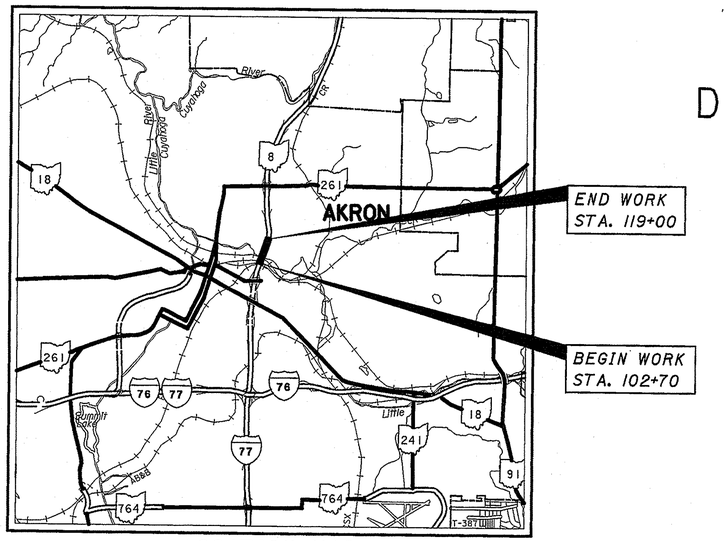


LOCATION MAP

LATITUDE: 41° 05′ 18″ N LONGITUDE: 81° 30′ 06″ W

SCALE IN MILES

0 1 2 3

N

PORTION TO BE IMPROVED

INTERSTATE & DIVIDED HIGHWAY 90

UNDIVIDED STATE & FEDERAL ROUTES 42

COUNTY HIGHWAYS

DESIGN DESIGNATION

CURRENT ADT (2009)	131,000
DESIGN YEAR ADT (2029)	141,300
DESIGN HOURLY VOLUME (2029)	12,720
DIRECTIONAL DISTRIBUTION	58%
TRUCKS (24 HOUR B&C)	7%
DESIGN SPEED	55 MPH
LEGAL SPEED	50 MPH

DESIGN FUNCTIONAL CLASSIFICATION - URBAN FREEWAYS AND EXPRESSWAYS

DESIGN EXCEPTIONS ---------- NONE REQUIRED

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
SUM-8-1.99

CITY OF AKRON
SUMMIT COUNTY

INDEX OF SHEETS:

PROJECT DESCRIPTION

THE PROJECT CONSISTS OF THE REHABILITATION OF THE STRUCTURE BY RETROFITTING TRUSS GUSSET PLATES, PATCHING PIER SEATS, REPLACING THE DECK STRIP SEALS, AND PERFORMING OTHER MINOR STRUCTURAL REPAIRS.

LIMITED ACCESS

THIS IMPROVEMENT IS ESPECIALLY DESIGNED FOR THROUGH TRAFFIC AND HAS BEEN DECLARED A LIMITED ACCESS HIGHWAY OR FREEWAY BY ACTION OF THE DIRECTOR IN ACCORDANCE WITH THE PROVISIONS OF SECTION 5511.02 OF THE OHIO REVISED CODE.

2008 SPECIFICATIONS

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

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

APPROVED Eric M. Gotl,
DATE 7-2-09 DISTRICT DEPUTY DIRECTOR

APPROVED Kolene M. Mallonis Jr.
DATE 7-2-09 DIRECTOR, DEPARTMENT OF TRANSPORTATION

PLAN PREPARED BY:

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

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

RICHLAND ENGINEERING LIMITED
29 NORTH PARK STREET
MANSFIELD, OHIO 44902

ENGINEERS SEAL:

STATE OF OHIO · DAVID L. RINEHART · 55967 · REGISTERED PROFESSIONAL ENGINEER

SIGNED: David L Rinehart
DATE: JULY 2, 2009

STANDARD CONSTRUCTION DRAWINGS

BP-5.1	7-28-00				
MT-35.10	4-20-01				
MT-95.30	9-5-06				
MT-101.60	9-5-06				
MT-105.10	1-16-09				
FB-1-82	5-10-82				

SUPPLEMENTAL SPECIFICATIONS

800-08	4-17-09
832	5-05-09

SPECIAL PROVISIONS

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

FEDERAL PROJECT NO. NON - FEDERAL

PID NO. 85246

CONSTRUCTION PROJECT NO.

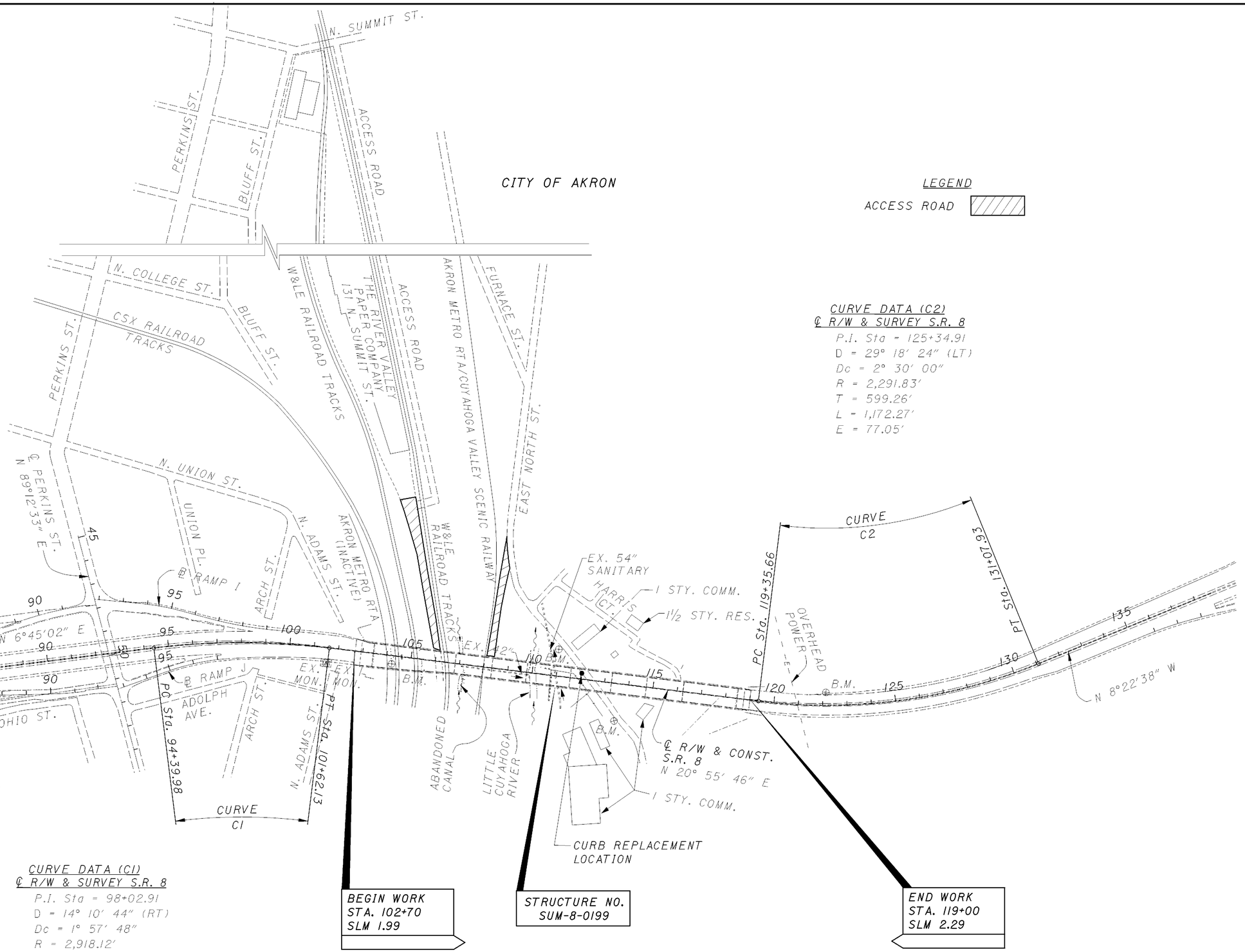
RAILROAD INVOLVEMENT
WHEELING & LAKE ERIE RAILROAD
METRO REGIONAL TRANSIT AUTHORITY

SUM-8-1.99

1
59

SUM - 8 - 1.99
098027 PID 85246
DIST 04 8/26/2009

105079-4/852466TOOL.DGN 7/2/09 SAM,SCB



LEGEND

ACCESS ROAD

CURVE DATA (C2)
℄ R/W & SURVEY S.R. 8

P.I. Sta = 125+34.91
D = 29° 18' 24" (LT)
Dc = 2° 30' 00"
R = 2,291.83'
T = 599.26'
L = 1,172.27'
E = 77.05'

CURVE DATA (C1)
℄ R/W & SURVEY S.R. 8

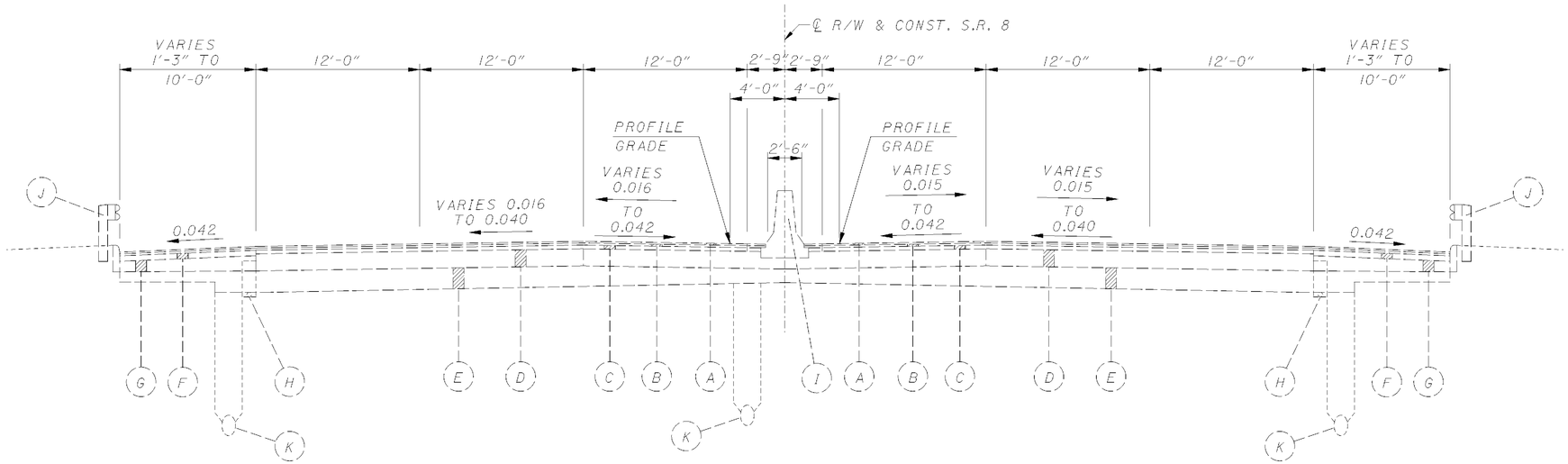
P.I. Sta = 98+02.91
D = 14° 10' 44" (RT)
Dc = 1° 57' 48"
R = 2,918.12'
T = 362.93'
L = 722.14'
E = 22.48'

HORIZONTAL SCALE IN FEET
0 100 200 400

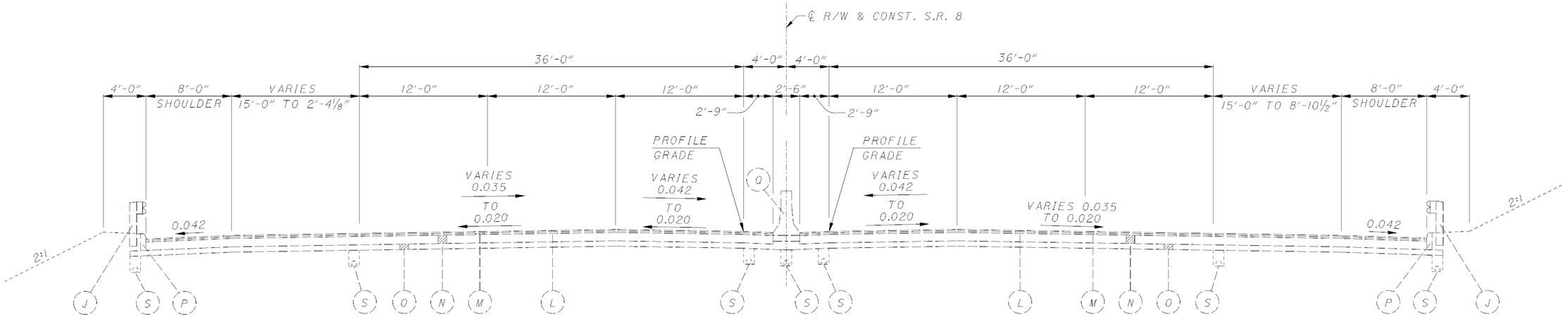
SCHEMATIC PLAN

SUM-8-1.99

852466BOOI.DGN 3/18/09 SAM.SCB



NORTH OF STRUCTURE SUM-8-0199



SOUTH OF STRUCTURE SUM-8-0199

EXISTING ITEM LEGEND

- (A) SPECIAL - ¾" RUBBERIZED OPEN GRADED ASPHALT FRICTION COURSE, TYPE I
- (B) 446 - 1¼" ASPHALT CONCRETE SURFACE COURSE, TYPE I, AC-20
- (C) 446 - 1¾" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, AC-20
- (D) 9" REINFORCED CONCRETE PAVEMENT OR 9" CONCRETE BASE
- (E) SUBBASE
- (F) 301 - 4¼" BITUMINOUS AGGREGATE BASE, AS PER PLAN
- (G) AGGREGATE BASE
- (H) 605 - SHALLOW UNDERDRAINS, AS PER PLAN
- (I) CONCRETE BARRIER
- (J) 606 - GUARDRAIL, TYPE 5
- (K) UNDERDRAIN
- (L) 446 - 1½" ASPHALT CONCRETE SURFACE COURSE, TYPE IH
- (M) 446 - 1¾" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, PG64-28
- (N) 302 - 9½" BITUMINOUS AGGREGATE BASE, PG64-22
- (O) 304 - 6" AGGREGATE BASE
- (P) 609 - CURB, TYPE 6
- (Q) 622 - CONCRETE BARRIER, TYPE BI
- (R) NOT USED
- (S) 605 - 6" SHALLOW PIPE UNDERDRAIN WITH FABRIC WRAP (18" DEEP)
- (T) 526 - REINFORCED CONCRETE APPROACH SLAB (T=15"±)

85246GYOOLDGN 3/12/09 SAM

UTILITIES

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

LIGHTING: ODOT DISTRICT 4
2088 S. ARLINGTON
AKRON, OH 44306
ATTN: STEVEN A. SASALA
OFFICE: (330) 786-4857
FAX: (330) 786-4801

OHIO EDISON
1910 WEST MARKET STREET
AKRON, OH 44313
ATTN: STEVE VANCHOFF
(330) 384-4750

LEVEL 3
1320 DERBYDALE ROAD
AKRON, OH 44306
ATTN: CLINT FERGUSON
(330) 256-8999

DOMINION EAST OHIO GAS
320 SPRINGSIDE DRIVE, SUITE 320
AKRON, OH 44333
ATTN: GEORGE TURNER JR.
(330) 664-2495

AT&T
50 W. BOWERY STREET
AKRON, OH 44308
ATTN: JOE RODRIGUEZ
(330) 384-4336

SPRINT
11815 HIGHWAY DR., SUITE 400
CINCINNATI, OH 45241
ATTN: DANA COSTA
(513) 459-5761

MCI
120 RAVINE STREET
AKRON, OH 44303
ATTN: AL GUEST
(330) 253-8267

QWEST
4650 LAKEHURST COURT
DUBLIN, OH 43016
ATTN: CHRIS STRAYER
(614) 215-5606

CITY OF AKRON, PUBLIC
UTILITIES BUREAU
146 S. HIGH STREET, ROOM 300
PO BOX 3665
AKRON, OH 44309-3665
ATTN: GEORGE THOMAS
(330) 375-2690 EXT. 6418

AKRON WATER DISTRIBUTION
565 JOHNSTON STREET
AKRON, OH 44311
ATTN: JOHN THOMPSON
(330) 375-2420

AKRON SEWER MAINTENANCE
1055 HOME AVENUE
AKRON, OH 44310
ATTN: DISPATCHER
(330) 375-2666

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.

RAILROAD CONTACT INFORMATION

URS CORPORATION (CSX)
ONE INDIANA SQUARE, SUITE 2100
INDIANAPOLIS, IN 46204
ATTN: LARRY J. SHAW, PE
(317) 635-0064

WHEELING & LAKE ERIE RAILWAY
100 EAST FIRST STREET
BREWSTER, OH 44613
ATTN: KASEY O'CONNOR
(330) 767-7279

METRO REGIONAL
TRANSIT AUTHORITY
416 KENMORE BOULEVARD
AKRON, OH 44301
ATTN: KIRT W. CONRAD
(330) 564-2281

TEMPORARY SEDIMENT AND EROSION CONTROL (TSEC)

THE CONTRACTOR SHALL PROVIDE NECESSARY TSEC MEASURES AS REQUIRED BY SS832. PAYMENT SHALL BE MADE UNDER THE FOLLOWING ITEM:

ITEM 832 - EROSION CONTROL 1000 EACH

ITEM 609 - CURB, TYPE 6, AS PER PLAN

A PREVIOUS CONSTRUCTION PROJECT INSTALLED A NEW STROM SEWER UNDER EAST NORTH STREET FROM PIER 5 TO THE LITTLE CUYAHOGA RIVER. THE PAVEMENT REPAIR ON EAST NORTH STREET INCLUDED THE REPLACEMENT OF THE EXISTING SANDSTONE CURB ON THE SOUTH SIDE OF EAST NORTH STREET WITH AN ASPHALT CURB. ITEM 609 CURB, TYPE 6, AS PER PLAN INCLUDES SAW CUTTING AND REMOVING THE EXISTING ASPHALT CURB IN A NEAT, CLEAN LINE BETWEEN THE EXISTING ADJOINING SANDSTONE CURB ON EITHER END, REMOVING THE ASPHALT CURB, EXCAVATING AS REQUIRED TO PROVIDE A TYPE 6 CURB AS SHOWN ON STANDARD CONSTRUCTION DRAWING BP-5.1 IN ACCORDANCE WITH THE CONSTRUCTION AND MATERIAL SPECIFICATIONS. THE AMOUNT OF REVEAL ON THE CURB SHALL BE ADJUSTED FROM THAT SHOWN ON THE STANDARD CONSTRUCTION DRAWING (6") TO BE CONSISTENT WITH EXISTING ADJOINING SANDSTONE CURB. THE ITEM ALSO INCLUDES ANY BACKFILLING, GRADING, SEEDING AND MULCHING REQUIRED TO RESTORE THE AREA TO A CONDITION SIMILAR TO THAT EXISTING BEFORE THE START OF CONSTRUCTION. THE GENERAL LOCATION OF THE CURB REPLACEMENT IS SHOWN ON THE SCHEMATIC PLAN SHEET NO. 2. THE FOLLOWING QUANTITY OF ITEM 609 CURB, TYPE 6, AS PER PLAN HAS BEEN PROVIDED AND CARRIED TO THE GENERL SUMMARY FOR THE REPLACEMENT OF THE EXISTING ASPHALT CURB DESCRIBED ABOVE.

ITEM 609 CURB, TYPE 6, AS PER PLAN 20 FT

ENVIRONMENTAL COMMITMENTS

LITTLE CUYAHOGA RIVER AVOIDANCE

NO EXCAVATION, GRADING, OR FILLING OPERATIONS SHALL BE PERFORMED IN THE LITTLE CUYAHOGA RIVER. UNDER NO CIRCUMSTANCES SHALL CONTRACTORS STORE EQUIPMENT AND/OR MATERIALS IN ANY WETLANDS, STREAMS, RIVERS OR OTHER WATERS OF THE UNITED STATES.

FORMER PENNSYLVANIA AND OHIO CANAL AVOIDANCE

NO EXCAVATION, GRADING, OR FILLING OPERATIONS SHALL BE PERFORMED IN THE FORMER PENNSYLVANIA AND OHIO CANAL. UNDER NO CIRCUMSTANCES SHALL THE CONTRACTOR STORE EQUIPMENT AND/OR MATERIALS IN THE FORMER PENNSYLVANIA AND OHIO CANAL.

CUYAHOGA VALLEY SCENIC RAILROAD

ACCESS WILL BE MAINTAINED FOR THE CUYAHOGA VALLEY SCENIC RAILROAD AT ALL TIMES DURING PROJECT CONSTRUCTION ACTIVITIES AND ANY CONSTRUCTION MATERIAL AND/OR EQUIPMENT REQUIRED TO REPAIR THE SUPERSTRUCTURE/SUBSTRUCTURE AS PART OF THE PROJECT WILL NOT BE STORED WITHIN THE DESIGNATED AKRON METRO RTA/CUYAHOGA VALLEY SCENIC RAILROAD RIGHT-OF-WAY.

PAINTING AND SEALING OPERATIONS

THE CONTRACTOR SHALL TAKE ALL PRECAUTIONS NECESSARY TO PREVENT EPOXY-URETHANE SEALER, PAINT, OR OTHER MATERIALS USED TO REPAIR, CLEAN, SEAL, OR TREAT ANY BRIDGE STRUCTURE FROM ENTERING ANY STREAMS, WETLANDS OR OTHER WATERS OF THE UNITED STATES AND TAKE THE APPROPRIATE ACTIONS IN THE EVENT OF A RELEASE.

CONSTRUCTION AND DEMOLITION DEBRIS

THE CONTRACTOR SHALL TAKE PRECAUTION TO AVOID AND/OR LIMIT CONSTRUCTION AND DEMOLITION DEBRIS FROM ENTERING THE STREAM. ANY DEBRIS THAT DOES FALL INTO THE STREAM SHALL BE REMOVED AS SOON AS POSSIBLE.

ENDANGERED SPECIES HABITAT

THIS PROJECT IS WITHIN THE RANGE OF THE FEDERALLY ENDANGERED INDIANA BAT (MYOTIS SODALIS) AND MAY IMPACT SUMMER ROOSTING HABITAT FOR THIS SPECIES. THE SUMMER ROOSTING HABITAT FOR THE INDIANA BAT CONSISTS OF LIVING OR DEAD TREES OR SNAGS WITH EXFOLIATING, PEELING OR LOOSE BARK, SPLIT TRUNKS AND/OR BRANCHES OR CAVITIES. THEREFORE, ANY UNAVOIDABLE CUTTING OF SUCH TREES WILL BE PERFORMED ONLY AFTER SEPTEMBER 15 AND BEFORE APRIL 15. PRIOR TO ANY REMOVAL OF STRUCTURAL MEMBERS, THE AREA OF BRIDGE TO BE IMPACTED SHOULD BE CAREFULLY EXAMINED FOR THE PRESENCE OF BATS, ESPECIALLY FROM APRIL 15 TO SEPTEMBER 15. IF ANY BATS ARE FOUND ROOSTING ON THE BRIDGE, THE USFWS, ECOLOGICAL SERVICES DIVISION SHOULD BE CONTACTED OR PROVIDED WITH INFORMATION.

CALCULATED PDG
CHECKED DAW

GENERAL NOTES

SUM-8-1.99

ITEM 614 - MAINTAINING TRAFFIC

A. GENERAL

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.

THE DECK STRIP SEAL REPLACEMENT WORK SHALL BE CONSTRUCTED IN PART-WIDTH PHASES WHILE MAINTAINING A MINIMUM OF ONE LANE OF TRAFFIC DURING OVERNIGHT LANE CLOSURES AS PER THE PERMITTED LANE CLOSURE CHART REQUIREMENTS OR WEEKEND LANE CLOSURES AS DESCRIBED BELOW.

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. THE CONTRACTOR SHALL ADVISE THE ODOT DISTRICT OFFICE (330-786-2211) AND CITY OF AKRON ENGINEER (330-375-2355) EIGHTEEN (18) DAYS IN ADVANCE OF WHEN THE LANE CLOSURES SHOULD BE IN EFFECT. ALL WORK ZONE DEVICES REQUIRED SHALL BE FURNISHED, ERECTED, MAINTAINED, AND SUBSEQUENTLY REMOVED BY THE CONTRACTOR.

C. RESTRICTIONS

THE THREE (3) LANES OF TRAFFIC IN EACH DIRECTION SHALL BE MAINTAINED ON STATE ROUTE 8 AT ALL TIMES EXCEPT DURING PERMITTED LANE CLOSURES CHART AS NOTED BELOW:

1. NO LANES SHALL BE CLOSED ON S.R. 8 DURING THE FOLLOWING DESIGNATED HOLIDAY OR SPECIAL EVENT WEEKENDS:

   MEMORIAL DAY
   LABOR DAY
   FOURTH OF JULY
   ITALIAN - AMERICAN COUNCIL FESTIVAL (7/10-7/12)
   SOAP BOX DERBY (7/24 - 7/26)
   WORLD GOLF CHAMPIONSHIPS - BRIDGESTONE INVITATIONAL (8/4 - 8/9)
   PRO FOOTBALL HALL OF FAME FESTIVAL (8/7 - 8/9)
   UNIVERSITY OF AKRON INAUGURAL FOOTBALL GAME (9/18 - 9/20)
   AKRON ROADRUNNER MARATHON (9/26)

2. LANE CLOSURE REQUIREMENTS:
   OVERNIGHT ONE LANE TRAFFIC WILL BE PERMITTED, BUT IT IS THE INTENT TO MINIMIZE THE IMPACT TO THE TRAVELING PUBLIC. OVERNIGHT LANE CLOSURES ARE LIMITED TO THE PERMITTED LANE CLOSURE CHART REQUIREMENTS BELOW.

   WEEKEND ONE LANE TRAFFIC WILL BE PERMITTED. THE INITIATION OF THE REDUCTION TO ONE LANE TRAFFIC FOR THE WEEKEND MAY BEGIN ON FRIDAY EVENING AND THE RESTORATION OF TRAFFIC TO NORMAL LANE CONFIGURATION SHALL BE MONDAY MORNING PER THE PERMITTED LANE CLOSURE CHART REQUIREMENTS BELOW.

   THE CONTRACTOR SHALL SUBMIT A SCHEDULE FOR THE PROPOSED OVERNIGHT AND WEEKEND WORK TO THE PROJECT ENGINEER FOR APPROVAL. THIS SUBMITTAL SHOULD BE MADE AT LEAST 48 HOURS IN ADVANCE OF THE PROPOSED WORK IS TO OCCUR. PRODUCTION RATES, SEQUENCE OF OPERATIONS, EQUIPMENT AND CREW SIZES SHOULD BE DISCUSSED IN THIS SUBMITTAL.

   A MINIMUM OF ONE TWELVE (12) FOOT LANE SHALL BE MAINTAINED ON THE APPROACH PAVEMENT AND BRIDGE DURING CONSTRUCTION OF THE WORK.

   THE CONTRACTOR SHALL HAVE ONE (1) ADDITIONAL ARROW BOARD ON THE PROJECT FOR USE AS DIRECTED BY THE ENGINEER, COST INCLUDED IN ITEM 614 MAINTAINING TRAFFIC.

3. PERMITTED LANE CLOSURE CHART REQUIREMENTS:
   LANE CLOSURES WILL BE PERMITTED, BUT IT IS THE INTENT TO MINIMIZE THE IMPACT TO THE TRAVELING PUBLIC. THE TIME AND DURATION OF ALL LANE CLOSURES AND RESTRICTIONS SHALL BE AS PER THE PERMITTED LANE CLOSURE CHART ON THE DATE THIS PROJECT SELLS AVAILABLE ON THE DISTRICT WEB-SITE AT:

   HTTP://PLCM.DOT.STATE.OH.US

4. THE NEW STRIP SEALS SHALL BE FURNISHED IN ONE PIECE AND CONTINUOUS ACROSS THE EXPANSION JOINTS FOR EACH SIDE OF THE BRIDGE. THE STRIP SEALS FOR THE STRUCTURES SHALL BE INSTALLED USING PHASE 1 AND PHASE 2 OR PHASE 3 AND PHASE 4 MAINTENANCE OF TRAFFIC PLANS TO CONSTRUCT THE STRIP SEALS CONTINUOUSLY ACROSS THE STRUCTURE DURING ONE OVERNIGHT OR WEEKEND CONSTRUCTION PERIOD. THIS MAY REQUIRE THE SHORT TERM CLOSURE OF THE APPROACH TO SHIFT TRAFFIC BETWEEN THE PHASES. SEE SHEET 22 FOR DETAILS FOR STOPPING TRAFFIC.

5. STRIP SEAL REPLACEMENT WORK (PHASE 1 AND 2):
   A MINIMUM OF ONE (1) LANE OF TRAFFIC SHALL BE MAINTAINED ON NORTHBOUND S.R. 8 DURING BRIDGE NO. SUM-8-0199 STRIP SEAL REPLACEMENT OPERATIONS, AS PER DETAILS ON SHEETS 11-15. THIS WORK SHALL BE COMPLETED IN THE WORK PHASES AS DETAILED IN THE PLAN.

6. STRIP SEAL REPLACEMENT WORK (PHASE 3 AND 4):
   A MINIMUM OF ONE (1) LANE OF TRAFFIC SHALL BE MAINTAINED ON SOUTHBOUND S.R. 8 DURING BRIDGE NO. SUM-8-0199 STRIP SEAL REPLACEMENT OPERATIONS, AS PER DETAILS ON SHEETS 16-20. THIS WORK SHALL BE COMPLETED IN THE WORK PHASES AS DETAILED IN THE PLAN.

7. THE CLOSING OF LANES TO REDUCE THE NUMBER OF LANES TO ONE SHALL BE AS PER MT-95.30 AND MAINTENANCE OF TRAFFIC - LANE CLOSURES SIGNING SHEET 21, THE CONTRACTOR MAY START CLOSING THE APPROACH ROADWAYS DOWN TO TWO (2) LANES AS PER THE PERMITTED LANE CLOSURE CHART. TWO LAW ENFORCEMENT OFFICERS (L.E.O.'S) SHALL BE USED AT EACH CLOSING LOCATION

   PRIOR TO REOPENING TO TRAFFIC EACH LANE SHALL BE IN A SAFE, PASSABLE CONDITION.

   DURING NON-WORKING HOURS, ALL LANES SHALL BE IN FULL OPERATION WITH ALL TRAFFIC CONTROL SIGNS, EXCEPT W20-1-48 "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.

8. CONTRACTOR'S EQUIPMENT - OPERATION AND STORAGE:
   A QUALIFIED FLAGGER SHALL BE EMPLOYED WHERE THE CONTRACTOR'S EQUIPMENT MUST MERGE WITH THE TRAFFIC STREAM. THE CONTRACTOR'S EQUIPMENT SHALL BE EQUIPPED WITH AT LEAST ONE AMBER FLASHING LIGHT. EQUIPMENT MAY BE PARKED IN AREAS ALONG THE HIGHWAY WHEN WORK OPERATIONS ARE SCHEDULED TO CONTINUE WITHIN THE NEXT WORKDAY. OTHERWISE THE EQUIPMENT SHALL BE STORED AT A STORAGE AREA OUTSIDE THE R/W, THE LOCATION OF WHICH SHALL HAVE PRIOR APPROVAL OF THE ENGINEER. WHEN PARKING ALONG THE HIGHWAY THE EQUIPMENT SHALL BE PLACED AND DELINEATED AS PER 614.03. NO EQUIPMENT SHALL BE PARKED IN THE MEDIAN OF THE HIGHWAY. ADEQUATE BARRICADES AND LIGHTS SHALL BE PLACED ON THE PAVEMENT SIDE OF THE EQUIPMENT TO IDENTIFY THE LIMITS OF THE EQUIPMENT. ALL OTHER EQUIPMENT, INCLUDING PRIVATE VEHICLES, SHALL BE STORED AT THE APPROVED CONTRACTOR'S STORAGE AREA. NO EQUIPMENT SHALL BE PARKED ON PRIVATE PROPERTY UNLESS PRIOR APPROVAL OF THE OWNER AND THE PROJECT ENGINEER/SUPERVISOR HAS BEEN GRANTED.

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 THEREINAFTER 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-95.30.

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 DRAWINGS MT-95.30 AND MT-35.10.

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. LAW ENFORCEMENT OFFICER WITH PATROL CAR:
   SEE NOTE, SHEET 6.

7. 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 AFOREMENTIONED 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.

3. DRUMS:
   DRUMS SHALL BE LOCATED AS SHOWN ON THE TRAFFIC CONTROL PLANS AND ARE REQUIRED FOR NIGHTTIME CLOSURES. CONES SHALL NOT BE ACCEPTABLE TRAFFIC CONTROL DEVICES FOR LANE RESTRICTIONS OR LANE REDUCTIONS.

4. 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.

5. PORTABLE CHANGEABLE MESSAGE SIGNS, AS PER PLAN:
   SEE NOTE, SHEET 6.

F. ESTIMATED QUANTITIES

THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN INCLUDED IN THE GENERAL SUMMARY FOR USE AS DETERMINED BY THE ENGINEER FOR THE MAINTENANCE OF THE ACCESS ROADS AS SHOWN ON THE SCHEMATIC PLAN SEET NO. 2

ITEM 410 - TRAFFIC COMPACTED SURFACE, TYPE C 100 CU. YD.

G. PAYMENT

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

INNOVATIVE CONTRACTING

LANE VALUE CONTRACT TABLE

DESCRIPTION OF CRITICAL LANE TO BE MAINTAINED	RESTRICTED TIME PERIOD	TIME UNIT	DISINCENTIVE $ PER TIME UNIT
ALL LANES/RAMPS OPEN TO TRAFFIC	5 AM MONDAY TO 8 PM FRIDAY	15 MINUTES	$5,000
ALL LANES/RAMPS OPEN TO TRAFFIC	6 AM TO 7 PM WEEKDAYS	15 MINUTES	$5,000
ALL LANES/RAMPS OPEN TO TRAFFIC	7 AM TO 6 PM WEEKENDS	15 MINUTES	$5,000

CALCULATED PDG CHECKED DAW

MAINTENANCE OF TRAFFIC NOTES

SUM-8-1.99

ITEM 614 - LAW ENFORCEMENT OFFICER WITH PATROL CAR

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

1. FOR LANE CLOSURES: DURING INITIAL SET-UP PERIODS OR TEAR DOWN PERIODS.
2. FOR OTHER PERIODS AS DIRECTED BY THE ENGINEER.

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 PROJECT ENGINEER SHALL HAVE CONTROL OVER THEIR PLACEMENT. THE OFFICIAL PATROL CAR SHALL BE A PUBLIC SAFETY VEHICLE AS REQUIRED BY THE OHIO REVISED CODE. THE CONTRACTOR SHALL MAKE ARRANGEMENTS FOR THESE SERVICES WITH:

CANTON PATROL POST
4710 SHUFFEL ROAD
NORTH CANTON, OHIO 44720
PHONE: 330-433-6200
FAX: 330-433-6230

IF AFTER CONTACTING THE OHIO HIGHWAY PATROL, IT IS DETERMINED THAT THEY CANNOT SUPPLY THE LEO, THEN AN AUTHORIZED MUNICIPAL OR COUNTY POLICE OFFICER WITH A MARKED AND FLASHER-LIGHT EQUIPPED OFFICIAL POLICE OR PATROL CAR SHALL BE PROVIDED.

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

ITEM 614, LAW ENFORCEMENT OFFICER WITH PATROL CAR 576 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.

ITEM 614 - PORTABLE CHANGEABLE MESSAGE SIGN, AS PER PLAN

THE CONTRACTOR SHALL FURNISH, INSTALL, MAINTAIN AND REMOVE, WHEN NO LONGER NEEDED, A CHANGEABLE MESSAGE SIGN, ON SITE, FOR THE DURATION OF THE PROJECT. EACH SIGN SHALL BE OF A TYPE SHOWN ON A LIST OF APPROVED PCMS UNITS MAINTAINED BY THE DIRECTOR (OFFICE OF MATERIALS MANAGEMENT). THIS LIST IS AVAILABLE ON THE ODOT WEBSITE AT HTTP://WWW.DOT.STATE.OH.US/TESTLAB/APPLISTS/MISC/ PCMS.HTM. THE CLASS UNITS SHALL HAVE A MINIMUM LEGIBILITY DISTANCE OF 850 FEET.

EACH SIGN SHALL BE TRAILER-MOUNTED AND EQUIPPED WITH A FUNCTIONAL DIMMING MECHANISM, TO DIM THE SIGN DURING DARKNESS, AND A TAMPER AND VANDAL PROOF ENCLOSURE. EACH SIGN SHALL BE PROVIDED WITH APPROPRIATE TRAINING AND OPERATION INSTRUCTIONS TO ENABLE ON-SITE PERSONNEL TO OPERATE AND TROUBLESHOOT THE UNIT. THE SIGN SHALL ALSO BE CAPABLE OF BEING POWERED BY AN ELECTRICAL SERVICE DROP FROM A LOCAL UTILITY COMPANY. PCMS TRAILERS SHOULD BE DELINEATED ON A PERMANENT BASIS BY AFFIXING RETROREFLECTIVE MATERIAL, IN A CONTINUOUS LINE ON THE FACE OF THE TRAILER AS SEEN BY ONCOMING ROAD USERS.

THE PROBABLE PCMS LOCATIONS AND WORK LIMITS FOR THOSE LOCATIONS ARE SHOWN ON SHEET 23-24 OF THE PLAN. PLACEMENT, OPERATION, MAINTENANCE AND ALL ACTIVATION OF THE SIGNS BY THE CONTRACTOR SHALL BE AS DIRECTED BY THE ENGINEER. THE PCMS SHALL BE LOCATED IN A HIGHLY VISIBLE POSITION YET PROTECTED FROM TRAFFIC. THE PCMS SHOULD NOT BE LOCATED IN THE MEDIAN OF THE HIGHWAY. THE PCMS SHOULD BE LOCATED BEHIND GUARDRAIL WHENEVER POSSIBLE. THE CONTRACTOR SHALL, AT THE DIRECTION OF THE ENGINEER, RELOCATE THE PCMS TO IMPROVE VISIBILITY OR ACCOMMODATE CHANGED CONDITIONS. WHEN NOT IN USE, THE PCMS SHALL BE TURNED OFF. ADDITIONALLY, WHEN NOT IN USE FOR EXTENDED PERIODS OF TIME, THE PCMS SHALL BE TURNED, FACING AWAY FROM ALL TRAFFIC, AND SHALL DISPLAY ONE OR MORE HIGH-INTENSITY YELLOW REFLECTIVE SHEETING SURFACES OF 9-INCH BY 15-INCH MINIMUM SIZE FACING TRAFFIC.

THE ENGINEER SHALL BE PROVIDED ACCESS TO EACH SIGN UNIT AND SHALL BE PROVIDED WITH APPROPRIATE TRAINING AND OPERATION INSTRUCTIONS TO ENABLE ODOT PERSONNEL TO OPERATE AND TROUBLESHOOT THE UNIT, AND TO REVISE SIGN MESSAGES, IF NECESSARY.

ALL MESSAGES TO BE DISPLAYED ON THE SIGN WILL BE PROVIDED BY THE ENGINEER. A LIST OF ALL REQUIRED PREPROGRAMMED MESSAGES WILL BE GIVEN TO THE CONTRACTOR AT THE PROJECT PRECONSTRUCTION CONFERENCE. THE SIGN SHALL HAVE TWO DIFFERENT MEMORIES (PROM AND RAM) AND THE CAPABILITY TO STORE UP TO 99 MESSAGES. MESSAGE MEMORY OR PRE-PROGRAMMED DISPLAYS SHALL NOT BE LOST AS A RESULT OF POWER FAILURES TO THE ON-BOARD COMPUTER. THE SIGN LEGEND SHALL BE CAPABLE OF BEING CHANGED IN THE FIELD. THREE-LINE PRESENTATION FORMATS WITH UP TO SIX MESSAGE PHASES WILL BE PERMITTED. NORMALLY ONLY A MAXIMUM OF THREE MESSAGE PHASES SHOULD BE EMPLOYED. PCMS FORMAT SHALL PERMIT THE COMPLETE MESSAGE FOR EACH PHASE TO BE READ AT LEAST ONCE.

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

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

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

THE CONTRACTOR SHALL BE RESPONSIBLE FOR OPERATION AND MAINTENANCE OF THESE SIGNS ON THE PROJECT FOR THE DURATION OF THE PHASES WHEN THE PLAN REQUIRES THEIR USE. THE REQUIREMENT TO FURNISH, INSTALL, MAINTAIN AND REMOVE PCMS UNITS ON THE PROJECT SHALL NOT IN ANY WAY RELIEVE THE CONTRACTOR OF HIS RESPONSIBILITY OUTLINED IN 614.07.

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

ESTIMATED QUANTITIES CARRIED ON SHEETS 23&24.

TRUCK MOUNTED ATTENUATOR

WHEN THE CONTRACTOR IS PERFORMING WORK ON ROADWAY, 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 TESTED TO MEET NCHRP 350 TL-3 AND BE LISTED ON AASHTO'S ROADSIDE DESIGN GUIDE LIST, SECTION 9.3.2.3.

THE T.M.A. SHALL 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. SET-UP AND TEAR-DOWN OF A LANE CLOSURE.
2. PLACING OR PICKING UP DRUMS, CONES, OR EQUIPMENT.
3. DURING EACH PHASE OF BRIDGE STRIP SEAL REPLACEMENT WORK (SEE M.O.T. PLAN SHEETS)

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

COVERING OF SIGNS

WHERE THE PLANS CALL FOR OR THE ENGINEER REQUESTS A PERMANENT SIGN TO BE COVERED, THE CONTRACTOR SHALL DO SO IN 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.

COOPERATION BETWEEN CONTRACTORS

THE CONTRACTOR SHALL BE ADVISED THAT THERE WILL BE A PROJECT UNDER CONSTRUCTION AT THE SAME TIME: SUM-8-4.30 (PID 76347, COMPLETION DATE OF 8/31/09).

ALL LANE RESTRICTIONS FOR THE SUM-8-4.30 PROJECT SHALL GOVERN OVER LANE RESTRICTIONS FOR THIS PROJECT. INSTALLATION OF ALL MOT ZONES WILL BE SUBJECT TO THE PROJECT ENGINEER'S REVIEW AND APPROVAL. THE CONTRACTOR SHALL SCHEDULE HIS WORK SO AS TO CAUSE NO DELAY OR CONFLICT WITH THE SUM-8-4.30 PROJECT.

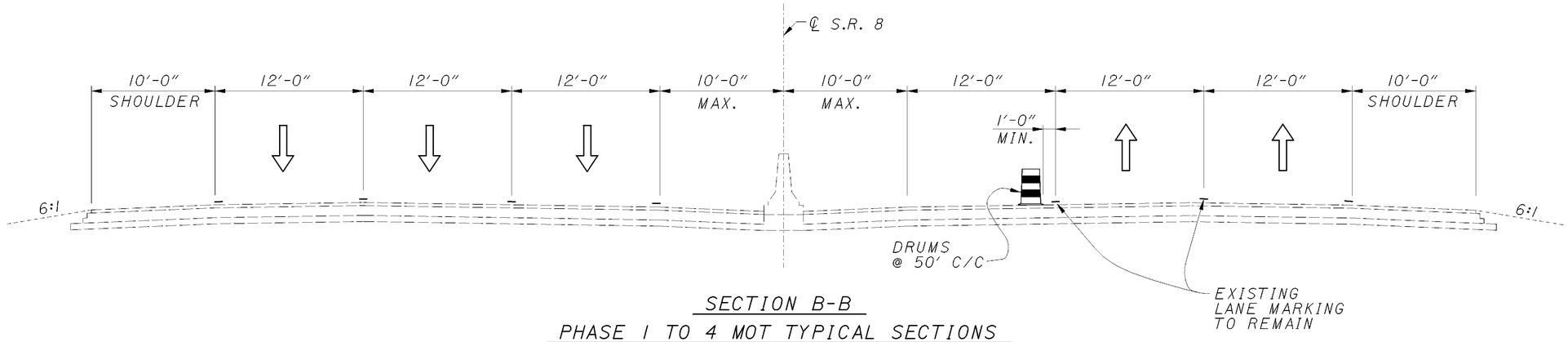
COMPENSATION FOR THIS COORDINATION SHALL BE INCIDENTAL TO THE VARIOUS PAY ITEMS WITHIN THE CONTRACT.

CALCULATED PDG
CHECKED DAW

MAINTENANCE OF TRAFFIC NOTES

SUM-8-1.99

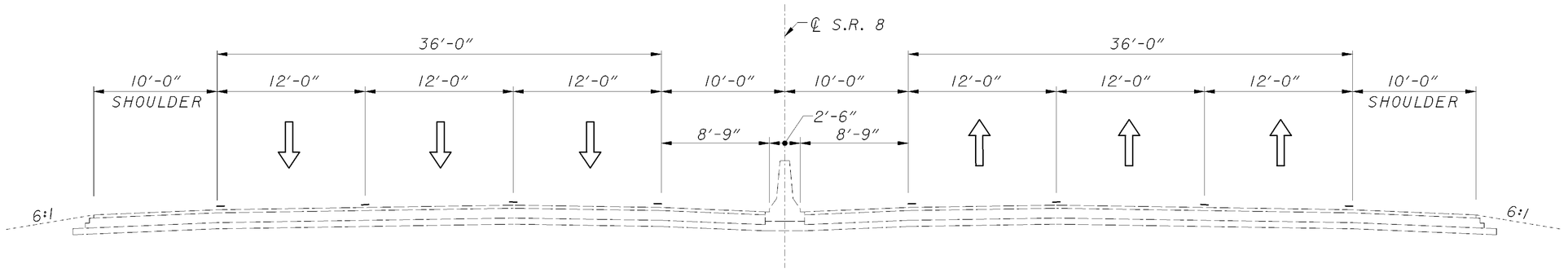
85246MNO02.DGN 3/18/09 SAM.SCB



SECTION B-B

PHASE 1 TO 4 MOT TYPICAL SECTIONS

SEE MOT TRAFFIC PLANS FOR LOCATIONS



SECTION A-A

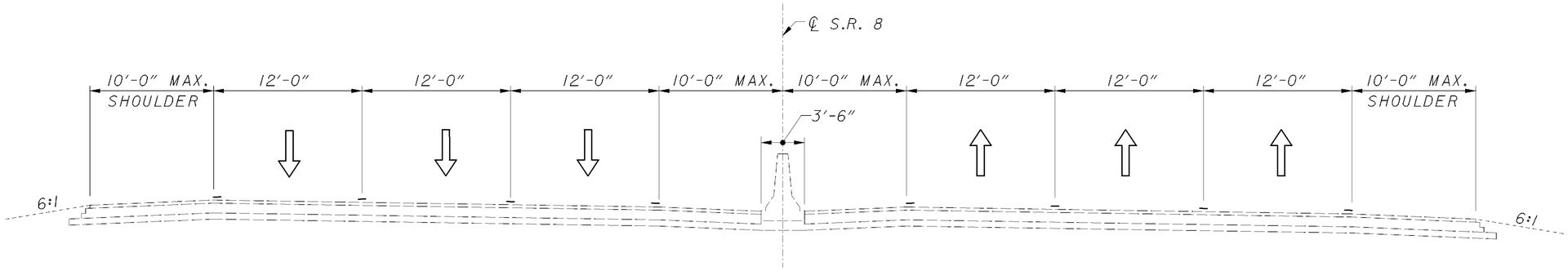
PHASE 1 TO 4 MOT TYPICAL SECTIONS

SEE MOT TRAFFIC PLANS FOR LOCATIONS

MAINTENANCE OF TRAFFIC
TYPICAL SECTIONS

SUM-8-1.99

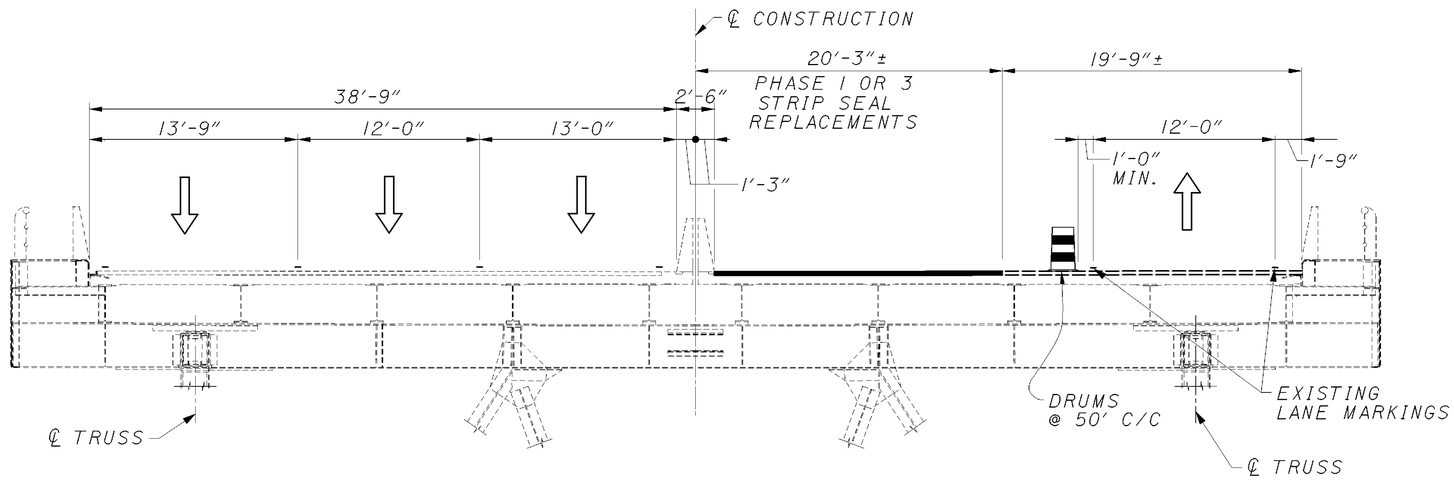
85246WYOOI.DGN 3/12/09 SAM



SECTION D-D

PHASE 1 TO 4 MOT TYPICAL SECTIONS

SEE MOT TRAFFIC PLANS FOR LOCATIONS



SECTION C-C

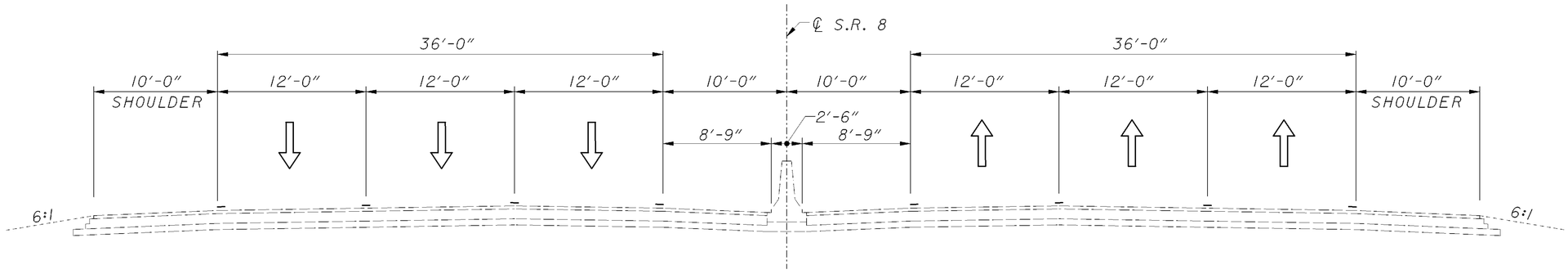
PHASE 1 AND 3 MOT TYPICAL SECTIONS

SEE MOT TRAFFIC PLANS FOR LOCATIONS

MAINTENANCE OF TRAFFIC
TYPICAL SECTIONS

SUM-8-1.99

85246WY00.DGN 3/12/09 SAM



SECTION E-E

PHASE 2 AND 4 MOT TYPICAL SECTIONS

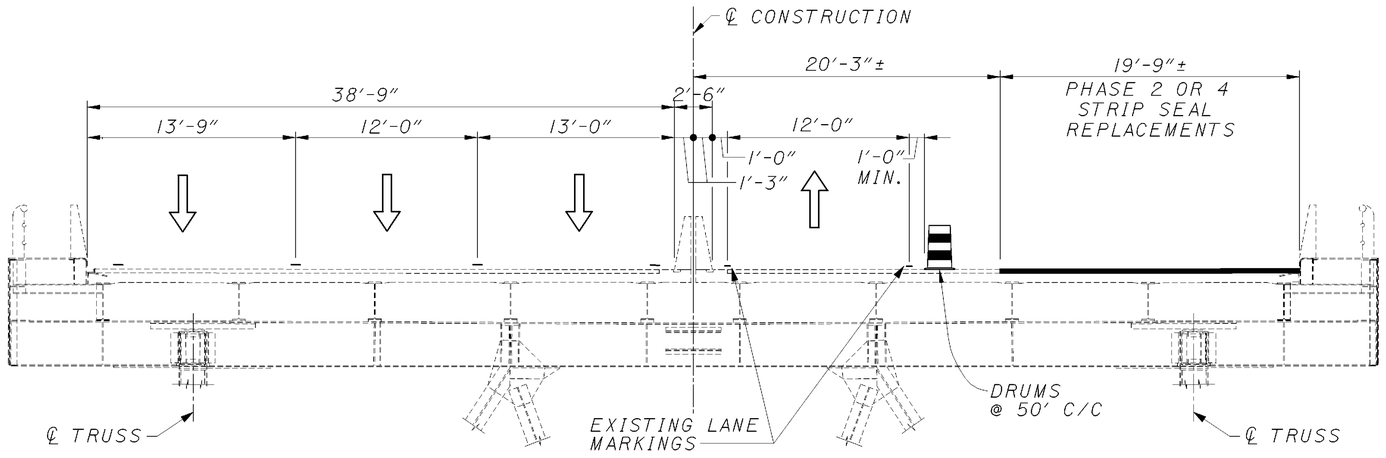
SEE MOT TRAFFIC PLANS FOR LOCATIONS

MAINTENANCE OF TRAFFIC
TYPICAL SECTIONS

SUM-8-1.99

9
59

85246WY002.DGN 3/12/09 SAM



SECTION G-G

PHASE 2 AND 4 MOT TYPICAL SECTIONS

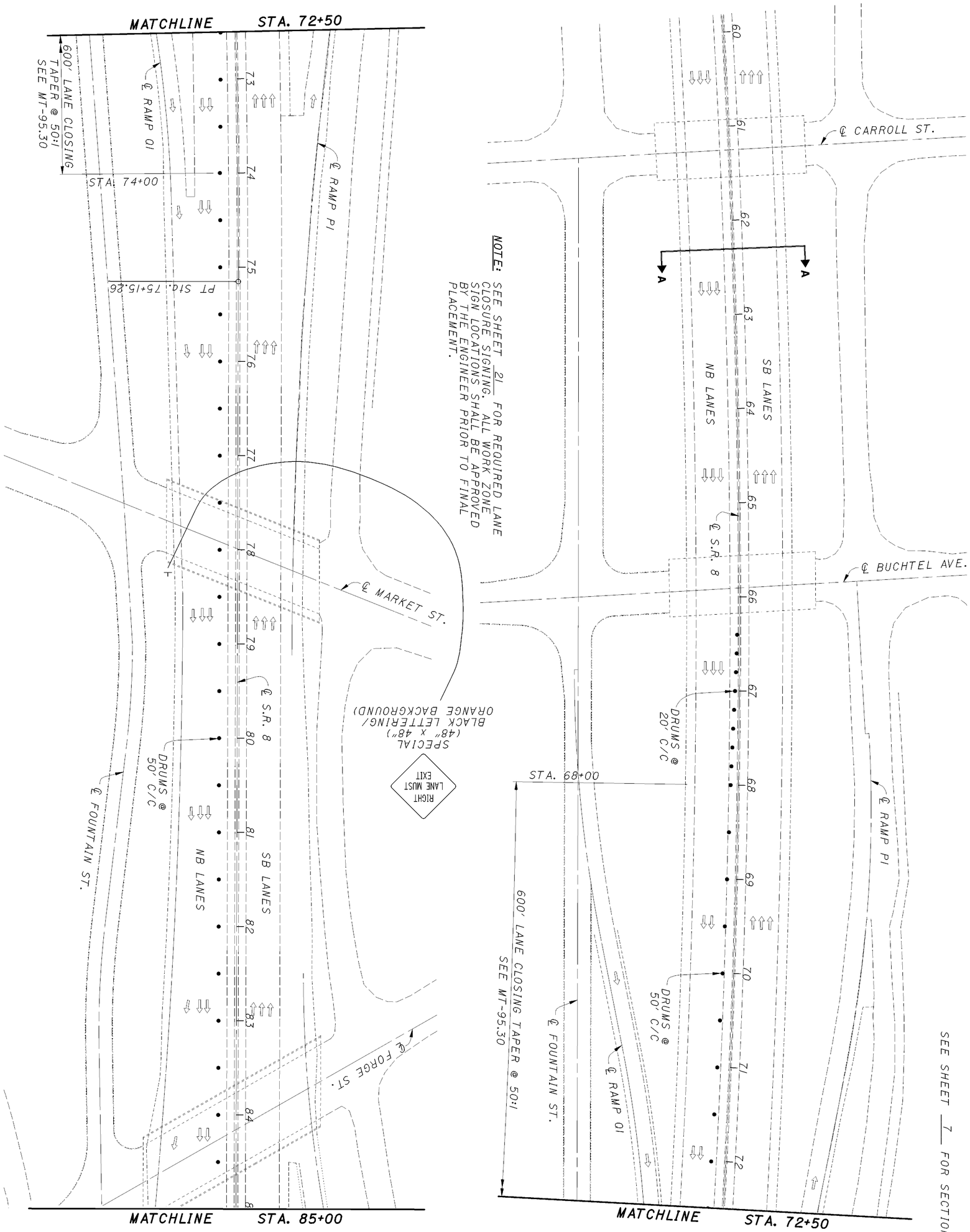
SEE MOT TRAFFIC PLANS FOR LOCATIONS

MAINTENANCE OF TRAFFIC
TYPICAL SECTIONS

SUM-8-1.99

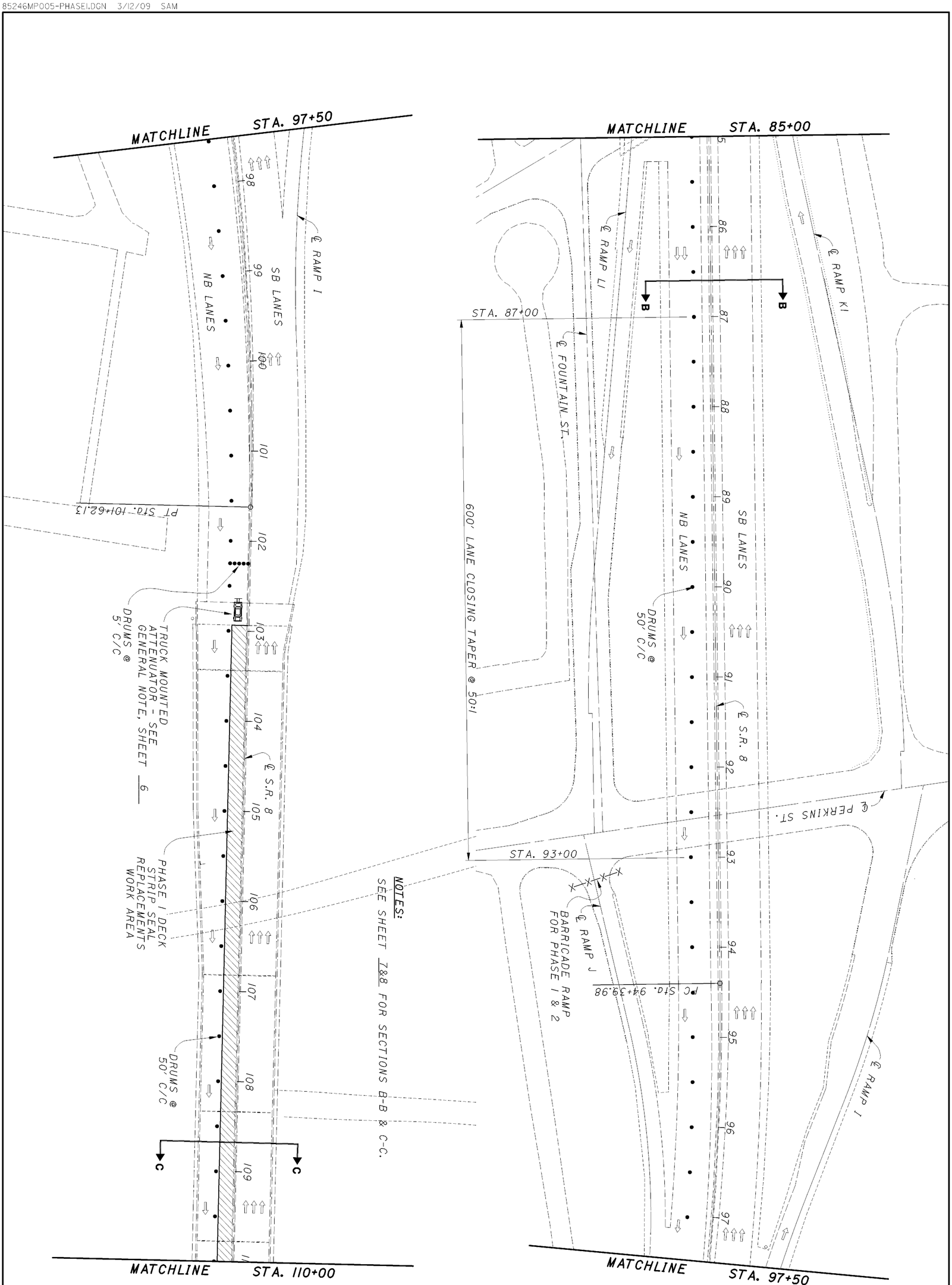
10
59

85246WY002.DGN 3/12/09 SAM

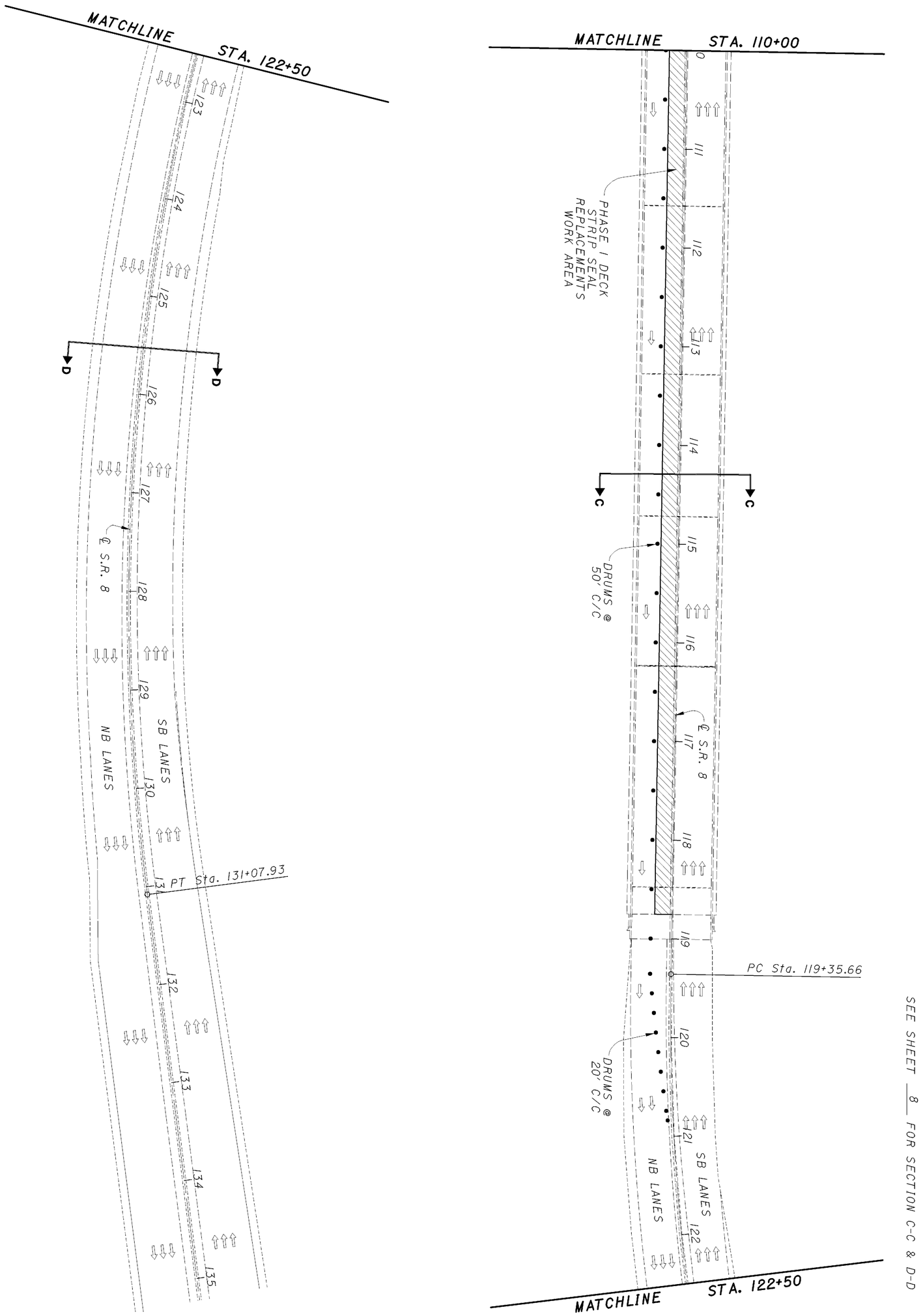


59	SUM-8-1.99	MAINTENANCE OF TRAFFIC PLAN PHASE 1 - STA. 60+00 TO STA. 85+00	CALCULATED PDG CHECKED DAW	0 50 25 100 HORIZONTAL SCALE IN FEET

85246MP005-PHASE1.DGN 3/12/09 SAM



12/59	SUM-8-1.99	MAINTENANCE OF TRAFFIC PLAN PHASE 1 - STA. 85+00 TO STA. 110+00	CALCULATED PDG CHECKED DAW	0 50 25 100 HORIZONTAL SCALE IN FEET



SUM-8-1.99

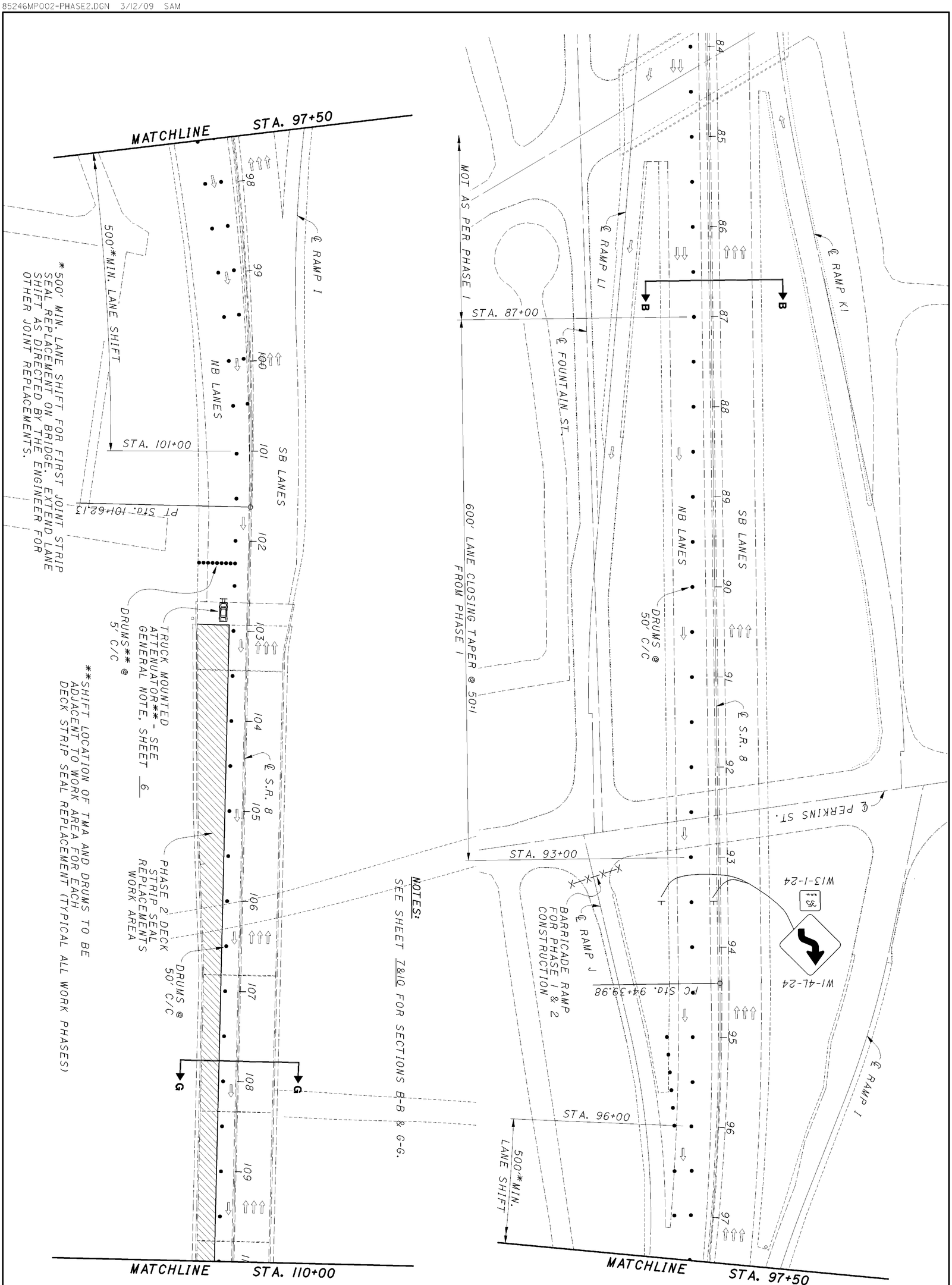
MAINTENANCE OF TRAFFIC PLAN
PHASE 1 - STA. 110+00 TO STA. 135+00

CALCULATED PDG
CHECKED DAW

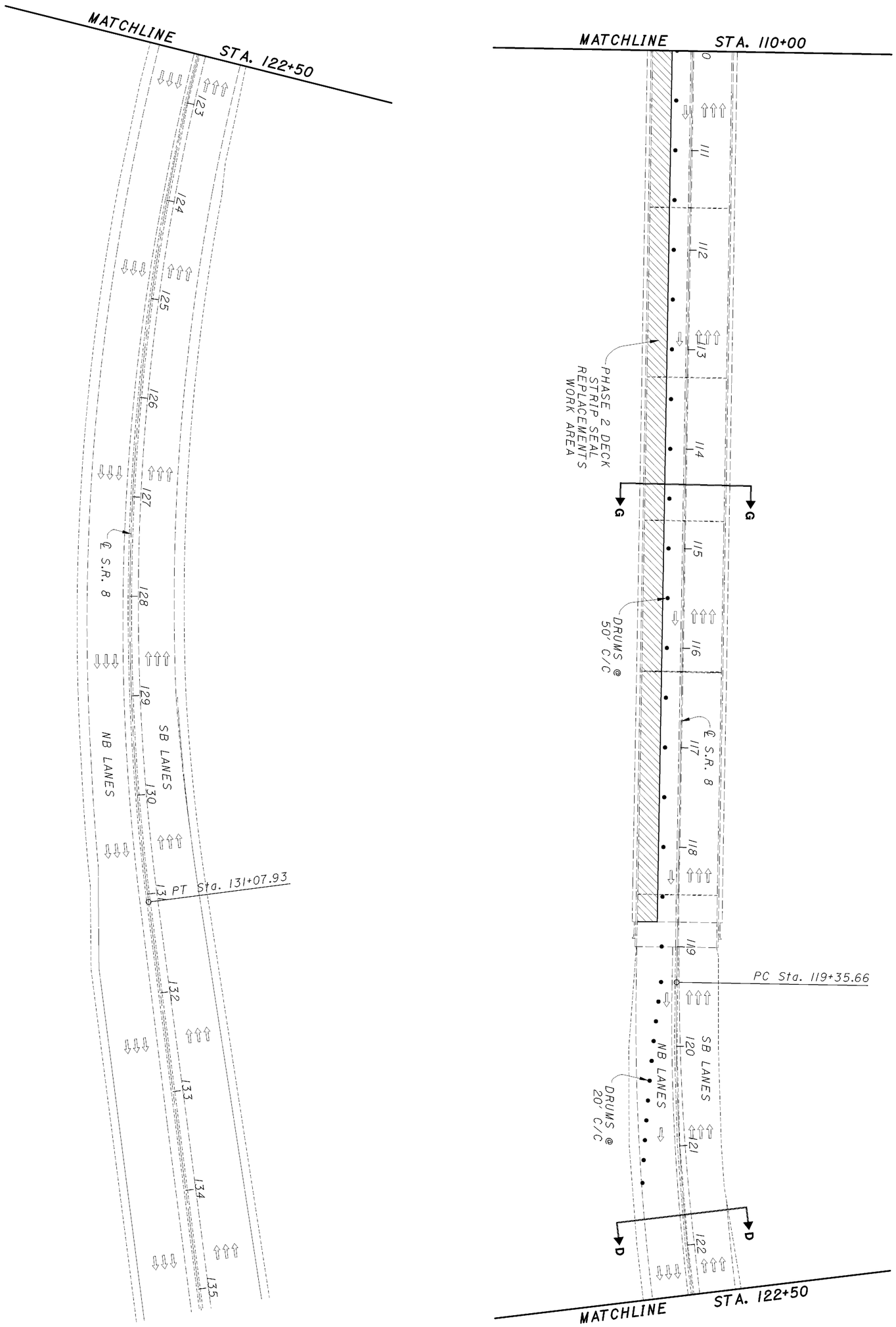
0 25 50 100
HORIZONTAL SCALE IN FEET

N

85246MP002-PHASE2.DGN 3/12/09 SAM

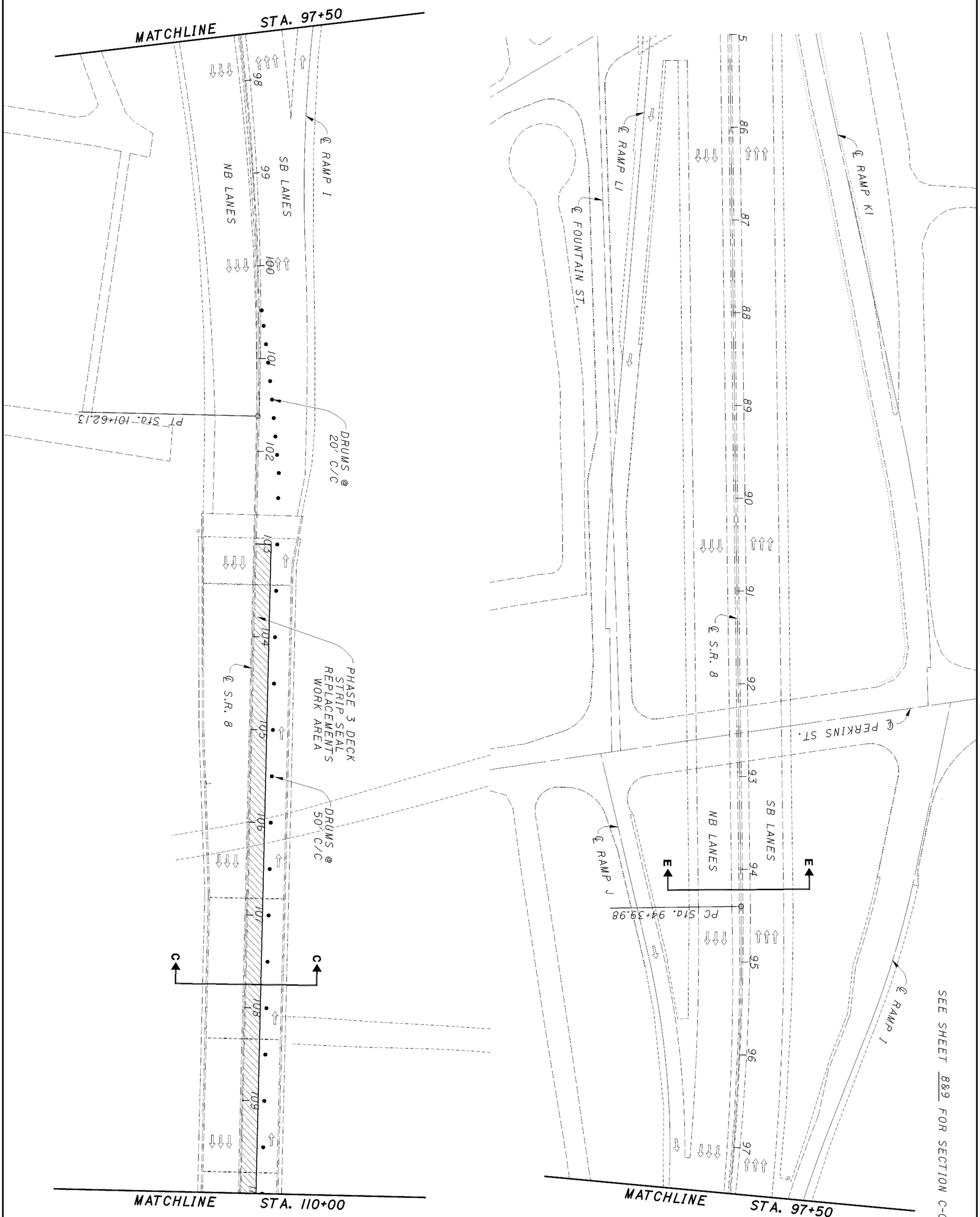


14 / 59	SUM-8-1.99	MAINTENANCE OF TRAFFIC PLAN PHASE 2 - STA. 85+00 TO STA. 110+00	CALCULATED PDG CHECKED DAW	0 50 25 100 HORIZONTAL SCALE IN FEET

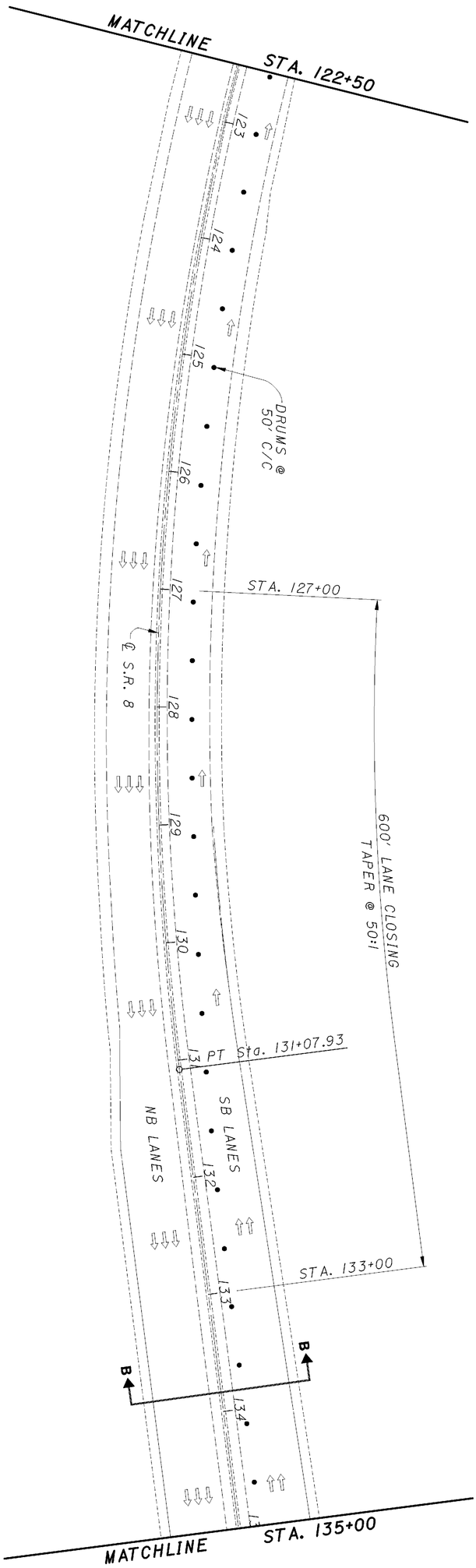


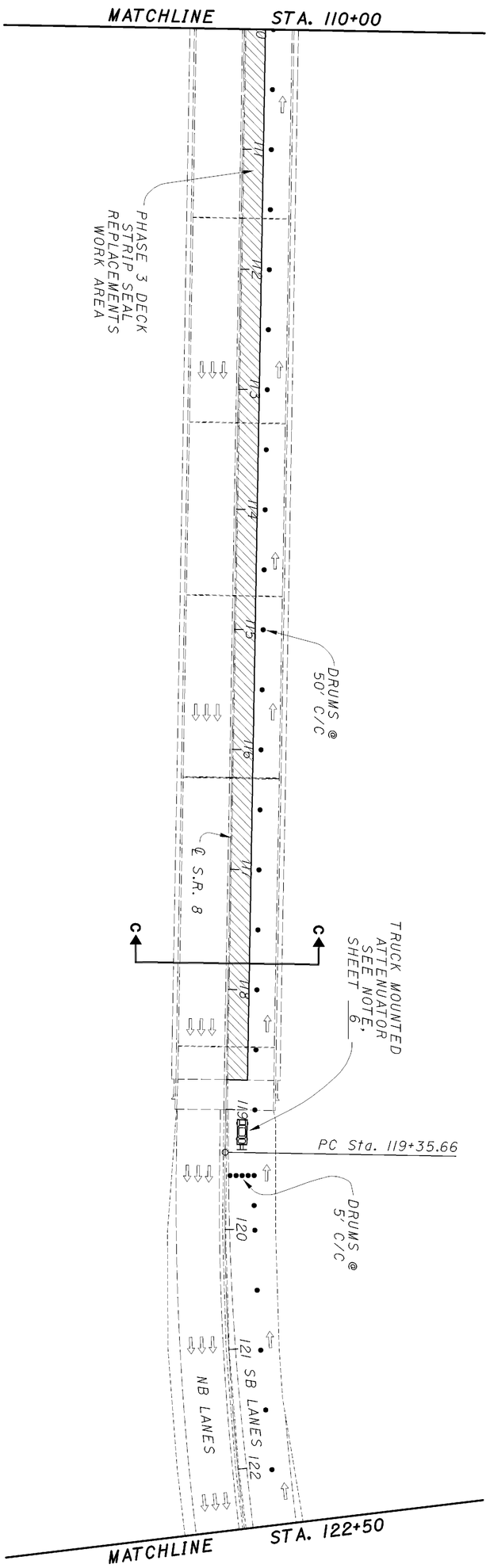
SEE SHEET 8 FOR SECTIONS C-C AND D-D

59 / 15	SUM-8-1.99	MAINTENANCE OF TRAFFIC PLAN PHASE 2 - STA. 110+00 TO STA. 135+00	CALCULATED PDG CHECKED DAW	0 50 25 100 HORIZONTAL SCALE IN FEET



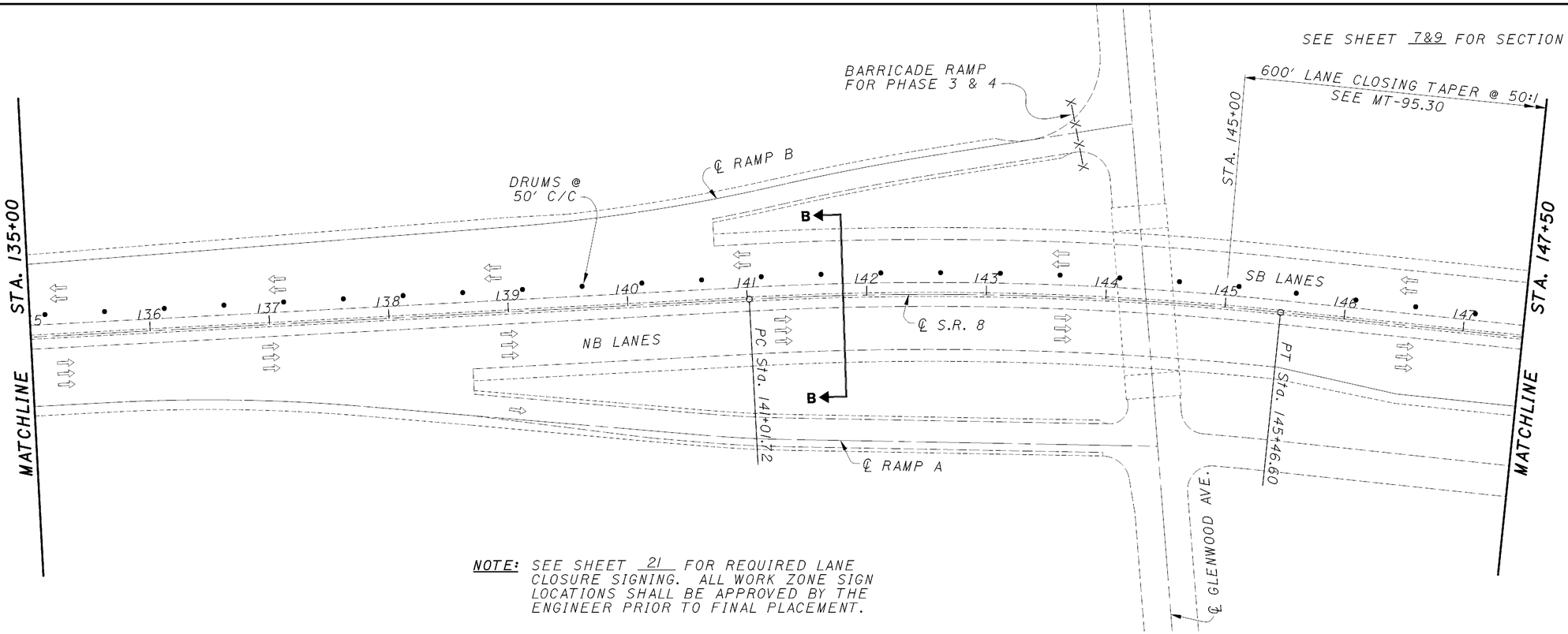
59 / 16	SUM-8-1.99	MAINTENANCE OF TRAFFIC PLAN PHASE 3 - STA. 85+00 TO STA. 110+00	CALCULATED PDG CHECKED DAW	0 50 25 100 HORIZONTAL SCALE IN FEET



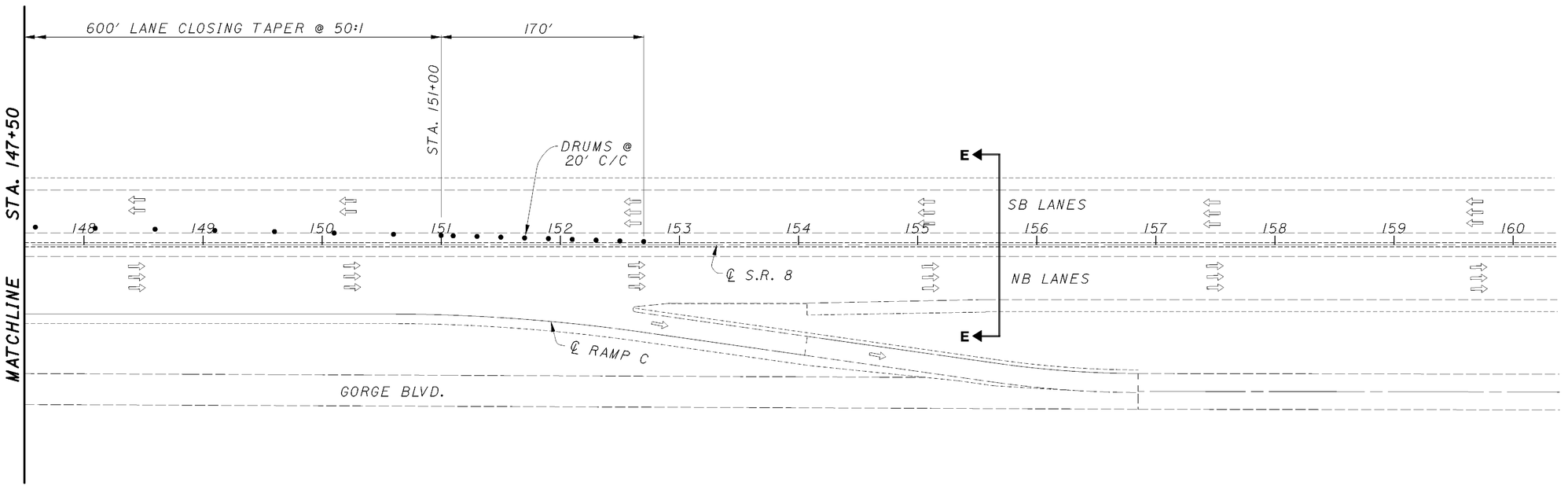


SEE SHEET 7&8 FOR SECTION B-B & C-C

17 / 59	SUM-8-1.99	MAINTENANCE OF TRAFFIC PLAN PHASE 3 - STA. 110+00 TO STA. 135+00	CALCULATED PDG CHECKED DAW	0 50 25 100 HORIZONTAL SCALE IN FEET



NOTE: SEE SHEET 21 FOR REQUIRED LANE CLOSURE SIGNING. ALL WORK ZONE SIGN LOCATIONS SHALL BE APPROVED BY THE ENGINEER PRIOR TO FINAL PLACEMENT.



HORIZONTAL SCALE IN FEET
0 25 50 100

CALCULATED PDG
CHECKED DAW

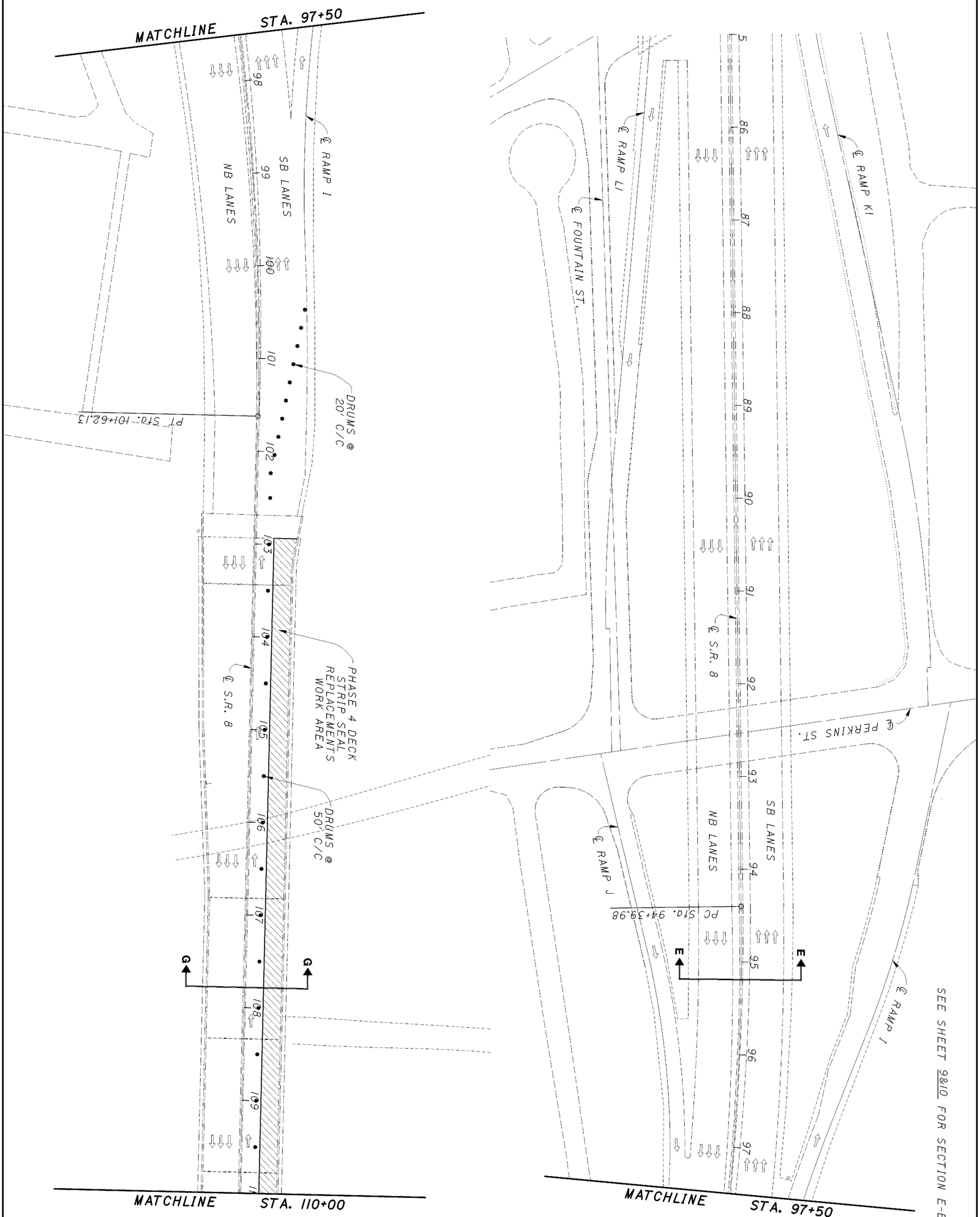
MAINTENANCE OF TRAFFIC PLAN
PHASE 3 - STA. 135+00 TO STA. 160+00

SUM-8-1.99

18
59

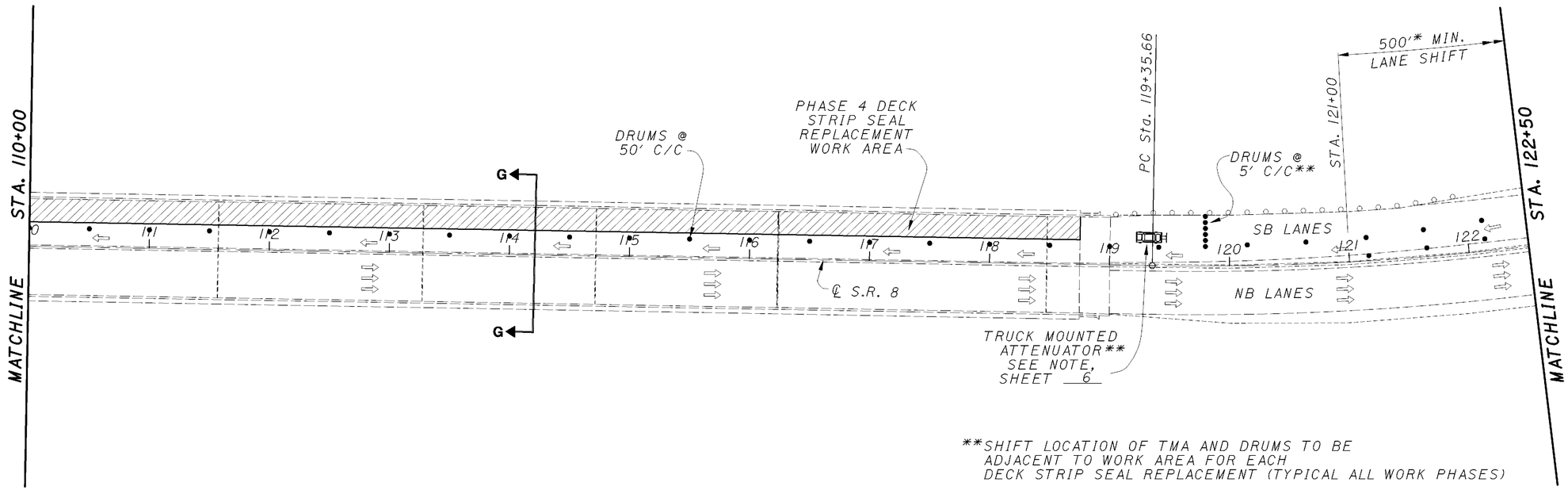
8524GMP02-PHASE3.DGN 3/12/09 SAM

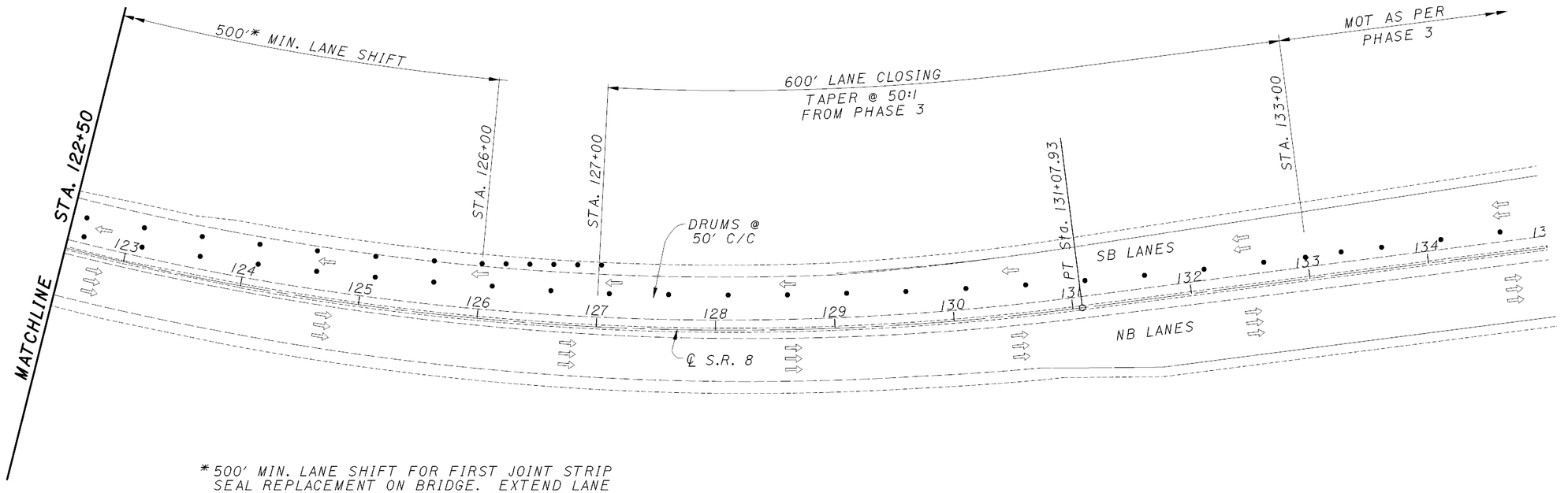
85246MP007-PHASE4.DGN 3/12/09 SAM



55 / 19	SUM-8-1.99	MAINTENANCE OF TRAFFIC PLAN PHASE 4 - STA. 85+00 TO STA. 110+00	CALCULATED PDG CHECKED DAW	0 50 25 100 HORIZONTAL SCALE IN FEET

SEE SHEET 10 FOR SECTION G-G





* 500' MIN. LANE SHIFT FOR FIRST JOINT STRIP SEAL REPLACEMENT ON BRIDGE. EXTEND LANE SHIFT AS DIRECTED BY THE ENGINEER FOR OTHER JOINT REPLACEMENTS.

** SHIFT LOCATION OF TMA AND DRUMS TO BE ADJACENT TO WORK AREA FOR EACH DECK STRIP SEAL REPLACEMENT (TYPICAL ALL WORK PHASES)

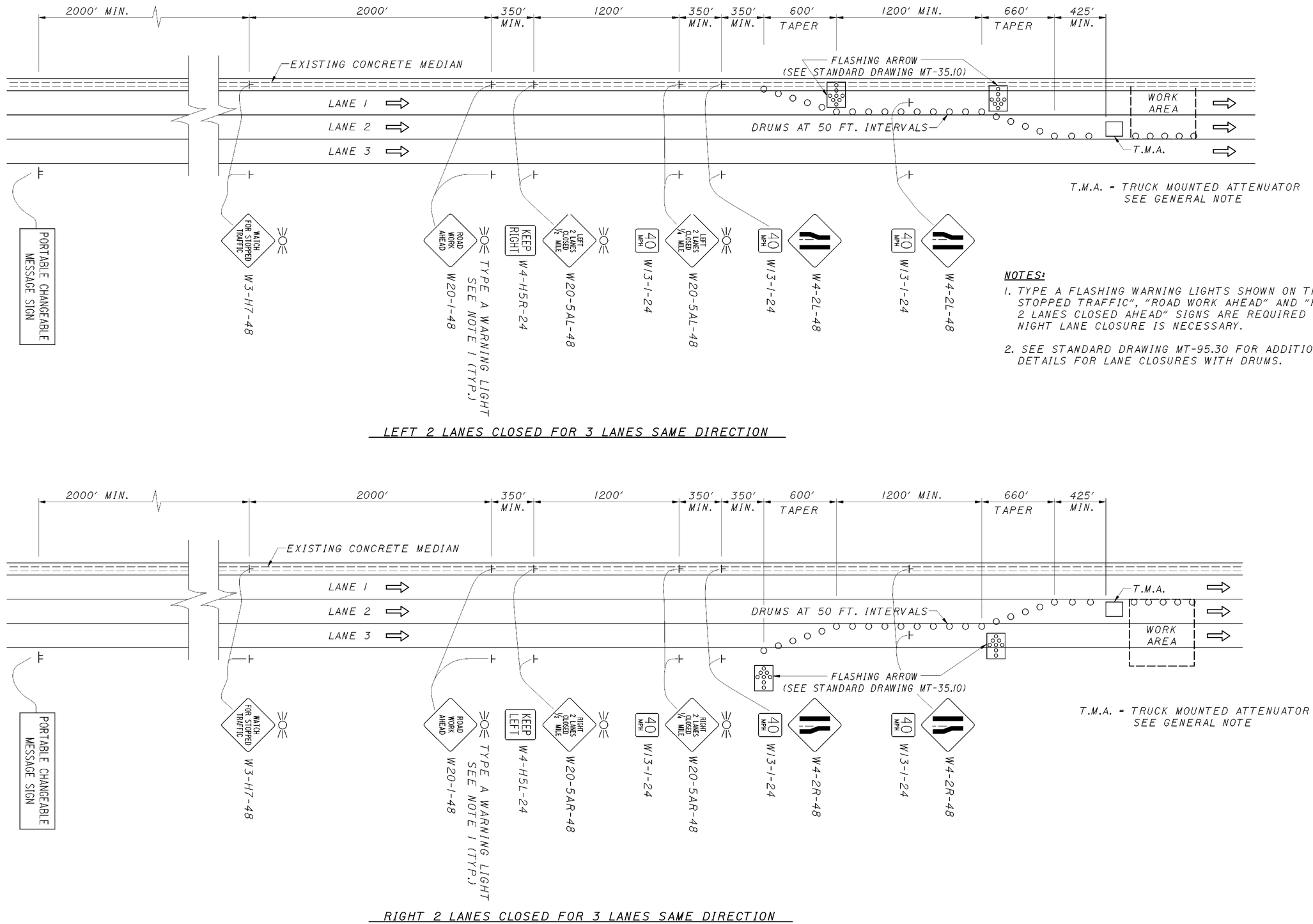
HORIZONTAL SCALE IN FEET
0 25 50 100

CALCULATED PDG
CHECKED DAW

MAINTENANCE OF TRAFFIC PLAN
PHASE 4 - STA. 110+00 TO STA. 135+00

SUM-8-1.99

8524GMP008-PHASE4.DGN 3/12/09 SAM



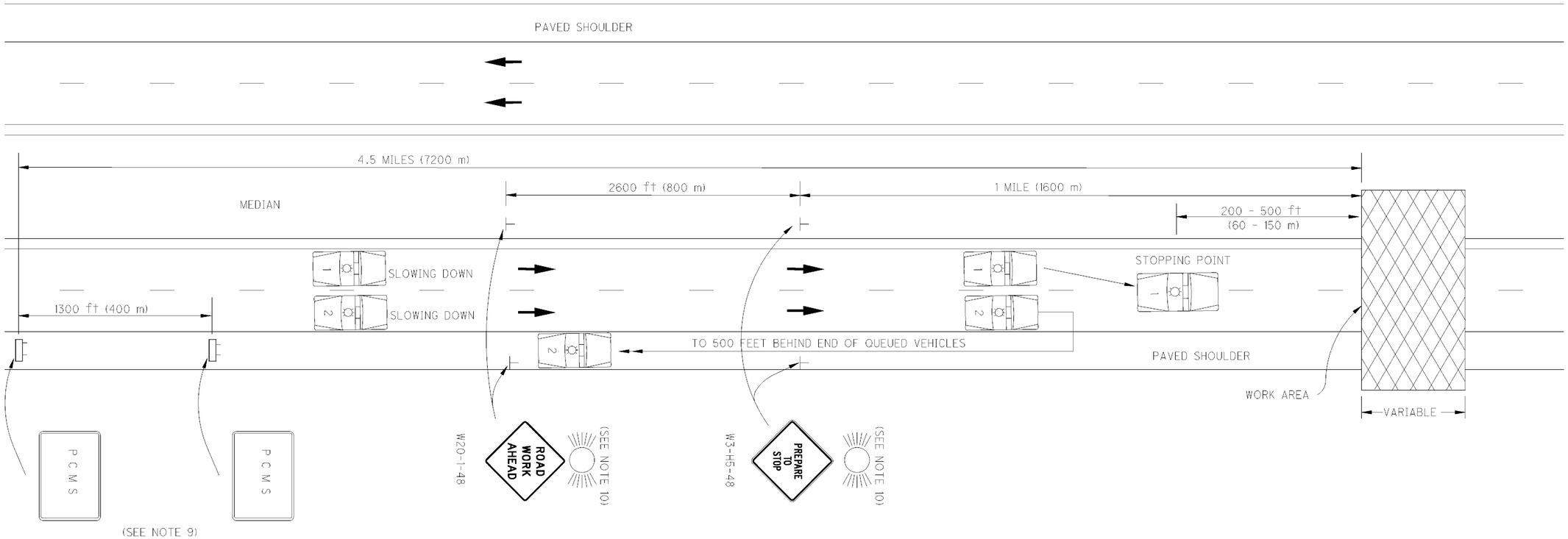
LEFT 2 LANES CLOSED FOR 3 LANES SAME DIRECTION

NOTES:

1. TYPE A FLASHING WARNING LIGHTS SHOWN ON THE "WATCH FOR STOPPED TRAFFIC", "ROAD WORK AHEAD" AND "RIGHT (OR LEFT) 2 LANES CLOSED AHEAD" SIGNS ARE REQUIRED WHENEVER A NIGHT LANE CLOSURE IS NECESSARY.
2. SEE STANDARD DRAWING MT-95.30 FOR ADDITIONAL NOTES AND DETAILS FOR LANE CLOSURES WITH DRUMS.

RIGHT 2 LANES CLOSED FOR 3 LANES SAME DIRECTION

852463MD001.DGN 3/12/09 MWS



1. This type of highway closure shall be used for all construction, maintenance and utility operations when the duration of closure will not exceed 15 minutes.

2. A minimum of two Law Enforcement Officers (LEO) with patrol cars per direction shall be provided to block traffic and pace motorists to a stop. The number of patrol cars shall equal the number of lanes closed on the highway.

3. Patrol cars, with lights flashing, should enter the stream of traffic at approximately 3 miles before the point of closure. At approximately 2 miles before the point of closure, they should begin the gradual slow down. Traffic shall be brought to a complete stop a safe distance, between 200 and 500 feet (60 and 150 m), from the work area. This slowing operation shall take no more than 10 minutes. After traffic has been stopped, one patrol car shall travel along the roadway shoulder 500 feet (150 m) behind the end of the queued vehicles.

4. The Contractor shall not begin work until traffic has been brought to a complete stop.

5. All entrance ramps located between the stopped traffic and the work area shall be closed.

6. After the highway has been closed and reopened via this procedure, both of the following requirements shall have been met before implementation of another short duration closure, except with the approval of the Engineer:
   A. A minimum period of 15 minutes shall have elapsed
   B. The queued traffic shall have dissipated

7. The time frame for stopping traffic shall be specified in the plans or by the District District Deputy Director.

8. The public shall be given advance notice of the upcoming closure by providing Portable Changeable Message signs at the site at least one week in advance of the scheduled closing. Closure information should also be provided through the news media.

9. Two ODOT approved Portable Changeable Message Signs, Class 1, shall be provided. The first message sign shall be placed at approximately 4.5 miles in advance of the closure or as directed by the Engineer. The second message sign shall be placed at approximately one-quarter mile beyond the first message sign. The first message sign shall read ROAD CLOSED AHEAD (0.8 sec.), PREPARE TO STOP (0.8 sec.), (Black screen for 0.3 sec.) The second message sign shall read ROAD CLOSED AHEAD (0.8 sec.), "EXPECT 30 MIN. DELAY" (0.8 sec.), (Black screen for 0.3 sec.)

10. The Contractor shall erect and maintian 48 inch "ROAD WORK AHEAD" and "PREPARE TO STOP" signs on each side of the highway. During night operations, each sign shall be illuminated with one Type A flashing warning light or two flares. The flares shall be replaced if they burn out.

85246MDA001.DGN

OFFICE OF TRAFFIC ENGINEERING

DESIGNED SHB
DETAILED
CHECKED
REVIEWED LAM
REVISION DATE 07/18/08

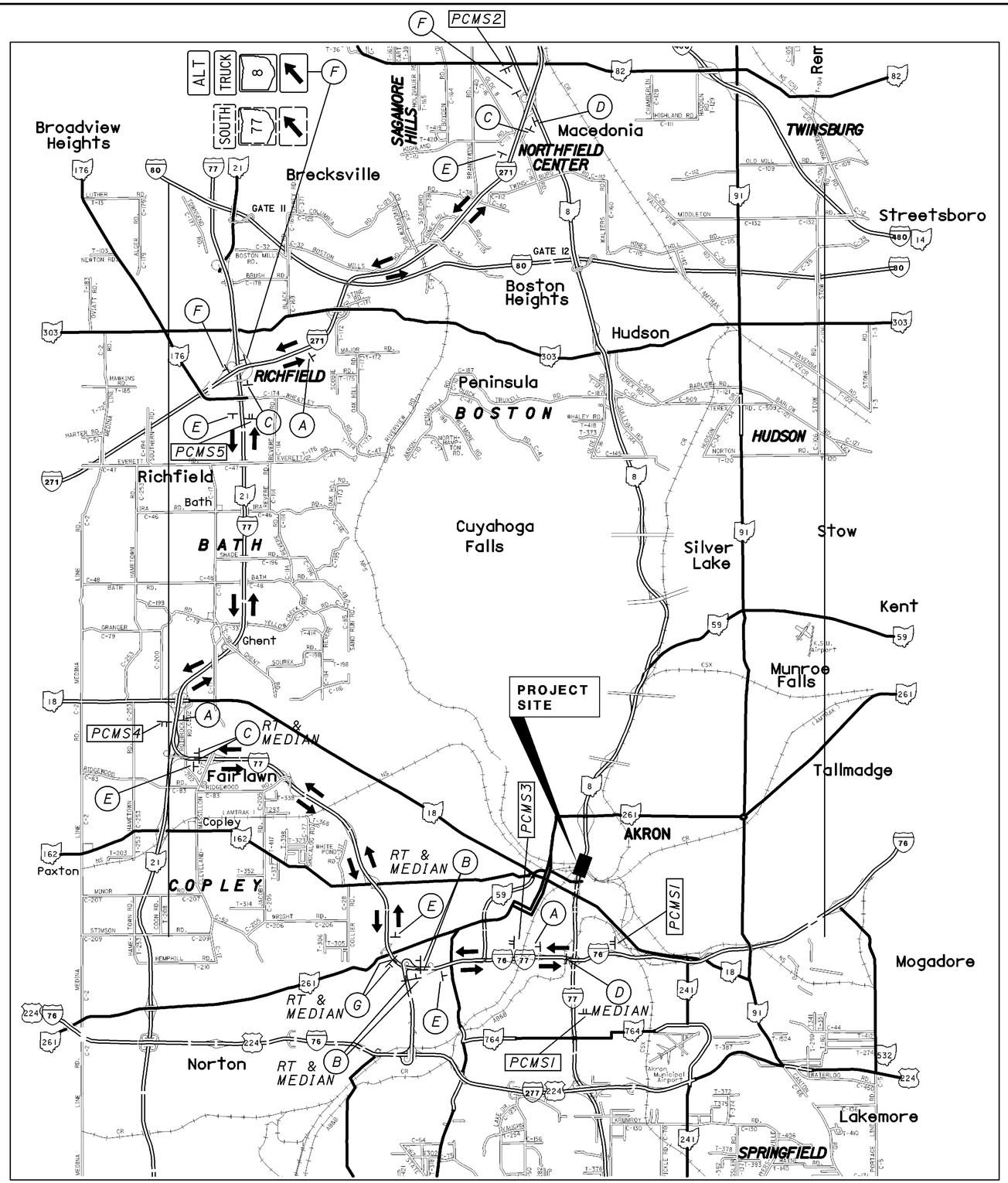
PID NUMBER 209960

PLAN INSERT SHEET
SHORT-DURATION CLOSURE OF MULTI-LANE DIVIDED HIGHWAY

SUM-8-1.99

1 / 1

22
59



LEGEND

ALTERNATE ROUTE - TRUCK TRAFFIC (SEE NOTE 1)

ALT ROUTE 8 NORTH FOLLOW 77 NORTH — PCMS1

ALT TRUCK ROUTE SR 8 EXIT 271 SOUTH — PCMS2

ALT 8 NORTH TRUCKS FOLLOW 77 LOCALS EXIT TO 59 — PCMS3

ALT TRUCK ROUTE SR 8 FOLLOW 77 SOUTH — PCMS4

ALT TRUCK ROUTE SR 8 EXIT 271 NORTH — PCMS5

2 REQUIRED

(A)
- ALT M4-1A-24
- NORTH M3-1-24
- 8 M1-5-24

(B)
- ALT M4-1A-24
- TRUCK M4-4-24
- 8 M1-5-24
- M6-3-21

(C)
- ALT M4-1A-24
- TRUCK M4-4-24
- 8 M1-5-24
- M6-2-21

(D)
- END M4-6-24
- ALT M4-1A-24
- TRUCK M3-3-24
- 8 M1-5-24

(E)
- ALT M4-4-24
- TRUCK M3-3-24
- 8 M1-5-24

(F)
- ALT M4-1A-24
- TRUCK M4-4-24
- 8 M1-5-24
- M6-2-21

(G)
- ALT M4-1A-24
- TRUCK M4-4-24
- 8 M1-5-24
- M6-3-21

614 DETOUR SIGNING:

ALL ALTERNATE TRUCK ROUTE SIGNING SHOWN EXCEPT PORTABLE CHANGEABLE MESSAGE SIGNS SHALL BE INCLUDED FOR PAYMENT IN LUMP SUM PRICE BID FOR ITEM 614 - DETOUR SIGNING

614 PORTABLE CHANGEABLE MESSAGE SIGN, AS PER PLAN
(6 UNITS x 4 MONTH EACH) 24 SIGN MONTH

NOTES:

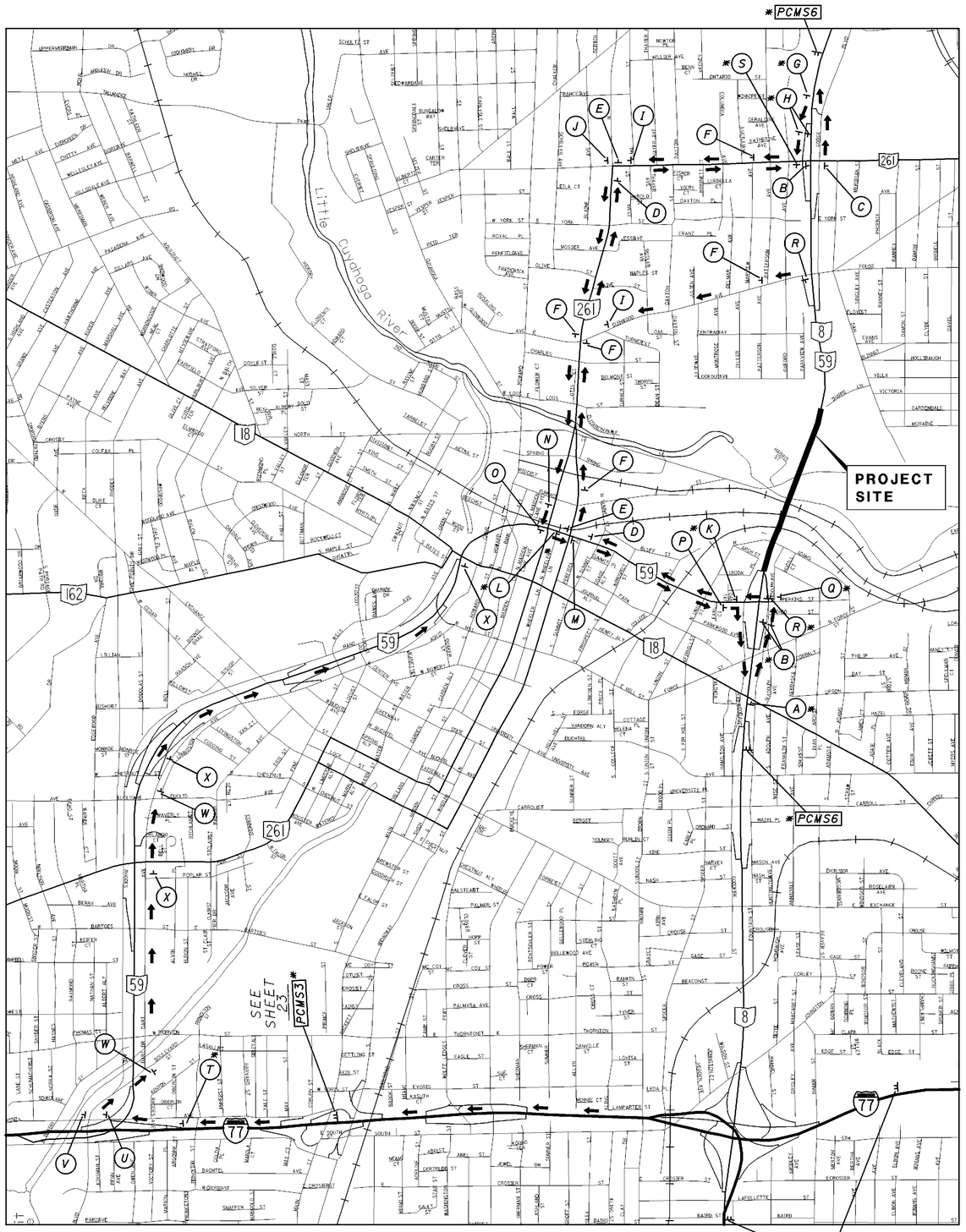
1. ALTERNATE TRUCK ROUTE SIGNING IS SHOWN FOR BOTH NORTHBOUND AND SOUTHBOUND S.R. 8 TRAFFIC, BUT ONLY APPLICABLE SIGNS FOR DIRECTIONAL LANE CLOSURES SHALL BE IN PLACE AT ANY TIME.
2. ALL SIGN LOCATIONS TO BE APPROVED BY THE ENGINEER PRIOR TO INSTALLATION
3. SEE SHEET 24 FOR S.R. 8 LOCAL ALTERNATE ROUTE SIGNING.
4. TURN OFF OR REMOVE PCMS SIGNS WHEN ALL S.R.8 TRAFFIC LANES REOPENED TO TRAFFIC. ALSO REMOVE OR COVER SIGN (F) AT S.R. 8 EXIT RAMP TO I.R. 271. OTHER SIGNS MAY BE LEFT IN PLACE.

CALCULATED PDG
CHECKED DAW

MAINTENANCE OF TRAFFIC
TRUCK TRAFFIC - ALTERNATE ROUTE SIGNING

SUM-8-1.99

85246MDOOLDGN 3/12/09 SAM



LEGEND

⇄ ALTERNATE ROUTE - LOCAL TRAFFIC (SEE NOTE 1)

* REMOVE OR COVER SIGNS WHEN DIRECTIONAL S.R.8 TRAFFIC LANES ARE REOPENED. ALL OTHER SIGNS MAY BE LEFT IN PLACE.

ALT	M4-1A-24	ALT	M4-1A-24	ALT	M4-1A-24	ALT	M4-1A-24	ALT	M4-1A-24	ALT	M4-1A-24
NORTH	M3-1-24	NORTH	M3-1-24	NORTH	M3-1-24	NORTH	M3-1-24	NORTH	M3-1-24	8	M1-5-24
8	M1-5-24	8	M1-5-24	8	M1-5-24	8	M1-5-24	8	M1-5-24	59	M1-5-24
59	M1-5-24	59	M1-5-24	59	M1-5-24	59	M1-5-24	59	M1-5-24	↑	M6-3-21
↗	M6-2-21	↰	M5-1L-21	←	M6-1-21	→	M5-1R-21	→	M6-1-21	F	
A		B		C		D		E			

ALT	M4-1A-24	ALT	M4-1A-24					DETOUR	M4-8-24	ALT	M4-1A-24
SOUTH	M3-3-24	SOUTH	M3-3-24	ALT	M4-1A-24	ALT	M4-1A-24	NORTH	M3-1-24	NORTH	M3-1-24
8	M1-5-24	8	M1-5-24	8	M1-5-24	8	M1-5-24	8	M1-5-24	8	M1-5-24
59	M1-5-24	59	M1-5-24	59	M1-5-24	59	M1-5-24	59	M1-5-24	59	M1-5-24
↗	M6-2-21	→	M5-1R-21	↰	M5-1L-21	←	M6-1-21	↑	M6-3-21	↰	M5-1L-21
G		H		I		J		K		L	

ALT	M4-1A-24	ALT	M4-1A-24	ALT	M4-1A-24	ALT	M4-1A-24		RII-2-48
NORTH	M3-1-24	8	M1-5-24	8	M1-5-24	SOUTH	M3-3-24		ROAD CLOSED
8	M1-5-24	↰	M5-1L-21	←	M6-1-21	8	M1-5-24	DETOUR AHEAD	← DETOUR
59	M1-5-24	N		O		→	M5-1R-21	W20-2-24	M4-10L-48 OR M4-10R-48 MOUNT ON RAMP BARRICADE
←	M6-1-21					P		Q	R
M									

ALT	M4-1A-24	ALT	M4-1A-24	ALT	M4-1A-24	ALT	M4-1A-24	ALT	M4-1A-24	ALT	M4-1A-24
SOUTH	M3-3-24	NORTH	M3-1-24	NORTH	M3-1-24	NORTH	M3-1-24	NORTH	M3-1-24	NORTH	M3-1-24
8	M1-5-24	8	M1-5-24	8	M1-5-24	8	M1-5-24	8	M1-5-24	8	M1-5-24
59	M1-5-24	↗	M6-2-21	→	M5-1R-21	→	M6-1-21	↖	M6-2-21	↑	M6-3-21
→	M6-1-21	T		U		V		W		X	
S											

EXPECT DELAYS AHEAD
ALTERNATE ROUTE
EXIT ON PERKINS ST
PCMS6

EXPECT DELAYS AHEAD
ALTERNATE ROUTE
EXIT ON TALLMADGE
PCMS7

NOTES:

1. ALTERNATE ROUTE SIGNING IS SHOWN FOR BOTH NORTHBOUND AND SOUTHBOUND S.R. 8 TRAFFIC, BUT ONLY APPLICABLE SIGNS FOR DIRECTIONAL LANE CLOSURES SHALL BE IN PLACE AT ANY TIME.
2. ALL SIGN LOCATIONS TO BE APPROVED BY THE ENGINEER PRIOR TO INSTALLATION.

614 DETOUR SIGNING:

ALL DETOUR & ALT. ROUTE SIGNING SHOWN EXCEPT PORTABLE CHANGEABLE MESSAGE SIGNS SHALL BE INCLUDED FOR PAYMENT IN LUMP SUM PRICE BID FOR ITEM 614 - DETOUR SIGNING.

ADDITIONAL MAINTENANCE OF TRAFFIC FLAT SHEET SIGNS FOR S.R. 8 (M1-5-24) AND ALT (M4-1A-24) SHALL BE PROVIDED BY THE CONTRACTOR TO BE USED AS DIRECTED BY THE ENGINEER. A QUANTITY OF 5 EACH OF THESE SIGNS SHALL BE INCLUDED FOR PAYMENT IN THE LUMP SUM PRICE BID FOR ITEM 614 DETOUR SIGNING.

614 PORTABLE CHANGEABLE MESSAGE SIGN, AS PER PLAN
(1 UNITS x 4 MONTHS EACH) 4 SIGN MONTH

CALCULATED PDG
CHECKED DAW

MAINTENANCE OF TRAFFIC
LOCAL ALTERNATE ROUTE SIGNING

SUM-8-1.99

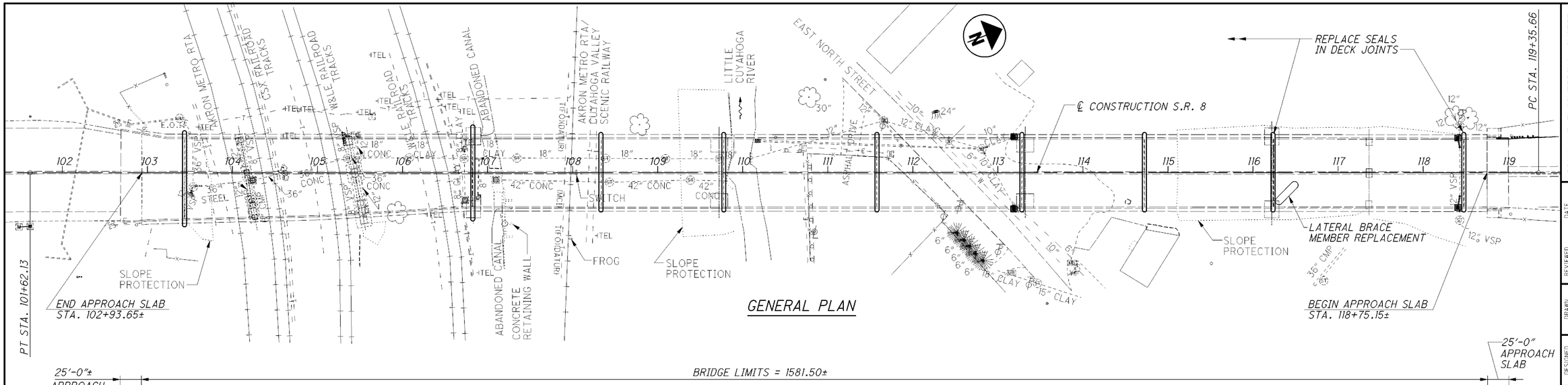
SHEET NUMBER													ITEM	ITEM EXT.	TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
								4	5	6	23	24						
																	EROSION CONTROL	
								1000					832	30000	1000	EACH	EROSION CONTROL	4
																	PAVEMENT	
								20					609	26001	20	FT	CURB, TYPE 6, AS PER PLAN	4
																	STRUCTURE OVER 20'	
																	STRUCTURE SUM-8-0199, SEE SHEET 33	
																	MAINTENANCE OF TRAFFIC	
									100				410	13000	100	CU. YD.	TRAFFIC COMPACTED SURFACE, TYPE C	
										576			614	11100	576	HOUR	LAW ENFORCEMENT OFFICER WITH PATROL CAR	6
											LUMP	LUMP	614	12420	LUMP		DETOUR SIGNING	
											24	4	614	18601	28	SIGN MNTH	PORTABLE CHANGEABLE MESSAGE SIGN, AS PER PLAN	6
									LUMP				614	11000	LUMP		MAINTAINING TRAFFIC	
													619	16000	10	MNTH	FIELD OFFICE, TYPE A	
													624	10000	LUMP		MOBILIZATION	

CALCULATED PDG
CHECKED DAW

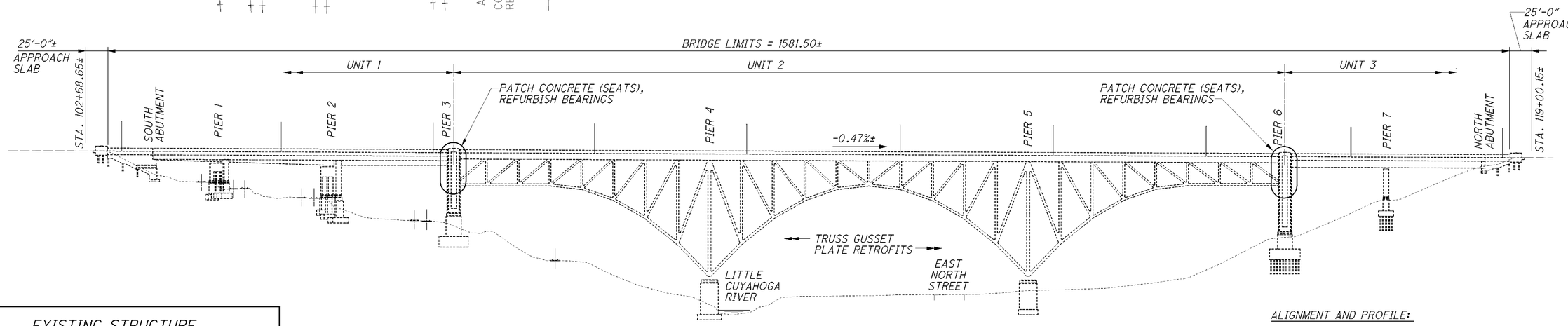
GENERAL SUMMARY

SUM-8-1.99

85246GG00LDGN 3/18/09 SAM.SCB



GENERAL PLAN



GENERAL ELEVATION

PROPOSED WORK

1. RECONSTRUCT BOTTOM FACE OF PIER 3 AND 6, ADDING CATHODIC PROTECTION AND CORBELS UNDER THE TRUSS BEARINGS.
2. RECONSTRUCT APPROACH SPANS GIRDER SEATS ON PIER 3 AND 6, ADDING CATHODIC PROTECTION.
3. REFURBISH APPROACH SPANS GIRDER BEARINGS AT PIER 3 AND 6.
4. REMOVE EXISTING SCUPPER GRATES AND INSTALL NEW GRATES. INSTALL NEW HOLD-DOWN ANGLES AS NECESSARY.
5. REMOVE EXISTING ELASTOMERIC STRIP SEALS AND INSTALL NEW ELASTOMERIC STRIP OR NEW PREFORMED SILICON JOINT SEALS IN EXISTING STEEL EXPANSION JOINTS.
6. REPLACE LATERAL BRACE ADJACENT TO PIER 6.
7. RETROFIT THE GUSSET PLATES BY ADDING SHEAR PLATES OR EDGE ABGLES. (SEE SHEET 22A/34 .)
8. CLEAN AND LUBRICATE THE TRUSS ROLLER BEARINGS AT PIER 3 AND 6.

EXISTING STRUCTURE

TYPE: UNITS 1 & 3: CONTINUOUS RIVETED GIRDERS WITH FLOORBEAMS & STRINGERS, AND REINFORCED CONCRETE DECK AND SUBSTRUCTURES
UNIT 2: CONTINUOUS RIVETED TRUSSES WITH FLOORBEAMS & STRINGERS WITH REINFORCED CONCRETE DECK & PIERS.

SKEW: 0°-00'± TYPICAL,
10°-30'± PIERS 1 & 2

SPANS: UNIT 1 - 71'-11¾"±, 126'-11⅞"±, 135'-0"± C/C BEARINGS
UNIT 2 - 287'-6⅛"±, 360'-0"±, 288'-5⅞"± C/C BEARINGS
UNIT 3 - 110'-0"±, 110'-0"± C/C BEARINGS

ROADWAY: VARIES 106'-2"± TO 80'-0"± F/F CURBS WITH 2'-6"± MEDIAN BARRIER AND 3'-0"± SAFETY WALK EACH SIDE

LOADING: HS 20-44 (CASE II) AND ALTERNATE MILITARY LOADING

WEARING SURFACE: 2¼"± MICRO SILICA MODIFIED CONCRETE OVERLAY

APPROACH SLABS: AS-1-81 (25'-0"± LONG)

ALIGNMENT: TANGENT

CONDITION: FAIR

YEAR BUILT: 1953 (REHAB 1987,2008)

STRUCTURE FILE NO.: 7700369

DISPOSITION: MINOR REHABILITATION

PROPOSED STRUCTURE

PROPOSED WORK: MINOR REHABILITATION INCLUDING TRUSS GUSSET RETROFITS, CONCRETE PATCHING ON PIER SEATS, AND REPLACING DECK JOINT SEALS

SPANS: SAME AS EXISTING

ROADWAY: SAME AS EXISTING

LOADING: SAME AS EXISTING

SKEW: SAME AS EXISTING

WEARING SURFACE: SAME AS EXISTING

APPROACH SLABS: SAME AS EXISTING

ALIGNMENT: SAME AS EXISTING

LATITUDE: N 41° 05' 12"

LONGITUDE: W 81° 30' 08"

CURRENT AVERAGE DAILY TRAFFIC: 131,000 (2009)

DESIGN AVERAGE DAILY TRAFFIC: 141,300 (2029)

DESIGN AVERAGE DAILY TRUCK TRAFFIC: 9,900 (2029)

ALIGNMENT AND PROFILE:

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

RICHLAND ENGINEERING LIMITED
29 NORTH PARK STREET
MANSFIELD, OHIO 44902

DESIGNED dht | DRAWN JLS | REVIEWED DLR | DATE 7-2-09
CHECKED JDB | REVISED | STRUCTURE FILE NUMBER 7700369

GENERAL PLAN AND ELEVATION
BRIDGE NO. SUM-8-0199
OVER RAILROADS, LITTLE CUYAHOGA RIVER AND EAST NORTH STREET

SUM-8-1.99
PID No. 85246

1/34

26/59

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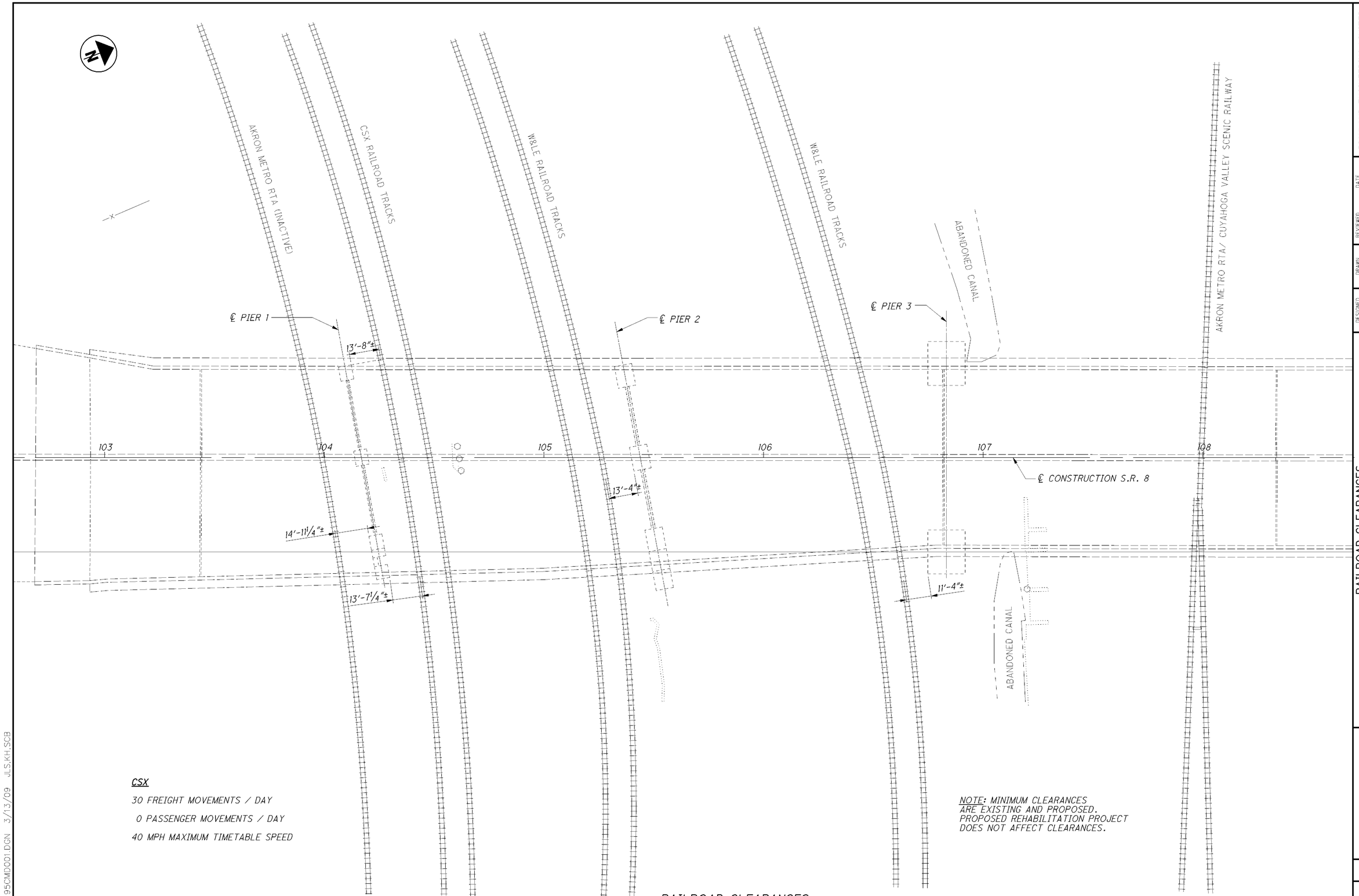

RAILROAD CLEARANCES

008_0195CMD001.DGN 3/13/09 JLS,KH,SCB

RICHLAND ENGINEERING LIMITED
29 NORTH PARK STREET
MANSFIELD, OHIO 44902

DESIGNED	DRAWN	REVIEWED	DATE
dht	JLS	DLR	3-23-09
CHECKED	REVISED	STRUCTURE TILE NUMBER	
JDB		7700369	

RAILROAD CLEARANCES
BRIDGE NO. SUM-8-0199
OVER RAILROADS, LITTLE CUYAHOGA RIVER AND EAST NORTH STREET

SUM-8-1.99
PID No. 85246

2 / 34

27
59

STANDARD DRAWINGS AND SUPPLEMENTAL SPECIFICATIONS

REFER TO THE FOLLOWING STANDARD BRIDGE DRAWINGS:

FB-1-82 DATED 5-10-82

AND TO THE FOLLOWING SUPPLEMENTAL SPECIFICATIONS:
NONE

DESIGN SPECIFICATIONS

THIS STRUCTURE CONFORMS TO "STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES" ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS (AASHTO), 17TH EDITION (2002), AND THE 2004 ODOT BRIDGE DESIGN MANUAL AND INTERIMS.

DESIGN LOADING

EXISTING STRUCTURE PLANS STATE THAT THE STRUCTURE WAS DESIGNED FOR HS 20-44 CASE II AND THE ALTERNATE MILITARY LOADING. GUSSET PLATE RETROFITS AT L4 AND L4' ARE DESIGNED FOR HS 20-44 LOADS.

DESIGN STRESSES (LOAD FACTOR DESIGN)

STRUCTURAL STEEL -
PROPOSED: ASTM A709 GRADE 50W - YIELD STRENGTH 50,000 PSI
CONCRETE CLASS C - COMPRESSIVE STRENGTH 4,000 PSI
REINFORCING STEEL- ASTM A615 OR A996 GRADE 60 - MINIMUM YIELD STRENGTH 60,000 PSI

EXISTING BRIDGE PLANS

MAY BE INSPECTED AT THE ODOT DISTRICT FOUR OFFICE, 2088 S. ARLINGTON ROAD, AKRON, OHIO 44306.

ALIGNMENT AND PROFILE

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

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 OBSERVATION AND MEASUREMENTS. CONSEQUENTLY, THEY ARE INDICATIVE OF THE EXISTING STRUCTURE AND THE PROPOSED WORK, BUT THEY SHALL BE CONSIDERED TENTATIVE AND APPROXIMATE. THE CONTRACTOR IS REFERRED TO CMS SECTIONS 102.05, 105.02, AND 513.04.

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

CONTINGENCY QUANTITIES:

THE CONTRACTOR SHALL NOT ORDER MATERIALS OR PERFORM WORK LISTED IN THE GENERAL SUMMARY FOR ITEMS DESIGNATED BY PLAN NOTE TO BE USED "BY THE ENGINEER" UNLESS AUTHORIZED BY THE ENGINEER. THE ACTUAL WORK LOCATIONS AND QUANTITIES USED AT THE ENGINEER'S DISCRETION SHALL BE MADE A MATTER OF RECORD BY INCORPORATION INTO THE FINAL CHANGE ORDER GOVERNING THE COMPLETION OF THIS PROJECT.

S.R. 8 MAINTENANCE OF TRAFFIC:

STATE ROUTE 8 VEHICULAR TRAFFIC SHALL BE MAINTAINED AT ALL TIMES EXCEPT AS PROVIDED IN THE MAINTENANCE OF TRAFFIC NOTES ON SHEETS 5 THROUGH 6 OF 59 .

ASBESTOS NOTIFICATION:

AN ASBESTOS SURVEY OF THE S.R. 8 BRIDGE (SFN 7700369) SCHEDULED FOR REHABILITATION WAS CONDUCTED BY A CERTIFIED ASBESTOS HAZARD EVALUATION SPECIALIST. THE SURVEY CONFIRMED THAT ASBESTOS IS PRESENT ON THE BRIDGE STRUCTURE.

KNOWN LOCATIONS OF ASBESTOS MATERIAL INCLUDE THE VENT PIPES IN THE PIERS.

NONE OF THE ASBESTOS IN THE PIER VENT PIPES IS SCHEDULED TO BE DISTURBED DURING THIS PROJECT, BUT THE CONTRACTOR SHOULD BE AWARE OF ITS PRESENCE IF WORKING IN THE VICINITY DURING SUBSTRUCTURE CONCRETE PATCHING OR OTHER ACTIVITIES.

A COPY OF THE OHIO ENVIRONMENTAL PROTECTION AGENCY (OEPA) NOTIFICATION OF DEMOLITION AND RENOVATION FORMS, PARTIALLY COMPLETED AND SIGNED BY THE BRIDGE OWNER, WILL BE PROVIDED TO THE SUCCESSFUL BIDDER. THE CONTRACTOR SHALL COMPLETE THE FORM AND SUBMIT IT TO:

AKRON REGIONAL AIR QUALITY MANAGEMENT DISTRICT
146 S. HIGH ST. SUITE 904
AKRON, OHIO 44308
LYNN M. MALCOLM, ADMIN.
(330) 375-2480
FAX: (330) 375-2402

AT LEAST TEN (10) WORKING DAYS PRIOR TO THE START OF ANY DEMOLITION AND/OR REHABILITATION, THE CONTRACTOR SHALL PROVIDE A COPY OF THE COMPLETED FORM TO THE ENGINEER.

INFORMATION REQUIRED ON THE FORM WILL INCLUDE: 1) THE CONTRACTOR'S NAME AND ADDRESS, 2) THE SCHEDULED DATES FOR THE START AND COMPLETION OF THE BRIDGE REMOVAL AND 3) A DESCRIPTION OF THE PLANNED DEMOLITION WORK AND THE METHOD(S) TO BE USED. A COPY OF THE OEPA FORM IS AVAILABLE FOR INSPECTION AT THE ODOT DISTRICT 4 OFFICE, 2088 SOUTH ARLINGTON ROAD, AKRON, OHIO, 44306.

BASIS FOR PAYMENT - THE CONTRACTOR SHALL FURNISH ALL FEES, LABOR, AND MATERIAL NECESSARY TO COMPLETE AND SUBMIT THE OEPA NOTIFICATION FORM. PAYMENT FOR THIS WORK SHALL BE INCLUDED IN ITEM 202 - PORTIONS OF STRUCTURE REMOVED, AS PER PLAN.

CONNECTION BOLTS: 5/8 INCH DIAMETER AND LARGER SHALL BE GALVANIZED ASTM A325 HIGH STRENGTH STEEL BOLTS, UNLESS OTHERWISE NOTED. ASTM A490 HIGH STRENGTH STEEL BOLTS SHALL NOT BE GALVANIZED. NEW CONNECTION BOLTS SHALL BE INCLUDED FOR PAYMENT WITH THE PERTINENT NEW MATERIAL PAY ITEM.

ASTM A490, TYPE 3 BOLTS, FABRICATED FROM A354 BD BLANKS, ARE USED AT ALL PANEL POINTS ADDING PLATES TO THE TRUSS GUSSET. ASTM A325, TYPE 3 BOLTS ARE USED AT PANEL POINTS ADDING ANGLES TO STRENGTHEN TRUSS GUSSET PLATE EDGES. GALVANIZED ASTM A325 BOLTS ARE USED AT OTHER STEEL REPAIRS.

SHOP DRAWINGS

STRUCTURAL STEEL WILL NOT REQUIRE SHOP DRAWINGS PRIOR TO FABRICATION. THE CONTRACTOR SHALL MAKE THE NECESSARY MEASUREMENTS AND PREPARE SKETCHES, DRAWINGS, TABLES, ETC. THE ENGINEER SHALL HAVE THE AUTHORITY AND RESPONSIBILITY FOR ENSURING THAT THE FABRICATED STEEL IS ACCEPTABLE. TECHNICAL ASSISTANCE WILL BE PROVIDED ON REQUEST BY THE OFFICE OF STRUCTURAL ENGINEERING. MILL TEST REPORTS AND SHIPPING DOCUMENTS SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW AND APPROVAL PRIOR TO INCORPORATING THE STEEL ITEMS INTO THE WORK, AS REQUIRED BY C.M.S. 501.06. AFTER FABRICATION, THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS TO THE ENGINEER FOR REVIEW AND APPROVAL TO ENSURE THAT THE DRAWINGS DEPICT THE STEEL AS ACTUALLY INCORPORATED INTO THE WORK. THE ENGINEER WILL THEN SEND ONE APPROVED SET OF SHOP DRAWINGS TO THE OFFICE OF STRUCTURAL ENGINEERING FOR INFORMATION. THE FABRICATOR SHALL FURNISH THE DIRECTOR A DIGITAL MEDIA COPY OF EACH APPROVED SHOP DRAWING. THE DIGITAL MEDIA SHALL BE AS SPECIFIED IN C.M.S. 501.04.

ITEM 202 - PORTIONS OF STRUCTURE REMOVED, AS PER PLAN

THIS ITEM SHALL INCLUDE THE ELEMENTS INDICATED IN THE PLANS AND GENERAL NOTES AND THAT 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 TO BE INCORPORATED INTO THE FINAL CONSTRUCTION AND ARE DIRECTED TO BE REMOVED BY THE ENGINEER. THE USE OF EXPLOSIVES, HEADACHE BALLS AND/OR HOE-RAMS WILL NOT BE PERMITTED. THE METHOD OF REMOVAL AND THE WEIGHT OF HAMMER SHALL BE APPROVED BY THE ENGINEER. PERFORM ALL WORK IN A MANNER THAT WILL NOT CUT, ELONGATE OR DAMAGE THE EXISTING REINFORCING STEEL TO BE PRESERVED. CHIPPING HAMMERS SHALL NOT BE HEAVIER THAN THE NOMINAL 90-POUND CLASS. PNEUMATIC HAMMERS SHALL NOT BE PLACED IN DIRECT CONTACT WITH REINFORCING STEEL THAT IS TO BE RETAINED IN THE REBUILT STRUCTURE. SUBMIT CONSTRUCTION PLANS ACCORDING TO CMS 501.05.

DAMAGED LATERAL BRACING MEMBER IS TACK WELDED TO CONNECTION PLATES AND THE TACK WELDS WILL NEED TO BE CUT TO REMOVE MEMBER. TACK WELD REMOVAL METHODS SHALL NOT DAMAGE BASE MATERIAL THAT IS TO REMAIN IN PLACE. THE CONTRACTOR SHALL SUBMIT DETAILS OF THE PROPOSED TACK WELD REMOVAL METHOD IN ACCORDANCE WITH CMS 501.05. ANY DAMAGE TO EXISTING MATERIAL TO REMAIN IN PLACE, DUE TO THE CONTRACTOR'S REMOVAL OPERATION, SHALL BE REPAIRED TO THE SATISFACTION OF THE ENGINEER AT THE COST OF THE CONTRACTOR.

ITEMS TO BE REMOVED ARE LISTED BELOW.

DAMAGED LATERAL BRACING MEMBER TO BE REPLACED.

TOP OF PIER 3 AND 6 GIRDER SEATS

BOTTOM OF PIER 3 AND 6 CAPS

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

REPLACE ALL EXISTING REINFORCING BARS DEEMED BY THE ENGINEER TO BE UNUSABLE BECAUSE OF CORROSION. AN ESTIMATE OF 250 POUNDS OF REINFORCING STEEL IS PROVIDED FOR BID PURPOSE. PAYMENT WILL BE MADE, BASED ON THE ACTUAL WEIGHT OF REINFORCING STEEL REPLACED, UNDER ITEM 509 - REINFORCING STEEL, REPLACEMENT OF EXISTING REINFORCING STEEL, AS PER PLAN.

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

ITEM 202 - REMOVAL, MISC.: RIVET

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

NO MORE RIVETS SHALL BE REMOVED FROM AN AREA THAN ARE NECESSARY FOR CONNECTING EACH NEW MATERIAL PIECE. RIVETS SHALL BE REMOVED FROM ONLY ONE SIDE OF A MEMBER AT A TIME. SEE GENERAL NOTE "ITEM 513 - STRUCTURAL STEEL, MISC.: TRUSS GUSSET REPAIR" FOR SPECIFIC REQUIREMENTS.

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

THE CONTRACTOR SHALL GRIND ALL BURRS FROM THE EDGE OF THE HOLE AND VERIFY THAT THE NEW BOLT WILL FIT PERPENDICULAR TO THE PLATE. ANY MISALIGNMENT OF THE HOLE CAN BE REAMED OUT, BUT ANY OIL USED FOR THE REAMING PROCESS NEEDS TO BE CLEANED OFF ALL FAYING SURFACES PRIOR TO INSTALLING THE FIRST NUT ON THE NEW BOLT.

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

PAYMENT FOR RIVET REMOVAL SHALL BE INCLUDED WITH ITEM 202 - REMOVAL, MISC.: RIVET.

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

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

1. CAREFUL FIELD MEASUREMENT BY THE CONTRACTOR SHALL BE USED FOR LOCATING HOLES IN NEW MATERIAL TO BE SUBPUNCHED OR DRILLED UNDERSIZE IN THE SHOP. THE HOLE SHALL BE 3/16 INCH LESS IN DIAMETER THAN THE NOMINAL DIAMETER OF THE NEW BOLT. THE HOLES SHALL BE REAMED TO PROPER SIZE IN THE FIELD AFTER FIT-UP TO THE EXISTING RIVET OR BOLT HOLES.

2. MAKE TEMPLATES IN THE FIELD OF HOLE PATTERNS AND LOCATIONS AFTER REMOVAL OF RIVETS OR BOLTS. USE THE FIELD TEMPLATES IN THE SHOP TO SUBPUNCH OR DRILL UNDERSIZE HOLES. THE HOLES SHALL BE REAMED IN THE FIELD AFTER FIT-UP TO THE EXISTING RIVET OR BOLT HOLES.

3. FURNISH NEW STRUCTURAL STEEL WITHOUT SHOP HOLES FOR RECONNECTION TO EXISTING RIVET OR BOLT HOLES. HOLES IN NEW MATERIAL TO BE FIELD DRILLED AND REAMED TO MATCH EXISTING RIVET OR BOLT LOCATION.

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

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

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

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

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

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

EPOXY-URETHANE SHALL BE THE LIGHT NEUTRAL COLOR MEETING FEDERAL COLOR STANDARD NO. 17778. ALL EXPOSED CONCRETE SURFACES OF PIERS 3 AND 6 NOT PREVIOUSLY SEALED, WITH THE EXCEPTION OF THE HORIZONTAL UNDERSIDE OF THE PIER CAPS, SHALL BE SEALED WITH EPOXY-URETHANE. STONE FACING AT PIER 3 AND PIER 6 SHALL NOT BE SEALED WITH EPOXY-URETHANE.

GENERAL NOTES CONTINUED: SEE SHEET 4/34 .

RICHLAND ENGINEERING LIMITED
29 NORTH PARK STREET
MANSFIELD, OHIO 44902

DESIGNED	DRAWN	REVIEWED	DATE
dht	TWH	DLR	7-2-09
CHECKED	REVISED	STRUCTURE FILE NUMBER	
JDB		7700369	

GENERAL NOTES - 1
BRIDGE NO. SUM-8-0199
OVER RAILROADS, LITTLE CUYAHOGA RIVER AND EAST NORTH STREET

SUM-8-1.99
PID No. 85246

ITEM 513 - STRUCTURAL STEEL, MISC. REPLACE DAMAGED LATERAL BRACING MEMBER:

WORK UNDER THIS ITEM SHALL CONSIST OF ALL LABOR, TOOLS AND MATERIALS REQUIRED TO REPLACE THE LATERAL BRACE MEMBER AS DETAILED IN THE PLANS ON SHEET 28/34.

ALL SECTIONS OF ITEM 513 APPLY EXCEPT AS REVISED HEREIN. THE ENGINEER IS RESPONSIBLE FOR ENSURING ANY SHOP OR FIELD FABRICATED STEEL SUPPLIED UNDER THIS BID ITEM IS ACCEPTABLE. THE REQUIREMENTS FOR SUBMITTAL OF SHOP DRAWINGS TO THE OFFICE OF STRUCTURAL ENGINEERING IS WAIVED. AT THE ENGINEER'S OPTION, THE CONTRACTOR SHALL EITHER SUPPLY THE ENGINEER WITH SHOP DRAWINGS, REQUIRED IN SECTION 501.04, PRIOR TO ANY INCORPORATION OF SHOP FABRICATED STEEL AT THE PROJECT, OR SUPPLY THE ENGINEER WITH "AS FABRICATED" DRAWINGS, MEETING 501.04, AFTER COMPLETION OF FIELD FABRICATION. THE ENGINEER SHALL ASSURE THE SUBMITTED DRAWINGS MATCH THE FINAL AS BUILT STEEL INCORPORATED INTO THE WORK. IF THE ENGINEER IS SATISFIED WITH THE DRAWINGS AND THE DELIVERED MATERIALS, THE CONTRACTOR SHALL SUPPLY A COPY SET, STAMPED AND DATED AS PER 501.04, TO THE PROJECT ENGINEER FOR RECORD PURPOSES. SUBMITTAL REQUIREMENTS UNDER 501.04, MATERIALS, SHALL BE MADE TO THE PROJECT ENGINEER. THE CONTRACTOR SHALL FURNISH A COPY OF THE WRITTEN LETTER OF ACCEPTANCE, 501.04, TO THE PROJECT ENGINEER.

NEW MATERIAL SHALL RECEIVE A PRIME COAT PER 513.27. PRIME PAINTING WILL BE CONSIDERED INCIDENTAL TO THIS ITEM.

PAYMENT FOR FURNISHING ALL LABOR, EQUIPMENT AND MATERIAL TO INSTALL NEW LATERAL BRACING MEMBER, INCLUDING NEW CONNECTION BOLTS AND PRIME PAINTING, SHALL BE MADE AT THE CONTRACT PRICE BID FOR:

ITEM	UNIT	DESCRIPTION
513	POUND	STRUCTURAL STEEL, MISC.: REPLACE DAMAGED LATERAL BRACING MEMBER

ITEM 513 - STRUCTURAL STEEL, MISC.: TRUSS GUSSET REPAIR

PATENT PENDING

MATERIAL

1. NEW MATERIAL SHALL BE ASTM A709 GRADE 50W.
2. NEW BOLTS SHALL BE ASTM A354 BD, TYPE 3 AND SHALL MEET THE ADDITIONAL REQUIREMENTS OF HEAD SIZE, MAXIMUM TENSILE STRENGTH, TEST, AND INSPECTIONS FOR ASTM A490 BOLTS. THE BOLTS SHALL UTILIZE HARDENED WASHERS PER ASTM F436, PLACED UNDER BOTH THE BOLT HEAD AND ALL NUTS. THE NUT USED FOR THE ASTM A490 BOLTS SHALL BE IN ACCORDANCE WITH ASTM A563. ALL HEAVY HEX HEAD NUTS SHALL BE TYPE DH3. NEW 7/8" DIAMETER ASTM A490 BOLTS SHALL BE TENSIONED TO A MINIMUM OF 49 KIPS.
3. TURN-OF-NUT IS ACCEPTABLE FOR ONLY FIVE BOLTS AT A TIME. AFTER THE FIFTH BOLT IS INSTALLED, THOSE FIVE BOLTS SHALL BE TESTED WITH A CALIBRATED TORQUE WRENCH. EACH AND EVERY BOLT LENGTH SHALL BE TESTED IN A SKIDMORE, AND EACH AND EVERY NUT SHALL BE TESTED WITH A CALIBRATED TORQUE WRENCH. THE SECOND NUTS WILL HAVE TO BE CHECKED SEVERAL TIMES DURING THE TIGHTENING PROCESS.
4. NEW BOLTS SHALL MATCH EXISTING RIVET SIZES.
5. NEW MATERIALS SHALL BE CERTIFIED PER CMS 501.06.

STEEL SURFACE PREPARATION

FAYING SURFACES BETWEEN EXISTING STEEL AND NEW STEEL SHALL BE PREPARED IN ACCORDANCE WITH THE "PENCIL ABRASIVE BLASTING" GENERAL NOTE PRIOR TO INSTALLATION OF NEW MATERIAL. EXISTING AND NEW MATERIAL SHALL NOT BE PRIME PAINTED.

FABRICATION

1. NEW MATERIAL MAY BE SHOP FABRICATED OR FIELD FABRICATED AT A FACILITY APPROVED BY THE ENGINEER. NO SHOP CERTIFICATION IS REQUIRED. WELDERS SHALL BE PREQUALIFIED.
2. EDGE DISTANCE FROM THE CENTER OF A FASTENER TO THE FIELD CUT EDGE OF THE NEW MATERIAL SHALL BE 2 INCHES UNLESS NOTED OTHERWISE. THE MINIMUM EDGE DISTANCE IS 1 1/2 INCHES.

CONSTRUCTION

1. REFER TO SHEET 23/34 FOR THE REPAIR INSTALLATION SEQUENCE.
2. IF SPECIFIED ON THE INDIVIDUAL DESIGN SHEETS, INSTALL NEW PLATES IN THE ORDER SHOWN. NEW PLATES ON DESIGN SHEETS WITHOUT AN ORDER SPECIFIED MAY BE INSTALLED IN ANY ORDER.

TOUCH-UP PAINTING OF EXISTING GUSSET PLATE

EXISTING PAINT ON THE FACE OF EXISTING GUSSET PLATES, OUTSIDE THE LIMITS OF THE RETROFIT PLATES, SHALL BE PROTECTED. CURRENTLY PAINTED AREAS DAMAGED OR EXPOSED BY THE CONTRACTOR'S SURFACE PREPARATION OR GUSSET PLATE RETROFIT OPERATIONS SHALL BE COATED WITH TWO COATS OF AN ALUMINUM EPOXY MASTIC PAINT. THE TOP COAT SHALL BE TINTED TO APPROXIMATE THE EXISTING FINISH COAT ON THE STRUCTURE.

SURFACE PREPARATION SHALL BE IN ACCORDANCE WITH SSPC-SP3.

THE PAINT USED SHALL BE CARBOMASTIC 90 ALUMINUM BY CARBOLINE COMPANY; BAR-RUST 231 BY ICI/DEVOE COATINGS; OR EPOXY MASTIC ALUM II BY SHERWIN-WILLIAMS COMPANY.

PAYMENT

PAYMENT FOR CAREFUL RIVET REMOVAL SHALL BE INCLUDED WITH ITEM 202 - REMOVAL, MISC.: RIVET - PER EACH.

PAYMENT FOR ACCESS TO THE REPAIR LOCATIONS SHALL BE INCLUDED WITH ITEM SPECIAL - STRUCTURE, MISC.: TRUSS PANEL POINT ACCESS.

PAYMENT FOR FURNISHING ALL LABOR, EQUIPMENT AND MATERIAL NECESSARY TO INSTALL NEW TRUSS GUSSET PLATE REPAIRS INCLUDING NEW PLATES, FILL PLATES, LIFTING TABS, TACK WELDS AND CONNECTION BOLTS; SURFACE PREPARATION OF EXISTING STEEL; TOUCH-UP PAINTING AND FABRICATION SHALL BE INCLUDED IN THE CONTRACT UNIT BID PRICE FOR:

ITEM 513 - STRUCTURAL STEEL, MISC.: TRUSS GUSSET REPAIR - POUND.

PENCIL ABRASIVE BLASTING

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

CLEAN THE DESIGNATED AREAS OF ALL PAINT, RUST, AND FOREIGN MATERIAL BY ABRASIVE BLASTING TO A SURFACE QUALITY EQUAL TO SSPC-SP10 PREPARATION GRADE SA 2 ACCORDING TO AND AS SHOWN IN SSPC-VIS 1-89. PERFORM THE ABRASIVE BLASTING USING A MAXIMUM COMPRESSED AIR PRESSURE OF 100 PSI, A HOSE NOZZLE DIAMETER OF 1/4 INCH (± 1/16 INCH), AND A GRADE 30/60 COAL SLAG ABRASIVE OR EQUIVALENT. DO NOT USE BLASTING ABRASIVES CONTAINING MORE THAN ONE-PERCENT FREE SILICA. BLASTERS USED FOR SURFACE PREPARATION FOR STRUCTURAL STEEL COATING CANNOT BE USED FOR PENCIL BLASTING. AFTER THE ABRASIVE BLASTING IS COMPLETE, AIR BLOW THE AREA CLEAN.

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

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

THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN AND INSTALLATION OF AN ADEQUATE JACKING SYSTEM CAPABLE OF RAISING THE GIRDERS AS INDICATED. A SUFFICIENT NUMBER OF JACKS OF ADEQUATE CAPACITY SHALL BE USED TO OFFSET THE DEAD LOAD AND LIVE LOAD REACTIONS OF THE STRUCTURE FOR VERTICAL LIFT. TEMPORARY BEARINGS, SUPPORTS AND BLOCKING SHALL BE AS INDICATED IN THESE PLANS. THE ESTIMATED EXISTING DEAD LOAD AND LIVE LOAD REACTIONS AT PIERS 3 AND 6 ARE TABULATED ON SHEET 10/34.

THE CONTRACTOR SHALL FURNISH JACKS WITH A TOTAL MINIMUM CAPACITY OF 150% OF THE ESTIMATED EXISTING DEAD LOAD AND LIVE LOAD. THE STRUCTURE SHALL NOT BE RAISED MORE THAN 0.25 INCHES TO REMOVE THE BEARINGS. JACKS UNDER HYDRAULIC PRESSURE SHALL NOT BE USED TO SUPPORT LIVE LOADS. JACKS SHALL BE SHIMMED TIGHT OR OTHERWISE BLOCKED WHEN UNDER LIVE LOAD. GIRDERS SHALL NOT BE SUPPORTED ON VERTICAL JACKS DURING NON-WORKING HOURS OR WHILE UNATTENDED BY CONTRACTOR'S PERSONNEL.

TEMPORARY JACKS, BLOCKING, AND TEMPORARY BEARINGS SHALL BE USED FOR SUPPORT ON TOP OF THE SUBSTRUCTURE UNITS.

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

THE CONTRACTOR MAY SUBMIT DETAILS OF AN ALTERNATE TEMPORARY SUPPORT SYSTEM AND METHODS AND PROCEDURES FOR UNLOADING THE BEARINGS TO THE DIRECTOR FOR APPROVAL PRIOR TO BEGINNING WORK. THE SUBMITTAL SHALL INDICATE MATERIALS, MEMBER SIZES, SPACINGS, JACK POINT LOCATIONS, JACKING LOADS, AND INSTALLATION AND REMOVAL PROCEDURES. DETAILED PLANS OF THE TEMPORARY SUPPORT SHALL BE PREPARED AND SUBMITTED IN ACCORDANCE WITH CMS 501.05.

BRIDGE SEATS SHALL BE RECONSTRUCTED TO PROVIDE A SMOOTH AND LEVEL SEAT FOR THE BEARINGS.

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

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

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

ITEM 518 - STRUCTURE DRAINAGE, MISC.: SCUPPER GRATE REPLACEMENT

THE 40 EXISTING SCUPPER GRATES ON THE STRUCTURE SHALL BE REPLACED WITH NEW STEEL SCUPPER GRATES AS DETAILED ON SHEET 34/34.

MOST (39) OF THE NEW GRATES HAVE BEEN FABRICATED AND ARE STORED AT THE ODOT GARAGE IN BOSTON HEIGHTS. THESE GRATES WILL REQUIRE MINOR MODIFICATIONS PRIOR TO INSTALLATION.

ONE ADDITIONAL GRATE WILL NEED TO BE FABRICATED IN ACCORDANCE WITH THE DETAILS ON SHEET 34/34. TAB REPLACEMENT ANGLES WILL ALSO NEED TO BE FABRICATED.

REPLACEMENT SEQUENCE:

1. REMOVE OLD SCUPPER GRATE. CLEAR SCUPPER TRAY OF ALL DIRT, DEBRIS, AND OTHER MATERIAL.
2. LOCATE AND FIELD DRILL HOLES THROUGH SCUPPER WALL FOR ATTACHING TAB REPLACEMENT ANGLES (DEPTH AS REQUIRED BY ADHESIVE ANCHOR MANUFACTURER).
3. INSTALL ADHESIVE ANCHORS PER MANUFACTURER'S RECOMMENDATION.
4. ATTACH TAB REPLACEMENT ANGLES TO SCUPPER USING THE ADHESIVE ANCHORS.
5. ATTACH NEW GRATE TO SCUPPER BY BOLTING TO THE TAB REPLACEMENT ANGLES.

ALTERNATELY, THE NEW GRATES MAY BE MODIFIED TO UTILIZE THE EXISTING CONNECTION TABS WITHIN THE SCUPPER TRAY (NOTE THAT SOME TABS ARE BROKEN.), OR A COMBINATION OF THESE METHODS MAY BE EMPLOYED.

AT LEAST THREE BOLTS SHALL BE USED TO SECURE THE GRATE TO THE SCUPPER, WITH TWO BOLTS LOCATED IN THE HALF OF THE GRATE UNDER TRAFFIC (AWAY FROM THE PARAPET).

THIS ITEM INCLUDES REMOVAL AND DISPOSAL OF EXISTING SCUPPER GRATES AND ANY MATERIAL FOUND IN THE SCUPPER TRAY, RETRIEVING THE PRE-FABRICATED GRATES FROM THE BOSTON HEIGHTS GARAGE, MODIFYING THOSE GRATES AS NEEDED FOR PROPER INSTALLATION, FABRICATING ONE NEW GRATE AND ANY NECESSARY TAB REPLACEMENT ANGLES, AND INSTALLING THE NEW SCUPPER GRATES. THE UNIT PRICE BID SHALL INCLUDE ALL EQUIPMENT, LABOR, AND INCIDENTALS NECESSARY TO REPLACE THE SCUPPER GRATES.

ITEM	UNIT	DESCRIPTION
518	EACH	STRUCTURAL DRAINAGE, MISC.: SCUPPER GRATE REPLACEMENT

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 ABRASIONS 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 518 - STRUCTURE DRAINAGE, MISC.: CLEAN STRUCTURE DRAINAGE SYSTEM

THIS ITEM SHALL BE PERFORMED AFTER THE NEW BRIDGE DECK JOINT SEALS HAVE BEEN INSTALLED. REMOVE ALL DIRT AND DEBRIS FROM CURB AREAS, SCUPPERS, HOPPERS, DRAINAGE TROUGHS, PIPE COLLECTORS AND DOWNSPOUTS ABOVE GROUND. AFTER THE DIRT AND DEBRIS HAVE BEEN REMOVED, FLUSH THE ENTIRE DRAINAGE SYSTEM WITH CLEAN WATER, MAKING CERTAIN THE WATER FLOWS SMOOTHLY TO THE ADJACENT CATCH BASIN. CATCH BASINS, PAVED GUTTERS AND UNDERGROUND STORM SEWERS ARE NOT INCLUDED WITH THIS ITEM.

THE CONTRACTOR SHALL PROPERLY REMOVE AND DISPOSE OF ALL DIRT AND DEBRIS FROM THE BRIDGE SITE. DIRT AND DEBRIS SHALL NOT BE FLUSHED INTO THE UNDERGROUND DRAINAGE SYSTEM. REMOVE ANY DIRT OR DEBRIS THAT ENDS UP IN THE UNDERGROUND DRAINAGE SYSTEM BY THE CONTRACTOR'S CLEANING OPERATIONS TO THE SATISFACTION OF THE ENGINEER AT NO ADDITIONAL COST TO THE DEPARTMENT.

COMPLY WITH POLLUTION CONTROL LAWS, RULES, AND REGULATIONS OF FEDERAL, STATE, AND LOCAL AGENCIES. THE DEPARTMENT WILL NOT PAY FOR ADDITIONAL TESTING REQUIRED BY ANY HAULER, TREATMENT FACILITY, DISPOSAL FACILITY OR LANDFILL.

THE CONTRACTOR SHALL PROVIDE ALL NECESSARY EQUIPMENT NEAR THE COMPLETION OF THE WORK FOR THE PURPOSE OF EXAMINING THE EXISTING STRUCTURE DRAINAGE SYSTEM. THE CONTRACTOR'S SUPERINTENDENT SHALL ACCOMPANY THE ENGINEER DURING THIS DETAILED EXAMINATION OF THE STRUCTURE DRAINAGE SYSTEM. NO SEPARATE PAYMENT WILL BE MADE TO THE CONTRACTOR TO COVER ANY COSTS OF THIS EXAMINATION.

ALL ITEMS REMOVED FOR THE PURPOSE OF CLEANING, SUCH AS DOWNSPOUT CLEANOUT CAPS, SHALL BE REINSTALLED ONCE THE CLEANING IS COMPLETE.

ALL COSTS FOR LABOR, TOOLS, MATERIALS AND EQUIPMENT NECESSARY TO COMPLETE THE CLEANING AND EXAMINATION OF THE STRUCTURE DRAINAGE SYSTEM AND THE DISPOSAL OF THE DIRT AND DEBRIS SHALL BE INCLUDED IN THE LUMP SUM BID PRICE FOR ITEM 518 - STRUCTURE DRAINAGE, MISC.: CLEAN STRUCTURE DRAINAGE SYSTEM.

GENERAL NOTES CONTINUED: SEE SHEET 5/34.

RICHLAND ENGINEERING LIMITED
29 NORTH PARK STREET
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DESIGNED	DRAWN	REVIEWED	DATE
dht	TWH	DLR	7-2-09
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JDB			7700369

GENERAL NOTES - 2
BRIDGE NO. SUM-8-0199
OVER RAILROADS, LITTLE CUYAHOGA RIVER AND EAST NORTH STREET

SUM-8-1.99
PID No. 85246

ITEM SPECIAL - STRUCTURE, MISC.: TRUSS PANEL POINT ACCESS

THIS ITEM SHALL CONSIST OF FURNISHING ALL MATERIAL, EQUIPMENT AND LABOR NECESSARY TO PREPARE WORK PLATFORMS AND PROVIDE ACCESS FOR PERSONNEL AND MATERIALS TO THE TRUSS GUSSET REPAIR AREAS.

PROVIDE ACCESS FOR THE ENGINEER IN ACCORDANCE WITH CMS 105.10.

ACCESS TO SPAN 4 IS FROM EAST NORTH STREET, ALONG THE RIVER, AND IS PROVIDED FOR IN A WORK AGREEMENT WITH THE AKRON BOARD OF EDUCATION.

PAYMENT FOR EACH ACCESS LOCATION SHALL INCLUDE INITIAL SETUP OF WORK PLATFORMS AND RIGGING, OR MANLIFTS; REMOVAL OF THE PORTIONS OF EXISTING DOWNSPOUT THAT BLOCK THE WORK AREA; CONTINUING ACCESS DURING THE WORK FOR CONSTRUCTING ALL REPAIRS AT A PANEL POINT; REINSTALLING THE PORTIONS OF EXISTING DOWNSPOUT THAT WERE REMOVED; REMOVAL OF ANY INSTALLED WORK PLATFORMS AND RIGGING; AND RESTORATION OF ANY PROPERTY AFFECTED BY ACCESS SETUP, DURATION, AND REMOVAL. EACH LOCATION IS DEFINED FOR PAYMENT AS A TRUSS PANEL POINT ON THE EAST OR WEST TRUSS.

PAYMENT FOR FURNISHING ALL LABOR, EQUIPMENT, AND MATERIALS NECESSARY TO PROVIDE ACCESS TO THE TRUSS PANEL POINT LOCATIONS SHALL BE INCLUDED IN THE CONTRACT BID PRICE FOR:

ITEM SPECIAL - STRUCTURE, MISC.: TRUSS PANEL POINT ACCESS
- PER EACH TRUSS PANEL POINT

ITEM SPECIAL - STRUCTURE, MISC.: JOINT SEALING SYSTEM REPLACEMENT

DESCRIPTION:

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

INSTALL THE JOINT SEAL SYSTEM AS DESCRIBED IN THIS NOTE AND DETAILED IN THE PLANS SO THAT A FULLY OPERATIONAL AND WATERPROOF SYSTEM SEALS THE JOINT IN WHICH IT IS INSTALLED.

THE JOINT SEAL SHALL BE CONTINUOUS ACROSS THE JOINT FROM THE MEDIAN BARRIER TO THE SIDEWALK CURB. FIELD FABRICATED SPLICES ARE NOT ACCEPTABLE.

JOINT SEALING SYSTEM:

REPLACE THE EXISTING JOINT SEALING SYSTEM WITH A NEW ELASTOMERIC JOINT SEAL THAT WILL LOCK INTO THE EXISTING STEEL EXTRUSIONS.

A. JOINT SEAL MATERIALS (ALL JOINTS EXCEPT PIER 6)

THE REHABILITATION PLANS ALLOWED FOR EITHER AN "ONFLEX" TYPE C EXTRUSION WITH SS SERIES SEAL MANUFACTURED BY STRUCTURAL ACCESSORIES, INC.; A "WABO-ACME" TYPE M EXTRUSION WITH S SERIES SEAL MANUFACTURED BY WATSON BOWMAN AND ACME CORP.; OR AN APPROVED EQUAL. THE CONTRACTOR IS RESPONSIBLE TO VERIFY THE JOINT SEAL NEEDED FOR THE REPLACEMENT.

B. JOINT SEAL MATERIALS (PIER 6)

SUPPLY A NEOPRENE LOCKING SEAL FOR A "WABO MAURER D900" EXPANSION JOINT AS MANUFACTURED BY WATSON BOWMAN ACME CORP., 95 PINEVIEW DRIVE, AMHERST, NEW YORK 14228, PHONE; (716) 691-7566. THE JOINT SEAL SHALL MEET THE REQUIREMENTS BELOW:

PHYSICAL PROPERTIES	PROCEDURE	REQUIREMENT
TENSILE STRENGTH	ASTM D-412	2000 PSI
ELONGATION AT BREAK	ASTM D-412	250%
HARDNESS, TYPE A DUROMETER	ASTM D-2240	60 ± 7
COMPRESSION SET 70 HOUR AT 212°F	ASTM D-395 METHOD B MOD.	40%
OVEN AGING. 70 HOUR AT 212°F TENSILE STRENGTH. LOSS. MAX. ELONGATION. TYPE A DUROMETER (POINTS CHANGE)	ASTM D-573	20% 20% 0 TO +10
OIL SWELL. ASTM 3, 70 HOUR AT 212°F. WEIGHT CHANGE MAX.		45%
OZONE RESISTANCE. 20% STRAIN. 300 PPHM. IN AIR AT 104°F (WIPED WITH TOLUENE TO REMOVE SURFACE CONTAMINATION)	ASTM D-1149	NO CRACKS

ALTERNATIVE JOINT SEAL SYSTEM:

A. JOINT SEAL MATERIALS:

SUPPLY PREFORMED SILICONE JOINT SEAL THAT MEETS THE REQUIREMENTS BELOW. INSTALL ALL COMPONENTS UTILIZING THE ADHESIVE SPECIFIED IN PART B FOR COMPLETE INSTALLATION.

PHYSICAL PROPERTIES	TEST METHOD	REQUIREMENT
DUROMETER (SHORE A)	ASTM D 2240	55 ± 5
TENSILE	ASTM D 412	550 PSI MIN.
ELONGATION (%)	ASTM D 412	350% MIN.
TEAR (DIE B ppi)	ASTM D 624	80 LB/IN. MIN.
COMPRESSION SET	ASTM D 395	30 % MAX. AT 350°F
OPERATING TEMPERATURE RANGE		-60°F + 450°F
SPECIFIC GRAVITY		1.51
COLOR	VISUAL	BLACK

B. ADHESIVE MATERIAL:

SUPPLY A ONE PART, METHODOXY CURE, NON-SAG, HIGH MODULUS SILICONE ADHESIVE THAT CURES QUICKLY AND ADHERES TO CONCRETE, STEEL, PREFORMED SILICONE JOINT SEAL AND MEETS THE REQUIREMENTS OF THE PROPERTIES LISTED BELOW:

PHYSICAL PROPERTIES	TEST METHOD	REQUIREMENT
SAG/FLOW	ASTM C 639	3/16 IN. MAX.
COLOR	VISUAL	BLACK
HARDNESS	ASTM C 661	20-25
TACK FREE TIME	ASTM C 679	30 MIN. MAX.
CURE THROUGH TO 1/4" THICKNESS	@ 75°F/505 RH	16 HRS. MAX.
SKIN OVER TIME (TOOLING TIME)	@ 75°F/505 RH	5 MIN. MAX.
RESISTANCE TO UV	ASTM C 793	NO CRACKING, OZONE CHALKING OR DEGRADATION
PEEL ADHESION TO SUBSTRATES	ASTM C 794	50 LB/IN. MIN.

JOINT SEAL SYSTEM INSTALLATION:

PROTECTION OF PERSONS AND PROPERTY:

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

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

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

POLLUTION CONTROL:

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

SAFETY REQUIREMENTS AND PRECAUTIONS:

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

WORK LIMITATIONS:

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

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

B. MOISTURE: DO NOT SEAL OR ABRASIVELY BLAST:

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

PRE-CLEANING:

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

GENERAL NOTES CONTINUED: SEE SHEET 6/34 .

RICHLAND ENGINEERING LIMITED
29 NORTH PARK STREET
MANSFIELD, OHIO 44902

DESIGNED dht | DRAWN TWH | CHECKED JDB | REVIEWED DLR | DATE 7-2-09 | REVISED | STRUCTURE FILE NUMBER 7700369

GENERAL NOTES - 3
BRIDGE NO. SUM-8-0199
OVER RAILROADS, LITTLE CUYAHOGA RIVER AND EAST NORTH STREET

SUM-8-1.99
PID No. 85246

ITEM SPECIAL - STRUCTURE, MISC.: JOINT SEALING SYSTEM REPLACEMENT, CONT'D

ABRASIVE BLASTING:

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

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

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

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

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

THE CONTRACTOR MAY ABRASIVELY CLEAN SURFACES TO THE SPECIFIED LEVEL OF CLEANLINESS AND PROFILE USING SELF-CONTAINED, RE-CIRCULATING BLAST-CLEANING EQUIPMENT PROVIDED ALL REQUIREMENTS OF THIS SPECIFICATION CAN BE ACHIEVED. THE ABRASIVE BLAST CLEANING MAY CAUSE SECTION LOSS, THEREFORE AN ADHESIVE SHALL BE USED WITH THE SEAL.

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

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

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

REMOVING FINS, TEARS, AND SLIVERS:

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

CONTAINMENT/WASTE DISPOSAL:

COMPLY WITH CMS 514.13D FOR THE CONTAINMENT/WASTE DISPOSAL REQUIREMENTS.

MANUFACTURER'S REPRESENTATIVE:

INSTALL THE COMPONENTS OF THE JOINT SYSTEM IN STRICT ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS AND THE DETAILS IN THESE PLANS. IN THE EVENT OF A CONFLICT, INSTALLATION INSTRUCTIONS IN THESE PLANS SUPERSEDE THOSE OF THE MANUFACTURER UNLESS OTHERWISE DIRECTED BY THE ENGINEER.

A REPRESENTATIVE OF THE MANUFACTURER SHALL BE PRESENT FOR ALL OF THE INSTALLATIONS AND ALL OF THE WATERTIGHT INTEGRITY INSPECTIONS. THE REPRESENTATIVE SHALL BE FULLY CONVERSANT IN ALL RESPECTS WITH THE CORRECT INSTALLATION METHODS. THE REPRESENTATIVE SHALL BE RESPONSIBLE TO ADVISE BOTH THE ENGINEER AND THE CONTRACTOR THAT THE PROPER INSTALLATION METHOD IS BEING FOLLOWED.

INSTALLATION:

INSTALL THE JOINT SEAL SYSTEM AS DESCRIBED IN THIS NOTE, AS DETAILED IN THE PLANS, AND ACCORDING TO MANUFACTURER'S INSTRUCTIONS. MEASURE EACH JOINT OPENING IN SEVERAL LOCATIONS PRIOR TO ORDERING MATERIAL FOR THAT JOINT.

INSTALLATION INSPECTION:

ALL INSTALLATION WORK IS SUBJECT TO THE ENGINEER'S INSPECTION. THE ENGINEER SHALL BE GIVEN ALL FACILITIES REQUIRED FOR A THOROUGH INSPECTION PER 105.10.

WATERTIGHT INTEGRITY INSPECTION:

AFTER THE JOINT SEAL SYSTEM HAS BEEN FULLY INSTALLED AS PER MANUFACTURER'S RECOMMENDATIONS, INSPECT THE ENTIRE JOINT SEAL SYSTEM FOR WATERTIGHT INTEGRITY EMPLOYING A METHOD SATISFACTORY TO THE ENGINEER. THE INSPECTION CAN BE PERFORMED IN PHASES TO ACCOMMODATE MAINTENANCE OF TRAFFIC, BUT THE ENTIRE JOINT SEAL SYSTEM SHALL BE INSPECTED. THE CONTRACTOR SHALL PROVIDE INSPECTION ACCESS TO THE UNDERSIDE OF THE JOINT. WATER, FROM NATURAL OR POTABLE SOURCES, SHALL COVER THE ENTIRE JOINT SEAL SYSTEM TO THE SATISFACTION OF THE ENGINEER. THE STEEL SURFACES UNDER THE JOINT SHALL BE INSPECTED FOR ANY EVIDENCE OF DRIPPING WATER OR MOISTURE. WATER TIGHTNESS IS DEFINED AS HAVING NO FREE DRIPPING WATER ON ANY SURFACE ON THE UNDERSIDE OF THE JOINT. PATCHES OF MOISTURE WILL NOT BE CAUSE FOR NON-ACCEPTANCE.

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

METHOD OF MEASUREMENT:

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

BASIS OF PAYMENT:

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

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

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

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

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

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

THE COST OF HAVING A REPRESENTATIVE OF THE MANUFACTURER ON-SITE FOR THE INSTALLATIONS AND WATERTIGHT INTEGRITY INSPECTIONS OF THE JOINT SEALS IS CONSIDERED INCIDENTAL TO THE COST OF THE SPECIFIED JOINT SEAL SYSTEM.

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

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

ITEM	UNIT	DESCRIPTION
SPECIAL	FOOT	STRUCTURE, MISC.: JOINT SEALING SYSTEM REPLACEMENT (ALL JOINTS EXCEPT PIER 6)
SPECIAL	FOOT	STRUCTURE, MISC.: JOINT SEALING SYSTEM REPLACEMENT (PIER 6)

ITEM 511 - CONCRETE, MISC.: EMBEDDED GALVANIC ANODE

PART 1 GENERAL

1.01 SUMMARY

A. THIS SECTION INCLUDES FURNISHING ALL LABOR, TOOLS, MATERIALS, EQUIPMENT AND SERVICES NECESSARY TO PROPERLY INSTALL EMBEDDED GALVANIC ANODES.

B. EMBEDDED GALVANIC ANODES ARE DESIGNED TO PROVIDE LOCALIZED CORROSION PROTECTION. WHEN PLACED AT THE APPROPRIATE SPACING ALONG THE PERIMETER OF CONCRETE PATCHES OR ALONG THE INTERFACE BETWEEN NEW/EXISTING CONCRETE, THE ANODES MITIGATE THE FORMATION OF NEW CORROSION SITES IN THE EXISTING CONCRETE.

1.02 REFERENCES

A. ACI/ICRI 1999 CONCRETE REPAIR MANUAL

B. ICRI GUIDELINE NO. 03730 GUIDE FOR SURFACE PREPARATION FOR THE REPAIR OF DETERIORATED CONCRETE RESULTING FROM REINFORCING STEEL CORROSION

C. ASTM A615/A615M-00 STANDARD SPECIFICATION FOR DEFORMED AND PLAIN BILLET-STEEL BAR FOR CONCRETE REINFORCEMENT

D. ASTM B418-95A STANDARD SPECIFICATION FOR CAST AND WROUGHT GALVANIC ZINC ANODES

PART 2 PRODUCTS

2.01 MATERIALS

A. EMBEDDED GALVANIC ANODES SHALL BE PUCK-SHAPED APPROXIMATELY 2½ INCHES IN DIAMETER BY 1 INCH HIGH, PRE-MANUFACTURED, CONTAINING MORE THAN 100G OF ZINC METAL IN COMPLIANCE WITH ASTM B418, CAST AROUND A PAIR OF STEEL TIE WIRES AND ENCASED IN A HIGHLY ALKALINE CEMENTITIOUS SHELL WITH A PH OF 14 OR GREATER. ANODES SHALL BE SUPPLIED WITH INTEGRAL TIE WIRES FOR TYING TO THE REINFORCING STEEL.

B. EMBEDDED GALVANIC ANODES SHALL BE "GALVASHIELD XP+" AS MANUFACTURED BY VECTOR CORROSION TECHNOLOGIES (PH: 813-830-7566), OR AN APPROVED EQUAL.

C. REPAIR MORTARS, CONCRETE AND BONDING AGENTS SHALL BE PORTLAND CEMENT-BASED MATERIALS WITH SUITABLE ELECTRICAL CONDUCTIVITY. NON-CONDUCTIVE REPAIR MATERIALS SUCH AS EPOXY, URETHANE, OR MAGNESIUM PHOSPHATE SHALL NOT BE PERMITTED.

PART 3 EXECUTION

3.01 CONCRETE REMOVAL

A. REMOVE LOOSE OR DELAMINATED CONCRETE.

B. UNDERCUT ALL EXPOSED REINFORCING BY REMOVING CONCRETE FROM THE FULL CIRCUMFERENCE OF THE STEEL. THE MINIMUM CLEARANCE BETWEEN THE CONCRETE SUBSTRATE AND REINFORCING STEEL SHALL BE ¾ INCH, OR ¼ INCH LARGER THAN THE TOP SIZE AGGREGATE IN THE REPAIR MATERIAL, WHICHEVER IS GREATER.

C. CONCRETE REMOVAL SHALL CONTINUE ALONG THE REINFORCING STEEL UNTIL THERE ARE NO VISIBLE SIGNS OF CORROSION.

3.02 CLEANING AND REPAIR OF REINFORCING STEEL

A. CLEAN EXPOSED REINFORCING STEEL OF RUST, MORTAR, ETC. TO PROVIDE SUFFICIENT ELECTRICAL CONNECTION AND MECHANICAL BOND.

B. IF SIGNIFICANT REDUCTION IN THE CROSS SECTION OF THE REINFORCING STEEL HAS OCCURRED, REPLACE OR INSTALL SUPPLEMENTAL REINFORCEMENT AS DIRECTED BY THE ENGINEER.

C. SECURE LOOSE REINFORCING STEEL BY TYING TIGHTLY TO OTHER BARS WITH STEEL TIE WIRE.

3.03 EDGE AND SURFACE CONDITIONING OF CONCRETE

A. CONCRETE PATCHES SHALL BE SQUARE OR RECTANGULAR IN SHAPE WITH SQUARED CORNERS.

B. SAWCUT THE PATCH BOUNDARY ½ INCH DEEP OR LESS IF REQUIRED TO AVOID CUTTING REINFORCING STEEL.

C. CREATE A CLEAN, SOUND SUBSTRATE BY REMOVING BOND-INHIBITING MATERIALS FROM THE CONCRETE SUBSTRATE BY HIGH PRESSURE WATER BLASTING OR ABRASIVE BLASTING.

GENERAL NOTES CONTINUED: SEE SHEET 7/34.

RICHLAND ENGINEERING LIMITED
29 NORTH PARK STREET
MANSFIELD, OHIO 44902

DESIGNED	DRAWN	REVIEWED	DATE
dht	TWH	DLR	7-2-09
CHECKED	REVISED	STRUCTURE FILE NUMBER	
JDB		7700369	

GENERAL NOTES - 4
BRIDGE NO. SUM-8-0199
OVER RAILROADS, LITTLE CUYAHOGA RIVER AND EAST NORTH STREET

SUM-8-1.99
PID No. 85246

ITEM 511 - CONCRETE, MISC.: EMBEDDED GALVANIC ANODE, CONT'D

3.04 GALVANIC ANODE INSTALLATION

A. GALVANIC ANODES SHALL BE INSTALLED ALONG THE PERIMETER OF THE REPAIR AREA AT THE SPACING SPECIFIED ON THE DRAWINGS. IN NO CASE SHALL THE DISTANCE BETWEEN ANODES EXCEED 30 INCHES.

B. PROVIDE SUFFICIENT CLEARANCE BETWEEN ANODES AND SUBSTRATE TO ALLOW REPAIR MATERIAL TO ENCASE ANODE.

C. SECURE THE GALVANIC ANODES AS CLOSE AS POSSIBLE TO THE PATCH EDGE USING THE ANODE TIE WIRES. THE TIE WIRES SHALL BE WRAPPED AROUND THE CLEANED REINFORCING STEEL AND TWISTED TIGHT TO ALLOW LITTLE OR NO FREE MOVEMENT.

1. IF THE ANODE IS TO BE TIED ONTO A SINGLE BAR, OR IF LESS THAN 1 INCH OF CONCRETE COVER IS EXPECTED, PLACE ANODE BENEATH THE BAR AND SECURE TO CLEAN REINFORCING STEEL.

2. IF SUFFICIENT CONCRETE COVER EXISTS, THE ANODE MAY BE PLACED AT THE INTERSECTION BETWEEN TWO BARS AND SECURED TO EACH CLEAN BAR.

D. ELECTRICAL CONTINUITY

1. CONFIRM ELECTRICAL CONNECTION BETWEEN ANODE TIE WIRE AND REINFORCING STEEL WITH A MULTI-METER.

2. CONFIRM ELECTRICAL CONTINUITY OF THE EXPOSED REINFORCING STEEL WITHIN THE REPAIR AREA. IF NECESSARY, ELECTRICAL CONTINUITY SHALL BE ESTABLISHED WITH STEEL TIE WIRE.

3. ELECTRICAL CONTINUITY IS ACCEPTABLE IF THE DC RESISTANCE MEASURED WITH MULTI-METER IS LESS THAN ONE OHM.

E. MANUFACTURER TECHNICAL ASSISTANCE:

1. THE CONTRACTOR SHALL ENLIST AND PAY FOR THE SERVICES OF A NACE CERTIFIED CATHODIC PROTECTION TECHNICIAN WHO IS AN EMPLOYEE OF THE GALVANIC ANODE MANUFACTURER TO PROVIDE TRAINING AND ON-SITE TECHNICAL ASSISTANCE DURING THE INITIAL INSTALLATION OF THE GALVANIC PROTECTION SYSTEM. THE CATHODIC PROTECTION TECHNICIAN SHALL HAVE VERIFIABLE EXPERIENCE IN THE INSTALLATION AND TESTING OF EMBEDDED GALVANIC PROTECTION SYSTEMS FOR REINFORCED CONCRETE STRUCTURES.

2. THE CONTRACTOR SHALL COORDINATE HIS WORK WITH THE DESIGNATED CATHODIC PROTECTION TECHNICIAN TO ALLOW FOR SITE SUPPORT DURING PROJECT STARTUP AND INITIAL ANODE INSTALLATION. THE TECHNICIAN SHALL PROVIDE CONTRACTOR TRAINING AND SUPPORT FOR DEVELOPMENT OF APPLICATION PROCEDURES, RELATED SUBMITTALS, ANODE INSTALLATION, REINFORCING STEEL CONNECTION PROCEDURES, AND ELECTRICAL CONTINUITY VERIFICATION OF EMBEDDED REINFORCING STEEL.

3. THE CATHODIC PROTECTION TECHNICIAN SHALL COORDINATE SYSTEM TESTING REQUIREMENTS WITH THE ENGINEER AND SHALL INSTALL SYSTEM INSTRUMENTATION WIRING, CONDUIT, AND RELATED DEVICES, AT LOCATIONS APPROVED BY THE ENGINEER.

3.05 CONCRETE REPLACEMENT

A. COMPLETE THE REPAIR FOLLOWING NORMAL CONCRETE REPAIR PROCEDURES, TAKING CARE NOT TO CREATE ANY AIR VOIDS AROUND THE ANODE.

PART 4 PAYMENT

4.01 METHOD OF MEASUREMENT

A. THE COST OF HAVING A NACE CERTIFIED CATHODIC PROTECTION TECHNICIAN FROM THE MANUFACTURER ON-SITE FOR THE INITIAL ANODE INSTALLATION IS CONSIDERED INCIDENTAL TO THE COST OF THE EMBEDDED GALVANIC ANODES.

B. THE DEPARTMENT WILL MEASURE THIS ITEM BY THE NUMBER OF EMBEDDED GALVANIC ANODES PROVIDED, INSTALLED, AND ACCEPTED.

4.02 BASIS OF PAYMENT

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

ITEM	DESCRIPTION	UNIT
511E81300	CONCRETE, MISC.: EMBEDDED GALVANIC ANODE	EACH

ITEM 511 CONCRETE, MISC.: DISTRIBUTED GALVANIC CORROSION PROTECTION SYSTEM

DESCRIPTION:

THE GALVANIC PROTECTION SYSTEM IS INTENDED TO EXTEND THE SERVICE LIFE OF THE STRUCTURE BY MITIGATING CHLORIDE-ION INDUCED CORROSION ACTIVITY OF THE TOP REINFORCING LAYER.

THE WORK UNDER THIS SECTION CONSISTS OF SUPPLYING, INSTALLING, AND ENERGIZING A ZINC-BASED GALVANIC CORROSION PROTECTION SYSTEM, INCLUDING REQUIRED ELECTRICAL CONNECTIONS, MATERIALS, TESTING, AND ENSURING CONTINUITY OF THE REINFORCING STEEL IN THE GIRDER SEATS AT PIERS 3 AND 6 AS OUTLINED IN THE CONSTRUCTION DRAWINGS.

REFERENCES:

A. ACI 222R PROTECTION OF METALS IN CONCRETE AGAINST CORROSION

B. ASTM B6 STANDARD SPECIFICATION FOR ZINC

C. ASTM B69 STANDARD SPECIFICATION FOR ROLLED ZINC

D. ASTM B418 STANDARD SPECIFICATION FOR CAST AND WROUGHT GALVANIC ZINC ANODES

E. SSPC SP-10 NEAR-WHITE BLAST CLEANING

BID QUANTITY:

BASE BIDS ON THE QUANTITY, DIMENSIONS, LENGTH, WEIGHT, AND INFORMATION IN THIS SPECIFICATION AND AS SHOWN ON THE DRAWINGS.

SUBMITTALS:

SUBMIT TYPICAL GALVANIC CORROSION PROTECTION SYSTEM INSTALLATION DETAILS, SUCH AS DISTRIBUTED ANODE DIMENSIONS, SACRIFICIAL ZINC MASS, ANODE TO HEADER CONNECTION DETAIL, AND HEADER TO REINFORCING CONNECTION DETAIL. SUBMITTAL SHALL BE PREPARED BY THE CONTRACTOR AND SUBMITTED FOR APPROVAL BY THE ENGINEER PRIOR TO ANY FIELD INSTALLATIONS.

ZINC ANODES:

GALVANIC ANODE UNITS SHALL BE CYLINDRICAL PRISMS OF ALKALI-ACTIVATED ZINC WITH A PH GREATER THAN 14 AND NOMINAL LENGTH AS INDICATED ON THE DRAWINGS. THE DISTRIBUTED ANODE UNITS SHALL CONTAIN AT LEAST 0.3 LB OF HIGH-PURITY ZINC PER LINEAL FOOT OF ANODE AND SHALL CONTAIN NO CONSTITUENTS THAT ARE CORROSIVE TO REINFORCING STEEL AS PER ACI 222R SUCH AS CHLORIDES, BROMIDES, OR OTHER HALIDES. THE ZINC ANODES SHALL CONTAIN A STEEL CORE AND SHALL BE MANUFACTURED IN COMPLIANCE WITH ASTM B418 TYPE II (Z13000) AND ASTM B69 ROLLED SPECIAL HIGH GRADE ZINC (Z13004) USING ZINC IN COMPLIANCE WITH ASTM B6 SPECIAL HIGH GRADE (Z13001) WITH IRON CONTENT LESS THAN 15 PPM.

THE GALVANIC PROTECTION SHALL BE GALVANODE DAS DISTRIBUTED ANODE SYSTEM SUPPLIED BY VECTOR CORROSION TECHNOLOGIES, [TAMPA, FL (813) 830-7566, (800) 665-6680, WWW.VECTOR-CORROSION.COM] OR APPROVED EQUAL.

GENERAL DESCRIPTION:

THE GALVANIC CORROSION PROTECTION SYSTEM SHALL CONSIST OF INTERCONNECTED GALVANIC ANODES THAT ARE PLACED ON THE TOP OF THE GIRDER SEAT UNDER THE TOP MAT OF REINFORCING STEEL AND ARE ELECTRICALLY CONNECTED TO THE REINFORCING STEEL THROUGH A HEADER WIRE OR STRAP. THE HEADER CONNECTS ROWS OF ANODES TO THE REINFORCING STEEL AS SHOWN ON THE DRAWINGS. THE REPAIR CONCRETE IS PLACED FOLLOWING STANDARD CONCRETE PLACEMENT PROCEDURES. AFTER THE ANODES ARE INSTALLED AND ENCASED IN THE SEAT CONCRETE, THE ANODES WILL PROVIDE GALVANIC PROTECTION TO THE REINFORCING STEEL IN THE PIER SEAT.

MANUFACTURER TECHNICAL ASSISTANCE:

A. THE CONTRACTOR SHALL ENLIST AND PAY FOR THE SERVICES OF A NACE CERTIFIED CATHODIC PROTECTION TECHNICIAN WHO IS AN EMPLOYEE OF THE GALVANIC ANODE MANUFACTURER TO PROVIDE TRAINING AND ON-SITE TECHNICAL ASSISTANCE DURING THE INITIAL INSTALLATION OF THE GALVANIC PROTECTION SYSTEM. THE CATHODIC PROTECTION TECHNICIAN SHALL HAVE VERIFIABLE EXPERIENCE IN THE INSTALLATION AND TESTING OF EMBEDDED GALVANIC PROTECTION SYSTEMS FOR REINFORCED CONCRETE STRUCTURES.

B. THE CONTRACTOR SHALL COORDINATE HIS WORK WITH THE DESIGNATED CATHODIC PROTECTION TECHNICIAN TO ALLOW FOR SITE SUPPORT DURING PROJECT STARTUP AND INITIAL ANODE INSTALLATION. THE TECHNICIAN SHALL PROVIDE CONTRACTOR TRAINING AND SUPPORT FOR DEVELOPMENT OF APPLICATION PROCEDURES, RELATED SUBMITTALS, ANODE INSTALLATION, REINFORCING STEEL CONNECTION PROCEDURES, AND ELECTRICAL CONTINUITY VERIFICATION OF EMBEDDED REINFORCING STEEL.

C. THE CATHODIC PROTECTION TECHNICIAN SHALL COORDINATE SYSTEM TESTING REQUIREMENTS WITH THE ENGINEER AND SHALL INSTALL SYSTEM INSTRUMENTATION WIRING, CONDUIT, AND RELATED DEVICES, AT LOCATIONS APPROVED BY THE ENGINEER.

SURFACE PREPARATION FOR ANODE INSTALLATION:

A. PERFORM CONCRETE REMOVAL IN ACCORDANCE WITH ITEM 202 PORTIONS OF STRUCTURE REMOVED, AS PER PLAN, AND AS SHOWN ON THE DRAWINGS.

B. CLEAN EXPOSED REINFORCING STEEL AND CONCRETE BY ABRASIVE BLASTING OR OTHER MEANS TO REMOVE CORROSION BY-PRODUCTS AND OTHER MATERIALS THAT MAY INHIBIT ELECTRICAL CONTINUITY.

ELECTRICAL CONTINUITY:

THE REINFORCING STEEL IN THE TOP OF THE PIER SEAT SHALL BE TESTED FOR ELECTRICAL CONTINUITY BETWEEN THE LONGITUDINAL BARS AND THE STIRRUP BARS, BETWEEN CONSECUTIVE LONGITUDINAL BARS AT LAP SPLICE LOCATIONS, AND BETWEEN THE LONGITUDINAL THROUGH BARS AND THE ADDITIONAL MAT OF REINFORCING STEEL AT THE GIRDER SEATS. USE A VOLTMETER WITH INTERNAL MEASURING IMPEDANCE OF AT LEAST 10 MEGOHMS ON THE DC MILLIVOLT SCALE. CONNECT THE TEST LEADS TO CLEAN REINFORCING STEEL AT TWO TEST SITES. A VOLTAGE DIFFERENCE BETWEEN THE TEST SITES LESS THAN 1.0 MILLIVOLT SHALL BE CONSIDERED CONFIRMATION OF ELECTRICAL CONTINUITY.

IN SITUATIONS WHERE CONTINUITY IS NOT CONFIRMED, RE-ESTABLISH CONTINUITY BY TYING REINFORCING TOGETHER WITH STEEL TIE WIRE OF BY OTHER APPROVED MEANS.

GALVANIC ANODE INSTALLATION:

DISTRIBUTED GALVANIC ANODE UNITS SHALL BE LOCATED AS INDICATED ON THE DRAWINGS. LOCATE A ROW OF ANODES ON THE PREPARED PIER TOP. PLACE ANODES BETWEEN PARALLEL LONGITUDINAL REINFORCING BARS.

PROTECT ANODES AND ELECTRICAL CONNECTIONS FROM DAMAGE DURING INSTALLATION.

PROVIDE AT LEAST 1.5 INCHES OF CONCRETE COVER OVER ANODES.

ELECTRICAL CONNECTIONS:

ELECTRICALLY CONNECT ANODES TO HEADER. THE TYPICAL CONNECTION IS A SELF-TAPPING SCREW CONNECTION BETWEEN THE ANODE CORE AND A PERFORATED STEEL STRAP HEADER. ALL ELECTRICAL CONNECTION DETAILS SHALL BE APPROVED BY THE ANODE MANUFACTURER. IDENTIFY ANODE MANUFACTURE APPROVED ANODE-TO-HEADER CONNECTION DETAIL IN THE GALVANIC PROTECTION SYSTEM SUBMITTAL.

ELECTRICALLY CONNECT HEADER TO REINFORCING. THE TYPICAL CONNECTION IS A BRAZED CONNECTION OF A STEEL HEADER STRAP THAT IS WRAPPED AROUND THE REINFORCING. ALL ELECTRICAL CONNECTION DETAILS SHALL BE APPROVED BY THE ANODE MANUFACTURER. IDENTIFY ANODE MANUFACTURER HEADER-TO-REINFORCING CONNECTION DETAIL IN THE GALVANIC PROTECTION SYSTEM SUBMITTAL.

ALL REINFORCING STEEL CONNECTIONS SHALL BE CLEANED AFTER BRAZING AND RECEIVE A COAT OF 100% SOLIDS, NON-CONDUCTIVE EPOXY SUCH THAT NO BRAZING MATERIAL IS EXPOSED TO THE CONCRETE WHEN PATCHING IS COMPLETE. THE CONTRACTOR SHALL VERIFY CONTINUITY BETWEEN THE ANODES AND THE REINFORCING PRIOR TO COATING WITH EPOXY.

THE HEADER MAY BE SECURED INTERMITTENTLY TO THE PIER TOP WITH MECHANICAL FASTENERS TO EXPOSED REINFORCING BARS WITH STEEL TIE WIRE.

CONCRETE PLACEMENT:

COMPLETE THE REPAIR FOLLOWING NORMAL CONCRETE REPAIR PROCEDURES, TAKING CARE NOT TO CREATE ANY AIR VOIDS AROUND THE ANODE.

PAYMENT:

THE DEPARTMENT WILL MEASURE THIS ITEM BY THE NUMBER OF DISTRIBUTED GALVANIC ANODE UNITS PROVIDED, INSTALLED, AND ACCEPTED.

THE COST OF HAVING A NACE CERTIFIED CATHODIC PROTECTION TECHNICIAN FROM THE MANUFACTURER ON-SITE FOR THE INITIAL ANODE INSTALLATION IS CONSIDERED INCIDENTAL TO THE COST OF THE DISTRIBUTED GALVANIC CORROSION PROTECTION SYSTEM.

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

ITEM	DESCRIPTION	UNIT
511E81300	CONCRETE, MISC.: DISTRIBUTED GALVANIC CORROSION PROTECTION SYSTEM	EACH

RICHLAND ENGINEERING LIMITED
29 NORTH PARK STREET
MANSFIELD, OHIO 44902

DESIGNED dht | DRAWN JLS | REVIEWED DLR | DATE 3-23-09 | CHECKED JDB | REVISED | STRUCTURE FILE NUMBER 7700369

GENERAL NOTES - 5
BRIDGE NO. SUM-8-0199
OVER RAILROADS, LITTLE CUYAHOGA RIVER AND EAST NORTH STREET

SUM-8-1.99
PID No. 85246

ESTIMATED QUANTITIES

CALCULATED dht DATED 3/09
CHECKED DLR DATED 3/09

	ITEM	ITEM EXT.	TOTAL	UNIT	DESCRIPTION	SUPER.	SUBSTR.	GENERAL	SEE SHEET
	202	11201	LUMP		PORTIONS OF STRUCTURE REMOVED, AS PER PLAN	LUMP	LUMP		3/34
	202	98100	2001	EACH	REMOVAL MISC.: RIVET	2001			3/34
	509	10000	8046	POUND	EPOXY COATED REINFORCING STEEL		8046		
*	509	20001	250	POUND	REINFORCING STEEL, REPLACEMENT OF EXISTING REINFORCING STEEL, AS PER PLAN			250	3/34
	510	10000	696	EACH	DOWEL HOLES WITH NONSHRINK, NONMETALLIC GROUT		696		
	511	43000	31	CU. YD.	CLASS C CONCRETE, PIER (CORBELS)		31		
	511	43200	22	CU. YD.	CLASS C CONCRETE, PIER (GIRDER SEAT RECONSTRUCTION)		22		
	511	81300	436	EACH	CONCRETE, MISC.: EMBEDDED GALVANIC ANODE		436		6/34
	511	81300	405	EACH	CONCRETE, MISC.: DISTRIBUTED GALVANIC CORROSION PROTECTION SYSTEM		405		7/34
	512	10100	173	SQ. YD.	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)		173		4/34
	513	90000	500	POUND	STRUCTURAL STEEL, MISC.: REPLACE DAMAGED LATERAL BRACING MEMBER	500			4/34
	513	90000	28,500	POUND	STRUCTURAL STEEL, MISC.: TRUSS GUSSET REPAIR	28,500			4/34
	513	90000	7,000	POUND	STRUCTURAL STEEL, MISC.: TRUSS GUSSET REPAIR, TYPES 2, 3, & 4	7,000			27C/34
	516	46930	LUMP		BEARING DEVICE, MISC.: CLEAN AND LUBRICATE TRUSS BEARINGS	LUMP			29/34
	516	47001	LUMP		JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE, AS PER PLAN	LUMP			4/34
	518	62200	40	EACH	STRUCTURE DRAINAGE, MISC.: SCUPPER GRATE REPLACEMENT	40			4/34
	518	63300	LUMP		STRUCTURE DRAINAGE, MISC.: CLEAN STRUCTURE DRAINAGE SYSTEM			LUMP	4/34
	520	11100	1958	SQ. FT.	PNEUMATICALLY PLACED MORTAR		1958		
	SPECIAL	53000400	65	EACH	STRUCTURE, MISC.: TRUSS PANEL POINT ACCESS	65			5/34
	SPECIAL	53001300	663	FT.	STRUCTURE, MISC.: JOINT SEALING SYSTEM REPLACEMENT (ALL JOINTS EXCEPT PIER 6)	663			5/34
	SPECIAL	53001300	243	FT.	STRUCTURE, MISC.: JOINT SEALING SYSTEM REPLACEMENT (PIER 6)	243			5/34

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

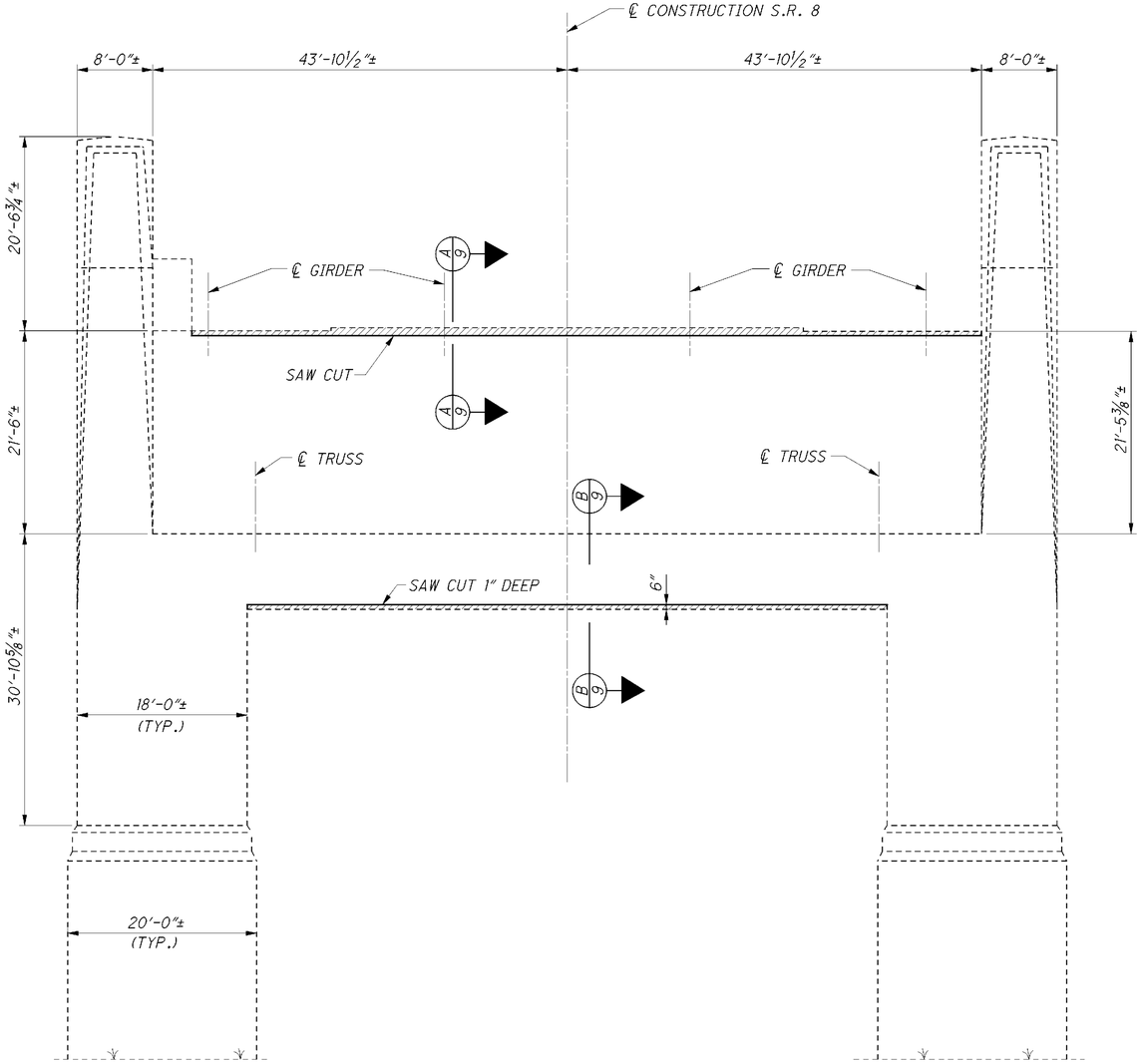
RICHLAND ENGINEERING LIMITED
29 NORTH PARK STREET
MANSFIELD, OHIO 44902

DESIGNED dht | DRAWN JLS | REVIEWED DLR | DATE 7-2-09
CHECKED JDB | REVISED | STRUCTURE TITLE NUMBER 7700369

ESTIMATED QUANTITIES
BRIDGE NO. SUM-8-0199
OVER RAILROADS, LITTLE CUYAHOGA RIVER AND EAST NORTH STREET

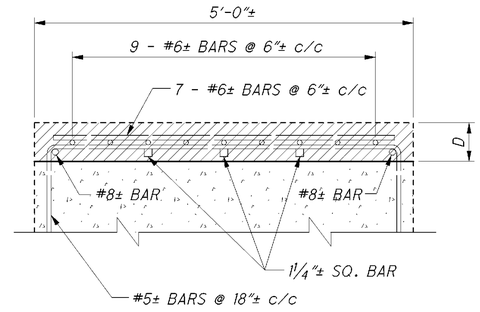
SUM-8-1.99
PID No. 85246

008_0195CEQ001.DGN 3/25/09 JLS,KH,SCB

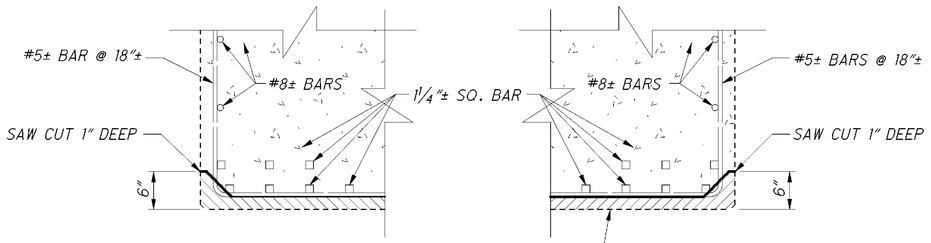


PIER 3 ELEVATION - SHOWN
PIER 6 ELEVATION - SIMILAR

D = MINIMUM DEPTH OF REPAIR
(AT LEAST ¾" BELOW TOP MAT OF REINFORCING STEEL)
VARIES 6⅛"± TO 10½"± (PIER 3)
VARIES 6⅛"± TO 9⅛"± (PIER 6)



SECTION A-A



SECTION B-B

LEGEND

INDICATES CONCRETE REMOVAL

NOTES

MATERIALS SHOWN ARE EXISTING UNLESS OTHERWISE NOTED.

RICHLAND ENGINEERING LIMITED
29 NORTH PARK STREET
MANSFIELD, OHIO 44902

DESIGNED	DRAWN	REVIEWED	DATE
dht	SCB	DLR	3-23-09
CHECKED	REVISED	STRUCTURE TILE NUMBER	
JDB		7700369	

STRUCTURE REMOVALS
BRIDGE NO. SUM-8-0199
OVER RAILROADS, LITTLE CUYAHOGA RIVER AND EAST NORTH STREET

SUM-8-1.99
PID No. 85246

008_0195CP1069.DGN 3/24/09 SCB,JLS,KH

TEMPORARY GIRDER SUPPORT. - WORK UNDER THIS ITEM IS THE LIFTING AND SUPPORT OF THE GIRDERS AT PIERS 3 AND 6 WHILE THE DETERIORATED PIER SEAT CONCRETE IS REPAIRED. THE LIFTING SYSTEM WILL USE THE EXISTING MASONRY PLATES ATOP THE PIERS. THE CONTRACTOR WILL DESIGN AND SUBMIT THE JACKING SYSTEM TO THE ENGINEER PER THE REQUIREMENTS OF THE CONSTRUCTION MATERIALS SPECIFICATIONS 501.05 PRIOR TO THE START OF WORK AT THE SITE. TO PROVIDE STABILITY TO THE SUPERSTRUCTURE, THE SEAT REPAIR AT EACH PIER WILL BE DONE IN TWO PHASES AS SHOWN IN THE PLANS. THE WORK SEQUENCE FOR THE TYPE A TEMPORARY GIRDER SUPPORT IS: (1)

1) INSTALL WORK PLATFORMS.
2) LEVEL PLACES FOR THE TEMPORARY SUPPORT BEARINGS IN THE PIER SEATS. (2)
3) ~~SECURE BEARING TO GIRDER SO THE BEARING DOES NOT FALL APART WHEN UNLOADED.~~ REMOVE NUTS FROM BEARING ANCHOR BOLTS. (1)
4) INSTALL JACKING SYSTEMS.
5) INSTALL TEMPORARY BEARINGS.
6) ESTABLISH TRAFFIC CONTROL FOR WORK ZONE. WHEN JACKING MEDIAN BEARINGS, RESTRICT THE TRAFFIC IN BOTH DIRECTIONS TO THE OUTSIDE LANE. WHEN JACKING AN OUTSIDE BEARING, RESTRICT THE TRAFFIC ON THE SIDE OF THE JACKING TO THE MEDIAN LANE.
7) LIFT STRUCTURE TO UNLOAD THE BEARING. (DO NOT DAMAGE THE EXISTING ANCHOR BOLTS TO REMAIN IN PLACE.) (1)
8) INSTALL TEMPORARY SUPPORT BEAM.
9) ATTACH TEMPORARY SUPPORT BEAM TO TEMPORARY BEARINGS
10) LOWER STRUCTURE ONTO TEMPORARY SUPPORT BEAM.
11) ATTACH GIRDER TO THE TEMPORARY SUPPORT BEAM.
12) ALLOW TRAFFIC THROUGH THE WORK ZONE.
13) REMOVE THE JACKING SYSTEM AND MASONRY PLATE.
14) REBUILD THE CONCRETE IN THE DETERIORATED PIER SEATS.
15) INSTALL JACKING MASONRY PLATE.
16) INSTALL JACKING SYSTEM.
17) ESTABLISH TRAFFIC CONTROL FOR WORK ZONE. WHEN JACKING MEDIAN BEARINGS, RESTRICT THE TRAFFIC IN BOTH DIRECTIONS TO THE OUTSIDE LANE. WHEN JACKING AN OUTSIDE BEARING, RESTRICT THE TRAFFIC ON THE SIDE OF THE JACKING TO THE MEDIAN LANE.
18) LIFT STRUCTURE TO UNLOAD TEMPORARY SUPPORT.
19) DISASSEMBLE AND REMOVE TEMPORARY SUPPORT BEAM AND BEARINGS.
20) LOWER STRUCTURE ONTO BEARING.
21) SECURE BEARING TO PIER BY REPLACING NUTS ON ANCHOR BOLTS. (1)
22) ALLOW TRAFFIC THROUGH THE WORK ZONE.
23) REMOVE THE JACKING SYSTEM.
24) REMOVE WORK PLATFORMS.

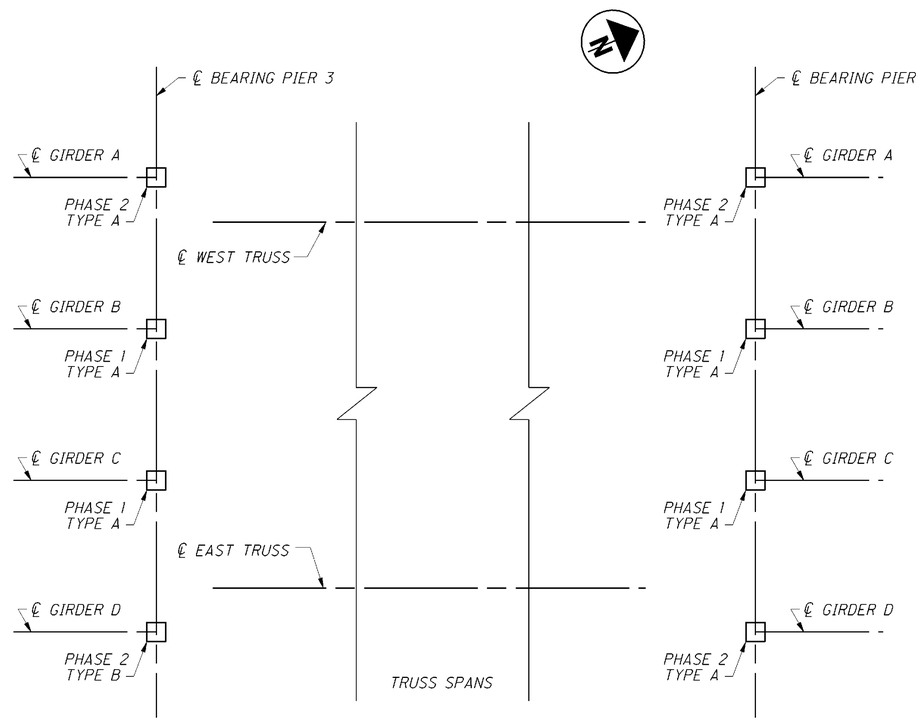
THE WORK SEQUENCE FOR THE TYPE B TEMPORARY GIRDER SUPPORT IS:

1) INSTALL WORK PLATFORMS.
2) LOCATE AND MARK EXISTING REINFORCING STEEL IN PIER STEM.
3) ~~SECURE BEARING TO GIRDER SO THE BEARING DOES NOT FALL APART WHEN UNLOADED.~~ REMOVE NUTS FROM BEARING ANCHOR BOLTS. (2) (1)
4) INSTALL JACKING SYSTEM.
5) CLAMP SHIM AND TEMPORARY SUPPORT COLUMN TO GIRDER.
6) ESTABLISH TRAFFIC CONTROL FOR WORK ZONE. RESTRICT THE TRAFFIC ON THIS SIDE TO THE MEDIAN LANE.
7) LIFT STRUCTURE TO UNLOAD BEARING. (DO NOT DAMAGE THE EXISTING ANCHOR BOLTS TO REMAIN IN PLACE.) (1)
8) DRILL HOLES FOR THROUGH BOLTS.
9) INSTALL TEMPORARY SUPPORT.
10) LOWER STRUCTURE ONTO TEMPORARY SUPPORT.
11) ALLOW TRAFFIC THROUGH THE WORK ZONE.
12) REMOVE THE JACKING SYSTEM AND MASONRY PLATE.
13) REBUILD THE CONCRETE IN THE DETERIORATED PIER SEATS.
14) INSTALL JACKING MASONRY PLATE.
15) INSTALL JACKING SYSTEM
16) ESTABLISH TRAFFIC CONTROL FOR WORK ZONE. RESTRICT THE TRAFFIC ON THIS SIDE TO THE MEDIAN LANE.
17) LIFT STRUCTURE TO UNLOAD TEMPORARY SUPPORT.
18) DISASSEMBLE AND REMOVE TEMPORARY SUPPORT.
19) LOWER STRUCTURE ONTO BEARING.
20) SECURE BEARINGS TO PIER BY REPLACING NUTS ON ANCHOR BOLTS. (1)
21) ALLOW TRAFFIC THROUGH THE WORK ZONE.
22) REMOVE THE JACKING SYSTEM.
23) PATCH HOLES THROUGH PIER STEM.
24) REMOVE WORK PLATFORMS.

ANY SURFACE DAMAGE MADE TO THE STEM OF THE PIER WILL BE REPAIRED TO THE SATISFACTION OF THE ENGINEER. THE HOLES MADE FOR THE THROUGH BOLTS WILL BE FILLED WITH A NON-SHRINK FLOWABLE MORTAR AS PART OF THE WORK DONE FOR THIS ITEM. REPAIR MATERIALS WILL BE APPROVED BY THE ENGINEER PRIOR TO START OF WORK.

ALL OF THE TEMPORARY NEW STEEL WILL HAVE A YIELD STRENGTH EQUAL TO OR GREATER THAN 50,000 POUNDS PER SQUARE INCH.

THE PRICE BID FOR ITEM 516 - JACKING AND TEMPORARY SUPPORT OF THE SUPERSTRUCTURE, AS PER PLAN WILL INCLUDE ALL WORK AND MATERIALS NEEDED TO LIFT, SUPPORT, AND AND RESEAT THE EIGHT GIRDERS SHOWN. (1)



PIER 3
BEARING REACTIONS
(MAXIMUM)
DEAD LOAD = 242 k
LIVE LOAD + IMPACT = 125 k
THESE ARE UNFACTORED (SERVICE) LOADS

PIER 6
BEARING REACTIONS
(MAXIMUM)
DEAD LOAD = 175 k
LIVE LOAD + IMPACT = 125 k
THESE ARE UNFACTORED (SERVICE) LOADS

NOTES

2	9-09-09
1	8-31-09

RICHLAND ENGINEERING LIMITED
29 NORTH PARK STREET
MANSFIELD, OHIO 44902

DESIGNED	DT	DATE	3-23-09
DRAWN	RB	REVIEWED	DLR
CHECKED	dhf	REVISED	dlr
		STRUCTURE TITLE NUMBER	7700369

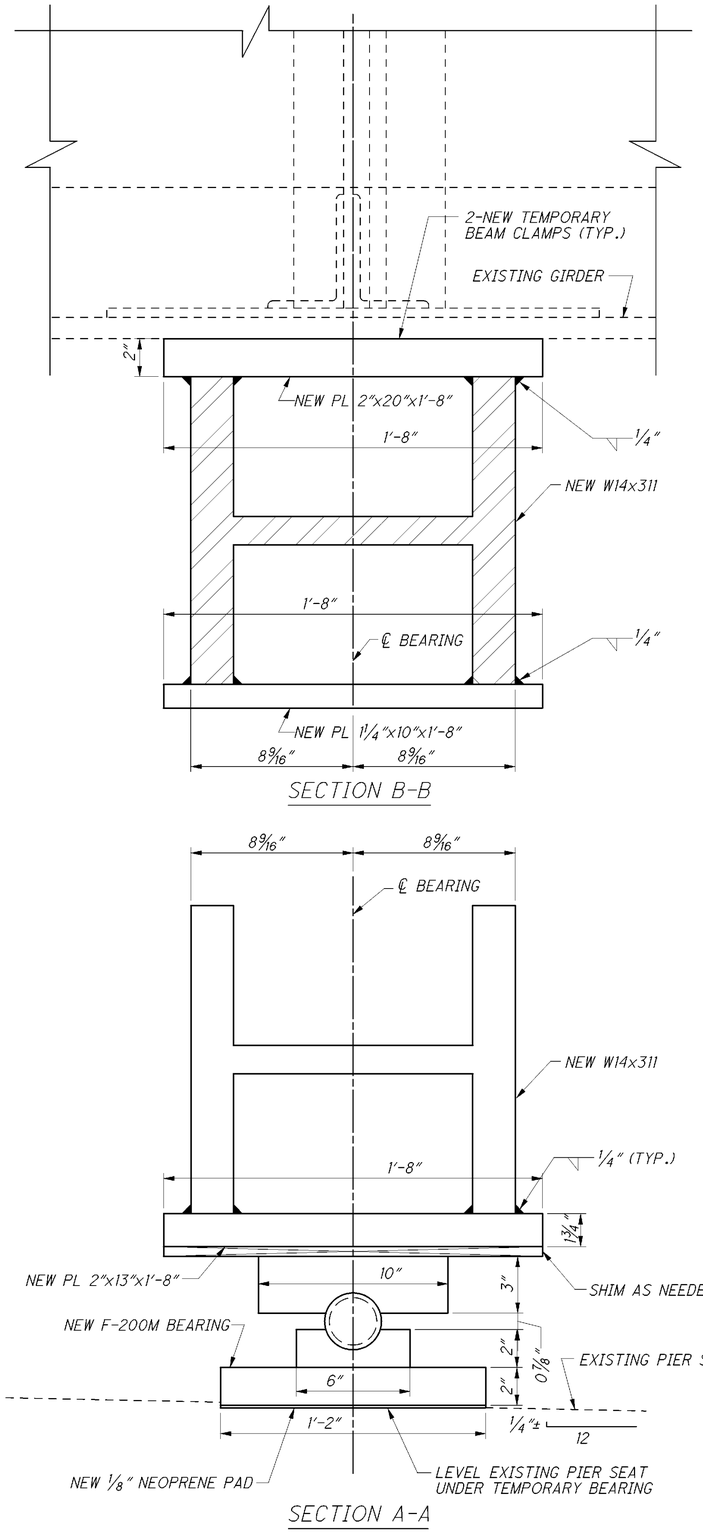
TEMPORARY SUPPORT PLAN
BRIDGE NO. SUM-8-0199
OVER RAILROADS, LITTLE CUYAHOGA RIVER AND EAST NORTH STREET

SUM-8-1.99
PID No. 85246

10 / 34

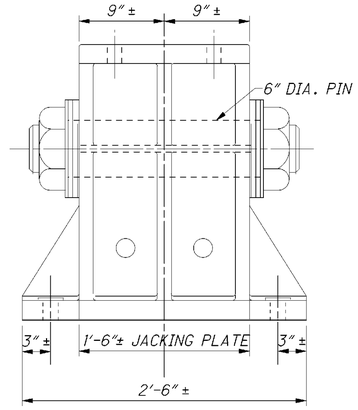
35 / 59

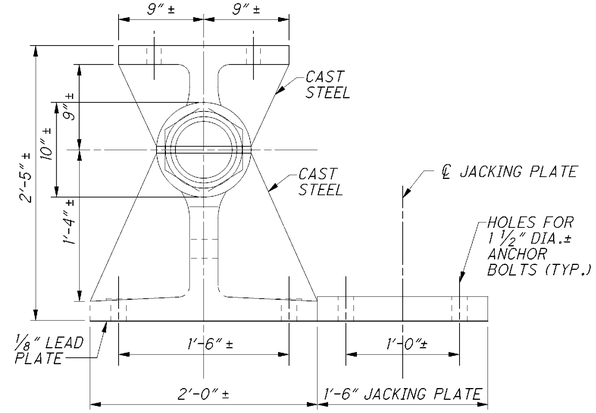
008_0195CBR004.DGN 3/23/09 RB SCB



SECTION B-B

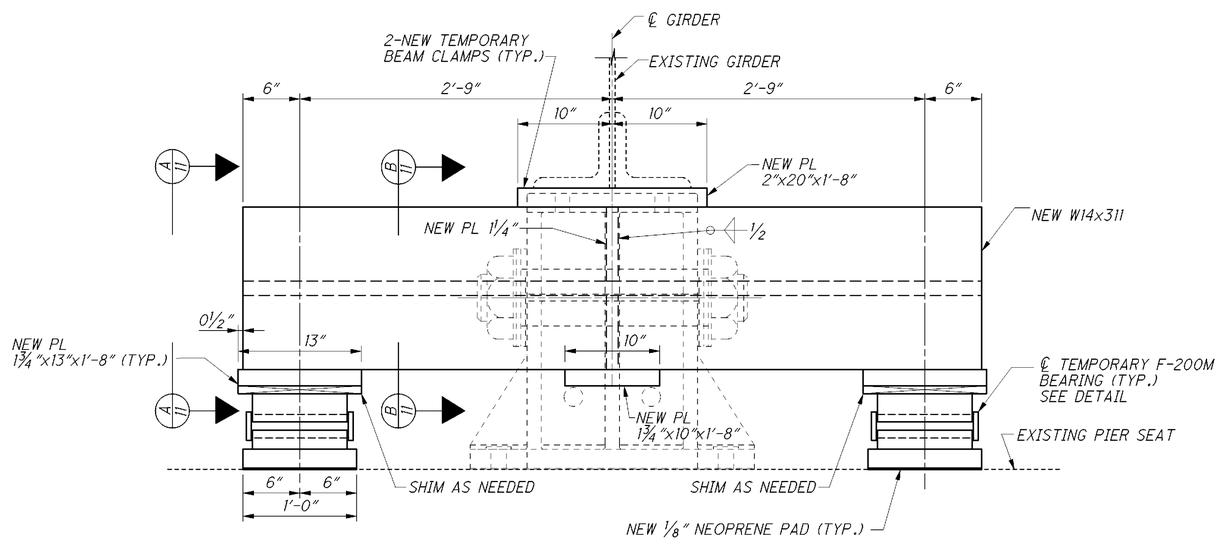
SECTION A-A





EXISTING BOLSTER

FOR INFORMATION ONLY



NEW F-200M BEARING DETAIL
TYPE A TEMPORARY GIRDER SUPPORT

NOTES

MATERIALS SHOWN ARE EXISTING UNLESS OTHERWISE NOTED.

F-200M: SEE STANDARD DRAWING FB-1-82 DATED 5-10-82 FOR DETAILS AND NOTES NOT SHOWN ON PLANS.

TEMPORARY STEEL BEAMS AND PLATES ARE ASTM 709 GRADE 50 MATERIAL.

TEMPORARY GIRDER SUPPORT NOTES: SEE SHEET 10/34.

RICHLAND ENGINEERING LIMITED
29 NORTH PARK STREET
MANSFIELD, OHIO 44902

DESIGNED DT | DRAWN TWH | REVIEWED DLR | DATE 3-23-09 | CHECKED dht | REVISED | STRUCTURE TITLE NUMBER 7700369

TEMPORARY SUPPORT DETAILS-1

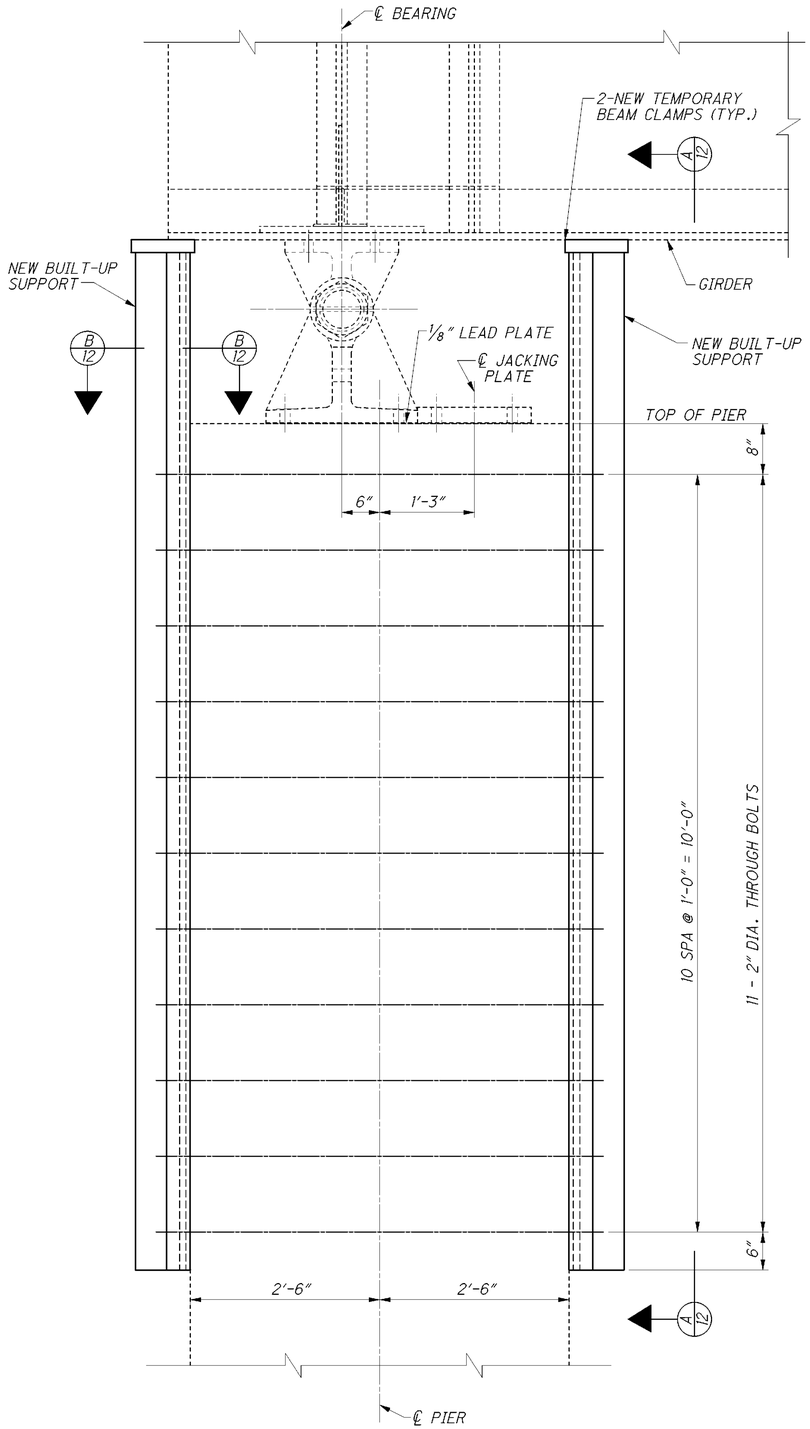
BRIDGE NO. SUM-8-0199
OVER RAILROADS, LITTLE CUYAHOGA RIVER AND EAST NORTH STREET

SUM-8-1.99
PID No. 85246

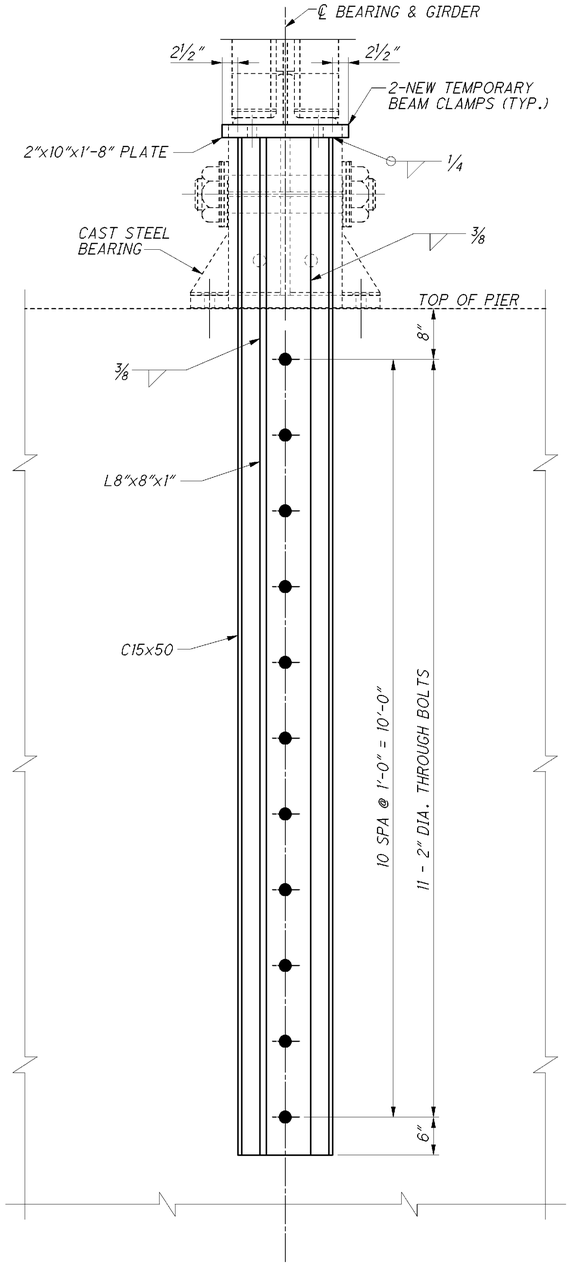
11/34

36/59

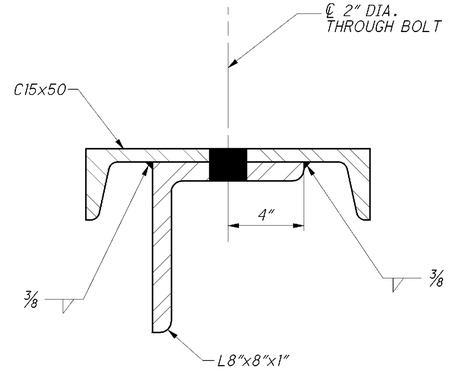
008_0195CBR002.DGN 03/23/09 TWH SCB



SPAN ELEVATION
TYPE B TEMPORARY GIRDER SUPPORT



SECTION A-A



SECTION B-B

NOTES

MATERIALS SHOWN ARE EXISTING UNLESS OTHERWISE NOTED.

RICHLAND ENGINEERING LIMITED
29 NORTH PARK STREET
MANSFIELD, OHIO 44902

DESIGNED	DRAWN	REVIEWED	DATE
DT	SCB	DLR	3-23-09
CHECKED	REVISED	STRUCTURE FILE NUMBER	
dhf		7700369	

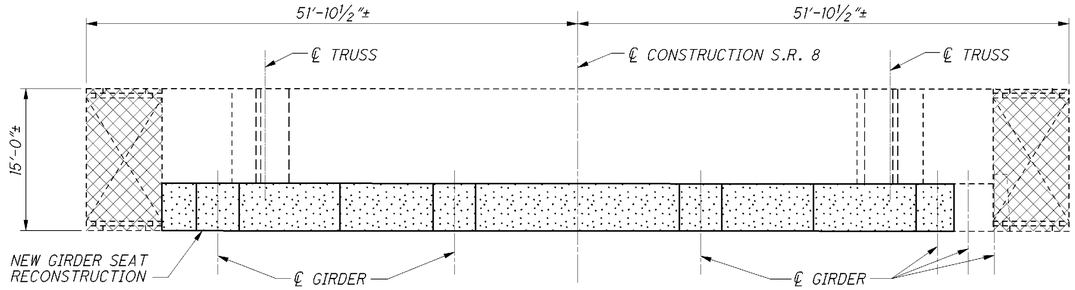
TEMPORARY SUPPORT DETAILS-2
BRIDGE NO. SUM-8-0199
OVER RAILROADS, LITTLE CUYAHOGA RIVER AND EAST NORTH STREET

SUM-8-1.99
PID No. 85246

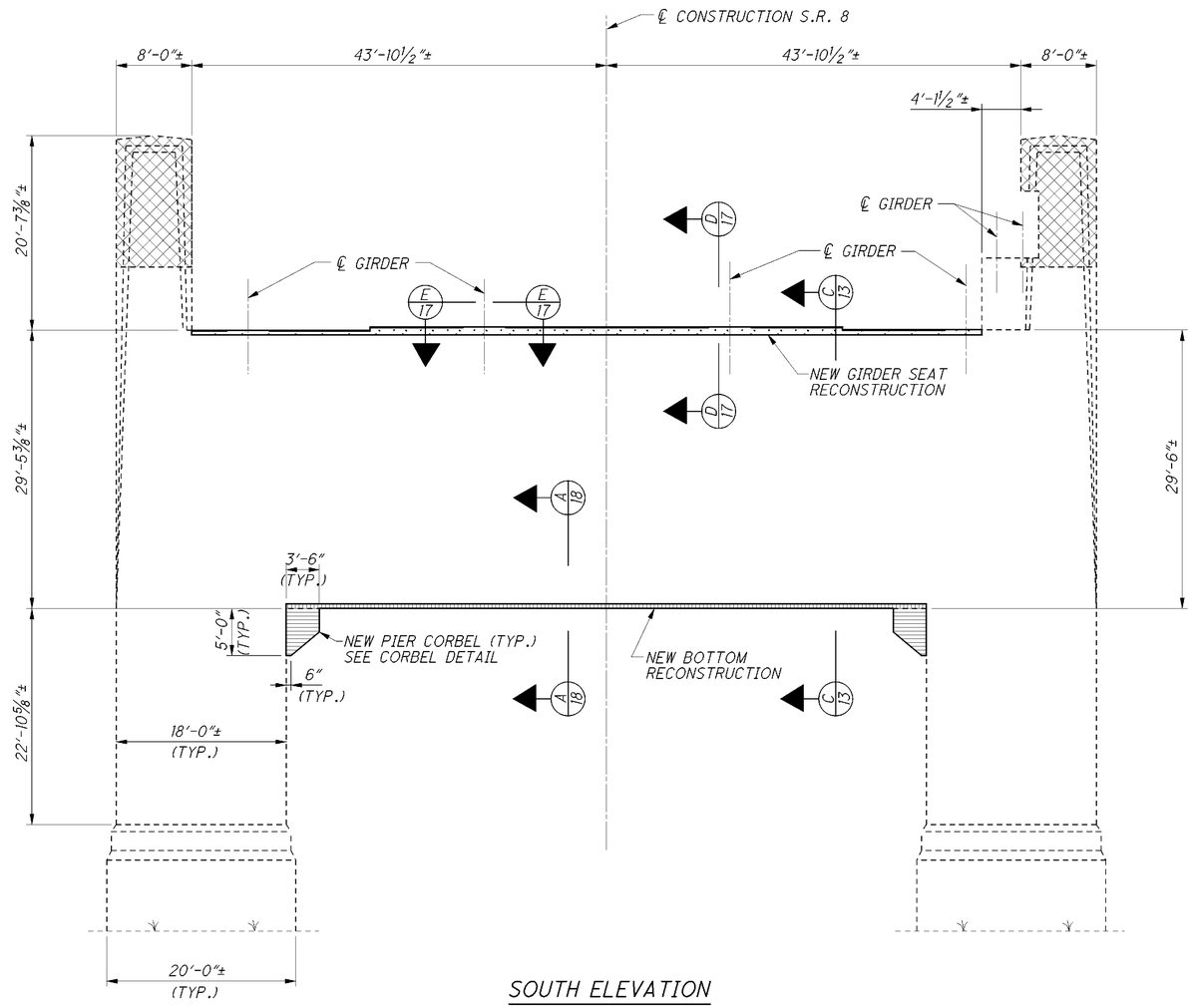
12 / 34

37 / 59

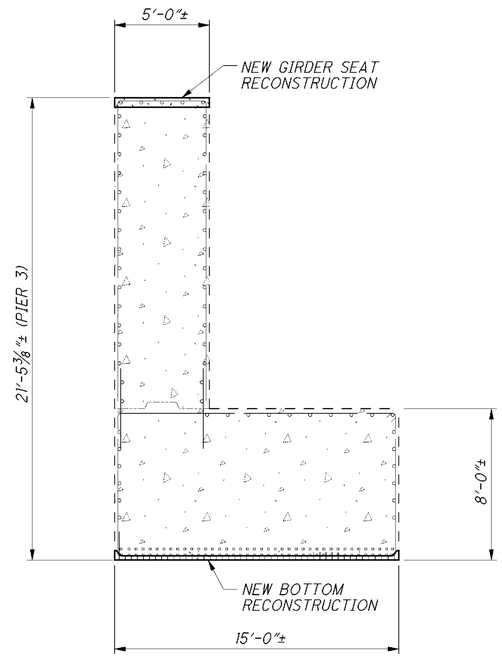
008_0195CBR003.DGN 03/24/09 SCB



PLAN VIEW



SOUTH ELEVATION



SECTION C-C

LEGEND

- INDICATES STONE FACING TO BE LEFT UNSEALED.
- INDICATES APPROXIMATE AREA TO BE REPAIRED PER ITEM 520 - PNEUMATICALLY PLACED MORTAR.
- INDICATES APPROXIMATE AREA TO BE REPAIRED PER ITEM 511 - CLASS C CONCRETE, PIER (GIRDER SEAT RECONSTRUCTION).
- INDICATES NEW CORBELS TO BE INSTALLED PER ITEM 511 - CLASS C CONCRETE, PIER (CORBEL).

NOTES

MATERIALS SHOWN ARE EXISTING UNLESS OTHERWISE NOTED.

CORBEL DETAIL: SEE SHEET 22/34.

GIRDER SEAT RECONSTRUCTION: SEE SHEET 17/34.

BOTTOM RECONSTRUCTION: SEE SHEET 18/34.

GIRDER BEARING DETAIL: SEE SHEET 11/34.

RICHLAND ENGINEERING LIMITED
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MANSFIELD, OHIO 44902

DESIGNED	DRAWN	REVIEWED	DATE
dht	JLS	DLR	3-23-09
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JDB		7700369	

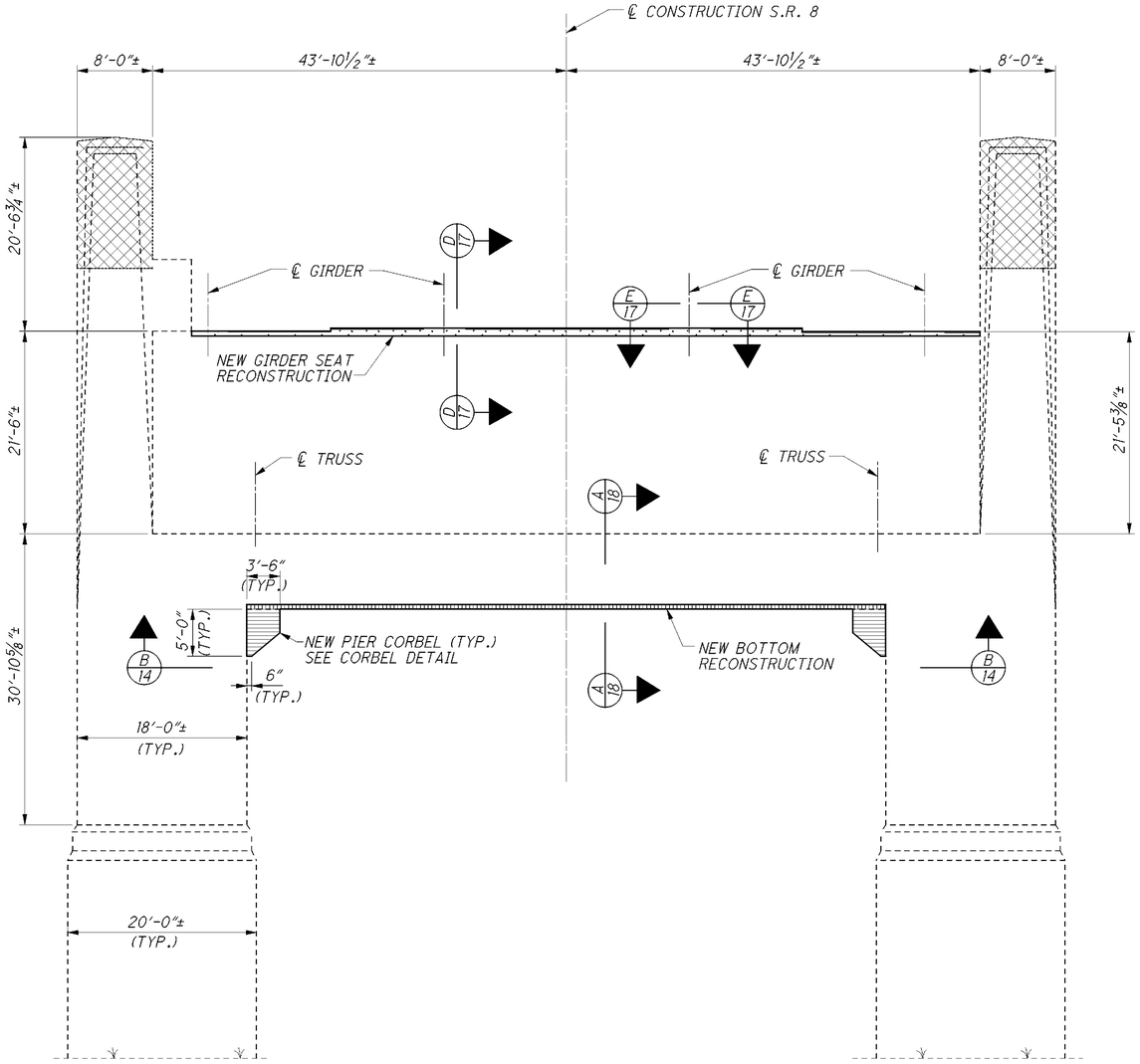
PIER 3 REPAIR DETAILS - 1
BRIDGE NO. SUM-8-0199
OVER RAILROADS, LITTLE CUYAHOGA RIVER AND EAST NORTH STREET

SUM-8-1.99
PID No. 85246

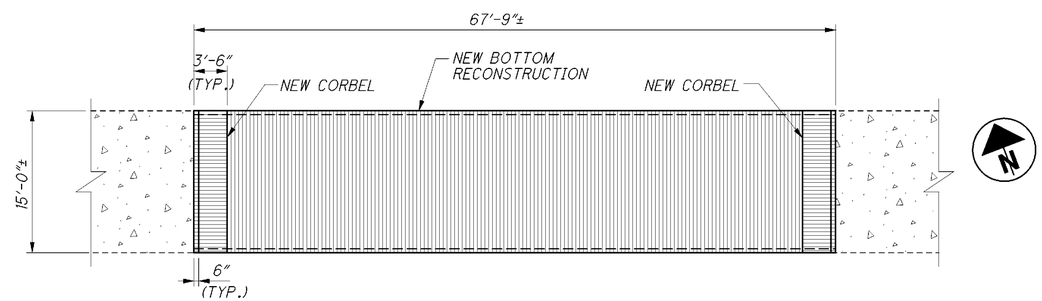
13/34

38/59

008_0195CP1001.DGN 3/24/09 SCB,JLS,KH



NORTH ELEVATION



VIEW B-B

BOTTOM OF CAP

LEGEND

- INDICATES STONE FACING TO BE LEFT UNSEALED.
- INDICATES APPROXIMATE AREA TO BE REPAIRED PER ITEM 520 - PNEUMATICALLY PLACED MORTAR.
- INDICATES APPROXIMATE AREA TO BE REPAIRED PER ITEM 511 - CLASS C CONCRETE, PIER (GIRDER SEAT RECONSTRUCTION).
- INDICATES NEW CORBELS TO BE INSTALLED PER ITEM 511 - CLASS C CONCRETE, PIER (CORBEL).

NOTES

MATERIALS SHOWN ARE EXISTING UNLESS OTHERWISE NOTED.

CORBEL DETAIL: SEE SHEET 22/34.

GIRDER SEAT RECONSTRUCTION: SEE SHEET 17/34.

BOTTOM RECONSTRUCTION: SEE SHEET 18/34.

GIRDER BEARING DETAIL: SEE SHEET 11/34.

RICHLAND ENGINEERING LIMITED
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MANSFIELD, OHIO 44902

DESIGNED	DRAWN	REVIEWED	DATE
dht	JLS	DLR	3-23-09
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JDB		7700369	

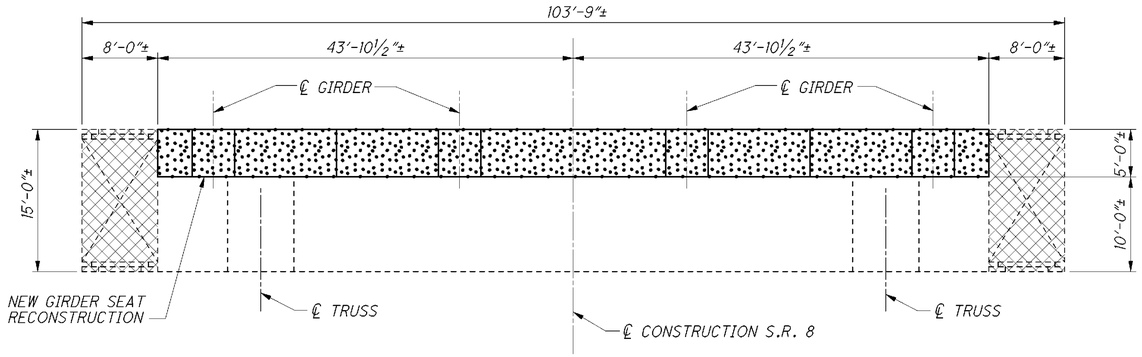
PIER 3 REPAIR DETAILS - 2
BRIDGE NO. SUM-8-0199
OVER RAILROADS, LITTLE CUYAHOGA RIVER AND EAST NORTH STREET

SUM-8-1.99
PID No. 85246

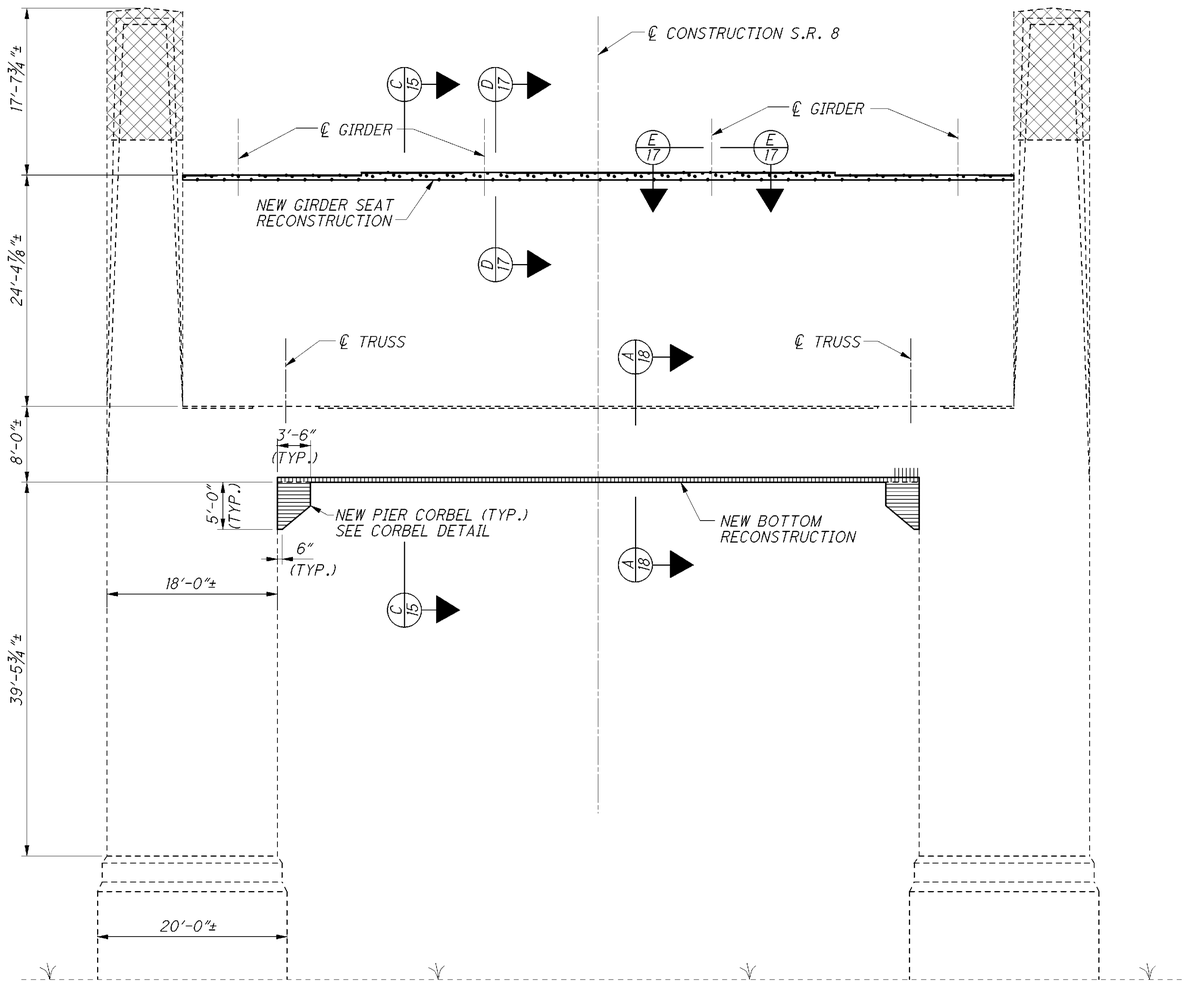
14/34

39/59

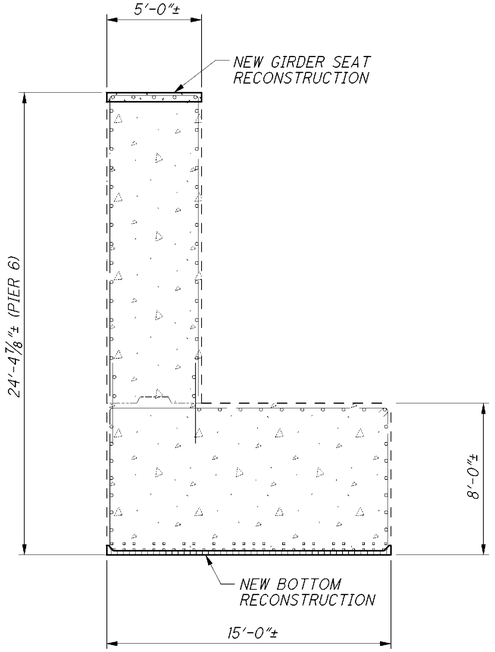
008_0195CPI002.DGN 3/24/09 SCB,JLS,KH



PLAN VIEW



SOUTH ELEVATION



SECTION C-C

LEGEND

- INDICATES STONE FACING TO BE LEFT UNSEALED.
- INDICATES APPROXIMATE AREA TO BE REPAIRED PER ITEM 520 - PNEUMATICALLY PLACED MORTAR.
- INDICATES APPROXIMATE AREA TO BE REPAIRED PER ITEM 511 - CLASS C CONCRETE, PIER (GIRDER SEAT RECONSTRUCTION).
- INDICATES NEW CORBELS TO BE INSTALLED PER ITEM 511 - CLASS C CONCRETE, PIER (CORBEL).

NOTES

MATERIALS SHOWN ARE EXISTING UNLESS OTHERWISE NOTED.

CORBEL DETAIL: SEE SHEET 22/34.

GIRDER SEAT RECONSTRUCTION: SEE SHEET 17/34.

BOTTOM RECONSTRUCTION: SEE SHEET 18/34.

GIRDER BEARING DETAIL: SEE SHEET 11/34.

RICHLAND ENGINEERING LIMITED
29 NORTH PARK STREET
MANSFIELD, OHIO 44902

DESIGNED dht | DRAWN JLS | REVIEWED DLR | DATE 3-23-09
CHECKED JDB | REVISED | STRUCTURE TITLE NUMBER 7700369

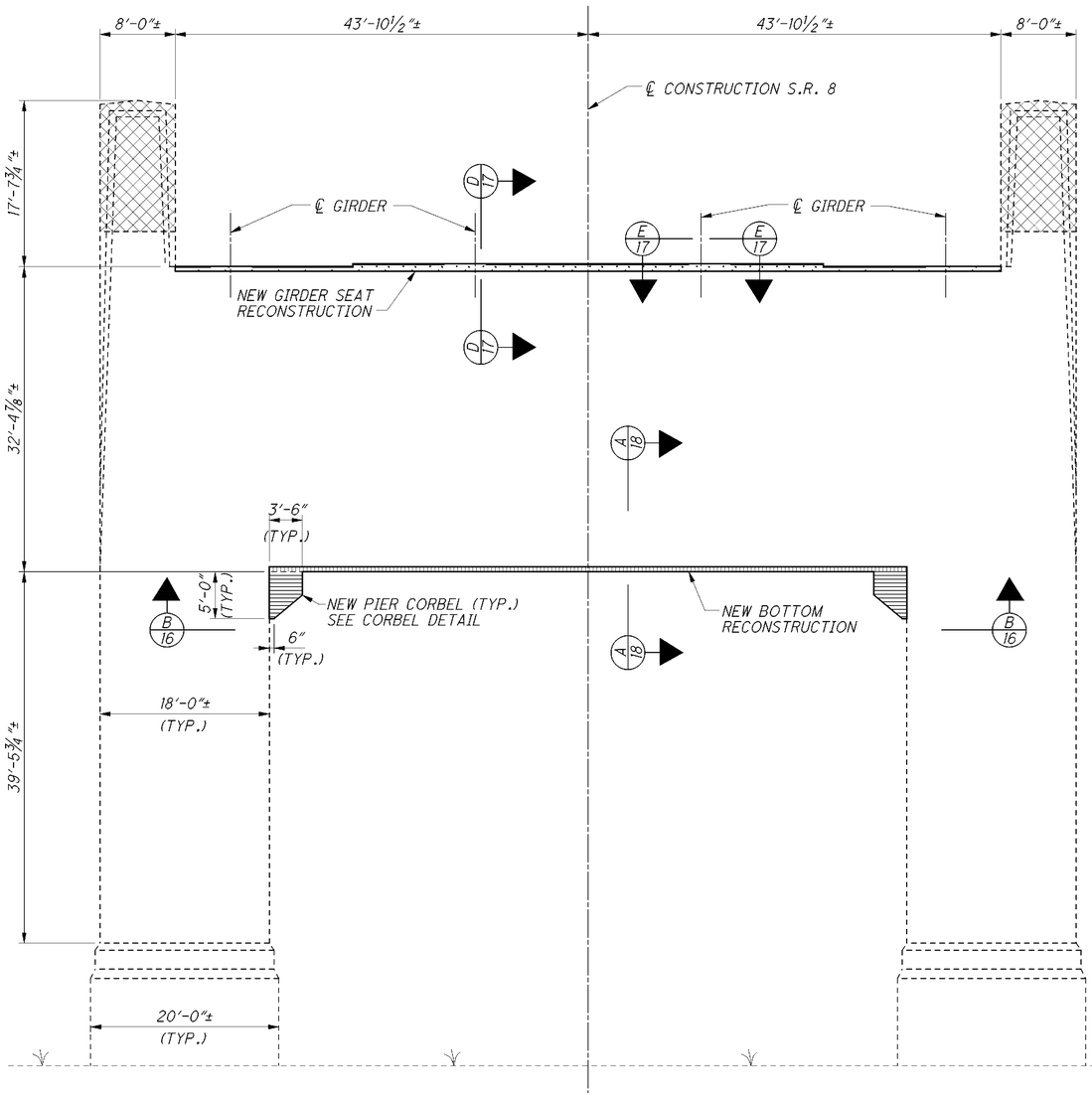
PIER 6 REPAIR DETAILS - 1
BRIDGE NO. SUM-8-0199
OVER RAILROADS, LITTLE CUYAHOGA RIVER AND EAST NORTH STREET

SUM-8-1.99
PID No. 85246

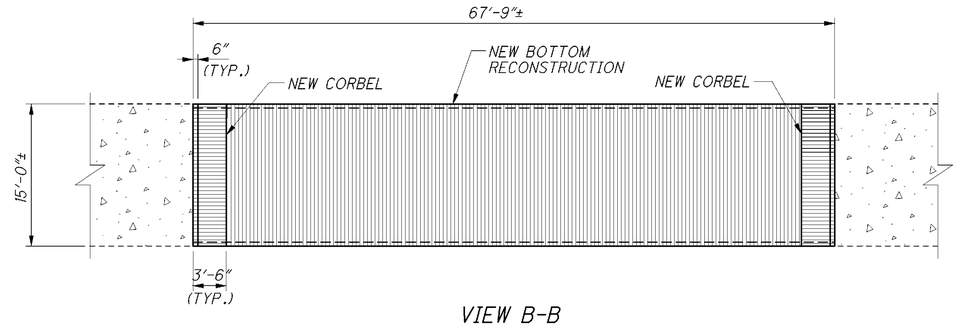
15/34

40/59

008_0195CPI003.DGN 3/24/09 SCB,JLS,KH



NORTH ELEVATION



VIEW B-B
BOTTOM OF CAP

LEGEND

INDICATES STONE FACING TO BE LEFT UNSEALED.

INDICATES APPROXIMATE AREA TO BE REPAIRED PER ITEM 520 - PNEUMATICALLY PLACED CONCRETE.

INDICATES APPROXIMATE AREA TO BE REPAIRED PER ITEM 511 - CLASS C CONCRETE, PIER (GIRDER SEAT RECONSTRUCTION).

INDICATES NEW CORBELS TO BE INSTALLED PER ITEM 511 - CLASS C CONCRETE, PIER (CORBEL).

NOTES

MATERIALS SHOWN ARE EXISTING UNLESS OTHERWISE NOTED.

CORBEL DETAIL: SEE SHEET 22/34.

GIRDER SEAT RECONSTRUCTION: SEE SHEET 17/34.

BOTTOM RECONSTRUCTION: SEE SHEET 18/34.

GIRDER BEARING DETAIL: SEE SHEET 11/34.

008_0195CP1004.DGN 3/24/09 SCB,JLS,KH

RICHLAND ENGINEERING LIMITED
29 NORTH PARK STREET
MANSFIELD, OHIO 44902

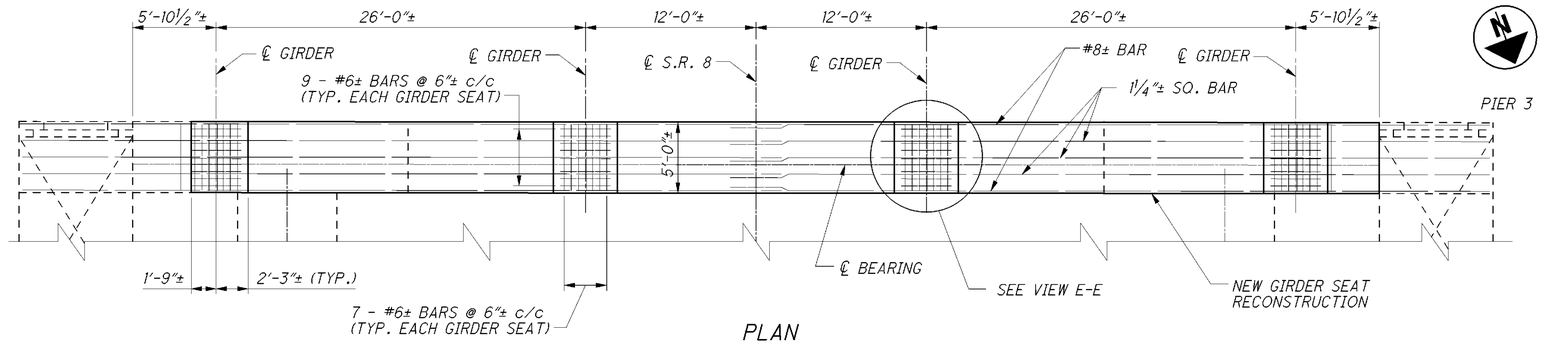
DESIGNED	DRAWN	REVIEWED	DATE
dht	JLS	DLR	3-23-09
CHECKED	REVISED	STRUCTURE FILE NUMBER	
JDB		7700369	

PIER 6 REPAIR DETAILS - 2
BRIDGE NO. SUM-8-0199
OVER RAILROADS, LITTLE CUYAHOGA RIVER AND EAST NORTH STREET

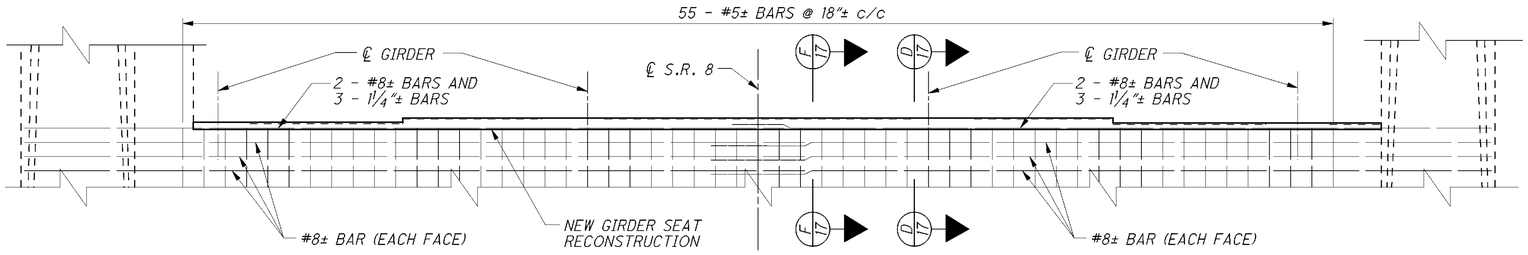
SUM-8-1.99
PID No. 85246

16/34

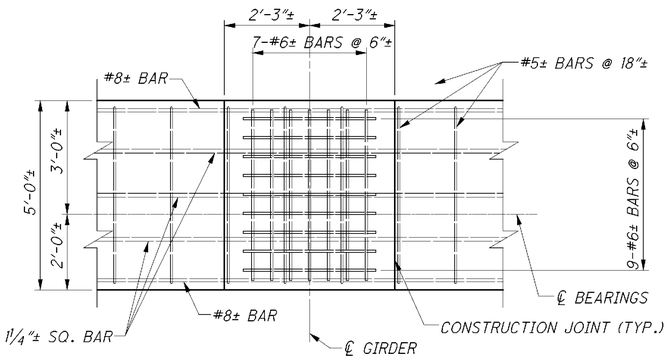
41/59



PLAN
PIER 3

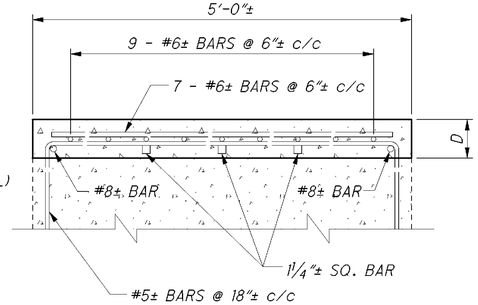


ELEVATION
PIER 3

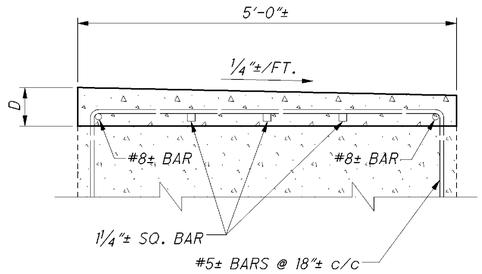


VIEW E-E

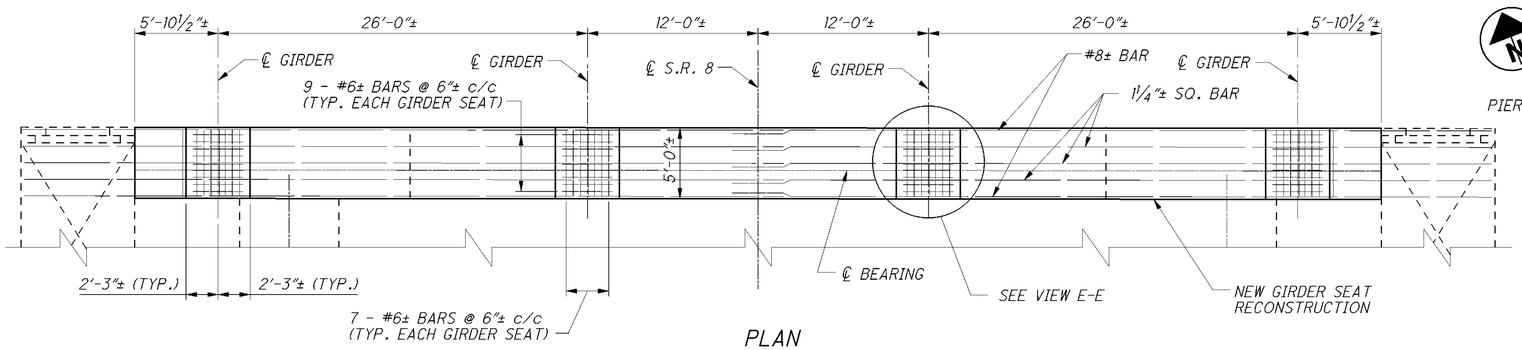
D = MINIMUM DEPTH OF REPAIR
(AT LEAST 3/4" BELOW TOP MAT OF REINFORCING STEEL)



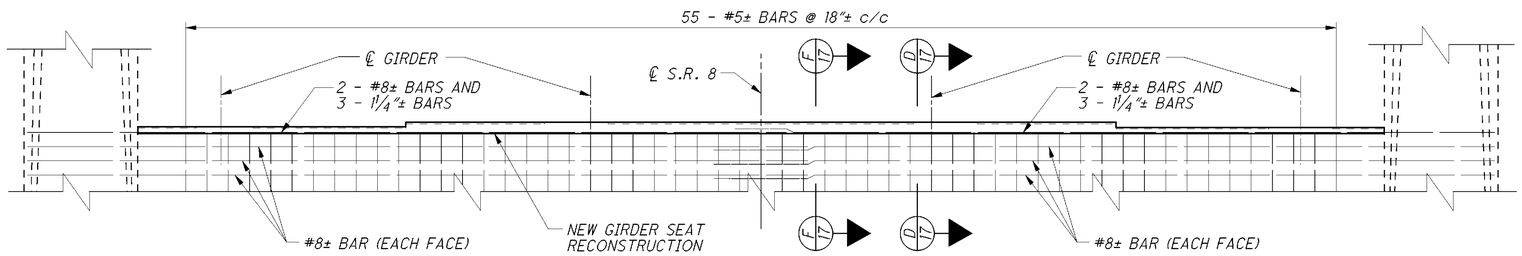
SECTION D-D
THROUGH SEAT AREA (TYP.)



SECTION F-F
BETWEEN SEATS



PLAN
PIER 6



ELEVATION
PIER 6

NOTES

MATERIALS *SHOWN ARE EXISTING UNLESS OTHERWISE NOTED.*

RICHLAND ENGINEERING LIMITED
29 NORTH PARK STREET
MANSFIELD, OHIO 44902

DESIGNED dht | DRAWN JLS | CHECKED JDB | REVIEWED DLR | DATE 3-23-09 | REVISED | STRUCTURE TITLE NUMBER T700369

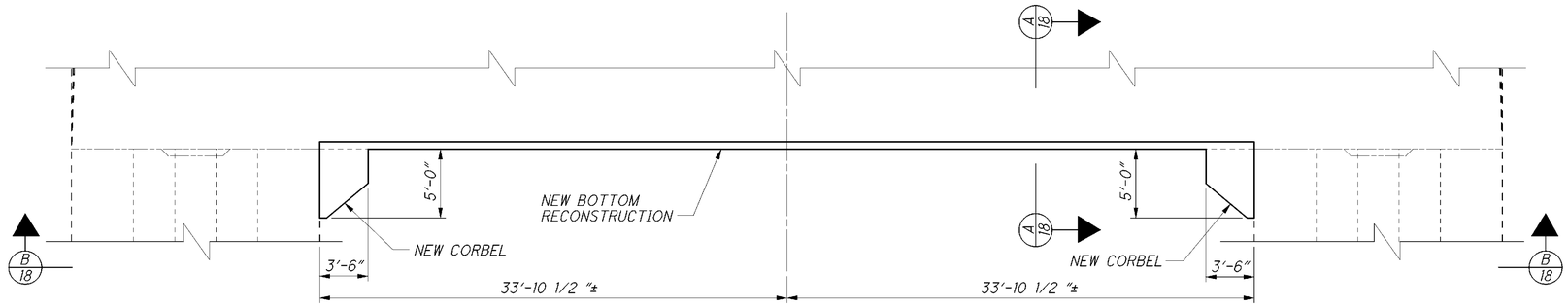
PIER REPAIRS - 1
BRIDGE NO. SUM-8-0199
OVER RAILROADS, LITTLE CUYAHOGA RIVER AND EAST NORTH STREET

SUM-8-1.99
PID No. 85246

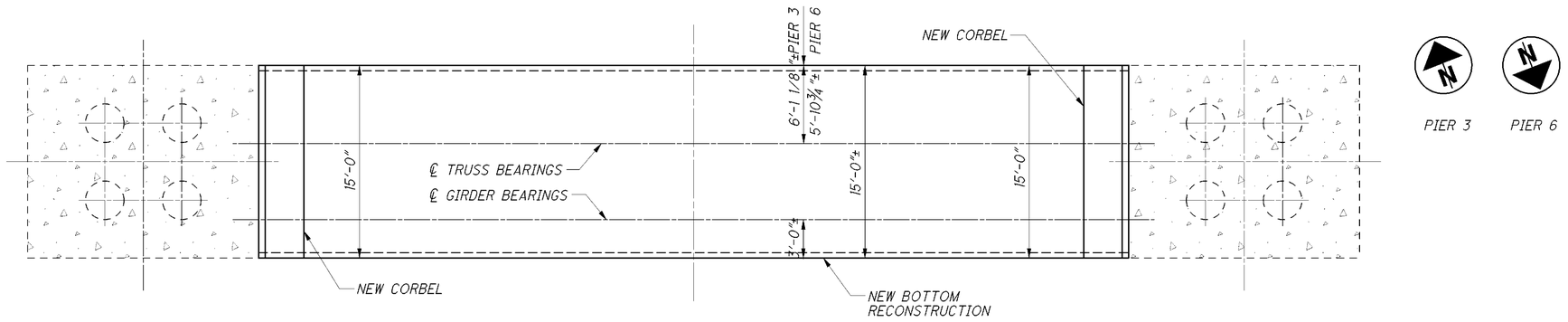
17 / 34

42
59

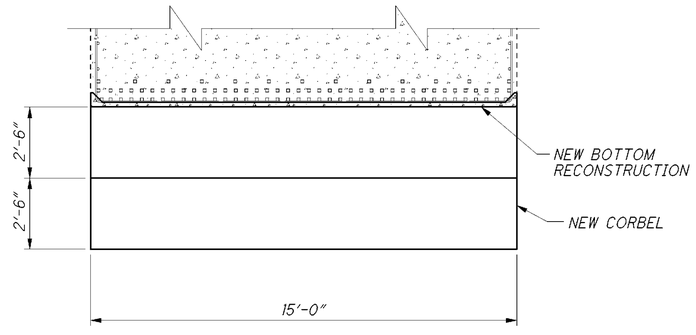
008_0195CP1006.DGN 3/24/09 JLS\KH\SCB



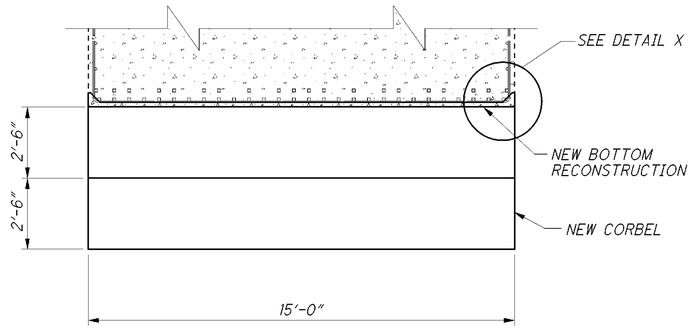
ELEVATION



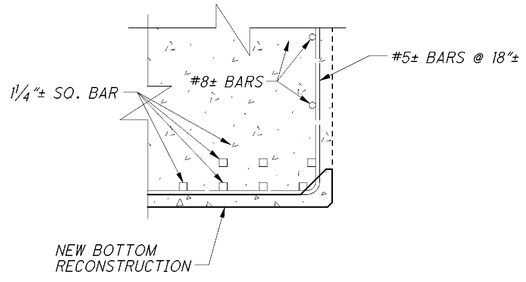
SECTION B-B



SECTION A-A
PIER 3



SECTION A-A
PIER 6



DETAIL X

NOTES

MATERIALS SHOWN ARE EXISTING UNLESS OTHERWISE NOTED.

CORBELS ARE INCLUDED WITH ITEM 511 - CLASS C CONCRETE, PIER (CORBELS) FOR PAYMENT.

BOTTOM RECONSTRUCTION IS INCLUDED WITH ITEM 520 - PNEUMATICALLY PLACED MORTAR FOR PAYMENT.

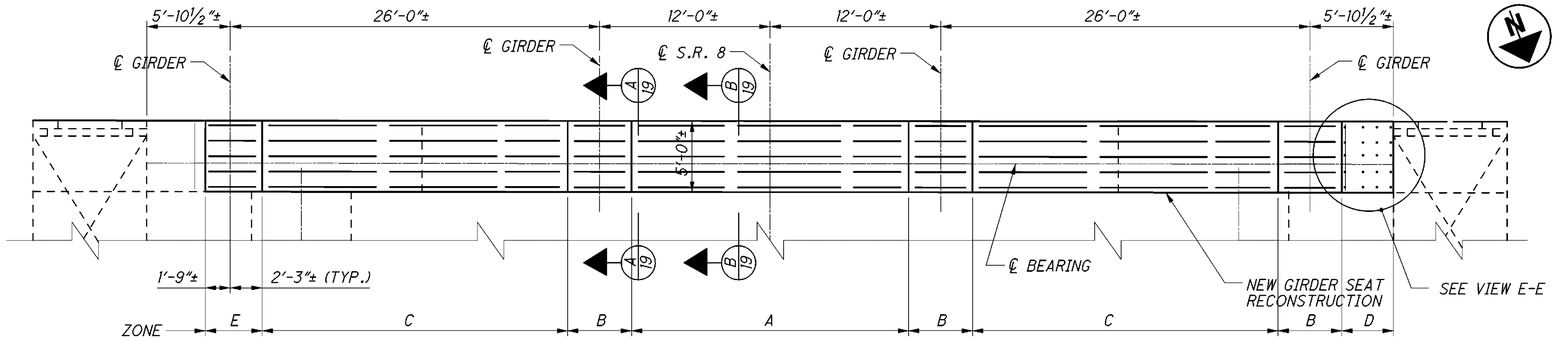
RICHLAND ENGINEERING LIMITED
29 NORTH PARK STREET
MANSFIELD, OHIO 44902

DESIGNED	DRAWN	REVIEWED	DATE
dht	JLS	DLR	3-23-09
CHECKED	REVISED	STRUCTURE TITLE NUMBER	
JDB		7700369	

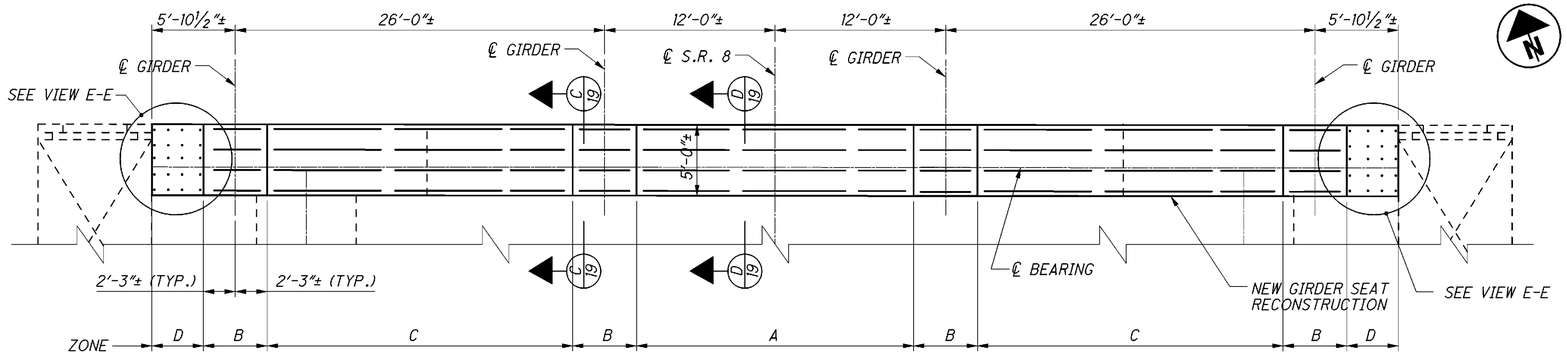
PIER REPAIR - 2
BRIDGE NO. SUM-8-0199
OVER RAILROADS, LITTLE CUYAHOGA RIVER AND EAST NORTH STREET

SUM-8-1.99
PID No. 85246

008_0195CP1007.DGN 3/24/09 JLS,KH



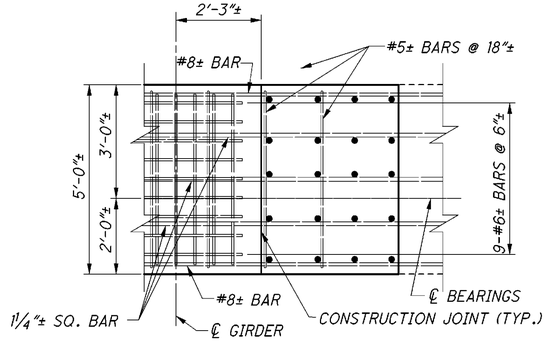
PIER 3 GIRDER SEAT



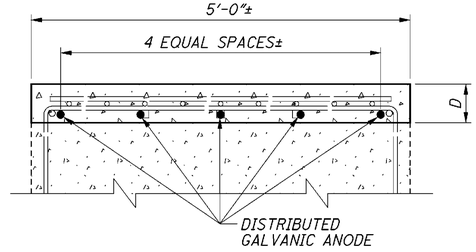
D = MINIMUM DEPTH OF REPAIR (AT LEAST 3/4" BELOW TOP MAT OF REINFORCING STEEL)

PIER 6 GIRDER SEAT

PIER	ZONE	WIDTH	LENGTH	#ROWS	SPACING	QUANTITY	ANODE LENGTH	TOTAL ANODES
3	A	5'-0"	19'-6"	2	16"	5	7'-6"	10
				1	16"	5	3'-9"	5
3	B	5'-0"	4'-6"	1	16"	5	3'-9"	15
3	C	5'-0"	21'-6"	2	16"	5	7'-6"	20
				1	16"	5	3'-9"	10
3	D	5'-0"	3'-7½	4	16"	5	PUCKS	20
3	E	5'-0"	4'-0"	1	16"	5	3'-9"	5
6	A	5'-0"	19'-6"	2	18"	4	7'-6"	8
				1	18"	4	3'-9"	4
6	B	5'-0"	4'-6"	1	18"	4	3'-9"	16
6	C	5'-0"	21'-6"	2	18"	4	7'-6"	16
				1	18"	4	3'-9"	8
6	D	5'-0"	3'-7½	4	18"	5	PUCKS	40

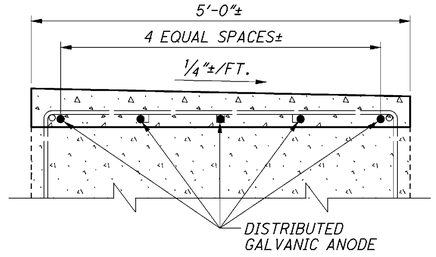


VIEW E-E



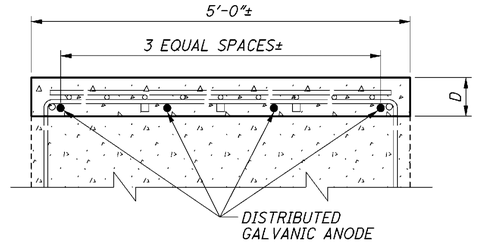
SECTION A-A

THROUGH SEAT AREA (TYP.)



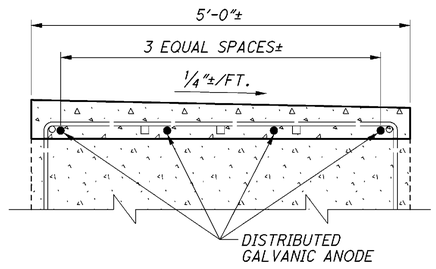
SECTION B-B

BETWEEN SEATS



SECTION C-C

THROUGH SEAT AREA (TYP.)



SECTION D-D

BETWEEN SEATS

NOTES

MATERIALS SHOWN ARE EXISTING UNLESS OTHERWISE NOTED.

RICHLAND ENGINEERING LIMITED
29 NORTH PARK STREET
MANSFIELD, OHIO 44902

DESIGNED dht | DRAWN JLS | CHECKED JDB | REVISED DLR | REVIEWED DLR | DATE 3-23-09 | STRUCTURE FILE NUMBER 7700369

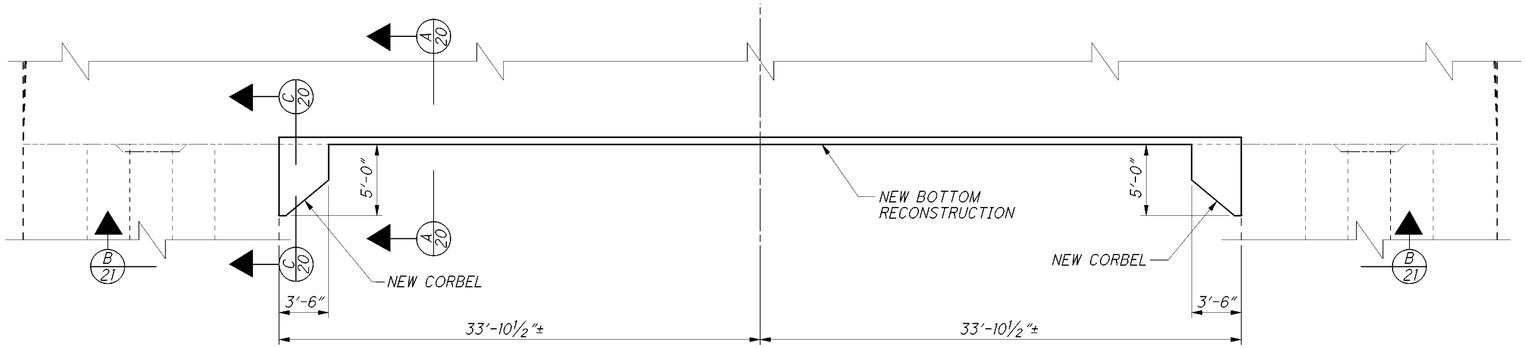
PIER REPAIRS - CATHODIC PROTECTION-1
BRIDGE NO. SUM-8-0199
OVER RAILROADS, LITTLE CUYAHOGA RIVER AND EAST NORTH STREET

SUM-8-1.99
PID No. 85246

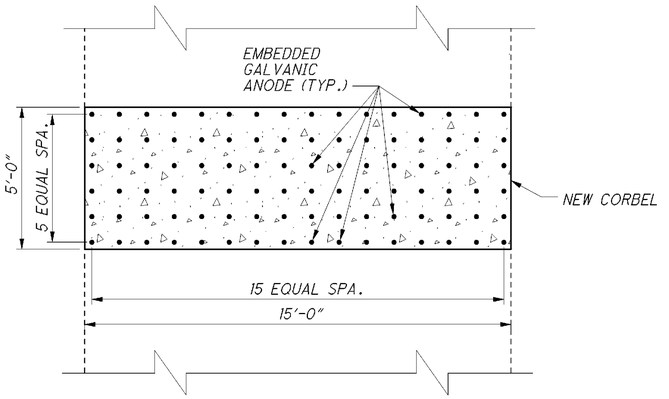
19 / 34

44
59

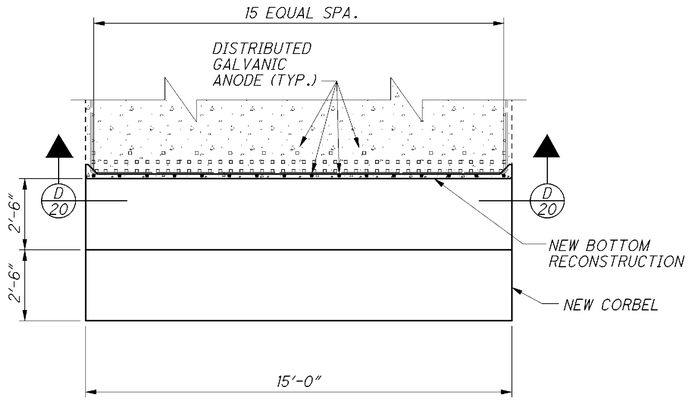
105079-4 /37/ ODOT/ SUM-8-1.99
008_0195CP1010.DGN 8//09 TWH



ELEVATION

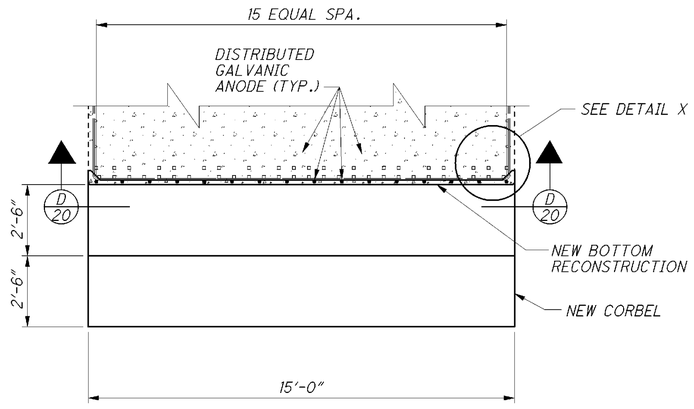


SECTION C-C



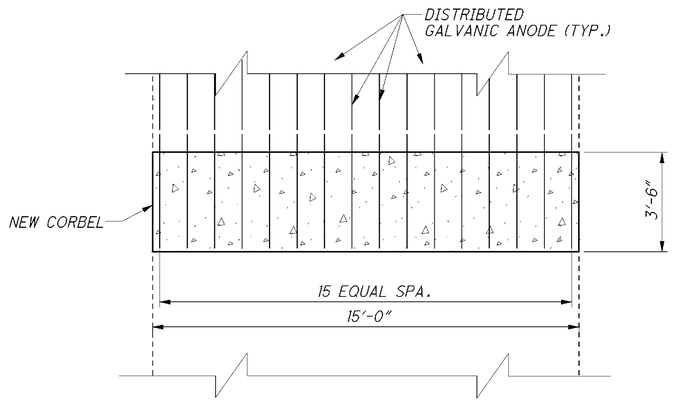
SECTION A-A

PIER 3

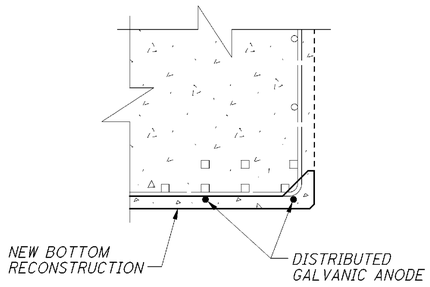


SECTION A-A

PIER 6



SECTION D-D



DETAIL X

NOTES

MATERIALS SHOWN ARE EXISTING UNLESS OTHERWISE NOTED.

CORBELS ARE INCLUDED WITH ITEM 511 - CLASS C CONCRETE, PIER (CORBELS) FOR PAYMENT.

BOTTOM RECONSTRUCTION IS INCLUDED WITH ITEM 520 - PNEUMATICALLY PLACED MORTAR FOR PAYMENT.

RICHLAND ENGINEERING LIMITED
29 NORTH PARK STREET
MANSFIELD, OHIO 44902

DESIGNED	DRAWN	REVIEWED	DATE
dht	JLS	DLR	3-23-09
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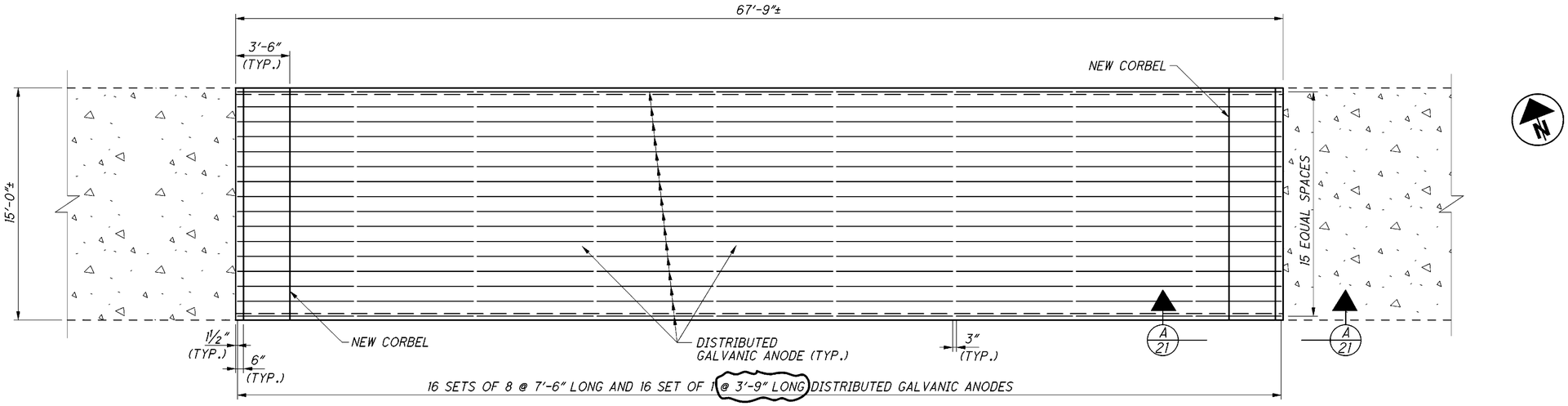
JDB		7700369	

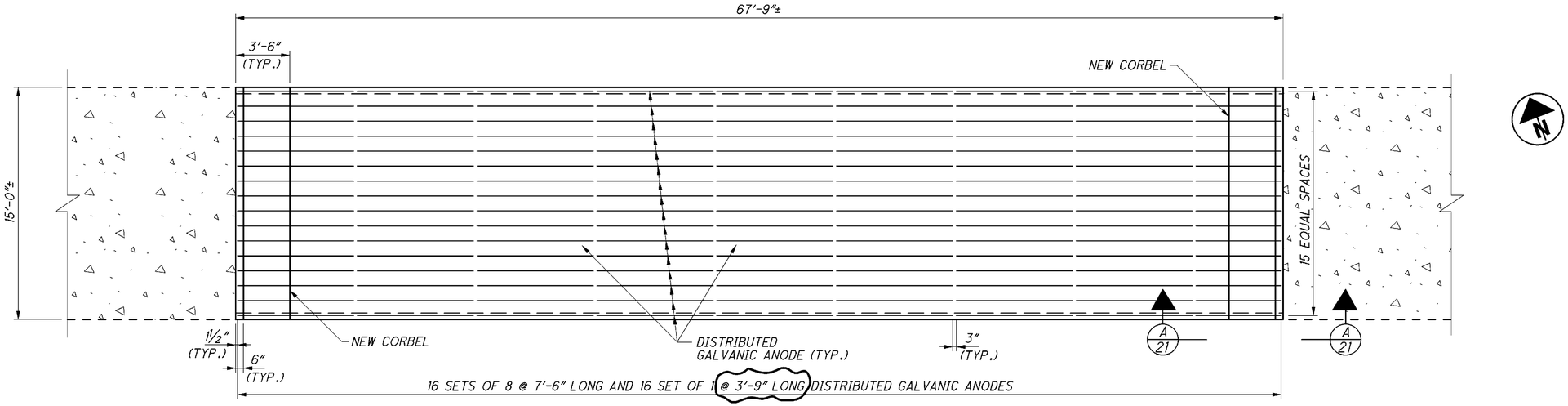
PIER REPAIR CATHODIC PROTECTION - 2
BRIDGE NO. SUM-8-0199
OVER RAILROADS, LITTLE CUYAHOGA RIVER AND EAST NORTH STREET

SUM-8-1.99
PID No. 85246

008_0195CPI01.DGN 3/24/09 JLS,RB,SCB,KH

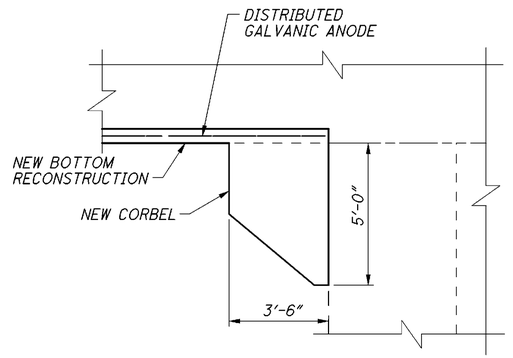


PIER 3 BOTTOM OF CAP



PIER 6 BOTTOM OF CAP

PIER	WIDTH	LENGTH	#ROWS	SPACING	QUANTITY	ANODE LENGTH	TOTAL ANODES
3	15'-0"	60'-9"	8	12"	16	7'-6"	128
			1	12"	16	3'-9"	16
6	15'-0"	60'-9"	8	12"	16	7'-6"	128
			1	12"	16	3'-9"	16



SECTION A-A

TYPICAL PIER 3 AND 6

NOTES

MATERIALS SHOWN ARE EXISTING UNLESS OTHERWISE NOTED.

BOTTOM RECONSTRUCTION DETAILS:
SEE SHEET 18/34 AND 20/34.

RICHLAND ENGINEERING LIMITED
29 NORTH PARK STREET
MANSFIELD, OHIO 44902

DESIGNED	DRAWN	REVIEWED	DATE
dht	SCB	DLR	3-23-09
CHECKED	REVISED	STRUCTURE FILE NUMBER	
JDB	DLR	7700369	

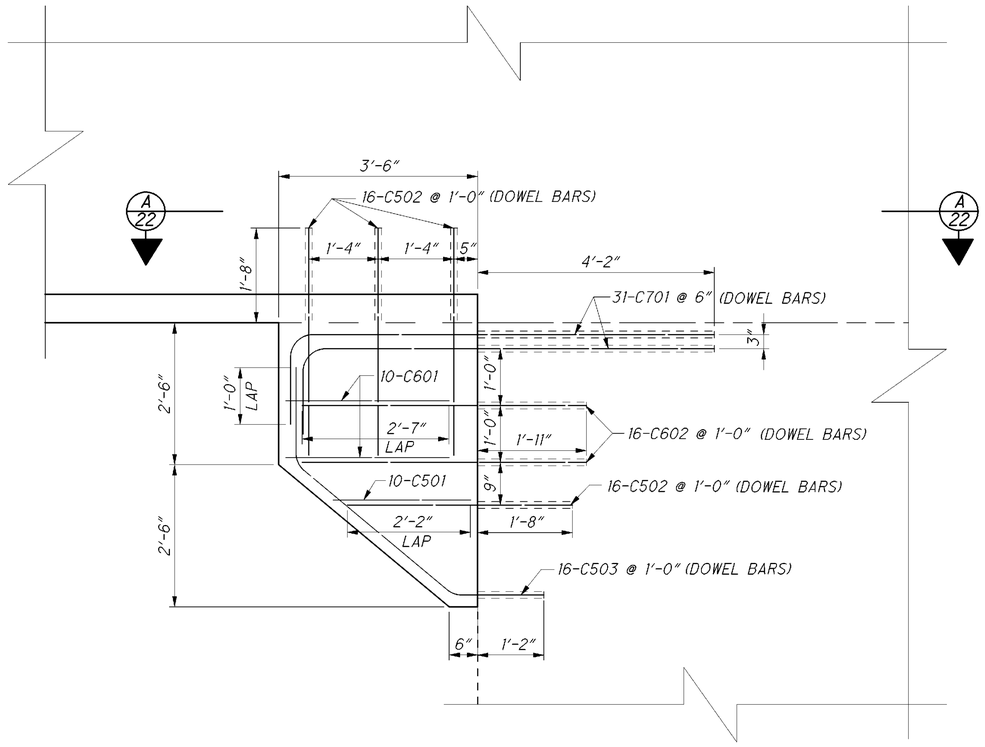
CATHODIC PROTECTION - 3
BRIDGE NO. SUM-8-0199
OVER RAILROADS, LITTLE CUYAHOGA RIVER AND EAST NORTH STREET

SUM-8-1.99
PID No. 85246

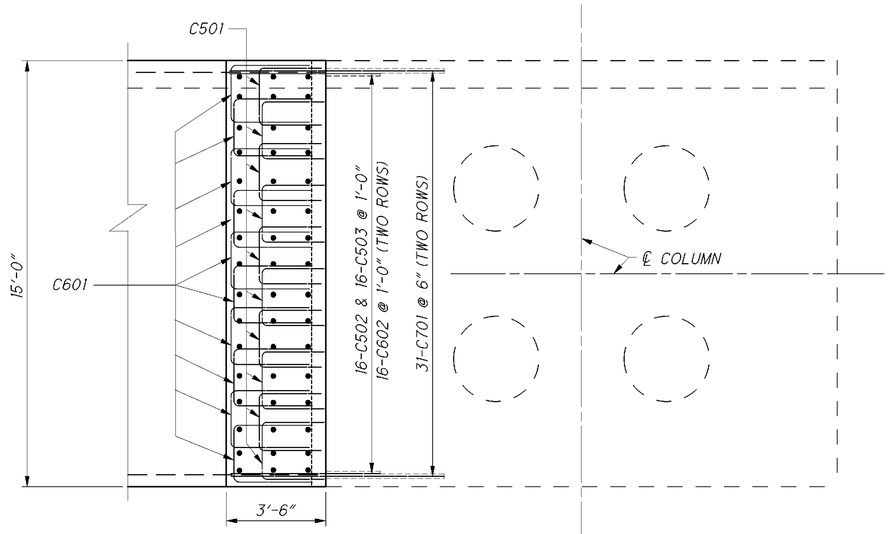
21/34

46/59

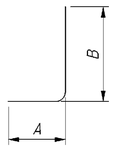
105079-4 /37/ ODOT/ SUM8-1.99
008_0195CPI012.DGN 3/24/09 SCB,KH



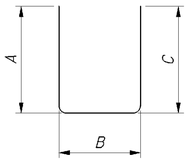
CORBEL ELEVATION



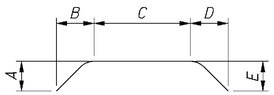
SECTION A-A



TYPE-1



TYPE-2



TYPE-20

REINFORCING STEEL LIST

CALCULATED TWH DATE 2/09
CHECKED dht DATE 2/09

MARK	NUMBER			LENGTH	WEIGHT	TYPE	DIMENSIONS						
	PIER 3	PIER 6	TOTAL				A	B	C	D	E	R	INC
C501	20	20	40	6'-1"	254	2	2'-2"	2'-0"	2'-2"				
C502	128	128	256	4'-0"	1069	STR.							
C503	32	32	64	6'-10"	456	20	1'-2"	1'-2"	3'-7"	1'-2"	1'-2"		
C601	40	40	80	7'-2"	862	2	2'-9"	2'-0"	2'-9"				
C602	64	64	128	5'-3"	1010	STR.							
C701	124	124	248	8'-8"	4395	1	1'-4"	7'-6"					
				SUB-TOTAL	8046								

NOTES

DOWEL HOLES: TO BE FILLED WITH NON-SHRINK, NON-METALLIC GROUT.

RICHLAND ENGINEERING LIMITED
29 NORTH PARK STREET
MANSFIELD, OHIO 44902

DESIGNED dht | DRAWN TWH | CHECKED JDB | REVIEWED DLR | DATE 3-23-09 | REVISED | STRUCTURE TITLE NUMBER 7700369

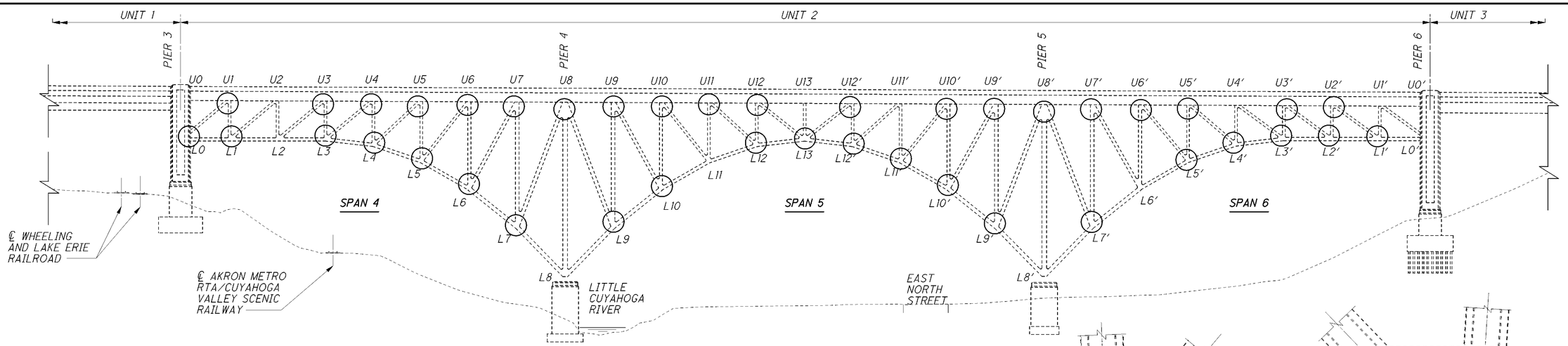
PIER CORBEL DETAILS
BRIDGE NO. SUM-8-0199
OVER RAILROADS, LITTLE CUYAHOGA RIVER AND EAST NORTH STREET

SUM-8-1.99
PID No. 85246

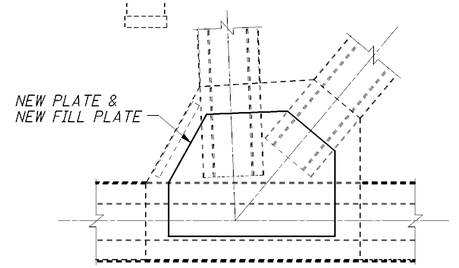
22 / 34

47 / 59

008_0195CPI008.DGN 3/24/09 TWH,KH

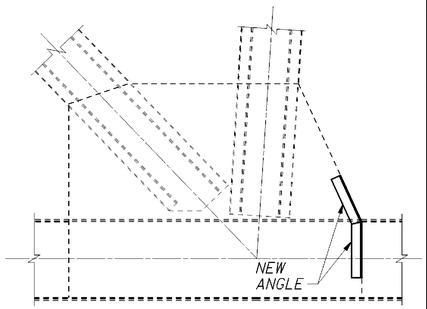


UNIT 2 ELEVATION



REPAIR TYPE ①

GUSSET PLATE
SHEAR REINFORCEMENT



REPAIR TYPE ②

REINFORCE BOWED PLATE EDGE

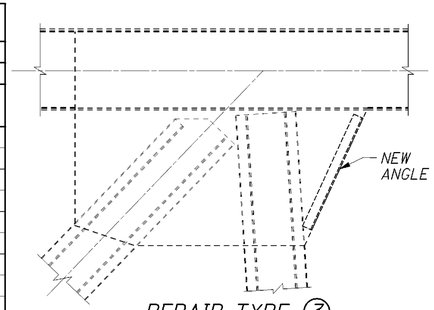
GUSSET PLATE REPAIR TABLE - NUMBER OF LOCATIONS FOR EACH REPAIR

LOWER CHORD

SPAN	PANEL POINT	WEST TRUSS REPAIR TYPE 1	2	3	4	5	SEE SHEET	EAST TRUSS REPAIR TYPE 1	2	3	4	5	SEE SHEET
PIER 3	L0	NO REPAIR							2				27I
4	L1		2	2			27D			2			27D
4	L2	NO REPAIR						NO REPAIR					
4	L3		2				27E		2				27E
4	L4	3					24,25	3					24,25
4	L5	NO REPAIR							2				27E
4	L6	NO REPAIR										1	27A
4	L7		2				27F	NO REPAIR					
PIER 4	L8	NO REPAIR						NO REPAIR					
5	L9		2				27F	NO REPAIR					
5	L10	NO REPAIR							2				27G
5	L11	NO REPAIR						NO REPAIR					
5	L12		2				27G		2				27G
5	L13	NO REPAIR							4				27H
5	L12′	NO REPAIR							4				27H
5	L11′					1	27B	NO REPAIR					
5	L10′		2				27G	NO REPAIR					
5	L9′		2				27F	NO REPAIR					
PIER 5	L8′	NO REPAIR						NO REPAIR					
6	L7′		2				27F	NO REPAIR					
6	L6′	NO REPAIR						NO REPAIR					
6	L5′		2				27E					1	27B
6	L4′	3					26,27	3					26,27
6	L3′		2				27E		2				27E
6	L2′		2				27I	NO REPAIR					
6	L1′			2			27D			2			27D
PIER 6	L0′	NO REPAIR						NO REPAIR					

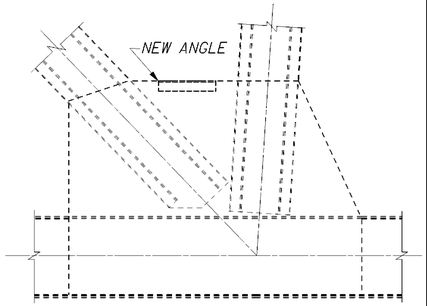
UPPER CHORD

SPAN	PANEL POINT	WEST TRUSS REPAIR TYPE 1	2	3	4	5	SEE SHEET	EAST TRUSS REPAIR TYPE 1	2	3	4	5	SEE SHEET
PIER 3	U0	NO REPAIR						NO REPAIR					
4	U1	NO REPAIR							2				27J
4	U2	NO REPAIR						NO REPAIR					
4	U3			2			27J			2			27J
4	U4		2				27K	NO REPAIR					
4	U5			2			27K			2			27K
4	U6			2			27L			2			27L
4	U7			2			27L			2			27L
PIER 4	U8			4			27M			4			27M
5	U9			2			27N			2			27N
5	U10			2			27N			2			27N
5	U11		2				27P	NO REPAIR					
5	U12				2		27P				2		27P
5	U13	NO REPAIR						NO REPAIR					
5	U12′				2		27P				2		27P
5	U11′	NO REPAIR						NO REPAIR					
5	U10′			2			27N			2			27N
5	U9′			2			27N			2			27N
PIER 5	U8′			4			27M			4			27M
6	U7′			2			27L			2			27L
6	U6′			2			27L			2			27L
6	U5′			2			27K			2			27K
6	U4′	NO REPAIR						NO REPAIR					
6	U3′			2			27J			2			27J
6	U2′	NO REPAIR						2					27R
6	U1′	NO REPAIR						NO REPAIR					
PIER 6	U0′	NO REPAIR						NO REPAIR					



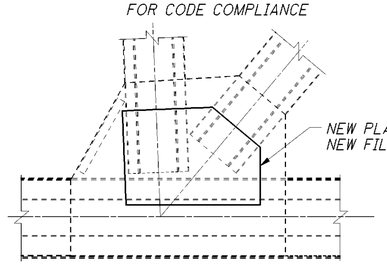
REPAIR TYPE ③

REINFORCE PLATE EDGE
FOR CODE COMPLIANCE



REPAIR TYPE ④

REINFORCE PLATE EDGE
FOR CODE COMPLIANCE



REPAIR TYPE ⑤

REINFORCE BOWED
PLATE INTERIOR

NOTES

RIVETS REMOVED: PAYMENT SHALL BE MADE UNDER ITEM 202 - REMOVAL, MISC.: RIVET.

NEW MATERIAL: PAYMENT FOR REPAIR TYPES 1 & 5 SHALL BE MADE UNDER ITEM 513 - STRUCTURAL, STEEL MISC.: TRUSS GUSSET REPAIR ON SHEET 4/34. PAYMENT FOR REPAIR TYPES 2,3, & 4 SHALL BE MADE UNDER ITEM 513 - STRUCTURAL STEEL, MISC.: TRUSS GUSSET REPAIR, TYPES 2,3, & 4 ON SHEET 27C/34.

RICHLAND ENGINEERING LIMITED
29 NORTH PARK STREET
MANSFIELD, OHIO 44902

DESIGNED DLR | DRAWN JLS | REVIEWED DAP | DATE 6-18-09
CHECKED ALP | REVISED | STRUCTURE FILE NUMBER 7700369

GENERAL ELEVATION
BRIDGE NO. SUM-8-0199
OVER RAILROADS, LITTLE CUYAHOGA RIVER AND EAST NORTH STREET

SUM-8-1.99
PID NO. 85246

22A / 34

47A
59

008_0195CMD006.DGN 6/25/09 RB,SCB,TWH,JLS

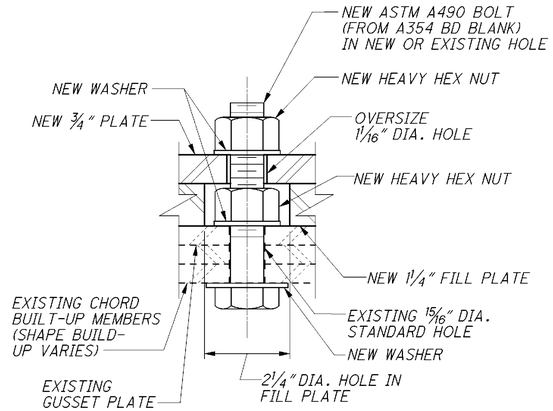
REPAIR INSTALLATION SEQUENCE

A PRE-INSTALLATION MEETING SHALL BE HELD PRIOR TO ANY WORK ON THE TRUSS GUSSET REPAIRS. ATTENDANCE AT THE PRE-INSTALLATION MEETING SHALL BE MANDATORY FOR THE ODOT PROJECT ENGINEER, IRON WORKERS (FOREMAN AND CREW), AND THE CONTRACTOR'S BRIDGE FOREMAN.

INSTALL EACH GUSSET PLATE REPAIR (SEE NEW DOUBLE NUT CONNECTION DETAIL ON THIS SHEET) AT A TRUSS NODE (ONE REPAIR PER NODE AT ANY TIME) USING THE FOLLOWING SEQUENCE:

1. PREPARE FAYING SURFACES IN ACCORDANCE WITH "STEEL SURFACE PREPARATION" REQUIREMENTS ON SHEET 4/34.
2. REMOVE A SINGLE RIVET.
3. IN THE OPEN RIVET HOLE, INSTALL A NEW PROPERLY TENSIONED LONG A490 BOLT WITH GRIP SUFFICIENT TO ACCOMMODATE THE EXISTING GUSSETS, ANGLES, CHORD MEMBERS AND NEW FILL AND GUSSET PLATES.
4. REPEAT STEPS "2" AND "3" FOR ALL EXISTING RIVETS TO BE REMOVED TO CONNECT THE NEW GUSSET AND FILL PLATES. (NEW BOLT MUST BE INSTALLED PRIOR TO REMOVAL OF THE NEXT EXISTING RIVET.)
5. CREATE A TEMPLATE OF THE NEW GUSSET PLATE, LOCATING ALL NEW BOLTS IN EXISTING HOLES ON THE EXISTING GUSSET PLATE.
6. USING THE TEMPLATE, FABRICATE THE NEW GUSSET AND FILL PLATES.
7. ERECT NEW FILL PLATE AND SECURE TO EXISTING GUSSET PLATE WITH TACK WELDS. (SEE DETAIL SHEETS FOR PERMITTED TACK WELD LOCATIONS.)
8. ERECT NEW GUSSET PLATE AND SECURE USING SECOND NUT AND WASHER ON BOLTS.
9. REMOVE LIFTING TABS AND TACK WELDS AND GRIND SMOOTH.
10. TIGHTEN ALL SECOND NUTS TO PROPER TENSION, WORKING OUTWARD FROM CENTER OF GUSSET PLATE. NUTS SHALL BE CHECKED WITH A CALIBRATED TORQUE WRENCH AFTER EVERY FIFTH BOLT IS TIGHTENED, AND RETIGHTEN IF NECESSARY. (SEQUENTIAL TIGHTENING OF BOLTS MAY LOOSEN BOLTS TIGHTENED EARLIER.) RETIGHTENING SHALL NOT BE CONSIDERED REUSE.
11. FIELD DRILL ONE NEW STANDARD SIZE BOLT HOLE FOR NEW BOLT THROUGH THE NEW GUSSET PLATE, NEW FILL PLATE AND EXISTING GUSSETS, ANGLES AND CHORD MEMBERS.
12. INSTALL PROPERLY TENSIONED BOLT AT THE NEW HOLE LOCATION.
13. REPEAT STEPS "10" AND "11" AS NEEDED FOR EACH OF THE NEW BOLT HOLES TO BE FIELD DRILLED IN EXISTING MATERIAL. (NEW BOLT MUST BE INSTALLED PRIOR TO DRILLING THE NEXT HOLE.)
14. RECHECK EACH AND EVERY BOLT IN THE NEW GUSSET PLATE USING A CALIBRATED TORQUE WRENCH. RETIGHTEN IF NECESSARY.
15. PAINT AREAS OF EXPOSED STEEL ON THE EXISTING GUSSET PLATE.

PATENT PENDING



NEW PLATE DOUBLE NUT CONNECTION DETAIL

BOLT LEGEND

- EXISTING RIVET OR BOLT TO REMAIN IN PLACE.
- FIELD DRILL EXISTING MATERIAL FOR NEW CONNECTION BOLT. NEW PLATE TO EXISTING MATERIAL.
- REMOVE EXISTING RIVET OR BOLT FOR NEW BOLTED CONNECTION. NEW PLATE TO EXISTING MATERIAL.

NOTES

RIVETS REMOVED: PAYMENT SHALL BE MADE UNDER ITEM 202 - REMOVAL, MISC.: RIVET.

NEW MATERIAL: PAYMENT SHALL BE MADE UNDER ITEM 513 - STRUCTURAL STEEL, MISC.: TRUSS GUSSET REPAIR.

A490 BOLTS: SHALL CONFORM TO THE MATERIAL REQUIREMENTS OF ITEM 513 - STRUCTURAL STEEL, MISC.: TRUSS GUSSET REPAIR ON SHEET 4/34.

RICHLAND ENGINEERING LIMITED
29 NORTH PARK STREET
MANSFIELD, OHIO 44902

DESIGNED	DRAWN	REVIEWED	DATE
dht	JLS	DLR	7-2-09
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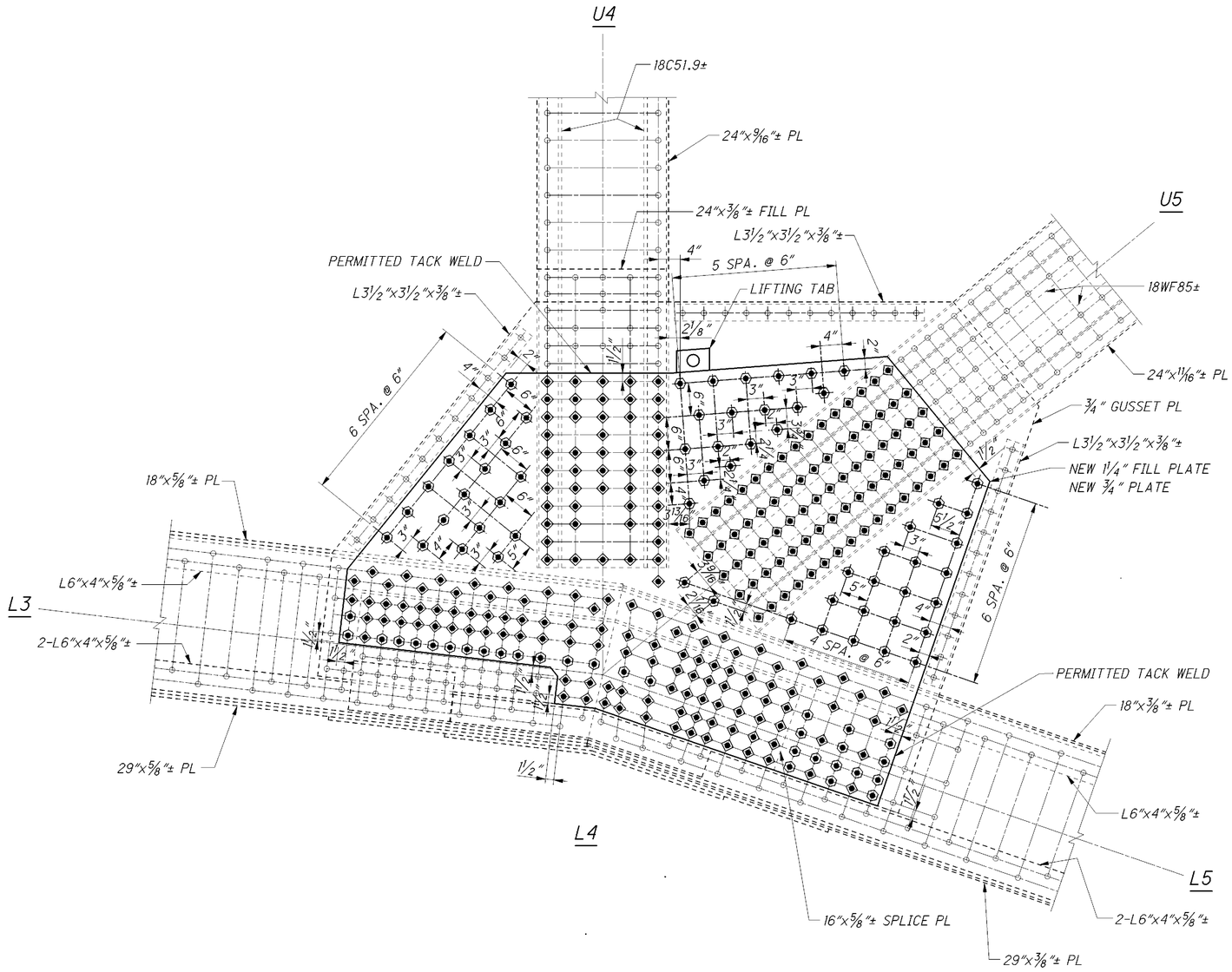
KAK		7700369	

REPAIR INSTALLATION SEQUENCE
BRIDGE NO. SUM-8-0199
OVER RAILROADS, LITTLE CUYAHOGA RIVER AND EAST NORTH STREET

SUM-8-1.99
PID No. 85246



L4 EAST OUTSIDE GUSSET PLATE (SHOWN)

L4 WEST OUTSIDE GUSSET PLATE (OPPOSITE HAND)

NOTES

MATERIALS SHOWN ARE EXISTING UNLESS OTHERWISE NOTED.

GENERAL NOTES: SEE SHEET 4/34.

NEW BOLTS: ASTM A490 SHALL CONFORM TO THE MATERIAL REQUIREMENTS OF ITEM 513 - STRUCTURAL STEEL, MISC.: TRUSS GUSSET REPAIR ON SHEET 4/34.

REPAIR INSTALLATION SEQUENCE: SEE SHEET 23/34.

NEW DOUBLE NUT CONNECTION DETAIL: SEE SHEET 23/34.

BOLT LEGEND: SEE SHEET 23/34.

LIFTING TABS: PLACEMENT AND AMOUNT OF TABS SHALL BE DECIDED BY THE CONTRACTOR.

RICHLAND ENGINEERING LIMITED
29 NORTH PARK STREET
MANSFIELD, OHIO 44902

DESIGNED dht | DRAWN KH | REVIEWED DLR | DATE 3-23-09
CHECKED KAK | REVISED | STRUCTURE TITLE NUMBER 7700369

SPAN 4 - L4 EAST & WEST TRUSS OUTSIDE GUSSET PLATE REPAIR
BRIDGE NO. SUM-8-0199
OVER RAILROADS, LITTLE CUYAHOGA RIVER AND EAST NORTH STREET

SUM-8-1.99
PID No. 85246

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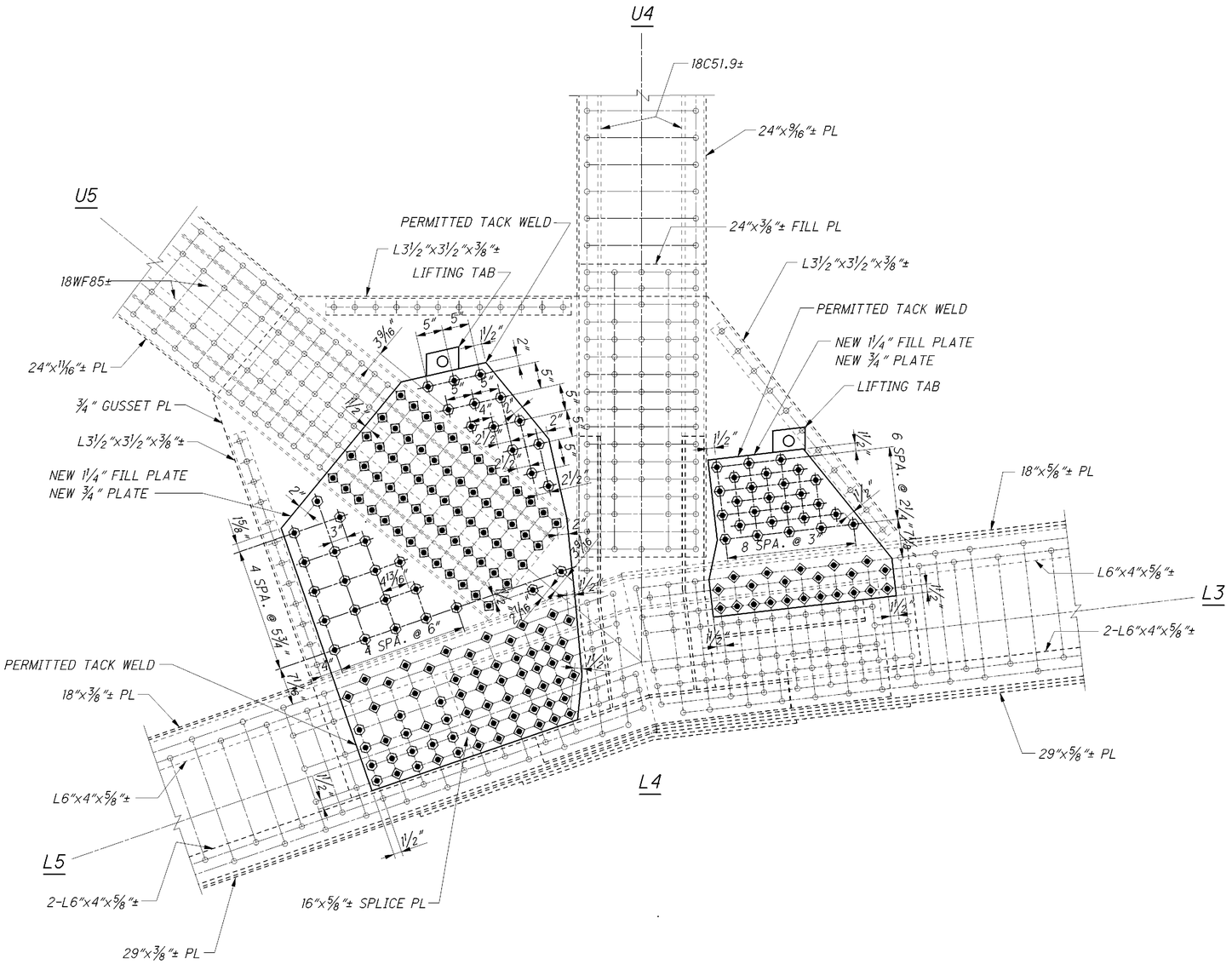


L4 EAST INSIDE GUSSET PLATE (SHOWN)

L4 WEST INSIDE GUSSET PLATE (OPPOSITE HAND)

NOTES

MATERIALS SHOWN ARE EXISTING UNLESS OTHERWISE NOTED.

GENERAL NOTES: SEE SHEET 4/34.

NEW BOLTS: ASTM A490 SHALL CONFORM TO THE MATERIAL REQUIREMENTS OF ITEM 513 - STRUCTURAL STEEL, MISC.: TRUSS GUSSET REPAIR ON SHEET 4/34.

REPAIR INSTALLATION SEQUENCE: SEE SHEET 23/34.

NEW DOUBLE NUT CONNECTION DETAIL: SEE SHEET 23/34.

BOLT LEGEND: SEE SHEET 23/34.

LIFTING TABS: PLACEMENT AND AMOUNT OF TABS SHALL BE DECIDED BY THE CONTRACTOR.

RICHLAND ENGINEERING LIMITED
29 NORTH PARK STREET
MANSFIELD, OHIO 44902

REVIEWED DLR DATE 3-23-09
STRUCTURE TITLE NUMBER 7700369

DRAWN KH REVISED
DESIGNED dht CHECKED KAK

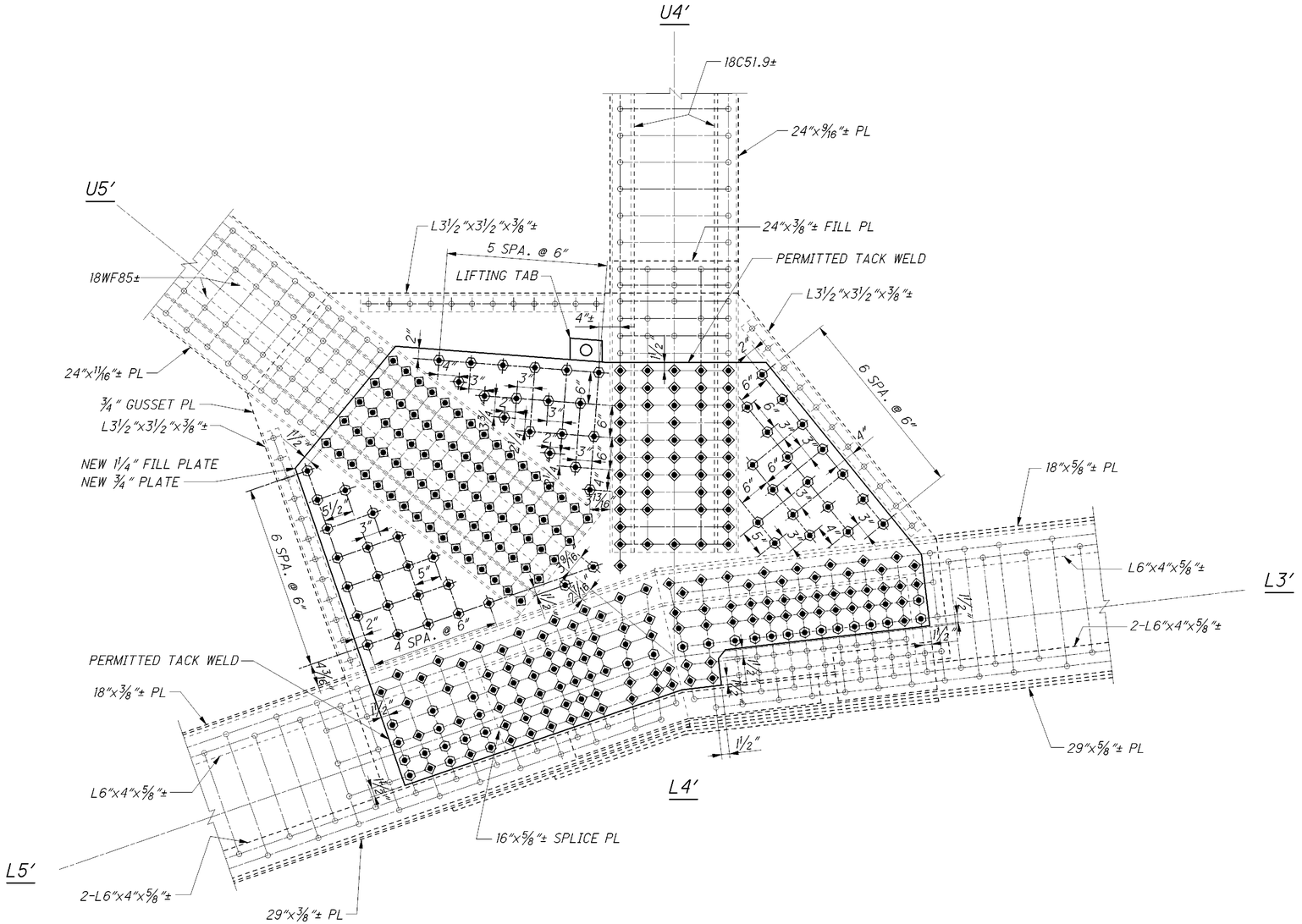
SPAN 4 - L4 EAST & WEST TRUSS INSIDE GUSSET PLATE REPAIR
BRIDGE NO. SUM-8-0199
OVER RAILROADS, LITTLE CUYAHOGA RIVER AND EAST NORTH STREET

SUM-8-1.99
PID No. 85246

25/34

50/59

008_0195CSD002.DGN 3/25/09 TWH,KH



L4′ EAST OUTSIDE GUSSET PLATE (SHOWN)

L4′ WEST OUTSIDE GUSSET PLATE (OPPOSITE HAND)

NOTES

MATERIALS SHOWN ARE EXISTING UNLESS OTHERWISE NOTED.

GENERAL NOTES: SEE SHEET 4/34.

NEW BOLTS: ASTM A490 SHALL CONFORM TO THE MATERIAL REQUIREMENTS OF ITEM 513 - STRUCTURAL STEEL, MISC.: TRUSS GUSSET REPAIR ON SHEET 4/34.

REPAIR INSTALLATION SEQUENCE: SEE SHEET 23/34.

NEW DOUBLE NUT CONNECTION DETAIL: SEE SHEET 23/34.

BOLT LEGEND: SEE SHEET 23/34.

LIFTING TABS: PLACEMENT AND AMOUNT OF TABS SHALL BE DECIDED BY THE CONTRACTOR.

RICHLAND ENGINEERING LIMITED
29 NORTH PARK STREET
MANSFIELD, OHIO 44902

DESIGNED dht | DRAWN TWH | REVIEWED DLR | DATE 3-23-09
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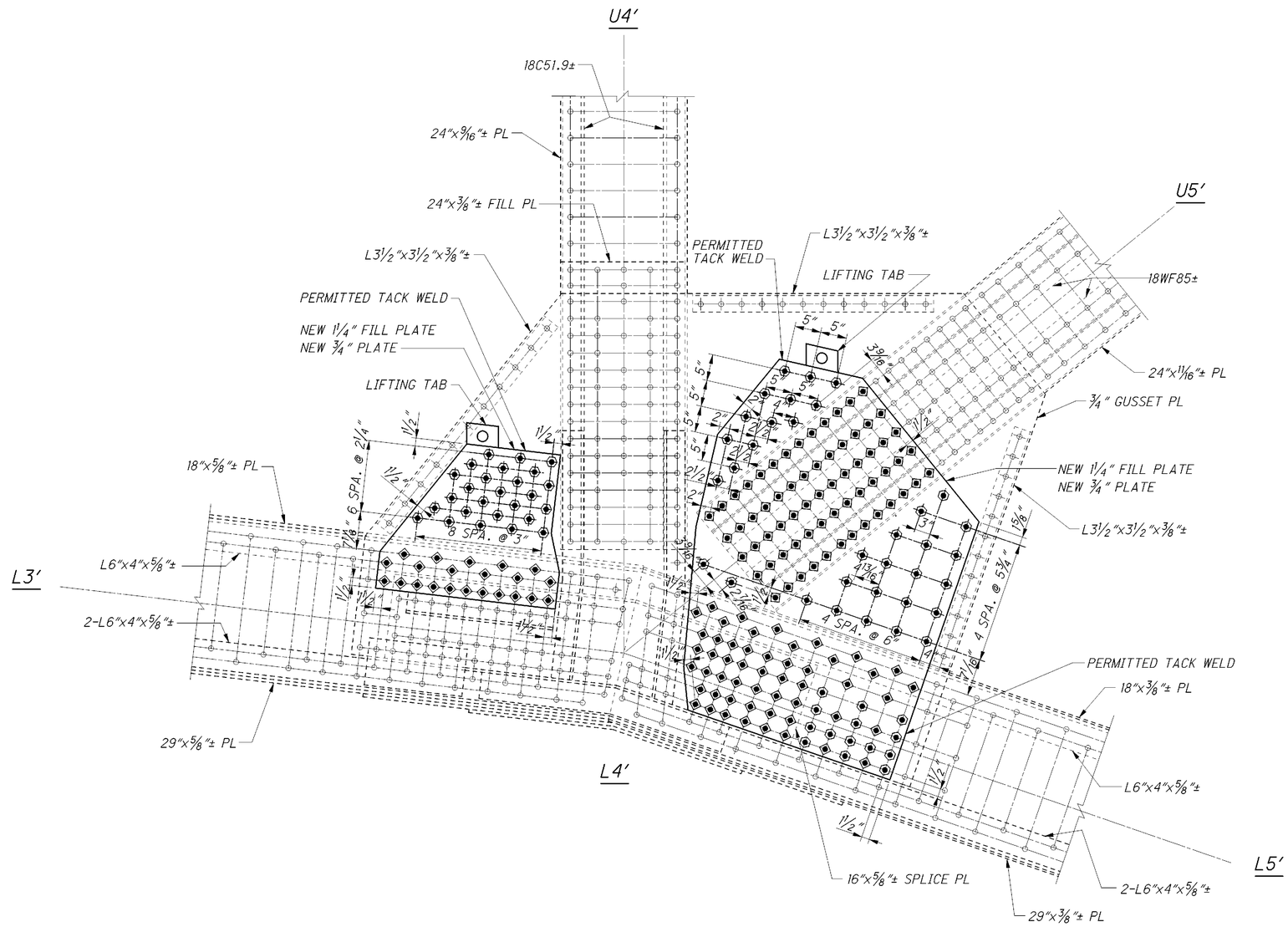
SPAN 6 - L4′ EAST & WEST TRUSS OUTSIDE GUSSET PLATE REPAIR
BRIDGE NO. SUM-8-0199
OVER RAILROADS, LITTLE CUYAHOGA RIVER AND EAST NORTH STREET

SUM-8-1.99
PID No. 85246

008_0195CSD005.DGN 3/25/09 TWH:KH



L4′ EAST INSIDE GUSSET PLATE (SHOWN)

L4′ WEST INSIDE GUSSET PLATE (OPPOSITE HAND)

NOTES

MATERIALS SHOWN ARE EXISTING UNLESS OTHERWISE NOTED.

GENERAL NOTES: SEE SHEET 4/34.

NEW BOLTS: ASTM A490 SHALL CONFORM TO THE MATERIAL REQUIREMENTS OF ITEM 513 - STRUCTURAL STEEL, MISC.: TRUSS GUSSET REPAIR ON SHEET 4/34.

REPAIR INSTALLATION SEQUENCE: SEE SHEET 23/34.

NEW DOUBLE NUT CONNECTION DETAIL: SEE SHEET 23/34.

BOLT LEGEND: SEE SHEET 23/34.

LIFTING TABS: PLACEMENT AND AMOUNT OF TABS SHALL BE DECIDED BY THE CONTRACTOR.

RICHLAND ENGINEERING LIMITED
29 NORTH PARK STREET
MANSFIELD, OHIO 44902

DESIGNED dht | DRAWN TWH | REVIEWED DLR | DATE 3-23-09

CHECKED KAK | REVISED | STRUCTURE FILE NUMBER 7700369

SPAN 6 - L4′ EAST & WEST TRUSS INSIDE GUSSET PLATE REPAIR

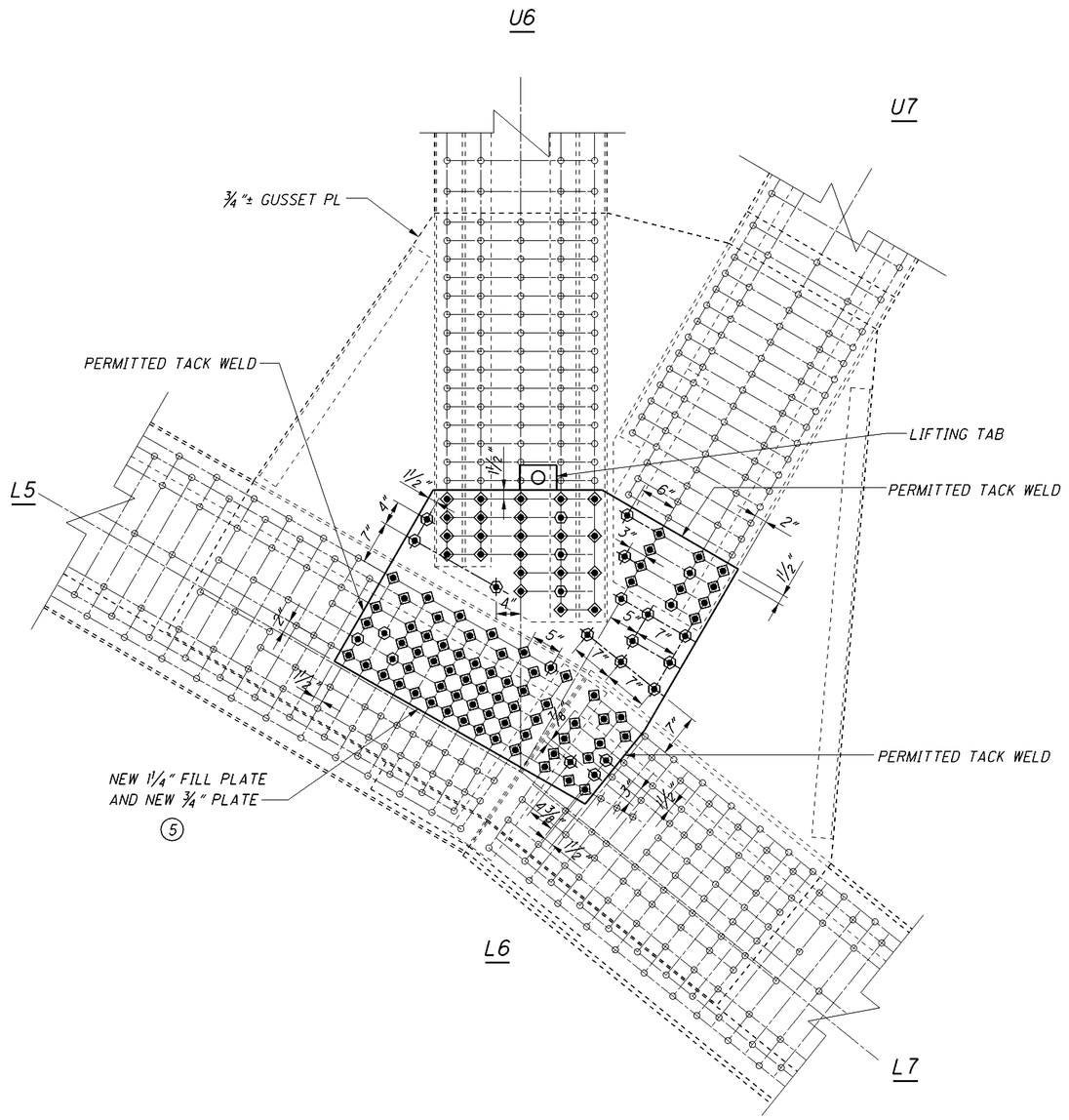
BRIDGE NO. SUM-8-0199

OVER RAILROADS, LITTLE CUYAHOGA RIVER AND EAST NORTH STREET

SUM-8-1.99

PID No. 85246

008_0195CS003.DGN 3/25/09 TWH,KH



L6 EAST OUTSIDE GUSSET PLATE

LEGEND

(1) REPAIR TYPE

NOTES

MATERIALS SHOWN ARE EXISTING UNLESS OTHERWISE NOTED.

GENERAL NOTES: SEE ITEM 513 - STRUCTURAL STEEL, MISC.: TRUSS GUSSET REPAIR ON SHEET 4/34.

RIVETS REMOVED: PAYMENT SHALL BE MADE UNDER ITEM 202 - REMOVAL, MISC.: RIVET ON SHEET 3/34.

NEW MATERIAL: PAYMENT SHALL BE MADE UNDER ITEM 513 - STRUCTURAL STEEL, MISC.: TRUSS GUSSET REPAIR ON SHEET 4/34.

NEW BOLTS: ASTM A490 SHALL CONFORM TO THE MATERIAL REQUIREMENTS OF ITEM 513 - STRUCTURAL STEEL, MISC.: TRUSS GUSSET REPAIR ON SHEET 4/34.

REPAIR INSTALLATION SEQUENCE: SEE SHEET 23/34.

NEW DOUBLE NUT CONNECTION DETAIL: SEE SHEET 23/34.

BOLT LEGEND: SEE SHEET 23/34.

LIFTING TABS: PLACEMENT AND AMOUNT OF TABS SHALL BE DECIDED BY THE CONTRACTOR.

RICHLAND ENGINEERING LIMITED
29 NORTH PARK STREET
MANSFIELD, OHIO 44902

DESIGNED	DRAWN	REVIEWED	DATE
ALP	JLS	DAP	6-18-09
CHECKED	REVISED	STRUCTURE FILE NUMBER	
DLR		7700369	

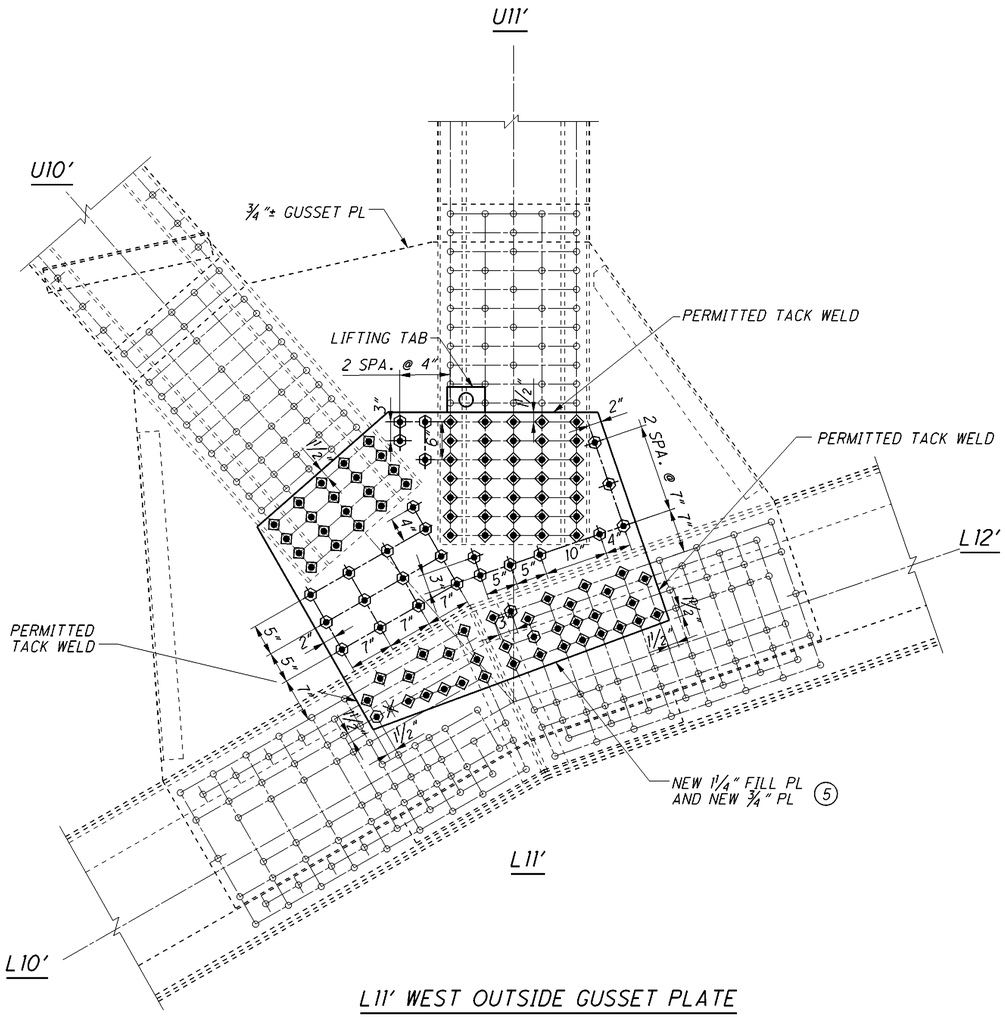
L6 EAST TRUSS OUTSIDE GUSSET PLATE REPAIR
BRIDGE NO. SUM-8-0199
OVER RAILROADS, LITTLE CUYAHOGA RIVER AND EAST NORTH STREET

SUM-8-1.99
PID No. 85246

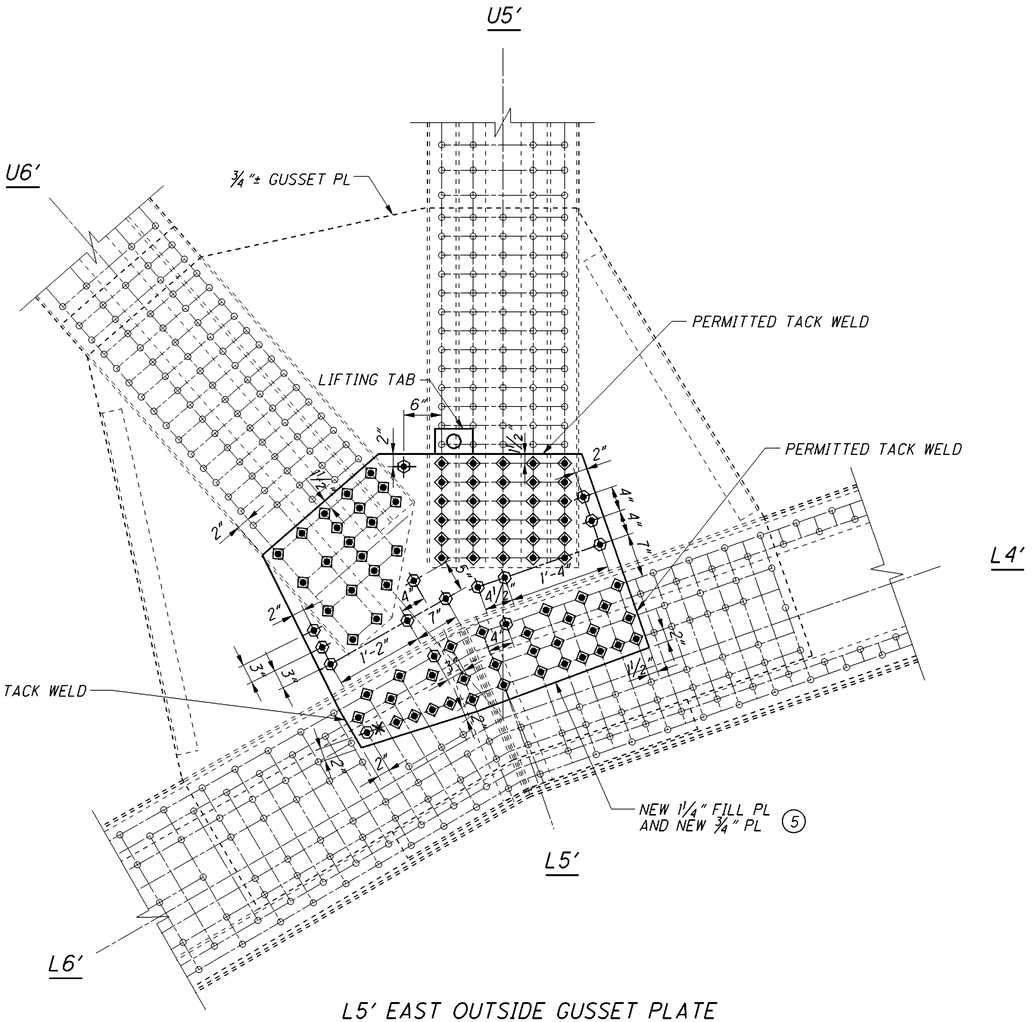
27A/34

52A/59

008_0195CSD015.DGN 6/17/09 JLS.TWH



L11' WEST OUTSIDE GUSSET PLATE



L5' EAST OUTSIDE GUSSET PLATE

LEGEND

(1) REPAIR TYPE

NOTES

MATERIALS SHOWN ARE EXISTING UNLESS OTHERWISE NOTED.

GENERAL NOTES: SEE ITEM 513 - STRUCTURAL STEEL, MISC.: TRUSS GUSSET REPAIR ON SHEET 4/34.

RIVETS REMOVED: PAYMENT SHALL BE MADE UNDER ITEM 202 - REMOVAL, MISC.: RIVET ON SHEET 3/34.

NEW MATERIAL: PAYMENT SHALL BE MADE UNDER ITEM 513 - STRUCTURAL STEEL, MISC.: TRUSS GUSSET REPAIR ON SHEET 4/34.

NEW BOLTS: ASTM A490 SHALL CONFORM TO THE MATERIAL REQUIREMENTS OF ITEM 513 - STRUCTURAL STEEL, MISC.: TRUSS GUSSET REPAIR ON SHEET 4/34.

REPAIR INSTALLATION SEQUENCE: SEE SHEET 23/34.

NEW DOUBLE NUT CONNECTION DETAIL: SEE SHEET 23/34.

BOLT LEGEND: SEE SHEET 23/34.

LIFTING TABS: PLACEMENT AND AMOUNT OF TABS SHALL BE DECIDED BY THE CONTRACTOR.

008_0195CSD017.DGN 6/18/09 KH,JLS,TWH

RICHLAND ENGINEERING LIMITED
29 NORTH PARK STREET
MANSFIELD, OHIO 44902

DESIGNED	DRAWN	REVIEWED	DATE
ALP	RB	DAP	6-18-09
CHECKED	REVISED	STRUCTURE FILE NUMBER	
DLR		7700369	

L11' WEST & L5' EAST TRUSS OUTSIDE GUSSET PLATE REPAIR
BRIDGE NO. SUM-8-0199
OVER RAILROADS, LITTLE CUYAHOGA RIVER AND EAST NORTH STREET

SUM-8-1.99
PID No. 85246

27B/34

52B/59

ITEM 513 - STRUCTURAL STEEL, MISC.: TRUSS GUSSET REPAIR, TYPES 2, 3 & 4

MATERIAL

1. NEW MATERIAL SHALL BE ASTM A709 GRADE 50W.
2. NEW BOLTS SHALL BE ASTM A325, TYPE 3.
3. NEW BOLTS SHALL MATCH EXISTING RIVET SIZES.
4. NEW MATERIALS SHALL BE CERTIFIED PER CMS 501.06.

STEEL SURFACE PREPARATION

FAYING SURFACES BETWEEN EXISTING STEEL AND NEW STEEL SHALL BE PREPARED IN ACCORDANCE WITH THE "PENCIL ABRASIVE BLASTING" GENERAL NOTE PRIOR TO INSTALLATION OF NEW MATERIAL. EXISTING AND NEW MATERIAL SHALL NOT BE PRIME PAINTED.

FABRICATION

1. NEW MATERIAL MAY BE SHOP FABRICATED OR FIELD FABRICATED AT A FACILITY APPROVED BY THE ENGINEER. NO SHOP CERTIFICATION IS REQUIRED. WELDERS SHALL BE PREQUALIFIED.
2. NEW ANGLE MATERIAL CONNECTED TO THE CHORD (TYPE 2 REPAIR) SHALL BE DEFLECTED TO CONFORM TO SHAPES INDICATED IN THE PLANS. ANGLE LEGS CUT TO FACILITATE THIS SHALL BE REATTACHED WITH COMPLETE-PENETRATION GROOVE WELDS. THE WELD SHALL BE GROUND SMOOTH ON THE OUTSIDE OF THE ANGLE LEG THAT WILL BE ATTACHED TO THE EXISTING GUSSET PLATE.
3. EDGE DISTANCE FROM THE CENTER OF A FASTENER TO THE FIELD CUT EDGE OF THE NEW MATERIAL SHALL BE 2 INCHES UNLESS NOTED OTHERWISE. THE MAXIMUM EDGE DISTANCE IS 1½ INCHES.

CONSTRUCTION

REFER TO THE REPAIR INSTALLATION SEQUENCE ON THIS SHEET.

TOUCH-UP PAINTING OF EXISTING GUSSET PLATE

EXISTING PAINT ON THE FACE OF EXISTING GUSSET PLATES, OUTSIDE THE LIMITS OF THE RETROFIT PLATES, SHALL BE PROTECTED. CURRENTLY PAINTED AREAS DAMAGED OR EXPOSED BY THE CONTRACTOR'S SURFACE PREPARATION OR GUSSET PLATE RETROFIT OPERATIONS SHALL BE COATED WITH TWO COATS OF AN ALUMINUM EPOXY MASTIC PAINT. THE TOP COAT SHALL BE TINTED TO APPROXIMATE THE EXISTING FINISH COAT ON THE STRUCTURE.

SURFACE PREPARATION SHALL BE IN ACCORDANCE WITH SSPC-SP3.

THE PAINT USED SHALL BE CARBOMASTIC 90 ALUMINUM BY CARBOLINE COMPANY; BAR-RUST 231 BY ICI/DEVOE COATINGS; OR EPOXY MASTIC ALUM II BY SHERWIN-WILLIAMS COMPANY.

PAYMENT

PAYMENT FOR CAREFUL RIVET REMOVAL SHALL BE INCLUDED WITH ITEM 202 - REMOVAL, MISC.: RIVET - PER EACH.

PAYMENT FOR ACCESS TO THE REPAIR LOCATIONS SHALL BE INCLUDED WITH ITEM SPECIAL - STRUCTURE, MISC.: TRUSS PANEL POINT ACCESS.

PAYMENT FOR FURNISHING ALL LABOR, EQUIPMENT AND MATERIAL NECESSARY TO INSTALL NEW TRUSS GUSSET PLATE REPAIRS INCLUDING NEW ANGLES AND CONNECTION BOLTS; SURFACE PREPARATION OF EXISTING STEEL; TOUCH-UP PAINTING AND FABRICATION SHALL BE INCLUDED IN THE CONTRACT UNIT BID PRICE FOR:

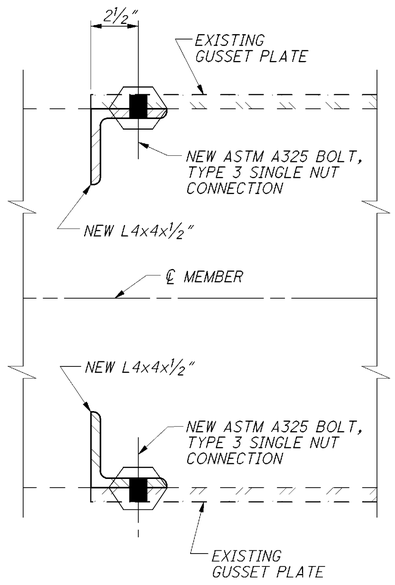
ITEM 513 - STRUCTURAL STEEL, MISC.: TRUSS GUSSET REPAIR, TYPES 2, 3 & 4 - POUND.

ANGLE INSTALLATION SEQUENCE - REPAIR TYPES 2, 3 & 4

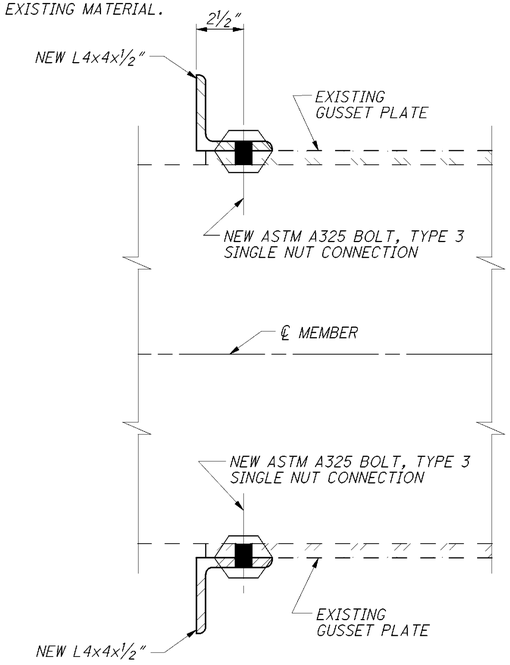
PERFORM THE INSTALLATION ON ONE TRUSS AS FOLLOWS:

INSTALL NEW EDGE ANGLES ON THE INSIDE AND OUTSIDE GUSSET PLATES PER THE FOLLOWING INSTRUCTIONS. COMPLETE THE INSTALLATION OF ONE NEW ANGLE BEFORE STARTING THE INSTALLATION OF A SUBSEQUENT NEW ANGLE AT THE SAME PANEL POINT.

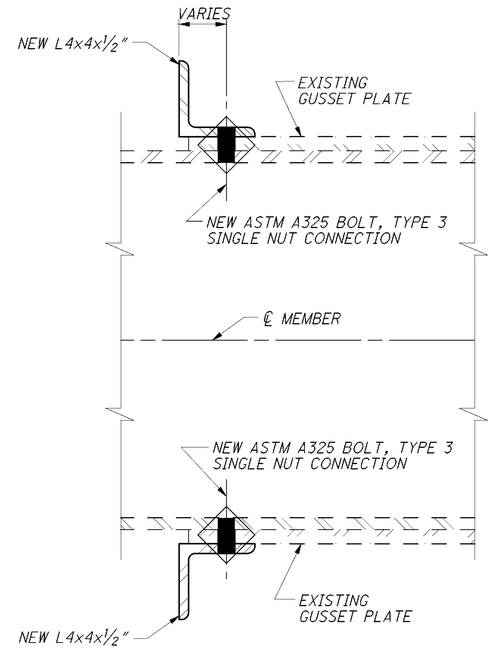
A. FABRICATE NEW ANGLES.
B. PREPARE FAYING SURFACES IN ACCORDANCE WITH "PENCIL ABRASIVE BLASTING" GENERAL NOTE ON SHEET 4/34.
C. REMOVE NO MORE RIVETS FROM A CONNECTION THAN ARE NECESSARY FOR CONNECTING EACH NEW MEMBER PIECE.
D. ERECT NEW STIFFENING ANGLE.
E. SECURE NEW ANGLE WITH PROPERLY TENSIONED NUTS WITH WASHERS ON THE NEW BOLTS.
F. FIELD DRILL ONE NEW STANDARD SIZE BOLT HOLE FOR NEW BOLT THROUGH THE NEW ANGLE AND EXISTING GUSSETS, ANGLES AND CHORD MEMBERS.
G. INSTALL PROPERLY TENSIONED BOLT AT THE NEW HOLE LOCATION.
H. REPEAT STEPS "F" AND "G" AS NEEDED FOR EACH OF THE NEW BOLT HOLES TO BE FIELD DRILLED IN EXISTING MATERIAL.



SECTION A-A



SECTION B-B



SECTION C-C

BOLT LEGEND

- EXISTING RIVET OR BOLT TO REMAIN IN PLACE.
- FIELD DRILL EXISTING MATERIAL FOR NEW CONNECTION BOLT. NEW PLATE OR ANGLE TO EXISTING MATERIAL.
- REMOVE EXISTING RIVET OR BOLT FOR NEW BOLTED CONNECTION. NEW PLATE OR ANGLE TO EXISTING MATERIAL.
- REMOVE EXISTING RIVET.

NOTES

RIVETS REMOVED: PAYMENT SHALL BE MADE UNDER ITEM 202 - REMOVAL, MISC.: RIVET.

NEW MATERIAL: PAYMENT SHALL BE MADE UNDER ITEM 513 - STRUCTURAL STEEL, MISC.: TRUSS GUSSET REPAIR, TYPES 2, 3 & 4.

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29 NORTH PARK STREET
MANSFIELD, OHIO 44902

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DLR	JLS	DAP	6-18-09
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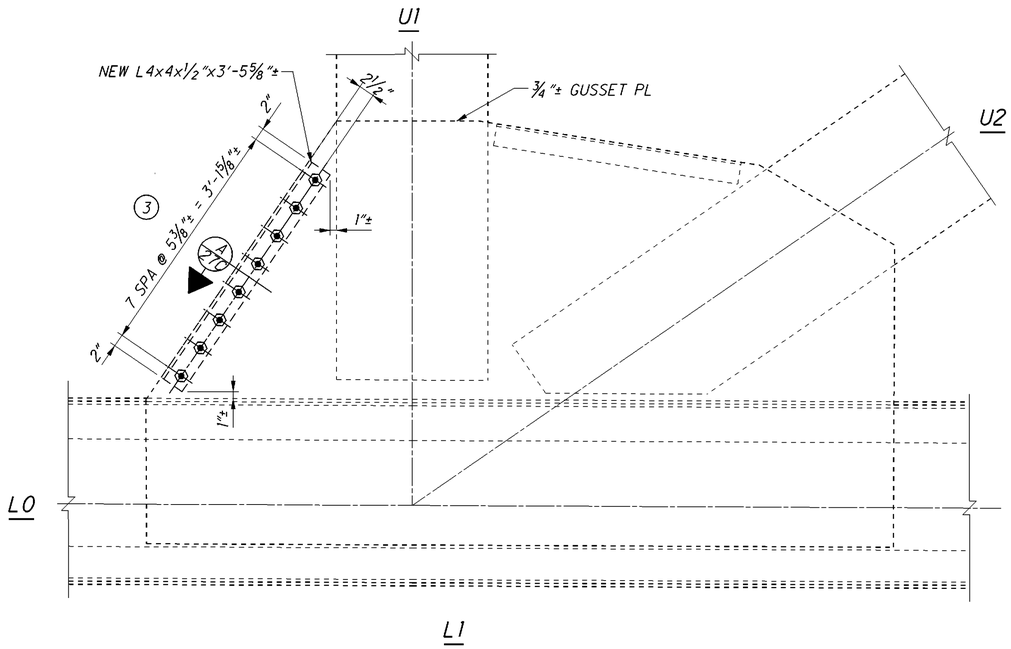
ALP		7700369	

REPAIR INSTALLATION SEQUENCE - TYPES 2, 3 & 4
BRIDGE NO. SUM-8-0199
OVER RAILROADS, LITTLE CUYAHOGA RIVER AND EAST NORTH STREET

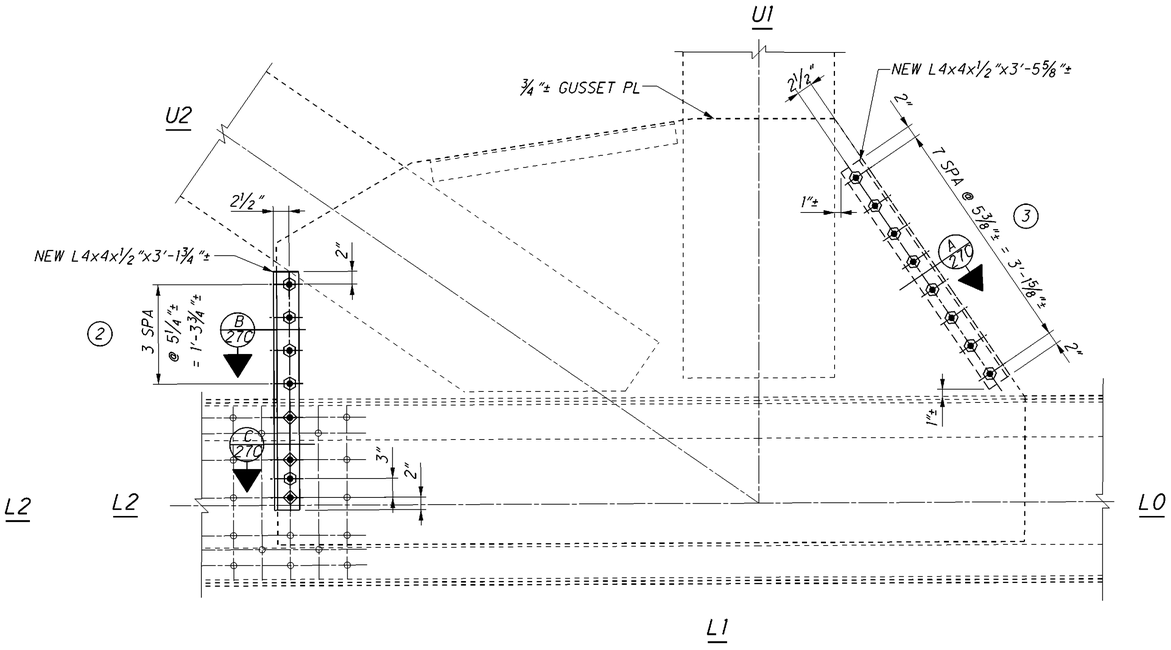
SUM-8-1.99
PID No. 85246

27C/34

52C
59



L1 EAST OUTSIDE GUSSET PLATE (SHOWN)
L1 EAST INSIDE GUSSET PLATE (OPPOSITE HAND)
L1' EAST & WEST INSIDE & OUTSIDE GUSSET PLATES (SIMILAR)



L1 WEST OUTSIDE GUSSET PLATE (SHOWN)
L1 WEST INSIDE GUSSET PLATE (OPPOSITE HAND)

LEGEND

(1) REPAIR TYPE

NOTES

MATERIALS SHOWN ARE EXISTING UNLESS OTHERWISE NOTED.

GENERAL NOTES: SEE ITEM 513 - STRUCTURAL STEEL, MISC.: TRUSS GUSSET REPAIR, TYPES 2, 3 & 4 ON SHEET 27C/34.

RIVETS REMOVED: PAYMENT SHALL BE MADE UNDER ITEM 202 - REMOVAL, MISC.: RIVET ON SHEET 3/34.

NEW MATERIAL: PAYMENT SHALL BE MADE UNDER ITEM 513 - STRUCTURAL STEEL, MISC.: TRUSS GUSSET REPAIR, TYPES 2, 3 & 4 ON SHEET 27C/34.

NEW BOLTS: ASTM A325, TYPE 3, ⅞" DIAMETER.

BOLT LEGEND: SEE SHEET 27C/34.

REPAIR INSTALLATION SEQUENCE: SEE SHEET 27C/34.

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ALP		7700369	

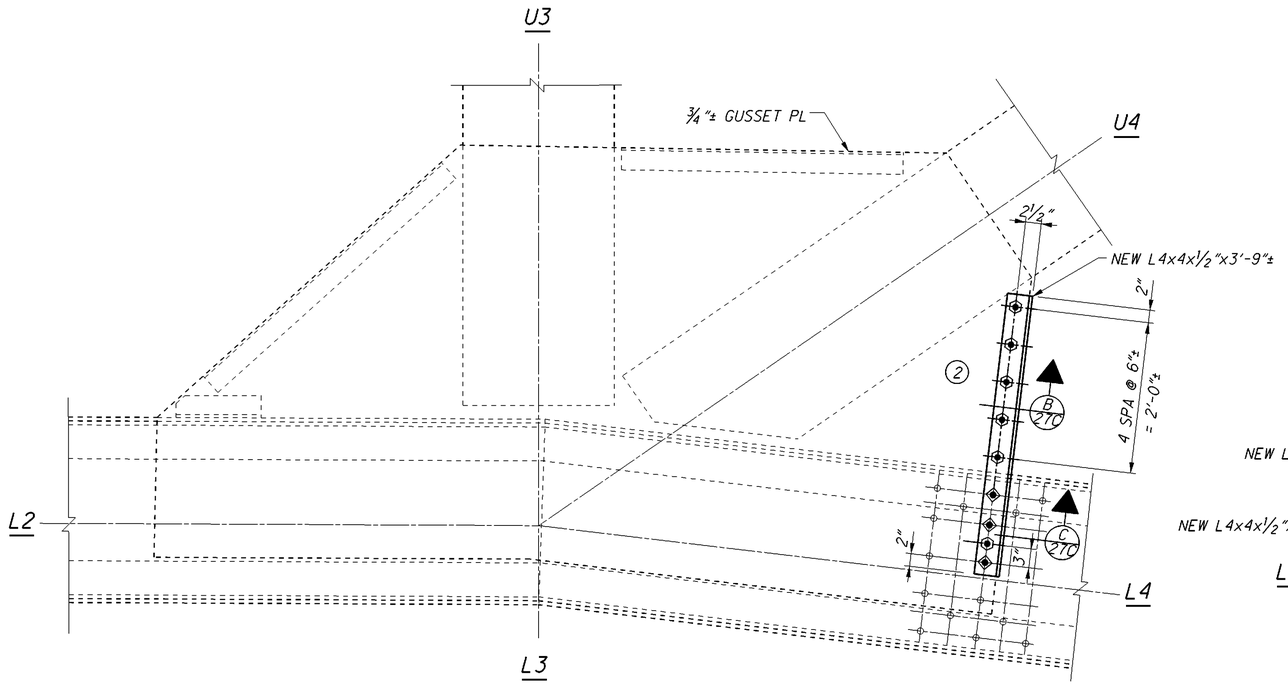
L1 & L1' EAST & WEST TRUSS GUSSET PLATE REPAIR
BRIDGE NO. SUM-8-0199
OVER RAILROADS, LITTLE CUYAHOGA RIVER AND EAST NORTH STREET

SUM-8-1.99
PID No. 85246

27D/34

52D/59

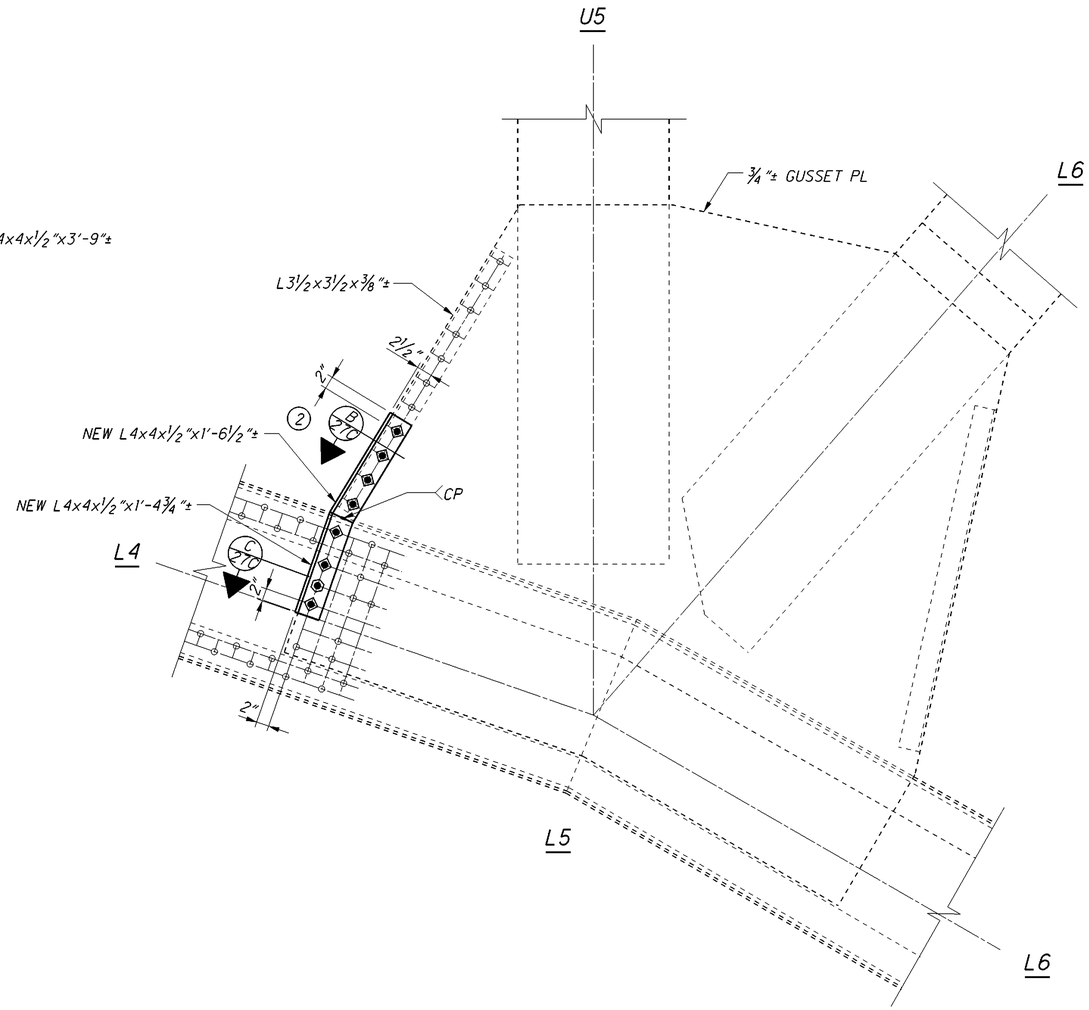
008_0195CSD013.DGN 6/18/09 SCB.TWH.JLS



L3 EAST OUTSIDE & L3 WEST INSIDE GUSSET PLATES (SHOWN)

L3 EAST INSIDE & L3 WEST OUTSIDE GUSSET PLATES (OPPOSITE HAND)

L3' EAST & WEST OUTSIDE & INSIDE GUSSET PLATES (SIMILAR)



L5 EAST OUTSIDE & L5' WEST OUTSIDE GUSSET PLATES (SHOWN)

L5 EAST INSIDE & L5' WEST INSIDE GUSSET PLATES (OPPOSITE HAND)

LEGEND

(1) REPAIR TYPE

NOTES

MATERIALS SHOWN ARE EXISTING UNLESS OTHERWISE NOTED.

GENERAL NOTES: SEE ITEM 513 - STRUCTURAL STEEL, MISC.: TRUSS GUSSET REPAIR, TYPES 2, 3 & 4 ON SHEET 27C/34.

RIVETS REMOVED: PAYMENT SHALL BE MADE UNDER ITEM 202 - REMOVAL, MISC.: RIVET ON SHEET 3/34.

NEW MATERIAL: PAYMENT SHALL BE MADE UNDER ITEM 513 - STRUCTURAL STEEL, MISC.: TRUSS GUSSET REPAIR, TYPES 2, 3 & 4 ON SHEET 27C/34.

NEW BOLTS: ASTM A325, TYPE 3, ⅞" DIAMETER.

BOLT LEGEND: SEE SHEET 27C/34.

REPAIR INSTALLATION SEQUENCE: SEE SHEET 27C/34.

CP - COMPLETE PENETRATION.

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DESIGNED	DRAWN	REVIEWED	DATE
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ALP		7700369	

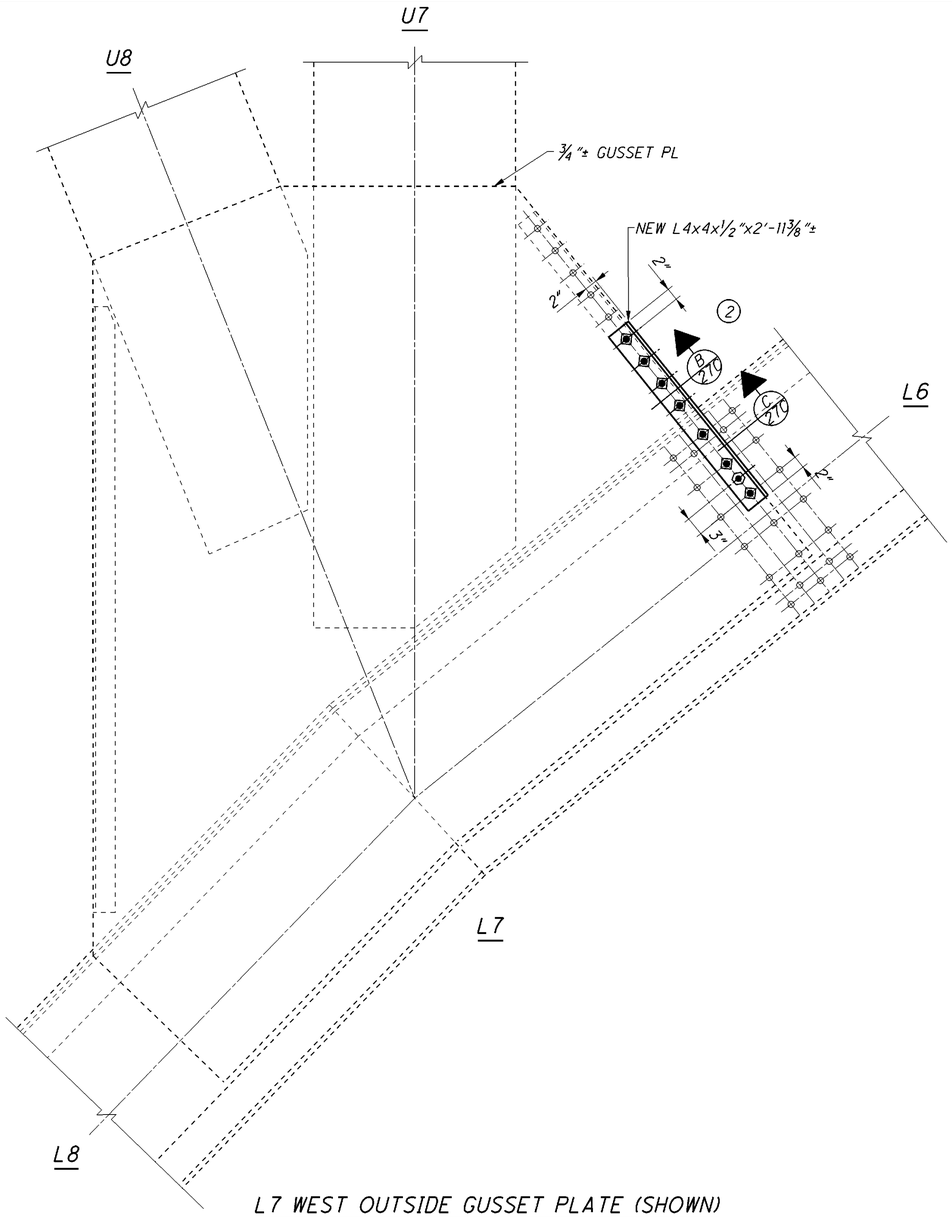
L3 & L3' EAST & WEST TRUSS, L5 EAST TRUSS,
& L5' WEST TRUSS GUSSET PLATE REPAIRS
BRIDGE NO. SUM-8-0199
OVER RAILROADS, LITTLE CUYAHOGA RIVER AND EAST NORTH STREET

SUM-8-1.99
PID No. 85246

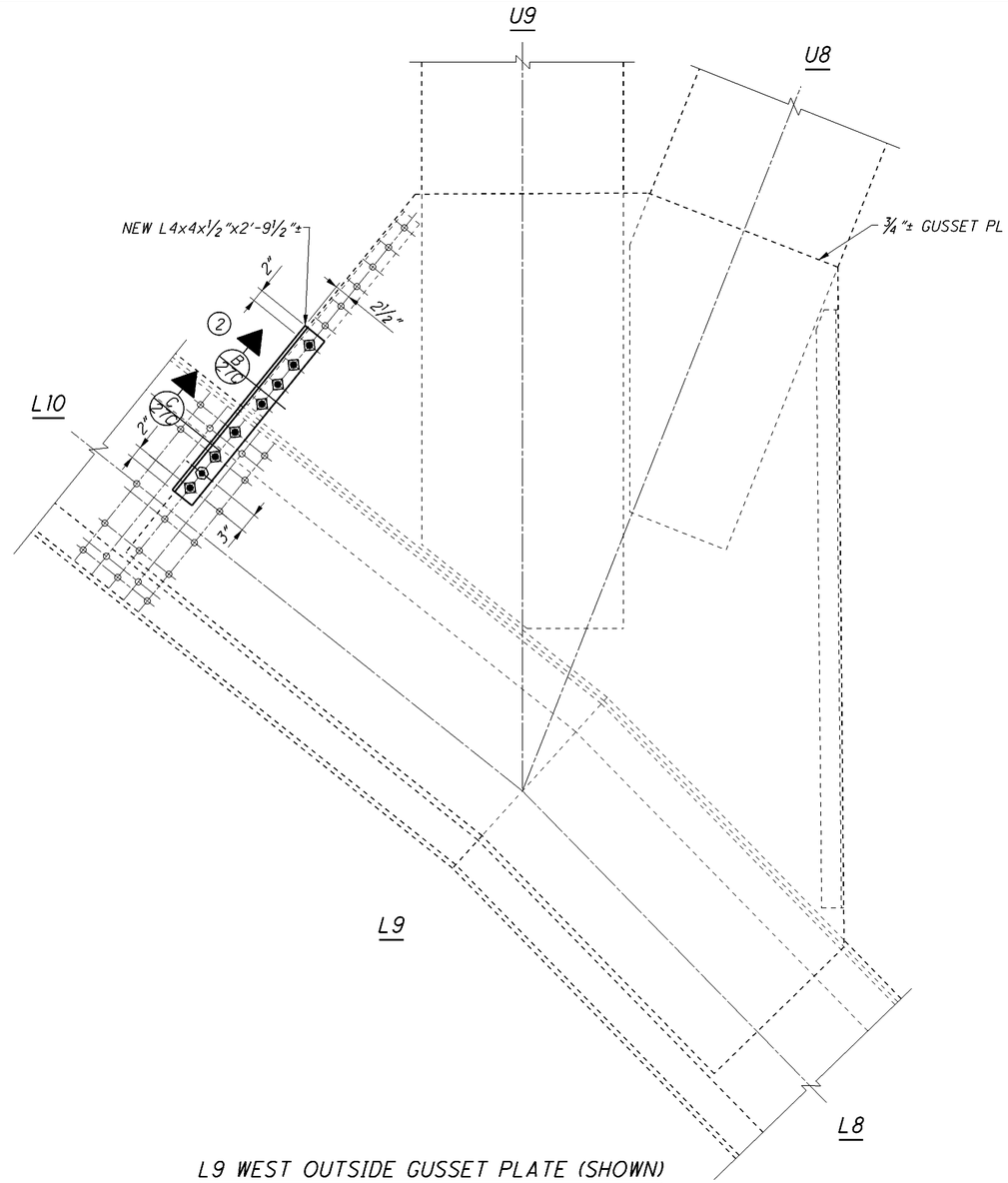
27E/34

52E
59

008_0195CSD019.DGN 6/18/09 SCB.JLS.TWH



L7 WEST OUTSIDE GUSSET PLATE (SHOWN)
L7 WEST INSIDE GUSSET PLATE (OPPOSITE HAND)
L7' WEST INSIDE & OUTSIDE GUSSET PLATES (SIMILAR)



L9 WEST OUTSIDE GUSSET PLATE (SHOWN)
L9 WEST INSIDE GUSSET PLATE (OPPOSITE HAND)
L9' WEST INSIDE & OUTSIDE GUSSET PLATES (SIMILAR)

LEGEND

(1) REPAIR TYPE

NOTES

MATERIALS SHOWN ARE EXISTING UNLESS OTHERWISE NOTED.

GENERAL NOTES: SEE ITEM 513 - STRUCTURAL STEEL, MISC.: TRUSS GUSSET REPAIR, TYPES 2, 3 & 4 ON SHEET 27C/34.

RIVETS REMOVED: PAYMENT SHALL BE MADE UNDER ITEM 202 - REMOVAL, MISC.: RIVET ON SHEET 3/34.

NEW MATERIAL: PAYMENT SHALL BE MADE UNDER ITEM 513 - STRUCTURAL STEEL, MISC.: TRUSS GUSSET REPAIR, TYPES 2, 3 & 4 ON SHEET 27C/34.

NEW BOLTS: ASTM A325, TYPE 3, 7/8" DIAMETER.

BOLT LEGEND: SEE SHEET 27C/34.

REPAIR INSTALLATION SEQUENCE: SEE SHEET 27C/34.

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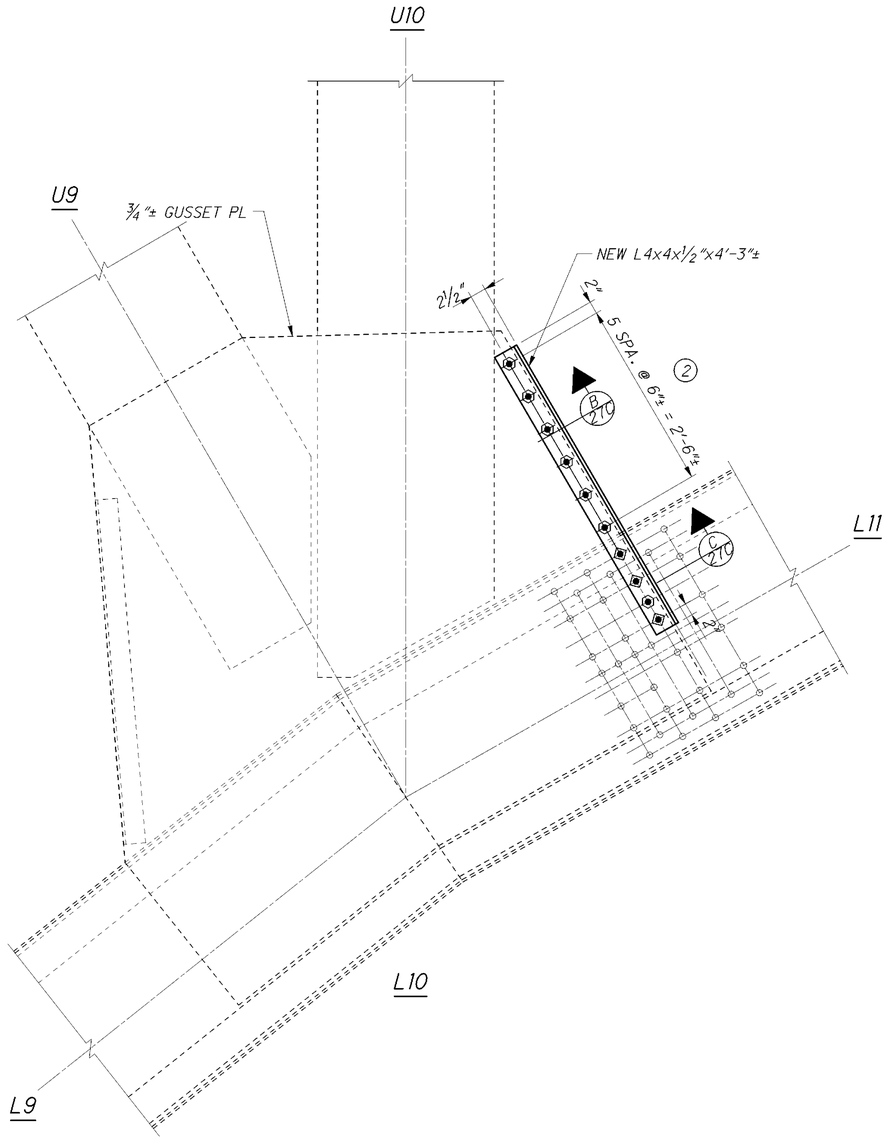
ALP		7700369	

L7, L7', L9 & L9' WEST TRUSS GUSSET PLATE REPAIR
BRIDGE NO. SUM-8-0199
OVER RAILROADS, LITTLE CUYAHOGA RIVER AND EAST NORTH STREET

SUM-8-1.99
PID No. 85246

27F/34

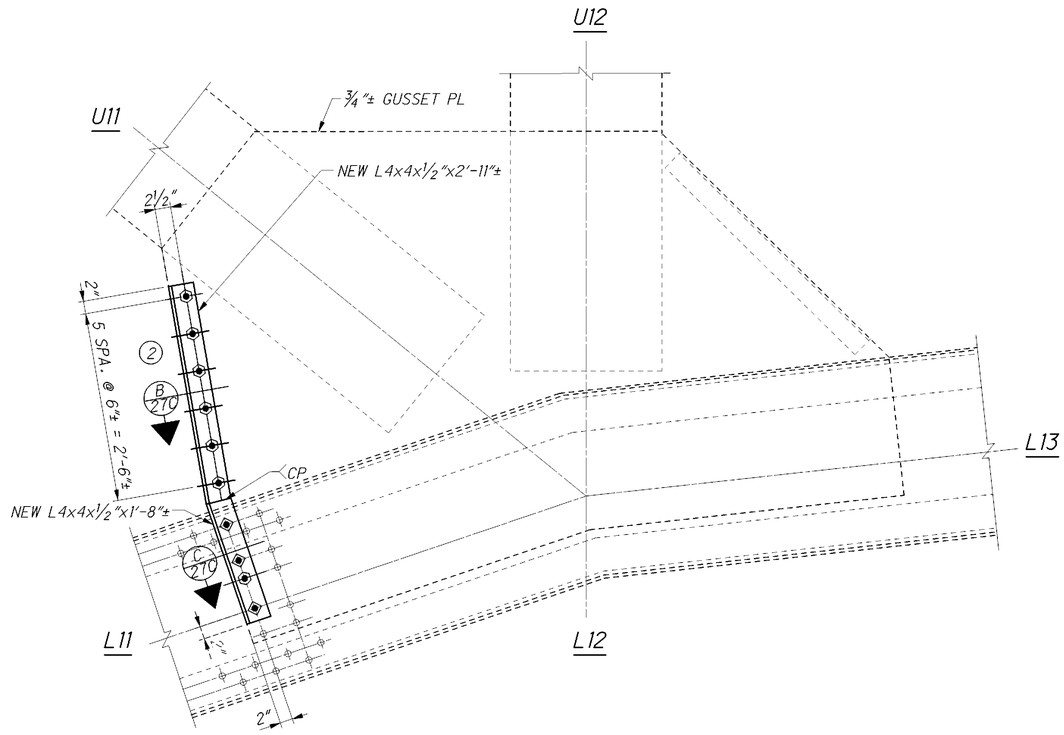
52F
59



L10 EAST OUTSIDE GUSSET PLATE (SHOWN)

L10 EAST INSIDE GUSSET PLATE (OPPOSITE HAND)

L10' WEST INSIDE AND OUTSIDE GUSSET PLATES (SIMILAR)



L12 EAST OUTSIDE & L12 WEST INSIDE GUSSET PLATES (SHOWN)

L12 EAST INSIDE & L12 WEST OUTSIDE GUSSET PLATES (OPPOSITE HAND)

LEGEND

(1) REPAIR TYPE

NOTES

MATERIALS SHOWN ARE EXISTING UNLESS OTHERWISE NOTED.

GENERAL NOTES: SEE ITEM 513 - STRUCTURAL STEEL, MISC.: TRUSS GUSSET REPAIR, TYPES 2, 3 & 4 ON SHEET 27C/34.

RIVETS REMOVED: PAYMENT SHALL BE MADE UNDER ITEM 202 - REMOVAL, MISC.: RIVET ON SHEET 3/34.

NEW MATERIAL: PAYMENT SHALL BE MADE UNDER ITEM 513 - STRUCTURAL STEEL, MISC.: TRUSS GUSSET REPAIR, TYPES 2, 3 & 4 ON SHEET 27C/34.

NEW BOLTS: ASTM A325, TYPE 3, ⅞" DIAMETER.

BOLT LEGEND: SEE SHEET 27C/34.

REPAIR INSTALLATION SEQUENCE: SEE SHEET 27C/34.

CP - COMPLETE PENETRATION.

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ALP		7700369	

L10 EAST TRUSS, L12 EAST & L10' WEST TRUSS GUSSET PLATE REPAIR
BRIDGE NO. SUM-8-0199
OVER RAILROADS, LITTLE CUYAHOGA RIVER AND EAST NORTH STREET

SUM-8-1.99
PID No. 85246

27G/34

52G
59

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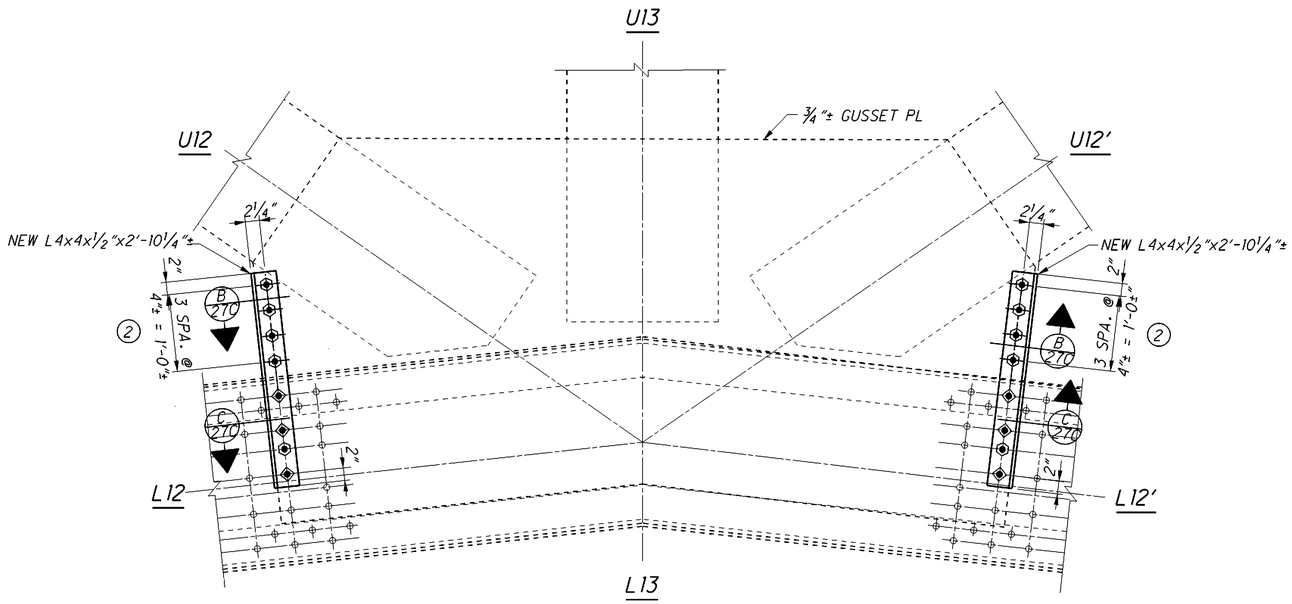
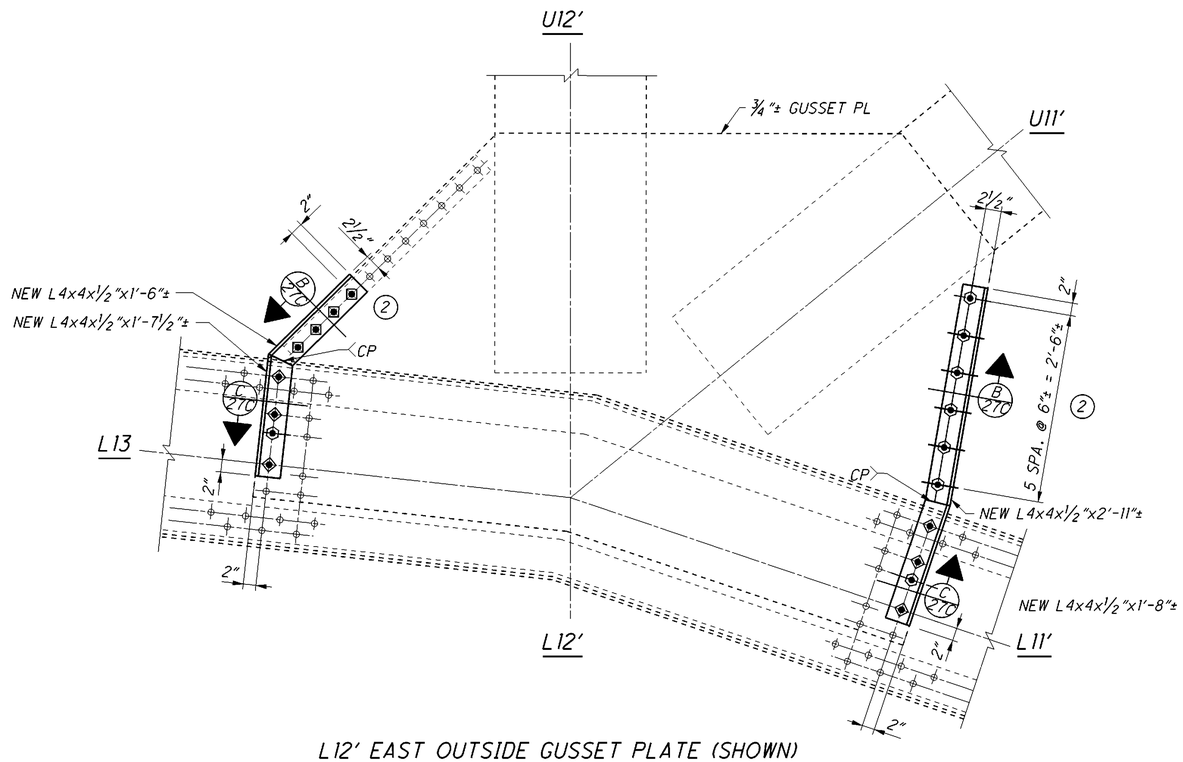


L13 EAST OUTSIDE GUSSET PLATE (SHOWN)

L13 EAST INSIDE GUSSET PLATE (OPPOSITE HAND)



L12' EAST OUTSIDE GUSSET PLATE (SHOWN)

L12' EAST INSIDE GUSSET PLATE (OPPOSITE HAND)

LEGEND

(1) REPAIR TYPE

NOTES

MATERIALS SHOWN ARE EXISTING UNLESS OTHERWISE NOTED.

GENERAL NOTES: SEE ITEM 513 - STRUCTURAL STEEL, MISC.: TRUSS GUSSET REPAIR, TYPES 2, 3 & 4 ON SHEET 27C/34.

RIVETS REMOVED: PAYMENT SHALL BE MADE UNDER ITEM 202 - REMOVAL, MISC.: RIVET ON SHEET 3/34.

NEW MATERIAL: PAYMENT SHALL BE MADE UNDER ITEM 513 - STRUCTURAL STEEL, MISC.: TRUSS GUSSET REPAIR, TYPES 2, 3 & 4 ON SHEET 27C/34.

NEW BOLTS: ASTM A325, TYPE 3, ⅞" DIAMETER.

BOLT LEGEND: SEE SHEET 27C/34.

REPAIR INSTALLATION SEQUENCE: SEE SHEET 27C/34.

CP - COMPLETE PENETRATION.

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ALP		7700369	

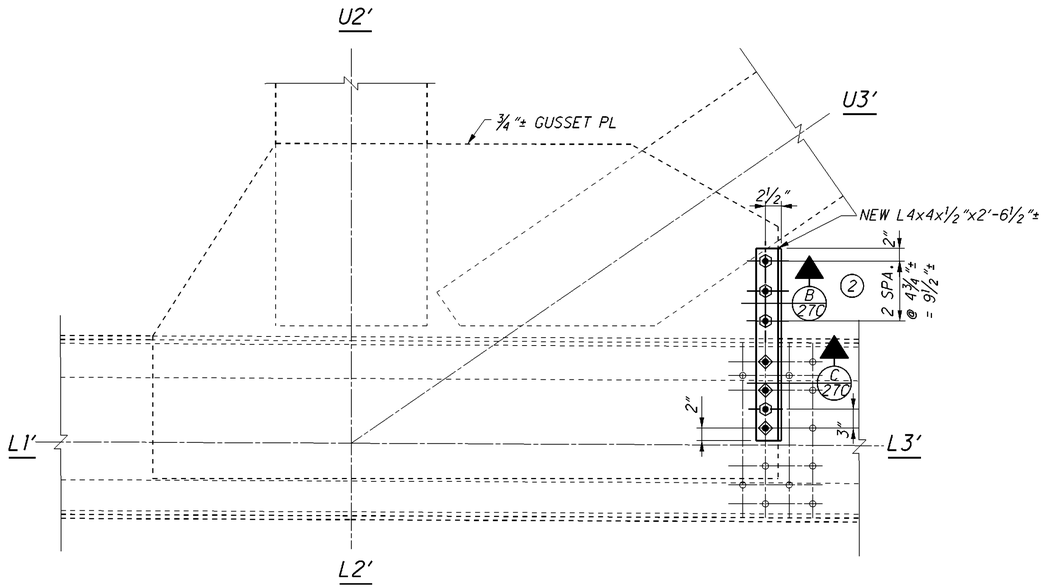
L13 EAST & L12' EAST TRUSS GUSSET PLATE REPAIR
BRIDGE NO. SUM-8-0199
OVER RAILROADS, LITTLE CUYAHOGA RIVER AND EAST NORTH STREET

SUM-8-1.99
PID No. 85246

27H / 34

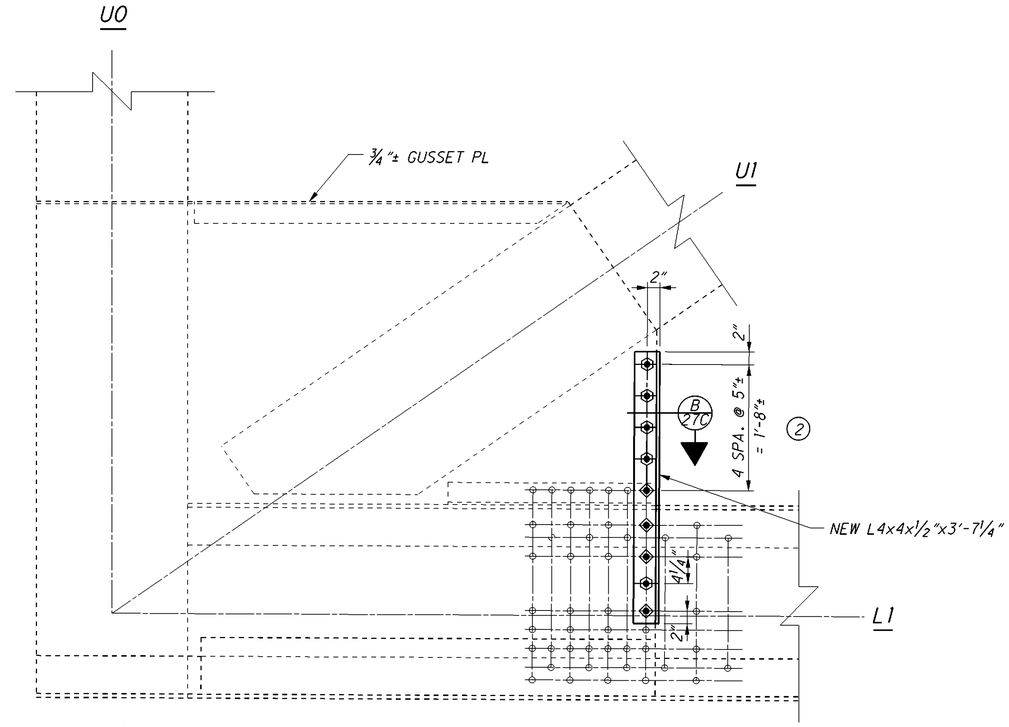
52H / 59

008_0195CSD018.DGN 6/17/09 TWH



L2' WEST OUTSIDE GUSSET PLATE (SHOWN)

L2' WEST INSIDE GUSSET PLATE (OPPOSITE HAND)



L0 EAST OUTSIDE GUSSET PLATE (SHOWN)

L0 EAST INSIDE GUSSET PLATE (OPPOSITE HAND)

LEGEND

(1) REPAIR TYPE

NOTES

MATERIALS SHOWN ARE EXISTING UNLESS OTHERWISE NOTED.

GENERAL NOTES: SEE ITEM 513 - STRUCTURAL STEEL, MISC.: TRUSS GUSSET REPAIR, TYPES 2, 3 & 4 ON SHEET 27C/34.

RIVETS REMOVED: PAYMENT SHALL BE MADE UNDER ITEM 202 - REMOVAL, MISC.: RIVET ON SHEET 3/34.

NEW MATERIAL: PAYMENT SHALL BE MADE UNDER ITEM 513 - STRUCTURAL STEEL, MISC.: TRUSS GUSSET REPAIR, TYPES 2, 3 & 4 ON SHEET 27C/34.

NEW BOLTS: ASTM A325, TYPE 3, ⅞" DIAMETER.

BOLT LEGEND: SEE SHEET 27C/34.

REPAIR INSTALLATION SEQUENCE: SEE SHEET 27C/34.

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ALP		7700369	

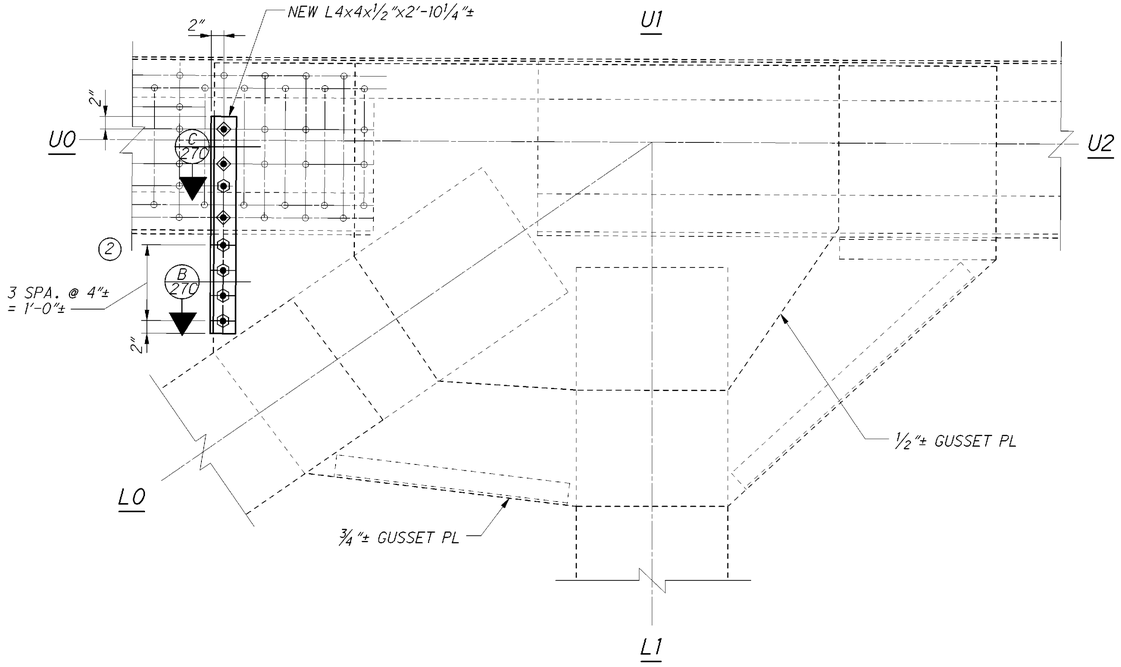
L2' WEST TRUSS GUSSET PLATE REPAIR
BRIDGE NO. SUM-8-0199
OVER RAILROADS, LITTLE CUYAHOGA RIVER AND EAST NORTH STREET

SUM-8-1.99
PID No. 85246

271/34

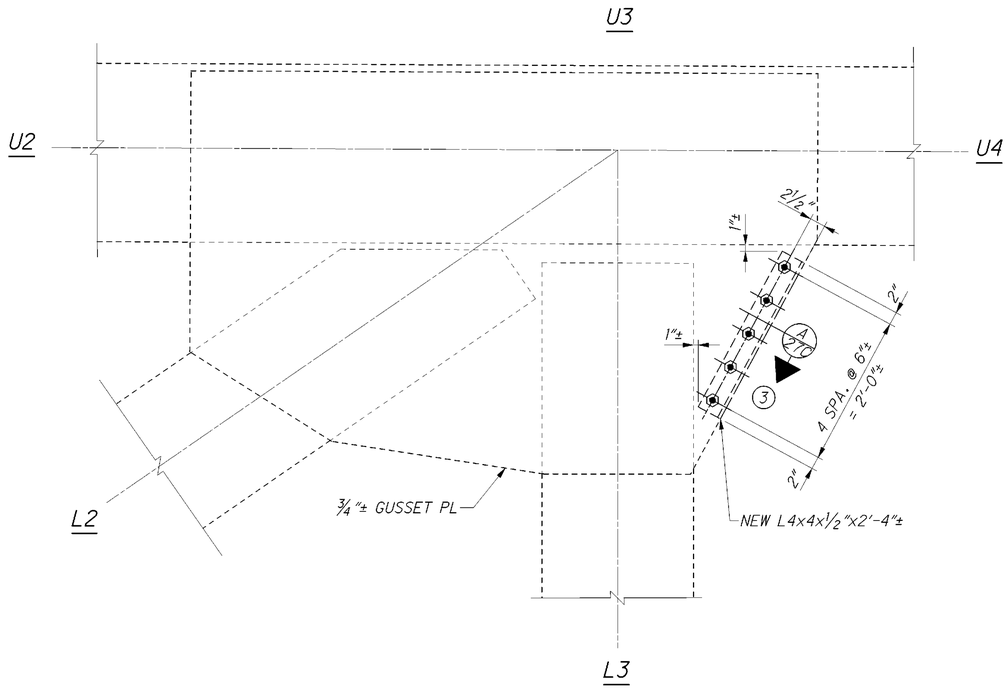
521
59

008_0195CSD014.DGN 6/18/09 SCB.TWH.JLS



U1 EAST OUTSIDE GUSSET PLATE (SHOWN)

U1 EAST INSIDE GUSSET PLATE (OPPOSITE HAND)



U3 EAST OUTSIDE & U3 WEST INSIDE GUSSET PLATES (SHOWN)

U3 EAST INSIDE & U3 WEST OUTSIDE GUSSET PLATES (OPPOSITE HAND)

U3' EAST & WEST OUTSIDE & INSIDE GUSSET PLATES (SIMILAR)

LEGEND

(1) REPAIR TYPE

NOTES

MATERIALS SHOWN ARE EXISTING UNLESS OTHERWISE NOTED.

GENERAL NOTES: SEE ITEM 513 - STRUCTURAL STEEL, MISC.: TRUSS GUSSET REPAIR, TYPES 2, 3 & 4 ON SHEET 27C/34.

RIVETS REMOVED: PAYMENT SHALL BE MADE UNDER ITEM 202 - REMOVAL, MISC.: RIVET ON SHEET 3/34.

NEW MATERIAL: PAYMENT SHALL BE MADE UNDER ITEM 513 - STRUCTURAL STEEL, MISC.: TRUSS GUSSET REPAIR, TYPES 2, 3 & 4 ON SHEET 27C/34.

NEW BOLTS: ASTM A325, TYPE 3, 7/8" DIAMETER.

BOLT LEGEND: SEE SHEET 27C/34.

REPAIR INSTALLATION SEQUENCE: SEE SHEET 27C/34.

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ALP		7700369	

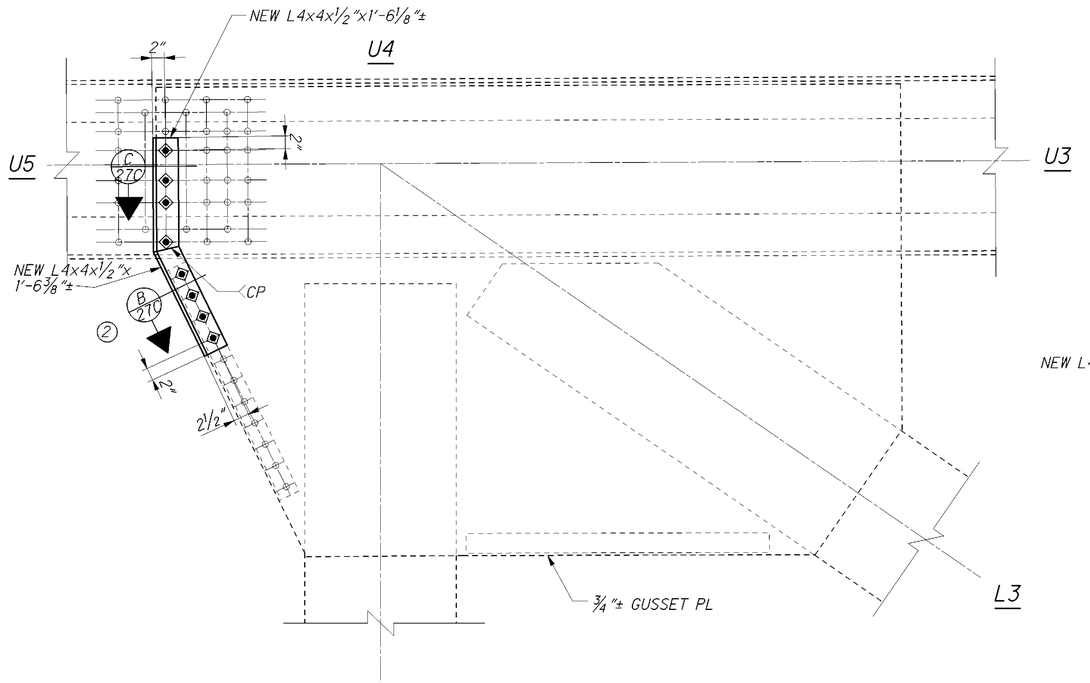
U1 EAST, U3 & U3' EAST & WEST TRUSS GUSSET PLATE REPAIR
BRIDGE NO. SUM-8-0199
OVER RAILROADS, LITTLE CUYAHOGA RIVER AND EAST NORTH STREET

SUM-8-1.99
PID No. 85246

27J/34

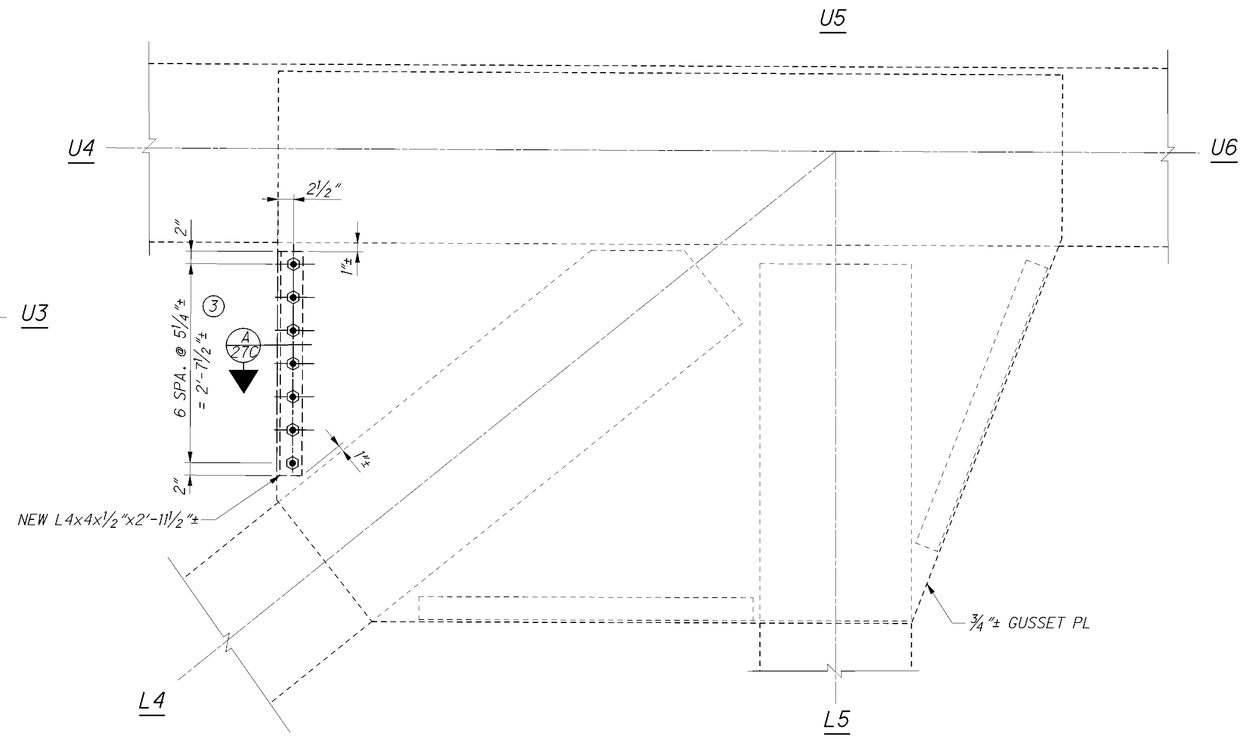
52J/59

008_0195CSD020.DGN 6/18/09 TWH JLS



U4 WEST OUTSIDE GUSSET PLATE (SHOWN)

U4 WEST INSIDE GUSSET PLATE (OPPOSITE HAND)



U5 EAST OUTSIDE & U5 WEST INSIDE GUSSET PLATES (SHOWN)

U5 EAST INSIDE & U5 WEST OUTSIDE GUSSET PLATES (OPPOSITE HAND)

U5' EAST & WEST OUTSIDE & INSIDE GUSSET PLATES (SIMILAR)

LEGEND

(1) REPAIR TYPE

NOTES

MATERIALS SHOWN ARE EXISTING UNLESS OTHERWISE NOTED.

GENERAL NOTES: SEE ITEM 513 - STRUCTURAL STEEL, MISC.: TRUSS GUSSET REPAIR, TYPES 2, 3 & 4 ON SHEET 27C/34.

RIVETS REMOVED: PAYMENT SHALL BE MADE UNDER ITEM 202 - REMOVAL, MISC.: RIVET ON SHEET 3/34.

NEW MATERIAL: PAYMENT SHALL BE MADE UNDER ITEM 513 - STRUCTURAL STEEL, MISC.: TRUSS GUSSET REPAIR, TYPES 2, 3 & 4 ON SHEET 27C/34.

NEW BOLTS: ASTM A325, TYPE 3, ⅞" DIAMETER.

BOLT LEGEND: SEE SHEET 27C/34.

REPAIR INSTALLATION SEQUENCE: SEE SHEET 27C/34.

CP - COMPLETE PENETRATION.

RICHLAND ENGINEERING LIMITED
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MANSFIELD, OHIO 44902

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DLR	KH	DAP	6/18/09
CHECKED	REVISED	STRUCTURE TITLE NUMBER	
ALP		7700369	

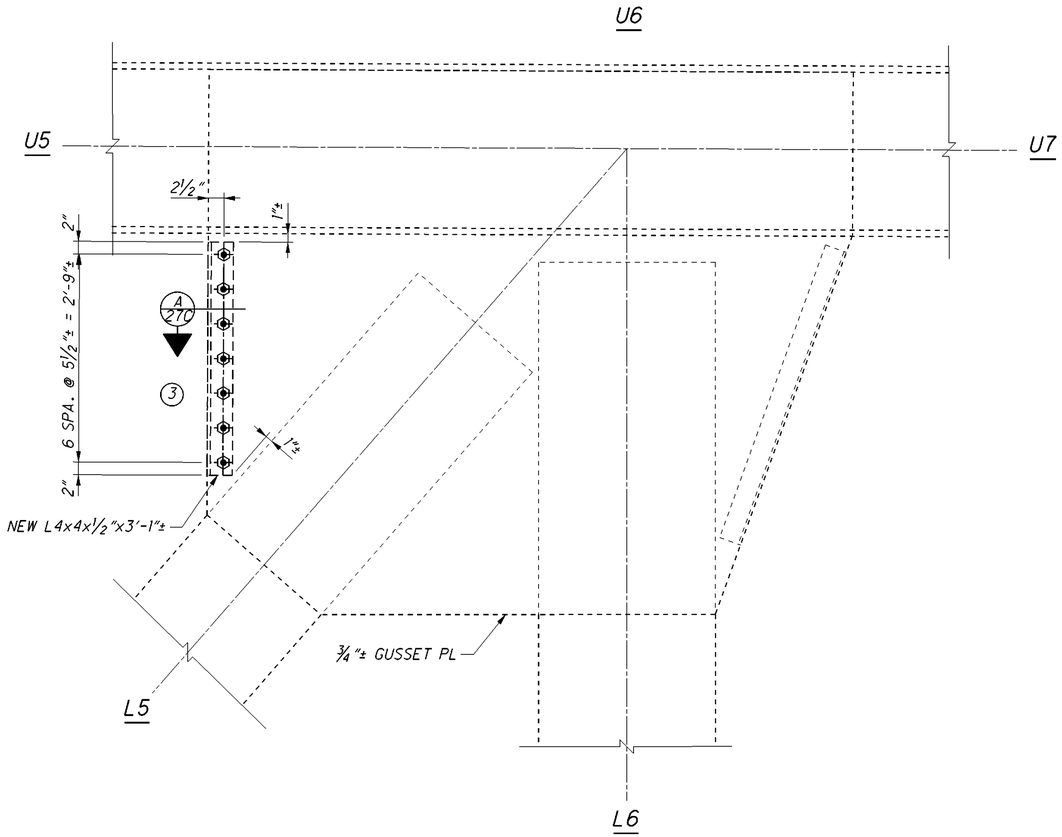
U4 WEST, U5 & U5' EAST & WEST TRUSS GUSSET PLATE REPAIR
BRIDGE NO. SUM-8-0199
OVER RAILROADS, LITTLE CUYAHOGA RIVER AND EAST NORTH STREET

SUM-8-1.99
PID No. 85246

27K/34

52K/59

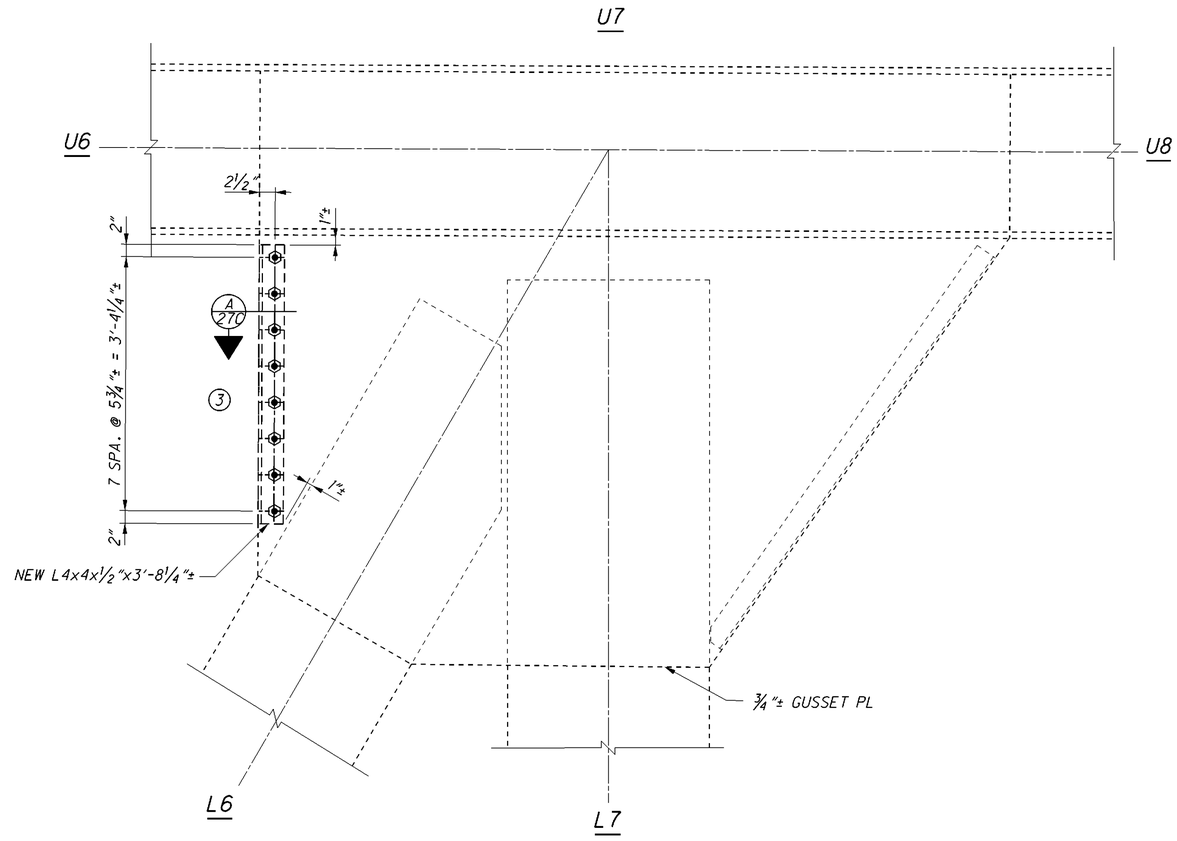
008_0195CSD007.DGN 6/18/09 RB,SCB,TWH,JLS



U6 EAST OUTSIDE & U6 WEST INSIDE GUSSET PLATES (SHOWN)

U6 EAST INSIDE & U6 WEST OUTSIDE GUSSET PLATES (OPPOSITE HAND)

U6' EAST & WEST OUTSIDE & INSIDE GUSSET PLATES (SIMILAR)



U7 EAST OUTSIDE & U7 WEST INSIDE GUSSET PLATES (SHOWN)

U7 EAST INSIDE & U7 WEST OUTSIDE GUSSET PLATES (OPPOSITE HAND)

U7' EAST & WEST OUTSIDE & INSIDE GUSSET PLATES (SIMILAR)

LEGEND

(1) REPAIR TYPE

NOTES

MATERIALS SHOWN ARE EXISTING UNLESS OTHERWISE NOTED.

GENERAL NOTES: SEE ITEM 513 - STRUCTURAL STEEL, MISC.: TRUSS GUSSET REPAIR, TYPES 2, 3 & 4 ON SHEET 27C/34.

NEW MATERIAL: PAYMENT SHALL BE MADE UNDER ITEM 513 - STRUCTURAL STEEL, MISC.: TRUSS GUSSET REPAIR, TYPES 2, 3 & 4 ON SHEET 27C/34.

NEW BOLTS: ASTM A325, TYPE 3, ⅞" DIAMETER.

BOLT LEGEND: SEE SHEET 27C/34.

REPAIR INSTALLATION SEQUENCE: SEE SHEET 27C/34.

RICHLAND ENGINEERING LIMITED
29 NORTH PARK STREET
MANSFIELD, OHIO 44902

REVIEWED DAP | DATE 6/18/09 | STRUCTURE FILE NUMBER 7700369
DRAWN TWH | REVISED
DESIGNED DLR | CHECKED ALP

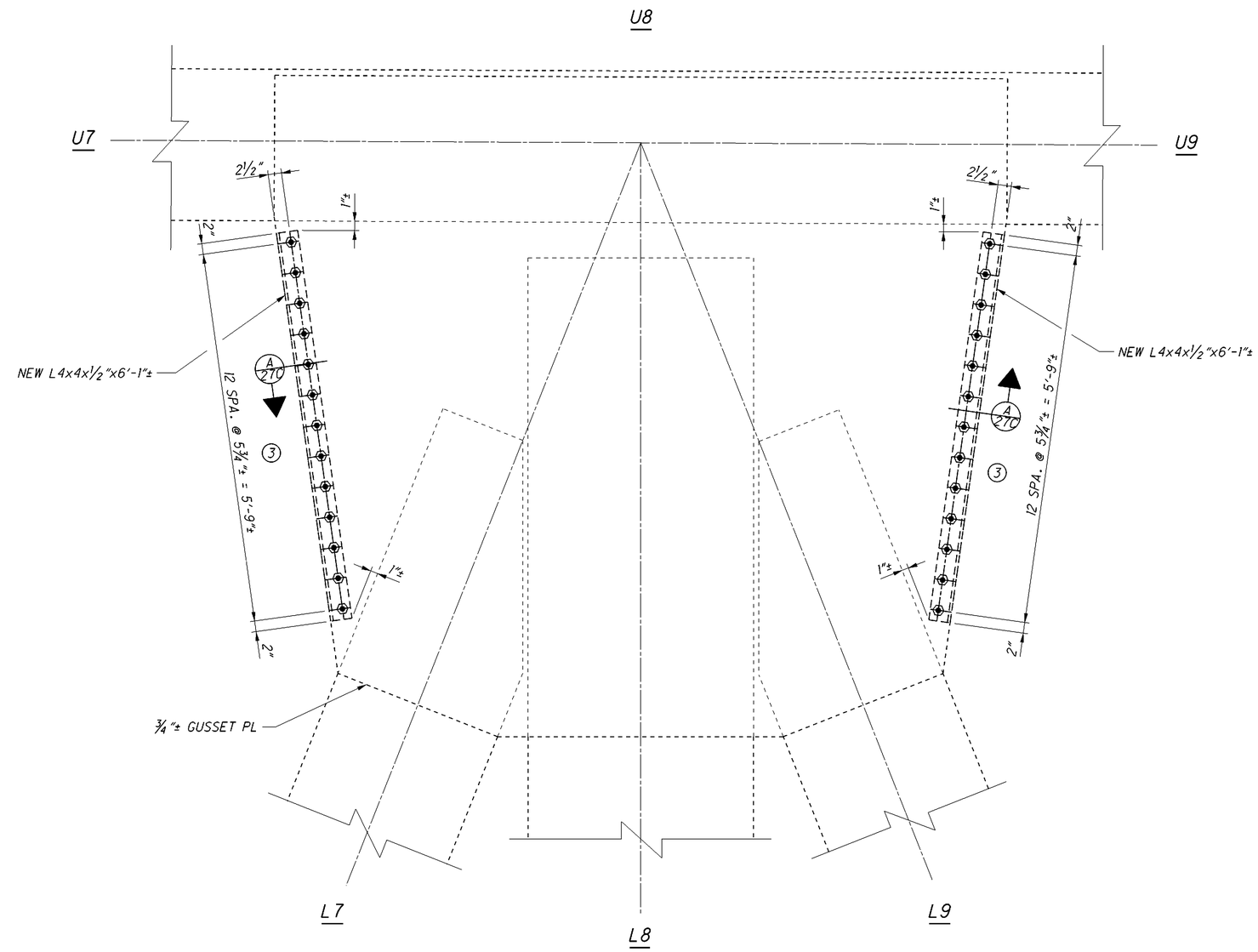
U6, U6', U7 & U7' EAST & WEST TRUSS GUSSET PLATE REPAIR
BRIDGE NO. SUM-8-0199
OVER RAILROADS, LITTLE CUYAHOGA RIVER AND EAST NORTH STREET

SUM-8-1.99
PID No. 85246

27L/34

52L/59

008_0195CSD010.DGN 6/19/09 SCB.TWH.JLS



U8 EAST OUTSIDE & U8 WEST INSIDE GUSSET PLATES (SHOWN)

U8 EAST INSIDE & U8 WEST OUTSIDE GUSSET PLATES (OPPOSITE HAND)

U8' EAST & WEST OUTSIDE & INSIDE GUSSET PLATES (SIMILAR)

LEGEND

(1) REPAIR TYPE

NOTES

MATERIALS SHOWN ARE EXISTING UNLESS OTHERWISE NOTED.

GENERAL NOTES: SEE ITEM 513 - STRUCTURAL STEEL, MISC.: TRUSS GUSSET REPAIR, TYPES 2, 3 & 4 ON SHEET 27C/34.

NEW MATERIAL: PAYMENT SHALL BE MADE UNDER ITEM 513 - STRUCTURAL STEEL, MISC.: TRUSS GUSSET REPAIR, TYPES 2, 3 & 4 ON SHEET 27C/34.

NEW BOLTS: ASTM A325, TYPE 3, ⅞" DIAMETER.

BOLT LEGEND: SEE SHEET 27C/34.

REPAIR INSTALLATION SEQUENCE: SEE SHEET 27C/34.

008_0195CSD009.DGN 6/19/09 SCB,TWH,JLS

RICHLAND ENGINEERING LIMITED
29 NORTH PARK STREET
MANSFIELD, OHIO 44902

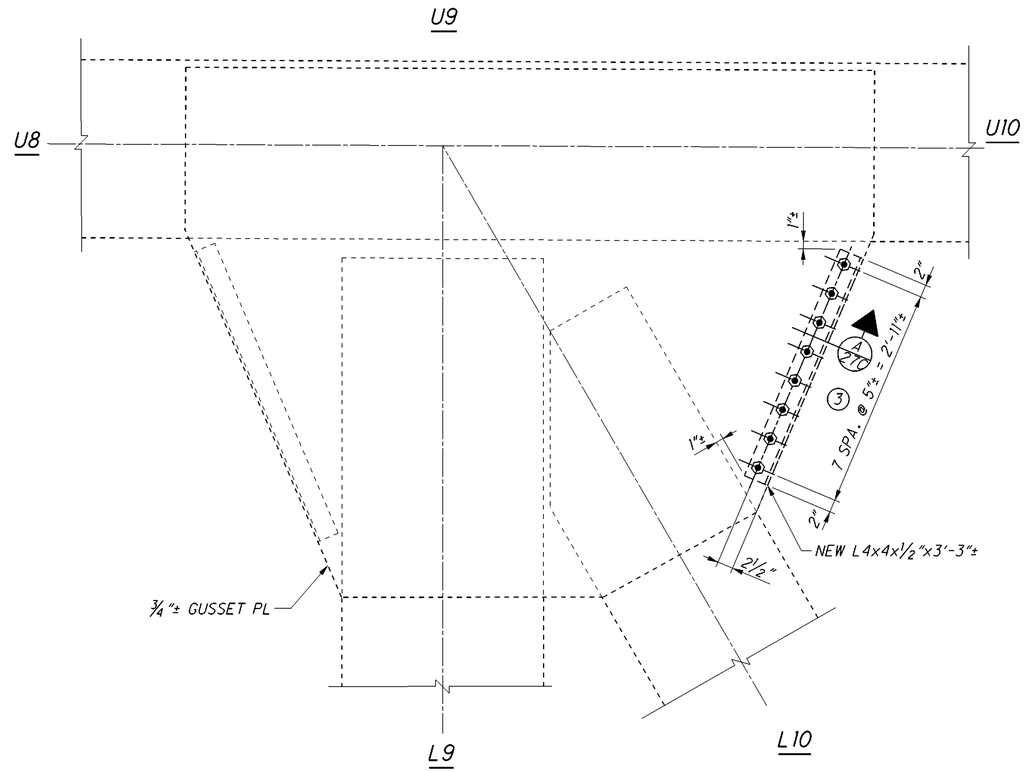
DESIGNED DLR | DRAWN JLS | REVIEWED DAP | DATE 6/18/09
CHECKED ALP | REVISED | STRUCTURE FILE NUMBER 7700369

U8 & U8' EAST & WEST TRUSS GUSSET PLATE REPAIR
BRIDGE NO. SUM-8-0199
OVER RAILROADS, LITTLE CUYAHOGA RIVER AND EAST NORTH STREET

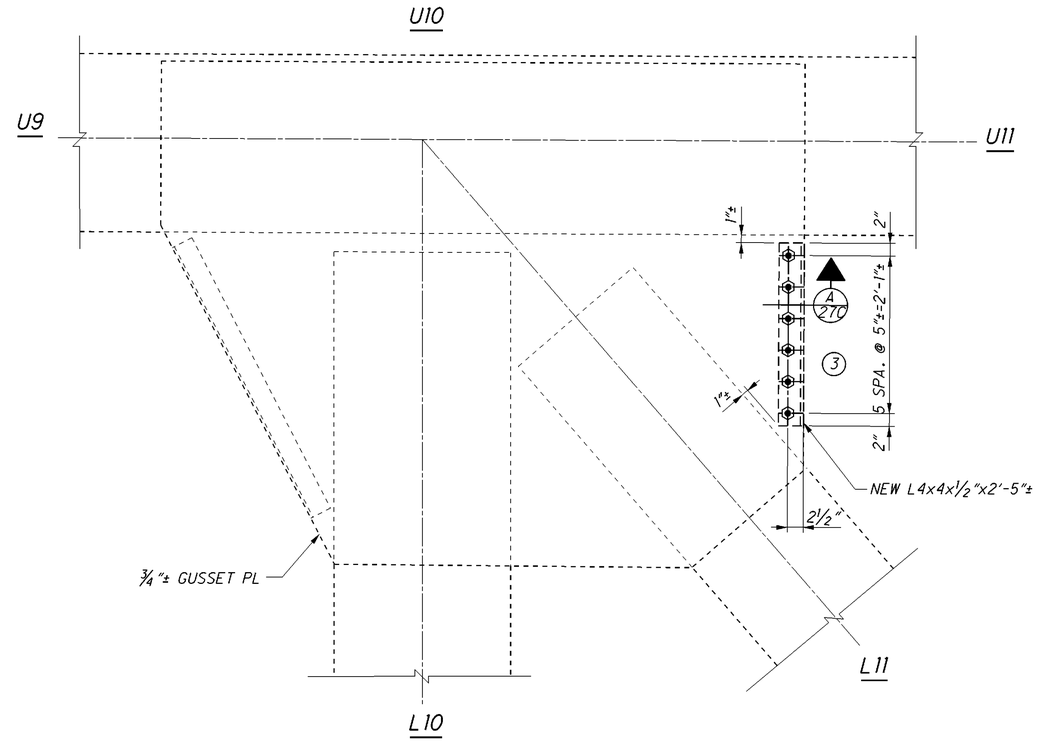
SUM-8-1.99
PID No. 85246

27M/34

52M/59



U9 EAST OUTSIDE & U9 WEST INSIDE GUSSET PLATES (SHOWN)
U9 EAST INSIDE & U9 WEST OUTSIDE GUSSET PLATES (OPPOSITE HAND)
U9' EAST & WEST OUTSIDE & INSIDE GUSSET PLATES (SIMILAR)



U10 EAST OUTSIDE & U10 WEST INSIDE GUSSET PLATES (SHOWN)
U10 EAST INSIDE & U10 WEST OUTSIDE GUSSET PLATES (OPPOSITE HAND)
U10' EAST & WEST OUTSIDE & INSIDE GUSSET PLATES (SIMILAR)

LEGEND

(1) REPAIR TYPE

NOTES

MATERIALS SHOWN ARE EXISTING UNLESS OTHERWISE NOTED.

GENERAL NOTES: SEE ITEM 513 - STRUCTURAL STEEL, MISC.: TRUSS GUSSET REPAIR, TYPES 2, 3 & 4 ON SHEET 27C/34.

NEW MATERIAL: PAYMENT SHALL BE MADE UNDER ITEM 513 - STRUCTURAL STEEL, MISC.: TRUSS GUSSET REPAIR, TYPES 2, 3 & 4 ON SHEET 27C/34.

NEW BOLTS: ASTM A325, TYPE 3, ⅞" DIAMETER.

BOLT LEGEND: SEE SHEET 27C/34.

REPAIR INSTALLATION SEQUENCE: SEE SHEET 27C/34.

RICHLAND ENGINEERING LIMITED
29 NORTH PARK STREET
MANSFIELD, OHIO 44902

DESIGNED	DRAWN	REVIEWED	DATE
DLR	RB	DAP	6/18/09
CHECKED	REVISED	STRUCTURE FILE NUMBER	
ALP		7700369	

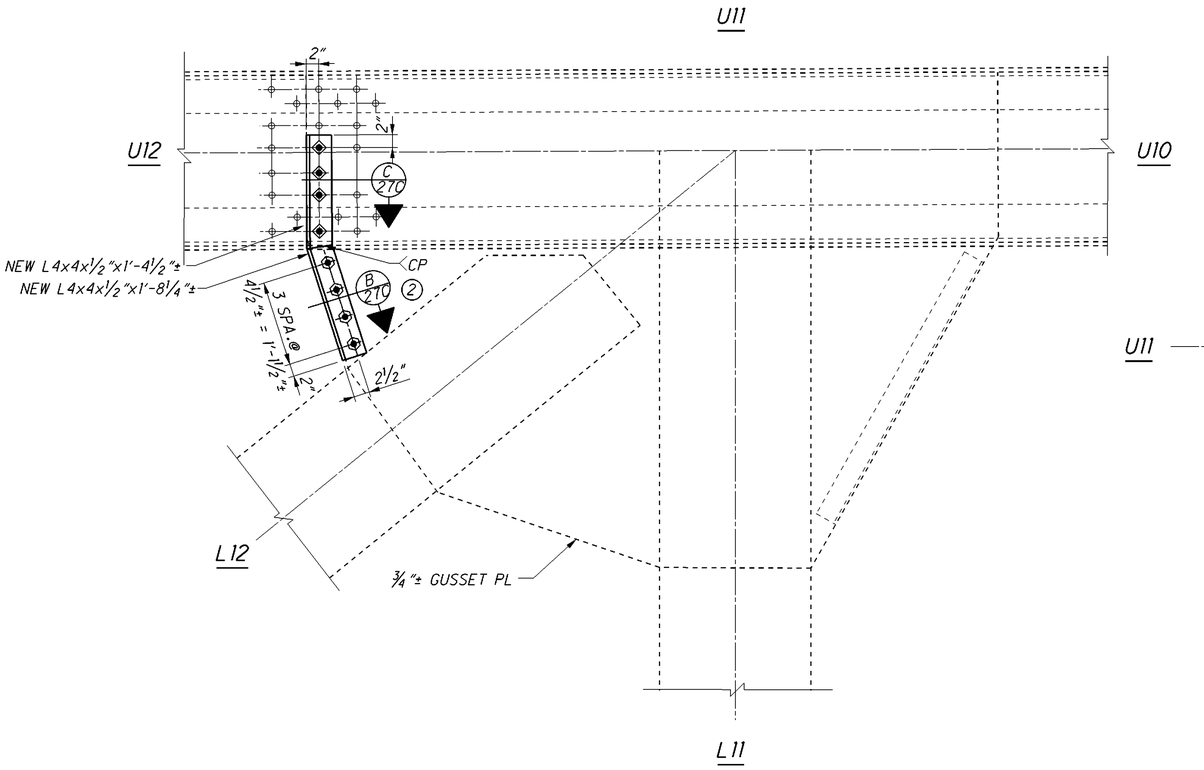
U9, U9', U10 & U10' EAST & WEST TRUSS GUSSET PLATE REPAIR
BRIDGE NO. SUM-8-0199
OVER RAILROADS, LITTLE CUYAHOGA RIVER AND EAST NORTH STREET

SUM-8-1.99
PID No. 85246

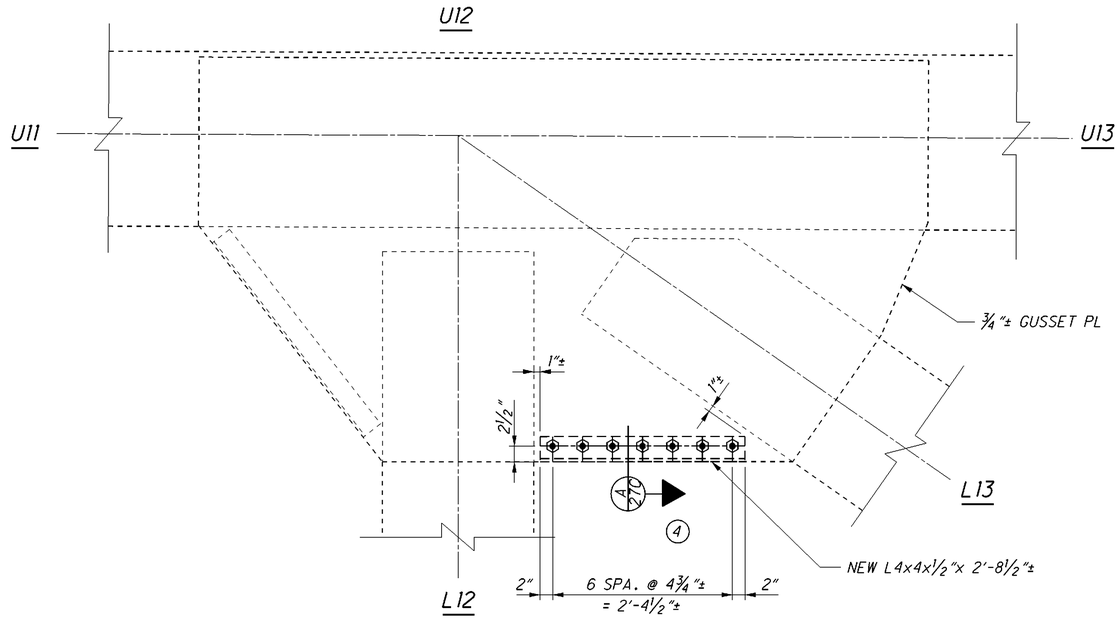
27N/34

52N/59

008_0195CSD0011.DGN 6/19/09 RB,SCB,TWH,JLS



U11 WEST OUTSIDE GUSSET PLATE (SHOWN)
U11 WEST INSIDE GUSSET PLATE (OPPOSITE HAND)



U12 EAST OUTSIDE & U12 WEST INSIDE GUSSET PLATES (SHOWN)
U12 EAST INSIDE & U12 WEST OUTSIDE GUSSET PLATES (OPPOSITE HAND)
U12' EAST & WEST OUTSIDE & INSIDE GUSSET PLATES (SIMILAR)

LEGEND

(1) REPAIR TYPE

NOTES

MATERIALS SHOWN ARE EXISTING UNLESS OTHERWISE NOTED.

GENERAL NOTES: SEE ITEM 513 - STRUCTURAL STEEL, MISC.: TRUSS GUSSET REPAIR, TYPES 2, 3 & 4 ON SHEET 27C/34.

RIVETS REMOVED: PAYMENT SHALL BE MADE UNDER ITEM 202 - REMOVAL, MISC.: RIVET ON SHEET 3/34.

NEW MATERIAL: PAYMENT SHALL BE MADE UNDER ITEM 513 - STRUCTURAL STEEL, MISC.: TRUSS GUSSET REPAIR, TYPES 2, 3 & 4 ON SHEET 27C/34.

NEW BOLTS: ASTM A325, TYPE 3, ⅞" DIAMETER.

BOLT LEGEND: SEE SHEET 27C/34.

REPAIR INSTALLATION SEQUENCE: SEE SHEET 27C/34.

CP - COMPLETE PENETRATION.

RICHLAND ENGINEERING LIMITED
29 NORTH PARK STREET
MANSFIELD, OHIO 44902

DESIGNED	DRAWN	REVIEWED	DATE
DLR	JLS	DAP	6/18/09
CHECKED	REVISED	STRUCTURE FILE NUMBER	
ALP		7700369	

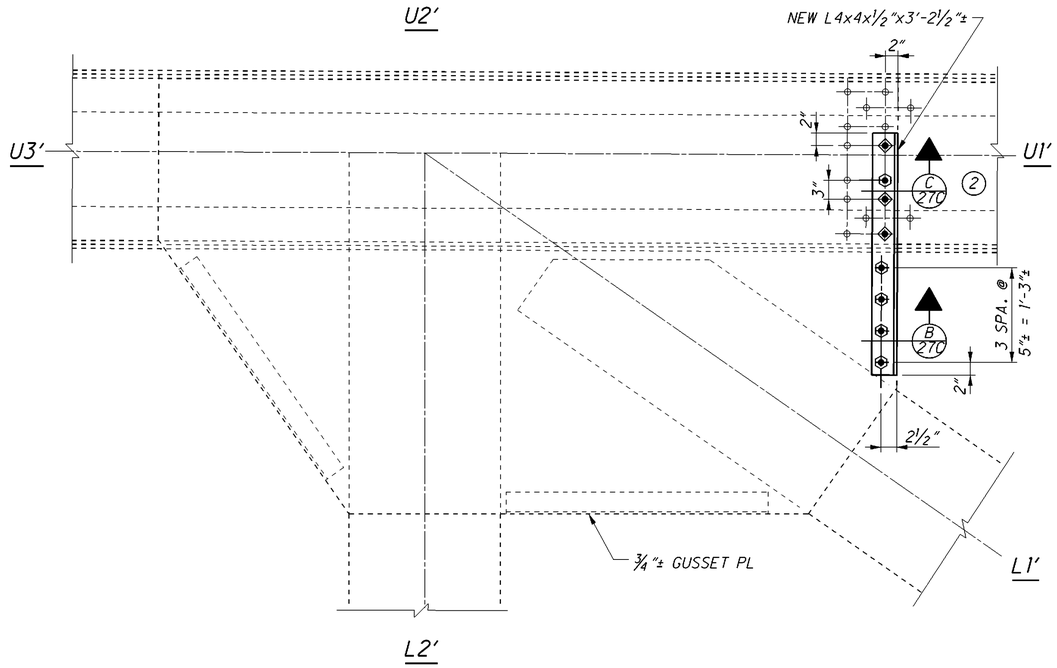
U11 WEST, U12 & U12' EAST & WEST TRUSS GUSSET PLATE REPAIR
BRIDGE NO. SUM-8-0199
OVER RAILROADS, LITTLE CUYAHOGA RIVER AND EAST NORTH STREET

SUM-8-1.99
PID No. 85246

27P/34

52P
59

008_0195CSD012.DGN 6/19/09 SCB.TWH.JLS



U2′ EAST OUTSIDE GUSSET PLATE (SHOWN)

U2′ EAST INSIDE GUSSET PLATE (OPPOSITE HAND)

LEGEND

(1) REPAIR TYPE

NOTES

MATERIALS SHOWN ARE EXISTING UNLESS OTHERWISE NOTED.

GENERAL NOTES: SEE ITEM 513 - STRUCTURAL STEEL, MISC.: TRUSS GUSSET REPAIR, TYPES 2, 3 & 4 ON SHEET 27C/34.

RIVETS REMOVED: PAYMENT SHALL BE MADE UNDER ITEM 202 - REMOVAL, MISC.: RIVET ON SHEET 3/34.

NEW MATERIAL: PAYMENT SHALL BE MADE UNDER ITEM 513 - STRUCTURAL STEEL, MISC.: TRUSS GUSSET REPAIR, TYPES 2, 3 & 4 ON SHEET 27C/34.

NEW BOLTS: ASTM A325, TYPE 3, ⅞" DIAMETER.

BOLT LEGEND: SEE SHEET 27C/34.

REPAIR INSTALLATION SEQUENCE: SEE SHEET 27C/34.

008_0195CSD0021.DGN 6/19/09 TWH,JLS

RICHLAND ENGINEERING LIMITED
29 NORTH PARK STREET
MANSFIELD, OHIO 44902

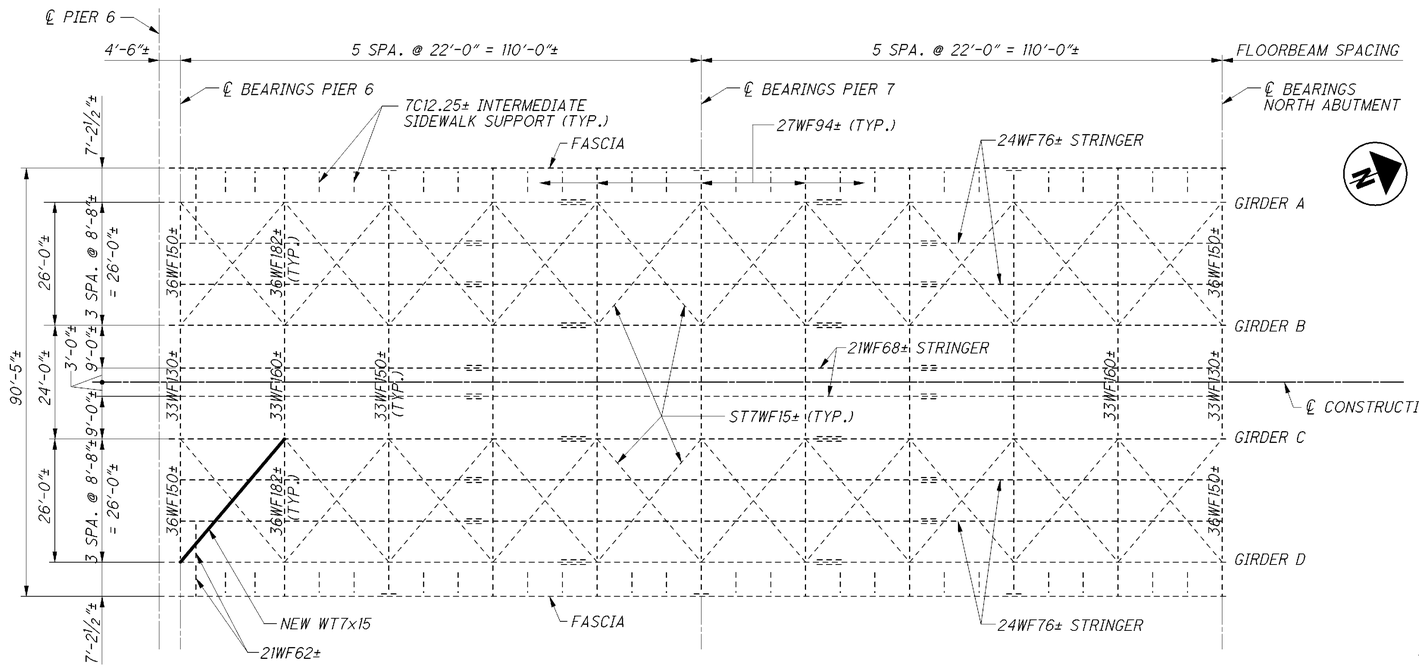
DESIGNED	DRAWN	REVIEWED	DATE
DLR	TWH	DAP	6/18/09
CHECKED	REVISED	STRUCTURE FILE NUMBER	
ALP		7700369	

U2′ EAST TRUSS GUSSET PLATE REPAIR
BRIDGE NO. SUM-8-0199
OVER RAILROADS, LITTLE CUYAHOGA RIVER AND EAST NORTH STREET

SUM-8-1.99
PID No. 85246

27R/34

52R/59

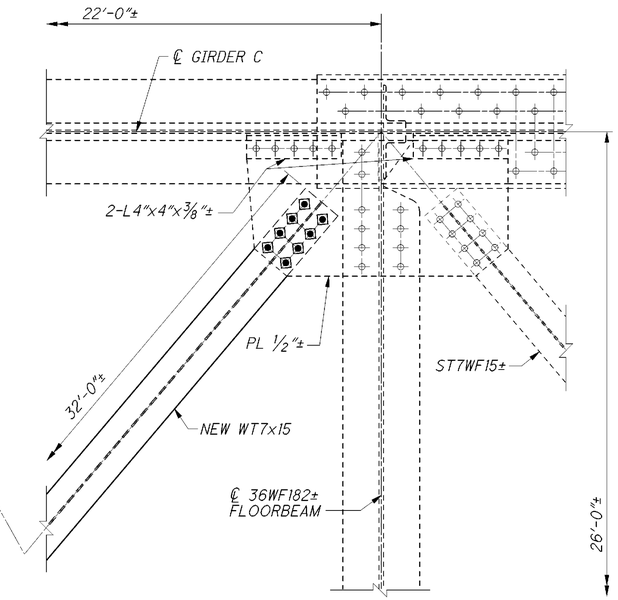


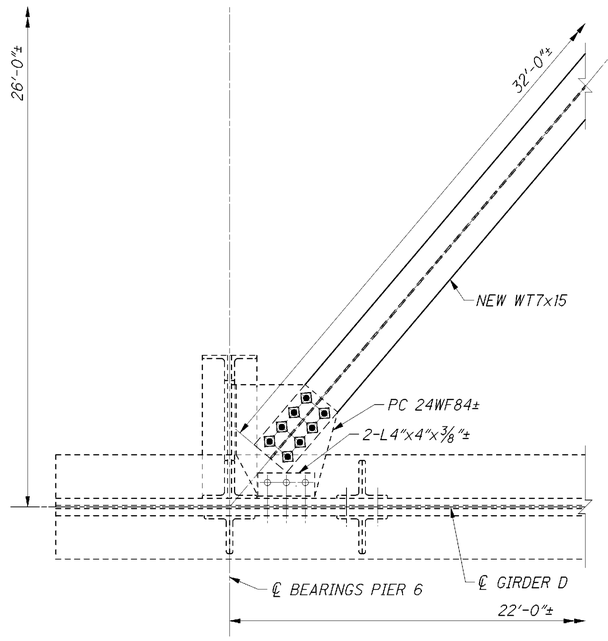
FRAMING PLAN - UNIT 3

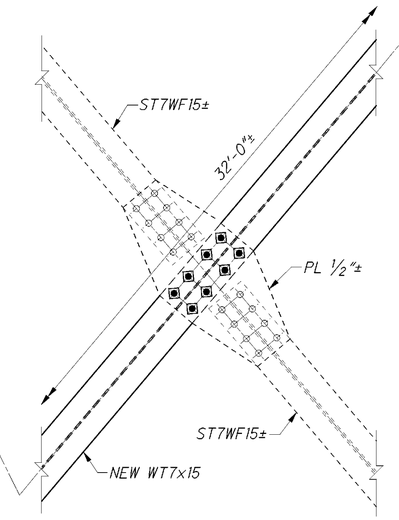
BOLT LEGEND

EXISTING RIVET OR BOLT TO REMAIN IN PLACE.

REMOVE EXISTING RIVET AND EXISTING MEMBER.
NEW CONNECTION BOLT FOR NEW MEMBER TO EXISTING PLATE.







NOTES

MATERIALS SHOWN ARE EXISTING UNLESS OTHERWISE NOTED.

RIVETS REMOVED: PAYMENT SHALL BE MADE UNDER ITEM 202 - REMOVAL, MISC.: RIVET.

REMOVAL OF EXISTING MEMBER: PAYMENT SHALL BE MADE UNDER ITEM 202 - PORTIONS OF STRUCTURE REMOVED, AS PER PLAN.

NEW MATERIAL: PAYMENT SHALL BE MADE UNDER ITEM 513 - STRUCTURAL STEEL, MISC.: REPLACE DAMAGED LATERAL BRACING MEMBER.

RICHLAND ENGINEERING LIMITED
29 NORTH PARK STREET
MANSFIELD, OHIO 44902

DESIGNED dht | DRAWN KH | CHECKED JDB | REVIEWED DLR | DATE 3-23-09 | REVISED | STRUCTURE TITLE NUMBER 7700369

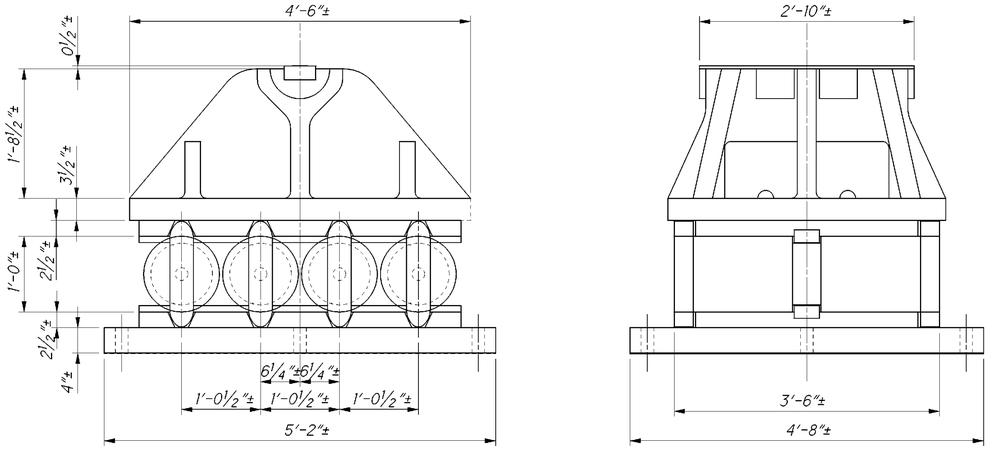
FRAMING PLAN - UNIT 3
BRIDGE NO. SUM-8-0199
OVER RAILROADS, LITTLE CUYAHOGA RIVER AND EAST NORTH STREET

SUM-8-1.99
PID No. 85246

28 / 34

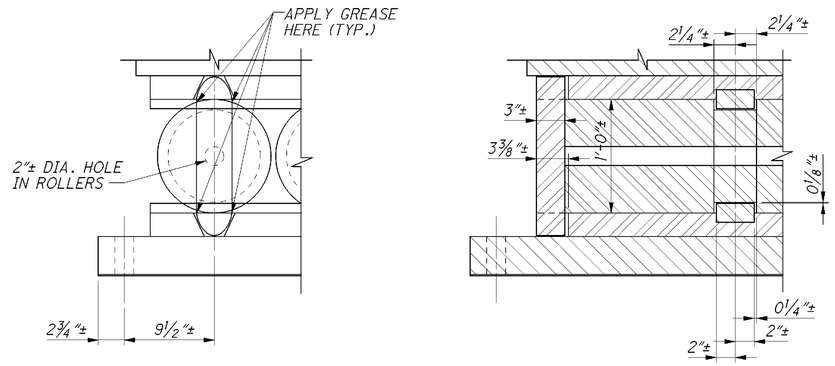
53
59

008_0195CS0001.DGN 3/20/09 KH



LOWER SHOE CASTING

PIER 3 AND PIER 6
(FOR INFORMATION ONLY)



END ELEVATION

LONGITUDINAL SECTION

TOOTH AND ROLLER DETAILS

(FOR INFORMATION ONLY)

ITEM 516-BEARING DEVICE, MISC.: CLEAN AND LUBRICATE TRUSS BEARINGS:

THIS ITEM SHALL BE PERFORMED AFTER ALL CONCRETE PATCHING AND REPAIR ITEMS HAVE BEEN COMPLETED ON PIERS 3 AND 6.

REMOVE ALL DIRT AND DEBRIS FROM WITHIN THE ROLLER NEST, WORKING FROM TOP DOWN AND FROM THE INSIDE OUT. FLUSH THE ROLLER NEST WITH CLEAN WATER AND ALLOW IT TO DRY.

ONCE THE ROLLER NEST IS DRY, APPLY A ¼" BEAD OF OPEN GEAR GREASE ALONG THE INTERFACE OF THE ROLLERS AND THE UPPER AND LOWER BEARING PLATES.

OPEN GEAR GREASE SHALL BE EXXON DYNAGEAR, LUBRIPLATE GEAR SHIELD, AMSOIL GFW, OR EQUAL.

THE CONTRACTOR SHALL PROPERLY REMOVE AND DISPOSE OF ALL DIRT AND DEBRIS FROM THE BRIDGE SITE.

COMPLY WITH ALL APPLICABLE POLLUTION CONTROL LAWS, RULES AND REGULATIONS OF FEDERAL, STATE AND LOCAL AGENCIES. THE DEPARTMENT WILL NOT PAY FOR ADDITIONAL TESTING REQUIRED BY ANY HAULER, TREATMENT FACILITY OR LANDFILL.

ALL COSTS FOR LABOR, TOOLS, MATERIALS, AND EQUIPMENT NECESSARY TO COMPLETE THE CLEANING AND LUBRICATION OF THE TRUSS BEARINGS AND THE DISPOSAL OF DIRT AND DEBRIS SHALL BE INCLUDED IN THE LUMP SUM BID PRICE FOR ITEM SPECIAL-STRUCTURE MISC: CLEAN AND LUBRICATE TRUSS BEARINGS.

NOTES

MATERIALS *SHOWN ARE EXISTING UNLESS OTHERWISE NOTED.*

RICHLAND ENGINEERING LIMITED
29 NORTH PARK STREET
MANSFIELD, OHIO 44902

DESIGNED	DRAWN	REVIEWED	DATE
DLR	RB	DLR	3-23-09
CHECKED	REVISED	STRUCTURE TILE NUMBER	
dhf		7700369	

TRUSS BEARING DETAILS
BRIDGE NO. SUM-8-0199
OVER RAILROADS, LITTLE CUYAHOGA RIVER AND EAST NORTH STREET

SUM-8-1.99
PID No. 85246

29 / 34

54
59

008_0195CBR001.DGN 3/16/09 RB,SCB

DECK PLAN

LEGEND

+38.93± - SCUPPER LOCATION

NOTES

REPLACE SCUPPER GRATE DETAILS: SEE SHEET 34/34.

RICHLAND ENGINEERING LIMITED
29 NORTH PARK STREET
MANSFIELD, OHIO 44902

DESIGNED	DRAWN	REVIEWED	DATE
dht	JLS	DLR	3-23-09
CHECKED	REVISED	STRUCTURE TILE NUMBER	
JDB		7700369	

DECK PLAN - 1
BRIDGE NO. SUM-8-0199
OVER RAILROADS, LITTLE CUYAHOGA RIVER AND EAST NORTH STREET

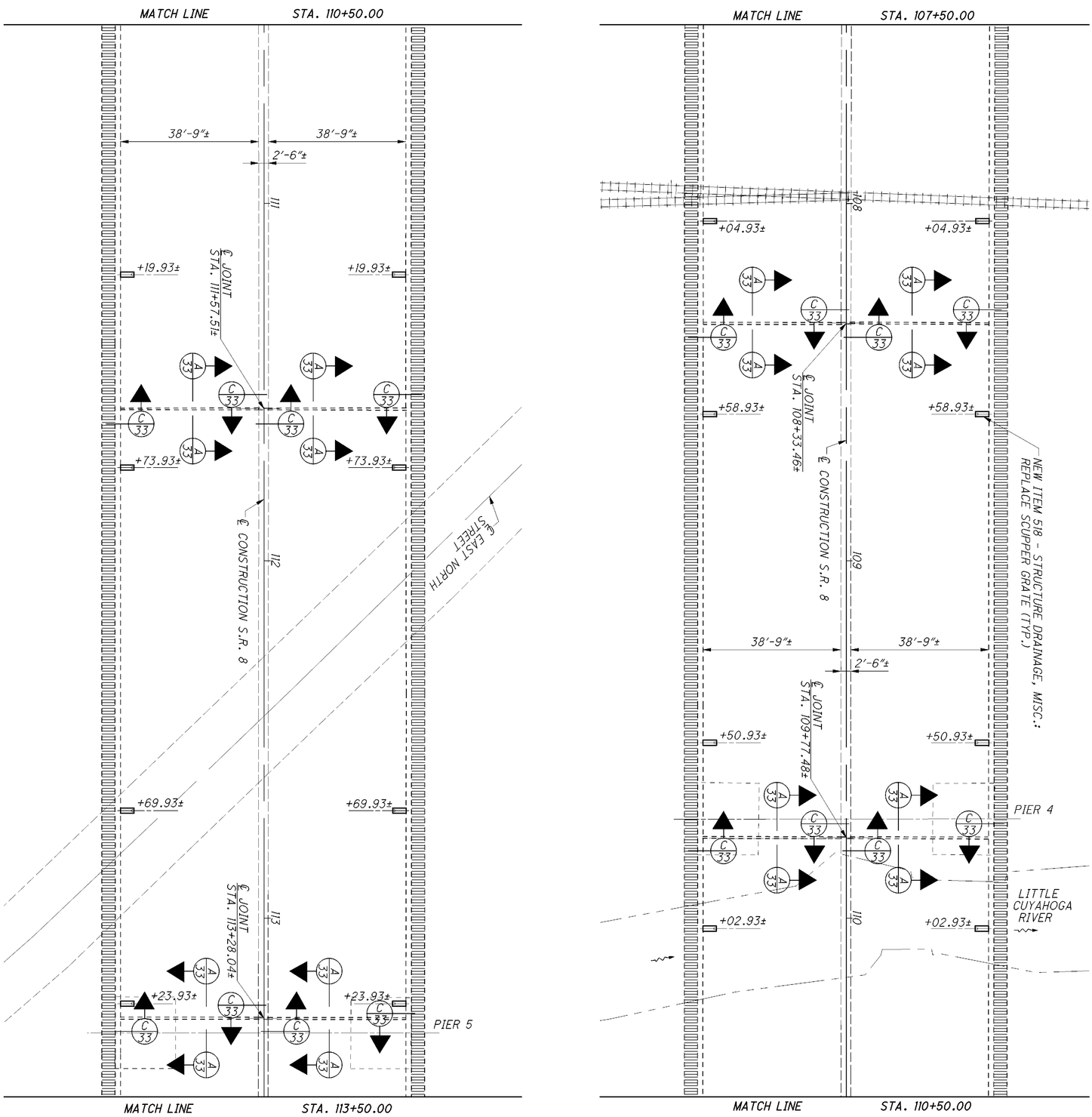
SUM-8-1.99
PID No. 85246

30/34

55/59

008_0195CMD005.DGN 3/16/09 JLS,SCB,KH

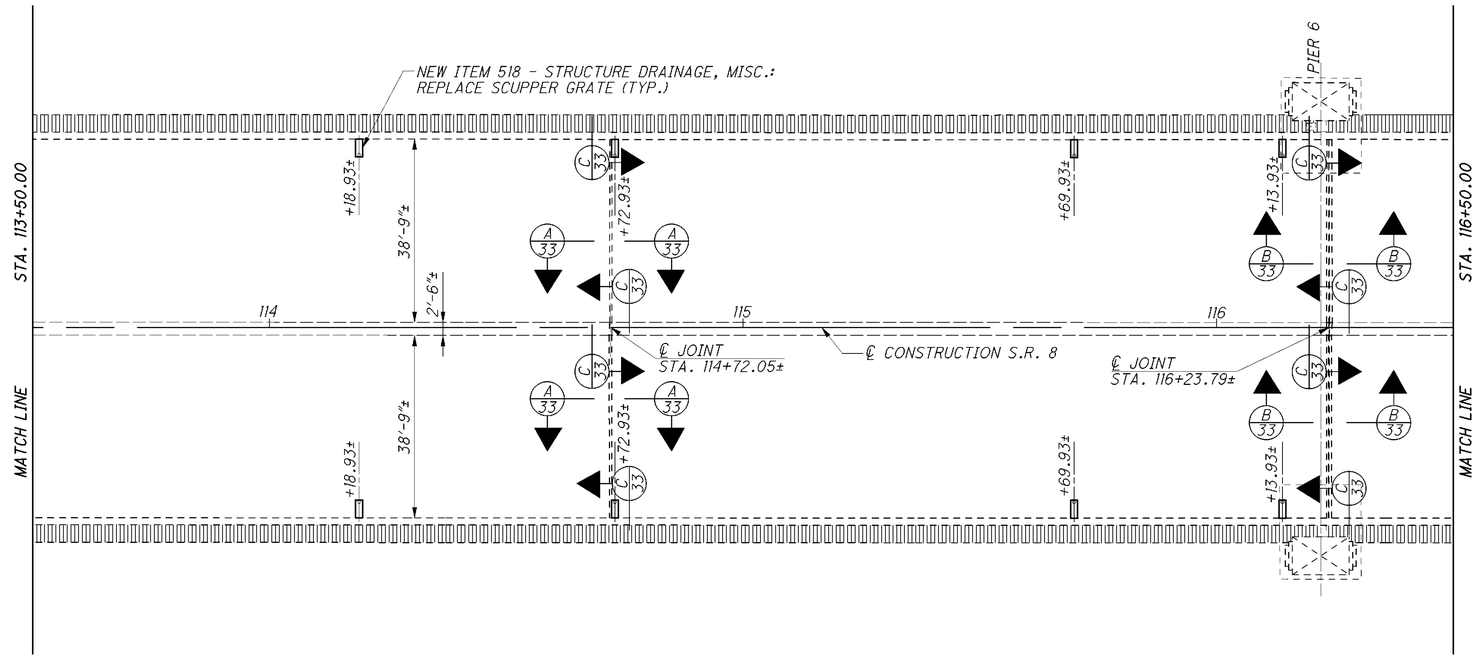
DECK PLAN

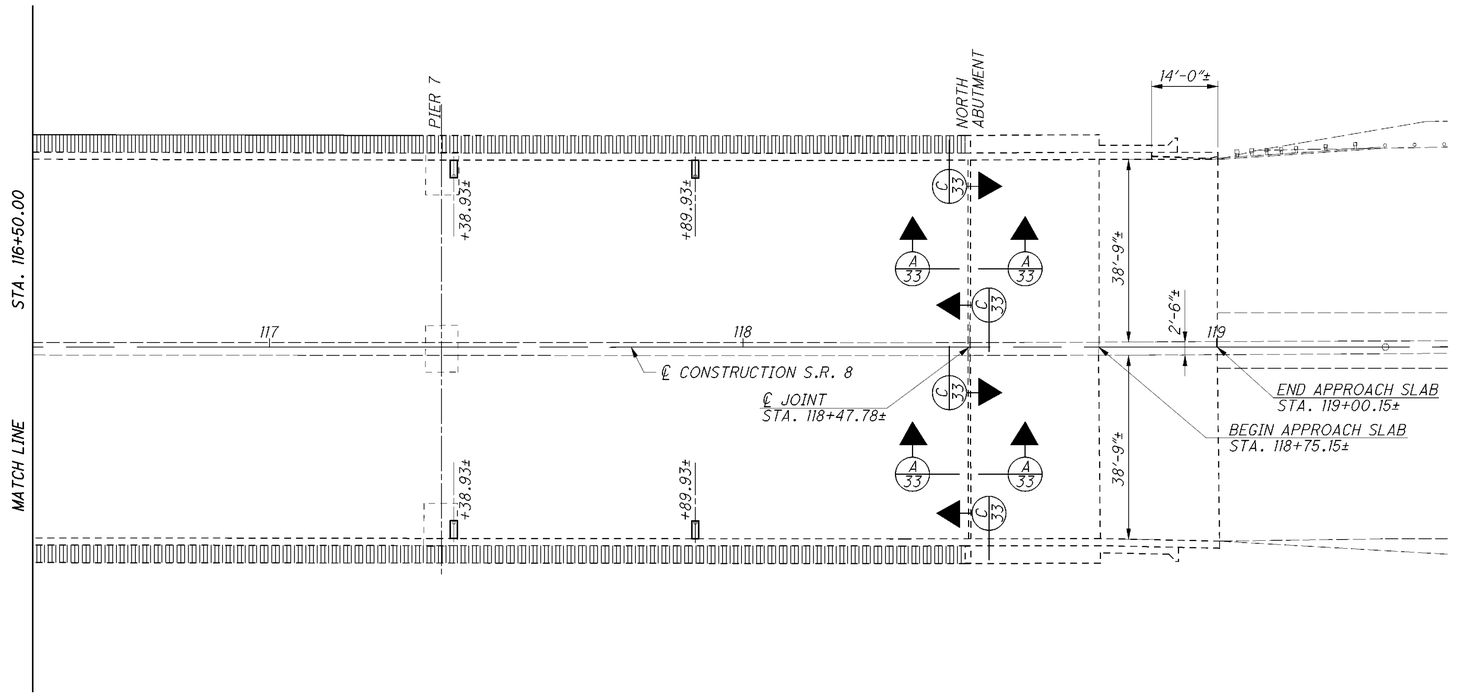


NOTES

ADDITIONAL NOTES: SEE SHEET 30/34

56/59	31/34	**SUM-8-1.99** **PID No. 85246**	DECK PLAN - 2 BRIDGE NO. SUM-8-0199 OVER RAILROADS, LITTLE CUYAHOGA RIVER AND EAST NORTH STREET	DESIGNED dht	DRAWN JLS	REVIEWED DLR	DATE 3-23-09	RICHLAND ENGINEERING LIMITED 29 NORTH PARK STREET MANSFIELD, OHIO 44902
				CHECKED JDB	REVISED	STRUCTURE FILE NUMBER 7700369		





DECK PLAN

NOTES

ADDITIONAL NOTES: SEE SHEET 30/34.

RICHLAND ENGINEERING LIMITED
29 NORTH PARK STREET
MANSFIELD, OHIO 44902

DESIGNED dht | DRAWN JLS | REVIEWED DLR | DATE 3-23-09
CHECKED JDB | REVISED | STRUCTURE TITLE NUMBER 7700369

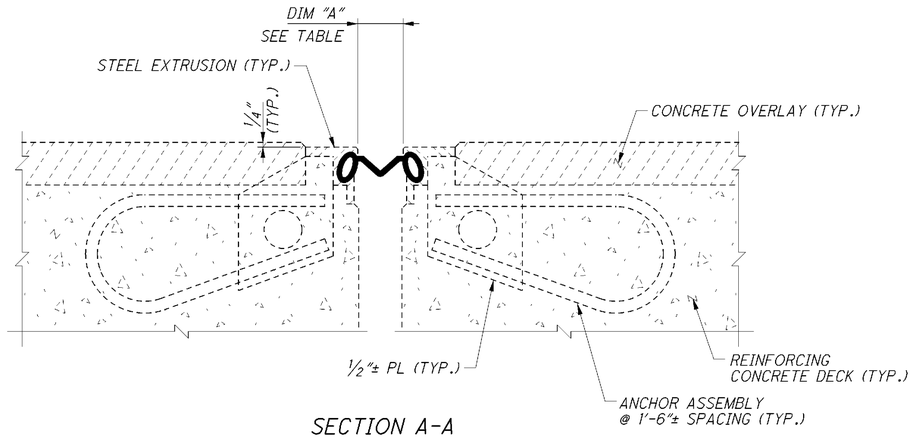
DECK PLAN - 3
BRIDGE NO. SUM-8-0199
OVER RAILROADS, LITTLE CUYAHOGA RIVER AND EAST

SUM-8-1.99
PID No. 85246

32/34

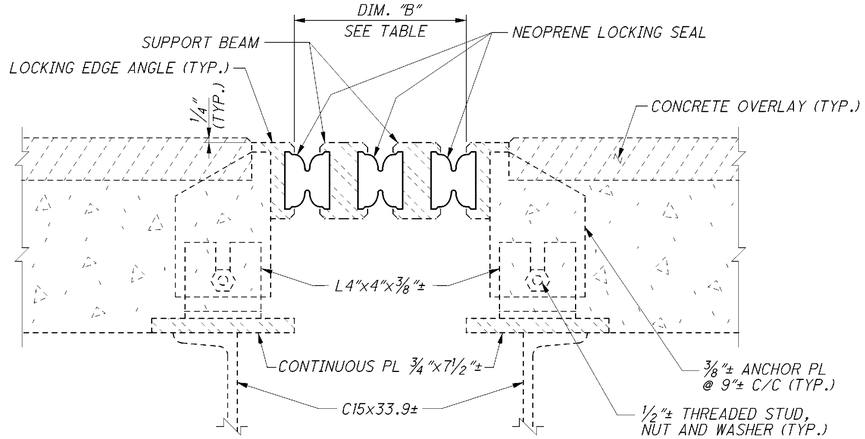
57
59

008_0195CM0004.DGN 3/16/09 JLS,SCB,KH



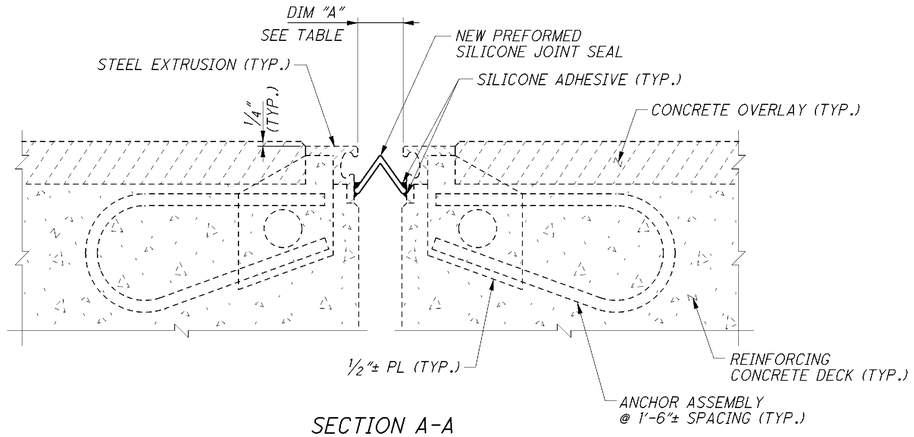
SECTION A-A

(TYPICAL)



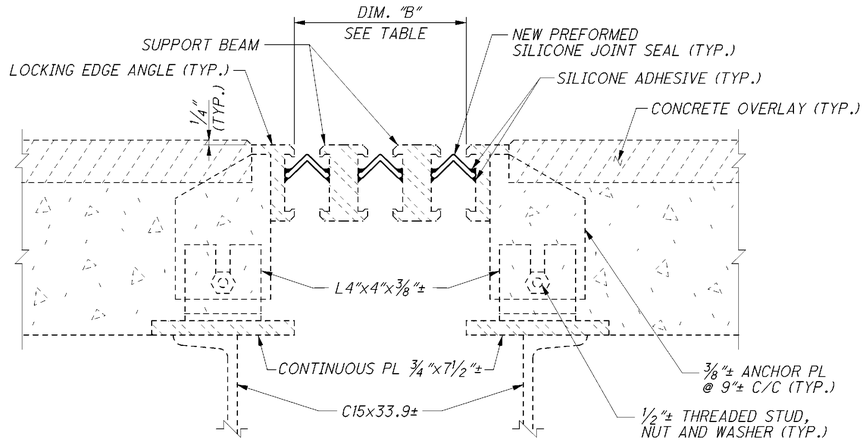
SECTION B-B

(PIER 6)



SECTION A-A

(TYPICAL)

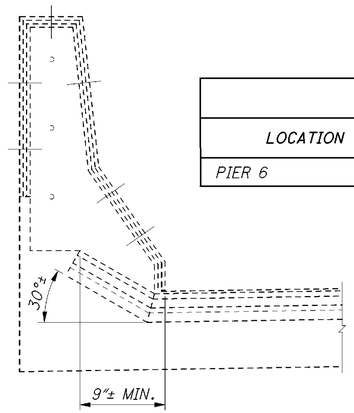


SECTION B-B

(PIER 6)

* DIM. "A" TABLE					
LOCATION	TEMPERATURE (°F)	ACTUAL WIDTH (IN.)	PLAN WIDTH @ 60 °F (IN.)	DIFFERENCE (IN.)	NOMINAL SEAL MOVEMENT (IN.)
SOUTH ABUTMENT	56	3.00±	2.63	-0.37±	5"
PIER 3	58	2.75±	2.50	-0.25±	5"
CONTRACTION JOINT 1	59	2.50±	2.00	-0.50±	3"
CONTRACTION JOINT 2	60	2.38±	2.00	-0.38±	3"
CONTRACTION JOINT 3	60	2.25±	2.00	-0.25±	3"
CONTRACTION JOINT 4	61	2.13±	2.00	-0.13±	3"
CONTRACTION JOINT 5	61	2.00±	2.00	0.00±	3"
NORTH ABUTMENT	61	1.75±	2.38	+0.63±	4"

* FIELD MEASUREMENTS TAKEN ALONG SHOULDER ON SEPTEMBER 10, 2008



SECTION C

(TYPICAL FOR ALL JOINTS)

DIM. "B" TABLE					
LOCATION	TEMPERATURE (°F)	ACTUAL WIDTH (IN.)	PLAN WIDTH @ 70 °F (IN.)	DIFFERENCE (IN.)	NOMINAL SEAL MOVEMENT (IN.)
PIER 6	68	9.00±	9.13	+0.13±	3 @ 3"

NOTES

MATERIALS SHOWN ARE EXISTING UNLESS OTHERWISE NOTED.

JOINT SEALING LOCATIONS: SEE SHEETS 30/34 TO 32/34 .

RICHLAND ENGINEERING LIMITED
29 NORTH PARK STREET
MANSFIELD, OHIO 44902

DESIGNED dht | DRAWN KH | REVIEWED DLR | DATE 3-23-09
CHECKED JDB | REVISED | STRUCTURE TITLE NUMBER 7700369

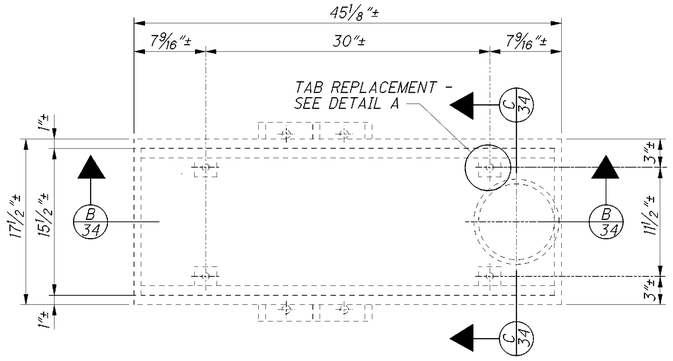
JOINT DETAILS
BRIDGE NO. SUM-8-0199
OVER RAILROADS, LITTLE CUYAHOGA RIVER AND EAST NORTH STREET

SUM-8-1.99
PID No. 85246

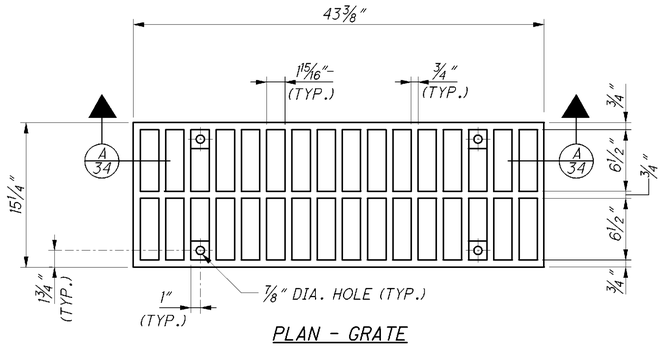
33/34

58
59

008_0195CEX001.DGN 3/16/09 KH,SCB



PLAN - SCUPPER

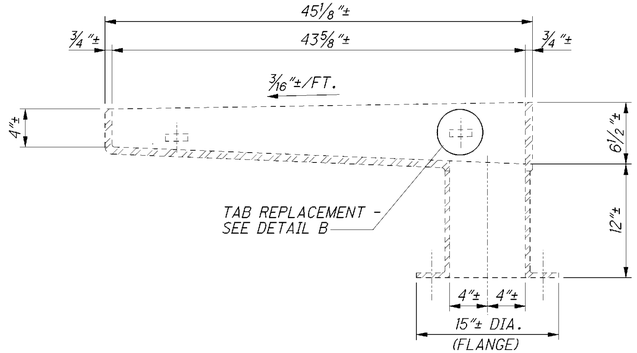


PLAN - GRATE

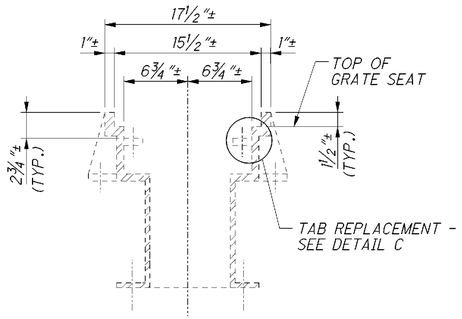
SECTION A-A

NEW SCUPPER GRATE

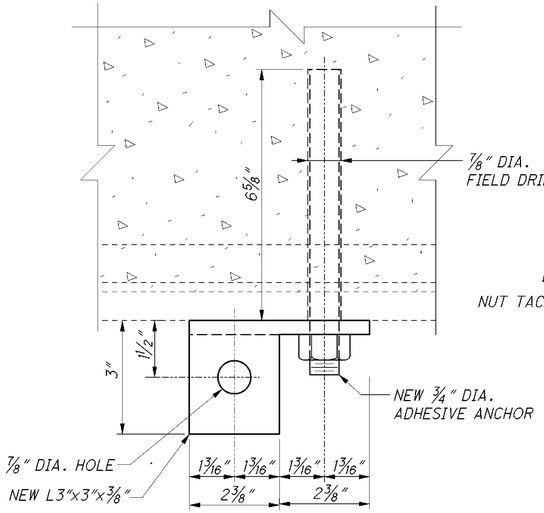
GALVANIZED PER CMS 711.02



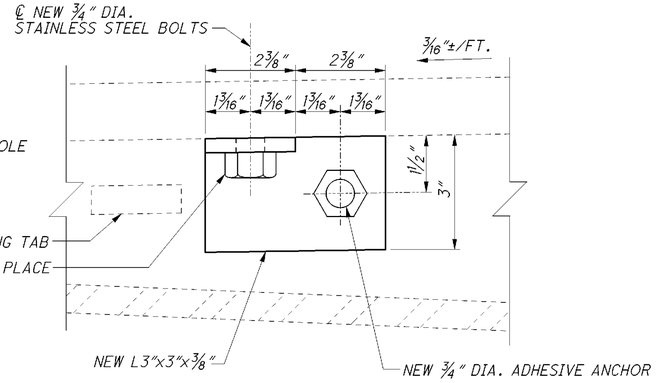
SECTION B-B



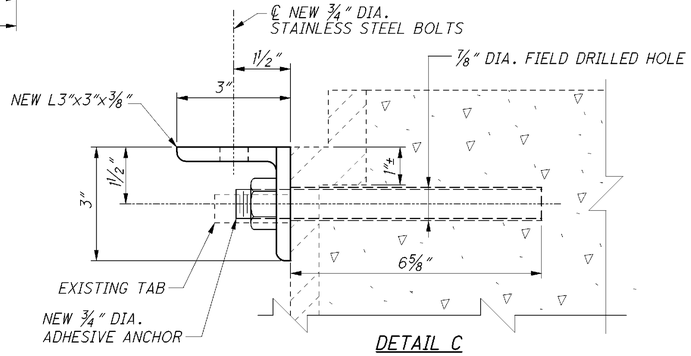
SECTION C-C



DETAIL A



DETAIL B



DETAIL C

TAB REPLACEMENT DETAILS

GALVANIZED PER CMS 711.02

SCUPPER DETAILS

NOTES

MATERIALS SHOWN ARE EXISTING UNLESS OTHERWISE NOTED.

SCUPPER GRATE REPLACEMENT: SEE SHEET 4/34.

SCUPPER GRATE REPLACEMENT LOCATIONS:
SEE SHEETS 30/34 TO 32/34.

RICHLAND ENGINEERING LIMITED
29 NORTH PARK STREET
MANSFIELD, OHIO 44902

DESIGNED	DRAWN	REVIEWED	DATE
dht	KH	DLR	3-23-09
CHECKED	REVISED	STRUCTURE TILE NUMBER	
JDB		7700369	

SCUPPER DETAILS
BRIDGE NO. SUM-8-0199
OVER RAILROADS, LITTLE CUYAHOGA RIVER AND EAST NORTH STREET

SUM-8-1.99
PID No. 85246

34/34

59/59

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