

STANDARD DRAWING AND SUPPLEMENTAL SPECIFICATIONS

REFERENCE SHALL BE MADE TO STANDARD DRAWINGS:
 AS-1-81 REVISED 07-19-02 SICD-1-96 REVISED 07-19-02
 GSD-1-96 REVISED 07-19-02 SBR-1-99 REVISED 07-19-02

AND TO SUPPLEMENTAL SPECIFICATIONS:
 832 DATED 04-25-06

DESIGN SPECIFICATIONS

THIS STRUCTURE CONFORMS TO "STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES" ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS, 17th EDITION, 2002 AND THE O.D.O.T. BRIDGE DESIGN MANUAL.

DESIGN LOADING

HS25 CASE II AND ALTERNATE MILITARY LOADING
 FUTURE WEARING SURFACE (FWS) OF 60 P.S.F.

DESIGN DATA

CONCRETE:
 CLASS HP CONCRETE - COMPRESSIVE STRENGTH 4500 P.S.I. (SUPERSTRUCTURE)

CLASS HP CONCRETE - COMPRESSIVE STRENGTH 4000 P.S.I. (SUBSTRUCTURE)

CLASS S CONCRETE - COMPRESSIVE STRENGTH 4000 P.S.I. (DRILLED SHAFTS)

REINFORCING STEEL:
 ASTM A615 OR A996, GRADE 60, MINIMUM YIELD STRENGTH 60,000 P.S.I.

SPIRAL REINFORCEMENT MAY BE PLAIN BARS, ASTM A82 OR A615

STRUCTURAL STEEL:
 ASTM A709 GRADE 50, YIELD STRENGTH 50,000 P.S.I.

DECK PROTECTION METHOD

EPOXY COATED REINFORCING STEEL
 2 1/2" CONCRETE COVER (TOP MAT)

MONOLITHIC WEARING SURFACE

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

ABBREVIATIONS

- | | |
|------------------------------------|---|
| N.F. = NEAR FACE | P.E.J.F. = PREFORMED EXPANSION JOINT FILLER |
| F.F. = FAR FACE | C.P.P. = CORRUGATED PLASTIC PIPE |
| E.F. = EACH FACE | BOTT. = BOTTOM |
| TYP. = TYPICAL | INV. = INVERT |
| MIN. = MINIMUM | FWD. = FORWARD |
| STA. = STATION | CONC. = CONCRETE |
| SPA. = SPACES | EA. = EACH |
| CONST. = CONSTRUCTION | HMWM = HIGH MOLECULAR WEIGHT METHACRYLATE |
| APPR. = APPROACH | STD. = STANDARD |
| EL. = ELEVATION | DWG. = DRAWING |
| C.I.P. = CAST-IN-PLACE | DIA. = DIAMETER |
| BRG. = BEARING | (R) = TO BE REMOVED |
| EX. = EXISTING | (TR) = TO REMAIN |
| PH. = PHASE | (TBR) = TO BE RELOCATED |
| A.P.P. = AS PER PLAN | FTG. = FOOTING |
| R.A. = REAR ABUTMENT | JT. = JOINT |
| F.A. = FORWARD ABUTMENT | PROP. = PROPOSED |
| EXP. = EXPANSION | WTR. = WATER |
| P.C.B. = PORTABLE CONCRETE BARRIER | |

UTILITY LINES

THE UTILITIES SHALL BORE ALL THE EXPENSE IN RELOCATING THE AFFECTED UTILITY LINES. THE CONTRACTOR AND THE UTILITIES ARE TO COOPERATED BY ARRANGING THEIR WORK IN SUCH A MANNER THAT INCONVENIENCE TO EITHER WILL BE HELD TO A MINIMUM.

ITEM 203 EMBANKMENT, AS PER PLAN

PLACE AND COMPACT EMBANKMENT MATERIAL IN 6 INCH LIFTS FOR THE CONSTRUCTION OF THE APPROACH EMBANKMENT. SEE ROADWAY PLANS FOR DETAILS AND PAYMENT.

DRILLED SHAFTS

THE DESIGN LOAD TO BE SUPPORTED BY EACH DRILLED SHAFT IS 20 TONS AT THE ABUTMENTS AND 23 TONS AT THE PIERS. THIS LOAD IS RESISTED BY SHAFT END BEARING. THE ALLOWABLE END BEARING PRESSURE IS 25 TONS PER SQUARE FOOT. THE REINFORCING STEEL SHALL BE EPOXY COATED ACCORDING TO 709.00.

PRECOMPRESSED FOAM JOINT

DESCRIPTION: THIS WORK WILL CONSIST OF THE INSTALLATION OF A PRE-COMPRESSED FOAM JOINT BETWEEN CONCRETE PARAPETS/BARRIERS AT THE BEGINNING AND END OF APPROACH SLABS. THE WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS AND RECOMMENDATIONS, OR AS DIRECTED BY THE ENGINEER. THE PRE-COMPRESSED FOAM JOINT FILLER SHALL COMPLETELY FILL THE GAP BETWEEN THE PARAPETS/BARRIERS.

THE MATERIAL SHALL BE A PRE-COMPRESSED FOAM JOINT FILLER SUCH AS ONE OF THE FOLLOWING OR AN APPROVED EQUAL:

SEALTITE STANDARD
 SCHUL INTERNATIONAL CO.
 ONE INDUSTRIAL PARK DRIVE
 PELHAM, N.H. 03076
 1-800-848-1120

EMSEAL DSM SYSTEM
 EMSEAL JOINT SYSTEMS (II)
 23 BRIDLE LANE,
 SUITE 3
 WESTBOROUGH, MA 01581
 1-800-526-8365

POLYTITE B
 DAYTON SUPERIOR
 7777 WASHINGTON VILLAGE DR.,
 SUITE 130
 DAYTON, OH 45459
 1-888-977-9600

PAYMENT FOR LABOR, MATERIALS AND INSTALLATION OF THIS ITEM SHALL BE INCLUDED WITH ITEM 526, REINFORCED CONCRETE APPROACH SLABS, AS PER PLAN.

ITEM 516, SEMI-INTEGRAL ABUTMENT EXPANSION JOINT SEAL, AS PER PLAN

INSTALL A 3 FOOT WIDE NEOPRENE SHEET AT LOCATIONS SHOWN IN THE PLANS. SECURE THE NEOPRENE SHEETING TO THE CONCRETE WITH 1 1/4" X #10 GAGE (LENGTH X SHANK DIAMETER) GALVANIZED BUTTON HEAD SPIKES THROUGH A 1 INCH OUTSIDE DIAMETER, #10 GAGE GALVANIZED WASHER. MAXIMUM FASTENER SPACING IS 9 INCHES. USE OF OTHER SIMILAR GALVANIZED DEVICES, WHICH WILL NOT DAMAGE EITHER THE NEOPRENE OR THE CONCRETE WILL BE SUBJECT TO THE APPROVAL OF THE ENGINEER.

CENTER THE NEOPRENE STRIPS ON ALL JOINTS. FOR HORIZONTAL JOINTS, SECURE THE HORIZONTAL NEOPRENE STRIP BY USING A SINGLE LINE OF FASTENERS, STARTING AT 6 INCHES, +/-, FROM THE TOP OF THE NEOPRENE STRIP. FOR THE VERTICAL JOINTS SECURE THE VERTICAL NEOPRENE STRIP BY USING A SINGLE VERTICAL LINE OF FASTENERS, STARTING AT 6 INCHES, +/-, FROM THE VERTICAL EDGE OF THE NEOPRENE STRIP NEAREST TO THE CENTERLINE OF THE ROADWAY. FOR VERTICAL JOINTS, INSTALL 2 ADDITIONAL FASTENERS AT 6 INCHES, CENTER TO CENTER, ACROSS THE TOP OF THE NEOPRENE STRIP ON THE SAME SIDE OF THE VERTICAL JOINT AS THE SINGLE VERTICAL ROW OF FASTENERS IS LOCATED.

THE VERTICAL NEOPRENE STRIPS SHOULD COMPLETELY OVERLAP THE HORIZONTAL STRIPS. LAP LENGTHS OF THE HORIZONTAL STRIPS THAT ARE NOT VULCANIZED OR ADHESIVE BONDED, SHALL BE AT LEAST 1 FOOT IN LENGTH, OR 6 INCHES IN LENGTH IF THE LAP IS VULCANIZED OR ADHESIVE BONDED. NO LAPS ARE ACCEPTABLE IN VERTICALLY INSTALLED NEOPRENE STRIPS.

THE NEOPRENE SHEETING SHALL BE 3/32" THICK GENERAL PURPOSE, HEAVY DUTY NEOPRENE SHEET WITH NYLON FABRIC REINFORCEMENT. THE SHEETING SHALL BE "FAIRPRENE NUMBER NN-0003", BY E.I. DUPONT DE NEMOURS AND COMPANY, INC., "WINGPRENE" BY THE GOODYEAR TIRE AND RUBBER COMPANY, OR AN APPROVED ALTERNATE. THE NEOPRENE SHEETING SHALL CONFORM TO THE FOLLOWING:

| DESCRIPTION OF TEST | AST METHOD | REQUIREMENT |
|---|------------|------------------------|
| THICKNESS, INCHES | D 751 | 0.094" +/- 0.01 |
| BREAKING STRENGTH, GRAB LBS. MINIMUM | D 751 | 700 X 700 |
| ADHESIVE 1" WIDE x 2" LONG, LBS. MINIMUM | D 751 | 9 |
| BURST STRENGTH, PSI MINIMUM | D 751 | 1400 |
| HEAT AGING 70 HR. 212° F, 180° BEND WITHOUT CRACKING | D 2136 | NO CRACKING OF COATING |
| LOW TEMPERATURE BRITTLENESS 1 HR., -40° F, BEND AROUND 1/4" MANDREL | D 2136 | NO CRACKING OF COATING |

IN LIEU OF THE NEOPRENE SHEETING THE CONTRACTOR MAY SUPPLY TYPE 3 MEMBRANE, 711.29.

METHOD OF MEASUREMENT: THE DEPARTMENT WILL MEASURE THE TOTAL LENGTH OF JOINT TO BE SEALED BY THE NUMBER OF FEET.

BASIS OF PAYMENT: THE DEPARTMENT WILL PAY FOR ACCEPTED QUANTITIES AT THE CONTRACT PRICE FOR ITEM 516, SEMI-INTEGRAL ABUTMENT EXPANSION JOINT SEAL, AS PER PLAN.

ITEM 526 - REINFORCED CONCRETE APPROACH SLABS (T=17"), AS PER PLAN

THE CONTRACTOR SHALL CONSTRUCT THE APPROACH SLABS PER DETAILS PROVIDED ON PLAN SHEETS 24 28 AND 25 28. WORK SHALL INCLUDE THE HMWM SEALER, 3" PRECOMPRESSED FOAM JOINT, THE CONSTRUCTION OF THE PARAPET/BARRIER CONCRETE, PARAPET SURFACE TREATMENT AND ASSOCIATED REINFORCING. PAYMENT SHALL BE INCLUDED WITH ITEM 526, REINFORCED CONCRETE APPROACH SLABS (T=17"), AS PER PLAN.

ENVIRONMENTAL COMMITMENTS

FOR ENVIRONMENTAL COMMITMENT NOTES SEE ROADWAY SHEET 41 OF 1679.

SEQUENCE OF CONSTRUCTION/PROPOSED WORK

STAGE 1 CONSTRUCTION

1. INSTALL STAGE 1 M.O.T. PER PLANS.
2. INSTALL STAGE 1 TEMPORARY SHORING.
3. REMOVE STAGE 1 PORTIONS OF EXISTING ABUTMENTS, WINGWALLS, PIERS, AND FOUNDATIONS FOR S.R. 2 BRIDGES (LAK-2-0530 L&R).
4. CONSTRUCT DRILLED SHAFTS FOR RAMP D BRIDGE (LAK-2-0530 P) ABUTMENTS AND PIERS, AND DRILLED SHAFTS FOR STAGE 1 PORTIONS OF ABUTMENTS AND PIERS FOR S.R. 2 BRIDGES (LAK-2-0530 L&R).
5. CONSTRUCT ABUTMENTS AND PIERS FOR RAMP D BRIDGE (LAK-2-0530 P), AND STAGE 1 PORTIONS OF ABUTMENTS AND PIERS FOR S.R. 2 BRIDGES (LAK-2-0530 L&R).
6. CONSTRUCT SUPERSTRUCTURE AND APPROACH SLABS FOR RAMP D BRIDGE (LAK-2-0530 P).
7. REMOVE STAGE 1 TEMPORARY SHORING AND M.O.T.

FOOTINGS

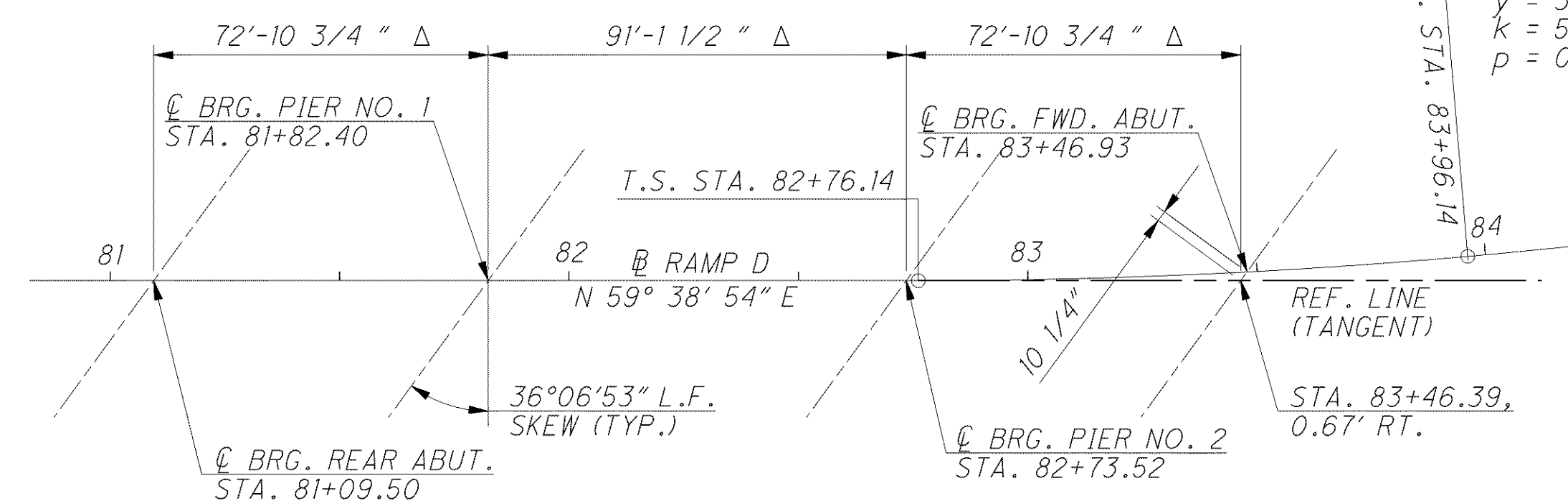
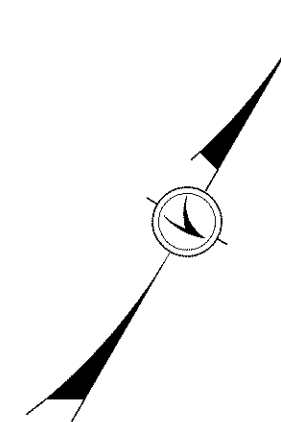
FOOTINGS SHALL EXTEND A MINIMUM OF 3 INCHES INTO BEDROCK OR TO THE ELEVATION SHOWN, WHICHEVER IS LOWER

ITEM 601, ROCK CHANNEL PROTECTION, TYPE A WITH FABRIC FILTER AS PER PLAN

ROCK CHANNEL PROTECTION SHALL BE GROUTED IN PLACE. GROUT SHALL CONSIST OF ONE PART PORTLAND CEMENT, THREE PARTS SAND AND ENOUGH WATER TO ALLOW THE GROUT TO FLOW INTO THE JOINTS AND CRACKS.

SPIRAL CURVE DATA

- P.I. STA. = 83+56.16
- Ls = 120.00'
- Os = 4°48'00"
- Lt = 80.03'
- St = 40.03'
- x = 119.92'
- y = 3.35'
- k = 59.99'
- p = 0.84'



CENTERLINE SCHEMATIC

Δ - MEASURED ALONG REFERENCE LINE

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DATE: 6/07
 REVIEWED: RBB
 DRAWN: CAF
 DESIGNED: FJC
 CHECKED: MVD

STRUCTURE FILE NUMBER: 4300750

STRUCTURAL GENERAL NOTES
 BRIDGE NO. LAK-2-0530 EN
 RAMP D OVER CHAGRIN RIVER

LAK-2-3.32
 PID 13486

3 / 28

1521
 1679