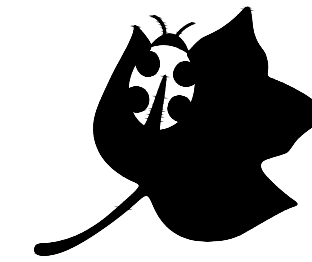


A black silhouette of a ladybug on a leaf. The ladybug is positioned on the right side of the leaf, facing left. The leaf has a long, curved stem and a single, large, rounded lobe. The ladybug's body is oval-shaped with a segmented pattern on its back.



The map shows the state of Delaware with its major roads and towns. A red circle and line highlight the Project Site near Milford. The map includes labels for towns such as Dover, Camden, Wilmington, and Georgetown, and roads such as I-95, I-495, and I-80. The Atlantic Ocean is shown to the east of the state.

LOCATION MAP

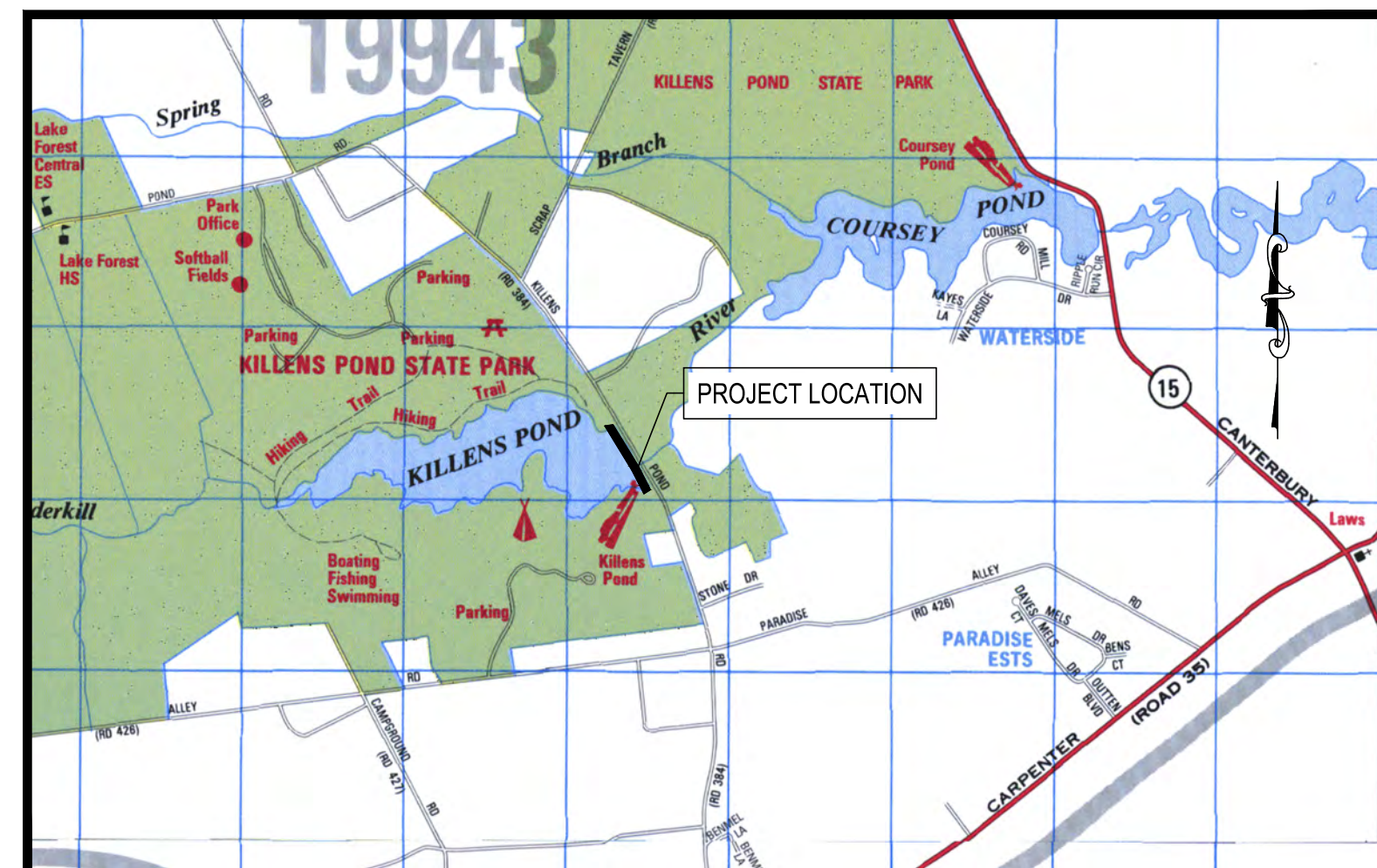
5025 KILLENS POND ROAD, FELTON, DE 19943

AUGUST 2020

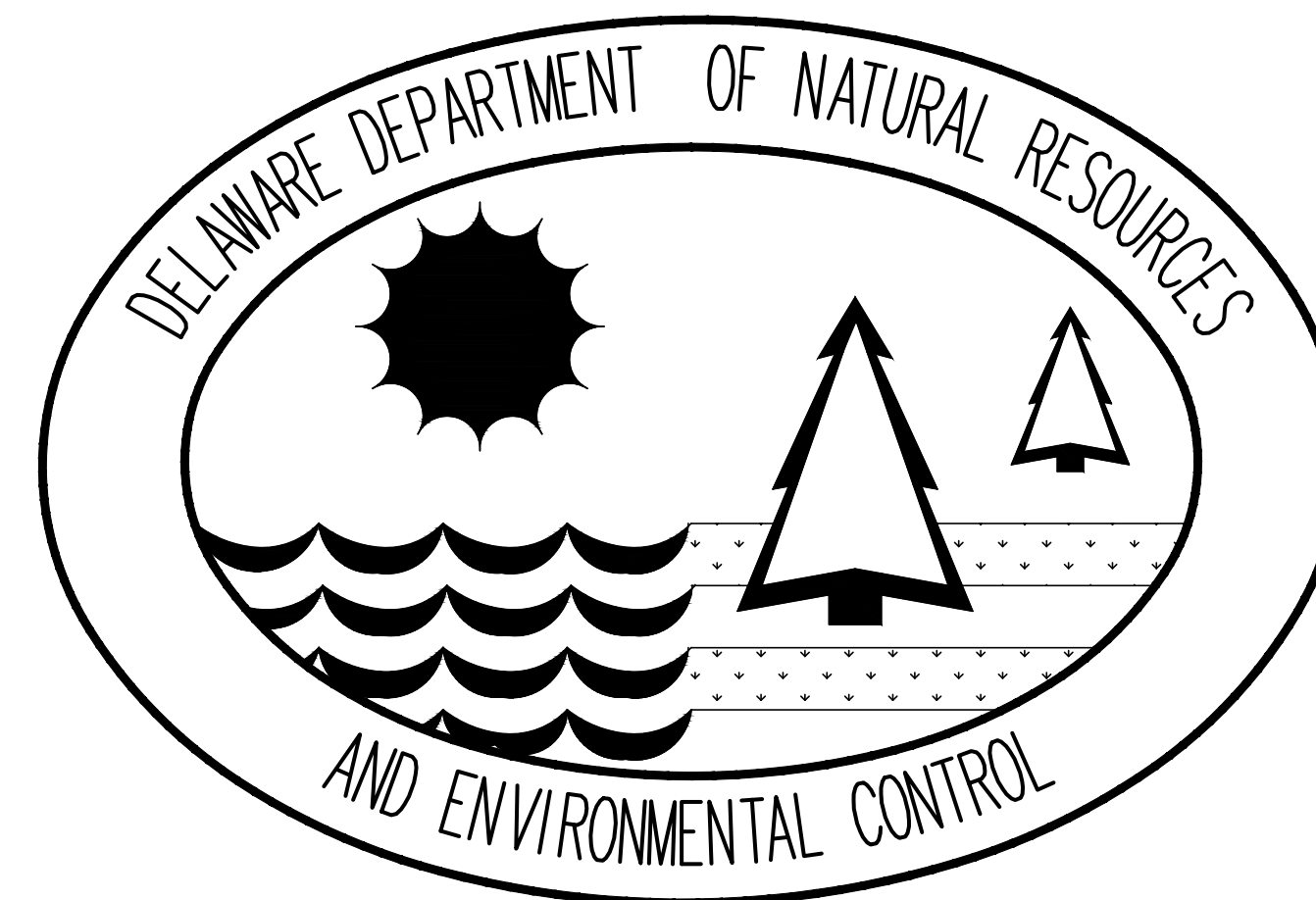
PROJECT NO. KPSP-28

INDEX OF SHEETS FOR PROJECT NO. KPSP-28

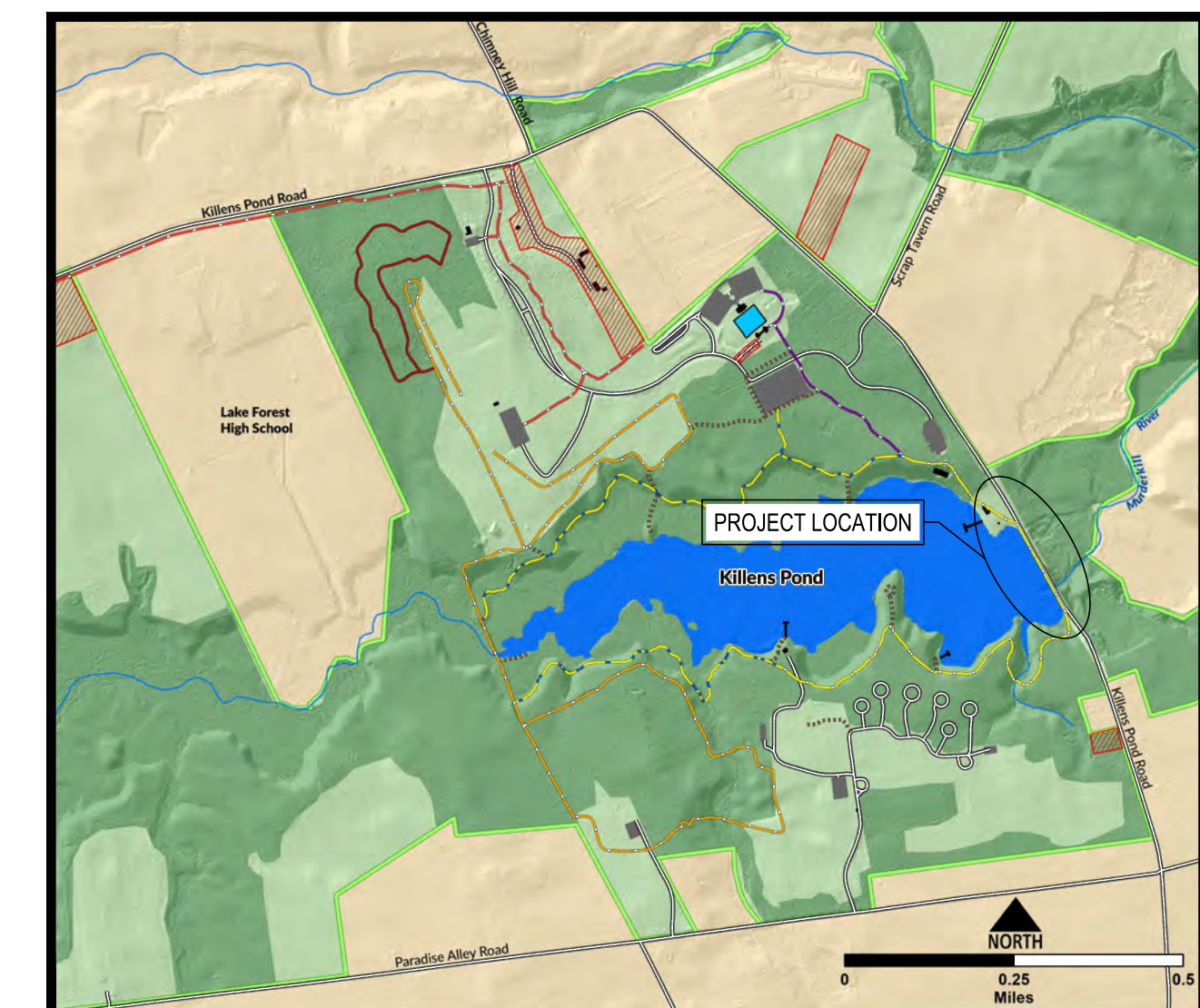
SHEET NO.	SHEET TITLE
CONSTRUCTION PLANS	
C100	COVER SHEET
C101	PROJECT NOTES & LEGEND
C102	PROJECT SCOPE AND SITE CONTROL PLAN
C201	DEMOLITION PLAN
C301	HORIZONTAL ALIGNMENT
C401-C402	SITE PLAN & PROFILE
C403-C404	CROSS SECTIONS
C501-C504	ELEVATED WALKWAY DETAILS
S601	WALKWAY PLAN AND ELEVATION
S602	ABUTMENT DETAILS
S603	REINFORCEMENT DETAILS
S604	PIER BENT DETAILS
S605	SOIL BORING LOGS
SEDIMENT AND STORMWATER MANAGEMENT PLAN	
SSMP500	STORMWATER MANAGEMENT COVER SHEET
SSMP501	EROSION AND SEDIMENT CONTROL PLAN
SSMP502-SSMP504	EROSION & SEDIMENT CONTROL DETAILS
S-1 THRU S-31	GATORBRIDGE APPROVED SHOP DRAWINGS



SITE MAP



ISSUED FOR BID



PARK MAP

REVISIONS: _____ DATE: _____ DESCRIPTION: _____ BY: _____

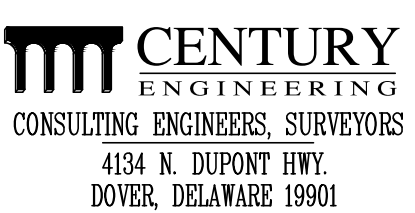
KILLENS POND STATE PARK ELEVATED WALKWAY

COVER SHEET

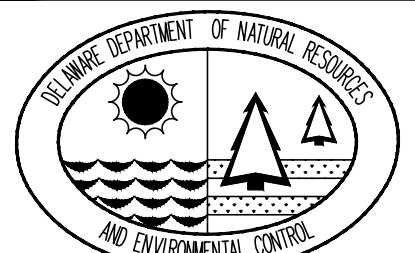
SEAL:



CIVIL ENGINEER:



CEI CONTRACT NO.: 175013.11



DESIGNED BY:

WJH

DRAWN BY:

JSW

CHECKED BY:

AES

DATE: _____

AUGUST 2020

SCALE:

NONE

SHEET NO.:

C100

CONTRACT NO.:

2020-KP-100

CIVIL ENGINEER

PREPARED BY:



CONSULTING ENGINEERS, SURVEYORS
4134 N. DUPONT HWY. DOVER, DELAWARE 19901 (302) 734-9188

SIGNATURE

DATE _____

Seal

OWNER

OFFICE OF DESIGN & DEVELOPMENT
DELAWARE DIVISION OF PARKS & RECREATION
89 KINGS HIGHWAY
DOVER, DELAWARE 19901
(302) 739-9231
(302) 739-7026 (FAX)

SIGNATURE

DATE _____

PROJECT NOTES:

1. THE INTENT OF THIS PROJECT IS TO PROVIDE THE FOLLOWING IMPROVEMENTS AT KILLENS POND STATE PARK:
- 1.1. CONSTRUCTION OF A NEW PRE-MANUFACTURED ALUMINUM ELEVATED WALKWAY OVER KILLENS POND, PARALLEL WITH KILLENS POND ROAD. WALKWAY WILL CONNECT THE EXISTING BOAT RAMP AREA TO THE CANOE LAUNCH AREA, AND OVERALL LENGTH TO BE 868± LINEAR FEET (0.164 MILES).
- 1.2. INSTALLATION OF GALVANIZED STEEL PIPE PILE PIER BENTS WITHIN KILLENS POND.
- 1.3. CONSTRUCTION OF REINFORCED CONCRETE ABUTMENTS LOCATED AT THE NORTH AND SOUTH ENDS OF THE WALKWAY.
- 1.4. CONSTRUCTION OF A GRAVEL TRAIL LEADING FROM THE NORTH END OF THE ELEVATED WALKWAY TO THE EXISTING NATURE CENTER TRAIL, AS SHOWN ON THESE PLANS.
- 1.5. REPAVING THE EXISTING BOAT RAMP PARKING LOT AT THE SOUTH END OF THE PROJECT AT THE END OF THE CONSTRUCTION.
- 1.6. MISCELLANEOUS CONSTRUCTION AND SITE WORK, AS SHOWN ON THESE PLANS.

2. THESE PLANS HAVE BEEN DEVELOPED IN ACCORDANCE WITH THE FOLLOWING:
- 2.1. UNITED STATES ACCESS BOARD "ACCESSIBILITY STANDARDS FOR FEDERAL OUTDOOR DEVELOPED AREAS".
- 2.2. AASHTO "GUIDE FOR THE DEVELOPMENT OF BICYCLE FACILITIES".
- 2.3. AASHTO "LRFD GUIDE SPECIFICATIONS FOR THE DESIGN OF PEDESTRIAN BRIDGES".

3. APPROVED SHOP DRAWINGS FOR THE PRE-MANUFACTURED ALUMINUM WALKWAY ARE INCLUDED WITH THIS PLAN PACKAGE.

4. AT THE TIME OF DELIVERY, THE CONTRACTOR SHALL BE RESPONSIBLE FOR INSPECTING, RECEIVING, TAKING OWNERSHIP, OFF-LOADING, AND STORAGE OF THE PRE-MANUFACTURED ALUMINUM WALKWAY. WALKWAY PANELS SHALL BE STORED ON NATURAL TIMBER CRIBBING WITH NATURAL TIMBER DUNNAGE. NO TREATED WOOD SHALL BE USED FOR MATING OR DUNNAGE. THE ENTIRE ELEVATED WALKWAY SHALL BE DELIVERED AT ONE TIME, OR WITHIN A REASONABLY CLOSE TIME-FRAME. STORAGE SHALL BE IN THE PARKING LOT BEHIND THE WATER PARK. THIS WORK SHALL BE INCLUDED IN THE PRICE BID FOR THIS PROJECT AND SHALL INCLUDE RELOCATING THE MATERIAL FROM THE STORAGE AREA TO THE CONSTRUCTION SITE.

5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ALL ANCHOR BOLTS USED TO SECURE THE PRE-MANUFACTURED ALUMINUM WALKWAY TO THE ABUTMENTS AND PIER CAPS.

6. STEEL PILES AND PIER CAPS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.

7. CONSTRUCTION OF THE ELEVATED WALKWAY SHALL BEGIN AT OR NEAR THE MID-POINT OF THE STRUCTURE AND PROGRESS NORTH AND SOUTH TO PREVENT UNAUTHORIZED PEDESTRIAN ACCESS DURING CONSTRUCTION.

8. NO CONSTRUCTION SHALL TAKE PLACE WITHIN THE WATERS OF KILLENS POND BETWEEN APRIL 1 AND JULY 15, 2020, IN ACCORDANCE WITH DNREC FISH AND WILDLIFE RESTRICTIONS.

9. PARCEL AND BOUNDARY LINES TAKEN FROM GIS INFORMATION. NO BOUNDARY SURVEY WAS REQUESTED OR PERFORMED FOR THIS PROJECT.

10. THESE PLANS WERE DEVELOPED FROM AERIAL SURVEY PROVIDED BY DNREC PARKS. CONVENTIONAL FIELD SURVEY WAS PROVIDED FOR THE AREA OF THE BRIDGE CROSSING AND THE NORTHERN HALF OF THE TRAIL. THE TRAIL, PIER, AND POND ARE SHOWN ON THE CONVENTIONAL SURVEY HAVE BEEN INCLUDED IN THESE PLANS. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL ADDITIONAL PHYSICAL CONTROL AND LAYOUT, INCLUDING BUT NOT LIMITED TO BASELINE(S) AND WORKING POINTS, AS REQUIRED TO COMPLETE THE WORK AT NO ADDITIONAL COST TO THE OWNER.

11. EXISTING UTILITIES SHOWN ARE BASED ON THE BEST INFORMATION AVAILABLE AT THE TIME THIS PLAN WAS DEVELOPED. COMPLETENESS OR CORRECTNESS OF THE UTILITIES SHOWN THEREOF IS NOT GUARANTEED. THE CONTRACTOR IS RESPONSIBLE FOR CONTACTING MISS UTILITY OF DELAWARE AND FOR EMPLOYING AN UNDERGROUND UTILITY LOCATOR TO LOCATE AND MARK EXISTING UTILITIES WITHIN THE LIMIT OF DISTURBANCE PRIOR TO BEGINNING CONSTRUCTION.

12. THE CONTRACTOR SHALL BE RESPONSIBLE FOR TEMPORARY PROTECTION OR SUPPORT OF ANY ELECTRICAL AND COMMUNICATION LINES, AND ELECTRICAL/COMMUNICATION PEDESTALS THAT INTERFERE WITH THE PROPOSED WORK AT NO ADDITIONAL COST TO THE PROJECT, AS DIRECTED BY THE ENGINEER. WORK SHALL INCLUDE, BUT IS NOT LIMITED TO, EXCAVATION/TRENCHING, MATERIALS, AND LAB LABOR.

13. WORK INCLUDING STAGING, SHALL BE CONFINED TO THE LIMIT OF DISTURBANCE SHOWN ON THE PLANS. ADDITIONAL MATERIAL STORAGE AREAS NECESSARY FOR THE PREMANUFACTURED ALUMINUM WALKWAY PANELS, AND OTHER OVERSIZED ITEMS, SHALL BE ON A PAVED SURFACE WITHIN THE PARK AT A REMOTE LOCATION TO BE DETERMINED BY THE OWNER. THE CONTRACTOR SHALL ACCOUNT FOR THE HOURS, EQUIPMENT, AND TRANSPORTATION COSTS TO MOVE/RELOCATE ITEMS FROM THE REMOTE STORAGE AREA TO THE CONSTRUCTION SITE IN HIS/HER BID PRICE.

14. PORTIONS OF THIS CONTRACT ARE TO BE CONSTRUCTED IN ACCORDANCE WITH DELAWARE DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION (STANDARD SPECIFICATIONS) DATED AUGUST 2016 INCLUDING ALL REVISIONS UP TO ADVERTISEMENT OF THIS PROJECT, UNLESS NOTED OTHERWISE IN THESE PLANS OR THE SPECIFICATIONS. ITEMS INCLUDING, BUT NOT LIMITED TO, EXCAVATION AND EMBANKMENT, ARE TO REFER TO THE "STANDARD SPECIFICATIONS" FOR MATERIALS AND METHOD OF CONSTRUCTION.

15. TOPSOIL SHALL BE STRIPPED, STOCKPILED, AND STABILIZED FOR FUTURE USE IN ACCORDANCE WITH THE DELAWARE EROSION & SEDIMENT CONTROL HANDBOOK, CURRENT EDITION. STOCKPILE AREAS TO BE WITHIN KILLENS POND STATE PARK AT LOCATIONS SHOWN ON THESE PLANS, OR AT AREAS DETERMINED BY THE ENGINEER IN THE FIELD.

16. EXCAVATED SOILS THAT ARE SUITABLE FOR FILL WITHIN THIS PROJECT SHALL BE STOCKPILED AND STABILIZED FOR FUTURE USE IN ACCORDANCE WITH THE DELAWARE EROSION & SEDIMENT CONTROL HANDBOOK, CURRENT EDITION. STOCKPILE(S) TO BE WITHIN KILLENS POND STATE PARK AT LOCATIONS SHOWN ON THESE PLANS.

17. EXCESS EXCAVATED MATERIAL SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE LEGALLY DISPOSED OF OFF SITE. APPROXIMATELY 64 CUBIC YARDS OF EXCESS MATERIAL IS ANTICIPATED TO BE GENERATED FROM THIS CONSTRUCTION.

18. CLEARING AND GRUBBING IS ASSUMED TO EXTEND A MINIMUM OF EIGHTEEN (18) INCHES BELOW EXISTING GRADE. CLEARING AND GRUBBING WITHIN THE LIMITS OF DISTURBANCE (LOD) SHALL CONSIST OF CLEARING, GRUBBING, REMOVING AND DISPOSING OF ALL TREES, ROOTS, VEGETATION AND DEBRIS OFF SITE, UNLESS OTHERWISE INDICATED AND/OR EXCEPT SUCH OBJECT(S) THAT ARE DESIGNATED TO REMAIN.

19. ALL TREE REMOVAL AND TREE TRIMMING WITHIN THE LIMITS OF DISTURBANCE, REGARDLESS OF SIZE, SHALL BE INCIDENTAL TO THE CONTRACT. INDIVIDUAL TREES ARE NOT SHOWN ON THE DRAWINGS BUT MAY REMAIN BY THE CONTRACTOR AS NECESSARY WITHIN THE LIMITS OF DISTURBANCE. TREES GREATER THAN 6" IN DIAMETER SHALL BE FLAGGED BY THE CONTRACTOR FOR REVIEW AND APPROVAL BY THE ENGINEER PRIOR TO REMOVAL. THE CONTRACTOR SHALL NOT REMOVE TREES WITHOUT PRIOR APPROVAL OF THE OWNER.

20. TREES NOT DESIGNATED TO BE REMOVED SHALL BE PROTECTED FROM CONSTRUCTION EQUIPMENT AND COMPACTION OF SOIL WITHIN THE DRIP LINE BY MEANS OF 3'-0" HIGH SENSITIVE AREA PROTECTION (SAP) FENCE, AS SHOWN ON THE EROSION AND SEDIMENT CONTROL PLANS.

21. CROSS SLOPE OF ALL NEW WALKWAYS SHALL NOT EXCEED A SLOPE OF 1:50. LONGITUDINAL SLOPES OF ALL NEW WALKWAYS SHALL NOT EXCEED 1:20, UNLESS SHOWN OTHERWISE ON THE CONTRACT PLANS.

22. THE CONTRACTOR MAY STORE AND/OR STOCKPILE EQUIPMENT AND MATERIALS WITHIN THE PROJECT SITE LIMIT OF CONSTRUCTION (LOC) SHOWN ON PLAN. REFER TO THE SEDIMENT AND EROSION CONTROL PLANS FOR ADDITIONAL INFORMATION.

23. THE CONTRACTOR IS ADVISED THAT CONTRACTOR EMPLOYEE PARKING SHALL BE LIMITED TO THE EXISTING PAVED PARK PARKING AREAS, UNLESS APPROVED BY THE ENGINEER. VEHICLE PARKING SHALL NOT BE ALLOWED ON UNPAVED AREAS OR ALONG KILLENS POND ROAD.

24. FEATURES NOT SPECIFICALLY DESIGNATED FOR DEMOLITION OR REMOVAL THAT ARE DAMAGED BY THE CONTRACTOR OR THE CONTRACTOR'S SUBCONTRACTORS SHALL BE REPAIRED OR REPLACED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE STATE. THE COST FOR REPAIRS OR REPLACEMENT SHALL BE ESTABLISHED BY THE STATE INSURANCE PROVIDER.

25. THE CONTRACTOR SHALL PREVENT DEBRIS, TOOLS, AND CONSTRUCTION MATERIAL FROM FALLING IN THE WATER.

26. REMOVAL OF VEGETATION WITHIN WETLANDS SHALL CONSIST OF CUTTING DOWN TO WITHIN SIX (6) INCHES OF EXISTING GRADE. NO GRUBBING SHALL BE ALLOWED.

27. THE CONTRACTOR SHALL NOTIFY THE OWNER A MINIMUM OF 48 HOURS PRIOR TO PERFORMING ANY CONSTRUCTION AND/OR TESTING, INCLUDING BUT NOT LIMITED TO POURING CONCRETE.

28. ALL TESTING OF MATERIALS SHALL BE PERFORMED AND CERTIFIED BY AN INDEPENDENT THIRD PARTY TESTING AGENCY QUALIFIED FOR EACH REQUIRED TEST.

29. TEST PILES SHALL BE TESTED AND CERTIFIED DURING INSTALLATION BY AN INDEPENDENT THIRD PARTY TESTING AGENCY WITH AT LEAST 5-YEARS OF EXPERIENCE WITH SIMILAR CONSTRUCTION. TESTING SHALL INCLUDE PILE DRIVING ANALYZER (PDA) TESTING TO DETERMINE PILE DEPTHS AND PILE LENGTHS TO ACHIEVE THE AXIAL LOADING REQUIREMENTS AS SPECIFIED IN THE CONTRACT PLANS.

TRAFFIC CONTROL NOTES:

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING A TRAFFIC SAFETY PERMIT FOR THE TWO TEMPORARY CONSTRUCTION ENTRANCES WITH THE DELAWARE DEPARTMENT OF TRANSPORTATION.
2. ALL WORK SHALL BE PERFORMED IN A MANNER THAT WILL REASONABLY PROVIDE THE LEAST PRACTICABLE OBSTRUCTION TO ROAD USERS, INCLUDING VEHICULAR TRAFFIC, BICYCLE TRAFFIC AND PEDESTRIAN TRAFFIC. NO WORK, STORAGE OF MATERIALS, OR PARKING OF VEHICLES SHALL BE ALLOWED WITHIN TEN (10) FEET OF THE EDGE OF THE ROADWAY.

3. NO WORK SHALL BE PERFORMED FROM KILLENS POND ROAD. NO CONSTRUCTION OR PERSONAL VEHICLES SHALL BE PARKED ON OR ALONG KILLENS POND ROAD.

4. TYPICAL APPLICATIONS PER THE DELAWARE MUTCD SHALL BE INCORPORATED TO ACHIEVE REQUIRED TEMPORARY TRAFFIC CONTROL AND SAFETY REQUIREMENTS. THIS PROJECT IS SUBJECT TO THE FOLLOWING TYPICAL APPLICATIONS, AS NOTED ABOVE, UNLESS DIRECTED OTHERWISE BY THE DELDOT DISTRICT SAFETY OFFICER:

- 4.1. TYPICAL APPLICATION 6 - SHOULDER WORK WITH MINOR ENCRoACHMENT ON A TWO-LANE, LOW-SPEED ROAD (≤40 MPH): "WORK WITHIN THE RIGHT OF WAY SHOULDER OF HOPKINS ROAD (7A-6)".
- 4.2. TYPICAL APPLICATION 10 - LANE CLOSURE ON A TWO-LANE ROAD USING FLAGGERS: "WORK WITHIN THE TRAVEL LANE OF HOPKINS ROAD (7A-10)".
- 4.3. TYPE II BARRICADES SHALL BE USED TO BLOCK ENTRANCE TO ALL CONSTRUCTION ALONG KILLENS POND ROAD.

5. ANY TEMPORARY TRAFFIC CONTROL AND TEMPORARY TRAFFIC CONTROL DEVICES DEEMED NECESSARY BY THE CONTRACTOR AND AS REQUIRED BY DELDOT, SHALL BE IN ACCORDANCE WITH:

- 5.1. THE CONTRACT DOCUMENTS, THE LATEST EDITION OF THE MANUAL TITLED "STATE OF DELAWARE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD)" (HEREINAFTER REFERRED TO AS THE "DELAWARE MUTCD").
- 5.2. CURRENT STATE OF DELAWARE DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, AND SUPPLEMENTAL SPECIFICATIONS, INCLUDING ALL REVISIONS AS OF THE DATE OF THE ENTRANCE PERMIT APPROVAL.

6. THE DEPARTMENT RESERVES THE RIGHT TO STOP THE CONTRACTOR'S OPERATIONS, IF, IN THE OPINION OF THE DEPARTMENT'S REPRESENTATIVE, THE CONTRACTOR'S OPERATIONS ARE NOT IN COMPLIANCE WITH THE DELAWARE MUTCD, THE SPECIFICATIONS OR THE PLANS OR IF THE CONTRACTOR'S OPERATIONS ARE DEEMED UNSAFE.

7. IF THE CONTRACTOR REQUIRES WORK OR OTHER ACTIVITY WITHIN TEN (10) FEET OF THE STATE ROAD, THE CONTRACTOR SHALL SUBMIT A TEMPORARY TRAFFIC CONTROL PLAN (TTCP) TO THE DELDOT DISTRICT SAFETY OFFICER FOR APPROVAL PRIOR TO THE START OF WORK AT EACH AND EVERY LOCATION. THE TTCP SHALL BE PREPARED, SIGNED AND SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF DELAWARE AND SHALL BE PREPARED IN ACCORDANCE WITH ALL APPLICABLE DELDOT STANDARDS. THE TTCP SHALL BE SUBMITTED 14 CALENDAR DAYS IN ADVANCE OF STARTING WORK.

8. ALL ROADWAY CLOSURES OR LANE CLOSURES BEYOND THOSE SPECIFIED AND APPROVED IN THE PLANS SHALL BE APPROVED BY THE DISTRICT SAFETY OFFICER A MINIMUM OF TWO WEEKS IN ADVANCE OF THE PROPOSED RESTRICTION.

9. TEMPORARY TRAFFIC CONTROL DEVICES SHALL BE MAINTAINED IN GOOD CONDITION IN ACCORDANCE WITH THE BROCHURE ENTITLED "QUALITY GUIDELINES FOR TEMPORARY TRAFFIC CONTROL DEVICES", PUBLISHED BY THE AMERICAN TRAFFIC SAFETY SERVICES ASSOCIATION (ATSSA). ANY TEMPORARY TRAFFIC CONTROL DEVICES THAT DO NOT MEET THE QUALITY GUIDELINES SHALL BE REMOVED AND REPLACED WITH ACCEPTABLE DEVICES. FAILURE TO COMPLY WILL RESULT IN WORK STOPPAGE.

10. TEMPORARY TRAFFIC CONTROL DEVICES USED ON ALL ROADWAYS OPEN TO THE PUBLIC IN DELAWARE SHALL CONFORM TO THE DELAWARE MUTCD AND SHALL BE IN NEW OR REFURBISHED CONDITION. ALL DEVICES SHALL BE CRASHWORTHY IN ACCORDANCE WITH THE NATIONAL COOPERATIVE HIGHWAY RESEARCH PROGRAM (NCHRP) REPORT 350 AND/OR IN ACCORDANCE WITH THE LATEST EDITION OF THE MANUAL FOR ASSESSING SAFETY HARDWARE (MASH), PUBLISHED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS (AASHTO). THE CONTRACTOR SHALL SUBMIT CERTIFICATION FOR ALL TEMPORARY TRAFFIC CONTROL DEVICES USED SPECIFICALLY ON THIS PROJECT TO THE DISTRICT SAFETY OFFICER AT OR PRIOR TO THE PRE-CONSTRUCTION MEETING. THE CONTRACTOR SHALL NOT BEGIN WORK OR PLACE ANY TEMPORARY TRAFFIC CONTROL DEVICES UNTIL THE CERTIFICATION OF DEVICES HAS BEEN APPROVED BY THE DISTRICT SAFETY OFFICER.

11. ANY DEFICIENCIES RELATED TO TEMPORARY TRAFFIC CONTROL THAT ARE REPORTED TO THE CONTRACTOR IN WRITING SHALL BE CORRECTED WITHIN 24 HOURS OR AS DIRECTED BY THE DISTRICT SAFETY OFFICER. CORRECTIVE ACTIONS ON SEVERE DEFICIENCIES SHALL BE TAKEN IMMEDIATELY. FAILURE TO COMPLY WILL RESULT IN THE SUSPENSION OF WORK UNTIL DEVICES ARE BROUGHT BACK INTO COMPLIANCE.

12. ACCESS TO ALL TRANSIT STOPS LOCATED WITHIN THE PROJECT LIMITS SHALL BE MAINTAINED UNLESS OTHERWISE DIRECTED BY THE PLANS OR THE ENGINEER. MAINTAINING ACCESS TO THE TRANSIT STOP SHALL INCLUDE MAINTAINING AN AREA OF THE TRANSIT VEHICLE TO STOP TO PICK-UP AND DISCHARGE PASSENGERS AND ALSO AN ACCESSIBLE PATH FOR PEDESTRIANS TO SAFELY ACCESS THE TRANSIT STOP.

13. THE CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING THE LOCAL 911 CENTER, LOCAL SCHOOLS AND THE DELDOT PUBLIC INFORMATION CENTER OF ALL ROADS AND LANES TO BE CLOSED A MINIMUM OF SEVEN CALENDAR DAYS BEFORE THE CLOSURE.

14. THE CONTRACTOR SHALL NOTIFY THE LOCAL 911 CENTER IF ACCESS TO A FIRE HYDRANT IS TEMPORARILY RESTRICTED.

15. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ENSURING THAT THE TRANSPORTATION MANAGEMENT CENTER IS NOTIFIED EACH AND EVERY DAY WHEN WORK IS BEING PERFORMED IN STATE RIGHT-OF-WAY. THE CONTRACTOR SHALL IDENTIFY THE TYPE OF WORK, ANY LANE(S) OR SHOULDER(S) CLOSED, THE LENGTH OF TIME FOR WORK, WHEN THE LANE RESTRICTIONS ARE IN PLACE, AND WHEN LANE RESTRICTIONS ARE LIFTED. CONTACT PERSON/PHONE NUMBER AND STATE INSPECTOR, THE TRANSPORTATION MANAGEMENT CENTER CAN BE REACHED AT (302) 659-4600.

17. AT THE END OF EACH WORKDAY, THE CONTRACTOR SHALL CORRECT ALL VERTICAL DIFFERENCES IN ACCORDANCE WITH TABLE 60-1 OF THE DELAWARE MUTCD, IF REQUIRED TO MAINTAIN TRAFFIC.

18. AT THE END OF EACH DAY'S OPERATION AND BEFORE TRAFFIC IS RETURNED TO UNRESTRICTED ROADWAY USE, TEMPORARY PAVEMENT MARKINGS SHALL BE APPLIED IN ACCORDANCE WITH THE DELAWARE MUTCD AND DELDOT'S TEMPORARY PAVEMENT MARKINGS POLICY.

19. WHEN SIDE ROADS INTERSECT THE WORK ZONE, ADDITIONAL TRAFFIC CONTROL DEVICES SHALL BE ERECTED INCLUDING PERMANENT WARNING SIGNS.

20. ALL STORAGE OF EQUIPMENT AND MATERIAL SHALL COMPLY WITH SECTION 66.21 OF THE DELAWARE MUTCD.

21. ALL FLAGGERS SHALL COMPLY WITH CHAPTER 6E OF THE DELAWARE MUTCD.

22. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING HIS/HER WORK WITH OTHER CONTRACTORS IN THE AREA.

23. ALL PERSONS WORKING WITHIN THE STATE RIGHT-OF-WAY SHALL WEAR A MINIMUM OF AN ANSI CLASS II SAFETY VEST MEETING OR EXCEEDING THE ANSI 107-2004 REQUIREMENTS, AS SPECIFIED IN THE DELAWARE MUTCD.

24. ALL PAVEMENT MARKINGS THAT ARE NO LONGER IN USE AND CONFLICT WITH TEMPORARY PAVEMENT MARKINGS SHALL BE REMOVED AND COMPLETELY OBLITERATED BY A METHOD APPROVED BY THE ENGINEER. PAINTING OVER THE CONFLICTING PAVEMENT MARKINGS WILL NOT BE ACCEPTED AS A METHOD OF REMOVAL.

25. THE CONTRACTOR IS RESPONSIBLE FOR THE MAINTENANCE OF EXISTING PAVEMENT WITHIN THE PROJECT LIMITS FOR THE DURATION OF THE CONTRACT OR AS DIRECTED BY THE ENGINEER.

26. ALL ROADWAYS AND ENTRANCES NOT OPEN TO TRAFFIC SHALL BE CLOSED USING TYPE III BARRICADES AND SHALL BE INSTALLED PER THE DELAWARE MUTCD.

EXPERIENCE REQUIREMENTS:

1. PROVIDE THE FOLLOWING DOCUMENTATION WITH THE BID SUBMITTAL PACKAGE:
- 1.1. STEEL PILES SHALL BE INSTALLED BY A CONTRACTOR EXPERIENCED IN PILE DRIVING OPERATIONS IN A MARINE ENVIRONMENT. PROVIDE DOCUMENTATION, INCLUDING JOB NAME(S), LOCATION(S), OWNER(S), AND OWNER(S) CONTACT INFORMATION FOR SIMILAR WORK EXPERIENCE PERFORMED WITHIN THE LAST THREE (3) YEARS.
- 1.2. PREMANUFACTURED BRIDGE SHALL BE INSTALLED BY A CONTRACTOR EXPERIENCED IN THIS TYPE OF WORK. PROVIDE DOCUMENTATION, INCLUDING JOB NAME(S), LOCATION(S), OWNER(S), AND OWNER(S) CONTACT INFORMATION FOR SIMILAR WORK EXPERIENCE PERFORMED WITHIN THE LAST THREE (3) YEARS.

ABBREVIATIONS

ADA	AMERICANS WITH DISABILITIES ACT	OHW	ORDINARY HIGH WATER
ALUM	ALUMINUM	PL	PLATE
BL	BASE LINE	P.L.	PROPERTY LINE
CL	CENTER LINE	PSI	POUNDS PER SQUARE INCH
CLR	CLEAR	PT	PRESSURE TREATED
CONC	CONCRETE	REBAR	REINFORCING BAR
E.F.	EACH FACE	ROW	RIGHT OF WAY
EL	ELEVATION	RW	RIGHT OF WAY
ELEV	ELEVATION	SF	SILT FENCE
F.F.	FAR FACE	SS	STAINLESS STEEL
F _c	COMPRESSIVE STRENGTH OF CONCRETE	STA	STATION
GALV	GALVANIZED	STL	STEEL
HORIZ	HORIZONTAL	STR	STRAIGHT
LOC	LIMIT OF CONSTRUCTION	T&B	TOP AND BOTTOM
LOD	LIMIT OF DISTURBANCE	TYP	TYPICAL
LRFD	LOAD RESISTANCE FACTORED DESIGN	UHMW	ULTRA HIGH MOLECULAR WEIGHT
MHW	MEAN HIGH WATER	UNO	UNLESS OTHERWISE NOTED
N.F.	NEAR FACE	VERT	VERTICAL
O.C.	ON CENTER	WSE	WATER SURFACE ELEVATION

GENERAL NOTES:

1. THE TERM "ENGINEER," "STATE," AND/OR "ARCHITECT" NOTED THROUGHOUT THE CONTRACT PLANS AND SPECIFICATIONS SHALL REFER TO DNREC / STATE PARKS, OR THEIR APPOINTED REPRESENTATIVE. THE TERM "SITE" AND "PARK" MAY BE USED INTERCHANGEABLY THROUGHOUT THESE DOCUMENTS AS A MEANS OF IDENTIFYING KILLENS POND STATE PARK.

2. THE CONTRACTOR SHALL RESTORE ALL AREAS AFFECTED BY THE CONSTRUCTION SHOWN HEREON AS SHOWN ON THESE PLANS AND SPECIFICATIONS, TO A CONDITION COMPARABLE TO THAT EXISTING PRIOR TO CONSTRUCTION, AND TO THE SATISFACTION OF DNREC.

3. THE CONTRACTOR SHALL PROVIDE NECESSARY FACILITIES, INCLUDING BUT NOT LIMITED TO RESTROOMS, AND CONSTRUCTION TRAILER DURING CONSTRUCTION. PARK FACILITIES SHALL NOT BE USED.

4. THE CONTRACTOR SHALL NOTE THAT IN CASE OF DISCREPANCY BETWEEN THE SCALED AND THE FIGURED DIMENSIONS SHOWN ON THE PLANS, THE FIGURED DIMENSIONS SHALL GOVERN. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONFIRMING ALL DIMENSIONS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR BRINGING ANY DIMENSIONAL DISCREPANCIES TO THE ATTENTION OF THE ENGINEER FOR CLARIFICATION.

5. THE CONTRACTOR SHALL CONTACT MISS UTILITY TWO (2) CONSECUTIVE WORKING DAYS PRIOR TO EXCAVATION, OR AS REQUIRED BY LAW, AT 1-800-282-8555.

6. BEFORE EXCAVATION IS STARTED, THE CONTRACTOR SHALL VERIFY THE LOCATION OF ALL UNDERGROUND UTILITIES. ALL EXISTING UTILITIES SHALL BE PROTECTED AND TEMPORARILY SUPPORTED OR RELOCATED AS NECESSARY TO COMPLETE THE WORK IN ACCORDANCE WITH THE PERTINENT OWNER/UTILITY COMPANY REQUIREMENTS. ANY UTILITIES DAMAGED BY THE CONTRACTOR SHALL BE PROMPTLY AND FULLY RESTORED TO THE SATISFACTION OF THE OWNER.

7. THE CONTRACTOR SHALL DESIGNATE A PERSON WHO SHALL BE RESPONSIBLE FOR IMPLEMENTING AND MAINTAINING THE EROSION AND SEDIMENT CONTROL PLANS, A PERSON WHO SHALL BE RESPONSIBLE FOR IMPLEMENTING AND MAINTAINING THE TRAFFIC CONTROL, AND A PERSON WHO SHALL BE RESPONSIBLE FOR WORKER SAFETY. THE PERSON RESPONSIBLE FOR IMPLEMENTING AND MAINTAINING THE EROSION AND SEDIMENT CONTROL PLANS SHALL BE CERTIFIED BY DNREC FOR EROSION AND SEDIMENT CONTROL RESPONSIBILITY (CERTIFIED CONSTRUCTION REVIEWER).

8. THE CONTRACTOR IS RESPONSIBLE FOR SECURING THE AREA WITHIN THE LIMITS OF CONSTRUCTION TO PROHIBIT PUBLIC ACCESS AND DIRECT PEDESTRIAN TRAFFIC UNTIL COMPLETION OF THE PROJECT. THE CONTRACTOR'S PROCEDURE/METHOD FOR LIMITING ACCESS SHALL INCLUDE TEMPORARY SAFETY FENCE, AND SHALL BE COORDINATED WITH THE OWNER AND SUBMITTED FOR REVIEWED AND APPROVAL PRIOR TO THE START OF WORK. THE COST TO INSTALL, RELOCATE, AND MAINTAIN SITE SECURITY SHALL BE INCIDENTAL TO THE CONTRACT.

9. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR OBTAINING OFF-SITE SPOIL AREAS FOR LEGAL DISPOSAL OF EXCESS MATERIAL NOT ACCEPTED BY THE PARK AND/OR UNSUITABLE MATERIALS AS NECESSARY IN ACCORDANCE WITH ALL FEDERAL, STATE, AND LOCAL REQUIREMENTS. ALL COST FOR RECYCLING, TRANSPORTING TO, PROCURING AND UTILIZING THE OFF-SITE SPOIL AREAS ARE TO BE INCIDENTAL TO THE CONTRACT.

10. IN CASE OF CONFLICT BETWEEN THE "MANUFACTURER'S RECOMMENDATIONS" FOR AN APPROVED MATERIAL AND THE GOVERNING "CONTRACT SPECIFICATIONS" FOR THE MATERIAL, THE MORE RESTRICTIVE OF THE TWO SHALL PREVAIL, UNLESS OTHERWISE DIRECTED BY THE ENGINEER.

11. THE CONSTRUCTION PLANS PRESENT A CONCEPT OF THE RELATIONSHIP BETWEEN TRAFFIC CONTROL, EROSION CONTROL, ETC. ANY REVISION TO THE DETAILS OR SEQUENCE SHOWN ON THE CONSTRUCTION PLANS SHALL BE PREPARED BY THE CONTRACTOR ON STANDARD DNREC PLAN SHEETS AND SUBMITTED FOR REVIEW AND APPROVAL BY THE ENGINEER. THE PLANS SHALL BE PREPARED IN ACCORDANCE WITH CURRENT DNREC STANDARDS FOR TRAFFIC CONTROL, EROSION AND SEDIMENT CONTROL (PREPARED BY A CERTIFIED CONSTRUCTION REVIEWER), STORM WATER MANAGEMENT, ETC. AND SHALL BE SIGNED AND SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF DELAWARE. ALL REQUIRED CALCULATIONS, REPORTS, ETC. SHALL ALSO ACCOMPANY THE SUBMISSION. THE NUMBER OF COPIES REQUIRED TO BE SUBMITTED FOR REVIEW SHALL BE DETERMINED BY DNREC, DEPENDING ON THE NATURE OF THE PROPOSED REVISION. THE CONTRACTOR SHALL NOTE THAT THE REVISIONS TO THE CONSTRUCTION PLANS, AS WELL AS REVIEW TIME BY DNREC, WILL NOT JUSTIFY A DELAY IN THE CONSTRUCTION SCHEDULE. REVISIONS INVOLVING UTILITIES WILL REQUIRE THE COMPLETION OF A UTILITY STATEMENT APPROVED BY THE RESPECTIVE UTILITIES AS PART OF THE PLAN DOCUMENTS. ALL COSTS INVOLVED IN PREPARING THE PLAN REVISIONS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.

12. THESE DRAWINGS DO NOT INCLUDE NECESSARY ELEMENTS OF CONSTRUCTION SAFETY. ALL CONSTRUCTION, INCLUDING EXCAVATION, MUST BE COMPLETED IN ACCORDANCE WITH THE OCCUPATIONAL SAFETY AND HEALTH ACT, CFR §1926.652(b)(2), AND ALL FEDERAL, STATE AND LOCAL REQUIREMENTS. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR ALL SITE SAFETY.

13. NO DEBRIS SHALL BE BURIED OR BURNED ON THE SITE UNLESS SPECIFICALLY NOTED WITHIN THESE PLANS OR SPECIFICATIONS.

LEGEND		
DESCRIPTION	EXISTING	PROPOSED
CONTOUR		
GUARDRAIL		N/A
SIGN		N/A
WOODEN BOLLARD		N/A
DOCK/PIER/ELEVATED WALKWAY	N/A	
TREE		N/A
FENCE		N/A
WOODSLINE		N/A
PROPERTY LINE/RIGHT OF WAY		N/A
ORDINARY HIGH WATER LINE		N/A
SOIL STOCKPILE AREA	N/A	
LIMITS OF DISTURBANCE/ LIMITS OF CONSTRUCTION	N/A	
GRAVEL TRAIL	N/A	
BOLLARD	N/A	
SPAN IDENTIFICATION NO.	N/A	
TEST PILE	N/A	
PRODUCTION PILE	N/A	
AREA OF DEMOLITION	N/A	

NOTE: REFER TO THE SEDIMENT & STORMWATER MANAGEMENT PLANS FOR ADDITIONAL LEGEND INFORMATION.

SPECIFICATIONS

CIVIL ELEMENTS UNDER THIS CONTRACT SHALL BE CONSTRUCTED UTILIZING THE FOLLOWING INFORMATION IN THE HIERARCHY LISTED BELOW:

1. CONTRACT AGREEMENT BETWEEN OWNER AND CONTRACTOR.
2. APPROVED PLANS.
3. PROJECT MANUAL.
4. STATE OF DELAWARE DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL EROSION AND SEDIMENT CONTROL HANDBOOK, APRIL 2014 OR MOST CURRENT AT DATE OF ADVERTISEMENT.
5. DELAWARE DEPARTMENT OF TRANSPORTATION STANDARD CONSTRUCTION DETAILS, 2017, OR MOST CURRENT AT ADVERTISEMENT.
6. DELAWARE DEPARTMENT OF TRANSPORTATION STANDARDS AND SPECIFICATIONS FOR BRIDGE AND ROAD CONSTRUCTION, 2016, OR MOST CURRENT AT DATE OF ADVERTISEMENT.

FIRE MARSHAL NOTES

NAME OF PROJECT:	KILLENS POND STATE PARK ELEVATED WALKWAY
ADDRESS:	5025 KILLENS POND ROAD FELTON, DE 19943
TAX MAP NUMBER:	8-00-149.00-01-13.00-0000 8-00-149.00-01-15.00-0000 6-00-149.00-01-19.00-0000 6-00-149.00-01-44.00-0000
OWNER'S NAME AND ADDRESS:	STATE OF DELAWARE DELAWARE STATE PARKS
ENGINEER:	CENTURY ENGINEERING, INC. 4134 N. DUPONT HWY. DOVER, DE 19901
APPLICANT:	WALTER J. HOEY, III, P.E. (CENTURY ENGINEERING, INC.)
INTENDED USE OF SITE:	MULTI-USE ELEVATED WALKWAY
WATER SUPPLIER:	NONE
NUMBER OF FIRE HYDRANTS:	NONE
BUILDING USE:	NONE
MAXIMUM HEIGHT OF BUILDING:	N/A
BUILDING(S) SIZE:	N/A
PROPOSED BUILDING CONSTRUCTION:	N/A
AUTOMATIC SPRINKLER PROTECTION:	N/A
FIRE LANES:	NONE

NOTES:

1. ALL FIRE LANES, FIRE HYDRANTS, AND FIRE DEPARTMENT CONNECTIONS SHALL BE MARKED IN ACCORDANCE WITH THE STATE FIRE PREVENTION REGULATIONS.
2. ALL PROPOSED FIRE HYDRANTS AND WATER MAINS SHALL BE INSTALLED IN ACCORDANCE WITH THE MOST CURRENT EDITION OF THE DELAWARE STATE FIRE REGULATIONS. (DSFPR REGULATION 702, CHAPTER 6 & 7.
3. FIRE HYDRANTS SHALL BE COLOR CODED IN ACCORDANCE WITH THE DSFPR REGULATION 703, CHAPTER 3, SECTION 4. THIS INCLUDES BOTH COLOR CODING THE BONNET AND 2 INCH REFLECTIVE TAPE AROUND THE BARREL UNDER THE TOP FLANGE.
4. ALL THREADS PROVIDED FOR FIRE DEPARTMENT CONNECTIONS, TO SPRINKLER SYSTEMS, STANDPIPES, YARD HYDRANTS OR ANY OTHER FIRE HOSE CONNECTIONS SHALL BE UNIFORM TO THOSE USED BY THE FIRE DEPARTMENT IN WHOSE DISTRICT THEY ARE LOCATED. (DSFPR REGULATION 703, CHAPTER 1, SECTION 1.5)
5. THE STEAMER CONNECTION OF ALL FIRE HYDRANTS SHALL BE SO POSITIONED SO AS TO BE FACING THE STREET OR FIRE LANE. (DSFPR REGULATION 705, CHAPTER 5, SECTION 10)

REVISIONS:
DATE: DESCRIPTION:
BY:

KILLENS POND STATE PARK
ELEVATED WALKWAY

PROJECT NOTES & LEGEND

SEAL:
WALTER J. HOEY, III
REGISTERED PROFESSIONAL ENGINEER
NO. 11204
DELAWARE

CIVIL ENGINEER:
CENTURY ENGINEERING
CONSULTING ENGINEERS, SURVEYORS
4134 N. DUPONT HWY.
DOVER, DELAWARE 19901

CEI CONTRACT NO.: 175013.11

DESIGNED BY:
WJH

DRAWN BY:
JSW

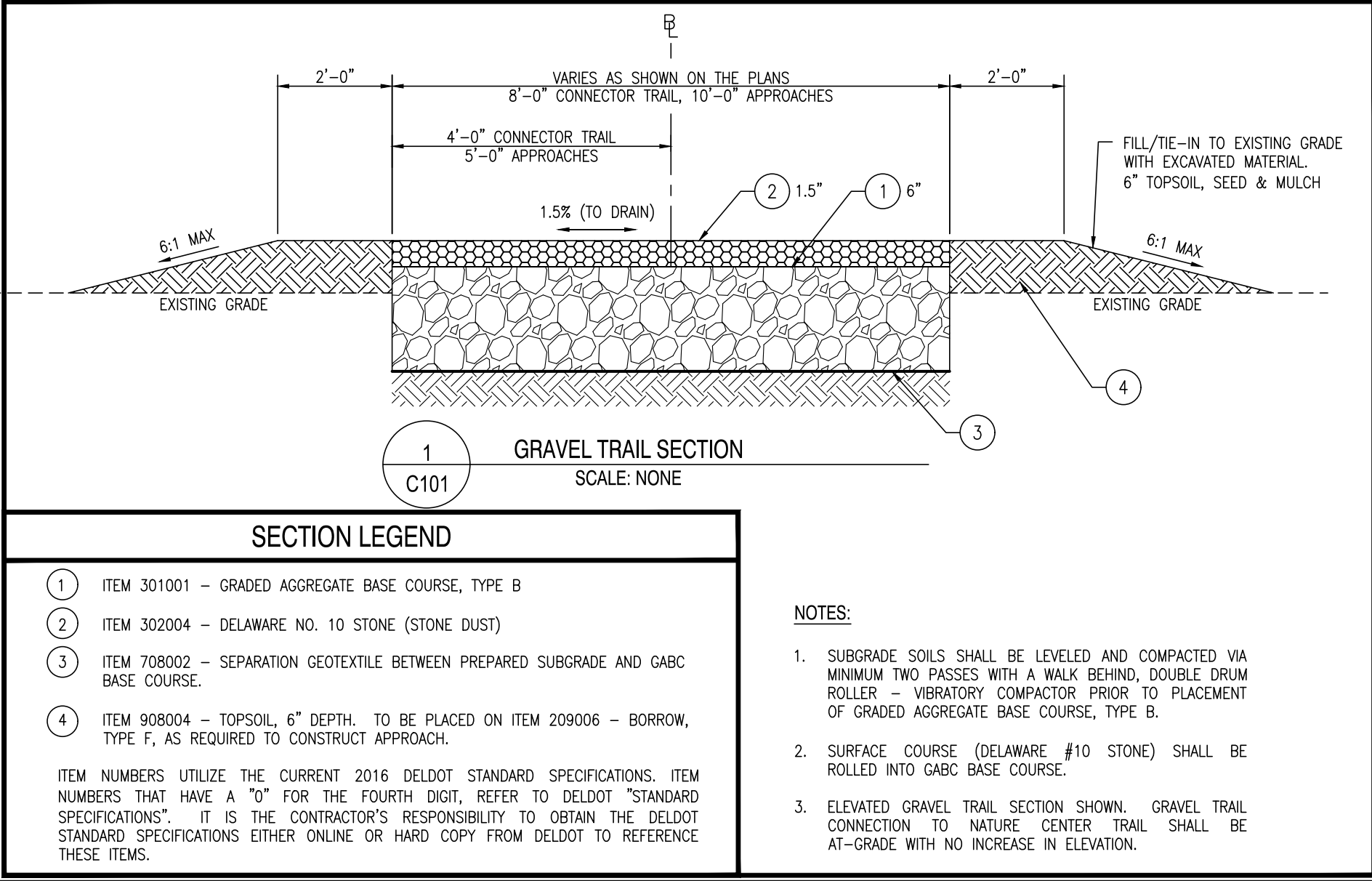
CHECKED BY:
AES

DATE:
AUGUST 2020

SCALE:
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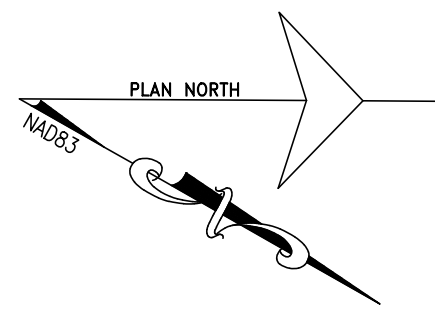
SHEET NO.:
C101

CONTRACT NO.:
2020-KP-100



NOTES:

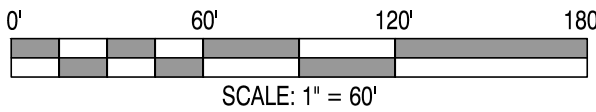
1. SUBGRADE SOILS SHALL BE LEVELED AND COMPACTED VIA MINIMUM TWO PASSES WITHIN WALK BEHIND DOUBLE DRUM ROLLER - VIBRATORY COMPACTOR PRIOR TO PLACEMENT OF GRADED AGGREGATE BASE COURSE, TYPE B.
2. SURFACE COURSE (DELAWARE #10 STONE) SHALL BE ROLLED INTO GABC BASE COURSE.
3. ELEVATED GRAVEL TRAIL SECTION SHOWN. GRAVEL TRAIL CONNECTION TO NATURE CENTER TRAIL SHALL BE AT-GRADE WITH NO INCREASE IN ELEVATION.



NOTE:

1. ALL CONTROL POINTS LISTED ARE CAPPED REBAR.
2. TRAVERSE POINT CONTROL SET BY CENTURY ENGINEERING, INC. ON MAY 3, 2012. CENTURY ENGINEERING, INC. SHALL NOT BE RESPONSIBLE FOR CONTROL THAT HAS BEEN DISTURBED BETWEEN THE DATE OF THE SURVEY AND THE ISSUANCE OF THESE PLANS.

3. SEE PLAN SHEETS SSMP500 THRU SSMP504 FOR COMPLETE SEDIMENT AND STORMWATER MANAGEMENT PLAN.



REVISIONS:

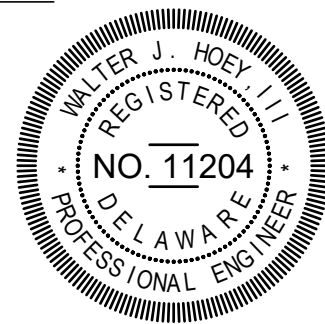
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BY:

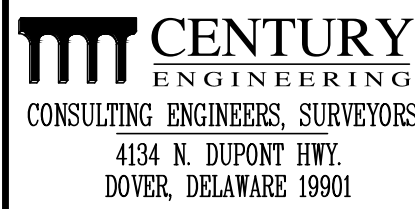
KILLENS POND STATE PARK ELEVATED WALKWAY

PROJECT SCOPE AND SITE CONTROL PLAN

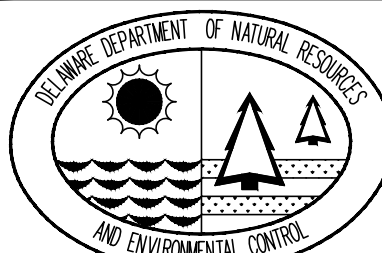
SEAL



CIVIL ENGINEER



CEI CONTRACT NO.: 175013.11



DESIGNED BY:

WJH

DRAWN BY:

JSW

CHECKED BY:

AES

DATE:

AUGUST 2020

SCALE:

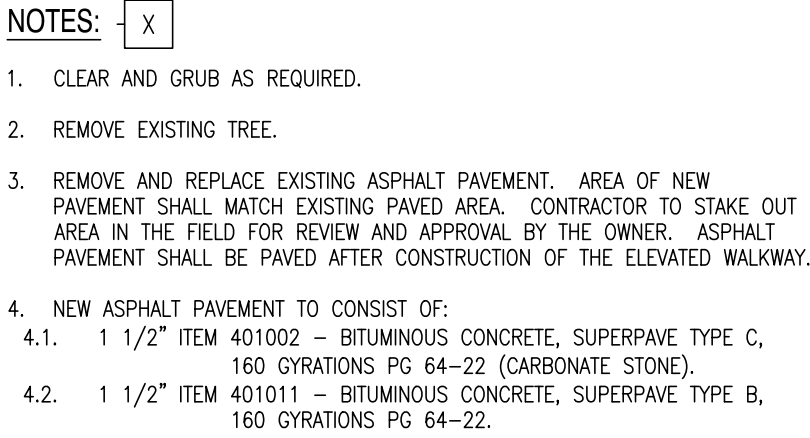
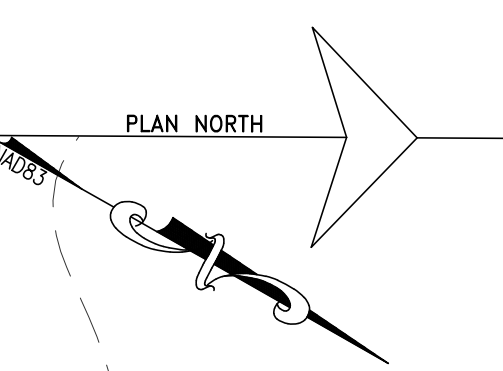
 $1'' = 60'$

SHEET NO.:

C102

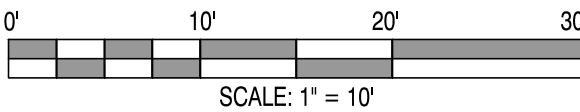
CONTRACT NO.:


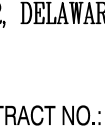
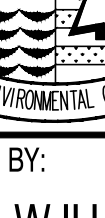
2020-KP-100

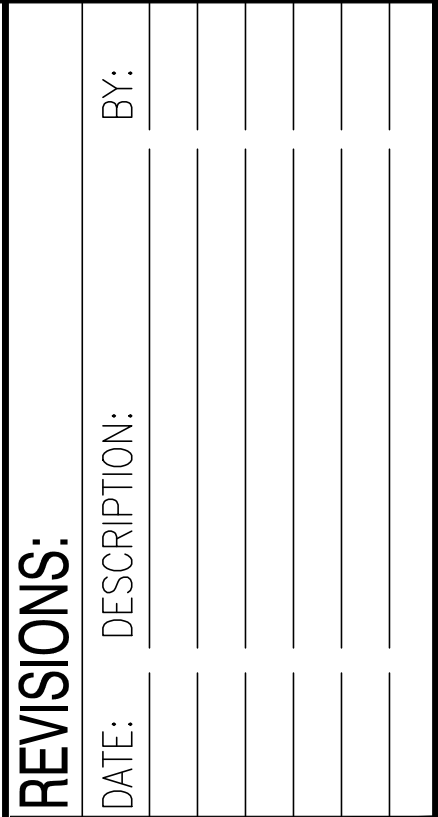


LEGEND (X)

①	TYPE C BITUMINOUS CONCRETE, PG 76-22, (ITEM NO. 401007)
②	TYPE B BITUMINOUS CONCRETE, PG 76-22, (ITEM NO. 401005)
③	GRADED AGGREGATE BASE COURSE, TYPE B, (ITEM NO. 301003) [SEE PROJECT NOTE 4]

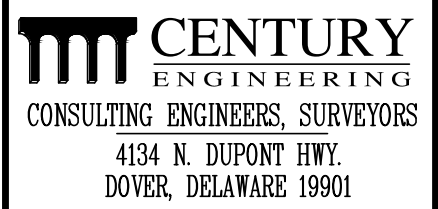


REVISIONS:	
DATE:	DESCRIPTION:
BY:	
KILLENS POND STATE PARK ELEVATED WALKWAY DEMOLITION PLAN	
SEAL: 	
CIVIL ENGINEER:  CENTURY ENGINEERING CONSULTING ENGINEERS, SURVEYORS 4134 N. DUPONT HWY. DOVER, DELAWARE 19901 CEI CONTRACT NO.: 175013.11 	
DESIGNED BY: WJH	
DRAWN BY: JSW	
CHECKED BY: AES	
DATE: AUGUST 2020	
SCALE: 1"=10'	
SHEET NO.: C201	
CONTRACT NO.: 2020-KP-100	

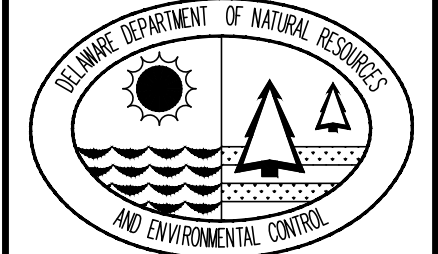


WALTER J. HOEY, III
REGISTERED
NO. 11204
DELAWARE
PROFESSIONAL ENGINEER

CIVIL ENGINEER:



CEI CONTRACT NO.: 175013.11



DESIGNED BY:

WJH

DRAWN BY:

JSW

CHECKED BY:

AES

DATE: **AUGUST 2022**

AUGUST 2020
SCALE

 $1''-20'$

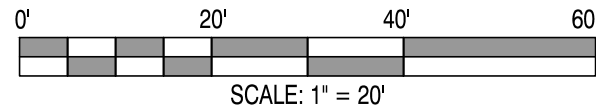
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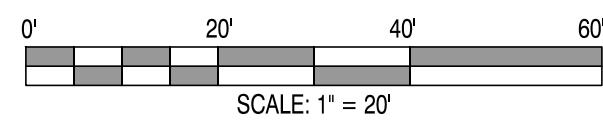
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CONTRACT NO.:

2020-KP-100

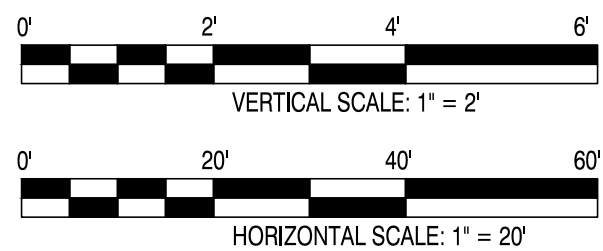
BOARDWALK ALIGNMENT			
POINT NO.	DESCRIPTION	NORTHING	EASTING
1000	PDB STA. 100+00.00	357199.3956	624168.7103
1001	STA. 101+31.13	357313.7284	624104.5031
1002	STA. 102+11.73	357359.5956	624038.2186
1003	STA 102+95.74	357432.8384	623997.0868
1004	STA. 103+79.97	357516.9307	623992.2119
1005	STA. 108+69.38	357945.7336	623756.3024
1006	PDE STA. 110+00.35	358060.4795	623693.1740





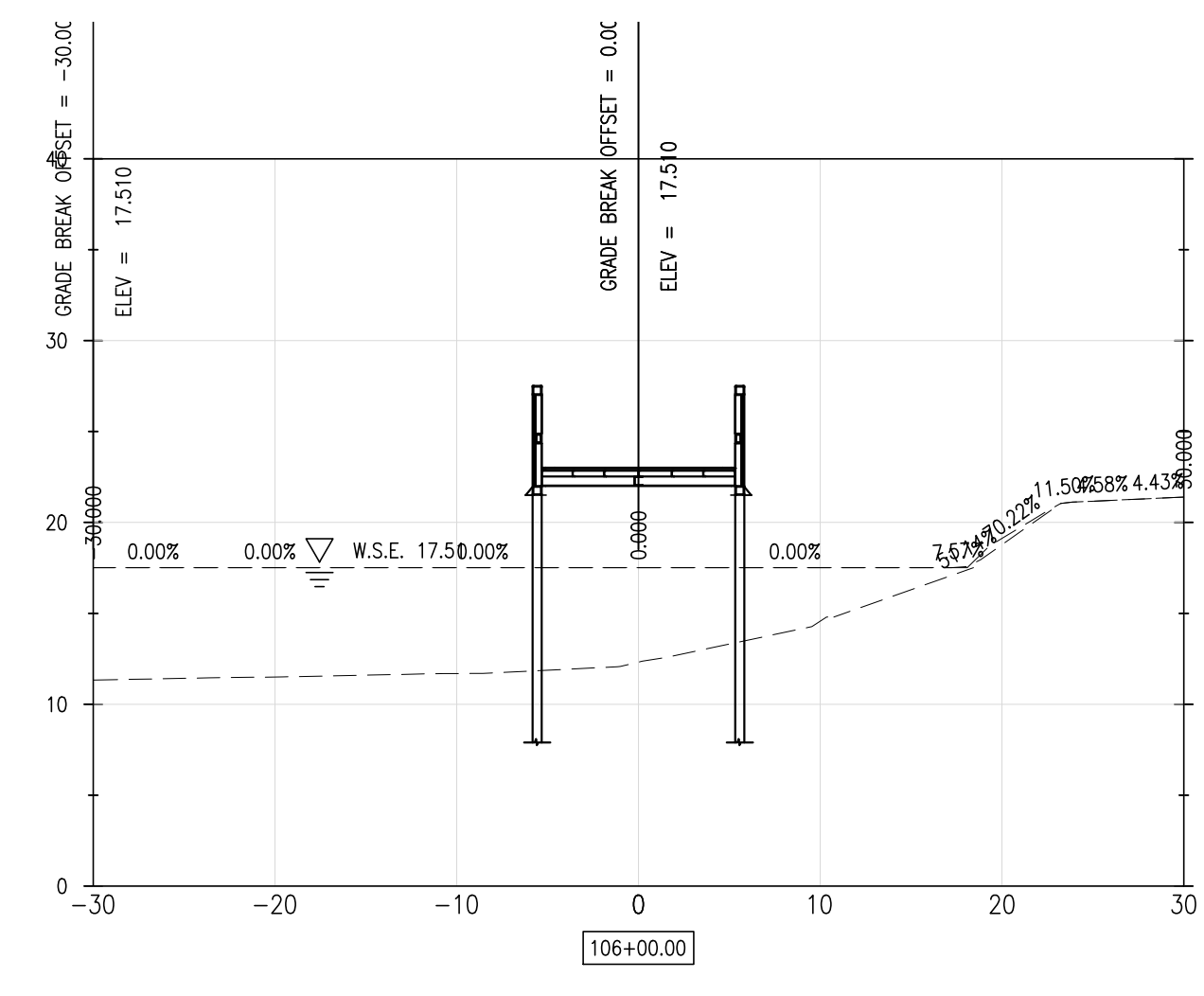
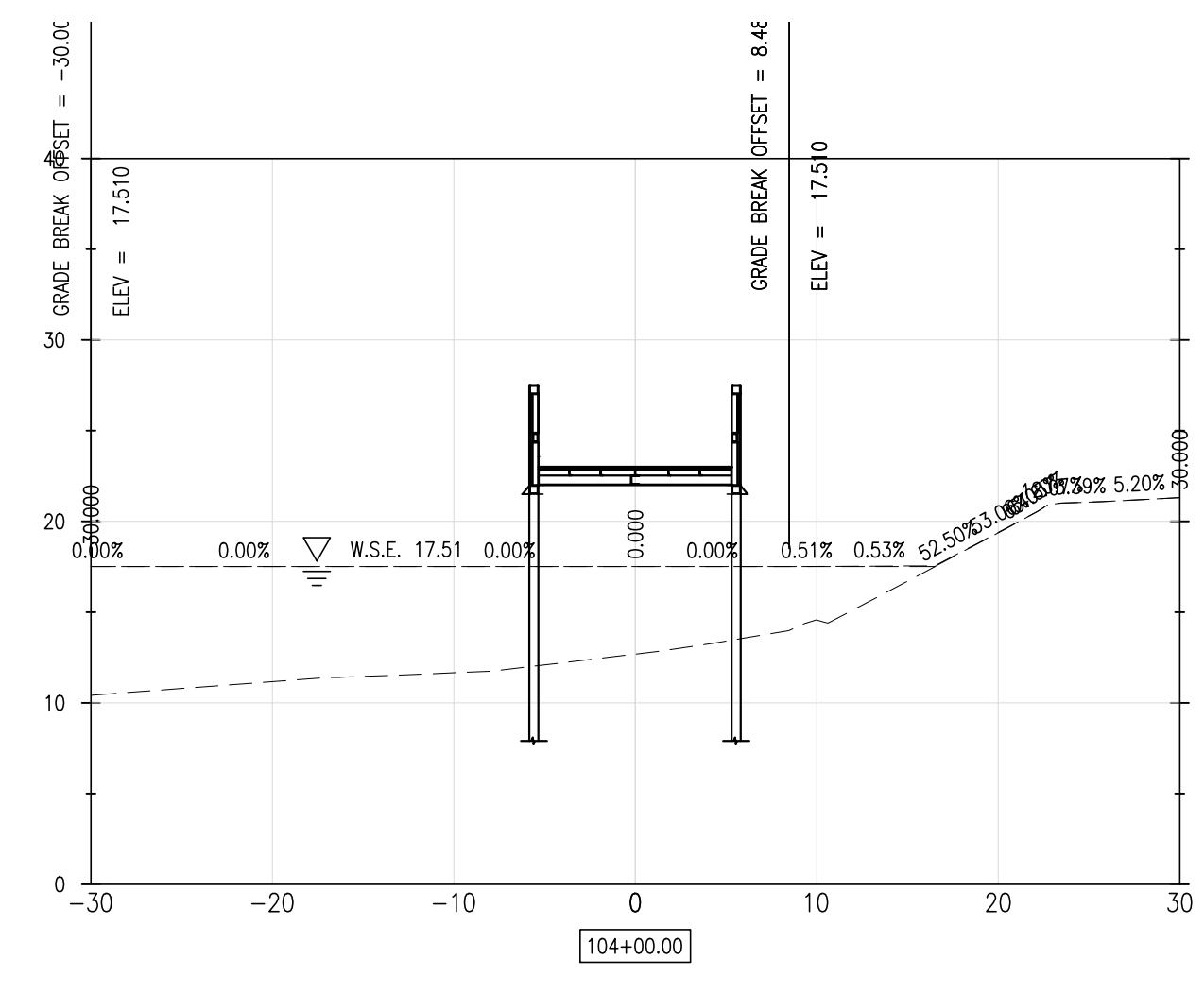
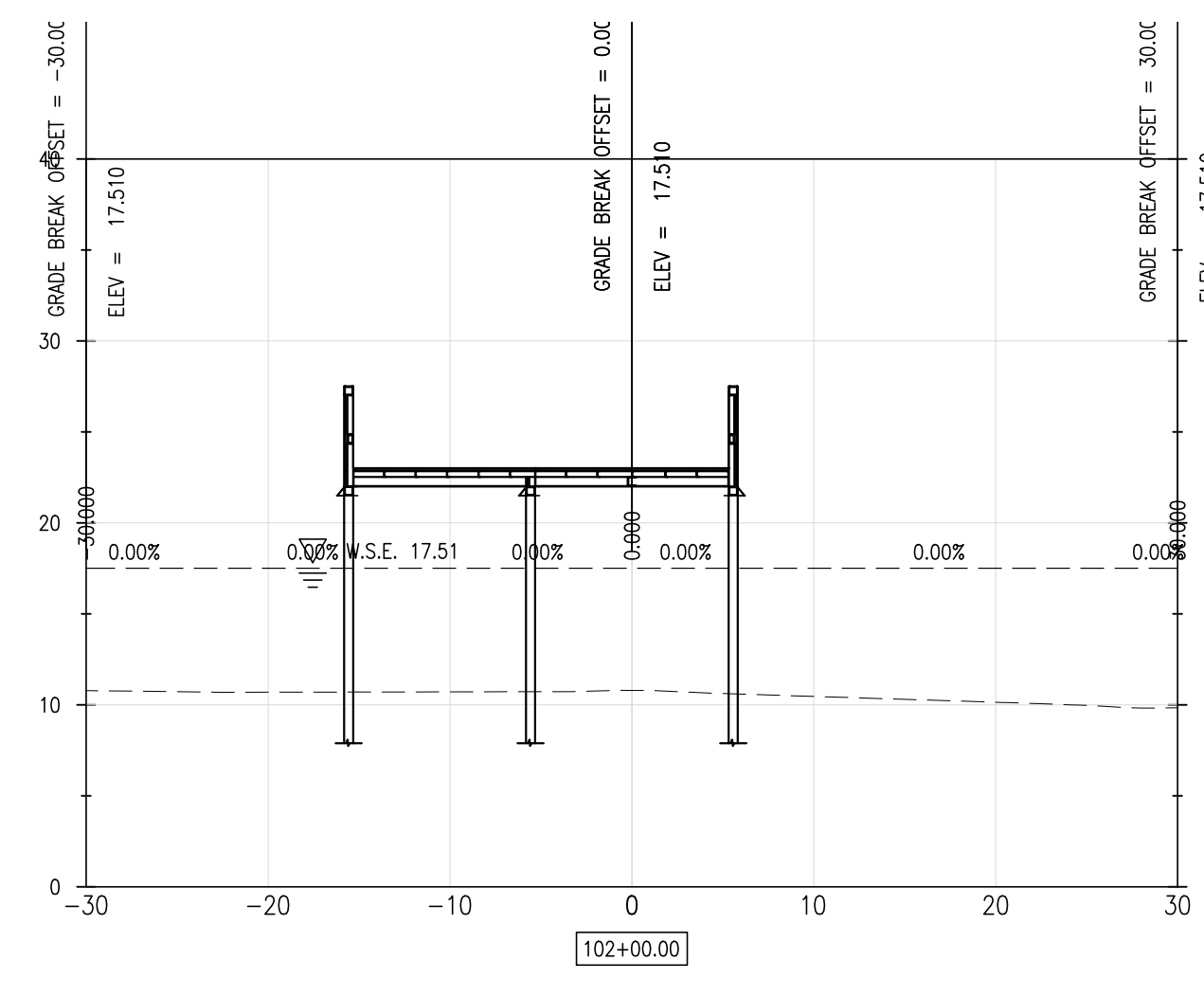
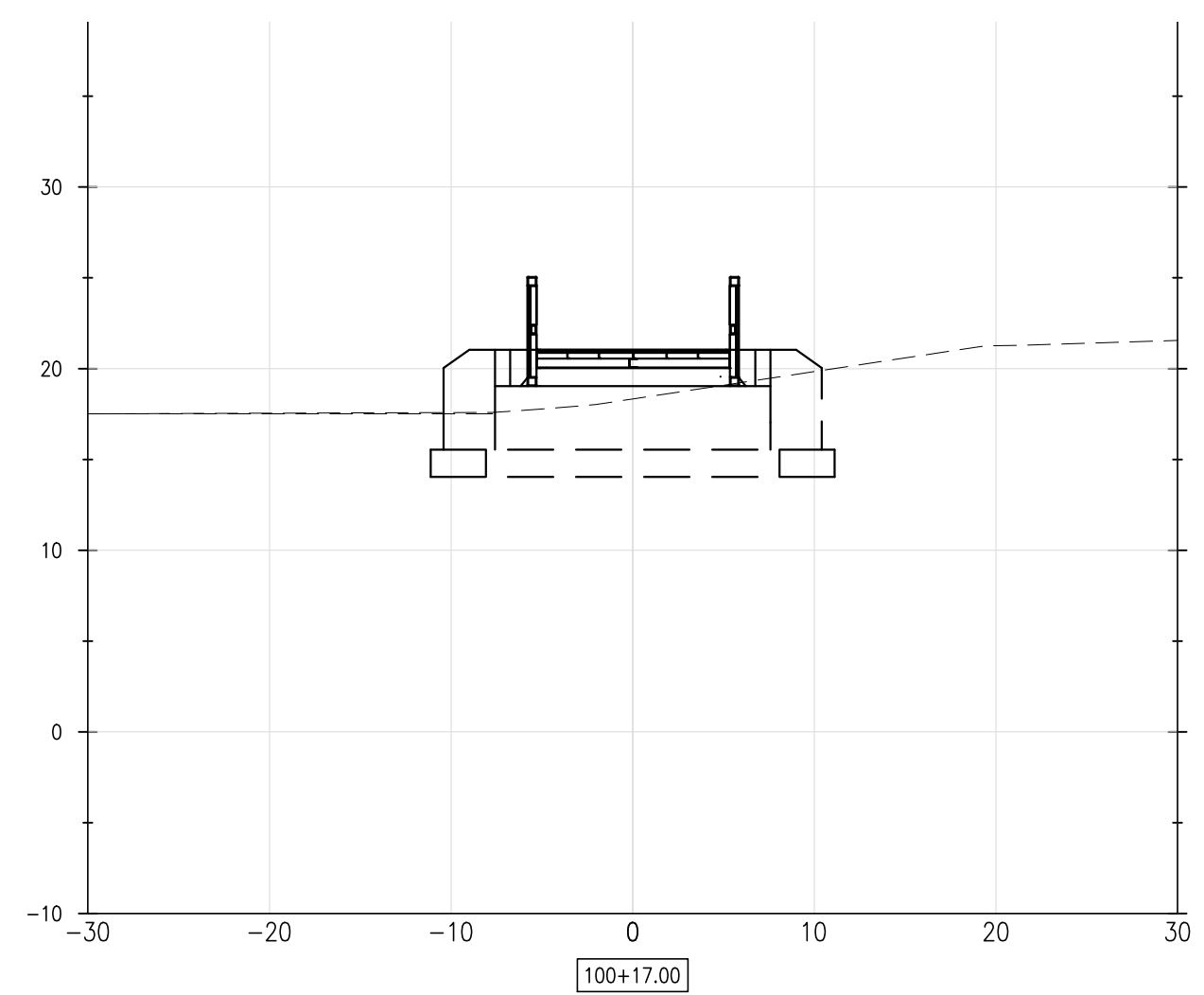
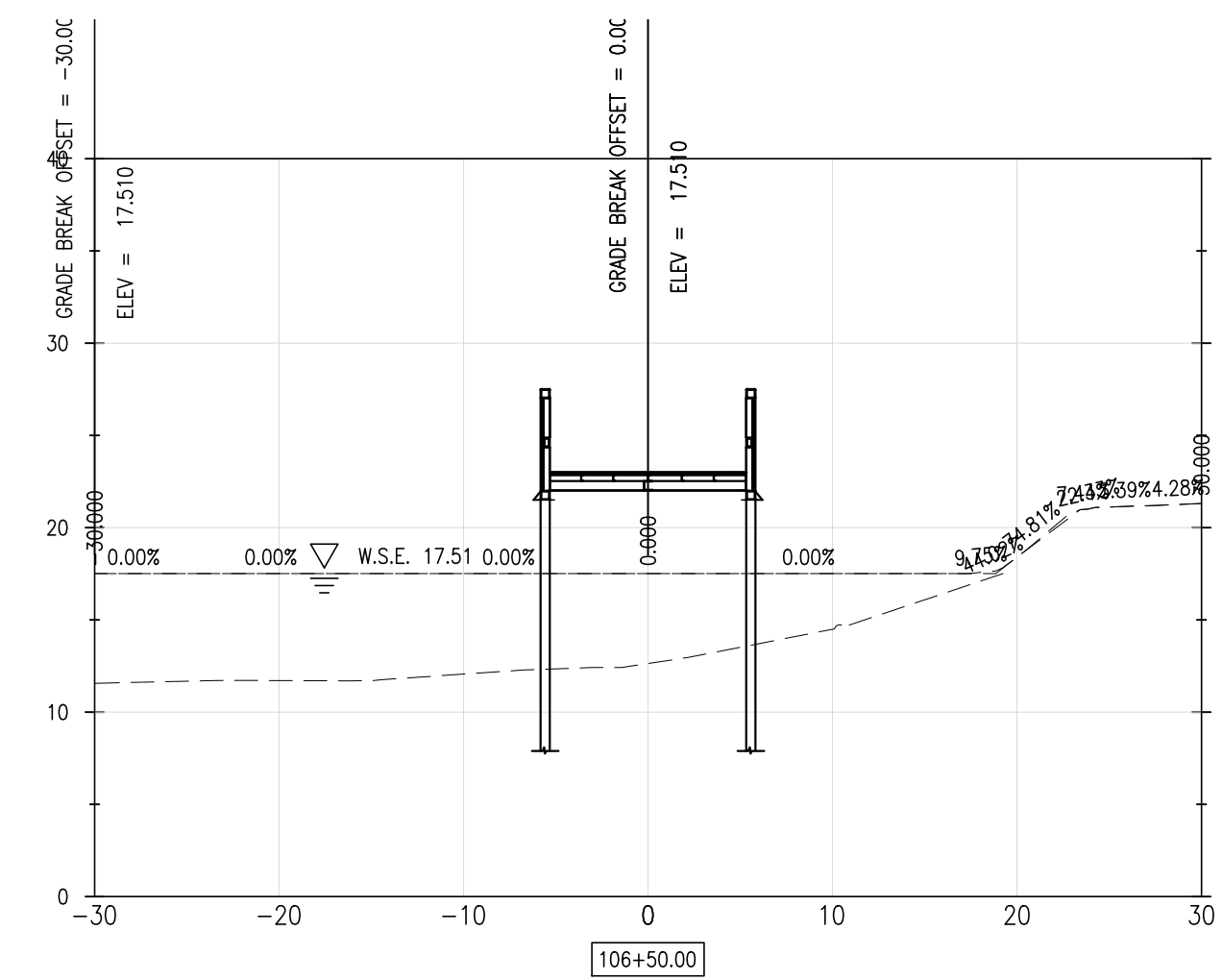
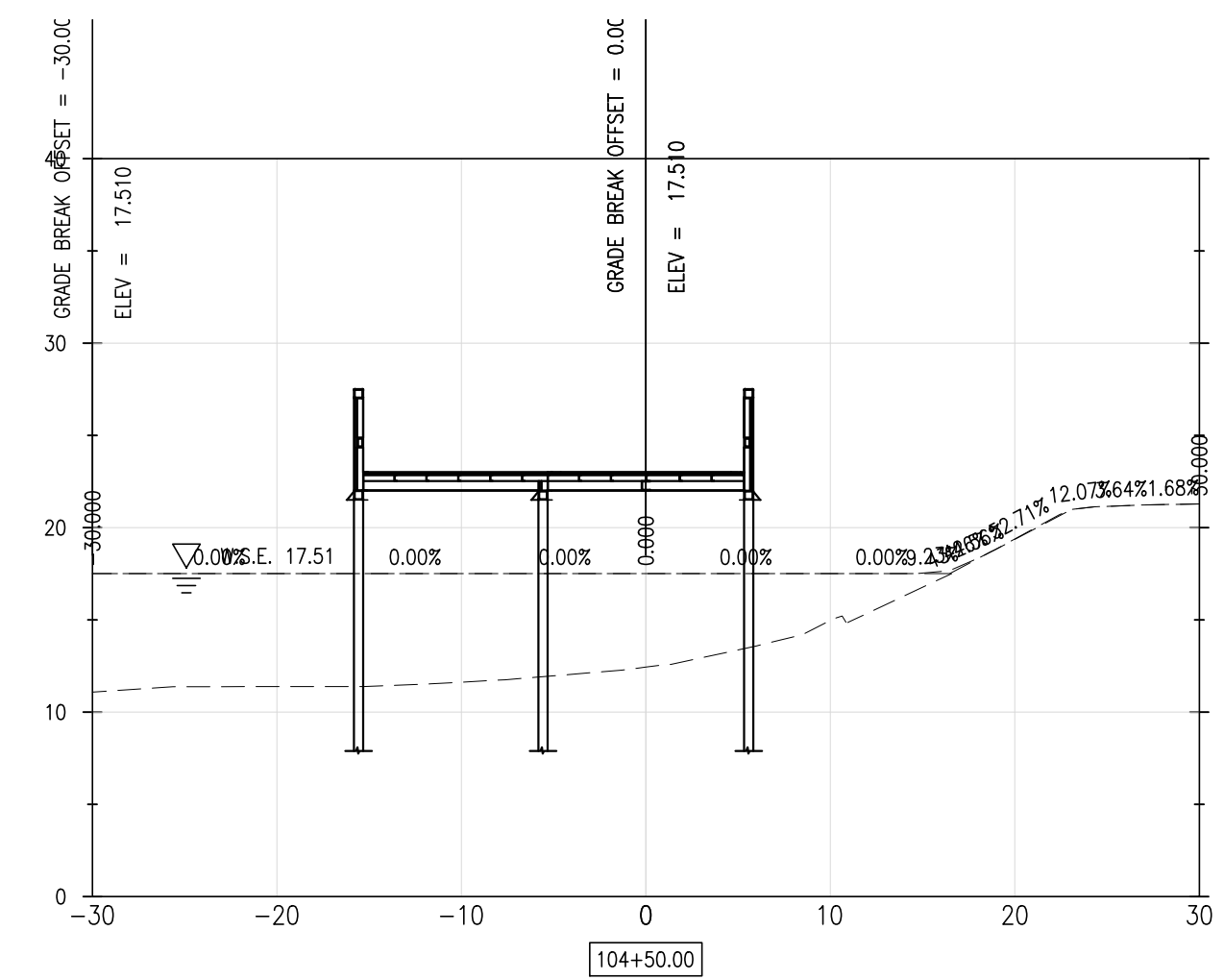
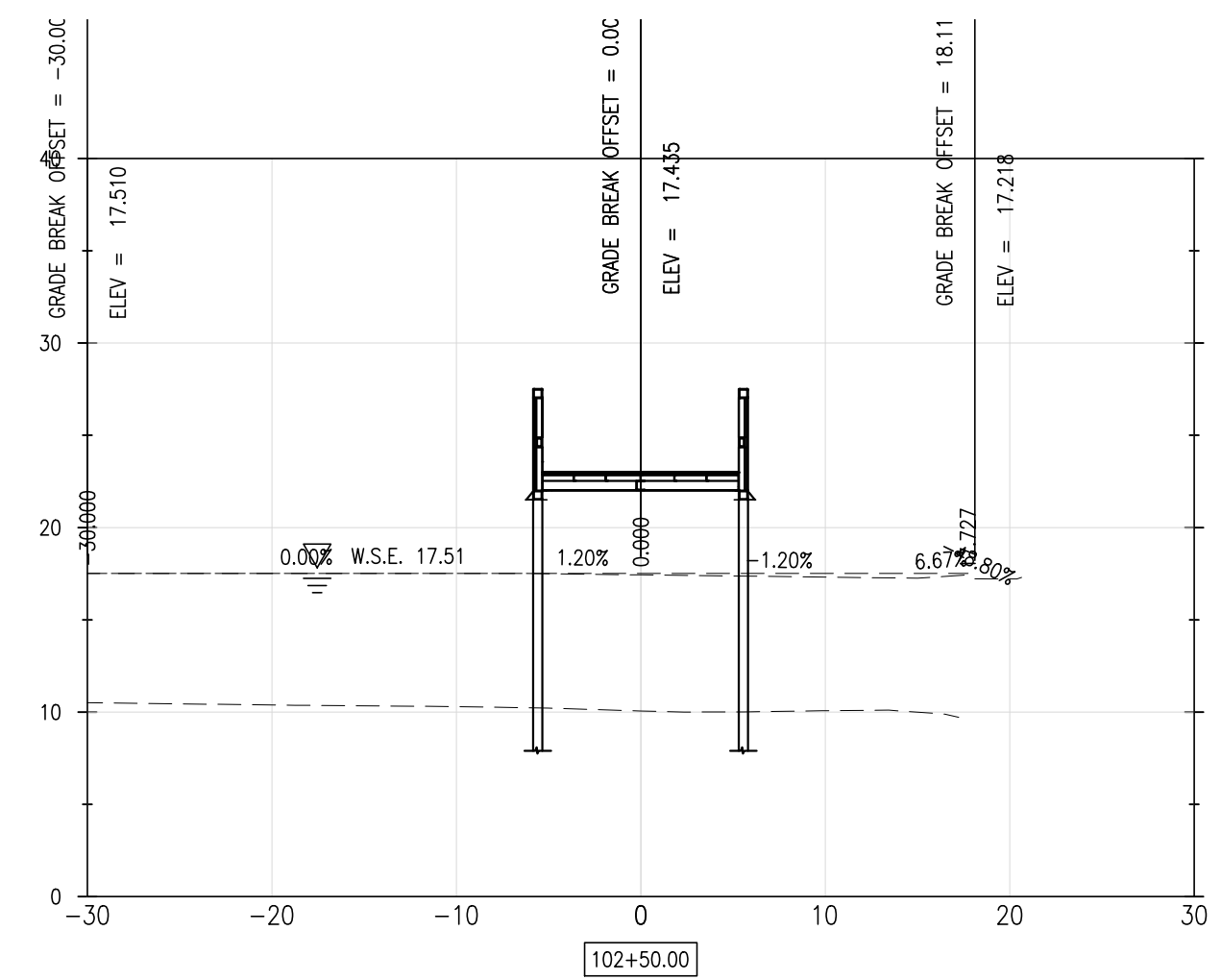
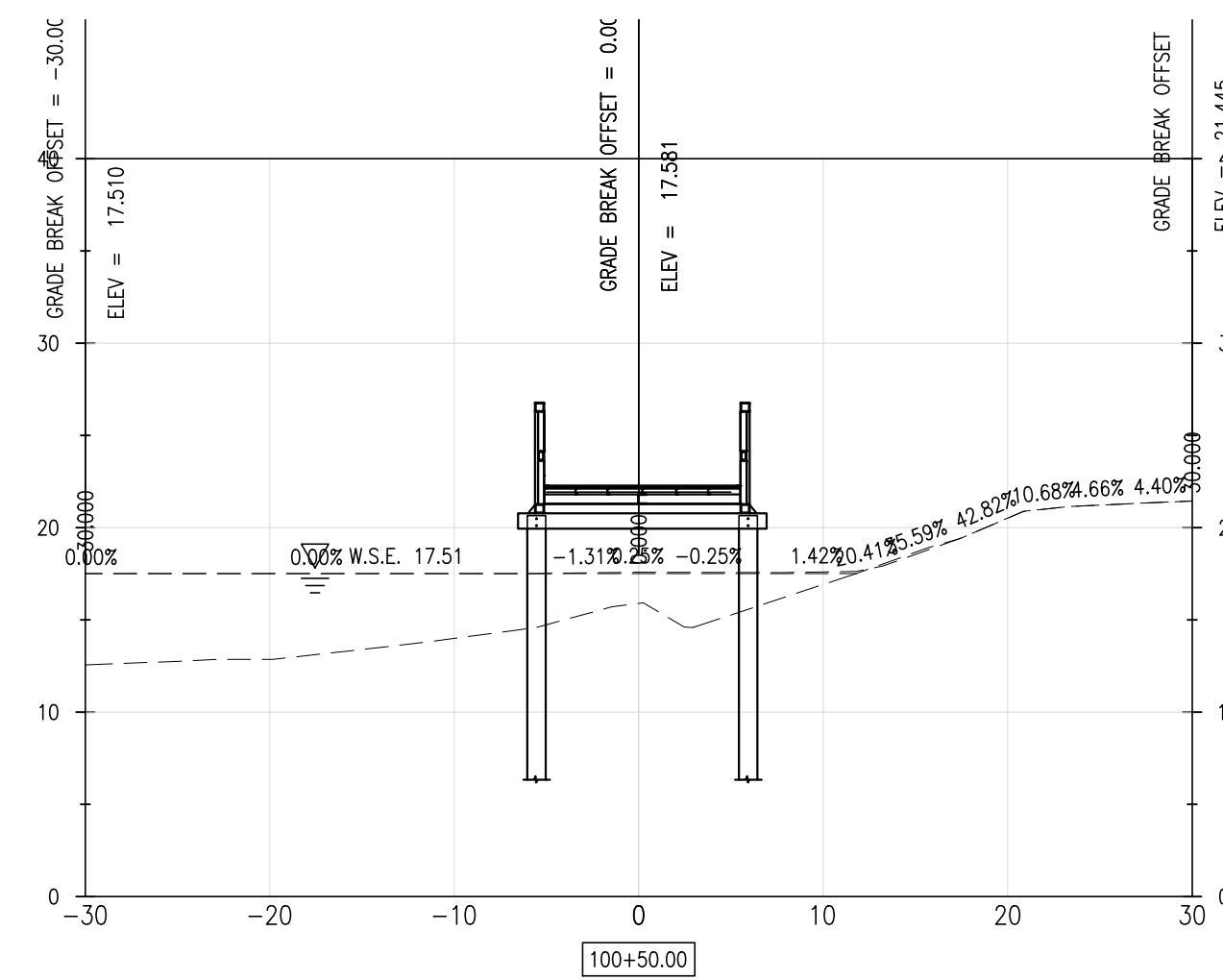
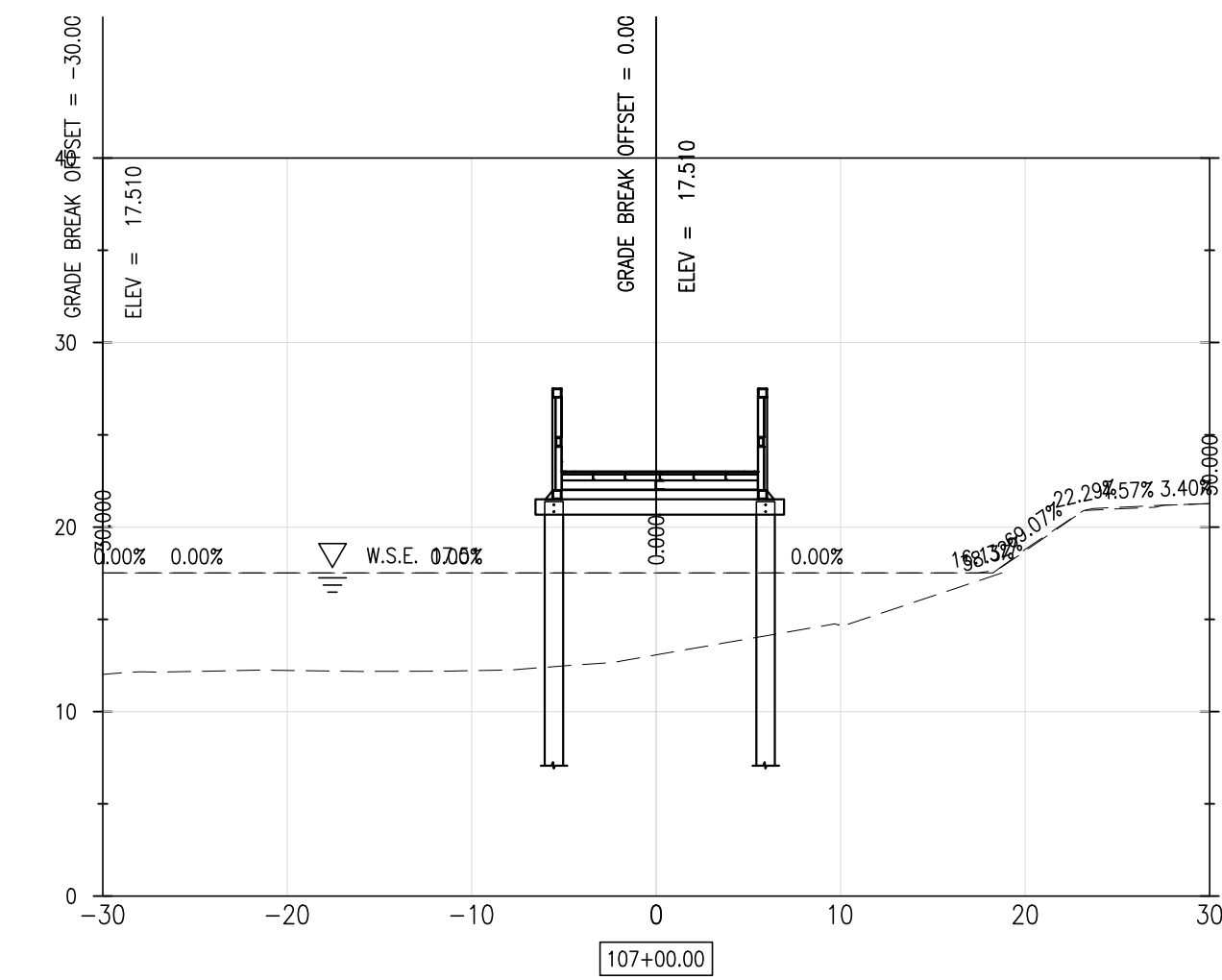
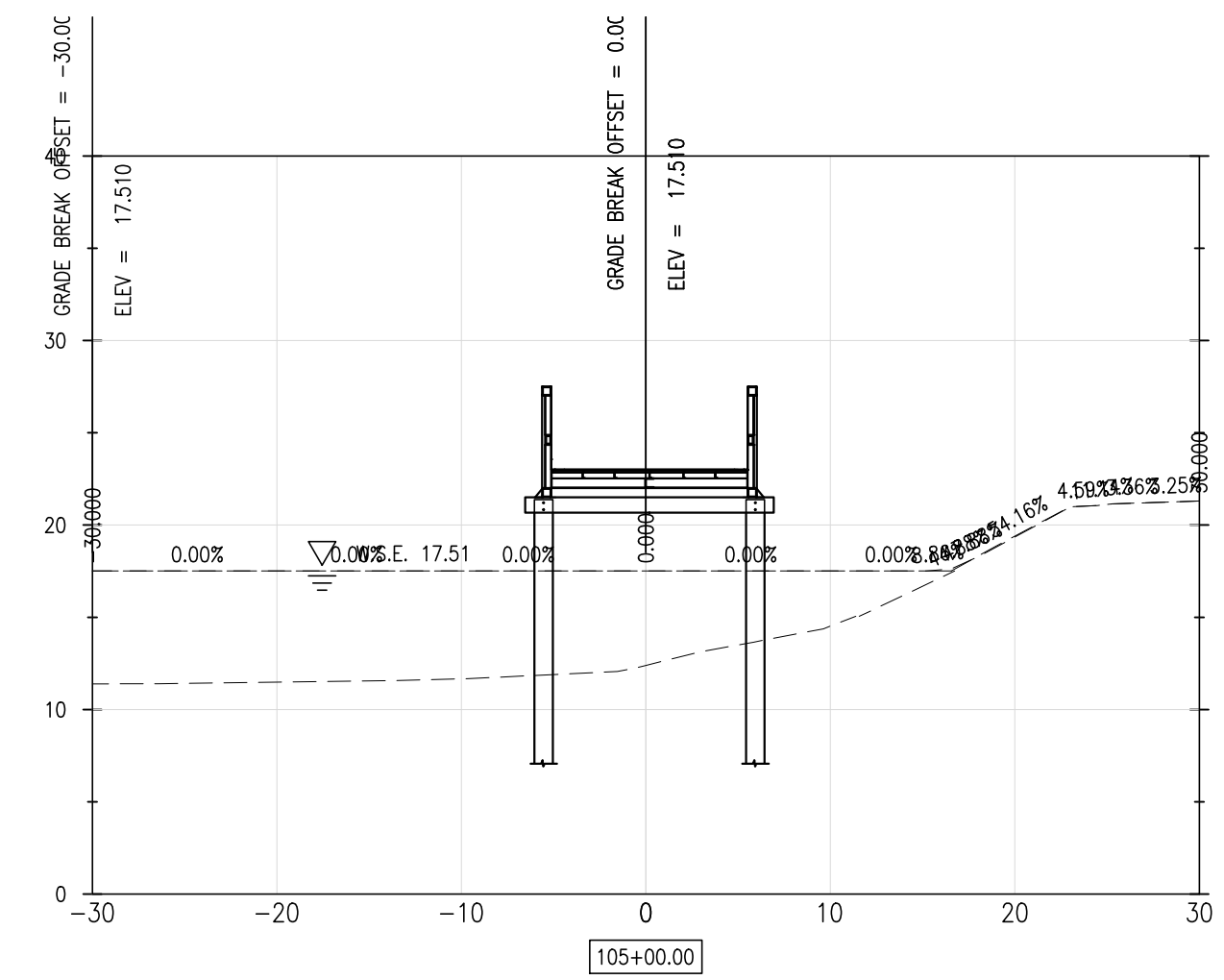
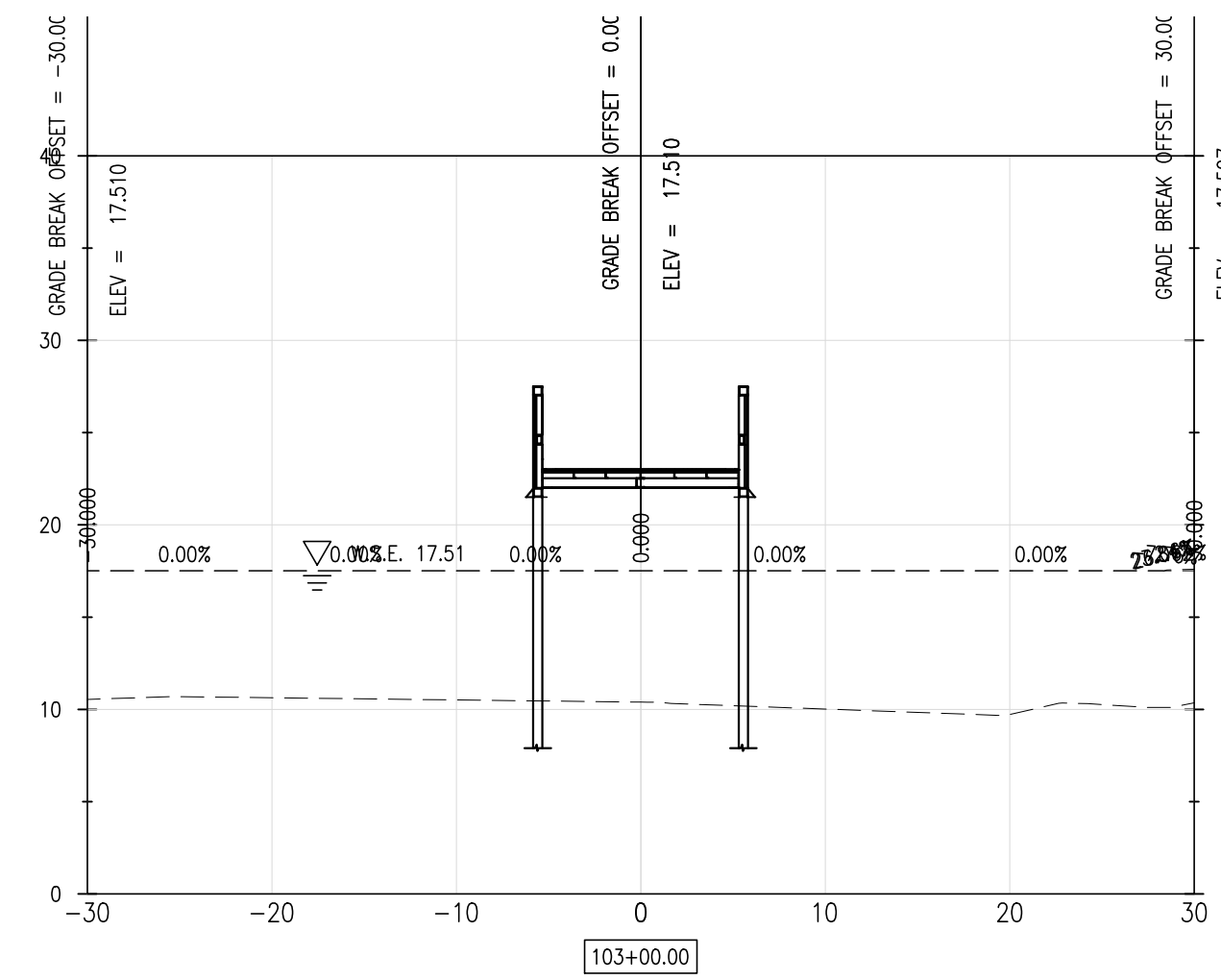
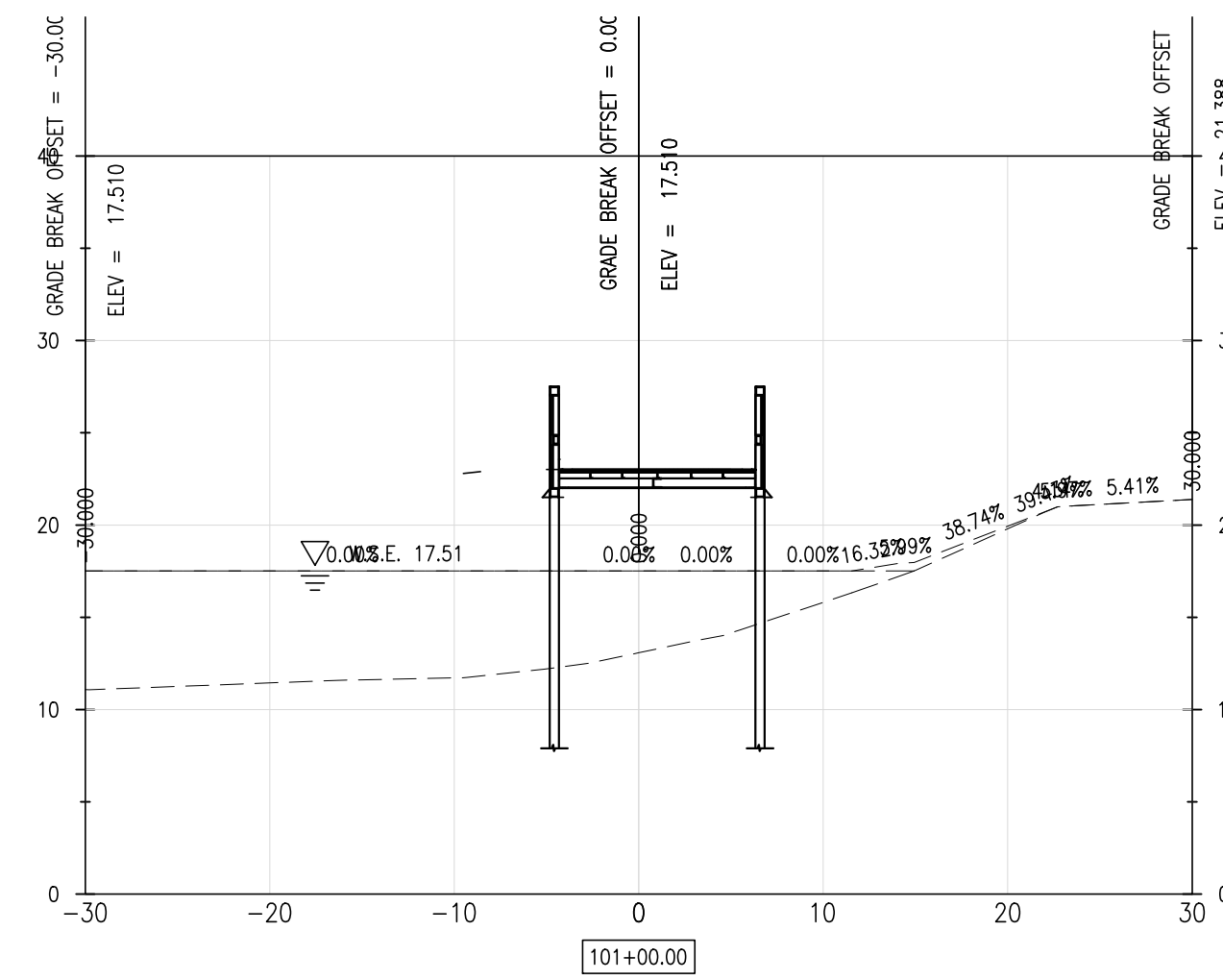
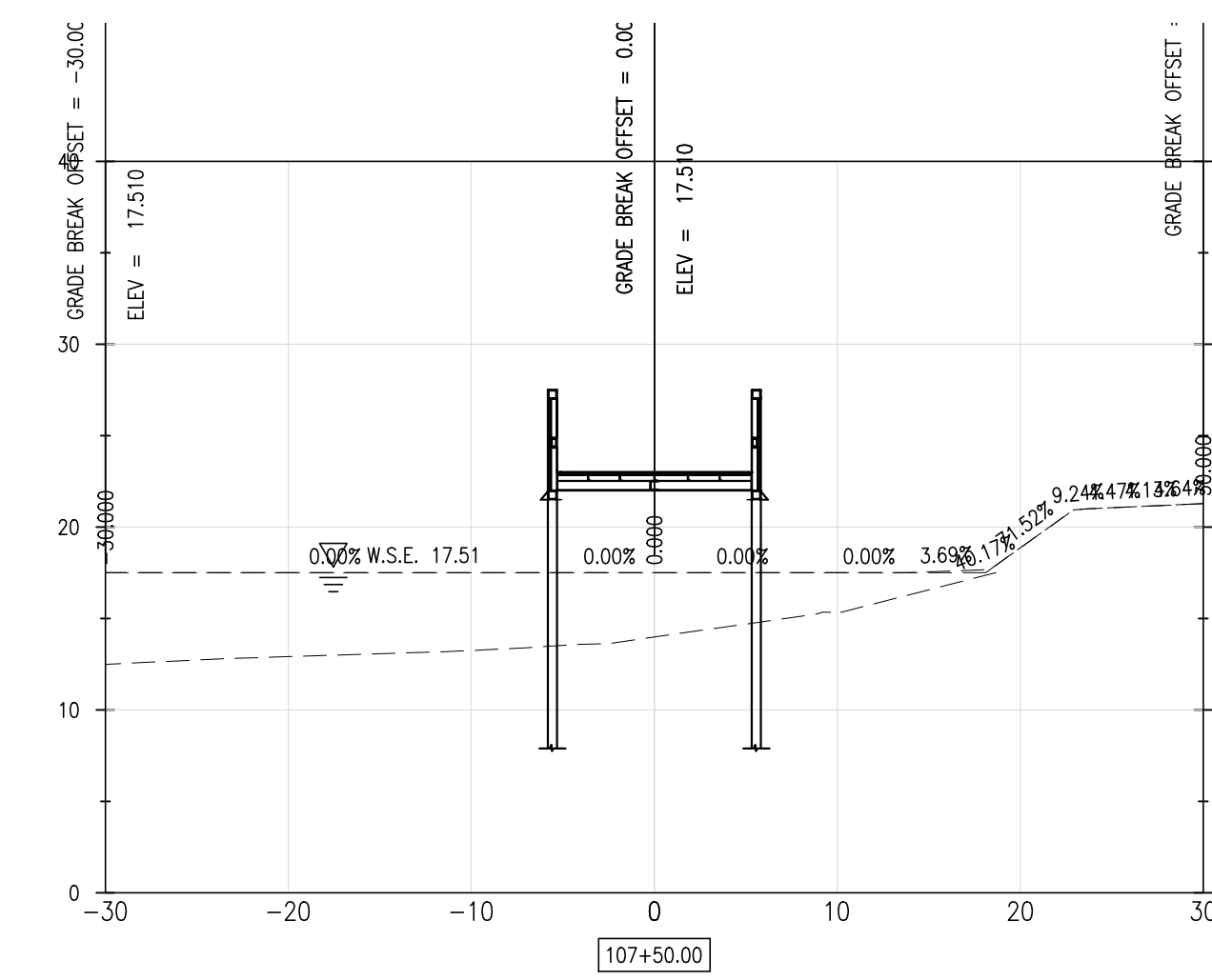
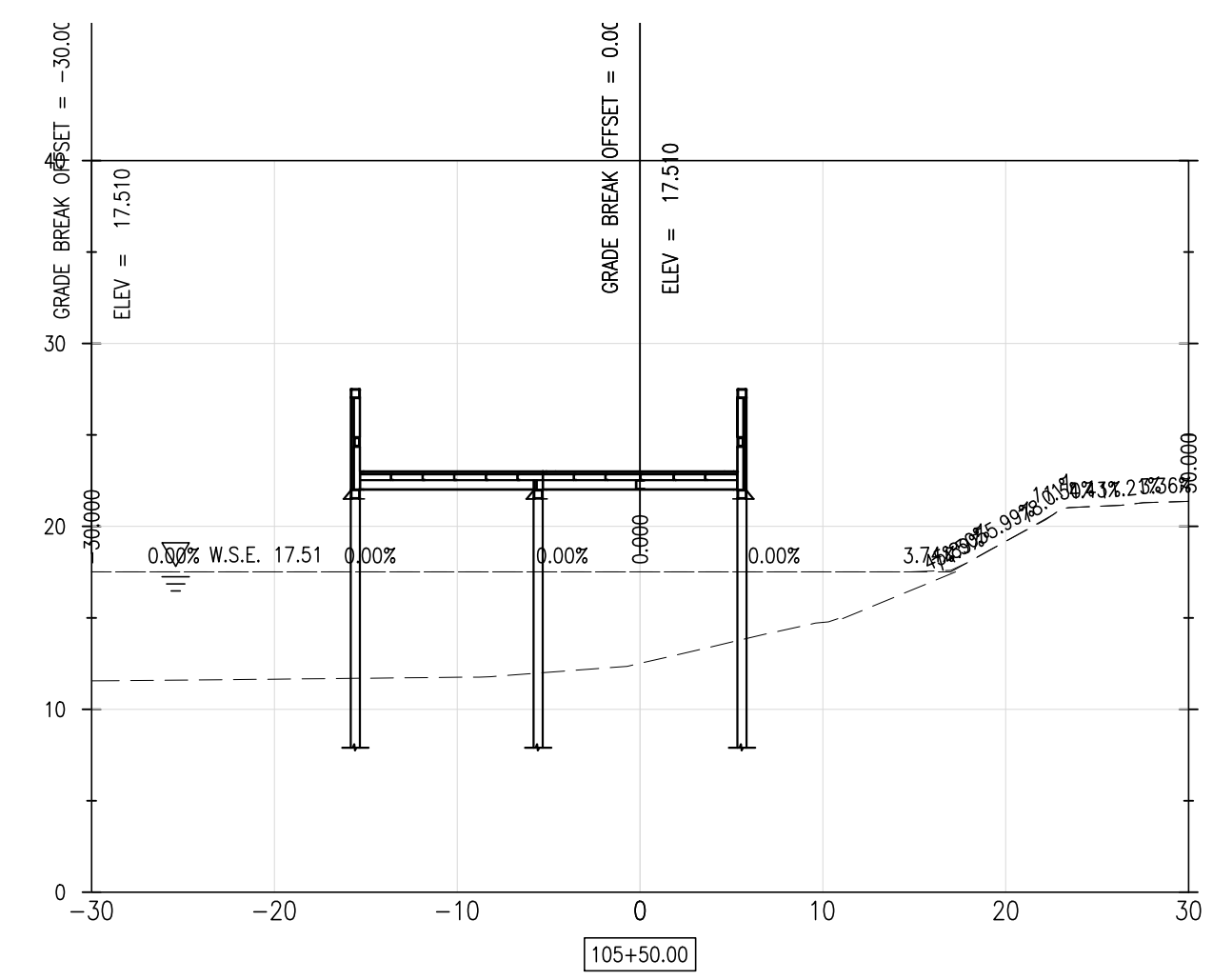
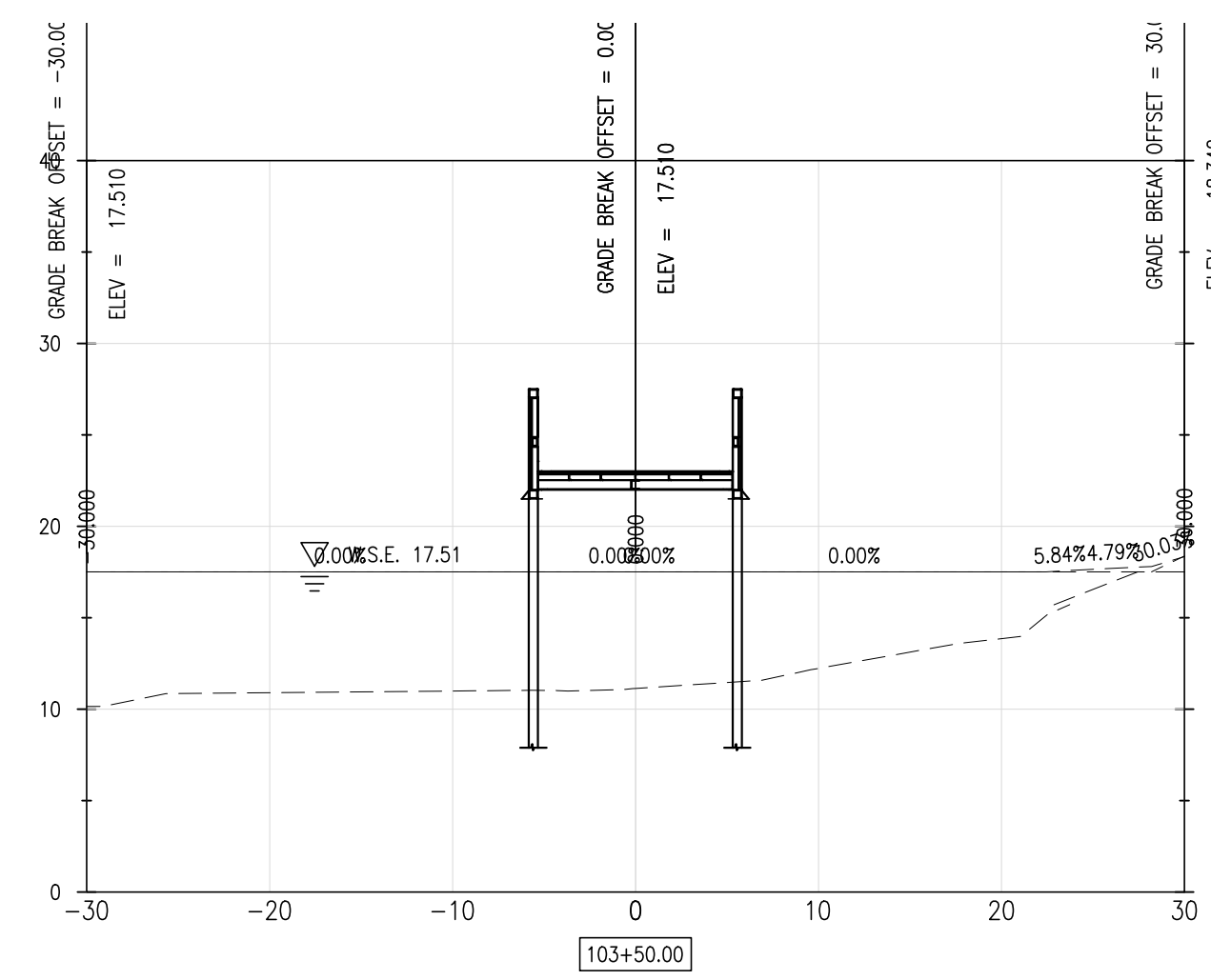
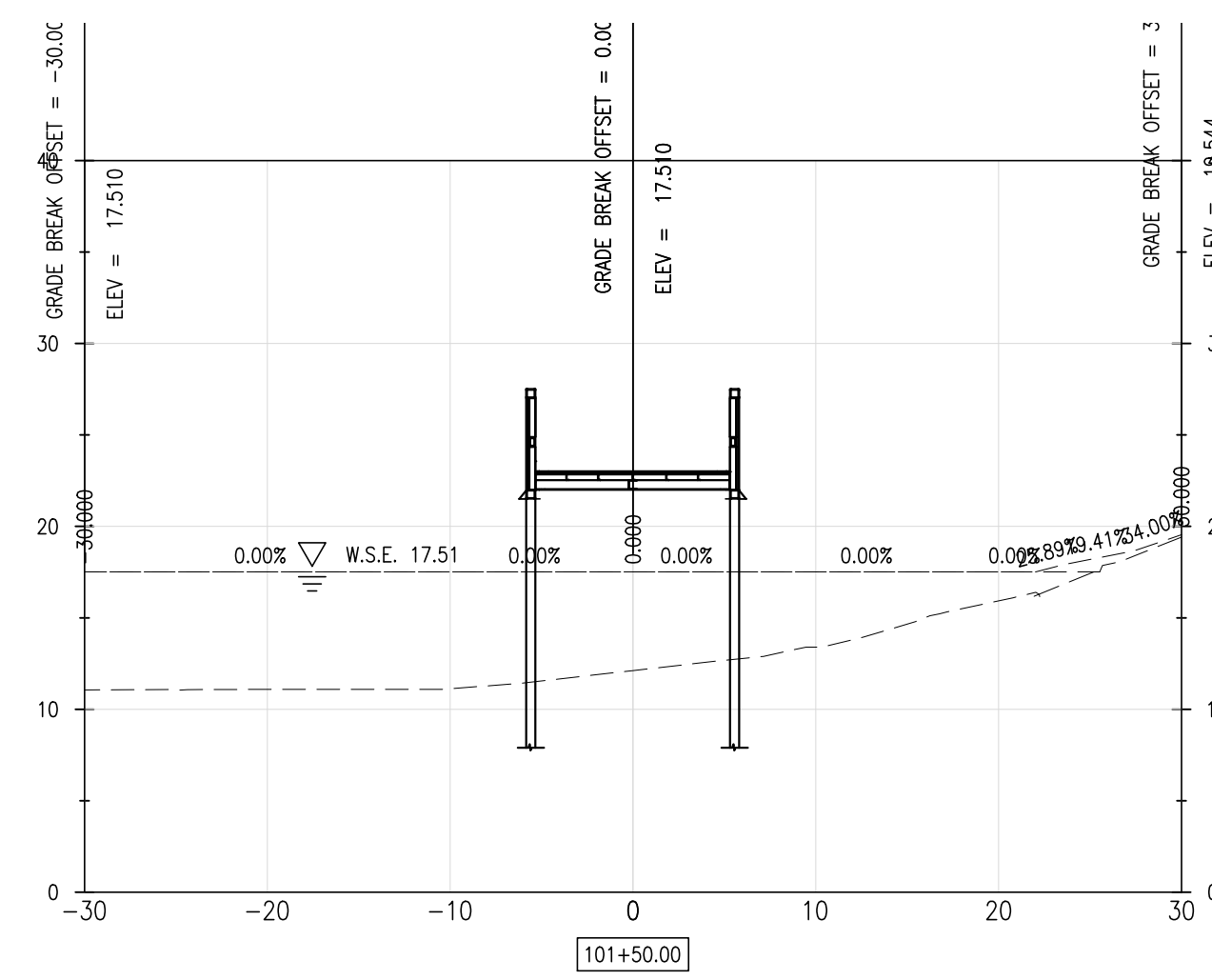
NOTES:

1. PILE TIP ELEVATIONS PROVIDED ARE MINIMUM AND FOR ESTIMATING PROPOSED APPROXIMATE ACTUAL PILE LENGTHS MAY BE LONGER AND SHALL BE ESTABLISHED FOLLOWING INSTALLATION OF TEST PILES UTILIZING A DYNAMIC LOAD TEST CONFORMING TO ASTM D4549 - STANDARD TEST METHOD FOR HIGH-STRAIN DYNAMIC TESTING OF PILES.
2. Φ_{TP} INDICATES TEST PILE LOCATION.
3. ● INDICATES PRODUCTION PILE LOCATION.
4. REFER TO SHEETS C401 AND C402 FOR ADDITIONAL INFORMATION.
5. THE DESIGNATION TOP XXXX SHOWN AT THE BOTTOM OF EACH PILE INDICATES THE ELEVATION OF THE BEARING PILE AT THE TOP OF THE PILE. THE CONTRACTOR SHALL ADJUST THIS ELEVATION AS REQUIRED TO ACCOUNT FOR THE THICKNESS OF THE BEARING PILE.
6. ALL PILES SHALL BE 12" GALVANIZED SCHEDULE 40 PIPE PILES WITH THE EXCEPTION OF PILES SUPPORTING SPAN #6, WHICH SHALL BE 14" X 0.625 GALVANIZED PIPE PILES.



SITE PLAN & PROFILE

2020-KP-100



REVISIONS:

DATE:	DESCRIPTION:
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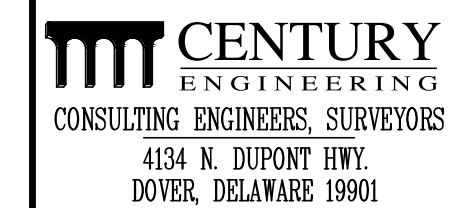
BY:

**KILLENS POND STATE PARK
ELEVATED WALKWAY
CROSS SECTIONS**

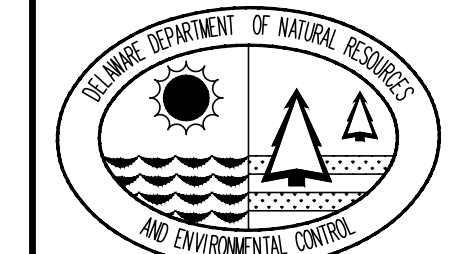
SEAL:



CIVIL ENGINEER:



CEI CONTRACT NO.: 175013.11



DESIGNED BY:

WJH

DRAWN BY:

JSW

CHECKED BY:

AES

DATE: _____

AUGUST 2020

SCALE:

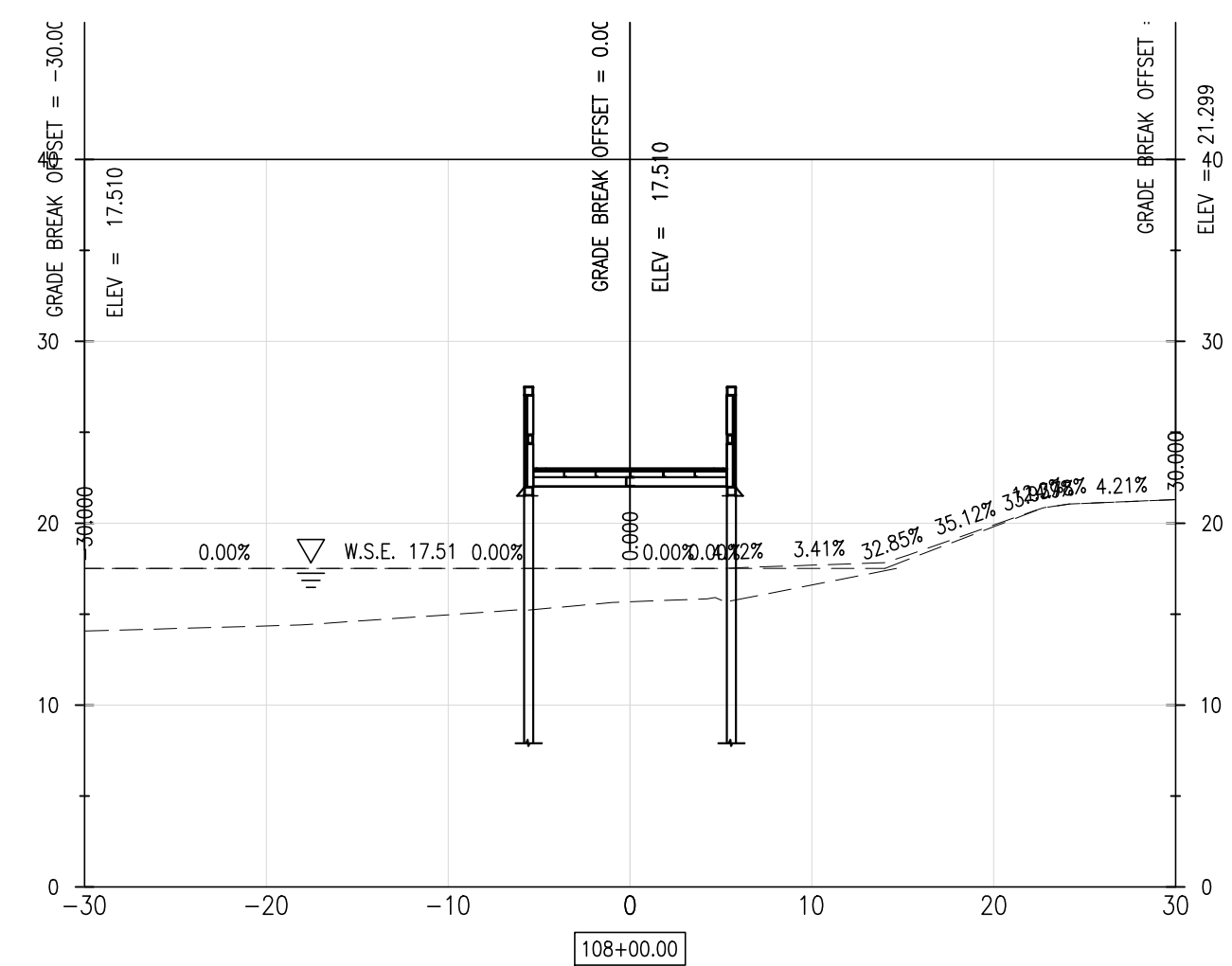
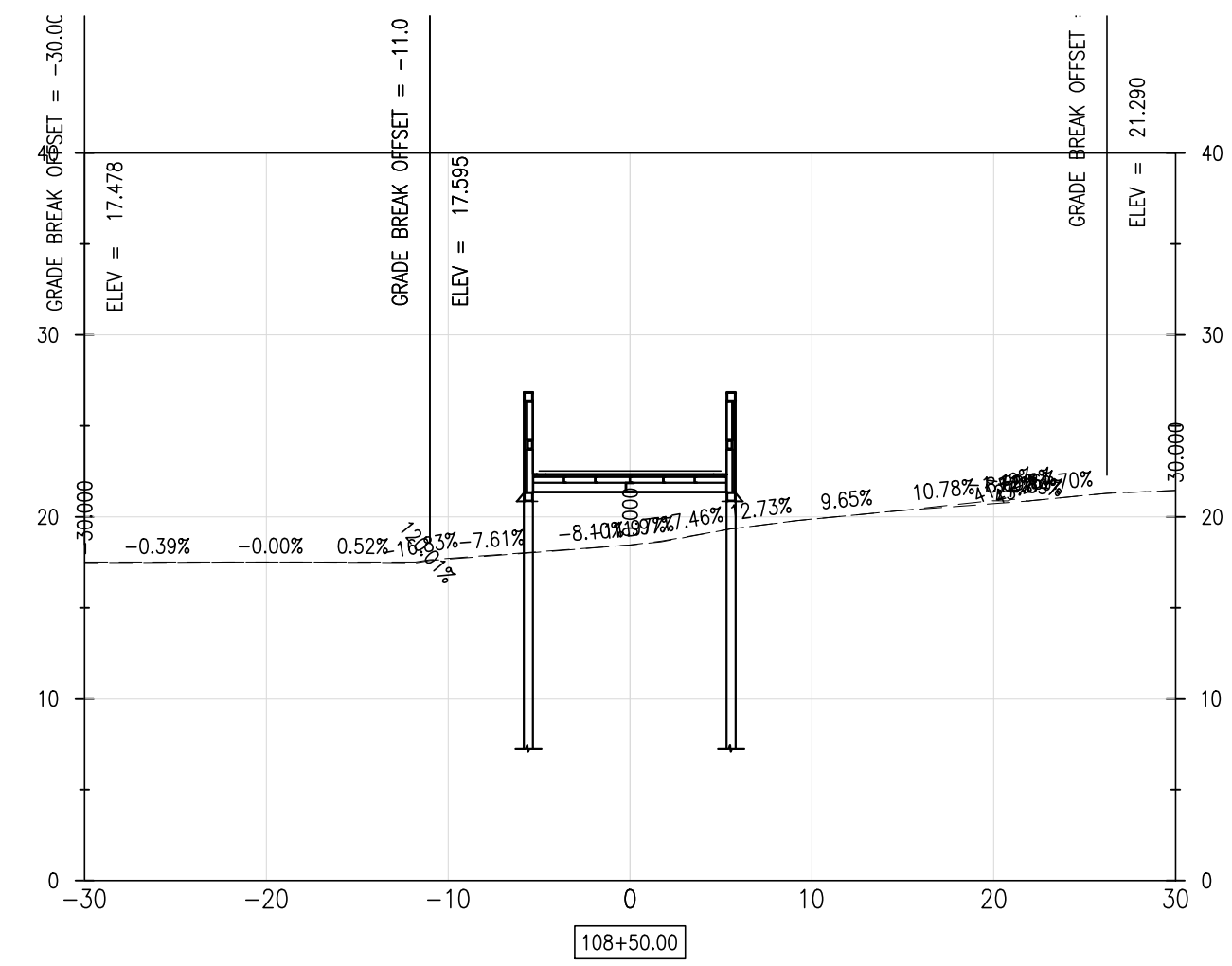
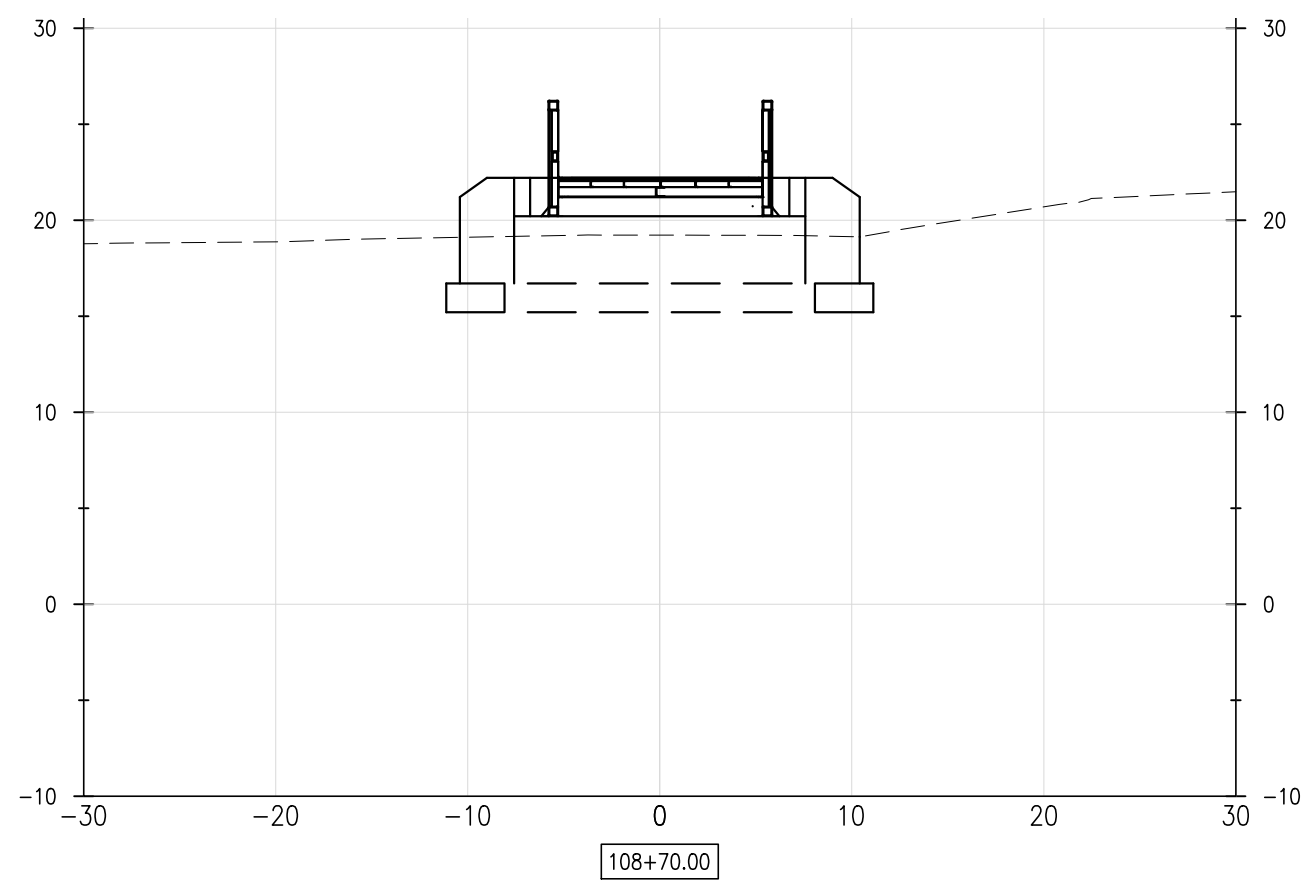
$$1'' = 10'$$

SHEET NO.:

C403

CONTRACT NO.:

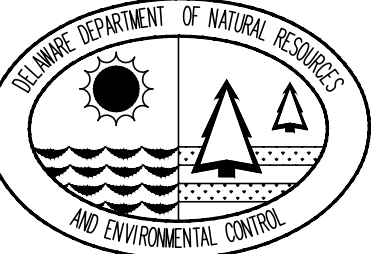
2020-KP-100



KILLENS POND STATE PARK
ELEVATED WALKWAY
CROSS SECTIONS

CENTURY
ENGINEERING
CONSULTING ENGINEERS, SURVEYORS
4134 N. DUPONT HWY.
DOVER, DELAWARE 19901

CEI CONTRACT NO.: 175013.11



WJH

JSW

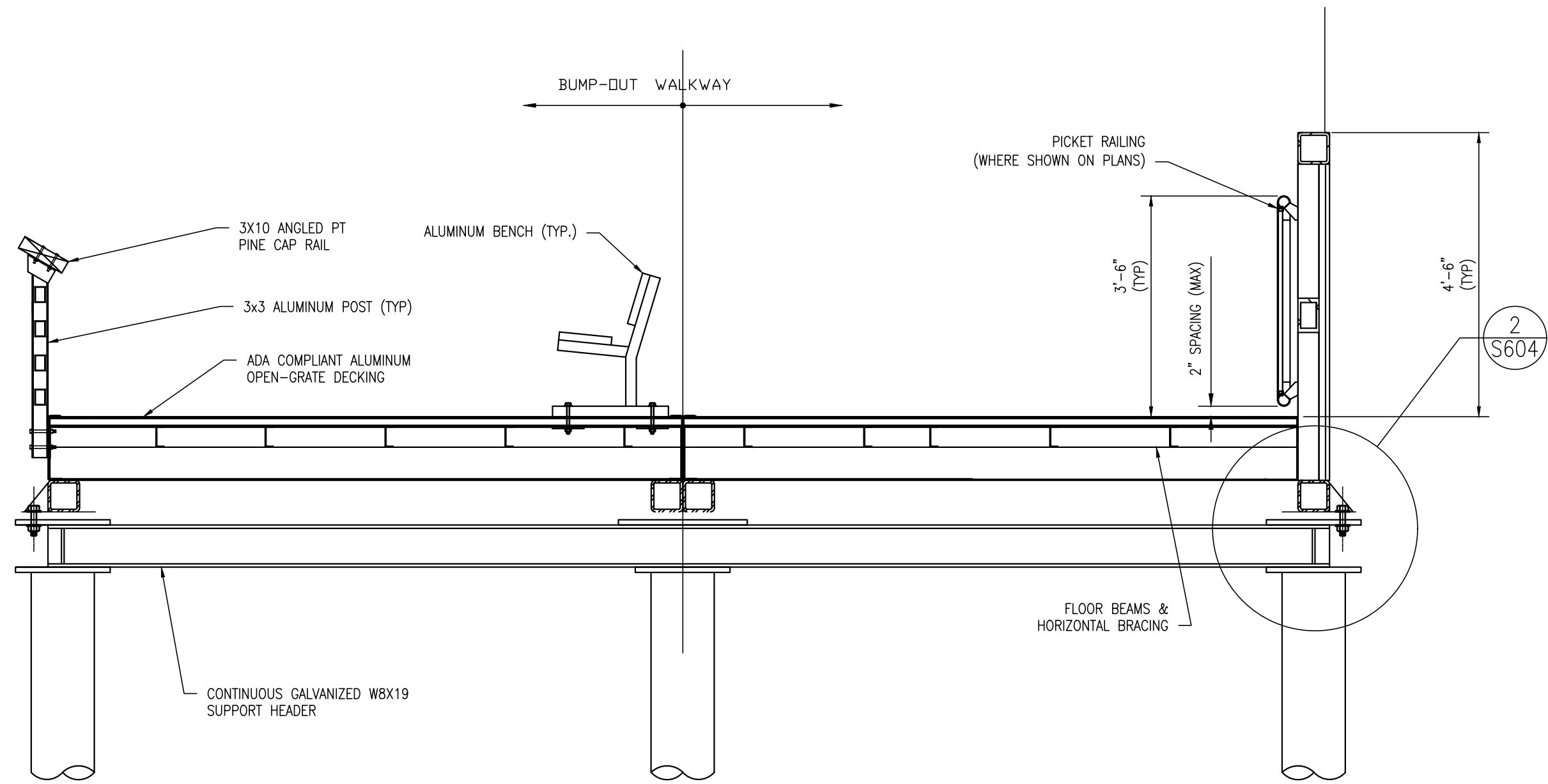
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AUGUST 2020

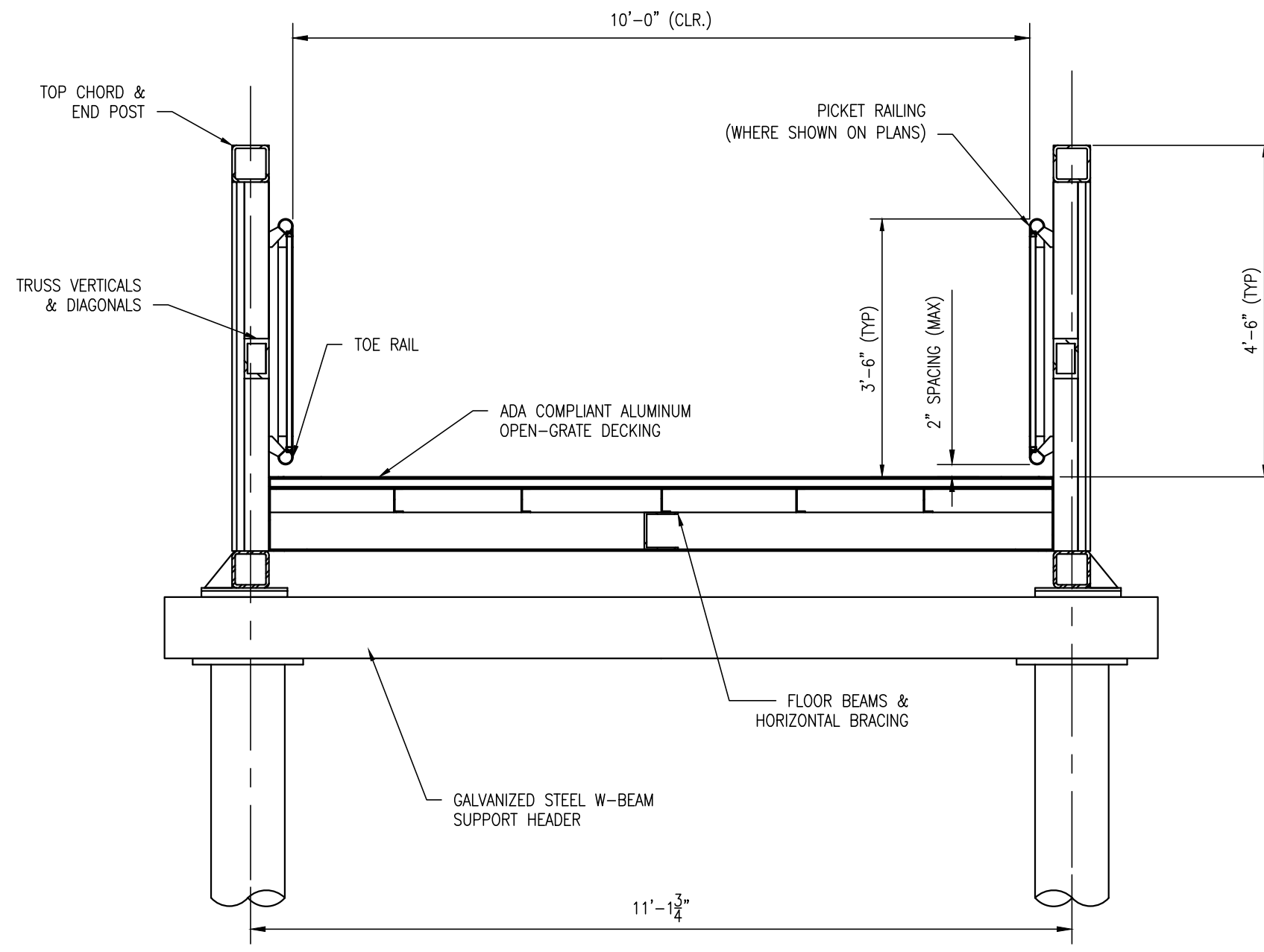
$$1'' = 10$$

C404

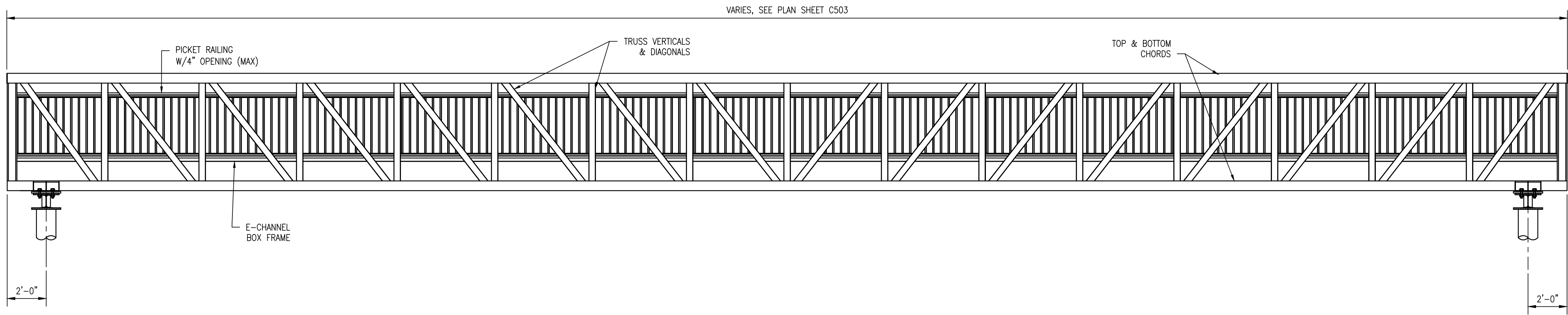
2020-KP-100



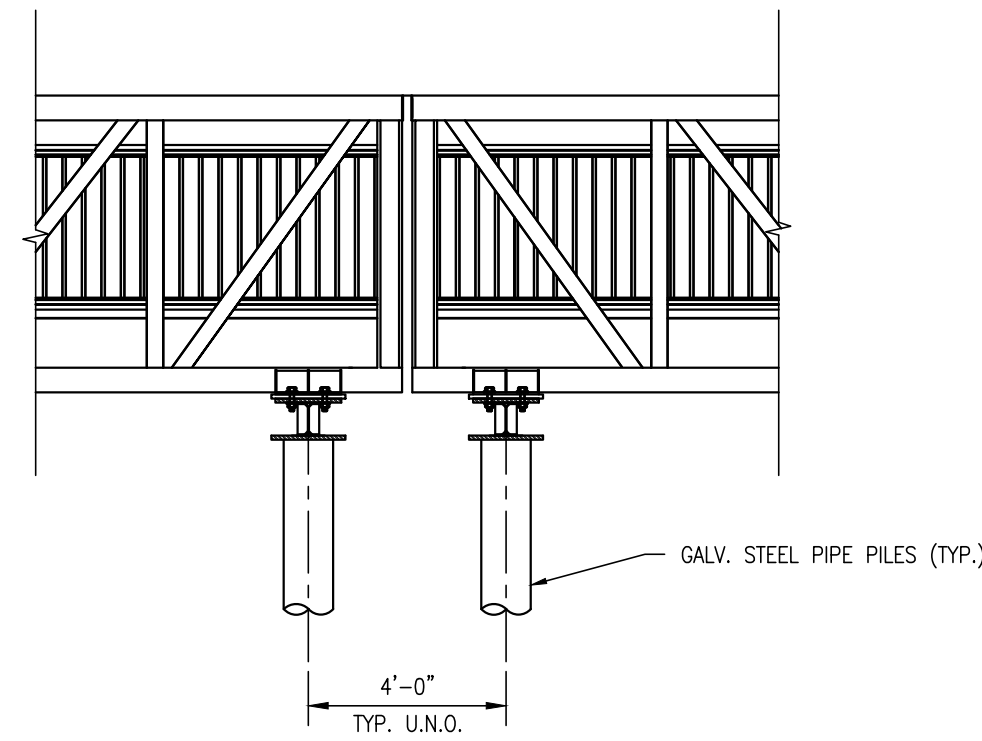
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C501
TYPICAL SECTION AT FISHING BUMP-OUT
SCALE: 1/2" = 1'-0"



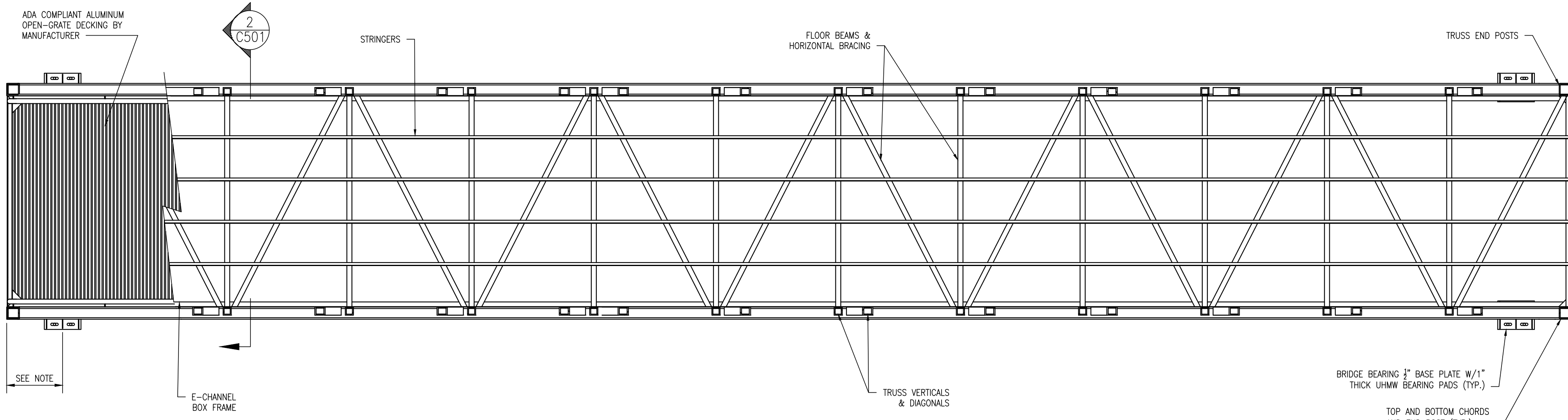
2
C501
TYPICAL WALKWAY SECTION
SCALE: 1/2" = 1'-0"



3
C501
ELEVATION VIEW
SCALE: 1/4" = 1'-0"

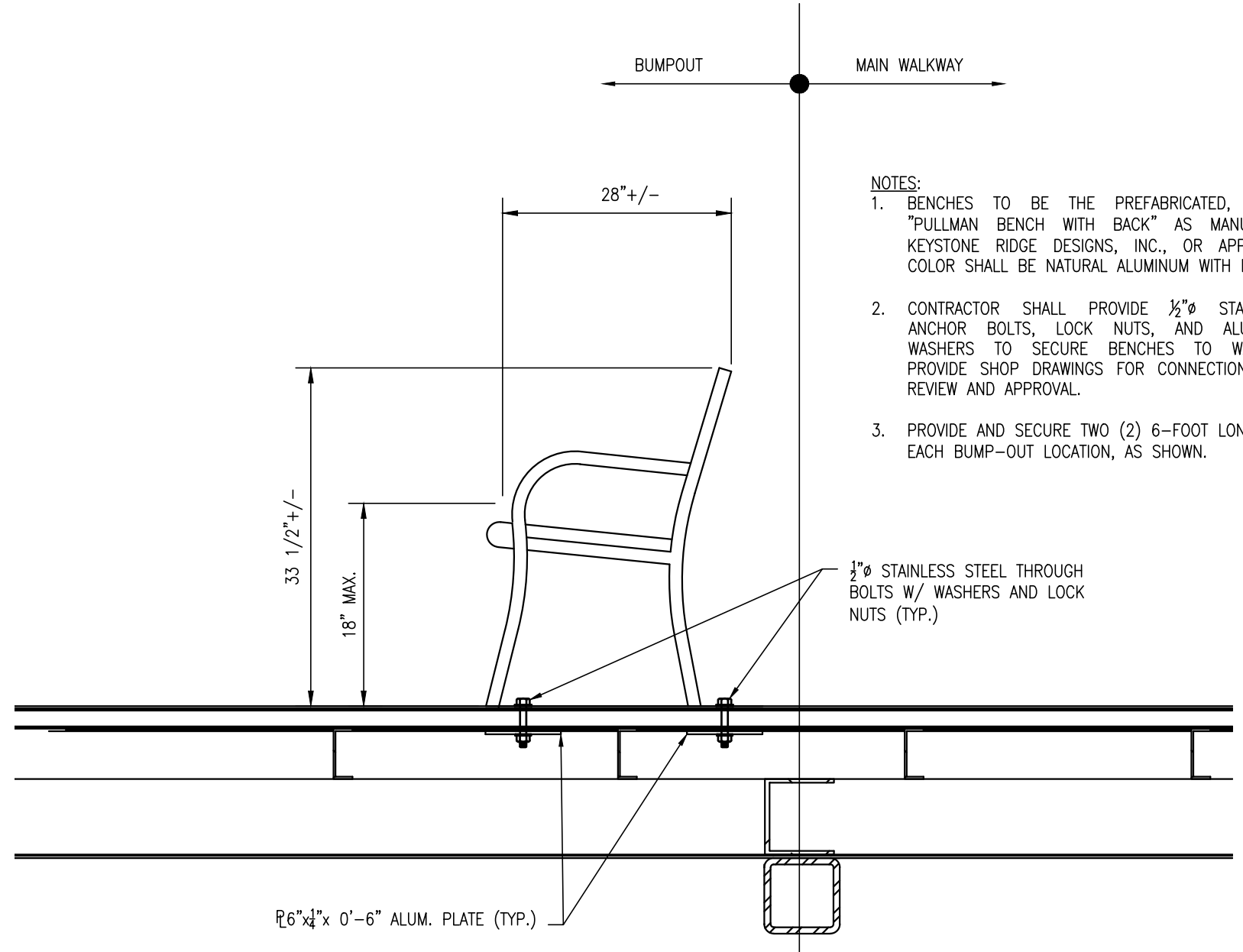


4
C501
ELEVATION AT WALKWAY JOINT
SCALE: 1/4" = 1'-0"



5
C501
PLAN VIEW
SCALE: 1/4" = 1'-0"

NOTE:
PILES AND ALUMINUM SUPPORT
HEADER NOT SHOWN FOR CLARITY.



5
C501
BENCH ATTACHMENT AT BUMP OUT
SCALE: 1" = 1'-0"

- NOTES:
1. BEARING LOCATIONS TO BE DETERMINED BY BRIDGE MANUFACTURER.
 2. ALUMINUM WALKWAY, FISHING PIERS, AND RAILINGS PROVIDED BY GATORBRIDGE/CMi MARINE STRUCTURES.
 3. ALUMINUM GRATE DECK TO BE FULL WIDTH IN 10-FOOT WIDE MAIN WALKWAYS AND BUMP-OUTS, WITH GRATING ORIENTED TRANSVERSELY TO THE MAIN WALKWAY TRAFFIC.
 4. ALUMINUM BENCHES AT FISHING PIERS TO BE PROVIDED AND INSTALLED BY CONTRACTOR.
 5. ALUMINUM TRUSS SUPERSTRUCTURE SHALL BE FABRICATED WITH WEEP HOLES TO PREVENT THE ACCUMULATION OF WATER IN ALL TUBE STEEL MEMBERS.

REVISIONS:

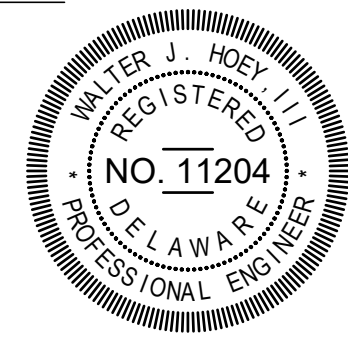
DATE: DESCRIPTION:

KILLENS POND STATE PARK

ELEVATED WALKWAY

ELEVATED WALKWAY DETAILS

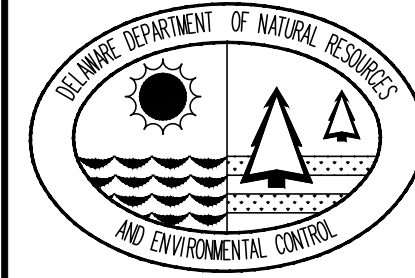
SEAL:



CIVIL ENGINEER:

CENTURY
ENGINEERING
CONSULTING ENGINEERS, SURVEYORS
4134 N. DUPONT HWY.
DOVER, DELAWARE 19901

CEI CONTRACT NO.: 175013.11



DESIGNED BY:

WJH

DRAWN BY:

JSW

CHECKED BY:

AES

DATE:

AUGUST 2020

SCALE:

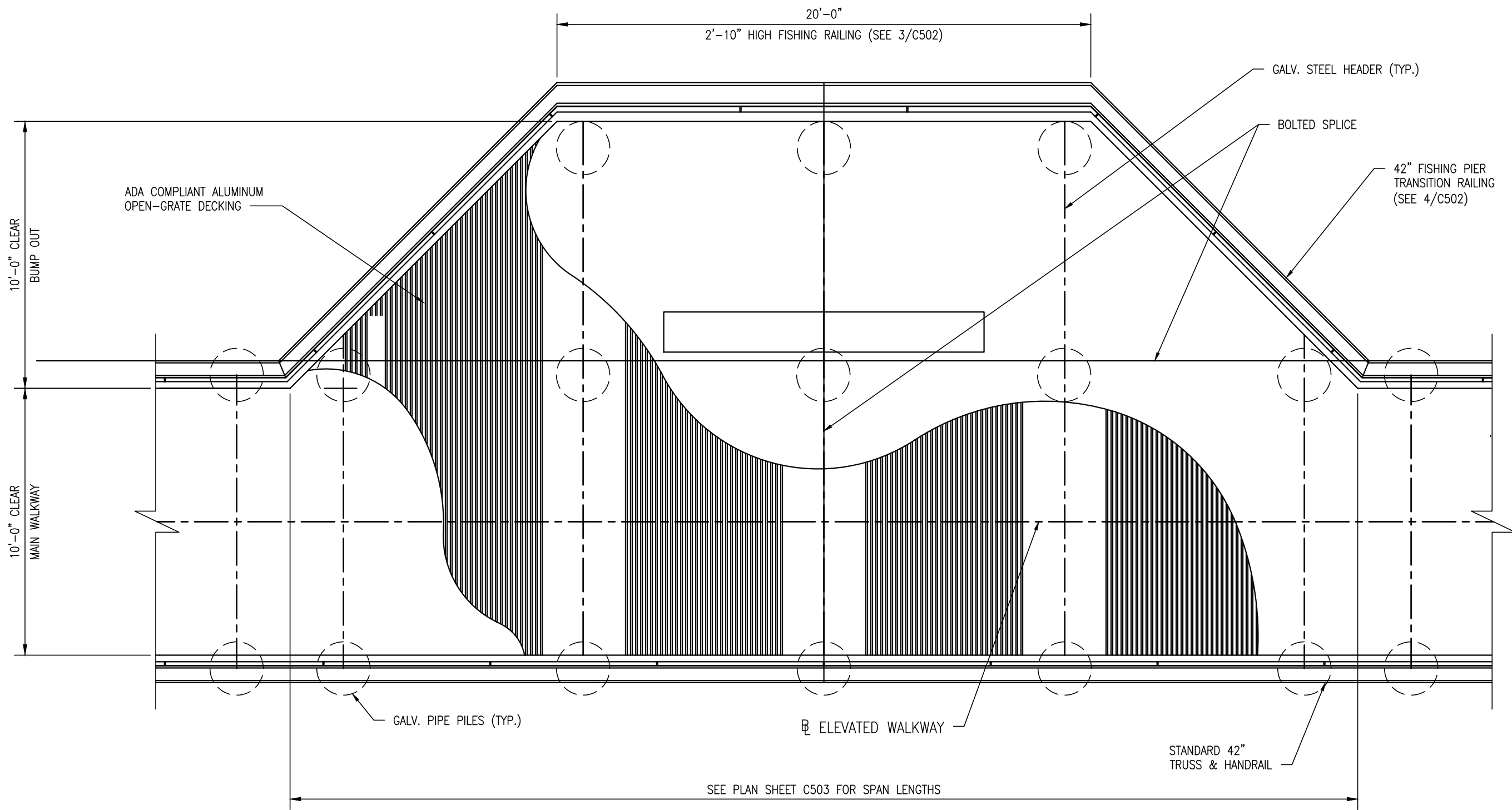
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SHEET NO.:

C501

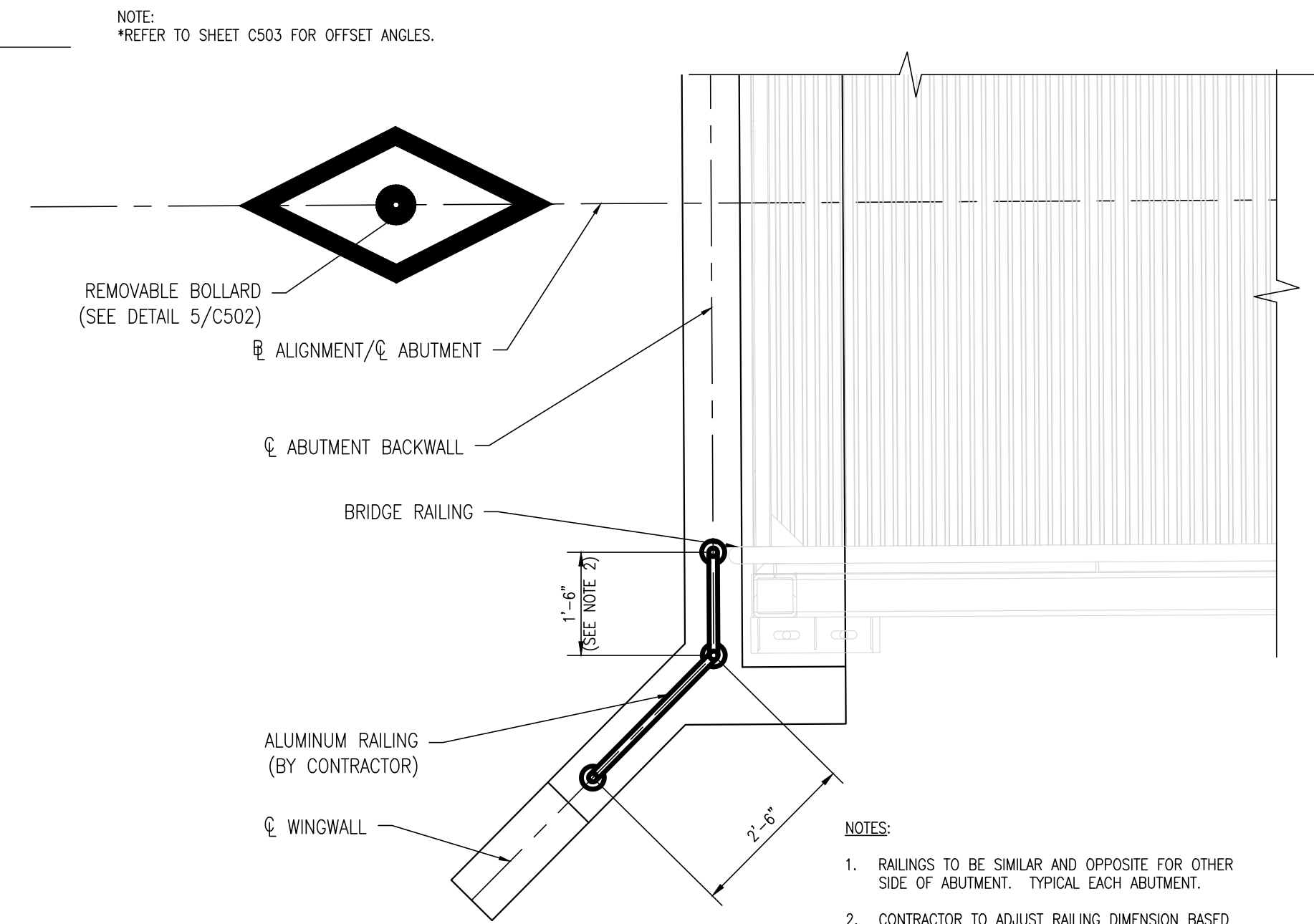
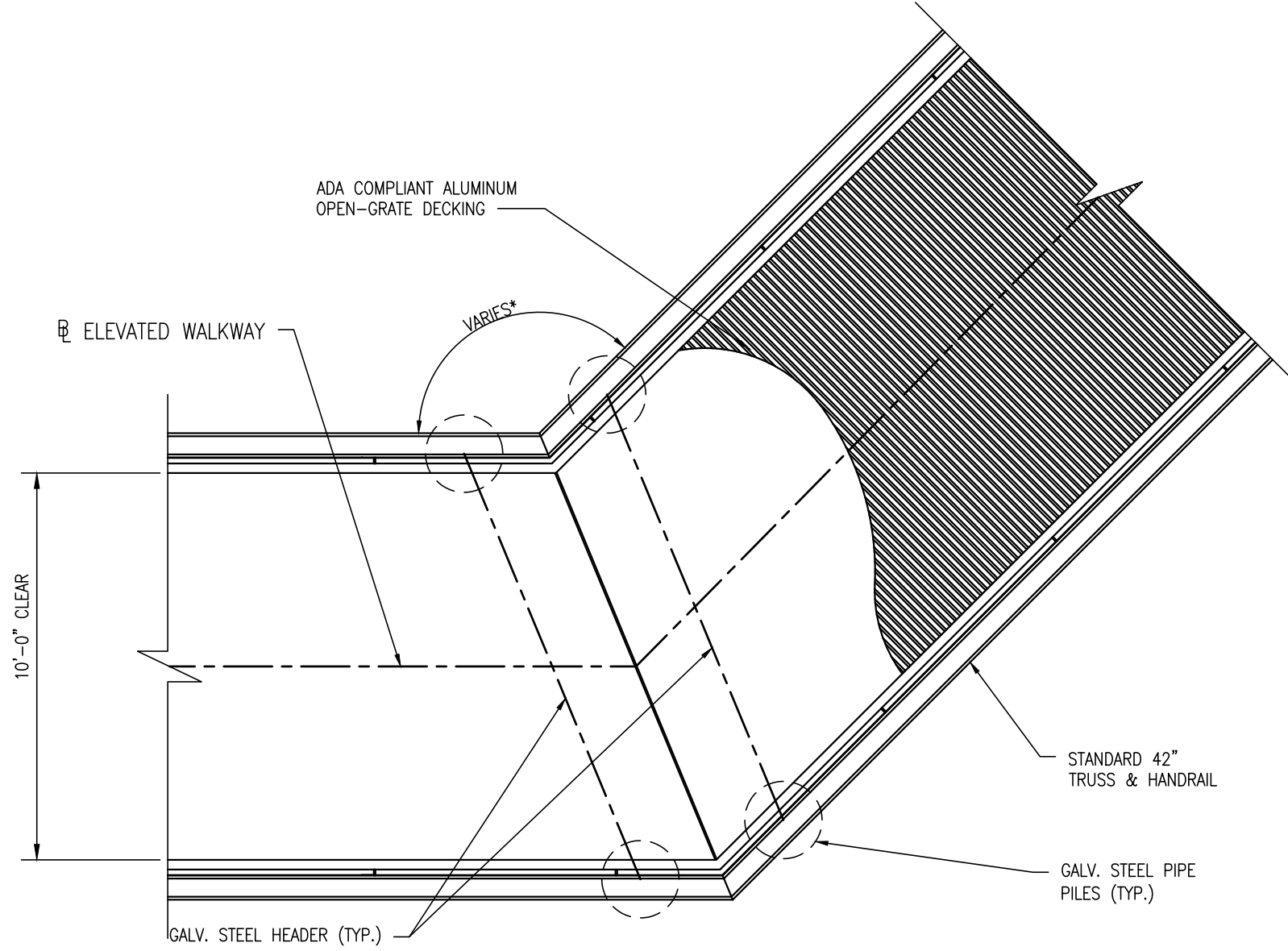
CONTRACT NO.:

2020-KP-100

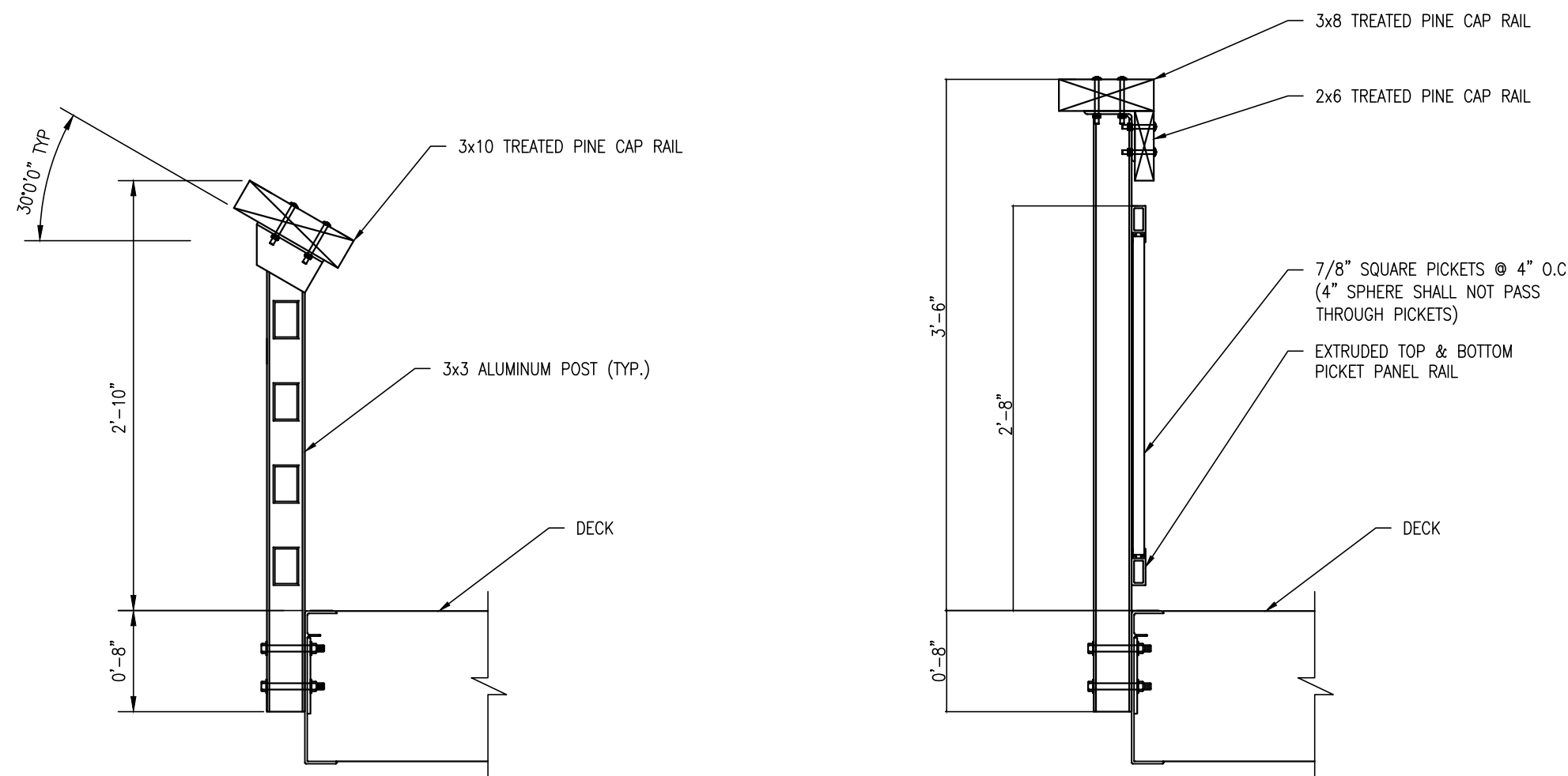


1
 C502
 FISHING PIER BUMP-OUT
 SCALE: 1/4" = 1'-0"

- NOTES:
1. FINAL PILE LAYOUT TO BE DETERMINED BY BRIDGE MANUFACTURER. REFER TO CONSTRUCTION SHOP DRAWINGS.
 2. FISHING PIER TO BE SHIPPED IN FOUR (4) PIECES TO BE CONSTRUCTED BY CONTRACTOR ON SITE.



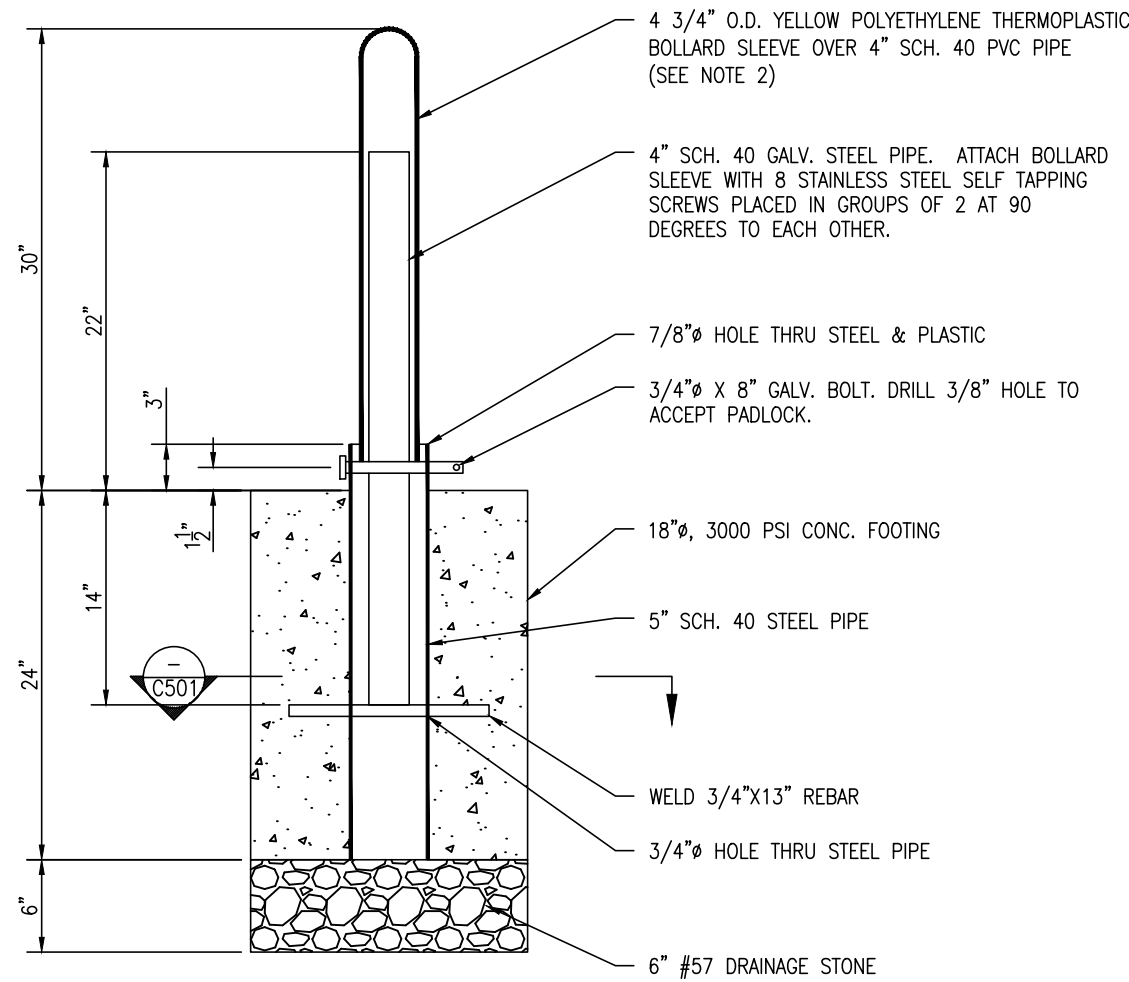
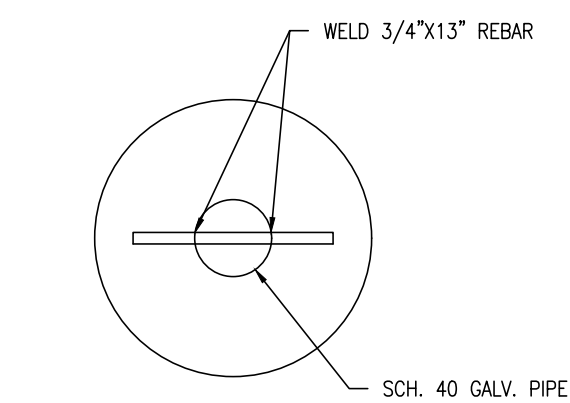
6
 C502
 ABUTMENT RAILING PLAN
 SCALE: 1/2" = 1'-0"



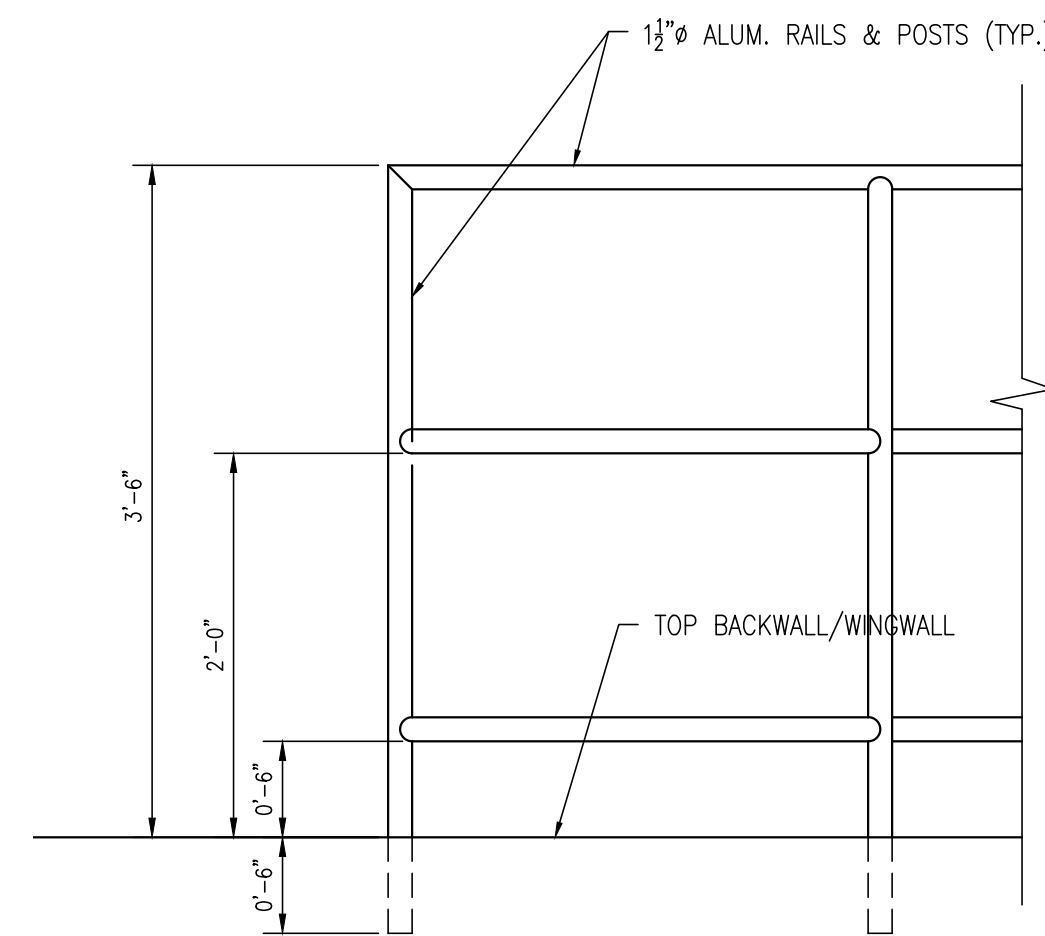
3
 C502
 FISHING RAILING
 SCALE: 1" = 1'-0"

4
 C502
 BUMP OUT TRANSITION RAILING
 SCALE: 1" = 1'-0"

- NOTES:
1. ALL STEEL SHALL BE HOT DIPPED GALVANIZED AFTER FABRICATION.
 2. REMOVABLE BOLLARD SLEEVE IS MODEL #BPD-YL-3 1/2-66-S DISTRIBUTED BY BOLLARDS AND SLEEVES, LLC (1-800-914-4771).
 3. BOLLARD TO BE PROVIDED BY THE CONTRACTOR.
 4. PLACE BOLLARDS AS SHOWN ON PLAN.
 5. BOLLARDS SHALL BE SET VERTICALLY PLUMB.



5
 C502
 BOLLARD DETAIL
 SCALE: 1" = 1'-0"



7
 C502
 ABUTMENT RAILING ELEVATION
 SCALE: 1" = 1'-0"

REVISIONS:

DATE: DESCRIPTION:

BY:

KILLENS POND STATE PARK

ELEVATED WALKWAY

ELEVATED WALKWAY DETAILS

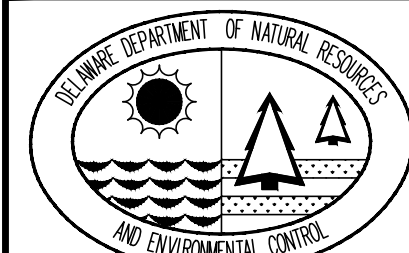
SEAL:



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SCALE:

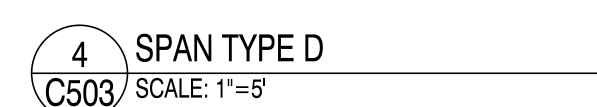
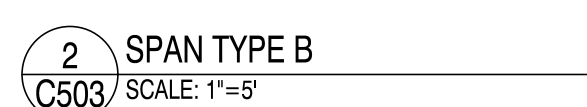
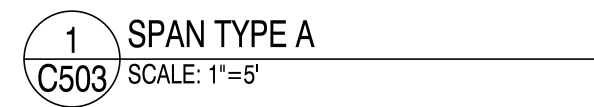
AS NOTED

SHEET NO.:

C502

CONTRACT NO.:

2020-KP-100



NOTES:

1. * SPAN ROTATED 180° FROM VIEW.
2. SPAN A AND D HAVE 90° SECTIONS.
3. RAILING NOT SHOWN FOR CLARITY.
4. INSTALL (2) 6' LONG BY 2' WIDE ALUMINUM BENCHES, SEE DETAIL 6/C501.
5. 10.00 FEET REPRESENTS THE CLEAR WIDTH ON EACH SPAN. REFER TO SHEET C501 FOR FULL DIMENSIONS.

REVISIONS:

DATE:	3/17/2020	DESCRIPTION:	REMOVED WALKWAY
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W/M	BY:
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WJW

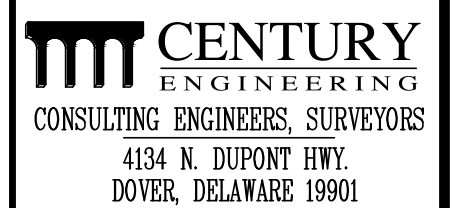
KILLENS POND STATE PARK
ELEVATED WALKWAY

ELEVATED WALKWAY DETAILS

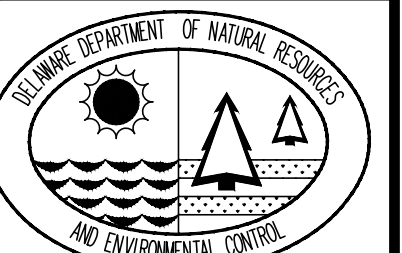
SEAL:



CIVIL ENGINEER:



CEI CONTRACT NO.: 175013.11



DESIGNED BY:

WJH

DRAWN BY:

JSW

CHECKED BY:

AES

DATE: _____

AUGUST 2020

SCALE:

AS SHOWN

SHEET NO.:

C503

CONTRACT NO.:

2020-KP-100



PILE POINT LAYOUT			
157	PILES	357585.6161	623948.1459
158	PILES	357622.4601	623940.4307
159	PILES	357617.1578	623930.7930
160	PILES	357625.9647	623938.5026
161	PILES	357620.6625	623928.8649
162	PILES	357657.5055	623921.1498
163	PILES	357652.2042	623911.5120
164	PILES	357661.0100	623919.2197
165	PILES	357655.9487	623910.0101
166	PILES	357668.9862	623914.8829
167	PILES	357663.8350	623905.6832
168	PILES	357658.9395	623896.7804
169	PILES	357676.7825	623910.5462
170	PILES	357671.7215	623901.3467
171	PILES	357666.8258	623892.4437
172	PILES	357684.6690	623906.2097
173	PILES	357679.6078	623897.0100
174	PILES	357674.7121	623888.1071
175	PILES	357692.5557	623901.8739
176	PILES	357687.4945	623892.6742
177	PILES	357696.0575	623899.9407
178	PILES	357690.7554	623890.3031
179	PILES	357727.5992	623882.5878
180	PILES	357722.2669	623872.9501
181	PILES	357731.1038	623880.6597
182	PILES	357725.8016	623871.0220
183	PILES	357762.6456	623863.3069
184	PILES	357757.3433	623853.6692
185	PILES	357766.1490	623861.3766
186	PILES	35761.0881	623852.1773
187	PILES	357774.0353	623857.0040
188	PILES	35768.9744	623847.8406
189	PILES	357764.0786	623838.9375
190	PILES	357781.9216	623852.7033
191	PILES	357776.8607	623843.5040
192	PILES	357771.9648	623834.6009
193	PILES	357789.8079	623848.3667
194	PILES	357784.7470	623839.1363
195	PILES	357779.8511	623830.2642
196	PILES	357797.6920	623844.0259
197	PILES	35792.6338	623834.8316
198	PILES	357801.1966	623842.0978
199	PILES	357795.8946	623832.4605
200	PILES	357832.7383	623824.7450
201	PILES	357827.4360	623815.1072
202	PILES	357836.2430	623822.8169
203	PILES	357830.9407	623813.1791
204	PILES	357867.7847	623805.4646
205	PILES	357862.4824	623795.8263
206	PILES	357871.2893	623803.5359
207	PILES	357865.9871	623793.8892
208	PILES	357902.8311	623786.1830
209	PILES	357897.5288	623776.5453
210	PILES	357906.3357	623784.2549
211	PILES	357901.0334	623774.6117

NOTES:

1. PILE TIP ELEVATIONS PROVIDED ARE MINIMUM AND FOR ESTIMATING PURPOSES ONLY. ACTUAL PILE LENGTHS MAY BE LONGER AND SHALL BE ESTABLISHED DURING INSTALLATION OF TEST PILES UTILIZING A DYNAMIC LOAD TEST CONFORMING TO ASTM D4549 - STANDARD TEST METHOD FOR HIGH-STRAIN DYNAMIC TESTING OF PILES.
2. \oplus_{TP} INDICATES TEST PILE LOCATION.
3. \bullet INDICATES PRODUCTION PILE LOCATION.
4. REFER TO SHEETS C401 AND C402 FOR ADDITIONAL INFORMATION.
5. ALL PILES SHALL BE 12" DIA. SCHEDULE 80 PIPE PILES WITH THE EXCEPTION OF PILES SUPPORTING SPAN #6, WHICH SHALL BE 14" X 0.625" DIA. DRILLED PIPE PILES.

REVISIONS:

DATE: DESCRIPTION:

KILLENS POND STATE PARK

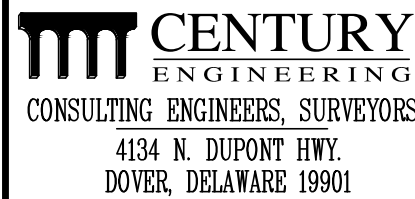
ELEVATED WALKWAY

ELEVATED WALKWAY DETAILS

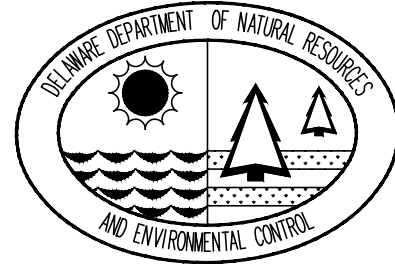
SEAL:



CIVIL ENGINEER:



CEI CONTRACT NO.: 175013.11



DESIGNED BY:

WJH

DRAWN BY:

JSW

CHECKED BY:

AES

DATE: _____

AUGUST 2020

SCALE:

AS SHOWN

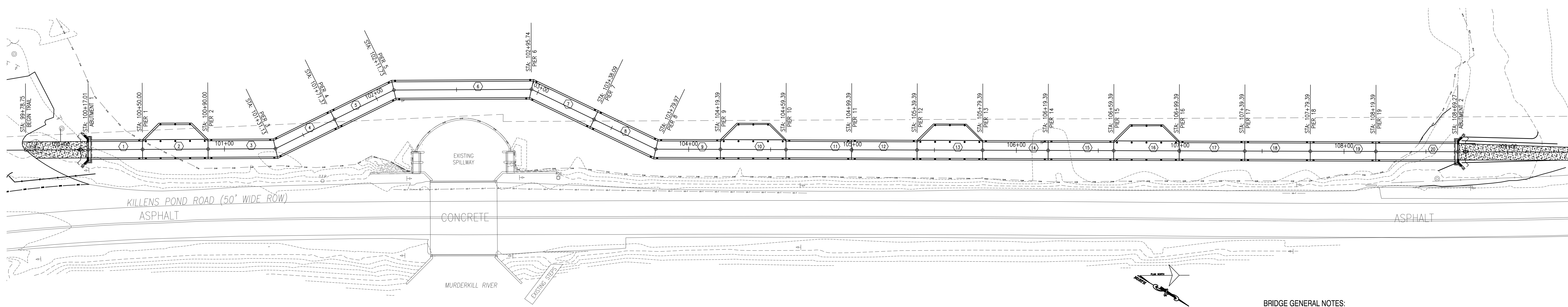
SHEET NO.:

C504

CONTRACT NO.:

2020-KP-100

\\delawarecentury.com\\Shared-CAD\\00-Project\\00\\Projects\\17501311 Killens Pond Bridge\\S601_Bridge Plan_Dwg.dwg, 7/15/2020 8:18:41 AM



1
S601
ELEVATED WALKWAY PLAN VIEW
SCALE: 1" = 30'-0"

BRIDGE GENERAL NOTES:

BRIDGE ELEMENTS SHALL BE PROVIDED BY DELAWARE STATE PARKS. BRIDGE REQUIREMENTS NOTED BELOW ARE FOR INFORMATIONAL PURPOSES ONLY.

DESIGN AND CONSTRUCTION SPECIFICATIONS:

- THE BRIDGE SECTIONS SHALL BE PRATT TRUSS SYSTEM, WITH ONE DIAGONAL PER PANEL, OR AN APPROVED EQUAL. ALL END POSTS AND INTERMEDIATE POSTS SHALL BE PLUMB (VERTICAL).
- AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS (WITH INTERIMS)
- DELAWARE STANDARD SPECIFICATIONS (WITH REVISIONS AND MODIFICATIONS)

DESIGN:

- SERVICE LOAD DESIGN (ABUTMENTS)
- ALLOWABLE STRESS DESIGN OR LOAD RESISTANCE FACTOR DESIGN (SUPERSTRUCTURE)

LOADS:

- LIVE LOAD - IN ACCORDANCE WITH AASHTO GUIDE SPECIFICATIONS FOR DESIGN OF PEDESTRIAN BRIDGES, 2ND EDITION, EXCEPT AS NOTED.
- VEHICLE LOAD - 2,500 POUNDS.

MATERIALS:

- BRIDGE SUPERSTRUCTURE SHALL BE 6061-T6 ALUMINUM ALLOY, OR AS NOTED IN THE TECHNICAL SPECIFICATIONS.
- ALUMINUM DECKING SHALL BE 6063-T6 ALUMINUM ALLOW, ADA COMPLIANT PLANKS RUNNING TRANSVERSE TO THE ALIGNMENT OF THE STRUCTURE, IN ACCORDANCE WITH THE TECHNICAL SPECIFICATIONS.
- CONTRACTOR TO PROVIDE AND INSTALL STAINLESS STEEL ANCHOR BOLTS, NUTS, AND WASHERS AS REQUIRED BY THE BRIDGE MANUFACTURER. ANCHOR BOLTS SHALL BE DESIGNED TO RESIST BRIDGE LOADS AS PROVIDED BY THE MANUFACTURER. MINIMUM EMBEDMENT DEPTH OF ANCHOR BOLTS TO BE 6 INCHES OR AS SHOWN ON THE STRUCTURAL DRAWINGS.
- BOLTED CONNECTIONS THAT ARE EXPOSED TO PEDESTRIANS ON THE BRIDGE SHALL BE POSITIONED SUCH THAT THE BOLT HEADS FACE THE DECK AND NUTS FACE AWAY FROM THE CENTERLINE OF THE BRIDGE.
- STEEL FABRICATION AND ERECTION:
 - ALL SHOP AND FIELD WELDING SHALL BE PERFORMED BY AWS CERTIFIED WELDERS. WELDERS QUALIFICATION TEST RECORDS FOR THE TYPE AND ORIENTATION OF WELDS BEING PERFORMED SHALL BE SUBMITTED FOR EACH WELDER WORKING ON THE JOB, FOR REVIEW AND APPROVAL PRIOR TO CONSTRUCTION.
 - ALL STEEL SHALL BE FABRICATED IN THE UNITED STATES IN ACCORDANCE WITH SECTION 006277 - BUY AMERICA.
 - PILES SHALL BE ASTM A252, GRADE 3, 12" O.D. X 0.50" WALL GALV. STEEL PIPE PILES. CERTIFICATE OF ANALYSIS AND TESTS FOR PILES SHALL BE SUBMITTED FOR REVIEW AND APPROVAL PRIOR TO CONSTRUCTION.
 - STEEL BEAMS/GIRDERS SHALL MEET THE REQUIREMENTS OF ASTM A572, GRADE 50 OR ASTM A992. STEEL CERTIFICATION SHALL BE SUBMITTED FOR REVIEW AND APPROVAL PRIOR TO CONSTRUCTION. ALL STEEL SHALL BE HOT DIPPED GALVANIZED IN ACCORDANCE WITH ASTM A123. GALVANIZING DAMAGED OR REMOVED FOR FIELD WELDING SHALL BE CLEANED AND COATED WITH "ZRC GALVALUTE, GALVANIZING REPAIR," OR APPROVED EQUAL.

REINFORCED CONCRETE:

- ALL REINFORCING STEEL SHALL BE AASHTO M31, GRADE 60 (ASTM A615).
- CONCRETE FOR ABUTMENT FOOTING SHALL BE DELDOT CLASS A ($f'_c = 4500$ PSI) AND SHALL CONFORM TO SECTION 610001 - PORTLAND CEMENT CONCRETE MASONRY, ABUTMENT FOOTING, CLASS A.
- CONCRETE FOR ABUTMENT STEM, WINGWALL AND BACKWALL SHALL BE DELDOT CLASS A ($f'_c = 4500$ PSI) AND SHALL CONFORM TO SECTION 610002 - PORTLAND CEMENT CONCRETE MASONRY, ABUTMENT ABOVE FOOTING, CLASS A.
- CONCRETE SHALL HAVE AN AIR CONTENT BETWEEN 4 AND 7 PERCENT.
- REINFORCEMENT SHALL CONFORM TO SECTION 611001 - BAR REINFORCEMENT, EPOXY COATED, OF THE DELDOT STANDARD SPECIFICATIONS. MINIMUM CONCRETE COVER FOR REBAR SHALL BE: 3" MINIMUM FOR SURFACES CAST AGAINST EARTH, AND 2" FOR ALL OTHER FIELD-FORMED SURFACES.
- CHAMFER ALL EXPOSED EDGES 3/4" UNLESS OTHERWISE NOTED.

CONSTRUCTION STAGING:

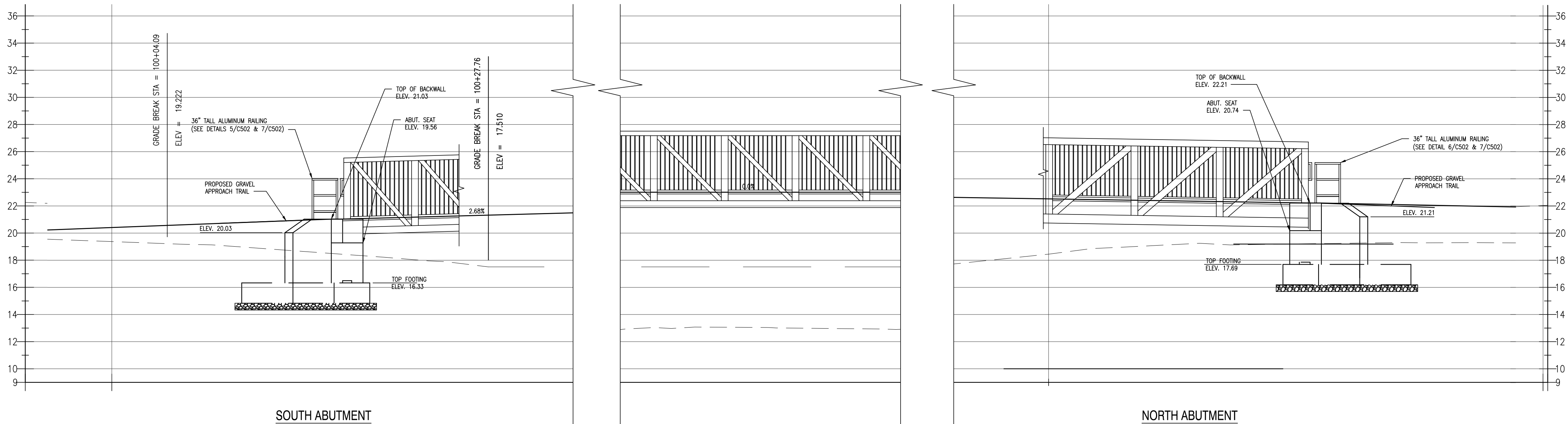
- THE CONTRACTOR SHALL SUBMIT AN ERECTION PLAN TO THE ENGINEER FOR REVIEW A MINIMUM OF 30 CALENDAR DAYS PRIOR TO ANY SCHEDULED BRIDGE ERECTION. NECESSARY REVISIONS AND ADDITIONS TO THE ERECTION PLAN, AS DEEMED NECESSARY BY THE ENGINEER, SHALL BE PREPARED BY THE CONTRACTOR AND SUBMITTED FOR REVIEW. THE ENGINEER MUST APPROVE ALL ERECTION PLANS BEFORE ANY PILES OR BRIDGE PLACEMENT WORK SHALL BE PERMITTED. SUBMITTALS MUST CONTAIN, BUT ARE NOT LIMITED TO, THE FOLLOWING:
 - CALCULATIONS SHOWING THE WEIGHT OF MATERIALS AND LIFTING EQUIPMENT.
 - TYPE AND POSITIONING OF LIFTING EQUIPMENT, SUCH AS CRANES, INCLUDING MOVEMENTS. PROVIDE EQUIPMENT CUT SHEETS FOR REVIEW AND APPROVAL.
 - LOCATION OF STAGING AREA(S) IF DIFFERENT THAN THOSE SHOWN ON THE CONSTRUCTION PLANS. CONTRACTOR/ERECTOR SHALL CONSIDER SITE ACCESSIBILITY AND ERECTION PATH.
- ADDITIONAL NOTES:
 - CONSTRUCTION OF THE ELEVATED WALKWAY SHALL BE STARTED AT OR NEAR THE MID-SPAN OF THE STRUCTURE AND PROGRESS TO THE NORTH AND THE SOUTH TO PREVENT PEDESTRIAN ACCESS UNTIL CONSTRUCTION IS COMPLETE.
 - DEWATERING IS ANTICIPATED FOR THE CONSTRUCTION OF THE BRIDGE ABUTMENTS. THE CONTRACTOR SHALL PROVIDE A DEWATERING SYSTEM AS NECESSARY FOR CONSTRUCTION OF BRIDGE ABUTMENTS. DEWATERING SYSTEM SHALL BE INCIDENTAL TO THE CONTRACT. THE CONTRACTOR SHALL OBTAIN ALL NECESSARY DEWATERING PERMITS.
 - NO FILL, TEMPORARY SCAFFOLDING, MATTING, PERSONNEL, OR EQUIPMENT IS/ARE TO BE PLACED WITHIN THE POND/STREAM BED.
 - MANEUVERING MACHINERY OR VEHICLES WITHIN THE WATERWAY IS NOT BE ALLOWED EXCEPT FOR BARGES AND BOATS.
 - CONSTRUCTION VEHICLES SHALL BE PROHIBITED FROM PASSING OVER THE PROPOSED BRIDGE UNLESS APPROVED BY THE OWNER.

HYDRAULIC DATA:

- ORDINARY POND WATER ELEVATION 17.51.

STEEL PIPE PILES:

- PILES SHALL CONFORM TO SECTION 316217-STEEL PILES, AND SHALL BE HOT-DIPPED GALVANIZED IN ACCORDANCE WITH ASTM A123.
- ALL PILES SHALL BE DRIVEN TO A MINIMUM CAPACITY OF 35 TONS AND TO THE MINIMUM TIP ELEVATION SHOWN ON SHEETS C401 AND C402.



2
S601
WALKWAY ABUTMENT ELEVATION
SCALE: 1" = 5'-0"

REVISIONS:

DATE: DESCRIPTION:

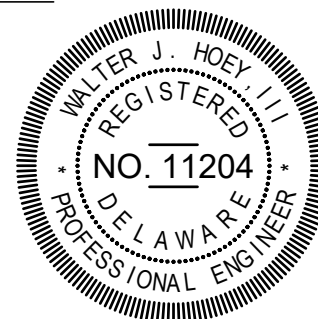
BY:

KILLENS POND STATE PARK

ELEVATED WALKWAY

WALKWAY PLAN AND ELEVATION

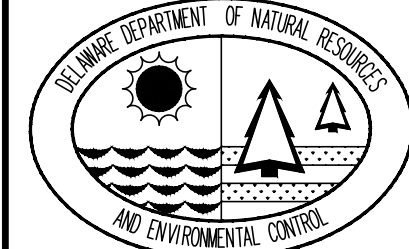
SEAL:



CIVIL ENGINEER:

CENTURY
ENGINEERING
CONSULTING ENGINEERS, SURVEYORS
4134 N. DUPONT HWY.
DOVER, DELAWARE 19901

CEI CONTRACT NO.: 175013.11



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AUGUST 2020

SCALE:

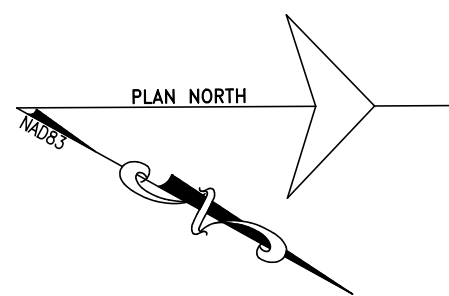
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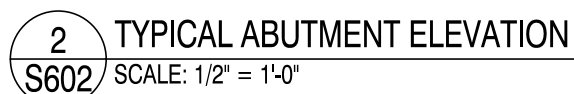
S601

CONTRACT NO.:

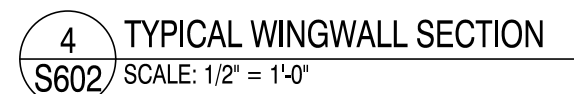
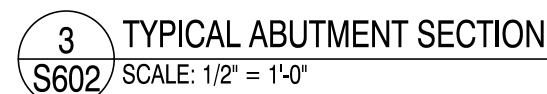
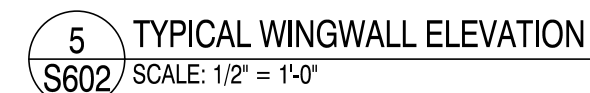
2020-KP-100



1 ABUTMENT PLAN LAYOUT
S602 SCALE: 1/2" = 1'-0"



WORKING POINTS			
POINT NO.	NORTHING	EASTING	DESCRIPTION
601	357205.5828	624152.4796	WP
602	357209.7299	624153.6399	WP
603	357212.0128	624152.3540	WP
604	357219.9280	624166.4500	WP
605	357217.6398	624167.7359	WP
606	357216.4786	624171.8690	WP
607	357954.2022	623764.3338	WP
608	357950.0794	623763.1374	WP
609	357947.7784	623764.4033	WP
610	357939.9857	623750.3288	WP
611	357942.2867	623748.9729	WP
612	357943.4831	623744.8501	WP



KILLENS POND STATE PARK

ELEVATED WALKWAY

ABUTMENT DETAILS

CENTURY
ENGINEERING
CONSULTING ENGINEERS, SURVEYORS
4134 N. DUPONT HWY.
DOVER, DELAWARE 19901

WJH

JSW

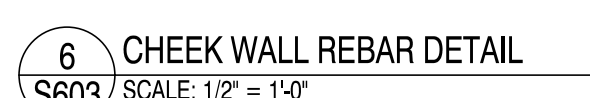
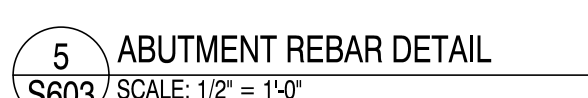
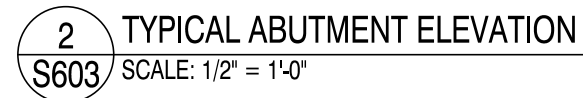
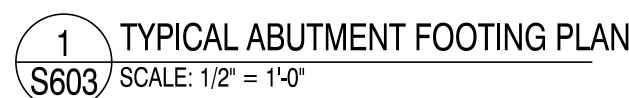
AES

AUGUST 2020

AS SHOWN

S602

2020-KP-100

[illegible]

REBAR NOTES:

1. UNLESS OTHERWISE NOTED, THE FOLLOWING MINIMUM CONCRETE COVER SHALL BE PROVIDED FOR REINFORCEMENT:	
1.1. CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH	3 INCHES.
1.2. CONCRETE EXPOSED TO EARTH OR WEATHER:	
1.2.1. PRIMARY REINFORCEMENT	2 INCHES.
1.2.2. STIRRUPS, TIES, AND SPIRALS	1 1/2 INCHES.

REINFORCEMENT ABBREVIATIONS

N.F.	NEAR FACE
F.F.	FAR FACE
E.F.	EACH FACE
O.C.	ON CENTER
T&B	TOP AND BOTTOM

F	FOOTING
A	ABUTMENT
W	WINGWALL
HORIZ.	HORIZONTAL
VERT.	VERTICAL

BAR BENDS

A B C

TYPE 2

TYPE 6

**KILLENS POND STATE PARK
ELEVATED WALKWAY
REINFORCEMENT DETAILS**

SEAL



CIVIL ENGINEER



CEI CONTRACT NO.: 175013.11



DESIGNED BY:

WJH

DRAWN BY:

JSW

CHECKED BY:

AES

DATE:

AUGUST 2020

SCALE:

AS SHOWN

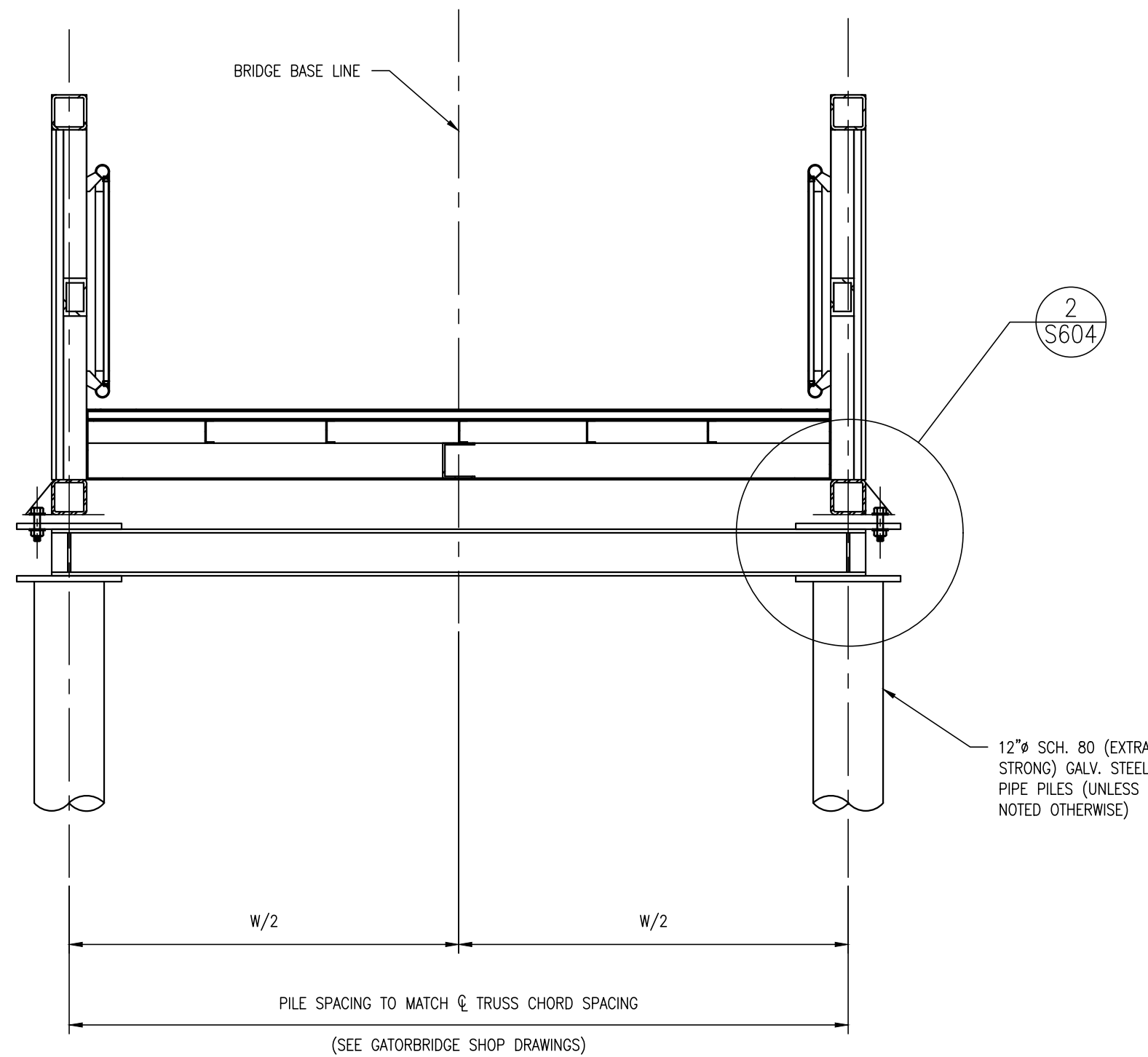
SHEET NO.:

S603

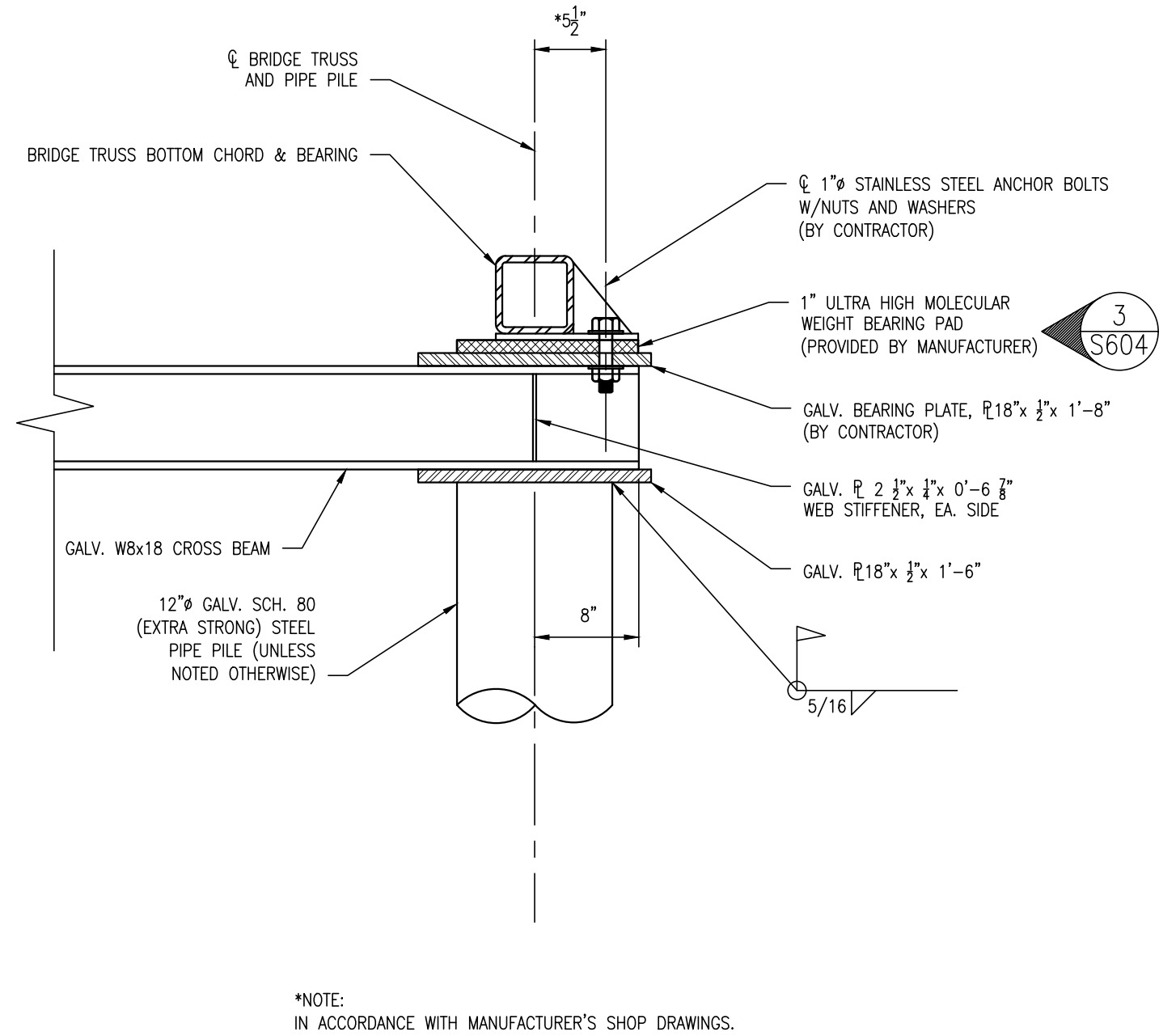
CONTRACT NO.:

2020-KP-100

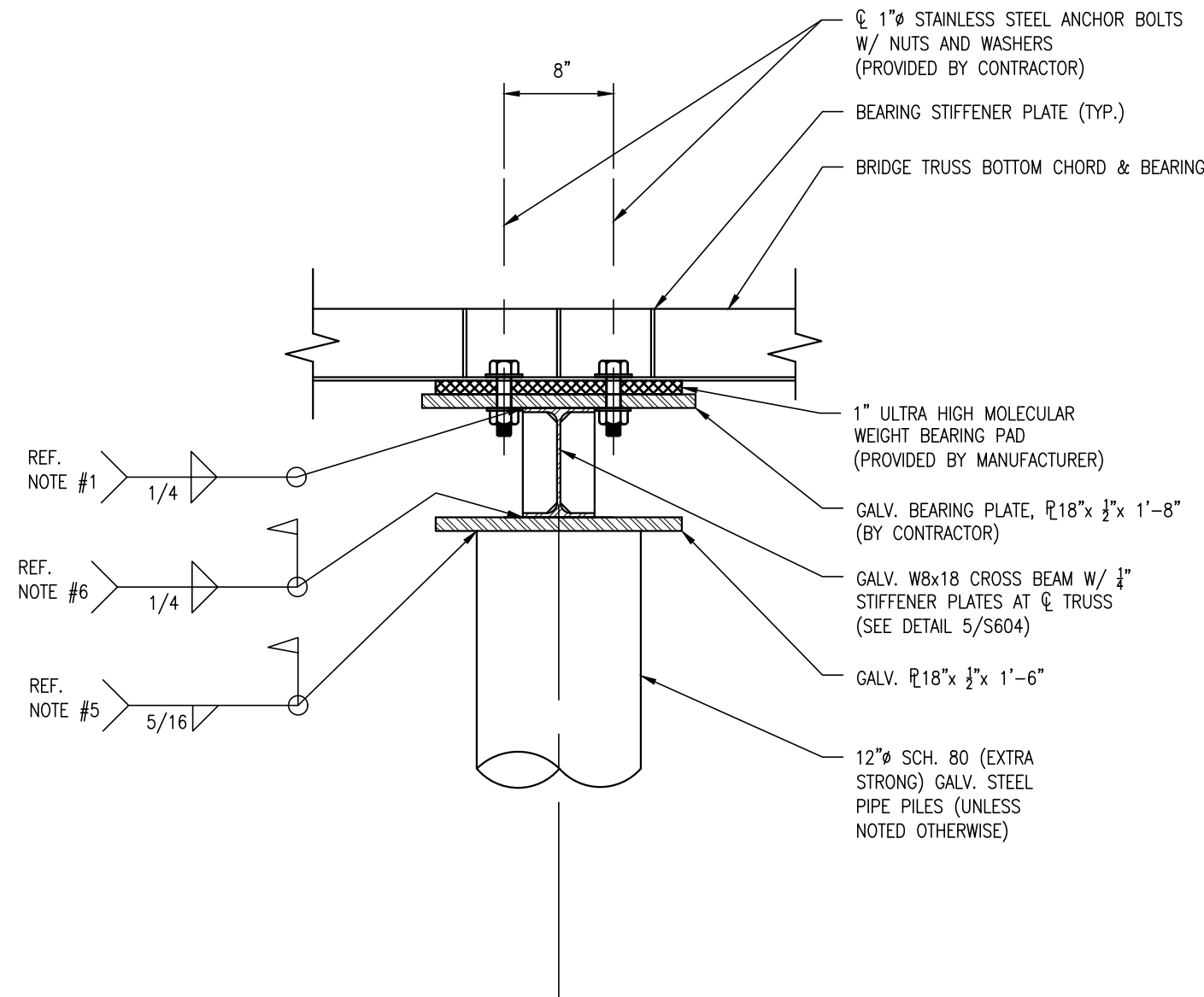
\\solomon.cermlunyang.com\Global-CE\00-ProjectData\Projects\175013.00 (DNREC 2017 Engineering CE)\175013.11 (Killara Pond Bridge)\CAD0 FILES\Sheets\Construction Plans\S803_Reinforcement Details.dwg, 7/15/2020 9:19:08 AM



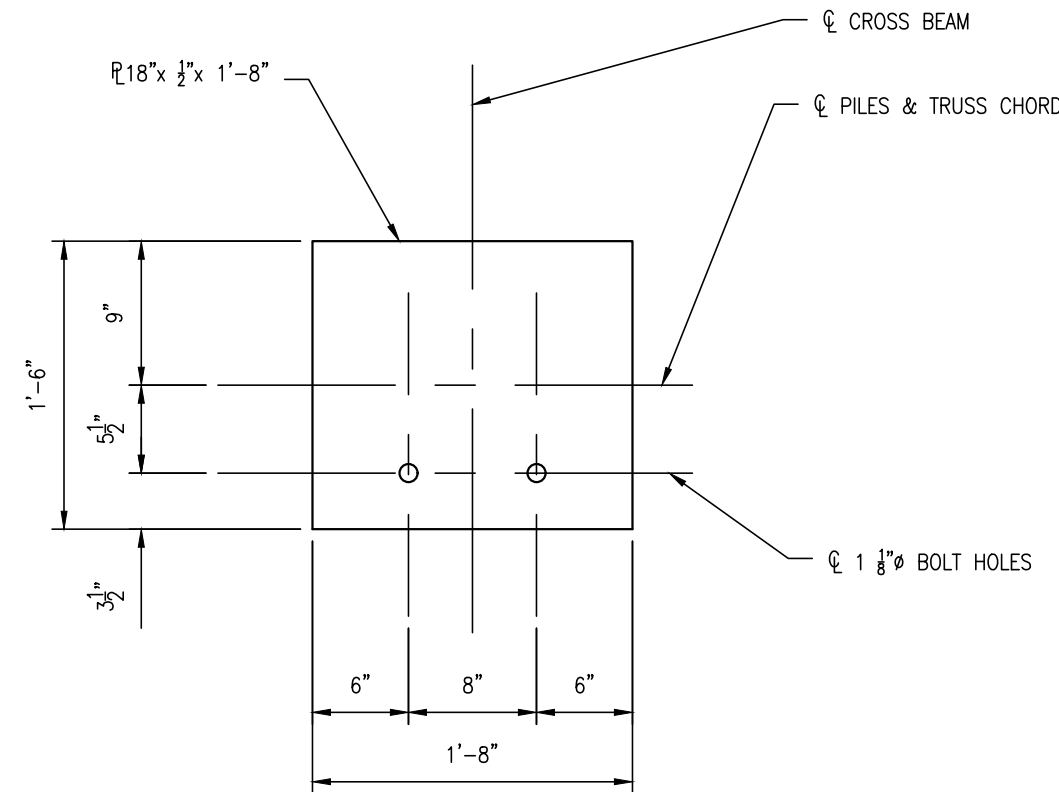
1 TYPICAL BRIDGE PIER
SCALE: 1/2" = 1'-0"



2 BRIDGE TO PIER ATTACHMENT DETAIL
SCALE: 1" = 1'-0"



3 BRIDGE PIER END VIEW
SCALE: 1" = 1'-0"



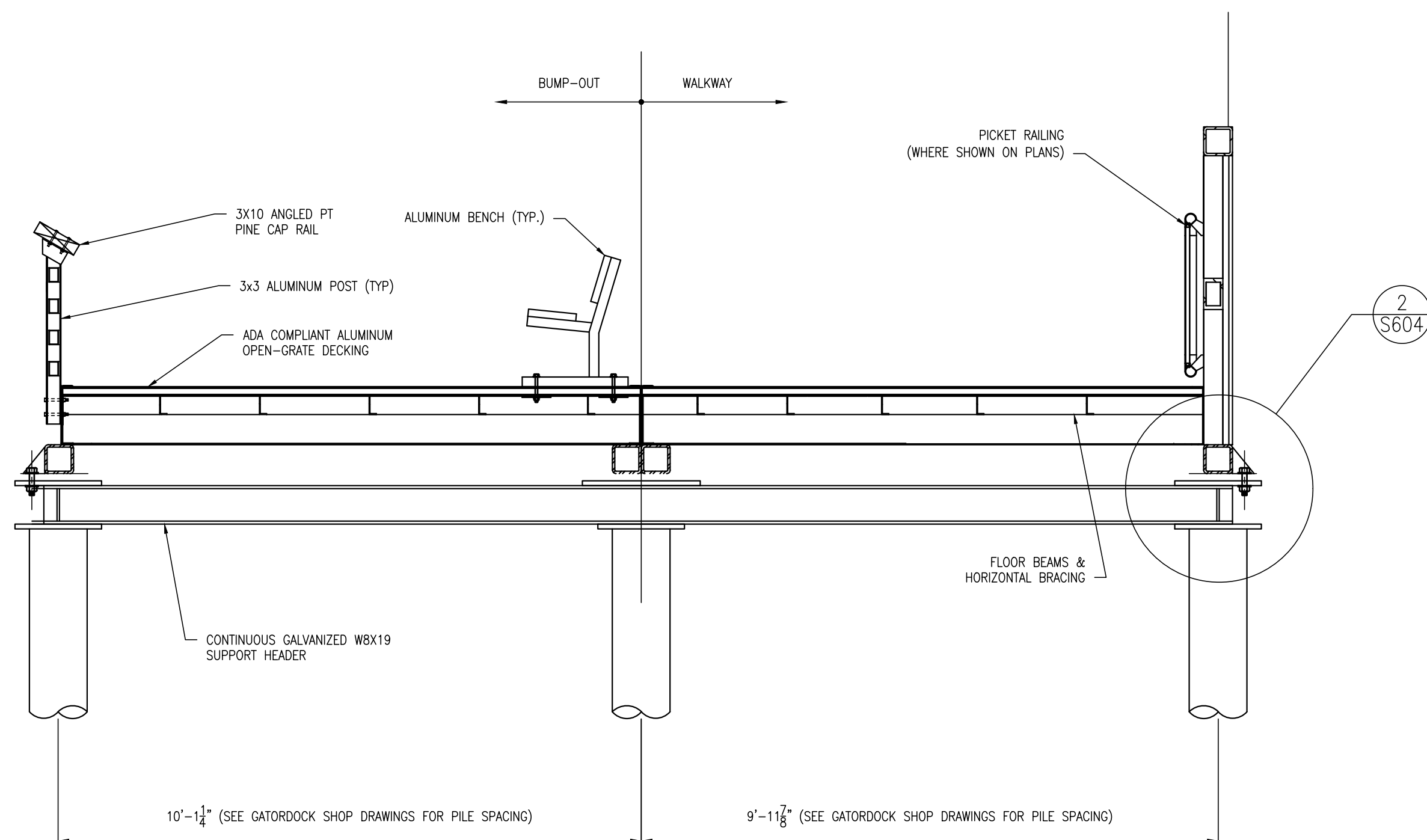
4 BEARING PLATE PLAN
SCALE: 1" = 1'-0"

SUGGESTED PIER BENT SEQUENCE OF CONSTRUCTION:

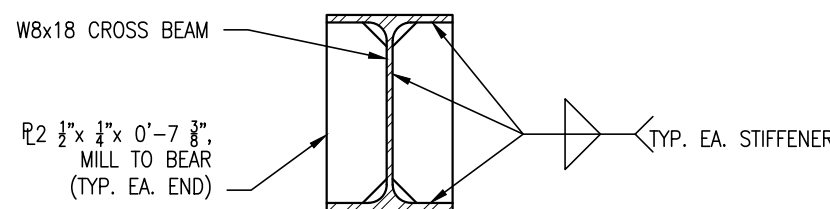
1. SHOP WELD CROSS BEAMS TO BEARING PLATES.
2. ATTACH/BOLT GALVANIZED CROSS BEAMS, ULTRA HIGH MOLECULAR WEIGHT BEARING PADS AND GALVANIZED $16 \times 1/2 \times 1'-6"$ PLATES TO WALKWAY BEARING PADS.
3. DRIVE GALVANIZED STEEL PIPE PILES AT LOCATIONS SHOWN ON CONTRACT PLANS AND PER GATORDOCK SHOP DRAWINGS TO MATCH WALKWAY BEARING PLATE LOCATIONS. PILES SHALL BE DRIVEN TO REQUIRED TIP ELEVATION.
4. CUT OFF TOPS OF PILES TO REQUIRED ELEVATION(S).
5. WELD PILE CAP ($18 \times 1/2 \times 1'-6"$) TO TOP OF PILES.
6. PLACE WALKWAY WITH CROSS BEAM ON TOP OF PILE CAPS AND WELD IN PLACE.
7. TIGHTEN ATTACHMENT BOLTS AS REQUIRED.
8. CLEAN WELDS AND COAT AREAS OF DAMAGED GALVANIZING IN ACCORDANCE WITH SECTION 316217 - STEEL PILES.

NOTES:

1. ALL PILES SHALL BE 12" GALVANIZED SCHEDULE 80 PIPE PILES WITH THE EXCEPTION OF PILES SUPPORTING SPAN #6, WHICH SHALL BE 14" X 0.625" GALVANIZED PIPE PILES.



5 TYPICAL BUMP-OUT PIER
SCALE: 1/2" = 1'-0"



5 TYPICAL BEARING STIFFENER
SCALE: 1 1/2" = 1'-0"

REVISIONS:

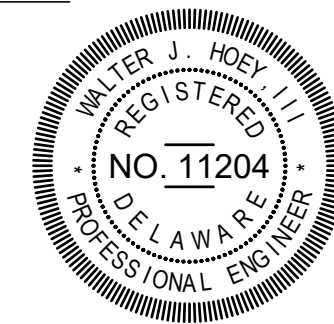
DATE: DESCRIPTION:

KILLENS POND STATE PARK

ELEVATED WALKWAY

PIER BENT DETAILS

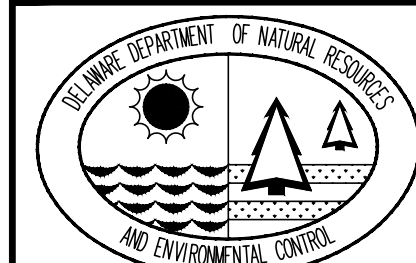
SEAL:



CIVIL ENGINEER:

CENTURY ENGINEERING
CONSULTING ENGINEERS, SURVEYORS
4134 N. DUPONT HWY.
DOVER, DELAWARE 19901

CEI CONTRACT NO.: 175013.11



DESIGNED BY:

WJH

DRAWN BY:

JSW

CHECKED BY:

AES

DATE:

AUGUST 2020

SCALE:

AS SHOWN

SHEET NO.:

S604

CONTRACT NO.:

2020-KP-100

\\delawarecentury.com\Shared-45\DW-Projects\Boring\17501311 (Kilns Pond Bridge) CAD\17501311 (Kilns Pond Bridge) Construction Plans\S605_SoilBoring.dwg, 7/15/2020 9:18:29 AM

HYNES & ASSOCIATES		LOG OF BORING B-101 (Page 1 of 1)				
Century Engineering 4134 North DuPont Highway Dover, Delaware 19901 Century-Killens Pond State Park Waterside Exp. Project No.: JDH-10/18/188		Date Completed: : August 6, 2018 Logged By: : J. Lindsey Drilled By: : B. Hynes Drilling Method: : HSA (Geoprobe 7822 DT) Total Depth: : 30.5 feet				
Depth in Feet	DESCRIPTION	GRAPHIC	USCS	Sample No.	Blows per 6 inches	REMARKS
0	Brown, wet to saturated, loose, fine to medium SAND, with trace silt		SP	1	2-3-4	Scale 1" = 6 feet Approximately 6 inches of organic bearing soil was encountered at the ground surface. Boring caved in at 3 feet.
2				2	3-2-4	
4				3	3-4-6	
6				4	1-4-4	
12	Brown, saturated, very dense, fine to medium SAND, with trace silt		SP	5	13-20-31	
14				6		
18	Dark gray, saturated, medium stiff, clayey organic SILT, with little fine sand		MH/OH	5	2-3-4	
22	Dark gray, saturated, medium stiff, silty CLAY, with trace fine sand, trace organic silt		CH/OH	7	2-2-4	
24				8	2-4-6	
30	Boring terminated at 30.5 feet.					
32						
34						
36						
38						
40						

HYNES & ASSOCIATES		LOG OF BORING B-102 (Page 1 of 1)				
Century Engineering 4134 North DuPont Highway Dover, Delaware 19901 Century-Killens Pond State Park Waterside Exp. Project No.: JDH-10/18/188		Date Completed: : August 7, 2018 Logged By: : J. Lindsey Drilled By: : M. Hynes Drilling Method: : HSA (Mobile B-47 HD) Total Depth: : 35.5 feet				
Depth in Feet	DESCRIPTION	GRAPHIC	USCS	Sample No.	Blows per 6 inches	REMARKS
0	Brown, saturated, very loose, fine to medium SAND, with trace silt		SP	1	WOH/18"	Scale 1" = 6 feet 5.5 feet to mudline.
2				2	1-1-1	
4			SM	3	1-1-1	
6	Dark brown, saturated, very loose, fine to medium SAND, with some silt, trace organic silt			4	5-7-13	
8	Gray, saturated, medium dense, fine to medium SAND, with trace silt		MH/OH	5	3-5-5	
10				6	4-6-9	
12	Dark brown, saturated, stiff, clayey organic SILT, with little fine sand		SM	7	7-9-12	
14				8	9-24-30	
16	Dark brown, saturated, medium dense, fine to medium SAND, with little silt, trace organic silt		ML/SM	9	8-22-29	
18						
20			CH/OH			
22	Gray, saturated, very dense, fine SAND and SILT					
24						
26						
28						
30						
32	Dark gray, saturated, hard, silty CLAY, with trace fine sand, trace organic silt					
34						
36	Boring terminated at 35.5 feet.					
38						
40						

HYNES & ASSOCIATES		LOG OF BORING B-103 (Page 1 of 1)				
Century Engineering 4134 North DuPont Highway Dover, Delaware 19901 Century-Killens Pond State Park Waterside Exp. Project No.: JDH-10/18/188		Date Completed: : August 7, 2018 Logged By: : J. Lindsey Drilled By: : M. Hynes Drilling Method: : HSA (Mobile B-47 HD) Total Depth: : 30.5 feet				
Depth in Feet	DESCRIPTION	GRAPHIC	USCS	Sample No.	Blows per 6 inches	REMARKS
0	Brown, saturated, very loose, fine to medium SAND, with trace silt		SP	1	1-1-1	Scale 1" = 6 feet 7.5 feet to mudline.
2				2	6-6-7	
4	Dark brown, saturated, medium dense, fine to medium SAND, with trace silt, trace organic silt		MH/OH	3	3-3-4	
6	Dark gray, saturated, medium stiff, clayey organic SILT, with little fine sand			4	3-6-12	
8	Brown, saturated, medium dense, fine to medium SAND, with some silt		SC	5	4-7-11	
10				6	5-7-12	
12	Dark brown, saturated, medium dense, fine to medium SAND, with little clay, little silt, trace organic silt		SM	7	5-13-19	
14				8	15-28-505"	
16	Dark gray, saturated, medium dense, fine to medium SAND, with some silt, trace organic silt		SP			
18						
20	Gray, saturated, medium dense to very dense, fine to coarse SAND, with trace silt					
22						
24						
26						
28						
30	Boring terminated at 30.5 feet.					
32						
34						
36						
38						
40						

HYNES & ASSOCIATES		LOG OF BORING B-104 (Page 1 of 1)				
Century Engineering 4134 North DuPont Highway Dover, Delaware 19901 Century-Killens Pond State Park Waterside Exp. Project No.: JDH-10/18/188		Date Completed: : August 7, 2018 Logged By: : J. Lindsey Drilled By: : M. Hynes Drilling Method: : HSA (Mobile B-47 HD) Total Depth: : 30.5 feet				
Depth in Feet	DESCRIPTION	GRAPHIC	USCS	Sample No.	Blows per 6 inches	REMARKS
0	Dark brown, saturated, very loose, fine to medium SAND, with little silt, trace organic silt		SP-SM	1	2-1-1	Scale 1" = 6 feet 7 feet to mudline.
2				2	1-4-15	
4	Brown, saturated, medium dense, fine to medium SAND, with little silt, trace fine to medium gravel		SM	3	4-5-5	
6	Brown, saturated, loose, fine to medium SAND, with some silt, trace clay			4	6-18-21	
8	Brown, saturated, dense, fine to medium SAND and SILT		SM/ML	5	5-6-6	
10				6	4-6-7	
12	Dark gray, saturated, medium dense, fine to coarse SAND, with some silt, trace clay, trace organic silt		SM	7	6-14-18	
14				8	16-30-504"	
16			SP			
18						
20						
22	Gray, saturated, dense, fine to medium SAND, with some silt, trace clay					
24						
26						
28	Gray, saturated, very dense, fine to medium SAND, with trace silt					
30	Boring terminated at 30.5 feet.					
32						
34						
36						
38						
40						

HYNES & ASSOCIATES		LOG OF BORING B-105 (Page 1 of 1)				
Century Engineering 4134 North DuPont Highway Dover, Delaware 19901 Century-Killens Pond State Park Waterside Exp. Project No.: JDH-10/18/188		Date Completed: : August 6, 2018 Logged By: : J. Lindsey Drilled By: : M. Hynes Drilling Method: : HSA (Mobile B-47 HD) Total Depth: : 35.5 feet				
Depth in Feet	DESCRIPTION	GRAPHIC	USCS	Sample No.	Blows per 6 inches	REMARKS
0	Brown, saturated, very loose, fine to medium SAND, with trace silt		SP	1	2-1-1	Scale 1" = 6 feet 8 feet to mudline.
2				2	1-2-2	
4				3	2-4-20	
6	Brown, saturated, medium dense, fine to medium SAND, with trace silt, trace fine gravel			4	28-15-19	
8	Brown, saturated, dense, fine to coarse SAND, with trace silt, trace fine to medium gravel		SM	5	4-10-12	
10				6	4-5-5	
12	Gray, saturated, medium dense, fine to coarse SAND, with some silt, little fine to medium gravel		SM/OL	7	4-7-10	
14				8	12-21-505"	
16	Dark gray, saturated, medium stiff, clayey organic SILT and fine to medium SAND		SM	9	15-29-39	
18						
20						
22	Gray, saturated, medium dense to very dense, fine to medium SAND, with some silt					
24						
26						
28						
30						
32	Gray, saturated, very dense, fine to medium SAND, with trace silt					
34						
36	Boring terminated at 35.5 feet.					
38						
40						

HYNES & ASSOCIATES		LOG OF BORING B-106 (Page 1 of 1)				
Century Engineering 4134 North DuPont Highway Dover, Delaware 19901 Century-Killens Pond State Park Waterside Exp. Project No.: JDH-10/18/188		Date Completed: : August 6, 2018 Logged By: : J. Lindsey Drilled By: : M. Hynes Drilling Method: : HSA (Mobile B-47 HD) Total Depth: : 35.5 feet				
Depth in Feet	DESCRIPTION	GRAPHIC	USCS	Sample No.	Blows per 6 inches	REMARKS
0	Brown, saturated, very loose, fine to medium SAND, with trace silt		SP	1	2-1-1	Scale 1" = 6 feet 5.5 feet to mudline.
2				2	1-1-1	
4			SM	3	5-4-4	
6	Brown, saturated, loose, fine to medium SAND, with little silt, little clay			4	2-4-4	
8	Dark brown, saturated, loose to medium dense, fine to medium SAND, with little silt, trace organic silt		SM	5	6-6-7	
10				6	3-5-6	
12			SC	7	4-5-6	
14				8	21-505"	
16	Dark brown, saturated, medium dense, fine to medium SAND, with little clay, little silt, trace organic silt		SM	9	10-20-16	
18						
20						
22	Gray, saturated, medium dense, fine to medium SAND, with some silt					
24						
26						
28	Gray, saturated, very dense to dense, fine to medium SAND, with trace silt					
30						
32						
34						
36	Boring terminated at 35.5 feet.					
38						
40						

HYNES & ASSOCIATES		LOG OF BORING B-107 (Page 1 of 1)				
Century Engineering 4134 North DuPont Highway Dover, Delaware 19901 Century-Killens Pond State Park Waterside Exp. Project No.: JDH-10/18/188		Date Completed: : August 6, 2018 Logged By: : J. Lindsey Drilled By: : M. Hynes Drilling Method: : HSA (Mobile B-47 HD) Total Depth: : 30.5 feet				
Depth in Feet	DESCRIPTION	GRAPHIC	USCS	Sample No.	Blows per 6 inches	REMARKS
0	Brown, saturated, very loose, fine to medium SAND, with trace silt, trace fine gravel		SP	1	2-2-1	Scale 1" = 6 feet 4.5 feet to mudline.
2				2	1-1-1	
4			ML	3	12-8-4	
6				4	4-8-34	
8	Brown, saturated, hard, clayey SILT, with little fine sand, trace fine to medium gravel		MH/OH	5	3-5-4	
10				6	4-6-5	
12	Dark brown, saturated, medium stiff to stiff, clayey organic SILT, with little fine sand		SM	7	6-8-13	
14				8	8-16-505"	
16	Dark brown, saturated, stiff, clayey organic SILT, with little fine sand					
18						
20	Dark gray, saturated, medium dense to very dense, fine to medium SAND, with little silt, little organic silt					
22						
24						
26						
28						
30	Boring terminated at 30.5 feet.					
32						
34						
36						
38						
40						

HYNES & ASSOCIATES		LOG OF BORING B-108 (Page 1 of 1)				
Century Engineering 4134 North DuPont Highway Dover, Delaware 19901 Century-Killens Pond State Park Waterside Exp. Project No.: JDH-10/18/188		Date Completed: : August 6, 2018 Logged By: : J. Lindsey Drilled By: : M. Hynes Drilling Method: : HSA (Mobile B-47 HD) Total Depth: : 30.5 feet				
Depth in Feet	DESCRIPTION	GRAPHIC	USCS	Sample No.	Blows per 6 inches	REMARKS
0	Brown, saturated, medium dense to dense, fine to medium SAND, with trace silt		SP	1	3-9-9	Scale 1" = 6 feet 3 feet to mudline.
2				2	10-21-17	
4			SM	3	3-5-6	
6	Dark gray, saturated, loose to medium dense, fine to coarse SAND, with trace silt, trace clay, trace organic silt			4	3-15-9	
8			SM	5	3-5-6	
10				6	3-5-5	
12			CL/CH	7	5-10-13	
14				8	9-25-33	
16	Gray, saturated, very stiff, silty CLAY, trace fine sand					
18						
20						
22						
24						
26						
28	Dark gray, saturated, hard, silty CLAY, with trace fine sand, trace organic silt					
30	Boring terminated at 30.5 feet.					
32						
34						
36						
38						
40						

NOTES:
1. SEE SHEET C301 FOR BORING LOCATIONS.
2. SOIL BORINGS PROVIDED FOR INFORMATIONAL PURPOSES ONLY.

REVISIONS:
DATE: DESCRIPTION:

KILLENS POND STATE PARK
ELEVATED WALKWAY
SOIL BORING LOGS

SEAL:
WATER J. HOEY, III
REGISTERED
NO. 11204
DELAWARE
PROFESSIONAL ENGINEER

CIVIL ENGINEER:
CENTURY ENGINEERING
CONSULTING ENGINEERS, SURVEYORS
4134 N. DUPONT HWY.
DOVER, DELAWARE 19901
CEI CONTRACT NO.: 175013.11

DESIGNED BY:
WJH

DRAWN BY:
JSW

CHECKED BY:
AES

DATE:
AUGUST 2020

SCALE:
AS NOTED

SHEET NO.:
S605

CONTRACT NO.:
2020-KP-100

COUNTY TAX MAP:	8--00--149.00-01--13.00-0000 8--00--149.00-01--15.00-0000 6--00--149.00-01--19.00-0000 6--00--149.00-01--44.00-0000
1. DNREC PROJECT NUMBER:	KPSP--28
2. ADDRESS OF SITE:	5025 WILLENS POND ROAD FELTON, DE 19943
3. ZONING:	EXISTING: AC--AGRICULTURAL CONSERVATION PROPOSED: AC-- AGRICULTURAL CONSERVATION
4. SOURCE OF TITLE:	D.B. 44150
5. LOT AREA:	429.24 AC
6. EXISTING USE:	STATE PARK
7. PROPOSED USE:	STATE PARK WITH ELEVATED WALKWAY
8. ELECTRIC:	NONE
9. SEWER:	NONE
10. WATER:	NONE
11. DATUM:	EXISTING VERTICAL -- NAVD 88 HORIZONTAL -- NAVD 83

12. SITE CONDITIONS WITHIN LIMITS OF DISTURBANCE (ACRES)		PROPOSED CONDITIONS	
<u>EXISTING CONDITIONS</u>			
BUILDING	0.00 ACRES	BUILDING	0.00 ACRES
ALUMINUM WALKWAY	0.00 ACRES	ALUMINUM WALKWAY	0.01 ACRES
BRUSH	0.02 ACRES	BRUSH	0.00 ACRES
GRAVEL	0.03 ACRES	GRAVEL	0.05 ACRES
OPEN AREA	0.29 ACRES	OPEN AREA	0.28 ACRES
TOTAL	0.34 ACRES		0.34 ACRES

IMPERVIOUS CONDITIONS
EXISTING 9% PROPOSED 18%

13. FLOOD PLAIN MAP
PER FIRM MAP NUMBER 10001C0335J, DATED JULY 7, 2014, THIS SITE LIES WITHIN ZONE AE,
AREA. (BFE = 17.43 FEET)
14. TOTAL LAND DISTURBANCE
THE TOTAL LAND DISTURBANCE PROPOSED BY THIS PLAN IS 0.34± ACRES
15. LIMITS OF CONSTRUCTION
THE TOTAL LIMITS OF CONSTRUCTION FOR THE SITE IS 0.60± ACRES
16. WETLANDS
THE TOTAL WETLANDS EXISTING WITHIN THE LIMITS OF DISTURBANCE IS 0.00± ACRES (000± S.F.)

17. OWNER/DEVELOPER: STATE OF DELAWARE
DNREC, DIVISION OF PARKS & RECREATION
89 KINGS HIGHWAY, DOVER, DE 19901
PHONE: 302-739-9210
FAX: 302-739-3817
18. CIVIL ENGINEER: CENTURY ENGINEERING, INC.
4134 NORTH DUPONT HIGHWAY, DOVER, DE 19901
WALTER J. HOEY, III, P.E.
PHONE: (302) 734-9188
FAX: (302) 734-4589

1. THE DNEPC SEDIMENT AND STORMWATER MANAGEMENT PROGRAM MUST BE NOTIFIED IN WRITING FIVE (5) DAYS prior TO COMMENCING WITH CONSTRUCTION. FAILURE TO DO SO CONSTITUTES A VIOLATION OF THE APPROVED SEDIMENT AND STORMWATER MANAGEMENT PLAN.
2. REVIEW AND APPROVAL OF THE SEDIMENT AND STORMWATER MANAGEMENT PLAN SHALL NOT RELIEVE THE CONTRACTOR FROM HIS OR HER RESPONSIBILITIES FOR COMPLIANCE WITH THE REQUIREMENTS OF THE DELAWARE SEDIMENT AND STORMWATER REGULATIONS, NOR SHALL IT RELIEVE THE CONTRACTOR FROM ERRORS OR OMISSIONS IN THE APPROVED PLAN.
3. IF THE APPROVED PLAN NEEDS TO BE MODIFIED, ADDITIONAL SEDIMENT AND STORMWATER CONTROL MEASURES MAY BE REQUIRED AS DEMAND NECESSARY BY DNEPC OR THE DELEGATED AGENCY.
4. FOLLOWING THE SOIL DISTURBANCE OR REDISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED FOR ALL PERMETER SEDIMENT CONTROLS, SOIL STOCKPILES, AND ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE WITHIN 14 CALENDAR DAYS UNLESS MORE RESTRICTIVE FEDERAL REQUIREMENTS APPLY.
5. ALL EROSION AND SEDIMENT CONTROL PRACTICES SHALL COMPLY WITH THE DELAWARE EROSION AND SEDIMENT CONTROL HANDBOOK, LATEST EDITION.
6. AT ANY TIME A Dewatering OPERATION IS USED, IT SHALL BE PREVIOUSLY APPROVED BY THE AGENCY CONSTRUCTION SITE REVIEWER FOR A NON-EROSIVE POINT OF DISCHARGE, AND A Dewatering PERMIT SHALL BE APPROVED BY THE DNEPC WELF PERMITTING BRANCH.
7. APPROVAL OF A SEDIMENT AND STORMWATER PLAN DOES NOT GRANT OR IMPLY A RIGHT TO DISCHARGE STORMWATER RUNOFF. THE OWNER/DEVELOPER IS RESPONSIBLE FOR ACQUIRING ANY AND ALL AGREEMENTS, EASEMENTS, ETC., NECESSARY TO COMPLY WITH STATE DRAINAGE AND OTHER APPLICABLE LAWS.
8. THE CONTRACTOR SHALL AT ALL TIMES PROTECT AGAINST SEDIMENT OR DEBRIS LAND RUNOFF OR WIND FROM LEAVING THE SITE. PERMETER CONTROLS SHALL BE CHECKED DAILY AND ADJUSTED AND/OR REPAIRED TO FULLY CONTAIN AND CONTROL SEDIMENT FROM LEAVING THE SITE. ACCUMULATED SEDIMENT SHALL BE REMOVED WHEN IT HAS REACHED HALF OF THE EFFECTIVE CAPACITY OF THE CONTROL. IN ADDITION, THE CONTRACTOR SHALL TRY TO ADJUST OR ALTER MEASURES IN TIMES OF ADVERSE WEATHER CONDITIONS, OR AS DIRECTED BY THE AGENCY CONSTRUCTION SITE REVIEWER.
9. BEST AVAILABLE TECHNOLOGY (BAT) SHALL BE EMPLOYED TO MANAGE TURBID DISCHARGE IN ACCORDANCE WITH REQUIREMENTS OF 7 DEL. C. CHAPTER 60, REGULATIONS GOVERNING THE CONTROL OF WATER POLLUTION, SECTION 9.1.02, KNOWN AS SPECIAL CONDITIONS FOR STORMWATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITIES AND DEPARTMENT POLICIES, PROCEDURES, AND GUIDANCE.

SEDIMENT & STORMWATER MANAGEMENT PLANS

KILLENS POND STATE PARK ELEVATED WALKWAY

ITEM	EXISTING	PROPOSED
PARCEL LINE	_____	N/A
CONTOUR	- - - - -	_____ (SP)
TRAVERSE POINT	▲	N/A
EDGE OF GRAVEL	_____	N/A
FENCE	_____ X _____ X _____	N/A
TREELINE	~~~~~	N/A
TREE (DECIDUOUS)	⊕	N/A
TREE (CONIFEROUS)	✱	N/A
BOLLARD	⊙	N/A
UTILITY POLE	⊗	N/A
WATER LINE	_____ W _____ W _____ W _____ W _____	_____ W _____ W _____ W _____ W _____
OVERHEAD ELECTRIC	N/A	_____ OH-E _____
UNDERGROUND ELECTRIC	_____ UG-E _____	_____ UG-E _____
SANITARY SEWER PIPE	_____ S _____ S _____ S _____	_____ S _____ S _____ S _____
LIMIT OF DISTURBANCE	_____ LOD _____ LOD _____	N/A
SILT FENCE	_____ SF _____ SF _____	N/A
STOCK PILE	_____ SP _____ SP _____	N/A
LINE OF ANALYSIS	_____	N/A
PROPOSED DRAINAGE AREA	_____	N/A
EXISTING IMPERVIOUS COVER	<input type="checkbox"/>	N/A
PROPOSED IMPERVIOUS COVER	<input type="checkbox"/>	N/A

1. THE INTENT OF THIS PROJECT IS TO PROVIDE THE FOLLOWING IMPROVEMENTS AT THE KILLENS POND STATE PARK:
 - 1.1. INSTALL ELLEVATED WALKWAYS AND APPROACHES.
2. THESE PLANS HAVE BEEN DEVELOPED IN ACCORDANCE WITH THE CURRENT EDITION OF THE "ACCESSIBILITY STANDARDS FOR FEDERAL OUTDOOR DEVELOPED AREAS".
3. PARCEL AND BOUNDARY LINES REFERENCED FROM GIS INFORMATION. NO BOUNDARY SURVEY WAS REQUESTED OR PERFORMED FOR THIS PROJECT.
4. EXISTING UTILITIES SHOWN ARE BASED ON THE BEST INFORMATION AVAILABLE AT THE TIME THIS PLAN WAS DEVELOPED. COMPLETENESS OR CORRECTNESS OF THE UTILITIES SHOWN THEREOF IS NOT GUARANTEED. THE CONTRACTOR IS RESPONSIBLE FOR EMPLOYING AN UNDERGROUND UTILITY LOCATOR TO LOCATE AND MARK EXISTING UTILITIES WITHIN THE LIMIT OF DISTURBANCE PRIOR TO BEGINNING CONSTRUCTION. ALL EXISTING UTILITIES SHALL BE PROTECTED AND TEMPORARILY SUPPORTED OR RELOCATED AS NECESSARY TO COMPLETE THE WORK IN ACCORDANCE WITH THE PERTINENT OWNER/UTILITY COMPANY REQUIREMENTS. ANY UTILITIES DAMAGED BY THE CONTRACTOR SHALL BE PROMPTLY AND FULLY RESTORED TO THE SATISFACTION OF THE OWNER.
5. TOPSOIL SHALL BE STRIPPED, STOCKPILED, AND STABILIZED FOR FUTURE USE IN ACCORDANCE WITH THE DELAWARE EROSION & SEDIMENT CONTROL HANDBOOK, CURRENT EDITION. STOCKPILE AREAS TO BE WITHIN TRAP POND STATE PARK AT LOCATIONS SHOWN ON THESE PLANS, OR AT AREAS DETERMINED BY THE ENGINEER IN THE FIELD.
6. TREES LOCATED WITHIN 5' OF THE SOIL AND NOT DESIGNATED TO BE REMOVED SHALL BE PROTECTED FROM CONSTRUCTION EQUIPMENT AND COMPACTION OF LOCL WITHIN THE DRIP LINE BY MEANS OF 3'-0" HIGH SENSITIVE AREA PROTECTION (SAP) FENCE, AS SHOWN ON THE EROSION AND SEDIMENT CONTROL PLANS.
7. CROSS SLOPE OF ALL NEW WALKWAYS/SIDEWALKS SHALL NOT EXCEED A SLOPE OF 1:50. LONGITUDINAL SLOPES OF ALL NEW WALKWAYS AND TRAILS SHALL NOT EXCEED 1:20, UNLESS SHOWN OTHERWISE ON THE CONTRACT PLANS.
8. THE CONTRACTOR MAY STORE AND/OR STOCKPILE EQUIPMENT AND MATERIALS WITHIN THE PROJECT SITE LIMIT OF DISTURBANCE (LOD) SHOWN ON PLAN.
9. THE CONTRACTOR IS ADVISED THAT CONTRACTOR EMPLOYEE PARKING SHALL BE LIMITED TO THE EXISTING PARK PARKING AREAS, UNLESS APPROVED BY THE ENGINEER.
10. FEATURES NOT SPECIFICALLY DESIGNATED FOR DEMOLITION OR REMOVAL THAT ARE DAMAGED BY THE CONTRACTOR OR THE CONTRACTOR'S SUBCONTRACTORS SHALL BE REPAIRED OR REPLACED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE STATE. THE COST FOR REPAIRS OR REPLACEMENT SHALL BE ESTABLISHED BY THE STATE INSURANCE PROVIDER.
11. NO CONSTRUCTION, EQUIPMENT, WORK, OR TEMPORARY FILLS SHALL BE ALLOWED WITHIN WETLANDS OR WATERS EXCEPT WITHIN THE LOD.
12. WETLANDS DISTURBED BY CONSTRUCTION SHALL BE REPORTED TO DNR&C, AND RESTORED TO MATCH ADJACENT AREA.
13. WORK HOURS: 8 AM TO 6 PM, MONDAY – FRIDAY UNLESS OTHERWISE APPROVED BY THE ENGINEER.

REVISIONS:

DESCRIPTION:

BY:

KILLENS POND STATE PARK

ELEVATED WALKWAY

STORMWATER MANAGEMENT COVER SHEET

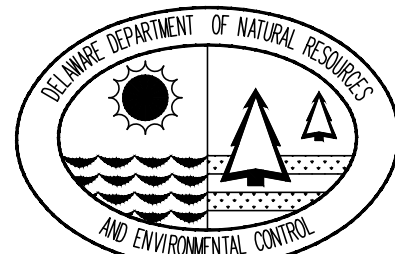
SEAL



CIVIL ENGINEER



CEI CONTRACT NO.: 175013.1



DESIGNED BY:

WJH

DRAWN BY:

DFS

CHECKED BY:

AES

DATE:

AUGUST 2020

SCALE:

NONE

SHEET NO.:

SSMP500

CONTRACT NO.:

2020-KPSP-100

I, THE UNDERSIGNED, CERTIFY THAT A LAND CLEARING, CONSTRUCTION AND DEVELOPMENT SHALL BE DONE PURSUANT TO THE APPROVED PLAN AND THAT RESPONSIBLE PERSONNEL (I.E. BLUE CARD HOLDER) INVOLVED IN THE LAND DISTURBANCE WILL HAVE A CERTIFICATION OF TRAINING PRIOR TO INITIATION OF THE PROJECT, AT A DNREC SPONSORED OR APPROVED TRAINING COURSE FOR THE CONTROL OF EROSION AND SEDIMENT DURING CONSTRUCTION. IN ADDITION, I GRANT THE DNREC SEDIMENT AND STORMWATER PROGRAM AND/OR THE RELEVANT DELEGATED AGENCY THE RIGHT TO CONDUCT ON-SITE REVIEWS, AND I UNDERSTAND MY RESPONSIBILITIES UNDER THE NPDES CONSTRUCTION GENERAL PERMIT, AS REFERENCED ON THIS COVERSHEET.

BROOKS CAHALL, P.E.
CONSTRUCTION PROJECT ADMINISTRATOR
OFFICE OF DESIGN AND DEVELOPMENT
DNREC - DIVISION OF PARKS AND RECREATION
89 KINGS HIGHWAY, DOVER, DE 19901
PHONE: 302-739-9210
FAX: 302-739-3817

I, HEREBY CERTIFY THAT THIS PLAN HAS BEEN PREPARED UNDER MY SUPERVISION AND TO THE BEST OF MY KNOWLEDGE COMPLIES WITH THE APPLICABLE STATE AND LOCAL REGULATIONS AND ORDINANCES.

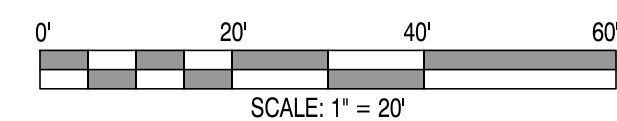
ALEX SCHMIDT, P.E., DE NO. 16139
CENTURY ENGINEERING, INC.
4134 NORTH DUPONT HIGHWAY
DOVER, DELAWARE 19901
PHONE: (302) 734-9188
FAX: (302) 734-4589



1. NOTIFY THE DNRCC SEDIMENT AND STORMWATER PROGRAM IN WRITING AT LEAST FIVE (5) DAYS PRIOR TO THE START OF CONSTRUCTION. FAILURE TO DO SO CONSTITUTES A VIOLATION OF THE APPROVED SEDIMENT AND STORMWATER MANAGEMENT PLAN.
2. PRIOR TO ANY CLEARING, INSTALLATION OF SEDIMENT CONTROL MEASURES OR GRADING, A PRECONSTRUCTION MEETING MUST BE SCHEDULED AND CONDUCTED WITH THE AGENCY CONSTRUCTION SUPERVISOR, REVIEWER, THE LANDOWNER/DEVELOPER, CONTRACTOR, AND CERTIFIED CONSTRUCTION REVIEWER ARE REQUIRED TO BE IN ATTENDANCE AT THE PRE-CONSTRUCTION MEETING; THE DESIGNER IS RECOMMENDED TO ATTEND.
3. CLEAR AND GRUB AS REQUIRED TO INSTALL PERMITTER CONTROLS. INSTALL PERMITTER CONTROLS. ALL PERMITTER CONTROLS ARE TO BE REVIEWED BY THE AGENCY CONSTRUCTION SUPERVISOR AND APPROVED PRIOR TO PROCEEDING WITH FURTHER SITE DISTURBANCE OR CONSTRUCTION.
4. THE CONTRACTOR SHALL AT ALL TIMES PROTECT AGAINST SEDIMENT OR DEBRIS FROM LAIDEN RUMOR OR WIND FROM LEAVING THE SITE. PERMITTER CONTROLS SHOULD BE CHECKED DAILY AND ADJUSTED (AND/OR REPAIRED TO FULLY CONTAIN AND CONTROL SEDIMENTATION ON THE SITE). ACCUMULATED SEDIMENT SHALL BE REMOVED WHEN IT HAS REACHED HALF OF THE EFFECTIVE CAPACITY OF THE CONTROL. IN ADDITION, THE CONTRACTOR MAY NEED TO ADJUST OR REPAIR MEASURES IN TIMES OF ADVERSE WEATHER CONDITIONS, OR AS DIRECTED BY THE AGENCY CONSTRUCTION SITE REVIEWER.
5. CONSTRUCT NEW ELEVATED WALKWAY AND APPROACHES.
6. STABILIZE ALL DISTURBED AREAS AND DISPOSED OF ALL EXCESS MATERIAL AT AN OFFICIAL LOCATION IN COMPLIANCE WITH ALL APPLICABLE LAWS AND REGULATIONS.

STABILIZATION REQUIREMENTS:

1. ALL DISTURBED AREAS SHALL BE STABILIZED WITH 6" TOPSOIL, DNREC SEDIMENT NO. 9, AND MULCH.
2. INSTALL STABILIZED CONSTRUCTION ENTRANCE AT EXISTING BREAK IN SPLIT RAIL FENCE AS SHOWN.



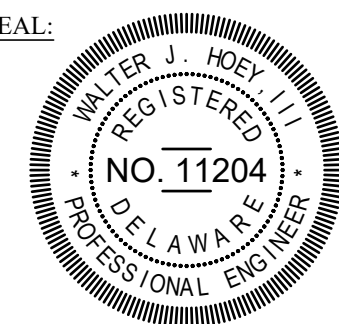
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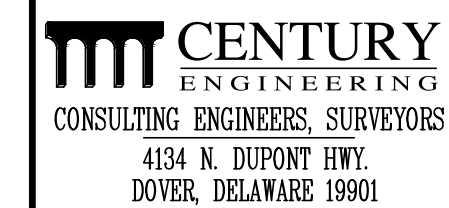
KILLENS POND STATE PARK ELEVATED WALKWAY

EROSION AND SEDIMENT CONTROL PLAN

SEAL:



CIVIL ENGINEER:



CEI CONTRACT NO.: 175013.11



DESIGNED BY:

WJH

DRAWN BY:

DFS

CHECKED BY:

AES

DATE: _____

AUGUST 2020

SCALE:

$$1'' = 20'$$

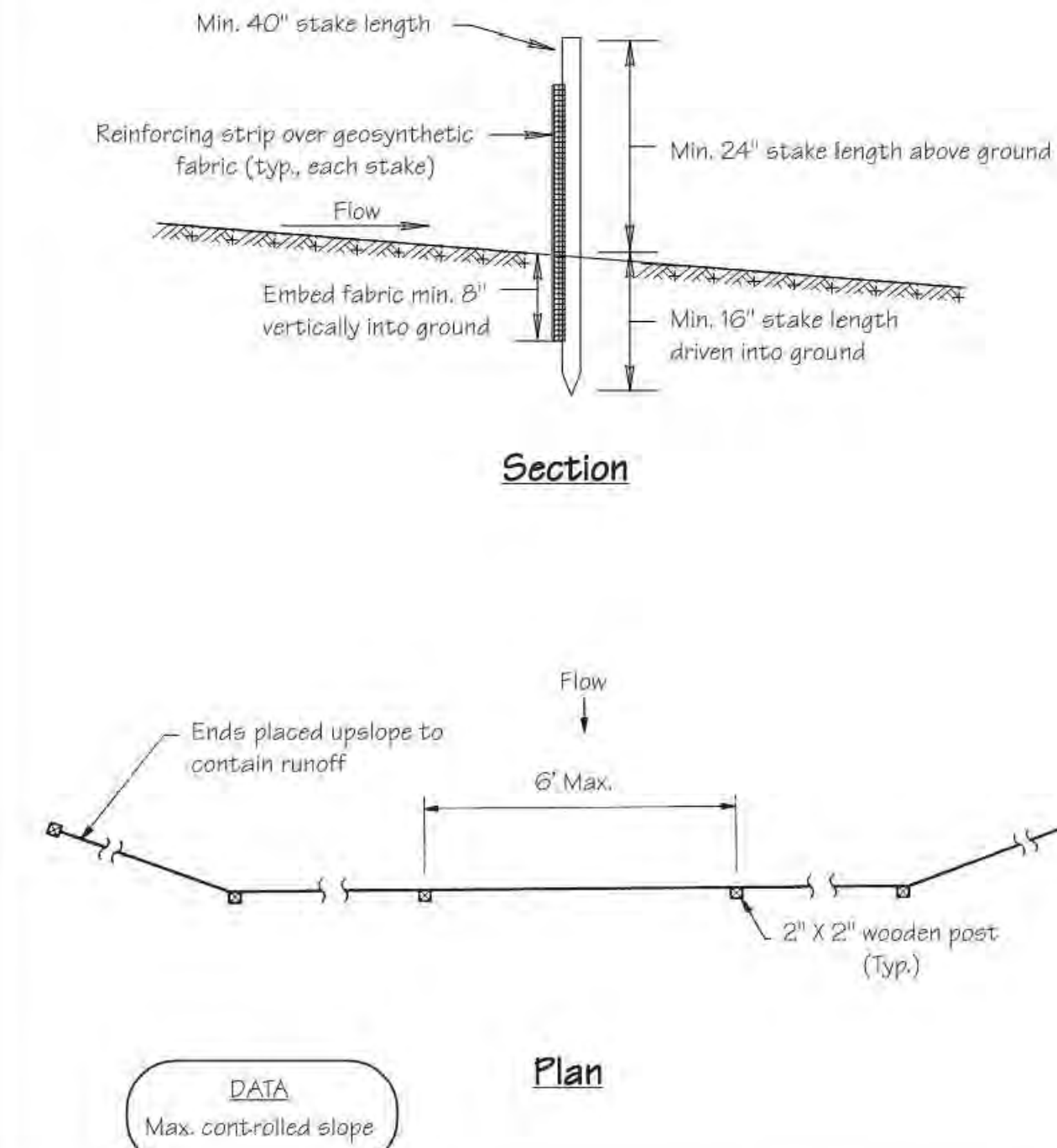
SHEET NO.:

SSMP501

CONTRACT NO.:

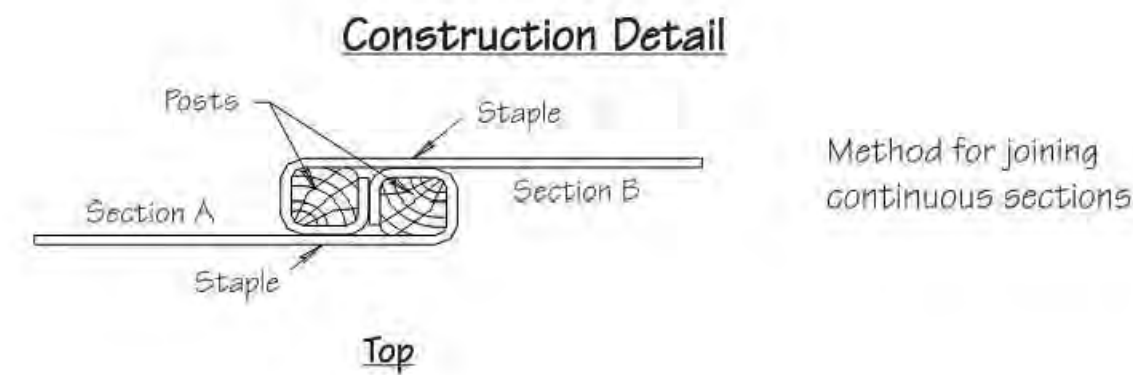
2020-KPSP-100

Standard Detail & Specifications
Silt Fence



Source:	Symbol:	Detail No.
Adapted from MD Sids. & Specs. for ESC	SF	DE-ESC-3.1.2.1 Sheet 1 of 2 Effective FEB 2019

Standard Detail & Specifications
Silt Fence



Construction Notes:

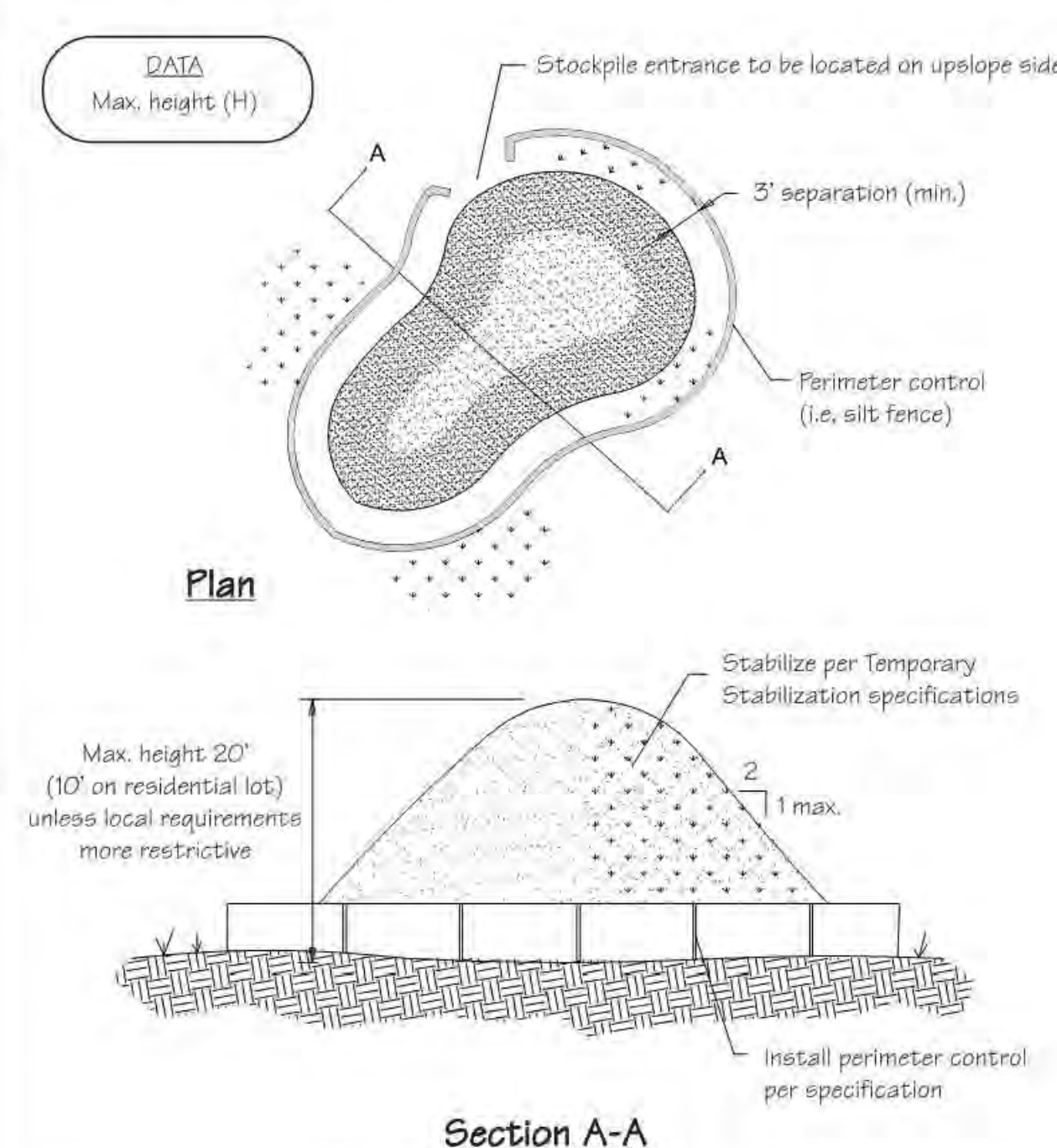
- Geosynthetic fabric to be fastened securely to fence posts with wire ties or staples.
- When two sections of filter cloth adjoin each other they shall be overlapped by six inches and folded.
- Maintenance shall be performed as needed and material removed when "bulges" develop in the silt fence.

Materials:

- Stakes: Steel (either T or U) or 2" x 2" hardwood
- Geosynthetic Fabric: Type GD-1
- Reinforcing strip: Wooden lath or plastic strip

Source:	Symbol:	Detail No.
Adapted from MD Sids. & Specs. for ESC	SF	DE-ESC-3.1.2.1 Sheet 2 of 2 Effective FEB 2019

Standard Detail & Specifications
Soil Stockpile



Source:	Symbol:	Detail No.
Adapted from Colorado Urban Storm Drainage Criteria Manual, Vol 3	SP	DE-ESC-3.7.3 Sheet 1 of 2 Effective FEB 2019

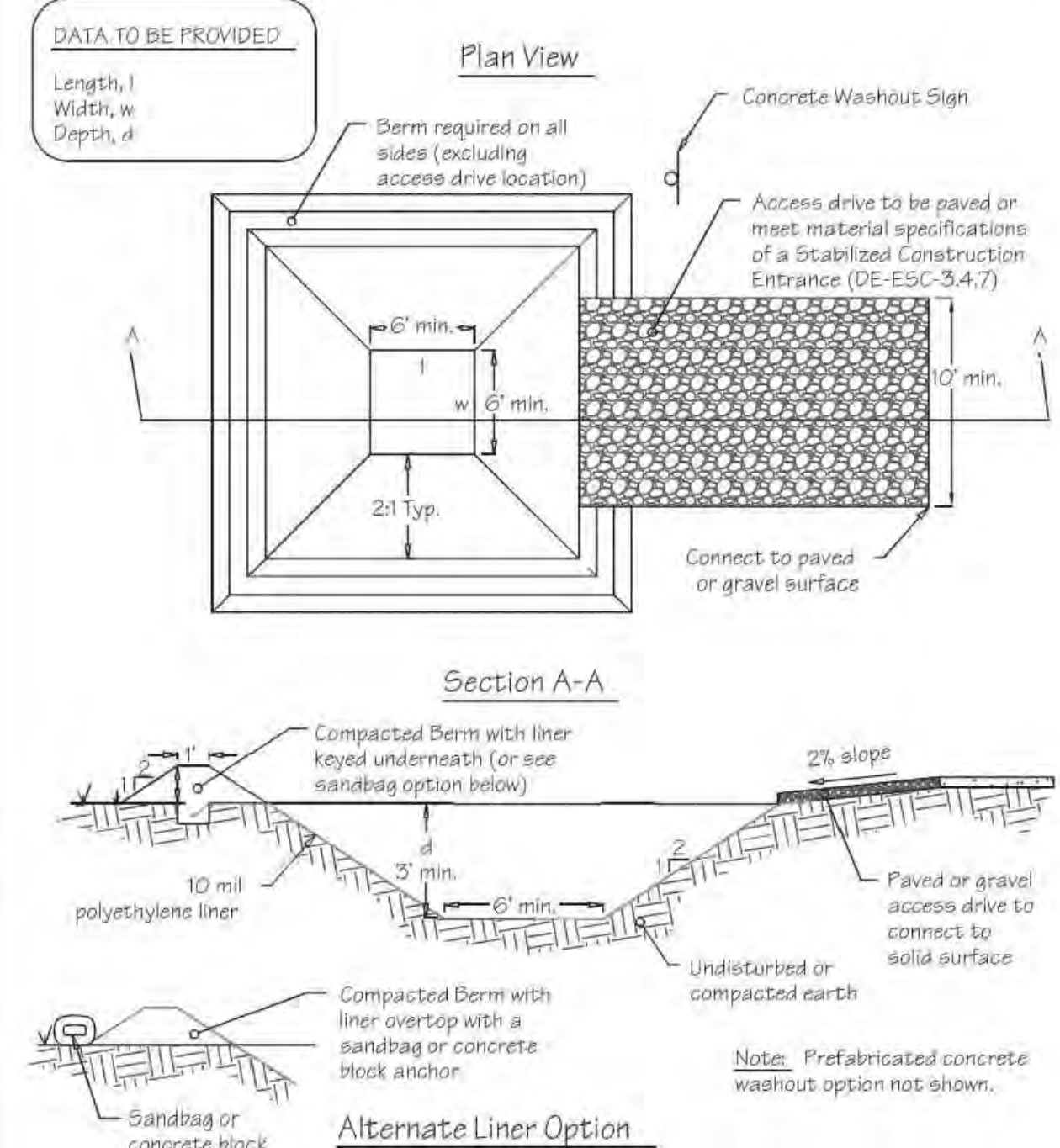
Standard Detail & Specifications
Soil Stockpile

Construction Notes:

- Locate stockpiles so that they are 50 feet from any storm drain inlet, open channel, wetland or waterbody. Redirect any concentrated flow around the stockpile using an approved erosion and sediment control measure.
- Secure the perimeter of the stockpile with an approved erosion and sediment control perimeter device.
- If stockpile is to remain inactive for more than 14 calendar days, the stockpile must be vegetated. Follow the temporary vegetation specifications. The vegetation chosen shall last the duration of the stockpile, the stockpile shall be restabilized if the temporary vegetation dies or erosion results.

Source:	Symbol:	Detail No.
Adapted from Colorado Urban Storm Drainage Criteria Manual, Vol 3	SP	DE-ESC-3.7.3 Sheet 2 of 2 Effective FEB 2019

Standard Detail & Specifications
Concrete Washout



Source:	Symbol:	Detail No.
Adapted from Colorado Urban Storm Drainage Criteria Manual, Vol 3	CW	DE-ESC-3.6.2 Sheet 1 of 2 Effective FEB 2019

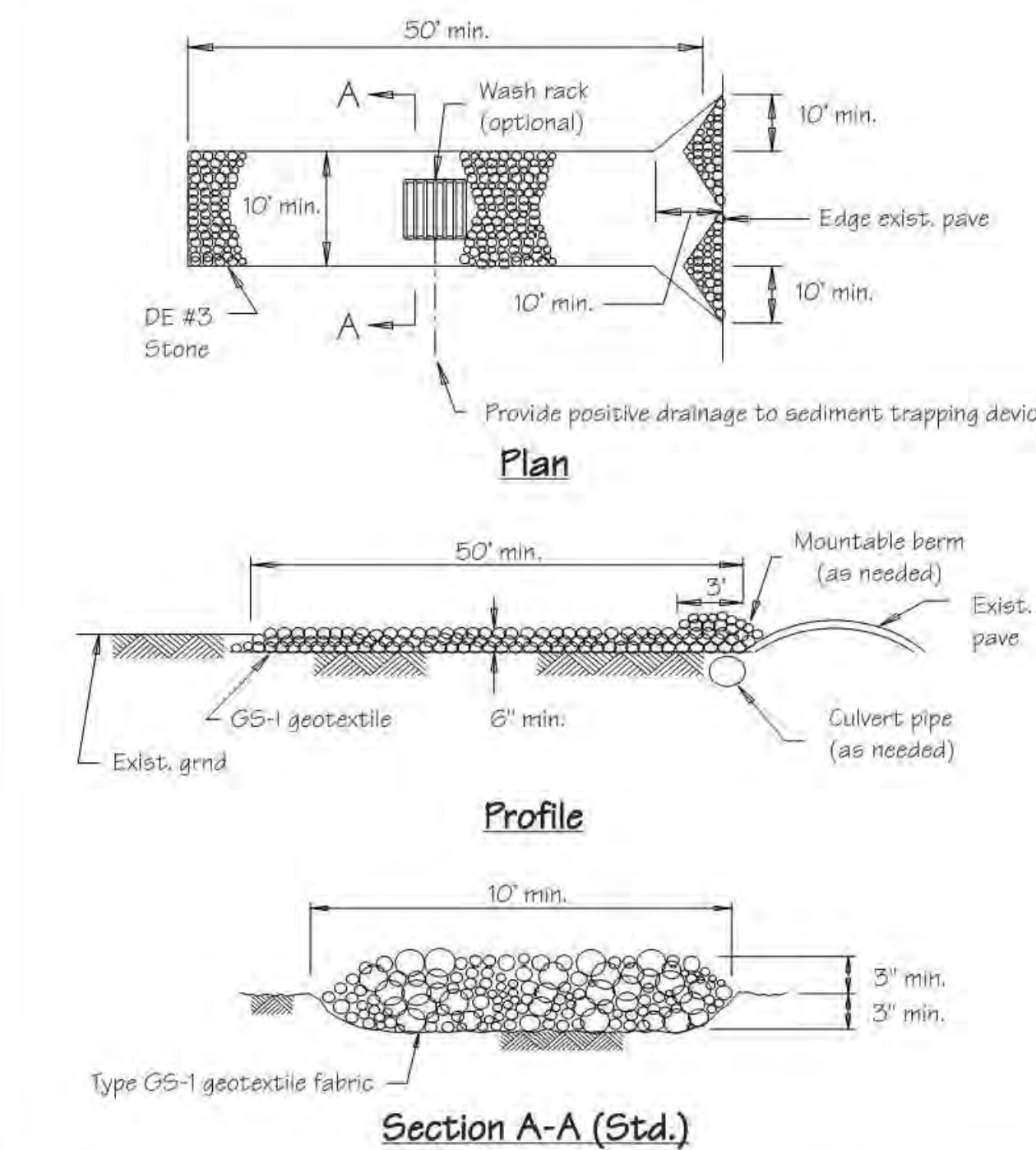
Standard Detail & Specifications
Concrete Washout

Construction Notes:

- Locate washout area a minimum of 50 feet from open channels, stormdrain inlets, wetlands or waterbodies.
- Locate washout area so that it is accessible to concrete equipment (service with a minimum 10 foot wide gravel accessway), but so it is not in a highly active construction area causing accidental damage.
- Minimum dimensions for prefabricated units are 4 feet by 4 feet by 1 foot deep with a minimum 4mil polyethylene plastic liner. Minimum dimensions for constructed concrete washout areas are 6 feet by 6 feet by 3 feet deep, with a minimum 10mil polyethylene liner, 2:1 side slopes, and a 1 foot high by 1 foot wide compacted fill berm.
- The liner must be free of tears or holes and placed over smooth surfaces to prevent puncturing. For excavated washouts, anchor the liner underneath the berm or overlap with sandbags or concrete blocks to hold in place.
- Provide a sign designating the washout area, and for large construction sites, provide signs throughout directing traffic to its location.
- Allow washed out concrete mixture to harden through evaporation of the wastewater. Once the facility has reached 75 percent of its capacity, remove the hardened concrete by reusing the broken aggregate onsite, recycling, or disposing of offsite. The hardened material can be buried on site with minimum of 1 foot of clean, compacted fill.
- Apply a new liner before reusing the station for additional washouts after maintenance has occurred.

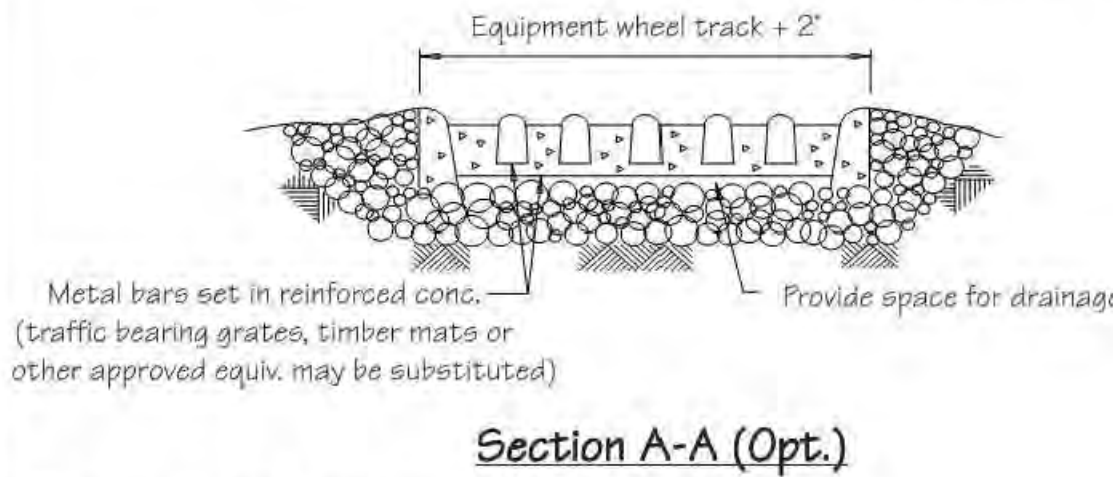
Source:	Symbol:	Detail No.
Adapted from Colorado Urban Storm Drainage Criteria Manual, Vol 3	CW	DE-ESC-3.6.2 Sheet 2 of 2 Effective FEB 2019

Standard Detail & Specifications
Stabilized Construct. Entrance



Source:	Symbol:	Detail No.
Adapted from VA ESC Handbook	SCE	DE-ESC-3.4.7 Sheet 1 of 2 Effective FEB 2019

Standard Detail & Specifications
Stabilized Construct. Entrance



Construction Notes:

- Stone size - Use DE #3 stone.
- Length - As required, but not less than 50 feet (except on a single residence lot where a 30 foot minimum length would apply).
- Thickness - Not less than size (6) inches.
- Width - Ten (10) foot minimum, but not less than the full width at points where ingress or egress occurs.
- Geotextile - Type GS-1; placed over the entire area prior to placing of stone.
- Surface Water - All surface water flowing or diverted toward construction entrances shall be piped across the entrance. If piping is impractical, a mountable berm with 5:1 slopes will be permitted.
- Maintenance - The entrance shall be maintained in a condition which will prevent tracking or flowing of sediment onto public rights-of-way. This may require periodic top dressing with additional stone as conditions demand and repair and/or cleanout of any measures used to trap sediment. All sediment spilled, dropped, washed or tracked onto public rights-of-way must be removed immediately.
- Washing - Vehicle wheels shall be cleaned to remove sediment prior to entrance onto public rights-of-way. When washing is required, it shall be done on an area stabilized with stone and which drains into an approved sediment trapping device.
- Inspection - Periodic inspection and needed maintenance shall be provided after each rain.

Source:	Symbol:	Detail No.
Adapted from VA ESC Handbook	SCE	DE-ESC-3.4.7 Sheet 2 of 2 Effective FEB 2019

REVISIONS:

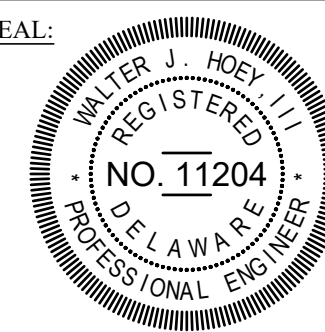
DATE: DESCRIPTION:

KILLENS POND STATE PARK

ELEVATED WALKWAY

EROSION & SEDIMENT CONTROL DETAILS

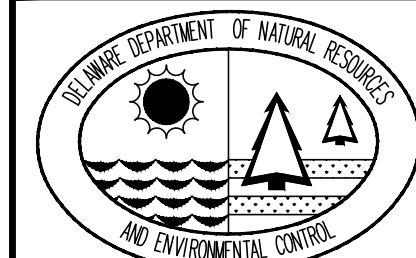
SEAL:



CIVIL ENGINEER:

CENTURY
ENGINEERING
CONSULTING ENGINEERS, SURVEYORS
4134 N. DUPONT HWY.
DOVER, DELAWARE 19901

CEI CONTRACT NO.: 175013.11



DESIGNED BY:

WJH

DRAWN BY:

DFS

CHECKED BY:

AES

DATE:

AUGUST 2020

SCALE:

NONE

SHEET NO.:

SSMP502

CONTRACT NO.:

2020-KPSP-100

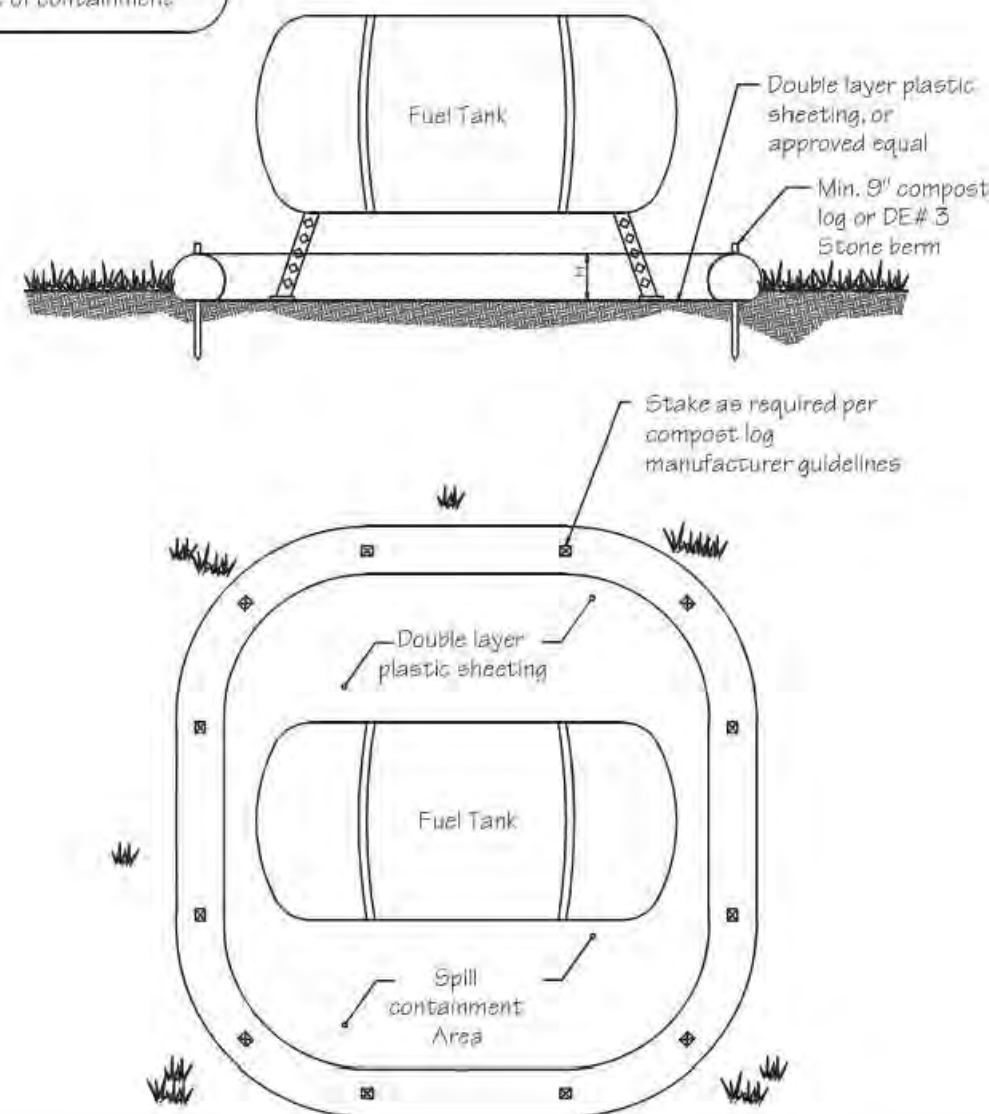
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Standard Detail & Specifications

Construction Site Waste Mgt & Spill Control

DATA TO BE PROVIDED:

Volume of Potential Pollution
Height of containment:
Area of containment
Volume of containment



Source:	Symbol:	Detail No.
Delaware ESC Handbook		DE-ESC-3.6.1 Sheet 1 of 5 Effective FEB 2019

Standard Detail & Specifications

Construction Site Waste Mgt & Spill Control

Notes (cont.)

- e. Contact information for reporting spills through the DNREC 24-Hour Toll Free Number shall be prominently posted.

6. Education

- a. Best management practices for construction site pollution control shall be a part of regular progress meetings.
b. Information regarding waste management, equipment maintenance and spill prevention shall be prominently posted in the construction trailer.

CONTACT INFORMATION

DNREC 24-Hour Toll Free Number 800-662-8802
DNREC Solid & Hazardous Waste Management Section 302-739-9403

Source:	Symbol:	Detail No.
Adapted from USEPA Pub. 840-B-92-002		DE-ESC-3.6.1 Sheet 5 of 5 Effective FEB 2019

Standard Detail & Specifications

Construction Site Waste Mgt & Spill Control

Pollution Prevention – Spill Prevention

- Fueling should only take place in signed designated areas, away from downstream drainage facilities and watercourses.
- Fueling must be with nozzles equipped with automatic shut-off to control drips. Do not top off.
- Protect the areas where equipment or vehicles are being repaired, maintained, fueled or parked from storm water run-on and runoff.
- Use barriers such as berms to prevent storm water run-on and runoff, and to contain spills.
- Place a "Fueling Area" sign next to each fueling area.
- Store hazardous materials such as fuel, solvents, oil and chemicals in secondary containment.
- Inspect vehicles and equipment for leaks on each day of use. Repair fluid and oil leaks immediately.
- Absorbent spill clean-up materials and spill kits must be available in fueling areas and on fuel trucks.
- If fueling is to take place at night, make sure the fueling area is sufficiently illuminated.
- Properly dispose of used oil, fluids, lubricants and spill clean-up materials.

CLEAN UP SPILLS

- If it is safe to do so, immediately contain and clean up any chemical and/or hazardous material spills.
- Properly dispose of used oil, fluids, lubricants and spill clean-up materials.
- Do not bury spills or wash them down with water.

LEAKS AND DRIPS

- Use drip pans or absorbent pads at all times. Place under and around leaky equipment.
- Do not allow oil, grease, fuel or chemicals to drip onto the ground.
- Have spill kits and clean up material on-site.
- Repair leaky equipment promptly or remove problem vehicles and equipment from the site. Clean up contaminated soil immediately.
- Store contaminated waste in sealed containers constructed of suitable material. Label these containers properly.
- Clean up all spills and leaks. Promptly dispose of waste and spent clean up materials.

Source:	Symbol:	Detail No.
Delaware ESC Handbook		DE-ESC-3.6.1 Sheet 2 of 5 Effective FEB 2019

Standard Detail & Specifications

Topsoiling

Construction Notes:

1. **Site Preparation** (Where Topsoil is to be added)

Note: When topsoiling, maintain needed erosion and sediment control practices such as diversions, grade stabilization structures, berms, dikes, waterways and sediment basins.

- a. Grading - Grades on the areas to be topsoiled which have been previously established shall be maintained.
b. Liming - Where the topsoil is either highly acid or composed of heavy clays, ground limestone shall be spread at the rate of 4-8 tons/acre (200-400 pounds per 1,000 square feet). Lime shall be distributed uniformly over designated areas and worked into the soil in conjunction with tillage operations as described in the following procedures.
c. Tilling - After the areas to be topsoiled have been brought to grade, and immediately prior to dumping and spreading the topsoil, the subgrade shall be loosened by discing or by scarifying to a depth of at least 3 inches to permit bonding of the topsoil to the subsoil. Pack by passing a bulldozer up and down over the entire surface area of the slope to create horizontal erosion check slots to prevent topsoil from sliding down the slope.

2. **Topsoil Material and Application**

Note:Topsoil salvaged from the existing site may often be used but it should meet the same standards as set forth in these specifications. The depth of topsoil to be salvaged shall be no more than the depth described as a representative profile for that particular soil type as described in the soil survey published by USDA-SCS in cooperation with Delaware Agricultural Experimental Station.

Source:	Symbol:	Detail No.
USDA - NRCS		DE-ESC-3.4.1 Sheet 1 of 2 Effective FEB 2019

Standard Detail & Specifications

Construction Site Waste Mgt & Spill Control

Notes:

The Construction Site Pollution Prevention Plan should include the following elements:

1. **Material Inventory**

Document the storage and use of the following materials:

- Concrete
- Detergents
- Paints (enamel and latex)
- Cleaning solvents
- Pesticides
- Wood scraps
- Fertilizers
- Petroleum based products

2. **Good housekeeping practices**

- Store only enough product required to do the job.
- All materials shall be stored in a neat, orderly manner in their original labeled containers and covered.
- Substances shall not be mixed.
- When possible, all of a product shall be used up prior to disposal of the container.
- Manufacturers' instructions for disposal shall be strictly adhered to.
- The site foreman shall designate someone to inspect all BMPs daily.

3. **Waste management practices**

- All waste materials shall be collected and stored in securely lidded dumpsters in a location that does not drain to a waterbody.
- Waste materials shall be salvaged and/or recycled whenever possible.
- The dumpsters shall be emptied a minimum of twice per week, or more if necessary. The licensed trash hauler is responsible for cleaning out dumpsters.

Source:	Symbol:	Detail No.
Adapted from USEPA Pub. 840-B-92-002		DE-ESC-3.6.1 Sheet 3 of 5 Effective FEB 2019

Standard Detail & Specifications

Topsoiling

Construction Notes (cont.)

- a. Materials - Topsoil shall be a loam, sandy loam, clay loam, silt loam, sandy clay loam, loamy sand or other soil as approved by an agronomist or soil scientist. It shall not have a mixture of contrasting textured subsoil and contain no more than 5 percent by volume of cinders, stones, slag, coarse fragment, gravel, sticks, roots, trash or other extraneous materials larger than 1-1/2 inches in diameter. Topsoil must be free of plants or plant parts of bermudagrass, quackgrass, Johnsongrass, nutsedge, poison ivy, thistles, or others as specified. All topsoil shall be tested by a reputable laboratory for organic matter content, pH and soluble salts. A pH of 6.0 to 7.5 and an organic content of not less than 1.5 percent by weight is required. If pH value is less than 6.0 lime shall be applied and incorporated with the topsoil to adjust the pH to 6.5 or higher. Topsoil containing soluble salts greater than 500 parts per million shall not be used.

Note: No sod or seed shall be placed on soil which has been treated with soil sterilants or chemicals used for weed control until sufficient time has elapsed to permit dissipation of toxic materials.

- b. Grading - The topsoil shall be uniformly distributed and compacted to a minimum of four (4) inches. Spreading shall be performed in such a manner that sodding or seeding can proceed with a minimum of additional soil preparation and tillage. Any irregularities in the surface resulting from topsoiling or other operations shall be corrected in order to prevent the formation of depressions or water pockets. Topsoil shall not be placed while in a frozen or muddy condition, when the subgrade is excessively wet, or in a condition that may otherwise be detrimental to proper grading and seedbed preparation.

Note:Topsoil substitutes or amendments as approved by a qualified agronomist or soil scientist, may be used in lieu of natural topsoil. Compost material used to improve the percentage of organic matter shall be provided by a certified supplier.

Compost amendments that are intended to meet specific post-construction stormwater management goals shall further meet the requirements of **Appendix 3.06.2 Post Construction Stormwater Management BMP Standards and Specifications, Section 14.0 Soil Amendments.**

Source:	Symbol:	Detail No.
USDA - NRCS		DE-ESC-3.4.1 Sheet 2 of 2 Effective FEB 2019

Standard Detail & Specifications

Construction Site Waste Mgt & Spill Control

Notes (cont.)

- Trash shall be disposed of in accordance with all applicable Delaware laws.
- Trash cans shall be placed at all lunch spots and littering is strictly prohibited. Recycle bins shall be placed near the construction trailer.
- If fertilizer bags can not be stored in a weather-proof location, they shall be kept on a pallet and covered with plastic sheeting which is overlapped and anchored.

4. **Equipment maintenance practices**

- If possible, equipment should be taken to off-site commercial facilities for washing and maintenance.
- If performed on-site, vehicles shall be washed with high-pressure water spray without detergents in an area contained by an impervious berm.
- Drip pans shall be used for all equipment maintenance.
- Equipment shall be inspected for leaks on a daily basis.
- Washout from concrete trucks shall be disposed of in a temporary pit for hardening and proper disposal.
- Fuel nozzles shall be equipped with automatic shut-off valves.
- All used products such as oil, antifreeze, solvents and tires shall be disposed of in accordance with manufacturers' recommendations and local, state and federal laws and regulations.

5. **Spill prevention practices**

- Potential spill areas shall be identified and contained in covered areas with no connection to the storm drain system.
- Warning signs shall be posted in hazardous material storage areas.
- Preventive maintenance shall be performed on all tanks, valves, pumps, pipes and other equipment as necessary.
- Low or non-toxic substances shall be prioritized for use.

Source:	Symbol:	Detail No.
Adapted from USEPA Pub. 840-B-92-002		DE-ESC-3.6.1 Sheet 4 of 5 Effective FEB 2019

REVISIONS:

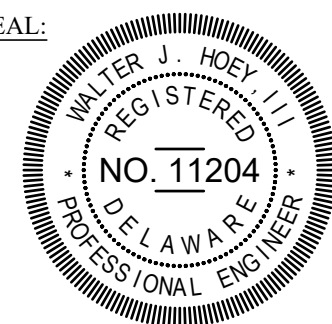
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KILLENS POND STATE PARK

ELEVATED WALKWAY

EROSION & SEDIMENT CONTROL DETAILS

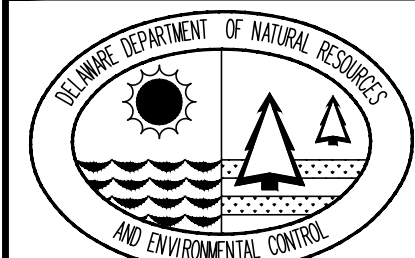
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4134 N. DUPONT HWY.
DOVER, DELAWARE 19901

CEI CONTRACT NO.: 175013.11



DESIGNED BY:

WJH

DRAWN BY:

DFS

CHECKED BY:

AES

DATE:

AUGUST 2020

SCALE:

NONE

SHEET NO.:

SSMP503

CONTRACT NO.:

2020-KPSP-100

Standard Detail & Specifications Mulching

1. Materials and Amounts

- Straw** - Straw shall be unrotted small grain straw applied at the rate of 1-1/2 to 2 tons per acre, or 70 to 90 pounds (two bales) per 1,000 square feet. Mulch materials shall be relatively free of weeds and shall be free of noxious weeds such as; thistles, Johnsongrass, and quackgrass. Spread mulch uniformly by hand or mechanically. For uniform distribution of hand spread mulch, divide area into approximately 1,000 square feet sections and place 70-90 pounds (two bales) of mulch in each section.
- Wood chips** - Apply at the rate of approximately 6 tons per acre or 275 pounds per 1,000 square feet when available and when feasible. These are particularly well suited for utility and road rights-of-way. If wood chips are used, increase the application rate of nitrogen fertilizer by 20 pounds of N per acre (200 pounds of 10-10-10 or 66 pounds of 30-0-0 per acre).
- Hydraulically applied mulch** - The following conditions apply to hydraulically applied mulch:
 - Definitions:
 - Wood fiber mulch shall consist of specially prepared wood that has been processed to a uniform state, is packaged for sale as a hydraulic mulch for use with hydraulic seeding equipment, and consists of a minimum of 70% virgin or recycled wood fiber combined with 30% paper fiber and additives.
 - Blended fiber mulch shall consist of any hydraulic mulch that contains greater than 30% paper fiber. The paper component must consist of specially prepared paper that has been processed to a uniform fibrous state and is packaged for sale as a hydraulic mulch for use with hydraulic seeding equipment.
 - A bonded fiber matrix (BFM) consists of long strand, specially prepared wood fibers that have been processed to a uniform state held together by a water resistant bonding agent. BFMs shall contain no paper (cellulose) mulch but may contain small percentages of synthetic fibers to enhance performance.
 - Refer to **Figure 3.4.5a** for conditions and limitations of use for each of the above categories of hydraulic mulch.
 - All components of the hydraulically applied mulches shall be pre-packaged by the manufacturer to assure material performance. Field mixing of the mulch components is acceptable, but must be done per manufacturers recommendations to ensure the proper results.
 - Hydraulic mulches shall be applied with a viable seed and of manufacturer's recommended rates. Increased rates may be necessary based on site conditions.
 - Hydraulically applied mulches and additives shall be mixed according to manufacturers recommendations.
 - Materials within this category shall only be used when hydraulically applied mulch has been specified for use on the approved Sediment and Stormwater Plan, or supplemental approval from the plan approval agency has been obtained in writing for a specific area.

Source: Delaware ESC Handbook & Filtrrex™ International

Symbol:

Detail No. **DE-ESC-3.4.5**
Sheet 1 of 3
Effective FEB 2019

Standard Detail & Specifications Mulching

- Application:
 - Apply product to geotechnically stable slopes that have been designed and constructed to divert runoff away from the face of the slope.
 - Do not apply to saturated soils, or if precipitation is anticipated within 24-48 hours.
 - During the spring (March 1 to May 31) and fall (September 1 to November 30) seasons, hydraulic mulches may be applied in a one-step process where all components are mixed together in single-tank loads. It is recommended that the product be applied from opposing directions to achieve optimum soil coverage.
 - During the summer (June 1 to August 31) and winter (December 1 to February 28) seasons, the following two-step process is required:
 - Step One** - Mix and apply seed and soil amendments with a small amount of mulch for visual metering.
 - Step Two** - Mix and apply mulch at manufacturers recommended rates over freshly seeded surfaces. Apply from opposing directions to achieve optimum soil coverage.
 - Minimum curing temperature is 40°F (4°C). The best results and more rapid curing are achieved at temperatures exceeding 60°F (15°C). Curing times may be accelerated in high temperature, low humidity conditions on dry soils.
 - Recommended application rates are for informational purposes only. Conformance with this standard and specification shall be performance-based and requires **100% soil coverage**. Any areas with bare soil showing shall be top dressed until full coverage is achieved.
 - Compost blanket (CB)** - Loosely applied with a pneumatic blower so that a 1" compost blanket uniformly covers the soil with **100% coverage**. This application can be used with seed to promote germination by applying the approved seed mix directly into the loosely blown compost. The compost blanket performs best on slopes less than 2:1 and requires no mulch anchoring.
- 2. Anchoring mulch** - Mulch must be anchored immediately to minimize loss by wind or water. This may be done by one of the following methods, depending upon size of area, erosion hazard, and cost:
- Crimping** - A crimper is a tractor drawn implement designed to punch and anchor mulch into the top two (2) inches of soil. This practice affords maximum erosion control but is limited to flatter slopes where equipment can operate safely. On sloping land, crimping should be done on the contour whenever possible.
 - Tracking** - Tracking is the process of cutting mulch (usually straw) into the soil using a bulldozer or other equipment that runs on cleated tracks. Tracking is used primarily on slopes 3:1 or steeper and should be done up and down the slope with the cleat marks running across the slope.
 - Liquid mulch binders** - Applications of liquid mulch binders should be heavier at edges, in valleys, and at crests of banks and other areas where the mulch will be moved by wind or water. All other areas should have a uniform application of binder. The use of synthetic binders is the preferred method of mulch binding and should be applied at the rates recommended by the manufacturer.
 - Paper fiber** - The fiber binder shall be applied at a net dry weight of 750 lbs/ac. The wood cellulose fiber shall be mixed with water, and the mixture shall contain a maximum of 50 lbs. of wood cellulose fiber per 100 gallons.
 - Nettings** - Synthetic or organic nettings may be used to secure straw mulch. Install and secure according to the manufacturers recommendations.

Source: Delaware ESC Handbook & Filtrrex™ International

Symbol:

Detail No. **DE-ESC-3.4.5**
Sheet 2 of 3
Effective FEB 2019

Standard Detail & Specifications Mulching

Percent Slope Less than 2%	Type of Mulch / App. Rate*	Dec. 1 to Feb. 28/29	March 1 to May 31	June 1 to Aug. 31	Sept. 1 to Nov. 30
		OK (1:1)	OK (1:1)	OK (1:1)	OK (1:1)
2% to 5.9%	Wood Fiber @ 2000 lbs/ac. min. Straw @ 2 Tons/ac. min. Stabilization Mating** 1" Compost Blanket (CB)	OK OK OK OK	OK OK OK OK	OK OK OK OK	OK OK OK OK
	Wood Fiber @ 2000-2500 lbs/ac. min. Straw @ 2 Tons/ac. min. Stabilization Mating** 1" Compost Blanket (CB)	OK OK OK OK	OK OK OK OK	OK OK OK OK	OK OK OK OK
6% to 10.9%	Wood Fiber @ 2000-2500 lbs/ac. min. Straw @ 2 Tons/ac. min. Stabilization Mating** 1" Compost Blanket (CB)	OK OK OK OK	OK OK OK OK	OK OK OK OK	OK OK OK OK
	Wood Fiber @ 2000-2500 lbs/ac. min. Straw @ 2 Tons/ac. min. Stabilization Mating** 1" Compost Blanket (CB)	OK OK OK OK	OK OK OK OK	OK OK OK OK	OK OK OK OK
11% to 24.9%	Wood Fiber @ 2500-3000 lbs/ac. min. Straw @ 2 Tons/ac. min. Stabilization Mating** 1" Compost Blanket (CB)	OK OK OK OK	OK OK OK OK	OK OK OK OK	OK OK OK OK
	Wood Fiber @ 2500-3000 lbs/ac. min. Straw @ 2 Tons/ac. min. Stabilization Mating** 1" Compost Blanket (CB)	OK OK OK OK	OK OK OK OK	OK OK OK OK	OK OK OK OK
25% to 35%	Wood Fiber @ 3000-3500 lbs/ac. min. Straw @ 2 Tons/ac. min. Stabilization Mating** 1" Compost Blanket (CB)	OK OK OK OK	OK OK OK OK	OK OK OK OK	OK OK OK OK
	Wood Fiber @ 3000-3500 lbs/ac. min. Straw @ 2 Tons/ac. min. Stabilization Mating** 1" Compost Blanket (CB)	OK OK OK OK	OK OK OK OK	OK OK OK OK	OK OK OK OK
35% and up	Wood Fiber @ 4000-4500 lbs/ac. min. Straw @ 2 Tons/ac. min. Stabilization Mating** 1" Compost Blanket (CB)	OK OK OK OK	OK OK OK OK	OK OK OK OK	OK OK OK OK
	Wood Fiber @ 4000-4500 lbs/ac. min. Straw @ 2 Tons/ac. min. Stabilization Mating** 1" Compost Blanket (CB)	OK OK OK OK	OK OK OK OK	OK OK OK OK	OK OK OK OK

Source: Delaware ESC Handbook & Filtrrex™ International

Symbol:

Detail No. **DE-ESC-3.4.5**
Sheet 3 of 3
Effective FEB 2019

Standard Detail & Specifications Vegetative Stabilization

TEMPORARY SEEDING BY RATES, DEPTHS AND DATES											
Mix #	Species ^a	Seeding Rate	Optimum Seeding Dates ¹								Planting Depth ³
			O = Optimum Planting Period; A = Acceptable Planting Period								
	Certified Seed	lb/Ac ²	lb/1000 sq.ft.	Coastal Plain			Piedmont		All		
				2/1-4/30	5/1-8/14	8/15-10/31	11/1-4/30	5/1-7/31	8/1-10/31-2/1		
1	Barley	125	4	O	A	O	O	A	O	1-2 inches 2-3" sandy soils	
2	Oats	125	4	O	A	A	O	A	A	1-2 inches 2-3" sandy soils	
3	Rye	125	4	O	A	O	O	A	O	1-2 inches 2-3" sandy soils	
4	Perennial Ryegrass	125	4	O	A	O	O	A	O	0.5 inches 1-2" sandy soils	
5	Annual Ryegrass	125	4	O	A	O	O	A	O	0.5 inches 1-2" sandy soils	
6	Winter Wheat	125	4	O	A	O	O	A	O	1-2 inches 2-3" sandy soils	
7	Foxtail Millet	30 PLS	0.7					O		0.5 inches 1-2" sandy soils	
8	Pearl Millet	20 PLS	0.5			O		O		0.5 inches 1-2" sandy soils	

- Winter seeding requires 3 tons per acre of straw mulch for proper stabilization.
- May be planted throughout summer if soil moisture is adequate or seeded area can be irrigated.
- Applicable on slopes 3:1 or less.
- Fifty pounds per acre of Annual Lespedeza may be added to 1/2 the seeding rate of any of the above species.
- Use varieties currently recommended for Delaware. Contact a County Extension Office for information.
- Warm season grasses such as Millet or Weeping Lovegrass may be used between 5/1 and 8/1 if desired. Seed at 3-5 lbs. per acre. Good on low fertility and acid areas. Seed after frost through summer at a depth of 0.5".

NOTE: Alternative seed mixes may be used with prior approval from the Department or Delegated Agency.

Source: Delaware ESC Handbook

Symbol:

Detail No. **DE-ESC-3.4.3**
Sheet 1 of 4
Effective FEB 2019

Standard Detail & Specifications Vegetative Stabilization

PERMANENT SEEDING AND SEEDING DATES										
Seeding Mixtures		Seeding Rate ¹	Optimum Seeding Dates ² O = Optimum Planting Period A = Acceptable Planting Period						Remarks	
Mix No.	Certified Seed ³		Coastal Plain			Piedmont		All ⁴		
	Well Drained Soils	lb/Ac	lb/1000 sq ft	3/1-5/14	5/1-8/14	8/15-10/31	3/1-7/31	8/1-10/31	10/31-2/1	
1	Tall Fescue Weeping Lovegrass	140 10	3.2 0.23	A O	A A	A A	A A	A A	Good erosion control mix Tolerant of low fertility soils Lowgrasses very difficult to mow; Germinates only in cool weather.	
2	Deergrass Sheep Fescue Common Lespedeza ⁵ inoculated	30 38 15	0.69 0.99 0.35	A O A	A A A	O A A	A A A	A A A	Good erosion control mix Tolerant of low fertility soils Good wildlife cover and food	
3	Tall Fescue (leaf-type) or Strong Creeping Red Fescue or Perennial Ryegrass	50 50 15	1.15 1.15 0.34	O A O	A A O	A A O	A A O	A A O	Good erosion control mix Tall Fescue for drought conditions. Creeping Red Fescue for heavy shade. Flaxseed to suppress woody vegetation.	
4	plus Flaxseed ⁶ Strong Creeping Red Fescue Kentucky Bluegrass Perennial Ryegrass or Redtop	100 70 15 5	2.3 1.81 0.35 0.11	O A O A	O A O A	A A O A	A A O A	A A O A	Stable waterway mix. Canada Bluegrass more drought tolerant. Use Redtop for increased drought tolerance.	
5	plus White Clover ⁷ Switchgrass ⁸ or Coastal Panicgrass Big Bluestem Little Bluestem Indian Grass	3 10 10 5 5 5	0.07 0.25 0.25 0.11 0.11 0.1	O O O O O O					Native warm-season mixture. Tolerant of low fertility soils. Drought tolerant. Poor shade tolerance. N fertilizer discouraged - weeds may take over.	
6	Tall Fescue (leaf-type) Blend of 3 cultivars	150	3.5	O	A	O	A	O	A	Managed filler strip for roadway use.
7	Tall Fescue Ky. Bluegrass (Blend) Perennial Ryegrass	150 20 20	3.5 0.46 0.46	O A O	A O A	O A O	A O A	O A O	A O A	Three cultivars of Kentucky Bluegrass. Traffic tolerant.
8	Big Bluestem Indian Grass Little Bluestem ¹⁰ Creeping Red Fescue plus one of: Panicgrass Prol. Bush Clover Wild Indigo Stoney Tick-Trefoil	10 10 5 30 5 5 3 3 2	0.25 0.25 0.18 0.69 0.11 0.18 0.07 0.07 0.05	O A O A O A O A O	O A O A O A O A O				All species are native. Indian Grass and Bluestem have huffy seeds. Plant with a specialized native seed drill. Creeping Red Fescue will provide erosion protection while the warm season grasses get established.	

NOTE: Alternative seed mixes may be used with prior approval from the Department or Delegated Agency.

Source: Delaware ESC Handbook

Symbol:

Detail No. **DE-ESC-3.4.3**
Sheet 2 of 4
Effective FEB 2019

Standard Detail & Specifications Vegetative Stabilization

PERMANENT SEEDING AND SEEDING DATES (cont.)										
Seeding Mixtures		Seeding Rate ¹		Optimum Seeding Dates ² O = Optimum Planting Period A = Acceptable Planting Period						Remarks
Mix No.	Certified Seed ³	Coastal Plain				Piedmont		All ⁴		
	Poorly Drained Soils	lb/Ac	lb/1000 sq ft	2/1-4/30	5/1-8/14	9/1-11/30	12/1-2/28	3/1-5/14	6/1-8/14	10/31-2/1
9	Redtop Creeping Bentgrass Sheep Fescue Rough Bluegrass	75 35 35 45	1.72 0.8 0.8 1	O A O A	O A O A	O A O A	O A O A	O A O A	O A O A	Add 100 lb/Ac Winter Rye Quick stabilization of disturbed sites and waterways
10	Reed Canarygrass ⁵	10	0.23	A		O	A		O	Good erosion control, wildlife cover and wetland revegetation.
Residential Lawns										
11	Tall Fescue Perennial Ryegrass Kentucky Bluegrass Blend	100 25 30	2.3 0.57 0.69	O A O	O A O	O A O	O A O	O A O	O A O	High value, high maintenance, light traffic, irrigation necessary. Well drained soils, full sun.
12	Tall Fescue Perennial Ryegrass Sheep Fescue	100 25 25	2.3 0.57 0.57	O A O	O A O	O A O	O A O	O A O	O A O	Moderate value, low maintenance, traffic tolerant.
13	Creeping Red Fescue Chewings Fescue Rough Bluegrass Kentucky Bluegrass	50 50 20 20	1.15 1.15 0.4 0.4	O A O A	O A O A	O A O A	O A O A	O A O A	O A O A	Shade tolerant, moderate traffic tolerance, moderate maintenance.
14	Creeping Red Fescue Rough Bluegrass or Chewings Fescue	50 50	1.15 2.1	O A	O A	O A	O A	O A	O A	Shade tolerant, moisture tolerant.
15	K-31 Tall Fescue	150	3.5	O	A	O	A	O	A	Monoculture, but performs well alone in lawns. Discouraged.

- When hydroseeding is the chosen method of application, the total rate of seed should be increased by 20%.
- Winter seeding requires 3 tons per acre of straw mulch. Planting dates listed above are average for Delaware. These dates may require adjustment to reflect local conditions.
- All seed shall meet the minimum purity and minimum germination percentages recommended by the Delaware Department of Agriculture. The maximum % of weed seeds shall be in accordance with Section 1, Chapter 24, Title 3 of the Delaware Code.
- Cool season species may be planted throughout summer if soil moisture is adequate or seeded area can be irrigated.
- All leguminous seed must be inoculated.
- Warm season grass mix and Reed Canary Grass cannot be mowed more than 4 times per year.
- Warm season grasses require a soil temperature of at least 50 degrees in order to germinate, and will remain dormant until then.

NOTE: Alternative seed mixes may be used with prior approval from the Department or Delegated Agency.

Source: Delaware ESC Handbook

Symbol:

Detail No. **DE-ESC-3.4.3**
Sheet 3 of 4
Effective FEB 2019

Standard Detail & Specifications Vegetative Stabilization

Construction Notes:

- Site Preparation
 - Prior to seeding, install needed erosion and sediment control practices such as diversions, grade stabilization structures, berms, dikes, grassed waterways, and sediment basins.
 - Final grading and shaping is not necessary for temporary seedings.

2. Seedbed Preparation

It is important to prepare a good seedbed to insure the success of establishing vegetation. The seedbed should be well prepared, loose, uniform, and free of large clods, rocks, and other objectionable material. The soil surface should not be compacted or crusted.

3. Soil Amendments

- Lime - Apply liming materials based on the recommendations of a **soil test** in accordance with the approved nutrient management plan. If a nutrient management plan is not required, apply dolomitic limestone at the rate of 1 to 2 tons per acre. Apply limestone uniformly and incorporate into the top 4 to 6 inches of soil.
- Fertilizer - Apply fertilizer based on the recommendations of a **soil test** in accordance with the approved nutrient management plan. If a nutrient management plan is not required, apply a formulation of 10-10-10 at the rate of 600 pounds per acre. Apply fertilizer uniformly and incorporate into the top 4 to 6 inches of soils.

4. Seeding

- For **temporary stabilization**, select a mixture from **Sheet 1**. For a **permanent stabilization**, select a mixture from **Sheet 2** or **Sheet 3** depending on the conditions. Alternative seed mixes may be used with prior approval from the Department or Delegated Agency.
- Apply seed uniformly with a broadcast seeder, drill, cultipacker seeder or hydroseeder. All seed will be applied at the recommended rate and planting depth.
- Seed that has been broadcast should be covered by raking or dragging and then lightly tamped into place using a roller or cultipacker. If hydroseeding is used and the seed and fertilizer is mixed, they will be mixed on site and the seeding shall be done immediately and without interruption.

5. Mulching

All mulching shall be done in accordance with detail **DE-ESC-3.4.5**.

Source: Delaware ESC Handbook

Symbol:

Detail No. **DE-ESC-3.4.3**
Sheet 4 of 4
Effective FEB 2019

REVISIONS:

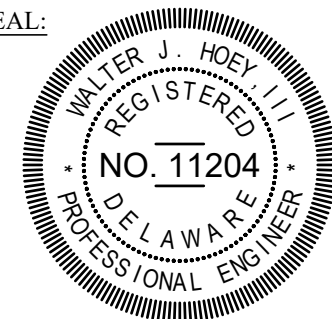
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KILLENS POND STATE PARK

ELEVATED WALKWAY

EROSION & SEDIMENT CONTROL DETAILS

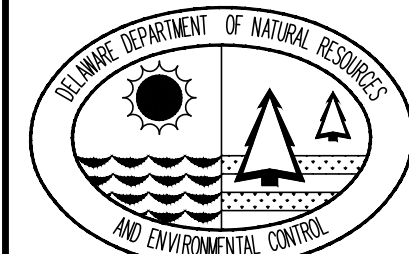
SEAL:



CIVIL ENGINEER:

CENTURY
ENGINEERING
CONSULTING ENGINEERS, SURVEYORS
4134 N. DUPONT HWY.
DOVER, DELAWARE 19901

CEI CONTRACT NO.: 175013.11



DESIGNED BY:

WJH

DRAWN BY:

DFS

CHECKED BY:

AES

DATE:

AUGUST 2020

SCALE:

NONE

SHEET NO.:

SSMP504

CONTRACT NO.:

2020-KPSP-100



DNREC KILLENS POND PEDESTRIAN BRIDGE

SHEET #	TITLE
S-1	TITLE PAGE - TABLE OF CONTENTS
S-2	BRIDGE GENERAL NOTES
S-3A	PROJECT LAYOUT (AREA A)
S-3B	PROJECT LAYOUT (AREA B)
S-4	BRIDGE SPAN 11, 12, 14, 15, 17, 18, 19: MATERIAL LIST
S-5	BRIDGE SPAN 11, 12, 14, 15, 17, 18, 19: ASSEMBLY DETAILS
S-6	BRIDGE SPAN 11, 12, 14, 15, 17, 18, 19: TRUSS DETAILS
S-7	BRIDGE SPAN 11, 12, 14, 15, 17, 18, 19: DECK DETAILS
S-8	BRIDGE SPAN 6: MATERIAL LIST
S-9	BRIDGE SPAN 6: ASSEMBLY DETAILS
S-10	BRIDGE SPAN 6: TRUSS DETAILS - SHORT SIDE
S-11	BRIDGE SPAN 6: TRUSS DETAILS - LONG SIDE
S-12	BRIDGE SPAN 6: DECK DETAILS
S-13	BRIDGE SPAN 1 & 20: MATERIAL LIST
S-14	BRIDGE SPAN 1 & 20: ASSEMBLY DETAILS
S-15	BRIDGE SPAN 1 & 20: TRUSS DETAILS
S-16	BRIDGE SPAN 1 & 20: DECK DETAILS

SHEET #	TITLE
S-17	BRIDGE SPAN 2,10,13,16: MATERIAL LIST
S-18	BRIDGE SPAN 2,10,13,16: ASSEMBLY DETAILS (PAGE 1/2)
S-19	BRIDGE SPAN 2,10,13,16: ASSEMBLY DETAILS (PAGE 2/2)
S-20	BRIDGE SPAN 2,10,13,16: TRUSS DETAILS
S-21	BRIDGE SPAN 2,10,13,16: FISHING RAIL DETAILS
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S-28	PICKET RAIL: DETAILS
S-29	PICKET RAIL: LENGTH CHART
S-30	APPROACH RAIL DETAILS
S-31	STRUCTURAL COMPONENT DETAILS

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CUSTOMER SIGNATURE

DATE

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605 MOLLY LANE
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WOODSTOCK, GA 30189



2880 MELLONVILLE AVE, SANFORD, FL 32773
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RECORD OF REVISIONS

No.	DATE	DESCRIPTION
1	03/19/2020	REVISED DRAFT
2	03/24/2020	REVISED DRAFT #2
3	04/01/2020	REVISED DRAFT #3
4	04/15/2020	12-IN ALUM. DECK PLANKS
5	05/29/2020	STAMPED SUBMITTAL

PROJECT NAME:

DNREC KILLENS POND
PEDESTRIAN BRIDGE

CUSTOMER NAME:

DELAWARE DIVISION OF
PARKS & RECREATION

CUSTOMER ADDRESS:

89 KINGS HIGHWAY
DOVER, DELAWARE 19901

PROJECT LOCATION:

5025 KILLENS POND ROAD
FELTON, DE 19943

CMI ORDER NO.:

Q98254

CUSTOMER PO NO.:

	NAME	DATE
DRAWN BY:	KLC	05/22/2020
CHECKED BY:	MKL	05/29/2020
FABRICATION:	BRS	05/29/2020

DRAWING NO.:

S-1
TITLE PAGE
TABLE OF CONTENTS

Physical properties are defined by ASTM testing standards, The Aluminum Association Design Manual, The Naval Facilities Design Manual DM 7.2, and The US Army Corps of Engineers General Design Guide: PVC Sheet Pile and/or standard engineering practice. The values shown are nominal and may vary. The information found in this document is believed to be true and accurate. No warranty of any kind is made as to the suitability of any CMI product for particular applications or the results obtained there from. ShoreGuard®, The ShoreGuard Seawall System®, C-Lo®, TimberGuard®, GatorDock®, Shore-Wall®, GatorBridge®, GatorDock Elite®, ArmorWave®, ArmorMod®, Box Profile®, UltraComposite®, The Steel Alternative®, Elite Wall®, Elite Panel®, Elite Fascia Panel®, RailPanel®, KCM®, KCM Technology®, KCM Overlay®, GatorBridge®, GatorAluminum®, Gator Sheet Piling®, GatorDock®, Beam Lock®, Textured Slab®, Crane Materials International®, Logo, CMI Sheet Piling Solutions®, Aqua Terra Systems®, Endurance®, Endurance Cap®, Pellets®, Edgeline®, GridGrip®, 22 Poly®, Picket®, SheerCap®, SheerCap Retaining Wall Systems®, Sheer Panel®, and CMI Waterfront Solutions® are trademarks, service marks or trade names of CMI Limited Co. CMI Limited Co. products are covered by one or more of the following U.S. Patents and International Patents: 4,674,931; 4,690,585; 5,292,208; 5,545,287; 6,005,883; 6,033,155; 6,093,686; 6,420,154; 6,575,667; 7,059,807; 7,056,066; 7,075,339; 7,393,482; 5,505,065; 5,803,677; 6,331,771; 12,465,963CA; 7,914,237 and other patents pending. © 2005-2017 CMI Limited Co. All Rights Reserved.

TOLERANCES UNLESS SPECIFIED OTHERWISE
XXX = ± 1/4"; FRACTIONS = ± 1/8"; ANGULAR = ± 1°

CMI LIMITED CO.
605 MOLLY LANE - SUITE 150
WOODSTOCK, GA 30189
PHONE: 770-933-8166
COA #4043



BRENDAN R. SHEPPARD
DELAWARE PE #14366

GENERAL NOTES:

ALUMINUM SPECIFICATIONS:

- ALL STRUCTURAL COMPONENTS SHALL BE 6061-T6 ALUMINUM
- ALL NON-STRUCTURAL COMPONENTS MAY BE 6063-T6 ALUMINUM
- ALL ALUMINUM WELD FILLER SHALL BE 5356
- ALUMINUM WELDING SHALL CONFORM TO AWS D1.2

FINISH:

- BRIDGE SHALL BE ALUMINUM MILL FINISH

BEARING COMPONENTS:

- BEARING PADS TO BE UHMW

CAMBER NOTES:

- NO BRIDGE CAMBER REQUIRED

INSTALLATION:

- INSTALLATION BY OTHERS - NO RESPONSIBILITY IS ACCEPTED FOR WORK BY OTHERS
- BRIDGES ARE SIZED FOR 1" ANCHOR BOLTS, TO BE DESIGNED AND PROVIDED BY OTHERS.
- BRIDGES ARE SIZED FOR A 1" ± GAP ON EACH END (2" BETWEEN SPANS).

LOADING:

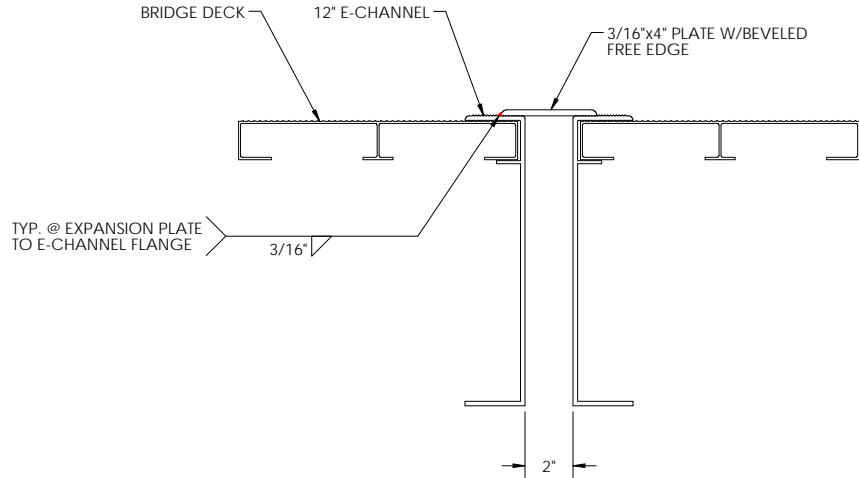
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- VEHICLE LOAD: ONE @ 2,500 LB
- WIND LOAD: 97 MPH PER AASHTO STANDARD SPECIFICATIONS / ASCE 7-05
- NO FLOOD LOADING CONSIDERED

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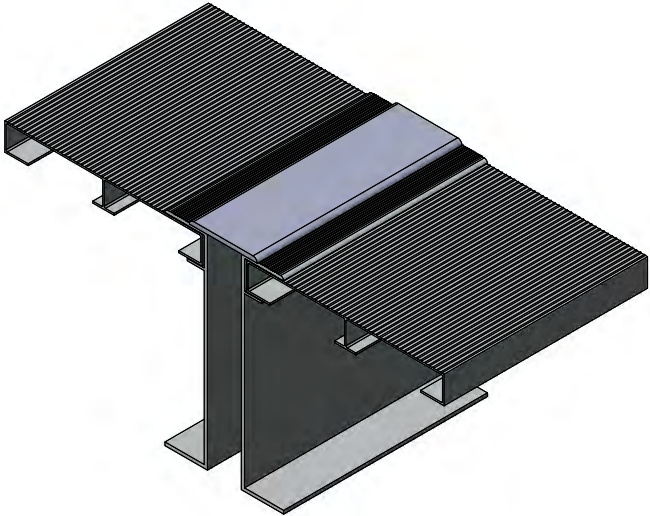
- AASHTO LRFD GUIDE SPECIFICATIONS FOR THE DESIGN OF PEDESTRIAN BRIDGES, 2009 WITH 2015 INTERIM REVISIONS
- AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 2010 WITH 2016 INTERIM REVISIONS
- AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES, AND TRAFFIC SIGNALS, 2013 WITH 2015 INTERIM REVISIONS
- NATIONAL ASSOCIATION OF ARCHITECTURAL METAL MANUFACTURERS (NAAMM) – PIPE RAILING SYSTEMS MANUAL (AMP 521-01 (R2012))
- STANDARD ENGINEERING PRACTICE

FABRICATION NOTES:

- DEBURR ALL EXPOSED WELDS WHICH MAY COME IN CONTACT WITH PEDESTRIANS.
- ADD WEEP HOLESAS NEEDED.



EXPANSION JOINT COVER: ELEVATION VIEW



EXPANSION JOINT COVER: ISO VIEW CUT SECTION



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RECORD OF REVISIONS		
No.	DATE	DESCRIPTION
1	03/19/2020	REVISED DRAFT
2	03/24/2020	REVISED DRAFT #2
3	04/01/2020	REVISED DRAFT #3
4	04/15/2020	12-IN ALUM. DECK PLANKS
5	05/29/2020	STAMPED SUBMITTAL

PROJECT NAME:
**DNREC KILLENS POND
PEDESTRIAN BRIDGE**

CUSTOMER NAME:
**DELAWARE DIVISION OF
PARKS & RECREATION**

CUSTOMER ADDRESS:
89 KINGS HIGHWAY
DOVER, DELAWARE 19901

PROJECT LOCATION:
5025 KILLENS POND ROAD
FELTON, DE 19943

CMI ORDER NO.:
Q98254

CUSTOMER PO NO.:

	NAME	DATE
DRAWN BY:	KLC	05/22/2020
CHECKED BY:	MKL	05/29/2020
FABRICATION:	BRS	05/29/2020

DRAWING NO.:
S-2
BRIDGE
GENERAL NOTES

Physical properties are defined by ASTM testing standards, The Aluminum Association Design Manual, The Naval Facilities Design Manual DM 7-2, and The US Army Corps of Engineers General Design Guide. PVC sheet pile and/or standard engineering practice. The values shown are nominal and may vary. The information found in this document is believed to be true and accurate. No warranties of any kind are made as to the suitability of any CMI product for particular applications or the results obtained therefrom. ShoreGuard®, The ShoreGuard Seawall System™, L-Lox®, TimberGuard®, GeoGuard®, Dura Dock®, Shore-All®, GatorBridge®, GatorDock Elite®, ArmorWare®, ArmorRed®, Box Profile™, UltraComposite™, The Steel Alternative™, Elite Wall™, Elite Panel™, Elite Pucca Panel™, HardPanel™, ICE™, ICE™ Technology™, ICE™ Vinyl™, GatorBridge™, GatorAluminum™, Gator Sheet Piling™, GatorDock™, I-Beam Lock™, Textured Slab™, Crane Materials International™, Igus, CMI Sheet Piling Solutions™, Aqua Terra Systems™, Endurance™, Endurance CIP™, Polaris™, Eclique™, Gridstone™, 2.5 Poly™, PlacClaw™, SheerScape™, SheerScape Retaining Wall Systems™, Sheer Panel™ and CMI Waterfront Solutions™ are trademarks, service marks or trade names of CMI Limited Co. CMI Limited Co. products are covered by one or more of the following U.S. Patents and International Patents: 4,874,261; 4,490,585; 5,292,206; 5,146,247; 6,000,883; 6,031,155; 6,263,146; 6,240,134; 6,375,687; 7,059,807; 7,056,066; 7,025,539; 7,393,482; 5,503,593; 5,803,672; 6,331,271; 1,245,063CA; 7,914,237 and other patents pending. © 2005-2017 CMI Limited Co. All Rights Reserved.

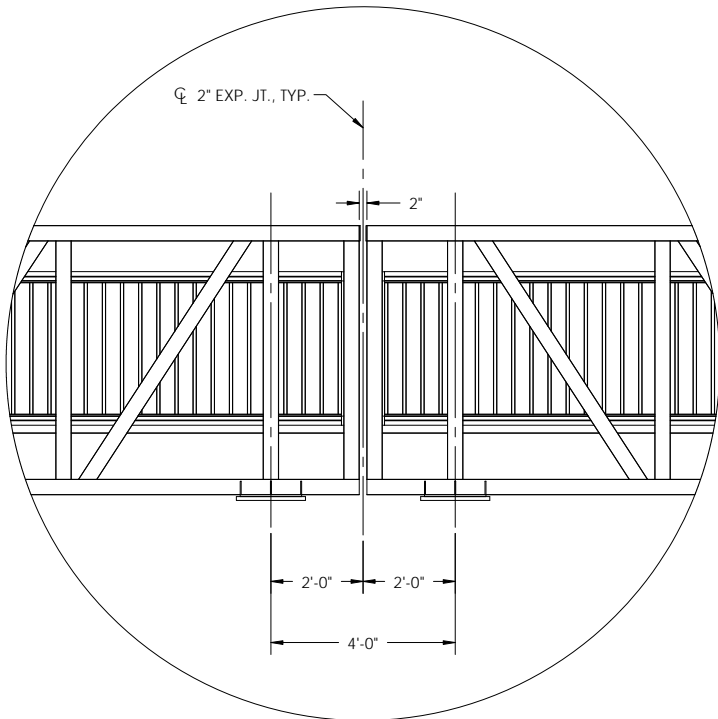
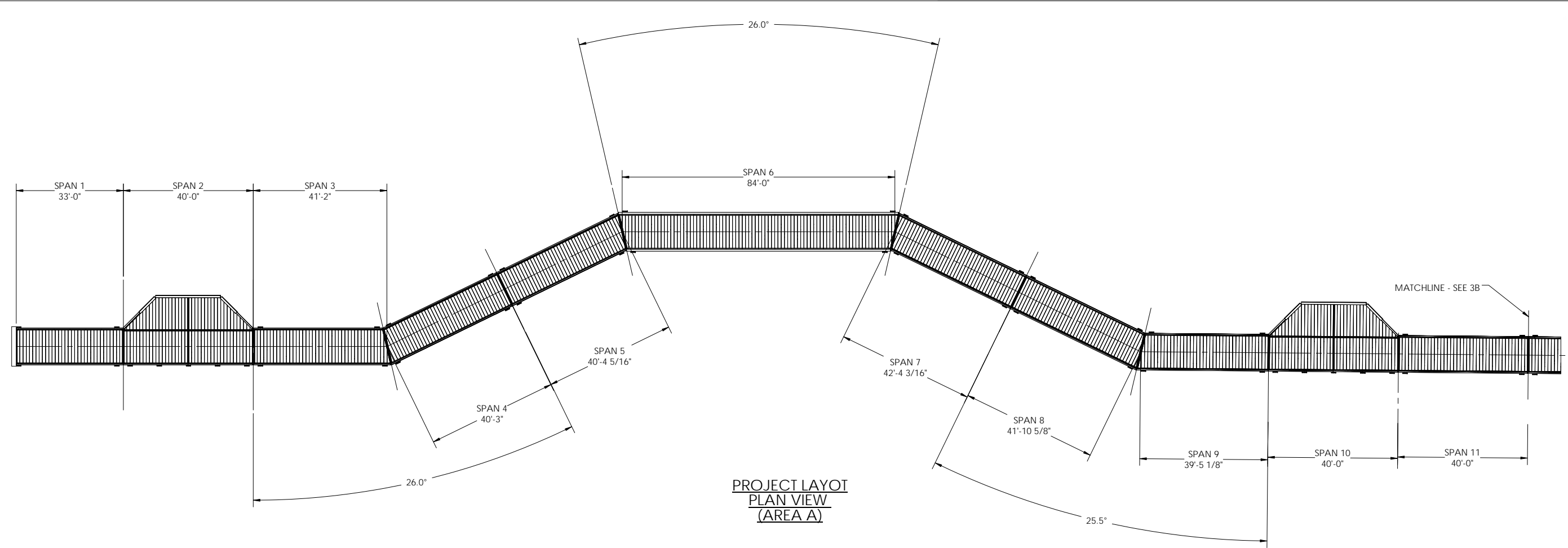
TOLERANCES UNLESS SPECIFIED OTHERWISE
XXX = ± 1/4"; FRACTIONS = ± 1/8"; ANGULAR = ± 1°

CMI LIMITED CO.
605 MOLLY LANE - SUITE 150
WOODSTOCK, GA 30189
PHONE: 770-933-8166
COA #4043



BRENDAN R. SHEPPARD
DELAWARE PE #14366

CUSTOMER
INITIAL



TYPICAL
EXPANSION JOINT

NOTES:

1. INTERIOR SPANS: DIMENSIONS ARE MEASURED ∇ -TO- ∇ OF EXPANSION JOINT.
2. END SPANS: DIMENSIONS ARE MEASURED FACE OF BACKWALL-TO- ∇ OF EXPANSION JOINT.
3. SPANS 1 AND 20 HAVE ROTATED BASE PLATES TO ACCOMODATE ELEVATION CHANGE.
4. SPAN 2: CONTRACTOR TO SHIM AS NEEDED TO ACCOMODATE ELEVATION CHANGE.



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5	05/29/2020	STAMPED SUBMITTAL

PROJECT NAME:
**DNREC KILLENS POND
PEDESTRIAN BRIDGE**

CUSTOMER NAME:
**DELAWARE DIVISION OF
PARKS & RECREATION**

CUSTOMER ADDRESS:
89 KINGS HIGHWAY
DOVER, DELAWARE 19901

PROJECT LOCATION:
5025 KILLENS POND ROAD
FELTON, DE 19943

CMI ORDER NO.:
Q98254

CUSTOMER PO NO.:

	NAME	DATE
DRAWN BY:	KLC	05/26/2020
CHECKED BY:	MKL	05/29/2020
FABRICATION:	BRS	05/29/2020

DRAWING NO.:
S-3A
PROJECT LAYOUT
(AREA A)

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COA #4043



BRENDAN R. SHEPPARD
DELAWARE PE #14366

CUSTOMER
INITIAL



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4	04/15/2020	12-IN ALUM. DECK PLANKS
5	05/29/2020	STAMPED SUBMITTAL

PROJECT NAME:

DNREC KILLENS POND PEDESTRIAN BRIDGE

CUSTOMER NAME:

**DELAWARE DIVISION OF
PARKS & RECREATION**

CUSTOMER ADDRESS:

89 KINGS HIGHWAY
DOVER, DELAWARE 19901

PROJECT LOCATION:

5025 KILLENS POND ROAD
FELTON, DE 19943

CMI ORDER NO.:

Q98254

CUSTOMER PO NO.:

	NAME	DATE
DRAWN BY:	KLC	05/26/2020
CHECKED BY:	MKL	05/29/2020
FABRICATION:	BRS	05/29/2020

DRAWING NO.:

S-3B

PROJECT LAYOUT (AREA B)

[illegible]

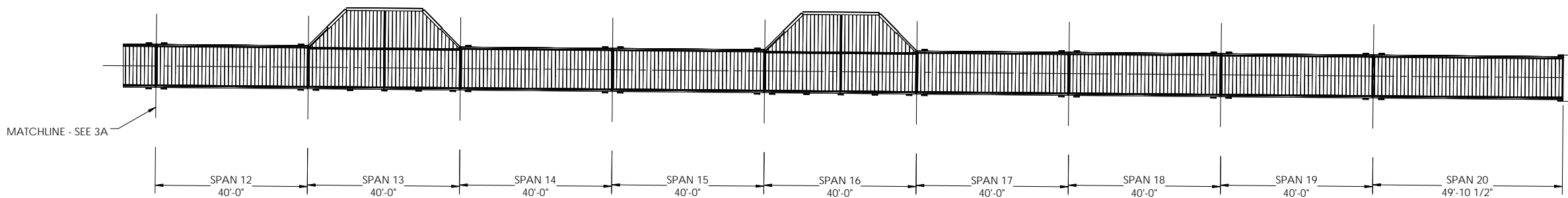
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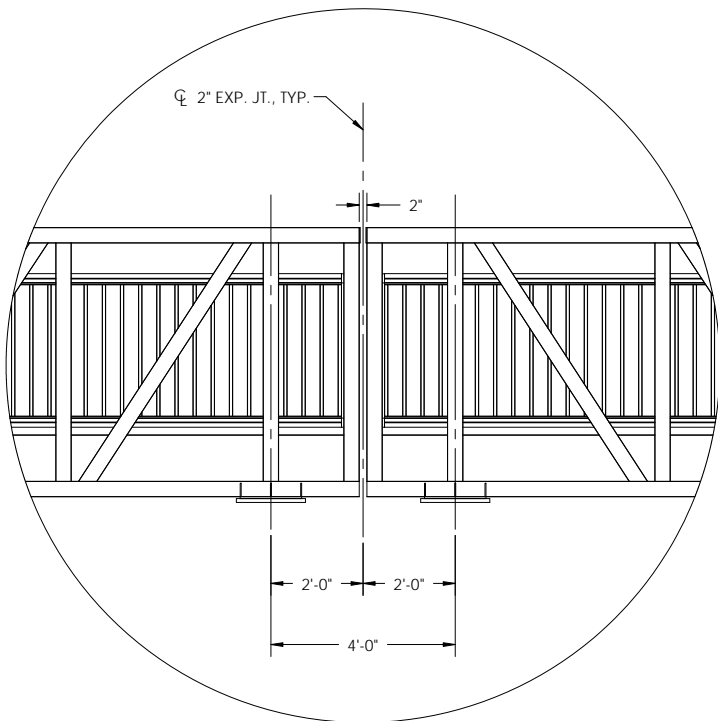


BRENDAN R. SHEPPARD
DELAWARE PE #14366

CUSTOMER
INITIAL



PROJECT LAYOUT
PLAN VIEW
(AREA B)

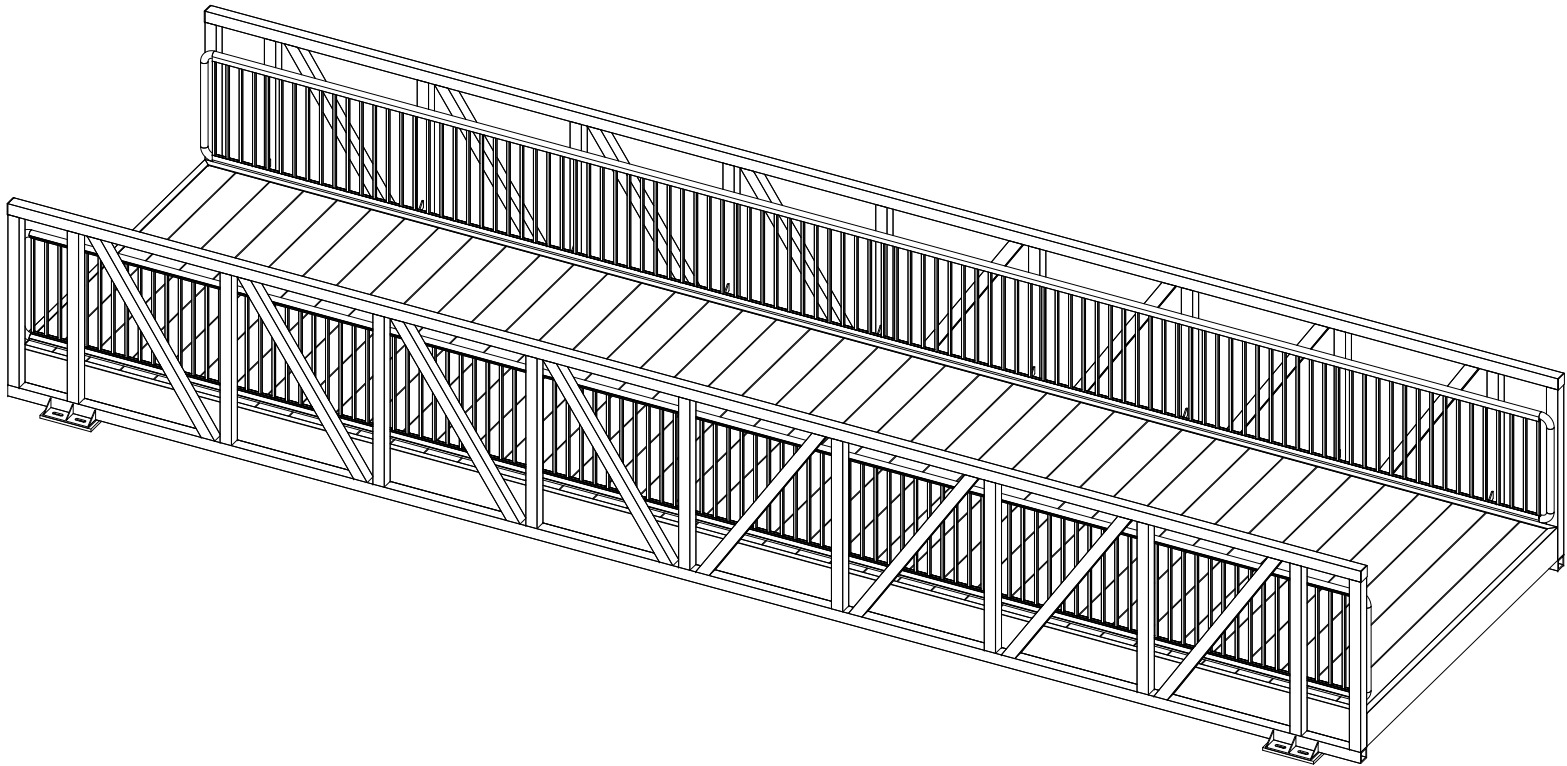


TYPICAL EXPANSION JOINT

- NOTES:

1. INTERIOR SPANS: DIMENSIONS ARE MEASURED
CL -TO- CL OF EXPANSION JOINT.
2. END SPANS: DIMENSIONS ARE MEASURED
FACE OF BACKWALL-TO- CL OF EXPANSION JOINT.
3. SPANS 1 AND 20 HAVE ROTATED BASE PLATES TO
ACCOMMODATE ELEVATION CHANGE.
4. SPAN 2: CONTRACTOR TO SHIM AS NEEDED TO
ACCOMMODATE ELEVATION CHANGE.

BILL OF MATERIALS					
ITEM #		TYPE	DESCRIPTION	QTY/COMMENTS	WEIGHTS
SPAN 11,12, 14,15,17,18, AND 19		BRIDGE	10'x39'-10" CASCADE BRIDGE	7	~5,200 LBS
	1	BOX FRAME	12" E-CHANNEL	1	---
	2	TRUSS CHORDS	4"x4"x1/2" TUBE	4	---
	3	TRUSS END POSTS	4"x4"x1/2" TUBE	8	---
	4	TRUSS VERTICALS	4"x4"x1/4" TUBE	14	---
	5A	TRUSS END DIAGONALS	4"x4"x1/2" TUBE	4	---
	5B	TRUSS INTERIOR DIAGONALS	4"x4"x1/4" TUBE	12	---
	6	FLOOR STRINGERS	4"x1 1/2" C-CHANNEL	5	---
	7A	FLOOR BEAMS 4&5	6"x6"x1/4" TUBE	3	---
	7B	FLOOR BEAMS 2 & 3	6"x4"x1/4" TUBE	4	---
	8	HORIZONTAL BRACING	6"x2 1/2" C-CHANNEL	8	---
	9	FLOOR END BEAMS	6"x4"x1/4" TUBE	2	---
	10	DECKING	12-IN. ALUMINUM DECK PLANKS	3/8" GAP	---
	11	BASE PLATE	9 1/2"x1'-4"x1/2" FLAT BAR	4	---
	12	BASE GUSSET	1/4" FLAT BAR GUSSET	12	---
	13	TOP CHORD END CAP	1/4" FLAT BAR END CAP	4	---
	14	COMBINATION RAIL	42" COMBINATION RAIL W/ 4" MAX SPACING	2 @ 39'-10" EACH	---
	15	RAIL BRACKET	3/8" PLATE	36	---
16	DECK CORNER GUSSETS	1/4" DECK CORNER GUSSETS	8	---	
BP1		BEARING PAD	9 1/2"x1'-6"x1" UHMW PAD	4 x 7 = 28	~5 LBS (EACH)



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PROJECT NAME:
**DNREC KILLENS POND
PEDESTRIAN BRIDGE**

CUSTOMER NAME:
**DELAWARE DIVISION OF
PARKS & RECREATION**

CUSTOMER ADDRESS:
89 KINGS HIGHWAY
DOVER, DELAWARE 19901

PROJECT LOCATION:
5025 KILLENS POND ROAD
FELTON, DE 19943

CMI ORDER NO.:
Q98254

CUSTOMER PO NO.:

	NAME	DATE
DRAWN BY:	KLC	05/22/2020
CHECKED BY:	MKL	05/29/2020
FABRICATION:	BRS	05/29/2020

DRAWING NO.:
S-4
SPANS 11,12,14,15,17,18,19:
MATERIAL LIST

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605 MOLLY LANE - SUITE 150
WOODSTOCK, GA 30189
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COA #4043



BRENDAN R. SHEPPARD
DELAWARE PE #14366

CUSTOMER
INITIAL

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5	05/29/2020	STAMPED SUBMITTAL

PROJECT NAME:

DNREC KILLENS POND PEDESTRIAN BRIDGE

CUSTOMER NAME:

DELAWARE DIVISION OF PARKS & RECREATION

CUSTOMER ADDRESS:

89 KINGS HIGHWAY
DOVER, DELAWARE 19901

PROJECT LOCATION:

5025 KILLENS POND ROAD
FELTON, DE 19943

CMI ORDER NO.:

Q98254

CUSTOMER PO NO.:

	NAME	DATE
DRAWN BY:	KLC	05/22/2020
CHECKED BY:	MKL	05/29/2020
FABRICATION:	BRS	05/29/2020

DRAWING NO.:

S-5

SPANS 11,12,14,15,17,18,19:
ASSEMBLY DETAILS

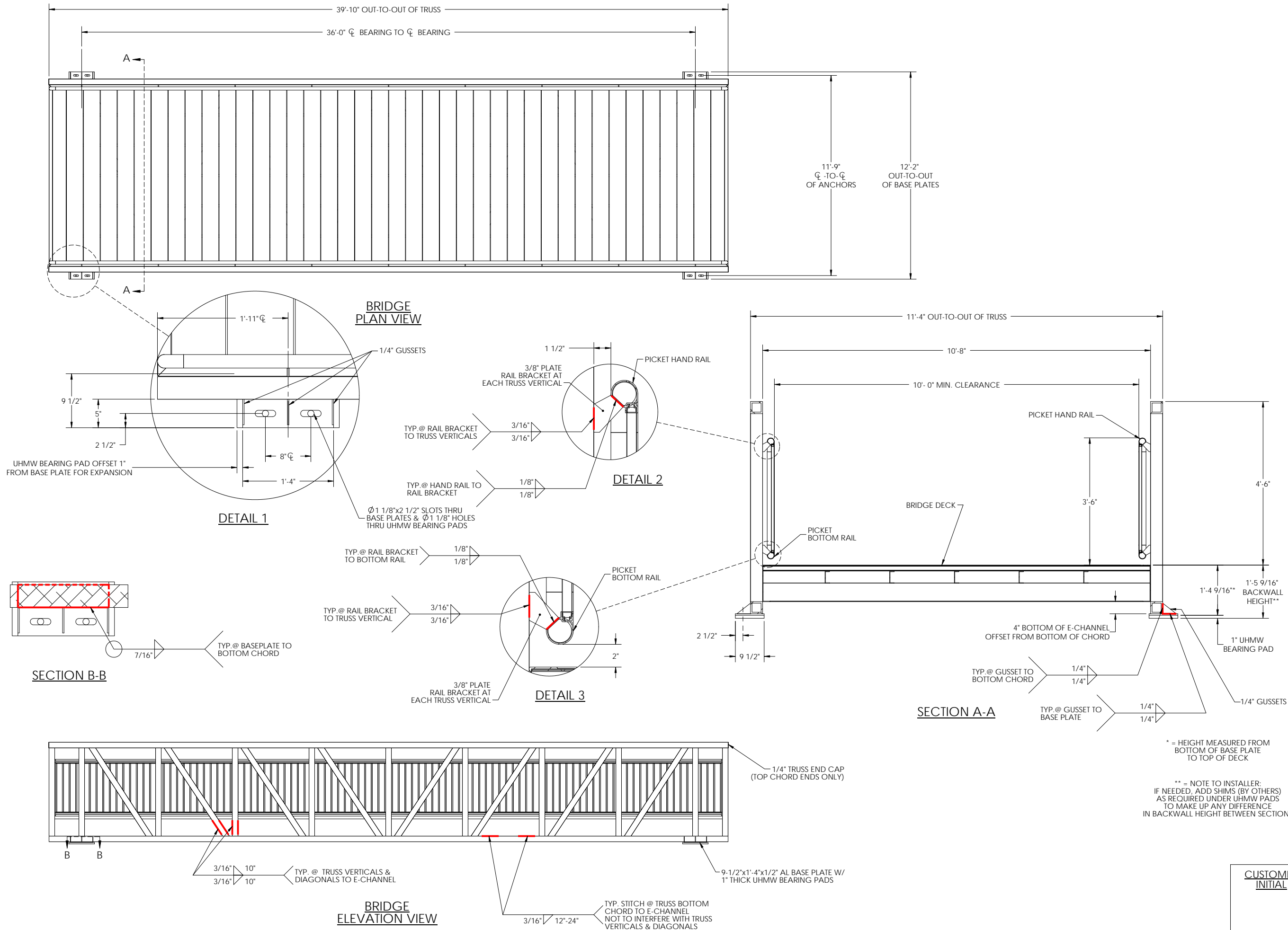
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BRENDAN R. SHEPPARD
DELAWARE PE #14366



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4	04/15/2020	12-IN ALUM. DECK PLANKS
5	05/29/2020	STAMPED SUBMITTAL

PROJECT NAME:
**DNREC KILLENS POND
PEDESTRIAN BRIDGE**

CUSTOMER NAME:
**DELAWARE DIVISION OF
PARKS & RECREATION**

CUSTOMER ADDRESS:
89 KINGS HIGHWAY
DOVER, DELAWARE 19901

PROJECT LOCATION:
5025 KILLENS POND ROAD
FELTON, DE 19943

CMI ORDER NO.:
Q98254

CUSTOMER PO NO.:

	NAME	DATE
DRAWN BY:	KLC	05/22/2020
CHECKED BY:	MKL	05/29/2020
FABRICATION:	BRS	05/29/2020

DRAWING NO.:
S-6
SPANS 11,12,14,15,17,18,19:
TRUSS DETAILS

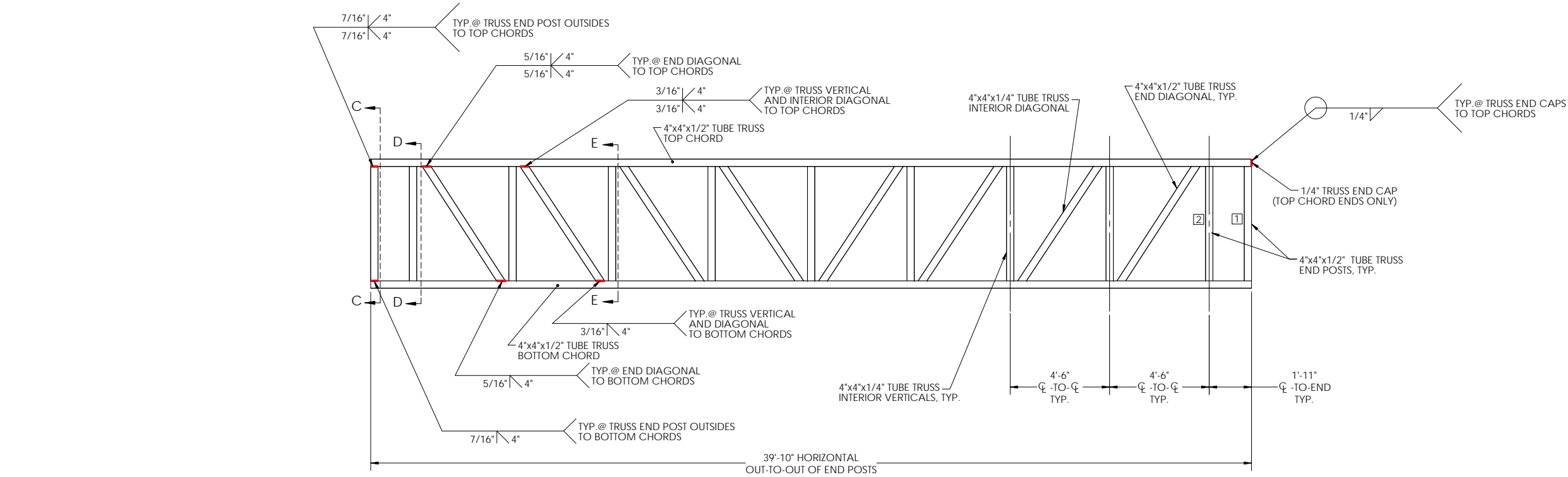
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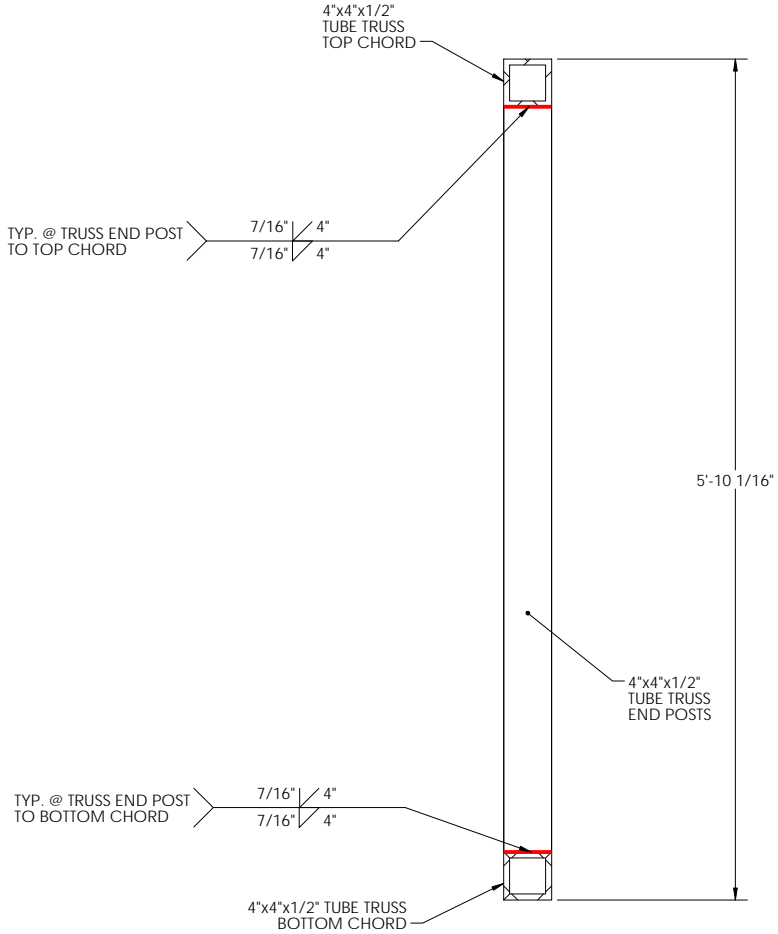
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WOODSTOCK, GA 30189
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COA #4043



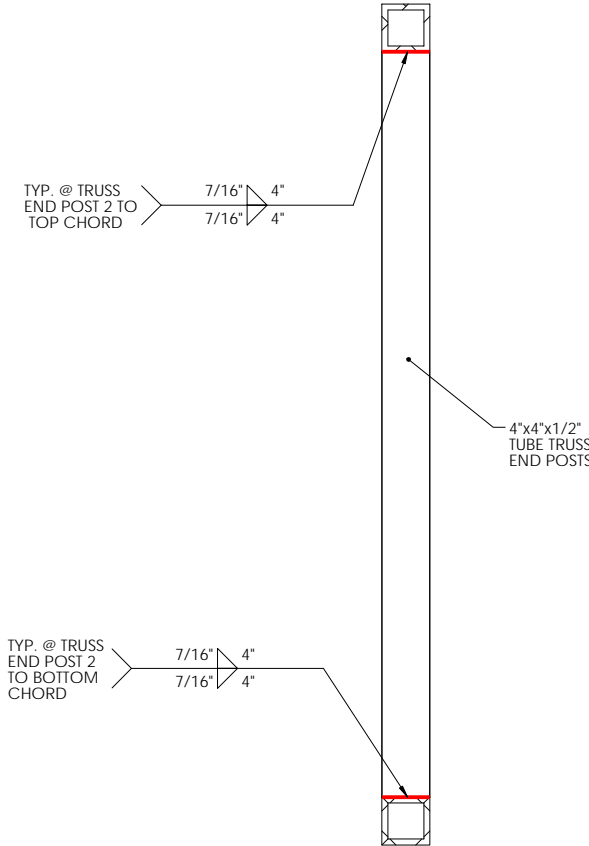
BRENDAN R. SHEPPARD
DELAWARE PE #14366



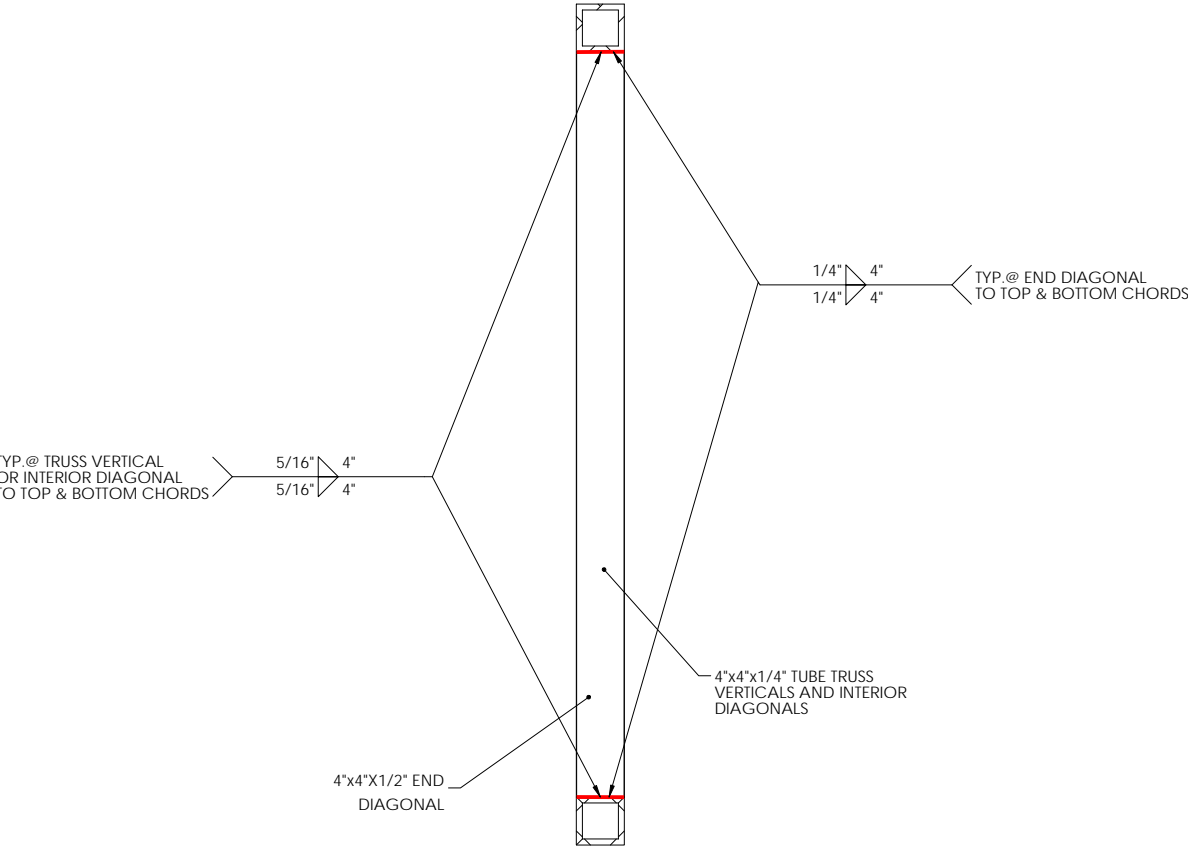
**TRUSS ELEVATION VIEW
(QUANTITY x2)**



TRUSS SECTION C-C



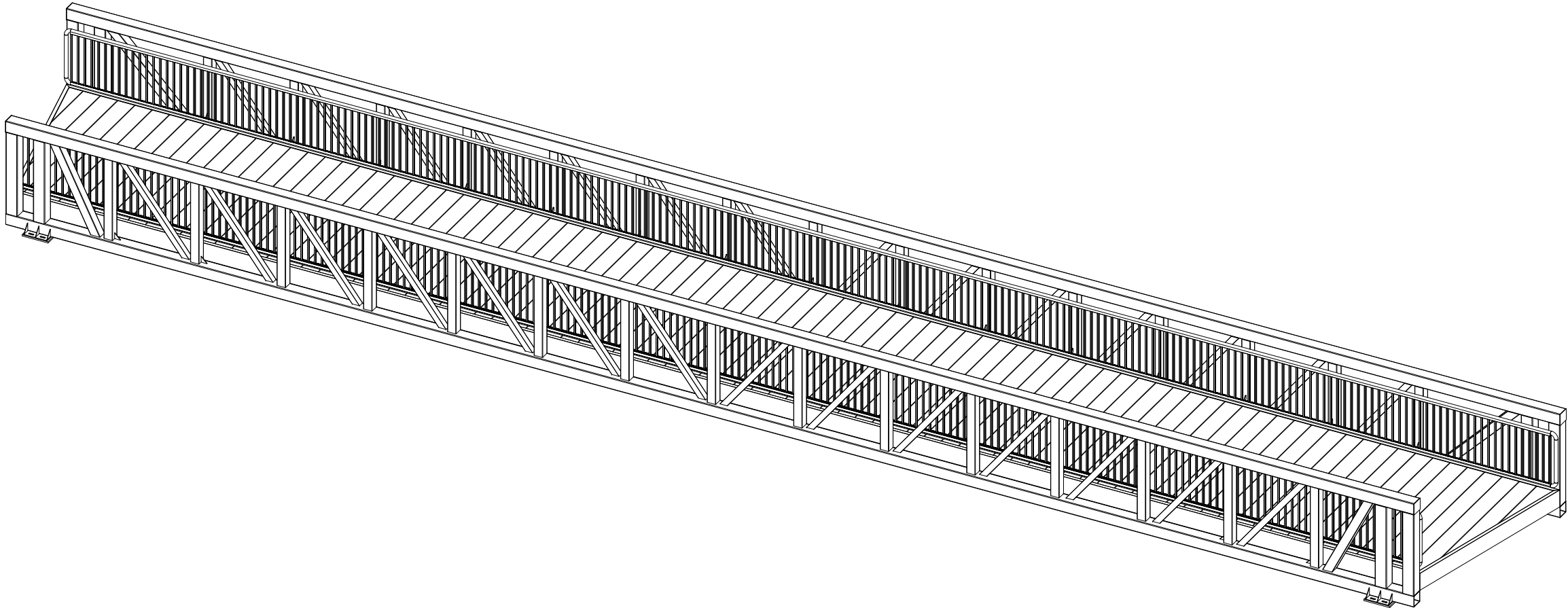
TRUSS SECTION D-D




TRUSS SECTION E-E

CUSTOMER
INITIAL

BILL OF MATERIALS					
ITEM #		TYPE	DESCRIPTION	QTY/COMMENTS	WEIGHTS
SPAN 6		BRIDGE	10'x83'-10" CASCADE BRIDGE	1	~15,600 LBS
	1	BOX FRAME	12" E-CHANNEL	1	---
	2	TRUSS CHORDS	8"x8"x1/2" TUBE	4	---
	3	TRUSS END POSTS	8"x8"x1/2" TUBE	8	---
	4A	TRUSS VERTICALS 1-4	6"x6"x1/4" TUBE	16	---
	4B	TRUSS VERTICALS 5-8	6"x6"x1/2" TUBE	14	---
	5A	TRUSS END DIAGONALS	6"x6"x1/2" TUBE	4	---
	5B	TRUSS DIAGONAL 1	4"x4"x1/2" TUBE	4	---
	5C	TRUSS DIAGONALS 2-7	4"x4"x1/4" TUBE	24	---
	6	FLOOR STRINGERS	4"x1 1/2" C-CHANNEL	5	---
	7A	FLOOR BEAMS 8 & 9	6"x6"x1/2" TUBE	3	---
	7B	FLOOR BEAMS 2-7	6"x6"x1/4" TUBE	12	---
	8	HORIZONTAL BRACING	6"x4"x1/4" TUBE	16	---
	9	FLOOR END BEAMS	6"x6"x1/4" TUBE	2	---
	10	DECKING	12-IN. ALUMINUM DECK PLANK	3/8" GAP.	---
	11	BASE PLATE	1'-2"x1'-4"x1/2" FLAT BAR	4	---
	12	BASE GUSSET	1/4" FLAT BAR GUSSET	12	---
13	TOP CHORD END CAP	1/4" FLAT BAR END CAP	4	---	
14	COMBINATION RAIL	42" COMBINATION RAIL W/ 4" MAX SPACING	2	---	
15	RAIL BRACKET	3/8" PLATE	58	---	
16	DECK CORNER GUSSETS	1/4" DECK CORNER GUSSETS	8	---	
BP2		BEARING PAD	1'-2"x1'-6"x1" UHMW PAD	4	~5 LBS (EACH)



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3	04/01/2020	REVISED DRAFT #3
4	04/15/2020	12-IN ALUM. DECK PLANKS
5	05/29/2020	STAMPED SUBMITTAL

PROJECT NAME:

**DNREC KILLENS POND
PEDESTRIAN BRIDGE**

CUSTOMER NAME:

**DELAWARE DIVISION OF
PARKS & RECREATION**

CUSTOMER ADDRESS:

89 KINGS HIGHWAY
DOVER, DELAWARE 19901

PROJECT LOCATION:

5025 KILLENS POND ROAD
FELTON, DE 19943

CMI ORDER NO.:

Q98254

CUSTOMER PO NO.:

	NAME	DATE
DRAWN BY:	VRP	05/29/2020
CHECKED BY:	BRS	05/29/2020
FABRICATION:	BRS	05/29/2020

DRAWING NO.:


S-8

BRIDGE SPAN 6:
MATERIAL LIST

Physical properties are defined by ASTM testing standards, The Aluminum Association Design Manual, The Naval Facilities Design Manual DM 7-2, and The US Army Corps of Engineers General Design Guide. PVC Sheet Pile and/or standard engineering practice. The values shown are nominal and may vary. The information found in this document is believed to be true and accurate. No warranties of any kind are made as to the suitability of any CMI product for particular applications or the results obtained therefrom. ShoreGuard™, The ShoreGuard Seawall System™, C-Lox™, TimberGuard™, GeoGuard™, Dura Dock™, Shore-All™, GatorBridge™, GatorDock Elite™, ArmorWare™, ArmorRed™, Box Profile™, UltraComposite™, The Steel Alternative™, Elite Wall™, Elite Panel™, Elite Puccia Panel™, FastFrame™, KCB™, KCB™ Technology™, KCB Vinyl™, GatorBridge™, GatorAluminum™, Gator Sheet Piling™, GatorDock™, i-Beam Lock™, Textured Slab™, Crane Materials International™, Igus, CMI Sheet Piling Solutions™, Aqua Terra System™, Endurance™, Endurance CPM™, Polaris™, Eclipse™, Gridstone™, 21 Poly™, PlacClaw™, SheerScape™, SheerScape Retaining Wall Systems™, Sheer Panel™ and CMI Waterfront Solution™ are trademarks, service marks or trade names of CMI Limited Co. CMI Limited Co. products are covered by one or more of the following U.S. Patents and International Patents: 4,874,261; 4,490,585; 5,292,206; 5,140,287; 6,000,883; 6,031,155; 6,263,146; 6,940,346; 6,375,687; 7,059,807; 7,056,066; 7,025,539; 7,393,482; 5,503,593; 5,803,672; 6,331,271; 1,245,063CA; 7,914,237 and other patents pending. © 2005-2017 CMI Limited Co. All Rights Reserved.

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CMI LIMITED CO.
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PHONE: 770-933-8166



BRENDAN R. SHEPPARD
LICENSE
No. 14366
PROFESSIONAL ENGINEER
DELAWARE

BRENDAN R. SHEPPARD
DELAWARE PE #14366

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PROJECT NAME:
**DNREC KILLENS POND
PEDESTRIAN BRIDGE**

CUSTOMER NAME:
**DELAWARE DIVISION OF
PARKS & RECREATION**

CUSTOMER ADDRESS:
89 KINGS HIGHWAY
DOVER, DELAWARE 19901

PROJECT LOCATION:
5025 KILLENS POND ROAD
FELTON, DE 19943

CMI ORDER NO.:
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CUSTOMER PO NO.:

	NAME	DATE
DRAWN BY:	VRP	05/29/2020
CHECKED BY:	BRS	05/29/2020
FABRICATION:	BRS	05/29/2020

DRAWING NO.:
S-9
**BRIDGE SPAN 6:
ASSEMBLY DETAILS**

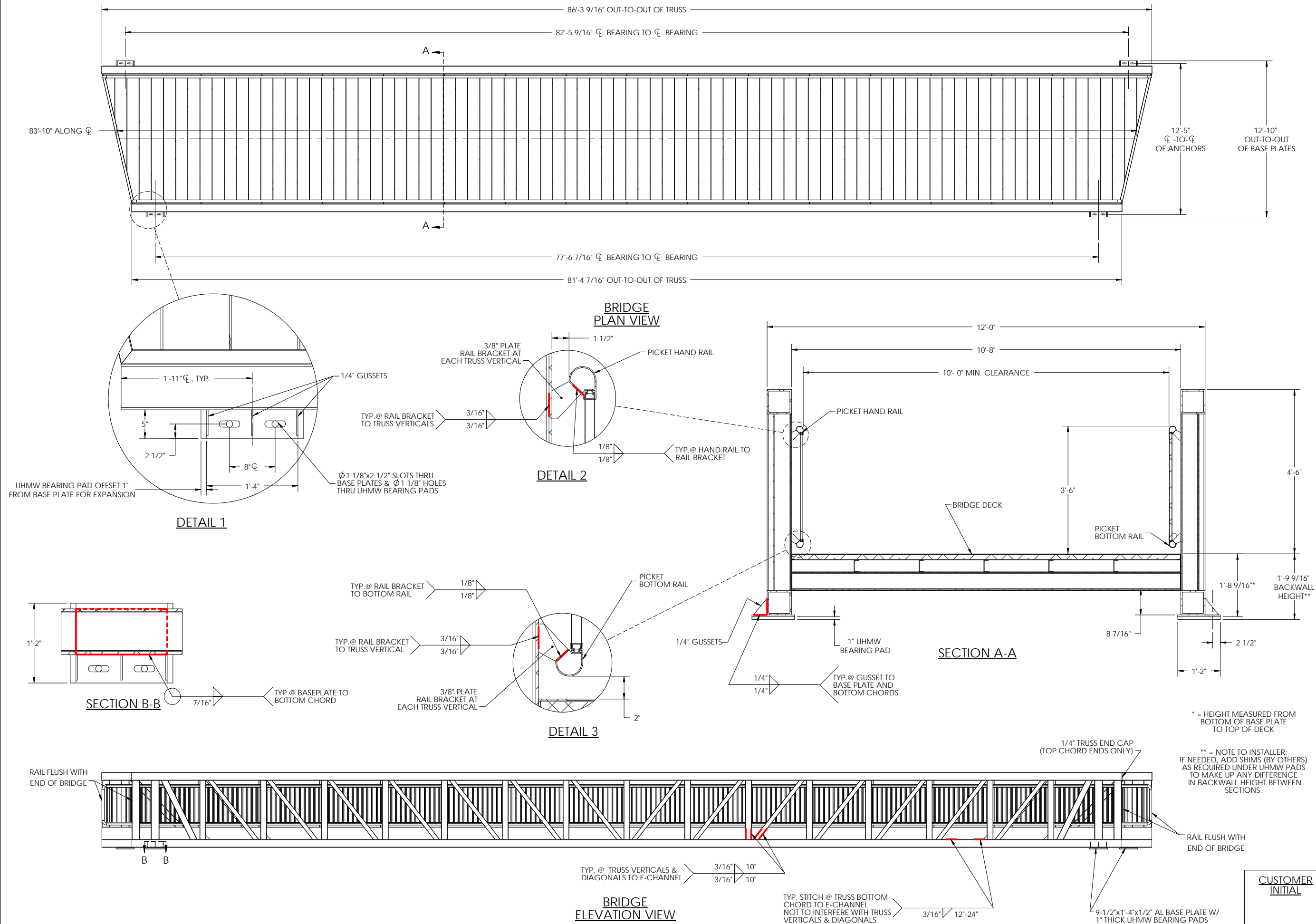
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BRENDAN R. SHEPPARD
DELAWARE PE #14366



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PEDESTRIAN BRIDGE**

CUSTOMER NAME:
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89 KINGS HIGHWAY
DOVER, DELAWARE 19901

PROJECT LOCATION:
5025 KILLENS POND ROAD
FELTON, DE 19943

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CUSTOMER PO NO.:

	NAME	DATE
DRAWN BY:	VRP	05/29/2020
CHECKED BY:	BRS	05/29/2020
FABRICATION:	BRS	05/29/2020

DRAWING NO.:
S-10
BRIDGE SPAN 6:
SHORT SIDE TRUSS DETAILS

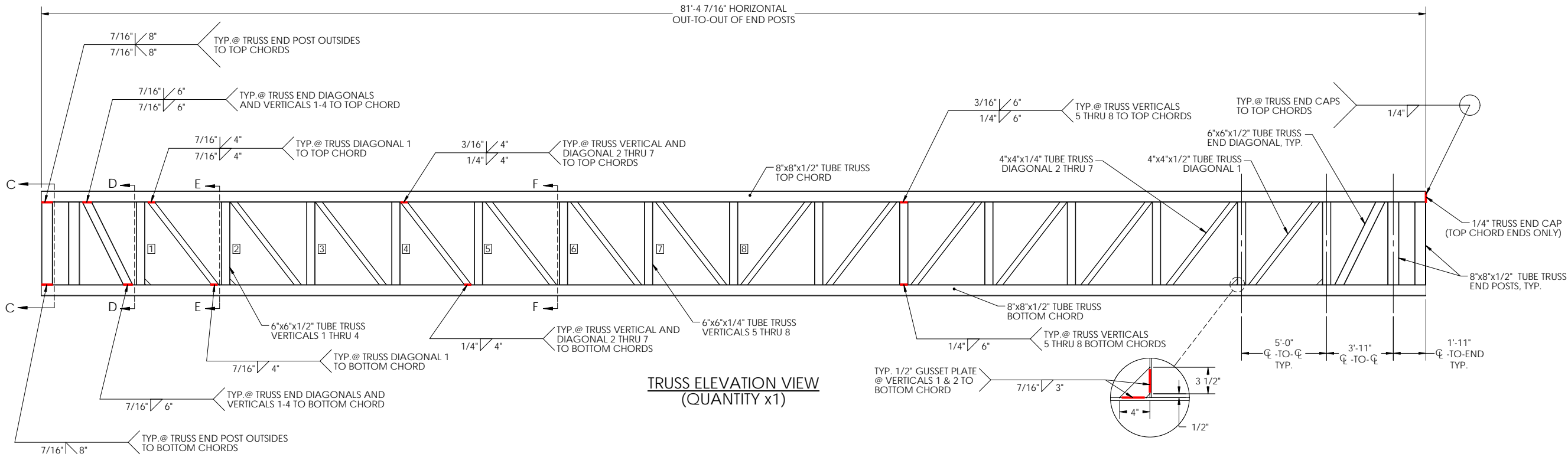
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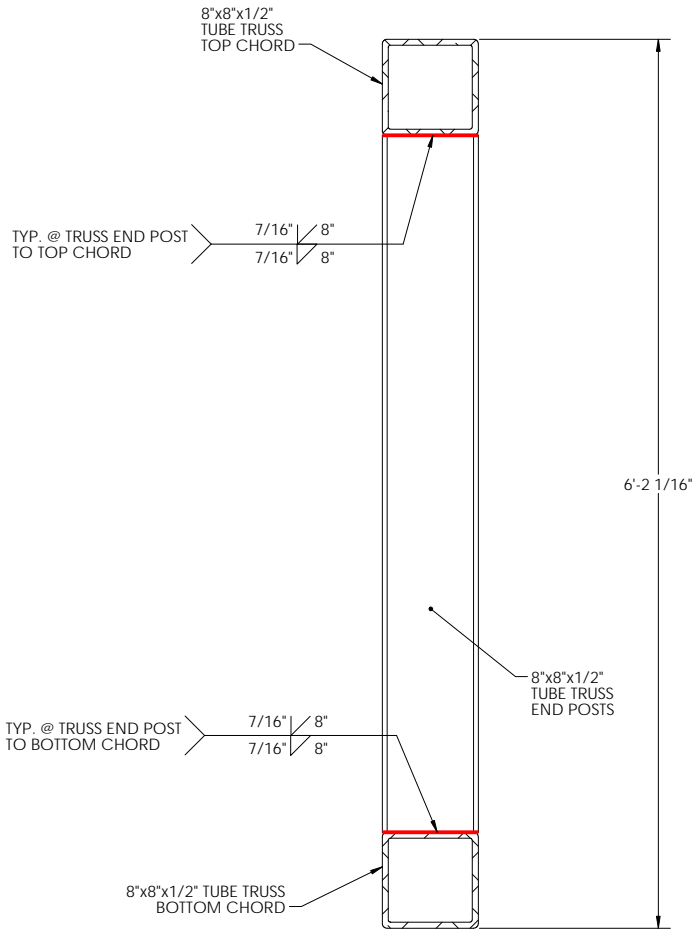
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PHONE: 770-933-8166



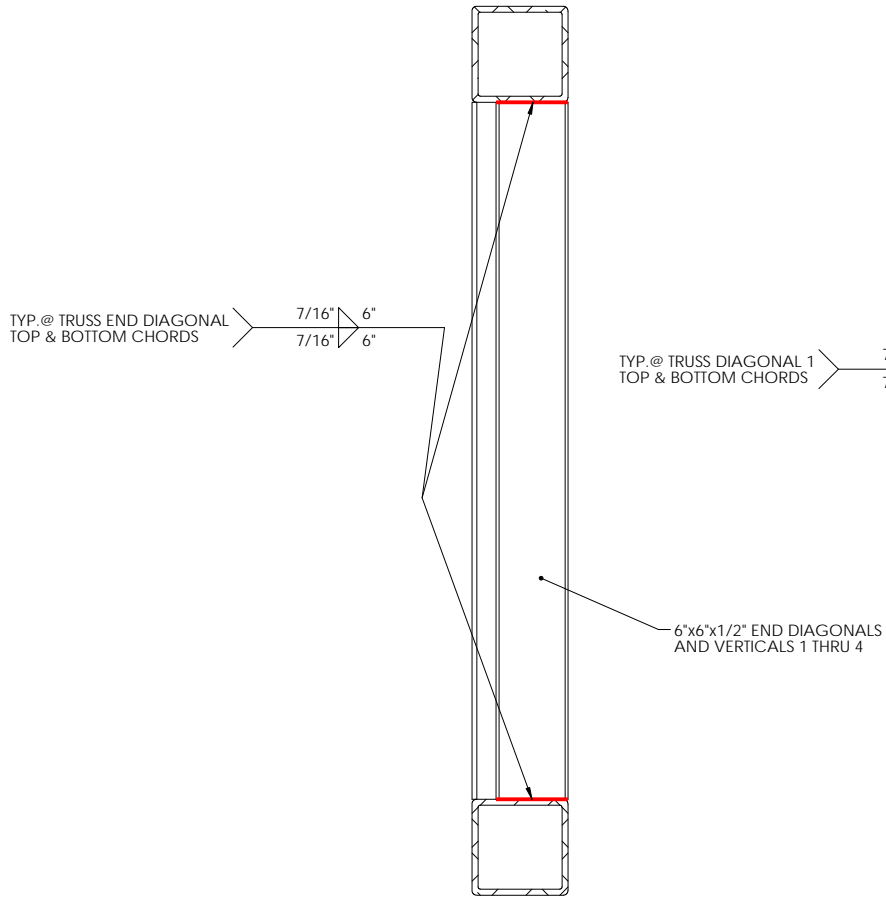
BRENDAN R. SHEPPARD
DELAWARE PE #14366



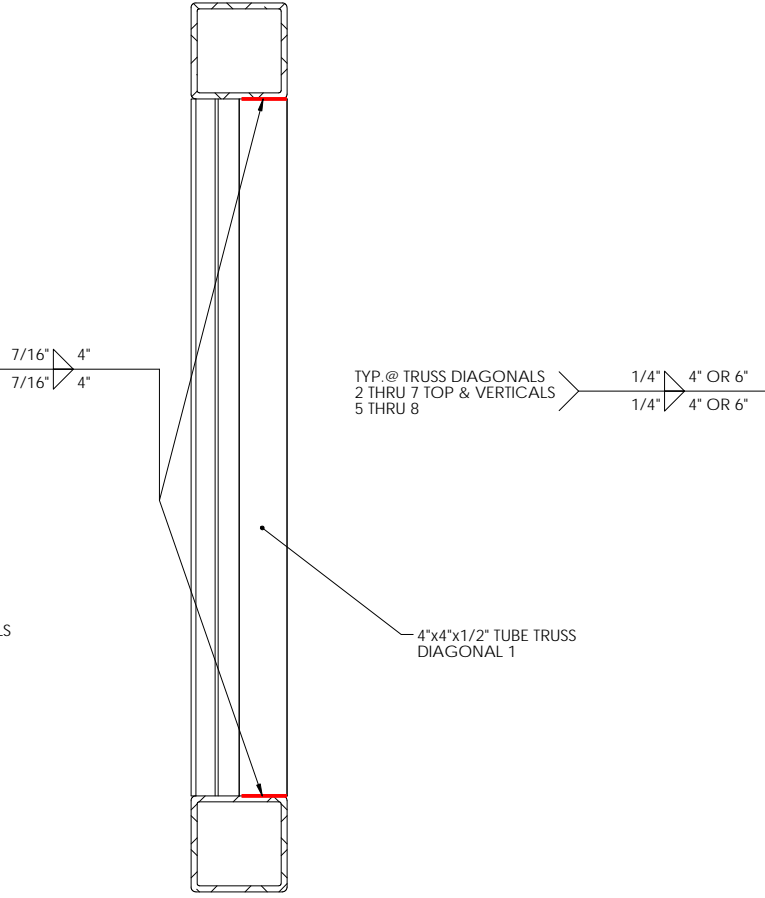
**TRUSS ELEVATION VIEW
(QUANTITY x1)**



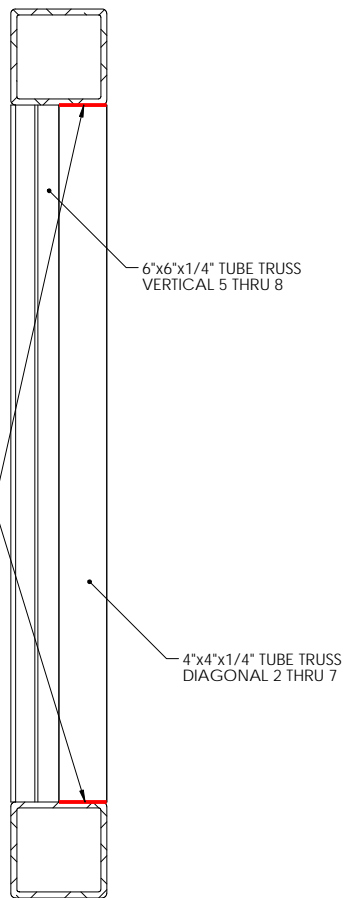
TRUSS SECTION C-C



TRUSS SECTION D-D

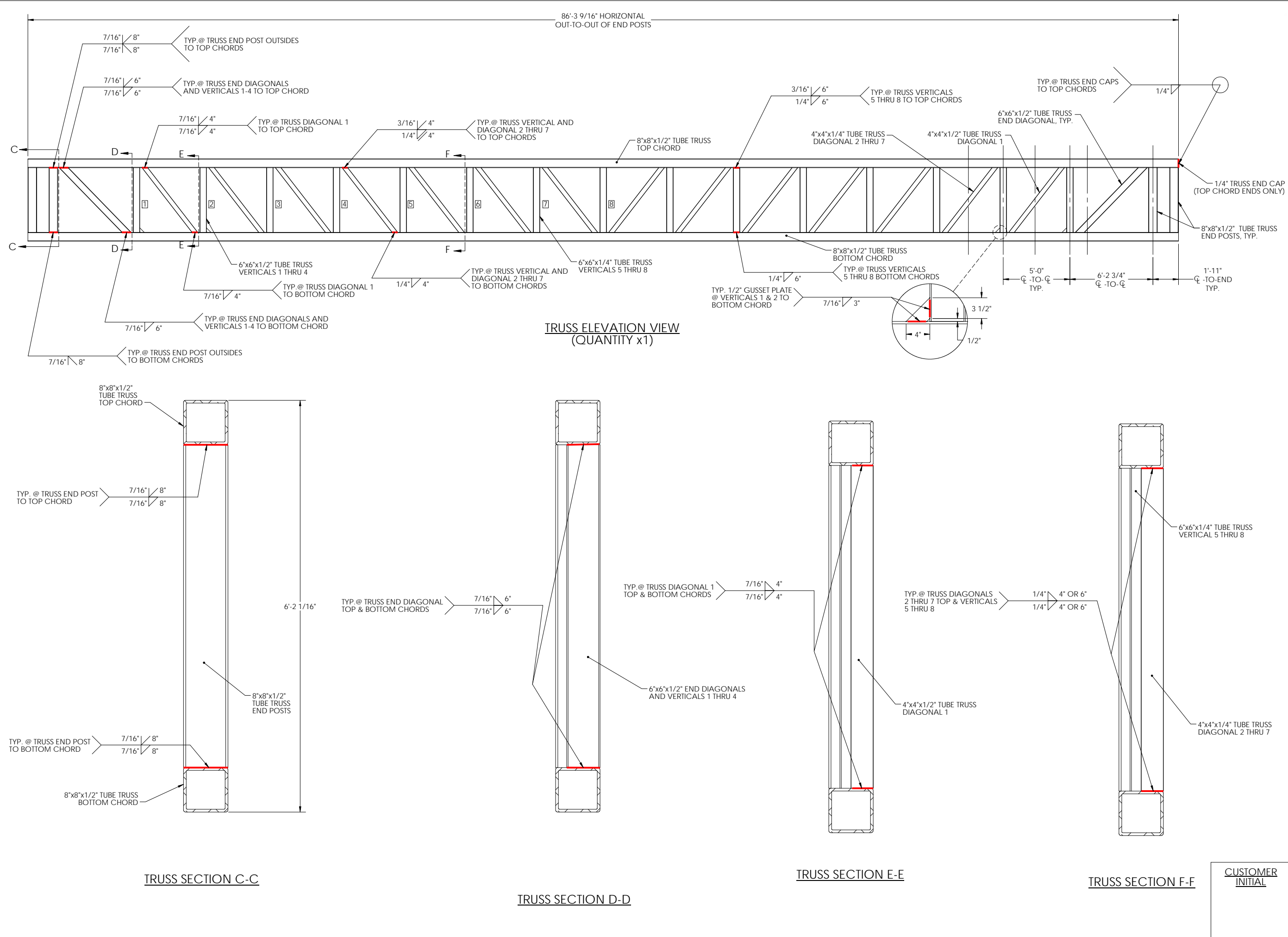


TRUSS SECTION E-E



TRUSS SECTION F-F

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4	04/15/2020	12-IN ALUM. DECK PLANKS
5	05/29/2020	STAMPED SUBMITTAL

PROJECT NAME:
DNREC KILLENS POND PEDESTRIAN BRIDGE

CUSTOMER NAME:
DELAWARE DIVISION OF PARKS & RECREATION

CUSTOMER ADDRESS:
89 KINGS HIGHWAY
DOVER, DELAWARE 19901

PROJECT LOCATION:
5025 KILLENS POND ROAD
FELTON, DE 19943

CMI ORDER NO.:
Q98254

CUSTOMER PO NO.:

	NAME	DATE
DRAWN BY:	VRP	05/29/2020
CHECKED BY:	BRS	05/29/2020
FABRICATION:	BRS	05/29/2020

DRAWING NO.:
S-11
BRIDGE SPAN 6:
LONG SIDE TRUSS DETAILS

Physical properties are defined by ASTM testing standards, The Aluminum Association Design Manual, The Naval Facilities Design Manual DM 7-2, and The US Army Corps of Engineers General Design Guide: PVC Sheet Pile and/or standard engineering practice. The values shown are nominal and may vary. The information found in this document is believed to be true and accurate. No warranties of any kind are made as to the suitability of any CMI product for particular applications or the results obtained therefrom. "Biorock", "The ShoreGuard Seawall System", "C-LOCK", "Interloc", "GatorDock", "Dura Dock", "ShoreWar", "GatorCrib", "GatorDock Elite", "ArmorWarp", "ArmorDock", "Box Profile", "UltraComposite", "The Steel Alternative", "Elite Warp", "Elite Pole", "Elite Race Barrier", "RatPaw", "KICK Technology", "KICK View", "GatorBridge", "GatorAluminum", "Gator Sheet Piling", "GatorDock", "Beam Lock", "Textured Slab", "Crane Materials International", "Log", "CMI Sheet Piling Solution", "Acqua Terra System", "Endurance CIP", "Palans", "Edgeline", "GridSpine", "11 Poly", "PierCrew", "SheerScape", "SheerScape Retaining Wall Systems", "Sheer Pond" and CMI Waterfront Solutions are trademarks, service marks or trade names of CMI Limited Co. CMI Limited Co. products are covered by one or more of the following U.S. Patents and International Patents: 4,874,502; 4,690,588; 5,392,208; 5,145,287; 6,000,883; 6,036,155; 6,053,646; 6,402,154; 6,575,647; 7,059,807; 7,056,066; 7,025,339; 7,393,482; 5,503,503; 5,903,672; 6,331,271; 1,245,063CA; 7,914,237 and other patents pending. © 2005-2017 CMI Limited Co. All Rights Reserved.

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WOODSTOCK, GA 30189
PHONE: 770-933-8166



BRENDAN R. SHEPPARD
DELAWARE PE #14366



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800/256-8857 407/323-0190

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5	05/29/2020	STAMPED SUBMITTAL

PROJECT NAME

DNREC KILLENS POND PEDESTRIAN BRIDGE

CUSTOMER NAME:

DELAWARE DIVISION OF
PARKS & RECREATION

CUSTOMER ADDRESS:

89 KINGS HIGHWAY
DOVER, DELAWARE 19901

PROJECT LOCATION:

5025 KILLENS POND ROAD
FELTON, DE 19943

CMI ORDER NO.:

Q98254

CUSTOMER PO NO.:

	NAME	DATE
DRAWN BY:	VRP	05/29/2020
CHECKED BY:	BRS	05/29/2020
FABRICATION:	BRS	05/29/2020

DRAWING NO.

S-12

BRIDGE SPAN 6: DECK DETAILS

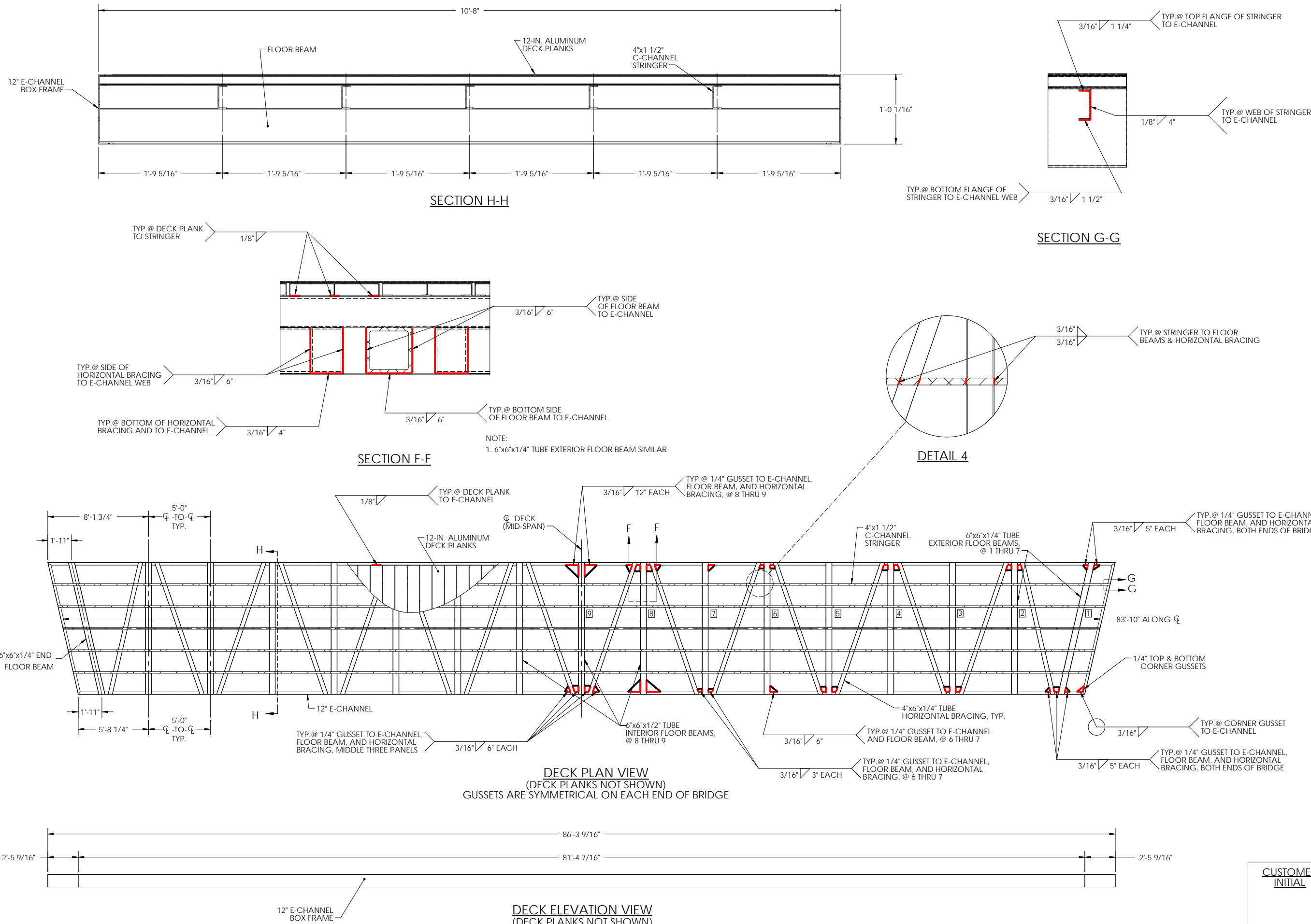
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BRENDAN R. SHEPPARD
DELAWARE PE #14366



BILL OF MATERIALS					
ITEM #		TYPE	DESCRIPTION	QTY/COMMENTS	WEIGHTS
SPAN 1		BRIDGE	10'x32'-10" CASCADE BRIDGE	1	~4,300 LBS
	1	BOX FRAME	12" E-CHANNEL	1	---
	2	TRUSS CHORDS	4"x4"x1/2" TUBE	4	---
	3	TRUSS END POSTS	4"x4"x1/2" TUBE	8	---
	4	TRUSS VERTICALS	4"x4"x1/4" TUBE	10	---
	5	TRUSS DIAGONALS	4"x4"x1/4" TUBE	12	---
	6	FLOOR STRINGERS	4"x1 1/2" C-CHANNEL	5	---
	7	FLOOR BEAMS	6"x4"x1/4" TUBE	5	---
	8	HORIZONTAL BRACING	6"x2 1/2" C-CHANNEL	6	---
	9	FLOOR END BEAMS	6"x4"x1/4" TUBE	3	---
	10	DECKING	12-IN. ALUMINUM DECK PLANK	3/8" GAP	---
	11	BASE PLATE	9 1/2"x1'-4"x1/2" FLAT BAR	4	---
	12	BASE GUSSET	1/4" FLAT BAR GUSSET	12	---
	13	TOP CHORD END CAP	1/4" FLAT BAR END CAP	4	---
	14	COMBINATION RAIL	42" COMBINATION RAIL W/ 4" MAX SPACING	2	---
	15	RAIL BRACKET	3/8" PLATE	28	---
	16	DECK CORNER GUSSETS	1/4" DECK CORNER GUSSETS	8	---
SPAN 20		BRIDGE	10'x49'-8.5" CASCADE BRIDGE	1	~6,200 LBS
	1	BOX FRAME	12" E-CHANNEL	1	---
	2	TRUSS CHORDS	4"x4"x1/2" TUBE	4	---
	3	TRUSS END POSTS	4"x4"x1/2" TUBE	8	---
	4	TRUSS VERTICALS	4"x4"x1/4" TUBE	14	---
	5	TRUSS END DIAGONALS	4"x4"x1/2" TUBE	2	---
	6	TRUSS INTERIOR DIAGONALS	4"x4"x1/4" TUBE	14	---
	7	FLOOR STRINGERS	4"x1 1/2" C-CHANNEL	5	---
	8	FLOOR BEAMS 4 & 5	6"x6"x1/4" TUBE	3	---
	9	FLOOR BEAMS 2 & 3	6"x4"x1/4" TUBE	4	---
	10	HORIZONTAL BRACING	6"x2 1/2" C-CHANNEL	8	---
	11	FLOOR END BEAMS	6"x4"x1/4" TUBE	3	---
	12	DECKING	12-IN. ALUMINUM DECK PLANK	3/8" GAP	---
	13	BASE PLATE	9 1/2"x1'-4"x1/2" FLAT BAR	4	---
	14	BASE GUSSET	1/4" FLAT BAR GUSSET	12	---
	15	TOP CHORD END CAP	1/4" FLAT BAR END CAP	4	---
	16	COMBINATION RAIL	42" COMBINATION RAIL W/ 4" MAX SPACING	2	---
	17	RAIL BRACKET	3/8" PLATE	36	---
	18	DECK CORNER GUSSETS	1/4" DECK CORNER GUSSETS	8	---
BP1		BEARING PAD	9 1/2"x1'-6"x1" UHMW PAD	4 x 2 = 8	~5 LBS (EACH)

 GatorBridge Prefabricated Aluminum Bridges		
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CUSTOMER NAME:		
DELAWARE DIVISION OF PARKS & RECREATION		
CUSTOMER ADDRESS:		
89 KINGS HIGHWAY DOVER, DELAWARE 19901		
PROJECT LOCATION:		
5025 KILLENS POND ROAD FELTON, DE 19943		
CMI ORDER NO.:		
O98254		
CUSTOMER PO NO.:		
	NAME	DATE
DRAWN BY:	KLC	05/20/2020
CHECKED BY:	MKL	05/29/2020
FABRICATION:	BRS	05/29/2020
DRAWING NO.:		
S-13		
SPANS 1 AND 20: MATERIAL LIST		
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CMI LIMITED CO. 605 MOLLY LANE - SUITE 150 WOODSTOCK, GA 30189 PHONE: 770-933-8166 COA #4043		
		
BRENDAN R. SHEPPARD DELAWARE PE #14366		



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FELTON, DE 19943

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Q98254

CUSTOMER PO NO.:

	NAME	DATE
DRAWN BY:	KLC	05/20/2020
CHECKED BY:	MKL	05/29/2020
FABRICATION:	BRS	05/29/2020

DRAWING NO.:

S-14

SPANS 1 AND 20: ASSEMBLY DETAILS

[illegible]

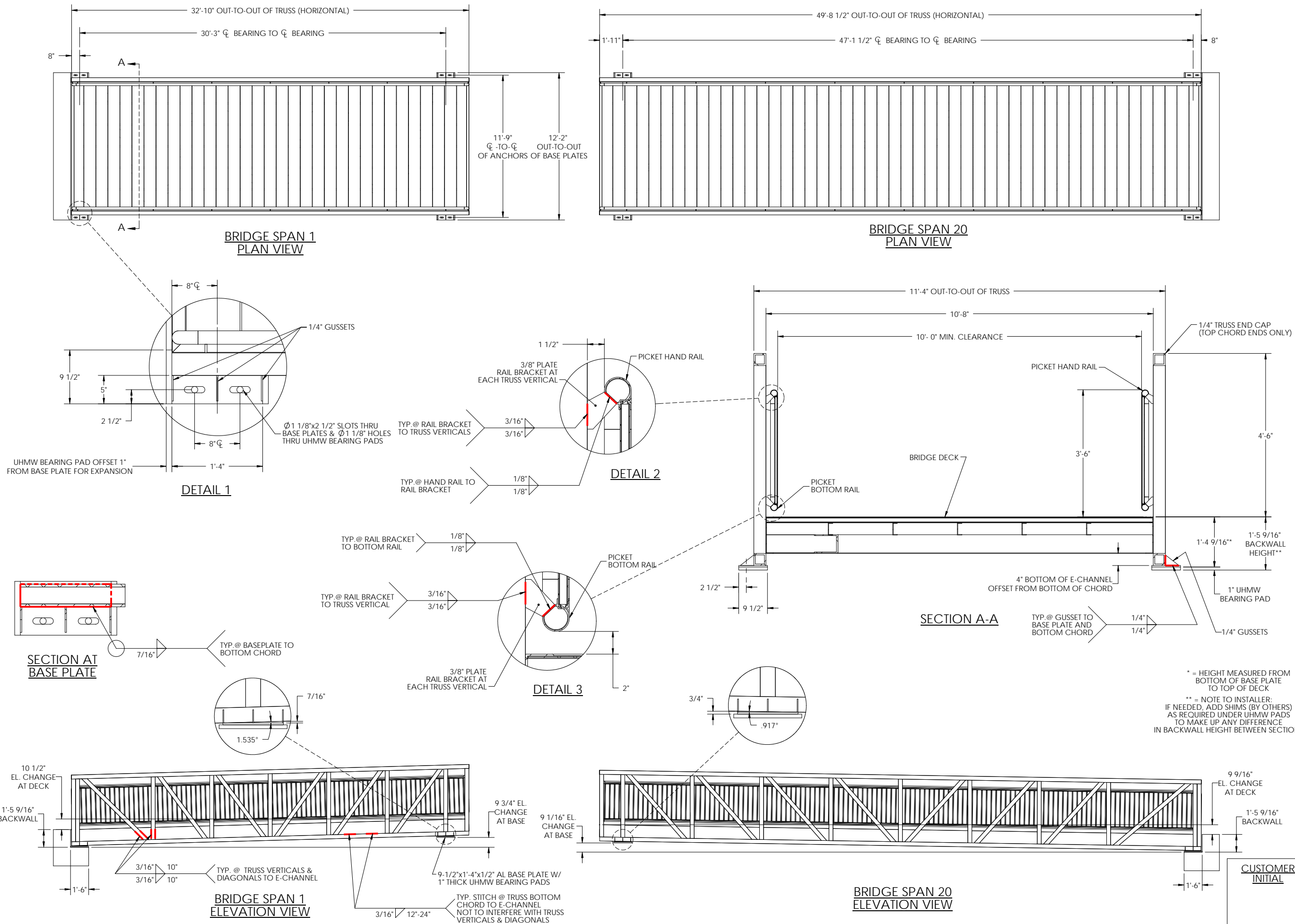
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**** = NOTE TO INSTALLER:
IF NEEDED, ADD SHIMS (BY OTHERS)
AS REQUIRED UNDER UHMW PADS
TO MAKE UP ANY DIFFERENCE
IN BACKWALL HEIGHT BETWEEN SECTIONS.**

CMI LIMITED CO.
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PHONE: 770-933-8166
COA #4043



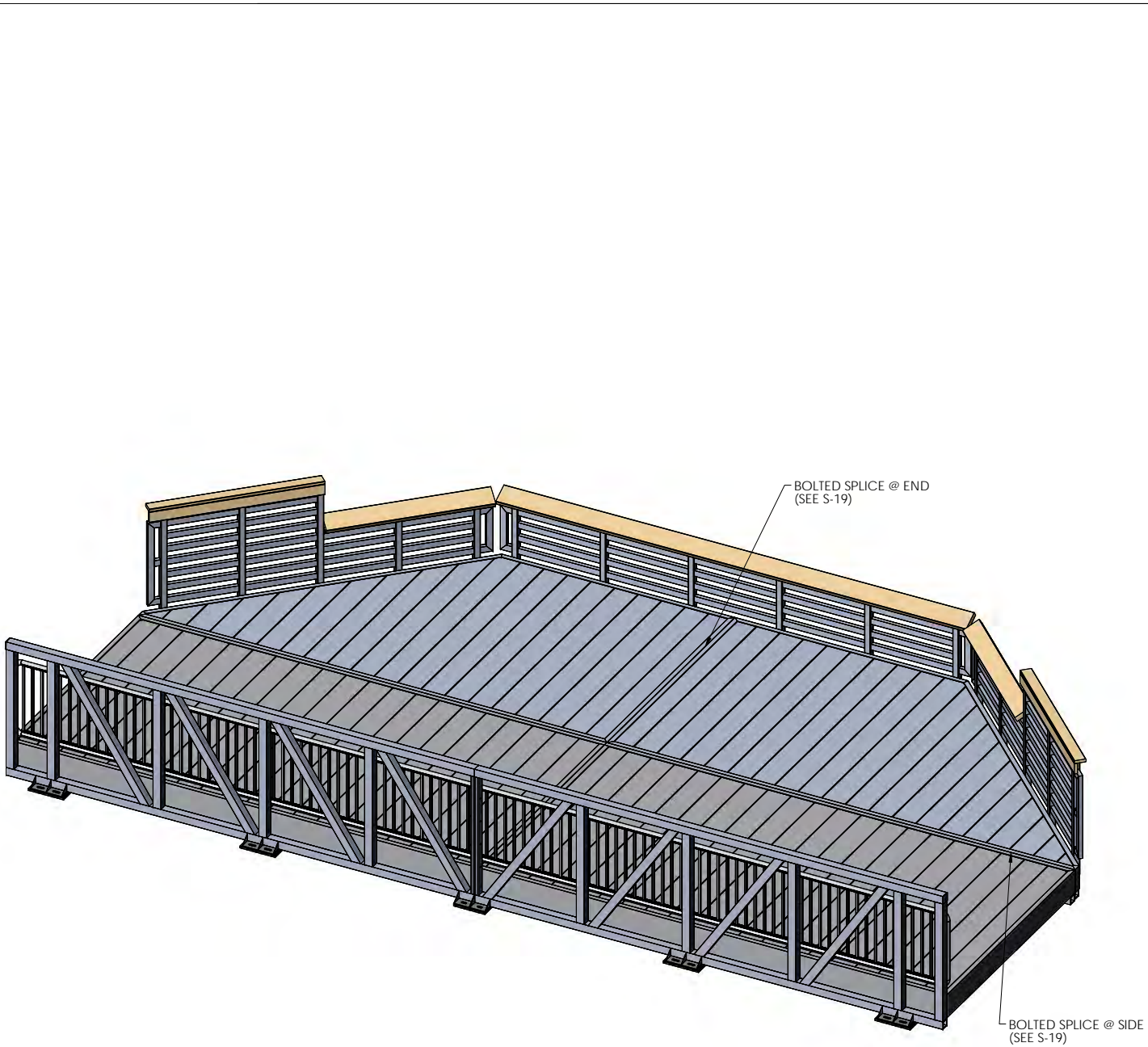
BRENDAN R. SHEPPARD
DELAWARE PE #14366


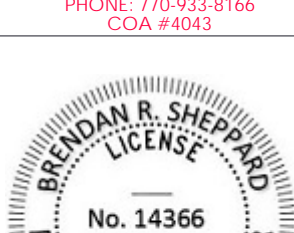




BRENDAN R. SHEPPARD
DELAWARE PE #14366

BILL OF MATERIALS					
ITEM #		TYPE	DESCRIPTION	QTY/COMMENTS	WEIGHTS
SPAN 2, 10, 13, AND 16		BRIDGE	10'x39'-10" FISHING PIER BRIDGE	4	~4,100 LBS
	1	BOX FRAME	12" E-CHANNEL	2	---
	2	TRUSS CHORDS	4"x4"x1/2" TUBE	6	---
	3	TRUSS END POSTS	4"x4"x1/2" TUBE	4	---
	4A	TRUSS VERTICALS	4"x4"x1/4" TUBE	6	---
	4B	TRUSS SPLICE POST	2"x4"x1/4" TUBE	2	---
	5	TRUSS DIAGONALS	4"x4"x1/4" TUBE	8	---
	6	FLOOR STRINGERS	4"x1 1/2" C-CHANNEL	5	---
	7	FLOOR BEAMS	6"x6"x1/4" TUBE	6	---
	8	FLOOR END BEAMS	6"x6"x1/4" TUBE	2	---
	9	FLOOR END BRACING	6"x2 1/2" C-CHANNEL	2	---
	10	DECKING	12-IN. ALUMINUM DECK PLANKS	3/8" GAP	---
	11	BASE PLATE	9 1/2"x8"x1/2" FLAT BAR	4	---
	12	BASE PLATE	9 1/2"x1'-4"x1/2" FLAT BAR	8	---
	13	BASE GUSSET	1/4" FLAT BAR GUSSET	32	---
	14	TOP CHORD END CAP	1/4" FLAT BAR END CAP	2	---
	15	COMBINATION RAIL	42" COMBINATION RAIL W/ 4" MAX SPACING	1	---
	16	RAIL BRACKET	3/8" PLATE	20	---
	17	DECK CORNER GUSSETS	1/4" DECK CORNER GUSSETS	16	---
	18	SPLICE FASTENER @ SPLICE VERTICALS	5/8"x5 1/2" SS HEX BOLT	4	---
	19	SPLICE FASTENER @ END	5/8"x2" SS HEX BOLT	10	---
	20	SPLICE FASTENER @ SIDE	5/8"x2" SS HEX BOLT	32	---
	21	SPLICE FASTENER	5/8" SS HEX NUT	42	---
	22	SPLICE FASTENER	5/8" SS WASHER	84	---
23	SPLICE FASTENER	5/8" NYLON WASHER	84	---	
FRAME		FRAME	10'x39'-10" FISHING PIER FRAME	4 SETS	~3,000 LBS
	1	BOX FRAME	12" E-CHANNEL	2	---
	2	TRUSS CHORDS	4"x4"x1/2" TUBE	6	---
	3	FLOOR STRINGERS	4"x1 1/2" C-CHANNEL	5	---
	4	FLOOR BEAMS	6"x6"x1/4" TUBE	6	---
	5	FLOOR END BRACING	6"x2 1/2" C-CHANNEL	2	---
	6	DECKING	12-IN. ALUMINUM DECK PLANKS	3/8" GAP	---
	7	BASE PLATE	9 1/2"x8"x1/2" FLAT BAR	4	---
	8	BASE PLATE	9 1/2"x1'-4"x1/2" FLAT BAR	6	---
	9	BASE GUSSET	1/4" FLAT BAR GUSSET	26	---
	10	DECK CORNER GUSSETS	1/4" DECK CORNER GUSSETS	16	---
	11	SPLICE FASTENER @ END	5/8"x2" SS HEX BOLT	10	---
	12	SPLICE FASTENER	5/8" SS HEX NUT	10	---
	13	SPLICE FASTENER	5/8" SS WASHER	20	---
	23	SPLICE FASTENER	5/8" NYLON WASHER	20	---
RAIL 1		FISHING RAIL 1	FISHING RAIL 20'-0"	1 x 4 = 4	~250 LBS
RAIL 2A		FISHING RAIL 2A	FISHING RAIL 13'-7"	1 x 4 = 4	~210 LBS
RAIL 2B		FISHING RAIL 2B	FISHING RAIL 13'-7"	1 x 4 = 4	~210 LBS
BP1		BEARING PAD	9 1/2"x1'-6"x1" UHMW PAD	14 x 4 = 56	~5 LBS (EACH)
BP3		BEARING PAD	9 1/2"x8"x1" UHMW PAD	8 x 4 = 32	~5 LBS (EACH)



 GatorBridge Prefabricated Aluminum Bridges		
2880 MELLONVILLE AVE, SANFORD, FL 32773 800/256-8857 407/323-0190		
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RECORD OF REVISIONS		
No.	DATE	DESCRIPTION
1	03/19/2020	REVISED DRAFT
2	03/24/2020	REVISED DRAFT #2
3	04/01/2020	REVISED DRAFT #3
4	04/15/2020	12-IN ALUM. DECK PLANKS
5	05/29/2020	STAMPED SUBMITTAL
PROJECT NAME:		
DNREC KILLENS POND PEDESTRIAN BRIDGE		
CUSTOMER NAME:		
DELAWARE DIVISION OF PARKS & RECREATION		
CUSTOMER ADDRESS:		
89 KINGS HIGHWAY DOVER, DELAWARE 19901		
PROJECT LOCATION:		
5025 KILLENS POND ROAD FELTON, DE 19943		
CMI ORDER NO.:		
Q98254		
CUSTOMER PO NO.:		
	NAME	DATE
DRAWN BY:	VRP	5/29/2020
CHECKED BY:	MKL	5/29/2020
FABRICATION:	BRS	5/29/2020
DRAWING NO.:		
S-17		
SPANS 2,10,13,16: MATERIAL LIST		
<small>Physical properties are defined by ASTM testing standards. The Aluminum Association Design Manual, The Naval Facilities Design Manual CM 7-2, and The US Army Corps of Engineers General Design Guide: PNC Sheet Pile and/or standard engineering practice. The values shown are nominal and may vary. The information found in this document is believed to be true and accurate. No warranties of any kind are made as to the suitability of any CMI product for particular applications or the results obtained there from. ShoreGuard®, The ShoreGuard® Seawall System, C-Lox®, TrenchGuard®, GeoGuard®, Dura Dock®, Shore-Ally®, GatorGate®, GatorDock Elite®, ArmorWarp®, ArmorFlex®, Box Profile®, UltraComposite®, The Steel Alternative®, Elite Warp®, Elite Pave®, Elite Facia Pave®, FlatPave®, KCR®, KCR Technology®, KCR Vinyl®, GatorBridge®, GatorAluminum®, GatorSheet Piling®, GatorDocks®, I-Beam Lock®, Textured Slats®, Crane Materials International®, High CMI Sheet Piling Solutions®, Aqua Terra Systems®, Endurance®, Endurance CPM®, Palms®, Edgeline®, Grappling®, 2" Poly®, PlacLaw®, ShoreScape®, ShoreScape Retaining Wall Systems®, Shore Pave®, and CMI Watermark Solutions® are trademarks, service marks or trade names of CMI Limited Co. CMI Limited Co. products are covered by one or more of the following U.S. Patents and International Patents: 4,874,921, 6,890,585, 5,282,208, 5,165,287, 6,000,881, 6,939,150, 6,938,666, D420,134, 6,579,667, 7,259,807, 7,026,096, 7,025,397, 7,395,482, 5,593,255, 5,803,972, 6,231,271, 5,245,065/Ca, 7,514,237 and other patents pending. © 2005-2017 CMI Limited Co. All Rights Reserved.</small>		
TOLERANCES UNLESS SPECIFIED OTHERWISE XXX ± 1/4"; FRACTIONS ± 1/8"; ANGULAR ± 1°		
CMI LIMITED CO. 605 MOLLY LANE - SUITE 150 WOODSTOCK, GA 30189 PHONE: 770-933-8166 COA #4043		
		



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RECORD OF REVISIONS

No.	DATE	DESCRIPTION
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4	04/15/2020	12-IN ALUM. DECK PLANKS
5	05/29/2020	STAMPED SUBMITTAL

PROJECT NAME:

DNREC KILLENS POND PEDESTRIAN BRIDGE

CUSTOMER NAME:

**DELAWARE DIVISION OF
PARKS & RECREATION**

CUSTOMER ADDRESS:

89 KINGS HIGHWAY
DOVER, DELAWARE 19901

PROJECT LOCATION:

5025 KILLENS POND ROAD
FELTON, DE 19943

CMI ORDER NO.:

Q98254

CUSTOMER PO NO.:

	NAME	DATE
DRAWN BY:	VRP	5/29/2020
CHECKED BY:	MKL	5/29/2020
FABRICATION:	BRS	5/29/2020

DRAWING NO.:

S-18

SPANS 2,10,13,16:
ASSEMBLY DETAILS (1/2)

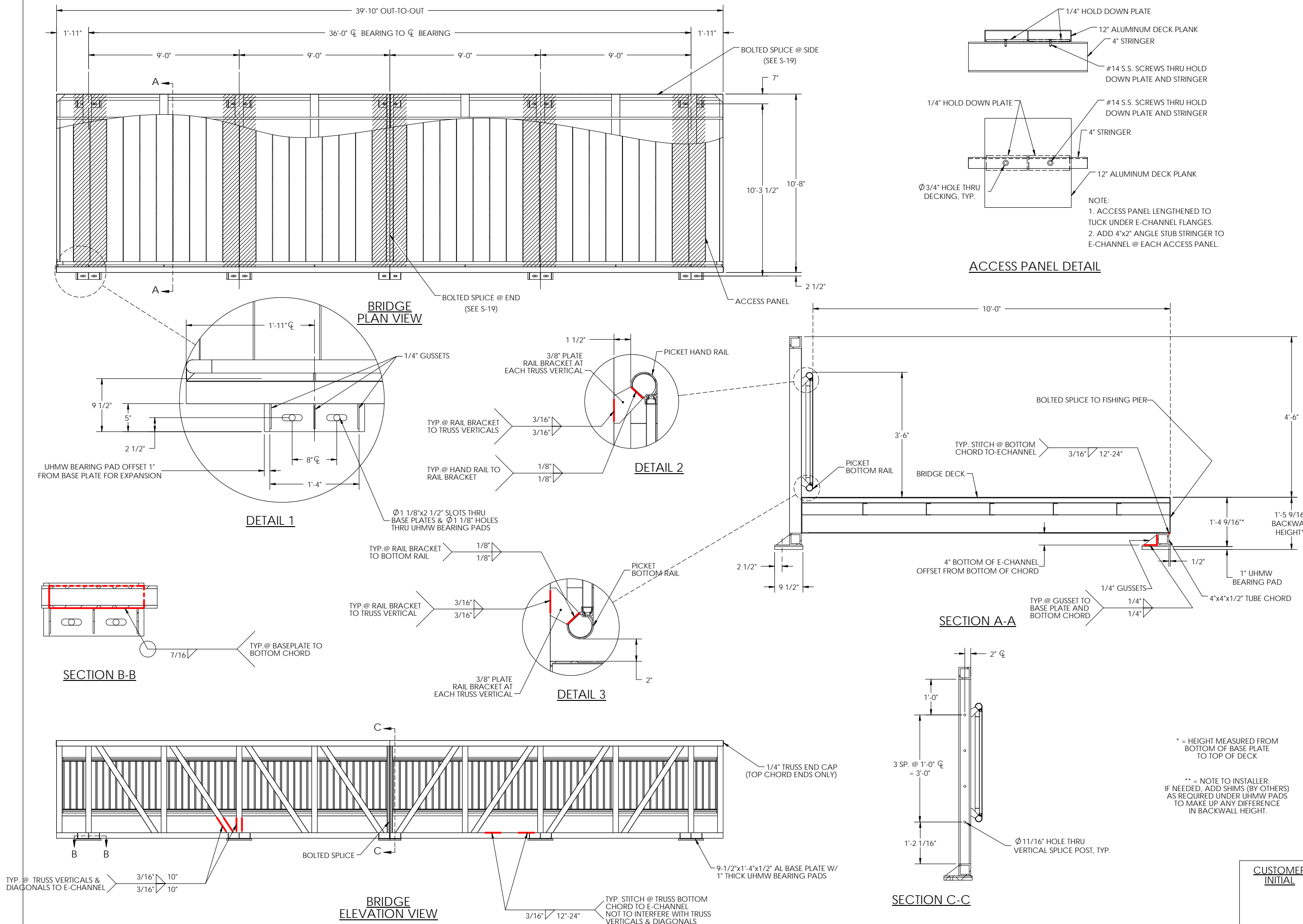
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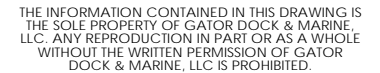
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COA #4043



BRENDAN R. SHEPPARD
DELAWARE PE # 14366





No.	DATE	DESCRIPTION
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5	05/29/2020	STAMPED SUBMITTAL

DNREC KILLENS POND PEDESTRIAN BRIDGE

CUSTOMER ADDRESS:
89 KINGS HIGHWAY
DOVER, DELAWARE 19901

PROJECT LOCATION:
5025 KILLENS POND ROAD
FELTON, DE 19943

CMI ORDER NO.: Q98254

CUSTOMER PO NO.:

	NAME	DATE
DRAWN BY:	VRP	5/29/2020
CHECKED BY:	MKL	5/29/2020
FABRICATION:	BRS	5/29/2020

DRAWING NO.:

S-20
SPANS 2,10,13,16:
TRUSS DETAILS

[illegible]

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4	04/15/2020	12-IN ALUM. DECK PLANKS
5	05/29/2020	STAMPED SUBMITTAL

PROJECT NAME:

DNREC KILLENS POND PEDESTRIAN BRIDGE

CUSTOMER NAME: _____

DELAWARE DIVISION OF
PARKS & RECREATION

CUSTOMER ADDRESS:

89 KINGS HIGHWAY
DOVER, DELAWARE 19901

PROJECT LOCATION:

5025 KILLENS POND ROAD
FELTON, DE 19943

CMI ORDER NO.:

Q98254

CUSTOMER PO NO.:

	NAME	DATE
DRAWN BY:	VRP	5/29/2020
CHECKED BY:	MKL	5/29/2020
FABRICATION:	BRS	5/29/2020

DRAWING NO.:

S-21

SPANS 2,10,13,16:
FISHING RAIL DETAILS

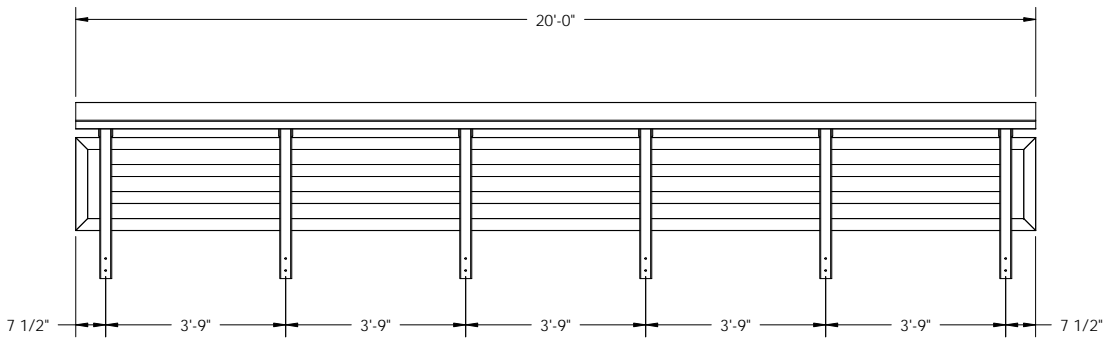
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TOLERANCES UNLESS SPECIFIED OTHERWISE
XXX = $\pm 1/4"$; FRACTIONS = $\pm 1/8"$; ANGULAR = $\pm 1^\circ$

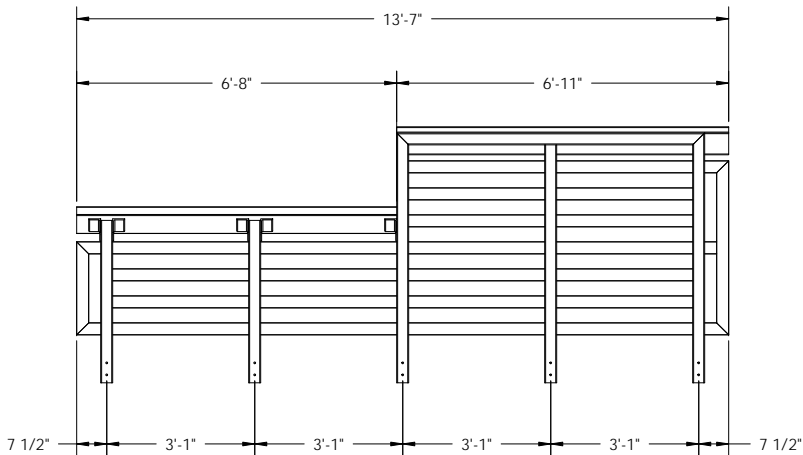
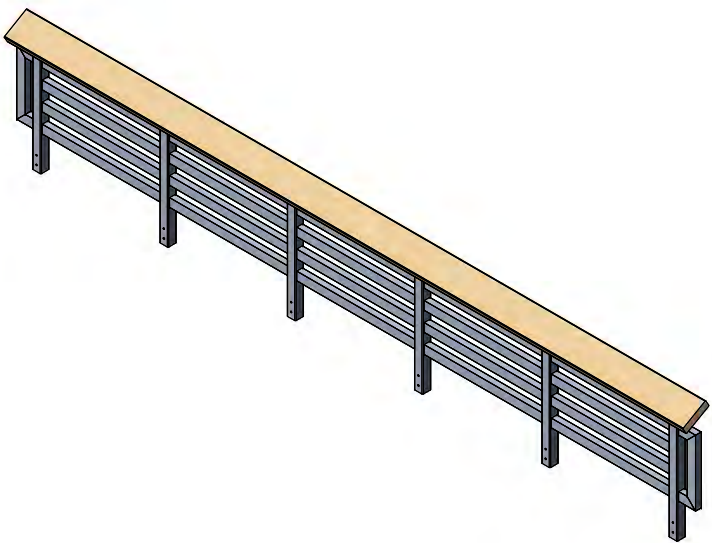
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PHONE: 770-933-8166
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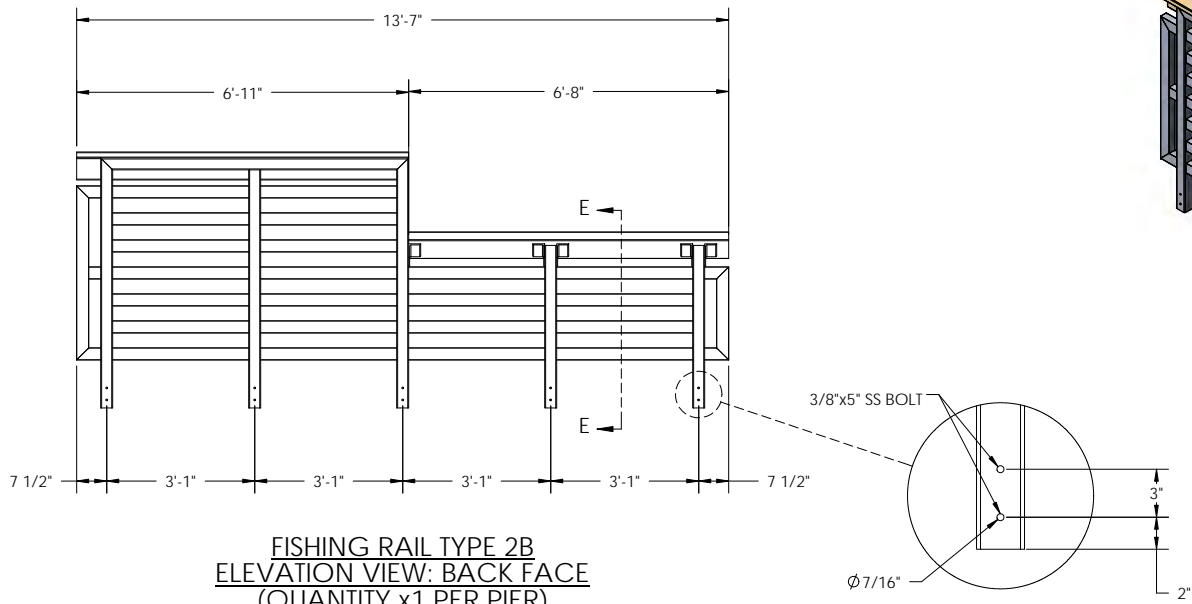
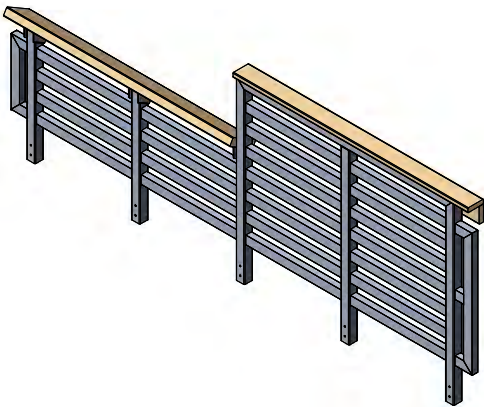
BRENDAN R. SHEPPARD
DELAWARE PE # 14366



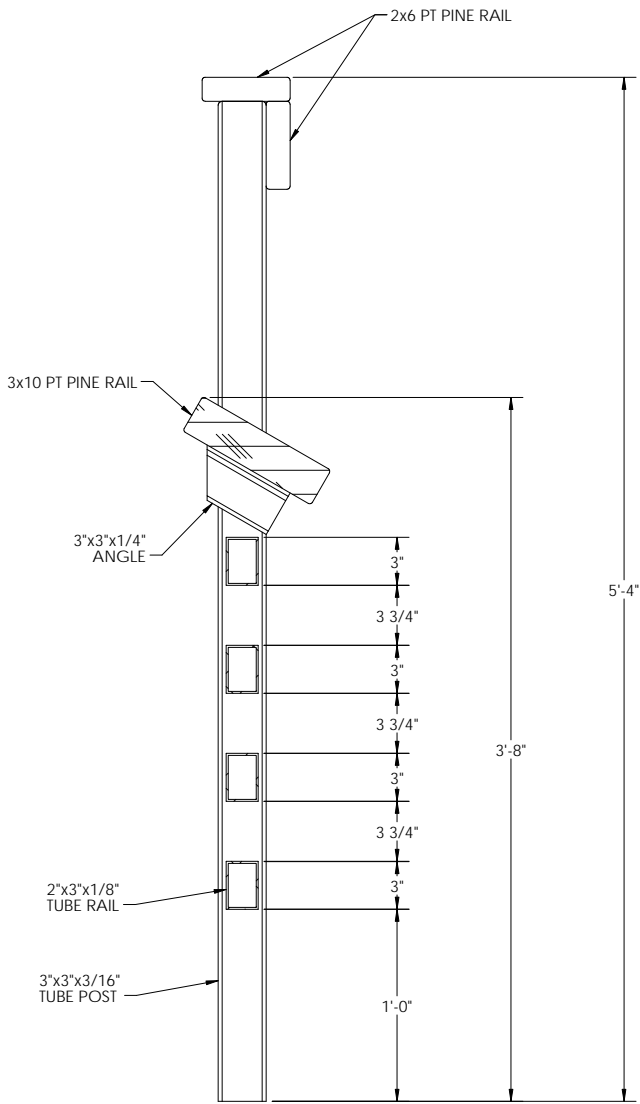
FISHING RAIL TYPE 1
ELEVATION VIEW: FRONT FACE
(QUANTITY x1 PER PIER)



FISHING RAIL TYPE 2A
ELEVATION VIEW: BACK FACE
(QUANTITY x1 PER PIER)

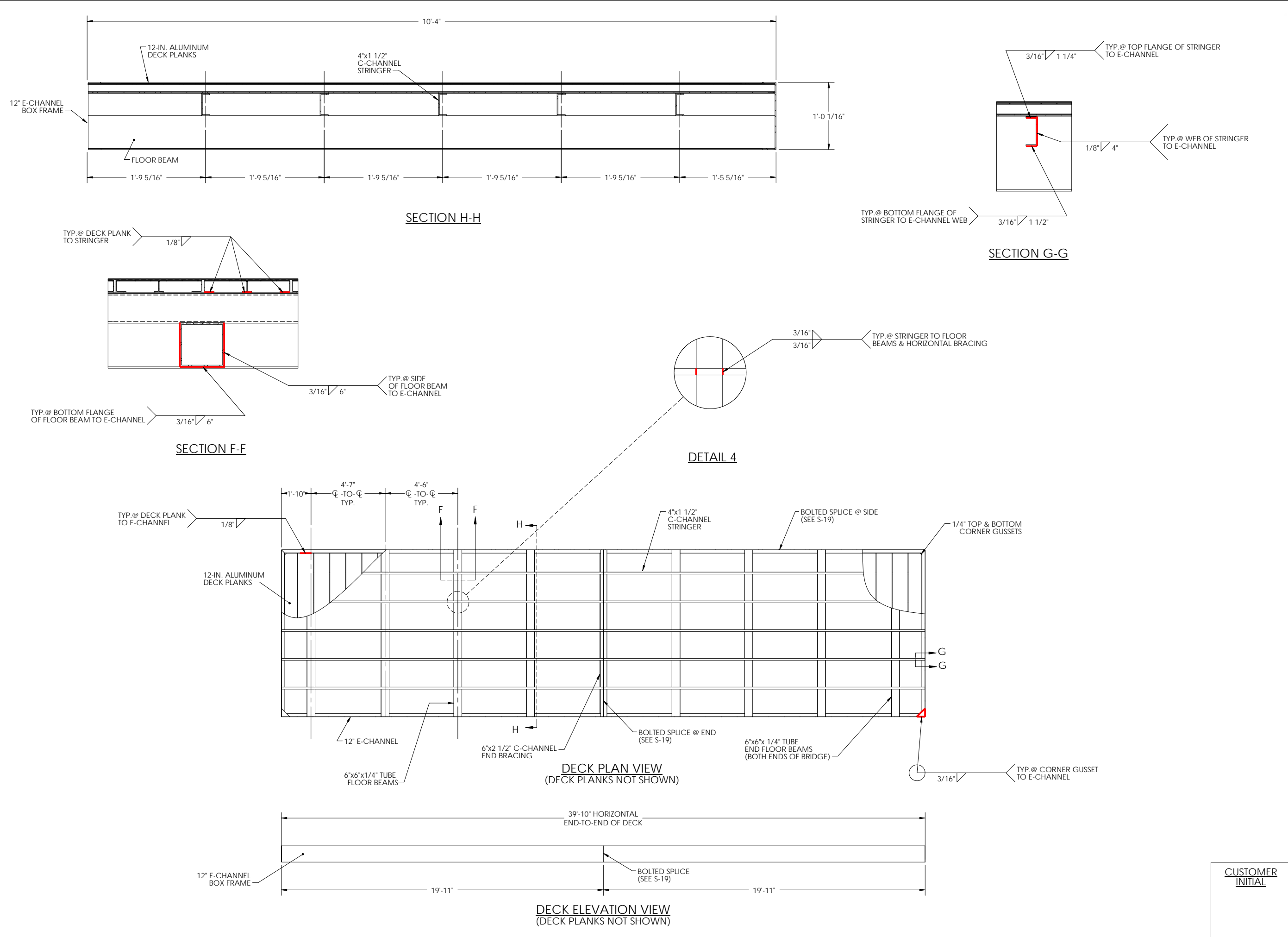



FISHING RAIL TYPE 2B
ELEVATION VIEW: BACK FACE
(QUANTITY x1 PER PIER)



SECTION E-E

CUSTOMER
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GatorBridge
Prefabricated Aluminum Bridges

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3	04/01/2020	REVISED DRAFT #3
4	04/15/2020	12-IN ALUM. DECK PLANKS
5	05/29/2020	STAMPED SUBMITTAL

PROJECT NAME:

DNREC KILLENS POND PEDESTRIAN BRIDGE

CUSTOMER NAME:

DELAWARE DIVISION OF PARKS & RECREATION

CUSTOMER ADDRESS:

89 KINGS HIGHWAY
DOVER, DELAWARE 19901

PROJECT LOCATION:

5025 KILLENS POND ROAD
FELTON, DE 19943

CMI ORDER NO.:

Q98254

CUSTOMER PO NO.:

	NAME	DATE
DRAWN BY:	VRP	5/29/2020
CHECKED BY:	MKL	5/29/2020
FABRICATION:	BRS	5/29/2020

DRAWING NO.:

S-22


SPANS 2,10,13,16: DECK DETAILS

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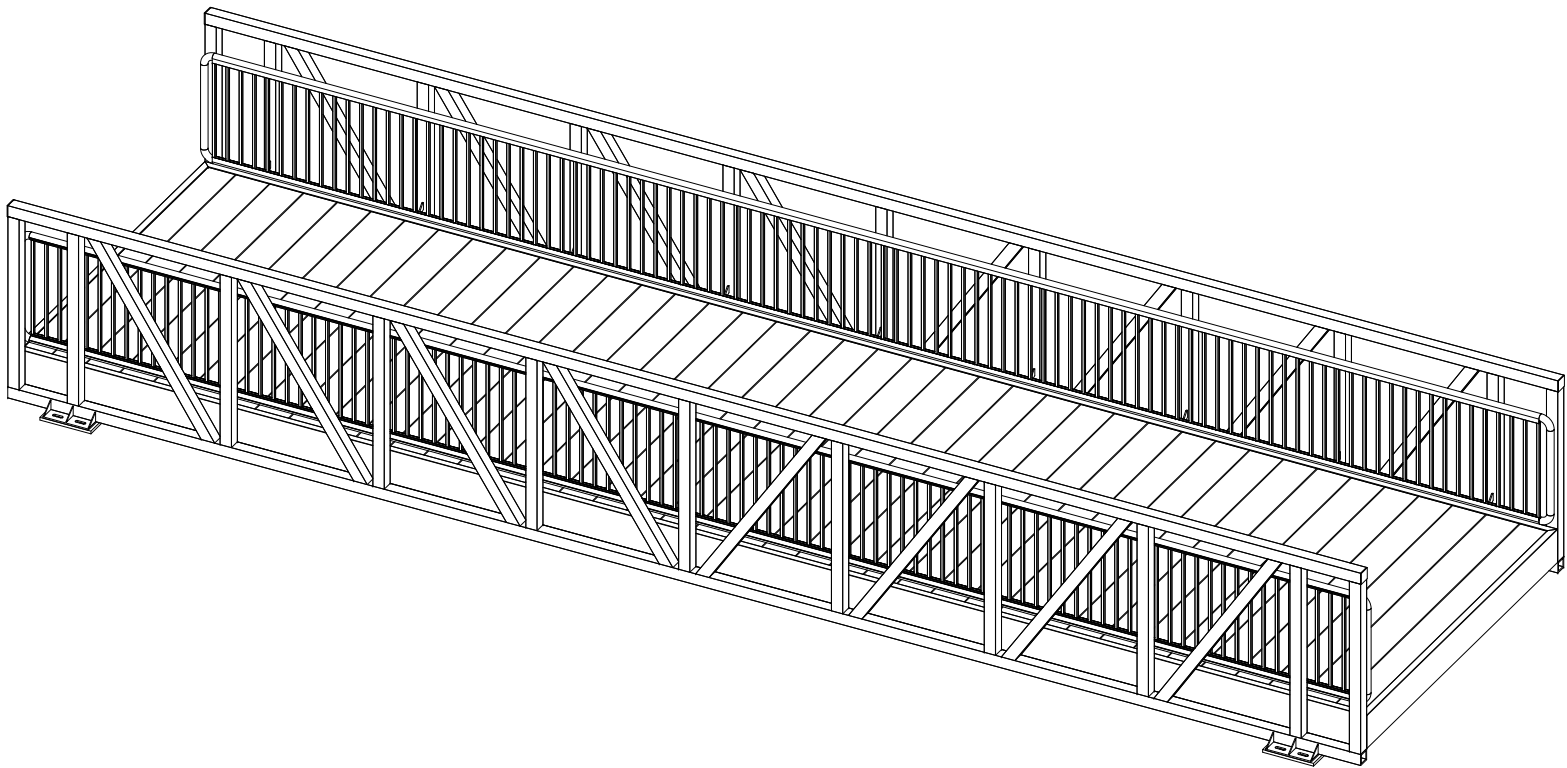
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WOODSTOCK, GA 30189
PHONE: 770-933-8166
COA #4043


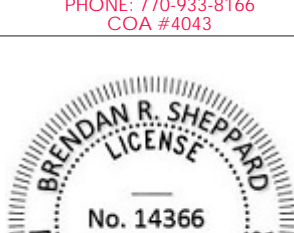
CUSTOMER INITIAL



BRENDAN R. SHEPPARD
DELAWARE PE # 14366

BILL OF MATERIALS					
ITEM #		TYPE	DESCRIPTION	QTY/COMMENTS	WEIGHTS
SPAN 3,4,5,7,8, AND 9		BRIDGE	10'x CASCADE BRIDGE	6 UNIQUE SPANS	~5,300 LBS TO ~5,600 LBS
	1	BOX FRAME	12" E-CHANNEL	1	---
	2	TRUSS CHORDS	4"x4"x1/2" TUBE	4	---
	3	TRUSS END POSTS	4"x4"x1/2" TUBE	8	---
	4	TRUSS VERTICALS	4"x4"x1/4" TUBE	14	---
	5A	TRUSS END DIAGONALS	4"x4"x1/2" TUBE	4	---
	5B	TRUSS INTERIOR DIAGONALS	4"x4"x1/4" TUBE	12	---
	6	FLOOR STRINGERS	4"x1 1/2" C-CHANNEL	5	---
	7A	FLOOR BEAMS 4&5	6"x6"x1/4" TUBE	3	
	7B	FLOOR BEAMS 2&3	6"x4"x1/4" TUBE	4	---
	8	HORIZONTAL BRACING	6"x2 1/2" C-CHANNEL	8	---
	9	FLOOR END BEAMS	6"x4"x1/4" TUBE	2	---
	10	DECKING	12-IN. ALUMINUM DECK PLANK	3/8" GAP	---
	11	BASE PLATE	9 1/2"x1'-4"x1/2" FLAT BAR	4	---
	12	BASE GUSSET	1/4" FLAT BAR GUSSET	12	---
	13	TOP CHORD END CAP	1/4" FLAT BAR END CAP	4	---
	14	COMBINATION RAIL	42" COMBINATION RAIL W/ 4" MAX SPACING	2	---
15	RAIL BRACKET	3/8" PLATE	36	---	
16	DECK CORNER GUSSETS	1/4" DECK CORNER GUSSETS	8	---	
BP1		BEARING PAD	9 1/2"x1'-6"x1" UHMW PAD	4 x 6 = 24	~5 LBS (EACH)



 GatorBridge Prefabricated Aluminum Bridges		
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RECORD OF REVISIONS		
No.	DATE	DESCRIPTION
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3	04/01/2020	REVISED DRAFT #3
4	04/15/2020	12-IN ALUM. DECK PLANKS
5	05/29/2020	STAMPED SUBMITTAL
PROJECT NAME:		
DNREC KILLENS POND PEDESTRIAN BRIDGE		
CUSTOMER NAME:		
DELAWARE DIVISION OF PARKS & RECREATION		
CUSTOMER ADDRESS:		
89 KINGS HIGHWAY DOVER, DELAWARE 19901		
PROJECT LOCATION:		
5025 KILLENS POND ROAD FELTON, DE 19943		
CMI ORDER NO.:		
Q98254		
CUSTOMER PO NO.:		
	NAME	DATE
DRAWN BY:	KLC	05/22/2020
CHECKED BY:	MKL	05/29/2020
FABRICATION:	BRS	05/29/2020
DRAWING NO.:		
S-23		
SPANS 3, 4, 5, 7, 8, 9: MATERIAL LIST		
<small>Physical properties are defined by ASTM testing standards. The Aluminum Association Design Manual, The Naval Facilities Design Manual CM 7-2, and The US Army Corps of Engineers General Design Guide, PNC Sheet File and/or standard engineering practice. The values shown are nominal and may vary. The information found in this document is believed to be true and accurate. No warranty of any kind is made as to the suitability of any CMI product for particular applications or the results obtained there from. ShoreGuard®, The ShoreGuard® Sealant System, C-Lox®, TuffGuard®, GatorGuard®, Dura Dock®, Shore-Ally®, GatorGate®, GatorDock Elite®, ArmorWarp®, ArmorFrost®, Box Profile®, UltraComposite®, The Steel Alternative®, Elite Warp®, Elite Pave®, Elite fascia Panels®, FastPanel®, XCR®, XCR Technology®, XCR Vinyl®, GatorBridge®, GatorAluminum®, Gator Sheet Piling®, GatorDocks®, I Beam Lock®, Textured Slats®, Crane Materials®, Interlocks® High CMI Sheet Piling Solutions®, Aqua Terra System®, Endurance®, Endurance CPM®, Patents®, Edgeline®, Grappling®, 2" Poly®, PlacMat®, ShearScape®, ShearScape Retaining Wall Systems®, Shore Pave®, and CMI Watermark Solutions® are trademarks, service marks or trade names of CMI Limited Co. CMI Limited Co. products are covered by one or more of the following U.S. Patents and International Patents: 4,874,921, 4,890,585, 5,282,206, 5,165,187, 6,000,881, 6,039,150, 6,036,666, 6,042,104, 6,579,667, 7,209,807, 7,036,096, 7,025,397, 7,395,482, 5,503,205, 5,803,072, 6,231,271, 7,240,926, 7,514,237 and other patents pending. © 2005-2017 CMI Limited Co. All Rights Reserved.</small>		
TOLERANCES UNLESS SPECIFIED OTHERWISE XXX ± 1/4"; FRACTIONS ± 1/8"; ANGULAR ± 1°		
CMI LIMITED CO. 605 MOLLY LANE - SUITE 150 WOODSTOCK, GA 30189 PHONE: 770-933-8166 COA #4043		
		
BRENDAN R. SHEPPARD DELAWARE PE #14366		

CUSTOMER
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4	04/15/2020	12-IN ALUM. DECK PLANKS
5	05/29/2020	STAMPED SUBMITTAL

PROJECT NAME:
**DNREC KILLENS POND
PEDESTRIAN BRIDGE**

CUSTOMER NAME:
**DELAWARE DIVISION OF
PARKS & RECREATION**

CUSTOMER ADDRESS:
89 KINGS HIGHWAY
DOVER, DELAWARE 19901

PROJECT LOCATION:
5025 KILLENS POND ROAD
FELTON, DE 19943

CMI ORDER NO.:
Q98254

CUSTOMER PO NO.:

	NAME	DATE
DRAWN BY:	KLC	05/22/2020
CHECKED BY:	MKL	05/29/2020
FABRICATION:	BRS	05/29/2020

DRAWING NO.:
S-24
SPANS 3,4,5,7,8,9:
ASSEMBLY DETAILS

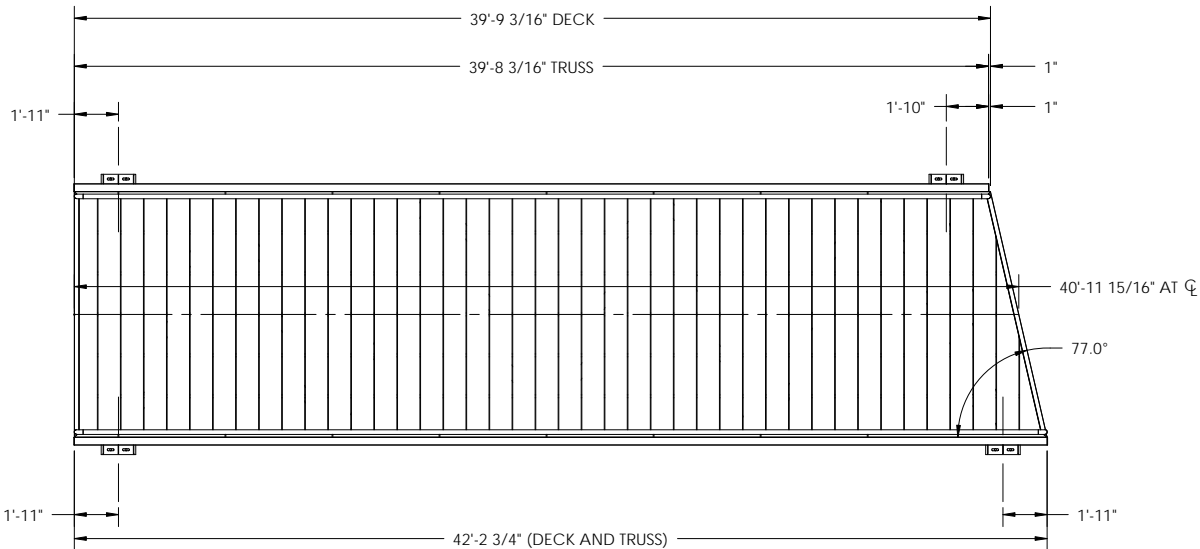
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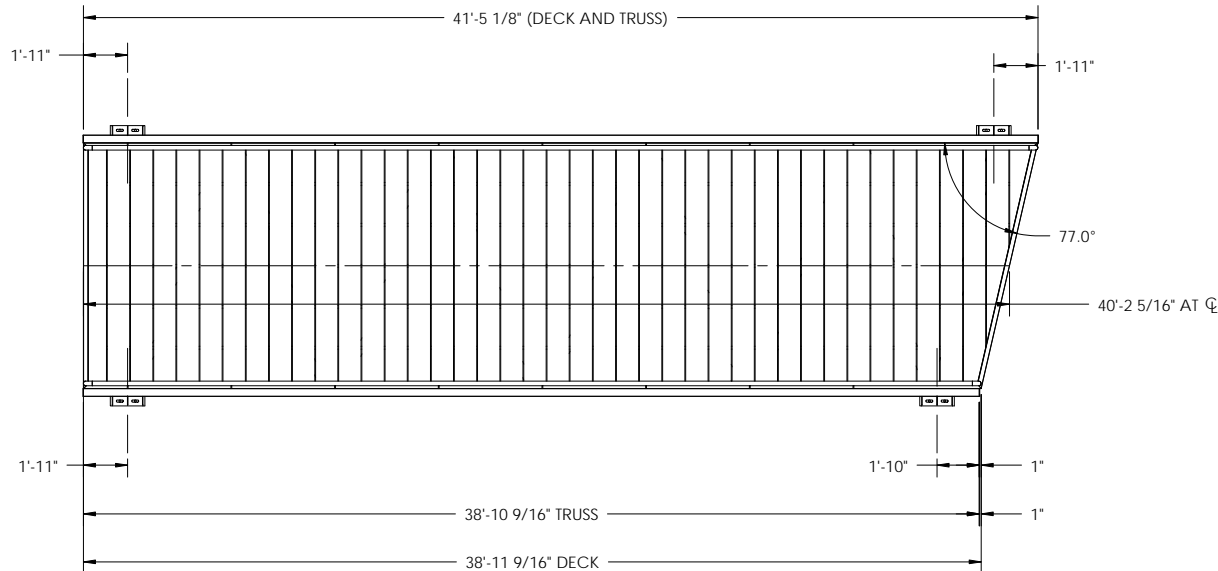
CMI LIMITED CO.
605 MOLLY LANE - SUITE 150
WOODSTOCK, GA 30189
PHONE: 770-933-8166
COA #4043



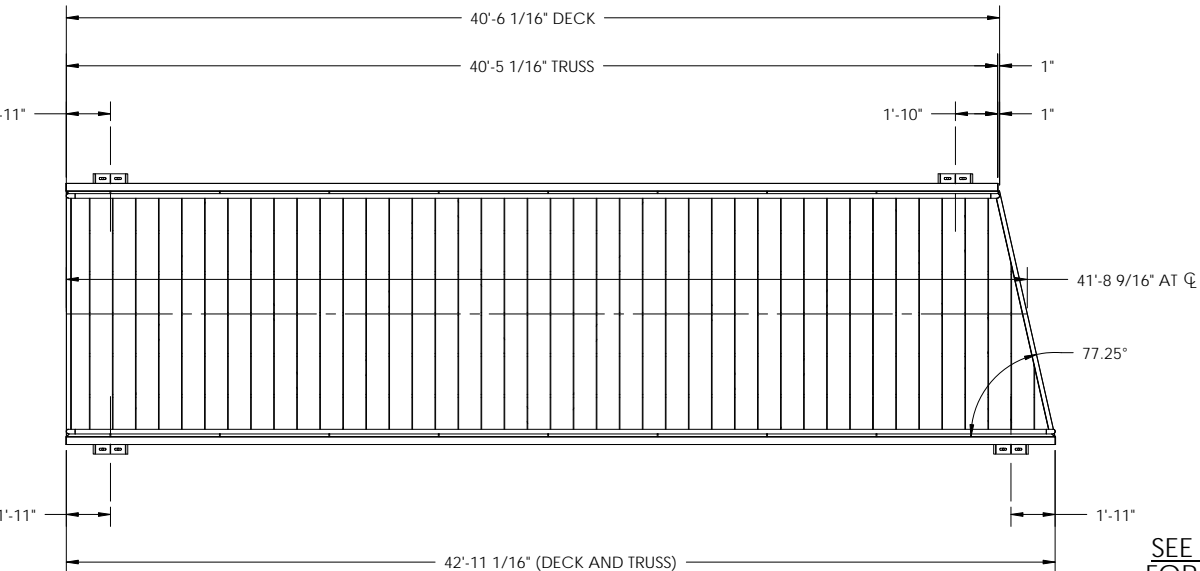
BRENDAN R. SHEPPARD
DELAWARE PE #14366



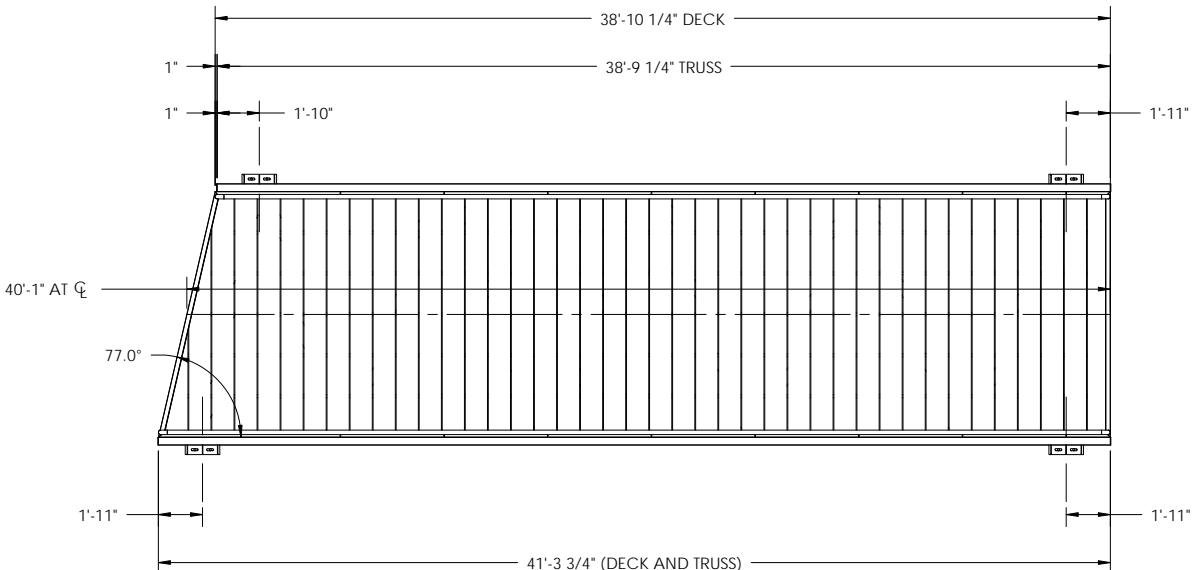
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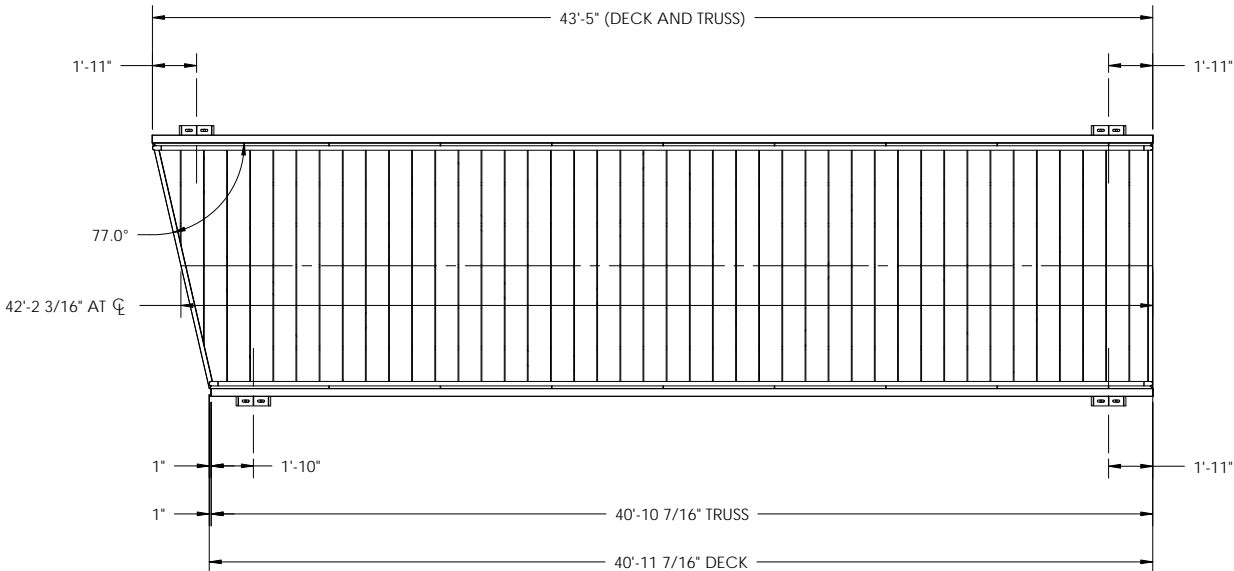
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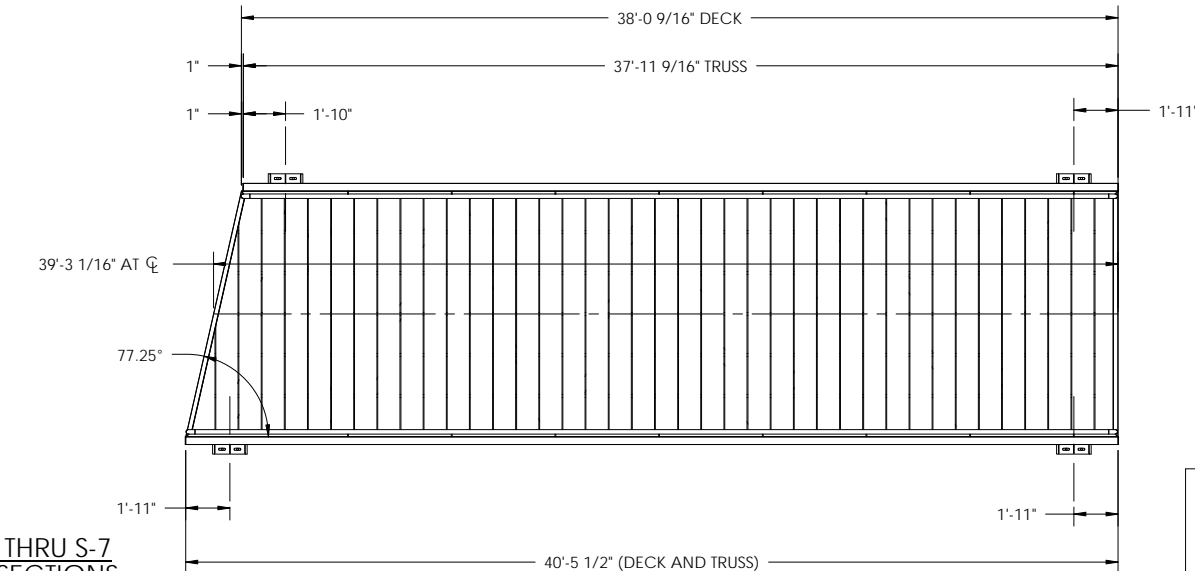
SPAN 8



SPAN 4



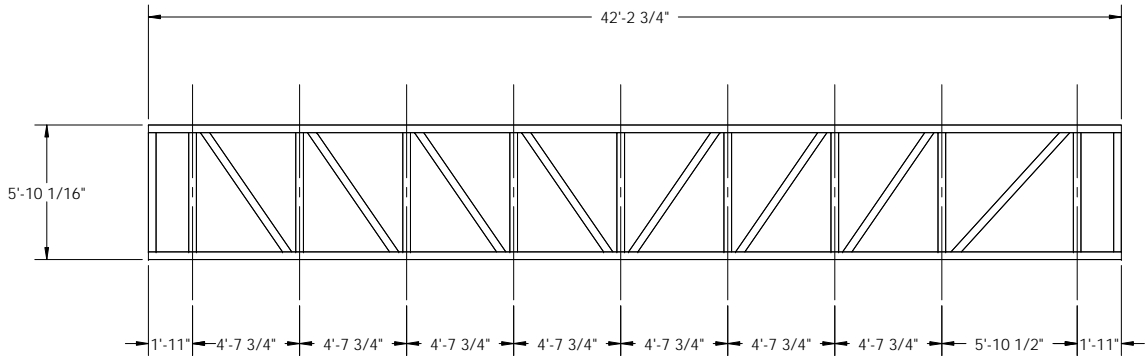
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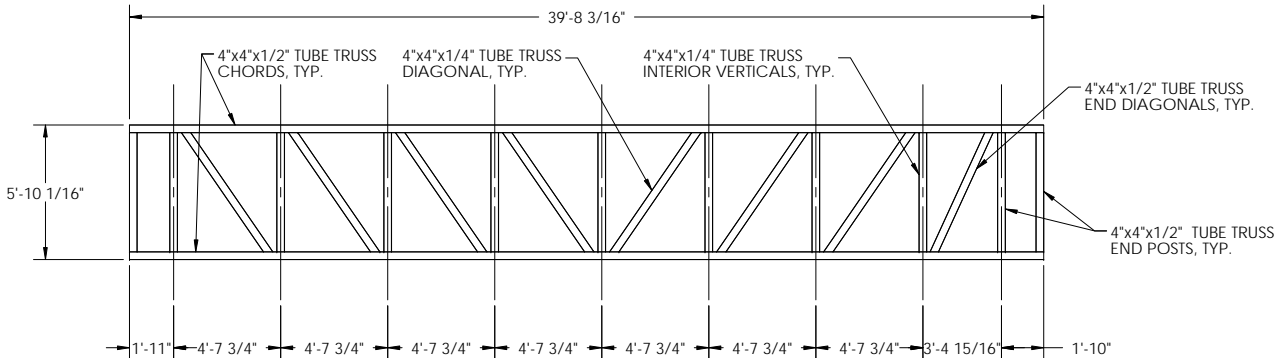
SPAN 9

**SEE SHEET S-5 THRU S-7
FOR TYPICAL SECTIONS
AND WELD DETAILS**

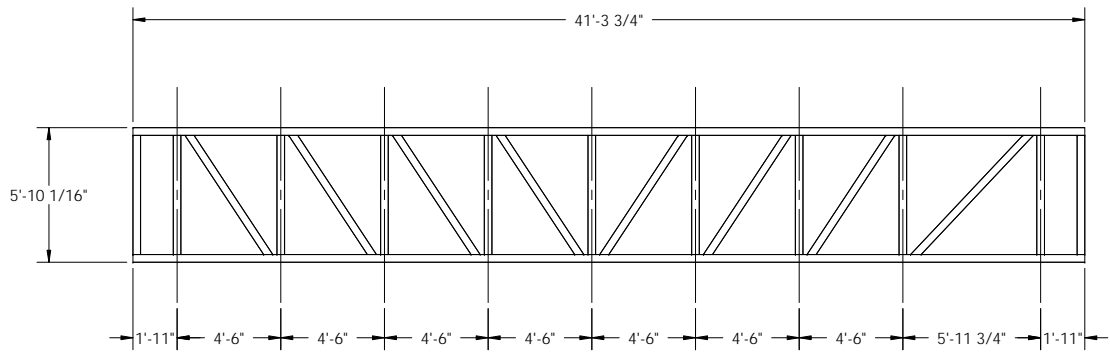
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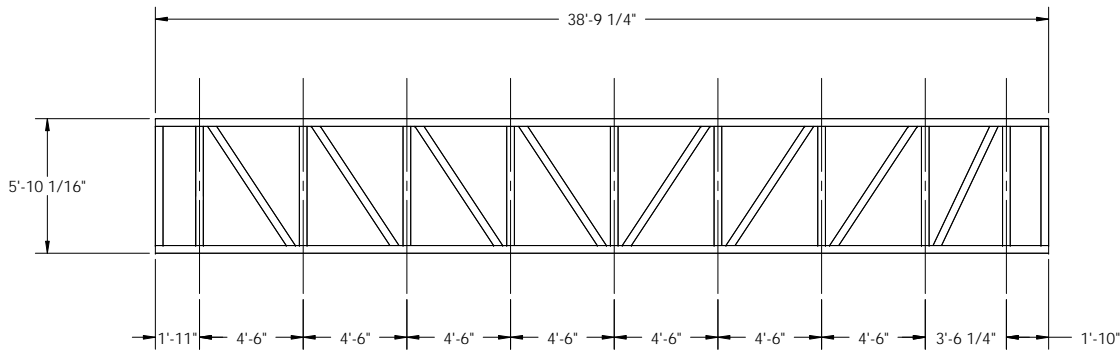
SPAN 3 TRUSS
LONG SIDE



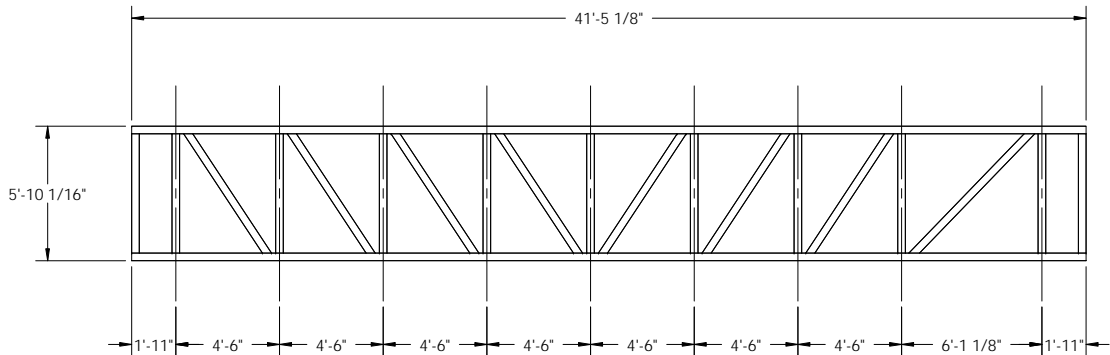
SPAN 3 TRUSS
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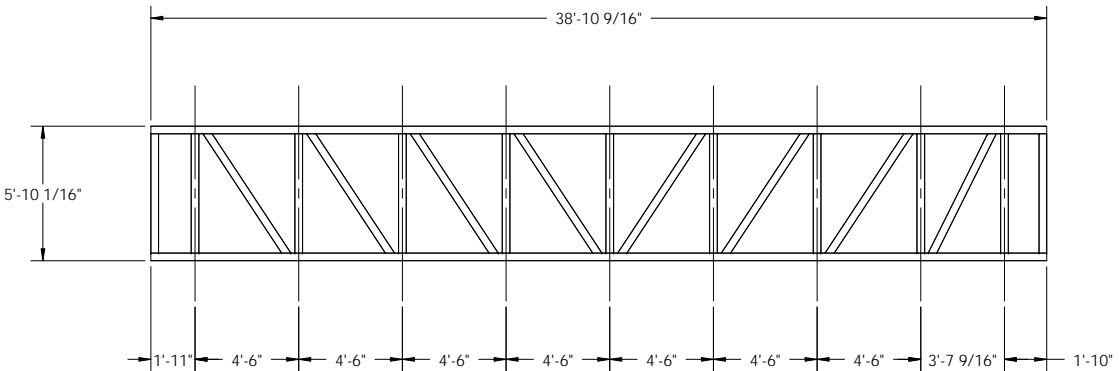
SPAN 4 TRUSS
LONG SIDE



SPAN 4 TRUSS
SHORT SIDE



SPAN 5 TRUSS
LONG SIDE



SPAN 5 TRUSS
SHORT SIDE

SEE SHEET S-5 THRU S-7
FOR TYPICAL SECTIONS
AND WELD DETAILS

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5	05/29/2020	STAMPED SUBMITTAL

PROJECT NAME:
**DNREC KILLENS POND
PEDESTRIAN BRIDGE**

CUSTOMER NAME:
**DELAWARE DIVISION OF
PARKS & RECREATION**

CUSTOMER ADDRESS:
89 KINGS HIGHWAY
DOVER, DELAWARE 19901

PROJECT LOCATION:
5025 KILLENS POND ROAD
FELTON, DE 19943

CMI ORDER NO.:
Q98254

CUSTOMER PO NO.:

	NAME	DATE
DRAWN BY:	KLC	05/22/2020
CHECKED BY:	MKL	05/29/2020
FABRICATION:	BRS	05/29/2020

DRAWING NO.:
S-25
SPANS 3,4,5,7,8,9:
TRUSS DETAILS (1/2)

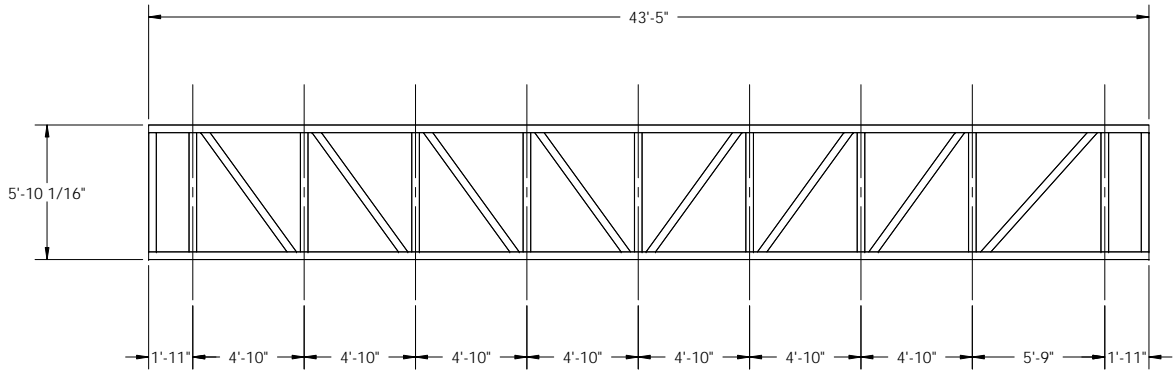
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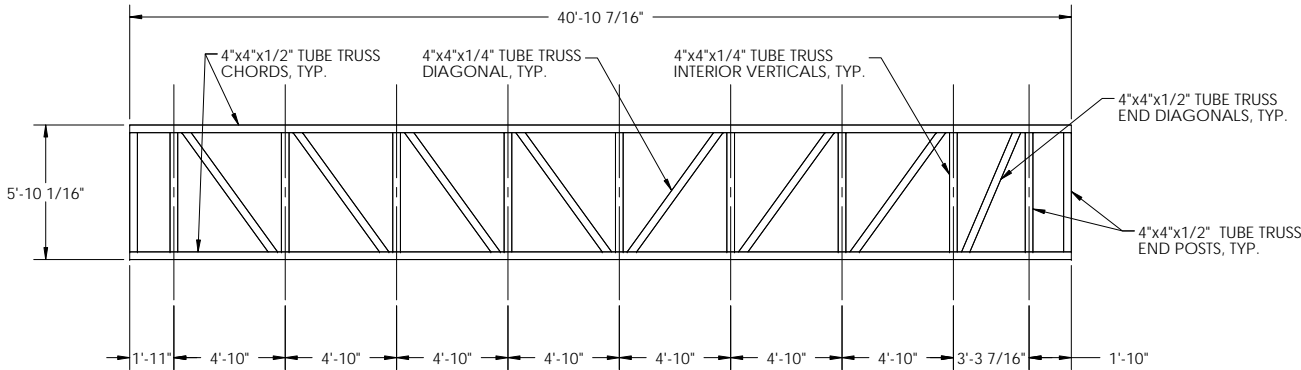
CMI LIMITED CO.
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WOODSTOCK, GA 30189
PHONE: 770-933-8166
COA #4043



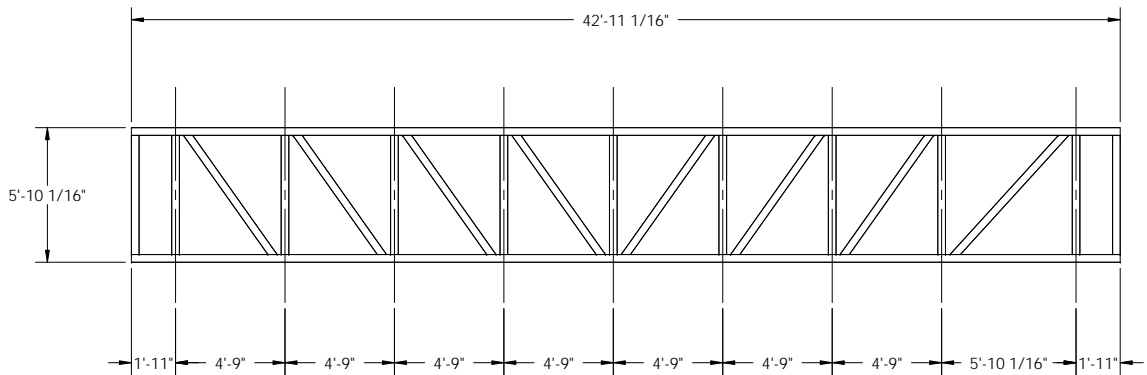
BRENDAN R. SHEPPARD
DELAWARE PE #14366



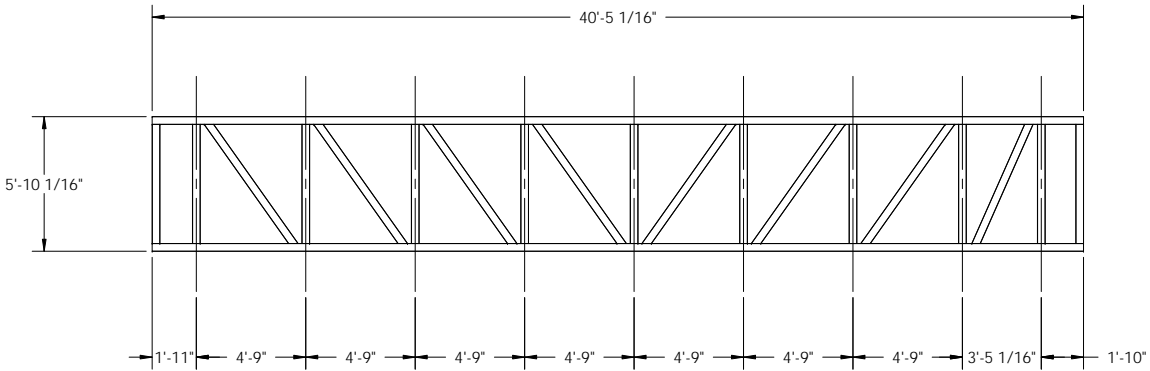
SPAN 7 TRUSS
LONG SIDE



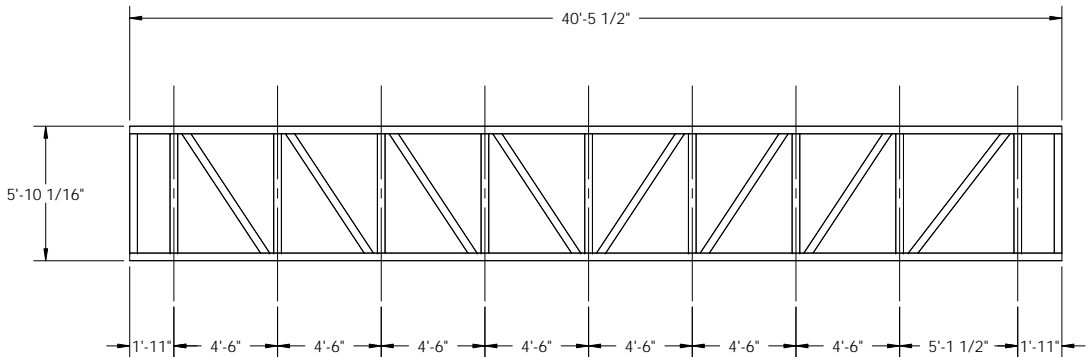
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SHORT SIDE



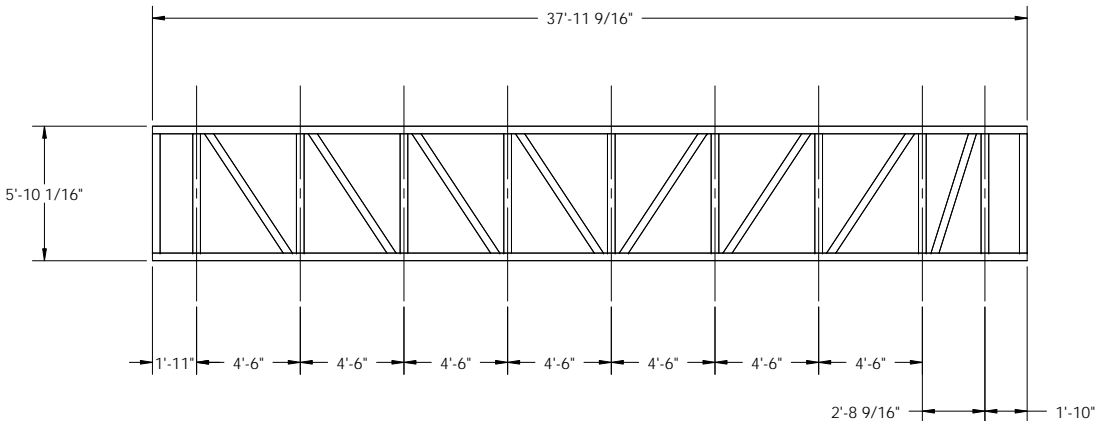
SPAN 8 TRUSS
LONG SIDE



SPAN 8 TRUSS
SHORT SIDE



SPAN 9 TRUSS
LONG SIDE



SPAN 9 TRUSS
SHORT SIDE

SEE SHEET S-5 THRU S-7
FOR TYPICAL SECTIONS
AND WELD DETAILS

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PROJECT NAME:

**DNREC KILLENS POND
PEDESTRIAN BRIDGE**

CUSTOMER NAME:
**DELAWARE DIVISION OF
PARKS & RECREATION**

CUSTOMER ADDRESS:
89 KINGS HIGHWAY
DOVER, DELAWARE 19901

PROJECT LOCATION:
5025 KILLENS POND ROAD
FELTON, DE 19943

CMI ORDER NO.:
Q98254

CUSTOMER PO NO.:

	NAME	DATE
DRAWN BY:	KLC	05/22/2020
CHECKED BY:	MKL	05/29/2020
FABRICATION:	BRS	05/29/2020

DRAWING NO.:

S-26
SPANS 3,4,5,7,8,9:
TRUSS DETAILS (2/2)

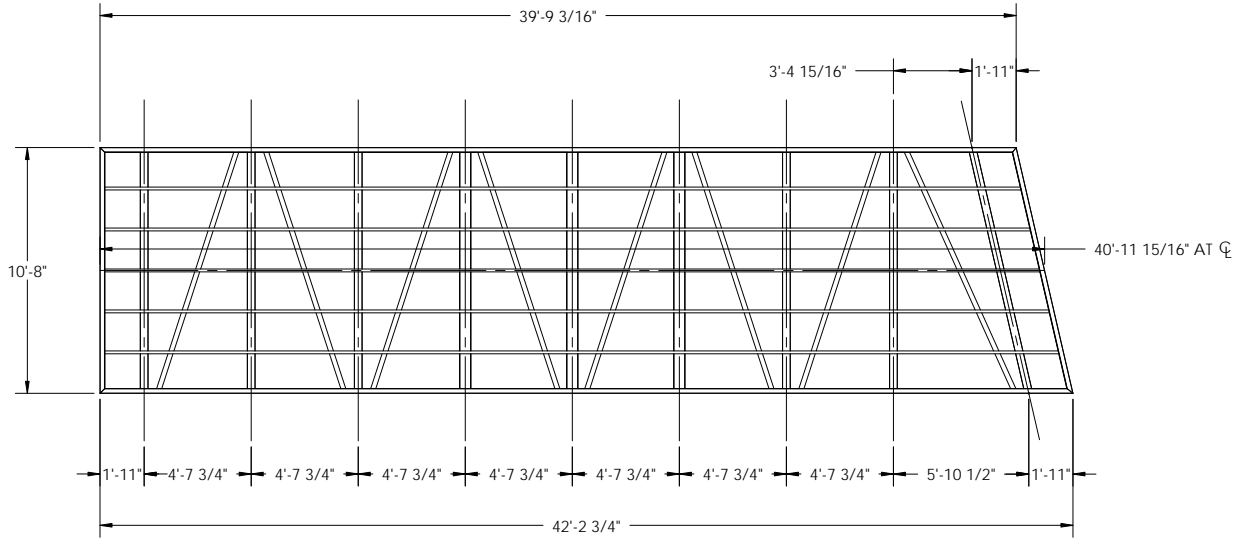
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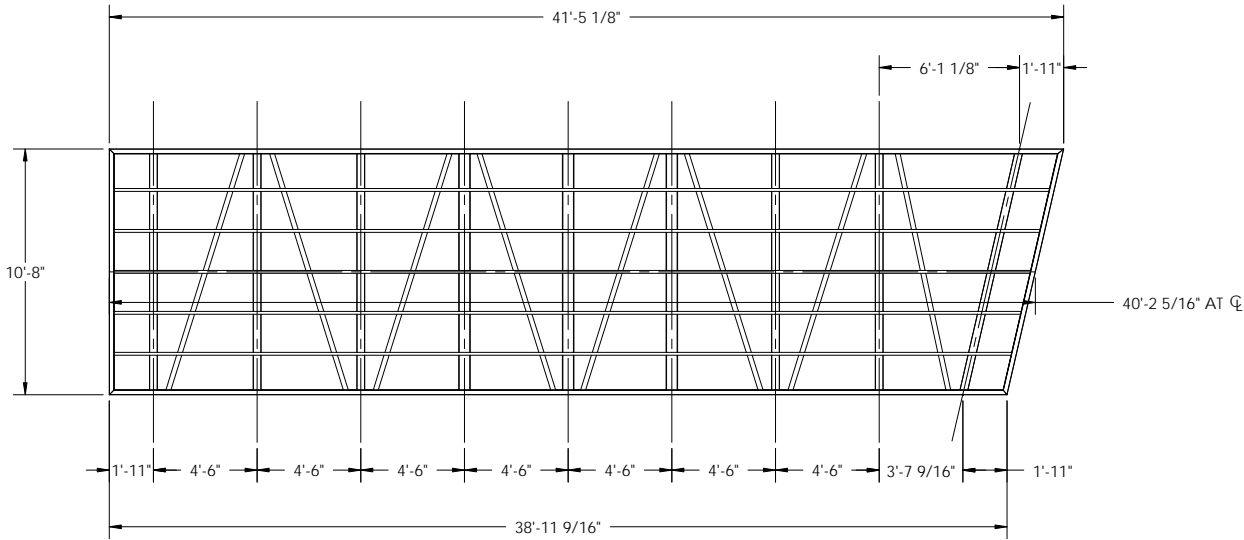
CMI LIMITED CO.
605 MOLLY LANE - SUITE 150
WOODSTOCK, GA 30189
PHONE: 770-933-8166
COA #4043



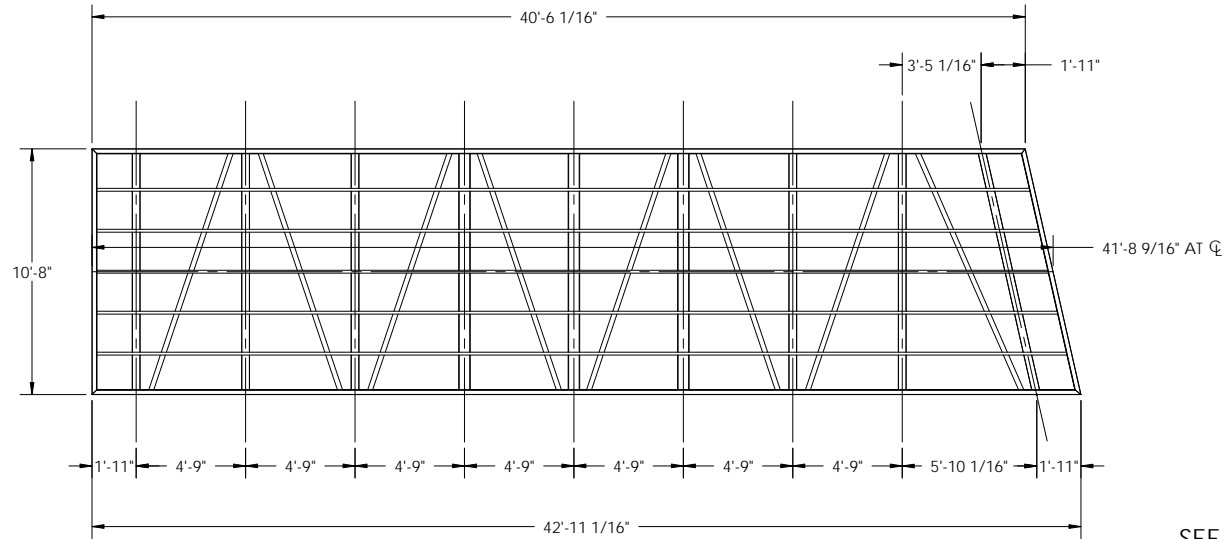
BRENDAN R. SHEPPARD
DELAWARE PE #14366



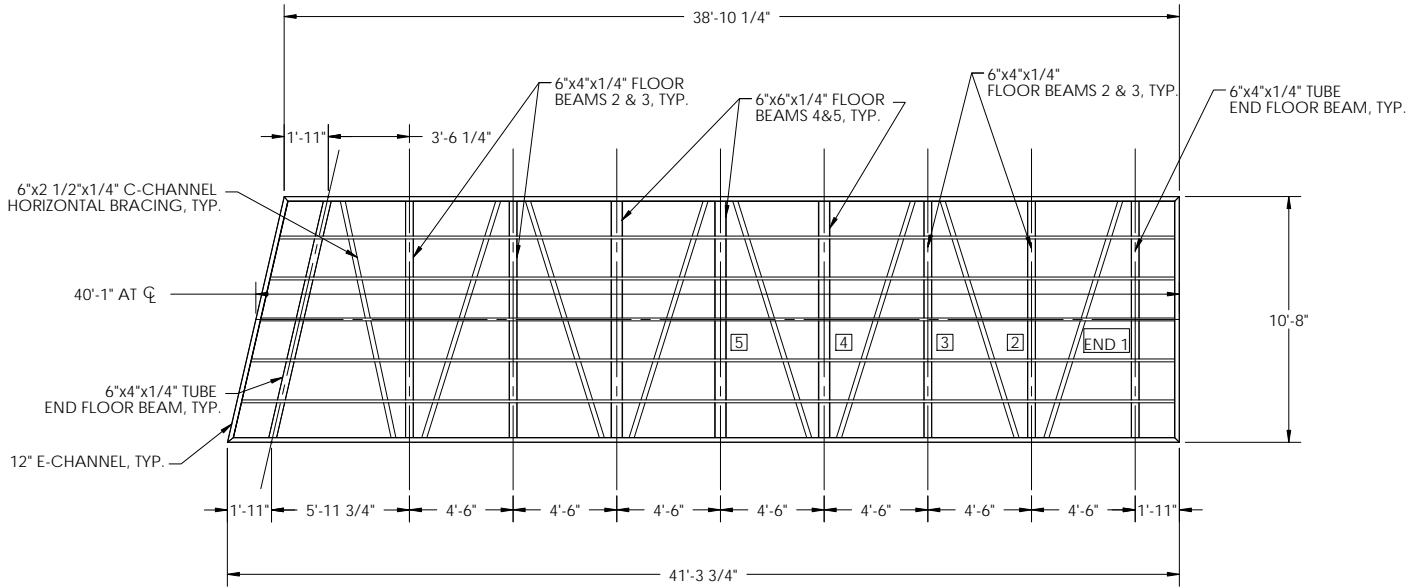
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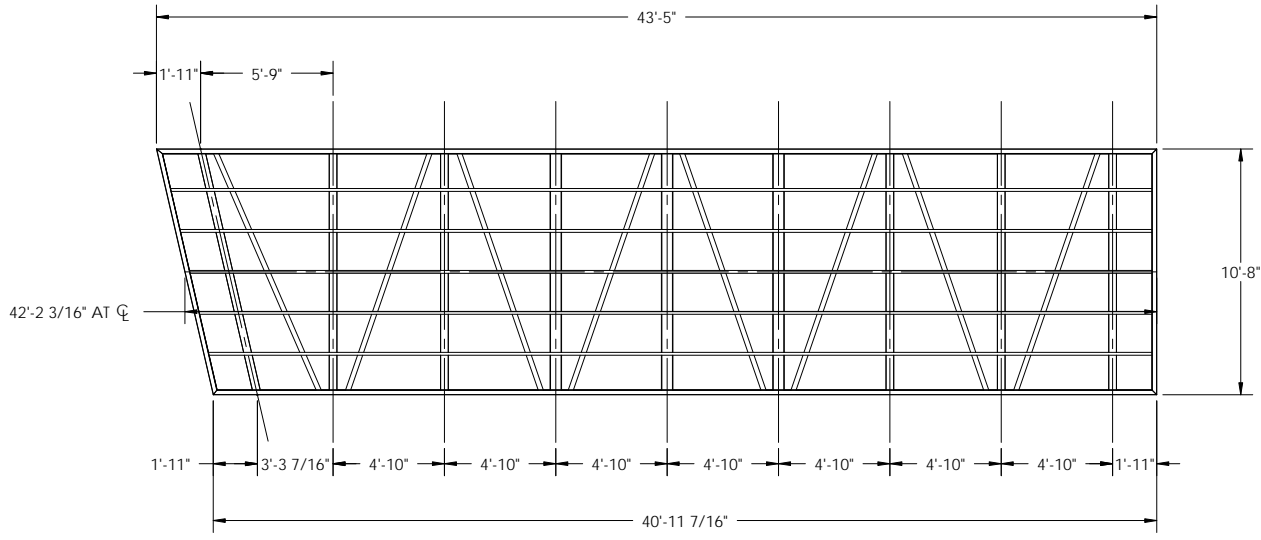
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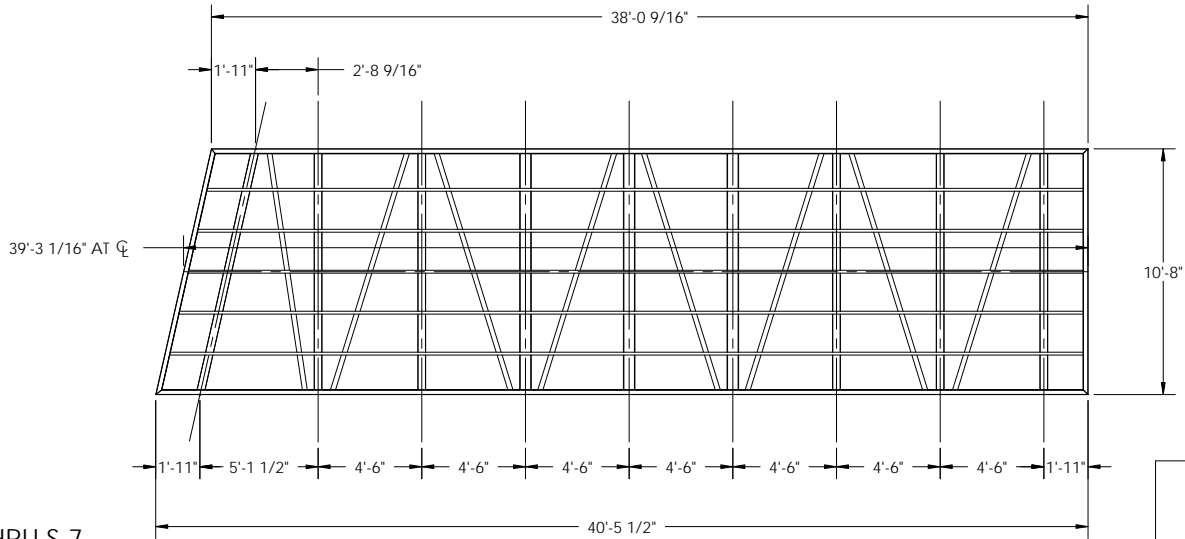
SPAN 8



SPAN 4



SPAN 7



SPAN 9

SEE SHEET S-5 THRU S-7
FOR TYPICAL SECTIONS, WELD DETAILS,
AND GUSSETS (NOT SHOWN HERE)



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5	05/29/2020	STAMPED SUBMITTAL

PROJECT NAME:

**DNREC KILLENS POND
PEDESTRIAN BRIDGE**

CUSTOMER NAME:
**DELAWARE DIVISION OF
PARKS & RECREATION**

CUSTOMER ADDRESS:
89 KINGS HIGHWAY
DOVER, DELAWARE 19901

PROJECT LOCATION:
5025 KILLENS POND ROAD
FELTON, DE 19943

CMI ORDER NO.:
Q98254

CUSTOMER PO NO.:

	NAME	DATE
DRAWN BY:	KLC	05/22/2020
CHECKED BY:	MKL	05/29/2020
FABRICATION:	BRS	05/29/2020

DRAWING NO.:

S-27
SPANS 3,4,5,7,8,9:
DECK DETAILS

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BRENDAN R. SHEPPARD
DELAWARE PE #14366

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CHECKED BY:	MKL	05/29/2020
FABRICATION:	BRS	05/29/2020

DRAWING NO.:
S-28
PICKET RAIL:
DETAILS

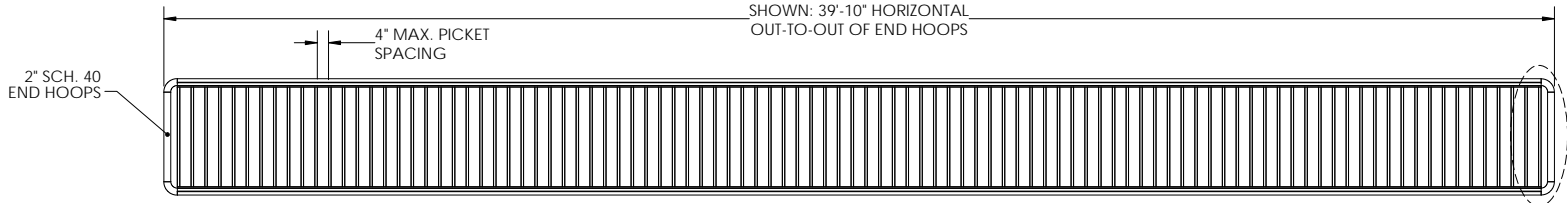
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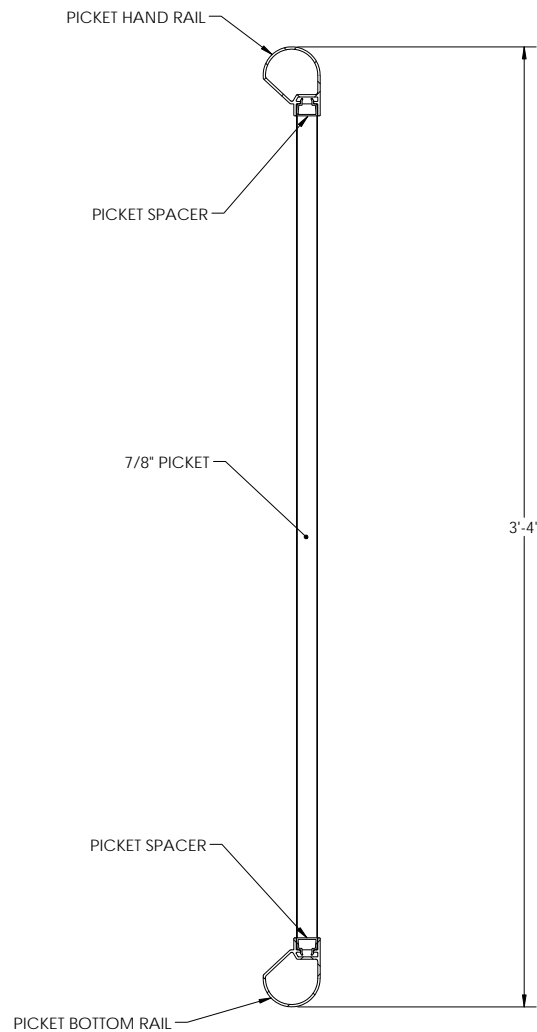


BRENDAN R. SHEPPARD
DELAWARE PE #14366



RAIL ELEVATION VIEW

- NOTES:**
- RAILS SHALL BE MECHANICALLY SPLICED AS REQUIRED;
 - **NOT WELDED** - MAX RAIL SECTION LENGTH 30 FT.
 - SEE SHEET S-29 FOR LENGTH TABLE



RAIL CROSS SECTION

TYP. TACK@ 7/8" PICKET TO PICKET HANDRAIL & TOERAIL EVERY 5TH PICKET

1/8"

PICKET HAND RAIL

1/8" TYP.@ END HOOPS TO PICKET HANDRAIL

2" SCH. 40 END HOOPS


7/8" PICKET

PICKET BOTTOM RAIL

1/8" TYP.@ END HOOP TO PICKET BOTTOM RAIL

DETAIL 5

* US PATENTS NO. 6,811,146 & 7,168,689
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			<div><div><div><div>GatorBridge</div><div>Prefabricated Aluminum Bridges</div></div></div><div><div>2880 MELLONVILLE AVE, SANFORD, FL 32773</div><div>800/256-8857407/323-0190</div></div><div>THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF GATOR DOCK & MARINE, LLC. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF GATOR DOCK & MARINE, LLC IS PROHIBITED.</div><div>RECORD OF REVISIONS</div><table><thead><tr><th>No.</th><th>DATE</th><th>DESCRIPTION</th></tr></thead><tbody><tr><td>1</td><td>03/19/2020</td><td>REVISED DRAFT</td></tr><tr><td>2</td><td>03/24/2020</td><td>REVISED DRAFT #2</td></tr><tr><td>3</td><td>04/01/2020</td><td>REVISED DRAFT #3</td></tr><tr><td>4</td><td>04/15/2020</td><td>12-IN ALUM. DECK PLANKS</td></tr><tr><td>5</td><td>05/29/2020</td><td>STAMPED SUBMITTAL</td></tr></tbody></table><div>PROJECT NAME:</div><div>DNREC KILLENS POND PEDESTRIAN BRIDGE</div><div>CUSTOMER NAME:</div><div>DELAWARE DIVISION OF PARKS & RECREATION</div><div>CUSTOMER ADDRESS:</div><div>89 KINGS HIGHWAY DOVER, DELAWARE 19901</div><div>PROJECT LOCATION:</div><div>5025 KILLENS POND ROAD FELTON, DE 19943</div><div>CMI ORDER NO.:</div><div>Q98254</div><div>CUSTOMER PO NO.:</div><div></div><table><thead><tr><th></th><th>NAME</th><th>DATE</th></tr></thead><tbody><tr><td>DRAWN BY:</td><td>KLC</td><td>05/22/2020</td></tr><tr><td>CHECKED BY:</td><td>MKL</td><td>05/29/2020</td></tr><tr><td>FABRICATION:</td><td>BRS</td><td>05/29/2020</td></tr></tbody></table><div>DRAWING NO.:</div><div>S-29</div><div>PICKET RAIL: LENGTH CHART</div><div><small>Physical properties are defined by ASTM testing standards, The Aluminum Association Design Manual, The Naval Facilities Design Manual CMI 7.2, and The US Army Corps of Engineers General Design Guide: PVC Sheet Pile and/or standard engineering practice. The values shown are nominal and may vary. The information found in this document is derived to be true and accurate. No warranty of any kind is made as to the suitability of any CMI product for particular applications or the results obtained there from. ShoreGuard®, The Shoreline Seawall System™, C-Log®, TimberGuard®, GatorGuard®, Dura Dock®, Shore-Wall®, GatorBridge®, GatorDock Elite®, ArmorWall™, ArmorRoad™, Box Profile™, UltraComposite™, The Steel Alternative™, Elite Wall™, Elite Panel™, Elite Stack Panel™, RailPanel™, XCR™, XCR Technology™, XCR Vinyl™, GatorBridge™, GatorAluminum™, Gator Sheet Piling™, GatorDock™, i-Beam Lock™, Textured Slat™, Crane Materials International™, Logi, CMI Sheet Piling Solutions™, Aqua Terra System™, Enduracon™, Endurance CSM™, Polaris™, Edgewise™, Gridspan™, J1 Poly™, PileClaw™, SheerScape™, SheerScape Retaining Wall Systems™, Sheer Panel™ and CMI Waterfront Solutions™ are trademarks, service marks or trade names of CMI Limited Co. CMI Limited Co. products are covered by one or more of the following U.S. Patents and International Patents: 4,874,871; 4,490,588; 5,392,208; 5,145,287; 6,000,883; 6,033,155; 6,063,686; 6,820,154; 6,375,687; 7,059,807; 7,056,066; 7,025,539; 7,393,482; 5,503,593; 5,903,672; 6,231,271; 1,245,063CA; 7,914,237 and other patents pending. © 2005-2017 CMI Limited Co. All Rights Reserved.</small></div><div>TOLERANCES UNLESS SPECIFIED OTHERWISE XXX = ± 1/4"; FRACTIONS = ± 1/8"; ANGULAR = ± 1°</div><div>CMI LIMITED CO. 605 MOLLY LANE - SUITE 150 WOODSTOCK, GA 30189 PHONE: 770-933-8166 COA #4043</div><div><div><div><div></div><div>BRENDAN R. SHEPPARD</div><div>LICENSE</div><div>No. 14366</div><div>DELAWARE</div><div>PROFESSIONAL ENGINEER</div></div></div></div><div>BRENDAN R. SHEPPARD DELAWARE PE #14366</div></div>	No.	DATE	DESCRIPTION	1	03/19/2020	REVISED DRAFT	2	03/24/2020	REVISED DRAFT #2	3	04/01/2020	REVISED DRAFT #3	4	04/15/2020	12-IN ALUM. DECK PLANKS	5	05/29/2020	STAMPED SUBMITTAL		NAME	DATE	DRAWN BY:	KLC	05/22/2020	CHECKED BY:	MKL	05/29/2020	FABRICATION:	BRS	05/29/2020
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PROJECT NAME

DNREC KILLENS POND PEDESTRIAN BRIDGE

CUSTOMER NAME:

**DELAWARE DIVISION OF
PARKS & RECREATION**

CUSTOMER ADDRESS:

89 KINGS HIGHWAY
DOVER, DELAWARE 19901

PROJECT LOCATION:

5025 KILLENS POND ROAD
FELTON, DE 19943

CMI ORDER NO.

Q98254

CUSTOMER PO NO.:

	NAME	DATE
DRAWN BY:	KLC	05/22/2020
CHECKED BY:	MKL	05/29/2020
FABRICATION:	BRS	05/29/2020

DRAWING NO.:

S-30
APPROACH RAIL
DETAILS

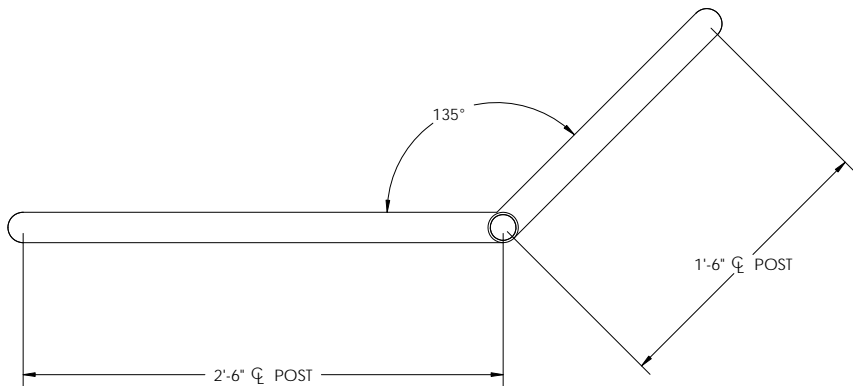
[illegible]

TOLERANCES UNLESS SPECIFIED OTHERWISE
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CMI LIMITED CO.
605 MOLLY LANE - SUITE 150
WOODSTOCK, GA 30189
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COA #4043

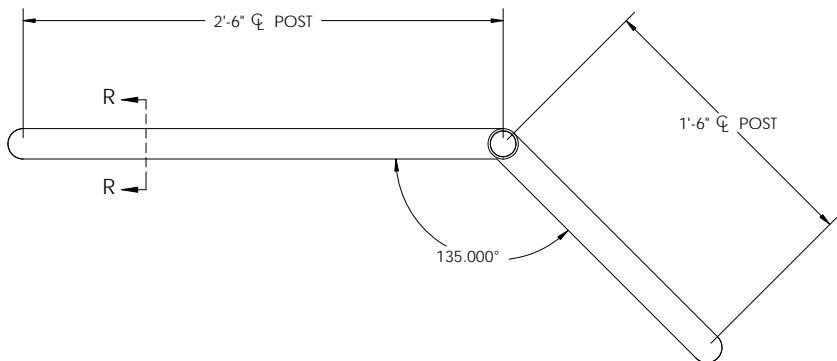


BRENDAN R. SHEPPARD
DELAWARE PE #14366



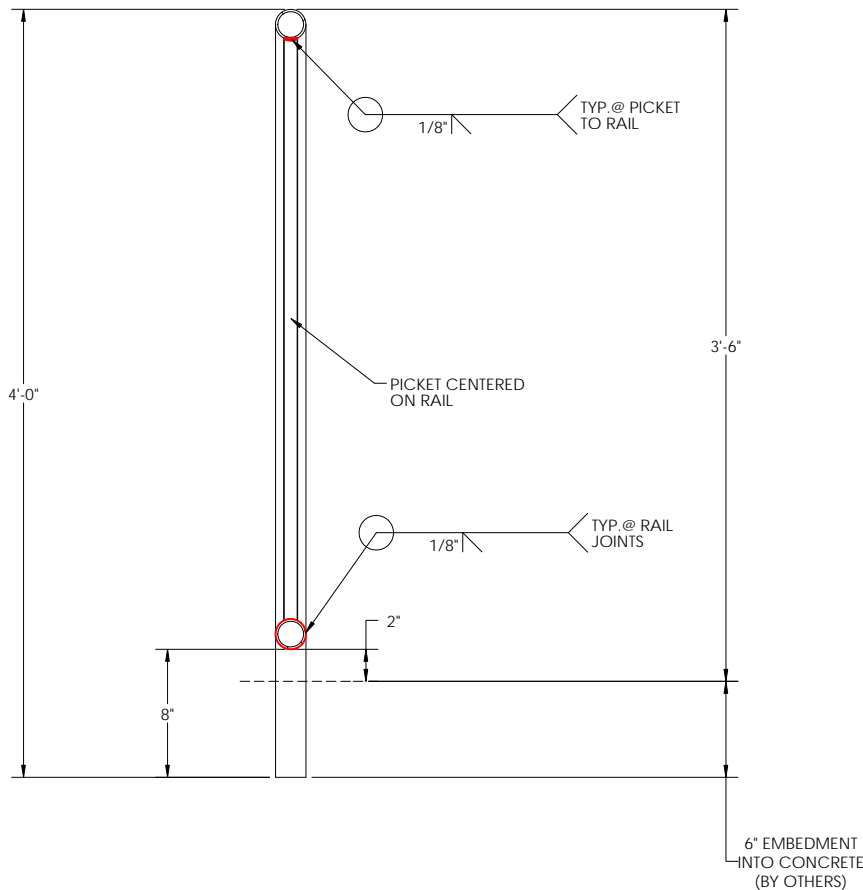
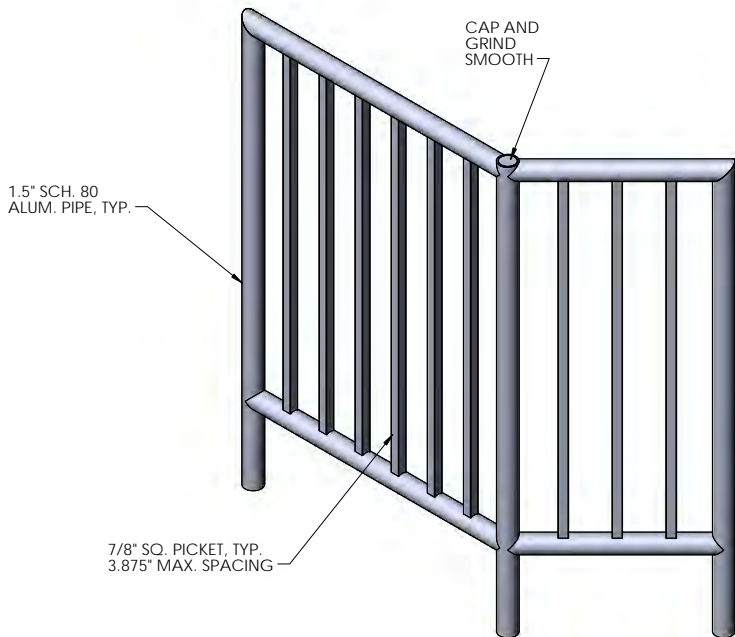
APPROACH RAIL TYPE 1
PLAN VIEW

QTY. = 2



APPROACH RAIL TYPE 2 PLAN VIEW

QTY. = 2



SECTION R-R

CUSTOMER
INITIAL

