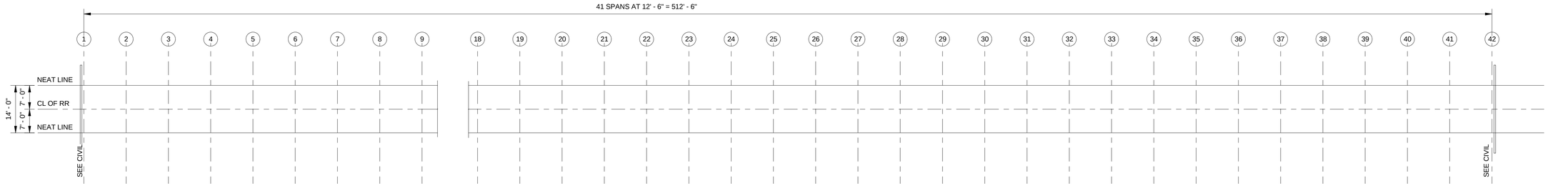
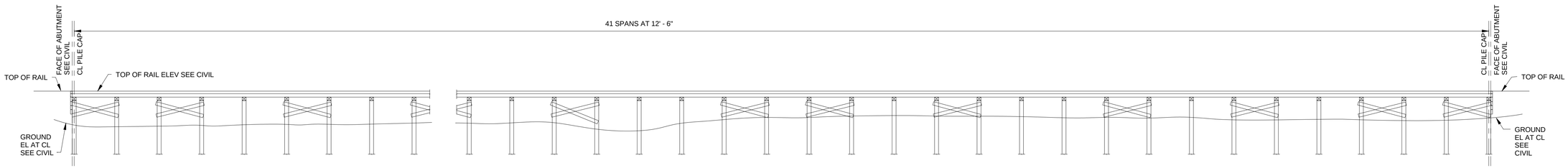


PLAN - BRIDGE 4
1/16" = 1'-0"



ELEVATION - BRIDGE 4
1/16" = 1'-0"

DESIGN AND CONSTRUCTION NOTES

1. TRESTLES DESIGNED FOR E60 LOADING.
2. TOTAL LOAD PER PILE VARIES, SEE PILE TABLE ON S-501. PILES TO BE DRIVEN TO CAPACITY INDICATED IN TABLE.
3. MAX BENDING STRESS IN STRINGER IS 1300 PSI.
4. MAXIXMUM HORIZONTAL SHEAR IN STRINGER IS 118PSI.
5. USE (2) OGEE WASHERS ON ALL THROUGH BOLTS EXCEPT IN GUARD TIMBERS.
6. SALVAGE AND STORE ALL RAIL, GUARD RAIL, RAIL JOINT PLATES, AND TIE BEARING PLATES FOR RE-USE. REINSTALL RE-USABLE SALVAGED MATERIAL DURING CONSTRUCTION. MATERIAL NOT IN CONDITION TO RE-USE SHALL BE REPLACED IN KIND WITH EQUIVALENT NEW MATERIAL.
7. ALL BOLTS TO BE A307 WITH MATCHING NUTS AND WASHERS UON. ALL PLATE AND FABRICATED HARDWARE TO BE ASTM A36 UON. INSTALL ALL THREADED HARDWARE IN HOLES 1/16" LARGER THAN FASTENER DIAMETER. ALL DRIFT BOLTS TO BE A307, INSTALLED IN HOLES 1/16" SMALLER THAN FASTENER DIAMETER. ALL HARDWARE TO BE HOT DIP GALVANIZED.

PILE AND WOOD TREATMENT NOTES

1. TIMBER PILES SHALL BE ASTM D 25 CLASS A, LENGTH AS INDICATED ON S-501, SOUTHERN YELLOW PINE, WITH A MINIMUM BUTT DIAMETER OF 14" UON.
2. TREAT PILES, ALL WOOD IN CONTACT WITH GROUND OR SPLASH ZONE, AND ALL PIER CROSS BRACING IN ACCORDANCE WITH AWPA U1 UC5C USING DUAL TREATMENT WITH CHROMATED COPPER ARSENATE (MINIMUM RETENTION 1.5 POUNDS PER CUBIC FOOT) AND CREOSOTE (MINIMUM RETENTION 20 POUNDS PER CUBIC FOOT).
3. TREAT ALL WOOD NOT INCLUDED IN NOTE 2 IN ACCORDANCE WITH AWPA U1 UC4C USING CHROMATED COPPER ARSENATE WITH A MINIMUM RETENTION OF 0.60 POUNDS PER CUBIC FOOT.
4. TREAT CUTS IN DRIVEN PILES AND ALL WOOD OR TIMBER IN ACCORDANCE WITH AWPA M-4 USING MINIMUM 2.0% COPPER NAPTHENATE.

FOUNDATION NOTES

1. PILE FOUNDATION DESIGN IS BASED ON "SUBSURFACE EXPLORATION AND GEOTECHNICAL ENGINEERING EVALUATION REPORT," APRIL 2017, PREPARED BY GEO-ENVIRONMENTAL SECTION, USACE, NORFOLK DISTRICT.
2. BENT PILES SHALL BE DRIVEN TO THE MINIMUM TIP ELEVATIONS AND CAPACITIES SHOWN IN THE PILE CHART ON SHEET S-501.
3. RETAINING WALL PILES AT END WALL EXTENSIONS AND WING WALLS SHALL BE MINIMUM 20'-0" LONG WITH 10" MINIMUM BUTT DIAMETER.
4. THE CONTRACTOR'S GEOTECHNICAL CONSULTAT SHALL BE RETAINED ON SITE DURING ALL PILE DRIVING OPERATIONS, INCLUDING TEST AND PRODUCTION PILE DRIVING.
5. THE TIMBER PILE TEST PROGRAM SHALL BE COMPLETED PER ASTM D 1143, PROCEDURE A: QUICK LOAD TEST (STATIC LOAD TEST) AND ASTM D 4945 (DYNAMIC LOAD TEST).
6. SEE SHEETS CS-101 AND CS-102 FOR TEST PILE LOCATIONS.
7. A COPY OF THE GEOTECHNICAL REPORT IS INCLUDED FOR REFERENCE IN THE PROJECT SPECIFICATION BINDER.

RAIL COORDINATION NOTES

1. FORT EUSTIS MILITARY RAILWAY WILL PROVIDE SITE SAFETY SUPPORT BY BLUE FLAGGING THE TRACK AT THE CONSTRUCTION SITE IN ACCORDANCE WITH FRA REGULATIONS. COORDINATE WITH RAILWAY POC AND PROVIDE MINIMUM TWO WEEKS NOTICE BEFORE INITIAL CLOSURE OF TRACK.
2. FORT EUSTIS MILITARY RAILWAY WILL PROVIDE SUPPORT IN MOVING RAIL CARS ONTO AND OFF OF THE INSTALLATION IF CONTRACTOR PLANS TO RECEIVE MATERIAL ON SITE BY RAIL. LOCOMOTIVE SUPPORT WILL BE PROVIDED FOR SPOTTING CARS, AND FOR MOVING BALLAST CARS FOR APPLICATION OF BALLAST IF REQUIRED. COORDINATE WITH RAILWAY POC AND PROVIDE MINIMUM TWO WEEKS NOTICE BEFORE ANY INCOMING SHIPMENT OR LOCOMOTIVE SUPPORT REQUIREMENT IS PLANNED.
3. FORT EUSTIS MILITARY RAILWAY POINTS OF CONTACT:

JAMIE JACKSON	(757) 878-5971	PRIMARY
LORI WATSON	(757) 878-5586	ALTERNATE
BILLY GRIMES	(757) 878-5962	SECOND ALTERNATE

WETLAND CONSTRUCTION NOTES

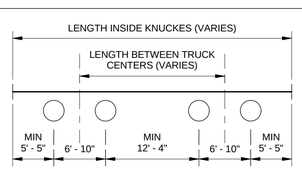
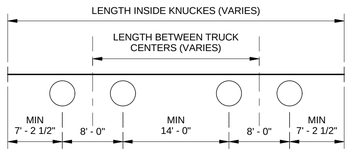
1. BRIDGES 4 AND 5 ARE CONSTRUCTED OVER TIDAL WETLANDS. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH APPROVED ENVIRONMENTAL PERMITS ALREADY OBTAINED BY FORT EUSTIS.
2. EXTREME CARE SHALL BE TAKEN TO MINIMIZE DISTURBANCE TO THE WETLANDS. DEMOLITION WORK IN THE WETLAND SHALL BE IN ACCORDANCE WITH RESTRICTIONS INCLUDED IN SPECIFICATION 02 41 00 PARAGRAPH 3.1.1.
3. USE OF MATS, TRACKED EQUIPMENT OR OTHER HEAVY EQUIPMENT IN THE WETLAND AREA IS PROHIBITED. ALL WORK REQUIRING THE USE OF HEAVY EQUIPMENT SHALL BE PERFORMED FROM ATOP THE STRUCTURE BEING CONSTRUCTED OR FROM ADJACENT NON-WETLAND LAND ALONG THE LENGTH OF THE PROJECT. ACCESS WITHIN THE WETLAND ITSELF SHALL BE LIMITED TO FOOT TRAFFIC AND USE OF HAND CARRIED TOOLS.
4. WORK WITHIN OR OVER THE TIDAL CREEKS MAY ALSO BE CONDUCTED FROM SMALL WATERCRAFT LOWERED BY HAND OR CRANE INTO THE WATER. THERE IS NO NAVIGABLE ACCESS FROM ANY ESTABLISHED BOAT RAMP. CONSTRUCTION OF A TEMPORARY RAMP FOR ACCESS IS NOT PERMITTED.

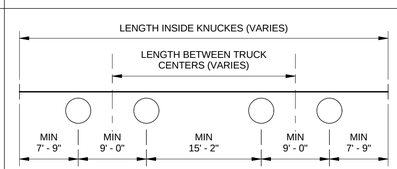
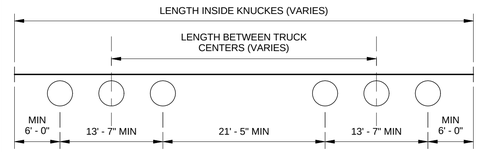
LONGITUDINAL BRACING - BRIDGE 4

INSTALL LONGITUDINAL BRACING ON THE FOLLOWING PAIRS OF PIERS, SEE DETAIL ON S-501 FOR INSTALLATION.

1-2	3-4	6-7	9-10	12-13	15-16	18-19	21-22
24-25	27-28	30-31	33-34	36-37	39-40	41-42	

0' 16' 32' 48'
SCALE: 1/16" = 1' - 0"

LOCOMOTIVE CLASS	WHEEL ARRANGEMENT	WEIGHT RATING (SHORT TON)
GE 80T Switcher USAX 1663 (Model-specific trucks)		**BRIDGE 4: 136T** **BRIDGE 5: 160T**
B-B Switcher Includes EMD SW8 and similar Trucks: AAR/GSC Type A		**BRIDGE 4: 149T** **BRIDGE 5: 184T**

LOCOMOTIVE CLASS	WHEEL ARRANGEMENT	WEIGHT RATING (SHORT TON)
B-B Road Switcher USAX 1880, 4624, 4635, 6516 Includes general purpose road switchers from EMD, GE, NRE Trucks: AAR/GSC Type B EMD GP (Blomberg B, Blomberg M, Flexicoil B) GE/GSC FB-2 Any with similar wheelbase		**BRIDGE 4: 151T** **BRIDGE 5: 206T**
C-C Road Locomotive Includes six axle road locomotives from EMD, GE Trucks: EMD SD (Flexicoil C, HT-C, HTCR) GE/GSC FB-3 Any with similar wheelbase		**BRIDGE 4: 198T** **BRIDGE 5: 234T**

US Army Corps of Engineers ®

MARK	DESCRIPTION	DATE

DESIGNED BY: JPJ
DRAWN BY: CES
CHECKED BY: LWM
SUBMITTED BY: CES
SIZE: ANSI 'D'
ISSUE DATE: 28-JUL-2017
PROJECT NUMBER 453314
CONTRACT NO. -
FILE NUMBER: 842
FILE NAME:

US ARMY CORPS OF ENGINEERS
NORFOLK DISTRICT
NORFOLK, VA

RAILROAD REPAIRS ALONG HARRISON ROAD BETWEEN STA 339+78 TO STA 357+35
FORT EUSTIS, VIRGINIA

BRIDGE 4 PLAN AND ELEVATION

SHEET ID

S-101

S-101-