENCY
BURGESS & NIPLE
5085 REED ROAD, COLUMBUS, OHIO 43220

MAINTENANCE OF TRAFFIC - IR90 EASTBOUND
PHASE 1 - NIGHT OR WEEKEND

CUY-90-15.99

35
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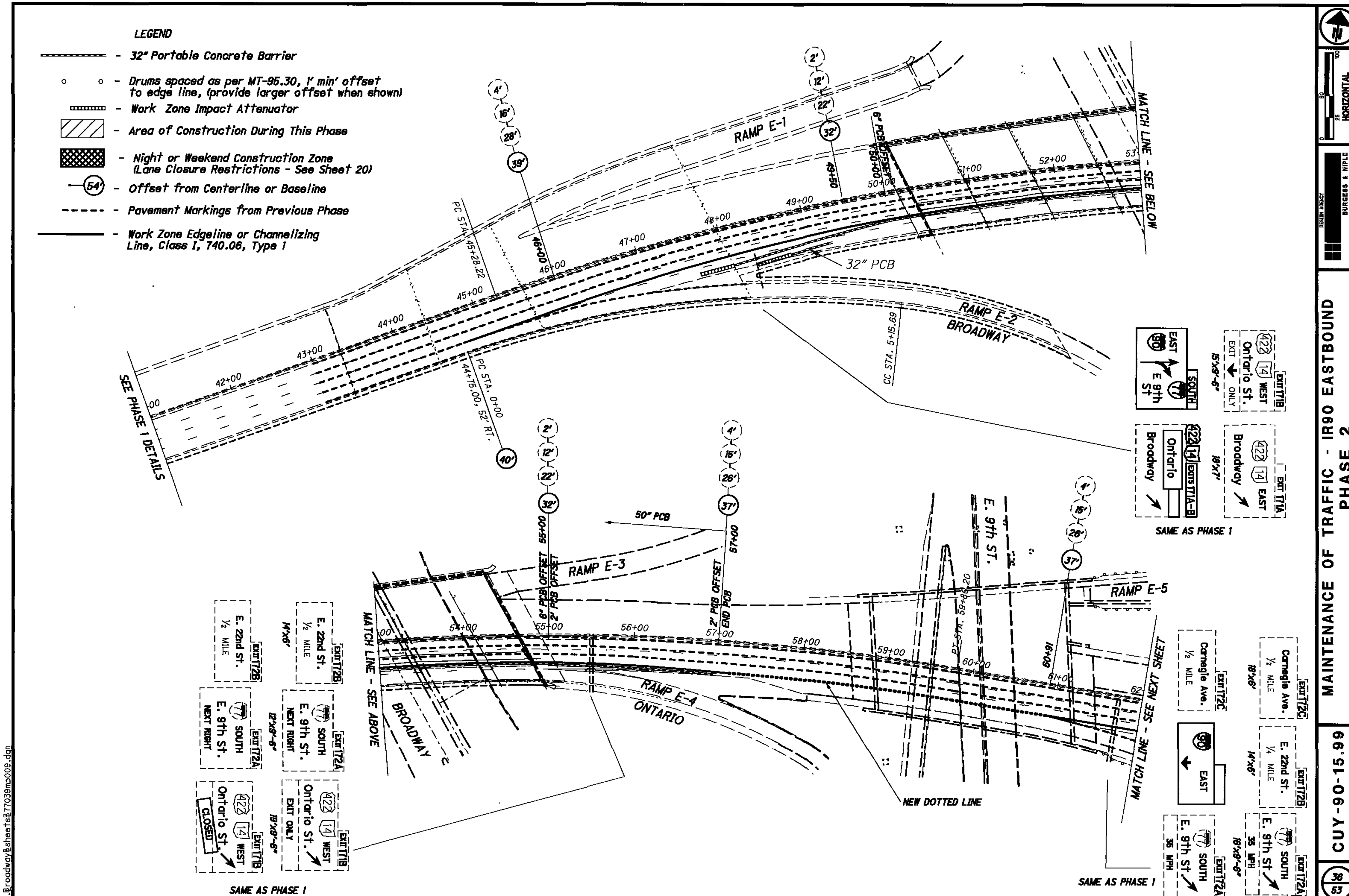
LEGEND
- 32" Portable Concrete Barrier
- Drums spaced as per MT-95.30, 1' min' offset to edge line, (provide larger offset when shown)
- Work Zone Impact Attenuator
- Area of Construction During This Phase
- Night or Weekend Construction Zone (Lane Closure Restrictions - See Sheet 20)
- Offset from Centerline or Baseline
- Pavement Markings from Previous Phase
- Work Zone Edgeline or Channelizing Line, Class I, 740.06, Type 1
RAMP E-1
RAMP E-2
BROADWAY
RAMP E-3
RAMP E-4
ONTARIO
RAMP E-5
E. 9th ST.
32" PCB
50" PCB
6" PCB OFFSET
2' PCB OFFSET
END PCB
NEW DOTTED LINE
PC STA. 45+28.22
PC STA. 0+00
44+75.00, 52' RT.
CC STA. 5+15.69
SEE PHASE 1 DETAILS
MATCH LINE - SEE BELOW
MATCH LINE - SEE ABOVE
MATCH LINE - SEE NEXT SHEET
SAME AS PHASE 1
EAST 90 E 9th St 77 SOUTH
EXIT 171B 422 14 WEST Ontario St. EXIT ONLY
EXITS 171A-B 422 14 Ontario Broadway
EXIT 171A 422 14 EAST Broadway
EXIT 172B E. 22nd St. ½ MILE
EXIT 172A 77 SOUTH E. 9th St. NEXT RIGHT
EXIT 171B 422 14 WEST Ontario St CLOSED
EXIT 172C Carnegie Ave. ½ MILE
90 EAST
EXIT 172B E. 22nd St. ¼ MILE
EXIT 172A 77 SOUTH E. 9th St 35 MPH
HORIZONTAL SCALE IN FEET
BURGESS & NIPLE
MAINTENANCE OF TRAFFIC - IR90 EASTBOUND PHASE 2
CUY-90-15.99
36/53

FOR LEGEND SEE SHEET 36

DESIGN AGENCY
BURGESS & NIPLE
8 EAST BROAD STREET, COLUMBUS, OHIO 43215

HORIZONTAL SCALE IN FEET
0 25 50 100

MAINTENANCE OF TRAFFIC - IR90 EASTBOUND PHASE 2

CUY-90-15.99

37
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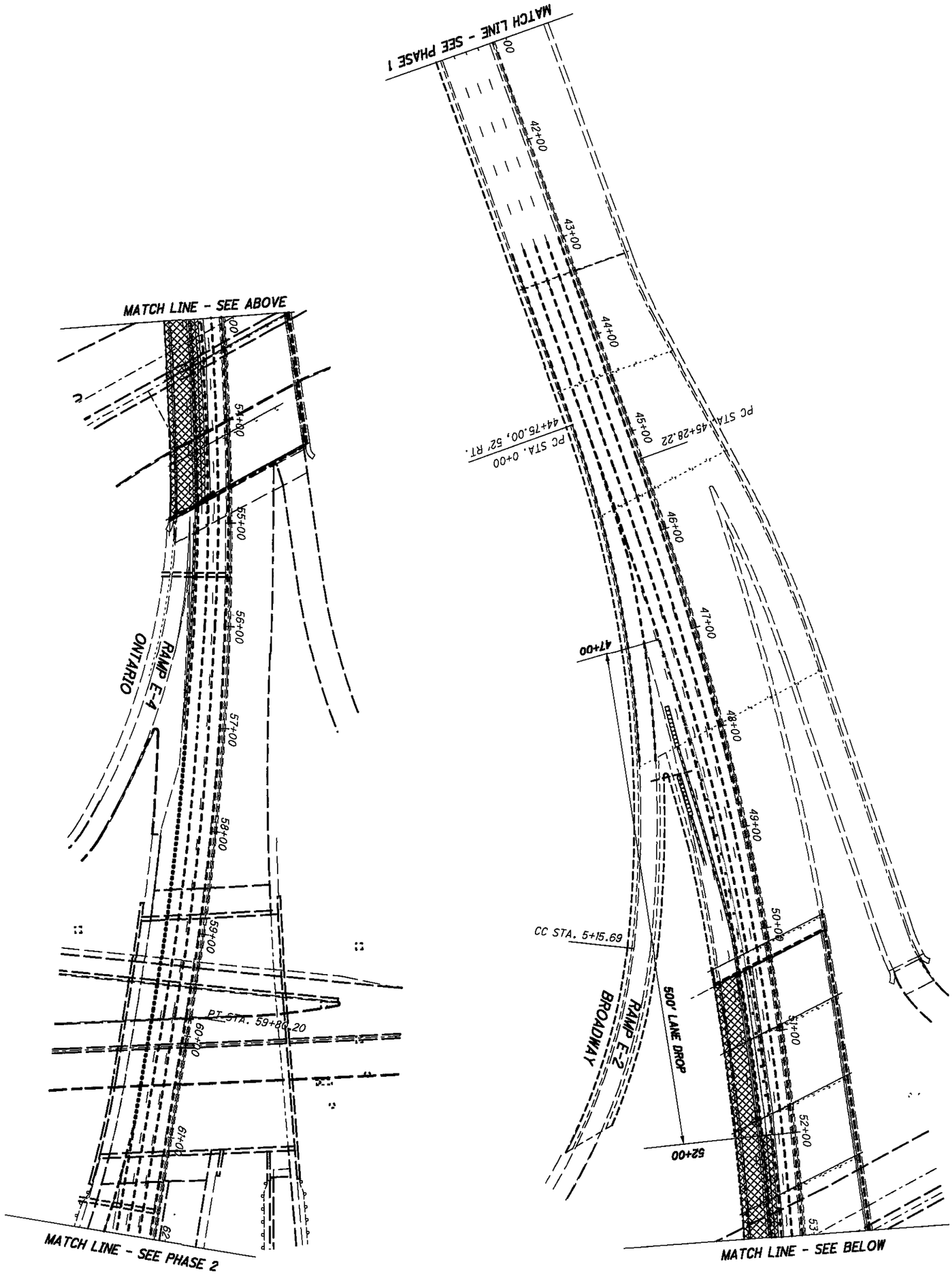


FOR LEGEND SEE SHEET 36

39/53	CUY-90-15.99	MAINTENANCE OF TRAFFIC - IR90 EASTBOUND PHASE 2 - NIGHT OR WEEKEND	DESIGN AGENCY BURGESS & NIPLE 50 WEST BROAD STREET COLUMBUS, OHIO 43207	0 50 25 100 HORIZONTAL SCALE IN FEET

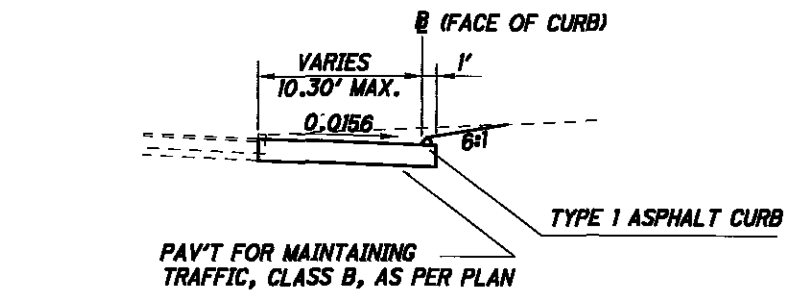
ITEM 615 - PAVEMENT FOR MAINTAINING TRAFFIC, CLASS B, AS PER PLAN

THIS ITEM MAY BE EITHER FLEXIBLE OR RIGID. THE PLANS DETAIL FLEXIBLE PAVEMENT. PAYMENT FOR THE ASPHALT CURB IS INCLUDED UNDER THIS ITEM OF WORK. RIGID PAVEMENT MAY ALSO BE USED. IF RIGID IS USED, A TYPE 2A INTEGRAL CURB SHALL BE CONSTRUCTED AS PART OF THIS ITEM. THE PAVING WIDTH FOR RIGID PAVEMENT SHALL BE 6" BEHIND THE FACE OF CURB, EXCEPT WHERE 2' MINIMUM PAVING IS PROVIDED. WHEN NO LONGER NEEDED, IT SHALL BE REMOVED.

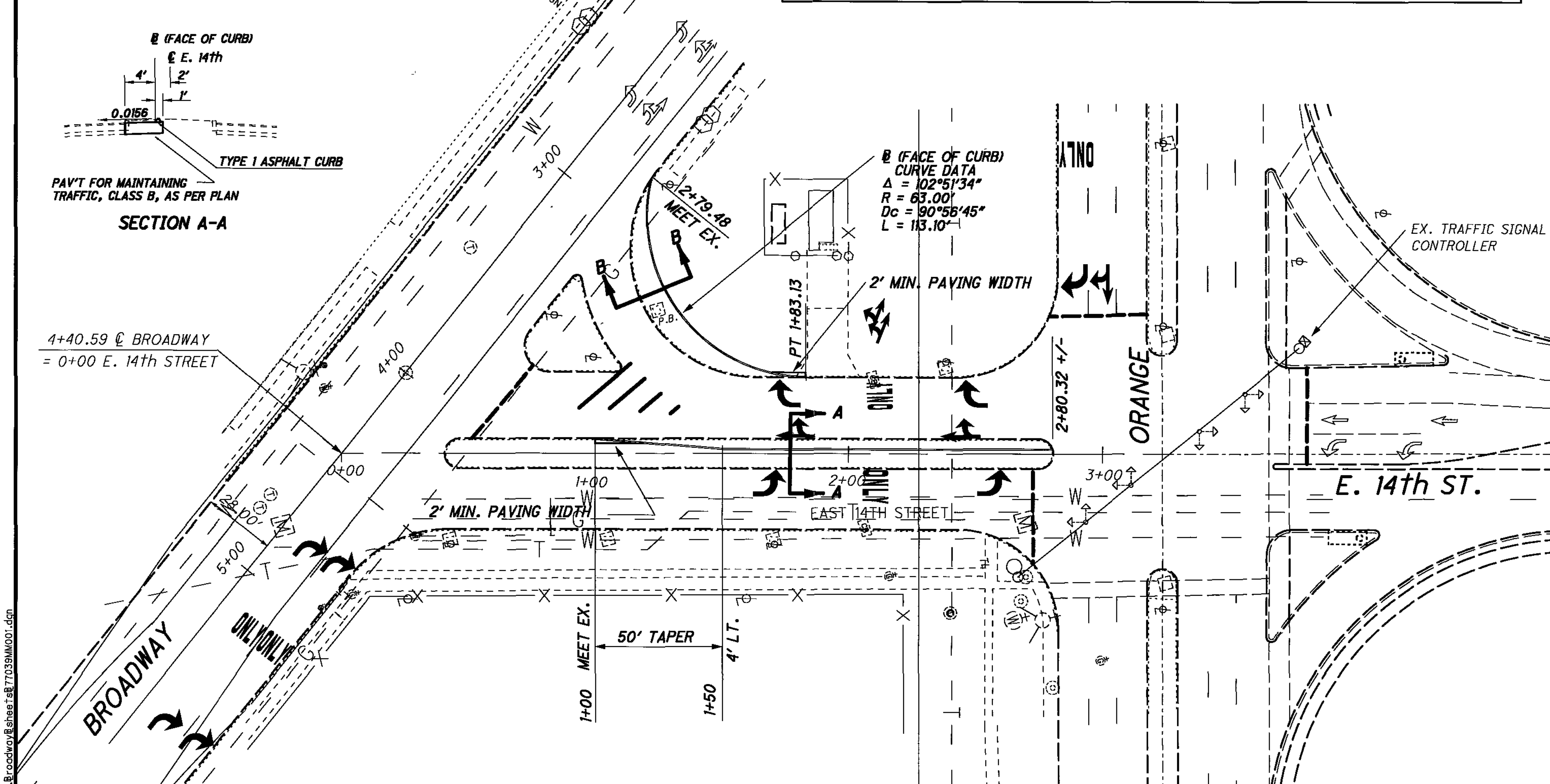
ITEM 615 - ROADS FOR MAINTAINING TRAFFIC, AS PER PLAN

THIS ITEM SHALL ALSO INCLUDE THE COST OF REMOVING THE EXISTING SANDSTONE CURB AND REPLACING IT AT THE END OF CONSTRUCTION. THE REPLACEMENT MAY BE PERFORMED BY RESETTING THE SANDSTONE CURB OR BY PLACING NEW TYPE 6 CURB. THE EXISTING PULLBOX SHALL BE REMOVED AND THE WIRES ADEQUATELY PROTECTED DURING THE PAVING OPERATION. AFTER REMOVING THE TEMPORARY PAVEMENT, THE PULLBOX SHALL BE REPLACED. PAYMENT FOR ALL OF THE ABOVE IS INCLUDED UNDER ITEM 615 - ROADS FOR MAINTAINING TRAFFIC, AS PER PLAN.

ESTIMATED QUANTITIES		
ITEM 615 - PAVEMENT FOR MAINTAINING TRAFFIC, CLASS B, AS PER PLAN	185	S.Y.
ITEM 615 - ROADS FOR MAINTAINING TRAFFIC, AS PER PLAN	LUMP	



SECTION B-B



PAVEMENT WIDENING - E. 14th STREET RUNAROUND

HORIZONTAL SCALE IN FEET

BURGESS & NIPLE

CUY-90-15.99

39/53

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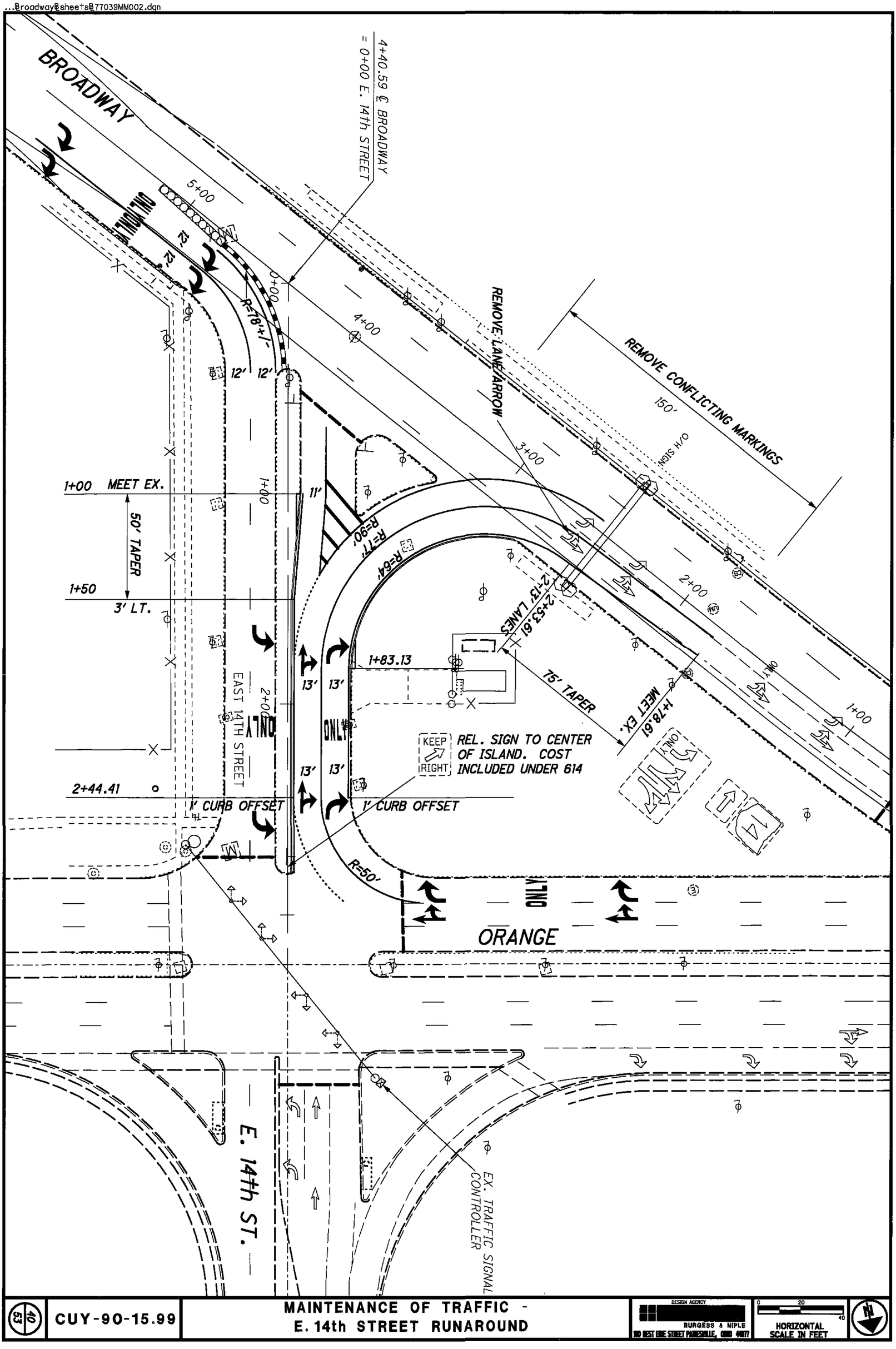
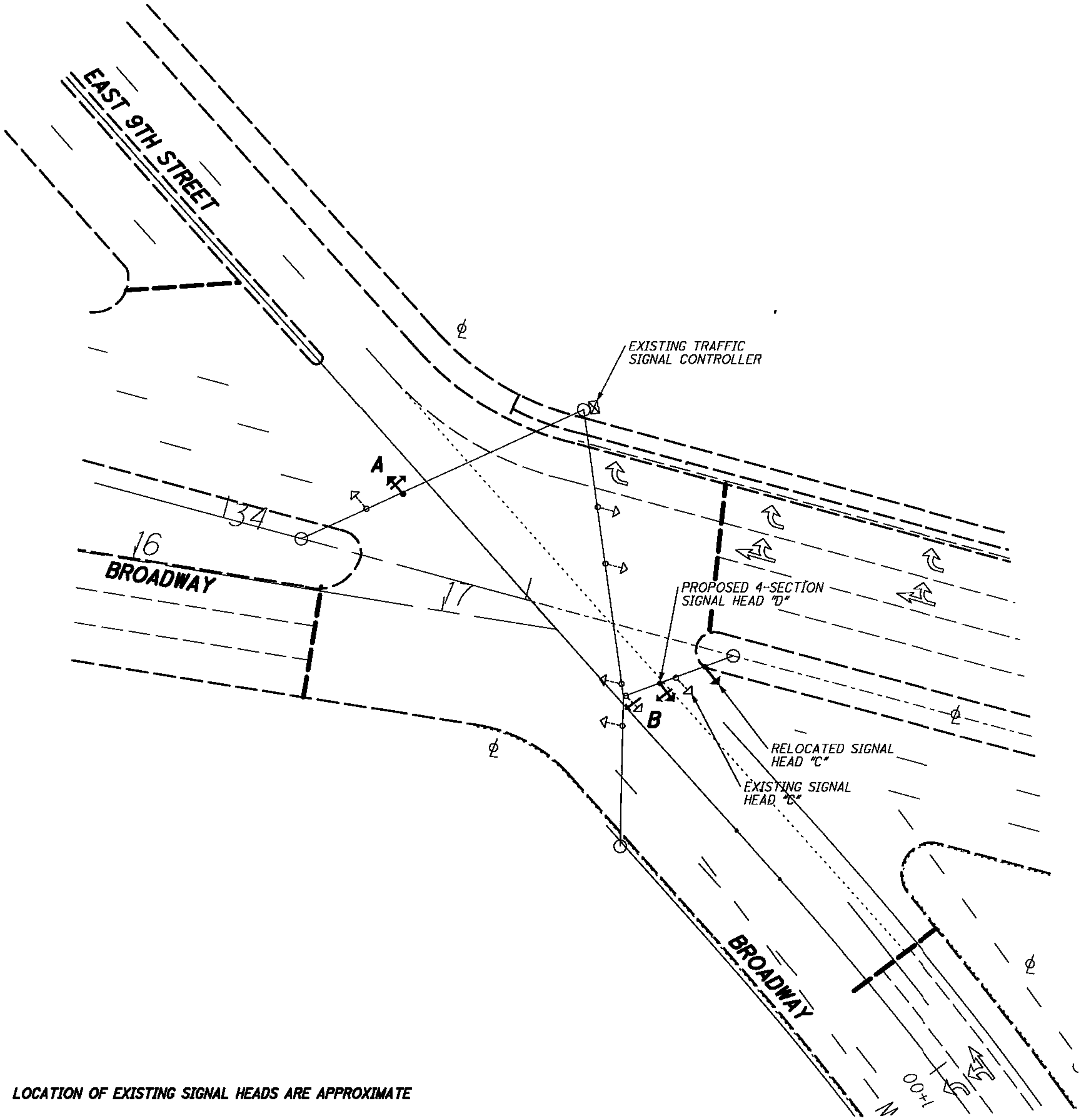


40/53	CUY-90-15.99	MAINTENANCE OF TRAFFIC - E. 14th STREET RUNAROUND	DESIGN AGENCY BURGESS & NIPLE 50 WEST BIG STREET PLAINESVILLE, OHIO 43077	0 20 40 HORIZONTAL SCALE IN FEET



LOCATION OF EXISTING SIGNAL HEADS ARE APPROXIMATE

EXISTING BROADWAY APPROACH

PROPOSED BROADWAY APPROACH

EXISTING EAST 9TH STREET APPROACH

PROPOSED EAST 9TH STREET APPROACH

REQUIRED SIGNAL MODIFICATIONS

SIGNAL HEAD "A" SHALL BE CHANGED FROM A THREE-SECTION HEAD TO A FOUR-SECTION HEAD WITH A LEFT TURN ARROW.

THE GREEN BALL LENS IN SIGNAL HEAD "B" SHALL BE REPLACED WITH A GREEN ARROW LENS. SIGNAL HEAD "B" SHOULD BE LOCATED IN THE CENTER OF THE EXCLUSIVE LEFT TURN LANE.

SIGNAL HEAD "C" SHALL BE MOVED TO THE CENTER OF THE NORTHBOUND SHARED THROUGH/RIGHT TURN LANE.

A NEW FOUR-SECTION SIGNAL HEAD, SIGNAL HEAD "D", SHALL BE INSTALLED IN THE CENTER OF THE NORTHBOUND SHARED THROUGH/LEFT TURN LANE. THE CONTRACTOR SHALL ENSURE THAT THE NEW FOUR-SECTION HEAD HAS A MINIMUM LATERAL SEPARATION OF 8 FEET FROM CENTER TO CENTER OF ADJACENT SIGNAL FACES.

THE SIGNAL PHASING SHALL BE MODIFIED SO THE NORTHBOUND AND SOUTHBOUND MOVEMENTS ARE DIRECTIONALLY SEPARATED.

0 20 40
HORIZONTAL SCALE IN FEET

DESIGN AGENCY
BURGESS & NIPLE

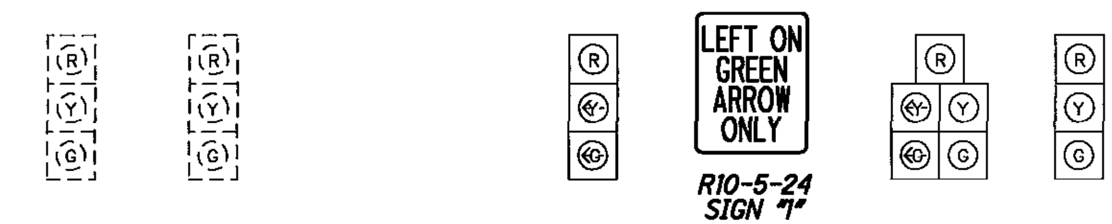
TRAFFIC SIGNAL MODIFICATIONS
ORANGE / BROADWAY / EAST 9TH

CUY-90-15.99

...Broadway\sheets\77039MM003.dgn

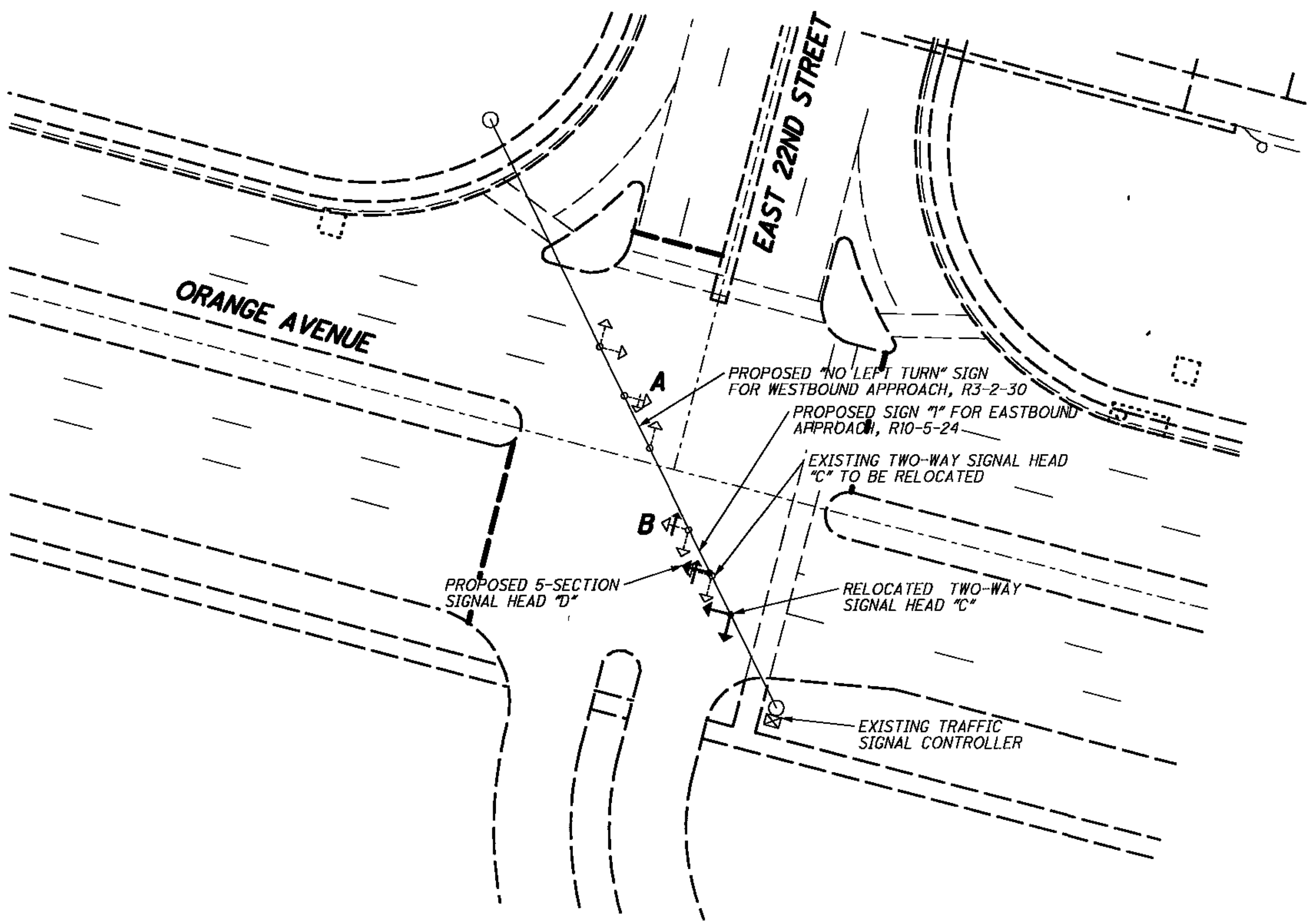
EXISTING WESTBOUND ORANGE AVENUE APPROACH

PROPOSED WESTBOUND ORANGE AVENUE APPROACH



EXISTING EASTBOUND ORANGE AVENUE APPROACH

PROPOSED EASTBOUND ORANGE AVENUE APPROACH



REQUIRED SIGNAL MODIFICATIONS

THE LEFT-TURN ARROW ON SIGNAL HEAD "A" SHALL BE BAGGED.

THE GREEN BALL LENS AND THE YELLOW BALL LENS IN SIGNAL HEAD "B" SHALL BE REPLACED WITH ARROW LENSES FOR PROTECTED LEFT TURNS.

SIGNAL HEAD "C" SHALL BE MOVED TO THE CENTER OF THE EASTBOUND SHARED THROUGH ONLY LANE.

A NEW FIVE-SECTION SIGNAL HEAD, SIGNAL HEAD "D", SHALL BE INSTALLED IN THE CENTER OF THE EASTBOUND SHARED THROUGH/LEFT TURN LANE. THE CONTRACTOR SHALL ENSURE THAT THE NEW FOUR-SECTION HEAD HAS A MINIMUM LATERAL SEPARATION OF 8 FEET FROM CENTER TO CENTER OF ADJACENT SIGNAL FACES.

THE SIGNAL PHASING SHALL BE MODIFIED AS SHOWN ON THE TRAFFFIC SIGNAL TIMINGS SHEET, SHEET MD4A.

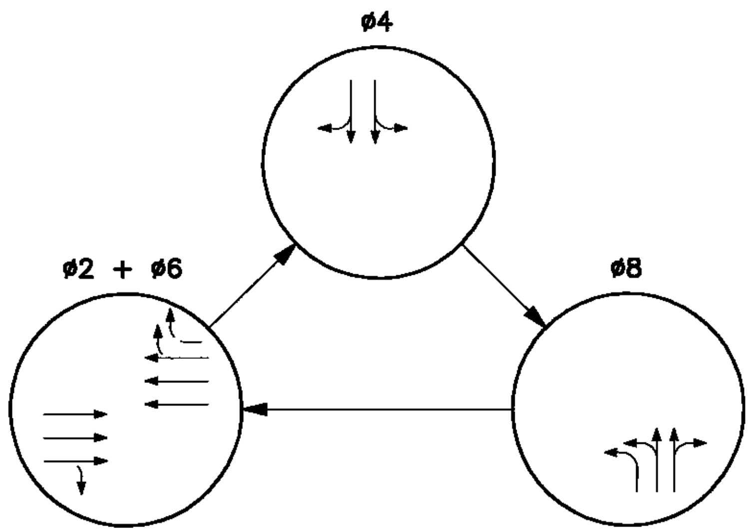
SIGN "1" SHALL BE INSTALLED BETWEEN SIGNAL HEADS "B" AND "D".

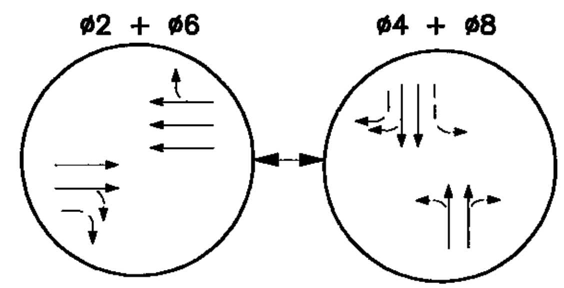
HORIZONTAL SCALE IN FEET 0 20 40

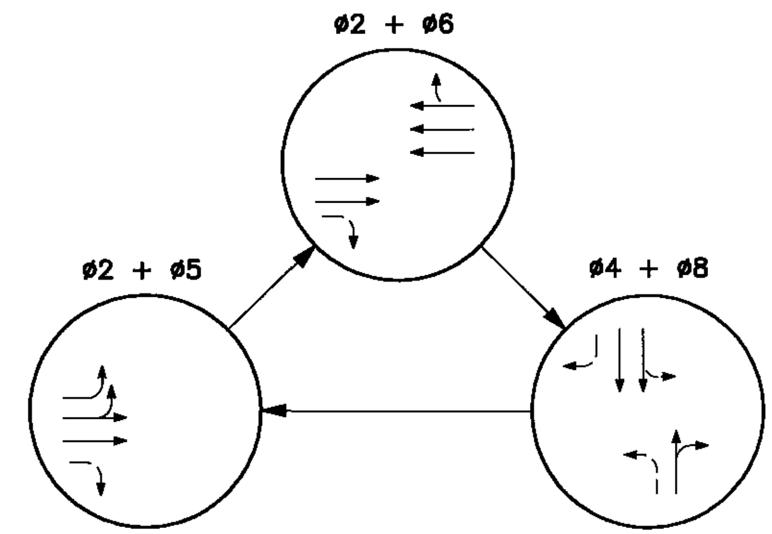
DESIGN AGENCY BURGESS & NIPLE

TRAFFIC SIGNAL MODIFICATIONS
ORANGE AVE. / EAST 22ND ST.

CUY-90-15.99







ORANGE/BROADWAY & EAST 9TH

COORDINATION TIMING			
	DIAL 1	DIAL 2	DIAL 3
CYCLE LENGTH	100 SEC.	90 SEC.	90 SEC.
PHASE 2 SPLIT	48%	40%	52%
PHASE 4 SPLIT	16%	26%	23%
PHASE 6 SPLIT	48%	40%	52%
PHASE 8 SPLIT	36%	34%	25%
OFFSET	100%	100%	100%
TIME OF DAY SCHEDULE	AM PEAK 6AM – 9AM	PM PEAK 3PM – 6PM	ALL OTHER TIMES

OFFSETS REFERENCED TO THE BEGINNING OF YELLOW PHASE 2+6

ORANGE & EAST 14TH

COORDINATION TIMING			
	DIAL 1	DIAL 2	DIAL 3
CYCLE LENGTH	100 SEC.	90 SEC.	90 SEC.
PHASE 2 SPLIT	48%	51%	66%
PHASE 4 SPLIT	52%	49%	34%
PHASE 6 SPLIT	48%	51%	66%
PHASE 8 SPLIT	52%	49%	34%
OFFSET	91%	11%	12%
TIME OF DAY SCHEDULE	AM PEAK 6AM – 9AM	PM PEAK 3PM – 6PM	ALL OTHER TIMES

OFFSETS REFERENCED TO THE BEGINNING OF YELLOW PHASE 2+6

ORANGE & EAST 22ND

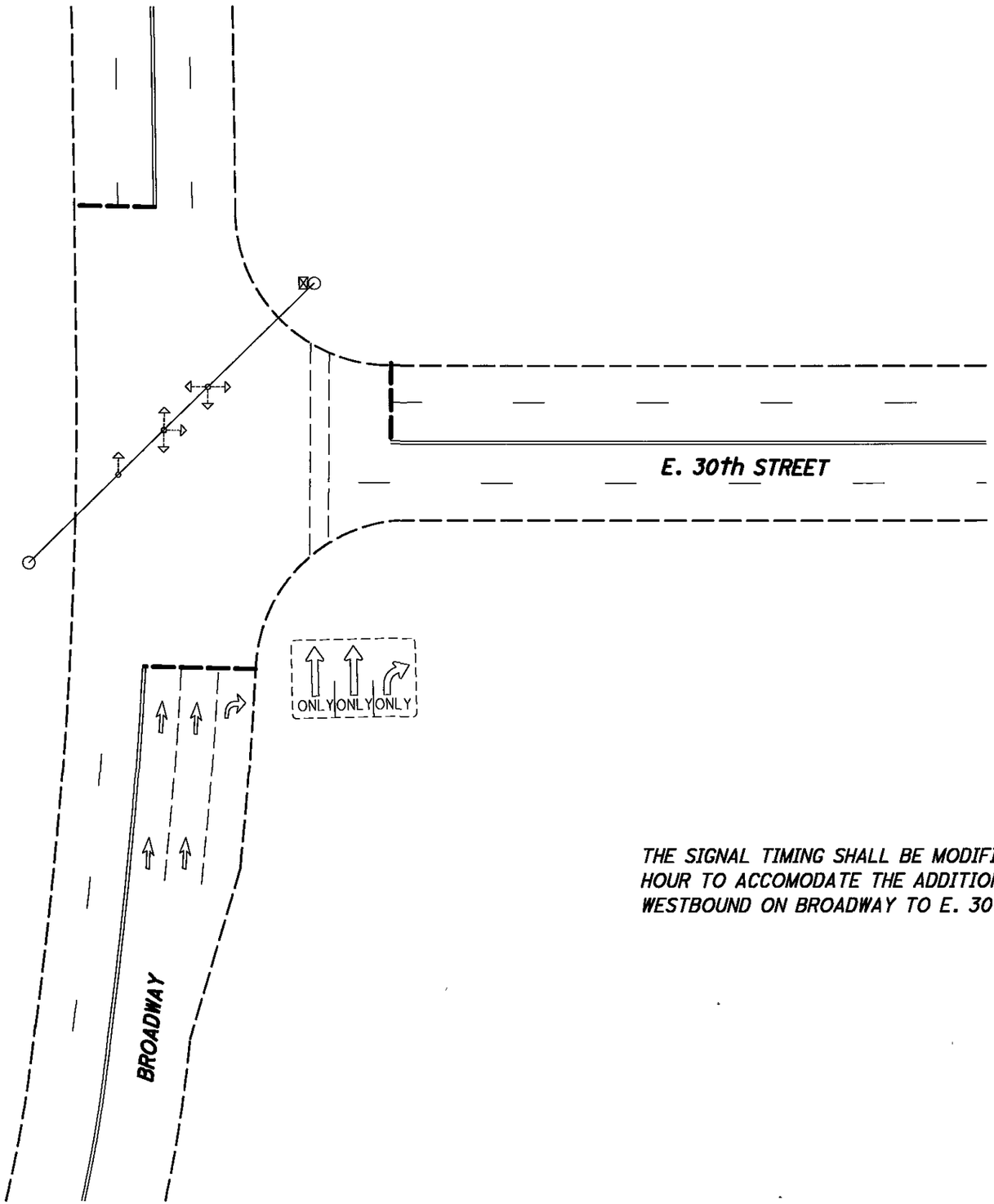
COORDINATION TIMING			
	DIAL 1	DIAL 2	DIAL 3
CYCLE LENGTH	100 SEC.	90 SEC.	90 SEC.
PHASE 2 SPLIT	71%	61%	64%
PHASE 4 SPLIT	29%	39%	36%
PHASE 5 SPLIT	34%	31%	38%
PHASE 6 SPLIT	37%	30%	26%
PHASE 8 SPLIT	29%	39%	36%
OFFSET	72%	53%	43%
TIME OF DAY SCHEDULE	AM PEAK 6AM – 9AM	PM PEAK 3PM – 6PM	ALL OTHER TIMES

OFFSETS REFERENCED TO THE BEGINNING OF YELLOW PHASE 2+6

DESIGN AGENCY
BURGESS & NIPLE

TRAFFIC SIGNAL TIMINGS - ORANGE AVENUE

CUY-90-15.99



THE SIGNAL TIMING SHALL BE MODIFIED DURING THE AM RUSH HOUR TO ACCOMODATE THE ADDITIONAL TRAFFIC TRAVELLING WESTBOUND ON BROADWAY TO E. 30th STREET NORTHBOUND.

HORIZONTAL SCALE IN FEET
0 20 40

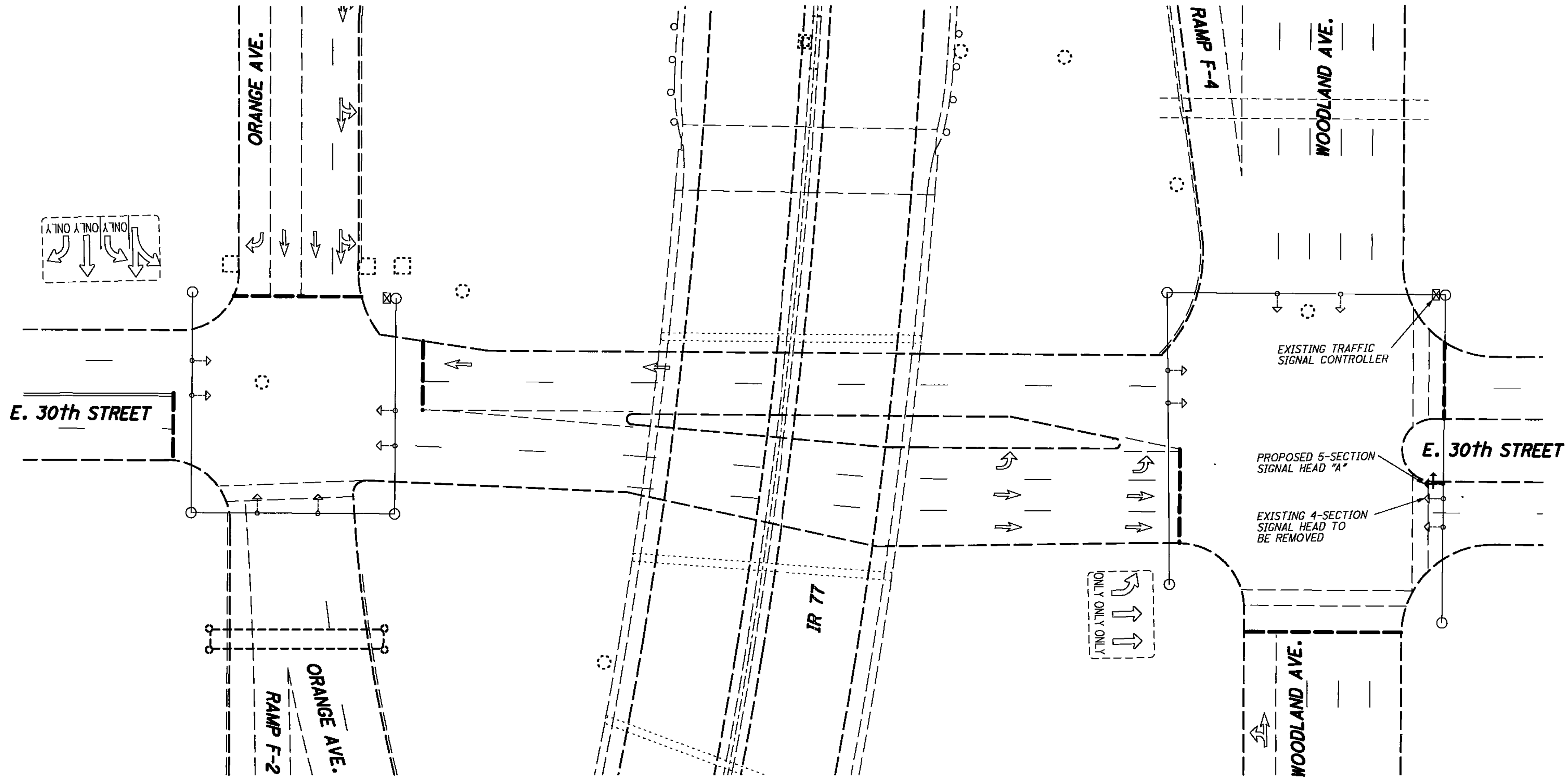
DESIGN AGENCY
BURGESS & NIPLE
100 WEST OHIO STREET FINDLAY, OHIO 45840

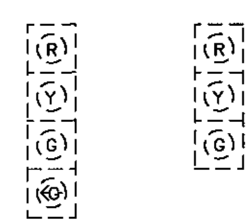
TRAFFIC SIGNAL MODIFICATIONS
BROADWAY / EAST 30TH

CUY-90-15.99

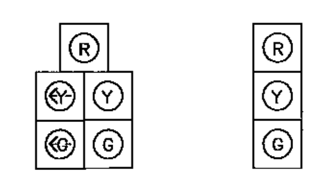
44
53

...Broadway\sheets\177039MM006.dgn





EXISTING E. 30TH ST. NORTHBOUND APPROACH



PROPOSED E. 30TH ST. NORTHBOUND APPROACH

THE SIGNAL TIMING SHALL BE MODIFIED DURING THE AM RUSH HOUR TO ACCOMODATE THE ADDITIONAL TRAFFIC TRAVELLING NORTH ON E. 30th STREET, TOWARDS WOODLAND AVE.

REQUIRED SIGNAL MODIFICATIONS
(EAST 30TH ST. AND WOODLAND AVE.)

A NEW FIVE-SECTION SIGNAL HEAD, SIGNAL HEAD "A", SHALL BE INSTALLED ALONG THE CHANNELIZING LINE BETWEEN THE NORTHBOUND LEFT TURN LANE AND THE NORTHBOUND THROUGH LANE. THE CONTRACTOR SHALL ENSURE THAT THE NEW FOUR-SECTION HEAD HAS A MINIMUM LATERAL SEPARATION OF 8 FEET FROM CENTER TO CENTER OF ADJACENT SIGNAL FACES.

THE EXISTING FOUR-SECTION SIGNAL HEAD SHALL BE REMOVED.

THE SIGNAL PHASING SHALL BE MODIFIED TO PROVIDE A NORTHBOUND PROTECTED LEADING LEADING LEFT.

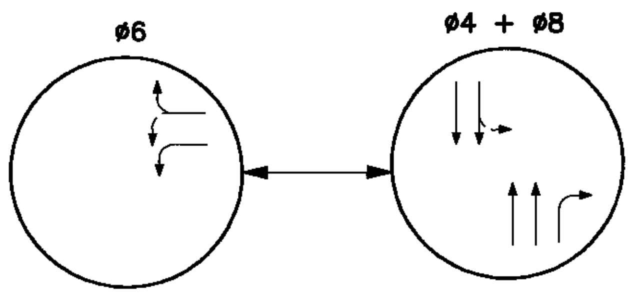
THE SIGNAL PHASING AND TIMING SHALL BE MODIFIED DURING THE AM RUSH HOUR TO ACCOMODATE THE ADDITIONAL TRAFFIC TRAVELLING NORTH ON E. 30th STREET, TURNING WEST ON WOODLAND AVE.

HORIZONTAL SCALE IN FEET

DESIGN AGENCY
BURGESS & NIPLE

TRAFFIC SIGNAL MODIFICATIONS
ORANGE/ EAST 30TH/ WOODLAND

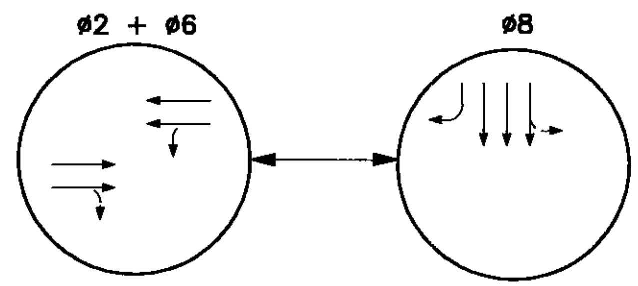
CUY-90-15.99



EAST 30TH & BROADWAY

COORDINATION TIMING			
	DIAL 1	DIAL 2	DIAL 3
CYCLE LENGTH	100 SEC.	NO CHANGE	NO CHANGE
PHASE 4 SPLIT	70%	NO CHANGE	NO CHANGE
PHASE 6 SPLIT	30%	NO CHANGE	NO CHANGE
PHASE 8 SPLIT	70%	NO CHANGE	NO CHANGE
OFFSET	21%	NO CHANGE	NO CHANGE
TIME OF DAY SCHEDULE	AM PEAK 6AM – 9AM	PM PEAK 3PM – 6PM	ALL OTHER TIMES

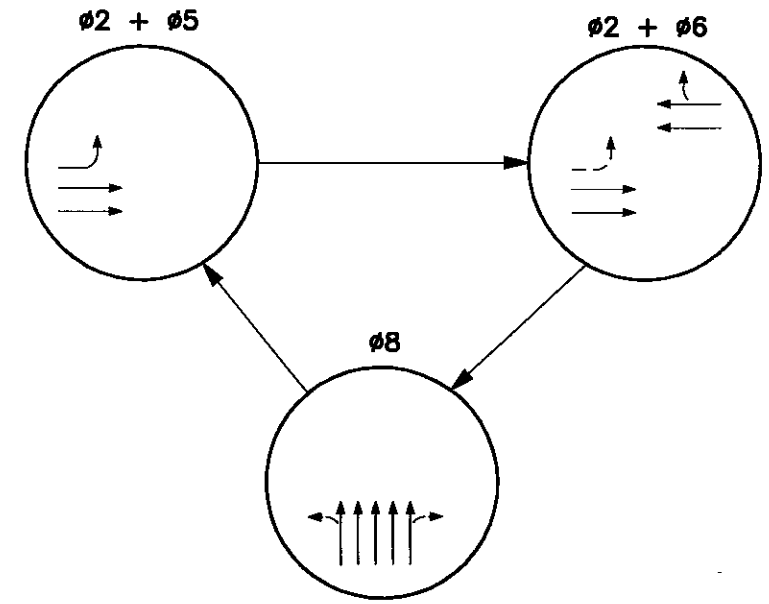
OFFSETS REFERENCED TO THE BEGINNING OF YELLOW PHASE 6



EAST 30th STREET & ORANGE AVE.

COORDINATION TIMING			
	DIAL 1	DIAL 2	DIAL 3
CYCLE LENGTH	100 SEC.	NO CHANGE	NO CHANGE
PHASE 2 SPLIT	71%	NO CHANGE	NO CHANGE
PHASE 4 SPLIT	71%	NO CHANGE	NO CHANGE
PHASE 8 SPLIT	29%	NO CHANGE	NO CHANGE
OFFSET	100%	NO CHANGE	NO CHANGE
TIME OF DAY SCHEDULE	AM PEAK 6AM – 9AM	PM PEAK 3PM – 6PM	ALL OTHER TIMES

OFFSETS REFERENCED TO THE BEGINNING OF YELLOW PHASE 2+6



EAST 30th STREET & WOODLAND AVE.

80% OF BROADWAY TRAFFIC DETOURED

COORDINATION TIMING			
	DIAL 1	DIAL 2	DIAL 3
CYCLE LENGTH	100 SEC.	NO CHANGE	NO CHANGE
PHASE 2 SPLIT	73%	NO CHANGE	NO CHANGE
PHASE 5 SPLIT	51%	NO CHANGE	NO CHANGE
PHASE 6 SPLIT	22%	NO CHANGE	NO CHANGE
PHASE 8 SPLIT	27%	NO CHANGE	NO CHANGE
OFFSET	95%	NO CHANGE	NO CHANGE
TIME OF DAY SCHEDULE	AM PEAK 6AM – 9AM	PM PEAK 3PM – 6PM	ALL OTHER TIMES

OFFSETS REFERENCED TO THE BEGINNING OF YELLOW PHASE 2+6

EAST 30th STREET & WOODLAND AVE.

100% OF BROADWAY TRAFFIC DETOURED

COORDINATION TIMING			
	DIAL 1	DIAL 2	DIAL 3
CYCLE LENGTH	100 SEC.	NO CHANGE	NO CHANGE
PHASE 2 SPLIT	74%	NO CHANGE	NO CHANGE
PHASE 5 SPLIT	52%	NO CHANGE	NO CHANGE
PHASE 6 SPLIT	22%	NO CHANGE	NO CHANGE
PHASE 8 SPLIT	26%	NO CHANGE	NO CHANGE
OFFSET	92%	NO CHANGE	NO CHANGE
TIME OF DAY SCHEDULE	AM PEAK 6AM – 9AM	PM PEAK 3PM – 6PM	ALL OTHER TIMES

OFFSETS REFERENCED TO THE BEGINNING OF YELLOW PHASE 2+6

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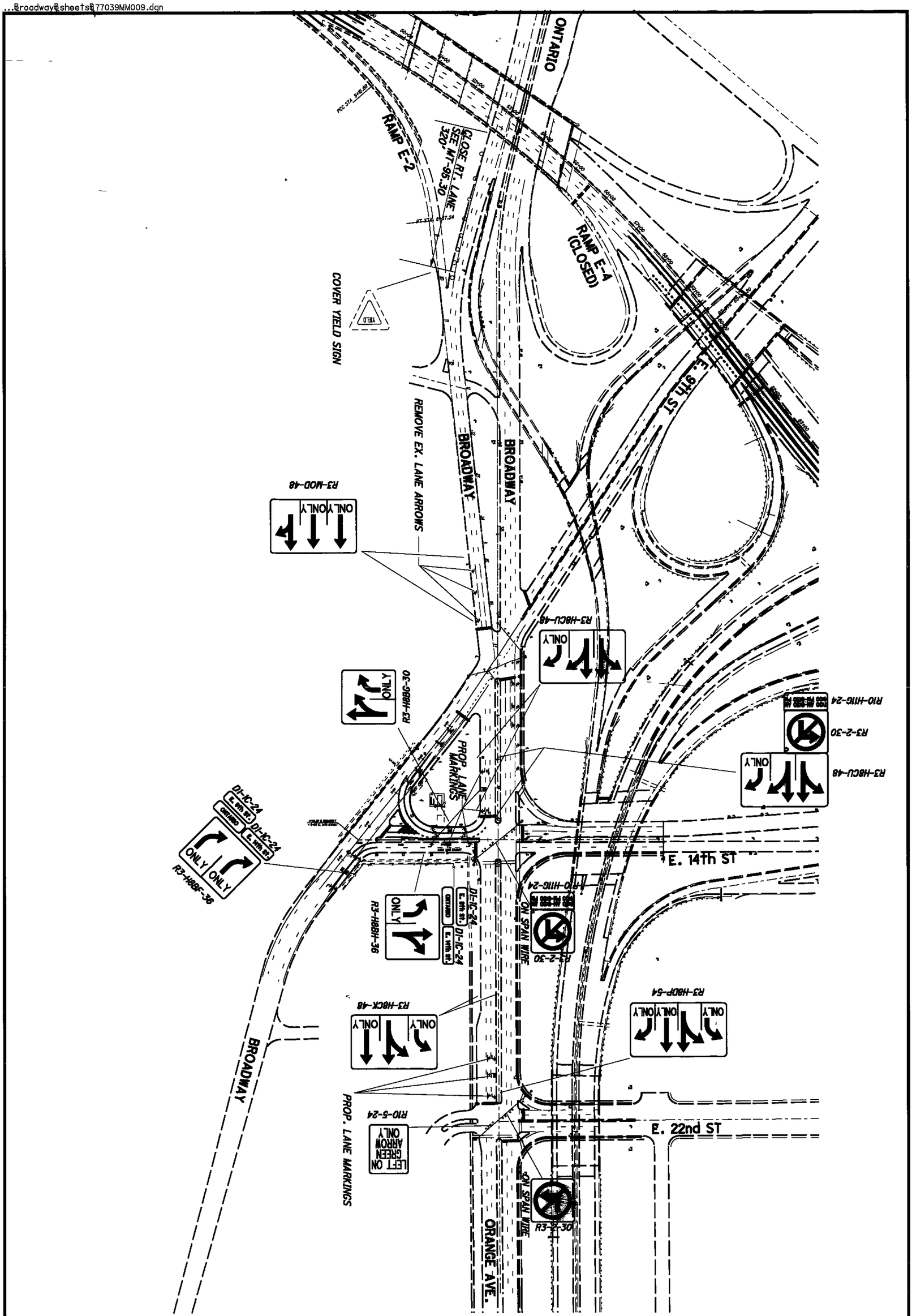
DESIGN AGENCY
BURGESS & NIPLE

TRAFFIC SIGNAL TIMINGS - E. 30th STREET

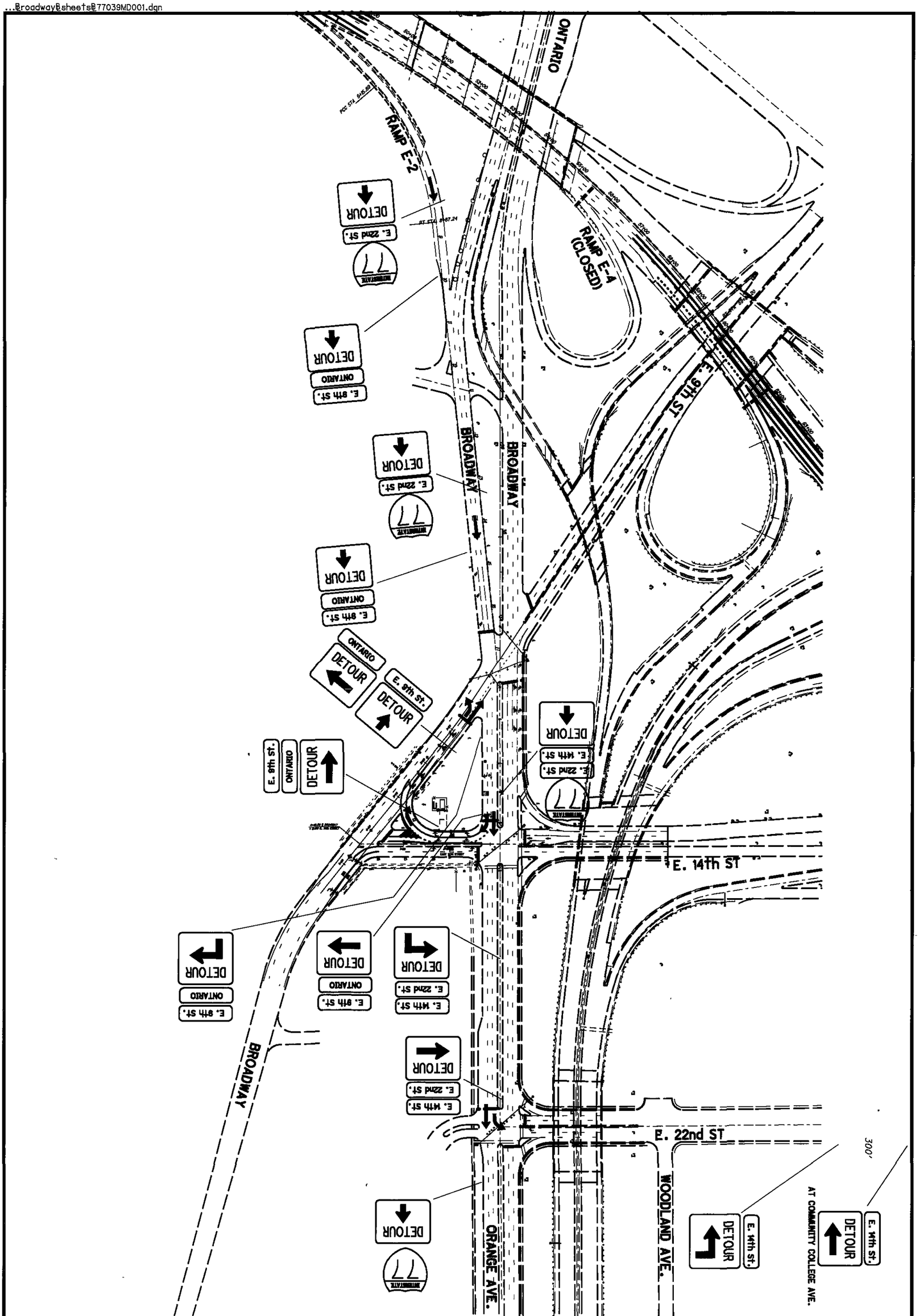
CUY-90-15.99

...Broadway\sheets\77039MM009.dgn

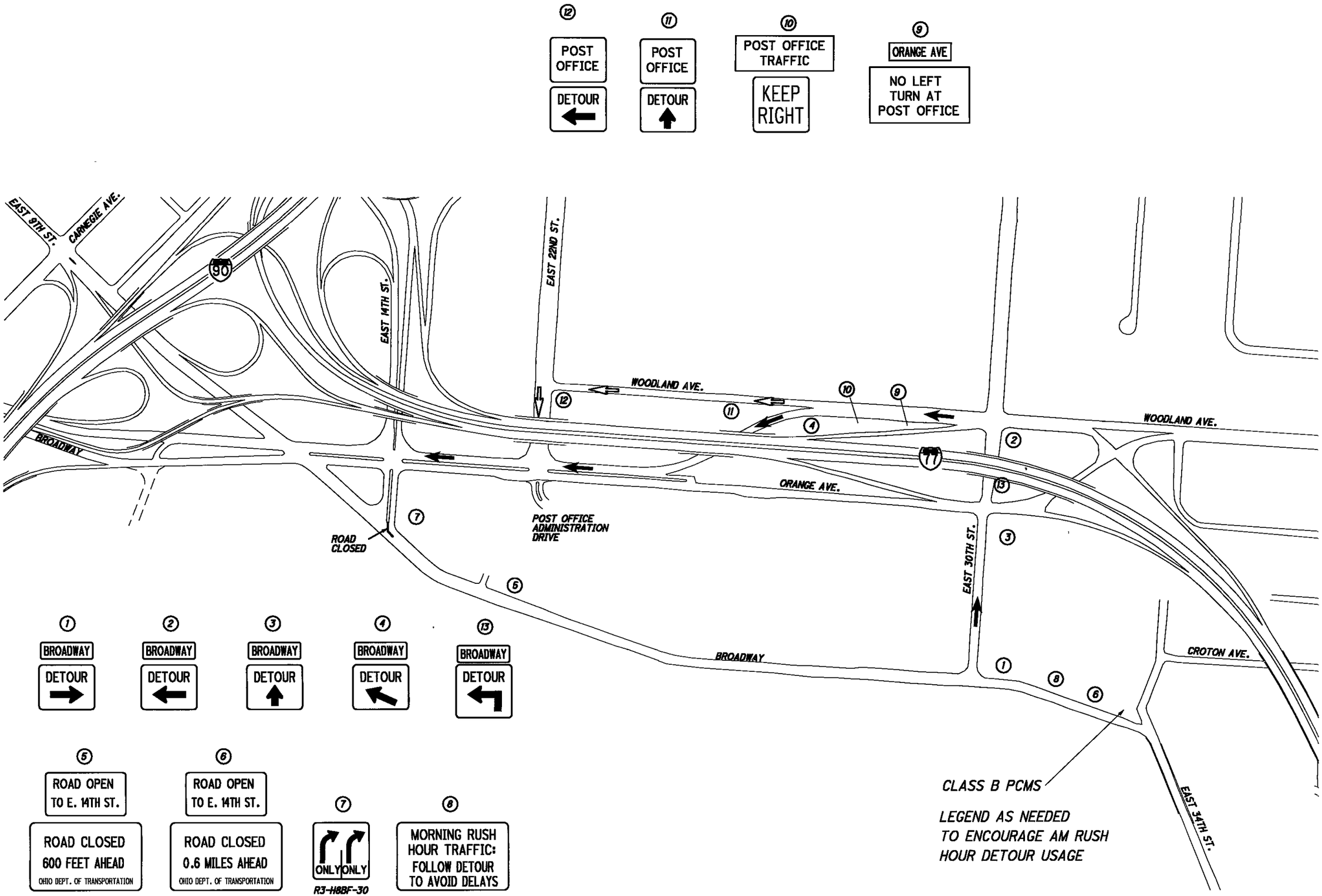


47/53	CUY-90-15.99	MAINTENANCE OF TRAFFIC - ONTARIO REGULATORY SIGNS	DESIGN AGENCY BURGESS & NIPLE 100 WEST ERIE STREET PAINESVILLE, OHIO 44077	0 100 200 HORIZONTAL SCALE IN FEET

...Broadway\sheets\77039MD001.dgn



48/53	CUY-90-15.99	MAINTENANCE OF TRAFFIC - ONTARIO DETOUR SIGNS	DESIGN AGENCY BURGESS & NIPLE 200 WEST ERIE STREET PAINESVILLE, OHIO 44077	HORIZONTAL SCALE IN FEET 0 100 200	N



HORIZONTAL SCALE IN FEET
0 100 200 400

CALCULATED

CHECKED

WESTBOUND BROADWAY DETOUR
POST OFFICE DETOUR

CUY-90-15.99

49
53

\roadway\sheets\77039MD002.dgn

.\roadway\sheets\77039MD003.dgn

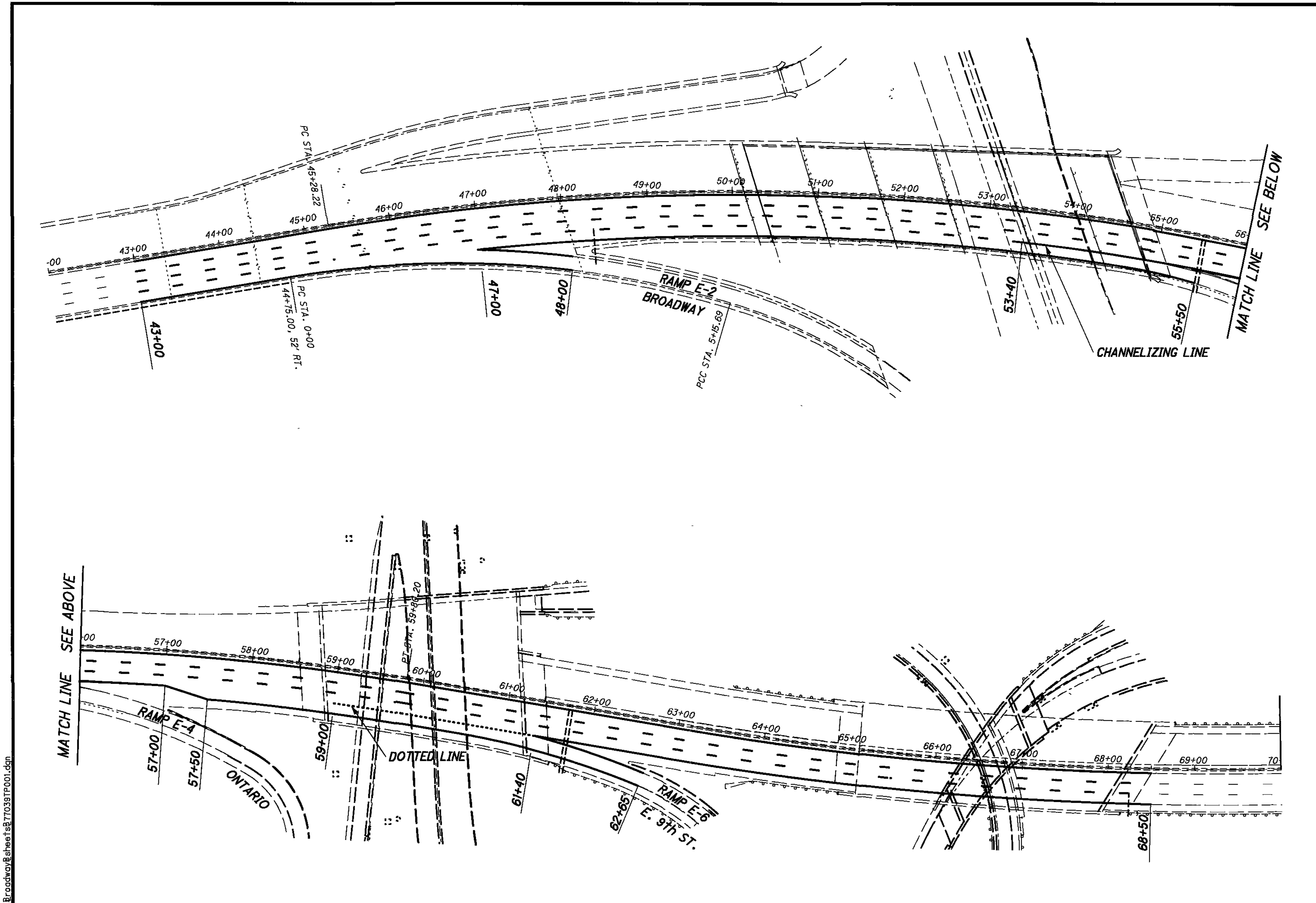
DETOUR EAST 90 ①

DETOUR EAST 90 ②

DETOUR EAST 90 ③

DETOUR EAST 90 ④

50/53	CUY-90-15.99	MAINTENANCE OF TRAFFIC RAMP W-1 DETOUR	CALCULATED CHECKED 0 400 200 800 HORIZONTAL SCALE IN FEET



0 25 50 100
HORIZONTAL SCALE IN FEET

DESIGN AGENCY
BURGESS & NIPLE

TRAFFIC CONTROL PLAN
RESTORATION OF PAVEMENT MARKINGS

CUY-90-15.99

51/53

Broadway@sheets\87039TP001.dgn

E. 9th ST.

36

34

17

16

15

BROADWAY

ORANGE

REPLACE LANE ARROWS
(PREVIOUSLY REMOVED)

REPLACE LANE ARROW
(PREVIOUSLY REMOVED)

2+75
END PAV'T MARKINGS

E. 14th ST.

1+78
BEGIN PAV'T MARKINGS

O/H SIGN

0+62
BEGIN PAV'T MARKINGS

4+40.59 ℄ BROADWAY
= 0+00 E. 14th STREET

4+76
END PAV'T MARKINGS

BROADWAY

HORIZONTAL
SCALE IN FEET
0 30 60

DESIGN AGENCY
BURGESS & NIPLE
(614) 891-2732 WESTERVILLE, OHIO 43081

TRAFFIC CONTROL PLAN
RESTORATION OF PAVEMENT MARKINGS

CUY-90-15.99

52
53

...Broadway\sheets\77039TP002.dgn

SHEET	STATION TO STATION			646							
					EDGE LINE, AS PER PLAN (YELLOW)	EDGE LINE, AS PER PLAN (WHITE)	LANE LINE, AS PER PLAN	CHANNELIZING LINE, AS PER PLAN	DOTTED LINE, 6", AS PER PLAN	LANE ARROW, AS PER PLAN	
	FROM	TO			FEET	FEET	FEET	FEET	FEET	EACH	
	IR 90	EASTBOUND									
51	43+00	47+00			400	400	1200				
	47+00	48+00			100	300	300				
	48+00	53+40			540	540	1620				
	53+40	55+50			210	210	420	210			
	55+50	59+00			350	350	700				
	59+00	61+40			240	240	480		240		
	61+40	62+65			125	375	250				
	62+65	68+50			585	585	1170				
	BROADWAY										
52	1+78	4+76					506	90			
	15+25	18+40								4	
	E.14th										
	0+62	2+75					213				
TOTALS CARRIED TO GENERAL SUMMARY					2,550	3,000	6,859	300	240	4	
					= 1.05 Mi.		= 1.30 Mi.				

SHEET	STATION	630					
			SIGN, TEMPORARY OVERLAY	REMOVAL OF TEMPORARY OVERLAY AND DISPOSAL			
			SQ. FT.	EACH			
30	38+05 (LANE W-N)		97.5	1			
32	48+35 (IR 90)		240.0	7			
32	55+50 (IR90)		22.5	1			
32	61+70 (IR90)		102.0	2			
TOTALS CARRIED TO GENERAL SUMMARY			462.0	11			

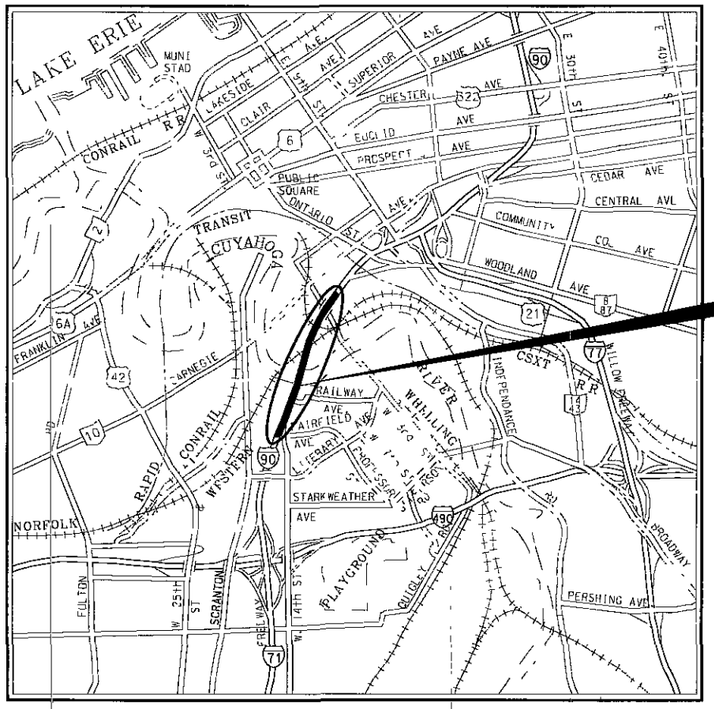
CALCULATED ENF
DESIGNED JTP

TRAFFIC SUBSUMMARY

CUY-90-15.99

53
53

...Broadway\Sheets\B77039TQ001.dgn



PROJECT LOCATION

LOCATION MAP

LATITUDE: N 41°29'05" LONGITUDE: W 81°41'28"

SCALE IN MILES

0 ½ 1 2

N

PORTION TO BE IMPROVED
INTERSTATE & DIVIDED HIGHWAY
U.S. HIGHWAYS
UNDIVIDED STATE & FEDERAL ROUTES
OTHER ROADS

DESIGN DESIGNATION

CURRENT ADT (2003)	128,680
DESIGN YEAR ADT	N/A
DESIGN HOURLY VOLUME	N/A
DIRECTIONAL DISTRIBUTION	65%
TRUCKS (24 HOUR B&C)	9%
DESIGN SPEED	55 M.P.H.
LEGAL SPEED	50 M.P.H.

DESIGN EXCEPTIONS

NONE REQUIRED

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

PREPARED AND RECOMMENDED BY.

RICHLAND ENGINEERING LIMITED
29 NORTH PARK STREET
MANSFIELD OHIO 44902
PHONE: (419) 524-0074 FAX: (419) 524-1812

ENGINEERS SEAL:

STATE OF OHIO
DAVID H. TIMMER
45122
REGISTERED
PROFESSIONAL ENGINEER

SIGNED:
DATE: April 13, 2007

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
CUY-90-15.24
PART 2
CITY OF CLEVELAND
CUYAHOGA COUNTY

FOR PART 1, SEE CUY-90-15.99

PROJECT DESCRIPTION

THE PROPOSED PROJECT IS A MINOR REHABILITATION OF BRIDGE CUY-90-1524 INCLUDING RESETTING BEARINGS AT THE WEST END PIER, JOINT SEALS, DRAINAGE REPAIRS AND OTHER STRUCTURE REPAIRS.

2005 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.

INDEX OF SHEETS:

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

STANDARD CONSTRUCTION DRAWINGS	SUPPLEMENTAL SPECIFICATIONS
SEE PART 1	SEE PART 1
SEE PART 1	SPECIAL PROVISIONS
	SEE PART 1

I HEREBY APPROVE THESE PLANS AND DECLARE THAT THE MAKING OF THIS IMPROVEMENT WILL REQUIRE THE CLOSING TO TRAFFIC OF I R. 90 AND THAT DETOURS WILL BE PROVIDED AS INDICATED ON SHEETS 6-8 .

APPROVED Brent A. Jones
DATE 4/13/07 DISTRICT DEPUTY DIRECTOR

APPROVED James J. Beasley, Jr.
DATE 4-30-07 DIRECTOR, DEPARTMENT OF TRANSPORTATION

FEDERAL PROJECT NO
NON-FEDERAL

PID NO.
77039

CONSTRUCTION PROJECT NO.

RAILROAD INVOLVEMENT
NORFOLK SOUTHERN RAILWAY

CUY-90-15.24

1 / 28

100109GT-STEEL DGN 4/12/07 JLS KH,TWH

ITEM 614 - MAINTAINING TRAFFIC

A. GENERAL

SEE PART I, CUY-90-15.99 (PARTIAL DECK REPLACEMENT) FOR ADDITIONAL MAINTENANCE OF TRAFFIC NOTES AND LANE CLOSURE INFORMATION.

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. FURTHERMORE, IN ADDITION TO THE CONSTRUCTION AND MATERIAL SPECIFICATIONS, THE FOLLOWING SPECIFIC PROVISIONS ARE MANDATORY.

B. 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 SHALL SUBMIT A SCHEDULE TO THE OHIO DEPARTMENT OF TRANSPORTATION PUBLIC INFORMATION OFFICER INDICATING THE LOCATIONS AND DATES OF THE LANE CLOSURES AT LEAST SEVEN (7) DAYS PRIOR TO THE IMPLEMENTATION OF ANY SUCH CLOSURES. THE CONTRACTOR SHALL ALSO NOTIFY THE LOCAL LAW ENFORCEMENT AGENCIES OF LANE CLOSURES AT LEAST THREE (3) DAYS PRIOR TO IMPLEMENTATION.

DISTRICT 12 PUBLIC INFORMATION OFFICER
5500 TRANSPORTATION BLVD.
GARFIELD HEIGHTS, OHIO 44125-5396
PHONE (216) 581-2100 EXT. 244

C. RESTRICTIONS

LANE CLOSURES MAY ONLY BE IMPLEMENTED AT THE TIME PERMITTED BY THE "DISTRICT 12, PERMITTED LANE CLOSURE TIMES" LIST, WHICH IS LOCATED ON THE ODOT WEB SITE: WWW.DOT.STATE.OH.US/DIST12/WORKZONE/LANECLO.HTM. THE LATEST REVISION, AT 14 DAYS PRIOR TO THE BID DATE, SHALL BE IN EFFECT FOR THIS PROJECT, WITH THE FOLLOWING EXCEPTIONS:

ANY ROADWAY NOT LISTED IN THE "DISTRICT 12 PERMITTED LANE CLOSURE TIMES" SHALL NOT HAVE ANY CLOSURES WEEKDAYS FROM 7AM TO 9AM AND 3PM TO 6PM

THE FOUR (4) LANES OF TRAFFIC IN EACH DIRECTION SHALL BE MAINTAINED ON INTERSTATE ROUTE 90 AT ALL TIMES EXCEPT DURING THE LANE RESTRICTIONS AS NOTED BELOW:

1 ALL EXISTING LANES SHALL BE OPEN TO TRAFFIC BETWEEN NOVEMBER 15 AND MARCH 15. SHORT TERM LANE CLOSURES ARE PERMITTED AS NOTED ABOVE. THE CONTRACTOR SHALL SCHEDULE HIS WORK TO MEET THIS REQUIREMENT. SHORT TERM CLOSURES OF I.R. 90 EASTBOUND AND WESTBOUND LANES FOR JACKING AND BEARING REPAIRS WILL BE PERMITTED.

NO LANES SHALL BE CLOSED ON I R. 90 DURING THE FOLLOWING DESIGNATED HOLIDAYS OR EVENTS

CHRISTMAS	NEW YEARS
MEMORIAL DAY	FOURTH OF JULY
LABOR DAY	THANKSGIVING

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

DAY OF THE WEEK	TIME ALL LANES ARE TO BE OPEN TO TRAFFIC
SUNDAY	12:00 N FRIDAY THROUGH 6:00 AM MONDAY
MONDAY	12:00 N FRIDAY THROUGH 6:00 AM TUESDAY
TUESDAY	12:00 N MONDAY THROUGH 6:00 AM WEDNESDAY
WEDNESDAY	12:00 N TUESDAY THROUGH 6:00 AM THURSDAY
THURSDAY	12:00 N WEDNESDAY THROUGH 6:00 AM MONDAY
FRIDAY	12:00 N THURSDAY THROUGH 6:00 AM MONDAY
SATURDAY	12:00 N FRIDAY THROUGH 6:00 AM MONDAY

NO LANE CLOSURES ON E B I.R. 90 SHALL BE PERMITTED FOR THE 2 HOURS PRIOR TO THE START OF ANY ENTERTAINMENT EVENT DOWNTOWN WITH A SEATING CAPACITY EXCEEDING 20,000.

2. JACKING/BEARING REPAIR
ALL I.R. 90 (I.R. 71) EASTBOUND AND WESTBOUND TRAFFIC LANES SHALL BE CLOSED TO TRAFFIC AND TRAFFIC DETOURED FOR JACKING AND REPAIR OF THE BEARINGS UNDER THE EXPANSION JOINT OVER THE WEST END PIER. SEE DETOUR SIGNING AS DETAILED ON SHEETS 6 & 7 . THIS COMPLETE CLOSURE AND DETOUR SHALL BE LIMITED TO TWO SEPARATE PERIODS DURING ONE WEEKEND. THE CLOSURES WILL BE LIMITED FROM MIDNIGHT FRIDAY TO 7AM SATURDAY AND FROM MIDNIGHT SATURDAY TO 8AM SUNDAY OF THE SAME WEEKEND. FOR THIS DETOUR THE EASTBOUND I.R. 90 (I.R. 71) DETOUR WILL REQUIRE SIGNING MODIFICATIONS AND ADDITIONAL RAMP CLOSURES ON I.R. 71 NORTHBOUND AS DETAILED ON SHEET 6. THE WESTBOUND I.R. 90 DETOUR SIGNING AND RAMP CLOSURES SHALL BE AS DETAILED ON SHEET 7. THE CONTRACTOR SHALL PROVIDE ALL THE REQUIRED DETOUR SIGNING AS DETAILED. NO PAVEMENT MARKINGS WILL BE REQUIRED AT THE RAMP CLOSURES AND CONFLICTING PAVEMENT MARKINGS SHALL NOT BE REMOVED.

DURING THESE CLOSURE PERIODS THE FOLLOWING ADDITIONAL BRIDGE REPAIR WORK SHALL ALSO BE COMPLETED:

a. A PORTION OF THE DECK CONTRACTION JOINT BETWEEN PIERS 6 AND 7 SHALL BE REPAIRED. SEE GENERAL PLAN ON SHEET 10 FOR LOCATION.

b. THE LONGITUDINAL CONSTRUCTION JOINT BETWEEN THE EAST END PIER AND THE EXPANSION JOINT IN SPAN 5B SHALL BE SEALED SEE GENERAL PLAN ON SHEET 10 FOR LOCATION.

RAMP W-1 SHALL BE CLOSED TO TRAFFIC DURING EACH OF THE I.R. 90 WEEKEND CLOSURE PERIODS AND TRAFFIC DETOURED AS SHOWN ON SHEET 8 THE CONTRACTOR SHALL PROVIDE THE DETOUR SIGNING AS SHOWN

THE CLOSING OF LANES TO REDUCE THE NUMBER OF LANES AT THE EXIT RAMPS STARTING THE DETOURS SHALL BE AS PER STD. DWG. MT-95.30 AND/OR SHEET 5 THE CONTRACTOR MAY START REDUCING THE TRAFFIC LANES ONE HOUR PRIOR TO THE SCHEDULED CLOSING TIME THREE LAW ENFORCEMENT OFFICERS (L.E.O.'S) SHALL BE USED AT EACH CLOSING LOCATION, TWO L E.O.'S SHALL REMAIN DURING CLOSURE, THREE L.E.O.'S SHALL BE USED AT EACH OPENING LOCATION AND ONE L.E.O. AT EACH CLOSED RAMP DURING THE CLOSURE.

3. DEFLECTION JOINT INSTALLATION:
SEE PART I, CUY-90-15.99 (PARTIAL DECK REPLACEMENT) FOR LANE CLOSURE INFORMATION FOR DEFLECTION JOINT INSTALLATION. IN ADDITION, THE CONTRACTOR WILL BE PERMITTED A SINGLE FIVE-MINUTE CLOSURE OF ALL LANES BETWEEN 11 00 PM AND 5 00 AM, PER DIRECTION, EACH NIGHT. THIS FULL CLOSURE IS TO ALLOW FOR THE SHIFTING OF THE SINGLE LANE OF TRAFFIC BEING MAINTAINED FROM THE MEDIAN LANE TO THE CURB LANE TO COMPLETE THE JOINT SEAL INSTALLATION.

4. DURING NON-WORKING HOURS, ALL LANES SHALL BE IN FULL OPERATION WITH ALL TRAFFIC CONTROL SIGNS, EXCEPT OW-134 ROAD WORK AHEAD SIGNS, REMOVED OR COVERED AND ALL CHANNELIZING DEVICES REMOVED FROM THE PAVEMENT SURFACES. CHANNELIZING DEVICES MAY NOT BE STORED ON THE SHOULDER. CONSTRUCTION EQUIPMENT, PRIVATE VEHICLES AND MATERIALS SHALL NOT BE PARKED OR STORED ON THE ROADWAY OR WITHIN 30 FEET OF ANY TRAVELED LANES.

5. LIQUIDATED DAMAGES
IF LANE CLOSURES ARE IN PLACE OUTSIDE THE SPECIFIED TIME, LIQUIDATED DAMAGES IN THE AMOUNT OF $20.00 PER MINUTE FOR THE FIRST 30 MINUTES, THEN $50.00 PER MINUTE THEREAFTER, SHALL BE ASSESSED THE CONTRACTOR FOR EACH MINUTE THE LANE REMAINS CLOSED.

D 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 THERINAFTER 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 CONDITION EXISTS, HE MAY DIRECT THAT ADDITIONAL OR ALTERNATIVE DEVICES BE USED.

2. CONDITIONS

DURING ALL PARTS OF THIS PROJECT, SIGNING, BARRICADES, FLASHING ARROWS, ETC. SHALL BE LOCATED AS INDICATED IN THE MANUAL, AS SHOWN ON THE MAINTENANCE OF TRAFFIC SHEETS OR AS SHOWN ON STANDARD DRAWING MT-97.10, MT-95.30, AND MT-99.50.

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. FLASHING ARROW REQUIREMENT

FLASHING ARROWS SHALL BE FURNISHED AS SHOWN ON THE MAINTENANCE OF TRAFFIC PLANS OR ON STANDARD DRAWING MT-95 30.

5. PROTECTION OF PUBLIC

WHENEVER ANY WORK IS BEING DONE OVER A TRAVELED LANE OR SHOULDER, THE CONTRACTOR SHALL SUPPLY SUFFICIENT SAFETY EQUIPMENT AS APPROVED BY THE DIRECTOR TO PROTECT THE TRAVELING PUBLIC FROM ANY CONSTRUCTION DEBRIS. IF TRAVELED LANES UNDER STRUCTURES ARE TO BE CLOSED FOR REASONS OF SAFETY, METHOD AND TIME OF CLOSURE MUST BE APPROVED PRIOR TO IMPLEMENTATION. PERSONAL CARS SHALL NOT BE PARKED WITHIN THE L/A.

CONTINUED SHEET 3 OF 28

MAINTENANCE OF TRAFFIC NOTES

CUY-90-15.24

ITEM 614 - MAINTAINING TRAFFIC CONT'D

6. FLAGGERS

FLAGGERS SHALL BE IN ACCORDANCE WITH MT-97.10. THE MAINTENANCE OF TRAFFIC REQUIRES THE USE OF TWO (2) FLAGGERS. ADDITIONAL FLAGGERS SHALL BE USED AS DIRECTED BY THE ENGINEER.

7. LAW ENFORCEMENT OFFICER WITH PATROL CAR

SEE NOTE, THIS SHEET.

8. FAILURE TO COMPLY

IF THERE IS ANY FAILURE TO COMPLY WITH PROVISION FOR TRAFFIC CONTROL SET OUT IN THESE PLANS AND NOTES, WITH THE PROVISIONS OF THE "MANUAL" OR 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 AFORMENTIONED ITEMS.

E. TRAFFIC CONTROL MATERIAL

1. SIGNS

SIGN DIMENSIONS AND SPECIFICATIONS, INCLUDING LETTER SIZES SHALL 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 THIS PROJECT.

2. SIGN SUPPORTS

SIGN SUPPORTS SHALL BE AS SHOWN ON THE STANDARD DRAWINGS MT- 105.10 AND MT-105.11

3. FLASHING APRON PANEL

THE ELECTRIC FLASHING ARROW PANELS SHALL BE AS SHOWN ON STANDARD CONSTRUCTION DRAWING MT-35.10

4. CONES

CONES SHALL BE LOCATED AS SHOWN IN THE "MANUAL" AND THE TRAFFIC CONTROL PLANS.

5. DRUMS

DRUMS SHALL BE LOCATED AS SHOWN ON THE TRAFFIC CONTROL PLANS AND ARE REQUIRED FOR NIGHTTIME CLOSURES.

6. FLOODLIGHTING

FLOODLIGHTING OF THE WORK SITE FOR OPERATIONS CONDUCTED DURING NIGHT TIME PERIODS SHALL BE ACCOMPLISHED SO THAT THE LIGHTS DO NOT CAUSE GLARE TO THE DRIVERS ON THE ROADWAY. TO ENSURE ADEQUACY OF THE FLOODLIGHT PLACEMENT, THE CONTRACTOR AND ENGINEER SHALL DRIVE THROUGH THE WORK SITE EACH NIGHT WHEN THE LIGHTING IS IN PLACE AND OPERATIVE PRIOR TO COMMENCING ANY WORK. IF GLARE IS DETECTED THE LIGHT PLACEMENT AND SHIELDING SHALL BE ADJUSTED TO THE SATISFACTION OF THE ENGINEER BEFORE WORK PROCEEDS

PAYMENT FOR ALL LABOR, EQUIPMENT AND MATERIALS SHALL BE INCLUDED IN THE LUMP SUM CONTRACT PRICE FOR MAINTAINING TRAFFIC.

7 PORTABLE CHANGEABLE MESSAGE SIGNS, AS PER PLAN

SEE NOTE, SHEET 4

8 WORK VEHICLES

ALL WORK VEHICLES LICENSED TO OPERATE ON THE HIGHWAY, INCLUDING TRUCKS, SHALL BE EQUIPPED WITH A FLASHING, ROTATING OR OSCILLATING AMBER LIGHT VISIBLE TO ALL DIRECTIONS OF TRAFFIC FOR A MINIMUM OF ONE-HALF KILOMETER IN BRIGHT SUNLIGHT AND SHALL BE OPERATED WITH LIGHTED HEAD AND TAIL LAMPS. THE AMBER LIGHT SHALL BE IN OPERATION AT ALL TIMES WITHIN THE WORK ZONE AND WHILE TRAVELING TO AND FROM THE WORK ZONE WHENEVER THE VEHICLE SPEED IS BELOW 55 MPH VEHICLE HAZARD LAMPS DO NOT SATISFY THIS REQUIREMENT. ALL OTHER EQUIPMENT SHALL BE EQUIPPED WITH A FLASHING, ROTATING OR OSCILLATING AMBER LIGHT VISIBLE IN ALL DIRECTIONS OF TRAFFIC FOR A MINIMUM OF ONE-HALF KILOMETER IN BRIGHT SUNLIGHT. THE AMBER LIGHT SHALL BE IN OPERATION WHILE THE EQUIPMENT IS WITHIN THE WORK ZONE

F 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 UNLESS SEPARATELY ITEMIZED

COVERING OF SIGNS

WHERE THE PLANS CALL FOR A PERMANENT SIGN TO BE COVERED, THE CONTRACTOR SHALL DO SO IN SUCH A MANNER AS TO AVOID DAMAGING THE PERMANENT SIGN WHEN THE COVER IS REMOVED THE COVER SHALL BE TOTALLY OPAQUE THE USE OF ADHESIVE TAPE APPLIED DIRECTLY TO A SIGN FACE IS STRICTLY PROHIBITED.

TRUCK MOUNTED ATTENUATOR

WHEN THE CONTRACTOR IS PERFORMING SHORT TERM WORK ON BERMS OR MEDIANS LESS THAN 10 FEET IN WIDTH, AND ON A ROAD WITH SPEEDS OF 45 MPH OR HIGHER, A TRUCK MOUNTED ATTENUATOR MUST TRAIL THE OPERATION. THIS SAME TRUCK MUST HAVE A TYPE B FLASHING ARROW PANEL MOUNTED ON IT FACING THE REAR OF THE TRUCK.

THE T.M.A SHALL BE AN ALPHA 60 M.D, MANUFACTURED BY

ENERGY ABSORPTION SYSTEMS, INC.
ONE EAST WACKER DRIVE
CHICAGO, ILLINOIS 60601-2076
(312)467-6750

AN EQUAL PRODUCT MAY BE SUBMITTED FOR APPROVAL BY THE ENGINEER. THE T M A MUST BRING A VEHICLE WEIGHING ABOUT 1,800 TO 4,500 LBS AND TRAVELING AT 60 MPH TO A SAFE, CONTROLLED STOP, PER NCHRP 350 CRITERIA. THE MANUFACTURER'S SPECIFICATION MUST BE FOLLOWED CONCERNING THE SIZE OF THE TRUCK AND THE CONNECTIONS TO THE T.M.A.

OPERATIONS THAT THE T.M A AND FLASHING ARROW PANEL ARE INTENDED FOR, BUT NOT LIMITED TO, ARE THE FOLLOWING;

1. INSTALLATION, COVERING, UNCOVERING OF CONSTRUCTION SIGNS.
2. SET-UP AND TEAR-DOWN OF A LANE CLOSURE
3. PLACING OR PICKING UP DRUMS, CONES, OR EQUIPMENT.
4. ANYTIME AS DIRECTED BY THE ENGINEER.

ALL COSTS ASSOCIATED WITH THIS ITEM ARE TO BE INCLUDED IN ITEM 614, MAINTAINING TRAFFIC.

ITEM 614 - LAW ENFORCEMENT OFFICER WITH PATROL CAR

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

FOR LANE CLOSURES: DURING INITIAL SET-UP PERIODS, TEAR DOWN PERIODS, SUBSTANTIAL SHIFTS OF A CLOSURE POINT OR WHEN NEW LANE CLOSURE ARRANGEMENTS ARE INITIATED

DURING THE ENTIRE ADVANCE PREPARATION AND CLOSURE SEQUENCE WHERE COMPLETE BLOCKAGE OF TRAFFIC IS REQUIRED.

LAW ENFORCEMENT OFFICERS (LEOS) SHOULD NOT BE USED WHERE THE OMUTCD INTENDS THAT FLAGGERS BE USED. THE LEOS 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 ENGINEER SHALL HAVE CONTROL OVER THEIR PLACEMENT. THE OFFICIAL PATROL CAR SHALL BE A PUBLIC SAFETY VEHICLE AS REQUIRED BY THE OHIO REVISED CODE. THE CONTRACTOR SHALL MAKE ARRANGEMENTS FOR THESE SERVICES WITH

CITY OF CLEVELAND
POLICE DEPARTMENT, THIRD DISTRICT
2001 PAYNE AVENUE
CLEVELAND, OHIO 44134
PHONE: (216) 623-5300

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

ITEM 614, LAW ENFORCEMENT OFFICER
WITH PATROL CAR 250 HOURS

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

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

CONTINUED SHEET 4 OF 28.

MAINTENANCE OF TRAFFIC NOTES

CUY-90-15.24

ITEM 614 - PORTABLE CHANGEABLE MESSAGE SIGNS, AS PER PLAN

THE CONTRACTOR SHALL FURNISH, INSTALL, MAINTAIN, AND REMOVE WHEN NO LONGER NEEDED A PORTABLE CHANGEABLE MESSAGE SIGN(S). THE PCMS SHALL BE OF THE TYPE SHOWN ON THE LIST OF APPROVED PCMS MAINTAINED BY THE DIRECTOR, WITH THE EXCEPTION THAT NO FLIP DISC (OR VARIATION OF FLIP DISC) UNITS WILL BE ALLOWED. THE PCMS SHALL BE A CLASS I OR II TYPE UNIT

THE PORTABLE CHANGEABLE MESSAGE SIGN SHALL BE MOUNTED ON A TRAILER THE LOCATION OF THE PCMS SHALL BE AS DIRECTED BY THE ENGINEER THE ENGINEER SHALL BE PROVIDED ACCESS TO EACH SIGN UNIT AND SHALL BE PROVIDED WITH APPROPRIATE TRAINING AND OPERATION INSTRUCTIONS.

THE PCMS SHALL CONTAIN A CELLULAR TELEPHONE LINK WHICH WILL ALLOW REMOTE SIGN ACTIVIATION, DEACTIVATION, MESSAGE CHANGES, MESSAGE ADDITIONAL AND REVISIONS TO TIME OF DAY PROGRAMS. THE SYSTEM SHALL ALSO PERMIT VERIFICATION OF CURRENT AND PROGRAMMED MESSAGES.

THE CONTRACTOR SHALL PROVIDE TO THE ENGINEER THE SOFTWARE NECESSARY TO CONTROL THE PCMS REMOTELY.

THE PCMS SHALL BE EQUIPPED WITH A MYRIAD SAFETY BEAM OR AN APPROVED EQUAL AS DETERMINED BY THE ENGINEER. THE MYRIAD SAFETY BEAM SENDS OUT A SIGNAL THAT ACTIVATES RADAR DETECTORS THE BEAM IS APPROVED BY THE F C C THE MYRIAD SAFETY BEAM SHALL USE THE SAME POWER SUPPLY AS THE PCMS. THE MYRIAD SAFETY BEAM SHALL BE ABLE TO BE ACTIVATED WITH THE PCMS RUNNING OR NOT. THE MYRIAD SAFETY BEAM IS DISTRIBUTED BY THE TRIPLEX GROUP, INC., P.O. BOX 428, NEW HOPE, PA 18938. PHONE (215) 862-5077.

AT THE DIRECTION OF THE ENGINEER THE PCMS MAY BE REMOVED FOR PERIODS OF TIMES WHEN NOT IN USE. NO PAYMENT WILL BE MADE FOR THESE TIMES (EX. WINTER MONTHS).

PAYMENT

THERE SHALL BE 14 CLASS I OR II PCMS AT ½ MONTH EACH

ITEM 614 PORTABLE CHANGEABLE MESSAGE SIGN, AS PER PLAN, 7 SIGN MONTHS

UTILITIES AND RAILROADS

LISTED BELOW ARE ALL UTILITIES AND RAILROADS LOCATED WITHIN THE PROJECT CONSTRUCTION LIMITS TOGETHER WITH THEIR OWNERS:

WATER:
THE CITY OF CLEVELAND WATER DEPARTMENT
1201 LAKESIDE AVENUE
CLEVELAND, OHIO 44114
PHONE: 216-664-2444

ELECTRIC:
CLEVELAND ELECTRIC ILLUMINATING COMPANY
55 PUBLIC SQUARE
P O BOX 5000
CLEVELAND, OHIO 44101
PHONE; 216-479-3452

GAS:
EAST OHIO GAS COMPANY
1201 EAST 55th STREET
CLEVELAND, OHIO 44103
PHONE: 216-736-6675

PHONE:
OHIO BELL TELEPHONE COMPANY
1020 BOLIVAR ROAD, ROOM 421
CLEVELAND, OHIO 44115
PHONE: 216-822-8206

AMERICAN TELEPHONE & TELEGRAPH
3833 WAYMOUTH ROAD
MEDINA, OHIO 44256
PHONE: 216-723-9110

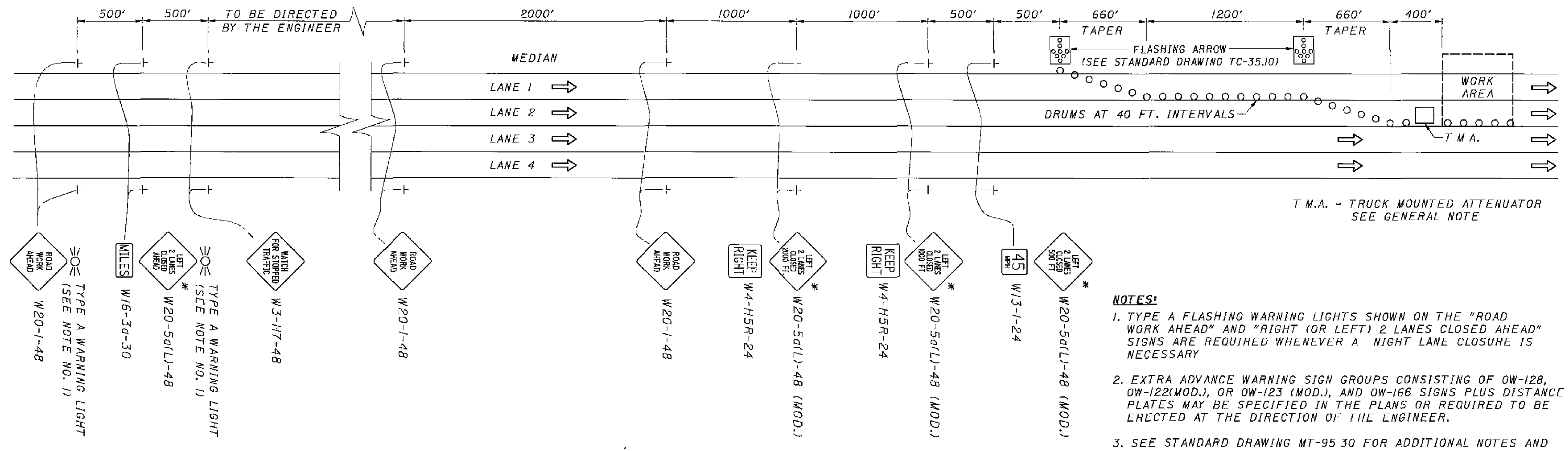
CABLE:
COX CABLE COMPANY
12221 PLAZA
PARMA, OHIO 44130
PHONE: 216-676-8300

SEWER:
NORTHEAST OHIO REGIONAL SEWER DISTRICT
3826 EUCLID AVENUE
CLEVELAND, OHIO

RAILROADS:
NORFOLK SOUTHERN RAILWAY CORPORATION
ATTN: SCOTT DICKERSON
PHONE: 757-629-2364

CLEVELAND REGIONAL TRANSIT AUTHORITY
PHONE: 216-566-5100

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



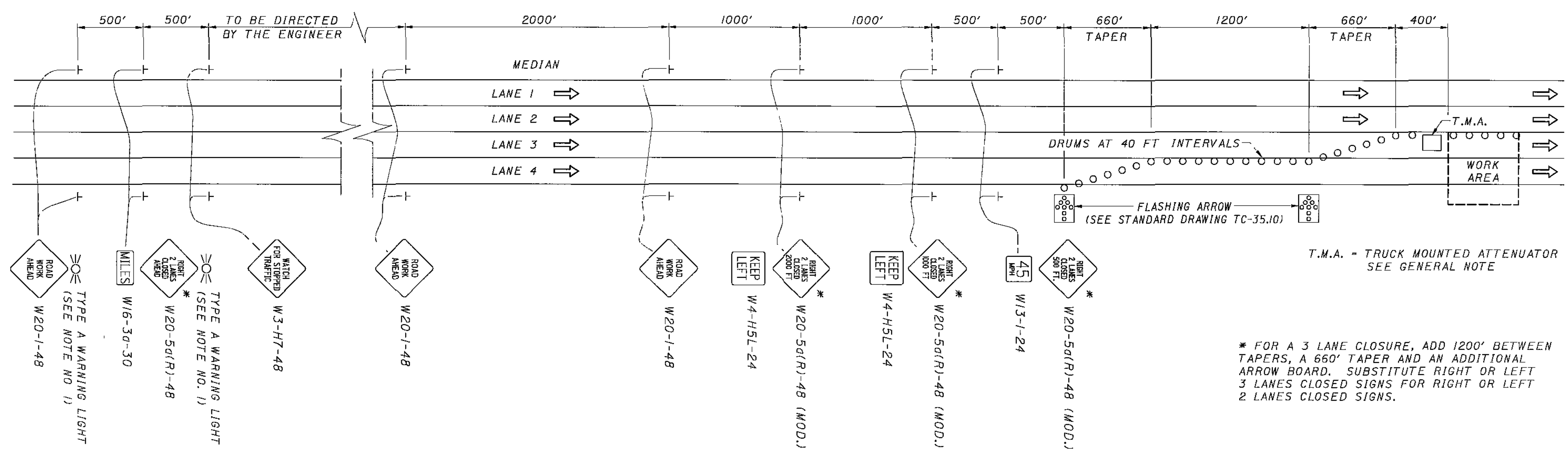
LEFT 2 LANES CLOSED FOR 4 LANES SAME DIRECTION

NOTES:

1. TYPE A FLASHING WARNING LIGHTS SHOWN ON THE "ROAD WORK AHEAD" AND "RIGHT (OR LEFT) 2 LANES CLOSED AHEAD" SIGNS ARE REQUIRED WHENEVER A NIGHT LANE CLOSURE IS NECESSARY

2. EXTRA ADVANCE WARNING SIGN GROUPS CONSISTING OF OW-128, OW-122(MOD.), OR OW-123 (MOD.), AND OW-166 SIGNS PLUS DISTANCE PLATES MAY BE SPECIFIED IN THE PLANS OR REQUIRED TO BE ERECTED AT THE DIRECTION OF THE ENGINEER.

3. SEE STANDARD DRAWING MT-95.30 FOR ADDITIONAL NOTES AND DETAILS FOR LANE CLOSURES WITH DRUMS.



* FOR A 3 LANE CLOSURE, ADD 1200' BETWEEN TAPERS, A 660' TAPER AND AN ADDITIONAL ARROW BOARD. SUBSTITUTE RIGHT OR LEFT 3 LANES CLOSED SIGNS FOR RIGHT OR LEFT 2 LANES CLOSED SIGNS.

RIGHT 2 LANES CLOSED FOR 4 LANES SAME DIRECTION

MAINTENANCE OF TRAFFIC - LANE CLOSURES

CUY-90-15.24

100109MDB-STEEL.DGN 4/12/07 HNJ.LS.TWH

REVISED 3/22/05

NOTE:
DETOUR SIGNING FOR EB & WB I.R.-90 SHALL BE IN PLACE FOR JACKING/BEARING REPAIR WORK.

LEGEND

- L.E.O. LAW ENFORCEMENT OFFICER WITH PATROL CAR
- DETOUR ROUTES
- BEGINNING OF DETOUR
- EXISTING OVERHEAD SPAN SUPPORT
- EXISTING OVERHEAD CANTILEVER SUPPORT
- EXISTING OVERHEAD CENTER MOUNT SUPPORT
- EXISTING BRIDGE MOUNTED SUPPORT
- PROPOSED SINGLE GROUND MOUNTED SUPPORT
- PROPOSED PORTABLE CHANGEABLE MESSAGE SIGN

NOTE: TYPICALLY DETOUR SIGNS ARE TO BE GROUND MOUNTED NEAR THE END FRAME OF THE EXISTING SIGN SUPPORT.

614 DETOUR SIGNING
LUMP SUM

* IN STANDARD CONSTRUCTION DRAWING MT-99.50, REPLACE WITH W20-3-48 "ROAD CLOSED AHEAD" SIGNS

HORIZONTAL SCALE IN FEET
0 250 500 1000

I.R. 90 DETOUR SIGNING PLAN-1

CUY-90-15.24

6
29

PROJECT AREA

I-90 CLOSED AHEAD
TAKE I-490 EAST TO I-77 NORTH
PORTABLE CHANGEABLE MESSAGE SIGN
(1/2 MILE SOUTH OF SR 42 EXIT)

I-90 CLOSED AHEAD
TAKE I-490 TO I-77 NORTH
PORTABLE CHANGEABLE MESSAGE SIGN
(1/2 MILE WEST OF SR 10 EXIT)

I-90 CLOSED AHEAD
TAKE I-490 EAST TO I-77 NORTH
PORTABLE CHANGEABLE MESSAGE SIGN

I-90 CLOSED AHEAD
TAKE I-490 EAST TO I-77 NORTH
PORTABLE CHANGEABLE MESSAGE SIGN
(I MILE SOUTH OF I-490 EXIT)

NOTE: RAMP CLOSED AS PER STD. DRAWING NO. MT-99.50 WITH L.E.O.S *

(NOTE: I.R. 71 CLOSED AS PER STD. DRAWING MT-99.50 WITH L.E.O.S *

(NOTE: RAMP TO I.R 71 CLOSED AS PER MT-98.19.

(NOTE: RAMP W-1 CLOSED AS PER MT 101.60 WITH L.E.O. - SEE SHEET 8

NOTE:
THE CLOSING OF TRAFFIC LANES AT THE INTERSTATE CLOSURE STARTING THE DETOURS SHALL BE AS PER STANDARD DRAWINGS MT-95.30, AND/OR SHEET 5 AND MT-99.50.

MATCHLINE I-90 SEE NEXT SHEET

MATCHLINE I-490 SEE NEXT SHEET

THIS AREA SHOWN OUT OF PROPORTION FOR CLARIFICATION

S.R. 176 (JENNINGS FREEWAY)

S.R. 42

CLARK AVE.

W. 14th ST.

STARKWEATHER AVE.

KENWORTH AVE.

FAIRFIELD AVE.

ABBEY AVE.

I0010STPA-STEEL.DGN 3/31/05 HNL.CEO

REVISED 3/22/05

Ⓐ NOTE: RAMP CLOSED AS PER MT-98.19 WITH L.E.O.

Ⓟ I-90 CLOSED AHEAD
TAKE I-77 SOUTH
TO I-490 WEST

PORTABLE CHANGEABLE MESSAGE SIGN (1/2 MILE NORTH OF I-77 EXIT)

ⓅⓅ I-90 CLOSED AHEAD
TAKE I-77 SOUTH
TO I-490 WEST

PORTABLE CHANGEABLE MESSAGE SIGN (1 MILE NORTH OF OF I-77 EXIT)

Ⓤ EAST I-90 TRAFFIC
TAKE I-77 NORTH

PORTABLE CHANGEABLE MESSAGE SIGN

NOTE:
THE CLOSING OF TRAFFIC LANES AT THE INTERSTATE CLOSURE STARTING THE DETOURS SHALL BE AS PER STANDARD DRAWINGS MT-95.30, AND/OR SHEET 5 AND MT-99-50.

LEGEND

L.E.O.	LAW ENFORCEMENT OFFICER WITH PATROL CAR
←	DETOUR ROUTES
· · · ·	BEGINNING OF DETOUR
ⵂ	EXISTING OVERHEAD SPAN SUPPORT
⊢	EXISTING OVERHEAD CANTILEVER SUPPORT
⊥	EXISTING OVERHEAD CENTER MOUNT SUPPORT
⊤	EXISTING BRIDGE MOUNTED SUPPORT
▲	PROPOSED SINGLE GROUND MOUNTED SUPPORT
●	PROPOSED PORTABLE CHANGEABLE MESSAGE SIGN

NOTE: TYPICALLY DETOUR SIGNS ARE TO BE GROUND MOUNTED NEAR THE END FRAME OF THE EXISTING SIGN SUPPORT.

N

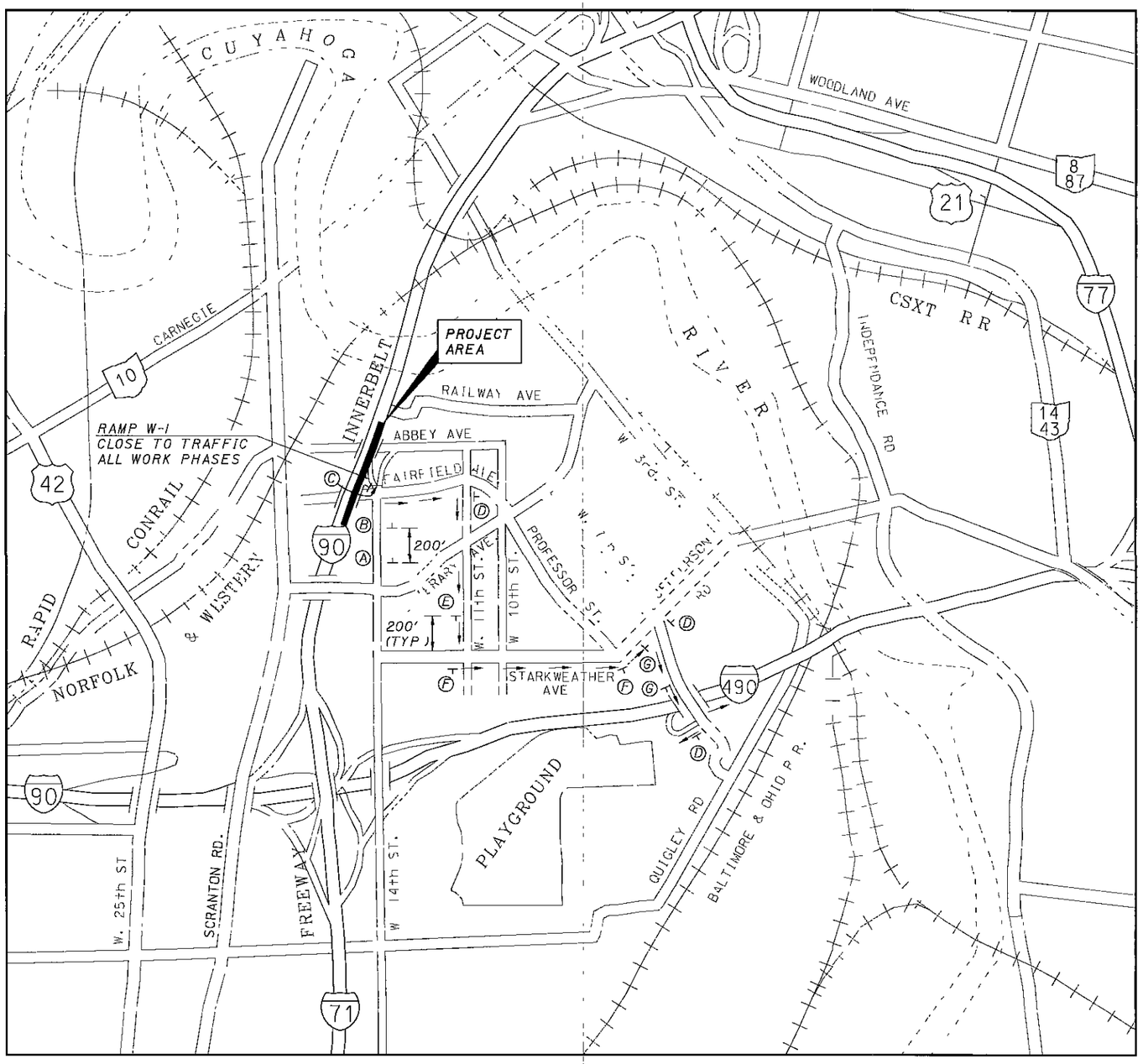
0 250 500 1000
HORIZONTAL SCALE IN FEET

I.R. 90 DETOUR SIGNING PLAN-2

CUY-90-15.24

7
29

10010TPB-STEEL.DGN 3/31/05 HN.CEO



NOT TO SCALE

DETOUR ROUTE

ROAD WORK AHEAD
W20-1-36
Ⓐ

DETOUR AHEAD
W20-2-36
Ⓑ

R11-2-48
ROAD CLOSED
DETOUR
M4-10R-48
MOUNT ON GATES & BARRICADES
Ⓒ

DETOUR M4-8a-24
TO M4-5-24
EAST M3-2-24
90 M1-1-24-2
M6-1-21
Ⓓ

DETOUR M4-8a-24
TO M4-5-24
EAST M3-2
90 M1-1-24-2
M5-1
Ⓔ

DETOUR M4-8a-24
TO M4-5-24
EAST M3-2
90 M1-1-24-2
M6-1-21
Ⓕ

DETOUR M4-8a-24
TO M4-5-24
EAST M3-2
90 M1-1-24-2
M5-1
Ⓖ

614 DETOUR SIGNING-LUMP SUM

DETOUR SIGNING PLAN
ENTRANCE RAMP W-1 TO I.R. 90 EAST

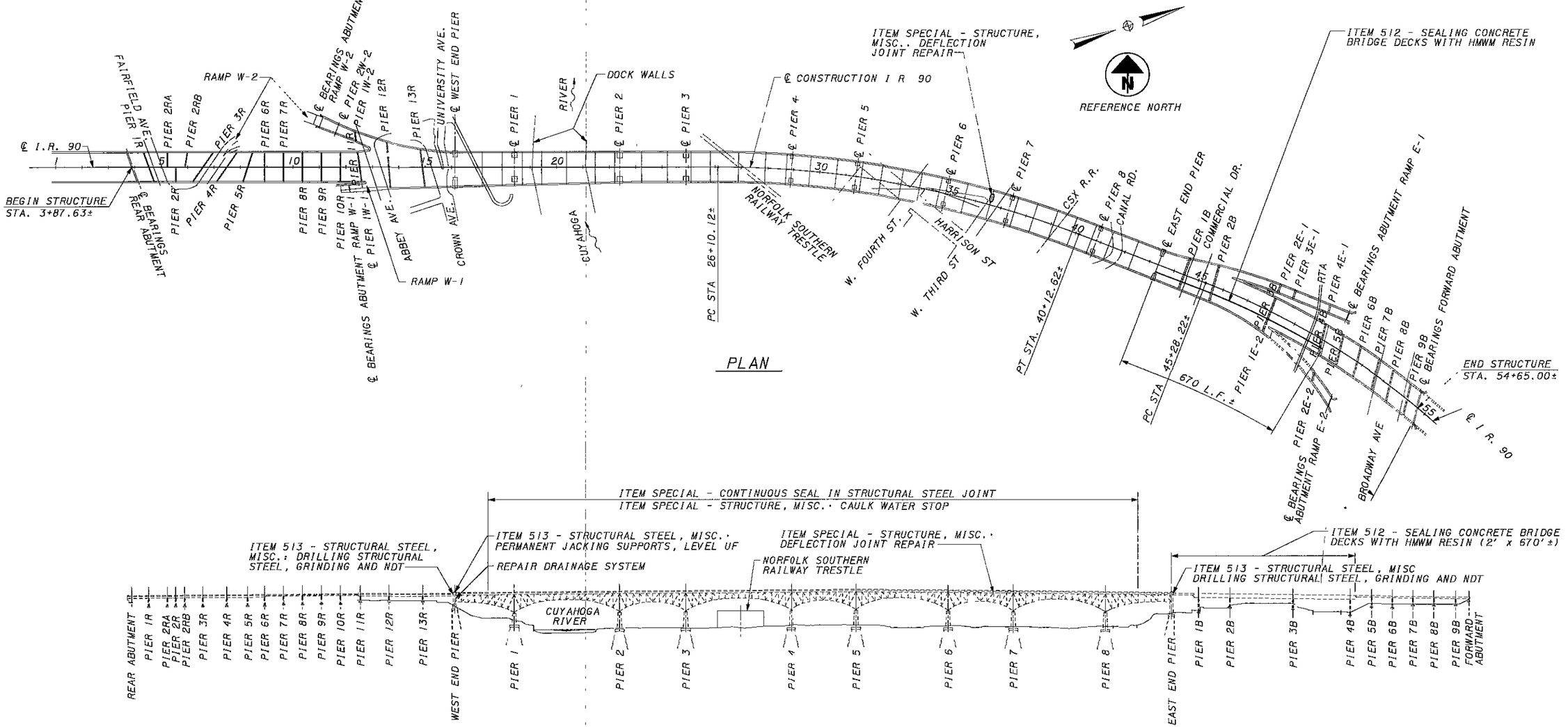
CUY-90-15.24

SHEET NUMBER														ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION	AS PER PLAN REFERENCE SHEET
			2-3	4		6-7	8												
																		MAINTENANCE OF TRAFFIC	
			250											614	11100	250	HOUR	LAW ENFORCEMENT OFFICER WITH PATROL CAR	
						LUMP	LUMP							614	12420	LUMP		DETOUR SIGNING	
				7										614	18601	7	SIGN-MNTH	PORTABLE CHANGEABLE MESSAGE SIGN, AS PER PLAN	4
																		STRUCTURE QUANTITIES	
																		CUY-90-1524 SEE SHEET NO. 15 .	
			LUMP											614	11000	LUMP		MAINTAINING TRAFFIC	
														624	10000	LUMP		MOBILIZATION	

CALCULATED PDG 11/06
CHECKED DT 11/06

GENERAL SUMMARY

CUY-90-15.24



EXISTING STRUCTURE - REAR APPROACH SPANS

TYPE: CONTINUOUS STEEL BEAMS AND GIRDERS WITH CONCRETE DECK AND SUBSTRUCTURE.

SPANS: WESTBOUND: 64'±, 70 5'±, 65.5'±, 69'±, 90'±, 79.5'±, 64'±, 5 @ 72'±, 109'±, 129'±AND 120'± EASTBOUND· 64'±, 102'±, 103'±, 90'±, 79 5'±, 64'±, 5 @ 72'±, 109'±, 129'± AND 120'±.

ROADWAY: 2 @ 53'-9"± CURB TO CURB WITH TWO (2) 3'-6"± SAFETY CURBS AND 2'-6"± MEDIAN BARRIER

LOADING: CF2000

SKEW: VARIES

WEARING SURFACE: 2½"± MICRO SILICA MODIFIED CONCRETE OVERLAY

APPROACH SLAB: AS-1-54 (25'-0"± LONG)

ALIGNMENT: TANGENT

YEAR BUILT: 1959 WITH MINOR REHABILITATIONS IN 1973, 1979, 1984, 1988 AND 2005.

EXISTING STRUCTURE - MAIN TRUSS SPANS

TYPE: STEEL DECK TRUSSES WITH REINFORCED CONCRETE DECK AND SUBSTRUCTURE.

SPANS: 227'±, 400'±, 250'±, 400'±, 248'±, 348'±, 248'±, 349'± AND 251'±.

ROADWAY: 2 @ 52'-9"± CURB TO CURB WITH TWO (2) 3'-2"± SAFETY CURBS AND 2'-6"± MEDIAN BARRIER.

LOADING: CF2000

SKEW: VARIES

WEARING SURFACE: 2½"± LATEX MODIFIED CONCRETE OVERLAY

ALIGNMENT: TANGENT, 1°30'± CURVE RIGHT, TANGENT

YEAR BUILT: 1959 WITH MINOR REHABILITATIONS IN 1973, 1984, 1988, 1999 AND 2002.

EXISTING STRUCTURE - FORWARD APPROACH SPANS

TYPE: CONTINUOUS STEEL BEAMS AND GIRDERS WITH CONCRETE DECK AND SUBSTRUCTURE

SPANS: 103'±, 119'±, 239'±, 216'±, 81'±, 78'±, 78'±, 79'±, 83'± AND 50'±.

ROADWAY: 2 @ 52'-9"± CURB TO CURB WITH TWO (2) 3'-6"± SAFETY CURBS AND 2'-6"± MEDIAN BARRIER.

LOADING: CF2000

SKEW: VARIES

WEARING SURFACE: MONOLITHIC CONCRETE OR 3½"± MICRO SILICA MODIFIED CONCRETE OVERLAY

APPROACH SLAB: AS-1-54 (25'-0"± LONG)

ALIGNMENT: 2°± CURVE RIGHT

YEAR BUILT: 1959 WITH MINOR REHABILITATIONS IN 1973, 1979, 1988, 1999 AND 2002.

EXISTING STRUCTURE

STRUCTURE FILE NUMBER: 1809393

AVERAGE DAILY TRAFFIC: 128,680 (2003)

AVERAGE DAILY TRUCK TRAFFIC: 11,580 (2003)

PROPOSED WORK

1. INSTALL PERMANENT JACKING POINTS ON THE BOX GIRDER AND WIDENING GIRDERS AT THE WEST END PIER
2. RELOCATE BOX GIRDER AND WIDENING GIRDERS BEARINGS AT THE WEST END PIER.
3. DRILL OUT CRACKS IN APPROACH GIRDERS ABOVE THE BOX GIRDERS
4. REPAIR THE DRAINAGE SYSTEM AT THE WEST END PIER
5. SEAL LONGITUDINAL JOINT IN DECK IN EASTBOUND FORWARD APPROACH WITH HMWM.
6. REPAIR DEFLECTION JOINT IN SPAN 7
7. REPAIR CRACKED STRINGERS IN MAIN TRUSS SPANS.
8. INSTALL DEFLECTION JOINT SEALS IN MAIN TRUSS SPANS
9. INSTALL CAULK WATER STOPS ON END OF FLOORBEAMS UNDER DEFLECTION JOINTS

RICHLAND ENGINEERING LIMITED
29 NORTH PARK STREET
MANSFIELD, OHIO 44902

DESIGNED	DRAWN	REVIEWED	DATE
JDB	KH	DAP	4/10/07
CHECKED	REVISED	STRUCTURE FILE NUMBER	
DT	JDB	1809393	

GENERAL PLAN
BRIDGE NO. CUY-90-1524
OVER CUYAHOGA RIVER

CUY-90-15.24
PID 76192

1 / 19

10 / 28

CU090GP-STEEL.DGN 4/12/07 TWH,KH,RC

REFERENCE: SHALL BE MADE TO STANDARD DRAWING EXJ-4-87 (REVISED 07-19-02)

DESIGN SPECIFICATIONS: THIS STRUCTURE CONFORMS TO "STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES" ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS, 2002, AND THE ODOT BRIDGE DESIGN MANUAL

DESIGN DATA:
STRUCTURAL STEEL- ASTM A572/A709 GRADE 50 - UNIT STRESS 50 K S I.

EXISTING STRUCTURE PLANS: INCLUDING DESIGN PLANS, SHOP DRAWINGS, AND RECONSTRUCTION PLANS ARE AVAILABLE FOR REVIEW AT THE ODOT DISTRICT 12 OFFICE, 5500 TRANSPORTATION BLVD., GARFIELD HEIGHTS, OHIO

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 C.M.S SECTIONS 102.05 AND 105.02

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

ALIGNMENT AND PROFILE: THE WORK CONSTRUCTED WITH THE PROJECT WILL NOT CHANGE THE EXISTING ALIGNMENT OR PROFILE OF THE STRUCTURE.

UTILITY LINES: ALL EXPENSES INVOLVED IN PERMANENT RELOCATION OF 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 WILL BE HELD TO A MINIMUM

CUYAHOGA RIVER TRAFFIC: THE CUYAHOGA RIVER UNDER TRUSS SPAN 2 IS NAVIGABLE AND IS USED BY LARGE SHIPS, WORK BOATS, AND PLEASURE BOATS THE CONTRACTOR SHALL COMPLY WITH THE PROVISIONS OF SECTION 107.08 OF THE C.M.S. REGARDING WORK ON NAVIGABLE WATERS

THE CONTRACTOR MUST MAINTAIN A VERTICAL CLEARANCE OF 96 FEET ABOVE THE CUYAHOGA RIVER LEVEL AT ALL TIMES FOR THE ENTIRE WIDTH BETWEEN PIER NO. 1 AND PIER NO. 2. RIVER TRAFFIC SHALL NOT BE INTERRUPTED.

THE CONTRACTOR SHALL NOT DROP MATERIALS OR DEBRIS IN THE RIVER. THE CONTRACTOR SHALL NOTIFY THE COMMANDER, NINTH U S COAST GUARD DISTRICT, BRIDGE BRANCH, IN WRITING, THIRTY (30) DAYS PRIOR TO IMPLEMENTING ANY OPERATION IN OR ABOVE THE NAVIGABLE PORTION OF THE RIVER, SO THAT THEY MAY PROVIDE ADEQUATE NOTICE TO THE WATERWAY USERS THE CITY OF CLEVELAND DEPARTMENT OF PORTS AND HARBORS SHALL ALSO BE NOTIFIED OF ANY MAJOR WORK BEING PERFORMED OVER OR ALONG THE RIVER

THE CONTRACTOR SHALL PROVIDE AND MAINTAIN ANY AND ALL NAVIGATION DEVICES REQUIRED BY THE UNITED STATES COAST GUARD.

I-90 MAINTENANCE OF TRAFFIC: INTERSTATE 90 VEHICULAR TRAFFIC SHALL BE MAINTAINED AT ALL TIMES EXCEPT AS PROVIDED IN THE MAINTENANCE OF TRAFFIC PLAN SHEETS 2 THROUGH 8 OF 28 .

THE BRIDGE WILL BE CLOSED TO ALL TRAFFIC FOR WORK IN THE AREA OF THE WEST END PIER TO REMOVE AND REINSTALL BEARINGS. THE VERTICAL JACKING WORK WILL RAISE THE WEST END PIER ROADWAY JOINT.

SEQUENCE OF CONSTRUCTION
THE CONTRACTOR WILL CAREFULLY COORDINATE THE WORK FOR THE VARIOUS ITEMS TO MINIMIZE THE DISTURBANCE OF THE PREVIOUSLY COMPLETED WORK, AND MINIMIZE THE DISTURBANCE TO THE ROADWAY TRAFFIC.

DURING THE COMPLETE ROAD CLOSURES, THE CONTRACTOR SHALL PERFORM THE DEFLECTION JOINT REPAIR AND SEALING CONCRETE BRIDGE DECK WITH HMWM RESIN, IN ADDITION TO LIFTING THE APPROACH SPAN, REMOVING THE ROLLER NEST BEARINGS, REPLACING THE REFURBISHED ROLLER NEST BEARINGS, AND RESETTING THE APPROACH GIRDER BEARINGS

DURING NIGHTTIME LANE CLOSURES, THE CONTRACTOR SHALL INSTALL THE NEW DEFLECTION JOINT SEALS. THE NEW SEALS SHALL NOT BE INSTALLED UNTIL THE DEFLECTION JOINT REPAIR HAS BEEN COMPLETED.

THE NEOPRENE DRAINAGE REPAIRS, AND STEEL DOWNSPOUTS SHALL BE INSTALLED AFTER THE STRUCTURE JACKING IS COMPLETE, AND THE TEMPORARY SUPPORT ITEMS ARE REMOVED ALL OTHER ITEMS MAY BE COMPLETED WITHOUT SPECIAL SEQUENCE

ANY INCREASED COSTS CAUSED BY THE CONSTRUCTION SEQUENCE SHALL BE CONSIDERED INCIDENTAL TO THE APPROPRIATE BID ITEMS AND INCLUDED IN THE PRICE BID. NO EXTRA PAYMENTS SHALL BE PERMITTED.

ITEM 202: PORTIONS OF STRUCTURE REMOVED, AS PER PLAN: SHALL INCLUDE THE ELEMENTS INDICATED IN THE PLANS AND GENERAL NOTES AND ARE NOT SEPARATELY LISTED FOR PAYMENT ITEMS TO BE REMOVED INCLUDE ALL EXISTING MATERIALS BEING REPLACED BY NEW CONSTRUCTION, AND MISCELLANEOUS ITEMS THAT ARE NOT SHOWN INCORPORATED IN THE FINAL CONSTRUCTION AND ARE DIRECTED TO BE REMOVED BY THE ENGINEER. SOME OF THE MAJOR ITEMS TO BE REMOVED ARE LISTED BELOW.

STRUCTURAL STEEL AND RIVETS INCIDENTAL TO NEW JACKING SUPPORT INSTALLATION

PORTIONS OF WEST END PIER PYLONS

DRAINAGE DOWNSPOUTS, SUPPORTS AND INCIDENTALS

REMOVAL OF EXISTING RIVETS: EXISTING RIVETS THAT ARE IN HOLES USED TO CONNECT NEW MATERIAL TO EXISTING MATERIAL, EXISTING RIVETS THAT MUST BE REMOVED TO REMOVE EXISTING STEEL, AND RIVETS DIRECTED TO BE REMOVED BY THE ENGINEER SHALL BE REMOVED WITH CARE IN ACCORDANCE WITH C.M.S. SECTION 202.03.

NO MORE RIVETS SHALL BE REMOVED FROM AN AREA THAN ARE NECESSARY FOR CONNECTING EACH NEW MATERIAL PIECE RIVETS SHALL BE REMOVED FROM ONLY ONE SIDE OF A MEMBER AT A TIME.

ALL EXISTING RIVETS TO BE REMOVED SHALL FIRST HAVE THE HEADS CUT OFF AND THEN THE REMAINDER OF THE RIVET REMOVED BY DRILLING OR BURNING. SOME RIVETS TO BE REMOVED MAY HAVE COUNTERSUNK HEADS ON ONE OR BOTH ENDS. RIVETS THAT ARE COUNTERSUNK ON BOTH ENDS SHALL BE REMOVED BY DRILLING OR BURNING. PUNCHING MAY BE USED TO REMOVE LOOSE FITTING SHANKS. RIVET REMOVAL METHODS SHALL NOT DAMAGE BASE MATERIAL THAT IS TO REMAIN IN PLACE THE CONTRACTOR SHALL SUBMIT DETAILS OF THE PROPOSED RIVET REMOVAL METHOD FOR APPROVAL BY THE ENGINEER PRIOR TO BEGINNING WORK. ANY DAMAGE TO EXISTING MATERIAL TO REMAIN IN PLACE, DUE TO THE CONTRACTOR'S REMOVAL OPERATION, SHALL BE REPAIRED TO THE SATISFACTION OF THE ENGINEER AT THE COST OF THE CONTRACTOR.

PAYMENT FOR CAREFUL STRUCTURAL STEEL REMOVAL SHALL BE INCLUDED WITH ITEM 202 - PORTIONS OF STRUCTURE REMOVED, AS PER PLAN.

CONNECTION BOLTS: 5/8 INCH DIAMETER AND LARGER SHALL BE HEX HEAD, GALVANIZED ASTM A325 HIGH STRENGTH STEEL BOLTS, UNLESS OTHERWISE NOTED. ASTM A490 HIGH STRENGTH STEEL BOLTS SHALL NOT BE GALVANIZED BOLTS 1/2 INCH DIAMETER AND SMALLER SHALL BE GALVANIZED ASTM A449 OR SAE J429 GRADE 5 STAINLESS STEEL BOLTS SHALL BE TYPE 304. NEW CONNECTION BOLTS SHALL BE INCLUDED FOR PAYMENT WITH THE PERTINENT NEW MATERIAL PAY ITEM

WELDING TO EXISTING STEEL: THE ORIGINAL DESIGN PLANS AND SHOP DRAWINGS FOR CUY-90-1524 INDICATE THAT COPPER-BEARING CARBON STRUCTURAL STEEL WAS USED FOR MOST OF THE STRUCTURE AND THAT MANGANESE STRUCTURAL STEEL WAS USED IN SOME AREAS FINGER EXPANSION JOINTS AND TRUSS BEARINGS ARE STEEL CASTINGS. WELDING TO THE EXISTING STEEL SHALL NOT BE PERMITTED WITHOUT THE APPROVAL OF THE DIRECTOR, EXCEPT WHERE DETAILED IN THE PLANS

NEW GALVANIZED STEEL: SHALL BE GALVANIZED AFTER FABRICATION PER C.M.S. 711 02. THE CONTRACTOR SHALL BE VERY CAREFUL IN HANDLING THE GALVANIZED STEEL TO MINIMIZE SCRATCHES AND ABRASION OF THE FINISH. WIRE ROPE SLINGS AND METAL HOOKS SHALL BE PADDED WITH WOOD, OR REINFORCED FABRIC WEBBING SHALL BE USED FOR MATERIAL HANDLING SCRATCHES AND ABRASIONS OF THE GALVANIZED FINISH SHALL BE TOUCHED UP IN THE FIELD BY "COLD APPLIED GALVANIZING" AS DIRECTED BY THE ENGINEER CONNECTION BOLTS FOR GALVANIZED STEEL MEMBERS SHALL BE MECHANICALLY GALVANIZED

BOLTED CONNECTION TO EXISTING STEEL: AT LOCATIONS SHOWN ON THE PLANS AND AS DIRECTED BY THE ENGINEER, NEW STRUCTURAL STEEL SHALL BE CONNECTED TO EXISTING STRUCTURAL STEEL USING EXISTING RIVET OR BOLT HOLES AND NEW BOLTS. RIVET REMOVAL PROCEDURES ARE DESCRIBED IN THE GENERAL NOTES PAYMENT FOR RIVET OR BOLT REMOVAL IS INCLUDED WITH ITEM 202 - PORTIONS OF STRUCTURE REMOVED, AS PER PLAN UNLESS OTHERWISE NOTED

HOLES IN NEW MATERIAL SHALL BE MADE BY ANY OF THE FOLLOWING METHODS (TO BE SELECTED BY THE CONTRACTOR):

1. CAREFUL FIELD MEASUREMENT BY THE CONTRACTOR SHALL BE USED FOR LOCATING HOLES IN NEW MATERIAL TO BE SUBPUNCHED OR DRILLED UNDERSIZE IN THE SHOP. THE HOLE SHALL BE 3/16 INCH LESS IN DIAMETER THAN THE NOMINAL DIAMETER OF THE NEW BOLT THE HOLES SHALL BE REAMED TO PROPER SIZE IN THE FIELD AFTER FIT-UP TO THE EXISTING RIVET OR BOLT HOLES
2. MAKE TEMPLATES IN THE FIELD OF HOLE PATTERNS AND LOCATIONS AFTER REMOVAL OF RIVETS OR BOLTS USE THE FIELD TEMPLATES IN THE SHOP TO SUBPUNCH OR DRILL UNDERSIZE HOLES. THE HOLES SHALL BE REAMED IN THE FIELD AFTER FIT-UP TO THE EXISTING RIVET OR BOLT HOLES
3. FURNISH NEW STRUCTURAL STEEL WITHOUT SHOP HOLES FOR RECONNECTION TO EXISTING RIVET OR BOLT HOLES HOLES IN NEW MATERIAL TO BE FIELD DRILLED AND REAMED TO MATCH EXISTING RIVET OR BOLT LOCATION

RIVET HOLES NOT USED FOR BOLTED CONNECTIONS OF NEW STRUCTURAL STEEL SHALL BE FILLED WITH A BOLT UNLESS OTHERWISE NOTED.

EXISTING MATERIAL WITHOUT HOLES FOR CONNECTION TO NEW MATERIAL SHALL BE FIELD DRILLED.

ALL HOLES THROUGH NEW AND EXISTING MATERIAL SHALL BE REAMED AFTER ASSEMBLY. THE FINAL HOLES SHALL BE STANDARD SIZE, 1/16 INCH LARGER IN DIAMETER THAN THE NOMINAL BOLT DIAMETER, UNLESS OTHERWISE NOTED

ADDITIONAL REQUIREMENTS FOR HOLES SHALL BE PER C M.S. 513.19. SHOP HOLES THAT DO NOT MATCH EXISTING RIVET HOLES SHALL BE FIELD DRILLED.

THE COST OF ALL MATERIAL, EQUIPMENT AND LABOR FOR CONNECTING NEW MATERIAL TO EXISTING MATERIAL, INCLUDING REAMING NEW OR EXISTING HOLES, AND DRILLING NEW HOLES, SHALL BE INCLUDED AS INCIDENTAL TO THE PERTINENT NEW MATERIAL PAY ITEM.

GENERAL NOTES CONTINUED: SEE SHEET 3 / 19

RICHLAND ENGINEERING LIMITED
29 NORTH PARK STREET
MANSFIELD, OHIO 44902

DESIGNED JDB | DRAWN KH | REVIEWED DAP | DATE 4/10/07
CHECKED DT | REVISED JDB | STRUCTURE FILE NUMBER 1809393

GENERAL NOTES - 1
BRIDGE NO. CUY-90-1524
OVER CUYAHOGA RIVER

CUY-90-15.24
PID 76192

ITEM 513 - STRUCTURAL STEEL MISC.: PENCIL ABRASIVE BLASTING, GRINDING, AND NDT

THIS WORK CONSISTS OF THE FOLLOWING SEQUENCE OF OPERATIONS PERFORMED AT THE AREAS AS DESIGNATED IN THE PLANS AND AS DIRECTED BY THE ENGINEER.

1 CLEAN THE DESIGNATED AREA BY PENCIL ABRASIVE BLASTING THE PAINT AND/OR RUST FROM THE STEEL SURFACE CLEANED AREAS SHALL BE AT LEAST 3-INCHES WIDE ALONG EACH SIDE OF A SUSPECTED CRACK LOCATION UNLESS OTHERWISE SHOWN IN THE PLANS

2 THE ENGINEER, ACCOMPANIED BY THE CONTRACTOR, SHALL CAREFULLY VISUALLY INSPECT THE CLEANED AREA. GRINDING MAY BE DIRECTED BY THE ENGINEER TO ENHANCE THE INVESTIGATION FOR CRACK PRESENCE. ALL GRINDING MUST BE DONE CAUTIOUSLY, ESPECIALLY IN TENSION ZONES THE GRINDING MOTION SHALL BE PARALLEL WITH THE FLANGE EDGE.

3 NON-DESTRUCTIVELY TEST (NDT) THE AREA USING MAGNETIC PARTICLE EXAMINATION AND/OR DYE PENETRATION SO THAT THE ENGINEER MAY FURTHER INSPECT FOR CRACKS.

4 ALL CRACKS AND/OR CRACK TIPS THAT ARE ACCESSIBLE ARE TO BE REMOVED AS SHOWN IN THE PLANS AND PAID FOR AS ITEM 513 - STRUCTURAL STEEL MISC : DRILLING STRUCTURAL STEEL, GRINDING AND NDT ANY CRACKS INACCESSIBLE TO DRILLING ARE TO BE REMOVED AS SHOWN IN THE PLANS BY CAREFUL GRINDING, OR BY CAREFULLY ENLARGING THE DRILLED HOLES BY GRINDING, AND PAID FOR UNDER· ITEM 513 - STRUCTURAL STEEL MISC . DRILLING STRUCTURAL STEEL, GRINDING AND NDT.

5. PERFORM STEPS 1 THROUGH 4 ON THE OTHER SIDE OF THIS LOCATION.

THE ACCEPTED NUMBER OF LOCATIONS OF WORK AS DESCRIBED IN THIS NOTE WILL BE PAID FOR AT THE CONTRACT UNIT PRICE PER LOCATION THIS PRICE AND PAYMENT SHALL BE FULL COMPENSATION FOR FURNISHING ALL MATERIAL, LABOR, AND EQUIPMENT NECESSARY TO CLEAN, GRIND, AND PERFORM NDT ON ALL SURFACES AT EACH LOCATION.

PAYMENT WILL BE MADE AT THE CONTRACT PRICE BID UNDER.

ITEM	UNIT	DESCRIPTION
513	EACH	STRUCTURAL STEEL MISC.· PENCIL ABRASIVE BLASTING, GRINDING, AND NDT

PENCIL ABRASIVE BLASTING

THE PENCIL ABRASIVE BLASTING REFERRED TO IN THE VARIOUS NOTES AND REPAIR ITEMS IN THESE PLANS SHALL CONFORM TO THE FOLLOWING

CLEAN THE DESIGNATED NON-DESTRUCTIVE TESTING (NDT) AREAS OF ALL PAINT, RUST, AND FOREIGN MATERIAL BY ABRASIVE BLASTING TO A SURFACE QUALITY EQUAL TO SSPC-SP10 PREPARATION GRADE SA 2 ACCORDING TO AND AS SHOWN IN SSPC-VIS 1-89. SINCE THE INTENT OF THE PENCIL ABRASIVE BLASTING IS TO ENHANCE THE VISUAL AND NDT CRACK DETECTION TECHNIQUES, A GENTLE ABRASIVE BLAST SHALL BE USED SUCH THAT THE SURFACE IS NOT PEENED OR OTHERWISE COLD WORKED PERFORM THE ABRASIVE BLASTING USING A MAXIMUM COMPRESSED AIR PRESSURE OF 100 PSI, A HOSE NOZZLE DIAMETER OF ¼ INCH (+/-1/16 INCH), AND A GRADE 30/60 COAL SLAG ABRASIVE OR EQUIVALENT. DO NOT USE BLASTING ABRASIVES CONTAINING MORE THAN ONE-PERCENT FREE SILICA. BLASTERS USED FOR SURFACE PREPARATION FOR STRUCTURAL STEEL COATING CANNOT BE USED FOR PENCIL BLASTING AFTER THE ABRASIVE BLASTING IS COMPLETE, AIR BLOW THE AREA CLEAN.

THE CONTRACTOR SHALL DEMONSTRATE TO THE ENGINEER THAT PENCIL ABRASIVE BLASTING CAN SATISFACTORILY BE PERFORMED ACCORDING TO THESE SPECIFICATIONS PRIOR TO THE START OF THE WORK THE COST OF THE PENCIL ABRASIVE BLASTING HAS BEEN INCLUDED FOR PAYMENT IN THE APPROPRIATE REPAIR ITEMS.

ITEM 513 - STRUCTURAL STEEL MISC.: DRILLING STRUCTURAL STEEL, GRINDING, AND NDT

THIS WORK CONSISTS OF DRILLING CRACKS AND ENDS OF CRACKS, GRINDING TO ENLARGE DRILLED HOLES, AND NON DESTRUCTIVE TESTING AS SHOWN IN THE PLANS AND AS DIRECTED BY THE ENGINEER. DISTRICT PRODUCTION DEPARTMENT (BRIDGE SECTION) APPROVAL MUST BE OBTAINED BEFORE DRILLING ANY HOLES IN THE FLANGES UNDER THIS PAY ITEM

DRILL HOLES TO REMOVE ENTIRE CRACKS OR THE APPARENT ENDS OF THE CRACKS REVEALED BY THE INITIAL NDT AND/OR VISUAL INSPECTION. GRIND SMOOTH THE EXPOSED CIRCUMFERENCE OF EACH DRILLED HOLE AND CAREFULLY INSPECT FOR CRACKS USING MAGNETIC PARTICLE EXAMINATION AND/OR DYE PENETRATION. CONTINUE DRILLING, GRINDING, AND TESTING UNTIL ALL CRACK ENDS ARE REMOVED IF NO CRACKS ARE DETECTED AT A LOCATION, NO HOLES SHALL BE DRILLED UNDER THIS ITEM

SINCE ANY OF THESE CRACKS COULD PROPAGATE INTO A TENSION ZONE, REMOVING THEIR ENDS IS IMPERATIVE CRACKS LESS THAN 1½ INCHES LONG, AND CRACKED AREAS OR DEFECTS LESS THAN 1½ INCHES IN DIAMETER SHALL BE REMOVED BY A SINGLE HOLE WHEN PRACTICAL. ENDS OF CRACKS LONGER THAN 1½ INCHES, AND DEFECTS SMALLER THAN ½ INCH SHALL BE DRILLED WITH 1 INCH DIAMETER DRILL BITS. HOLES SHALL BE CAREFULLY EXAMINED FOR CRACKS IN THE PLANE OF THE PLATE. 1½ OR 2 INCH DIAMETER HOLES MAY BE DRILLED WHERE THE PROXIMITY OF THE CRACK END TO ADJACENT STEEL PRECLUDES DRILLING OF 1 INCH DIAMETER HOLES.

THE LOCATION OF ALL HOLES SHALL BE DETERMINED BY AND DRILLED UNDER THE DIRECTION OF THE ENGINEER.

THE ACCEPTED NUMBER OF HOLES DRILLED IN THE STRUCTURAL STEEL AS DETAILED ABOVE WILL BE PAID FOR AT THE CONTRACT PRICE PER EACH HOLE PRICE AND PAYMENT SHALL BE FULL COMPENSATION FOR FURNISHING ALL MATERIAL, LABOR AND EQUIPMENT NECESSARY FOR DRILLING THE HOLES, GRINDING TO ENLARGE DRILLED HOLES, AND NDT.

PAYMENT WILL BE MADE AT THE CONTRACT PRICE BID UNDER.

ITEM	UNIT	DESCRIPTION
513	EACH	STRUCTURAL STEEL MISC . DRILLING STRUCTURAL STEEL, GRINDING, AND NDT

ITEM 513 - STRUCTURAL STEEL, MISC.: STRINGER BOTTOM FLANGE RETROFIT

THIS ITEM SHALL CONSIST OF FURNISHING ALL MATERIAL, EQUIPMENT, AND LABOR NECESSARY TO INSTALL THE DOUBLE ANGLES REQUIRED FOR THE STRINGER BOTTOM FLANGE RETROFIT AS SHOWN IN THE PLANS AND STATED HEREIN. THIS ITEM SHALL INCLUDE ALL PRE-DRILLED STRUCTURAL STEEL, BOLTS, NUTS AND WASHERS, FIELD DRILLING OF BOLT HOLES, AND ALL OTHER INCIDENTALS NECESSARY TO INSTALLATION OF THE DOUBLE ANGLES.

STRUCTURAL STEEL SHALL BE ASTM A572/A709 GRADE 50 CONFORMING TO 513 OF THE CMS AND SHALL NOT REQUIRE A SHOP APPLIED PRIME COAT STRUCTURAL STEEL UNDER THIS ITEM WILL NOT REQUIRE SHOP DRAWINGS PRIOR TO FABRICATION THE CONTRACTOR SHALL MAKE THE NECESSARY MEASUREMENTS AND PREPARE SKETCHES, DRAWINGS, TABLES, ETC. THE ENGINEER SHALL HAVE THE AUTHORITY AND RESPONSIBILITY FOR ENSURING THAT THE FABRICATED STEEL IS ACCEPTABLE TECHNICAL ASSISTANCE WILL BE PROVIDED ON REQUEST BY THE OFFICE OF STRUCTURAL ENGINEERING MILL TEST REPORTS AND SHIPPING DOCUMENTS SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW AND APPROVAL PRIOR TO INCORPORATING THE STEEL ITEMS INTO THE WORK, AS REQUIRED BY 501.06. AFTER FABRICATION, THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS TO THE ENGINEER FOR REVIEW AND APPROVAL TO ENSURE THAT THE DRAWINGS DEPICT THE STEEL AS ACTUALLY INCORPORATED INTO THE WORK. THE ENGINEER WILL THEN SEND ONE APPROVED SET OF SHOP DRAWINGS TO THE OFFICE OF STRUCTURAL ENGINEERING FOR INFORMATION THE FABRICATOR SHALL FURNISH THE DIRECTOR A 35 MILLIMETER MICROFILM COPY OF EACH APPROVED SHOP DRAWING. THE MICROFILM SHALL BE MOUNTED ON AN APERTURE CARD AS SPECIFIED IN 501 04

ALL BOLTS SHALL BE ⅞" DIAMETER, GALVANIZED, A325 UNLESS OTHERWISE NOTED. CONNECTIONS SHALL BE IN ACCORDANCE WITH 513.20 OF THE CMS

PAYMENT FOR FURNISHING ALL MATERIAL, EQUIPMENT AND LABOR NECESSARY TO INSTALL THE DOUBLE ANGLES AT ONE STRINGER BOTTOM FLANGE RETROFIT LOCATION SHALL BE INCLUDED IN THE CONTRACT UNIT BID PRICE FOR

ITEM 513 - STRUCTURAL STEEL, MISC STRINGER BOTTOM FLANGE RETROFIT - PER EACH STRINGER.

ITEM SPECIAL-CONTINUOUS SEAL IN STRUCTURAL STEEL JOINT

DESCRIPTION:

THIS WORK CONSISTS OF FURNISHING AND INSTALLING THE BRIDGE DEFLECTION JOINT SEAL SYSTEM IN EACH DEFLECTION JOINT ON THE BRIDGE AS INDICATED IN THIS NOTE AND THE PLANS.

DEFLECTION JOINT SEAL SYSTEM:

THIS SYSTEM CONSISTS OF A TWO-PART JOINT SEAL SYSTEM· PART ONE) POLYETHYLENE JOINT SEAL TOPPED WITH; PART TWO) SILICONE JOINT SEAL. INSTALL THE JOINT SEAL SYSTEM AS DESCRIBED IN THIS NOTE AND DETAILED IN THE PLANS SO THAT A FULLY OPERATIONAL AND WATERPROOF SYSTEM SEALS THE JOINT IN WHICH IT IS INSTALLED.

SUPPLY A POLYETHYLENE JOINT SEAL THAT IS CONTINUOUS ACROSS THE JOINT FROM THE MEDIAN BARRIER TO THE SIDEWALK CURB FIELD FABRICATED SPLICES ARE NOT ACCEPTABLE.

PART ONE) POLYETHYLENE JOINT SEAL MATERIAL:

A. SUPPLY A POLYETHYLENE JOINT SEAL THAT CONSISTS OF AN IMPERMEABLE CLOSED-CELL, CROSS-LINKED, ETHYLENE VINYL ACETATE, LOW DENSITY POLYETHYLENE COPOLYMER, NITROGEN BLOWN RESILIENT, NON-EXTRUDABLE FOAM MATERIAL WITH A UV STABILIZER EXHIBITING THE PHYSICAL PROPERTIES LISTED IN THE FOLLOWING TABLE SUPPLY A POLYETHYLENE JOINT SEAL WITH VERTICAL SIDES THAT ARE GROOVED. THE GROOVES SHALL BE ⅛" WIDE BY ⅛" DEEP AND SPACED BETWEEN ¼" TO ½" APART AND RUN ALONG THE ENTIRE LENGTH OF THE VERTICAL SURFACES TO BE BONDED TO THE EXISTING STEEL JOINT ARMOR INSTALL ALL COMPONENTS UTILIZING THE ADHESIVE SPECIFIED IN PART ONE (B) FOR COMPLETE INSTALLATION.

PHYSICAL PROPERTIES	TEST METHOD	REQUIREMENT
ELONGATION AT BREAK	ASTM D 3575, SUFFIX T	255% ±25%
TENSILE STRENGTH	ASTM D 3575, SUFFIX T	115 PSI ± 21%
TEAR RESISTANCE	ASTM D 624	15 0 LBS/INCH ± 20%
DENSITY	ASTM D 3575, SUFFIX W METHOD A	2.7 - 3.4
WATER ABSORPTION	ASTM D 3575; SUFFIX: L	0 02 LBS/SF
COMPRESSION RECOVERY (% OF ORIGINAL WIDTH) 22 HR @ 73° F ½ HR RECOVERY	ASTM D 545	90% MIN.
WEATHER/ DETERIORATION	HH-F-341A	NO DETERIORATION
COMPRESSION SET 50% COMPRESSION FOR 22 HOURS @ 73° F	ASTM D 3575, SUFFIX: B	2 HR RECOVERY 10% SET 24 HR RECOVERY 9% SET
EXTRUSION (SPECIMEN COMPRESSED 60% OF ORIGINAL THICKNESS WITH 3 RESTRAINED SIDES)	ASTM D 545	EXTRUSION ON FREE SIDE DOES NOT EXCEED 0 25 INCHES

B. ADHESIVE MATERIAL .

SUPPLY 100% SOLIDS TWO COMPONENT MOISTURE INSENSITIVE MODIFIED EPOXY ADHESIVE WHICH MEETS ASTM C 881 TYPE I & II GRADE 2 CLASS B & C AND THE REQUIREMENTS OF THE PROPERTIES LISTED BELOW·

PROPERTIES (UNCURED):

	PART A	PART B	MIXED
COLOR	WHITE	CARMEL	BEIGE
SHELF LIFE	2 YEARS	2 YEARS	
MIXING RATIO (BY VOLUME)	3	1	3.1
SPECIFIC GRAVITY	1 47	1 15	
DENSITY (LBS/GAL) @ 77° F	12.2 ±0.2	9.6 ±0.2	1 6 ±0 2
VISCOSITY (CPS) @ 77° F	22,000	33,000	26,000
POT LIFE (200 GMS)			32 - 36 MINUTES
INITIAL SET @ 77° F			1 ½ - 2 HOURS
INITIAL CURE			8 - 12 HOURS
FULL CHEMICAL CURE			7 DAYS

PROPERTIES (AFTER CURE).

TEST	TEST METHOD	REQUIREMENT
COMPRESSIVE STRENGTH	ASTM D 695	7000 PSI
TENSILE STRENGTH	ASTM D 638	3500 PSI
ELONGATION AT BREAK	ASTM D 638	3-5%
SHORE D HARDNESS	ASTM D 2250	75
WATER ABSORPTION	ASTM D 570	0.25%
BOND STRENGTH	ASTM C 882	430 PSI

GENERAL NOTES CONTINUED: SEE SHEET 4/19

RICHLAND ENGINEERING LIMITED
29 NORTH PARK STREET
MANSFIELD, OHIO 44902

DESIGNED JDB | DRAWN KH | REVIEWED DAP | DATE 4/10/07
CHECKED DT | REVISED JDB | STRUCTURE FILE NUMBER 1809393

GENERAL NOTES - 2
BRIDGE NO. CUY-90-1524
OVER CUYAHOGA RIVER

CUY-90-15.24
PID 76192

PART TWO) SILICONE SEAL MATERIAL:

SUPPLY A COLD-APPLIED, TWO-COMPONENT, SELF-LEVELING, LOW MODULUS SILICONE SEALANT EXHIBITING THE PHYSICAL PROPERTIES LISTED IN THE TABLE BELOW.

AS SUPPLIED PROPERTIES.

	PART A	PART B
COLOR	WHITE	GRAY
EXTRUSION RATE (ASTM C 1183)	200-600 ML/MIN.	200-600 ML/MIN

MIXED PROPERTIES.

	TEST METHOD	REQUIREMENT
LEVELING	ASTM C 639	SELF LEVELS
TACK FREE TIME	ASTM C 679	60 MINUTES MAX.
JOINT ELONGATION	ASTM D 5329	600% MIN
JOINT MODULUS, 100% EXTENSION	ASTM D 5329	15 PSI MAX
CURE EVALUATION	ASTM D 5893	PASS @ 4 HRS. MAX.
ULTIMATE ELONGATION	ASTM D 412 DIE C	1000% MIN
STRESS AT 150% ELONGATION	ASTM D 412 DIE C	25 PSI MAX.
SHORE HARDNESS, 00	ASTM C 661	40 - 80
SPECIFIC GRAVITY	ASTM D 792	1 20 - 1 40

DEFLECTION JOINT SEAL SYSTEM INSTALLATION:

PROTECTION OF PERSONS AND PROPERTY:

COLLECT, REMOVE, AND DISPOSE OF ALL BUCKETS, RAGS, AND OTHER DISCARDED MATERIALS AND LEAVE THE JOB SITE IN A CLEAN CONDITION

PROTECT ALL PORTIONS OF THE STRUCTURE THAT ARE NOT TO BE SEALED FROM DAMAGE OR DISFIGUREMENT BY SPLASHES, SPATTERS, OVERSPRAY, AND SMIRCHES OF SEALER MATERIALS.

IF THE CONTRACTOR CAUSES DIRECT OR INDIRECT DAMAGE OR INJURY TO PUBLIC OR PRIVATE PROPERTY, THE CONTRACTOR SHALL RESTORE THE PROPERTY TO A CONDITION SIMILAR OR EQUAL TO THE CONDITION EXISTING BEFORE THE DAMAGE OR INJURY.

POLLUTION CONTROL:

COMPLY WITH POLLUTION CONTROL LAWS, RULES, AND REGULATIONS OF FEDERAL, STATE, AND LOCAL AGENCIES AND REQUIREMENTS OF THIS SPECIFICATION.

SAFETY REQUIREMENTS AND PRECAUTIONS.

COMPLY WITH APPLICABLE SAFETY REQUIREMENTS OF THE OHIO INDUSTRIAL COMMISSION AND OSHA. PROVIDE MATERIAL SAFETY DATA SHEETS (MSDS) AT THE PRECONSTRUCTION MEETING FOR ALL MATERIALS AND ABRASIVES USED ON THIS PROJECT DO NOT BEGIN WORK UNTIL SUBMITTING THE MSDS TO THE ENGINEER

WORK LIMITATIONS:

THE JOINT SEAL MANUFACTURER MAY REQUIRE ADDITIONAL WORK LIMITATIONS FOR THIS SPECIFIC PROJECT.

A. TEMPERATURE. PERFORM WORK BETWEEN 50°AND 90° F UNLESS OTHERWISE SPECIFIED BY THE MANUFACTURER'S REPRESENTATIVE OR PRINTED INSTRUCTIONS.

B. MOISTURE: DO NOT SEAL OR ABRASIVELY BLAST.

1. IF THE SURFACE OF THE STEEL JOINT ARMOR TO BE SEALED IS WET, DAMP, FROSTED, OR ICE-COATED.
2. DURING PERIODS OF RAIN, FOG, OR MIST.
3. IF THE STEEL TEMPERATURE IS LESS THAN 5° F ABOVE THE DEW POINT UNLESS OTHERWISE SPECIFIED BY THE MANUFACTURER'S REPRESENTATIVE OR PRINTED INSTRUCTIONS.
4. IF THE RELATIVE HUMIDITY IS GREATER THAN 85 PERCENT UNLESS OTHERWISE SPECIFIED BY THE MANUFACTURER'S REPRESENTATIVE OR PRINTED INSTRUCTIONS

PRE-CLEANING:

REMOVE ALL EXISTING SEAL MATERIAL THAT WILL IMPEDE INSTALLATION OF THE NEW JOINT SEAL REMOVE CONTAMINATION USING A 5000 PSI PRESSURE WASHER WITH A 10-INCH STAND OFF DISTANCE AT A RATE NOT TO EXCEED 5 LINEAR FEET PER MINUTE. SUPPLY PRESSURIZED HOT WATER CONTAINING A SOLUTION OF POTABLE WATER WITH A COMMERCIALLY AVAILABLE BIODEGRADABLE SALT REMOVER FOLLOWED BY A POTABLE WATER RINSE. PRE CLEAN ALL STEEL EXPANSION JOINT SURFACES TO BE SEALED THE SEALED LIMITS ARE THE VERTICAL ARMORED SURFACES BEING PREPARED FOR THE SEAL INSTALLATION. THESE VERTICAL SURFACES EXTEND FROM THE INTERSECTION WITH THE ROADWAY TO 1 INCH BELOW THE BOTTOM DEPTH OF THE SPECIFIED JOINT SEALING SYSTEM. ALLOW THE SURFACES TO COMPLETELY DRY PRIOR TO PERFORMING ABRASIVE BLASTING. DRYING CAN BE ACCELERATED WITH CLEAN COMPRESSED AIR

ABRASIVE BLASTING

ABRASIVE BLAST ALL EXISTING STEEL EXPANSION JOINT SURFACES TO BE SEALED ACCORDING TO SSPC-SP 10 AND AS SHOWN ON THE PICTORIAL SURFACE PREPARATION STANDARDS FOR PAINTING STEEL SURFACES SHOWN IN SSPC-VIS 1. MAINTAIN THE STEEL TO A SSPC-SP 10 BLAST CLEANED CONDITION UNTIL IT IS SEALED WITH BOTH PART ONE AND PART TWO MATERIALS. THE SEALED LIMITS ARE THE VERTICAL ARMORED SURFACES BEING PREPARED FOR THE SEAL INSTALLATION THESE VERTICAL SURFACES EXTEND FROM THE INTERSECTION WITH THE ROADWAY TO 1 INCH BELOW THE BOTTOM DEPTH OF THE SPECIFIED JOINT SEALING SYSTEM

USE RECYCLABLE STEEL GRIT MEETING THE REQUIREMENTS OF SSPC-AB 3 CLEAN THE ABRASIVE OF PAINT, CHIPS, RUST, MILL SCALE, AND OTHER FOREIGN MATERIAL AFTER EACH USE AND BEFORE EACH REUSE ACCORDING TO SSPC-AB 2. USE EQUIPMENT SPECIFICALLY DESIGNED FOR CLEANING THE ABRASIVE.

CHECK ABRASIVES FOR OIL CONTENT AND WATER-SOLUBLE CONTAMINATION ACCORDING TO SSPC-AB 2. CHECK ABRASIVES USED AT THE JOB SITE AT THE BEGINNING OF EACH SHIFT AND AT 4-HOUR INTERVALS. ALSO CHECK EACH LOAD OF ABRASIVE DELIVERED TO THE JOB SITE FOR CONTAMINATION BEFORE USE.

CHECK THE COMPRESSOR FOR OIL CONTAMINATION BY BLOWING AIR FROM THE NOZZLE FOR 30 SECONDS ONTO A WHITE CLOTH OR BLOTTER HELD IN A RIGID FRAME. IF THE CLOTH OR BLOTTER RETAINS OIL OR OTHER CONTAMINANTS, SUSPEND ABRASIVE BLASTING UNTIL RETESTS VERIFY THE PROBLEM WAS CORRECTED. PERFORM THIS TEST AT THE START OF EACH SHIFT AND AT 4-HOUR INTERVALS.

SHIELD AND PROTECT SURFACES NOT INTENDED TO BE SEALED FROM DAMAGE CAUSED BY BLASTING OPERATIONS.

THE CONTRACTOR MAY ABRASIVELY CLEAN SURFACES TO THE SPECIFIED LEVEL OF CLEANLINESS AND PROFILE USING SELF-CONTAINED, RE-CIRCULATING BLAST-CLEANING EQUIPMENT PROVIDED ALL REQUIREMENTS OF THIS SPECIFICATION CAN BE ACHIEVED

IN LOCATIONS EXHIBITING LARGE AMOUNTS OF RUST, THE CONTRACTOR MAY EMPLOY MECHANICAL METHODS OR OTHER MEANS AS APPROVED BY THE ENGINEER BEFORE ABRASIVE BLASTING.

THE CONTRACTOR MAY SIMULTANEOUSLY ABRASIVE BLAST AND SEAL AT DIFFERENT DEFLECTION JOINTS PROVIDED THE ABRASIVE BLASTING DEBRIS AND DUST DOES NOT CONTAMINATE SURFACES TO BE SEALED.

REMOVE ABRASIVES AND RESIDUE FROM ALL SURFACES TO BE SEALED KEEP ALL SURFACES TO BE SEALED DUST FREE.

REMOVING FINS, TEARS, AND SLIVERS.

CONDITION ALL FINS, TEARS, SLIVERS, AND BURRED OR SHARP EDGES THAT APPEAR AFTER THE BLASTING OPERATION PER ASTM A6, THEN RE-BLAST TO MEET THE REQUIREMENTS FOR CLEANLINESS.

CONTAINMENT/WASTE DISPOSAL

COMPLY WITH 514 FOR THE CONTAINMENT/WASTE DISPOSAL REQUIREMENTS

MANUFACTURER'S REPRESENTATIVE:

INSTALL THE COMPONENTS OF THE JOINT SYSTEM IN STRICT ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS AND THE DETAILS IN THESE PLANS. IN THE EVENT OF A CONFLICT, INSTALLATION INSTRUCTIONS IN THESE PLANS SUPERSEDE THOSE OF THE MANUFACTURER UNLESS OTHERWISE DIRECTED BY THE ENGINEER. A REPRESENTATIVE OF THE MANUFACTURER SHALL BE PRESENT FOR THE FIRST THREE DAYS OF INSTALLATION. THE REPRESENTATIVE SHALL BE FULLY CONVERSANT IN ALL RESPECTS WITH THE CORRECT INSTALLATION METHODS. THE REPRESENTATIVE SHALL BE RESPONSIBLE TO ADVISE BOTH THE ENGINEER AND THE CONTRACTOR THAT THE PROPER INSTALLATION METHOD IS BEING FOLLOWED

INSTALLATION:

INSTALL THE JOINT SEAL SYSTEM AS DESCRIBED IN THIS NOTE, AS DETAILED IN THE PLANS, AND ACCORDING TO MANUFACTURER'S INSTRUCTIONS. MEASURE EACH JOINT OPENING IN SEVERAL LOCATIONS PRIOR TO ORDERING MATERIAL FOR THAT JOINT. USE A CONTINUOUS POLYETHYLENE JOINT SEAL WITH A WIDTH REQUIRING APPROXIMATELY 25% COMPRESSION OF THE MATERIAL TO FIT INSIDE THE CLEANED JOINT OPENING AFTER INSTALLING THE POLYETHYLENE JOINT SEAL, AND WITHOUT THE USE OF SOLVENTS, CLEAN ALL EXCESS EPOXY FROM JOINT ARMOR AND TOP OF POLYETHYLENE SEAL. BEFORE INSTALLING THE SILICONE JOINT SEAL, REMOVE ANY ADHESIVE THAT WILL DETERIORATE THE BOND OR PERFORMANCE OF THE SILICONE SEAL THE CONTRACTOR MAY ELECT TO USE A MASKING TECHNIQUE TO PROTECT THE STEEL SURFACES TO BE SEALED WITH THE PART TWO MATERIALS

INSTALLATION INSPECTION:

ALL INSTALLATION WORK IS SUBJECT TO THE ENGINEER'S INSPECTION THE ENGINEER SHALL BE GIVEN ALL FACILITIES REQUIRED FOR A THOROUGH INSPECTION PER 105.10. AFTER INSTALLATION OF THE POLYETHYLENE COMPONENT OF THE JOINT SEAL SYSTEM, AND PRIOR TO THE INSTALLATION OF THE SILICONE, THE ENGINEER WILL INSPECT THE SEAL TO ENSURE ACCEPTABLE BONDING TO THE JOINT ARMOR. RE-BOND ANY LOCATIONS OF THE POLYETHYLENE SEAL DEEMED TO BE UNACCEPTABLE BY THE ENGINEER

WATERTIGHT INTEGRITY TEST

AT LEAST FIVE DAYS AFTER THE JOINT SEAL SYSTEM HAS BEEN FULLY INSTALLED, TEST THE ENTIRE (FULL LENGTH) JOINT SEAL SYSTEM FOR WATERTIGHT INTEGRITY EMPLOYING A METHOD SATISFACTORY TO THE ENGINEER. COVER THE ENTIRE JOINT SEAL SYSTEM WITH WATER, EITHER PONDED OR FLOWING, FOR A MINIMUM DURATION OF 15 MINUTES. THE STEEL SURFACES UNDER THE JOINT SHALL BE INSPECTED DURING THIS 15 MINUTE PERIOD AND FOR A MINIMUM OF 45 MINUTES AFTER THE SUPPLY OF WATER HAS STOPPED FOR ANY EVIDENCE OF DRIPPING WATER OR MOISTURE. WATER TIGHTNESS IS DEFINED AS HAVING NO FREE DRIPPING WATER ON ANY SURFACE ON THE UNDERSIDE OF THE JOINT. PATCHES OF MOISTURE WILL NOT BE CAUSE FOR NON-ACCEPTANCE

SHOULD THE JOINT SEAL SYSTEM EXHIBIT EVIDENCE OF WATER LEAKAGE AT ANY PLACE WHATSOEVER, LOCATE THE PLACE(S) OF LEAKAGE AND TAKE ALL MEASURES NECESSARY TO STOP THE LEAKAGE AFTER REPAIRS HAVE BEEN COMPLETED, PERFORM A SUBSEQUENT WATER INTEGRITY TEST SUBJECT TO THE SAME CONDITIONS AND CONSEQUENCES AS THE ORIGINAL TEST THIS WORK SHALL BE DONE AT THE CONTRACTOR'S EXPENSE.

METHOD OF MEASUREMENT

MEASUREMENT WILL BE MADE AS THE NUMBER OF FEET OF JOINT SEAL SYSTEM COMPLETELY INSTALLED, MEASURED HORIZONTALLY ALONG THE CENTERLINE OF THE JOINT BETWEEN THE OUTER LIMITS AS INDICATED IN THE PLANS

BASIS OF PAYMENT:

THE DEPARTMENT WILL PAY FOR ACCEPTED QUANTITIES AT THE CONTRACT PRICES AS FOLLOWS

IF THE CONTRACTOR CAUSES DAMAGE OR INJURY TO PUBLIC OR PRIVATE PROPERTY, THE DEPARTMENT WILL NOT PAY FOR RESTORING THE PROPERTY TO ITS ORIGINAL CONDITION

THE DEPARTMENT WILL NOT PAY FOR REPAIRING DEFLECTION JOINT SEAL SYSTEM DAMAGED DURING THE REMOVAL, SURFACE PREPARATION, INSTALLATION, RE-BONDING OR WATERTIGHT INTEGRITY TESTING

THE DEPARTMENT WILL NOT PAY FOR REPAIRING DEFLECTION JOINT SEAL SYSTEM BECAUSE OF FAILURE TO MEET THESE SPECIFICATIONS.

THE DEPARTMENT WILL NOT PAY FOR ADDITIONAL TESTING REQUIRED BY ANY HAULER, TREATMENT FACILITY, DISPOSAL FACILITY OR LANDFILL

THE COST OF MATERIAL, PRODUCING FIELD SAMPLES AND THE WATERTIGHT INTEGRITY TESTING IS CONSIDERED INCIDENTAL TO THE COST OF THE SPECIFIED DEFLECTION JOINT SEAL SYSTEM.

IF CONCRETE PATCHING IS REQUIRED, THE DEPARTMENT WILL PAY FOR THIS AS EXTRA WORK ACCORDING TO CMS 109 05

THE DEPARTMENT WILL NOT PAY FOR ACCESSING, INSPECTING, AND REPAIRING AREAS THAT ARE NOT FOUND TO BE IN CONFORMANCE WITH THE SPECIFICATIONS AND PERTINENT CONTRACT DOCUMENTS.

ALL OTHER REQUIREMENTS OF THIS SPECIFICATION ARE CONSIDERED INCIDENTAL TO THE WORK.

ITEM	UNIT	DESCRIPTION
SPECIAL	FOOT	CONTINUOUS SEAL IN STRUCTURAL STEEL JOINT

GENERAL NOTES CONTINUED: SEE SHEET 5/19

RICHLAND ENGINEERING LIMITED
29 NORTH PARK STREET
MANSFIELD, OHIO 44902

DESIGNED JDB | DRAWN KH | REVIEWED DAP | DATE 4/10/07
CHECKED DT | REVISED JDB | STRUCTURE FILE NUMBER 1809393

GENERAL NOTES - 3
BRIDGE NO CUY-90-1524
OVER CUYAHOGA RIVER

CUY-90-15.24
PID 76192

ITEM 516 - BEARING DEVICE, MISC.: RESET BEARING, WEST APPROACH SPAN GIRDER

THE ROCKERS UNDER THE APPROACH SPAN GIRDERS AT THE WEST END PIER WILL BE RELOCATED UNDER THIS ITEM. AFTER THE STEELWORK HAS BEEN LIFTED OFF OF THE ROCKERS, THE MASONRY PLATE WILL BE LIFTED AND REALIGNED AS SHOWN ON SHEET 16/19 A NEW LEAD OR NEOPRENE LEVELING PAD IS TO BE ADDED.

PAYMENT FOR ALL LABOR, MATERIALS AND EQUIPMENT REQUIRED, PER EACH BEARING, SHALL BE INCLUDED WITH THE FOLLOWING ITEM·

ITEM 516 - BEARING DEVICE, MISC.. RESET BEARING, WEST APPROACH SPAN GIRDER.

ITEM 516 - BEARING DEVICE, MISC.: CLEAN AND RESET BEARING, WEST END PIER BOX GIRDER

THE WEST END PIER BOX GIRDER EXPANSION ROCKERS SHALL BE COMPLETELY REMOVED, DISASSEMBLED AND CLEANED PRIOR TO PLACING IN THEIR FINAL POSITION. THE CONTRACTOR MAY, AT HIS OPTION, FURNISH ALL NEW MATERIAL IN ADDITION TO NEW MATERIAL SPECIFIED IN THE PLANS, IN LIEU OF REUSING EXISTING MATERIAL. IF THE CONTRACTOR CHOOSES TO FURNISH NEW MATERIAL, IT SHALL BE OF EQUIVALENT SIZE AND CONFIGURATION IN ACCORDANCE WITH ITEMS 513 AND 516, AT NO ADDITIONAL COST. EXISTING STEEL CASTINGS MAY BE REPLACED WITH WELDMENTS.

SHOP DRAWINGS SHALL BE FURNISHED PER C.M.S 501 04 FOR ALL NEW MATERIAL. PAYMENT FOR ALL LABOR, MATERIALS AND EQUIPMENT REQUIRED, PER EACH BEARING, SHALL BE INCLUDED WITH THE FOLLOWING ITEM:

ITEM 516 - BEARING DEVICE, MISC. CLEAN AND RESET BEARING, WEST END PIER BOX GIRDER.

ITEM 516 - JACKING AND TEMPORARY SUPPORT OF THE SUPERSTRUCTURE, AS PER PLAN

PREVIOUS INSPECTIONS, MEASUREMENTS AND STUDIES OF BRIDGE CUY-90-1524 HAVE IDENTIFIED MOVEMENT OF THE SUBSTRUCTURE FROM ITS ORIGINAL POSITION. THE WORK INCLUDES REPOSITIONING EXPANSION BEARINGS LONGITUDINALLY TO PROPERLY ALIGN THE BEARINGS.

THE BEARINGS SHALL BE RELOCATED TO PLACE THEM IN A VERTICAL POSITION AT 60° F. THE ESTIMATED DISTANCES FOR RELOCATING THE BEARINGS ARE.

	LONGITUDINAL
WEST END PIER BOX GIRDER NORTH BEARING	4¾" WEST (LOWER SHOE ONLY)
WEST END PIER BOX GIRDER SOUTH BEARING	3" WEST (LOWER SHOE ONLY)
WEST APPROACH GIRDER U BEARING	⅞" WEST
WEST APPROACH GIRDER V BEARING	¾" WEST

SEE "SEQUENCE OF CONSTRUCTION" GENERAL NOTE SHEET 2/19 FOR LIMITATIONS ON RELOCATION WORK.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN AND INSTALLATION OF AN ADEQUATE SUPPORT AND JACKING SYSTEM CAPABLE OF RAISING THE SPAN AND BEARINGS AS INDICATED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROPERLY ARRANGING ALL TEMPORARY SUPPORTS SO AS NOT TO DAMAGE OR INDUCE OVERSTRESS IN ANY EXISTING BRIDGE MEMBERS. A SUFFICIENT NUMBER OF JACKS OF ADEQUATE CAPACITY SHALL BE USED TO OFFSET THE DEAD LOAD REACTION OF THE STRUCTURE FOR VERTICAL LIFT TEMPORARY BEARINGS, SUPPORTS AND BLOCKING SHALL BE ADEQUATE TO CARRY THE LIVE LOAD IN ADDITION TO THE DEAD LOAD. TEMPORARY BEARINGS FOR LIVE LOAD CONDITIONS SHALL BE PLACED IN THE LOCATIONS OF THE EXISTING PERMANENT BEARINGS, NOT AT THE JACKING LOCATIONS THE ESTIMATED EXISTING DEAD LOAD AND LIVE LOAD REACTIONS AT THE WEST END PIER ARE TABULATED IN THE DRAWINGS, SHEETS 16/19 AND 17/19

THE PROPOSED TEMPORARY SUPPORTS ARE SHOWN FOR THE CONTRACTOR'S INFORMATION ONLY ADAPTATION OF THE TEMPORARY SUPPORTS IN WHOLE OR PART IS AT THE CONTRACTOR'S DISCRETION AND BECOMES SOLE RESPONSIBILITY OF THE CONTRACTOR.

MATERIALS FOR TEMPORARY SUPPORTS SHALL BE AS SPECIFIED IN C.M.S. 513. ALLOWABLE UNIT STRESSES MAY BE INCREASED BY 33% FOR TEMPORARY ERECTION LOADING CONDITIONS.

THE CONTRACTOR SHALL FURNISH JACKS WITH A TOTAL MINIMUM CAPACITY OF 150% OF THE ESTIMATED EXISTING DEAD LOAD. THE STRUCTURE SHALL NOT BE RAISED MORE THAN 2 5 INCHES TO REMOVE AND/OR RELOCATE THE BEARINGS. JACKS UNDER HYDRAULIC PRESSURE SHALL NOT BE USED TO SUPPORT LIVE LOADS JACKS SHALL BE SHIMMED TIGHT OR OTHERWISE BLOCKED WHEN UNDER LIVE LOAD. PROVISION FOR EXPANSION AND CONTRACTION MOVEMENT OF THE STRUCTURE WITH TEMPERATURE CHANGE SHALL BE MADE AT ALL TIMES THE STRUCTURE SHALL NOT BE SUPPORTED ON VERTICAL JACKS AT THE WEST END PIER WITHOUT EXPANSION AND CONTRACTION PROVISIONS DURING NON-WORKING HOURS OR WHILE UNATTENDED BY CONTRACTOR'S PERSONEL

TEMPORARY JACKS, BLOCKING, AND ROLLER DEVICES OR LOW FRICTION SLIDERS SHALL BE USED FOR SUPPORT ON TOP OF THE SUBSTRUCTURE UNITS THE EXISTING STRUCTURE MEMBERS MAY BE REINFORCED WITH MATERIAL ADDED ONLY WITH THE APPROVAL OF THE DIRECTOR.

JACKS FOR LIFTING THE STRUCTURE SHALL BE HYDRAULIC RAM TYPE WITH ELECTRIC POWER PUMPS MULTIPLE JACKS AT A SINGLE BEARING LOCATION SHALL BE CONNECTED TO A HYDRAULIC MANIFOLD AND OPERATED BY A SINGLE PUMP TO PROVIDE EQUAL LIFTING PRESSURE. THE CONTRACTOR SHALL FURNISH PERSONNEL TO OPERATE AND/OR OBSERVE JACKS AT EACH BEARING LOCATION

THE CONTRACTOR SHALL SUBMIT DETAILS OF THE PROPOSED TEMPORARY SUPPORT SYSTEM AND METHODS AND PROCEDURES FOR MOVING THE BEARINGS TO THE DIRECTOR FOR APPROVAL PRIOR TO BEGINNING WORK THE SUBMITTAL SHALL INDICATE MATERIALS, MEMBER SIZES, SPACINGS, JACK POINT LOCATIONS, JACKING LOADS, AND INSTALLATION AND REMOVAL PROCEDURES. DETAILED PLANS OF THE TEMPORARY SUPPORT SHALL BE PREPARED BY AN OHIO REGISTERED PROFESSIONAL ENGINEER AND SHALL BEAR HIS SIGNATURE AND NUMBER OF PROFESSIONAL ENGINEERING SEAL THE CONTRACTOR SHALL SUBMIT THREE (3) COPIES OF THE PLANS AND TWO (2) COPIES OF THE DESIGN CALCULATIONS TO THE DIRECTOR, AT LEAST FIFTEEN (15) DAYS PRIOR TO BEGINNING WORK, AND SHALL RECEIVE APPROVAL BEFORE STARTING

ATTACHMENTS MADE BY WELDING TO ANY STRUCTURAL MEMBER SHALL BE APPROVED BY THE DIRECTOR BEFORE SUCH ATTACHMENTS ARE MADE. DETAILS OF THE ATTACHMENTS SHALL BE SUBMITTED AS PART OF THE SUPPORT PLANS, OR INDEPENDENTLY BY A SIMILAR SUBMISSION. APPROVAL OF THE PLAN SHALL NOT RELIEVE THE CONTRACTOR OF RESPONSIBILITY FOR THE BEHAVIOR OF THE SUPPORTS OR THE WORK NECESSARY TO MOVE THE BEARINGS

EXISTING BRIDGE SEATS SHALL BE PREPARED PER C.M.S 516 07 AS NECESSARY TO PROVIDE A SMOOTH AND LEVEL SEAT FOR THE BEARINGS IN THE NEW POSITIONS.

AFTER ALL RELOCATION AND BEARING WORK IS COMPLETE, ALL JACKS AND TEMPORARY SUPPORT MATERIAL SHALL BE REMOVED.

PAYMENT FOR ALL LABOR, MATERIALS, AND EQUIPMENT REQUIRED FOR RELOCATING BEARINGS, INCLUDING ALL TEMPORARY SUPPORTS, JACKING, AND SUBMITTAL SHALL BE INCLUDED IN THE LUMP SUM PRICE BID AS FOLLOWS

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

ITEM 518 - PIPE DOWNSPOUT, INCLUDING SPECIALS, 18"x14", AS PER PLAN

DOWNSPOUT SHALL BE A WELDED GALVANIZED STEEL BOX FABRICATED AS SHOWN ON SHEET 13/19. ANY ELBOWS SHALL BE WELDED FITTINGS WITH FULL PENETRATION BUTT WELDS ELBOWS AND DOWNSPOUT INLETS SHALL BE SHOP FABRICATED WITH THE DOWNSPOUTS

DOWNSPOUT SHALL HAVE A WALL THICKNESS OF 0 375 INCHES

ELBOWS AND BENDS SHALL BE SMOOTH RADIUS OR FABRICATED WITH A SINGLE MITER CUT

STEEL MATERIALS FOR DOWNSPOUTS, INCLUDING ELBOWS, MOUNTING BRACKETS, COUPLINGS AND ALL HARDWARE SHALL BE GALVANIZED PER C M S 711 02 AFTER FABRICATION.

DOWNSPOUTS SHALL BE SUPPORTED BY BRACKETS AS SHOWN IN THE PLANS UNLESS OTHERWISE NOTED. THESE BRACKETS ARE TO BE CONSIDERED INCIDENTAL TO THE DOWNSPOUT PIPE AND NO EXTRA PAYMENT SHALL BE MADE

DOWNSPOUT INLETS SHALL BE INCLUDED IN THE MEASURED LENGTH OF THE DOWNSPOUT

SHOP DRAWINGS SHALL BE FURNISHED PER C.M.S. 501.04 FOR ALL 518 ITEMS.

ITEM 518 - STRUCTURE DRAINAGE, MISC.: NYLON REINFORCED NEOPRENE FLASHING END CAP

ITEM 518 - STRUCTURE DRAINAGE, MISC.: NYLON REINFORCED NEOPRENE FLASHING END

ITEM 518 - STRUCTURE DRAINAGE, MISC.: NYLON REINFORCED NEOPRENE GUTTER

THE NYLON REINFORCED NEOPRENE SHEET (NRNS) MATERIAL SHALL BE 3/32" THICK GENERAL PURPOSE, HEAVY DUTY ELASTOMERIC SHEET OF NYLON FABRIC ENCASED IN A NEOPRENE POLYMER THE MATERIAL IN PLACE WAS SPECIFIED AS "FAIRPRENE" NUMBER NN-0003 AS MANUFACTURED BY THE DUPONT COMPANY, FABRICS AND FINISHES DEPARTMENT, SPECIALTY PRODUCTS DIVISION, WILMINGTON, DELEWARE, "WINGPRENE STYLE N" AS MANUFACTURED BY THE GOODYEAR TIRE AND RUBBER COMPANY OR AN APPROVED EQUAL THE NEW MATERIAL SHALL BE COMPATIBLE WITH THESE.

THE ONE PLY MATERIAL SHALL CONFORM TO ASTM D751 AND THE FOLLOWING:

THICKNESS	0 094 INCH ± 0 01 INCH
MINIMUM BREAKING STRENGTH, GRAB	700 x 700 LB.
MINIMUM ADHESION	1" STRIP, 2" MIN. - 9 LBS
MINIMUM BURSTING STRENGTH	1,400 PSI
HEAT AGING AFTER 70 HOURS, 180° BEND WITHOUT CRACKING	212°F
LOW TEMPERATURE BRITTLENESS	ASTM D2136
PASS FLEX TEST AFTER 5 HOURS AT	MINUS 40°F

THE EXISTING NYLON REINFORCED NEOPRENE SHEET FLASHING HAS BEEN IN PLACE FOR APPROXIMATELY 18 YEARS. THE NEW MATERIAL WILL OVERLAP THE EXISTING SHEETS TO REMAIN BY A MINIMUM OF 6 INCHES THE EXISTING BOLTS AND CLAMP BARS WILL BE LOOSENED AND THE NEW SHEETS PLACED AS SHOWN THE EXISTING BOLTS WILL THEN BE RETIGHTENED.

ADHESIVES FOR BONDING NEW MATERIAL TO EXISTING MATERIAL SHALL BE FAIRPRENE NEOPRENE ADHESIVE NZ-5140 AS MANUFACTURED BY THE DUPONT COMPANY, CHEMLOK 220/205 AS MANUFACTURED BY HUGHSON CHEMICALS, LORD CORPORATION, ERIE, PENNSYLVANIA, OR APPROVED EQUAL. THE ADHESIVE SHALL BE USED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS ALL SURFACES WHERE ADHESIVE IS TO BE PLACED SHALL BE THOROUGHLY CLEANED OF ALL RUST, DIRT, WATER AND OTHER FOREIGN MATERIALS BEFORE ADHESIVE IS APPLIED. ALL SPLICES SHALL BE LAPPED AS DETAILED ON THE PLANS. PRESSURE SHALL BE APPLIED TO JOINED PIECES UNTIL ADHESIVE SETS. ALL REPAIRS ARE TO BE COMPLETED WITH SINGLE SHEETS OF NRNS. SPLICES WILL NOT BE PERMITTED TO CONNECT NEW MATERIAL TO NEW MATERIAL

FABRICATION, HANDLING, SPLICING AND INSTALLATION OF THE NRNS SHALL BE IN STRICT ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

PAYMENT FOR THE NRNS MATERIAL, ADHESIVE, CLEANING EXISTING MATERIAL, SUPPORTS, FABRICATION AND INSTALLATION SHALL BE INCLUDED IN THE PRICE BID AS FOLLOWS.

ITEM 518 - STRUCTURE DRAINAGE, MISC. NYLON REINFORCED NEOPRENE FLASHING END CAP - EACH

ITEM 518 - STRUCTURE DRAINAGE, MISC.· NYLON REINFORCED NEOPRENE FLASHING END - EACH

ITEM 518 - STRUCTURE DRAINAGE, MISC : NYLON REINFORCED NEOPRENE GUTTER - EACH

ITEM SPECIAL - STRUCTURE, MISC.: DEFLECTION JOINT REPAIR

WORK UNDER THIS ITEM INCLUDES. REMOVAL, MATERIALS, EQUIPMENT, TOOLS AND LABOR TO REPAIR THE BROKEN DEFLECTION JOINT AT FLOORBEAM 7 OF SPAN 7 IN THE WESTBOUND LANES, AS SHOWN ON SHEET 10/19.

WORK INCLUDES FIELD MEASURING THE BREAK AND FABRICATING THE REPAIR MATERIAL.

DURING A COMPLETE ROADWAY CLOSURE, THE PORTION OF THE DECK CONCRETE SHALL BE REMOVED, THE STEEL CHANNEL TRIMMED TO ACCEPT THE REPAIR, THE REPAIR ANGLE PLACED AND WELDED INTO PLACE, AND THE END OF THE DECK CAST WITH A QUICK SETTING CONCRETE MORTAR, 705.21 AND FINISHED.

ALL REMOVALS SHALL COMPLY WITH THE REQUIREMENTS OF CMS 202.

ALL WORK WILL BE COORDINATED AND DONE DURING ONE OF THE SCHEDULED COMPLETE CLOSURES OF THE ROADWAY FOR BEARING WORK AT THE WEST END PIER.

THE LUMP SUM PRICE BID FOR ITEM SPECIAL - STRUCTURE, MISC DEFLECTION JOINT REPAIR WILL INCLUDE ALL THE SPECIFIED WORK NEEDED TO COMPLETE THIS ITEM. NO EXTRA PAYMENTS WILL BE MADE

ITEM SPECIAL - STRUCTURE, MISC.: CAULK WATER STOP

THIS ITEM SHALL INCLUDE THE FURNISHING OF ALL MATERIALS, LABOR, AND EQUIPMENT REQUIRED FOR SOLVENT CLEANING AND INSTALLING THE NEW CAULK WATER STOPS AS SHOWN IN THE PLANS AND AS SPECIFIED HEREIN

SURFACE PREPARATION:
ALL GREASE, OIL, ASPHALT CEMENT, SALT, DIRT, BIRD NESTINGS, ETC. SHALL BE REMOVED BY SOLVENT CLEANING IN ACCORDANCE WITH CMS 514 PRIOR TO INSTALLING NEW CAULKING. ALL SOLVENT CLEANED AREAS SHALL BE WASHED WITH POTABLE WATER AFTER SOLVENT CLEANING AND BEFORE STARTING CAULKING.

USE EQUIPMENT CAPABLE OF DELIVERING THE WATER AT A NOZZLE PRESSURE OF AT LEAST 1000 POUNDS PER SQUARE INCH AND AT A RATE OF NOT LESS THAN 4 GALLONS PER MINUTE. PROVIDE GAUGES ON THE EQUIPMENT TO VERIFY THE PRESSURE DURING OPERATION HOLD THE NOZZLE A MAXIMUM OF 12 INCHES FROM THE SURFACE BEING WASHED THE CONTRACTOR SHALL TAKE CARE NOT TO DAMAGE THE EXISTING PAINT SYSTEM DURING SURFACE PREPARATION OPERATIONS

CAULK MATERIAL:
USE A TWO-COMPONENT, NON-SAG, NON-SHRINK 100 PERCENT SOLIDS EPOXY ONLY MATERIAL THAT IS LISTED ON THE OFFICE OF MATERIALS MANAGEMENT QUALIFIED PRODUCT LIST WEBSITE MAY BE USED.

APPLICATION:
THE CONTRACTOR SHALL ENSURE COMPATIBILITY OF NEW CAULK OVER THE EXISTING PAINT SYSTEM. THE CAULKING MATERIAL SHALL HAVE AN EXCELLENT ADHESION TO THE EXISTING PAINT AND BE SUITABLE FOR APPLICATION TO VERTICAL AND OVERHEAD AREAS THE EXISTING TOP COAT IS VINYL.

SURFACES TO BE CAULKED SHALL BE CLEAN, DRY, SOUND AND ABOVE 40 DEGREES FAHRENHEIT

PAYMENT:
ALL COSTS OF INSTALLING THE NEW CAULK WATER STOPS TO THE SATISFACTION OF THE ENGINEER, INCLUDING SOLVENT CLEANING, MATERIALS, EQUIPMENT, LABOR, AND INCIDENTALS, SHALL BE INCLUDED UNDER ITEM SPECIAL - STRUCTURE, MISC.. CAULK WATER STOP, PER EACH LOCATION

RICHLAND ENGINEERING LIMITED
29 NORTH PARK STREET
MANSFIELD, OHIO 44902

DESIGNED JDB | DRAWN KH | REVIEWED DAP | DATE 4/10/07
CHECKED DT | REVISED JDB | STRUCTURE FILE NUMBER 1809393

GENERAL NOTES - 4
BRIDGE NO. CUY-90-1524
OVER CUYAHOGA RIVER

CUY-90-15.24
PID 76192

5 / 19

14 / 28

ESTIMATED QUANTITIES

CALCULATED DT DATED 3/07
CHECKED JDB DATED 3/07

ITEM	ITEM EXT.	TOTAL	UNIT	DESCRIPTION	SUPER.	SUBSTR.	GENERAL	SEE SHEET
202	11201	LUMP		PORTIONS OF STRUCTURE REMOVED, AS PER PLAN	LUMP	LUMP		2 / 19
512	10300	149	SY	SEALING CONCRETE BRIDGE DECKS WITH HMWM RESIN	149			
513	90000	9006	LB	STRUCTURAL STEEL, MISC.· PERMANENT JACKING SUPPORTS, LEVEL UF	9006			16-18/19
513	95030	8	EACH	STRUCTURAL STEEL, MISC.· PENCIL ABRASIVE BLASTING, GRINDING AND NDT	8			3 / 19
513	95030	8	EACH	STRUCTURAL STEEL, MISC · DRILLING STRUCTURAL STEEL, GRINDING AND NDT	8			3 / 19
513	95030	12	EACH	STRUCTURAL STEEL, MISC.· SWEDGE ANCHOR BOLTS (1½" DIA. x 2'-6") WITH NUT AND WASHER	12			18/19
513	95030	6	EACH	STRUCTURAL STEEL, MISC.· STRINGER BOTTOM FLANGE RETROFIT	6			3 / 19
SPECIAL	51614110	2631	FT	CONTINUOUS SEAL IN STRUCTURAL STEEL JOINT	2631			3 / 19
516	46900	2	EACH	BEARING DEVICE, MISC · RESET BEARING, WEST APPROACH SPAN GIRDER	2			5 / 19
516	46900	2	EACH	BEARING DEVICE, MISC.: CLEAN AND RESET BEARING, WEST END PIER BOX GIRDER	2			5 / 19
516	47001	LUMP		JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE, AS PER PLAN	LUMP			5 / 19
518	51201	35	LF	PIPE DOWNSPOUT, INCLUDING SPECIALS, 18"x14", AS PER PLAN	35			5 / 19
518	62200	1	EACH	STRUCTURE DRAINAGE, MISC NYLON REINFORCED NEOPRENE FLASHING END CAP	1			5 / 19
518	62200	1	EACH	STRUCTURE DRAINAGE, MISC.: NYLON REINFORCED NEOPRENE FLASHING END	1			5 / 19
518	62200	2	EACH	STRUCTURE DRAINAGE, MISC.: NYLON REINFORCED NEOPRENE GUTTER	2			5 / 19
518	62200	7	EACH	STRUCTURE DRAINAGE, MISC.. DOWNSPOUT END MODIFICATION	7			14/19
SPECIAL	53000200	LUMP		STRUCTURE, MISC · DEFLECTION JOINT REPAIR	LUMP			5 / 19
SPECIAL	53000400	96	EACH	STRUCTURE, MISC · CAULK WATER STOP	96			5 / 19

INDEX OF SHEETS

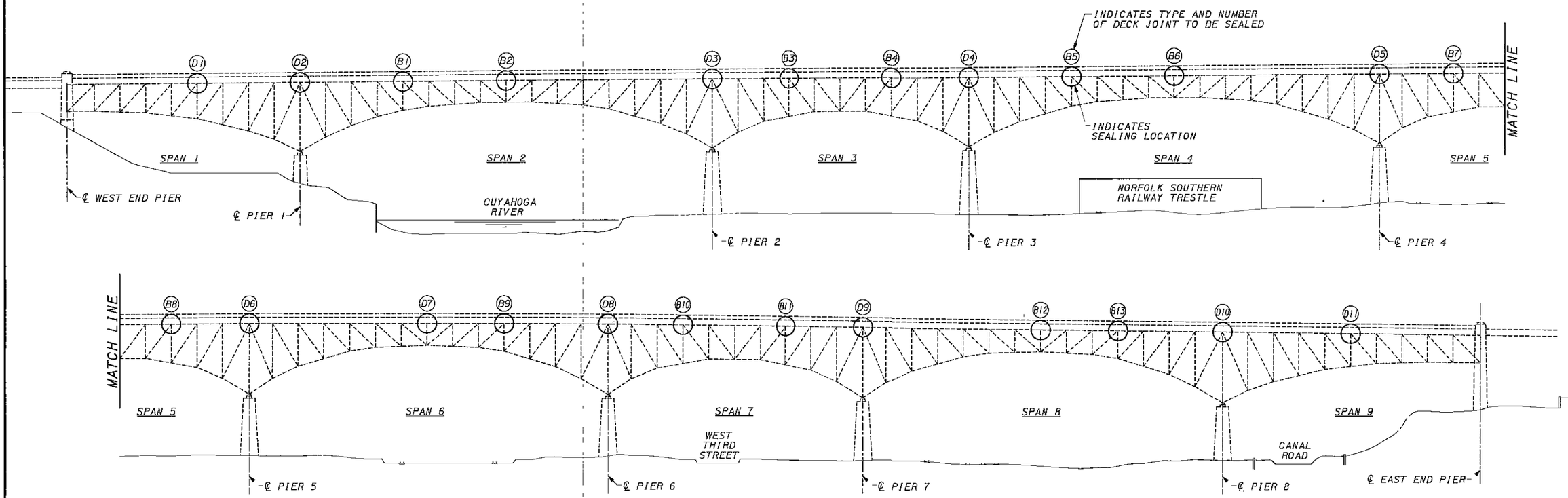
RICHLAND ENGINEERING LIMITED
29 NORTH PARK STREET
MANSFIELD, OHIO 44902

DESIGNED JDB
DRAWN KH
CHECKED DT
REVISED JDB
REVIEWED DAP
DATE 4/10/07
STRUCTURE FILE NUMBER 1809393

ESTIMATED QUANTITIES
BRIDGE NO. CUY-90-1524
OVER CUYAHOGA RIVER

CUY-90-15.24
PID 76192

CU090EQ-STEEL.DGN 4/12/07 KH,RC,TWH

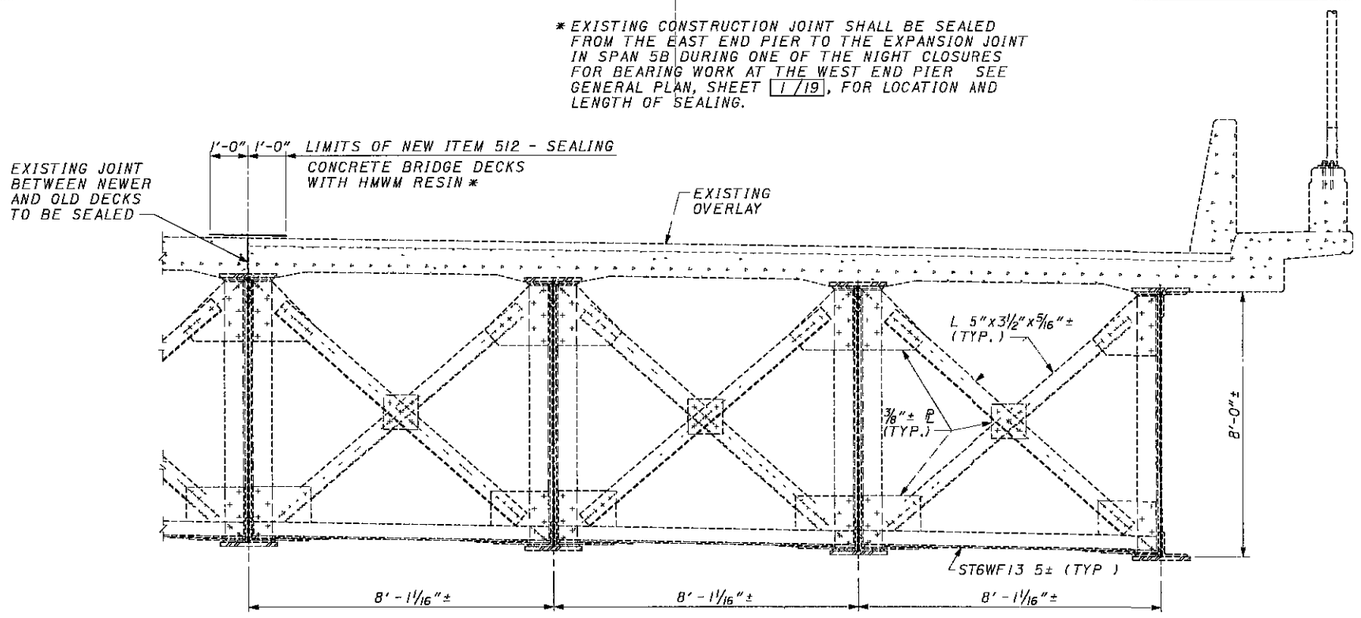


ELEVATION

NOTES

TYPE B JOINT SEALING DETAILS: SEE SHEET 8/19.

TYPE D JOINT SEALING DETAILS: SEE SHEET 9/19.



PARTIAL TRANSVERSE SECTION

(EASTBOUND FORWARD APPROACH SPAN 4B SHOWN)

NOTES

MATERIALS SHOWN ARE EXISTING UNLESS OTHERWISE NOTED

CU090PL-STEEL.DGN 4/12/07 TWH,KH

RICHLAND ENGINEERING LIMITED
29 NORTH PARK STREET
MANSFIELD, OHIO 44902

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DT		1809393	

JOINT SEALING LOCATIONS
BRIDGE NO. CUY-90-1524
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CUY-90-15.24
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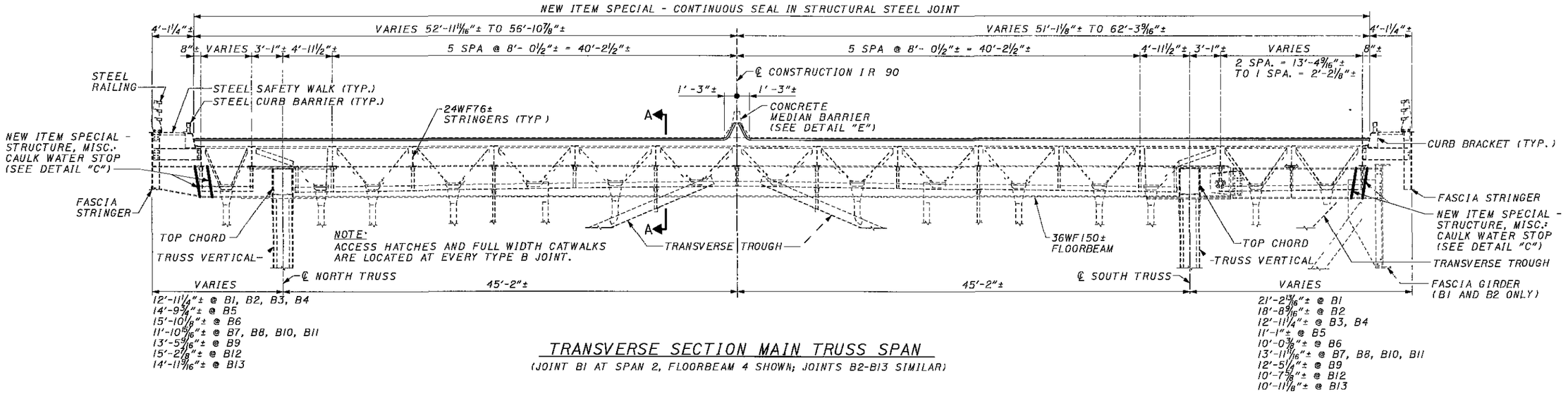
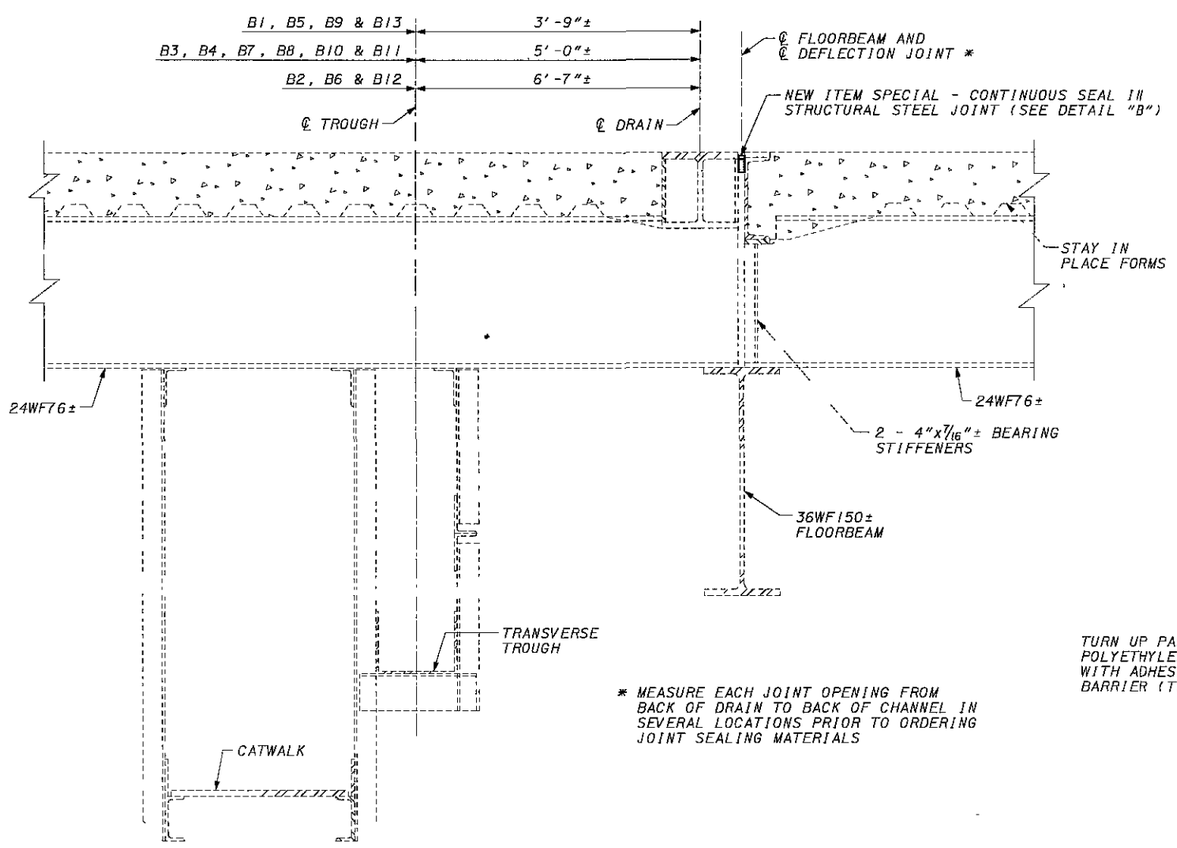


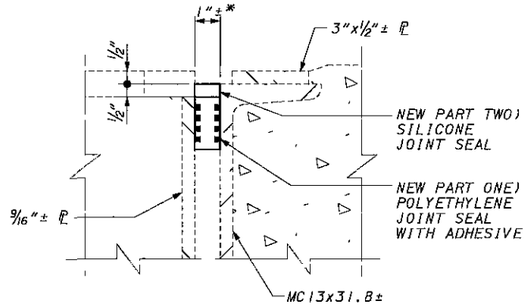
TRANSVERSE SECTION MAIN TRUSS SPAN

(JOINT B1 AT SPAN 2, FLOORBEAM 4 SHOWN; JOINTS B2-B13 SIMILAR)



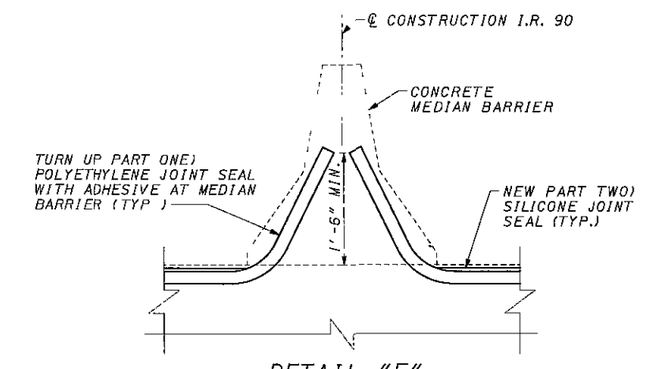
SECTION A-A

* MEASURE EACH JOINT OPENING FROM BACK OF DRAIN TO BACK OF CHANNEL IN SEVERAL LOCATIONS PRIOR TO ORDERING JOINT SEALING MATERIALS



DETAIL "B"

(PROPOSED)



DETAIL "E"

LEGEND

B1, B2, ETC. INDICATES TYPE AND NUMBER OF DECK JOINT TO BE SEALED

NOTES

MATERIALS SHOWN ARE EXISTING UNLESS OTHERWISE NOTED.

DETAIL "C": SEE SHEET 9/19

JOINT SEALING AND CAULK LOCATIONS: SEE SHEET 7/19

JOINT SEALING NOTES: SEE GENERAL NOTES SHEET 3/19

CAULK WATER STOP NOTES: SEE GENERAL NOTES SHEET 5/19

RICHLAND ENGINEERING LIMITED
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TYPE B JOINT SEALING DETAILS

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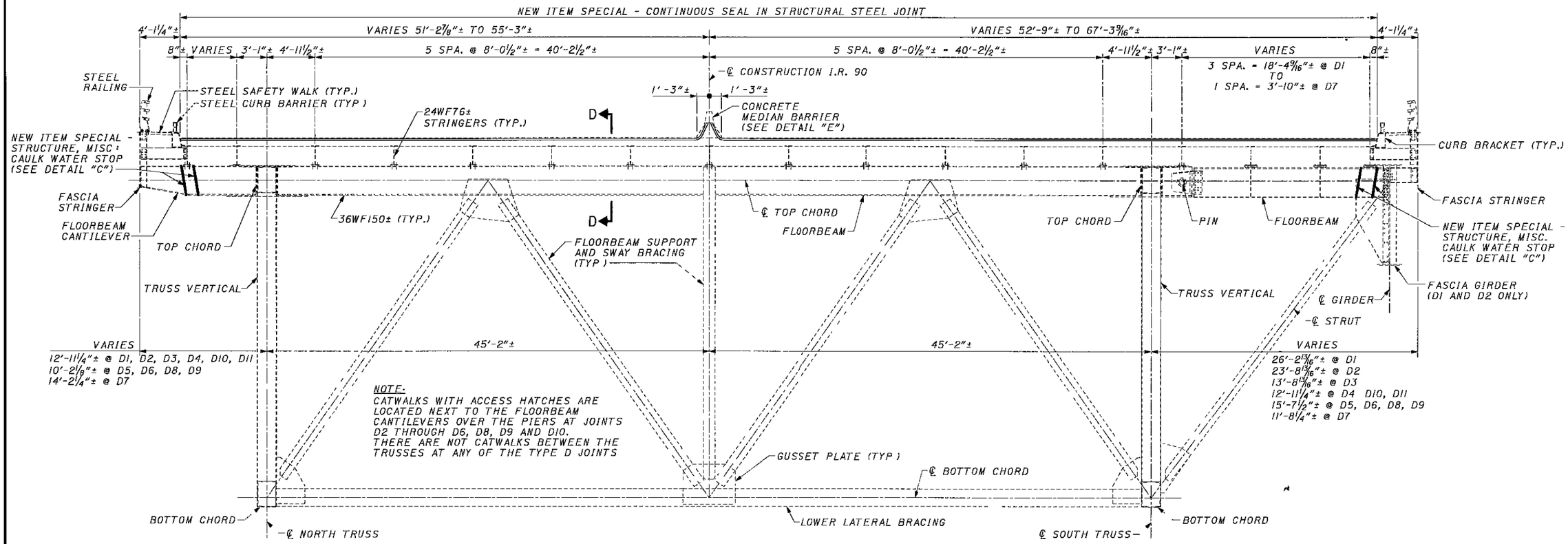
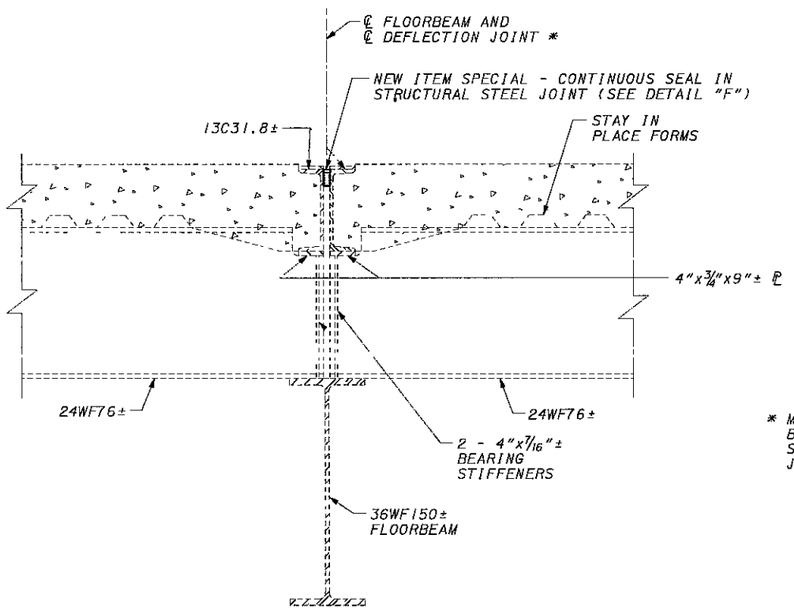
CU090PD2-STEEL DGN 4/12/07 TWH,KH,RC

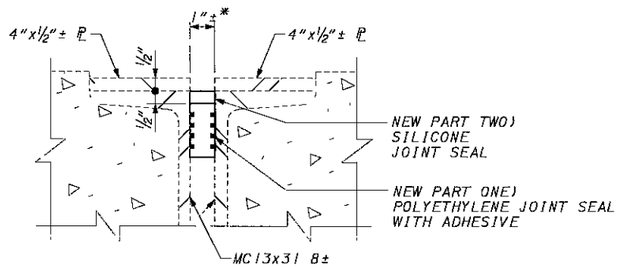


TRANSVERSE SECTION MAIN TRUSS SPAN

(JOINT D1 AT SPAN 1, FLOORBEAM 5 SHOWN ; JOINTS D2 - D11 SIMILAR)

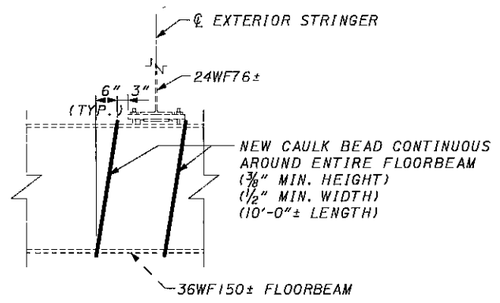


SECTION D-D



DETAIL "F"

* MEASURE EACH JOINT OPENING FROM BACK OF CHANNEL TO BACK OF CHANNEL IN SEVERAL LOCATIONS PRIOR TO ORDERING JOINT SEALING MATERIALS



DETAIL "C"

(SOUTH END OF FLOORBEAM SHOWN; NORTH END OPPOSITE HAND)

LEGEND

D1, D2, ETC. INDICATES TYPE AND NUMBER OF DECK JOINT TO BE SEALED

NOTES

MATERIALS SHOWN ARE EXISTING UNLESS OTHERWISE NOTED.

DETAIL "E": SEE SHEET 8/19.

JOINT SEALING AND CAULK LOCATIONS: SEE SHEET 7/19.

JOINT SEALING NOTES: SEE GENERAL NOTES SHEET 3/19.

CAULK WATER STOP NOTES: SEE GENERAL NOTES SHEET 5/19

RICHLAND ENGINEERING LIMITED
29 NORTH PARK STREET
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DATE 4/10/07
STRUCTURE FILE NUMBER 1809393
REVIEWED DAP
DRAWN KH
REVISED
DESIGNED JDB
CHECKED DT

TYPE D JOINT SEALING DETAILS

BRIDGE NO. CUY-90-1524
OVER CUYAHOGA RIVER

CUY-90-15.24
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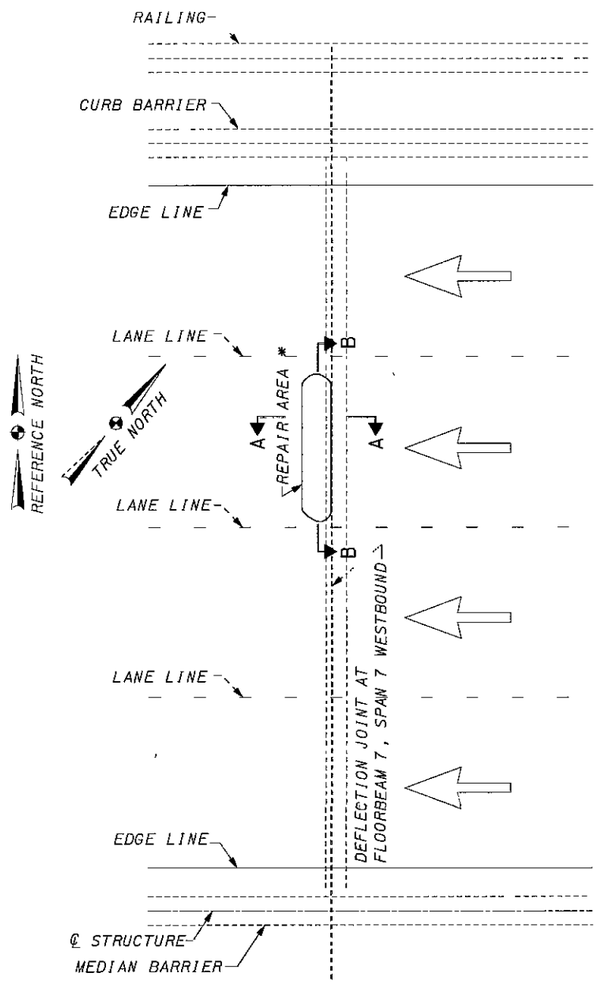
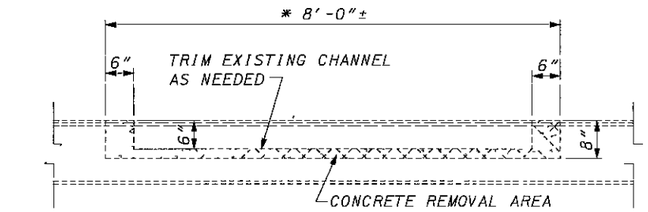
9/19

18/28

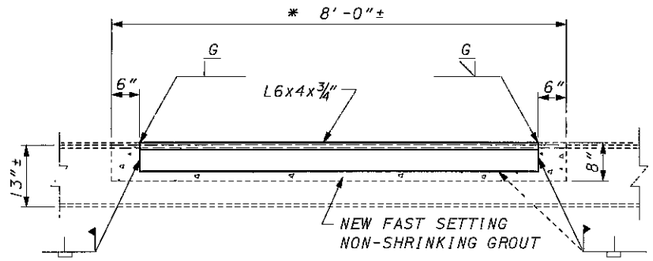
CU090PDI-STEEL DCN 4/12/07 TWH,KH,RC



PLAN

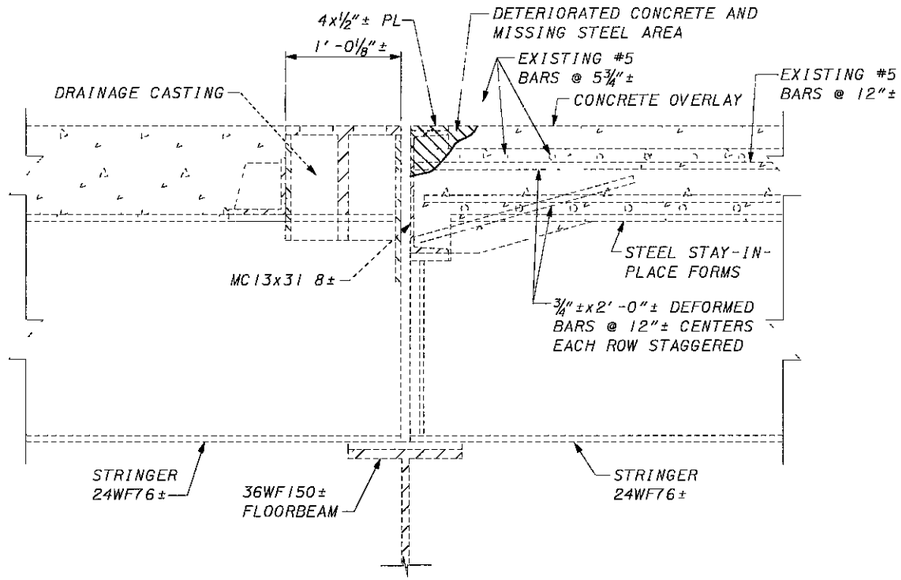


EXISTING SECTION B-B



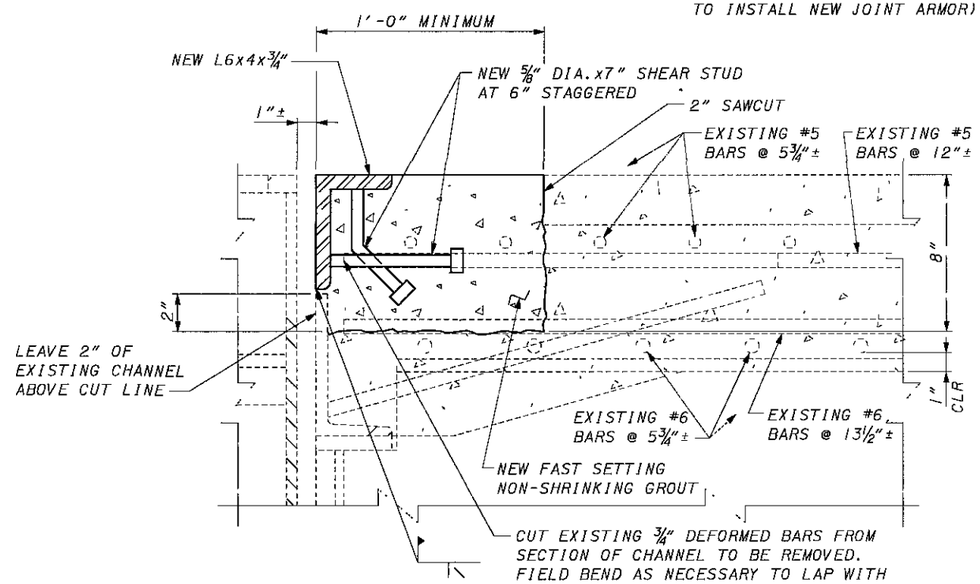
PROPOSED SECTION B-B

* CONTRACTOR SHALL FIELD VERIFY LENGTH OF L6x4x¾" REQUIRED TO COMPLETE THE REPAIR WITH ENOUGH ADDITIONAL LENGTH PROVIDED TO TRIM THE ANGLE TO FIT AGAINST THE EXISTING CHANNEL AND PLATE TO REMAIN.



SECTION A-A

NOTE:
EXISTING REINFORCING STEEL TO REMAIN (BEND AS NECESSARY TO INSTALL NEW JOINT ARMOR)



REPAIR DETAIL

NOTES

MATERIALS SHOWN ARE EXISTING UNLESS NOTED OTHERWISE.

DEFLECTION JOINT REPAIR LOCATION: SEE SHEET 7/19.

DEFLECTION JOINT REPAIR NOTES: SEE GENERAL NOTES SHEET 5/19.

ADDITIONAL NOTES AND MATERIAL PROPERTIES: SEE STANDARD DRAWING EXJ-4-87.

RICHLAND ENGINEERING LIMITED
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DEFLECTION JOINT REPAIR DETAILS

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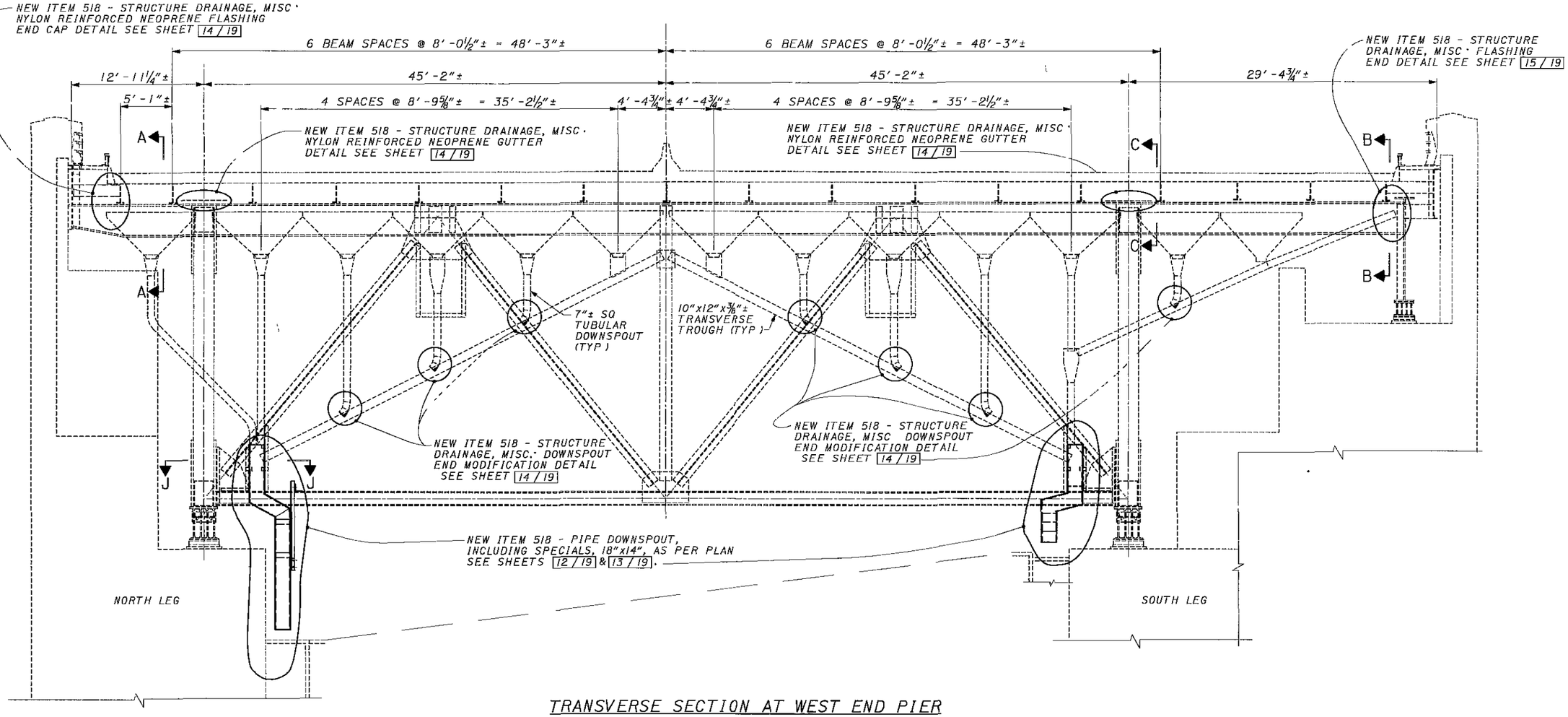
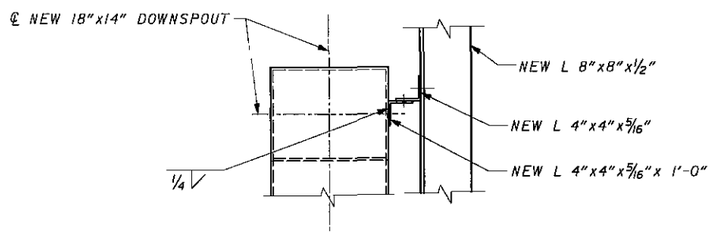


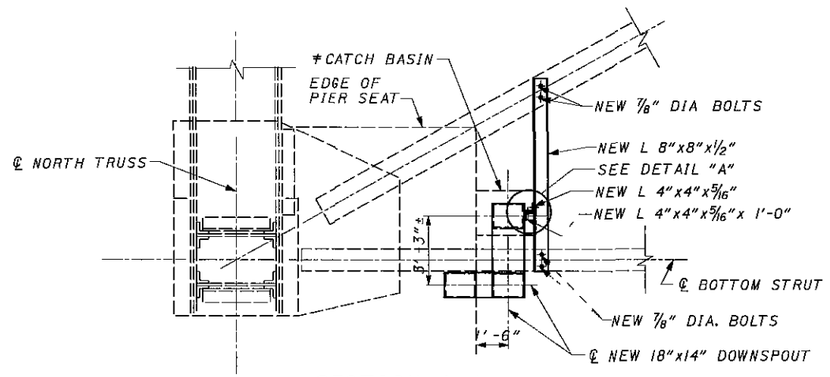
TRANSVERSE SECTION AT WEST END PIER

NOTE· ACCESS HATCHES AND FULL WIDTH CATWALKS ARE LOCATED AT THE WEST END PIER.

*EXISTING CATCH BASINS AT WEST END PIER HAVE BEEN FILLED WITH CONCRETE



DETAIL "A"



SECTION J-J

NOTES

MATERIALS SHOWN ARE EXISTING UNLESS OTHERWISE NOTED.

SECTIONS A-A & C-C: SEE SHEET 14/19

SECTION B-B: SEE SHEETS 15/19

CU090DDI-STEEL.DGN 12/22/06 TWH,HN,JL's

RICHLAND ENGINEERING LIMITED
29 NORTH PARK STREET
MANSFIELD, OHIO 44902

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DRAINAGE DETAILS - 1
BRIDGE NO. CUY-90-1524
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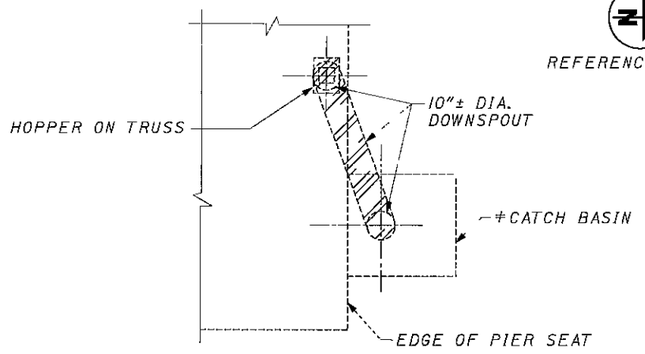
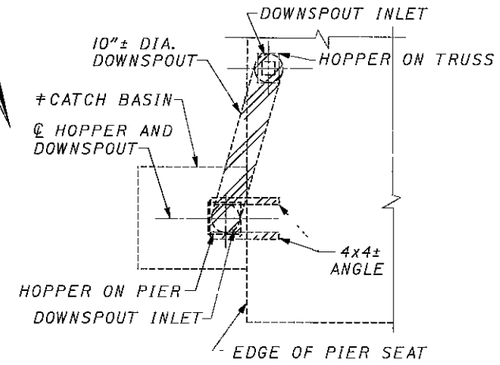


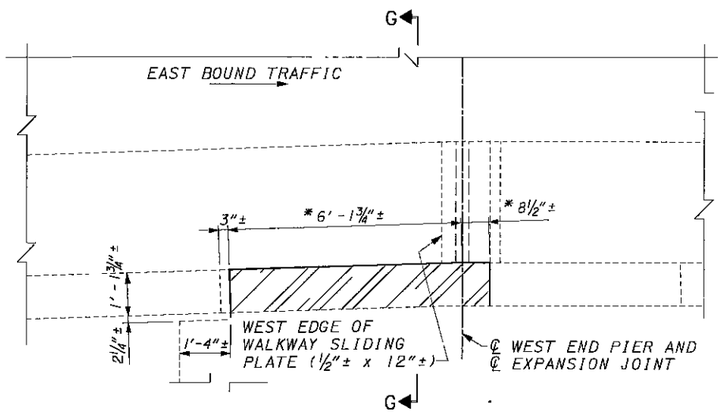
WEST END PIER SOUTH LEG PLAN

REFERENCE NORTH

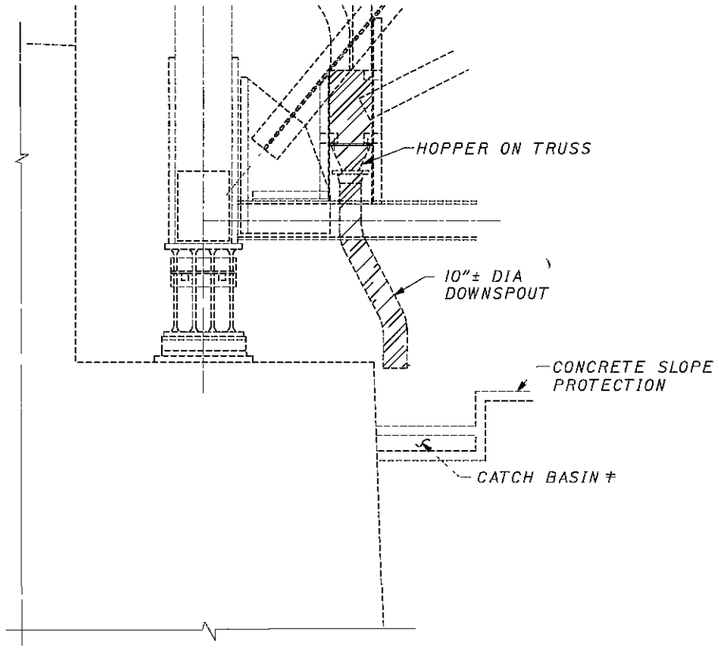


WEST END PIER NORTH LEG PLAN

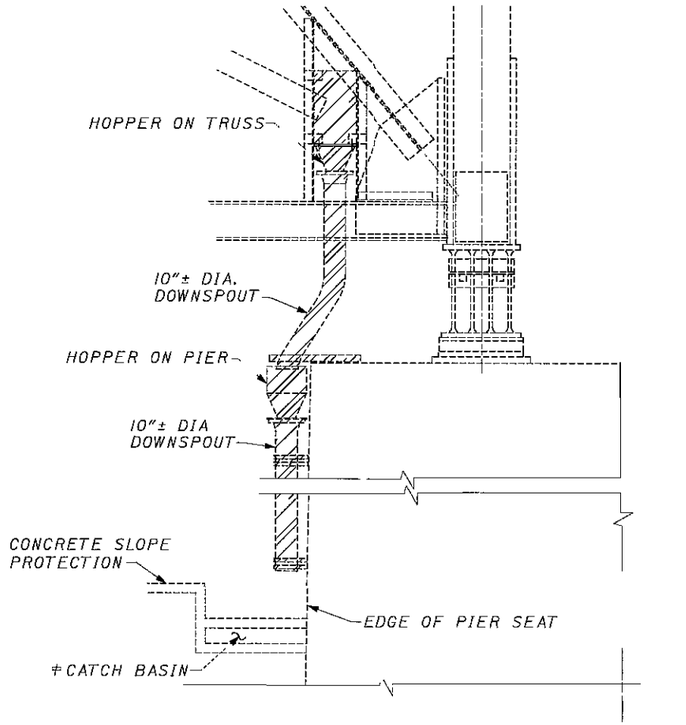
REFERENCE NORTH



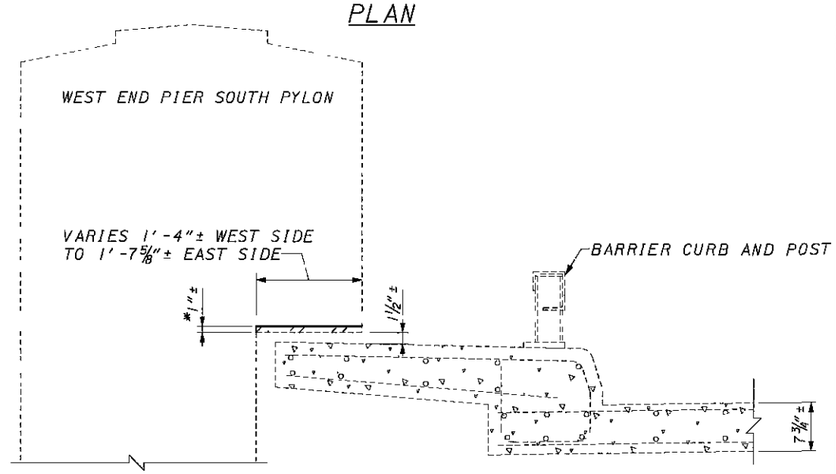
PLAN



WEST END PIER SOUTH LEG ELEVATION



WEST END PIER NORTH LEG ELEVATION



SECTION G-G

* SAW CUT PORTION OF WEST END PIER PYLONS AS SHOWN TO PROVIDE ADEQUATE CLEARANCE FOR VERTICAL JACKING OF BOX FLOORBEAM. PAYMENT SHALL BE INCLUDED WITH ITEM 202 - PORTIONS OF STRUCTURE REMOVED, AS PER PLAN (SOUTH PYLON SHOWN, NORTH PYLON SIMILAR.)

≠ EXISTING CATCH BASINS AT WEST END PIER HAVE BEEN FILLED WITH CONCRETE

LEGEND

▨ ITEM 202- PORTIONS OF STRUCTURE REMOVED, AS PER PLAN

NOTES

MATERIALS SHOWN ARE EXISTING UNLESS OTHERWISE NOTED

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DRAINAGE DETAILS - 2
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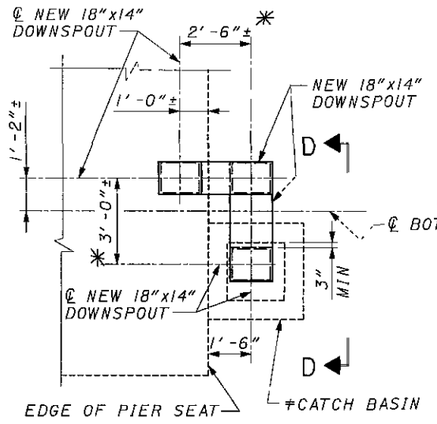
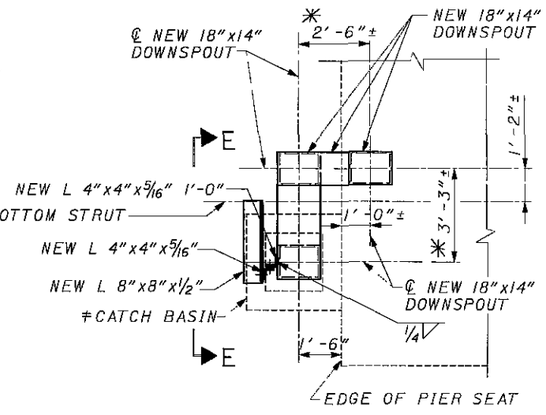
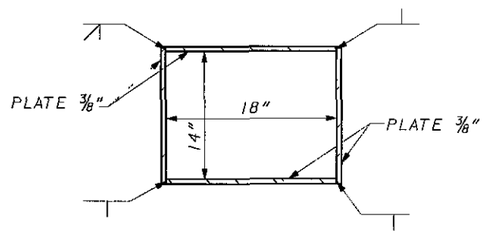
CU090DD2-STEEL DGN 4/12/07 HN,JLS,KH,TWH



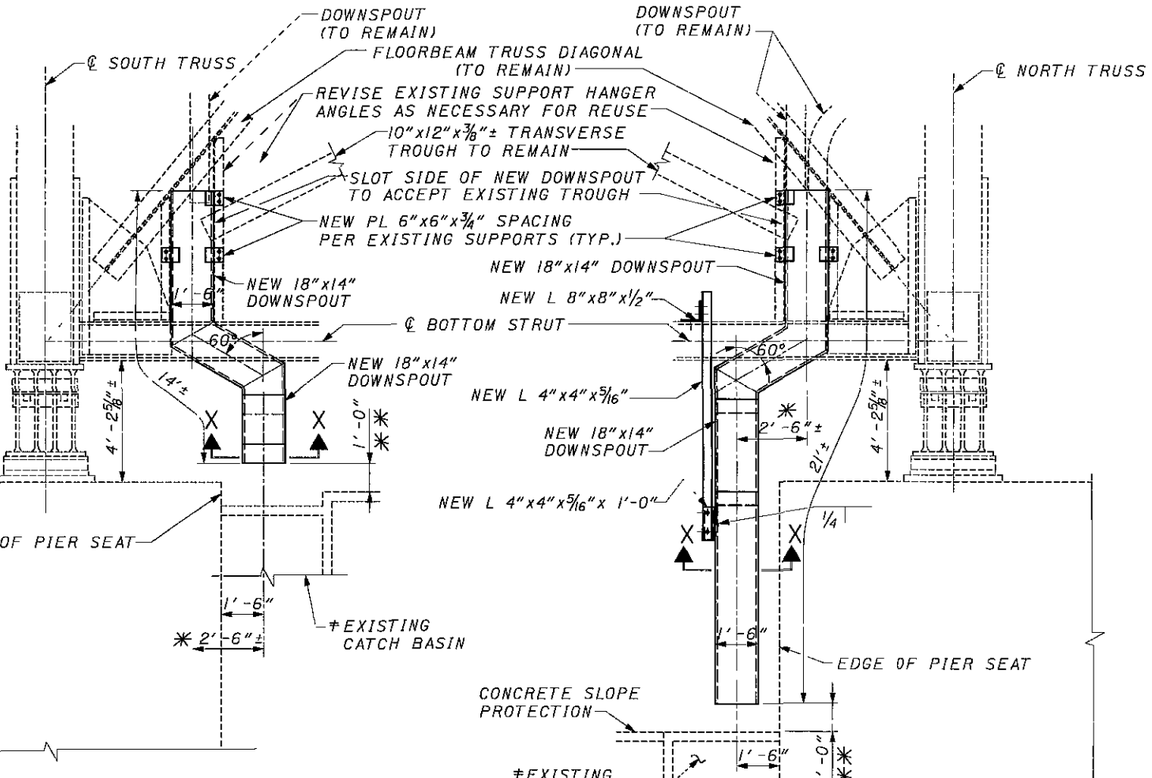


* CONTRACTOR SHALL FIELD MEASURE PRIOR TO DOWNSPOUT FABRICATION



SECTION X-X

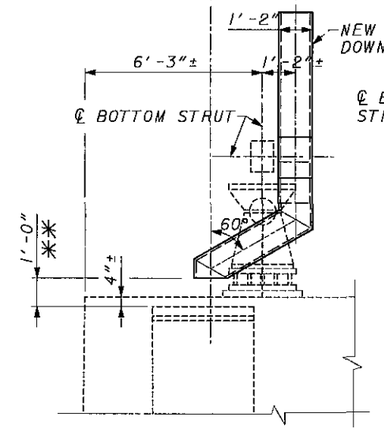
WEST END PIER SOUTH LEG PLAN



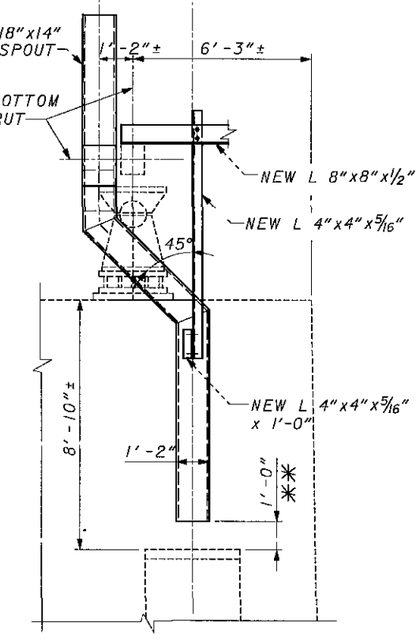
WEST END PIER SOUTH LEG ELEVATION

WEST END PIER NORTH LEG PLAN

WEST END PIER NORTH LEG ELEVATION



VIEW D-D



VIEW E-E

** DIMENSION MEASURED NORMAL TO FACE OF THE PIER AT CENTERLINE OF DOWNSPOUT

≠ EXISTING CATCH BASINS AT WEST END PIER HAVE BEEN FILLED WITH CONCRETE.

ITEM 518 - PIPE DOWNSPOUT, INCLUDING SPECIALS, 18"x14", AS PER PLAN

NOTES

MATERIALS SHOWN ARE EXISTING UNLESS OTHERWISE NOTED ALL NEW MATERIAL SHALL BE ASTM A572/A709 GRADE 50.

HANGER, SUPPORT ANGLES AND BOLTS ARE CONSIDERED INCIDENTAL TO THE DOWNSPOUT.

CONNECTION BOLTS SHALL BE 7/8" DIA. A325, GALVANIZED, UNLESS OTHERWISE NOTED. BOLT HOLES SHALL BE EQUAL TO THE NOMINAL BOLT DIAMETER PLUS 1/16"

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DRAINAGE DETAILS - 3
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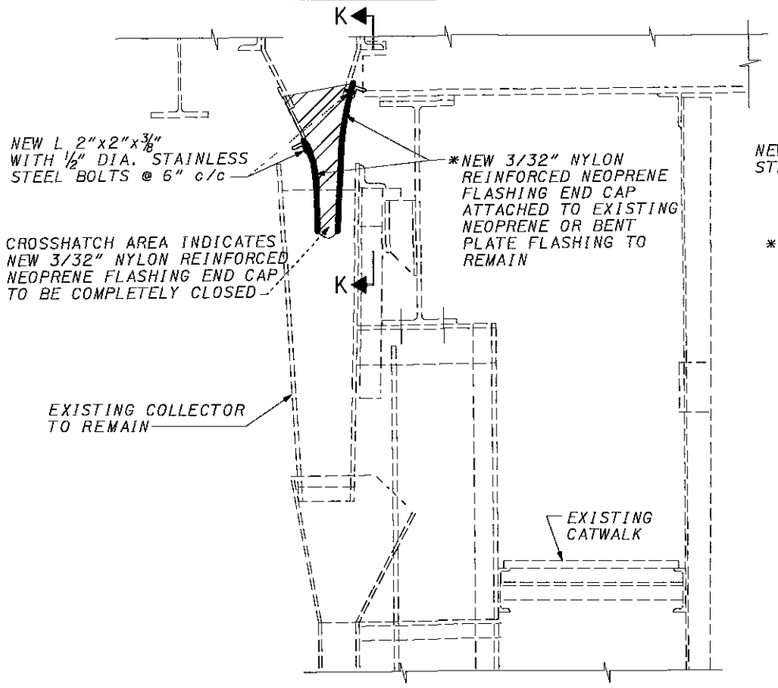
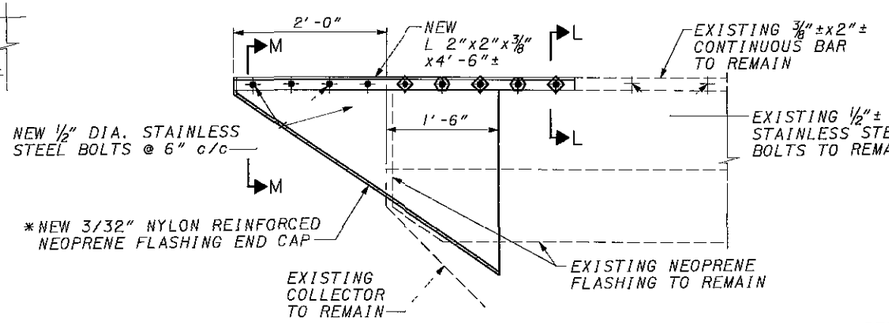
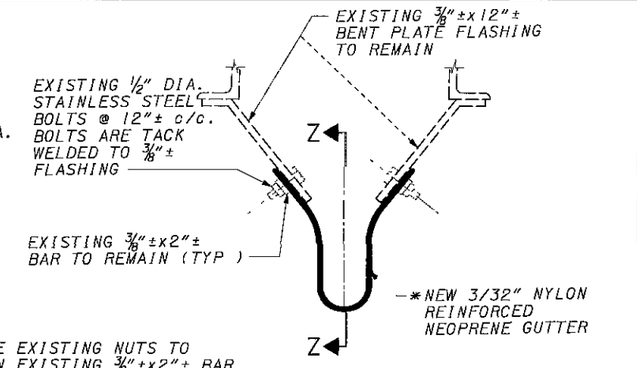


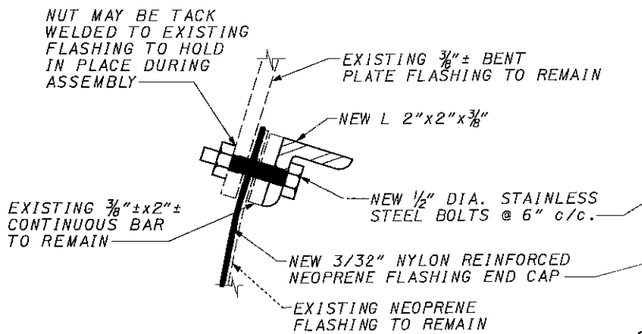
SECTION A-A



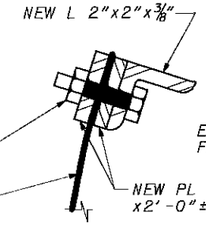
SECTION K-K



SECTION C-C

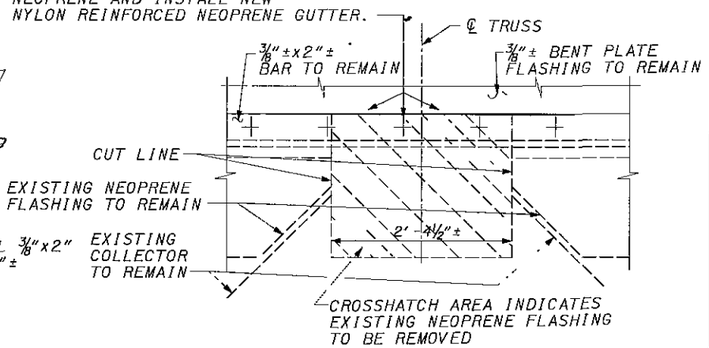


SECTION L-L



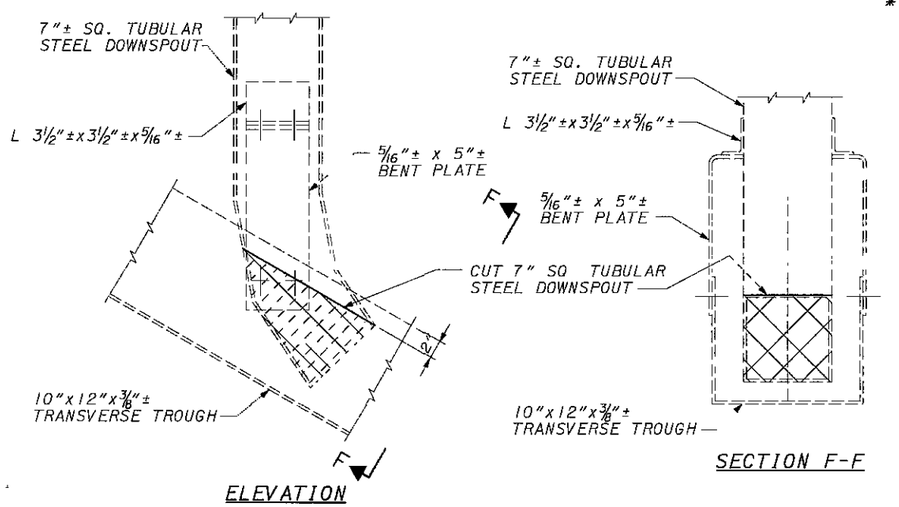
SECTION M-M

REMOVE EXISTING NUTS TO LOOSEN EXISTING 3/8"±x2"± BAR ENOUGH TO REMOVE EXISTING NEOPRENE AND INSTALL NEW NYLON REINFORCED NEOPRENE GUTTER.



EXISTING SECTION Z-Z

ITEM 518 - STRUCTURE DRAINAGE, MISC.: NYLON REINFORCED NEOPRENE FLASHING END CAP DETAIL



ELEVATION

SECTION F-F

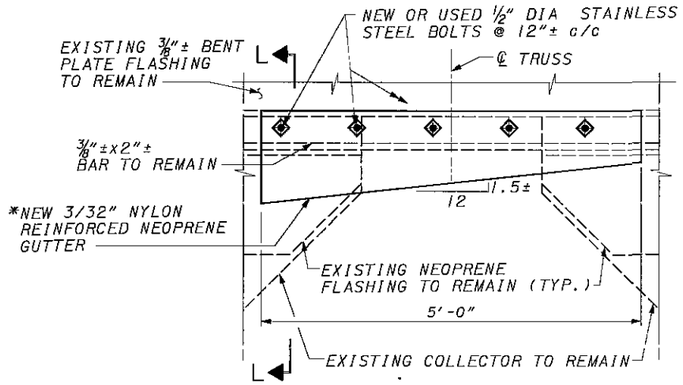
ITEM 518 - STRUCTURE DRAINAGE, MISC.: DOWNSPOUT END MODIFICATION DETAIL

* PROVIDE ENOUGH NEOPRENE SHEETING TO ALLOW FOR UNIMPEDED EXPANSION AND CONTRACTION OF THE BRIDGE NEW NYLON REINFORCED NEOPRENE SHEETING SHALL BE PLACED INSIDE EXISTING NEOPRENE SHEETING AT ALL LOCATIONS

LEGEND

ITEM 518 - STRUCTURE DRAINAGE, MISC. · DOWNSPOUT END MODIFICATION.

REMOVAL INCLUDED WITH ITEM 518 - STRUCTURE DRAINAGE, MISC · NYLON REINFORCED NEOPRENE GUTTER.



PROPOSED SECTION Z-Z

ITEM 518 - STRUCTURE DRAINAGE, MISC.: NYLON REINFORCED NEOPRENE GUTTER DETAIL

NOTES

MATERIALS SHOWN ARE EXISTING UNLESS OTHERWISE NOTED ALL NEW MATERIAL SHALL BE ASTM A572/A709 GRADE 50 AND GALVANIZED PER C.M.S. 711.02 AFTER FABRICATION.

SECTIONS A-A & C-C: FOR LOCATIONS SEE SHEET 11/19

BOLT LEGEND: SEE SHEET 17/19

RICHLAND ENGINEERING LIMITED
29 NORTH PARK STREET
MANSFIELD, OHIO 44902

DESIGNED	CHECKED	DRAWN	REVISED	REVIEWED	DATE
DT	JDB	TWH		DAP	4/10/07

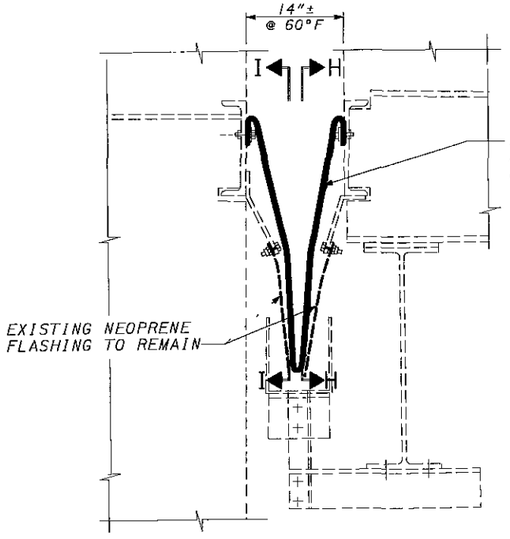
STRUCTURE FILE NUMBER 1809393

DRAINAGE DETAILS - 4

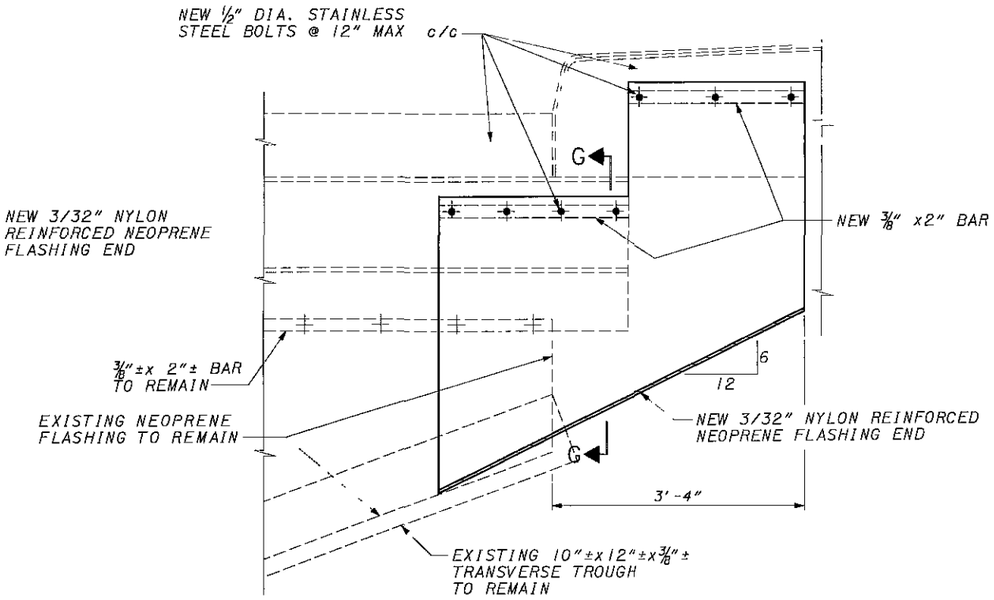
BRIDGE NO. CUY-90-1524
OVER CUYAHOGA RIVER

CUY-90-15.24
PID 76192

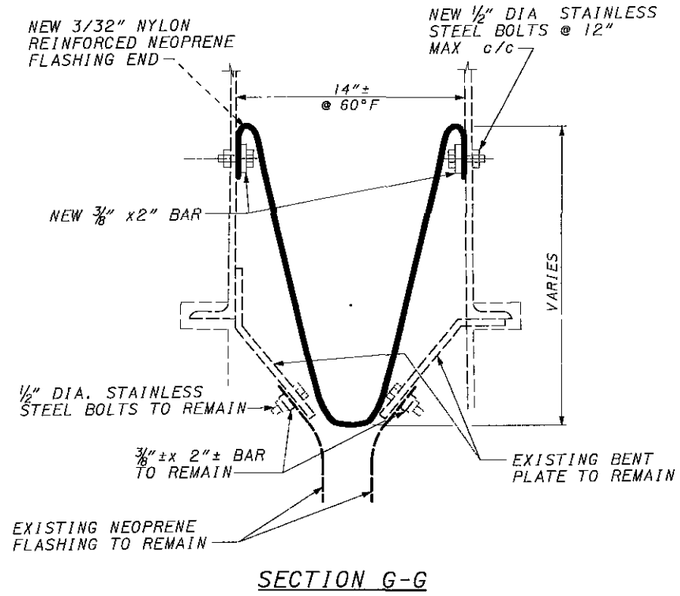
CU090DD4-STEEL.DGN 4/12/07 HN,JLS TWH



SECTION B-B

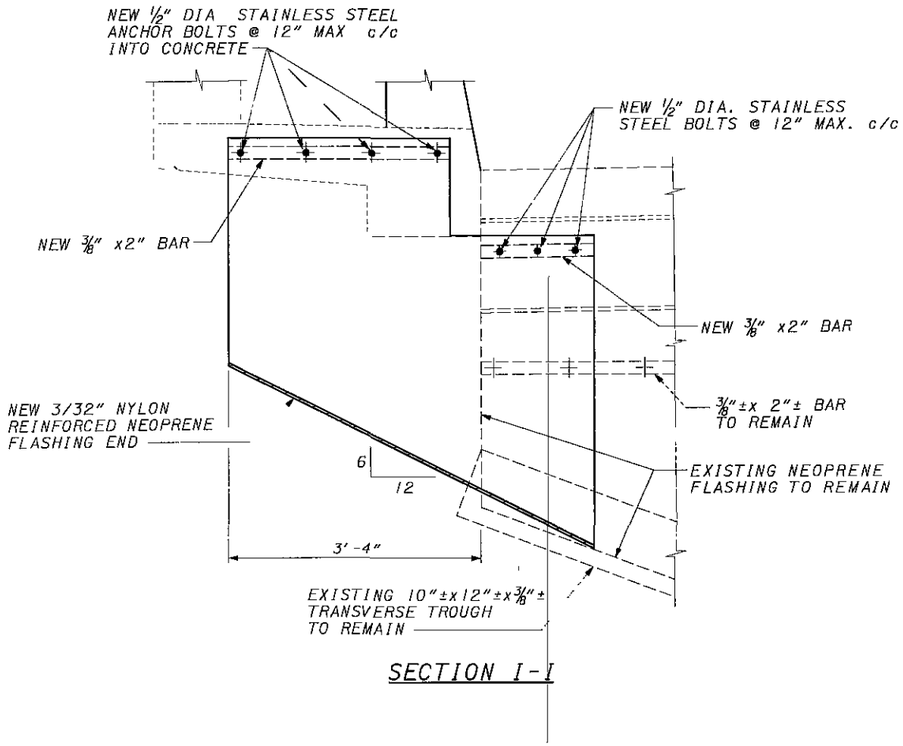


SECTION H-H



SECTION G-G

ITEM 518 - STRUCTURE DRAINAGE, MISC.:
FLASHING END DETAIL



SECTION I-I

NOTES

MATERIALS SHOWN ARE EXISTING UNLESS OTHERWISE NOTED. ALL NEW MATERIAL SHALL BE ASTM A572/A709 GRADE 50 AND GALVANIZED PER C M S 711.02 AFTER FABRICATION

SECTION B-B: FOR LOCATION SEE SHEET 11/19

BOLT LEGEND: SEE SHEET 17/19.

RICHLAND ENGINEERING LIMITED
29 NORTH PARK STREET
MANSFIELD, OHIO 44902

DESIGNED DT | DRAWN TWH | REVIEWED DAP | DATE 4/10/07
CHECKED JDB | REVISED | STRUCTURE FILE NUMBER 1809393

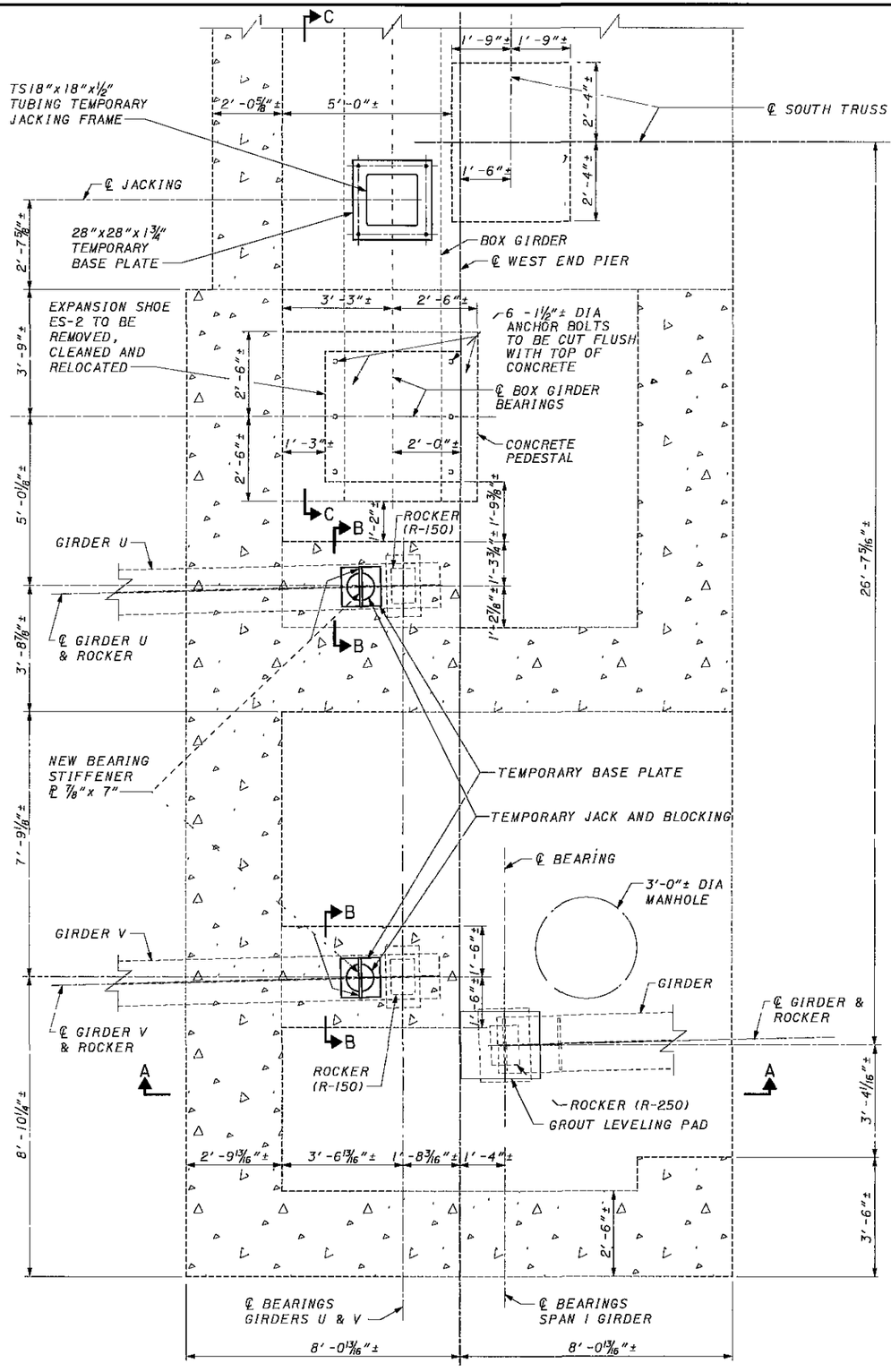
DRAINAGE DETAILS - 5
BRIDGE NO. CUY-90-1524
OVER CUYAHOGA RIVER

CUY-90-15.24
PID 76192

15/19

24
28

CU090D03-STEEL.DGN 4/12/07 HN,CEO,JL S,KH TWH

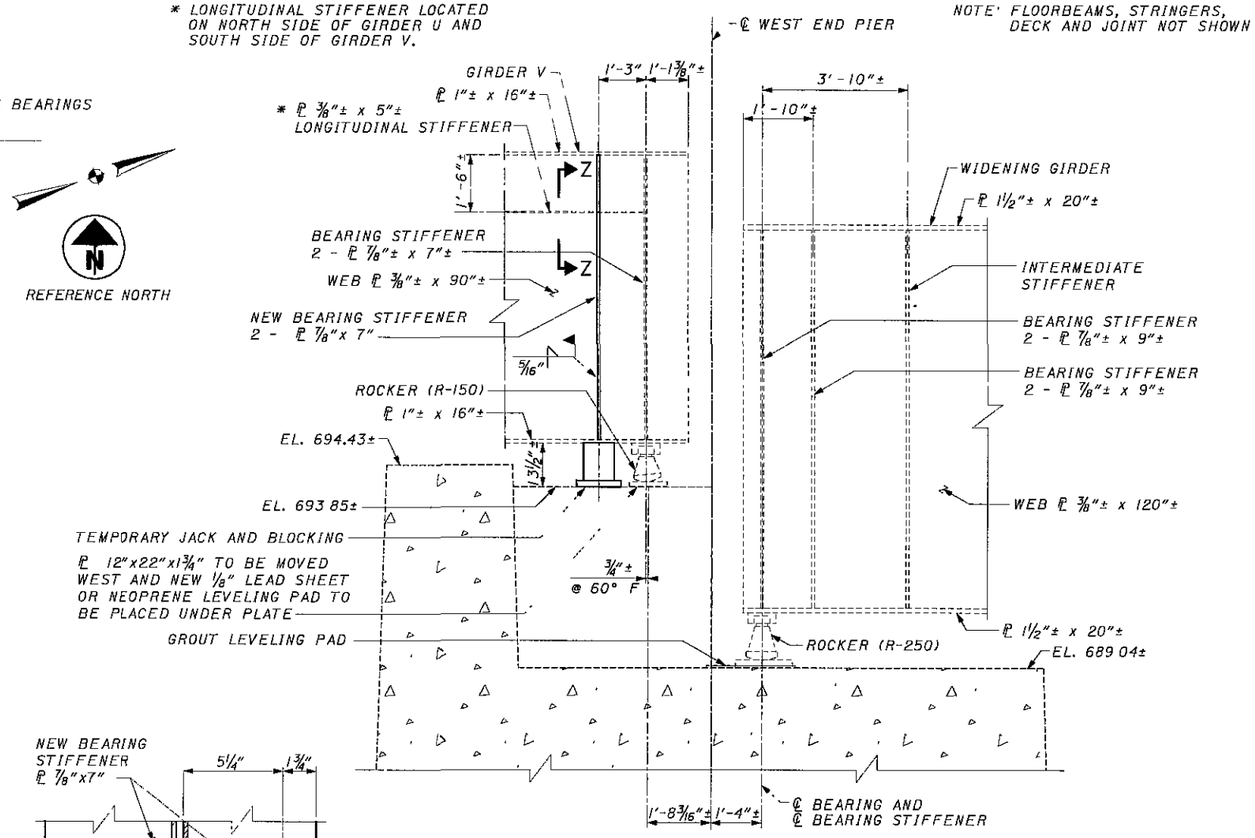


WEST END PIER SOUTH LEG
PLAN AT EL. 689.04±

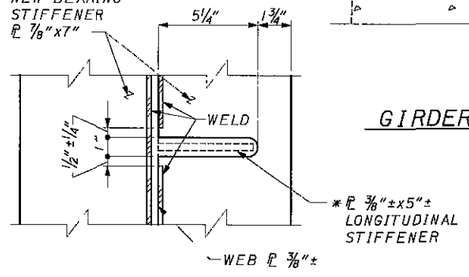
REFERENCE NORTH

* LONGITUDINAL STIFFENER LOCATED ON NORTH SIDE OF GIRDER U AND SOUTH SIDE OF GIRDER V.

NOTE: FLOORBEAMS, STRINGERS, DECK AND JOINT NOT SHOWN

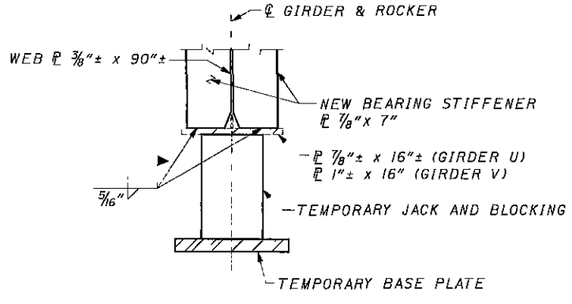


GIRDER BEARING WEST END PIER (LOOKING NORTH)

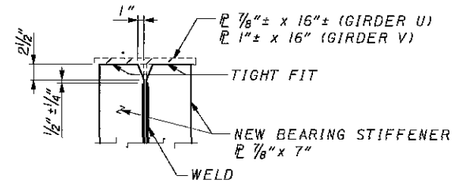


* SECTION Z-Z

SECTION A-A
(GIRDER V SHOWN, GIRDER U SIMILAR)



SECTION B-B



TYPICAL CORNER CLIPPING AND WELD TERMINATION DETAIL

ESTIMATED WEST END PIER WIDENING GIRDER BEARING REACTIONS

	GIRDER U	GIRDER V
DEAD LOAD	75 KIPS	110 KIPS
LIVE LOAD	70 KIPS	65 KIPS
TOTAL	145 KIPS	175 KIPS

NOTES

MATERIALS SHOWN ARE EXISTING UNLESS OTHERWISE NOTED EXISTING STRUCTURAL STEEL FOR GIRDERS U AND V IS ASTM A36.

SECTION C-C: SEE SHEET 17/19

ADDITIONAL NOTES: SEE SHEET 17/19.

RICHLAND ENGINEERING LIMITED
29 NORTH PARK STREET
MANSFIELD, OHIO 44902

DESIGNED	DRAWN	REVIEWED	DATE
JDB	KH	DAP	4/10/07
CHECKED	REVISED	STRUCTURE FILE NUMBER	
DT	JDB	1809393	

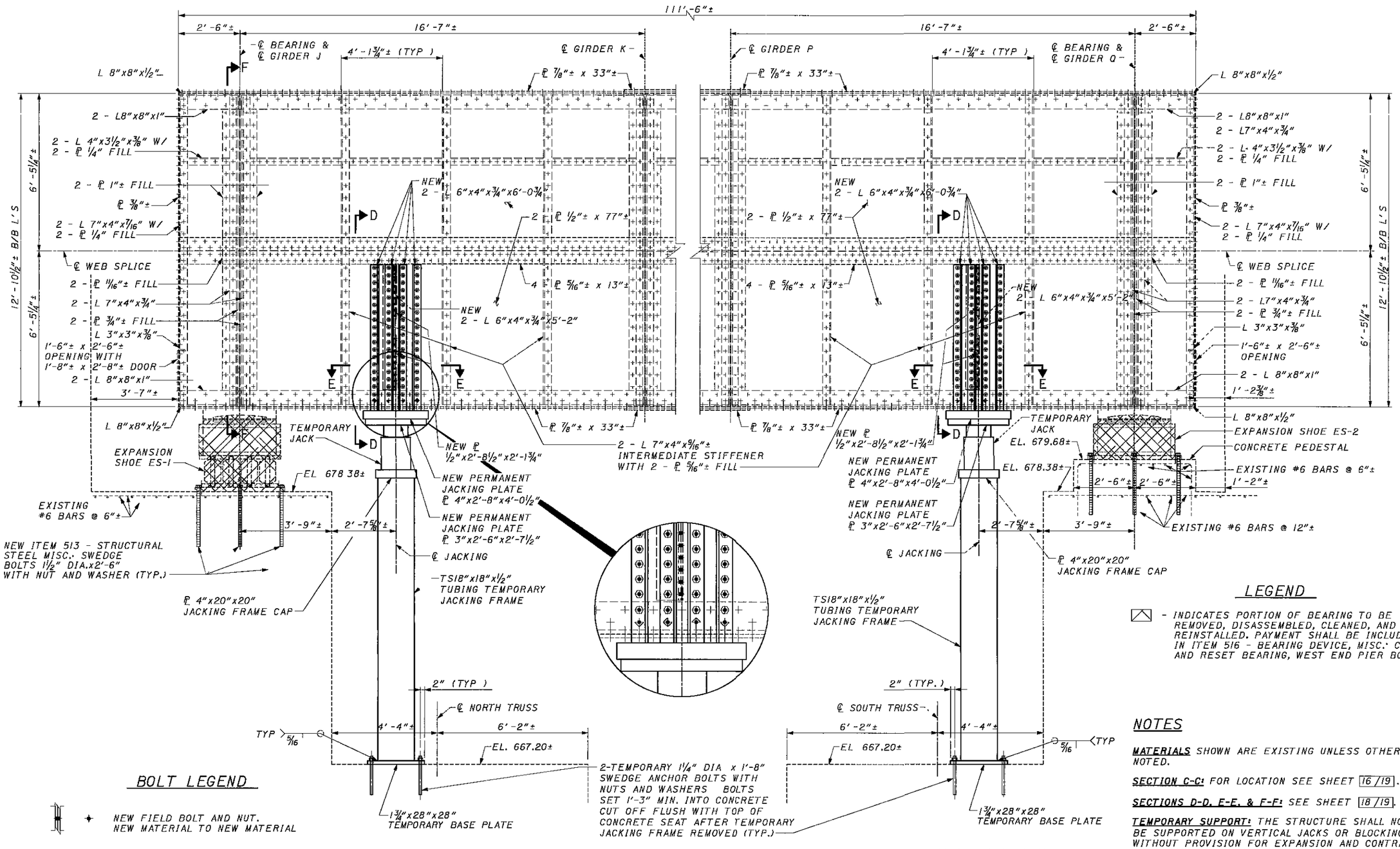
WEST END PIER GIRDER BEARINGS
BRIDGE NO CUY-90-1524
OVER CUYAHOGA RIVER

CUY-90-15.24
PID 76192

16/19

25/28

CU090GBI-STEEL.DGN 4/12/07 HN JLS.NH FWH



BOLT LEGEND

- NEW FIELD BOLT AND NUT. NEW MATERIAL TO NEW MATERIAL
- REMOVE EXISTING RIVET OR BOLT. INSTALL NEW FIELD BOLT AND NUT. NEW MATERIAL TO EXISTING RIVET OR BOLT HOLE.
- NEW FIELD BOLT AND NUT NEW MATERIAL TO FIELD DRILLED NEW OR EXISTING STEEL.
- EXISTING RIVET TO REMAIN.

WEST END PIER BOX GIRDER

ESTIMATED WEST END PIER BOX GIRDER BEARING REACTIONS

	NORTH	SOUTH
DEAD LOAD	720 KIPS	690 KIPS
LIVE LOAD	285 KIPS	295 KIPS
TOTAL	1005 KIPS	985 KIPS

SECTION C-C

LEGEND

▨ - INDICATES PORTION OF BEARING TO BE REMOVED, DISASSEMBLED, CLEANED, AND REINSTALLED. PAYMENT SHALL BE INCLUDED IN ITEM 516 - BEARING DEVICE, MISC.: CLEAN AND RESET BEARING, WEST END PIER BOX GIRDER.

NOTES

MATERIALS SHOWN ARE EXISTING UNLESS OTHERWISE NOTED.

SECTION C-C: FOR LOCATION SEE SHEET 16/19.

SECTIONS D-D, E-E, & F-F: SEE SHEET 18/19.

TEMPORARY SUPPORT: THE STRUCTURE SHALL NOT BE SUPPORTED ON VERTICAL JACKS OR BLOCKING WITHOUT PROVISION FOR EXPANSION AND CONTRACTION MOVEMENT DURING NON-WORKING HOURS OR WHILE UNATTENDED BY CONTRACTOR'S PERSONNEL SEE GENERAL NOTES SHEET 5/19.

CONNECTION BOLTS SHALL BE ⅞" DIA. A325, GALVANIZED, UNLESS OTHERWISE NOTED BOLT HOLES SHALL BE EQUAL TO THE NOMINAL BOLT DIAMETER PLUS 1/16". HOLES FOR CONNECTING NEW MATERIAL SHALL BE DRILLED ON ONLY ONE SIDE OF THE BOX GIRDER AT A TIME ONCE THE NEW MATERIAL HAS BEEN INSTALLED, AND BOLTS TIGHTENED, THE HOLES MAY BE DRILLED IN THE OPPOSITE WEB PLATE

CLEAN AND RESET BEARINGS: SEE GENERAL NOTES SHEET 5/19.

RICHLAND ENGINEERING LIMITED
29 NORTH PARK STREET
MANSFIELD, OHIO 44902

DESIGNED JDB | DRAWN KH | REVIEWED DAP | DATE 4/10/07
CHECKED DT | REVISED JDB | STRUCTURE FILE NUMBER 1809393

WEST END PIER BOX GIRDER - 1

BRIDGE NO. CUY-90-1524
OVER CUYAHOGA RIVER

CUY-90-15.24
PID 76192

17/19

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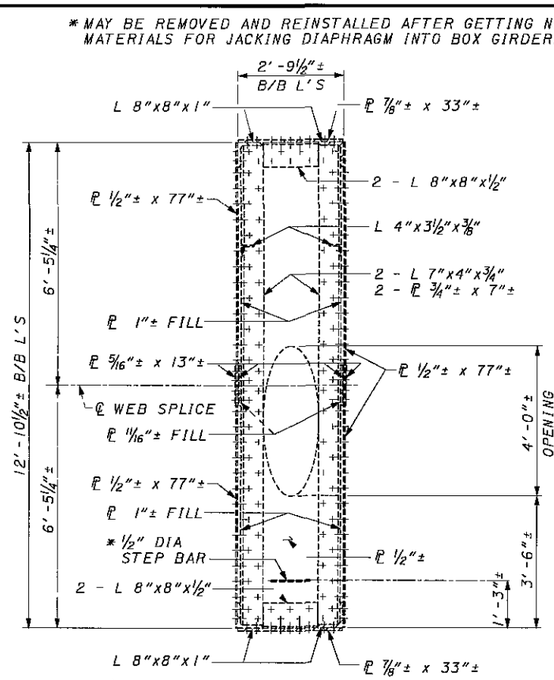
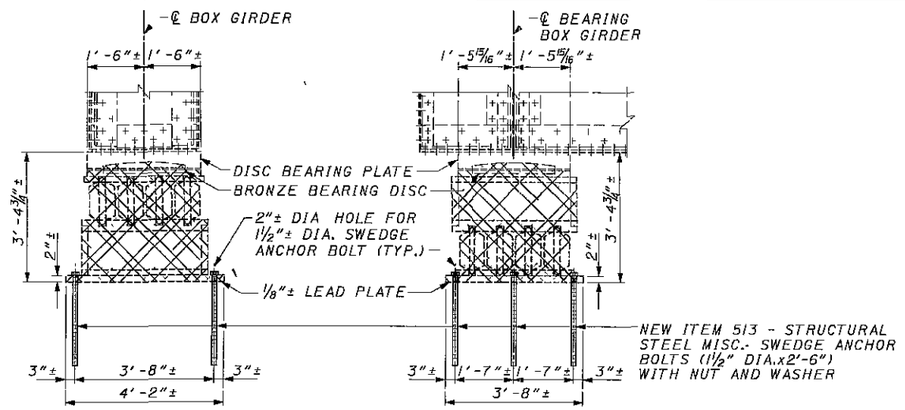
28

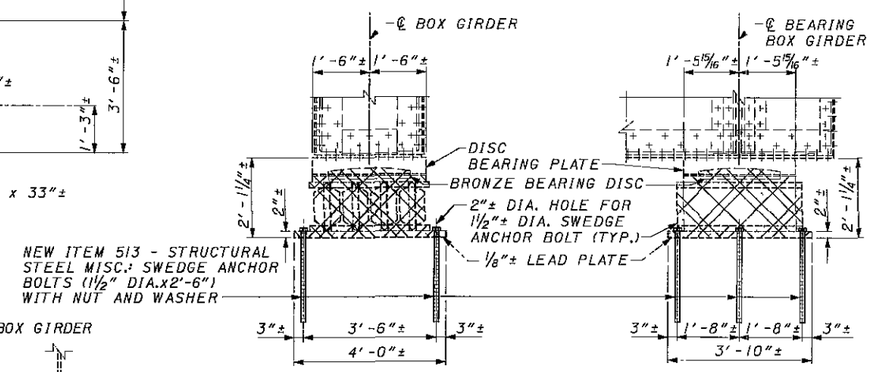
CU090GDI-STEEL D.gN 4/12/07 CED..JLS.KH..TWH



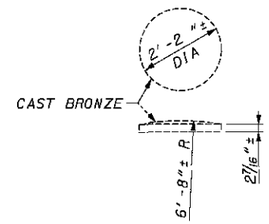
SECTION F-F



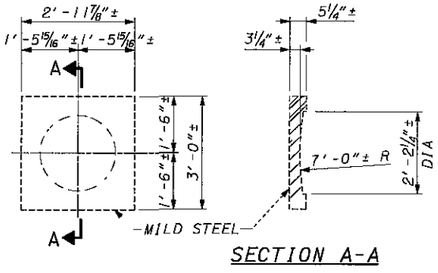
EXPANSION SHOE ES-1



EXPANSION SHOE ES-2

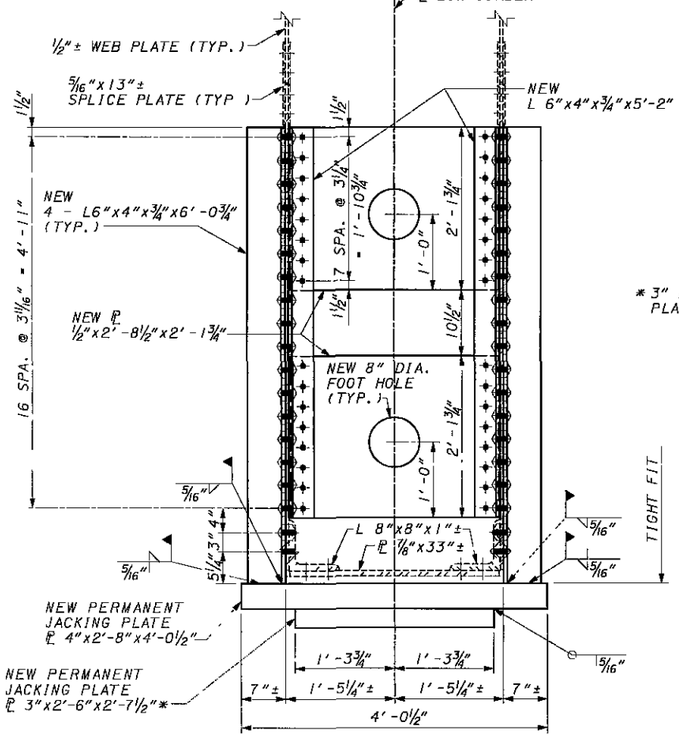


BRONZE BEARING DISC



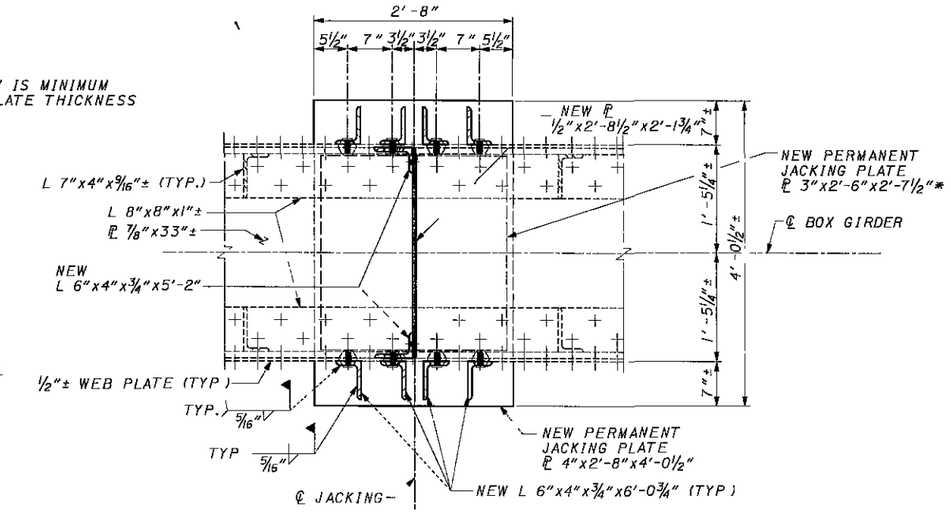
SECTION A-A

DISC BEARING PLATE



SECTION D-D

* 3" IS MINIMUM PLATE THICKNESS



SECTION E-E

LEGEND

▨ - INDICATES PORTION OF BEARING TO BE REMOVED, DISASSEMBLED, CLEANED AND REINSTALLED PAYMENT SHALL BE INCLUDED IN ITEM 516 - BEARING DEVICE, MISC. CLEAN AND RESET BEARING, WEST END PIER BOX GIRDER.

NOTES

MATERIALS SHOWN ARE EXISTING UNLESS OTHERWISE NOTED. ALL NEW MATERIAL SHALL BE ASTM A572/A709 GRADE 50

SWEDGED ANCHOR BOLTS: SHALL BE PROVIDED PER 516.04 AND GALVANIZED PER 711.02

BOLT LEGEND: SEE SHEET 17/19

FOR SECTIONS LOCATIONS: SEE SHEET 17/19

ADDITIONAL NOTES: SEE SHEET 17/19.

CU090CD2-STEEL.DGN 4/12/07 HN.CEO.JLS TWH

RICHLAND ENGINEERING LIMITED
29 NORTH PARK STREET
MANSFIELD, OHIO 44902

DESIGNED	DRAWN	REVIEWED	DATE
JDB	KH	DAP	4/10/07
CHECKED	REVISED	STRUCTURE FILE NUMBER	
DT	JDB	1809393	

WEST END PIER BOX GIRDER DETAILS - 2
BRIDGE NO. CUY-90-1524
OVER CUYAHOGA RIVER

CUY-90-15.24
PID 76192

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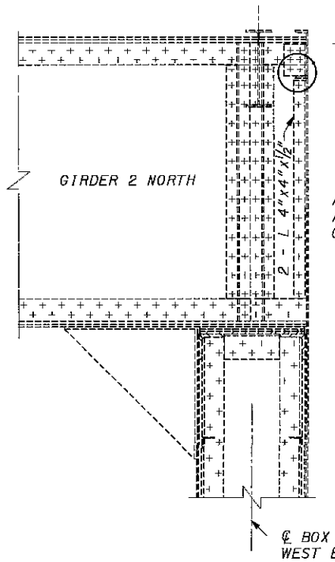
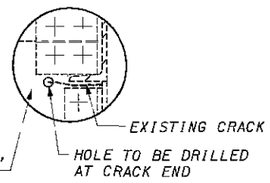
28

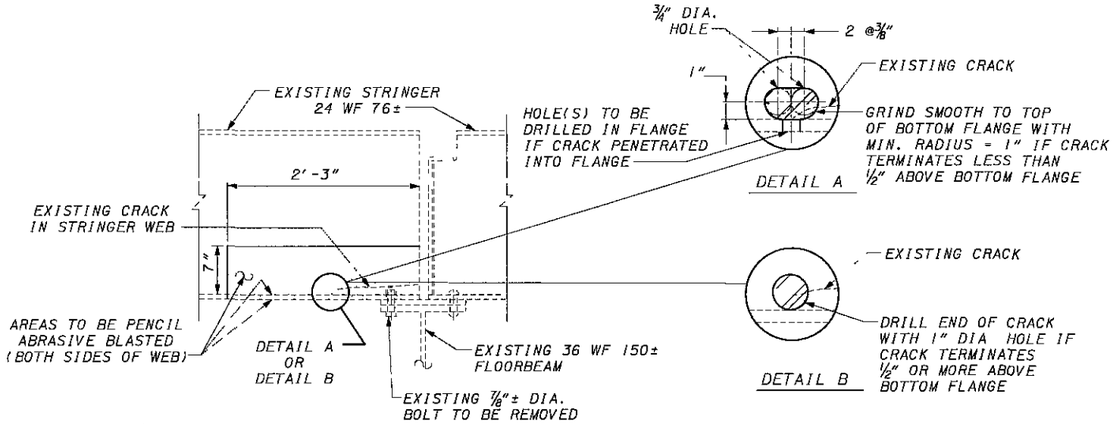




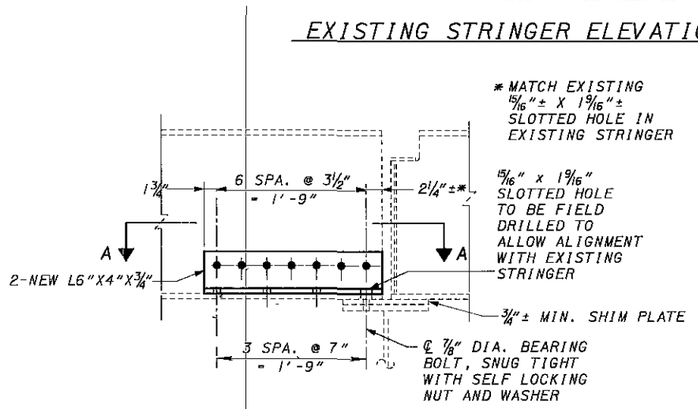
DETAIL "C"

CRACK REPAIR OVER BEARING STIFFENER AT WEST END PIER GIRDER 2 NORTH SHOWN

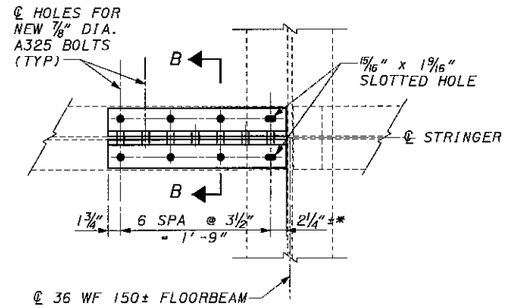
(EAST END PIER GIRDER 4 SOUTH SIMILAR)



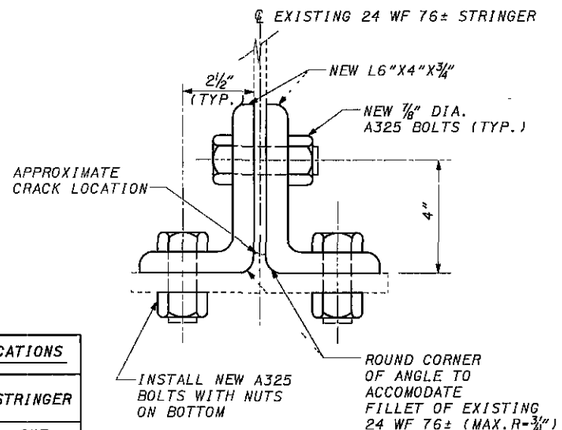
EXISTING STRINGER ELEVATION



TYPICAL STRINGER BOTTOM FLANGE RETROFIT



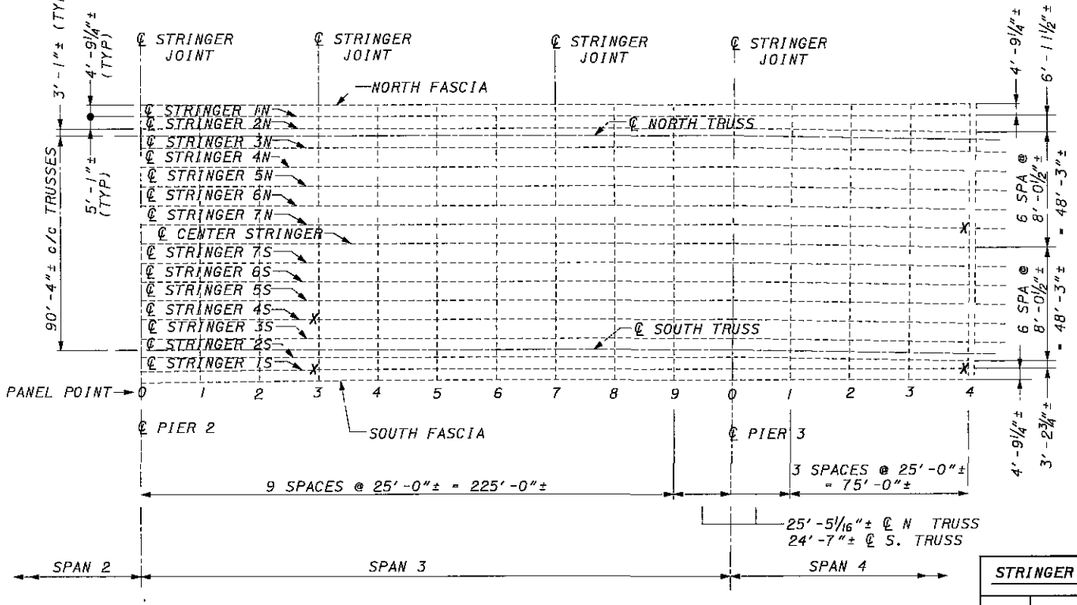
SECTION A-A



SECTION B-B

X - STRINGER BOTTOM FLANGE RETROFIT LOCATION

REFERENCE NORTH



PARTIAL FRAMING PLAN TRUSS SPANS 3 & 4

(EXAMPLE OF STRINGER NOMENCLATURE)

STRINGER CRACK LOCATIONS		
SPAN	PANEL POINT	STRINGER
2	4	2NE
3	3	4SW
3	3	1SW
4	4	7NW
4	4	1SW
5	3	3S

SEQUENCE OF OPERATIONS FOR STRINGER BOTTOM FLANGE RETROFIT

1. CLEAN STRINGER WEB AND TOP AND BOTTOM OF BOTTOM FLANGE BY PENCIL ABRASIVE BLASTING TO THE LIMITS SHOWN IN THE PLANS
2. NON-DESTRUCTIVELY TEST (NDT) CRACK AREA TO EXPOSE END OF CRACK
3. FIELD DRILL HOLES IN CRACK ENDS IN STRINGER WEB AND FLANGE AS REQUIRED. CUT AND GRIND COPE PER DETAIL A IF REQUIRED.
4. REPEAT NDT TO ENSURE INTERCEPTION OF CRACK ENDS OR CRACK REMOVAL.
5. REMOVE EXISTING 7/8" DIA. BEARING BOLTS AT FLOORBEAM CONNECTION.
6. PLACE MATCHED, PREDRILLED ANGLES IN PLACE AND MARK HOLES ON STRINGER
7. FIELD DRILL SLOTTED BEARING BOLT HOLE IN ANGLES TO MATCH EXISTING SLOTTED HOLES IN STRINGER.
8. BOLT ANGLES TO STRINGER .
9. BOLT ANGLES AND STRINGER TO FLOORBEAM

NOTES

MATERIALS SHOWN ARE EXISTING UNLESS OTHERWISE NOTED.

CONNECTION BOLTS SHALL BE 7/8" DIA A325, GALVANIZED, UNLESS OTHERWISE NOTED. BOLT HOLES SHALL BE EQUAL TO THE NOMINAL BOLT DIAMETER PLUS 1/16"

STRINGER BOTTOM FLANGE RETROFIT NOTES: SEE SHEET 3/19.

RICHLAND ENGINEERING LIMITED
29 NORTH PARK STREET
MANSFIELD, OHIO 44902

DESIGNED JDB | DRAWN KH | REVISED | CHECKED DT | REVIEWED DAP | DATE 4/10/07 | STRUCTURE FILE NUMBER 1809393

CRACK REPAIRS
BRIDGE NO. CUY-90-1524
OVER CUYAHOGA RIVER

CUY-90-15.24
PID 76192

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CU090CD15STEEL.DGN 4/12/07 JLS,KH,TWH