STANDARD DRAWINGS AND SUPPLEMENTAL SPECIFICATIONS

REFER TO THE FOLLOWING STANDARD BRIDGE DRAWING(S):
EXJ-4-87 DATED/REVISED 7/19/2002
VPF-1-90 DATED/REVISED 7/17/2015

AND TO THE FOLLOWING SUPPLEMENTAL SPECIFICATION(S):
SS 843 DATED 4/18/2003
SS 848 DATED 4/18/2014

DESIGN SPECIFICATIONS

DESIGN SPECIFICATIONS: THIS STRUCTURE CONFORMS TO "STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES" ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS, 17TH EDITION , INCLUDING THE 2002 INTERIM SPECIFICATIONS AND THE ODOT BRIDGE DESIGN MANUAL.

EXISTING STRUCTURE VERIFICATION

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.

PROPOSED WORK

SUM-76-0913 (OVER MANCHESTER RD)
-REMOVE EXISTING EXPANSION JOINT ALONG WITH CONCRETE DECK AND BACKWALL
-REPLACE WITH NEW JOINT

SUM-76-0956 (OVER BOWERY ST)
-REMOVE EXISTING EXPANSION JOINT ALONG WITH CONCRETE DECK AND BACKWALL
-REPLACE WITH NEW JOINT

SUM-76-0966 (OVER LAKE SHORE BLVD)
-REMOVE EXISTING EXPANSION JOINT ALONG WITH CONCRETE DECK AND BACKWALL
-REPLACE WITH NEW JOINT

SUM-76-1034 (OVER MAIN ST)
-REMOVE EXISTING EXPANSION JOINT ALONG WITH CONCRETE DECK AND BACKWALL
-REPLACE WITH NEW JOINT

SUM-76-1041 (OVER BROADWAY ST)
-REMOVE EXISTING EXPANSION JOINT ALONG WITH CONCRETE DECK AND BACKWALL
-REPLACE WITH NEW JOINT

SUM-76-1179L (OVER INMAN STREET)
-REMOVE EXISTING CONCRETE WEARING SURFACE AND REPLACE WITH A NEW CONCRETE OVERLAY ON THE BRIDGE DECK AND APPROACH SLABS
-PATCH ALL UNSOUND AREAS OF THE SUBSTRUCTURE INCLUDING THE PARAPETS
-REPAIR PARAPET WALLS
-SEAL ALL EXPOSED CONCRETE SURFACES OF SUBSTRUCTURE AND PARAPETS THAT HAVE BEEN REPAIRED WITH EPOXY-URETHANE
-CLEARING AND GRUBBING 15' AROUND STRUCTURE TO REMOVE ALL VEGETATION
-NEW STRUCTURE IDENTIFICATION SIGNS

SUM-76-1179R (OVER INMAN STREET)
-REMOVE EXISTING CONCRETE WEARING SURFACE AND REPLACE WITH A NEW CONCRETE OVERLAY ON THE BRIDGE DECK AND APPROACH SLABS
-REPAIR PARAPET WALLS
-PATCH ALL UNSOUND AREAS OF THE SUBSTRUCTURE INCLUDING THE PARAPETS
-SEAL ALL EXPOSED CONCRETE SURFACES OF SUBSTRUCTURE AND PARAPETS THAT HAVE BEEN REPAIRED WITH EPOXY-URETHANE
-CLEARING AND GRUBBING 15' AROUND STRUCTURE TO REMOVE ALL VEGETATION
-NEW STRUCTURE IDENTIFICATION SIGNS

SUM-76-1199 (UNDER HOBAN HIGH PED. BRIDGE)
-PATCH ALL UNSOUND AREAS OF THE SUBSTRUCTURE INCLUDING THE DECK EDGE AND CURB
-SEAL ALL EXPOSED CONCRETE SURFACES OF PIER COLUMNS AND CAPS WITH EPOXY- URETHANE
-CLEARING AND GRUBBING 15' AROUND STRUCTURE TO REMOVE ALL VEGETATION
-NEW STRUCTURE IDENTIFICATION SIGNS

SUM-76-1230 (OVER ARLINGTON STREET)
-PATCH ALL UNSOUND AREAS OF THE CONCRETE DECK AND APPROACH SLABS
-SEAL PATCHED WEARING SURFACE AND APPROACH SLABS WITH SRS CONCRETE TREATMENT
-PATCH ALL UNSOUND AREAS OF THE SUBSTRUCTURE INCLUDING THE PARAPETS
-REMOVE ALL SPALLED AREAS FROM BOTTOM OF DECK FLOOR AND SEAL WITH EPOXY-URETHANE
-SEAL ALL EXPOSED CONCRETE SURFACES OF SUBSTRUCTURE AND PARAPETS THAT HAVE BEEN REPAIRED WITH EPOXY-URETHANE
-CLEARING AND GRUBBING 15' AROUND STRUCTURE TO REMOVE ALL VEGETATION
-NEW STRUCTURE IDENTIFICATION SIGNS

SUM-76-1236 (RAMP E-8 OVER RAMP E-6)
-REPLACE EXISTING ELASTOMERIC STRIP SEAL WITH NEW STRIP SEAL
-PATCH ALL UNSOUND AREAS OF THE SUBSTRUCTURE INCLUDING THE PARAPETS
-PAINT STEEL EXPANSION JOINT ARMOR ON PARAPETS
-CLEARING AND GRUBBING 15' AROUND STRUCTURE TO REMOVE ALL VEGETATION
-NEW STRUCTURE IDENTIFICATION SIGNS

SUM-76-1246 (RAMP E-7 OVER RAMP E-4)
-REMOVE EXISTING CONCRETE WEARING SURFACE AND REPLACE WITH A NEW CONCRETE OVERLAY ON THE BRIDGE DECK AND APPROACH SLABS
-PATCH ALL UNSOUND AREAS OF THE SUBSTRUCTURE INCLUDING THE PARAPETS
-PAINT STEEL EXPANSION JOINT ARMOR
-SEAL ALL EXPOSED CONCRETE SURFACES OF SUBSTRUCTURE AND PARAPETS THAT HAVE BEEN REPAIRED WITH EPOXY-URETHANE
-CLEARING AND GRUBBING 15' AROUND STRUCTURE TO REMOVE ALL VEGETATION
-NEW STRUCTURE IDENTIFICATION SIGNS

SUM-76-1265 (OVER FULLER STREET)
-REMOVE EXISTING CONCRETE WEARING SURFACE AND REPLACE WITH A NEW CONCRETE OVERLAY ON THE BRIDGE DECK AND APPROACH SLABS
-REPAIR EROSION AT THE REAR RIGHT AND FORWARD RIGHT OF THE STRUCTURE
-PATCH ALL UNSOUND AREAS OF THE SUBSTRUCTURE INCLUDING THE PARAPETS
-REMOVE ALL SPALLED AREAS FROM BOTTOM OF DECK FLOOR AND SEAL WITH EPOXY-URETHANE
-SEAL ALL EXPOSED CONCRETE SURFACES OF SUBSTRUCTURE AND PARAPETS THAT HAVE BEEN REPAIRED WITH EPOXY-URETHANE
-CLEARING AND GRUBBING 15' AROUND STRUCTURE TO REMOVE ALL VEGETATION
-NEW STRUCTURE IDENTIFICATION SIGNS

SUM-76-1273 (OVER KELLY AVE., METRO REGIONAL TRANSIT AUTHORITY, CANAL)
-REMOVE EXISTING CONCRETE WEARING SURFACE AND REPLACE WITH A NEW CONCRETE OVERLAY ON THE BRIDGE DECK AND APPROACH SLABS IN WESTBOUND DIRECTION ONLY
-PATCH ALL UNSOUND AREAS OF THE CONCRETE DECK AND APPROACH SLABS IN EASTBOUND DIRECTION ONLY
-SEAL PATCHED WEARING SURFACE AND APPROACH SLABS WITH SRS CONCRETE TREATMENT IN EASTBOUND DIRECTION ONLY
-PATCH ALL UNSOUND AREAS OF THE SUBSTRUCTURE INCLUDING THE PARAPETS
-REMOVE ALL SPALLED AREAS FROM BOTTOM OF DECK FLOOR AND SEAL WITH EPOXY-URETHANE
-CLEARING AND GRUBBING 15' AROUND STRUCTURE TO REMOVE ALL VEGETATION
-NEW STRUCTURE IDENTIFICATION SIGNS

SUM-76-1296 (OVER MARTHA AVENUE)
-PATCH ALL UNSOUND AREAS OF THE CONCRETE DECK AND APPROACH SLABS
-SEAL PATCHED WEARING SURFACE AND APPROACH SLABS WITH SRS CONCRETE TREATMENT
-REPAIR DAMAGED CROSS FRAMES BETWEEN RIGHT FASCIA BEAM AND THE SECOND BEAM
-PATCH ALL UNSOUND AREAS OF THE SUBSTRUCTURE INCLUDING THE PARAPETS
-REMOVE ALL SPALLED AREAS FROM BOTTOM OF DECK FLOOR AND SEAL WITH EPOXY-URETHANE
-SEAL ALL EXPOSED CONCRETE SURFACES OF SUBSTUCTURE AND PARAPETS THAT HAVE BEEN REPAIRED WITH EPOXY-URETHANE
-CLEARING AND GRUBBING 15' AROUND STRUCTURE TO REMOVE ALL VEGETATION
-NEW STRUCTURE IDENTIFICATION SIGNS

SUM-76-1303J (RAMP E-10 OVER RAMP E-16)
-REMOVE EXISTING CONCRETE WEARING SURFACE AND REPLACE WITH A NEW CONCRETE OVERLAY ON THE BRIDGE DECK AND APPROACH SLABS
-PATCH ALL UNSOUND AREAS OF THE SUBSTRUCTURE INCLUDING THE PARAPETS
-REMOVE ALL SPALLED AREAS FROM BOTTOM OF DECK FLOOR AND SEAL WITH EPOXY-URETHANE
-SEAL ALL EXPOSED CONCRETE SURFACES OF SUBSTUCTURE AND PARAPETS THAT HAVE BEEN REPAIRED WITH EPOXY-URETHANE
-CLEARING AND GRUBBING 15' AROUND STRUCTURE TO REMOVE ALL VEGETATION
-NEW STRUCTURE IDENTIFICATION SIGNS

SUM-76-1332 (OVER SEIBERLING STREET)
-REMOVE EXISTING CONCRETE WEARING SURFACE AND REPLACE WITH A NEW CONCRETE OVERLAY ON THE BRIDGE DECK AND APPROACH SLABS IN WESTBOUND DIRECTION
-PATCH ALL UNSOUND AREAS OF THE CONCRETE DECK AND APPROACH SLABS IN EASTBOUND DIRECTION
-SEAL PATCHED WEARING SURFACE AND APPROACH SLABS WITH SRS CONCRETE TREATMENT IN EASTBOUND DIRECTION
-PATCH ALL UNSOUND AREAS OF THE SUBSTRUCTURE INCLUDING THE PARAPETS
-REMOVE ALL SPALLED AREAS FROM BOTTOM OF DECK FLOOR AND SEAL WITH EPOXY-URETHANE
-SEAL ALL EXPOSED CONCRETE SURFACES OF SUBSTUCTURE AND PARAPETS THAT HAVE BEEN REPAIRED WITH EPOXY-URETHANE
-CLEARING AND GRUBBING 15' AROUND STRUCTURE TO REMOVE ALL VEGETATION
-NEW STRUCTURE IDENTIFICATION SIGNS

SUM-76-1407 (OVER SUM SR 18 1351 MARKET)
-PATCH ALL UNSOUND AREAS OF THE CONCRETE DECK AND APPROACH SLABS
-REPAIR THE TOP OF BACK WALLS
-SEAL PATCHED WEARING SURFACE AND APPROACH SLABS WITH SRS CONCRETE TREATMENT
-PATCH ALL UNSOUND AREAS OF THE SUBSTRUCTURE INCLUDING THE PARAPETS
-REMOVE ALL SPALLED AREAS FROM BOTTOM OF DECK FLOOR AND SEAL WITH EPOXY-URETHANE
-SEAL ALL EXPOSED CONCRETE SURFACES OF SUBSTUCTURE AND PARAPETS THAT HAVE BEEN REPAIRED WITH EPOXY-URETHANE
-CLEARING AND GRUBBING 15' AROUND STRUCTURE TO REMOVE ALL VEGETATION
-NEW STRUCTURE IDENTIFICATION SIGNS

SUM-76-1512 (LITTLE CUYAHOGA RIVER)
-CLEANOUT CHANNEL
-CLEARING AND GRUBBING 15' AROUND STRUCTURE TO REMOVE ALL VEGETATION
-NEW STRUCTURE IDENTIFICATION SIGNS

SUM-76-1518 (RAMP E 27 OVER WHEELING & LAKE ERIE RR)
-REMOVE EXISTING CONCRETE WEARING SURFACE AND REPLACE WITH A NEW CONCRETE OVERLAY ON THE BRIDGE DECK AND APPROACH SLABS
-PATCH ALL UNSOUND AREAS OF THE SUBSTRUCTURE INCLUDING THE PARAPETS
-REMOVE ALL SPALLED AREAS FROM BOTTOM OF DECK FLOOR AND SEAL WITH EPOXY-URETHANE
-SEAL ALL EXPOSED CONCRETE SURFACES OF SUBSTRUCTURE AND PARAPETS THAT HAVE BEEN REPAIRED WITH EPOXY-URETHANE
-CLEARING AND GRUBBING 15' AROUND STRUCTURE TO REMOVE ALL VEGETATION
-NEW STRUCTURE IDENTIFICATION SIGNS

DESIGN AGENCY
ODOT --- DISTRICT 4
PLANNING AND ENGINEERING

DESIGNED	DRAWN	REVIEWED	DATE
NRC	NRC	LMP	8/7/2015
CHECKED	REVISED		STRUCTURE FILE NUMBER
LMP			

STRUCTURE GENRAL NOTES

SUM-76-0913,SUM-76-0956, SUM-76-0966, SUM-76-1034, SUM-76-1041, SUM-76-1179L, SUM-76-1179R, SUM-76-1199, SUM-76-1230, SUM-76-1236, SUM-76-1246, SUM-76-1265, SUM-76-1273, SUM-76-1296, SUM-76-1303J, SUM-76-1332, SUM-76-1407, SUM-76-1512, SUM-76-1518, SUM-76-1631, SUM-76-1648, SUM-76-1695, SUM-76-1744, & SUM-241-1172

SUM-76/241-
VAR/11.72
PID No. 77876

SUM-76-1521 (OVER WHEELING & LAKE ERIE RR)
-PATCH ALL UNSOUND AREAS OF THE CONCRETE DECK AND APPROACH SLABS
-SEAL PATCHED WEARING SURFACE AND APPROACH SLABS WITH SRS CONCRETE TREATMENT
-PATCH ALL UNSOUND AREAS OF THE SUBSTRUCTURE INCLUDING THE PARAPETS
-REMOVE ALL SPALLED AREAS FROM BOTTOM OF DECK FLOOR AND SEAL WITH EPOXY-URETHANE
-SEAL ALL EXPOSED CONCRETE SURFACES OF SUBSTRUCTURE AND PARAPETS THAT HAVE BEEN REPAIRED WITH EPOXY-URETHANE
-CLEARING AND GRUBBING 15' AROUND STRUCTURE TO REMOVE ALL VEGETATION
-NEW STRUCTURE IDENTIFICATION SIGNS

SUM-76-1531 (OVER GILCHRIST ROAD)
-PATCH ALL UNSOUND AREAS OF THE CONCRETE DECK AND APPROACH SLABS
-SEAL PATCHED WEARING SURFACE AND APPROACH SLABS WITH SRS CONCRETE TREATMENT
-REPLACE EXISTING ELASTOMERIC STRIP SEAL WITH NEW STRIP SEAL
-REPAIR SLOPE PROTECTION AT RIGHT REAR AND FORWARD LEFT OF STRUCTURE
-PATCH ALL UNSOUND AREAS OF THE SUBSTRUCTURE INCLUDING THE PARAPETS
-REMOVE ALL SPALLED AREAS FROM BOTTOM OF DECK FLOOR AND SEAL WITH EPOXY-URETHANE
-SEAL ALL EXPOSED CONCRETE SURFACES OF SUBSTRUCTURE AND PARAPETS THAT HAVE BEEN REPAIRED WITH EPOXY-URETHANE
-CLEARING AND GRUBBING 15' AROUND STRUCTURE TO REMOVE ALL VEGETATION
-NEW STRUCTURE IDENTIFICATION SIGNS

SUM-76-1631 (UNDER MONROE FALLS ROAD)
-PATCH ALL UNSOUND AREAS OF THE CONCRETE DECK AND APPROACH SLABS
-REPAIR TOP OF BACKWALLS
-SEAL PATCHED WEARING SURFACE AND APPROACH SLABS WITH SRS CONCRETE TREATMENT
-REMOVE AND REPLACE EXISTING VANDAL PROTECTION FENCE
-RESET AND REFURBISH EXISTING ABUTMENT BEARINGS
-CLEAN EXISTING STRUCTURAL STEEL
-PATCH ALL UNSOUND AREAS OF THE SUBSTRUCTURE INCLUDING THE PARAPETS
-REMOVE ALL SPALLED AREAS FROM BOTTOM OF DECK FLOOR AND SEAL WITH EPOXY-URETHANE
-SEAL ALL EXPOSED CONCRETE SURFACES OF SUBSTRUCTURE AND PARAPETS THAT HAVE BEEN REPAIRED WITH EPOXY-URETHANE
-CLEARING AND GRUBBING 15' AROUND STRUCTURE TO REMOVE ALL VEGETATION
-NEW STRUCTURE IDENTIFICATION SIGNS

SUM-76-1648 (UNDER NEWTON STREET)
-PATCH ALL UNSOUND AREAS OF THE CONCRETE DECK AND APPROACH SLABS
-REPAIR TOP OF BACKWALLS
-SEAL PATCHED WEARING SURFACE AND APPROACH SLABS WITH SRS CONCRETE TREATMENT
-RESET AND REFURBISH EXISTING FASCIA BEARING ON LEFT SIDE OF THE FORWARD PIER
-CLEAN EXISTING STRUCTURAL STEEL
-PATCH ALL UNSOUND AREAS OF THE SUBSTRUCTURE INCLUDING THE PARAPETS
-REMOVE ALL SPALLED AREAS FROM BOTTOM OF DECK FLOOR AND SEAL WITH EPOXY-URETHANE
-SEAL ALL EXPOSED CONCRETE SURFACES OF SUBSTRUCTURE AND PARAPETS THAT HAVE BEEN REPAIRED WITH EPOXY-URETHANE
-CLEARING AND GRUBBING 15' AROUND STRUCTURE TO REMOVE ALL VEGETATION
-NEW STRUCTURE IDENTIFICATION SIGNS

SUM-76-1695 (OVER SUMMIT SR 532)
-SEAL WEARING SURFACE AND APPROACH SLABS WITH SRS CONCRETE TREATMENT
-SEAL ALL EXPOSED CONCRETE SURFACES OF PARAPETS AND MEDIAN BARRIER WITH EPOXY-URETHANE
-CLEARING AND GRUBBING 15' AROUND STRUCTURE TO REMOVE ALL VEGETATION
-NEW STRUCTURE IDENTIFICATION SIGNS

SUM-76-1774 (OVER EASTWOOD AVE)
-SEAL WEARING SURFACE AND APPROACH SLABS WITH SRS CONCRETE TREATMENT
-REPAIR EROSION ON RIGHT SIDE OF STRUCTURE AT THE FORWARD AND REAR ABUTMENT WHERE THE FOOTER IS EXPOSED
-SEAL ALL EXPOSED CONCRETE SURFACES OF PARAPETS AND MEDIAN BARRIER WITH EPOXY-URETHANE
-CLEARING AND GRUBBING 15' AROUND STRUCTURE TO REMOVE ALL VEGETATION
-NEW STRUCTURE IDENTIFICATION SIGNS

SUM-241-1172 (LITTLE CUYAHOGA RIVER)
-PATCH ALL UNSOUND AREAS OF THE INSIDE OF CONCRETE CULVERT
-SEAL ALL EXPOSED CONCRETE SURFACES OF HEAD WALLS WITH EPOXY- URETHANE
-CLEARING AND GRUBBING 15' AROUND STRUCTURE TO REMOVE ALL VEGETATION
-NEW STRUCTURE IDENTIFICATION SIGNS

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.

ITEM 202 - REMOVAL MISC.: CHANNEL CLEANOUT

THIS WORK WILL CONSIST OF RE-ESTABLISHING THE ORIGINAL CHANNEL PROFILE BY REMOVING SEDIMENT BUILDUP, VEGETATION, AND DEBRIS FROM THE EXISTING CHANNEL WITHIN STATE RIGHT-OF-WAY LIMITS AS SPECIFIED IN THE PLANS FOR STRUCTURES SUM-76-1512. ANY TREES LOCATED WITHIN CHANNEL OR BANK LIMITS WILL BE INCLUDED UNDER ITEM 201, CLEARING AND GRUBBING. ALL MATERIALS REMOVED SHALL BE DISPOSED OF IN ACCORDANCE WITH 105.16 AND 105.17 OF THE CMS WITH THE APPROVAL OF THE ENGINEER. NO AREAS OF EXISTING CHANNEL PROTECTION SHALL BE REMOVED IN ORDER TO RESTORE THE ORIGINAL CHANNEL PROFILE. AFFECTED CHANNEL AREAS SHALL BE CLEANED OUT TO THE SATISFACTION OF THE ENGINEER.

CHANNEL CLEANOUT WILL BE PAID FOR AT THE UNIT PRICE BID FOR ITEM 202 REMOVAL MISC.: CHANNEL CLEANOUT. THIS PRICE WILL INCLUDE THE COST FOR LABOR, EQUIPMENT, AND ALL INCIDENTALS REQUIRED TO COMPLETE THE CHANNEL CLEANOUT.

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.

EROSION REPAIR

THIS WORK WILL CONSIST OF REPAIRING THE EROSION ALONG THE REAR RIGHT AND FORWARD RIGHT OF STRUCTURE SUM-76-1265 AND SUM-76-1774. REPAIR EROSION ALONG THE RIGHT REAR AND FORWARD LEFT WINGWALL OR APPROACH PAVEMENT EMBANKMENT OF STRUCURE SUM-76-1531 WHERE THE FOOTER OF THE ABUTMENT IS EXPOSED.

STRUCTURE SUM-76-1265:
ITEM 203 - BORROW 10 CY
ITEM 601 - DUMPED ROCK, TYPE B 10 CY

STRUCTURE SUM-76-1531:
ITEM 203 - BORROW 3 CY

STRUCTURE SUM-76-1774:
ITEM 203 - BORROW 10 CY
ITEM 601 - DUMPED ROCK, TYPE B 10 CY

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.

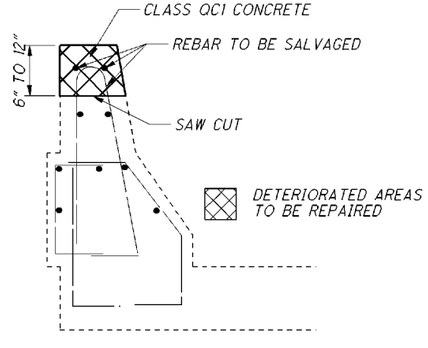
ITEM 509 - EPOXY COATED REINFORCING STEEL, AS PER PLAN

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

ITEM 511 - CONCRETE MISC.: PARAPET REPAIR

THIS ITEM WILL BE USED TO REPAIR DAMAGED PARAPETS OF STRUCTURES SUM-76-1179L, SUM-76-1179R, AND SUM-76-1407

SAWCUT AND REMOVE DAMAGED/SPALLED AREAS OF THE EXISTING PARAPETS TO A MINIMUM DEPTH OF 6" AND A MAXIMUM DEPTH OF 12" OR AS DIRECTED BY THE ENGINEER. CARE SHALL BE TAKEN WHEN REMOVING SPALLED CONCRETE TO SALVAGE EXISTING REBAR. CLASS QCI CONCRETE WILL BE USED TO REPAIR THE DAMAGED PARAPETS. THE REMOVAL OF CONCRETE, PREPARATION OF THE SURFACES, FORMS, CLASS QCI CONCRETE, AND EPOXY-URETHANE SEALER WILL BE INCIDENTAL TO THIS ITEM. PAYMENT WILL BE MADE AT THE CONTRACT BID PRICE PER FOOT FOR ITEM 511, CONCRETE MISC.: PARAPET REPAIR.



DESIGN AGENCY
ODOT --- DISTRICT 4
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DESIGNED	DRAWN	REVIEWED	DATE
NRC	NRC	LMP	8/7/2015
CHECKED	REVISED		STRUCTURE FILE NUMBER
LMP			

STRUCTURE GENRAL NOTES

SUM-76-0313,SUM-76-0956, SUM-76-0966, SUM-76-1179L, SUM-76-1179R, SUM-76-1199, SUM-76-1230, SUM-76-1236, SUM-76-1246, SUM-76-1265, SUM-76-1273, SUM-1296, SUM-76-1303, SUM-76-1332, SUM-76-1407, SUM-76-1512, SUM-76-1518, SUM-76-1621 SUM-76-1631, SUM-76-1631, SUM-76-1648, SUM-76-1695, SUM-76-1774, & SUM-241-1172

SUM-76/241-VAR/11.72
PID No. 77876

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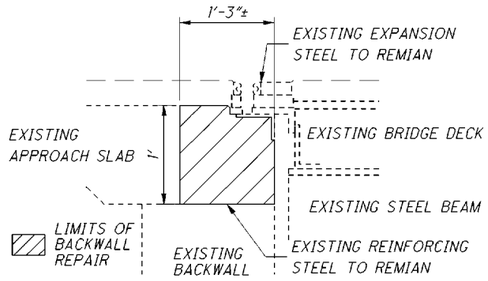
ITEM 511 - CONCRETE MISC.: BACKWALL REPAIR

THIS ITEM OF WORK CONSISTS OF THE REMOVAL OF ALL UNSOUND CONCRETE AT THE BACKWALLS OF STRUCTURES SUM-76-1407, SUM-76-1631 AND SUM-76-1648 TO THE LIMITS SHOWN BELOW OR AS DIRECTED BY THE ENGINEER, THE PREPARATION OF THE SURFACE FORMS, TEMPORARY SUPPORTS OF THE EXPANSION JOINT AND PROVIDING AND PLACING CLASS QCI CONCRETE SUBSTRUCTURE.

TEMPORARY SUPPORTS OF THE EXPANSION JOINT WILL BE USED TO MAINTAIN THE PROPER ALIGNMENT AND GRADE OF THE JOINT DURING REMOVAL AND REPLACEMENT OF BACKWALL CONCRETE. THE COST OF THIS TEMPORARY SUPPORT WILL BE INCIDENTAL TO THIS ITEM.

PAYMENT WILL BE MADE AT THE CONTRACT PRICE PER CU. YD. FOR ITEM 511 - CONCRETE MISC.: BACKWALL REPAIR WHICH WILL INCLUDE ALL MATERIALS AND LABOR INCLUDING REMOVAL AND DISPOSAL OF THE EXISTING CONCRETE REQUIRED TO MAKE THIS WORK COMPLETE.



ITEM 513 - STRUCTURAL STEEL, MISC.: REPLACEMENT OF DAMAGED CROSSFRAMES

THIS WORK CONSISTS OF REPLACING DAMAGED CROSSFRAMES THAT ARE BENT OF HAVE SECTION LOSS ON STRUCTURE SUM-76-1296 THIS ITEM WILL INCLUDE SUPPLYING NEW CROSSFRAMES AND WELDING THEM BACK TO THE ORIGINAL POSITIONS OF THE CROSSFRAMES THAT ARE BEING REPLACED. AFTER REMOVAL, ALL WELDS WILL BE GROUND SMOOTH IN PREPARATION OF WELDING THE NEW CROSSFRAMES IN PLACE. ALL CROSSFRAMES TO BE REPLACED WILL BE FIELD MEASURED TO VERIFY SIZE AND LENGHTS PRIOR TO ORDERING MATERIAL. THE NEW CROSSFRAMES WILL BE WELDED TO THE GIRDERS OR BEAMS ON BOTH SIDES OF THE VERTICAL LEG AND ON THE TOP SIDE OF THE HORIZONTAL LEG. THE ANGLE WILL BE WELDED USING A ¼" CONTINUOUS FILLET WELD. STEEL MEMBERS TO BE FABRICATED UNDER THIS ITEM WILL NOT REQUIRE SHOP DRAWINGS PRIOR TO FABRICATION. AISC CERTIFICATION IS NOT REQUIRED. THE CONTRACTOR WILL TAKE THE NECESSARY FIELD MEASUREMENTS TO VERIFY MEASUREMENTS BEFORE ORDERING MATERIALS. THE ENGINEER WILL HAVE THE AUTHORITY AND THE RESPONSIBILTY FOR ENSURING THAT THE STEEL IS ACCEPTABLE. AFTER FABRICATION THE PAY WEIGHTS SHALL BE COMPUTED IN COMPLIANCE WITH ITEM 513 OF THE CONSTRUCTION AND MATERIAL SPECIFICATIONS AND TO THE ENGINEER FOR REVIEW AND APPROVAL.

ALL LABOR, MATERIALS, EQUIPMENT, PAINT, AND INCIDENTALS NECESSARY TO COMPLETE THIS ITEM WILL BE INCLUDED FOR PAYMENT UNDER ITEM 513 - STRUCTURAL STEEL MISC.: REPLACEMENT OF DAMAGED CROSSFRAMES.

ITEM 514 - FIELD PAINTING, MISC.; REPAIR PAINTING

PAINTED AREAS THAT ARE DAMAGED OR RUSTED WILL BE DESIGNATED BY THE PROJECT ENGINEER. THE CMS 514.22 PROCESS WILL BE USED TO REPAIR THESE AREAS.

THE CONTRACTOR SHALL PROVIDE THE ENGINEER WITH ALL NECESSARY EQUIPMENT TO INSPECT THIS WORK.

THE MAJORITY OF THE AREAS TO BE REPAIR PAINTED ARE: EXPANSION JOINT PARAPET ARMOUR AT THE REAR LEFT AND FORWARD RIGHT CORNERS OF STRUCTURE SUM-76-1236. THE REAR RIGHT AND FORWARD LEFT CORNERS FOR STURCTURE SUM-76-1246. AREAS TO BE REPAIR PAINTED ARE NOT LIMITED TO THESE AREAS. THE AREAS DESIGNATED BY THE PROJECT ENGINEER WILL BE PAINTED.

STRUCTURE SUM-76-1236:
ITEM 514 - FIELD PAINTING, MISC.: REPAIR PAINTING 21 SF.

STRUCTURE SUM-76-1246:
ITEM 514 - FIELD PAINTING, MISC.: REPAIR PAINTING 21 SF.

SPECIAL - STRUCTURE MISC.: STRUCTURE CLEANING

THIS WORK WILL CONSIST OF CLEANING THE BEAMS/GIRDERS AND BEARINGS OF STRUCTURES SUM-76-1631 AND SUM-76-1648 AS PER CMS 514.14. ALSO, ALL DIRT AND DEBRIS FROM THE ABUTMENTS, BEAM SEATS, AND PIER CAPS WILL BE REMOVED AND WASHED WITH POTABLE WATER.

STRUCTURE CLEANING WILL BE PAID FOR AT THE LUMP SUM BID FOR SPECIAL, STRUCTURE MISC.: STRUCTURE CLEANING. THIS PRICE WILL INCLUDE THE COST FOR LABOR, EQUIPMENT, AND ALL INCIDENTALS REQUIRED TO COMPLETE THE WORK.

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

THIS WORK CONSISTS OF RAISING OR RE-POSITIONING EXISTING STRUCTURES TO THE DIMENSIONS AND REQUIREMENTS DEFINED IN THE PROJECT PLANS.

SUBMIT CONSTRUCTION PLANS IN ACCORDANCE WITH CMS 501.05.

IF, DURING THE JACKING OPERATIONS, CRACKING OF THE CONCRETE SUPERSTRUCTURE, SEPARATION OF THE CONCRETE DECK FROM THE STEEL STRINGERS, 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. EPOXY INJECT ALL BEAMS THAT SEPARATE FROM THE DECK FOR THE DISTANCE OF THE SEPARATION IN ACCORDANCE WITH CMS 512.07. THE DEPARTMENT WILL NOT PAY FOR THE COST OF THIS EPOXY INJECTION OR OTHER 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.

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.

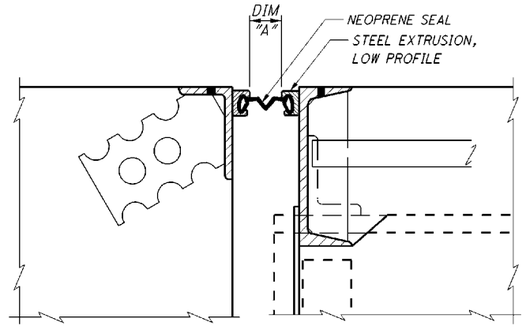
ITEM 516 - REFURBISHING BEARING DEVICES, AS PER PLAN

THIS ITEM SHALL INCLUDE ALL WORK NECESSARY TO PROPERLY ALIGN BRIDGE BEARINGS AS WELL AS THEIR CLEANING AND PAINTING. INCLUDED SHALL BE THE DISASSEMBLY OF THE BEARINGS, HAND TOOL CLEANING (GRINDING IF NECESSARY), PAINTING ACCORDING TO ITEM 514, REPLACEMENT OF ANY DAMAGED SHEET LEAD WITH PREFORMED BEARING PADS (711.21), INSTALLATION OF ANY NECESSARY STEEL SHIMS OF THE SAME SIZE AS THE BEARINGS TO PROVIDE A SNUG FIT, REALIGNMENT OF THE UPPER BEARING PLATE BY REMOVING EXISTING WELDS AND REWELDING SO THAT THE BEARINGS ARE VERTICALLY ALIGNED AT 60 DEGREES F, LUBRICATING SLIDING SURFACES, AND REASSEMBLY OF THE BEARINGS. ASSURE ALL BEARINGS ARE SHIMMED ADEQUATELY AND THAT NO BEAMS AND/OR BEARING DEVICES ARE "FLOATING". AT NO ADDITIONAL COST TO THE STATE, THE CONTRACTOR MAY INSTALL NEW BEARINGS OF THE SAME TYPE AS THE EXISTING IN PLACE OF REFURBISHING THE BEARINGS. 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 - REFURBISH BEARING DEVICES, AS PER PLAN.

ITEM 516 - ELASTOMERIC STRIP SEAL WITHOUT STEEL EXTRUSIONS, AS PER PLAN

THIS ITEM WILL INCLUDE THE REMOVAL AND REPLACEMENT OF THE EXISTING SEALS FROM EDGE TO EDGE OF STRUCTURES SUM-76-1236 AND SUM-76-1531 DECKS. UPON REMOVAL OF THE SEAL, THE CONTRACTOR WILL ATTEMPT TO MATCH THE REPLACEMENT SEAL AS CLOSELY AS POSSIBLE WITH THE EXISTING SEAL SO AS TO PROVIDE A SNUG, WATERTIGHT SEAL. THE EXISTING SEAL WILL BE FIELD MEASURE PRIOR TO ORDERING MATERIAL.

THIS WORK WILL BE PAID FOR AT THE UNIT PRICE BID FOR ITEM 516, ELASTOMERIC STRIP SEAL WITHOUT STEEL EXTRUSIONS, AS PER PLAN. THIS PRICE WILL INCLUDE THE REMOVAL OF THE EXISTING SEAL, LABOR, EQUIPMENT, MATERIAL, AND INCIDENTALS REQUIRED TO REPLACE THE SEAL.



DIMENSION A

TEMPERATURE, °F	SUM-76-1236	SUM-76-1531
30°	1.87"	2.69"
40°	1.79"	2.63"
50°	1.71"	2.63"
60°	1.63"	2.56"
70°	1.55"	2.5"
80°	1.47"	2.44"
90°	1.41"	2.38"

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.

DESIGN AGENCY
ODOT --- DISTRICT 4
PLANNING AND ENGINEERING

DESIGNED	DRAWN	REVIEWED	DATE
NRC	NRC	LMP	8/7/2015
CHECKED	REVISED	STRUCTURE FILE NUMBER	
LMP			

STRUCTURE GENRAL NOTES

SUM-76-0913,SUM-76-0956, SUM-76-0966, SUM-76-1179L, SUM-76-1179R, SUM-76-1199, SUM-76-1246, SUM-76-1407, SUM-76-1213, SUM-1296, SUM-76-1303, SUM-76-1332, SUM-76-1407, SUM-76-1265, SUM-76-1273, SUM-76-1531, SUM-76-1631, SUM-76-1648, SUM-76-1695, SUM-76-1774, & SUM-241-1172

SUM-76/241-
VAR/11.72
PID No. 77876

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SPECIAL - STRUCTURE MISC.: CONCRETE SPALL REMOVAL

THIS WORK WILL CONSIST OF REMOVING ALL VISIBLY SPALLED AREAS OF THE BOTTOM DECK FLOOR OF STRUCTURE(S) SUM-76-1230, SUM-76-1265, SUM-76-1273, SUM-76-1296, SUM-76-1303J, SUM-76-1332, SUM-76-1407, SUM-76-1518, SUM-76-1521 SUM-76-1531, SUM-76-1631, AND SUM-76-1648. WITHOUT SOUNDING. AFTER SPALLED CONCRETE AREAS HAVE BEEN REMOVED, REMOVAL AREAS WILL BE SEALED WITH ITEM 512, SEALING OF CONCRETE SURFACES (EPOXY-URETHANE).

CONCRETE SPALL REMOVAL WILL BE PAID FOR AT THE UNIT BID PRICE FOR SPECIAL - STRUCTURE MISC.: CONCRETE SPALL REMOVAL. THIS PRICE WILL INCLUDE THE COST OF LABOR, EQUIPMENT, AND ALL INCIDENTALS REQUIRED TO COMPLETE THIS WORK.

SPEC, STRUCTURE MISC.: CONCRETE SPALL REMOVAL, 50 SY
512, SEALING OF CONCRETE SURFACES (EPOXY-URETHANE), 50 SY

CORRECTING BRIDGE IDENTIFICATION SIGN NUMBERS:

SOME OF THE EXISTING BRIDGE NUMBER SIGNS HAVE INCORRECT BRIDGE NUMBERS ON THEM. THE FOLLOWING BRIDGE NUMBERS ARE THE CORRECT ONES AND WILL BE USED ON THE NEW BRIDGE IDENTIFICATIONS SIGNS.

STRUCTURE SUM-76-1236 (SFN: 7706251) THE EXISTING SIGN SHOWS 1235. THE CORRECT BRIDGE IDENTIFICATION NUMBER IS 1236.

STRUCTURE SUM-76-1518 (SFN: 77006650) THE EXISTING SIGN SHOWS 15.19. THE CORRECT BRIDGE IDENTIFICATION NUMBER IS 1518.

STRUCTURE SUM-76-1631 (SFN: 7706693) THE EXISTING SIGN SHOWS 16.31. THE CORRECT BRIDGE IDENTIFICATION NUMBER IS 1631.

STRUCTURE SUM-76-1695 (SFN: 7706758) THE EXISTING SIGN SHOWS 16.98. THE CORRECT BRIDGE IDENTIFICATION NUMBER IS 1695.

STRUCTURE IDENTIFICATION SIGNS

STRUCTURE IDENTIFICATION SIGNS (I-H25a) WILL BE PLACED ON EACH APPROACH OFF THE RIGHT SHOULDER, FACING TRAFFIC, AND BEHIND THE GUARDRAIL IF APPLICABLE. A QUANTITY OF ONE SIGN PER APPROACH WILL BE INSTALLED. THE SIGNS WILL HAVE A NON-REFLECTIVE WHITE SHEETING BACKGROUND.

THE SIGNS WILL BE MOUNTED ON NEW NO. 2 POSTS AND WILL BE INSTALLED AS PER STANDARD CONSTRUCTION DRAWING TC-41.20, MOST CURRENT REVISION. EACH POST WILL BE 7.5' IN LENGTH.

INSTALL SIGNS FOR THE FOLLOWING STRUCTURES:
SUM-76-1179L, SUM-76-1179R, SUM-76-1199, SUM-76-1230, SUM-76-1236, SUM-76-1246, SUM-76-1265, SUM-76-1273, SUM-76-1296, SUM-76-1303J, SUM-76-1332, SUM-76-1407, SUM-76-1512, SUM-76-1518, SUM-76-1521, SUM-76-1531, SUM-76-1631, SUM-76-1648, SUM-76-1695, SUM-76-1774 AND SUM-241-1172

THE FOLLOWING QUANTITIES HAVE BEEN INCLUDED FOR EACH APPROACH:
ITEM 630 - SIGN, FLAT SHEET, 730.20, 1 SQ FT
ITEM 630 - GROUND MOUNTED SUPPORT, NO. 2 POST, 7.5 FT
ITEM 630 - REMOVAL OF GROUND MOUNTED SIGN AND DISPOSAL, 1 EACH
ITEM 630 - REMOVAL OF GROUND MOUNTED POST SUPPORT AND DISPOSAL, 1 EACH

ITEM 848 - MICRO-SILICA MODIFIED CONCRETE OVERLAY USING HYDRODEMOLITION, AS PER PLAN
ITEM 848 - SURFACE PREPARATION USING HYDRODEMOLITION, AS PER PLAN
ITEM 848 - MICRO-SILICA MODIFIED CONCRETE OVERLAY (VARIABLE THICKNESS), MATERIAL ONLY, AS PER PLAN
ITEM 848 - FULL DEPTH REPAIR, AS PER PLAN

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

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

CONSTRUCTION JOINTS WILL NOT BE PERMITTED IN THE WHEEL LINE.

(SEE 848.12) THE COMPONENTS OF THE MICRO-SILICA MODIFIED CONCRETE SHALL BE PROPORTIONED AS FOLLOWS.

CONCRETE TABLE
QUANTITIES PER CUBIC YARD
AGGREGATES (SSD)

AGGREGATE TYPE	FINE AGGRE. (LB)	* # 8 COARSE AGGRE. (LB)	AGGRE. TOTAL (LB)	CEMENT CONTENT (LB)	MICRO-SILICA (LB)	WATER TO CEMENTITIOUS RATIO	AIR CONTENT ± 2%	**FIBER (1 1/4" POLYPROPYLENE) (LB)
GRAVEL	1410	1430	2840	600	50	0.4	8	1
LIMESTONE	1410	1450	2860	600	50	0.4	8	1
SLAG	1300	1350	2650	600	50	0.4	8	1

* ALL COARSE AGGREGATE SHALL HAVE AN ABSORPTION OF 1.00% OR GREATER AS DEFINED PER ASTM C127

** FIBER MESH SHALL BE 100% VIRGIN POLYPROPYLENE IN A FIBRILLATED-NETWORK FORM AND SHALL BE 1¼" IN LENGTH.

THE WEIGHTS SPECIFIED IN THE CONCRETE TABLE WERE CALCULATED FOR MATERIALS OF THE FOLLOWING BULK SPECIFIC GRAVITIES (SSD): NATURAL SAND AND GRAVEL 2.62, LIMESTONE SAND 2.68, LIMESTONE 2.65, SLAG 2.30, MICRO-SILICA SOLIDS 2.20, AND PORTLAND CEMENT 3.15. FOR AGGREGATES OF SPECIFIC GRAVITIES DIFFERING MORE THAN PLUS OR MINUS 0.02 FROM THESE, THE WEIGHTS IN THE TABLE WILL BE CORRECTED. FIBER MESH WEIGHTS NOT INCLUDED IN MIX DESIGN.

ALL COARSE AGGREGATE SHALL HAVE AN ABSORPTION OF 1.00% OR GREATER AS DEFINED BY ASTM C127

ALL OTHER REQUIREMENTS OF THE SUPPLEMENTAL SPECIFICATION SHALL REMAIN IN EFFECT.

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

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

(SEE 848.29) THE WET CURE TIME IS REDUCED FROM 72 HOURS TO 24 HOURS OR UNTIL A BEAM BREAK OF 600 PSI IS ACHIEVED, WHICHEVER IS GREATER. AFTER THE 24 HOUR WET CURE, THE FINISHED OVERLAY SURFACE SHALL BE CURED BY SPRAYING A UNIFORM APPLICATION OF CURING MATERIAL OF 705.07, TYPE 1 OR ID, AS PER CMS 511.14 METHOD (B) MEMBRANE CURING. IF THE CURING COMPOUND CAN NOT BE PLACED WITHIN THE SAME SHORT TERM CLOSURE PERIOD AS THE OVERLAY, THE CONTRACTOR MAY ALLOW TRAFFIC ONTO THE OVERLAY, AND SHALL, AT THE NEXT AVAILABLE SHORT TERM CLOSURE PERIOD, APPLY THE MEMBRANE CURING COMPOUND.

(SEE 848.29) TRAFFIC WILL NOT BE PERMITTED ON THE FINISHED OVERLAY SURFACE UNTIL AFTER THE COMPLETION OF THE 24 HOUR WET CURE, AND AFTER TWO TEST BEAMS HAVE ATTAINED AN AVERAGE MODULUS OF RUPTURE OF 600 PST (4.2 Mpa).

(SEE 848.30) THE OVERLAY SURFACE EVAPORATION RATE REQUIREMENTS ARE IN EFFECT FROM 9:30 AM TO 11:00 PM. THEY ARE NOT IN EFFECT FROM 11:00 PM TO 11:00 AM.

(SEE 848.31) FOR EACH PHASE, THE CONTRACTOR SHALL PROVIDE ENOUGH MATERIAL FOR TWO BEAM BREAKS EACH AT 12 HOURS, 24 HOURS, 36 HOURS, AND 48 HOURS. THE DEPARTMENT WILL PERFORM THE BEAM BREAK TESTS AND DOCUMENT THE TIME OF THE POUR, THE TIME OF THE BEAM BREAK TESTS, AND THE MODULUS OF RUPTURE FOR EACH BEAM UNTIL THE MODULUS OF RUPTURE OF THE TWO TESTS IS NOT LESS THAN 650 PSI (4.5 MPa). TRAFFIC IS ALLOWED ON THE OVERLAY AT 600 PSI (4.5 Mpa).

ALL OTHER REQUIREMENTS OF THE SUPPLEMENTAL SPECIFICATION SHALL REMAIN IN EFFECT.

ITEM SPECIAL - VANDAL PROTECTION FENCE 6' STRAIGHT, COATED FABRIC

PRIOR TO ORDERING MATERIALS THE CONTRACTOR SHALL LAYOUT THE POST LOCATIONS AND THE PROJECT ENGINEER SHALL APPROVE THE POST SPACING TO BE USED. THE POST SPACING SHALL BE AS PER STANDARD DRAWING VPF-1-90. THE FENCE SHALL NOT EXTEND PAST THE END OF THE DECK (ONTO THE APPROACH SLAB PARAPET). AFTER THE REMOVAL OF THE EXISTING VANDAL FENCE, ALL BOLT HOLES SHALL BE GROUTED AND NEW POST LOCATIONS SHALL BE A MINIMUM OF 1 FOOT FROM EXISTING POST LOCATIONS.

POST SECTION PS-4 AND BASE PLATE BP-5 SHALL BE USED.

DESIGN AGENCY
ODOT --- DISTRICT 4
PLANNING AND ENGINEERING
DESIGNED NRC
DRAWN NRC
REVIEWED LMP
DATE 8/7/2015
CHECKED LMP
REVISED
STRUCTURE FILE NUMBER
SUM-76/241-VAR/11.72
PID No. 77876

ITEM SPECIAL - PATCHING CONCRETE STRUCTURES, MISC.: VES-LMC (VERY EARLY STRENGHT LATEX MODIFIED CONCRETE)

DESCRIPTION:
THIS ITEM WILL CONSIST OF FURNISHING THE NECESSARY LABOR, MATERIALS, AND EQUIPMENT TO REPAIR CONCRETE BRIDGE DECKS, APPROACH SLABS AND TOPS OF THE BACKWALLS, INCLUDING THE REMOVAL OF LOOSE AND UNSOUND CONCRETE, BITUMINOUS PATCHES, SURFACE PREPARATION, BONDING COAT, AND THE MIXING, PLACING, FINISHING, CURING, COMPRESSIVE STRENGHT TESTING, AND SEALING OF ALL THE PATCHES AS DIRECTED BU THE ENGINEER.

RESTRICTIONS:
THE VES-LMC WILL NOT BE PLACED WHEN RAIN IS FORECAST WITHIN THE PERIOD OF TIME WHEN THE REPAIR WILL BE PERFORMED, INCLUDING PREPARATION, INSTALLATION OF THE PATCH AND CURING. IF RAIN OCCURS DURING THE PLACING OF THE MATERIAL, ALL OPERATIONS WILL CEASE. DURING DELAYS IN THE PATCH PLACEMENT OPERATIONS OF MORE THAN 10 MINUTES, THE WORK FACE OF THE PLACED PATCH MATERIAL AND ANY BONDING GROUTED AREAS WILL BE TEMPORARILY COVERED WITH WET BURLAP. IF AN EXCESSIVE DELAY IS ANTICIPATED, A BULKHEAD WILL BE INSTALLED AT THE WORK FACE AND THE PATCHING PLACEMENT OPERATION TERMINATED

THE VES-LMC PATCHING MATERIAL WILL BE PLACED ONLY WHEN THE LOCAL AMBIENT TEMPERATURE IS ABOVE 45ФF AND IS FORECAST TO REMAIN ABOVE 45ФF FOR THE CURING PERIOD. THE TEMPERATURE AT THE PATCH SURFACE WILL BE MAINTAINED ABOVE 35ФF UNTIL THE CURING PERIOD IS COMPLETE.

DO NOT BEGIN OPERATIONS IF EVAPORATION RATES ARE PREDICTED TO BE MORE THAN 0.1 POUND PER SQUARE FOOT PER HOUR AS DETERMINED ACCORDING TO CMS 511.10, FIGURE 1, ACI 308, WITHIN 12 HOURS OF COMMENCEMENT.

UNLESS OTHERWISE AUTHORIZED BY THE ENGINEER, PATCHES WILL NOT BE PLACED ADJACENT TO A PREVIOUS PATCH WHICH HAS CURED FOR LESS THAN 4 HOURS.

IF PLACEMENT OF PATCHES IS TO BE MADE AT NIGHT, THE CONTRACTOR WILL SUBMIT A PLAN WHICH PROVIDES ADEQUATE LIGHTING FOR WORK AREA. THE PLAN WILL BE SUBMITTED AT LEAST 15 CALENDAR DAYS IN ADVANCE AND BE APPROVED BY THE ENGINEER BEFORE CONCRETE IS PLACED. THE LIGHTS WILL BE DIRECTED SO THAT THEY DO NOT AFFECT OR DISTRACT APPROACHING TRAFFIC.

REMOVAL OF UNSOUND CONCRETE:
THE ENGINEER WILL SOUND THE WEARING SURFACE AND BACKWALL TOPS AND OUTLINE THE AREAS TO BE REMOVED. SOUNDING MAY HAVE TO BE DELAYED UNTIL THE DECK IS SUFFICENTLY DRY TO PERMIT DETECTION OF ALL AREAS OF DELAMINATION. BACKWALL REMOVAL AND DEPTH WILL BE AS DIRECTED THE ENGINEER AND WILL NOT GO BELOW THE EXISTING APPROACH SLAB SEAT. THE PERIMETER OF ALL REMOVAL AREAS WILL BE SAWED TO A DEPTH OF 2 INCHES TO PRODUCE A VERTICAL OR SLIGHTLY UNDERCUT FACE. ADDITIONAL SAW CUTS MAY BE REQUIRED TO FACILITATE REMOVAL. SAW CUTS WILL NOT EXTEND BEYOND THE LIMITS OF THE PATCH. COOLING WATER FROM WET SAWING AND DUST FROM DRY SAWING WILL NOT BE ALLOWED TO CONTAMINATE THE EXPOSED PATCH HOLES. ALL PATCHES OTHER THAN SOUND CONCRETE AND ALL OBIVOUSLY LOOSE AND DISINTEGRATED CONCRETE WILL BE REMOVED. THE UNSOUND CONCRETE MAY BE REMOVED BY CHIPPING, AND DRES- SING, OR HYDRODEMOLITION (AS PER SS848). THE REMOVAL OF AN UNSOUND EXISTING CONCRETE OVERLAY MAY BE PERFORMED AS PER SS847.17. CHIPPING HAMMERS WILL NOT BE HEAVIER THAN THE NORMAL 35-POUND CLASS AND WILL BE OPERATED AT AN ANGLE LESS THAN 45 DEGREES MEASURED FROM THE SURFACE OF THE DECK.

CONCRETE WILL BE REMOVED IN A MANNER THAT PREVENTS CUTTING, ELONGATING, OR DAMAGING REINFORCING STEEL, WHERE THE BOND BETWEEN THE CONCRETE AND PRIMARY REINFORCING BAR HAS BEEN DESTROYED, OR WHERE MORE THAN HALF OF THE PERIPHERY OF SUCH A BAR HAS BEEN EXPOSED, THE ADJACENT CONCRETE WILL BE REMOVED TO A DEPTH THAT WILL PROVIDE A MINIMUM 3#4 INCH CLEARANCE AROUND THE BAR EXCEPT WHERE OTHER REINFORCING BARS MAKE THIS IMPRACTICABLE, REINFORCEMENT WHICH HAS BECOME LOOSE WILL BE ADEQUATELY SUPPORTED AND TIED BACK INTO PLACE.

SURFACE PREPARATION:
CLEANING WILL CLOSELY PRECEDE APPLICATION OF THE BONDING GROUT OR THE PATCHING MATERIAL. THE SURFACE TO BE PATCHED AND THE EXPOSED REINFORCING STEEL WILL BE THOROUGHLY CLEANED WITHIN 24 HOURS PRIOR TO PATCHING BY ABRASIVE BLASTING FOLLOWED BY AN AIR BLAST. BLASTING ABRASIVES CONTAINING MORE THAN 1% FREE SILICA WILL NOT BE ALLOWED. IT MAY BE NECESSARY TO USE HAND TOOLS TO REMOVE SCALE FROM THE REINFORCING STEEL.

CONTAMINATION OF THE AREA TO BE PATCHED BY CONSTRUCTION EQUIPMENT OR FROM ANY OTHER SOURCE WILL BE PREVENTED BY PLACEMENT OF A CLEAN 4-MIL POLYETHYLENE SHEET (OR ANY OTHER COVERINGS AS APPROVED BY THE ENGINEER) ON THE SURFACE OF THE DECK FOLLOWING THE AIR BLAST CLEAINIG. WHERE REINFORCING STEEL IS EXPOSED, THE CONTRACTOR WILL PROVIDE ADEQUATE SUPPORT FOR THE CONCRETE MIXER SO THAT REINFORCING STEEL AND ITS BOND WITH THE CONCRETE WILL NOT BE DAMAGED BY THE WEIGHT AND MOVEMENT OF THE CONCRETE MIXER, OR WILL PROVIDE MEANS TO CONVEY CONCRETE FROM THE MIXER THE PATCH LOCATIONS.

MATERIALS:
MATERIALS WILL CONFORM TO THE FOLLOWING REQUIREMENTS:

FINE AGGREGATE (NATURAL SAND)	703.02	(NOTE 1)
COARSE AGGREGATE (NO. 8)	703.02	(NOTE 1)
RAPID HARDENING HYDRAULIC CEMENT		(NOTE 2)
WATER		499.02
LATEX EMULSION		SS953
CURING MATERIAL	705.05,OR 705.06,	WHITE OPAQUE
REPLACEMENT REINFORCING STEEL		709.00

POSSOLONIC MATERIAL OR PORTLAND POZZOLAN CEMENTS WILL NOT BE USED.

ANTI-FOAM ADDITIVES AS RECOMMENDED BY THE LATEX EMULSION MANUFACTURER MAY BE REQUIRED IF THE CONCRETE MIXTURE ENTRAINED AIR IS ABOVE THE SPECIFIED AMOUNT.

AIR-ENTRAINING ADMIXTURES WILL NOT BE USED

A SET CONTROL IN ACCORDANCE WITH THE CEMENT MANUFACTURER'S RECOMMENDATION MAY BE CONSIDERED.

ADMIXTURES CONTAINIG CALCIUM CHLORIDE WILL NOT BE USED.

(NOTE 1): DELETRIOUS MATERIAL WILL NOT EXCEED ONE HALF THE REQUIREMENTS FOR THE SUPERSTRUCTURE AGGREGATE, AND THE SODIUM SULFATE SOUNDNESS LOSS WILL NOT EXCEED THAT SPECIFIED FOR SUPERSTRUCTURE CONCRETE IN 703.02.

(NOTE 2): CEMENT WILL BE APPROXIMATELY 1#3 CALCIUM SULFOALUMINATE (C4A3S) AND 2#3 DICALCIUM SILICATE (CS2) OR OTHER HYDRAULIC CEMENT THAT WILL PROVIDE A LATEX MODIFIED CONCRETE THAT MEETS THE PHYSICAL REQUIREMENTS FOR VERY EARLY STRENGTH LATEX MODIFIED CONCRETE LISTED BELOW:

1.COMPRESSIVE STRENGHT, MINIMUM, CONCRETE ASTM C39:
- 3 HOURS: 2500 PSI
- 1 DAY: 3500 PSI
- 7 DASY: 5000 PSI

2. PRIOR TO PLACING PATCHES THE CONCRETE WILL DEMSTRATE THAT THE CONCRETE MIXTURE WILL OBTAIN A COMPRESSIVE STRENGHT OF AT LEAST 2500 PSI WITHIN THE CURING PERIOD AND AT THE CURING TEMPERATURES IN WHICH THE PATCHES WILL BE PLACED.

3.PERMEABILITY, MAXIMUM AT 28 DAYS, AASHTO T277: 1000 COULOMBS. PERMEABILITY SAMPLES WILL BE MOIST CURED 2 DAYS IN THE MOLDS (1 DAY AT THE JOB SITE AND 1 DAY IN THE LAB). AIR CURED 5 DAYS IN THE MOLDS IN THE LABORATORY, AND 21 DAYS OUT OF THE MOLDS AT 100ФF AIR TEMP.

4.BOND STRENGHT, MINIMUM AT 7 DAYS, ASTM C1583 USING TYPE 1, SELF-ALIGNMENT ADHESION TESTER PER ASTM D4541 = 150 PSI.

(NOTE 3): THE LATEX EMULSION WILL BE PROTECTED FROM FREEZING AND PROLONGED EXPOSURE TO TEMPERATURES IN EXCESS OF 85ФF. EMULSIONS IN STORAGE FACILITIES WILL BE RE-CIRCULATED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.

PROPORTIONING AND MIXING:
ALL MIXING OF MATERIALS WILL BE DONE ON SITE IN A CONTINUOUS MOBILE MIXER. PRIOR TO EACH DAY'S PLACEMENT, EACH MIXER WILL BE CHECKED TO ASSURE THAT SPECIFIED AIR CONTENT, SLUMP, AND YEILD HAE BEEN ATTAINED. TRIAL CONCRETE WILL NOT BE INCORPORATED INTO THE WORK. PROPORTIONING AND ALL OTHER REQUIRED CHARACTERISTICS OF THE MIX WILL BE ADJUSTED OFF THE DECK BEFORE PLACE- MENT OF THE PATCHES BEGIN.

THE MIXTURE WILL CONSIST OF A WORKABLE MIXTURE OF UNIFORM COMPOSITION AND CONSISTENCY WITH THE FOLLOWING QUANTITIES OF MATERIALS PER CUBIC YARD (DRY WEIGHT):

QUANTITIES OF MATERIALS PER CUBIC YARD (DRY WEIGHT):

TYPE OF COARSE AGGREGATE	FINE AGGREGATE (LB)	COARSE AGGREGATE (LB)	CEMENT (LB)	LATEX EMULSION (GAL)	MAX. NET WATER (GAL)
GRAVEL	1645	1300	658	24.5	17.5
LIMESTONE	1645	1315	658	24.5	17.5
SLAG	1645	1140	658	24.5	17.5

SLUMP: 4 TO 6 INCHES

AIR CONTENT OF PLASTIC MIX WILL NOT EXCEED 7 PERCENT

NOTE: THE SPECIFIC GRAVITY USED FOR DETERMINING THE ABOVE WEIGHTS ARE: NATURAL SAND 2.62, GRAVEL 2.62, LIMESTONE 2.65, AND SLAG 2.30.

NOTE: THE DRY WEIGHTS ARE APPROXIMATE. THIS PROPORTION SHOULD PRODUCE GOOD WORKABILITY, BUT DUE TO GRADATION VARIABILITY, THE FINE AGGREGATE CONTENT MAY BE INCREASED WITH APPROVAL BY THE ENGINEER, AS MUCH AS 8 PERCENT BY WEIGHT IF THE COARSE AGGREGATE IS REDUCED AN EQUAL VOLUME.

NOTE: THE SLUMP WILL NOT BE MEASURED UNTIL AFTER THE CONCRETE HAS BEEN DISCHARGED FROM THE MIXER AND LEFT UNDISTURBED FOR 4 TO 5 MINUTES. THE WATER CONTENT MAY BE ADJUSTED TO CONTROL THE SLUMP WITHIN THE PRESCRIBED LIMITS.

CONTINUOUS MOBILE MIXER:
REQUIREMENTS FOR CONTINUOUS MOBILE MIXERS FOR LATEX MODIFIED CONCRETE ARE AS FOLLOWS: THE PROPORTIONING AND MIXING EQUIPEMENT WILL BE AN INTEGRAL MOBILE UNIT HAVING CAPACITY AND CONTINUOUS MIXING CAPABILITY TO PERMIT THE FINISHING OPERATIONS TO PROCEED AT A CONSTANT RATE SO THAT THE FINAL FINISHING CAN BE COMPLETED PRIOR TO THE FORMATION OF A PLASTIC FILM ON THE VES-LMC SURFACE. IT WILL CONSISTENTLY PRODUCE UNIFORMLY BLENDED MIXTURE WITH THE SPECIFIED AIR CONTENT AND SLUMP LIMITS.

THE MIXER WILL ALSO:
- -BE CAPABLE OF PRODUCING NOT LESS THAN 6 CUBIC YARDS OF VES-LMC WITHOUT RECHARGING
- -BE EQUIPED WITH A RECORDING METR WITH A TICKET PRINTOUT DEVICE TO RECORD AN INDICATION OF THE CEMENT QUANTITY BEING INTRODUCED INTO THE MIX. THE METERING DEVICE WILL BE ACCURATE WITHIN A TOLERANCE OF -1 TO +3 PERCENT.
- -BE EQUIPED WITH A LATEX METERING DEVICE TO INDICATE VOLUME DISPENSED. THE METERING DEVICE WILL BE ACCURATE TO WITHIN A TOLERANCE OF -1 TO +2 PERCENT. IN ADDITION THE LATEX TANK WILL HAVE A STAND PIPE MARKED GALLONS.
- -BE EQUIPPED WITH A WATER FLOW INDICATOR AND HAVE A WATER FLOW CONTROL THAT IS READILY ADJUSTABLE TO PROVIDE FOR MINOR VARIATIONS IN AGGREGATE MOIS- TURE CONTENT. THE FLOW INDICATOR WILL BE ACCURATE WITHIN A TOLERANCE OF +1 PERCENT IN THE RANGE OF EXPECTED USE.
- -BE EQUIPPED WITH A CONTROL TO REGULATE THE QUANTITY OF EACH OF THE VES-LMC COMPONENTS TO PERMIT THE PRODUCTION OF THE MIX HAVING THE SPECIFIED COMPOSITION. TO ENSURE THAT THE MIXER CAN ACCURATELY PROPORTION AND BLEND ALL COMPONENTS OF THE VES-LMC ON A CONTINUOS OR INTERMITTENT BASIS. THE MIXER WILL BE CALIBRATED PRIOR TO THE PRODUCTION OF THE MATERIAL.
- -THE ENGINEER MAY REQUIRE RE-CALIBRATION OF THE CEMENT, LATEX AND WATER METERING DEVICES AS HE DEEMS NECESSARY.
- -BE CAPABLE OF DISCHARGING MIXED VES-LMC THROUGH A CONVENTIONAL CHUTE DIRECTLY IN FRONT OF THE FINISHING MACHINE.
- -BE KEPT CLEAN, FREE OF PARTIALLY DRIED OR HARDENED MATERIALS, AND PROPERLY OPERATED AT ALL TIMES.

PLACING, CONSOLIDATING AND FINISHING:
IMMEDIATELY PRIOR TO PLACING THE PATCHES, CLEAN AND WET ALL EXPOSED CONCRETE SURFACES.

CONTINUOUSLY FOG THE VES-LMC MATERIAL FROM THE TIME OF PLACING UNTIL COVERED WITH WET BURLAP. APPLY THE FOG UNIFORMLY OVER THE ENTIRE SURFACE OF THE PATCH AREA WITHOUT PRODUCING STANDING WATER.

SCREEDING:
THE PATCHING MATERIAL WILL BE PLACED, CONSOLIDATED, AND FINISHED TO THE ADJACENT GRADE. PATCHES EXCEEDING 50 SQ FT (4.6 SQ M) WILL BE LEVELED AND CONSOLIDATED WITH A MECHANICAL VIBRATING SCREED. SMALLER PATCHES WILL BE HAND VIBRATED AND LEVELED WITH A STRAIGHTEDGE. THE SCREED WILL BE PLACED PARALLEL TO THE BRIDGE CENTERLINE SO THAT THE DECK PROFILE REMAINS CONSISTENT WITH THE WORN SURFACE.

DO NOT ADD WATER TO AID THE FINISHING AND AN EVAPORATION RETARDANT MAY NOT BE USED.

AFTER THE PATCHES HAVE BEEN CONSOLIDATED AND FINISHED THEY WILL BE TEXTURED IN ACCORDANCE WITH 451.09.

THE CONCTRACTOR WILL TEST THE SURFACE OF THE PLASTIC CONCRETE FOR TRUENESS AND FOR BEING FLUSH WITH THE EDGES OF THE ADJACENT SURFACES BY USE OF A STRAIHTEDGE. THE STRAIGHTEDGE WILL BE DONE BY PLACING THE STRAIGHTEDGE PARALLEL TO THE BRIDGE CENTERLINE WITH THE ENDS RESTING ON THE EXISTING WEARING SURFACE ADJACENT TO THE PATCH AND DRAWING THE STRAIGHTEDGE ACROSS THE PATCH. ANY HIGH OR LOW AREAS EXCEEDING 1*8 INCH IN 10 FEET (3 MM IN 3 M) WILL BE CORRECTED. IF ANY CORRECTIONS ARE MADE, THE SURFACE WILL BE RECHECKED.

CURING:
COVER THE FINISHED PATCHED SURFACES WITH A SINGLE LAYER OF CLEAN WET BURLAP AND COVER THE BURLAP WITH A 4-MIL WHITE OPAQUE POLYETHYLENE FILM FOR A MINIMUM OF 4 HOURS FOLLOWED BY A MEMBRANE CURE PER 511.17 METHOD (B).

ADEQUATE PRECAUTIONS WILL BE TAKEN TO PROTECT THE FRESHLY PLACED VES-LMC FROM RAIN.

THE CONTRACTOR WILL SUPPLY A PROPERLY CALIBRATED IMPACT REBOUND HAMMER TO VERIFY THAT THE PATCHES HAVE REACHED 3000 PSI COMPRESSIVE STRENGTH PRIOR TO OPENING TO TRAFFIC.

INSPECTION AND SOUNDING OF CONCRETE PATCHES:
AFTER CURING AND BEFORE FINAL ACCEPTANCE, ALL PATCHED AREAS WILL BE SOUNDED. ALL DELAMINATED AREAS WILL BE REMOVED AND REPATCHED ACCORDING TO THIS NOTE. ALL PATCHES WHICH ARE SOUND BUT SHOW SIGNS OF CRACKING WILL BE SEALED AND THE PERIMETER OF ALL PATCHES WILL ALSON BE SEALED WITH GRAVITY FED RESIN.

ALL SOUNDING AND REPLACEMENT OF REJECTED AREAS WILL BE THE RESPONSIBILITY OF THE CONCTRACTOR AND INCLUDED IN THE UNIT BID PRICE FOR THIS ITEM.

METHOD OF MEASUREMENT:
PAYMENT WILL BE MADE AT THE CONTRACTOR PRICE PER CUBIC YARD FOR ITEM SPECIAL - PATCHING CONCRETE STRUCTURES, MISC.: VES-LMC (VERY EARLY STRENGHT LATEX MODIFIED CONCRETE) WHICH WILL INCLUDE ALL MATERIALS AND LABOR REQUIRED TO PERFORM THIS WORK INCLUDING REMOVAL AND DISPOSAL OF THE EXISTING MATERIAL.

ITEM SPECIAL - PATCHING CONCRETE STRUCTURES, MISC.: TRIAL BATCH FOR VES-LMC (VERY EARLY STRENGTH LATEX MODIFIED CONCRETE)

MAKE ONE OR MORE, ON CUBIC YARD, TRIAL BATCHES OF THE VES-LMC MATERIAL AT LEAST 14 DAYS PRIOR TO THE MATERIAL BEING PLACED. DEMONSTRATE THE ABILITY TO ACHIEVE THE REQUIREMENTS OF THE MATERIAL AS PER THE PLAN NOTE.

PAYMENT WILL BE MADE AT THE LUMP SUM CONTRACT PRICE FOR ITEM SPECIAL - PATCHING CONCRETE STRUCTURES, MISC.: TRIAL BATCH FOR VES-LMC (VERY EARLY STRENGTH LATEX MODIFIED CONCRETE) WHICH WILL INCLUDE ALL MATERIALS AND LABOR REQUIRED TO PERFORM THIS WORK.

DESIGN AGENCY
ODOT --- DISTRICT 4
PLANNING AND ENGINEERING

DESIGNED	DRAWN	REVIEWED	DATE
NRC	NRC	LMP	8/7/2015
CHECKED	REVISED	STRUCTURE FILE NUMBER	
LMP			

STRUCTURE GENRAL NOTES

SUM-76-0915,SUM-76-0956, SUM-76-0966, SUM-76-1179L, SUM-76-1179R, SUM-76-1199, SUM-76-1230, SUM-76-1235, SUM-76-1246, SUM-76-1285, SUM-76-1273, SUM-1296, SUM-76-1303, SUM-76-1332, SUM-76-1407, SUM-76-1512, SUM-76-1518, SUM-76-1621 SUM-76-1631, SUM-76-1631, SUM-76-1648, SUM-76-1695, SUM-76-1774, & SUM-241-1172

SUM-76/241-VAR/11.72
PID No. 77876

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CALC:	NRC	DATE:	6/1/2015
CHECKED:	LMP	DATE:	8/10/2015

ESTIMATED QUANTITIES

BRIDGE NO. / STRUCTURE FILE NO.												ITEM	EXTENSION	UNIT	DESCRIPTION	SEE SHEET
SUM-76-0914 7703481 03/IMS/BR	SUM-76-0956 7703457 03/IMS/BR	SUM-76-0966 7703392 03/IMS/BR	SUM-76-1179L 7706154 03/IMS/BR	SUM-76-1179R 7706189 03/IMS/BR	SUM-76-1199 7706219 03/IMS/BR	SUM-76-1230 7706243 02/BRO/BR	SUM-76-1236 7706251 03/IMS/BR	SUM-76-1246 7706286 03/IMS/BR	SUM-76-1265 7706308 03/IMS/BR	SUM-76-1273 7706332 03/IMS/BR	SUM-76-1296 7706367 03/IMS/BR					
			LUMP	LUMP	LUMP	LUMP	LUMP	LUMP	LUMP	LUMP	LUMP	201	11000		CLEARING AND GRUBBING	
LUMP	LUMP	LUMP										202	11201		PORTIONS OF STRUCTURE REMOVED, AS PER PLAN	2/16
									10			203	40000	CY	BORROW	
7870	9591	6240										509	10001	LB	EPOXY COATED REINFORCING STEEL, AS PER PLAN	2/16
400	500	300	50	50								509	20001	LB	REINFORCING STEEL, REPLACEMENT OF EXISTING REINFORCING STEEL, AS PER PLAN	2/16
552	674	440										510	10000	EACH	DOWEL HOLES WITH NONSHRINK, NONMETALLIC GROUT	
			10	10								511	81100	FT	CONCRETE, MISC.: PARAPET REPAIR	2/16
			25	25	110	84	20	50	80	120	90	512	10100	SY	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)	3/16
						2113				7110	2112	512	10400	SY	TREATING OF CONCRETE BRIDGE DECK WITH SRS	
					110							512	74000	SY	REMOVAL OF EXISTING COATINGS FROM CONCRETE SURFACES	
											4	513	95030	EACH	STRUCTURAL STEEL, MISC.: REPLACEMENT OF DAMAGED CROSSFRAMES	3/16
							21	21				514	27700	SF	FIELD PAINTING, MISC.: REPAIR PAINTING	3/16
							150					516	01301	FT	ELASTOMERIC STRIP SEAL WITHOUT STEEL EXTRUSIONS, AS PER PLAN	3/16
			150	150	250	200	100	200	150	350	200	519	11101	SF	PATCHING CONCRETE STRUCTURE, AS PER PLAN	3/16
36	44	28										SPEC	51911900	CY	PATCHING CONCRETE STRUCTURE, MISC.: VES-LMC (VERY EARLY STRENGHT LATEX MODIFIED CONCRETE)	5/16
						22				36	32	SPEC	51912304	SY	PATCHING CONCRETE BRIDGE DECK - TYPE C	
LUMP	LUMP	LUMP										SPEC	51960000		PATCHING CONCRETE STRUCTURE, MISC.: TRIAL BATCH FOR VES-LMC (VERY EARLY STRENGTH LATEX MODIFIED CONCRETE)	6/16
						50			50	50	50	SPEC	53000800	SY	STRUCTURE, MISC.: CONCRETE SPALL REMOVAL	4/16
									10			601	26000	CY	DUMPED ROCK FILL, TYPE B	
			7.5	7.5	15	15	7.5	7.5	15	15	15	630	02100	FT	GROUND MOUNTED SUPPORT, NO. 2 POST	
			1	1	2	2	1	1	2	2	2	630	80100	SF	SIGN, FLAT SHEET, 730.20	
				1		2		1	2	1		630	84900	EACH	REMOVAL OF GROUND MOUNTED SIGN AND DISPOSAL	
				1		1		1	1			630	86002	EACH	REMOVAL OF GROUND MOUNTED POST SUPPORT AND DISPOSAL	
			75	75	150	100	50	100	100	250	150	843	50000	SF	PATCHING CONCRETE STRUCTURES WITH TROWELABLE MORTAR	
			538	670				448	1836	7090		848	10001	SY	MICRO SILICA MODIFIED CONCRETE OVERLAY USING HYDRODEMOLITION, AS PER PLAN (T=1 1/2")	4/16
			538	670				448	1836	7090		848	20001	SY	SURFACE PREPARATION USING HYDRO DEMOLITION, AS PER PLAN	4/16
			45	56				38	153	591		848	30001	CY	MICRO SILICA MODIFIED CONCRETE OVERLAY (VARIABLE THICKNESS), MATERIAL ONLY, AS PER PLAN	4/16
			17	21				14	56	213		848	50000	SY	HAND CHIPPING	
			LUMP	LUMP				LUMP	LUMP	LUMP		848	50100		TEST SLAB	
			1	1				1	1	1		848	50201	CY	FULL DEPTH REPAIR, AS PER PLAN	4/16

DESIGN AGENCY
ODOT --- DISTRICT 4
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DESIGNED	DRAWN	REVIEWED	DATE
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LMP			

STRUCTURE ESTIMATED QUANTITIES
SUM-76-0913, SUM-76-0956, SUM-76-0966, SUM-76-1179L, SUM-76-1179R, SUM-76-1199, SUM-76-1230, SUM-76-1246, SUM-76-1265, SUM-76-1273, & SUM-76-1296

SUM-76/241-VAR/11.72
PID No. 77876

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80 / 103

CALC:	NRC	DATE:	12/1/2015
CHECKED:	TJP	DATE:	12/2/2015

ESTIMATED QUANTITIES

BRIDGE NO. / STRUCTURE FILE NO.								ITEM	EXTENSION	UNIT	DESCRIPTION	SEE SHEET
SUM-76-1035 7703309 02/BRO/BR	SUM-76-1041 7703155 03/IMS/BR											
LUMP	LUMP							202	11201		PORTIONS OF STRUCTURE REMOVED, AS PER PLAN	2/16
7657	9591							509	10001	LB	EPOXY COATED REINFORCING STEEL, AS PER PLAN	2/16
400	500							509	20001	LB	REINFORCING STEEL, REPLACEMENT OF EXISTING REINFORCING STEEL, AS PER PLAN	2/16
560	728							510	10000	EACH	DOWEL HOLES WITH NONSHRINK, NONMETALLIC GROUT	
43	53							SPEC	51911900	CY	PATCHING CONCRETE STRUCTURE, MISC.: VES-LMC (VERY EARLY STRENGTH LATEX MODIFIED CONCRETE	5/16
LUMP	LUMP							SPEC	51960000		PATCHING CONCRETE STRUCTURE, MISC.: TRIAL BATCH FOR VES-LMC (VERY EARLY STRENGTH LATEX MODIFIED CONCRETE)	6/16

DESIGN AGENCY
ODOT --- DISTRICT 4
PLANNING AND ENGINEERING

DESIGNED	DRAWN	REVIEWED	DATE
NRC	NRC	TJP	12/2/2015
CHECKED	REVISED	STRUCTURE FILE NUMBER	
LMP			

STRUCTURE ESTIMATED QUANTITIES
SUM-76-1035 & SUM-76-1041

SUM-76/241-
VAR/11.72
PID No. 77876

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CALC:	NRC	DATE:	6/1/2015
CHECKED:	LMP	DATE:	8/10/2015

ESTIMATED QUANTITIES

BRIDGE NO. / STRUCTURE FILE NO.												ITEM	EXTENSION	UNIT	DESCRIPTION	SEE SHEET
SUM-76-1303J 7706383 03/IMS/BR	SUM-76-1332 7706421 03/IMS/BR	SUM-76-1407 7706480 02/BRO/BR	SUM-76-1512 7706545 03/IMS/BR	SUM-76-1518 7706650 03/IMS/BR	SUM-76-1521 7706634 03/IMS/BR	SUM-76-1531 7706669 03/IMS/BR	SUM-76-1631 7706693 03/IMS/BR	SUM-76-1648 7706723 03/IMS/BR	SUM-76-1695 7706758 03/IMS/BR	SUM-76-1774 7706812 03/IMS/BR	SUM-241-1172 7709315 04/NHS/BR					
LUMP	LUMP	LUMP	LUMP	LUMP	LUMP	LUMP	LUMP	LUMP	LUMP	LUMP	LUMP	201	11000		CLEARING AND GRUBBING	
							520					202	75260	FT	VANDAL PROTECTION FENCE REMOVED	
			20									202	98200	FT	REMOVAL MISC.: CHANNEL CLEANOUT	2/16
						3				10		203	40000	CY	BORROW	
		100					50	50				509	20001	LB	REINFORCING STEEL, REPLACEMENT OF EXISTING REINFORCING STEEL, AS PER PLAN	2/16
		29					4	4				511	71100	CY	CONCRETE, MISC.: BACKWALL REPAIR	3/16
		50										511	81100	FT	CONCRETE, MISC.: PARAPET REPAIR	2/16
90	84	100		75	84	45	95	84	526	532	353	512	10100	SY	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)	3/16
	876	3218			3478	4182	1160	1738	3002	3100		512	10400	SY	TREATING OF CONCRETE BRIDGE DECK WITH SRS	
									526	532		512	74000	SY	REMOVAL OF EXISTING COATINGS FROM CONCRETE SURFACES	
						433						516	01301	FT	ELASTOMERIC STRIP SEAL WITHOUT STEEL EXTRUSIONS, AS PER PLAN	3/16
							21	10				516	46801	EACH	REFURBISH AND RESET BEARING, AS PER PLAN	3/16
							LUMP	LUMP				516	47001		JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE, AS PER PLAN	3/16
200	200	200		150	200	250	250	200			200	519	11101	SF	PATCHING CONCRETE STRUCTURE, AS PER PLAN	3/16
	9	33			35	42	12	18				SPEC	51912304	SY	PATCHING CONCRETE BRIDGE DECK - TYPE C	
							LUMP	LUMP				SPEC	53000200		STRUCTURE, MISC.: STRUCTURE CLEANING	3/16
50	50	50		50	50		50	50				SPEC	53000800	SY	STRUCTURE, MISC.: CONCRETE SPALL REMOVAL	4/16
						10				10		601	20010	CY	CRUSHED AGGREGATE SLOPE PROTECTION	
												601	26000	CY	DUMPED ROCK FILL, TYPE B	
7.5	15	15		7.5	15	15	15	15	15	15	15	630	02100	FT	GROUND MOUNTED SUPPORT, NO. 2 POST	
1	2	2		1	2	2	2	2	2	2	2	630	80100	SF	SIGN, FLAT SHEET, 730.20	
1	1	2		1	1	2	2		2	2	2	630	84900	EACH	REMOVAL OF GROUND MOUNTED SIGN AND DISPOSAL	
		2		1	1	2			2	2	2	630	86002	EACH	REMOVAL OF GROUND MOUNTED POST SUPPORT AND DISPOSAL	
150	100	100		50	100	150	150	100			100	843	50000	SF	PATCHING CONCRETE STRUCTURES WITH TROWELABLE MORTAR	
511	864			873								848	10001	SY	MICRO SILICA MODIFIED CONCRETE OVERLAY USING HYDRODEMOLITION, AS PER PLAN (T=1 1/2")	4/16
511	864			873								848	20001	SY	SURFACE PREPARATION USING HYDRO DEMOLITION, AS PER PLAN	4/16
43	73			73								848	30001	CY	MICRO SILICA MODIFIED CONCRETE OVERLAY (VARIABLE THICKNESS), MATERIAL ONLY, AS PER PLAN	4/16
16	26			27								848	50000	SY	HAND CHIPPING	
LUMP	LUMP			LUMP								848	50100		TEST SLAB	
1	1			1								848	50201	CY	FULL DEPTH REPAIR, AS PER PLAN	4/16

DESIGN AGENCY
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DESIGNED	DRAWN	REVIEWED	DATE
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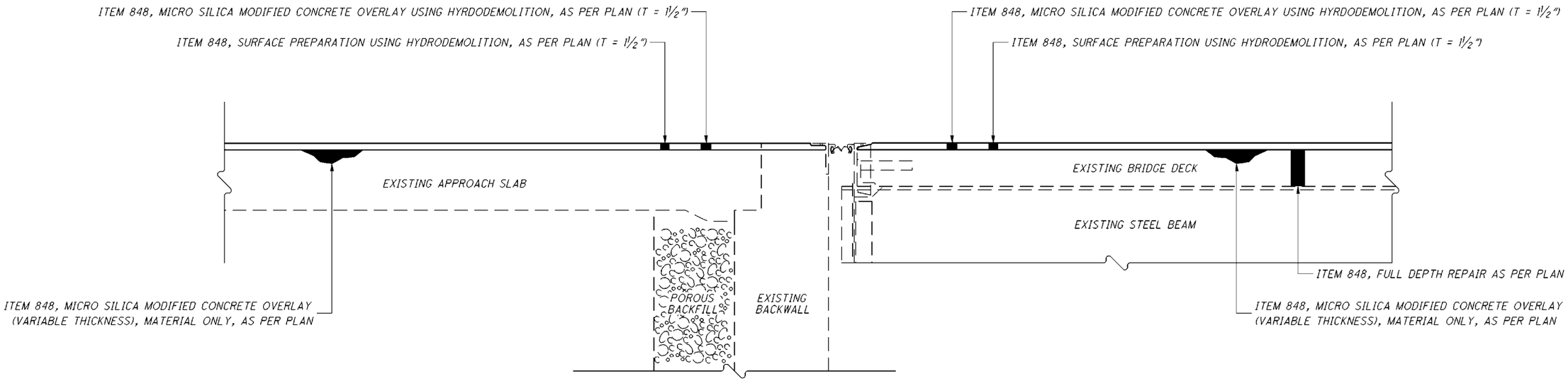
LMP			

STRUCTURE ESTIMATED QUANTITIES
SUM-76-1303J, SUM-76-1332, SUM-76-1407, SUM-76-1512, SUM-76-1518, SUM-76-1521, SUM-76-1531, SUM-76-1631, SUM-76-1648, SUM-76-1695, SUM-76-1774, & SUM-241-1172

SUM-76/241-
VAR/11.72
PID No. 77876



SUM-76-1179L, SUM-76-1179R, SUM-76-1246, SUM-76-1265 SUM-76-1273, SUM-76-1303J, SUM-76-1332, & SUM-76-1518

APPROACH SHOWN, TRAILING SIMILAR

BRIDGE NUMBER	BRIDGE DECK												APPROACH SLABS												
	LENGTH (BRIDGE LIMITS)	BRIDGE WIDTH	DECK AREA	848 MICRO SILICA MODIFIED CONCRETE OVERLAY USING HYDRODEMOLITION, AS PER PLAN (T=1.5")	848 SURFACE PREPARATION USING HYDRO DEMOLITION, AS PER PLAN (T=1.5")	848 MICRO SILICA MODIFIED CONCRETE OVERLAY (VARIABLE THICKNESS), MATERIAL ONLY, AS PER PLAN	848 HAND CHIPPING	848 TEST SLAB	848 FULL DEPTH REPAIR, AS PER PLAN				LENGTH (APPROACH SLABS)	APPROACH SLAB WIDTH	APPROACH SLAB AREA	APPROACH (FORWARD / REAR)	848 MICRO SILICA MODIFIED CONCRETE OVERLAY USING HYDRODEMOLITION, AS PER PLAN (T=1.5")	848 SURFACE PREPARATION USING HYDRO DEMOLITION, AS PER PLAN (T=1.5")	848 MICRO SILICA MODIFIED CONCRETE OVERLAY (VARIABLE THICKNESS), MATERIAL ONLY, AS PER PLAN	848 HAND CHIPPING					
	FT	FT	SQ YD	SY	SY	CY	SY	LUMP	CY				FT	FT	SQ YD		SY	SY	CY	SY					
SUM-76-1179L	58.00	55.00	354.44	354.44	354.44	29.54	10.63	LUMP	1.00				15.00	55.00	91.67	FWD	91.67	91.67	7.64	2.75					
													15.00	55.00	91.67	REAR	91.67	91.67	7.64	2.75					
SUM-76-1179R	62.00	65.50	451.22	451.22	451.22	37.60	13.54	LUMP	1.00				15.00	65.50	109.17	FWD	109.17	109.17	9.10	3.28					
													15.00	65.50	109.17	REAR	109.17	109.17	9.10	3.28					
SUM-76-1246	104.00	28.00	323.56	323.56	323.56	26.96	9.71	LUMP	1.00				20.00	28.00	62.22	FWD	62.22	62.22	5.19	1.87					
													20.00	28.00	62.22	REAR	62.22	62.22	5.19	1.87					
SUM-76-1265	68.00	140.00	1057.78	1057.78	1057.78	88.15	31.73	LUMP	1.00				25.00	140.00	388.89	FWD	388.89	388.89	32.41	11.67					
													25.00	140.00	388.89	REAR	388.89	388.89	32.41	11.67					
SUM-76-1273	814.00	73.00	6602.44	6602.44	6602.44	550.20	198.07	LUMP	1.00				30.00	73.00	243.33	FWD	243.33	243.33	20.28	7.30					
(WESTBOUND ONLY)													30.00	73.00	243.33	REAR	243.33	243.33	20.28	7.30					
SUM-76-1303J	104.00	28.00	323.56	323.56	323.56	26.96	9.71	LUMP	1.00				30.00	28.00	93.33	FWD	93.33	93.33	7.78	2.80					
													30.00	28.00	93.33	REAR	93.33	93.33	7.78	2.80					
SUM-76-1332	58.00	72.00	464.00	464.00	464.00	38.67	13.92	LUMP	1.00				25.00	72.00	200.00	FWD	200.00	200.00	16.67	6.00					
(WESTBOUND ONLY)													25.00	72.00	200.00	REAR	200.00	200.00	16.67	6.00					
SUM-76-1518	230.50	28.00	717.11	717.11	717.11	59.76	21.51	LUMP	1.00				25.00	28.00	77.78	FWD	77.78	77.78	6.48	2.33					
													25.00	28.00	77.78	REAR	77.78	77.78	6.48	2.33					
			TOTALS	10295	10295	858	309	0	8	0	0	0				TOTALS	2533	2533	212	76	0	0	0	0	0

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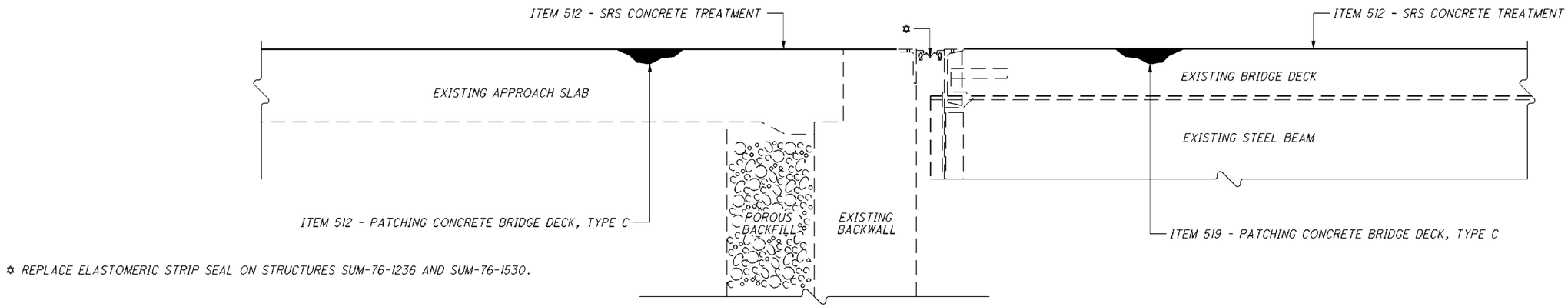
CHECKED	REVISED	STRUCTURE FILE NUMBER	

STRUCTURE DETAILS

SUM-76-1179L, SUM-76-1179R, SUM-76-1246, SUM-76-1265, SUM-76-1273, SUM-76-1303, SUM-76-1332, & SUM-76-1518

SUM-76/241-VAR/11.72
PID No. 77876



✡ REPLACE ELASTOMERIC STRIP SEAL ON STRUCTURES SUM-76-1236 AND SUM-76-1530.

SUM-76-1230, SUM-76-1273, SUM-76-1296, SUM-76-1407, SUM-76-1521, SUM-76-1531, SUM-76-1631, SUM-76-1648, SUM-76-1695, & SUM-76-1774

BRIDGE NUMBER	BRIDGE DECK												APPROACH SLABS												
				512	SPEC		516										512	SPEC							
	LENGTH (BRIDGE LIMITS)	BRIDGE WIDTH	DECK AREA	TREATING OF CONCRETE BRIDGE DECK WITH SRS	PATCHING CONCRETE BRIDGE DECK - TYPE C		ELASTOMERIC STRIP SEAL WITHOUT STEEL EXTRUSIONS, AS PER PLAN						LENGTH (APPROACH SLABS)	APPROACH SLAB WIDTH	APPROACH SLAB AREA	APPROACH (FORWARD / REAR)	TREATING OF CONCRETE BRIDGE DECK WITH SRS	PATCHING CONCRETE BRIDGE DECK - TYPE C							
	FT	FT	SQ YD	SY	SY		FT						FT	FT	SQ YD		SY	SY							
SUM-76-1230	80.00	146.25	1300.00	1300.00	13.00		292.50						25.00	146.25	406.25	FWD	406.25	4.06							
													25.00	146.25	406.25	REAR	406.25	4.06							
SUM-76-1273	814.00	72.00	6512.00	6512.00	32.56								27.50	117.00	357.50	FWD	357.50	1.79							
(EASTBOUND ONY)													30.00	72.00	240.00	REAR	240.00	1.20							
SUM-76-1296	73.00	154.50	1253.17	1253.17	18.80								25.00	154.50	429.17	FWD	429.17	6.44							
													25.00	154.50	429.17	REAR	429.17	6.44							
SUM-76-1332	58.00	73.00	470.44	470.44	4.70								25.00	73.00	202.78	FWD	202.78	2.03							
(EASTBOUND ONY)													25.00	73.00	202.78	REAR	202.78	2.03							
SUM-76-1407	168.00	127.00	2370.67	2370.67	23.71								30.00	127.00	423.33	FWD	423.33	4.23							
													30.00	127.00	423.33	REAR	423.33	4.23							
SUM-76-1518	208.00	119.00	2750.22	2750.22	27.50								25.00	119.00	330.56	FWD	330.56	3.31							
													30.00	119.00	396.67	REAR	396.67	3.97							
SUM-76-1531	286.00	112.00	3559.11	3559.11	35.59		224.00						25.00	112.00	311.11	FWD	311.11	3.11							
													25.00	112.00	311.11	REAR	311.11	3.11							
SUM-76-1631	267.00	34.00	1008.67	1008.67	10.09								20.00	34.00	75.56	FWD	75.56	0.76							
													20.00	34.00	75.56	REAR	75.56	0.76							
SUM-76-1648	400.00	34.00	1511.11	1511.11	15.11								30.00	34.00	113.33	FWD	113.33	1.13							
													30.00	34.00	113.33	REAR	113.33	1.13							
SUM-76-1695	173.00	120.00	2306.67	2306.67									25.00	125.00	347.22	FWD	347.22								
													25.00	125.00	347.22	REAR	347.22								
SUM-76-1773	175.00	124.00	2411.11	2411.11									25.00	124.00	344.44	FWD	344.44								
													25.00	124.00	344.44	REAR	344.44								
			TOTALS	25454	182	0	517	0	0	0	0	0				TOTALS	6632	54	0	0	0	0	0	0	0

BRIDGE OVERLAY CALULATIONS

DESIGN AGENCY
ODOT --- DISTRICT 4
PLANNING AND ENGINEERING

DESIGNED	DRAWN	REVIEWED	DATE
NRC	NRC	LMP	8/7/2015
CHECKED	REVISED	STRUCTURE FILE NUMBER	

STRUCTURE DETAILS

SUM-76-1230, SUM-76-1273, SUM-76-1296, SUM-76-1332, SUM-76-1407
SUM-76-1518, SUM-76-1531, SUM-76-1631, SUM-76-1648, SUM-76-1695, & SUM-76-1774

SUM-76/241-VAR/11.72
PID No. 77876

10 / 16

83 / 103

10-AUG-2015 3:17PM mstipeti
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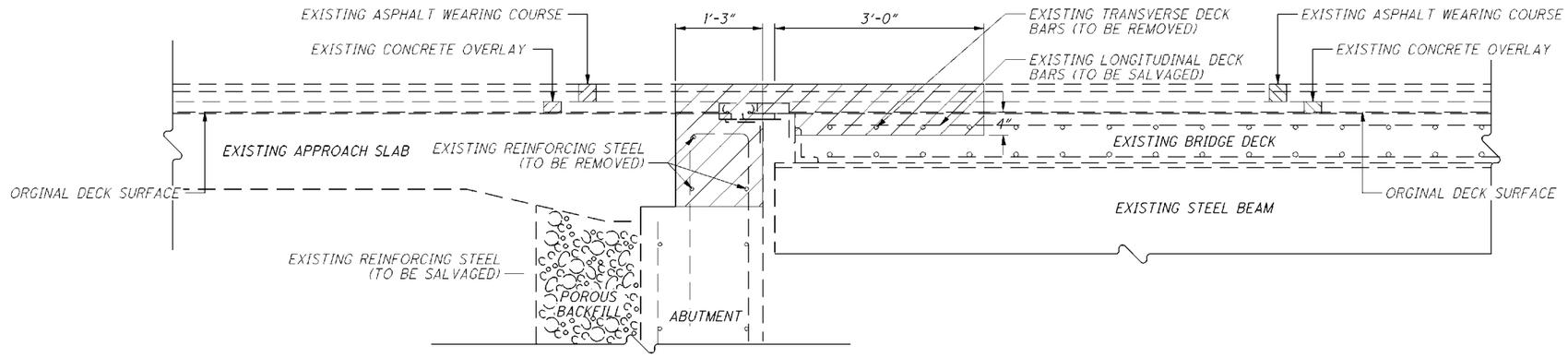
NOTES:

1. ITEM 202 - PORTIONS OF STRUCTURE TO BE REMOVED

2. REMOVAL OF EXISTING JOINTS, DECK CONCRETE AND BACK-WALL CONCRETE WILL BE PAID FOR UNDER ITEM 202 PORTIONS OF STRUCTURE REMOVED, AS PER PLAN. REMOVAL LIMITS WILL BE 1 FT. AWAY FROM BARRIER WALL TO 1 FT. AWAY FROM MEDIAN WALL OF BRIDGE DECK AND BACKWALL FOR THE LENGTH SHOWN IN THE DETAIL BELOW AT EACH ABUTMENT. CARE WILL BE TAKEN TO SALVAGE ALL EXISTING LONGITUDINAL DECK AND BACKWALL U-SHAPED REINFORCING STEEL DURING CONCRETE REMOVAL.



SUM-76-0913, SUM-76-0956, SUM-76-0966, SUM-76-1034, AND SUM-76-1041

APPROACH PAVEMENT SHOWN
TRAILING PAVEMENT SIMILAR

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DESIGN AGENCY
ODOT --- DISTRICT 4
PLANNING AND ENGINEERING

DESIGNED	DRAWN	REVIEWED	DATE
NRC	NRC	LMP	8/7/2015
CHECKED	REVISED	STRUCTURE FILE NUMBER	

REMOVAL DETAILS
SUM-76-0913, SUM-76-0956, SUM-76-0966, SUM-76-1034, & SUM-76-1041

SUM-76/241-VAR/11.72
PID No. 77876

11 / 16

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NOTES:

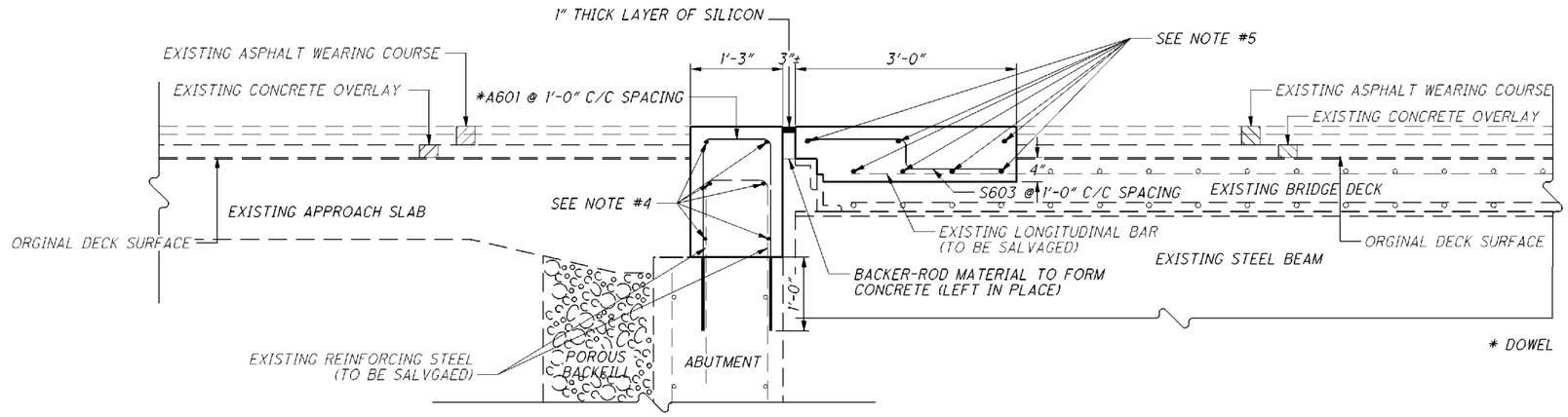
1. REBUILD PORTION OF DECK AND ABUTMENT BACKWALL PER THE DETAIL SHOWN BELOW. ALL MATERIAL, LABOR, EQUIPMENT, AND INCIDENTALS SUCH AS BACKER-ROD MATERIAL AND 1" THICK LAYER OF SILICON REQUIRED TO PERFORM THIS WORK WILL BE INCLUDED IN THE UNIT BID PRICE FOR ITEM SPEC, PATCHING CONCRETE STRUCTURE, MISC.: VES-LMC (VERY EARLY STRENGTH - LATEX MODIFIED CONCRETE).

2. ALL REINFORCING STEEL REQUIRED TO COMPLETE THE CONSTRUCTION OF THE NEW JOINT WILL BE PAID FOR UNDER ITEM 509, EPOXY COATED REINFORCING STEEL, AS PER PLAN.

3. PROVIDE A 2" MINIMUM REINFORCING STEEL CLEARANCE.

4. SUM-76-0913: 3-A501
   SUM-76-0956: 3-A501 OR 3-A502
   SUM-76-0966: 3-A501
   SUM-76-1034: 3-A501
   SUM-76-1041: 3-A501 OR 3-A502

5. SUM-76-0913: 3-S601
   SUM-76-0956: 3-S601 OR 3-S602
   SUM-76-0966: 3-S601
   SUM-76-1034: 3-S601
   SUM-76-1041: 3-S01 OR 3-S02



SUM-76-0913, SUM-76-0956, SUM-76-0966, SUM-76-1034, AND SUM-76-1041

APPROACH PAVEMENT SHOWN
TRAILING PAVEMENT SIMILAR

* SEE SHEET 12A/16 FOR QUANTITIES

DESIGN AGENCY
ODOT --- DISTRICT 4
PLANNING AND ENGINEERING

DESIGNED	DRAWN	REVIEWED	DATE
NRC	NRC	LMP	8/7/2015
CHECKED	REVISED	STRUCTURE FILE NUMBER	

SUPERSTRUCTURE DETAILS
SUM-76-0913, SUM-76-0956, SUM-76-0966, SUM-76-1034, & SUM-76-1041

SUM-76/241-VAR/11.72
PID No. 77876

12 / 16

85 / 103

BRIDGE NUMBER	BRIDGE DECK													BACKWALL												
	LENGTH (BRIDGE LIMITS)	BRIDGE WIDTH	DECK AREA	SPEC PATCHING CONCRETE STRUCTURE, MISC.: VES-LMC (VERY EARLY STRENGTH LATEX MODIFIED CONCRETE)	519 SPECIAL - PATCHING CONCRETE STRUCTURE, MISC.: TRIAL BATCH FOR VES-LMC (VERY EARLY STRENGTH LATEX									LENGTH (BACKWALL)	BACKWALL WIDTH	BACKWALL AREA	APPROACH (FORWARD / REAR)	SPEC PATCHING CONCRETE STRUCTURE, MISC.: VES-LMC (VERY EARLY STRENGTH LATEX MODIFIED CONCRETE)									
	FT	FT	SQ YD	CU YD	LUMP									FT	FT	SQ YD		CU YD								
SUM-76-0914 EASTBOUND	3.00	68.00	22.67	5.67	LUMP									1.25	68.00	9.44	FWD	5.51								
	3.00	68.00	22.67	5.67	LUMP									1.25	68.00	9.44	REAR	5.51								
SUM-76-0914 WESTBOUND	3.00	68.00	22.67	5.67	LUMP									1.25	68.00	9.44	FWD	5.51								
	3.00	68.00	22.67	5.67	LUMP									1.25	68.00	9.44	REAR	5.51								
SUM-76-0956 EASTBOUND	3.00	64.00	21.33	5.33	LUMP									1.25	64.00	8.89	FWD	5.19								
	3.00	64.00	21.33	5.33	LUMP									1.25	68.00	9.44	REAR	5.51								
SUM-76-0956 WESTBOUND	3.00	98.00	32.67	8.17	LUMP									1.25	98.00	13.61	FWD	7.94								
	3.00	110.00	36.67	9.17	LUMP									1.25	110.00	15.28	REAR	8.91								
SUM-76-0966 EASTBOUND	3.00	54.00	18.00	4.50	LUMP									1.25	54.00	7.50	FWD	4.38								
	3.00	54.00	18.00	4.50	LUMP									1.25	54.00	7.50	REAR	4.38								
SUM-76-0966 WESTBOUND	3.00	54.00	18.00	4.50	LUMP									1.25	54.00	7.50	FWD	4.38								
	3.00	54.00	18.00	4.50	LUMP									1.25	54.00	7.50	REAR	4.38								
SUM-76-1034 EASTBOUND	3.00	70.00	23.33	5.83	LUMP									1.25	70.00	9.72	FWD	5.67								
	3.00	70.00	23.33	5.83	LUMP									1.25	70.00	9.72	REAR	5.67								
SUM-76-1034 WESTBOUND	3.00	58.00	19.33	4.83	LUMP									1.25	58.00	8.06	FWD	4.70								
	3.00	58.00	19.33	4.83	LUMP									1.25	58.00	8.06	REAR	4.70								
SUM-76-1041 EASTBOUND	3.00	85.00	28.33	7.08	LUMP									1.25	85.00	11.81	FWD	6.89								
	3.00	70.00	23.33	5.83	LUMP									1.25	70.00	9.72	REAR	5.67								
SUM-76-1041 WESTBOUND	3.00	104.00	34.67	8.67	LUMP									1.25	104.00	14.44	FWD	8.43								
	3.00	58.00	19.33	4.83	LUMP									1.25	58.00	8.06	REAR	4.70								
TOTALS				117	0	0	0	0	0	0	0	0					TOTALS	114	0	0	0	0	0	0	0	0

DESIGN AGENCY
ODOT --- DISTRICT 4
PLANNING AND ENGINEERING

DESIGNED NRC | DRAWN NRC | REVIEWED T.JP | DATE 12/2/2015
CHECKED | REVISED | STRUCTURE FILE NUMBER

SUPERSTRUCTURE DETAILS
SUM-76-0913, SUM-76-0956, SUM-76-0966, SUM-76-10343, & SUM-76-1041

SUM-76/241-
VAR/11.72
PID No. 77876

12A / 16

85A / 103

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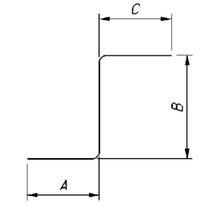
MARK	NUMBER				LENGTH	WEIGHT (LBS)	TYPE	DIMENSIONS				
	REAR ABUT	FWD ABUT	SUPER	TOTAL				A	B	C	D	E
	EASTBOUND											
S601	21	21		42	25'-0"	1578	STR					
S603	69	69		138	2'-9"	571	8	1'-4"	5"	1'-4"		
	WESTBOUND											
S601	21	21		42	25'-0"	1578	STR					
S603	69	69		138	3'-1"	640	8	1'-4"	5"	1'-4"		
	SUPERSTRUCTURE SUB-TOTAL					4367						
	EASTBOUND											
A501	18	18		36	25'-0"	939	STR					
*A601	69	69		138	3'-9"	778	2	1'-7"	11"	1'-7"		
	WESTBOUND											
A501	18	18		36	25'-0"	939	STR					
*A601	69	69		138	4'-1"	847	2	1'-7"	11"	1'-7"		
	ABUTMENT SUB-TOTAL					3503						
	GRAND TOTAL					7870						

* DOWEL

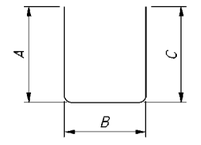
THE BAR SIZE NUMBER IS SPECIFIED ON THE PLANS IN THE BAR MARK COLUMN. THE FIRST DIGIT WHERE THREE DIGITS ARE USED, THE FIRST TWO DIGITS WHERE FOUR ARE USED, INDICATES THE BAR SIZE NUMBER. FOR EXAMPLE, P601 IS A NO. 6 BAR. BAR DIMENSIONS SHOWN ARE OUT TOOUT UNLESS OTHERWISE INDICATED. R INDICATES INSIDE RADIUS, UNLESS OTHERWISE NOTED. "STD." WRITTEN IN PLACE OF A DIMENSION INDICATES A STANDARD BEND AT THE END OF THE BAR.

ALL REINFORNCING STEEL TO BE EPOXY COATED

* = DOWEL



TYPE-8



TYPE-2

DESIGN AGENCY
ODOT --- DISTRICT 4
PLANNING AND ENGINEERING

DESIGNED	DRAWN	REVIEWED	DATE
NRC	NRC	LMP	8/7/2015
CHECKED	REVISED	STRUCTURE FILE NUMBER	

REINFORCEMENT STEEL
SUM-76-0913

SUM-76/241-
VAR/11.72
PID No. 77876

13 / 16

86
103

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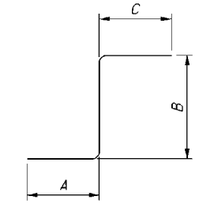
MARK	NUMBER				LENGTH	WEIGHT (LBS)	TYPE	DIMENSIONS				
	REAR ABUT	FWD ABUT	SUPER	TOTAL				A	B	C	D	E
	EASTBOUND											
S601	21	21		42	24'-0"	1515	STR					
S603	65	65		130	2'-9"	537	8	1'-4"	5"	1'-4"		
	WESTBOUND											
S601	21			21	35'-0"	1104	STR					
S602		21		21	39'-0"	1231	STR					
S603	99	108		207	2'-9"	856	8	1'-4"	5"	1'-4"		
	SUPERSTRUCTURE SUB-TOTAL					5243						
	EASTBOUND											
A501	21	21		42	24'-0"	1052	STR					
*A601	65	65		130	3'-9"	733	2	1'-7"	11"	1'-7"		
	WESTBOUND											
A501	21			21	34'-7 1/2"	759	STR					
A502		21		21	38'-0"	833	STR					
*A601	99	108		207	3'-9"	1166	2	1'-7"	11"	1'-7"		
	ABUTMENT SUB-TOTAL					4543						
	GRAND TOTAL					9786						

* DOWEL

THE BAR SIZE NUMBER IS SPECIFIED ON THE PLANS IN THE BAR MARK COLUMN. THE FIRST DIGIT WHERE THREE DIGITS ARE USED, THE FIRST TWO DIGITS WHERE FOUR ARE USED, INDICATES THE BAR SIZE NUMBER. FOR EXAMPLE, P601 IS A NO. 6 BAR. BAR DIMENSIONS SHOWN ARE OUT TOOUT UNLESS OTHERWISE INDICATED. R INDICATES INSIDE RADIUS, UNLESS OTHERWISE NOTED. "STD." WRITTEN IN PLACE OF A DIMENSION INDICATES A STANDARD BEND AT THE END OF THE BAR.

ALL REINFORNCING STEEL TO BE EPOXY COATED

* = DOWEL



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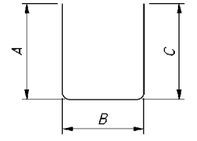


TYPE-2

DESIGN AGENCY
ODOT --- DISTRICT 4
PLANNING AND ENGINEERING

DESIGNED NRC | DRAWN NRC | REVIEWED LMP | DATE 8/7/2015
CHECKED | REVISED | STRUCTURE FILE NUMBER

REINFORCEMENT STEEL
SUM-76-0956

SUM-76/241-VAR/11.72
PID No. 77876

14 / 16

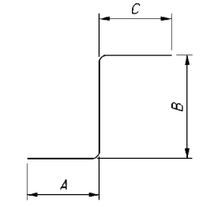
87 / 103

MARK	NUMBER				LENGTH	WEIGHT (LBS)	TYPE	DIMENSIONS				
	REAR ABUT	FWD ABUT	SUPER	TOTAL				A	B	C	D	E
	EASTBOUND											
S601	21	21		42	20'-6"	1294	STR					
S603	55	55		110	2'-9"	455	8	1'-4"	5"	1'-4"		
	WESTBOUND											
S601	21	21		42	20'-6"	1294	STR					
S603	55	55		110	2'-9"	455	STR	1'-4"	5"	1'-4"		
							8					
	SUPERSTRUCTURE SUB-TOTAL					3498						
	EASTBOUND											
A501	18	18		36	20'-0"	751	STR					
*A601	55	55		110	3'-9"	620	2	1'-7"	11"	1'-7"		
	WESTBOUND											
A501	18	18		36	20'-0"	751	STR					
*A601	55	55		110	3'-9"	620	2	1'-7"	11"	1'-7"		
	ABUTMENT SUB-TOTAL					2742						
	GRAND TOTAL					6240						

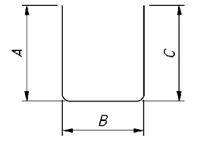
THE BAR SIZE NUMBER IS SPECIFIED ON THE PLANS IN THE BAR MARK COLUMN. THE FIRST DIGIT WHERE THREE DIGITS ARE USED, THE FIRST TWO DIGITS WHERE FOUR ARE USED, INDICATES THE BAR SIZE NUMBER. FOR EXAMPLE, P601 IS A NO. 6 BAR. BAR DIMENSIONS SHOWN ARE OUT TOOUT UNLESS OTHERWISE INDICATED. R INDICATES INSIDE RADIUS, UNLESS OTHERWISE NOTED. "STD." WRITTEN IN PLACE OF A DIMENSION INDICATES A STANDARD BEND AT THE END OF THE BAR.

ALL REINFORNCING STEEL TO BE EPOXY COATED

* = DOWEL



TYPE-8



TYPE-2

DESIGN AGENCY
ODOT --- DISTRICT 4
PLANNING AND ENGINEERING

DESIGNED	DRAWN	REVIEWED	DATE
NRC	NRC	LMP	8/7/2015
CHECKED	REVISED	STRUCTURE FILE NUMBER	

REINFORCEMENT STEEL
SUM-76-0966

SUM-76/241-
VAR/11.72
PID No. 77876

15 / 16

88
103

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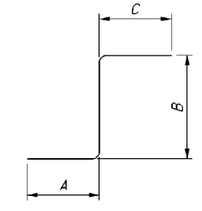
MARK	NUMBER				LENGTH	WEIGHT (LBS)	TYPE	DIMENSIONS				
	REAR ABUT	FWD ABUT	SUPER	TOTAL				A	B	C	D	E
	EASTBOUND											
S601	21	21		42	26'-0"	1641	STR					
S603	71	71		142	2'-9"	587	8	1'-4"	5"	1'-4"		
	WESTBOUND											
S601	21	21		42	21'-6"	1357	STR					
S603	69	69		138	3'-1"	640	8	1'-4"	5"	1'-4"		
	SUPERSTRUCTURE SUB-TOTAL					4225						
	EASTBOUND											
A501	18	18		36	26'-0"	977	STR					
*A601	71	71		142	3'-9"	800	2	1'-7"	11"	1'-7"		
	WESTBOUND											
A501	18	18		36	21'-6"	808	STR					
*A601	69	69		138	4'-1"	847	2	1'-7"	11"	1'-7"		
	ABUTMENT SUB-TOTAL					3432						
	GRAND TOTAL					7657						

THE BAR SIZE NUMBER IS SPECIFIED ON THE PLANS IN THE BAR MARK COLUMN. THE FIRST DIGIT WHERE THREE DIGITS ARE USED, THE FIRST TWO DIGITS WHERE FOUR ARE USED, INDICATES THE BAR SIZE NUMBER. FOR EXAMPLE, P601 IS A NO. 6 BAR. BAR DIMENSIONS SHOWN ARE OUT TOOUT UNLESS OTHERWISE INDICATED. R INDICATES INSIDE RADIUS, UNLESS OTHERWISE NOTED. "STD." WRITTEN IN PLACE OF A DIMENSION INDICATES A STANDARD BEND AT THE END OF THE BAR.

ALL REINFORNCING STEEL TO BE EPOXY COATED

* = DOWEL



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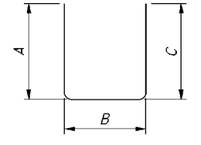

TYPE-2

DESIGN AGENCY
ODOT --- DISTRICT 4
PLANNING AND ENGINEERING

DESIGNED	DRAWN	REVIEWED	DATE
NRC	NRC	TJP	12/2/2015
CHECKED	REVISED	STRUCTURE FILE NUMBER	

REINFORCEMENT STEEL
SUM-76-1034

SUM-76/241-
VAR/11.72
PID No. 77876

15A | 16

88A
103

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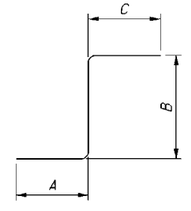
MARK	NUMBER				LENGTH	WEIGHT (LBS)	TYPE	DIMENSIONS				
	REAR ABUT	FWD ABUT	SUPER	TOTAL				A	B	C	D	E
	EASTBOUND											
S601	21			21	25'-9"	813	STR					
S602		21		21	30'-6"	963	STR					
S603	71	86		157	2'-9"	649	8	1'-4"	5"	1'-4"		
	WESTBOUND											
S601	21			21	21'-9"	687	STR					
S602		21		21	37'-0"	1168	STR					
S603	99	108		207	2'-9"	856	8	1'-4"	5"	1'-4"		
	SUPERSTRUCTURE SUB-TOTAL					5136						
	EASTBOUND											
A501	18			18	25'-9"	484	STR					
A502		18		18	30'-2"	816	STR					
*A601	71	86		157	3'-9"	885	2	1'-7"	11"	1'-7"		
	WESTBOUND											
A501	18			18	21'-9"	409	STR					
A502		18		18	37'-0"	695	STR					
*A601	99	108		207	3'-9"	1166	2	1'-7"	11"	1'-7"		
	ABUTMENT SUB-TOTAL					4455						
	GRAND TOTAL					9591						

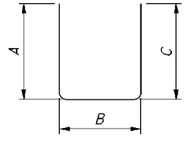
THE BAR SIZE NUMBER IS SPECIFIED ON THE PLANS IN THE BAR MARK COLUMN. THE FIRST DIGIT WHERE THREE DIGITS ARE USED, THE FIRST TWO DIGITS WHERE FOUR ARE USED, INDICATES THE BAR SIZE NUMBER. FOR EXAMPLE, P601 IS A NO. 6 BAR. BAR DIMENSIONS SHOWN ARE OUT TOOUT UNLESS OTHERWISE INDICATED. R INDICATES INSIDE RADIUS, UNLESS OTHERWISE NOTED. "STD." WRITTEN IN PLACE OF A DIMENSION INDICATES A STANDARD BEND AT THE END OF THE BAR.

ALL REINFORNCING STEEL TO BE EPOXY COATED

* = DOWEL



TYPE-8



TYPE-2

DESIGN AGENCY
ODOT --- DISTRICT 4
PLANNING AND ENGINEERING

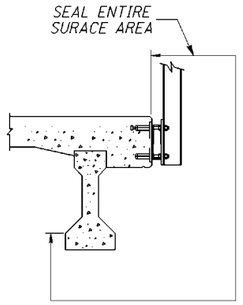
DESIGNED	DRAWN	REVIEWED	DATE
NRC	NRC	TJP	12/2/2015
CHECKED	REVISED	STRUCTURE FILE NUMBER	

REINFORCEMENT STEEL
SUM-76-1041

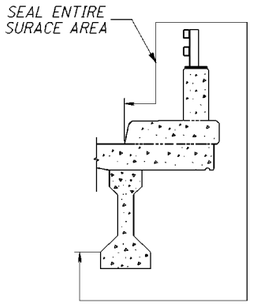
SUM-76/241-VAR/11.72
PID No. 77876

15B/16

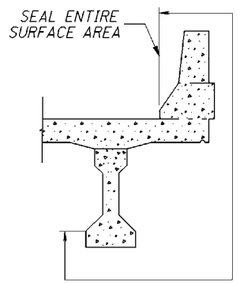
88B/103



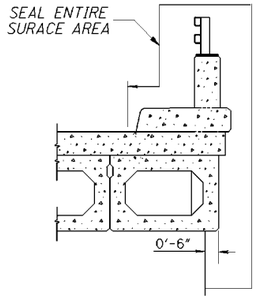
DETAIL A
CONCRETE DECKS WITH
OVER THE SIDE DRAINAGE



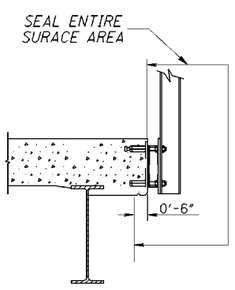
DETAIL B
CONCRETE DECKS WITH CURBS,
SIDEWALKS AND PARAPET



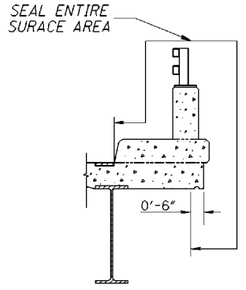
DETAIL C
CONCRETE DECK WITH
DEFLECTOR PARAPET



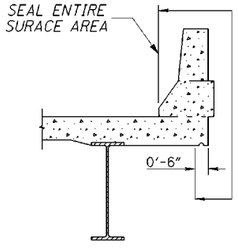
DETAIL D
PRESTRESSED BOX BEAM DECK
WITH DEFLECTOR PARAPET



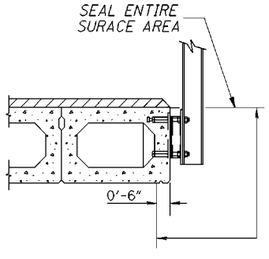
DETAIL E
CONCRETE DECKS WITH
OVER THE SIDE DRAINAGE



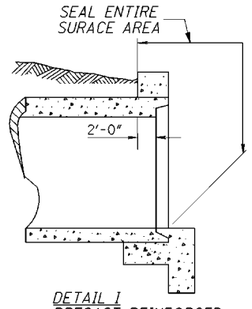
DETAIL F
CONCRETE DECKS WITH CURBS,
SIDEWALKS AND PARAPET



DETAIL G
CONCRETE DECK WITH
DEFLECTOR PARAPET



DETAIL H
PRESTRESSED BOX BEAM DECK
WITH OVER THE SIDE DRAINAGE



DETAIL I
PRECAST REINFORCED
CONCRETE BOX CULVERT

				ESTIMATED QUANTITIES				
BRIDGE NUMBER	STRUCTURE TYPE	PROPOSED SEALING	FEDERAL COLOR NUMBER	ABUT (SQ YD)	PIER (SQ YD)	SUPER (SQ YD)	GENERAL (SQ YD)	TOTAL (SQ YD)
SUM-76-1179L	STEEL BEAM SIMPLE SPAN	SEAL SUBSTRUCTURE AND PARAPETS THAT HAVE BEEN PATCHED AND REPAIRED	PER CMS				25	25
SUM-76-1179R	STEEL BEAM SIMPLE SPAN	SEAL SUBSTRUCTURE AND PARAPETS THAT HAVE BEEN PATCHED AND REPAIRED	PER CMS				25	25
SUM-76-1199	4 SPAN CONTINUOUS STEEL BEAM	SEAL PIER CAPS AND COLUMNS	PER CMS		110			110
SUM-76-1230	STEEL BEAM SIMPLE SPAN	SEAL SUBSTRUCTURE AND PARAPETS THAT HAVE BEEN PATCHED	PER CMS				34	34
SUM-76-1236	STEEL BEAM SIMPLE SPAN	SEAL SUBSTRUCTURE AND PARAPETS THAT HAVE BEEN PATCHED	PER CMS				20	20
SUM-76-1246	STEEL BEAM SIMPLE SPAN	SEAL SUBSTRUCTURE AND PARAPETS THAT HAVE BEEN PATCHED	PER CMS				34	34
SUM-76-1265	STEEL BEAM SIMPLE SPAN	SEAL SUBSTRUCTURE AND PARAPETS THAT HAVE BEEN PATCHED	PER CMS				30	30
SUM-76-1273	7 SPAN STEEL GIRDER DECK	SEAL SUBSTRUCTURE AND PARAPETS THAT HAVE BEEN PATCHED	PER CMS				70	70
SUM-76-1296	STEEL BEAM SIMPLE SPAN	SEAL SUBSTRUCTURE AND PARAPETS THAT HAVE BEEN PATCHED	PER CMS				40	40
SUM-76-1303J	STEEL BEAM SIMPLE SPAN	SEAL SUBSTRUCTURE AND PARAPETS THAT HAVE BEEN PATCHED	PER CMS				40	40
SUM-76-1332	STEEL BEAM SIMPLE SPAN	SEAL SUBSTRUCTURE AND PARAPETS THAT HAVE BEEN PATCHED	PER CMS				34	34
SUM-76-1407	STEEL BEAM SIMPLE SPAN	SEAL SUBSTRUCTURE AND PARAPETS THAT HAVE BEEN PATCHED AND REPAIRED	PER CMS				100	100
SUM-76-1519	3 SPAN CONTINUOUS STEEL BEAM	SEAL SUBSTRUCTURE AND PARAPETS THAT HAVE BEEN PATCHED	PER CMS				25	25
SUM-76-1520	2 SPAN CONTINUOUS STEEL BEAM	SEAL SUBSTRUCTURE AND PARAPETS THAT HAVE BEEN PATCHED	PER CMS				34	34
SUM-76-1530	4 SPAN CONTINUOUS STEEL BEAM	SEAL SUBSTRUCTURE AND PARAPETS THAT HAVE BEEN PATCHED	PER CMS				45	45
SUM-76-1633	4 SPAN CONTINUOUS STEEL BEAM	SEAL SUBSTRUCTURE AND PARAPETS THAT HAVE BEEN PATCHED SEAL ALL SPALL REMOVAL AREAS OF DECK FLOOR	PER CMS				45	45
SUM-76-1651	4 SPAN CONTINUOUS STEEL BEAM	SEAL SUBSTRUCTURE AND PARAPETS THAT HAVE BEEN PATCHED	PER CMS				34	34
SUM-76-1696	3 SPAN CONTINUOUS STEEL BEAM	SEAL ALL EXPOSED CONCRETE OF THE PARAPETS AND MEDIAN BARRIER PER DETAIL G	PER CMS				526	526
SUM-76-1773	3 SPAN CONTINUOUS STEEL BEAM	SEAL ALL EXPOSED CONCRETE OF THE PARAPETS AND MEDIAN BARRIER PER DETAIL G	PER CMS				532	532
SUM-241-1168	CONCRETE CULVERT FILLED	SEAL ALL EXPOSED CONCRETE PER DETAIL I	PER CMS				353	353

NOTES:
- EPOXY-URETHANE SEALER SHALL BE USED UNLESS SHOWN OTHERWISE
- DETAILS E, F, G AND H ALSO APPLY TO CONCRETE SLAB BRIDGES

DESIGN AGENCY
ODOT --- DISTRICT 4
PLANNING AND ENGINEERING

DESIGNED NRC | DRAWN NRC | REVIEWED LMP | DATE 8/7/2015
CHECKED | REVISED | STRUCTURE FILE NUMBER

CONCRETE SEALING DETAILS

SUM-76-1179L, SUM-76-1179R, SUM-76-1199, SUM-76-1230, SUM-76-1236, SUM-76-1246, SUM-76-1265, SUM-76-1273, SUM-76-1296, SUM-76-1303J, SUM-76-1332, SUM-76-1407, SUM-76-1519, SUM-76-1520, SUM-76-1530, SUM-76-1633, SUM-76-1651, SUM-76-1696, SUM-76-1773 & SUM-241-1168

SUM-76/241-
VAR/11.72
PID No. 77876

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STANDARD DRAWINGS AND SUPPLEMENTAL SPECIFICATIONS

AND TO THE FOLLOWING SUPPLEMENTAL SPECIFICATION(S):

SS 843 DATED 4/18/2003

PROPOSED WORK

SUM-76-1365 (LT CUY RIV, MASSILLON RD)
-PATCH ALL UNSOUND AREAS OF THE CONCRETE DECK AND APPROACH SLABS
-SEAL PATCHED WEARING SURFACE AND APPROACH SLABS WITH SRS CONCRETE TREATMENT
-REMOVE AND REPLACE EXISTING EXPANSION JOINTS
-REPAIR PARAPET WALLS
-PATCH ALL UNSOUND AREAS OF THE SUBSTRUCTURE INCLUDING THE PARAPETS
-REMOVE ALL SPALLED AREAS FROM BOTTOM OF DECK FLOOR AND SEAL WITH EPOXY-URETHANE
-SEAL ALL EXPOSED CONCRETE SURFACES OF SUBSTUCTURE AND PARAPETS THAT HAVE BEEN REPAIRED WITH EPOXY-URETHANE
-CLEARING AND GRUBBING 15' AROUND STRUCTURE TO REMOVE ALL VEGETATION
-NEW STRUCTURE IDENTIFICATION SIGNS

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.

SPECIAL - STRUCTURE MISC.: CONCRETE SPALL REMOVAL

THIS WORK WILL CONSIST OF REMOVING ALL VISIBLY SPALLED AREAS OF THE BOTTOM DECK FLOOR OF STRUCTURE(S) SUM-76-1355 WITHOUT SOUNDING. AFTER SPALLED CONCRETE AREAS HAVE BEEN REMOVED, REMOVAL AREAS WILL BE SEALED WITH WITH ITEM 512, SEALING OF CONCRETE SURFACES (EPOXY-URETHANE).

CONCRETE SPALL REMOVAL WILL BE PAID FOR AT THE UNIT BID PRICE FOR SPECIAL - STRUCTURE MISC.: CONCRETE SPALL REMOVAL. THIS PRICE WILL INCLUDE THE COST OF LABOR, EQUIPMENT, AND ALL INCIDENTALS REQUIRED TO COMPLETE THIS WORK.

SPEC, STRUCTURE MISC.: CONCRETE SPALL REMOVAL, 50 SY
512, SEALING OF CONCRETE SURFACES (EPOXY-URETHANE), 50 SY

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

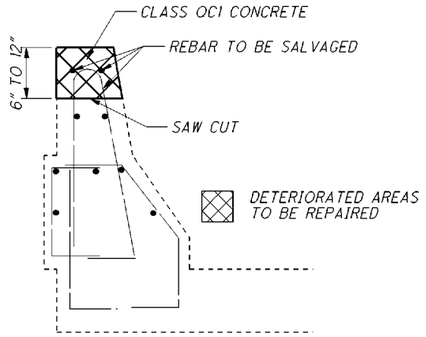
REPLACE ALL EXISTING REINFORCING BARS DEEMED BY THE ENGINEER TO BE UNUSABLE BECAUSE OF CORROSION. THE DEPARTMENT WILL MEASURE THE REPLACEMENT REINFORCING STEEL BY THE NUMBER OF POUNDS ACCEPTED IN PLACE.

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.

ITEM 511 - CONCRETE MISC.: PARAPET REPAIR

THIS ITEM WILL BE USED TO REPAIR DAMAGED PARAPETS OF STRUCTURE SUM-76-1365.

SAWCUT AND REMOVE DAMAGED/SPALLED AREAS OF THE EXISTING PARAPETS TO A MINIMUM DEPTH OF 6" AND A MAXIMUM DEPTH OF 12" OR AS DIRECTED BY THE ENGINEER. CARE SHALL BE TAKEN WHEN REMOVING SPALLED CONCRETE TO SALVAGE EXISTING REBAR. CLASS QC1 CONCRETE WILL BE USED TO REPAIR THE DAMAGED PARAPETS. THE REMOVAL OF CONCRETE, PREPARATION OF THE SURFACES, FORMS, AND CLASS QC1 CONCRETE WILL BE INCIDENTAL TO THIS ITEM. PAYMENT WILL BE MADE AT THE CONTRACT BID PRICE PER FOOT FOR ITEM 511, CONCRETE MISC.: PARAPET REPAIR.



STRUCTURE IDENTIFICATION SIGNS

STRUCTURE IDENTIFICATION SIGNS (I-H25a) WILL BE PLACED ON EACH APPROACH OFF THE RIGHT SHOULDER, FACING TRAFFIC, AND BEHIND THE GUARDRAIL IF APPLICABLE. A QUANTITY OF ONE SIGN PER APPROACH WILL BE INSTALLED. THE SIGNS WILL HAVE A NON-REFLECTIVE WHITE SHEETING BACKGROUND.

THE SIGNS WILL BE MOUNTED ON NEW NO. 2 POSTS AND WILL BE INSTALLED AS PER STANDARD CONSTRUCTION DRAWING TC-41.20, MOST CURRENT REVISION. EACH POST WILL BE 7.5' IN LENGTH.

INSTALL SIGNS FOR THE FOLLOWING STRUCTURES:
SUM-76-1365.

THE FOLLOWING QUANTITIES HAVE BEEN INCLUDED FOR EACH APPROACH:
ITEM 630 - SIGN, FLAT SHEET, 730.20, 1 SQ FT
ITEM 630 - GROUND MOUNTED SUPPORT, NO. 2 POST, 7.5 FT
ITEM 630 - REMOVAL OF GROUND MOUNTED SIGN AND DISPOSAL, 1 EACH
ITEM 630 - REMOVAL OF GROUND MOUNTED POST SUPPORT AND DISPOSAL, 1 EACH

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.

DESIGN AGENCY
ODOT --- DISTRICT 4
PLANNING AND ENGINEERING

DESIGNED	DRAWN	REVIEWED	DATE
NRC	NRC	LMP	08/10/15
CHECKED	REVISED		STRUCTURE FILE NUMBER
LMP			

STRUCTURE GENRAL NOTES
BRIDGE NO. SUM-76-1365
OVER LITTLE CUYAHOGA RIVER & MASSILON ROAD

SUM-76/241-
VAR/11.72
PID No. 77876

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DESIGN SPECIFICATIONS:

THIS STRUCTURE CONFORMS TO THE 17TH EDITION OF THE AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, 2002 INCLUDING ALL SUBSEQUENT INTERIM SPECIFICATIONS AND THE 2004 ODOT BRIDGE DESIGN MANUAL INCLUDING INTERIMS.

DESIGN DATA

DESIGN LOADING (EXPANSION JOINT) - HS25 WITH 100% IMPACT.
EXPANSION JOINT STEEL - ASTM A709, GRADE 36
CONCRETE CLASS QC2 - COMPRESSIVE STRENGTH 4500 PSI (EXPANSION JOINT BLOCKOUT & PARAPET/MEDIAN)
REINFORCING STEEL - ASTM A615 OR A996, GRADE 60 WITH MINIMUM YIELD STRESS OF 60 KSI

DECK PROTECTION METHOD

EPOXY COATED REINFORCING STEEL AND 2½" CONCRETE COVER.

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 AND 105.02.

BASE CONTRACT BID PRICES UPON RECOGNITION OF THE UNCERTAINIES 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 THAT HAVE BEEN VERIFIED IN THE FIELD.

PROPOSED ABUTMENT EXPANSION JOINT WORK

1. SET UP AND MAINTAIN TRAFFIC CONTROL FOR PHASE CONSTRUCTION FOR THE REAR AND FORWARD ABUTMENT EXPANSION JOINT REPLACEMENT AND RELATED PARAPET/MEDIAN WORK. MAINTAIN TWO LANES OF TRAFFIC ALL TIMES.
2. REMOVE THE EXISTING REAR AND FORWARD ABUTMENT MODULAR JOINTS INCLUDING 1'-6"± (WIDE) X 1'-1"± (HIGH) ORIGINAL CONCRETE BLOCK OUTS.
3. CUT AND BEND DESIGNATED STIRRUP BARS IN THE BLOCK OUTS TO PROVIDE CLEARANCE FOR THE PROPOSED REPLACEMENT JOINT PER PLAN DETAILS.
4. REMOVE SECTIONS OF THE PARAPET AND MEDIAN TO ACCOMMODATE THE REPLACEMENT OF THE MODULAR JOINT. CAREFULLY REMOVE AND SAVE THE STEEL PARAPET FACING PLATES AND PROJECTING REINFORCING IN THESE LOCATIONS FOR REUSE. DISCARD THE STEEL VERTICAL JOINT END PLATES.
5. MEASURE JOINT OPENING AND COMPARE TO THE PLAN VALUES AT A GIVEN TEMPERATURE. ADJUST JOINT SPACING BETWEEN NEW BLOCK OUT CONCRETE TO BE NEAR THE MIDRANGE OF THE NEW LOW PROFILE JOINT.
6. PLACE NEW REINFORCING STEEL AND CONCRETE IN THE EXISTING JOINT BLOCKOUTS IN THE DECK, ABUTMENT BACKWALL AND FIRST LIFT OF THE PARAPET. SIZE BLOCKOUTS TO APPROPRIATE WIDTH IN THE NEW CONCRETE FOR THE NEW JOINT BASED ON AMBIENT TEMPERATURE. CONSTRUCT THE LOWER SECTION OF THE PARAPET WITH A HORIZONTAL CONSTRUCTION JOINT JUST AT THE TOP OF THE SLOPED FACE CUT OUT FOR THE TURNED UP JOINT SEAL SEGMENT.
7. INSTALL THE JOINT, INCLUDING TURNED UP JOINT SEAL IN THE PARAPET IN THE CONSTRUCTION PHASE PER THE MANUFACTURER'S INSTRUCTIONS. SETTING THE CONCRETE JOINT OPENING AND PLACING THE SEAL SEGMENTS SHOULD BE DONE AS MUCH AS POSSIBLE NEAR THE NEUTRAL TEMPERATURE OF 60 DEGREES.
8. IMMEDIATELY DOWEL AND INSTALL ADHESIVE ANCHORS THROUGH THE ELASTOMERIC JOINT INTO THE NEW CONCRETE BLOCKOUT. THE USE OF ADHESIVE ANCHORS IN DOWEL HOLES INSTEAD OF CAST-IN-PLACE ANCHORS IS PREFERRED TO PROVIDE MAXIMUM ADJUSTMENT WHEN SETTING THE ELASTOMERIC JOINT SEGMENTS. INSTALL CAST-IN-PLACE ANCHOR RODS WITH THE CONCRETE POUR ONLY WITH THE PERMISSION OF THE ENGINEER.
9. PLACE REMAINING PARAPET REINFORCING STEEL. PLACE THE REUSED PARAPET OR MEDIAN FACE PLATES, DEPENDING ON THE CONSTRUCTION PHASE, AND THE CONCRETE ABOVE THE CONSTRUCTION JOINT. THE EXISTING MODULAR JOINT CONCRETE BLOCK OUTS EXTEND TO THE FACE OF TURNED-BACK WINGWALL. THESE SURFACES HAVE A FORMED AESTHETIC TREATMENT. THE CONTRACTOR SHALL RECREATE THE TEXTURE AND COLORING TO BLEND THE NEW CONCRETE INTO THE ORIGINAL WALL SURFACE.
10. APPLY THE JOINT SEALING COMPOUND AROUND THE EDGES OF THE JOINT AFTER THE JOINT MANUFACTURER'S RECOMMENDED CURING PERIOD FOR THE CONCRETE. (APPROXIMATELY 14 DAYS.) SUBMIT ALL ALTERNATE CONCRETE MATERIAL PROPOSALS FOR APPROVAL.
11. FLOOD THE COMPLETED JOINT PORTIONS AS DESCRIBED IN THE GENERAL NOTE TO ENSURE THAT THE INSTALLED JOINT DOES NOT LEAK. IN THE FINAL PHASE OF CONSTRUCTION, ENSURE THE FLOODING COVERS THE PHASED CONSTRUCTION JOINT TO TEST IT FOR LEAKAGE.
12. REPEAT THE PROCEDURE FOR THE OTHER CONSTRUCTION PHASE.

ITEM 202 - PORTION OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN

REMOVAL LIMITATIONS

THIS WORK CONSISTS OF THE PARTIAL REMOVAL OF CONCRETE DECKS AND PARAPETS, AND MODULAR DECK JOINTS AT THE ABUTMENT JOINTS. THE REMOVAL LIMITS ARE SHOWN IN THE PLANS, AND ARE GENERALLY CONFINED TO THE EXISTING CONCRETE PARAPETS AND CONCRETE BLOCKOUTS ORIGINALLY CONSTRUCTED IN THE DECK AND BACKWALL FOR THE INSTALLATION OF THE EXISTING MODULAR EXPANSION JOINTS. THE EXISTING REINFORCING STEEL PROJECTING INTO THESE BLOCKOUT AREAS IS TO BE PRESERVED FOR REUSE AS INDICATED IN THE PLANS.

THE WORK SHALL ALSO INCLUDE THE CAREFUL REMOVAL OF THE PROTECTIVE STEEL PLATES COVERING THE JOINT GAPS IN THE CONCRETE PARAPETS. THESE PLATES ARE TO BE STORED AND REUSED IN THE REBUILT PARAPETS AT THE NEW JOINTS.

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.

PROTECTION OF STEEL SUPPORT SYSTEMS

IT IS NOT ANTICIPATED THAT THE CONCRETE REMOVAL WILL AFFECT THE STEEL SUPPORTING SYSTEMS (BEAMS, GIRDERS, CROSS FRAMES, ETC.) AT THE BRIDGE ENDS. THE PROVISIONS OF ITEM 202 APPLY EXCEPT AS SPECIFIED BY THE FOLLOWING NOTES. PERFORM WORK CAREFULLY DURING DECK REMOVALS TO PROTECT PORTIONS OF SUCH SYSTEMS THAT ARE TO BE SALVAGED AND INCORPORATED INTO THE PROPOSED STRUCTURE. THE USE OF EXPLOSIVES, HEADACHE BALLS AND/OR HOE RAM TYPE OF EQUIPMENT IS PROHIBITED. SUBMIT CONSTRUCTION PLANS ACCORDING TO CMS 501.05. THE CONTRACTOR MAY REMOVE CONCRETE BY CUTTING AND BY MEANS OF HAND OPERATED PNEUMATIC HAMMERS EMPLOYING POINTED OR BLUNTED CHISEL TYPE TOOLS.

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 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.

MISCELLANEOUS CONCRETE REMOVAL

THE TOP OF THE BACKWALLS EXHIBIT ISOLATED AREAS WITH SPALLING AND DELAMINATION ADJACENT TO THE CONCRETE BLOCKOUTS DESIGNATED FOR REMOVAL. REMOVE THESE DAMAGED AREAS AS PART OF THE CONCRETE REMOVAL AND PREPARE THEM FOR CONCRETE PATCHING IN ACCORDANCE WITH ITEM 519. THIS WORK SHALL BE CONSIDERED INCIDENTAL TO THE ITEM 202 REMOVAL ITEM.

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, OVER 20 FOOT SPAN, AS PER PLAN.

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.

ITEM 509 - EPOXY COATED REINFORCING STEEL, AS PER PLAN

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

ITEM 510 - DOWEL HOLES WITH NONSHRINK, NONMETALLIC GROUT

DOWEL QUANTITY IS FOR NEW REINFORCING STEEL INSTALLED INTO EXISTING CONCRETE AS SHOWN ON THE PLANS.

AN ADDITIONAL QUANTITY OF 12 DOWEL BARS HAS BEEN INCLUDED IN THE JOINT REPLACEMENT PLANS TO BE USED AS DIRECTED BY THE ENGINEER TO SECURE REPLACEMENT REINFORCING STEEL BARS IN THE EXISTING CONCRETE BACKWALL, DECK OR PARAPET. THE QUANTITY IS TO USED FOR EXISTING BARS DEEMED UNUSABLE BY THE ENGINEER UPON COMPLETION OF CONCRETE REMOVAL AND PREPARATION FOR THE NEW JOINT CONCRETE OPERATIONS.

THIS QUANTITY IS NOT TO BE USED FOR ANCHORING REPLACEMENT REINFORCING STEEL BARS DAMAGED BY THE CONTRACTOR'S REMOVAL OPERATIONS; NOR IS IT TO BE USED FOR THE ANCHORAGE OF THE LOW PROFILE JOINT SYSTEM, WHOSE ANCHOR INSTALLATION IS PAID FOR AS PART OF THE JOINT PAY ITEM.

ITEM 511 - CLASS QC2 CONCRETE, BRIDGE DECK, AS PER PLAN

BRIDGE JOINT BLOCK-OUT CONCRETE MAY BE OPENED TO TRAFFIC AFTER SEVEN DAYS OF CURING AND WHEN COMPRESSIVE STRENGTH IS ≥ 0.85% f'c OR FLEXURAL STRENGTH IS ≥ 650 PSI. ODOT SUPPLEMENT 1098, PROCEDURE FOR ESTIMATING CONCRETE STRENGTH BY THE MATURITY METHOD, SHALL BE USED TO DETERMING CONCRETE STRENGTH.

INCLUDE CONCRETE FORMLINER COSTS IN THE CONCRETE PAY ITEM.

ITEM 512 - SEALING OF CONCRETE SURFACES (EPOXY-URETHANE), AS PER PLAN

SEAL THE NEW CONCRETE IN THE REBUILT PARAPETS, DECK END BLOCK FASCIA, AND ABUTMENT CONCRETE WITH AN EPOXY-URETHANE SEALER CLOSELY MATCHING THE SEALER COLOR ON THE EXISTING CONCRETE.

ITEM 513 - STRUCTURAL STEEL, MISC.: PREPARATION AND REINSTALLATION OF STEEL PARAPET COVER PLATES

WORK UNDER THIS ITEM INCLUDES THE STORAGE, PREPARATION AND REINSTALLATION OF THE STEEL PLATES COVERING THE GAPS IN THE PARAPETS AT THE ABUTMENT JOINTS.

PREPARATION OF THE PLATES INCLUDES THE REMOVAL OF SELECTED BENT ANCHORS, AS WELL AS INSTALLATION OF NEW WELDED STUD ANCHORS AS SHOWN IN THE PLANS.

THE REINSTALLATION OF THE PLATES INCLUDES THE POSITIONING AND TEMPORARY SUPPORT OF THE PLATES IN THEIR FINAL POSITION WHILE THE PARAPET CONCRETE IS PLACED AND CURES. ALSO INCLUDED IS THE INSTALLATION OF THE OUTER COVER PLATE TO THE EMBEDDED PLATES WITH NEW STAINLESS STEEL SCREWS PER CMS 730.10 PROVIDED BY THE CONTRACTOR.

ITEM 516 - STRUCTURAL JOINT OR JOINT SEALER, MISC.: LOW PROFILE JOINT SYSTEM

A. DESCRIPTION

THIS ITEM SHALL CONSIST OF FURNISHING ALL MATERIALS, SERVICES, LABOR, TOOLS, EQUIPMENT AND INCIDENTALS NECESSARY TO DESIGN, FABRICATE, INSPECT, TEST AND INSTALL LOW PROFILE JOINT SYSTEMS IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.

THE JOINT SHALL BE THE WABO TRANSFLEX, MODEL NUMBER 650, OR APPROVED EQUIVALENT.

B. GENERAL

1. THE JOINT SHALL BE DESIGNED, CONSTRUCTED AND FABRICATED IN ACCORDANCE WITH THESE PLANS AND NOTES, THE OHIO DEPARTMENT OF TRANSPORTATION'S LATEST CONSTRUCTION AND MATERIALS SPECIFICATION, THE 2004 OHIO BRIDGE DESIGN MANUAL AND AASHTO'S 2002 STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES.
2. THE JOINT MANUFACTURER'S TECHNICAL REPRESENTATIVE SHALL PHYSICALLY OVERSEE THE FABRICATION, INSTALLATION, ADJUSTMENT AND TESTING DURING ALL OPERATIONS.

ITEM 516 - STRUCTURAL JOINT OR JOINT SEALER, MISC.: LOW PROFILE JOINT SYSTEM (CONTINUED ON NEXT SHEET)

RICHLAND ENGINEERING LIMITED
29 NORTH PARK STREET
MANSFIELD, OHIO 44902

DESIGNED BLN | DRAWN SJK | REVIEWED DAP | DATE 7/20/15 | CHECKED KAK | REVISED | STRUCTURE FILE NUMBER 7706456

GENERAL NOTES - 1
BRIDGE NO. SUM-76-1365
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SUM-76/241-VAR/11.72
PID No. 77876

ITEM 516 - STRUCTURAL JOINT OR JOINT SEALER, MISC.: LOW PROFILE JOINT SYSTEM (CONTINUED)

C. DESIGN

1. THE JOINT SYSTEM SHALL BE DESIGNED FOR AASHTO HS25 LOADING PLUS 100% IMPACT. THE JOINT SYSTEM SHALL ALSO BE DESIGNED FOR FATIGUE. THE MANUFACTURER SHALL SUBMIT CALCULATIONS SHOWING THAT THE DEVICE CAN MEET THE IMPACT AND FATIGUE DESIGN REQUIREMENTS. THE FATIGUE CYCLES SHOULD BE 2,000,000+ TRUCK LOAD CYCLES.

2. THE DESIGN SHALL BE PREPARED BY AND CHECKED UNDER THE AUTHORITY OF AN OHIO-REGISTERED PROFESSIONAL ENGINEER. THE REGISTERED PROFESSIONAL ENGINEER SHALL SEAL, SIGN AND DATE THE DESIGN CALCULATIONS AND SHOP DRAWINGS.

3. THE DESIGN CALCULATIONS SHALL BE INCLUDED WITH THE CONTRACTOR'S SUBMISSION OF SHOP DRAWINGS PER CMS 513.06.

4. THE SHOP DRAWINGS SHALL CONTAIN A DETAILED INSTALLATION PROCEDURE AND INCLUDE ANY SPECIFIC MANUFACTURER'S NOTES NECESSARY FOR COMPLETION OF THE WORK AND CONSTRUCTION PHASING.

5. TEMPORARY AND FIELD CONNECTIONS TO THE BRIDGE SHALL BE DESIGNED TO ACCOMMODATE ADJUSTMENTS FOR ROADWAY GEOMETRY AND VARYING TEMPERATURE.

6. THE JOINT SHALL ACCOMMODATE THE PLAN SPECIFIED MOVEMENT FOR A COLD CLIMATE AS SPECIFIED IN BY 2002 AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES SECTION 3.16.

7. THE JOINT SYSTEM SHALL BE REMOVABLE AND REPLACEABLE.

8. THE JOINT SYSTEM SHALL BE SET 1/8 INCH BELOW THE ROADWAY SURFACE.

D. MATERIALS

1. ALL STRUCTURAL AND PERMANENT MATERIALS SHALL BE OF DOMESTIC ORIGIN, AND MATERIAL CERTIFICATION STATING ALL SUCH MATERIALS ARE "MELTED AND MANUFACTURED" IN THE UNITED STATES OF AMERICA SHALL BE SUBMITTED.

2. STRUCTURAL STEEL PLATES AND ANGLES IMBEDDED IN THE MOLDED PANELS SHALL BE IN ACCORDANCE WITH ASTM A709, GRADE 36 OR BETTER.

3. ADHESIVE ANCHORS - ANCHOR RODS, NUTS, AND WASHERS SHALL CONFORM TO THE MANUFACTURER'S SPECIFICATIONS. MATERIALS SHALL BE GALVANIZED.

4. ADHESIVE ANCHORS - THE NON-SHRINK, NONMETALLIC EPOXY GROUT USED TO INSTALL THE ANCHOR RODS SHALL CONFORM TO ODOT'S CMS 705.20.

5. THE ELASTOMER USED TO MOLD THE PANELS SHALL MEET THE FOLLOWING PHYSICAL REQUIREMENTS:

PHYSICAL PROPERTIES	ASTM	REQUIREMENTS
TENSILE STRENGTH, MIN. PSI. (KG/CM2)	D-412	1800 (12.4)
ELONGATION AT BREAK, MIN. %	D-412	400
HARDNESS, TYPE A DUROMETER	D-2240	45 ± 5
LOW TEMPERATURE, BRITTLENESS 3 MIN. @ -40°F	D-746	NOT BRITTLE
FLAME RESISTANCE	C-542	FLAME MUST NOT PROPAGATE
RESISTANCE TO OIL AGING CHANGE IN VOLUME AFTER 70 HRS. IMMERSION IN ASTM OIL #3 @212°F (100°C), % MAX.	D-471	120
RESISTANCE TO OZONE CONDITION AFTER EXPOSURE TO 100 PPHM OZONE IN AIR FOR 70 HRS. @ 104°F (SAMPLE UNDER 20% STRAIN)	D-1149	NO CRACKS
RESISTANCE TO PERMANENT SET COMPRESSION SET AFTER 22 HRS. @ 158°F (70°C), % MAX.	D-395	20

6. BOLT HOLE CAVITIES SHALL BE FILLED WITH A TWO-PART POLYURETHANE SEALANT WHICH MEETS FEDERAL SPECIFICATION TT-S-00227E. THE PHYSICAL PROPERTIES SHALL MEET OR EXCEED:

PHYSICAL PROPERTIES	ASTM	VALUE
SOLIDS BY WT. - %	D-553	99+1
TENSILE STRENGTH, PSI	D-412	250
ELONGATION - %	D-412	450
MODULUS, 100% ELONGATION	D-412	40
SHORE "A" - INITIAL	D-676	30
RECOVERY, 100% ELONGATION - %	D-412	85
FLEXIBILITY - LOW TEMPERATURE	E-154	-40°F
HIGH TEMPERATURE	D-573	200°F
SERVICE TIME	1980	12 YEARS

7. JOINT SEALING COMPOUND - A ONE-PART POLYSULFIDE BASE SYNTHETIC RUBBER SEALANT SHALL BE USED TO SEAL EDGE VOIDS AND ALL TONGUE AND GROOVE JOINTS. THE SEALANT SHALL CONFORM TO FEDERAL SPECIFICATION TT-S-00230C TYPE II, NON-SAG. THE PHYSICAL PROPERTIES SHALL MEET OR EXCEED:

COLOR	BLACK
CONSISTENCY	GUN GRADE
HARDNESS	30-35 SHORE A ASTM C661
SHRINKAGE	NIL
TACK TIME	12-24 HOURS @ 75°F, 50% R.H.
PRACTICAL SERVICE RANGE	-20°F - +180°F
STORAGE TIME (@77°F)	6 MONTHS IN UNOPENED CONTAINER
TENSILE STRENGTH	160 PSI
ELONGATION	800%
PEEL ADHESION (CONCRETE)	25 LBS/IN.
PEEL ADHESION (NEOPRENE)	32 LBS/IN.

8. BEDDING TAPE SHALL BE USED AS A BEDDING COMPOUND AND ALL BUTT JOINTS SHALL BE SEALED WITH THREE (3) LAYERS OF BEDDING TAPE. IT IS USED TO CREATE A WEATHER SEAL BETWEEN TWO SURFACES. THE TAPE SHALL BE A PREFORMED GLAZING TAPE FURNISHED ON RELEASE PAPER ROLLS. THE PHYSICAL PROPERTIES SHALL MEET OR EXCEED:

BASE POLYMER	BUTYL RUBBER (POLYISOBUTYLENE)
SOLIDS CONTENT	100% SOLIDS (CONTAINS NO ASBESTOS)
CURE TIME	FULLY CURED BEFORE APPLICATION
HARDNESS	20 DUROMETER SHORE "A" @ 77°F 70 DUROMETER SHORE "00" @ 77°F (RELATIVELY NON-COMPRESSIBLE)
TEMPERATURE RANGE	APPLICATION -10°F TO 120°F SERVICE -45°F TO 190°F
JOINT MOVEMENT	30% (+/- 15%) OF JOINT ACCOMODATION
SHELF LIFE	ONE-YEAR GUARANTEE
SERVICE LIFE	TWENTY-YEAR MINIMUM

E. INSPECTION

1. THE MANUFACTURER SHALL PROVIDE FULL TIME QUALITY CONTROL INSPECTION TO ENSURE THAT THE MATERIALS AND WORKMANSHIP MEET OR EXCEED THE MINIMUM REQUIREMENTS OF THE CONTRACT.

2. QUALITY CONTROL INSPECTION SHALL BE THE RESPONSIBILITY OF A QUALITY CONTROL GROUP, WHICH IS INDEPENDENT OF THE FABRICATION GROUP.

F. FABRICATION

1. THE ELASTOMERIC JOINT PANEL LAYOUT SHALL BE ARRANGED SUCH THAT STANDARD LENGTH PIECES ARE USED WHERE PRACTICABLE. PIECES AT PHASED CONSTRUCTION JOINTS SHALL BE AT LEAST 3'-0" LONG AND ANCHORED TO THE CONCRETE ON EACH SIDE BY A MINIMUM OF 3 ANCHORS.

2. WELDING DETAILS, PROCEDURES AND TESTING SHALL CONFORM TO THE AASHTO/AWS D1.5 (2010) BRIDGE WELDING CODE.

G. INSTALLATION

1. WHERE SPECIAL INSTRUCTIONS ARE NOT CONTAINED HEREIN OR ELSEWHERE IN THESE NOTES, DIRECTION FOR THE INSTALLATION SHALL BE ACCORDING TO THE RECOMMENDATIONS OF THE TECHNICAL REPRESENTATIVE.

2. THE CONTRACTOR SHALL COORDINATE AND SCHEDULE THE TECHNICAL REPRESENTATIVE.

3. THE COMPLETE, INSTALLED EXPANSION DEVICE SHALL BE TESTED FOR WATERTIGHTNESS BY FLOODING THE TOTAL EXPANSION JOINT LENGTH WITH WATER FOR A PERIOD NOT LESS THAN ONE HOUR. THE JOINT SYSTEM SHALL BE COVERED EITHER BY PONDED OR FLOWING WATER. SHOULD THE JOINT SYSTEM EXHIBIT ANY EVIDENCE OF WATER LEAKAGE, THE CONTRACTOR SHALL LOCATE THE POINTS OF LEAKAGE AND SHALL TAKE ANY AND ALL MEASURES NECESSARY TO STOP THE LEAKAGE. THIS WORK SHALL BE DONE AT THE CONTRACTOR'S EXPENSE. AFTER ALL REPAIRS HAVE BEEN MADE, AN ADDITIONAL TEST FOR WATERTIGHTNESS SHALL BE PERFORMED.

H. METHOD OF MEASUREMENT

THE DEPARTMENT WILL MEASURE THE JOINT SYSTEM BY THE NUMBER OF FEET ALONG THE JOINT CENTERLINE, EXTENDING FROM THE EDGE OF DECK TO EDGE OF DECK.

I. BASIS OF PAYMENT

PAYMENT WILL BE MADE AT CONTRACT BID PRICES PER FOOT OF JOINT SYSTEM INSTALLED AND ACCEPTED BY THE DEPARTMENT.

RICHLAND ENGINEERING LIMITED
29 NORTH PARK STREET
MANSFIELD, OHIO 44902

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GENERAL NOTES - 2
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CALC:	KAK	DATE:	7/6/2015
CHECKED:	JLS	DATE:	7/6/2015

ESTIMATED QUANTITIES (03/IMS/BR)

ITEM	EXTENSION	TOTAL	UNIT	DESCRIPTION	ABUT.	PIERS	SUPER.	GEN.	SEE SHEET
201	11000	LUMP		CLEARING AND GRUBBING				LUMP	
202	11203	LUMP		PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN				LUMP	2/14
509	20001	100	LB	REINFORCING STEEL, REPLACEMENT OF EXISTING REINFORCING STEEL, AS PER PLAN (PARAPET REPAIR)				100	1/14
509	20001	50	LB	REINFORCING STEEL, REPLACEMENT OF EXISTING REINFORCING STEEL, AS PER PLAN (JOINT REPLACEMENT)			50		2/14
509	25001	4230	LB	REINFORCING STEEL, AS PER PLAN			4230		2/14
510	10000	28	EACH	DOWEL HOLES WITH NONSHRINK, NONMETALLIC GROUT			28		
511	34445	33	CY	CLASS QC2 CONCRETE, BRIDGE DECK, AS PER PLAN			33		2/14
511	81100	50	FT	CONCRETE, MISC.:PARAPET REPAIR				50	1/14
512	10100	142	SY	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)			142		
512	10400	14420	SY	TREATING OF CONCRETE BRIDGE DECK WITH SRS			14420		
513	95020	LUMP		STRUCTURAL STEEL, MISC.:PREPARATION AND REINSTALLATION OF STEEL PARAPET COVER PLATES				LUMP	
516	14600	273	FT	STRUCTURAL JOINT OR JOINT SEALER, MISC.:LOW PROFILE JOINT SYSYTEM				273	
SPEC	51910000	73	SY	PATCHING CONCRETE BRIDGE DECK OVERLAY WITH MICRO- SILICA MODIFIED CONCRETE			73		
519	11101	300	SF	PATCHING CONCRETE STRUCTURE, AS PER PLAN				300	
SPEC	53000800	50	SY	STRUCTURE, MISC.: CONCRETE SPALL REMOVAL				50	1/14
630	02100	7.5	FT	GROUND MOUNTED SUPPORT, NO. 2 POST				7.5	
630	80100	1	SF	SIGN, FLAT SHEET, 730.20				1	
630	84900	1	EACH	REMOVAL OF GROUND MOUNTED SIGN AND DISPOSAL				1	
843	50000	200	SF	PATCHING CONCRETE STRUCTURES WITH TROWELABLE MORTAR				200	

NOTES

JOINT REPLACEMENT QUANTITIES *ARE CONSIDERED ALL SUPERSTRUCTURE QUANTITIES, ALTHOUGH WORK IS BEING DONE ON THE ABUTMENTS.*

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ESTIMATED QUANTITIES
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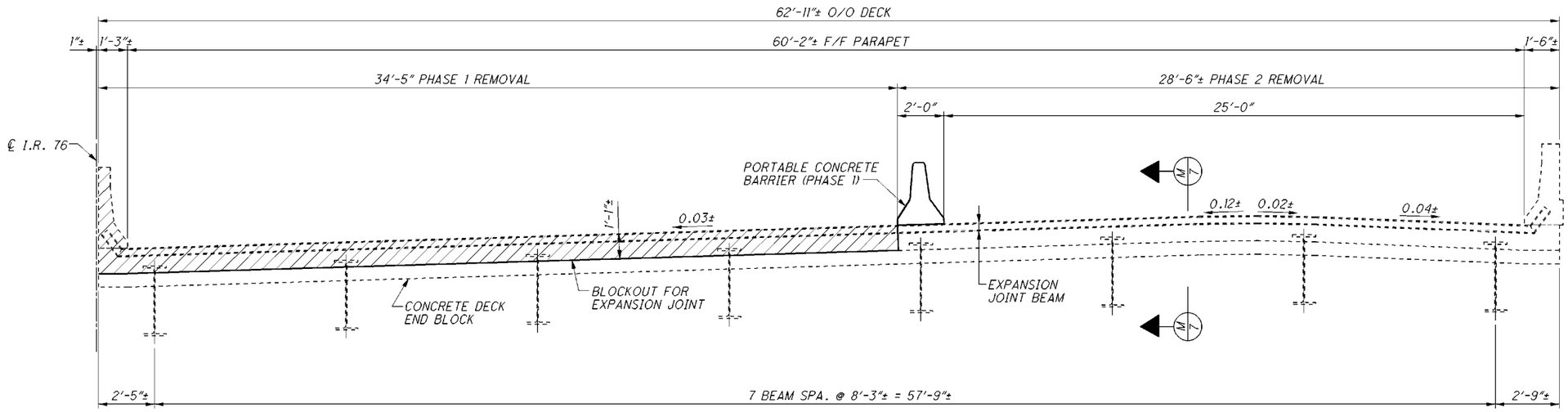
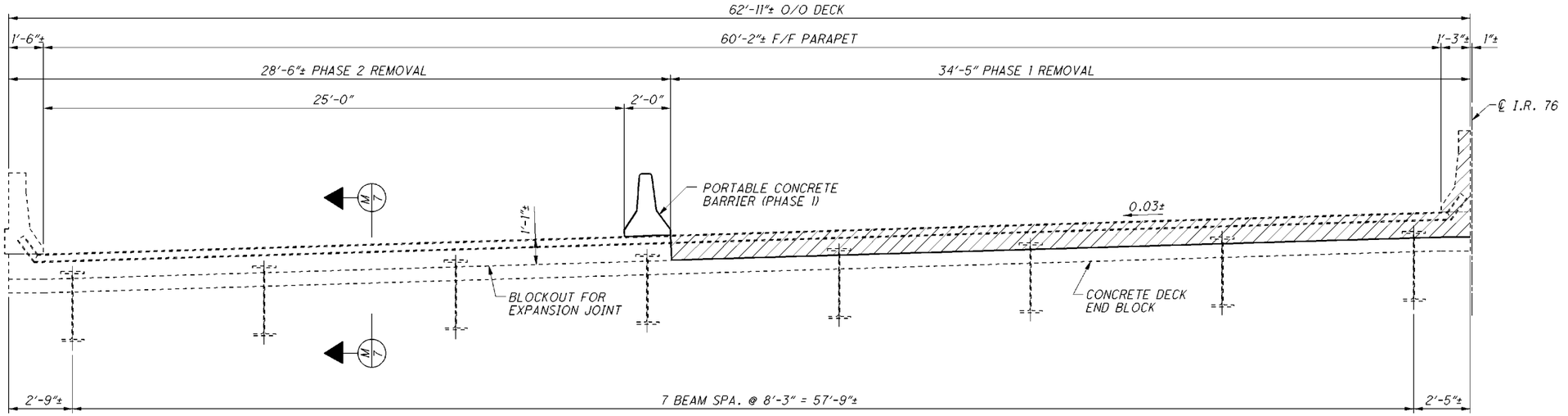


REAR ABUTMENT EXPANSION JOINT WESTBOUND LANE

(LOOKING BACK)



REAR ABUTMENT EXPANSION JOINT EASTBOUND LANE

(LOOKING BACK)

LEGEND

ITEM 202 - PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN. (PHASE 1 REMOVAL SHOWN - PHASE 2 REMOVAL SIMILAR)

NOTES

MATERIALS SHOWN ARE EXISTING UNLESS OTHERWISE NOTED.

PHASE 1 REMOVAL DETAILS SHOWN.

TYPICAL PHASE 1 CONSTRUCTION & PHASE 2 REMOVAL DETAIL: SEE SHEET 6/14.

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REAR ABUTMENT EXPANSION JOINT PHASE CONSTRUCTION
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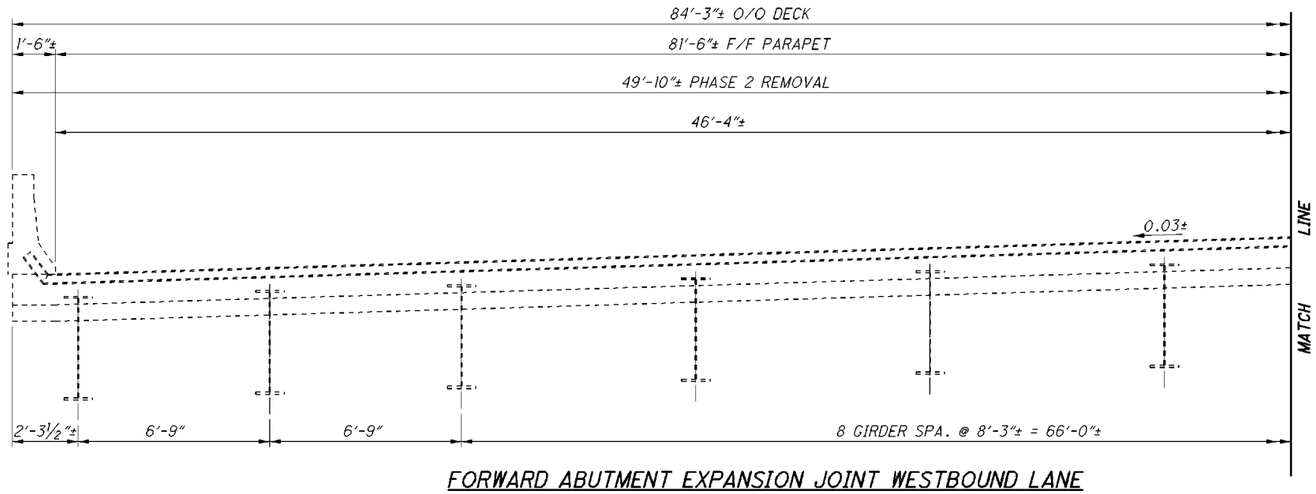
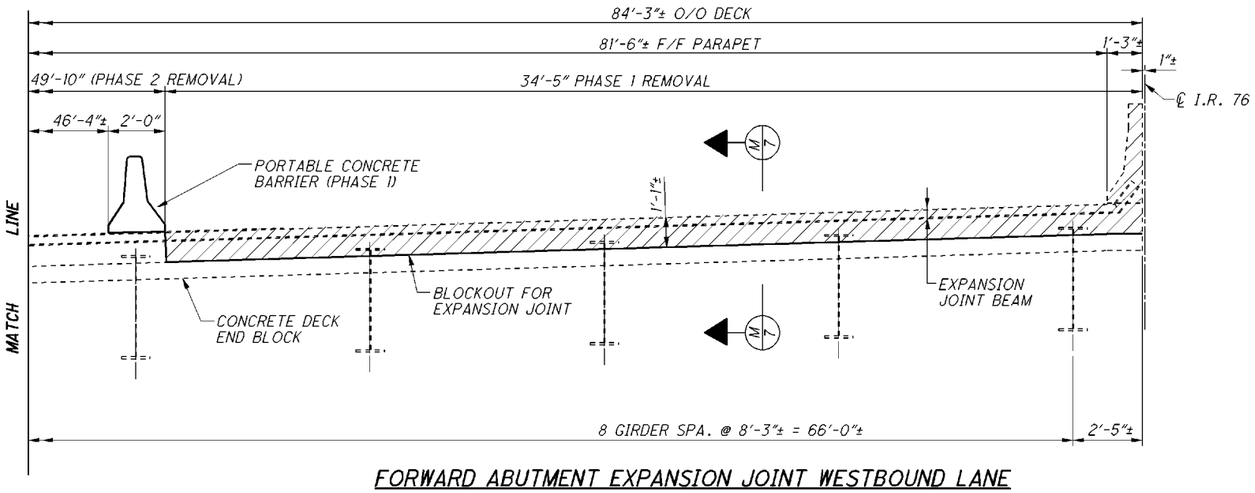


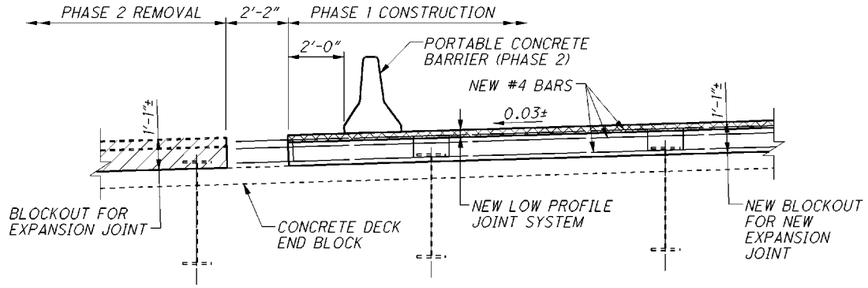
FORWARD ABUTMENT EXPANSION JOINT WESTBOUND LANE

(LOOKING AHEAD)

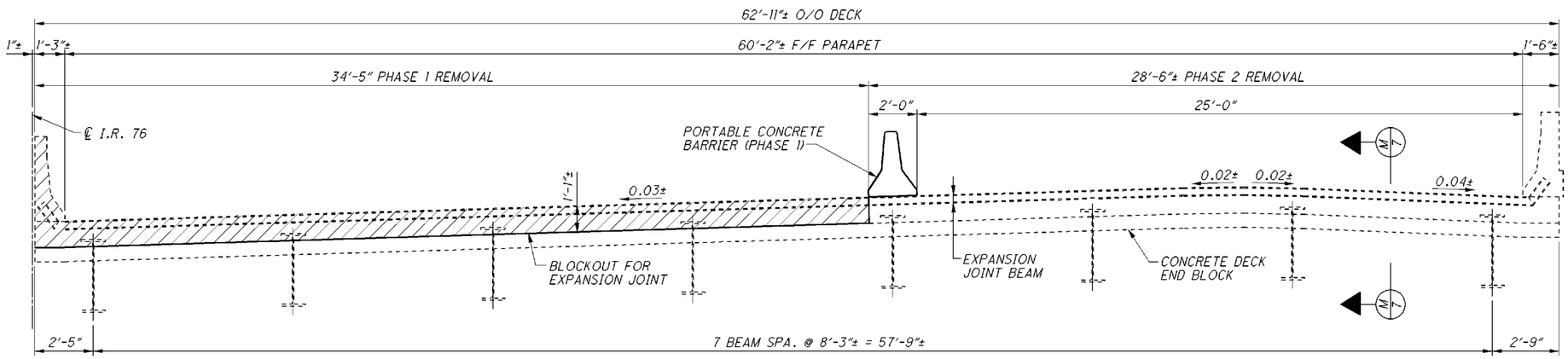


FORWARD ABUTMENT EXPANSION JOINT WESTBOUND LANE

(LOOKING AHEAD)



TYPICAL PHASE 1 CONSTRUCTION & PHASE 2 REMOVAL



FORWARD ABUTMENT EXPANSION JOINT EASTBOUND LANE

(LOOKING AHEAD)

LEGEND

ITEM 202 - PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN (PHASE 1 REMOVAL SHOWN - PHASE 2 REMOVAL SIMILAR)

NEW LOW PROFILE JOINT SYSTEM.

NOTES

MATERIALS SHOWN ARE EXISTING UNLESS OTHERWISE NOTED.

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FORWARD ABUTMENT EXPANSION JOINT PHASE CONSTRUCTION
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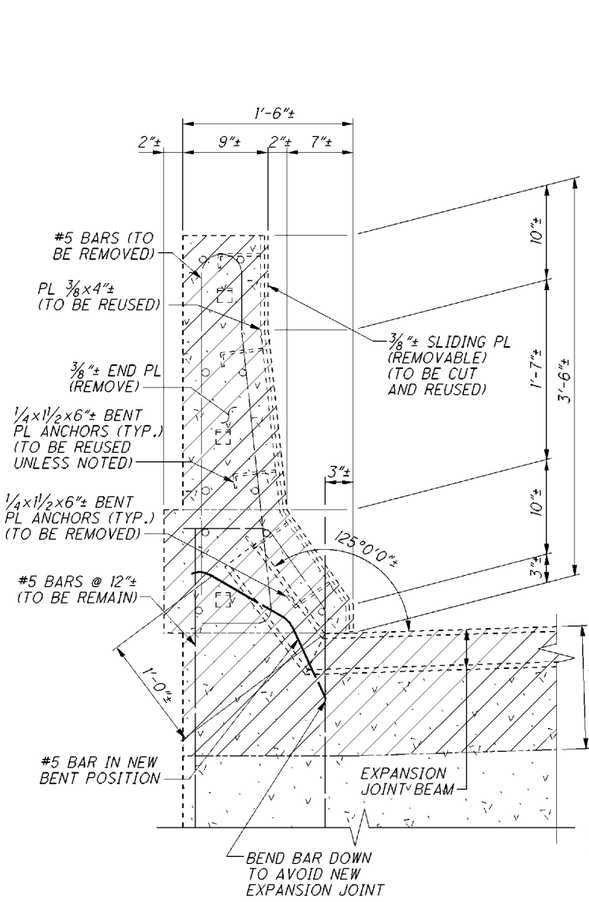
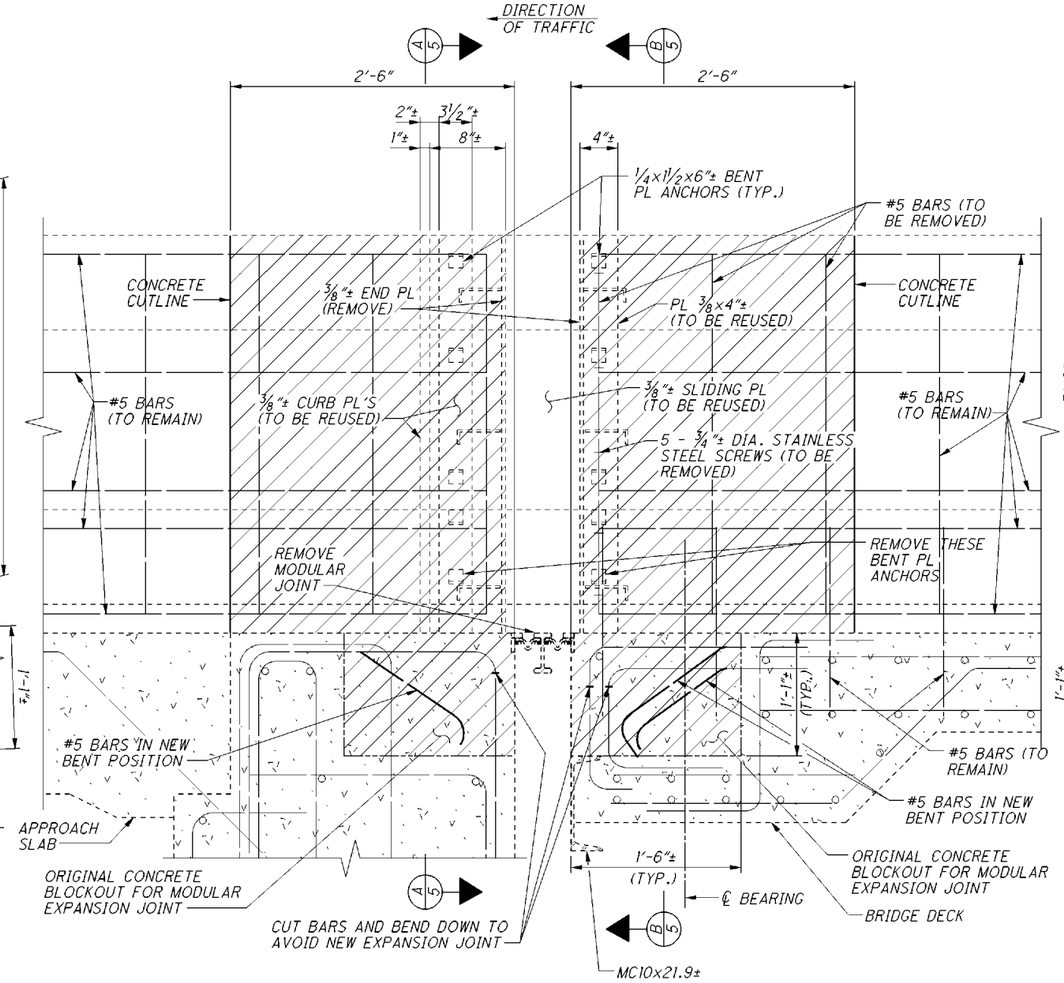
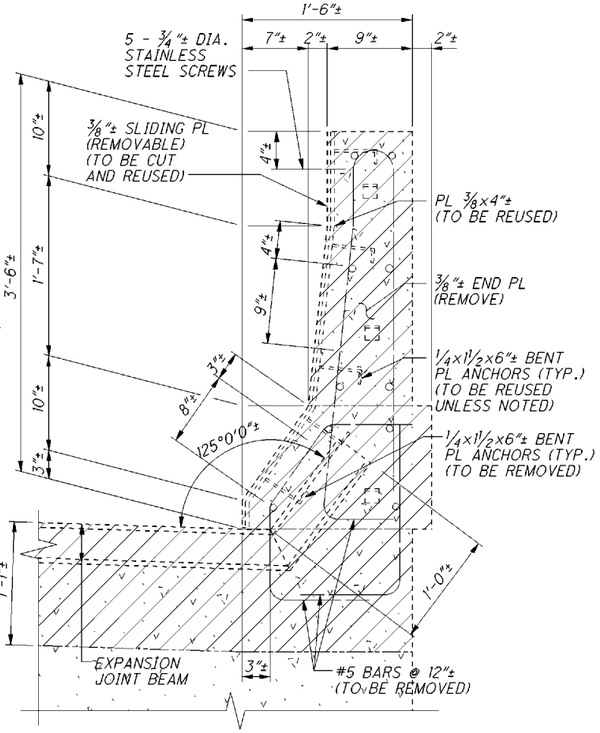


SECTION A-A



PARAPET



SECTION B-B

LEGEND

INDICATES MATERIALS TO BE REMOVED - PER ITEM 202-PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN.

NOTES

MATERIALS SHOWN ARE EXISTING UNLESS OTHERWISE NOTED.

10-AUG-2015 3:17PM mstipeti

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RICHLAND ENGINEERING LIMITED
29 NORTH PARK STREET
MANSFIELD, OHIO 44902

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EXTERIOR PARAPET EXPANSION JOINT REMOVAL DETAILS
BRIDGE NO. SUM-76-1355
OVER LITTLE CUYAHOGA RIVER & MASSILLON ROAD

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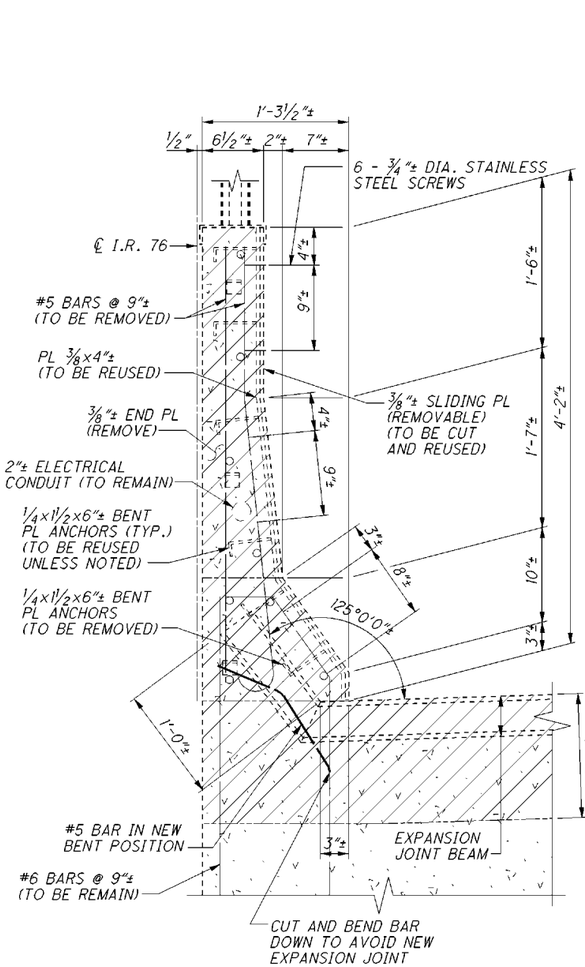
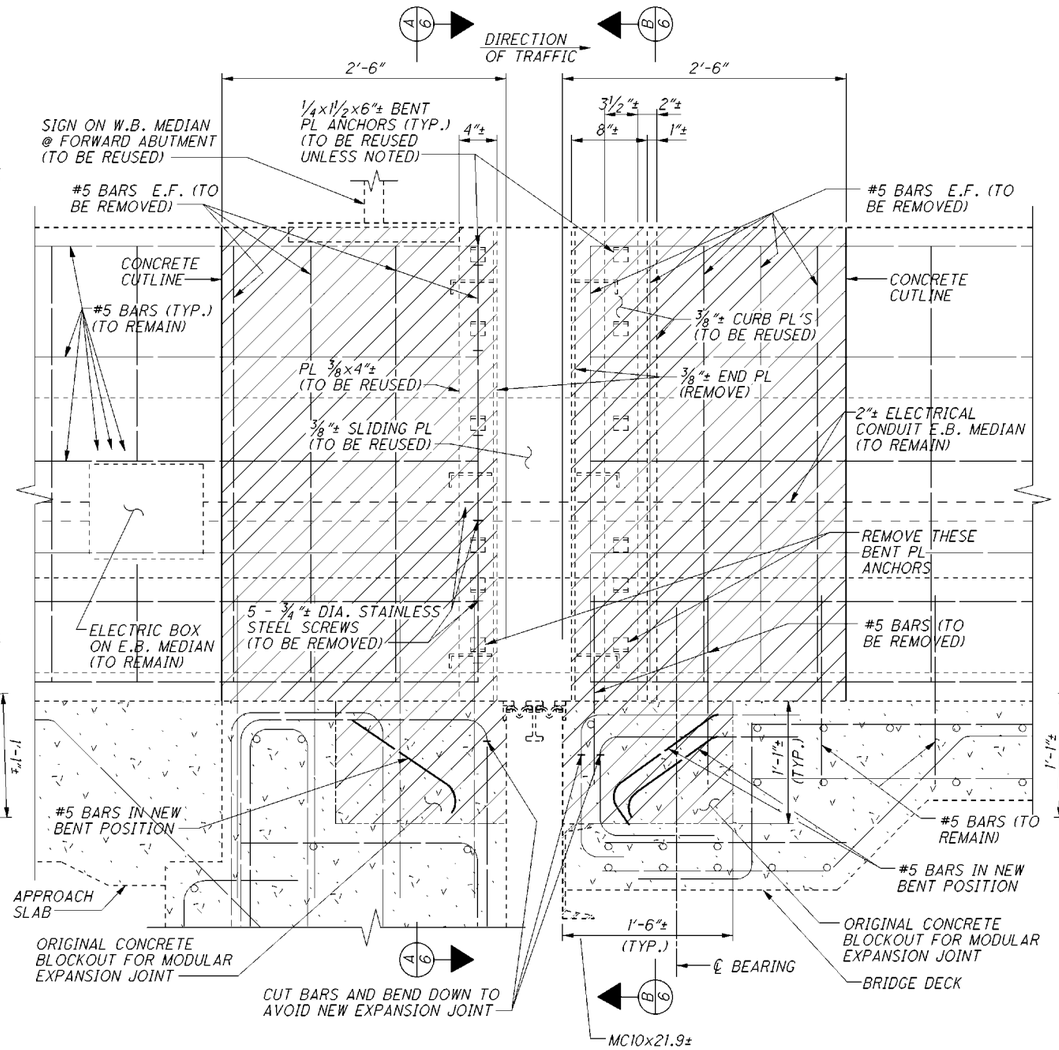
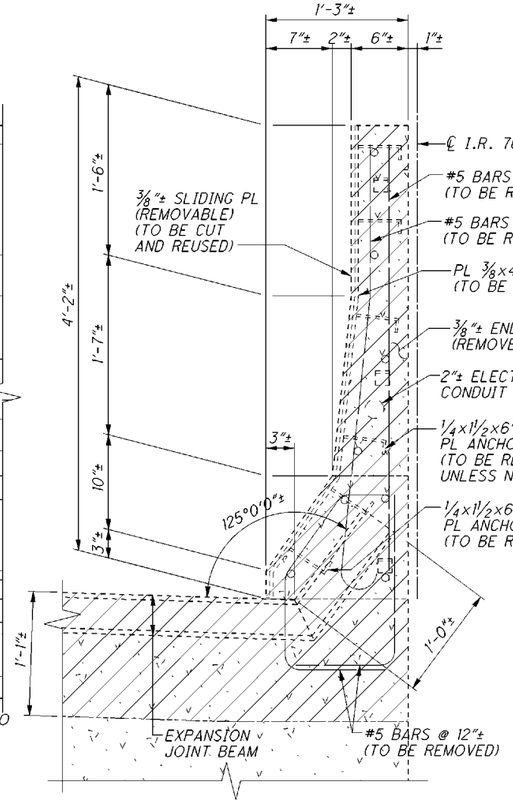


SECTION A-A



MEDIAN



SECTION B-B

LEGEND

INDICATES MATERIALS TO BE REMOVED - PER ITEM 202-PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN.

NOTES

MATERIALS SHOWN ARE EXISTING UNLESS OTHERWISE NOTED.

NOTATION: W.B. - WESTBOUND
E.B. - EASTBOUND
E.F. - EACH FACE

SIGN REMOVAL NOTES: SEE SHEET 12/14.

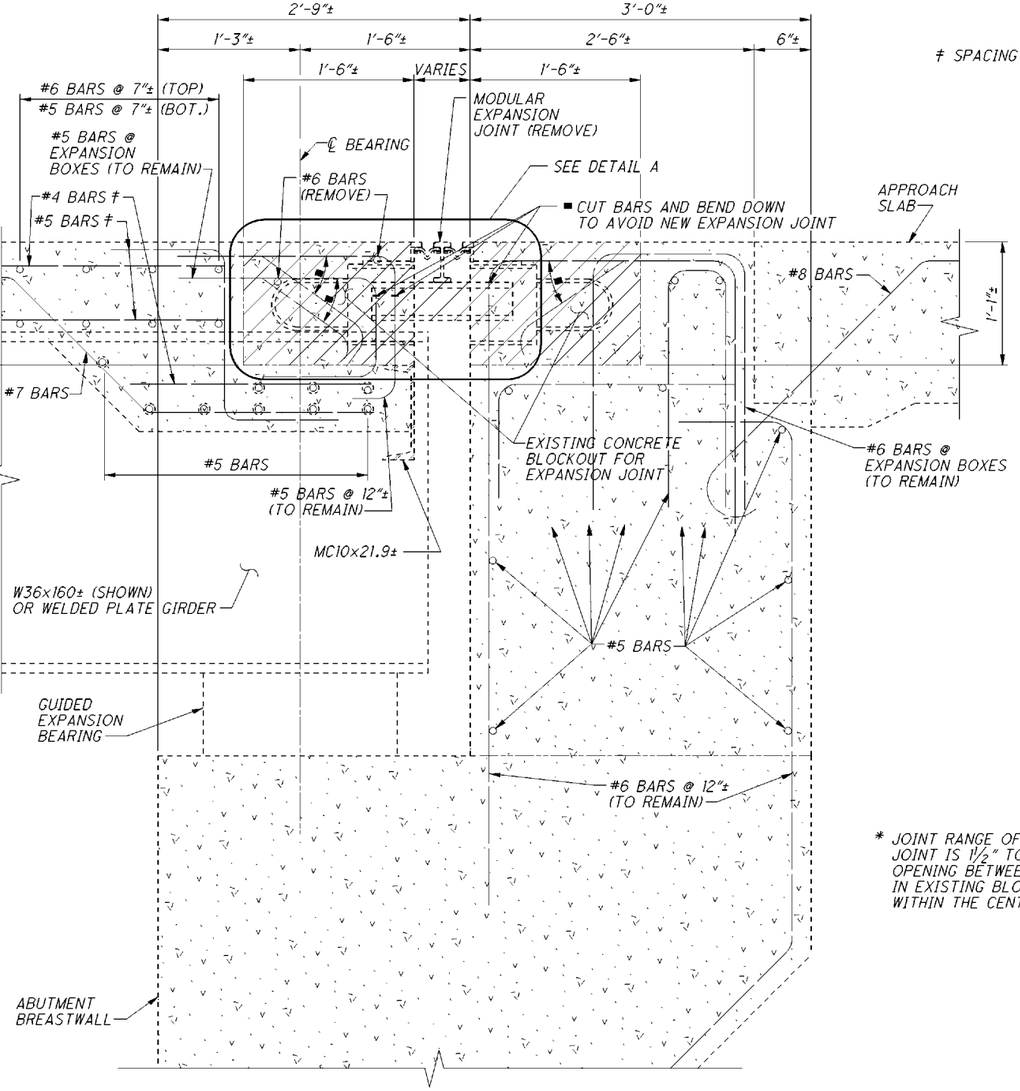
RICHLAND ENGINEERING LIMITED
29 NORTH PARK STREET
MANSFIELD, OHIO 44902

DESIGNED BLN | DRAWN SJK | REVIEWED DAP | DATE 7/20/15
CHECKED KAK | REVISED | STRUCTURE FILE NUMBER 7706456

MEDIAN PARAPET EXPANSION JOINT REMOVAL DETAILS

BRIDGE NO. SUM-76-1355
OVER LITTLE CUYAHOGA RIVER & MASSILLON ROAD

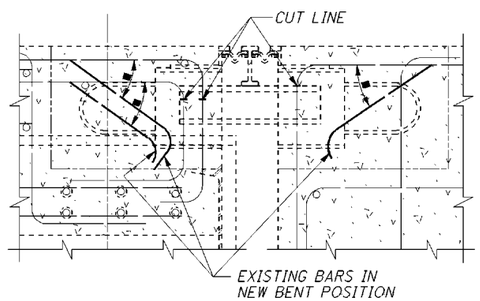
SUM-76/241-VAR/11.72
PID No. 77876



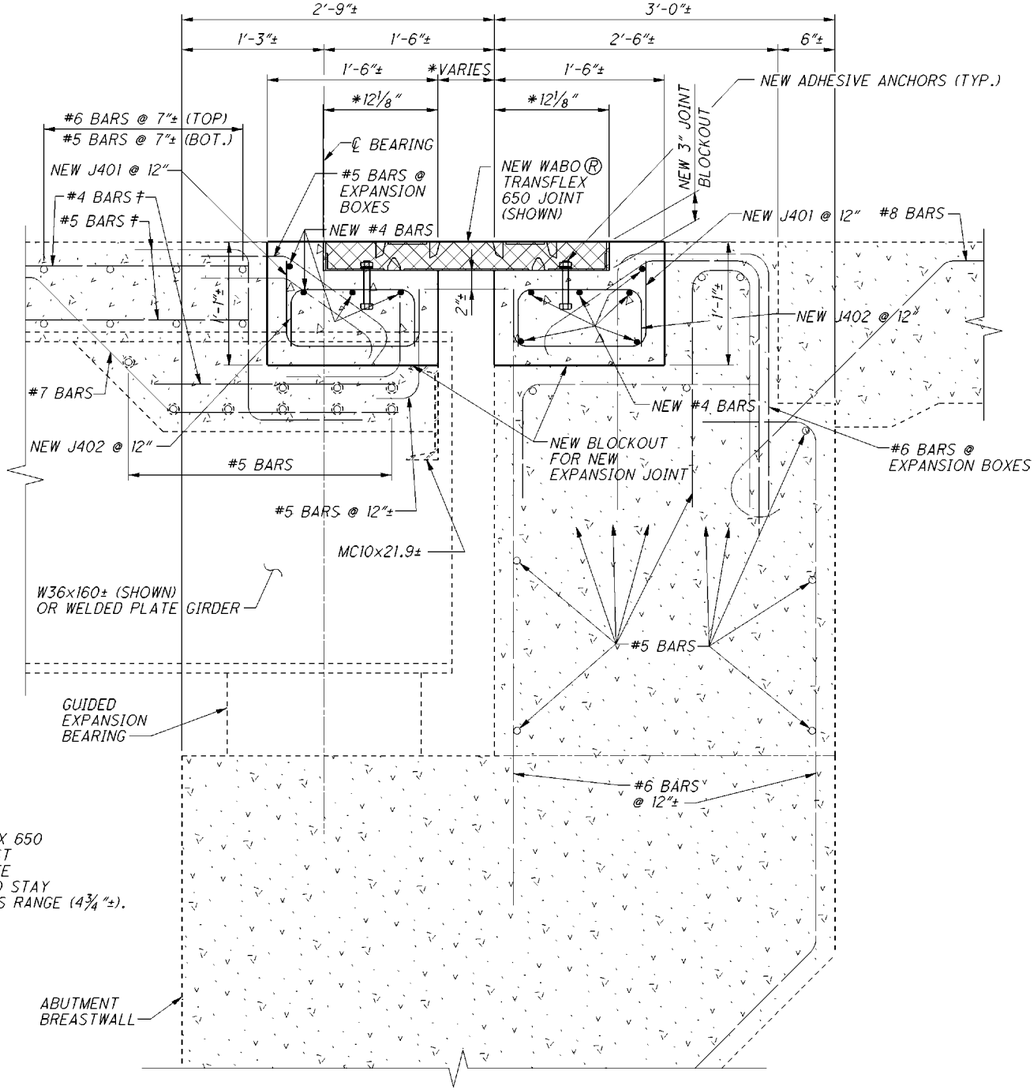
ǂ SPACING VARIES

* JOINT RANGE OF TRANSFLEX 650 JOINT IS 1½" TO 8". ADJUST OPENING BETWEEN CONCRETE IN EXISTING BLOCKOUTS TO STAY WITHIN THE CENTER OF THIS RANGE (4¾"±).

SECTION M-M
ABUTMENT EXPANSION JOINT REMOVAL DETAIL



DETAIL A



SECTION N-N
PROPOSED ABUTMENT EXPANSION JOINT DETAIL

LEGEND

- INDICATES MATERIALS TO BE REMOVED PER ITEM 202-PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN.
- NEW LOW PROFILE JOINT SYSTEM.

NOTES

MATERIALS SHOWN ARE EXISTING UNLESS OTHERWISE NOTED.

SECTION M-M: FOR LOCATION SEE SHEETS 5/14 AND 6/14.

SECTION N-N: FOR LOCATION SEE SHEETS 10/14 AND 11/14.

RICHLAND ENGINEERING LIMITED
29 NORTH PARK STREET
MANSFIELD, OHIO 44902

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KAK		7706456	

REAR ABUTMENT EXPANSION JOINT DETAILS
BRIDGE NO. SUM-76-1355
OVER LITTLE CUYAHOGA RIVER & MASSILLON ROAD

SUM-76/241-
VAR/11.72
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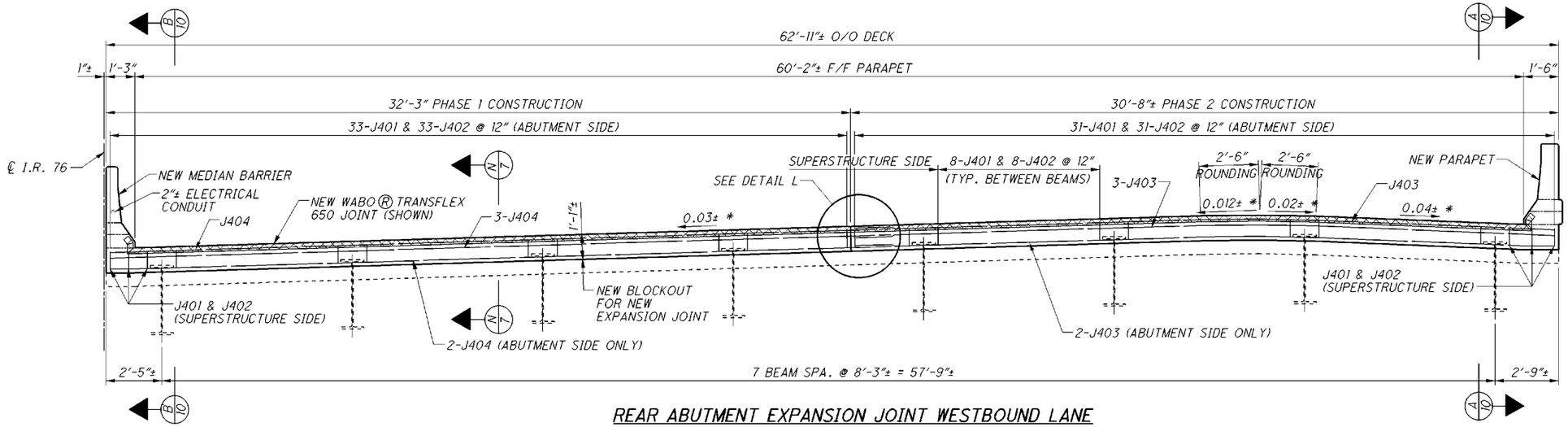
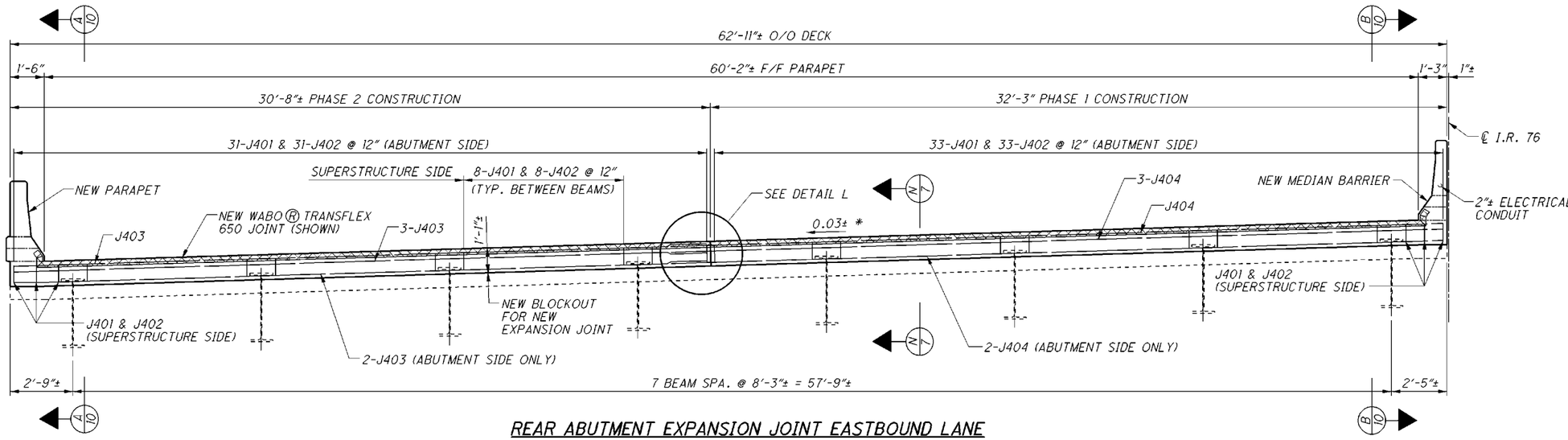


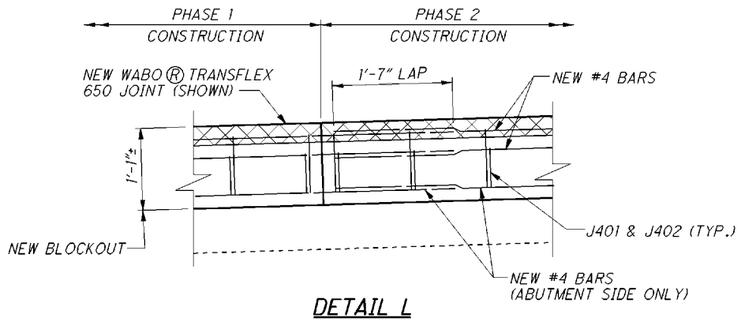
REAR ABUTMENT EXPANSION JOINT WESTBOUND LANE

(LOOKING BACK)



REAR ABUTMENT EXPANSION JOINT EASTBOUND LANE

(LOOKING BACK)



DETAIL L

LEGEND

NEW LOW PROFILE JOINT SYSTEM.

* CONTRACTOR TO FIELD VERIFY CROSS SLOPES AND ROUNDING BEFORE FABRICATION OF NEW LOW PROFILE JOINT SYSTEM.

NOTES

MATERIALS SHOWN ARE EXISTING UNLESS OTHERWISE NOTED.

REINFORCING STEEL WITH THE LETTER DESIGNATION "J" IS NEW REINFORCING STEEL.

REINFORCING STEEL SPLICE LENGTHS SHALL BE 1'-7" FOR HORIZONTAL #4 BARS.

NEW PARAPET: FOR DETAILS AND REINFORCING STEEL SEE SHEET 13/14.

NEW MEDIAN BARRIER: FOR DETAILS AND REINFORCING STEEL SEE SHEET 13/14.

RICHLAND ENGINEERING LIMITED
29 NORTH PARK STREET
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REAR ABUTMENT EXPANSION JOINT PHASE CONSTRUCTION
BRIDGE NO. SUM-76-1355
OVER LITTLE CUYAHOGA RIVER & MASSILLON ROAD

SUM-76/241-VAR/11.72
PID No. 77876

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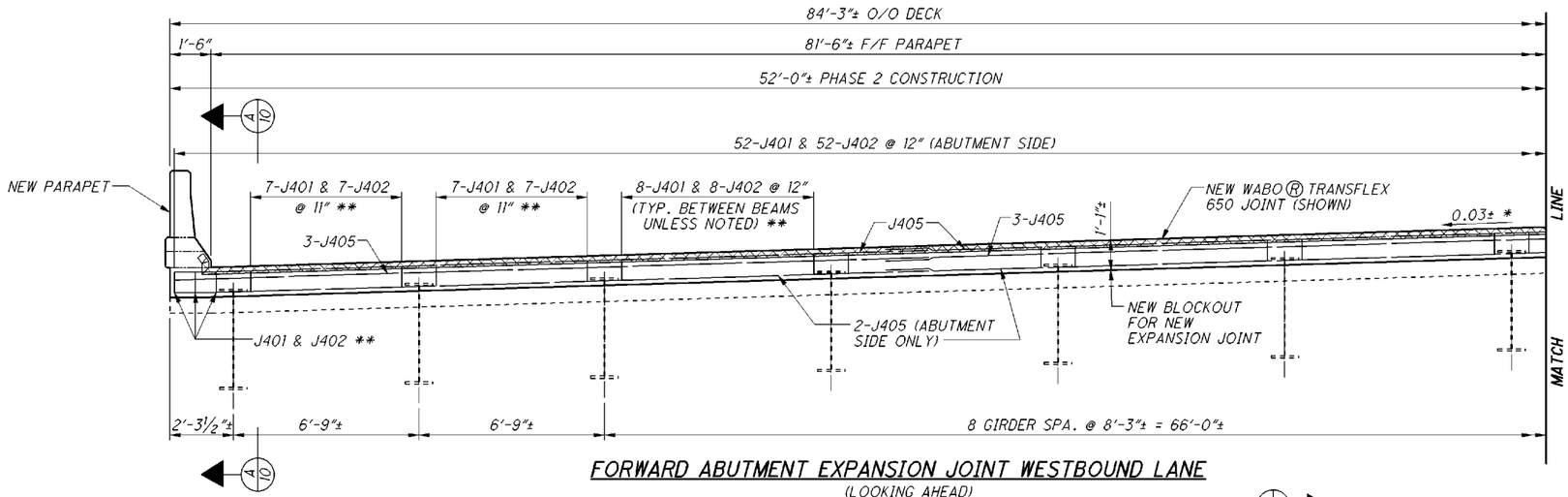
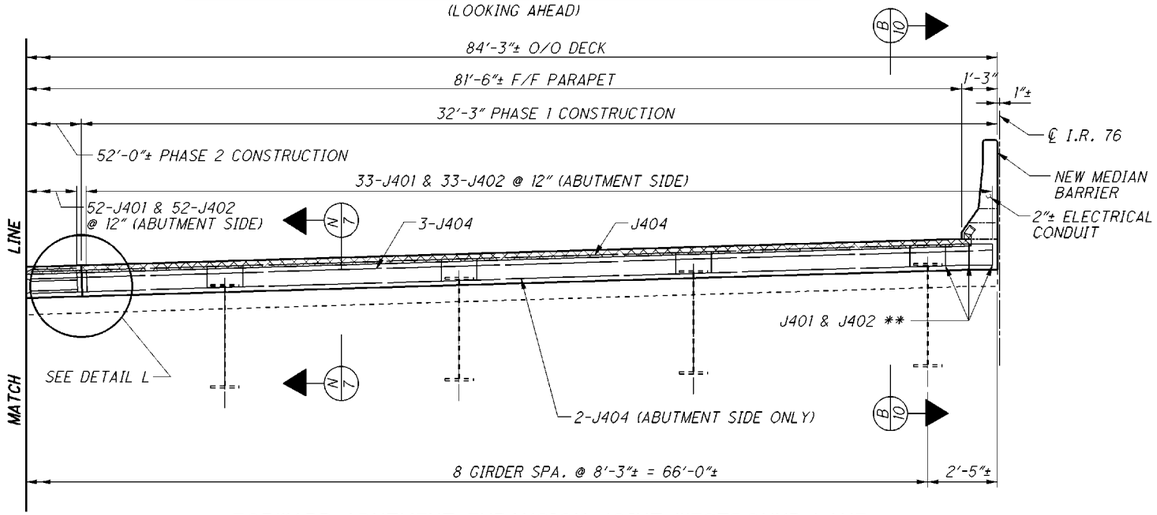


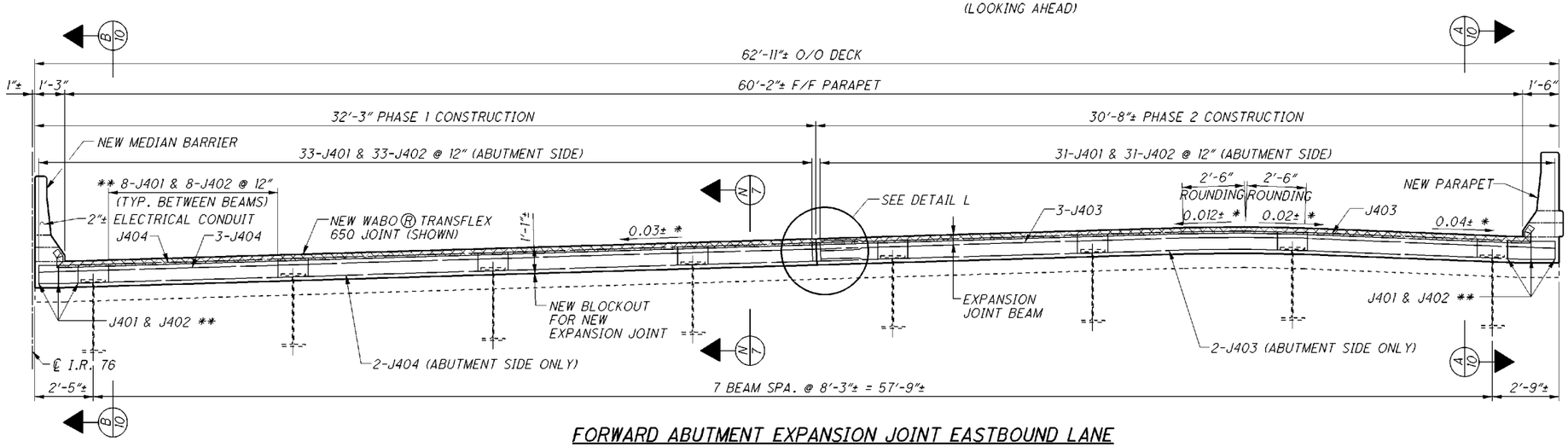
FORWARD ABUTMENT EXPANSION JOINT WESTBOUND LANE

(LOOKING AHEAD)



FORWARD ABUTMENT EXPANSION JOINT WESTBOUND LANE

(LOOKING AHEAD)



FORWARD ABUTMENT EXPANSION JOINT EASTBOUND LANE

(LOOKING AHEAD)

LEGEND

NEW LOW PROFILE JOINT SYSTEM.

* CONTRACTOR TO FIELD VERIFY CROSS SLOPES AND ROUNDING BEFORE FABRICATION OF LOW PROFILE JOINT SYSTEM.

** SUPERSTRUCTURE SIDE

NOTES

MATERIALS SHOWN ARE EXISTING UNLESS OTHERWISE NOTED.

DETAIL L: SEE SHEET 10/14.

ADDITIONAL NOTES: SEE SHEET 10/14.

RICHLAND ENGINEERING LIMITED
29 NORTH PARK STREET
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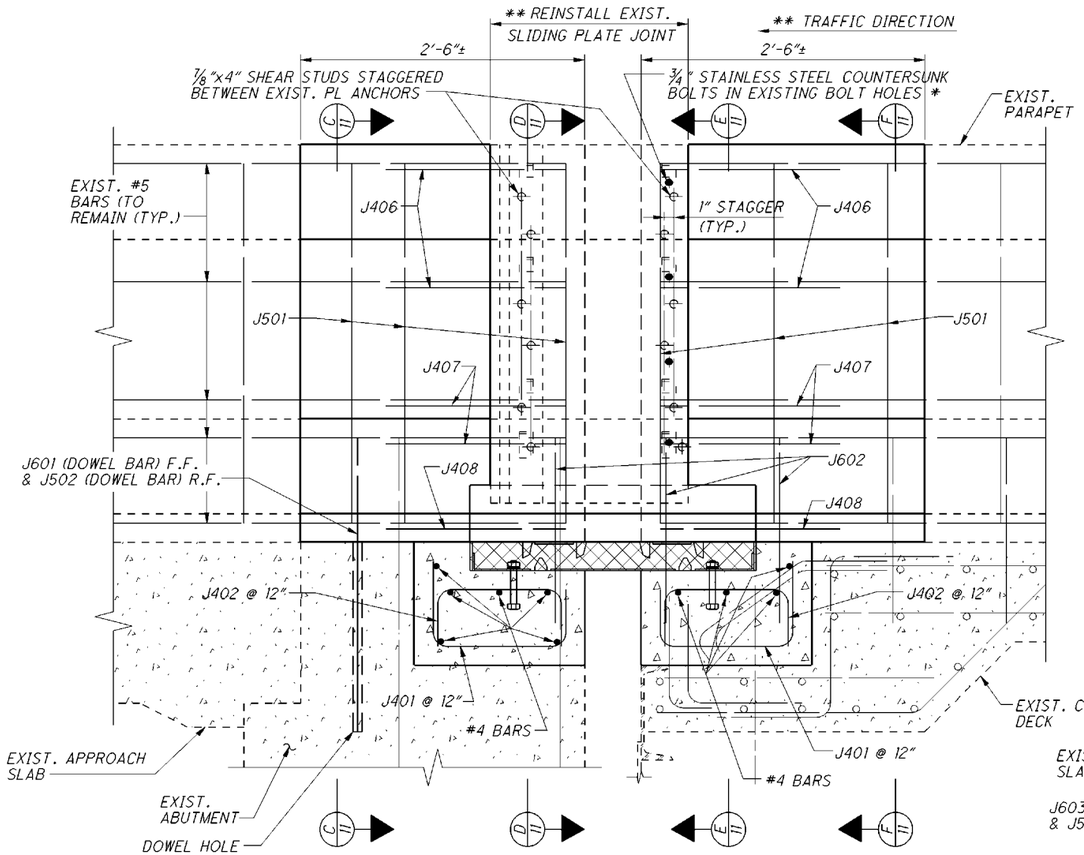
KAK		7706456	

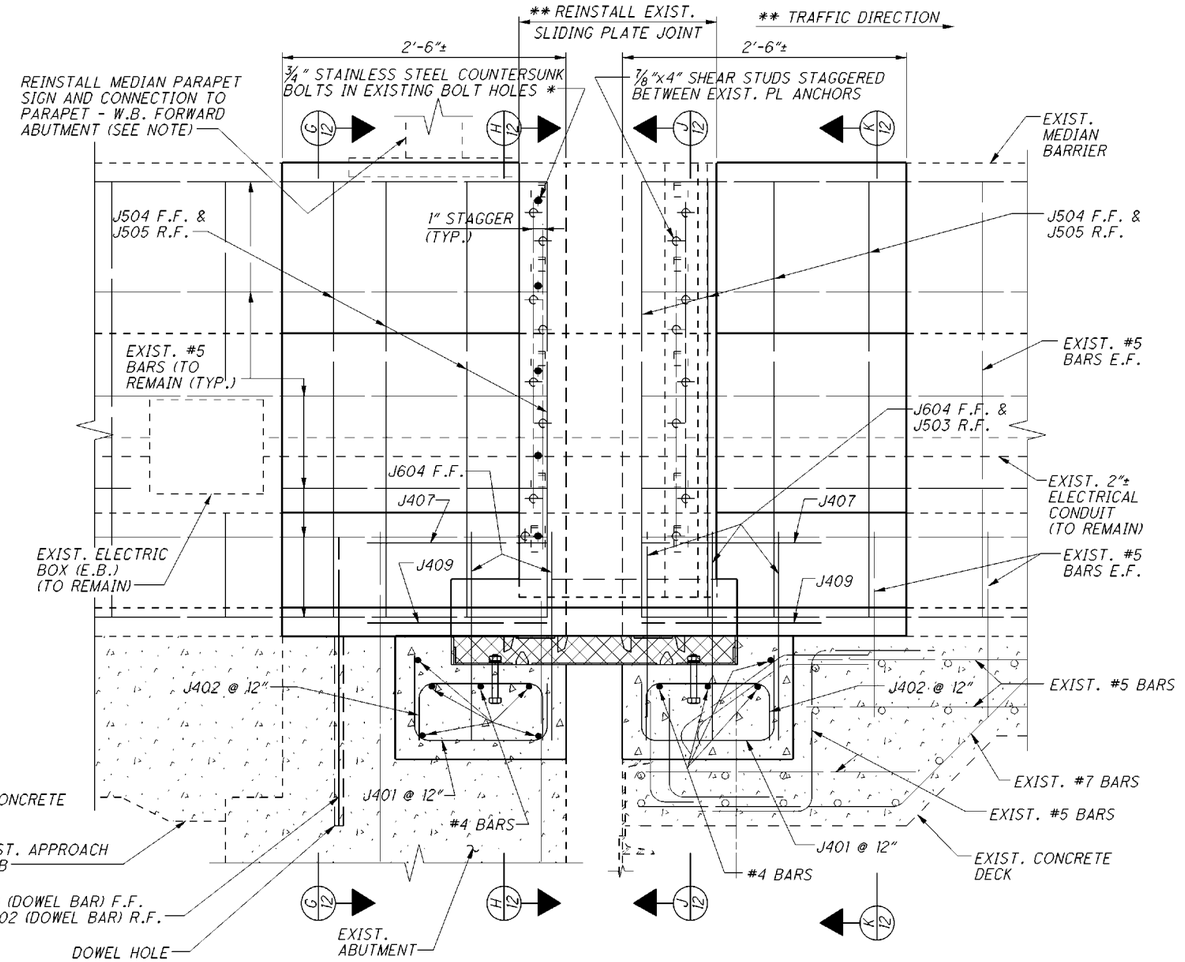
FORWARD ABUTMENT EXPANSION JOINT PHASE CONSTRUCTION
BRIDGE NO. SUM-76-1355
OVER LITTLE CUYAHOGA RIVER & MASSILLON ROAD

SUM-76/241-VAR/11.72
PID No. 77876



SECTION A-A

(AT OUTSIDE PARAPET)
REAR ABUTMENT WESTBOUND (SHOWN)
REAR ABUTMENT EASTBOUND (OPPOSITE HAND)
FORWARD ABUTMENT WESTBOUND (OPPOSITE HAND)
FORWARD ABUTMENT EASTBOUND (SHOWN)



SECTION B-B

(AT MEDIAN BARRIER)
REAR ABUTMENT WESTBOUND (OPPOSITE HAND)
REAR ABUTMENT EASTBOUND (SHOWN)
FORWARD ABUTMENT WESTBOUND (SHOWN)
FORWARD ABUTMENT EASTBOUND (OPPOSITE HAND)

LEGEND

NEW LOW PROFILE JOINT SYSTEM.

* ADJUST LOCATION OF SHEAR STUDS AS NECESSARY TO MISS STAINLESS STEEL COUNTERSUNK BOLTS.

** EXISTING SLIDING PLATES TO BE REINSTALLED IN THE SAME CONFIGURATION AS THE EXISTING, WITH THE SLIDING SURFACES BETWEEN PLATES ON THE TRAILING END OF THE JOINT OPENING.

NOTES

MATERIALS SHOWN ARE NEW UNLESS OTHERWISE NOTED.

NOTATION: F.F. - FRONT FACE W.B. - WESTBOUND
R.F. - REAR FACE E.B. - EASTBOUND
E.F. - EACH FACE

SECTIONS A-A & B-B: FOR LOCATIONS SEE SHEETS 10/14 AND 11/14.

SIGN REMOVAL & REINSTALLATION: CAREFULLY REMOVE, STORE AND REINSTALL BRIDGE END MARKER SIGN AND SUPPORT. PROVIDE A CONNECTION TO THE PARAPET MATCHING THE EXISTING CONNECTION AND TO THE SATISFACTION OF THE ENGINEER. THE WORK SHALL BE CONSIDERED INCIDENTAL TO THE PROJECT AND NO ADDITIONAL PAYMENT SHALL BE MADE.

ADDITIONAL NOTES: SEE SHEET 10/14.

RICHLAND ENGINEERING LIMITED
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MANSFIELD, OHIO 44902

DESIGNED BLN | DRAWN JLS | REVIEWED DAP | DATE 7/20/15
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EXPANSION JOINT DETAILS - 1

BRIDGE NO. SUM-76-1355
OVER LITTLE CUYAHOGA RIVER & MASSILLON ROAD

SUM-76/241-VAR/11.72
PID No. 77876

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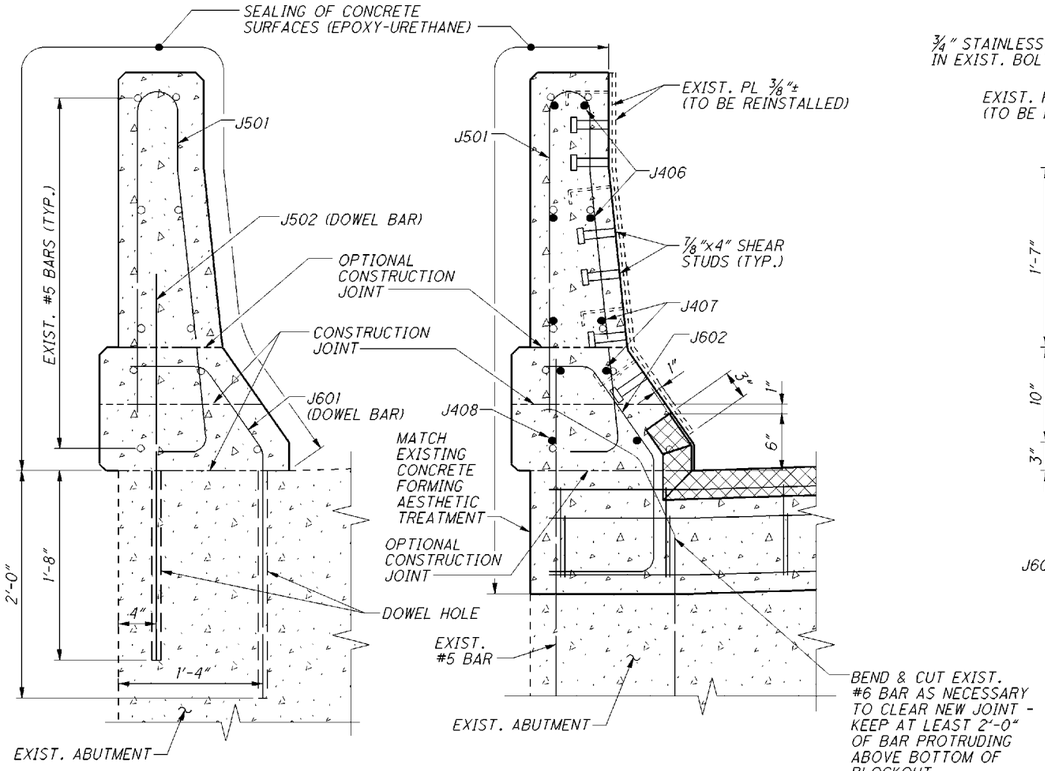
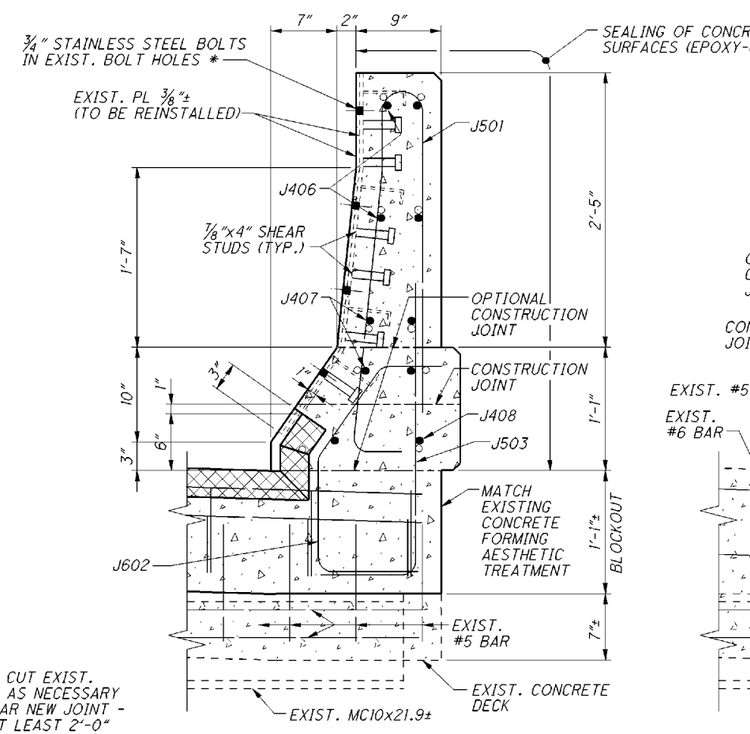
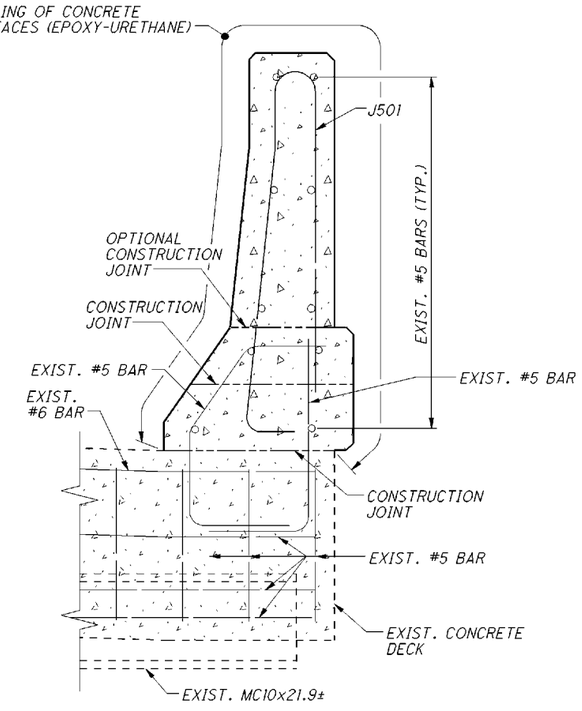


SECTION C-C

SECTION D-D

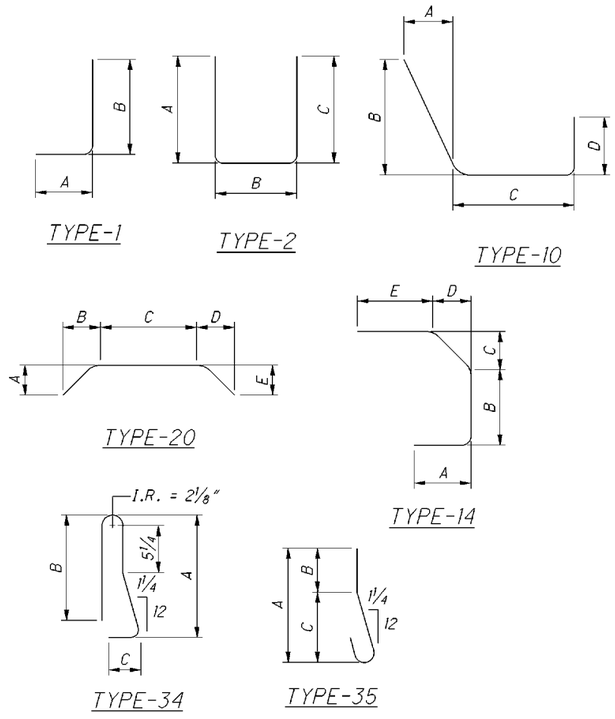


SECTION E-E



SECTION F-F

MARK	NUMBER			LENGTH	WEIGHT	TYPE	DIMENSIONS						
	REAR	FWD.	TOTAL				A	B	C	D	E	R	INC
EXPANSION JOINTS												CALCULATED JLS CHECKED BLN	DATE 5/15 DATE 6/15
J401	252	295	547	2'-3"	822	2	0'-6"	1'-2"	0'-9"				
J402	252	295	547	2'-0"	731	2	0'-6"	1'-2"	0'-6"				
J403	20	10	30	30'-4"	608	STR							
J404	20	20	40	33'-10"	904	STR							
J405		20	20	26'-8"	356	STR							
J406	8	8	16	3'-3"	35	2	1'-7"	0'-4"	1'-7"				
J407	12	12	24	3'-4"	53	2	1'-7"	0'-5"	1'-7"				
J408	4	4	8	3'-8"	20	2	1'-7"	0'-9"	1'-7"				
J409	4	4	8	3'-6"	19	2	1'-7"	0'-7"	1'-7"				
J501	12	12	24	6'-10"	171	34	3'-3"	3'-0"	0'-7½"				
J502	2	2	4	3'-4"	14	STR							
J503	6	6	12	3'-4"	42	1	0'-11"	2'-6"					
J504	16	16	32	4'-6"	150	35	3'-11"	1'-4"	2'-7"				
J505	16	16	32	3'-10"	128	STR							
J601	2	2	4	3'-7"	22	20	1'-3"	1'-9 ½"	0'-10 ¾"	0'-4"	0'-5 ¾"		
J602	6	6	12	3'-1"	56	14	0'-11"	1'-0 ½"	0'-9 ½"	0'-6 ¾"	0'-4 ¼"		
J603	2	2	4	3'-5"	21	20	1'-3"	1'-9 ½"	0'-10 ½"	0'-3"	0'-4"		
J604	10	10	20	2'-7"	78	10	0'-9 ½"	0'-8"	1'-0 ½"	0'-8"			
				TOTAL	4230								



BENDING DIAGRAMS

LEGEND

NEW LOW PROFILE JOINT SYSTEM.

* ADJUST LOCATION OF SHEAR STUDS AS NEEDED TO MISS STAINLESS STEEL BOLTS.

NOTES

MATERIALS SHOWN ARE NEW UNLESS NOTED OTHERWISE.

SECTIONS C-C, D-D, E-E & F-F: FOR LOCATIONS SEE SHEET 12/14.

BAR SIZE IS INDICATED IN THE BAR MARK. THE FIRST LETTER IDENTIFIES BAR LOCATION, THE NEXT DIGIT INDICATES THE BAR SIZE DESIGNATION. THE REMAINING DIGITS STATE THE SEQUENCE NUMBER.

EXAMPLE: A511
A = LOCATION OF THE BAR IN STRUCTURE (ABUTMENT)
5 = BAR SIZE DESIGNATION
11 = SEQUENCE NUMBER

BAR DIMENSIONS SHOWN ARE OUT TO OUT UNLESS OTHERWISE INDICATED. R INDICATES INSIDE RADIUS, UNLESS OTHERWISE NOTED.

ALL REINFORCING STEEL TO BE EPOXY COATED, PER CMS 709.00.

ADDITIONAL NOTES: SEE SHEET 9/14.

RICHLAND ENGINEERING LIMITED
29 NORTH PARK STREET
MANSFIELD, OHIO 44902

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EXPANSION JOINT DETAILS - 2
BRIDGE NO. SUM-76-1355
OVER LITTLE CUYAHOGA RIVER & MASSILLON ROAD

SUM-76/241-VAR/11.72
PID No. 77876

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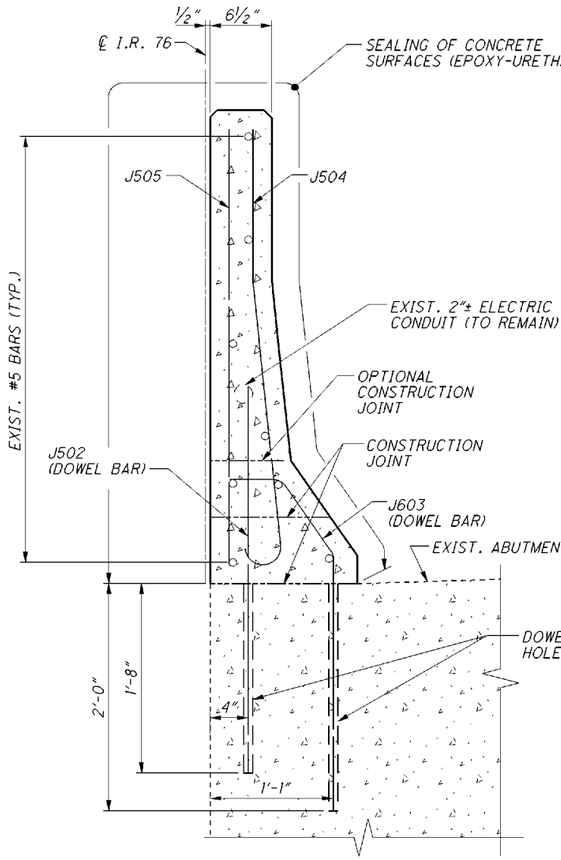
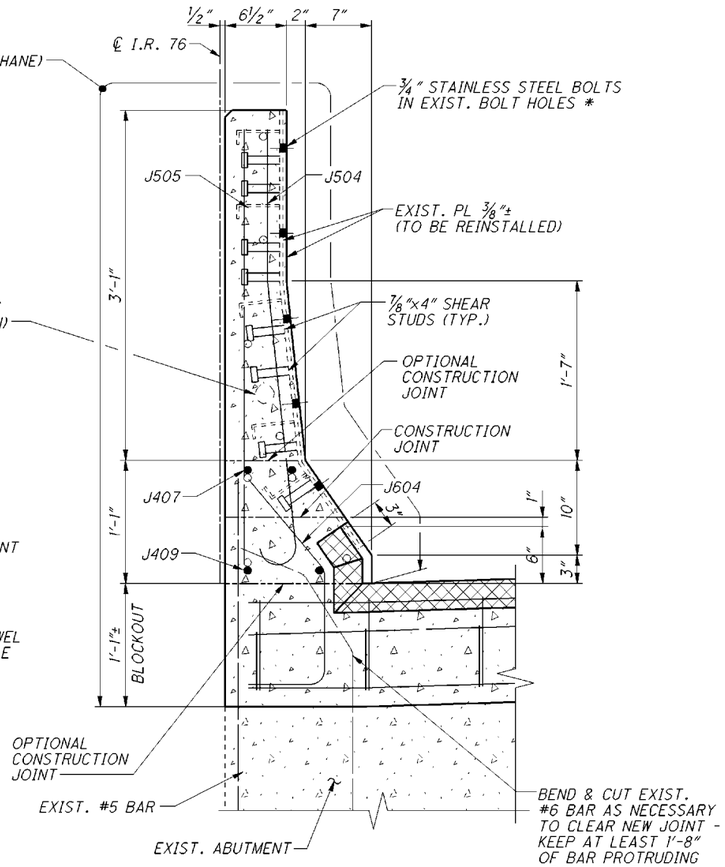
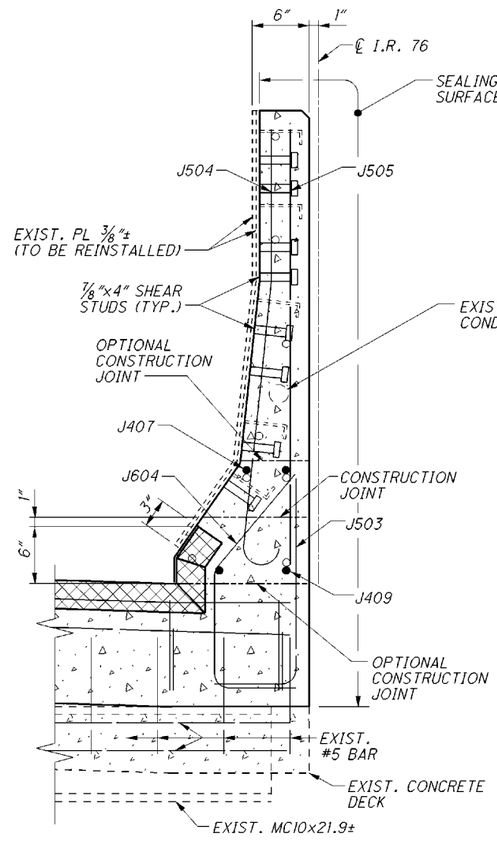


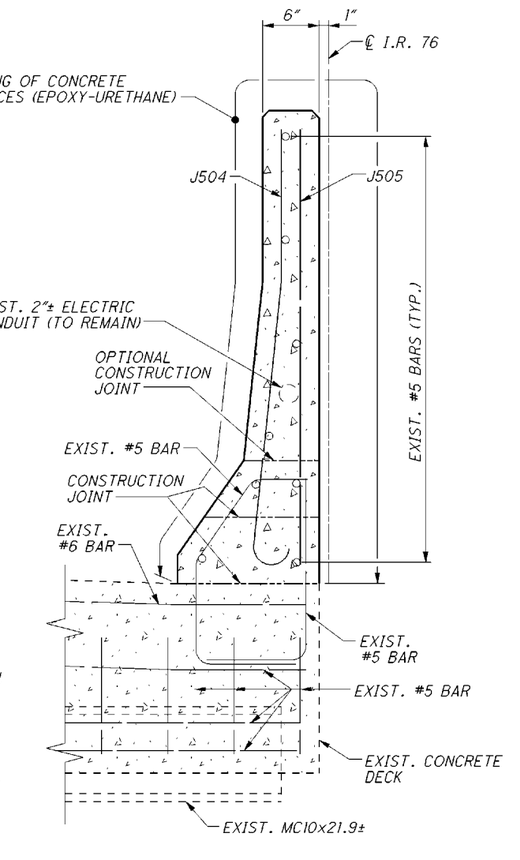
SECTION G-G



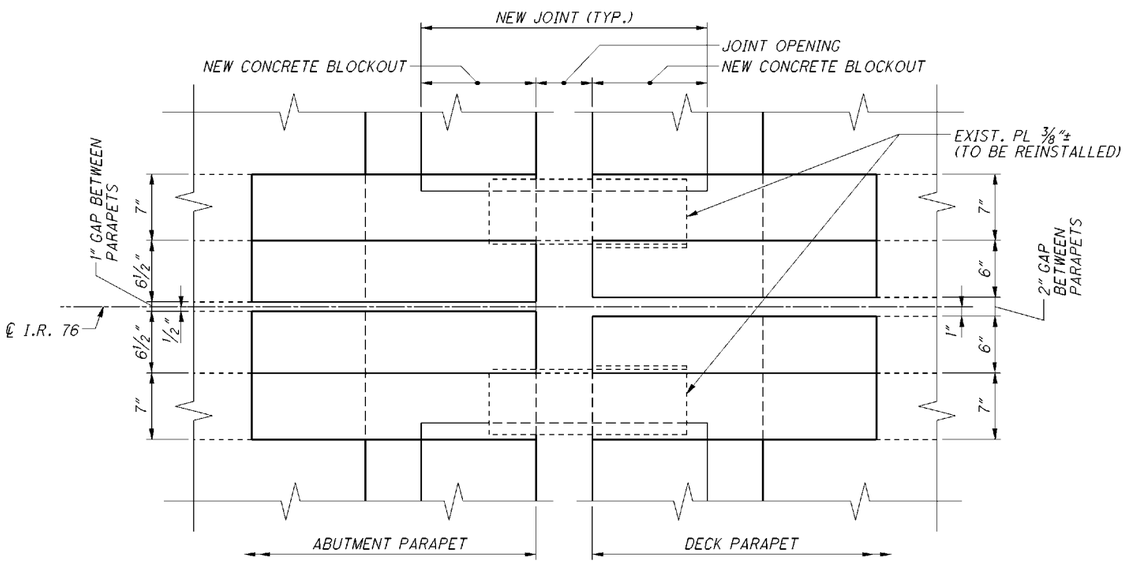
SECTION H-H



SECTION J-J



SECTION K-K



MEDIAN PARAPET PLAN AT EXPANSION JOINT

LEGEND

NEW LOW PROFILE JOINT SYSTEM.

* ADJUST LOCATION OF SHEAR STUDS AS NEEDED TO MISS STAINLESS STEEL BOLTS.

NOTES

MATERIALS SHOWN ARE NEW UNLESS NOTED OTHERWISE.

SECTIONS G-G, H-H, J-J & K-K: FOR LOCATIONS SEE SHEET 12/14.

ADDITIONAL NOTES: SEE SHEET 9/14.

RICHLAND ENGINEERING LIMITED
29 NORTH PARK STREET
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KAK		7706456	

EXPANSION JOINT DETAILS - 3
BRIDGE NO. SUM-76-1355
OVER LITTLE CUYAHOGA RIVER & MASSILLON ROAD

SUM-76/241-
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