CUY-90-14.90

PID 77332/85531

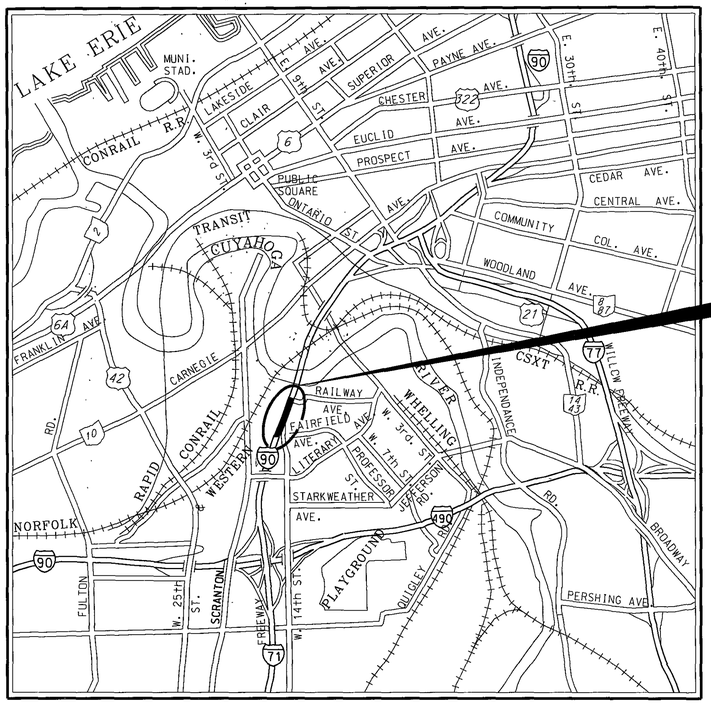
APPENDIX EX-55

CUY-090-1524 PID 78541
(Reference Document)

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

Innerbelt Bridge
Construction Contract Group 1 (CCG1)

Revision Date: 2005



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 (2000)	125,340
DESIGN YEAR ADT (2010)	N/A
DESIGN HOURLY VOLUME (2010)	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

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION

CUY-90-15.24

CITY OF CLEVELAND
CUYAHOGA COUNTY
MAINTENANCE PROJECT

INDEX OF SHEETS:

PROJECT DESCRIPTION

THE PROPOSED PROJECT IS A MINOR REHABILITATION OF BRIDGE CUY-90-1524 INCLUDING PARTIAL DECK OVERLAY, NEW SAFETY PARAPETS, AND OTHER STRUCTURE REPAIRS.

2002 SPECIFICATIONS

THE STANDARD SPECIFICATIONS OF THE STATE OF OHIO, DEPARTMENT OF TRANSPORTATION, INCLUDING CHANGES AND SUPPLEMENTAL SPECIFICATIONS LISTED IN THE PROPOSAL SHALL GOVERN THIS IMPROVEMENT.

I HEREBY APPROVE THESE PLANS AND DECLARE THAT THE MAKING OF THIS IMPROVEMENT WILL REQUIRE THE CLOSING TO TRAFFIC OF I.R. 90 EASTBOUND AND THAT DETOURS WILL BE PROVIDED AS INDICATED ON SHEET 13-15 .

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)

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: David H. Timmer
DATE: Dec. 28, 2004

STANDARD CONSTRUCTION DRAWINGS

								SUPPLEMENTAL SPECIFICATIONS	
GR-1.1	7-16-04		MT-35.10	4-20-01	TC-41.20	1-19-01		848	2-8-02
GR-2.1	1-16-04							864	7-11-00
GR-3.1	4-18-03		MT-95.30	7-16-04	TC-72.20	1-19-01		954	9-9-97
GR-5.1	4-18-03		MT-97.10	4-19-02	TC-73.10	1-19-01		832	4-17-04
								833	2-12-03
			MT-99.50	10-18-02	TC-65.10	10-19-01			
			MT-101.60	10-18-02	TC-65.11	10-19-01	EXJ-4-87 7-19-02		
			MT-105.10	10-18-02			TBR-91 7-19-02		
			MT-105.11	10-18-02			VPF-1-90 7-19-02		

APPROVED Dave Coyle (D.K.)
DATE _____ DISTRICT DEPUTY DIRECTOR

APPROVED Gordon Proctor
DATE 2-9-05 DIRECTOR, DEPARTMENT OF TRANSPORTATION

FEDERAL PROJECT NO. NHN-FEDERAL
PID NO. 78541
CONSTRUCTION PROJECT NO. CUY-90-15.24
RAILROAD INVOLVEMENT NONE

1 / 34

Cuy-IR 90-15.24
050259 PID 78541
Dist 12 4/20/2005

10019GT-CONC.DGN 11/15/04 HN

ITEM 614 - MAINTAINING TRAFFIC

A. GENERAL

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 ON 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 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 AND AS APPROVED BY THE PROJECT ENGINEER. THE CONTRACTOR SHALL SCHEDULE HIS WORK TO MEET THIS REQUIREMENT. SHORT TERM LANE CLOSURES OF I.R. 90 EASTBOUND LANES FOR THE DECK SURFACE OVERLAY AND NEW PARAPET 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 OPENED
SUNDAY	12:00 N FRIDAY THROUGH 12:00 N MONDAY
MONDAY	12:00 N FRIDAY THROUGH 12:00 N TUESDAY
TUESDAY	12:00 N MONDAY THROUGH 12:00 N WEDNESDAY
WEDNESDAY	12:00 N TUESDAY THROUGH 12:00 N THRUSDAY
THURSAY	12:00 N WEDNESDAY THROUGH 12:00 N MONDAY
FRIDAY	12:00 N THURSDAY THROUGH 12:00 N MONDAY
SATURDAY	12:00 N FRIDAY THROUGH 12:00 N 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.

DECK OVERLAY WORK:
DURING 4 WEEKENDS, FROM 10PM FRIDAY TO 6AM MONDAY, THE FOUR LANE SECTION OF I-90 EASTBOUND MAY BE REDUCED TO ONE (1) LANE EASTBOUND, PROVIDED I-90 EASTBOUND IS COMPLETELY CLOSED PRIOR TO THE I-71 INTERCHANGE, AND I-90 EASTBOUND TRAFFIC IS DETOURED TO I-490 EASTBOUND TO I-77 NORTHBOUND BACK TO I-90 EASTBOUND, AND I-71 NORTHBOUND TRAFFIC IS REDUCED FROM TWO (2) LANES TO ONE (1) LANE. SEE SHEETS 13 AND 14 OF 34.

PHASE 2 OF THE DECK OVERLAY SHALL NOT COMMENCE UNTIL THE NEW CONCRETE PARAPET IS IN PLACE. SEE "CONCRETE PARAPET WORK", THIS SHEET.

DURING THE PERIODS WHEN EASTBOUND IR90 (NORTHBOUND IR 71) IS RESTRICTED TO ONLY ONE (1) LANE OF TRAFFIC, THE IR90 EASTBOUND TRAFFIC SHALL BE DETOURED AS DETAILED ON SHEETS 13 & 14 . ALSO PORTABLE CHANGEABLE MESSAGE SIGNS SHALL BE PROVIDED AND ERECTED BY THE CONTRACTOR ON NORTHBOUND IR71 AND S.R. 176 PER DETAILS ON SHEET 13 .

RAMP WI SHALL BE CLOSED TO TRAFFIC DURING EACH OF THE I.R. EB WEEKEND LANE CLOSURE PERIODS AND TRAFFIC DETOURED AS SHOWN ON SHEET NO. 15 . THE CONTRACTOR SHALL PROVIDE THE DETOUR SIGNING AS SHOWN ON SHEET NO. 15 .

CONCRETE PARAPET WORK:
A MINIMUM OF THREE (3) LANES OF TRAFFIC SHALL BE MAINTAINED ON EASTBOUND I.R. 90 DURING THE CONSTRUCTION OF THE CONCRETE PARAPET. SEE DETAILS ON SHEET NOS. 8 & 9 . THIS WORK SHALL BE COMPLETED DURING DISTRICT 12 PERMITTED LANE CLOSURE TIMES AS PER RESTRICTIONS NOTE AT LEFT. THIS WORK MAY REQUIRE TWO WORK PERIODS TO COMPLETE. THE CURB REMOVAL, DRILLING OF THE HOLES AND THE GROUTING OF REBARS MAY BE COMPLETED DURING ONE PERIOD AND THE NEW PARAPET POURED THE SECOND WORK PERIOD. WATER CURE CAN BE LEFT IN PLACE DURING THE WORK WEEK WITH ALL LANES OPEN TO TRAFFIC.

RAMP WI SHALL BE CLOSED TO TRAFFIC FOR CONCRETE PARAPET WORK AND TRAFFIC DETOURED AS SHOWN ON SHEET NO. 15 .

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:
SHOULD THE CONTRACTOR FAIL TO MEET ANY OF THE TIME RESTRICTIONS NOTED ON THIS SHEET, THE CONTRACTOR SHALL BE ASSESSED LIQUIDATED DAMAGES OF $90.00 PER MINUTE.

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.

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, SHEET 4 .

CONTINUED SHEET 3 OF 34

MAINTENANCE OF TRAFFIC NOTES

CUY-90-15.24

1001090MNA-CONC.DGN 11/23/04 HN

ITEM 614 - MAINTAINING TRAFFIC CONT'D

8. 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:

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

THE NATIONAL SAFETY COUNCIL, TRAFFIC CONTROL ZONES SUPERVISORS COURSE, PHONE NO. 1-800-441-5103

NATIONAL HIGHWAY INSTITUTE, DESIGN AND OPERATION OF WORK ZONE TRAFFIC CONTROL, PHONE NO. 1-703-235-0528

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

THE WTS SHALL BE PRESENT WHEN THE CONTRACTOR OR SUBCONTRACTOR INSTALLS A TRAFFIC RESTRICTION, LANE CLOSURE, ETC. IN LIEU OF THE WTS BEING PRESENT WHEN A SUBCONTRACTOR HAS A WORKZONE IN PLACE, THE CONTRACTOR MAY USE HIS OWN PERSONNEL THAT IS A CERTIFIED WTS. THE CONTRACTOR OR SUBCONTRACTOR MUST PRESENT A COPY OF HIS WTS CERTIFICATE TO THE PROJECT ENGINEER. A WTS MUST BE PRESENT WHEN THE WORK ZONE IS BEING SET UP. HE MUST APPROVE THE WORK ZONE BEFORE HE LEAVES OR PERFORMS OTHER DUTIES.

THE RESTRICTIONS ARE SHORT TERM. THE WTS SHALL MONITOR THE ZONE FOR COMPLIANCE. DURING THE LANE CLOSURE HE SHALL MAKE SURE ALL TRAFFIC CONTROL ITEMS ARE FUNCTIONING PROPERLY. TRAFFIC CONTROL WILL BE THE WTS DUTY DURING IMPLEMENTATION OF ZONES OR SHORT TERM ZONES. THE WTS SHALL HAVE THE AUTHORITY TO HAVE DEFICIENCIES CORRECTED AS SOON AS POSSIBLE. THEN WTS SHALL PROVIDE THE DISTRICT WORK ZONE TRAFFIC CONTROL ENGINEER A SKETCH OF THE TRAFFIC CONTROL PLAN (TCP). EVERYDAY THERE IS TO BE A SHORT TERM TRAFFIC RESTRICTION, LANE CLOSURE, ETC. THE TCP SHALL SHOW HOW THE WORK ZONES ARE TO BE IMPLEMENTED.

THE WTS SHALL BE AVAILABLE ON A 24-HOUR BASIS TO REPAIR AND/OR REPLACE DAMAGED OR MISSING TRAFFIC CONTROL DEVICES. A 24-HOUR PHONE NUMBER SHALL BE MADE AVAILABLE TO THE PROJECT ENGINEER IN ORDER TO CONTACT THE WTS. THE WTS SHALL HAVE A PAGER AND THE PHONE NUMBER PROVIDED TO THE PROJECT ENGINEER.

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

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

9. FAILURE TO COMPLY

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

THE FOLLOWING ESTIMATED QUANTITY HAS BEEN INCLUDED IN THE GENERAL SUMMARY TO REPAIR ANY ASPHALT THAT MAY BE DAMAGED DURING THE CONSTRUCTION.

614 - ASPHALT CONCRETE FOR MAINTAINING TRAFFIC 10 CU. YD.

G. 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 MANUFACTURE'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 - REPLACEMENT SIGN

FLATSHEET 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 WHEN ORDERED BY THE ENGINEER. 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 AT THE CONTRACT PRICE PER SQUARE FOOT 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.

AN ESTIMATED QUANTITY OF 200 SQUARE FEET HAS BEEN PROVIDED IN THE GENERAL SUMMARY.

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 WHEN ORDERED BY THE ENGINEER. REPLACEMENT DRUMS SHALL BE NEW.

PAYMENT FOR THE NEW DRUMS SHALL BE MADE AT THE CONTRACT 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.

AN ESTIMATED QUANTITY OF 50 EACH HAS BEEN PROVIDED IN THE GENERAL SUMMARY.

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 325 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.

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 8 CLASS I OR II PCMS AT 1 MONTH EACH

ITEM 614 PORTABLE CHANGEABLE MESSAGE SIGN, AS PER PLAN, 8 SIGN MONTHS

614 WORK ZONE IMPACT ATTENUATOR (UNDIRECTIONAL)

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

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

   THE LENGTH OF THE SIX-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:

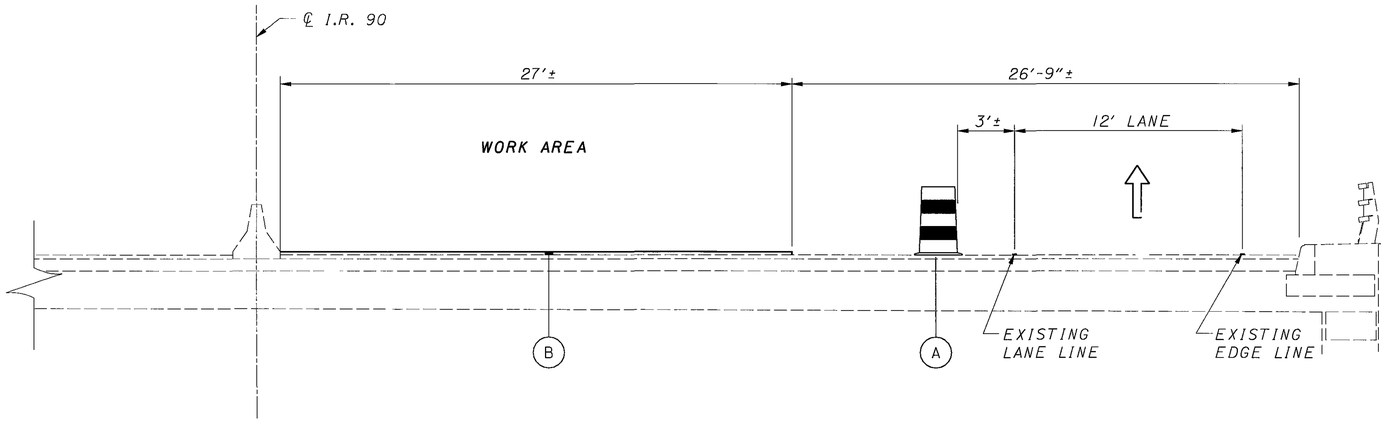
DRAWING NUMBER	DRAWING NAME	DRAWING REVISION DATE	ODOT APPROVAL DATE
QSCZCV9-T4	QUADGUARD CZ SYSTEM FOR CONSTRUCTION ZONES	5/13/99 REV. J	8/27/99
35-40 10	QUADGUARD SYSTEM CONCRETE PAD, CZ, QG	11/19/97 REV. D	8/27/99
35-40-16	QUADGUARD CZ SYSTEM BACKUP ASSEMBLY, CZ, QG	7/30/99 REV. F	8/27/99
354051z	QUADGUARD CZ SYSTEM BACKUP 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
35-400260	QUADGUARD SYSTEM PCMB ANCHOR ASSEMBLY	11/19/97 REV. C	8/27/99

2. THE TRACC (TRINITY ATTENUATING CRASH CUSHION) MANUFACTURED BY SYRO INC., 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:

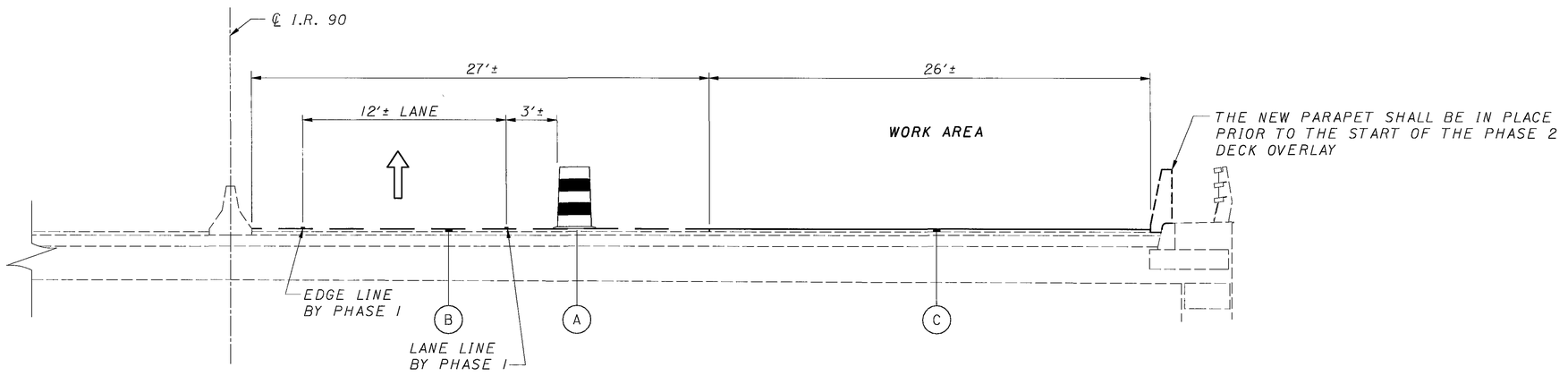
DRAWING NUMBER	DRAWING NAME	DRAWING REVISION DATE	ODOT APPROVAL DATE
SS450 SS450M	CRASH-CUSHION ATTENUATING TERMINAL PLAN, ELEVATION & SECTIONS	3/12/99 REV. 1 3/12/99 REV. 1	8/27/99 8/27/99
SS455	TRACC TRANSITION TO W-BEAM MEDIAN BARRIER PLAN, ELEVATION & SECTIONS	2/18/99	8/27/99
SS461	TRACC TRANSITION TO CONCRETE SAFETY SHAPE BARRIER PLAN, ELEV. & SECTIONS	6/30/99 REV. 1	8/27/99
SS462	TRACC TRANSITION TO CONCRETE BARRIER SINGLE SLOPE PLAN, ELEV. & SECTIONS	6/30/99	8/27/99

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 ONE TO SIX UNITS INSTALLED ON THE PROJECT SITE. FOR EXAMPLE, FIVE INSTALLED UNITS REQUIRE ONE SPARE PARTS PACKAGE AND SEVEN INSTALLED UNITS REQUIRE TWO SPARE PARTS PACKAGES.



NOTE: THE NEW PARAPET REQUIRED ON PHASE 2 BELOW MAY BE PLACED PRIOR TO PHASE I M.O.T. SEE SHEETS 8 & 9.

PHASE I M.O.T. TYPICAL SECTION



PHASE 2 M.O.T. TYPICAL SECTION

LEGEND

- (A) DRUMS @ 40' C/C
- (B) PHASE I DECK OVERLAY
- (C) PHASE 2 DECK OVERLAY

MAINTENANCE OF TRAFFIC TYPICAL SECTIONS FOR DECK OVERLAY

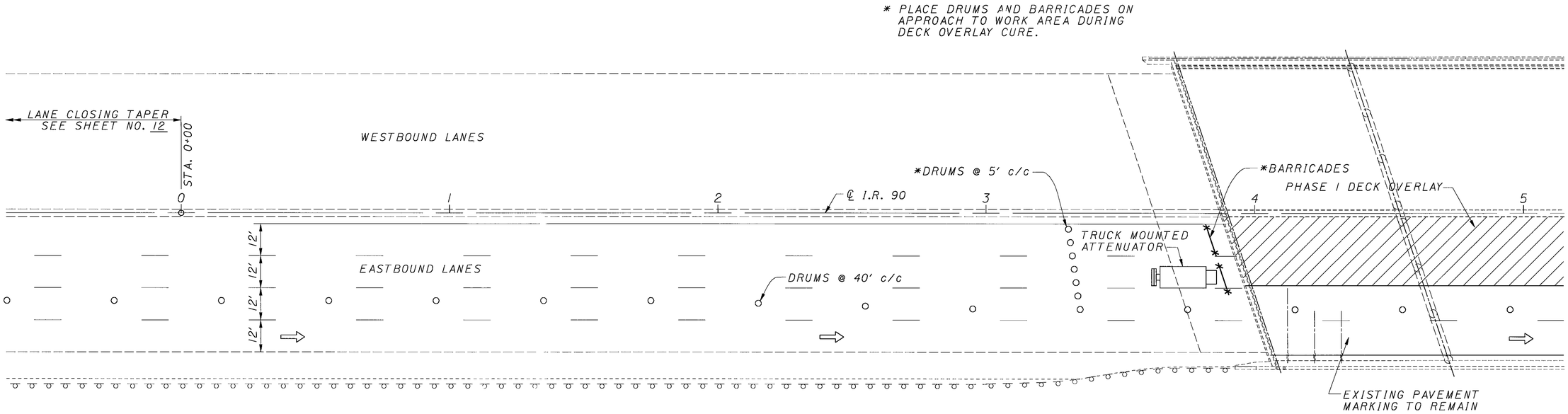
CUY-90-15.24

WORK ZONE PAVEMENT MARKINGS

614 WORK ZONE EDGE LINE, YELLOW CLASS I, 642 PAINT — 1224 FT./0.23 MI.

614 WORK ZONE LANE LINE, CLASS I, 642 PAINT — 1219 FT./0.23 MI.

THESE WORK ZONE MARKINGS OR THE PERMANENT PAVEMENT MARKINGS SHALL BE PLACED ON THE PHASE I DECK OVERLAY PRIOR TO REOPENING TO TRAFFIC. FOR PERMANENT MARKINGS, SEE SHEETS 18 & 19.



SEE SHEETS FOR PHASE I M.O.T. TYPICAL ON BRIDGE

NOTE:

PHASE I M.O.T. CONTINUES AHEAD ACROSS BRIDGE, SEE NEXT SHEET.

HORIZONTAL SCALE IN FEET
0 10 20 40

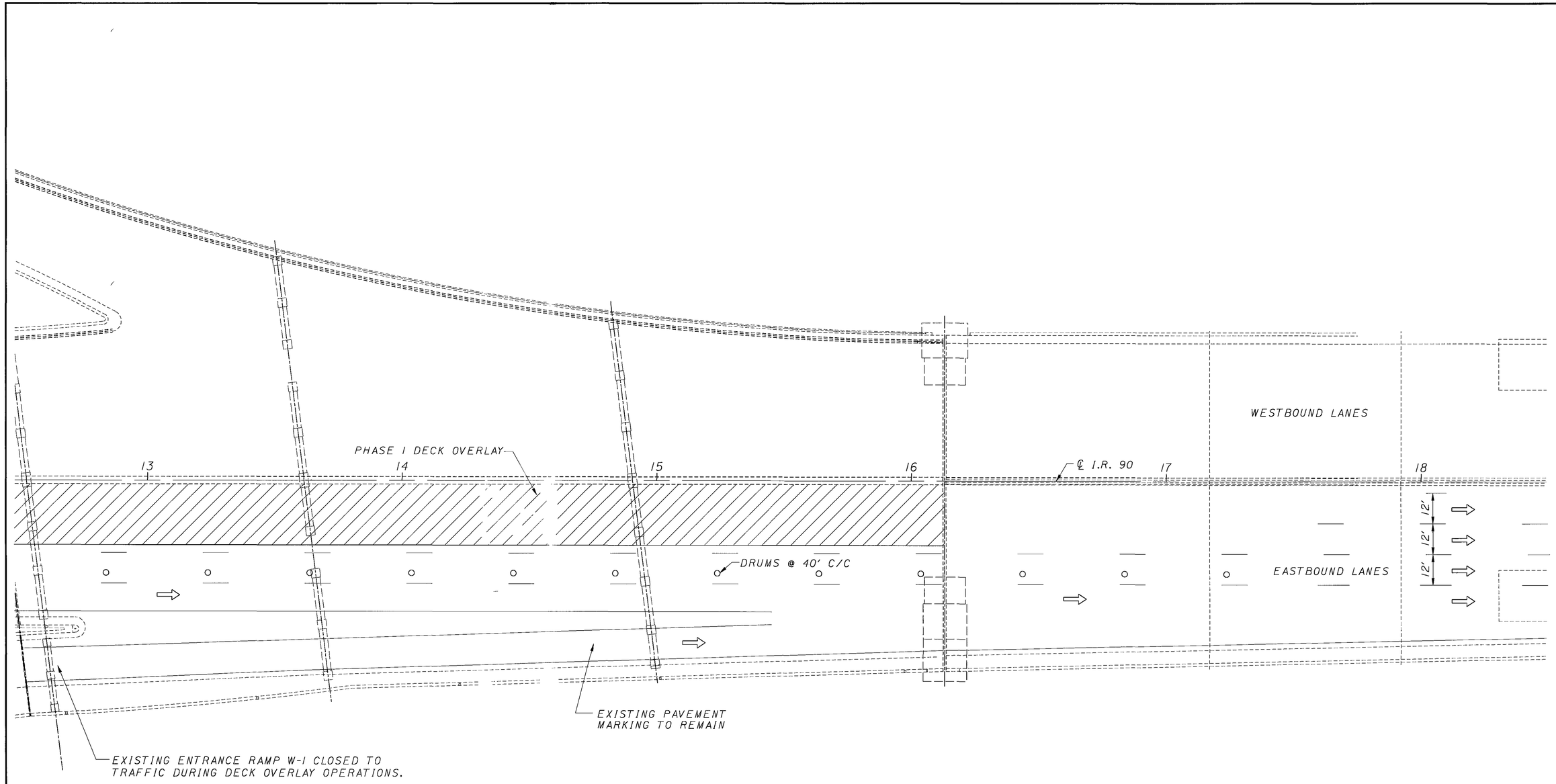
CALCULATED PDG 11/04
CHECKED DT 11/04

MAINTENANCE OF TRAFFIC PLAN
PHASE 1 - DECK OVERLAY

CUY-90-15.24

6
34

I0009MPE-CONC.DGN 11/23/04 HN



NOTE:

PHASE I M.O.T. CONTINUES BACK ACROSS BRIDGE, SEE PREVIOUS SHEET.

HORIZONTAL SCALE IN FEET
0 10 20 40

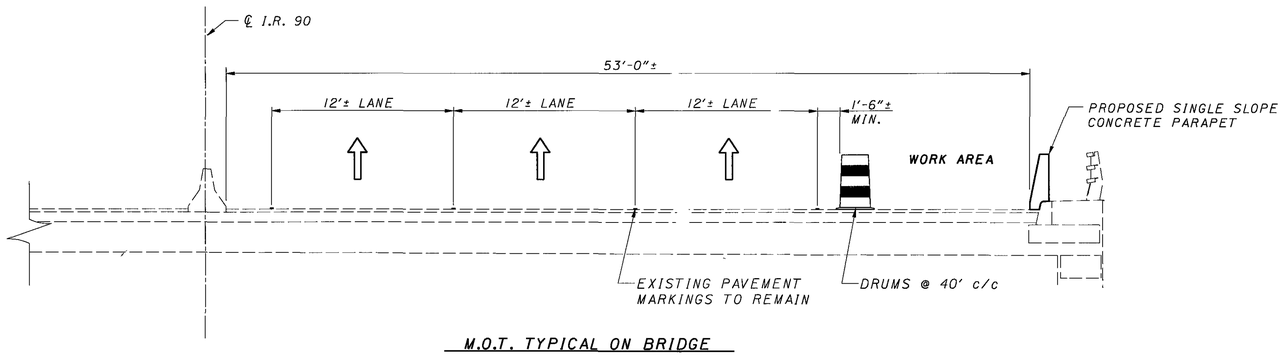
CALCULATED PDG 11/04
CHECKED DT 11/04

MAINTENANCE OF TRAFFIC PLAN
PHASE 1 - DECK OVERLAY

CUY-90-15.24

7
34

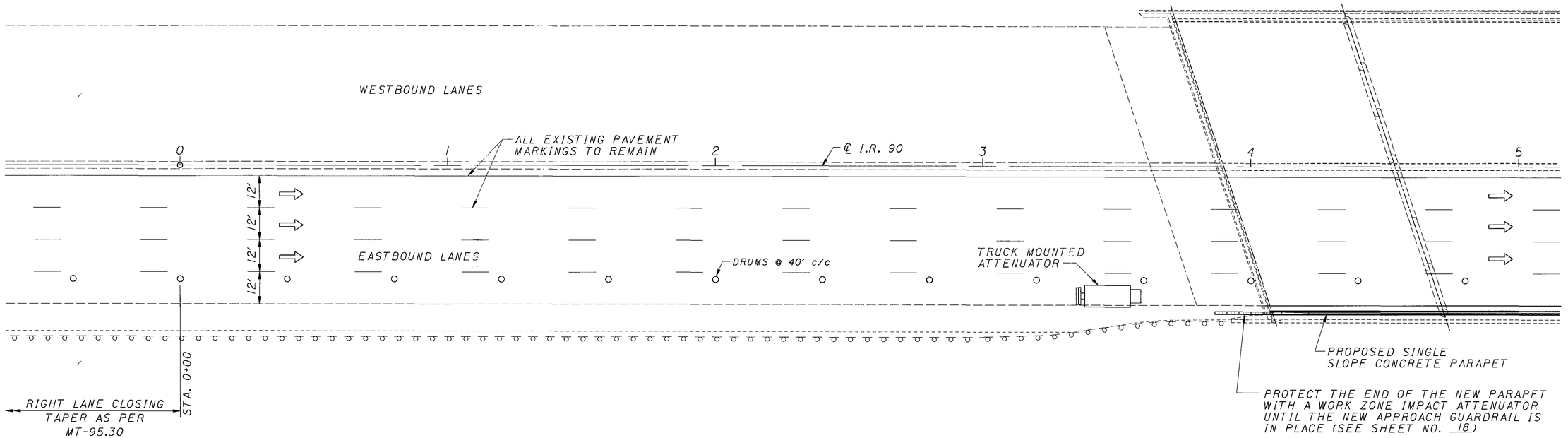
10010 9MPF-CONC.DGN 11/23/04 HN



M.O.T. TYPICAL ON BRIDGE

SEE 614 NOTE ON SHEET NO. 2, FOR TIME LIMIT RESTRICTIONS OF LANE CLOSURE(S) FOR PARAPET CONSTRUCTION.

NOTE:
PROPOSED PARAPET CONSTRUCTION MAY BE COMPLETED BEFORE OR AFTER PHASE I DECK OVERLAY, BUT MUST BE IN PLACE PRIOR TO PHASE 2 DECK OVERLAY. SEE TYPICALS, SHEET NO. 5 .



ESTIMATED QUANTITIES

614	WORK ZONE IMPACT ATTENUATOR (UNDIRECTIONAL)	1	EACH

NOTE:
EASTBOUND I.R. 90 M.O.T. CONTINUES AHEAD ACROSS BRIDGE, SEE SHEET NEXT SHEET.

HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED PDG 11/04
CHECKED DT 11/04

MAINTENANCE OF TRAFFIC PLAN - DURING SINGLE SLOPE PARAPET CONSTRUCTION

CUY-90-15.24

8
34

100109MPJ-CONC.DGN 11/23/04 HN

RAMP W2

WESTBOUND LANES

ALL EXISTING PAVEMENT MARKINGS TO REMAIN

11 12 13 14 ℄ I.R. 90 15 16

12' 12' 12' 12'

EASTBOUND LANES

DRUMS @ 40' C/C

RAMP W1

PROPOSED SINGLE SLOPE CONCRETE PARAPET (TYPICAL)

EXISTING PAVEMENT MARKING TO REMAIN

RAMP W1 SHALL BE CLOSED TO TRAFFIC DURING PARAPET CONSTRUCTION ON THE RAMP AND ACCELERATION LANE

PROTECT THE END OF THE NEW PARAPETS WITH A WORK ZONE IMPACT ATTENUATOR UNTIL THE NEW APPROACH GUARDRAIL IS IN PLACE (SEE SHEET NO. 19)

ESTIMATED QUANTITIES

614	WORK ZONE IMPACT ATTENUATOR (UNDIRECTIONAL)	2	EACH

NOTE:

EASTBOUND I.R. 90 M.O.T. CONTINUES BACK ACROSS BRIDGE, SEE SHEET PREVIOUS SHEET.

HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED PDG 11/04
CHECKED DT 11/04

MAINTENANCE OF TRAFFIC PLAN - DURING SINGLE SLOPE PARAPET CONSTRUCTION

CUY-90-15.24

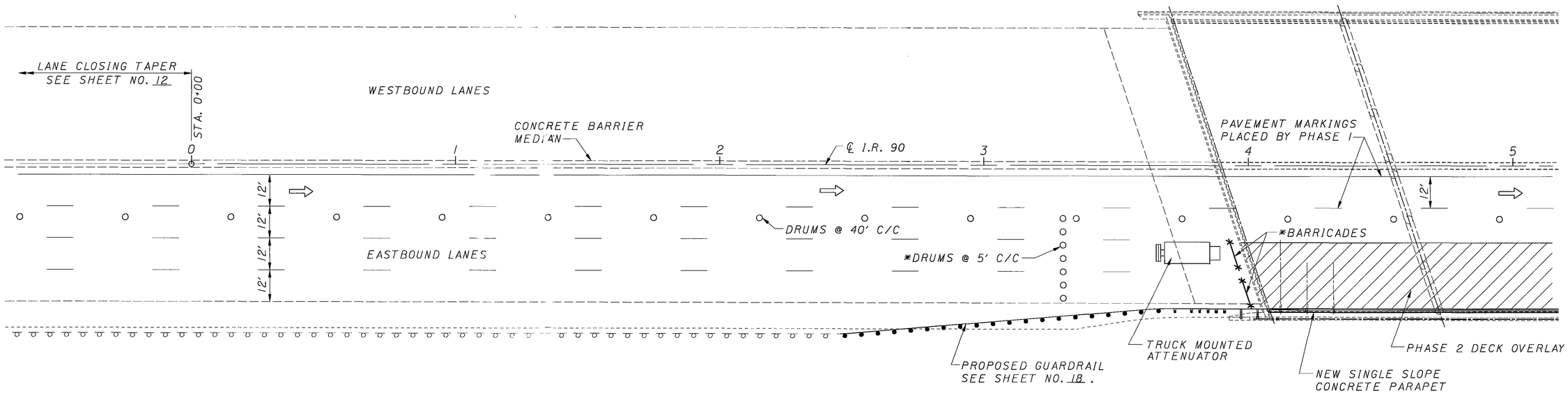
9
34

100109MPK-CONC.DGN 11/23/04 HN

WORK ZONE PAVEMENT MARKINGS

614 WORK ZONE LANE LINE, CLASS I, 642 PAINT	2426 FT/0.46	MILE
614 WORK ZONE CHANNELIZING LINE, CLASS I, 642 PAINT	270 FT	
614 WORK ZONE EDGE LINE, CLASS I, 642 PAINT (WHITE)	1140 FT/0.22	MILE

THESE WORK ZONE MARKINGS OR THE PERMANENT PAVEMENT MARKINGS SHALL BE PLACED ON THE PHASE 2 DECK OVERLAY PRIOR TO REOPENING TO TRAFFIC. PLACEMENT OF THE WORK ZONE MARKINGS SHALL BE ON THE SAME ALIGNMENT AS THE PERMANENT MARKINGS, SEE SHEETS 18&19 .



* PLACE DRUMS AND BARRICADES ON APPROACH TO WORK AREA DURING DECK OVERLAY CURE.

SEE SHEET NO. 5 FOR PHASE 2 M.O.T. TYPICAL ON BRIDGE.

NOTE:

PHASE 2 M.O.T. CONTINUES AHEAD ACROSS BRIDGE, SEE NEXT SHEET.

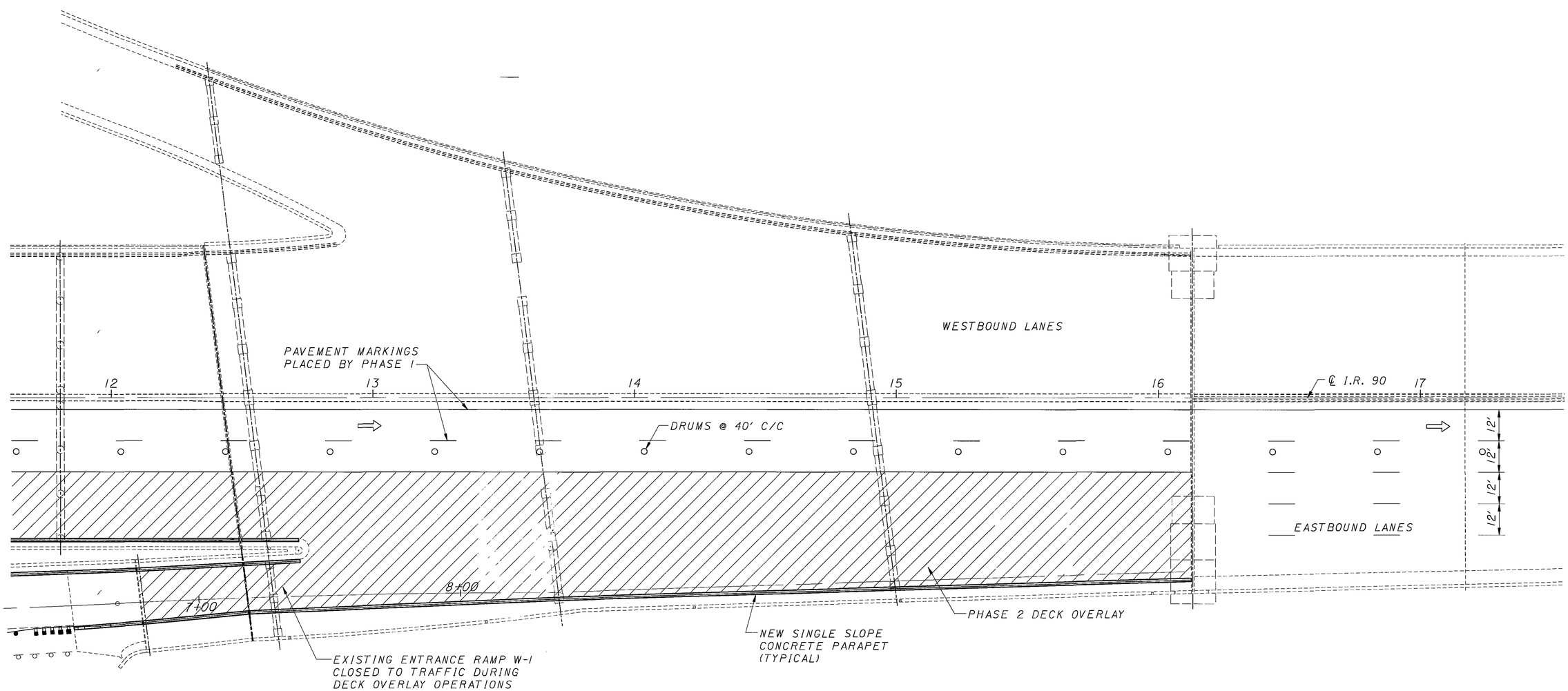
HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED PDG 11/04
CHECKED DT 11/04

MAINTENANCE OF TRAFFIC PLAN
PHASE 2 - DECK OVERLAY

CUY-90-15.24

10019MPB-CONC.DGN 11/23/04 HN



NOTE:

PHASE 2 M.O.T. CONTINUES BACK ACROSS BRIDGE, SEE PREVIOUS SHEET.

HORIZONTAL SCALE IN FEET
0 10 20 40

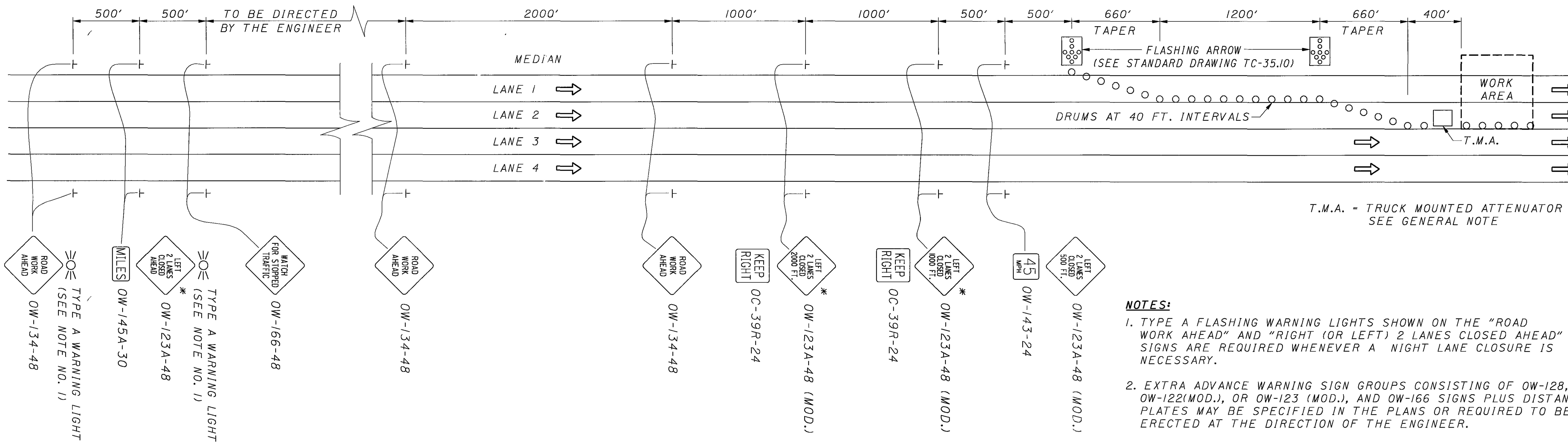
CALCULATED PDG 11/04
CHECKED DT 11/04

MAINTENANCE OF TRAFFIC PLAN PHASE 2 - DECK OVERLAY

CUY-90-15.24

11
34

10010SMPD-CONC.DGN 11/23/04 HN



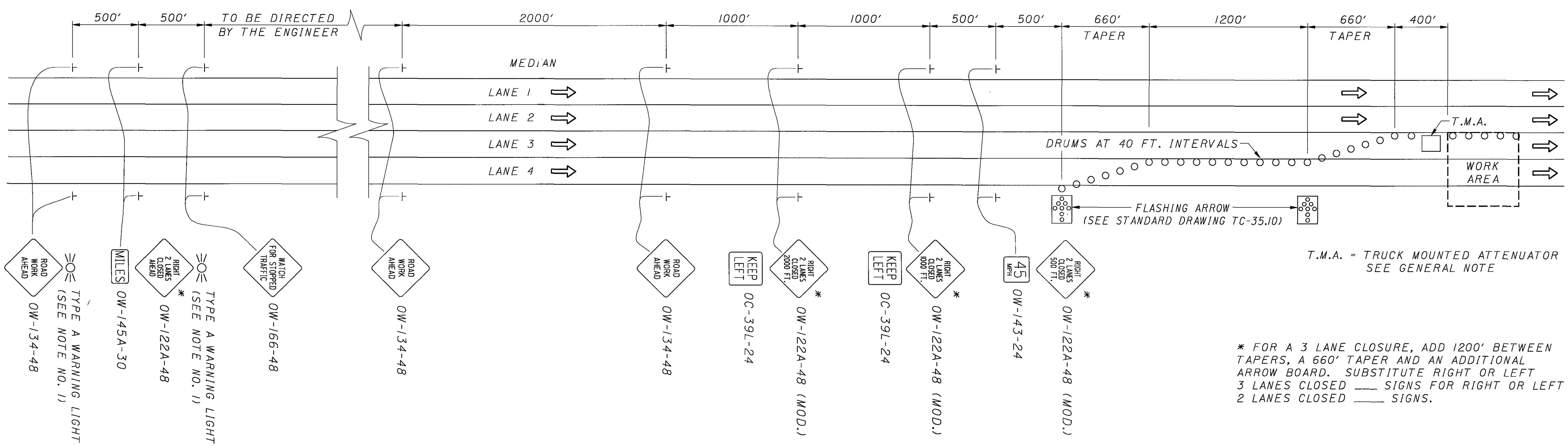
NOTES:

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.

LEFT 2 LANES CLOSED FOR 4 LANES SAME DIRECTION



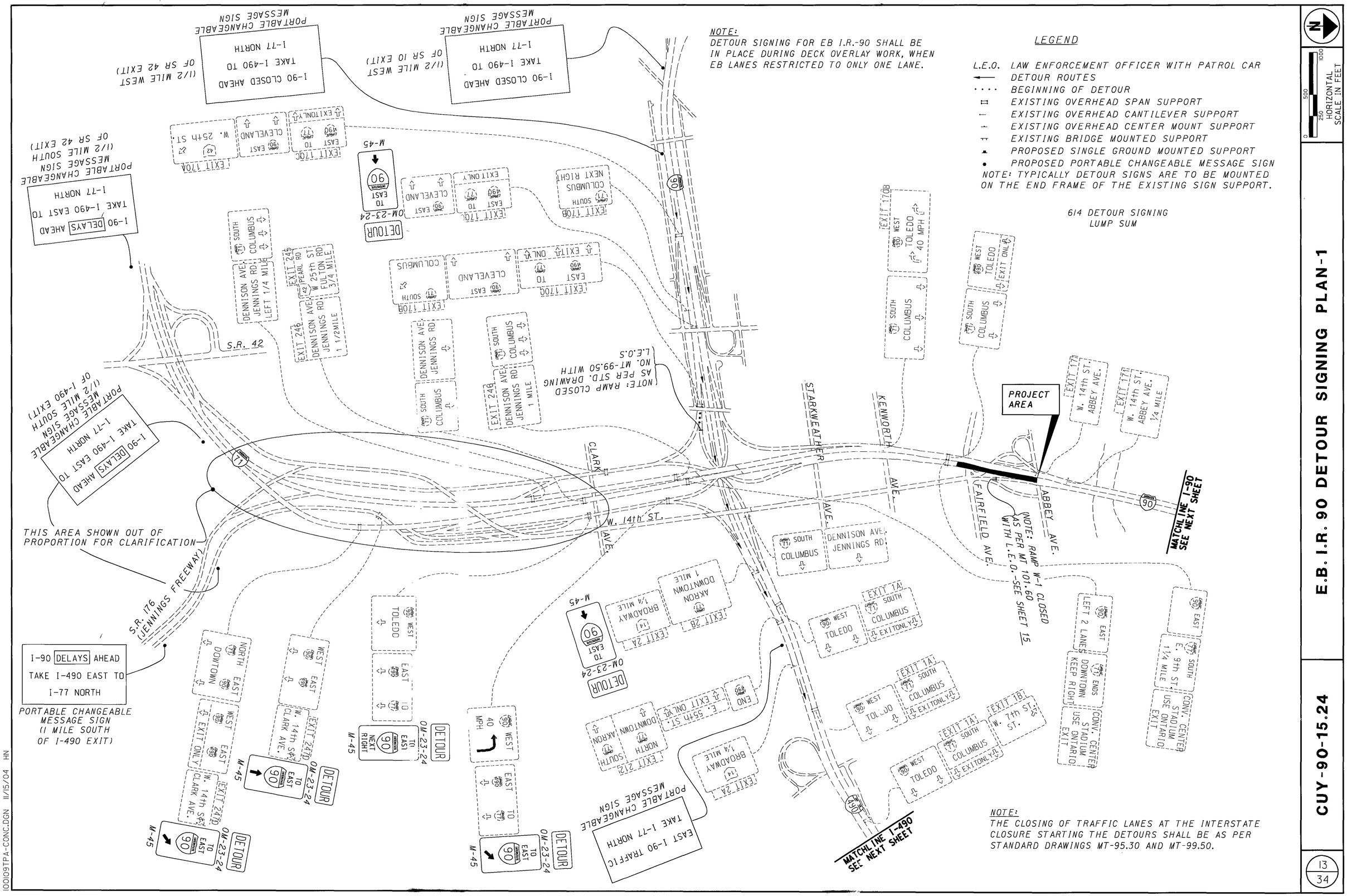
* FOR A 3 LANE CLOSURE, ADD 1200' BETWEEN TAPERS, A 660' TAPER AND AN ADDITIONAL ARROW BOARD. SUBSTITUTE RIGHT OR LEFT 3 LANES CLOSED ___ SIGNS FOR RIGHT OR LEFT 2 LANES CLOSED ___ SIGNS.

RIGHT 2 LANES CLOSED FOR 4 LANES SAME DIRECTION

MAINTENANCE OF TRAFFIC - LANE CLOSURES

CUY-90-15.24

10010MDB-CONC.DGN 11/11/04 HN



E.B. I.R. 90 DETOUR SIGNING PLAN-1

CUY-90-15.24

13
34

I:\001\09TPA-CONC.DGN 11/15/04 HN

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

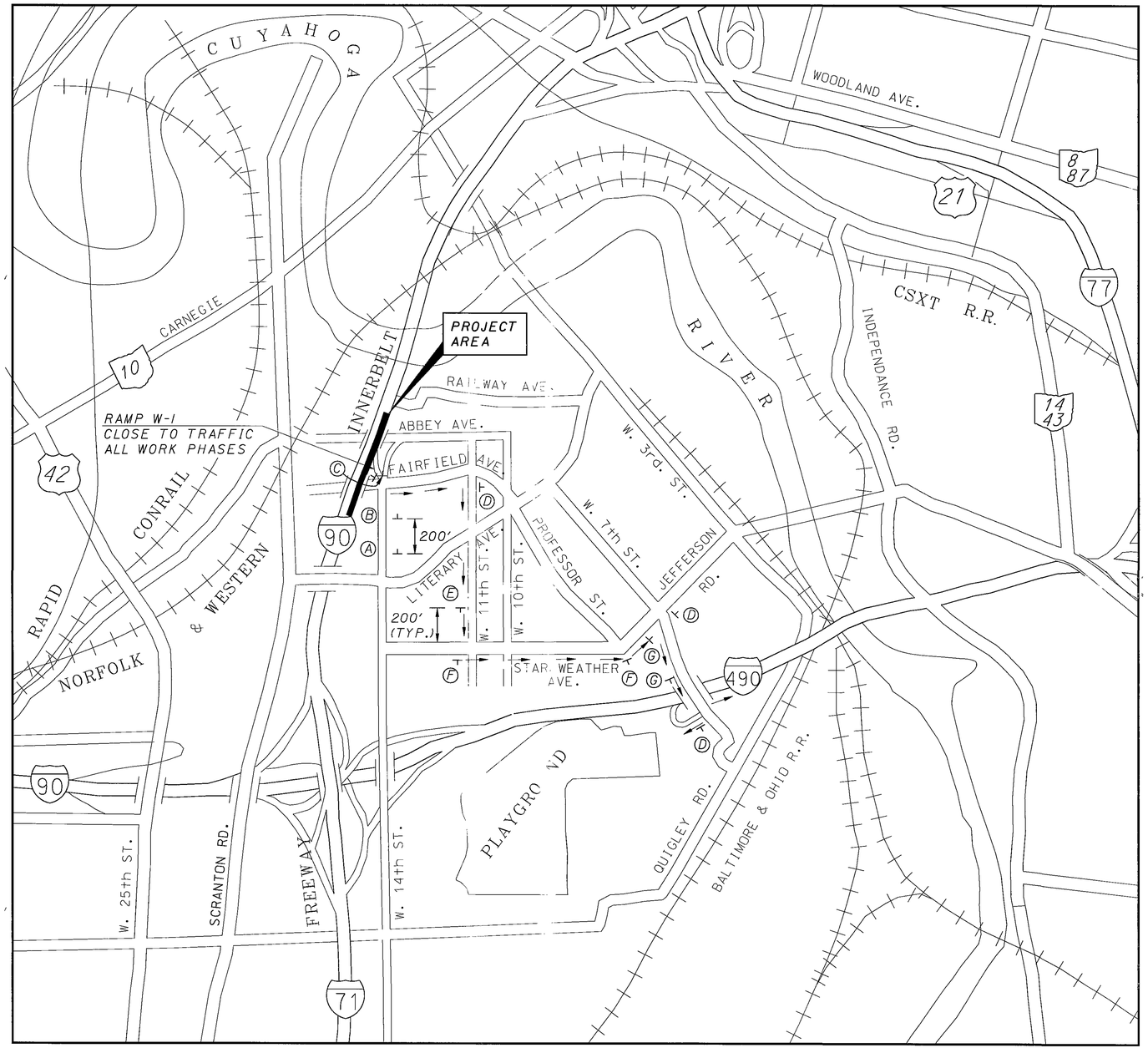
NOTE: TYPICALLY DETOUR SIGNS ARE TO BE MOUNTED ON THE END FRAME OF THE EXISTING SIGN SUPPORT.

N

0 250 500 1000
HORIZONTAL
SCALE IN FEET

E.B. I.R. 90 DETOUR SIGNING PLAN-2

CUY-90-15.24



NOT TO SCALE

→ → → DETOUR ROUTE

ROAD WORK AHEAD
OW-134-36 Ⓐ

DETOUR AHEAD
OW-127-36 Ⓑ

R-75-48
ROAD CLOSED
DETOUR
OC-14R-48
MOUNT ON GATES & BARRICADES
Ⓒ

DETOUR OM-23-24
TO IM-8-24
EAST IM-39-24
90 M-5-24-2
IM-21-21
Ⓔ

DETOUR OM-23-24
TO IM-8-24
EAST IM-39-24
90 M-5-24-2
IM-24-21
Ⓓ

DETOUR OM-23-24
TO IM-8-24
EAST IM-39-24
90 M-5-24-2
IM-5-24-2

IM-24-21
Ⓕ

DETOUR OM-23-24
TO IM-8-24
EAST IM-39-24
90 M-5-24-2
IM-19-21
Ⓖ

614 DETOUR SIGNING-LUMP SUM

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

CUY-90-15.24

15
34

100109DA-CONC.DGN 11/11/04 HN

CALCULATED PDG 11/04 CHECKED DT 11/04

UTILITIES

LISTED BELOW ARE ALL UTILITIES 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

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

CONTINGENCY QUANTITIES

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

ELEVATION DATUM

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

CONSTRUCTION LIMITS

THE CONSTRUCTION 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 CONSTRUCTION LIMITS.

ITEM 202 - RAISED PAVEMENT MARKERS REMOVED AND DISPOSED

RAISED PAVEMENT MARKERS SHALL BE REMOVED FROM THE BRIDGE DECK IN SUCH A MANNER THAT PREVENTS DAMAGE TO THE DECK. REMOVED MARKERS SHALL BE DISPOSED OF AS PER 202.02.

THE FOLLOWING ESTIMATED QUANTITY HAS BEEN INCLUDED IN THE GENERAL SUMMARY:

ITEM 202 - RAISED PAVEMENT MARKERS REMOVED AND DISPOSED — 64 EACH

ITEM 606 - GUARDRAIL TYPE 5, AS PER PLAN

PORTIONS OF THE NEW TYPE 5 GUARDRAIL WILL REQUIRE THE PLACEMENT OF THE POSTS IN THE EXISTING PAVED SHOULDERS. THE PROPOSED POSTS SHALL BE EITHER DRIVEN OR SET IN BORED HOLES IN THE ASPHALT PAVEMENT. AFTER THE POSTS ARE SET IN PLACE, THE CONTRACTOR SHALL PATCH AROUND THE POSTS. THE MATERIALS USED FOR PATCHING SHALL BE AN ASPHALT CONCRETE APPROVED BY THE ENGINEER. PATCHED AREAS SHALL BE COMPACTED USING EITHER HAND OR MECHANICAL METHODS. FINISHED SURFACES SHALL BE SMOOTH AND SLOPED TO DRAIN AWAY FROM THE POSTS. ALL THE EQUIPMENT, MATERIALS AND LABOR REQUIRED TO PERFORM THE ABOVE WORK SHALL BE INCLUDED FOR PAYMENT IN ITEM 606, GUARDRAIL, TYPE 5, AS PER PLAN.

CONNECTION BETWEEN EXISTING AND PROPOSED GUARDRAIL

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

GENERAL NOTES

CUY-90-15.24

SHEET NUMBER													ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION	AS PER PLAN REFERENCE SHEET
	2-4	6	8	9	10	13-14	15	16	18	19								
																	ROADWAY	
										14			202	32000	14	FT	CURB REMOVED	
									155	215			202	38000	370	FT	GUARDRAIL REMOVED	
								64					202	54000	64	EACH	RPM REMOVED AND DISPOSED	
									143.75	200.00			606	13001	343.75	FT	GUARDRAIL, TYPE 5, AS PER PLAN	16
									1	2			606	35000	3	EACH	BRIDGE TERMINAL ASSEMBLY, TYPE 1	
									2	3			626	00100	5	EACH	BARRIER REFLECTOR, TYPE A	
									6	8			626	00200	14	EACH	BARRIER REFLECTOR, TYPE B	
																	TRAFFIC CONTROL	
									24	30			621	00100	54	EACH	RPM	
									0.23	0.31			646	10000	0.54	MILE	EDGE LINE	
									0.34	0.36			646	10100	0.70	MILE	LANE LINE	
										270			646	10300	270	FT	CHANNELIZING LINE	
																	MAINTENANCE OF TRAFFIC	
	325												614	11100	325	HOUR	LAW ENFORCEMENT OFFICER WITH PATROL CAR	
			1	2									614	12336	3	EACH	WORK ZONE IMPACT ATTENUATOR (UNIDIRECTIONAL)	4
						LUMP	LUMP						614	12420	LUMP		DETOUR SIGNING	
	200												614	12510	200	SQ FT	REPLACEMENT SIGN	
	10												614	13000	10	CU YD	ASPHALT CONCRETE FOR MAINTAINING TRAFFIC	
	50												614	12600	50	EACH	REPLACEMENT DRUM	
	8												614	18601	8	SIGN-MNTH	PORTABLE CHANGEABLE MESSAGE SIGN, AS PER PLAN	4
		0.23			0.46								614	20100	0.69	MILE	WORK ZONE LANE LINE, CLASS I, 642 PAINT	
		0.23			0.22								614	22100	0.45	MILE	WORK ZONE EDGE LINE, CLASS I, 642 PAINT	
					270								614	23200	270	FT	WORK ZONE CHANNELIZING LINE, CLASS I, 642 PAINT	
													832	30000	1000	EACH	EROSION CONTROL	
													SPECIAL	530 00400	4	EACH	STRUCTURE MISC.: EMERGENCY ASPHALT PAVING OPERATION ON STANDBY	
																	STRUCTURE QUANTITIES	
																	CUY-90-1524 SEE SHEET NO. 23	
	LUMP												614	11000	LUMP		MAINTAINING TRAFFIC	
													624	10000	LUMP		MOBILIZATION	

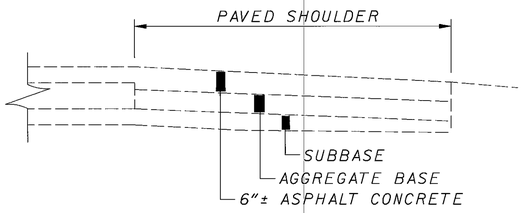
CALCULATED PDG 11/04
CHECKED DT 11/04

GENERAL SUMMARY

CUY-90-15.24

ESTIMATED QUANTITIES

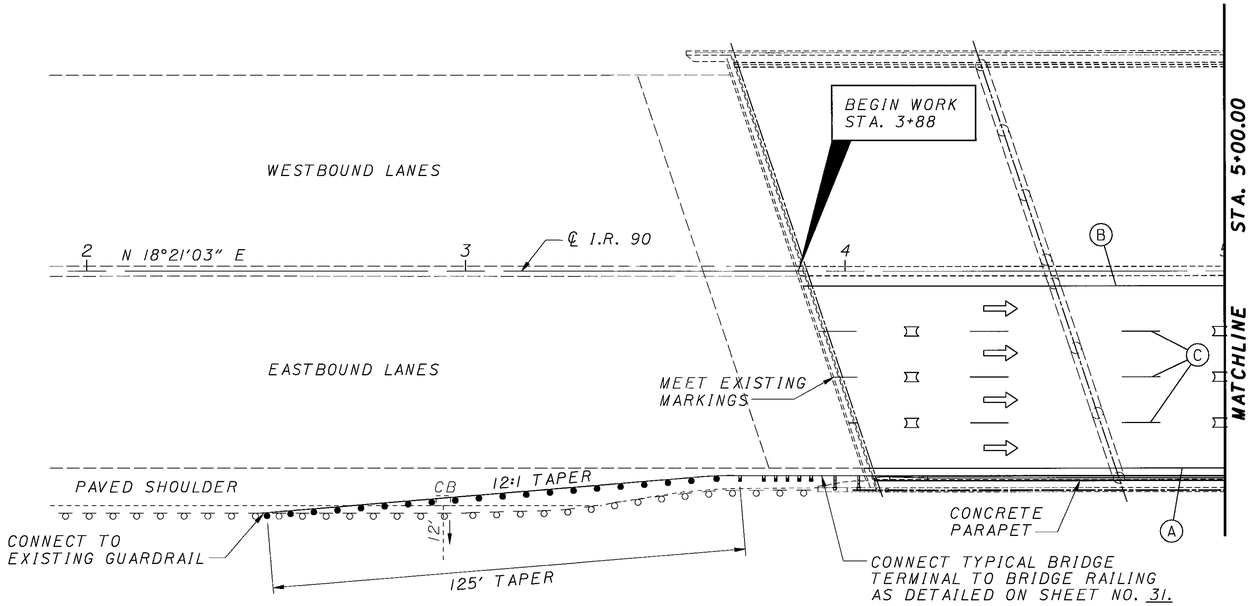
202	GUARDRAIL REMOVED	155	FT.
606	GUARDRAIL, TYPE 5, AS PER PLAN	143.75	FT.
606	BRIDGE TERMINAL ASSEMBLY, TYPE 1	1	EACH
621	RAISED PAVEMENT MARKER, 1 WAY WHITE	24	EACH
646	LANE LINE	1808	FT./0.34 MI.
646	EDGE LINE, WHITE	595	FT./0.11 MI.
646	EDGE LINE, YELLOW	611	FT./0.12 MI.
626	BARRIER REFLECTOR, TYPE A	2	EACH
626	BARRIER REFLECTOR, TYPE B	6	EACH

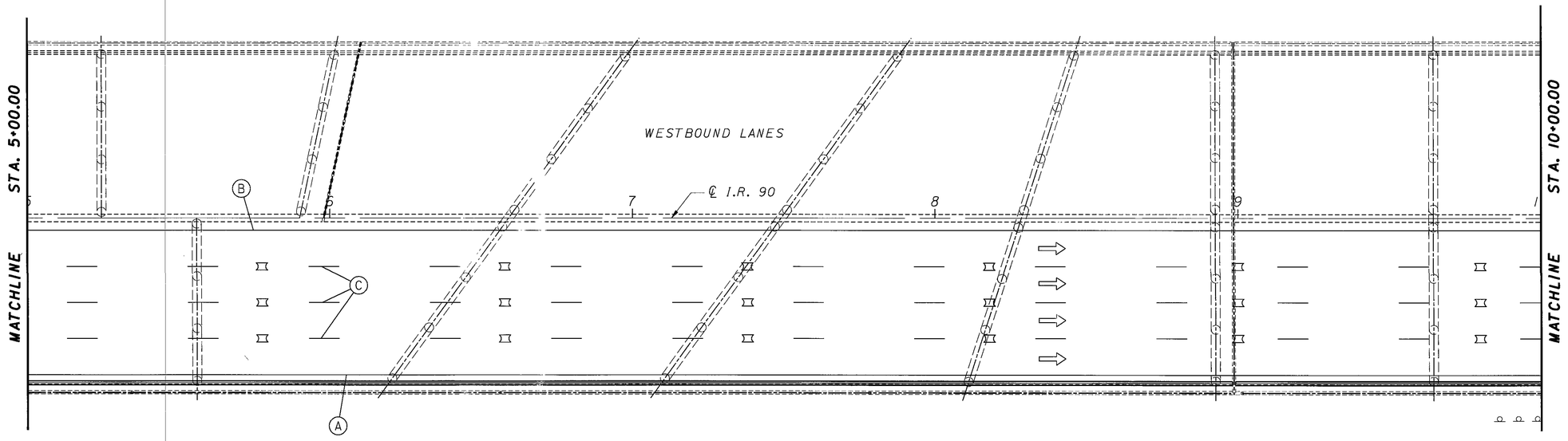


EXISTING PAVED SHOULDER TYPICAL

NOTES:
1. PROVIDE 20' MINIMUM TYPE 4C CONCRETE CURB ON APPROACH TO NEW CONCRETE PARAPET. SAW CUT EXISTING PAVED SHOULDER AT CURB FACE, COSTS INCLUDED IN BRIDGE TERM. ASSEMBLY. SEE STANDARD DRAWING GR-3.1.

2. PATCH AROUND ALL GUARDRAIL POSTS IN EXISTING PAVED SHOULDER WITH ASPHALT. SEE 606 GUARDRAIL, TYPE 5, AS PER PLAN NOTE, SHEET NO. 16 .





RAISED PAVEMENT MARKER LEGEND
- 1 WAY WHITE @ 120' c/c
- 2 WAY YELLOW/RED
- 2 WAY WHITE/RED

PAVEMENT MARKING LEGEND
- (A) 646 EDGE LINE, WHITE
- (B) 646 EDGE LINE, YELLOW
- (C) 646 LANE LINE
- (D) 646 CHANNELIZING LINE

HORIZONTAL SCALE IN FEET
0 10 20 40

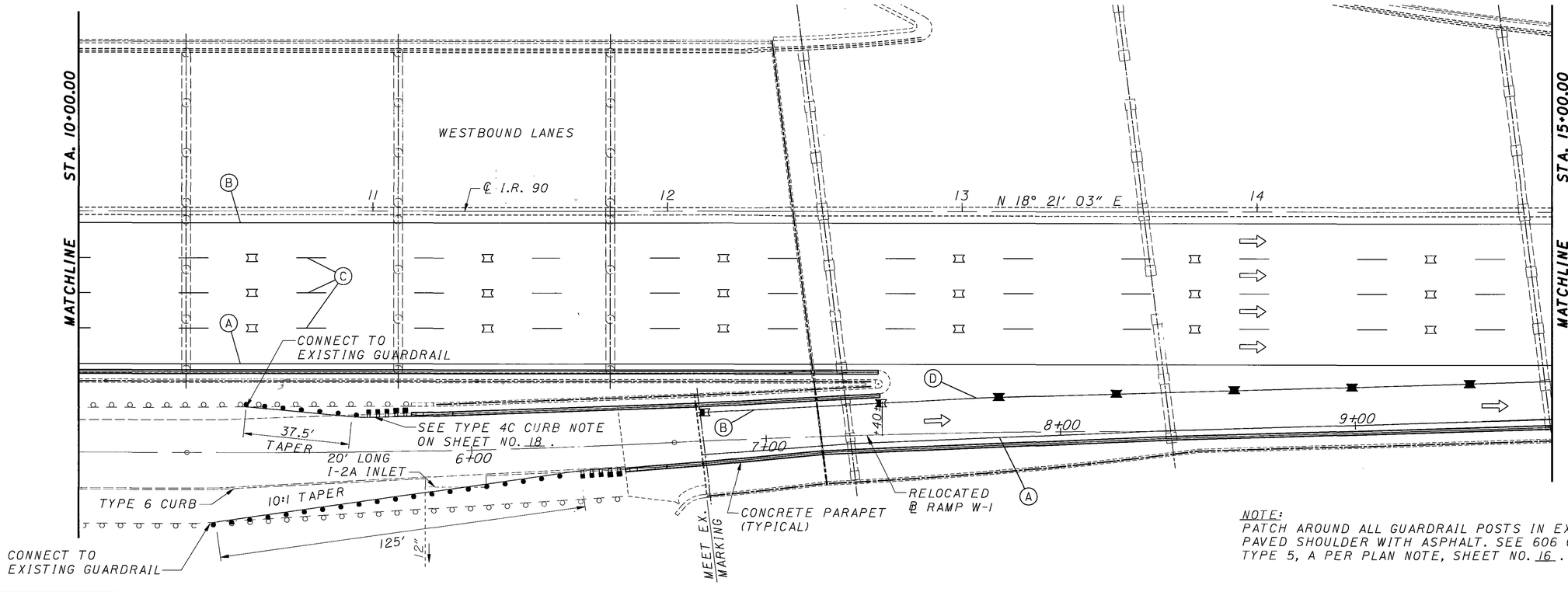
CALCULATED PDG 11/04
CHECKED DT 11/04

PLAN SHEET
STA. 2+00 TO STA. 10+00

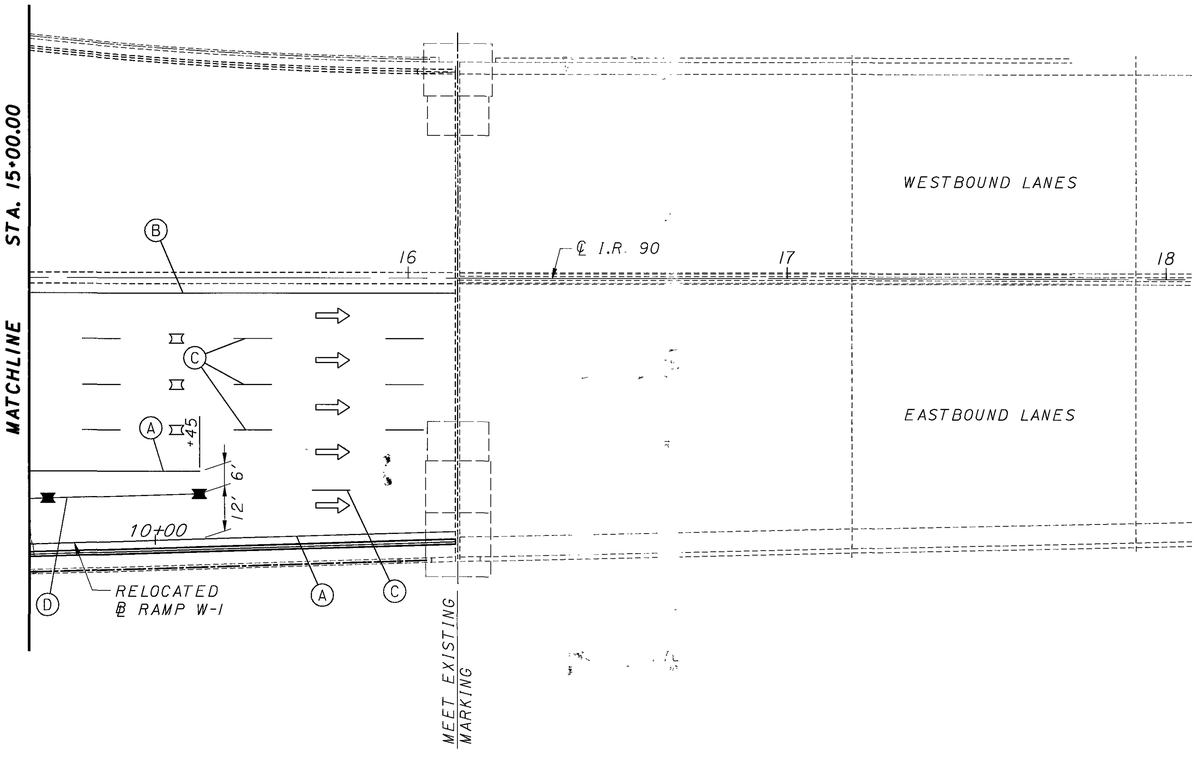
CUY-90-15.24

18
34

10010 9MPG-CONC.DGN 12/28/04 HN



NOTE:
PATCH AROUND ALL GUARDRAIL POSTS IN EXISTING PAVED SHOULDER WITH ASPHALT. SEE 606 GUARDRAIL, TYPE 5, A PER PLAN NOTE, SHEET NO. 16 .



ESTIMATED QUANTITIES

202	GUARDRAIL REMOVED (LEFT)	70	FT.
202	GUARDRAIL REMOVED (RIGHT)	145	FT.
202	CURB REMOVED (RIGHT)	14	FT.
606	GUARDRAIL, TYPE 5, AS PER PLAN	56.25	FT. (LEFT)
606	GUARDRAIL, TYPE 5, AS PER PLAN	143.75	FT. (RIGHT)
606	BRIDGE TERMINAL ASSEMBLY, TYPE I	2	EACH
621	RAISED PAVEMENT MARKER		
	1 WAY WHITE	21	EACH
	2 WAY YELLOW/RED	2	EACH
	2 WAY WHITE/RED	7	EACH
646	LANE LINE	1903	FT./0.36 MI.
646	EDGE LINE. WHITE	945	FT./0.18 MI.
646	EDGE LINE, YELLOW	678	FT./0.13 MI.
646	CHANNELIZING LINE	270	FT.
626	BARRIER REFLECTOR, TYPE A	3	EACH
626	BARRIER REFLECTOR, TYPE B	8	EACH

RAISED PAVEMENT MARKER LEGEND

- 1 WAY WHITE @ 80' c/c
- 2 WAY YELLOW/RED
- 2 WAY WHITE/RED

PAVEMENT MARKING LEGEND

- (A) 646 EDGE LINE, WHITE
- (B) 646 EDGE LINE, YELLOW
- (C) 646 LANE LINE
- (D) 646 CHANNELIZING LINE

HORIZONTAL SCALE IN FEET
0 10 20 40

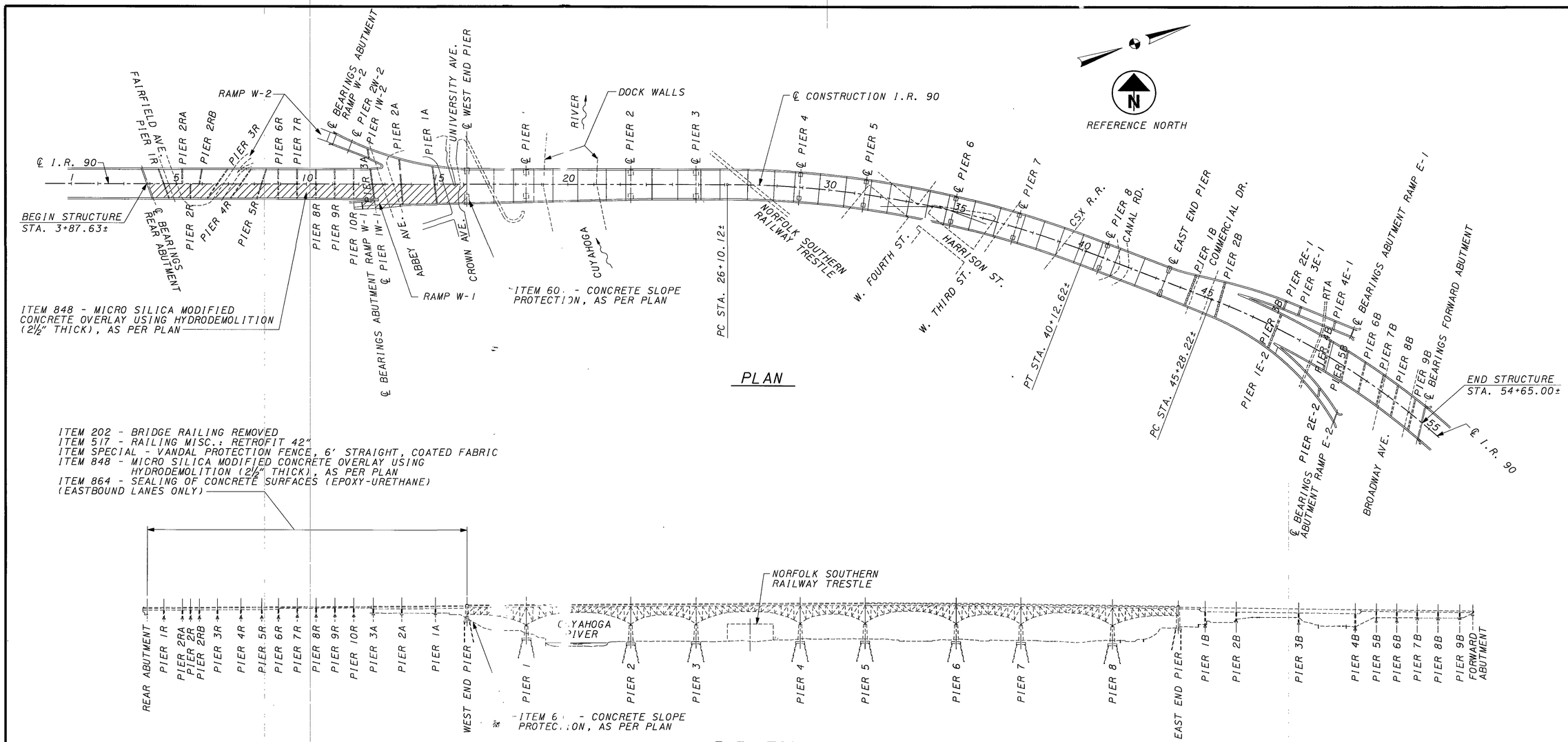
CALCULATED PDG 11/04
CHECKED DT 11/04

PLAN SHEET
STA. 10+00 TO STA. 18+00

CUY-90-15.24

19
34

100109MPH-CONC.DGN 12/28/04 HN



PLAN

ITEM 202 - BRIDGE RAILING REMOVED
ITEM 517 - RAILING MISC.: RETROFIT 42"
ITEM SPECIAL - VANDAL PROTECTION FENCE, 6' STRAIGHT, COATED FABRIC
ITEM 848 - MICRO SILICA MODIFIED CONCRETE OVERLAY USING HYDRODEMOLITION (2½" THICK), AS PER PLAN
ITEM 864 - SEALING OF CONCRETE SURFACES (EPOXY-URETHANE) (EASTBOUND LANES ONLY)

ELEVATION

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) 2'-2"± SAFETY CURBS AND 2'-6"± MEDIAN BARRIER.

LOADING: CF2000

SKEW: VARIES

WEARING SURFACE: 2½"± LATEX MODIFIED CONCRETE

APPROACH SLAB: AS-1-54 (25'-0"± LONG)

ALIGNMENT: TANGENT

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

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 2[illegible]'±.

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

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

YEAR BUILT: 1959 WITH MINOR REHABILITATIONS IN 1973, 19[illegible] 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'-2"± SAFETY CURBS AND 2'-6"± MEDIAN BARRIER.

LOADING: CF2000

SKEW: VARIES

WEARING SURFACE: 2½"± LATEX MODIFIED CONCRETE

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: 125,340 (2000)

AVERAGE DAILY TRUCK TRAFFIC: 10,090 (2000)

PROPOSED WORK

1. OVERLAY WEARING SURFACE ON EASTBOUND 4 LANES IN R AND A SECTIONS (INCLUDING RAMP W-1).
2. INSTALL NEW 42" STRAIGHT FACED BARRIER AND 6' VANDAL PROTECTION FENCE.
3. REPLACE AND SEAL CRACKED SLOPE PROTECTION AT THE WEST END PIER.

RICHLAND ENGINEERING LIMITED
29 NORTH PARK STREET
MANSFIELD, OHIO 44902

DESIGNED JDB | DRAWN KH | CHECKED DT | REVIEWED DAP | DATE 11/22/04 | REVISED | STRUCTURE FILE NUMBER 1809393

GENERAL PLAN

BRIDGE NO. CUY-90-1524
OVER CUYAHOGA RIVER

CUY-90-15.24

1 / 15

20 / 34

CUY090GP-CONC.DGN 11/23/04 KH,HN

10009

REFERENCE: SHALL BE MADE TO STANDARD DRAWINGS:
EXJ-4-87 (REVISED 07-19-02)
VPF-1-90 (REVISED 07-19-02)
TBR-91 (REVISED 07-19-02)

AND TO SUPPLEMENTAL SPECIFICATIONS:
848 (DATED 02-08-02)
864 (DATED 07-11-00)
954 (DATED 09-09-97)

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:
CONCRETE CLASS HP - COMPRESSIVE STRENGTH 4500 P.S.I. (PARAPET)

REINFORCING STEEL - ASTM A615 OR A996, GRADE 60 WITH A MINIMUM YIELD STRENGTH OF 60 K.S.I.
SPLICES INDICATED ARE FOR GRADE 60 STEEL.

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

DECK PROTECTION METHOD: MICRO SILICA CONCRETE OVERLAY AND SEALING OF CONCRETE SURFACES.

WEARING SURFACE: WEARING SURFACE IS 2½" MICRO SILICA MODIFIED CONCRETE OVERLAY.

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.

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 AND 3 OF 34 .

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.

THE 42" CONCRETE BARRIERS ALONG THE WEST APPROACH SPANS CURBS ARE TO BE BUILT PRIOR TO THE PHASE II OVERLAY WORK. ONCE THE BARRIER IS BUILT, THE ALUMINUM TUBE RAILING WILL BE REPLACED BY THE VANDAL PROTECTION FENCE. AFTER THE NEW FENCE IS IN PLACE THE CONCRETE RAIL, SIDEWALK, SOFFIT, EDGES, AND BARRIER ITEMS WILL BE SEALED WITH EPOXY-URETHANE (AFTER PROPER CURING TIME FOR BARRIER AND OVERLAY).

ANY INCREASED COSTS CAUSED BY THE CONSTRUCTION SEQUENCE SHALL BE CONSIDERED INCIDENTIAL 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.

EXISTING BARRIER CURB AND POSTS (APPROXIMATELY 400')

ALL LABOR, ACCESS AND EQUIPMENT NECESSARY TO REMOVE LOOSE CONCRETE AND FORMING SPALLS FROM AREAS TO RECEIVE CONCRETE SEALING WITH EPOXY-URETHANE.

CONNECTION BOLTS: ⅝ 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 ½ 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.

ITEM 517 - RAILING MISC.: RETROFIT 42"

THIS ITEM SHALL INCLUDE THE FURNISHING OF ALL MATERIALS, DRILLING, EPOXY GROUTING, REMOVING UNSOUND CURB CONCRETE, REMOVE EXISTING CONCRETE OVERLAY IN AREAS TO RECEIVE NEW RAILING, CAULKING, CUTTING CRACK CONTROL JOINTS, INSTALLING DRAINAGE SLOTS, INSTALLING TRANSITIONS, TESTING AND LABOR NECESSARY TO CONSTRUCT AND ERECT THE RAILING AS SHOWN IN THE PLANS AND AS SPECIFIED HEREIN.

ALL CONCRETE SHALL CONFORM TO THE FOLLOWING NOTES AND SHALL BE INCLUDED IN THE COST OF THIS ITEM.

GENERAL REQUIREMENTS:

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

MIX OPTIONS:

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

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

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)	GGBF SLAG (LB)	MICRO-SILICA (LB)	WATER TO CEMENTITIOUS RATIO +/-.02	AIR CONTENT +/-2%
GRAVEL	1245	360	1315	2920	400	170	30	0.42	7
LIMESTONE	1245	360	1335	2940	400	170	30	0.42	7
SLAG	1245	315	1155	2715	400	170	30	0.42	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):

FORMS SHALL NOT BE REMOVED UNTIL AT LEAST 2 HOURS AFTER THE FINAL SET. DETERMINATION OF THE FINAL SET SHALL BE AS PER ASTM C266 (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.

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 SLIP 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 C.M.S. 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.

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.

CRACK CONTROL JOINTS:

FOR BOTH SLIP FORMED AND FORMED AND POURED PARAPETS, THE CONTRACTOR SHALL CONSTRUCT 1½" DEEP AND ¼" WIDE CRACK CONTROL JOINTS SPACED AT A MINIMUM OF 6 FT. AND A MAXIMUM OF 10 FT. ON CENTER. 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 OR CONCRETE SAFETY WALK. 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 ALL FACES OF THE PARAPET. THE ENTIRE LENGTH OF EACH CONTROL JOINT SHALL BE SEALED TO A MINIMUM DEPTH OF 1½" WITH A CAULKING MATERIAL CONFORMING TO FEDERAL SPECIFICATION TT-S-00227E.

ALL REINFORCING STEEL SHALL BE EPOXY COATED AND SHALL BE INCLUDED IN THE COST OF THIS ITEM. THE CONTRACTOR MAY FIELD BEND REINFORCING STEEL TO MAINTAIN MINIMUM CLEARANCES AND COVER.

ALL DRILLING AND EPOXY GROUTING REQUIRED FOR INSTALLATION OF RAILING SHALL CONFORM TO C.M.S. 510 (GROUT ANCHORING) AND SHALL BE INCLUDED IN THE COST OF THIS ITEM.

BEFORE ANY DRILLING, THE CONTRACTOR SHALL USE A REBAR LOCATOR TO IDENTIFY LOCATIONS OF EXISTING REINFORCING STEEL. THE CONTRACTOR SHALL DRILL ONLY WHERE EXISTING REINFORCING STEEL IS NOT LOCATED.

CAULK EDGES OF ALL JOINTS BETWEEN NEW AND EXISTING CONCRETE WITH CAULK WHICH MEETS FEDERAL SPECIFICATION TT-S-00227E. ALL CAULKING COSTS SHALL BE INCLUDED UNDER THIS ITEM.

PAYMENT FOR THE ABOVE WORK WILL BE MADE AT THE CONTRACT UNIT PRICE BID FOR:

ITEM	UNITS	DESCRIPTION
517	FOOT	RAILING MISC.: (RETROFIT, 42"), AS PER PLAN

GENERAL NOTES CONTINUED: SEE SHEET 3/15 .

RICHLAND ENGINEERING LIMITED
29 NORTH PARK STREET
MANSFIELD, OHIO 44902

DESIGNED	DRAWN	REVIEWED	DATE
JDB	KH	DAP	11/22/04
CHECKED	REVISED	STRUCTURE FILE NUMBER	
DT		1809393	

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

CUY-90-15.24

ITEM SPECIAL - STEEL DRIP STRIP, AS PER PLAN

THIS ITEM SHALL INCLUDE THE INSTALLATION OF NEW STAINLESS STEEL DRIP STRIPS AT THE LOCATIONS SHOWN IN THE PLANS AND AS DIRECTED BY THE ENGINEER. THE DRIP STRIPS SHALL BE INSTALLED AFTER THE NEW CONCRETE SLOPE PROTECTION AND HOT APPLIED JOINT SEALANT ARE COMPLETED.

THE STRIPS SHALL BE FASTENED AT 1'-0" C/C MAXIMUM WITH 1¼"x3/32" GALVANIZED OR STAINLESS BUTTON HEAD SPIKES (LENGTH x SHANK DIAMETER) OR NO. 10 GALVANIZED SCREWS AND EXPANSION ANCHORS, SUBJECT TO APPROVAL OF THE ENGINEER. THE STRIPS SHALL BE 7½" WIDE x 0.029" THICK STAINLESS STEEL MANUFACTURED PER ASTM A167, TYPE 304, MILL FINISH. WHERE SPLICES ARE REQUIRED, THE INDIVIDUAL PIECES SHALL BE BUTTED TOGETHER.

PAYMENT SHALL BE AT THE CONTRACT PRICE BID FOR ITEM SPECIAL - STEEL DRIP STRIP, AS PER PLAN, PER FOOT, WHICH SHALL INCLUDE ALL MATERIALS, LABOR, TOOLS, AND INCIDENTALS NECESSARY TO COMPLETE THE ITEM TO THE SATISFACTION OF THE ENGINEER.

ITEM 601 - CONCRETE SLOPE PROTECTION, AS PER PLAN

THIS ITEM SHALL INCLUDE THE FURNISHING OF ALL MATERIALS, LABOR AND EQUIPMENT REQUIRED FOR INSTALLING THE NEW 6 INCH THICK CONCRETE SLOPE PROTECTION TO MATCH THE EXISTING CONCRETE SLOPE PROTECTION AS SHOWN IN THE PLANS AND AS SPECIFIED HEREIN.

THE EXISTING CONCRETE SLOPE PROTECTION SHALL BE SAW CUT ONE FOOT FROM AN EXISTING CRACK CONTROL JOINT AND REMOVED WITH CARE TAKEN NOT TO DAMAGE THE SLOPE PROTECTION AND WELDED STEEL WIRE FABRIC TO REMAIN. IF VOIDS ARE FOUND UNDER THE EXISTING CONCRETE SLOPE PROTECTION BEING REMOVED THEY SHALL BE FILLED WITH 304 AGGREGATE BASE MATERIAL OR CONCRETE FOR ADJUSTMENT TO GRADE.

CRACK CONTROL JOINTS SHALL BE PLACED IN THE NEW CONCRETE SLOPE PROTECTION TO LINE UP WITH THE EXISTING CRACK CONTROL JOINTS IN THE CONCRETE SLOPE PROTECTION TO REMAIN. SAW OR FORM THE CRACK CONTROL JOINTS TO A DEPTH OF 1½" AND APPROXIMATELY ⅛" WIDE.

THE INSTALLATION OF THE NEW REINFORCED CONCRETE SLOPE PROTECTION SHALL INCLUDE WELDED STEEL WIRE FABRIC, PREFORMED EXPANSION JOINT FILLER, JOINT SEALER, CRACK CONTROL JOINTS, BASE MATERIAL, AND CONCRETE. ANY CRACKS IN THE EXISTING CONCRETE SLOPE PROTECTION THAT ARE SEPARATED MORE THAN ¼"± SHALL BE BLOWN CLEAR OF DIRT AND DEBRIS AND SEALED WITH HOT APPLIED JOINT SEALER AS PER C.M.S. 705.04.

ALL COSTS OF CONSTRUCTING THE NEW CONCRETE SLOPE PROTECTION TO THE SATISFACTION OF THE ENGINEER, INCLUDING REMOVAL OF EXISTING CONCRETE SLOPE PROTECTION, ALL NECESSARY BASE MATERIAL, EXCAVATION, WELDED STEEL WIRE FABRIC, PREFORMED EXPANSION JOINT FILLER, JOINT SEALER, AND CONCRETE SHALL BE INCLUDED UNDER ITEM 601 - CONCRETE SLOPE PROTECTION, AS PER PLAN, PER SQUARE YARD.

ITEM 848 - MICRO SILICA MODIFIED CONCRETE OVERLAY USING HYDRODEMOLITION (2½" THICK), AS PER PLAN
ITEM 848 - SURFACE PREPARATION USING HYDRODEMOLITION (1" DEPTH), AS PER PLAN
ITEM 848 - MICRO SILICA MODIFIED CONCRETE OVERLAY (VARIABLE THICKNESS), MATERIAL ONLY, AS PER PLAN
ITEM 848 - FULL DEPTH REPAIR, AS PER PLAN
ITEM 848 - EXISTING CONCRETE OVERLAY REMOVED (1½" THICK SDC), AS PER PLAN

THESE ITEMS SHALL BE PERFORMED PER SUPPLEMENTAL SPECIFICATION 848 "BRIDGE DECK REPAIR AND OVERLAY WITH CONCRETE USING HYDRO-DEMOLITION" WITH THE FOLLOWING REVISIONS:

THE THICKNESS OF THE CONCRETE OVERLAY REMOVED, PROPOSED OVERLAY AND THE DEPTH OF THE HYDRODEMOLITION SHALL BE AS SPECIFIED IN THE PLANS.

ALL COARSE AGGREGATE SHALL HAVE AN ABSORPTION OF 1.00% OR GREATER AS DEFINED BY ASTM C-127.

CONSTRUCTION JOINTS WILL NOT BE PERMITTED IN THE WHEEL LINE.

THESE ITEMS SHALL BE PERFORMED AS PER SUPPLEMENTAL SPECIFICATION: 848 "BRIDGE DECK REPAIR AND OVERLAY WITH CONCRETE USING HYDRODEMOLITION" WITH THE FOLLOWING REVISIONS.

(SEE 848.18) THE REMOVAL OPERATIONS SHALL NOT BEGIN IF SUSTAINED RAINS (5 HOURS OR MORE WITH BREAKS BETWEEN SHOWERS LESS THAN 1½ HOURS) ARE PREDICTED WITHIN 48 HOURS OF COMMENCEMENT.

(SEE 848.21) THE FINAL SOUNDING MAY TAKE PLACE WITHIN 24 HOURS OF A RAIN, AND THE DECK DOES NOT HAVE TO BE COMPLETELY DRY.

(SEE 848.23) FULL DEPTH REPAIR IS NOT REQUIRED IF LESS THAN ONE HALF OF THE ORIGINAL DECK CONCRETE THICKNESS IS SOUND.

(SEE 848.29) THE WET CURE TIME IS REDUCED FROM 72 HOURS TO 36 HOURS AND UNTIL A BEAM BREAK OF 600 PSI IS ACHIEVED, WHICHEVER IS GREATER. AFTER THE 36 HOUR WET CURE, THE FINISHED OVERLAY SURFACE SHALL BE CURED BY SPRAYING A UNIFORM APPLICATION OF CURING MATERIAL 705.07, TYPE I OR ID, AS PER C.M.S. 511.17 METHOD (B) MEMBRANE CURING. IF THE CURING COMPOUND CAN NOT BE PLACED WITHIN THE SAME SHORT TERM CLOSURE PERIOD AS THE OVERLAY, THE CONTRACTOR MAY ALLOW TRAFFIC ONTO THE OVERLAY, AND SHALL, AT THE NEXT AVAILABLE SHORT TERM CLOSURE PERIOD, APPLY THE MEMBRANE CURING COMPOUND.

(SEE 848.29) TRAFFIC WILL NOT BE PERMITTED ON THE FINISHED OVERLAY SURFACE UNTIL AFTER THE COMPLETION OF THE 36 HOUR WET CURE, AND AFTER TWO TEST BEAMS HAVE ATTAINED AN AVERAGE MODULUS OF RUPTURE OF 600 PSI.

(SEE 848.30) THE OVERLAY SURFACE EVAPORATION RATE REQUIREMENTS ARE IN EFFECT FROM 11:30 AM TO 11:00 PM. THEY ARE NOT IN EFFECT FROM 11:00 PM TO 11:30 AM.

(SEE 848.31) FOR EACH PHASE, THE CONTRACTOR SHALL PROVIDE ENOUGH MATERIAL FOR TWO BEAM BREAKS EACH AT 12 HOURS, 24 HOURS, 36 HOURS, AND 48 HOURS. THE DEPARTMENT WILL PERFORM THE BEAM BREAK TESTS AND DOCUMENT THE TIME OF THE POUR, THE TIME OF THE BEAM BREAK TESTS, AND THE MODULUS OF RUPTURE FOR EACH BEAM UNTIL THE MODULUS OF RUPTURE OF TWO TESTS IS NOT LESS THAN 650 PSI. (TRAFFIC IS ALLOWED ON THE OVERLAY AT 600 PSI.)

IF THE CONTRACTOR CAN NOT COMMENCE THE CONCRETE POUR BY 3a.m. SUNDAY, THE CONTRACTOR SHALL FOLLOW ITEM SPECIAL STRUCTURE, MISC.: EMERGENCY ASPHALT PAVING OPERATION ON STANDBY.

ALL OTHER REQUIREMENTS OF SS 848 REMAIN IN EFFECT.

SEALING OF CONCRETE SURFACES

EPOXY-URETHANE SHALL BE THE LIGHT NEUTRAL COLOR MEETING FEDERAL COLOR STANDARD NO. 17778. SUPERSTRUCTURE SHALL BE SEALED WITH EPOXY-URETHANE AS PER PLAN DETAILS.

ITEM SPECIAL STRUCTURE, MISC.: EMERGENCY ASPHALT PAVING OPERATION ON STANDBY:

THE CONTRACTOR SHALL MAKE ARRANGEMENTS TO HAVE AN ASPHALT CONCRETE SUPPLIER AND ASPHALT PAVING COMPANY ON CALL ON SUNDAYS THAT THE BRIDGE DECK OVERLAY IS SCHEDULED. IF THE CONTRACTOR HAS NOT STARTED TO POUR THE CONCRETE OVERLAY BY 3 A.M. SUNDAY, THE PROJECT ENGINEER WILL DIRECT THE CONTRACTOR TO STOP OPERATIONS AND PAVE THE BRIDGE WITH ASPHALT. THE ASPHALT CONTRACTOR WILL HAVE THE ABILITY TO MOBILIZE OPERATIONS WITHIN 12 HOURS. THIS INCLUDES PROVIDING 448 ASPHALT AND A PAVING CREW WITH COMPACTION EQUIPMENT.

THE PAVING AND ALL EXISTING TRAFFIC CONTROL MUST BE IN PLACE BY 5a.m. MONDAY.

THE FOLLOWING ITEMS SHALL BE USED IN THIS OPERATION:

ITEM	UNIT	DESCRIPTION
614	CU. YD.	ASPHALT CONCRETE FOR MAINTAINING TRAFFIC
848	SQ. YD.	WEARING COURSE REMOVED, ASPHALT, AS PER PLAN

THE STATE WILL PAY FOR ALL COSTS ASSOCIATED WITH PLACING AND REMOVING THE ASPHALT IF THE CONTRACTOR WAS NOT RESPONSIBLE FOR THE DELAY. IF THE CONTRACTOR WAS RESPONSIBLE FOR THE DELAY, THE CONTRACTOR WILL HAVE TO PAY ALL THE COST ASSOCIATED WITH THE PLACEMENT AND REMOVAL OF THE ASPHALT.

PAYMENT FOR ALL OF THE ABOVE SHALL BE AT THE UNIT PRICE BID PER EACH FOR ITEM SPECIAL STRUCTURE, MISC.: EMERGENCY ASPHALT PAVING OPERATION ON STANDBY WHICH SHALL INCLUDE ALL LABOR, EQUIPMENT, MATERIALS, AND INCIDENTALS NECESSARY TO COMPLETE THE ABOVE WORK.

RICHLAND ENGINEERING LIMITED
29 NORTH PARK STREET
MANSFIELD, OHIO 44902

DESIGNED JDB | DRAWN KH | REVIEWED DAP | DATE 11/22/04
CHECKED DT | REVISED | STRUCTURE FILE NUMBER 1809393

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

CUY-90-15.24

CUY090GN2-CONC.DGN 11/23/04 KH,HN

ESTIMATED QUANTITIES

CALCULATED DT DATED 11/04
CHECKED JDB DATED 11/04

	ITEM	ITEM EXT.	TOTAL	UNIT	DESCRIPTION	SUPER.	SUBSTR.	GENERAL	SEE SHEET
	202	11201	LUMP		PORTIONS OF STRUCTURE REMOVED, AS PER PLAN	LUMP	LUMP		2/15
	202	38500	1413	FOOT	BRIDGE RAILING REMOVED	1413			
	516	15000	6	EACH	STRUCTURAL JOINT OR JOINT SEALER, MISC.: 42" RAILING JOINT ARMOR	6			11/15
	517	73008	12.5	FOOT	RAILING (THRIE BEAM RAIL), MISC.: TRANSITION EXTENSION	12.5			12/15
	517	76300	1448	FOOT	RAILING MISC.: RETROFIT 4.	1448			2/15
	SPECIAL	51822301	35	FOOT	STEEL DRIP STRIP, AS PER PLAN		35		3/15
*	SPECIAL	53000400	140	EACH	STRUCTURE, MISC.: ADHESIVE ANCHORS	80		60	14/15
	601	21001	90	SQ.YD.	CONCRETE SLOPE PROTECTION AS PER PLAN			90	3/15
	SPECIAL	60739900	1404	FOOT	VANDAL PROTECTION FENCE, 6' STRAIGHT, COATED FABRIC	1404			14/15
	848	10001	8008	SQ.YD.	MICRO SILICA MODIFIED CONCRETE OVERLAY USING HYDRODEMOLITION (2½" THICK), AS PER PLAN	8008			3/15
	848	20001	8008	SQ.YD.	SURFACE PREPARATION USING HYDRODEMOLITION (1" DEPTH), AS PER PLAN	8008			3/15
*	848	30001	110	CU.YD.	MICRO SILICA MODIFIED CONCRETE OVERLAY (ARIABLE THICKNESS), MATERIAL ONLY, AS PER PLAN	110			3/15
*	848	50000	240	SQ.YD.	HAND CHIPPING	240			
	848	50100	LUMP		TEST SLAB	LUMP			
*	848	50201	18	CU.YD.	FULL DEPTH REPAIR, AS PER PLAN	18			3/15
	848	50321	8008	SQ.YD.	EXISTING CONCRETE OVERLAY REMOVED (½" THICK SDC), AS PER PLAN	8008			3/15
*	848	50340	1600	SQ.YD.	REMOVAL OF DEBONDED OR DETERIORATED EXISTING VARIABLE THICKNESS CONCRETE OVERLAY	1600			
	864	10100	3247	SQ.YD.	SEALING OF CONCRETE SURFACES (EPOXY URETHANE)	3247			3/15

INDEX OF SHEETS

* INDICATES APPROXIMATE QUANTITIES ARE FOR BID ONLY. ACTUAL PAY QUANTITIES WILL BE BASED ON FIELD MEASUREMENTS.

RICHLAND ENGINEERING LIMITED
29 NORTH PARK STREET
MANSFIELD, OHIO 44902

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

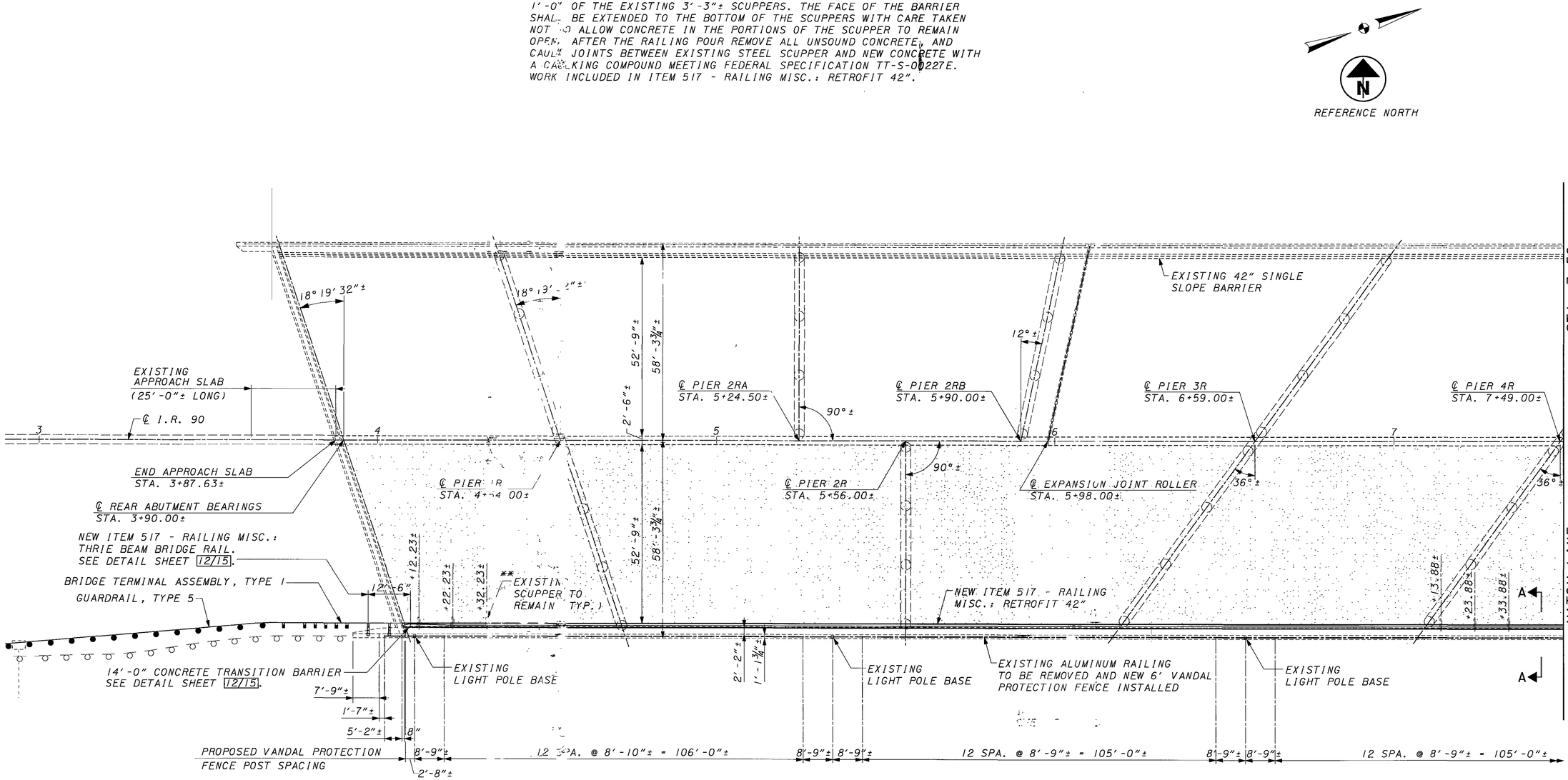
CUY-90-15.24

4/15

23/34

CU090EQ-CONC.DGN 11/23/04 KH,HN

** THE NEW 42" SINGLE SLOPE BARRIER WILL COVER APPROXIMATELY 1'-0" OF THE EXISTING 3'-3"± SCUPPERS. THE FACE OF THE BARRIER SHALL BE EXTENDED TO THE BOTTOM OF THE SCUPPERS WITH CARE TAKEN NOT TO ALLOW CONCRETE IN THE PORTIONS OF THE SCUPPER TO REMAIN OPEN. AFTER THE RAILING POUR REMOVE ALL UNSOUND CONCRETE, AND CAULK JOINTS BETWEEN EXISTING STEEL SCUPPER AND NEW CONCRETE WITH A CAULKING COMPOUND MEETING FEDERAL SPECIFICATION TT-S-00227E. WORK INCLUDED IN ITEM 517 - RAILING MISC.: RETROFIT 42".



DECK PLAN - 1

LEGEND

[ ] - INDICATES NEW ITEM 848 - MICRO SILICA MODIFIED CONCRETE OVERLAY USING HYDRODEMOLITION (2½" THICK), AS PER PLAN

NOTES

1. FOR STRUCTURE GENERAL NOTES, SEE SHEET 2/15.
2. FOR FENCE DETAILS, SEE SHEET 14/15.
3. FOR SECTION A-A, SEE SHEET 8/15.
4. THE INTENT OF THE PROPOSED FENCE POST SPACING IS TO UTILIZE THE ANCHOR BOLTS FROM THE EXISTING LIGHT POLES AND RAIL POSTS WHEREVER POSSIBLE. ALL SPACINGS ARE APPROXIMATE.
5. ALL EXISTING DOUBLE PIPE RAILING, INCLUDING POSTS, SHALL BE CAREFULLY REMOVED TO PRESERVE EXISTING ANCHOR BOLTS FOR RE-USE. PAYMENT FOR ALL LABOR AND EQUIPMENT SHALL BE MADE PER FOOT FOR ITEM 202, BRIDGE RAILING REMOVED.
6. CONTRACTOR SHALL EXERCISE EXTREME CARE WHILE REMOVING CONCRETE OR DRILLING AROUND REINFORCING STEEL. ANY REINFORCING STEEL THAT IS DAMAGED BY THE CONTRACTOR'S OPERATIONS SHALL BE REPLACED TO THE SATISFACTION OF THE ENGINEER AT THE CONTRACTOR'S EXPENSE.

CU090DPI-CONC.DGN 11/23/04 KH,HN

RICHLAND ENGINEERING LIMITED
29 NORTH PARK STREET
MANSFIELD, OHIO 44902

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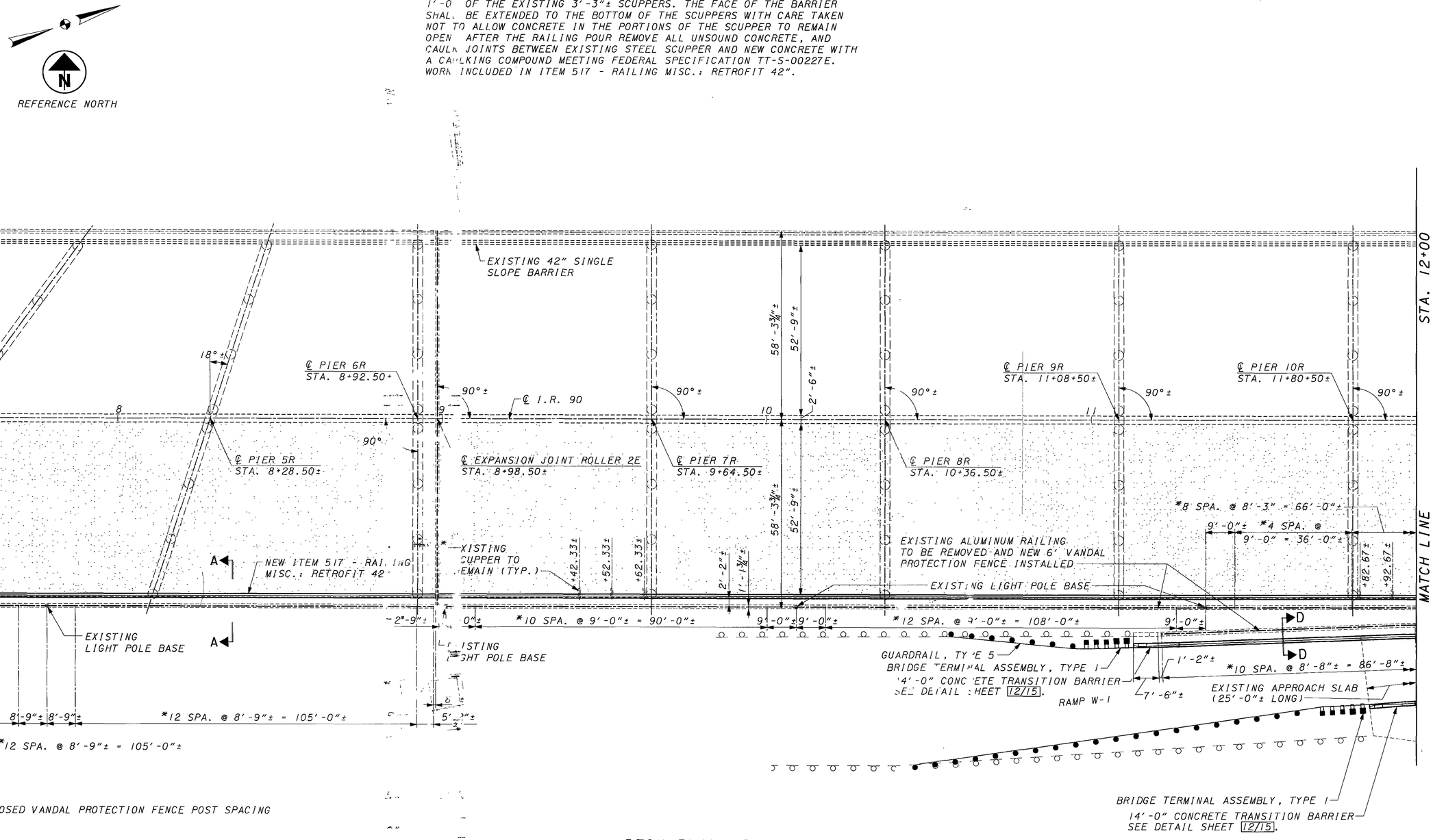
DECK PLAN - 1
BRIDGE NO. CUY-90-1524
OVER CUYAHOGA RIVER

CUY-90-15.24

5/15

24/34

** THE NEW 42" SINGLE SLOPE BARRIER WILL COVER APPROXIMATELY 1'-0" OF THE EXISTING 3'-3"± SCUPPERS. THE FACE OF THE BARRIER SHALL BE EXTENDED TO THE BOTTOM OF THE SCUPPERS WITH CARE TAKEN NOT TO ALLOW CONCRETE IN THE PORTIONS OF THE SCUPPER TO REMAIN OPEN AFTER THE RAILING POUR REMOVE ALL UNSOUND CONCRETE, AND CAULK JOINTS BETWEEN EXISTING STEEL SCUPPER AND NEW CONCRETE WITH A CAULKING COMPOUND MEETING FEDERAL SPECIFICATION TT-S-00227E. WORK INCLUDED IN ITEM 517 - RAILING MISC.: RETROFIT 42".



* PROPOSED VANDAL PROTECTION FENCE POST SPACING

DECK PLAN- 2

LEGEND

[ ] - INDICATES NEW ITEM 848 - MICRO SILICA MODIFIED CONCRETE OVERLAY USING HYDRODEMOLITION (2½" THICK), AS PER PLAN

NOTES

ADDITIONAL NOTES: SEE SHEET 5/15.

SECTIONS A-A & D-D: SEE SHEET 8/15.

FENCE DETAILS: SEE SHEET 14/15.

CU090DP2-CONC.DGN 11/23/04 KH,HN

RICHLAND ENGINEERING LIMITED
29 NORTH PARK STREET
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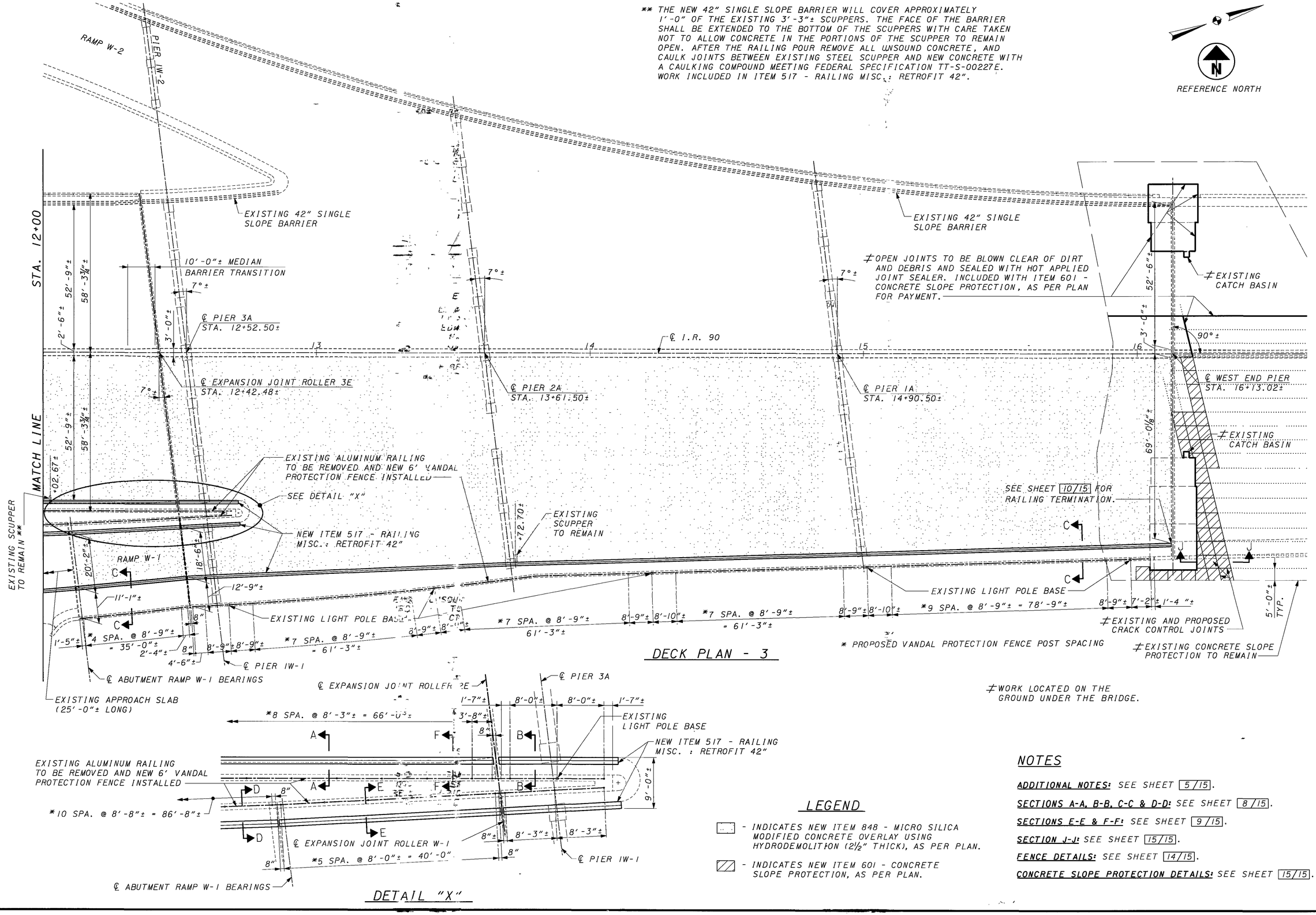
DECK PLAN - 2
BRIDGE NO. CUY-90-1524
OVER CUYAHOGA RIVER

CUY-90-15.24

6/15
25/34

** THE NEW 42" SINGLE SLOPE BARRIER WILL COVER APPROXIMATELY 1'-0" OF THE EXISTING 3'-3"± SCUPPERS. THE FACE OF THE BARRIER SHALL BE EXTENDED TO THE BOTTOM OF THE SCUPPERS WITH CARE TAKEN NOT TO ALLOW CONCRETE IN THE PORTIONS OF THE SCUPPER TO REMAIN OPEN. AFTER THE RAILING POUR REMOVE ALL UNSOUND CONCRETE, AND CAULK JOINTS BETWEEN EXISTING STEEL SCUPPER AND NEW CONCRETE WITH A CAULKING COMPOUND MEETING FEDERAL SPECIFICATION TT-S-00227E. WORK INCLUDED IN ITEM 517 - RAILING MISC. : RETROFIT 42".

REFERENCE NORTH



DECK PLAN - 3

DETAIL "X"

LEGEND

- INDICATES NEW ITEM 848 - MICRO SILICA MODIFIED CONCRETE OVERLAY USING HYDRODEMOLITION (2½" THICK), AS PER PLAN.
- INDICATES NEW ITEM 601 - CONCRETE SLOPE PROTECTION, AS PER PLAN.

NOTES

ADDITIONAL NOTES: SEE SHEET 5/15.

SECTIONS A-A, B-B, C-C & D-D: SEE SHEET 8/15.

SECTIONS E-E & F-F: SEE SHEET 9/15.

SECTION J-J: SEE SHEET 15/15.

FENCE DETAILS: SEE SHEET 14/15.

CONCRETE SLOPE PROTECTION DETAILS: SEE SHEET 15/15.

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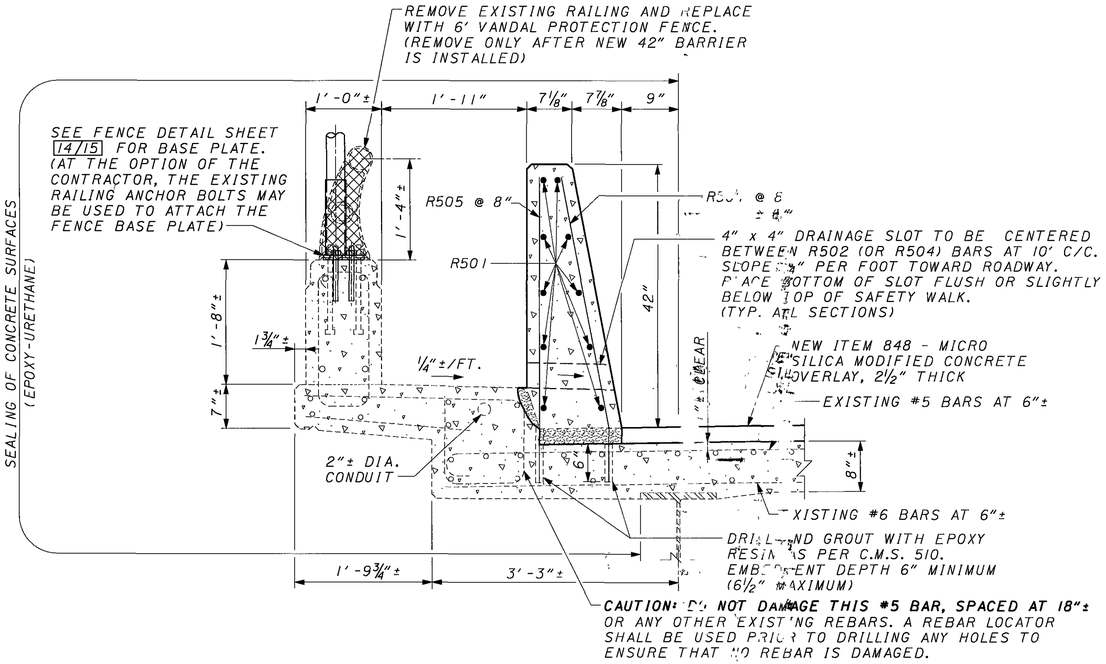
DECK PLAN - 3

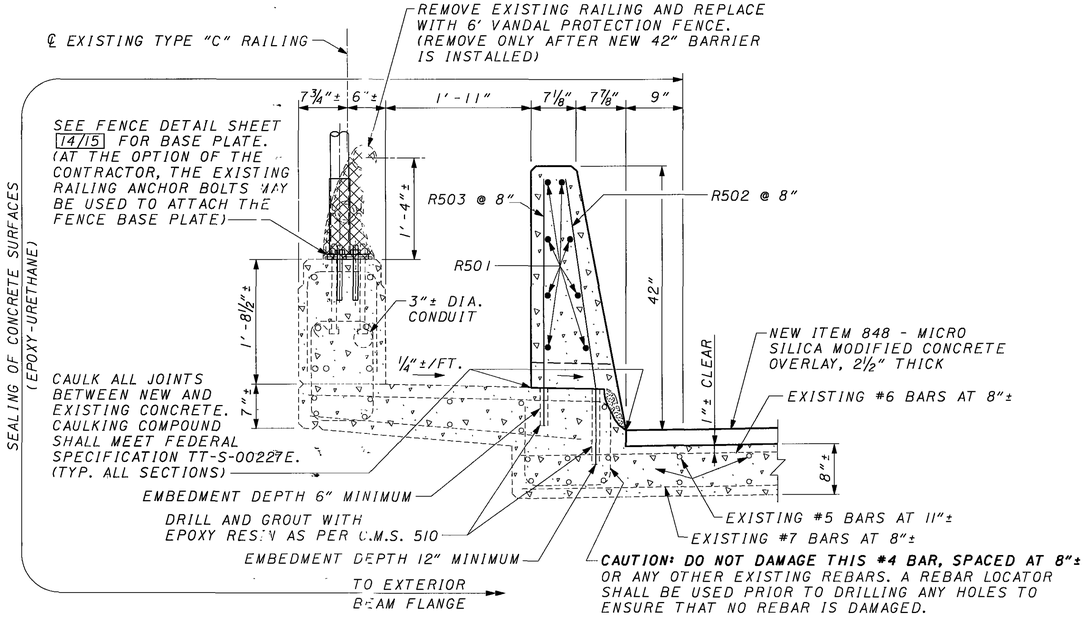
BRIDGE NO. CUY-90-1524
OVER CUYAHOGA RIVER

CUY-90-15.24

CU090DP3-CONC.DGN 11/23/04 KH,HN



SECTION A-A



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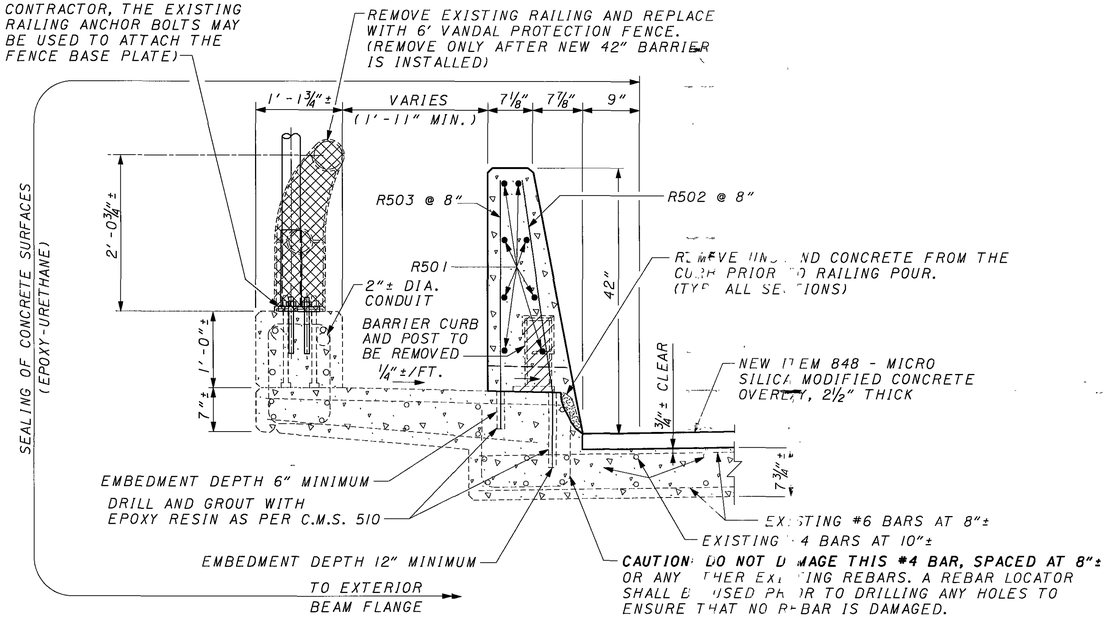
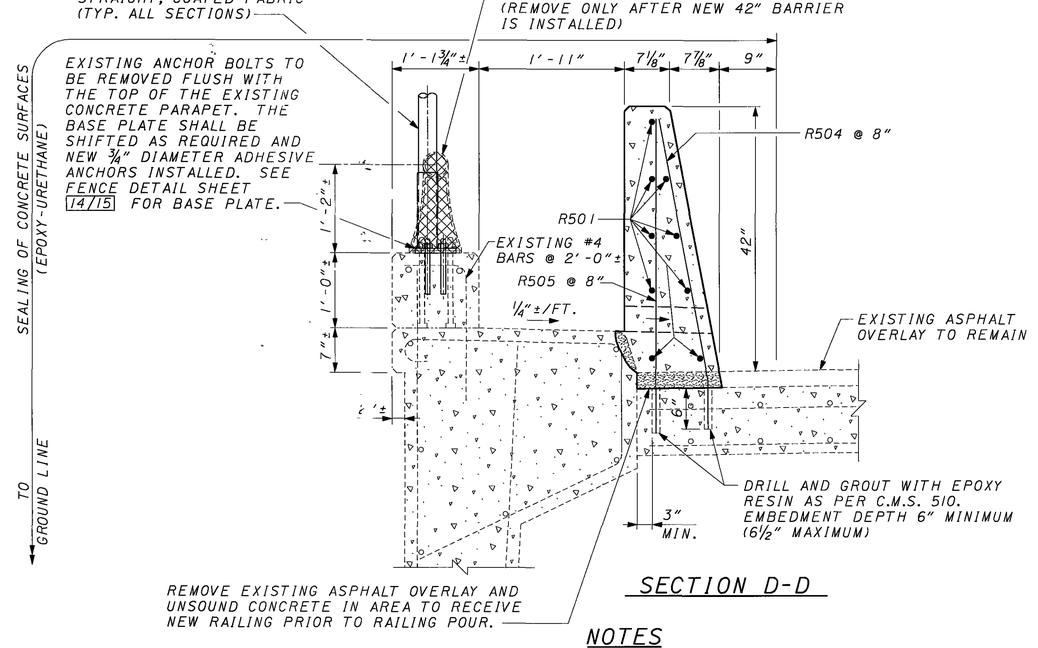


SECTION C-C



SECTION D-D

LEGEND

- ITEM 202 - PORTIONS OF STRUCTURE REMOVED, AS PER PLAN
- ITEM 202 - BRIDGE RAILING REMOVED
- REMOVAL INCLUDED WITH ITEM 517 - RAILING, MISC.: RETROFIT 42"

NOTES

FOR SECTIONS LOCATIONS: SEE SHEETS 5/15 TO 7/15.

REINFORCING STEEL SPLICE LENGTHS: SHALL BE 1'-11" FOR FOR #5 HORIZONTAL BARS.

ALL REBAR SHALL MAINTAIN 2 INCHES COVER INCLUDING 2 INCHES CLEAR FROM DRAINAGE SLOTS.

REINFORCING STEEL LIST: SEE SHEET 9/15.

CRACK CONTROL JOINTS SHALL BE CENTERED ABOVE DRAINAGE SLOTS AND FILLED WITH CAULKING MATERIAL THAT MEETS FEDERAL SPECIFICATION TT-S-00227E.

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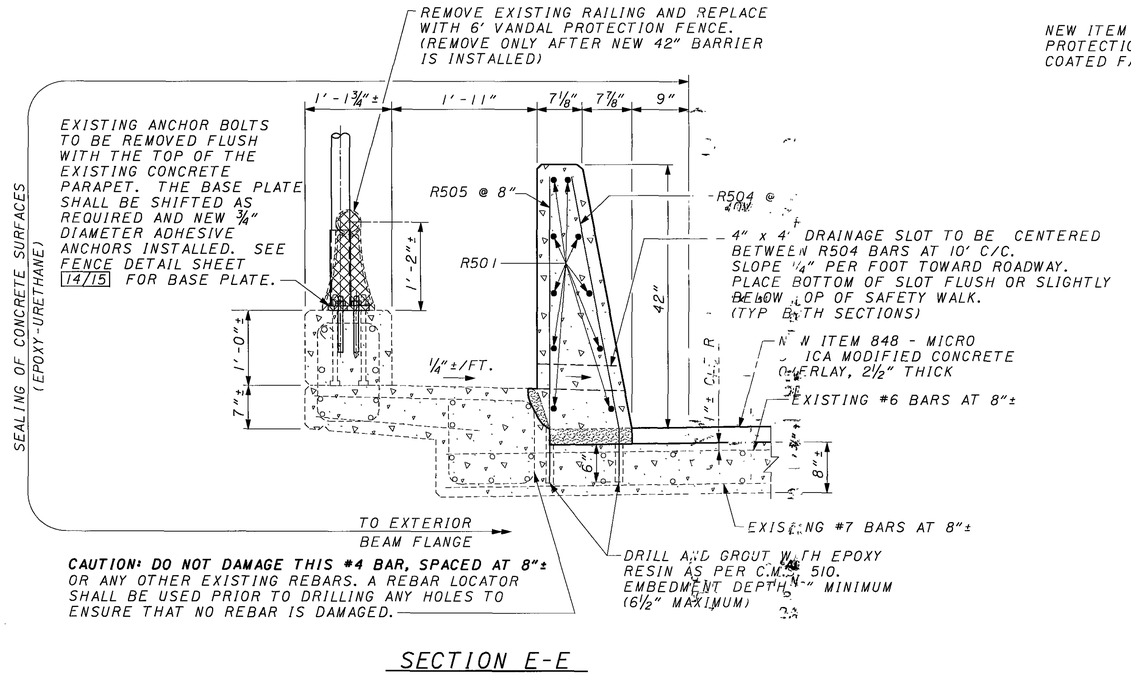
BARRIER DETAILS - 1
BRIDGE NO. CUY-90-1524
OVER CUYAHOGA RIVER

CUY-90-15.24

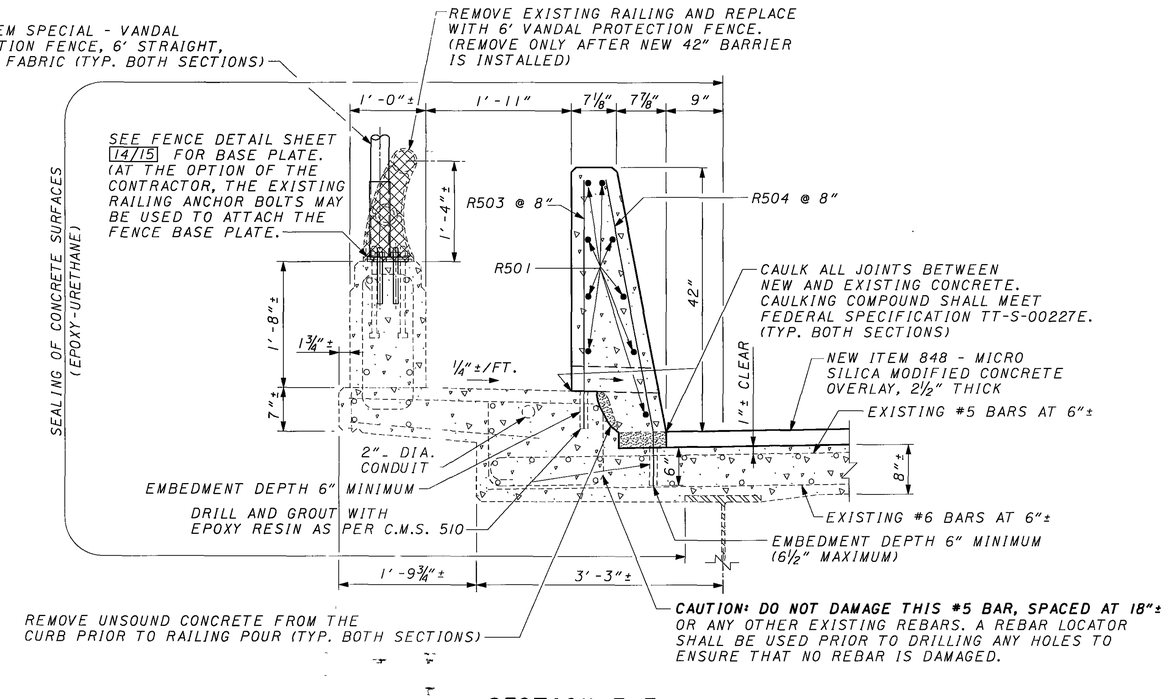
8/15

27/34

CU090BDI-CONC.DGN 11/23/04 KH,HN



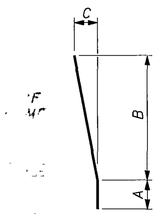
SECTION E-E



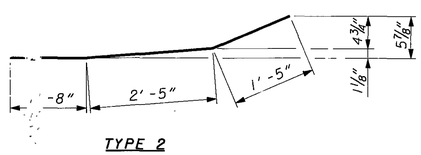
SECTION F-F

REINFORCING STEEL LIST

MARK	LENGTH	TYPE	DIM. A	DIM. B	DIM. C	INCREMENT	SERIES
• R501	*	STR.					
▲ R502	3'-8"	1	1'-0½"	2'-7"	0'-5¾"		
▲ R503	3'-0"	STR.					
▲ R504	4'-0"	1	0'-7¾"	3'-3½"	0'-7¾"		
▲ R505	3'-11"	STR.					
▲ R509	3'-1¾" / 3'-11¾"	1	0'-7¾"	2'-6" / 3'-2¾"	0'-0¼" / 0'-9¾"	1/16"	1 SER. OF 10
▲ R510	3'-1¾" / 3'-10½"	STR.				⅝"	1 SER. OF 15
R511	3'-2"	STR.					
• R512	5'-6"	2					
• R513	5'-6"	STR.					
• R514	12'-1"	1	2'-1"	10'-0"	0'-10"		



TYPE 1



TYPE 2

- ALL LONGITUDINAL REINFORCING STEEL SHALL BE CONTINUOUS. NO. 5 BARS SHALL HAVE A MINIMUM LAP LENGTH OF 1'-11".
- ▲ ALL VERTICAL NO.5 BARS SHALL BE SPACED AT 8" INTERVALS LONGITUDINALLY.
- * LENGTH TO BE DETERMINED BY CONTRACTOR.

NOTES: VERTICAL NO.5 BARS MAY BE FIELD BENT TO MAINTAIN 2" COVER.

ALL REINFORCING STEEL SHALL BE GRADE 60, EPOXY COATED.

THE BAR SIZE NUMBER IS SPECIFIED ON THE PLAN IN THE BAR MARK COLUMN. THE FIRST DIGIT WHERE THREE DIGITS ARE USED, AND THE FIRST TWO DIGITS WHERE FOUR DIGITS ARE USED, INDICATES THE BAR SIZE NUMBER. FOR EXAMPLE, R501 IS A NO. 5 BAR. BAR DIMENSIONS SHOWN ARE OUT TO OUT UNLESS OTHERWISE INDICATED.

LEGEND

- ITEM 202 - BRIDGE RAILING REMOVED
- REMOVAL INCLUDED WITH ITEM 517 - RAILING MISC.: RETROFIT 42"

NOTES

FOR SECTIONS LOCATIONS: SEE SHEET 7/15.

REINFORCING STEEL SPLICE LENGTHS: SHALL BE 1'-11" FOR FOR #5 HORIZONTAL BARS.

ALL REBAR SHALL MAINTAIN 2 INCHES COVER INCLUDING 2 INCHES CLEAR FROM DRAINAGE SLOTS.

CRACK CONTROL JOINTS SHALL BE CENTERED ABOVE DRAINAGE SLOTS AND FILLED WITH CAULKING MATERIAL THAT MEETS FEDERAL SPECIFICATION TT-S-00227E.

RICHLAND ENGINEERING LIMITED
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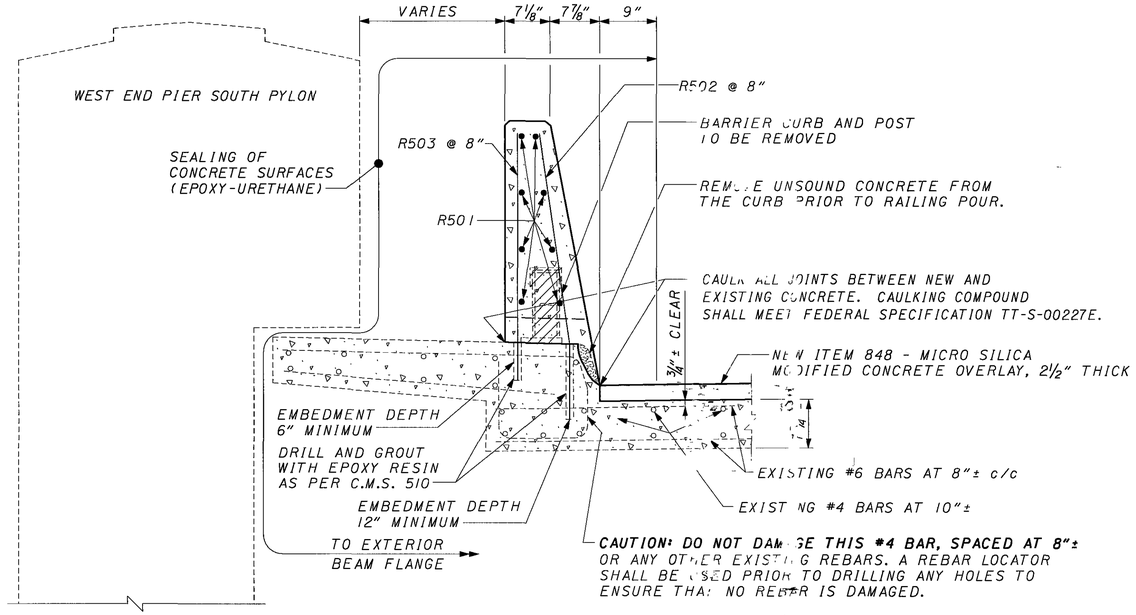
BARRIER DETAILS - 2
BRIDGE NO. CUY-90-1524
OVER CUYAHOGA RIVER

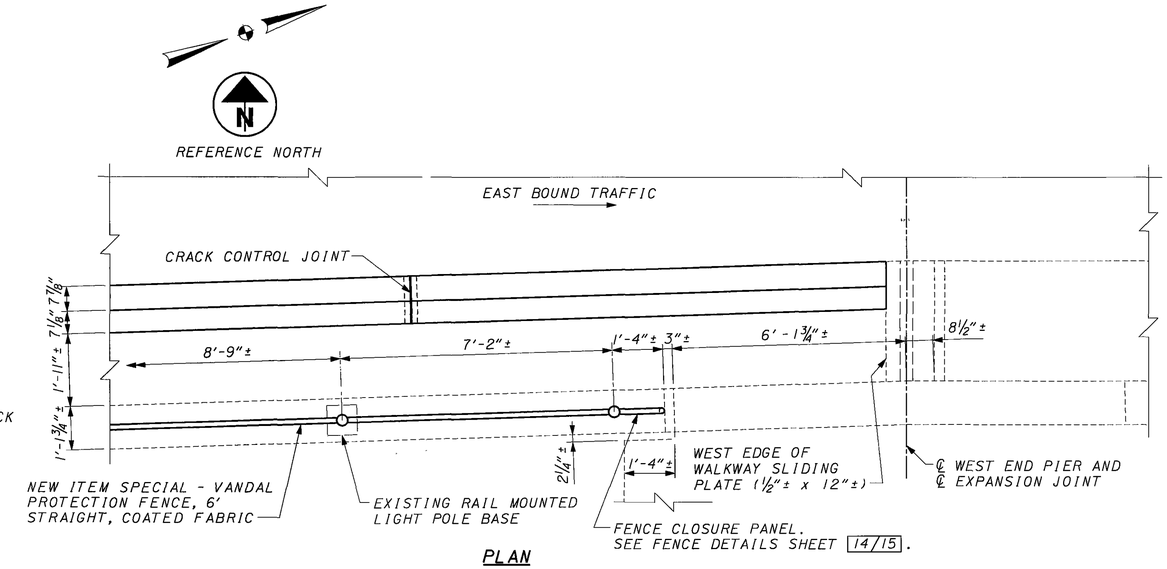
CUY-90-15.24

9/15

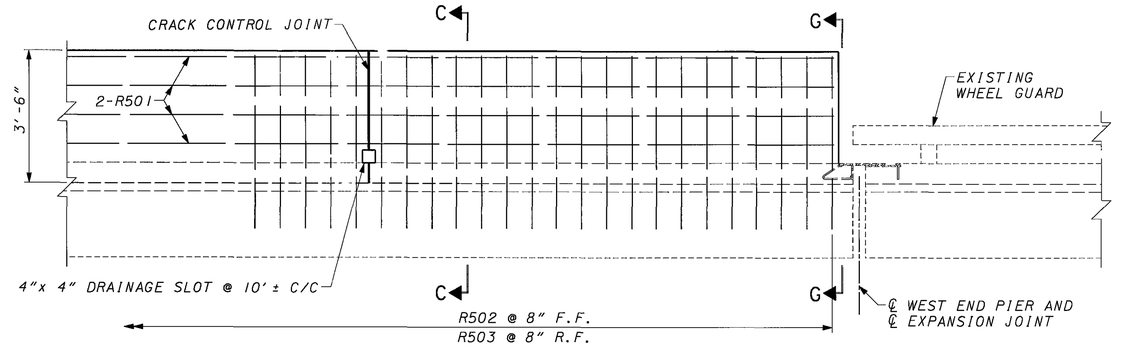
28/34



SECTION G-G

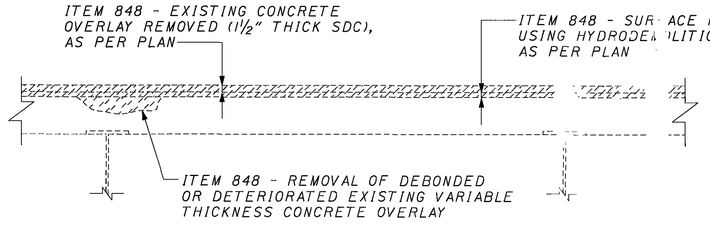


PLAN

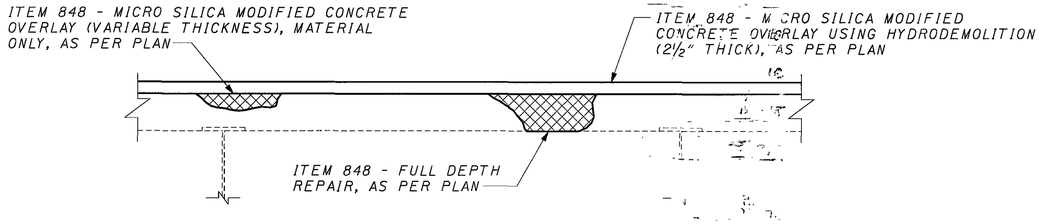


ELEVATION

BARRIER TERMINATION AT WEST END PIER



EXISTING OVERLAY DETAIL



PROPOSED OVERLAY DETAIL

LEGEND

- ITEM 202 - PORTIONS OF STRUCTURE REMOVED, AS PER PLAN
- REMOVAL INCLUDED WITH ITEM 517 - RAILING MISC.: RETROFIT 42"

NOTES

SECTION C-C: SEE SHEET 8/15.

FENCE DETAILS: SEE SHEET 14/15.

DECK PLAN: SEE SHEETS 5/15 TO 7/15.

ALL REBAR SHALL MAINTAIN 2 INCHES COVER INCLUDING 2 INCHES CLEAR FROM DRAINAGE SLOTS.

REINFORCING STEEL LIST: SEE SHEET 9/15.

CRACK CONTROL JOINTS SHALL BE CENTERED ABOVE DRAINAGE SLOTS AND FILLED WITH CAULKING MATERIAL THAT MEETS FEDERAL SPECIFICATION TT-S-00227E.

NOTATION: F.F. - FRONT FACE
R.F. - REAR FACE

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BARRIER DETAILS - 3
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OVER CUYAHOGA RIVER

CUY-90-15.24

10/15

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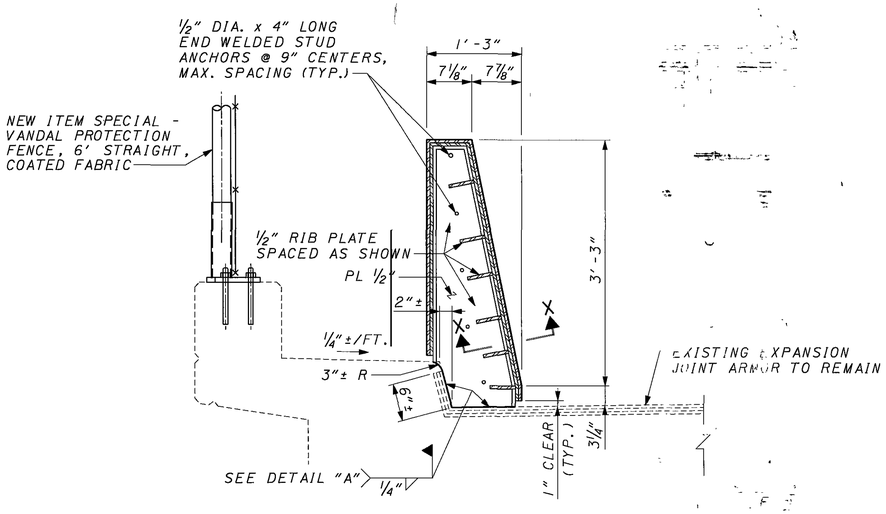
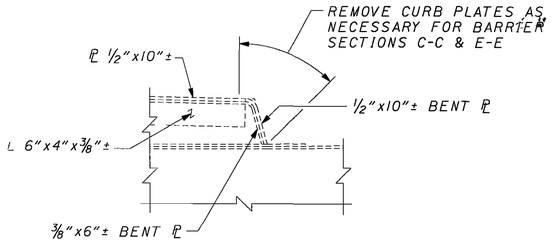
CU090BD3-CONC.DGN 11/23/04 KH,HN



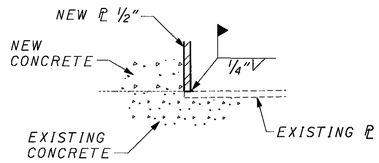
SECTION THROUGH EXPANSION JOINT 2E

BARRIER SECTION A-A SHOWN, SECTIONS B-B, C-C, E-E & F-F SIMILAR
FOR BARRIER AND CURB DIMENSIONS NOT SHOWN, SEE BARRIER SECTIONS.

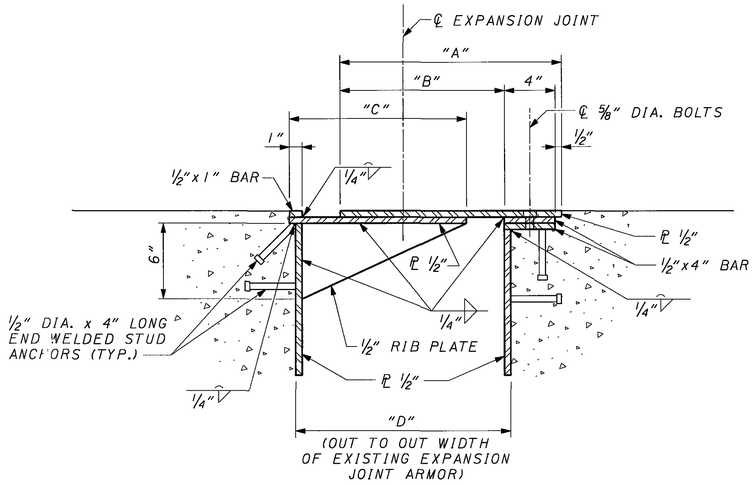


EXISTING CURB SECTION

CURB AT ABUTMENT W-1 JOINT SHOWN,
RAMP W-1 EXPANSION ROLLER JOINT SIMILAR



DETAIL "A"



SECTION X-X

JOINT LOCATIONS	DIMENSIONS				
	"A"	"B"	"C"	"D" @ 60°F	SKEW ANGLE
REAR ABUTMENT	15½"±	11"±	12"±	14"±	18°19'32"± RIGHT FORWARD
EXPANSION ROLLER 2E	13½"±	9"±	10"±	12⅜"±	0°±
EXPANSION ROLLER 3E	20"±	15½"±	16½"±	19⅜"±	7°00'00"± RIGHT FORWARD
ABUTMENT W-1	13½"±	9"±	10"±	12"±	5°39'05"± RIGHT FORWARD
EXPANSION ROLLER W-1 NORTH	20"±	15½"±	16½"±	19½"±	3°28'35"± RIGHT FORWARD
EXPANSION ROLLER W-1 SOUTH	20"±	15½"±	16½"±	19½"±	3°28'35"± RIGHT FORWARD

NOTE: DIMENSION "D" AND SKEW ANGLE WERE TAKEN FROM EXISTING PLANS AND SHALL BE FIELD VERIFIED BY THE CONTRACTOR. DIMENSIONS "A" THRU "D" ARE NORMAL TO THE JOINT REGARDLESS OF SKEW ANGLE.

NOTES

FOR SECTIONS A-A, B-B & C-C: SEE SHEET 8/15.

FOR SECTIONS E-E & F-F: SEE SHEET 9/15.

PAYMENT FOR ALL LABOR, MATERIALS, EQUIPMENT AND INCIDENTALS NECESSARY TO COMPLETE ALL EXPANSION JOINT WORK SHALL BE INCLUDED IN THE UNIT PRICE BID, PER EACH JOINT LOCATION, FOR ITEM 516 - STRUCTURAL JOINT OR JOINT SEALER, MISC.: 42" RAILING JOINT ARMOR.

BARRIER REINFORCING STEEL SHALL BE FIELD CUT AS REQUIRED AND DAMAGED EPOXY REPAIRED. COST FOR FIELD CUTTING SHALL BE INCLUDED IN ITEM 517 - RAILING MISC.: RETROFIT 42".

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BARRIER DETAILS - 4
BRIDGE NO. CUY-90-1524
OVER CUYAHOGA RIVER

CUY-90-15.24

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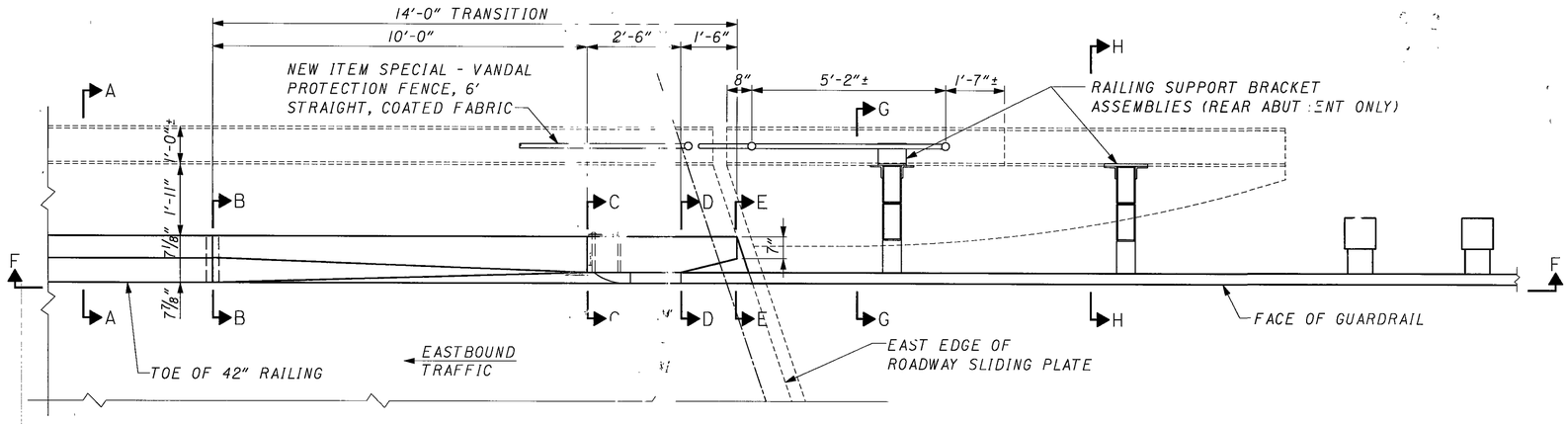
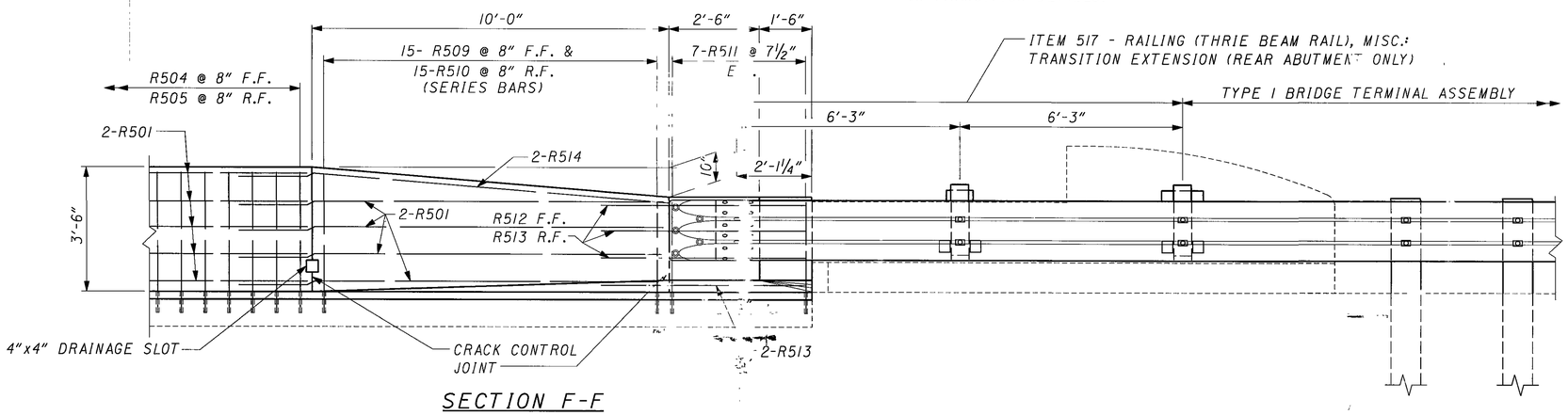


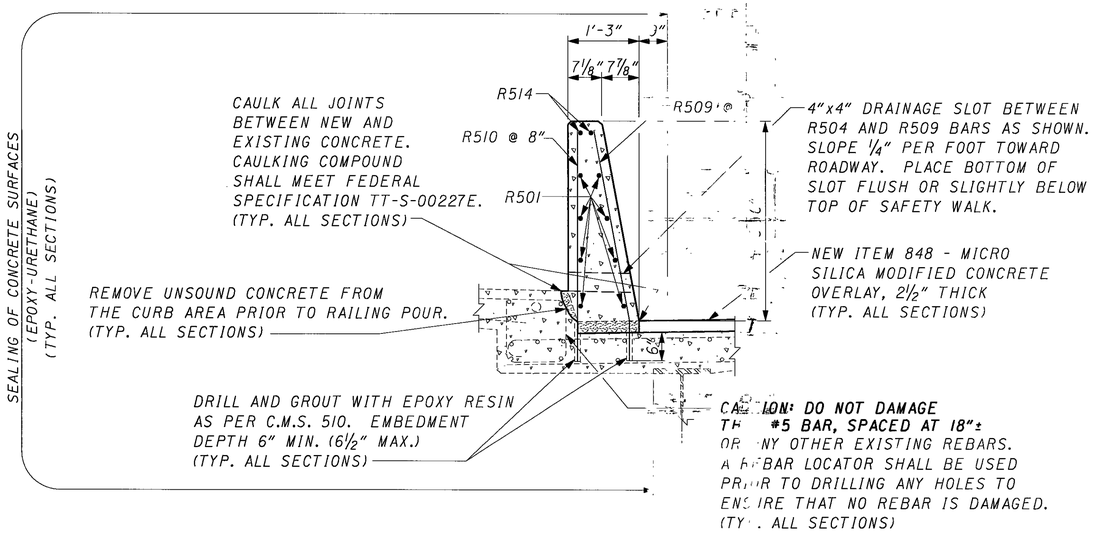
PLAN

REAR ABUTMENT (SHOWN)
RAMP W-1 (SIMILAR)

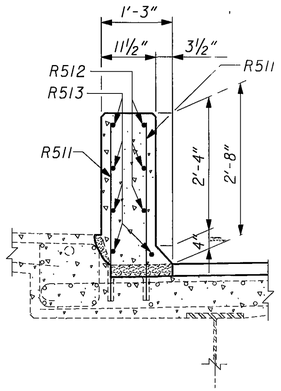
NO DRAINAGE SLOTS LOCATED IN TRANSITION DETAILS.



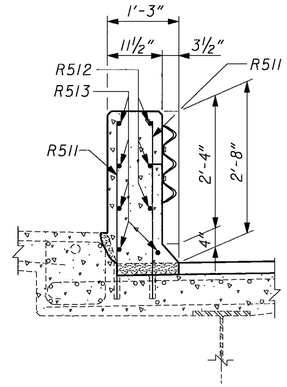
SECTION F-F



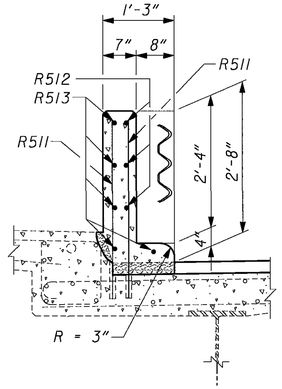
SECTION B-B



SECTION C-C



SECTION D-D



SECTION E-E

LEGEND

REMOVAL INCLUDED WITH ITEM 517 - RAILING MISC.: RETROFIT 42"

NOTES

SECTION A-A: SEE SHEET 8/15.

SECTIONS G-G & H-H: SEE SHEET 13/15.

RAILING SUPPORT BRACKET ASSEMBLIES: SEE SHEET 13/15.

DECK PLAN: SEE SHEETS 5/15 TO 7/15.

REINFORCING STEEL LIST: SEE SHEET 9/15.

ALL REBAR SHALL MAINTAIN 2 INCHES COVER INCLUDING 2 INCHES CLEAR FROM DRAINAGE SLOTS.

CRACK CONTROL JOINTS SHALL BE CENTERED ABOVE DRAINAGE SLOTS AND FILLED WITH CAULKING MATERIAL THAT MEETS FEDERAL SPECIFICATION TT-S-00227E.

NOTATION: F.F. - FRONT FACE
R.F. - REAR FACE

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BARRIER DETAILS - 5

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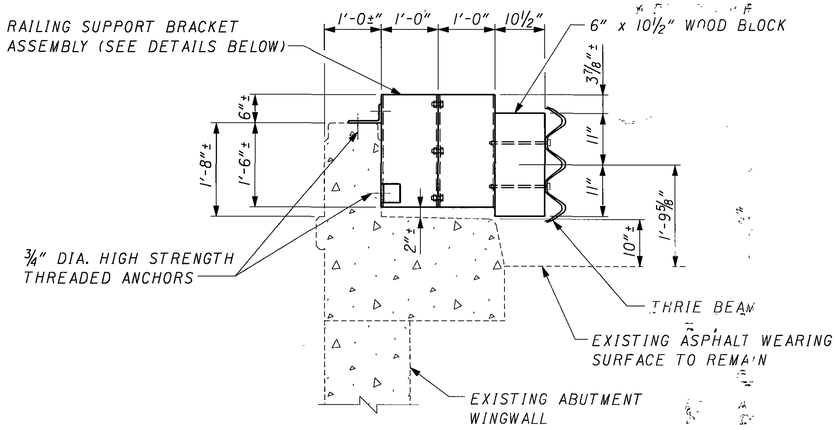
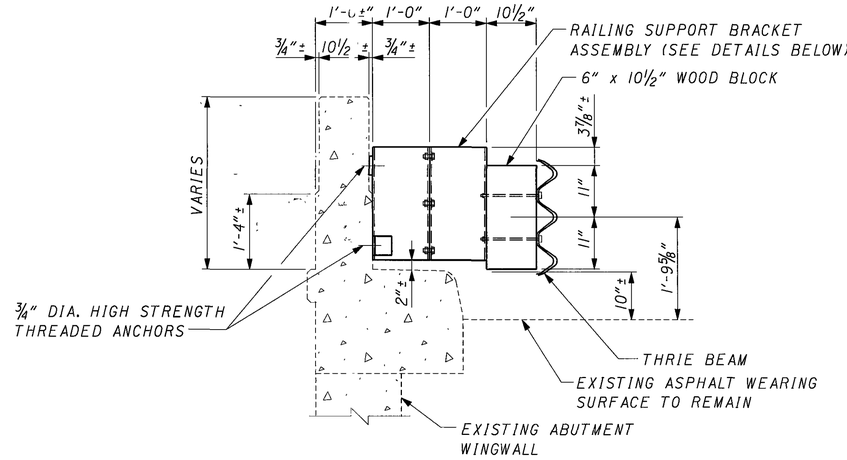
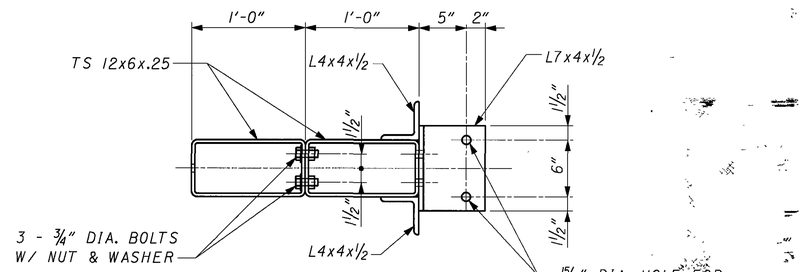


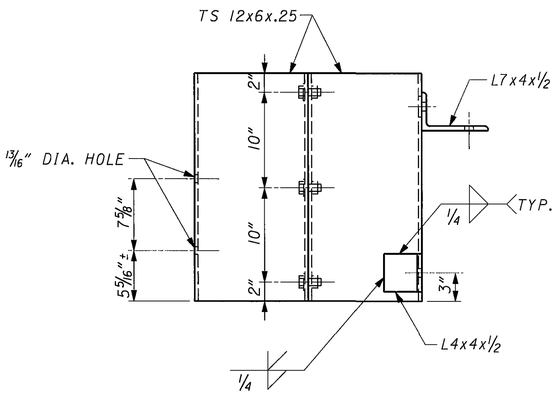
SECTION G-G



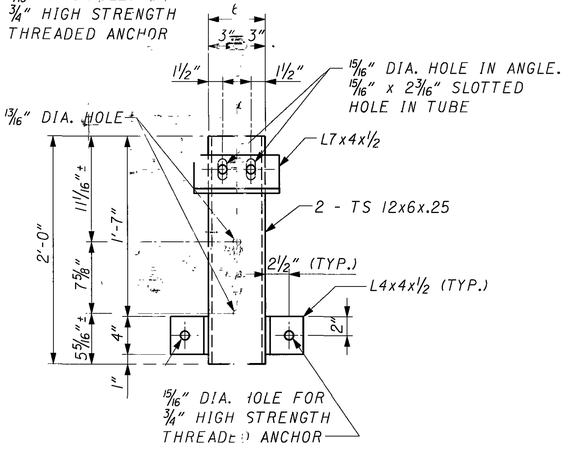
SECTION H-H



TOP VIEW

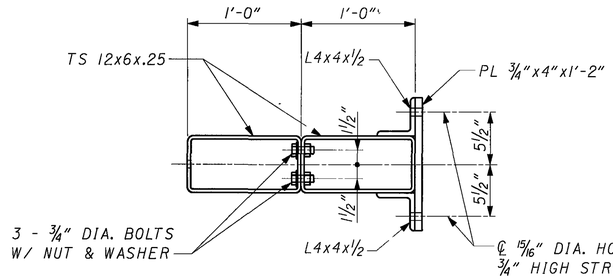


SIDE VIEW

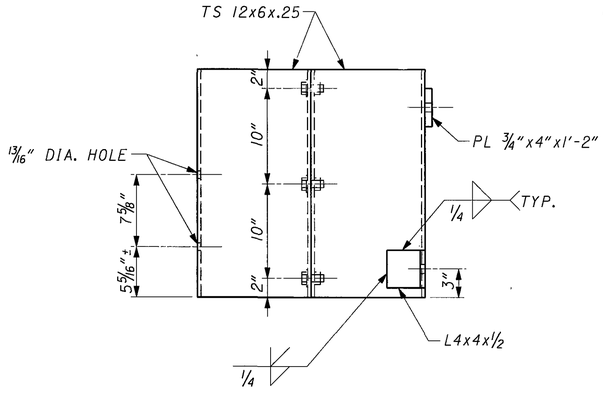


FRONT VIEW

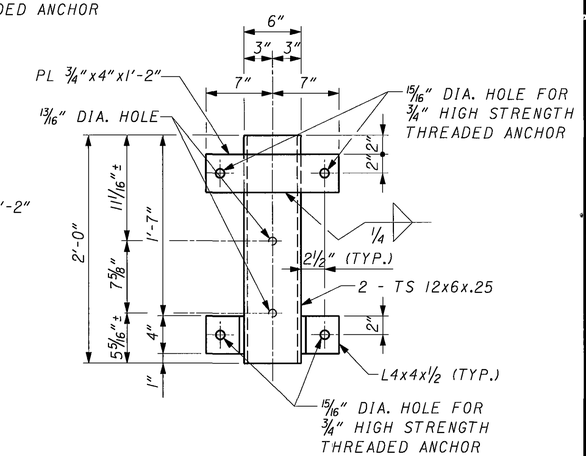
* RAILING SUPPORT BRACKET ASSEMBLY



TOP VIEW



SIDE VIEW



FRONT VIEW

* RAILING SUPPORT BRACKET ASSEMBLY

* CONTRACTOR TO FIELD VERIFY PRIOR TO FABRICATION

NOTES

SECTIONS G-G & H-H: FOR LOCATIONS SEE SHEET 12/15.

RAILING SUPPORT BRACKET ASSEMBLIES: FOR ADDITIONAL NOTES AND DETAILS SEE BRIDGE STANDARD DRAWING TBR-91.

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BARRIER DETAILS - 6
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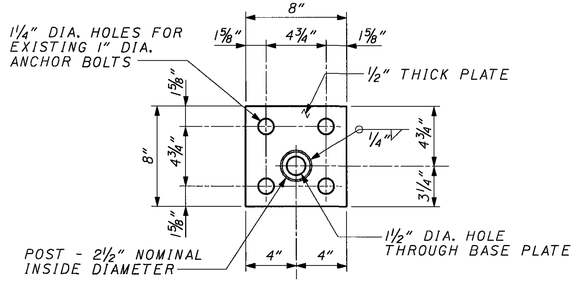
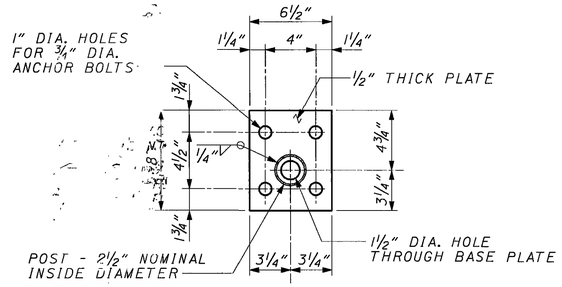
* CONTRACTOR TO FIELD VERIFY PRIOR TO FABRICATION



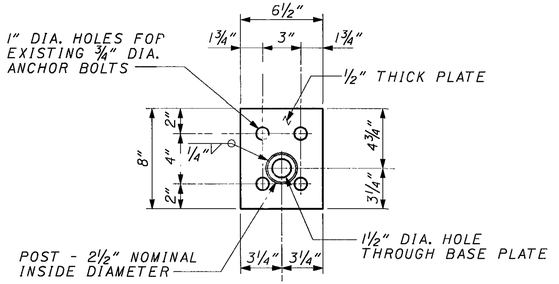
* FENCE POST BASE PLATE

USE AT EXISTING LIGHT POLE BASE LOCATIONS



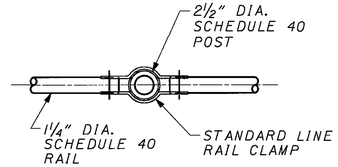
* FENCE POST BASE PLATE

USE AT EXISTING RAILING POST LOCATIONS
FOR SECTIONS B-B, C-C, D-D & E-E AND NEW FENCE POST LOCATIONS

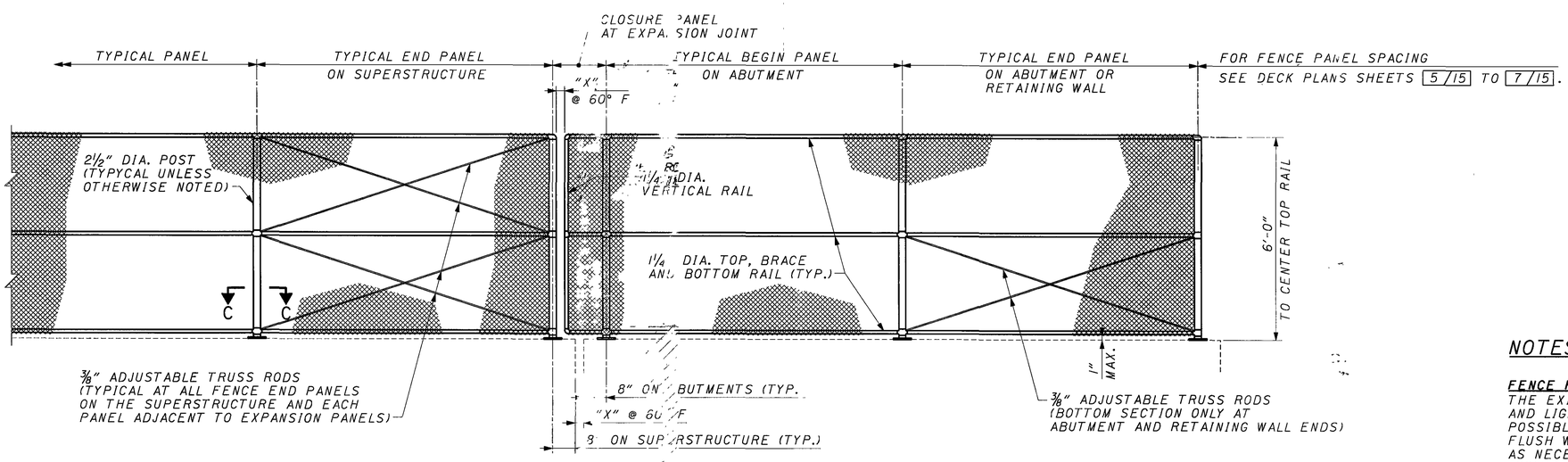


* FENCE POST BASE PLATE

USE AT EXISTING RAILING POST LOCATIONS
FOR SECTIONS A-A, B-B & F-F



SECTION C-C



FENCE ELEVATION

EXPANSION JOINT AT ABUTMENT SHOWN.
EXAPNSION JOINT AT ROLLERS SIMILAR.
TRUSS RODS REQUIRED ON BOTH SIDES OF ROLLER JOINT.

JOINT LOCATIONS	"X" @ 60° F
REAR ABUTMENT	2"±
EXPANSION ROLLER 2E	2⅜"±
EXPANSION ROLLER 3E	2 1/16"±
ABUTMENT W-1	2"±
EXPANSION ROLLER W-1 NORTH	3"±
EXPANSION ROLLER W-1 SOUTH	3"±
WEST END PIER	2"±

NOTES

FENCE POST BASE PLATES SHALL BE INSTALLED USING THE EXISTING ANCHOR BOLTS FROM THE RAILING POSTS AND LIGHT POLES, WITH NEW NUTS AND WASHERS WHENEVER POSSIBLE. ANY UNUSEABLE BOLTS SHALL BE REMOVED FLUSH WITH THE TOP OF CONCRETE, BASE PLATE SHIFTED AS NECESSARY AND ¾" DIA. ADHESIVE ANCHORS INSTALLED. INCLUDED WITH ITEM SPECIAL - STRUCTURE, MISC.: ADHESIVE ANCHORS FOR PAYMENT. ANCHOR BOLTS DAMAGED BY CONTRACTOR'S REMOVAL OPERATIONS SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE TO THE SATISFACTION OF THE ENGINEER.

A CONTINGENT QUANTITY OF 60 EACH ¾" DIA. ADHESIVE ANCHORS, FOR USE BY THE ENGINEER, HAS BEEN INCLUDED WITH ITEM SPECIAL - STRUCTURE, MISC.: ADHESIVE ANCHORS.

ITEM SPECIAL - VANDAL PROTECTION FENCE, 6' STRAIGHT, COATED FABRIC:
THIS ITEM OF WORK INCLUDES THE FURNISHING OF ALL MATERIALS, LABOR, EQUIPMENT AND INCIDENTALS NECESSARY TO COMPLETE THE FENCING. FENCE POSTS AND ANCHOR BOLTS SHALL BE PERPENDICULAR TO GRADE. RAILS SHALL BE PARALLEL TO GRADE. THE FABRIC AND RAILS SHALL BE FREE TO EXPAND OR CONTRACT ACROSS BRIDGE EXPANSION JOINTS. MATERIALS AND WORKMANSHIP SHALL MEET THE REQUIREMENTS OF ITEM 607 EXCEPT THAT ALL COMPONENTS SHALL BE GALVANIZED ACCORDING TO 711.02. ALUMINUM OR ALUMINUM ALLOYS SHALL NOT BE USED. ALL POST AND RAIL SIZES ARE NOTED IN TERMS OF THE NOMINAL INSIDE DIAMETER OF STANDARD WEIGHT PIPE SCHEDULE 40. PAYMENT FOR THE ABOVE SHALL BE MADE AT THE UNIT BID PRICE, PER FOOT, UNDER ITEM SPECIAL - VANDAL PROTECTION FENCE, 6' STRAIGHT, COATED FABRIC.

SEE STANDARD DRAWING VPF-1-90 FOR MATERIAL PROPERTIES, DETAILS AND DIMENSIONS NOT SHOWN.

FOR SECTIONS LOCATIONS: SEE SHEETS 5/15 TO 7/15.

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DESIGNED JDB | CHECKED DT

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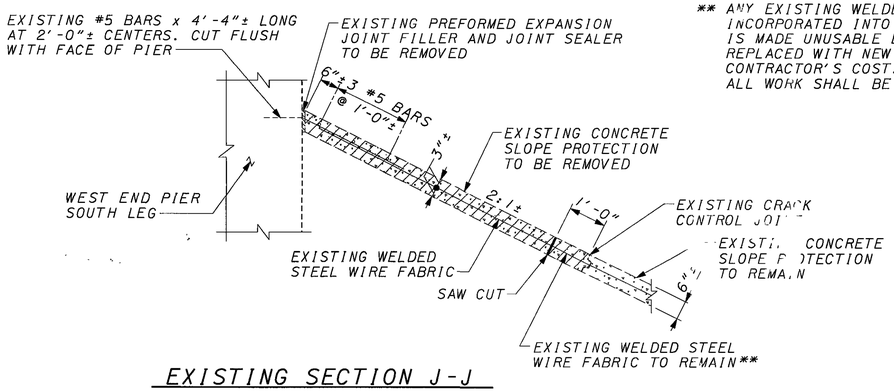
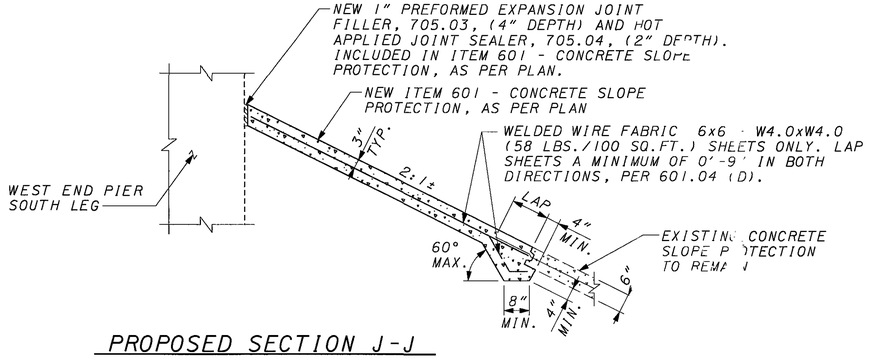
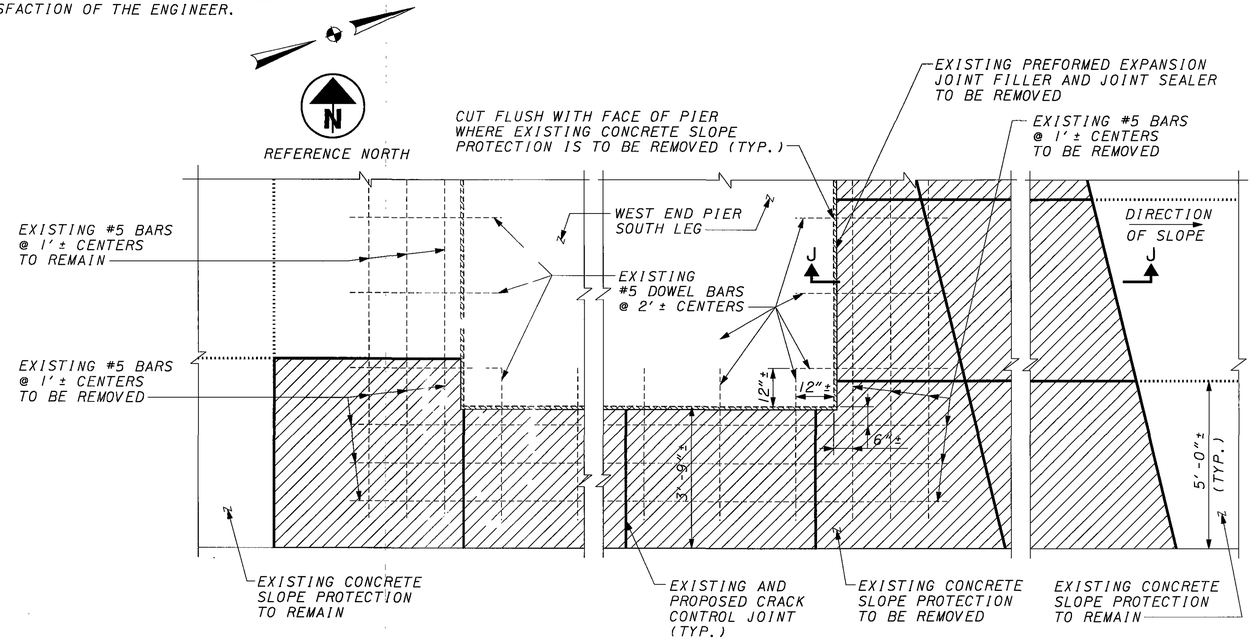
** ANY EXISTING WELDED STEEL WIRE FABRIC WHICH IS TO BE INCORPORATED INTO THE NEW CONCRETE SLOPE PROTECTION AND IS MADE UNUSABLE BY CONCRETE REMOVAL OPERATIONS SHALL BE REPLACED WITH NEW WELDED WIRE FABRIC, PER 601.04, AT THE CONTRACTOR'S COST. MINIMUM LAP LENGTHS SHALL BE MAINTAINED. ALL WORK SHALL BE TO THE SATISFACTION OF THE ENGINEER.



EXISTING SECTION J-J

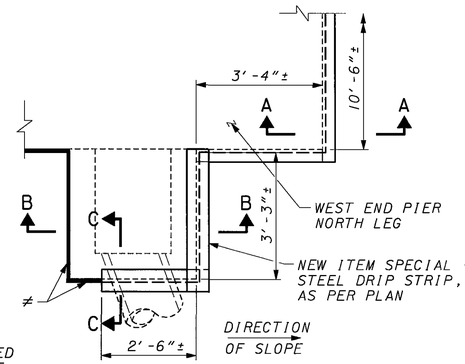


PROPOSED SECTION J-J

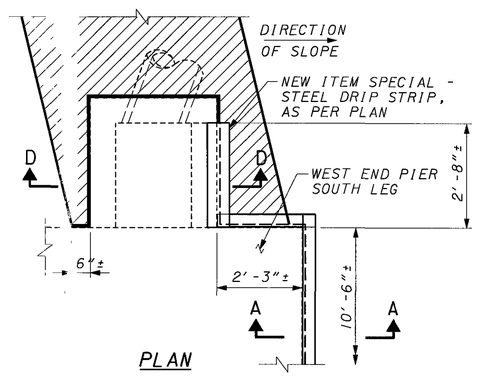


PLAN VIEW - TYPICAL ALL SIDES OF WEST END PIER

EXISTING SLOPE PROTECTION REINFORCING DETAIL

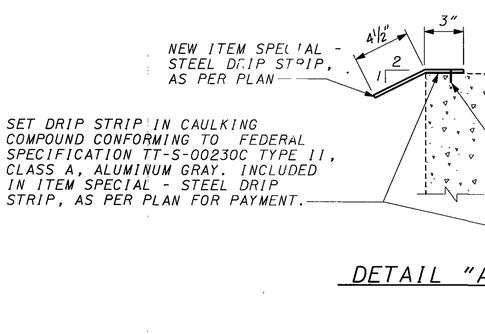


PLAN

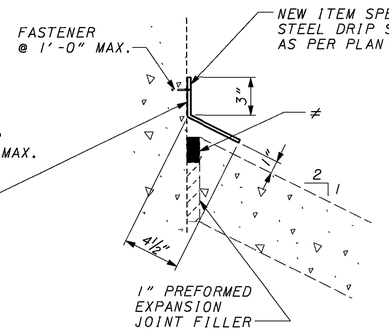


PLAN

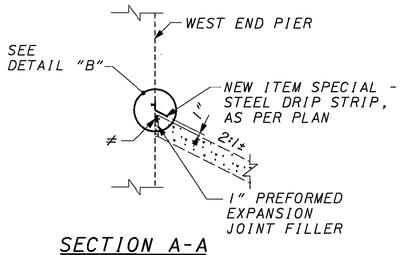
≠ NEW HOT APPLIED JOINT SEALER 705.04. INCLUDED IN ITEM 601 - CONCRETE SLOPE PROTECTION, AS PER PLAN FOR PAYMENT



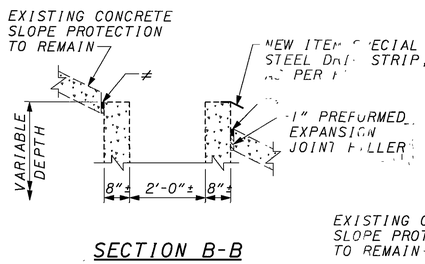
DETAIL "A"



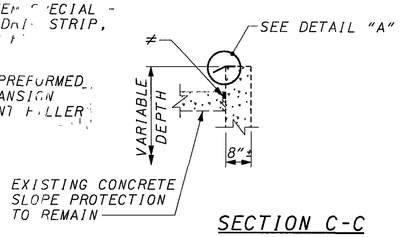
DETAIL "B"



SECTION A-A

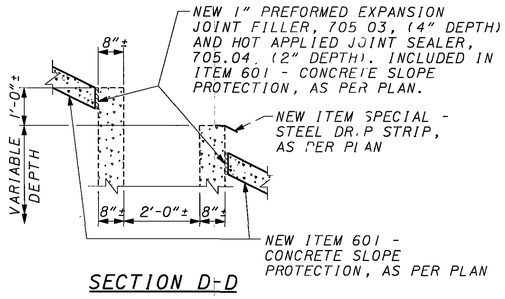


SECTION B-B



SECTION C-C

EXISTING CATCH BASIN



SECTION D-D

LEGEND

▨ - INDICATES PORTIONS OF EXISTING CONCRETE SLOPE PROTECTION TO BE REMOVED AND REPLACED WITH NEW ITEM 601 - CONCRETE SLOPE PROTECTION, AS PER PLAN.

NOTES

MATERIALS SHOWN ARE EXISTING UNLESS OTHERWISE NOTED.

FOR CONCRETE SLOPE PROTECTION LOCATION: SEE SHEET 7/15.

CONCRETE SLOPE PROTECTION NOTES: SEE GENERAL NOTES SHEET 3/15.

RICHLAND ENGINEERING LIMITED
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CONCRETE SLOPE PROTECTION DETAILS

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