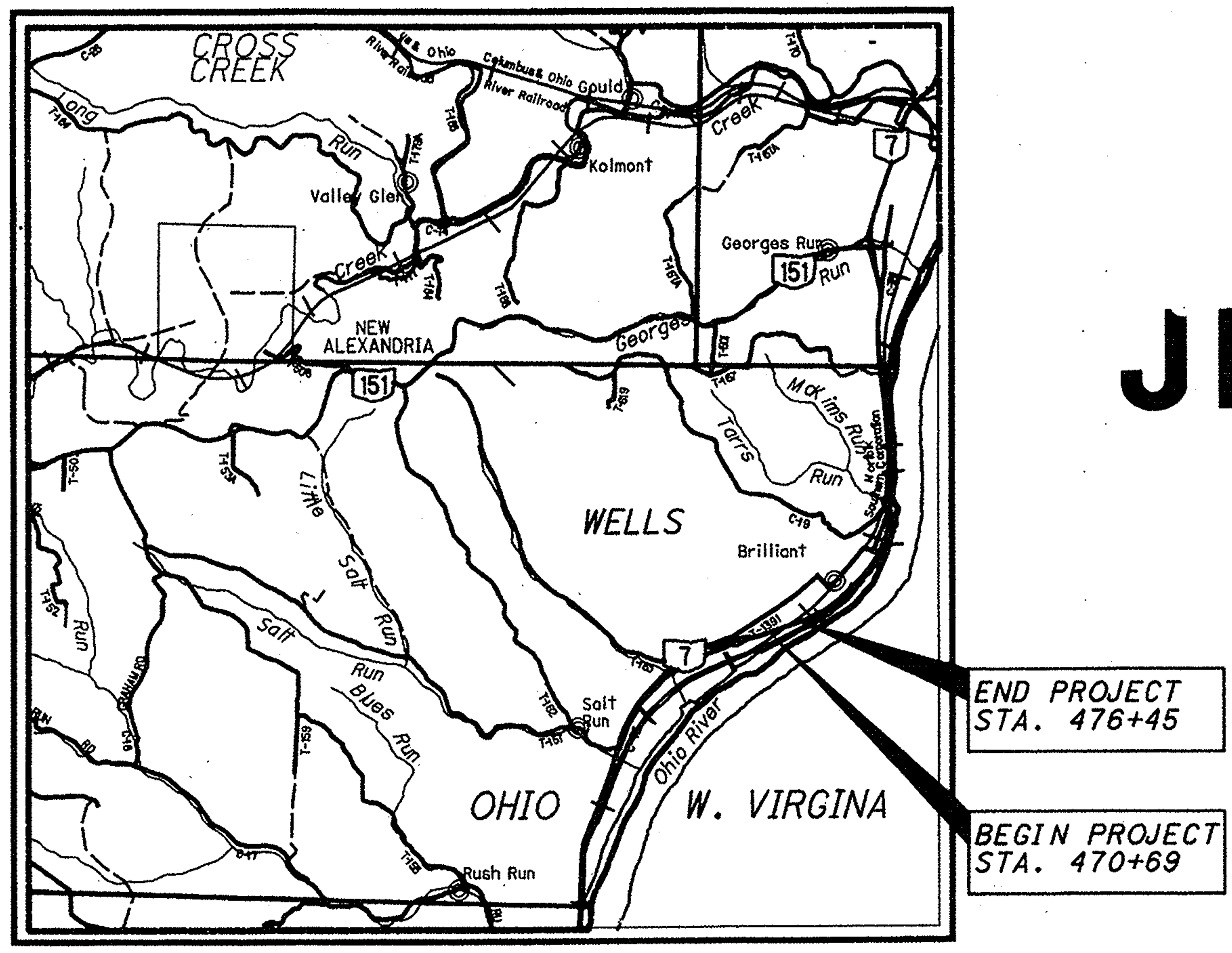
STATE OF OHIO
DEPARTMENT OF TRANSPORTATION

JEF-7-8.56 (PART 1)

WELLS TOWNSHIP
JEFFERSON COUNTY
FOR PART 2, SEE JEF-7-9.92



LOCATION MAP

LATITUDE: N40°15'35" LONGITUDE: W80°38'00"

SCALE IN MILES

0 1 2 3 4

N

PORTION TO BE IMPROVED
INTERSTATE HIGHWAY
STATE & FEDERAL ROUTES
COUNTY & TOWNSHIP ROADS
OTHER ROADS

DESIGN DESIGNATION

CURRENT ADT (2011) ____ 15600
DESIGN YEAR ADT (2031) ____ 18600
DESIGN HOURLY VOLUME (2031) ____ 1674
DIRECTIONAL DISTRIBUTION ____ 55%
TRUCKS (24 HOUR B&C) ____ 15%
DESIGN SPEED ____ 55 MPH
LEGAL SPEED ____ 55 MPH
DESIGN FUNCTIONAL CLASSIFICATION:
FREEWAY/EXPRESSWAY (URBAN)
NHS PROJECT ____ NO

DESIGN EXCEPTIONS

BRIDGE WIDTH APPROVED 3-23-10 SHEET NO. 25-26, 52

UNDERGROUND UTILITIES

CONTACT BOTH SERVICES
CALL TWO WORKING DAYS
BEFORE YOU DIG

CALL
1-800-362-2764
(TOLL FREE)
OHIO UTILITIES PROTECTION SERVICE
NON-MEMBERS
MUST BE CALLED DIRECTLY

OIL & GAS PRODUCERS PROTECTIVE
SERVICE CALL: **1-800-925-0988**

PLAN PREPARED BY:

OSBORN ENGINEERING
441 WOLF LEDGES PARKWAY
AKRON, OHIO

INDEX OF SHEETS:

ENGINEERS SEAL:

STATE OF OHIO
SCOTT A. VURA
E-63375
REGISTERED PROFESSIONAL ENGINEER

SIGNED: Scott A. Vura
DATE: 12-2-2010

STANDARD CONSTRUCTION DRAWINGS (PARTS 1 & 2)										SUPPLEMENTAL SPECIFICATIONS	
BP-3.1	10-19-07	DM-4.3	4-17-09	MT-35.10	4/20/01			BR-1	07-19-02	800-2010	1-21-11
BP-5.1	7-28-00	DM-4.4	4-17-09	MT-95.30	7/17/09	TC-41.10	10-19-07	EXJ-3-82	07-19-02	802	10-15-10
				MT-95.40	7/17/09	TC-41.20	1-19-01	EXJ-5-93	07-19-02	832	5-5-09
BP-9.1	4-15-05			MT-95.70	7/17/09	TC-42.20	7-16-04	GSD-1-96	07-19-02	843	04-18-03
				MT-95.82	9/05/06			PCB91	07-19-02	848	04-16-10
GR-1.1	7-16-04			MT-98.10	7/17/09	TC-52.10	1-19-07				
GR-2.1	1-16-04			MT-98.11	7/17/09	TC-52.20	1-19-07				
GR-3.2	10-16-09			MT-98.20	7/17/09						
GR-5.1	4-16-10					TC-61.30	4-16-10			SPECIAL PROVISIONS	
GR-6.1	4-16-10			MT-99.20	1/16/09	TC-65.10	1-21-05				
				MT-100.00	1/16/09	TC-65.11	1-21-05				
RM-4.1	10-20-06			MT-101.60	4/17/09						
RM-4.2	10-15-10			MT-101.70	1/16/10	TC-72.20	10/16/09				
				MT-105.10	1/16/10	TC-73.10	1/19/01				

PROJECT DESCRIPTION

IMPROVEMENT OF 0.16 MILE OF STATE ROUTE 7 BY REHABILITATING STRUCTURE JEF-7-0856 OVER THE NORFOLK SOUTHERN RAILROAD. THE REHABILITATION CONSISTS OF SUBSTRUCTURE REPAIRS AND SUPERSTRUCTURE REPAIRS.

PROJECT EARTH DISTURBED AREA: N/A ACRES
ESTIMATED CONTRACTOR EARTH DISTRUBED AREA: N/A ACRES
NOTICE OF INTENT EARTH DISTURBED AREA: N/A ACRES
(MAINTENANCE PROJECT)

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.

2010 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.

UNDER AUTHORITY OF SECTION 4511.21, DIVISION (H) OF THE OHIO REVISED CODE, THE REVISED PRIMA FACIE SPEED LIMITS AS INDICATED HEREIN ARE DETERMINED TO BE REASONABLE AND SAFE, AND ARE HEREBY ESTABLISHED FOR THE DURATION OF THIS PROJECT. THE PRIMA FACIE SPEED LIMIT OR LIMITS HEREBY ESTABLISHED SHALL BECOME EFFECTIVE WHEN APPROPRIATE SIGNS GIVING NOTICE THEREOF ARE ERECTED.

APPROVED Richard A. Bible P.E.
DATE 1/6/11 DISTRICT DEPUTY DIRECTOR

APPROVED Jerry Wray
DATE 1-18-11 DIRECTOR, DEPARTMENT OF TRANSPORTATION

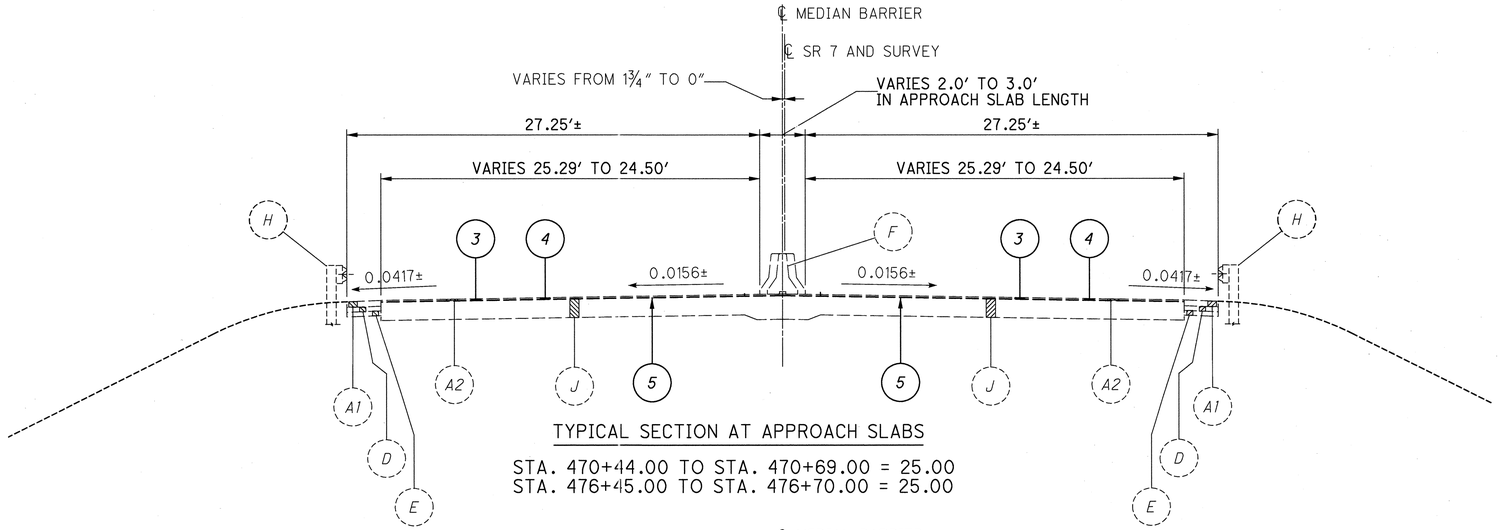
FEDERAL PROJECT NO. E034251

PID NO. 24979

CONSTRUCTION PROJECT NO.

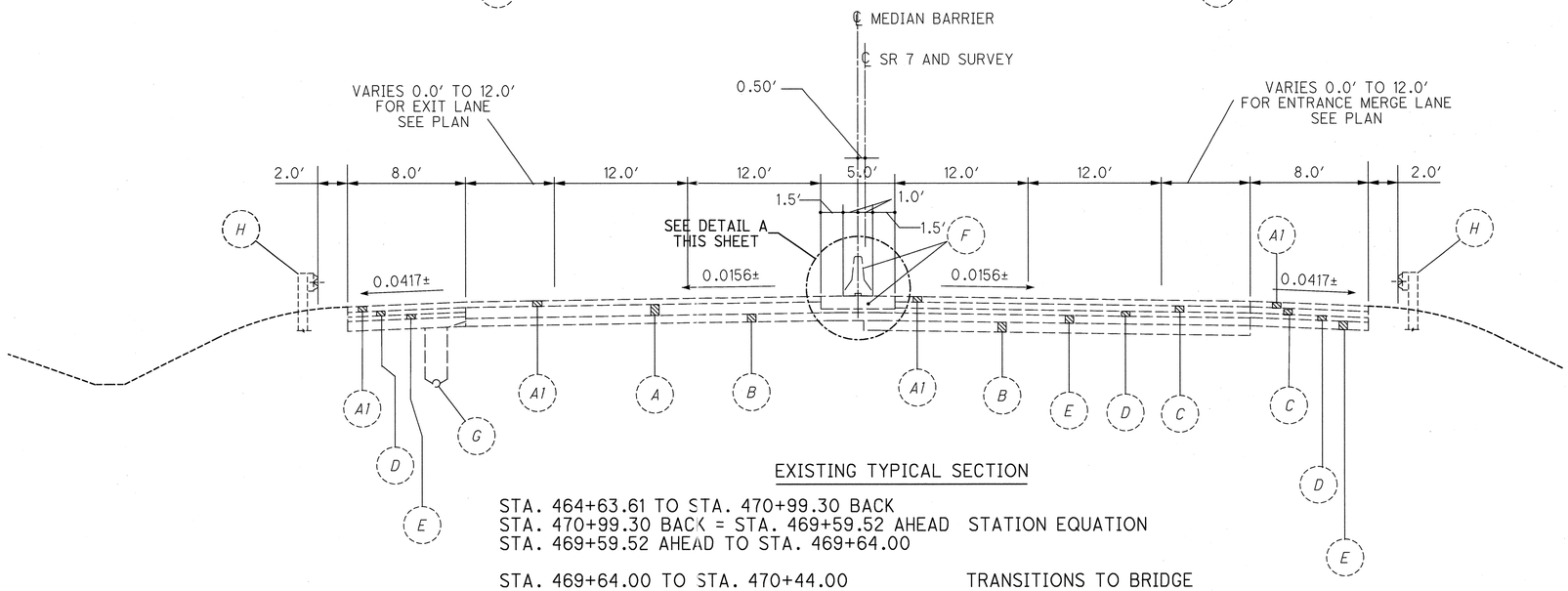
RAILROAD INVOLVEMENT NORFOLK SOUTHERN

JEF-7-8.56



TYPICAL SECTION AT APPROACH SLABS

STA. 470+44.00 TO STA. 470+69.00 = 25.00
STA. 476+45.00 TO STA. 476+70.00 = 25.00

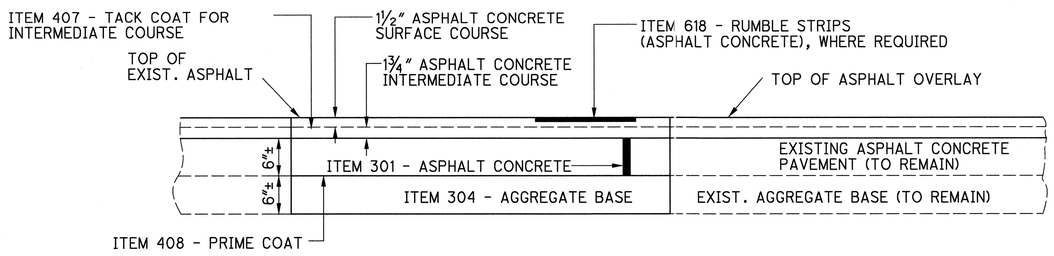


EXISTING TYPICAL SECTION

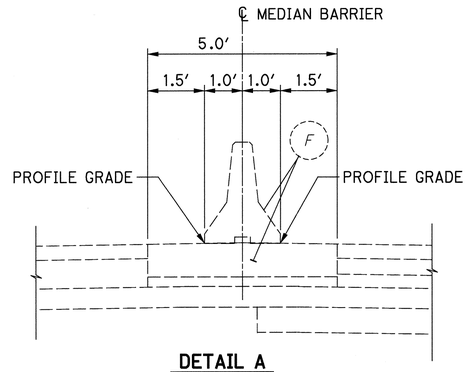
STA. 464+63.61 TO STA. 470+99.30 BACK
STA. 470+99.30 BACK = STA. 469+59.52 AHEAD STATION EQUATION
STA. 469+59.52 AHEAD TO STA. 469+64.00

STA. 469+64.00 TO STA. 470+44.00 TRANSITIONS TO BRIDGE
STA. 470+69.00 TO STA. 476+45.00 BRIDGE

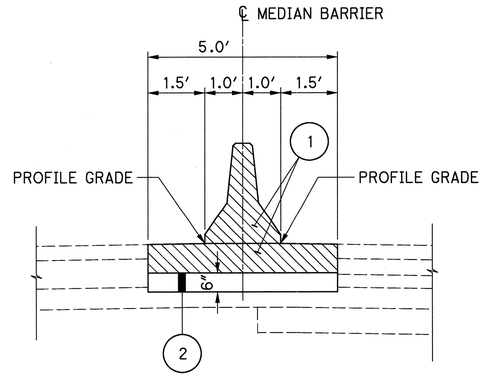
STA. 476+70.00 TO STA. 484+50.00



SHOULDER REPAIR TYPICAL



DETAIL A



DETAILS OF ITEM 622 -CONCRETE BARRIER, TYPE A, AS PER PLAN

STA. 464+63.61 TO STA. 470+99.30
STA. 477+70.00 TO STA. 484+50.00

EXISTING LEGEND

- (A1) EXISTING 3" TO 4 1/2" ASPHALT CONCRETE SURFCE COURSES
- (A2) EXISTING 1" TO 2" ASPHALT CONCRETE SURFACE COURSE
- (A) EXISTING 9" REINFORCED CONCRETE PAVEMENT
- (B) EXISTING 6" SUBBASE
- (C) EXISTING ASPHALT CONCRETE PAVEMENT
- (D) EXISTING BITUMINOUS AGGREGATE BASE
- (E) EXISTING AGGREGATE BASE
- (F) EXISTING CONCRETE MEDIAN BARRIER
- (G) EXISTING 6" SHALLOW PIPE UNDERDRAIN
- (H) EXISTING GUARDRAIL
- (J) EXISTING REINFORCED CONCRETE APPROACH SLAB

PROPOSED LEGEND

- (1) ITEM 622 - CONCRETE BARRIER, TYPE A, AS PER PLAN
- (2) ITEM 304 - AGGREGATE BASE
- (3) ITEM 254 - PAVEMENT PLANING, ASPHALT CONCRETE (1¼"±)
- (4) ITEM 446- 1¼"± ASPHALT CONCRETE SURFACE COURSE, TYPE 1, PG70-22M, AS PER PLAN
- (5) ITEM 407- TACK COAT

TYPICAL SECTIONS

JEF-7-8.56

2497GY001.dgn

CALCULATED SMS CHECKED GTA

GENERAL NOTES

ROUNDING

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

UTILITIES

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

GAS: COLUMBIA GAS TRANSMISSION CORPORATION
ATTN: RUSS JOHNSON
589 NORTH STATE ROAD
MEDINA, OH 44256
(419)-340-6403

ELECTRIC: AEP OHIO POWER COMPANY
ATTN: JEFF TURNER
P.O. BOX 89
47687 NATIONAL ROAD
ST. CLAIRSVILLE, OHIO 43950
(740)-699-7845

TELEPHONE: AT&T OHIO, INC.
ATTN: SANDI RANDOLPH
160 NORTH 6th STREET
ZANESVILLE, OHIO 43701
(704)-454-3455

WATER: BRILLIANT WATER & SEWER DISTRICT
ATTN: JAMES McDONALD
706 SECOND STREET
BRILLIANT, OHIO 43913
(740)-598-4322

SEWER: WELLS TOWNSHIP WASTE WATER TREATMENT PLANT
ATTN: PLANT SUPERINTENDENT
HUDSON STREET
BRILLIANT, OH 43913
(740)-598-4385

HIGHWAY LIGHTING: ODOT DISTRICT 11
ATTN: BEN KUNZE
2201 REISER AVE.
NEW PHILADELPHIA, OHIO 44663
(330)-339-6633

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.

EXISTING PLANS

EXISTING PLANS ENTITLED JEF-7-(4.63-8.99) MAY BE INSPECTED IN THE ODOT DISTRICT 11 OFFICE IN NEW PHILADELPHIA, OHIO.

ELEVATION DATUM

ALL ELEVATIONS ARE ORTHOMETRIC HEIGHTS USING THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88) AND THE GEOID03 GEOID. HORIZONTAL POSITIONS ARE BASED ON THE OHIO STATE PLANE NORTH ZONE, A LAMBERT CONFORMAL CONIC MAP PROJECTION, THE NORTH AMERICAN DATUM OF 1983 ADJUSTED TO THE NATIONAL SPATIAL REFERENCE SYSTEM OF 2007 (NAD 83 (NSRS 2007)), AND THE GRS80 ELLIPSOID.

WORK LIMITS

THE WORK LIMITS SHOWN ON THESE PLANS ARE FOR PHYSICAL CONSTRUCTION ONLY. PROVIDE THE INSTALLATION AND OPERATION OF ALL WORK ZONE TRAFFIC CONTROL AND WORK ZONE TRAFFIC CONTROL DEVICES REQUIRED BY THESE PLANS WHETHER INSIDE OR OUTSIDE THESE WORK LIMITS.

CLEARING AND GRUBBING

ALTHOUGH THERE ARE NO TREES OR STUMPS SPECIFICALLY MARKED FOR REMOVAL WITHIN THE LIMITS OF THE PROJECT, A LUMP SUM QUANTITY IS INCLUDED IN THE GENERAL SUMMARY FOR ITEM 201, CLEARING AND GRUBBING. ALL PROVISIONS AS SET FORTH IN THE SPECIFICATIONS UNDER THIS ITEM ARE INCLUDED IN THE LUMP SUM PRICE BID FOR ITEM 201, CLEARING AND GRUBBING.

- IN ADDITION TO THE ABOVE REQUIREMENTS THE CONTRACTOR WILL BE REQUIRED TO CLEAR AND GRUB ON EACH SIDE OF THE BRIDGE AND UNDER THE BRIDGE.

CONTINGENCY QUANTITIES

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

MEDIAN AND/OR CURBING ON APPROACH SLABS

WITHIN THE LIMITS OF THE APPROACH SLAB, TRANSITION THE SHAPE OF THE MEDIAN AND/OR CURBING ON APPROACH SLABS FROM THE STANDARD SECTION ON THE APPROACHES TO THE SECTION USED ON THE BRIDGE.

ITEM 604 - INLET MISC.: NEW JERSEY SHAPE BARRIER MEDIAN INLETS

THE CONTRACTOR SHALL PROVIDE A MEDIAN BARRIER INLET PER DETAILS SHOWN ON SHEETS 28 AND 29. THE EXISTING CATCH BASIN AND TRANSITION SHALL REMAIN.

ITEM 622 - CONCRETE BARRIER, TYPE A, AS PER PLAN

THIS ITEM SHALL BE CONSTRUCTED ACCORDING TO THE DETAILS SHOWN ON THE PLAN INSERT SHEETS, TITLED "CONCRETE BARRIER DETAIL", EXCEPT THAT THE 9" THICK CONCRETE BASE SHALL EXTEND TO COVER THE WHOLE 5-FOOT SPAN, AS SHOWN ON SHEET 2.

ITEM 446 - ASPHALT CONCRETE SURFACE COURSE, TYPE 1, PG70-22M, AS PER PLAN

MATERIALS FURNISHED FOR FINE AND COURSE AGGREGATES USED IN THIS ITEM SHALL EXCLUDE ALL STONE AND CRUSHED CARBONATE STONE.

SEEDING AND MULCHING

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

659, SEEDING AND MULCHING	320 SQ. YD.
659, COMMERCIAL FERTILIZER	0.05 TON
659, LIME	0.07 ACRES
659, WATER	5 M. GAL.

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

ITEM 623 - CONSTRUCTION LAYOUT STAKES, AS PER PLAN

THE PROPOSED CONCRETE OVERLAY SHALL FOLLOW THE ALIGNMENT AND PROFILE OF THE EXISTING PAVEMENT. THE PROPOSED CONCRETE OVERLAY SHALL HAVE A UNIFORM THICKNESS OF 2 INCHES.

THE CONTRACTOR SHALL SURVEY THE EXISTING DECK AND APPROACH PAVEMENT PRIOR TO REMOVING THE CONCRETE OVERLAY. SURVEY LOCATIONS ON THE DECK WILL BE EVERY 10 FEET AT THE CENTERLINE AND THE CURB LINE. SURVEY LOCATIONS FOR THE APPROACH PAVEMENT WILL BE EVERY 25 FEET AT THE CENTERLINE AND EDGE OF PAVEMENT.

ALL COSTS, EQUIPMENT AND LABOR TO PERFORM THE SURVEY WILL BE INCLUDED WITH THE LUMP SUM CONTRACT PRICE FOR ITEM 623, CONSTRUCTION LAYOUT STAKES, AS PER PLAN.

CONNECTION BETWEEN EXISTING AND PROPOSED GUARDRAIL

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

ITEM 253- PAVEMENT REPAIR, AS PER PLAN

THIS ITEM SHALL BE USED FOR SHOULDER REPAIR AND SHALL MEET THE REQUIREMENTS OF ITEM 253, PAVEMENT REPAIR, AND THE TYPICAL SECTION SHOWN ON SHEET 2.

THE ESTIMATED QUANTITIES ARE TO BE CONSIDERED APPROXIMATE. A FINAL FIELD REVIEW WILL BE PERFORMED BY ODOT PRIOR TO CONSTRUCTION AND FINAL LOCATIONS WILL BE GIVEN TO THE CONTRACTOR PRIOR TO CONSTRUCTION.

THIS WORK CONSISTS OF REMOVING THE EXISTING ASPHALT CONCRETE AND THE AGGREGATE BASE COURSES; SHAPING AND COMPACTING THE EXPOSED MATERIAL; PLACING ITEM 304 AGGREGATE BASE; FOLLOWED BY ITEM 301 ASPHALT CONCRETE BASE, AND ASPHALT CONCRETE INTERMEDIATE AND SURFACE COURSES.

THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN PROVIDED FOR INFORMATION ONLY.

ITEM 446- ASPHALT CONCRETE SURFACE COURSE, TYPE 1, PG70-22M, AS PER PLAN	32 C.Y.
ITEM 446- ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, PG64-22	44 C.Y.
ITEM 407- TACK COAT FOR INTERMEDIATE COURSE	63 GALS.
ITEM 301- ASPHALT CONCRETE BASE COURSE, PG64-22	150 C.Y.
ITEM 304- AGGREGATE BASE	150 C.Y.
ITEM 408- PRIME COAT	360 GALS.
ITEM 618- RUMBLE STRIPS (ASPHALT CONCRETE)	1120 FT.

THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN CARRIED TO THE GENERAL SUMMARY TO BE USED AS DIRECTED BY THE ENGINEER. FINAL PAYMENT FOR THESE ITEMS SHALL BE FOR THE ACCEPTED QUANTITY COMPLETED IN PLACE.

ITEM 253- PAVEMENT REPAIR, AS PER PLAN	2025 S.Y.

JEF-7-8.56

24979GN001

ITEM 614, MAINTAINING TRAFFIC

A MINIMUM OF ONE (1) LANE OF TRAFFIC IN EACH DIRECTION SHALL BE MAINTAINED AT ALL TIMES BY USE OF THE EXISTING PAVEMENT AND ITEM 615 PAVEMENT FOR MAINTAINING TRAFFIC.

ALL EXISTING LANES SHALL BE OPEN TO TRAFFIC BETWEEN NOVEMBER 1 AND APRIL 1. NOVEMBER 1 SHALL BE CONSIDERED TO CONSTITUTE AN INTERIM COMPLETION DATE AND LIQUIDATED DAMAGES SHALL BE ASSESSED IN ACCORDANCE WITH CMS 108.07 FOR EACH CALENDAR DAY THAT ALL LANES ARE NOT OPEN AND AVAILABLE TO TRAFFIC. IN ADDITION, THE CONTRACTOR SHALL COMPLETE ALL WORK REQUIRING LANE RESTRICTIONS ON S.R. 7 DURING THE CROSSOVER (MOT PHASES 2 & 3) WITHIN A PERIOD NOT EXCEEDING 70 CONSECUTIVE DAYS. LIQUIDATED DAMAGES AS NOTED ABOVE SHALL BE ASSESSED FOR DAYS EXCEEDING THE LIMIT.

SEQUENCE OF CONSTRUCTION - S.R. 7

SUBSTRUCTURE REPAIRS THAT DO NOT REQUIRE LANE RESTRICTIONS MAY BE COMPLETED DURING ANY PHASE.

PHASE 1

A. CLOSE THE MEDIAN LANE FOR NORTHBOUND AND SOUTHBOUND TRAFFIC PER MT-95.30.
B. REMOVE THE EXISTING MEDIAN BARRIER AND CONCRETE BASE AND REPLACE WITH PAVEMENT FOR MAINTAINING TRAFFIC INCLUDING MODIFICATIONS REQUIRED FOR EXISTING MEDIAN INLET(S) IN THE CROSSOVER AREAS. THE REMOVAL OF EXISTING BARRIERS, PLACEMENT OF PAVEMENT FOR MAINTAINING TRAFFIC AND INSTALLATION OF WORK ZONE ATTENUATORS MUST BE COMPLETED IN A CONTINUOUS MANNER AND QUICKLY TO MINIMIZE EXPOSER TO DRIVERS. INSTALL WORK ZONE DRUMS AT A MAXIMUM SPACING OF 20 FT. C/C.
C. DURING NON-PEAK TRAFFIC PERIODS (9AM-3PM AND 6PM-6AM), CLOSE OUTSIDE LANE OF NB AND SB TRAFFIC PER MT-95.30, MODIFY RAMP TRAFFIC PER MT-98.10/MT-98.20; AS APPROPRIATE AND PERFORM WORK IN THE VICINITY OF THE ENTRANCE AND EXIT RAMPS THAT WILL BE REQUIRED BEFORE THE MAIN LINE TRAFFIC COULD BE SHIFTED IN PHASES 2 AND 3. THESE INCLUDE:
    1) REMOVAL OF EXISTING PAVEMENT AS NECESSARY FOR CONSTRUCTING PAVEMENT FOR MAINTAINING TRAFFIC IN THE VICINITY OF ENTRANCE RAMP - D
    2) RELOCATION OF EXISTING LIGHT POLE IN THE VICINITY OF EXIT RAMP - C
    3) CONSTRUCTION OF WORK ZONE LIGHTING SYSTEM
    4) MOT SIGNING AND ALL OTHER MOT ITEMS REQUIRED FOR THE TRAFFIC SHIFT IN PHASES 2 AND 3.

PHASE 2

A MAINTAIN TRAFFIC WITH CROSSOVERS PER MT-95.70, MT-95.30, MT-98.11 AND THE DETAILS PROVIDED IN THE PLANS.
B. SHIFT NORTHBOUND TRAFFIC ONTO THE SOUTHBOUND LANES THROUGH THE WORKZONE.
C. COMPLETE ALL REHABILITATION WORK ON THE NORTHBOUND BRIDGE THAT REQUIRES LANE RESTRICTIONS.

PHASE 3

A. MAINTAIN TRAFFIC WITH CROSSOVERS PER MT-95.70, MT-95.30, AND THE DETAILS PROVIDED IN THE PLANS.
B. SHIFT SOUTHBOUND TRAFFIC ONTO THE NORTHBOUND LANES THROUGH THE WORK ZONE.
C. COMPLETE ALL REHABILITATION WORK ON THE SOUTHBOUND BRIDGE THAT REQUIRES LANE RESTRICTIONS.

PHASE 4

A. CLOSE THE MEDIAN LANE FOR NORTHBOUND AND SOUTHBOUND TRAFFIC PER MT-95.30.
B. CONSTRUCT THE PROPOSED MEDIAN BARRIER AND MEDIAN BARRIER INLET. SEE SHEETS 2 AND 22 FOR DETAILS.
C. COMPLETE FINAL PAVEMENT MARKINGS PER MT-99.20.

LENGTH AND DURATION OF LANE CLOSURES, CROSSOVERS AND RESTRICTIONS SHALL BE AT THE APPROVAL OF THE ENGINEER, IT IS THE INTENT TO MINIMIZE THE IMPACT TO THE TRAVELING PUBLIC, LANE CLOSURES OR RESTRICTIONS OVER SEGMENTS OF THE PROJECT IN WHICH NO WORK IS ANTICIPATED WITHIN A REASONABLE TIME FRAME, AS DETERMINED BY THE ENGINEER, SHALL NOT BE PERMITTED. THE LEVEL OF UTILIZATION OF MAINTENANCE OF TRAFFIC DEVICES SHALL BE COMMENSURATE WITH THE WORK IN PROGRESS.

THE CONTRACTOR SHALL PROVIDE, ERECT AND MAINTAIN SIGNS AND SIGN SUPPORTS, AS DETAILED IN THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES AND TYPE III BARRICADES OF THE TYPE AND LOCATION AS SHOWN IN THE PLANS AND ON STANDARD CONSTRUCTION DRAWINGS.

ALL WORK AND TRAFFIC CONTROL DEVICES SHALL BE IN ACCORDANCE WITH CMS 614 AND OTHER APPLICABLE PORTIONS OF THE SPECIFICATION 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 BID FOR ITEM 614, MAINTAINING TRAFFIC, UNLESS SEPARATELY ITEMIZED IN THE PLAN.

BARRIER MEDIAN INLET PROTECTION

THE BARRIER INLETS WITHIN THE PROPOSED WORK LIMITS SHALL BE REMOVED PER THE DETAILS FOR ITEM 202 -INLET REMOVED, AS PER PLAN. THE CONTRACTOR SHALL COVER THE REMAINING PORTION OF THE EXISTING INLET WITH STEEL PLATES OR OTHER MATERIAL OF ADEQUATE STRENGTH TO PREVENT DEFLECTION UNDER THE PAVEMENT FOR MAINTAINING TRAFFIC. IF NECESSARY, THE CONTRACTOR SHALL SECURE THE COVER PLATE TO THE INLET TO PREVENT ANY MOVEMENT. THE COVER PLATES SHALL BE REMOVED WHEN THE PAVEMENT FOR MAINTAINING TRAFFIC IS NO LONGER REQUIRED. ALL LABOR, EQUIPMENT AND MATERIALS NECESSARY TO COMPLETE THIS WORK SHALL BE INCLUDED IN THE LUMP SUM PRICE BID FOR ITEM 614 - MAINTAINING TRAFFIC.

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

THIS WORK SHALL CONSIST OF FURNISHING, MAINTAINING, AND SUBSEQUENTLY REMOVING A 50-INCH PORTABLE CONCRETE BARRIER (PCB) AT THE LOCATIONS SHOWN ON THE PLANS. FOR DETAILS SEE SCD RM-4.1. PLEASE NOTE THAT SCD RM-4.1 WAS UPDATED 10-20-06 TO PROVIDE A PCB WHICH IS COMPATIBLE WITH NCHRP 350 CRITERIA.

PORTABLE CONCRETE BARRIER, 32 INCHES HIGH WITH AN 18-INCH MINIMUM HEIGHT GLARE SCREEN MAY BE USED AT THE OPTION OF THE CONTRACTOR. THE GLARE SCREEN SHALL BE CONSTRUCTED USING ONE OF THE SCREENS PROVIDED ON THE APPROVED LIST, AVAILABLE ON THE OFFICE OF MATERIAL MANAGEMENT WEB PAGE. THE APPROVED LIST OF GLARE SCREENS CAN BE FOUND ON THE ODOT WEBSITE BY CLICKING ON THE SERVICES MENU, THEN CLICKING ON MATERIALS MANAGEMENT, AND CHOOSING THE APPROVED LIST LINK.

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

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

FOR DIRECTIONS ON HOW TO INSTALL THE GLARE SCREEN AND THE BARRIER, SEE THE MANUFACTURER'S INSTRUCTIONS.

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

ITEM 614, BARRIER REFLECTORS AND/OR OBJECT MARKERS

BARRIER REFLECTORS AND/OR OBJECT MARKERS SHALL BE INSTALLED ON ALL PORTABLE CONCRETE BARRIER USED FOR TRAFFIC CONTROL. BARRIER REFLECTORS, OBJECT MARKERS AND THEIR INSTALLATION SHALL CONFORM TO CMS 626, EXCEPT THAT THE SPACING SHALL BE 50 FEET. ESTIMATED QUANTITIES HAVE BEEN PROVIDED IN THE MOT SUBSUMMARY AND CARRIED TO THE GENERAL SUMMARY.

COORDINATION BETWEEN PART 1 (JEF-7-8.56) AND PART 2 (JEF-7.9.92)

THE MAINTENANCE OF TRAFFIC SEQUENCE FOR PART 1 SHALL BE COORDINATED WITH PART 2. THE CONTRACTOR SHALL SCHEDULE THE WORK SUCH THAT PART 1 / PHASE 2 AND PART 2 /PHASE 2 SHALL BE CONSTRUCTED SIMULTANEOUSLY. LIKEWISE, PART 1 /PHASE 3 AND PART 2 / PHASE 3 SHALL BE CONSTRUCTED SIMULTANEOUSLY. A SCHEMATIC FOR THE OVERALL MAINTENANCE OF TRAFFIC FOR BOTH PARTS IS PROVIDED WITH PART 1 MAINTENANCE OF TRAFFIC PLAN SHEET. BOTH PARTS ARE TO BE CONSTRUCTED SIMULTANEOUSLY PER THE SCHEMATIC PROVIDED IN PART 1.

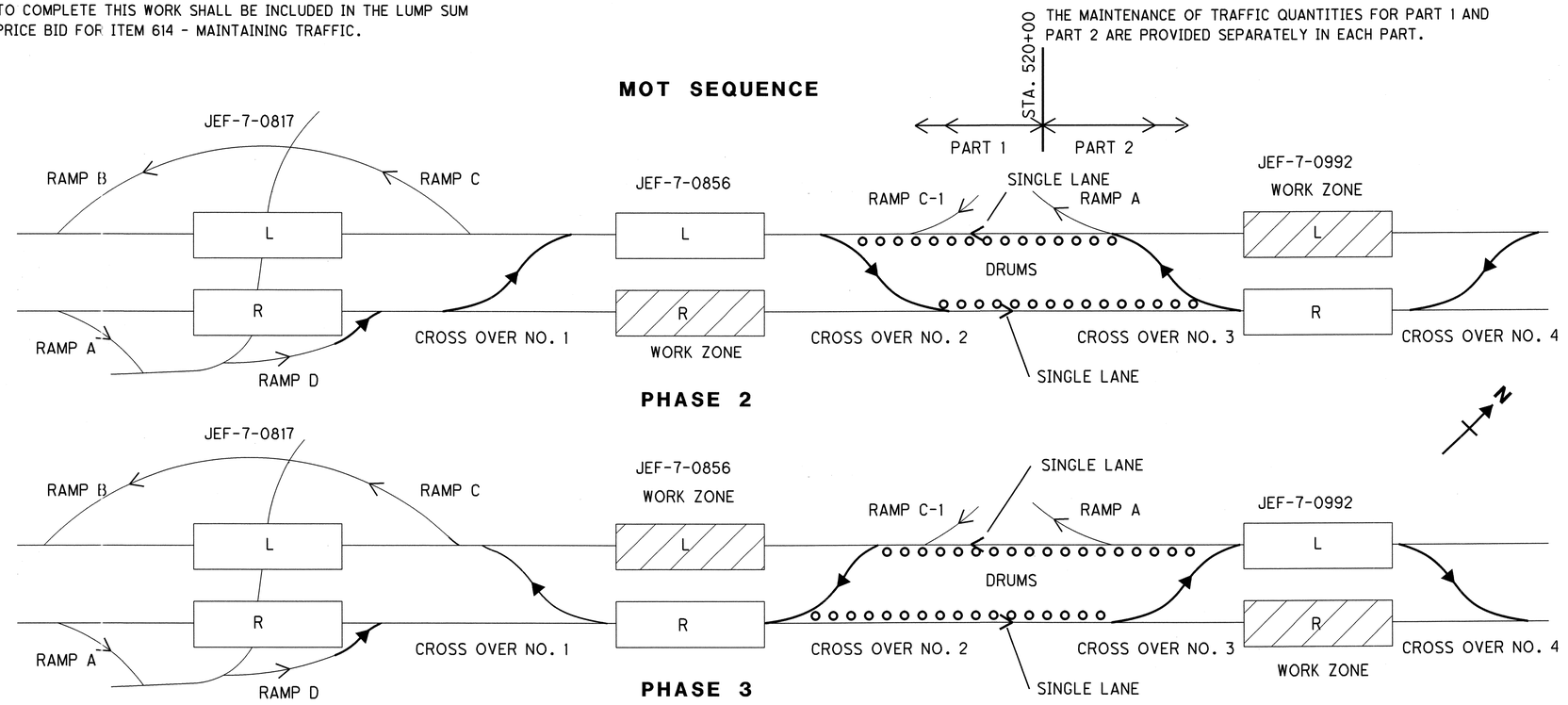
AT NO TIME SHALL THE CONTRACTOR BE PERMITTED TO CLOSE BOTH BRIDGE JEF-7-0856 NORTHBOUND AND BRIDGE JEF-7-0992 NORTHBOUND AT THE SAME TIME OR CLOSE JEF-7-0856 SOUTHBOUND JEF-7-0992 SOUTHBOUND AT THE SAME TIME.

THE CONTRACTOR SHALL BE REQUIRED TO CLOSE BOTH THE SOUTHBOUND AND NORTHBOUND MEDIAN LANES BETWEEN THE TWO BRIDGES WITH CONSTRUCTION DRUMS. ACCESS TO RAMPS A AND C-1 MUST BE MAINTAINED AT ALL TIMES. SIGNING TO MAINTAINING ACCESS FOR RAMPS SHALL BE PER THE STANDARD CONSTRUCTION DRAWINGS AND THE ENGINEERS DIRECTION.

THE PART 1 PLAN REFLECTS ALL MAINTENANCE OF TRAFFIC REQUIREMENTS FROM STATION 450+00 TO STATION 520+00.

THE MAINTENANCE OF TRAFFIC QUANTITIES FOR PART 1 AND PART 2 ARE PROVIDED SEPARATELY IN EACH PART.

MOT SEQUENCE



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MAINTENANCE OF TRAFFIC GENERAL NOTES

JEF-7-8.56

24979MN001

ITEM 614, WORK ZONE IMPACT ATTENUATOR FOR 24" WIDE HAZARDS (UNIDIRECTIONAL OR BIDIRECTIONAL)

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

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

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

DRAWING NUMBER: QSCZCVR-T4
DRAWING NAME: QUADGUARD CZ SYSTEM FOR CONSTRUCTION ZONES
REVISION DATE: 5/13/99 REV. J
ODOT APPROVAL DATE: 8/27/99

DRAWING NUMBER: 35-40-10
DRAWING NAME: QUADGUARD SYSTEM CONCRETE PAD, CZ, QG
REVISION DATE: 11/19/97 REV. D
ODOT APPROVAL DATE: 8/27/99

DRAWING NUMBER: 35-40-16
DRAWING NAME: QUADGUARD SYSTEM BACKUP ASSEMBLY, CZ, QG
REVISION DATE: 7/30/99 REV. F
ODOT APPROVAL DATE: 8/27/99

DRAWING NUMBER: 354051Z
DRAWING NAME: QUADGUARD CZ SYSTEM NOSE ASSEMBLY, CZ, QG, 24, 30, 36
REVISION DATE: 5/17/99
ODOT APPROVAL DATE: 8/27/99

DRAWING NUMBER: 35-40-18
DRAWING NAME: TRANSITION ASSEMBLY, 4 OFFSET, QG
REVISION DATE: 6/25/99 REV. F
ODOT APPROVAL DATE: 8/27/99

DRAWING NUMBER: 35400260
DRAWING NAME: QUADGUARD SYSTEM PCMB ANCHOR ASSEMBLY
REVISION DATE: 11/19/97 REV. C
ODOT APPROVAL DATE: 8/27/99

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

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

DRAWING NUMBER: SS450
DRAWING NAME: CRASH-CUSHION ATTENUATING TERMINAL PLAN, ELEVATION & SECTIONS
REVISION DATE: 3/12/99 REV. 1
ODOT APPROVAL DATE: 8/27/99

DRAWING NUMBER: SS455
DRAWING NAME: TRACC TRANSITION TO W-BEAM MEDIAN BARRIER PLAN, ELEVATION & SECTIONS
REVISION DATE: 2/18/99
ODOT APPROVAL DATE: 8/27/99

DRAWING NUMBER: SS461
DRAWING NAME: TRACC TRANSITION TO CONCRETE SAFETY SHAPE BARRIER PLAN, ELEVATION & SECTIONS
REVISION DATE: 6/30/99 REV. 1
ODOT APPROVAL DATE: 8/27/99

DRAWING NUMBER: SS462
DRAWING NAME: TRACC TRANSITION TO CONCRETE BARRIER SINGLE SLOPE PLAN, ELEVATION & SECTIONS
REVISION DATE: 6/30/99
ODOT APPROVAL DATE: 8/27/99

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

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

DRAWING NUMBER: A040416
DRAWING NAME: UNIVERSAL TAU-II PARTS LIST
REVISION DATE: 4/22/04
ODOT APPROVAL DATE: 10/16/04

DRAWING NUMBER: A040420
DRAWING NAME: UNIVERSAL TAU-II FOUNDATION, FLUSH MOUNT BACKSTOP
REVISION DATE: 4/28/04
ODOT APPROVAL DATE: 10/16/04

DRAWING NUMBER: A040105
DRAWING NAME: UNIVERSAL TAU-II FOUNDATION, PCB BACKSTOP (REFERENCED ON A04020)
REVISION DATE: 1/07/04
ODOT APPROVAL DATE: 10/16/04

DRAWING NUMBER: BO40239
DRAWING NAME: APPLICATION, FLUSH MOUNT BACKSTOP (TYPICAL FOR PARALLEL 60 MPH UNIT)
REVISION DATE: 4/21/04
ODOT APPROVAL DATE: 10/16/04

THE CONTRACTOR SHALL REPAIR OR REPLACE A DAMAGED UNIT WITHIN 24 HOURS OF A DAMAGING IMPACT.

WHEN BIDIRECTIONAL DESIGNS ARE SPECIFIED, THE CONTRACTOR SHALL SUPPLY APPROPRIATE TRANSITIONS. PAYMENT FOR THE ABOVE WORK SHALL BE MADE AT THE UNIT PRICE BID AND SHALL INCLUDE ALL LABOR, TOOLS, EQUIPMENT AND MATERIALS NECESSARY TO CONSTRUCT AND MAINTAIN A COMPLETE AND FUNCTIONAL IMPACT ATTENUATOR SYSTEM, INCLUDING ALL RELATED BACKUPS, TRANSITIONS, LEVELING PADS, HARDWARE AND GRADING, NOT SEPARATELY SPECIFIED, AS REQUIRED BY THE MANUFACTURER.

ITEM 614, PORTABLE CHANGEABLE MESSAGE SIGNS, AS PER PLAN

THE CONTRACTOR SHALL FURNISH, INSTALL, MAINTAIN AND REMOVE, WHEN NO LONGER NEEDED, TWO (2) CHANGEABLE MESSAGE SIGNS, ON SITE, FOR THE DURATION OF THE PROJECT. THE SIGNS SHALL BE OF A TYPE SHOWN ON A LIST OF APPROVED PCMS UNITS MAINTAINED BY THE DIRECTOR (OFFICE OF MATERIALS MANAGEMENT). THE APPROVED LIST OF PORTABLE CHANGEABLE MESSAGE SIGNS CAN BE FOUND ON THE ODOT WEBSITE BY CLICKING ON THE SERVICES MENU, THEN CLICKING ON MATERIALS MANAGEMENT. THE LIST CONTAINS CLASS A AND B UNITS WITH MINIMUM LEGIBILITY DISTANCES OF 650 FT. AND 475 FT., RESPECTIVELY.

EACH SIGN SHALL BE TRAILER-MOUNTED AND EQUIPPED WITH A FUNCTIONAL DIMMING MECHANISM, TO DIM THE SIGN DURING DARKNESS, AND A TAMPER AND VANDAL PROOF ENCLOSURE. EACH SIGN SHALL BE PROVIDED WITH APPROPRIATE TRAINING AND OPERATION INSTRUCTIONS TO ENABLE ON-SITE PERSONNEL TO OPERATE AND TROUBLESHOOT THE UNIT. THE SIGN SHALL ALSO BE CAPABLE OF BEING POWERED BY AN ELECTRICAL SERVICE DROP FROM A LOCAL UTILITY COMPANY. PCMS TRAILERS SHOULD BE DELINEATED ON A PERMANENT BASIS BY AFFIXING RETRO REFLECTIVE 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 SHALL BE AS FOLLOWS OR AS DIRECTED BY THE ENGINEER:
NB - APPROXIMATE STA. 450+00, DURING PHASE 2
SB - APPROXIMATE STA. 510+00, DURING PHASE 3
PLACEMENT, OPERATION, MAINTENANCE AND ALL ACTIVATION OF THE SIGNS BY THE CONTRACTOR SHALL BE AS DIRECTED BY THE ENGINEER. THE PCMS SHALL BE LOCATED IN A HIGHLY VISIBLE POSITION YET PROTECTED FROM TRAFFIC. THE CONTRACTOR SHALL, AT THE DIRECTION OF THE ENGINEER, RELOCATE THE PCMS TO IMPROVE VISIBILITY OR ACCOMMODATE CHANGED CONDITIONS. WHEN NOT IN USE, THE PCMS SHALL BE TURNED OFF. ADDITIONALLY, WHEN NOT IN USE FOR EXTENDED PERIODS OF TIME, THE PCMS SHALL BE TURNED, FACING AWAY FROM ALL TRAFFIC, AND SHALL DISPLAY ONE OR MORE YELLOW RETRO 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 THE CAPABILITY TO STORE UP TO 99 MESSAGES. MESSAGE MEMORY OR PRE-PROGRAMMED DISPLAYS SHALL NOT BE LOST AS A RESULT OF POWER FAILURES TO THE ON-BOARD COMPUTER. THE SIGN LEGEND SHALL BE CAPABLE OF BEING CHANGED IN THE FIELD. THREE-LINE PRESENTATION FORMATS WITH UP TO SIX MESSAGE PHASES SHALL BE SUPPORTED. PCMS FORMAT SHALL PERMIT THE COMPLETE MESSAGE FOR EACH PHASE TO BE READ AT LEAST TWICE.

THE MESSAGE FOR S.R. 7 NORTH BOUND AND SOUTH BOUND TRAFFIC AT BRIDGE 8.56 SHALL BE AS FOLLOWS UNLESS ALTERED BY THE ENGINEER:

"CROSS OVER AHEAD" "40 MPH"

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

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

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

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

ITEM 614, PORTABLE CHANGEABLE MESSAGE SIGN, AS PER PLAN 160 DAYS

ITEM 614, WORK ZONE CROSSOVER LIGHTING SYSTEM

THIS WORK SHALL CONSIST OF FURNISHING, ERECTING, OPERATING, MAINTAINING AND REMOVING A WORK ZONE LIGHTING SYSTEM FOR A SINGLE CROSSOVER, OR OVERLAPPING A PAIR OF CROSSOVERS. THE SYSTEM SHALL BE AS SHOWN ON SCD MT-100.00 AND AS SHOWN ON SHEET 9. THE CONTRACTOR SHALL ARRANGE FOR AND PAY FOR POWER. ALL MATERIALS AND CONSTRUCTION SHALL COMPLY WITH APPLICABLE PORTIONS OF 625 AND 725 EXCEPT:
THE PERFORMANCE TEST OF 625.19F, AND CERTIFIED DRAWING REQUIREMENT OF 625.04, ARE WAIVED AND USED MATERIALS IN GOOD CONDITION ARE ACCEPTABLE.

POLES WHICH ARE NOT PROTECTED BY GUARDRAIL OR PORTABLE CONCRETE BARRIER SHALL BE LOCATED OUTSIDE THE CLEAR ZONE, AND SHOULD BE LOCATED AT LEAST 30 FT (PREFERABLY 40 FEET) FROM THE EDGE OF PAVEMENT WHEN POSSIBLE. ADDITIONAL POLE LINES, CABLES AND APPURTENANCES NECESSARY TO FURNISH POWER TO THE LIGHTING SYSTEM SHALL BE INCLUDED IN THIS ITEM. SERVICE POLES SHALL BE POSITIONED WITH THE SAME CONSTRAINTS AS THE LIGHTING POLES AS A MINIMUM.

PAYMENT WILL BE MADE AT THE UNIT PRICE PER EACH FOR ITEM 614, WORK ZONE CROSSOVER LIGHTING SYSTEM THROUGHOUT ALL PHASES OF WORK WHEN THE CROSSOVER ROADWAYS ARE USED.

ITEM 614, WORK ZONE CROSSOVER LIGHTING SYSTEM, AS PER PLAN

THE WORK UNDER THIS ITEM SHALL INCLUDE WORK ZONE LIGHTING SYSTEM AT CROSSOVER NO.1 NEAR RAMP D AND RAMP C AS SHOWN IN SHEET 9 AND 11. IT SHALL INCLUDE TEN (10) NEW WORK ZONE LIGHT POLES WITH LUMINARIES AND INCORPORATE SIX (6) EXISTING HIGHWAY LIGHTS INTO A COMPLETE WORK ZONE LIGHTING SYSTEM FOR DURATION OF THE MAINTENANCE OF TRAFFIC OPERATION. ALL OTHER APPLICABLE REQUIREMENTS INDICATED ON SCD MT-100.00 AND AS INDICATED ABOVE FOR THE WORK ZONE CROSSOVER LIGHTING SYSTEM SHALL APPLY.

THE UNIT PRICE BID FOR THIS ITEM OF WORK SHALL ALSO INCLUDE THE FOLLOWING INCIDENTAL WORK:

(A) REMOVAL OF EXISTING LIGHTING AT STA. 459+40±, 42' LEFT NEAR EXIT GORE AT RAMP-C DURING MOT OPERATIONS AND THEN RE -INSTALLING IT BACK TO IT'S ORIGINAL LOCATION AFTER THE MOT OPERATIONS ARE COMPLETED.

(B) TEMPORARILY REWIRING OF EXISTING LIGHTING SYSTEM TO THE TEMPORARY WORK ZONE CROSSOVER LIGHTING SYSTEM DURING THE MOT OPERATIONS AND THEN RESTORING IT BACK TO IT'S ORIGINAL OPERATING CONDITION AFTER THE MOT OPERATIONS ARE COMPLETED.

LINEAR DELINEATION

INCREASED DELINEATION, AS SPECIFIED HEREIN, SHALL BE INSTALLED ON ALL CONCRETE BARRIER, PERMANENT OR TEMPORARY, LOCATED WITHIN 5 FEET OF THE EDGE OF THE TRAVELED LANE UNDER EITHER OF THE FOLLOWING CONDITIONS:

ALONG TAPERS AND TRANSITION AREAS

ALONG CURVES (OUTSIDE ONLY) WITH DEGREE OF CURVATURE GREATER THAN OR EQUAL TO 3 DEGREES

THE INCREASED DELINEATION SHALL CONSIST OF EITHER LINEAR DELINEATION PANELS OR THE TRIPLE STACKING OF WORK ZONE BARRIER REFLECTORS.

THE LINEAR DELINEATION PANELS SHALL CONSIST OF PANELS OF DELINEATION, APPROXIMATELY 34 INCHES LONG AND 6-INCHES WIDE AND SHALL BE "CRIMPED". PANELS SHALL BE PROVIDED AT THE RATE OF ONE PER SECTION OF PORTABLE CONCRETE BARRIER, OR ONE PANEL EVERY 10 FEET ON PERMANENT BARRIER, SPACED EVENLY ALONG THE LENGTH OF THE RUN. THE PANELS SHALL BE MOUNTED SUCH THAT THE TOPS OF THE PANELS ARE 26 INCHES FROM THE BASE OF THE CONCRETE BARRIER.

TRIPLE STACKED BARRIER REFLECTORS SHALL CONSIST OF THREE BARRIER REFLECTORS STACKED VERTICALLY IN THEIR ATTACHMENT TO CONCRETE BARRIER. THERE SHALL BE NO OPEN SPACE BETWEEN THE ADJACENT BARRIER REFLECTORS. THE TOP OF THE MIDDLE BARRIER REFLECTOR SHALL BE LOCATED 26 IN ABOVE THE PAVEMENT.

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

THE ESTIMATED QUANTITY HAS BEEN TABULATED IN MOT SUB-SUMMARY, SHEET 8.

ALONG RUNS OF CONCRETE BARRIER WHERE THIS ITEM IS PROVIDED, THE QUANTITY SHALL BE MEASURED AS THE ENTIRE LENGTH OF THE RUN BEING DELINEATED, INCLUDING THE SPACES BETWEEN THE INDIVIDUAL PANELS OR STACKS OF BARRIER REFLECTORS.

CONCRETE BARRIER DELINEATION

OBJECT MARKERS SHALL BE INSTALLED ON ALL PERMANENT CONCRETE BARRIER, LOCATED WITHIN 5 FEET OF THE EDGE OF THE ADJACENT TRAVEL LANE. OBJECT MARKER SPACING SHALL BE 50 FEET.

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

ESTIMATED QUANTITY OF ITEM 614 OBJECT MARKER HAS BEEN TABULATED IN MOT SUB-SUMMARY, SHEET 8.

ITEM 614 - LAW ENFORCEMENT OFFICER (WITH PATROL CAR) FOR ASSISTANCE DURING CONSTRUCTION OPERATIONS

USE OF LAW ENFORCEMENT OFFICERS (LEOS) BY CONTRACTORS OTHER THAN THE USES SPECIFIED BELOW WILL NOT BE PERMITTED AT PROJECT COST. LEOS SHOULD NOT BE USED WHERE THE OMUTCD INTENDS THAT FLAGGERS BE USED.

IN ADDITION TO THE REQUIREMENTS OF CMS 614 AND THE OMUTCD, A UNIFORMED LEO WITH AN OFFICIAL PATROL CAR (CAR WITH TOP-MOUNTED EMERGENCY FLASHING LIGHTS AND COMPLETE MARKINGS OF THE APPROPRIATE LAW ENFORCEMENT AGENCY) SHALL BE PROVIDED FOR THE FOLLOWING TRAFFIC CONTROL TASKS:

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

PATROLLING THE WORKZONE AREA.

IN ADDITION TO THE REQUIREMENT OF CMS 614 AND THE OMUTCD, A UNIFORMED LEO WITH AN OFFICIAL PATROL CAR (CAR WITH TOP-MOUNTED EMERGENCY FLASHING LIGHTS AND COMPLETE MARKINGS OF THE APPROPRIATE LAW ENFORCEMENT AGENCY) SHOULD BE PROVIDED FOR THE FOLLOWING TRAFFIC CONTROL TASKS:

FOR LANE CLOSURES: DURING INITIAL SET-UP PERIODS, TEAR DOWN PERIODS, SUBSTANTIAL SHIFTS OF A CLOSURE POINT OR WHEN NEW LANE CLOSURE ARRANGEMENTS ARE INITIATED FOR LONG-TERM LANE CLOSURES/SHIFTS (FOR THE FIRST AND LAST DAY OF MAJOR CHANGES IN TRAFFIC CONTROL SETUP). IN GENERAL, LEOS SHOULD BE POSITIONED AT THE POINT OF LANE RESTRICTION OR ROAD CLOSURE AND TO MANUALLY CONTROL TRAFFIC MOVEMENTS THROUGH INTERSECTIONS IN WORK ZONES.

WHEN CONSTRUCTION VEHICLES ARE ENTERING/EXITING THE ZONE DIRECTLY FROM/INTO AN OPEN LANE OF TRAFFIC. IF A LANE HAS BEEN CLOSED TO PROVIDE AN ACCELERATION/DECELERATION LANE FOR THE VEHICLE, THE LEO WILL NOT BE REQUIRED.

LEOS SHOULD NOT FORGO THEIR TRAFFIC CONTROL RESPONSIBILITIES TO APPREHEND MOTORISTS FOR ROUTINE TRAFFIC VIOLATIONS. HOWEVER, IF A MOTORIST'S ACTIONS ARE CONSIDERED TO BE RECKLESS, THEN PURSUIT OF THE MOTORIST IS APPROPRIATE.

THE LEOS WORK AT THE DIRECTION OF THE CONTRACTOR. THE CONTRACTOR IS RESPONSIBLE FOR SECURING THE SERVICES OF THE LEOS WITH THE APPROPRIATE AGENCIES AND COMMUNICATING THE INTENTIONS OF THE PLANS WITH RESPECT TO DUTIES OF THE LEOS. THE ENGINEER SHALL HAVE FINAL CONTROL OVER THE LEOS' DUTIES AND PLACEMENT, AND WILL RESOLVE ANY ISSUES THAT MAY ARISE BETWEEN THE TWO PARTIES.

THE LEO SHALL REPORT IN TO THE CONTRACTOR PRIOR TO THE START OF THE SHIFT, IN ORDER TO RECEIVE INSTRUCTIONS REGARDING SPECIFIC WORK ASSIGNMENTS DURING HIS/HER SHIFT. THE LEO IS EXPECTED TO STAY AT THE PROJECT SITE FOR THE ENTIRE DURATION OF HIS/HER SHIFT. THE LEO SHALL REPORT TO THE CONTRACTOR AT THE END OF HIS/HER SHIFT. ONCE THE LEO HAS COMPLETED THE DUTIES DESCRIBED ABOVE AND STILL HAS TIME REMAINING ON HIS/HER SHIFT, THE LEO MAY BE ASKED TO PATROL THROUGH THE WORK ZONE (WITH FLASHING LIGHTS OFF) OR BE PLACED AT A LOCATION TO DETER MOTORISTS FROM SPEEDING. SHOULD IT BE NECESSARY TO LEAVE THE PROJECT SITE, THE LEO SHALL NOTIFY THE ENGINEER. THE CONTRACTOR SHALL PROVIDE THE LEO WITH A TWO-WAY COMMUNICATION DEVICE WHICH SHALL BE RETURNED TO THE CONTRACTOR AT THE END OF HIS/HER SHIFT.

LEOS (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) FOR ASSISTANCE. THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN CARRIED TO THE GENERAL SUMMARY.

ITEM 614, LAW ENFORCEMENT OFFICER WITH PATROL CAR FOR ASSISTANCE 200 HOURS

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

ANY ADDITIONAL COSTS (ADMINISTRATIVE OR OTHERWISE) INCURRED BY THE CONTRACTOR TO OBTAIN THE SERVICES OF AN LEO ARE INCLUDED WITH THE BID UNIT PRICE FOR ITEM 614, LAW ENFORCEMENT OFFICER WITH PATROL CAR FOR ASSISTANCE.

ITEM 614, WORK ZONE SPEED LIMIT SIGN

THE CONTRACTOR SHALL FURNISH, INSTALL, MAINTAIN, COVER DURING SUSPENSION OF WORK, AND SUBSEQUENTLY REMOVE WORK ZONE SPEED LIMIT (R2-1) (45 SPEED LIMIT) SIGNS AND SUPPORTS WITHIN THE WORK LIMITS IN ACCORDANCE WITH THE FOLLOWING REQUIREMENTS:

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

THE WORK ZONE SPEED LIMIT SIGNS MAY BE ERECTED OR UNCOVERED NO MORE THAN FOUR HOURS BEFORE THE ACTUAL START OF WORK. THE SIGNS SHALL BE REMOVED OR COVERED NO LATER THAN FOUR HOURS FOLLOWING RESTORATION OF ALL LANES TO TRAFFIC WITH NO RESTRICTIONS, OR SOONER AS DIRECTED BY THE ENGINEER. TEMPORARY SIGN COVERING AND UNCOVERING DUE TO TEMPORARY LANE RESTORATIONS SHALL BE GUIDED BY THE FOUR-HOUR LIMITATIONS STATED ABOVE. SUCH LANE RESTORATIONS SHOULD BE EXPECTED TO REMAIN IN EFFECT FOR 30 OR MORE DAYS, SUCH AS DURING WINTER SHUT-DOWNS. CLEANUP WORK AND OTHER WORK BEYOND THE SHOULDER SUCH AS SEEDING, TO BE PERFORMED AFTER RESTORATION OF ALL FULL-WIDTH LANES AND SHOULDERS TO TRAFFIC, DOES NOT CONSTITUTE A CONDITION WARRANTING A SPEED REDUCTION. THEREFORE, WHEN ACTIVITY IS LIMITED TO SUCH WORK, THE SPEED LIMIT IN EFFECT SHALL BE THE NORMAL SPEED LIMIT FOR THE SITE.

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

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

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

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

SPEED REDUCTION SIGNS (W3-5) SHALL BE ERECTED IN ADVANCE OF THE SPEED REDUCTION, APPROXIMATELY 1250-FEET ON MULTI-LANE HIGHWAYS AND 500 FEET ON TWO-LANE HIGHWAYS.

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

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

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

PAYMENT FOR ACCEPTED QUANTITIES, COMPLETE IN PLACE, WILL BE MADE AT THE CONTRACT UNIT PRICE. PAYMENT SHALL BE FULL COMPENSATION FOR ALL MATERIALS, LABOR, INCIDENTALS AND EQUIPMENT FOR FURNISHING, ERECTING, MAINTAINING, COVERING DURING SUSPENSION OF WORK, AND REMOVING THE SIGNS AND SUPPORTS. SPEED LIMIT SIGNING FOR THE POINT OF RESUMPTION OF THE STATUTORY SPEED LIMIT SHALL BE PAID FOR AS WORK ZONE SPEED LIMIT SIGNS. THE FOLLOWING ESTIMATED QUANTITY HAS BEEN CARRIED TO THE GENERAL SUMMARY.

ITEM 614, WORK ZONE SPEED LIMIT SIGN 4 EACH
ITEM 614, SPEED ZONE AHEAD SYMBOL SIGN 1 EACH

WORK ZONE INCREASED PENALTIES SIGN (R11-H5A)

R11-H5A-48 SIGNS SHALL BE FURNISHED, ERECTED, AND MAINTAINED IN GOOD CONDITION AND/OR REPLACED AS NECESSARY AND SUBSEQUENTLY REMOVED BY THE CONTRACTOR. SIGNS SHALL BE MOUNTED AT THE APPROPRIATE OFFSETS AND ELEVATIONS AS PRESCRIBED BY THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES. THEY SHALL BE MAINTAINED ON SUPPORTS MEETING CURRENT SAFETY CRITERIA.

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

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

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

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

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

ITEM 614, WORK ZONE INCREASED PENALITIES SIGN 8 EACH

WORK ZONE INCREASED PENALTIES SIGNS WILL BE PLACED AT THE FOLLOWING LOCATIONS:

- BETWEEN FIRST ROAD WORK AHEAD SIGN AND NEXT SIGN IN LINE
- ENTRANCE RAMP D
- ENTRANCE RAMP C
- ENTRANCE RAMP C-1

ITEM SPECIAL - RUMBLE STRIPS

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

THE RUMBLE STRIPS SHALL BE 4" WIDE AND 1/4" MINIMUM THICK IN PLACE AND SHALL TRAVERSE THE TOTAL LANE WIDTH. THERE WILL BE TWO SECTIONS OF RUMBLE STRIPS.

THE FIRST SECTION SHALL START AT STA. 453+50. THERE SHALL BE 5 TRANSVERSE STRIPS 6 FEET APART. THE SECOND SECTION SHALL START AT APPROXIMATE STA. 457+00. THERE SHALL BE 5 STRIPS CROSSWISE AT 4'-6" APART.

THE RUMBLE STRIPS SHALL BE REMOVED WHEN THEY ARE NO LONGER NEEDED AS DETERMINED BY THE ENGINEER. MATERIAL USED FOR RUMBLE STRIPS SHALL BE PERFORMED THERMOPLASTIC. MATERIAL CALLED PREMARK, MANUFACTURED BY FLINT TRADING, INC., 115 TODD COURT, THOMASVILLE, NC 27360 PHONE (336) 475-6600 OR AN APPROVED EQUAL. THE MANUFACTURERS RECOMMENDATIONS MUST BE FOLLOWED FOR INSTALLATION. THE PREMARK STRIPS ARE 1/8" THICK. THE PREMARK STRIPS WILL HAVE TO BE DOUBLED IN ORDER TO MEET THE THICKNESS REQUIREMENT.

THIS ITEM WILL BE PAID FOR BY THE FOOT AT 1/4" THICKNESS. THIS WILL INCLUDE ALL LABOR MATERIALS AND EQUIPMENT FOR THE INSTALLATION, MAINTENANCE AND REMOVAL OF THE RUMBLE STRIPS. SHORT TERM LANE CLOSURES WILL HAVE TO BE IN PLACE FOR THE RUMBLE STRIPS TO BE PLACED.

THE ESTIMATED QUANTITY HAS BEEN TABULATED IN THE MOT SUB-SUMMARY, SHEET 8.

ITEM 202 - INLET REMOVED, AS PER PLAN

THE CONTRACTOR SHALL REMOVE THE EXISTING MEDIAN BARRIER INLET AND TROUGH AT THE EXISTING INLET. THE EXISTING TRANSITION AND CATCH BASIN SHALL BE COVERED AND PAVED OVER WITH TEMPORARY PAVEMENT DURING MAINTENANCE OF TRAFFIC OPERATIONS. FOR ADDITIONAL DETAILS, SEE SHEET 27.

ITEM 202 - CONCRETE BARRIER REMOVED, AS PER PLAN

THE CONTRACTOR SHALL REMOVE THE EXISTING CONCRETE MEDIAN BARRIER INCLUDING THE CONCRETE BARRIER BASE THAT IS ATTACHED TO THE BARRIER. THE BARRIER BASE IS APPROXIMATELY FIVE (5) FEET WIDE AS SHOWN IN THE MAINTENANCE OF TRAFFIC TYPICAL SECTION DETAIL ON SHEET 21. THE UNIT PRICE BID SHALL INCLUDE REMOVAL OF THE CONCRETE BARRIER BASE.

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

THIS ITEM SHALL MEET THE REQUIREMENTS OF CMS 615, EXCEPT THE PAVEMENT SHALL BE LEFT IN PLACE. THE CONTRACTOR SHALL UTILIZE FLEXIBLE PAVEMENT DESIGN TO MATCH EXISTING ASPHALT CONCRETE SURFACE COURSE CONSTRUCTION.

ANY INCIDENTAL EARTHWORK REQUIRED TO PLACE THE WORK ZONE PAVEMENT FOR MAINTAINING TRAFFIC SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THIS ITEM. NO SEPARATE PAYMENT SHALL BE CONSIDERED FOR THE WORK ZONE EARTHWORK.

WORK ZONE MARKINGS AND SIGNS

THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN CARRIED TO THE GENERAL SUMMARY FOR USE AS DIRECTED BY THE ENGINEER FOR WORK ZONE PAVEMENT MARKINGS AND SIGNS PER THE REQUIREMENTS 614.04 AND 614.11. THE SIGNS SHALL BE STORED AT THE PROJECT FIELD OFFICE FOR USE AS DIRECTED BY THE ENGINEER. THE PAVEMENT MARKINGS SHALL BE USED IN CONJUNCTION WITH ANY CONTINGENT ASPHALT CONCRETE USED IN MAINTAINING PAVEMENT AND/OR SHOULDERS AS DIRECTED BY THE ENGINEER.

ITEM 614 WORK ZONE LANE LINE, CLASS 1, 740.06, TYPE 1 1 MILES
ITEM 614 WORK ZONE EDGE LINE, CLASS 1, 740.06, TYPE 1 2 MILES
ITEM 614 WORK ZONE MARKING SIGN 4 EACH
(OW-152-48 - PREPARE TO STOP, 2 EACH)
(OW-SPEC-ACCIDENT AHEAD OR SIMILAR SIGNS, 2 EACH)

CALCULATED SMS CHECKED GTA

MAINTENANCE OF TRAFFIC GENERAL NOTES

JEF-7-8.56

24979MN004

SHEET	PHASE	LOCATION	STATION FROM	STATION TO	SIDE	614 WORK ZONE IMPACT ATTENUATOR, (UNI-DIRECTIONAL)	SPECIAL LINEAR DELINEATION	614 WORK ZONE LANE LINE, CLASS 1, 740.06, TYPE 1	614 WORK ZONE EDGE LINE, CLASS 1 740.06, TYPE 1 (YELLOW)	614 WORK ZONE EDGE LINE, CLASS 1 740.06, TYPE 1 (WHITE)	614 WORK ZONE CHANNELIZING LINE, CLASS 1 740.06, TYPE 1	614 WORK ZONE DOTTED LINE, CLASS 1, 740.06, TYPE 1	614 WORK ZONE TRANSVERSE/DIAGONAL LINE, CLASS 1, 740.06, TYPE 1		614 OBJECT MARKER, TWO WAY	614 BARRIER REFLECTOR, TYPE B	622 PORTABLE CONCRETE BARRIER, 50", AS PER PLAN	SPECIAL RUMBLE STRIPS	202 CONCRETE BARRIER REMOVED, AS PER PLAN	202 INLET REMOVED, AS PER PLAN		
						EACH	FT	MILE	MILE	MILE	FT	FT	FT		EACH	EACH	FT	FT	FT	EACH		
9, 10	1	NB, SB	464+63.61	484+50															1316	1		
9, 10	2	NB	453+00	489+50	LT & RT	2		0.02	0.72	0.63	-	484	-					120				
9	2	NB	470+39	470+99	C										3	3	60					
9, 10	2	NB	469+59 AHD	477+70	LT										17	17						
9	2	RAMP D NB	3+98	10+00	LT & RT				0.11	0.11												
9, 10	2	SB	453+00	489+50	LT & RT	1		0.06	0.50		265	384	156									
9	2	SB	464+43	467+73	LT										8	8	330					
9, 10	2	SB	467+73	482+33	LT										33	66	1600					
10	2	SB	482+33	487+64	LT										12	12	531					
9, 10	2	SB	470+69 AHD	476+45	LT										13	13						
11, 12	3	NB	453+00	489+50	LT & RT	1		-	0.72	0.46	700	640						120				
11	3	NB	464+04	467+14	RT										7	7	310					
11, 12	3	NB	467+17	483+74	RT										37	74	1800					
12	3	NB	483+74	486+53	RT										7	7	279					
11, 12	3	NB	470+69 AHD	476+45	RT										13	13						
11	3	RAMP D NB	3+98	7+81	LT & RT				0.07	0.07												
11	3	RAMP D NB	7+81	10+00	LT & RT					0.04												
11	3	RAMP D NB	460+72	470+99 BK	RT				-	0.19												
11, 12	3	SB	453+00	489+50	LT & RT	2			0.50	0.40		240										
11, 12	3	SB	477+70	479+70											5	5	200					
11, 12	3	SB	469+59 AHD	477+70	C										17	17						
13	2 & 3	NB	489+50	520+00	RT				0.58													
13	2 & 3	SB	489+50	520+00	LT				0.58													
		LINEAR DELINEATION ON BARRIERS																				
9	2	NB - WEST	468+10	470+69	WEST		322															
9	2	NB - EAST	470+39	470+69	EAST		170															
10	2	NB - WEST	479+33	481+76	WEST		245															
10	2	SB - WEST	475+19	476+69	WEST		150															
10	2	SB - EAST	485+51	487+64	EAST		213															
11	3	NB - WEST	464+04	472+19	WEST		815															
11	3	NB - EAST	470+69	472+19	EAST		150															
11	3	SB - EAST	467+94	470+99	EAST		305															
12	3	SB - EAST	476+45	482+62	EAST		617															
12	3	SB - WEST	476+45	479+48	WEST		303															
		NOTE: PAY LENGTHS SHOWN IN THE TABLE ARE ADJUSTED +139.78' DUE TO STATION EQUATION (WHERE APPLICABLE)																				
		MOT ITEMS FOR MAIN LINE ARE TABULATED BETWEEN STA. 453+00 TO 520+00 FOR PHASES 2 & 3 ABOVE.																				
		ALL ITEMS OF MOT WORK THAT ARE REQUIRED PER APPROPRIATE STANDARD CONSTRUCTION DRAWINGS NOT TABULATED SPECIFICALLY SHALL BE INCLUDED WITH ITEM 614 - MAINTAINING TRAFFIC																				
									3.78	1.90												
TOTALS CARRIED TO GENERAL SUMMARY						6	3365	0.08	5.68		965	1748	156		172	242	5110	240	1316	1		

CALCULATED GTA CHECKED SMS

WORKZONE SUBSUMMARY

JEF-7-8.56

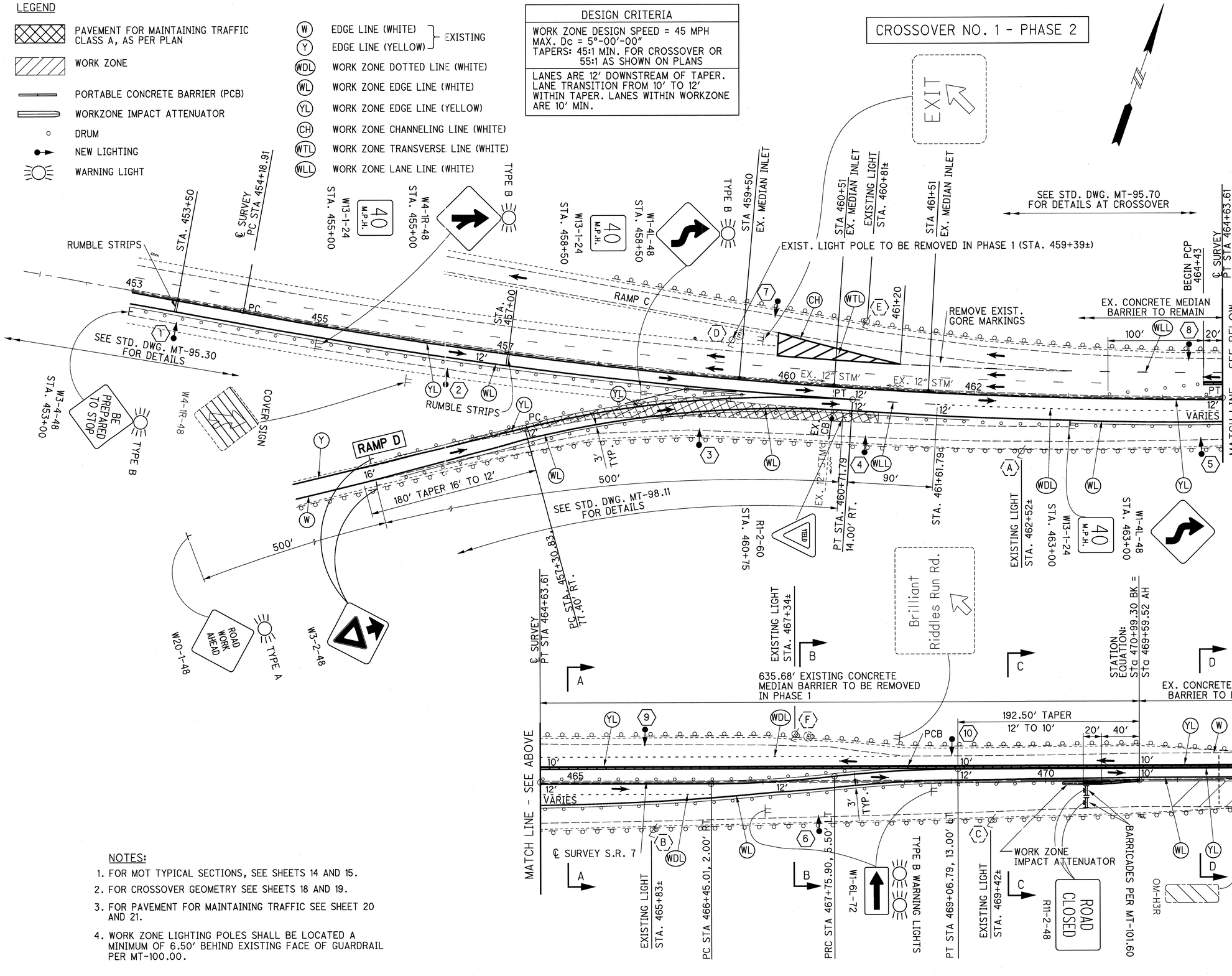
24979WSA001.DGN

LEGEND

- PAVEMENT FOR MAINTAINING TRAFFIC CLASS A, AS PER PLAN
- WORK ZONE
- PORTABLE CONCRETE BARRIER (PCB)
- WORKZONE IMPACT ATTENUATOR
- DRUM
- NEW LIGHTING
- WARNING LIGHT
- (W) EDGE LINE (WHITE) } EXISTING
- (Y) EDGE LINE (YELLOW) } EXISTING
- (WDL) WORK ZONE DOTTED LINE (WHITE)
- (WL) WORK ZONE EDGE LINE (WHITE)
- (YL) WORK ZONE EDGE LINE (YELLOW)
- (CH) WORK ZONE CHANNELING LINE (WHITE)
- (WTL) WORK ZONE TRANSVERSE LINE (WHITE)
- (WLL) WORK ZONE LANE LINE (WHITE)

DESIGN CRITERIA
WORK ZONE DESIGN SPEED = 45 MPH MAX. Dc = 5°-00'-00" TAPERS: 45:1 MIN. FOR CROSSOVER OR 55:1 AS SHOWN ON PLANS
LANES ARE 12' DOWNSTREAM OF TAPER. LANE TRANSITION FROM 10' TO 12' WITHIN TAPER. LANES WITHIN WORKZONE ARE 10' MIN.

CROSSOVER NO. 1 - PHASE 2



ITEM 614 WORK ZONE CROSSOVER LIGHTING SYSTEM, AS PER PLAN	
POLE REFERENCE NUMBER	
1	STA. 453+51
2	STA. 456+42
3	STA. 459+14
4	STA. 460+88
5	STA. 464+41
6	STA. 467+60
7	STA. 459+84
8	STA. 464+28
9	STA. 465+75
10	STA. 469+00
EXISTING LIGHTS TO BE INCORPORATED IN WORK ZONE LIGHTING SYSTEM, AS PER PLAN	
A	STA. 462+52±
B	STA. 465+83±
C	STA. 469+42±
D	STA. 459+39±
E	STA. 460+81±
F	STA. 467+34±

SEE NOTES THIS SHEET

NOTES:

1. FOR MOT TYPICAL SECTIONS, SEE SHEETS 14 AND 15.
2. FOR CROSSOVER GEOMETRY SEE SHEETS 18 AND 19.
3. FOR PAVEMENT FOR MAINTAINING TRAFFIC SEE SHEET 20 AND 21.
4. WORK ZONE LIGHTING POLES SHALL BE LOCATED A MINIMUM OF 6.50' BEHIND EXISTING FACE OF GUARDRAIL PER MT-100.00.

CALCULATED SMS
CHECKED GTA

MAINTENANCE OF TRAFFIC - PHASE 2
STA 453+00 TO STA 471+50

JEF-7-8.56

9
59

24979MP003

LEGEND

- PAVEMENT FOR MAINTAINING TRAFFIC CLASS A, AS PER PLAN
- WORK ZONE
- PORTABLE CONCRETE BARRIER (PCB)
- WORKZONE IMPACT ATTENUATOR
- DRUM
- NEW LIGHTING
- WARNING LIGHT

- (W) EDGE LINE (WHITE) } EXISTING
- (Y) EDGE LINE (YELLOW) }
- (WDL) WORK ZONE DOTTED LINE (WHITE)
- (WL) WORK ZONE EDGE LINE (WHITE)
- (YL) WORK ZONE EDGE LINE (YELLOW)
- (CH) WORK ZONE CHANNELING LINE (WHITE)
- (WTL) WORK ZONE TRANSVERSE LINE (WHITE)
- (WLL) WORK ZONE LANE LINE (WHITE)

DESIGN CRITERIA
WORK ZONE DESIGN SPEED = 45 MPH MAX. Dc = 5°-00'-00" TAPERS: 45:1 MIN. FOR CROSSOVER OR 55:1 AS SHOWN ON PLANS
LANES ARE 12' DOWNSTREAM OF TAPER. LANE TRANSITION FROM 10' TO 12' WITHIN TAPER. LANES WITHIN WORKZONE ARE 10' MIN.

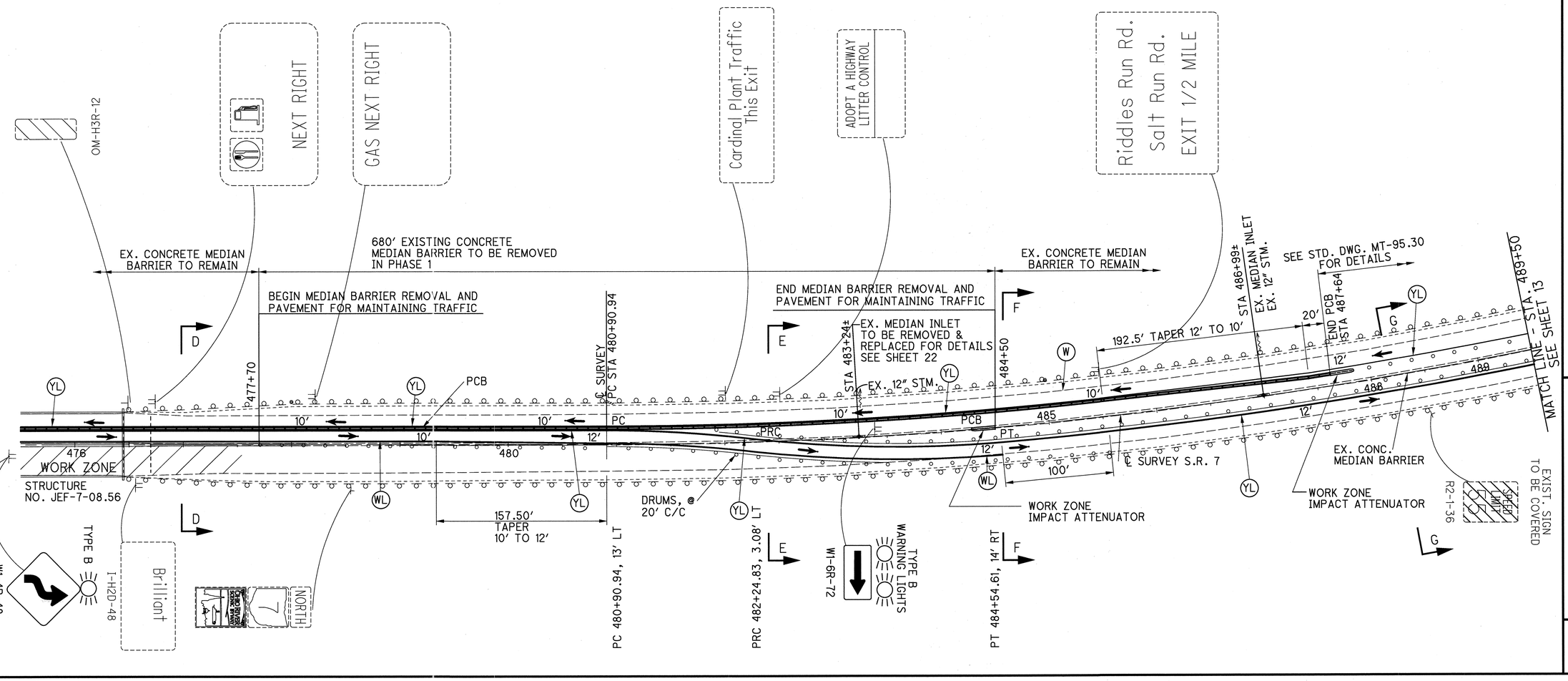
ITEM 614 WORK ZONE CROSSOVER LIGHTING SYSTEM
WORK ZONE LIGHTING POLE LOCATION AS PER STANDARD CONSTRUCTION DRAWING MT-100.00

SEE NOTE 3 THIS SHEET

NOTES:

1. THESE SIGNS ARE TO BE PLACED ON THE BRIDGE DECK AT A LOCATION SELECTED IN THE FIELD BY THE ENGINEER, APPROXIMATELY BETWEEN STA. 473+00 AND STA. 474+00. THE SIGNS SHALL BE MOVED WITHIN THE STATIONS LISTED ABOVE TO CLEAR THE PROPOSED WORK ON THE DECK.
2. SEE SHEETS 14 & 15 FOR MOT TYPICAL SECTIONS.
3. WORK ZONE LIGHTING AT CROSSOVER NO. 2 IS NOT SHOWN FOR CLARITY. IT SHALL BE AS PER MT-100.00.

CROSSOVER NO. 2 - PHASE 2



24979MP001

CALCULATED SMS
CHECKED GTA

MAINTENANCE OF TRAFFIC - PHASE 2
STA 475+50 TO STA 489+50

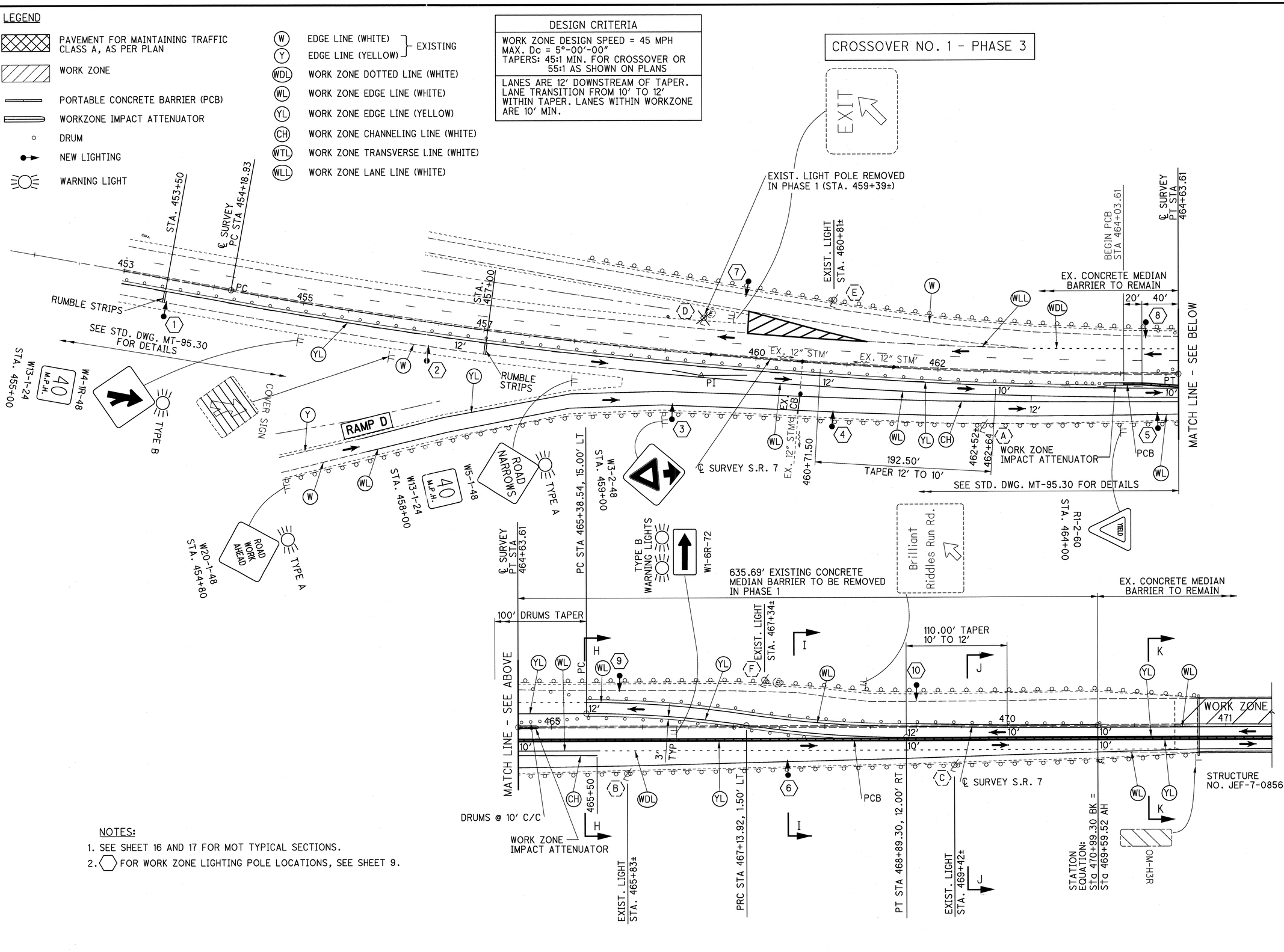
JEF-7-8.56

LEGEND

- PAVEMENT FOR MAINTAINING TRAFFIC CLASS A, AS PER PLAN
- WORK ZONE
- PORTABLE CONCRETE BARRIER (PCB)
- WORKZONE IMPACT ATTENUATOR
- DRUM
- NEW LIGHTING
- WARNING LIGHT
- (W) EDGE LINE (WHITE) } EXISTING
- (Y) EDGE LINE (YELLOW) } EXISTING
- (WDL) WORK ZONE DOTTED LINE (WHITE)
- (WL) WORK ZONE EDGE LINE (WHITE)
- (YL) WORK ZONE EDGE LINE (YELLOW)
- (CH) WORK ZONE CHANNELING LINE (WHITE)
- (WTL) WORK ZONE TRANSVERSE LINE (WHITE)
- (WLL) WORK ZONE LANE LINE (WHITE)

DESIGN CRITERIA
WORK ZONE DESIGN SPEED = 45 MPH MAX. Dc = 5°-00'-00" TAPERS: 45:1 MIN. FOR CROSSOVER OR 55:1 AS SHOWN ON PLANS
LANES ARE 12' DOWNSTREAM OF TAPER. LANE TRANSITION FROM 10' TO 12' WITHIN TAPER. LANES WITHIN WORKZONE ARE 10' MIN.

CROSSOVER NO. 1 - PHASE 3



NOTES:

1. SEE SHEET 16 AND 17 FOR MOT TYPICAL SECTIONS.
2. ⬡ FOR WORK ZONE LIGHTING POLE LOCATIONS, SEE SHEET 9.

CALCULATED SMS
CHECKED GTA

MAINTENANCE OF TRAFFIC - PHASE 3
STA 453+00 TO STA 471+50

JEF-7-8.56

11
59

24979MP004

LEGEND

- PAVEMENT FOR MAINTAINING TRAFFIC CLASS A, AS PER PLAN
- WORK ZONE
- PORTABLE CONCRETE BARRIER (PCB)
- WORKZONE IMPACT ATTENUATOR
- DRUM
- NEW LIGHTING
- WARNING LIGHT

- (W) EDGE LINE (WHITE) } EXISTING
- (Y) EDGE LINE (YELLOW) }
- (WDL) WORK ZONE DOTTED LINE (WHITE)
- (WL) WORK ZONE EDGE LINE (WHITE)
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- (WTL) WORK ZONE TRANSVERSE LINE (WHITE)
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DESIGN CRITERIA
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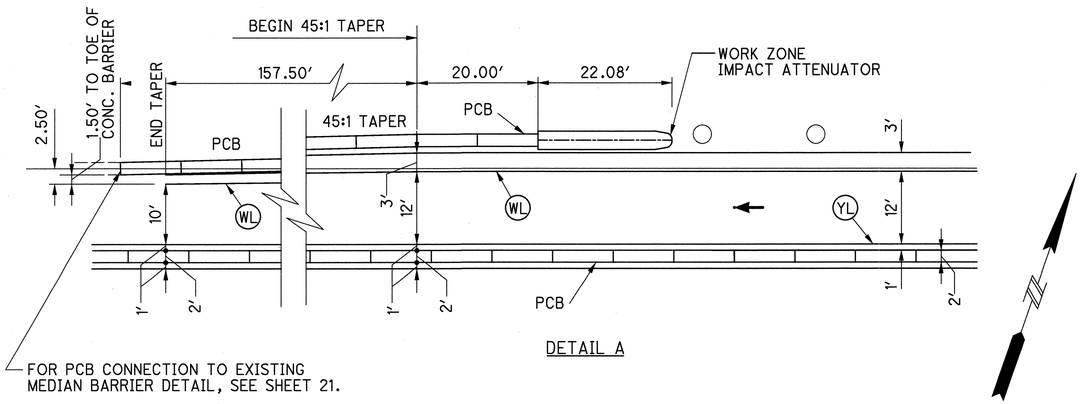
LANES ARE 12' DOWNSTREAM OF TAPER. LANE TRANSITION FROM 10' TO 12' WITHIN TAPER. LANES WITHIN WORKZONE ARE 10' MIN.



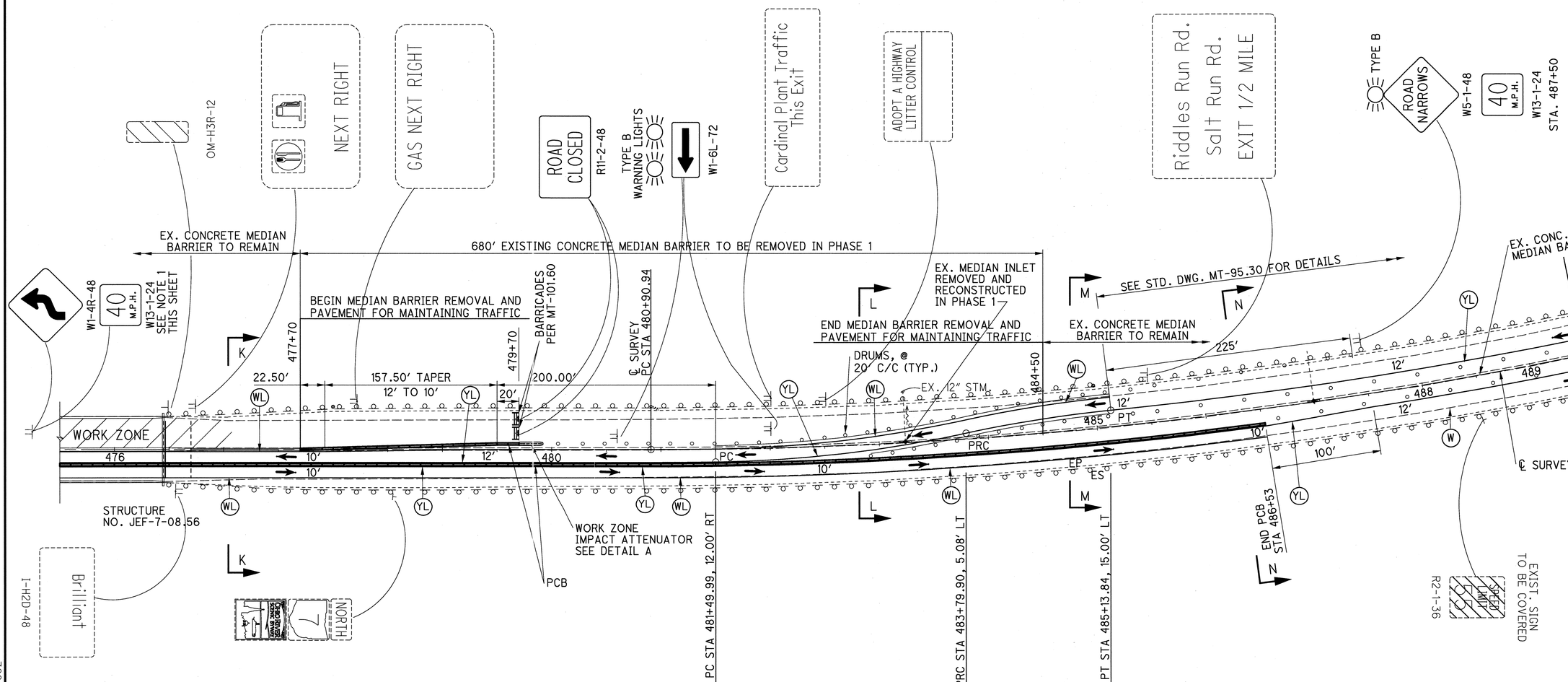
DETAIL A

FOR PCB CONNECTION TO EXISTING MEDIAN BARRIER DETAIL, SEE SHEET 21.

NOTES:

1. THESE SIGNS ARE TO BE PLACED ON THE BRIDGE DECK AT A LOCATION SELECTED IN THE FIELD BY THE ENGINEER, APPROXIMATELY BETWEEN STA. 474+50 AND STA. 475+50. THE SIGNS SHALL BE MOVED WITHIN THE STATIONS LISTED ABOVE TO CLEAR THE PROPOSED WORK ON THE DECK.
2. SEE SHEETS 16 AND 17 FOR MOT TYPICAL SECTIONS.
3. WORK ZONE LIGHTING AT CROSSOVER NO. 2 IS NOT SHOWN FOR CLARITY. IT SHALL BE AS PER MT-100.00 AND REMAIN ACTIVE DURING PHASE 3.

CROSSOVER NO. 2 - PHASE 3



24979MP002

CALCULATED SMS
CHECKED GTA

MAINTENANCE OF TRAFFIC - PHASE 3
STA 475+50 TO STA 489+50

JEF-7-8.56

12
59

MAINTENANCE OF TRAFFIC STA. 489+50 TO STA. 520+00

CALCULATED SMS
CHECKED GTA

LEGEND

- PAVEMENT FOR MAINTAINING TRAFFIC CLASS A, AS PER PLAN
- WORK ZONE
- PORTABLE CONCRETE BARRIER (PCB)
- WORKZONE IMPACT ATTENUATOR
- DRUM
- NEW LIGHTING
- WARNING LIGHT

- (W) EDGE LINE (WHITE) } EXISTING
- (Y) EDGE LINE (YELLOW) }
- (WDL) WORK ZONE DOTTED LINE (WHITE)
- (WL) WORK ZONE EDGE LINE (WHITE)
- (YL) WORK ZONE EDGE LINE (YELLOW)
- (CH) WORK ZONE CHANNELING LINE (WHITE)
- (WTL) WORK ZONE TRANSVERSE LINE (WHITE)
- (WLL) WORK ZONE LANE LINE (WHITE)

DESIGN CRITERIA
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LANES ARE 12' DOWNSTREAM OF TAPER. LANE TRANSITION FROM 10' TO 12' WITHIN TAPER. LANES WITHIN WORKZONE ARE 10' MIN.

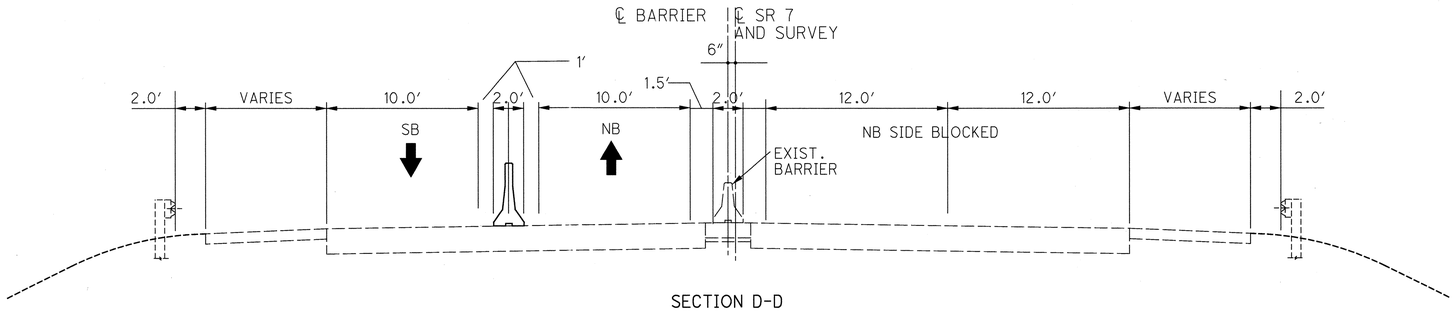
PHASE 2 & PHASE 3
MOT AT ENTRANCE RAMP C-1

PHASE 2 & 3
PHASE 3 ONLY
TYPE B
ROAD NARROWS
W5-1-48
W1-4L-48
40 M.P.H.
W13-1-24
STA 490+00
EX. CONC. MEDIAN BARRIER
MATCH LINE - STA. 489+50
SEE SHEET 10 PHASE 2
SEE SHEET 12 PHASE 3
490'
492'
493'
R2-1-48
STA 490+00
SPEED LIMIT 45
℄ SURVEY S.R. 7
MATCH LINE - SEE BELOW
Brilliant
Next Right
I-H2D-48
TYPE B
W4-1R-48
SOUTH
7
TYPE A
ROAD WORK AHEAD
W20-1-48
STA 503+40
PT Sta. 503+29.69
SPEED LIMIT 45
R2-1-48
STA 506+50
SERVICE ROAD
PART 1
PART 2
EXISTING PAVEMENT MARKINGS ON RAMP PAVEMENT REMAINS THE SAME
MATCH LINE - SEE ABOVE
494'
495'
500'
501'
503'
505'
506'
520'
12'
RAMP C-1
(YL)
(W)
EXISTING SIGN TO BE COVERED
R2-1-36
SPEED LIMIT 55
Mingo Jct 4
Steubenville 7
℄ SURVEY S.R. 7
SPEED LIMIT 45
R2-1-48
STA 504+00
QUANTITES FOR PART 1
SHOWN IN WORK ZONE SUB-SUMMARY, SHEET 8
TO STA. 520+00
STA. 520+00

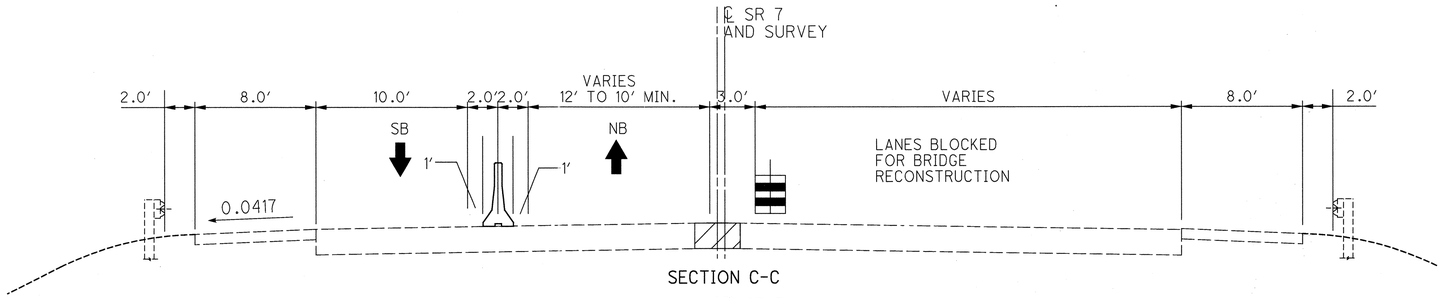
24979MP005

JEF-7-8.56

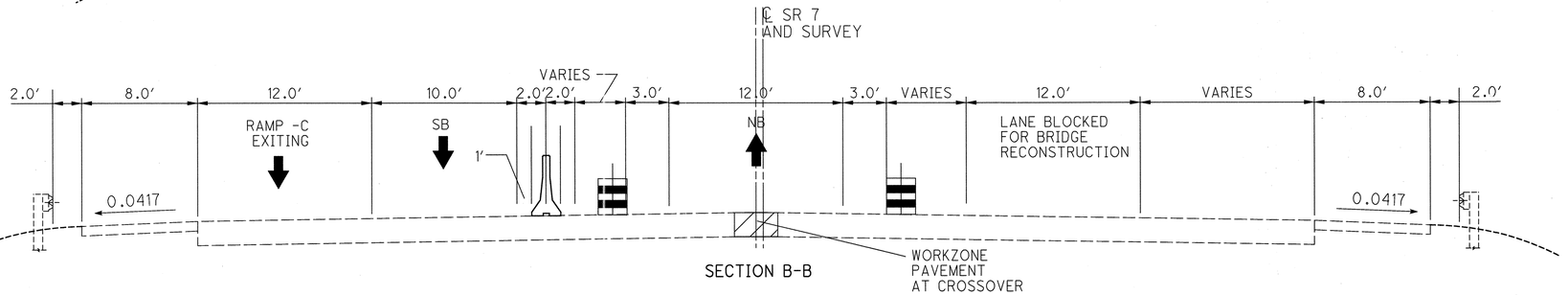
13
59



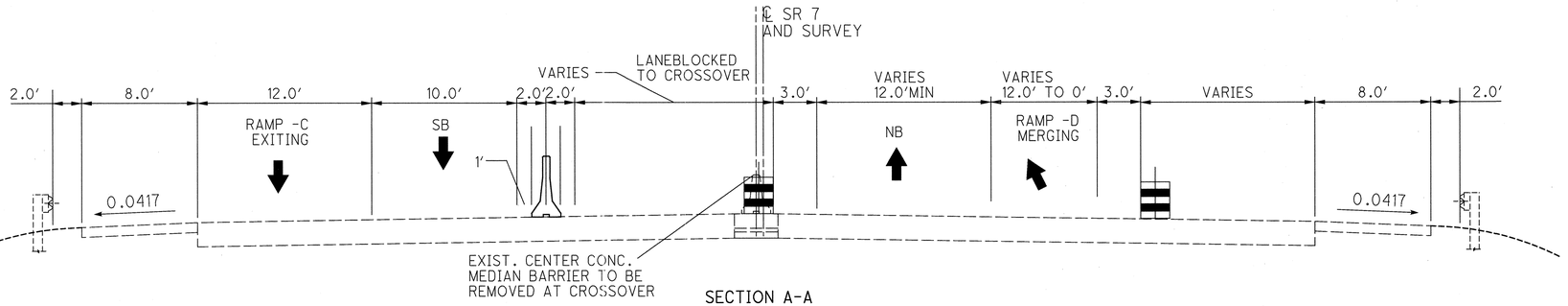
SECTION D-D



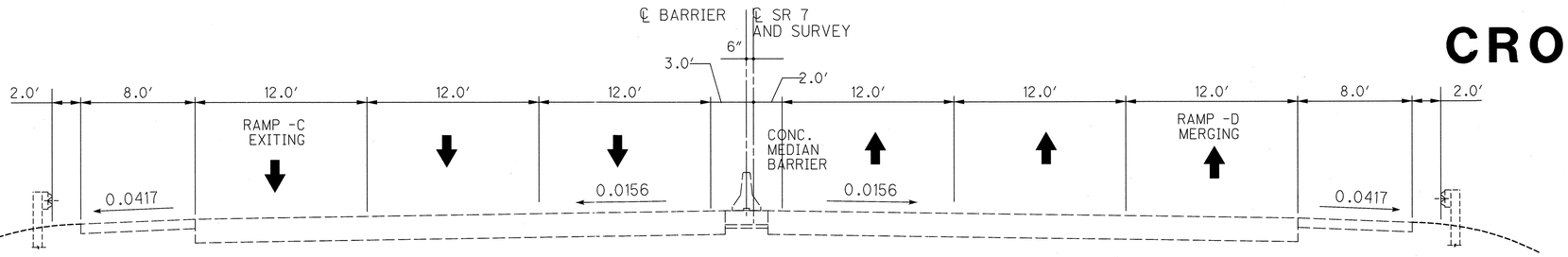
SECTION C-C



SECTION B-B



SECTION A-A



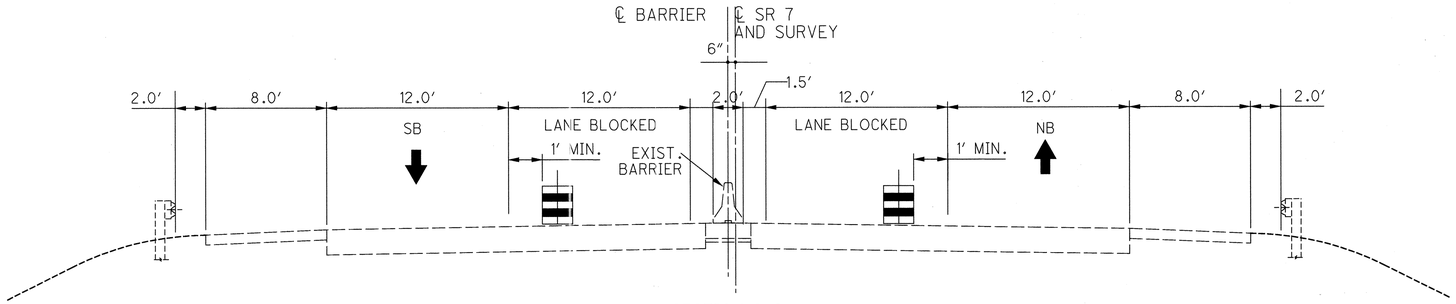
EXISTING TYPICAL

PHASE 2
AT
CROSS OVER NO. 1

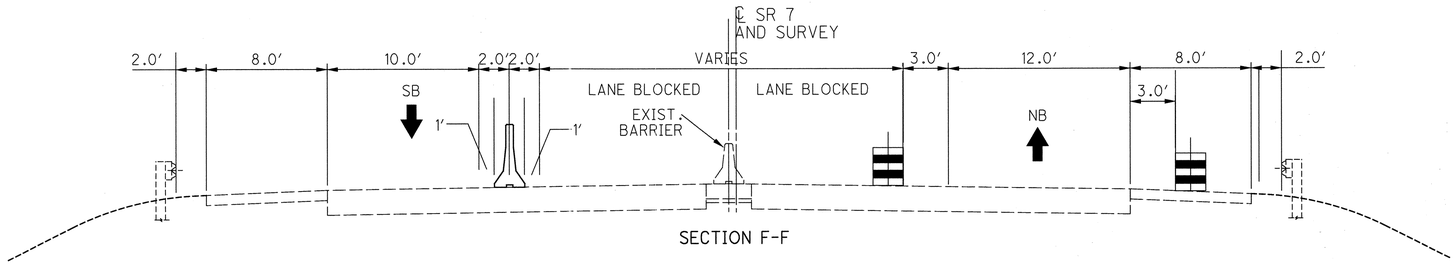
MAINTENANCE OF TRAFFIC
TYPICAL SECTIONS

JEF-7-8.56

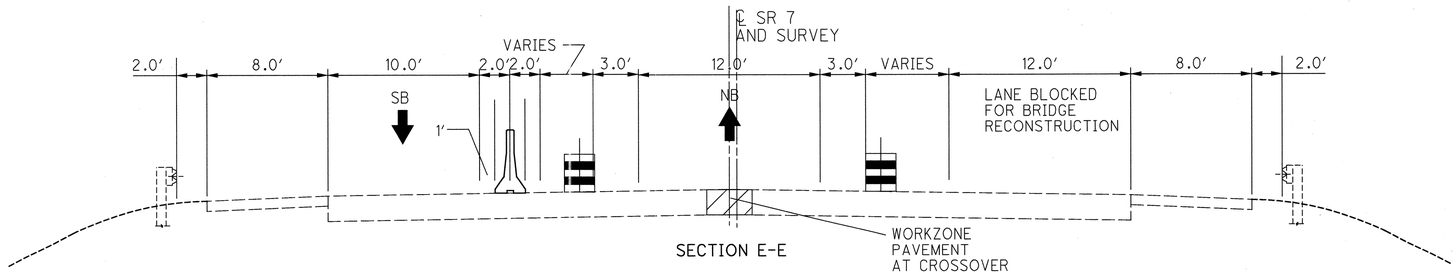
24979MY001



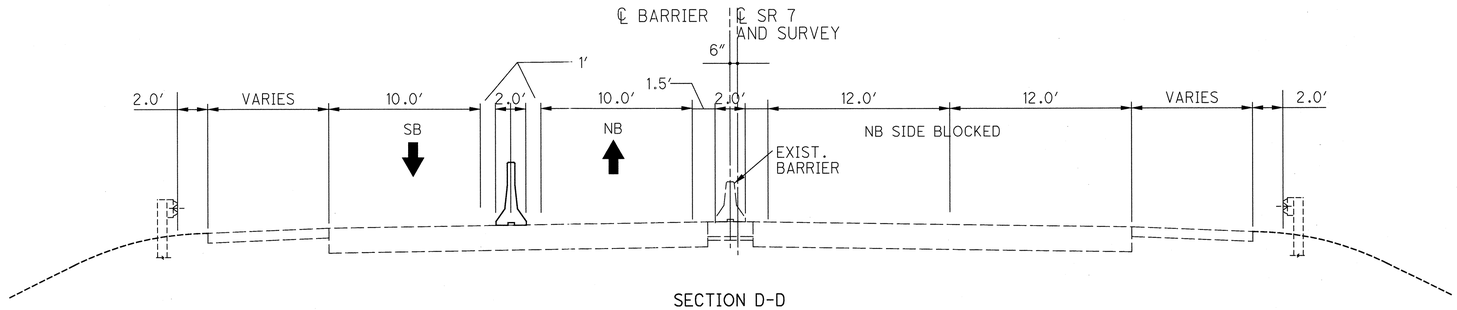
SECTION G-G



SECTION F-F



SECTION E-E



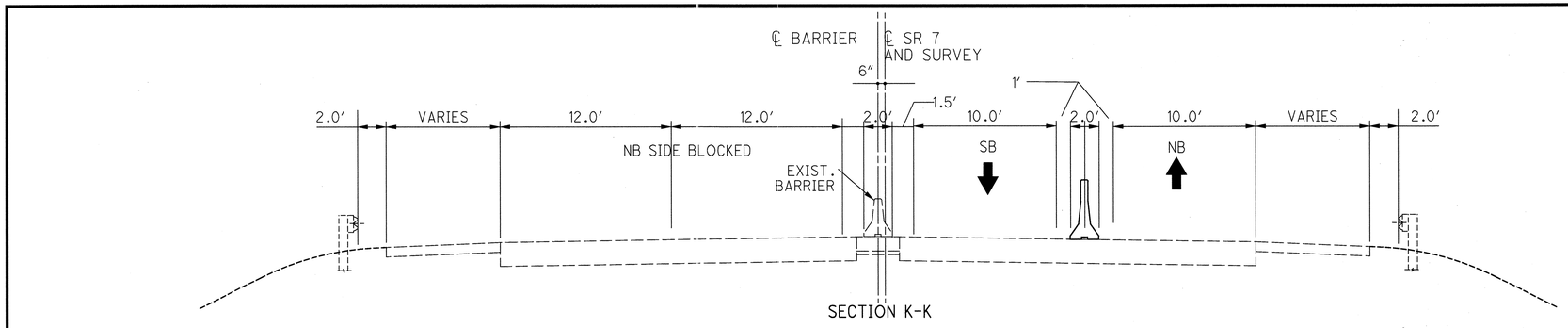
SECTION D-D

PHASE 2
AT
CROSS OVER NO. 2

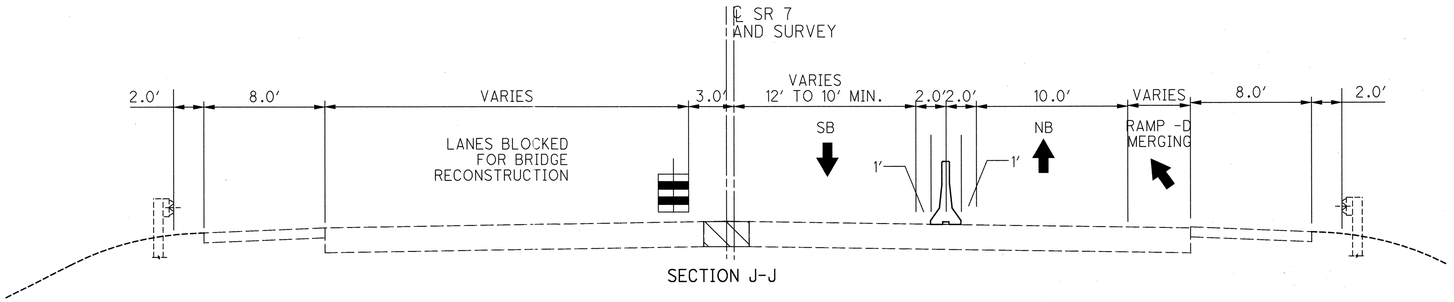
MAINTENANCE OF TRAFFIC
TYPICAL SECTIONS

JEF-7-8.56

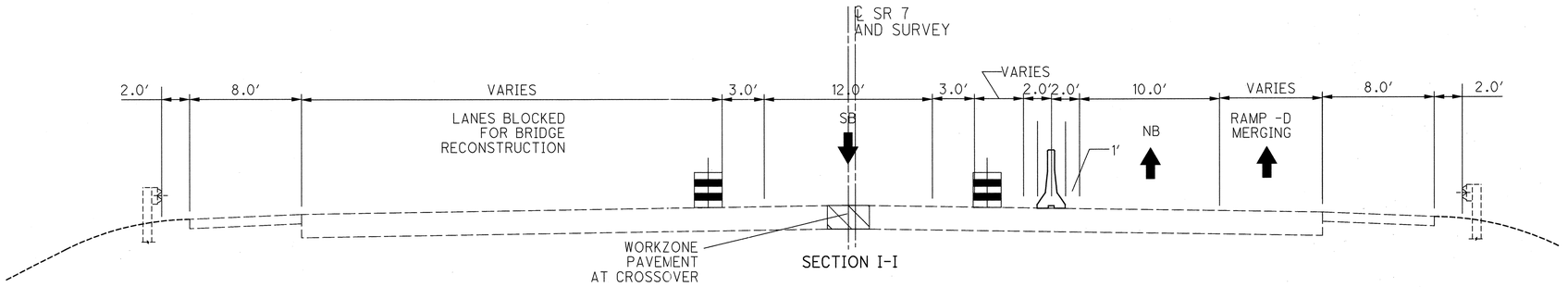
24979MY002



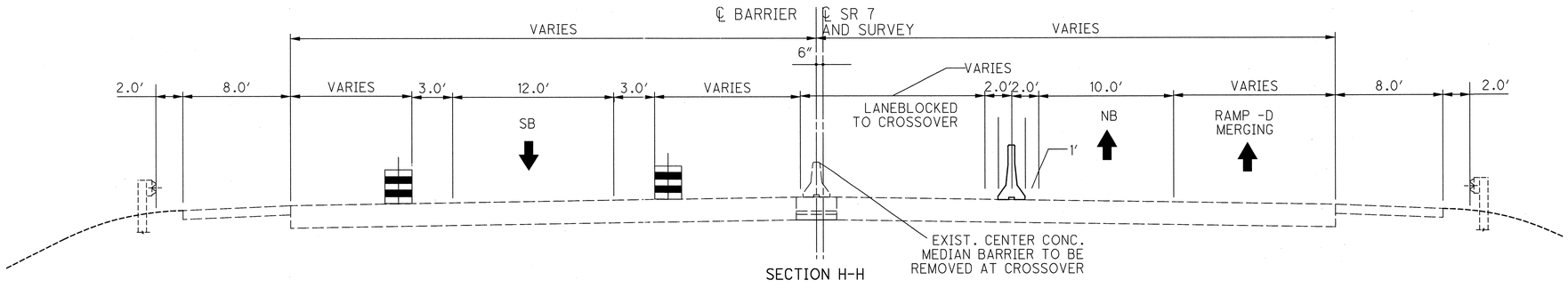
SECTION K-K



SECTION J-J



SECTION I-I



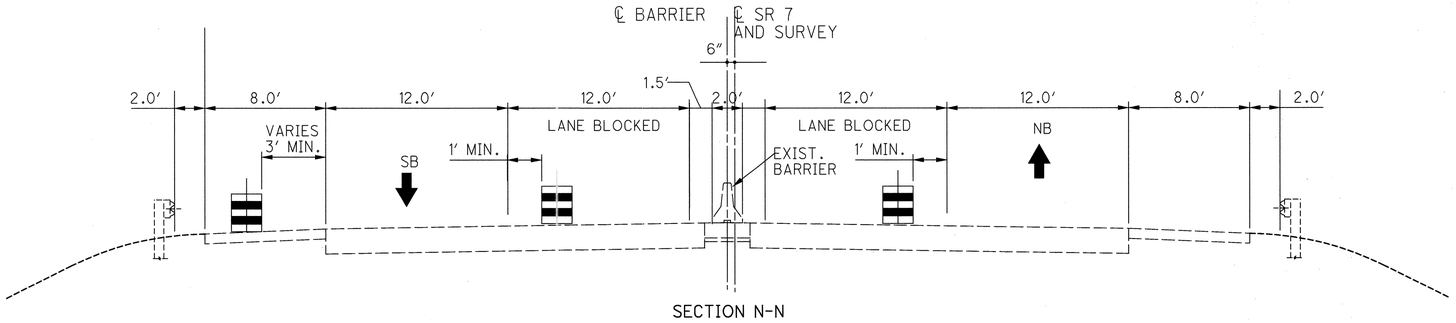
SECTION H-H

PHASE 3
AT
CROSS OVER NO. 1

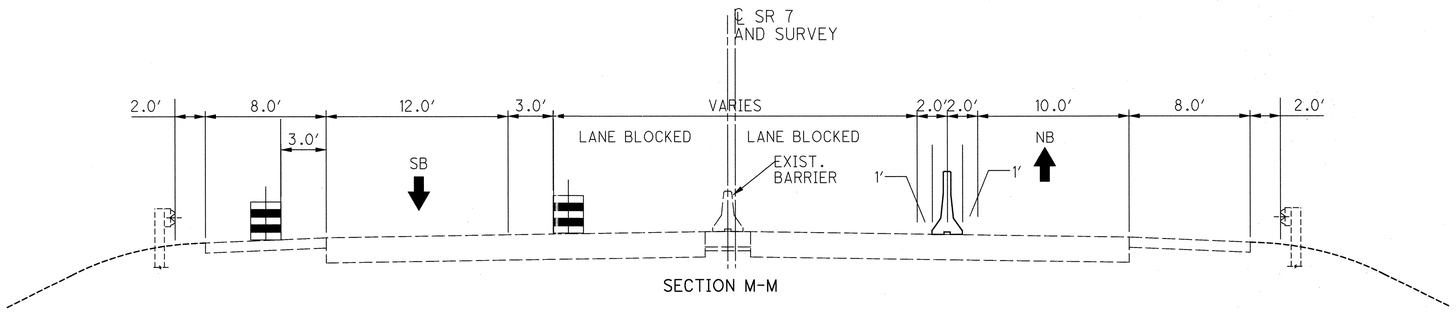
MAINTENANCE OF TRAFFIC
TYPICAL SECTIONS

JEF-7-8.56

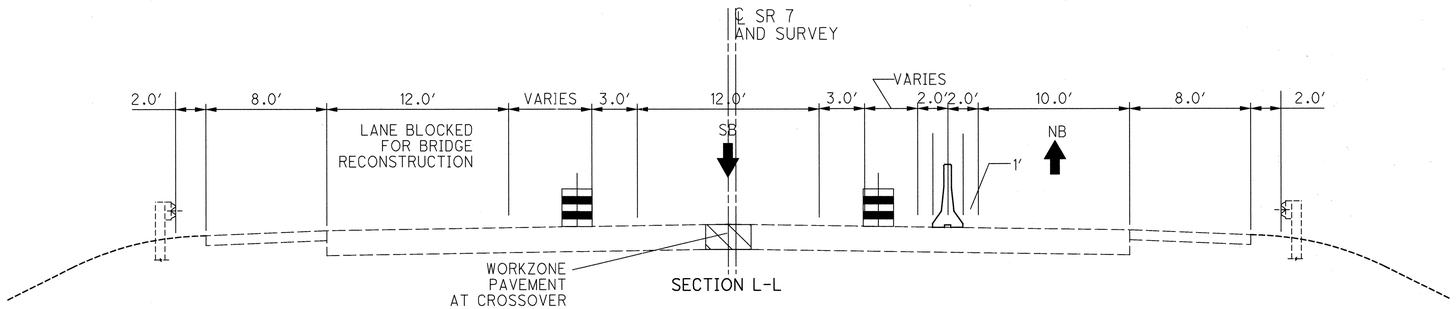
24979MY003



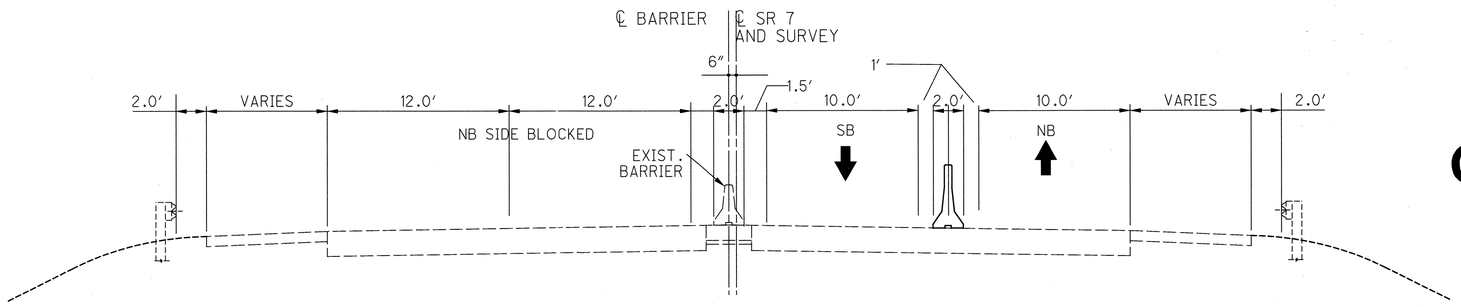
SECTION N-N



SECTION M-M



SECTION L-L



SECTION K-K

PHASE 3 AT CROSS OVER NO. 2

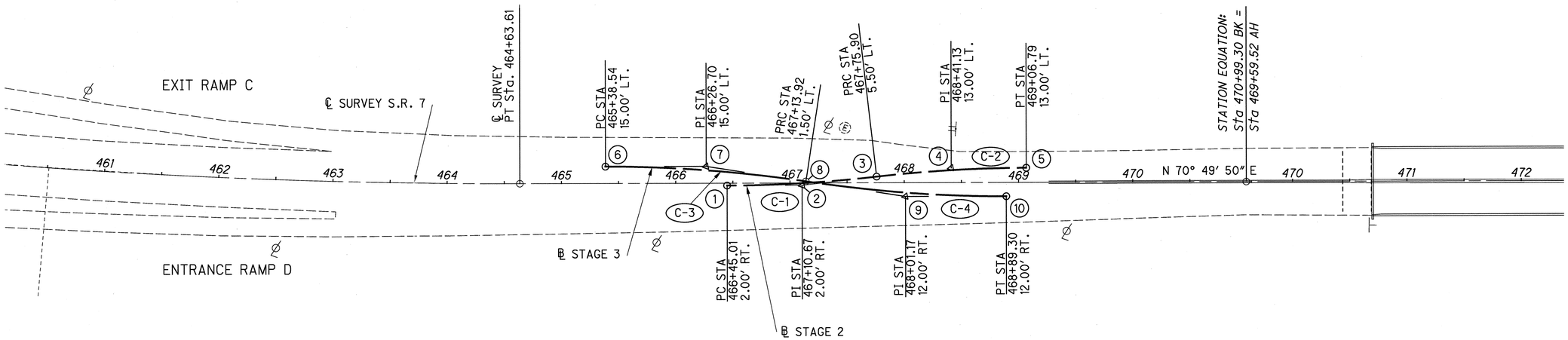
MAINTENANCE OF TRAFFIC
TYPICAL SECTIONS

JEF-7-8.56

17
59

24979MY004

CROSSOVER NO. 1 - STAGE 2 & 3



℄ SURVEY S.R. 7 - CURVE DATA

P.I. STA. 459+42.71
Δ = 10° 26' 49" (LT)
Dc = 1° 00' 00"
R = 5,729.58'
T = 523.80'
L = 1,044.69'
E = 23.89'
PC STA. 454+18.91
PT STA. 464+63.61

CROSSOVER STAGE 2 - ℄ CURVE DATA

C-1 PI STA 466+26.70, 15.00' LT.
R= 1145.916'
Dc = 5°00'00"
Δ= 6°33'32" LT.
T= 65.66'
L= 131.18'

1. PC STA. 20+00.00
2. PI STA. 20+65.66
3. PRC STA. 21+31.18

C-2 PI STA 468+01.17, 12.00' RT.
R= 1145.916'
Dc = 5°00'00"
Δ= 6°33'32" RT.
T= 65.66'
L= 131.18'

3. PRC STA. 21+31.18
4. PI STA. 21+96.84
5. PT STA. 22+62.36

CROSSOVER STAGE 3 - ℄ CURVE DATA

C-3 PI STA 467+10.67, 2.00' RT.
R= 1145.916'
Dc = 5°00'00"
Δ= 8°48'13" RT.
T= 88.21'
L= 176.07'

6. PC STA. 30+00.00
7. PI STA. 30+88.21
8. PRC STA. 31+76.07

C-4 PI STA 468+41.13, 13.00' LT.
R= 1145.916'
Dc = 5°00'00"
Δ= 8°48'13" LT.
T= 88.21'
L= 176.07'

8. PRC STA. 31+76.07
9. PI STA. 32+64.28
10. PT STA. 33+52.14

CALCULATED SMS
CHECKED GTA

0 25 50 100
HORIZONTAL SCALE IN FEET

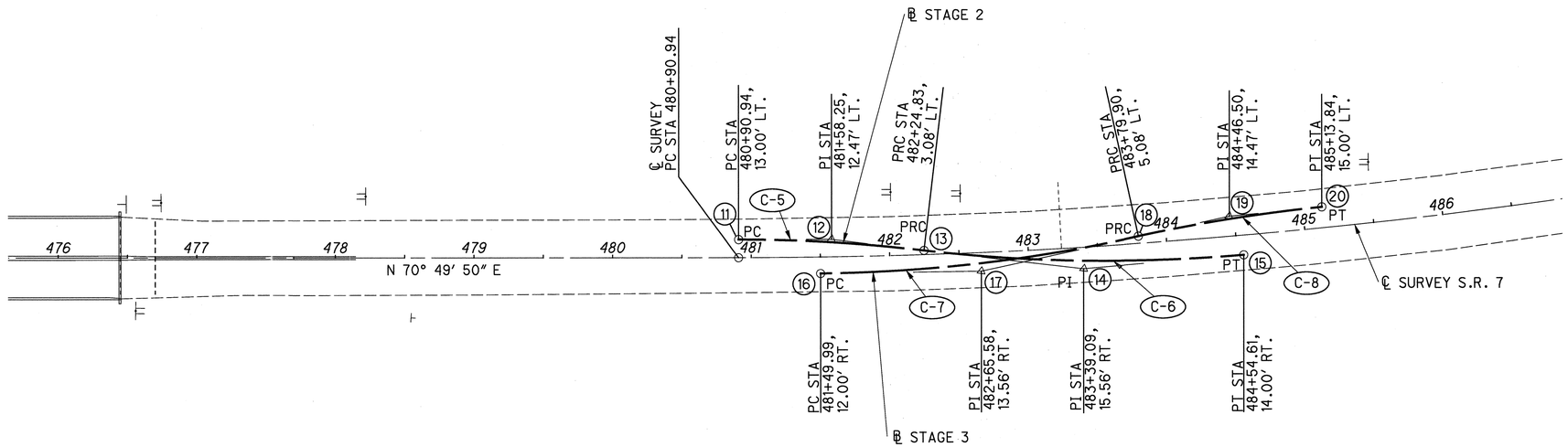
MAINTENANCE OF TRAFFIC
CROSSOVER GEOMETRY PLAN

JEF-7-8.56

18
59

24979MH001

CROSSOVER NO. 2 - STAGE 2 & 3



CROSSOVER STAGE 2 - ℄ CURVE DATA

C-5
PI STA 481+58.25,12.47' LT.
R= 1145.916'
Dc = 5°00'00"
Δ= 6°42'15" RT.
T= 67.12'
L= 134.08'

C-6
PI STA 483+39.09, 15.56' RT.
R= 1145.916'
Dc = 5°00'00"
Δ= 11°33'12" LT.
T= 115.93'
L= 231.07'

(11) PC STA. 40+00.00
(12) PI STA. 40+67.12
(13) PRC STA. 41+34.08
(14) PI STA. 42+50.01
(15) PT STA. 43+65.15

CROSSOVER STAGE 3 - ℄ CURVE DATA

C-7
PI STA 482+65.58, 13.56' RT.
R= 1145.916'
Dc = 5°00'00"
Δ= 11°33'17" LT.
T= 115.94'
L= 231.10'

C-8
PI STA 484+46.50, 14.47' LT.
R= 1145.916'
Dc = 5°00'00"
Δ= 6°42'12" RT.
T= 67.11'
L= 134.07'

(16) PC STA. 50+00.00
(17) PI STA. 51+15.94
(18) PRC STA. 52+31.09
(19) PI STA. 52+98.20
(20) PT STA. 53+65.16

℄ SURVEY S.R. 7 - CURVE DATA

P.I. STA. 492+36.34
R = 4,297.18'
Dc = 1° 20' 00"
Δ = 29° 51' 00" (LT)
T = 1,145.40'
L = 2,238.75'
PC STA. 480+90.94
PT STA. 503+29.69

CALCULATED SMS
CHECKED GTA

0 25 50 100
HORIZONTAL SCALE IN FEET

MAINTENANCE OF TRAFFIC
CROSSOVER GEOMETRY PLAN

JEF-7-8.56

19
59

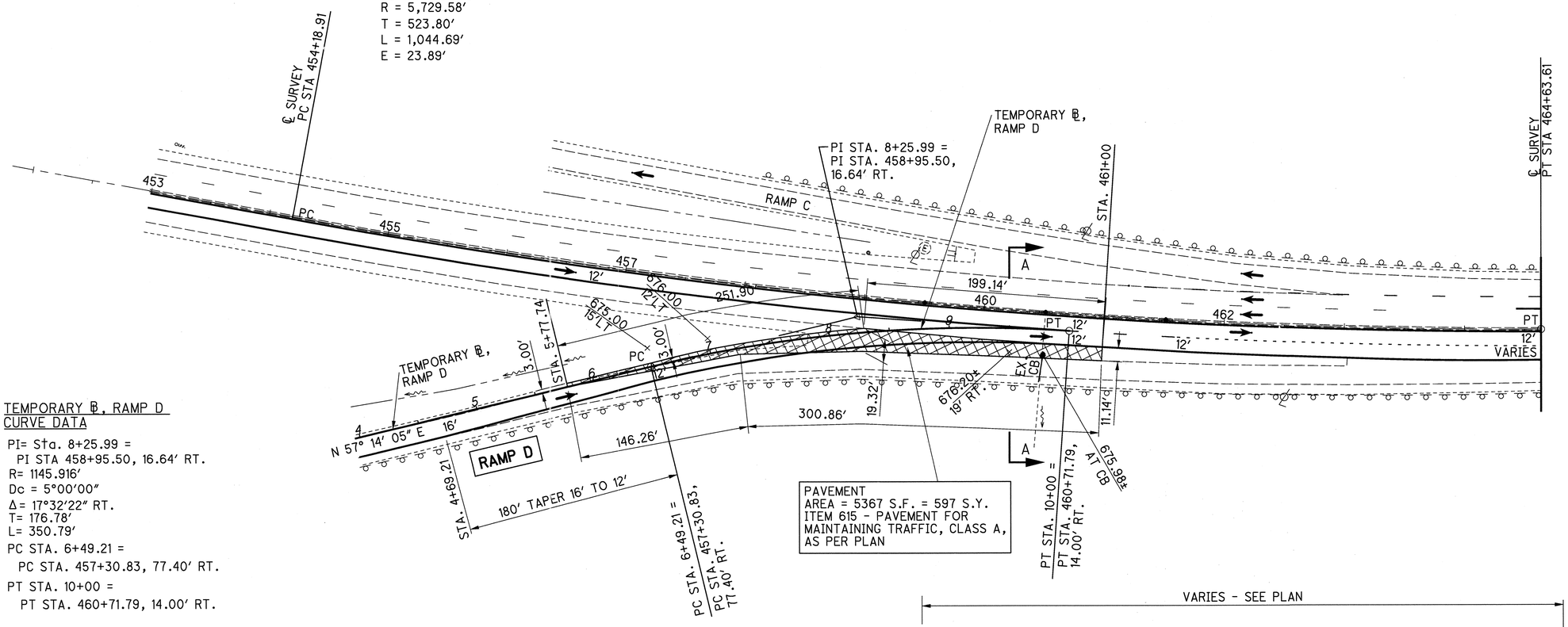
24979MH002

LEGEND

PAVEMENT FOR MAINTAINING TRAFFIC
CLASS A, AS PER PLAN

℄ SURVEY S.R. 7 - CURVE DATA

P.I. STA. 459+42.71
Δ = 10° 26′ 49″ (LT)
Dc = 1° 00′ 00″
R = 5,729.58′
T = 523.80′
L = 1,044.69′
E = 23.89′



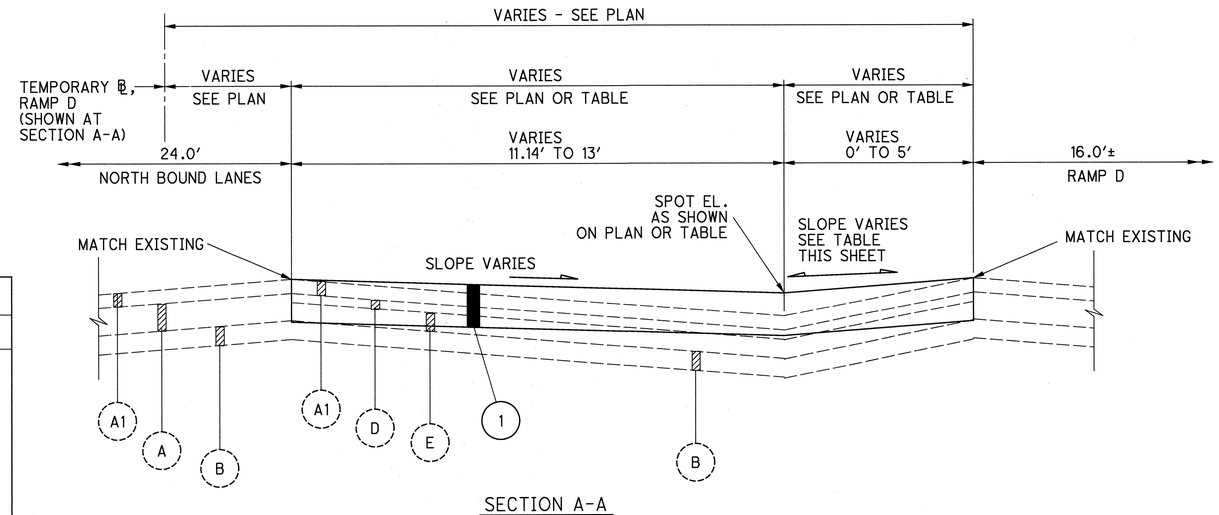
TEMPORARY ℄, RAMP D
CURVE DATA

PI= Sta. 8+25.99 =
PI STA 458+95.50, 16.64′ RT.
R= 1145.916′
Dc = 5°00′00″
Δ = 17°32′22″ RT.
T= 176.78′
L= 350.79′
PC STA. 6+49.21 =
PC STA. 457+30.83, 77.40′ RT.
PT STA. 10+00 =
PT STA. 460+71.79, 14.00′ RT.

PAVEMENT FOR MAINTAINING TRAFFIC
TOP OF PAVEMENT ELEVATIONS

LEFT SIDE		TEMPORARY ℄ RAMP D		RIGHT SIDE			
ELEV.	OFFSET	ELEV.	STATION	OFFSET	ELEV.	OFFSET	ELEV.
		*	5+77.74	0.0′	*		
676.29	-3.00′	676.14	6+00	1.00′	676.09±		
676.93	-3.00′	676.75	6+50	4.00′	676.51±		
676.61	-3.00′	677.38	7+00	5.00′	676.98±		
677.96	-3.00′	677.72	7+50	9.00′	677.01±		
		677.01	8+00	14.00′	676.72±		
		676.78±	8+50	18.00′	676.50±		
		*	9+00	6.75′	676.51±	22.00′	676.32±
		*	9+50	10.50′	676.36±	24.00′	676.25±
		*	10+00	12.00′	676.36±	24.00′	676.30±

* MEET EXITING ELEVATION



SECTION A-A

(1) ITEM 615 - PAVEMENT FOR MAINTAINING TRAFFIC, CLASS A, AS PER PLAN

FOR EXISTING PAVEMENT LEGEND, SEE SHEET 2

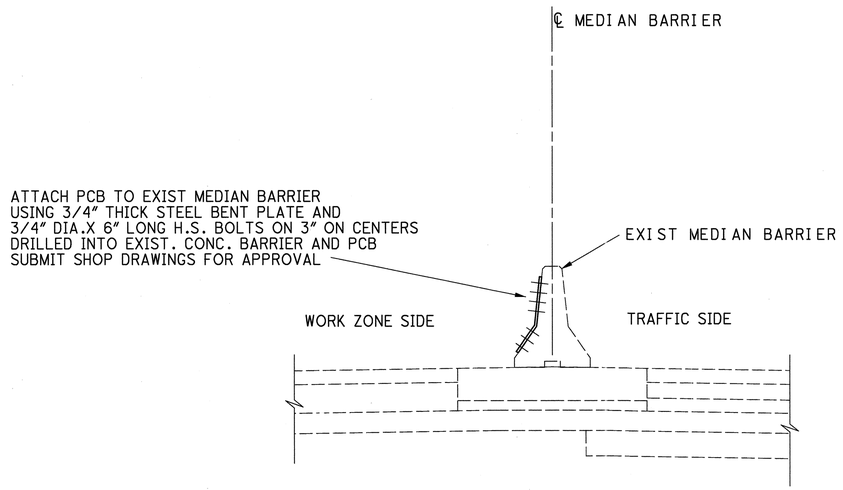
CALCULATED SMS
CHECKED GTA

MAINTENANCE OF TRAFFIC
WORKZONE PAVEMENT DETAILS AT RAMP D

JEF-7-8.56

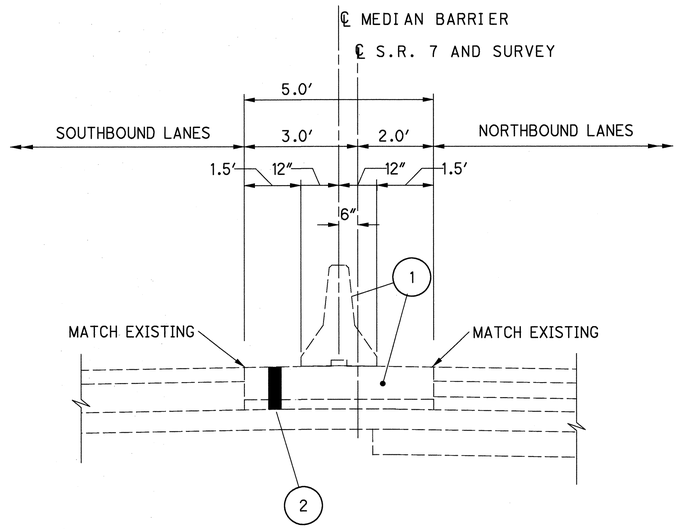
20
59

24979MM002



TYPICAL CONNECTION DETAIL

PCB TO EXISTING MEDIAN BARRIER
REQUIRED AT 4 PLACES



MAINTENANCE OF TRAFFIC TYPICAL SECTION - S.R. 7

STA. 464+63.62 TO STA. 470+99.30 = 635.68 L.F.
STA. 477+70.00 TO STA. 484+50.00 = 680.00 L.F.
TOTAL = 1315.68 L.F.

(1) ITEM 202 - CONCRETE BARRIER REMOVED, AS PER PLAN

(2) ITEM 615 - PAVEMENT FOR MAINTAINING TRAFFIC, CLASS A

ITEM 615 - PAVEMENT FOR MAINTAINING TRAFFIC, CLASS A
AREA = 1315.68′ x 5′ ÷ 9 = 731 S.Y.

CALCULATED SMS
CHECKED GTA

MAINTENANCE OF TRAFFIC DETAILS

JEF-7-8.56

24979MM001.dgn

SHEET NUMBER												PARTICIPATION		ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
OFFICE CALCS			3 3		8			24											
																		ROADWAY	
			LUMP											201	11000	LUMP		CLEARING AND GRUBBING	
					1316									202	30701	1316	FT	CONCRETE BARRIER REMOVED, AS PER PLAN	7
								4						202	47000	4	EACH	BRIDGE TERMINAL ASSEMBLY REMOVED	
					1									202	58201	1	EACH	INLET REMOVED, AS PER PLAN	7
								112.5						606	13000	112.5	FT	GUARDRAIL, TYPE 5	
								2						606	35000	2	EACH	BRIDGE TERMINAL ASSEMBLY, TYPE 1	
								2						606	35100	2	EACH	BRIDGE TERMINAL ASSEMBLY, TYPE 2	
								1296						622	23301	1296	FT	CONCRETE BARRIER, TYPE A, AS PER PLAN	3
																		EROSION CONTROL	
			320											659	10000	320	SQ YD	SEEDING AND MULCHING	
			0.05											659	20000	0.05	TON	COMMERCIAL FERTILIZER	
			0.07											659	31000	0.07	ACRE	LIME	
			5											659	35000	5	M GAL	WATER	
														832	30000	1000	EACH	EROSION CONTROL	
																		PAVEMENT	
			2025											253	01001	2025	SQ YD	PAVEMENT REPAIR, AS PER PLAN	3
303														254	01000	303	SQ YD	PAVEMENT PLANING, ASPHALT CONCRETE	
								122						304	20000	122	CU YD	AGGREGATE BASE	
31														407	10000	31	GALLON	TACK COAT	
11														446	47029	11	CU YD	ASPHALT CONCRETE SURFACE COURSE, TYPE 1, PG70-22M, AS PER PLAN	3
								40						609	24510	40	FT	CURB, TYPE 4-C	
																		DRAINAGE	
								1						604	22500	1	EACH	INLET MISC: NEW JERSEY SHAPE BARRIER MEDIAN INLET	3
																		TRAFFIC CONTROL	
								70						626	00100	70	EACH	BARRIER REFLECTOR	
								18						630	02100	18	FT	GROUND MOUNTED SUPPORT, NO. 2 POST	
								6						630	80100	6	SQ FT	SIGN, FLAT SHEET	
								2						630	84900	2	EACH	REMOVAL OF GROUND MOUNTED SIGN AND DISPOSAL	
								2						630	86002	2	EACH	REMOVAL OF GROUND MOUNTED POST SUPPORT AND DISPOSAL	
								5.25						642	00100	5.25	MILE	EDGE LINE, TYPE 1	
								2.47						642	00200	2.47	MILE	LANE LINE, TYPE 1	
								1320						642	00400	1320	FT	CHANNELIZING LINE, TYPE 1	
								104						642	00700	104	FT	TRANSVERSE/DIAGONAL LINE, TYPE 1	
																		STRUCTURES	
																		FOR STRUCTURE JEF-7-0856 GENERAL SUMMARY SEE SHEET 37	

CALCULATED SMS
CHECKED KJS

GENERAL SUMMARY

JEF-7-8.56

24979GG001.dgn

SHEET NUMBER												PARTICIPATION		ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
OFFICE CALCS			4	5	6	7	8	9	10	20	21								
																		MAINTENANCE OF TRAFFIC	
					200									614	11110	200	HOUR	LAW ENFORCEMENT OFFICER WITH PATROL CAR FOR ASSISTANCE	
							3365							614	11620	3365	FT	LINEAR DELINEATION	6
							6							614	12336	6	EACH	WORK ZONE IMPACT ATTENUATOR (UNIDIRECTIONAL)	
						1								614	12410	1	EACH	SPEED ZONE AHEAD SYMBOL SIGN	
						4								614	12460	4	EACH	WORK ZONE MARKING SIGN	
						4								614	12470	4	EACH	WORK ZONE SPEED LIMIT SIGN	
						8								614	12484	8	EACH	WORK ZONE INCREASED PENALTIES SIGN	
									1					614	12756	1	EACH	WORK ZONE CROSSOVER LIGHTING SYSTEM	
								1						614	12757	1	EACH	WORK ZONE CROSSOVER LIGHTING SYSTEM, AS PER PLAN	6
							242							614	13300	242	EACH	BARRIER REFLECTOR, TYPE B	
							172							614	13360	172	EACH	OBJECT MARKER, TWO WAY	
				160										614	18401	160	DAY	PORTABLE CHANGEABLE MESSAGE SIGN, AS PER PLAN	5
						1	0.08							614	20200	1.08	MILE	WORK ZONE LANE LINE, CLASS I, 740.06, TYPE 1	
						2	5.68							614	22200	7.68	MILE	WORK ZONE EDGE LINE, CLASS I, 740.06, TYPE 1	
							965							614	23400	965	FT	WORK ZONE CHANNELIZING LINE, CLASS I, 740.06, TYPE 1	
							1748							614	24400	1748	FT	WORK ZONE DOTTED LINE, CLASS I, 740.06, TYPE 1	
							156							614	25400	156	FT	WORK ZONE TRANSVERSE/DIAGONAL LINE, CLASS I, 740.06, TYPE 1	
											731			615	20000	731	SQ YD	PAVEMENT FOR MAINTAINING TRAFFIC, CLASS A	
										597				615	20001	597	SQ YD	PAVEMENT FOR MAINTAINING TRAFFIC, CLASS A, AS PER PLAN	7
							5110							622	40031	5110	FT	PORTABLE CONCRETE BARRIER, 50", AS PER PLAN	4
							240							SPECIAL	69013000	240	FT	RUMBLE STRIPS	7
														SPECIAL	10830000	LUMP		CPM PROGRESS SCHEDULE SHORT DURATION PROJECTS	
			LUMP											614	11000	LUMP		MAINTAINING TRAFFIC	
														619	16010	6	MONTH	FIELD OFFICE, TYPE B	
														623	10001	LUMP		CONSTRUCTION LAYOUT STAKES, AS PER PLAN	3
														624	10000	LUMP		MOBILIZATION	

CALCULATED SMS
CHECKED KJS

GENERAL SUMMARY

JEF-7-8.56

24979GG002.dgn

REF NO.	SHEET NO.	STATION TO STATION		SIDE	202 BRIDGE TERMINAL ASSEMBLY REMOVED	606 BRIDGE TERMINAL ASSEMBLY, TYPE 1	606 BRIDGE TERMINAL ASSEMBLY, TYPE 2	606 GUARDRAIL, TYPE 5	622 CONCRETE BARRIER, TYPE A, AS PER PLAN	604 INLET MISC.: NEW JERSEY SHAPE BARRIER MEDIAN INLET	304 AGGREGATE BASE	626 BARRIER REFLECTOR		609 CURB, TYPE 4-C	642 EDGE LINE, TYPE 1		642 LANE LINE, TYPE 1	642 CHANNELIZING LINE, TYPE 1	642 TRANSVERSE/ DIAGONAL LINE, TYPE 1
												TYPE A	TYPE B		W	Y			
					EACH	EACH	EACH	FT.	FT.	EACH	C.Y.	EACH		FT.	MILE		MILE	FT.	FT.
GR-1	28	470+44	470+69	LT.	1		1	25				3							
GR-2	28	470+37.75	470+69	RT.	1	1		31.25				3		20					
GR-3	29	476+45	476+76.25	LT.	1	1		31.25				3		20					
GR-4	29	476+45	476+70	RT.	1		1	25				3							
B-1	9	464+63.61	470+99.30	℄					636		58.86		28						
B-2	10	477+70	484+50	℄					660	1	62.96		30						
-	32	453+00	520+00	NB											1.30	1.30	1.30	700	
-	32	3+98	10+00	RAMP D											0.24	0.07			
-	32	459+50	520+00	SB											1.17	1.17	1.17		
-	32	459+88	462+98	AT RAMP C														620	104
TOTALS CARRIED TO GENERAL SUMMARY					4	2	2	112.5	1296	1	121.82	12	58	40	2.71	2.54	2.47	1320	104

REF NO.	SHEET NO.	STATION	SIDE	630 GROUND MOUNTED SUPPORT, NO. 2 POST	630 SIGN FLAT SHEET	630 REMOVAL OF GROUND MOUNTED SIGN AND DISPOSAL	630 REMOVAL OF GROUND MOUNTED POST SUPPORT AND DISPOSAL
				FT	SQ FT	EACH	EACH
S-1	25	470+66.92	RT.	9	3	1	1
S-2	26	476+49.11	LT.	9	3	1	1
TOTALS CARRIED TO GENERAL SUMMARY				18	6	2	2

CALCULATED SMS
CHECKED KJS

SUBSUMMARY

JEF-7-8.56

249799S001

PAVEMENT PLANING AND RESURFACING

BARRIER TRANSITION

25.00′ APP. SLAB

STA. 469+64.00

STA. 470+44

GR-1

P.K. SET
STA. 470+61.96,
32.83′ LT.

LANE LINE

℄ RA

℄ PIER 1

℄ PIER 2

℄ PIER 3

℄ PIER 4

℄ PIER 5

℄ PIER 6

℄ PIER 7

℄ PIER 8

℄ PIER 9

℄ PIER 10
Ex A

℄ PIER 11

℄ PIER 12

℄ PIER 13

℄ DECK JOINT 1

℄ DECK JOINT 2

CONC. PIER CAP (TYP)

Ex RR

Ex LA

Ex A

8′±
12′±
12′±
5′±
12′±
12′±
8′±

PT STA. 464+63.61

465+00

℄ SURVEY &
CONSTRUCTION S.R. 7

470+00 (AH)

N 74°-51′-31″ E

471+00

472+00

473+00

474+00

27.25′±
NDC=30.00′

27.25′±
NDC=30.00′

STA. 470+69.00
END APP. SLAB

LANE LINE

P.K.S.

GR-2

S-1

SEE SHEET 26

E034251

℄ SURVEY S.R. 7- CURVE DATA
P.I. STA. 459+42.71
Δ = 10° 26′ 49″ (LT)
Dc = 1° 00′ 00″
R = 5,729.58′
T = 523.80′
L = 1,044.69′
E = 23.89′

BENCHMARK
STATION EQUATION
STA. 470+99.30 BACK =
STA. 469+59.52 AHEAD,
39.00′ RT.
TOP IRON PIN ELEV. 693.41

STATION EQUATION
STA. 470+99.30 BACK =
STA. 469+59.52 AHEAD
(ADD 139.78 FT.)

P.K. SET
STA. 470+62.25,
33.08′ RT.

NOTE: FOR EXISTING SURVEY CONTROL SEE SHEET 29.

BEGIN PROJECT
JEF-7-8.56 (PART 1)
STA. 470+69.00
S.L.M. 8.56

℄ NORFOLK SOUTHERN RR

FO†

STEEL PIER CAP (TYP)

EXISTING COLLISION WALL (TYP)

EXIST. UNDERGROUND
AT&T FIBER OPTIC
(TO REMAIN)

MATCH LINE: STA. 474+40
SHEET 26

PLAN

1800′ VC
PVI STA. 474+25 PVI ELEV. 710.75
+3.00% -3.98%

℄ SURVEY S.R. 7			
DESCRIPTION	STATION	NORTHING	EASTING
HORIZONAL CONTROL			
P.I.	STA. 459+42.71	221,061.5099	2,487,948.9475
P.C.	STA. 454+18.91	220,982.0762	2,487,431.2062
P.T.	STA. 464+63.61	221,233.5062	2,488,443.7031

25.00′ APP. SLAB

STA. 470+69.00

BRIDGE LIMIT = 576.00′

REAR ABUT. PIER 1 PIER 2 PIER 3 PIER 4 PIER 5 PIER 6 PIER 7 PIER 8 PIER 9 PIER 10 PIER 11 PIER 12 PIER 13

EXIST. & PROPOSED
PROFILE GRADE

STA. 470+44
SAW CUT AT JT.

2:1

EXIST. CRUSHED AGGREGATE
SLOPE PROTECTION.

EXIST.
GRADE

STATION EQUATION
STA. 479+99.30 BACK =
STA. 469+59.52 AHEAD

691.62 692.42 693.12 693.63 694.16 694.59 694.93 695.17 695.31 695.35 695.30 695.16

700 690 680 670 660 650

470+00 471+00 472+00 473+00 474+00

MATCH LINE - STA. 474+40
SHEET 26

HORIZONTAL SCALE IN FEET
0 10 20 40

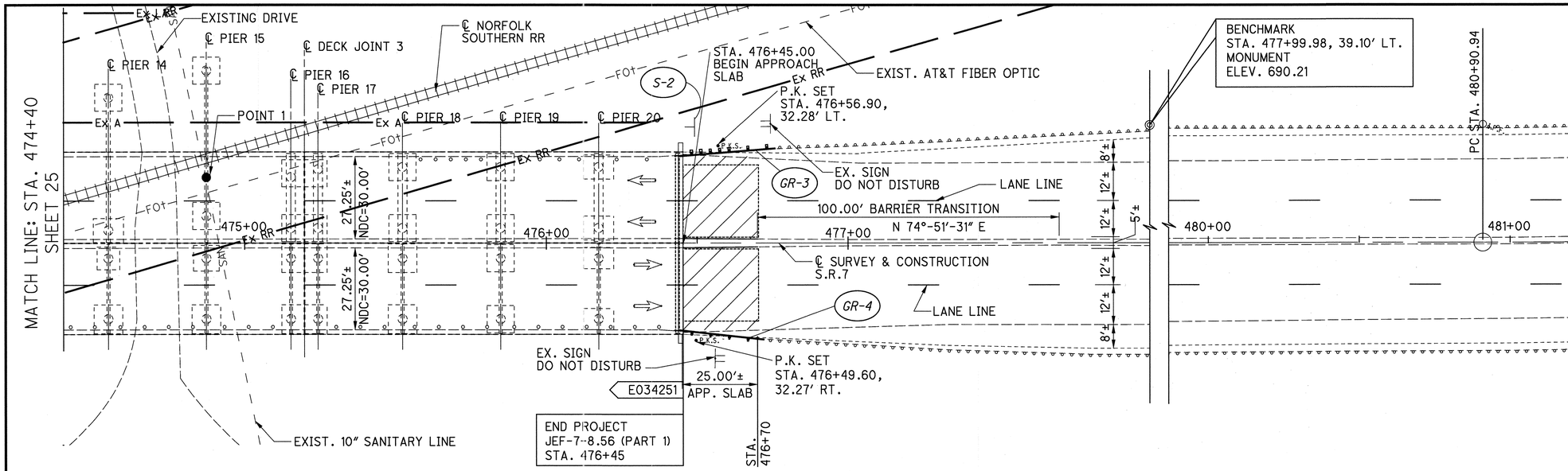
CALCULATED SMK
CHECKED KJS

PLAN AND PROFILE
STA. 470+00 to STA. 474+40

JEF-7-8.56

25
59

24979GP001.dgn

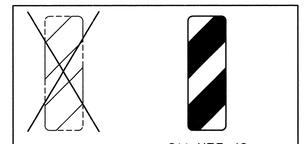


PLAN

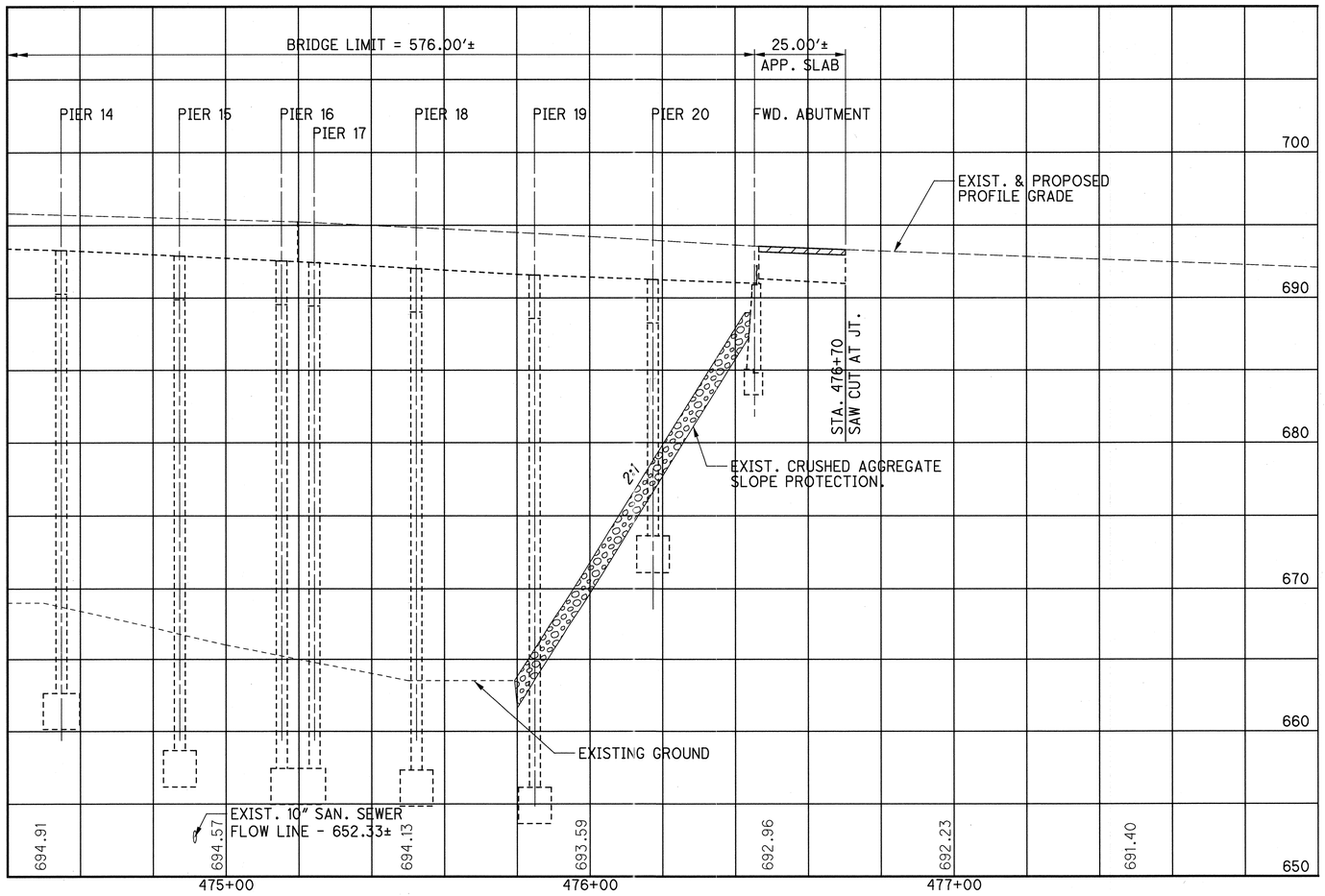
PAVEMENT PLANING AND RESURFACING

℄ SURVEY S.R. 7- CURVE DATA

P.I. STA. 492+36.34
Δ= 29° 51' 00" (LT)
Dc = 1° 20' 00"
R = 4,297.18'
T = 1,145.40'
L = 2,238.75'
E = 150.03'



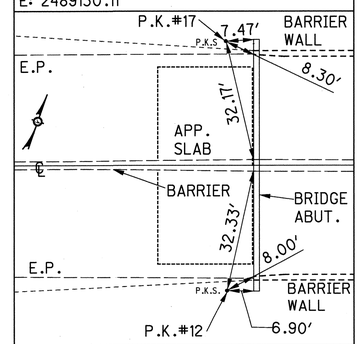
PROPOSED SIGNS



℄ SURVEY S.R. 7			
DESCRIPTION	STATION	NORTHING	EASTING
HORIZONAL CONTROL			
P.I.	STA. 492+36.34	222,189.8663	2,491,194.7183
P.C.	STA. 480+90.94	221,813.7597	2,490,112.8297
P.T.	STA. 503+29.69	223,054.5650	2,491,945.8744

EXISTING SURVEY CONTROL

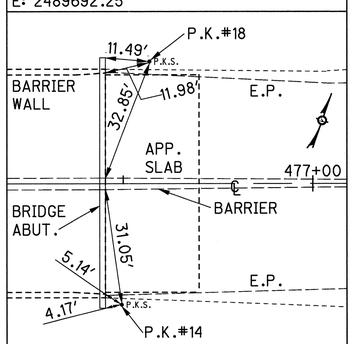
CONTROL POINT #1 (PT. 17)
P.K. SET
STA. 470+61.96, 32.83 LT.
N: 221506.89
E: 2489130.11



CONTROL POINT #2 (PT. 12)
P.K. SET
STA. 470+62.25, 33.08 RT.
N: 221444.72
E: 2489152.03

EXISTING SURVEY CONTROL

CONTROL POINT #3 (PT. 18)
P.K. SET
STA. 476+56.90, 32.28 LT.
N: 221701.73
E: 2489692.25



CONTROL POINT #4 (PT. 14)
P.K. SET
STA. 476+49.60, 32.27 RT.
N: 221638.36
E: 2489706.55

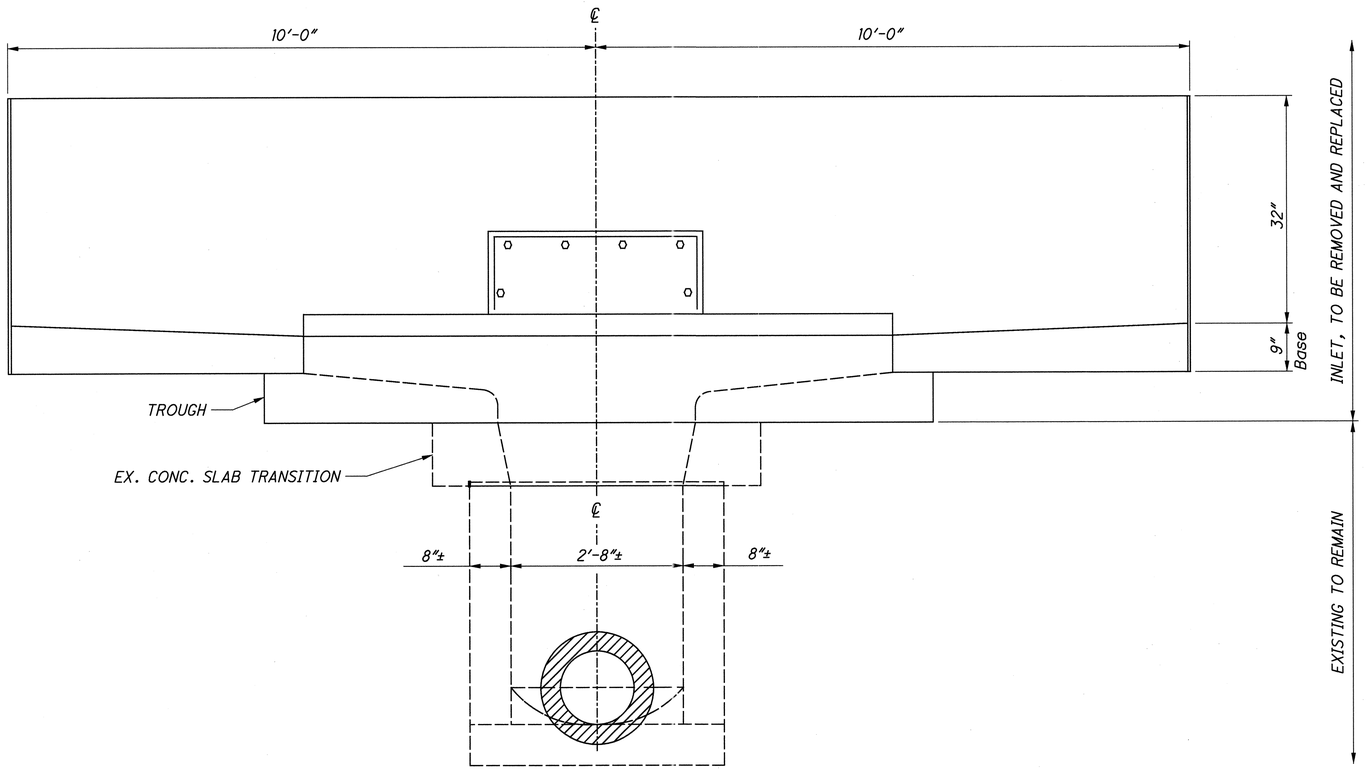
CALCULATED SMK
CHECKED KJS

HORIZONTAL SCALE IN FEET
0 10 20 40

PLAN AND PROFILE
STA. 474+40 to STA. 478+00

JEF-7-8.56

24979GP002.dgn



MEDIAN INLET REMOVAL AND REPLACEMENT DETAIL

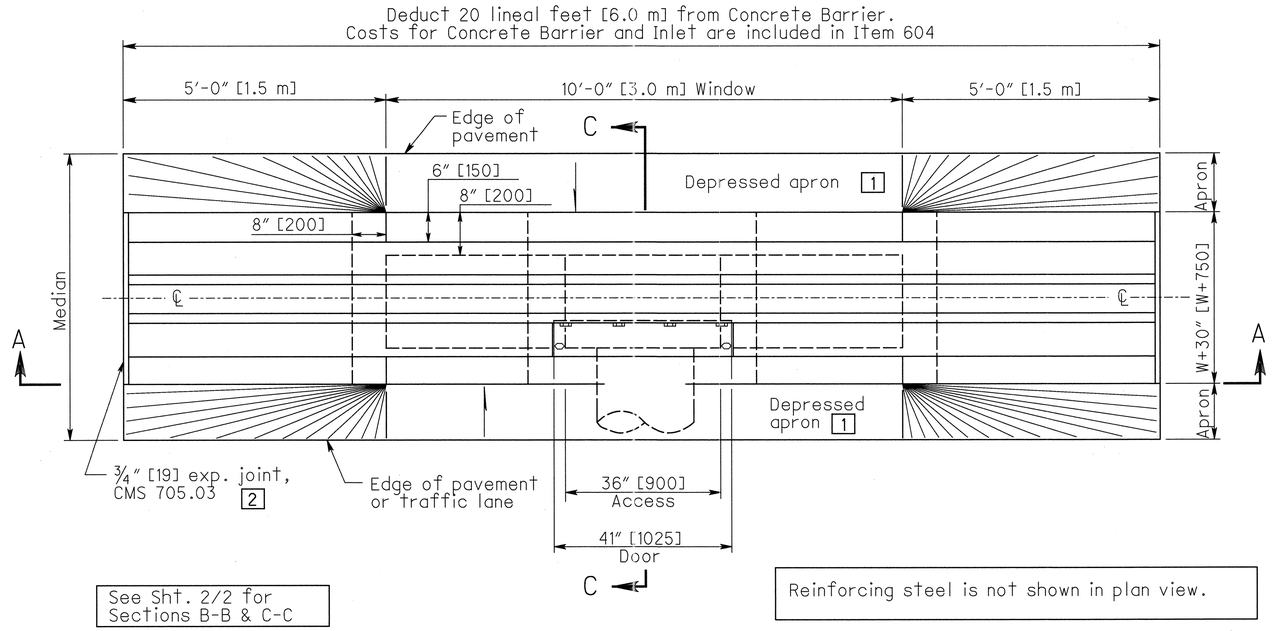
FOR BARRIER ON TOP OF INLET, SEE SHEETS 28 AND 29.

CALCULATED SMS
CHECKED GTA

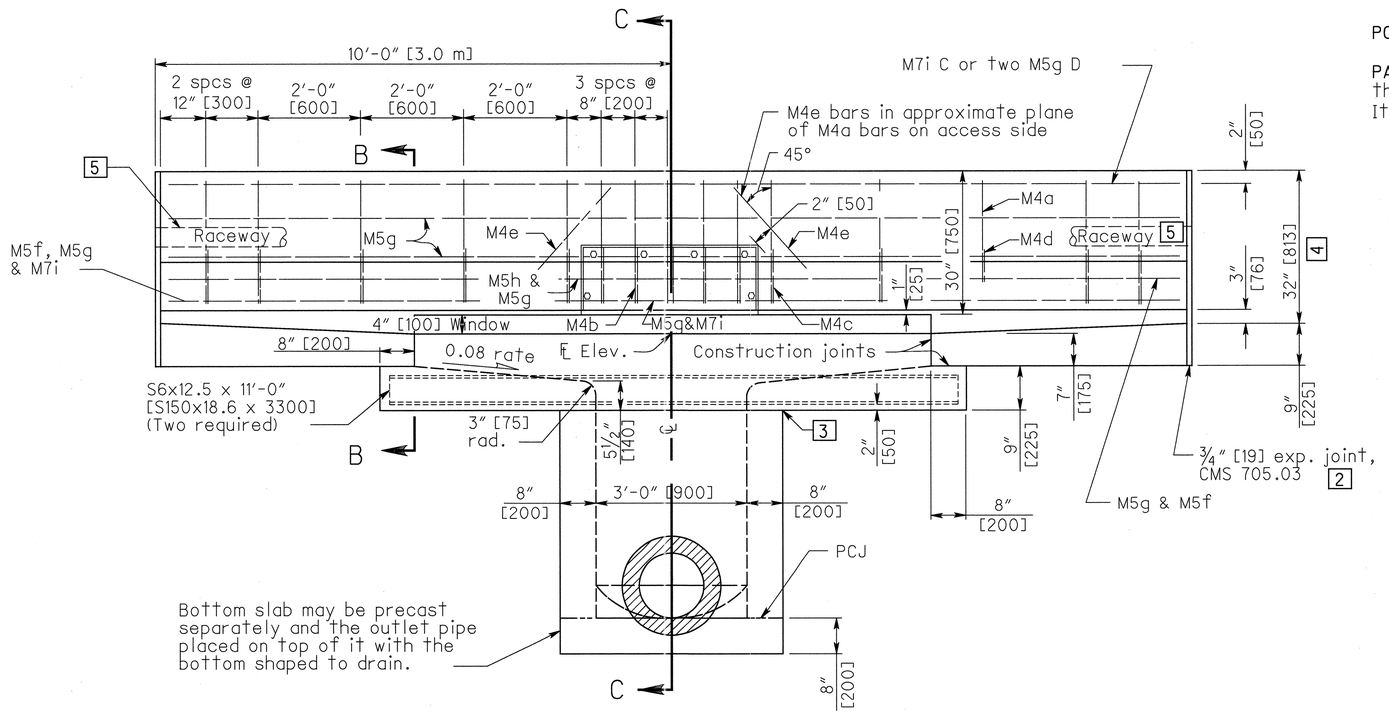
BARRIER MEDIAN INLETS

JEF-7-8.56

24979DD001



PLAN VIEW



ELEVATION A-A

NOTES

GENERAL: The details on this sheet are based on original SCD I-2.2.

WALLS: The walls between the bottom slab and the upper permissible construction joint may be built of brick, concrete block or cast-in-place concrete, 8″ [200] nominal thickness for depths of 12′ [3.5 m] or less. Precast walls shall have a minimum thickness of 6″ [150] and be reinforced sufficiently to permit shipping and handling without damage.

HEIGHT: When placed in 50″ [1270] high barrier the 30″ [763] height shall be made 48″ [1220].

CONCRETE: Cast-in-place concrete is to be Class C. All precast concrete shall meet the requirements of CMS 706.13 with a minimum of 4% entrained air content in the hardened concrete. Required markings shall include the inlet number. Exposed concrete surfaces of the barrier shall be sealed with an approved sealer.

REINFORCING STEEL: Reinforcing steel shall be epoxy coated in accordance with CMS 509.09.

STEPS: Steps shall be in accordance with SCD MH-1.1.

INLETS OVER 12 FEET [3.5 m] IN DEPTH: Such inlets shall be precast or cast-in-place concrete; reinforced with #4 [#13M] bars on 12″ [300] centers both vertically and horizontally with 2″ [50] clearance from the inside wall face.

OPENINGS: Pipe openings shall be the outside diameter of the pipe being supplied plus 2″ [50] when fabricated or field cut. The interstitial space shall be filled with grout per CMS 601.

ACCESS DOOR: The steel door, frame and all inserts, shall be galvanized. The hex head bolts shall be stainless steel. (See ACCESS DOOR DETAIL, Sht. 2/2).

PCJ: Permissible Construction Joint.

PAYMENT: All labor, equipment, and materials necessary to complete the work as detailed shall be included in the unit price bid for Item 604 - Inlet Misc.: New Jersey Shape Barrier Median Inlets.

STANDARD INLET NUMBERS	
I-3C Type A	(32″ [813] Barrier with W=6″ [150])
~~I-3C Type A1~~	~~(50″ [1270] Barrier with W=6″ [150])~~
~~I-3D Type B~~	~~(32″ [813] Barrier with W=12″ [300])~~
~~I-3D Type B1~~	~~(50″ [1270] Barrier with W=12″ [300])~~

LEGEND

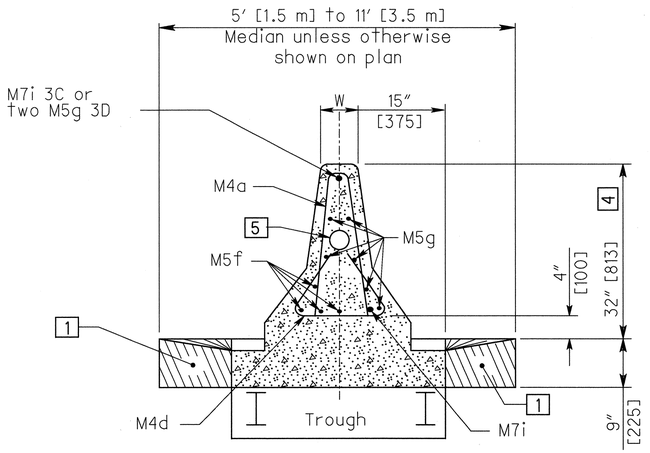
1. Aprons on both sides of the inlet shall be sloped toward windows and filled with Class C concrete. On superelevated sections, the aprons shall be sloped as shown in SECTION C-C on Sht. 2/2. Cost of any pavement removal and material is included in CMS 604.
2. A 1½″ [38] minimum exp. joint shall be provided in concrete pavement or concrete shoulders.
3. Inlet top profile shall match the adjacent concrete median barrier profile by constructing the top surface of the base to match the median barrier profile.
4. Barrier height equals either 32″ [813] or 50″ [1270].
5. 4″ [100] Lighting raceway, if required else where by the plans. (Only when W=12″ [300].)

CALCULATED SMS CHECKED GTA

BARRIER MEDIAN INLETS

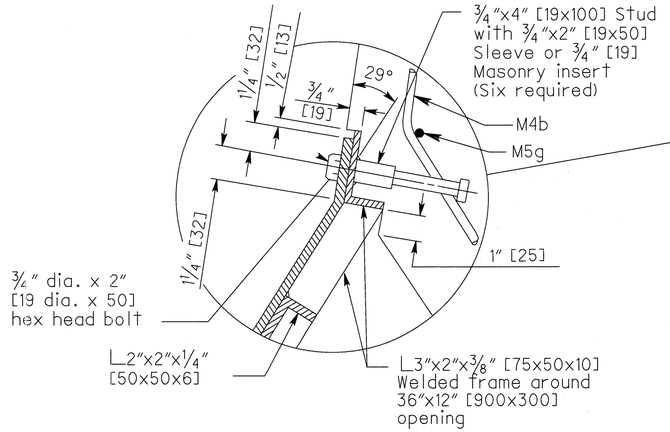
JEF-7-8.56

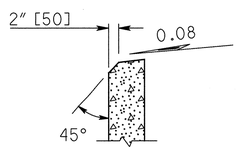
24979DD002



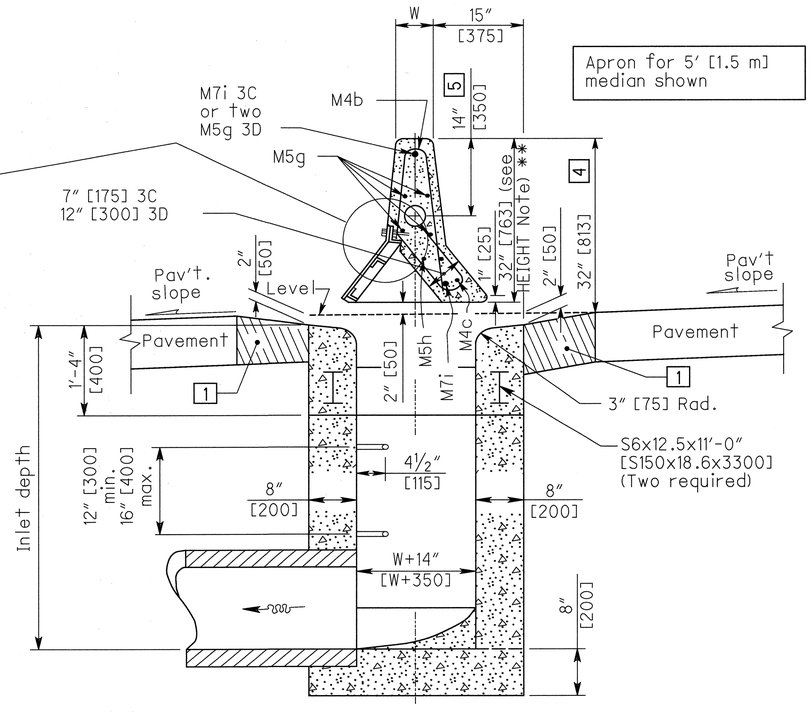
SECTION B-B
(See Sht. 1/2)

See Sheet 1 of 2 for NOTES and LEGEND

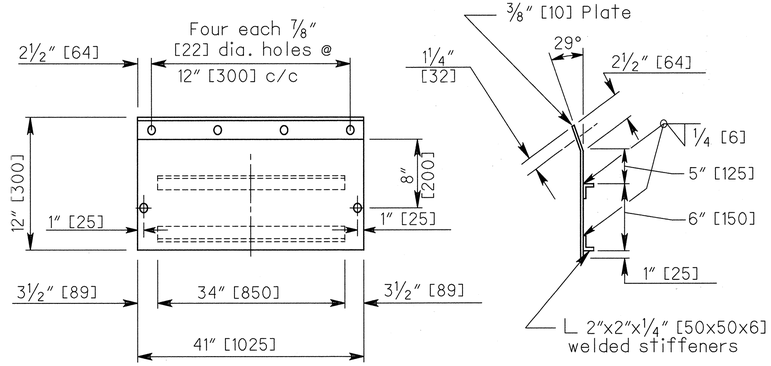




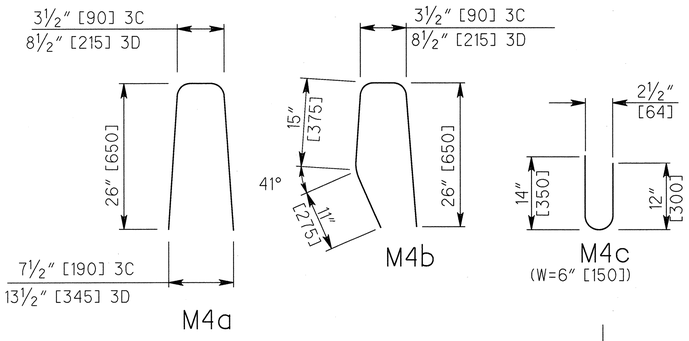
ALTERNATE SPILLWAY SHAPE

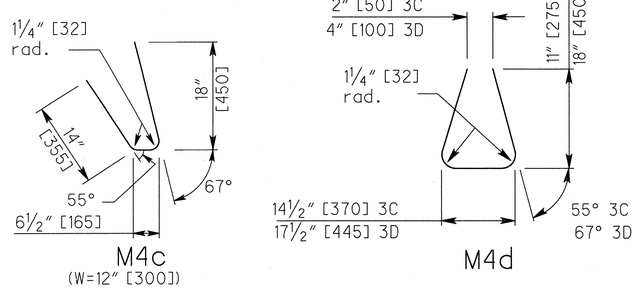


SECTION C-C
(See Sht. 1/2)



ACCESS DOOR DETAIL





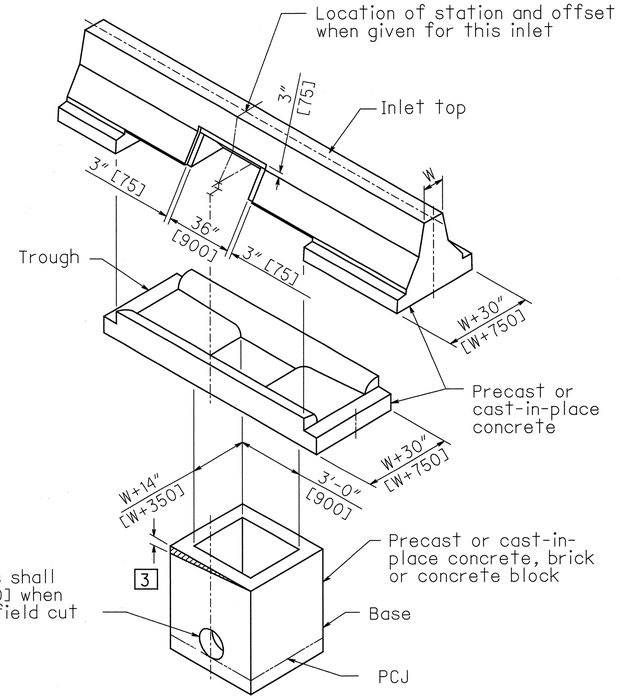
BENDING DIAGRAMS

REINFORCING STEEL LIST

SIZE	BAR	I-3C W=6″ [W=150] Ea.	I-3C W=6″ [W=150] Length	I-3D W=12″ [W=300] Ea.	I-3D W=12″ [W=300] Length
#4 [#13M]	M4a	10	4′-6″ [1370]	10	5′-0″ [1525]
	M4b	5	4′-6″ [1370]	5	5′-0″ [1525]
	M4c	5	2′-4″ [710]	5	3′-2″ [965]
	M4d	10	3′-1″ [940]	10	4′-6″ [1370]
	M4e	2	2′-0″ [610]	2	2′-0″ [610]
#5 [#16M]	M5f	8	8′-2″ [2490]	8	8′-2″ [2490]
	M5g	6	19′-8″ [5995]	8	19′-8″ [5995]
	M5h	1	5′-0″ [1525]	1	5′-0″ [1525]
#7 [#22M]	M7i	2	19′-8″ [5995]	1	19′-8″ [5995]
S6x12.5 [S150x18.6]		2	11′-0″ [3300]	2	11′-0″ [3300]

Included for estimating purposes only. The cost of furnishing and placing all reinforcing steel shall be included in Item 604 for payment.

Openings for pipes shall be O.D. plus 2″ [50] when prefabricated or field cut



PICTORIAL VIEW

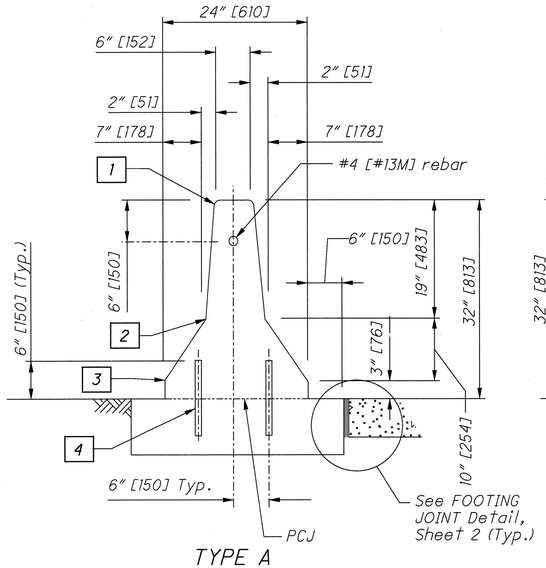
CALCULATED SMS CHECKED GTA

BARRIER MEDIAN INLETS

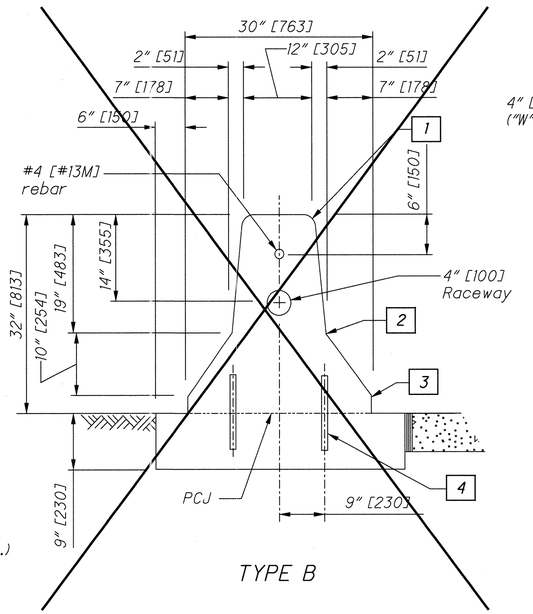
JEF-7-8.56

29
59

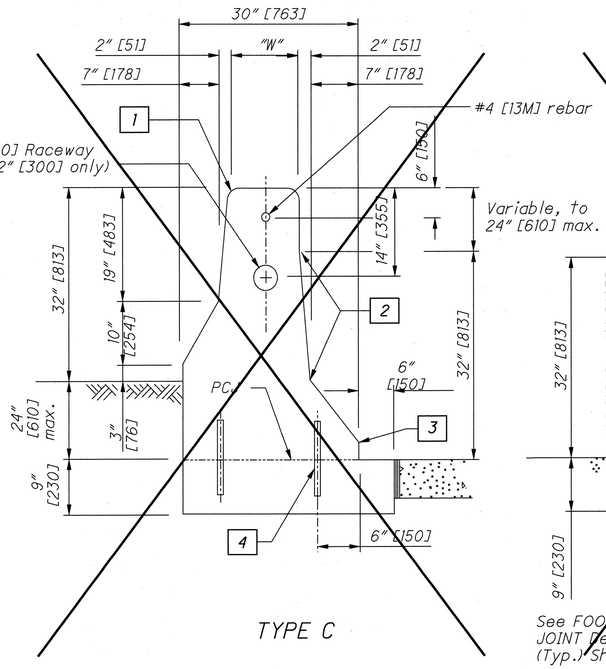
24979DD003



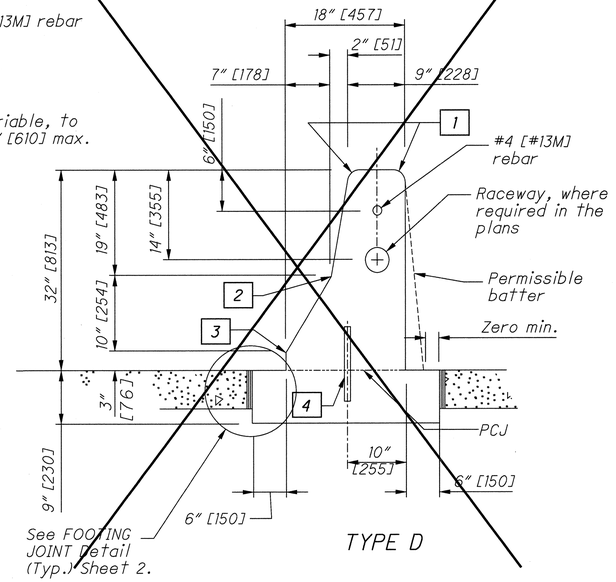
TYPE A



TYPE B



TYPE C

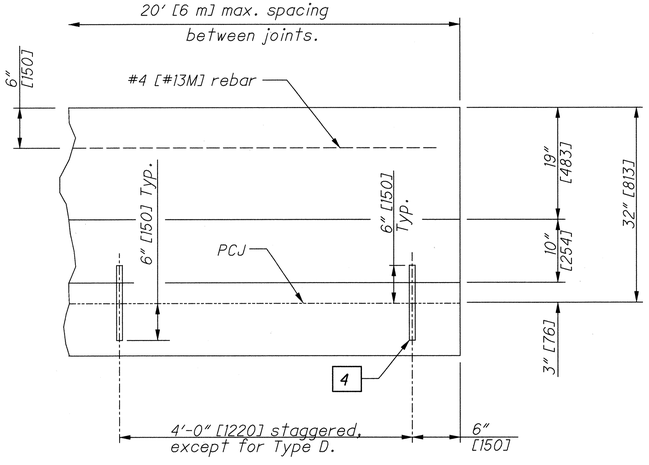


TYPE D

NORMAL 32 INCH SECTIONS

"W" = 6" [152] or 12" [305] barrier width, as specified in the plans.

All metric dimensions (in brackets []) are in millimeters unless otherwise noted.



32" [813-mm] BARRIER
BARRIER ELEVATION

NOTES

JOINTS: Unsealed contraction joints spaced at 20' [6 m] maximum shall be constructed throughout the run of Concrete Barrier except that expansion joints shall be used at the center line of and around each bridge pier column and on either side of overhead sign supports, inlets and light pole foundations. If the inlet top is slip formed, the expansion joints adjacent to it may be omitted.

Contraction joints may be constructed with metal inserts inside the forms, preformed full width joint filler, a grooving tool, or by sawing. Inserts, tooled joints, and sawed joints shall have a 3" [75] minimum depth. All joints shall be constructed for the full height of the barrier including the footing. Sawing shall be done as soon as curing will allow, to prevent spalling.

FOOTING JOINTS: The vertical walls between the barrier footing and a concrete pavement or concrete base shall be provided with a sealed joint as shown on Sheet 2. Sealing material shall conform to CMS 705.04.

PCJ = Permissible Construction Joint

MEASUREMENT: Item 622, Concrete Barrier, including transitions and pier sections as detailed on the New Jersey Shape Barrier Transition drawing, is paid for in linear feet [meters] as one of the four types (A, B, C or D) or as Type A1 and B1, (for 50" [1270] high barrier), with appropriate deductions for other items such as:

Item 604 - I-3 Median Inlet	20 Lin Ft. [6 Meters].
Item 625 - Light Pole Foundation or Pullbox	2.5 Lin. Ft. [1 Meter].
Item 630 - Overhead Sign Support Foundation	10 Lin. Ft. [3 Meters].
Item 630 - Barrier Wall Assembly	10 Lin. Ft. [3 Meters].

TRANSITIONS: Linear transitions between the different types of barrier detailed on this Standard Drawing shall occur between contraction joints spaced no closer than 10' [3 m].

RACEWAY: The contractor shall ensure that the electrical raceway is clear of internal obstructions. Cost of the 4" [100] polyvinyl chloride raceway and No. 10 AWG copper-clad or aluminum-clad wire if needed for future installation of circuits shall be included in the unit cost per Linear Foot [Meter] for Item 622 - Concrete Barrier, Type ____ .

STATION MARKING: The Station marking shall be impressed in the "green" concrete on both sides at the top of the barrier if specified in the plans. The cost shall be incidental to the unit cost per Linear Foot [Meter] bid for Item 622 - Concrete Barrier, Type ____ .

REFLECTORIZATION: Barrier reflectorization shall be installed in accordance with CMS 626.

LEGEND

1. 1" [25] radius or ¾" [19] chamfer.
2. Permissible 10" [250] radius.
3. Permissible 1" [25] radius.
4. #8 [#25M] epoxy coated Deformed Steel Bars, 1'-0" [305] long, spaced 4'-0" [1220] between successive Bars on a staggered pattern except in Type D. Omit Dowels when the Top is constructed integrally with the Base.

OFFICE OF ROADWAY ENGINEERING

DESIGNED | REVIEWED

REVISION DATE 10-20-06 | CHECKED

PLAN INSERT SHEET

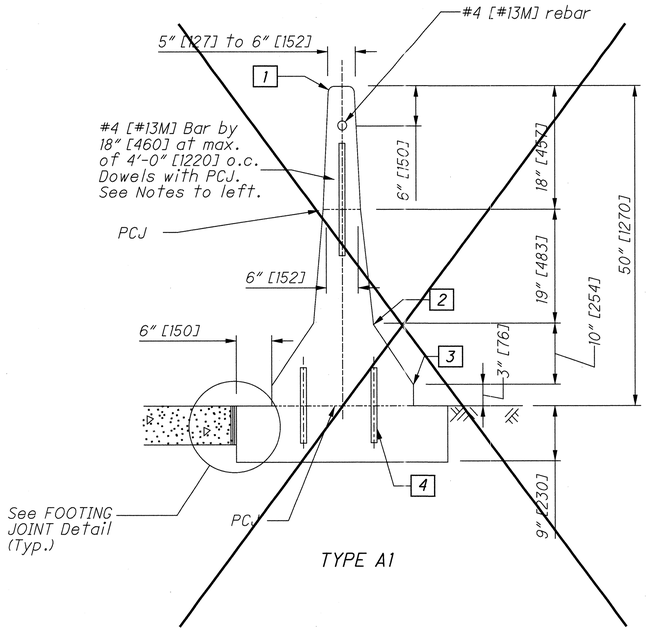
NEW JERSEY SHAPE CONCRETE BARRIER

JEF-7-8.56

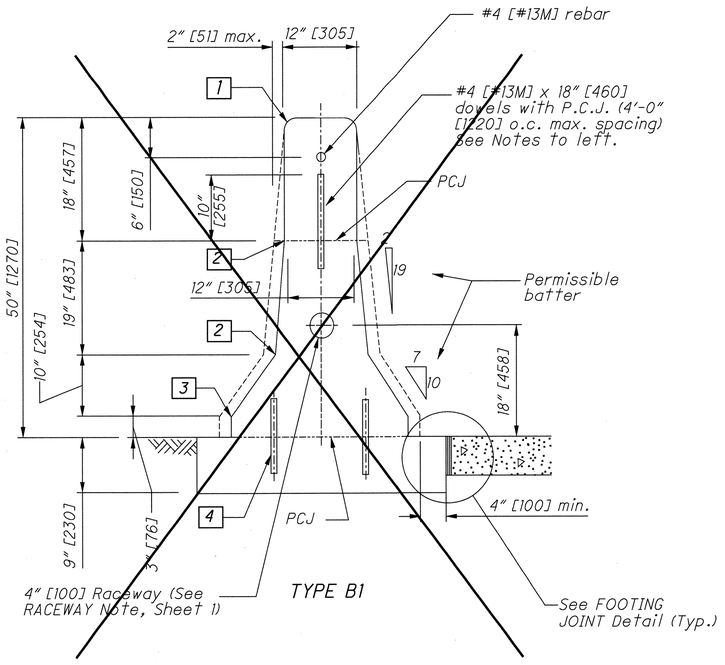
- / -

30
59

24979RM43NJ-PIS001



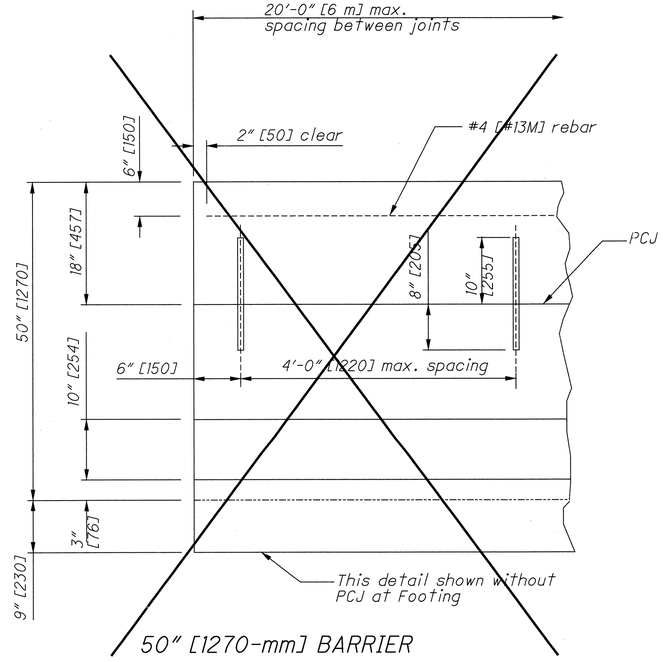
TYPE A1



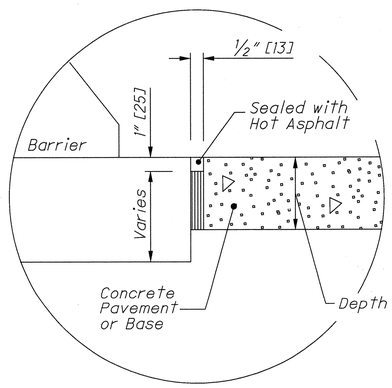
TYPE B1

50" [1270-mm] BARRIERS - TYPICAL SECTIONS

See Type A and Type B Normal Section Details (Sheet 1) for dimensions that are not shown.



50" [1270-mm] BARRIER
BARRIER ELEVATION



FOOTING JOINT DETAIL
See FOOTING NOTE on Sheet 1.

All metric dimensions (in brackets []) are in millimeters unless otherwise noted.

NOTES

50" [1270-mm] BARRIER: High barrier shall be built in locations specified in the plans. Construct the lower 32" [813] of the barrier base using the same dimensions as as shown in the corresponding Normal Section on Sheet 1. The upper 18" [457] may be constructed integrally with the bottom, or separately with #4 [#13M] rebar dowels at 4'-0" [1220] maximum spacing.

Start and end dowels 6" [150] from barrier contraction joints.

LEGEND

1. *1" [25] radius or 3/4" [19] chamfer.*
2. *Permissible 10" [250] radius.*
3. *Permissible 1" [25] radius.*
4. *#8 [#25M] epoxy coated deformed Steel Bars, 1'-0" [305] long, spaced 4'-0" [1220] between successive Bars on a staggered pattern except in Type D. Omit Dowels when the Top is constructed integrally with the Base.*

OFFICE OF ROADWAY ENGINEERING

DESIGNED | REVIEWED

REVISION DATE 10-20-06 | CHECKED

PLAN INSERT SHEET

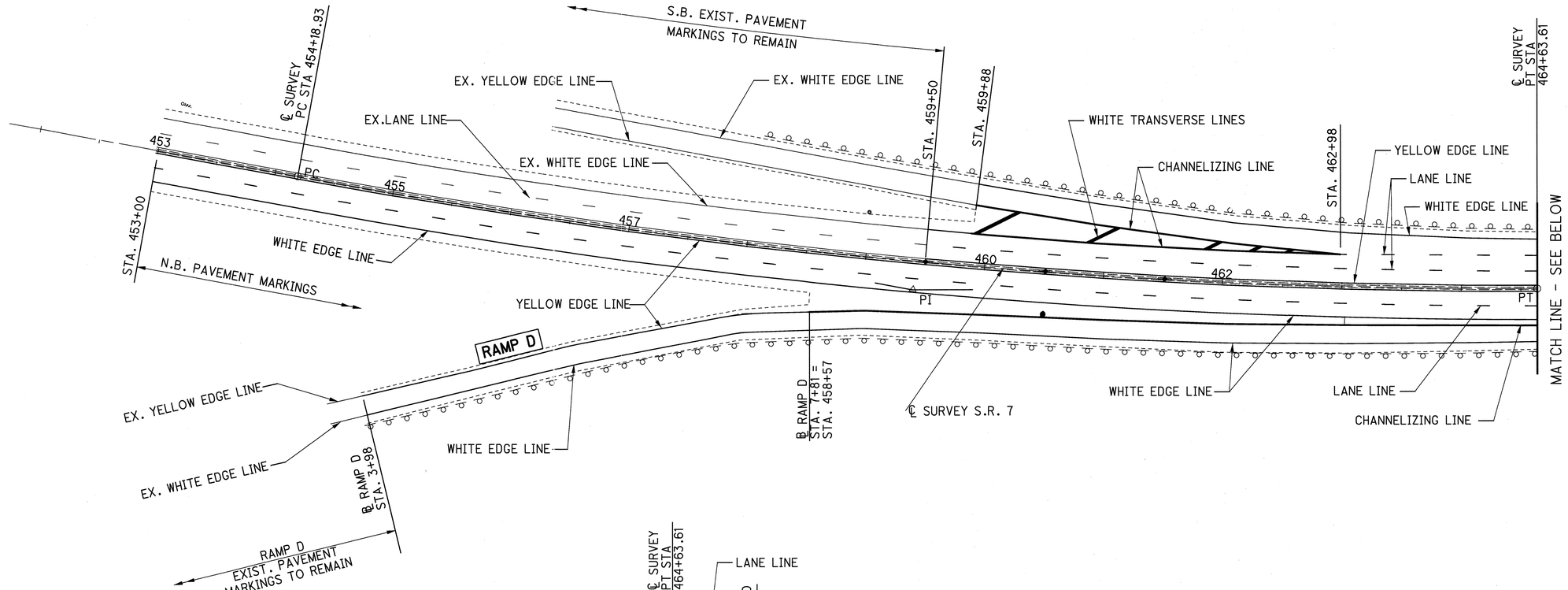
NEW JERSEY SHAPE CONCRETE BARRIER

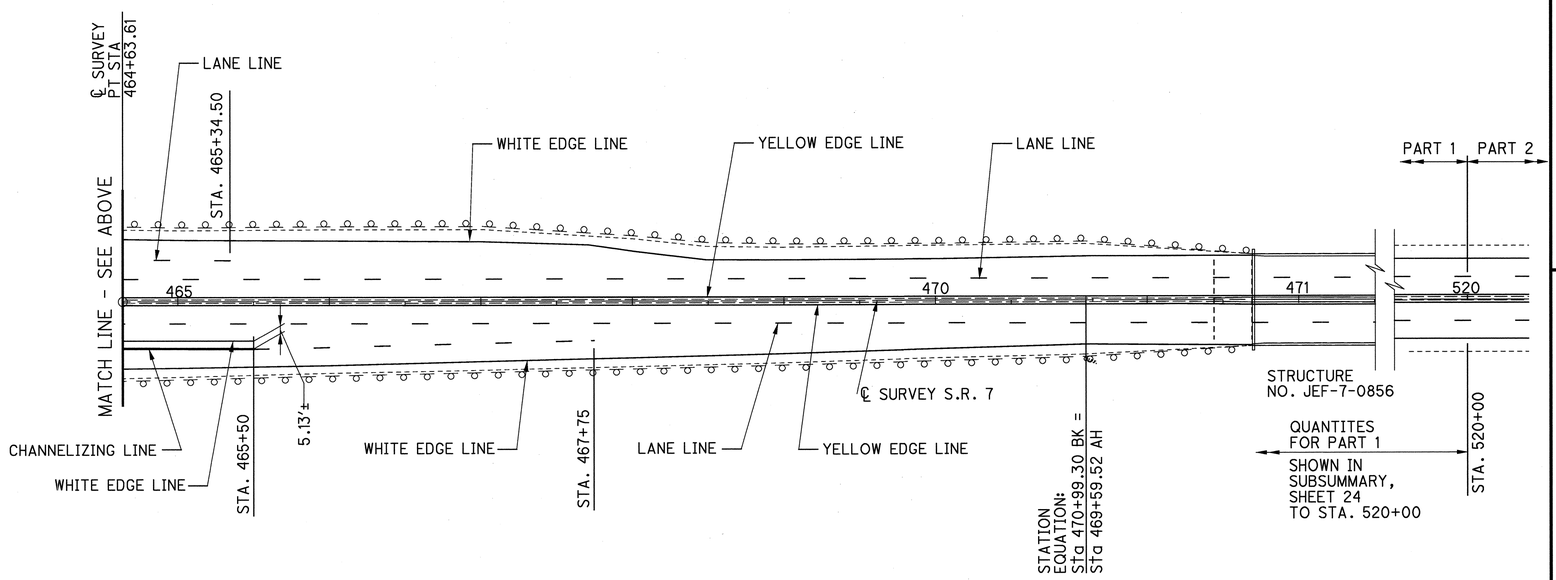
JEF-7-8.56

- / -

31
59

24979RM43NJ-PIS002





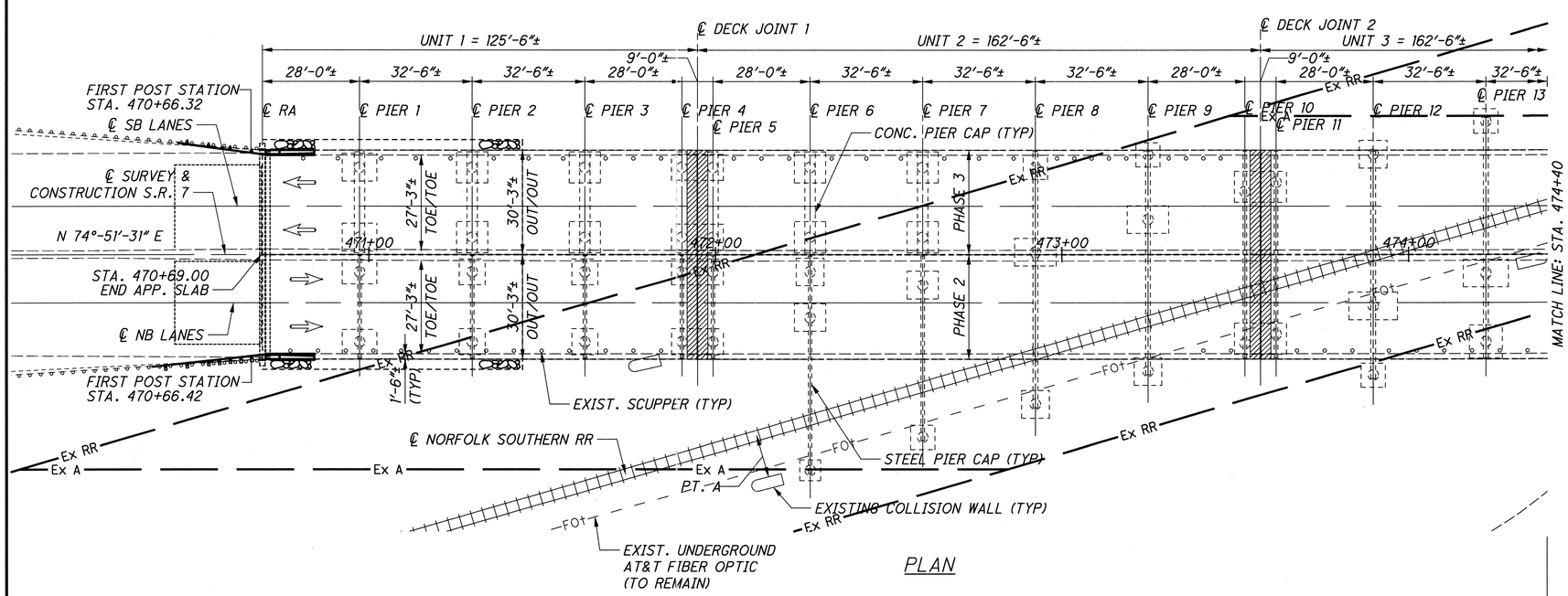
FOR PAVEMENT MARKING QUANTITIES,
SEE SUBSUMMARY SHEET 24.

CALCULATED SMS
CHECKED GTA

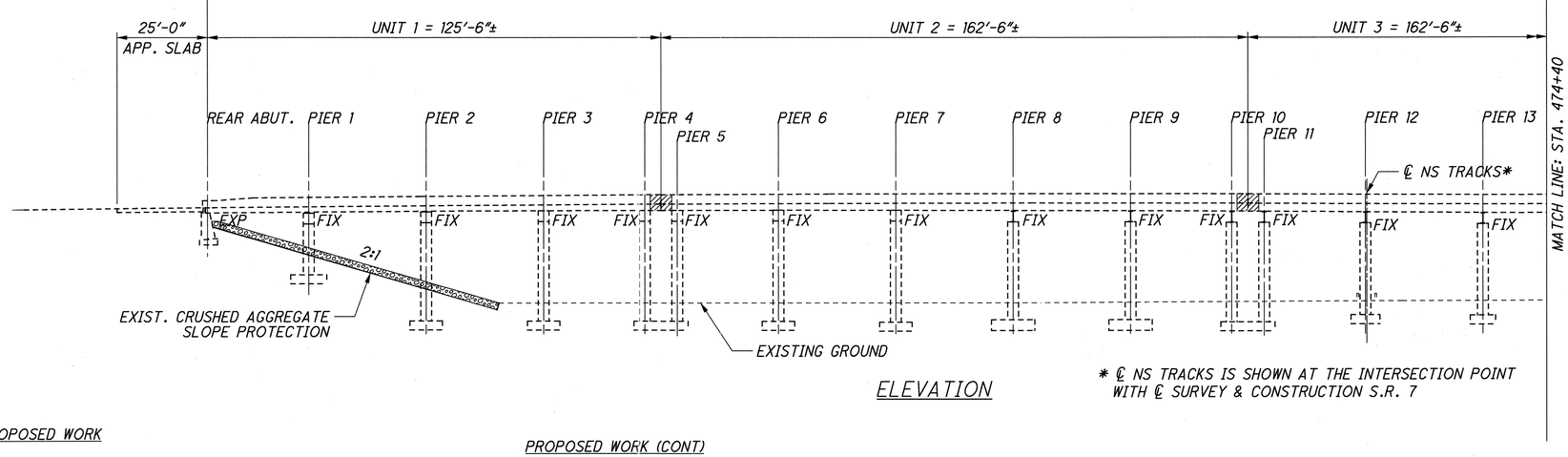
TRAFFIC CONTROL
STA 453+00 TO STA 520+00

JEF-7-8.56

24979TP001



PLAN



ELEVATION

* ℄ NS TRACKS IS SHOWN AT THE INTERSECTION POINT WITH ℄ SURVEY & CONSTRUCTION S.R. 7

LEGEND

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

MINIMUM HORIZONTAL CLEARANCE	
LOCATION	EXISTING
PT. A	12'-2"±

EXISTING STRUCTURE

TYPE: CONTINUOUS REINFORCED CONCRETE SLAB ON CONCRETE AND STEEL SUBSTRUCTURE

SPANS: UNIT 1: 28'-0"±, 32'-6"±, 32'-6"±, 28'-0"± C/C BRGS. (TYP)
UNIT 2: 28'-0"±, 32'-6"±, 32'-6"±, 32'-6"±, 28'-0"±
UNIT 3: 28'-0"±, 32'-6"±, 32'-6"±, 32'-6"±, 28'-0"±
UNIT 4: 28'-0"±, 32'-6"±, 32'-6"±, 28'-0"±

ROADWAY: 27'-3"± T/T PARAPET

LOADING: CF=400 (51) N.B. LANES
CF=400 (57) S.B. LANES

SKEW: NONE

APPROACH SLABS: 25'-0"± LONG

WEARING SURFACE: 1¼"± LATEX MODIFIED CONCRETE OVERLAY

ALIGNMENT: TANGENT

CROWN: 0.0156 FT/FT

STRUCTURAL FILE NUMBER: 4100395

DATE BUILT: 1958, NORTH BOUND/1970, SOUTH BOUND, REHAB 1988

PROPOSED STRUCTURE

TYPE: CONTINOUS REINFORCED CONCRETE SLAB ON CONCRETE AND STEEL SUBSTRUCTURE

SPANS: UNIT 1: 28'-0"±, 32'-6"±, 32'-6"±, 28'-0"± C/C BRGS. (TYP)
UNIT 2: 28'-0"±, 32'-6"±, 32'-6"±, 32'-6"±, 28'-0"±
UNIT 3: 28'-0"±, 32'-6"±, 32'-6"±, 32'-6"±, 28'-0"±
UNIT 4: 28'-0"±, 32'-6"±, 32'-6"±, 28'-0"±

ROADWAY: 27'-3"± TOE/TOE PARAPET

LOADING: CF=400 (57)

SKEW: NONE

APPROACH SLABS: 25'-0"± LONG

WEARING SURFACE: 2" MICRO-SILICA MODIFIED CONCRETE OVERLAY

ALIGNMENT: TANGENT

CROWN: 0.0156 FT/FT

COORDINATES: LATITUDE N40°-15'-35"
LONGITUDE W80°-38'-00"

PROPOSED WORK

1. REMOVE EXISTING 1 ¼" LATEX MODIFIED CONCRETE OVERLAY AND ¾" ADDITIONAL CONCRETE SURFACE OF DECK SLAB USING HYDRODEMOLITION AND REPLACE WITH NEW 2" MICRO-SILICA MODIFIED CONCRETE OVERLAY.

2. AT INTERMEDIATE EXPANSION JOINTS REMOVE EXISTING EXPANSION JOINTS AND PORTION OF DECK SLAB AND PARAPET AS SHOWN ON THE PLANS. REPLACE WITH FULL DEPTH CONCRETE, NEW STRIP SEAL EXPANSION JOINTS AND NEW PARAPETS.

3. AT ABUTMENTS REMOVE EXISTING EXPANSION JOINTS, PORTIONS OF BACKWALL, DECK SLAB AND PARAPET AS SHOWN ON THE PLANS. REPLACE WITH COMPRESSION EXPANSION JOINT AND NEW PARAPET TRANSITION.

4. TEMPORARILY SUPPORT EXISTING STEEL CROSS BEAMS AND REPAIR BEARINGS AND PIER COLUMNS DESIGNATED IN THE PLANS.

PROPOSED WORK (CONT)

5. PATCH ABUTMENT AND PIER CONCRETE.

6. REMOVE DELAMINATED CONCRETE ON BOTTOM SURFACE OF DECK SLAB AND PATCH & SEAL AS REQUIRED.

7. PAINT EXISTING STEEL CROSS BEAMS AND SEAL CONCRETE SURFACES WITH EPOXY-URETHANE SEALER.

8. SEAL LONGITUDINAL JOINT BETWEEN MEDIAN PARAPET.

9. REMOVE AND REPLACE SCUPPERS.

10. EMBED GALVANIC ANODES IN PATCH CONCRETE AREAS AS DESIGNATED IN THE PLANS.

NOTES:

1. EXISTING UTILITIES LINES SHOWN ARE APPROXIMATE BASED ON RECORD PLANS.

2. CLEAR AND GRUB UNDER THE BRIDGE, 10 FEET BEYOND THE EDGE OF DECK, UNDER THE STEEL PIER CAPS AND AROUND ANY COLUMNS NOT UNDER THE BRIDGE.

DESIGN AGENCY
OSBORN ENGINEERING
AKRON, OHIO

REVIEWED SAV DATE 12-2-10
STRUCTURE FILE NUMBER 4100395

DRAWN SMK REVISED
DESIGNED SMK CHECKED BCK

GENERAL PLAN & ELEVATION
BRIDGE NO. JEF-7-0856
OVER NORFOLK SOUTHERN RAILROAD

JEF-7-8.56
PID No. 24979

1 / 27

33
59

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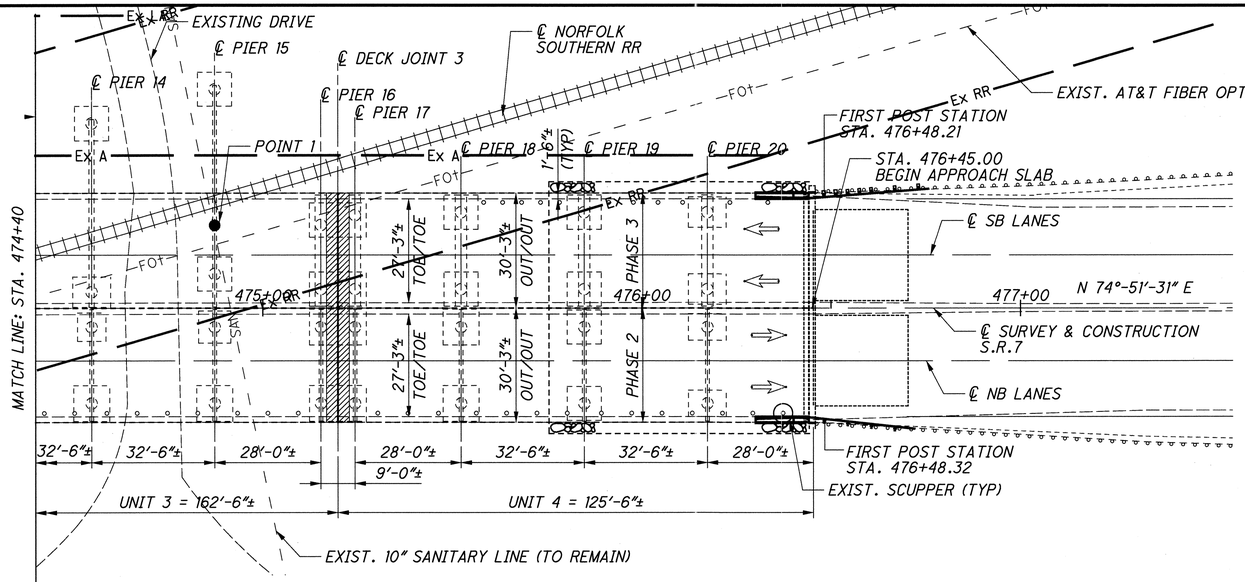
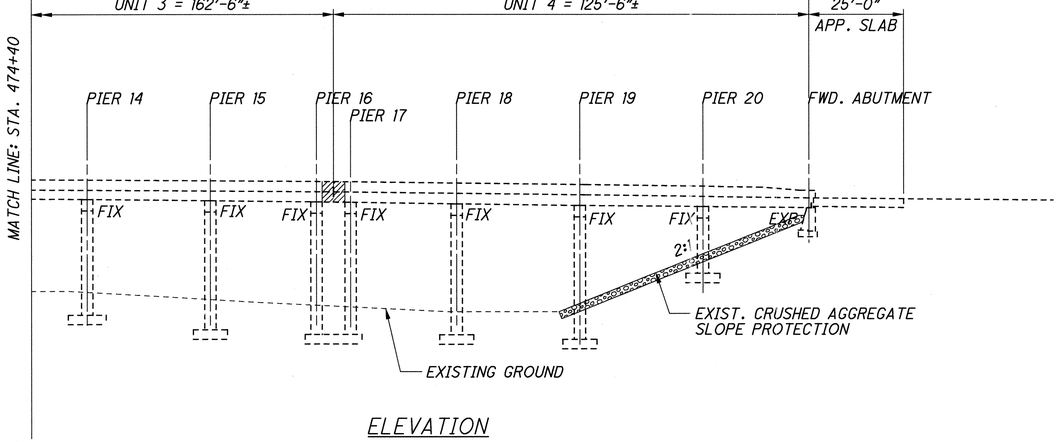


PLAN



ELEVATION

LEGEND

- ● POINT OF MINIMUM VERTICAL CLEARANCE
- ▨ ITEM 202 - PORTIONS OF STRUCTURE REMOVED, AS PER PLAN

MINIMUM VERTICAL CLEARANCE (Δ)	
LOCATION	EXISTING
POINT 1	21'-2"

Δ MINIMUM VERTICAL CLEARANCE IS MEASURED 6 FEET OFF THE ℄ OF TRACK

NOTES:

1. FOR PROPOSED WORK AND ADDITIONAL NOTES, SEE SHEET 1/27

DESIGN AGENCY
OSBORN ENGINEERING
AKRON, OHIO

REVIEWED SAV
DATE 12-2-10
STRUCTURE FILE NUMBER 4100395

DRAWN SMK
REVISED

DESIGNED SMK
CHECKED BCK

GENERAL PLAN & ELEVATION
BRIDGE NO. JEF-7-0856
OVER NORFOLK SOUTHERN RAILROAD

JEF-7-8.56
PID No. 24979

2 / 27

34
59

007_0856cSP002

REFER TO THE FOLLOWING STANDARD BRIDGE DRAWINGS:

BR-1	REVISED	07-19-02
EXJ-3-82	REVISED	07-19-02
EXJ-5-93	REVISED	07-19-02
GSD-1-96	REVISED	07-19-02

AND TO THE FOLLOWING SUPPLEMENTAL SPECIFICATIONS:

843 DATED 04-18-03
848 DATED 04-16-10

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

DESIGN DATA:
CONCRETE CLASS S - COMPRESSIVE STRENGTH 4.5 KSI (SUPERSTRUCTURE)
CONCRETE CLASS C - COMPRESSIVE STRENGTH 4.0 KSI (SUBSTRUCTURE)
REINFORCING STEEL - ASTM A615 OR A996 GRADE 60 - MINIMUM YIELD STRENGTH 60 KSI
STRUCTURAL STEEL - ASTM A709 GRADE 50 - YIELD STRENGTH 50 KSI

DECK PROTECTION METHOD:
EPOXY COATED REINFORCING STEEL
2" MICRO-SILICA MODIFIED CONCRETE OVERLAY
SEALING OF CONCRETE SURFACES
EMBEDDED GALVANIC ANODES

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, EXCEPT FOR WEARING COURSE REMOVAL. 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.

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

ITEM 202, PORTIONS OF STRUCTURE REMOVED, AS PER PLAN: (CONTINUED)

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

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

SUBSTRUCTURE CONCRETE REMOVAL: REMOVE CONCRETE BY MEANS OF APPROVED PNEUMATIC HAMMERS EMPLOYING POINTED AND BLUNT CHISEL TOOLS. HYDRAULIC HOE-RAM TYPE HAMMERS WILL NOT BE PERMITTED. THE WEIGHT OF THE HAMMER SHALL NOT BE MORE THAN 35 POUNDS FOR REMOVAL WITHIN 18 INCHES OF PORTIONS TO BE PRESERVED. OUTSIDE THE 18 INCH LIMIT, THE CONTRACTOR MAY USE HAMMERS NOT EXCEEDING 90 POUNDS UPON THE APPROVAL OF THE ENGINEER. DO NOT PLACE PNEUMATIC HAMMERS IN DIRECT CONTACT WITH REINFORCING STEEL THAT IS TO BE RETAINED IN THE REBUILT STRUCTURE.

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

ITEM 202, REMOVAL MISC.: DELAMINATED CONCRETE AREAS ON BRIDGE SLAB

DESCRIPTION: THIS ITEM SHALL CONSIST OF THE REMOVAL OF ALL THE DELAMINATED CONCRETE AREAS ON THE UNDERSIDE OF DECK SLAB IN AREAS OVER THE RAILROAD AND DRIVE AS SHOWN IN THE PLANS. REMOVE ALL LOOSE AND DISINTEGRATED CONCRETE FROM DESIGNATED AREAS IN SUCH A MANNER AS TO EXPOSE A SOUND CONCRETE SURFACE.

REMOVAL METHODS: ONLY USE PNEUMATIC OR HAND TOOLS THAT GIVE RESULTS SATISFACTORY TO THE ENGINEER IN THE REMOVAL OF THE DISINTEGRATED CONCRETE AND IN PREPARING THE AREAS.

AFTER REMOVING ALL DISINTEGRATED AND LOOSE CONCRETE, THOROUGHLY CLEAN THE SURFACE OF THE AREA OF ALL DIRT, DUST, OR OTHER FOREIGN MATERIALS WITH WATER, AIR UNDER PRESSURE, OR ANY OTHER METHOD THAT PRODUCES SATISFACTORY RESULTS, AND APPLY AN EPOXY URETHANE SEALER TO THE AREA.

ITEM 202, REMOVAL MISC.: DELAMINATED CONCRETE AREAS ON BRIDGE SLAB (CONTINUED)

MEASUREMENT AND PAYMENT: THE DEPARTMENT WILL MEASURE THE QUANTITY OF REMOVALS ON A SQUARE YARD BASIS. CONCRETE SEALING WILL BE INCLUDED WITH THIS ITEM. THE DEPARTMENT WILL PAY FOR THE ACCEPTED QUANTITES OF REMOVAL AT THE CONTRACT PRICE PER ITEM 202, REMOVAL MISC.: DELAMINATED CONCRETE AREAS ON BRIDGE SLAB.

EXISTING STRUCTURE VERIFICATION: DETAILS AND DIMENSIONS SHOWN ON THESE PLANS PERTAINING TO THE EXISTING STRUCTURE HAVE BEEN OBTAINED FROM PLANS OF THE EXISTING STRUCTURE AND FROM FIELD OBSERVATIONS AND MEASUREMENTS. CONSEQUENTLY, THEY ARE INDICATIVE OF THE EXISTING STRUCTURE AND THE PROPOSED WORK BUT THEY SHALL BE CONSIDERED TENTATIVE AND APPROXIMATE. THE CONTRACTOR IS REFERRED TO CMS SECTIONS 102.05, 105.02 AND 513.04.

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

THE FOLLOWING EXISTING STRUCTURE PLANS ARE ON FILE

JEF-7-(8.22-10.35) DATED 1956
JEF-7-(4.63-8.99) DATED 1968
JEF-7-8.56 DATED 1988

AND MAY BE REVIEWED AT:

OHIO DEPARTMENT OF TRANSPORTATION
DISTRICT ELEVEN
2201 REISER AVE., SE
NEW PHILADELPHIA, OHIO 44663

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

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

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

A QUANTITY OF 1000 POUNDS IS INCLUDED IN THE ESTIMATED QUNATITIES FOR REPLACEMENT OF EXISTING REINFORCING STEEL IF REQUIRED.

CONSTRUCTION CLEARANCE

MAINTAIN A CONSTRUCTION CLEARANCE OF 12'-2"± HORIZONTALLY FROM THE CENTER OF TRACKS AND 21'-2"± VERTICALLY FROM A POINT LEVEL WITH THE TOP OF THE HIGHER RAIL, AND 6 FEET FROM THE CENTER OF TRACKS, AT ALL TIMES.

ITEM 511, CONCRETE MISC.: EMBEDDED GALVANIC ANODE (EGA)

PART 1 GENERAL:

1.01 SUMMARY:

A. THIS WORK UNDER THIS SECTION INCLUDES FURNISHING ALL LABOR, TOOLS, MATERIALS, EQUIPMENT AND SERVICES NECESSARY TO PROPERLY INSTALL ZINC-BASED EMBEDDED GALVANIC CORROSION PROTECTION SYSTEMS FOR PATCHING APPLICATIONS AS SHOWN IN THE PLAN.

B. THE GALVANIC CORROSION PROTECTION SYSTEM SHALL CONSIST OF INTER-CONNECTED GALVANIC ANODES THAT ARE PLACED WITHIN THE CONCRETE PATCHES 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. AFTER THE ANODES ARE INSTALLED AND ENCASED IN THE CONCRETE PATCH, THE ANODES WILL PROVIDE GALVANIC PROTECTION TO THE REINFORCING STEEL IN THE CONCRETE PATCH.

1.02 REFERENCES:

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

B. ASTM B6 STANDARD SPECIFICATIONS FOR ZINC.

C. ASTM B69 STANDARD SPECIFICATION FOR ROLLED ZINC.

D. ASTM B418 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, AND CONSIST OF ELECTROLYTIC HIGH GRADE ZINC 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.

B. EMBEDDED GALVANIC ANODES (EGAs) SHALL BE GALVASHIELD XP AVAILABLE FROM VECTOR CORROSION TECHNOLOGIES (813) 830-7566 OR 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 SURFACE AND REINFORCING STEEL PREPARATION:

A. PERFORM CONCRETE REMOVAL AND SURFACE PREPARATION FOR THE CONCRETE PATCH IN ACCORDANCE WITH ITEM 519.

B. FULLY EXPOSE REINFORCING STEEL AT EACH EDGE OF THE PREPARED SURFACE AT INTERVALS AS INDICATED ON THE DRAWINGS TO ALLOW ELECTRICAL CONNECTION OF THE HEADER TO THE REINFORCING STEEL.

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

DESIGN AGENCY
OSBORN ENGINEERING
AKRON, OHIO

DESIGNED	DRAWN	REVIEWED	DATE
SMK	SMK	SAV	12/2/10
CHECKED	REVISED	STRUCTURE FILE NUMBER	
BCK		4100395	

STRUCTURAL GENERAL NOTES
BRIDGE NO. JEF-7-0856
OVER NORFOLK SOUTHERN RAILROAD

JEF-7-8.56
PID No. 24979

007_0856cGN001

PART 3 EXECUTION (CONTINUED...)

3.01 SURFACE AND REINFORCING STEEL PREPARATION (CONT...)

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

E. SECURE LOOSE REINFORCING STEEL BY TYING TIGHTLY TO OTHER BARS WITH STEEL TIE WIRES.

3.02 GALVANIC ANODE INSTALLATION:

A. GALVANIC ANODES SHALL BE INSTALLED ALONG THE PERIMETER OF THE REPAIR AT SPACING AS 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. PROVIDE AT LEAST 1½ INCHES OF CONCRETE COVER OVER THE ANODES.

C. SECURE THE GALVANIC ANODES AS CLOSE AS POSSIBLE TO THE PATCH EDGE USING THE ANODE TIE WIRES. THE TIE WIRES SHOULD BE TIGHTENED 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.

3.03 ELECTRICAL CONTINUITY AND CONNECTIONS:

A. THE REINFORCING STEEL IN THE STRUCTURAL CONCRETE COMPONENT SHALL BE TESTED FOR ELECTRICAL CONTINUITY AT THE REPAIR AREAS WHERE REINFORCING IS EXPOSED. CONTINUITY SHALL BE CHECKED BETWEEN BARS IN EACH LOCATION, IN THE LONGITUDINAL AND TRANSVERSE DIRECTIONS. USE A VOLTMETER DIFFERENCE BETWEEN THE TEST SITES LESS THAN 1.0mV SHALL BE CONSIDERED CONFIRMATION OF ELECTRICAL CONTINUITY.

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

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

D. PROVIDE SUFFICIENT CLEARANCE BETWEEN ANODES AND SUBSTRATE TO ALLOW REPAIR MATERIAL TO ENCASE ANODE. PROVIDE AT LEAST 1½ INCHES OF CONCRETE COVER OVER THE ANODES.

E. ELECTRICALLY CONNECT ANODES TO EXISTING REINFORCING. THE TYPICAL CONNECTION IS A BRAZED CONNECTION OF A HEADER STRAP THAT IS WRAPPED AROUND THE REINFORCING. ALL ELECTRICAL CONNECTION DETAILS SHALL BE APPROVED BY THE ANODE MANUFACTURER.

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

PART 3 EXECUTION (CONTINUED...)

3.04 CONCRETE REPLACEMENT:

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

PART 4 LOCATION OF ANODES:

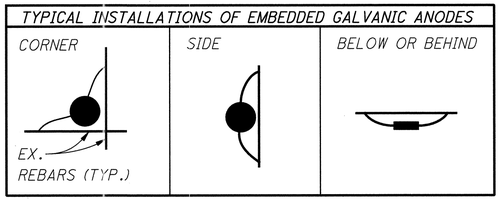
A. CONCRETE SLAB AT DECK JOINTS
1. SEE DETAIL ON SHEET 20/27

B. PIER COLUMNS
1. SEE DETAIL ON SHEET 16/27

EACH EGA PROVIDED AND INSTALLED, WITH ALL INCIDENTALS INCLUDED, SHALL BE PAID FOR AT THE UNIT PRICE BID FOR:

ITEM	DESCRIPTION	UNIT
511E81300	CONCRETE MISC.: EMBEDDED GALVANIC ANODE (EGA)	EACH

TYPICAL INSTALLATIONS OF EMBEDDED GALVANIC ANODES



ITEM 514 - FIELD PAINTING STRUCTURAL STEEL, FINISH COAT

THE FINISH COAT COLOR SHALL BE BLUE, FEDERAL COLOR NO. 15526.

ITEM 516 - REFURBISHING BEARING DEVICES, AS PER PLAN

THIS ITEM SHALL INCLUDE ALL WORK NECESSARY TO PROPERLY ALIGN BRIDGE BEARINGS AS WELL AS THEIR CLEANING, PAINTING AND REPLACEMENT. INCLUDED SHALL BE THE DISASSEMBLY OF THE BEARINGS, WELD REMOVAL AND THE RE-WELDING OF BEARINGS, HAND TOOL CLEANING (GRINDING IF NECESSARY), PAINTING ACCORDING TO ITEM 514, REPLACEMENT OF LEAD SHEET WITH PREFORMED BEARING PADS (711.21), PROVIDING AND INSTALLING ANCHOR RODS (711.10) AND NUTS INCLUDING DRILLING DOWEL HOLES AND EPOXY GROUT, INSTALLATION OF SHIM PLATES OF THE SAME SIZE AS THE BEARING TO PROVIDE A SNUG FIT, AND REASSEMBLY OF THE BEARINGS. ASSURE ALL BEARINGS ARE SHIMMED ADEQUATELY AND THAT NO BEAMS AND/OR BEARING DEVICES ARE "FLOATING". THE CONTRACTOR SHALL INSTALL NEW BEARINGS AS SHOWN IN THE PLANS. ALL WORK SHALL BE TO THE SATISFACTION OF THE ENGINEER. PAYMENT FOR ALL OF THE ABOVE DESCRIBED LABOR AND MATERIALS WILL BE MADE AT THE CONTRACT PRICE BID FOR ITEM 516-REFURBISHING BEARING DEVICES, AS PER PLAN.

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

THIS WORK CONSISTS OF RAISING AND THE TEMPORARY SUPPORT OF A CONCRETE SLAB BRIDGE FOR THE PURPOSE OF REFURBISHING THE BEARING DEVICES AND/OR PATCHING THE REPAIR AT THE TOP OF PIER COLUMNS AS DEFINED IN THE PROJECT PLANS.

SUBMIT CONSTRUCTION PLANS IN ACCORDANCE WITH CMS 501.05.

THE JACKING AND TEMPORARY SUPPORT OPERATION IS TO BE PERFORMED IN SUCH A WAY THAT NO SEPARATION BETWEEN CONCRETE SUPERSTRUCTURE AND STEEL TRANSVERSE PIER MEMBERS OCCURS.

ITEM 516, JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE, AS PER PLAN (CONTINUED)

IF, DURING THE JACKING OPERATIONS, CRACKING OF THE CONCRETE SUPERSTRUCTURE OR OTHER DAMAGE TO THE STRUCTURE IS VISUALLY OBSERVED, IMMEDIATELY CEASE THE JACKING OPERATION AND INSTALL SUPPORTS TO THE SATISFACTION OF THE ENGINEER. ANALYZE THE DAMAGE AND SUBMIT A METHOD OF CORRECTION TO THE ENGINEER FOR APPROVAL. THE DEPARTMENT WILL NOT PAY FOR THE COST OF REQUIRED REPAIRS. THE BRIDGE BEARINGS SHALL BE FULLY SEATED AT ALL CONTACT AREAS. IF FULL SEATING IS NOT ATTAINED, SUBMIT A REPAIR PLAN TO THE ENGINEER. THE DEPARTMENT WILL NOT PAY FOR THE REPAIR COSTS TO ENSURE FULL SEATING ON BEARINGS.

JACKING PROCEDURE:

1. THE CONTRACTOR SHALL JACK THE STRUCTURE AT THE PIER LOCATIONS ONLY.

2. AN ENTIRE BRIDGE UNIT SHALL BE RAISED. NO DIFFERENTIAL DEFLECTION BETWEEN PIERS IS PERMITTED.

3. THE SUPERSTRUCTURE SHALL BE RAISED ALONG THE OUTSIDE EDGE. THE MAXIMUM JACKING HEIGHT IS ½".

4. THE CONTACTOR SHALL OBSERVE THE MEDIAN OPENING DURING JACKING PROCEDURE. JACKING OPERATION SHALL NOT CLOSE MEDIAN JOINT AT ANY TIME.

5. WHERE WORK IS BEING PERFORMED ON TOP OF PIER COLUMNS, (BEARING REFURBISHING), THE CONTRACTOR SHALL SUPPORT THE WEIGHT OF THE SUPERSTRUCTURE FOR THE DURATION OF REPAIR.

6. MAXIMUM SUPPORT WEIGHT AT EXTERIOR COLUMNS IS 370 KIPS. MAXIMUM SUPPORT WEIGHT AT MIDDLE COLUMNS IS 570 KIPS. THE SUPPORT WEIGHT CONSISTS OF TOTAL DEAD LOAD AND LIVE LOAD PLUS IMPACT REACTIONS.

THE DEPARTMENT WILL MEASURE THIS WORK ON A LUMP SUM BASIS.

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

ITEM 518 - STRUCTURE DRAINAGE, MISC.: SCUPPER REPLACEMENT

SCUPPERS SHALL BE PLACED AT EXISTING SCUPPER LOCATIONS. WORK SHALL INCLUDE ALL STEEL, STUDS, FABRICATION, CONCRETE AND INSTALLATION. STEEL FOR SCUPPERS SHALL BE A709, GRADE 50, AND SHALL BE GALVANIZED AFTER FABRICATION ACCORDING TO STANDARD DRAWING GSD-1-96. CONCRETE ENCASEMENT SHALL BE CLASS S CONCRETE. REMOVAL OF THE EXISTING SCUPPERS SHALL BE INCLUDED WITH ITEM 202 - PORTIONS OF STRUCTURE REMOVED, AS PER PLAN.

ITEM 519 - PATCHING CONCRETE STRUCTURES, AS PER PLAN

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

ITEM 848 - SURFACE PREPARATION USING HYDRODEMOLITION, AS PER PLAN

THE ENTIRE TOP SURFACE OF THE BRIDGE DECK SHALL BE COMPLETELY REMOVED AS SPECIFIED IN SUPPLEMENTAL SPECIFICATION 848.20 EXCEPT THAT THE MINIMUM REMOVAL DEPTH "D" SHALL BE ¾ INCH INSTEAD OF THE MINIMUM DEPTH "D" OF 1 INCH SPECIFIED IN 848.20.

ITEM 848 - MICRO-SILICA MODIFIED CONCRETE OVERLAY (VARIABLE THICKNESS)

THE BRIDGE DECK WAS SURVEYED USING A GROUND PENETRATION RADAR TO DETERMINE THE PERCENTAGE OF DELAMINATION AND SCALING. INSPECTION OF THIS REPORT IS AVAILABLE AT:

ODOT - DISTRICT 11
2201 REISER AVE. SE
NEW PHILADELPHIA, OHIO 44663

THE SURVEY WILL BE USED BY THE ENGINEER TO VERIFY DELAMINATED AREAS AND QUANTITIES. QUANTITIES IN THE PLAN FOR VARIABLE DEPTH MATERIAL WERE DETERMINED FROM THIS SURVEY. FINAL PAYMENT TO BE DETERMINED AS PER ITEM 848.32.

ASBESTOS NOTIFICATION

AN ASBESTOS SURVEY OF THE SR-7 BRIDGE STRUCTURE OVER NORFOLK SOUTHERN RR (STRUCTURE NO. JEF-7-0856, SFN 4100395) SCHEDULED FOR REHABILITATION WAS CONDUCTED BY A CERTIFIED ASBESTOS HAZARD EVALUATION SPECIALIST. THE SURVEY DETERMINED THAT NO ASBESTOS IS PRESENT ON THE BRIDGE STRUCTURE.

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 THE ADDRESS BELOW AT LEAST TEN (10) WORKING DAYS PRIOR TO THE START OF ANY DEMOLITION AND/OR RENOVATION.

MR. JIM LOPER
OHIO EPA, SEDO
2195 FRONT STREET
LOGAN, OHIO 43138

THE CONTRACTOR SHALL PROVIDE A COPY OF THE COMPLETED FORM TO THE ENGINEER. INFORMATION REQUIRED ON THE FORM WILL INCLUDE: 1) THE CONTRACTORS 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 11 OFFICE, 2201 REISER AVENUE, NEW PHILADELPHIA, OHIO 44663.

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

ABBREVIATIONS

ABUT.	- ABUTMENT	FT.	- FEET
ALT.	- ALTERNATE	LBS.	- POUNDS
APPR.	- APPROACH	MAX.	- MAXIMUM
BRGS.	- BEARINGS	MEAS.	- MEASURED
BOT.	- BOTTOM	MIN.	- MINIMUM
CLR.	- CLEAR	P.E.J.F.	- PREFORMED EXPANSION JOINT FILLER
COL.	- COLUMN	PERF.	- PERFORATED
CONSTR.	- CONSTRUCTION	R.A.	- REAR ABUTMENT
CORR.	- CORRUGATED	R.F.	- REAR FACE
DIA.	- DIAMETER	REQ'D.	- REQUIRED
DIM.	- DIMENSION	SER.	- SERIES
DWG.	- DRAWING	SPA.	- SPACING
EGA	- EMBEDDED GALVANIC ANODES	S.R.	- STATE ROUTE
ELEV.	- ELEVATION	STA.	- STATION
E.F.	- EACH FACE	T/S	- TOP OF SLOPE
EXIST.	- EXISTING	TYP.	- TYPICAL
F.A.	- FORWARD ABUTMENT	VAR.	- VARIES
FWD.	- FORWARD	W/	- WITH
F.F.	- FRONT FACE		

DESIGN AGENCY
OSBORN ENGINEERING
AKRON, OHIO

DESIGNED SMK | DRAWN SMK | REVIEWED SAV | DATE 12-2-10 | CHECKED BCK | REVISED | STRUCTURE FILE NUMBER 4100395

STRUCTURAL GENERAL NOTES
BRIDGE NO. JEF-7-0856
OVER NORFOLK SOUTHERN RAILROAD

JEF-7-8.56
PID No. 24979

4/27

36/59

007_0856cGN002

ESTIMATED QUANTITIES

CALC. BY: EIW DATE: 11-8-10 CHKD. BY: SMK DATE: 11-10-10

ITEM	EXTENSION	TOTAL	UNIT	DESCRIPTION	ABUT.	PIERS	SUPER.	GEN.	SEE STRUCTURE SHT. NO.
202	11201	LUMP		PORTIONS OF STRUCTURE REMOVED, AS PER PLAN				LUMP	3 OF 27
202	98400	101	SQ FT	REMOVAL MISC.: DELAMINATED CONCRETE AREAS ON BRIDGE SLAB			101		3 OF 27
509	10000	6427	POUND	EPOXY COATED REINFORCING STEEL	254	82	6091		27 OF 27
509	20001	1000	POUND	REINFORCING STEEL, REPLACEMENT OF EXISTING REINFORCING STEEL, AS PER PLAN				1000	3 OF 27
510	10000	90	EACH	DOWEL HOLES WITH NONSHRINK, NONMETALLIC GROUT			90		
511	34400	75	CU YD	CLASS S CONCRETE, SUPERSTRUCTURE			75		
511	43200	2	CU YD	CLASS C CONCRETE, PIER		2			
511	45700	5	CU YD	CLASS C CONCRETE, ABUTMENT	5				
511	81300	424	EACH	CONCRETE, MISC.: EMBEDDED GALVANIC ANODE (EGA)		16	408		3, 4, 16 & 20 OF 27
512	10050	518	SQ YD	SEALING OF CONCRETE SURFACES (NON-EPOXY)			518		19 OF 27
512	10100	2192	SQ YD	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)	81	1936	175		
512	10300	81	SQ YD	SEALING CONCRETE BRIDGE DECKS WITH HMWM RESIN			81		
512	10600	26	FT	CONCRETE REPAIR BY EPOXY INJECTION	24	2			
514	00050	9610	SQ FT	SURFACE PREPARATION OF EXISTING STRUCTURAL STEEL		9610			
514	00056	9610	SQ FT	FIELD PAINTING OF EXISTING STRUCTURAL STEEL, PRIME COAT		9610			
514	00060	9610	SQ FT	FIELD PAINTING STRUCTURAL STEEL, INTERMEDIATE COAT		9610			
514	00066	9610	SQ FT	FIELD PAINTING STRUCTURAL STEEL, FINISH COAT		9610			4 OF 27
514	00504	35	MAN HOUR	GRINDING FINS, TEARS, SLIVERS ON EXISTING STRUCTURAL STEEL		35			
514	10000	8	EACH	FINAL INSPECTION REPAIR		8			
516	10501	125	FT	STRUCTURAL EXPANSION JOINT INCLUDING ELASTOMERIC COMPRESSION SEAL, AS PER PLAN	125				21-23 OF 27
516	10901	576	FT	ELASTOMERIC COMPRESSION SEAL, AS PER PLAN			576		19 OF 27
516	11211	185	FT	STRUCTURAL EXPANSION JOINT INCLUDING ELASTOMERIC STRIP SEAL, AS PER PLAN			185		20, 24-25 OF 27
516	13600	7	SQ FT	1" PREFORMED EXPANSION JOINT FILLER	7				
516	45305	2	EACH	REFURBISH BEARING DEVICE, AS PER PLAN		2			4 OF 27
516	47001	LUMP		JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE, AS PER PLAN				LUMP	4 OF 27
518	62200	88	EACH	STRUCTURE DRAINAGE, MISC.: SCUPPER REPLACEMENT			88		4 OF 27
519	11101	672	SQ FT	PATCHING CONCRETE STRUCTURE, AS PER PLAN	23	335	314		4 OF 27
843	50000	279	SQ FT	PATCHING CONCRETE STRUCTURES WITH TROWELABLE MORTAR			279		
848	10000	3380	SQ YD	MICRO SILICA MODIFIED CONCRETE OVERLAY USING HYDRODEMOLITION (2" THICK)			3380		
848	20001	3380	SQ YD	SURFACE PREPARATION USING HYDRODEMOLITION, AS PER PLAN			3380		4 OF 27
848	30000	30	CU YD	MICRO SILICA MODIFIED CONCRETE OVERLAY (VARIABLE THICKNESS), MATERIAL ONLY			30		
848	50000	33	SQ YD	HAND CHIPPING			33		
848	50100	LUMP		TEST SLAB				LUMP	
848	50320	3380	SQ YD	EXISTING CONCRETE OVERLAY REMOVED (1 1/4" NOMINAL THICKNESS)			3380		
848	50340	332	SQ YD	REMOVAL OF DEBONDED OR DETERIORATED EXISTING VARIABLE THICKNESS CONCRETE OVERLAY			332		

DESIGN AGENCY
OSBORN ENGINEERING
AKRON, OHIO

REVIEWED SAV DATE 12-2-10
STRUCTURE FILE NUMBER 4100395

DRAWN SMK REVISED
DESIGNED SMK CHECKED BCK

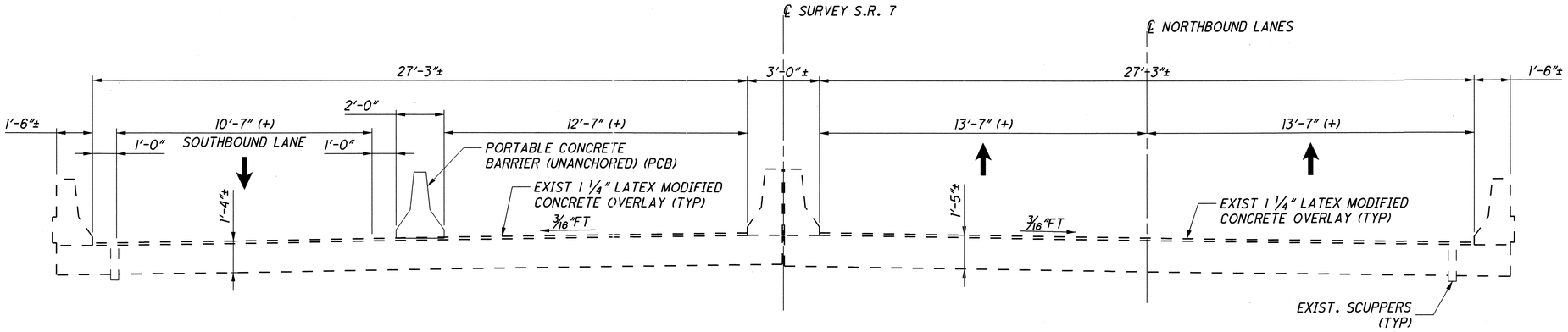
STRUCTURE ESTIMATED QUANTITIES
BRIDGE NO. JEF-7-0856
OVER NORFOLK SOUTHERN RAILROAD

JEF-7-8.56
PID No. 24979

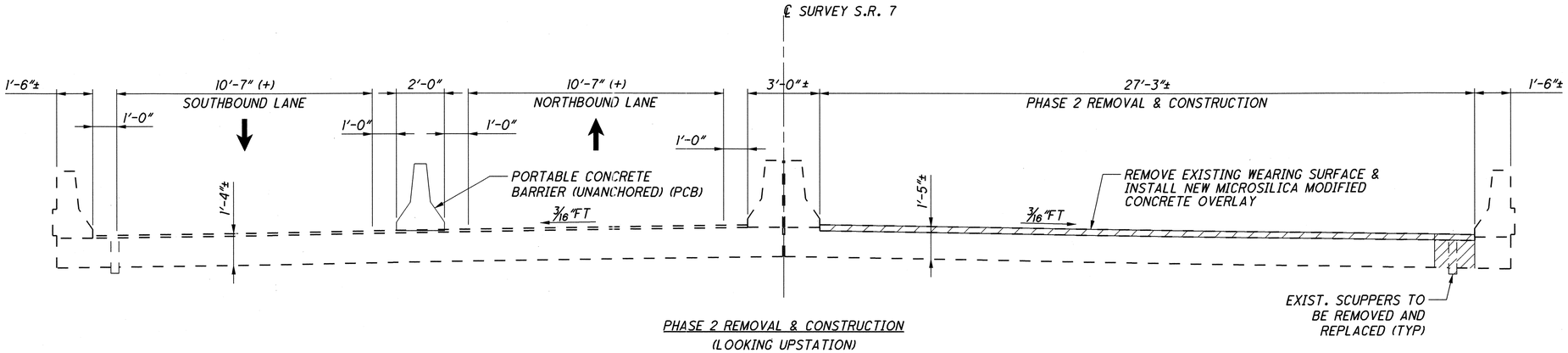
5/27

37/59

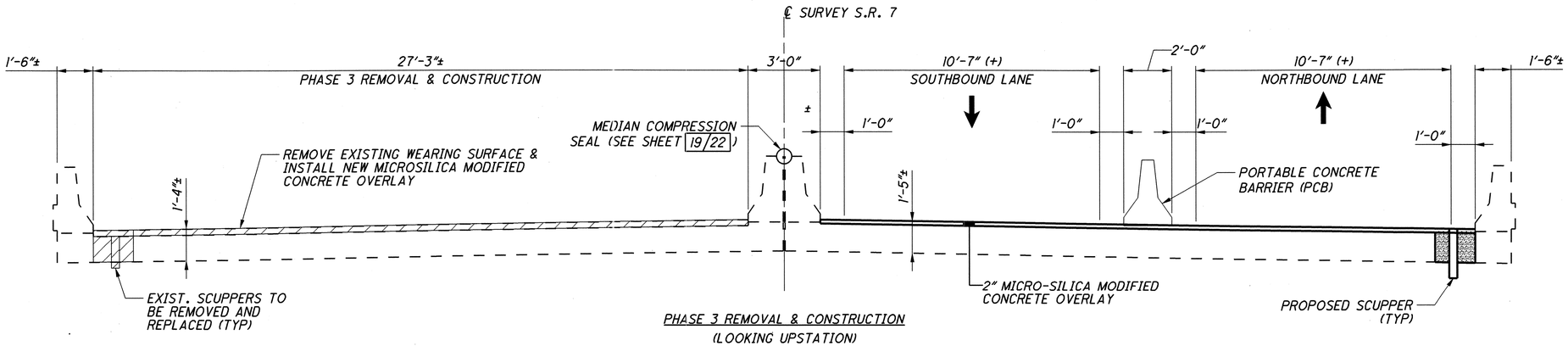
007_0856cEQ001



PHASE 1 CONSTRUCTION
(LOOKING UPSTATION)



PHASE 2 REMOVAL & CONSTRUCTION
(LOOKING UPSTATION)



PHASE 3 REMOVAL & CONSTRUCTION
(LOOKING UPSTATION)

NOTES:

1. FOR ROADWAY PHASE CONSTRUCTION AND MOT DETAILS, SEE SHEET 4 THRU 21.

2. NOTE NOT USED

3. FOR PROPOSED TRANSVERSE SECTION, SEE SHEET 19/27 AND 20/27.

4. FOR SCUPPER DETAILS, SEE SHEET 19/27

5. FOR EXISTING OVERLAY REMOVAL DETAILS, SEE SHEET 19/27.

LEGEND

DENOTES AREA TO BE REMOVED

TRAFFIC MAINTAINED

PCB - PORTABLE CONCRETE BARRIER

PHASE 1 CONSTRUCTION

1. SEE MAINTENANCE OF TRAFFIC SHEETS 4 THRU 21 FOR ADDITIONAL DETAILS.

2. INSTALL PORTABLE CONCRETE BARRIER ON SOUTHBOUND BRIDGE. MAINTAIN TRAFFIC AS SHOWN.

PHASE 2 REMOVAL & CONSTRUCTION

1. MAINTAIN TWO LANES OF TRAFFIC (ONE LANE S.B. & ONE LANE N.B.) ON SOUTHBOUND STRUCTURE.

2. REMOVE EXISTING WEARING SURFACE ON THE NORTHBOUND STRUCTURE.

3. REMOVE THE EXISTING SCUPPERS BY REMOVING AN APPROXIMATE 1.5'x1.5' AREA AROUND THE SCUPPER. DO NOT CUT OR DAMAGE EXISTING DECK REINFORCING. REMOVAL SHALL BE INCLUDED WITH ITEM 202 - PORTIONS OF STRUCTURE REMOVED, AS PER PLAN FOR PAYMENT.

4. REMOVE AREAS OF FULL DEPTH DECK REPLACEMENT AT INTERMEDIATE JOINT LOCATIONS ON THE N.B. STRUCTURE AS DETAILED IN THE PLANS. REMOVAL TO INCLUDE PORTIONS OF EXISTING CONCRETE PARAPETS AS REQUIRED.

5. CONSTRUCT PORTIONS OF NEW CONCRETE DECK SLAB & PARAPETS AT INTERMEDIATE JOINTS AND INSTALL EXPANSION JOINTS ON N.B. STRUCTURE AS DETAILED IN THE PLANS.

6. INSTALL NEW SCUPPERS.

7. INSTALL NEW 2" MICRO-SILICA MODIFIED CONCRETE OVERLAY ON N.B. STRUCTURE.

PHASE 3 REMOVAL & CONSTRUCTION

1. REMOVE PCB FROM S.B. STRUCTURE AND INSTALL PCB ON N.B STRUCTURE.

2. MAINTAIN TWO LANES OF TRAFFIC (ONE S.B. LANE & ONE N.B. LANE) ON NORTHBOUND STRUCTURE.

3. REMOVE EXISTING WEARING SURFACE ON THE SOUTHBOUND STRUCTURE.

4. REMOVE THE EXISTING SCUPPERS BY REMOVING AN APPROXIMATE 1.5'x1.5' AREA AROUND THE SCUPPER. DO NOT CUT OR DAMAGE EXISTING DECK REINFORCING. REMOVAL SHALL BE INCLUDED WITH ITEM 202 - PORTIONS OF STRUCTURE REMOVED, AS PER PLAN FOR PAYMENT.

5. REMOVE AREAS OF FULL DEPTH DECK REPLACEMENT AT INTERMEDIATE JOINT LOCATIONS ON THE SOUTHBOUND STRUCTURE AS DETAILED IN THE PLANS. REMOVAL TO INCLUDE PORTIONS OF EXISTING CONCRETE PARAPETS.

6. CONSTRUCT PORTIONS OF NEW CONCRETE DECK SLAB & PARAPETS AT INTERMEDIATE JOINTS AND INSTALL EXPANSION JOINTS ON SOUTHBOUND STRUCTURE AS DETAILED IN THE PLANS.

7. INSTALL NEW SCUPPERS.

8. INSTALL NEW 2" MICRO-SILICA MODIFIED CONCRETE OVERLAY ON S.B. STRUCTURE.

9. INSTALL THE MEDIAN COMPRESSION SEAL UPON COMPLETION OF ALL REPAIRS. GLAND IS TO BE INSTALLED WITHIN EACH BRIDGE UNIT. A 1/2" OPENING SHALL BE LEFT IN THE GLAND AT EACH EXPANSION JOINT. INSTALLATION OF THE COMPRESSION SEAL SHALL INCLUDE ALL LABOR AND MATERIAL NECESSARY TO COMPLETE THE ABOVE WORK. PAYMENT WILL BE INCLUDED WITH THE CONTRACT BID PRICE FOR ITEM 516 - ELASTOMERIC COMPRESSION SEAL, AS PER PLAN.

PHASED CONSTRUCTION DETAILS

BRIDGE NO. JEF-7-0856
OVER NORFOLK SOUTHERN RAILROAD

JEF-7-8.56
PID No. 24979

DESIGN AGENCY
OSBORN ENGINEERING
AKRON, OHIO

DESIGNED	DRAWN	REVIEWED	DATE
SMK	SMK	SAV	12-2-10
CHECKED	REVISED	STRUCTURE FILE NUMBER	
BCK		4100395	

6/27

38/59

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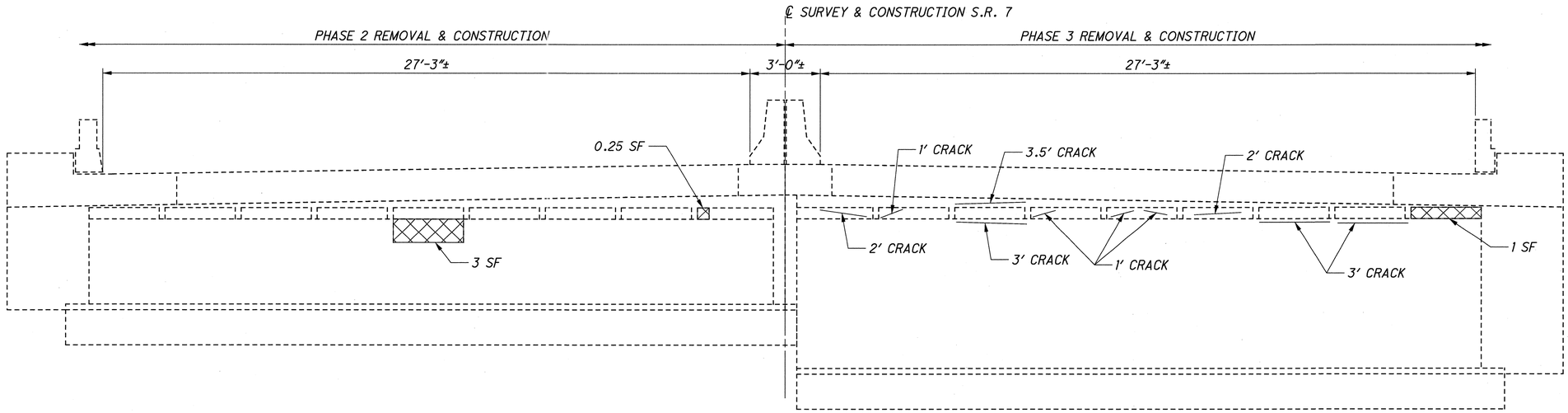
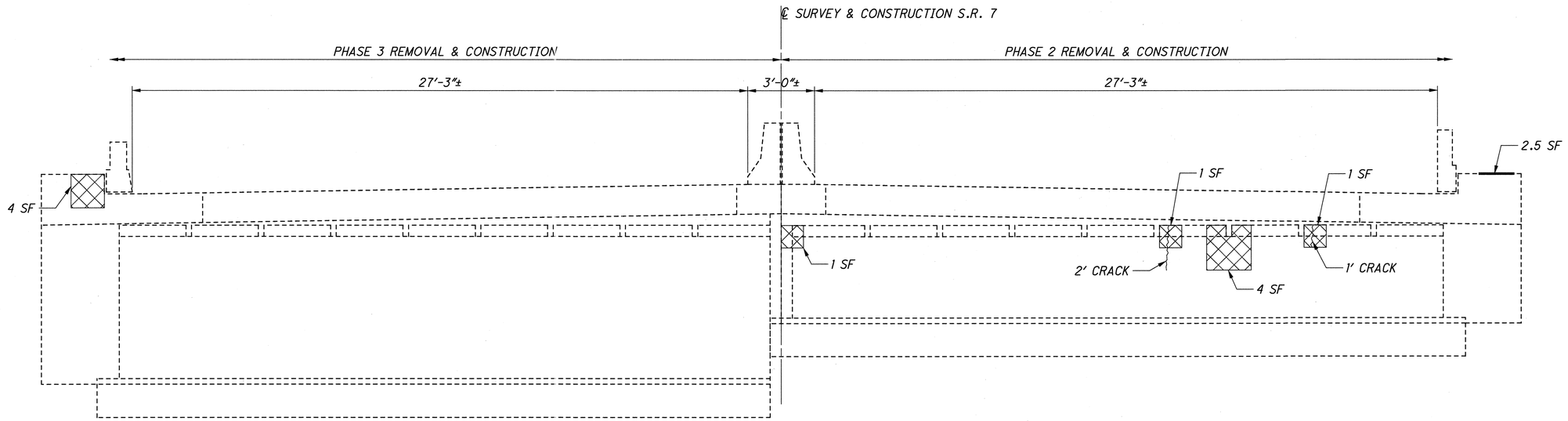


NORTHBOUND STRUCTURE

SOUTHBOUND STRUCTURE

REAR ABUTMENT



SOUTHBOUND STRUCTURE

NORTHBOUND STRUCTURE

FORWARD ABUTMENT

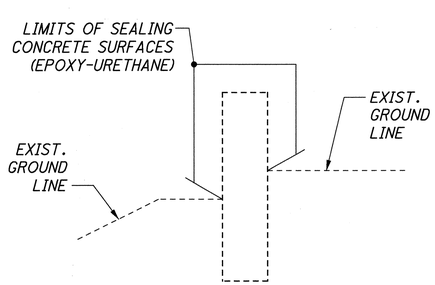
ABUTMENT REPAIR QUANTITY TABLE*		
	ITEM 519 - PATCHING CONCRETE STRUCTURE, AS PER PLAN (SF)	ITEM 512 - CONCRETE REPAIR BY EPOXY INJECTION (FT)
	REAR ABUTMENT	
NORTHBOUND	3.25	-
SOUTHBOUND	1.00	20.50
	FORWARD ABUTMENT	
NORTHBOUND	9.5	3.00
SOUTHBOUND	4.0	-
MEASURED TOTAL	18	24
ESTIMATED TOTAL	23	24

* QUANTITIES HAVE BEEN CARRIED TO THE ESTIMATED QUANTITY SHEET 5/27

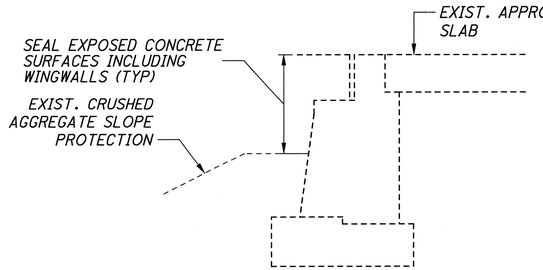
LEGEND

ITEM 512 - CONCRETE REPAIR BY EPOXY INJECTION

ITEM 519 - PATCHING CONCRETE STRUCTURES, AS PER PLAN



WINGWALL
LIMITS OF SEALING CONCRETE SURFACES (EPOXY-URETHANE)



ABUTMENT
LIMITS OF SEALING CONCRETE SURFACES (EPOXY-URETHANE)

DESIGN AGENCY
OSBORN ENGINEERING
AKRON, OHIO

DESIGNED SMK | DRAWN SMK | REVIEWED SAV | DATE 12-2-10
CHECKED BCK | REVISED | STRUCTURE FILE NUMBER 4100395

ABUTMENT REPAIR DETAILS
BRIDGE NO. JEF-7-0856
OVER NORFOLK SOUTHERN RAILROAD

JEF-7-8.56
PID No. 24979

7/27

39/59

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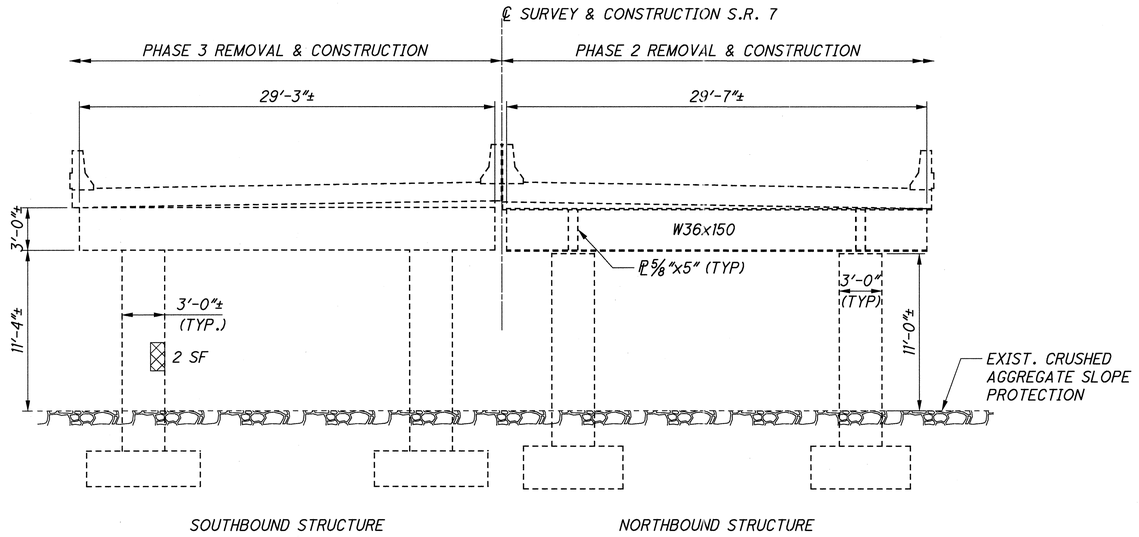
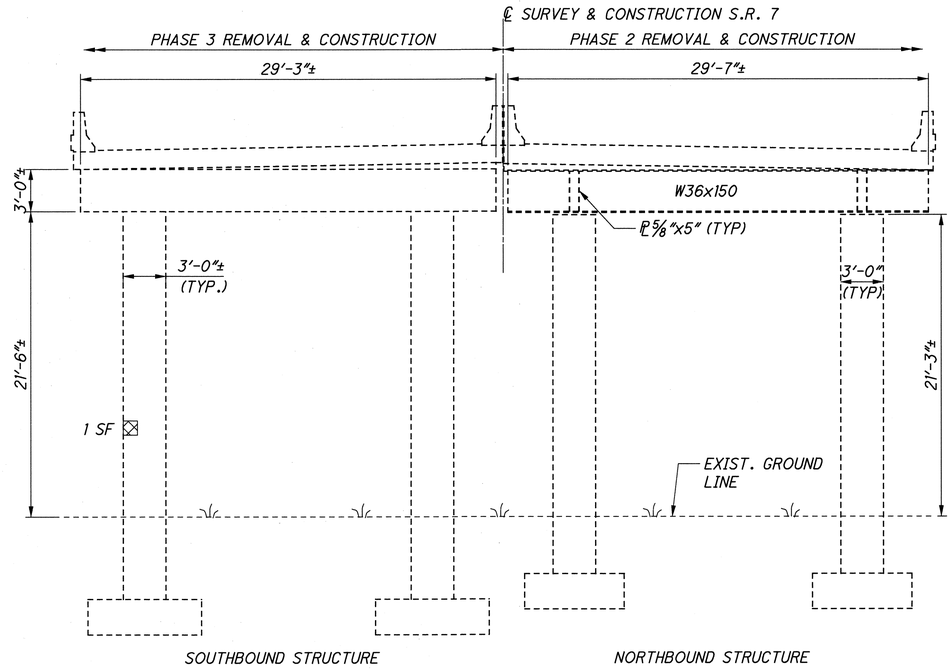
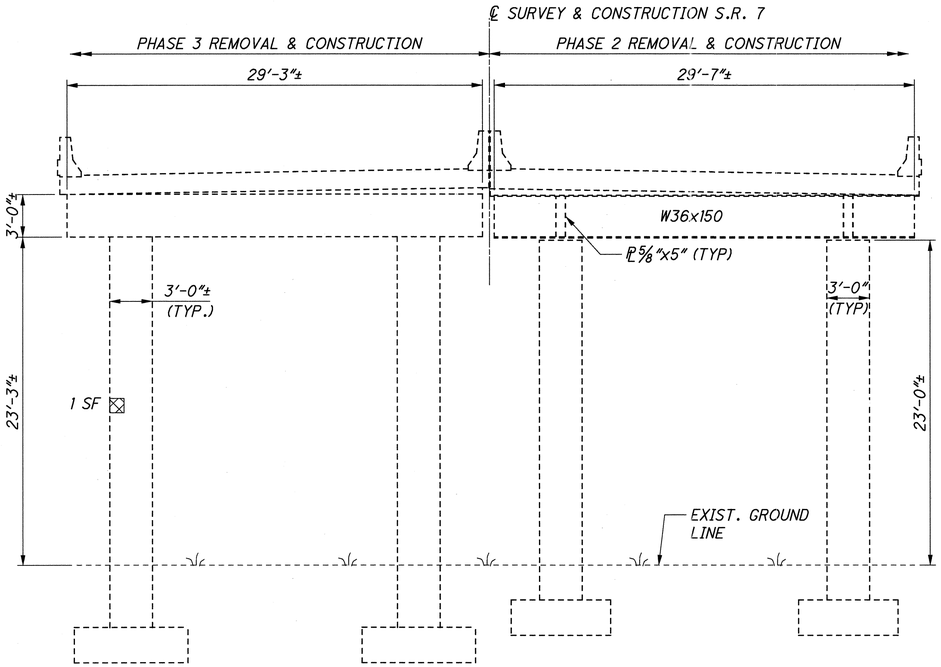


PIER 1
(LOOKING NORTH)



PIER 2
(LOOKING NORTH)



PIER 3
(LOOKING NORTH)

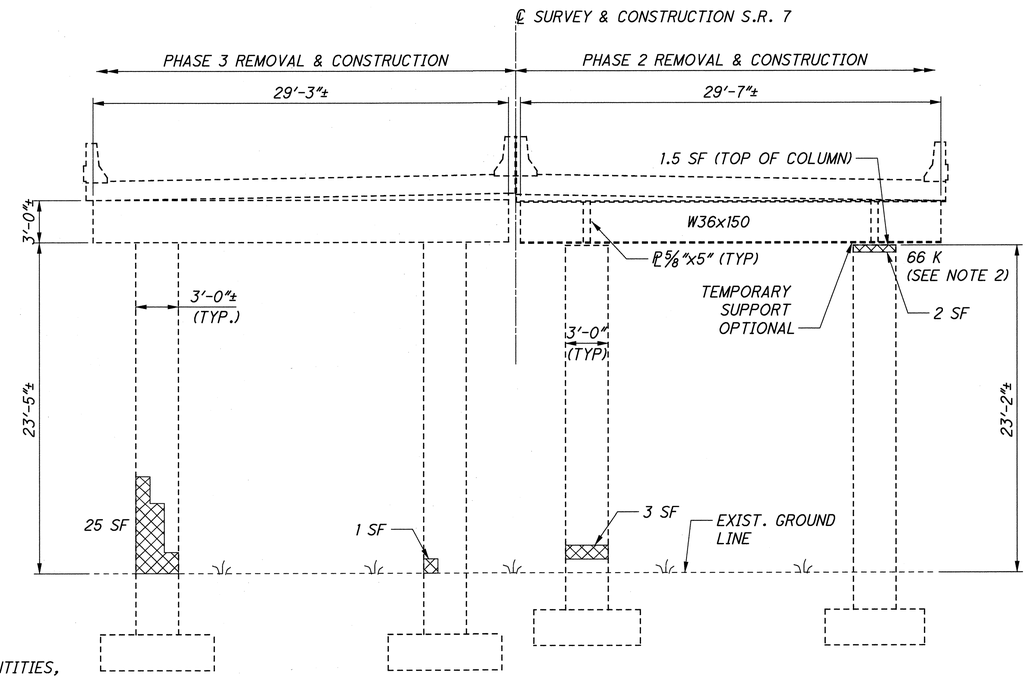
LEGEND

ITEM 519 - PATCHING CONCRETE STRUCTURES, AS PER PLAN

NOTES:

1. FOR SUMMARY OF PIER REPAIR QUANTITIES, SEE SHEET 15/27

2. THE JACKING LOAD SHOWN AT EACH COLUMN IS FOR DEAD LOAD ONLY. FOR JACKING UNDER LIVE LOAD CONDITIONS, SEE SHEET 4/27.



PIER 4
(LOOKING NORTH)

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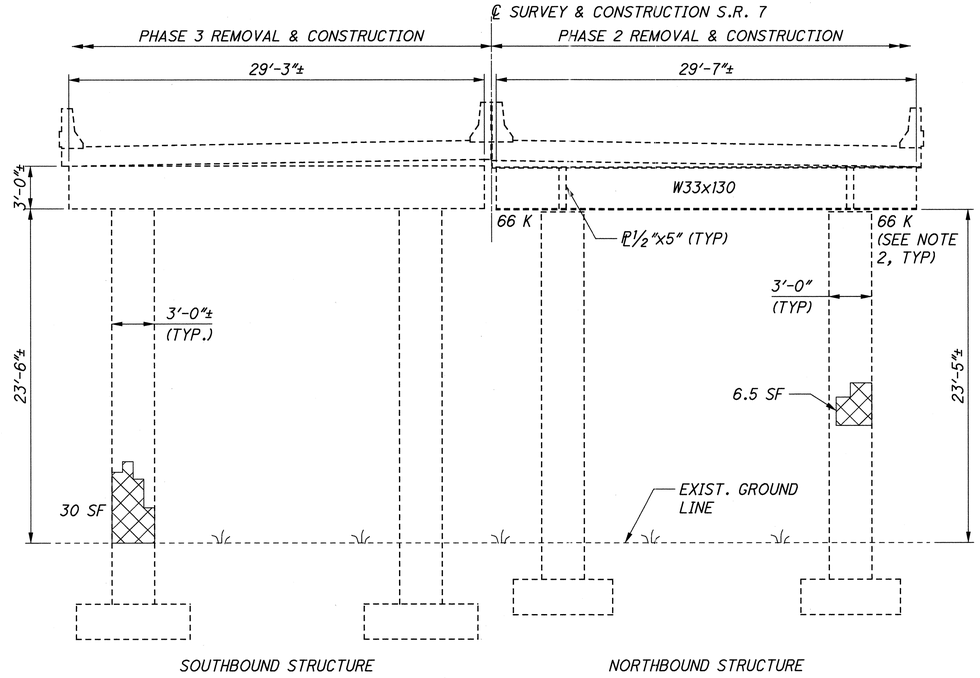
DESIGN AGENCY
OSBORN ENGINEERING
AKRON, OHIO

DESIGNED	DRAWN	REVIEWED	DATE
SMK	SMK	SAV	12-2-10
CHECKED	REVISED	STRUCTURE FILE NUMBER	
BCK		4100395	

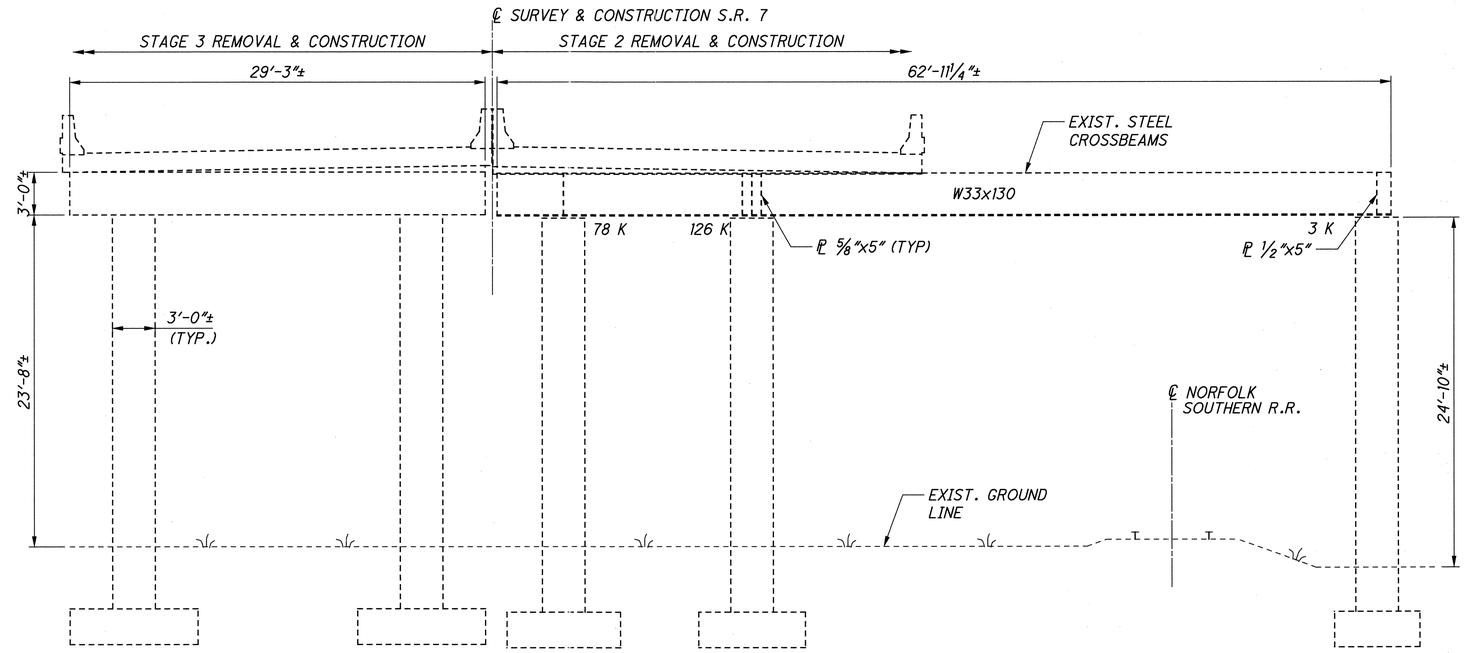
PIER REPAIR DETAILS - PIERS 1 THRU 4

BRIDGE NO. JEF-7-0856
OVER NORFOLK SOUTHERN RAILROAD

JEF-7-8.56
PID No. 24979



PIER 5
(LOOKING NORTH)



PIER 6
(LOOKING NORTH)

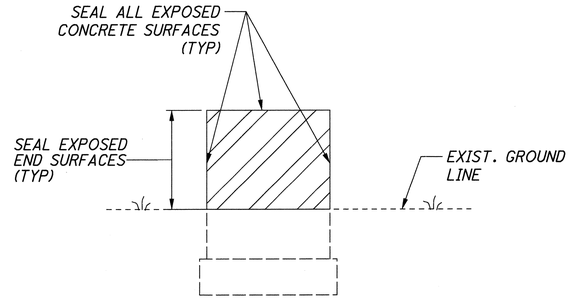
NOTES:

1. FOR SUMMARY OF PIER REPAIR QUANTITIES, SEE SHEET 15/27 .

2. THE JACKING LOAD SHOWN AT EACH COLUMN IS FOR THE DEAD LOAD ONLY. FOR JACKING UNDER LIVE LOAD CONDITIONS, SEE SHEET 4/27.

LEGEND

ITEM 519 - PATCHING CONCRETE STRUCTURES, AS PER PLAN



COLLISION WALLS
LIMITS OF SEALING CONCRETE SURFACES (EPOXY-URETHANE)

DESIGN AGENCY
OSBORN ENGINEERING
AKRON, OHIO

DESIGNED	DRAWN	REVIEWED	DATE
SMK	SMK	SAV	12-2-10
CHECKED	REVISED	STRUCTURE FILE NUMBER	
BCK		4100395	

PIER REPAIR DETAILS - PIERS 5 & 6
BRIDGE NO. JEF-7-0856
OVER NORFOLK SOUTHERN RAILROAD

JEF-7-8.56
PID No. 24979

9/27

41/59

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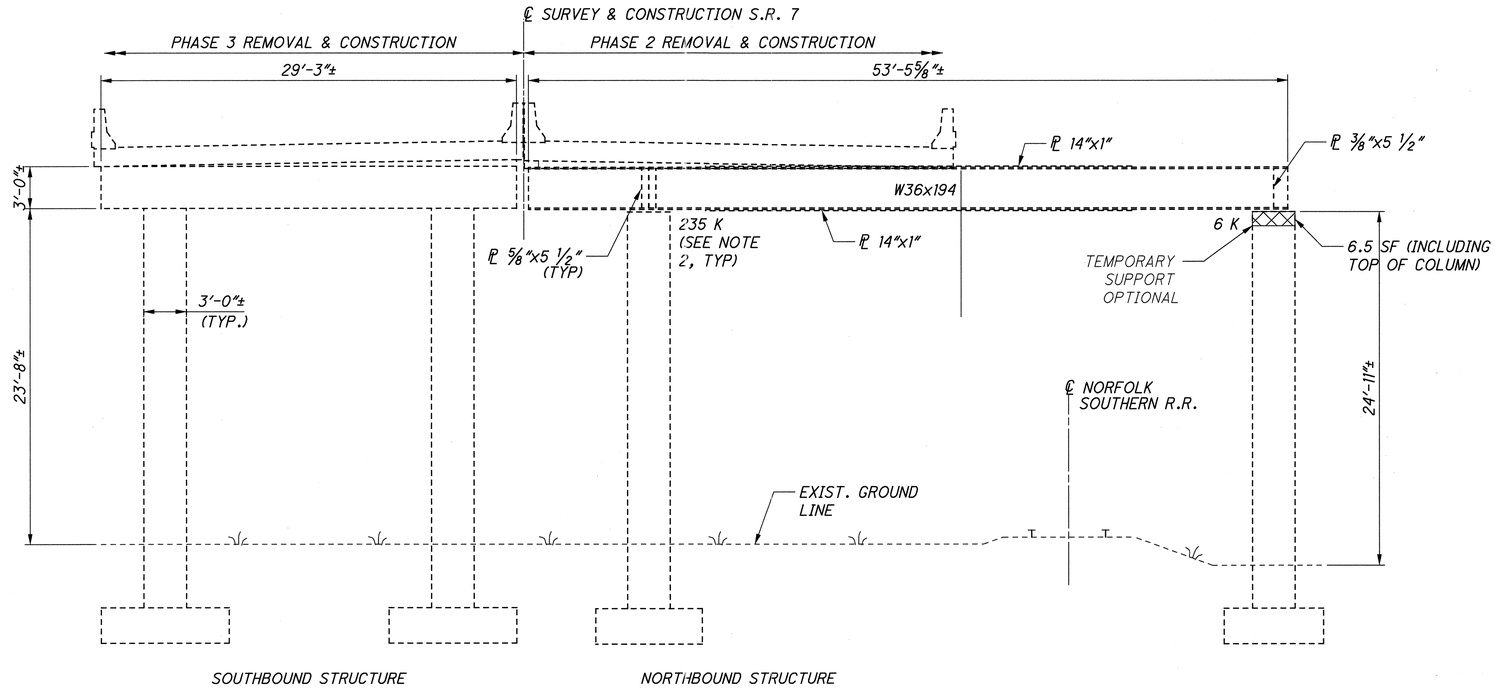
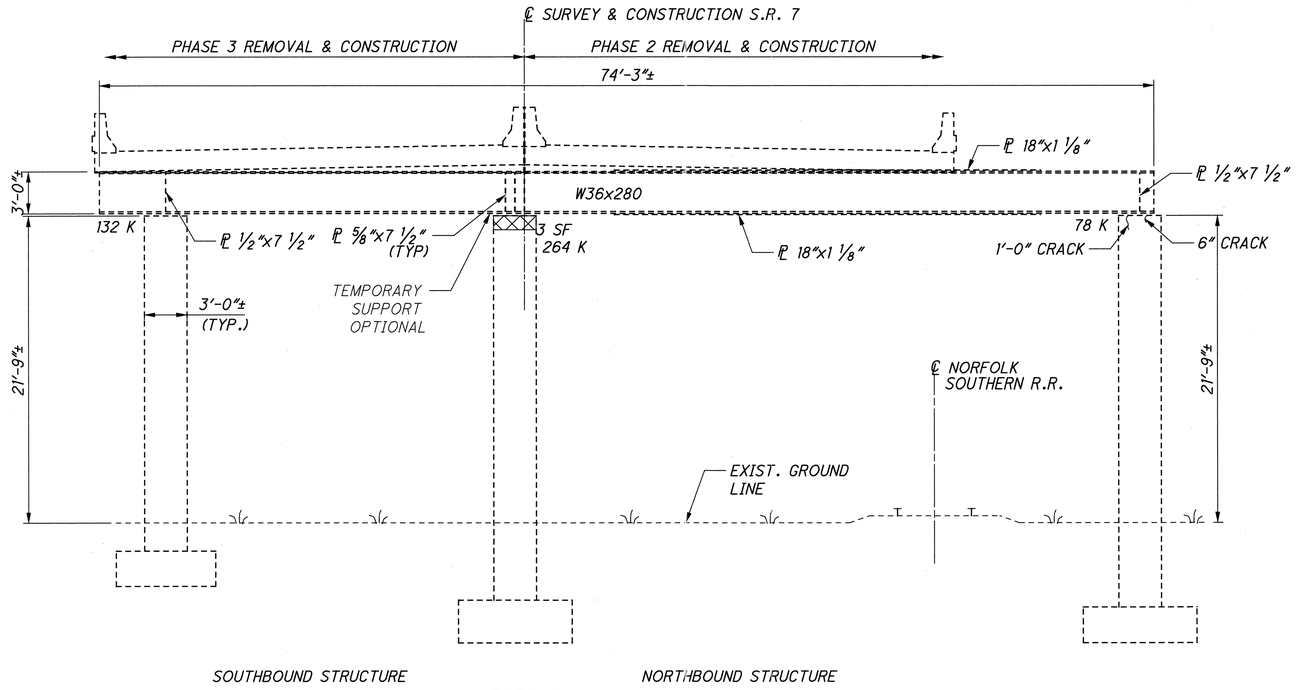


PIER 7
(LOOKING NORTH)



PIER 8
(LOOKING NORTH)

NOTES:

1. FOR SUMMARY OF PIER REPAIR QUANTITIES SEE SHEET 15/27 .

2. THE JACKING LOAD SHOWN AT EACH COLUMN IS FOR THE DEAD LOAD ONLY. FOR JACKING UNDER LIVE LOAD CONDITIONS, SEE SHEET 4/27 .

LEGEND

ITEM 512 - CONCRETE REPAIR BY EPOXY INJECTION

ITEM 519 - PATCHING CONCRETE STRUCTURES, AS PER PLAN

DESIGN AGENCY
OSBORN ENGINEERING
AKRON, OHIO

DESIGNED SMK | DRAWN SMK | REVIEWED SAV | DATE 12-2-10
CHECKED BCK | REVISED | STRUCTURE FILE NUMBER 4100395

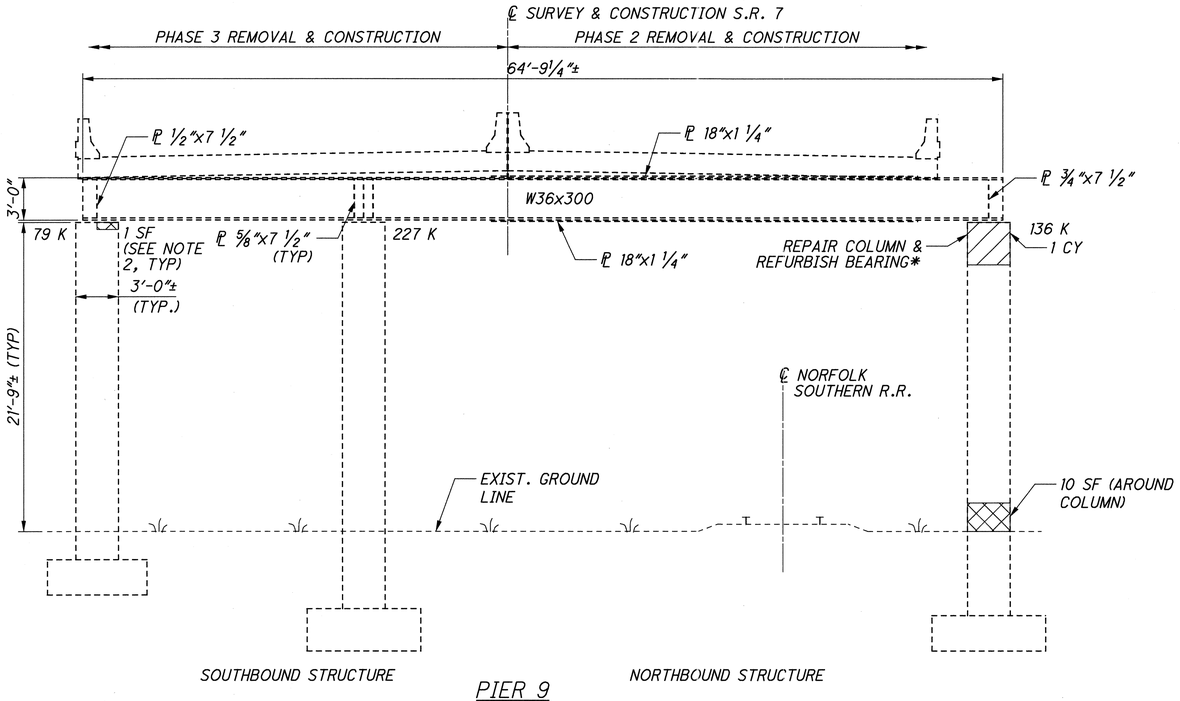
PIER REPAIR DETAILS - PIERS 7 & 8
BRIDGE NO. JEF-7-0856
OVER NORFOLK SOUTHERN RAILROAD

JEF-7-8.56
PID No. 24979

10 / 27

42
59

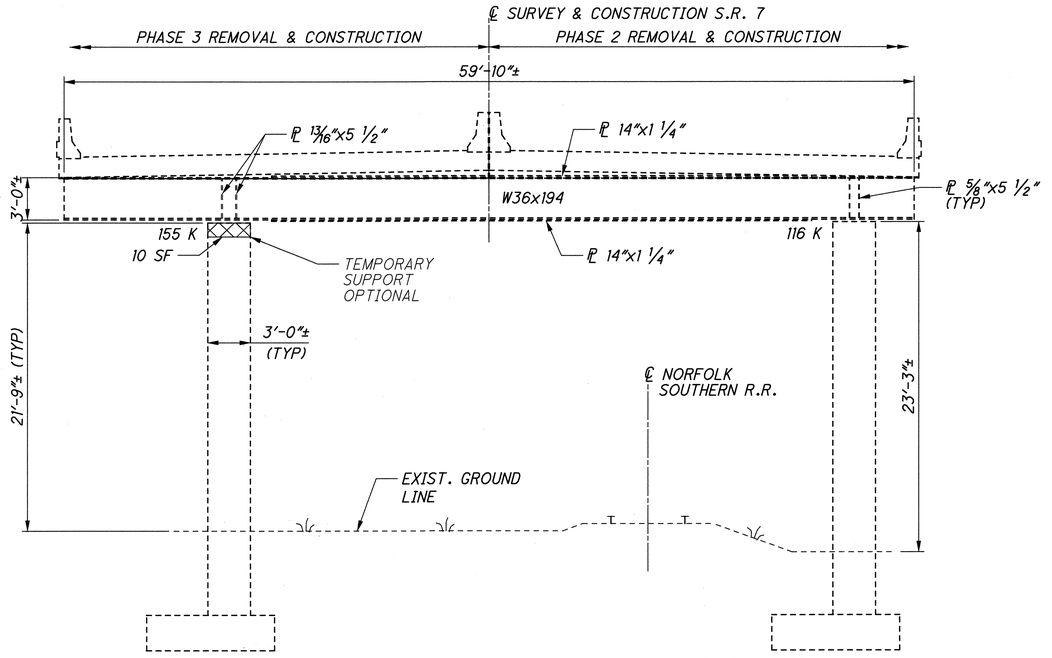
007_0856cPI003.dgn



PIER 9

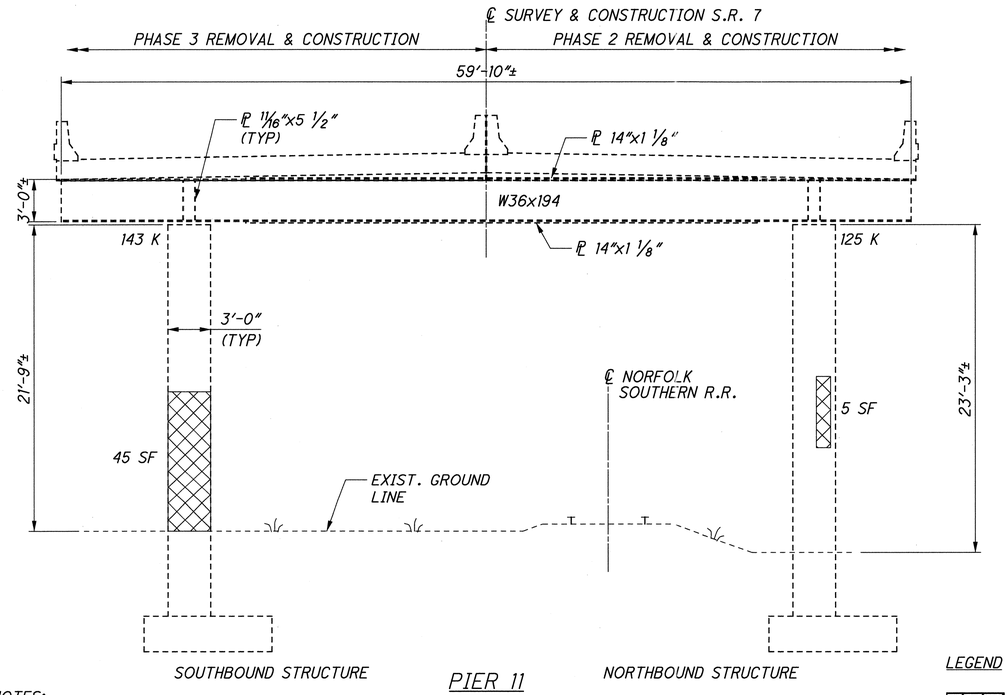
(LOOKING NORTH)

* SEE SHEET 16/27 FOR DETAILS TO REPAIR COLUMN & REFURBISH EXIST. BEARING OF THE EAST FASCIA PIER COLUMN



PIER 10

(LOOKING NORTH)



PIER 11

(LOOKING NORTH)

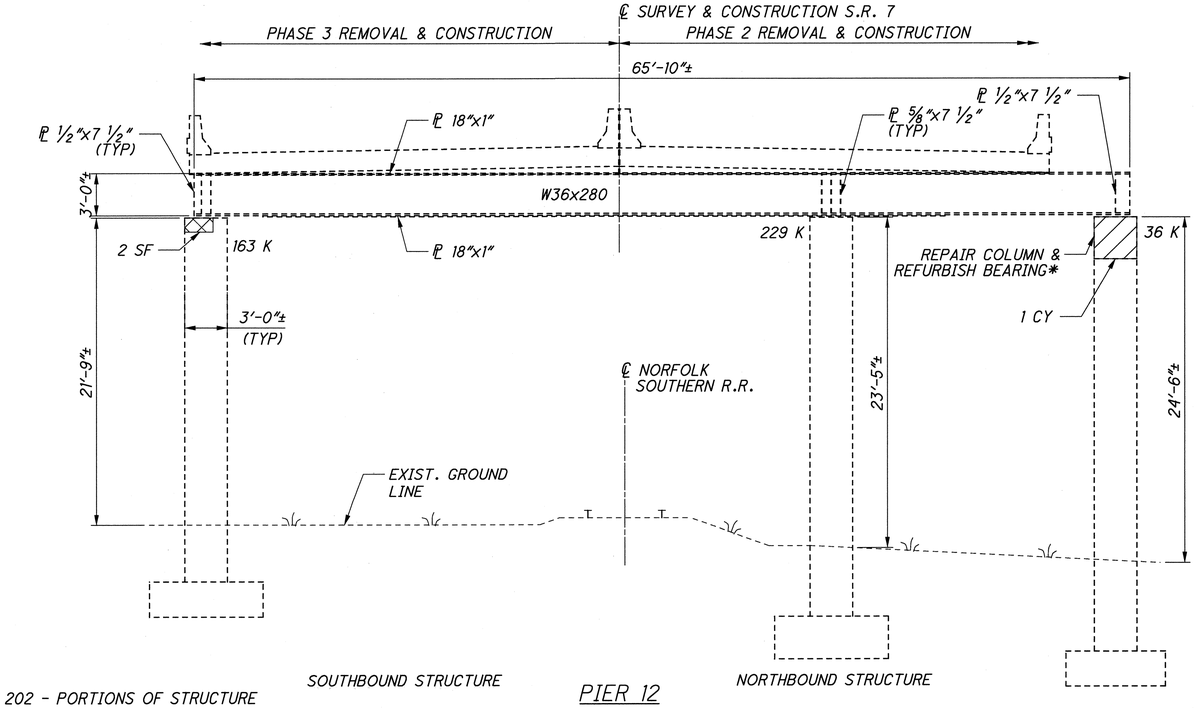
NOTES:

1. FOR SUMMARY OF PIER REPAIR QUANTITIES, SEE SHEET 15/27 .
2. THE JACKING LOAD SHOWN AT EACH COLUMN IS FOR THE DEAD LOAD ONLY. FOR JACKING UNDER LIVE LOAD CONDITIONS, SEE SHEET 4/27 .

LEGEND

ITEM 202 - PORTIONS OF STRUCTURE REMOVED, AS PER PLAN

ITEM 519 - PATCHING CONCRETE STRUCTURES, AS PER PLAN



PIER 12

(LOOKING NORTH)

* SEE SHEET 16/27 FOR DETAILS TO REPAIR COLUMN & REFURBISH EXIST. BEARING OF THE EAST FASCIA PIER COLUMN

DESIGN AGENCY
OSBORN ENGINEERING
AKRON, OHIO

DESIGNED SMK | DRAWN SMK | REVIEWED SAV | DATE 12-2-10
CHECKED BCK | REVISED | STRUCTURE FILE NUMBER 4100395

PIER REPAIR DETAILS - PIERS 9 THRU 12

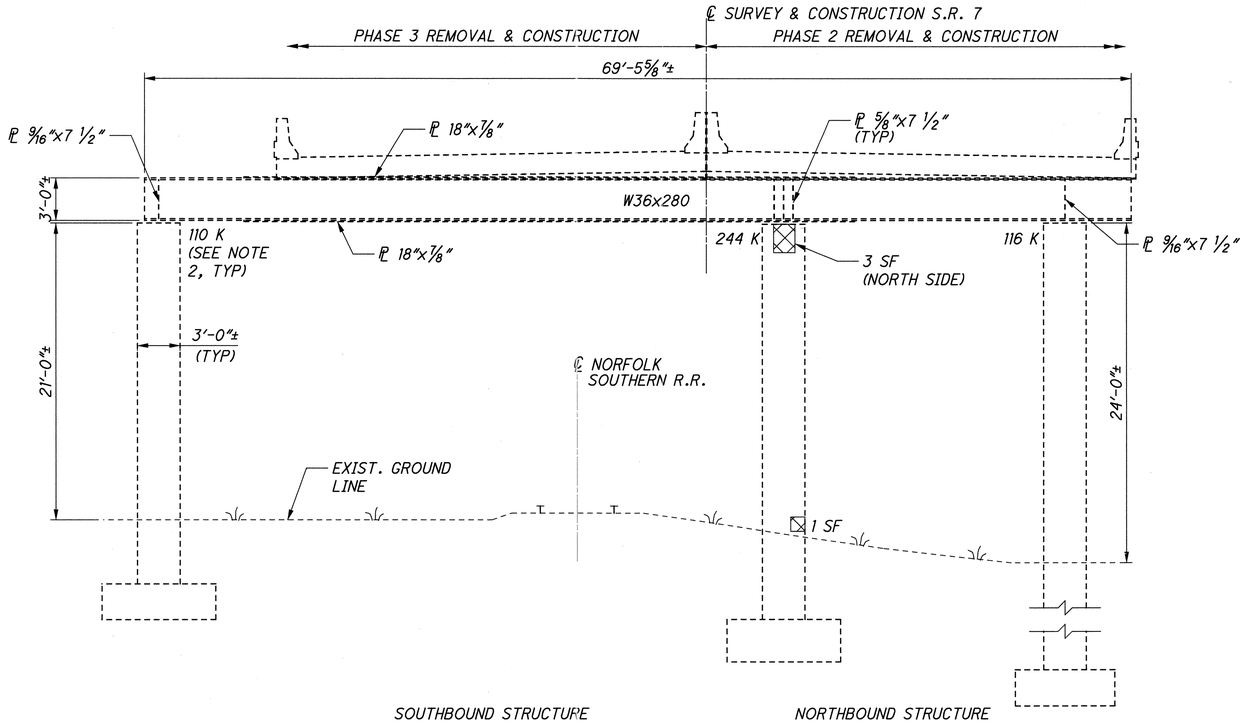
BRIDGE NO. JEF-7-0856
OVER NORFOLK SOUTHERN RAILROAD

JEF-7-8.56
PID No. 24979

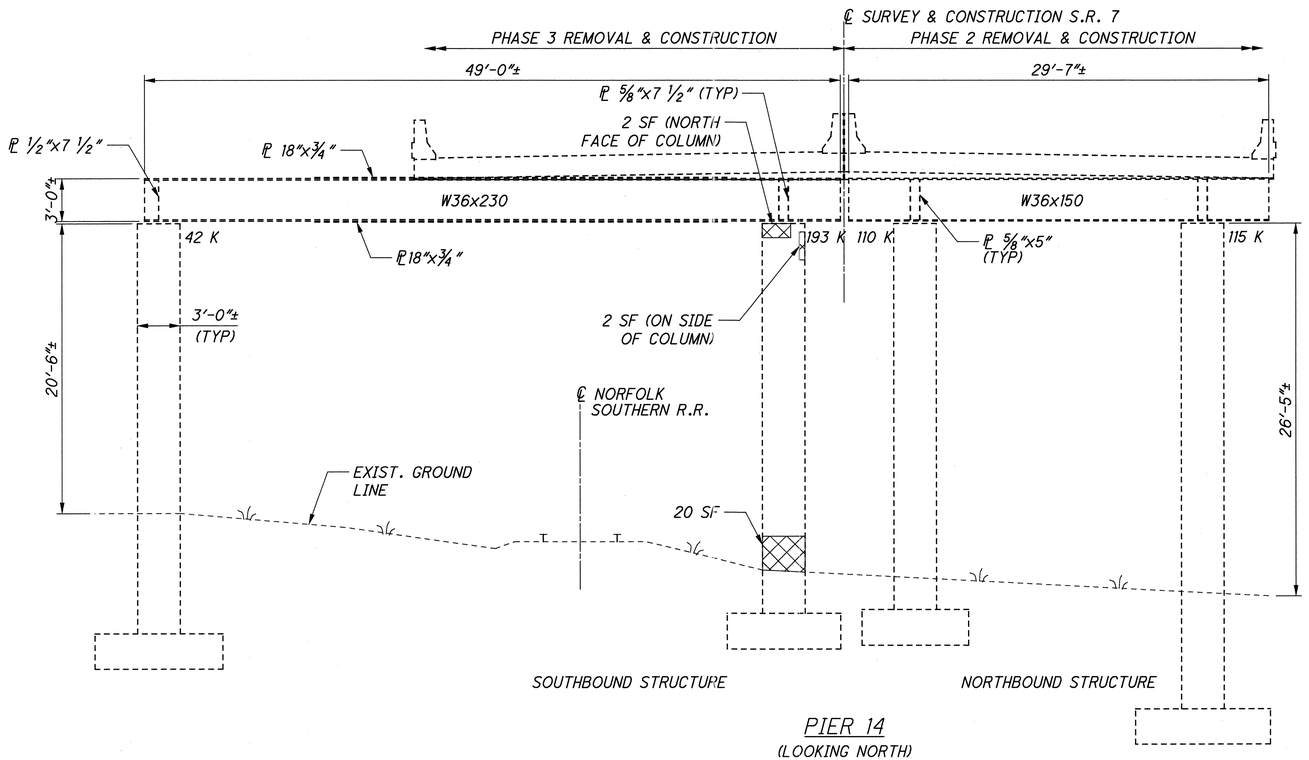
11/27

43/59

007_0856cPI004.dgn



PIER 13
(LOOKING NORTH)



PIER 14
(LOOKING NORTH)

NOTES:

1. FOR SUMMARY OF PIER REPAIR QUANTITIES, SEE SHEET 15/27 .

2. THE JACKING LOAD SHOWN AT EACH COLUMN IS FOR THE DEAD LOAD ONLY. FOR JACKING UNDER LIVE LOAD CONDITIONS, SEE SHEET 4/27 .

LEGEND

ITEM 519 - PATCHING CONCRETE STRUCTURES, AS PER PLAN

DESIGN AGENCY
OSBORN ENGINEERING
AKRON, OHIO

DESIGNED	DRAWN	REVIEWED	DATE
SMK	SMK	SAV	12-2-10
CHECKED	REVISED	STRUCTURE FILE NUMBER	
BCK		4100395	

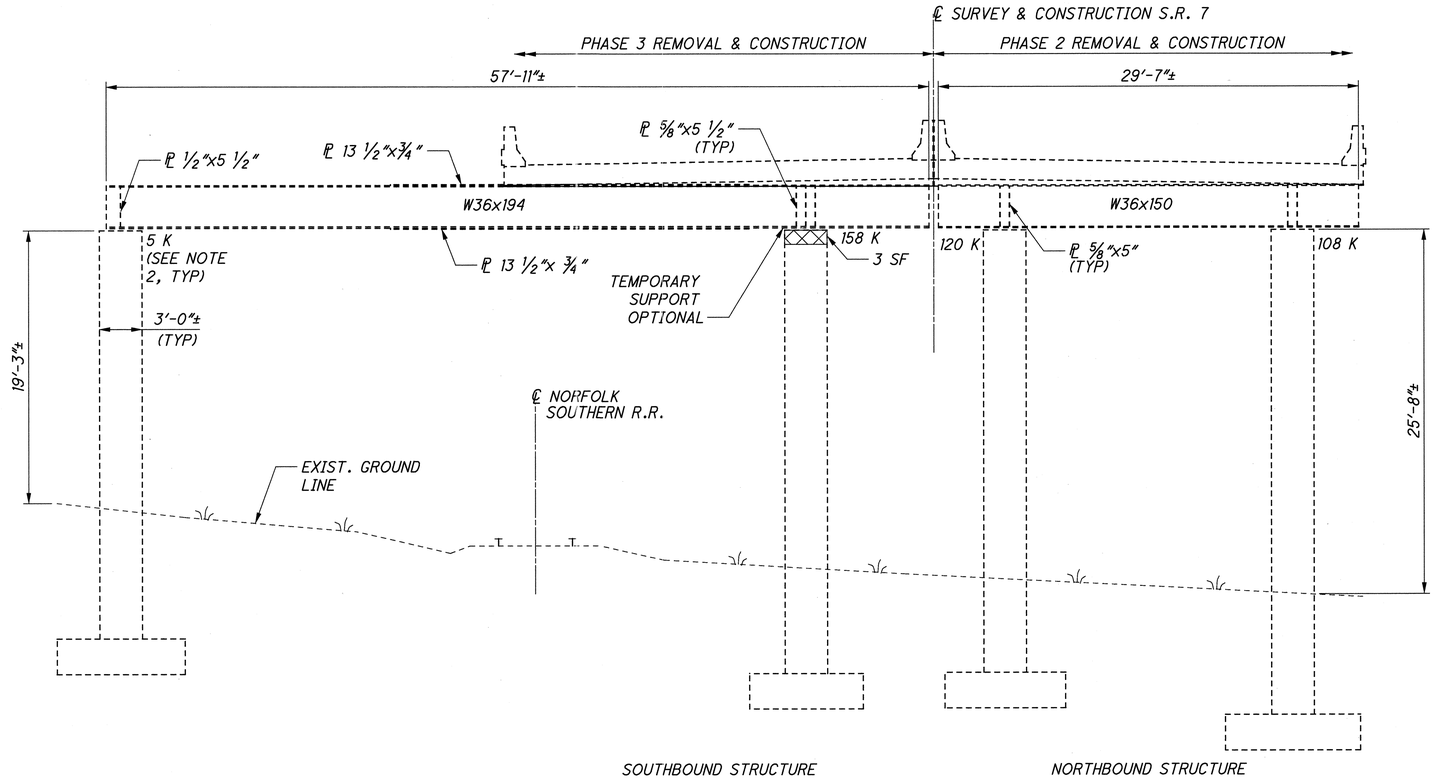
PIER REPAIR DETAILS - PIERS 13 & 14
BRIDGE NO. JEF-7-0856
OVER NORFOLK SOUTHERN RAILROAD

JEF-7-8.56
PID No. 24979

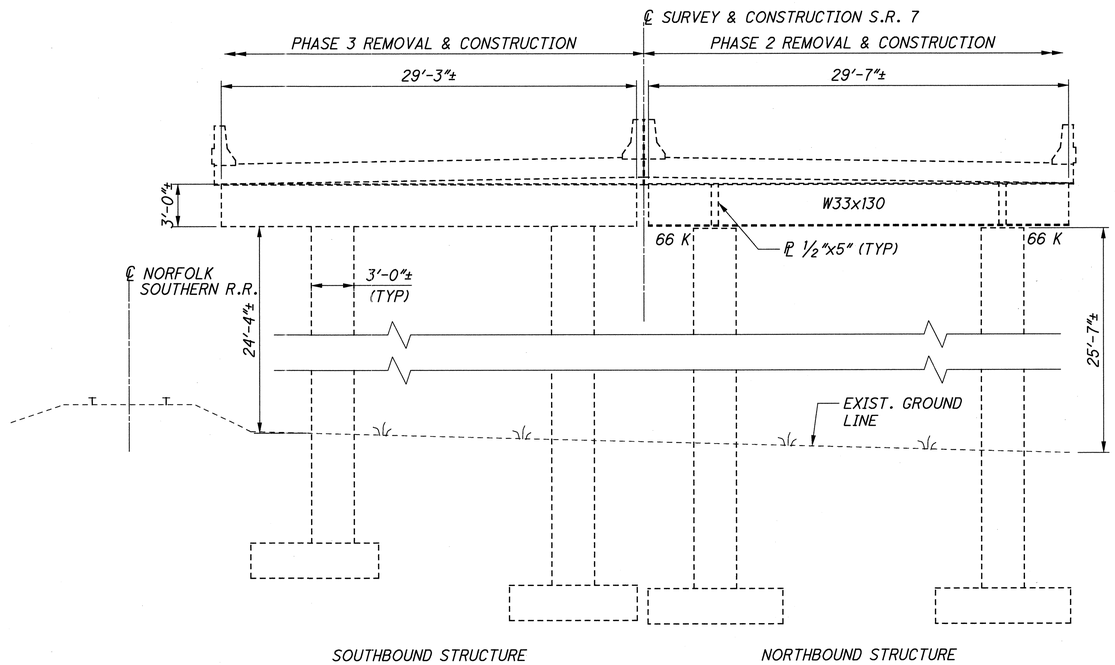
12/27

44/59

007_0856cPI005.dgn



PIER 15
(LOOKING NORTH)



PIER 16
(LOOKING NORTH)

NOTES:

1. FOR SUMMARY OF PIER REPAIR QUANTITIES, SEE SHEET 15/27 .

2. THE JACKING LOAD SHOWN AT EACH COLUMN IS FOR THE DEAD LOAD ONLY. FOR JACKING UNDER LIVE LOAD CONDITIONS, SEE SHEET 4/27.

LEGEND

ITEM 519 - PATCHING CONCRETE STRUCTURES, AS PER PLAN

DESIGN AGENCY
OSBORN ENGINEERING
AKRON, OHIO

DESIGNED	DRAWN	REVIEWED	DATE
SMK	SMK	SAV	12-2-10
CHECKED	REVISED	STRUCTURE FILE NUMBER	
BCK		4100395	

PIER REPAIR DETAILS - PIERS 15 & 16
BRIDGE NO. JEF-7-0856
OVER NORFOLK SOUTHERN RAILROAD

JEF-7-8.56
PID No. 24979

13/27

45/59

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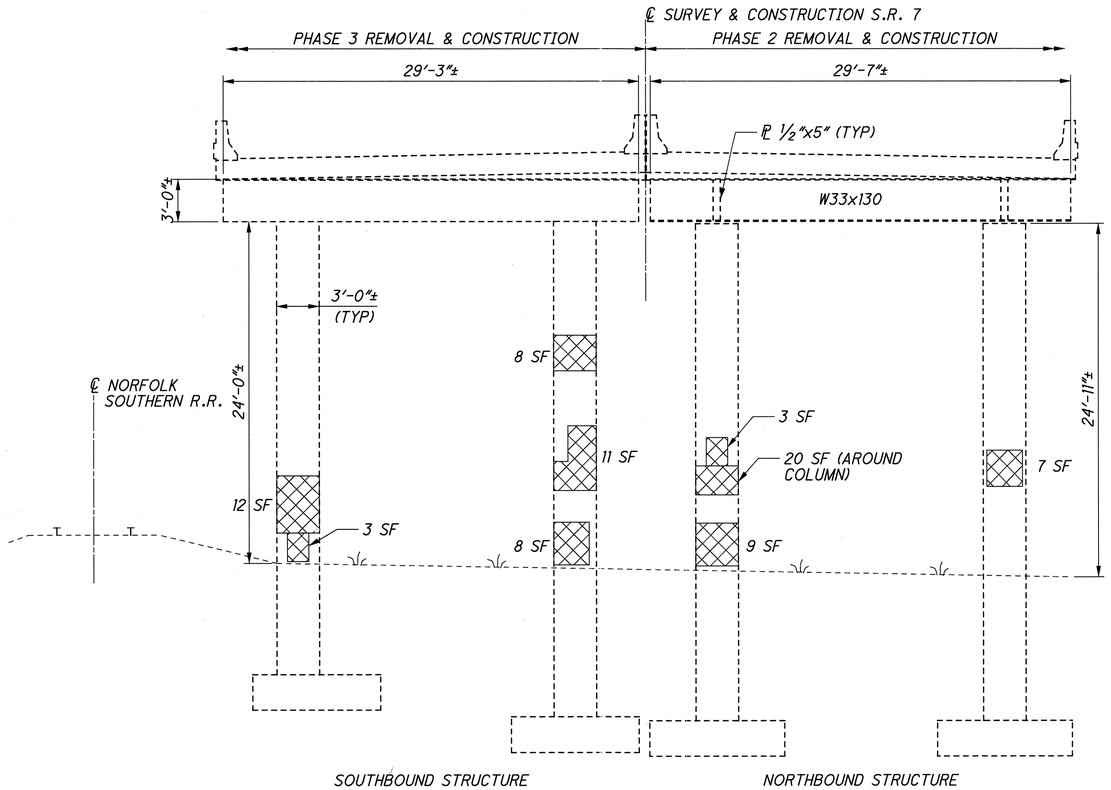
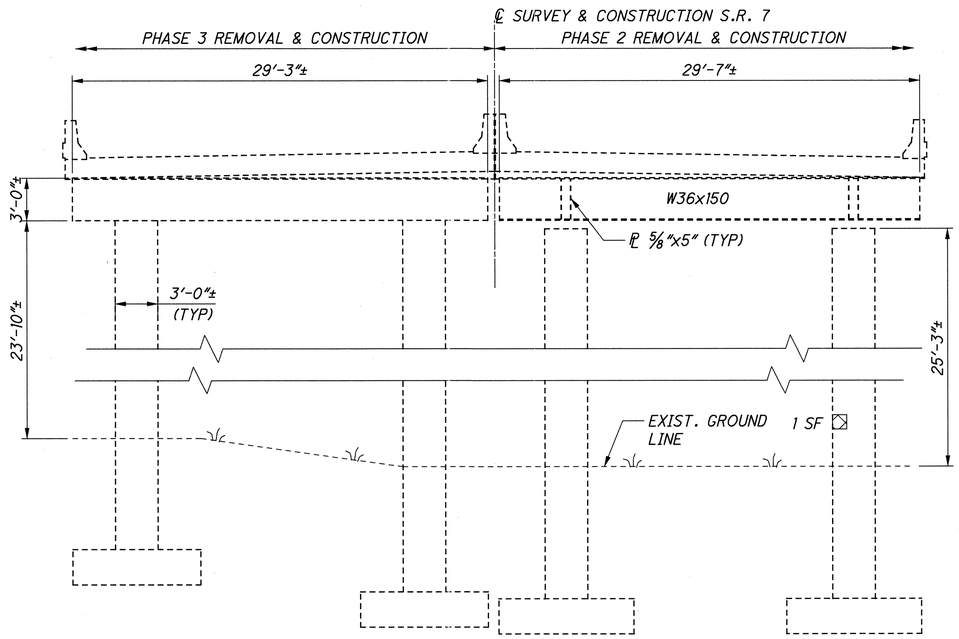


PIER 17
(LOOKING NORTH)



PIER 18
(LOOKING NORTH)

NOTES:

1. FOR SUMMARY OF PIER REPAIR QUANTITIES, SEE SHEET 15/27

LEGEND

ITEM 519 - PATCHING CONCRETE STRUCTURES, AS PER PLAN

DESIGN AGENCY
OSBORN ENGINEERING
AKRON, OHIO

REVIEWED SAV
DATE 12-2-10
STRUCTURE FILE NUMBER 4100395

DRAWN SMK
REVISED

DESIGNED SMK
CHECKED BCK

PIER REPAIR DETAILS - PIERS 17 & 18

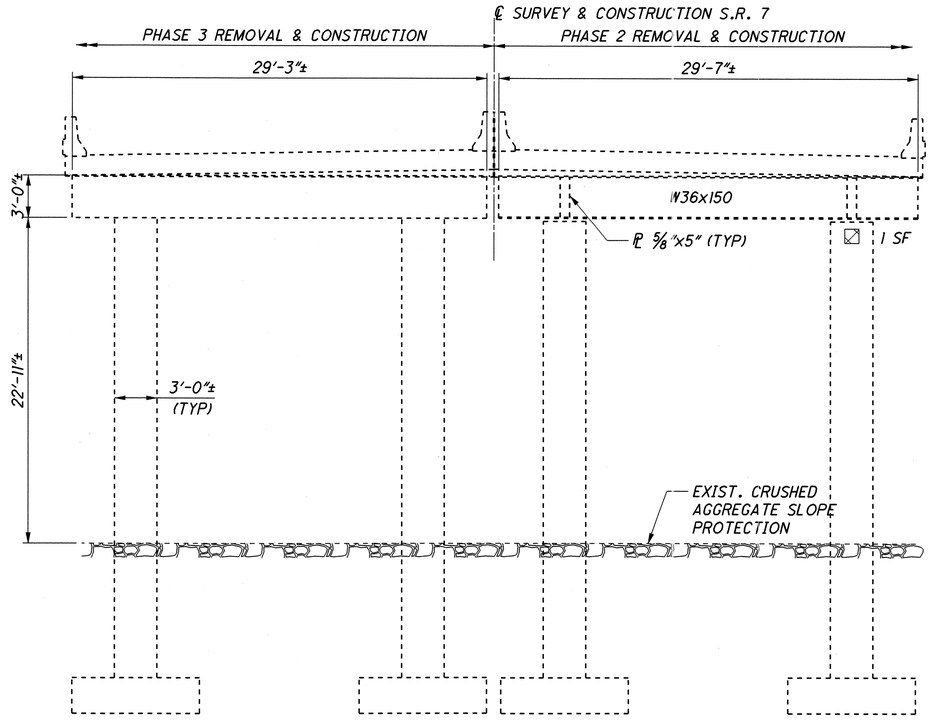
BRIDGE NO. JEF-7-0856
OVER NORFOLK SOUTHERN RAILROAD

JEF-7-8.56
PID No. 24979

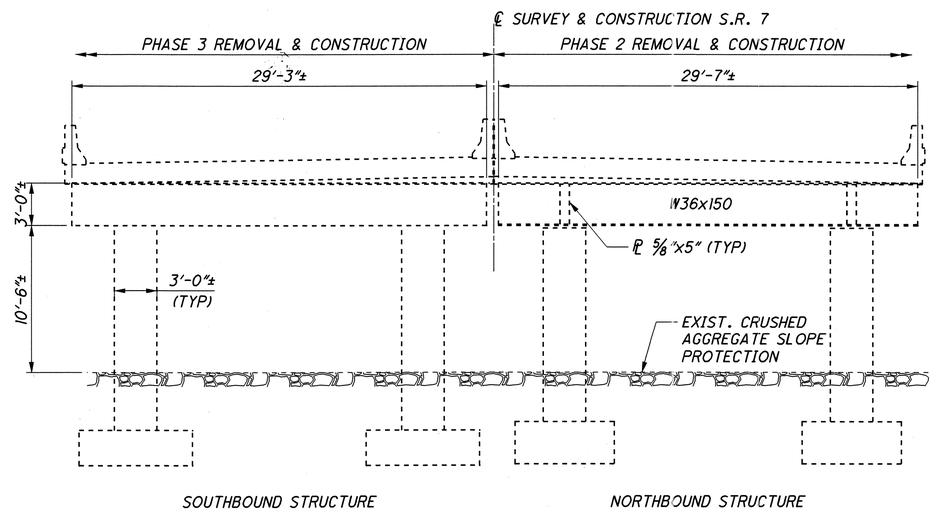
14 / 27

46
59

007_0856cPI007.dgn



PIER 19
(LOOKING NORTH)



PIER 20
(LOOKING NORTH)

PIER REPAIR QUANTITY TABLE*			
	ITEM 519 - PATCHING CONCRETE STRUCTURE, AS PER PLAN (SF)	ITEM 512 - SEALING OF CONCRETE SURFACES (EPOXY-URETHANE) S.Y.	ITEM 512 - CONCRETE REPAIR BY EPOXY INJECTION (FT)
PIER 1	2.00	78	-
PIER 2	1.00	121	-
PIER 3	1.00	128	-
PIER 4	31.00	129	-
PIER 5	36.50	129	-
PIER 6	-	154	-
PIER 7	6.50	132	-
PIER 8	3.00	69	1.50
PIER 9	11.00	69	-
PIER 10	10.00	47	-
PIER 11	50.00	47	-
PIER 12	2.00	73	-
PIER 13	4.00	70	-
PIER 14	24.00	102	-
PIER 15	3.00	98	-
PIER 16	-	136	-
PIER 17	81.00	42	-
PIER 18	1.00	110	-
PIER 19	1.00	127	-
PIER 20	-	75	-
MEASURED TOTAL	268	1936	1.5
SUB-TOTAL **	335	1936	2

* QUANTITIES HAVE BEEN CARRIED TO THE ESTIMATED QUANTITY SHEET 5/27

** PATCHING AND REPAIR BY EPOXY INJECTION MEASURED SUB-TOTALS INCREASED BY 25%.

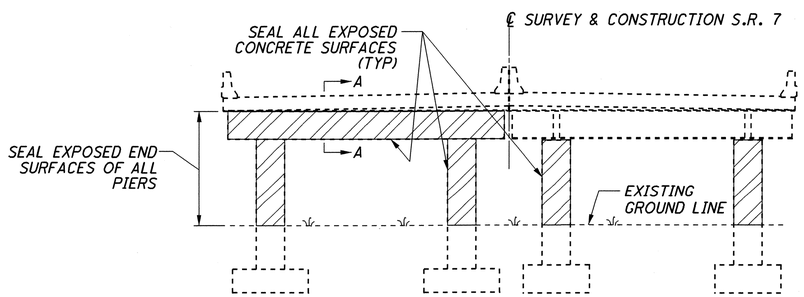
NOTES:

1. PIER REPAIR AREAS FOR PIERS 1 THRU 18 ARE SHOWN ON SHEETS 8/27 THRU 14/27.

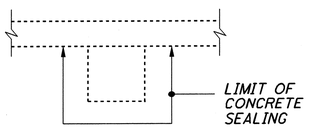
LEGEND

ITEM 512 - CONCRETE REPAIR BY EPOXY INJECTION

ITEM 519 - PATCHING CONCRETE STRUCTURES, AS PER PLAN



PIERS
LIMITS OF SEALING CONCRETE SURFACES (EPOXY-URETHANE)



SECTION A-A

DESIGN AGENCY
OSBORN ENGINEERING
AKRON, OHIO

DESIGNED	DRAWN	REVIEWED	DATE
SMK	SMK	SAV	12-2-10
CHECKED	REVISED	STRUCTURE FILE NUMBER	
BCK		4100395	

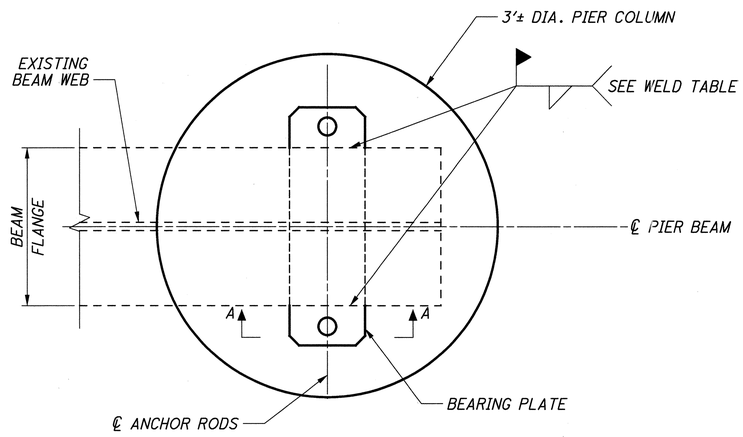
PIER REPAIR DETAILS - PIERS 19 & 20
BRIDGE NO. JEF-7-0856
OVER NORFOLK SOUTHERN RAILROAD

JEF-7-8.56
PID No. 24979

15 / 27

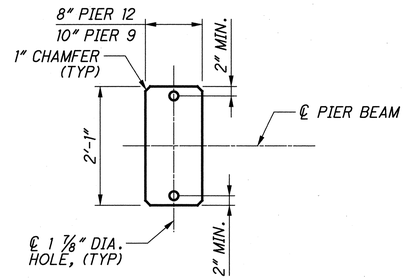
47
59

007_0856cPI008.dgn

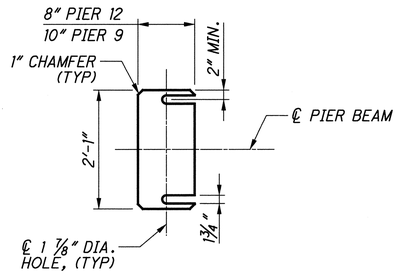


PLAN

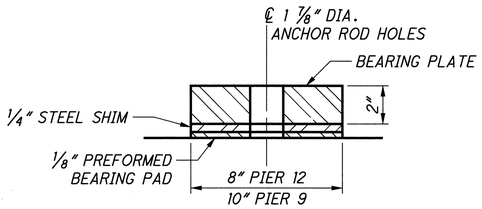
EXISTING WELD SIZE	
LOCATION	WELD
PIER 9	3/8"
PIER 12	1/2"



BEARING PLATE DETAILS

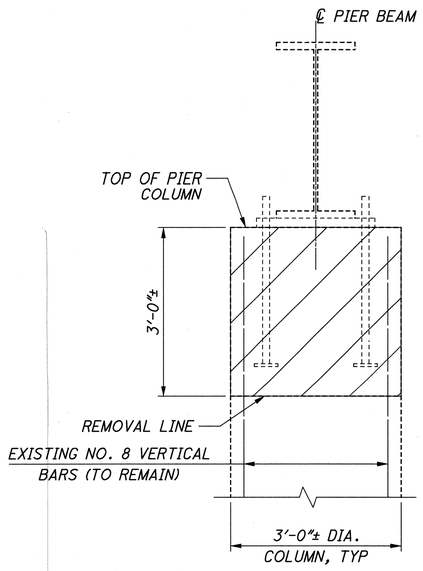


STEEL SHIM PLATES AND PREFORMED PADS

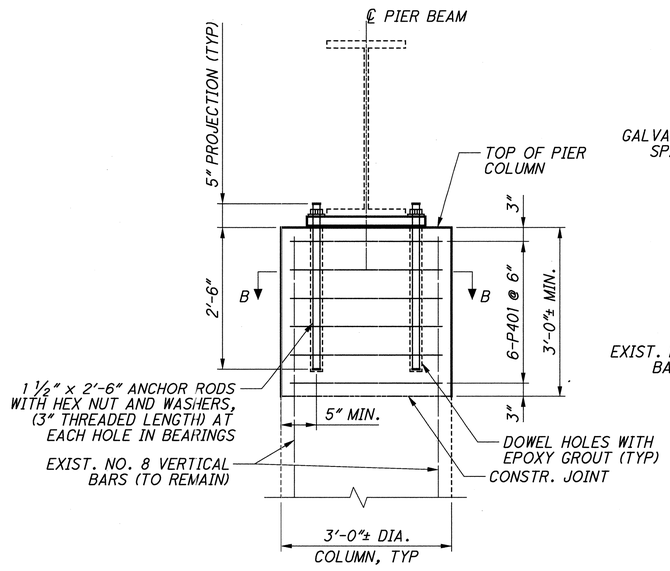


SECTION A-A

BEARING DETAILS

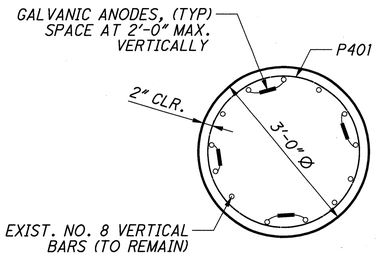


REMOVAL



CONSTRUCTION

PIER COLUMN REPAIR DETAILS
(PIERS 9 & 12)



SECTION B-B

BEARING REPLACEMENT AND COLUMN REPAIR PROCEDURES:

1. PRIOR TO JACKING AND REMOVAL OPERATIONS, FIELD VERIFY AND RECORD BOTTOM OF BEAM ELEVATIONS AT BEARING LOCATION TO BE REFURBISHED.

2. PROVIDE TEMPORARY SUPPORT OF COLUMNS AT LOCATIONS WHERE COLUMN REPAIR IS INDICATED.

3. REMOVE EXISTING BEARING AND SHIM PLATES AND TOP OF COLUMN AS PER PLAN.

4. REPLACE EXISTING BEARING PLATES.

5. GRIND THE WELDED PORTION OF THE FLANGE DOWN TO EXISTING STEEL, SURFACE SHALL BE SMOOTH.

6. ASSUMING FASCIA BEAM IS JACKED THE MAXIMUM DISTANCE OF 1/2", RECONSTRUCT TOP OF COLUMN 3" BELOW JACKED ELEVATION OF BOTTOM FLANGE.

7. UPON COMPLETION OF TOP OF COLUMN REPAIRS, SLIDE PROPOSED BEARING INTO PLACE. USE BEARING AS TEMPLATE TO LOCATE DOWEL HOLES. REMOVE BEARING AND DRILL DOWEL HOLES.

8. PREPARE DOWEL HOLES FOR EPOXY GROUT. SLIDE PROPOSED BEARING INTO PLACE, SUPPORT AND WELD TO BOTTOM FLANGE. INSERT ANCHOR RODS AND EPOXY GROUT.

9. RAISE SUPERSTRUCTURE 1/2" MAXIMUM AT EXTERIOR COLUMNS AND 1/8" MAXIMUM AT MIDDLE COLUMNS. SLIDE SHIM AND 1/8" PREFORMED PAD UNDER BEARING. LOWER SUPERSTRUCTURE.

NOTES:

1. ℄ OF PIER BEARING MAY NOT ALIGN WITH ℄ OF PIER COLUMN. CONTRACTOR SHALL FIELD MEASURE AND LOCATE THE BEARING PLATE PRIOR TO INSTALLATION TO ENSURE THAT THE ANCHOR ROD ASSEMBLIES WILL CLEAR THE EXISTING BOTTOM FLANGE.

2. BEARING REPLACEMENT SHALL APPLY ONLY TO THE EAST FASCIA PIER COLUMN OF PIER 9 AND 12.

3. STRUCTURAL STEEL: A709 GRADE 50 (STEEL PLATES AND SHIMS)

LEGEND

ITEM 202 - PORTIONS OF STRUCTURE REMOVED, AS PER PLAN

DESIGN AGENCY
OSBORN ENGINEERING
AKRON, OHIO

REVIEWED SAV | DATE 12-2-10 | STRUCTURE FILE NUMBER 4100395

DRAWN SMK | REVISED

DESIGNED SMK | CHECKED BCK

BEARING DETAILS & PIER COLUMN REPAIR

BRIDGE NO. JEF-7-0856
OVER NORFOLK SOUTHERN RAILROAD

JEF-7-8.56
PID No. 24979

16 / 27

48
59

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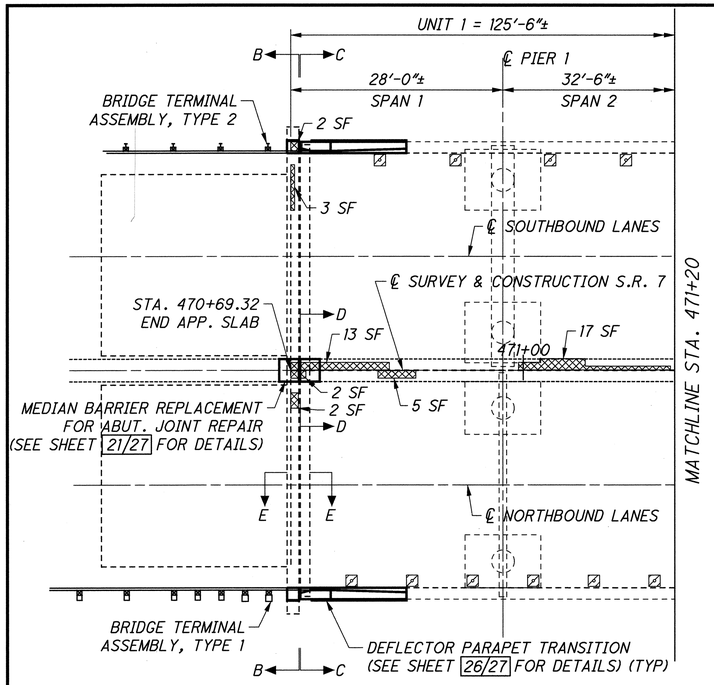


UNDERSIDE DECK REPAIR PLAN

LEGEND

* HAUNCH REPAIR

ITEM 202 - PORTIONS OF STRUCTURE REMOVED, AS PER PLAN (SEE NOTE 1)

ITEM 202 - REMOVAL, MISC.: DELAMINATED CONCRETE AREAS ON BRIDGE SLAB (SEE NOTE 2)

ITEM 519- PATCHING CONCRETE STRUCTURES, AS PER PLAN (SEE NOTE 3)

ITEM 843 - PATCHING CONCRETE STRUCTURES WITH TROWELABLE MORTAR

NOTES:

1. HATCHED AREAS DENOTE AREA OF FULL DEPTH DECK REMOVAL.

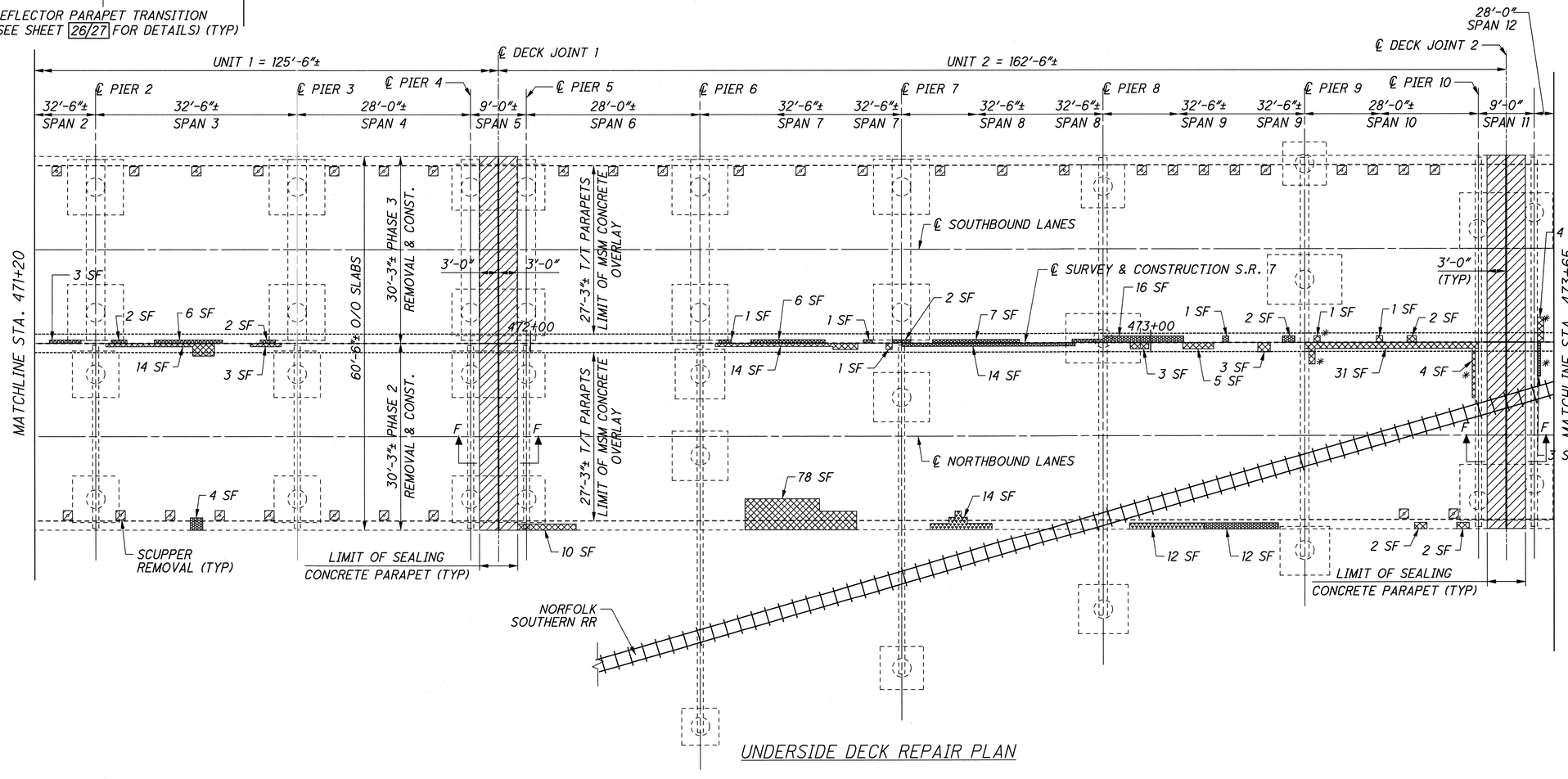
2. HATCHED AREAS DENOTE REPAIR AREAS OF THE BOTTOM OF DECK SLAB OVER THE RAILROAD AND DRIVE.

3. HATCHED AREAS OF ITEM 519 - PATCHING CONCRETE STRUCTURES ARE FOR THE BOTTOM OF THE DECK SLAB. FINAL DETERMINATION OF AREAS TO BE PATCHED WILL BE MADE BY THE ENGINEER AT THE TIME OF CONSTRUCTION.

4. FOR SECTIONS B-B AND C-C SEE SHEET 22/27.

5. FOR SECTIONS D-D AND E-E SEE SHEET 21/27.

6. FOR SECTION F-F, SEE SHEET 24/27.



UNDERSIDE DECK REPAIR PLAN

DESIGN AGENCY
OSBORN ENGINEERING
AKRON, OHIO

DESIGNED	DRAWN	REVIEWED	DATE
SMK	SMK	SAV	12-2-10
CHECKED	REVISED	STRUCTURE FILE NUMBER	
BCK		4100395	

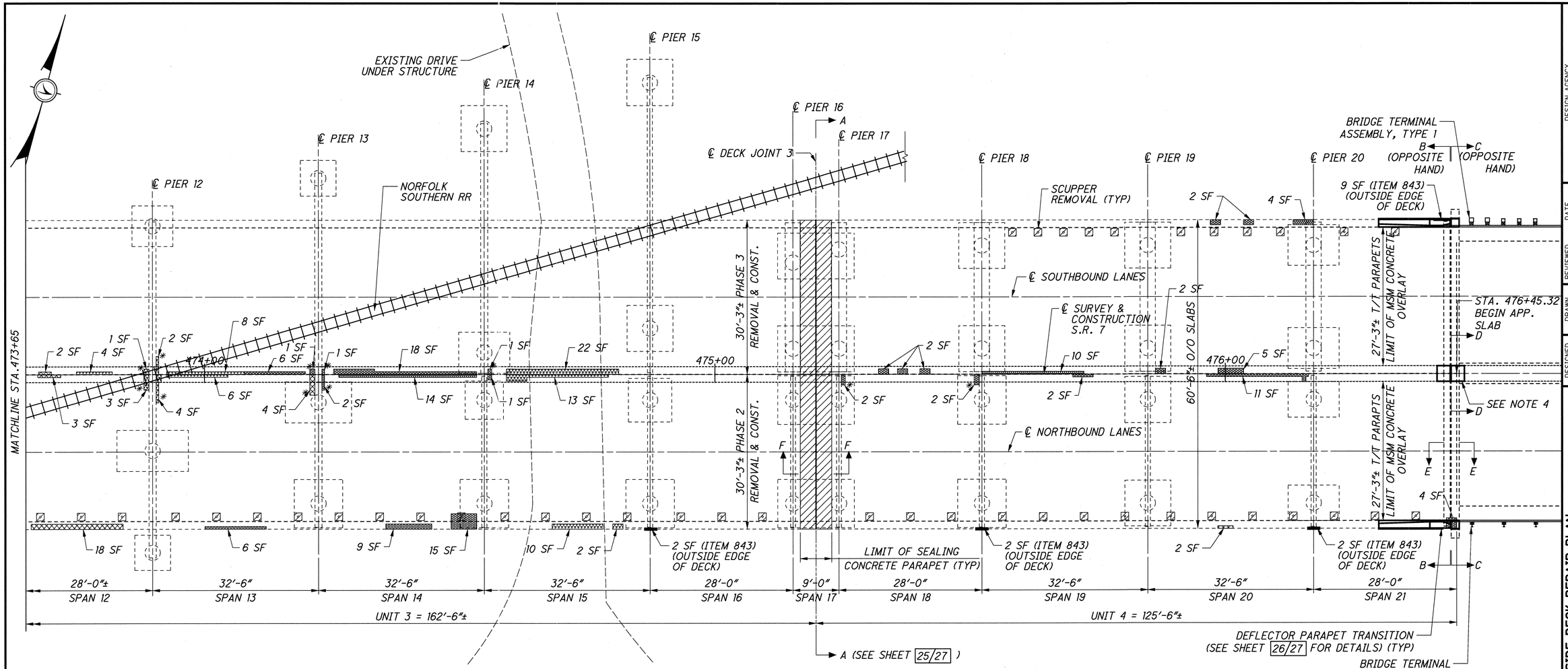
UNDERSIDE DECK REPAIR PLAN
BRIDGE NO. JEF-7-0856
OVER NORFOLK SOUTHERN RAILROAD

JEF-7-8.56
PID No. 24979

17 / 27

49
59

007_0856cDP001.dgn



UNDERSIDE DECK REPAIR PLAN

LEGEND

* HAUNCH REPAIR

ITEM 202 - PORTIONS OF STRUCTURE REMOVED, AS PER PLAN (SEE NOTE 1)

ITEM 202 - REMOVAL, MISC.: DELAMINATED CONCRETE AREAS ON BRIDGE SLAB (SEE NOTE 2)

ITEM 519- PATCHING CONCRETE STRUCTURES, AS PER PLAN (SEE NOTE 3)

ITEM 843 - PATCHING CONCRETE STRUCTURES WITH TROWELABLE MORTAR

NOTES:

1. HATCHED AREAS DENOTE AREA OF FULL DEPTH DECK REMOVAL.
2. HATCHED AREAS DENOTE REPAIR AREAS OF THE BOTTOM OF DECK SLAB OVER THE RAILROAD AND DRIVE.
3. HATCHED AREAS OF ITEM 519 - PATCHING CONCRETE STRUCTURES ARE FOR THE BOTTOM OF THE DECK SLAB. FINAL DETERMINATION OF AREAS TO BE PATCHED WILL BE MADE BY THE ENGINEER AT THE TIME OF CONSTRUCTION.
4. MEDIAN BARRIER REPLACEMENT FOR ABUTMENT JOINT REPAIR. SEE SHEET 21/27 FOR DETAILS.
5. FOR SECTIONS B-B AND C-C SEE SHEET 22/27.
6. FOR SECTIONS D-D AND E-E SEE SHEET 21/27.
7. FOR SECTION F-F, SEE SHEET 24/27.

DECK REPAIR QUANTITY TABLE Δ

		ITEM 202: REMOVAL, MISC.: DELAMINATED CONCRETE AREAS ON BRIDGE SLAB (SQ. FT.)	ITEM 519: PATCHING CONCRETE STRUCTURES, AS PER PLAN (SQ. FT.)	ITEM 843: PATCHING CONCRETE STRUCTURES WITH TROWELABLE MORTAR (SQ. FT.)
UNIT 1	N.B. DECK	0	26	4
	S.B. DECK	0	35	13
UNIT 2	N.B. DECK	26	153	26
	S.B. DECK	0	4	36
UNIT 3	N.B. DECK	38	25	52
	S.B. DECK	37	6	27
UNIT 4	N.B. DECK	0	2	25
	S.B. DECK	0	0	40
MEASURED TOTAL		101	251	223
ESTIMATED TOTAL		-	314	279

Δ QUANTITIES HAVE BEEN CARRIED TO THE ESTIMATED QUANTITY SHEET

DESIGN AGENCY
OSBORN ENGINEERING
AKRON, OHIO

DATE 12-2-10
REVIEWED SAV
STRUCTURE FILE NUMBER 4100395
DRAWN SMK
REVISED
DESIGNED SMK
CHECKED BCK

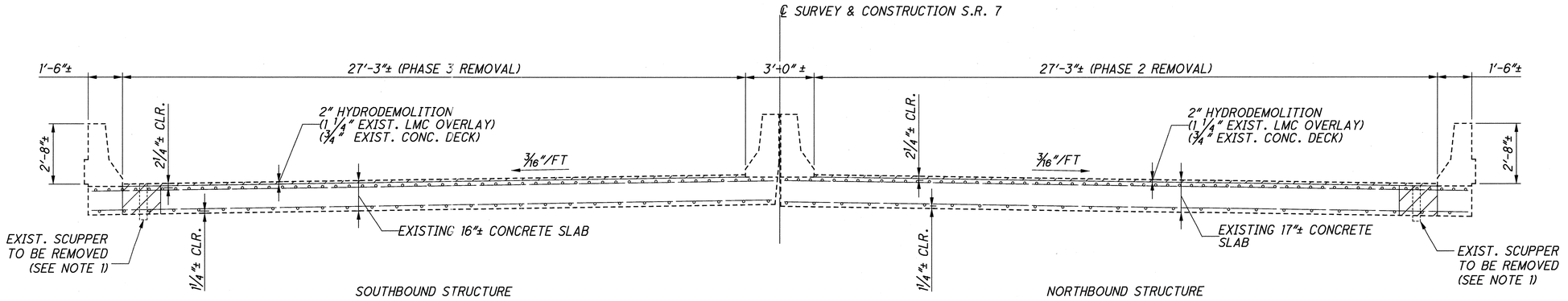
UNDERSIDE DECK REPAIR PLAN
BRIDGE NO. JEF-7-0856
OVER NORFOLK SOUTHERN RAILROAD

JEF-7-8.56
PID No. 24979

18/27

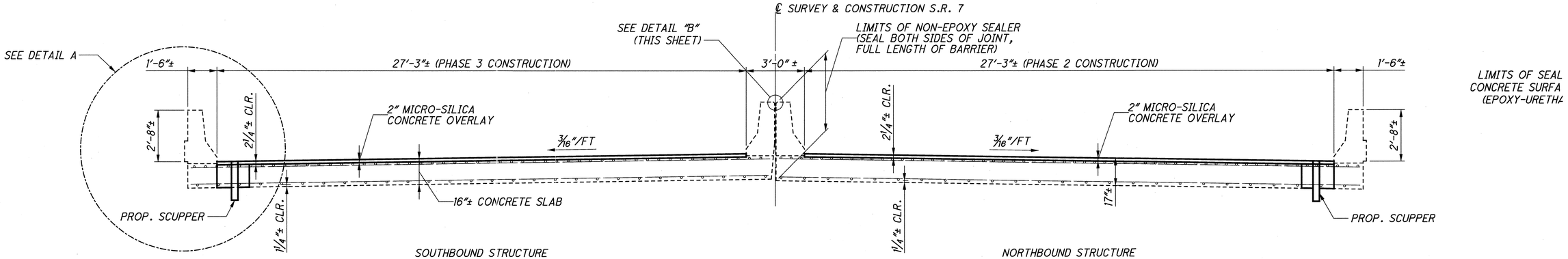
50/59

007_0856cDP002



EXISTING TRANSVERSE SECTION

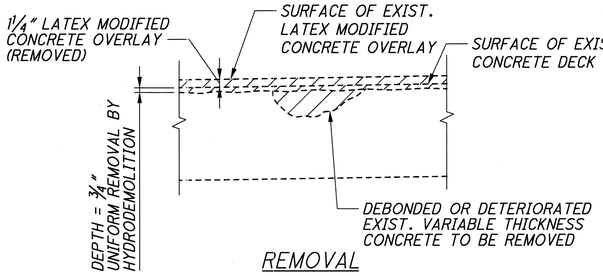
(LOOKING UPSTATION)



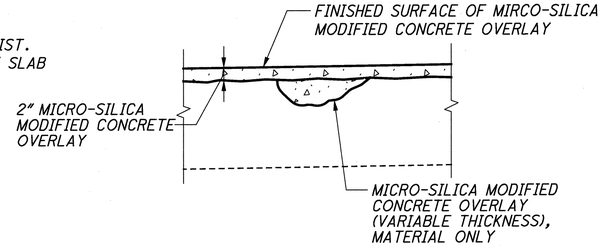
LIMITS OF SEAL
CONCRETE SURFA
(EPOXY-URETHA

PROPOSED TRANSVERSE SECTION

(LOOKING UPSTATION)

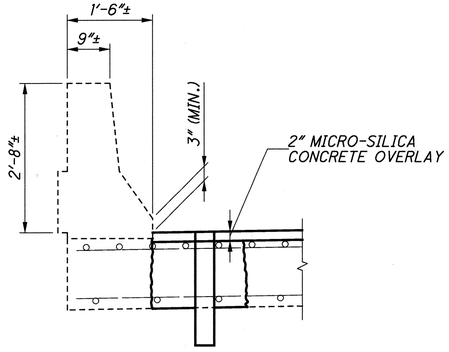


REMOVAL

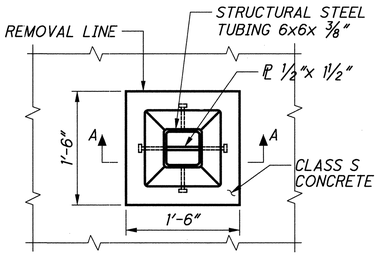


PROPOSED

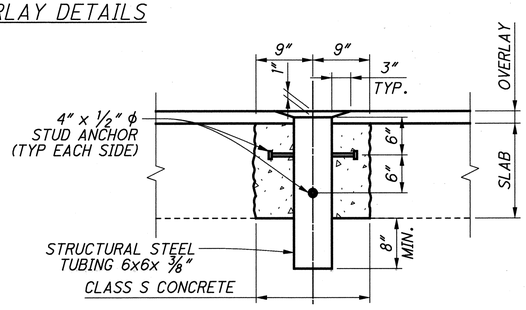
OVERLAY DETAILS



DETAIL A

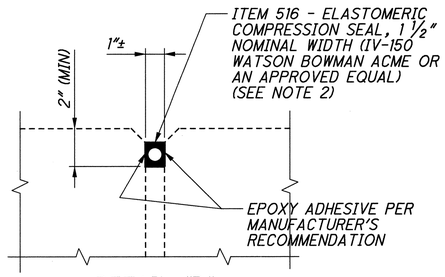


PLAN



SECTION A-A

SCUPPER DETAILS



DETAIL "B"

NOTES:

1. REMOVE THE EXISTING SCUPPERS BY REMOVING AN APPROXIMATE 1.5'x1.5' AREA AROUND THE SCUPPER. DO NOT CUT OR DAMAGE EXISTING DECK REINFORCING. SEE ITEM 518 - STRUCTURE DRAINAGE MISC.: DRAINAGE REPLACEMENT NOTE ON SHEET 4/27.

2. INSTALL THE MEDIAN PARAPET COMPRESSION SEAL UPON COMPLETION OF ALL REPAIRS. SEAL IS TO BE INSTALLED WITHIN EACH LONGITUDINAL BRIDGE UNIT. A ½" OPENING SHALL BE LEFT IN THE SEAL AT EACH UNIT TRANSITION (TRANSVERSE EXPANSION JOINTS). INSTALLATION OF THE COMPRESSION SEAL SHALL INCLUDE ALL LABOR AND MATERIAL NECESSARY TO COMPLETE THE ABOVE WORK. PAYMENT WILL BE INCLUDED WITH THE CONTRACT BID PRICE FOR ITEM 516 - ELASTOMERIC COMPRESSION SEAL, AS PER PLAN.

DESIGN AGENCY
OSBORN ENGINEERING
AKRON, OHIO

DESIGNED	DRAWN	REVIEWED	DATE
SMK	SMK	SAV	12-2-10
CHECKED	REVISED	STRUCTURE FILE NUMBER	
BCK		4100395	

TYPICAL TRANSVERSE SECTION

BRIDGE NO. JEF-7-0856
OVER NORFOLK SOUTHERN RAILROAD

JEF-7-8.56
PID No. 24979

19 / 27

51
59

007_0856cTS001.dgn

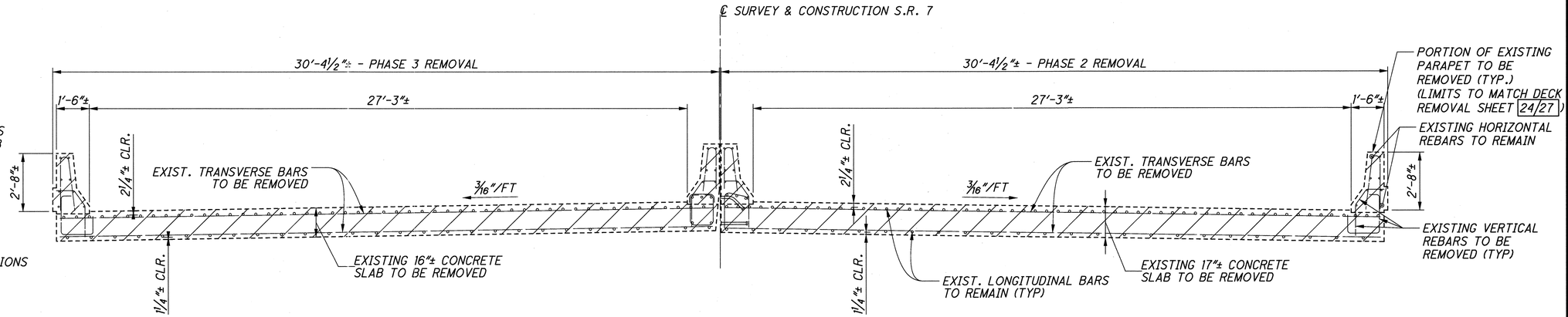
NOTES:

1. FULL DEPTH DECK REPAIRS ARE TO BE AT ALL DECK JOINT LOCATIONS.

2. SEE SHEET 24/27 & 25/27 FOR EXPANSION JOINT DETAILS.

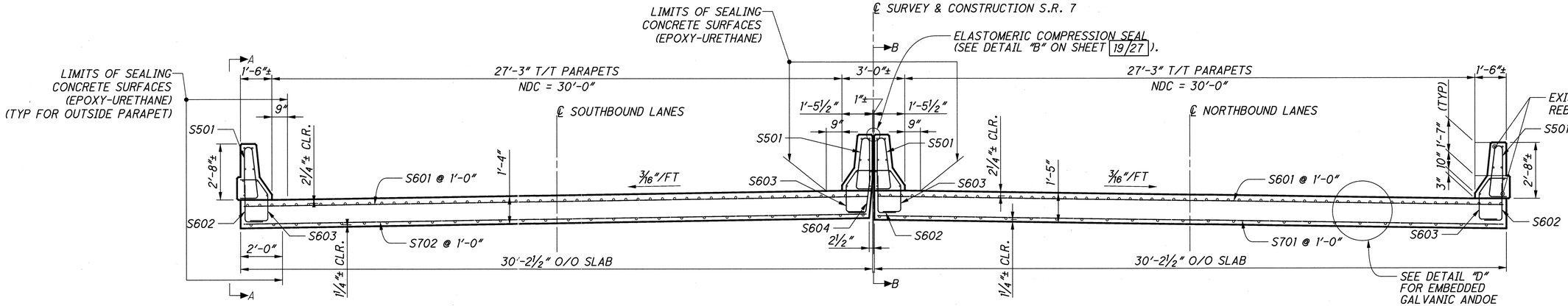
3. IF EXIST. LONGITUDINAL BARS ARE DAMAGED DURING DECK SLAB REMOVAL, CONTRACTOR SHALL PROVIDE NEW LONGITUDINAL REBAR AS DIRECTED BY THE ENGINEER. NEW REINFORCING STEEL SHALL BE DOWELED A MINIMUM OF 18" INTO THE EXISTING CONCRETE PARAPET.

4. FOR MEDIAN PARAPET DIMENSIONS SEE SHEET 21/27.



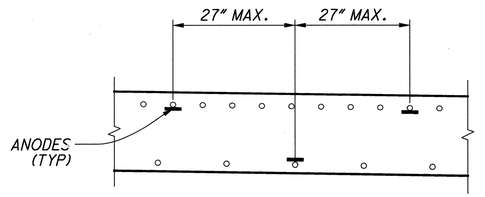
EXISTING TRANSVERSE SECTION

(LOOKING UPSTATION)



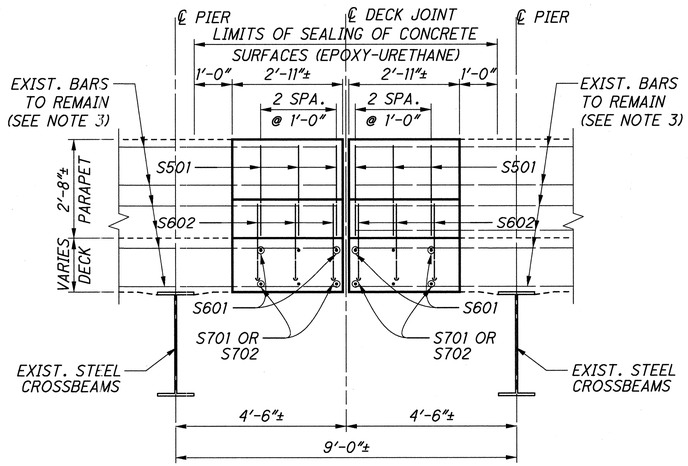
PROPOSED TRANSVERSE SECTION

(LOOKING UPSTATION)



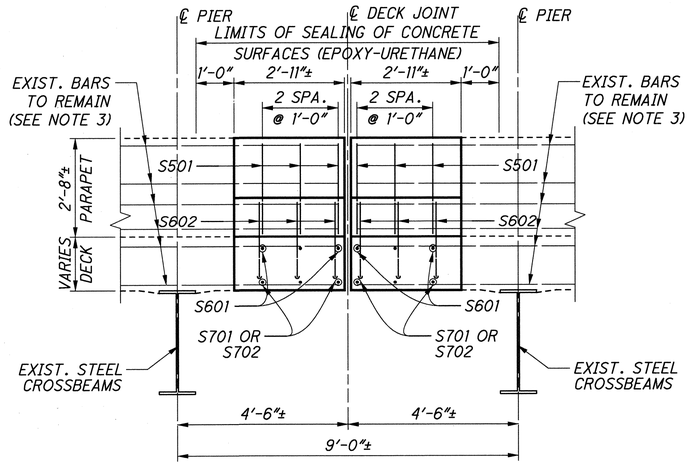
DETAIL "D"

ATTACH EGA'S TO EX. NO. 9 BARS ALTERNATE BETWEEN TOP MAT AND BOTTOM MAT



SECTION A-A

(OUTSIDE PARAPETS)



SECTION B-B

(MEDIAN PARAPETS)

DESIGN AGENCY
OSBORN ENGINEERING
AKRON, OHIO

DATE 12-2-10
REVIEWED SAV
STRUCTURE FILE NUMBER 4100395
DRAWN SMK
REVISED
DESIGNED SMK
CHECKED BCK

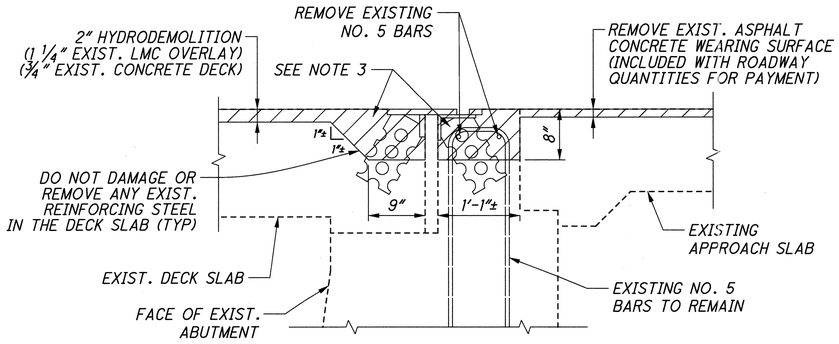
TRANSVERSE SECTION AT DECK JOINT REPAIRS
BRIDGE NO. JEF-7-0856
OVER NORFOLK SOUTHERN RAILROAD

JEF-7-8.56
PID No. 24979

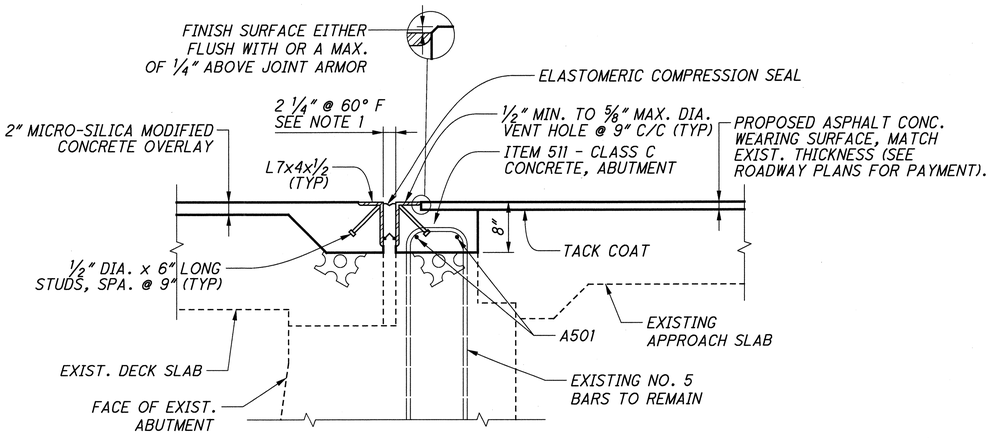
20 / 27

52 / 59

007_0856cTS002.dgn

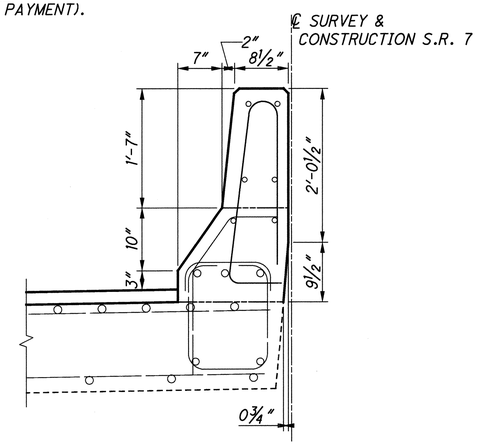


REMOVAL

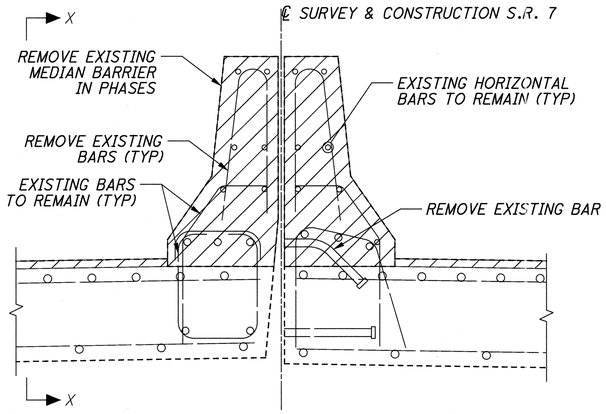


PROPOSED

SECTION E-E

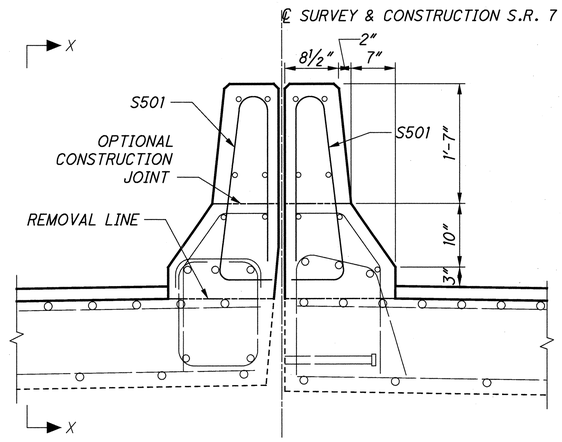


PROPOSED SOUTHBOUND
MEDIAN PARAPET



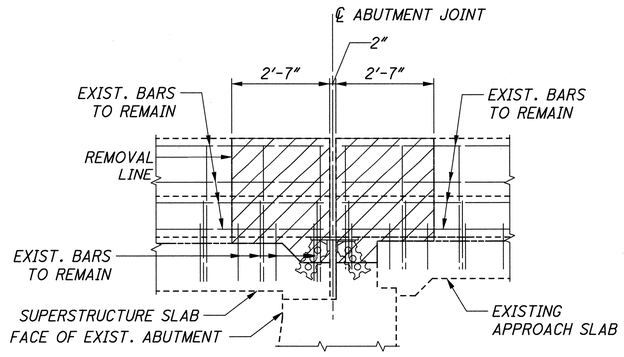
REMOVAL

ALL LONGITUDINAL BARS TO REMAIN

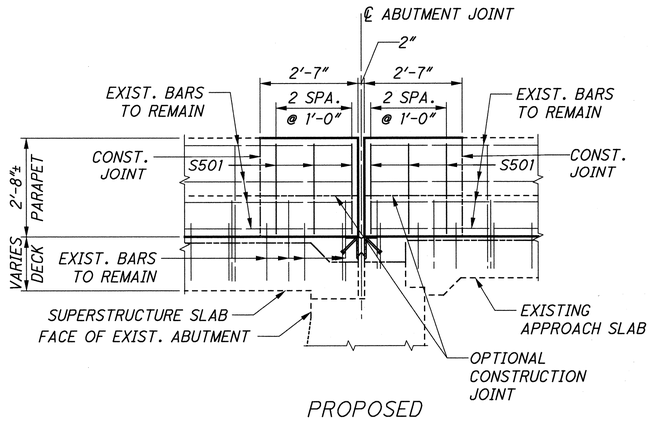


PROPOSED

SECTION D-D

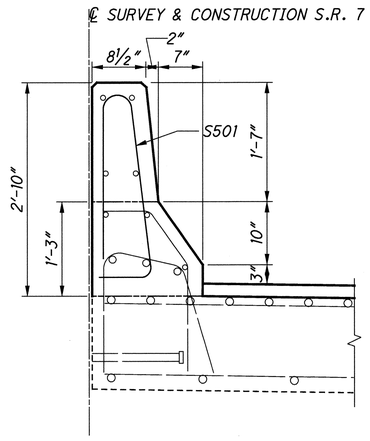


REMOVAL



PROPOSED

VIEW X-X



PROPOSED SOUTHBOUND
MEDIAN PARAPET

LEGEND

DENOTES AREA OF REMOVAL

NOTES:

1. FOR NOTES AND DETAILS NOT SHOWN SEE STANDARD DRAWING EXJ-3-82.

2. FOR LOCATION OF SECTIONS D-D AND E-E SEE SHEETS 17/27 & 18/27 .

3. THE 8" DEEP REMOVAL OF PORTIONS OF THE BACK WALL AND DECK SLAB SHALL EXTEND BETWEEN THE INTERIOR FACES OF THE EXISTING WINGWALLS (SEE SECTION H-H SHEET 26/27).

DESIGN AGENCY
OSBORN ENGINEERING
AKRON, OHIO

REVIEWED	DATE
SAV	12-2-10
DRAWN	STRUCTURE FILE NUMBER
SMK	4100395
DESIGNED	REVISED
SMK	
CHECKED	
BCK	

ABUTMENT EXPANSION JOINT DETAILS

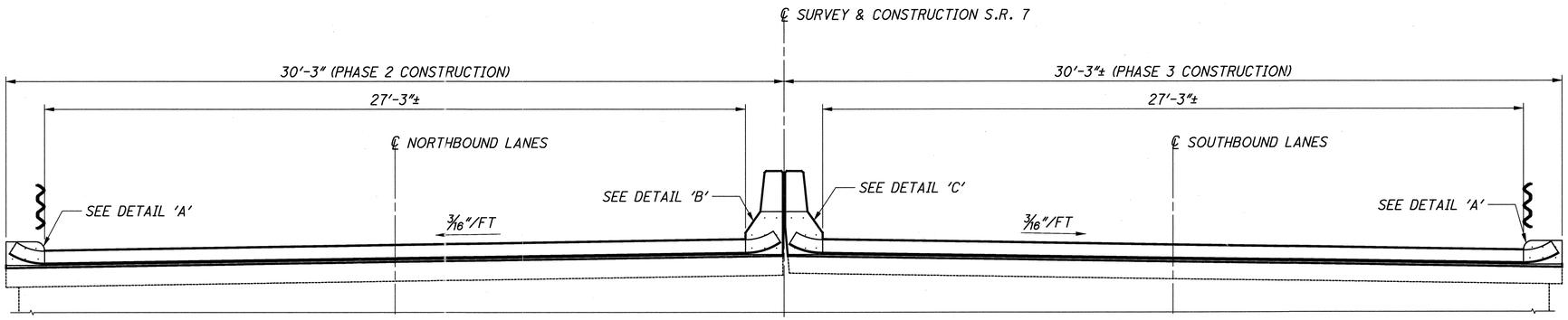
BRIDGE NO. JEF-7-0856
OVER NORFOLK SOUTHERN RAILROAD

JEF-7-8.56
PID No. 24979

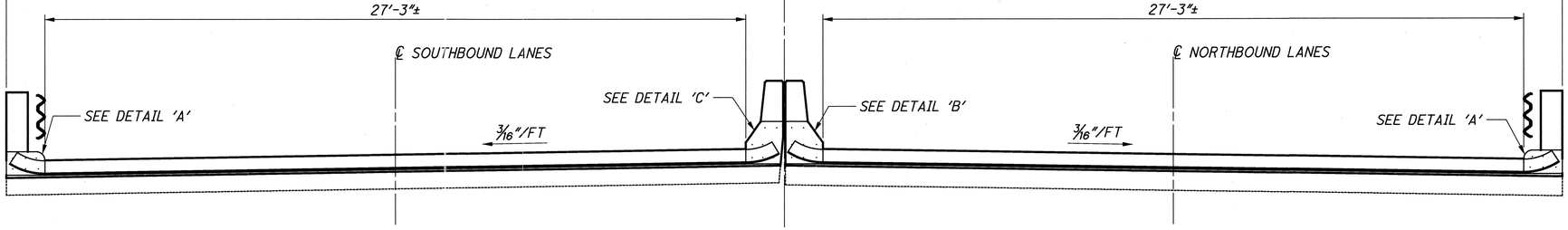
21/27

53
59

007_0856cEX002.dgn



SECTION B-B



SECTION C-C

NOTES:

1. FOR DETAILS NOT SHOWN SEE SHEET 21/27 AND STD. DRAWING EXJ-3-82.

2. FOR LOCATION OF SECTIONS B-B AND C-C SEE SHEET 17/27 & 18/27.

3. FOR DETAILS "A", "B" AND "C" SEE SHEET 23/27.

DESIGN AGENCY
OSBORN ENGINEERING
AKRON, OHIO

DESIGNED SMK | DRAWN SMK | REVIEWED SAV | DATE 12-2-10
CHECKED BCK | REVISED | STRUCTURE FILE NUMBER 4100395

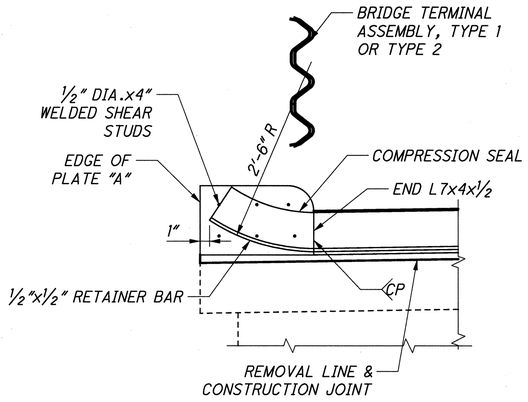
ABUTMENT EXPANSION JOINT DETAILS
BRIDGE NO. JEF-7-0856
OVER NORFOLK SOUTHERN RAILROAD

JEF-7-8.56
PID No. 24979

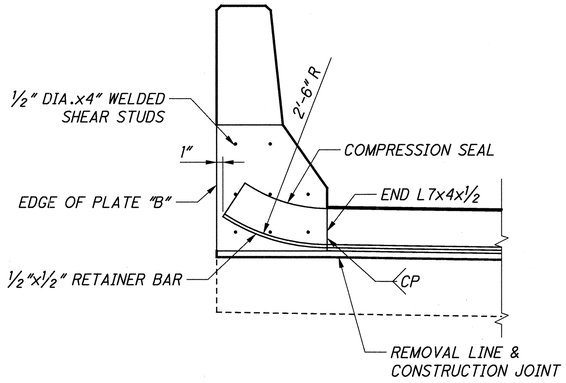
22/27

54
59

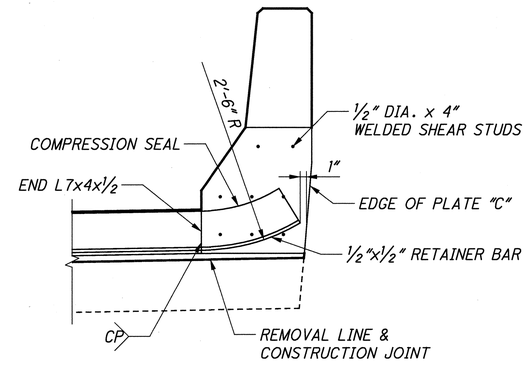
007_0856cEX004.dgn



DETAIL 'A'



DETAIL 'B'



DETAIL 'C'

PLATE "A"

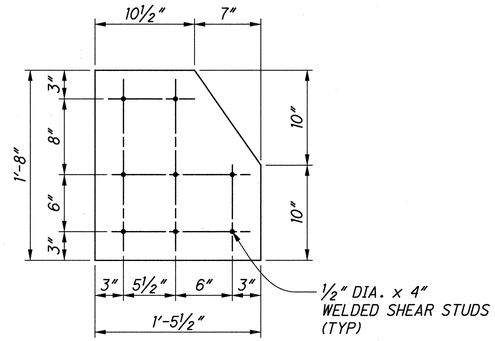


PLATE "B"

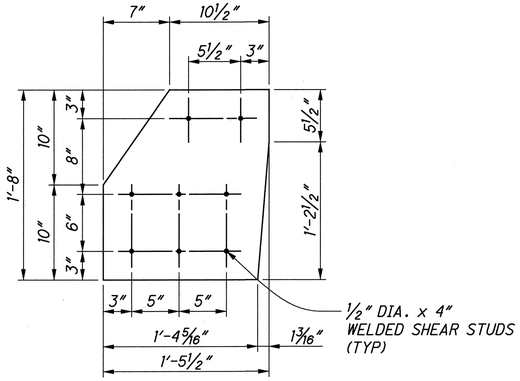


PLATE "C"

1/2" STEEL PLATE DETAIL

NOTES:

1. FOR DETAILS NOT SHOWN SEE SHEET 21/27 AND STD. DRAWING EXJ-3-82.

2. FOR LOCATION OF DETAILS "A", "B" AND "C" SEE SHEET 22/27.

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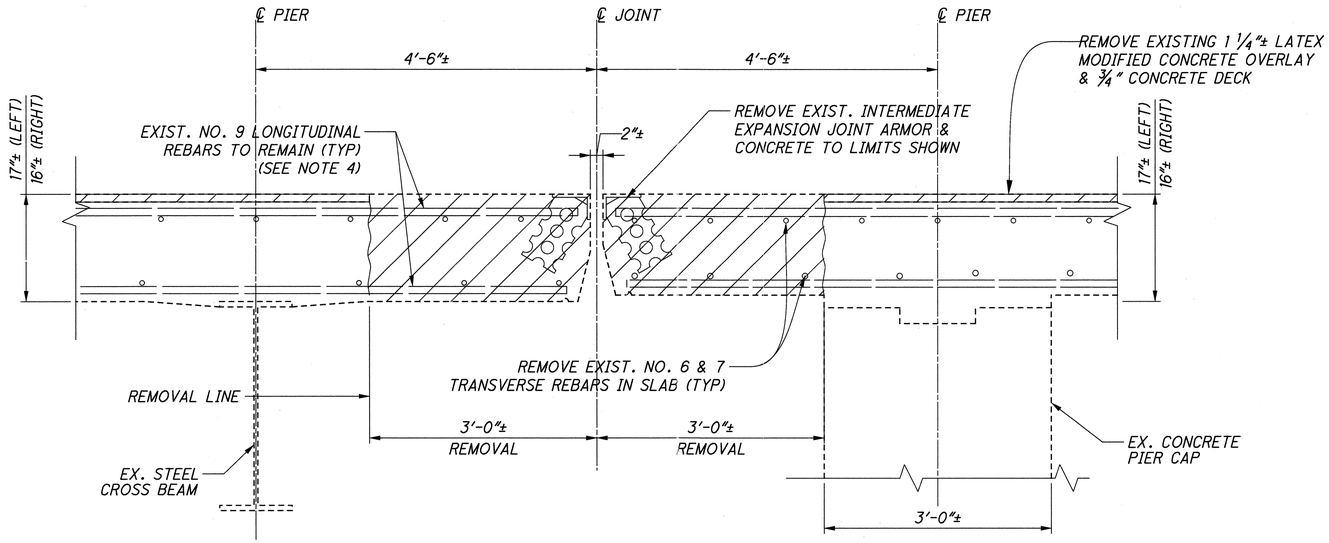
DESIGN AGENCY
OSBORN ENGINEERING
AKRON, OHIO

DESIGNED	DRAWN	REVIEWED	DATE
SMK	SMK	SAV	12-2-10
CHECKED	REVISED	STRUCTURE FILE NUMBER	
BCK		4100395	

ABUTMENT EXPANSION JOINT DETAILS

BRIDGE NO. JEF-7-0856
OVER NORFOLK SOUTHERN RAILROAD

JEF-7-8.56
PID No. 24979



EXISTING INTERMEDIATE DECK JOINT AND CONCRETE - REMOVAL

SECTION F-F

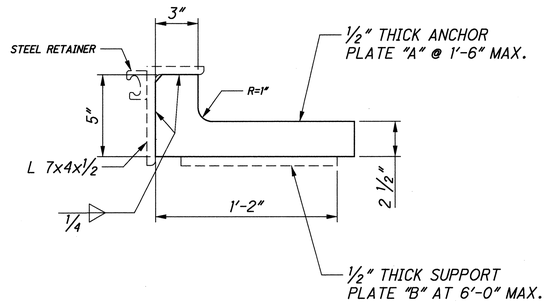


PLATE "A"

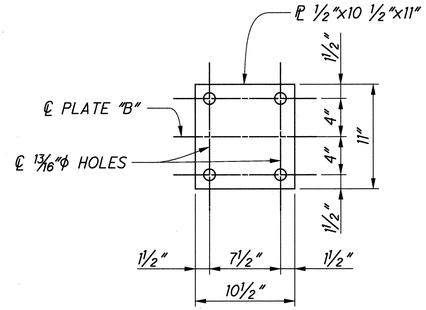
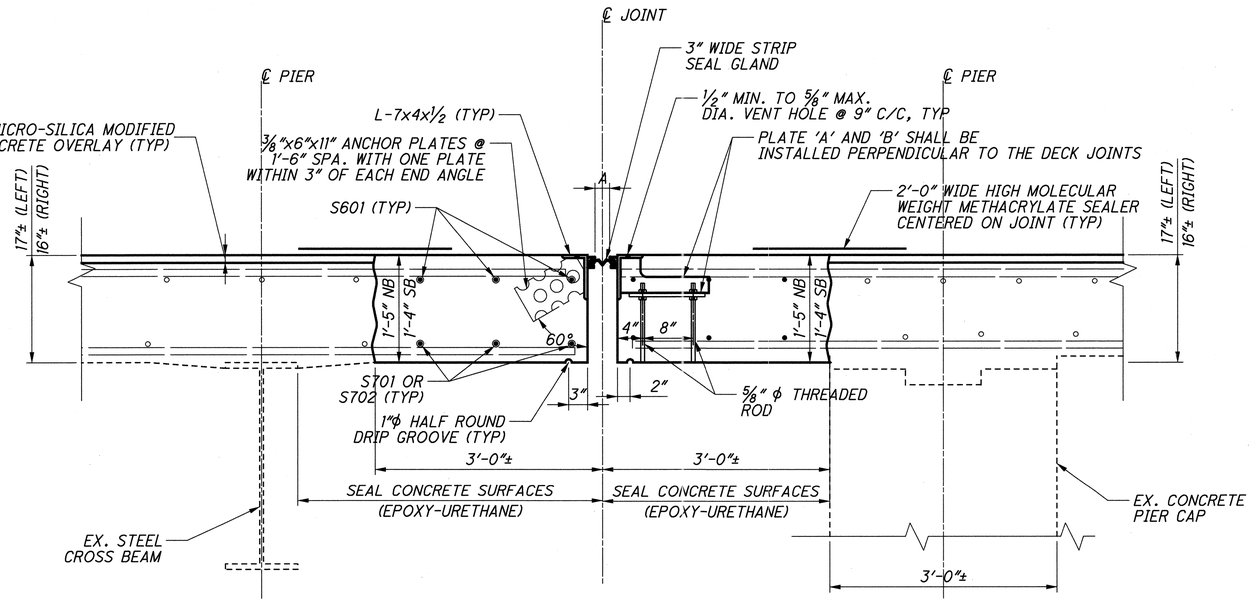


PLATE "B"



PROPOSED INTERMEDIATE DECK JOINT AND CONCRETE

SECTION F-F

DECK JOINT (STRIP SEAL SIZE = 3 INCHES)	
AMBIENT TEMPERATURE	DIMENSION 'A'
30°	2"
40°	1 13/16"
50°	1 11/16"
60°	1 ½"
70°	1 ⅜"*
80°	1 3/16"*
90°	1 1/16"*

* MINIMUM JOINT OPENING AT TIME OF SEAL GLAND INSTALLATION SHALL NOT BE LESS THAN 1 ½". IF NECESSARY, POSTPONE INSTALLATION OF GLAND UNTIL THE TEMPERATURE DROPS A SUFFICIENT AMOUNT TO ALLOW THE MINIMUM 1 ½" OPENING

NOTES:

1. THE STRIP SEAL GLAND SIZE SHALL BE 3 INCHES AT ALL DECK JOINTS.

2. PROPER ELEVATION OF THE SUPPORT/ARMOR SHALL BE ACHIEVED BY ADJUSTING THE ⅝" DIA. THREADED RODS.

3. FOR ADDITIONAL JOINT DETAILS SEE STD. DRAWING EXJ-5-93.

4. IF EXIST. LONGITUDINAL BARS ARE DAMAGED DURING DECK SLAB REMOVAL, CONTRACTOR SHALL PROVIDE NEW LONGITUDINAL REBAR AS DIRECTED BY THE ENGINEER. NEW REINFORCING STEEL SHALL BE DOWELED A MINIMUM OF 18" INTO THE EXISTING CONCRETE DECK SLAB.

DESIGN AGENCY
OSBORN ENGINEERING
AKRON, OHIO

REVIEWED SAV
DATE 12-2-10
STRUCTURE FILE NUMBER 4100395

DRAWN SMK
REVISED

DESIGNED SMK
CHECKED BCK

INTERMEDIATE EXPANSION JOINT DETAILS

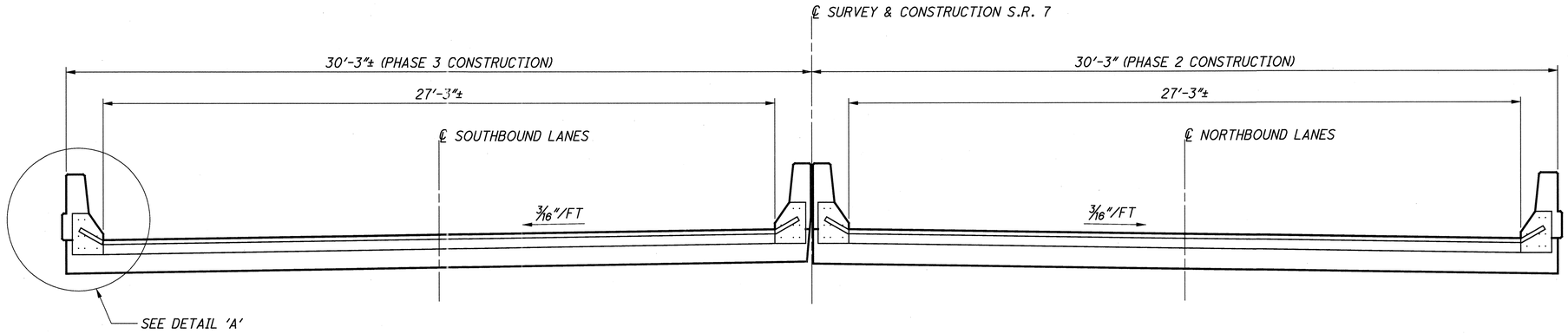
BRIDGE NO. JEF-7-0856
OVER NORFOLK SOUTHERN RAILROAD

JEF-7-8.56
PID No. 24979

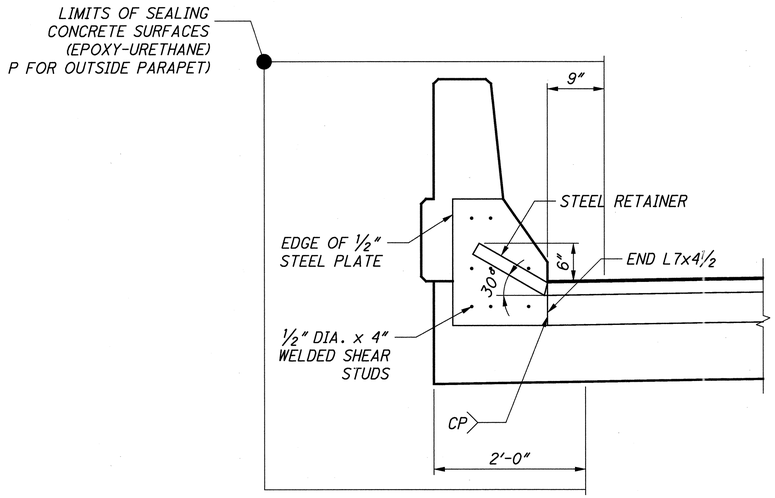
24 / 27

56
59

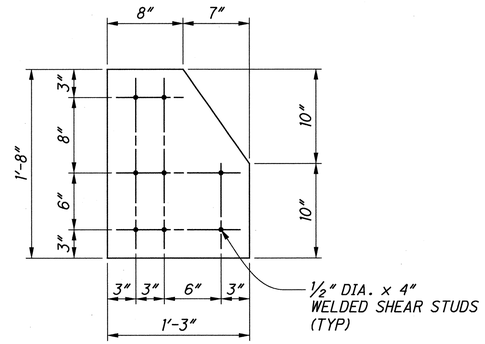
007_0856cTS003.dgn



SECTION A-A



DETAIL 'A'



1/2" STEEL PLATE DETAIL

NOTES:

1. FOR DETAILS NOT SHOWN SEE SHEET 24/27 AND STD. DRAWING EXJ-5-93.

2. FOR LOCATION OF SECTION A-A SEE SHEET 18/27

DESIGN AGENCY
OSBORN ENGINEERING
AKRON, OHIO

REVIEWED SAV | DATE 12-2-10 | STRUCTURE FILE NUMBER 4100395

DRAWN SMK | REVISED

DESIGNED SMK | CHECKED BCK

INTERMEDIATE EXPANSION JOINT DETAILS & OVERLAY DETAILS

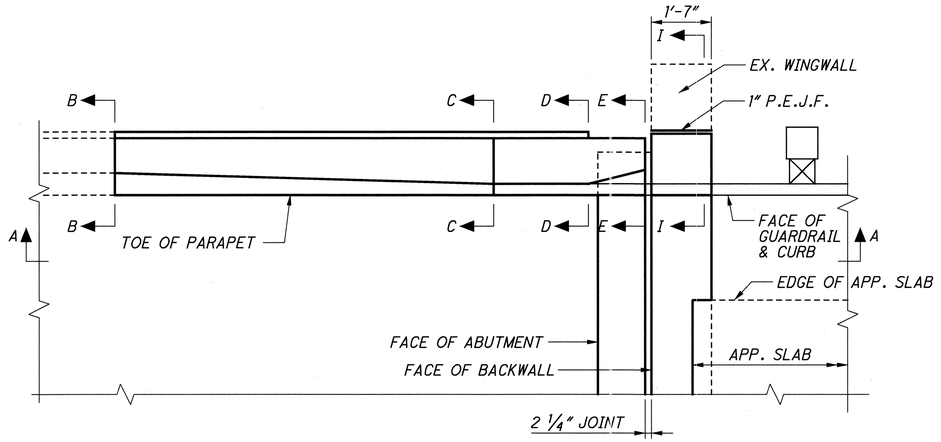
BRIDGE NO. JEF-7-0856
OVER NORFOLK SOUTHERN RAILROAD

JEF-7-8.56
PID No. 24979

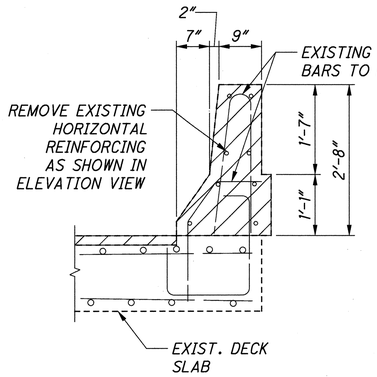
25/27

57/59

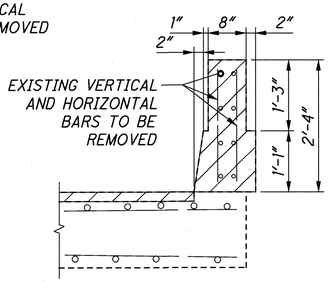
007_0856cEX001.dgn



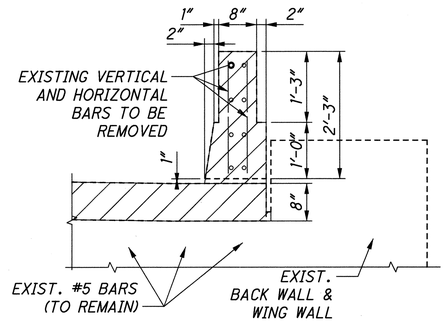
PLAN



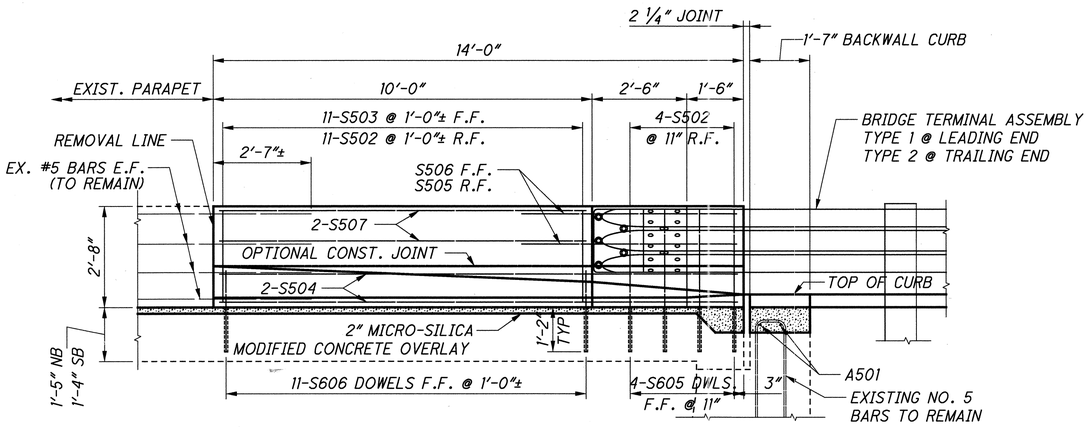
SECTION F-F



SECTION G-G

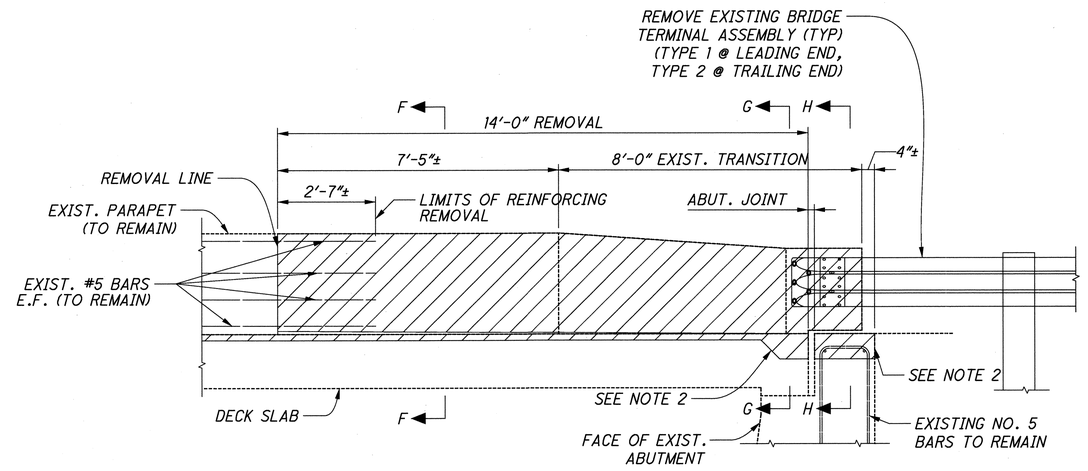


SECTION H-H



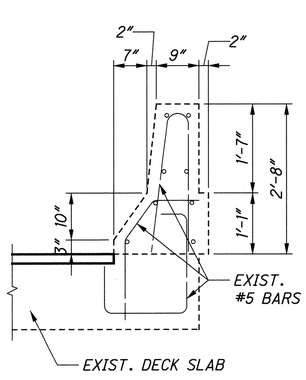
SECTION A-A

(BARRIER TRANSITION AT LEADING OF PARAPET IS DRAWN, TRAILING END IS OPPOSITE HAND)

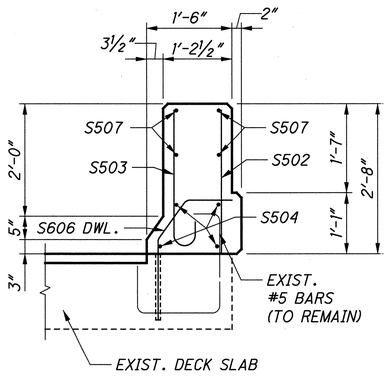


ELEVATION

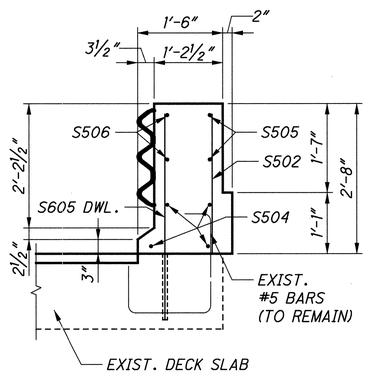
REMOVAL DETAILS



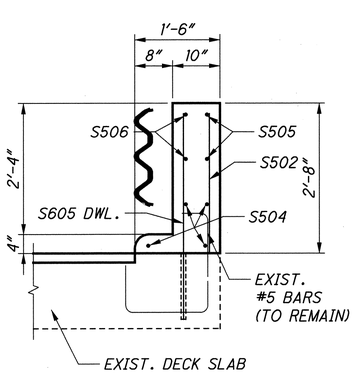
SECTION B-B



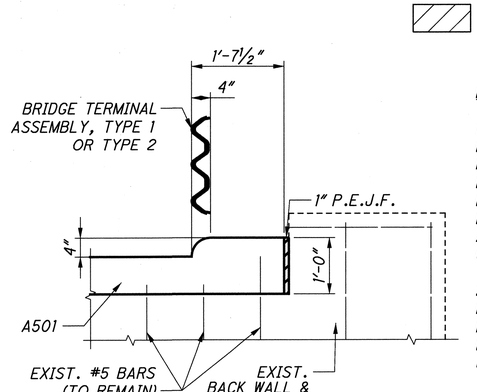
SECTION C-C



SECTION D-D



SECTION E-E



SECTION I-I

LEGEND

ITEM 202 - PORTIONS OF STRUCTURE REMOVED, AS PER PLAN

NOTES:

1. IF EXIST. LONGITUDINAL BARS ARE DAMAGED DURING DECK SLAB OR PARAPET REMOVAL, CONTRACTOR SHALL PROVIDE NEW LONGITUDINAL REBAR AS DIRECTED BY THE ENGINEER. NEW REINFORCING STEEL SHALL BE DOWELED A MINIMUM OF 18" INTO THE EXISTING CONCRETE BRIDGE DECK OR PARAPET.

2. FOR DETAILS AND NOTES ON THE REMOVAL AND REPLACEMENT OF PORTIONS OF THE DECK SLAB AND BACKWALL FOR ABUTMENT EXPANSION JOINT REPLACEMENT, SEE SHEET 21/27.

DESIGN AGENCY
OSBORN ENGINEERING
AKRON, OHIO

DESIGNED SMK
DRAWN SMK
REVIEWED SAV
DATE 12-2-10
CHECKED BCK
REVISED
STRUCTURE FILE NUMBER 4100395

DEFLECTOR PARAPET TRANSITION DETAILS

BRIDGE NO. JEF-7-0856
OVER NORFOLK SOUTHERN RAILROAD

JEF-7-8.56
PID No. 24979

26/27

58/59

007_0856cRA001.dgn

PIER REINFORCING STEEL LIST

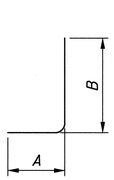
PIER	MARK	NUMBER			LENGTH	TYPE	A	B	C	D	E	INC.	WEIGHT (LBS)
		PHASE 2	PHASE 3	TOTAL									
9	P401	6		6	10'-3"	34	2'-8"						41
12	P401	6		6	10'-3"	34	2'-8"						41
												TOTAL	82

ABUTMENT REINFORCING STEEL LIST

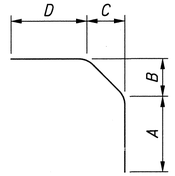
MARK	NUMBER			LENGTH	TYPE	A	B	C	D	E	INC.	WEIGHT (LBS)
	PHASE 2	PHASE 3	TOTAL									
A501	4	4	8	30'-5"	STR							254
											TOTAL	254

SUPERSTRUCTURE REINFORCING STEEL LIST

MARK	NUMBER			LENGTH	TYPE	A	B	C	D	E	INC.	WEIGHT (LBS)
	PHASE 2	PHASE 3	TOTAL									
S501	48	48	96	5'-4"	23	8"	2'-5"	2'-2"	R = 1½"			534
S502	30	30	60	2'-6"	STR							156
S503	22	22	44	3'-6"	16	2'-5"						161
S504	8	8	16	13'-8"	STR							228
S505	4	4	8	5'-8"	STR							47
S506	4	4	8	5'-8"	25	1'-10"	2'-5"	1'-5"	1½"	5"		47
S507	8	8	16	9'-8"	STR							161
S601	18	18	36	29'-10"	STR							1613
S602	36	18	54	2'-7"	1	10"	1'-11"					210
S603	36	36	72	3'-6"	14	10"	1'-3"	9"	7"	9"		385
S604		18	18	2'-7"	19	10"	4"	1'-9"				70
S605	8	8	16	3'-9"	STR							90
S606	22	22	44	3'-0"	13	1'-5"	8½"	6"	9"			198
S701	18		18	29'-10"	STR							1098
S702		18	18	29'-8"	STR							1092
											TOTAL	6091



TYPE-1



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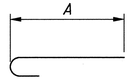

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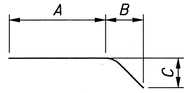

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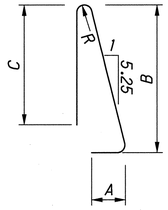

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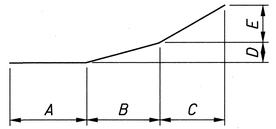

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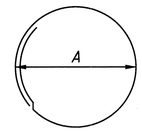


TYPE-34

NOTES:

1. ALL REINFORCING STEEL SHALL BE EPOXY COATED. SEE STRUCTURE GENERAL NOTES, SHEET 3/27 FOR ADDITIONAL MATERIAL REQUIREMENTS.

2. THE BAR SIZE NUMBER IS SPECIFIED ON THE PLANS IN THE BAR MARK COLUMN. THE FIRST DIGIT WHERE THREE DIGITS ARE USED, AND THE FIRST TWO DIGITS WHERE FOUR DIGITS ARE USED, INDICATES THE BAR SIZE NUMBER. FOR EXAMPLE, S501 IS A NO. 5 BAR. BAR DIMENSIONS SHOWN ARE OUT TO OUT UNLESS OTHERWISE NOTED. R INDICATES INSIDE RADIUS, UNLESS OTHERWISE NOTED.

3. BEND BARS CAREFULLY TO THE DIMENSIONS LISTED IN THE SCHEDULES AND/OR STANDARD BEND TABLE (CMS 509.05).

DESIGN AGENCY
OSBORN ENGINEERING
AKRON, OHIO

REVIEWED SAV
DATE 12-2-10
STRUCTURE FILE NUMBER 4100395

DRAWN SMK
REVISED

DESIGNED SMK
CHECKED BCK

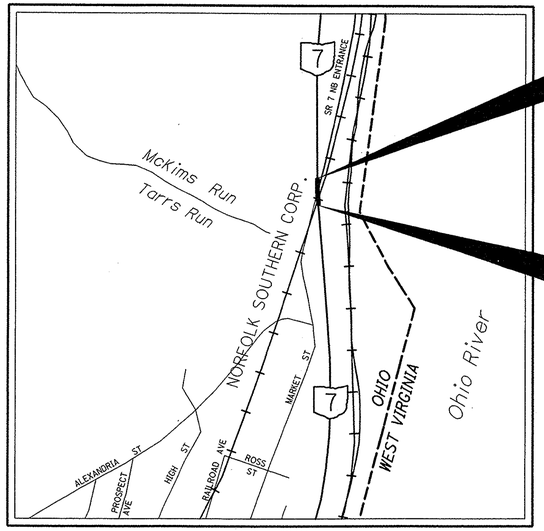
REINFORCING STEEL LISTS
BRIDGE NO. JEF-7-0856
OVER NORFOLK SOUTHERN RAILROAD

JEF-7-8.56
PID No. 24979

27/27

59
59

007_0856cRT001



END PROJECT
STA. 548+31.35

BEGIN PROJECT
STA. 542+28.50

LOCATION MAP

LATITUDE: N 40°16'25" LONGITUDE: W 80°37'10"

SCALE IN MILES

0 1/16 1/4

N

PORTION TO BE IMPROVED

INTERSTATE & DIVIDED HIGHWAY

UNDIVIDED STATE & FEDERAL ROUTES

OTHER ROADS

DESIGN DESIGNATION

CURRENT ADT (2011)	15600
DESIGN YEAR ADT (2031)	18600
DESIGN HOURLY VOLUME (2031)	1674
DIRECTIONAL DISTRIBUTION	55%
TRUCKS (24 HOUR B&C)	15%
DESIGN SPEED	55 MPH
LEGAL SPEED	55 MPH
DESIGN FUNCTIONAL CLASSIFICATION: FREEWAY/EXPRESSWAY (URBAN)	
NHS PROJECT	NO

DESIGN EXCEPTIONS

	APPROVED DATE	SHEET
BRIDGE WIDTH	1/13/2010	17-18

UNDERGROUND UTILITIES

CONTACT BOTH SERVICES
CALL TWO WORKING DAYS
BEFORE YOU DIG

CALL
1-800-362-2764
(TOLL FREE)
OHIO UTILITIES PROTECTION SERVICE
NON-MEMBERS
MUST BE CALLED DIRECTLY

OIL & GAS PRODUCERS PROTECTIVE
SERVICE CALL: 1-800-925-0988

PLAN PREPARED BY:

ENGINEERING ASSOCIATES, INC.
1935 EAGLE PASS - WOOSTER, OHIO
TELEPHONE : (330) 345-6556

ENGINEERS SEAL:	ENGINEERS SEAL:
FOR ENTIRE PLAN EXCEPT STRUCTURES	FOR STRUCTURE ONLY
STATE OF OHIO · A. FREDERICK SELING JR. · E-46722 · REGISTERED PROFESSIONAL ENGINEER	STATE OF OHIO · BENJAMIN D. HOOTMAN · E-67464 · REGISTERED PROFESSIONAL ENGINEER
SIGNED: A. Frederick Seling Jr.	SIGNED: Benjamin D. Hootman
DATE: 11/01/2010	DATE: 11/1/2010

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
JEF-7-9.92 PART 2
WELLS TOWNSHIP
JEFFERSON COUNTY

FOR PART 1, SEE JEF-7-8.56

INDEX OF SHEETS:

PROJECT DESCRIPTION

IMPROVEMENT OF 0.11 MILE OF STATE ROUTE 7 BY REHABILITATING BRIDGE NO. JEF-7-0992 OVER STATE ROUTE 7 NORTHBOUND RAMP AND NORFOLK SOUTHERN RAILROAD. THE REHABILITATION CONSISTS OF SUPERSTRUCTURE AND SUBSTRUCTURE CONCRETE REPAIRS WITH MINIMAL APPROACH PAVEMENT AND ROADWAY WORK.

EARTH DISTURBED AREAS

PROJECT EARTH DISTURBED AREA:	N/A
ESTIMATED CONTRACTOR EARTH DISTURBED AREA:	N/A
NOTICE OF INTENT EARTH DISTURBED AREA:	N/A

(MAINTENANCE PROJECT)

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.

2010 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.

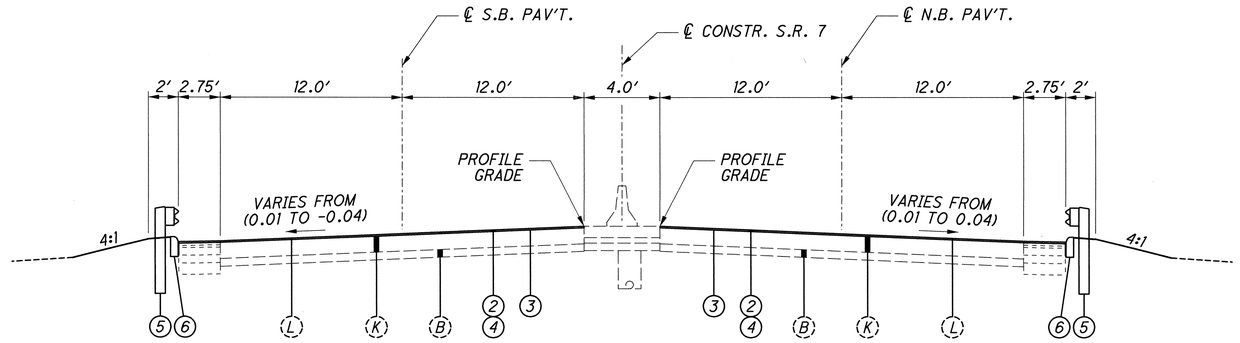
UNDER AUTHORITY OF SECTION 4511.21, DIVISION (H) OF THE OHIO REVISED CODE, THE REVISED PRIMA FACIE SPEED LIMITS AS INDICATED HEREIN ARE DETERMINED TO BE REASONABLE AND SAFE, AND ARE HEREBY ESTABLISHED FOR THE DURATION OF THIS PROJECT. THE PRIMA FACIE SPEED LIMIT OR LIMITS HEREBY ESTABLISHED SHALL BECOME EFFECTIVE WHEN APPROPRIATE SIGNS GIVING NOTICE THEREOF ARE ERECTED.

APPROVED Richard A Bible P.E.
DATE 1/4/11 DISTRICT DEPUTY DIRECTOR

APPROVED Jerry Wray
DATE 1-18-11 DIRECTOR, DEPARTMENT OF TRANSPORTATION

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

FEDERAL PROJECT NO. E080067
PID NO. 24979
CONSTRUCTION PROJECT NO.
RAILROAD INVOLVEMENT NORFOLK SOUTHERN
JEF-7-9.92
1/55



APPROACH SLAB TYPICAL SECTION - S.R. 7

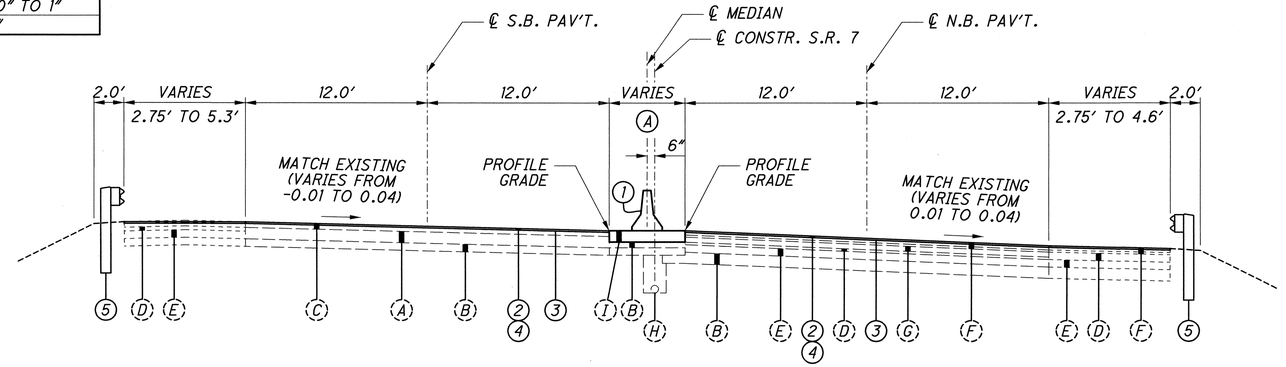
ASPHALT OVERLAY THICKNESS				
STA	TO	STA	DIRECTION	THICKNESS
S.R. 7				
541+78.50		542+03.50	NB & SB	1 1/4"
542+03.50		542+28.50	NB & SB	VARY FROM 1" TO 0"
547+72.00		547+97.00	SB	VARY FROM 0" TO 1"
547+97.00		548+22.00	SB	1 1/4"
548+31.35		548+56.35	NB	VARY FROM 0" TO 1"
548+56.35		548+81.35	NB	1 1/4"

SOUTHBOUND LANES

STA 542+03.50 TO STA 542+28.50
STA 547+72.00 TO STA 547+97.00

NORTHBOUND LANES

STA 542+03.50 TO STA 542+28.50
STA 548+31.35 TO STA 548+56.35



RESURFACING TYPICAL SECTION - S.R. 7

SOUTHBOUND LANES

STA 541+78.50 TO STA 542+03.50
STA 547+97.00 TO STA 548+22.00

NORTHBOUND LANES

STA 541+78.50 TO STA 542+03.50
STA 548+56.35 TO STA 548+81.35

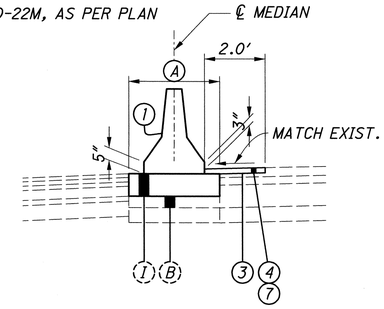
*REDUCE OVERLAY WIDTH TO 1.0' AND VARY OVERLAY THICKNESS FROM 1" AT FACE OF BARRIER TO 1 1/4" AT EDGE OF LANE TO MATCH ROADWAY OVERLAY THICKNESS FROM STA 541+78.50 TO STA 542+03.50.

PROPOSED ITEM LEGEND

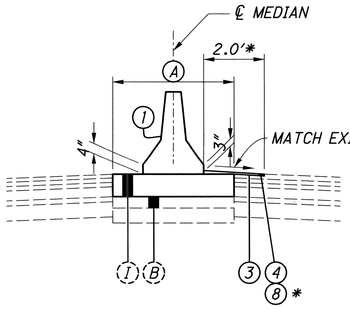
1. ITEM 622 - CONCRETE BARRIER, TYPE A, AS PER PLAN
2. ITEM 446 - ASPHALT CONCRETE SURFACE COURSE, TYPE 1, PG70-22M, AS PER PLAN (THICKNESS VARIES, SEE TABLE)
3. ITEM 407 - TACK COAT (0.04 GAL./S.Y.)
4. ITEM 254 - PAVEMENT PLANING, ASPHALT CONCRETE (DEPTH VARIES, SEE OVERLAY THICKNESS)
5. ITEM 606 - GUARDRAIL, TYPE 5
6. ITEM 609 - CURB, TYPE 4-C
7. ITEM 446 - 2" ASPHALT CONCRETE SURFACE COURSE, TYPE 1, PG70-22M, AS PER PLAN
8. ITEM 446 - 1" ASPHALT CONCRETE SURFACE COURSE, TYPE 1, PG70-22M, AS PER PLAN

EXISTING ITEM LEGEND

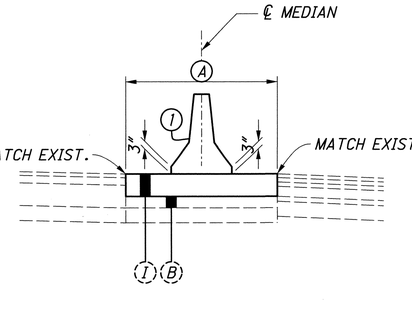
- A. 9" REINFORCED CONCRETE PAVEMENT
- B. 4 1/2" SUBBASE
- C. ±4 1/2" ASPHALT OVERLAY
- D. BITUMINOUS AGGREGATE BASE
- E. AGGREGATE BASE
- F. ±5" ASPHALT OVERLAY
- G. ASPHALT CONCRETE PAVEMENT
- H. PIPE UNDERDRAIN
- I. 9" CONCRETE BASE
- J. CONCRETE BARRIER
- K. REINFORCED CONCERTE APPROACH SLAB
- L. ±1" ASPHALT CONCRETE OVERLAY



STA 537+50.00 TO STA 540+51.00



STA 540+51.00 TO STA 542+03.50



MEDIAN BARRIER REMOVAL AND REPLACEMENT

STA 548+56.35 TO STA 553+00.00

CONCRETE BASE WIDTH			
STA	TO	STA	(A)
S.R. 7			
537+50.00		540+51.00	3.0'
540+51.00		542+03.50	4.0'
548+56.35		549+56.35	4.0' TO 5.0'
549+56.35		553+00.00	5.0'

TYPICAL SECTIONS

JEF-7-9.92

ROUNDING

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

UTILITIES

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

FIBER OPTIC: AT&T LEGACY
ATTN: JEFF BALLINGER
590-G WILCOX PLACE
DUBLIN, OHIO 43016
(614) 216-1160

TELEPHONE: AT&T OHIO, INC.
c/o SANDI RANDOLPH
160 NORTH 6TH STREET
ZANESVILLE, OHIO 43701
(740) 454-3455

VERIZON
c/o BRENT FIALA
6223 NORWALK ROAD
MEDINA, OHIO 44256
(330) 722-9453

WATER & SEWER: BRILLIANT WATER & SEWER DISTRICT
c/o JAMES McDONALD
706 SECOND STREET
BRILLIANT, OHIO 43913
(740) 598-4322

GAS: COLUMBIA GAS TRANSMISSION
c/o RUSS JOHNSON
589 NORTH STATE ROAD
MEDINA, OHIO 44256
(419) 340-6403

BOC LINDE
616 DRY RUN ROAD
NEW CUMBERLAND, WV 26047
(304) 387-0889

ELECTRIC: AEP OHIO POWER COMPANY
c/o JEFF TURNER
P.O. BOX 89
47687 NATIONAL ROAD
ST. CLAIRSVILLE, OHIO 43950
(740) 699-7845

CABLE: COMCAST
c/o CRAIG TACY
100 WELDAY AVENUE, SUITE A
WINTERSVILLE, OHIO 43953
(740) 346-2250

HIGHWAY LIGHTING: ODOT DISTRICT 11
ATTN: BEN KUNZE
2201 REISER AVENUE, SE
NEW PHILADELPHIA, OHIO 44663
(330) 339-6633

RAILROAD: NORFOLK SOUTHERN RAILROAD
c/o MS. R.A. MOORE
ENGINEER, PUBLIC IMPROVEMENTS
BRIDGES AND STRUCTURES
NORFOLK SOUTHERN CORPORATION
1200 PEACHTREE ST.
ATLANTA, GA 30309

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 COORDINATION

OUPS/OGPUPS SERVICES DO NOT LOCATE BURIED RAILROAD SIGNAL AND COMMUNICATIONS LINES. THE CONTRACTOR SHALL CONTACT THE RAILROAD'S REPRESENTATIVE 2 DAYS IN ADVANCE OF WORK AT THOSE PLACES WHERE EXCAVATION, PILE DRIVING, OR HEAVY LOADS MAY DAMAGE RAILROAD UNDERGROUND LINES ON RAILROAD PROPERTY. UPON REQUEST FROM THE CONTRACTOR OR AGENCY, RAILROAD SIGNAL FORCES WILL LOCATE AND PAINT MARK OR FLAG RAILROAD UNDERGROUND SIGNAL, COMMUNICATION, AND POWER LINES IN THE AREA TO BE DISTURBED FOR THE CONTRACTOR. THE CONTRACTOR SHALL AVOID EXCAVATION OR OTHER DISTURBANCE OF THESE LINES WHICH ARE CRITICAL TO THE SAFETY OF THE RAILROAD AND THE PUBLIC. IF DISTURBANCE OR EXCAVATION IS REQUIRED NEAR A BURIED RAILROAD SIGNAL, COMMUNICATION, OR POWER LINE, THE LINE SHALL BE POTHOLED MANUALLY WITH CAREFUL HAND EXCAVATION BY THE CONTRACTOR, AND PROTECTED BY THE CONTRACTOR DURING THE COURSE OF THE DISTURBANCE UNDER THE SUPERVISION AND DIRECTION OF A RAILROAD SIGNAL REPRESENTATIVE.

EXISTING PLANS

EXISTING PLANS ENTITLED JEF-7-(8.22-10.35), JEF-7-(4.63-8.99), JEF-7-8.56 MAY BE INSPECTED IN THE ODOT DISTRICT 11 OFFICE IN NEW PHILADELPHIA, OHIO.

ELEVATION DATUM

ALL ELEVATIONS ARE BASED ON THE EXISTING PLAN ELEVATION OF 685.15 ON THE TOP OF THE SOUTHEAST WINGWALL OF THE STRUCTURE FROM ODOT PLAN JEF-7-(8.22-10.35). HORIZONTAL COORDINATES ARE PROJECT ASSUMED. THE BASIS OF BEARING IS THE CENTERLINE OF RIGHT OF WAY FROM ODOT PLAN JEF-7-(8.22-10.35).

WORK LIMITS

THE WORK LIMITS SHOWN ON THESE PLANS ARE FOR PHYSICAL CONSTRUCTION ONLY. PROVIDE THE INSTALLATION AND OPERATION OF ALL WORK ZONE TRAFFIC CONTROL AND WORK ZONE TRAFFIC CONTROL DEVICES REQUIRED BY THESE PLANS WHETHER INSIDE OR OUTSIDE THESE WORK LIMITS.

CLEARING AND GRUBBING

ALTHOUGH THERE ARE NO TREES OR STUMPS SPECIFICALLY MARKED FOR REMOVAL WITHIN THE LIMITS OF THE PROJECT, A LUMP SUM QUANTITY IS INCLUDED IN THE GENERAL SUMMARY FOR ITEM 201, CLEARING AND GRUBBING. ALL PROVISIONS AS SET FORTH IN THE SPECIFICATIONS UNDER THIS ITEM ARE INCLUDED IN THE LUMP SUM PRICE BID FOR ITEM 201, CLEARING AND GRUBBING. CLEAR AND GRUB ALL BRUSH UNDER AND 10' EACH SIDE OF STRUCTURE.

MEDIAN AND/OR CURBING ON APPROACH SLABS

WITHIN THE LIMITS OF THE APPROACH SLAB, TRANSITION THE SHAPE OF THE MEDIAN AND/OR CURBING ON APPROACH SLABS FROM THE STANDARD SECTION ON THE APPROACHES TO THE SECTION USED ON THE BRIDGE.

CONNECTION BETWEEN EXISTING AND PROPOSED GUARDRAIL

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

REVIEW OF DRAINAGE FACILITIES

BEFORE ANY WORK IS STARTED ON THE PROJECT AND AGAIN BEFORE FINAL ACCEPTANCE BY THE STATE, REPRESENTATIVES OF THE STATE AND THE CONTRACTOR, ALONG WITH LOCAL REPRESENTATIVES, SHALL MAKE AN INSPECTION OF ALL EXISTING SEWERS WHICH ARE TO REMAIN IN SERVICE AND WHICH MAY BE AFFECTED BY THE WORK. THE CONDITION OF THE EXISTING CONDUITS AND THEIR APPURTENANCE SHALL BE DETERMINED FROM FIELD OBSERVATIONS. RECORDS OF THE INSPECTION SHALL BE KEPT IN WRITING BY THE STATE.

ALL NEW CONDUITS, INLETS, CATCH BASINS, AND MANHOLES CONSTRUCTED AS A PART OF THE PROJECT SHALL BE FREE OF ALL FOREIGN MATTER AND IN A CLEAN CONDITION BEFORE THE PROJECT WILL BE ACCEPTED BY THE STATE.

ALL EXISTING SEWERS INSPECTED INITIALLY BY THE ABOVE MENTIONED PARTIES SHALL BE MAINTAINED AND LEFT IN A CONDITION REASONABLY COMPARABLE TO THAT DETERMINED BY THE ORIGINAL INSPECTION. ANY CHANGE IN THE CONDITION RESULTING FROM THE CONTRACTOR'S OPERATIONS SHALL BE CORRECTED BY THE CONTRACTOR TO THE SATISFACTION OF THE ENGINEER.

PAYMENT FOR ALL OPERATIONS DESCRIBED ABOVE SHALL BE INCLUDED IN THE CONTRACT PRICE FOR THE PERTINENT 603 CONDUIT ITEMS.

ITEM 202 - INLET REMOVED, AS PER PLAN

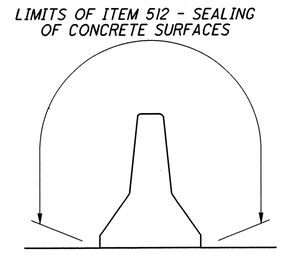
THE CONTRACTOR SHALL REMOVE THE EXISTING MEDIAN BARRIER INLET AND TROUGH AT THE EXISTING INLET. THE EXISTING TRANSITION AND CATCH BASIN SHALL BE COVERED AND PAVED OVER WITH TEMPORARY PAVEMENT DURING MAINTENANCE OF TRAFFIC OPERATIONS. FOR ADDITIONAL REQUIREMENTS, SEE MAINTENANCE OF TRAFFIC SHEET 6 AND SHEET 19.

ITEM 446 - ASPHALT CONCRETE SURFACE COURSE, TYPE 1, PG70-22M, AS PER PLAN

MATERIALS FURNISHED FOR FINE AND COARSE AGGREGATES USED IN THIS ITEM SHALL EXCLUDE ALL STONE AND CRUSHED CARBONATE STONE.

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

SEAL ALL PROPOSED MEDIAN CONCRETE BARRIER AND MEDIAN INLETS PER THE REQUIREMENTS OF ITEM 512 AND THE DETAIL BELOW.



THE FOLLOWING QUANTITY HAS BEEN CARRIED TO SHEET 28 AND INCLUDED WITH THE STRUCTURE ESTIMATED QUANTITIES.

ITEM 512 - SEALING OF CONCRETE SURFACES (EPOXY-URETHANE) 620.0 SQ YD

ITEM 604 - INLET MISC.: NEW JERSEY SHAPE BARRIER MEDIAN INLET

THE CONTRACTOR SHALL PROVIDE A BARRIER MEDIAN INLET PER THE DETAILS ON SHEETS 20-21. THE EXISTING CATCH BASIN AND TRANSITION SHALL REMAIN.

ITEM 622 - CONCRETE BARRIER, TYPE A, AS PER PLAN

CONCRETE BARRIER SHALL BE CONSTRUCTED PER THE DETAILS ON SHEET 22.

ITEM 623 - CONSTRUCTION LAYOUT STAKES, AS PER PLAN

THE PROPOSED CONCRETE OVERLAY SHALL FOLLOW THE ALIGNMENT AND PROFILE OF THE EXISTING PAVEMENT. THE PROPOSED CONCRETE OVERLAY SHALL HAVE A UNIFORM THICKNESS OF 2 1/4 INCHES.

THE CONTRACTOR SHALL SURVEY THE EXISTING DECK AND APPROACH PAVEMENT PRIOR TO REMOVING THE CONCRETE OVERLAY. SURVEY LOCATIONS ON THE DECK WILL BE EVERY 10 FEET AT THE CENTERLINE AND THE CURB LINE. SURVEY LOCATIONS FOR THE APPROACH PAVEMENT WILL BE EVERY 25 FEET AT THE CENTERLINE AND EDGE OF PAVEMENT.

ALL COSTS, EQUIPMENT AND LABOR TO PERFORM THE SURVEY WILL BE INCLUDED WITH THE LUMP SUM CONTRACT PRICE FOR ITEM 623, CONSTRUCTION LAYOUT STAKES, AS PER PLAN.

CALCULATED SLM CHECKED SDS

GENERAL NOTES

JEF-7-9.92

ITEM 614, MAINTAINING TRAFFIC

A MINIMUM OF 1 LANE OF TRAFFIC IN EACH DIRECTION SHALL BE MAINTAINED AT ALL TIMES BY USE OF THE EXISTING PAVEMENT AND ITEM 615 PAVEMENT FOR MAINTAINING TRAFFIC.

TRAFFIC SHALL BE MAINTAINED ACCORDING TO THE NOTES BELOW:

COORDINATION BETWEEN PART 1 (JEF-7-8.56) AND PART 2 (JEF-7-9.92)

THE MAINTENANCE OF TRAFFIC SEQUENCE FOR PART 2 SHALL BE COORDINATED WITH PART 1. THE CONTRACTOR SHALL SCHEDULE THE WORK SUCH THAT PART 1 / PHASE 2 AND PART 2 / PHASE 2 SHALL BE CONSTRUCTED SIMULTANEOUSLY. LIKEWISE, PART 1 / PHASE 3 AND PART 2 / PHASE 3 SHALL BE CONSTRUCTED SIMULTANEOUSLY. A SCHEMATIC FOR THE OVERALL MAINTENANCE OF TRAFFIC FOR BOTH PARTS IS PROVIDED WITH THE PART 1 MAINTENANCE OF TRAFFIC PLAN SHEETS. BOTH PARTS ARE TO BE CONSTRUCTED SIMULTANEOUSLY PER THE SCHEMATIC PROVIDED IN PART 1.

AT NO TIME SHALL THE CONTRACTOR BE PERMITTED TO CLOSE BOTH BRIDGE JEF-7-0856 NORTHBOUND AND BRIDGE JEF-7-0992 NORTHBOUND AT THE SAME TIME OR CLOSE BOTH JEF-7-0856 SOUTHBOUND AND JEF-7-0992 SOUTHBOUND AT THE SAME TIME.

THE CONTRACTOR SHALL BE REQUIRED TO CLOSE BOTH THE SOUTHBOUND AND NORTHBOUND MEDIAN LANES BETWEEN THE TWO BRIDGES WITH CONSTRUCTION DRUMS. ACCESS TO RAMPS A AND C MUST BE MAINTAINED AT ALL TIMES. SIGNING TO MAINTAIN ACCESS FOR THE RAMPS SHALL BE PER THE STANDARD DRAWINGS AND THE ENGINEER'S DIRECTION.

THE PART 2 PLAN REFLECTS ALL MAINTENANCE OF TRAFFIC REQUIREMENTS FROM STATION 520+00 TO STATION 556+00.

THE MAINTENANCE OF TRAFFIC QUANTITIES FOR PART 1 AND PART 2 ARE PROVIDED SEPARATELY IN EACH PART.

SEE PART 1 MAINTENANCE OF TRAFFIC NOTES FOR THE NUMBER OF DAYS ALLOWED TO COMPLETE THE WORK.

SEQUENCE OF CONSTRUCTION - S.R. 7

SUBSTRUCTURE REPAIRS THAT DO NOT REQUIRE LANE RESTRICTIONS MAY BE COMPLETED DURING ANY PHASE.

PHASE 1

A. CLOSE THE MEDIAN LANE FOR NORTHBOUND AND SOUTHBOUND TRAFFIC PER MT-95.30.
B. REMOVE THE EXISTING MEDIAN BARRIER AND CONCRETE BASE AND REPLACE WITH PAVEMENT FOR MAINTAINING TRAFFIC PER THE TYPICAL SECTION ON SHEET 5. COMPLETE WORK AS QUICKLY AS POSSIBLE . INSTALL DRUMS AT MAX SPACING OF 20 FEET C/C.

PHASE 2

A. MAINTAIN TRAFFIC WITH CROSSOVERS PER MT-95.70 AND THE DETAILS PROVIDED IN THE PLANS. SIGN W13-1-(24x24) (40 MPH) REQUIRED. INSTALL TYPE "B" WARNING LIGHTS ABOVE W1-4L-48 SIGNS. INSTALL ROAD NARROWS SIGN (W5-1-48) WITH TYPE "B" WARNING LIGHT AND ADVISORY SPEED PLAQUE (40 MPH)(W13-1-24) A MINIMUM OF 200 FEET BEFORE LANE WIDTH REDUCTION (12 FT. TO 10.5FT.) FOR EACH DIRECTION OF S.R. 7.
B. SHIFT SOUTHBOUND TRAFFIC ONTO THE NORTHBOUND LANES THROUGH THE WORK ZONE.
C. COMPLETE ALL REHABILITATION WORK ON THE SOUTHBOUND BRIDGE THAT REQUIRES LANE RESTRICTIONS.

PHASE 3

A. MAINTAIN TRAFFIC WITH CROSSOVERS PER MT-95.70 AND THE DETAILS PROVIDED IN THE PLANS. SIGN W13-1-(24x24) (40 MPH) REQUIRED. INSTALL TYPE "B" WARNING LIGHT ABOVE W1-4L-48 SIGNS. INSTALL ROAD NARROWS SIGN (W5-1-48) WITH TYPE "B" WARNING LIGHT AND ADVISORY SPEED PLAQUE (40 MPH)(W13-1-24) A MINIMUM OF 200 FEET BEFORE LANE WIDTH REDUCTION (12 FT. TO 10.5 FT.) FOR EACH DIRECTION OF S.R. 7.
B. SHIFT NORTHBOUND TRAFFIC ONTO THE SOUTHBOUND LANES THROUGH THE WORK ZONE.
C. COMPLETE ALL REHABILITATION WORK ON THE NORTHBOUND BRIDGE THAT REQUIRES LANE RESTRICTIONS.

PHASE 4

A. CLOSE THE MEDIAN LANE FOR NORTHBOUND AND SOUTHBOUND TRAFFIC PER MT-95.30.
B. CONSTRUCT THE PROPOSED MEDIAN BARRIER AND MEDIAN DRAINAGE.
C. COMPLETE FINAL PAVEMENT MARKINGS PER MT-99.20.

S.R. 7 NORTHBOUND ENTRANCE RAMP

A MINIMUM OF ONE LANE OF TRAFFIC SHALL BE MAINTAINED ON THE ENTRANCE RAMP AT ALL TIMES EXCEPT FOR SHORT DURATIONS WHEN COMPLETE STOPPAGE OF TRAFFIC WILL BE PERMITTED AS NOTED BELOW.

THE CONTRACTOR SHALL NOT PERFORM ANY FULL DEPTH BRIDGE REPAIR OVERHEAD OF A LANE OPEN TO TRAFFIC. RAMP TRAFFIC SHALL BE SHIFTED PER MT-95.40 TO COMPLETE OVERHEAD BRIDGE REPAIRS AND PROTECT THE TEMPORARY SUPPORT OF THE STRUCTURE. A MINIMUM 12 FOOT WIDE LANE SHALL BE PROVIDED AT ALL TIMES.

WHEN COMPLETE STOPPAGE OF TRAFFIC IS NECESSARY, THE CONTRACTOR SHALL NOT STOP TRAFFIC FOR A DURATION OF MORE THAN TEN (10) MINUTES BEFORE ALLOWING ALL STOPPED TRAFFIC TO CLEAR THE WORK ZONE. THE CONTRACTOR SHALL PROVIDE A FLAGGER TO STOP TRAFFIC ON THE RAMP.

THE FOLOWING QUANTITIES HAVE BEEN CARRIED TO THE GENERAL SUMMARY FOR COMPLETION OF THIS WORK.

ITEM 614 - BARRIER REFLECTOR, TYPE B	18 EACH
ITEM 614 - OBJECT MARKER, ONE WAY	18 EACH
ITEM 622 - PORTABLE CONCRETE BARRIER, 32"	800 FT

ALL OTHER LABOR, EQUIPMENT AND MATERIALS NECESSARY TO MAINTAIN TRAFFIC ON THE RAMP SHALL BE INCLUDED IN THE LUMP SUM PRICE FOR ITEM 614, MAINTAINING TRAFFIC.

LENGTH AND DURATION OF LANE CLOSURES/CROSSOVERS AND RESTRICTIONS SHALL BE AT THE APPROVAL OF THE ENGINEER. IT IS THE INTENT TO MINIMIZE THE IMPACT TO THE TRAVELING PUBLIC. LANE CLOSURES OR RESTRICTIONS OVER SEGMENTS OF THE PROJECT IN WHICH NO WORK IS ANTICIPATED WITHIN A REASONABLE TIME FRAME, AS DETERMINED BY THE ENGINEER, SHALL NOT BE PERMITTED. THE LEVEL OF UTILIZATION OF MAINTENANCE OF TRAFFIC DEVICES SHALL BE COMMENSURATE WITH THE WORK IN PROGRESS.

THE CONTRACTOR SHALL PROVIDE, ERECT AND MAINTAIN SIGNS AND SIGN SUPPORTS, AS DETAILED IN THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES, AND TYPE III BARRICADES OF THE TYPE AND LOCATION AS SHOWN IN THE PLANS AND ON STANDARD CONSTRUCTION DRAWINGS.

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.

ITEM 614, PORTABLE CHANGEABLE MESSAGE SIGNS, AS PER PLAN

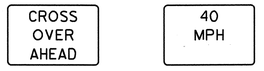
THE CONTRACTOR SHALL FURNISH, INSTALL, MAINTAIN AND REMOVE, WHEN NO LONGER NEEDED, TWO (2) CHANGEABLE MESSAGE SIGNS, ON SITE, FOR THE DURATION OF THE PROJECT. THE SIGNS SHALL BE OF A TYPE SHOWN ON A LIST OF APPROVED PCMS UNITS MAINTAINED BY THE DIRECTOR (OFFICE OF MATERIALS MANAGEMENT). THE APPROVED LIST OF PORTABLE CHANGEABLE MESSAGE SIGNS CAN BE FOUND ON THE ODOT WEBSITE BY CLICKING ON THE SERVICES MENU, THEN CLICKING ON MATERIALS MANAGEMENT. THE LIST CONTAINS CLASS A AND B UNITS WITH MINIMUM LEGIBILITY DISTANCES OF 650 FT. AND 475 FT., RESPECTIVELY.

EACH SIGN SHALL BE TRAILER-MOUNTED AND EQUIPPED WITH A FUNCTIONAL DIMMING MECHANISM, TO DIM THE SIGN DURING DARKNESS, AND A TAMPER AND VANDAL PROOF ENCLOSURE. EACH SIGN SHALL BE PROVIDED WITH APPROPRIATE TRAINING AND OPERATION INSTRUCTIONS TO ENABLE ON-SITE PERSONNEL TO OPERATE AND TROUBLESHOOT THE UNIT. THE SIGN SHALL ALSO BE CAPABLE OF BEING POWERED BY AN ELECTRICAL SERVICE DROP FROM A LOCAL UTILITY COMPANY. PCMS TRAILERS SHALL BE DELINEATED ON A PERMANENT BASIS BY AFFIXING CONSPICUITY TAPE CONFORMING TO CMS 614.03, 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 NEAR STA 580+00 FOR SOUTHBOUND TRAFFIC DURING PHASE 2 AND NEAR STA 526+00 FOR NORTHBOUND TRAFFIC DURING PHASE 3.
PLACEMENT, OPERATION, MAINTENANCE AND ALL ACTIVATION OF THE SIGNS BY THE CONTRACTOR SHALL BE AS DIRECTED BY THE ENGINEER. THE PCMS SHALL BE LOCATED IN A HIGHLY VISIBLE POSITION YET PROTECTED FROM TRAFFIC. THE CONTRACTOR SHALL, AT THE DIRECTION OF THE ENGINEER, RELOCATE THE PCMS TO IMPROVE VISIBILITY OR ACCOMMODATE CHANGED CONDITIONS. WHEN NOT IN USE, THE PCMS SHALL BE TURNED OFF. ADDITIONALLY, WHEN NOT IN USE FOR EXTENDED PERIODS OF TIME, THE PCMS SHALL BE TURNED, FACING AWAY FROM ALL TRAFFIC, AND SHALL DISPLAY ONE OR MORE YELLOW RETROREFLECTIVE SHEETING SURFACES OF 9-INCH BY 15-INCH MINIMUM SIZE FACING TRAFFIC.

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

THE MESSAGE FOR S.R. 7 NORTHBOUND AND SOUTHBOUND TRAFFIC SHALL BE THE FOLLOWING UNLESS ALTERED BY THE ENGINEER.



A LIST OF ADDITIONAL REQUIRED PREPROGRAMMED MESSAGES WILL BE GIVEN TO THE CONTRACTOR AT THE PROJECT PRECONSTRUCTION CONFERENCE. THE SIGN SHALL HAVE THE CAPABILITY TO STORE UP TO 99 MESSAGES.
MESSAGE MEMORY OR PRE-PROGRAMMED DISPLAYS SHALL NOT BE LOST AS A RESULT OF POWER FAILURES TO THE ON-BOARD COMPUTER. THE SIGN LEGEND SHALL BE CAPABLE OF BEING CHANGED IN THE FIELD. THREE-LINE PRESENTATION FORMATS WITH UP TO SIX MESSAGE PHASES SHALL BE SUPPORTED. PCMS FORMAT SHALL PERMIT THE COMPLETE MESSAGE FOR EACH PHASE TO BE READ AT LEAST TWICE.

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

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

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

PAYMENT FOR THE ABOVE DESCRIBED ITEM SHALL BE AT THE CONTRACT UNIT PRICE. PAYMENT SHALL INCLUDE ALL LABOR, MATERIALS, EQUIPMENT, FUELS, LUBRICATING OILS, SOFTWARE, HARDWARE AND INCIDENTALS TO PERFORM THE ABOVE DESCRIBED WORK. THE CONTRACTOR SHALL ONLY BE PAID FOR PCMS UNITS WHEN THEY ARE IN OPERATION ON THE PROJECT AS SPECIFIED IN THE PLANS OR BY THE ENGINEER.

ITEM 614, PORTABLE CHANGEABLE MESSAGE SIGN,
AS PER PLAN 80 DAY

ITEM 614, BARRIER REFLECTORS AND/OR OBJECT MARKERS

BARRIER REFLECTORS AND OBJECT MARKERS SHALL BE INSTALLED ON ALL PORTABLE CONCRETE BARRIER USED FOR TRAFFIC CONTROL. BARRIER REFLECTORS, OBJECT MARKERS AND THEIR INSTALLATION SHALL CONFORM TO CMS 626, EXCEPT THAT THE SPACING SHALL BE 50 FEET.

ITEM 614, WORK ZONE IMPACT ATTENUATOR FOR 24" WIDE HAZARDS (UNIDIRECTIONAL OR BIDIRECTIONAL)

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

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

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

DRAWING NUMBER: QSCZCVR-T4
DRAWING NAME: QUADGUARD CZ SYSTEM FOR CONSTRUCTION ZONES
REVISION DATE: 5/13/99 REV. J
ODOT APPROVAL DATE: 8/27/99

DRAWING NUMBER: 35-40-10
DRAWING NAME: QUADGUARD SYSTEM CONCRETE PAD, CZ, QG
REVISION DATE: 11/19/97 REV. D
ODOT APPROVAL DATE: 8/27/99

DRAWING NUMBER: 35-40-16
DRAWING NAME: QUADGUARD SYSTEM BACKUP ASSEMBLY, CZ, QG
REVISION DATE: 7/30/99 REV. F
ODOT APPROVAL DATE: 8/27/99

DRAWING NUMBER: 354051Z
DRAWING NAME: QUADGUARD CZ SYSTEM NOSE ASSEMBLY, CZ, QG, 24, 30, 36
REVISION DATE: 5/17/99
ODOT APPROVAL DATE: 8/27/99

DRAWING NUMBER: 35-40-18
DRAWING NAME: TRANSITION ASSEMBLY, 4 OFFSET, QG
REVISION DATE: 6/25/99 REV. F
ODOT APPROVAL DATE: 8/27/99

DRAWING NUMBER: 35400260
DRAWING NAME: QUADGUARD SYSTEM PCMB ANCHOR ASSEMBLY
REVISION DATE: 11/19/97 REV. C
ODOT APPROVAL DATE: 8/27/99

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

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

DRAWING NUMBER: SS450
DRAWING NAME: CRASH-CUSHION ATTENUATING TERMINAL PLAN, ELEVATION & SECTIONS
REVISION DATE: 3/12/99 REV. 1
ODOT APPROVAL DATE: 8/27/99

DRAWING NUMBER: SS455
DRAWING NAME: TRACC TRANSITION TO W-BEAM MEDIAN BARRIER PLAN, ELEVATION & SECTIONS
REVISION DATE: 2/18/99
ODOT APPROVAL DATE: 8/27/99

DRAWING NUMBER: SS461
DRAWING NAME: TRACC TRANSITION TO CONCRETE SAFETY SHAPE BARRIER PLAN, ELEVATION & SECTIONS
REVISION DATE: 6/30/99 REV. 1
ODOT APPROVAL DATE: 8/27/99

DRAWING NUMBER: SS462
DRAWING NAME: TRACC TRANSITION TO CONCRETE BARRIER SINGLE SLOPE PLAN, ELEVATION & SECTIONS
REVISION DATE: 6/30/99
ODOT APPROVAL DATE: 8/27/99

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

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

DRAWING NUMBER: A040416
DRAWING NAME: UNIVERSAL TAU-II PARTS LIST
REVISION DATE: 4/22/04
ODOT APPROVAL DATE: 10/16/04

DRAWING NUMBER: A040420
DRAWING NAME: UNIVERSAL TAU-II FOUNDATION, FLUSH MOUNT BACKSTOP
REVISION DATE: 4/28/04
ODOT APPROVAL DATE: 10/16/04

DRAWING NUMBER: A040105
DRAWING NAME: UNIVERSAL TAU-II FOUNDATION, PCB BACKSTOP (REFERENCED ON A04020)
REVISION DATE: 1/07/04
ODOT APPROVAL DATE: 10/16/04

DRAWING NUMBER: BO40239
DRAWING NAME: APPLICATION, FLUSH MOUNT BACKSTOP (TYPICAL FOR PARALLEL 60 MPH UNIT)
REVISION DATE: 4/21/04
ODOT APPROVAL DATE: 10/16/04

THE CONTRACTOR SHALL REPAIR OR REPLACE A DAMAGED UNIT WITHIN 24 HOURS OF A DAMAGING IMPACT.

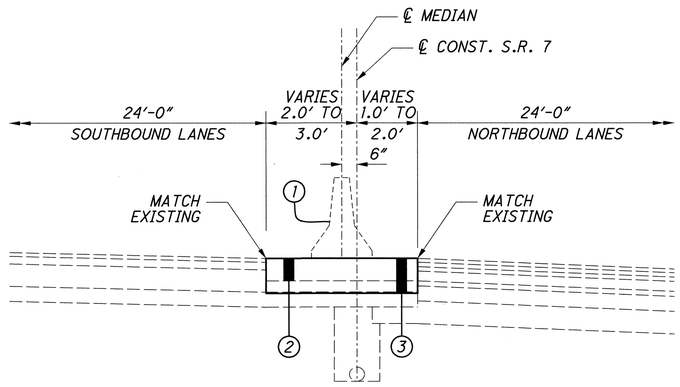
WHEN BIDIRECTIONAL DESIGNS ARE SPECIFIED, THE CONTRACTOR SHALL SUPPLY APPROPRIATE TRANSITIONS. PAYMENT FOR THE ABOVE WORK SHALL BE MADE AT THE UNIT PRICE BID AND SHALL INCLUDE ALL LABOR, TOOLS, EQUIPMENT AND MATERIALS NECESSARY TO CONSTRUCT AND MAINTAIN A COMPLETE AND FUNCTIONAL IMPACT ATTENUATOR SYSTEM, INCLUDING ALL RELATED BACKUPS, TRANSITIONS, LEVELING PADS, HARDWARE AND GRADING, NOT SEPARATELY SPECIFIED, AS REQUIRED BY THE MANUFACTURER.

ITEM 614, WORK ZONE CROSSOVER LIGHTING SYSTEM

THIS WORK SHALL CONSIST OF FURNISHING, ERECTING, OPERATING, MAINTAINING AND REMOVING A WORK ZONE LIGHTING SYSTEM FOR A SINGLE CROSSOVER, OR OVERLAPPING A PAIR OF CROSSOVERS. THE SYSTEM SHALL BE AS SHOWN ON SCD MT-100.00. THE CONTRACTOR SHALL ARRANGE FOR AND PAY FOR POWER. ALL MATERIALS AND CONSTRUCTION SHALL COMPLY WITH APPLICABLE PORTIONS OF 625 AND 725 EXCEPT: THE PERFORMANCE TEST OF 625.19F, AND CERTIFIED DRAWING REQUIREMENT OF 625.04, ARE WAIVED AND USED MATERIALS IN GOOD CONDITION ARE ACCEPTABLE.

POLES WHICH ARE NOT PROTECTED BY GUARDRAIL OR PORTABLE CONCRETE BARRIER SHALL BE LOCATED OUTSIDE THE CLEAR ZONE, AND SHOULD BE LOCATED AT LEAST 30 FT (PREFERABLY 40 FEET) FROM THE EDGE OF PAVEMENT WHEN POSSIBLE. ADDITIONAL POLE LINES, CABLES AND APPURTENANCES NECESSARY TO FURNISH POWER TO THE LIGHTING SYSTEM SHALL BE INCLUDED IN THIS ITEM. SERVICE POLES SHALL BE POSITIONED WITH THE SAME CONSTRAINTS AS THE LIGHTING POLES AS A MINIMUM.

PAYMENT WILL BE MADE AT THE UNIT PRICE PER EACH FOR ITEM 614, WORK ZONE CROSSOVER LIGHTING SYSTEM THROUGHOUT ALL PHASES OF WORK WHEN THE CROSSOVER ROADWAYS ARE USED.



MAINTENANCE OF TRAFFIC TYPICAL SECTION - S.R. 7
STA 537+50.00 TO STA 542+03.50 = 453.50 L.F.
STA 548+56.35 TO STA 553+00.00 = 443.65 L.F.
TOTAL = 897.15 L.F.

PROPOSED ITEM LEGEND

(1) ITEM 202 - CONCRETE BARRIER REMOVED
(2) ITEM 202 - CONCRETE BASE REMOVED
(3) ITEM 615 - PAVEMENT FOR MAINTAINING TRAFFIC, CLASS A

CONCRETE BARRIER DELINEATION

INCREASED DELINEATION, AS SPECIFIED HEREIN, SHALL BE INSTALLED ON ALL CONCRETE BARRIER, PERMANENT OR TEMPORARY, LOCATED WITHIN 5 FEET OF THE EDGE OF THE TRAVELED LANE UNDER EITHER OF THE FOLLOWING CONDITIONS:

ALONG TAPERS AND TRANSITION AREAS

ALONG CURVES (OUTSIDE ONLY) WITH DEGREE OF CURVATURE GREATER THAN OR EQUAL TO 3 DEGREES

THE INCREASED DELINEATION SHALL CONSIST OF EITHER LINEAR DELINEATION PANELS OR THE TRIPLE STACKING OF WORK ZONE BARRIER REFLECTORS.

THE LINEAR DELINEATION PANELS SHALL CONSIST OF PANELS OF DELINEATION, APPROXIMATELY 34 INCHES LONG AND 6-INCHES WIDE AND SHALL BE "CRIMPED". PANELS SHALL BE PROVIDED AT THE RATE OF ONE PER SECTION OF PORTABLE CONCRETE BARRIER, OR ONE PANEL EVERY 10 FEET ON PERMANENT BARRIER, SPACED EVENLY ALONG THE LENGTH OF THE RUN. THE PANELS SHALL BE MOUNTED SUCH THAT THE TOPS OF THE PANELS ARE 26 INCHES FROM THE BASE OF THE CONCRETE BARRIER.

TRIPLE STACKED BARRIER REFLECTORS SHALL CONSIST OF THREE BARRIER REFLECTORS STACKED VERTICALLY IN THEIR ATTACHMENT TO CONCRETE BARRIER. THERE SHALL BE NO OPEN SPACE BETWEEN THE ADJACENT BARRIER REFLECTORS. THE TOP OF THE MIDDLE BARRIER REFLECTOR SHALL BE LOCATED 26 IN ABOVE THE PAVEMENT.

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

AN ESTIMATED QUANTITY HAS BEEN INCLUDED IN THE PLANS FOR ITEM 614 - LINEAR DELINEATION.

ALONG RUNS OF CONCRETE BARRIER WHERE THIS ITEM IS PROVIDED, THE QUANTITY SHALL BE MEASURED AS THE ENTIRE LENGTH OF THE RUN BEING DELINEATED, INCLUDING THE SPACES BETWEEN THE INDIVIDUAL PANELS OR STACKS OF BARRIER REFLECTORS.

CONCRETE BARRIER DELINEATION

OBJECT MARKERS SHALL BE INSTALLED ON ALL PERMANENT CONCRETE BARRIER, LOCATED WITHIN 5 FEET OF THE EDGE OF THE ADJACENT TRAVEL LANE. OBJECT MARKER SPACING SHALL BE 50 FEET.

PAYMENT SHALL BE FULL COMPENSATION FOR ALL MATERIAL, LABOR, INCIDENTALS AND EQUIPMENT NECESSARY FOR FURNISHING, INSTALLING, MAINTAINING AND REMOVING OBJECT MARKERS. AN ESTIMATED QUANTITY FOR ITEM 614 OBJECT MARKER, 1 OR 2-WAY HAS BEEN PROVIDED IN THE PLANS.

GUARDRAIL DELINEATION

OBJECT MARKERS SHALL BE INSTALLED ON ALL GUARDRAIL LOCATED WITHIN 5 FEET OF THE EDGE OF THE ADJACENT TRAVEL LANE. GUARDRAIL-MOUNTING OF OBJECT MARKERS SHALL BE MADE BY INSTALLING THE OBJECT MARKERS ON THE EXTENSION BLOCKS RATHER THAN DIRECTLY ONTO THE GUARDRAIL ITSELF. OBJECT MARKER SPACING SHALL BE APPROXIMATELY 50 FEET.

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

AN ESTIMATED QUANTITY FOR ITEM 614 OBJECT MARKERS, 1 -WAY HAS BEEN PROVIDED IN THE PLANS.

BARRIER MEDIAN INLET PROTECTION

THE BARRIER MEDIAN INLETS WITHIN THE PROPOSED WORK LIMITS SHALL BE REMOVED PER THE DETAILS FOR ITEM 202 - INLET REMOVED, AS PER PLAN. THE CONTRACTOR SHALL COVER THE REMAINING PORTION OF THE THE INLET WITH STEEL PLATES OR OTHER MATERIAL OF ADEQUATE STRENGTH TO PREVENT DEFLECTION UNDER THE PAVEMENT FOR MAINTAINING TRAFFIC. IF NECESSARY, THE CONTRACTOR SHALL SECURE THE COVER TO THE INLET TO PREVENT ANY MOVEMENT. THE COVER PLATE SHALL BE REMOVED WHEN THE PAVEMENT FOR MAINTAINING TRAFFIC IS NO LONGER REQUIRED. ALL LABOR, EQUIPMENT, AND MATERIALS NECESSARY TO COMPLETE THIS WORK SHALL BE INCLUDED IN THE LUMP SUM PRICE FOR ITEM 614 - MAINTAINING TRAFFIC.

ITEM 614 - LAW ENFORCEMENT OFFICER (WITH PATROL CAR) FOR ASSISTANCE DURING CONSTRUCTION OPERATIONS

USE OF LAW ENFORCEMENT OFFICERS (LEOS) BY CONTRACTORS OTHER THAN THE USES SPECIFIED BELOW WILL NOT BE PERMITTED AT PROJECT COST. LEOS SHOULD NOT BE USED WHERE THE OMUTCD INTENDS THAT FLAGGERS BE USED.

IN ADDITION TO THE REQUIREMENTS OF CMS 614 AND THE OMUTCD, A UNIFORMED LEO WITH AN OFFICIAL PATROL CAR (CAR WITH TOP-MOUNTED EMERGENCY FLASHING LIGHTS AND COMPLETE MARKINGS OF THE APPROPRIATE LAW ENFORCEMENT AGENCY) SHALL BE PROVIDED FOR THE FOLLOWING TRAFFIC CONTROL TASKS:

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

IN ADDITION TO THE REQUIREMENT OF CMS 614 AND THE OMUTCD, A UNIFORMED LEO WITH AN OFFICIAL PATROL CAR (CAR WITH TOP-MOUNTED EMERGENCY FLASHING LIGHTS AND COMPLETE MARKINGS OF THE APPROPRIATE LAW ENFORCEMENT AGENCY) SHOULD BE PROVIDED FOR THE FOLLOWING TRAFFIC CONTROL TASKS:

FOR LANE CLOSURES: DURING INITIAL SET-UP PERIODS, TEAR DOWN PERIODS, SUBSTANTIAL SHIFTS OF A CLOSURE POINT OR WHEN NEW LANE CLOSURE ARRANGEMENTS ARE INITIATED FOR LONG-TERM LANE CLOSURES/SHIFTS (FOR THE FIRST AND LAST DAY OF MAJOR CHANGES IN TRAFFIC CONTROL SETUP). IN GENERAL, LEOS SHOULD BE POSITIONED AT THE POINT OF LANE RESTRICTION OR ROAD CLOSURE AND TO MANUALLY CONTROL TRAFFIC MOVEMENTS THROUGH INTERSECTIONS IN WORK ZONES.

WHEN CONSTRUCTION VEHICLES ARE ENTERING/EXITING THE ZONE DIRECTLY FROM/INTO AN OPEN LANE OF TRAFFIC. IF A LANE HAS BEEN CLOSED TO PROVIDE AN ACCELERATION/DECELERATION LANE FOR THE VEHICLE, THE LEO WILL NOT BE REQUIRED.

LEOS SHOULD NOT FORGO THEIR TRAFFIC CONTROL RESPONSIBILITIES TO APPREHEND MOTORISTS FOR ROUTINE TRAFFIC VIOLATIONS. HOWEVER, IF A MOTORIST'S ACTIONS ARE CONSIDERED TO BE RECKLESS, THEN PURSUIT OF THE MOTORIST IS APPROPRIATE.

THE LEOS WORK AT THE DIRECTION OF THE CONTRACTOR. THE CONTRACTOR IS RESPONSIBLE FOR SECURING THE SERVICES OF THE LEOS WITH THE APPROPRIATE AGENCIES AND COMMUNICATING THE INTENTIONS OF THE PLANS WITH RESPECT TO DUTIES OF THE LEOS. THE ENGINEER SHALL HAVE FINAL CONTROL OVER THE LEOS' DUTIES AND PLACEMENT, AND WILL RESOLVE ANY ISSUES THAT MAY ARISE BETWEEN THE TWO PARTIES.

THE LEO SHALL REPORT IN TO THE CONTRACTOR PRIOR TO THE START OF THE SHIFT, IN ORDER TO RECEIVE INSTRUCTIONS REGARDING SPECIFIC WORK ASSIGNMENTS DURING HIS/HER SHIFT. THE LEO IS EXPECTED TO STAY AT THE PROJECT SITE FOR THE ENTIRE DURATION OF HIS/HER SHIFT. THE LEO SHALL REPORT TO THE CONTRACTOR AT THE END OF HIS/HER SHIFT. ONCE THE LEO HAS COMPLETED THE DUTIES DESCRIBED ABOVE AND STILL HAS TIME REMAINING ON HIS/HER SHIFT, THE LEO MAY BE ASKED TO PATROL THROUGH THE WORK ZONE (WITH FLASHING LIGHTS OFF) OR BE PLACED AT A LOCATION TO DETER MOTORISTS FROM SPEEDING. SHOULD IT BE NECESSARY TO LEAVE THE PROJECT SITE, THE LEO SHALL NOTIFY THE ENGINEER. THE CONTRACTOR SHALL PROVIDE THE LEO WITH A TWO-WAY COMMUNICATION DEVICE WHICH SHALL BE RETURNED TO THE CONTRACTOR AT THE END OF HIS/HER SHIFT.

LEOS (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) FOR ASSISTANCE. THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN CARRIED TO THE GENERAL SUMMARY.

ITEM 614, LAW ENFORCEMENT OFFICER WITH PATROL CAR FOR ASSISTANCE 100 HOURS

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

ANY ADDITIONAL COSTS (ADMINISTRATIVE OR OTHERWISE) INCURRED BY THE CONTRACTOR TO OBTAIN THE SERVICES OF AN LEO ARE INCLUDED WITH THE BID UNIT PRICE FOR ITEM 614, LAW ENFORCEMENT OFFICER WITH PATROL CAR FOR ASSISTANCE.

ITEM 614, WORK ZONE SPEED LIMIT SIGN

THE CONTRACTOR SHALL FURNISH, INSTALL, MAINTAIN, COVER DURING SUSPENSION OF WORK, AND SUBSEQUENTLY REMOVE WORK ZONE SPEED LIMIT (R2-1) (45 MPH SPEED LIMIT) SIGNS AND SUPPORTS WITHIN THE WORK LIMITS IN ACCORDANCE WITH THE FOLLOWING REQUIREMENTS:

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

THE WORK ZONE SPEED LIMIT SIGNS MAY BE ERECTED OR UNCOVERED NO MORE THAN FOUR HOURS BEFORE THE ACTUAL START OF WORK. THE SIGNS SHALL BE REMOVED OR COVERED NO LATER THAN FOUR HOURS FOLLOWING RESTORATION OF ALL LANES TO TRAFFIC WITH NO RESTRICTIONS, OR SOONER AS DIRECTED BY THE ENGINEER. TEMPORARY SIGN COVERING AND UNCOVERING DUE TO TEMPORARY LANE RESTORATIONS SHALL BE GUIDED BY THE FOUR-HOUR LIMITATIONS STATED ABOVE. SUCH LANE RESTORATIONS SHOULD BE EXPECTED TO REMAIN IN EFFECT FOR 30 OR MORE DAYS, SUCH AS DURING WINTER SHUT-DOWNS. CLEANUP WORK AND OTHER WORK BEYOND THE SHOULDER SUCH AS SEEDING, TO BE PERFORMED AFTER RESTORATION OF ALL FULL-WIDTH LANES AND SHOULDERS TO TRAFFIC, DOES NOT CONSTITUTE A CONDITION WARRANTING A SPEED REDUCTION. THEREFORE, WHEN ACTIVITY IS LIMITED TO SUCH WORK, THE SPEED LIMIT IN EFFECT SHALL BE THE NORMAL SPEED LIMIT FOR THE SITE.

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

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

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

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

SPEED REDUCTION SIGNS (W3-5) SHALL BE ERECTED IN ADVANCE OF THE SPEED REDUCTION, APPROXIMATELY 1250-FEET ON MULTI-LANE HIGHWAYS AND 500 FEET ON TWO-LANE HIGHWAYS.

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

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

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

PAYMENT FOR ACCEPTED QUANTITIES, COMPLETE IN PLACE, WILL BE MADE AT THE CONTRACT UNIT PRICE. PAYMENT SHALL BE FULL COMPENSATION FOR ALL MATERIALS, LABOR, INCIDENTALS AND EQUIPMENT FOR FURNISHING, ERECTING, MAINTAINING, COVERING DURING SUSPENSION OF WORK, AND REMOVING THE SIGNS AND SUPPORTS. SPEED LIMIT SIGNING FOR THE POINT OF RESUMPTION OF THE STATUTORY SPEED LIMIT SHALL BE PAID FOR AS WORK ZONE SPEED LIMIT SIGNS. THE FOLLOWING ESTIMATED QUANTITY HAS BEEN CARRIED TO THE GENERAL SUMMARY.

ITEM 614, WORK ZONE SPEED LIMIT SIGN	6 EACH
ITEM 614, SPEED ZONE AHEAD SYMBOL SIGN	1 EACH

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

THIS WORK SHALL CONSIST OF FURNISHING, MAINTAINING, AND SUBSEQUENTLY REMOVING A 50-INCH PORTABLE CONCRETE BARRIER (PCB) AT THE LOCATIONS SHOWN ON THE PLANS. FOR DETAILS SEE SCD RM-4.1. PLEASE NOTE THAT SCD RM-4.1 WAS UPDATED 10-20-06 TO PROVIDE A PCB WHICH IS COMPATIBLE WITH NCHRP 350 CRITERIA.

PORTABLE CONCRETE BARRIER, 32 INCHES HIGH WITH AN 18-INCH MINIMUM HEIGHT GLARE SCREEN MAY BE USED AT THE OPTION OF THE CONTRACTOR. THE GLARE SCREEN SHALL BE CONSTRUCTED USING ONE OF THE SCREENS PROVIDED ON THE APPROVED LIST, AVAILABLE ON THE OFFICE OF MATERIAL MANAGEMENT WEB PAGE. THE APPROVED LIST OF GLARE SCREENS CAN BE FOUND ON THE ODOT WEBSITE BY CLICKING ON THE SERVICES MENU, THEN CLICKING ON MATERIALS MANAGEMENT, AND CHOOSING THE APPROVED LIST LINK.

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

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

FOR DIRECTIONS ON HOW TO INSTALL THE GLARE SCREEN AND THE BARRIER, SEE THE MANUFACTURER'S INSTRUCTIONS.

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

STATION		SIDE	614	614	614	614	614		614	614				614	614		615		622			
			LINEAR DELINEATION	WORK ZONE IMPACT ATTENUATOR (BIDIRECTIONAL)	WORK ZONE CROSSOVER LIGHTING SYSTEM	WORK ZONE RAISED PAVEMENT MARKER	BARRIER REFLECTOR, TYPE B, @ 50' C/C		OBJECT MARKER, ONE WAY, @ 50' C/C	OBJECT MARKER, TWO WAY, @ 50' C/C				WORK ZONE EDGE LINE, CLASS I, 740.06, TYPE I (WHITE)	WORK ZONE EDGE LINE, CLASS I, 740.06, TYPE I (YELLOW)		PAVEMENT FOR MAINTAINING TRAFFIC, CLASS A		PORTABLE CONCRETE BARRIER, 50', AS PER PLAN			
FROM	TO		FT	EACH	EACH	EACH	EACH		EACH	EACH				FT	FT		SQ YD		FT			
PHASE 1																						
537+50.00	540+51.00	℄		1													100.3					
540+51.00	542+03.50	℄		1													67.8					
548+56.35	549+56.35	℄		1													50.0					
549+56.35	553+00.00	℄		1													190.9					
PERMANENT CONCRETE BARRIER DELINEATION																						
542+03.50	548+56.35	℄								14												
542+28.50	549+36	NB							15													
542+28.50	547+72	SB							12													
PHASE 2																						
535+95.00	541+78.50	NB			1									583.50	583.50							
541+78.50	548+81.35	NB												702.85	702.85							
548+81.35	554+30.00	NB			1									548.65	548.65							
535+30.00	553+00.00	NB					70			35									1770			
537+18.84	541+78.50	SB												459.66	459.66							
541+78.50	548+81.35	SB												702.85	702.85							
548+81.35	553+77.20	SB												495.85	495.85							
534+18.84	544+77.51	SB				106																
545+85.00	556+77.20	SB				110																
PERMANENT GUARDRAIL DELINEATION																						
541+28.50	542+28.50	NB							3													
549+36.00	548+86.00	NB							2													
INCREASED CONCRETE BARRIER DELINEATION																						
537+10.00	537+75.00	NB	65																			
540+48.00	541+75.00	SB	127																			
548+85.00	549+90.00	SB	105																			
PHASE 3																						
535+96.73	552+52.18	NB												1655.45	1655.45							
535+70.00	554+65.00	SB												1895.00	1895.00							
537+50.00	553+00.00	SB					62			31									1550			
532+96.73	544+77.51	NB				118																
545+85.00	555+52.18	NB				96																
PERMANENT GUARDRAIL DELINEATION																						
541+78.50	542+28.50	SB							2													
547+72.00	549+72.00	SB							3													
INCREASED CONCRETE BARRIER DELINEATION																						
540+60.00	541+75.00	NB	115																			
548+85.00	553+00.00	NB	415																			
550+50.00	551+15.00	SB	65																			
TOTALS CARRIED TO GENERAL SUMMARY			892	4	2	430	132		37	80				2.67 MI			409		3320			

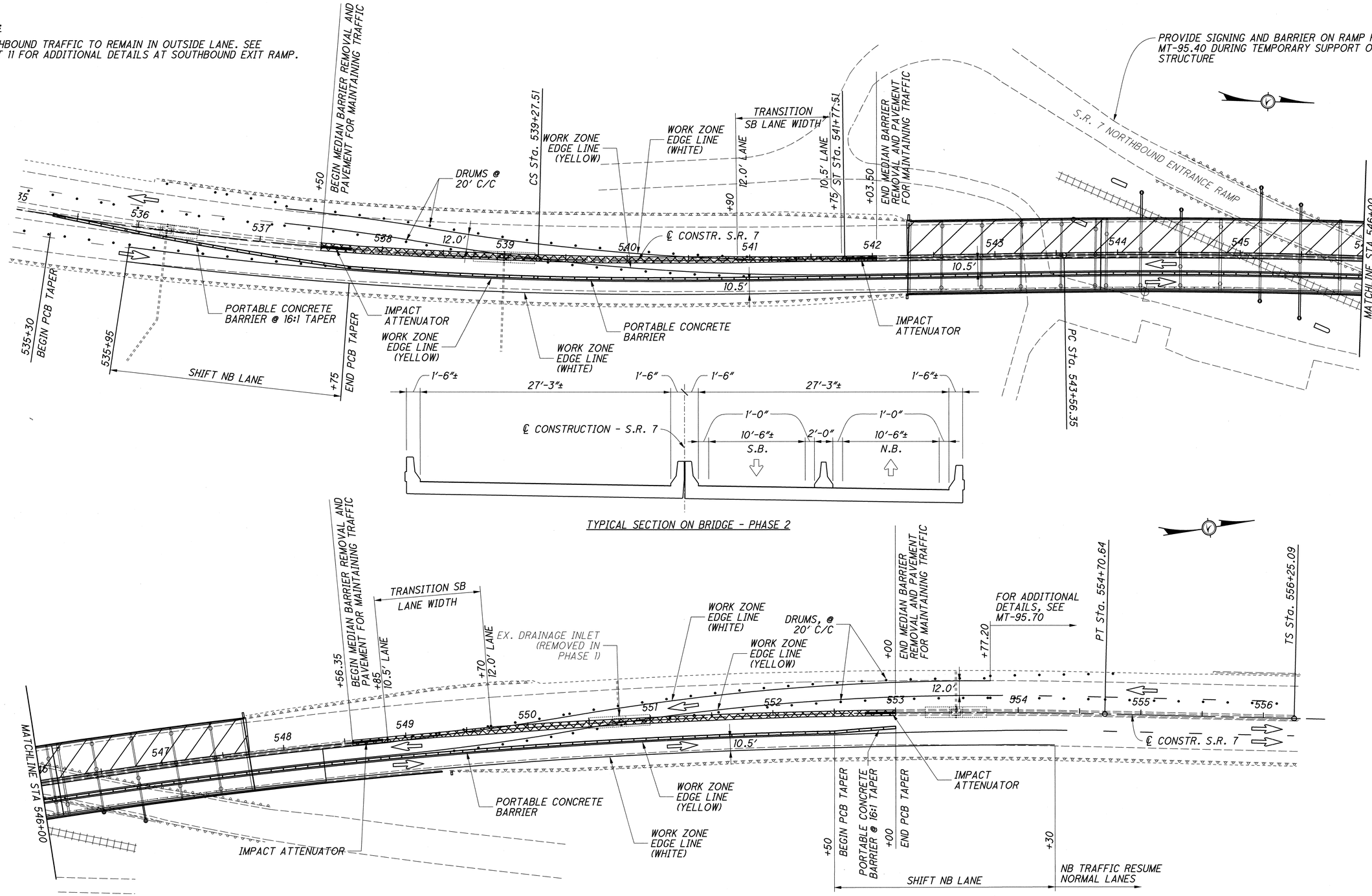
CALCULATED MDC
CHECKED SDS

MAINTENANCE OF TRAFFIC SUBSUMMARY

JEF-7-9.92

NOTE:

SOUTHBOUND TRAFFIC TO REMAIN IN OUTSIDE LANE. SEE SHEET 11 FOR ADDITIONAL DETAILS AT SOUTHBOUND EXIT RAMP.



PAVEMENT FOR MAINTAINING TRAFFIC, CLASS A

WORK ZONE AREA

FOR CROSSOVER GEOMETRY SEE SHEET 12-13.

FOR ADDITIONAL DETAILS NOT SHOWN, SEE SCD MT-95.70

HORIZONTAL SCALE IN FEET
0 20 40 80

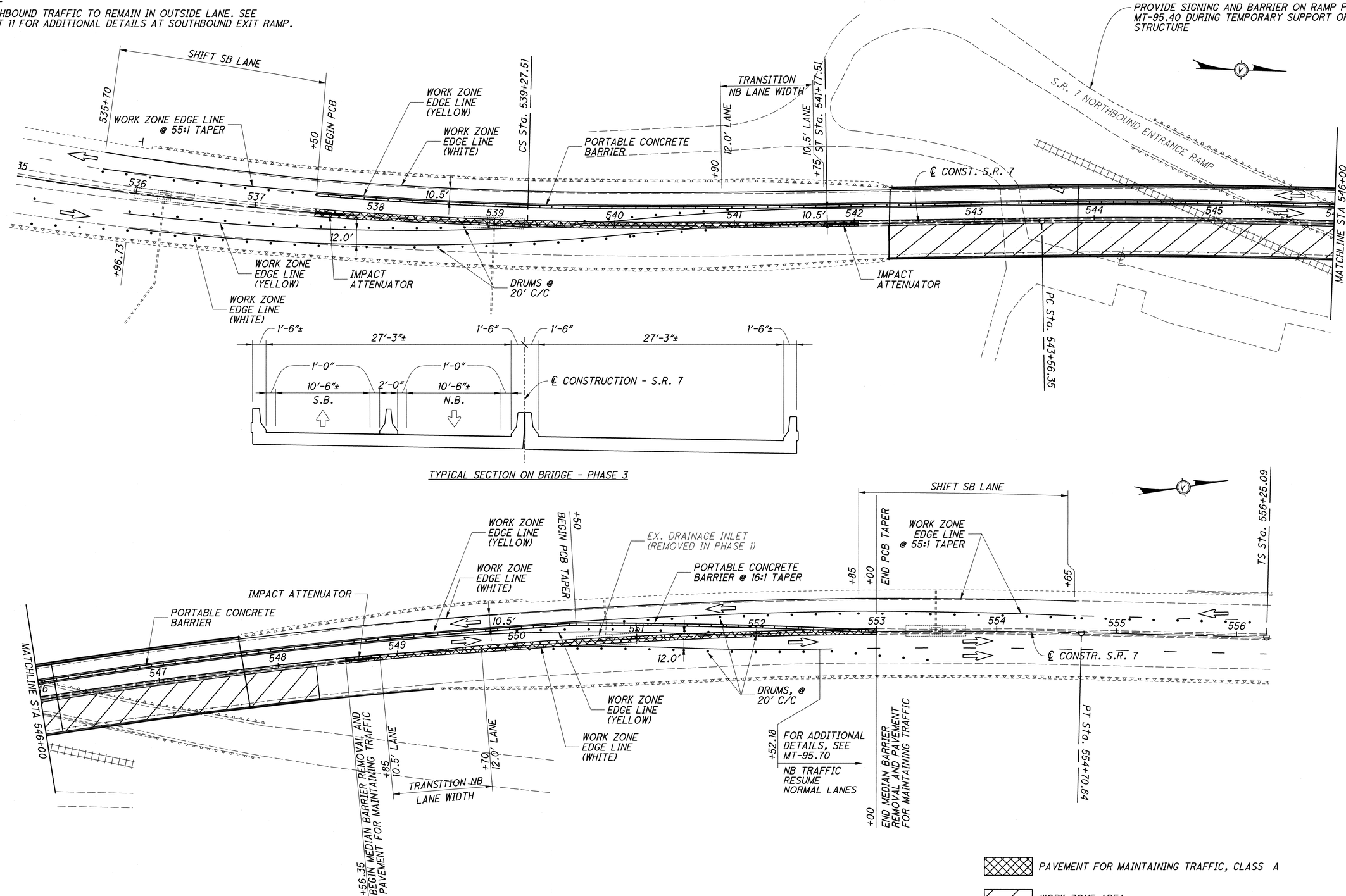
CALCULATED JGL
CHECKED SDS

MAINTENANCE OF TRAFFIC - PHASE 2
STA 535+00 TO STA 556+00

JEF-7-9.92

NOTE:

SOUTHBOUND TRAFFIC TO REMAIN IN OUTSIDE LANE. SEE SHEET 11 FOR ADDITIONAL DETAILS AT SOUTHBOUND EXIT RAMP.



TYPICAL SECTION ON BRIDGE - PHASE 3

PAVEMENT FOR MAINTAINING TRAFFIC, CLASS A

WORK ZONE AREA

FOR CROSSOVER GEOMETRY SEE SHEET 12-13.

FOR ADDITIONAL DETAILS NOT SHOWN, SEE SCD MT-95.70

HORIZONTAL SCALE IN FEET
0 20 40 80

JGL CHECKED SDS

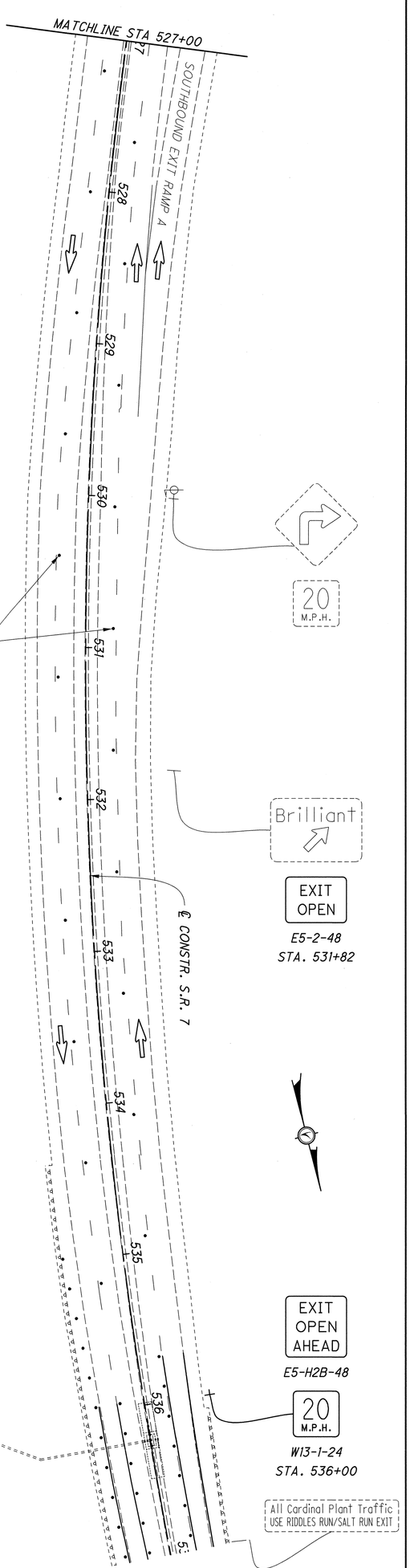
MAINTENANCE OF TRAFFIC - PHASE 3
STA 535+00 TO STA 556+00

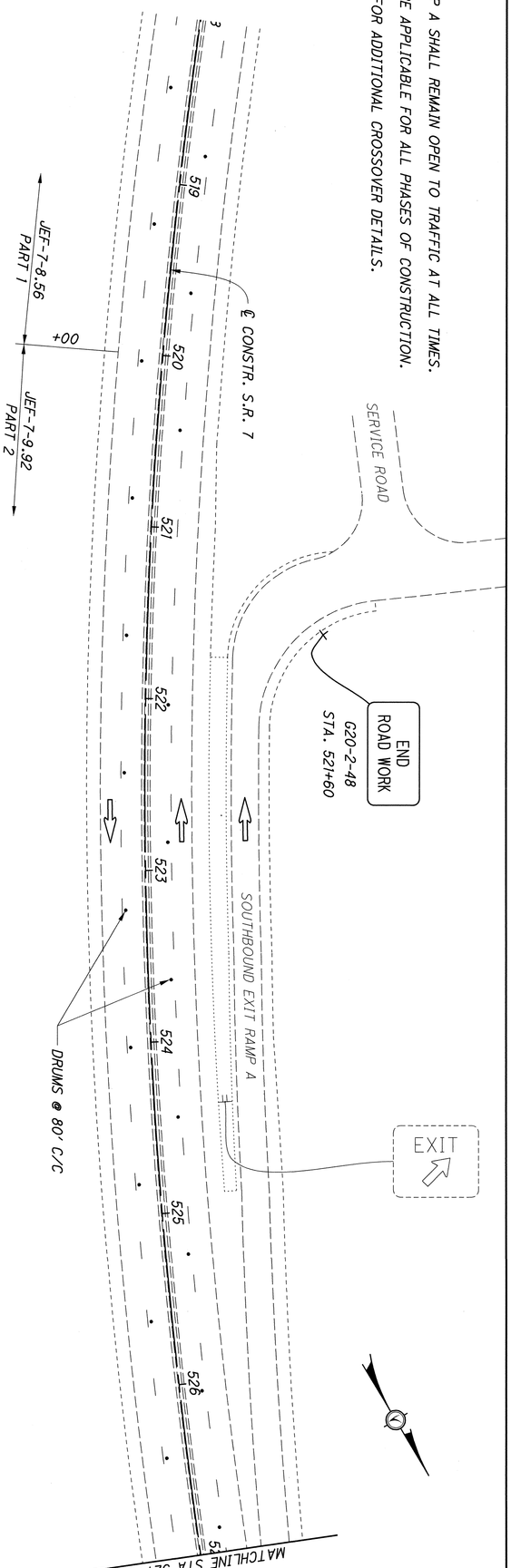
JEF-7-9.92

10
55

NOTES:

1. SOUTHBOUND EXIT RAMP A SHALL REMAIN OPEN TO TRAFFIC AT ALL TIMES.
2. EXIT RAMP DETAILS ARE APPLICABLE FOR ALL PHASES OF CONSTRUCTION.
3. SEE SHEETS 9 AND 10 FOR ADDITIONAL CROSSOVER DETAILS.



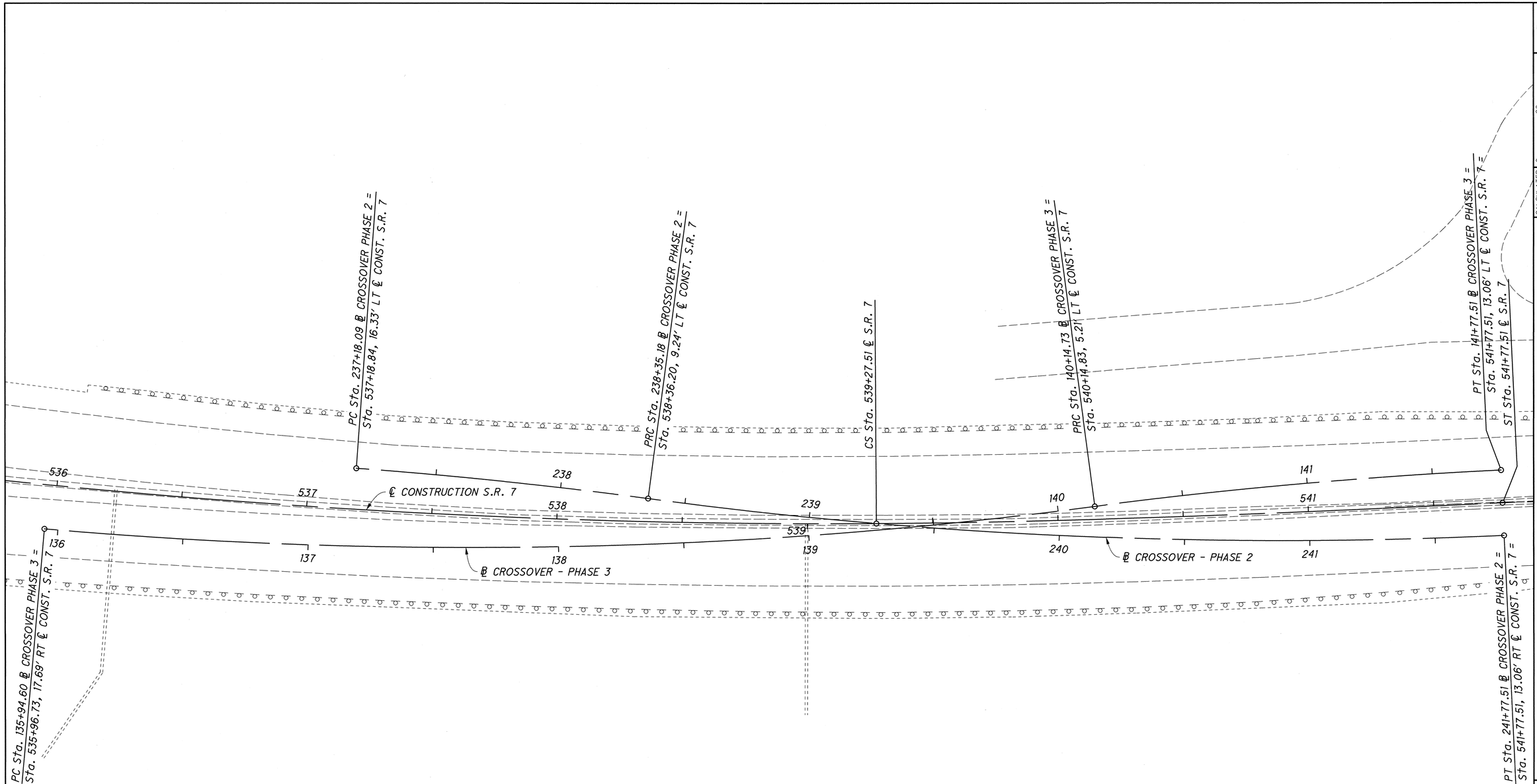


JEF-7-9.92

MAINTENANCE OF TRAFFIC - SOUTHBOUND EXIT RAMP A STA 518+00 TO STA 537+00

CALCULATED SLM
CHECKED SDS

0 20 40 80
HORIZONTAL SCALE IN FEET



℄ CROSSOVER PHASE 2 - CURVE DATA

P.I. STA. 237+76.66	P.I. STA. 240+06.80
Δ = 3° 30′ 47″ (RT)	Δ = 10° 16′ 11″ (LT)
Dc = 3° 00′ 00″	Dc = 3° 00′ 00″
R = 1,909.86′	R = 1,909.86′
T = 58.57′	T = 171.62′
L = 117.09′	L = 342.33′
E = 0.90′	E = 7.70′

℄ CROSSOVER PHASE 3 - CURVE DATA

P.I. STA. 138+05.51	P.I. STA. 140+96.17
Δ = 12° 36′ 14″ (LT)	Δ = 4° 53′ 01″ (RT)
Dc = 3° 00′ 00″	Dc = 3° 00′ 00″
R = 1,909.86′	R = 1,909.86′
T = 210.91′	T = 81.44′
L = 420.13′	L = 162.78′
E = 11.61′	E = 1.74′

℄ CONSTRUCTION S.R. 7 - CURVE DATA

P.I. STA. 528+42.23	P.I. STA. 549+15.90	P.I. STA. 560+26.11
Δ = 47° 16′ 00″ (LT)	Δ = 13° 00′ 00″ (RT)	Δ = 12° 00′ 00″ (LT)
Dc = 1° 50′ 00″	Dc = 1° 10′ 00″	Dc = 3° 00′ 00″
R = 3,125.22′	R = 4,911.07′	R = 1,909.86′
Ls = 250.00′	T = 559.55′	Ls = 400.00′
θs = 2° 17′ 30″	L = 1,114.29′	θs = 6° 00′ 00″
LT = 166.68′	E = 31.77′	LT = 266.82′
ST = 83.35′		ST = 133.47′
Lc = 2,328.18′		Lc = 0.00′
Ts = 1,492.90′		Ts = 401.03′
Es = 287.02′		Es = 14.03′

N

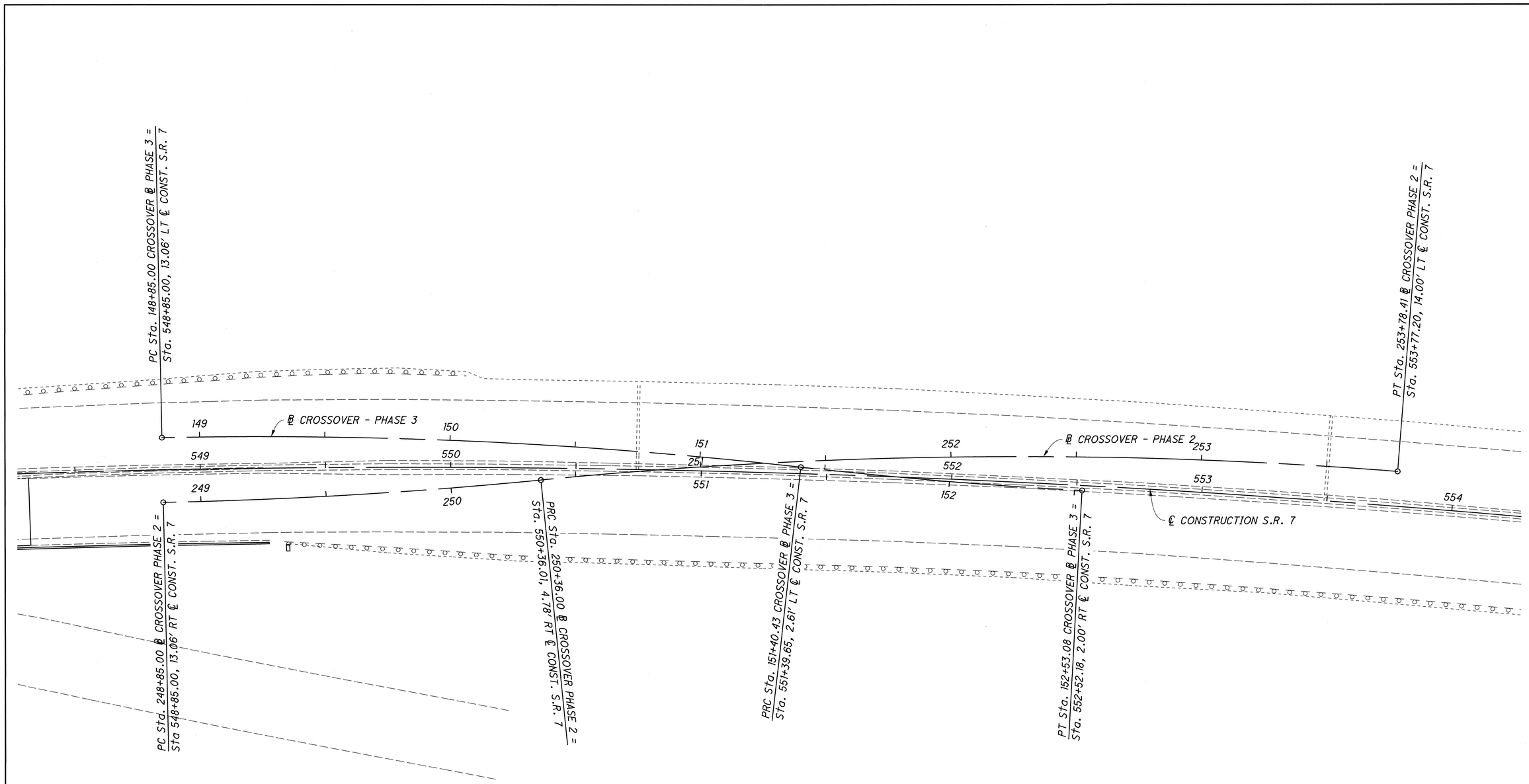
HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED JGL
CHECKED SDS

MAINTENANCE OF TRAFFIC
CROSSOVER GEOMETRY PLAN

JEF-7-9.92

12
55



℄ CROSSOVER PHASE 2 - CURVE DATA

P.I. STA. 249+60.54	P.I. STA. 252+07.66
Δ = 4° 31′ 48″ (LT)	Δ = 10° 16′ 20″ (RT)
Dc = 3° 00′ 00″	Dc = 3° 00′ 00″
R = 1,909.86′	R = 1,909.86′
T = 75.54′	T = 171.66′
L = 151.00′	L = 342.41′
E = 1.49′	E = 7.70′

℄ CROSSOVER PHASE 3 - CURVE DATA

P.I. STA. 150+12.91	P.I. STA. 151+96.77
Δ = 7° 39′ 47″ (RT)	Δ = 3° 22′ 45″ (LT)
Dc = 3° 00′ 00″	Dc = 3° 00′ 00″
R = 1,909.86′	R = 1,909.86′
T = 127.91′	T = 56.34′
L = 255.43′	L = 112.65′
E = 4.28′	E = 0.83′

℄ CONSTRUCTION S.R. 7 - CURVE DATA

P.I. STA. 528+42.23	P.I. STA. 549+15.90	P.I. STA. 560+26.11
Δ = 47° 16′ 00″ (LT)	Δ = 13° 00′ 00″ (RT)	Δ = 12° 00′ 00″ (LT)
Dc = 1° 50′ 00″	Dc = 1° 10′ 00″	Dc = 3° 00′ 00″
R = 3,125.22′	R = 4,911.07′	R = 1,909.86′
Ls = 250.00′	T = 559.55′	Ls = 400.00′
θs = 2° 17′ 30″	L = 1,114.29′	θs = 6° 00′ 00″
LT = 166.68′	E = 31.77′	LT = 266.82′
ST = 83.35′		ST = 133.47′
Lc = 2,328.18′		Lc = 0.00′
Ts = 1,492.90′		Ts = 401.03′
Es = 287.02′		Es = 14.03′

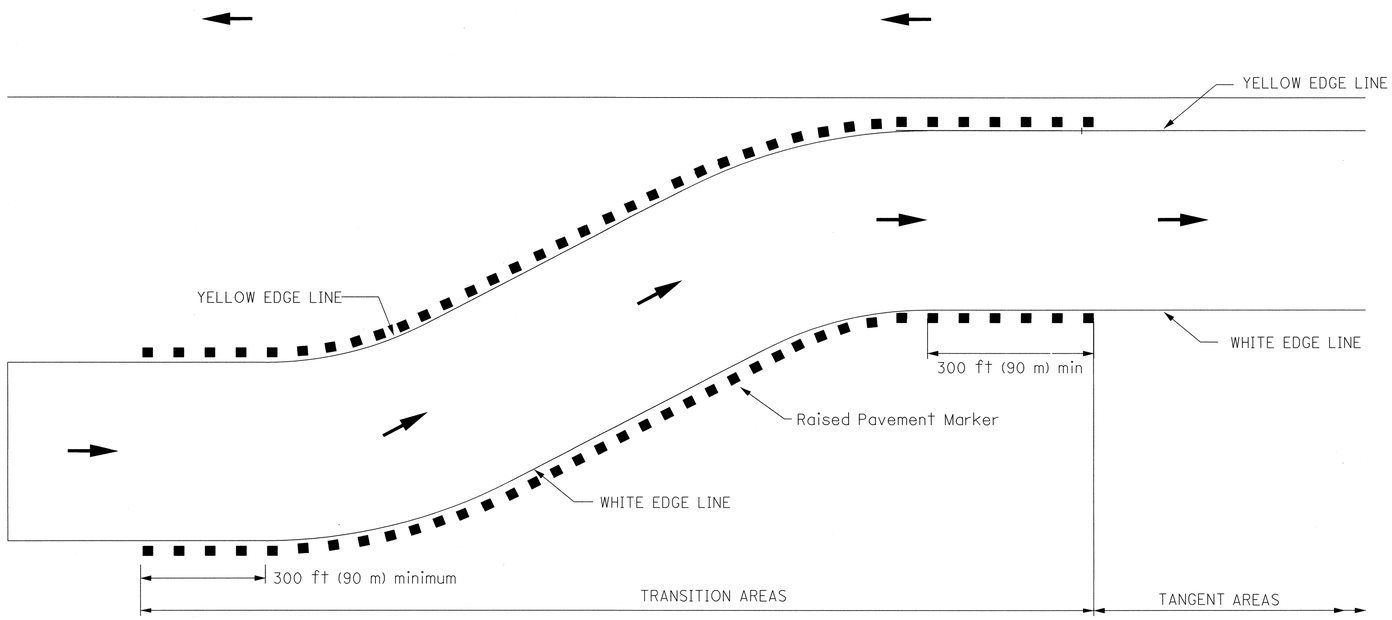
N

0 10 20 40
HORIZONTAL SCALE IN FEET

CALCULATED JGL
CHECKED SDS

MAINTENANCE OF TRAFFIC CROSSOVER GEOMETRY PLAN

JEF-7-9.92



WORK ZONE DELINEATION FOR CROSSOVERS

NOTES

1. This drawing presents delineation procedures for freeways and expressways on asphalt surfaces.
2. Raised Pavement Markers shall meet the following seasonal specifications:

   a) Raised Pavement Markers in place during the normal construction season may be either 621 Raised Pavement Markers or 614 Work Zone Raised Pavement Markers (WZRPMs). The normal construction season with regard to use of WZRPMs shall be the period from April 1 through October 15.

   b) At locations where it is intended that Raised Pavement Markers will winter over, 621 Raised Pavement Markers shall be provided.

   c) At locations where it is intended that work will continue beyond October 15 but will be completed prior to the beginning of snow-plowing season, 614 WZRPMs may remain in place until such time. Snow-plowing season shall be as specified in the plans. If snow-plowing season is not specified in the plans, it shall be assumed that snow-plowing season runs from October 16 through March 31. If project delays, not the fault of ODOT, cause work to extend into the snow-plowing season, the contractor shall be responsible for replacing WZRPMs with 621 Raised Pavement Markers, as determined by the Engineer, at the contrator's expense.
3. All material furnished shall be listed on the Department's Prequalified Lists.
4. The geometrics of the crossover shall be as shown in the plans. Additional details are provided in Standard Construction Drawing MT-95.70.
5. See Standard Construction Drawings MT-102.10 and MT-102.20 for more details concerning lane shifts.
6. Spacing of raised pavement markers (RPMs) shall be at 20 feet (6 m) center-to-center for all long-line marking within transition areas. Within tangent areas RPMs shall be provided only along the lane lines, spaced at 120 foot (36 m) center-to-center.
7. The RPMs shall be 1-way, facing oncomming traffic, and shall be white or yellow to match the color of the associated line marking.
8. Along the edge lines, the RPMs shall be offset a maximum of 4 inches (100 mm) to the outside of the lines. Along the channelizing lines, the RPMs shall be offset to the left of the lines by no more than 1 inch (25 mm). Along the lane lines the RPMs shall be centered between dashes.
9. The RPMs shall be removed when they are no longer appropriate.
10. Holes resulting from removal of 621 RPMs shall be filled as per 621.08. If removal of the 621 RPMs does not take place immediately after the highlighted alignment becomes invalid, the reflectors within the 621 RPMs shall be removed.
11. Following removal of 621 RPMs resurfacing of the transition shall be performed. The resurfacing shall be performed at the time the surface course is being applied. In preparation for resurfacing, the existing pavement shall be removed to a depth necessary to match the level of the intermediate course of the proposed pavement.

LEGEND

■ RPM

→ DIRECTION OF TRAVEL

CALCULATED MDG | CHECKED SDS

WORK ZONE DELINEATION ON ASPHALT SURFACES

JEF-7-9.92

SHEET NUMBER														ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
	3					17	18		23			OFFICE CALC.							
																		ROADWAY	
	LUMP													201	11000	LUMP		CLEARING AND GRUBBING	
						168	241							202	23900	409	SQ YD	CONCRETE BASE REMOVED	
						434	424							202	30700	858	FT	CONCRETE BARRIER REMOVED	
						199	65							202	38000	264	FT	GUARDRAIL REMOVED	
						1	1							202	58201	2	EACH	INLET REMOVED, AS PER PLAN	3
						206.25	68.75							606	13000	275.00	FT	GUARDRAIL, TYPE 5	
						1	1							606	35000	2	EACH	BRIDGE TERMINAL ASSEMBLY, TYPE 1	
						1								606	35100	1	EACH	BRIDGE TERMINAL ASSEMBLY, TYPE 2	
						434	424							622	23301	858	FT	CONCRETE BARRIER, TYPE A, AS PER PLAN	3
																		EROSION CONTROL	
														832	30000	1500	EACH	EROSION CONTROL	
																		DRAINAGE	
						1	1							604	22500	2	EACH	INLET, MISC.: NEW JERSEY SHAPE BARRIER MEDIAN INLET	3
																		PAVEMENT	
												672		254	01000	672	SQ YD	PAVEMENT PLANING, ASPHALT CONCRETE	
												28		407	10000	28	GALLON	TACK COAT	
												24		446	47029	24	CU YD	ASPHALT CONCRETE SURFACE COURSE, TYPE 1, PG70-22M, AS PER PLAN	3
						20	20							609	24510	40	FT	CURB, TYPE 4-C	
																		TRAFFIC CONTROL	
									47					621	00100	47	EACH	RPM	
									47					621	54000	47	EACH	RAISED PAVEMENT MARKER REMOVED	
						9	7							626	00100	16	EACH	BARRIER REFLECTOR	
									1.41					642	00100	1.41	MILE	EDGE LINE, TYPE 1	
									0.71					642	00200	0.71	MILE	LANE LINE, TYPE 1	
																		STRUCTURES	
																		FOR BRIDGE NO. JEF-7-0992 QUANTITIES SEE SHEET 28.	

CALCULATED MDG
CHECKED SDS

GENERAL SUMMARY

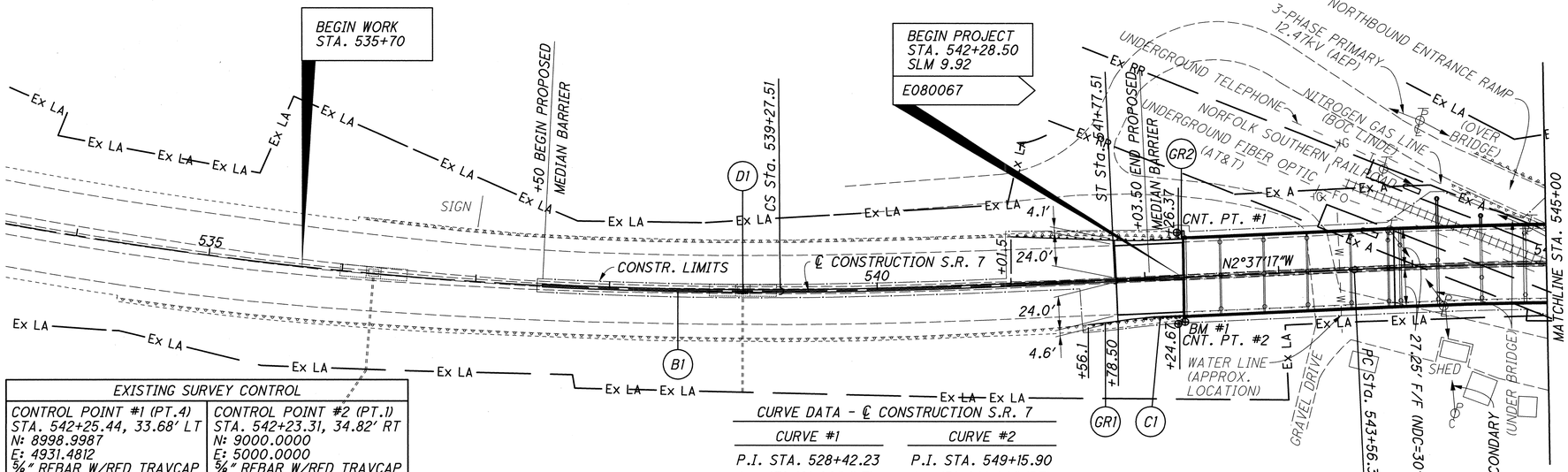
JEF-7-9.92

SHEET NUMBER														ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
		4	6	7	8													***MAINTENANCE OF TRAFFIC***	
			100											614	11110	100	HOUR	LAW ENFORCEMENT OFFICER WITH PATROL CAR FOR ASSISTANCE	
					892									614	11620	892	FT	LINEAR DELINEATION	
					4									614	12338	4	EACH	WORK ZONE IMPACT ATTENUATOR (BIDIRECTIONAL)	
				1										614	12410	1	EACH	SPEED ZONE AHEAD SYMBOL SIGN	
				6										614	12470	6	EACH	WORK ZONE SPEED LIMIT SIGN	
					2									614	12756	2	EACH	WORK ZONE CROSSOVER LIGHTING SYSTEM	
					430									614	12800	430	EACH	WORK ZONE RAISED PAVEMENT MARKER	
		18			132									614	13300	150	EACH	BARRIER REFLECTOR, TYPE B	
		18			37									614	13350	55	EACH	OBJECT MARKER, ONE WAY	
					80									614	13360	80	EACH	OBJECT MARKER, TWO WAY	
		80												614	18401	80	DAY	PORTABLE CHANGEABLE MESSAGE SIGN, AS PER PLAN	4
					2.67									614	22200	2.67	MILE	WORK ZONE EDGE LINE, CLASS I, 740.06, TYPE I	
					409									615	20000	409	SQ YD	PAVEMENT FOR MAINTAINING TRAFFIC, CLASS A	
		800												622	40020	800	FT	PORTABLE CONCRETE BARRIER, 32"	
					3320									622	40031	3320	FT	PORTABLE CONCRETE BARRIER, 50", AS PER PLAN	7
														SPECIAL	10830000	LUMP		CPM PROGRESS SCHEDULE SHORT DURATION PROJECTS	
														614	11000	LUMP		MAINTAINING TRAFFIC	
														619	16010	6	MONTH	FIELD OFFICE, TYPE B	
														623	10001	LUMP		CONSTRUCTION LAYOUT STAKES, AS PER PLAN	3
														624	10000	LUMP		MOBILIZATION	

CALCULATED MDG
CHECKED SDS

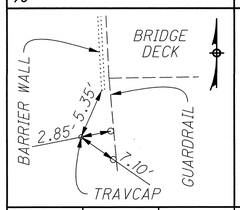
GENERAL SUMMARY

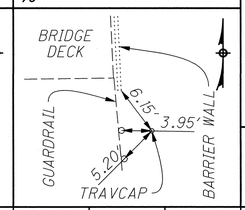
JEF-7-9.92



* NEW JERSEY SHAPE BARRIER MEDIAN INLET

EXISTING SURVEY CONTROL	
CONTROL POINT #1 (PT.4) STA. 542+25.44, 33.68' LT N: 8998.9987 E: 4931.4812 ⅝" REBAR W/RED TRAVCAP	CONTROL POINT #2 (PT.1) STA. 542+23.31, 34.82' RT N: 9000.0000 E: 5000.0000 ⅝" REBAR W/RED TRAVCAP



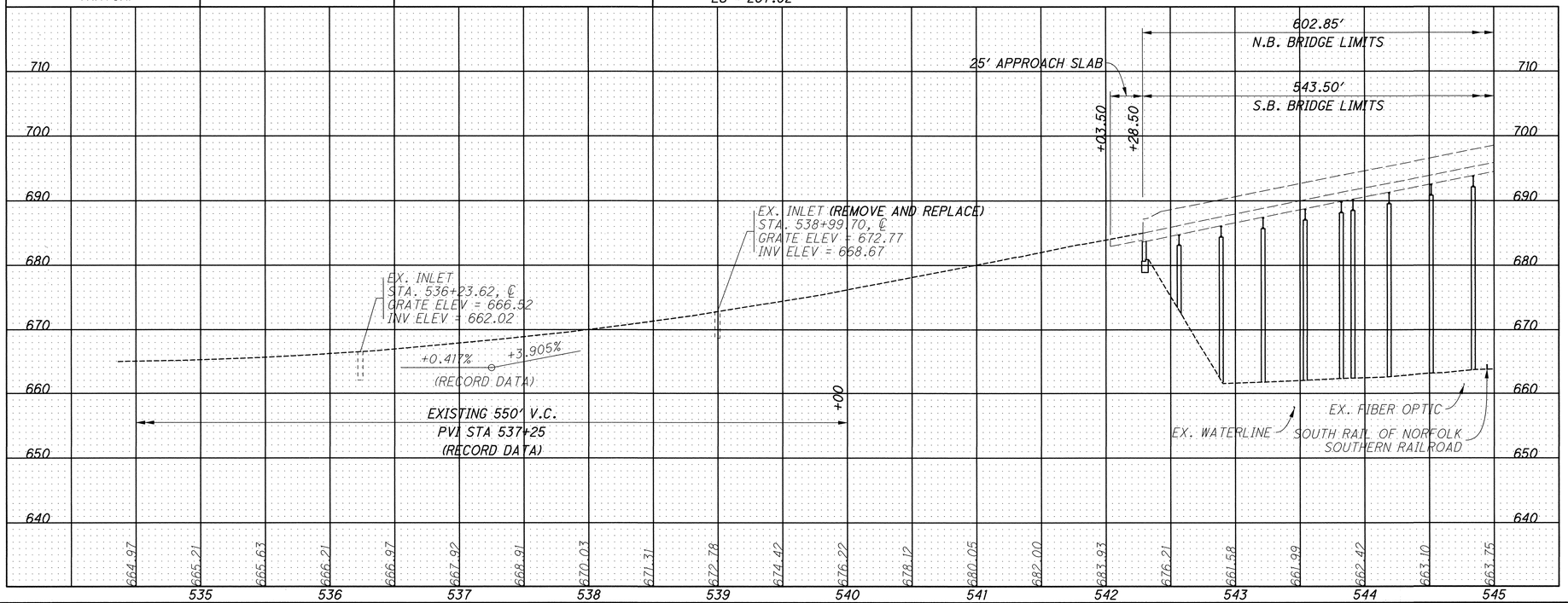


BENCHMARK #1 (PT. NO. 5)
STA. 542+28.53, 33.44' RT.
ELEV = 685.15
NORTHEAST CORNER OF WINGWALL

CURVE DATA - ℄ CONSTRUCTION S.R. 7

CURVE #1	CURVE #2
P.I. STA. 528+42.23	P.I. STA. 549+15.90
Δ = 47° 16' 00" (LT)	Δ = 13° 00' 00" (RT)
Dc = 1° 50' 00"	Dc = 1° 10' 00"
R = 3,125.22'	R = 4,911.07'
Ls = 250.00'	T = 559.55'
θs = 2° 17' 30"	L = 1,114.29'
LT = 166.68'	E = 31.77'
ST = 83.35'	
Lc = 2,328.18'	
Ts = 1,492.90'	
Es = 287.02'	

NOTE:
SEE SHEET 18 FOR CENTERLINE CONTROL COORDINATES.



REF NO.	STATION FROM	STATION TO	SIDE	202 CONCRETE BASE REMOVED SQ YD	202 CONCRETE BARRIER REMOVED FT	202 GUARDRAIL REMOVED FT	202 INLET REMOVED, AS PER PLAN EACH	604 INLET, MISC.: * EACH	606 GUARDRAIL, TYPE 5 FT	606 BRIDGE TERMINAL ASSEMBLY, TYPE 1 EACH	606 BRIDGE TERMINAL ASSEMBLY, TYPE 2 EACH	609 CURB, TYPE 4-C FT	622 CONC. BARRIER, TYPE A, AS PER PLAN FT	626 BARRIER REFLECTOR EACH
B1	537+50	542+03.50	℄	168	433.50								433.50	5
C1	542+07.15	542+27.15	RT				1	1	75.00	1		20		2
D1	538+99.70	542+99.70	℄						131.25		1	20		2
GR1	541+56.1	542+30.92	RT			71.58								
GR2	541+01.5	542+32.62	LT			127.50								
TOTALS CARRIED TO GENERAL SUMMARY				168	434	199	1	1	206.25	1	1	20	434	9

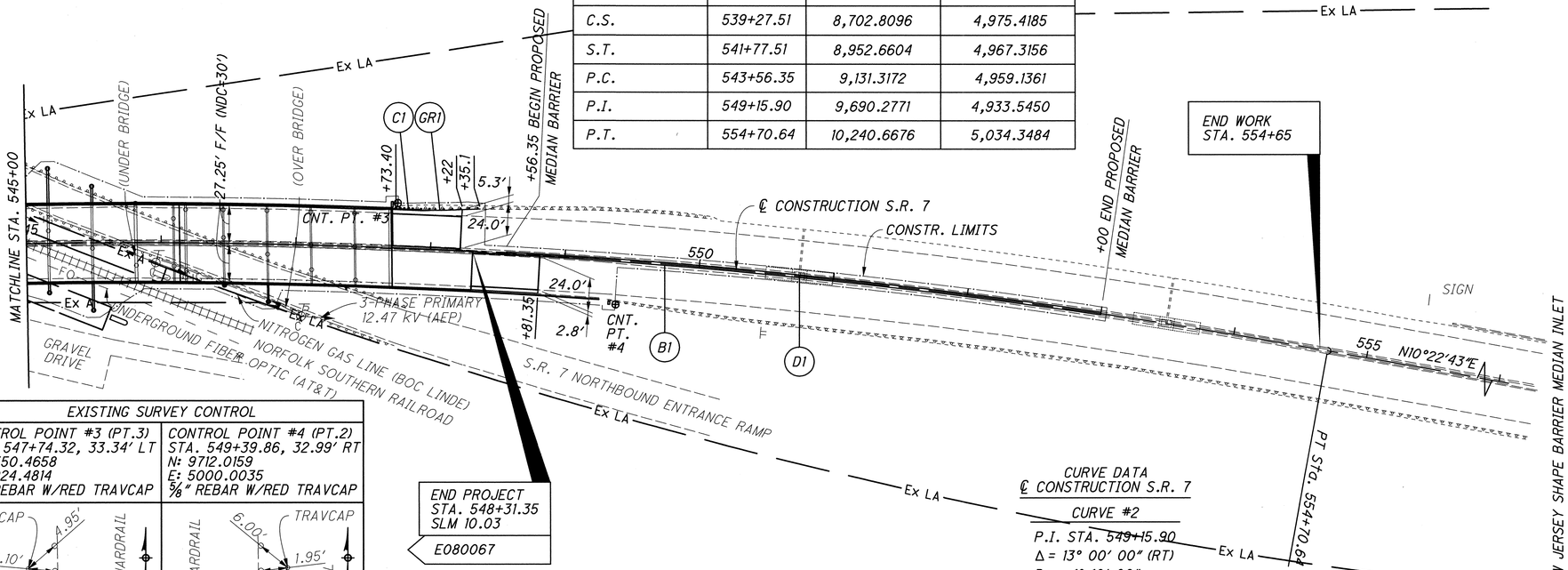
CALCULATED MDG
CHECKED SDS

HORIZONTAL SCALE IN FEET
0 25 50 100

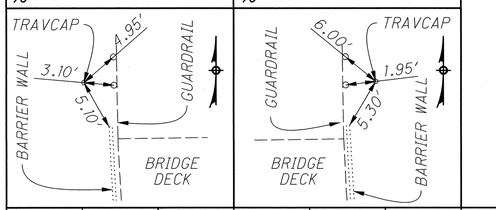
PLAN AND PROFILE
STA 535+00 TO STA 545+00

JEF-7-9.92

℄ SURVEY & CONSTRUCTION - S.R. 7			
DESCRIPTION	STATION	NORTHING	EASTING
HORIZONTAL CONTROL			
P.I. (SCS)	528+42.23	7,461.3220	5,035.5943
C.S.	539+27.51	8,702.8096	4,975.4185
S.T.	541+77.51	8,952.6604	4,967.3156
P.C.	543+56.35	9,131.3172	4,959.1361
P.I.	549+15.90	9,690.2771	4,933.5450
P.T.	554+70.64	10,240.6676	5,034.3484



EXISTING SURVEY CONTROL	
CONTROL POINT #3 (PT.3) STA. 547+74.32, 33.34' LT N: 9550.4658 E: 4924.4814 ⅝" REBAR W/RED TRAVCAP	CONTROL POINT #4 (PT.2) STA. 549+39.86, 32.99' RT N: 9712.0159 E: 5000.0035 ⅝" REBAR W/RED TRAVCAP

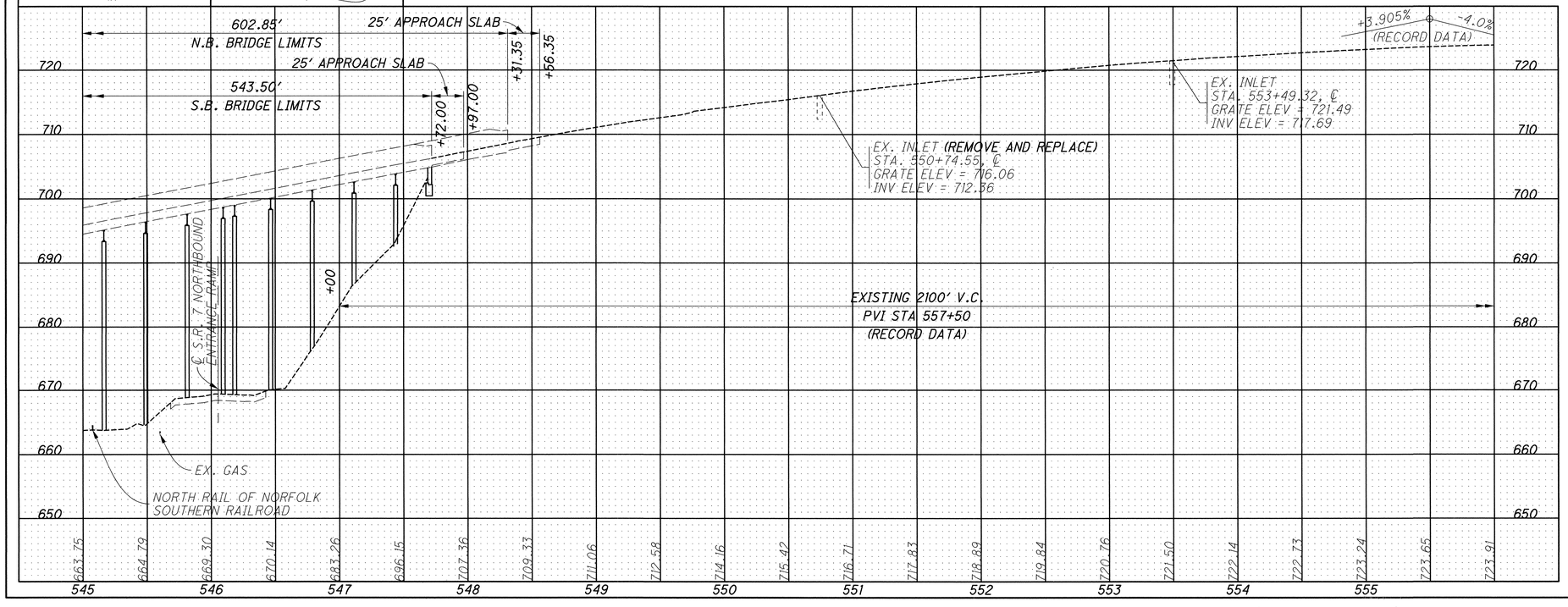


CURVE DATA
℄ CONSTRUCTION S.R. 7

CURVE #2

P.I. STA. 549+15.90
Δ = 13° 00' 00" (RT)
Dc = 1° 10' 00"
R = 4,911.07'
T = 559.55'
L = 1,114.29'
E = 31.77'

* NEW JERSEY SHAPE BARRIER MEDIAN INLET



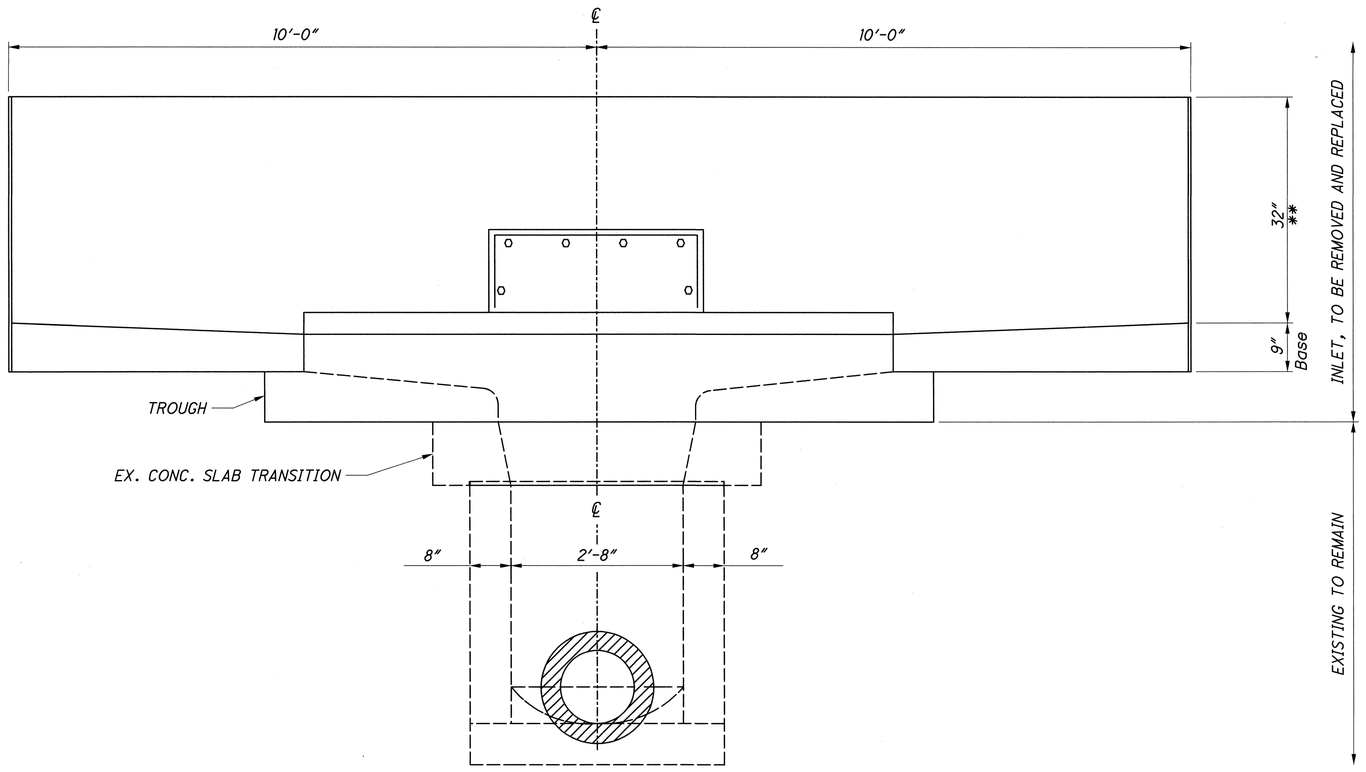
REF NO.	STATION FROM	STATION TO	SIDE	626 BARRIER REFLECTOR	622 CONC. BARRIER, TYPE A, AS PER PLAN	609 CURB, TYPE 4-C	606 BRIDGE TERMINAL ASSEMBL', TYPE 1	606 GUARDRAIL, TYPE 5	604 INLET, MISC.: *	202 INLET REMOVED, AS PER PLAN	202 GUARDRAIL REMOVED	202 CONCRETE BARRIER REMOVED	202 CONCRETE BASE REMOVED
				EACH	FT	FT	EACH	FT	EACH	EACH	FT	FT	SQ YD
B1	548+56.35	553+00	℄									423.65	241
C1	547+70.92	547+90.92	LT			20			1	1			
D1	550+74.55	550+74.55	℄				1	68.75					
GR1	547+67.15	548+35.1	LT	2	423.65		1				65.3		
TOTALS CARRIED TO GENERAL SUMMARY				5	423.65	20	1	68.75	1	1	65	424	241
				7	424	20	1	68.75	1	1	65	424	241

CALCULATED MDG
CHECKED SDS

HORIZONTAL SCALE IN FEET
0 25 50 100

PLAN AND PROFILE
STA 545+00 TO STA 556+00

JEF-7-9.92



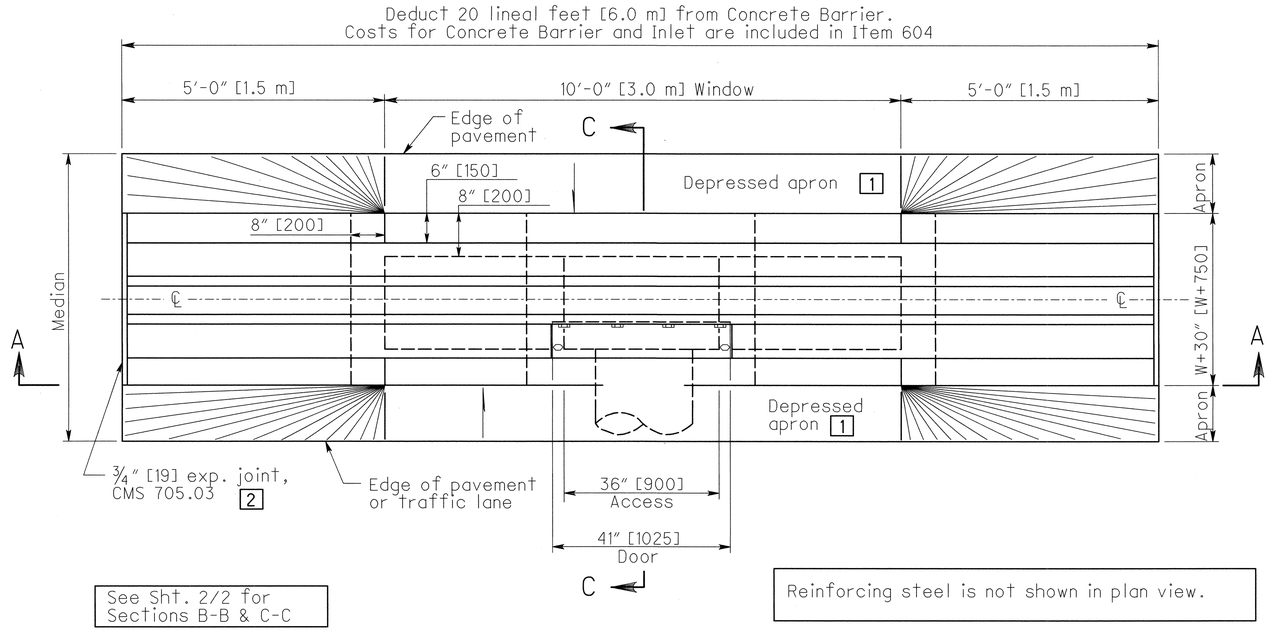
MEDIAN INLET REMOVAL AND REPLACEMENT DETAIL

** SEE NOTES REGARDING VARIABLE HEIGHT BARRIER ON SHEET 22.

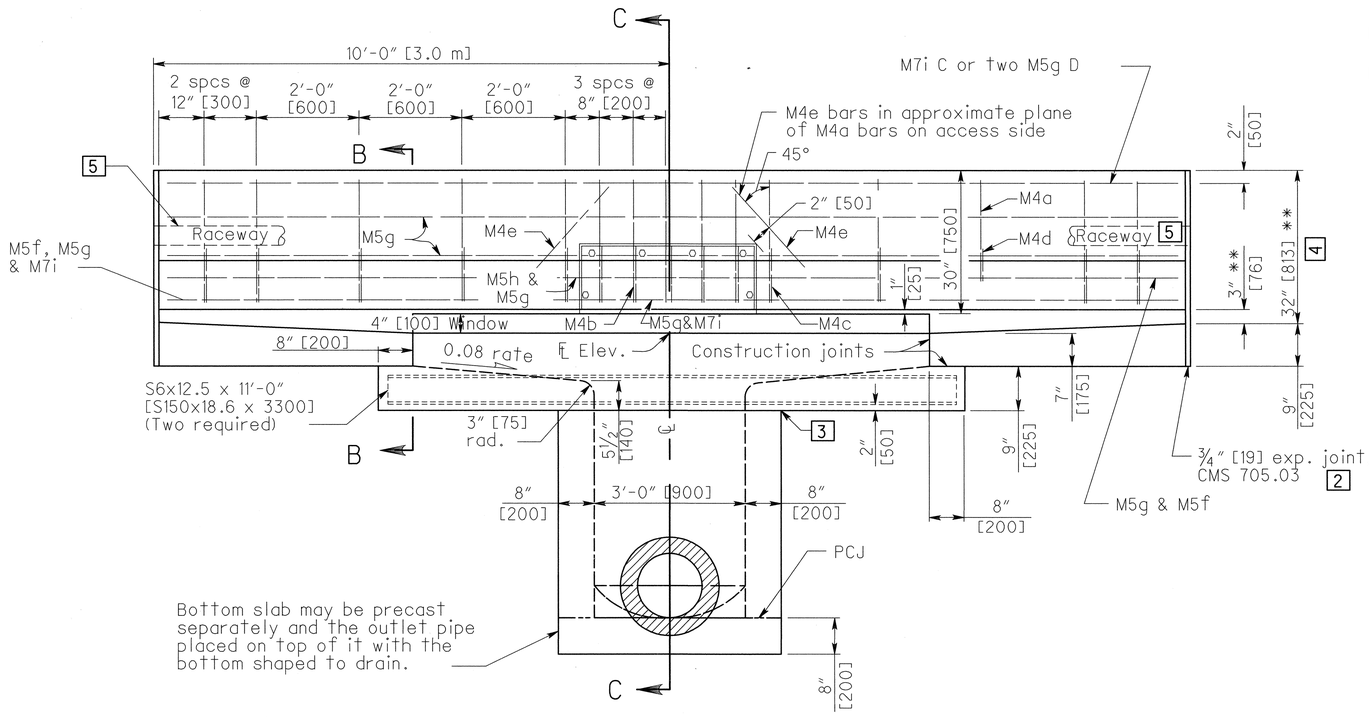
CALCULATED JGL
CHECKED SDS

BARRIER MEDIAN INLETS

JEF-7-9.92



PLAN VIEW



ELEVATION A-A

NOTES

GENERAL: The details on this sheet are based on original **SCD I-2.2.**

WALLS: The walls between the bottom slab and the upper permissible construction joint may be built of brick, concrete block or cast-in-place concrete, 8" [200] nominal thickness for depths of 12' [3.5 m] or less. Precast walls shall have a minimum thickness of 6" [150] and be reinforced sufficiently to permit shipping and handling without damage.

HEIGHT: When placed in 50" [1270] high barrier the 30" [763] height shall be made 48" [1220].

CONCRETE: Cast-in-place concrete is to be Class C. All precast concrete shall meet the requirements of CMS 706.13 with a minimum of 4% entrained air content in the hardened concrete. Required markings shall include the inlet number. Exposed concrete surfaces of the barrier shall be sealed with an approved sealer.

REINFORCING STEEL: Reinforcing steel shall be epoxy coated in accordance with CMS 509.09.

STEPS: Steps shall be in accordance with **SCD MH-1.1.**

INLETS OVER 12 FEET [3.5 m] IN DEPTH: Such inlets shall be precast or cast-in-place concrete; reinforced with #4 [#13M] bars on 12" [300] centers both vertically and horizontally with 2" [50] clearance from the inside wall face.

OPENINGS: Pipe openings shall be the outside diameter of the pipe being supplied plus 2" [50] when fabricated or field cut. The interstitial space shall be filled with grout per CMS 601.

ACCESS DOOR: The steel door, frame and all inserts, shall be galvanized. The hex head bolts shall be stainless steel. (See ACCESS DOOR DETAIL, Sht. 2/2).

PCJ: Permissible Construction Joint.

PAYMENT: All labor, equipment, and materials necessary to complete the work as detailed shall be included in the unit price bid for Item 604 - Inlet Misc.: New Jersey Shape Barrier Median Inlets.

STANDARD INLET NUMBERS	
I-3C Type A	(32" [813] ** Barrier with W=6" [150])
~~I-3C Type A1~~	~~(50" [1270] Barrier with W=6" [150])~~
~~I-3D Type B~~	~~(32" [813] Barrier with W=12" [300])~~
~~I-3D Type B1~~	~~(50" [1270] Barrier with W=12" [300])~~

LEGEND

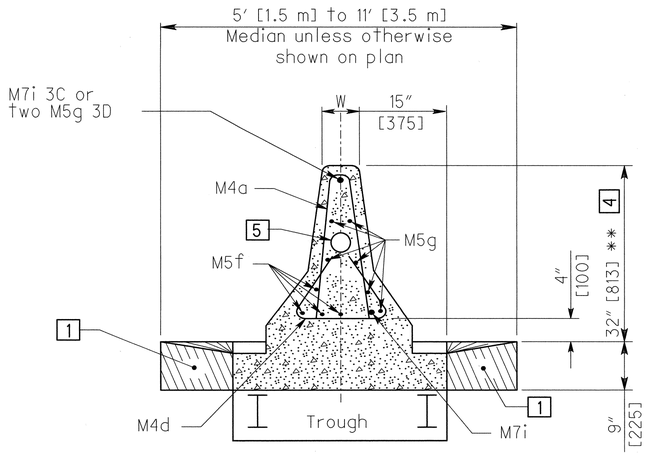
1. Aprons on both sides of the inlet shall be sloped toward windows and filled with Class C concrete. On superelevated sections, the aprons shall be sloped as shown in SECTION C-C on Sht. 2/2. Cost of any pavement removal and material is included in CMS 604.
2. A 1½" [38] minimum exp. joint shall be provided in concrete pavement or concrete shoulders.
3. Inlet top profile shall match the adjacent concrete median barrier profile by constructing the top surface of the base to match the median barrier profile.
4. Barrier height equals either 32" [813] or 50" [1270].
5. 4" [100] Lighting raceway, if required else where by the plans. (Only when W=12" [300].)

*** SEE NOTES REGARDING VARIABLE HEIGHT BARRIER ON SHEET 22.*

CALCULATED MDG CHECKED SDS

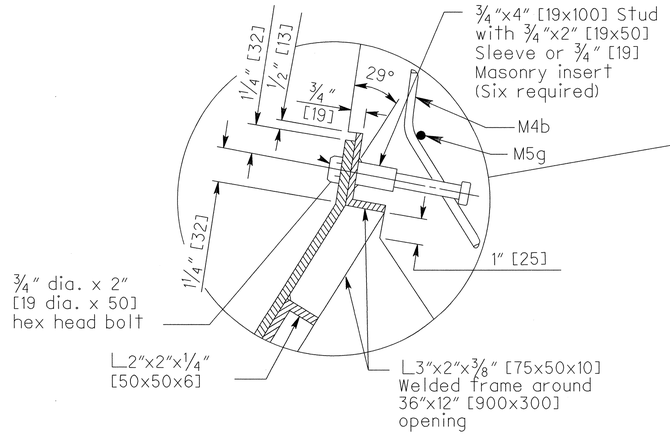
BARRIER MEDIAN INLETS

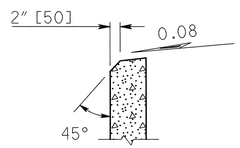
JEF-7-9.92



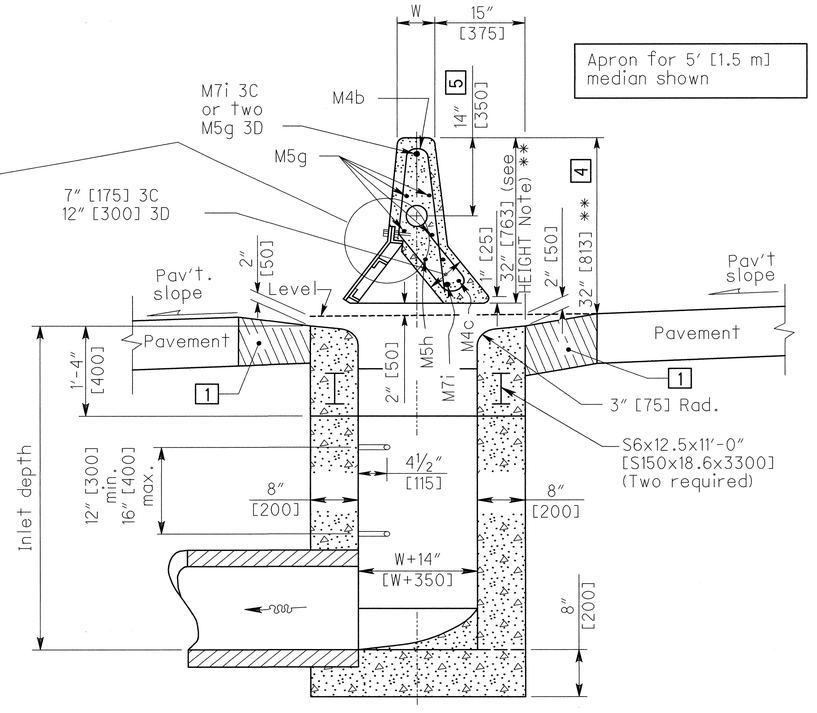
SECTION B-B
(See Sht. 1/2)

See Sheet 1 of 2 for
NOTES and LEGEND

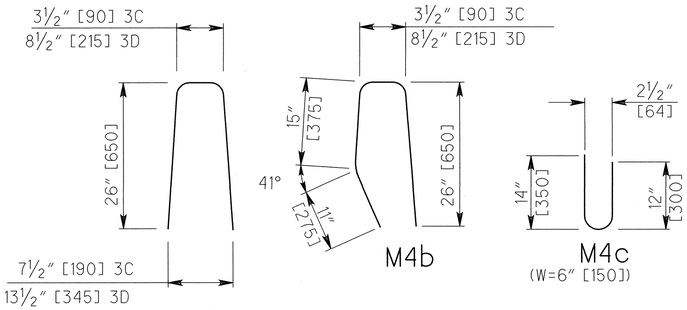


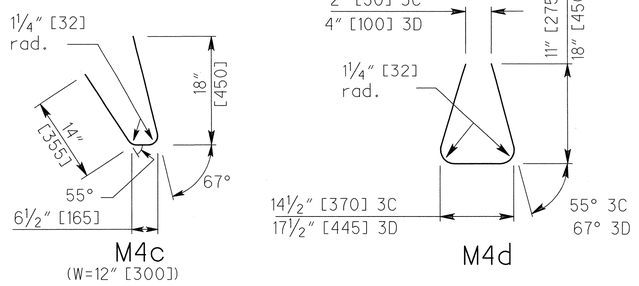


ALTERNATE
SPILLWAY SHAPE

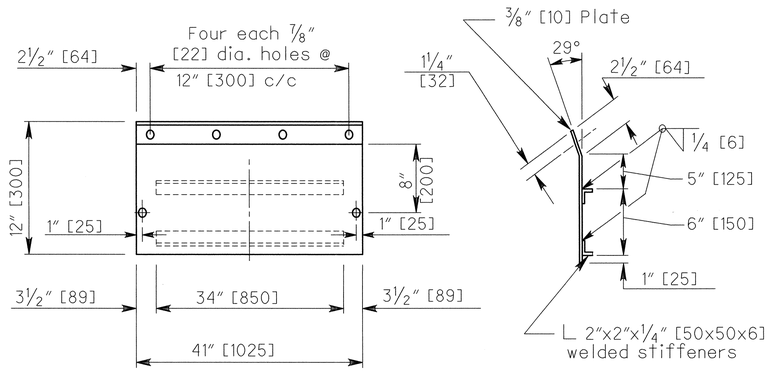


SECTION C-C
(See Sht. 1/2)





BENDING DIAGRAMS

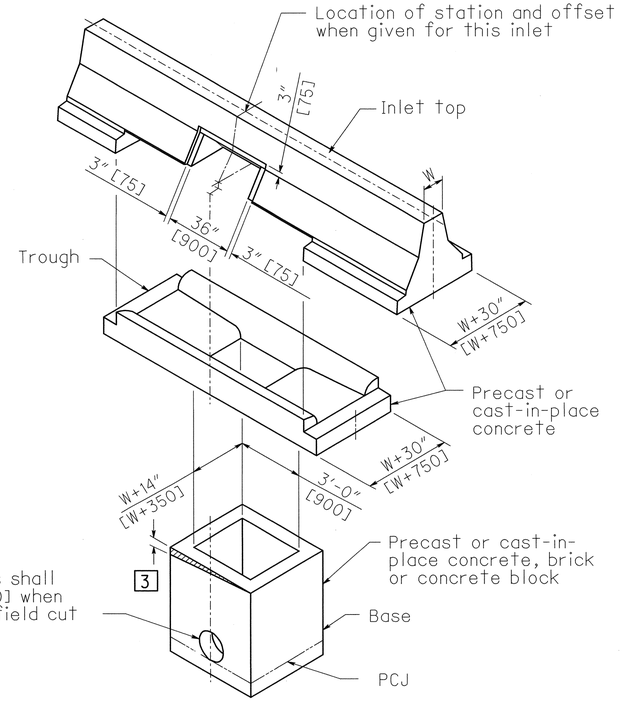


ACCESS DOOR DETAIL

REINFORCING STEEL LIST						
SIZE	BAR	I-3C W=6″ [W=150]			I-3D W=12″ [W=300]	
		Ea.	Length		Ea.	Length
#4 [#13M]	M4a	10	4′-6″	[1370]	10	5′-0″ [1525]
	M4b	5	4′-6″	[1370]	5	5′-0″ [1525]
	M4c	5	2′-4″	[710]	5	3′-2″ [965]
	M4d	10	3′-1″	[940]	10	4′-6″ [1370]
	M4e	2	2′-0″	[610]	2	2′-0″ [610]
#5 [#16M]	M5f	8	8′-2″	[2490]	8	8′-2″ [2490]
	M5g	6	19′-8″	[5995]	8	19′-8″ [5995]
	M5h	1	5′-0″	[1525]	1	5′-0″ [1525]
#7 [#22M]	M7i	2	19′-8″	[5995]	1	19′-8″ [5995]
S6x12.5 [S150x18.6]		2	11′-0″	[3300]	2	11′-0″ [3300]

Included for estimating purposes only. The cost of furnishing and placing all reinforcing steel shall be included in Item 604 for payment.

Openings for pipes shall
be O.D. plus 2″ [50] when
prefabricated or field cut



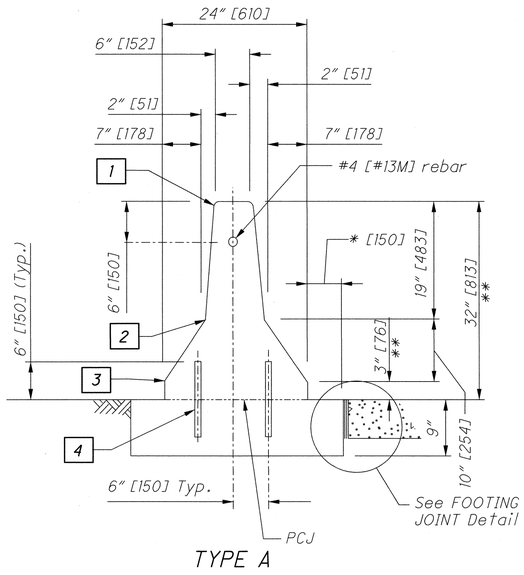
PICTORIAL VIEW

** SEE NOTES REGARDING VARIABLE HEIGHT BARRIER ON SHEET 22.

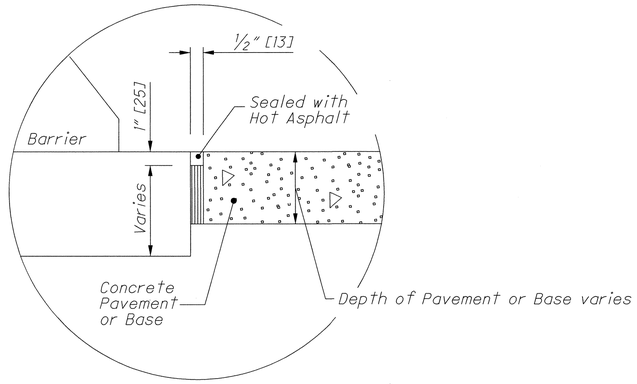
CALCULATED MDG CHECKED SDS

BARRIER MEDIAN INLETS

JEF-7-9.92



TYPE A

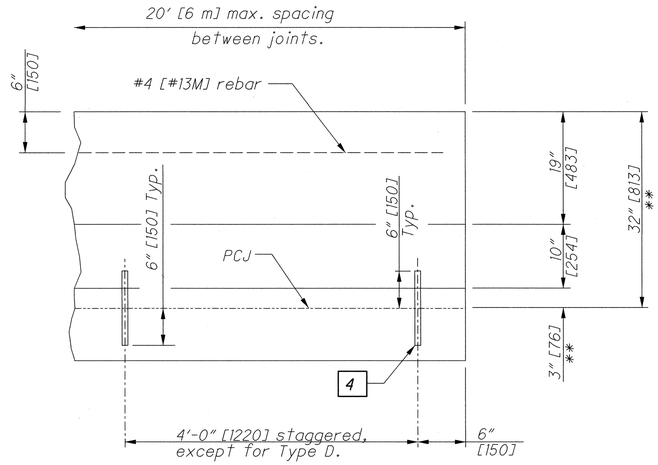


FOOTING JOINT DETAIL

See FOOTING NOTE.

* WIDTH OF CONCRETE BASE VARIES. SEE TYPICAL SECTIONS FOR ADDITIONAL INFORMATION.

** HEIGHT OF REVEAL VARIES TO ACCOMMODATE ELEVATION DIFFERENCES ON EITHER SIDE OF BARRIER.



32" [813-mm] BARRIER
BARRIER ELEVATION

NOTES

JOINTS: Unsealed contraction joints spaced at 20' [6 m] maximum shall be constructed throughout the run of Concrete Barrier except that expansion joints shall be used at the center line of and around each bridge pier column and on either side of overhead sign supports, inlets and light pole foundations. If the inlet top is slip formed, the expansion joints adjacent to it may be omitted.

Contraction joints may be constructed with metal inserts inside the forms, preformed full width joint filler, a grooving tool, or by sawing. Inserts, tooled joints, and sawed joints shall have a 3" [75] minimum depth. All joints shall be constructed for the full height of the barrier including the footing. Sawing shall be done as soon as curing will allow, to prevent spalling.

FOOTING JOINTS: The vertical walls between the barrier footing and a concrete pavement or concrete base shall be provided with a sealed joint as shown. Sealing material shall conform to CMS 705.04.

PCJ = Permissible Construction Joint

MEASUREMENT: Item 622, Concrete Barrier, including transitions and pier sections as detailed on the New Jersey Shape Barrier Transition drawing, is paid for in linear feet [meters] as Item 622, Concrete Barrier, Type A, As Per Plan with appropriate deductions for other items such as:

Item 604 - I-3 Median Inlet	20 Lin Ft. [6 Meters].
Item 625 - Light Pole Foundation or Pullbox	2.5 Lin. Ft. [1 Meter].
Item 630 - Overhead Sign Support Foundation	10 Lin. Ft. [3 Meters].
Item 630 - Barrier Wall Assembly	10 Lin. Ft. [3 Meters].

TRANSITIONS: Linear transitions between the different types of barrier detailed on this Standard Drawing shall occur between contraction joints spaced no closer than 10' [3 m].

RACEWAY: The contractor shall ensure that the electrical raceway is clear of internal obstructions. Cost of the 4" [100] polyvinyl chloride raceway and No. 10 AWG copper-clad or aluminum-clad wire if needed for future installation of circuits shall be included in the unit cost per Linear Foot [Meter] for Item 622 - Concrete Barrier, Type A, As Per Plan.

STATION MARKING: The Station marking shall be impressed in the "green" concrete on both sides at the top of the barrier if specified in the plans. The cost shall be incidental to the unit cost per Linear Foot [Meter] bid for Item 622 - Concrete Barrier, Type A, As Per Plan.

REFLECTORIZATION: Barrier reflectorization shall be installed in accordance with CMS 626.

LEGEND

1. 1" [25] radius or ¾" [19] chamfer.
2. Permissible 10" [250] radius.
3. Permissible 1" [25] radius.
4. #8 [#25M] epoxy coated Deformed Steel Bars, 1'-0" [305] long, spaced 4'-0" [1220] between successive Bars on a staggered pattern except in Type D. Omit Dowels when the Top is constructed integrally with the Base.

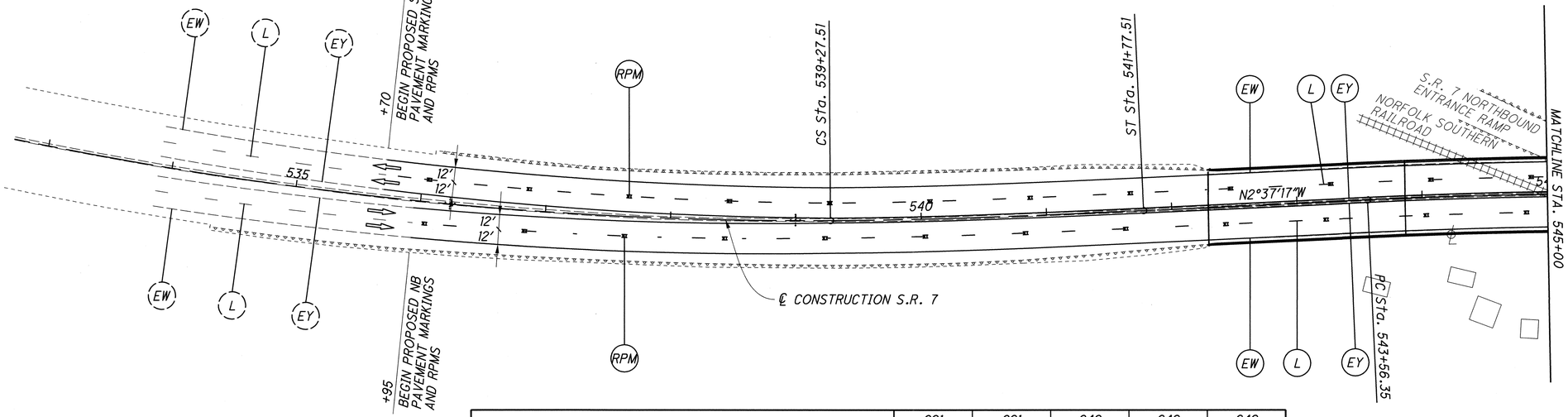
STATE OF OHIO DEPARTMENT OF TRANSPORTATION

All metric dimensions (in brackets []) are in millimeters unless otherwise noted.

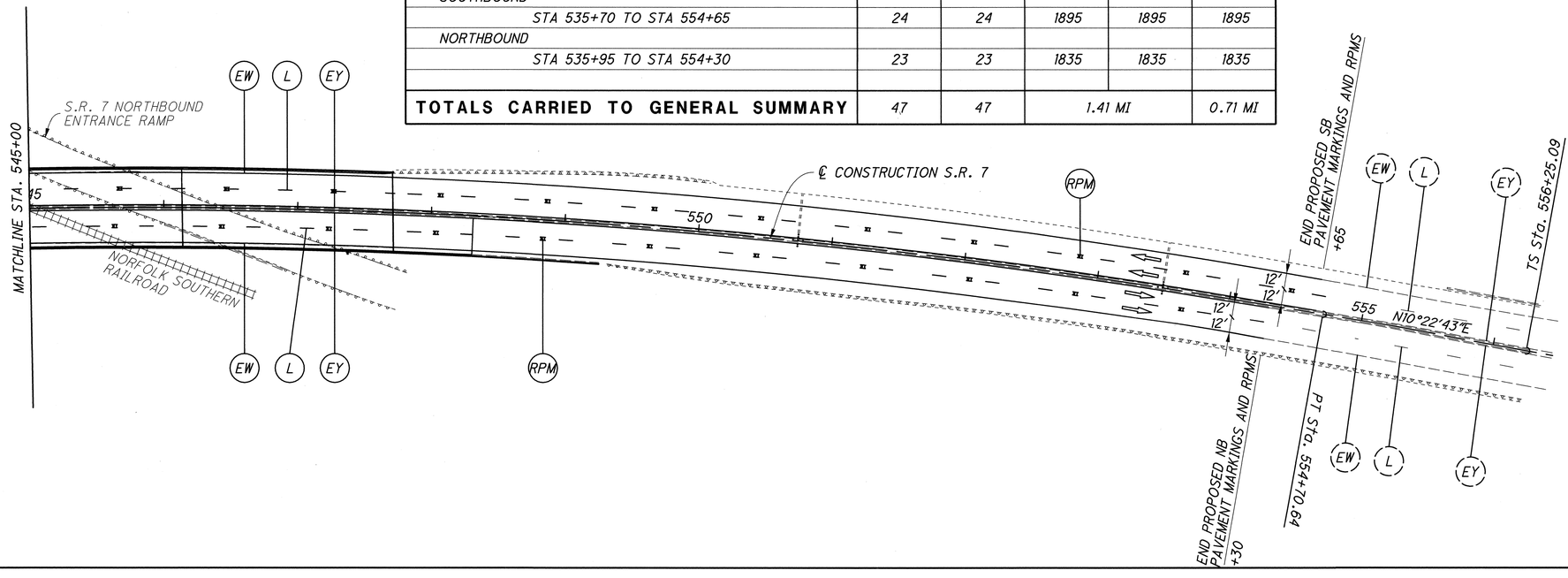
CALCULATED SLM CHECKED SDS

NEW JERSEY SHAPE CONCRETE BARRIER

JEF-7-9.92



STATION TO STATION	621 RPM	621 RAISED PAVEMENT MARKER REMOVED	642 EDGE LINE, TYPE 1 (WHITE)	642 EDGE LINE, TYPE 1 (YELLOW)	642 LANE LINE, TYPE 1
	EACH	EACH	FEET	FEET	FEET
SOUTHBOUND					
STA 535+70 TO STA 554+65	24	24	1895	1895	1895
NORTHBOUND					
STA 535+95 TO STA 554+30	23	23	1835	1835	1835
TOTALS CARRIED TO GENERAL SUMMARY	47	47	1.41 MI		0.71 MI



TRAFFIC CONTROL LEGEND

- (EW) EDGE LINE, WHITE
- (EY) EDGE LINE, YELLOW
- (L) LANE LINE
- (RPM) RAISED PAVEMENT MARKER, TWO WAY (WHITE/RED) 80' C/C
- ⇒ DIRECTION OF TRAFFIC
- ⬚ EXISTING PAVEMENT MARKINGS

N

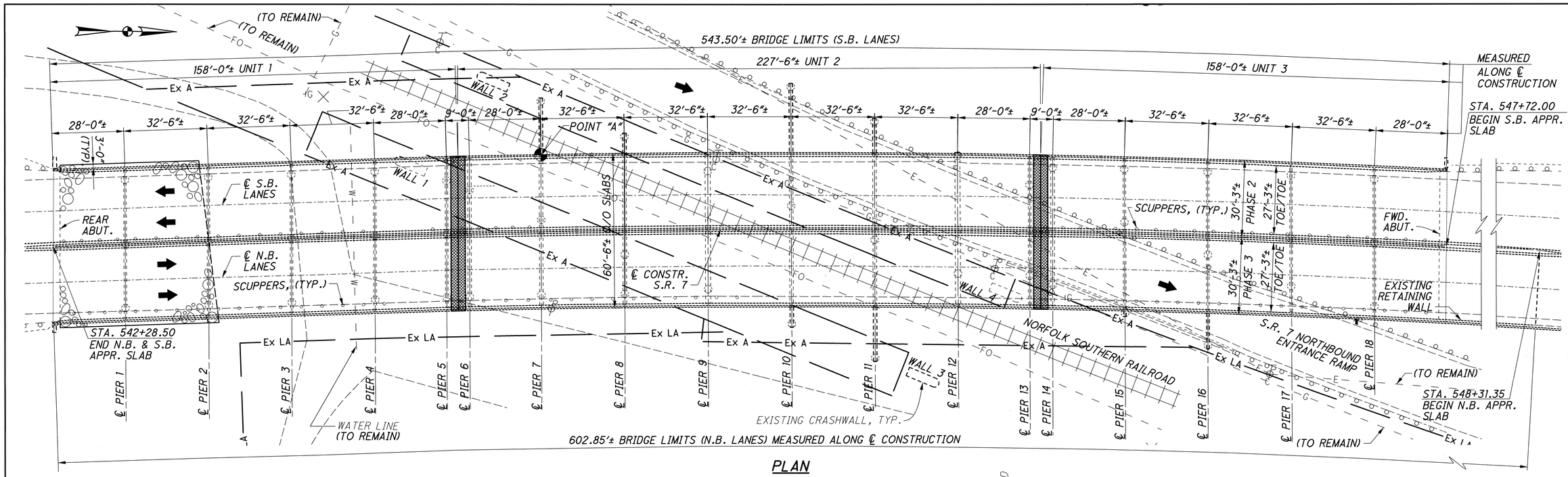
0 25 50 100 HORIZONTAL SCALE IN FEET

CALCULATED MDG CHECKED SDS

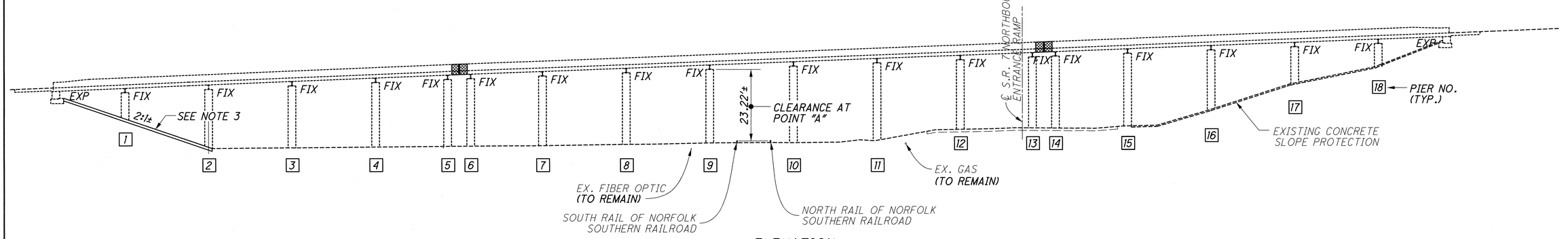
PAVEMENT MARKING PLAN

STA 534+00 TO STA 556+25

JEF-7-9.92



PLAN



ELEVATION

PROPOSED WORK

PROPOSED WORK (INCLUDES THE FOLLOWING):

1) REMOVE EXISTING 1¾"± LATEX MODIFIED CONCRETE OVERLAY ON DECK SLAB USING HYDRODEMOLITION AND REPLACE WITH NEW 2¼" MICRO-SILICA MODIFIED CONCRETE OVERLAY
2) REMOVE EXISTING EXPANSION JOINTS AND REPLACE WITH NEW SEALED EXPANSION JOINTS
3) TEMPORARILY SUPPORT EXISTING STEEL CROSS BEAMS AND REPAIR BEARINGS AND PIER COLUMNS DESIGNATED IN THE PLANS TO BE REPAIRED
4) PATCH ABUTMENT AND PIER CONCRETE
5) REMOVE DELAMINATED CONCRETE ON BOTTOM SURFACE OF SLAB AND PATCH AND SEAL
6) PAINT EXISTING STEEL CROSS BEAMS AND SEAL CONCRETE SURFACES
7) SEAL LONGITUDINAL JOINT BETWEEN MEDIAN BARRIER
8) REMOVE AND REPLACE SCUPPERS
9) REMOVE DRAINAGE SYSTEM UNDER EXPANSION JOINT
10) EMBED GALVANIC ANODES IN PATCHED CONCRETE AREAS

NOTES

1. EXISTING SUB-SURFACE INFORMATION IS NOT SHOWN.
2. CLEAR AND GRUB UNDER THE BRIDGE, 10 FEET BEYOND THE EDGE OF THE DECK, UNDER THE STEEL PIER CAPS AND AROUND ANY COLUMNS NOT UNDER THE BRIDGE.
3. REPAIR EXISTING CRUSHED AGGREGATE SLOPE PROTECTION. PROVIDE A MINIMUM THICKNESS OF 1 FOOT.

EXISTING STRUCTURE

TYPE: CONTINUOUS REINFORCED CONCRETE SLAB ON REINFORCED CONCRETE SUBSTRUCTURE

SPANS: 26'-9"±, 3 SPA. @ 32'-6"±. 28'-0"±; 9'-0"±, 28'-0"±, 5 SPA. @ 32'-6"±, 28'-0"±; 9'-0"±, 28'-0"±, 3 SPA. @ 32'-6"±, 26'-9"± (MEASURED ALONG ℄ CONSTRUCTION S.R. 7)

ROADWAY: 57'-6"± T/T PARAPETS

DESIGN LOADING: CF = 400 (51) N.B. LANES
CF = 400 (57) S.B. LANES

SKEW: VARIES FROM 1° 42' 00"± L.F. TO 3° 09' 00"± R.F.

ALIGNMENT: 1° 10'± CURVE RIGHT

WEARING SURFACE: 1¾"± LATEX MODIFIED CONC. OVERLAY

APPROACH SLABS: AS-1-54 (25'-0" LONG)

SUPERELEVATION: VARIES FROM 0.0128± TO 0.0311±

DATE BUILT: 1958 (N.B. LANES), 1970 (S.B. LANES)

STRUCTURE FILE NUMBER: 4100425

COORDINATES: LATITUDE N 40° 16' 25"
LONGITUDE W 80° 37' 10"

PROPOSED STRUCTURE

PROPOSED WORK: NEW 2¼" MICRO SILICA MODIFIED CONCRETE OVERLAY

SPANS: 26'-9"±, 3 SPA. @ 32'-6"±. 28'-0"±; 9'-0"±, 28'-0"±, 5 SPA. @ 32'-6"±, 28'-0"±; 9'-0"±, 28'-0"±, 3 SPA. @ 32'-6"±, 26'-9"± (MEASURED ALONG ℄ CONSTRUCTION S.R. 7)

ROADWAY WIDTH: 57'-6"± T/T PARAPETS

DESIGN LOADING: CF = 400

SKEW: VARIES 1° 42' 00"± L.F. TO 3° 09' 00"± R.F.

ALIGNMENT: 1° 10'± CURVED RIGHT

WEARING SURFACE: 2¼" MICRO SILICA MODIFIED CONCRETE OVERLAY

APPROACH SLAB: AS-1-54 (25'-0"± LONG)

SUPERELEVATION: VARIES 0.0128± TO 0.0311±

DESIGN AGENCY
ENGINEERING ASSOCIATES, INC.
935 EAGLE PASS - WOOSTER, OHIO 44691
TELEPHONE: (330) 345-9556
FAX: (330) 345-8077

DESIGNED	DRAWN	REVIEWED	DATE
BDH	MDG	AFS	10-29-10
CHECKED	REVISED	STRUCTURE FILE NUMBER	
RLE		4100425	

GENERAL PLAN AND ELEVATION
BRIDGE NO. JEF-7-0992 OVER
S.R. 7 NORTHBOUND ENTRANCE RAMP AND NORFOLK SOUTHERN RAILROAD

JEF-7-9.92
PID 83452

1 / 32

24 / 55

EA PROJECT NO. 08-085

REFER TO THE FOLLOWING STANDARD BRIDGE DRAWINGS:

BR-1	REVISED	7-19-02
EXJ-3-82	REVISED	7-19-02
EXJ-5-93	REVISED	7-19-02
GSD-1-96	REVISED	7-19-02

AND TO THE FOLLOWING SUPPLEMENTAL SPECIFICATION:

848	DATED	4-16-10

DESIGN SPECIFICATIONS

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

DESIGN SPECIFICATIONS

STATE OF OHIO, DEPARTMENT OF TRANSPORTATION, DATED JANUARY 1, 2010.

DESIGN STRESSES

CONCRETE CLASS C - COMPRESSIVE STRENGTH 4000 P.S.I.

CONCRETE CLASS S - COMPRESSIVE STRENGTH 4500 P.S.I. (SUPERSTRUCTURE)

REINFORCING STEEL - ASTM A615 OR A996 GRADE 60 MINIMUM YIELD STRENGTH 60,000 P.S.I.

STRUCTURAL STEEL - A709 GRADE 50, YIELD STRENGTH 50,000 P.S.I.

DECK PROTECTION METHOD

2¼" MICRO SIILICA MODIFIED CONCRETE OVERLAY, SEALING OF CONCRETE SURFACES AND EMBEDDED GALVANIC ANODES.

PROPOSED WORK

REHABILITATION OF THE EXISTING BRIDGE SHALL INCLUDE: REMOVAL OF EXISTING CONCRETE OVERLAY, REPAIRING THE TRANSVERSE DECK JOINTS, OVERLAYING THE DECK WITH MICRO-SILICA MODIFIED CONCRETE, REPAIRING THE PIER COLUMNS, PAINTING THE STRUCTURAL STEEL SURFACES, REGRADING SLOPE PROTECTION, CONCRETE PATCHING AND SEALING OF CONCRETE SURFACES.

EXISTING STRUCTURE VERIFICATION

DETAILS AND DIMENSIONS SHOWN ON THESE PLANS PERTAINING TO THE EXISTING STRUCTURE HAVE BEEN OBTAINED FROM PLANS OF THE EXISTING STRUCTURE AND FROM FIELD OBSERVATIONS AND MEASUREMENTS. CONSEQUENTLY, THEY ARE INDICATIVE OF THE EXISTING STRUCTURE AND THE PROPOSED WORK BUT THEY SHALL BE CONSIDERED TENTATIVE AND APPROXIMATE. THE CONTRACTOR IS REFERRED TO CMS SECTIONS 102.05, 105.02 AND 513.04.

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

THE FOLLOWING EXISTING STRUCTURE PLANS ARE ON FILE AND MAY BE REVIEWED AT THE DISTRICT ELEVEN OFFICE OF THE OHIO DEPARTMENT OF TRANSPORTATION, 2201 REISER AVE. SE, NEW PHILADELPHIA, OHIO 44663:

JEF-7-(8.22-10.35)	DATED	1956
JEF-7-(4.63-8.99)	DATED	1968
JEF-7-8.56	DATED	1988

ITEM 202 - PORTIONS OF STRUCTURE REMOVED, AS PER PLAN

DESCRIPTION: THIS ITEM SHALL INCLUDE ELEMENTS INDICATED IN THE PLANS AND GENERAL NOTES AND THAT ARE NOT SEPARATELY LISTED FOR PAYMENT, EXCEPT FOR WEARING COURSE REMOVAL. ITEMS TO BE REMOVED INCLUDE SCUPPERS, DOWNSPOUTS, DRAINAGE TROUGH SYSTEM, PORTIONS OF THE CONCRETE DECK AND PARAPETS, DECK JOINTS, PORTIONS OF THE ABUTMENTS, TOP OF PIER COLUMNS, 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 THE 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.

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

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

EXISTING WELDED ATTACHMENTS: REMOVE EXISTING WELDED ATTACHMENTS FOR SCUPPER SUPPORTS WHICH ARE TO BE REMOVED. CAREFULLY GRIND PARALLEL TO FLANGES.

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

SUBSTRUCTURE CONCRETE REMOVAL: REMOVE CONCRETE BY MEANS OF APPROVED PNEUMATIC HAMMERS EMPLOYING POINTED AND BLUNT CHISEL TOOLS. HYDRAULIC HOE-RAM TYPE HAMMERS WILL NOT BE PERMITTED. THE WEIGHT OF THE HAMMER SHALL NOT BE MORE THAN 35 POUNDS FOR REMOVAL WITHIN 18 - INCHES OF PORTIONS TO BE PRESERVED. OUTSIDE THE 18 - INCH LIMIT, THE CONTRACTOR MAY USE HAMMERS NOT EXCEEDING 90 POUNDS UPON THE APPROVAL OF THE ENGINEER. DO NOT PLACE PNEUMATIC HAMMERS IN DIRECT CONTACT WITH REINFORCING STEEL THAT IS TO BE RETAINED IN THE REBUILT STRUCTURE.

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

THE CONTRACTOR SHALL SUBMIT THE PROPOSED DEMOLITION, REPAIR, AND JACKING PROCEDURES TO NORFOLK SOUTHERN FOR REVIEW AND APPROVAL PRIOR TO COMMENCING WORK.

ITEM 202 - REMOVAL MISC.: DELAMINATED CONCRETE AREAS ON BRIDGE SLAB

DESCRIPTION: THIS ITEM SHALL CONSIST OF THE REMOVAL OF ALL THE DELAMINATED CONCRETE AREAS ON THE UNDERSIDE OF THE SLAB AS SHOWN IN THE PLANS. REMOVE ALL LOOSE AND DISINTEGRATED CONCRETE FROM DESIGNATED AREAS IN SUCH A MANNER AS TO EXPOSE A SOUND CONCRETE SURFACE.

REMOVAL METHODS: ONLY USE PNEUMATIC OR HAND TOOLS THAT GIVE RESULTS SATISFACTORY TO THE ENGINEER IN THE REMOVAL OF THE DISINTEGRATED CONCRETE AND IN PREPARING THE AREAS.

AFTER REMOVING ALL DISINTEGRATED AND LOOSE CONCRETE, THOROUGHLY CLEAN THE SURFACE OF THE AREA OF ALL DIRT, DUST, OR OTHER FOREIGN MATERIALS WITH WATER, AIR UNDER PRESSURE, OR ANY OTHER METHOD THAT PRODUCES SATISFACTORY RESULTS, AND APPLY AN EPOXY URETHANE SEALER TO THE AREA. EPOXY-URETHANE SEALER SHALL BE INCLUDED WITH THIS ITEM FOR PAYMENT.

MEASUREMENT AND PAYMENT: THE DEPARTMENT WILL MEASURE THE QUANTITY OF REMOVALS ON A SQUARE FOOT BASIS. THE DEPARTMENT WILL PAY FOR THE ACCEPTED QUANTITIES OF REMOVAL AT THE CONTRACT PRICE PER ITEM 202 - REMOVAL MISC.: DELAMINATED CONCRETE AREAS ON BRIDGE SLAB.

ASBESTOS NOTIFICATION

AN ASBESTOS SURVEY OF THIS STRUCTURE WAS CONDUCTED BY A CERTIFIED ASBESTOS HAZARD EVALUATION SPECIALIST. THE SURVEY DETERMINED THAT NO ASBESTOS IS PRESENT ON THE BRIDGE STRUCTURE.

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 THE ADDRESS BELOW AT LEAST TEN (10) WORKING DAYS PRIOR TO THE START OF ANY DEMOLITION AND/OR RENOVATION.

MR. JIM LOPER
OHIO EPA, SEDO
2195 FRONT STREET
LOGAN, OHIO 43138

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 START AND COMPLETION OF THE BRIDGE REMOVAL
3. A DESCRIPTION OF THE PLANNED DEMOLITION WORK AND THE METHOD(S) TO BE USED

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.

CONSTRUCTION CLEARANCE

MAINTAIN CONSTRUCTION CLEARANCE OF 13 FEET HORIZONTALLY FROM THE CENTER OF TRACKS AND 22 FEET VERTICALLY FROM A POINT LEVEL WITH THE TOP OF THE HIGHER RAIL AT ALL TIMES.

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

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

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

A QUANTITY OF 1000 POUNDS IS INCLUDED IN THE ESTIMATED QUANTITIES FOR REPLACEMENT OF EXISTING REINFORCING STEEL IF REQUIRED.

DESIGN AGENCY
ENGINEERING ASSOCIATES, INC.
1935 EAGLE PASS - WOOSTER, OHIO 44691
TELEPHONE: (330) 345-6556
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DESIGNED	DRAWN	REVIEWED	DATE
HK	RLE	AFS	10-29-10
CHECKED	REVISED	STRUCTURE FILE NUMBER	
BDH		4100425	

STRUCTURE GENERAL NOTES
BRIDGE NO. JEF-7-0992 OVER
S.R. 7 NORTHBOUND ENTRANCE RAMP AND NORFOLK SOUTHERN RAILROAD

JEF-7-9.92
PID 83452

EA PROJECT NO. 08-085

ITEM 511 - CONCRETE MISC.: EMBEDDED GALVANIC ANODE (EGA)

PART 1 GENERAL

1.01 SUMMARY

A. THIS WORK UNDER THIS SECTION INCLUDES FURNISHING ALL LABOR, TOOLS, MATERIALS, EQUIPMENT AND SERVICES NECESSARY TO PROPERLY INSTALL ZINC-BASED EMBEDDED GALVANIC CORROSION PROTECTION SYSTEMS FOR PATCHING APPLICATIONS AS SHOWN IN THE PLAN.

B. THE GALVANIC CORROSION PROTECTION SYSTEM SHALL CONSIST OF INTER-CONNECTED GALVANIC ANODES THAT ARE PLACED WITHIN THE CONCRETE PATCHES 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. AFTER THE ANODES ARE INSTALLED AND ENCASED IN THE CONCRETE PATCH, THE ANODES WILL PROVIDE GALVANIC PROTECTION TO THE REINFORCING STEEL IN THE CONCRETE PATCH.

1.02 REFERENCES

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

B. ASTM B6 STANDARD SPECIFICATIONS FOR ZINC.

C. ASTM B69 STANDARD SPECIFICATION FOR ROLLED ZINC.

D. ASTM B418 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, AND CONSIST OF ELECTROLYTIC HIGH GRADE ZINC 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.

B. EMBEDDED GALVANIC ANODES (EGAs) SHALL BE GALVASHIELD XP AVAILABLE FROM VECTOR CORROSION TECHNOLOGIES (813) 830-7566 OR 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 SURFACE AND REINFORCING STEEL PREPARATION

A. PERFORM CONCRETE REMOVAL AND SURFACE PREPARATION FOR THE CONCRETE PATCH IN ACCORDANCE WITH ITEM 519, PATCHING CONCRETE STRUCTURE, AS PER PLAN.

B. FULLY EXPOSE REINFORCING STEEL AT EACH EDGE OF THE PREPARED SURFACE AT INTERVALS AS INDICATED ON THE DRAWINGS TO ALLOW ELECTRICAL CONNECTION OF THE HEADER TO THE REINFORCING STEEL.

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

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

E. SECURE LOOSE REINFORCING STEEL BY TYING TIGHTLY TO OTHER BARS WITH STEEL TIE WIRES.

ITEM 511 - CONCRETE MISC.: EMBEDDED GALVANIC ANODE (EGA) (CONTINUED)

PART 3 EXECUTION (CONTINUED)

3.02 GALVANIC ANODE INSTALLATION

A. GALVANIC ANODES SHALL BE INSTALLED ALONG THE PERIMETER OF THE REPAIR AT SPACING AS 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. PROVIDE AT LEAST 1½ INCHES OF CONCRETE COVER OVER THE ANODES.

C. SECURE THE GALVANIC ANODES AS CLOSE AS POSSIBLE TO THE PATCH EDGE USING THE ANODE TIE WIRES. THE TIE WIRES SHOULD BE TIGHTENED 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.

3.03 ELECTRICAL CONTINUITY AND CONNECTIONS

A. THE REINFORCING STEEL IN THE STRUCTURAL CONCRETE COMPONENT SHALL BE TESTED FOR ELECTRICAL CONTINUITY AT THE REPAIR AREAS WHERE REINFORCING IS EXPOSED. CONTINUITY SHALL BE CHECKED BETWEEN BARS IN EACH LOCATION, IN THE LONGITUDINAL AND TRANSVERSE DIRECTIONS. USE A VOLTMETER DIFFERENCE BETWEEN THE TEST SITES LESS THAN 1.0mV SHALL BE CONSIDERED CONFIRMATION OF ELECTRICAL CONTINUITY.

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

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

D. PROVIDE SUFFICIENT CLEARANCE BETWEEN ANODES AND SUBSTRATE TO ALLOW REPAIR MATERIAL TO ENCASE ANODE. PROVIDE AT LEAST 1½ INCHES OF CONCRETE COVER OVER THE ANODES.

E. ELECTRICALLY CONNECT ANODES TO EXISTING REINFORCING. THE TYPICAL CONNECTION IS A BRAZED CONNECTION OF A HEADER STRAP THAT IS WRAPPED AROUND THE REINFORCING. ALL ELECTRICAL CONNECTION DETAILS SHALL BE APPROVED BY THE ANODE MANUFACTURER.

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

3.04 CONCRETE REPLACEMENT

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

ITEM 511 - CONCRETE MISC.: EMBEDDED GALVANIC ANODE (EGA) (CONTINUED)

PART 4 LOCATION OF ANODES

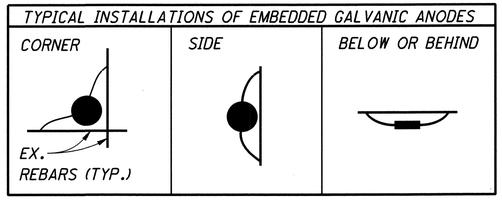
4.01 ABUTMENT WINGWALLS
A. SEE DETAILS ON SHEET 8 / 32 .

4.02 PIER COLUMNS
A. SEE DETAILS ON SHEET 15 / 32 .

4.03 DECK JOINTS
A. SEE DETAILS ON SHEET 30 / 32 .

BASIS OF PAYMENT: EACH EGA PROVIDED AND INSTALLED, WITH ALL INCIDENTALS INCLUDED, SHALL BE PAID FOR AT THE UNIT PRICE BID FOR ITEM 511 - CONCRETE MISC.: EMBEDDED GALVANIC ANODE (EGA).

TYPICAL INSTALLATIONS OF EMBEDDED GALVANIC ANODES



ITEM 514 - FIELD PAINTING STRUCTURAL STEEL, FINISH COAT

THE FINISH COAT COLOR SHALL BE BLUE, FEDERAL COLOR NO. 15526.

ITEM 516 - PREFORMED ELASTOMERIC COMPRESSION JOINT SEAL, AS PER PLAN

THIS ITEM SHALL INCLUDE ALL WORK NECESSARY TO INSTALL THE PREFORMED ELASTOMERIC COMPRESSION SEAL (1¼" WIDE FOR A ½" WIDE GROOVE), MEETING THE REQUIREMENTS OF 705.11. INCLUDED SHALL BE THE SAWCUTTING OF A ½" x 2⅛" GROOVE IN THE EXISTING DECK SLAB AND CLEANING AND PREPARATION OF THE RESULTING GROOVE. ALL WORK SHALL BE TO THE SATISFACTION OF THE ENGINEER. PAYMENT FOR ALL OF THE ABOVE DESCRIBED LABOR AND MATERIALS WILL BE MADE AT THE CONTRACT PRICE BID FOR ITEM - 516 PREFORMED ELASTOMERIC COMPRESSION SEAL, AS PER PLAN.

ITEM 516 - REFURBISHING BEARING DEVICES, AS PER PLAN

THIS ITEM SHALL INCLUDE ALL WORK NECESSARY TO PROPERLY ALIGN BRIDGE BEARINGS AS WELL AS THEIR CLEANING, PAINTING AND REPLACEMENT. INCLUDED SHALL BE THE DISASSEMBLY OF THE BEARINGS, WELD REMOVAL AND THE RE-WELDING OF BEARINGS, HAND TOOL CLEANING (GRINDING IF NECESSARY), PAINTING ACCORDING TO ITEM 514, REPLACEMENT OF LEAD SHEET WITH PREFORMED BEARING PAD (711.21), PROVIDING AND INSTALLING ANCHOR RODS (711.10) AND NUTS, INSTALLATION OF SHIM PLATES THE SAME SIZE AS THE BEARING TO PROVIDE A SNUG FIT, AND REASSEMBLY OF THE BEARINGS. ASSURE ALL BEARINGS ARE SHIMMED ADEQUATELY AND THAT NO BEAMS AND/OR BEARING DEVICES ARE "FLOATING". THE CONTRACTOR SHALL INSTALL NEW BEARINGS AS SHOWN IN THE PLANS. ALL WORK SHALL BE TO THE SATISFACTION OF THE ENGINEER. PAYMENT FOR ALL OF THE ABOVE DESCRIBED LABOR AND MATERIALS WILL BE MADE AT THE CONTRACT PRICE BID FOR ITEM 516 - REFURBISHING BEARING DEVICES, AS PER PLAN

DESIGN AGENCY
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DESIGNED	DRAWN	REVIEWED	DATE
HK	RLE	AFS	10-29-10
CHECKED	REVISED	STRUCTURE FILE NUMBER	
BDH		4100425	

STRUCTURE GENERAL NOTES
BRIDGE NO. JEF-7-0992 OVER
S.R. 7 NORTHBOUND ENTRANCE RAMP AND NORFOLK SOUTHERN RAILROAD

JEF-7-9.92
PID 83452

EA PROJECT NO. 08-085

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

THIS WORK SHALL CONSIST OF RAISING AND THE TEMPORARY SUPPORT OF A CONCRETE SLAB BRIDGE FOR THE PURPOSE OF REFURBISHING THE BEARING DEVICES AND/OR THE REPAIR OF PIER COLUMNS AS DEFINED IN THE PROJECT PLANS.

SUBMIT CONSTRUCTION PLANS IN ACCORDANCE WITH CMS 501.05.

THE JACKING AND TEMPORARY SUPPORT OPERATION IS TO BE PERFORMED IN SUCH A WAY THAT NO SEPARATION BETWEEN CONCRETE SUPERSTRUCTURE AND STEEL TRANSVERSE PIER MEMBERS OCCURS.

IF, DURING THE JACKING OPERATIONS, CRACKING OF THE CONCRETE SUPERSTRUCTURE OR OTHER DAMAGE TO THE STRUCTURE IS VISUALLY OBSERVED, IMMEDIATELY CEASE THE JACKING OPERATION AND INSTALL SUPPORTS TO THE SATISFACTION OF THE ENGINEER. ANALYZE THE DAMAGE AND SUBMIT A METHOD OF CORRECTION TO THE ENGINEER FOR APPROVAL. THE DEPARTMENT WILL NOT PAY FOR THE COST OF REQUIRED REPAIRS. THE BRIDGE BEARINGS SHALL BE FULLY SEATED AT ALL CONTACT AREAS. IF FULL SEATING IS NOT ATTAINED, SUBMIT A REPAIR PLAN TO THE ENGINEER. THE DEPARTMENT WILL NOT PAY FOR THE REPAIR COSTS TO ENSURE FULL SEATING ON BEARINGS.

JACKING PROCEDURE:

1. THE CONTRACTOR SHALL JACK STRUCTURE AT PIER LOCATIONS ONLY.
2. AN ENTIRE BRIDGE UNIT SHALL BE RAISED. NO DIFFERENTIAL DEFLECTION BETWEEN PIERS IS PERMITTED.
3. THE SUPERSTRUCTURE SHALL BE RAISED ALONG THE OUTSIDE EDGE. THE MAXIMUM JACKING HEIGHT IS ½".
4. THE CONTRACTOR SHALL OBSERVE THE MEDIAN OPENING DURING JACKING PROCEDURE. JACKING OPERATION SHALL NOT CLOSE MEDIAN JOINT AT ANY TIME.
5. WHERE WORK IS BEING PERFORMED ON TOP OF PIER COLUMNS, (BEARING REFURBISHING AND/OR COLULMN REPAIR), THE CONTRACTOR SHALL SUPPORT THE WEIGHT OF THE SUPERSTRUCTURE FOR THE DURATION OF REPAIR.
6. MAXIMUM SUPPORT WEIGHT AT EXTERIOR COLUMNS IS 370 KIPS. MAXIMUM SUPPORT WEIGHT AT MIDDLE COLUMNS IS 570 KIPS. THE SUPPORT WEIGHT CONSISTS OF TOTAL DEAD LOAD AND LIVE LOAD PLUS IMPACT REACTIONS.

THE DEPARTMENT WILL MEASURE THIS WORK ON A LUMP SUM BASIS.

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

ITEM 518 - STRUCTURE DRAINAGE, MISC.: SCUPPER REPLACEMENT

SCUPPERS SHALL BE PLACED AT EXISTING SCUPPER LOCATIONS. WORK SHALL INCLUDE ALL STEEL, STUDS, FABRICATION, CONCRETE AND INSTALLATION. STEEL FOR SCUPPERS SHALL BE A709, GRADE 50, AND SHALL BE GALVANIZED AFTER FABRICATION ACCORDING TO STANDARD DRAWING GSD-1-96. CONCRETE ENCASEMENT SHALL BE CLASS S CONCRETE. REMOVAL OF THE EXISTING SCUPPERS SHALL BE INCLUDED WITH ITEM 202 - PORTIONS OF STRUCTURE REMOVED, AS PER PLAN.

ITEM 519 - PATCHING CONCRETE STRUCTURE, AS PER PLAN

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

ITEM 601 - CRUSHED AGGREGATE SLOPE PROTECTION, AS PER PLAN

THIS ITEM SHALL BE USED FOR THE REGRADING OF THE EXISTING SLOPE PROTECTION. REGRADING SHALL CONSIST OF RESTORING THE EXISTING EMBANKMENT SURFACES TO THE ORIGINAL SLOPES WITH CRUSHED AGGREGATE SLOPE PROTECTION. THE MINIMUM TOTAL THICKNESS OF PROPOSED PROTECTION RESTORED SHALL BE 1 FOOT.

PAYMENT FOR THE ABOVE WORK SHALL BE AT THE UNIT PRICE BID PER SQUARE YARD OF ITEM 601 - CRUSHED AGGREGATE SLOPE PROTECTION, AS PER PLAN, AND SHALL INCLUDE ALL LABOR, EQUIPMENT, MATERIAL AND INCIDENTALS NECESSARY TO COMPLETE THE ABOVE WORK.

ITEM 848 - SURFACE PREPARATION USING HYDRODEMOLITION, AS PER PLAN

THE ENTIRE TOP SURFACE OF THE BRIDGE DECK SHALL BE COMPLETELY REMOVED AS SPECIFIED IN SUPPLEMENTAL SPECIFICATION 848.20 EXCEPT THAT THE MINIMUM REMOVAL DEPTH "D" SHALL BE ½ INCH INSTEAD OF THE MINIMUM DEPTH "D" OF 1 INCH SPECIFIED IN 848.20.

ITEM 848 - MICRO SILICA MODIFIED CONCRETE OVERLAY (VARIABLE THICKNESS)

THE BRIDGE DECK WAS SURVEYED USING A GROUND PENETRATING RADAR TO DETERMINE THE PERCENTAGE OF DELAMINATION AND SCALING. INSPECTION OF THIS REPORT IS AVAILABLE AT THE DISTRICT 11 OFFICE, NEW PHILADELPHIA, OHIO. THE SURVEY WILL BE USED BY THE ENGINEER TO VERIFY DELAMINATED AREAS AND QUANTITIES.

QUANTITIES IN THE PLAN FOR VARIABLE DEPTH MATERIAL WERE DETERMINED FROM THIS SURVEY. FINAL PAYMENT TO BE DETERMINED AS PER ITEM 848.32.

MAINTENANCE OF TRAFFIC

REFER TO SHEETS (4/55) THRU (12/55) FOR MAINTENANCE OF TRAFFIC PLAN.

ABBREVIATIONS:

ABUT.	-	ABUTMENT	R.A.	-	REAR ABUTMENT
ALT.	-	ALTERNATE	R.F.	-	REAR FACE
APPR.	-	APPROACH	REQ'D.	-	REQUIRED
BRGS.	-	BEARINGS	SER.	-	SERIES
BOT.	-	BOTTOM	SPA.	-	SPACING
CLR.	-	CLEAR	S.R.	-	STATE ROUTE
COL.	-	COLUMN	STA.	-	STATION
CONSTR.	-	CONSTRUCTION	T/S	-	TOP OF SLOPE
CORR.	-	CORRUGATED	TYP.	-	TYPICAL
DIA.	-	DIAMETER	VAR.	-	VARIES
DIM.	-	DIMENSION	W/	-	WITH
DWG.	-	DRAWING			
EGA	-	EMBEDED GALVANIC ANODES			
ELEV.	-	ELEVATION			
E.F.	-	EACH FACE			
EXIST.	-	EXISTING			
F.A.	-	FORWARD ABUTMENT			
FWD.	-	FORWARD			
F.F.	-	FRONT FACE			
FT.	-	FEET			
LBS.	-	POUNDS			
MAX.	-	MAXIMUM			
MEAS.	-	MEASURED			
MIN.	-	MINIMUM			
P.E.J.F.	-	PREFORMED EXPANSION JOINT FILLER			
PERF.	-	PERFORATED			

EA PROJECT NO. 08-085

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STRUCTURE ESTIMATED QUANTITIES
BRIDGE NO. JEF-7-0992 OVER
S.R. 7 NORTHBOUND ENTRANCE RAMP AND NORFOLK SOUTHERN RAILROAD

JEF-7-9.92
PID 83452

4 / 32

(27/55)

ESTIMATED QUANTITIES

CALC. BY: RLE DATE: 10-29-2010 CHKD. BY: BDH DATE: 10-29-2010

ITEM	ITEM EXTENSION	TOTAL	UNIT	DESCRIPTION	ABUT.	PIER	SUPER.	GEN'L	SEE STRUCTURE SHEET NO.
202	11201	LUMP		PORTIONS OF STRUCTURE REMOVED, AS PER PLAN				LUMP	2 OF 32
202	98400	124	SQ FT	REMOVAL MISC.: DELAMINATED AREAS ON BRIDGE SLAB			124		17-21 of 32
509	10000	4526	POUND	EPOXY COATED REINFORCING STEEL	283	491	3752		
509	20001	1000	POUND	REINFORCING STEEL, REPLACEMENT OF EXISTING REINFORCING STEEL, AS PER PLAN				1000	2 & 3 OF 32
510	10000	82	EACH	DOWEL HOLES WITH NONSHRINK, NONMETALLIC GROUT	22		60		
511	34400	45	CU YD	CLASS S CONCRETE, SUPERSTRUCTURE			45		
511	43200	7	CU YD	CLASS C CONCRETE, PIER		7			
511	45700	3	CU YD	CLASS C CONCRETE, ABUTMENT	3				
511	81300	472	EACH	CONCRETE, MISC.: EMBEDDED GALVANIC ANODE (EGA)	12	90	370		3,8,15,30 OF 32
512	10050	488	SQ YD	SEALING OF CONCRETE SURFACES (NON-EPOXY)			488		
512	10100	2117	SQ YD	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)	79	1200	90	748	
512	10300	49	SQ YD	SEALING CONCRETE BRIDGE DECK WITH HMWM RESIN			49		
514	00050	12,271	SQ FT	SURFACE PREPARATION OF EXISTING STRUCTURAL STEEL		12,271			
514	00056	12,271	SQ FT	FIELD PAINTING EXISTING STRUCTURAL STEEL, PRIME COAT		12,271			
514	00060	12,271	SQ FT	FIELD PAINTING STRUCTURAL STEEL, INTERMEDIATE COAT		12,271			
514	00066	12,271	SQ FT	FIELD PAINTING STRUCTURAL STEEL, FINISH COAT		12,271			3 OF 32
514	00504	41	MAN HOUR	GRINDING FINS, TEARS, SLIVERS ON EXISTING STRUCTURAL STEEL		41			
514	10000	10	EACH	FINAL INSPECTION REPAIR		10			
516	10001	27	FT	PREFORMED ELASTOMERIC COMPRESSION JOINT SEAL, AS PER PLAN				27	3 & 24 OF 32
516	10501	120	FT	STRUCTURAL EXPANSION JOINT INCLUDING ELASTOMERIC COMPRESSION SEAL, AS PER PLAN			120		23-26 OF 32
516	10901	603	FT	ELASTOMERIC COMPRESSION SEAL, AS PER PLAN			603		22 OF 32
516	11211	117	FT	STRUCTURAL EXPANSION JOINT INCLUDING ELASTOMERIC STRIP SEAL, AS PER PLAN			117		27-29 OF 32
516	13600	5	SQ FT	1" PREFORMED EXPANSION JOINT FILLER	5				
516	45305	14	EACH	REFURBISH BEARING DEVICE, AS PER PLAN		14			3 OF 32
516	47001	LUMP		JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE, AS PER PLAN			LUMP		3 & 4 OF 32
518	62200	92	EACH	STRUCTURE DRAINAGE MISC.: SCUPPER REPLACEMENT			92		4,6,7,17-21 OF 32
519	11101	402	SQ FT	PATCHING CONCRETE STRUCTURE, AS PER PLAN	11	36	355		4 OF 32
601	20001	161	SQ YD	CRUSHED AGGREGATE SLOPE PROTECTION, AS PER PLAN				161	4 OF 32
848	10000	3401	SQ YD	MICRO SILICA MODIFIED CONCRETE OVERLAY USING HYDRODEMOLITION (2¼" THICK)			3401		
848	20001	3401	SQ YD	SURFACE PREPARATION USING HYDRODEMOLITION, AS PER PLAN			3401		4 OF 32
848	30000	33	CU YD	MICRO SILICA MODIFIED CONCRETE OVERLAY (VARIABLE THICKNESS), MATERIAL ONLY			33		4 OF 32
848	50000	40	SQ YD	HAND CHIPPING			40		
848	50100	LUMP		TEST SLAB			LUMP		
848	50320	3401	SQ YD	EXISTING CONCRETE OVERLAY REMOVEDO (1¾" NOMINAL THICKNESS)			3401		
848	50340	399	SQ YD	REMOVAL OF DEBONDED OR DETERIORATED EXISTING VARIABLE THICKNESS CONCRETE OVERLAY			399		

EA PROJECT NO. 08-085

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DATE 10-29-10
REVIEWED AFS
STRUCTURE FILE NUMBER 4100425
DRAWN RLE
REVISED
DESIGNED HK
CHECKED BDH

STRUCTURE ESTIMATED QUANTITIES
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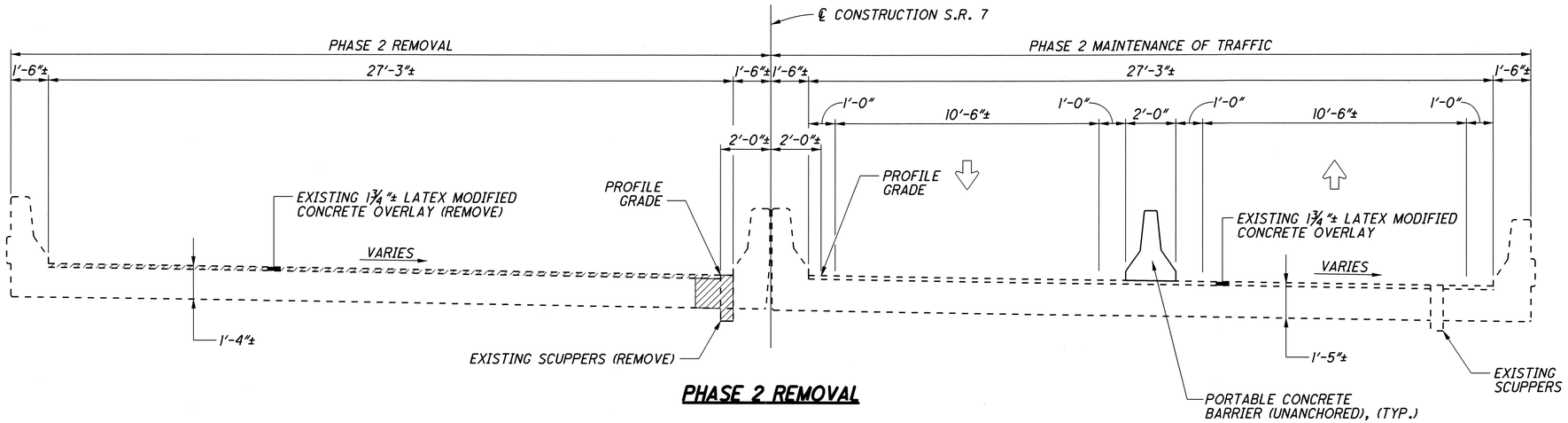
S.R. 7 NORTHBOUND ENTRANCE RAMP AND NORFOLK SOUTHERN RAILROAD

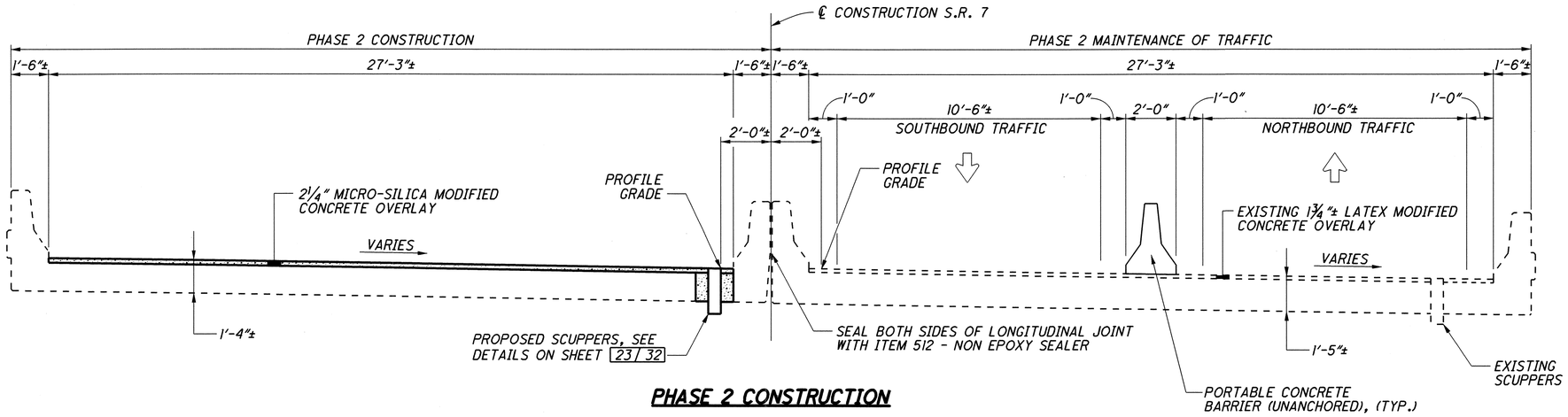
JEF-7-9.92
PID 83452

5 / 32

28
55



PHASE 2 REMOVAL



PHASE 2 CONSTRUCTION

PHASE CONSTRUCTION NOTES

PHASE 1 REMOVAL / CONSTRUCTION

1. SEE MAINTENANCE OF TRAFFIC SHEETS 4 OF 55 THRU 13 OF 55 IN THE ROADWAY PLANS FOR DETAILS OF CONCRETE MEDIAN BARRIER REMOVAL AND CONSTRUCTION OF PAVEMENT FOR MAINTAINING TRAFFIC TO THE NORTH AND SOUTH OF THE STRUCTURES.
2. NO REMOVAL OR CONSTRUCTION WORK WILL BE PERFORMED ON EITHER THE NORTHBOUND OR SOUTHBOUND SUPER STRUCTURE DURING PHASE 1, HOWEVER, REPAIR WORK MAY BE COMPLETED ON THE SUBSTRUCTURE DURING THIS PHASE.

PHASE 2 REMOVAL

1. PLACE THE PORTABLE CONCRETE BARRIER ON THE LEFT SIDE OF THE STRUCTURE AS SHOWN PER STD. DWG. PCB-91. MAINTAIN ONE LANE OF NORTHBOUND TRAFFIC AND ONE LANE OF SOUTHBOUND TRAFFIC ON THE LEFT SIDE OF THE STRUCTURE.
2. REMOVE THE EXISTING LATEX MODIFIED CONCRETE OVERLAY AS SHOWN. REMOVE THE EXISTING SCUPPERS BY REMOVING AN APPROXIMATE 1.5' X 1.5' AREA AROUND THE SCUPPER. DO NOT CUT OR DAMAGE REINFORCING. REMOVAL SHALL BE PAID FOR UNDER ITEM 202-PORTIONS OF STRUCTURE REMOVED, AS PER PLAN.

PHASE 2 CONSTRUCTION

1. PLACE NEW SCUPPERS. FILL VOID LEFT FROM SCUPPER REMOVAL WITH CLASS S CONCRETE. REPLACEMENT OF SCUPPER AND CONCRETE SHALL BE INCLUDED IN ITEM 518-STRUCTURE DRAINAGE MISC.: SCUPPER REPLACEMENT FOR PAYMENT.
2. CONSTRUCT THE 2¼" MICRO-SILICA MODIFIED CONCRETE OVERLAY ON THE LEFT SIDE OF THE STRUCTURE.

LEGEND

▨ - DENOTES AREAS TO BE REMOVED

NOTES

1. **FOR ABBREVIATIONS:** SEE SHEET 4/32 .
2. **FOR PHASE 3 & 4 CONSTRUCTION DETAILS:** SEE SHEET 7/32 .
3. **FOR PROPOSED MICRO-SILICA MODIFIED CONCRETE OVERLAY AND SCUPPER REPLACEMENT DETAILS:** SEE SHEET 23/32 .

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PHASE 1 & 2 CONSTRUCTION
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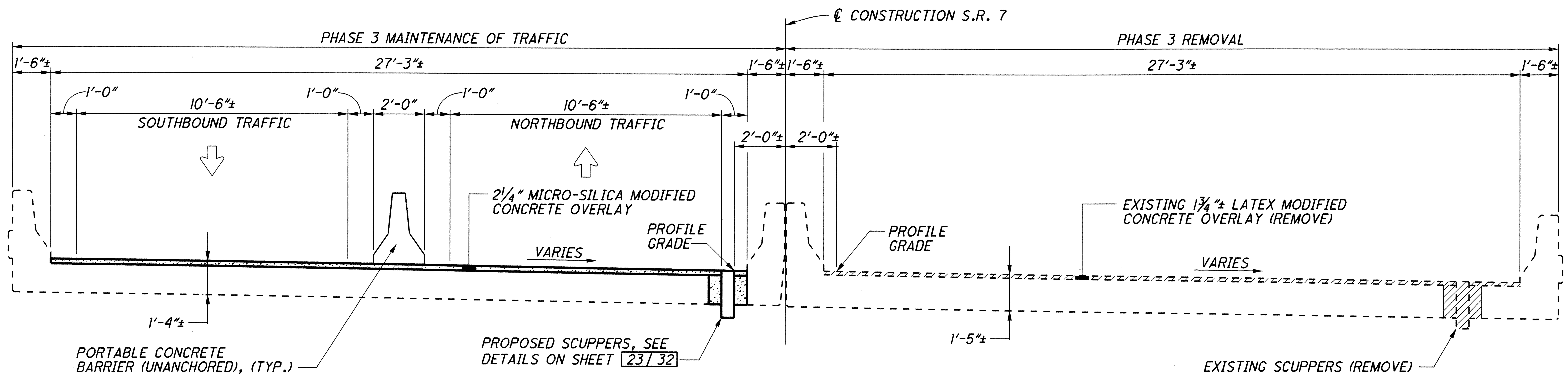
S.R. 7 NORTHBOUND ENTRANCE RAMP AND NORFOLK SOUTHERN RAILROAD

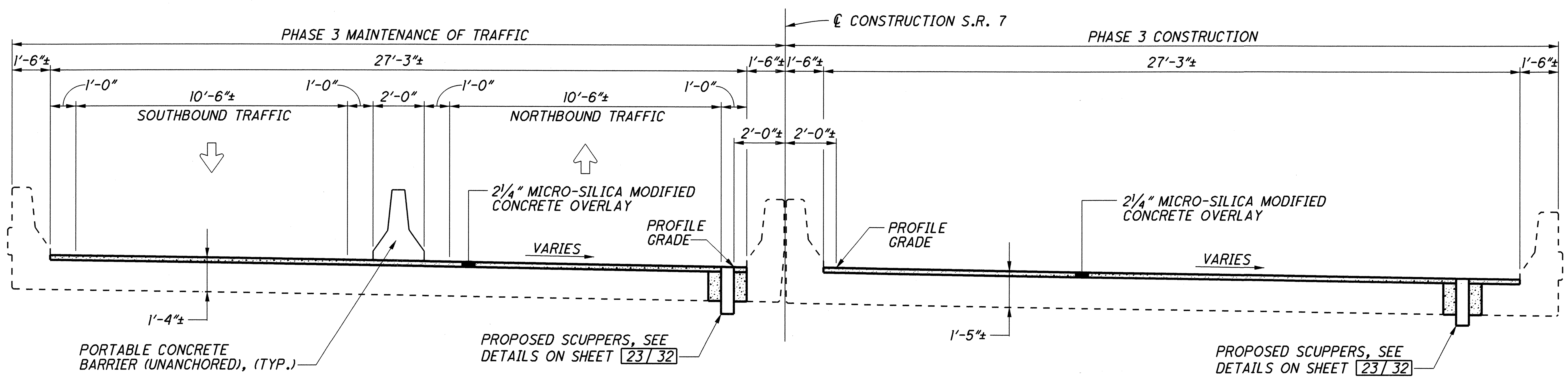
JEF-7-9.92
PID 83452

6/32

29/55



PHASE 3 REMOVAL



PHASE 3 CONSTRUCTION

PHASE CONSTRUCTION NOTES

PHASE 3 REMOVAL

1. PLACE THE PORTABLE CONCRETE BARRIER ON THE RIGHT SIDE OF THE STRUCTURE AS SHOWN PER STD. DWG. PCB-91. MAINTAIN ONE LANE OF NORTHBOUND TRAFFIC AND ONE LANE OF SOUTHBOUND TRAFFIC ON THE RIGHT SIDE OF THE STRUCTURE.

2. REMOVE THE EXISTING LATEX MODIFIED CONCRETE OVERLAY AS SHOWN. REMOVE THE EXISTING SCUPPERS BY REMOVING AN APPROXIMATE 1.5' X 1.5' AREA AROUND THE SCUPPER. DO NOT CUT OR DAMAGE REINFORCING. REMOVAL SHALL BE PAID FOR UNDER ITEM 202-PORTIONS OF STRUCTURE REMOVED, AS PER PLAN.

PHASE 3 CONSTRUCTION

1. PLACE NEW SCUPPERS. FILL VOID LEFT FROM SCUPER REMOVAL WITH CLASS S CONCRETE. REPLACEMENT OF SCUPPER AND CONCRETE SHALL BE INCLUDED IN ITEM 518-STRUCTURE DRAINAGE MISC.: SCUPPER REPLACEMENT FOR PAYMENT.

2. CONSTRUCT THE 2¼" MICRO-SILICA MODIFIED CONCRETE OVERLAY AS SHOWN.

3. PLACE MEDIAN COMPRESSION SEAL UPON COMPLETION OF ALL REPAIRS. GLAND IS TO BE INSTALLED WITHIN EACH UNIT. A ½" OPENING SHALL BE LEFT IN THE GLAND AT EACH EXPANSION JOINT. INSTALLATION OF THE COMPRESSION SEAL SHALL INCLUDE ALL LABOR AND MATERIAL NECESSARY TO COMPLETE THE ABOVE WORK. PAYMENT WILL BE CONTRACT BID PRICE FOR ITEM 516-ELASTOMERIC COMPRESSION SEAL, AS PER PLAN.

PHASE 4 REMOVAL / CONSTRUCTION

1. SEE MAINTENANCE OF TRAFFIC SHEETS 4 OF 55 THRU 13 OF 55 IN THE ROADWAY PLANS FOR DETAILS OF PROPOSED MEDIAN BARRIER AND MEDIAN DRAINAGE CONSTRUCTION TO THE NORTH AND SOUTH OF THE STRUCTURES.

2. NO REMOVAL OR CONSTRUCTION WORK WILL BE PERFORMED ON EITHER THE NORTHBOUND OR SOUTHBOUND SUPER STRUCTURE DURING PHASE 4, HOWEVER, REPAIR WORK MAY BE COMPLETED ON THE SUBSTRUCTURE DURING THIS PHASE.

LEGEND

(hatched box) - DENOTES AREAS OF REMOVAL

NOTES

1. **FOR ABBREVIATIONS:** SEE SHEET 4/32 .
2. **FOR PHASE 1 & 2 CONSTRUCTION DETAILS:** SEE SHEET 6/32 .
3. **FOR PROPOSED MICRO-SILICA MODIFIED CONCRETE OVERLAY, SCUPPER REPLACEMENT AND MEDIAN COMPRESSION SEAL DETAILS:** SEE SHEET 23/32 .

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PHASE 3 & 4 CONSTRUCTION
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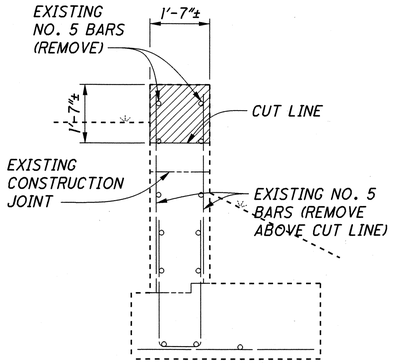
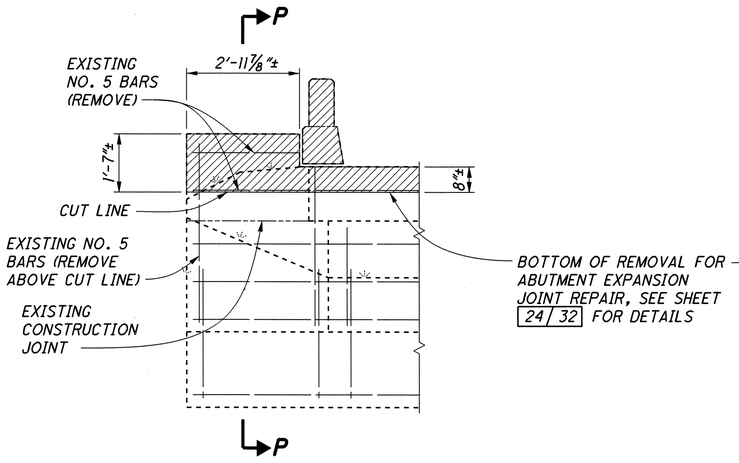
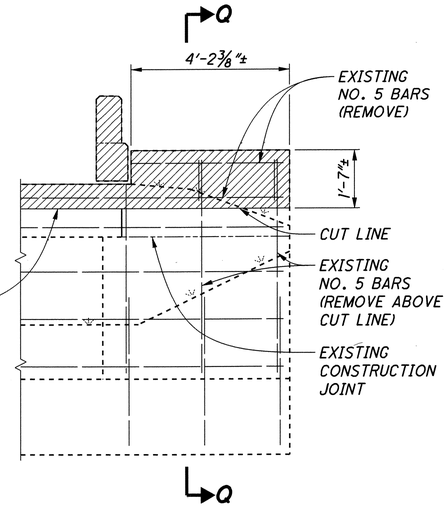


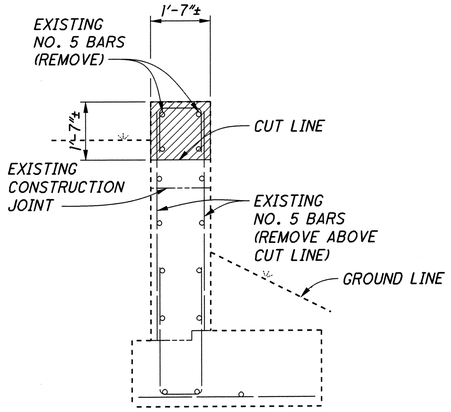
SECTION P-P



ELEVATION



ELEVATION



SECTION Q-Q

PHASE 3 REMOVAL - RIGHT WINGWALL

PHASE 2 REMOVAL - LEFT WINGWALL

SECTION R-R

ELEVATION

ELEVATION

SECTION S-S

68'-2½"±

PHASE 3 CONSTRUCTION - RIGHT WINGWALL

ANODE PLACEMENT DETAIL

PHASE 2 CONSTRUCTION - LEFT WINGWALL

LEGEND

DENOTES AREA OF REMOVAL, ITEM 202 - PORTIONS OF STRUCTURE REMOVED, AS PER PLAN

* DENOTES DOWEL BAR GROUTED INTO EXISTING STRUCTURE

NOTES

1. **FOR REINFORCING STEEL LIST:** SEE SHEET 32/32 .
2. **FORWARD ABUTMENT REPAIR DETAILS:** SEE SHEET 9/32 .
3. **FOR ABBREVIATIONS:** SEE SHEET 4/32 .
4. **FOR LIMITS OF SEALING OF CONCRETE SURFACES:** SEE SHEET 9/32 .

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REAR ABUTMENT REPAIR DETAILS
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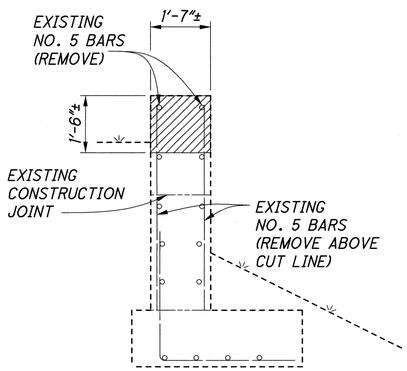
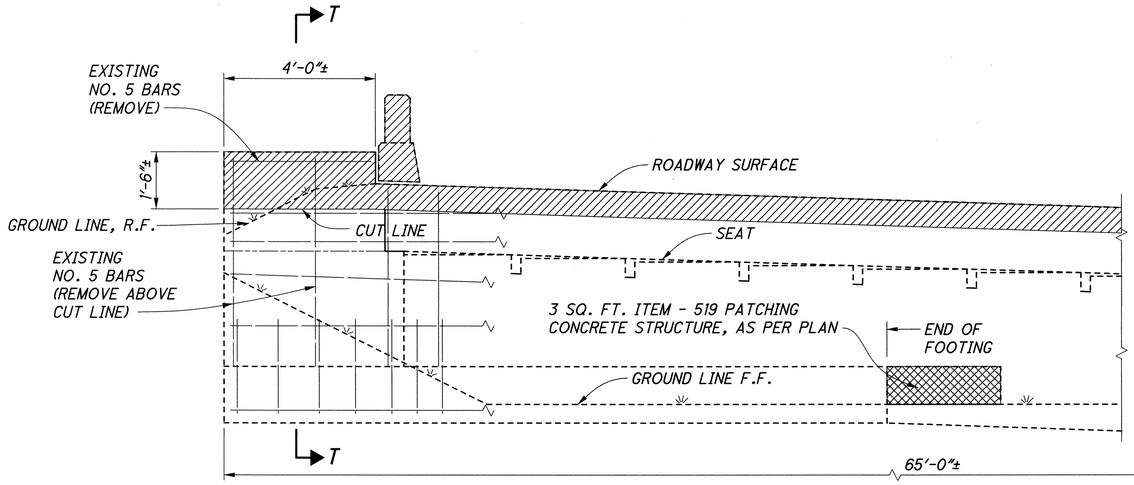
8/32

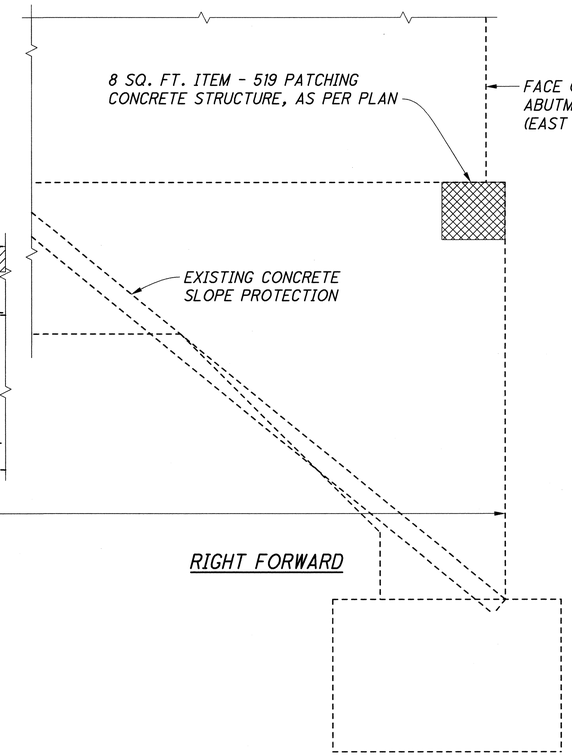
31/55



SECTION T-T



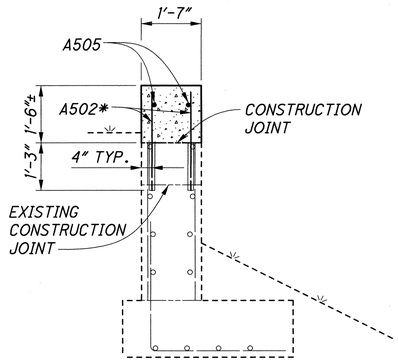
LEFT FORWARD



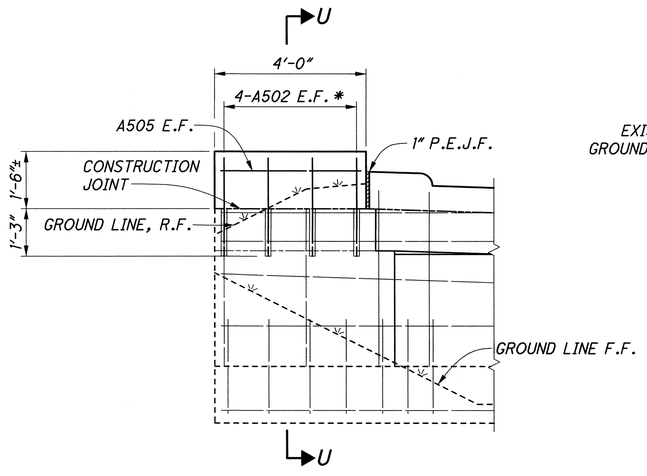
RIGHT FORWARD

PHASE 2 REMOVAL - LEFT WINGWALL

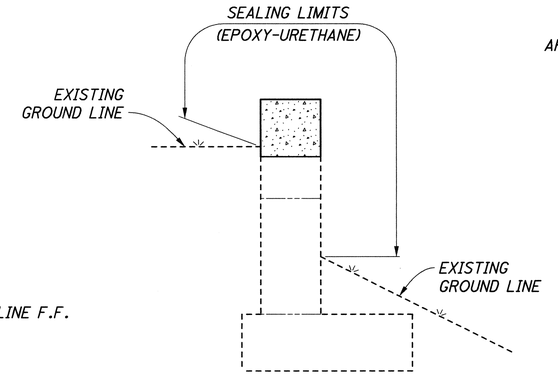
PARTIAL ELEVATION



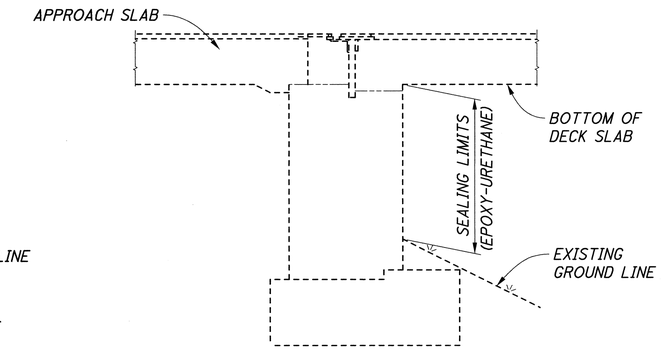
SECTION U-U



ELEVATION



WINGWALL SECTION



BREASTWALL SECTION

LIMITS OF SEALING OF CONCRETE SURFACES

(REAR AND FORWARD ABUTMENTS)

PHASE 2 CONSTRUCTION - LEFT WINGWALL

LEGEND

DENOTES AREA OF REMOVAL, ITEM 202 - PORTIONS OF STRUCTURE REMOVED, AS PER PLAN

* DENOTES DOWEL BAR GROUTED INTO EXISTING STRUCTURE

NOTES

1. **FOR REINFORCING STEEL LIST:** SEE SHEET 32/32 .
2. **REAR ABUTMENT REPAIR DETAILS:** SEE SHEET 8/32 .
3. **FOR ABBREVIATIONS:** SEE SHEET 4/32 .
4. **ANODE PLACEMENT DETAIL:** SEE SHEET 8/32 .

EA PROJECT NO. 08-085

DESIGN AGENCY
ENGINEERING ASSOCIATES, INC.
WEST LIBERTY, OHIO 43357
TELEPHONE: (330) 465-6556
FAX: (330) 465-6077

DESIGNED	DRAWN	REVIEWED	DATE
BDH	RLE	AFS	10-29-10
CHECKED	REVISED	STRUCTURE FILE NUMBER	
HK		4100425	

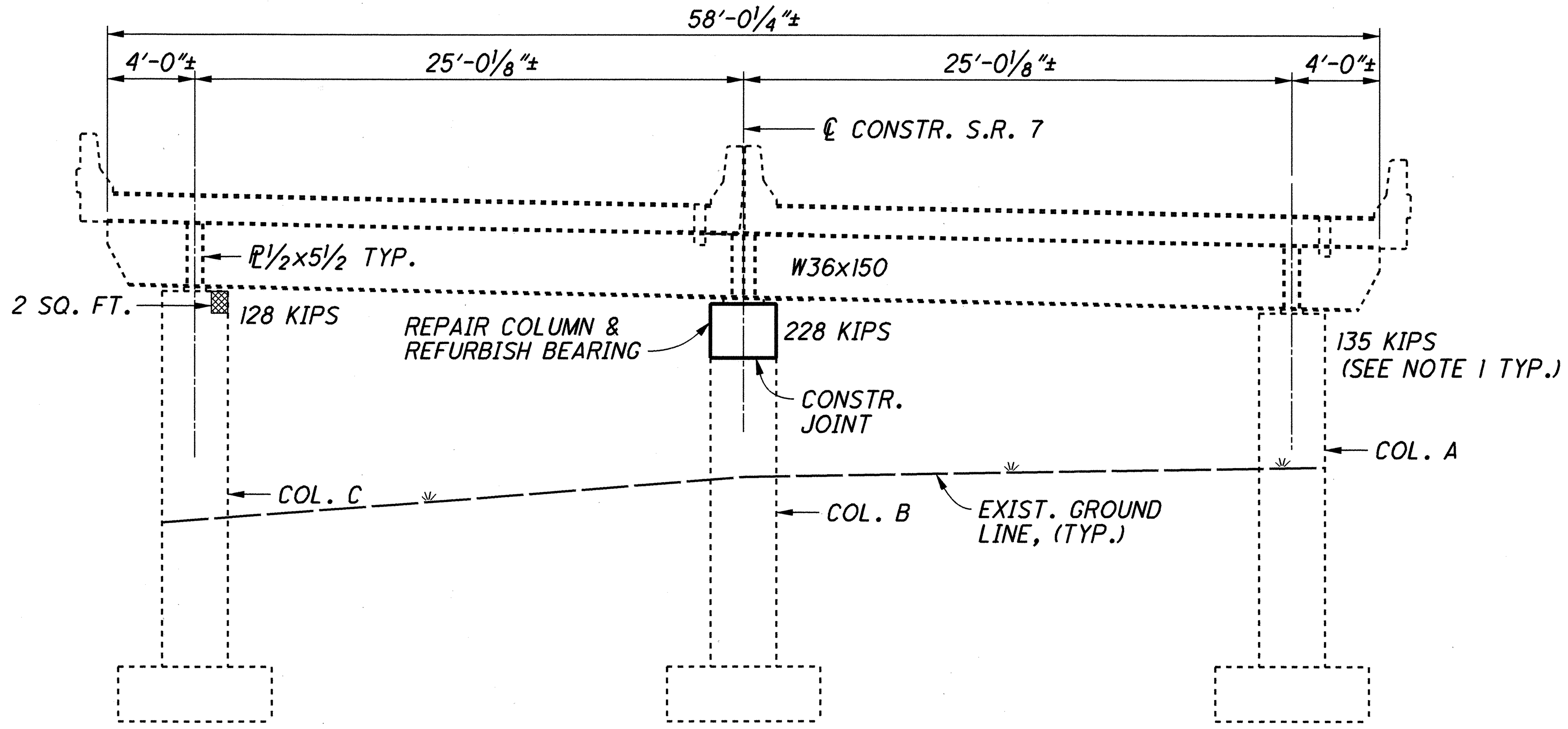
FORWARD ABUTMENT & MISC. REPAIR DETAILS

BRIDGE NO. JEF-7-0992 OVER
S.R. 7 NORTHBOUND ENTRANCE RAMP AND NORFOLK SOUTHERN RAILROAD

JEF-7-9.92
PID 83452

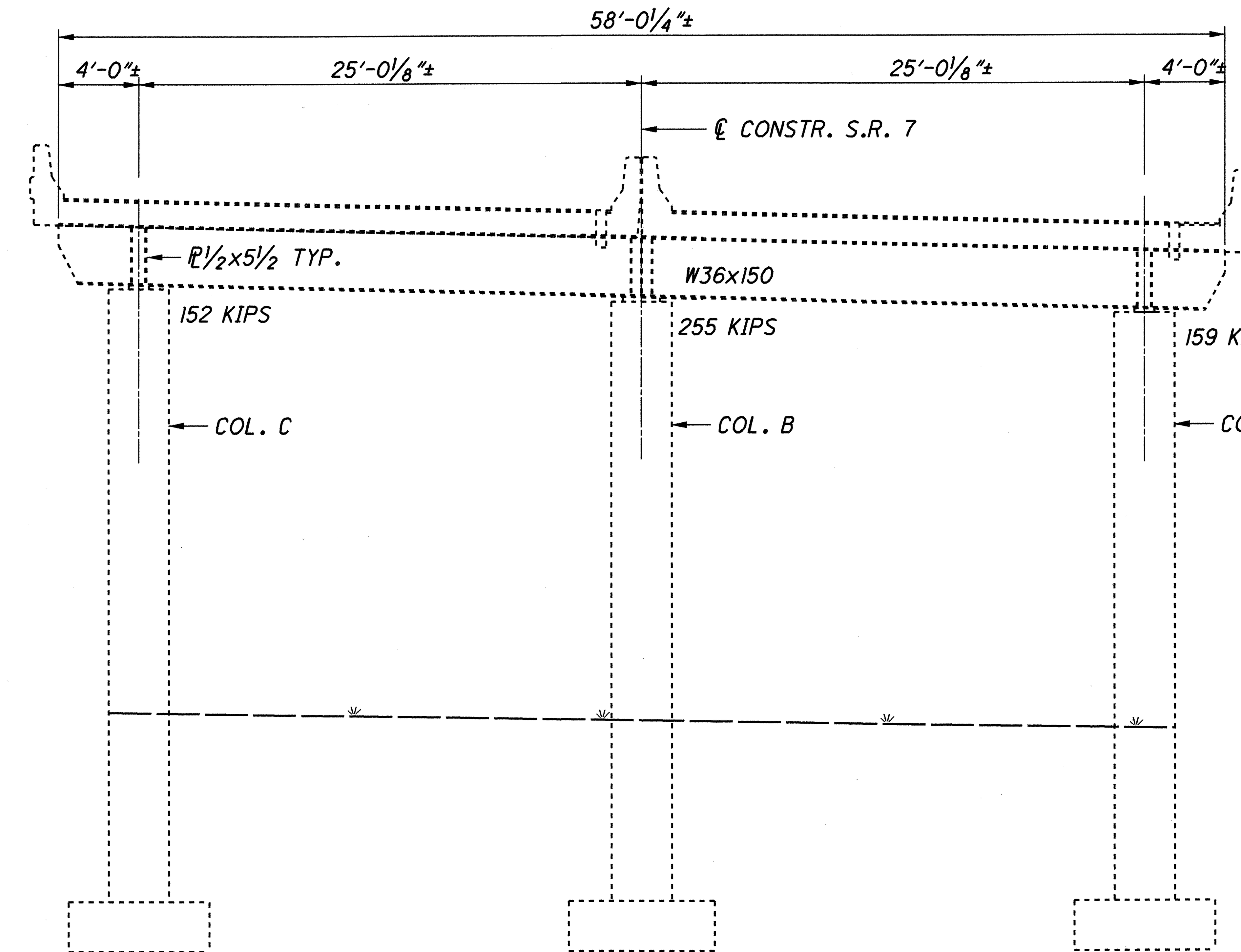
9/32

32/55



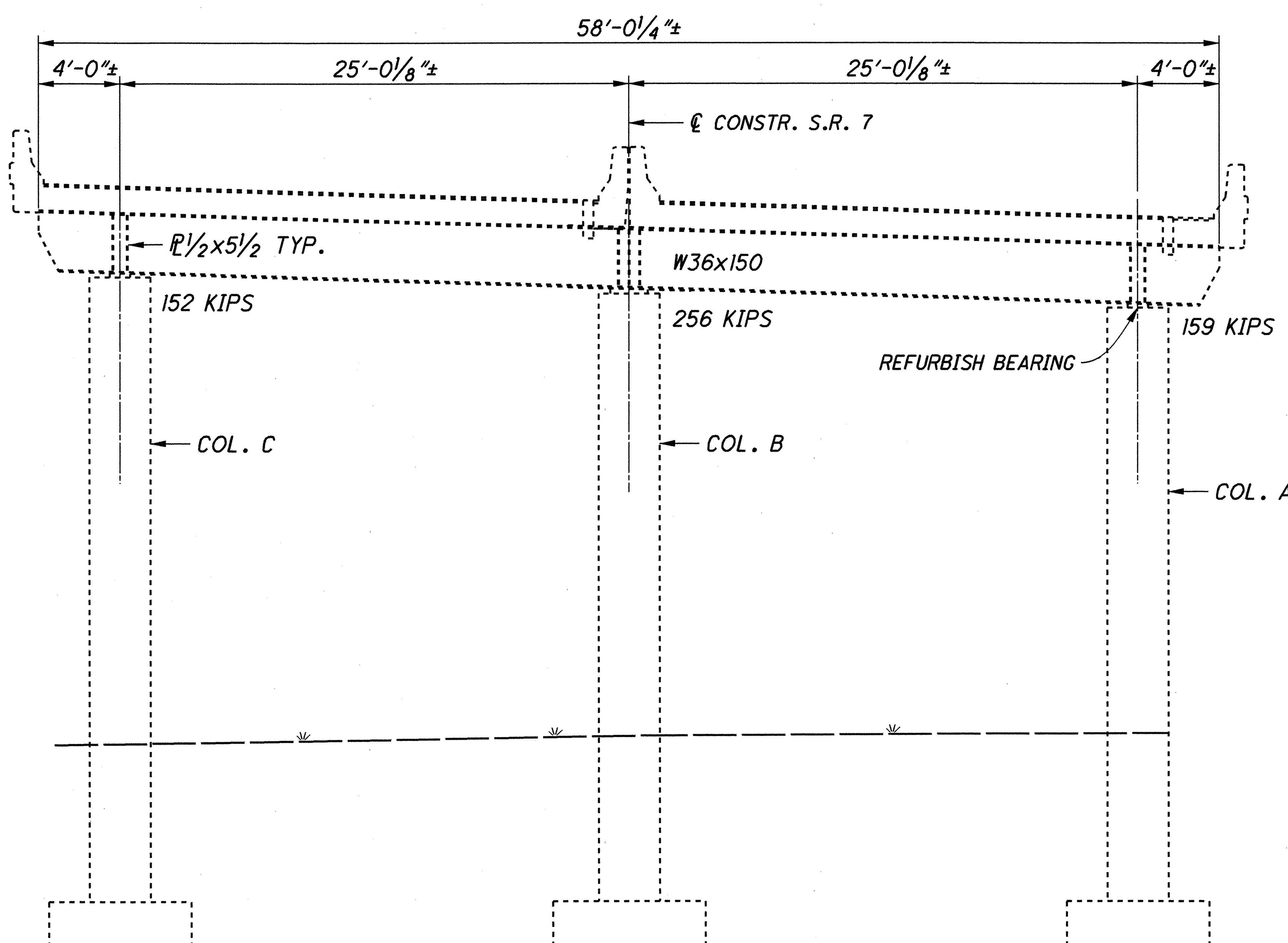
PIER - 1

LOOKING NORTH (TYP.)

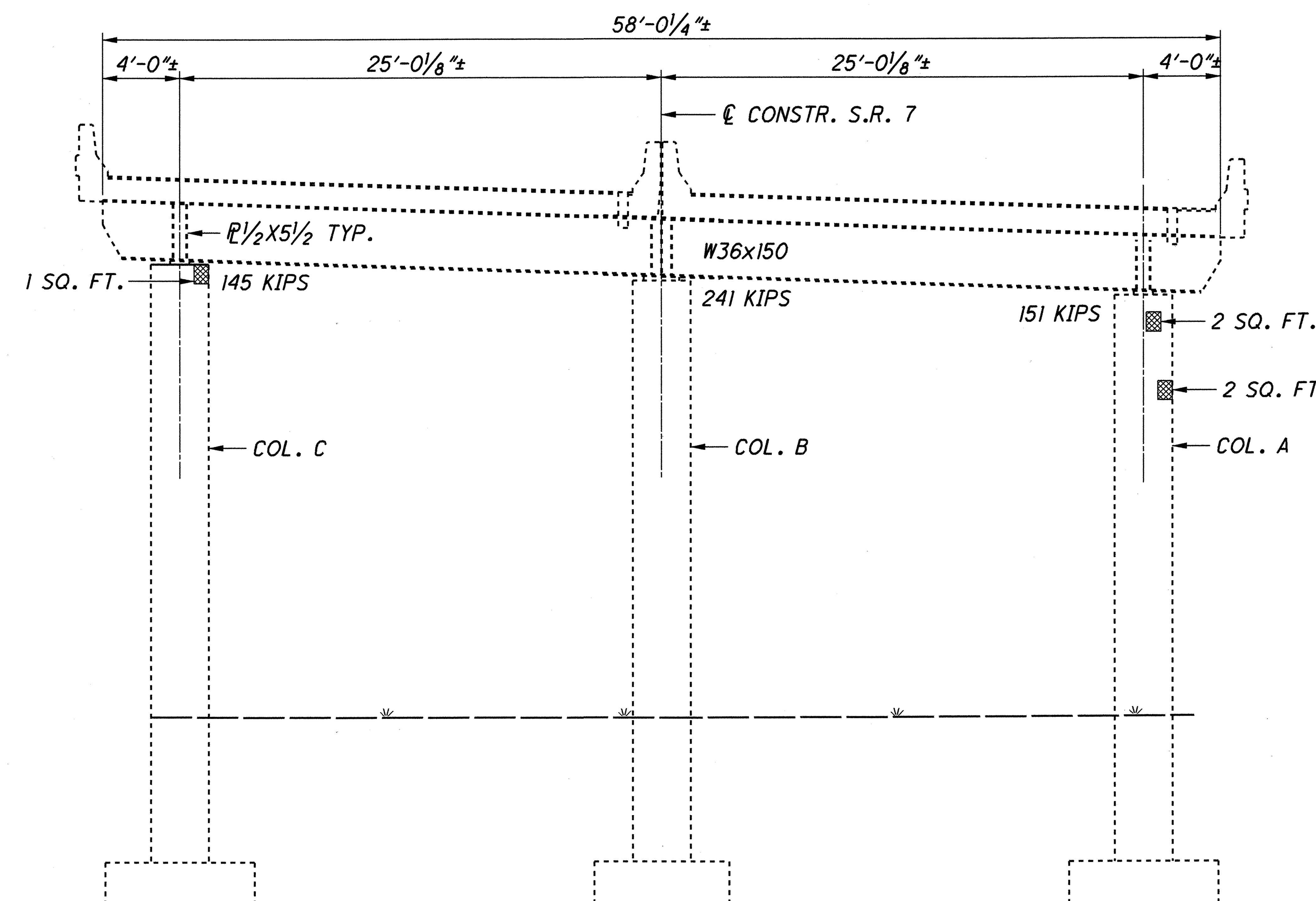


PIER - 2

PATCHING AREAS	
LOCATION	AREA
PIER 1	2 SQ. FT.
PIER 4	5 SQ. FT.



PIER - 3



PIER - 4

NOTES

1. **JACKING LOAD** IS SHOWN AT EACH COLUMN FOR DEAD LOAD ONLY. FOR JACKING UNDER LIVE CONDITIONS, SEE SHEET 4/32.
2. **FOR COLUMN REPAIR DETAILS AND NOTES:** SEE SHEET 15/32.
3. **FOR BEARING REFURBISHING DETAILS AND NOTES:** SEE SHEET 16/32.

LEGEND

ITEM 519 - PATCHING CONCRETE STRUCTURES, AS PER PLAN (ON SIDES OF COLUMNS)

EA PROJECT NO. 08-085

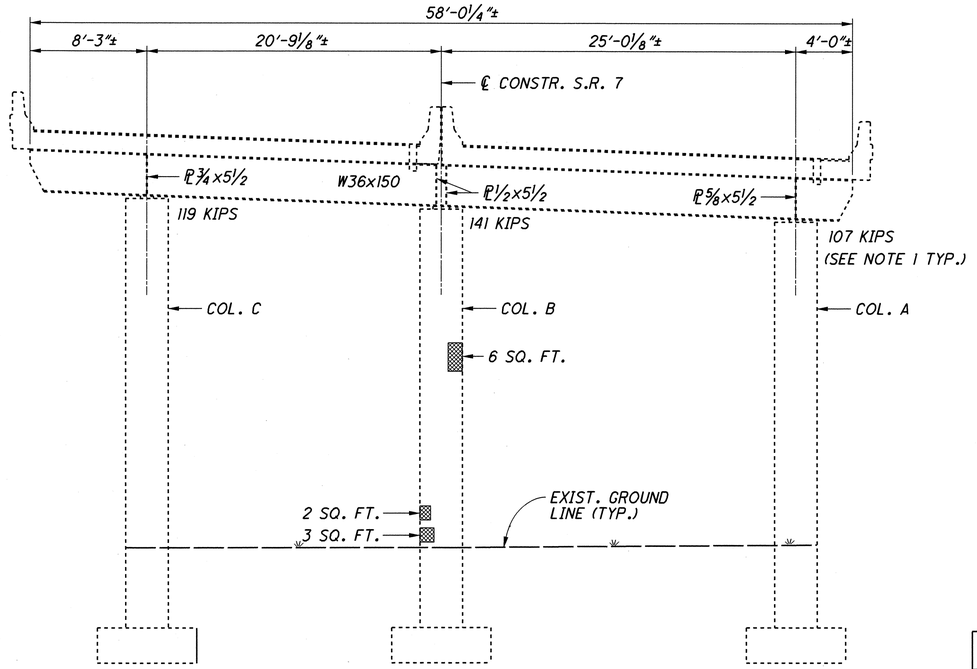
DESIGN AGENCY
ENGINEERING ASSOCIATES, INC.
1935 EAGLE PASS - WOOSTER, OHIO 44691
TELEPHONE: (330) 345-6556
FAX: (330) 345-8077

DESIGNED BDH | CHECKED HK | DRAWN RLE | REVISED | REVIEWED AFS | DATE 10-29-10 | STRUCTURE FILE NUMBER 4100425

PIER REPAIR DETAILS - 1

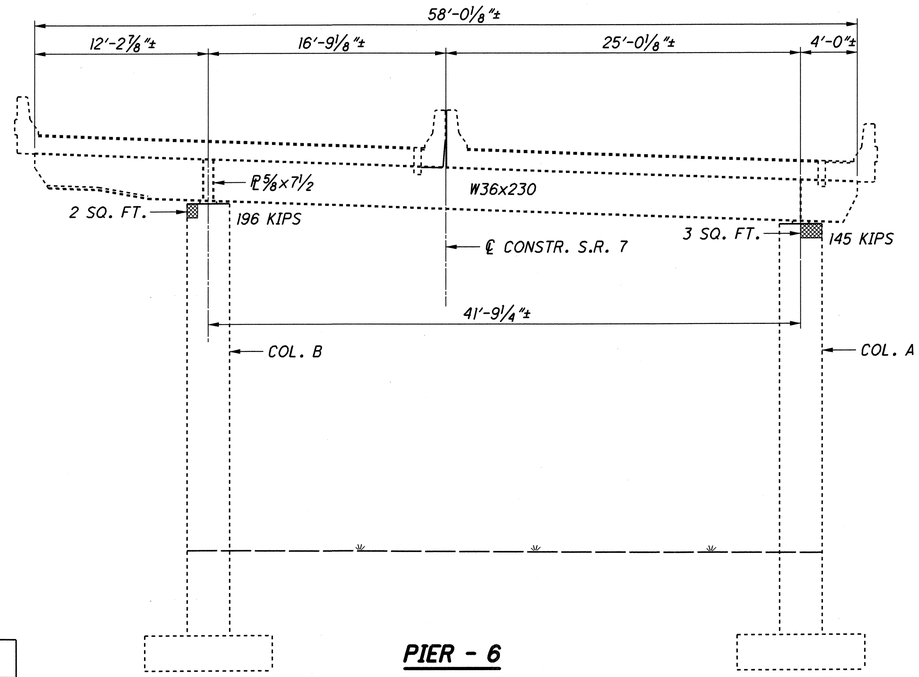
BRIDGE NO. JEF-7-0992 OVER S.R. 7 NORTHBOUND ENTRANCE RAMP AND NORFOLK SOUTHERN RAILROAD

JEF-7-9.92
PID 83452



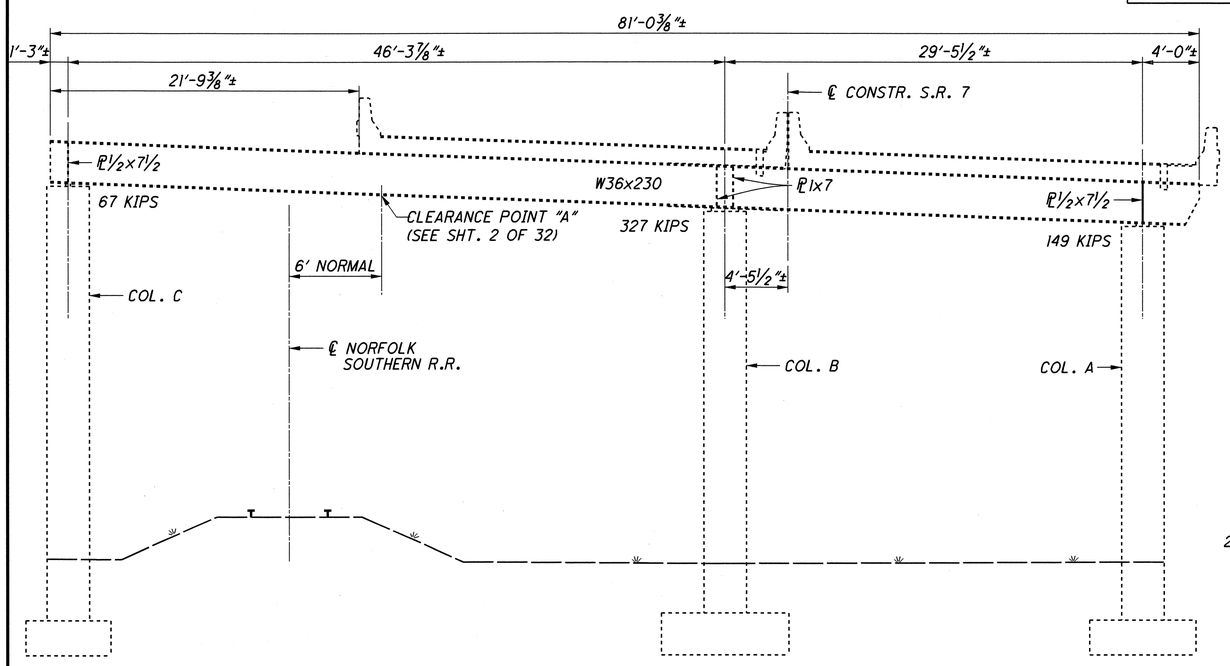
PIER - 5

LOOKING NORTH (TYP.)

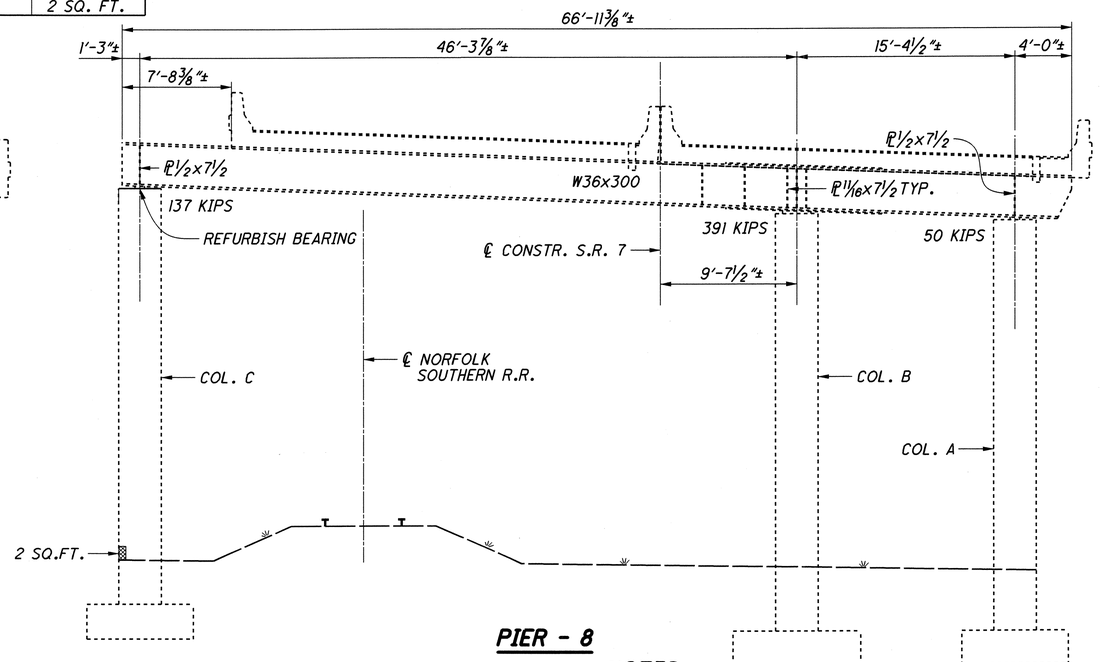


PIER - 6

PATCHING AREAS	
LOCATION	AREA
PIER 5	11 SQ. FT.
PIER 6	5 SQ. FT.
PIER 8	2 SQ. FT.



PIER - 7



PIER - 8

LEGEND

ITEM 519 - PATCHING CONCRETE STRUCTURES, AS PER PLAN (ON SIDES OF COLUMNS)

NOTES

1. **JACKING LOAD** IS SHOWN AT EACH COLUMN FOR DEAD LOAD ONLY. FOR JACKING UNDER LIVE CONDITIONS, SEE SHEET 4/32.
2. **FOR COLUMN REPAIR DETAILS AND NOTES:** SEE SHEET 15/32.
3. **FOR BEARING REFURBISHING DETAILS AND NOTES:** SEE SHEET 16/32.

EA PROJECT NO. 08-085

DESIGN AGENCY
ENGINEERING ASSOCIATES, INC.
935 EAGLE PASS • WOOSTER, OHIO 44691
TELEPHONE: (330) 345-6558
FAX: (330) 345-8077

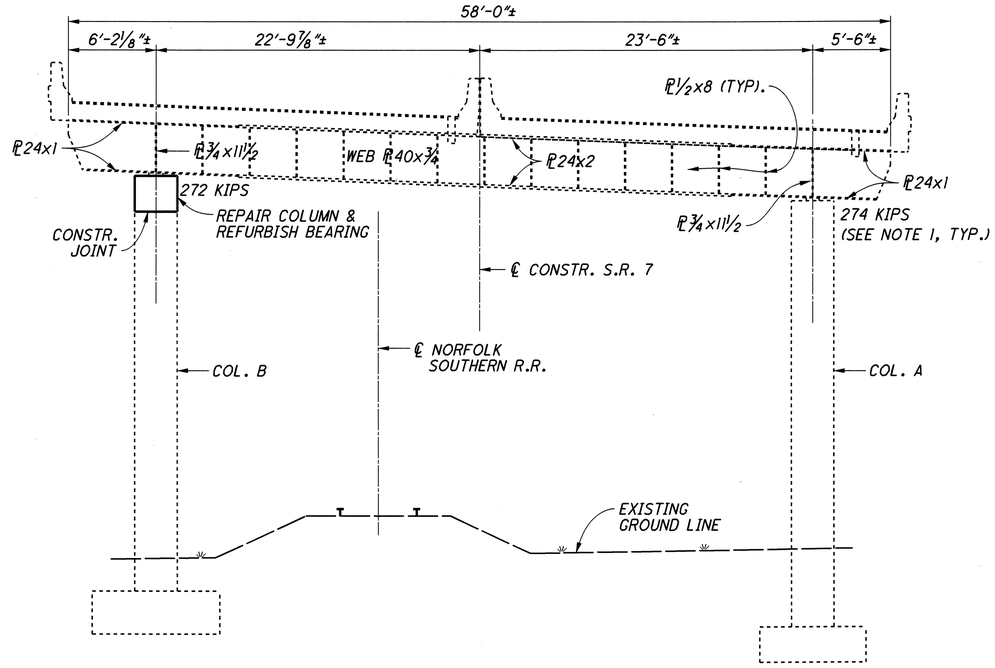
DESIGNED	DRAWN	REVIEWED	DATE
BDH	RLE	AFS	10-29-10
CHECKED	REVISED	STRUCTURE FILE NUMBER	
HK		4100425	

PIER REPAIR DETAILS - 2
BRIDGE NO. JEF-7-0992 OVER
S.R. 7 NORTHBOUND ENTRANCE RAMP AND NORFOLK SOUTHERN RAILROAD

JEF-7-9.92
PID 83452

11 / 32

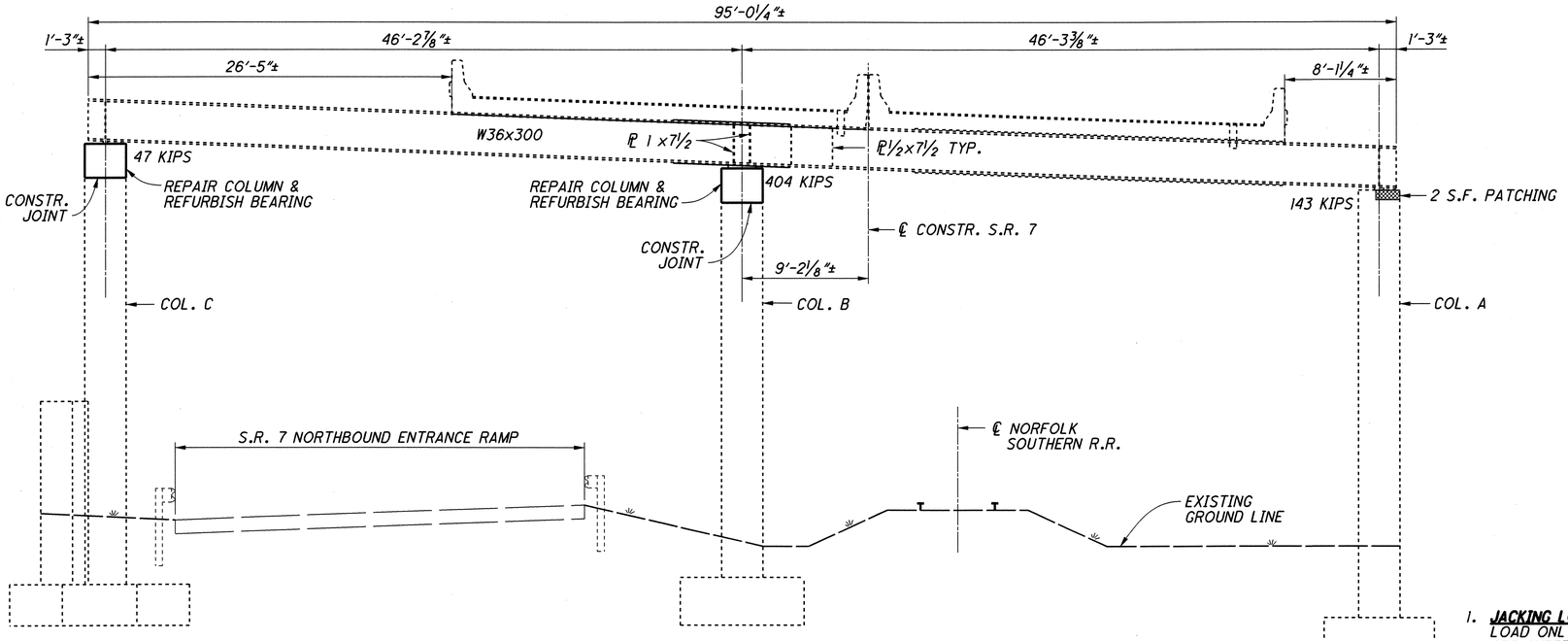
34
55



PIER - 9

ITEM 519 - PATCHING CONCRETE STRUCTURES, AS PER PLAN (ON SIDES OF COLUMNS)

PATCHING AREAS	
LOCATION	AREA
PIER 10	2 SQ. FT.



PIER - 10

LOOKING NORTH (TYP.)

NOTES

1. **JACKING LOAD** IS SHOWN AT EACH COLUMN FOR DEAD LOAD ONLY. FOR JACKING UNDER LIVE CONDITIONS, SEE SHEET 4/32.
2. **FOR COLUMN REPAIR DETAILS AND NOTES:** SEE SHEET 15/32.
3. **FOR BEARING REFURBISHING DETAILS AND NOTES:** SEE SHEET 16/32.

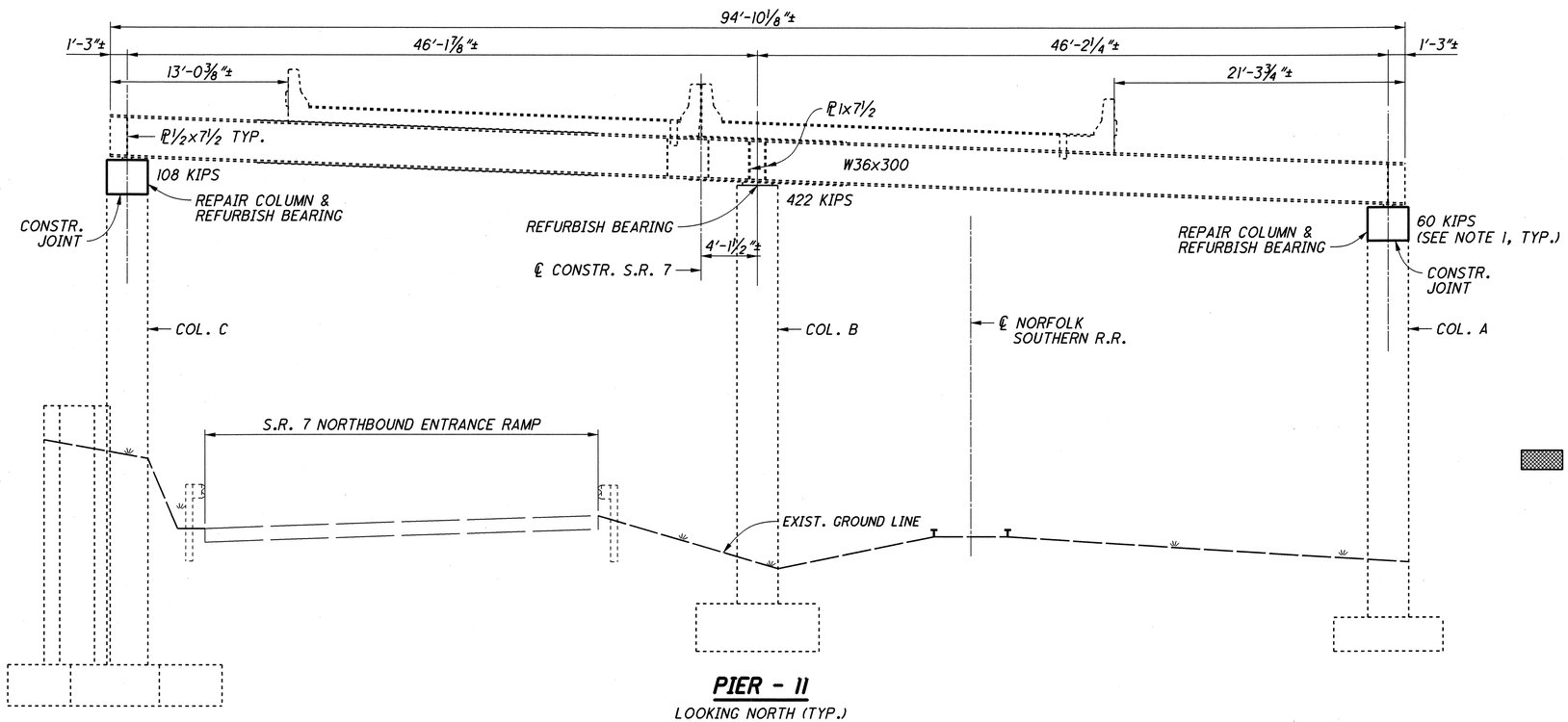
EA PROJECT NO. 08-085

DESIGN AGENCY
ENGINEERING ASSOCIATES, INC.
935 EAGLE PASS - WOOSTER, OHIO 44691
TELEPHONE: (330) 345-6556
FAX: (330) 345-6077

DESIGNED	DRAWN	REVIEWED	DATE
BDH	RLE	AFS	10-29-10
CHECKED	REVISED	STRUCTURE FILE NUMBER	
HK		4100425	

PIER REPAIR DETAILS - 3
BRIDGE NO. JEF-7-0992 OVER
S.R. 7 NORTHBOUND ENTRANCE RAMP AND NORFOLK SOUTHERN RAILROAD

JEF-7-9.92
PID 83452



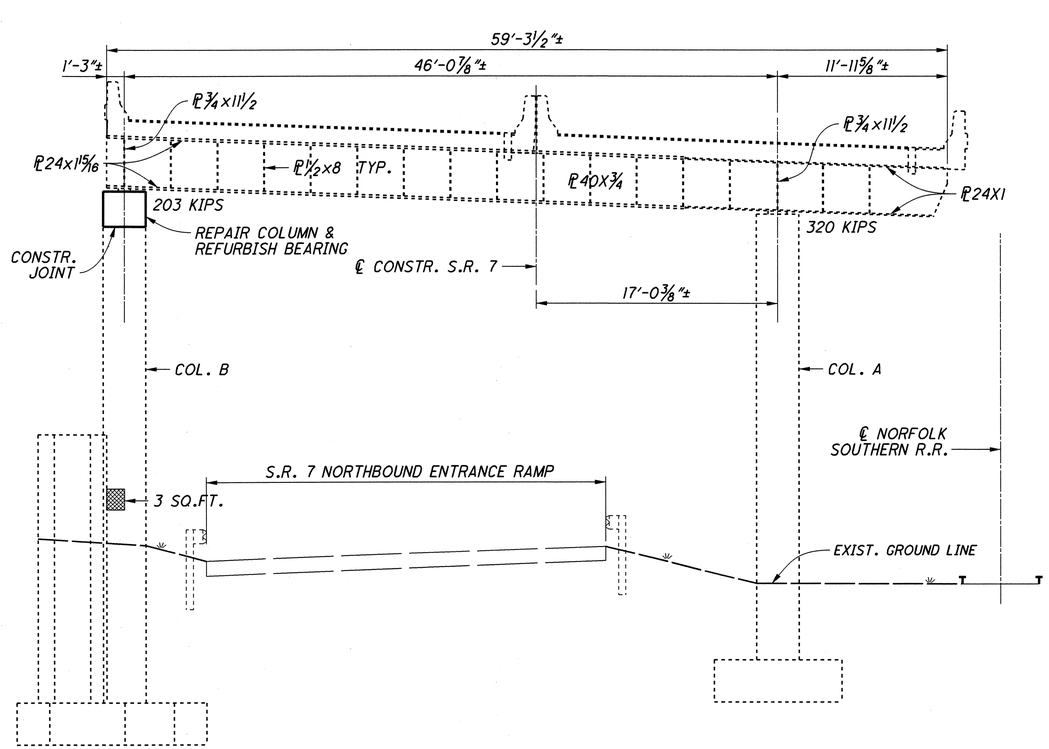
PIER - 11

LOOKING NORTH (TYP.)

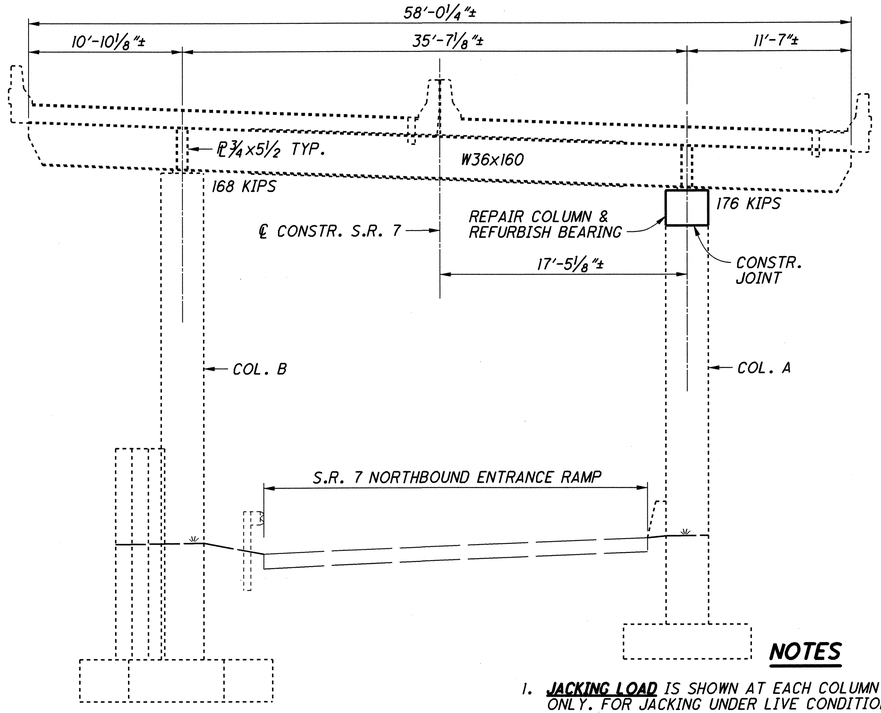
LEGEND

ITEM 519 - PATCHING CONCRETE STRUCTURES, AS PER PLAN (ON SIDES OF COLUMNS)

PATCHING AREAS	
LOCATION	AREA
PIER 12	3 SQ. FT.



PIER - 12



PIER - 13

NOTES

1. **JACKING LOAD** IS SHOWN AT EACH COLUMN FOR DEAD LOAD ONLY. FOR JACKING UNDER LIVE CONDITIONS, SEE SHEET 4/32.
2. **FOR COLUMN REPAIR DETAILS AND NOTES:** SEE SHEET 15/32.
3. **FOR BEARING REFURBISHING DETAILS AND NOTES:** SEE SHEET 16/32.

EA PROJECT NO. 08-085

DESIGN AGENCY
ENGINEERING ASSOCIATES, INC.
935 EAGLE PASS - WOOSTER, OHIO 44691
TELEPHONE: (330) 345-9556
FAX: (330) 345-8077

DESIGNED	DRAWN	REVIEWED	DATE
BDH	RLE	AFS	10-29-10
CHECKED	REVISED	STRUCTURE FILE NUMBER	
HK		4100425	

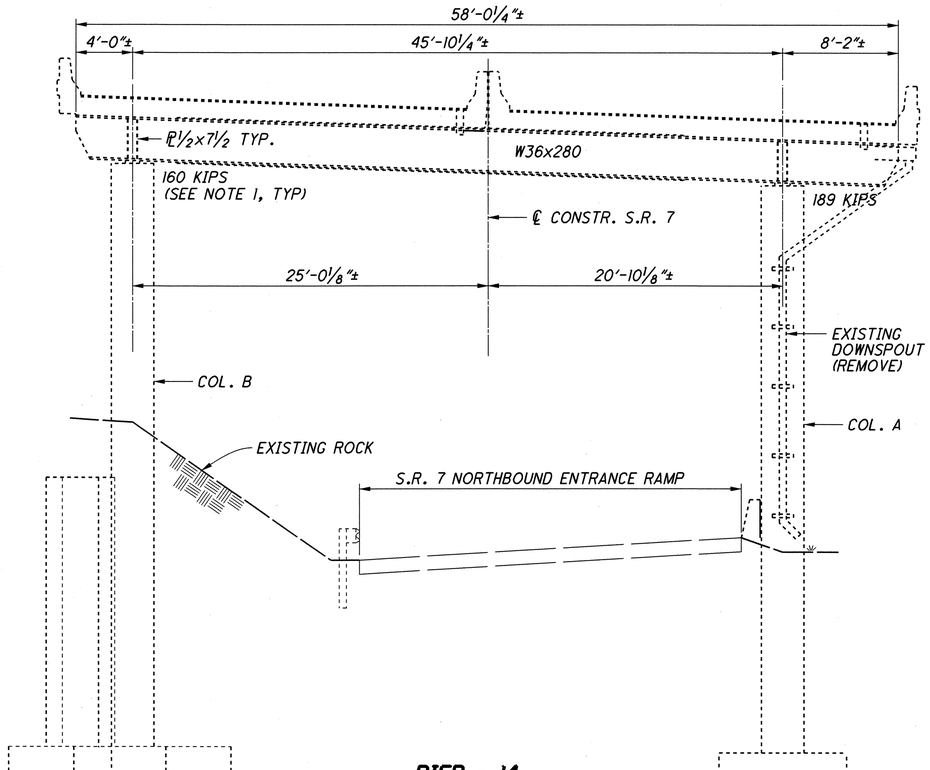
PIER REPAIR DETAILS - 4

BRIDGE NO. JEF-7-0992 OVER
S.R. 7 NORTHBOUND ENTRANCE RAMP AND NORFOLK SOUTHERN RAILROAD

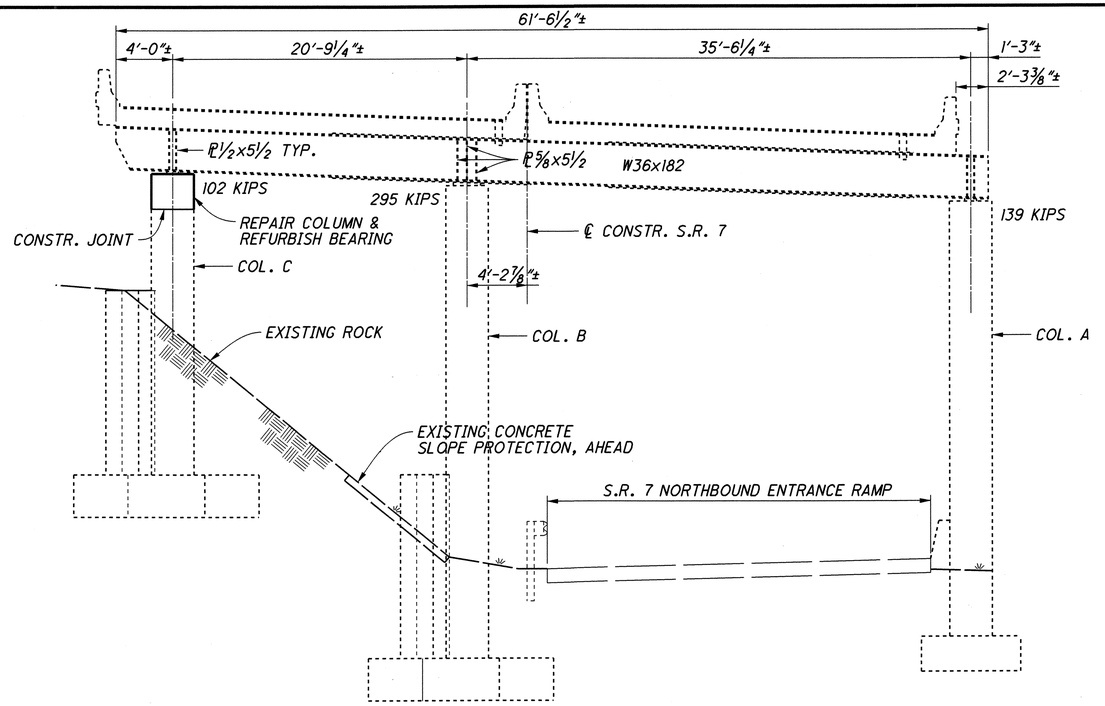
JEF-7-9.92
PID 83452

13/32

36/55

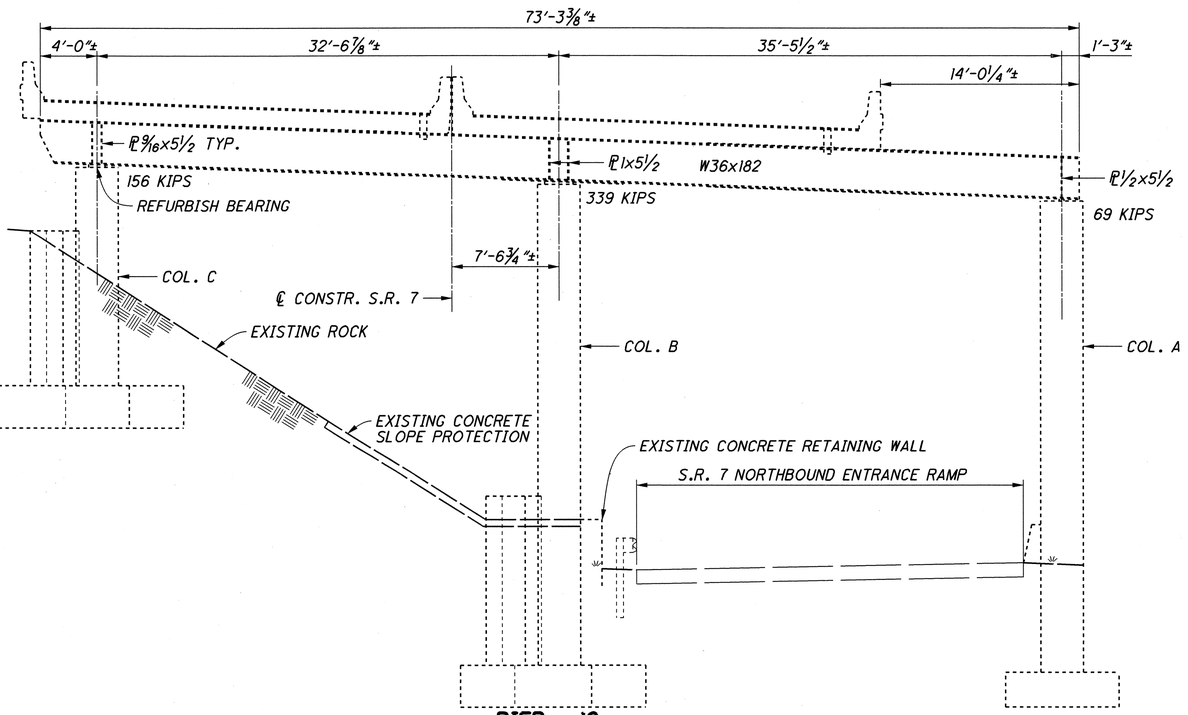


PIER - 14

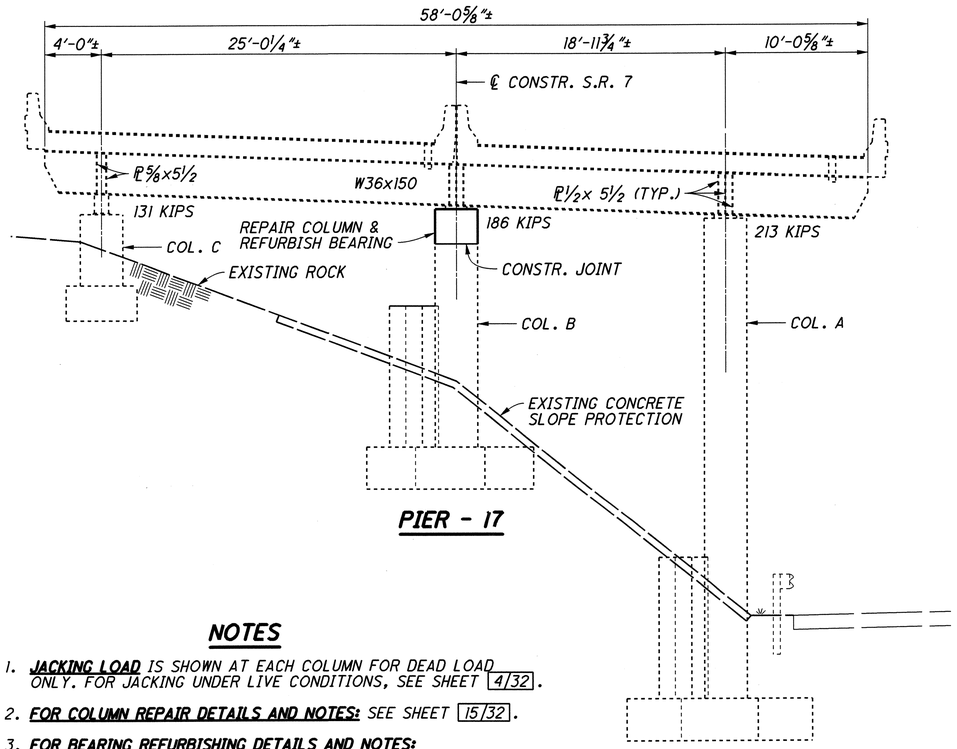


PIER - 15

LOOKING NORTH (TYP.)



PIER - 16



PIER - 17

NOTES

1. ***JACKING LOAD*** IS SHOWN AT EACH COLUMN FOR DEAD LOAD ONLY. FOR JACKING UNDER LIVE CONDITIONS, SEE SHEET 4/32.
2. ***FOR COLUMN REPAIR DETAILS AND NOTES:*** SEE SHEET 15/32.
3. ***FOR BEARING REFURBISHING DETAILS AND NOTES:*** SEE SHEET 16/32.

EA PROJECT NO. 08-085

DESIGN AGENCY
ENGINEERING ASSOCIATES, INC.
935 EAGLE PASS - WOOSTER, OHIO 44691
TELEPHONE: (330) 345-6556
FAX: (330) 345-6077

DESIGNED	DRAWN	REVIEWED	DATE
BDH	RLE	AFS	10-29-10
CHECKED	REVISED	STRUCTURE FILE NUMBER	
HK		4100425	

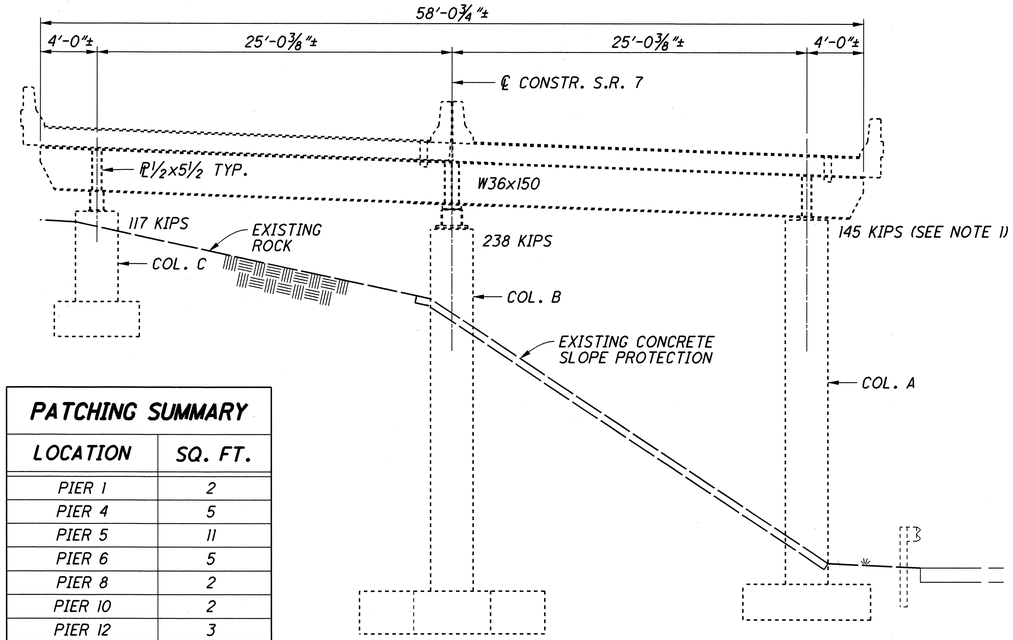
PIER REPAIR DETAILS - 5

BRIDGE NO. JEF-7-0992 OVER
S.R. 7 NORTHBOUND ENTRANCE RAMP AND NORFOLK SOUTHERN RAILROAD

JEF-7-9.92
PID 83452

14/32

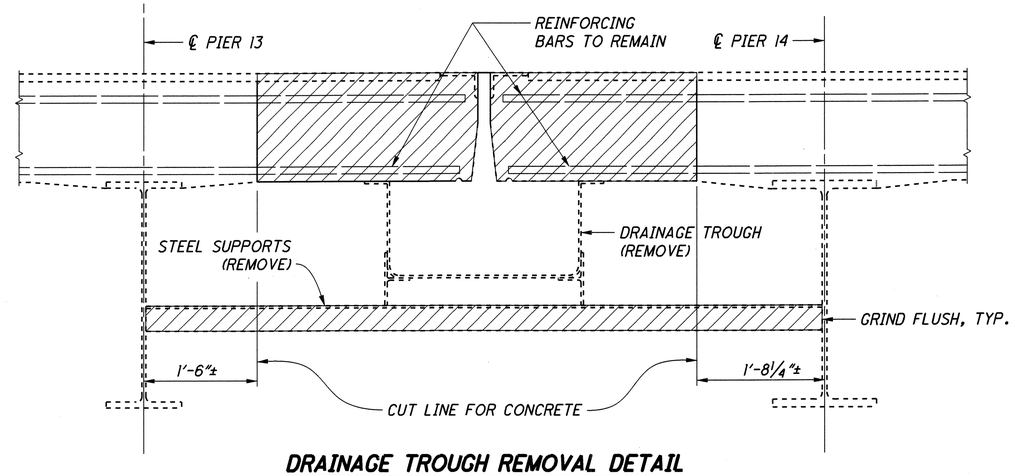
37/55



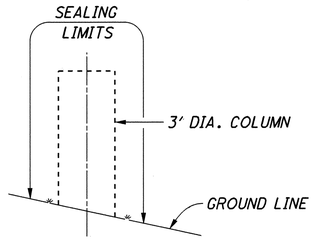
PATCHING SUMMARY	
LOCATION	SQ. FT.
PIER 1	2
PIER 4	5
PIER 5	11
PIER 6	5
PIER 8	2
PIER 10	2
PIER 12	3
FWD. ABUTMENT	6
TOTAL	36

PIER - 18

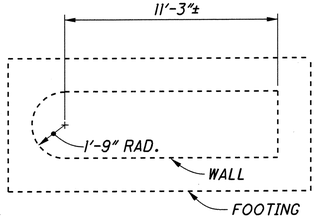
LOOKING NORTH



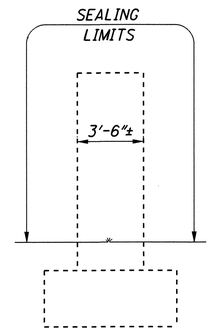
DRAINAGE TROUGH REMOVAL DETAIL



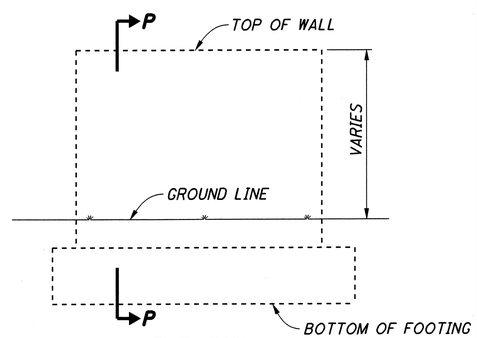
SEALING OF CONCRETE SURFACES, (EPOXY-URETHANE). (PIER COLUMNS)



PLAN

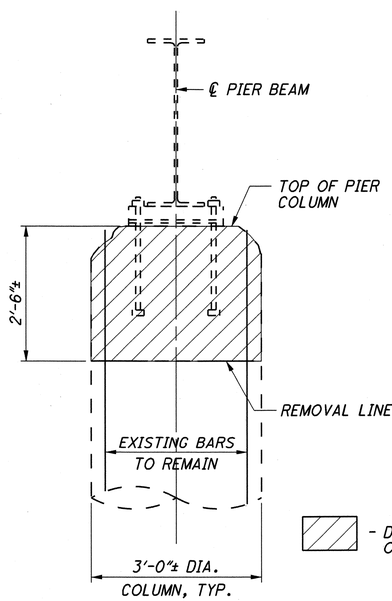


SECTION P-P

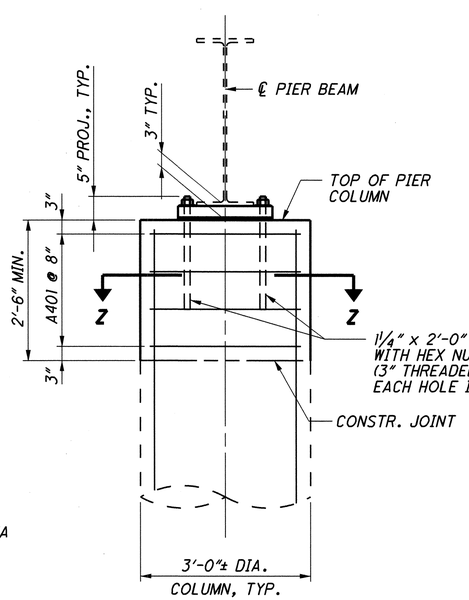


ELEVATION

SEALING OF CONCRETE SURFACES, (EPOXY-URETHANE). (CRASHWALLS)

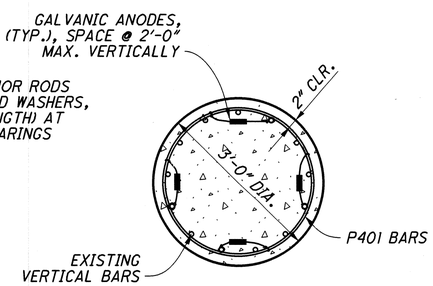


REMOVAL



CONSTRUCTION

PIER COLUMN REPAIR DETAILS



SECTION Z-Z

NOTE:

COLUMN REPAIR CONCRETE SHALL BE PAID FOR UNDER ITEM 511 - CLASS C CONCRETE, PIER

NOTES

1. **JACKING LOAD** IS SHOWN AT EACH COLUMN FOR DEAD LOAD ONLY. FOR JACKING UNDER LIVE CONDITIONS, SEE SHEET 4/32.
2. **FOR ABBREVIATIONS:** SEE SHEET 4/32.
3. **PATCHING REPAIRS** SHALL BE PAID FOR UNDER ITEM 519 - PATCHING CONCRETE STRUCTURES, AS PER PLAN, THE AREAS SHOWN ARE APPROXIMATE. FINAL DETERMINATION OF THE AREA TO BE REPAIRED WILL BE MADE BY THE ENGINEER AT THE TIME OF CONSTRUCTION.
4. **LOCATIONS OF CRASHWALLS:** SEE SHEET 1/32.

EA PROJECT NO. 08-085

DESIGN AGENCY
ENGINEERING ASSOCIATES, INC.
835 EAGLE PASS • WOOSTER, OHIO 44691
TELEPHONE: (330) 345-6556
FAX: (330) 345-8077

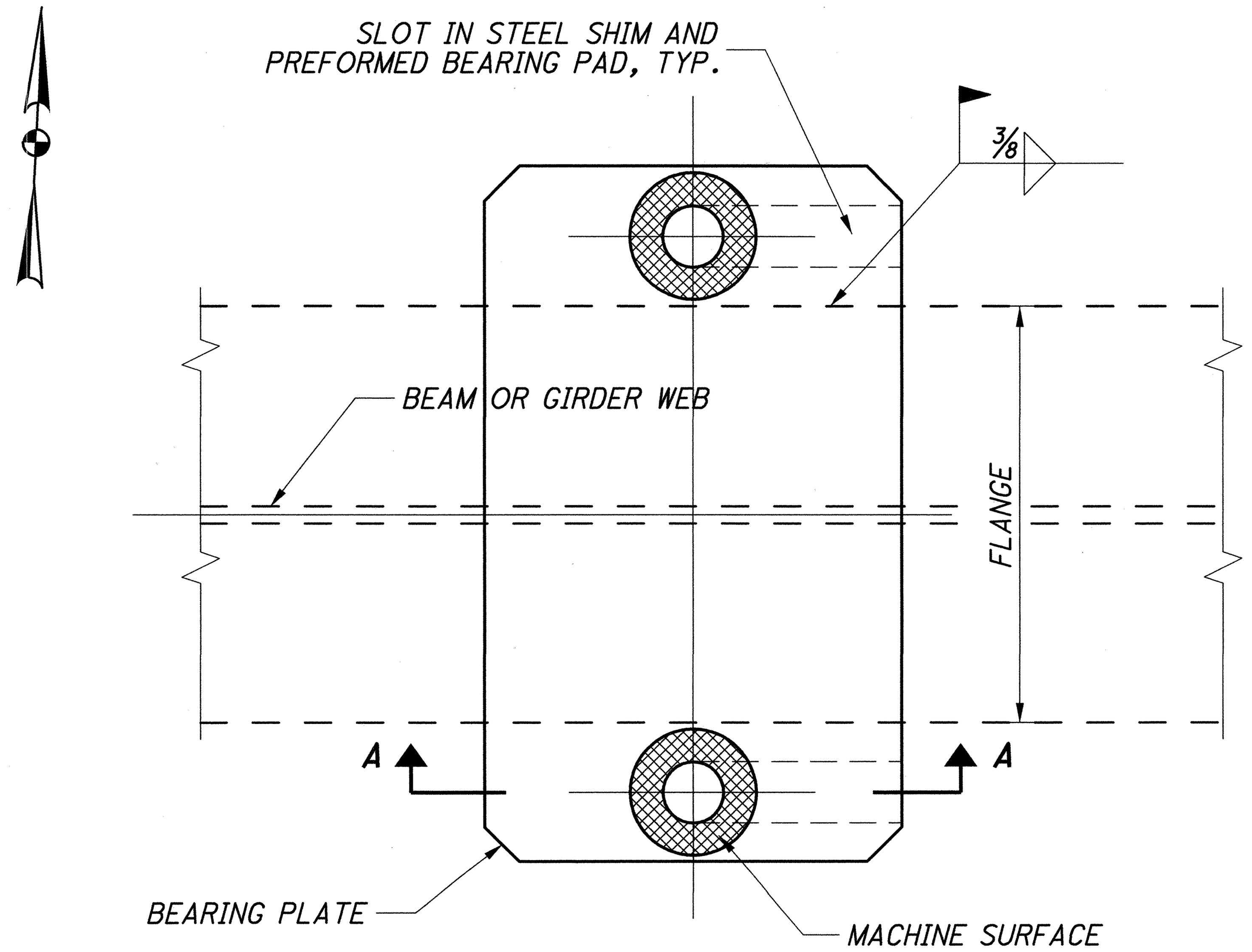
DESIGNED	DRAWN	REVIEWED	DATE
BDH	RLE	AFS	10-29-10
CHECKED	REVISED	STRUCTURE FILE NUMBER	
HK		4100425	

PIER REPAIR DETAILS - 6
BRIDGE NO. JEF-7-0992 OVER
S.R. 7 NORTHBOUND ENTRANCE RAMP AND NORFOLK SOUTHERN RAILROAD

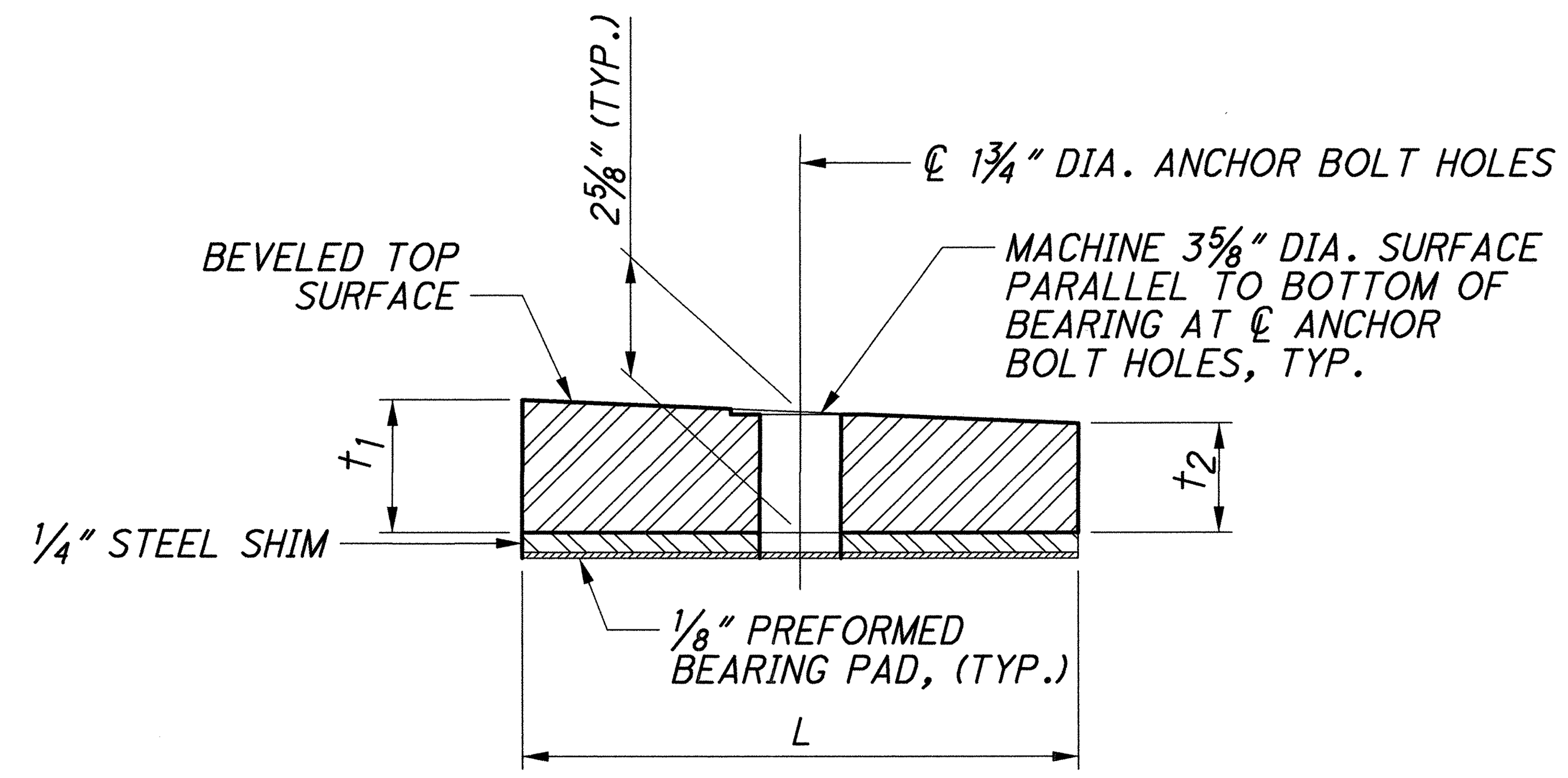
JEF-7-9.92
PID 83452

15/32

38/55



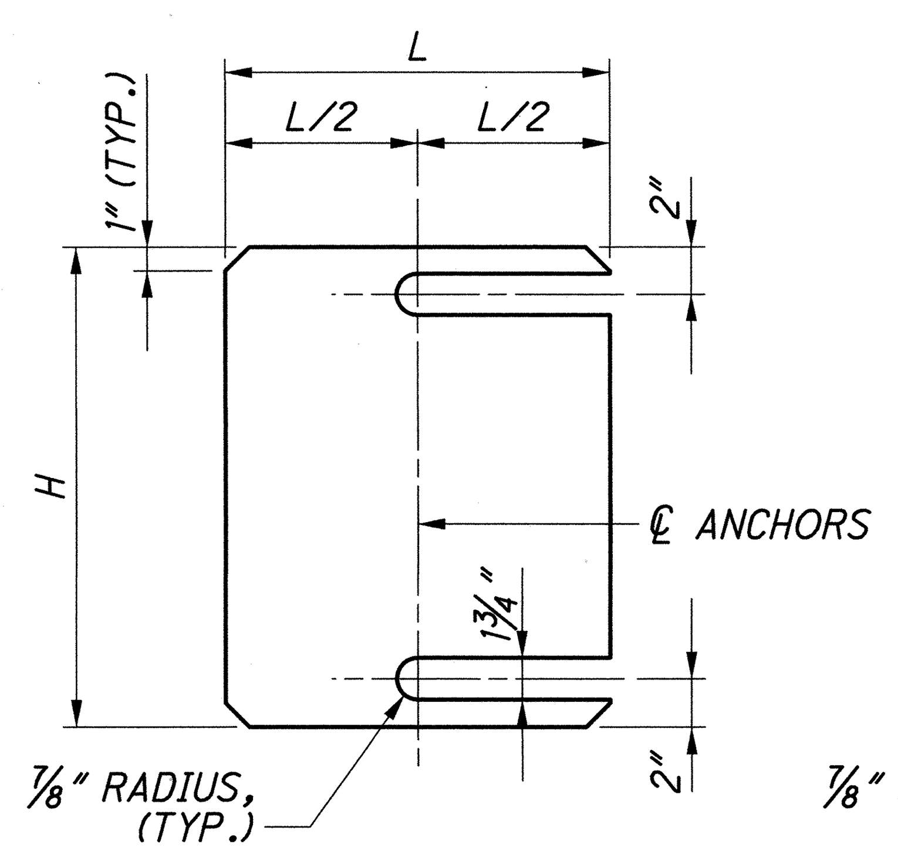
PLAN



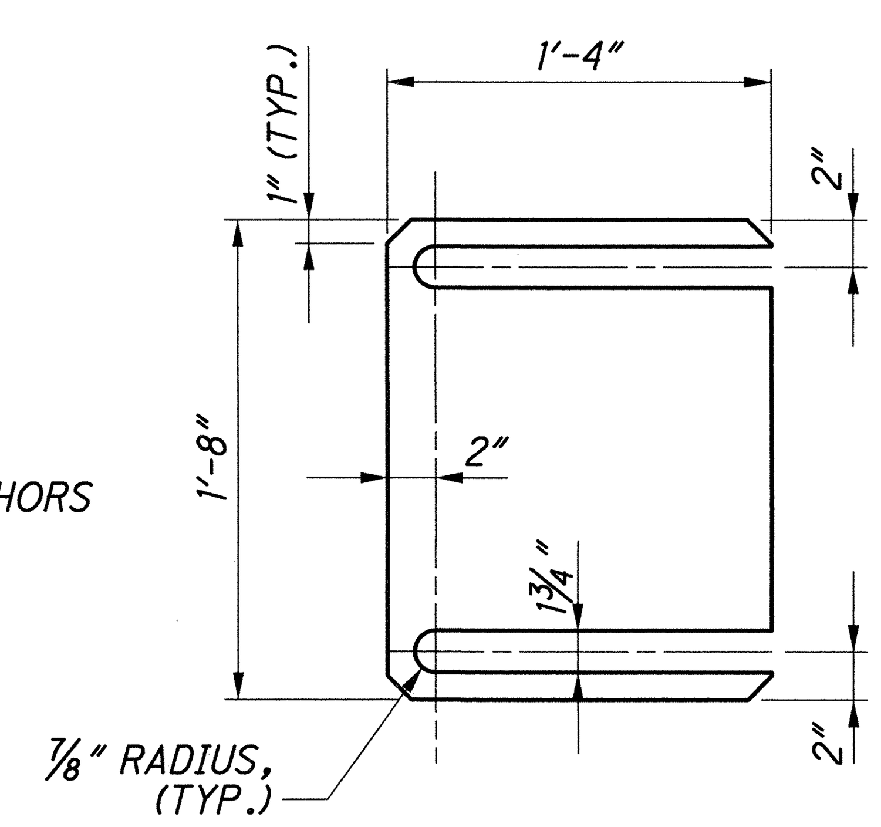
SECTION A-A

BEARING DETAILS

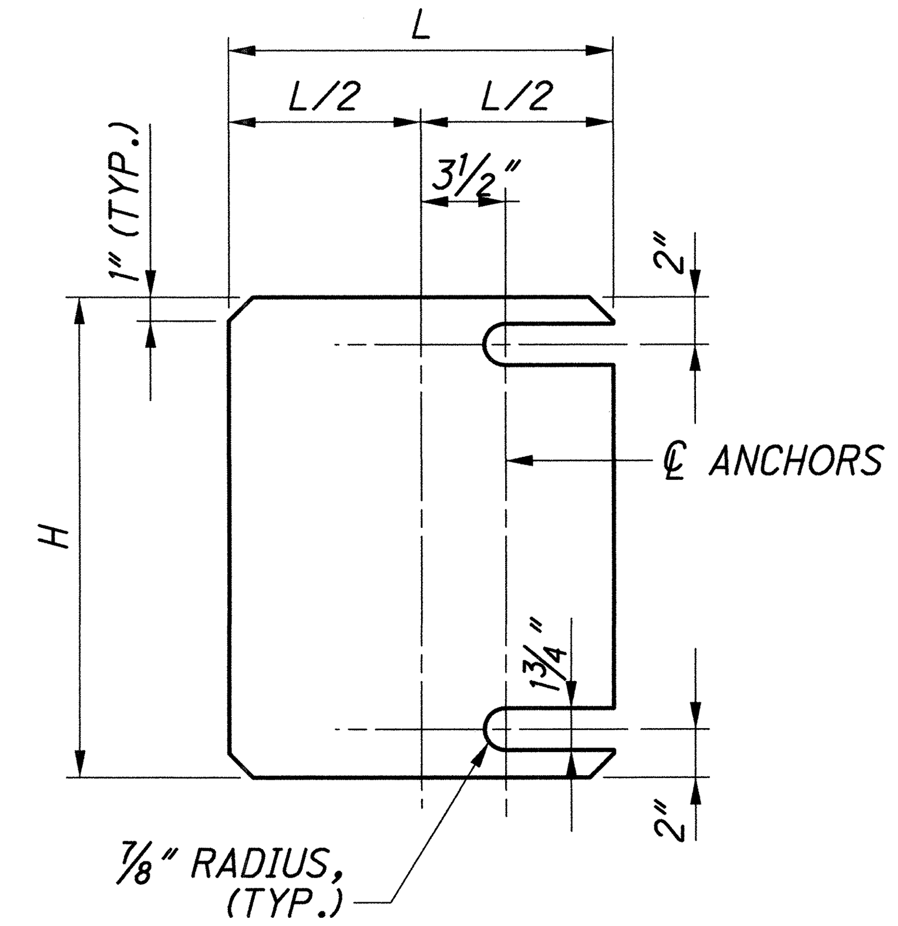
(SEE TABLE FOR DIMENSIONS)



DETAIL A

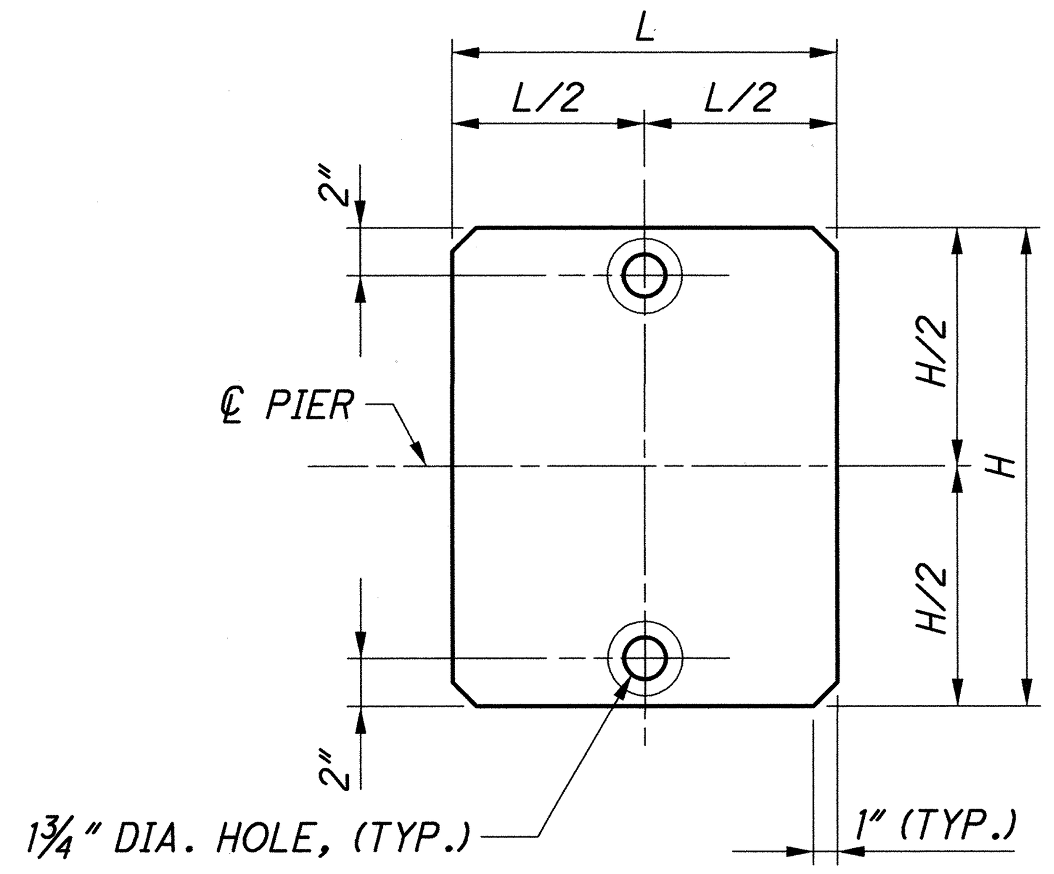


DETAIL B

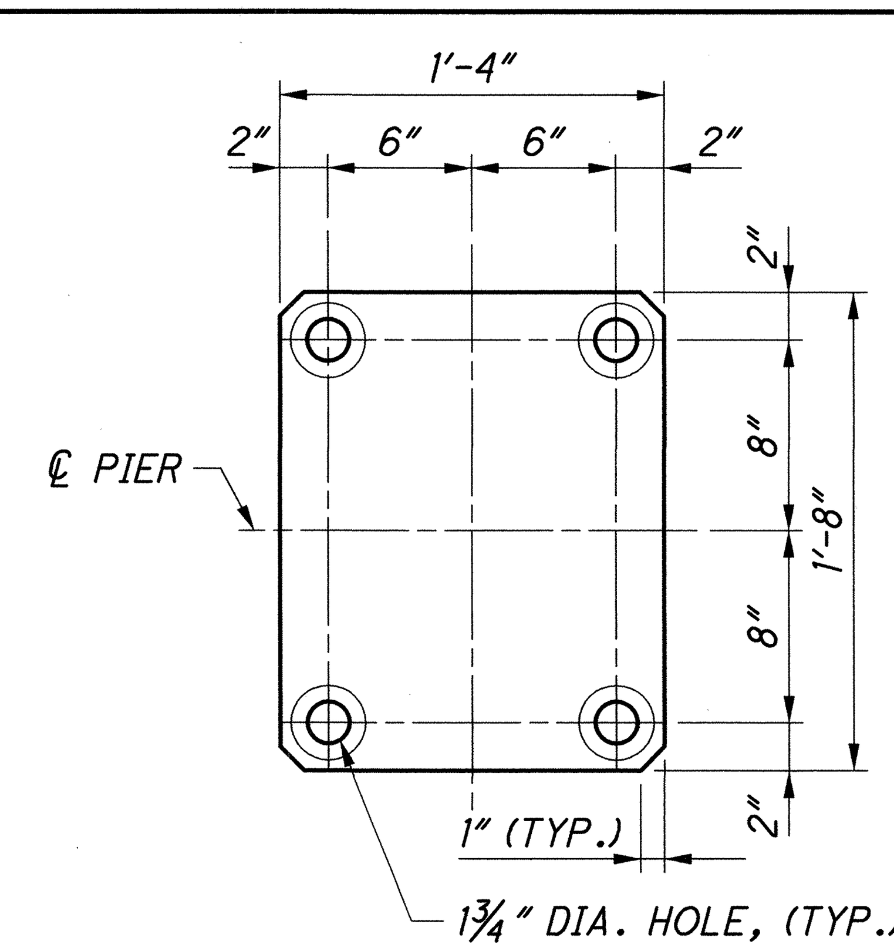


DETAIL C

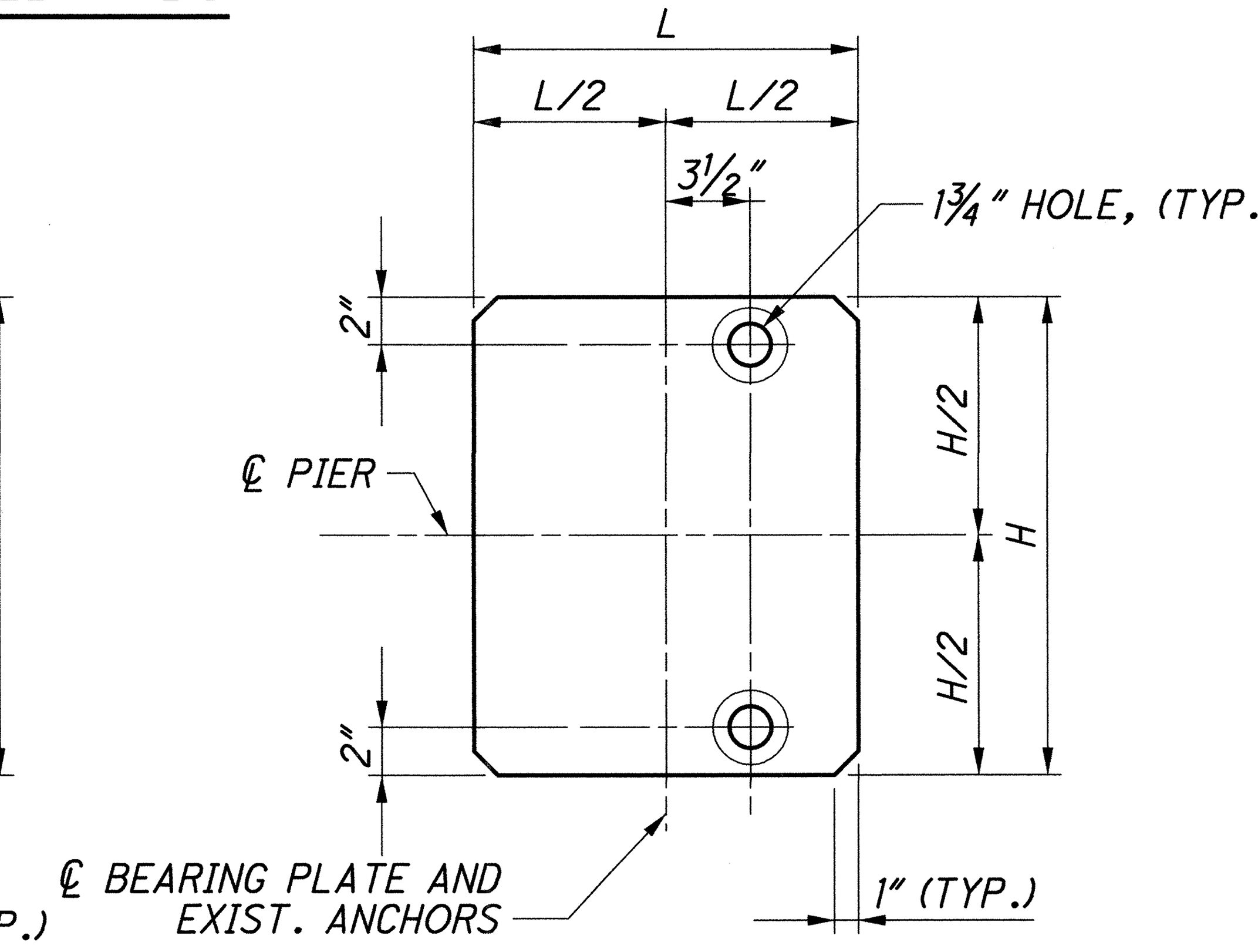
PLAN - STEEL SHIMS AND PREFORMED PADS



DETAIL A



DETAIL B



DETAIL C

PLAN - BEARING PLATES

BEARING DATA

PIER NO.	COLUMN	DETAIL	DIMENSIONS			
			L	H	t1	t2
1	B	A	1'-9"	1'-10"	2 13/16"	2 7/16"
3	A	C	1'-4"	1'-8"	##	##
8	C	C	1'-2"	2'-0 1/2"	##	##
9	B	A	1'-0"	2'-8"	2 7/8"	2 3/8"
10	B	A	2'-2"	2'-2"	3 1/8"	2 1/8"
	C	A	1'-2"	2'-0 1/2"	2 7/8"	2 3/8"
11	A	A	1'-2"	2'-0 1/2"	2 7/8"	2 3/8"
	B	C	2'-2"	2'-2 "	##	##
	C	A	1'-2"	2'-0 1/2"	2 7/8"	2 3/8"
12	B	A	1'-0"	2'-8"	2 7/8"	2 3/8"
13	A	A	1'-4"	1'-8"	2 15/16"	2 5/16"
15	C	B	1'-4"	1'-8"	2 15/16"	2 5/16"
16	C	C	1'-4"	1'-8"	##	##
17	B	A	1'-9"	1'-10"	3"	2 1/4"

FIELD MEASURE EXISTING CONDITION

BEARING REPLACEMENT AND COLUMN REPAIR PROCEDURE:

1. PRIOR TO JACKING AND REMOVAL OPERATIONS, FIELD VERIFY AND RECORD BOTTOM OF BEAM OR COVER PLATE ELEVATIONS AT BEARING LOCATIONS TO BE REFURBISHED.
2. PROVIDE TEMPORARY SUPPORT OF COLUMN AT LOCATIONS WHERE COLUMN REPAIR IS INDICATED
3. REMOVE EXISTING BEARING AND SHIM PLATES
4. REMOVE TOP OF COLUMN AS PER PLAN
5. GRIND THE WELDED PORTION OF THE FLANGE DOWN TO EXISTING STEEL, SURFACE SHALL BE SMOOTH
6. RECONSTRUCT TOP OF COLUMN 3" BELOW RECORDED ELEVATION OF BOTTOM FLANGE OR COVER PLATE
7. UPON COMPLETION OF TOP OF COLUMN REPAIRS, SLIDE PROPOSED BEARING INTO PLACE. USE BEARING AS TEMPLATE TO LOCATE DOWEL HOLES. REMOVE BEARING AND DRILL DOWEL HOLES.
8. PREPARE DOWEL HOLES FOR GROUT. SLIDE PROPOSED BEARING INTO PLACE, SUPPORT AND WELD TO BOTTOM FLANGE. INSERT ANCHOR RODS AND GROUT.
9. RAISE SUPERSTRUCTURE 1/2" MAXIMUM AT EXTERIOR COLUMNS AND 1/8" MAXIMUM AT MIDDLE COLUMNS. SLIDE SHIM AND 1/8" PREFORMED PAD UNDER BEARING. LOWER SUPERSTRUCTURE.

NOTES

1. **STRUCTURAL STEEL:** A709 GRADE 50 (STEEL PLATES AND SHIMS)
2. **REINFORCING STEEL LIST:** SEE SHEET 32/32 .
3. **STRUCTURE GENERAL NOTES:** SEE SHEETS 2, 3 & 4/32 .

EA PROJECT NO. 08-085

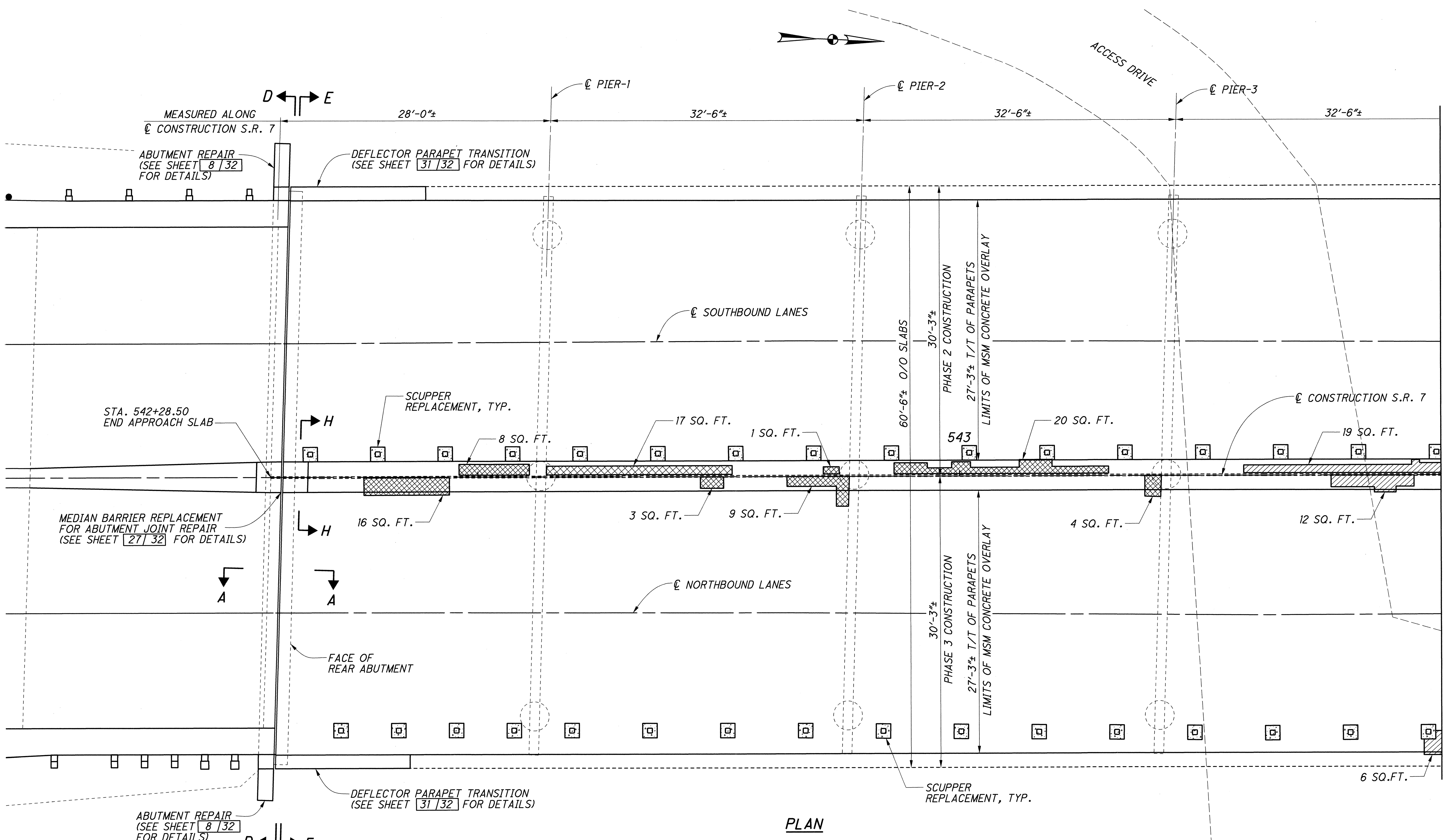
DESIGN AGENCY
ENGINEERING ASSOCIATES, INC.
1935 EAGLE PASS - WOOSTER, OHIO 44691
TELEPHONE: (330) 345-6556
FAX: (330) 345-8077

DESIGNED	DRAWN	REVIEWED	DATE
HK	RLE	AFS	10-29-10
CHECKED	REVISED	STRUCTURE FILE NUMBER	
BDH		4100425	

BEARING DETAILS AND PIER COLUMN REPAIR

BRIDGE NO. JEF-7-0992 OVER
S.R. 7 NORTHBOUND ENTRANCE RAMP AND NORFOLK SOUTHERN RAILROAD

JEF-7-9.92
PID 83452



PLAN

LEGEND

- DENOTES PROPOSED SCUPPER
- DENOTES AREA OF PATCHING (BOTTOM OF SLAB) TO BE PAID FOR UNDER ITEM 519 - PATCHING CONCRETE STRUCTURE, AS PER PLAN. AREAS SHOWN ARE APPROXIMATE. FINAL DETERMINATION OF PATCHING AREAS WILL BE MADE BY THE ENGINEER AT THE TIME OF CONSTRUCTION.
- DENOTES AREA OF REMOVAL (BOTTOM OF SLAB) TO BE PAID FOR UNDER ITEM 202 - REMOVAL MISC.: DELAMINATED AREAS ON BRIDGE SLAB. AREAS SHOWN ARE APPROXIMATE. FINAL DETERMINATION OF REMOVAL AREAS WILL BE MADE BY THE ENGINEER AT THE TIME OF CONSTRUCTION.

NOTES

1. FOR SECTION A-A: SEE SHEET 24/32.
2. FOR SECTIONS D-D & E-E: SEE SHEET 25/32.
3. FOR SECTION H-H: SEE SHEET 27/32.
4. FOR ABBREVIATIONS: SEE SHEET 4/32.
5. FOR PROPOSED MICRO-SILICA MODIFIED CONCRETE OVERLAY AND SCUPPER REPLACEMENT DETAILS: SEE SHEET 23/32.

EA PROJECT NO. 08-085

DESIGN AGENCY
ENGINEERING ASSOCIATES, INC.
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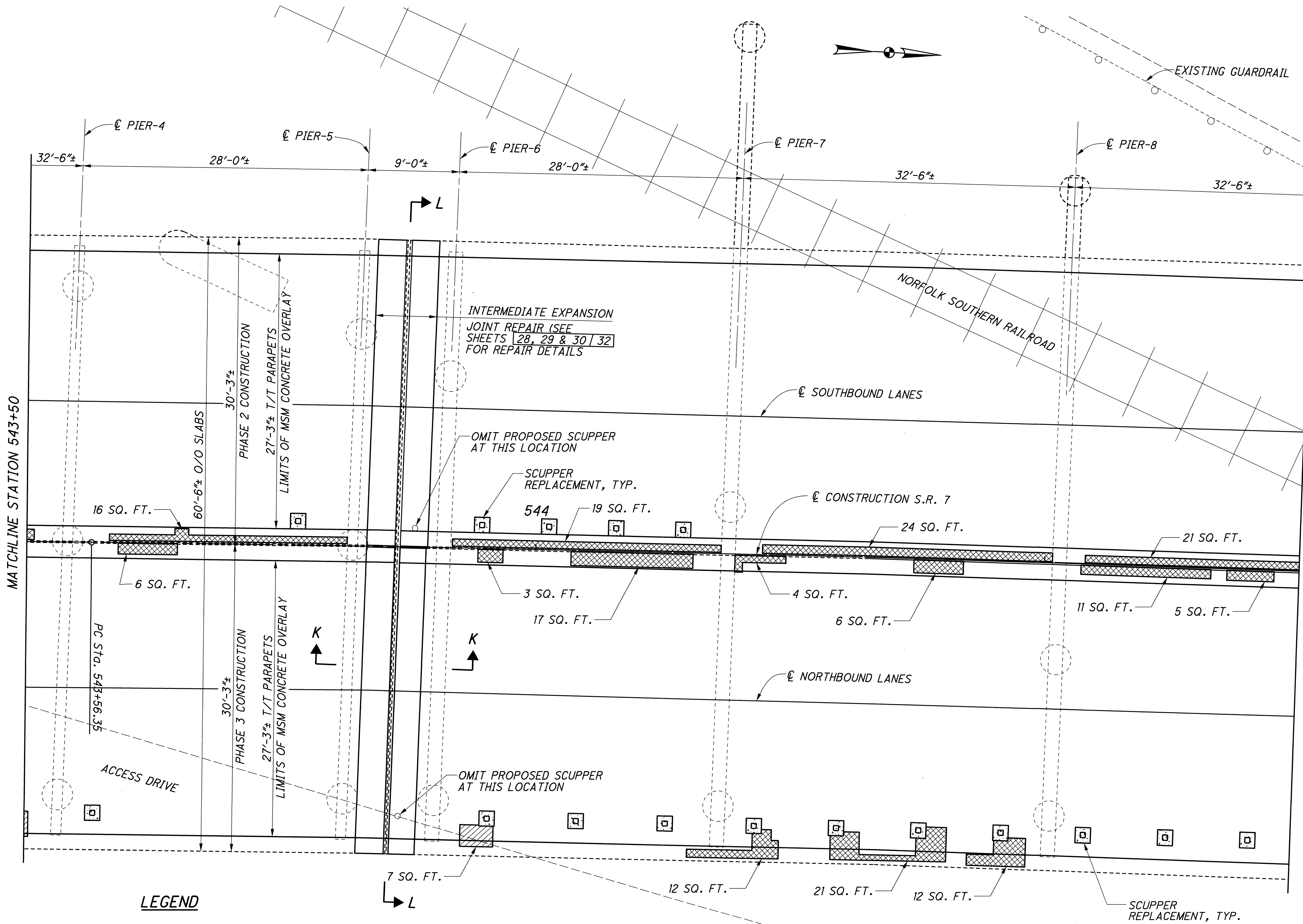
DESIGNED	DRAWN	REVIEWED	DATE
BDH	MDG	AFS	10-29-10
CHECKED	REVISED	STRUCTURE FILE NUMBER	
HK		4100425	

SLAB REPAIR PLAN - 1

BRIDGE NO. JEF-7-0992 OVER
S.R. 7 NORTHBOUND ENTRANCE RAMP AND NORFOLK SOUTHERN RAILROAD

JEF-7-9.92
PID 83452



PLAN

LEGEND

- DENOTES PROPOSED SCUPPER

- DENOTES AREA OF PATCHING (BOTTOM OF SLAB) TO BE PAID FOR UNDER ITEM 519 - PATCHING CONCRETE STRUCTURE, AS PER PLAN. AREAS SHOWN ARE APPROXIMATE. FINAL DETERMINATION OF PATCHING AREAS WILL BE MADE BY THE ENGINEER AT THE TIME OF CONSTRUCTION.

- DENOTES AREA OF REMOVAL (BOTTOM OF SLAB) TO BE PAID FOR UNDER ITEM 202 - REMOVAL MISC.: DELAMINATED AREAS ON BRIDGE SLAB. AREAS SHOWN ARE APPROXIMATE. FINAL DETERMINATION OF REMOVAL AREAS WILL BE MADE BY THE ENGINEER AT THE TIME OF CONSTRUCTION.

NOTES

1. FOR SECTION K-K: SEE SHEET 28/32 .
2. FOR SECTION L-L: SEE SHEET 29/32 .
3. FOR ABBREVIATIONS: SEE SHEET 4/32 .
4. FOR PROPOSED MICRO-SILICA MODIFIED CONCRETE OVERLAY AND SCUPPER REPLACEMENT DETAILS: SEE SHEET 23/32 .

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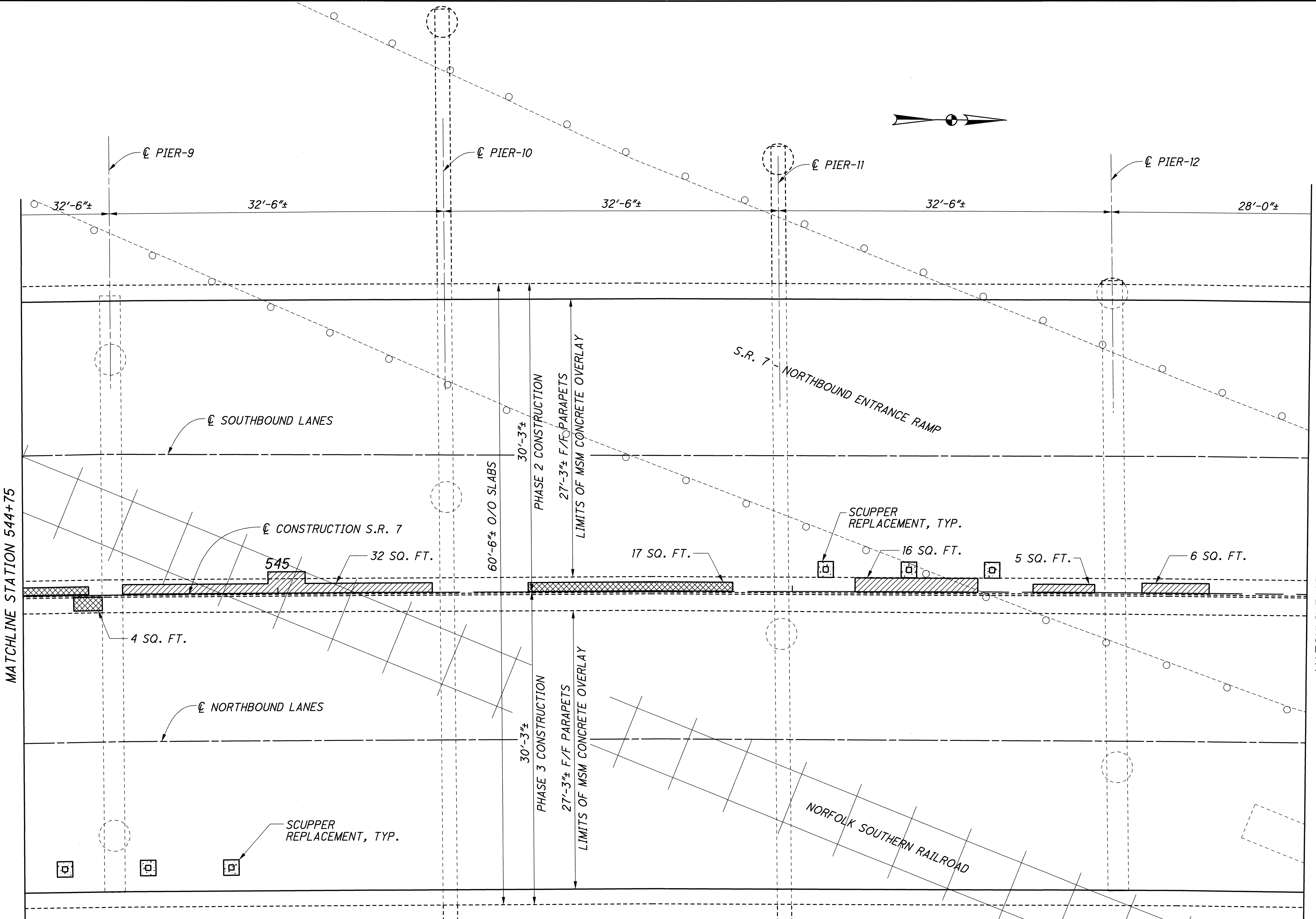
SLAB REPAIR PLAN - 2
BRIDGE NO. JEF-7-0992 OVER
S.R. 7 NORTHBOUND ENTRANCE RAMP AND NORFOLK SOUTHERN RAILROAD

JEF-7-9.92
PID 83452



PLAN

LEGEND

- DENOTES PROPOSED SCUPPER

- DENOTES AREA OF PATCHING (BOTTOM OF SLAB) TO BE PAID FOR UNDER ITEM 519 - PATCHING CONCRETE STRUCTURE, AS PER PLAN. AREAS SHOWN ARE APPROXIMATE. FINAL DETERMINATION OF PATCHING AREAS WILL BE MADE BY THE ENGINEER AT THE TIME OF CONSTRUCTION.

- DENOTES AREA OF REMOVAL (BOTTOM OF SLAB) TO BE PAID FOR UNDER ITEM 202 - REMOVAL MISC.: DELAMINATED AREAS ON BRIDGE SLAB. AREAS SHOWN ARE APPROXIMATE. FINAL DETERMINATION OF REMOVAL AREAS WILL BE MADE BY THE ENGINEER AT THE TIME OF CONSTRUCTION.

NOTES

1. FOR ABBREVIATIONS: SEE SHEET 4/32 .
2. FOR PROPOSED MICRO-SILICA MODIFIED CONCRETE OVERLAY AND SCUPPER REPLACEMENT DETAILS: SEE SHEET 23/32 .

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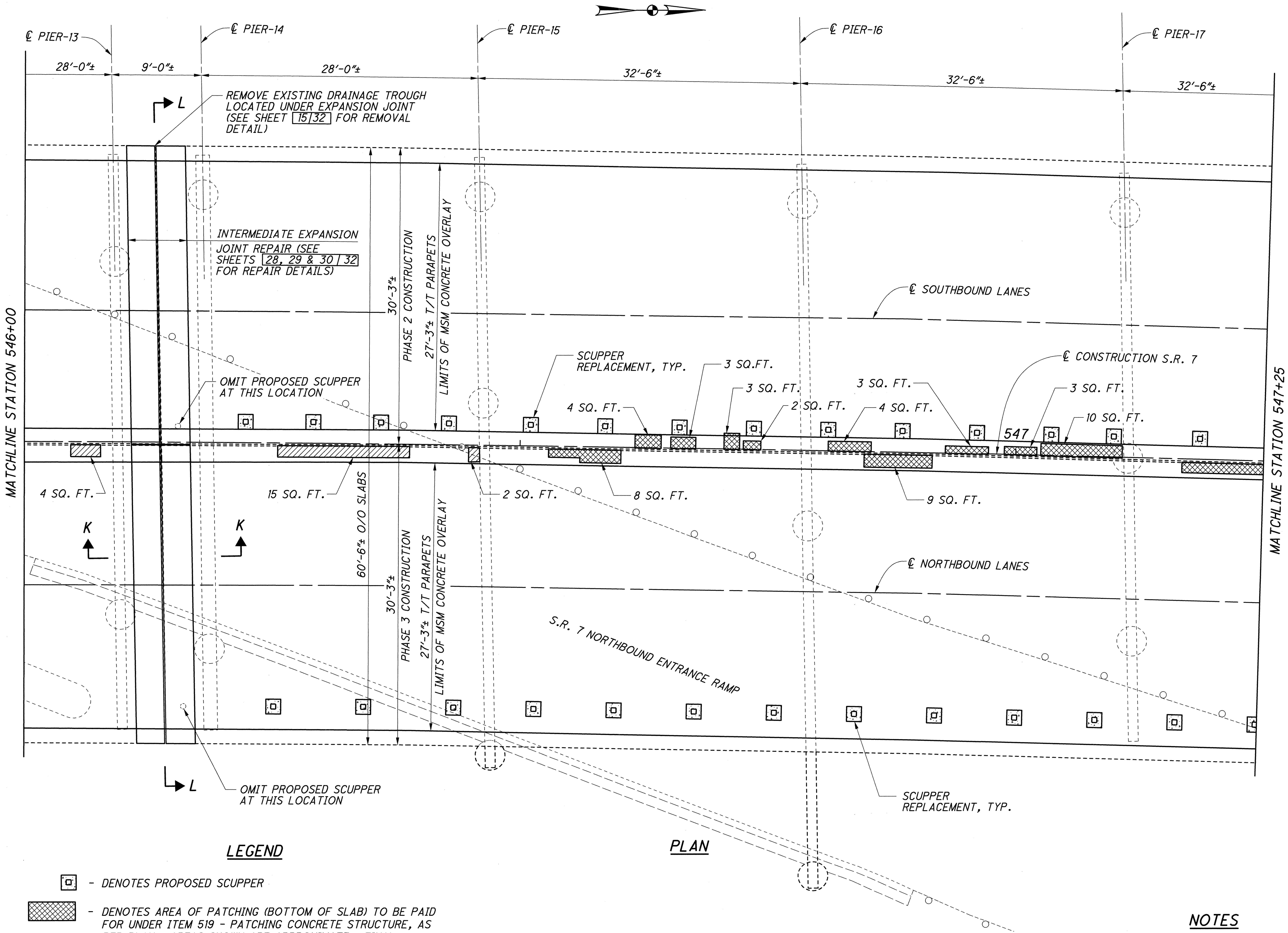
SLAB REPAIR PLAN - 3

BRIDGE NO. JEF-7-0992 OVER
S.R. 7 NORTHBOUND ENTRANCE RAMP AND NORFOLK SOUTHERN RAILROAD

JEF-7-9.92
PID 83452



PLAN

LEGEND

[scupper symbol] - DENOTES PROPOSED SCUPPER

[cross-hatch symbol] - DENOTES AREA OF PATCHING (BOTTOM OF SLAB) TO BE PAID FOR UNDER ITEM 519 - PATCHING CONCRETE STRUCTURE, AS PER PLAN. AREAS SHOWN ARE APPROXIMATE. FINAL DETERMINATION OF PATCHING AREAS WILL BE MADE BY THE ENGINEER AT THE TIME OF CONSTRUCTION.

[diagonal hatch symbol] - DENOTES AREA OF REMOVAL (BOTTOM OF SLAB) TO BE PAID FOR UNDER ITEM 202 - REMOVAL MISC.: DELAMINATED AREAS ON BRIDGE SLAB. AREAS SHOWN ARE APPROXIMATE. FINAL DETERMINATION OF REMOVAL AREAS WILL BE MADE BY THE ENGINEER AT THE TIME OF CONSTRUCTION.

NOTES

1. FOR SECTION K-K: SEE SHEET 28/32 .
2. FOR SECTION L-L: SEE SHEET 29/32 .
3. FOR ABBREVIATIONS: SEE SHEET 4/32 .
4. FOR PROPOSED MICRO-SILICA MODIFIED CONCRETE OVERLAY AND SCUPPER REPLACEMENT DETAILS: SEE SHEET 23/32 .

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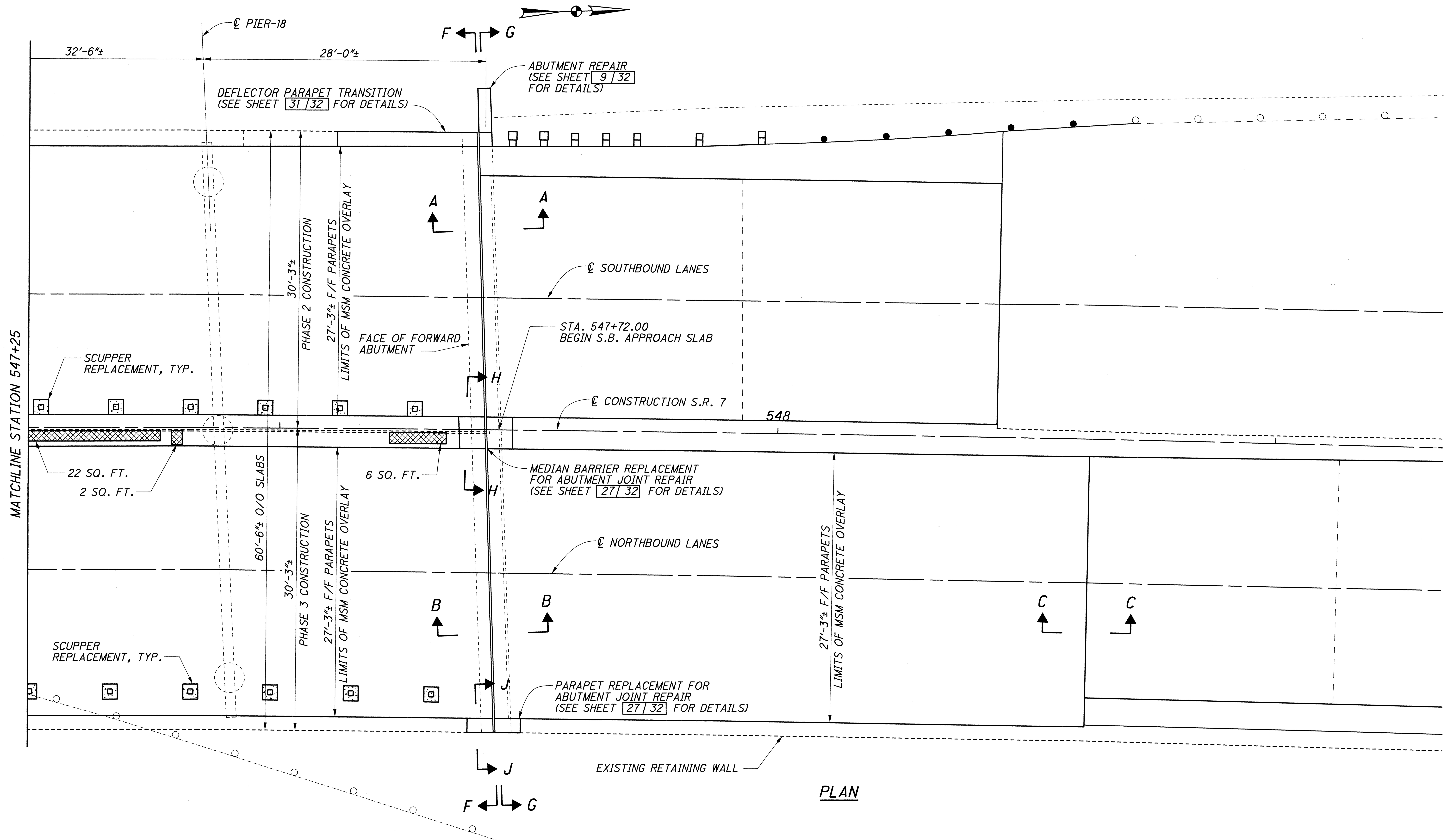
SLAB REPAIR PLAN - 4

BRIDGE NO. JEF-7-0992 OVER
S.R. 7 NORTHBOUND ENTRANCE RAMP AND NORFOLK SOUTHERN RAILROAD

JEF-7-9.92
PID 83452



PLAN

LEGEND

- DENOTES PROPOSED SCUPPER

- DENOTES AREA OF PATCHING (BOTTOM OF SLAB) TO BE PAID FOR UNDER ITEM 519 - PATCHING CONCRETE STRUCTURE, AS PER PLAN. AREAS SHOWN ARE APPROXIMATE. FINAL DETERMINATION OF PATCHING AREAS WILL BE MADE BY THE ENGINEER AT THE TIME OF CONSTRUCTION.

- DENOTES AREA OF REMOVAL (BOTTOM OF SLAB) TO BE PAID FOR UNDER ITEM 202 - REMOVAL MISC.: DELAMINATED AREAS ON BRIDGE SLAB. AREAS SHOWN ARE APPROXIMATE. FINAL DETERMINATION OF REMOVAL AREAS WILL BE MADE BY THE ENGINEER AT THE TIME OF CONSTRUCTION.

NOTES

1. FOR SECTIONS A-A, B-B & C-C: SEE SHEET 24/32.
2. FOR SECTIONS F-F & G-G: SEE SHEET 25/32.
3. FOR SECTIONS H-H & J-J: SEE SHEET 27/32.
4. FOR ABBREVIATIONS: SEE SHEET 4/32.
5. FOR PROPOSED MICRO-SILICA MODIFIED CONCRETE OVERLAY AND SCUPPER REPLACEMENT DETAILS: SEE SHEET 23/32.

EA PROJECT NO. 08-085

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DESIGNED BDH | DRAWN MDG | REVIEWED AFS | DATE 10-29-10
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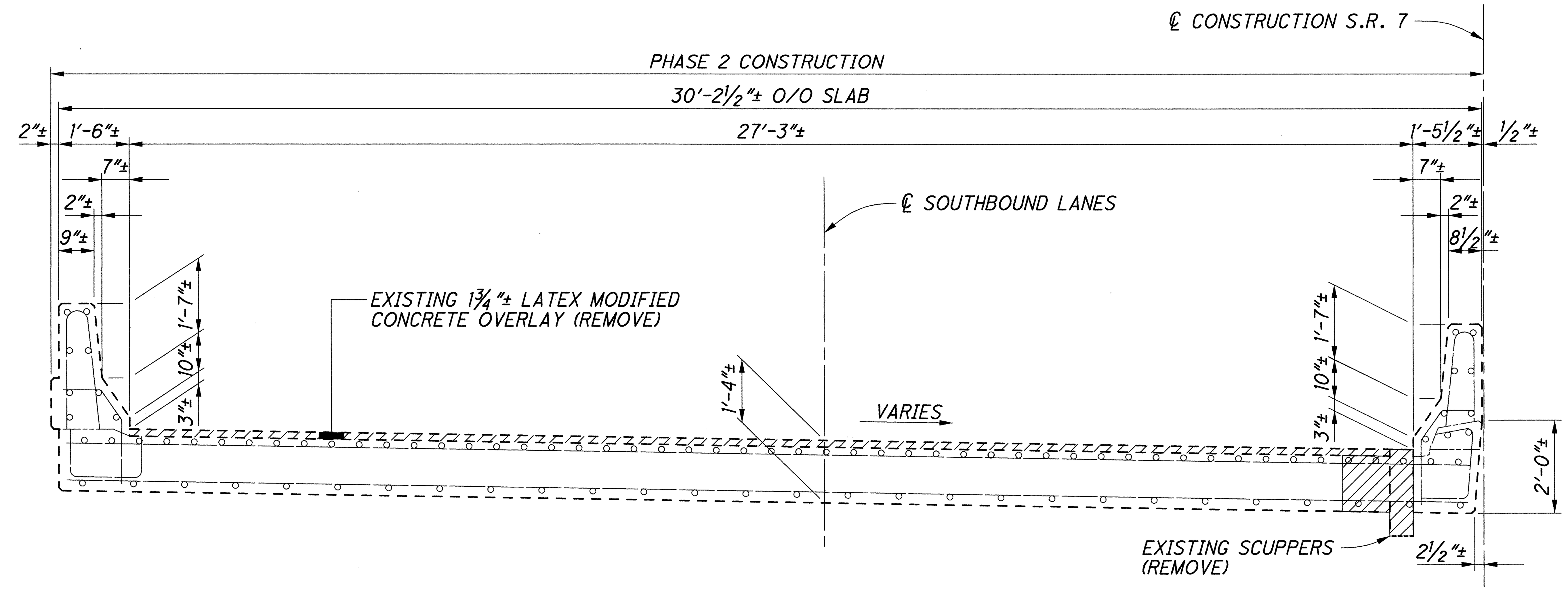
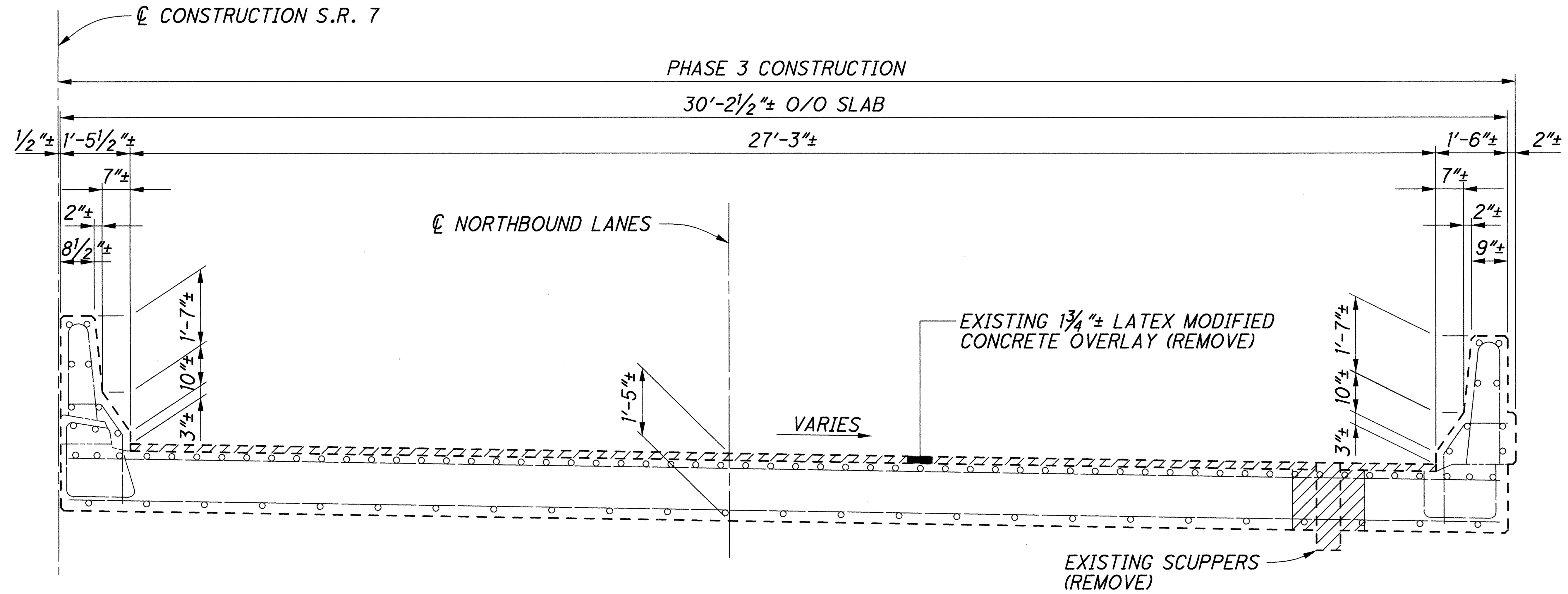
SLAB REPAIR PLAN - 5

BRIDGE NO. JEF-7-0992 OVER
S.R. 7 NORTHBOUND ENTRANCE RAMP AND NORFOLK SOUTHERN RAILROAD

JEF-7-9.92
PID 83452



EXISTING TRANSVERSE SECTION - LEFT



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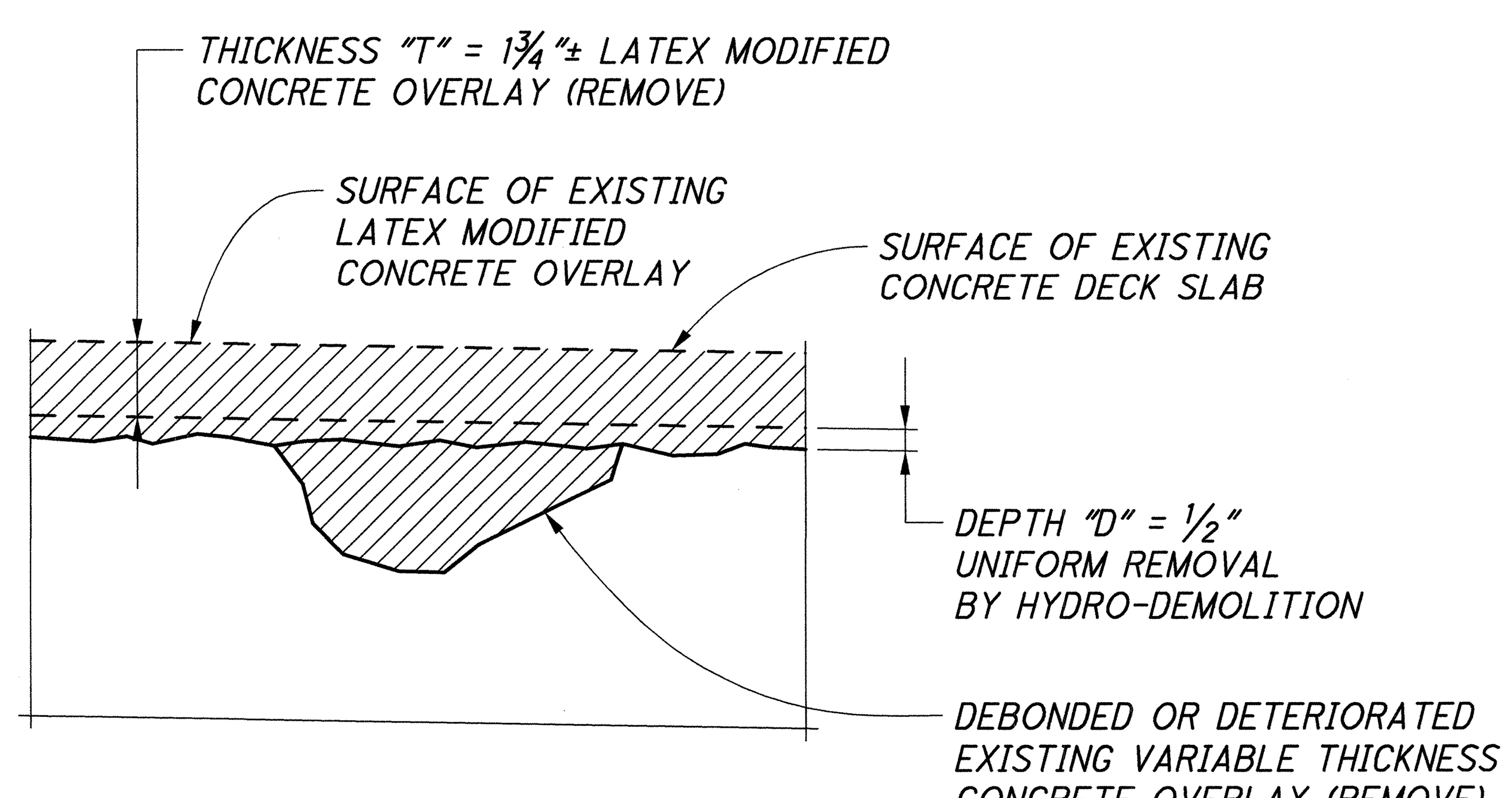

OVERLAY REMOVAL DETAIL

LEGEND

(hatched box) - DENOTES AREAS TO BE REMOVED

NOTES

1. <u>FOR PROPOSED OVERLAY DETAIL AND SCUPPER DETAILS:</u> SEE SHEET 23/32 .

EA PROJECT NO. 08-085

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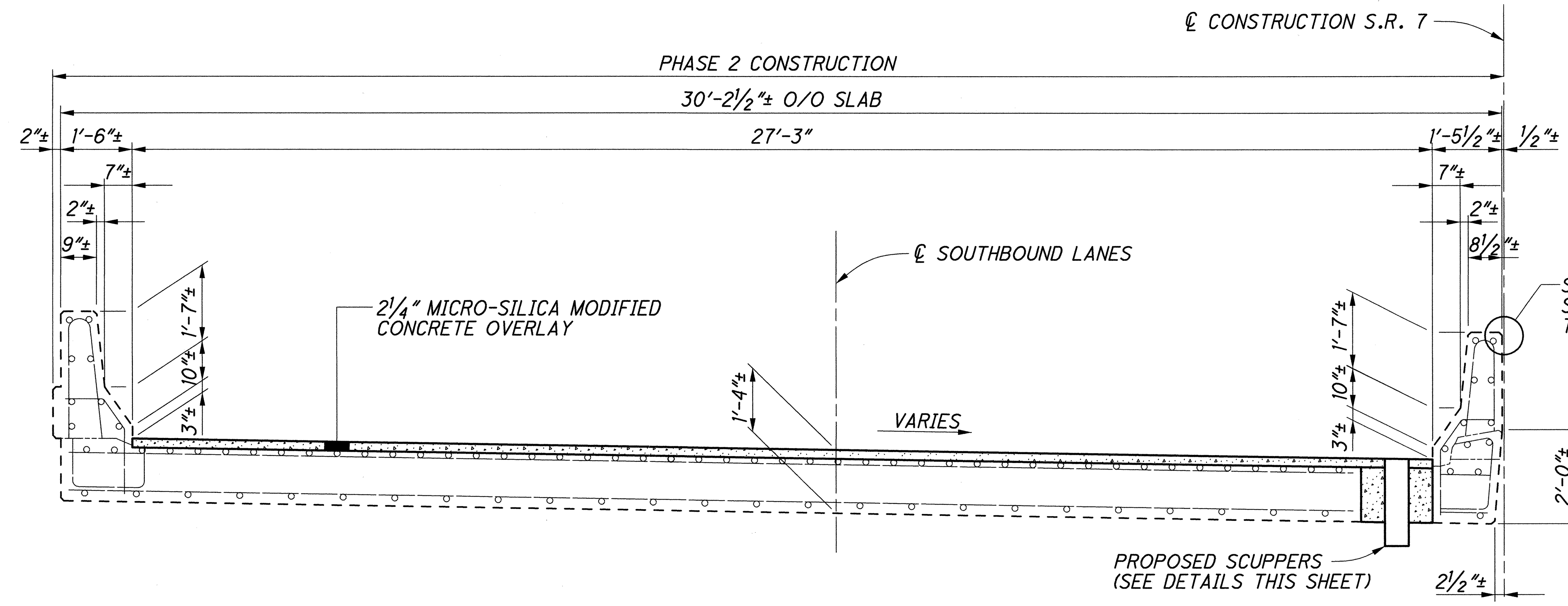
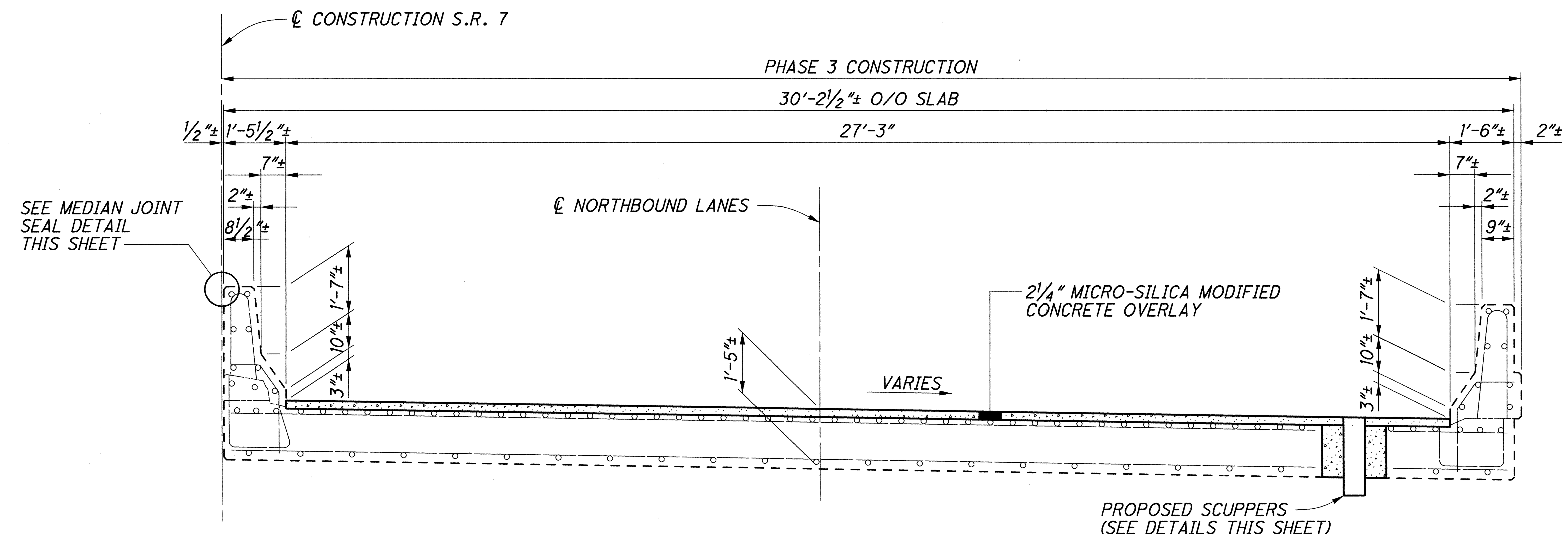
EXISTING TRANSVERSE SECTION

BRIDGE NO. JEF-7-0992 OVER
S.R. 7 NORTHBOUND ENTRANCE RAMP AND NORFOLK SOUTHERN RAILROAD

JEF-7-9.92
PID 83452



PROPOSED TRANSVERSE SECTION - LEFT



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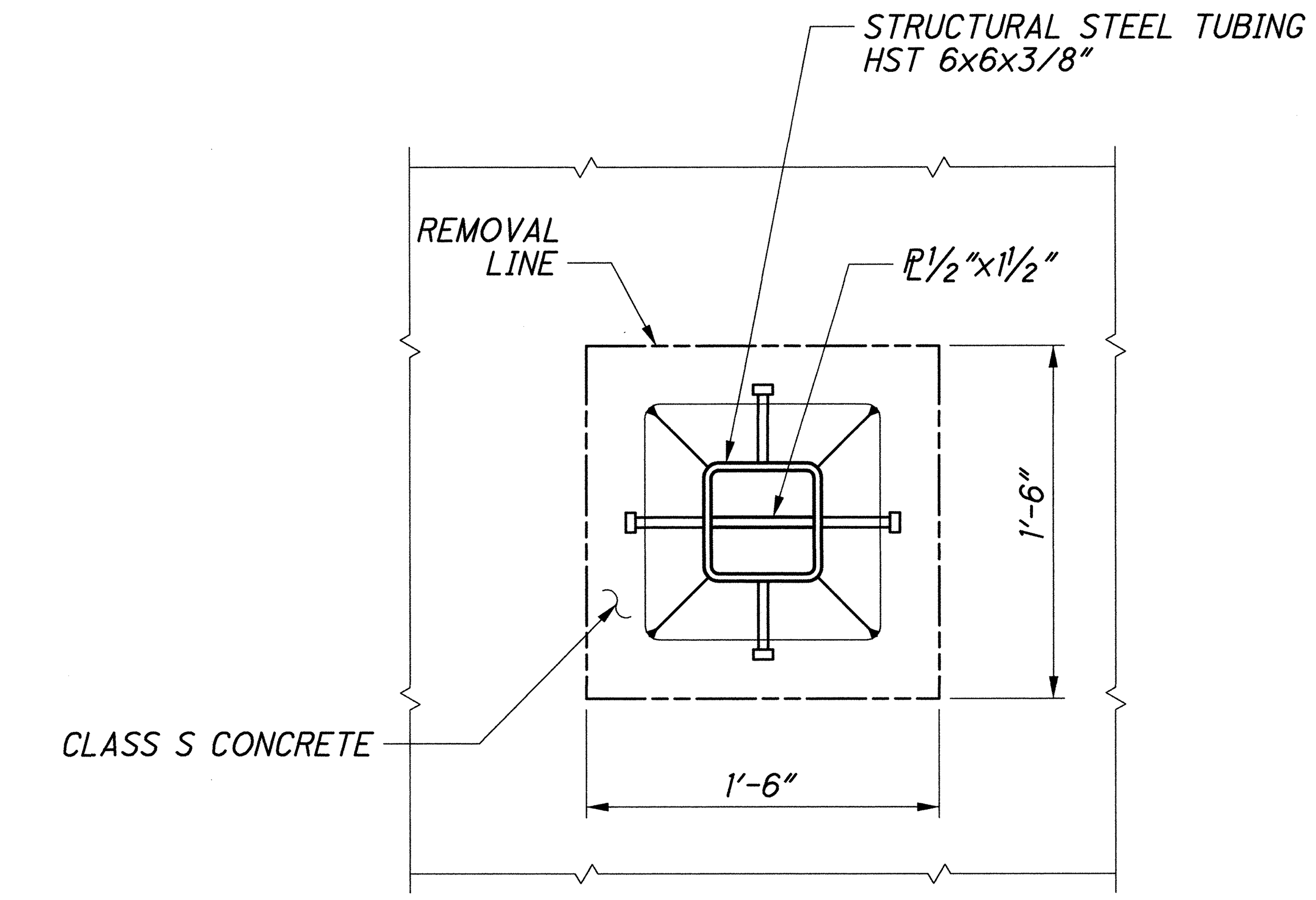
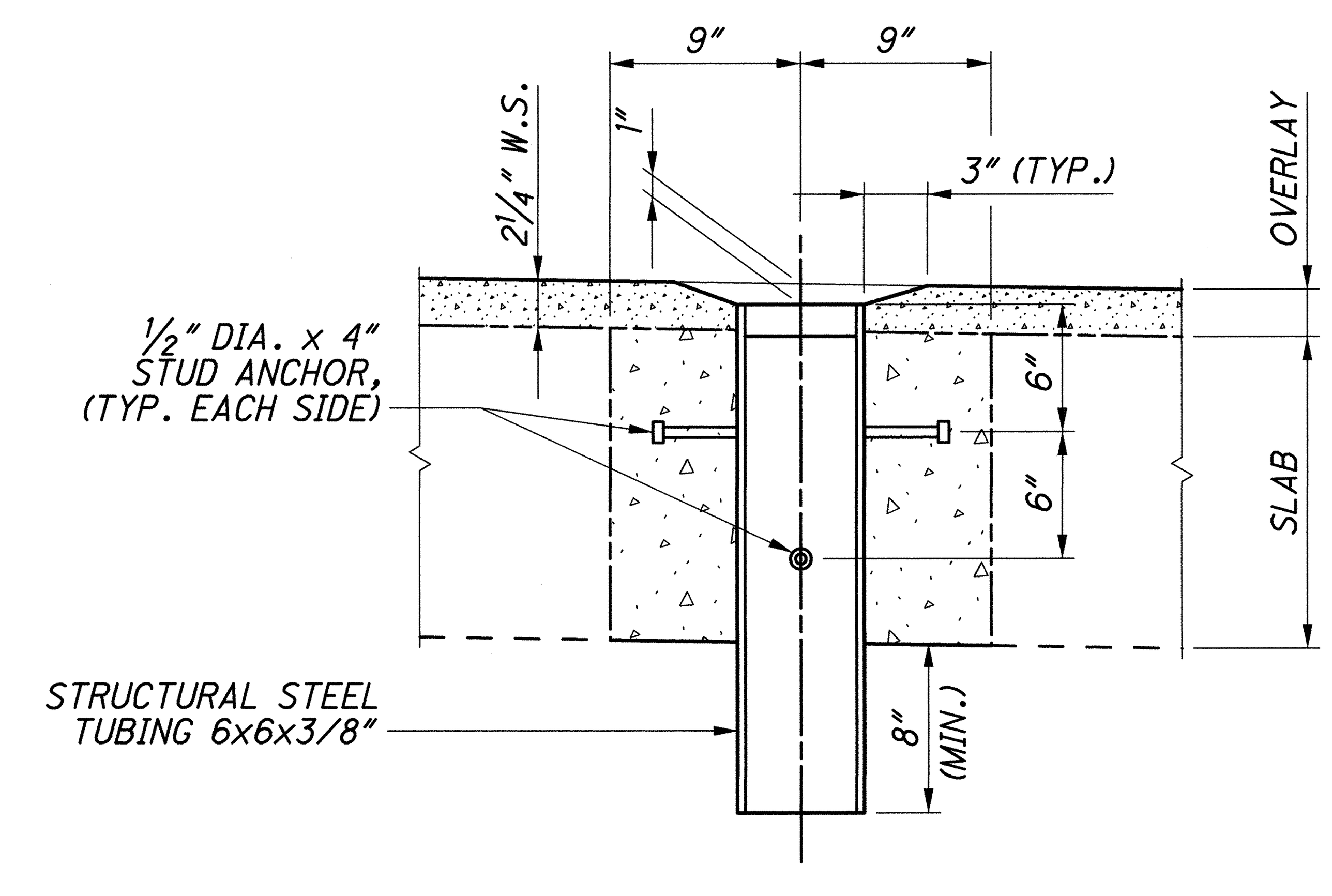
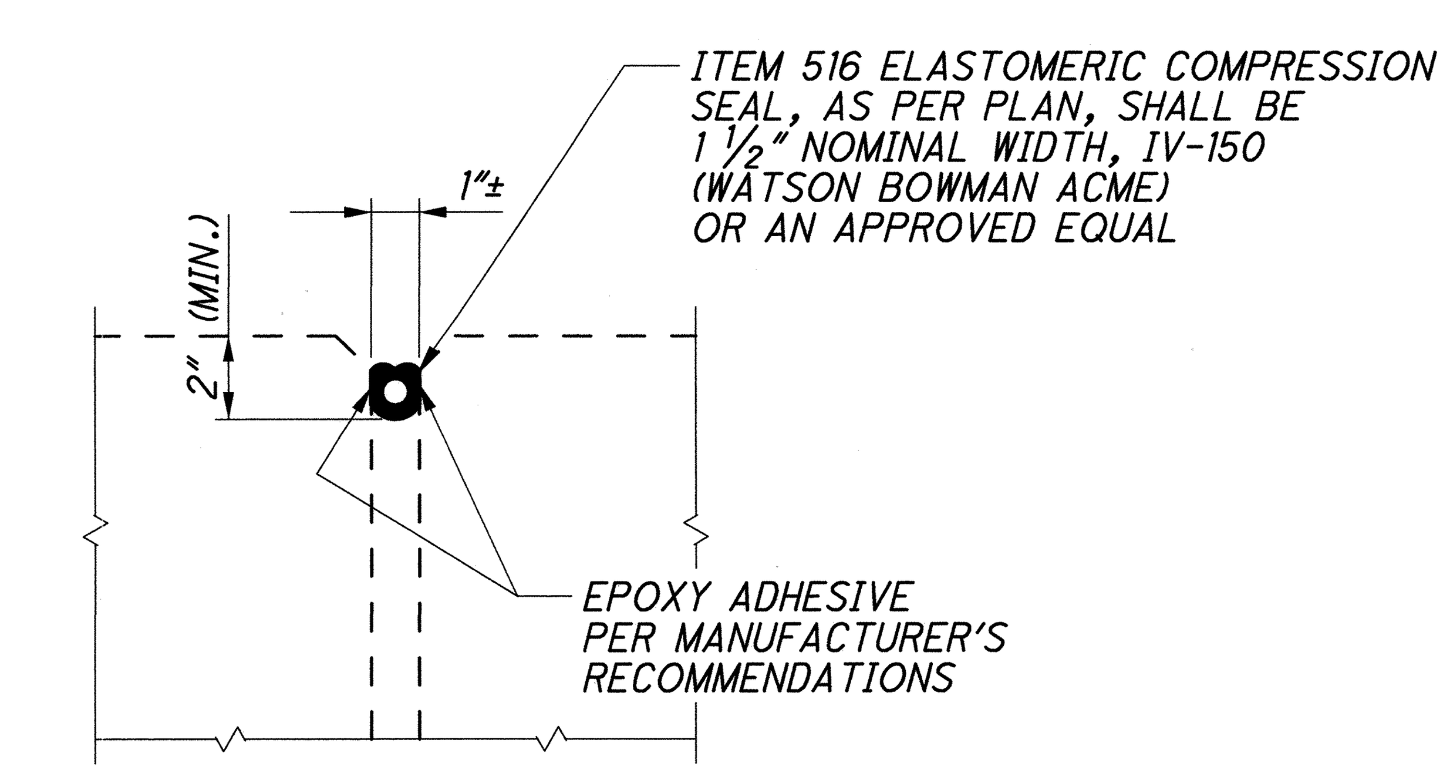


PLAN

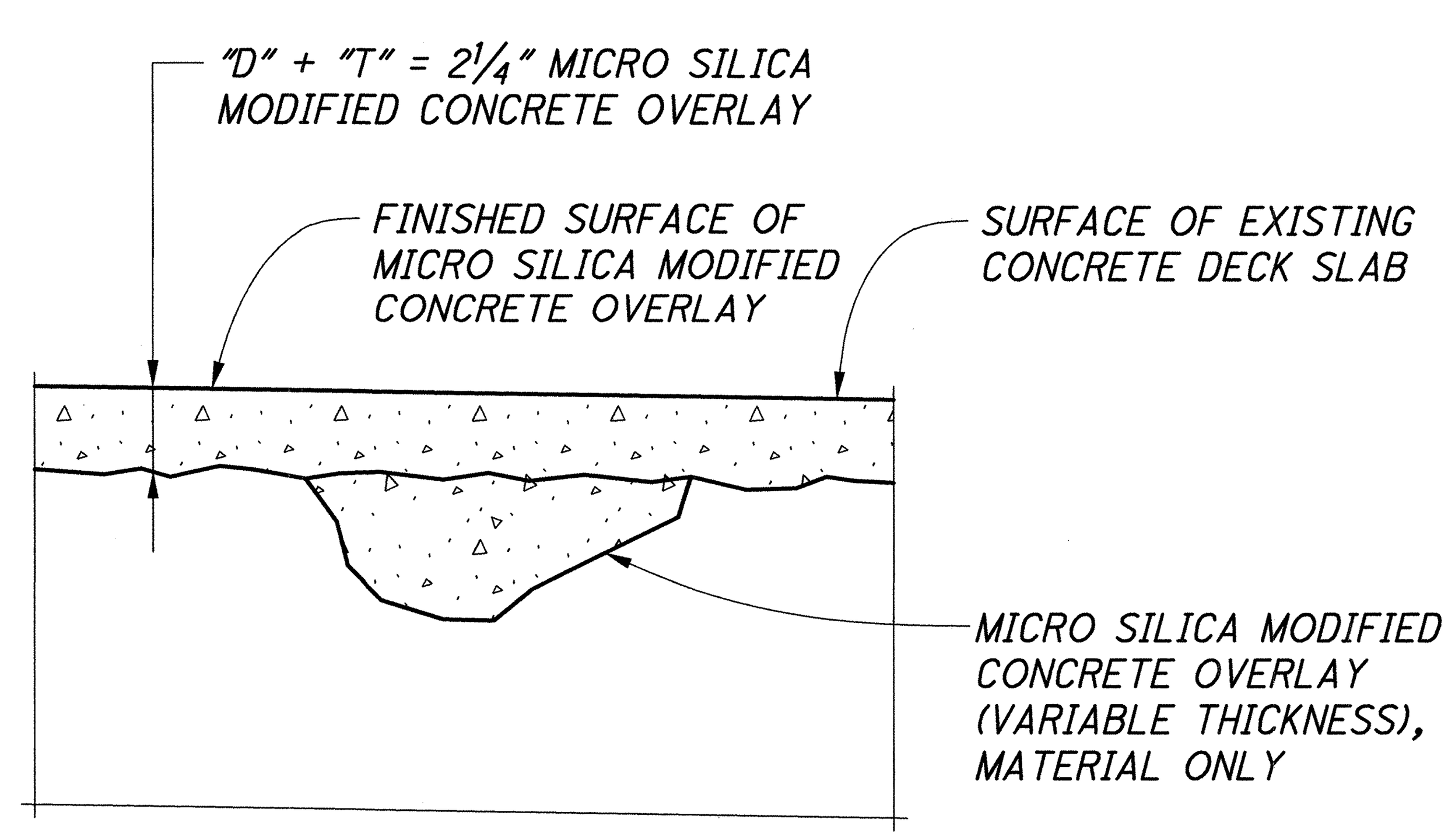


SECTION

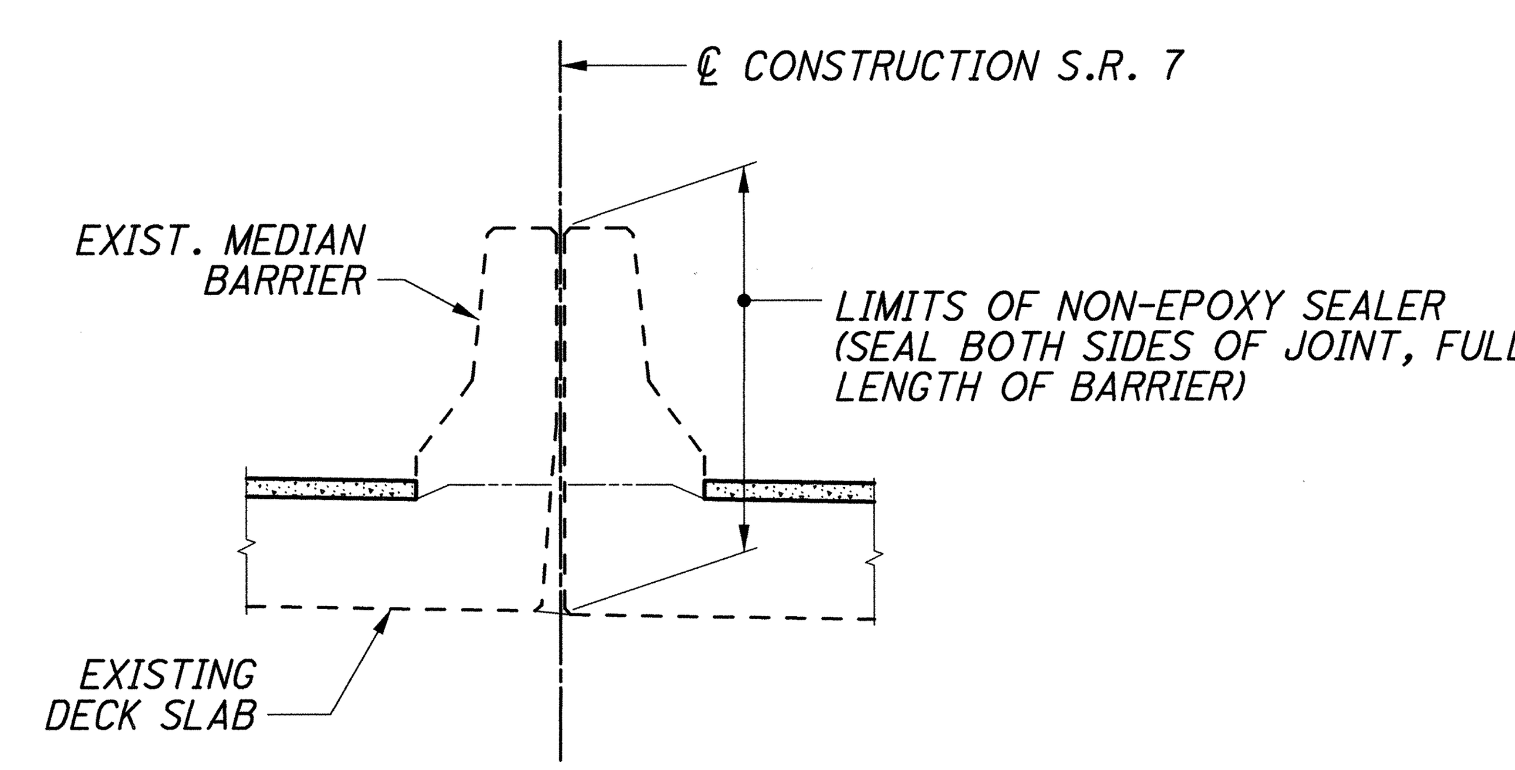
SCUPPER DETAILS



MEDIAN JOINT SEAL DETAIL
(TYPICAL)



OVERLAY DETAIL



MEDIAN BARRIER SEALING DETAIL

NOTES

1. **SCUPPERS:** SEE ITEM 518-STRUCTURE DRAINAGE MISC.: DRAINAGE REPLACEMENT NOTE ON SHEET 4/32.
2. **FOR LOCATION OF SCUPPERS** SEE SHEETS 17,18,19,20 & 21/32.

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DESIGNED BDH | CHECKED HK | DRAWN RLE | REVISED | REVIEWED AFS | DATE 10-29-10 | STRUCTURE FILE NUMBER 4100425

PROPOSED TRANSVERSE SECTION

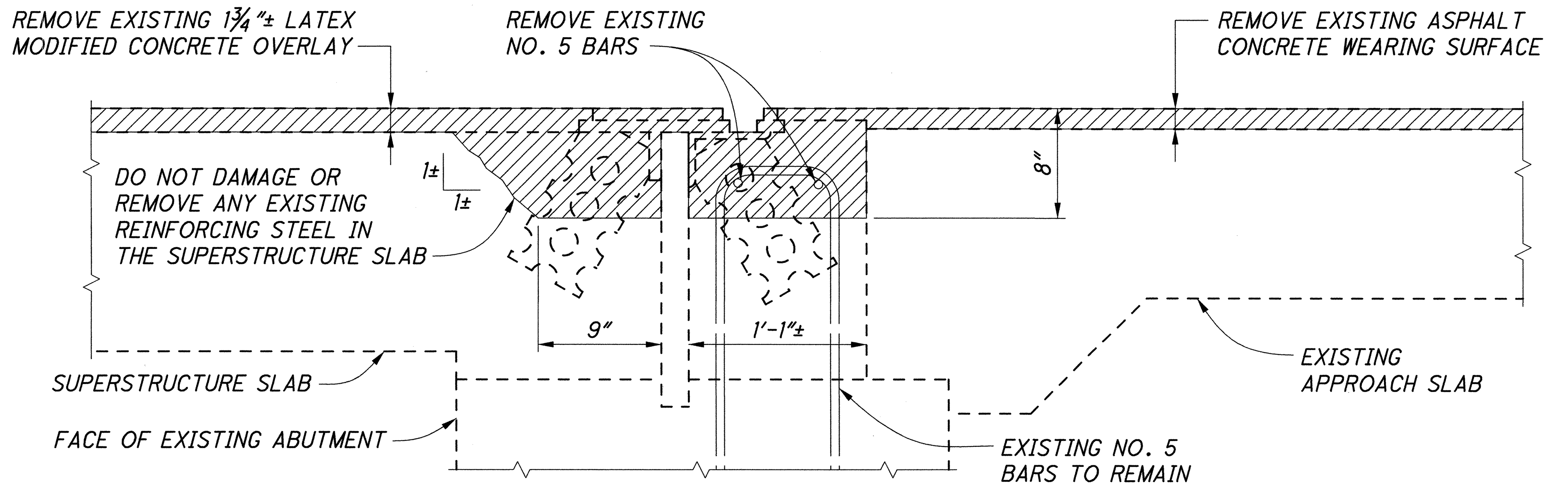
BRIDGE NO. JEF-7-0992 OVER S.R. 7 NORTHBOUND ENTRANCE RAMP AND NORFOLK SOUTHERN RAILROAD

JEF-7-9.92
PID 83452

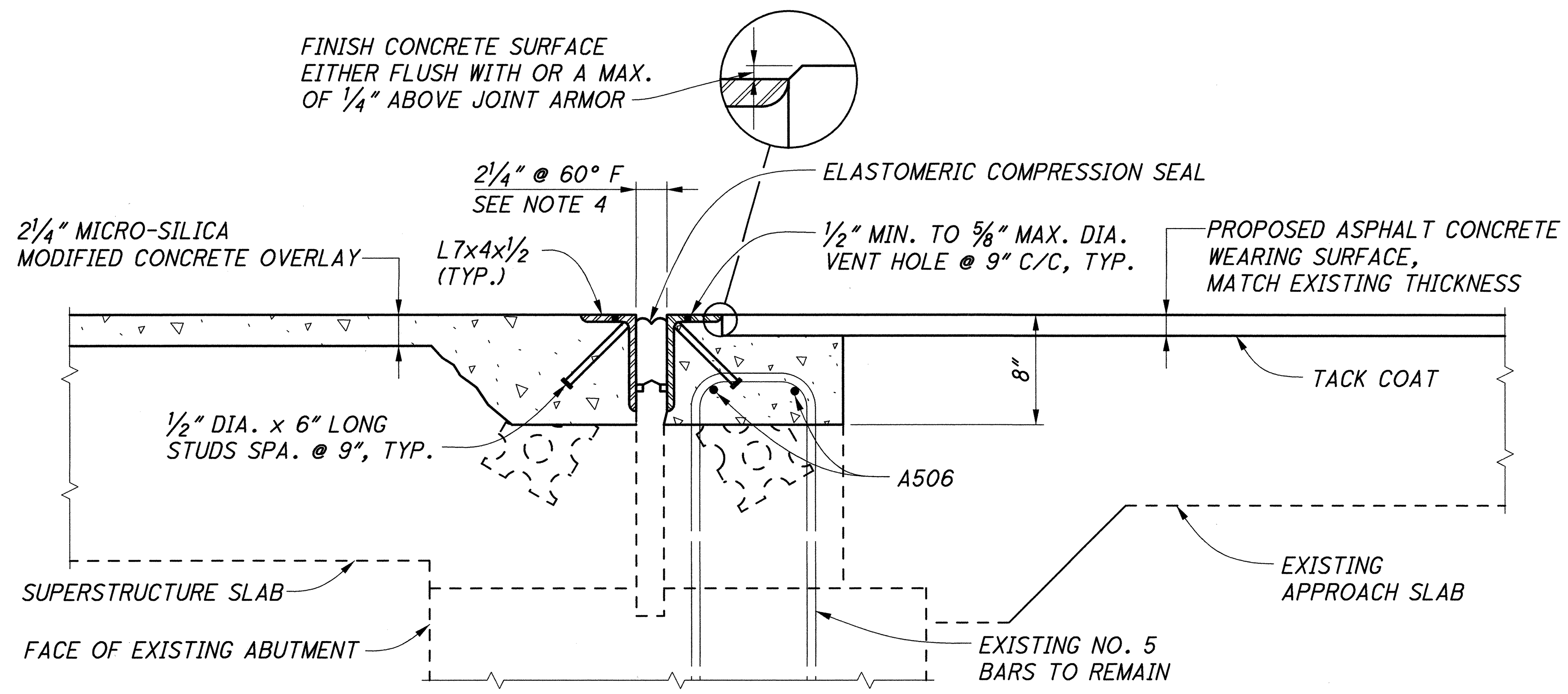
23/32

46/55

EA PROJECT NO. 08-085

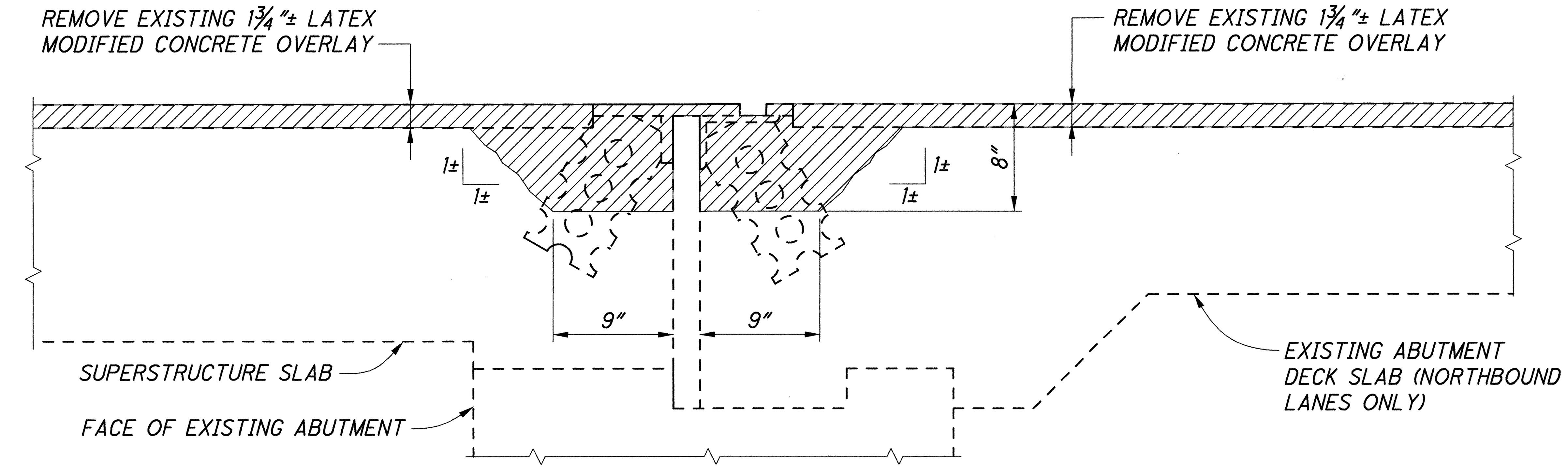


REMOVAL

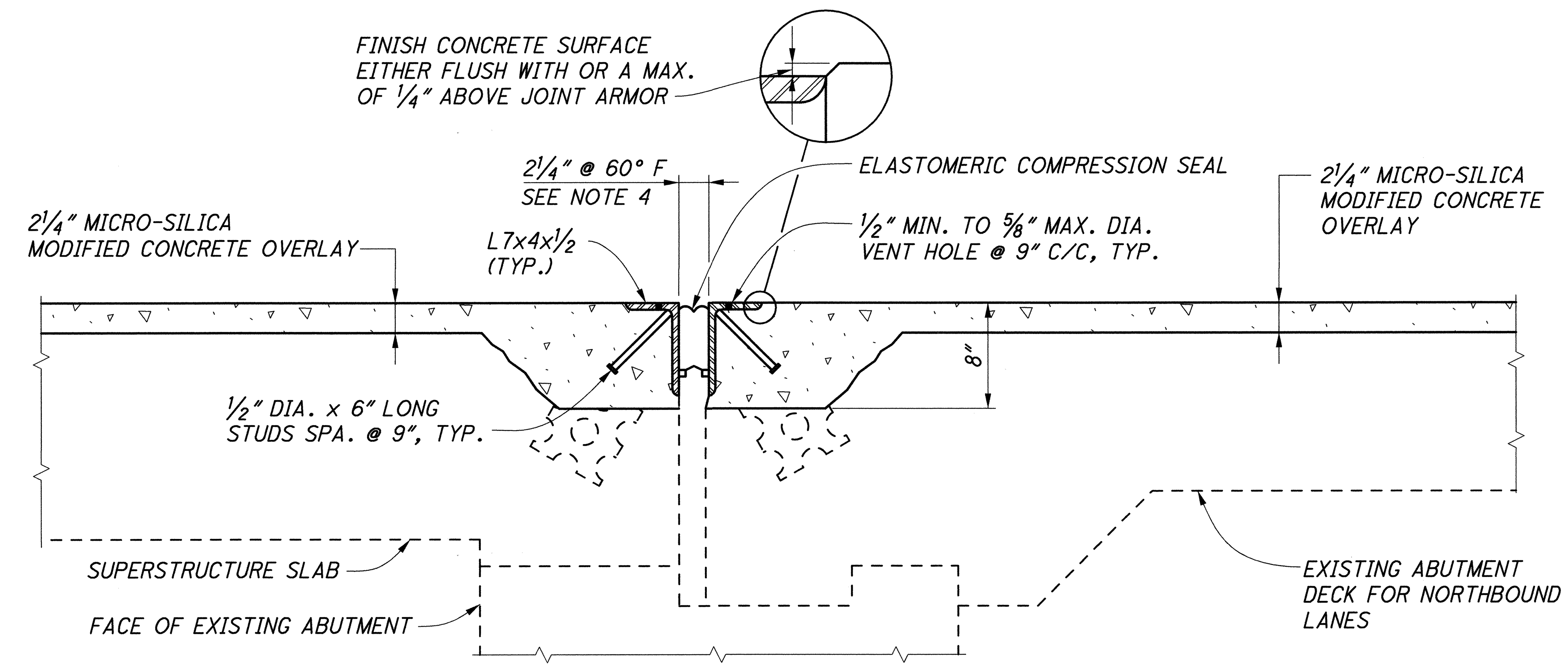


PROPOSED

SECTION A-A

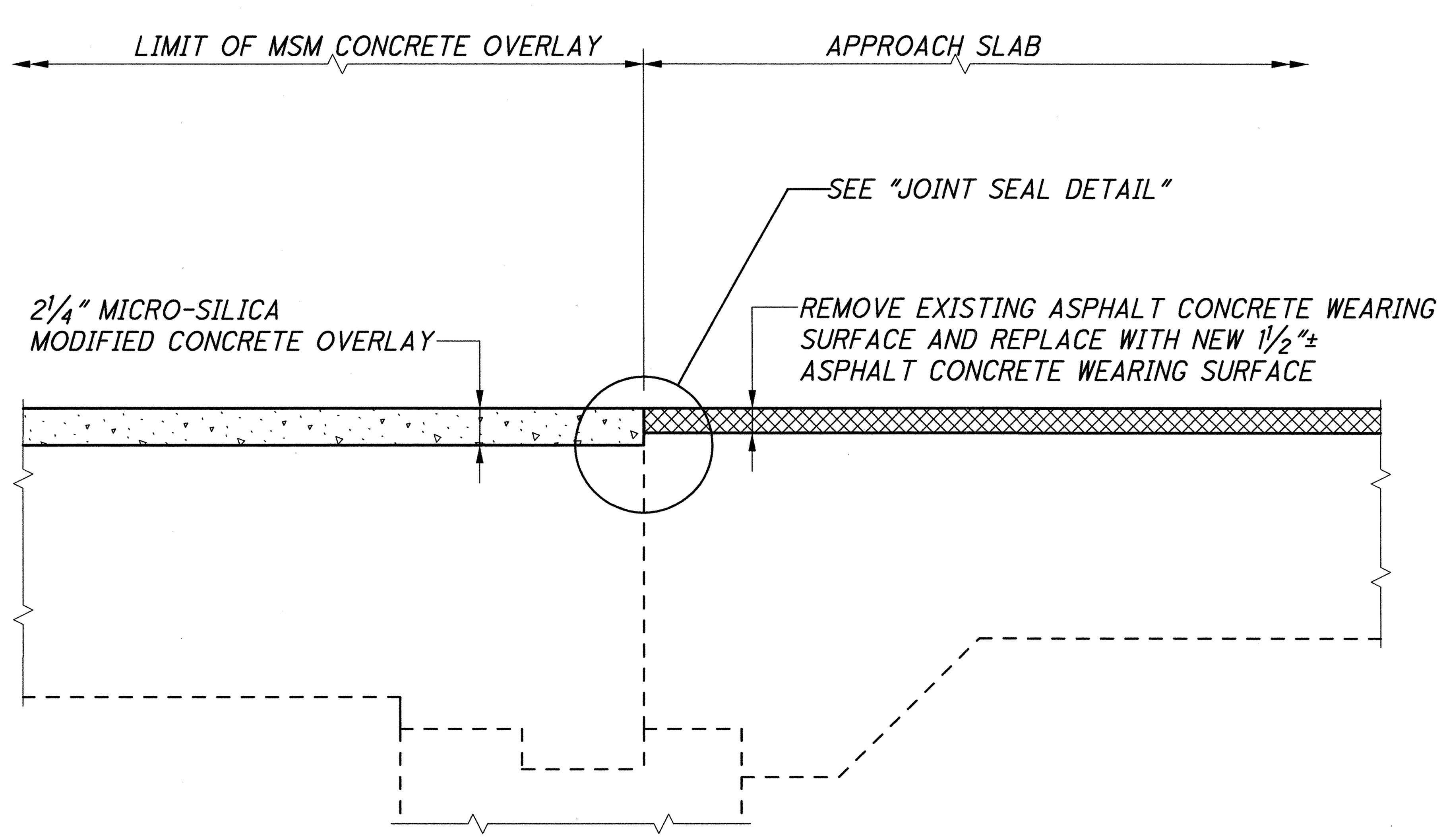


REMOVAL

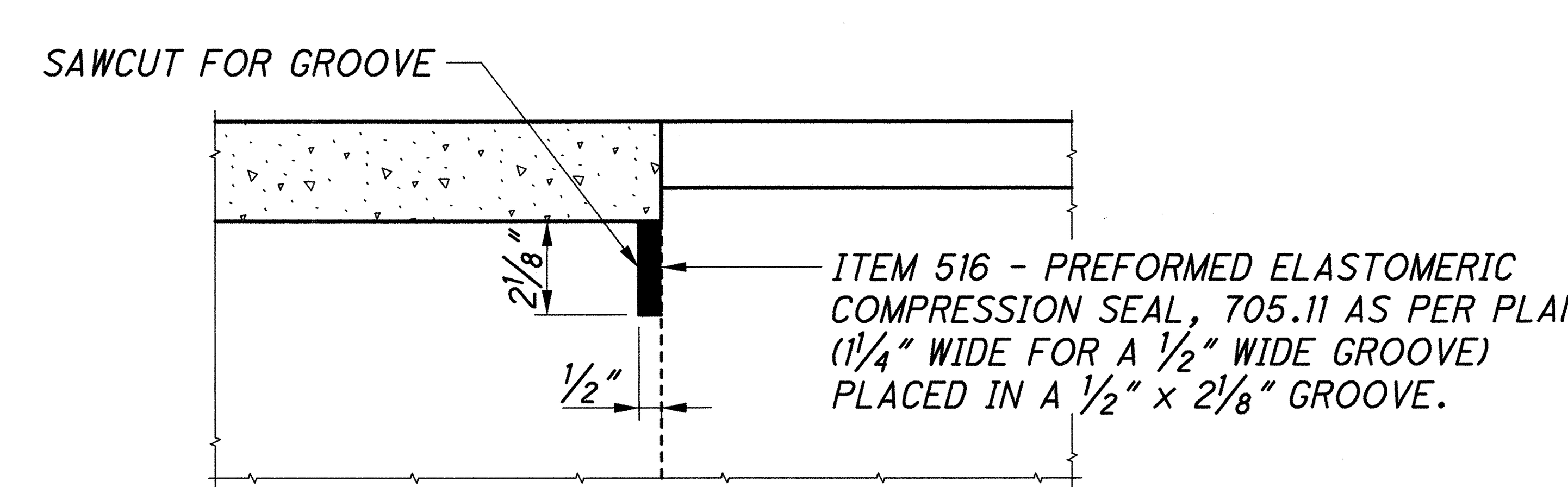


PROPOSED

SECTION B-B



SECTION C-C



JOINT SEAL DETAIL

LEGEND

▨ - DENOTES AREA OF REMOVAL

NOTES

1. FOR LOCATION OF SECTION A-A: SEE SHEET 17/32 & 21/32 .
2. FOR LOCATION OF SECTIONS B-B & C-C: SEE SHEET 21/32 .
3. FOR ABBREVIATIONS: SEE SHEET 4/32 .
4. ITEM 516 - PREFORMED ELASTOMERIC COMPRESSION JOINT SEAL, AS PER PLAN: SEE NOTE ON SHEET 3/32 .
5. FOR NOTES AND DETAILS NOT SHOWN: SEE STANDARD DRAWING EXJ-3-82.

DESIGN AGENCY
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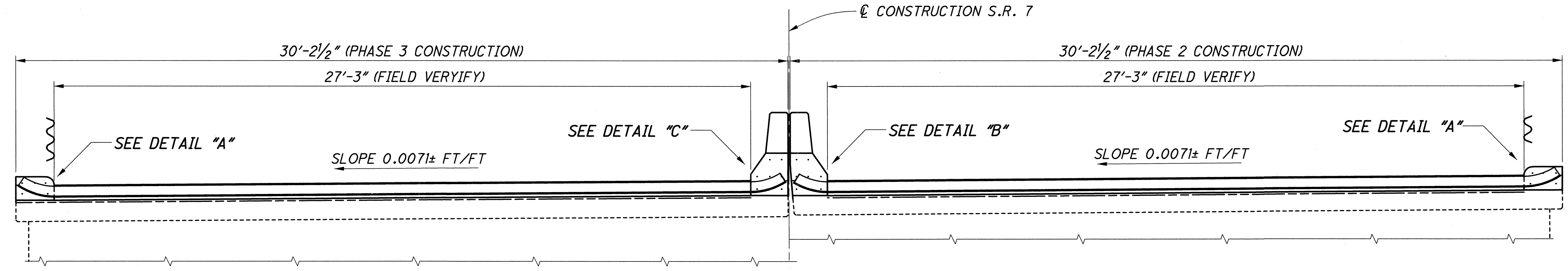
HK		4100425	

ABUTMENT EXPANSION JOINT DETAILS

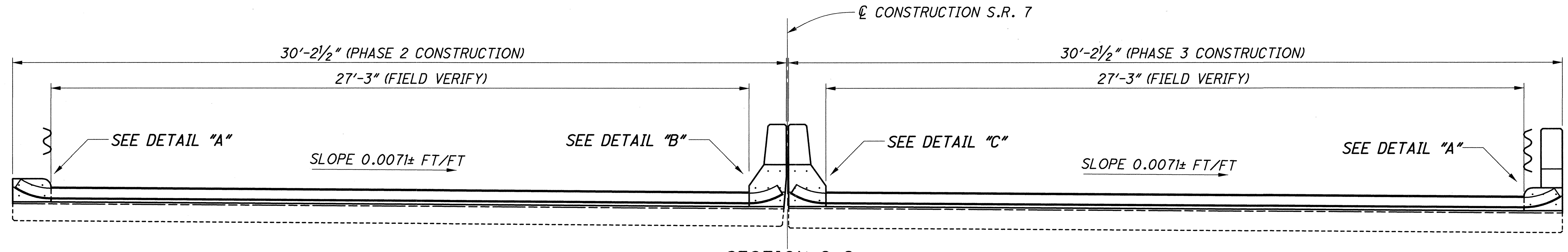
BRIDGE NO. JEF-7-0992 OVER
S.R. 7 NORTHBOUND ENTRANCE RAMP AND NORFOLK SOUTHERN RAILROAD

JEF-7-9.92
PID 83452

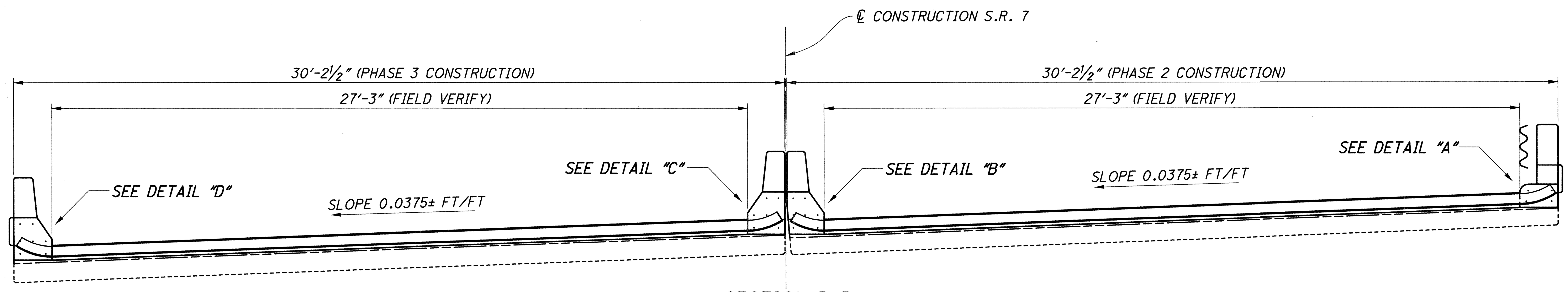
EA PROJECT NO. 08-085



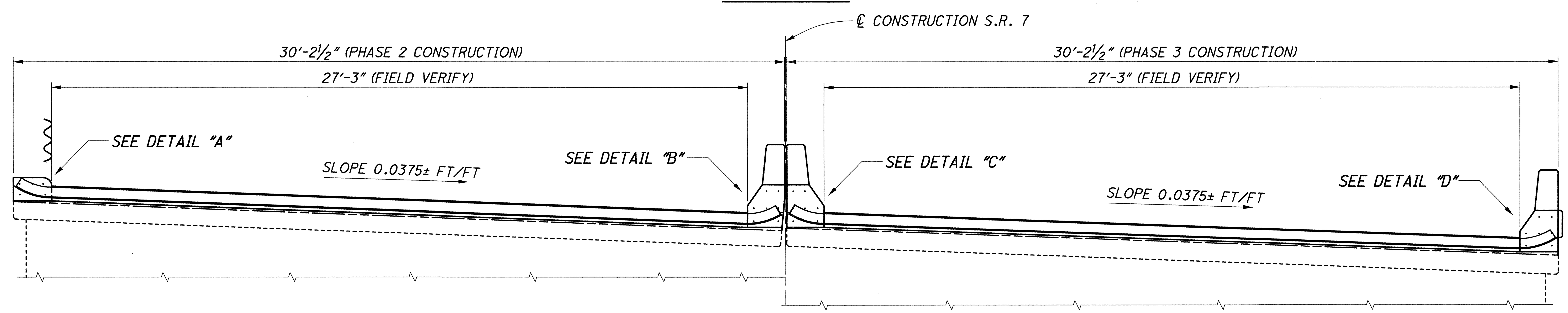
SECTION F-F



SECTION G-G



SECTION D-D



SECTION E-E

NOTES

1. FOR LOCATION OF SECTIONS D-D & E-E: SEE SHEET 17/32 .
2. FOR LOCATION OF SECTIONS F-F & G-G: SEE SHEET 21/32 .
3. FOR DETAILS "A", "B", "C" & "D": SEE SHEET 26/32 .

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DRAWN BDH | REVISED
DESIGNED BDH | CHECKED HK

ABUTMENT EXPANSION JOINT DETAILS
BRIDGE NO. JEF-7-0992 OVER
S.R. 7 NORTHBOUND ENTRANCE RAMP AND NORFOLK SOUTHERN RAILROAD

JEF-7-9.92
PID 83452

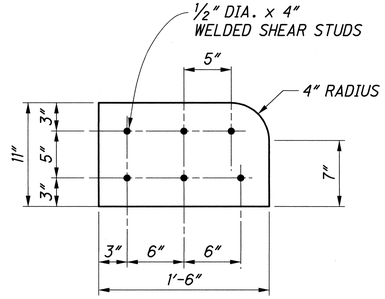


PLATE "A"

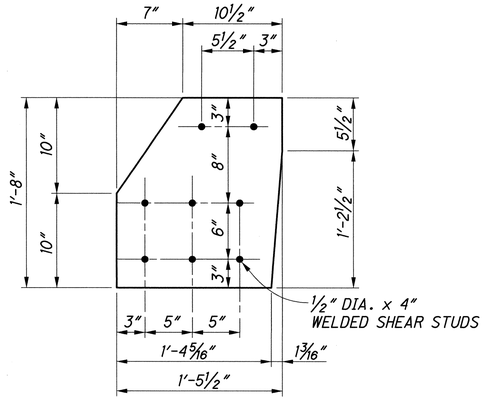


PLATE "B"

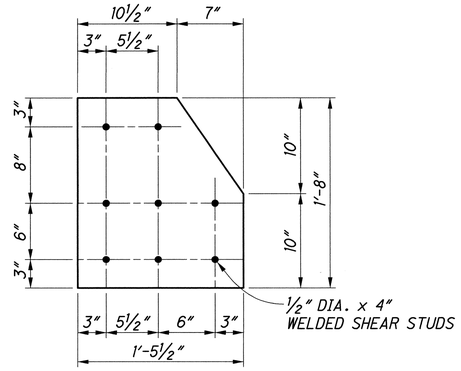


PLATE "C"

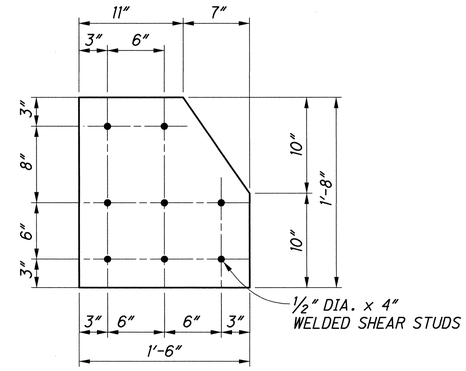
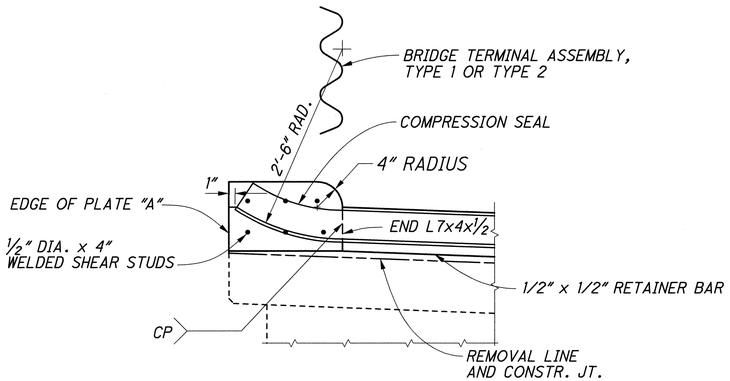
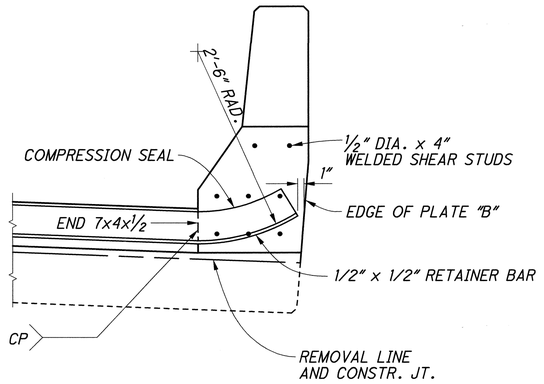


PLATE "D"

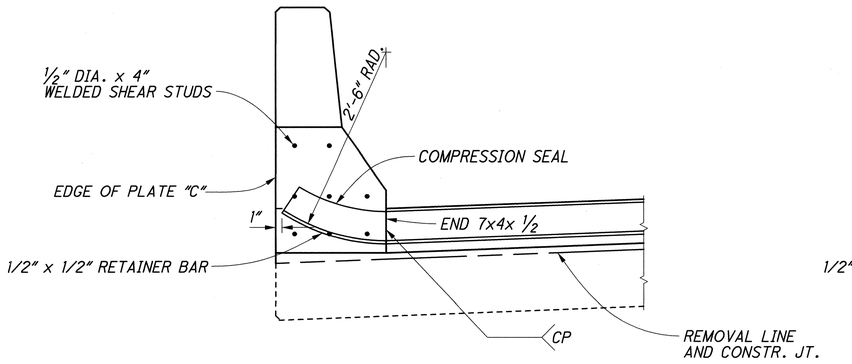
1/2" STEEL PLATE DETAILS



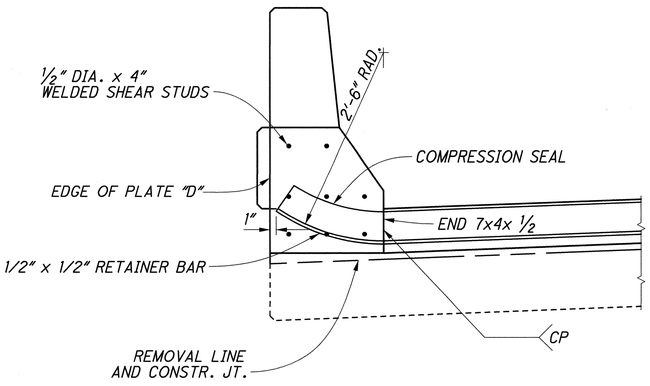
DETAIL "A"



DETAIL "B"



DETAIL "C"



DETAIL "D"

NOTES

1. **FOR DETAILS NOT SHOWN:** SEE SHEET 24/32 AND STD. DWG. EXJ-3-82
2. **FOR LOCATION OF DETAILS "A", "B", "C" & "D":** SEE SHEETS 25/32.

EA PROJECT NO. 08-085

DESIGN AGENCY
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ABUTMENT EXPANSION JOINT DETAILS
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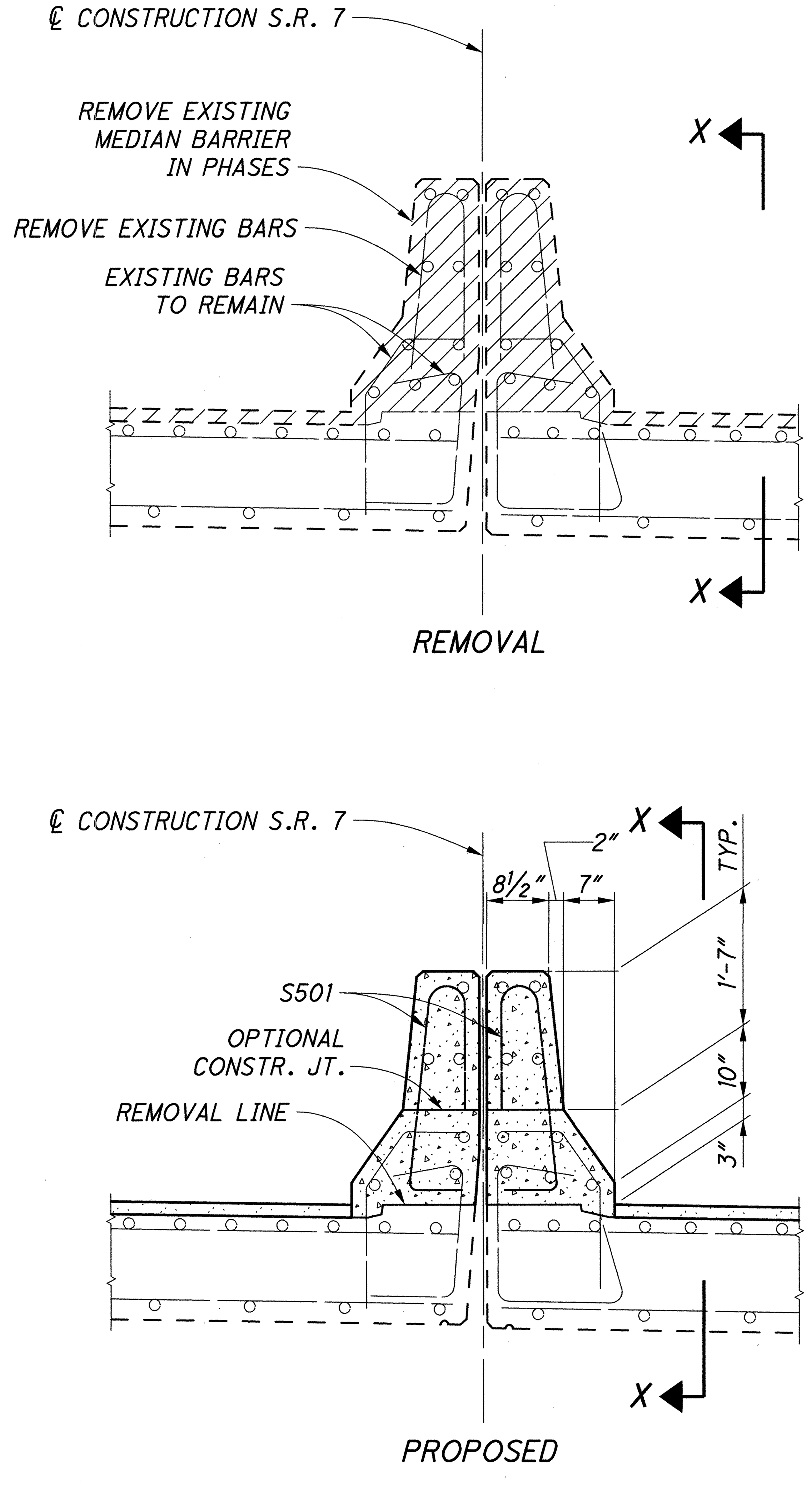
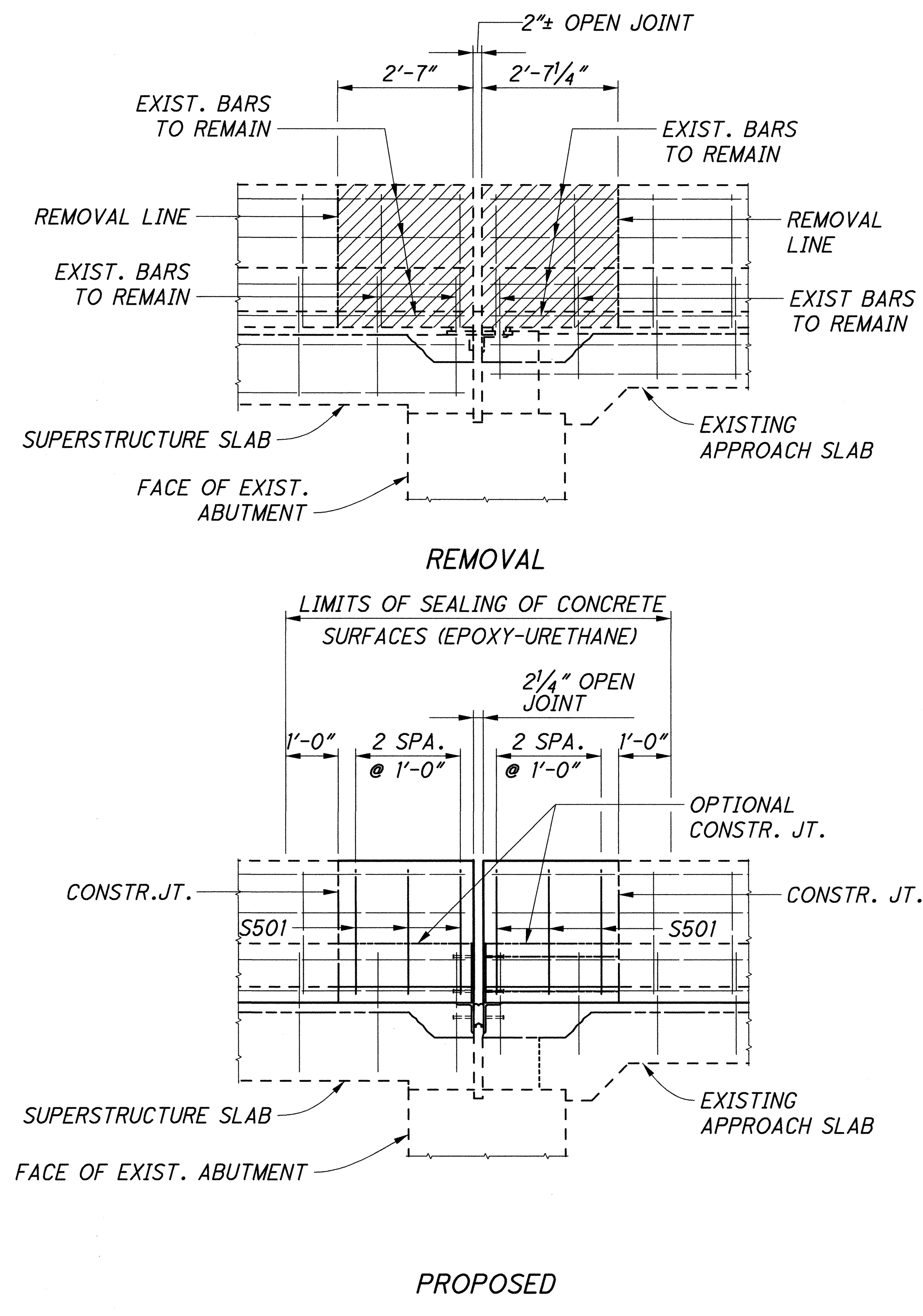
S.R. 7 NORTHBOUND ENTRANCE RAMP AND NORFOLK SOUTHERN RAILROAD

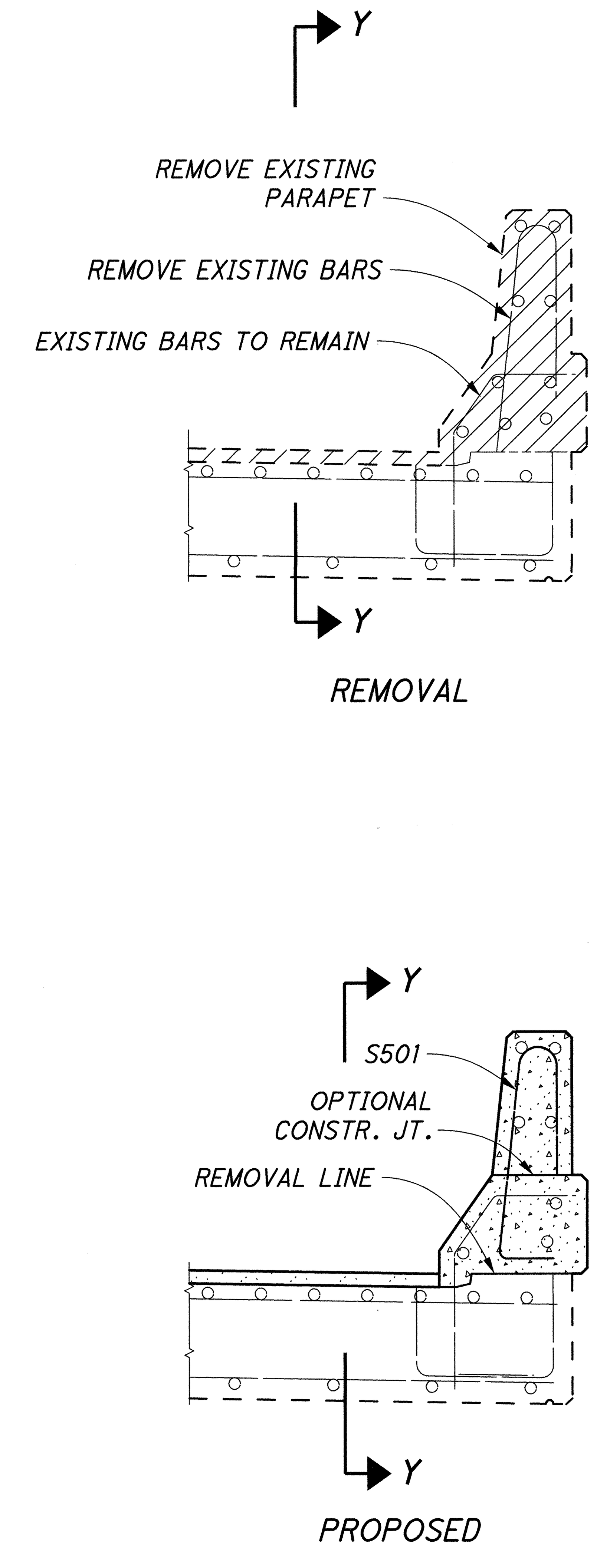
JEF-7-9.92
PID 83452



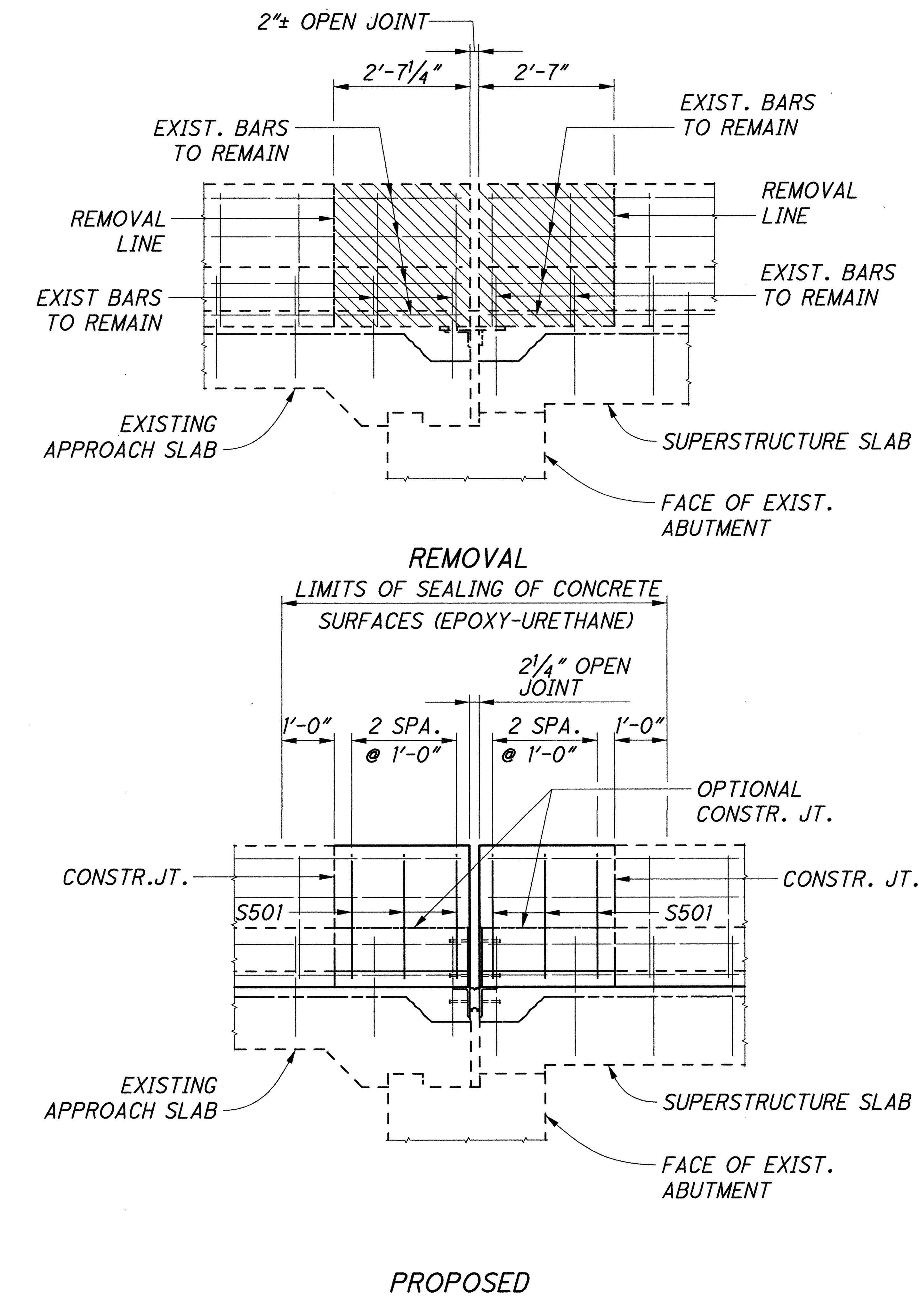
SECTION H-H



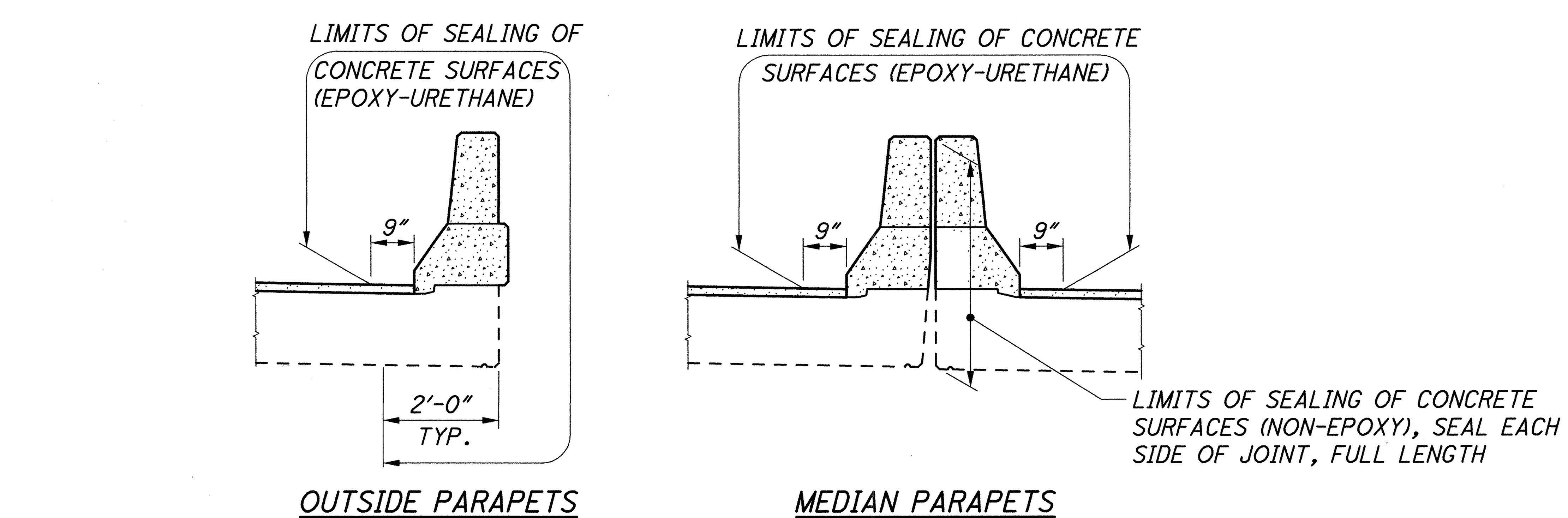
VIEW X-X



SECTION J-J



VIEW Y-Y



PARAPET SEALING DETAILS

LEGEND

- DENOTES AREAS TO BE REMOVED

NOTES

1. FOR LOCATION OF SECTION H-H: SEE SHEET 17/21 AND 21/32.
2. FOR LOCATION OF SECTION J-J: SEE SHEET 21/32.

EA PROJECT NO. 08-085

DESIGN AGENCY
ENGINEERING ASSOCIATES, INC.
1935 EAGLE PASS - WOOSTER, OHIO 44691
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REVIEWED	DATE
AFS	10-29-10
STRUCTURE FILE NUMBER	
4100425	

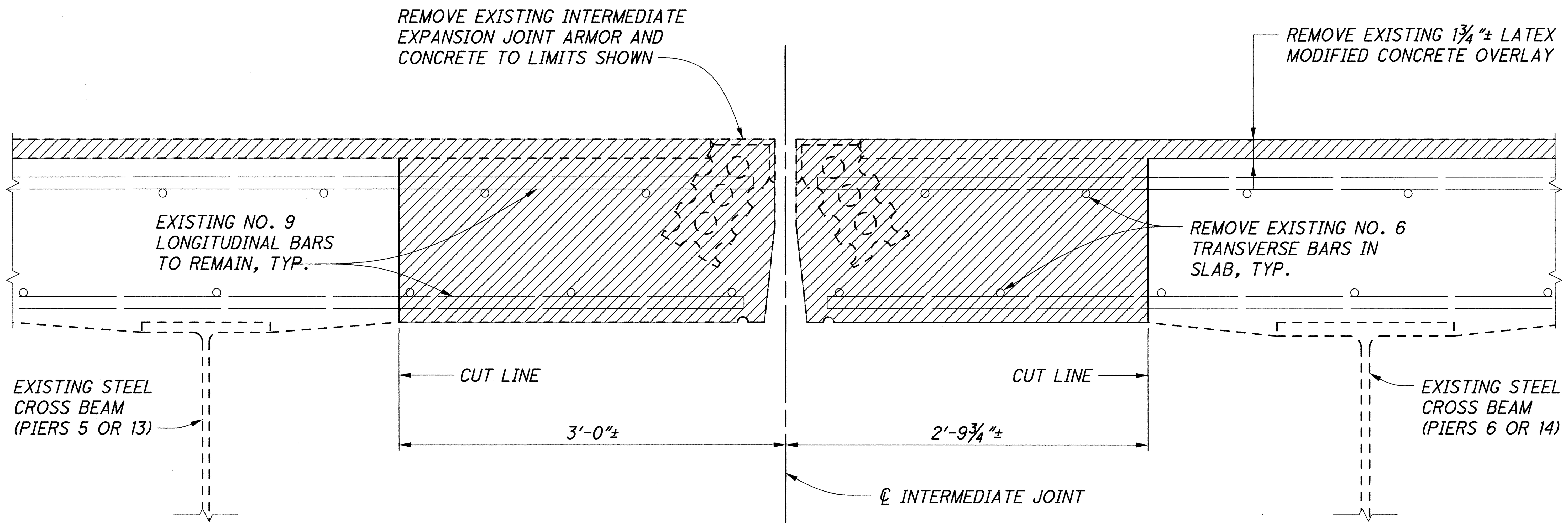
DRAWN	REVISED
RLE	

DESIGNED	CHECKED
BDH	HK

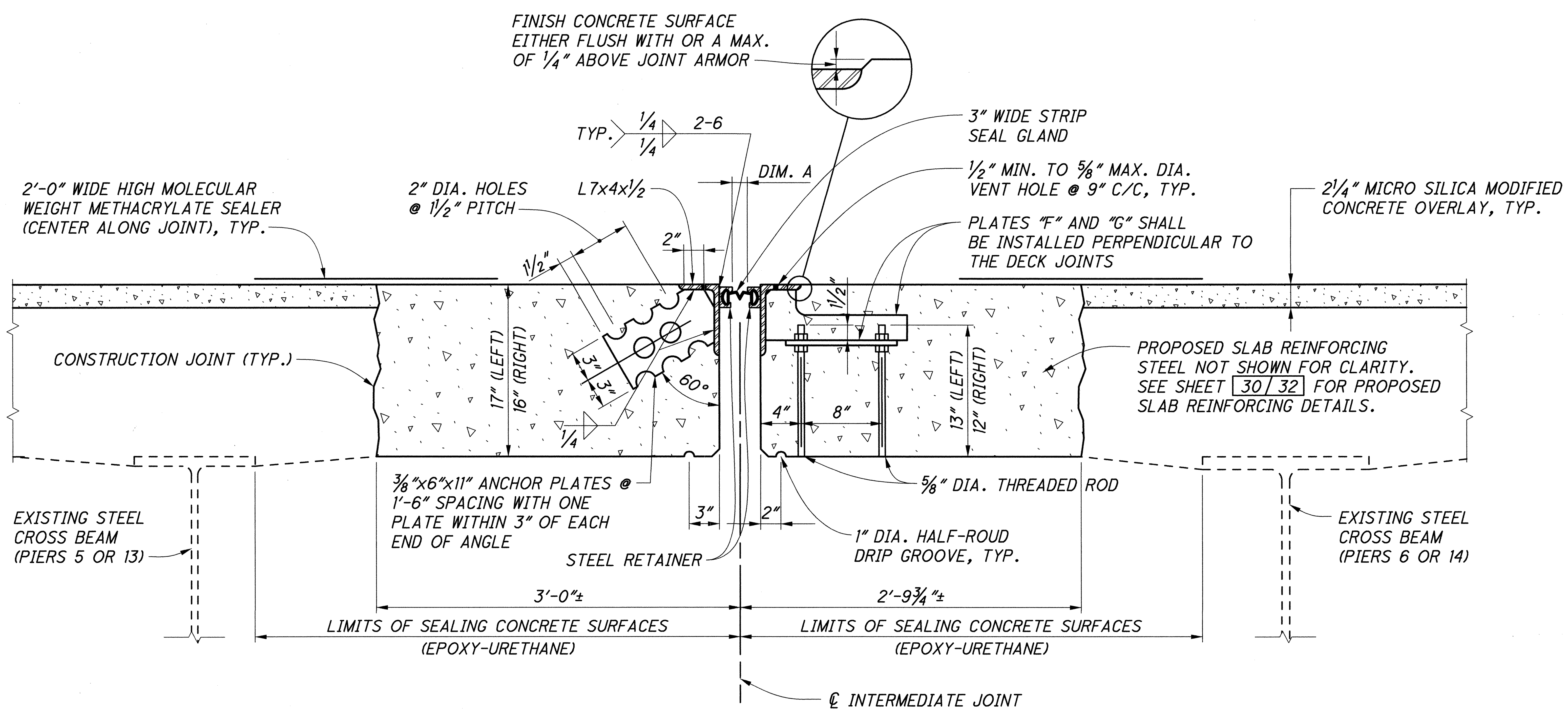
ABUTMENT EXPANSION JOINT DETAILS

BRIDGE NO. JEF-7-0992 OVER
S.R. 7 NORTHBOUND ENTRANCE RAMP AND NORFOLK SOUTHERN RAILROAD

JEF-7-9.92
PID 83452



REMOVAL



PROPOSED

SECTION K-K

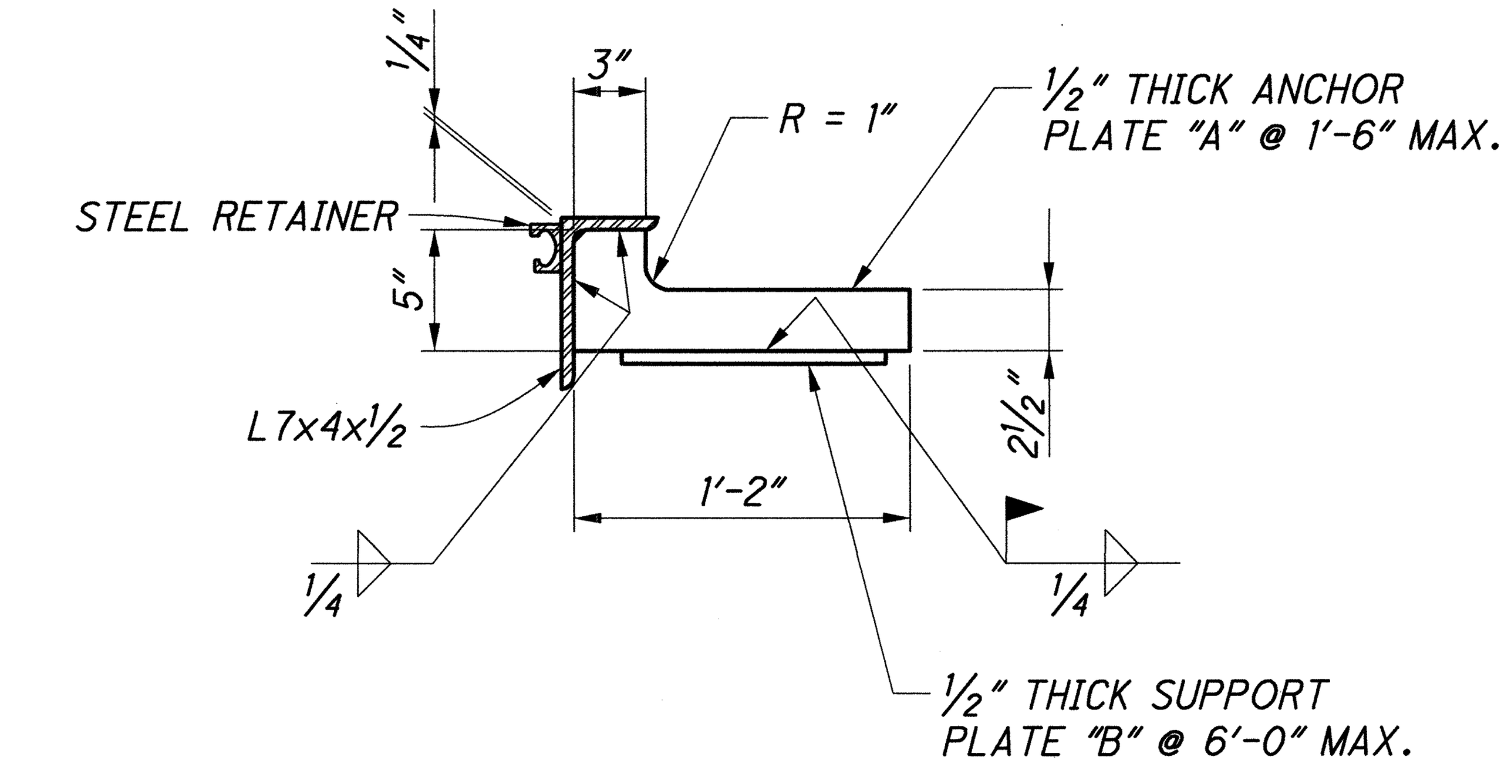


PLATE "F"

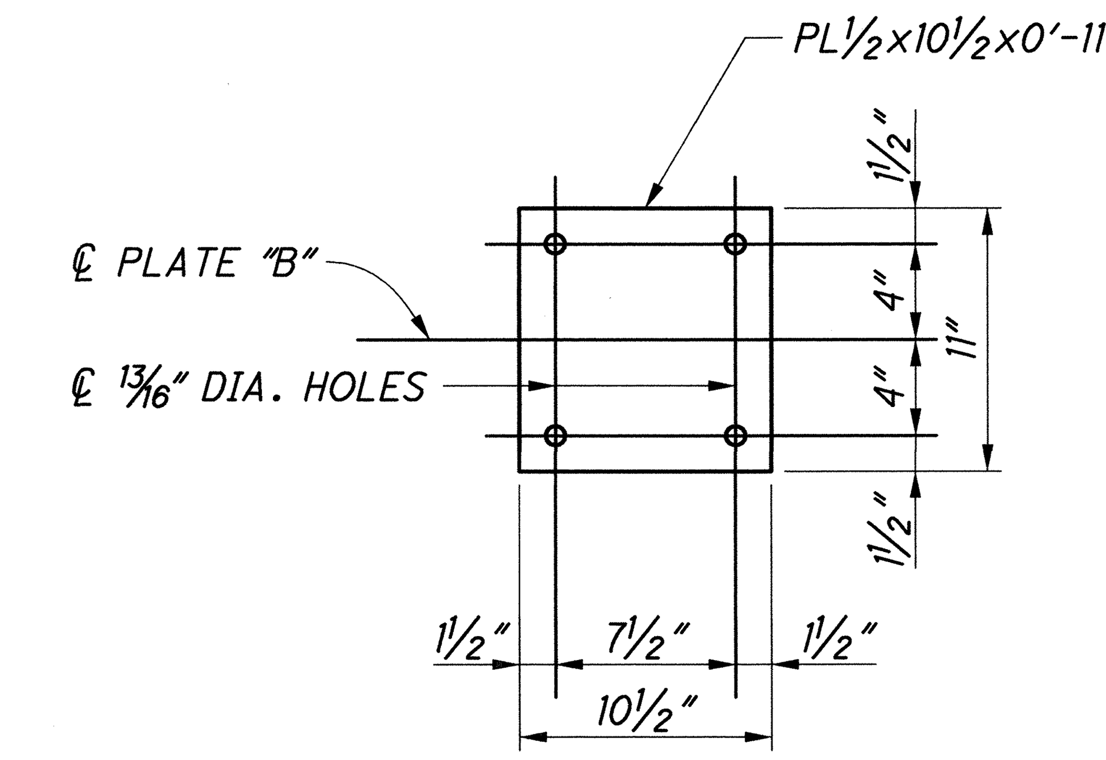


PLATE "G"

DECK JOINT OPENING	
TEMPERATURE (°F)	DIMENSION A (INCHES)
90	1 1⁄16*
80	1 3⁄16*
70	1 ⅜*
60	1 ½
50	1 11⁄16
40	1 13⁄16
30	2

*MINIMUM JOINT OPENING AT TIME OF SEAL GLAND INSTALLATION SHALL BE NOT LESS THAN 1½". IF NECESSARY, POSTPONE INSTALLATION OF GLAND UNTIL THE TEMPERATURE DROPS A SUFFICIENT AMOUNT TO ALLOW THE MINIMUM 1½" OPENING.

NOTES

1. **FOR LOCATION OF SECTION K-K:** SEE SHEET 18/32 AND 20/32 .
2. **FOR ADDITIONAL DETAILS AND NOTES:** REFER TO STD. DWG. EXJ-5-93.
3. PROPER ELEVATION OF THE SUPPORT/ARMOR SHALL BE ACHIEVED BY ADJUSTING THE ⅝" DIAMETER THREADED RODS.

DESIGN AGENCY
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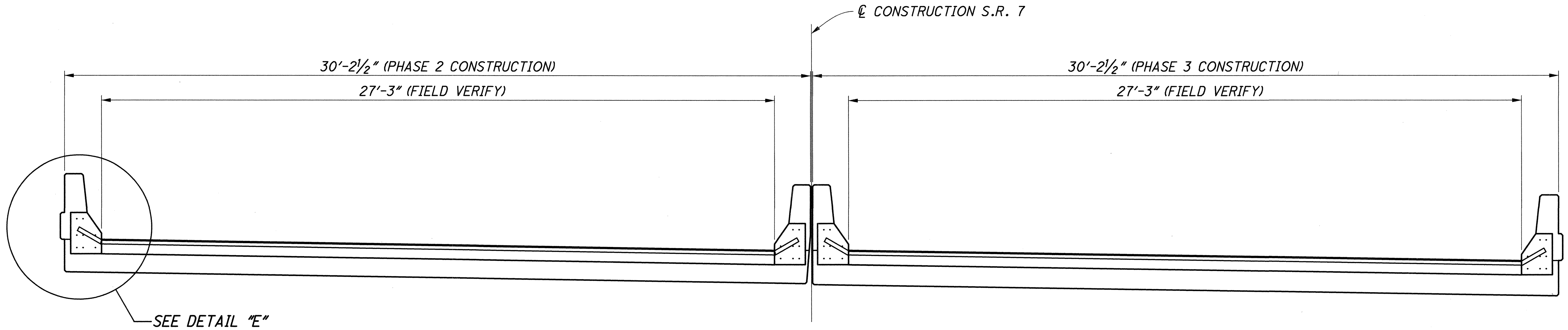
DESIGNED BDH | DRAWN BDH | REVIEWED AFS | DATE 10-29-10
CHECKED HK | REVISED | STRUCTURE FILE NUMBER 4100425

INTERMEDIATE EXPANSION JOINT DETAILS

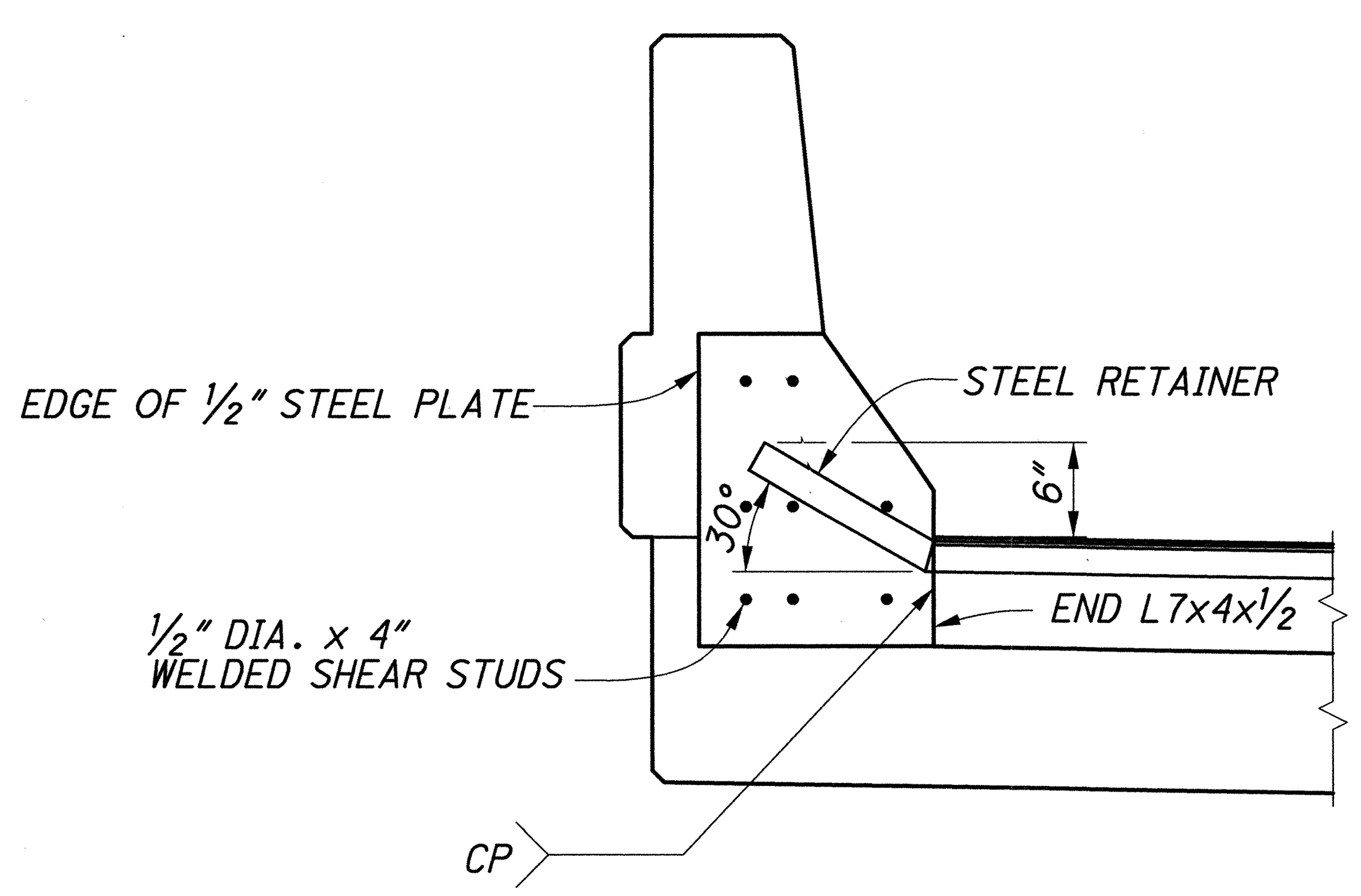
BRIDGE NO. JEF-7-0992 OVER
S.R. 7 NORTHBOUND ENTRANCE RAMP AND NORFOLK SOUTHERN RAILROAD

JEF-7-9.92
PID 83452

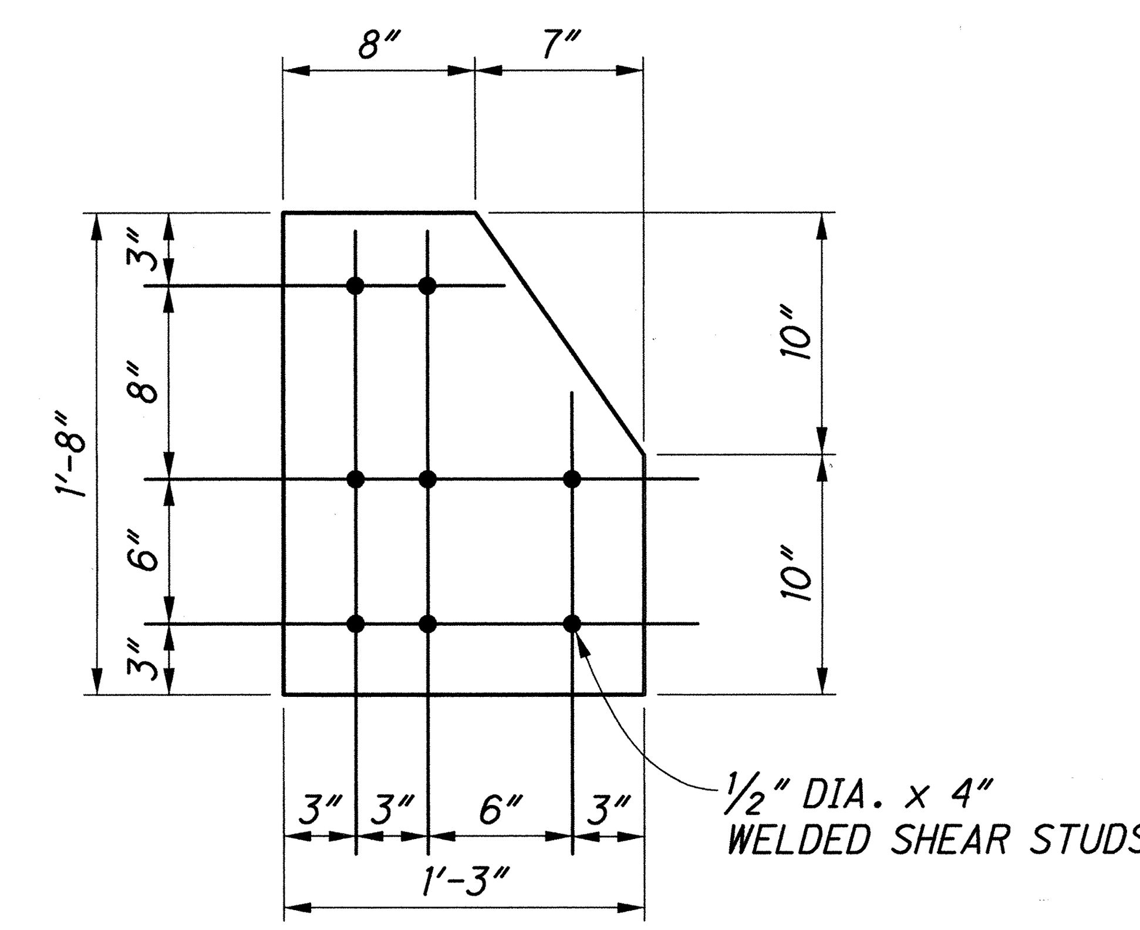
EA PROJECT NO. 08-085



SECTION L-L



DETAIL "E"



½″ STEEL PLATE DETAIL

NOTES

1. FOR DETAILS NOT SHOWN: SEE SHEET 28/32 AND STD. DWG. EXJ-5-93
2. FOR LOCATIONS OF SECTION L-L: SEE SHEETS 18 & 20/32 .

EA PROJECT NO. 08-085

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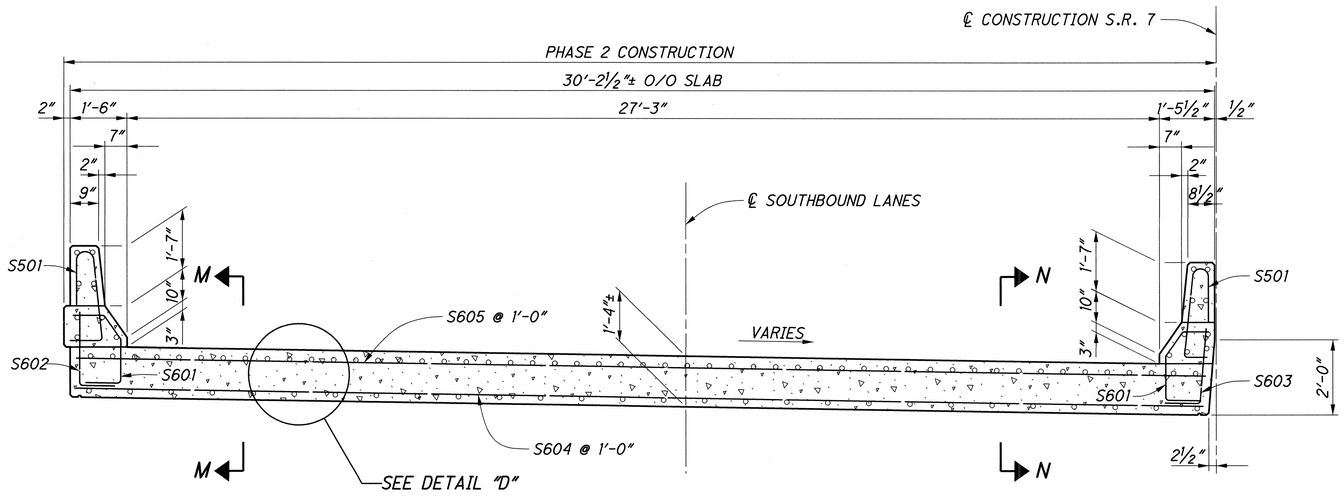
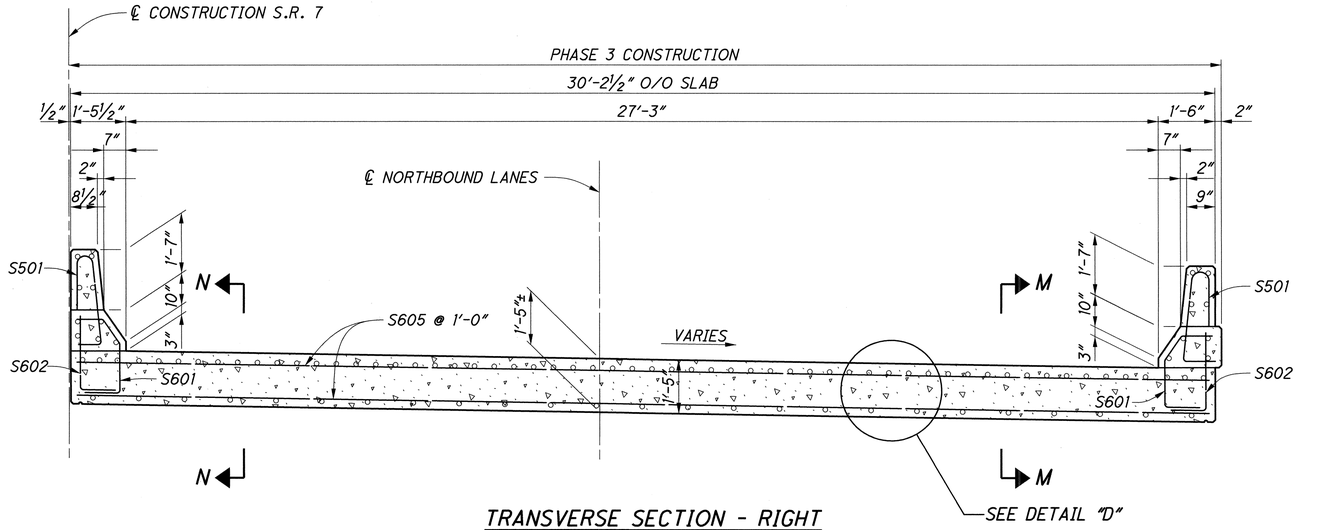
DESIGNED BDH | CHECKED HK | DRAWN BDH | REVISED | REVIEWED AFS | DATE 10-29-10 | STRUCTURE FILE NUMBER 4100425

INTERMEDIATE EXPANSION JOINT DETAILS
BRIDGE NO. JEF-7-0992 OVER
S.R. 7 NORTHBOUND ENTRANCE RAMP AND NORFOLK SOUTHERN RAILROAD

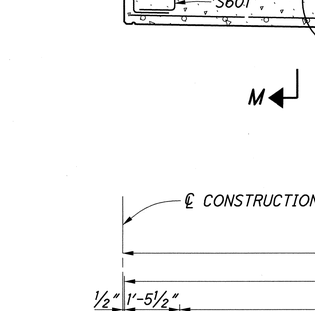
JEF-7-9.92
PID 83452



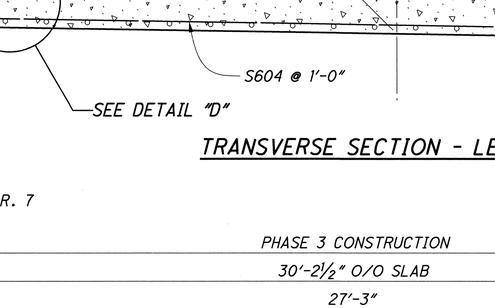
TRANSVERSE SECTION - LEFT



TRANSVERSE SECTION - RIGHT

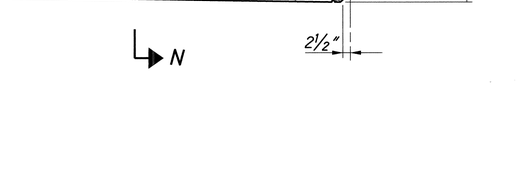


OUTSIDE PARAPETS



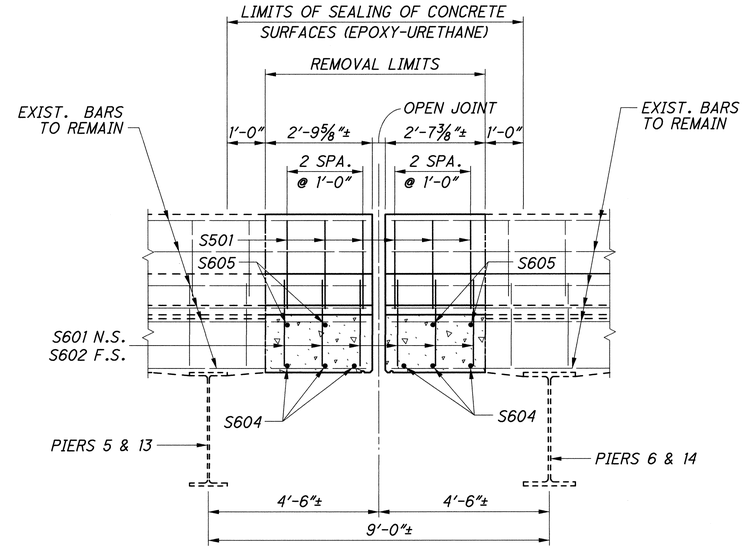
MEDIAN PARAPETS

PARAPET SEALING DETAILS



DETAIL "D"

ATTACH EGA'S TO EXISTING NO. 9 BARS.
ALTERNATE BETWEEN TOP MAT AND BOTTOM MAT.



OUTSIDE PARAPETS

SECTION M-M

MEDIAN PARAPETS

SECTION N-N

NOTES

1. **FOR ABBREVIATIONS:** SEE SHEET 4/32 .
2. **FOR DETAILS AND NOTES NOT SHOWN:** SEE STANDARD DRAWING BR-1, SHEET 1 OF 2.
3. **FOR ADDITIONAL INFORMATION ABOUT EMBEDDED GALVANIC ANODES (EGA):** SEE STRUCTURE GENERAL NOTES SHEETS 3/32 .

DESIGN AGENCY
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DESIGNED	DRAWN	REVIEWED	DATE
BDH	RLE	AFS	10-29-10
CHECKED	REVISED	STRUCTURE FILE NUMBER	
HK		4100425	

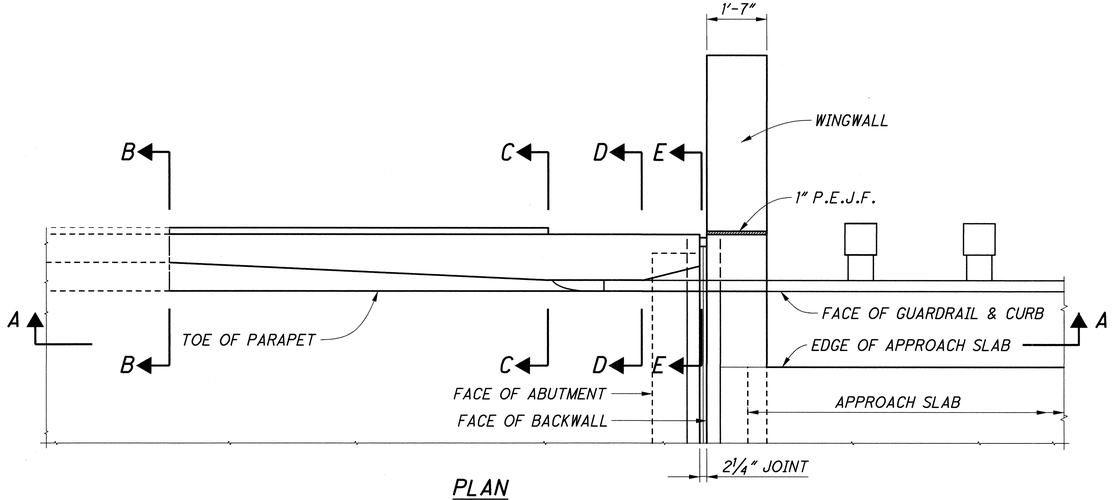
INTERMEDIATE EXPANSION JOINT DETAILS
BRIDGE NO. JEF-7-0992 OVER
S.R. 7 NORTHBOUND ENTRANCE RAMP AND NORFOLK SOUTHERN RAILROAD

JEF-7-9.92
PID 83452

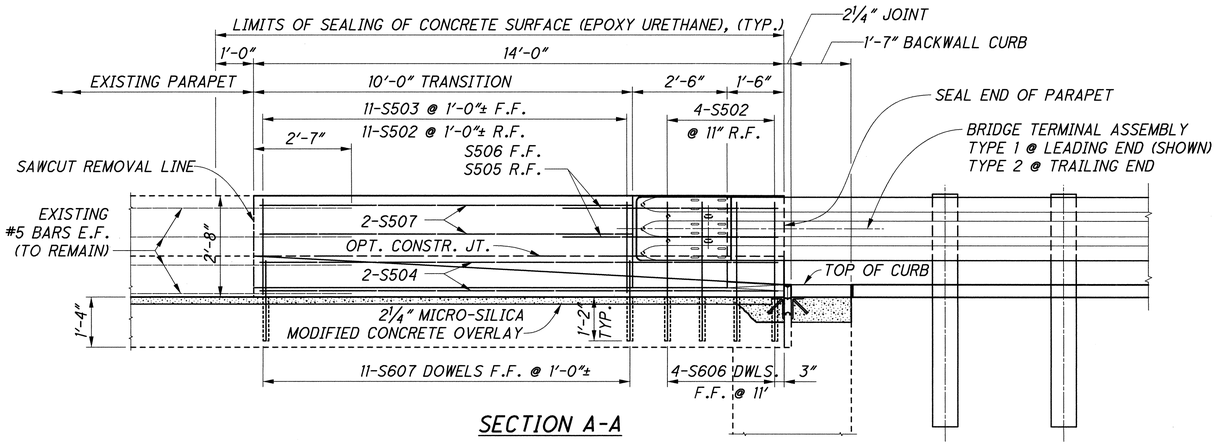
30/32

53/55

EA PROJECT NO. 08-085

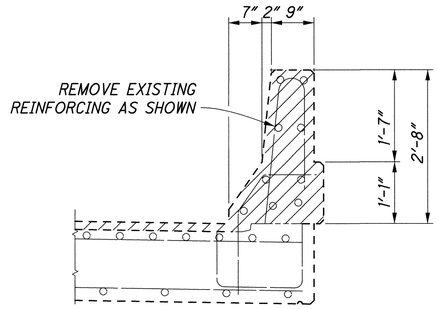


PLAN

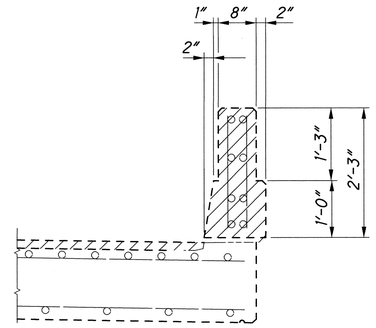


SECTION A-A

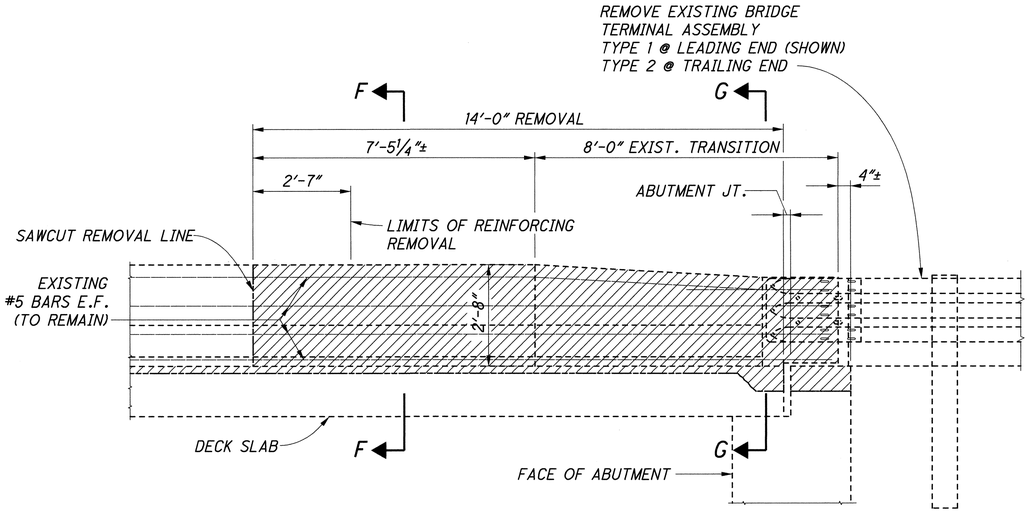
BARRIER TRANSITION AT LEADING OF PARAPET
IS DRAWN, TRAILING END IS OPPOSITE HAND



SECTION F-F

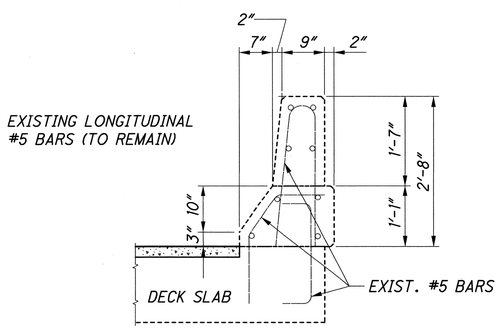


SECTION G-G

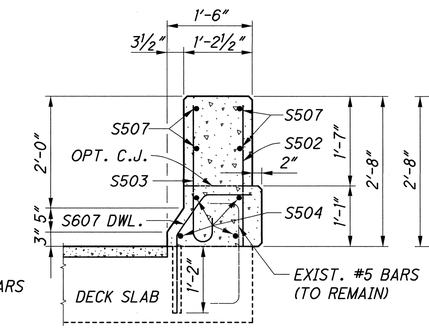


ELEVATION

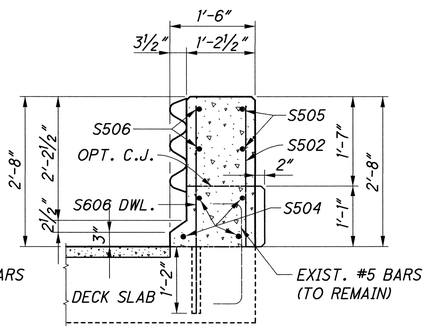
REMOVAL DETAILS



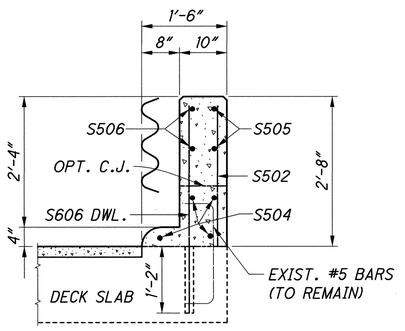
SECTION B-B



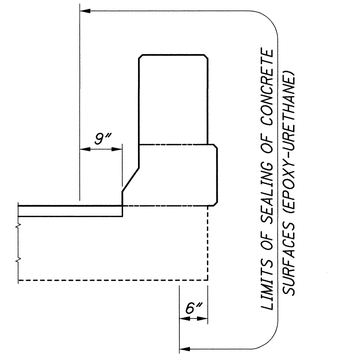
SECTION C-C



SECTION D-D



SECTION E-E



OUTSIDE PARAPET SEALING DETAIL

NOTES

FOR BRIDGE TERMINAL ASSEMBLY: SEE STANDARD CONSTRUCTION DRAWING GR-3.1 AND GR-3.2.

EA PROJECT NO. 08-085

DESIGN AGENCY
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DESIGNED	DRAWN	REVIEWED	DATE
BDH	RLE	AFS	10-29-10
CHECKED	REVISED	STRUCTURE FILE NUMBER	
HK		4100425	

DEFLECTOR PARAPET TRANSITION DETAILS

BRIDGE NO. JEF-7-0992 OVER
S.R. 7 NORTHBOUND ENTRANCE RAMP AND NORFOLK SOUTHERN RAILROAD

JEF-7-9.92
PID 83452

ABUTMENT REINFORCING STEEL LIST

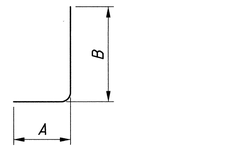
MARK	NUMBER PHASE 2 REAR	NUMBER PHASE 2 FWD.	NUMBER PHASE 3 REAR	NUMBER PHASE 3 FWD.	NUMBER TOTAL	LENGTH	TYPE	A	B	C	INC.	WEIGHT (LBS)
A501			4		4	2'-7"	STR					11
A502		8	6		14	2'-7"	STR					38
A503	4				4	3'-10"	STR					16
A504	8				8	3'-6"	1	1'-1"	2'-7"			29
A505		2			2	3'-8"	STR					8
A506	2	2	2		6	29'-0"	STR					181
											TOTAL	283

PIER REINFORCING STEEL LIST

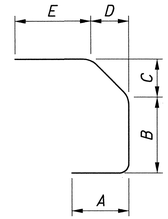
PIER	MARK	NUMBER PHASE 2	NUMBER PHASE 3	NUMBER TOTAL	LENGTH	TYPE	A	B	C	D	E	INC.	WEIGHT (LBS)
1	P401	8		8	10'-3"	29	2'-8"						55
3	P401		4	4	10'-3"	29	2'-8"						27
4	P401	4		4	10'-3"	29	2'-8"						27
6	P401	4	4	8	10'-3"	29	2'-8"						55
8	P401	4		4	10'-3"	29	2'-8"						27
9	P401	4		4	10'-3"	29	2'-8"						27
10	P401	8		8	10'-3"	29	2'-8"						55
11	P401	4	8	12	10'-3"	29	2'-8"						82
12	P401	4		4	10'-3"	29	2'-8"						27
13	P401		4	4	10'-3"	29	2'-8"						27
15	P401	4		4	10'-3"	29	2'-8"						27
16	P401	4		4	10'-3"	29	2'-8"						27
17	P401	4		4	10'-3"	29	2'-8"						27
												TOTAL	491

SUPERSTRUCTURE REINFORCING STEEL LIST

MARK	NUMBER PHASE 2	NUMBER PHASE 3	NUMBER TOTAL	LENGTH	TYPE	A	B	C	D	E	INC.	WEIGHT (LBS)
S501	42	36	78	5'-4"	23	8"	2'-5"	2'-2"	R = 1½"			434
S502	30	30	60	2'-6"	STR							156
S503	22	22	44	3'-6"	16	2'-5"						161
S504	8	8	16	13'-8"	STR							228
S505	4	4	8	5'-8"	STR							47
S506	4	4	8	5'-8"	25	1'-10"	2'-5"	1'-5"	1½"	5"		47
S507	8	8	16	10'-0"	STR							167
S601	24	24	48	3'-5"	14	10½"	1'-2½"	8½"	6"	9"		246
S602	12	24	36	2'-8"	1	11"	1'-11"					144
S603	12		12	2'-8"	28	11"	1'-11"	2"				48
S604	12		12	29'-7"	STR							533
S605	8	20	28	29'-9"	STR							1251
S606	8	8	16	3'-10"	STR							92
S607	22	22	44	3'-0"	14	0	1'-4"	8½"	6"	9"		198
											TOTAL	3752



TYPE-1



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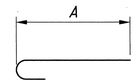

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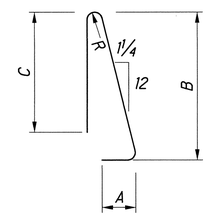
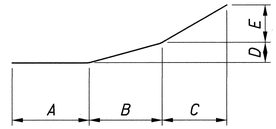
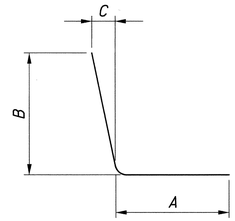


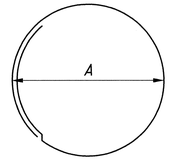
TYPE-23



TYPE-25



TYPE-28



TYPE-29

NOTES

1. ***ALL REINFORCING STEEL:*** *SHALL BE EPOXY COATED. SEE STRUCTURE GENERAL NOTES, SHEET 2 /32 FOR ADDITIONAL MATERIAL REQUIREMENTS.*
2. ***THE BAR SIZE NUMBER*** *IS SPECIFIED ON THE PLANS IN THE BAR MARK COLUMN. THE FIRST DIGIT WHERE THREE DIGITS ARE USED, AND THE FIRST TWO DIGITS WHERE FOUR DIGITS ARE USED, INDICATES THE BAR SIZE NUMBER. FOR EXAMPLE, S501 IS A NO. 5 BAR. BAR DIMENSIONS SHOWN ARE OUT TO OUT UNLESS OTHERWISE NOTED. R INDICATES INSIDE RADIUS, UNLESS OTHERWISE NOTED.*
3. ***BAR BENDS:*** *BEND BARS CAREFULLY TO THE DIMENSIONS LISTED IN THE SCHEDULES AND/OR STANDARD BENDS TABLE (CMS 509.05).*
4. ***ABBREVIATIONS:*** *SEE SHEET 4 /32 .*

EA PROJECT NO. 08-085

DESIGN AGENCY
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DESIGNED	DRAWN	REVIEWED	DATE
HK	RLE	AFS	10-29-10
CHECKED	REVISED	STRUCTURE FILE NUMBER	
BDH		4100425	

REINFORCING STEEL LISTS
BRIDGE NO. JEF-7-0992 OVER
S.R. 7 NORTHBOUND ENTRANCE RAMP AND NORFOLK SOUTHERN RAILROAD

JEF-7-9.92
PID 83452