

GENERAL NOTES

LAKE COUNTY
LAK-91-(4.23)(4.49)

OHIO
FHWA
REGION 5

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REQUIREMENTS

THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN AND INSTALLATION OF AN ADEQUATE SUPPORT AND JACKING SYSTEM CAPABLE OF RAISING THE STRUCTURE AND WILL BE RESPONSIBLE FOR PROPERLY ARRANGING ALL TEMPORARY SUPPORTS SO AS NOT TO DAMAGE OR INDUCE OVERSTRESS IN ANY EXISTING BRIDGE MEMBERS AND DIAPHRAGMS.

JACKING AND/OR TEMPORARY SUPPORTS SHALL BE LIMITED TO ONE (1) SUBSTRUCTURE UNIT AT ANY GIVEN TIME (E.G. JACKING AND/OR TEMPORARY SUPPORTS WILL NOT BE PERMITTED AT REAR ABUTMENT AND FORWARD ABUTMENT SIMULTANEOUSLY). ALL BEAMS AT A GIVEN SUBSTRUCTURE UNIT SHALL BE RAISED SIMULTANEOUSLY. E.G. BEAM LINES 1-10 SHALL BE RAISED SIMULTANEOUSLY WHEN REMOVING THE ABUTMENT BEARINGS. THE STRUCTURE SHALL NOT BE RAISED MORE THAN 1/4".

ANY DAMAGE TO STRUCTURAL MEMBERS, CONNECTIONS OR PARTS THAT ARE TO REMAIN AS PART OF THE PERMANENT CONSTRUCTION SHALL BE CORRECTED AND/OR REPAIRED BY THE CONTRACTOR AT HIS EXPENSE TO THE SATISFACTION OF THE ENGINEER. THE CONTRACTOR'S DETAILED PROCEDURES FOR SETTING THE BEARINGS SHALL BE SUBMITTED, TO THE ENGINEER FOR APPROVAL. THE SUBMITTAL SHALL INCLUDE DETAILS OF THE PROPOSED TEMPORARY SUPPORT AND JACKING SYSTEM, INDICATING MATERIALS, MEMBER SIZES, SPACINGS, SUPPORT LOCATIONS, JACKING POINTS, REACTION AND REMOVAL PROCEDURES.

CONTRACTOR OPTION

AT THE CONTRACTOR'S OPTION, THE EXISTING EXPANSION BEARING DEVICE INDICATED TO BE RESET MAY BE REMOVED AND REPLACED WITH A NEW EXPANSION BEARING DEVICE EQUAL TO THAT OF THE EXISTING DEVICE AND IN CONFORMANCE WITH PROVISIONS UNDER ITEM 516.

METHOD OF MEASUREMENT

THE QUANTITY WILL BE MEASURED AS THE ACTUAL NUMBER OF BEARINGS RESET

BASIS OF PAYMENT

WORK UNDER RESETTING EXPANSION BEARING DEVICES WILL BE PAID FOR AT THE CONTRACT UNIT PRICE PER EACH BEARING REFURBISHED AND RESET, AND SHALL BE FULL COMPENSATION FOR ALL LABOR, MATERIALS AND EQUIPMENT NECESSARY TO PERFORM THE WORK, COMPLETE AND ACCEPTED. PAINTING OF EXISTING AND/OR NEW BEARINGS SHALL CONFORM TO ITEM 514, FIELD PAINTING OF EXISTING STEEL AND THE OZEU PAINT SYSTEM PROPOSAL NOTE.

ITEM	UNIT	DESCRIPTION
SPECIAL	EACH	REFURBISH AND RESET BEARING

ITEM 517--RAILING FACED, AS PER PLAN:

THIS ITEM SHALL CONSIST OF FACING CURB STYLE PARAPETS TO ATTAIN A DEFLECTOR PARAPET SHAPE USING CAST-IN-PLACE CONCRETE AS SHOWN ON THE DETAIL SHEETS.

REMOVAL: THE CONTRACTOR SHALL CAREFULLY REMOVE THE EXISTING ALUMINUM RAILING, POSTS, PORTIONS OF CURB PLATE AND EXISTING CONCRETE CURB TO PROVIDE CLEARANCE FOR PLACING CONCRETE AS DETAILED IN THE PLANS. THE WINGWALL PARAPET AND CURB SHALL BE REMOVED WITHIN THE END 14 FOOT WINGWALL TRANSITION LENGTH AS DETAILED IN THE PLANS. ALL LOOSE OR UNSOUND PARAPET CONCRETE SHALL ALSO BE REMOVED. ALL WORK SHALL BE DONE IN A MANNER THAT WILL NOT CUT, ELONGATE OR DAMAGE IN ANY WAY THE REINFORCING STEEL WHICH IS TO REMAIN. CONCRETE MAY BE REMOVED BY CHIPPING OR HAND DRESSING. CHIPPING HAMMERS SHALL NOT BE HEAVIER THAN THE NOMINAL 90-POUND CLASS. NO BACKHOE-RAMS SHALL BE PERMITTED.

DOWEL HOLES AND REINFORCING STEEL: DOWEL HOLES SHALL BE DRILLED WHERE SHOWN ON THE PLANS. THE TOE DECK STEEL EPOXY GROUT AND HOLES SHALL BE IN ACCORDANCE WITH SS852. ANY REINFORCING STEEL WHICH IS TO REMAIN THAT IS BROKEN DURING REBENDING SHALL BE REPLACED WITH A NEW, DOWELED IN BAR AS DETAILED. ALL REINFORCING STEEL, DOWEL HOLES AND GROUTING ARE INCLUDED UNDER THIS ITEM OF WORK.

ANY DAMAGE DONE TO THE EXISTING 2" DIAMETER LIGHTING CONDUIT AND ASSOCIATED ELECTRICAL WIRING EMBEDDED IN THE EXISTING WINGWALL PARAPET SHALL BE REPAIRED AND/OR REPLACED BY THE CONTRACTOR TO THE SATISFACTION OF THE ENGINEER AND IN ACCORDANCE WITH STANDARD DRAWING HL-30.31.

SURFACE PREPARATION: THE PARAPET SURFACE NEXT TO THE REFACING SHALL BE THOROUGHLY CLEANED BY SANDBLASTING FOLLOWED BY AN AIR BLAST. USE OF HAND TOOLS MAY BE NECESSARY TO REMOVE SCALE FROM THE REINFORCING STEEL. THE SURFACE SHALL BE MADE FREE OF SPALLS, LAITANCE AND ALL TRACES OF FOREIGN MATERIAL. DETERGENT CLEANING SHALL PRECEDE BLAST CLEANING AS NECESSARY TO ENSURE THE REMOVAL OF CONTAMINANTS THAT ARE DETRIMENTAL TO ACHIEVING AN ADEQUATE BOND.

MATERIALS

REINFORCING STEEL 509.10, GRADE 60
CONCRETE 511. CLASS "S"

SHRINKAGE CRACK CONTROL JOINTS: SHRINKAGE CRACK CONTROL JOINTS SHALL BE PLACED IN THE NEW CONCRETE PARAPETS AT THE SAME LOCATION AND MIDWAY BETWEEN THE EXISTING DEFLECTION JOINTS AND SHALL BE MADE AT A RIGHT ANGLE TO THE DECK BY SAWING. THE MAXIMUM SPACING BETWEEN SHRINKAGE CRACK CONTROL JOINTS IN THE PARAPET REFACING SHALL BE 10'. THE SAWING SHALL BE DONE AFTER THE CONCRETE HAS TAKEN ITS INITIAL SET AND BEFORE ANY SHRINKAGE CRACKS CAN DEVELOPE. THE USE OF AN EDGE GUIDE, FENCE OR JIG IS REQUIRED TO INSURE THAT THE JOINT IS CUT STRAIGHT, TRUE AND ALIGNED ON ALL FACES OF THE PARAPET. DEPTH OF THE SAW CUT SHALL BE ONE AND ONE HALF INCHES. THE JOINT WIDTH SHALL BE THE WIDTH OF THE SAW BLADE, NOT TO EXCEED ONE QUARTER INCH. THE OUTSIDE ONE INCH OF THE PERIMETER OF THE SHRINKAGE CRACK CONTROL JOINT SHALL BE SEALED WITH A POLYURETHANE OR POLYMERIC JOINT SEALANT MEETING THE REQUIREMENTS OF FEDERAL SPECIFICATION TT-S-002.7E. THE BOTTOM ONE HALF INCH OF THE SHRINKAGE CRACK CONTROL JOINT AT BOTH THE INSIDE AND OUTSIDE FACES OF THE PARAPET SHOULD BE LEFT UNSEALED TO ALLOW ANY WATER WHICH MAY ENTER THE JOINT TO ESCAPE.

METHOD OF MEASUREMENT: THE QUANTITY SHALL BE THE ACTUAL LENGTH OF THE RAILING FACED AS MEASURED BETWEEN THE OUTSIDE ENDS OF THE WINGWALLS. THIS ITEM SHALL INCLUDE THE FURNISHING OF ALL LABOR EQUIPMENT AND MATERIALS NECESSARY TO COMPLETE THIS WORK. ALL COSTS OF REMOVAL, DOWEL HOLES, REINFORCING STEEL, CONCRETE, INSTALLING SHRINKAGE CRACK CONTROL JOINTS, LIGHTING CONDUIT REPAIR/REPLACEMENT AND CONSTRUCTION OF WINGWALL RAILING TRANSITIONS SHALL BE INCLUDED IN THE UNIT PRICE BID FOR:

ITEM	UNIT	DESCRIPTION
517	LIN. FT.	RAILING FACED, AS PER PLAN

ITEM SPECIAL - STRUCTURE DRAINAGE, MISC.: ABUTMENT DRAIN EXTENSION

THIS ITEM SHALL CONSIST OF ALL LABOR, MATERIALS AND EQUIPMENT NECESSARY FOR INSTALLING THE ABUTMENT DRAIN EXTENSIONS AT BRIDGE NO. LAK-91-0449, INCLUDING THE CUTTING AND REMOVING OF PORTIONS OF THE EXISTING ABUTMENT DRAINS, CLEANING THE EXISTING ABUTMENT DRAINS, INSERTING THE NEW 5-INCH P.V.C. DRAIN, PACKING THE OPENING WITH 3/8-INCH DIAMETER BACKING ROD AND ENCASING THE DRAIN EXTENSION IN CONCRETE AT THE ABUTMENT OPENING AS SHOWN IN THE DETAIL ON SHEET 18/24. PAYMENT WILL BE AT THE UNIT PRICE BID FOR:

ITEM	DESCRIPTION	UNIT
SPECIAL	STRUCTURE DRAINAGE, MISC.: ABUTMENT DRAIN EXTENSION	LIN. FT.

ITEM 622--PORTABLE CONCRETE BARRIER, 32" BRIDGE MOUNTED, AS PER PLAN

PAYMENT FOR THIS ITEM IS CARRIED IN THE MAINTENANCE OF TRAFFIC QUANTITIES. SEE TRAFFIC NOTES, SHEET 11 OF 56.

ITEM 516 - STRUCTURAL JOINT OR JOINT SEALER, MISC:

DESCRIPTION: THIS WORK SHALL INCLUDE FURNISHING AND INSTALLING A NEOPRENE SEAL ALONG THE CENTER OF THE RAISED CONCRETE MEDIAN IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS.

MATERIAL: THE NEOPRENE PIECES SHALL MEET THE FOLLOWING SPECIFICATIONS.

PROPERTY	REQUIREMENT	ASTM METHOD
TENSILE STRENGTH, MIN.	2000	D-412-62T
PSI ELONGATION AT BREAK,	250%	D-412-51T
MIN. HARDNESS, DUROMETER A	60 +5	D-2240 MODIFIED
OZONE RESISTANCE, 20% ELONGATION 300 PPHM 40°C (104°F) (70HRS) WIPE SURFACES WITH SOLVENT TO REMOVE CONTAMINATION	NO CRACKS	D-1149
HEATING AGING 70HRS 0212°F		D-573
TENSILE STRENGTH, MAX%	-20	
DECREASE ELONGATION,	-20	
MAX.% DECREASE HARDNESS,	+10/-0	
MAX. CHANGE		
OIL SWELL, ASTM OIL #3 70 HRS @ 212F MAX.	+45	
WEIGHT INCREASE AT SPECIFIC GRAVITY 1.35+3	+45	
COMPRESSION SET, 70HRS. 0212°F LOW TEMP.	40% MAX. NOT BRITTLER-746	D-395(B)
RESISTANCE TO SALT, VARIATION OF VOLUME IN % 70 HRS AT 40°C IN CAC12 SOLUTION	-5% TO +10%	
ADHESIVES SHALL BE SIKADUR 31 MANUFACTURED BY THE SIKA CHEMICAL COMPANY OF LYNDHURST, NEW JERSEY, FEL-POXY FP-01 MANUFACTURED BY THE FELT PRODUCTS MANUFACTURING COMPANY OF SKOKID, ILLINOIS, OR AN APPROVED EQUAL. ADHESIVES SHALL BE STORED AT TEMPERATURES BETWEEN 50°F AND 80°F AND SHALL BE USED WITHIN 270 DAYS AFTER THE DATE OF MANUFACTURE.		

REQUIREMENTS: THE MEDIAN SEAL SHALL BE CONTINUOUS ALONG THE LENGTH OF THE BRIDGE. ELASTOMERIC SHEETS SHALL BE AS LONG AS PRACTICAL WITH FIELD SPLICES BONDED TOGETHER WITH ADHESIVE.

SURFACE PREPARATION:

NEOPRENE: TO AVOID THE SUBSEQUENT CONTAMINATION OF PREPARED SURFACES, ALL SURFACES OF THE NEOPRENE SHALL BE CLEANED WITH METHYL ETHYL KETON (MEK), TOLUENE (T) OR OTHER APPROVED SOLVENT USING CLEAN DISPOSABLE CLOTHS. THEN NOT MORE THAN 7 DAYS PRIOR TO THE SEAL INSTALLATION. A THIN (1/8" MIN. THICKNESS) COATING OF CYCLIZING PASTE SHALL BE APPLIED TO THE BONDING SURFACE. AFTER 25 TO 40 MINUTES, THE PASTE SHALL BE WASHED FROM THE SURFACES WITH CLEAN WATER.

CYCLIZING PASTE IS A MIXTURE OF ONE POUND OF PITTSBURGH PLATE GLASS INDUSTRIES' HISIL 223 OR AN APPROVED ALTERNATE AND SIX POUNDS OF CONCENTRATED SULFURIC ACID (18 MOLAR). TO MIX THE PASTE, ADD HISIL TO ACID SLOWLY WHILE STIRRING MIXTURE TO ACHIEVE A SMOOTH VISCOUS PASTE. NOTE: SINCE CONCENTRATED SULFURIC ACID IS VERY CORROSIVE AND HISIL IS AN EXTREMELY FINE NON-TOXIC POWDER, RUBBER GLOVES AND GLASSES SHOULD BE USED BY THOSE USING THE PASTE WHILE GLOVES, GLASSES AND A RESPIRATOR SHOULD BE USED BY THOSE MIXING THE PASTE.

CONCRETE: THE CONCRETE SURFACE SHALL BE THOROUGHLY CLEANED TO REMOVE DUST, CURING COMPOUND, LAITANCE AND OTHER FOREIGN MATERIALS BY MEANS OF SANDBLASTING FOLLOWED BY AIR BROOMING OR POWER SWEEPING TO REMOVE DUST AND SAND FROM THE SURFACE AND OPENED PORES.

Burgess & Niple, Limited
Engineers and Architects



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GENERAL STRUCTURE NOTES

BRIDGE NO. LAK - 91 - 0423

BRIDGE NO. LAK - 91 - 0449

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED DATE	REVISED
WAC	SJS TPM		WAC	EBB 4/19/92	