

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/OR 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 513.02.

CONTRACT BID PRICES SHALL BE BASED UPON A RECOGNITION OF THE UNCERTAINTIES DESCRIBED ABOVE AND UPON A PREBID EXAMINATION OF THE EXISTING STRUCTURE BY THE CONTRACTOR. HOWEVER, ALL PROJECT WORK SHALL BE BASED UPON ACTUAL DETAILS AND DIMENSIONS WHICH HAVE BEEN VERIFIED BY THE CONTRACTOR IN THE FIELD.

EXISTING STRUCTURE PLANS:

THE ORIGINAL DESIGN PLANS MAY BE EXAMINED BY PROSPECTIVE BIDDERS AT THE OHIO DEPARTMENT OF TRANSPORTATION, DISTRICT 12 OFFICE, 5500 TRANSPORTATION BLVD., GARFIELD HEIGHTS, OHIO 44125. THE CONTRACTOR SHALL BECOME FAMILIAR WITH THE DRAWINGS.

PROPOSED WORK

IN GENERAL THE PROPOSED WORK CONSISTS OF PATCHING THE BRIDGE DECK SIDEWALK, CURBS, AND SUBSTRUCTURE CONCRETE; EPOXY INJECTION OF THE DECK FLOOR AND WEARING SURFACE; SEALING CONCRETE SURFACES; AND REPLACING DETERIORATED END FRAME ANGLES.

MAINTENANCE OF TRAFFIC

ONE LANE OF TRAFFIC AND ONE SIDEWALK MUST BE MAINTAINED AT ALL TIMES THROUGHOUT THE CONSTRUCTION. THE PROJECT ITEMS OF WORK MAY BE PERFORMED AT THE CONTRACTOR'S OWN SCHEDULE WITHIN THE TIME FRAME. HOWEVER, ALL WORK MUST BE COORDINATED WITHIN THE MAINTENANCE OF TRAFFIC PLANS AND SAFETY REQUIREMENTS AND NO WORK MAY BE BEGUN THAT CANNOT BE COMPLETED WITHIN THE ALLOWABLE DURATION OF LANE CLOSURES.

ITEM SPECIAL - SEALING OF CONCRETE SURFACES WITH TINTED SILANE

THIS ITEM OF WORK SHALL BE USED TO SEAL THE CONCRETE SIDEWALKS OF THE BRIDGE DECK AND APPROACHES AS PER ODOT PROPOSAL NOTE 516. INCLUDED IN THIS WORK IS THE REMOVAL OF THE EXISTING SIDEWALK SEALER. THE SILANE SEALER SHALL NOT BE APPLIED UNTIL ALL CURB AND SIDEWALK CONCRETE REPAIRS HAVE BEEN MADE AND PROPERLY CURED.

PAYMENT SHALL BE MADE AT THE CONTRACT PRICE BID FOR ITEM SPECIAL - SEALING OF CONCRETE SURFACES WITH TINTED SILANE. THIS PRICE AND PAYMENT SHALL BE FULL COMPENSATION FOR ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS NECESSARY TO COMPLETE THE WORK IN CONFORMANCE WITH THESE REQUIREMENTS AND TO THE SATISFACTION OF THE ENGINEER.

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

THIS ITEM SHALL CONSIST OF THE NECESSARY LABOR, MATERIALS, AND EQUIPMENT TO PREPARE AND TREAT CONCRETE SURFACES WITH AN APPROVED EPOXY-URETHANE SEALER AS PER ODOT PROPOSAL NOTE 516. THE COLOR OF THE URETHANE TOP COAT SHALL BE FEDERAL COLOR STANDARD No. 36492, GRAY.

AREAS TO BE SEALED INCLUDE, BUT ARE NOT LIMITED TO, THE SUBSTRUCTURE CONCRETE AND AREAS PATCHED WITH ITEM 843 - PATCHING CONCRETE STRUCTURES WITH TROWELABLE MORTAR.

PAYMENT SHALL BE MADE AT THE CONTRACT PRICE BID FOR ITEM SPECIAL - SEALING OF CONCRETE SURFACES (EPOXY-URETHANE). THIS PRICE AND PAYMENT SHALL BE FULL COMPENSATION FOR ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS NECESSARY TO COMPLETE THE WORK IN CONFORMANCE WITH THESE REQUIREMENTS AND TO THE SATISFACTION OF THE ENGINEER.

ITEM SPECIAL - URETHANE TOP COAT SEALER

THIS ITEM SHALL CONSIST OF THE NECESSARY LABOR, MATERIALS, AND EQUIPMENT TO PREPARE AND TREAT EPOXY-SEALED CONCRETE SURFACES WITH AN APPROVED URETHANE TOPCOAT IN ACCORDANCE WITH ODOT PROPOSAL NOTE 516 AND THESE SPECIFICATIONS. THE COLOR SHALL BE FEDERAL COLOR STANDARD No. 36492, GRAY.

THE AREAS TO BE SEALED INCLUDE THE EPOXY COATED SURFACES OF THE DECK EDGES, CURBS, AND PARAPETS.

ITEM SPECIAL - URETHANE TOP COAT SEALER (CONTINUED)

SURFACES TO WHICH TOPCOATS ARE TO BE APPLIED SHALL BE DRY AND FREE FROM DUST, OIL, WAX, CURING COMPOUNDS, EFFLORESCENCE, LAITANCE AND OTHER FOREIGN MATERIALS EXCEPT THE EXISTING EPOXY SEALER.

THE REQUIRED CLEANING METHOD SHALL BE A HIGH PRESSURE WATER BLAST (1000 PSI OR GREATER) FOLLOWED BY A LIGHT SWEEP ABRASIVE BLAST TO REMOVE FOREIGN SUBSTANCES AND TO ROUGHEN THE EXISTING SEALER WITHOUT REMOVING THE EXISTING SEALER. MILDEW SHALL BE TREATED WITH A HYPOCHLORITE SOLUTION TO KILL SPORES. THE ABRASIVE BLAST SHALL BE FOLLOWED BY AN AIR BLAST. BLASTING ABRASIVES CONTAINING MORE THAN 1% FREE SILICA SHALL NOT BE ALLOWED.

THE URETHANE TOPCOAT SHALL BE APPLIED ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS AND PROPOSAL NOTE 516 WITHIN FORTY-EIGHT (48) HOURS FOLLOWING SURFACE PREPARATION. APPLICATION SHALL BE BRUSH OR ROLLER, AS DIRECTED BY THE ENGINEER, TO THE AREAS SHOWN IN THE PLANS.

THE URETHANE TOPCOAT SHALL BE PRE-QUALIFIED AND APPLIED UNDER THE RELEVANT PROVISIONS OF THE ODOT PROPOSAL NOTE 516-93.

PAYMENT SHALL BE MADE AT THE CONTRACT PRICE BID FOR ITEM SPECIAL - URETHANE TOP COAT SEALER. THIS PRICE AND PAYMENT SHALL BE FULL COMPENSATION FOR ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS NECESSARY TO COMPLETE THE WORK IN CONFORMANCE WITH THESE REQUIREMENTS AND TO THE SATISFACTION OF THE ENGINEER.

ITEM 519 - PATCHING CONCRETE STRUCTURE, MISC:

PATCHING CONCRETE BRIDGE DECK AS PER PLAN

THIS ITEM OF WORK CONSISTS OF SOUNDING THE DECK WEARING SURFACE, REMOVING DELAMINATED OR DETERIORATED CONCRETE AND PLACING THE CONCRETE PATCHES AS PER ODOT CMS 519. INCLUDED IS INSTALLING REPLACEMENT CORRPO ANODE MESH IF NEEDED AND PLACING EMACO S88 CI MORTAR AS THE PATCHING MATERIAL.

MATERIALS:

THE CATHODIC PROTECTION SYSTEM ANODE MESH SHALL BE AS SPECIFIED AND SUPPLIED BY CORRPO COMPANIES, INC. CONCRETE SERVICES GROUP, 1055 WEST SMITH ROAD, MEDINA, OHIO 44256. THE ANODE MESH WILL BE INSTALLED AS PER THE MANUFACTURER'S SPECIFICATIONS. THE PATCHING MATERIAL SHALL BE EMACO S88 CI MORTAR SUPPLIED BY MASTER BUILDERS INC., 23700 CHAGRIN BLVD, CLEVELAND, OHIO 44122. THE MATERIAL SHALL BE INSTALLED AS PER THE MANUFACTURER'S RECOMMENDATIONS AND SPECIFICATIONS IN NO GREATER THAN 2" LAYERS.

PAYMENT SHALL BE MADE AT THE CONTRACT PRICE BID FOR ITEM 519 - PATCHING CONCRETE STRUCTURES, MISC: PATCHING CONCRETE BRIDGE DECK AS PER PLAN. THIS PRICE AND PAYMENT SHALL BE FULL COMPENSATION FOR ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS NECESSARY TO COMPLETE THE WORK IN CONFORMANCE WITH THESE REQUIREMENTS AND TO THE SATISFACTION OF THE ENGINEER.

ITEM 530 - STRUCTURES MISC: REPLACEMENT PULL BOX COVER PLATE

THIS ITEM SHALL CONSIST OF REMOVING THE EXISTING ELECTRICAL PULL BOX COVER AND PORTIONS OF THE SURROUNDING CONCRETE IN THE SIDEWALKS AND INSTALLING A NEW COVER AS DETAILED IN THESE NOTES AND ON SHEET 25/25 OF THESE PLANS.

MATERIALS: THE STEEL SHALL MEET ODOT CMS 513, BE GALVANIZED AS PER 711.02 AND THE SS MACHINE SCREWS MEET CMS 730.10. THE GROUT FOR THE ANCHORS MUST FULLY ENCASE THE ANCHOR AND BE FLUSH OR SLIGHTLY ABOVE THE SURROUNDING CONCRETE. IT SHALL MEET CMS 705.20. MORTAR, IF NEEDED TO FILL OR LEVEL THE CONCRETE DEPRESSION FOR THE PROPER SEATING OF THE STEEL COVER PLATE SHALL BE CMS 705.21, TYPE 1.

PAYMENT SHALL BE MADE AT THE CONTRACT PRICE BID FOR ITEM 530 - STRUCTURES MISC: REPLACEMENT PULL BOX COVER PLATE. THIS PRICE AND PAYMENT SHALL BE FULL COMPENSATION FOR ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS NECESSARY TO COMPLETE THE WORK IN CONFORMANCE WITH THESE REQUIREMENTS AND TO THE SATISFACTION OF THE ENGINEER.

ITEM 843 - PATCHING CONCRETE STRUCTURES WITH TROWELABLE MORTAR

THIS ITEM CONSIST OF THE REMOVAL OF ALL LOOSE AND DISINTEGRATED CONCRETE, PREPARATION OF THE SURFACE, AND THE MIXING, PLACING, FINISHING AND CURING OF THE PATCHES AS DIRECTED BY THE ENGINEER AND PER ODOT SUPPLEMENTAL SPECIFICATION 843. THE WORK SHALL BE PERFORMED UPON CONCRETE BRIDGE COMPONENTS IN ACCORDANCE WITH THESE SPECIFICATIONS, AND IN REASONABLY CLOSE CONFORMITY WITH THE PLANS AND THE MANUFACTURER'S SPECIFICATIONS AND RECOMMENDATIONS. INCLUDED ARE ANY EXCAVATION AND OR SUBSEQUENT EMBANKMENT NECESSARY TO REPAIR APPARENT CONCRETE DETERIORATION AT THE GROUND LEVEL. ALSO INCLUDED IS THE SOUNDING AND MARKING OF REPAIR AREAS BY THE CONTRACTOR WITH THE APPROVAL OF THE ENGINEER.

AREAS TO BE PATCHED INCLUDE THE PIER COLUMNS AND CAPS, ABUTMENTS, WINGWALLS, DECK EDGES, PARAPETS AND SIDEWALKS. (CURBS ARE NOT TO BE INCLUDED IN THIS ITEM OF WORK.) FORMS WILL BE REQUIRED FOR REPAIR OF VERTICAL SURFACES AND SHALL MEET THE APPROVAL OF THE ENGINEER.

INSPECTION AND SOUNDING OF CONCRETE PATCHED: THE CONTRACTOR SHALL LEAVE HIS LADDERS, PLATFORMS OR SCAFFOLDS IN PLACE FOR A SUFFICIENT LENGTH OF TIME AND IN SUCH A MANNER AS TO PERMIT THE ENGINEER TO SOUND OR INSPECT THE CONCRETE.

BASIS OF PAYMENT:

PAYMENT WILL BE MADE AT THE CONTRACT PRICE BID FOR ITEM 843 - PATCHING CONCRETE STRUCTURES WITH TROWELABLE MORTAR. THIS PRICE AND PAYMENT SHALL BE FULL COMPENSATION FOR ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS NECESSARY TO COMPLETE THE WORK IN CONFORMANCE WITH THESE REQUIREMENTS AND TO THE SATISFACTION OF THE ENGINEER.

ITEM 863 - STRUCTURAL STEEL MEMBERS,

MISCELLANEOUS LEVEL FABRICATION, AS PER PLAN - ENDFRAME ANGLE REPLACEMENT

THIS WORK IS THE REMOVAL AND REPLACEMENT OF THE ENDFRAME ANGLES AS PER ODOT SUPPLEMENTAL SPECIFICATION 863, DATED 10/12/99, THE PLANS AND NOTES, AND AS DIRECTED BY THE ENGINEER. ALSO INCLUDED IS THE FIELD PAINTING PER SUPPLEMENTAL SPECIFICATION 816 OF THE NEW STEEL AND ADJACENT EXISTING STEEL WHERE THE PAINT FILM HAS BEEN DAMAGED BY THE REPAIR OPERATION.

PAYMENT SHALL BE MADE AT THE CONTRACT PRICE BID FOR ITEM 863 - STRUCTURAL STEEL MEMBERS, MISCELLANEOUS LEVEL FABRICATION, AS PER PLAN - ENDFRAME ANGLE REPLACEMENT. THIS PRICE AND PAYMENT SHALL BE FULL COMPENSATION FOR ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS NECESSARY TO COMPLETE THE WORK IN CONFORMANCE WITH THESE REQUIREMENTS AND TO THE SATISFACTION OF THE ENGINEER.

ITEM SPECIAL - LOW PRESSURE EPOXY INJECTING OF DELAMINATED CONCRETE

DESCRIPTION

THIS WORK SHALL CONSIST OF LOW-PRESSURE EPOXY INJECTION OF DELAMINATED CONCRETE OF BRIDGE DECKS IN ACCORDANCE WITH THESE SPECIFICATIONS, IN REASONABLY CLOSE CONFORMITY WITH THE PLANS AND MANUFACTURER'S RECOMMENDATIONS AS DIRECTED BY THE ENGINEER. ALL REMOVAL OPERATIONS ON THE DECK MUST BE COMPLETE BEFORE THE BOTTOM CAN BE INJECTED.

MATERIALS

THE INJECTION RESIN SHALL BE: THERMAL-CHEM INJECTION RESIN PRODUCT NO. 2, POLY-CARB MARK-10 INJECTION RESIN, DURAL CRETE LV OR SIKADUR 52 INJECTION RESIN.

BONDER SHALL BE: THERMAL-CHEM BONDER PRODUCT NO. 4, POLY-CARB MARK 8 NON-SAG EPOXY BONDER, DURAL CRETE GEL OR SIKADUR HI-MOD GEL (SIKASTIX 31).

ALL MATERIALS SHALL BE STORED AND INCORPORATED IN THE WORK AS RECOMMENDED BY THE MANUFACTURER. A MANUFACTURER'S REPRESENTATIVE SHALL BE PRESENT AT JOB SITE UNTIL SUCH TIME AS HE AND THE ENGINEER ARE SATISFIED THAT THE CONTRACTOR IS QUALIFIED IN ALL ASPECTS OF EPOXY PRESSURE GROUTING.

ITEM SPECIAL - LOW PRESSURE EPOXY INJECTING OF DELAMINATED CONCRETE (CONTINUED)

PREPARATION PORTS SHALL BE INSTALLED IN CLEAN HOLES VACUUM-DRILLED TO PREVENT FINES FROM BEING IMPACTED INTO THE CRACK. THE HOLES SHALL BE 6 INCHES DEEP FOR DECK WEARING SURFACE INJECTION AND 3 INCHES FOR DECK BOTTOM SURFACE INJECTION SO THAT THE EPOXY WILL PENETRATE THE HOLLOW PLANE. THE FIRST PORT SHALL BE LOCATED NEAR THE EDGE OF THE OUTLINED UNSOUND AREA. ADDITIONAL PORTS SHALL BE PLACED AT DISTANCES SLIGHTLY GREATER THAN THE DISTANCE FROM THE FIRST PORT TO THE VOID EDGE. PORT PLACEMENT MUST ENSURE THAT THE GROUT FACE REACHES THE EDGE OF THE VOID BEFORE REACHING THE NEXT PORT. BONDER SHALL BE USED ONLY TO PREVENT EMISSION OF THE INJECTION RESIN BY SEALING THE VISIBLE CRACKS AND INSTALLING THE PORTS AND SHALL NOT BE INDISCRIMINATELY TROWELLED ON THE DECK SURFACES. THE BONDER SHALL CURE 24 HOURS PRIOR TO INJECTION OF EPOXY RESIN.

THE RESIN SHALL BE INJECTED ONLY WHEN THE DECK IS DRY AND ITS TEMPERATURE IS ABOVE 50 DEGREES F. THE INJECTION RESIN SHALL BE AT 70 DEGREES F. PRIOR TO MIXING COMPONENTS. THE EPOXY INJECTION EQUIPMENT SHALL BE CAPABLE OF INJECTING THE MATERIAL INTO THE PORTS AT LOW PRESSURE OF 14 TO 20 PSI. THE INJECTION EQUIPMENT SHALL BE CAPABLE OF METERING, MIXING, INJECTING AND MEASURING THE FLOW OF THE EPOXY RESIN ACCORDING TO THE MANUFACTURER'S SPECIFICATIONS.

THE INJECTION SHALL COMMENCE AT THE EDGE OF THE DELAMINATION AND CONTINUE UNTIL THE EPOXY RESIN APPEARS AT THE NEXT PORT. MOST INCOMPLETELY FILLED VOIDS ARE CAUSED BY THE OPERATOR STOPPING THE INJECTION PROCESS PREMATURELY. THEREFORE, A STEADY, LOW PRESSURE SHALL BE MAINTAINED ON THE EPOXY UNTIL A STEADY CLEAR FLOW APPEARS AT THE NEXT PORT. THEN THE NOZZLE IS REMOVED, THE PORT CLOSED AND THE INJECTION CONTINUED FROM PORT TO PORT UNTIL THE VOID IS COMPLETELY FILLED. SINCE THE GROUT FACE IS MOVING UNDER VISCOUS FLOW CONDITIONS WHICH ARE GOVERNED BY FLUID SURFACE FRICTION, THE INJECTION PROCESS IS SLOW. REGARDLESS, INJECTION PRESSURE SHALL BE 20 PSI MAXIMUM SO THAT COVER CONCRETE IS NOT BLOWN OFF. PROGRESS OF THE EPOXY SHALL BE CHECKED WITH A TAPPING HAMMER.

THE OUTLINED INJECTED VOIDS SHALL BE SOUNDED WITH A HAMMER BY THE ENGINEER. ANY REMAINING UNSOUND AREAS SHALL BE PORTED AND RE-INJECTED AT NO ADDITIONAL COST TO THE STATE. ALL PORTS SHALL BE CUT OFF FLUSH WITH THE SURFACE. ALL EQUIPMENT, LABOR AND MATERIALS REQUIRED BY THE ENGINEER TO ACCOMPLISH THIS WORK SHALL BE SUPPLIED BY THE CONTRACTOR.

THIS SPECIFICATION LIMITS THE INJECTING PRESSURE TO 20 PSI MAX. TO PREVENT BLOWING THE DELAMINATION OFF THE DECK. IF THE CONTRACTOR PREFERENCES TO UTILIZE A HIGHER PRESSURE INJECTION PROCESS INSTEAD OF THE LOW PRESSURE HEREIN REQUIRED, HE SHALL SUBMIT HIS PROPOSED METHOD OF PREVENTING BLOW OFF OF THE SURFACE TO THE ENGINEER FOR APPROVAL. NO HIGH PRESSURE INJECTION WILL BE PERMITTED WITHOUT WRITTEN APPROVAL FROM THE ENGINEER.

NO VEHICULAR TRAFFIC INCLUDING CONSTRUCTION TRAFFIC WILL BE PERMITTED ON A BRIDGE DECK WHICH HAS RECEIVED WEARING SURFACE INJECTION UNTIL THE EPOXY HAS CURED A MINIMUM OF SIX HOURS AND HAS DEVELOPED ITS DESIGN STRENGTH. THE ADDITIONAL TIME REQUIRED TO CURE WILL DEPEND ON THE EPOXY FORMULATION AND WILL BE DETERMINED BY THE MANUFACTURER AND PROVIDED TO THE ENGINEER.

METHOD OF MEASUREMENT THE FOOTAGE UNDER THIS ITEM SHALL BE THE NUMBER OF SQUARE FEET OF DELAMINATED DECK CONCRETE THAT ARE SATISFACTORILY INJECTED AND ACCEPTED.

BASIS OF PAYMENT PAYMENT WILL BE MADE AT CONTRACT PRICES FOR: ITEM SPECIAL - LOW PRESSURE EPOXY INJECTING DELAMINATED CONCRETE - DECK WEARING SURFACE; OR ITEM SPECIAL - LOW PRESSURE EPOXY INJECTING DELAMINATED CONCRETE - DECK BOTTOM SURFACE. THIS PRICE AND PAYMENT SHALL BE FULL COMPENSATION FOR FURNISHING AND PLACING ALL MATERIALS, SOUNDING THE INJECTED AREAS, SUPPLYING THE MANUFACTURER'S REPRESENTATIVE AND ALL OTHER MATERIAL, LABOR, EQUIPMENT AND INCIDENTALS NECESSARY TO COMPLETE THE WORK IN ACCORDANCE WITH THIS SPECIFICATION AND TO THE SATISFACTION OF THE ENGINEER.

**BURGESS & NIPLÉ**

DATE 3-1-00	REVIEWED DWL	DRAWN DCF	DESIGNED DCF
STRUCTURE FILE NUMBER 4302702		REVISED	CHECKED M/AF

**STRUCTURE NOTES**  
BRIDGE NO. LAK-44-0510  
JACKSON STREET OVER STATE ROUTE 44

**LAK-20-14.34**  
**LAK-44-5.10**

2 / 4

23  
25