STANDARD DRAWINGS

REFER TO THE FOLLOWING STANDARD BRIDGE DRAWINGS:

AS-1-15	REVISED	7-17-15
AS-2-15	REVISED	1-18-19
BR-2-15	REVISED	1-21-22
EXJ-4-87	REVISED	7-15-22
GSD-1-19	REVISED	1-15-21
HL-50.21	REVISED	7-15-22

AND TO THE FOLLOWING SUPPLEMENTAL SPECIFICATIONS:

DATED SEE PROPOSAI 55800

DESIGN SPECIFICATIONS

THIS STRUCTURE CONFORMS TO THE "LRFD BRIDGE DESIGN SPECIFICATIONS" ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS, 2020, 9TH EDITION AND THE ODOT BRIDGE DESIGN MANUAL, 2020.

OPERATIONAL IMPORTANCE

A LOAD MODIFIER OF 1.0 HAS BEEN ASSUMED FOR THE DESIGN OF THIS STRUCTURE IN ACCORDANCE WITH THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, ARTICLE 1.3.5 AND THE ODOT BRIDGE DESIGN MANUAL, 2020.

DESIGN LOADING

VEHICULAR LIVE LOAD HL-93 FUTURE WEARING SURFACE (FWS) OF 0.0 KIPS/FT² (SUPERSTRUCTURE).

DESIGN DATA

CONCRETE CLASS QC2 WITH QC/QA - COMPRESSIVE STRENGTH 4.5 KSI (SUPERSTRUCTURE)

CONCRETE CLASS QC1 WITH QC/QA - COMPRESSIVE STRENGTH 4.0 KSI (SUBSTRUCTURE)

CONCRETE REINFORCEMENT:

UNCOATED STEEL	MINIMUM YIELD STRENGTH
REINFORCEMENT	60 KSI - ABUTMENTS
EPOXY COATED STEEL	MINIMUM YIELD STRENGTH
REINFORCEMENT	60 KSI - DECK

STRUCTURAL STEEL - ASTM A709 GRADE 50-YIELD STRENGTH 50.0 KSI

MONOLITHIC WEARING SURFACE

MONOLITHIC WEARING SURFACE IS ASSUMED, FOR DESIGN PURPOSES, TO BE 1 INCH THICK.

IN-STREAM WORK RESTRICTION

THE CONTRACTOR SHALL TAKE ALL PRECAUTIONS TO AVOID CONSTRUCTION IN AND/OR LIMIT DEMOLITION DEBRIS FROM ENTERING STREAMS OR WETLANDS. ANY MATERIAL THAT DOES FALL INTO STREAMS OR WETLANDS SHALL BE REMOVED AS SOON AS POSSIBLE. THE CONTRACTOR SHALL SUBMIT A PLAN TO PREVENT DEMOLITION DEBRIS FROM FALLING INTO THE RIVER FOR REVIEW PER CMS 501.05.

ALL PROJECTS INVOLVING JURISDICTIONAL WATERS OF THE UNITED STATED (STREAMS, RIVERS, NON-ISOLATED WETLANDS) AND/OR ISOLATED WETLANDS ARE SUBJECT TO REGULATION UNDER SECTIONS 404 AND 401 OF THE CLEAN WATER ACT, AND POSSIBLY OHIO EPA ISOLATED WETLAND LAW. IT IS ANTICIPATED THAT NO IN-STREAM WORK, OR WORK UNDER THE STREAM'S ORDINARY HIGH WATER MARK (OHWM) WILL BE NEEDED. THEREFORE NO WATERWAY PERMITS HAVE BEEN GRANTED FOR THIS PROJECT AND NO IN-STREAM WORK IS ALLOWED. IN THE PROJECT AREA, THE GRAND RIVER IS CONSIDERED JURISDICTIONAL WATERS.

SHOULD WORK (EITHER TEMPORARY OF PERMANENT) IN THE STREAM BE NEEDED: IT WILL REQUIRE A PERMIT AND AUTHORIZATION BY THE UNITED STATES ARMY CORPS OF ENGINEERS (USACE). THE CONTRACTOR SHALL NOT UTILIZE FILLS BELOW OHWM UNTIL SUCH ACTIVITY IS AUTHORIZED BY THE USACE. DETAILS OF THIS REQUIREMENT ARE DESCRIBED IN ODOT'S SUPPLEMENTAL SPECIFICATION 832.09.

USACE DEFINITION OF OHWM - THE ORDINARY HIGH WATER MARK IS THE LINE ON THE SHORES ESTABLISHED BY THE FLUCTUATIONS OF WATER AND INDICATED BY PHYSICAL CHARACTERISTICS SUCH AS A CLEAR, NATURAL LINE IMPRESSED ON THE BANK; SHELVING; CHANGES IN THE CHARACTER OF THE SOIL; DESTRUCTION OF TERRESTRIAL VEGETATION; THE PRESENCE OF LITTER AND DEBRIS; OR THE APPROPRIATE MEANS THAT CONSIDER THE CHARACTERISTICS OF THE SURROUNDING AREAS.

ITEM 202, PORTIONS OF STRUCTURE REMOVED, AS PER PLAN: THIS WORK CONSISTS OF THE REMOVAL OF CONCRETE DECKS INCLUDING SIDEWALKS, CONCRETE BRIDGE RAILINGS, METAL RAILINGS, DECK JOINTS AND OTHER APPURTENANCES FROM STEEL SUPPORTING SYSTEMS (BEAMS, GIRDERS, CROSS-FRAMES, ETC.). THE PROVISIONS OF ITEM 202 APPLY EXCEPT AS SPECIFIED BY THE FOLLOWING NOTES. PERFORM WORK CAREFULLY DURING DECK REMOVALS TO PROTECT PORTIONS OF SUCH SYSTEMS THAT ARE TO BE SALVAGED AND INCORPORATED INTO THE PROPOSED STRUCTURE. THE USE OF EXPLOSIVES, HEADACHE BALLS AND/OR HOE RAM TYPE OF EQUIPMENT IS PROHIBITED. SUBMIT CONSTRUCTION PLANS ACCORDING TO C&MS 501.05.

PROTECTION OF STEEL SUPPORT SYSTEMS:

BEFORE DECK SLAB CUTTING IS PERMITTED, DRAW THE OUTLINE OF PRIMARY STEEL MEMBERS IN CONTACT WITH THE BOTTOM OF THE DECK ON THE SURFACE OF DECK. DRILL SMALL DIAMETER PILOT HOLES 2 INCHES OUTSIDE THESE LINES TO CONFIRM THE LOCATION OF FLANGE EDGES. DECK CUTS OVER OR WITHIN 2 INCHES OF FLANGE EDGES SHALL NOT EXTEND LOWER THAN THE BOTTOM LAYER OF DECK SLAB REINFORCING STEEL. CUTS MADE OUTSIDE 2 INCHES OF FLANGE EDGES MAY EXTEND THE FULL DEPTH OF THE DECK. PERFORM WORK CAREFULLY DURING CUTTING OF THE DECK SLAB TO AVOID DAMAGING STEEL MEMBERS THAT ARE TO BE INCORPORATED INTO THE PROPOSED STRUCTURE. REPLACE OR REPAIR STEEL MEMBERS DAMAGED BY THE DECK SLAB CUTTING OPERATIONS AT NO COST TO THE PROJECT. AT LEAST 7 DAYS BEFORE PERFORMING REPAIR WORK, SUBMIT A PROPOSED REPAIR PLAN, DEVELOPED BY AN OHIO REGISTERED PROFESSIONAL ENGINEER TO THE ENGINEER. OBTAIN THE ENGINEER'S APPROVAL BEFORE PERFORMING REPAIR.

REMOVAL METHODS:

THE CONTRACTOR MAY REMOVE CONCRETE BY CUTTING AND BY MEANS OF HAND OPERATED PNEUMATIC HAMMERS EMPLOYING POINTED OR BLUNTED CHISEL TYPE TOOLS. FOR REMOVALS OVER STRUCTURAL MEMBERS (PRESTRESSED BOX BEAM, I-BEAM, STEEL BEAM STEEL GIRDER, ETC.), THE CONTRACTOR MAY USE A HAMMER HEAVIER THAN 35 POUNDS BUT NOT TO EXCEED 90 POUNDS UNLESS APPROVED BY THE ENGINEER. REMOVAL METHODS OVER STRUCTURAL MEMBERS SHALL ENSURE ADEQUATE DEPTH CONTROL AND PREVENT NICKING OR GOUGING THE PRIMARY STRUCTURAL MEMBERS. DUE TO THE POSSIBLE PRESENCE OF ATTACHMENTS (E.G., FINISHING MACHINE, SCUPPER AND FORM SUPPORTS, ETC.) TO EXISTING STRUCTURAL MEMBERS, PERFORM WORK CAREFULLY DURING DECK REMOVAL TO AVOID DAMAGING STRUCTURAL MEMBERS THAT ARE TO REMAIN. REPLACE OR REPAIR STRUCTURAL MEMBERS DAMAGED BY THE REMOVAL OPERATIONS AT NO COST TO THE PROJECT. AT LEAST 7 DAYS BEFORE PERFORMING REPAIR WORK, SUBMIT A PROPOSED REPAIR PLAN, DEVELOPED BY AN OHIO REGISTERED PROFESSIONAL ENGINEER TO THE ENGINEER. OBTAIN THE ENGINEER'S APPROVAL BEFORE PERFORMING REPAIR.

DECK REMOVAL - COMPOSITE DECK DESIGNS STEEL

SUPERSTRUCTURES: DUE TO THE PRESENCE OF WELDED STUDS TO THE EXISTING STRUCTURAL STEEL, SUBMIT A DETAILED PROCEDURE OF THE DECK REMOVAL TO THE ENGINEER AT LEAST 7 DAYS BEFORE CONSTRUCTION BEGINS. DEPARTMENT ACCEPTANCE IS NOT REQUIRED. THE PROCEDURE SHALL INCLUDE ALL DETAILS, EQUIPMENT AND METHODS TO BE USED FOR REMOVAL OF THE CONCRETE OVER THE FLANGES AND AROUND THE STUDS. REPLACE OR REPAIR MAIN STEEL AND STUDS DAMAGED BY THE REMOVAL OPERATIONS AT NO COST TO THE PROJECT. THE CONTRACTOR HAS THE OPTION TO REMOVE ALL OF THE EXISTING STUDS AT NO COST TO THE PROJECT FOR PLACEMENT OF PROPOSED STUDS. AT LEAST 7 DAYS BEFORE PERFORMING REPAIR WORK, SUBMIT A PROPOSED REPAIR AND/OR STUD REMOVAL PLAN, DEVELOPED BY AN OHIO REGISTERED PROFESSIONAL ENGINEER TO THE ENGINEER. OBTAIN THE ENGINEER'S APPROVAL BEFORE PERFORMING WORK

EXISTING WELDED ATTACHMENTS:

REMOVE EXISTING WELDED ATTACHMENTS (E.G., FINISHING MACHINE AND FORM SUPPORTS; AND SUPPORTS FOR SCUPPERS AND BULB ANGLES WHICH ARE TO BE REMOVED) LOCATED IN THE DESIGNATED TENSION PORTIONS OF THE TOP FLANGES OF EXISTING STEEL MEMBERS AND GRIND THE FLANGE SURFACES SMOOTH. CAREFULLY GRIND PARALLEL TO THE FLANGES.

CUT LINE CONSTRUCTION JOINT PREPARATION:

SAW CUT BOUNDARIES OF PROPOSED CONCRETE REMOVALS 1 INCH DEEP. REMOVE CONCRETE TO A ROUGH SURFACE. LEAVE THE EXISTING REINFORCING STEEL, IF REQUIRED IN THE PLANS, IN PLACE. INSTALL DOWEL BARS IF SPECIFIED. PRIOR TO CONCRETE PLACEMENT ABRASIVELY CLEAN JOINT SURFACES AND EXISTING EXPOSED REINFORCEMENT TO REMOVE LOOSE AND DISINTEGRATED CONCRETE AND LOOSE RUST. THOROUGHLY CLEAN THE JOINT SURFACE AND EXPOSED REINFORCEMENT OF ALL DIRT, DUST, RUST OR OTHER FOREIGN MATERIAL BY THE USE OF WATER, AIR UNDER PRESSURE, OR OTHER METHODS THAT PRODUCE SATISFACTORY RESULTS. EXISTING REINFORCING STEEL DOES NOT HAVE TO HAVE A BRIGHT STEEL FINISH BUT REMOVE ALL PACK AND LOOSE RUST. THOROUGHLY DRENCH EXISTING CONCRETE SURFACES WITH CLEAN WATER AND ALLOW TO DRY TO A DAMP CONDITION BEFORE PLACING CONCRETE.

ITEM 202, PORTIONS OF STRUCTURE REMOVED, AS PER PLAN: (CONTINUED)

SUBSTRUCTURE CONCRETE REMOVAL:

REMOVE CONCRETE BY MEANS OF APPROVED PNEUMATIC HAMMERS EMPLOYING POINTED AND BLUNT CHISEL TOOLS. HYDRAULIC HOE-RAM TYPE HAMMERS WILL NOT BE PERMITTED. THE WEIGHT OF THE HAMMER SHALL NOT BE MORE THAN 35 POUNDS FOR REMOVAL WITHIN 18 INCHES OF PORTIONS TO BE PRESERVED. OUTSIDE THE 18 INCH LIMIT, THE CONTRACTOR MAY USE HAMMERS NOT EXCEEDING 90 POUNDS UPON THE APPROVAL OF THE ENGINEER. DO NOT PLACE PNEUMATIC HAMMERS IN DIRECT CONTACT WITH REINFORCING STEEL THAT IS TO BE RETAINED IN THE REBUILT STRUCTURE.

MEASUREMENT & PAYMENT:

THE DEPARTMENT WILL MEASURE THE QUANTITY OF REMOVALS ON A LUMP SUM BASIS. THE DEPARTMENT WILL PAY FOR THE ACCEPTED QUANTITIES OF REMOVALS AT THE CONTRACT PRICE FOR ITEM 202 -PORTIONS OF STRUCTURE REMOVED, AS PER PLAN.

EXISTING STRUCTURE VERIFICATION:

DETAILS AND DIMENSIONS SHOWN ON THESE PLANS PERTAINING TO THE EXISTING STRUCTURE HAVE BEEN OBTAINED FROM PLANS OF THE EXISTING STRUCTURE AND FROM FIELD OBSERVATIONS AND MEASUREMENTS. CONSEQUENTLY, THEY ARE INDICATIVE OF THE EXISTING STRUCTURE AND THE PROPOSED WORK BUT THEY SHALL BE CONSIDERED TENTATIVE AND APPROXIMATE. THE CONTRACTOR IS REFERRED TO C&MS SECTIONS 102.05, 105.02 AND 513.04*. BASE CONTRACT BID PRICES UPON A RECOGNITION OF THE UNCERTAINTIES DESCRIBED ABOVE AND UPON A PREBID EXAMINATION OF THE EXISTING STRUCTURE. HOWEVER, THE DEPARTMENT WILL PAY FOR ALL PROJECT WORK BASED UPON ACTUAL DETAILS AND DIMENSIONS THAT HAVE BEEN VERIFIED IN THE FIELD.



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

REPLACE ALL EXISTING REINFORCING STEEL BARS WHICH ARE TO BE INCORPORATED INTO THE NEW WORK AND ARE DEEMED BY THE ENGINEER TO BE MADE UNUSABLE BY CONCRETE REMOVAL OPERATIONS WITH NEW EPOXY COATED REINFORCING STEEL OF THE SAME SIZE AND COATING AT NO COST TO THE DEPARTMENT.

A QUANTITY OF 500 POUNDS IS INCLUDED IN THE ESTIMATED QUANTITIES FOR REPLACEMENT OF EXISTING REINFORCING IF REOURED

ITEM 509, EPOXY COATED REINFORCING STEEL, AS PER PLAN:

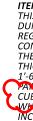
IN ADDITION TO THE PROVISIONS OF ITEM 509, FIELD BEND AND/OR FIELD CUT THE REINFORCING STEEL DESIGNATED IN THE PLANS, AS NECESSARY, IN ORDER TO MAINTAIN THE REQUIRED CLEARANCES AND BAR SPACINGS. REPAIR ALL DAMAGE TO THE EPOXY COATING, AS A RESULT OF THIS WORK, ACCORDING TO C&MS 709.00.

ITEM 512, REMOVAL OF EXISTING COATINGS FROM CONCRETE SURFACES, AS PER PLAN:

SHALL INCLUDE ALL MATERIALS, EQUIPMENT AND LABOR NECESSARY TO REMOVE THE EXISTING COATINGS AT THE REAR AND FORWARD ABUTMENT SEATS AND FACE OF ABUTMENTS.

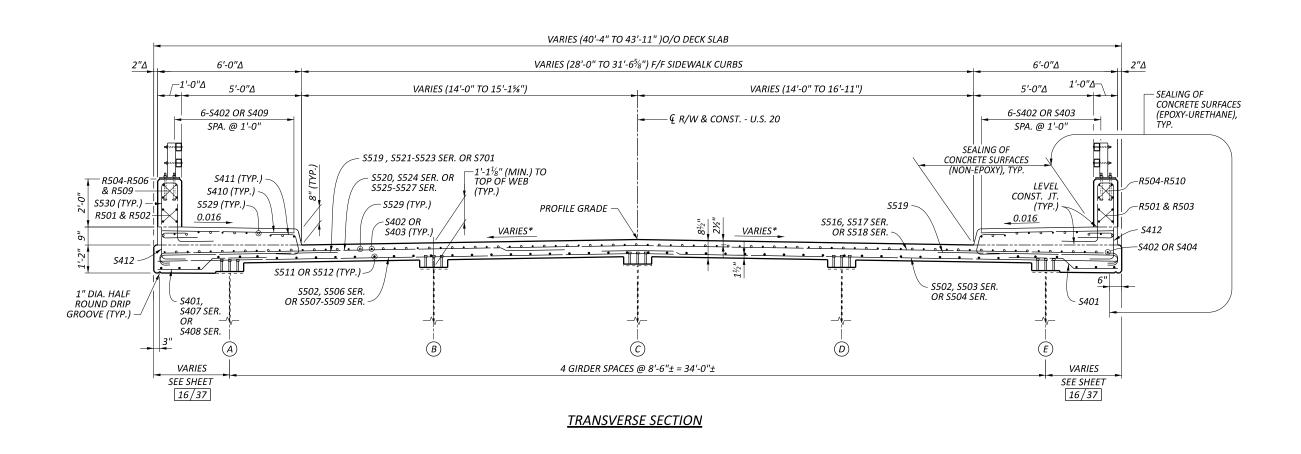
ITEM 516, JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE, AS PER PLAN:

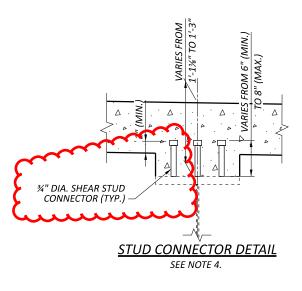
THIS WORK CONSISTS OF TEMPORARY SUPPORT AND/OR REPOSITIONING OF THE EXISTING SUPERSTRUCTURE TO THE DIMENSIONS AND REQUIREMENTS DEFINED IN THE PROJECT PLANS. SUBMIT CONSTRUCTION PLANS IN ACCORDANCE WITH C&MS 501.05. THE JACKING OPERATION IS LIMITED TO THE HEIGHT NECESSARY TO REMOVE THE EXISTING ABUTMENT BEARINGS AND ERECTING THE SUPPORT OF THE SUPERSTRUCTURE TO RECONSTRUCT THE ABUTMENT BACKWALLS. INSTALL SUPPORTS TO THE SATISFACTION OF THE ENGINEER. IF DURING THE JACKING OPERATION ANY DAMAGE IN CONNECTION WITH THIS PROCESS IS OBSERVED CEASE OPERATIONS AND INFORM THE ENGINEER. THE DEPARTMENT WILL MEASURE THIS WORK ON A LUMP SUM BASIS. THE DEPARTMENT WILL PAY FOR THE ACCEPTED QUANTITIES AT THE CONTRACT PRICE FOR ITEM 516. JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE, AS PER PLAN.



THE FOLLOWI METHODS WE SUPERSTRUCT OF THE FALSE AND WILL ASS FOR DEVIATIO AN EIGH WHEEL L A MINIM THE MAU A MAXIM OF 48 IN A MAXIM FASCIA C 65". ITEM 601, DU THIS ITEM SH/ DUMPED ROC REGRADING C CONSIST OF R THE ORIGINAL	IENT DESIGN ASSUMPTIONS: NG ASSUMPTIONS OF CONSTRUCTION MEANS AND RE MADE FOR THE ANALYSIS AND DESIGN OF THE "URE. THE CONTRACTOR IS RESPONSIBLE FOR THE DESIGN WORK SUPPORT SYSTEM WITHIN THESE PARAMETERS SUME RESPONSIBILITY FOR SUPERSTRUCTURE ANALYSIS IN FROM THESE DESIGN ASSUMPTIONS. T WHEEL FINISHING MACHINE WITH A MAXIMUM OAD OF 2.35 KIPS. 10M OUT-TO-OUT WHEEL SPACING AT EACH END OF CHINE OF 103". 10M SPACING OF OVERHANG FALSEWORK BRACKETS 10M DISTANCE FROM THE CENTERLINE OF THE SIRDER TO THE FACE OF THE SAFETY HANDRAIL OF MPED ROCK FILL, TYPE D, AS PER PLAN: ALL BE USED FOR THE PLANS. IT ALSO INCLUDES DF THE EXISTING SLOPE PROTECTION. REGRADING SHALL ESTORING THE EXISTING EMBANKMENT SURFACES TO . PROPOSED PROTECTION RESTORED OR NEW SHALL BE	ς; κ.
1'-6". PAKWENT FOR CUBIC YARD C WHICH SHALL	R THE ABOVE WORK SHALL BE AT THE UNIT PRICE BID PER F ITEM 601, DUMPED ROCK FILL, TYPE D, AS PER PLAN, INCLUDE ALL LABOR, EQUIPMENT, MATERIALS, AND NECESSARY TO COMPLETE THE ABOVE WORK.	AL NOTES). LAK-20-1723 GRAND RIVER
ABBREVIATIO ABUT. APPR. BRG. BOT. CONST. JT. CLR. CONST. CORR. DIA. DIM. DWG. EL. E.F. EXIST. F.A. FWD. F.F. FT. LBS. MAX. MEAS. MIN. OPT. P.E.J.F. R.A. R.F. REQ'D. SPA. STA. T.O.S. TYP. U.O.N.	NS ABUTMENT ABUTMENT ABUTMENT APPROACH BEARING BOTTOM CONSTRUCTION JOINT CLEAR CONSTRUCTION JOINT CLEAR CONSTRUCTION CORRUGATED DIAMETER DIMENSION DAWING DAWING CACHFACE EXISTING FORWARD ABUTMENT FORWARD ABUTMENT FORWARD ABUTMENT FORWARD ABUTMENT FORWARD ABUTMENT AMAXIMUM AMAACHINATION AMAAACHINATION AMAAACHINATION AMAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA	GENERAL NOTES BRIDGE NO. LAK-20-1723 OVER THE GRAND RIVER
VAR. W/	- VARIES - WITH	SFN 4302206 DESIGN AGENCY ENGINEERING ASSECIATES 1935 EAUE PASS WOOSTER, DHID 46691 PHONE: (330) 345-6556 WWW.esoHol-com DESIGNER ACB HK REVIEWER SDS 08-02-22 PROJECT ID 114486 SUBSET TOTAL 4 37 SHEET TOTAL

26 59





- 6.

LEGEND

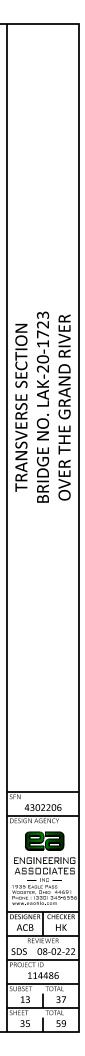
 Δ - DISTANCE IS NORMAL TO CURB LINE

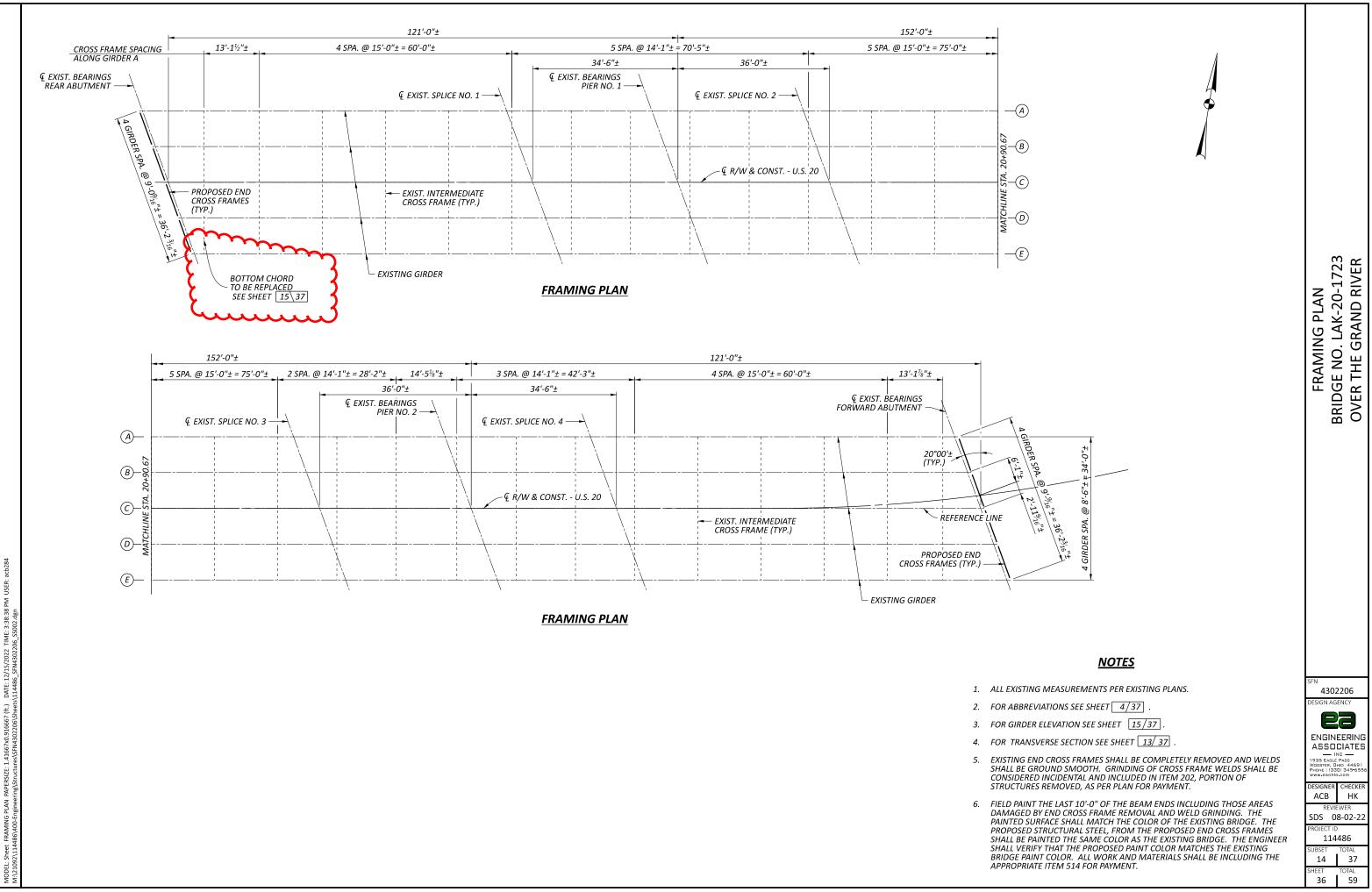
* - SEE PAVEMENT TRANSITION DETAIL

NOTES:

1. FOR ABBREVIATIONS SEE SHEET 4/372. FOR SLAB DETAILS SEE SHEETS 16/37 AND 17/37 3. FOR DECK ELEVATION TABLES SEE SHEET 18/37 THRU 21/37 4. FOR SHEAR CONNECTOR SPACING SEE SHEET 15/375. FOR SUPERELEVATION TRANSITION DETAIL SEE SHEET 16/37 MINIMUM REINFORCING STEEL SPLICE LENGTH UNLESS OTHERWISE NOTED: NO. 4 BAR = 1'-11" NO. 5 BAR = 2'-5"

S502, S507, S508 & S509 = 3'-0"





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LAK-20-17.21

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