

BRIDGE GENERAL NOTES

SPECIFICATIONS

COMPLY WITH THE REQUIREMENTS OF THE 2009 OKLAHOMA STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, EXCEPT AS MODIFIED BY THE PLANS AND SPECIAL PROVISIONS.

DESCRIPTION OF WORK

THE WORK TO BE PERFORMED UNDER THIS PROJECT, FOR BRIDGE "A" AND BRIDGE "B" CONSISTS OF REMOVING THE EXISTING 38 FOOT CLEAR ROADWAY BRIDGE DECK, AND REPLACING WITH A 38 FOOT CLEAR ROADWAY BRIDGE DECK, APPROACH SLABS, INCLUDING CONCRETE RAILS (TR4 WITHOUT OPENINGS) AND SIDE DRAINS. OTHER SUPERSTRUCTURE REPAIRS INCLUDE ADDITION OF SHEAR CONNECTORS TO THE BEAMS, REPLACING DIAPHRAGMS AT VARIOUS LOCATIONS, AND RESETTING VARIOUS ROLLER BEARINGS. PEDESTALS WILL BE REPAIRED WITH CLASS AA CONCRETE. PIERS AND ABUTMENTS WILL BE REPAIRED WITH EPOXY INJECTION AND PNEUMATICALLY PLACED MORTAR. PIER COLUMNS AND PIER CAPS WILL BE ENCAPSULATED WITH 6" OF CLASS AA CONCRETE. PIER PROTECTION ON I-35 WILL BE REPLACED TO FACILITATE ENCAPSULATION OF EXISTING PIERS. VOID UNDER ABUTMENT SEATS WILL BE BACKFILLED WITH CLSM AND AREAS OF SLOPE WALL WILL BE REPLACED.

UTILITY LOCATE

CONTRACTOR TO MAKE EVERY EFFORT TO LOCATE AND PROTECT ALL UTILITIES AND STRUCTURES, WHETHER SHOWN OR NOT, PRIOR TO ANY CONSTRUCTION OPERATIONS. HE SHALL SO CARRY ON HIS CONSTRUCTION SUCH THAT HE WILL NOT DAMAGE ANY UTILITIES OR STRUCTURES REMAINING IN PLACE. THE CONTRACTOR SHALL CONTACT OKIE BEFORE PERFORMING ANY EXCAVATIONS.

EXISTING UTILITIES MUST BE LOCATED AND PROPERLY FLAGGED BY CONTACTING "CALL OKIE" 1(800)-522-6543 OR 811 BEFORE ANY CONSTRUCTION BEGINS.

IF EXISTING UTILITIES ARE IDENTIFIED DURING CONSTRUCTION, A FIELD CHANGE MAY BE REQUIRED TO INSURE CLEARANCE OF THESE FACILITIES.

VERIFICATION OF EXISTING CONDITIONS

ALL DIMENSIONS AND ELEVATIONS OF THE EXISTING BRIDGES AND APPROACH ROADWAYS SHOWN IN THE PLANS ARE APPROXIMATE. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND ELEVATIONS NECESSARY TO CONNECT THE NEW MATERIAL TO THE EXISTING BRIDGES AND APPROACH ROADWAYS AND SHALL BE SOLELY RESPONSIBLE FOR THE ACCURACY THEREOF.

BIDDERS SHALL FULLY INFORM THEMSELVES OF THE NATURE OF THE WORK AND CONDITION UNDER WHICH IT WILL BE PERFORMED. THE CONTRACTOR SHALL ADOPT METHODS CONSISTENT WITH GOOD CONSTRUCTION PRACTICE AND SHALL TAKE ALL NECESSARY PRECAUTIONS TO PREVENT DAMAGE TO THE EXISTING BRIDGE OR APPROACH ROADWAY. ANY DAMAGES DUE TO THE CONTRACTOR'S NEGLIGENCE SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE TO THE SATISFACTION OF THE ENGINEER.

THE ORIGINAL CONSTRUCTION PLANS FOR THE EXISTING BRIDGES MAY BE OBTAINED FROM THE PRINTING SERVICES BRANCH OF THE OKLAHOMA DEPARTMENT OF TRANSPORTATION BY REFERENCING THE ORIGINAL PROJECT NUMBER. THE EXISTING BRIDGES WERE ORIGINALLY CONSTRUCTED UNDER THE FOLLOWING: FEDERAL AID PROJECT I-35-2-(12)

SUGGESTED SEQUENCE OF CONSTRUCTION

A SUGGESTED SEQUENCE OF CONSTRUCTION IS INCLUDED IN THE PLANS. CONTRACTOR MAY SUBMIT AN ALTERNATE SEQUENCE OF CONSTRUCTION TO THE ENGINEER FOR APPROVAL BEFORE BEGINNING WORK.

SURVEYING AND CONSTRUCTION STAKING

THE CONTRACTOR WILL BE REQUIRED TO CONDUCT ALL SURVEYING AND CONSTRUCTION STAKING NECESSARY FOR THE COMPLETION OF THE PROJECT AS DIRECTED BY THE ENGINEER. THE SURVEYING AND CONSTRUCTION STAKING REQUIRED FOR COMPLETION OF THE PROJECT MAY INCLUDE THE FOLLOWING:

1. ESTABLISHING HORIZONTAL CONTROL INCLUDING THE STAKING OF CENTERLINE BRIDGE AND APPROACH.
2. ESTABLISHING VERTICAL CONTROL INCLUDING THE SETTING OF BENCHMARKS.
3. MEASURING THE ELEVATIONS ALONG THE EXISTING BRIDGE DECK AT CENTERLINE AND EDGES OF DECK SLAB AND AT EACH BEAM LINE.
4. MEASURING THE ELEVATIONS ALONG THE EXISTING APPROACH ROADWAY AT CENTERLINE & EDGES.
5. MEASURING THE EXISTING TOP OF PEDESTAL ELEVATIONS FOR DETERMINING NEW PEDESTAL ELEVATIONS, DECK HAUNCH AND FORMING DATA.
6. MEASURING AND SETTING CONSTRUCTION STAKES AS NECESSARY FOR CONDUCTING THE GRADING AND SURFACING WORK ON THE APPROACH ROADWAY.

ALL SURVEY DATA, ANY PROPOSED ADJUSTMENTS IN THE NEW FINISH GRADES FROM ORIGINAL, FORMING DATA AND HAUNCH CALCULATIONS SHALL BE PROVIDED TO THE ENGINEER FOR APPROVAL BEFORE CONSTRUCTING THE NEW DECK SLAB AND NEW APPROACH ROADWAY PAVEMENT. ALL COST OF THE SURVEYING AND CONSTRUCTION STAKING NECESSARY FOR COMPLETION OF THE PROJECT AS DIRECTED BY THE ENGINEER INCLUDING THE COST OF MATERIALS, LABOR, EQUIPMENT AND INCIDENTALS SHALL BE INCLUDED IN THE UNIT PRICE BID PER LUMP SUM OF "CONSTRUCTION STAKING LEVEL II".

CONCRETE PLACEMENT

ALL CONCRETE SHALL BE PLACED IN THE DRY.

CONCRETE

CONCRETE FOR SUPERSTRUCTURE, PIER ENCAPSULATION, PIER PROTECTION AND APPROACH SLABS SHALL BE CLASS AA, $f_c = 4,000$ psi MINIMUM STRENGTH AT 28 DAYS. WHEN VIBRATING CONCRETE CONTAINING EPOXY COATED REINFORCING STEEL, THE VIBRATOR SHALL BE EQUIPPED WITH A SHEATH DESIGNED TO PREVENT DAMAGE TO THE EPOXY COATING. PROVIDE ALL EXPOSED CONCRETE EDGES OF THE SUBSTRUCTURE (EXCLUDING PEDESTAL EDGES WHICH SHALL HAVE 3/4" CHAMFER) WITH A 1 1/2" CHAMFER UNLESS OTHERWISE SHOWN OR NOTED ON THE PLANS. PROVIDE ALL EXPOSED CONCRETE EDGES OF THE SUPERSTRUCTURE WITH A 3/4" CHAMFER UNLESS OTHERWISE SHOWN OR NOTED ON THE PLANS. USED SIZED LUMBER FOR ALL CHAMFER STRIPS.

REINFORCING STEEL

UNLESS OTHERWISE SPECIFIED THE CONTRACT DOCUMENTS, ALL REINFORCING STEEL SHALL CONFORM TO AASHTO M31 (ASTM A615), GRADE 60. NO WELDING OR TACK WELDING OF REINFORCING BARS WILL BE PERMITTED.

STRUCTURAL STEEL

PROVIDE STRUCTURAL STEEL FOR BEAM FLANGE REPAIR AND DIAPHRAGM MEMBERS IN ACCORDANCE WITH AASHTO M270 (ASTM A709), GRADE 50W (WEATHERING STEEL, NON-FRACTURE CRITICAL CHARPY V-NOTCH TESTED FOR ZONE 2). USE SHEAR CONNECTORS CONFORMING TO AASHTO M169 (ASTM A108), GRADE 1015, 1018, OR 1020. PROVIDE WELDING WITH WEATHERING CHARACTERISTICS.

REPORT ANY DETERIORATED STRUCTURAL STEEL EXPOSED DURING OPERATIONS TO THE BRIDGE ENGINEER FOR REMEDIAL ACTION, IF NECESSARY.

MAKE ALL WELDS TO SOUND STEEL. ADJUST WELD LOCATIONS AND EXTENTS OF NEW STRUCTURAL STEEL IF SOUND STEEL IS NOT FOUND AT LOCATIONS SHOWN IN THE PLANS. PERFORM ALL WELDING OPERATIONS IN ACCORDANCE WITH SECTION 724.03 OF THE SPECIFICATIONS AND THE CURRENT ANSI/AASHTO/AWS D1.5 BRIDGE WELDING CODE. ALL FIELD WELDS SHALL BE INSPECTED BY THE ODOT MATERIALS DIVISION OR THEIR REPRESENTATIVE. CONTACT THE ODOT MATERIALS DIVISION AT (405) 522-4999 AT LEAST SEVENTY - TWO (72) HOURS PRIOR TO THE ANTICIPATED COMPLETION OF FIELD WELDS.

CLEANING BRIDGE SEATS

ALL BRIDGE SEATS SHALL BE SWEEPED CLEAN OF ALL DEBRIS. ALL COST OF CLEANING THE BRIDGE SEATS INCLUDING THE COST OF MATERIALS, LABOR, EQUIPMENT AND INCIDENTALS SHALL BE INCLUDED IN OTHER ITEMS OF WORK.

WATER REPELLENT TREATMENT

WATER REPELLENT TREATMENT SHALL BE APPLIED TO THE BRIDGE IN A MANNER CONSISTENT WITH PLAN NOTES AND THE WATER REPELLENT TREATMENT DETAILS.

DECK SLAB

ANY STEEL USED BY CONTRACTORS TO FACILITATE DECK CONSTRUCTION, SUCH AS INSERT WELD ANCHORS, TY-BAR CLIPS, FORM HANGARS OR OTHER APPURTENANCES, THAT REMAIN IN PLACE IN THE BRIDGE DECK MUST BE EPOXY COATED OR GALVANIZED. EPOXY COAT IN ACCORDANCE WITH AASHTO M 284 AND/OR GALVANIZE IN ACCORDANCE WITH AASHTO M 111.

PLACE THE DECK SLAB CONCRETE CONSISTENT WITH THE SLAB POURING SEQUENCE AS DETAILED ON SHEET 21. IN THE EVENT OF AN EMERGENCY, HALT THE PLACEMENT OF CONCRETE BY FORMING A CONSTRUCTION JOINT MADE PERPENDICULAR TO THE DIRECTION OF TRAFFIC. DO NOT PLACE ANY HEAVY EQUIPMENT ON THE FINISHED DECK SLAB WITHIN 5 FEET OF ANY CONSTRUCTION JOINT UNTIL THE CONCRETE IS IN PLACE ON BOTH SIDES OF THE RESPECTIVE JOINT AND AT LEAST 48 HOURS HAS ELAPSED SINCE CONCRETE PLACEMENT.

PREPARE ALL DECK SLAB CONSTRUCTION JOINTS AND SEAL WITH HIGH MOLECULAR WEIGHT METHACRYLATE IN ACCORDANCE WITH SECTION 523 OF THE SPECIFICATIONS. THE DEPARTMENT WILL NOT MEASURE THE PREPARATION AND SEALER OF EMERGENCY CONSTRUCTION JOINTS FOR PAYMENT

REMOVAL OF BRIDGE ITEMS

UNLESS OTHERWISE NOTED IN THE PLANS, ALL MATERIAL REMOVED DURING THIS PROJECT SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE DISPOSED OF IN A MANNER APPROVED BY THE ENGINEER. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PREVENT DEBRIS FROM DECK AND PARAPET REMOVAL FROM FALLING ON THE HIGHWAY BELOW. BEFORE MAKING ANY REMOVALS, THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER A PLAN FOR REMOVING EACH ITEM OR PORTIONS OF ITEMS TO BE REMOVED FROM THE EXISTING BRIDGE. THE CONTRACTOR SHALL NOT MAKE ANY REMOVALS UNTIL THE PLAN HAS BEEN APPROVED BY THE ENGINEER. THE PLAN SHALL INCLUDE A LIST OF ALL EQUIPMENT THAT WILL BE USED TO MAKE THE REMOVALS WITH A DESCRIPTION OF HOW THE EQUIPMENT WILL BE USED TO MAKE THE REMOVALS AND A SEQUENTIAL LIST OF STEPS THAT WILL BE FOLLOWED BY THE CONTRACTOR TO MAKE THE REMOVALS.

THE CONTRACTOR SHALL TAKE EVERY PRECAUTION NECESSARY TO PREVENT DAMAGING THE EXISTING SUBSTRUCTURES. ANY DAMAGE CAUSED BY THE CONTRACTOR TO THESE COMPONENTS WITH A SAW OR OTHER EQUIPMENT SHALL BE REPAIRED OR COMPLETELY REPLACED AT THE CONTRACTOR'S EXPENSE TO THE SATISFACTION OF THE ENGINEER. THE ENGINEER WILL DETERMINE IF THE DAMAGED COMPONENT CAN BE SATISFACTORILY REPAIRED OR IF THE COMPONENT SHALL BE COMPLETELY REPLACED.

ALL COSTS NECESSARY TO COMPLETE THE WORK AS SPECIFIED OR AS SHOWN IN THE PLANS INCLUDING THE COST OF SAWING, CUTTING, DEMOLITION, CLEANING, CONTAINMENT AND REMOVAL OF DEBRIS, MATERIALS, LABOR, EQUIPMENT AND INCIDENTALS SHALL BE INCLUDED IN THE UNIT PRICE BID PER LUMP SUM OF "REMOVAL OF BRIDGE ITEMS".

STAY-IN-PLACE FORMS

STAY-IN-PLACE STEEL DECK FORMS SHALL PROVIDE A MINIMUM DECK SLAB THICKNESS OF 8" BY MEASURING FROM THE TOP OF THE DECK SLAB TO THE TOP PORTION OF THE STEEL CORRUGATION. PREFORMED CORRUGATION FILLER, COMPOSED OF POLYSTYRENE OR OTHER MATERIAL, MAY BE USED IF BONDED TO THE DECK FORMS. NO ADDITIONAL CONCRETE WEIGHT OF THE DECK SLAB IS PERMITTED. THE TOTAL ADDITIONAL WEIGHT OF THE DECK FORM AND FILLER SHALL NOT EXCEED 5 PSF. THE DEPARTMENT CONSIDERS ALL COSTS OF STAY-IN-PLACE STEEL DECK FORMS TO BE INCLUDED IN THE CONTRACT UNIT PRICE OF "CLASS AA CONCRETE."

ANCHORAGE INTO EXISTING CONCRETE

PERFORM WORK SO THAT NO DAMAGE IS CAUSED TO TRAFFIC DURING CLEANING AND PAINTING OPERATIONS. USE TARPS AND OTHER NECESSARY EQUIPMENT AS APPROVED BY THE ENGINEER. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR SECURING THE PAINT APPLICATION.

THE CONTRACTOR SHALL HAVE THE OPTION OF THE METHODS BY WHICH THE NEW CONCRETE REINFORCING STEEL BARS AND/OR ANCHOR BOLTS SHOWN IN THE PLANS ARE TO BE ANCHORED INTO THE CONCRETE OF THE EXISTING BRIDGE. ANCHORAGE INTO THE CONCRETE OF THE EXISTING BRIDGE SHALL BE ACCOMPLISHED BY ONE OF THE FOLLOWING METHODS:

1. SELF-MIXING INJECTION TYPE ANCHORAGE SYSTEMS SUCH AS "HILTI-HIT-HY150" OR AN APPROVED EQUAL. ANCHORAGES SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURERS SPECIFICATIONS FOR THE SYSTEM USED.
2. ENCAPSULATED NON-EXPANDING CHEMICAL TYPE ANCHORAGE SYSTEMS SUCH AS "RAWPLUG COMPANY CHEM-STUD", "HILTI ENCAPSULATED" OR AN APPROVED EQUAL. ANCHORAGES SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS FOR THE SYSTEM USED.

DRILLING INTO THE EXISTING CONCRETE TO INSTALL THE ANCHORAGE SHALL BE ACCOMPLISHED WITHOUT CUTTING EXISTING CONCRETE REINFORCING STEEL BARS. PRIOR TO DRILLING, THE CONTRACTOR SHALL LOCATE AND MARK THE EXISTING CONCRETE REINFORCING STEEL BARS WITH NON DESTRUCTIVE TOOLS, EQUIPMENT AND METHODS APPROVED BY THE ENGINEER. IF EXISTING REINFORCING STEEL BARS ARE ENCOUNTERED DURING DRILLING, THE DRILLING SHALL CEASE AND THE HOLE SHALL BE GROUTED. THE HOLE SHALL THEN BE RELOCATED TO CLEAR THE EXISTING REINFORCING STEEL BARS FROM THE PLAN LOCATIONS SHOWN AND SHALL BE THE MINIMUM AMOUNT NECESSARY TO AVOID CUTTING THE EXISTING CONCRETE REINFORCING STEEL BARS AND SHALL BE APPROVED BY THE ENGINEER.

ALL COST TO ANCHOR THE NEW CONCRETE REINFORCING STEEL BARS INTO THE EXISTING BRIDGE AS SPECIFIED OR AS SHOWN IN THE PLANS INCLUDING THE COST OF LOCATING EXISTING CONCRETE REINFORCING STEEL BARS, DRILLING, REPAIRING FLAWED DRILL HOLES, ADJUSTING THE LENGTH OF THE NEW REINFORCING STEEL ANCHOR BAR AS PER THE ANCHORAGE ASSEMBLY MANUFACTURER, ANCHORING INTO THE EXISTING CONCRETE, MATERIALS, LABOR, EQUIPMENT AND INCIDENTALS SHALL BE INCLUDED IN OTHER ITEMS OF WORK.

SUBSTRUCTURE REPAIRS

THE EXISTING PIER CAPS AND ABUTMENT SEATS SHALL BE REPAIRED WITH PNEUMATICALLY PLACED MORTAR IN THE LOCATIONS DETERMINED BY AND IN A MANNER APPROVED BY THE ENGINEER AND IN ACCORDANCE WITH SECTION 521 OF THE STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION. LOOSE CONCRETE SHALL BE REMOVED USING HAND TOOLS ONLY. POWER TOOLS WILL NOT BE ALLOWED UNLESS HAND TOOLS PROVE INCAPABLE OF EXCAVATING ALL DETERIORATED CONCRETE TO SOUND CONCRETE. SHOULD POWER TOOLS BE NECESSARY, THEY SHALL BE OF SUCH SIZE THAT THEIR USE DOES NOT CAUSE DAMAGE TO THE SOUND CONCRETE. ANY DAMAGE DONE TO THE EXISTING REINFORCING STEEL DURING REMOVAL PROCESS SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE AND TO THE SATISFACTION OF THE ENGINEER. ANY DETERIORATED REINFORCING STEEL SHALL BE REPORTED TO THE ENGINEER FOR DETERMINATION OF REMEDIAL ACTION. PRIOR TO MORTAR PLACEMENT, BLAST CLEAN THE CONCRETE SURFACE AND REINFORCING STEEL. APPLY PNEUMATICALLY PLACED MORTAR TO REPLACE DETERIORATED CONCRETE. BUILD UP MORTAR TO MATCH THE ORIGINAL LINES AND GRADES OF THE REPAIRED SURFACE.

THE CONTRACTOR MAY PROPOSE AND USE AS AN ALTERNATIVE, ONE OF THE FOLLOWING REPAIR METHODS:

1. CAST-IN-PLACE CONCRETE.
2. FORMED AND PUMPED CONCRETE MORTAR.

THE CONTRACTOR SHALL SUBMIT A PROPOSED WORK PLAN OF THE REPAIR METHOD TO BE USED TO THE ENGINEER FOR APPROVAL. THE WORK PLAN SHALL INCLUDE SURFACE PREPARATION METHODS, PATCHING MATERIAL SPECIFICATIONS, BONDING AGENTS, MATERIAL PLACEMENT METHODS, AND FINISHING METHODS. THE CONTRACTOR SHALL TEST REPAIR AN AREA TO VERIFY THE EFFECTIVENESS OF THE PROPOSED REPAIR METHOD PRIOR TO COMMENCEMENT OF THE WORK. FAULTY REPAIRS SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE.

ALL COSTS, INCLUDING LABOR, EQUIPMENT, MATERIALS, AND INCIDENTALS NECESSARY TO COMPLETE THE WORK DESCRIBED ABOVE SHALL BE INCLUDED IN THE PRICE BID PER SQUARE YARD OF "PNEUMATICALLY PLACED MORTAR."

S.H. 74 OVER I-35

McCLAIN CO.

DESIGN	GDD		OKLAHOMA DEPARTMENT OF TRANSPORTATION BRIDGE GENERAL NOTES STATE JOB NO. <u>29572(04)</u> SHEET NO. <u>2</u>
DRAWN	ZTF		
CHECKED	JTK		
APPROVED			
SQUAD	MacArthur		