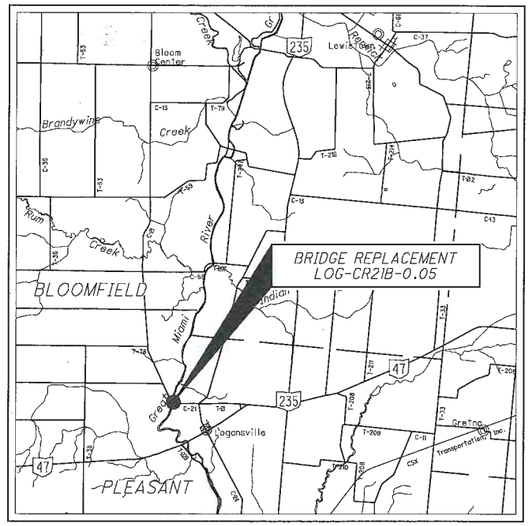
STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
LOGAN COUNTY ENGINEER'S OFFICE

LOG-CR21B-0.05

PLEASANT TOWNSHIP
LOGAN COUNTY



LOCATION MAP

LATITUDE: 40° 21' 06" LONGITUDE: 83° 56' 18"

SCALE IN MILES

0 1 2 3 4

N

PORTION TO BE IMPROVED _____

INTERSTATE HIGHWAY _____

FEDERAL ROUTES _____

STATE ROUTES _____

COUNTY & TOWNSHIP ROADS _____

OTHER ROADS _____

DESIGN DESIGNATION

CURRENT ADT BR 21-1.00 (2022)	693
ESTIMATED ADT BR 21B-0.05 (2036)	11
DESIGN YEAR ADT BR 21-1.00 (2036)	1049
DESIGN HOURLY VOLUME (2036)	89
DIRECTIONAL DISTRIBUTION	0.50
TRUCKS (24 HOUR B&C)	0
DESIGN SPEED	20 MPH
LEGAL SPEED	20 MPH

DESIGN FUNCTIONAL CLASSIFICATION:
RURAL LOCAL ROAD

NHS PROJECT _____ NO

DESIGN EXCEPTIONS

PROJECT DESCRIPTION

LOG CR 21B-0.05 (SFN 119717) - REHABILITATION OF HISTORIC TRUSS OVER THE GREAT MIAMI RIVER AND THE INSTALLATION OF A CONCRETE WALK TO ALLOW RECREATIONAL ACCESS TO THE GREAT MIAMI RIVER.

PROJECT EARTH DISTURBED AREA:	0.31 ACRES
ESTIMATED CONTRACTOR EARTH DISTURBED AREA:	0.25 ACRES
NOTICE OF INTENT EARTH DISTURBED AREA:	N/A ACRES

2023 SPECIFICATIONS

THE STANDARD SPECIFICATIONS OF THE STATE OF OHIO, DEPARTMENT OF TRANSPORTATION, INCLUDING CHANGES AND SUPPLEMENTAL SPECIFICATIONS LISTED IN THE PROPOSAL SHALL GOVERN THIS IMPROVEMENT.

INDEX OF SHEETS:

STRUCTURAL SEAL:

STATE OF OHIO · JEFFREY THOMAS YODER · E-61418 · REGISTERED PROFESSIONAL ENGINEER

Jeffrey T. Yoder

ENGINEERS SEAL:

STATE OF OHIO · MATTHEW LEE SLOAT · E-61262 · REGISTERED PROFESSIONAL ENGINEER

Matthew Sloat

PLAN PREPARED BY:

E. P. FERRIS AND ASSOCIATES INC

Consulting Civil Engineers and Surveyors

OHIO DEPARTMENT OF TRANSPORTATION STANDARD CONSTRUCTION DRAWINGS				SUPPLEMENTAL SPECIFICATIONS	SPECIAL PROVISIONS
BP-3.1	1/19/24	TST-1-99	REV. 1/15/21	SS 800 7/19/24	OEPA DEMO 12/20/24
		EXJ-3-82	REV. 1/18/13	SS 832 7/19/24	
MGS-1.1	7/21/21	DS-1-92	REV. 7/15/22		
MGS-2.1	1/19/18				
MGS-3.1	1/19/18				
MGS-4.1	1/20/17				
MGS-4.2	7/19/13				

UNDERGROUND UTILITIES
Contact Two Working Days Before You Dig
OHIO811.org Before You Dig
OHIO811, 8-1-1, or 1-800-362-2764
(Non-members must be called directly)

I HEREBY APPROVE THESE PLANS AND DECLARE THAT THE MAKING OF THIS IMPROVEMENT WILL REQUIRE THE CLOSING TO TRAFFIC OF THE HIGHWAY AND THAT DETOURS WILL BE PROVIDED AS INDICATED ON SHEET 5.

APPROVED Scott C Adams
DATE 2-19-25 LOGAN COUNTY ENGINEER

APPROVED _____
DATE _____ LOGAN COUNTY COMMISSIONER

APPROVED _____
DATE _____ LOGAN COUNTY COMMISSIONER

APPROVED _____
DATE _____ LOGAN COUNTY COMMISSIONER

FEDERAL PROJECT NO. E240(012)

PID NO. 119717

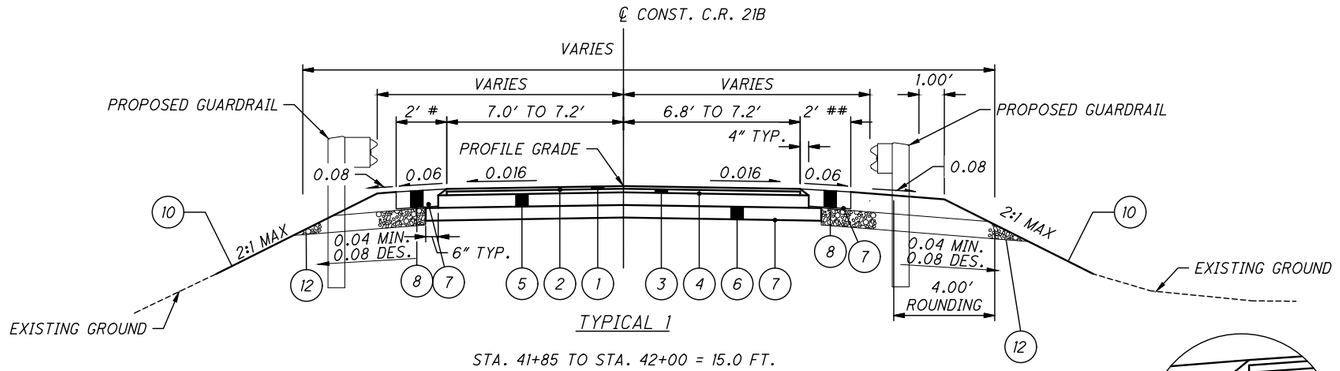
CONSTRUCTION PROJECT NO.

RAILROAD INVOLVEMENT NONE

LOG-CR21B-0.05

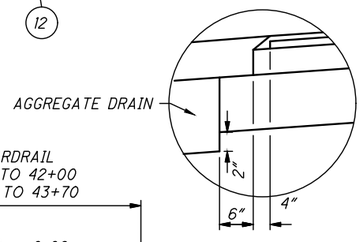
1 / 44

M:\624002_LOG-CR-21B\truss rehab_PID119717\DWG\Roadway\624002_GT001.dwg 3-Feb-25 9:08 AM

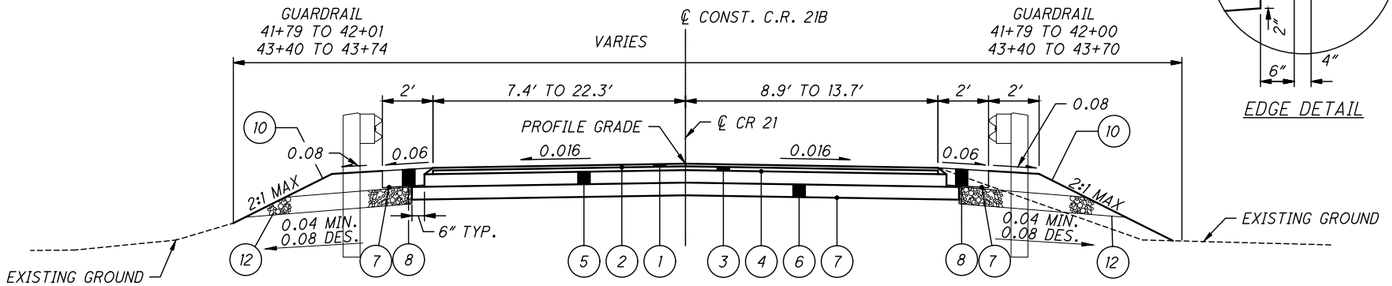


TYPICAL 1

STA. 41+85 TO STA. 42+00 = 15.0 FT.

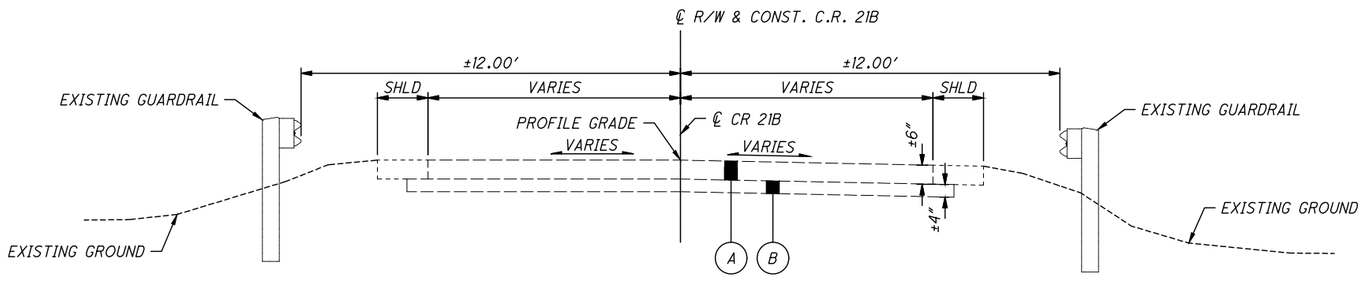


EDGE DETAIL

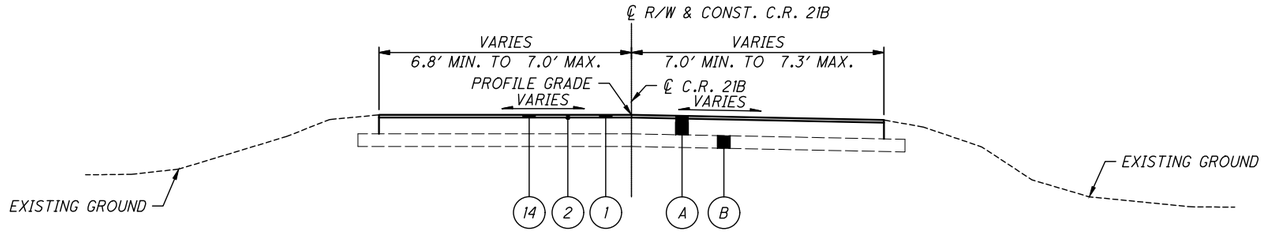


TYPICAL 2

STA. 43+40 TO STA. 43+73 = 33.0 FT.

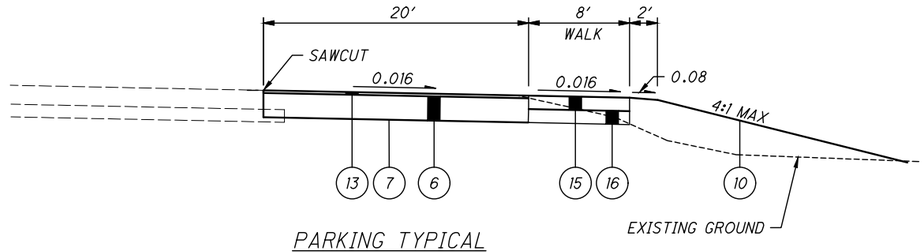


EXISTING SECTION - C.R. 21B



RESURFACING TYPICAL

STA. 41+50 TO STA. 41+85
STA. 43+73 TO STA. 44+75



PARKING TYPICAL

STA. 44+75 TO STA. 45+25

LEGEND (ALL TYPICAL SECTIONS)

(1) - ITEM 441 - 1¼″ ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (449), PG64-22
(2) - ITEM 407 - TACK COAT (APPLIED @ 0.075 GAL/SY)
(3) - ITEM 441 - 1¾″ ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, (449)
(4) - ITEM 407 - TACK COAT (APPLIED @ 0.050 GAL/SY)
(5) - ITEM 301 - 6″ ASPHALT CONCRETE BASE, PG64-22 (449)
(6) - ITEM 304 - 6″ AGGREGATE BASE
(7) - ITEM 204 - SUBGRADE COMPACTION
(8) - ITEM 304 - 8″ AGGREGATE BASE (SHOULDER)
(9) - ITEM 526 - REINFORCED CONCRETE APPROACH SLABS (T=15″), AS PER PLAN
(10) - ITEM 659 - SEEDING AND MULCHING
(12) - ITEM 605 - AGGREGATE DRAINS - PLACE DRAINS AT 4 CORNERS OF BRIDGE (SEE GENERAL NOTES SHEET 4 FOR LOCATIONS)
(13) - ITEM 441 - 2″ ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (449), PG64-22
(14) - ITEM 254 - 1 1/4″ PAVEMENT PLANING
(15) - ITEM 608 - 4″ CONCRETE WALK
(16) - ITEM 304 - 4″ AGGREGATE BASE
(A) - EXISTING 7″ ASPHALT (B) - EXISTING 4″ BASE

CALCULATED RJB
CHECKED MLS

TYPICAL SECTIONS

LOG-CR21B-0.05

GENERAL

THE STANDARD SPECIFICATIONS OF THE STATE OF OHIO, DEPARTMENT OF TRANSPORTATION, INCLUDING CHANGES AND SUPPLEMENTAL SPECIFICATIONS LISTED IN THE PROPOSAL SHALL GOVERN THIS IMPROVEMENT PROJECT.

UTILITIES

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

LOGAN COUNTY ELECTRIC COOPERATIVE
1587 C.R. 32 NORTH
BELLEFONTAINE, OHIO 43311
(937) 651-6981

CENTURYLINK
125 N. MAIN STREET
SIDNEY, OHIO 45365
(937) 498-5105

THE LOCATION OF THE UNDERGROUND UTILITIES SHOWN ON THE PLANS ARE AS OBTAINED FROM THE OWNERS AS REQUIRED BY SECTION 153.64 O.R.C.

ROUNDING

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

SURVEYING PARAMETERS

PRIMARY PROJECT CONTROL MONUMENTS GOVERN ALL POSITIONING ON THIS PROJECT. SEE PLAN AND PROFILE SHEET OF THE PLANS FOR A INFORMATION REGARDING THE CONTROL POINTS.

USE THE FOLLOWING PROJECT CONTROL, VERTICAL POSITIONING, AND HORIZONTAL POSITIONING PARAMETERS FOR ALL SURVEYING:

PROJECT CONTROL

POSITIONING METHOD: ODOT VRS
MONUMENT TYPE: N/A

VERTICAL POSITIONING

ORTHOMETRIC HEIGHT DATUM: NAVD88
GEOID: GEOID12A

HORIZONTAL POSITIONING

REFERENCE FRAME: NAD83(2011)
ELLIPSOID: GRS80
MAP PROJECTION: LAMBERT CONFORMAL CONIC
COORDINATE SYSTEM: OHIO STATE PLANE, SOUTH OHIO
COMBINED SCALE FACTOR: 1.000090521
ORIGIN OF COORDINATE SYSTEM: 0, 0

USE THE POSITIONING METHODS AND MONUMENT TYPE USED IN THE ORIGINAL SURVEY TO RESTORE ALL MONUMENTS RELATED TO PRIMARY PROJECT CONTROL THAT ARE DAMAGED OR DESTROYED BY CONSTRUCTION ACTIVITIES. RESTORE THE DAMAGED OR DESTROYED MONUMENTS IN ACCORDANCE WITH CMS 623.

UNITS ARE IN U.S. SURVEY FEET.

WORK LIMITS

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

CLEARING AND GRUBBING

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

ITEM 204 - PROOF ROLLING

THE FOLLOWING QUANTITY IS PROVIDED IN THE GENERAL SUMMARY TO ADDRESS LOCATIONS REQUIRING PROOF ROLLING. SEE PLAN SHEET NO. 2 FOR ADDITIONAL INFORMATION.

ITEM 204 - PROOF ROLLING 1 HOUR

CROSSING AND CONNECTIONS TO EXISTING PIPES AND UTILITIES

WHERE PLANS PROVIDE FOR A PROPOSED CONDUIT TO BE CONNECTED TO, OR CROSS OVER OR UNDER AN EXISTING SEWER OR UNDERGROUND UTILITY, THE CONTRACTOR SHALL LOCATE THE EXISTING PIPES OR UTILITIES BOTH AS TO LINE AND GRADE BEFORE STARTING TO LAY THE PROPOSED CONDUIT.

IF IT IS DETERMINED THAT THE ELEVATION OF THE EXISTING CONDUIT, OR EXISTING APPURTENANCES TO BE CONNECTED, DIFFERS FROM THE PLAN ELEVATION OR RESULTS IN A CHANGE IN THE PLAN CONDUIT SLOPE, THE ENGINEER SHALL BE NOTIFIED BEFORE STARTING CONSTRUCTION OF ANY PORTION OF THE PROPOSED CONDUIT WHICH WILL BE AFFECTED BY THE VARIANCE IN THE EXISTING ELEVATIONS.

IF IT IS DETERMINED THAT THE PROPOSED CONDUIT WILL INTERSECT AN EXISTING SEWER OR UNDERGROUND UTILITY IF CONSTRUCTED AS SHOWN ON THE PLAN, THE ENGINEER SHALL BE NOTIFIED BEFORE STARTING CONSTRUCTION OF ANY PORTION OF THE PROPOSED CONDUIT WHICH WOULD BE AFFECTED BY THE INTERFERENCE WITH AN EXISTING FACILITY.

PAYMENT FOR ALL THE OPERATIONS DESCRIBED ABOVE SHALL BE INCLUDED IN THE CONTRACT PRICE FOR THE PERTINENT 611 CONDUIT ITEM.

REVIEW OF DRAINAGE FACILITIES

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

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

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

PAYMENT FOR ALL OPERATIONS DESCRIBED ABOVE SHALL BE INCLUDED IN THE CONTRACT PRICE FOR THE PERTINENT 611 CONDUIT ITEMS.

MIGRATORY BIRD PROTECTION:

PRIOR TO THE START OF CONSTRUCTION THE CONTRACTOR MUST INSPECT THE BRIDGE FOR EVIDENCE OF ACTIVE BIRD NESTS. WRITTEN CONFIRMATION OF THE INSPECTION, INCLUDING A STATEMENT WHETHER ACTIVE NESTS WERE FOUND, MUST BE PROVIDED TO THE CONSTRUCTION ENGINEER. IF AN ACTIVE NEST CONTAINING AN EGG OR CHICK IS PRESENT, IMPACTS TO THE NEST MUST BE AVOIDED UNTIL ALL DEVELOPING BIRDS ARE ABLE TO INDEPENDENTLY FLY FROM THE NEST. NESTS THAT DO NOT CONTAIN AN EGG OR CHICK ARE CONSIDERED INACTIVE AND MAY BE REMOVED TO DISCOURAGE BIRDS FROM NESTING AND CONSTRUCTION ACTIVITIES MAY PROCEED. NESTING BIRDS MAY BE AVOIDED BY UNDERTAKING THE WORK FROM OCTOBER 1 TO MARCH 1. IF AN ACTIVE NEST CANNOT BE AVOIDED, THE CONTRACTOR MUST OBTAIN A DEPREDATION PERMIT FROM THE USFWS PRIOR TO DESTROYING ANY ACTIVE NEST. INFORMATION ON OBTAINING A DEPREDATION PERMIT MAY BE OBTAINED BY CONTACTING THE REGION 3 MIGRATORY BIRD REGIONAL PERMIT OFFICE AT 5600 AMERICAN BLVD. WEST, SUITE 990, BLOOMINGTON, MN 55437-1458; PHONE: 612-713-5436. IF OPERATING UNDER A PERMIT, DOCUMENTATION MUST BE PROVIDED TO THE CONSTRUCTION ENGINEER.

PROTECTION OF BATS - BRIDGE INSPECTION:

THE CONTRACTOR MUST VISUALLY INSPECT WORK AREAS ON THE STRUCTURE FOR EVIDENCE OF ROOSTING BATS 60 DAYS PRIOR TO CONSTRUCTION. THE PERSON(S) CONDUCTING THE INSPECTION MUST BE CAPABLE OF IDENTIFYING BATS. INSPECTION USING BINOCULARS FROM THE GROUND IS ACCEPTABLE. THE CONTRACTOR MUST PROVIDE WRITTEN CONFIRMATION OF THE INSPECTION TO THE ENGINEER, INCLUDING A STATEMENT INDICATING WHETHER EVIDENCE OF ROOSTING BATS WAS FOUND.

IF NO EVIDENCE OF ROOSTING BATS WERE ENCOUNTERED, CONSTRUCTION ACTIVITIES CAN PROCEED ANY TIME OF THE YEAR.

IF ROOSTING BATS ARE ENCOUNTERED WITHIN THE PROPOSED WORK AREA, CONTACT THE ENGINEER AND ODOT DISTRICT ENVIRONMENTAL COORDINATOR (TRICIA BISHOP AT TRICIA.BISHOP@DOT.OHIO.GOV) IMMEDIATELY. CONSTRUCTION ACTIVITIES CAN ONLY OCCUR BETWEEN OCTOBER 31 AND MARCH 31 UNLESS THE CONTRACTOR BLOCKS ACCESS TO PORTIONS OF THE BRIDGE THAT COULD BECOME ROOSTING LOCATIONS (SUCH AS THE UNDERSIDE OF BRIDGE EXPANSION JOINTS, ETC.) PRIOR TO APRIL 1ST. THE CONTRACTOR MUST PROVIDE WRITTEN CONFIRMATION TO THE ENGINEER INCLUDING A STATEMENT INDICATING MEASURES TAKEN TO BLOCK ACCESS TO ROOSTING LOCATIONS. WORK THAT WOULD RESULT IN HARM TO THE BATS SHALL NOT OCCUR.

PROTECTION OF BATS - CUTTING RESTRICTIONS:

THE PROJECT IS LOCATED WITHIN THE KNOWN HABITAT RANGES OF THE FEDERALLY LISTED AND PROTECTED INDIANA BAT AND NORTHERN LONG-EARED BAT. THE CONTRACTOR SHALL NOT REMOVE TREES UNDER THIS PROJECT FROM APRIL 1 THROUGH SEPTEMBER 30. ALL NECESSARY TREE REMOVAL SHALL OCCUR FROM OCTOBER 1 THROUGH MARCH 31. THE CONTRACTOR SHALL DEMARCATE CLEARING LIMITS IN THE FIELD TO AVOID ANY UNAUTHORIZED TREE CLEARING. FOR THE PURPOSES OF THIS NOTE, A TREE IS DEFINED AS A LIVE, DYING, OR DEAD WOODY PLANT, WITH A TRUNK THREE INCHES OR GREATER IN DIAMETER AT A HEIGHT OF 4.5 FEET ABOVE THE GROUND SURFACE, AND WITH A MINIMUM HEIGHT OF 13 FEET.

PROTECTION OF DRINKING WATER RESOURCES:

BEST CONSTRUCTION PRACTICES ARE TO BE IMPLEMENTED TO MINIMIZE WATER QUALITY IMPACTS. IDLE EQUIPMENT, PETROCHEMICALS, AND TOXIC/HAZARDOUS MATERIALS SHALL NOT BE STORED NEAR DRAINAGE WAYS, DITCHES OR STREAMS. REFUELING SHALL NOT BE UNDERTAKEN NEAR DRAINAGE WAYS, DITCHES OR STREAMS. A SPILL CONTAINMENT KIT IS TO BE MAINTAINED ON-SITE THROUGHOUT CONSTRUCTION ACTIVITIES. SPILLS OF FUELS, OILS, CHEMICALS, OR OTHER MATERIALS WHICH COULD POSE A THREAT TO GROUNDWATER SHALL BE CLEANED UP IMMEDIATELY. IF THE SPILL IS A REPORTABLE AMOUNT, THE LOCAL FIRE DEPARTMENT (911), LOCAL EMERGENCY COORDINATOR (937-935-0221) AND THE OEPA (1-800-282-9378) MUST BE CONTACTED WITHIN 30 MINUTES OF KNOWLEDGE OF THE RELEASE.

CALCULATED RJB | CHECKED MLS

GENERAL NOTES

LOG-CR21B-0.05

SEEDING AND MULCHING

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

ITEM 659 - SOIL ANALYSIS TEST	1	EACH
ITEM 659 - TOPSOIL	58	CU YD
ITEM 659 - SEEDING AND MULCHING	524	SQ YD
ITEM 659 - REPAIR SEEDING AND MULCHING	26	SQ YD
ITEM 659 - INTER-SEEDING	26	SQ YD
ITEM 659 - COMMERCIAL FERTILIZER	0.07	TON
ITEM 659 - LIME	0.11	ACRES
ITEM 659 - WATER	4.2	M. GAL

SEEDING AND MULCHING SHALL BE APPLIED TO ALL AREAS OF EXPOSED SOIL BETWEEN THE RIGHT-OF-WAY LINES, AND WITHIN THE CONSTRUCTION LIMITS FOR AREAS OUTSIDE THE RIGHT-OF-WAY LINES COVERED BY WORK AGREEMENT OR SLOPE EASEMENT. QUANTITY CALCULATIONS FOR SEEDING AND MULCHING ARE BASED ON THESE LIMITS. SEEDING TO BE COMPLETED BY OCTOBER 1ST.

ITEM 407 - TACK COAT

THE RATE OF APPLICATION OF THE ITEM 407 - TACK COAT SHALL BE SUBJECT TO ADJUSTMENT AS DIRECTED BY THE ENGINEER. PLAN QUANTITIES INDICATE AN AVERAGE APPLICATION RATE OF 0.075 GAL/SQ YD FOR THE FIRST APPLICATION, AND 0.040 GAL/SQ YD FOR THE SECOND APPLICATION, FOR ESTIMATING PURPOSES ONLY.

ITEM 605 - AGGREGATE DRAINS

AGGREGATE DRAINS SHALL BE PLACED AT 50 FOOT INTERVALS ON EACH SIDE OF NORMAL CROWNED SECTIONS, STAGGERED SO THAT EACH DRAIN IS 25 FEET FROM THE ADJACENT DRAIN ON THE OPPOSITE SIDE, AND AT 25 FOOT INTERVALS ON THE LOW SIDE ONLY OF SUPERELEVATED SECTIONS. AN AGGREGATE DRAIN SHALL BE PLACED AT THE LOW POINT OF EACH SAG VERTICAL CURVE.

PLACE DRAINS AT THE FOLLOWING LOCATIONS LISTED BELOW AT THE FOUR CORNERS OF THE BRIDGE.

41+85, LT. & RT.
43+73, LT. & RT.

THE FOLLOWING QUANTITY IS PROVIDED IN THE GENERAL SUMMARY TO BE INSTALLED AS SHOWN ON SHEET NO 2. ALL WORK NECESSARY TO COMPLETE THIS ITEM SHALL BE INCLUDED UNDER THE CONTRACT UNIT PRICE BID FOR ITEM 605, AGGREGATE DRAINS.

ITEM 605 - AGGREGATE DRAINS	34 FT.

NOTIFICATION OF TRAFFIC RESTRICTIONS

THROUGHOUT THE DURATION OF THE PROJECT, THE CONTRACTOR SHALL NOTIFY THE PROJECT ENGINEER IN WRITING OF ALL TRAFFIC RESTRICTIONS AND UPCOMING MAINTENANCE OF TRAFFIC CHANGES. THE CONTRACTOR SHALL ENSURE THE WRITTEN NOTIFICATION IS SUBMITTED IN A TIMELY MANNER TO ALLOW THE PROJECT ENGINEER TO MEET THE REQUIRED TIME FRAMES SET FORTH IN THE TABLE BELOW TO INFORM THE SPECIAL HAULING PERMITS SECTION (HAULING.PERMITS@DOT.OHIO.GOV) AND THE DISTRICT PUBLIC INFORMATION OFFICE (PIO). THIS NOTIFICATION SHALL BE RECEIVED BY THE PROJECT ENGINEER PRIOR TO THE PHYSICAL SETUP OF ANY APPLICABLE SIGNS OR MESSAGE BOARDS.

INFORMATION SHOULD INCLUDE, BUT IS NOT LIMITED TO, ALL CONSTRUCTION ACTIVITIES THAT IMPACT OR INTERFERE WITH TRAFFIC AND SHALL LIST THE SPECIFIC LOCATION, TYPE OF WORK, ROAD STATUS, DATE AND TIME OF RESTRICTION, DURATION OF RESTRICTION, NUMBER OF LANES MAINTAINED, NUMBER OF LANES CLOSED, MINIMUM VERTICAL CLEARANCE, MINIMUM WIDTH OF DRIVABLE PAVEMENT, DETOUR ROUTES, IF APPLICABLE, AND ANY OTHER INFORMATION REQUESTED BY THE PROJECT ENGINEER.

ITEM	NOTIFICATION TIME TABLE DURATION OF CLOSURE	NOTICE DUE TO PERMITS & PIO
RAMP &	>= 2 WEEKS	21 CALENDAR DAYS PRIOR TO CLOSURE
ROAD	> 12 HOURS & < 2 WEEKS	14 CALENDAR DAYS PRIOR TO CLOSURE
CLOSURES	< 12 HOURS	4 BUSINESS DAYS PRIOR TO CLOSURE
LANE	>= 2 WEEKS	14 CALENDAR DAYS PRIOR TO CLOSURE
CLOSURES & RESTRICTIONS	< 2 WEEKS	5 BUSINESS DAYS PRIOR TO CLOSURE
START OF CONSTRUCTION & TRAFFIC PATTERN CHANGES	N/A	14 CALENDAR DAYS PRIOR TO IMPLEMENTATION

ANY UNFORESEEN CONDITIONS NOT SPECIFIED IN THE PLANS REQUIRING TRAFFIC RESTRICTIONS SHALL ALSO BE REPORTED TO THE PROJECT ENGINEER USING THE NOTIFICATION TIME TABLE.

ITEM 614, MAINTAINING TRAFFIC (NOTICE OF CLOSURE SIGN)

NOTICE OF CLOSURE SIGNS (W20-H13) SHALL BE ERECTED BY THE CONTRACTOR PRIOR TO THE SCHEDULED ROAD OR RAMP CLOSURE IN ACCORDANCE WITH THE NOTICE OF CLOSURE TIME TABLE BELOW. [AT THE APPROVAL OF THE ENGINEER, PORTABLE CHANGEABLE MESSAGE SIGNS MAY BE USED IN LIEU OF THE STANDARD FLATSHEET SIGN FOR CLOSURE DURATIONS OF LESS THAN 1 WEEK.]

THE SIGNS SHALL BE ERECTED ON THE RIGHT-HAND SIDE OF THE ROAD/RAMP FACING TRAFFIC. THEY SHALL BE PLACED SO AS NOT TO INTERFERE WITH THE VISIBILITY OF ANY OTHER TRAFFIC CONTROL SIGNS. ON ROADWAYS, THEY SHOULD BE ERECTED AT OR NEAR THE POINT OF CLOSURE. THE SIGNS MAY BE ERECTED ANYWHERE ON RAMPS AS LONG AS THEY ARE VISIBLE TO THE MOTORISTS USING THE RAMP. ON ENTRANCE RAMPS, THE SIGN SHALL BE ERECTED WELL IN ADVANCE OF THE MERGE AREA TO AVOID DISTRACTING MOTORISTS.

NOTICE OF CLOSURE SIGN TIME TABLE

ITEM	DURATION OF CLOSURE	SIGN DISPLAYED TO PUBLIC
RAMP &	>= 2 WEEKS	14 CALENDAR DAYS PRIOR TO CLOSURE
ROAD	> 12 HOURS & < 2 WEEKS	7 CALENDAR DAYS PRIOR TO CLOSURE
CLOSURES	< 12 HOURS	2 BUSINESS DAYS PRIOR TO CLOSURE

THE SIGN SHALL DISPLAY THE DATE OF THE CLOSURE IN MMM-DD FORMAT AND THE NUMBER OF DAYS OF THE CLOSURE. THE LAST LINE OF THE W20-H13 SIGN LISTS A PHONE NUMBER WHICH A MOTORIST MAY CALL FOR ADDITIONAL INFORMATION. THIS IS TO BE A SPECIFIC OFFICE WITHIN THE DISTRICT RATHER THAN THE GENERAL SWITCHBOARD NUMBER.

GREAT MIAMI RIVER WATER TRAIL:

THE CONTRACTOR SHALL MAINTAIN UNDER BRIDGE BOAT ACCESS ON THE GREAT MIAMI RIVER WHEN SAFE FOR USERS. WHENEVER THE RIVER IS CLOSED TO BOAT TRAFFIC, ADVANCE NOTICE OF RIVER CLOSURES IS TO BE POSTED UPSTREAM AND DOWNSTREAM OF THE BRIDGE AND AT THE NEAREST PORTAGE POINTS UPSTREAM AND DOWNSTREAM OF THE BRIDGE. THE NORTH PORTAGE IS LOCATED NEAR INDIAN LAKE DAM AND THE SOUTH PORTAGE IS LOCATED AT THE S.R. 235 BRIDGE NEAR DE GRAFF. THE SIGN SHALL STATE THE FOLLOWING:

RIVER CLOSED AHEAD AT C.R. 21B
DUE TO BRIDGE CONSTRUCTION

AT LEAST 15 DAYS ADVANCE NOTICE OF RIVER CLOSURES ARE TO BE PROVIDED TO THE DIVISION OF PARKS AND WATERCRAFT (614-265-6466).

VERIFICATION OF SIGNS AND LOCATIONS WILL BE DETERMINED AT THE PRECONSTRUCTION MEETING. THE ODNR DIVISION OF PARKS AND WATERCRAFT SHALL BE INVITED TO THE PRE-CONSTRUCTION MEETING (614-265-6466).

THE CONTRACTOR SHALL NOTIFY THE FOLLOWING INDIVIDUALS TWO WEEKS PRIOR TO THE START OF CONSTRUCTION:

MARK ALLEN, ODNR WATER TRAILS MANAGER

PHONE: 614-265-6575
EMAIL: mark.allen@dnr.ohio.gov

SARAH HIPPENSTEEL, THE MIAMI CONSERVANCY DISTRICT

PHONE: 937-223-1271
EMAIL: shippensteel@mcdwater.org

KYLA MAUNZ, ODNR OFFICE OF REAL ESTATE AND LAND MANGEMENT, ODOT LIAISON

PHONE: 614-265-6386
EMAIL: kyla.maunz@dnr.ohio.gov

IF ON-THE-WATER LAW ENFORCEMENT IS NEEDED DURING ANY PORTION OF THE CONSTRUCTION ACTIVITIES, THE COUNTY/ODOT SHALL CONTACT THE ODNR DIVISION OF PARKS AND WATERCRAFT LAW ENFORCEMENT SUPERVISOR (937-902-4950)

NO INSTREAM WORK PERMITTED:

THE GREAT MIAMI RIVER IN THE VICINITY OF THE BRIDGE IS KNOWN TO HARBOR FEDERALLY- PROTECTED FRESHWATER MUSSEL SPECIES. ANY HARM, HARASSMENT OR DESTRUCTION OF FEDERALLY-PROTECTED SPECIES IS A VIOLATION OF THE FEDERAL ENDANGERED SPECIES ACT OF 1973, AS AMENDED. ANY PERSON WHO KNOWINGLY VIOLATES ANY PROVISION OF THE ENDANGERED SPECIES ACT MAY BE ASSESSED CRIMINAL AND CIVIL PENALTIES UP TO $25,000.00 PER DAY OR IMPRISONMENT FOR NOT MORE THAN SIX MONTHS, OR BOTH, FOR EACH VIOLATION.

THE CONTRACTOR SHALL NOT PLACE ANY TEMPORARY OR PERMANENT FILL BELOW THE ORDINARY HIGH WATER MARK [ELEVATION 971.0']. NO COFFERDAMS, WEIRS, CAUSEWAYS, SCAFFOLDING, BRACING, OTHER EQUIPMENT, DEMOLITION DEBRIS OR OTHER MATERIALS ARE PERMITTED IN THE CHANNEL. PRIOR TO THE START OF CONSTRUCTION, THE CONTRACTOR SHALL ADEQUATELY DEMARCATE THE ORDINARY HIGH WATER MARK AND SHALL ENSURE ON-SITE PERSONNEL ARE AWARE OF THE RESTRICTION AGAINST INSTREAM WORK.

WHEN NECESSARY, INSTREAM ACCESS BELOW THE ORDINARY HIGH WATER MARK [ELEVATION 971.0'] MAY OCCUR USING PERSONNEL ON FOOT OR BOATS/RAFTS, PROVIDED THE BOATS/RAFTS DO NOT IMPACT MUSSELS BY COMING IN CONTACT WITH THE CREEK BOTTOM BELOW THE NORMAL WATER ELEVATION [ELEVATION 968.3] ELEVATION.

DURING CONSTRUCTION OPERATIONS, THE CONTRACTOR SHALL TAKE ALL APPROPRIATE PRECAUTIONS TO COLLECT & CONTAIN DEMOLITION DEBRIS AND OTHER MATERIALS, IN ORDER TO PREVENT SUCH MATERIALS FROM ENTERING THE CHANNEL. THE CONTRACTOR SHALL DISPOSE OF ALL WASTE MATERIAL OFF-SITE.

IF AT ANY TIME ANY MATERIALS ARE FOUND TO BE ENTERING THE CHANNEL, THE CONTRACTOR SHALL IMMEDIATELY STOP WORK IN PROXIMITY TO THE CHANNEL. THE CONTRACTOR SHALL NOTIFY THE LOGAN COUNTY ENGINEER AND DISTRICT ENVIRONMENTAL COORDINATOR [TRICIA BISHOP AT 937-497-6721 AND TRICIA.BISHOP@DOT.OHIO.GOV], TO DETERMINE IF ADDITIONAL AGENCY CONSULTATION IS REQUIRED. THE CONTRACTOR SHALL NOT RESUME CONSTRUCTION ANY NECESSARY AGENCY CONSULTATION HAS CONCLUDED AND THE CONTRACTOR CAN VERIFY TO THE LOGAN COUNTY CONSTRUCTION ENGINEER THAT CORRECTIVE MEASURES HAVE BEEN IMPLEMENTED TO PREVENT FURTHER RELEASES OF MATERIAL TO THE CHANNEL.

CALCULATED RJB | CHECKED MLS

GENERAL NOTES

LOG-CR21B-0.05

ITEM 614 - MAINTAINING TRAFFIC

THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING SAFE AND EFFECTIVE TRAFFIC CONTROL 24 HOURS A DAY FOR THE DURATION OF THIS PROJECT. THIS INCLUDES PROVIDING, PLACING, MAINTAINING, AND SUBSEQUENTLY REMOVING ALL NECESSARY TRAFFIC CONTROL MEASURES FOR ALL PROPOSED CONSTRUCTION OPERATIONS.

BEFORE WORK BEGINS, THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER THE NAME(S) AND TELEPHONE NUMBER(S) OF PERSON(S) WHO CAN BE CONTACTED 24 HOURS A DAY BY THE OHIO DEPARTMENT OF TRANSPORTATION, THE HIGHWAY PATROL, AND ALL OTHER INTERESTED POLICE AGENCIES. THIS PERSON(S) SHALL BE RESPONSIBLE FOR REPAIRING AND OR REPLACING ALL TRAFFIC CONTROL DEVICES NEEDED TO MAINTAIN SAFETY FOR THE DURATION OF THIS PROJECT. THIS PERSON(S) SHALL HAVE AVAILABLE ALL MATERIALS, EQUIPMENT, AND INCIDENTALS NECESSARY TO PERFORM THE REQUIRED REPAIRS WITHIN A REASONABLE PERIOD OF TIME.

THE CONTRACTOR SHALL PROVIDE, ERECT, AND MAINTAIN SIGNS (IN PROPER POSITION, CLEAN AND LEGIBLE, AND IN GOOD WORKING CONDITION) AND REMOVE ALL LIGHTS, SIGNS, CONES, DRUMS, AND ANY OTHER TRAFFIC CONTROL DEVICES NECESSARY FOR THE MAINTENANCE OF TRAFFIC ACCORDING TO THESE PLAN NOTES AND DETAILS.

THE CONTRACTOR SHALL FURNISH AND INSTALL ADVANCE WARNING "ROAD WORK AHEAD" (W20-1-48) SIGNS AND "END ROAD WORK" (G20-2-48) SIGNS ON ALL PUBLIC ROADS ENTERING AND EXITING THE PROJECT LIMITS. SIGNS SHALL BE DUALED ON ALL MULTI-LANE HIGHWAYS AND RAMPS. SINGLE SIGN INSTALLATIONS MAY BE USED ON TWO-LANE HIGHWAYS.

VEHICLES AND OTHER EQUIPMENT SHALL NOT BE PERMITTED TO STOP OR TO BE PARKED ALONG THE ROADWAY EXCEPT WITHIN DESIGNATED WORK AREAS AND SHALL NOT ENTER OR LEAVE WORK AREAS IN A MANNER WHICH WILL BE HAZARDOUS TO, OR INTERFERE WITH THE NORMAL FLOW OF TRAFFIC. PERSONAL VEHICLES WILL NOT BE PERMITTED TO PARK WITHIN THE RIGHT-OF-WAY EXCEPT WITHIN SPECIFIC AREAS DESIGNATED BY THE ENGINEER.

ACCESS TO AND FROM ALL CROSS ROADS WITHIN THE LIMITS OF THIS PROJECT SHALL BE MAINTAINED AT ALL TIMES ON EITHER THE EXISTING OR PROPOSED PAVEMENTS, UNLESS OTHERWISE SHOWN IN THESE PLANS OR OTHERWISE DIRECTED BY THE ENGINEER.

TRAFFIC SHALL BE MAINTAINED IN A UNIFORM PATTERN THROUGHOUT THE ENTIRE LENGTH OF THE PROJECT AND SHALL NOT BE SUBJECTED TO CONSTANT LANE SHIFTS.

THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF ANY INTENDED CHANGES TO ANY EXISTING OR TEMPORARY TRAFFIC CONTROL DEVICES AND SHALL OBTAIN THE ENGINEERS APPROVAL PRIOR TO MAKING THE CHANGES.

THE USE OF EXISTING SHOULDER AREAS TO MAINTAIN TRAFFIC IS PERMITTED, UNLESS OTHERWISE NOTED IN THESE PLANS. SHOULD ANY EXISTING OR NEW SHOULDER AREA USED TO MAINTAIN TRAFFIC BECOME DAMAGED OR DESTROYED DUE TO THE NEGLIGENCE OR FAILURE TO PROVIDE ADEQUATE SIGNS OR OTHER APPROPIATE TRAFFIC CONTROL DEVICES, THE RESTORATION OR REPLACEMENT OF THE SHOULDER AREA WILL BE AT THE CONTRACTOR'S EXPENSE.

UNLESS OTHERWISE NOTED IN THESE PLANS, THE STANDARD CHANNELIZING DEVICE FOR CLOSING ANY LANE TO TRAFFIC SHALL BE PROPERLY WEIGHTED AND REFLECTORIZED PLASTIC DRUMS AND OR GRABBER CONES LOCATED AND SPACED ACCORDING WITH APPLICABLE STANDARD DRAWINGS OR PLAN NOTES AND DETAILS.

NO AREA OF PAVEMENT PLANING SHALL BE OPENED TO THE TRAVELING PUBLIC. IT IS THE COUNTY'S INTENT THAT THE PAVEMENT PLANING AND THE PLACEMENT OF ITEM 441 - ASPHALT CONCRETE INTERMEDIATE COURSE BE IN CONJUNCTION WITH EACH OTHER ON A DAILY BASIS PRIOR TO OPENING THE ROAD TO THE TRAVELING PUBLIC. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ASSURING THAT THIS IS A COMPLETE PROCESS EACH DAY.

ACCESS TO ALL ADJOINING PROPERTIES SHALL BE MAINTAINED AT ALL TIMES.

EMERGENCY VEHICLE ACCESS SHALL BE MAINTAINED AT ALL TIMES.

THE ROADWAY SHALL NOT BE OPENED TO TRAFFIC UNTIL PERMANENT TRAFFIC CONTROLS ARE IN PLACE, OR UNTIL TEMPORARY TRAFFIC CONTROLS, APPROVED BY THE ENGINEER, ARE INSTALLED. THE CONTRACTOR ASSUMES ALL LIABILITY FOR THE PREMATURE REMOVAL OF TEMPORARY TRAFFIC CONTROLS.

ALL PERMANENT TRAFFIC CONTROLS NOT IN CONFLICT WITH THE TEMPORARY TRAFFIC CONTROLS SHALL BE MAINTAINED THROUGHOUT THIS PROJECT BY THE CONTRACTOR. THE CONTRACTOR IS RESPONSIBLE FOR ADJUSTING SIGNAL TIMING AS NOTED IN THE CONSTRUCTION SEQUENCE NOTE. PERMANENT TRAFFIC CONTROLS MAY BE TEMPORARILY RELOCATED, AS APPROVED BY THE ENGINEER. THE CONTRACTOR SHALL ASSUME ALL LIABILITY FOR MISSING, DAMAGED AND IMPROPERLY PLACED SIGNS.

CONSTRUCTION PHASING:

NOTICES SHALL BE GIVEN TO ANY OWNERS 1 WEEK PRIOR TO THE CHANGE IN ANY ACCESS.

A MINIMUM OF ONE LANE OF TRAFFIC IN EACH DIRECTION ON CR 21B SHALL BE MAINTAINED AT ALL TIMES FOR RESIDENTS, CLOSE CR21B AT THE BRIDGE. THE CONTRACTOR SHALL PROVIDE, ERECT, AND MAINTAIN STANDARD 48 X 30 INCH ROAD CLOSED SIGNS, SIGN SUPPORTS, BARRICADES, GATES, AND LIGHTS, AS DETAILED IN THESE PLANS AND MT-101.60.

THE CONTRACTOR SHALL PROVIDE, ERECT, AND MAINTAIN SIGNS AND SIGN SUPPORTS, AS DETAILED IN THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES, AND TYPE III BARRICADES AS DETAILED IN THESE PLANS.

ALL WORK AND TRAFFIC CONTROL DEVICES SHALL BE IN ACCORDANCE WITH CMS 614 AND OTHER APPLICABLE PORTIONS OF THE SPECIFICATIONS, AS WELL AS THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES. PAYMENT FOR ALL LABOR, EQUIPMENT, AND MATERIALS SHALL BE INCLUDED IN THE LUMP SUM CONTRACT PRICE FOR ITEM 614 - MAINTAINING TRAFFIC, UNLESS SEPARATELY ITEMIZED IN THE PLAN.

DUST CONTROL

THE CONTRACTOR SHALL FURNISH AND APPLY WATER FOR DUST CONTROL AS DIRECTED BY THE ENGINEER. THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN INCLUDED FOR DUST CONTROL PURPOSES:

ITEM 616 - WATER 1 M.GAL

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

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

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

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

DURING A TRAFFIC SIGNAL INSTALLATION WHEN IMPACTING THE NORMAL FUNCTION OF THE SIGNAL OR THE FLOW OF TRAFFIC, OR WHEN TRAFFIC NEEDS TO BE DIRECTED THROUGH AN ENERGIZED TRAFFIC SIGNAL CONTRARY TO THE SIGNAL DISPLAY (E.G. DIRECTING MOTORISTS THROUGH A RED LIGHT).

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

FOR LANE CLOSURES: DURING INITIAL SET-UP PERIODS, TEAR DOWN PERIODS, SUBSTANTIAL SHIFTS OF A CLOSURE POINT OR WHEN NEW LANE CLOSURE ARRANGEMENTS ARE INITIATED FOR LONG-TERM LANE CLOSURES/SHIFTS (FOR THE FIRST AND LAST DAY OF MAJOR CHANGES IN TRAFFIC CONTROL SETUP).

IN GENERAL, LEOS SHOULD BE POSITIONED IN ADVANCE OF AND ON THE SAME SIDE AS THE LANE RESTRICTION OR AT THE POINT OF ROAD CLOSURE, AND TO MANUALLY CONTROL TRAFFIC MOVEMETNS THROUGH SIGNALIZED INTERSECTIONS IN WORK ZONES.

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

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

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

LEOS (WITH PATROL CAR) REQUIRED BY THE TRAFFIC MAINTENANCE TASKS ABOVE SHALL BE PAID FOR ON A UNIT PRICE (HOURLY) BASIS UNDER ITEM 614 - LAW ENFORCEMENT OFFICER (WITH PATROL CAR) FOR ASSISTANCE. THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN CARRIED TO THE GENERAL SUMMARY.

ITEM 614 - LAW ENFORCEMENT OFFICER WITH PATROL CAR FOR ASSISTANCE 5 HOURS

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

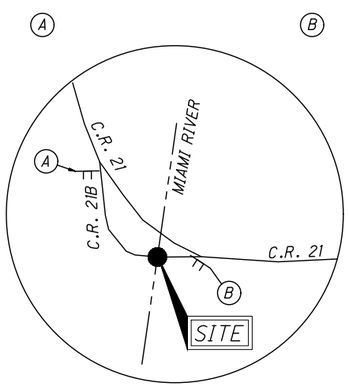
ANY ADDITIONAL COSTS (ADMINISTRATIVE OR OTHERWISE) INCURRED BY THE CONTRACTOR TO OBTAIN THE SERVICES OF A LEO ARE INCLUDED WITH THE BID UNIT PRICE FOR ITEM 614 - LAW ENFORCEMENT OFFICER WITH PATROL CAR FOR ASSISTANCE.

DETOUR

THE COUNTY ENGINEER SHALL PROVIDE, ERECT AND MAINTAIN C.R. 21B DETOUR SIGNS AND SIGN SUPPORTS AS DETAILED IN THE PLANS.

R11-3a-60
M4-10-30
10' TYPE III SOLID BARRICADE
STD. DWG. MT-101.60

R11-3a-60
M4-10-30
10' TYPE III SOLID BARRICADE
STD. DWG. MT-101.60



DETOUR MAP
N.T.S.

CALCULATED RJB | CHECKED MLS

MAINTENANCE OF TRAFFIC GENERAL NOTES AND DETOUR MAP

LOG-CR21B-0.05

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SHEET NUMBER										PART.		ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET
3	4	5		8	12					01/STR/13							
																ROADWAY	
				1						1		201	11000	1	LUMP	CLEARING AND GRUBBING	
				114						114		202	38000	114	FT	GUARDRAIL REMOVED	
					68					68		203	10000	68	CY	EXCAVATION	
					56					56		203	20000	56	CY	EMBANKMENT	
				196						196		204	10000	196	SY	SUBGRADE COMPACTION	
1										1		204	45000	1	HOUR	PROOF ROLLING	
				37.5						37.5		606	15100	37.5	FT	GUARDRAIL, TYPE MGS WITH LONG POSTS	
				1						1		606	25550	1	EACH	ANCHOR ASSEMBLY, MGS TYPE A	
				1						1		606	26550	1	EACH	ANCHOR ASSEMBLY, MGS TYPE T	
				4						4		606	35002	4	EACH	MGS BRIDGE TERMINAL ASSEMBLY, TYPE 1	
				1277						1277		608	10000	1277	SF	4" CONCRETE WALK	
				8						8		626	00102	8	EACH	BARRIER REFLECTOR, TYPE 1	
				6						6		626	00110	6	EACH	BARRIER REFLECTOR, TYPE 2	
																EROSION CONTROL	
	1									1		659	00100	1	EACH	SOIL ANALYSIS TEST	
	58									58		659	00300	58	CY	TOPSOIL	
	524									524		659	10000	524	SY	SEEDING AND MULCHING	
	26									26		659	14000	26	SY	REPAIR SEEDING AND MULCHING	
	26									26		659	15000	26	SY	INTER-SEEDING	
	0.07									0.07		659	20000	0.07	TON	COMMERCIAL FERTILIZER	
	0.11									0.11		659	31000	0.11	ACRE	LIME	
	4.2									4.2		659	35000	4.2	MGAL	WATER	
										10000		832	30000	10000	EACH	EROSION CONTROL	
																DRAINAGE	
	34									34		605	31100	34	FT	AGGREGATE DRAINS	

CALCULATED RJB | CHECKED MLS

GENERAL SUMMARY

LOG-CR21B-0.05

SHEET NUMBER										PART.		ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET
3	4	5		8						01/STR/13							
																PAVEMENT	
				354						354		254	01000	354	SY	PAVEMENT PLANING, ASPHALT CONCRETE	
				15						15		301	46000	15	CY	ASPHALT CONCRETE BASE, PG64-22, (449)	
				55						55		304	20000	55	CY	AGGREGATE BASE	
				38						38		407	10000	38	GAL	TACK COAT	
				23						23		441	70000	23	CY	ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (449), PG64-22	
				4						4		441	70300	4	CY	ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, (449)	
																TRAFFIC CONTROL	
				42						42		630	03100	42	FT	GROUND MOUNTED SUPPORT, NO. 3 POST	
				3						3		630	80100	3	SF	SIGN, FLAT SHEET	
				3						3		630	85100	3	EACH	REMOVAL OF GROUND MOUNTED SIGN & REERECTION	
				3						3		630	86002	3	EACH	REMOVAL OF GROUND MOUNTED POST SUPPORT AND DISPOSAL	
				120						120		644	01200	120	FT	PARKING LOT STALL MARKING	
																FOR STRUCTURES OVER 20' SPAN QUANTITIES SEE SHEET 22-23	
																MAINTENANCE OF TRAFFIC	
			5							5		614	11110	5	HRS	LAW ENFORCEMENT OFFICER WITH PATROL CAR FOR ASSISTANCE	5
			1							1		616	10000	1	MGAL	WATER	5
																INCIDENTALS	
			1							1		614	11001	1	LUMP	MAINTAINING TRAFFIC, AS PER PLAN	5
										1		623	10000	1	LUMP	CONSTRUCTION LAYOUT STAKES AND SURVEYING	
										1		624	10000	1	LUMP	MOBILIZATION	

CALCULATED RJB | CHECKED MLS

GENERAL SUMMARY

LOG-CR21B-0.05

REFERENCE NUMBER	SHEET NUMBER	STATION TO STATION	CODE	SIZE (INCHES)	MEASURED AREA	202 GUARDRAIL REMOVED	204 SUBGRADE COMPACTION	254 PAVEMENT PLANING, ASPHALT CONCRETE	301 6" ASPHALT CONCRETE BASE, PG64-22, (449)	304 6" AGGREGATE BASE	304 8" AGGREGATE BASE (SHOULDER)	304 6" AGGREGATE BASE (PARKING)	304 4" AGGREGATE BASE	407 TACK COAT @ 0.075 GAL/S.Y.	407 TACK COAT @ 0.05 GAL/S.Y. FOR INTERMEDIATE COURSE	441 1 1/4" ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (449), PG64-22	441 2" ASPHALT CONCRETE SURFACE COURSE, TYPE 1,(449) PG64-22 (PARKING)	441 1 3/4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, (449)	606 GUARDRAIL, TYPE MGS WITH LONG POSTS	606 ANCHOR ASSEMBLY, MGS TYPE A	606 ANCHOR ASSEMBLY,MGS TYPE T	606 MGS BRIDGE TERMINAL ASSEMBLY, TYPE 1	608 4" CONCRETE WALK	626 BARRIER REFLECTOR, TYPE 1	626 BARRIER REFLECTOR, TYPE 2	630 SIGN, FLAT SHEET	630 REMOVAL OF GROUND MOUNTED SIGN & RE-ERECTION	630 REMOVAL OF GROUND MOUNTED POST SUPPORT AND DISPOSAL	630 GROUND MOUNTED SUPPORT, NO. 3 POST	644 PARKING LOT STALL MARKING
					SF	FT	SY	SY	CY	CY	CY	CY	CY	GAL	GAL	CY	CY	CY	FT	EACH	EACH	EACH	S.F.	EACH	EACH	SF	EACH	EACH	FT	FT
GR-1	9	41+75 TO 42+00, RT.				25																1		2						
GR-2	9	41+75 TO 42+00, LT.				25																1		2						
GR-3	9	43+40 TO 44+22, RT.				28													25	1		1		2						
GR-4	9	43+40 TO 43+83, LT.				36													12.5		1	1		2						
GR-5	9	42+00 TO 43+40, RT.																							3					
GR-6	9	42+00 TO 43+40, LT.																							3					
P-1	9	41+50 TO 41+85, LT. & RT.			490			54.4																						
P-2	9	41+85 TO 42+00, LT. & RT.			210		23.3		3.9	3.9	1.5			4.1		1.9														
P-3	9	43+40 TO 43+73, LT. & RT.			550		61.1		10.2	10.2	3.3			1.8	1.2	0.8		1.1												
P-4	9	43+73 TO 44+75 LT. & RT.			2691			299						4.6	3.1	2.1		3.0												
P-5	9	44+75 TO 45+24.86, RT.			1000		111.1					18.5		22.4		10.4	6.2													
S-1	9	41+94, LT	OM-3L-18	24x18																							1	1	10.5	
S-2	9	44+46, RT	OM-3R-18	24x18																							1	1	10.5	
S-3	9	44+45, LT	OM-3L-18	24x18																							1	1	10.5	
S-4	9	41+97, RT	OM-3R-18	24x18																						3			10.5	
S-5	9	44+75 TO 45+25 RT.																												120
SW-1	9	43+31.71 TO 45+24.86, RT.			1277								15.7										1277							
SUBTOTAL										15	5	19	16	33	5	16	7													
TOTALS TO GENERAL SUMMARY						114	196	354	15	55				38		23		4	37.5	1	1	4	1277	8	6	3	3	3	42	120

CALCULATED RJB
CHECKED MLS

ROADWAY SUB-SUMMARY

LOG-CR21B-0.05

8
44

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CURVE NO. 1
Δ = 55° 01′ 20″
Dc = 46° 05′ 04″
R = 124.33′
L = 119.39′
T = 64.75′
E = 15.85

SIGN LEGEND

S-1, S-2: OM-3L-12, 24″ X 18″

S-3, S-4: OM-3R-12, 24″ X 18″

1 1/4″ ASPHALT PLANING

1 1/4″ ASPHALT CONCRETE

EX. ROCK CHANNEL PROTECTION

PROP. CONCRETE WALK

* MATCH EX. ELEVATION

HORIZONTAL SCALE IN FEET: 0, 10, 20, 40

CALCULATED: RJB

CHECKED: MLS

PLAN AND PROFILE - CR 21B STA. 41+50 TO STA. 44+75

LOG-CR21B-0.05

9 / 44

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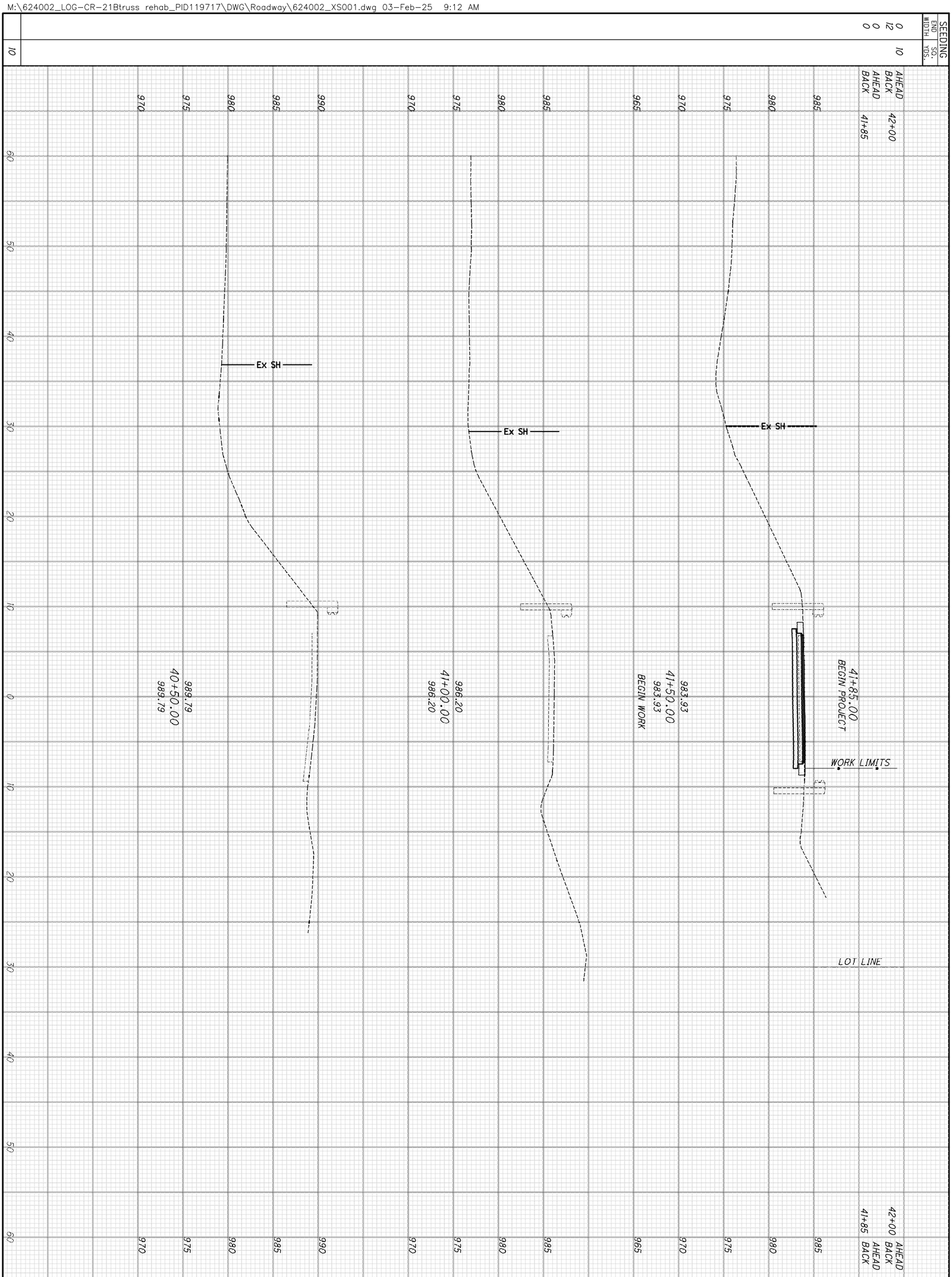

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44

LOG-CR21B-0.05

CROSS SECTIONS
STA. 40+50 TO STA. 41+85

CALCULATED RJB

CHECKED MLS

SEEDING END WIDTH	SEEDING SQ. YDS.
	28
10	
30	
	82
29	
	111
11	
	61
11	
	14
15	
0	
	296

END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
6	3		
		6	4
6	4		
		12	8
6	4		
		6	3
6	1		
23	1		
		19	2
23	3		
		9	1
23	3		
0	0		
		52	18

CALCULATED RJB

CHECKED MLS

AHEAD BACK 44+75

END PLANING 44+75 BACK

Ex SH

LOT LINE

WORK LIMITS

12:1 4:1 50:1

PROP. WALK 4:1

978.0

EX. C.B. (DND)

EX. 30" STM.

980.55
44+50.00
980.55

981.53
44+00.00
981.53

982.64
43+73.00
END PROJECT

43+73 AHEAD BACK

983.38
43+50.00
983.10

AHEAD BACK 43+40

43+40 AHEAD BACK

985 980 975 970 965

60 50 40 30 20 10 0 10 20 30 40 50 60

CROSS SECTIONS
STA. 43+50 TO STA. 44+50

LOG-CR21B-0.05

11
44

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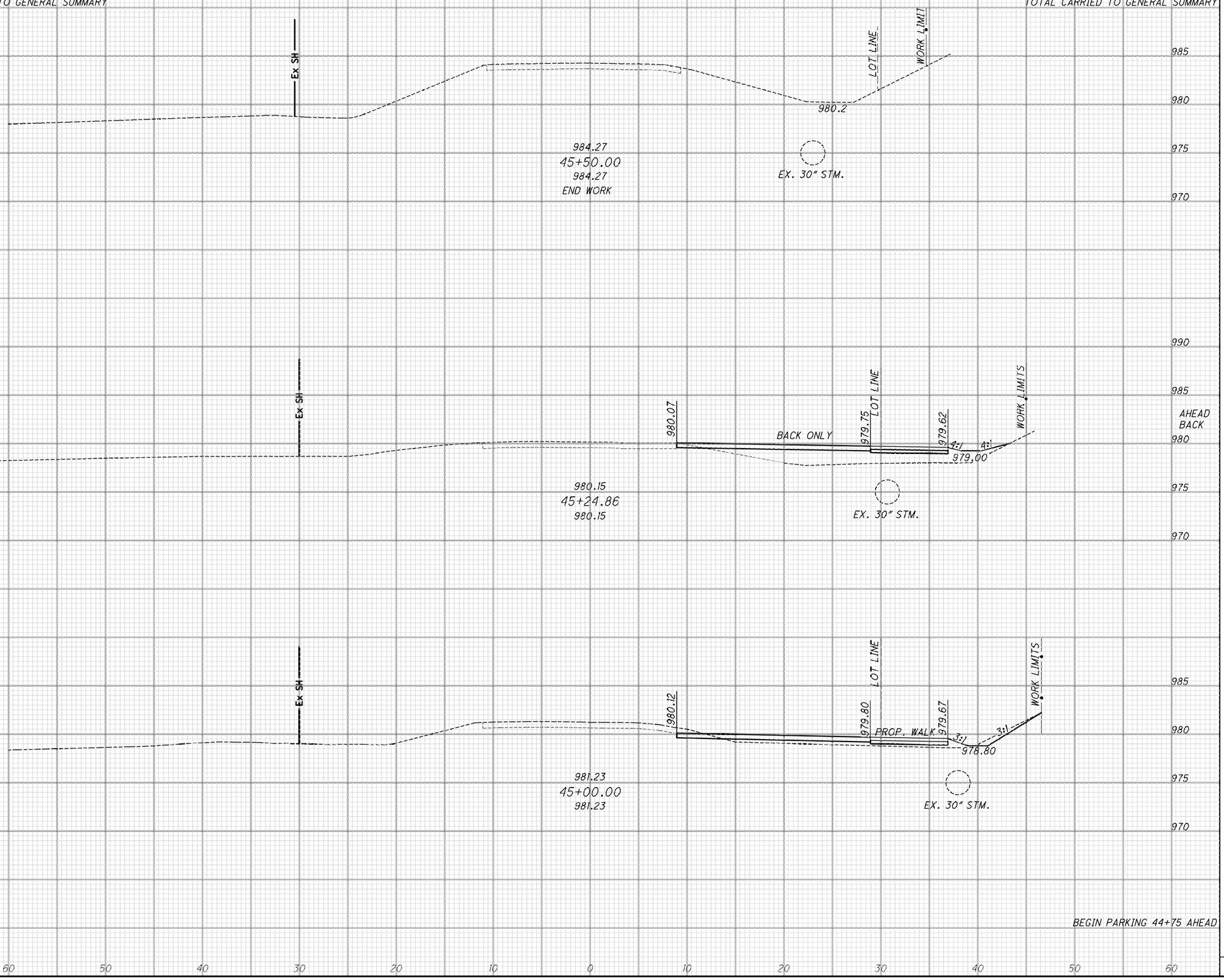
SEEDING END WIDTH	SEEDING SQ. YDS.	END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
	334			68	56
0		0	0		
				0	8
	7				
		AHEAD 0 BACK 1	17 33		
5				2	20
	21				
10		3	10		
		0	10	2	10
	28			4	38

TOTAL CARRIED TO GENERAL SUMMARY

TOTAL CARRIED TO GENERAL SUMMARY



CALCULATED RJB

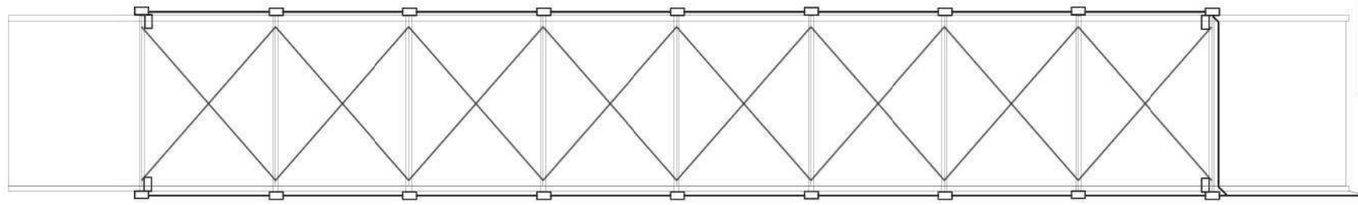
CHECKED MLS

CROSS SECTIONS
STA. 45+00 TO STA. 45+50

LOG-CR21B-0.05

12
44

M:\624002_LOG-CR-21Btruss rehab_PID119717\DWG\Roadway\624002_XS001.dwg 03-Feb-25 9:12 AM



UPPER LEVEL PLAN VIEW ALTERNATE No. 2
SCALE: 1/8" = 1' - 0"

ALTERNATE No. 2 LIGHT FIXTURE SCHEDULE	
ILLUMITEX	VL504DW45UCA

CALL DAVID KEGELMAYER AT SPECTRUM LIGHTING
FOR PRICING ON BASE DESIGN EQUIPMENT
614-486-5354 EXT #42

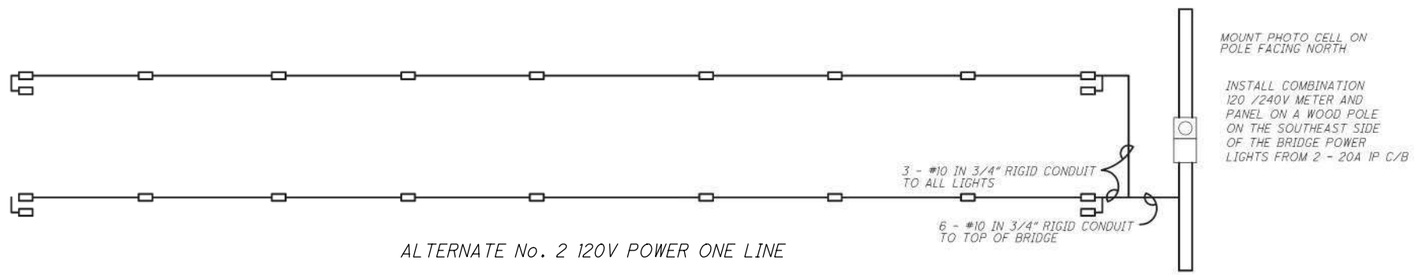
A CUSTOM MADE LIGHT FIXTURE MOUNTING BRACKET WILL NEED TO BE CREATED TO INSURE THE PROPER LIGHTING EFFECT DESIRED BY OF THE COUNTY ENGINEER

NEW POWER POLE WITH
METER AND 120/240V PANEL

ALTERNATE No. 2
ITEM 625 LIGHTING, MISC: METERED BRIDGE LIGHTING SYSTEM

THIS ITEM OF WORK CONSISTS OF THE DESIGN AND CONSTRUCTION OF A METERED LIGHTING SYSTEM FOR THE BRIDGE, DETAILS HAVE BEEN PROVIDED IN THE PLANS ON THIS SHEET. QUANTITIES AND MATERIAL ITEMS SHOWN ON THE PLAN ARE FOR INFORMATION AND GUIDANCE ONLY AND DOES NOT NECESSARILY REFLECT ALL REQUIRED MATERIAL AND QUANTITIES NEEDED TO PROVIDE A COMPLETE OPERATIONAL LIGHTING SYSTEM. THE CONTRACTOR WILL BE RESPONSIBLE FOR DESIGN AND PROVIDING A COMPLETE OPERATIONAL SYSTEM. THE CONTRACTOR'S DESIGN MUST BE SUBMITTED TO THE ENGINEER FOR THEIR APPROVAL. THE CONTRACTOR SHALL COORIDINATE THE DESIGN AND WORK WITH THE ELECTRICAL SERVICE PROVIDER.

THE LUMP SUM PRICE FOR ITEM 625 LIGHTING MISC.: METERED BRIDGE LIGHTING SYSTEM SHALL INCLUDE PAYMENT FOR THE DESIGN AND ALL LABOR, EQUIPMENT, MATERIALS, AND INCIDENTALS NECESSARY TO DESIGN AND CONSTRUCT THE METERED BRIDGE LIGHTING SYSTEM.



ALTERNATE No. 2 120V POWER ONE LINE

DESIGN AGENCY
DGL Consulting Engineers, LLC
3455 Briarfield Blvd. Suite E
Maumee, Ohio 43537 (419) 535-1015

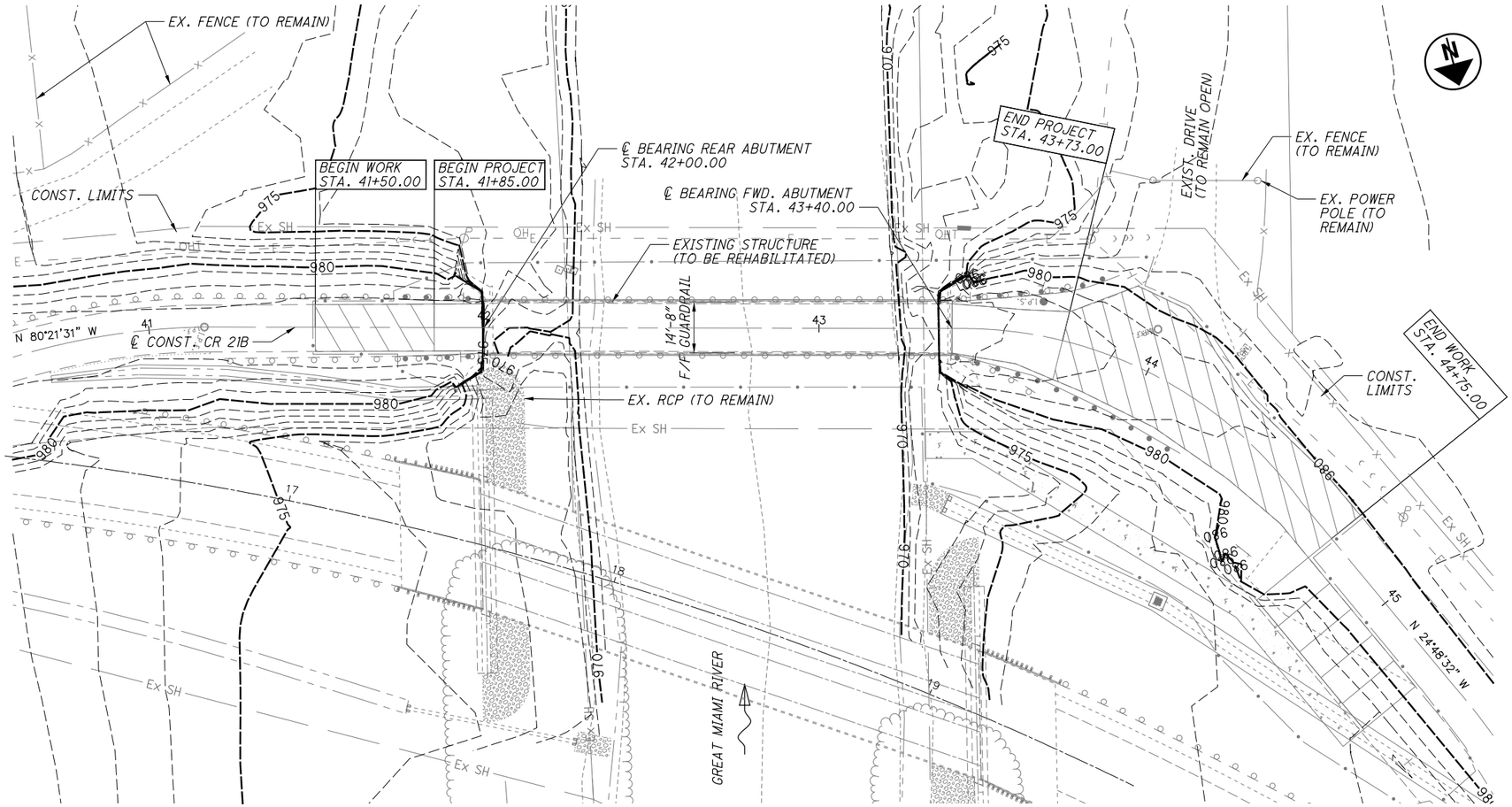
DESIGNED	DRAWN	REVIEWED	DATE
BM	TOBYJEF	JTY	5-24
CHECKED	REVISED	STRUCTURE FILE NUMBER	
BP	.	4631838	

ALTERNATE No. 2 - METERED BRIDGE LIGHTING SYSTEM
BRIDGE No. LOG-21B-0.05
OVER GREAT MIAMI RIVER

LOG-CR21B-0.05
PID No. 119717

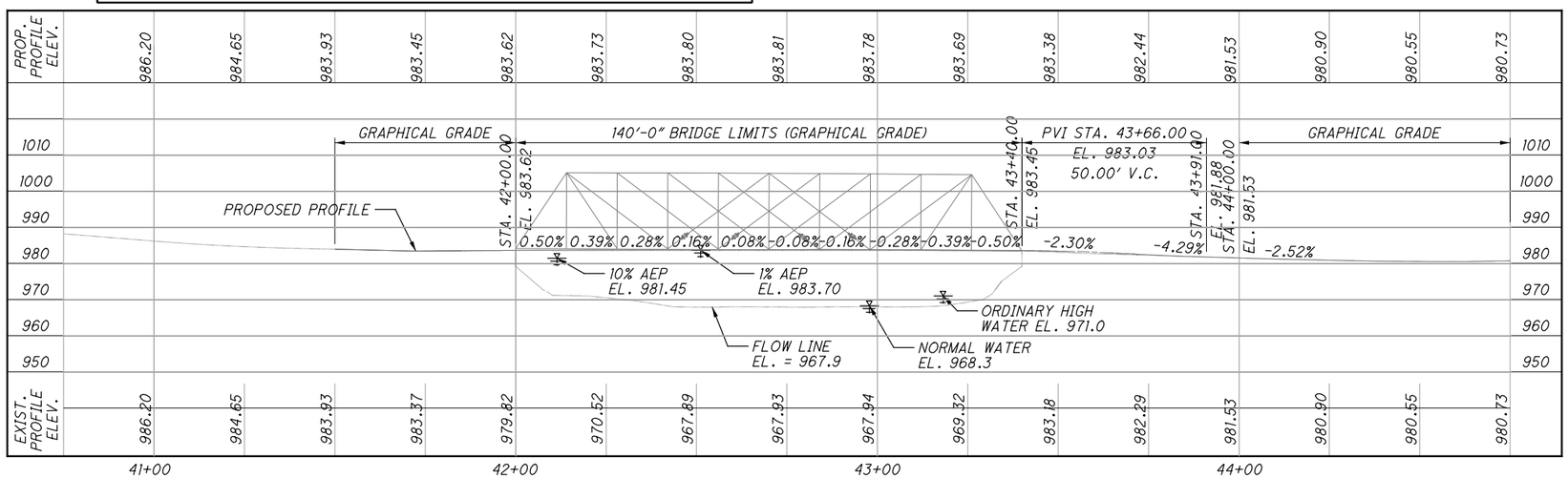
. / .

13
44



PLAN

ORIGINAL PLANS PREPARED BY KOHLI AND KALIHER ASSOCIATES, INC. (K&K) IN 2014. K&K ARE NO LONGER IN BUSINESS. DGL CONSULTING ENGINEERS HAVE REVIEWED THE PLANS AND UPDATED THEM BASED ON CURRENT BRIDGE CONDITIONS. "DESIGN" AND "CHECK" BOXES IN THE BORDER STILL CONTAIN THE ORIGINAL PERSONNEL FROM K&K.



ELEVATION ALONG ℄ CONSTRUCTION CR 21B

BENCHMARK DATA

SITE BENCH MARK: CHISELED SQUARE (FOUND) ON NORTH WEST WINGWALL. ELEV. 984.72

FOR ADDITIONAL BENCHMARK INFORMATION. SEE ROADWAY PLAN SHEET 2/41

NOTES

EARTHWORK LIMITS SHOWN ARE APPROXIMATE. ACTUAL SLOPES SHALL CONFORM TO PLAN CROSS SECTIONS.

SEE GUARDRAIL DETAILS, SHEET 9 OF 44 FOR STATIONING OF GUARDRAIL POSTS AND PAYMENT LIMITS.

EXISTING STRUCTURE

TYPE: WROUGHT IRON DOUBLE INTERSECTION PRATT (WHIPPLE) THROUGH TRUSS WITH TIMBER DECK ON STONE MASONRY ABUTMENTS
SPANS: 140'-0"± C/C BEARINGS
ROADWAY: 15'-6"± F/F GUARDRAIL
WEARING SURFACE: ASPHALT CONCRETE
LOADING: 31% LEGAL
SKEW: NONE
APPROACH SLABS: NONE
ALIGNMENT: TANGENT
STRUCTURAL FILE NUMBER: 4631838
DATE BUILT: 1882
DISPOSITION: TO BE REHABILITATED

REHABILITATED STRUCTURE

TYPE: WROUGHT IRON DOUBLE INTERSECTION PRATT (WHIPPLE) THROUGH TRUSS WITH DECK ON STONE MASONRY ABUTMENTS
PROPOSED WORK: DISASSEMBLE, REPAIR, GALVANIZE, AND RE-ERECT TRUSS WITH NEW DIAGONALS, PINS, BEARINGS, AND FLOOR SYSTEM
SPANS: 140'-0"± C/C BEARINGS
ROADWAY: 14'-8" F/F GUARDRAIL
WEARING SURFACE: ASPHALT CONCRETE
LOADING: 100% LEGAL
SKEW: NONE
APPROACH SLABS: NONE
ALIGNMENT: TANGENT
COORDINATES: LATITUDE 40°21'04" N
LONGITUDE 83°56'19" W

DESIGN AGENCY
DGL Consulting Engineers, LLC
3455 Briarfield Blvd. Suite E
Maumee, Ohio 43537 (419) 535-1015

DESIGNED	DRAWN	REVIEWED	DATE
NBL	NBL	JTY	5-24
CHECKED	REVISED	STRUCTURE FILE NUMBER	
JTY		4631838	

LOGAN COUNTY
STA. 41+97.27
STA. 43+42.73

SITE PLAN
BRIDGE No. LOG-21B-0.05
OVER GREAT MIAMI RIVER

LOG-CR21B-0.05
PID No. 119717

1 / 31

14 / 44

REFERENCE SHALL BE MADE TO STANDARD DARWINGS:

TST-1-99	REVISED 1-15-21
EXJ-3-82	REVISED 1-18-13
DS-1-92	REVISED 7-15-22

DESIGN SPECIFICATIONS:

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

DESIGN DATA:

NEW MATERIALS INCORPORATED IN THE STRUCTURE CONFORM TO THE FOLLOWING.

DESIGN LOADING: 100% OHIO LEGAL LOAD (OPERATING)
CONCRETE CLASS QC1 - COMPRESSIVE STRENGTH 4000 PSI (SUBSTRUCTURE)

REINFORCING STEEL - GALVINIZED STEEL REINFORCEMENT MINIMUM YIELD STRENGTH - 60-KSI.

STRUCTURAL STEEL - ASTM A709 - GRADE 50, ALLOWABLE STRENGTH 27,000 PSI
YIELD STRENGTH 50,000 PSI

DECK - TREATED SOUTHERN YELLOW PINE, STRESS GRADES FOR STRUCTURAL PURPOSES.
THE TIMBER DECK ELEMENTS ARE 3"x6" NOMINAL DIMENSIONS
COMPONENT ALLOWABLE STRESS/PROPERTIES, NAIL LAMINATED DECK:

F_B 1600 PSI	- BENDING UNDER WET USE
F_V 100 PSI	- HORIZONTAL SHEAR
F_{Q} 440 PSI	- COMPRESSION PERPENDICULAR TO GRAINS (UNDER WET USE)
E 1,600,000 PSI	- MODULUS OF ELASTICITY (UNDER WET UES)

FCM

FRACTURE CRITICAL NON-REDUNDANT BRIDGE MEMBERS (FCM) SHALL MEET THE PROVISIONS OF SECTION 12, AWSD1.5. BASE METAL CHARPY V-NOTCH (CVN) IMPACT REQUIREMENTS SHALL SATISFY ZONE 2 TEMPERATURES.

CVN

WHERE A SHAPE OR PLATE IS DESIGNATED (CVN), FURNISH MATERIAL THAT MEETS THE MINIMUM NOTCH TOUGHNESS REQUIREMENTS AS SPECIFIED IN 711.01.

DECK PROTECTION METHOD

TYPE 2 WATERPROOFING WITH ASPHALT CONCRETE OVERLAY

EXISTING STRUCTURE VERIFICATION

DETAILS AND DIMENSIONS SHOWN ON THESE PLANS PERTAINING TO THE EXISTING STRUCTURE HAVE BEEN OBTAINED 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.

CONTRACT BID PRICES SHALL BE BASED UPON THE 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.

SPECIAL NOTES

DIMENSIONS OF THE EXISTING STRUCTURES SHOWN ON THESE PLANS ARE FOR GENERAL REFERENCE ONLY. THEY HAVE BEEN TAKEN FROM THE FIELD NOTES TAKEN FOR BRIDGE INSPECTION AND ARE NOT GUARANTEED TO BE ACCURATE. ALL DIMENSIONS AFFECTED BY THE GEOMETRY, AND/OR LOCATIONS OF THE EXISTING STRUCTURES SHALL BE VERIFIED IN THE FIELD BY THE CONTRACTOR BEFORE ANY CONSTRUCTION IS PREFORMED, AND BEFORE ANY MATERIALS ARE ORDERED OR FABRICATED. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO SUPPLY THE COUNTY ENGINEER WITH ALL FIELD DIMENSIONS REQUIRED TO CHECK SHOP DRAWINGS. THERE IS NO SEPARATE BID ITEM FOR VERIFICATION OF EXISTING TRUSS GEOMETRY, MEMBER COMPONENTS AND DIMENSIONS. CONTRACTOR IS TO INCLUDE ANY WORK REQUIRED FOR FIELD VERIFICATION IN THE TOTAL FINAL BID PRICE. ANY EXPENSES INCURRED AS A RESULT OF IMPROPER FIT OF NEW MATERIALS WILL BE AT THE EXPENSE OF THE CONTRACTOR.

THE CONTRACTOR SHALL VISIT THE SITE BEFORE BIDDING TO BECOME FAMILIAR WITH THE PRESENT CONDITIONS, AND TO JUDGE THE EXTENT AND NATURE OF THE WORK TO BE DONE UNDER THIS CONTRACT.

THE EXISTING BRIDGE REQUIRES LOAD LIMIT POSTINGS. DO NOT OPERATE OVER OR OCCUPY BRIDGE WITH CONSTRUCTION VEHICLES OR EQUIPMENT EXCEEDING POSTED LIMITS AT ANY TIME.

RECONSTRUCTION NOTES

THE CONTRACTOR'S ATTENTION IS DIRECTED TO THE FACT THAT, DUE TO THE NATURE OF RECONSTRUCTION PROJECTS, THE EXACT EXTENT OF RECONSTRUCTION WORK CANNOT ALWAYS BE ACCURATELY DETERMINED PRIOR TO THE COMMENCEMENT OF WORK. THESE CONTRACT DOCUMENTS HAVE BEEN PREPARED BASED ON FIELD INSPECTION AND OTHER INFORMATION AVAILABLE AT THE TIME. ACTUAL FIELD CONDITIONS MAY REQUIRE MODIFICATIONS TO CONSTRUCTION DETAILS AND WORK QUANTITIES. THE CONTRACTOR SHALL PERFORM THE WORK IN ACCORDANCE WITH FIELD CONDITIONS.

RECONSTRUCTION NOTES: (CONT.)

MORE SPECIFICALLY, SOME MEMBER SIZES SUCH AS PIN SIZES AND DIAMETERS, DIAGONAL AND LOWER CHORD LENGTH, ℄ PIN HOLE TO ℄ PIN HOLE, AND MEMBER CONDITION CANNOT BE ACCURATELY DETERMINED UNTIL THE TRUSS HAS BEEN DISSASSEMBLED AND INDIVIDUAL MEMBERS HAVE BEEN CLEANED AND INSPECTED. ALSO INDIVIDUAL MEMBERS, OUT OF A GROUP, MAY HAVE BEEN DESIGNATED TO BE THE PROTOTYPE FOR FABRICATION OF NEW MEMBERS BASED UPON THEIR FIT AND TENSION AT THE BRIDGE CONSTRUCTION INSPECTION.

THE CONTRACTOR SHALL PERFORM ALL WORK WITH CARE SO THAT ANY MATERIALS THAT ARE TO REMAIN WILL NOT BE DAMAGED. IF THE CONTRACTOR DAMAGES ANY MATERIALS THAT ARE TO REMAIN OR THAT ARE TO REMAIN THE PROPERTY OF THE COUNTY, THE DAMAGED MATERIALS SHALL BE REPAIRED OR REPLACED IN A MANNER SATISFACTORY TO THE ENGINEER AT THE EXPENSE OF THE CONTRACTOR.

WHENEVER ITEMS IN THE CONTRACT REQUIRE MATERIALS TO BE REMOVED AND DISPOSED OF, THE COST OF SUPPLYING A DISPOSAL AREA AND TRANSPORTATION TO THAT AREA SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THOSE ITEMS. EXISTING STONES FROM THE ABUTMENTS AND WINGWALL CAN BE REUSED FOR SCOUR PROTECTION.

DURING REMOVAL OPERATIONS, THE CONTRACTOR SHALL NOT BE ALLOWED TO DROP WASTE CONCRETE, DEBRIS, OR ANY OTHER MATERIALS TO THE AREA BELOW OR ADJACENT TO THE BRIDGE. PLATFORMS, NETS, SCREENS, OR OTHER PROTECTIVE DEVICES SHALL BE USED TO CATCH THE MATERIAL. IF THE ENGINEER DETERMINES THAT ADEQUATE PROTECTIVE DEVICES ARE NOT BEING EMPLOYED, THE WORK SHALL BE SUSPENDED UNTIL PROTECTION IS PROVIDED. THE COST OF FURNISHING, INSTALLING, MAINTAINING, AND DISPOSING OF ALL PLATFORMS, NETS, SCREENS, OR OTHER PROTECTIVE DEVICES SHALL BE INCLUDED IN THE PRICE BID FOR THE VARIOUS ITEMS OF THE CONTRACT. ALL MATERIAL FALLING ON THE AREA ADJACENT OR BELOW THE BRIDGE SHALL BE REMOVED AND DISPOSED OF BY THE CONTRACTOR ON A REGULAR RECURRING BASIS.

UTILITY LINES

THE UTILITY(IES) SHALL BEAR ALL EXPENSE INVOLVED IN RELOCATING (INSTALLING) ANY AFFECTED UTILITY LINES. THE CONTRACTOR AND UTILITY(IES) ARE TO COOPERATE BY ARRANGING THEIR WORK IN SUCH A MANNER THAT INCONVENIENCE TO EITHER WILL BE HELD TO A MINIMUM.

RIVER/WATERWAY PROTECTION NOTES

DURING THE COURSE OF CONSTRUCTION, THE CONTRACTOR SHALL CONDUCT OPERATIONS IN SUCH A MANNER AS TO PREVENT OR REDUCE TO A MINIMUM ANY DAMAGE TO ANY STREAM FROM POLLUTION BY DEBRIS, SEDIMENT, OR OTHER FOREIGN MATERIAL OR FROM MANIPULATION OF EQUIPMENT AND/OR MATERIALS IN OR NEAR SUCH A STREAM. THE CONTRACTOR SHALL NOT RETURN DIRECTLY TO A STREAM ANY WATER WHICH HAS BEEN USED FOR WASH PURPOSES OR OTHER SIMILAR OPERATIONS WHICH CAUSE THIS WATER TO BECOME POLLUTED WITH SAND, SILT, CEMENT, OIL, OR OTHER IMPURITIES.

PROPOSED STRUCTURE WORK:

1. NO WORK SHALL BE PERFORMED IN THE RIVER. NO SUPPORTS WILL BE PLACED IN THE RIVER AND THE STRUCTURE WILL BE PLACED ON WOODEN BENTS IN EXISTING RIGHT-OF-WAY .
2. REMOVE ASPHALT, TIMBER DECK, AND GUARDRAILS.
3. BRACE AND REMOVE TRUSS TO TIMBER BENTS IN EXISTING RIGHT-OF-WAY AREAS.
4. DISASSEMBLE TRUSS AND MOVE TO FABRICATION SHOP FOR CLEANING AND INSPECTION OF INDIVIDUAL MEMBERS.
5. MEMBERS U1L1, U9L9; U1L2, U9L8; U1L3, U9L7; U2L4, U8L6; U3L5, U7L5; L3U5, L7U5; AND L4U6, L6U4 WILL BE REPLACED WITH NEW GALVANIZED MEMBERS AS DETAILED IN THE PLANS.
6. MEMBERS L0L1, L1L2, L2L3, L3L4, L4L5, L5L6, L6L7, L7L8, L8L9, AND L9L10 WILL BE SALVAGED (CLEANED AND GALVANIZED) IF THE INSPECTION AND STRENGTH TEST (Fy AND Fu) INDICATE THE MEMBERS ARE ACCEPTABLE. OTHERWISE NEW MEMBERS WILL BE FABRICATED UTILIZING THE DESIGNATED EXISTING MEMBER AS THE MODEL.
7. THE END POSTS, TOP CHORDS, VERTICALS U2L2, U3L3, U4L4, U5L5, U6L6, U7L7, AND U8L8 WILL BE SALVAGED (CLEANED AND GALVANIZED) FOR REUSE. MINOR REPAIR OF THE NORTH EAST END POST WILL BE REQUIRED PRIOR TO GALVANIZING.
8. TOP STRUTS, TOP SWAY BRACES, TOP KNEE BRACES WILL BE SALVAGED (CLEANED AND GALVANIZED) FOR REUSE IN THE REHABILITATED TRUSS. THE TOP SPLICE COVER PLATES WILL BE REPLACED USING HIGH STRENGTH BOLTS.

PROPOSED STRUCTURE WORK: (CONT.)

9. ALL EXISTING FLOOR BEAMS WILL BE REPLACED.
10. THE LOWER LATERAL BRACES WILL BE SALVAGED (CLEANED AND GALVANIZED). THOSE LOWER LATERAL BRACES DEEMED NOT REUSABLE WILL BE REPLACED WITH NEW MEMBERS. THE BOLTS, NUTS, & WASHERS WILL BE REPLACED WITH NEW GALVANIZED H.S. BOLTS, NUTS, & WASHERS.
11. FLOOR BEAM HANGER BOLTS AND BEARING PLATES WILL BE REPLACED WITH NEW GALVANIZED BOLTS, PLATES, AND NUTS.
12. ALL PINS WILL BE REPLACED WITH STAINLESS STEEL PINS AND NUTS. THE OLD PINS WILL BE USED AS THE MODEL FOR THE NEW PINS AS TO DIAMETER, THREADS, AND PIN LENGTH.
13. ELASTOMERIC BEARINGS WILL REPLACE THE EXISTING BEARINGS FOR THE EXPANSION END POST BEARINGS, FIXED END POST BEARINGS, EXPANSION STRINGER BEARINGS, AND FIXED STRINGER BEARINGS.
14. THE BRIDGE END JOINTS WILL BE REPLACED WITH COMPRESSION SEAL EXPANSION JOINTS AT BOTH ENDS OF THE BRIDGE.
15. REFURBISHED AND NEW BRIDGE TRUSS COMPONENTS SHALL BE GALVANIZED AND MEMBERS PREASSEMBLED.
16. REPAIR STONE ABUTMENTS
    A. REMOVE AND REPLACE BROKEN STONES
    B. SEAL ABUTMENTS STONE CRACKS BY EPOXY INJECTION
    C. REPOINT MORTAR JOINTS AND CLEAN STONE MASONRY.
17. REASSEMBLE TRUSS AT JOB SITE AND SET ON REPAIRED STONE ABUTMENTS. PLACE STRINGERS AND NEW TIMBER DECKING.
18. BUILD NEW ABUTMENT BACKWALLS AND END OF BRIDGE EXPANSION JOINTS.
19. REBUILD SHORT PORTIONS OF APPROACH ROADWAY ON EACH END OF THE BRIDGE.
20. REPLACE THE RAILING ON THE BRIDGE AND APPROACHES WITH A STRONGER GUARDRAIL SYSTEM.
21. PLACE TYPE 2 WATERPROOFING ON TIMBER DECK AND PLACE ASPHALT WEARING SURFACE ON BRIDGE AND APPROACH ROADWAY.
22. PLACE NEW DECORATIVE LIGHTING ON BRIDGE. (IF ALTERNATE AUTHORIZED)
23. OPEN STRUCTURE TO TRAFFIC.

BOLTED CONNECTION TO EXISTING STEEL

AT LOCATIONS SHOWN ON THE PLANS AND AS DIRECTED BY THE ENGINEER, NEW STRUCTURAL STEEL SHALL BE CONNECTED TO EXISTING STRUCTURAL STEEL USING EXISTING RIVET OR BOLT HOLES AND NEW BOLTS. RIVET REMOVAL PROCEDURES ARE DESCRIBED IN THE GENERAL NOTES. PAYMENT FOR RIVET OR BOLT REMOVED IS INCLUDED WITH RESPECTIVE ITEMS OR WITH ITEM 202 - REMOVAL MISC.: EXISTING RIVET OR BOLT.

HOLES IN NEW MATERIALS SHALL BE MADE BY ANY OF THE FOLLOWING METHODS (TO BE SELECTED BY THE CONTRACTOR):

1. CAREFUL MEASUREMENT OF EXISTING HOLE LOCATIONS BY THE CONTRACTOR SHALL BE USED FOR LOCATING HOLES IN NEW MATERIALS TO BE SUBPUNCHED OR DRILLED UNDERSIZED IN THE SHOP. THE HOLE SHALL BE 3/16 INCH LESS IN DIAMETER THAN THE NORMAL DIAMETER OF THE NEW BOLT. THE NEW HOLES SHALL BE REAMED TO PROPER SIZE AFTER FIT-UP TO THE EXISTING RIVET OR BOLT HOLES.
2. MAKE TEMPLATES OF HOLE PATTERNS AND LOCATIONS AFTER REMOVAL OF RIVETS OR BOLTS. USE THE TEMPLATES IN THE SHOP TO PUNCH OR DRILL STANDARD HOLE SIZES. THE HOLES SHALL BE REAMED AFTER FIT-UP TO THE EXISTING RIVET OR BOLT HOLES.
3. FURNISH NEW STRUCTURAL STEEL WITHOUT SHOP HOLES FOR RECONNECTION TO EXISTING RIVET OR BOLT HOLES. HOLES IN NEW MATERIAL TO BE DRILLED AND REAMED TO MATCH EXISTING RIVET OR BOLT LOCATIONS.

RIVET HOLES NOT USED FOR BOLTED CONNECTIONS OF NEW STRUCTURAL STEEL SHALL BE FILLED WITH A BOLT UNLESS OTHERWISE NOTED.

EXISTING MATERIALS WITHOUT HOLES FOR CONNECTION TO NEW MATERIAL SHALL BE FIELD DRILLED.

ALL HOLES THROUGH NEW AND EXISTING MATERIAL SHALL BE REAMED AFTER ASSEMBLY. THE FINAL HOLES SHALL BE STANDARD SIZE, 1/16 INCH LARGER IN DIAMETER THAN THE NOMINAL BOLT DIAMETER, UNLESS OTHERWISE NOTED.

ADDITIONAL REQUIREMENTS FOR HOLES SHALL BE PER 513.19. SHOP HOLES THAT DO NOT MATCH EXISTING RIVET HOLES SHALL BE FIELD DRILLED.

EXISTING MATERIALS SHALL BE CLEANED AND GALVANIZED BEFORE CONNECTION TO NEW MATERIAL.

THE COST OF ALL MATERIAL, EQUIPMENT, AND LABOR FOR CONNECTING NEW MATERIAL TO EXISTING MATERIAL INCLUDING REAMING NEW OR EXISTING HOLES, AND DRILLING NEW HOLES, SHALL BE INCLUDED AS AN INCIDENTAL TO THE PERTINENT NEW MATERIAL PAY ITEM.

DESIGN AGENCY
DGL Consulting Engineers, LLC
3455 Briarfield Blvd. Suite E
Maumee, Ohio 43537 (419) 535-1015

DESIGNED	DRAWN	REVIEWED	DATE
BLS	BLS/JEF	JTY	5-24
CHECKED	REVISED	STRUCTURE FILE NUMBER	
DGB		4631838	

GENERAL NOTES - SHEET 1 OF 7
BRIDGE No. LOG-21B-0.05
OVER GREAT MIAMI RIVER

LOG-CR21B-0.05
PID No. 119717

CONNECTION BOLTS

⅝ INCH DIAMETER AND LARGER SHALL BE HEX HEAD, GALVANIZED ASTM A325 HIGH STRENGTH STEEL BOLTS, UNLESS OTHERWISE NOTED. BOLTS ½ INCH DIAMETER AND SMALLER SHALL BE GALVANZINED ASTM A449. STAINLESS STEEL BOLTS SHALL BE TYPE 304. COUNTERSUNK BOLTS SHALL BE GALVANIZED SAE J429 GRADE5. NEW CONNECTION BOLTS SHALL BE INCLUDED FOR PAYMENT WITH THE PERTINENT NEW MATERIAL PAY ITEM.

THREADED BOLT ENDS AND NUTS SHALL BE LOCATED TO THE INSIDE OF BOX TYPE TRUSS MEMBERS SUCH AS END POSTS, UPPER CHORDS, LOWER CHORDS, VERTICALS, AND DIAGONALS. NUTS SHALL BE LOCATED IN LESS VISIBLE LOCATIONS AS DIRECTED BY THE ENGINEER.

NO INFORMATION, INCLUDING RIVET SIZES, REMAINS FOR THE EXISTING BRIDGE. NEW BOLT SIZES ARE DERIVED FROM FIELD MEASUREMENTS OF THE EXISTING RIVET HEADS. GIVEN THE SMALL SIZE OF MANY RE-USED EXISTING MEMBERS, THE SIZE OF THE NEW BOLTS IN THESE PLANS GENERALLY MATCHES THE EXISTING RIVET SIZE. THE FABRICATOR SHALL VERIFY THE EXISTING RIVET HOLES AND USE NEW BOLTS CORRESPONDING TO THE ACTUAL HOLE SIZE, UNLESS A SPECIFIED SIZE IS NOTED IN THE PLANS. IF A SPECIFIC BOLT SIZE IS SPECIFIED TO CONNECT EXISTING MATERIAL, THE HOLES MAY NEED TO BE ENLARGED TO ACCOMODATE A LARGER BOLT.

HOLES FOR CONNECTION BOLTS, CONNECTING NEW MATERIAL TO NEW MATERIAL MAY BE OVERSIZED 1/16 INCH LARGER THAN STANDARD HOLES. HOLES IN EXISTING MATERIAL AND NEW MATERIAL CONNECTING TO EXISTING MATERIAL SHALL BE OVERSIZED ⅛ INCH LARGER THAN THE BOLT DIAMETER.

WELDING TO EXISTING STEEL

WELDING TO THE EXISTING STRUCTURAL STEEL SHALL NOT BE PERMITTED WITHOUT THE APPROVAL OF THE COUNTY ENGINEER.

ITEM 202 - REMOVAL, MISC.: EXISTING RIVET OR BOLT

EXISTING RIVETS OR BOLTS THAT ARE IN HOLES USED TO CONNECT NEW TO EXISTING MATERIAL; EXISTING RIVETS OR BOLTS THAT MUST BE REMOVED TO REMOVE EXISTING STEEL; RIVETS OR BOLTS NECESSARY FOR TRUSS DISASSEMBLY, AND RIVETS DIRECTED TO BE REMOVED BY THE ENGINEER SHALL BE REMOVED WITH CARE IN ACCORDANCE WITH CMS SECTION 202.03.

ALL EXISTING RIVETS TO BE REMOVED SHALL FIRST HAVE THE HEADS CUT OFF AND THEN THE REMAINDER OF THE RIVET SHALL BE REMOVED BY DRILLING OR BURNING. SOME RIVETS TO BE REMOVED MAY HAVE COUNTERSUNK HEADS ON ONE OR BOTH ENDS. RIVETS THAT ARE COUNTERSUNK BOTH ENDS SHALL BE REMOVED BY DRILLING OR BURNING. PUNCHING MAY BE USED TO REMOVE LOOSE FITTING SHANKS. RIVET REMOVAL METHODS SHALL NOT DAMAGE BASE MATERIAL THAT IS TO REMAIN IN PLACE. THE CONTRACTOR SHALL SUBMIT DETAILS OF THE PROPOSED RIVET AND BOLT REMOVAL METHOD FOR APPROVAL BY THE ENGINEER PRIOR TO BEGINNING WORK. ANY DAMAGE TO EXISTING MATERIAL TO REMAIN IN PLACE SHALL BE REPAIRED TO THE SATISFACTION OF THE ENGINEER AT THE COST OF THE CONTRACTOR.

PAYMENT FOR SPECIAL RIVET AND BOLT REMOVAL PROCEDURES SHALL BE INCLUDED PER EACH CONNECTOR WITH ITEM 202 - REMOVAL MISC.: EXISTING RIVET OR BOLT.

ITEM 513 - STRUCTURAL STEEL, MISC.: REMOVE AND REPLACE EXISTING RIVETS WITH HIGH STRENGTH BOLTS

A QUANTITY OF BOLTS HAS BEEN INCLUDED TO REPLACE BROKEN OR SERIOUSLY DETERIORATED RIVETS ON THE TRUSS BUILT UP MEMBERS OR FLOOR BEAM BUILT UP MEMBERS. THESE RIVETS SHOULD BE IDENTIFIED, AFTER ABRASIVE BLASTING OR PACK RUST REMOVAL. A CONTINGENCY QUANTITY HAS BEEN INCLUDED TO ACCOUNT BOLTS NOT DELINEATED IN THE PLANS. THE REMOVAL OF THESE RIVETS AND PLACEMENT OF NEW BOLTS OF THE SAME DIAMETER SHALL BE PAID PER EACH UNDER ITEM 513 - STRUCTURAL STEEL, MISC: REMOVE AND REPLACE EXSITING RIVETS WITH HIGH STRENGTH BOLTS.

CONTINGENCY	TOTAL
400 EACH	400 EACH

ITEM 512 - TYPE 2 WATERPROOFING, AS PER PLAN (ON TIMBER DECK)

EXCESS WOOD PRESERVATIVE SHALL BE REMOVED BY SCRAPING AND CLEANING WITH SOLVENT TO THE SATISFACTION OF THE ENGINEER PRIOR TO APPLING THE TYPE 2 WATERPROOFING TO THE NEW TIMBER STRIP DECK.

ITEM 512 - TYPE 2 WATERPROOFING, AS PER PLAN (ON STRINGER)

PLACE TYPE 2 WATERPROOFING ON THE TOP FLANGE OF THE STRINGERS - OVERHANG FLANGE ½" ON EACH SIDE PRIOR TO PLACING TIMBER DECKING.

ITEM 513 - STRUCTURAL STEEL MEMBERS, LEVEL 6, AS PER PLAN

THIS PAY ITEM SHALL INCLUDE ALL WORK DESCRIBED IN 513.01, EXCEPT ERECTION, FOR NEW STRUCTURAL STEEL INCORPORATED INTO THE REHABILITATED BRIDGE NOT SEPARATELY LISTED FOR PAYMENT. STEEL SUCH AS BEARINGS, EXPANSION JOINTS AND RAILINGS ARE DESCRIBED UNDER THEIR RESPECTIVE PAY ITEMS.

THE STRUCTURAL STEEL SHALL BE GALVANIZED AS DESCRIBED IN THE "GALVANIZED COATING SYSTEM FOR STRUCTURAL STEEL BRIDGES" NOTE.

NEW MEMBERS SHOULD BE SHOP-FIT TO EXISTING MEMBERS TO VERIFY CONNECTIONS MATCH. THIS DOES NOT REQUIRE A FULL SHOP FIT-UP.

THE NEW STRUCTURAL STEEL SHALL BE ERECTED WITH THE RE-USED TRUSS MEMBERS AND PAID FOR AS DESCRIBED IN THE "STRUCTURAL STEEL, MISC.: REASSEMBLE TRUSS" NOTE.

WORK UNDER THIS ITEM SHALL BE PAID FOR PER LUMP SUM UNDER ITEM 513 - STRUCTURAL STEEL MEMBERS, LEVEL 6, AS PER PLAN.

ITEM 513 - STRUCTURAL STEEL, MISC.: PINS AND NUTS

THE STEEL PINS AND NUTS SHALL BE STAINLESS STEEL CONFORMING TO ASTM A240, UNS 21800 OR ASTM A276, UNS 21800.

STAINLESS STEEL PINS SHALL HAVE A SURFACE FINISH CONFORMING TO 513.12. THE PINS SHALL MEET THE SPECIFIED MINIMUM NOTCH TOUGHNESS REQUIREMENTS FOR A573 STEEL AS SPECIFIED IN 711.01.

THE PIN SPACERS SHALL BE A709, GRADE 50 STEEL. THE SPACERS SHALL BE GALVANIZED.

ALL PIN HOLE SURFACES SHALL CONFORM TO THE SURFACE FINISH DEFINED IN SECTION 513.12.

THE FABRICATOR QUALIFICATION LEVEL FOR THE PINS, NUTS, AND SPACERS SHALL BE MISCELLANEOUS.

PINS, PIN SPACERS, NUTS AND SET SCREW SHALL BE INCLUDED FOR PAYMENT WITH ITEM 513 - STRUCTURAL STEEL MISC.: PINS AND NUTS.

ITEM 513 - STRUCTURAL STEEL, MISC.: DISASSEMBLE EXISTING TRUSS

WORK UNDER THIS ITEM SHALL INCLUDE THE DISMANTLING OF THE EXISTING TRUSS BRIDGE. THIS ITEM SHALL INCLUDE ALL TEMPORARY SUPPORTS AND BRACES NEEDED TO KEEP THE BRIDGE STABLE DURING DISASSEMBLY, TRANSPORT TO THE SHOP FOR CLEANING & INSPECTION, AND REPAIR AS REQUIRED.

THIS WORK SHALL ALSO INCLUDE THE REMOVAL OF THE CONNECTION BETWEEN THE FIXED TRUSS BEARINGS AND THE FORWARD (EAST) ABUTMENT. EXISTING ANCHOR BOLTS SHALL BE CUT TO FREE THE TRUSS AND THEN CUT FLUSH WITH THE TOP SURFACE OF THE ABUTMENT SEAT AFTER THE BEARINGS HAVE BEEN REMOVED.

NO PART OF THE STRUCTURE SHALL BE SUBJECT TO UNIT STRESSES THAT EXCEED 136.5% OF THE ALLOWABLE UNIT STRESSES GIVEN IN THE AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES OR MANUAL FOR CONDITION EVALUATION OF BRIDGES, DUE TO DISMANTLING THE BRIDGE. STRUCTURAL ANALYSIS COMPUTATIONS, BY PROFESSIONAL ENGINEER, REGISTERED IN OHIO, SHOWING THAT THE ALLOWABLE STRESSES AND THE MAXIMUM STRESSES PRODUCED BY THE CONTRACTOR'S METHODS OR EQUIPMENT SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW AND APPROVAL AT LEAST TWO WEEKS PRIOR TO THE START OF THE WORK.

THE CONTRACTOR SHALL NOT DAMAGE, MAR OR ADD ADDITIONAL HOLES TO EXISTING STEEL AND IRON DESIGNATED FOR RE-USE TO FACILITATE THE REMOVAL OR TEMPORARY SUPPORT OF THE STRUCTURE.

PAYMENT FOR ALL TOOLS, LABOR, MATERIALS, AND INCIDENTALS FOR THE ABOVE DESCRIBED WORK SHALL BE PAID PER LUMP SUM UNDER ITEM 513 - STRUCTURAL STEEL, MISC.: DISASSEMBLE EXISTING TRUSS.

ITEM 513 - STRUCTURAL STEEL, MISC.: REASSEMBLE TRUSS

WORK UNDER THIS ITEM SHALL INCLUDE THE TRANSPORT TO THE SITE, ERECTION AND ASSEMBLY OF THE SUPERSTRUCTURE STEEL AND IRON INCLUDING NEW MATERIAL AND RE-USED EXISTING MATERIAL. NEW HIGH STRENGTH BOLTS, NUTS & WASHERS USED FOR CONNECTING STRUCTURAL STEEL MEMBERS SHALL BE INCLUDED IN AND CONSIDERED INCIDENTAL TO THIS ITEM. ALSO INCLUDE ALL TEMPORARY SUPPORTS AND BRACES NEEDED TO KEEP THE BRIDGE STABLE DURING ASSEMBLY.

THE HOLES FOR THE PIN CONNECTIONS SHALL BE BORED TO 1/32" LARGER THAN THE PIN DIAMETER AFTER GALVANIZING THE EXISTING AND NEW MEMBERS. THE PIN SHALL BE SHOP INSERTED THROUGH ALL MEMBERS IN THE FABRICATION SHOP PRIOR TO FIELD ASSEMBLY, AT THE PROJECT SITE.

THE CONDITIONS OF THE WORK DESCRIBED IN THE " DISASSEMBLE EXISTING TRUSS" NOTE PERTAINING TO TEMPORARY SUPPORT, CONSTRUCTION STRESSES, AND DAMAGE TO STEEL SHALL APPLY.

PAYMENT FOR ALL TOOLS, LABOR, MATERIALS, AND INCIDENTALS FOR THE ABOVE DESCRIBED WORK SHALL BE PAID PER LUMP SUM UNDER ITEM 513 - STRUCTURAL STEEL, MISC.: REASSEMBLE TRUSS.

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

SHALL INCLUDE THE ELEMENTS INDICATED IN THE PLANS AND GENERAL NOTES AND ARE NOT SEPARATELY LISTED FOR PAYMENT. ITEMS TO BE REMOVED INCLUDE ALL EXISTING MATERIALS BEING REPLACED BY NEW CONSTRUCTION AND MISCELLANEOUS ITEMS THAT ARE NOT SHOWN INCORPORATED IN THE FINAL CONSTRUCTION AND ARE DIRECTED TO BE REMOVED BY THE ENGINEER.

THIS WORK SHALL INCLUDE THE REMOVAL OF THE ABUTMENT CONCRETE BACKWALL, THE TIMBER DECK, AND RAILING. CARE SHALL BE TAKEN DURING DECK REMOVAL TO PROTECT PORTIONS OF THE STRUCTURE THAT ARE TO BE SALVAGED AND INCORPORATED INTO THE PROPOSED STRUCTURE. IN THIS RESPECT, THE USE OF EXPLOSIVES, HEADACHE BALLS, AND/OR HOE RAM TYPE OF EQUIPMENT IS PROHIBITED.

NO PART OF THE STRUCTURE SHALL BE SUBJECTED TO UNIT STRESSES THAT EXCEED 136.5% OF THE ALLOWABLE UNIT STRESSES GIVEN IN THE AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES OR MANUAL FOR CONDITION EVALUATION OF BRIDGES, DUE EITHER TO DEMOLITION, ERECTION OR CONSTRUCTION METHODS, OR TO THE USE OR MOVEMENT OF DEMOLITION OR ERECTION EQUIPMENT ON OR ACROSS THE STRUCTURE. STRUCTURAL ANALYSIS COMPUTATIONS BY A PROFESSIONAL ENGINEER REGISTERED IN OHIO, SHOWING THE ALLOWABLE STRESSES AND THE MAXIMUM STRESSES PRODUCED BY THE CONTRACTOR'S METHODS OR EQUIPMENT SHALL BE SUBMITTED TO THE COUNTY ENGINEER FOR REVIEW AND APPROVAL AT LEAST TWO WEEKS PRIOR TO THE START OF THE WORK.

PAYMENT FOR THE ABOVE MENTIONED WORK SHALL BE INCLUDED IN ITEM 202 - PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN.

ITEM 202 - WEARING COURSE REMOVED, AS PER PLAN

THE CONTRACTOR SHALL EXERCISE CARE IN THE REMOVAL OF THE ASPHALT CONCRETE WEARING SURFACE FROM THE BRIDGE. NO ASPHALT CONCRETE SHALL BE PERMITTED TO ENTER THE RIVER.

ITEM SPECIAL 530 - STRUCTURE, MISC.: PACK RUST REMOVAL

WORK UNDER THIS ITEM INCLUDES THE ADDITIONAL EFFORT ABOVE ABRASIVE BLASTING REQUIRED TO COMPLETELY REMOVE PACK RUST FROM BETWEEN CONNECTED PLATES, WHERE NEITHER PLATE WILL BE REPLACED. PACK RUST AREAS ARE DEFINED AS THOSE LOCATIONS WHERE ADJACENT STEEL PLATES ARE RUSTED APART MORE THAN 1/8".

HEAT METAL TO NO MORE THAN 800°F. DO NOT HEAT METAL TO GLOWING.

USING A RIVET GUN OR OTHER SUITABLE DEVICE, HAMMER ON A STEEL "CUSHION PLATE" SET AGAINST THE HEATED METAL. DO NOT HAMMER DIRECTLY ON THE BRIDGE METAL AS THIS WILL CAUSE SCARRING. HAMMER UNTIL PACK RUST COMES OUT AND THE METAL IS FLAT.

WHEN WORKING ON JOINTS OF BUILT-UP SECTIONS, REPAIR SMALL SECTIONS, NO LONGER THAN 2' LONG AT ONE TIME, THEN MOVE TO OTHER AREAS AND RETURN TO THE FIRST LATER IF NEEDED. THE MORE THE WORK IS DISTRIBUTED THE BETTER. HEATING A LONG EDGE AT ONE TIME CAN PERMANENTLY BEND (WARP) THE BUILT-UP MEMBER.

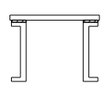
THE WORK OF PACK RUST REMOVAL SHALL BE DONE BY, OR UNDER THE DIRECT SUPERVISION OF A BLACKSMITH OR CRAFTSMAN APPROVED BY THE ENGINEER BASED ON DOCUMENTATION OF SUCCESSFUL COMPLETION OF SIMILAR WORK ON OTHER STRUCTURES OR THE FHWA'S WORKSHOP ON HEAT STRAIGHTENING REPAIR.

ONCE THE PACK RUST IS REMOVED, THE CONTRACTOR SHALL CHECK THOSE RIVETS AND MAY REQUEST REPLACEMENT UNDER "ITEM 513 - STRUCTURAL STEEL, MISC.: REMOVE AND REPLACE EXISTING RIVET WITH NEW HIGH STRENGTH BOLTS" OF RIVETS WHICH ARE LOOSE OR HAVE EXCESSIVE SECTION LOSS.

PAYMENT FOR ALL TOOLS, LABOR, EQUIPMENT, AND MATERIALS NECESSARY TO COMPLETE THE DESCRIBED WORK SHALL BE MADE PER SQUARE FOOT UNDER ITEM SPECIAL 530 - STRUCTURE, MISC.: PACK RUST REMOVAL. A CONTINGENCY QUANTITY HAS BEEN INCLUDED TO ACCOUNT AREAS NOT DELINEATED IN THE PLANS.

ESTIMATED QUANTITY	CONTINGENCY	TOTAL
1 SF	39 SF	40 SF

PLAN VIEW



SECTION VIEW

PACK RUST AREA

CONTINGENCY QUANTITIES

THE CONTRACTOR SHALL NOT ORDER MATERIALS OR PERFORM WORK FOR ITEMS DESIGNATED BY PLAN NOTE TO BE USED "AS DIRECTED BY THE ENGINEER" OR REFERED TO AS "CONTINGENCY QUANTITIES" UNLESS AUTHORIZED BY THE ENGINEER. THE ACTUAL WORK LOCATIONS AND QUANTITIES USED FOR SUCH ITEMS SHALL BE INCORPORATED FOR PAYMENT.

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DESIGNED	DRAWN	REVIEWED	DATE
BLS	BLS/JEF	JTY	5-24
CHECKED	REVISED	STRUCTURE FILE NUMBER	
DGB	.	4633838	

GENERAL NOTES -- SHEET 2 OF 7
BRIDGE No. LOG-21B-0.05
OVER GREAT MIAMI RIVER

LOG-CR21B-0.05
PID No. 119717

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ITEM 513 - STRUCTURAL STEEL, MISC.: LOWER CHORDS CLEANING AND INSPECTION

THIS PAY ITEM SHALL INCLUDE ALL WORK NECESSARY TO CLEAN THE LOWER CHORD MEMBERS, PERFORM A VISUAL INSPECTION, AND MAGNETIC PARTICAL INSPECTION IF MEMBER CRACKING IS SUSPECTED.

IF THE MEMBER IS ACCEPTABLE FOR REUSE THE PAYMENT FOR ADDITIONAL WORK SHALL BE INCLUDED IN ITEM 513-STRUCTURAL STEEL, MISC.: GALVANIZED EXISTING LOWER CHORDS.

IF THE MEMBER IS NOT ACCEPTABLE, THE COST OF ADDITIONAL WORK SHALL BE INCLUDED IN ITEM 513-STRUCTURAL STEEL, MISC.: NEW GALVANIZED LOWER CHORDS.

ITEM 513 - STRUCTURAL STEEL, MISC.: LOWER LATERAL BRACES CLEANING AND INSPECTION

THIS PAY ITEM SHALL INCLUDE ALL WORK NECESSARY TO CLEAN THE LOWER LATERAL BRACES AND PERFORM A VISUAL INSPECTION TO DETERMINE IF THE MEMBER IS ACCEPTABLE FOR REUSE IN THE STRUCTURE.

IF THE MEMBER IS ACCEPTABLE FOR REUSE THE PAYMENT FOR ADDITIONAL WORK SHALL BE INCLUDED IN ITEM 513-STRUCTURAL STEEL, MISC.: GALVANIZED EXISTING LOWER LATERAL BRACES.

IF THE MEMBER IS NOT ACCEPTABLE, THE COST OF ADDITIONAL WORK SHALL BE INCLUDED IN ITEM 513-STRUCTURAL STEEL, MISC.: NEW GALVANIZED LOWER LATERAL BRACES.

ITEM 513 - STRUCTURAL STEEL, MISC.: NEW GALVANIZED FLOORBEAMS

THIS PAY ITEM SHALL INCLUDE ALL WORK DESCRIBED IN 513.01, EXCEPT ERECTION. THE FABRICATOR SHALL BE LEVEL 6. THE STRUCTURAL STEEL SHALL BE GALVANIZED AS DESCRIBED IN THE "GALVANIZED COATING SYSTEM FOR STRUCTURAL STEEL BRIDGES" NOTE.

NEW MEMBERS SHOULD BE SHOP-FIT TO EXISTING MEMBERS TO VERIFY CONNECTIONS MATCH. THIS DOES NOT REQUIRE A FULL SHOP FIT-UP.

THE NEW STRUCTURAL STEEL SHALL BE ERECTED WITH THE REUSED TRUSS MEMBERS AND PAID FOR AS DESCRIBED IN THE "STRUCTURAL STEEL, MISC.: REASSEMBLE TRUSS" NOTE.

WORK UNDER THIS ITEM SHALL BE PAID FOR PER EACH UNDER ITEM 513 - STRUCTURAL STEEL MISC.: NEW GALVANIZED FLOORBEAMS.

ITEM 513 - STRUCTURAL STEEL, MISC.: NEW GALVANIZED LOWER CHORDS

THIS PAY ITEM SHALL INCLUDE ALL WORK DESCRIBED IN 513.01, EXCEPT ERECTION. THE FABRICATOR SHALL BE LEVEL 6.

THE STRUCTURAL STEEL SHALL BE GALVANIZED AS DESCRIBED IN THE "GALVANIZED COATING SYSTEM FOR STRUCTURAL STEEL BRIDGES" NOTE.

NEW MEMBERS SHOULD BE SHOP-FIT TO EXISTING MEMBERS TO VERIFY CONNECTIONS MATCH. THIS DOES NOT REQUIRE A FULL SHOP FIT-UP.

THE NEW STRUCTURAL STEEL SHALL BE ERECTED WITH THE REUSED TRUSS MEMBERS AND PAID FOR AS DESCRIBED IN THE "STRUCTURAL STEEL, MISC.: REASSEMBLE TRUSS" NOTE.

WORK UNDER THIS ITEM SHALL BE PAID FOR PER EACH UNDER ITEM 513 - STRUCTURAL STEEL MISC.: NEW GALVANIZED LOWER CHORDS.

ITEM 513 - STRUCTURAL STEEL, MISC.: NEW GALVANIZED LOWER LATERAL BRACES

THIS PAY ITEM SHALL INCLUDE ALL WORK DESCRIBED IN 513.01, EXCEPT ERECTION. THE FABRICATOR SHALL BE LEVEL UF.

THE STRUCTURAL STEEL SHALL BE GALVANIZED AS DESCRIBED IN THE "GALVANIZED COATING SYSTEM FOR STRUCTURAL STEEL BRIDGES" NOTE.

NEW MEMBERS SHOULD BE SHOP-FIT TO EXISTING MEMBERS TO VERIFY CONNECTIONS MATCH. THIS DOES NOT REQUIRE A FULL SHOP FIT-UP.

THE NEW STRUCTURAL STEEL SHALL BE ERECTED WITH THE REUSED TRUSS MEMBERS AND PAID FOR AS DESCRIBED IN THE "STRUCTURAL STEEL, MISC.: REASSEMBLE TRUSS" NOTE.

WORK UNDER THIS ITEM SHALL BE PAID FOR PER EACH UNDER ITEM 513 - STRUCTURAL STEEL MISC.: NEW GALVANIZED LOWER LATERAL BRACES.

ALL NEW LOWER LATERAL BRACES SHALL BE 1¼" ϕ A709 GR50 WITH A TURN BUCKLE. USE EXISTING AS A PROTOTYPE TO DETERMINE THE LENGTH OF BRACES AND BOLT, NUT, AND WASHER SIZES.

ITEM 513 - STRUCTURAL STEEL, MISC.: GALVANIZED EXISTING LOWER CHORDS

WORK UNDER THIS ITEM INCLUDES THE TRANSPORT, CLEANING AND GALVANIZATION OF THE EXISTING STRUCTURAL STEEL DESIGNATED FOR REUSE IN THE REHABILITATED BRIDGE.

THE CLEANING AND GALVANIZING OF THE MEMBERS SHALL BE PER THE "GALVANIZED COATING SYSTEM FOR STRUCTURAL STEEL BRIDGES" NOTE.

AFTER GALVANIZING, THE EXISTING STRUCTURAL STEEL MEMBERS SHALL BE SHIPPED TO THE FABRICATOR FOR SHOP FIT UP OF THE CONNECTIONS TO THE NEW STRUCTURAL STEEL MEMBERS.

PAYMENT FOR THE WORK DESCRIBED ABOVE SHALL BE MADE PER EACH.

ITEM 513 - STRUCTURAL STEEL, MISC.: GALVANIZED EXISTING LOWER LATERAL BRACES

WORK UNDER THIS ITEM INCLUDES THE TRANSPORT, CLEANING AND GALVANIZATION OF THE EXISTING STRUCTURAL STEEL DESIGNATED FOR REUSE IN THE REHABILITATED BRIDGE.

THE CLEANING AND GALVANIZING OF THE MEMBERS SHALL BE PER THE "GALVANIZED COATING SYSTEM FOR STRUCTURAL STEEL BRIDGES" NOTE.

AFTER GALVANIZING, THE EXISTING STRUCTURAL STEEL MEMBERS SHALL BE SHIPPED TO THE FABRICATOR FOR SHOP FIT UP OF THE CONNECTIONS TO THE NEW STRUCTURAL STEEL MEMBERS.

PAYMENT FOR THE WORK DESCRIBED ABOVE SHALL BE MADE PER EACH.

ITEM 513 - STRUCTURAL STEEL, MISC.: GALVANIZE EXISTING TRUSS MEMBERS

WORK UNDER THIS ITEM INCLUDES THE TRANSPORT, CLEANING AND GALVANIZATION OF THE EXISTING STRUCTURAL STEEL DESIGNATED FOR RE-USE IN THE REHABILITATED BRIDGE.

THE CLEANING AND GALVANIZING OF THE MEMBERS SHALL BE PER THE "GALVANIZED COATING SYSTEM FOR STRUCTURAL STEEL BRIDGES" NOTE.

AFTER GALVANIZING, THE EXISTING STRUCTURAL STEEL MEMBERS SHALL BE SHIPPED TO THE FABRICATOR FOR SHOP FIT UP OF THE CONNECTIONS TO THE NEW STRUCTURAL STEEL MEMBERS. THIS ITEM IS FOR END POST, TOP CHORDS, VERTICALS, TOP STRUTS, TOP SWAY BRACES, TOP KNEE BRACES, AND ASSOCIATED CONNECTION HARDWARE.

PAYMENT FOR THE WORK DESCRIBED ABOVE SHALL BE MADE PER LUMP SUM UNDER ITEM 513-STRUCTURAL STEEL, MISC.: GALVANIZE EXISTING TRUSS MEMBERS.

ITEM 513 - STRUCTURAL STEEL MEMBERS, LEVEL UF, AS PER PLAN

WORK UNDER THIS ITEM INCLUDES FABRICATION OF THE BEARING PLATES WITH KEEPER BARS FOR THE TRUSS END POST BEARINGS AND THE STRINGER BEARINGS FOR USE WITH THE NEW ELASTOMERIC BEARING PADS. THE STEEL SHALL BE GALVANIZED AS DESCRIBED IN THE "GALVANIZED COATING SYSTEM FOR STRUCTURAL STEEL BRIDGES" NOTE.

PAYMENT FOR THE WORK DESCRIBED ABOVE SHALL BE MADE PER LUMP SUM UNDER ITEM 513 - STRUCTURAL STEEL MEMBER, LEVEL UF, AS PER PLAN.

ITEM 513 - COMPATIBILITY & REQUIREMENTS OF GALVANIZED NUTS, BOLTS, AND WASHERS

HIGH STRENGTH STEEL BOLTS, NUTS, AND WASHERS SHALL CONFORM TO THE REQUIREMENTS OF CMS 513, 711.02, 711.09, AND SUPPLEMENT 1080.

FOR GALVANIZED NUTS AND BOLTS, THE COMPATIBILITY OF THE NUTS AND BOLTS AFTER GALVANIZING IS ESSENTIAL. THEREFORE, THE CONTRACTOR SHALL ORDER NUTS, BOLTS, AND WASHERS FROM A DISTRIBUTOR AND SHALL NOT ORDER THEM BLACK AND THEN MAKE SEPARATE ARRANGEMENTS FOR GALVANIZING. THE THREADS OF THE NUTS SHALL BE LUBRICATED WITH MELTED BEESWAX OR MELTED COMMERCIAL WAX PRIOR TO SHIPMENT TO THE JOB SITE.

PAYMENT WILL BE CONSIDERED INCIDENTAL TO THE APPLICABLE CMS 513, PLAN ITEM.

GALVANIZED COATING SYSTEM FOR STRUCTURAL STEEL BRIDGES:

1.0 DESCRIPTION

IN ADDITION TO THE REQUIREMENTS OF CONSTRUCTION AND MATERIAL SPECIFICATIONS (CMS) SECTION 513, THIS ITEM SHALL CONSIST OF FURNISHING ALL NECESSARY LABOR, MATERIALS AND EQUIPMENT TO CLEAN AND GALVANIZE ALL STRUCTURAL STEEL SURFACES, AS SPECIFIED HEREIN. THE GALVANIZED COATING SYSTEM MAY BE APPLIED BY A GALVANIZER NOT QUALIFIED AS A FABRICATION SHOP UNDER CMS 513, BUT THE APPROVED FABRICATOR OF THE STRUCTURAL STEEL SHALL BE RESPONSIBLE FOR THE QUALITY OF THE APPLIED GALVANIZED COATING SYSTEM AND ANY REPAIRS, RE-FABRICATING, ADDITIONAL LAYDOWNS REQUIRED TO ASSURE THE FABRICATED STEEL MEETS ALL REQUIREMENTS OF THIS SPECIFICATION. SECTIONS 513.27 AND 513.28 SHALL NOT APPLY. THIS ITEM SHALL ALSO INCLUDE GALVANIZING, PER 711.02, OF ALL NUTS, WASHERS, BOLTS, AND ANCHOR BOLTS. SEE GALVANIZED NUTS AND BOLTS COMPATIBILITY NOTE ON THIS SHEET FOR ADDITIONAL HARDWARE REQUIREMENTS.

2.0 PRE-FABRICATION MEETING

IN ADDITION TO THE PRE-FABRICATION MEETING REQUIREMENTS UNDER CMS 513.07, BOTH THE FABRICATOR'S QUALITY CONTROL SPECIALIST, (QCPS) AND GALVANIZED COATING APPLICATOR SHALL BE PRESENT AND DISCUSS METHODS OF OPERATION, QUALITY CONTROL, INCLUDING REPAIRS, TRANSPORTATION, ERECTION METHODS TO ACCOMPLISH ALL PHASES OF THE PREPARATION AND COATING WORK REQUIRED BY THIS SPECIFICATION.

3.0 QUALITY CONTROL

3.1 QUALITY CONTROL SPECIALIST

THE QCPS (QUALITY CONTROL PAINT SPECIALIST) REQUIRED UNDER CMS 513, IS RESPONSIBLE FOR ALL QUALITY CONTROL REQUIREMENTS OF THIS SPECIFICATION. THE QCPS SHALL HAVE THE TESTING EQUIPMENT SPECIFIED IN CMS 514.05.

3.2 QUALITY CONTROL POINTS (QCP)

QUALITY CONTROL POINTS (QCP) ARE POINTS IN TIME WHEN ONE PHASE OF THE WORK IS COMPLETE AND READY FOR INSPECTION BY THE FABRICATOR'S QCPS AND THE COUNTY'S QA REPRESENTATIVE. THE NEXT OPERATIONAL STEP MUST NOT PROCEED UNLESS THE QCP HAS BEEN ACCEPTED OR QA INSPECTION WAIVED BY THE COUNTY'S QA REPRESENTATIVE. AT THESE POINTS THE FABRICATOR MUST AFFORD ACCESS TO INSPECT ALL AFFECTED SURFACES. IF INSPECTION INDICATES A DEFICIENCY, THAT PHASE OF THE WORK MUST BE CORRECTED IN ACCORDANCE WITH THESE SPECIFICATIONS PRIOR TO BEGINNING THE NEXT PHASE OF WORK. DISCOVERY OF DEFECTIVE WORK OR MATERIAL AFTER A QUALITY CONTROL POINT IS PAST OR FAILURE OF THE FINAL PRODUCT BEFORE FINAL ACCEPTANCE, MUST NOT IN ANY WAY PREVENT REJECTION OR OBLIGATE THE COUNTY TO FINAL ACCEPTANCE.

QUALITY CONTROL POINTS	
QUALITY CONTROL POINTS (QCP)	PURPOSE
A. SOLVENT CLEANING	REMOVE ASPHALTIC CEMENT, OIL, GREASE, SALT, DIRT, ETC.
B. GRINDING EDGES	REMOVE SHARP CORNERS PER AWS.
C. ABRASIVE BLASTING	BLAST SURFACES, INCLUDING REPAIR FINS, TEARS, SLIVERS OR SHARP EDGES.
D. GALVANIZING	CHECK COATING THICKNESS
E. FAYING SURFACE CLEANING	CHECK FAYING SURFACE ROUGHNESS. CHECK BOLT HOLE CLEARANCE. CHECK FOR OTHER FIELD CONNECTIONS UNIFORM COATING THICKNESS.
F. SECOND LAY DOWN	CHECK SWEEP AND CAMBER TOLERANCES OF EACH STRUCTURAL MEMBER.
G. FIELD REPAIR OF DAMAGE AREAS	CHECK FOR DAMAGE AREAS AFTER ERECTION OF STRUCTURE. PERFORM DAMAGE REPAIRS.
H. FINAL REVIEW	CLEAN STRUCTURE AS PER QCP#1. VISUALLY INSPECT SYSTEM FOR ACCEPTANCE.

A. SOLVENT CLEANING (QCP #1)

THE STEEL MUST BE SOLVENT CLEANED WHERE NECESSARY TO REMOVE ALL TRACES OF ASPHALTIC CEMENT, OIL, GREASE, DIESEL FUEL DEPOSITS, AND OTHER SOLUBLE CONTAMINANTS PER SSPC-SP1 SOLVENT CLEANING. UNDER NO CIRCUMSTANCES MUST ANY ABRASIVE BLASTING BE DONE TO AREAS WITH ASPHALTIC CEMENT, OIL, GREASE, OR DIESEL FUEL DEPOSITS. STEEL MUST BE ALLOWED TO DRY BEFORE BLAST CLEANING BEGINS. THE QCPS SHALL INSPECT AND DOCUMENT THAT THE CLEANING CONFORMS TO SSPC-SP1 AND PROVIDE A COVER LETTER LISTING EACH MAIN MEMBER INSPECTED.

B. GRINDING EDGES (QCP #2)

ALL CORNERS OF THERMALLY CUT OR SHEARED EDGES MUST HAVE A 1/16 INCH RADIUS OR EQUIVALENT FLAT SURFACE AT A SUITABLE ANGLE. THERMALLY CUT MATERIAL THICKER THAN 1 1/2 INCH MUST HAVE THE SIDES GROUND TO REMOVE THE HEAT EFFECTED ZONE, AS NECESSARY TO ACHIEVE THE SPECIFIED SURFACE CLEANING. THE QCPS MUST VISUALLY INSPECT AND DOCUMENT THAT THE GRINDING CONFORMS TO THIS SPECIFICATION AND PROVIDE A COVER LETTER LISTING EACH MAIN MEMBER INSPECTED.

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DESIGNED	DRAWN	REVIEWED	DATE
BLS	BLS/JEF	JTY	5-24
CHECKED	REVISED	STRUCTURE FILE NUMBER	
DGB		4631838	

GENERAL NOTES - SHEET 3 OF 7

BRIDGE No. LOG-21B-0.05
OVER GREAT MIAMI RIVER

LOG-CR21B-0.05

PID No. 119717

GALVANIZED COATING SYSTEM FOR STRUCTURAL STEEL BRIDGES: (CONTINUED)

C. ABRASIVE BLASTING (QCP #3)
BEAMS AND GIRDERS MUST BE PREPARED BY THE FABRICATOR TO STEEL STRUCTURES PAINTING COUNCIL (SSPC) GRADE SIX (6) COMMERCIAL BLAST CLEANING PRIOR TO GALVANIZING. ALL MATERIAL MUST BE FREE OF PAINT MARKS. SECONDARY ANGLE, PLATES, BARS AND SHAPES NEED NOT BE BLAST CLEANED. ABRASIVES MUST ALSO BE CHECKED FOR OIL CONTAMINATION BEFORE USE. A SMALL SAMPLE OF ABRASIVES MUST BE ADDED TO ORDINARY TAP WATER. ANY DETECTION OF AN OIL FILM ON THE SURFACE OF THE WATER MUST BE CAUSE FOR REJECTION. THE QCPS MUST PERFORM AND RECORD THIS TEST AT THE START OF EACH SHIFT. ALL FINS, TEARS, SLIVERS AND BURRED OR SHARP EDGES THAT ARE PRESENT ON ANY STEEL MEMBER OR THAT APPEAR AFTER THE BLASTING OPERATION MUST BE CONDITIONED PER ASTM A6. WELDING REPAIRS MUST ONLY BE PERFORMED BY THE CMS 513 FABRICATOR. THE QCPS MUST VISUALLY INSPECT AND DOCUMENT THAT THE BLAST CONFORMS TO SSPC-SP6, THAT ALL CONDITIONING IS PERFORMED PER ASTM A6, AND PROVIDE A COVER LETTER LISTING EACH MAIN MEMBER INSPECTED.

D. GALVANIZING (QCP #4)
GALVANIZE PER 711.02 AND THIS SPECIFICATION. COATING THICKNESS MUST BE A MINIMUM OF 4 MILS MEASURED AS SPECIFIED. MATERIAL MUST BE FREE OF IMPERFECTIONS OR DEPRESSIONS CAUSED BY MATERIAL HANDLING. THE FABRICATOR, GALVANIZER AND ERECTOR MUST USE LIFTING CLAMPS OR SOFTENERS FOR HANDLING. PRIOR TO GALVANIZING, SURFACE IMPERFECTIONS MAY BE REPAIRED BY THE FABRICATOR IN CONFORMANCE WITH ASTM A6. IMPERFECTIONS GREATER THAN THE LIMITS ALLOWED BY ASTM A6 MUST BE DOCUMENTED. REPAIR OR REPLACEMENT OF THIS MEMBER WILL BE AT THE DISCRETION OF THE COUNTY.
ALL DAMAGED GALVANIZING MUST BE REPAIRED IN ACCORDANCE WITH ASTM A780, METHOD A1 OR A3. DOCUMENTATION OF COATING THICKNESS MUST BE PERFORMED BY THE QCPS. THE QCPS MUST RECORD THE GAGE READINGS AND PROVIDE A COVER LETTER LISTING EACH MAIN MEMBER INSPECTED.

E. FAYING SURFACE CLEANING (QCP #5)
AREAS OF FIELD CONNECTIONS MUST HAVE A UNIFORM GALVANIZED COATING THICKNESS FREE OF LOCAL EXCESSIVE ROUGHNESS WHICH WOULD PREVENT SPLICE PLATES, BEARINGS OR OTHER FIELD CONNECTIONS FROM MAKING INTIMATE CONTACT. FAYING SURFACES OF THE BOLTED SPLICES MUST BE ROUGHENED IN THE SHOP AFTER GALVANIZING BY HAND WIRE BRUSHING. POWER WIRE BRUSHING IS NOT PERMITTED. ALL FIELD SPLICE BOLT HOLES MUST BE FREE OF ZINC BUILD UP. AFTER GALVANIZING, EACH HOLE MUST BE CHECKED IN THE SHOP BY USING A DRIFT PIN WITH A DIAMETER 1/16 INCH GREATER THAN THE DIAMETER OF THE BOLT TO BE USED IN THAT HOLE. CONSIDERATION WILL BE GIVEN TO OTHER METHODS OF TREATING THE FAYING SURFACES IF A WRITTEN REQUEST IS SUBMITTED TO THE OFFICE OF STRUCTURAL ENGINEERING (OSE) IN ACCORDANCE WITH CMS 108.05. INSPECTION OF THE ROUGHENING OF THE FAYING SURFACES AND CHECKING OF HOLES WITH DRIFT PINS MUST BE PERFORMED BY THE QCPS. ACCEPTANCE OF THE FAYING SURFACES AND HOLES SHALL BE DOCUMENTED BY THE QCPS.

F. SECOND LAY DOWN (QCP #6)
AFTER GALVANIZING, MATERIALS MUST BE PLACED IN A SECOND SHOP ASSEMBLY PER CMS SECTION 513.24 TO CHECK ALIGNMENT OF HOLES, SWEEP AND CAMBER AGAINST THE FABRICATOR'S ORIGINAL RECORDED LAY DOWN DIMENSIONS. THIS SHOP ASSEMBLY MAY BE PERFORMED AT THE GALVANIZER'S FACILITY, BY THE FABRICATOR'S PERSONNEL, IF APPROVED BY THE OSE. THE SECOND LAY DOWN MAY BE WAIVED BY THE OSE IF THE FABRICATOR RECORDS INDIVIDUAL BEAM CAMBERS AND SWEEPS DURING THE FIRST LAY DOWN, AND THE NEW INDIVIDUAL BEAM CAMBERS AND SWEEPS, AFTER GALVANIZING, COMPARED TO THE FIRST LAY DOWN ARE WITHIN THE FOLLOWING TOLERANCES:
BEARING POINTS AFTER GALVANIZING, MUST BE WITHIN +/- 1/8 INCH OF THE APPROVED SHOP DRAWING LAY DOWN.
CAMBER POINTS AFTER GALVANIZING MUST BE + 1/4 INCH OR - 0 INCH FROM THE FIRST LAY DOWN.
SWEEP POINTS AFTER GALVANIZING MUST BE +/- 3/8 INCH FROM THE FIRST LAY DOWN.
INDIVIDUAL BEAMS THAT EXCEED THE LISTED TOLERANCES MUST BE PLACED WITH AT LEAST TWO ADJACENT BEAMS IN LAY DOWN FOR CHECKING AGAINST THE RECORDED SHOP ASSEMBLY RECORDS PER CMS 513.04. DOCUMENTATION OF THE SECOND LAY DOWN OR INDIVIDUAL MEMBER CAMBERS MUST BE RECORDED BY THE QCPS PER CMS 513.24.

G. FIELD REPAIR OF DAMAGED AREAS (QCP #7)
MATERIAL MUST BE FREE OF IMPERFECTIONS OR DEPRESSIONS CAUSED BY MATERIAL HANDLING. THE CONTRACTOR MUST USE LIFTING CLAMPS OR SOFTENERS FOR HANDLING. IMPERFECTIONS MAY BE REPAIRED BY GRINDING AS ALLOWED BY ASTM A6 BY THE CONTRACTOR. IMPERFECTIONS THAT ARE GREATER THAN THE GRINDING LIMITS ALLOWED BY ASTM A6, MUST BE DOCUMENTED. REPAIR OR REPLACEMENT OF THIS MEMBER WILL BE AT THE DISCRETION OF THE OSE. ALL DAMAGED GALVANIZING MUST BE REPAIRED IN ACCORDANCE WITH ASTM A780, METHOD A1 OR A3. DAMAGED GALVANIZING WHICH WILL BE INACCESSIBLE FOR REPAIR AFTER ERECTION MUST BE REPAIRED PRIOR TO ERECTION. IN ORDER TO MINIMIZE DAMAGE TO THE GALVANIZED STEEL, CONCRETE SPLATTER AND FORM LEAKAGE MUST BE WASHED FROM THE SURFACE OF THE STEEL SHORTLY AFTER THE CONCRETE IS PLACED AND BEFORE IT IS DRY. IF THE CONCRETE DRIES, IT MUST BE REMOVED.
TEMPORARY ATTACHMENTS, SUPPORTS FOR SCAFFOLDING AND FINISHING MACHINE OR FORMS MUST NOT DAMAGE THE COATING SYSTEM. IN PARTICULAR, SUFFICIENT SIZE SUPPORT PADS MUST BE USED ON THE FASCIAS WHERE BRACING IS USED.
DOCUMENTATION OF GALVANIZING REPAIRS MUST BE PERFORMED BY THE QCPS BY A COVER LETTER LISTING EACH MAIN MEMBER INSPECTED.

H. FINAL REVIEW (QCP #8)
AFTER THE ERECTION WORK HAS BEEN COMPLETED, INCLUDING ALL CONNECTIONS AND THE APPROVED REPAIR OF ANY DAMAGED BEAMS, GIRDERS OR OTHER STEEL MEMBERS, AND THE DECK HAS BEEN PLACED, THE CONTRACTOR AND ENGINEER MUST INSPECT THE STRUCTURE FOR DAMAGED COATING. (QCP #8). DAMAGED AREAS MUST BE REPAIRED BY QCP #7. AT THE COMPLETION OF CONSTRUCTION, THE GALVANIZING MUST BE UNDAMAGED AND THE SURFACES FREE FROM GREASE, OIL, CHALK MARKS, PAINT, CONCRETE SPLATTER OR OTHER SILAGE. SUCH SILAGE WILL BE REMOVED BY SOLVENT CLEANING PER SSPC-SP1 (QCP #1). DOCUMENTATION OF FINAL REVIEW MUST BE PERFORMED BY THE QCPS BY A COVER LETTER LISTING EACH MAIN MEMBER INSPECTED.

4.0 TESTING EQUIPMENT
THE FABRICATOR MUST PROVIDE THE QCPS INSPECTOR THE FOLLOWING TESTING EQUIPMENT IN GOOD WORKING ORDER FOR THE DURATION OF THE PROJECT: ONE (POSITECTOR 2000 OR 6000, QUANIX 2200, OR ELCOMETER A345FBI) AND THE CALIBRATION PLATES, 38-200 MM AND 250-625 MM [1.5 -8 MILS AND 10-25 MILS] AS PER THE NBS CALIBRATION STANDARDS IN ACCORDANCE WITH ASTM D-1186.

5.0 COATING THICKNESS
GALVANIZED THICKNESS MUST BE DETERMINED BY USE OF TYPE 2 MAGNETIC GAGE IN ACCORDANCE WITH THE FOLLOWING:
FIVE SEPARATE SPOT MEASUREMENTS MUST BE MADE, SPACED EVENLY OVER ONE (1) RANDOMLY SELECTED, 100 SQUARE FEET OF SURFACE AREA ON EACH STRUCTURAL MEMBER. THREE GAGE READINGS MUST BE MADE FOR EACH SPOT MEASUREMENT. THE PROBE MUST BE MOVED A DISTANCE OF 1 TO 3 INCHES FOR EACH NEW GAGE READING. ANY UNUSUALLY HIGH OR LOW GAGE READING THAT CANNOT BE REPEATED CONSISTENTLY MUST BE DISCARDED. THE AVERAGE (MEAN) OF THE 3 GAGE READINGS MUST BE USED AS THE SPOT MEASUREMENT. THE AVERAGE OF FIVE SPOT MEASUREMENTS FOR EACH SUCH 100 SQUARE FOOT AREA MUST NOT BE LESS THAN THE SPECIFIED THICKNESS. NO SINGLE SPOT MEASUREMENT IN ANY 100 SQUARE FOOT AREA MUST BE LESS THAN 80% OF THE SPECIFIED MINIMUM THICKNESS. ANY ONE OF 3 READINGS WHICH ARE AVERAGED TO PRODUCE EACH SPOT MEASUREMENT, MAY UNDER-RUN OR OVER-RUN BY A GREATER AMOUNT. THE 5 SPOT MEASUREMENTS MUST BE MADE FOR ONE (1) RANDOMLY SELECTED, 100 SQUARE FEET OF AREA ON EACH STRUCTURAL MEMBER. ALL SPLICE MATERIAL AND SECONDARY MEMBERS MUST HAVE AT LEAST ONE SPOT MEASURED ON EACH PIECE. THE PROBE MUST BE MOVED SO THAT ONE READING IS TAKEN AT EACH END AND MIDDLE OF THE PIECE FOR A TOTAL OF THREE READINGS. THE QCPS MUST INSPECT AND PROVIDE DOCUMENTATION OF ACTUAL DATA, THE GALVANIZED THICKNESS CHECKS WERE PERFORMED PER SPECIFICATION, AND THE COATING THICKNESS MEETS SPECIFICATION REQUIREMENTS.

6.0 HANDLING AND SHIPPING
REASONABLE CARE MUST BE EXERCISED IN HANDLING THE GALVANIZED STEEL DURING SHIPPING, ERECTION, AND SUBSEQUENT CONSTRUCTION OF THE BRIDGE. THE STEEL MUST BE INSULATED FROM THE BINDING CHAINS BY SOFTENERS. HOOKS AND SLINGS USED TO HOIST STEEL MUST BE PADDED. DIAPHRAGMS AND SIMILAR PIECES MUST BE SPACED IN SUCH A WAY THAT NO RUBBING WILL OCCUR DURING SHIPMENT THAT MAY DAMAGE THE GALVANIZING. THE STEEL MUST BE STORED ON PALLETS AT THE JOB SITE, OR BY OTHER MEANS, SO THAT IT DOES NOT REST ON THE GROUND OR SO THAT COMPONENTS DO NOT FALL OR REST ON EACH OTHER.

7.0 SAFETY REQUIREMENTS AND PRECAUTIONS
THE CONTRACTOR MUST MEET THE SAFETY REQUIREMENTS OF THE OHIO INDUSTRIAL COMMISSION AND THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA), IN ADDITION TO THE SCAFFOLDING REQUIREMENTS BELOW. THE CONTRACTOR IS REQUIRED TO MEET THE APPLICABLE SAFETY REQUIREMENTS OF THE OHIO INDUSTRIAL COMMISSION IN ADDITION TO THE SCAFFOLDING REQUIREMENTS SPECIFIED BELOW.

8.0 SCAFFOLDING
RUBBER ROLLERS, OR OTHER PROTECTIVE DEVICES MEETING THE APPROVAL OF THE ENGINEER, MUST BE USED ON SCAFFOLD FASTENINGS. METAL ROLLERS OR CLAMPS AND OTHER TYPES OF FASTENINGS WHICH WILL MAR OR DAMAGE COATED SURFACES MUST NOT BE USED.

9.0 INSPECTION ACCESS FOR FIELD REPAIR
IN ADDITION TO THE REQUIREMENT OF 105.10, THE CONTRACTOR MUST FURNISH, ERECT, AND MOVE SCAFFOLDING AND OTHER APPROPRIATE EQUIPMENT, TO PERMIT THE INSPECTOR THE OPPORTUNITY TO INSPECT (CLOSELY OBSERVE), ALL AFFECTED SURFACES. THIS OPPORTUNITY MUST BE PROVIDED TO THE INSPECTOR DURING ALL PHASES OF THE WORK AND CONTINUE FOR A PERIOD OF AT LEAST TEN (10) WORKING DAYS AFTER THE TOUCH-UP WORK HAS BEEN COMPLETED. WHEN SCAFFOLDING IS USED, IT MUST BE PROVIDED IN ACCORDANCE WITH THE FOLLOWING REQUIREMENTS.
WHEN SCAFFOLDING, OR THE HANGERS ATTACHED TO THE SCAFFOLDING ARE SUPPORTED BY HORIZONTAL WIRE ROPES, OR WHEN SCAFFOLDING IS PLACED DIRECTLY UNDER THE SURFACE TO BE PAINTED, THE FOLLOWING REQUIREMENTS MUST BE COMPLIED WITH:
WHEN SCAFFOLDING IS SUSPENDED 43" OR MORE BELOW THE COATED SURFACE TO BE REPAIRED, TWO ROWS OF GUARDRAIL MUST BE PLACED ON ALL SIDES OF THE SCAFFOLDING. ONE ROW OF GUARDRAIL MUST BE PLACED AT 42" ABOVE THE SCAFFOLDING AND THE OTHER ROW AT 20" ABOVE THE SCAFFOLDING.
WHEN THE SCAFFOLDING IS SUSPENDED AT LEAST 21", BUT LESS THAN 43" BELOW THE COATED SURFACE TO BE REPAIRED, A ROW OF GUARDRAIL MUST BE PLACED ON ALL SIDES OF THE SCAFFOLDING AT 20" ABOVE THE SCAFFOLDING.
TWO ROWS OF GUARDRAIL MUST BE PLACED ON ALL SIDES OF SCAFFOLDING NOT PREVIOUSLY MENTIONED. THE ROWS OF GUARDRAIL MUST BE PLACED AT 42" AND 20" ABOVE SCAFFOLDING, AS PREVIOUSLY MENTIONED.
ALL SCAFFOLDING MUST BE AT LEAST 24" WIDE WHEN GUARDRAIL IS USED AND 28" WIDE WHEN THE SCAFFOLDING IS SUSPENDED LESS THAN 21" BELOW THE COATED SURFACE TO BE REPAIRED AND GUARDRAIL IS NOT USED. IF TWO OR MORE SCAFFOLDING ARE LAID PARALLEL TO ACHIEVE THE PROPER WIDTH, THEY MUST BE RIGIDLY ATTACHED TO EACH OTHER TO PRECLUDE ANY DIFFERENTIAL MOVEMENT.
ALL GUARDRAIL MUST BE CONSTRUCTED AS A SUBSTANTIAL BARRIER WHICH IS SECURELY FASTENED IN PLACE AND IS FREE FROM PROTRUDING OBJECTS SUCH AS NAILS, SCREWS AND BOLTS. THERE MUST BE AN OPENING IN THE GUARDRAIL, PROPERLY LOCATED, TO ALLOW THE INSPECTOR ACCESS ONTO THE SCAFFOLDING. THE RAILS AND UPRIGHTS MUST BE EITHER METAL OR WOOD. IF PIPE RAILING IS USED, THE RAILING MUST HAVE A NOMINAL DIAMETER OF NO LESS THAN ONE AND ONE HALF INCHES. IF STRUCTURAL STEEL RAILING IS USED, THE RAILS MUST BE 2 X 2 X 3/8 INCH STEEL ANGLES OR OTHER METAL SHAPES OF EQUAL OR GREATER STRENGTH. IF WOOD RAILING IS USED, THE RAILING MUST BE 2 X 4 INCH (NOMINAL) STOCK. ALL UPRIGHTS MUST BE SPACED AT NO MORE THAN 8 FEET ON CENTER. IF WOOD UPRIGHTS ARE USED, THE UPRIGHTS MUST BE 2 X 4 INCH (NOMINAL) STOCK.

WHEN THE SURFACE TO BE INSPECTED IS MORE THAN 15 FEET ABOVE THE GROUND OR WATER, AND THE SCAFFOLDING IS SUPPORTED FROM THE STRUCTURE BEING PAINTED, THE CONTRACTOR MUST PROVIDE THE INSPECTOR WITH A SAFETY BELT AND LIFELINE. THE LIFELINE MUST NOT ALLOW A FALL GREATER THAN 6 FEET. THE CONTRACTOR MUST PROVIDE A METHOD OF ATTACHING THE LIFELINE TO THE STRUCTURE INDEPENDENT OF THE SCAFFOLDING, CABLES, OR BRACKETS SUPPORTING THE SCAFFOLDING. WHEN SCAFFOLDING IS MORE THAN TWO AND ONE HALF FEET ABOVE THE GROUND, THE CONTRACTOR MUST PROVIDE A LADDER FOR ACCESS ONTO THE SCAFFOLDING. THE LADDER AND ANY EQUIPMENT USED TO ATTACH THE LADDER TO THE STRUCTURE MUST BE CAPABLE OF SUPPORTING 250 POUNDS WITH A SAFETY FACTOR OF AT LEAST FOUR (4). ALL RUNGS, STEPS, CLEATS, OR TREADS MUST HAVE UNIFORM SPACING AND MUST NOT EXCEED 12" ON CENTER. AT LEAST ONE SIDE RAIL MUST EXTEND AT LEAST 36" ABOVE THE LANDING NEAR THE TOP OF THE LADDER. AN ADDITIONAL LANDING MUST BE REQUIRED WHEN THE DISTANCE FROM THE LADDER TO THE POINT WHERE THE SCAFFOLDING MAY BE ACCESSED, EXCEEDS 12". THE LANDING MUST BE A MINIMUM OF AT LEAST 24" WIDE AND 24" LONG. IT MUST ALSO BE OF ADEQUATE SIZE AND SHAPE SO THAT THE DISTANCE FROM THE LANDING TO THE POINT WHERE THE SCAFFOLDING IS ACCESSED DOES NOT EXCEED 12". THE LANDING MUST BE RIGID AND FIRMLY ATTACHED TO THE LADDER; HOWEVER, IT MUST NOT BE SUPPORTED BY THE LADDER. THE SCAFFOLDING MUST BE CAPABLE OF SUPPORTING A MINIMUM OF 1000 LBS. IN ADDITION TO THE AFOREMENTIONED REQUIREMENTS, THE CONTRACTOR IS STILL RESPONSIBLE TO OBSERVE AND COMPLY WITH ALL FEDERAL, STATE AND LOCAL LAWS, ORDINANCES, REGULATIONS, ORDERS AND DECREES. THE CONTRACTOR MUST FURNISH ALL NECESSARY TRAFFIC CONTROL TO PERMIT INSPECTION DURING AND AFTER ALL PHASES OF THE PROJECT.

10.0 PROTECTION OF PERSONS AND PROPERTY
THE CONTRACTOR MUST INSTALL AND MAINTAIN SUITABLE SHIELDS OR ENCLOSURES TO PREVENT DAMAGE TO ADJACENT BUILDINGS, PARKED CARS, TRUCKS, BOATS, OR VEHICLES TRAVELING ON, OVER, OR UNDER STRUCTURES HAVING GALVANIZED REPAIRS. THEY MUST BE SUITABLY ANCHORED AND REINFORCED TO PREVENT INTERFERING WITH NORMAL TRAFFIC OPERATIONS IN THE OPEN LANES. PAYMENT FOR THE SHIELDS MUST BE INCLUDED AS INCIDENTAL TO THE APPLICABLE FIELD COATING OPERATION. WORK MUST BE SUSPENDED WHEN DAMAGE TO ADJACENT BUILDINGS, MOTOR VEHICLES, BOATS, OR OTHER PROPERTY IS OCCURRING. WHEN OR WHERE ANY DIRECT OR INDIRECT DAMAGE OR INJURY IS DONE TO PUBLIC OR PRIVATE PROPERTY, THE CONTRACTOR MUST RESTORE, AT HIS OWN EXPENSE, SUCH PROPERTY, TO A CONDITION SIMILAR OR EQUAL TO THAT EXISTING BEFORE SUCH DAMAGE OR INJURY WAS DONE.

11.0 POLLUTION CONTROL
THE CONTRACTOR MUST TAKE ALL NECESSARY PRECAUTIONS TO COMPLY WITH POLLUTION CONTROL LAWS, RULES OR REGULATIONS OF FEDERAL, STATE OR LOCAL AGENCIES.

12.0 METHOD OF MEASUREMENT
THE COST OF ALL LABOR, MATERIALS, AND EQUIPMENT NECESSARY TO GALVANIZE AND TO FABRICATE THE STRUCTURAL STEEL IN ACCORDANCE WITH CMS 513 AND PERFORM ANY NECESSARY FIELD REPAIR SHALL BE INCLUDED IN THE APPLICABLE CMS 513, AS PER PLAN ITEM.

13.0 BASIS OF PAYMENT
PAYMENT WILL BE MADE AT CONTRACT PRICES FOR THE APPLICABLE CMS 513, AS PER PLAN ITEM.

DESIGN AGENCY
DGL Consulting Engineers, LLC
3455 Briarfield Blvd. Suite E
Maumee, Ohio 43537 (419) 535-1015

DESIGNED	DRAWN	REVIEWED	DATE
BLS	BLS/JEF	JTY	5-24
CHECKED	REVISED	STRUCTURE FILE NUMBER	
DGB		4631838	

GENERAL NOTES - SHEET 4 OF 7
BRIDGE No. LOG-21B-0.05
OVER GREAT MIAMI RIVER

LOG-CR21B-0.05
PID No. 119717

5 / 31

18 / 44

ITEM SPECIAL 530 - STRUCTURE, MISC.: 6" STRIP FLOOR

DESCRIPTION:
TIMBER SHALL CONSIST OF FURNISHING, CUTTING, PRESERVATIVE TREATMENT, PLACING AND ERECTING OF TIMBER AND THE FURNISHING AND INSTALLING OF ALL NECESSARY HARDWARE, AS SPECIFIED. THE TIMBER STRIP FLOOR SHALL CONSIST OF NO. 1 DENSE MIXED SOUTHERN PINE OR SOUTHERN PINE AS RATED BY THE SOUTHERN PINE INSPECTION BUREAU; OR AN ALTERNATE WOOD TYPE, ACCEPTED BY THE ENGINEER, WITH AN ALLOWABLE BENDING STRESS EQUAL OR GREATER THAN $F_B \geq 1600$ (WET SERVICE CONDITION).

MATERIALS:
MATERIALS SHALL CONFORM TO THE FOLLOWING:
STRUCTURAL TIMBER AND LUMBER SHALL CONFORM TO AASHTO M 168 WITH THE FOLLOWING ADDITIONS: TIMBER AND LUMBER SHALL BE AIR DRIED OR KILN DRIED TO A MOISTURE CONTENT NOT TO EXCEED 19 PERCENT BY WEIGHT. SIZE AND GRADE SHALL CONFORM TO AMERICAN LUMBER STANDARDS. ALL STRUCTURAL TIMBER AND LUMBER ORIGINATING WITHIN THE STATE OF OHIO SHALL BE SUBJECT TO INSPECTION BY AN AUTHORIZED INSPECTOR OF THE DEPARTMENT. ALL UNTREATED LUMBER ORIGINATING OUTSIDE THE STATE OF OHIO SHALL BE GRADED UNDER THE RULES OF ONE OF THE FOLLOWING ASSOCIATIONS:

(1) WEST COAST LUMBER INSPECTION BOARD
(2) WESTERN WOOD PRODUCTS ASSOCIATION
(3) SOUTHERN PINE INSPECTION BUREAU
(4) NORTHERN HARDWOOD AND PINE MANUFACTURERS ASSOCIATION

THE UNTREATED LUMBER SHALL BE GRADED BY AND BEAR THE MARK OF AN AGENCY CERTIFIED FOR GRADING LUMBER UNDER THE RULES OF ONE OF THE ABOVE ASSOCIATIONS. THE LABORATORY HAS A LISTING OF APPROVED AGENCIES. ALL TREATED TIMBER AND LUMBER ORIGINATING OUTSIDE THE STATE OF OHIO SHALL BE CERTIFIED BEFORE TREATMENT AS TO GRADE, SPECIES AND GRADING AGENCY BY THE FOLLOWING MEANS:

(A) A CERTIFICATE OF INSPECTION FROM AN APPROVED GRADING AGENCY.
(B) A MARK OF IDENTIFICATION ON ONE END OF EACH PIECE INDICATING THE GRADE, GRADING AGENCY, AND PRODUCER. SUCH IDENTIFICATION IS TO BE APPLIED BY THE MANUFACTURER PRODUCING THE MATERIAL.

PRESERVATIVE TREATMENT FOR STRUCTURAL TIMBER AND LUMBER:

STRUCTURAL TIMBER AND LUMBER SHALL CONFORM TO THE CURRENT AWPA STANDARDS AND REQUIREMENTS OF THIS SPECIFICATION.

MATERIAL TREATED WITHIN THE STATE OF OHIO SHALL EITHER BE INSPECTED BY AN AUTHORIZED INSPECTOR OF THE DEPARTMENT OR, WHERE SUCH INSPECTION IS WAIVED, THE COMPANY TREATING THE MATERIAL SHALL SUBMIT FOR EACH CHARGE:

(1) CHARTS FROM AUTOMATIC RECORDING INSTRUMENTS SHOWING CONDITIONS WITHIN THE TREATING CYLINDER AT ALL TIMES DURING TREATMENT
(2) COMPUTATIONS SHOWING THE VOLUME OF WOOD IN THE CHARGE, THE VOLUME OF PRESERVATIVE MATERIAL USED AND THE FINAL NET RETENTION OF EACH CHARGE.
(3) APPROXIMATELY ONE DOZEN REPRESENTATIVE CORES TAKEN FROM THE MATERIAL WITH AN INCREMENT BORER. THE DEPARTMENT SHALL BE NOTIFIED AT LEAST 72 HOURS (EXCLUSIVE OF SATURDAYS, SUNDAYS, AND HOLIDAYS) IN ADVANCE OF THE TREATING OF THE MATERIAL.

MATERIAL TREATED OUTSIDE THE STATE OF OHIO SHALL BEAR THE IDENTIFICATION MARK OF THE INSPECTION AGENCY. A CERTIFICATE OF INSPECTION FOR TREATMENT SHALL BE FORWARDED TO THE DEPARTMENT. AN AGENCY QUALIFIED AND APPROVED BY THE DEPARTMENT FOR SUCH INSPECTION SHALL MAKE THE REQUIRED INSPECTION AND THE COST OF THIS INSPECTION AND FURNISHING OF THE REPORTS SHALL BE INCLUDED IN THE PRICE BID FOR MATERIAL. THE SUPPLIER SHALL FURNISH A NOTARIZED CERTIFICATE OF CONFORMANCE WITH EACH SHIPMENT OF MATERAL STATING THE SIZE, SPECIES, QUANTITIY SHIPPED, PROJECT NUMBER, SOURCE OF MATERIAL, WHERE TREATED, TYPE OF TREATMENT, DATE TREATED, RETENTION IN POUNDS PER CUBIC FOOT, CHARGE NUMBER, INSPECTION AGENCY, INSPECTION REPORT NUMBER, AND DATE ISSUED.

MATERIALS:
THE TIMBER MEMBERS SHALL BE TREATED BY CHROMATED COPPER ARSENATE (CCA) IN ACCORDANCE WITH AWPA STANDARD P5-02, STANDARD FOR WATERBORNE PRESERVATIONS. THE TIMBER SHALL HAVE A MINIMUM PRESERVATIVE RETENTION OF 0.6 POUNDS PER CUBIC FOOT OF LUMBER.

PREPARATION FOR TREATMENT:

SORTING
WHENEVER IT IS PRACTICAL THE MATERIAL SHALL BE SORTED INTO ONE KIND OR DESIGNATED GROUP OF KINDS OF WOOD AND INTO PIECES OF APPROXIMATELY EQUAL SIZE, MOISTURE AND SAPWOOD CONTENT, THIS WILL INSURE THE CONTACT OF TREATING MEDIUM WITH ALL SURFACES.

FRAMING
ALL ADZING, BORING, CHAMFERING, FRAMING, GRAINING, MORTISING, SURFACING, ETC., SHALL BE DONE PRIOR TO TREATMENT AS LONG AS PRACTICABLE.

INCISING
A SUITABLE POWER-DRIVEN MACHINE BEFORE TREATMENT SHALL INCISE ALL TIMBER WITH THE EXCEPTION OF RAIL AND RAIL POSTS WHEN THE LEAST DIMENSION IS 2 INCHES OR OVER. LUMBER HAVING A THICKNESS OF 3 INCHES AND OVER SHALL BE INCISED ON ALL FOUR SIDES. LUMBER LESS THAN THREE INCHES THICK SHALL BE INCISED ON THE WIDE FACES ONLY, EXCEPT WHERE INDICATED ON THE PLANS. THE SPACING AND SHAPE OF THE CUTTING TEETH AND THE METHOD OF INCISING SHALL BE SUCH AS TO PRODUCE A UNIFORM PENETRATION. THE DEPTH OF THE INCISION SHALL BE NOT LESS THAN THE FOLLOWING:

SIZE	MINIMUM DEPTH OF INCISION (IN)
2 X 12	3/8
3 X 12	7/16
4 X 12	1/2
8 X 12	9/16
10 X 12	5/8
12 X 12	3/4

AMOUNT OF PRESERVATIVE
THE NET RETENTION IN ANY CHARGE SHALL BE NOT LESS THAN 90 PERCENT OF THE QUANTITY OF PRESERVATIVE SPECIFIED; HOWEVER, THE AVERAGE RETENTION BY THE MATERIAL TREATED UNDER ANY CONTRACT OR ORDER AND THE AVERAGE RETENTION OF ANY FIVE CONSECUTIVE CHARGES SHALL BE AT LEAST 100 PERCENT OF THE QUANTITY SPECIFIED. THE MINIMUM AMOUNTS OF PRESERVATIVE RETAINED SHALL BE AS SPECIFIED BY AASHTO M 133 WHICH ARE THOSE SET FORTH IN THE REFERENCED AMERICAN WOOD-PRESERVERS' ASSOCIATION STANDARD P5-02. ALL SPECIES OF STRUCTURAL TIMBER AND LUMBER SHALL BE TREATED ACCORDING TO THE CURRENT AWPA STANDARD SPECIFICATIONS.

HARDWARE

HARDWARE SHALL BE OF A GOOD QUALITY AND STANDARD MAKE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CORRECT DIMENSIONS.

BOLTS, WASHERS, LAG SCREWS, NAILS, SPIKES, TWISTED DRIVE DOWELS, ANCHOR PLATES (FOR FLOOR) AND SIMILAR ITEMS SHALL BE CONSIDERED HARDWARE.

CAST IRON OGEE OR MALLEABLE RIBBED WASHERS SHALL BE USED UNDER THE HEADS OF LAG SCREWS AND AT BOTH ENDS OF BOLTS BEARING ON TIMBER.

ALL HARDWARE NAILS, SPIKES, TWISTED DRIVE DOWELS, FLOOR CLIPS, CAST IRON AND MALLEABLE WASHERS SHALL BE GALVANIZED STEEL ACCORDING TO CMS 711.02.

GENERAL

HOLES FOR BOLTS SHALL BE DRILLED TO THE EXACT SIZE OF BOLTS. HOLES FOR DOWELS AND DRIFT BOLTS SHALL BE DRILLED 1/16 INCH SMALLER THAN THE DIAMETER OF THE DOWEL OR DRIFT BOLT. HOLES FOR LAG SCREWS SHALL BE NEAT SIZE IN THE HELD TIMBER AND THE SIZE OF THE SCREW AT ROOT OF THREADS FOR THE HOLDING TIMBER.

STRIP FLOOR:

THE TIMBER SHALL BE ALL OF THE SAME SPECIES IN ANY ONE STRUCTURE, SURFACED ON ALL SIDES. THE DECK SHALL HAVE A NOMINAL HEIGHT OF 6 INCHES, WITH A FINISHED HEIGHT OF 5½ INCHES. STRIPS SHALL HAVE A WIDTH NOT TO EXCEED 3 INCHES EXCEPT FOR END BLOCKS AT DECK JOINTS. THERE SHALL BE NO VARIATION OF MORE THAN 1/8 INCH FROM THE SPECIFIED DIMENSIONS IN MATERIAL HAVING THE SAME AMOUNT OF SURFACING AND NO VARIATION OF DEPTH OF MORE THAN 1/8 INCH BETWEEN ADJACENT STRIPS. ALL STRIPS ON A STRUCTURE SHALL HAVE THE SAME SURFACING. STRIPS SHALL EXTEND ENTIRELY ACROSS THE ROADWAY WITH NO SPLICES.

EACH STRIP OF FLOOR SHALL BE PLACED AGAINST THE PRECEDING STRIP LAID, THE GREATER DIMENSION BEING VERTICAL, AND SHALL BE SPIKED TO THE PRECEDING STRIP AT EACH END AND AT APPROXIMATELY 12 INCH INTERVALS USING CUT SPIKES OR DRIVE DOWELS OF 1/4 INCH NOMINAL SIZE THAT WILL REACH THROUGH THE ADJACENT STRIP. THE STRIPS SHALL BE SECURELY FASTENED TO THE STEEL STRINGERS BY THE USE OF APPROVED METAL CLIPS. CARE SHALL BE TAKEN TO HAVE EACH STRIP VERTICAL AND TIGHT AGAINST THE PRECEDING ONE AND BEARING EVENLY ON ALL THE JOISTS. ANY SPECIAL TOOLS OR EQUIPMENT NECESSARY TO SECURE THIS RESULT SHALL BE USED. THE STRIPS SHALL BE LAID IN STRAIGHT PARALLEL LINES. IF THE LAST STRIP PLACED DOES NOT FIT SNUGGLY AGAINST THE ADJACENT STRIP, CAREFUL MEASUREMENTS OF THE OPENING SHALL BE MADE AND STRIPS OF LENGTH TO PROPERLY STAGGER THE JOINTS SHALL BE RIPSAWN TO MAKE A TIGHT FIT. IN NO CASE WILL SPREADING OF ADJACENT STRIPS TO TAKE UP THIS FINAL GAP DISTANCE BE PERMITTED.

METHOD OF MEASUREMENT:

STRIP FLOORS, INCLUDING THE END PLANKS FOR STRIP FLOORS, SHALL BE MEASURED IN SQUARE FEET.

BASIS OF PAYMENT

PAYMENT WILL BE MADE AT CONTRACT PRICES PER SQ. FT. FOR ITEM SPECIAL - STRUCTURE, MISC.: 6" STRIP FLOOR

ALTERNATE No. 1

ITEM SPECIAL 530 - STRUCTURE, MISC.: REMOVE AND REPLACE BROKEN STONES

1.0 DESCRIPTION
WORK UNDER THIS ITEM INCLUDES REMOVING AND REPLACING PLAN DESIGNATED STONES OR STONES DESIGNATED BY THE COUNTY ENGINEER ON SITE DURING CONSTRUCTION IN THE BRIDGE ABUTMENTS.

2.0 MATERIALS
2.1 STONE MASONRY, IF NEEDED FROM OFF-SITE SOURCES, SHALL BE TOUGH, DENSE, SOUND, AND DURABLE AND FREE OF SEAMS, CRACKS, INCLUSIONS OR OTHER STRUCTURAL DEFECTS. PRIOR TO SHIPMENT OF STONE TO THE JOB SITE THE CONTRACTOR SHALL OBTAIN APPROVAL OF THE PROPOSED SOURCE AND SHALL SUBMIT A REPRESENTATIVE SAMPLE OF STONE TO THE ENGINEER FOR INSPECTION AND, IF NECESSARY, TESTING. THE SAMPLE SHALL BE DRESSED AND FINISHED AS SPECIFIED FOR USE IN THE WORK AND SHALL NOT BE LESS THAN 11 INCHES IN ANY DIMENSION. ALL STONE USED IN THIS WORK SHALL BE OF A QUALITY COMPARABLE TO THAT OF THE SAMPLE SUBMITTED.

2.2 SHIPMENT AND STORAGE OF STONE
QUARRY OPERATIONS AND DELIVERY OF STONE TO THE POINT OF USE SHALL BE ORGANIZED TO INSURE DELIVERIES WELL AHEAD OF MASONRY OPERATIONS. A SUFFICIENTLY LARGE STOCK OF THE SPECIFIED STONE SHALL BE KEPT ON THE SITE AT ALL TIMES, TO PERMIT ADEQUATE SELECTION OF STONE BY THE MASONS.

THE STONE SHALL BE KEPT FREE FROM DIRT, OIL, OR ANY OTHER INJURIOUS MATERIAL WHICH MAY PREVENT THE PROPER ADHESION OF THE MORTAR OR DETRACT FROM THE APPEARANCE OF THE EXPOSED SURFACES.

2.3 MORTAR
THE INGREDIENTS USED IN MAKING MORTAR SHALL CONFORM TO THE FOLLOWING REQUIREMENTS:

PORTLAND CEMENT, ADMIXTURES AND WATER: SECTION 8 - AASHTO "STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES" (2002)
MASONRY CEMENT: ASTM C 91
HYDRATED LIME: ASTM C 207
QUICK LIME USED TO MAKE LIME PUTTY: ASTM C 5
SAND AGGREGATE: AASHTO M 45 (ASTM C 144)

THE PROPORTIONS OF MATERIALS SHALL BE SUCH THAT THE VOLUME OF SAND IN A DAMP, LOOSE CONDITION IS BETWEEN 2¼ AND 3 TIMES THE VOLUME OF THE CEMENTITIOUS MATERIALS. THE CEMENTITIOUS MATERIALS SHALL CONSIST OF EITHER ONE PART OF PORTLAND CEMENT TO BETWEEN 1/4 AND ½ PARTS OF HYDRATED LIME OR LIME PUTTY, OR ONE PART OF PORTLAND CEMENT TO BETWEEN ONE AND TWO PARTS OF MASONRY CEMENT. PREMIXED MATERIALS CONFORMING TO THESE REQUIREMENTS MAY BE USED. ADMIXTURES SHALL BE USED ONLY WHEN SPECIFIED OR APPROVED BY THE ENGINEER.

3.0 MANUFACTURING OF STONE FOR MASONRY
3.1 GENERAL
EACH STONE SHALL BE FREE FROM DEPRESSIONS AND PROJECTIONS THAT MIGHT WEAKEN IT OR PREVENT IT FROM BEING PROPERLY BEDDED, AND SHALL BE OF A SHAPE TO MEET THE REQUIREMENTS FOR THE CLASS OF MASONRY SPECIFIED.

INDIVIDUAL STONES DESIGNATED FOR REPLACEMENT IN THESE PLANS OR AS DIRECTED BY THE ENGINEER SHALL BE REPLACED BY STONES CUT TO DIMENSIONS MATCHING THE ORIGINAL DIMENSIONS OF THE DETERIORATED STONES. MULTIPLE STONES CAN BE USED TO REPLACE AN INDIVIDUAL STONE OR GAP, PROVIDED THEY MEET THE MINIMUM SIZE REQUIREMENTS OF THESE SPECIFICATIONS.

WHEN HEADERS ARE REQUIRED, THEIR LENGTHS SHALL BE NOT LESS THAN THE WIDTH OF BED OF THE WIDEST ADJACENT STRETCHER PLUS 12 INCHES.

3.2 SURFACE FINISHES OF STONE
THE SURFACE FINISH OF THE ADDITIONAL STONE BROUGHT IN SHALL REASONABLY MATCH THAT OF THE EXISTING STONE.

3.3 SIZE
INDIVIDUAL STONES SHALL HAVE A THICKNESS OF NOT LESS THAN 11 INCHES AND A WIDTH OF NOT LESS THAN 1½ TIMES THE THICKNESS. NO STONES, EXCEPT HEADERS, SHALL HAVE A LENGTH LESS THAN 1½ TIMES THEIR WIDTH

3.4 SHAPE
THE STONES SHALL BE ROUGHLY SQUARED ON JOINTS, BEDS, AND FACES. SELECTED STONE, ROUGHLY SQUARED AND PITCHED TO LINE, SHALL BE USED AT ALL ANGLES AND ENDS OF WALLS. STONES TO BE USED ADJACENT TO EXISTING STONES SHALL BE FIT SUCH THAT THE ENTIRE END FACES OF THE EXISTING AND NEW STONES ARE WITHIN 1½" OF EACH OTHER. TO ACCOMPLISH THIS VERTICAL JOINT, NEW STONES MAY REQUIRE CUTTING TO FIT.

3.5 DRESSING
STONES SHALL BE DRESSED TO REMOVE ANY THIN OR WEAK PORTIONS. FACE STONES SHALL BE DRESSED TO PROVIDE BED AND JOINT LINES WITH A MAXIMUM VARIATION FROM TRUE LINE OF 1½ INCHES UNLESS OTHERWISE INDICATED ON THE PLANS OR IN THE SPECIAL PROVISIONS.

4.0 CONSTRUCTION
4.1 WEATHER CONDITIONS
STONE MASONRY SHALL NOT BE CONSTRUCTED IN FREEZING WEATHER OR WHEN STONE CONTAINS FROST, EXCEPT BY WRITTEN PERMISSION OF THE ENGINEER AND SUBJECT TO SUCH CONDITIONS AS HE OR SHE MAY REQUIRE.

4.2 MIXING MORTAR
THE MORTAR SHALL BE HAND OR MACHINE MIXED. IN THE PREPARATION OF HAND-MIXED MORTAR, THE SAND AND CEMENT SHALL BE THOROUGHLY MIXED TOGETHER IN A CLEAN, TIGHT MORTAR BOX UNTIL THE MIXTURE IS OF UNIFORM COLOR, AFTER WHICH CLEAN WATER SHALL BE ADDED IN SUCH QUANTITY AS TO FORM A STIFF PLASTIC MASS. MACHINE-MIXED MORTAR SHALL BE PREPARED IN AN APPROVED MIXER AND SHALL BE MIXED NOT LESS THAN 3 MINUTES NOR MORE THAN 10 MINUTES. MORTAR SHALL BE USED WITHIN 1½ HOURS AFTER MIXING AND BEFORE FINAL SET BEGINS. RETEMPERING OF MORTAR SHALL BE DONE AS NECESSARY TO MAINTAIN PROPER CONSISTENCY DURING PLACEMENT.

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DESIGNED BLS | DRAWN BLS/JEF | REVIEWED JTY | DATE 5-24
CHECKED DGB | REVISED | STRUCTURE FILE NUMBER 4631838

GENERAL NOTES - SHEET 5 OF 7
BRIDGE No. LOG-21B-0.05
OVER GREAT MIAMI RIVER

LOG-CR21B-0.05
PID No. 119717

ITEM SPECIAL - STRUCTURE, MISC.: REMOVE AND REPLACE BROKEN STONES: (CONTINUED)

4.3 SELECTION AND PLACING OF STONE
WHEN MASONRY IS PLACED ON A PREPARED FOUNDATION BED, THE BED SHALL BE FIRM AND NORMAL TO THE FACE OF THE WALL, AND APPROVED BY THE ENGINEER BEFORE ANY STONE IS PLACED.

ALL MASONRY SHALL BE CONSTRUCTED BY EXPERIENCED WORKMEN.

EACH STONE SHALL BE CLEANED AND THOROUGHLY SATURATED WITH WATER BEFORE BEING SET AND THE BED WHICH IS TO RECEIVE IT SHALL BE CLEAN AND WELL MOISTENED. ALL STONES SHALL BE WELL BEDDED IN FRESHLY MADE MORTAR. THE MORTAR JOINTS SHALL BE FULL AND THE STONES CAREFULLY SETTLED IN PLACE BEFORE THE MORTAR HAS BEEN SET. NO SPALLS WILL BE PERMITTED IN BEDS.

STONES SHALL NOT BE DROPPED UPON OR SLID OVER THE WALL, NOR WILL HAMMERING, ROLLING, OR TURNING OF THE STONES ON THE WALL BE ALLOWED. THEY SHALL BE CAREFULLY SET WITHOUT JARRING THE STONE ALREADY LAID AND THEY SHALL BE HANDLED WITH A LEWIS OR OTHER APPLIANCE THAT WILL NOT CAUSE DISFIGUREMENT.

IN CASE ANY STONE IS MOVED OR THE JOINT BROKEN, THE STONE SHALL BE TAKEN UP, THE MORTAR THOROUGHLY CLEANED FROM BED AND JOINTS, AND THE STONE RESET IN FRESH MORTAR.

4.4 POINTING
POINTING SHALL NOT BE DONE IN FREEZING WEATHER OR WHEN THE STONE CONTAINS FROST.

WHENEVER POSSIBLE, THE FACE JOINTS SHALL BE PROPERLY POINTED BEFORE THE MORTAR BECOMES SET. JOINTS WHICH CANNOT BE SO POINTED SHALL BE PREPARED FOR POINTING BY RAKING THEM OUT TO A DEPTH OF 2 INCHES BEFORE THE MORTAR HAS SET. THE FACE SURFACES OF STONES SHALL NOT BE SMEARED WITH THE MORTAR FORCED OUT OF THE JOINTS OR THAT USED IN POINTING.

JOINTS NOT POINTED AT THE TIME THE STONE IS LAID SHALL BE THOROUGHLY WET WITH CLEAN WATER AND FILLED WITH MORTAR. THE MORTAR SHALL CONFORM TO ARTICLE 2.3 EXCEPT THAT THE PROPORTIONS OF HYDRATED LIME PUTTY SHALL BE INCREASED TO 1.2 TO 2 TIMES THE VOLUME OF THE CEMENT OR THE CEMENT SHALL BE ALL MASONRY TYPE CEMENT. THE MORTAR SHALL BE WELL DRIVEN INTO THE JOINTS AND FINISHED WITH AN APPROVED POINTING TOOL. THE WALL SHALL BE KEPT WET WHILE POINTING IS BEING DONE AND IN HOT OR DRY WEATHER THE POINTED MASONRY SHALL BE PROTECTED FROM THE SUN AND KEPT WET FOR A PERIOD OF AT LEAST 3 DAYS AFTER COMPLETION.

AFTER THE POINTING IS COMPLETE AND THE MORTAR SET, THE WALL SHALL BE THOROUGHLY CLEANED AND LEFT IN A NEAT AND WORKMANLIKE CONDITION.

4.5 MEASUREMENT AND PAYMENT
THE REMOVAL AND REPLACEMENT OF BROKEN STONES IN THE BRIDGE ABUTMENTS WILL BE PAID FOR BY THE CONTRACT PRICE PER SQUARE FEET. SUCH PAYMENT SHALL BE CONSIDERED TO BE FULL COMPENSATION FOR THE COST OF ALL LABOR, TOOLS, MATERIALS, INCLUDING MORTAR FOR BEDDING AND POINTING; AND OTHER ITEMS INCIDENTAL TO THE SATISFACTORY COMPLETION OF THE WORK. THE ESTIMATED PLAN QUANTITY HAS BEEN INCREASED BY A FACTOR OF 100% TO ACCOUNT FOR CHANGES DURING CONSTRUCTION.

ESTIMATED QUANTITY	CONTINGENCY	TOTAL
21 SQ FT	21 SQ FT	42 SQ FT

ALTERNATE No. 1

ITEM SPECIAL 530 - STONE REPAIR SEALING CRACKS BY EPOXY INJECTION

THIS SPECIFICATION COVERS THE REPAIR OF DRY, MOIST OR WET CRACKS OR FRACTURES THAT ARE 0.002" TO 0.375" IN THICKNESS IN ABUTMENT STONE. THE REPAIR IS BY MEANS OF AN EPOXY INJECTION SYSTEM. THIS SYSTEM SHALL CONSIST OF A PASTE EPOXY USED TO SEAL THE SURFACE CRACKS AND AN INJECTION EPOXY USED UNDER LOW PRESSURE, 200 PSI MAX., TO PENETRATE AND FILL THE CRACKS AND BOND THE CRACK SURFACES TOGETHER. MATERIAL FOR EACH EPOXY SHALL CONSIST OF A TWO-COMPONENT MODIFIED RESIN BONDING SYSTEM. THE UNMODIFIED RESIN SHALL BE KNOWN AS COMPONENT A AND THE HARDENER AS COMPONENT B.

ARRANGE TO HAVE A MANUFACTURER'S REPRESENTATIVE AT THE JOB SITE TO FAMILIARIZE HIM AND THE ENGINEER WITH THE EPOXY MATERIALS, APPLICATION PROCEDURES AND RECOMMENDED PRESSURE PRACTICE. THIS REPRESENTATIVE SHALL DIRECT AT LEAST ONE COMPLETE CRACK OR AREA INJECTION AND BE ASSURED PRIOR TO HIS DEPARTURE FROM THE PROJECT THAT THE PERSONNEL ARE ADEQUATELY INFORMED TO SATISFACTORILY PERFORM THE REMAINING REPAIRS.

FURNISH THE ENGINEER A COPY OF THE MANUFACTURER'S COMPREHENSIVE PREPARATION, MIXING AND APPLICATION INSTRUCTIONS WHICH HAVE BEEN DEVELOPED ESPECIALLY FOR USE WITH THE PROPOSED EPOXY INJECTION SYSTEM. ENSURE THAT ANY SIGNIFICANT CHANGES TO THESE INSTRUCTIONS WHICH ARE RECOMMENDED BY THE REPRESENTATIVE FOR AN UNANTICIPATED SITUATION HAVE BEEN APPROVED BY THE COUNTY ENGINEER PRIOR TO THE ADOPTION OF SUCH CHANGES.

CLEAN STONE SURFACES ADJACENT TO THE CRACKS TO BE SEALED ONLY TO THE EXTENT NECESSARY TO ACHIEVE AN ADEQUATE BOND WITH THE PASTE EPOXY, AND ONLY BY PROCEDURES WHICH WILL NOT CAUSE ABRASIVE GRITS OR CONCRETE DUST TO PENETRATE THE CRACKS. DO NOT PERMIT THE USE OF SOLVENTS OR THINNERS IN CRACKS OR ON BONDING SURFACES.

INSTALL INJECTION PORTS OR TEES IN CRACKS TO BE INJECTED. SPACE INJECTION PORTS OR TEES AT 6 TO 12 INCHES VERTICALLY AND 6 TO 18 INCHES HORIZONTALLY BUT IN NO CASE CLOSER TOGETHER THAN THE THICKNESS OF THE CONCRETE MEMBER IF FULL DEPTH PENETRATION IS DESIRED UNLESS OTHERWISE SPECIFIED OR DIRECTED. SET PORTS OR TEES IN DUST FREE HOLES MADE EITHER WITH VACUUM DRILLS OR CHIPPING HAMMERS. SEAL ALL SURFACE CRACKS IN THE AREA TO BE REPAIRED, AFTER INJECTION PORTS OR TEES HAVE BEEN INSERTED INTO THE HOLES, WITH PASTE EPOXY BETWEEN PORTS TO ENSURE RETENTION OF THE PRESSURE INJECTED EPOXY WITHIN THE CONFINES OF THE MEMBER. THE DEPARTMENT WILL ALLOW AN ALTERNATIVE PROCEDURE OF SEALING THE CRACKS BEFORE THE INJECTION HOLES HAVE BEEN MADE. LIMIT THE APPLICATION OF PASTE EPOXY TO CLEAN AND DRY SURFACES. LIMIT SUBSTRATE TEMPERATURES TO NOT LESS THAN 45 °F DURING EPOXY APPLICATIONS.

BEGIN THE EPOXY INJECTION AT THE BOTTOM OF THE FRACTURED AREA AND PROGRESS UPWARD USING A PORT OR TEE FILLING SEQUENCE THAT WILL ENSURE THE FILLING OF THE LOWERMOST INJECTION PORTS OR TEES FIRST.

ESTABLISH INJECTION PROCEDURES AND THE DEPTHS AND SPACINGS OF HOLES AT INJECTION PORTS OR TEES. USE EPOXY WITH FLOW CHARACTERISTICS AND INJECTION PRESSURE THAT ENSURE NO FURTHER DAMAGE WILL BE DONE TO THE MEMBER BEING REPAIRED. ENSURE THAT THE EPOXY WILL FIRST FILL THE INNERMOST PORTION OF THE CRACKED CONCRETE AND THAT THE POTENTIAL FOR CREATING VOIDS WITHIN THE CRACK OR EPOXY WILL BE MINIMIZED.

REMOVE THE INJECTION PORTS OR TEES FLUSH WITH THE CONCRETE SURFACE AFTER THE FRACTURED AREA HAS BEEN FILLED AND THE EPOXY HAS PARTIALLY CURED (24 HOURS AT AMBIENT TEMPERATURE NOT LESS THAN 60°F, OTHERWISE NOT LESS THAN 48 HOURS). ROUGHEN THE SURFACES OF THE REPAIRED AREAS TO ACHIEVE UNIFORM SURFACE TEXTURE. REMOVE ANY INJECTION EPOXY RUNS OR SPILLS FROM CONCRETE SURFACES.

OBTAIN TWO 4-INCH DIAMETER CORE SAMPLES IN THE FIRST 100 LINEAR FEET OF CRACK REPAIRED AND ONE CORE FOR EACH 100 LINEAR FEET THEREAFTER. TAKE THE CORE SAMPLES FROM LOCATIONS DETERMINED BY THE ENGINEER AND FOR THE FULL CRACK DEPTH. CORES WILL BE VISIBLY EXAMINED BY THE ENGINEER TO DETERMINE THE EXTENT OF EPOXY PENETRATION. REPAIR THE CORE HOLES IN THE CONCRETE WITH MATERIAL SPECIFIED IN 705.21.

THE EPOXY INJECTION MATERIAL USED SHALL BE ONE THAT IS INCLUDED IN THE OHIO DEPARTMENT OF TRANSPORTATION QUALIFIED PRODUCTS LIST, SPEC. REFERENCE 705.26. A CONTINGENCY QUANTITY HAS BEEN INCLUDED TO ACCOUNT FOR LOCATIONS NOT DELINEATED IN THE PLANS.

ESTIMATED QUANTITY	CONTINGENCY	TOTAL
47 FT	47 FT	94 FT

PAYMENT WILL BE MADE AT THE CONTRACT BID PRICE PER FOOT FOR ITEM SPECIAL-STRUCTURE, MISC.: STONE REPAIR SEALING CRACKS BY EPOXY INJECTION. SUCH PAYMENT SHALL BE CONSIDERED FULL COMPENSATION FOR THE COST OF ALL LABOR, TOOLS, MATERIALS, AND OTHER ITEMS INCIDENTAL TO THE SATISFACTORY COMPLETION OF THIS WORK.

ALTERNATE No. 1

ITEM SPECIAL 530 - STRUCTURE, MISC.: STONE MASONRY CLEANING

ITEM SPECIAL 530 - STRUCTURE, MISC.: REPOINTING MORTAR JOINTS

A. DESCRIPTION
THE MORTAR JOINTS IN THE STONE ABUTMENTS AND WINGWALLS SHALL BE INSPECTED FOR SOUNDNESS. THE CONTRACTOR SHALL PROVIDE ACCESS TO THE ENGINEER TO INSPECT THE MORTAR JOINTS AND THE ENGINEER SHALL DETERMINE WHICH JOINTS SHALL BE REPOINTED BY TAKING INTO ACCOUNT FACTORS SUCH AS: CRACKING, LOOSE MORTAR AND WATER LEAKING BEHIND THE STONES.

THE FOLLOWING PROCEDURE IS TO BE FOLLOWED IN REPOINTING WORK

1. REMOVE THE OLD MORTAR TO A MINIMUM DEPTH OF 2½ TIMES THE WIDTH OF THE JOINTS TO ENSURE AN ADEQUATE BOND; REMOVE ALL LOOSE AND DISINTEGRATED MORTAR BEYOND THE MINIMUM DEPTH; CAREFULLY INSPECT AND TEST ALL MORTAR JOINTS WITH HAND TOOLS TO DETERMINE THEIR CONDITION - REPLACE ALL LOOSE AND DISINTEGRATED MORTAR.

2. POWER GRINDERS AND SAWS TO REMOVE THE MORTAR SHALL NOT BE USED; REMOVE ALL MORTAR CAREFULLY WITH HAND-HELD POWER TOOLS.

3. LEAVE THE BOTTOM 2" OF EACH VERTICAL JOINT OPEN AS A WEEP HOLE.

B. MATERIALS
SAND IS TO CONFORM TO ASTM C-144. IT'S COLOR, SIZE AND TEXTURE ARE TO MATCH THE EXISTING ORIGINAL WORK (NOT PREVIOUS PARTIAL REPOINTINGS). LIME IS TO CONFORM TO ASTM C-207 TYPE S, HYDRATED LIME FOR MASONRY PURPOSES. CEMENT IS TO CONFORM TO ASTM C-150, TYPE II (WHITE, NON-STAINING) PORTLAND CEMENT. CEMENT SHALL HAVE LESS THAN 0.6 ALKALI CONTENT TO AVOID EFFLORESCENCE. POTABLE WATER SHALL BE USED, CLEAN AND FREE FROM ACIDS, ALKALI OR LARGE AMOUNTS OF ORGANIC MATERIALS.

C. PROPORTIONING:
THE MORTAR MIX SHALL CONSIST OF SIX (6) PARTS SAND, THREE (3) PARTS LIME, ONE-HALF (½) PART WHITE PORTLAND CEMENT. THE AMOUNT OF CEMENT SHALL NOT EXCEED 20% OF THE TOTAL OF LIME AND CEMENT.

D. EXECUTION:
MACHINE MIX THE MORTAR FOR A MINIMUM OF FIVE (5) MINUTES AFTER ALL MATERIALS, EXCEPT FOR WATER, ARE IN THE MIXER. MIX THE SAND, LIME AND CEMENT IN THEIR DRY STATE. ADD ONE-HALF THE REQUIRED AMOUNT OF WATER AFTER THOROUGHLY MIXING THE DRY MATERIALS. ADD THE REMAINING WATER IN SMALL AMOUNTS UNTIL THE MIXTURE IS PLASTIC AND A WORKABLE MIX HAS BEEN ATTAINED. AVOID OVER WETTING THE MIXTURE. NO ADMIXTURES SUCH AS ANTI-FREEZES, ETC. ARE PERMITTED. SIZE THE MORTAR MIX FOR USE WITHIN ONE (1) HOUR. EMPTY THE MIXER AND CLEAN IT OUT BEFORE STARTING A NEW BATCH.

CLEAN THE EXCESS MORTAR FROM THE STONE SURFACES WITH A STIFF BRISTLE BRUSH AFTER THE MORTAR HAS DRIED BUT BEFORE IT IS FULLY HARDENED, ABOUT ONE TO TWO HOURS AFTER APPLICATION. FURTHER CLEANING OF ALL MASONRY SURFACES SHALL BE DONE WITH PLAIN WATER AND BRISTLE BRUSHES. THE FURTHER CLEANING SHALL TAKE PLACE WITHIN THIRTY (30) DAYS AFTER THE APPLICATION OR WHEN THE MORTAR HAS FULLY SET. PROTECT THE MORTAR DURING HOT WEATHER FROM DIRECT EXPOSURE TO THE SUN AND WIND FOR AT LEAST 48 HOURS AFTER INSTALLATION. KEEP THE MORTAR BOARD DAMP, IN THE SHADE, OR COVERED. DO NOT REPOINT STONE IN TEMPERATURES BELOW 40 DEGREES F. NO CALCIUM CHLORIDE SHALL BE USED TO ACCELERATE THE SET MORTAR AND NO ANTI-FREEZE ADDITIVES SHALL BE USED.

ALL OF THE STONE MASONRY SURFACES ARE TO BE CLEANED BY THE MILDEST AND LEAST ABRASIVE MEANS POSSIBLE. LOW-PRESSURE WATER WASHING WITH BRISTLE BRUSHES IS THE PREFERRED TREATMENT. CARE MUST BE EXERCISED TO AVOID WATER ABSORPTION BY THE MASONRY, WHICH CAN RESULT IN THE FORMATION OF SOLUBLE SALT DEPOSITS ON THE MASONRY SURFACES SOME TIME AFTER COMPLETION OF THE CLEANING OPERATION. WATER CANNOT BE USED TO CLEAN THE SURFACES IN PERIODS WHEN THE TEMPERATURE OVER A PERIOD OF SEVERAL DAYS MIGHT BE EXPECTED TO DROP BELOW FREEZING. PERIODIC INSPECTIONS SHALL BE MADE NOT ONLY OF THE MASONRY ITSELF BUT ESPECIALLY OF THE MORTAR JOINTS TO ENSURE THAT THE TREATMENT IS NOT CAUSING DAMAGE OR UNDUE MOISTURE PENETRATION OF THESE JOINTS.

WATER FOR SURFACE CLEANING SHALL BE CLEAN AND FREE OF CHEMICAL AGENTS THAT MIGHT INTERACT WITH THE MASONRY SURFACES. BRISTLE BRUSHES SHALL BE FLEXIBLE ENOUGH TO AVOID DAMAGE TO MASONRY SURFACES.

E. QUALITY ASSURANCE:
ALL REPOINTING WORK IS TO CONFORM WITH THE STANDARDS RECOMMENDED BY THE BRICK INSTITUTE OF AMERICA (1750 OLD MEADOW ROAD, MELEAN VA, 22101) FOR MASONRY RESTORATION, THE US DEPARTMENT OF THE INTERIOR'S NATIONAL PARK SERVICE PRESERVATION BRIEF NUMBER 2 "REPOINTING MORTAR JOINTS IN HISTORIC BRICK BUILDINGS". THE CONTRACTOR SHALL SUPPLY TWO COPIES OF THIS BRIEF FOR REFERENCE DURING REPOINTING WORK.

ALL MATERIALS AND WORK ARE TO MATCH THE EXISTING ORIGINAL WORK IN SIZE, TEXTURE AND COLOR OF MATERIAL. AN EIGHT FOOT TEST JOINT SHALL BE MADE FOR COMPARISON AND SHALL BE APPROVED BEFORE ADDITIONAL WORK IS DONE. COLOR PHOTOS SHALL BE TAKEN OF THE TEST JOINT FOR COMPARISON WITH OTHER AREAS.

F. BASIS OF PAYMENT:
PAYMENT WILL BE MADE AT THE CONTRACT BID PRICE FOR

ITEM	UNIT	DESCRIPTION
SPECIAL	SQ FT	STRUCTURE, MISC.: STONE MASONRY CLEANING
SPECIAL	FT	STRUCTURE, MISC.: REPOINTING MORTAR JOINTS

ALTERNATE No. 1

ITEM 602 - MASONRY, MISC.: REFURBISHING ABUTMENT BEARING AREAS FOR TRUSS AND STRINGER BEARINGS

WORK UNDER THIS ITEM SHALL INCLUDE ALL MATERIALS, LABOR, TOOLS AND INCIDENTALS REQUIRED TO PREPARE THE EXISTING ABUTMENT SEATS FOR THE BEARING DEVICES. THE BEARING AREAS SHALL BE MADE FLAT AND SMOOTHLY FINISHED.

IF THE BRIDGE SEAT AREA IS HIGH OR UNEVEN, USE A BUSHHAMMER OR GRINDER FOLLOWED BY A THIN FILM OF PORTLAND CEMENT MORTAR OR PASTE TO FILL THE PITTED SURFACE TO BRING THE SEAT AREA TO THE PROPER ELEVATION AND PROVIDE A LEVEL, EVEN SURFACE. IF THE AREA IS LOW, USE ELASTOMERIC SHIMS THE SAME BEARING AREA AS THE ELASTOMERIC BEARINGS TO BRING THE SEAT TO THE PROPER ELEVATION. THE ABUTMENT STONE BRIDGE SEATS SHALL BE MADE TO DRAIN BETWEEN THE BEARING AREAS BY BUSHHAMMER OR GRINDER (⅛ INCH PER FOOT SLOPE). PLACE EPOXY SEALER ON THE BRIDGE SEATS, BUT NOT UNDER THE ELASTOMER BEARING SEAT AREAS.

PAYMENT WILL BE MADE AT CONTRACT BID PRICE FOR ITEM 602, SQ FT, MASONRY, MISC.: REFURBISH ABUTMENT BEARING AREAS FOR TRUSS AND STRINGER BEARINGS.

ABBREVIATIONS:

ABUT. - ABUTMENT
CLR. - CLEARANCE
DIA. - DIAMETER
FF - FAR FACE
FWD. - FORWARD
MAX. - MAXIMUM
NF - NEAR FACE
SPS - SPACES
TYP. - TYPICAL

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DESIGNED	DRAWN	REVIEWED	DATE
BLS	BLS/JEF	JTY	5-24
CHECKED	REVISED	STRUCTURE FILE NUMBER	
DGB		4631838	

GENERAL NOTES - SHEET 6 OF 7
BRIDGE No. LOG-21B-0.05
OVER GREAT MIAMI RIVER

LOG-CR21B-0.05
PID No. 119717

ITEM 511 CLASS QC1 CONCRETE, ABUTMENT, AS PER PLAN

THIS ITEM OF WORK SHALL INCLUDE IPANEX, AN ADMIXTURE FOR WATERPROOFING AND INCREASING DURABILITY OF CONCRETE, IPANEX SHALL BE ADDED AT A RATE OF 13 OZ. PER SACK OF CEMENT. THE WATER/CEMENT RATIO SHALL BE BETWEEN 0.42 - 0.48, IPANEX, BY IT'S PRODUCT FORMULATION, WILL ADD 1% AIR ENTRAINMENT TO THE FINAL MIX DESIGN SO ADJUSTMENTS NEED TO BE MADE IN ORDER TO MEET DESIGN CRITERIA.

PAYMENT FOR THE ADMIXTURE SHALL BE INCLUDED WITH THE UNIT PRICE FOR ITEM 511 CLASS QC1 CONCRETE, ABUTMENT, AS PER PLAN.

ITEM 513 STRUCTURAL STEEL, MISC.: COUPON TENSILE STRENGTH TESTING OF EXISTING STRUCTURAL STEEL

DETERMINE THE Fu (ULTIMATE) AND Fy (YIELD) TENSILE STRENGTH IN ACCORDANCE WITH STANDARD ENGINEERING PRACTICE AS INDICATED IN THESE PLANS, SHEET 30/52.

BASIS OF PAYMENT: THE LUMP SUM BID SHALL INCLUDE THE COST OF FURNISHING ALL LABOR, MATERIALS, AND EQUIPMENT NECESSARY TO COMPLETE THE WORK INCLUDING REPAIR OF THE FLOOR BEAMS TO REPLACE THE STEEL COUPONS.

ITEM SPECIAL 530 - STRUCTURE, MISC.: LUBRICATE TRUSS PIN-CONNECTED JOINTS

WORK SHALL BE PERFORMED WITH THE BRIDGE ERECTED AND ALL COMPONENTS ON THE BRIDGE IN PLACE, EXCEPT FOR THE RAILING, ASPHALT WEARING SURFACE, AND DECK WATERPROOFING NEED NOT BE INSTALLED AT THE TIME OF PIN LUBRICATION.

ALL PIN-CONNECTED JOINTS ON THE NORTH AND SOUTH TRUSSES SHALL BE SOAKED WITH A LIGHT PENETRATING OIL. ALL INTERFACES BETWEEN LINKS AND BETWEEN LINKS AND PINS SHALL BE WETTED. THE LUBRICANT SHALL BE APPLIED BY PUMPING OR SPRAYING. ALL SPILLS AND RUNS SHALL BE WIPED UP IMMEDIATELY. NO OIL SHALL BE PERMITTED TO DROP FROM THE BRIDGE ONTO THE GROUND OR RIVER BELOW.

THE COST FOR ALL LABOR, MATERIALS, AND EQUIPMENT SHALL BE INCLUDED FOR PAYMENT IN THE LUMP SUM BID FOR ITEM SPECIAL 530 - STRUCTURE, MISC.: LUBRICATE TRUSS PIN-CONNECTED JOINTS.

ITEM 513 - STRUCTURAL STEEL, MISC.: NEW GALVANIZED STRINGERS

THIS PAY ITEM SHALL INCLUDE ALL WORK DESCRIBED IN 513.01, EXCEPT ERECTION. THE FABRICATOR SHALL BE LEVEL 6. THE STRUCTURAL STEEL SHALL BE GALVANIZED AS DESCRIBED IN THE "GALVNAIZED COATING SYSTEM FOR STRUCTURAL STEEL BRIDGES" NOTE.

THE NEW STRUCTURAL STEEL SHALL BE ERECTED WITH THE REUSED TRUSS MEMBERS AND PAID FOR AS DESCRIBED IN THE "STRUCTURAL STEEL, MISC.: REASSEMBLE TRUSS" NOTE.

WORK UNDER THIS ITEM SHALL BE PAID FOR PER POUND UNDER ITEM 513 - STRUCTURAL STEEL MISC.: NEW GALVANIZED STRINGERS.

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DESIGNED	DRAWN	REVIEWED	DATE
BLS	BLS/JEF	JTY	5-24
CHECKED	REVISED	STRUCTURE FILE NUMBER	
DGB		4631838	

GENERAL NOTES - SHEET 7 OF 7

BRIDGE No. LOG-21B-0.05
OVER GREAT MIAMI RIVER

LOG-CR21B-0.05
PID No. 119717

ESTIMATED QUANTITIES

ITEM	EXTENSION	TOTAL	UNIT	DESCRIPTION	ABUT.	SUPER.	GEN.	SHEET #
202	11203	LUMP		PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN		LUMP		3 OF 31
202	23501	251	SQ YD	WEARING SURFACE REMOVED, AS PER PLAN		251		3 OF 31
202	98100	420	EACH	REMOVAL MISC.: EXISTING RIVET OR BOLT		420		3 OF 31
407	10000	18	GAL	TACK COAT		18		
441	70000	14	CU YD	ASPHALT CONCRETE SURFACE COURSE TYPE 1, (449), PG 64-22		14		
503	21300	LUMP		UNCLASSIFIED EXCAVATION	LUMP			
509	26000	862	POUND	GALVANIZED STEEL REINFORCEMENT	862			
510	10000	114	EACH	DOWEL HOLES WITH NONSHRINK, NONMETALLIC GROUT	114			
511	45711	6	CU YD	CLASS QC1 CONCRETE, ABUTMENT, AS PER PLAN	6			8,11,12 OF 31
512	10050	11	SQ YD	SEALING OF CONCRETE SURFACES (NON-EPOXY)	11			11,12 OF 31
512	33001	232	SQ YD	TYPE 2 WATERPROOFING, AS PER PLAN (ON TIMBER DECK)		232		3 OF 31
512	33001	54	SQ YD	TYPE 2 WATERPROOFING, AS PER PLAN (ON STRINGERS)		54		3,14 OF 31
513	10001	LUMP		STRUCTURAL STEEL MEMBERS; LEVEL UF, AS PER PLAN		LUMP		4, 25-28 OF 31
513	10121	LUMP		STRUCTURAL STEEL MEMBERS: LEVEL 6, AS PER PLAN		LUMP		3,17,19,20 OF 31
513	90000	25,600	LB	STRUCTURAL STEEL, MISC.: NEW GALVINZED STRINGERS	25,600	LUMP		8 OF 31
513	95020	LUMP		STRUCTURAL STEEL, MISC.: PINS AND NUTS		LUMP		3 OF 31
513	95020	LUMP		STRUCTURAL STEEL, MISC.: DISASSEMBLE EXISTING TRUSS		LUMP		3 OF 31
513	95020	LUMP		STRUCTURAL STEEL, MISC.: COUPON TENSILE STRENGTH TESTING OF EXISTING STRUCTURAL STEEL		LUMP		8,13,17 OF 31
513	95020	LUMP		STRUCTURAL STEEL, MISC.: GALVANIZE EXISTING TRUSS MEMBERS		LUMP		4 OF 31
513	95020	LUMP		STRUCTURAL STEEL, MISC.: REASSEMBLE TRUSS		LUMP		3 OF 31
513	95030	38	EACH	STRUCTURAL STEEL, MISC.: LOWER CHORDS CLEANING AND INSPECTION		38		4 OF 31
513	95030	16	EACH	STRUCTURAL STEEL, MISC.: LOWER LATERAL BRACES CLEANING AND INSPECTION		16		4 OF 31
513	95030	2	EACH	STRUCTURAL STEEL, MISC.: FABRICATE PORTAL SIGN, GALVANIZE, AND PAINT		1		18 OF 31
513	95030	9	EACH	STRUCTURAL STEEL, MISC.: NEW GALVANIZED FLOOR BEAMS		9		4 OF 31
513	95030	40	EACH	STRUCTURAL STEEL, MISC.: NEW GALVANIZED LOWER CHORDS [1]		40		4,13,21 OF 31
513	95030	20	EACH	STRUCTURAL STEEL, MISC.: NEW GALVANIZED LOWER LATERAL BRACES [2]		20		4,17,30 OF 31
513	95030	38	EACH	STRUCTURAL STEEL, MISC.: GALVANIZED EXISTING LOWER CHORDS [1]		38		4,13,21 OF 31
513	95030	20	EACH	STRUCTURAL STEEL, MISC.: GALVANIZED EXISTING LOWER LATERAL BRACES [2]		20		4,17,30 OF 31
513	95030	400	EACH	STRUCTURAL STEEL, MISC.: REMOVE AND REPLACE RIVETS WITH HIGH STRENGTH BOLTS		400		3 OF 31
513	95030	18	EACH	STRUCTURAL STEEL, MISC.: NEW GALVANIZIED HANGER BOLTS, PLATES, AND HARDWARE		18		24 OF 31
516	10501	30	FEET	STRUCTURAL EXPANSION JOINT INCLUDING ELASTOMERIC COMPRESSION SEAL, AS PER PLAN		30		29 OF 31
516	41100	4	EACH	1/8" PREFORMED BEARING PADS (11"x13")		4		25 OF 31
516	41100	4	EACH	1/8" PREFORMED BEARING PADS (10"x13")		4		26 OF 31
516	41100	12	EACH	1/8" PREFORMED BEARING PADS (9"x9")		12		27 OF 31
516	41100	12	EACH	1/8" PREFORMED BEARING PADS (8"x8")		12		28 OF 31
516	43200	2	EACH	ELASTOMERIC BEARING PADS WITH INTERNAL LAMINATES ONLY (NEOPRENE) 11" X 13" X 3"		2		25 OF 31
516	43200	2	EACH	ELASTOMERIC BEARING PADS WITH INTERNAL LAMINATES ONLY (NEOPRENE) 10" X 13" X 2.5"		2		26 OF 31
516	43200	6	EACH	ELASTOMERIC BEARING PADS WITH INTERNAL LAMINATES ONLY (NEOPRENE) 9" X 9" X 3"		6		27 OF 31
516	43200	6	EACH	ELASTOMERIC BEARING PADS WITH INTERNAL LAMINATES ONLY (NEOPRENE) 8" X 8" X 2.5"		6		28 OF 31
517	70001	302	FEET	RAILING (TWIN STEEL TUBE), AS PER PLAN		302		14,31 OF 31
SPECIAL	518 22300	356	FEET	STEEL DRIP STRIP		356		
SPECIAL	530 00200	LUMP		STRUCTURE, MISC.: LUBRICATE TRUSS PIN-CONNECTED JOINTS		LUMP		8 OF 31
SPECIAL	530 00600	40	SQ FT	STRUCTURE, MISC.: PACK RUST REMOVAL		40		3,18 OF 31
SPECIAL	530 00600	2082	SQ FT	STRUCTURE, MISC.: 6" STRIP FLOOR		2082		6,14,27,28 OF 31

[1] NEW GALVANIZED LOWER CHORDS / GALVANIZED EXISTING LOWER CHORDS - THESE ITEMS ARE LINKED (ONLY ONE WILL BE PERFORMED - THE OTHER WILL BE DELETED) *

[2] NEW GALVANIZED LOWER LATERAL BRACES / GALVANIZED EXISTING LOWER LATERAL BRACES - THESE ITEMS ARE LINKED (ONLY ONE WILL BE PERFORMED - THE OTHER WILL BE DELETED) *

* THE FINAL DETERMINATION REGARDING USING NEW MEMBERS VS. EXISTING MEMBERS WILL BE BASED ON THE SHOP INSPECTION OF CLEANED MEMBERS. THE CONTRACTOR SHALL NOT ORDER MATERIALS OR FABRICATE NEW MEMBERS UNTIL AUTHORIZED BY THE COUNTY ENGINEER.

DESIGN AGENCY
DGL Consulting Engineers, LLC
3455 Briarfield Blvd. Suite E
Maumee, Ohio 43537 (419) 535-1015

DESIGNED ARM | DRAWN ARM/JEF | REVIEWED JTY | DATE 5-24
CHECKED DGB | REVISED . | STRUCTURE FILE NUMBER 4631838

ESTIMATED QUANTITIES - SHEET 1 OF 2
BRIDGE No. LOG-21B-0.05
OVER GREAT MIAMI RIVER

LOG-CR21B-0.05
PID No. 119717

ESTIMATED QUANTITIES

ITEM	EXTENSION	TOTAL	UNIT	DESCRIPTION	ABUT.	SUPER.	GEN.	SHEET #
				ADDITIVE ALTERNATE NO. 1				
SPECIAL	530 00600	42	SQ FT	STRUCTURE, MISC.: REMOVE AND REPLACE BROKEN STONES	42			6,7 OF 31
SPECIAL	530 00600	871	SQ FT	STRUCTURE, MISC.: STONE MASONRY CLEANING	871			7 OF 31
SPECIAL	530 01300	614	FEET	STRUCTURE, MISC.: REPOINTING MORTAR JOINT	614			7 OF 31
SPECIAL	530 01300	94	FEET	STRUCTURE, MISC.: STONE REPAIR SEALING CRACKS BY EPOXY INJECTION	94			7 OF 31
602	97000	125	SQ FT	MASONRY, MISC.: REFURBISH ABUTMENT BEARING AREAS FOR TRUSS AND STRINGER BEARINGS	125			7 OF 31
				ADDITIVE ALTERNATE NO. 2				
625	98200	LUMP		LIGHTING, MISC.: METERED BRIDGE LIGHTING SYSTEM		LUMP		E1

DESIGN AGENCY
DGL Consulting Engineers, LLC
3455 Briarfield Blvd. Suite E
Maumee, Ohio 43537 (419) 535-1015

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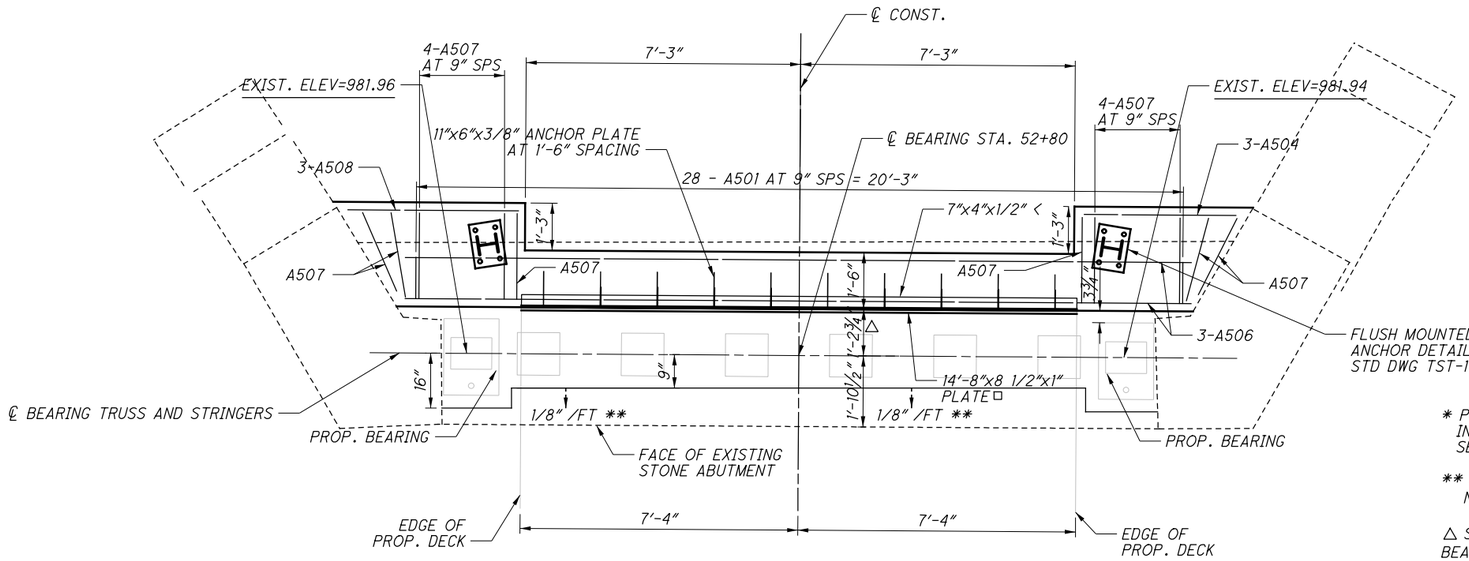
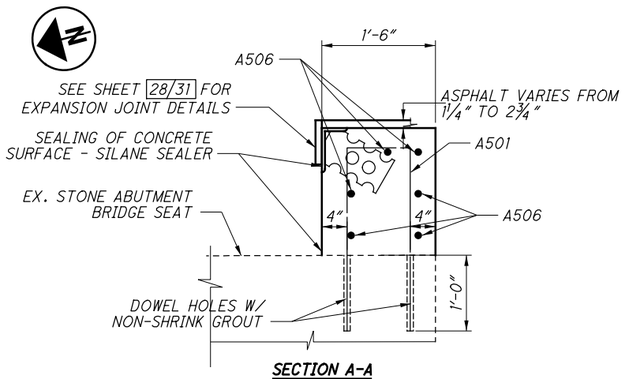
ESTIMATED QUANTITIES - SHEET 2 OF 2
BRIDGE No. LOG-21B-0.05
OVER GREAT MIAMI RIVER

LOG-CR21B-0.05
PID No. 119717



REAR (EAST) ABUTMENT PLAN



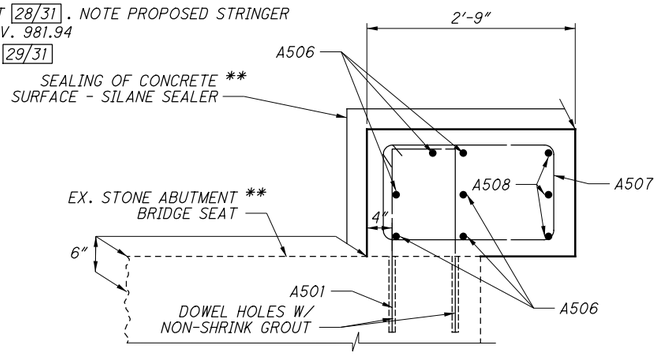
SECTION A-A

* POUR BACKWALL AFTER TRUSS HAS BEEN SET IN PLACE - MATCH TO EXPANSION JOINT STEEL SET ON BRIDGE TRUSS.

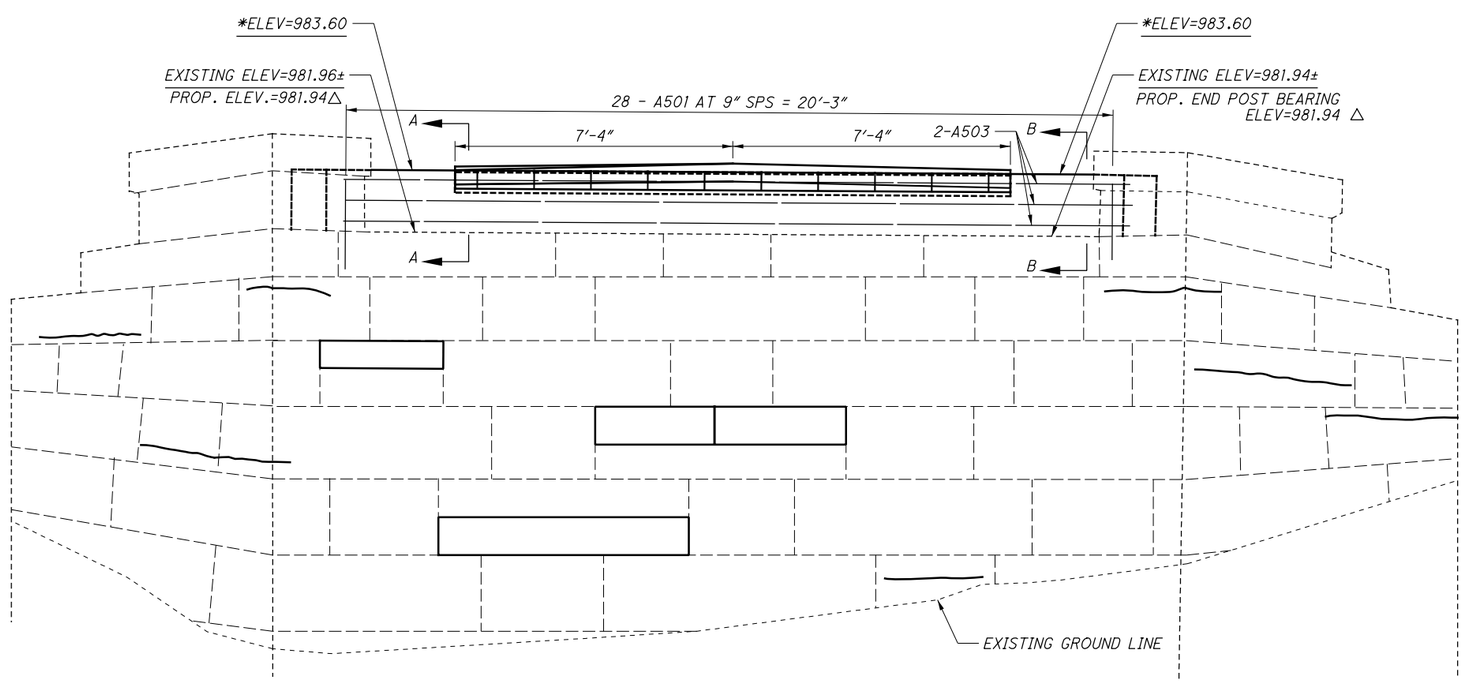
** SEE REFURBISHING ABUTMENT BEARING AREAS NOTE SHEET 7/31

△ SEE SHEET 28/31. NOTE PROPOSED STRINGER BEARING ELEV. 981.94

□ SEE SHEET 29/31

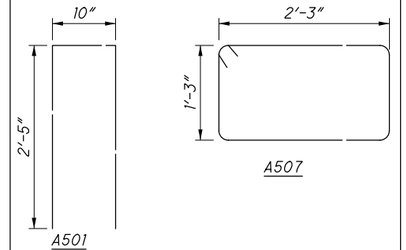


SECTION B-B



REAR (EAST) ABUTMENT ELEVATION

GALVANIZED REINFORCING STEEL



MARK	TOTAL	LENGTH	WEIGHT
A501	28	5'-5"	158
A504	3	4'-0"	13
A506	6	20'-9"	130
A507	14	7'-7"	111
A508	3	4'-6"	14
		TOTAL:	426

ITEM 511 - CLASS QC1 CONCRETE, ABUTMENT, AS PER PLAN:

THE BACKWALL CONCRETE SHALL BE PLACED ON THE ABUTMENT STONES. THE LIMITS OF THE ABUTMENT STONES ARE NOT KNOWN. THE ACTUAL BACK WALL DIMENSION AND SHAPE SHALL BE ADJUSTED TO MATCH EXISTING FIELD CONDITIONS, AS APPROVED BY THE PROJECT ENGINEER. FINAL PAYMENT SHALL BE IN ACCORDANCE WITH FINAL DIMENSIONS AND SHALL BE INCLUDED IN ITEM 511- CLASS QC1 CONCRETE, ABUTMENT, AS PER PLAN.

APPROXIMATE BOUNDARY OF STONE TO BE REMOVED AND REPLACED (ALTERNATE No. 1)

CRACKS TO BE REPAIRED WITH EPOXY INJECTION (ALTERNATE No. 1)

SEE NOTES SHEET 6/31 AND 7/31.

DESIGN AGENCY
DGL Consulting Engineers, LLC
3455 Briar Field Blvd. Suite E
Maumee, Ohio 43537 (419) 535-1015

DESIGNED	DRAWN	REVIEWED	DATE
BLS	BLS/JEF	JTY	5-24
CHECKED	REVISED	STRUCTURE FILE NUMBER	
DGB		4631838	

REAR (EAST) ABUTMENT DETAILS
BRIDGE No. LOG-21B-0.05
OVER GREAT MIAMI RIVER

LOG-CR21B-0.05
PID No. 119717

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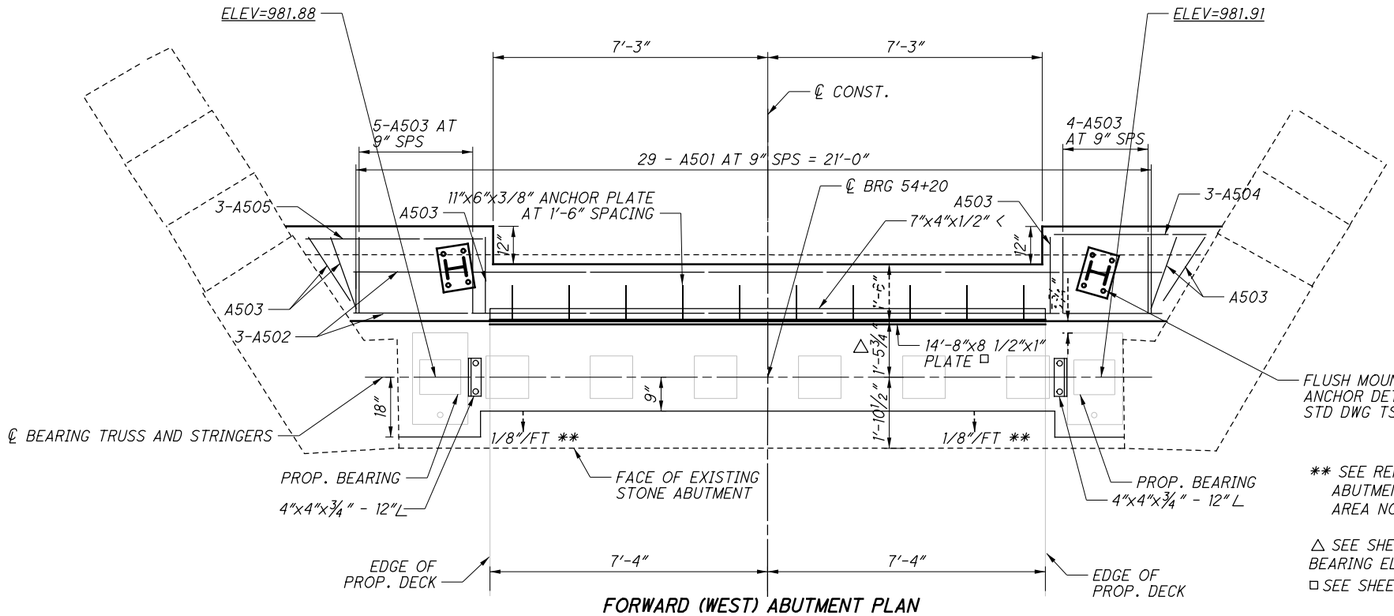
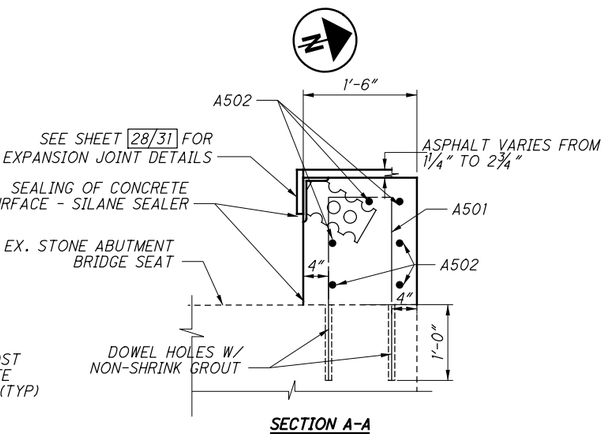


FORWARD (WEST) ABUTMENT PLAN



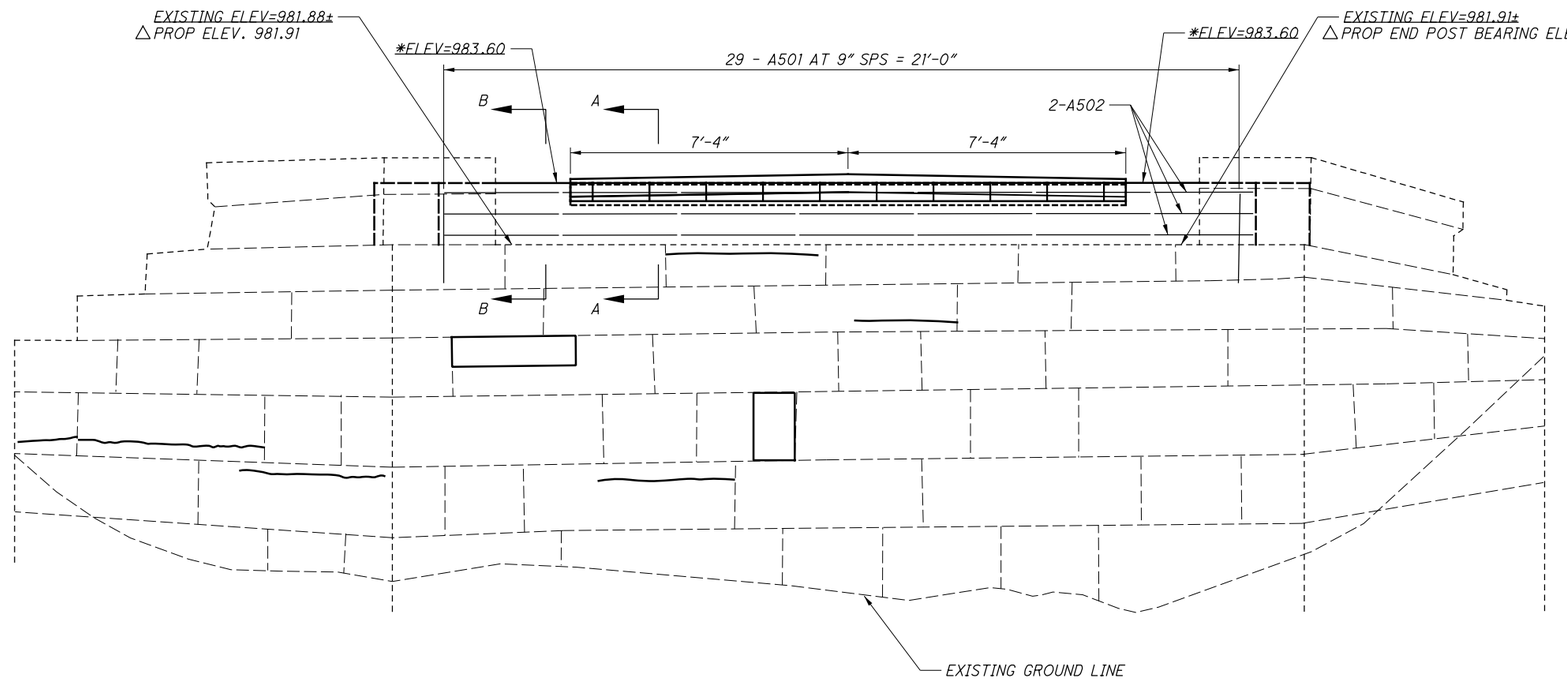
SECTION A-A

** SEE REFURBISHING ABUTMENT BEARING AREA NOTE SHEET 7/31

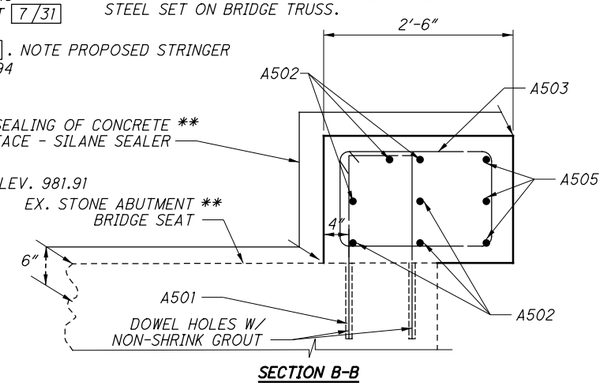
△ SEE SHEET 28/31. NOTE PROPOSED STRINGER BEARING ELEV. 981.94

□ SEE SHEET 29/31

* POUR BACKWALL AFTER TRUSS HAS BEEN SET IN PLACE - MATCH TO EXPANSION JOINT STEEL SET ON BRIDGE TRUSS.

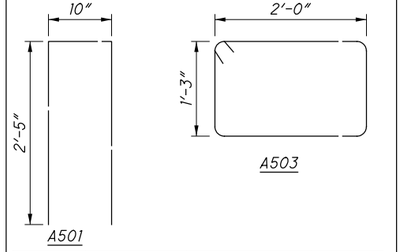


FORWARD (WEST) ABUTMENT ELEVATION



SECTION B-B

GALVANIZED COATED REINFORCING STEEL



MARK	TOTAL	LENGTH	WEIGHT
A501	29	5'-5"	164
A502	6	21'-4"	133
A503	15	7'-1"	111
A504	3	4'-0"	13
A505	3	4'-8"	15
		TOTAL:	436

APPROXIMATE BOUNDARY OF STONE TO BE REMOVED AND REPLACED (ALTERNATE No. 1)

CRACKS TO BE REPAIRED WITH EPOXY INJECTION (ALTERNATE No. 1)

SEE NOTES SHEET 6/31 AND 7/31.

ITEM 511 - CLASS QC1 CONCRETE, ABUTMENT, AS PER PLAN:

THE BACKWALL CONCRETE SHALL BE PLACED ON THE ABUTMENT STONES. THE LIMITS OF THE ABUTMENT STONES ARE NOT KNOWN. THE ACTUAL BACK WALL DIMENSION AND SHAPE SHALL BE ADJUSTED TO MATCH EXISTING FIELD CONDITIONS, AS APPROVED BY THE PROJECT ENGINEER. FINAL PAYMENT SHALL BE IN ACCORDANCE WITH FINAL DIMENSIONS AND SHALL BE INCLUDED IN ITEM 511- CLASS QC1 CONCRETE, ABUTMENT, AS PER PLAN.

DESIGN AGENCY
DGL Consulting Engineers, LLC
3455 Briar Field Blvd. Suite E
Maumee, Ohio 43537 (419) 535-1015

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BLS	BLS/JEF	JTY	5-24
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DGB		4631838	

FORWARD (WEST) ABUTMENT DETAILS

BRIDGE No. LOG-21B-0.05
OVER GREAT MIAMI RIVER

LOG-CR21B-0.05
PID No. 119717

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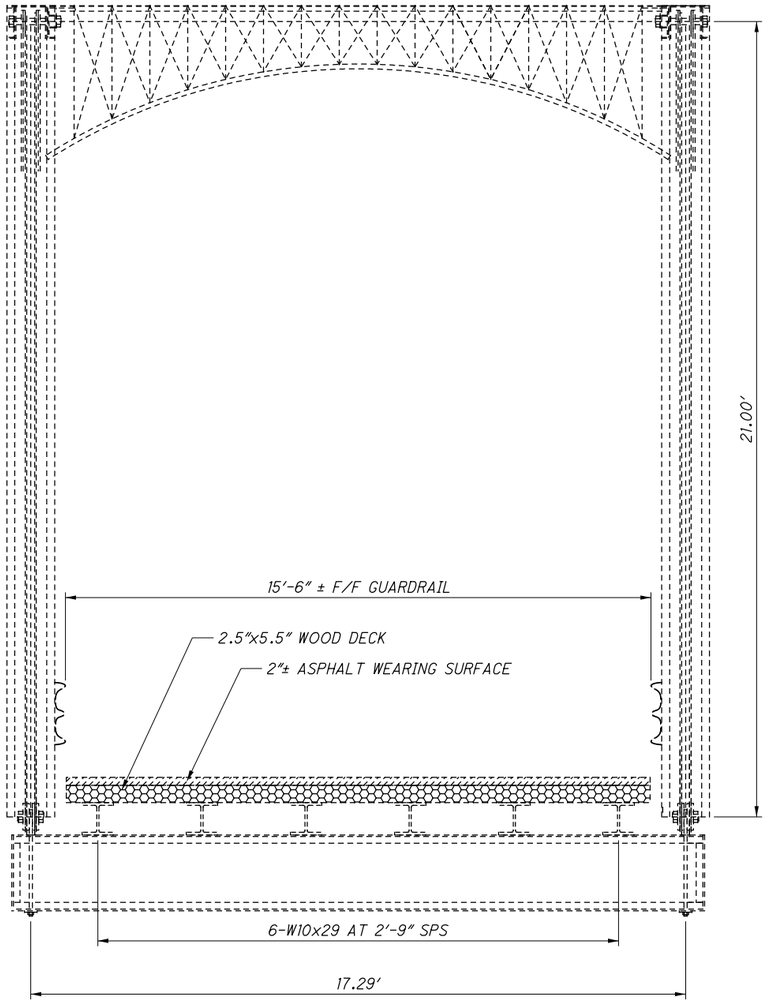
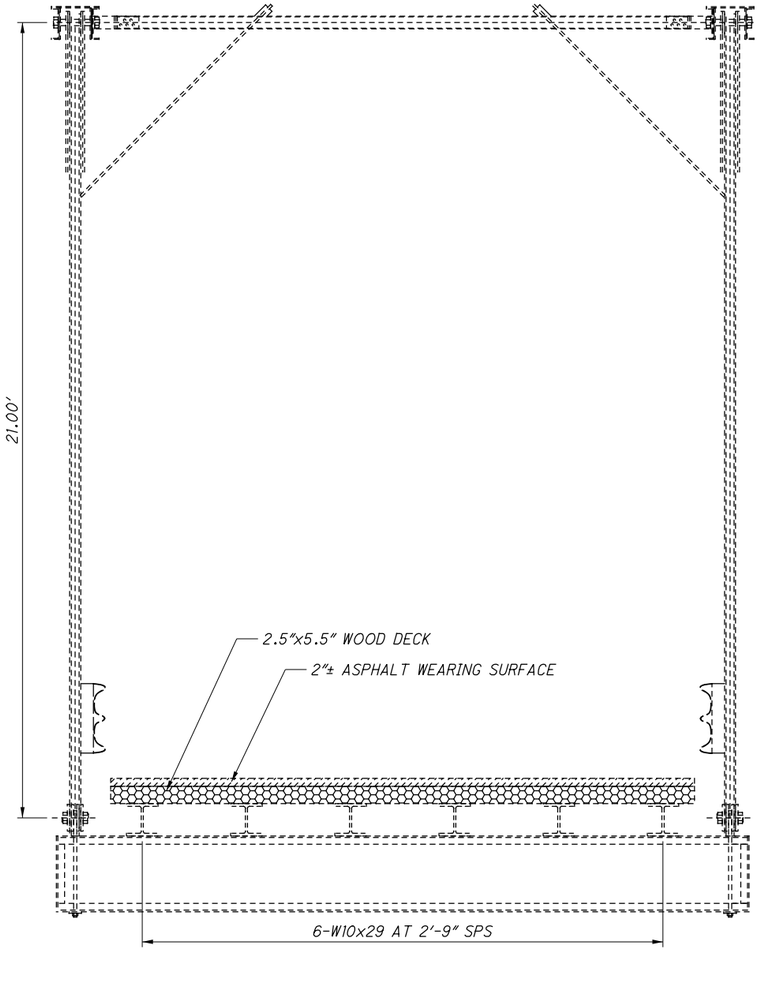


EXISTING PORTAL SECTION



EXISTING TRANSVERSE SECTION

ITEM 513 - STRUCTURAL STEEL, MISC.: COUPON TENSILE STRENGTH TESTING OF EXISTING STRUCTURAL STEEL:

REMOVE A 12" LENGTH OF STEEL (SAWN) FROM LOWER CHORD, L0-L1 SS, AND L5-L6 NN FOR TESTING. REPLACE THE MEMBERS WITH A709 GRADE 50 (CVN) (FCM) (USE THE EXISTING MEMEBER AS THE PROTOTYPE FOR THE NEW MEMBER).

REMOVE A 12" LENGTH OF STEEL (SAWN) FROM MEMBERS U1-L2 S, U1-L3, SS, AND U9-L7 N FOR TESTING.

THE COUPON SHALL BE TENSILE STRENGTH TESTED FOR Fy (YIELD STRENGTH) AND Fu (ULTIMTE STRENGTH).

DESIGN AGENCY
DGL Consulting Engineers, LLC
3455 Briarfield Blvd. Suite E
Maumee, Ohio 43537 (419) 535-1015

DESIGNED	DRAWN	REVIEWED	DATE
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CHECKED	REVISED	STRUCTURE FILE NUMBER	
DGB		4631838	

EXISTING TRANSVERSE SECTION
BRIDGE No. LOG-21B-0.05
OVER GREAT MIAMI RIVER

LOG-CR21B-0.05
PID No. 119717

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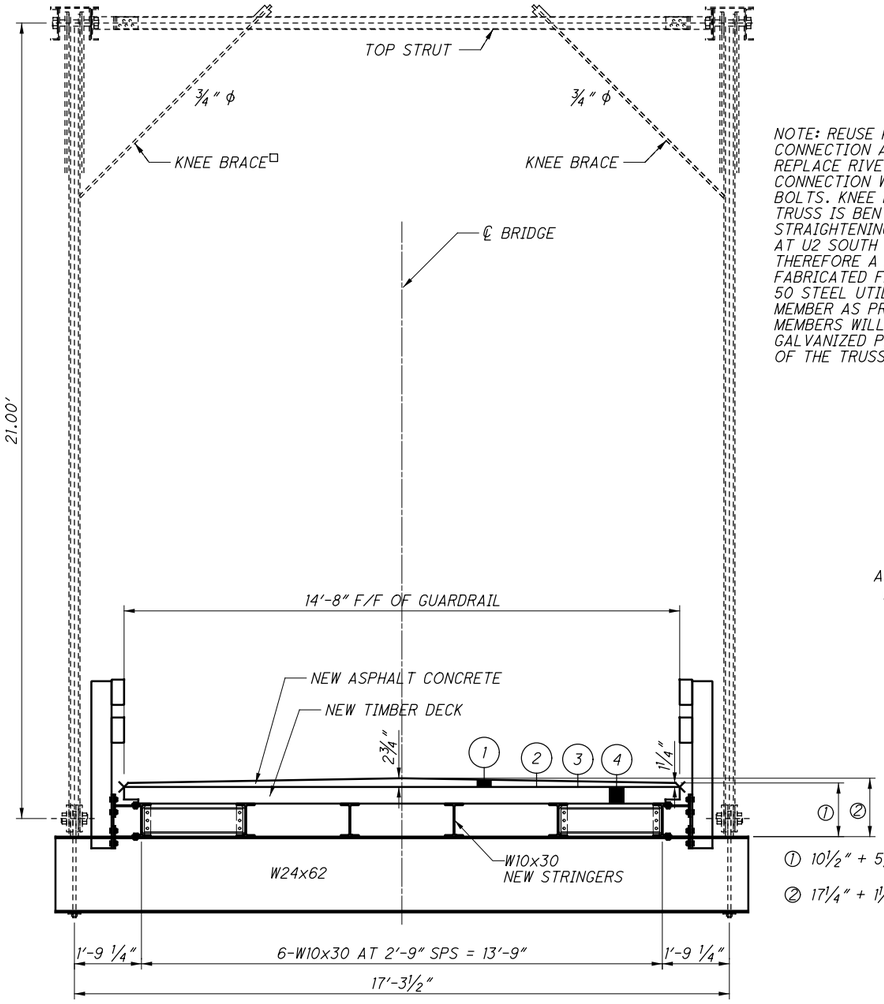
44



① 10½" + 5½" + 1¼" = 17¼"

② 17¼" + 1½" = 18¾"

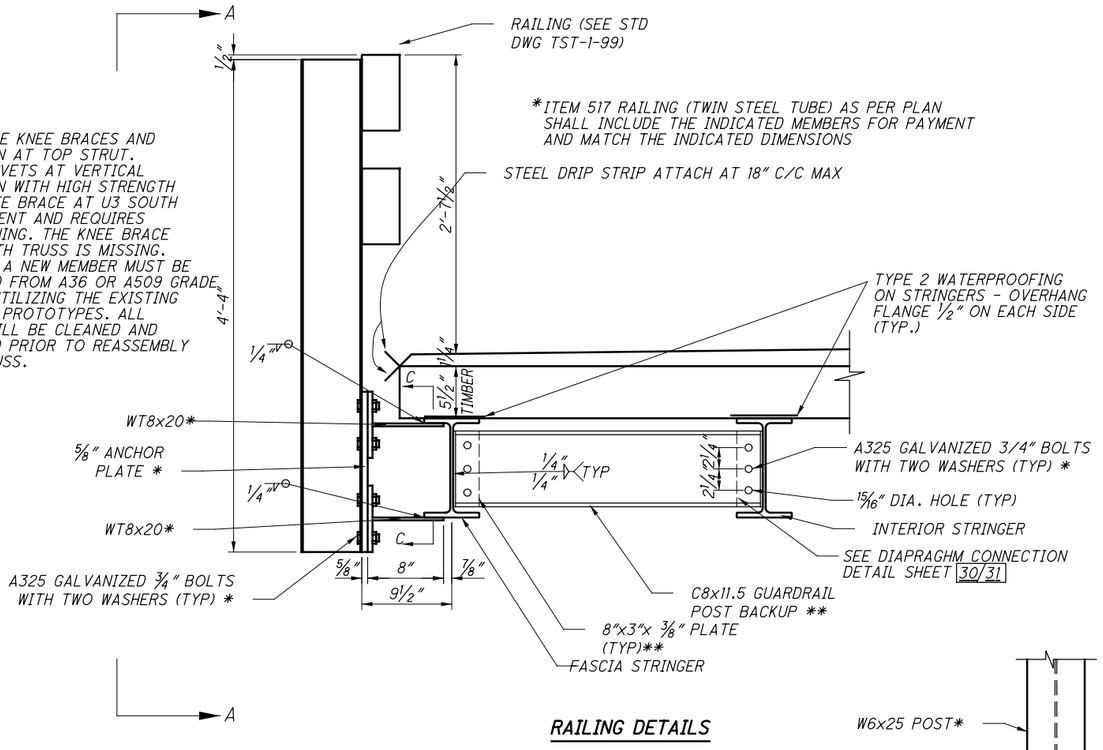
PROPOSED TRANSVERSE SECTION

1. ITEM 441 ASPHALT CONCRETE SURFACE COURSE TYPE 1, (449), PG64-22
2. ITEM 407 TACK COAT, APPLIED AT 0.075 GAL PER SQ YD ON WATERPROOFING
3. ITEM 512 TYPE 2 WATERPROOFING, AS PER PLAN (BASE BID)
4. ITEM SPECIAL STRUCTURE, MISC: 6" (5½" NOMINAL) STRIP FLOOR (BASE BID)

□ KNEE BRACE AT U2 SOUTH TRUSS IS MISSING. A NEW MEMBER SHALL BE FABRICATED FROM A79 GR50 STEEL AND INCLUDED WITH ITEM 513 - STRUCTURAL STEEL MEMBERS, LEVEL 6, AS PER PLAN FOR PAYMENT.

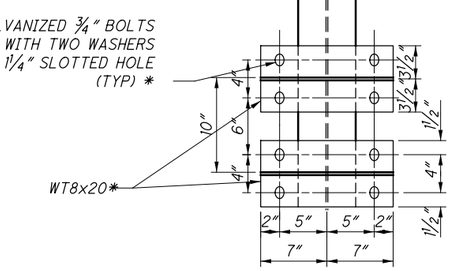
□ KNEE BRACE AT U3 SOUTH TRUSS IS BENT AND SHALL BE STRAIGHTENED WITH COST INCLUDED WITH ITEM 513 - STRUCTURAL STEEL MISC., GALVANIZED EXISTING TRUSS MEMBERS FOR PAYMENT.

NOTE: REUSE KNEE BRACES AND CONNECTION AT TOP STRUT. REPLACE RIVETS AT VERTICAL CONNECTION WITH HIGH STRENGTH BOLTS. KNEE BRACE AT U3 SOUTH TRUSS IS BENT AND REQUIRES STRAIGHTENING. THE KNEE BRACE AT U2 SOUTH TRUSS IS MISSING. THEREFORE A NEW MEMBER MUST BE FABRICATED FROM A36 OR A509 GRADE 50 STEEL UTILIZING THE EXISTING MEMBER AS PROTOTYPES. ALL MEMBERS WILL BE CLEANED AND GALVANIZED PRIOR TO REASSEMBLY OF THE TRUSS.

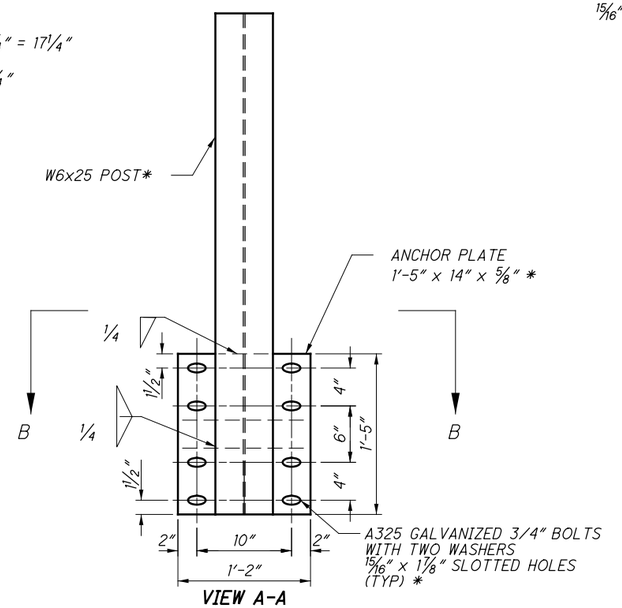


RAILING DETAILS

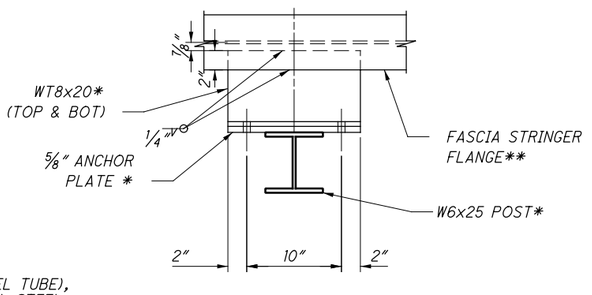
(TRUSS NOT SHOWN)



VIEW C-C



VIEW A-A



VIEW B-B

* INCLUDE WITH ITEM 517 - RAILING (TWIN STEEL TUBE), AS PER PLAN FOR PAYMENT. THE STRUCTURAL STEEL SHALL BE GALVANIZED AS DESCRIBED IN THE "GALVANIZED COATING SYSTEM FOR STRUCTURAL STEEL BRIDGES" NOTE.

** INCLUDE WITH ITEM 513 - STRUCTURAL STEEL MEMBERS, LEVEL 6, AS PER PLAN FOR PAYMENT

DESIGN AGENCY
DGL Consulting Engineers, LLC
3455 Briarfield Blvd. Suite E
Maumee, Ohio 43537 (419) 535-1015

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DGB	.	4631838	

PROPOSED TRANSVERSE SECTION

BRIDGE No. LOG-21B-0.05
OVER GREAT MIAMI RIVER

LOG-CR21B-0.05
PID No. 119717

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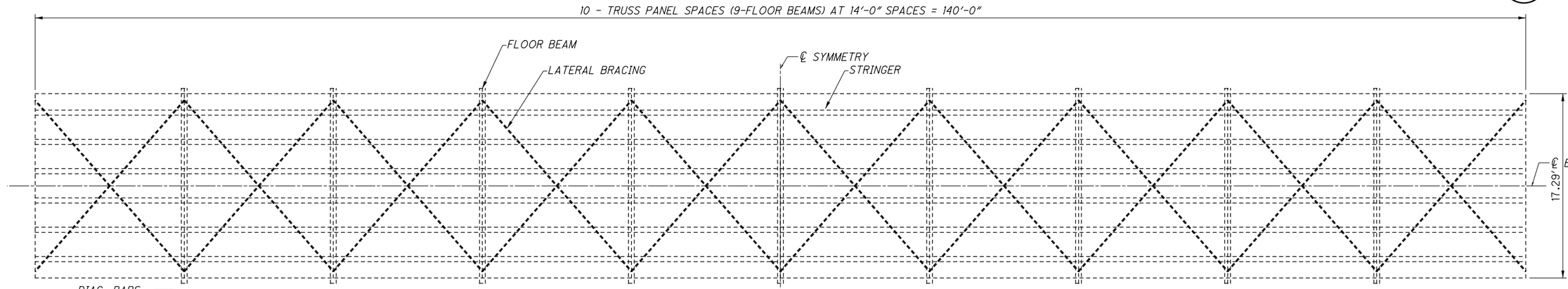
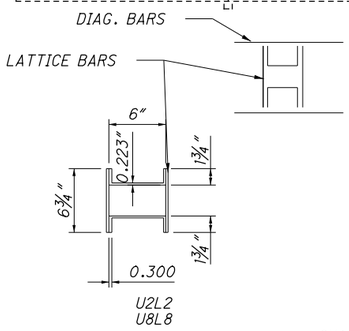
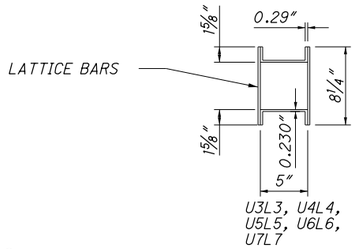
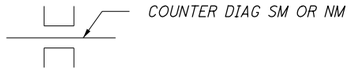
2.7
4.4

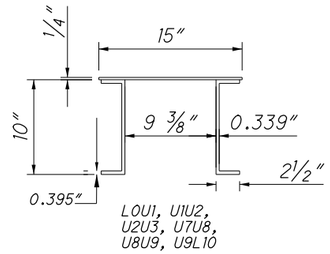


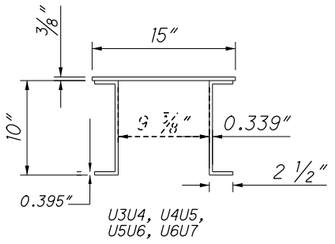
EXISTING TRUSS LOWER CHORD - FRAMING PLAN

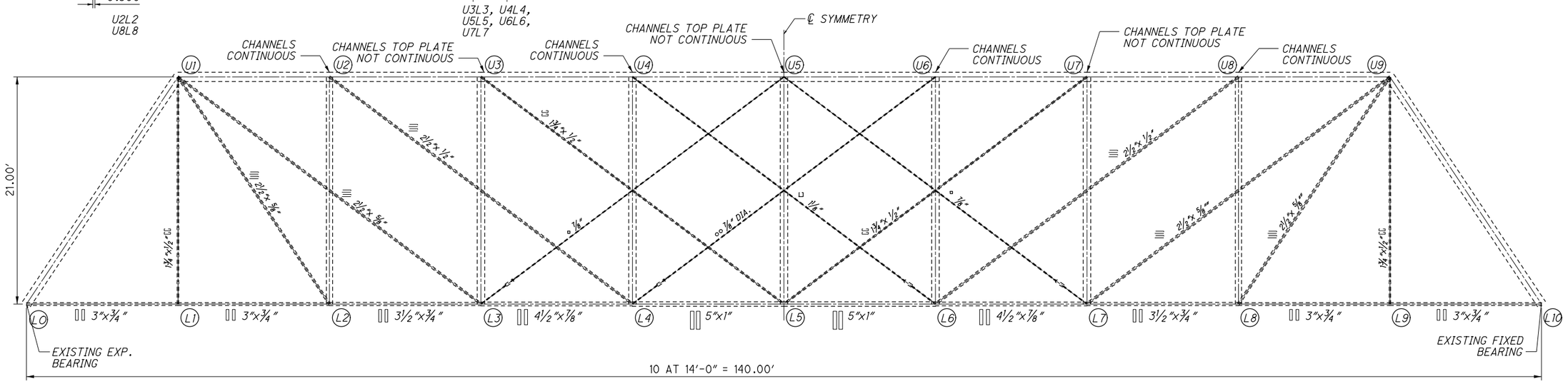




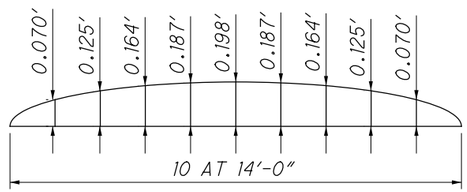








EXISTING TRUSS ELEVATION



TRUSS CAMBER DIAGRAM

GEOGRAPHICAL GRADE:
THE TOP CHORD MEMBERS ARE THEORETICALLY ¼" LONGER FOR EACH PANEL LENGTH THAN THE CORRESPONDING LOWER CHORDS. THE FINISH DECK GRAPHICAL GRADE MATCHES THE TRUSS CAMBER DIAGRAM.

DESIGN AGENCY
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ELEVATION

EXISTING TRUSS FRAMING PLAN &
BRIDGE No. LOG-21B-0.05
OVER GREAT MIAMI RIVER

LOG-CR21B-0.05
PID No. 119717

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44

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NM = NORTH MIDDLE MEMBER

SM = SOUTH MIDDLE MEMBER

NN - NORTHERN NORTH SIDE MEMBER

N - NORTH SIDE MEMBER

S - SOUTH SIDE MEMBER

SS - SOUTHERN SOUTH SIDE MEMBER

TURN BUCKLE

N

L3U5:
COUNTER DIAG
NM: GOOD SHAPE, GOOD TENSION - TURN BUCKLE
*SM: GOOD SHAPE, GOOD TENSION - TURN BUCKLE

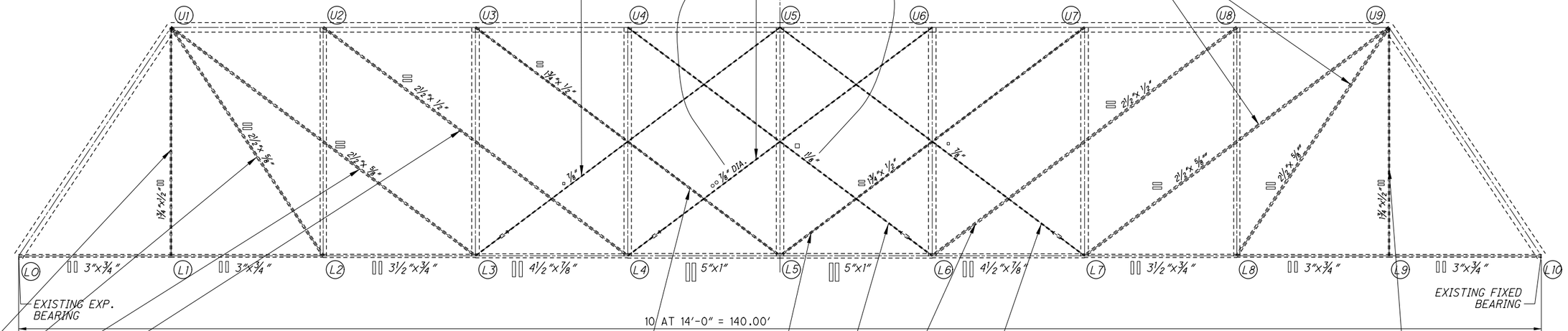
L4U6:
NN: GOOD SHAPE - TURN BUCKLE - FAIRLY LOOSE
N: GOOD SHAPE - TURN BUCKLE - FAIRLY LOOSE
S: TURN BUCKLE - EVEN TENSION
*SS: TURN BUCKLE

L7U9:
NN: GOOD SHAPE, GOOD TENSION
N: GOOD SHAPE, GOOD TENSION
S: GOOD SHAPE, GOOD TENSION
*SS: GOOD SHAPE, GOOD TENSION

L8U9:
NN: GOOD SHAPE, GOOD TENSION
N: GOOD SHAPE, GOOD TENSION
S: GOOD SHAPE, GOOD TENSION
*SS: GOOD SHAPE, GOOD TENSION

COUNTER DIAG

COUNTER DIAG



EXISTING TRUSS ELEVATION

U2L4:
*NN: GOOD SHAPE, GOOD TENSION, BUT MORE THAN N
N: GOOD SHAPE, GOOD TENSION, BUT LESS THAN NN
*S: GOOD SHAPE, MORE TENSION THAN SS
SS: GOOD SHAPE, LESS TENSION THAN S

U1L3:
*NN: GOOD SHAPE, GOOD TENSION - SLIGHTLY GREATER TENSION THAN N
N: GOOD SHAPE, GOOD TENSION - SLIGHTLY LESS TENSION THAN NN
S: GOOD SHAPE, GOOD TENSION
SS: GOOD SHAPE, GOOD TENSION

U1L2:
NN: GOOD SHAPE, GOOD TENSION
N: SLIGHTLY BENT, GOOD TENSION
S: GOOD SHAPE, GOOD TENSION
*SS: GOOD SHAPE, GOOD TENSION

U1L1:
NN: GOOD SHAPE - EXTRA BAR
*N: GOOD SHAPE - GOOD TENSION
S: BAD SHAPE - WELDED BAR AND TURN BUCKLE - GOOD TENSION
SS: REPAIRED LESS TENSION THAN S

U5L7:
COUNTER DIAG
NM: GOOD SHAPE - GOOD TENSION
*SM: GOOD SHAPE - GOOD TENSION

L6U8:
NN: GOOD SHAPE - GOOD TENSION
N: GOOD SHAPE - GOOD TENSION
S: GOOD SHAPE - GOOD TENSION
*SS: GOOD SHAPE - GOOD TENSION

U4L6:
NM: GOOD SHAPE - LESS TENSION THAN SM
*SM: GOOD SHAPE - GOOD TENSION
ONE 1 1/8"

L5U7:
NN: GOOD SHAPE, LESS TENSION THAN N
N: GOOD SHAPE - GOOD TENSION
*S: GOOD SHAPE - GOOD TENSION
SS: GOOD SHAPE - LESS TENSION THAN S

U3L5:
NN: GOOD SHAPE, LOOSE
N: BAD - BROKEN, REPAIRED WITH TURN BUCKLE - GOOD TENSION
ΔS: BAD - BROKEN, REPAIRED WITH TURN BUCKLE - GOOD TENSION
*SS: GOOD SHAPE - LOOSE

U9L9:
NN: GOOD SHAPE - WELD FATIGUE PROBLEMS
*N: GOOD SHAPE, GOOD TENSION
S: BAD SHAPE - GOOD TENSION, WELDED REPAIR
SS: BAD SHAPE, GOOD TENSION - WELD FATIGUE PROBLEMS

* USE AS PROTOTYPE FOR NEW MEMBER FABRICATION PAID FOR UNDER 513-STRUCTURAL STEEL MEMBERS, LEVEL 6, AS PER PLAN - SEE NOTE PG 18.

Δ NOTE: FABRICATE NEW U3L5 SS, S, N, NN THE SAME LENGTH AS THE "S" MEMBER, BUT USE SS MEMBER AS PROTOTYPE FOR SIZE AND SHAPE.

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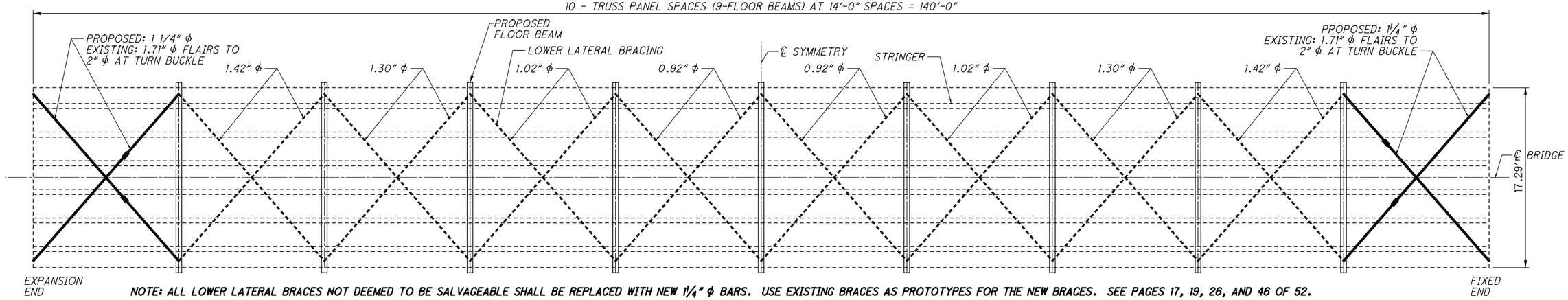
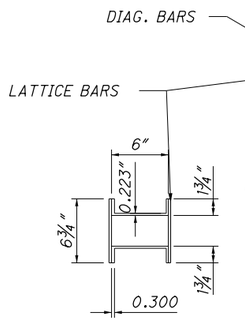
EXISTING TRUSS FRAMING ELEVATION
BRIDGE No. LOG-21B-0.05
OVER GREAT MIAMI RIVER

LOG-CR21B-0.05
PID No. 119717

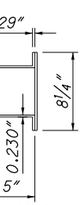


NOTE: ALL LOWER LATERAL BRACES NOT DEEMED TO BE SALVAGEABLE SHALL BE REPLACED WITH NEW 1¼" ϕ BARS. USE EXISTING BRACES AS PROTOTYPES FOR THE NEW BRACES. SEE PAGES 17, 19, 26, AND 46 OF 52.

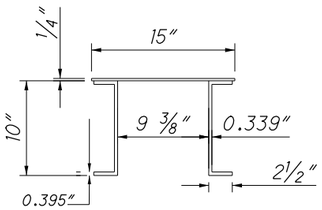
PROPOSED TRUSS LOWER CHORD - FRAMING PLAN



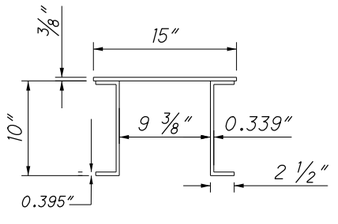
U2L2
U8L8



U3L3, U4L4,
U5L5, U6L6,
U7L7



L0U1, U1U2,
U2U3, U7U8,
U8U9, U9L10



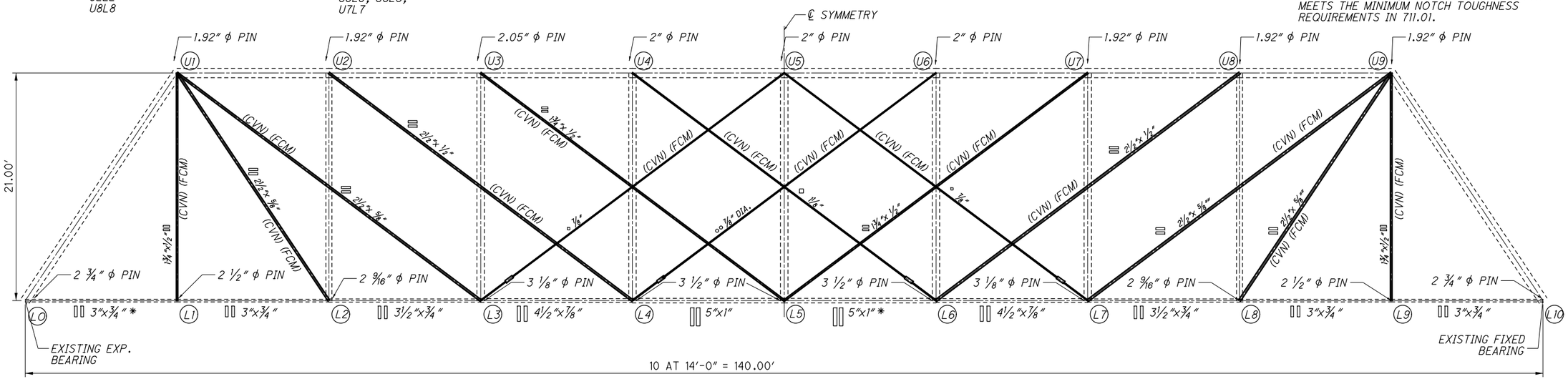
U3U4, U4U5,
U5U6, U6U7

NOTE:

1. MEMBERS U1L1, U9L9; U1L2, U9L8; U1L3, U9L7; U2L4, U8L6; U3L5, U7L5; L3U5, L7U5; AND L4U6, L6U4 SHALL BE REPLACED WITH NEW MEMBERS. UTILIZE THE DESIGNATED MEMBER ON PAGE 33/52 AS THE PROTOTYPE FOR THE NEWLY FABRICATED MEMBER. THE EDGES OF FABRICATED MEMBERS SHALL BE ROUNDED TO 3/32 INCH PRIOR TO GALVANIZING **
2. REPLACE ALL PINS AND NUTS WITH ASTM 240 STAINLESS STEEL. ***USE EXISTING PINS AS PROTOTYPES FOR THE NEW PINS.***

ECM: FRACTURE CRITICAL NON-REDUNDANT BRIDGE MEMBERS (FCM) SHALL MEET THE PROVISIONS OF SECTION 12, AWS D1.5. BASE METAL CHARPY V-NOTCH (CVN) IMPACT REQUIREMENTS SHALL SATISFY ZONE 2 TEMPERATURES.

CVN: WHERE A SHAPE OR PLATE IS DESIGNATED (CVN), FURNISH MATERIAL THAT MEETS THE MINIMUM NOTCH TOUGHNESS REQUIREMENTS IN 711.01.



* ITEM 513 - STRUCTURAL STEEL, MISC.: COUPON TESTING OF EXISTING STRUCTURAL STEEL: REMOVE A 12" LENGTH OF STEEL (SAWN) FROM THE LOWER CHORD L0L1 SS AND L5L6 NN FOR FOR TESTING. REPLACE THE MEMBERS WUTH A709 GRADE 50 CVN)(FCM). USE THE EXISTING MEMBERS FOR THE PROTOTYPE FOR THE NEW MEMBER.

PROPOSED TRUSS ELEVATION

** INCLUDE IN ITEM 513 - STRUCTURAL STEEL, LEVEL 6, AS PER PLAN FOR PAYMENT

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PROPOSED TRUSS FRAMING PLAN & ELEVATION
BRIDGE No. LOG-21B-0.05
OVER GREAT MIAMI RIVER

LOG-CR21B-0.05
PID No. 119717

17 / 31

30
44

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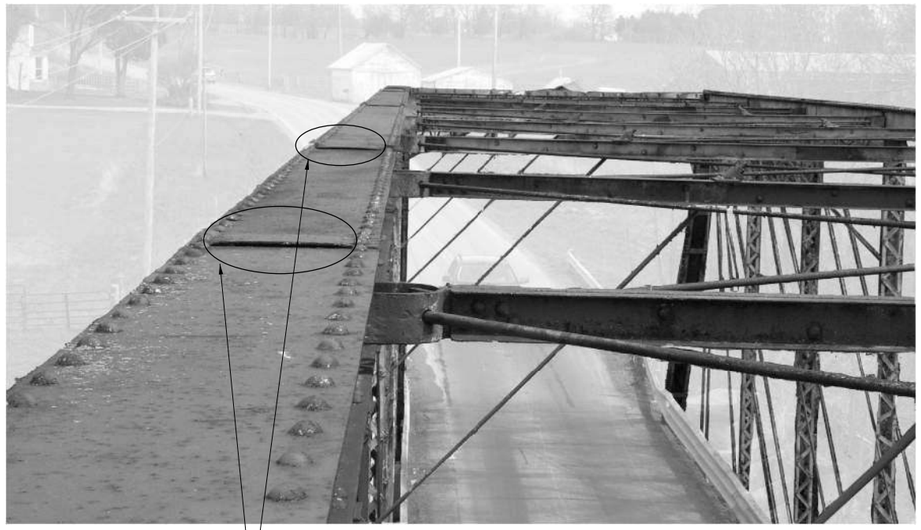
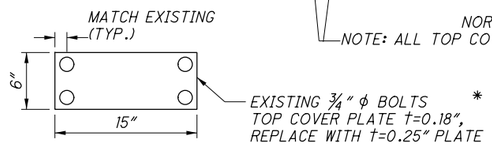
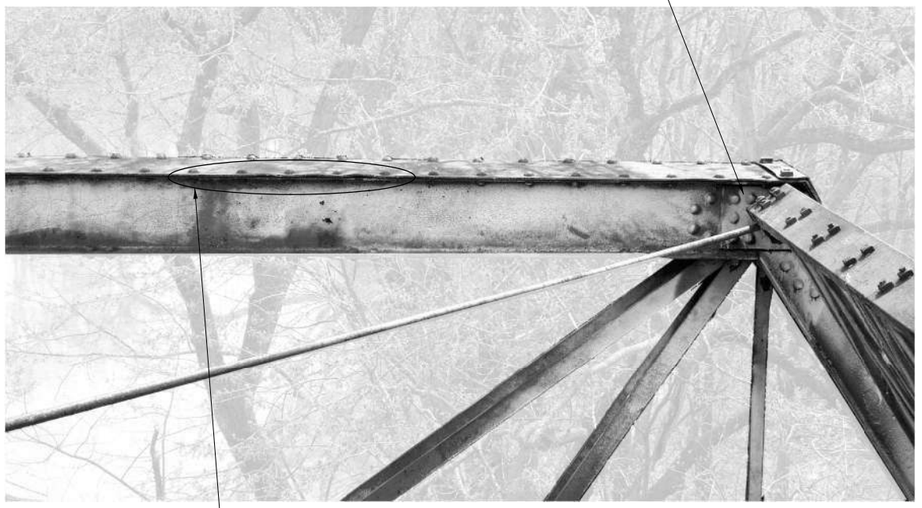


NORTH TRUSS, TOP CHORD SHOWN
NOTE: ALL TOP COVER PLATES SHALL BE REPLACED, SEE DETAIL



REPLACE END POST TO TOP CHORD (SPLICE/PIN PLATE) OUTSIDE AND INSIDE USING ORIGINAL AS THE PROTOTYPE. * REFASTEN WITH HIGH STRENGTH BOLTS. SEE SHEET 37/52



SOUTH TRUSS, TOP CHORD (U1U2)
REMOVE PACK RUST PRIOR TO GALVANIZING
SEE ITEM SPECIAL-STRUCTURE MISC.:
PACK RUST REMOVAL NOTE SHEET 18/52.

TYPICAL BRIDGE PORTAL

PORTAL SHALL BE CLEANED AND GALVANIZED INTACT - KEEP BOLTS AND NUTS. TIGHTEN ANY LOOSE BOLTS PRIOR TO GALVANIZING. **

* INCLUDE WITH ITEM 513 - STRUCTURAL STEEL MEMBERS, LEVEL 6, AS PER PLAN FOR PAYMENT

** INCLUDE WITH ITEM 513 - STRUCUTRAL STEEL, MISC.: GALVANIZE EXISTING TRUSS MEMBERS FOR PAYMENT

□ WEST PORTAL SIGN - NO LONGER IN PLACE

THE COUNTY HAS ONE PORTAL SIGN IN THEIR YARD. IT IS BROKEN BUT CAN BE USED AS A TEMPLATE FOR THE NEW SIGNS. FABRICATE THE NEW SIGNS FROM A36 STEEL REPLICATING THE EXISTING SIGN. THE SIGNS SHALL BE GALVANIZED AND PAINTED, COORDINATE COLOR WITH THE LOGAN COUNTY ENGINEER. △

△ INCLUDE WITH ITEM 513 FABRICATE PORTAL SIGN FOR PAYMENT.

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TRUSS DETAILS
BRIDGE No. LOG-21B-0.05
OVER GREAT MIAMI RIVER

LOG-CR21B-0.05
PID No. 119717

18 / 31

31
44

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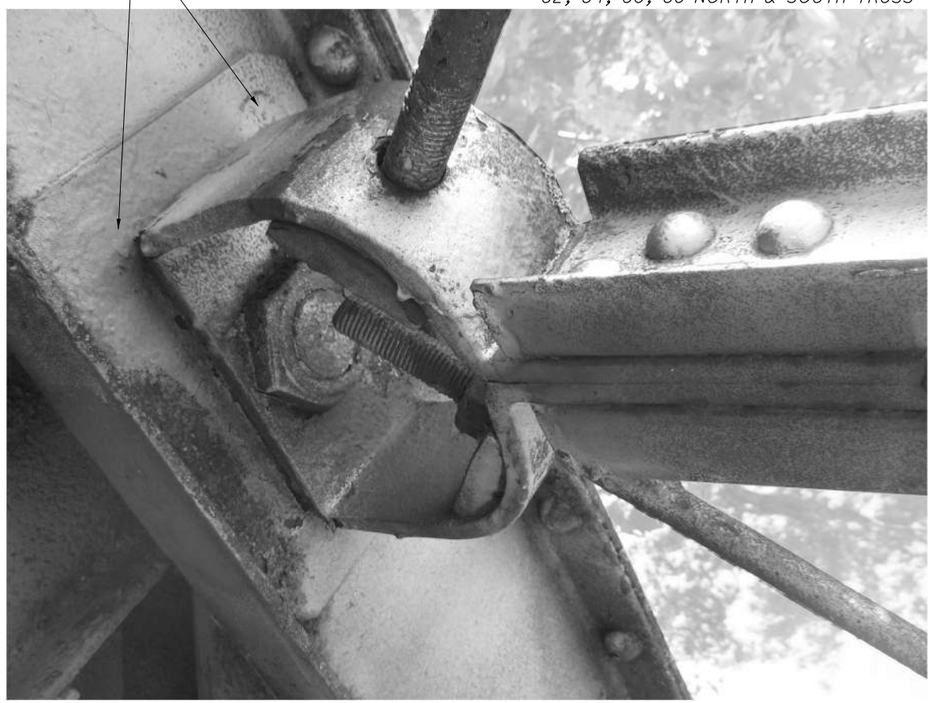
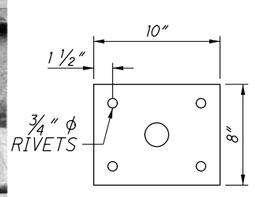
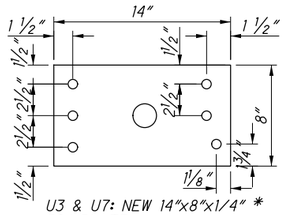
TYPICAL TOP STRUT
LATERAL BRACING TO TOP CHORD CONNECTOR



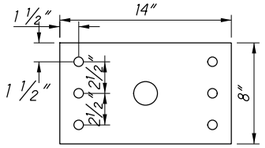
TYPICAL TOP STRUT TO TOP CHORD CONNECTION
SAVE AND REFURBISH TOP CHORDS, TOP STRUTS,
TOP LATERAL BRACES, AND CONNECTIONS.
SEE NOTE PAGE 19/52 **



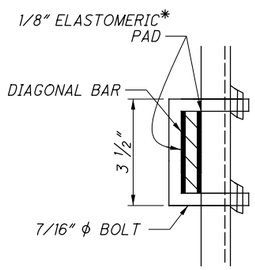
EXISTING 10"x8x1/4"* PIN PLATE



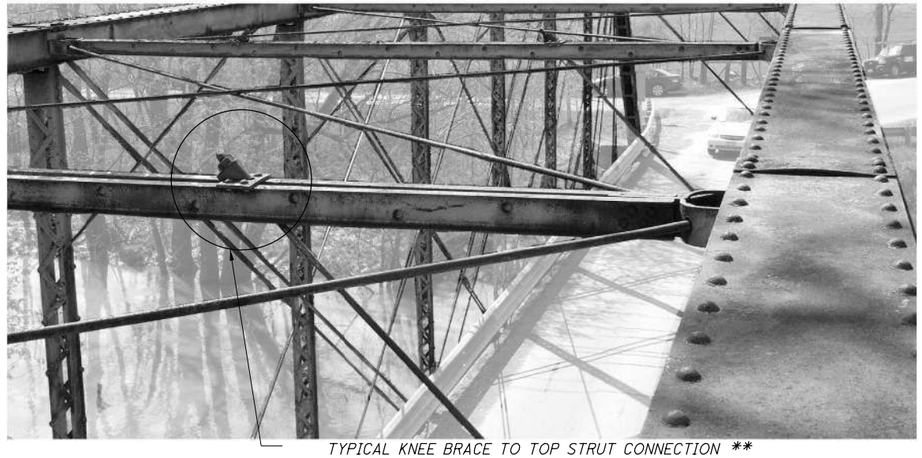
U3 & U7: NEW 14"x8"x1/4" * PIN PLATE



U5: NEW 14"x8"x1/4" * PIN PLATE



PLACE NEW GALVANIZED BOLTS * AT ALL DIAGONAL-VERTICAL CONNECTIONS



TYPICAL KNEE BRACE TO TOP STRUT CONNECTION **
CLEAN & GALVANIZE TOP STRUTS, LATERAL BRACES, KNEE BRACES INCLUDING CONNECTIONS.

TYPICAL KNEE BRACE TO VERTICAL CONNECTION - SAVE AND REFURBISH CONNECTIONS. **
REPLACE RIVETS WITH HIGH STRENGTH BOLTS.

* INCLUDE WITH ITEM 513 - STRUCTURAL STEEL MEMBERS, LEVEL 6, AS PER PLAN FOR PAYMENT.
THE ELASTOMERIC PADS ARE INCIDENTAL TO AND INCLUDED IN THE COST OF THIS ITEM.

** INCLUDE WITH ITEM 513-STRUCTURAL STEEL, MISC.: GALVANIZE EXISTING TRUSS MEMBERS FOR PAYMENT

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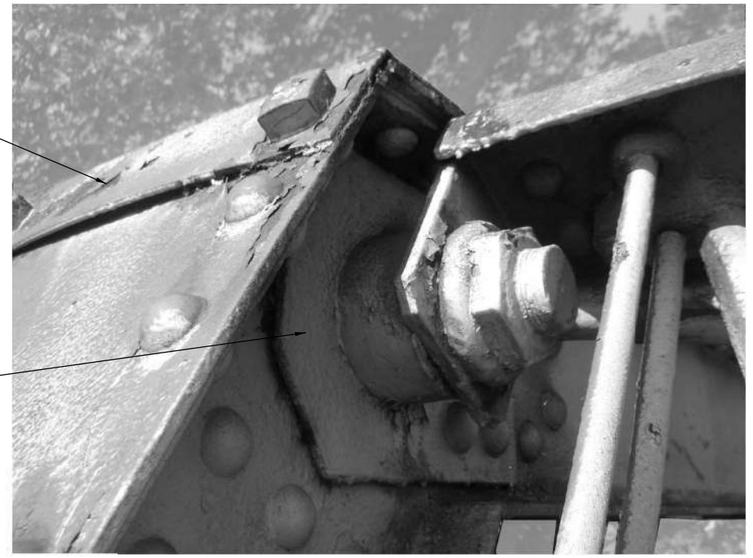
TRUSS DETAILS
BRIDGE No. LOG-21B-0.05
OVER GREAT MIAMI RIVER

LOG-CR21B-0.05
PID No. 119717

TYPICAL COVER PLATE AT END POST TO TOP CHORD CONNECTION
ALL COVER PLATES SHALL BE REPLACED.

REPLACE END POST TOP CHORD COVER PLATES AND BOLTS. REFASTEN WITH HIGH STRENGTH BOLTS. *

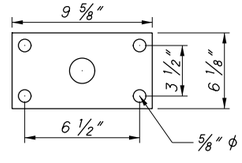


TYPICAL END POST TO TOP CHORD CONNECTION
PIN 1.92" DIA. AT END. REPLACE ALL PINS AND NUTS WITH STAINLESS STEEL.

REPLACE END POST TO TOP CHORD (SPLICE/PIN) PLATE OUTSIDE AND INSIDE USING THE ORIGINAL AS THE PROTOTYPE; REFASTEN WITH HIGH STRENGTH BOLTS. *

TYPICAL LOWER LATERAL BRACE TO FLOOR BEAM CONNECTION/
SAVE AND REFURBISH LOWER LATERAL BRACING/
(REPLACE BOLTS, NUTS, AND REINFORCEMENT PLATES AT LOWER LATERAL CONNECTION POINTS. USE EXISTING BOLT, NUT, AND WASHER SIZES AS PROTOTYPE FOR NEW HARDWARE.) *

REINFORCEMENT PLATE ¼" THICK *



* INCLUDE WITH ITEM 513 - STRUCTURAL STEEL MEMBERS, LEVEL 6, AS PER PLAN FOR PAYMENT

TYPICAL FLOOR BEAM TO TRUSS HANGER BOLT & PLATE
REPLACE ALL HANGER BOLTS, NUTS, AND PLATES.
SEE SHEET 40/52 FOR HANGER BOLT & PLATE DETAILS.

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TRUSS DETAILS
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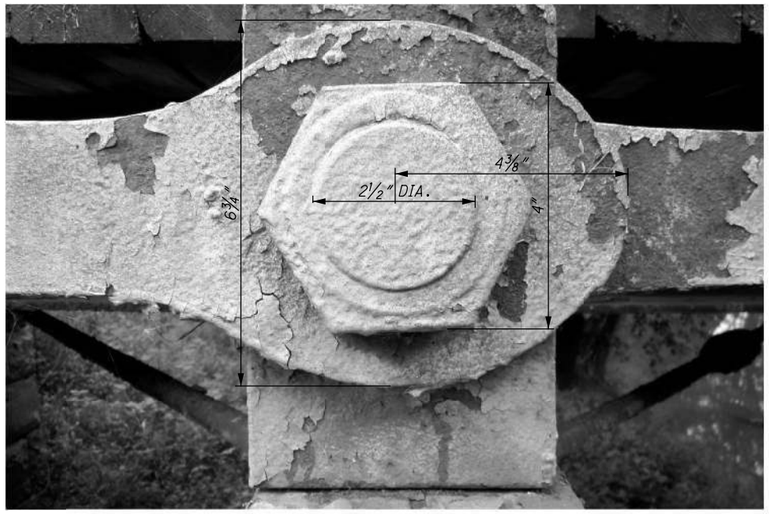
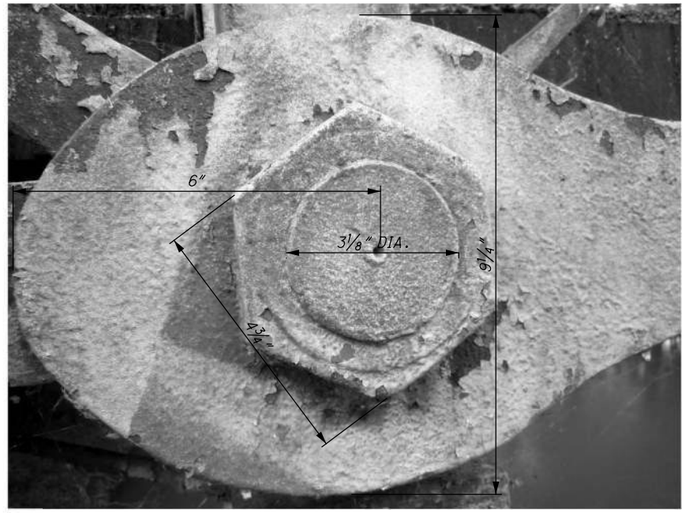
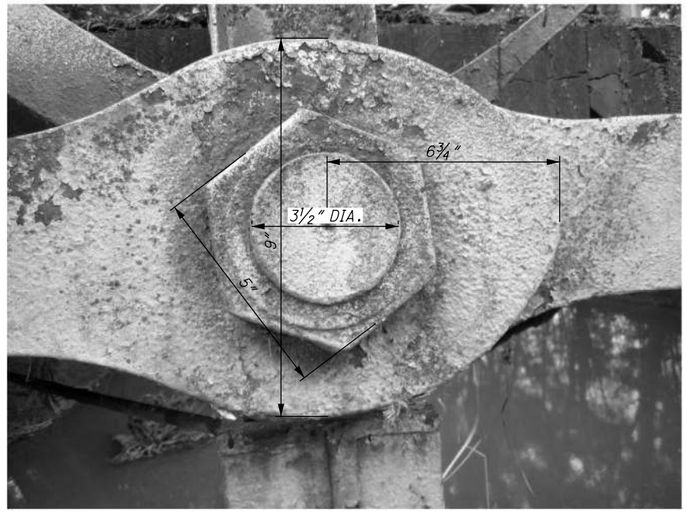


L1/L9 PIN (TYP)

L2/L8 PIN (TYP)



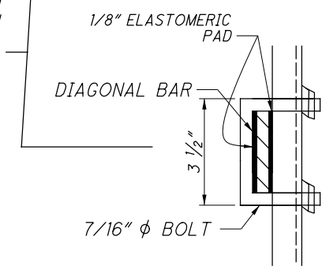
L3/L7 PIN (TYP)



L4/L6 PIN (TYP)

L5 PIN (TYP)

DIAGONAL TO VERTICAL U-BOLT CONNECTION
PLACE NEW U-BOLT CONNECTION
BOLTS WITH 1/8" ELASTOMERIC PADS.
SEE SHEET 36/52 FOR ADDITIONAL DETAILS.



PLACE NEW GALVANIZED BOLTS AT ALL DIAGONAL-VERTICAL CONNECTIONS

REPLACE PINS AND NUTS WITH STAINLESS STEEL. AFTER DISASSEMBLING THE TRUSS AND CLEANING THE LOWER CHORDS, CAREFULLY INSPECT THE MEMBERS TO DETERMINE SECTION LOSS AND POSSIBLE CRACKS. TEST PORTIONS OF MEMBERS AS INDICATED ON SHEET 30/52 FOR Fy & Fu. IF Fy IS EQUAL TO OR GREATER THAN 26ksi AND THE MEMBERS ARE ASSESSED TO BE IN GOOD CONDITION, THEN ALL LOWER CHORDS EXCEPT THE TEST SPECIMENS SHALL BE GALVANIZED FOR REUSE IN THE TRUSS. ALL MEMBERS NOT DEEMED ACCEPTABLE FOR REUSE SHALL BE REPLACED WITH NEWLY FABRICATED MEMBERS. NEW MEMBERS WILL BE FABRICATED FROM A709 GR. 50 STEEL TO REPLACE THE NON ACCEPTABLE MEMBERS AND THE TEST MEMBERS. THE TWIN TO THE TEST MEMBERS OR REPLACED MEMBERS SHALL BE USED AS THE PROTOTYPE TO FABRICATE THE NEW MEMBER. THE NEW MEMBER SHALL MEET THE FCM AND CVN REQUIREMENTS FOR FRACTURE CRITICAL MEMBERS.

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TRUSS DETAILS
BRIDGE No. LOG-21B-0.05
OVER GREAT MIAMI RIVER

LOG-CR21B-0.05
PID No. 119717

NORTHEAST END POST - LOOKING NORTH

NORTHEAST END POST - PLAN

REPAIR THE NORTH TRUSS EAST END POST BY STRENGTHENING, WELDING, AND BUTT WELDING A NEW PLATE AS REQUIRED. *

U5L5 - NORTH TRUSS, WEST SIDE

U5L5 - NORTH TRUSS, EAST SIDE

REBUILD LOWER PORTION OF U5L5 TO MATCH ORIGINAL TRUSS. USE HIGH STRENGTH BOLTS IN LIEU OF RIVETS. *

NORTHWEST END POST

NORTHWEST END POST

REPAIR THE NORTH TRUSS WEST END POST BY STRENGTHENING THE STEEL MEMBERS AND GRINDING SMOOTH THE DAMAGED EDGES. *

REPLACE THE LOWER CHORD PIN REINFORCEMENT PLATES INSIDE AND OUTSIDE AS REQUIRED - DETERMINE BY THOROUGH INSPECTION AFTER TRUSS HAS BEEN CLEANED IN THE SHOP. INCLUDE IN ITEM 513 - STRUCTURAL STEEL MEMBERS, LEVEL 6, AS PER PLAN FOR PAYMENT.

* REPAIR OF THE NORTH TRUSS EAST END POST, NORTH TRUSS WEST END POST, AND NORTH TRUSS U5L5 SHALL BE CONSIDERED INCIDENTAL TO AND INCLUDED IN ITEM 513 - STRUCTURAL STEEL MEMBERS, LEVEL 6, AS PER PLAN FOR PAYMENT.

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TRUSS DETAILS
BRIDGE No. LOG-21B-0.05
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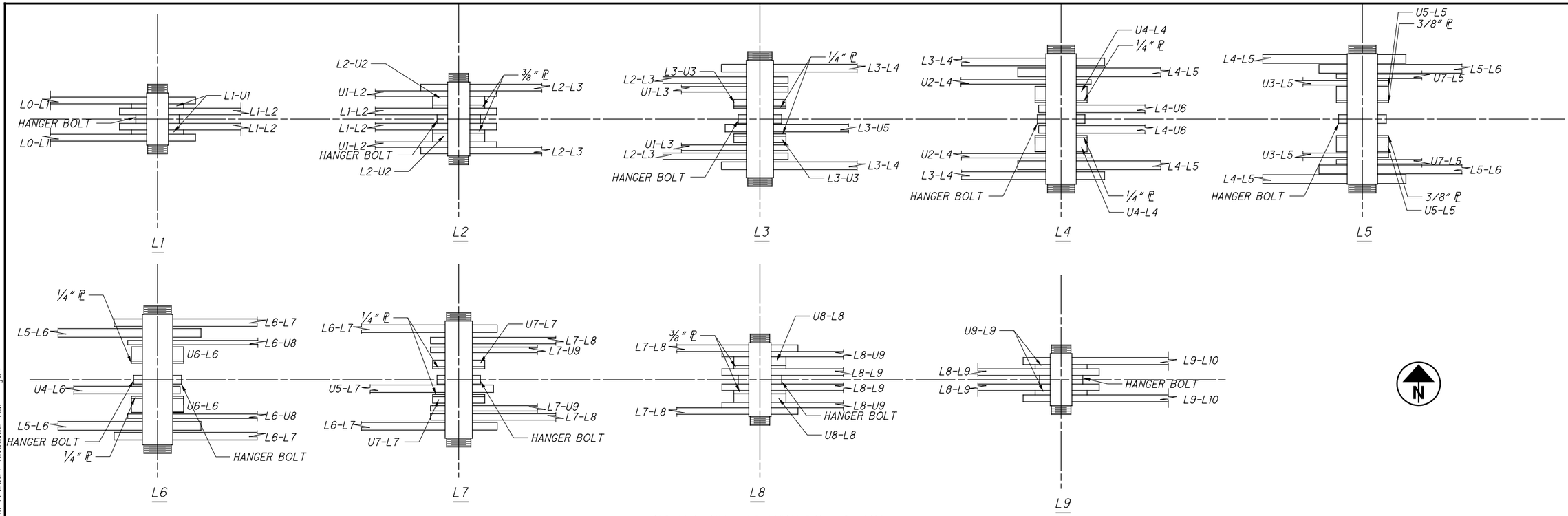
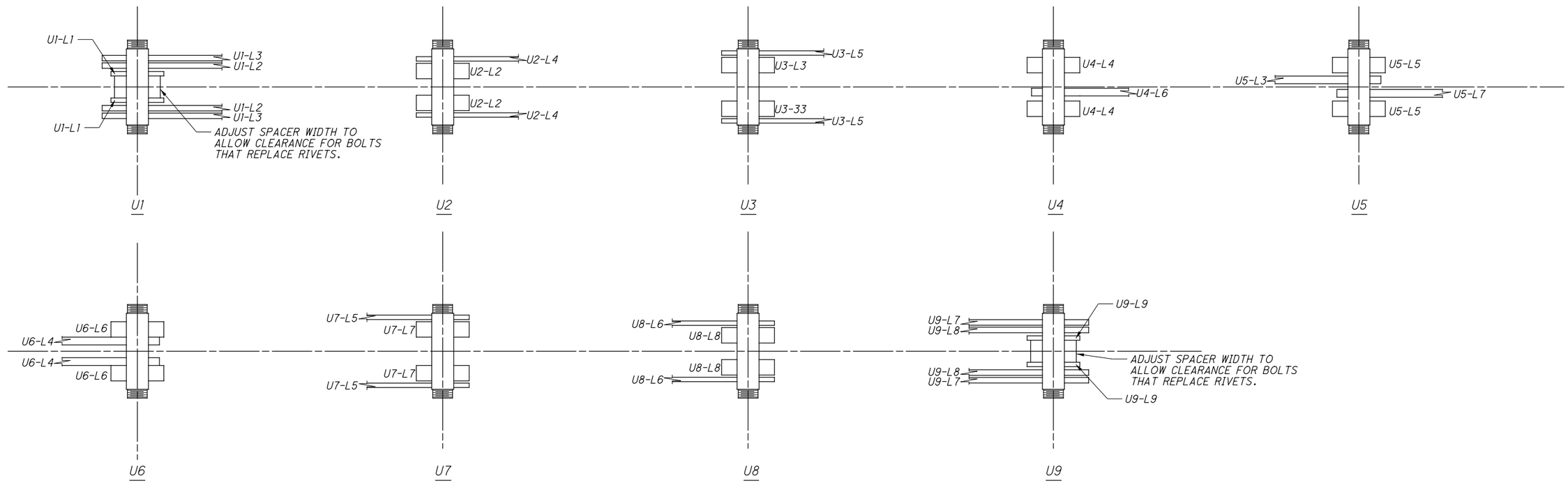


LOWER CHORD PIN PACKING DIAGRAM



UPPER CHORD PIN PACKING DIAGRAM

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TRUSS CINNECTION DETAILS

BRIDGE No. LOG-21B-0.05
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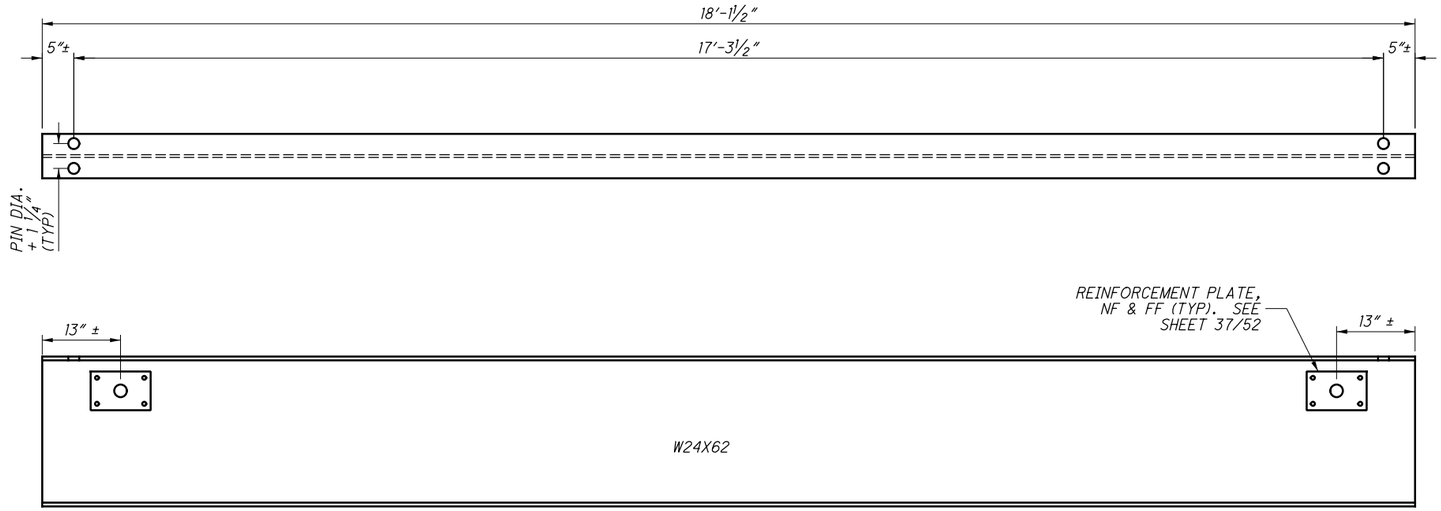
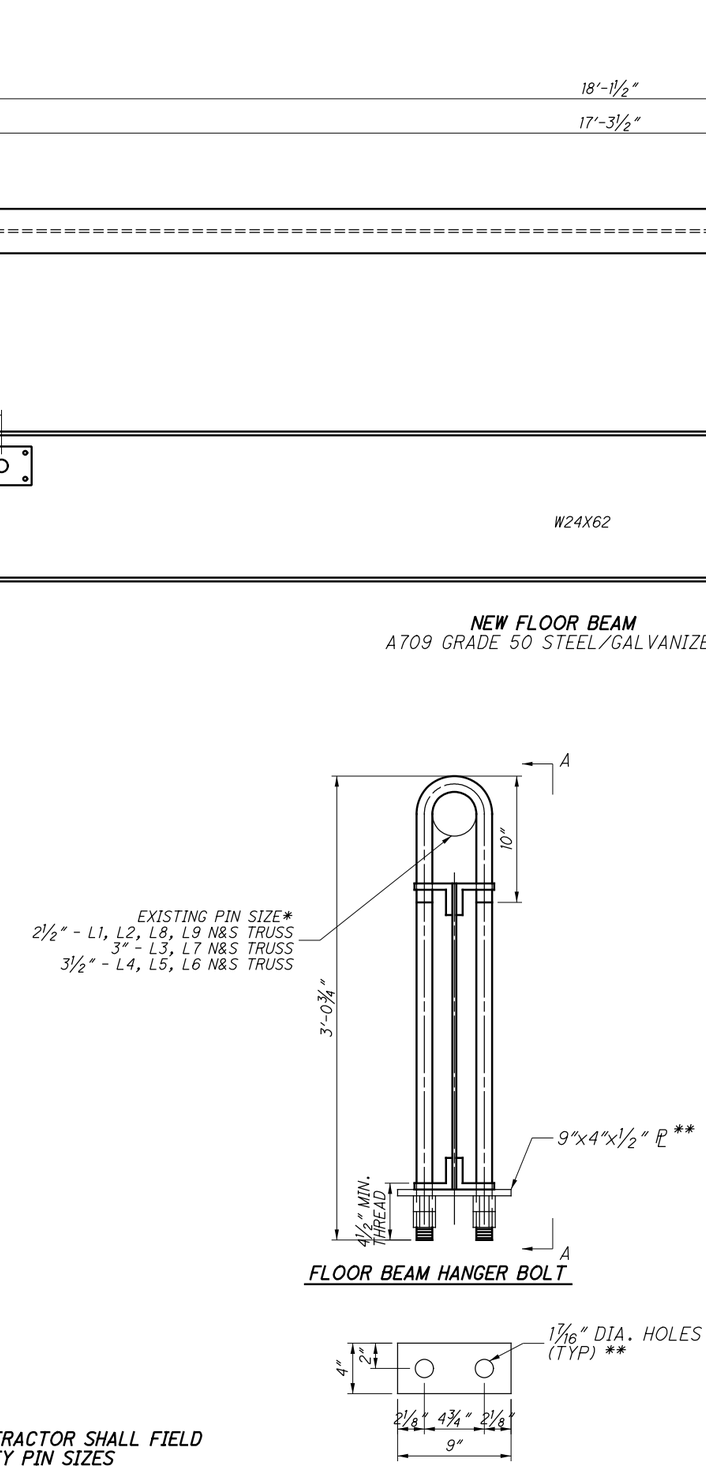
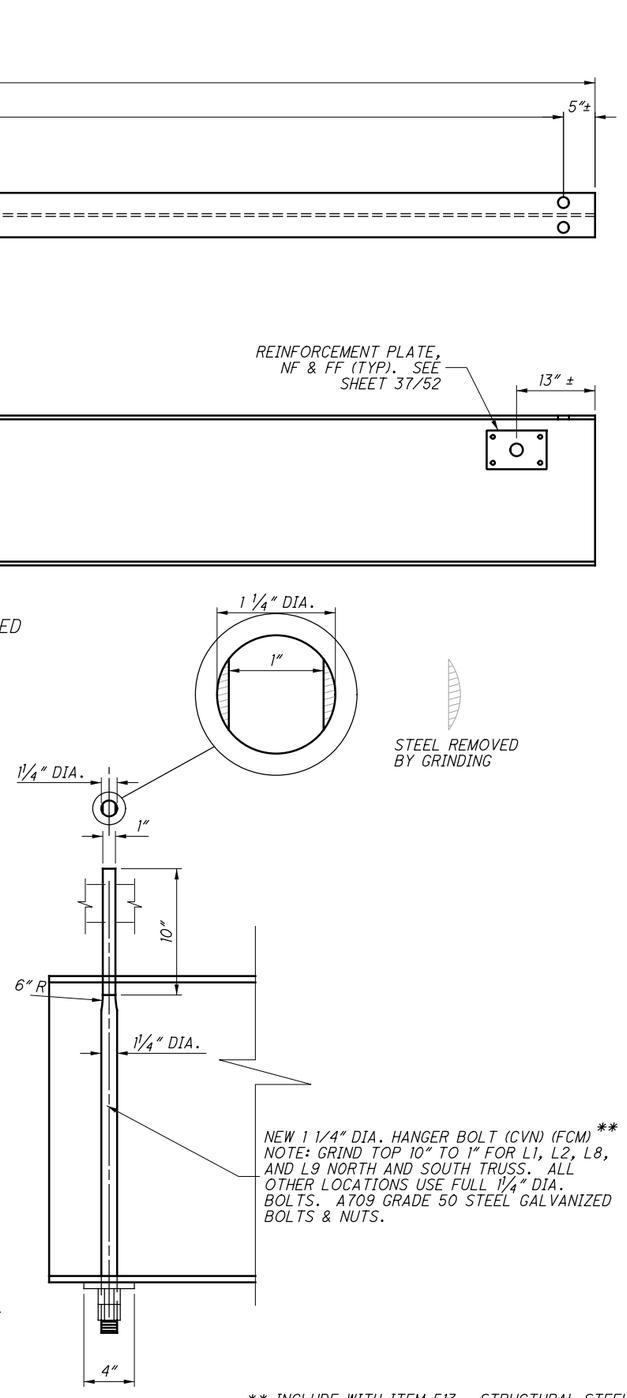
LOG-CR21B-0.05
PID No. 119717



NEW FLOOR BEAM
A709 GRADE 50 STEEL/GALVANIZED

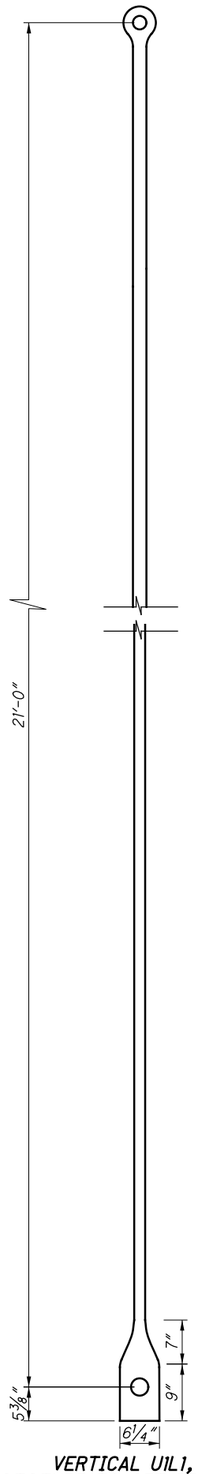


FLOOR BEAM HANGER BOLT



VIEW A-A

** INCLUDE WITH ITEM 513 - STRUCTURAL STEEL, MISC.: NEW GALVANIZED HANGER BOLTS, PLATES, AND HARDWARE FOR PAYMENT



VERTICAL U1L1, U9L9
USE PROTOTYPE TO GET PRECISE DIMENSIONS
(SEE SHEET 33/52)

*** CONTRACTOR SHALL FIELD VERIFY PIN SIZES**

M:\23289 (EP Ferris - LOG-CR21B Truss Rehab)\119717_LOG_CR21\Design\Structures\119717_SM001.dgn Sheet 1/28/2025 2:11:17 PM jef

DESIGN AGENCY
DGL Consulting Engineers, LLC
3455 Briarfield Blvd. Suite E
Maumee, Ohio 43537 (419) 535-1015

DESIGNED	DRAWN	REVIEWED	DATE
BLS	BLS/JEF	JTY	5-24
CHECKED	REVISED	STRUCTURE FILE NUMBER	
DGB		4631838	

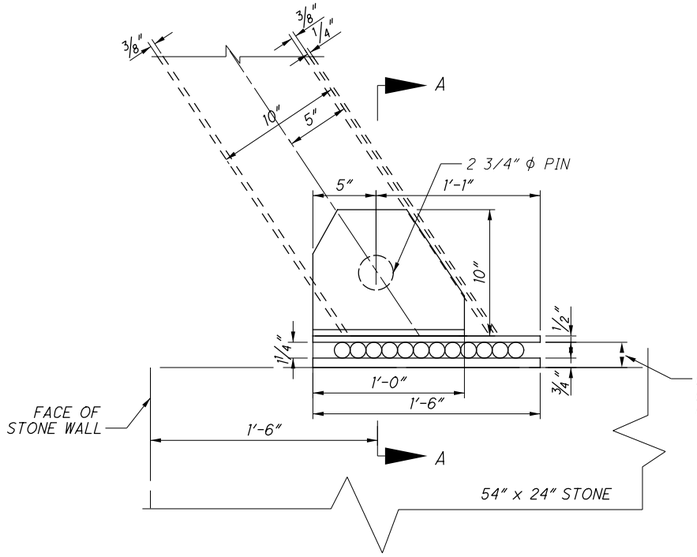
FLOOR BEAM/HIP VERTICAL/HANGER BOLT

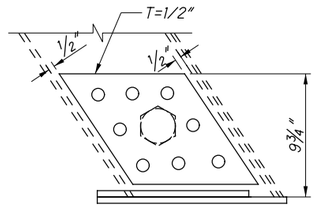
BRIDGE No. LOG-21B-0.05
OVER GREAT MIAMI RIVER

LOG-CR21B-0.05
PID No. 119717

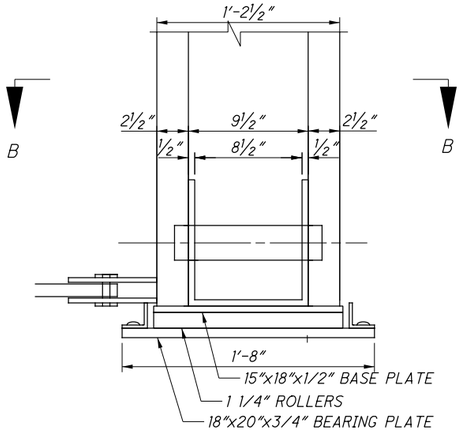
24 / 31

37 / 44

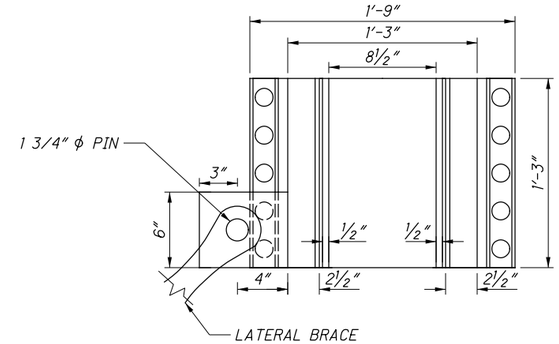




OUTSIDE GUSSET PLATE



VIEW A-A



VIEW B-B

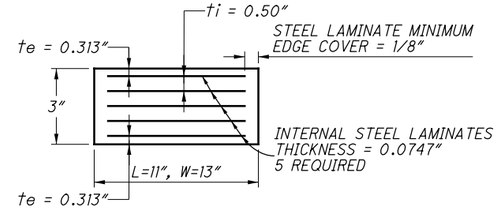
EXISTING (WEST) END POST BEARING

ELASTOMERIC BEARINGS:

THE ELASTOMER SHALL HAVE A HARDNESS OF 50 DUROMETER. THE BEARINGS WERE DESIGNED IN ACCORDANCE WITH SECTION 14.7.6 (METHOD A) OF THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS. THE LONG-TERM COMPRESSION PROOF LOAD TEST (AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, DIVISION II, SECTION 18.7.2.6) IS NOT REQUIRED.

BEARING POSITION:

POSITION ELASTOMERIC BEARINGS SO THAT, WHEN THE COMPLETED BRIDGE IS AT 60°F (16°C), THE ELASTOMERIC BEARINGS ARE VERTICAL.

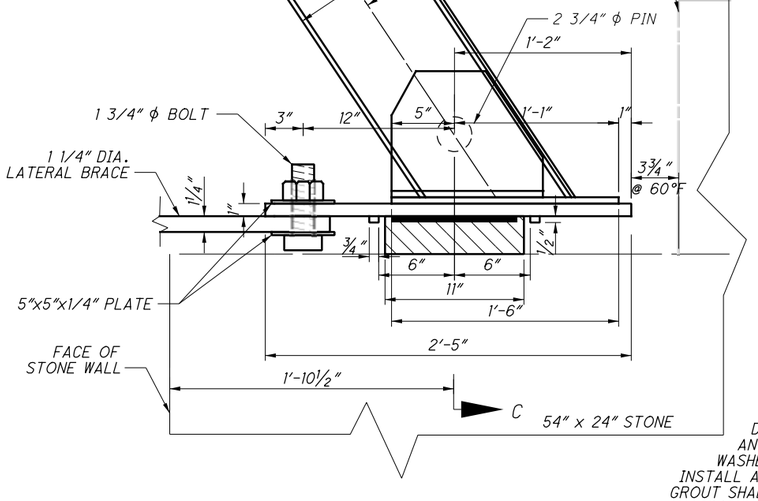


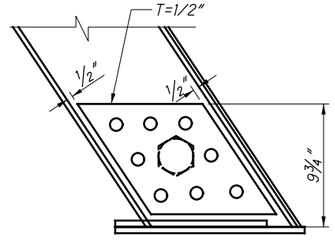
LAMINATED ELASTOMERIC EXPANSION BEARING

50 DUROMETER

EXPANSION BEARING (WEST END) :

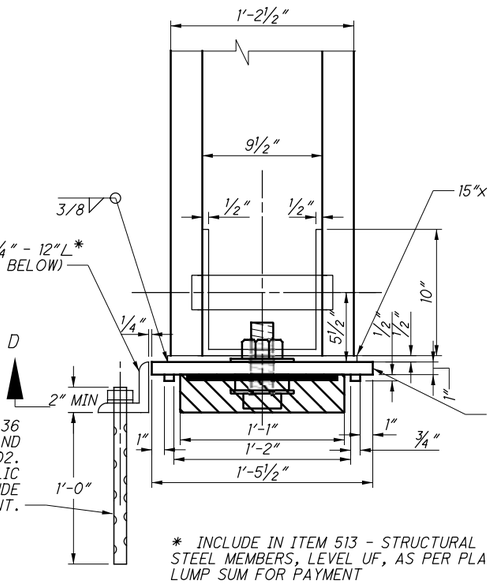
DEAD LOAD REACTION = 47.26 k
LIVE LOAD REACTION = 45.72 k
MAXIMUM DESIGN LOAD = 92.98 k



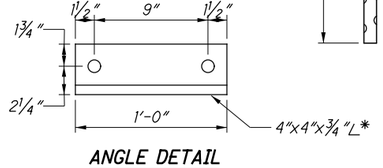


OUTSIDE GUSSET PLATE

KEEP PLATES AND RIVETS CLEAN AND GALVANIZED AS UNITS.



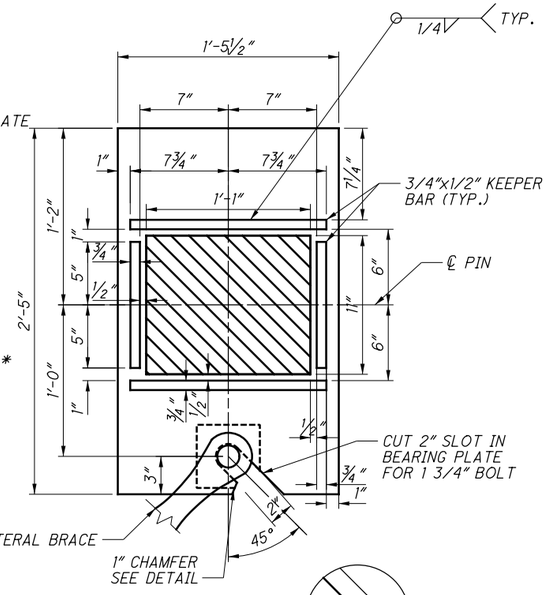
DRILL 1 3/4" DIA. HOLE FOR 1" DIA. F1554 GRADE 36 ANCHOR SWEDGE BOLT. ANCHOR BOLTS , NUTS, AND WASHERS SHALL BE GALVANIZED ACCORDING TO 711.02. INSTALL ANCHOR BOLTS PER 510. NONSHRINK NONMETALLIC GROUT SHALL MEET THE REQUIREMENTS OF 705.20. INCLUDE DOWEL HOLES AND ANCHOR BOLTS WITH * FOR PAYMENT.



ANGLE DETAIL

* INCLUDE IN ITEM 513 - STRUCTURAL STEEL MEMBERS, LEVEL UF, AS PER PLAN, LUMP SUM FOR PAYMENT

VIEW C-C



VIEW D-D

11"x13"x3" ELASTOMERIC BEARING PAD

CHAMFER DETAIL

PROPOSED (WEST) END POST BEARING

DESIGN AGENCY
DGL Consulting Engineers, LLC
3455 Briarfield Blvd. Suite E
Maumee, Ohio 43537 (419) 535-1015

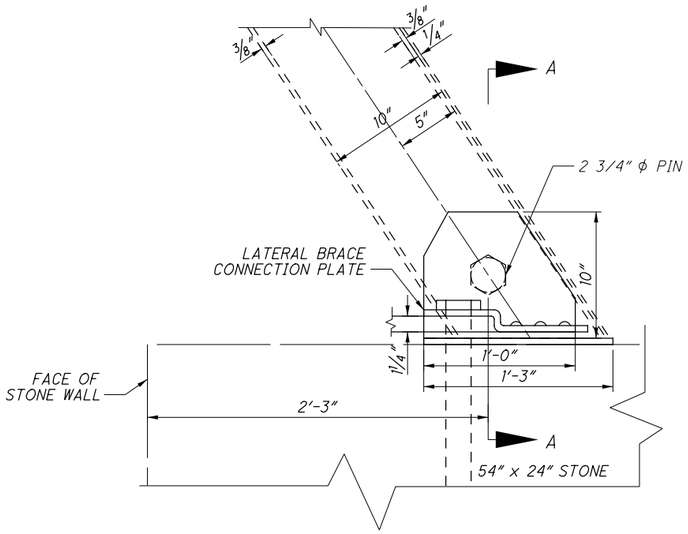
DESIGNED IMF | DRAWN ARM/JEF | REVIEWED JTY | DATE 5-24
CHECKED DGB | REVISED | STRUCTURE FILE NUMBER 4631838

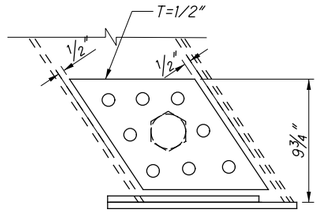
ENDPOST EXPANSION BEARING (WEST END)
BRIDGE No. LOG-21B-0.05
OVER GREAT MIAMI RIVER

LOG-CR21B-0.05
PID No. 119717

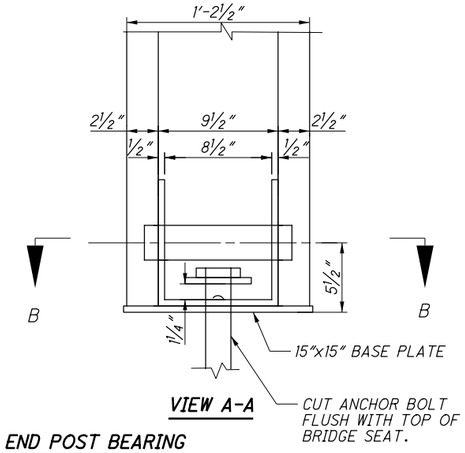
25 / 31
38 / 44

M:\23289 (EP Ferris - LOG-CR21B Truss Rehab)\119717_LOG_CR21\Design\Structures\119717_SB001.dgn Sheet 11/7/2024 10:35:37 AM jef



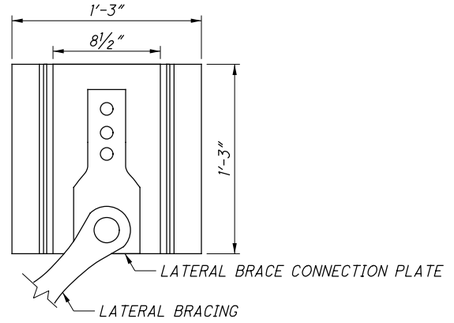


OUTSIDE GUSSET PLATE



VIEW A-A

EXISTING (EAST) END POST BEARING



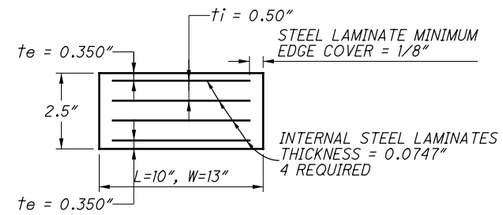
VIEW B-B

ELASTOMERIC BEARINGS:

THE ELASTOMER SHALL HAVE A HARDNESS OF 50 DUROMETER. THE BEARINGS WERE DESIGNED IN ACCORDANCE WITH SECTION 14.7.6 (METHOD A) OF THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS. THE LONG-TERM COMPRESSION PROOF LOAD TEST (AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, DIVISION II, SECTION 18.7.2.6) IS NOT REQUIRED.

BEARING POSITION:

POSITION ELASTOMERIC BEARINGS SO THAT, WHEN THE COMPLETED BRIDGE IS AT 60°F (16°C), THE ELASTOMERIC BEARINGS ARE VERTICAL.

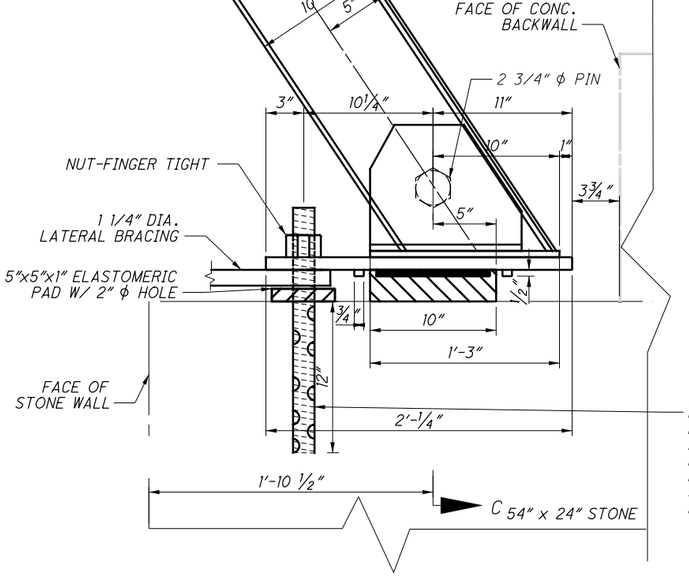


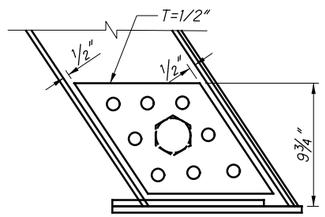
LAMINATED ELASTOMERIC RESTRAINED BEARING

50 DUROMETER

RESTRAINED BEARING (EAST END) :

DEAD LOAD REACTION = 47.26 k
LIVE LOAD REACTION = 45.72 k
MAXIMUM DESIGN LOAD = 92.98 k

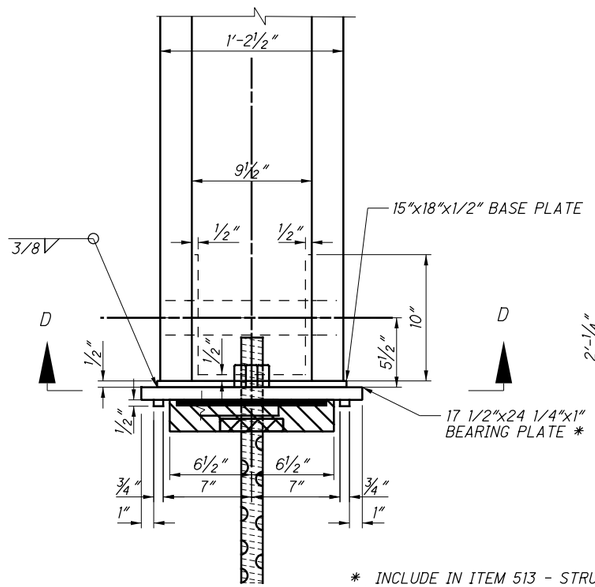




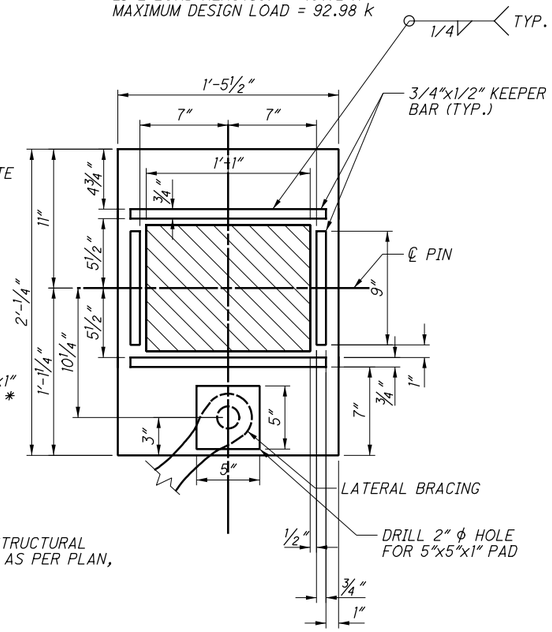
OUTSIDE GUSSET PLATE

KEEP PLATES AND RIVETS CLEAN AND GALVANIZED AS UNITS

*DRILL 2 1/2" ϕ HOLE FOR 1 3/4" ϕ F1554 GRADE 36 ANCHOR SWEDGE BOLT. ANCHOR BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED ACCORDANCE TO 711.02. INSTALL BOLT PER 510. FILL WITH 705.04 JOINT SEALER. INCLUDE DOWEL HOLES AND ANCHOR BOLTS WITH * FOR PAYMENT.*



VIEW C-C



VIEW D-D

* INCLUDE IN ITEM 513 - STRUCTURAL STEEL MEMBERS, LEVEL UF, AS PER PLAN, LUMP SUM FOR PAYMENT

10"x13"x2 1/2" ELASTOMERIC BEARING PAD

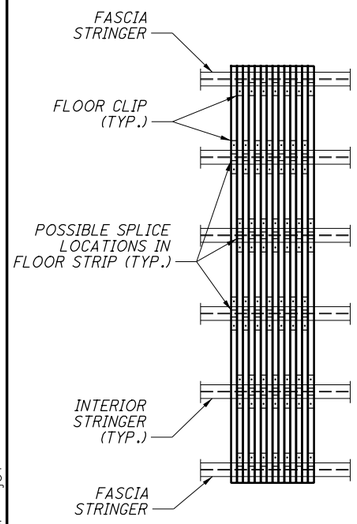
PROPOSED (EAST) END POST BEARING

DESIGN AGENCY
DGL Consulting Engineers, LLC
3455 Briarfield Blvd. Suite E
Maumee, Ohio 43537 (419) 535-1015

DESIGNED	DRAWN	REVIEWED	DATE
IMK	ARM/JEF	JTY	5-24
CHECKED	REVISED	STRUCTURE FILE NUMBER	
DGB		4631838	

ENDPOST RESTRAINED BEARING (EAST END)
BRIDGE No. LOG-21B-0.05
OVER GREAT MIAMI RIVER

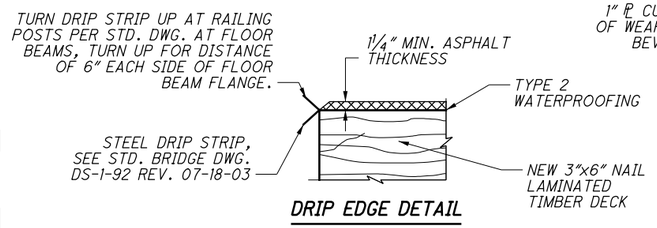
LOG-CR21B-0.05
PID No. 119717



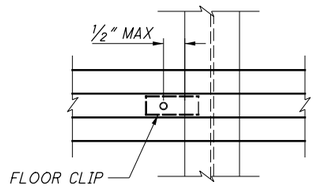
PERMISSIBLE

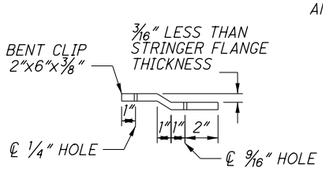
FLOOR CLIP LAYOUT

FLOOR CLIPS AT 1'-0" MAX. INTERVALS AS SHOWN (NOT TO SCALE)

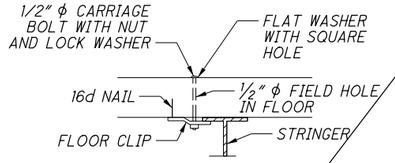


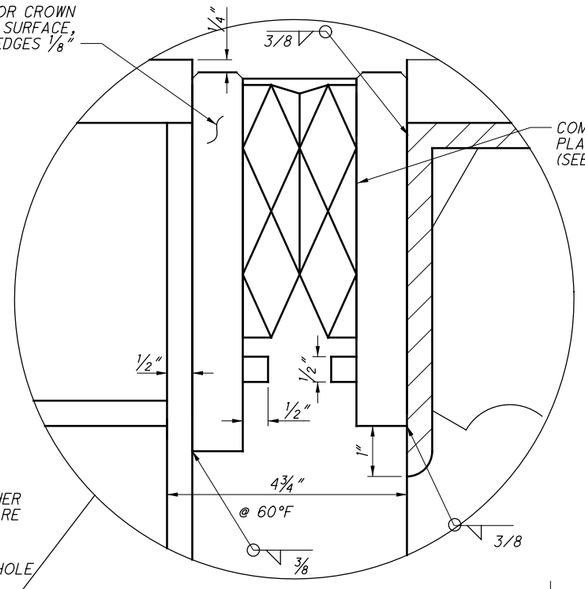
DRIP EDGE DETAIL

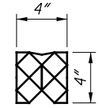




FLOOR CLIP DETAILS

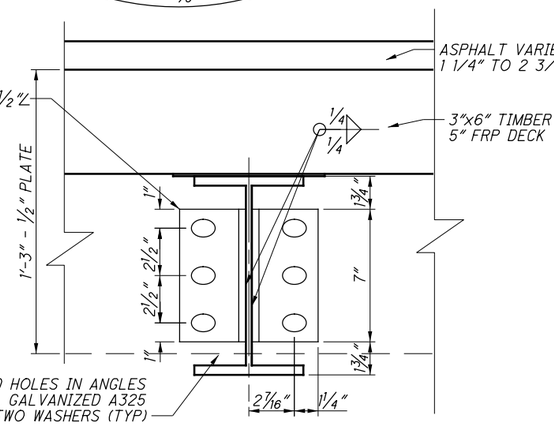




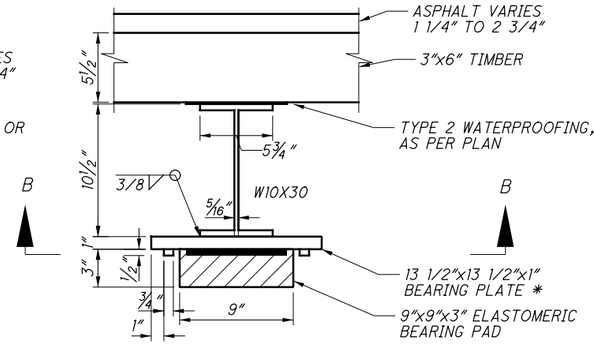


COMPRESSION SEAL DETAIL

FURNISH MATERIAL CONFORMING TO 705.11 ACCEPTED MANUFACTURERS ARE: DS BROWN (MODEL CV4000), WATSON & BOWMAN-ACME (MODEL WJ400) OR AN APPROVED EQUIVALENT.

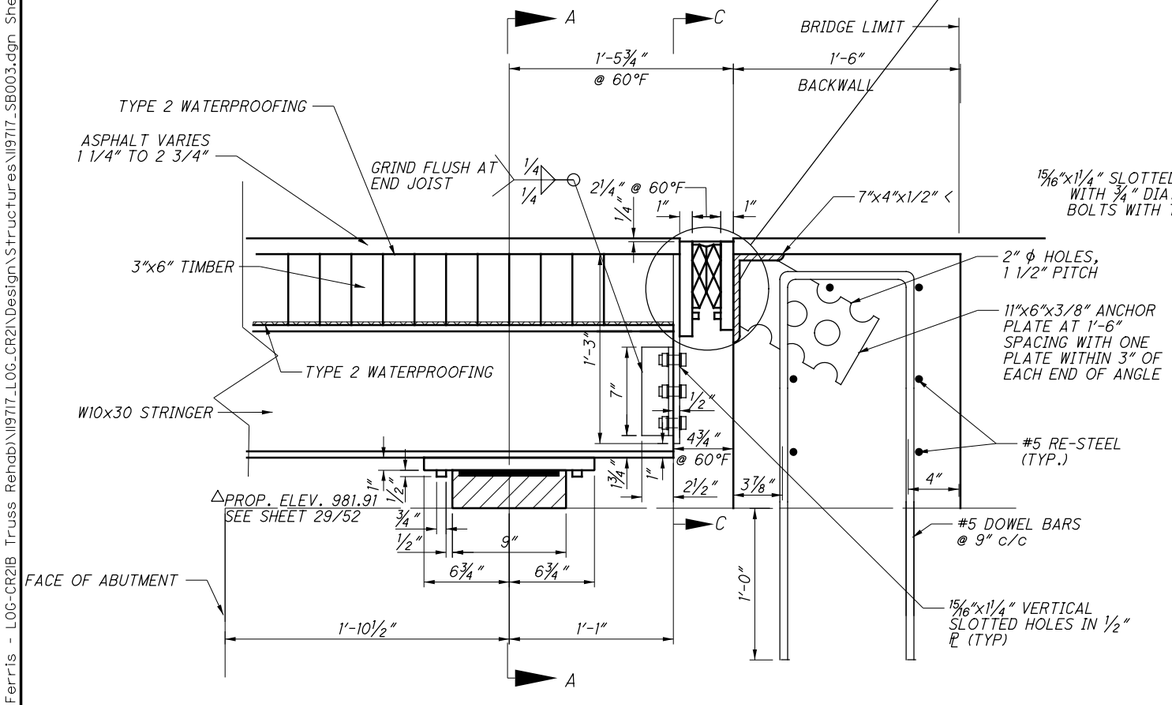


VIEW C-C

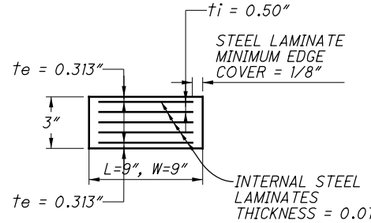


VIEW A-A

* INCLUDE IN ITEM 513 - STRUCTURAL STEEL MEMBERS, LEVEL UF, AS PER PLAN, LUMP SUM FOR PAYMENT.



EXPANSION STRINGER (WEST END BEARING & EXPANSION JOINT DETAILS

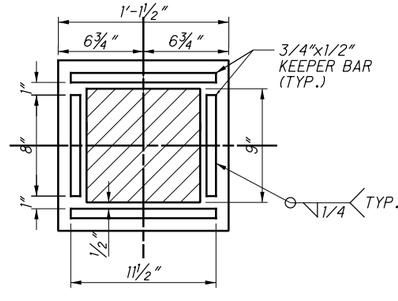


LAMINATED ELASTOMERIC EXPANSION BEARING

50 DUROMETER

EXPANSION BEARING (WEST END) :

DEAD LOAD REACTION = 2.70 k
LIVE LOAD REACTION = 20.80 k
MAXIMUM DESIGN LOAD = 23.50 k



VIEW B-B

ELASTOMERIC BEARINGS:

THE ELASTOMER SHALL HAVE A HARDNESS OF 50 DUROMETER. THE BEARINGS WERE DESIGNED IN ACCORDANCE WITH SECTION 14.7.6 (METHOD A) OF THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS. THE LONG-TERM COMPRESSION PROOF LOAD TEST (AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, DIVISION II, SECTION 18.7.2.6) IS NOT REQUIRED.

BEARING POSITION:

POSITION ELASTOMERIC BEARINGS SO THAT, WHEN THE COMPLETED BRIDGE IS AT 60°F (16°C), THE ELASTOMERIC BEARINGS ARE VERTICAL.

DESIGN AGENCY
DGL Consulting Engineers, LLC
3455 Briarfield Blvd. Suite E
Maumee, Ohio 43537 (419) 535-1015

DESIGNED IMK | DRAWN ARM/JEF | REVIEWED JTY | DATE 5-24

CHECKED DGB | REVISED | STRUCTURE FILE NUMBER 4631838

EXPANSION STRINGER (WEST) BEARING DETAILS/JOINT DETAILS

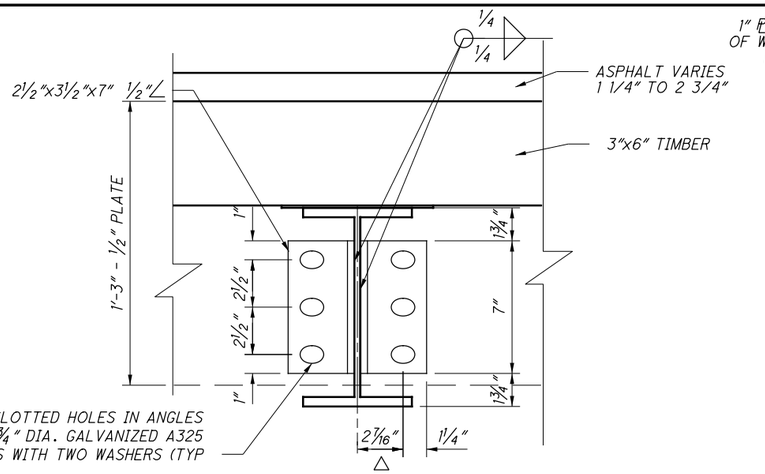
BRIDGE No. LOG-21B-0.05
OVER GREAT MIAMI RIVER

LOG-CR21B-0.05
PID No. 119717

27 / 31

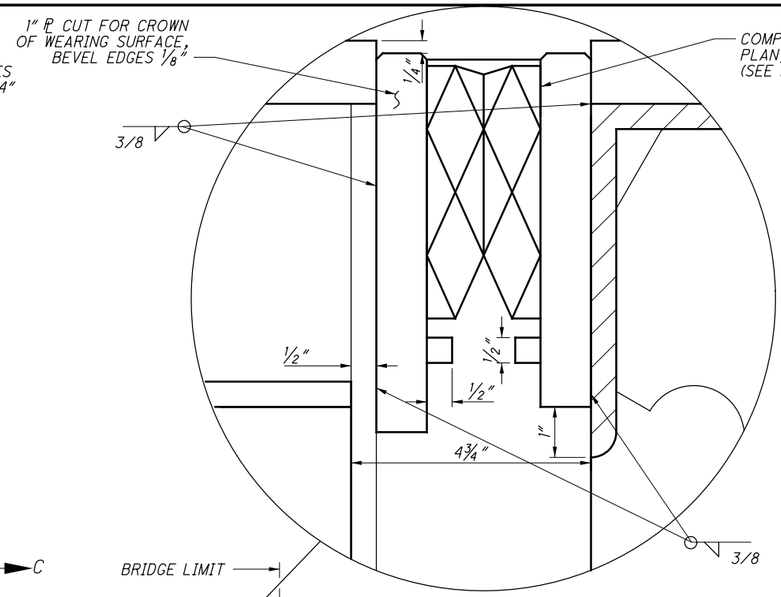
40 / 44

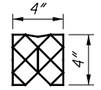
M:\23289 (EP Ferris - LOG-CR2B Truss Rehab)\119717_LOG_CR21\Design\Structures\119717_SB003.dgn Sheet 1/28/2025 2:15:33 PM jef



△ SEE SHEET 45/52

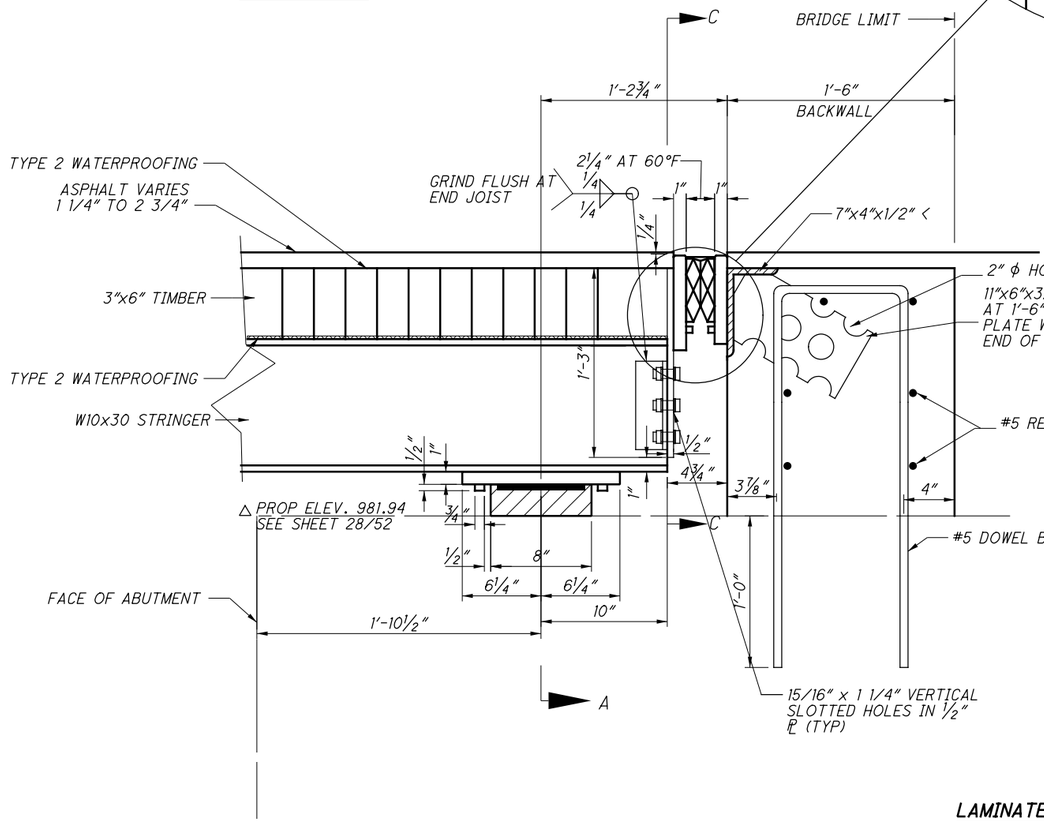
VIEW C-C



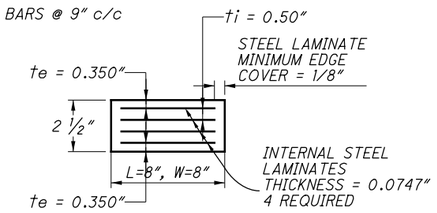


COMPRESSION SEAL DETAIL

FURNISH MATERIAL CONFORMING TO 705.11 ACCEPTED MANUFACTURERS ARE: DS BROWN (MODEL CV4000), WATSON & BOWMAN-ACME (MODEL WJ400) OR AN APPROVED EQUIVALENT.



RESTRAINED STRINGER (EAST END BEARING & EXPANSION JOINT DETAILS

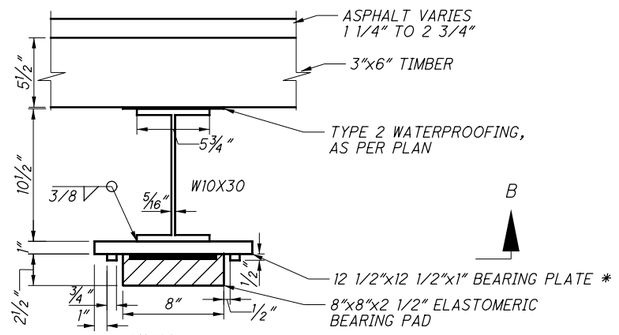


LAMINATED ELASTOMERIC RESTRAINED BEARING

50 DUROMETER

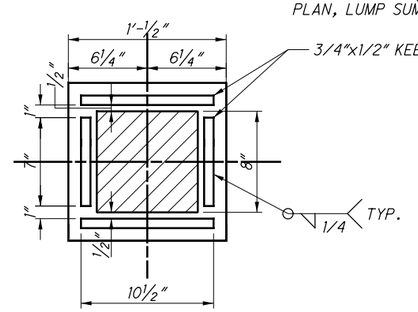
RESTRAINED BEARING (EAST END) :

DEAD LOAD REACTION = 2.70 k
LIVE LOAD REACTION = 20.80 k
MAXIMUM DESIGN LOAD = 23.50 k



VIEW A-A

* INCLUDE IN ITEM 513 - STRUCTURAL STEEL MEMBERS, LEVEL UF, AS PER PLAN, LUMP SUM FOR PAYMENT.



VIEW B-B

ELASTOMERIC BEARINGS:

THE ELASTOMER SHALL HAVE A HARDNESS OF 50 DUROMETER. THE BEARINGS WERE DESIGNED IN ACCORDANCE WITH SECTION 14.7.6 (METHOD A) OF THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS. THE LONG-TERM COMPRESSION PROOF LOAD TEST (AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, DIVISION II, SECTION 18.7.2.6) IS NOT REQUIRED.

BEARING POSITION:

POSITION ELASTOMERIC BEARINGS SO THAT, WHEN THE COMPLETED BRIDGE IS AT 60°F (16°C), THE ELASTOMERIC BEARINGS ARE VERTICAL.

DESIGN AGENCY
DGL Consulting Engineers, LLC
3455 Briar Field Blvd. Suite E
Maumee, Ohio 43537 (419) 535-1015

DESIGNED	DRAWN	REVIEWED	DATE
IMK	ARM/JEF	JTY	05-24
CHECKED	REVISED	STRUCTURE FILE NUMBER	
DGB		4631838	

RESTRAINED STRINGER EAST BEARING DETAILS/JOINT DETAILS
BRIDGE No. LOG-21B-0.05
OVER GREAT MIAMI RIVER

LOG-CR21B-0.05
PID No. 119717

28 / 31

41
44

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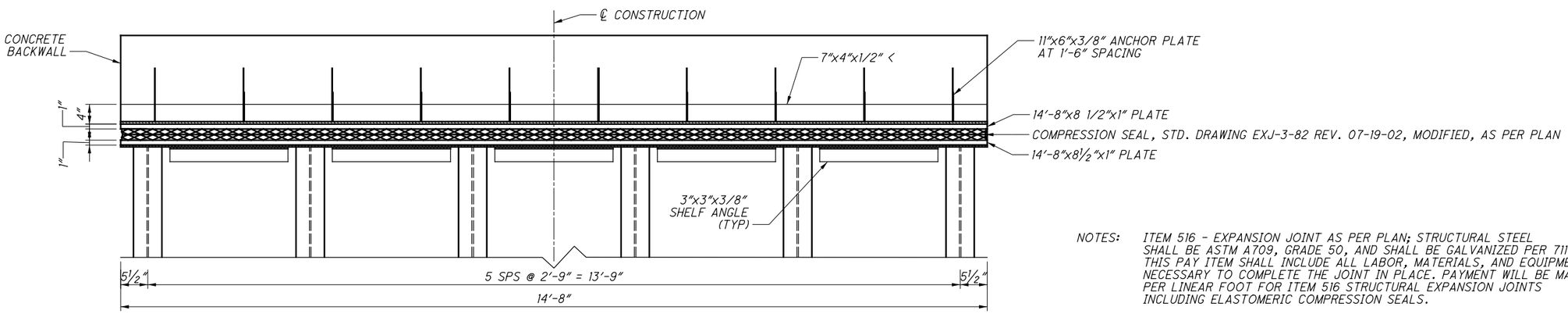
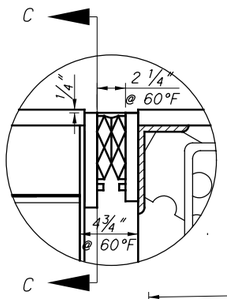
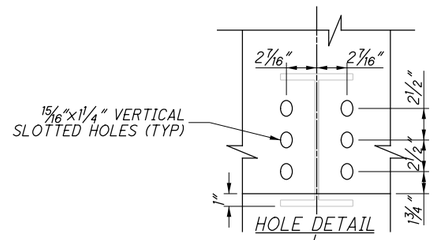


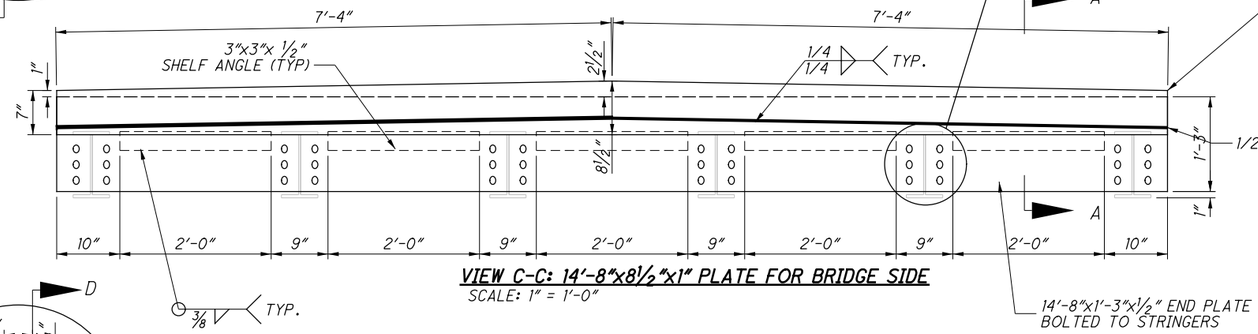
NOTES: ITEM 516 - EXPANSION JOINT AS PER PLAN; STRUCTURAL STEEL SHALL BE ASTM A709, GRADE 50, AND SHALL BE GALVANIZED PER 711.02. THIS PAY ITEM SHALL INCLUDE ALL LABOR, MATERIALS, AND EQUIPMENT NECESSARY TO COMPLETE THE JOINT IN PLACE. PAYMENT WILL BE MADE PER LINEAR FOOT FOR ITEM 516 STRUCTURAL EXPANSION JOINTS INCLUDING ELASTOMERIC COMPRESSION SEALS.

COMPRESSION SEALS - FURNISH MATERIAL CONFORMING TO 705.11 ACCEPTED MANUFACTURERS ARE: DS BROWN (MODEL CV4000), WATSON & BOWMAN-ACME (MODEL WJ400) OR AN APPROVED EQUIVALENT.



PLAN
SCALE: 1" = 1'-0"

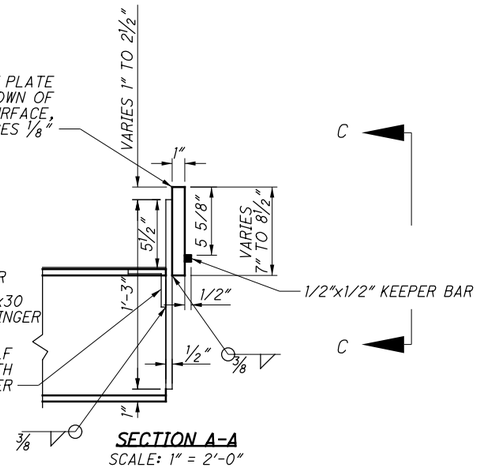




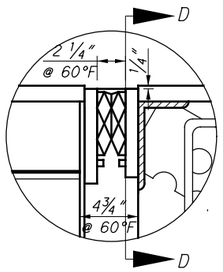
VIEW C-C: 14'-8"x8½"x1" PLATE FOR BRIDGE SIDE
SCALE: 1" = 1'-0"

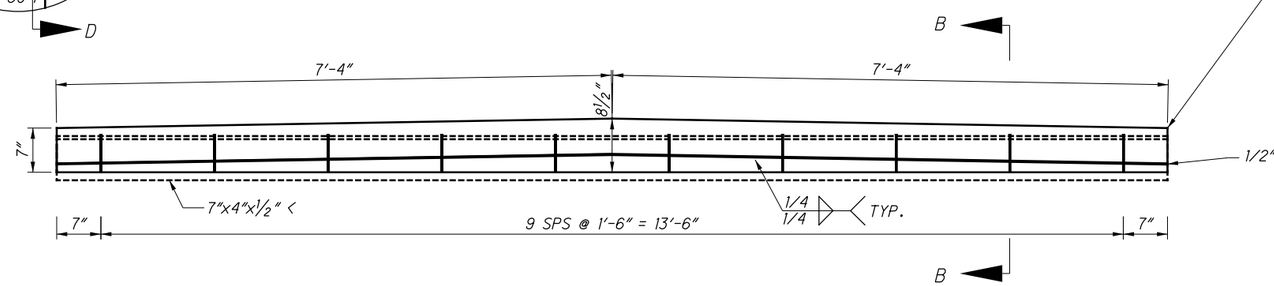
14'-8" x 8½" x 1" PLATE CUT FOR CROWN OF WEARING SURFACE, BEVEL EDGES ⅛"

1/2"x1/2" KEEPER BAR

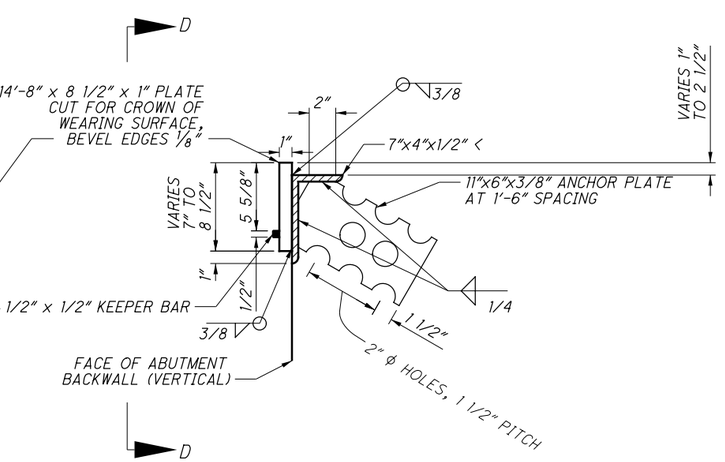


SECTION A-A
SCALE: 1" = 2'-0"





VIEW D-D: 14'-8"x8 1/2"x1" PLATE FOR ABUTMENT SIDE
SCALE: 1" = 1'-0"



SECTION B-B
SCALE: 1" = 2'-0"

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DESIGN AGENCY
DGL Consulting Engineers, LLC
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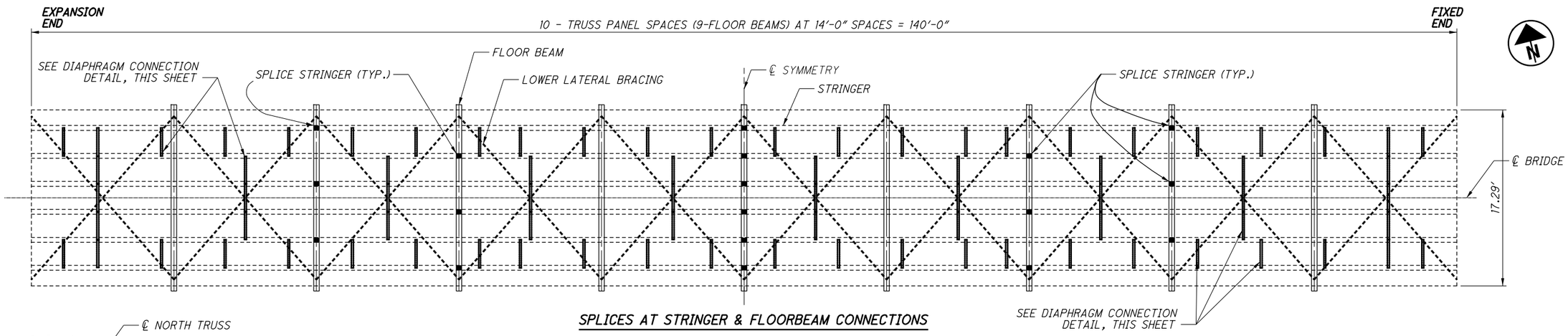
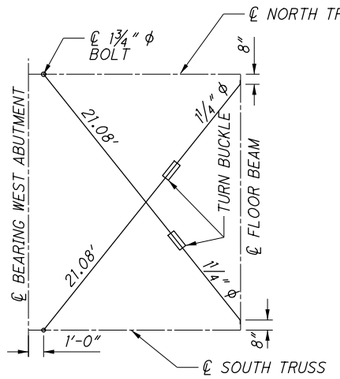
DESIGNED	DRAWN	REVIEWED	DATE
ARM	ARM/JEF	JTY	5-24
CHECKED	REVISED	STRUCTURE FILE NUMBER	
DGB		4631838	

BRIDGE EXPANSION/RESTRAINED JOINT DETAILS
BRIDGE No. LOG-21B-0.05
OVER GREAT MIAMI RIVER

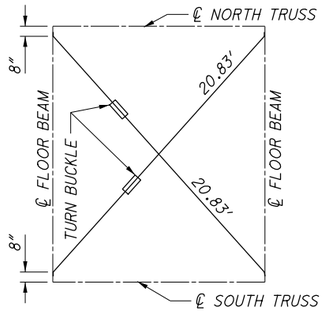
LOG-CR21B-0.05
PID No. 119717



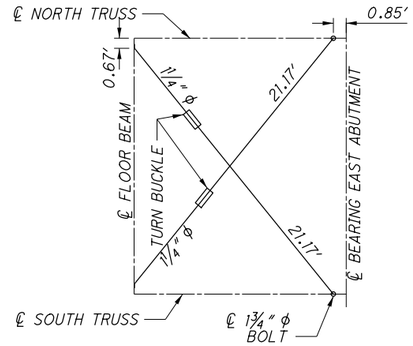
SPLICES AT STRINGER & FLOORBEAM CONNECTIONS



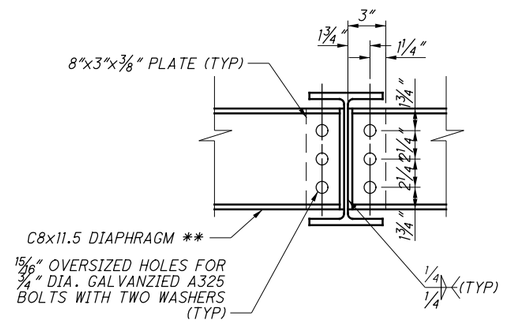
LOWER LATERAL BRACING
WEST MOST BAY



LOWER LATERAL BRACING
MIDDLE BAYS

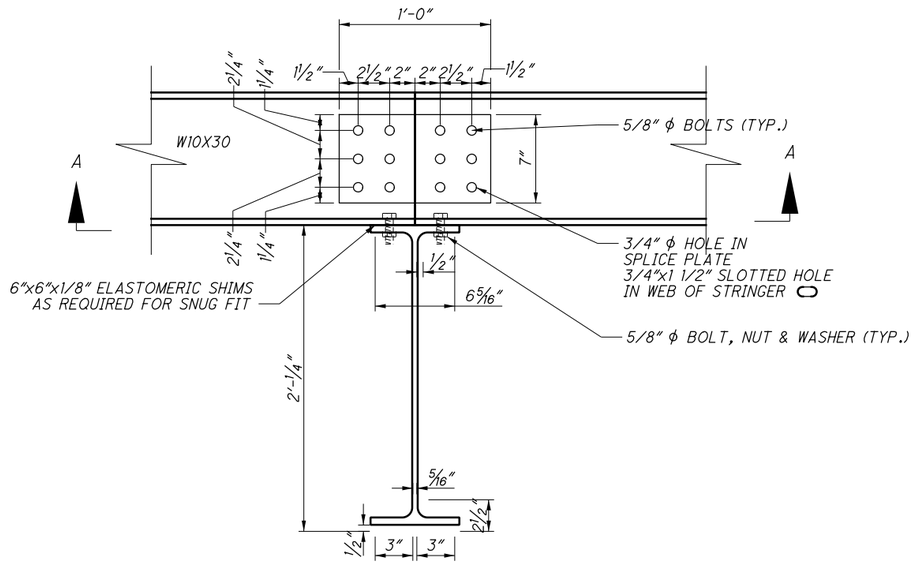


LOWER LATERAL BRACING
EAST MOST BAY

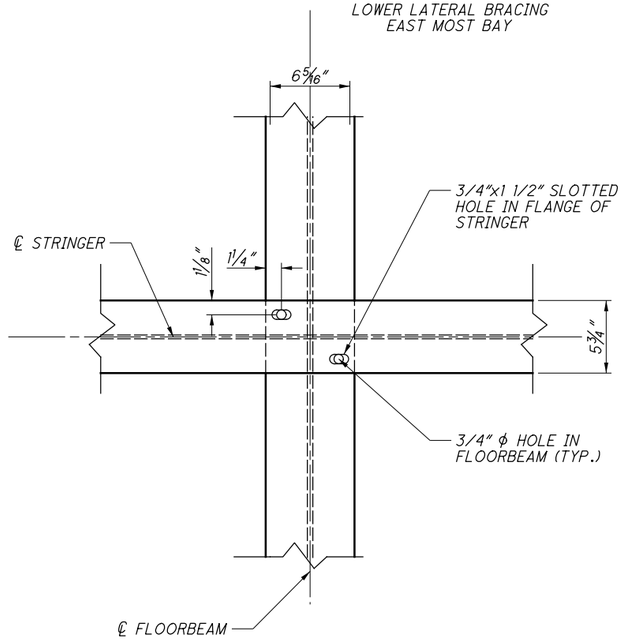


DIAPHRAGM CONNECTION DETAIL

**INCLUDE WITH ITEM 513 - STRUCTURAL STEEL MEMBERS, LEVEL 6, AS PER PLAN FOR PAYMENT



STRINGER CONNECTION & SPLICE AT FLOORBEAMS AT DESIGNATED LOCATIONS



VIEW A-A

DESIGN AGENCY
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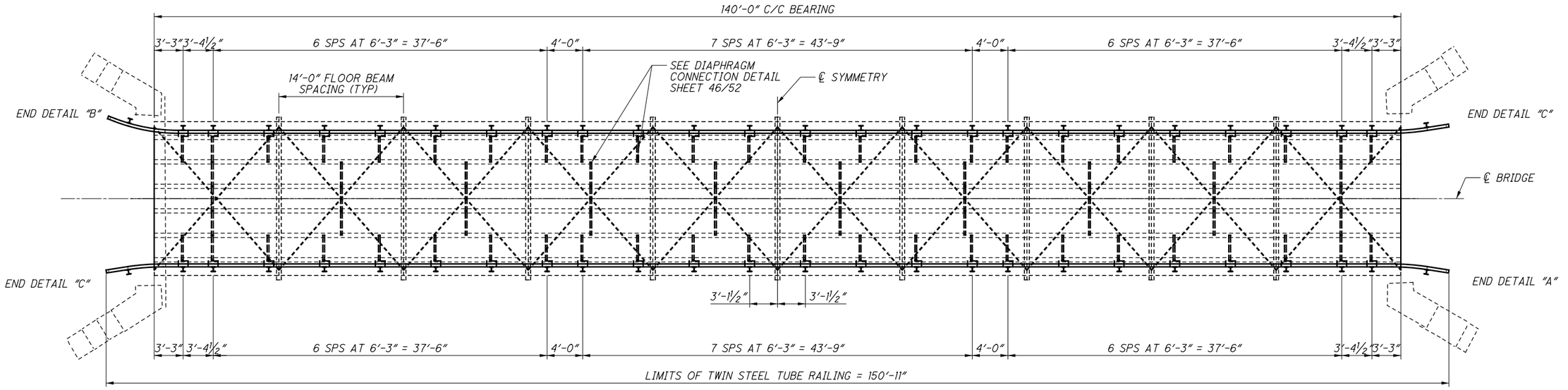
DESIGNED	DRAWN	REVIEWED	DATE
ARM	ARM/JEF	JTY	5-24
CHECKED	REVISED	STRUCTURE FILE NUMBER	
DGB		4631838	

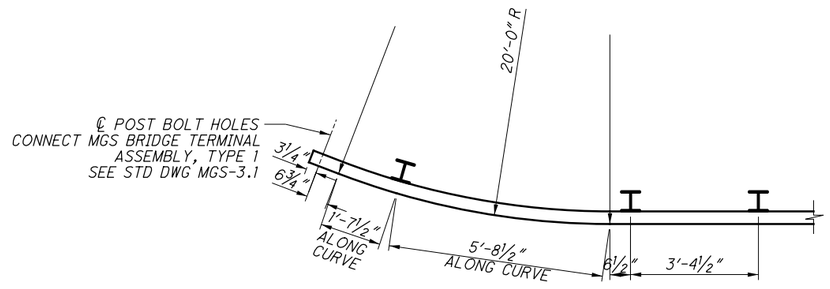
STRINGER BEARINGS & SPLICES AT FLOOR BEAMS

BRIDGE No. LOG-21B-0.05
OVER GREAT MIAMI RIVER

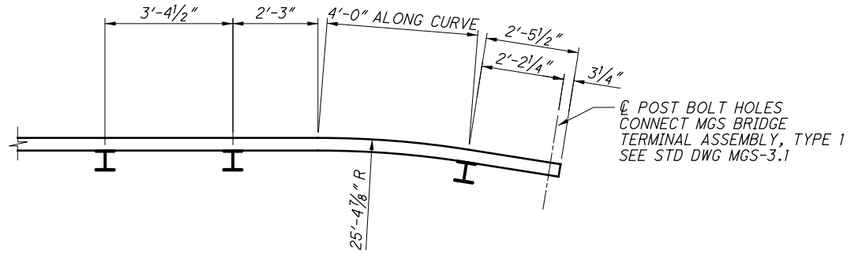
LOG-CR21B-0.05
PID No. 119717



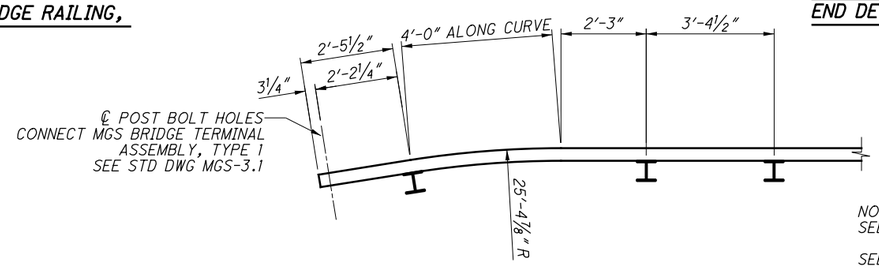
RAILING PLAN



TWIN STEEL TUBE BRIDGE RAILING, END DETAIL "B"



TWIN STEEL TUBE BRIDGE RAILING, END DETAIL "A"



TWIN STEEL TUBE BRIDGE RAILING, END DETAIL "C"

NOTE:
SEE ABUTMENT SHEETS 28/52 AND 29/52 FOR FLUSH MOUNTED POST ANCHOR PLATE DETAIL.

SEE SHEET 31/52 FOR TWIN STEEL TUBE RAILING BRIDGE MOUNTING AND GUARDRAIL POST BACK UP DETAILS.

ITEM 517 - RAILING (TWIN STEEL TUBE), AS PER PLAN: INCLUDE FABRICATION OF THE SPECIAL END DETAILS AND PROVIDE SUFFICIENT EXPANSION GAPS TO ACCOMODATE 1¼" EXPANSION MOVEMENT RELATIVE TO THE FLUSH MOUNTED GUARDRAIL POST IN ITEM 517 - RAILING (TWIN STEEL TUBE), AS PER PLAN FOR PAYMENT.

DESIGN AGENCY
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DESIGNED	DRAWN	REVIEWED	DATE
IMK	BLS/JEF	JTY	5-24
CHECKED	REVISED	STRUCTURE FILE NUMBER	
DGB		4631838	

RAILING PLAN
BRIDGE No. LOG-21B-0.05
OVER GREAT MIAMI RIVER

LOG-CR21B-0.05
PID No. 119717

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