REFERENCED STANDARD DRAWINGS

AS-1-15 _____ REVISED 07-17-2015
GSD-1-19 _____ DATED 01-15-2021
SBR-1-20 _____ REVISED 07-17-2020
SICD-1-21 _____ DATED 01-15-2021
SICD-2-14 _____ REVISED 01-15-2021
HL-30.32 _____ REVISED 04-17-2020
HL-50.21 _____ REVISED 01-15-2021

REFERENCED SUPPLEMENTAL SPECIFICATIONS

800 _____ DATED 01-15-2021
1083 _____ DATED 01-20-2017

DESIGN SPECIFICATIONS

THIS STRUCTURE CONFORMS TO THE "LRFD BRIDGE DESIGN SPECIFICATIONS", ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS, 2020 (NINTH EDITION), AND THE ODOT BRIDGE DESIGN MANUAL, 2020, EXCEPT AS NOTED ELSEWHERE IN THE PLANS.

LRFD OPERATIONAL IMPORTANCE

A LOAD MODIFIER OF 1.00 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, 2019.

DESIGN LOADING

VEHICULAR LIVE LOAD: HL-93
FUTURE WEARING SURFACE (FWS) OF 0.060 KSF

DESIGN DATA

CONCRETE CLASS QC1: COMPRESSIVE STRENGTH 4.0 KSI (SUBSTRUCT)
CONCRETE CLASS QC2: COMPRESSIVE STRENGTH 4.5 KSI (SUPERSTRUCT)

REINFORCING STEEL: MINIMUM YIELD STRENGTH 60 KSI

STRUCTURAL STEEL: ASTM A709 GRADE 50W - YIELD STRENGTH 50 KSI

STEEL PIPE FOR CIP CONCRETE PILES: ASTM A252, GRADE 3
- YIELD STRENGTH 45 KSI

MONOLITHIC WEARING SURFACE

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

DECK PROTECTION METHODS

EPOXY COATED REINFORCING STEEL
SEALING OF CONCRETE SURFACES (PARAPETS)
2½" CONCRETE COVER

FOUNDATIONS ON PILES WITH NEW EMBANKMENTS

PILE DRIVING CONSTRAINTS: PRIOR TO DRIVING PILES, CONSTRUCT THE SPILL THROUGH SLOPES AND THE BRIDGE APPROACH EMBANKMENT BEHIND THE ABUTMENTS UP TO THE LEVEL OF THE SUBGRADE ELEVATION FOR A MINIMUM DISTANCE OF 200 FEET BEHIND EACH ABUTMENT. DO NOT BEGIN THE EXCAVATION FOR THE ABUTMENT FOOTINGS AND THE INSTALLATION OF THE ABUTMENT PILES UNTIL AFTER THE ABOVE REQUIRED EMBANKMENT HAS BEEN CONSTRUCTED AND CONFIRMATION HAS BEEN RECEIVED FROM THE ENGINEER THAT THE CRITERIA TO END THE SETTLEMENT WAITING PERIOD HAVE BEEN MET IN ACCORDANCE WITH THE NOTES ON SHEET 21 OF 381. AFTER THE REQUIRED WAITING PERIOD HAS ELAPSED, DRIVE ABUTMENT PILES TO THE UBV SPECIFIED FOR EACH ABUTMENT.

ITEM 507 - 14" CAST-IN-PLACE REINFORCED CONCRETE PILES, FURNISHED, AS PER PLAN

IN ADDITION TO THE REQUIREMENTS OF ITEM 507 AND CMS 711.03, FURNISH ASTM A252, GRADE 3, STEEL PIPES FOR ALL PILES. FOR PIER 1, PIER 2, AND FORWARD ABUTMENT, ALSO FURNISH PIPES WITH A MINIMUM WALL THICKNESS OF 5/8".

ITEM 511 - CLASS QC2 CONCRETE WITH QC/QA, BRIDGE DECK (PARAPET), AS PER PLAN

IN ADDITION TO THE BRIDGE DECK PARAPETS, THE DEPARTMENT WILL PAY FOR CONCRETE PARAPETS ON THE APPROACH SLABS WITH ITEM 511 - CLASS QC2 CONCRETE WITH QC/QA, BRIDGE DECK (PARAPET), AS PER PLAN.

FRICTION TYPE PILES

PILE DESIGN LOADS (ULTIMATE BEARING VALUE): THE ULTIMATE BEARING VALUE IS 379 KIPS PER PILE FOR THE REAR ABUTMENT AND 464 KIPS PER PILE FOR THE FORWARD ABUTMENT. THE ULTIMATE BEARING VALUE IS 536 KIPS PER PILE FOR PIER 1 AND 530 KIPS PER PILE FOR PIER 2. THE UBV FOR THE FORWARD ABUTMENT PILES INCLUDES AN ADDITIONAL 85 KIPS PER PILE DUE TO THE POSSIBILITY OF LOSING 8.1 FEET OF FRICTIONAL RESISTANCE FROM SCOUR. DRIVE THE FORWARD ABUTMENT PILES TO THE UBV OR A TIP ELEVATION OF 842.50, WHICHEVER IS DEEPER.

REAR ABUTMENT PILES:
14" DIA CIP CONCRETE PILES 55 FEET LONG, ORDER LENGTH
1 DYNAMIC LOAD TESTING ITEM

PIER 1 PILES:
14" DIA CIP CONCRETE PILES 55 FEET LONG, ORDER LENGTH
1 DYNAMIC LOAD TESTING ITEM

PIER 2 PILES:
14" DIA CIP CONCRETE PILES 60 FEET LONG, ORDER LENGTH
1 DYNAMIC LOAD TESTING ITEM

FORWARD ABUTMENT PILES:
14" DIA CIP CONCRETE PILES 50 FEET LONG, ORDER LENGTH
1 DYNAMIC LOAD TESTING ITEM

DECK PLACEMENT DESIGN ASSUMPTIONS

THE FOLLOWING ASSUMPTIONS OF CONSTRUCTION MEANS AND METHODS WERE MADE FOR THE ANALYSIS AND DESIGN OF THE SUPERSTRUCTURE. THE CONTRACTOR IS RESPONSIBLE FOR THE DESIGN OF THE FALSEWORK SUPPORT SYSTEM WITHIN THESE PARAMETERS AND WILL ASSUME RESPONSIBILITY FOR SUPERSTRUCTURE ANALYSIS FOR DEVIATION FROM THESE DESIGN ASSUMPTIONS.

AN EIGHT WHEEL FINISHING MACHINE WITH A MAXIMUM WHEEL LOAD OF 2.73 KIPS.

A MINIMUM OUT-TO-OUT WHEEL SPACING AT EACH END OF THE MACHINE OF 103".

A MAXIMUM SPACING OF OVERHANG FALSEWORK BRACKETS OF 48".

A MAXIMUM DISTANCE FROM THE CENTERLINE OF THE FASCIA GIRDER TO THE FACE OF THE SAFETY HANDRAIL OF 65".

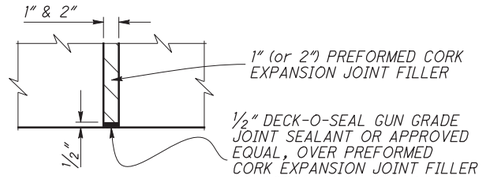
ITEM 512 - SEALING OF CONCRETE SURFACES, AS PER PLAN (PERMANENT GRAFFITI PROTECTION)

APPLY A PERMANENT GRAFFITI COATING QUALIFIED ACCORDING TO SUPPLEMENT 1083 THAT IS COMPATIBLE WITH THE CONCRETE SEALER OVER WHICH IT IS APPLIED. APPLY THE GRAFFITI COATING IN ACCORDANCE WITH THE MANUFACTURER'S PRINTED INSTRUCTIONS.

ITEM 516 - 1" (OR 2") PREFORMED EXPANSION JOINT FILLER, AS PER PLAN

ALL 1" (OR 2") PEJF CALLED FOR IN THE PLANS SHALL BE PREFORMED CORK JOINT FILLER (IN ACCORDANCE WITH CMS 705.03). RECESS JOINT FILLER ½" FOR ALL JOINTS (SEE DETAIL BELOW). SEAL ALL JOINTS WITH DECK-O-SEAL GUN-GRADE JOINT SEALANT OR AN APPROVED EQUAL. THE COLOR SHALL BE STONE GRAY. APPROVED MANUFACTURER'S APPLICATION METHODS SHALL BE FOLLOWED DURING SURFACE PREPARATION AND APPLICATION FOR MAXIMUM EFFECTIVENESS.

DECK-O-SEAL
P.O. BOX 397
HAMPSHIRE, IL 60140
PHONE: 800-542-7665



PAYMENT FOR THE ABOVE WORK SHALL BE MADE AT THE UNIT PRICE BID FOR ITEM 516 - 1" (OR 2") PEJF, AS PER PLAN, AND SHALL INCLUDE ALL LABOR, EQUIPMENT, AND INCIDENTALS REQUIRED TO COMPLETE THE WORK DESCRIBED.

ITEM 613 - LOW STRENGTH MORTAR BACKFILL, AS PER PLAN

LOW STRENGTH MORTAR (LSM) USED AS BACKFILL BEHIND SEMI-INTEGRAL ABUTMENT DIAPHRAGMS SHALL HAVE A LONG TERM COMPRESSIVE STRENGTH BETWEEN 150 AND 200 PSI. THE TOP ELEVATION SHALL BE AT LEAST 6" BELOW THE PROPOSED BOTTOM OF APPROACH SLAB AND ANY FORMWORK BETWEEN THE LSM BACKFILL AND SEMI-INTEGRAL DIAPHRAGM SHALL BE COMPLETELY REMOVED. USE CAUTION WHEN OPERATING EQUIPMENT NEAR THE FORMED EDGE OF THE LSM MASS TO MINIMIZE DISTURBANCE TO THE EDGE.

THE QUANTITY IN THE PLANS ASSUMES A 1.5:1 SLOPE OF BOTTOM OF LSM ELEVATION UP TO 2' BELOW THE PROPOSED TOP OF LSM ELEVATION (WHERE A VERTICAL END OF THE ITEM 613 IS ASSUMED). ADDITIONAL LSM BEYOND THESE LIMITS IS INCLUDED WITH ITEM 503 - UNCLASSIFIED EXCAVATION, AS PER PLAN.

PERFORMING THE EXCAVATION REQUIRED FOR BACKFILL BEHIND THE SEMI-INTEGRAL ABUTMENT DIAPHRAGMS, AND PLACING AND REMOVING ANY FORMWORK, SHEETING, BENCHING, ETC. REQUIRED TO CONFINE THE LSM WITHIN THE LIMITS SHOWN IN THE PLANS, SHALL BE INCLUDED FOR PAYMENT WITH THIS ITEM. PAYMENT FOR ITEM 613 - LOW STRENGTH MORTAR BACKFILL, AS PER PLAN SHALL BE CONSIDERED FULL PAYMENT FOR ALL LABOR, EQUIPMENT, MATERIALS, AND INCIDENTALS REQUIRED TO PERFORM THE WORK TO THE LIMITS SPECIFIED.

ITEM SPECIAL, 530 - STRUCTURES: AESTHETIC TREATMENT (CONCRETE FORMLINER/STAIN)

THE SURFACE FINISH SHALL BE ONE OF THE PATTERNS DESCRIBED BELOW IN THE ARCHITECTURAL SURFACE ELEVATION AND TABLE FROM AN APPROVED COMPANY MEETING THE DETAILS SHOWN ON THIS SHEET.

THE STAINING OF THE PATTERNED CONCRETE SURFACES SHALL BE DONE PRIOR TO APPLICATION OF ITEM 512 - SEALING OF CONCRETE SURFACES (NON-EPOXY). THE STAIN COLORED CONCRETE, USING LITHOCHROME TINTURA STAIN, SHALL BE FEDERAL STANDARD COLOR 2626 (LIGHT GRAY) AS PROVIDED BY L.M. SCOFIELD COMPANY, DOUGLASVILLE, GEORGIA (800) 800-9900 OR APPROVED EQUAL. THE STAIN SHALL BE APPLIED BY AN AIR-APPLIED, EVEN, AND CONTROLLED METHOD AS RECOMMENDED BY THE MANUFACTURER AND APPROVED BY THE ENGINEER. THE CONTRACTOR WILL NOT ALLOW OVERSPRAY OR RUNS TO RUIN THE APPEARANCE OF THE ADJACENT CONCRETE, WHICH SHALL REMAIN UNSTAINED. SEE FORMLINER/AESTHETIC DETAIL CALLOUTS ON THE EXTERIOR PARAPETS FOR THE LOCATIONS OF THE SURFACES TO BE STAINED.

THE CONTRACTOR OR AN APPROVED SUB-CONTRACTOR MUST SUPPLY DOCUMENTATION STATING THAT THEY HAVE AT LEAST 5 YEARS EXPERIENCE IN CONCRETE STAINING WITH PAST WORK REFERENCES CITED.

ITEM SPECIAL, 530 - STRUCTURES: AESTHETIC TREATMENT (CONCRETE FORMLINER/STAIN) (CONT'D)

GENERAL PARAMETERS OF THE PATTERENED SURFACE TEXTURE AND COLOR ARE GIVEN HEREIN; HOWEVER, FINAL BASIS FOR APPROVAL WILL BE PROVIDED BY AN EXISTING BRIDGE EXAMPLE. THE PHYSICAL LOCATION OF THIS EXAMPLE IS:

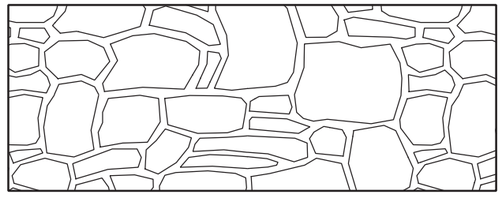
BRIDGE NO. LIC-16-1718
SFN: 4500830
NEWARK, OH 43055
COORDINATES = N 40.0532278°, W 82.4741444°

ALL CONCRETE WORK MUST BE COMPLETED AND CURED FOR A MINIMUM OF 28 DAYS BEFORE THE STAIN IS APPLIED. SURFACE PREPARATION SHALL BE AS PER CMS 512.03.F.

TWO FULL SCALE, DIFFERENTLY PATTERNED, STAINED AND SEALED, PRECONSTRUCTION TEST PANELS SHALL BE PROVIDED FOR APPROVAL BY THE ENGINEER. IF THE TEST PANELS DO NOT MEET THE APPROVAL OF THE ENGINEER, THE RESULTS MAY BE GROUNDS TO REJECT THE PROPOSED PANEL SURFACE CHOSEN. THE TEST PANELS WILL BE PROVIDED REPEATEDLY, AS NECESSARY, UNTIL APPROVAL IS GRANTED. FIVE FEET BY FIVE FEET TEST PANELS SHALL BE PROVIDED. THE MOCK-UPS SHALL HAVE THE SAME ARCHITECTURAL RELIEF, THICKNESS, PATTERN, AND COLOR/SEALANT INTENDED TO BE USED ON THE PROJECT. THE PANELS SHALL BE OF THE SAME CEMENT, AGGREGATE SOURCE, AND CONCRETE SEALANT THAT WILL BE USED TO CONSTRUCT THE PROJECT. AFTER APPROVAL THE CONCRETE TEST PANELS SHALL BE REMOVED AND DISPOSED OF BY THE CONTRACTOR.

MEASUREMENT: ITEM SPECIAL, 530 - STRUCTURES: AESTHETIC TREATMENT (CONCRETE FORMLINER/STAIN) SHALL BE MEASURED IN SQ. FT. AND SHALL BE DEFINED BY THE AREAS THAT ARE DETAILED FOR THE APPROVED PATTERNED AREA.

ALL WORK INCLUDING SURFACE PREPARATION, STAINING, AND OTHER MATERIALS REQUIRED TO COMPLETE THIS WORK SHALL BE INCLUDED FOR PAYMENT WITH ITEM SPECIAL, 530 - STRUCTURES: AESTHETIC TREATMENT (CONCRETE FORMLINER/STAIN).



ARCHITECTURAL SURFACE - ELEVATION

THE FOLLOWING SHALL BE USED:

THE PATTERN AND TEXTURE SHALL DUPLICATE THE APPEARANCE OF IRREGULAR, DRY-STACKED STONE THAT IS DRY LAID (WITH NO MORTAR JOINTS). THE BRIDGE RAILING SHALL HAVE 3 COURSES WITH A TOTAL HEIGHT EQUALING 3 FEET. THE PATTERN SHALL BE RANDOMIZED WITHIN THE WORK AREA.

COMPANY NAME:	FORMLINED SURFACE TREATMENT:	SPECIFICATIONS:
SPEC FORMLINERS, INC.	WASHINGTON DRYSTACK # 1581	MAX RELIEF 1½" LINER THICKNESS 2⅝" STONE SIZE 4" TO 24"
CUSTOM ROCK INTERNATIONAL	NEW ENGLAND DRYSTACK # 12003	MAX RELIEF 1⅜" LINER THICKNESS 2¼" STONE SIZE 3" TO 24"
APPROVED EQUAL	APPROVED EQUAL	APPROVED EQUAL

SUBMITTAL: Pre Tracings
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2/21/2023 11:57:22 AM mdonnell
pw:\\vgfnet-pw.bentley.com:vgfnet-pw-01\Documents\Projects\58677\87642\structures\LICThwdX_0010S\sheets\04_sn001.dgn

DESIGN AGENCY
Gannett Fleming
ENGINEERS & ARCHITECTS, P.C.
2500 CORPORATE EXCHANGE, SUITE 230
COLUMBUS, OHIO 43231

DESIGNED	DRAWN	REVIEWED	DATE
RSN	RSN	CTM	09/2022
CHECKED	REVISED	STRUCTURE FILE NUMBER	
MTO		4560100	

GENERAL NOTES 1 OF 2
BRIDGE NO. LIC-THWDX-0010
OVER T.J. EVANS TRAIL AND RACCOON CREEK

LIC-THORNWOOD CROSSING
PID No. 87642