

GENERAL NOTES



RICHLAND ENGINEERING LIMITED
29 NORTH PARK STREET
MANSFIELD, OHIO 44902

DATE	9/18/99
REVISION	DAP
STRUCTURE FILE NO.	4304361/4304411
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GENERAL NOTES
BRIDGE NO. LAK-90-23609/23641
S.R. 44 OVER I-90

LAK-90-23.609/23.641

3 / 18
26
41

REFERENCE

SHALL BE MADE TO STANDARD DRAWINGS AND SUPPLEMENTAL SPECIFICATIONS;

STANDARD DRAWINGS:

- AS-1-81M, SHEETS 1 AND 2 OF 3 (DATED 10-25-94)
- EXJ-4-87M, SHEETS 1,2,4 AND 5 OF 5 (REVISED 2-18-97)
- RB-1-55M (DATED 10-25-94)
- VPF-1-90M, SHEETS 1,4,5,6 AND 7 OF 7 (DATED 3-20-95)

SUPPLEMENTAL SPECIFICATIONS:

- 815 (DATED 5-30-96)
- 844 (DATED 1-6-99)
- 863 (DATED 9-9-97)
- 910 (DATED 4-21-97)
- 1011 (DATED 12-7-95)
- 846 (DATED 9-9-97)

DESIGN SPECIFICATIONS:

THIS STRUCTURE CONFORMS TO THE "STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES" ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS, 1996, AND THE ODOT BRIDGE DESIGN MANUAL.

DESIGN DATA:

- DESIGN LOADING - MS 18 CASE II AND THE ALTERNATE MILITARY LOADING
- CONCRETE CLASS S - COMPRESSIVE STRENGTH 31.0 MPa (SUPERSTRUCTURE)
- CONCRETE CLASS C - COMPRESSIVE STRENGTH 27.5 MPa (SUBSTRUCTURE)
- REINFORCING STEEL - ASTM A615M, A616M, OR A617M
 - GRADE 400 WITH MINIMUM YIELD STRESS OF 400 MPa
 - ALL REINFORCING SHALL BE EPOXY COATED PER MATERIAL SPECIFICATION 709.00
 - SPLICES INDICATED ARE FOR GRADE 400 STEEL
- STRUCTURAL STEEL - EXISTING: ASTM A373, YIELD STRESS 225 MPa
 - PROPOSED: ASTM A36M, YIELD STRESS 250 MPa

PROPOSED WORK:

THE FOLLOWING WORK WILL BE CONSTRUCTED USING STAGED CONSTRUCTION METHODS TO MAINTAIN A MINIMUM OF ONE LANE OF TRAFFIC IN EACH DIRECTION ON S.R. 44 AND I-90 AT ALL TIMES.

THE WORK INCLUDES:

1. REMOVAL OF ASPHALT WEARING SURFACE.
2. REMOVAL OF REINFORCED CONCRETE DECK, RAILINGS, DRAINAGE SCUPPERS AND APPROACH SLABS.
3. REMOVAL OF REINFORCED CONCRETE ABUTMENT BACKWALLS, AND PORTIONS OF THE WINGWALLS.
4. REPAIRING OF DETERIORATED REINFORCED CONCRETE ON PORTIONS OF THE ABUTMENT AND PIERS TO BE REUSED. CLEANING AND FLUSHING THE EXISTING ABUTMENT WEEPHOLES.
5. REFURBISHING AND RESETTING SELECTED ABUTMENT AND PIER BEARINGS
6. CLEANING AND PRIME PAINTING THE TOP FLANGE OF THE EXISTING RIVETED PLATE GIRDERS PER SYSTEM OZEU.
7. ADDING WELDED SHEAR STUDS TO THE TOP FLANGE OF THE PLATE GIRDERS.
8. CAULKING SEAMS IN LOWER FLANGES OF PLATE GIRDERS PER SYSTEM OZEU.
9. REPAIRING DAMAGED PAINT ON REMAINING STEELWORK PER SYSTEM OZEU.
10. CONSTRUCTING NEW ABUTMENT BACKWALLS, INCLUDING POROUS BACKFILL WITH FILTER FABRIC, AND PERFORATED DRAINS TO CONNECT WITH WEEPHOLES.
11. CONSTRUCTING NEW REINFORCED CONCRETE DECK AND APPROACH SLABS, INCLUDING ARMORED ELASTOMERIC STRIP SEALS.
12. CONSTRUCTING NEW 1050 mm SINGLE SLOPE REINFORCED CONCRETE PARAPETS ON THE DECK AND APPROACH SLABS.
13. PLACING 1850 mm VANDAL PROTECTION FENCE OVER I-90.
14. RESURFACING APPROACH WEARING SURFACE AND ADDING NEW BRIDGE TERMINAL ASSEMBLIES TO CONNECT EXISTING PAVEMENT AND GUARDRAIL TO REHABILITATED STRUCTURE.
15. REMOVAL OF CRUSHED AGGREGATE SLOPE PROTECTION.
16. INSTALLATION OF GROUT-FILLED FABRIC BAG SLOPE PROTECTION BENEATH THE END SPANS.

DECK PROTECTION METHOD:

EPOXY COATED REINFORCING STEEL, 65 mm CONCRETE COVER AND SEALING OF CONCRETE SURFACES.

MONOLITHIC WEARING SURFACE

THE WEARING SURFACE IS ASSUMED, FOR DESIGN PURPOSES, TO BE 25 mm THICK.

UTILITY LINES:

ALL EXPENSES INVOLVED IN RELOCATING THE AFFECTED UTILITY LINES SHALL BE BORNE BY THE OWNERS. THE CONTRACTOR AND THE OWNERS ARE REQUESTED TO COOPERATE BY ARRANGING THEIR WORK IN SUCH A MANNER THAT INCONVENIENCE TO EITHER WILL BE HELD TO A MINIMUM.

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 CMS 102.05, 105.02 AND 513.02.

CONTRACT BID PRICES SHALL BE BASED UPON 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 DIMENSIONS WHICH HAVE BEEN VERIFIED BY THE CONTRACTOR IN THE FIELD.

CONTINGENCY QUANTITIES:

THE CONTRACTOR SHALL NOT ORDER MATERIALS OR PERFORM WORK LISTED IN THE GENERAL SUMMARY FOR ITEMS DESIGNATED BY PLAN NOTE TO BE USED "BY THE ENGINEER" UNLESS AUTHORIZED BY THE ENGINEER. THE ACTUAL WORK LOCATIONS AND QUANTITIES USED AT THE ENGINEER'S DISCRETION SHALL BE MADE A MATTER OF RECORD BY INCORPORATION INTO THE FINAL CHANGE ORDER GOVERNING THE COMPLETION OF THIS PROJECT.

WELDING TO EXISTING STEEL

THE ORIGINAL DESIGN PLANS FOR THE STRUCTURE DO NOT DESIGNATE THE TYPE OF STRUCTURAL STEEL THAT WAS USED. THE EXISTING STRUCTURAL STEEL IS CONSIDERED TO BE WELDABLE A373. THE CONTRACTOR SHALL TEST, IN THE PRESENCE OF THE ENGINEER THE ELECTRODES AND FLUX ELECTRODE COMBINATIONS THAT HE PROPOSES TO USE. ALL WELDING SHALL BE PERFORMED IN ACCORDANCE WITH THE CURRENT AASHTO/AWS D1.5-88 BRIDGE WELDING CODE AND ODOT SS 1011.

ITEM 202 - PORTIONS OF STRUCTURE REMOVED, OVER 6 METER SPAN, AS PER PLAN:

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

PROTECTION OF TRAFFIC: PRIOR TO DEMOLITION OF ANY PORTIONS OF THE THE EXISTING SUPERSTRUCTURE, THE CONTRACTOR SHALL SUBMIT PLANS FOR THE PROTECTION OF VEHICULAR TRAFFIC ADJACENT TO AND UNDER THE STRUCTURE TO THE DIRECTOR FOR APPROVAL. THESE PLANS SHALL INCLUDE PROVISIONS FOR ANY DEVICES AND STRUCTURES THAT MAY BE NECESSARY TO ENSURE SUCH PROTECTION. TEMPORARY VERTICAL CLEARANCES SPECIFIED ON THE PLANS OR IN THE PROPOSAL SHALL BE MAINTAINED AT ALL TIMES EXCEPT AS OTHERWISE APPROVED BY THE DIRECTOR.

DECK CONCRETE REMOVAL METHODS: CONCRETE MAY BE REMOVED BY CUTTING AND BY MEANS OF HAND OPERATED PNEUMATIC HAMMERS EMPLOYING POINTED OR BLUNTED CHISEL TYPE TOOLS. FOR REMOVALS ABOVE STEEL MEMBERS, A HAMMER HEAVIER THAN 16 KILOGRAM BUT NOT TO EXCEED 41 KILOGRAM MAY BE USED AT THE APPROVAL OF THE ENGINEER, TO ENSURE ADEQUATE DEPTH CONTROL AND TO PREVENT NICKING OR GOUGING THE PRIMARY STEEL MEMBERS.

DECK REMOVALS: DUE TO THE PRESENCE OF WELDED ATTACHMENTS TO EXISTING STRUCTURAL STEEL (FINISHING MACHINE, SCUPPER AND FORM SUPPORTS, ETC.), CARE SHALL BE TAKEN DURING DECK REMOVAL TO AVOID DAMAGING STRINGERS WHICH ARE TO REMAIN. STRINGERS DAMAGED BY THE CONTRACTOR'S REMOVAL OPERATION SHALL, AT NO COST TO THE PROJECT, BE REPLACED OR REPAIRED. PROPOSED REPAIRS, DEVELOPED BY A REGISTERED PROFESSIONAL ENGINEER, SHALL BE SUBMITTED IN WRITING FOR REVIEW AND APPROVAL BY THE DIRECTOR.

EXTRANEUS MEMBERS: EXISTING EXTRANEUS MEMBERS (I.E., FINISHING MACHINE AND FORM SUPPORTS, ETC., AND THE SUPPORT FOR SCUPPERS AND BULB ANGLES WHICH ARE TO BE REMOVED) ATTACHED BY WELDED CONNECTIONS TO PORTIONS OF THE STRINGERS SHALL BE REMOVED AND THE STRINGERS' SURFACES GROUND SMOOTH. GRINDING SHALL BE CAREFULLY DONE AND PARALLEL TO THE STRINGERS' SURFACES.

PROTECTION OF STEEL SUPPORT SYSTEMS: BEFORE DECK SLAB CUTTING IS PERMITTED, THE OUTLINE OF PRIMARY STEEL MEMBERS IN CONTACT WITH THE BOTTOM OF THE DECK SHALL BE DRAWN ON THE SURFACE OF THE DECK. SMALLER DIAMETER PILOT HOLES SHALL BE DRILLED 50 mm OUTSIDE THESE LINES TO CONFIRM THE LOCATION OF THE FLANGE EDGES. DECK CUTS OVER OR WITHIN 50 mm OF FLANGE EDGES SHALL NOT EXTEND LOWER THAN THE BOTTOM LAYER OF DECK SLAB REINFORCING STEEL. CUTS MADE OUTSIDE 50 mm OF THE FLANGE EDGES MAY EXTEND THE FULL DEPTH OF THE DECK. DURING CUTTING OF THE DECK SLAB, CARE SHALL BE TAKEN NOT TO DAMAGE MEMBERS THAT ARE TO BE INCORPORATED INTO THE PROPOSED STRUCTURE.

CUT LINE CONSTRUCTION JOINT PREPARATION: SAW CUT BOUNDARIES OF PROPOSED CONCRETE REMOVALS 25 mm DEEP. REMOVE CONCRETE TO A ROUGH SURFACE. WHERE PRACTICABLE, THE EXISTING REINFORCING STEEL WHERE REQUIRED IN THE PLANS SHALL BE LEFT IN PLACE. INSTALL DOWEL BARS WHERE SPECIFIED. PRIOR TO CONCRETE PLACEMENT, ABRASIVELY CLEAN JOINT SURFACE AND EXPOSED REINFORCEMENT TO REMOVE LOOSE AND DISINTEGRATED CONCRETE AND LOOSE RUST. THE JOINT SURFACE AND EXPOSED REINFORCEMENT SHALL BE THOROUGHLY CLEANED OF ALL DIRT, DUST, OR OTHER FOREIGN MATERIAL BY THE USE OF WATER, AIR UNDER PRESSURE, OR OTHER METHODS THAT PRODUCE SATISFACTORY RESULTS. CONCRETE BONDING SURFACES SHALL BE WET WITHOUT FREE WATER AS CONCRETE IS PLACED.

SUBSTRUCTURE CONCRETE REMOVAL SHALL BE 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 16 KILOGRAM FOR REMOVAL WITHIN 450 mm OF PORTIONS TO BE PRESERVED. OUTSIDE THE 450 mm LIMIT, A HAMMER HEAVIER THAN 16 KILOGRAM, BUT NOT TO EXCEED 41 KILOGRAM, MAY BE USED AT THE APPROVAL OF THE ENGINEER. PNEUMATIC HAMMERS SHALL NOT BE PLACED IN DIRECT CONTACT WITH REINFORCING STEEL THAT IS TO BE RETAINED IN THE REBUILT STRUCTURE.

PAYMENT: THIS WORK WILL BE PAID FOR AT THE CONTRACT LUMP SUM PRICE BID, WHICH PRICE AND PAYMENT SHALL BE FULL COMPENSATION FOR ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS NECESSARY TO COMPLETE THE WORK IN CONFORMANCE WITH THESE REQUIREMENTS, WITH PERTINENT PROVISIONS OF 202, AND TO THE SATISFACTION OF THE ENGINEER.

ITEM 503 - EXCAVATION FOR STRUCTURES:

EXISTING GROUND DISTURBED BY ANY WORK WILL BE RESTORED TO PREVIOUS CONDITION. EXCAVATION, RESTORATION AND COMPLIANCE WITH THE APPROPRIATE SECTION OF CMS 503 WILL BE CONSIDERED INCIDENTAL TO THE APPROPRIATE WORK ITEMS. NO EXTRA PAYMENTS WILL BE MADE.

ITEM 844 - HIGH PERFORMANCE CONCRETE SUBSTRUCTURE, AS PER PLAN

ANY EXISTING REINFORCING BARS WHICH ARE TO BE INCORPORATED INTO THE NEW WORK AND WHICH ARE MADE UNUSABLE BY CONCRETE REMOVAL OPERATIONS SHALL BE REPLACED WITH NEW STEEL AT THE CONTRACTOR'S COST. ANY EXISTING REINFORCING STEEL DEEMED BY THE ENGINEER TO BE UNUSABLE BECAUSE OF CORROSION SHALL BE REPLACED WITH NEW STEEL. AN ALLOWANCE OF 10 METERS OF 19 mm REINFORCING BAR PER BRIDGE IS INCLUDED IN THE ABUTMENT REINFORCING STEEL LISTS FOR USE AS REPLACEMENT BARS. ANY EXISTING BARS THAT ARE TO REMAIN, BUT ARE FOUND TO BE UNUSABLE SHALL BE CUT OFF FLUSH WITH THE CONCRETE SURFACE AND NEW BARS, CUT INTO LENGTHS OF AT LEAST 1000 mm SHALL BE DOWELED INTO THE CONCRETE. THE COST OF THE ADDITIONAL REINFORCING STEEL AND DOWEL HOLES SHALL BE INCLUDED FOR PAYMENT WITH ITEM 844 - HIGH PERFORMANCE CONCRETE SUBSTRUCTURE, AS PER PLAN.

ITEM 863 - TRIMMING OF BEAM END, AS PER PLAN

AFTER THE BEARINGS HAVE BEEN RESET AND DURING THE LAYOUT OF THE NEW CONCRETE, THE CONTRACTOR AND THE ENGINEER SHALL MEASURE THE CLEARANCE BETWEEN THE EXISTING STRUCTURAL STEEL GIRDERS AND THE PROPOSED BACKWALL. TO PROVIDE THE REQUIRED CLEARANCE, UP TO 51 mm MAY BE TRIMMED OFF THE INTRODUCING BEAM LINES. A CONTINGENCY QUANTITY OF 26 EACH ITEM 863 - TRIMMING OF BEAM END, AS PER PLAN IS INCLUDED IN THE ESTIMATED QUANTITIES.

THE WORK UNDER THIS ITEM CONSISTS OF FURNISHING THE NECESSARY LABOR, MATERIALS AND EQUIPMENT TO TRIM THE ENDS OF THE STRUCTURAL STEEL MEMBERS AS DESIGNATED BY THE ENGINEER. ALL APPLICABLE PORTIONS OF ITEM 863 SHALL APPLY. THE CONTRACTOR SHALL TRIM AND GRIND SMOOTH THE BEAM ENDS. AREAS OF DAMAGED PAINT RESULTING FROM THE TRIMMING SHALL BE INCLUDED IN THE APPROPRIATE ITEM 815 PAINTING ITEMS.

PAYMENT SHALL BE AT THE CONTRACT UNIT PRICE BID FOR ITEM 863 - TRIMMING OF BEAM END, AS PER PLAN FOR THE ACTUAL NUMBER OF MEMBER ENDS THAT ARE TRIMMED AND ACCEPTED.

ITEM 514 - FIELD PAINTING MISC.: PARTIAL CLEANING AND PRIMING EXISTING STEEL:

WORK UNDER THIS ITEM WILL INCLUDE THE SURFACE PREPARATION AND FIELD PRIMING OF THE PORTIONS OF THE TOP FLANGES TO BE EMBEDDED IN THE NEW CONCRETE. THE WORK IS TO BE PERFORMED IN ACCORDANCE WITH SUPPLEMENTAL SPECIFICATION 815, FIELD PAINTING OF EXISTING STEEL, SYSTEM OZEU.

AFTER THE EXISTING CONCRETE DECK IS REMOVED, THE CONTRACTOR SHALL CLEAN ANY DIRT, RUST, DEBRIS, AND/OR EXISTING PAINT FROM THE EDGES AND SURFACES OF THE GIRDER SECTIONS' TOP FLANGE AND TOP SPLICE PLATES TO BE EMBEDDED IN THE NEW CONCRETE. ONCE CLEAN, THE EXPOSED STEEL WILL BE COATED USING AN APPROVED ORGANIC ZINC RICH PRIMER. AFTER THE SHEAR STUDS ARE INSTALLED, THE BURN MARKS AND OTHER DAMAGE WILL BE REPAIRED. CLEANING OF THE ORGANIC ZINC PRIME COAT WILL BE REQUIRED IF THE CONCRETE DECK IS NOT PLACED WITHIN 14 DAYS OF COATING.

FOR LIMITS, SEE SHEET [17/18].

ITEM 516 - REFURBISH AND RESET BEARING, AS PER PLAN:

THIS ITEM SHALL INCLUDE ALL WORK NECESSARY TO PROPERLY ALIGN BRIDGE BEARINGS AS WELL AS THEIR CLEANING AND PAINTING. INCLUDED SHALL BE THE DISASSEMBLY OF THE BEARINGS, HAND TOOL CLEANING (GRINDING IF NECESSARY), PAINTING AS REQUIRED BY SYSTEM OZEU, REPLACEMENT OF ANY DAMAGED LEAD SHEET (711.19), INSTALLATION OF ANY NECESSARY STEEL SHIMS OF THE SAME SIZE AS THE BEARINGS TO PROVIDE A SNUG FIT, REALIGNMENT OF THE LOWER BEARING PLATE, RESETTNG SO THAT THE BEARINGS ARE VERTICALLY ALIGNED AT 16° C, AND REASSEMBLY OF THE BEARINGS. THE CONTRACTOR SHALL BE SURE THAT ALL BEARINGS ARE SHIMMED ADEQUATELY AND THAT NO BEAMS AND/OR BEARING DEVICES ARE "FLOATING." AT THE OPTION OF THE CONTRACTOR AND AT NO ADDITIONAL COST TO THE STATE, NEW BEARINGS OF THE SAME TYPE AS THE EXISTING MAY BE INSTALLED IN PLACE OF REFURBISHING THE BEARINGS. ALL WORK SHALL BE TO THE SATISFACTION OF THE ENGINEER. PAYMENT FOR ALL THE ABOVE DESCRIBED LABOR AND MATERIALS WILL BE MADE AT THE CONTRACT BID PRICE FOR ITEM 516 - REFURBISH AND RESET BEARING, AS PER PLAN.

ROCKERS SCHEDULED TO BE REFURBISHED AND RESET ARE GIVEN ON SHEET [11/18] AND [12/18].

GENERAL NOTES CONTINUED: SEE SHEET [4/18].

96161GN.DWG
JOB NO. 96161
DATE 8/30/99
DRAWN BY KAK,TWH