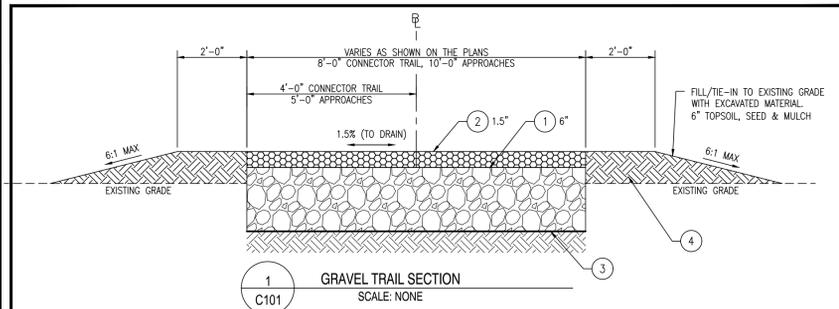




**PROJECT NOTES:**

- THE INTENT OF THIS PROJECT IS TO PROVIDE THE FOLLOWING IMPROVEMENTS AT KILLENS POND STATE PARK:
  - 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).
  - INSTALLATION OF GALVANIZED STEEL PIPE PIER PIER BENTS WITHIN KILLENS POND.
  - CONSTRUCTION OF REINFORCED CONCRETE ABUTMENTS LOCATED AT THE NORTH AND SOUTH ENDS OF THE WALKWAY.
  - 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.
  - REPAIRING THE EXISTING BOAT RAMP PARKING LOT AT THE SOUTH END OF THE PROJECT AT THE END OF THE CONSTRUCTION.
  - MISCELLANEOUS CONSTRUCTION AND SITE WORK, AS SHOWN ON THESE PLANS.
- THESE PLANS HAVE BEEN DEVELOPED IN ACCORDANCE WITH THE FOLLOWING:
  - UNITED STATES ACCESS BOARD "ACCESSIBILITY STANDARDS FOR FEDERAL OUTDOOR DEVELOPED AREAS".
  - ASHTO "GUIDE FOR THE DEVELOPMENT OF BICYCLE FACILITIES".
  - ASHTO "LRFD GUIDE SPECIFICATIONS FOR THE DESIGN OF PEDESTRIAN BRIDGES".
- APPROVED SHOP DRAWINGS FOR THE PRE-MANUFACTURED ALUMINUM WALKWAY ARE INCLUDED WITH THIS PLAN PACKAGE.
- 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.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ALL ANCHOR BOLTS USED TO SECURE THE PRE-MANUFACTURED ALUMINUM WALKWAY TO THE ABUTMENTS AND PIER CAPS.
- STEEL PILES AND PIER CAPS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
- 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.
- 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.
- PARCEL AND BOUNDARY LINES TAKEN FROM GIS INFORMATION. NO BOUNDARY SURVEY WAS REQUESTED OR PERFORMED FOR THIS PROJECT.
- THESE PLANS WERE DEVELOPED FROM AERIAL SURVEY PROVIDED BY DNREC PARKS. CONVENTIONAL FIELD SURVEY WAS PROVIDED FOR THE AREA OF THE BRIDGE ENGINEER AND THE NORTHERN HALF OF THE TRAIL. THE CONTROL POINTS FOR 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.
- 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.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR TEMPORARY RELOCATION 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 LABOR.
- 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 MANHOURES, EQUIPMENT, AND TRANSPORTATION COSTS TO MOVE/RELOCATE ITEMS FROM THE REMOTE STORAGE AREA TO THE CONSTRUCTION SITE IN HIS/HER BID PRICE.
- 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 16, 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.
- 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.
- 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.
- 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.
- 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 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- THE CONTRACTOR SHALL PREVENT DEBRIS, TOOLS, AND CONSTRUCTION MATERIAL FROM FALLING IN THE WATER.
- REMOVAL OF VEGETATION WITHIN WETLANDS SHALL CONSIST OF CUTTING DOWN TO WITHIN SIX (6) INCHES OF EXISTING GRADE. NO GRUBBING SHALL BE ALLOWED.
- 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.
- ALL TESTING OF MATERIALS SHALL BE PERFORMED AND CERTIFIED BY AN INDEPENDENT THIRD PARTY TESTING AGENCY QUALIFIED FOR EACH REQUIRED TEST.
- 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.



**SECTION LEGEND**

1	ITEM 301001 - GRADED AGGREGATE BASE COURSE, TYPE B
2	ITEM 302004 - DELAWARE NO. 10 STONE (STONE DUST)
3	ITEM 708002 - SEPARATION GEOTEXTILE BETWEEN SUBGRADE AND GABC BASE COURSE.
4	ITEM 908004 - TOPSOIL, 6" DEPTH, TO BE PLACED ON ITEM 209006 - BORROW, TYPE F, AS REQUIRED TO CONSTRUCT APPROACH.

ITEM NUMBERS UTILIZE THE CURRENT 2016 DELDOT STANDARD SPECIFICATIONS. ITEM NUMBERS THAT HAVE A "0" FOR THE FOURTH DIGIT, REFER TO DELDOT "STANDARD SPECIFICATIONS". IT IS THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN THE DELDOT STANDARD SPECIFICATIONS EITHER ONLINE OR HARD COPY FROM DELDOT TO REFERENCE THESE ITEMS.

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

**TRAFFIC CONTROL NOTES:**

- THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING A TRAFFIC SAFETY PERMIT FROM THE TWO TEMPORARY CONSTRUCTION ENTRANCES WITH THE DELAWARE DEPARTMENT OF TRANSPORTATION.
- 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.
- NO WORK SHALL BE PERFORMED FROM KILLENS POND ROAD. NO CONSTRUCTION OR PERSONAL VEHICLES SHALL BE PARKED ON OR ALONG KILLENS POND ROAD.
- 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:
  - 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-6J).
  - TYPICAL APPLICATION 10 - LANE CLOSURE ON A TWO-LANE ROAD USING FLAGGERS: WORK WITHIN THE TRAVEL LANE OF HOPKINS ROAD (7A-10J).
  - TYPE III BARRICADES SHALL BE USED TO BLOCK ENTRANCE TO ALL CONSTRUCTION ALONG KILLENS POND ROAD.
- ANY TEMPORARY TRAFFIC CONTROL AND TEMPORARY TRAFFIC CONTROL DEVICES DEEMED NECESSARY BY THE CONTRACTOR AND AS REQUIRED BY DELDOT, SHALL BE IN ACCORDANCE WITH:
  - 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").
  - 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.
- 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.
- 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.
- 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.
- 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.
- 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 REBURNISHED 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.
- 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.
- 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.
- 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.
- THE CONTRACTOR SHALL NOTIFY THE LOCAL 911 CENTER IF ACCESS TO A FIRE HYDRANT IS TEMPORARILY RESTRICTED.
- 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.
- 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.
- 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.
- WHEN SIDE ROADS INTERSECT THE WORK ZONE, ADDITIONAL TRAFFIC CONTROL DEVICES SHALL BE ERECTED INCLUDING PERMANENT WARNING SIGNS.
- ALL STORAGE OF EQUIPMENT AND MATERIAL SHALL COMPLY WITH SECTION 66.21 OF THE DELAWARE MUTCD.
- ALL FLAGGERS SHALL COMPLY WITH CHAPTER 6E OF THE DELAWARE MUTCD.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING HIS/HER WORK WITH OTHER CONTRACTORS IN THE AREA.
- 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.
- 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.
- 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.
- 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:**

- PROVIDE THE FOLLOWING DOCUMENTATION WITH THE BID SUBMITTAL PACKAGE:
  - 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.
  - 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	P	PLATE
B	BASE LINE	P.L.	PROPERTY LINE
C	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:**

- 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.
- 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.
- THE CONTRACTOR SHALL PROVIDE NECESSARY FACILITIES, INCLUDING BUT NOT LIMITED TO RESTROOMS, AND CONSTRUCTION TRAILER DURING CONSTRUCTION. PARK FACILITIES SHALL NOT BE USED.
- 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.
- THE CONTRACTOR SHALL CONTACT MISS UTILITY TWO (2) CONSECUTIVE WORKING DAYS PRIOR TO EXCAVATION, OR AS REQUIRED BY LAW, AT 1-800-282-8555.
- 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.
- 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).
- 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 REVIEW AND APPROVAL PRIOR TO THE START OF WORK. THE COST TO INSTALL, RELOCATE, AND MAINTAIN SITE SECURITY SHALL BE INCIDENTAL TO THE CONTRACT.
- 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.
- 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.
- 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.
- 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.
- NO DEBRIS SHALL BE BURIED OR BURNED ON THE SITE UNLESS SPECIFICALLY NOTED WITHIN THESE PLANS OR SPECIFICATIONS.

LEGEND		
DESCRIPTION	EXISTING	PROPOSED
CONTOUR	- - - - -10' - - - - -	10
GUARDRAIL	○	N/A
SIGN	○	N/A
WOODEN BOLLARD	○	N/A
DOCK/PIER/ELEVATED WALKWAY	N/A	▭
TREE	○	N/A
FENCE	○	○
WOODSLOPE	○	N/A
PROPERTY LINE/RIGHT OF WAY	○	N/A
ORDINARY HIGH WATER LINE	OHW	N/A
SOIL STOCKPILE AREA	N/A	SP
LIMITS OF DISTURBANCE/ LIMITS OF CONSTRUCTION	N/A	LOD-LOC
GRAVEL TRAIL	N/A	▨
BOLLARD	N/A	◇
SPAN IDENTIFICATION NO.	N/A	9
TEST PILE	N/A	⊗ TP
PRODUCTION PILE	N/A	⊗ TP
AREA OF DEMOLITION	N/A	▨

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

**DATA COLUMN**

1. COUNTY TAX MAP:	8-00-149.00-01-13.00-0001 8-00-149.00-01-15.00-0000 6-00-149.00-01-19.00-0001 6-00-149.00-01-44.00-0000
2. DNREC PROJECT NUMBER:	KPSP-28
3. ADDRESS OF SITE:	5025 KILLENS POND ROAD FELTON, DE 19943
4. SITE COORDINATES AT CENTER OF PROJECT SITE:	LONGITUDE: 38.9816 W LATITUDE: 75.5229 N
5. ZONING:	EXISTING: AC-AGRICULTURAL CONSERVATION PROPOSED: AC-AGRICULTURAL CONSERVATION
6. LOT AREA:	TAX PARCEL NO. EXISTING 8-00-149.00-01-13.00-0000 37.68± ACS. 8-00-149.00-01-15.00-0000 2.57± ACS. 6-00-149.00-01-19.00-0000 8.06± ACS. 6-00-149.00-01-44.00-0000 87.7± ACS.
7. SOURCE OF TITLE:	TAX PARCEL NO. DEED RECORD/INSTRUMENT NUMBER 8-00-149.00-01-13.00-0000 2-0023-0536 8-00-149.00-01-15.00-0000 2-0023-0536 6-00-149.00-01-19.00-0000 2-0023-0536 6-00-149.00-01-44.00-0000
8. EXISTING USE:	STATE PARK
9. PROPOSED USE:	STATE PARK WITH PEDESTRIAN IMPROVEMENTS
10. DATUM:	EXISTING VERTICAL - NAVD 88 HORIZONTAL - NAD 83
11. FLOOD PLAIN MAP:	PER FIRM MAP NUMBER 100010335J, DATED JULY 7, 2014, THIS SITE LIES WITHIN ZONE AE, AREA (SFE = 17.43 FEET)
12. WATER RESOURCE PROTECTION:	THIS SITE DOES NOT LAY WITHIN A RECHARGE WATER RESOURCE PROTECTION AREA.
13. TOTAL LAND DISTURBANCE:	THE TOTAL LAND DISTURBANCE PROPOSED BY THIS PLAN IS 0.49± ACRES (21,249± S.F.)
14. LIMITS OF CONSTRUCTION:	THE TOTAL LIMITS OF CONSTRUCTION FOR THE SITE IS 0.49± ACRES (21,249± S.F.)
15. LENGTH OF PROPOSED TRAIL:	868 LINEAR FEET (0.164 MILES).
16. OWNER/DEVELOPER:	STATE OF DELAWARE DNREC, DIVISION OF PARKS & RECREATION 89 KINGS HIGHWAY, DOVER, DE 19901 PHONE: 302-739-9210 FAX: 302-739-3817
17. REVIEW AGENCY:	DNREC, DIVISION OF WATERSHED STEWARDSHIP 89 KINGS HIGHWAY, DOVER, DE 19901 PHONE: (302) 739-9921 FAX: (302) 739-6724
18. CIVIL ENGINEER:	CENTURY ENGINEERING, INC. 4134 NORTH DUPONT HIGHWAY, DOVER, DE 19901 ALEX SCHMIDT, P.E. PHONE: (302) 734-9188 FAX: (302) 734-4589

**SPECIFICATIONS**

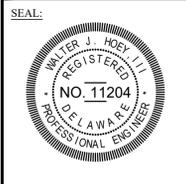
- CIVIL ELEMENTS UNDER THIS CONTRACT SHALL BE CONSTRUCTED UTILIZING THE FOLLOWING INFORMATION IN THE HIERARCHY LISTED BELOW:
- CONTRACT AGREEMENT BETWEEN OWNER AND CONTRACTOR.
  - APPROVED PLANS.
  - PROJECT MANUAL.
  - STATE OF DELAWARE DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL EROSION AND SEDIMENT CONTROL HANDBOOK, APRIL 2014 OR MOST CURRENT AT DATE OF ADVERTISEMENT.
  - DELAWARE DEPARTMENT OF TRANSPORTATION STANDARD CONSTRUCTION DETAILS, 2017, OR MOST CURRENT AT ADVERTISEMENT.
  - 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:	<ol style="list-style-type: none"> <li>ALL FIRE LANES, FIRE HYDRANTS, AND FIRE DEPARTMENT CONNECTIONS SHALL BE MARKED IN ACCORDANCE WITH THE STATE FIRE PREVENTION REGULATIONS.</li> <li>ALL PROPOSED FIRE HYDRANTS AND WATER MAINS SHALL BE INSTALLED IN ACCORDANCE WITH THE MOST CURRENT EDITION OF THE DELAWARE STATE FIRE REGULATIONS. (DSFR REGULATION 702, CHAPTER 6 &amp; 7.</li> <li>FIRE HYDRANTS SHALL BE COLOR CODED IN ACCORDANCE WITH THE DSFR 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.</li> <li>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. (DSFR REGULATION 703, CHAPTER 1, SECTION 1.5)</li> <li>THE STEAMER CONNECTION OF ALL FIRE HYDRANTS SHALL BE SO POSITIONED SO AS TO BE FACING THE STREET OR FIRE LANE. (DSFR REGULATION 705, CHAPTER 5, SECTION 10)</li> </ol>

REVISIONS:	DATE:	DESCRIPTION:

**KILLENS POND STATE PARK  
ELEVATED WALKWAY**  
  
**PROJECT NOTES & LEGEND**



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

CEI CONTRACT NO.: 175013.11



DESIGNED BY:  
**WJH**

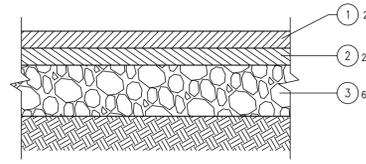
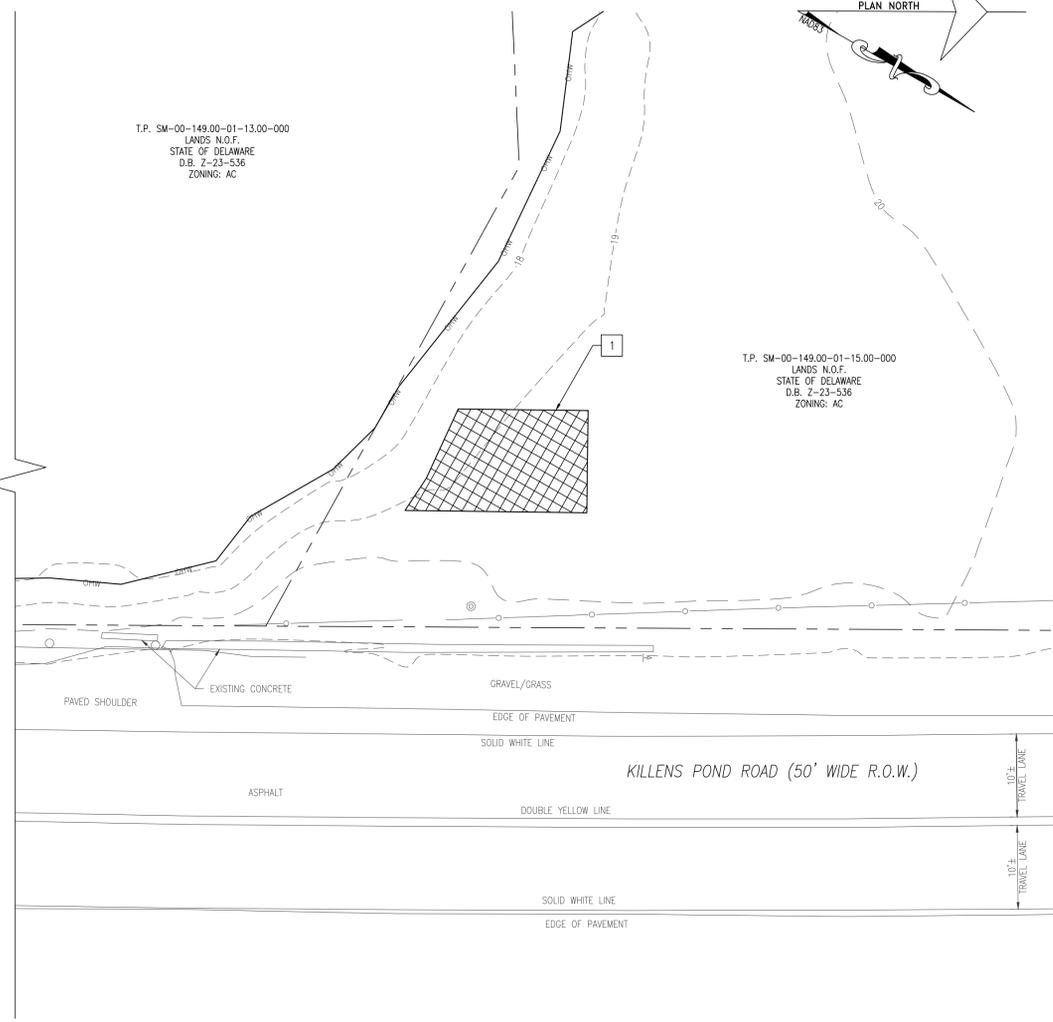
DRAWN BY:  
**JSW**

CHECKED BY:  
**AES**

DATE:  
**AUGUST 2020**

SCALE:  
**NONE**





TYPICAL SECTION - PARKING LOT & PATCH  
SCALE: NONE

- 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]

- NOTES:** (X)
1. CLEAR AND GRUB AS REQUIRED.
  2. REMOVE EXISTING TREE.
  3. REMOVE AND REPLACE EXISTING ASPHALT PAVEMENT. AREA OF NEW PAVEMENT SHALL MATCH EXISTING PAVED AREA. CONTRACTOR TO STAKE OUT AREA IN THE FIELD FOR REVIEW AND APPROVAL BY THE OWNER. ASPHALT PAVEMENT SHALL BE PAVED AFTER CONSTRUCTION OF THE ELEVATED WALKWAY.
  4. NEW ASPHALT PAVEMENT TO CONSIST OF:
    - 4.1. 1 1/2" ITEM 401002 - BITUMINOUS CONCRETE, SUPERPAVE TYPE C, 160 GYRATIONS PG 64-22 (CARBONATE STONE).
    - 4.2. 1 1/2" ITEM 401011 - BITUMINOUS CONCRETE, SUPERPAVE TYPE B, 160 GYRATIONS PG 64-22.



REVISIONS:	DATE:	DESCRIPTION:	BY:

**KILLENS POND STATE PARK  
ELEVATED WALKWAY  
DEMOLITION PLAN**



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**

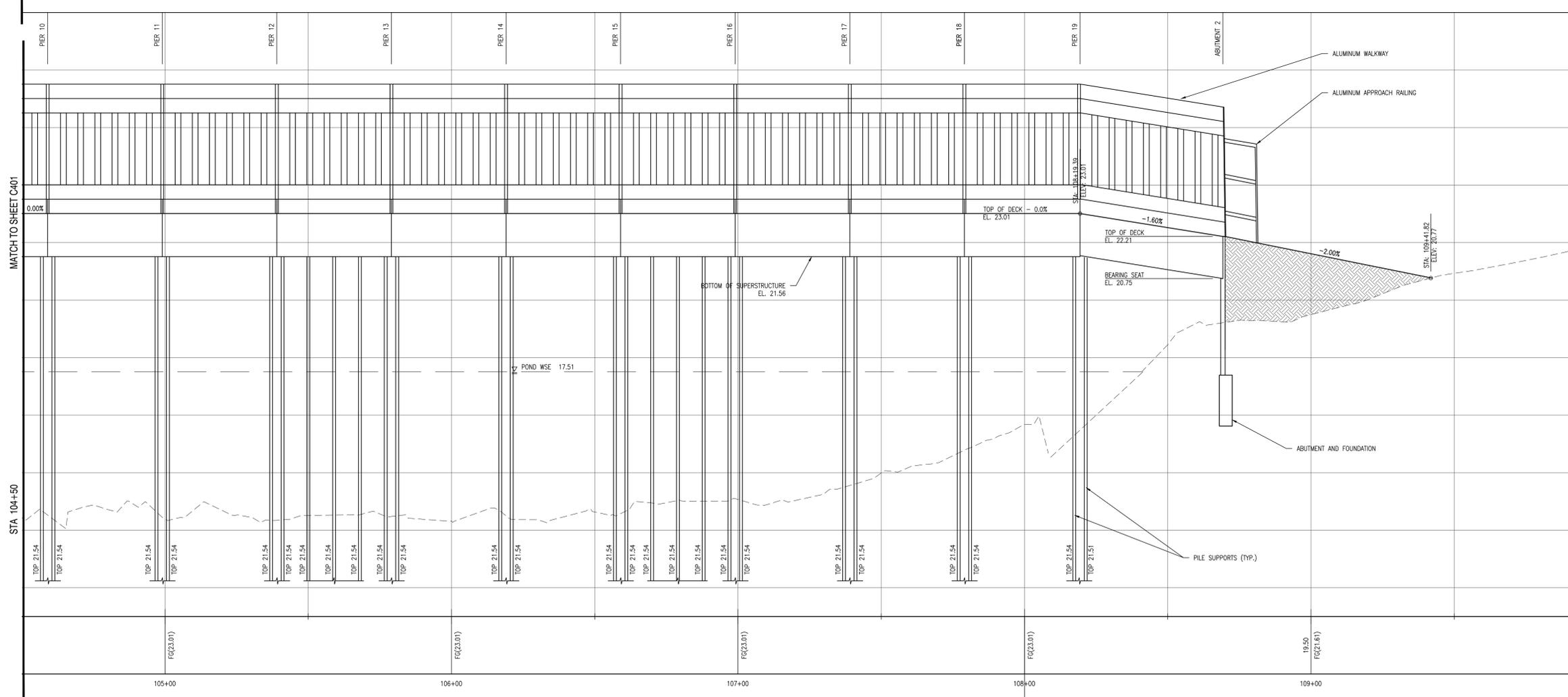
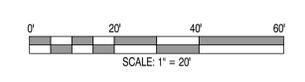
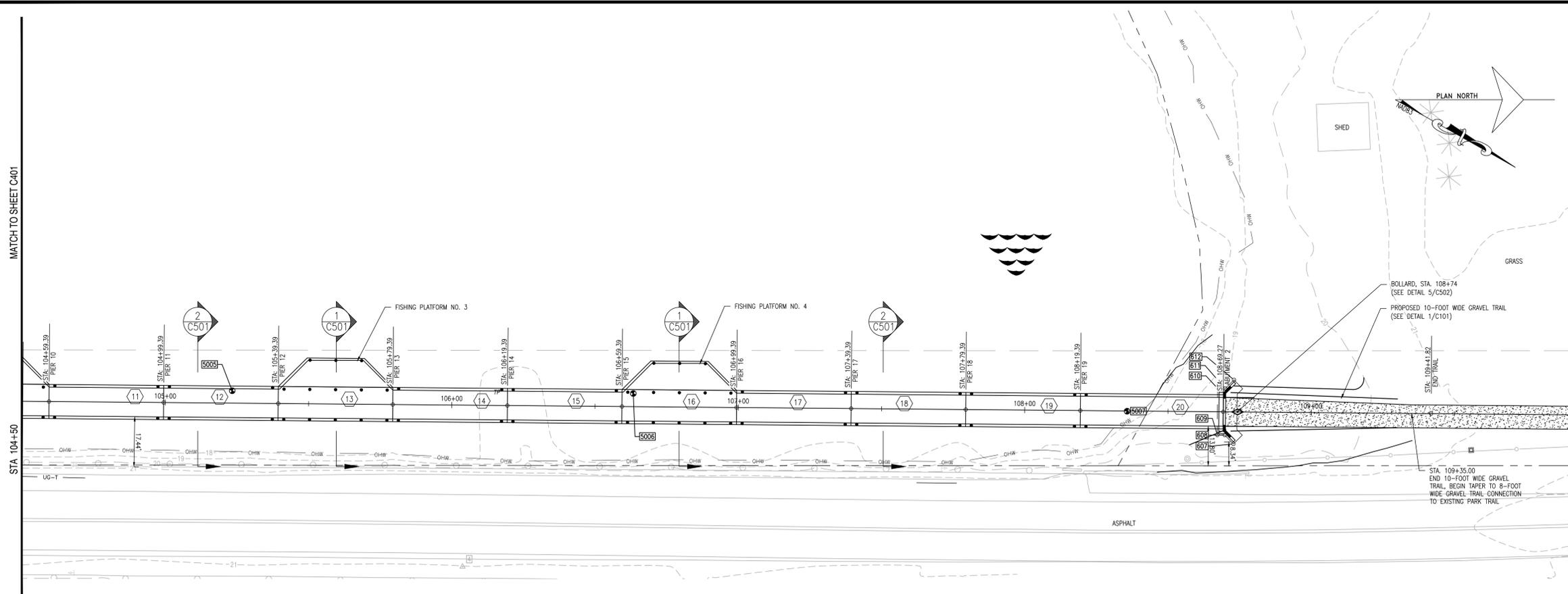
DATE:  
**AUGUST 2020**  
 SCALE:  
**1"=10'**  
 SHEET NO.:  
**C201**  
 CONTRACT NO.:  
**2020-KP-100**

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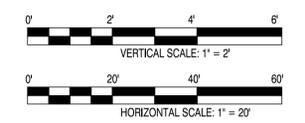


\\\www.centuryeng.com\Drawings\2020\2020-KP-100 (DWG) 2020-08-11 11:11:11 (Date: 2020-08-11) (Time: 11:11:11) (User: J. Hoey) (Project: Killens Pond State Park Elevation Walkway) (Sheet: C402) (Scale: 1"=20') (Date: 7/14/2020 8:16:18 AM)



PILE SCHEDULE			
PIER NO.	EX. GRADE	MIN. PILE TIP	PILE TOP
1	15,000	-10,000	20.40
2	13,000	-12,000	21.48-21.54
3	13,000	-12,000	21.54
4	11,000	-14,000	21.54
5	10,500	-14,500	21.54-21.20
6	10,500	-14,500	21.20-21.54
7	10,500	-14,500	21.54
8	13,000	-12,000	21.54
9	12,500	-12,500	21.54
10	12,500	-12,500	21.54
11	12,500	-12,500	21.54
12	12,500	-12,500	21.54
13	12,500	-12,500	21.54
14	12,500	-12,500	21.54
15	12,500	-12,500	21.54
16	13,000	-12,000	21.54
17	13,500	-11,500	21.54
18	14,500	-10,500	21.54
19	15,000	-10,000	21.54-21.51

- NOTES:
- PILE TIP ELEVATIONS PROVIDED ARE MINIMUM AND FOR ESTIMATING PURPOSES ONLY. ACTUAL PILE LENGTHS MAY BE LONGER AND SHALL BE ESTABLISHED FOLLOWING INSTALLATION OF TEST PILES UTILIZING A DYNAMIC LOAD TEST CONFORMING TO ASTM D4849 - STANDARD TEST METHOD FOR HIGH-STRAIN DYNAMIC TESTING OF PILES.
  - ⊕<sub>TP</sub> INDICATES TEST PILE LOCATION.
  - INDICATES PRODUCTION PILE LOCATION.
  - REFER TO SHEETS C401 AND C402 FOR ADDITIONAL INFORMATION.
  - THE DESIGNATION "TOP XX.XX" SHOWN AT THE BOTTOM OF EACH PILE DESIGNATES THE ELEVATION OF THE BEARING PLATE AT THE TOP OF THE PILE. THE CONTRACTOR SHALL ADJUST THIS ELEVATION AS REQUIRED TO ACCOUNT FOR THE THICKNESS OF THE BEARING PLATE.
  - 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.



**REVISIONS:**  
 DATE: 1/6/2020 DESCRIPTION: RELOCATED BOLLARD  
 BY: WJH

**KILLENS POND STATE PARK  
 ELEVATED WALKWAY  
 SITE PLAN & PROFILE**

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**

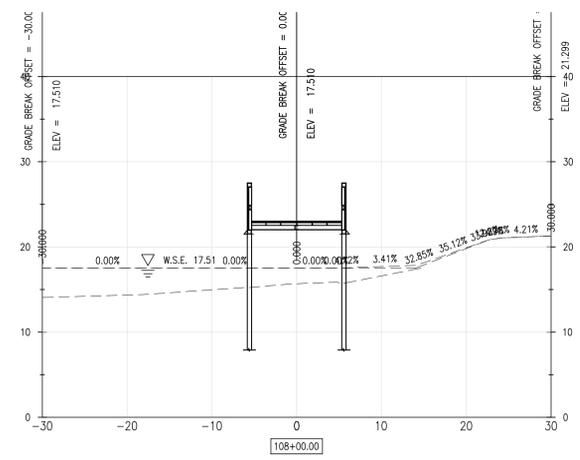
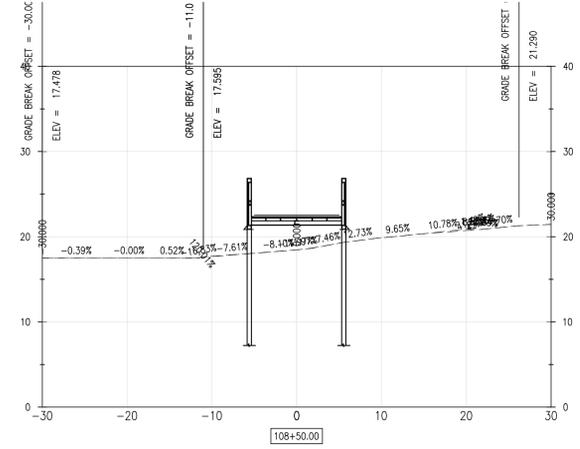
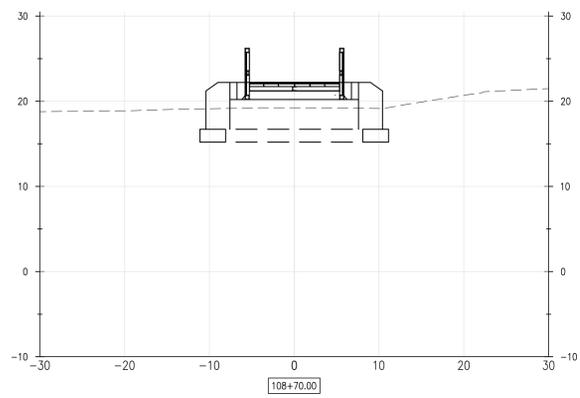
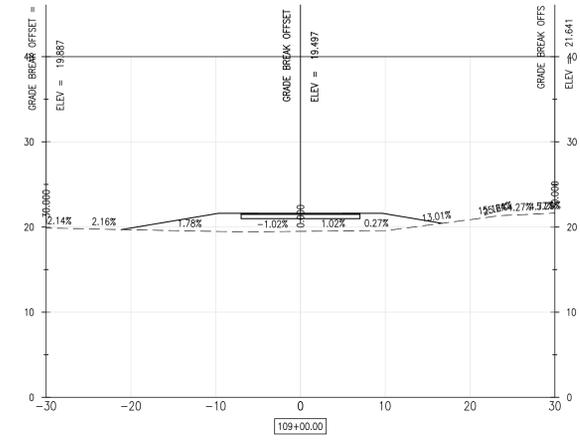
SCALE:  
**AS NOTED**

SHEET NO.:  
**C402**

CONTRACT NO.:  
**2020-KP-100**



\\www.centuryeng.com\Cad\CD\00-Projects\001\Project\17501310 (DWSG) 2017 Engineering\00\17501311 Killens Pond Bridge\CAD\FILES\Cross\Construction Plans\C404\_Section.dwg, 7/17/2020 8:17:22 AM



REVISIONS:

DATE:	DESCRIPTION:	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:

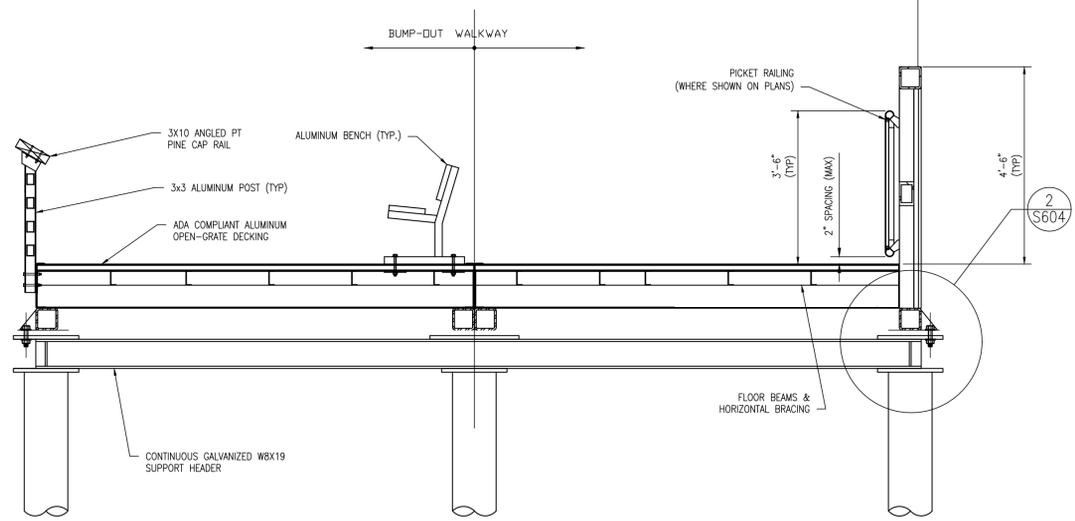
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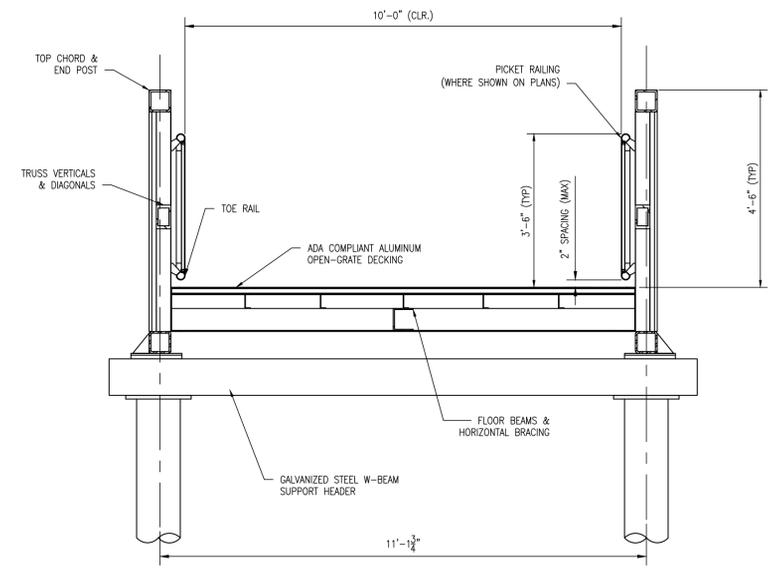
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CONTRACT NO.:

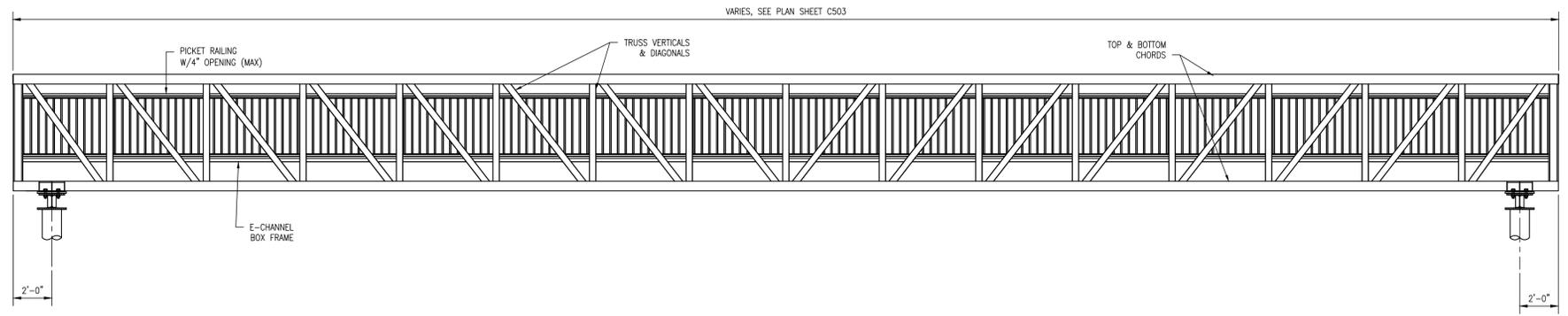
2020-KP-100



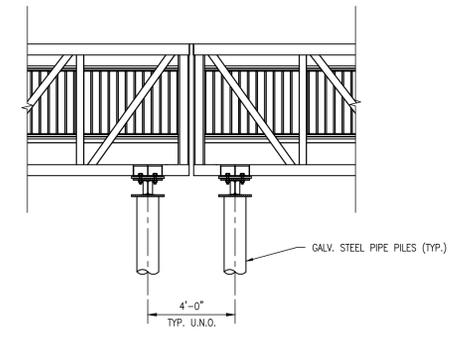
1 TYPICAL SECTION AT FISHING BUMP-OUT  
SCALE: 1/2" = 1'-0"



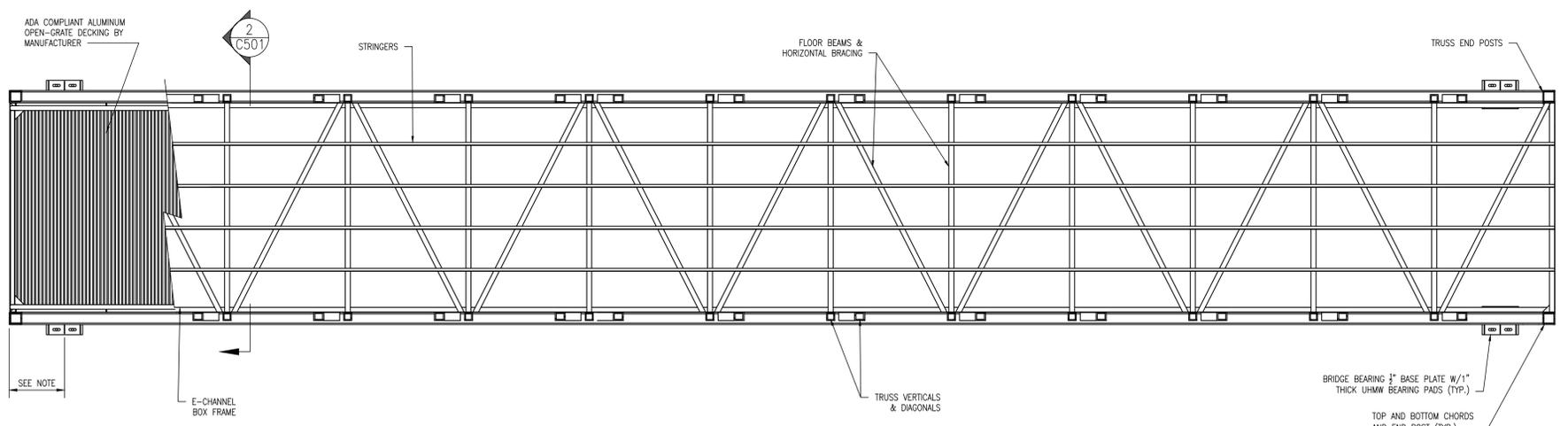
2 TYPICAL WALKWAY SECTION  
SCALE: 1/2" = 1'-0"



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

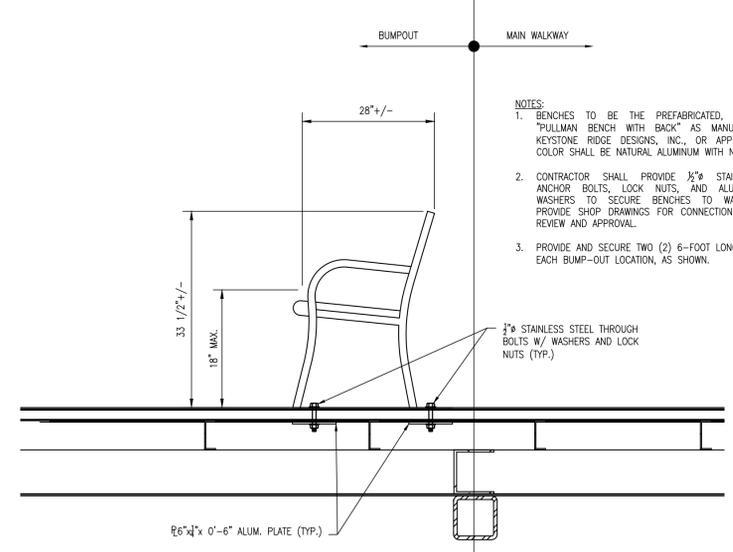


4 ELEVATION AT WALKWAY JOINT  
SCALE: 1/4" = 1'-0"



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

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



5 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



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

CEI CONTRACT NO.: 175013.11

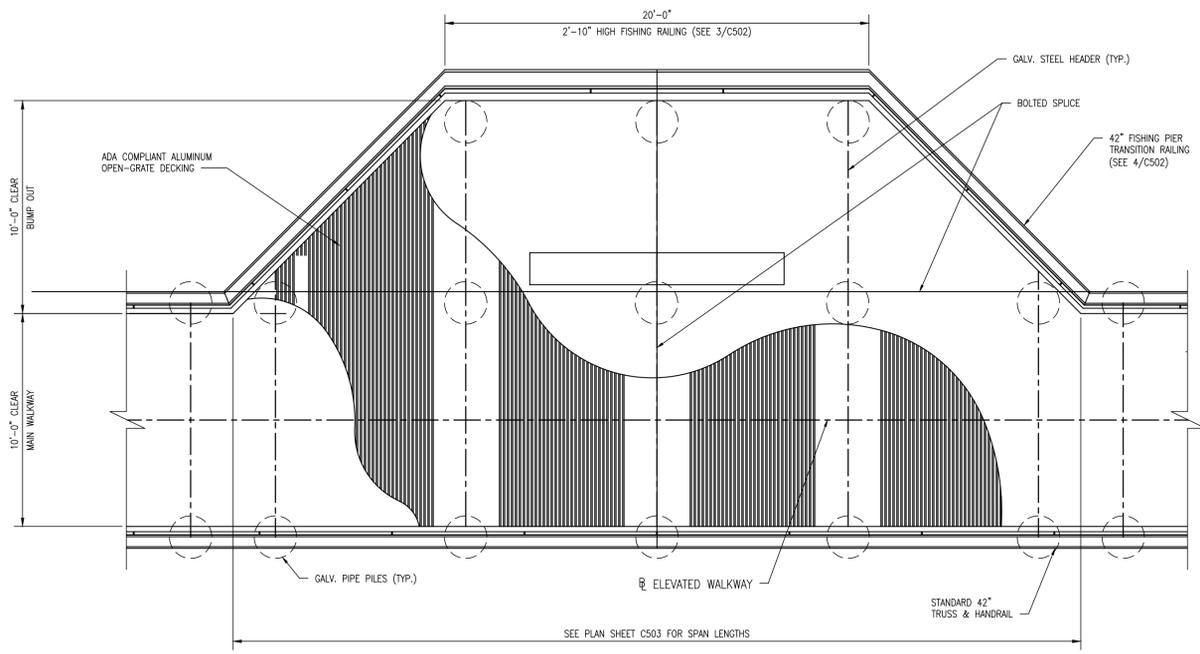


DESIGNED BY:  
**WJH**  
DRAWN BY:  
**JSW**  
CHECKED BY:  
**AES**

DATE:  
**AUGUST 2020**  
SCALE:  
**AS SHOWN**

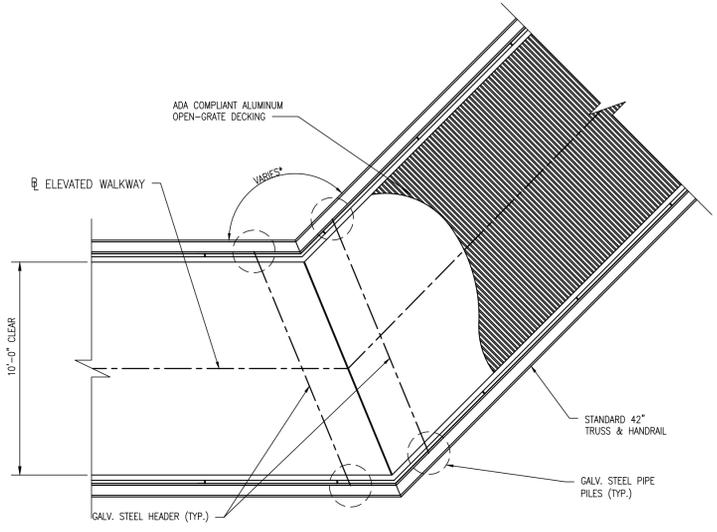
SHEET NO.:  
**C501**

CONTRACT NO.:  
**2020-KP-100**



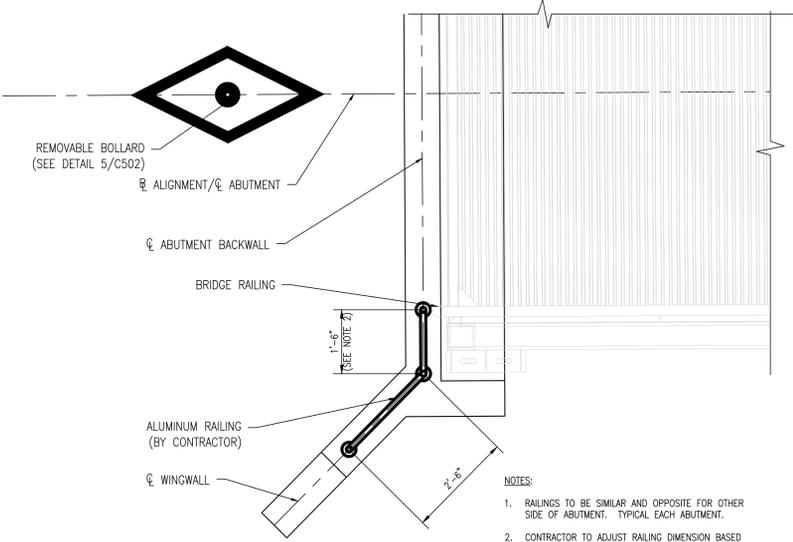
1 FISHING PIER BUMP-OUT  
SCALE: 1/4" = 1'-0"

- 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.



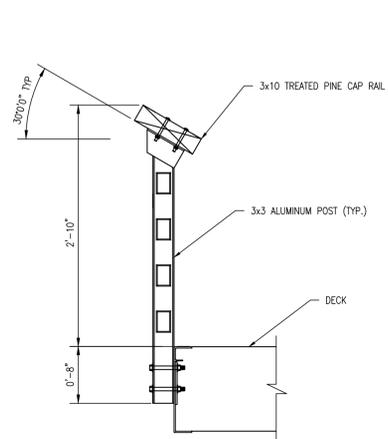
2 TYPICAL OFFSET  
SCALE: 1/4" = 1'-0"

NOTE: \*REFER TO SHEET C503 FOR OFFSET ANGLES.

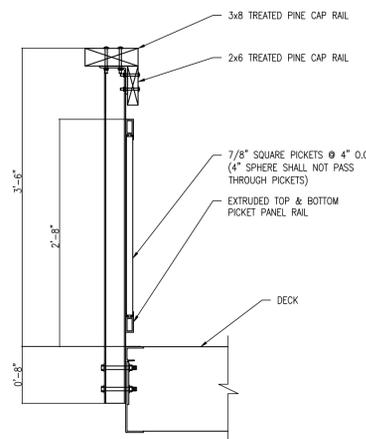


6 ABUTMENT RAILING PLAN  
SCALE: 1/2" = 1'-0"

- NOTES:
1. RAILINGS TO BE SIMILAR AND OPPOSITE FOR OTHER SIDE OF ABUTMENT. TYPICAL EACH ABUTMENT.
  2. CONTRACTOR TO ADJUST RAILING DIMENSION BASED ON BRIDGE RAILING LOCATION(S).

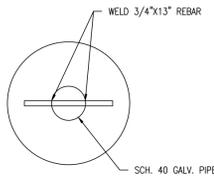


3 FISHING RAILING  
SCALE: 1" = 1'-0"

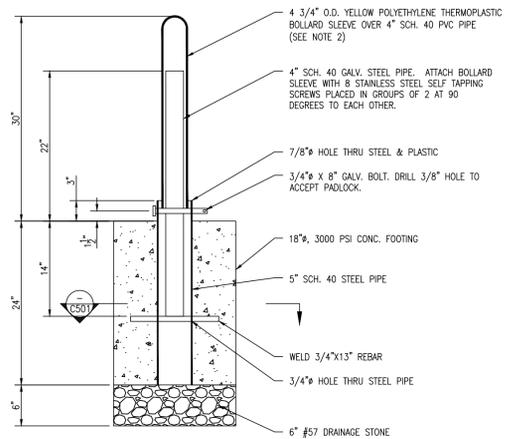


4 BUMP OUT TRANSITION RAILING  
SCALE: 1" = 1'-0"

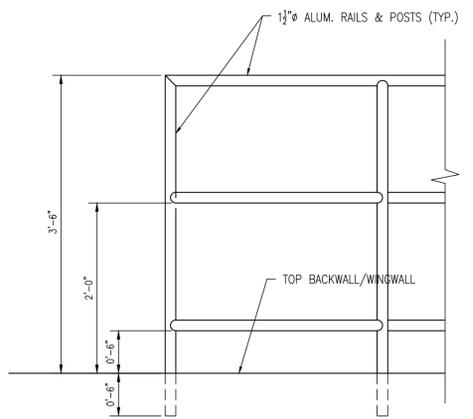
- NOTES:
1. ALL STEEL SHALL BE HOT DIPPED GALVANIZED AFTER FABRICATION.
  2. REMOVABLE BOLLARD SLEEVE IS MODEL #BPD-YL-3 1/2-68-S DISTRIBUTED BY BOLLARDS AND SLEEVES, LLC (1-800-914-4771).
  3. BOLLARD TO BE PROVIDED BY THE CONTRACTOR.
  4. PLACE BOLLARDS AS SHOWN ON PLAN.
  5. BOLLARDS SHALL BE SET VERTICALLY PLUMB.



5 PLAN VIEW/SECTION



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



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

REVISIONS:

DATE:	DESCRIPTION:	BY:

KILLENS POND STATE PARK  
ELEVATED WALKWAY  
ELEVATED WALKWAY DETAILS



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



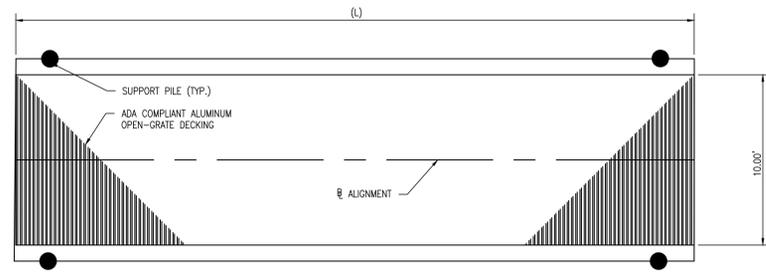
DESIGNED BY:  
**WJH**  
DRAWN BY:  
**JSW**  
CHECKED BY:  
**AES**

DATE:  
**AUGUST 2020**  
SCALE:  
**AS NOTED**

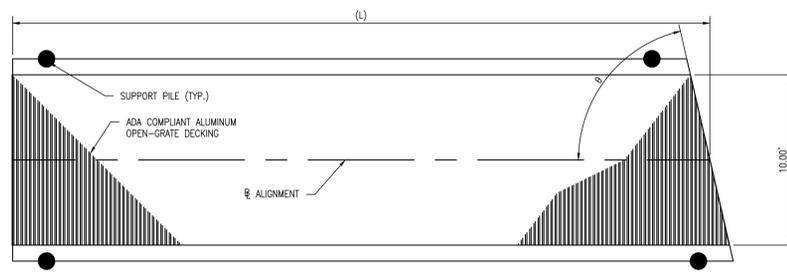
SHEET NO.:  
**C502**

CONTRACT NO.:  
**2020-KP-100**

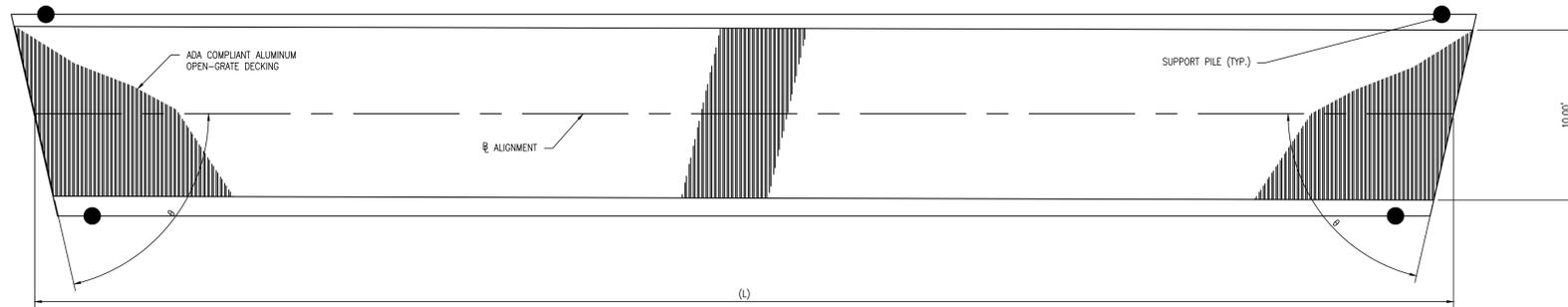
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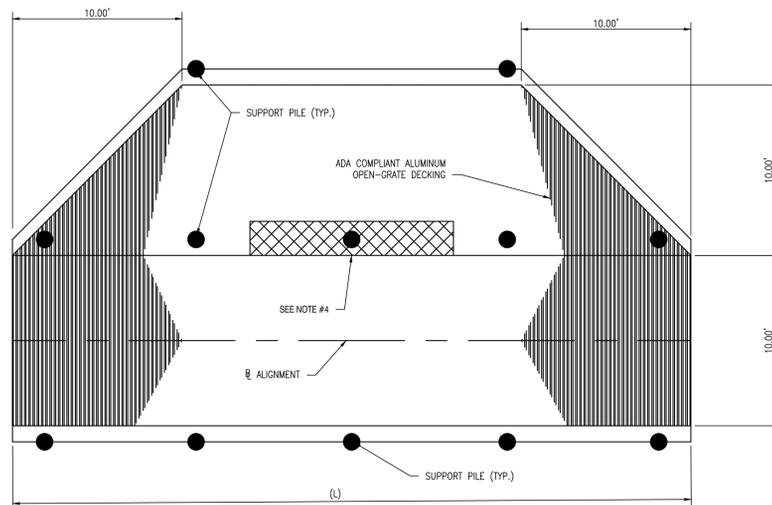
1 SPAN TYPE A  
C503 SCALE: 1"=5'



2 SPAN TYPE B  
C503 SCALE: 1"=5'



3 SPAN TYPE C  
C503 SCALE: 1"=5'



4 SPAN TYPE D  
C503 SCALE: 1"=5'

WALKWAY SPAN SCHEDULE			
SPAN	TYPE	LENGTH (L)	ANGLE (θ)
1	A	31.49'-33.00'	
2	A	40'	
3	B	41.13'	77°00'00"
4	B (* SEE NOTE 1)	40.24'	77°00'00"
5	D	39.24'-40.38'	77°00'00"
6	C	84.00'	77°00'00"/77°00'00"
7	B (* SEE NOTE 1)	42.35'	77°00'00"
8	B	41.88'	77°15'00"
9	B (* SEE NOTE 1)	39.42'	77°15'00"
10	D	40.00'	
11	A	40.00'	
12	A	40.00'	
13	D	40.00'	
14	A	40.00'	
15	A	40.00'	
16	D	40.00'	
17	A	40.00'	
18	A	40.00'	
19	A	40.00'	
20	A	48.38'-49.88'	

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

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

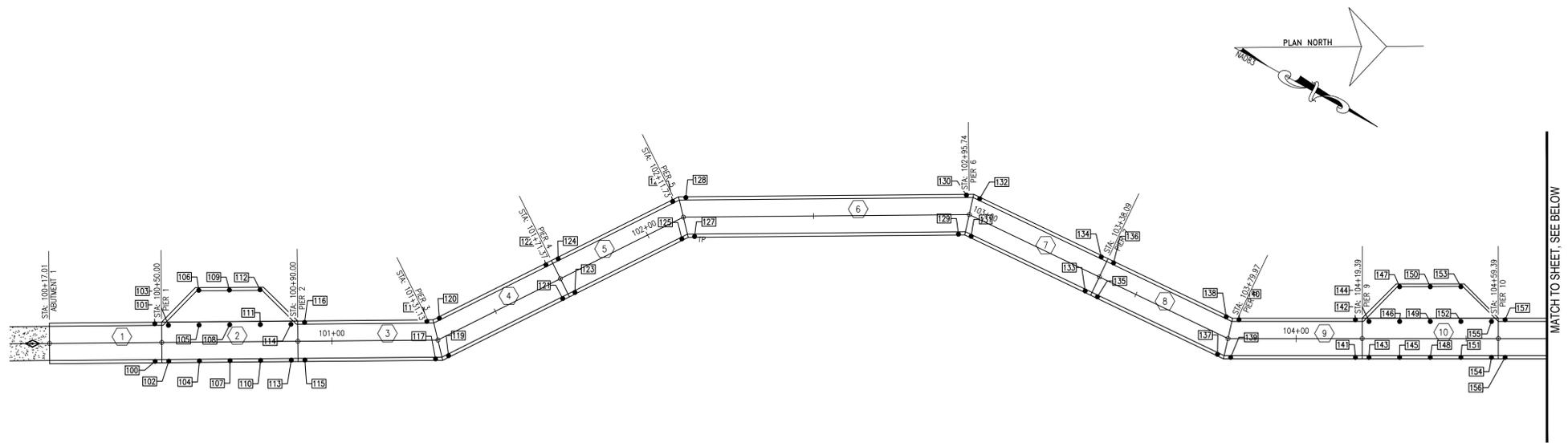
CONTRACT NO.:

2020-KP-100

REVISIONS:  
DATE: 3/17/2020  
DESCRIPTION: REVISED WALKWAY SPAN SCHEDULE (LENGTHS)

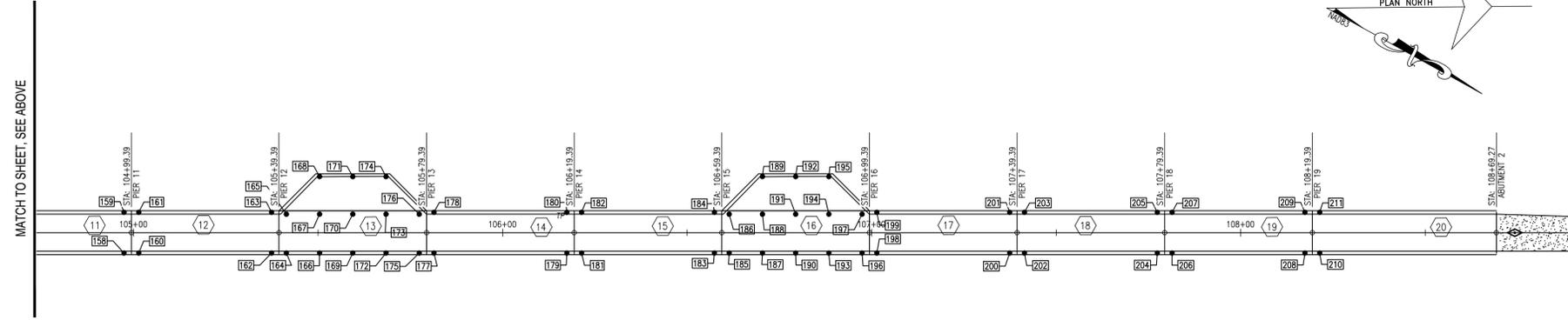
BY:

WJH



1 PILE LAYOUT  
SCALE: 1"=20'

MATCH TO SHEET, SEE BELOW



2 PILE LAYOUT  
SCALE: 1"=20'

MATCH TO SHEET, SEE ABOVE

PILE POINT LAYOUT		
POINT NO.	DESCRIPTION	EASTING
100	PILES	624150.0003
101	PILES	624140.4131
102	PILES	624148.0417
103	PILES	624138.8866
104	PILES	624143.6364
105	PILES	624134.4812
106	PILES	624125.6216
107	PILES	624139.2310
108	PILES	624130.0759
109	PILES	624121.2162
110	PILES	624134.8256
111	PILES	624125.6705
112	PILES	624116.8109
113	PILES	624130.4211
114	PILES	624121.2660
115	PILES	624128.4578
116	PILES	624118.8667
117	PILES	624109.6572
118	PILES	624101.2724
119	PILES	624107.0070
120	PILES	624098.7176
121	PILES	624076.1871
122	PILES	624069.9278
123	PILES	624072.8978
124	PILES	624066.6386
125	PILES	624044.0095
126	PILES	624035.7244
127	PILES	624041.6129
128	PILES	624032.8647
129	PILES	624003.6469
130	PILES	623992.4862
131	PILES	624002.3906
132	PILES	623991.5516
133	PILES	624000.2423
134	PILES	623989.2608
135	PILES	624000.0108
136	PILES	623989.0293
137	PILES	623997.7487
138	PILES	623986.9070
139	PILES	623986.6466
140	PILES	623985.8464
141	PILES	623978.9927
142	PILES	623969.3549
143	PILES	623977.0624
144	PILES	623967.8627
145	PILES	623972.7258
146	PILES	623963.5261
147	PILES	623954.6234
148	PILES	623968.3892
149	PILES	623959.1895
150	PILES	623950.2867
151	PILES	623964.0525
152	PILES	623954.8528
153	PILES	623945.9501
154	PILES	623959.7167
155	PILES	623950.5170
156	PILES	623957.7836

PILE POINT LAYOUT		
POINT NO.	DESCRIPTION	EASTING
157	PILES	623948.1459
158	PILES	623940.4307
159	PILES	623930.7930
160	PILES	623938.5026
161	PILES	623928.8649
162	PILES	623921.1498
163	PILES	623911.5120
164	PILES	623919.2197
165	PILES	623910.0198
166	PILES	623914.8829
167	PILES	623905.6832
168	PILES	623896.7804
169	PILES	623910.5462
170	PILES	623901.3467
171	PILES	623892.4437
172	PILES	623906.2097
173	PILES	623897.0100
174	PILES	623888.1071
175	PILES	623901.8739
176	PILES	623892.6742
177	PILES	623899.9407
178	PILES	623890.3031
179	PILES	623882.5878
180	PILES	623872.9501
181	PILES	623880.6597
182	PILES	623871.0220
183	PILES	623863.3069
184	PILES	623853.6692
185	PILES	623861.3766
186	PILES	623852.1773
187	PILES	623857.0400
188	PILES	623847.8406
189	PILES	623838.9375
190	PILES	623852.7033
191	PILES	623843.5040
192	PILES	623834.6009
193	PILES	623848.3667
194	PILES	623839.1673
195	PILES	623830.2642
196	PILES	623844.0259
197	PILES	623834.8316
198	PILES	623842.0978
199	PILES	623832.4605
200	PILES	623824.7450
201	PILES	623815.1072
202	PILES	623822.8169
203	PILES	623813.1791
204	PILES	623805.4640
205	PILES	623795.8263
206	PILES	623803.5359
207	PILES	623793.8982
208	PILES	623786.1830
209	PILES	623776.5453
210	PILES	623784.2549
211	PILES	623774.6172

- NOTES:
- PILE TIP ELEVATIONS PROVIDED ARE MINIMUM AND FOR ESTIMATING PURPOSES ONLY. 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.
  - ⊕<sub>TP</sub> INDICATES TEST PILE LOCATION.
  - INDICATES PRODUCTION PILE LOCATION.
  - REFER TO SHEETS C401 AND C402 FOR ADDITIONAL INFORMATION.
  - 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.

REVISIONS:

DATE:	DESCRIPTION:	BY:

KILLENS POND STATE PARK  
ELEVATED WALKWAY  
ELEVATED WALKWAY DETAILS

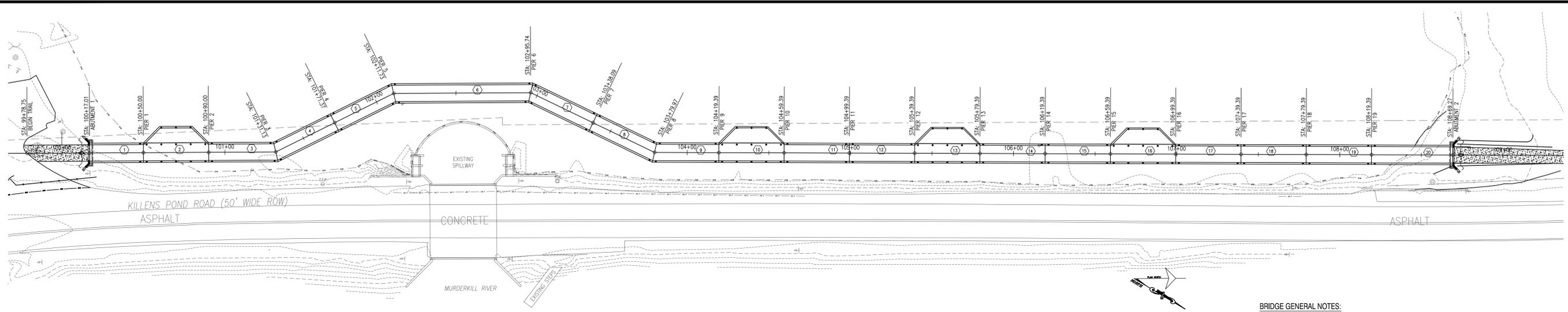


CIVIL ENGINEER:  
**CENTURY ENGINEERING**  
CONSULTING ENGINEERS, SURVEYORS  
4134 N. DUPONT HWY.  
DOVER, DELAWARE 19901



CEI CONTRACT NO.: 175013.11

DESIGNED BY:	WJH
DRAWN BY:	JSW
CHECKED BY:	AES
DATE:	AUGUST 2020
SCALE:	AS SHOWN
SHEET NO.:	C504
CONTRACT NO.:	2020-KP-100



1 ELEVATED WALKWAY PLAN VIEW  
S601 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 GALVALUME, 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 DEMAND 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:**

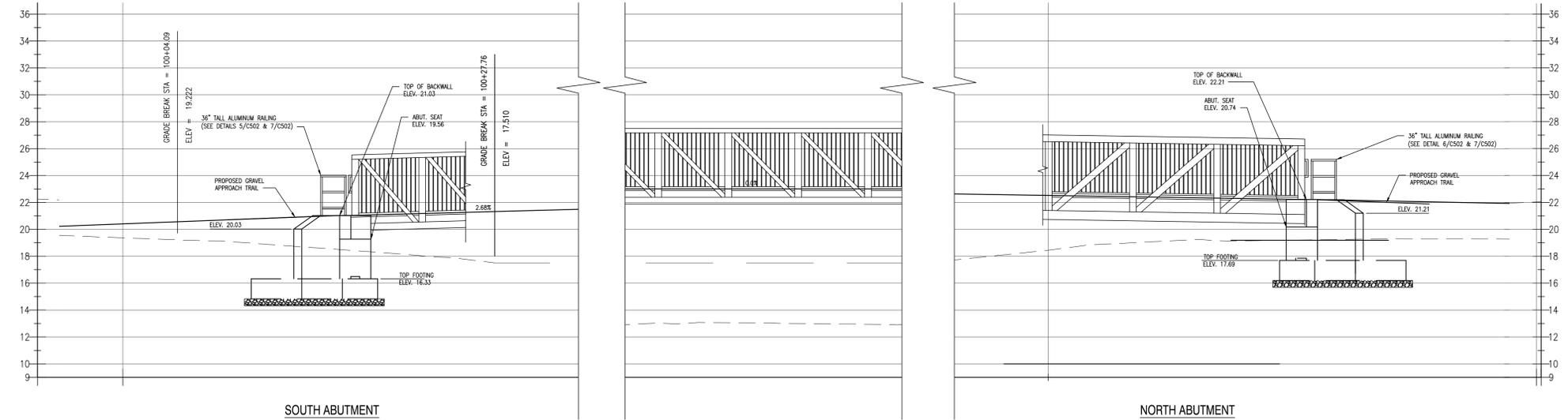
- CONSTRUCTION OF THE ELEVATED WALKWAY SHALL BE STARTED AT OR NEAR THE MID-SPAN OF THE STRUCTURE AND PROGRESS TO THE NORTH AND THE SOUTH TO PREVENT PEDESTRIAN ACCESS UNTIL CONSTRUCTION IS COMPLETE.
- DEWATERING IS ANTICIPATED FOR THE CONSTRUCTION OF THE BRIDGE ABUTMENTS. THE CONTRACTOR SHALL PROVIDE 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.
- ELEVATION OF LOWEST BRIDGE SUPERSTRUCTURE ELEMENT ON LEVEL SECTIONS SHALL BE A MINIMUM OF 4.0 FEET ABOVE THE POND WATER ELEVATION. THE CONTRACTOR SHALL ADJUST THE PROFILE OF THE BRIDGE AS REQUIRED TO PROVIDE THIS MINIMUM CLEARANCE.

**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 25 TONS AND TO THE MINIMUM TIP ELEVATION SHOWN ON SHEETS S601 AND S602. AT A MINIMUM, ALL PILES SHALL BE DRIVEN TO 25-FOOT EMBEDMENT WITH 27 KIPS CAPACITY FOR 12-INCH PILES AND 45 KIPS CAPACITY FOR 14-INCH PILES.



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

REVISIONS:	DATE:	DESCRIPTION:
	9/19/2020	REVISED NOTE 31
BY:		
CHK:		

KILLENS POND STATE PARK  
 ELEVATED WALKWAY  
 WALKWAY PLAN AND ELEVATION



**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**

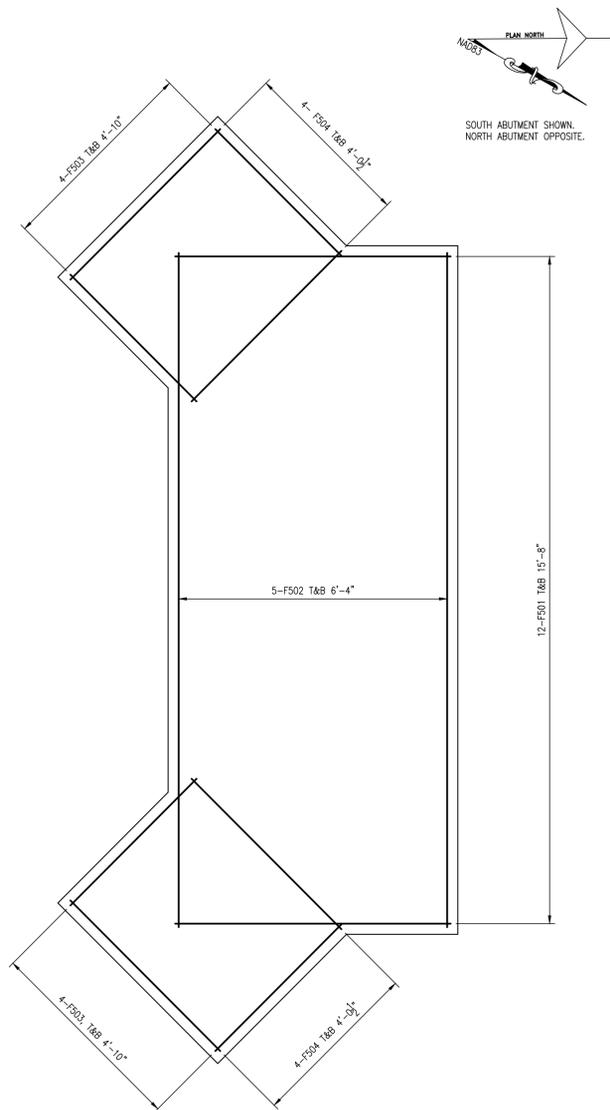
DATE:  
**AUGUST 2020**

SCALE:  
**AS SHOWN**

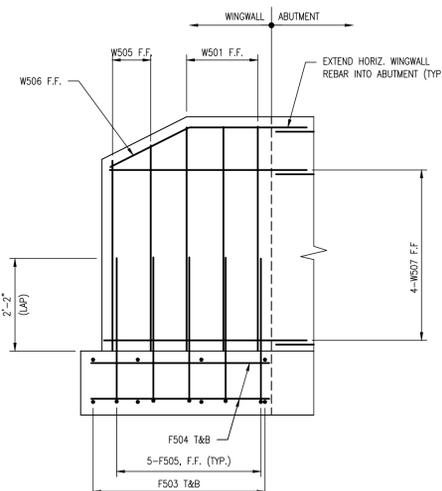
SHEET NO.:  
**S601**

CONTRACT NO.:  
**2020-KP-100**

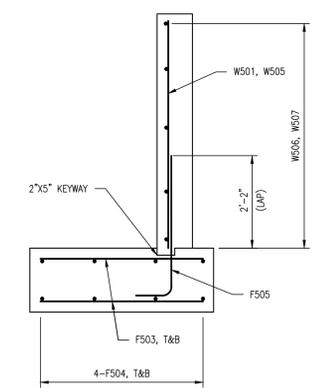




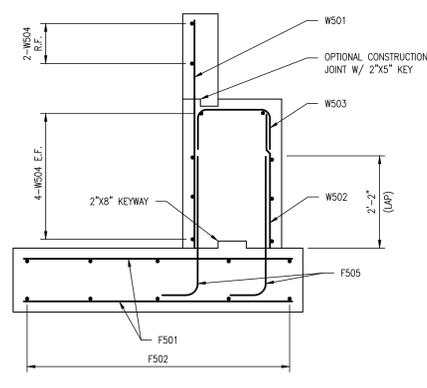
1 TYPICAL ABUTMENT FOOTING PLAN  
S603 SCALE: 1/2" = 1'-0"



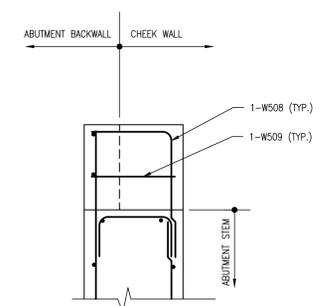
3 TYPICAL WINGWALL REBAR ELEVATION  
S603 SCALE: 1/2" = 1'-0"



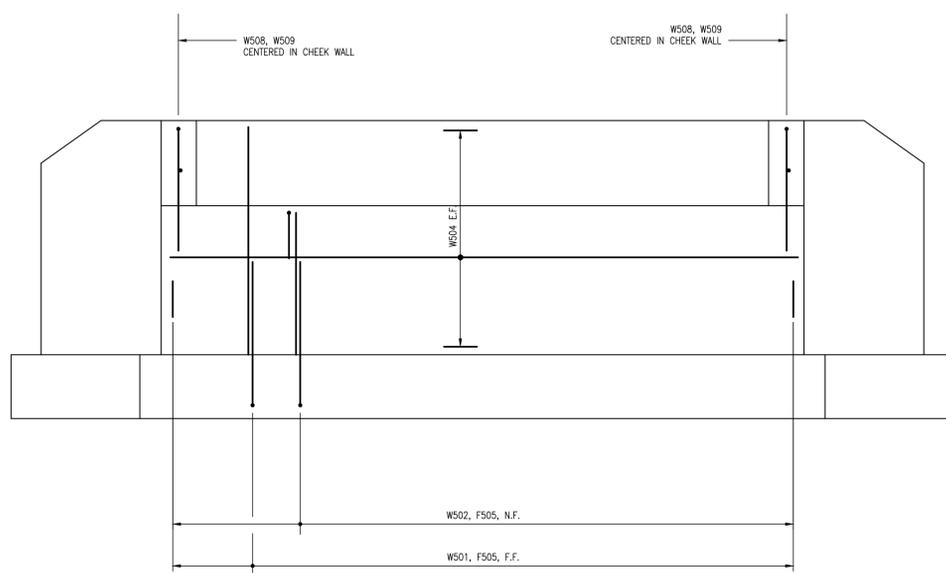
4 TYPICAL WINGWALL REBAR DETAIL  
S603 SCALE: 1/2" = 1'-0"



5 ABUTMENT REBAR DETAIL  
S603 SCALE: 1/2" = 1'-0"



6 CHEEK WALL REBAR DETAIL  
S603 SCALE: 1/2" = 1'-0"

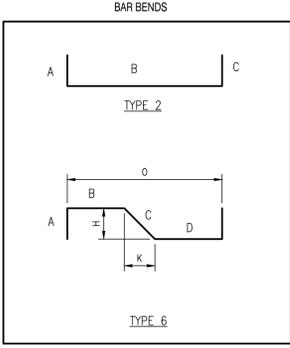


2 TYPICAL ABUTMENT ELEVATION  
S603 SCALE: 1/2" = 1'-0"

NOTE:  
SEE DETAIL 3/S603 FOR WINGWALL REINFORCEMENT DETAILS

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



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.

REBAR SCHEDULE (QUANTITIES SHOWN ARE FOR TWO ABUTMENTS)

MARK	SIZE	NO.	LENGTH	TYPE	A	B	C	D	E	F	G	H	K	REMARKS
FOOTINGS														
F501	5	48	6'-4"	STR										
F502	5	20	15'-8"	STR										
F503	5	32	4'-0 1/2"	STR										
F504	5	32	4'-10"	STR										
F505	5	48	4'-0 1/2"	2	0'-10"	3'-4"								
ABUTMENT & WINGS														
W501	5	36	5'-3 1/4"	STR										
W502	5	24	3'-4"	STR										
W503	5	24	4'-0"	2	1'-0"	2'-0"	1'-0"							
W504	5	20	15'-8"	STR										
W505	5	8	(4'-4" TO 5'-4")	STR										2 SETS, 2 EACH SET
W506	5	4	4'-8"	6		2'-8"	2'-0"					1'-0"	1'-9"	
W507	5	16	4'-7"	STR										
W508	5	4	4'-10"	2	2'-0"	2'-10"								
W509	5	4	2'-0"	STR										

REVISIONS:

BY:	
DATE:	
DESCRIPTION:	

KILLENS POND STATE PARK  
ELEVATED WALKWAY  
REINFORCEMENT DETAILS



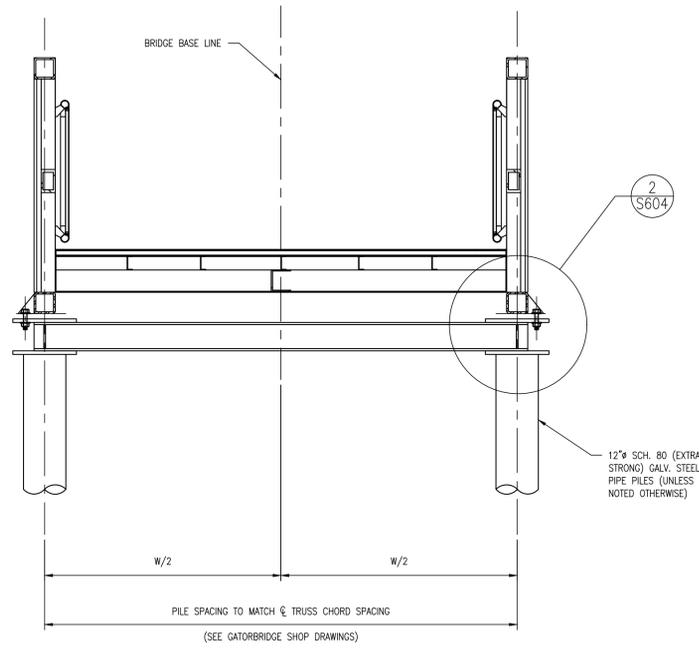
CIVIL ENGINEER:  
**CENTURY ENGINEERING**  
CONSULTING ENGINEERS, SURVEYORS  
4134 N. DUPONT HWY.  
DOVER, DELAWARE 19901



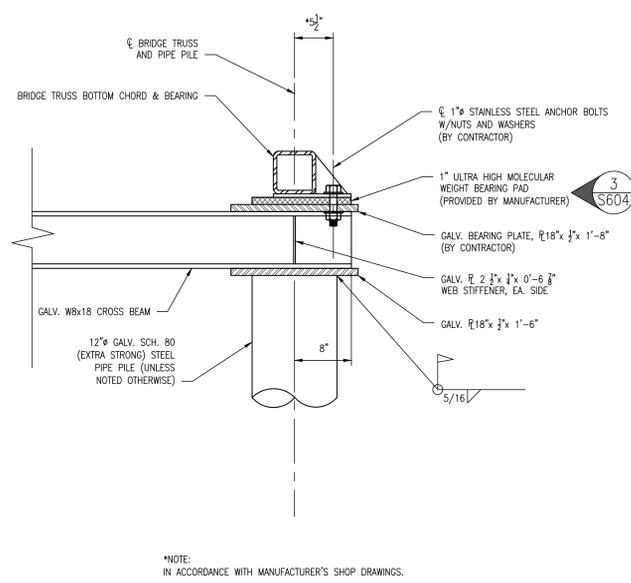
DESIGNED BY:  
**WJH**  
DRAWN BY:  
**JSW**  
CHECKED BY:  
**AES**  
DATE:  
**AUGUST 2020**  
SCALE:  
**AS SHOWN**

SHEET NO.:  
**S603**  
CONTRACT NO.:  
**2020-KP-100**

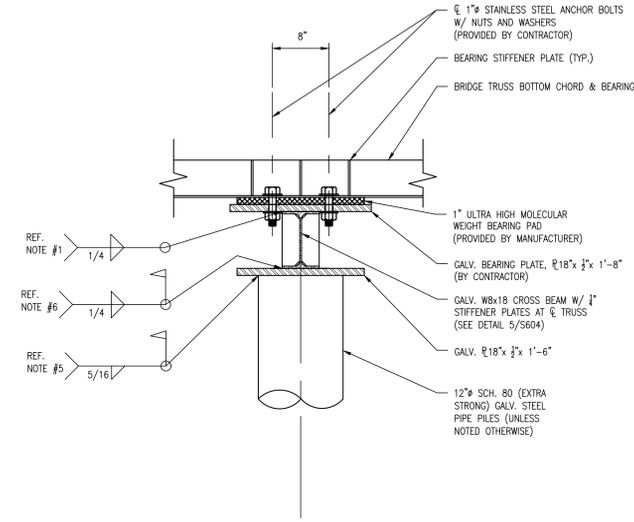
\\www.centuryeng.com\Cad\453\00-Proj\00\Project\17501111 (Dover Road Bridge) CAD\17501111 (Dover Road Bridge) S603 Reinforcement Details.dwg 7/12/2020 9:19:08 AM



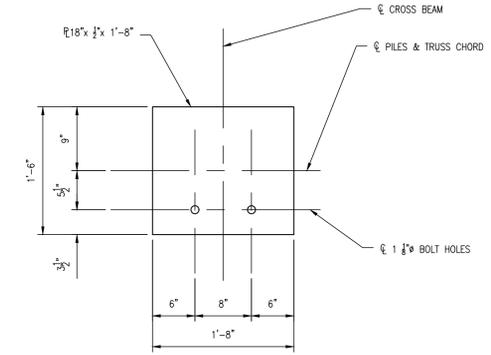
1 TYPICAL BRIDGE PIER  
SCALE: 1/2" = 1'-0"



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



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



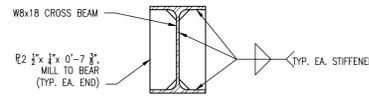
4 BEARING PLATE PLAN  
SCALE: 1" = 1'-0"

SUGGESTED PIER BENT SEQUENCE OF CONSTRUCTION:

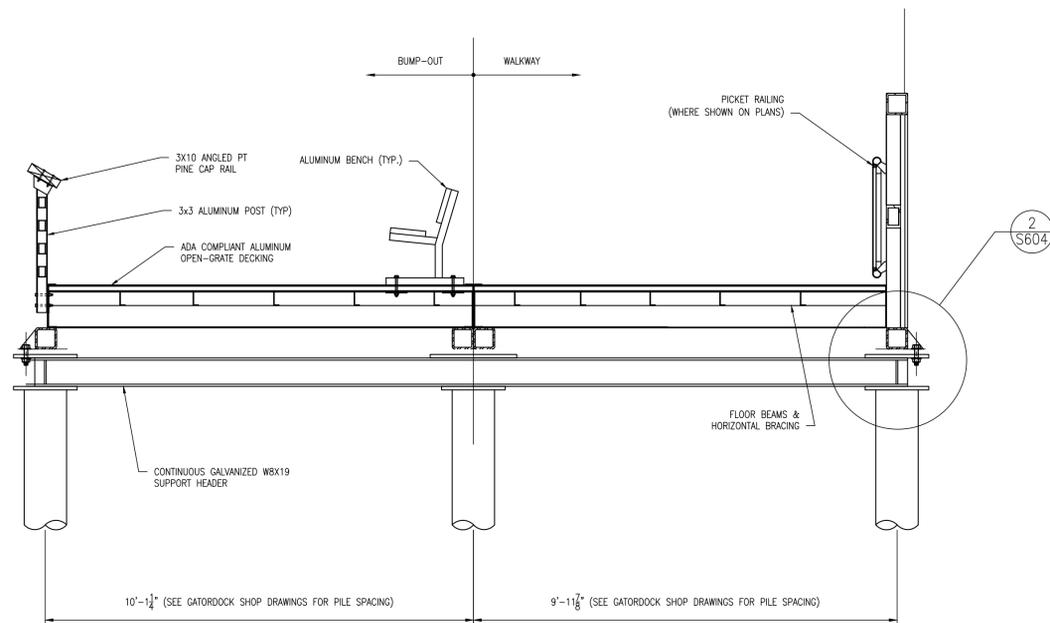
1. SHOP WELD CROSS BEAMS TO BEARING PLATES.
2. ATTACH/BOLT GALVANIZED CROSS BEAMS, ULTRA HIGH MOLECULAR WEIGHT BEARING PADS AND GALVANIZED  $16 \times 1 \times 6$  PLATES TO WALKWAY BEARING PADS.
3. DRIVE GALVANIZED STEEL PIPE PILES AT LOCATIONS SHOWN ON CONTRACT PLANS AND PER GATORDOCK SHOP DRAWINGS 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 ( $16 \times 1 \times 6$ ) 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 BEARING STIFFENER  
SCALE: 1 1/2" = 1'-0"



5 TYPICAL BUMP-OUT PIER  
SCALE: 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.:

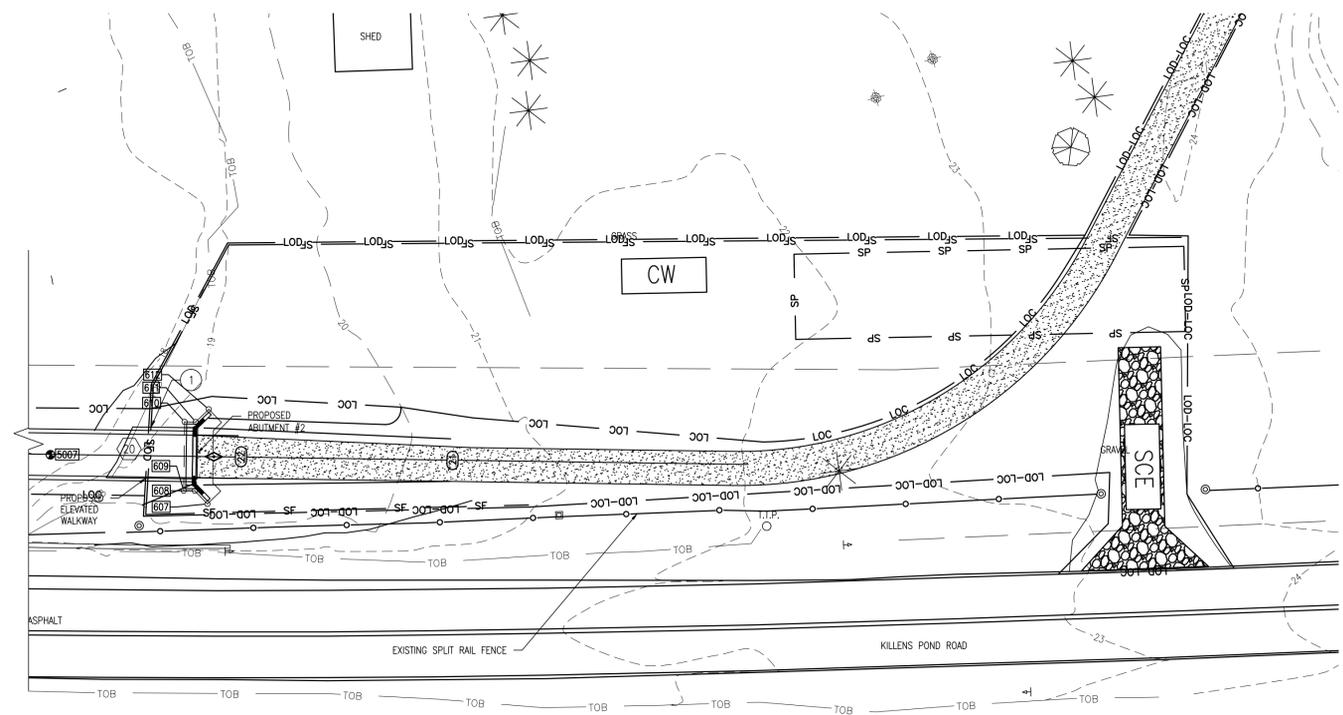
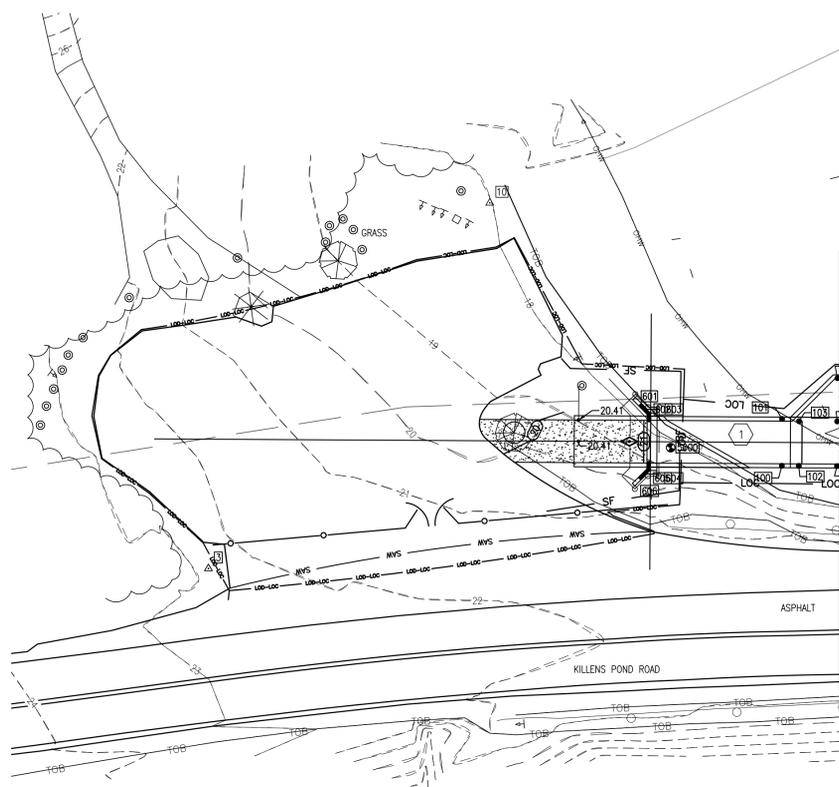
S604

CONTRACT NO.:

2020-KP-100







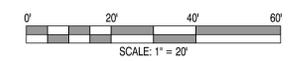
1 EROSION AND SEDIMENT CONTROL PLAN  
 SSMP 501 SCALE: 1" = 20'-0"

**SEQUENCE OF CONSTRUCTION:**

1. NOTIFY THE DNREC 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 SITE 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 PERIMETER CONTROLS. INSTALL PERIMETER CONTROLS. ALL PERIMETER CONTROLS ARE TO BE REVIEWED BY THE AGENCY CONSTRUCTION SITE REVIEWER AND APPROVED PRIOR TO PROCEEDING WITH FURTHER SITE DISTURBANCE OR CONSTRUCTION.
4. THE CONTRACTOR SHALL AT ALL TIMES PROTECT AGAINST SEDIMENT OR DEBRIS LADEN RUNOFF OR WIND FROM LEAVING THE SITE. PERIMETER 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 OFFSITE LOCATION IN COMPLIANCE WITH ALL APPLICABLE LAWS AND REGULATIONS.

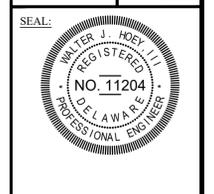
**STABILIZATION REQUIREMENTS:**

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.



REVISIONS:	DATE:	DESCRIPTION:	BY:

**KILLENS POND STATE PARK  
 ELEVATED WALKWAY  
 EROSION AND SEDIMENT CONTROL PLAN**



**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**

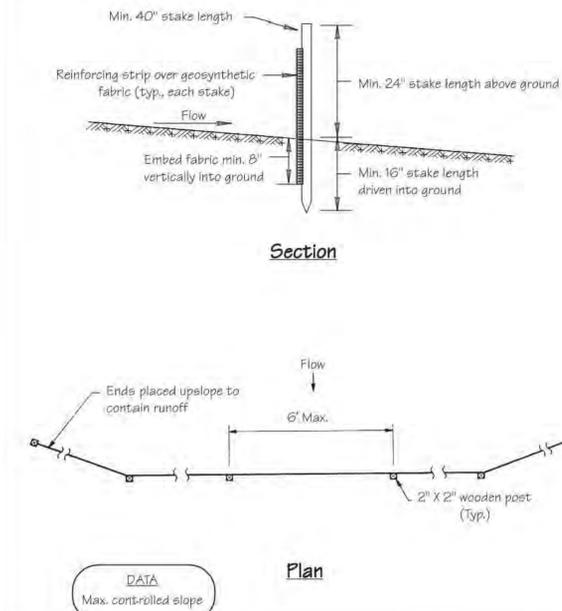
SCALE:  
**1" = 20'**

SHEET NO.:  
**SSMP501**

CONTRACT NO.:  
**2020-KPSP-100**

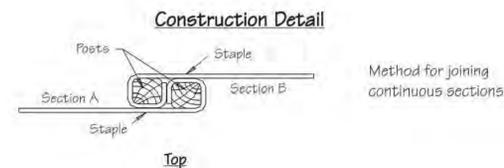
\\www.centuryeng.com\Cad\c43\00-Project\00\Project\175013.11 (Dover Road Bridge) CAD\1153\DWG\Construction Plans\SSMP501\_ErosionAndSedimentControl.dwg, 7/15/2020 3:02 AM

**Standard Detail & Specifications**  
**Silt Fence**



Source: Adapted from MD Sids. & Specs. for ESC	Symbol: <b>SF</b>	Detail No. <b>DE-ESC-3.1.2.1</b> Sheet 1 of 2 Effective FEB 2019
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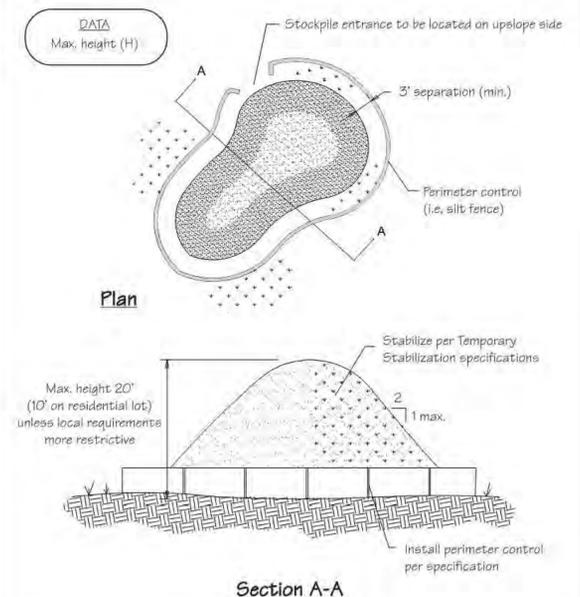
**Standard Detail & Specifications**  
**Silt Fence**



- 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: Adapted from MD Sids. & Specs. for ESC	Symbol: <b>SF</b>	Detail No. <b>DE-ESC-3.1.2.1</b> Sheet 2 of 2 Effective FEB 2019
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**Standard Detail & Specifications**  
**Soil Stockpile**



Source: Adapted from Colorado Urban Storm Drainage Criteria Manual, Vol 3	Symbol: <b>SP</b>	Detail No. <b>DE-ESC-3.7.3</b> Sheet 1 of 2 Effective FEB 2019
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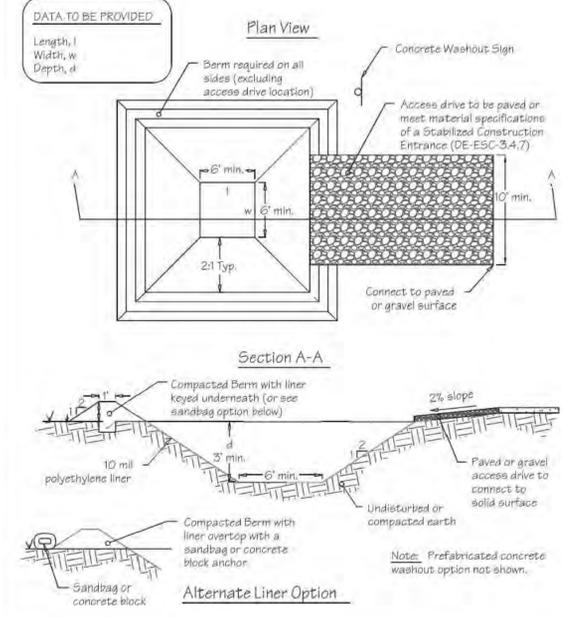
**Standard Detail & Specifications**  
**Soil Stockpile**



- 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: Adapted from Colorado Urban Storm Drainage Criteria Manual, Vol 3	Symbol: <b>SP</b>	Detail No. <b>DE-ESC-3.7.3</b> Sheet 2 of 2 Effective FEB 2019
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**Standard Detail & Specifications**  
**Concrete Washout**



Source: Adapted from Colorado Urban Storm Drainage Criteria Manual, Vol 3	Symbol: <b>CW</b>	Detail No. <b>DE-ESC-3.6.2</b> Sheet 1 of 2 Effective FEB 2019
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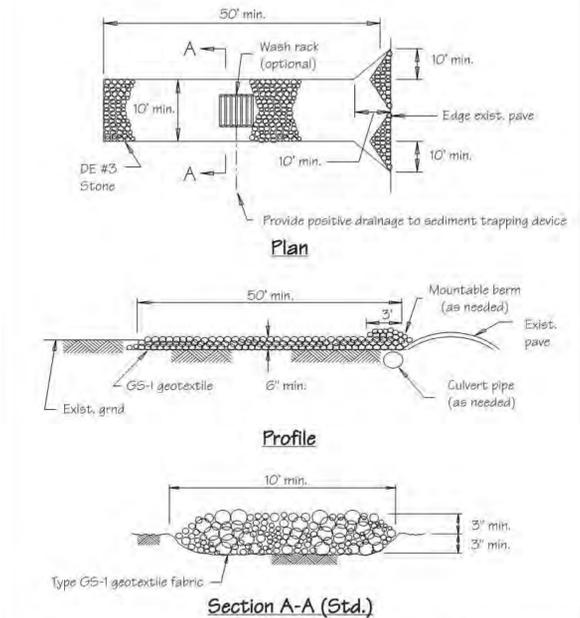
**Standard Detail & Specifications**  
**Concrete Washout**



- 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: Adapted from Colorado Urban Storm Drainage Criteria Manual, Vol 3	Symbol: <b>CW</b>	Detail No. <b>DE-ESC-3.6.2</b> Sheet 2 of 2 Effective FEB 2019
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**Standard Detail & Specifications**  
**Stabilized Construct. Entrance**



Source: Adapted from VA ESC Handbook	Symbol: <b>SCE</b>	Detail No. <b>DE-ESC-3.4.7</b> Sheet 1 of 2 Effective FEB 2019
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**Standard Detail & Specifications**  
**Stabilized Construct. Entrance**

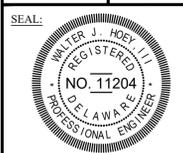


- 
- Construction Notes:**
- Stone size - Use DE #3 stone.
  - Length - As required, but not less than 50 feet (except on a single residence lot where a 30 foot minimum length would apply).
  - Thickness - Not less than size (6) inches.
  - Width - Ten (10) foot minimum, but not less than the full width 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: Adapted from VA ESC Handbook	Symbol: <b>SCE</b>	Detail No. <b>DE-ESC-3.4.7</b> Sheet 2 of 2 Effective FEB 2019
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REVISIONS:  
DATE: DESCRIPTION:

**KILLENS POND STATE PARK**  
**ELEVATED WALKWAY**  
**EROSION & SEDIMENT CONTROL DETAILS**



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**



### 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 manufacturer's recommendations to ensure the proper results.
  - Hydraulic mulches shall be applied with a viable seed and at manufacturer's recommended rates. Increased rates may be necessary based on site conditions.
  - Hydraulically applied mulches and additives shall be mixed according to manufacturer's 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 & Filtrix™ International  
 Symbol: **DE-ESC-3.4.5**  
 Detail No. 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 matting.
      - Step Two** - Mix and apply mulch at manufacturer's 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 anchoring.
- 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 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. 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 manufacturer's recommendations.

Source: Delaware ESC Handbook & Filtrix™ International  
 Symbol: **DE-ESC-3.4.5**  
 Detail No. Sheet 2 of 3  
 Effective FEB 2019

### Standard Detail & Specifications Mulching

MULCHING MATERIAL SELECTION GUIDE	Type of Mulch / App. Rate*	Optimum Seeding Dates <sup>1</sup>												
		June 1 to Aug. 31	Sept. 1 to Nov. 30	March 1 to May 31	June 1 to Aug. 31	Sept. 1 to Nov. 30	Dec. 1 to Feb. 28/29	March 1 to May 31	June 1 to Aug. 31	Sept. 1 to Nov. 30	Dec. 1 to Feb. 28/29	March 1 to May 31	June 1 to Aug. 31	
Less than 2%	Wood Fiber @ 2000 lbs/ac. min. Straw @ 2000 lbs/ac. min. Straw @ 2 Tractor Min. Stabilization Matting** 1" Compost Blanket (CB)	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
2% to 5%	Wood Fiber @ 2000-3000 lbs/ac. min. Straw @ 2 Tractor min. Stabilization Matting** 1" Compost Blanket (CB)	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
5% to 10.5%	Wood Fiber @ 2000-2500 lbs/ac. min. Straw @ 2 Tractor min. Stabilization Matting** 1" Compost Blanket (CB)	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
11% to 24.5%	Wood Fiber @ 2000-3000 lbs/ac. min. Straw @ 2 Tractor min. Stabilization Matting** 1" Compost Blanket (CB)	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
25% to 31%	Wood Fiber @ 2000-3000 lbs/ac. min. Straw @ 2 Tractor min. Stabilization Matting** 1" Compost Blanket (CB)	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
33% and up	Wood Fiber @ 2000-4500 lbs/ac. min. Straw @ 2 Tractor min. Stabilization Matting** 1" Compost Blanket (CB)	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK

Source: Delaware ESC Handbook & Filtrix™ International  
 Symbol: **DE-ESC-3.4.5**  
 Detail No. Sheet 3 of 3  
 Effective FEB 2019

### Standard Detail & Specifications Vegetative Stabilization

Mix #	Species <sup>a</sup>	Seeding Rate	Optimum Seeding Dates <sup>1</sup>									Planting Depth <sup>3</sup>
			Coastal Plain			Piedmont			All			
			2/1-4/30	5/1-8/14	9/15-11/30	3/1-4/30	5/1-7/31	8/1-10/31	2/1-4/30	5/1-8/14	9/15-11/30	
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	A		1.2 inches 2-3" sandy soils
4	Perennial Ryegrass	125	4	O	A	O	O	A	O	A		0.5 inches 1.2" sandy soils
5	Annual Ryegrass	125	4	O	A	O	O	A	O	A		0.5 inches 1.2" sandy soils
6	Winter Wheat	125	4	O	A	O	O	A	O	A		1-2 inches 2-3" sandy soils
7	Foxtail Millet	30 PLS	0.7									0.5 inches 1.2" sandy soils
8	Pearl Millet	20 PLS	0.5									0.5 inches 1.2" sandy soils

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

Source: Delaware ESC Handbook  
 Symbol: **DE-ESC-3.4.3**  
 Detail No. Sheet 1 of 4  
 Effective FEB 2019

### Standard Detail & Specifications Vegetative Stabilization

Mix No.	Seeding Mixture	Seeding Rate <sup>1</sup>	Optimum Seeding Dates <sup>2</sup>												Remarks
			Coastal Plain			Piedmont			All						
			2/1-4/30	5/1-8/14	9/15-11/30	3/1-4/30	5/1-7/31	8/1-10/31	2/1-4/30	5/1-8/14	9/15-11/30	3/1-4/30	5/1-7/31	8/1-10/31	
1	Well Drained Soils Tall Fescue Weeping Lovegrass	140 10	3.2 0.25	A O	A O	A O	A O	A O	A O	A O	A O	A O	A O	A O	Good erosion control mix. Tolerant of low fertility soils. Lowgrasses very difficult to mow. Good wildlife cover and food source.
2	Dwarfing Fescue Common Lespedeza <sup>3</sup> Mucilage	30 35 15	0.60 0.99 0.35	A O	A O	A O	A O	A O	A O	A O	A O	A O	A O	A O	Good erosion control mix. Tolerant of low fertility soils. Good wildlife cover and food source.
3	Tall Fescue (leaf types) or Strong Creeping Red Fescue or Perennial Ryegrass Blue Fescue <sup>4</sup>	50 50 15	1.15 1.15 0.34	O O	A O	A O	A O	A O	A O	A O	A O	A O	A O	A O	Good erosion control mix. Tall Fescue for droughty conditions. Creeping Red Fescue for heavy shade. Fescue to suppress woody vegetation.
4	Strong Creeping Red Fescue Kentucky Bluegrass Perennial Ryegrass or Rye Blue White Clover <sup>5</sup>	100 70 15 5	2.3 1.81 0.35 0.11	O O	A O	A O	A O	A O	A O	A O	A O	A O	A O	A O	Suitable waterway mix. Canada Bluegrass more drought tolerant. Use Rye for increased drought tolerance.
5	Switchgrass <sup>6</sup> or Coastal Panicgrass Big Bluestem Little Bluestem Indian Grass	10 10 5 5	0.25 0.25 0.11 0.11	O					O						Native warm-season mixture. Tolerant of low fertility soils. Drought tolerant. Poor shade tolerance. N fertilizer discouraged - weeds.
6	Tall Fescue (leaf-type) Blend of 3 cultivars	150	3.5	O	A	O	A	O	A	O	A	O	A	O	Managed fiber strip for nutrient uptake.
7	Tall Fescue K1 Bluegrass (blend) Perennial Ryegrass	150 20 20	3.5 0.46 0.46	O	A	O	A	O	A	O	A	O	A	O	Three cultivars of Kentucky Bluegrass. Traffic tolerant.
8	Big Bluestem Indian Grass <sup>7</sup> Little Bluestem <sup>7</sup> Creeping Red Fescue plus one of: Partridge Pea Bush Clover Wild Indigo Snowy Tarragon	10 10 5 30 5 3 3 2	0.25 0.25 0.18 0.69 0.11 0.07 0.07 0.25	O	A	O	A	O	A	O	A	O	A	O	All species are native. Indian Grass and Bluestem have fully acidic. Plant with specialized native seed drill. Creeping Red Fescue will provide erosion protection while the warm season grasses are established.

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

Source: Delaware ESC Handbook  
 Symbol: **DE-ESC-3.4.3**  
 Detail No. Sheet 2 of 4  
 Effective FEB 2019

### Standard Detail & Specifications Vegetative Stabilization

Mix No.	Seeding Mixture	Seeding Rate <sup>1</sup>	Optimum Seeding Dates <sup>2</sup>												Remarks
			Coastal Plain			Piedmont			All						
			2/1-4/30	5/1-8/14	9/15-11/30	3/1-4/30	5/1-7/31	8/1-10/31	2/1-4/30	5/1-8/14	9/15-11/30	3/1-4/30	5/1-7/31	8/1-10/31	
9	Poorly Drained Soils Ryegrass Creeping Bentgrass Sheep Fescue Rough Ryegrass	75 35 35 30	1.72 0.8 0.8 1	O	A	O	A	O	A	O	A	O	A	O	Quick stabilization of disturbed sites and waterways.
10	Residential Lawns Tall Fescue Perennial Ryegrass Kentucky Bluegrass Blend	100 25 30	2.3 0.57 0.69	O	A	O	A	O	A	O	A	O	A	O	High value, high maintenance, light traffic, irrigation necessary. Well drained soils, full sun.
11	Tall Fescue Perennial Ryegrass Sheep Fescue	100 25 25	2.3 0.57 0.57	O	A	O	A	O	A	O	A	O	A	O	Moderate value, low maintenance, traffic tolerant.
12	Creeping Red Fescue Chewings Fescue Rough Ryegrass 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	Shade tolerant, moderate traffic tolerance, moderate maintenance.
13	Creeping Red Fescue Kentucky Bluegrass Chewings Fescue	50 90 50	1.15 2.1 0.4	O	A	O	A	O	A	O	A	O	A	O	Shade tolerant, moisture tolerant.
14	K-31 Tall Fescue	150	3.5	O	A	O	A	O	A	O	A	O	A	O	Monoculture, but performs well alone in lawns. Discouraged.

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

Source: Delaware ESC Handbook  
 Symbol: **DE-ESC-3.4.3**  
 Detail No. 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.
- Seedbed Preparation
 

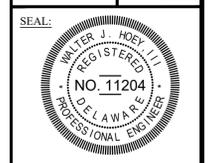
It is important to prepare a good seedbed to insure the success of establishing vegetation. The seedbed should be well prepared, loose, uniform, and free of large clods, rocks, and other objectionable material. The soil surface should not be compacted or crusted.
- Soil Amendments
  - lime - Apply liming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

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

Source: Delaware ESC Handbook  
 Symbol: **DE-ESC-3.4.3**  
 Detail No. Sheet 4 of 4  
 Effective FEB 2019

REVISIONS:  
 DATE: \_\_\_\_\_  
 DESCRIPTION: \_\_\_\_\_

KILLENS POND STATE PARK  
 ELEVATED WALKWAY  
 EROSION & SEDIMENT CONTROL DETAILS



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



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

NO SITE VISIT OR ENGINEERING TESTING WAS PERFORMED TO DETERMINE FIT FOR USE FOR ANY APPLICATION. DRAWINGS ARE BASED ON CUSTOMER PROVIDED SPECIFICATIONS AND COMMUNICATIONS ONLY. CHANGES MAY BE SUBJECT TO PRICE INCREASE. SIGNATURE INDICATES THAT ALL DESIGN AND PERFORMANCE CRITERIA, ASSUMPTIONS, AND GEOMETRY ARE MET AND SUFFICIENT.

SIGN AND DATE BELOW AND INITIAL ALL SHEETS TO INDICATE ACCEPTANCE AND APPROVAL FOR GATOR DOCK & MARINE TO PROCEED WITH FABRICATION.

CUSTOMER SIGNATURE \_\_\_\_\_

DATE \_\_\_\_\_

**THIS DRAWING PACKAGE IS TO BE SIGNED BY THE CUSTOMER IN THE SIGNATURE BOX ABOVE, INITIALED ON EVERY PAGE, AND RETURNED TO:**

**CMI LIMITED CO.  
605 MOLLY LANE  
SUITE 150  
WOODSTOCK, GA 30189**

SHEET #	TITLE
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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 SUBMITAL

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 Heat Treating Design Manual, and the US Army Corps of Engineers General Design Guide. PVC 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 fit and use is made as to the suitability of any CMI product for particular applications or the results obtained therefrom. ShoreGuard®, The ShoreGuard Seawall System®, C-Lo®, TimberGuard®, GatorDock®, Dura Dock®, Shore-All®, GatorBridge®, GatorDock Elite®, ArmorWear®, ArmorRoad®, Box Profile®, UltraComposite®, The Steel Alternator®, Elite Wall®, Elite Panel®, Elite Paving Panel®, FlatBeam®, KICK Technology®, KICK View®, GatorBridge®, GatorBumper®, Gator Sheet Piling®, GatorDock®, I-Beam Lock®, Textured Slab®, Crane Materials, International®, High-Density Polyethylene®, Aqua Terra Systems®, Endurance Composite®, Polys®, Edgeline®, GridDeck®, 2-Poly®, ShearLock®, ShearLock Retaining Wall Systems®, Shear 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: 4,674,921; 4,690,588; 5,292,208; 5,145,287; 6,005,883; 6,033,155; 6,053,666; 6,920,154; 6,575,667; 7,059,907; 7,056,086; 7,025,319; 7,973,482; 5,565,056; 5,883,872; 6,331,771; 5,245,061; CA 2,914,237 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  
COA #4043



**BRENDAN R. SHEPPARD**  
DELAWARE PE #14366

**RECORD OF REVISIONS**

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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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FABRICATION:	BRS	05/29/2020

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# S-2

**BRIDGE  
GENERAL NOTES**

Physical properties are defined by ASTM testing standards, The Aluminum Association Design Manual, The Steel Institute Design Manual SMI 2, and The US Army Corps of Engineers General Design Guide. PVC Shear Plate 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®, Gator Dock®, Shore-All®, GatorGate®, GatorDock Elite®, ArmorWare®, ArmorRid®, Box Profile®, UltraComposite®, The Steel Alternator®, Elite Right®, Elite Panel®, Elite Fencing Panel®, FishBarr®, ICE Technology®, ICE Vinyl®, GatorBridge®, GatorAluminum®, Gator Sheet Piling®, GatorDock®, I-Beam Lock®, Textured Slate®, Crane Materials International®, I-Beam Sheet Piling Solution®, Aqua Terra Systems®, Endurance CIP®, Polaris®, Edgus®, Gridstone®, 21 Poly®, PileCrew®, SheerScope®, SheerScope 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: 4,874,521; 4,490,585; 5,292,205; 5,145,287; 6,000,883; 6,033,155; 6,293,646; 6,920,534; 6,375,667; 7,059,807; 7,058,066; 7,025,219; 7,393,482; 5,501,500; 5,801,672; 6,233,271; 1,345,061CA; 7,914,237 and other patents pending. © 2005-2017 CMI Limited Co. All Rights Reserved.

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 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:**

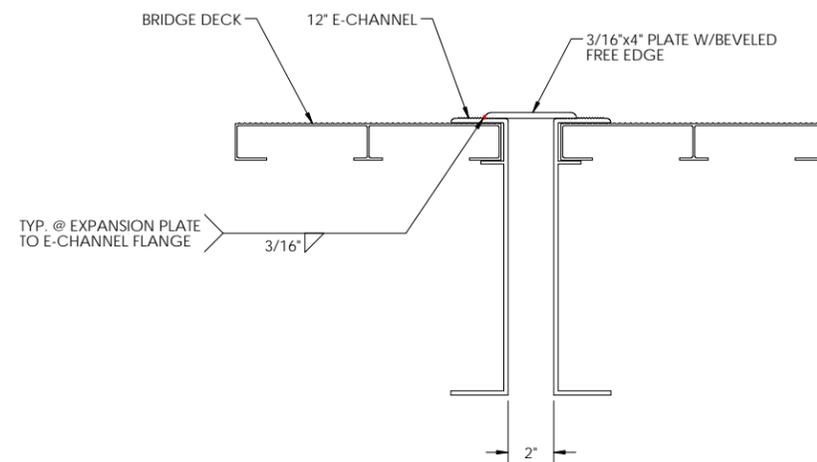
- SEE CALCULATION PACKAGE FOR COMPLETE DESIGN & LOADING CRITERIA
- LIVE LOAD: 90 PSF
- VEHICLE LOAD: ONE @ 2,500 LB
- WIND LOAD: 97 MPH PER AASHTO STANDARD SPECIFICATIONS / ASCE 7-05
- NO FLOOD LOADING CONSIDERED

**DESIGN CRITERIA:**

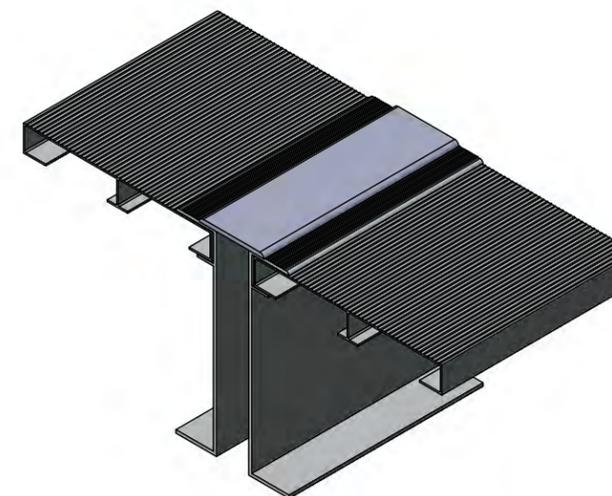
- AASHTO LRFD GUIDE SPECIFICATIONS FOR THE DESIGN OF PEDESTRIAN BRIDGES, 2009 WITH 2015 INTERIM REVISIONS
- AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 2010 WITH 2016 INTERIM REVISIONS
- AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES, AND TRAFFIC SIGNALS, 2013 WITH 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 HOLES AS NEEDED.



EXPANSION JOINT COVER: ELEVATION VIEW



EXPANSION JOINT COVER: ISO VIEW CUT SECTION

 CUSTOMER  
 INITIAL

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5	05/29/2020	STAMPED SUBMITAL

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)

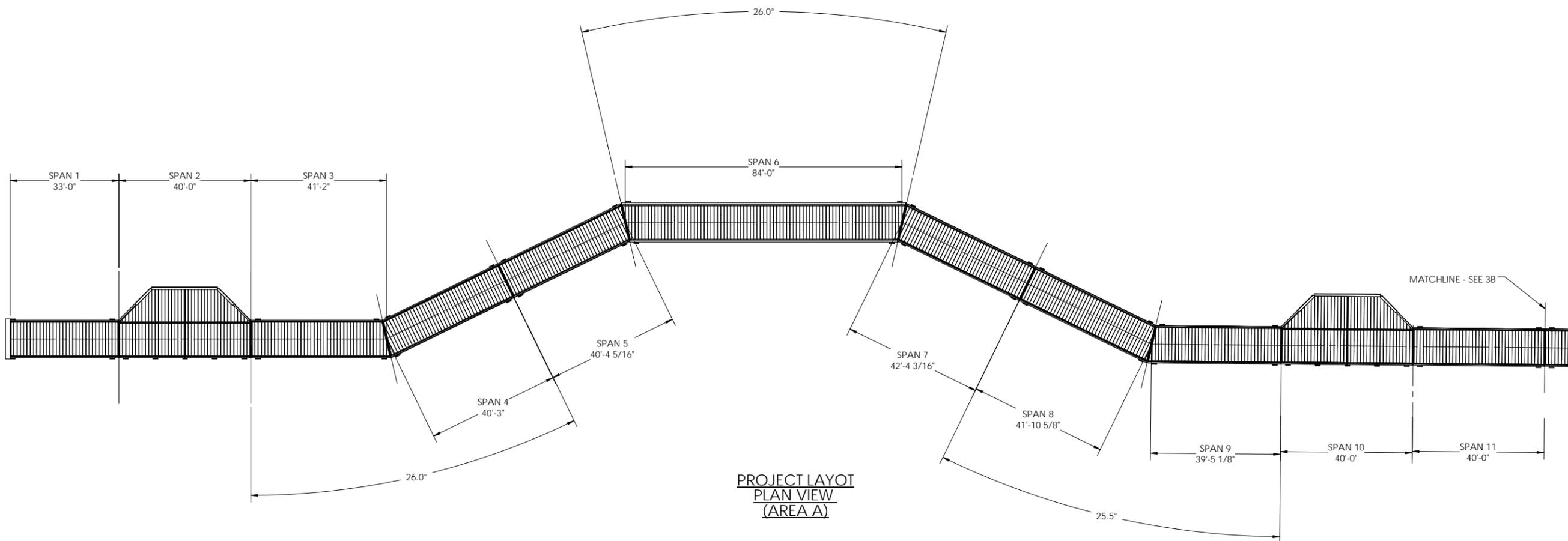
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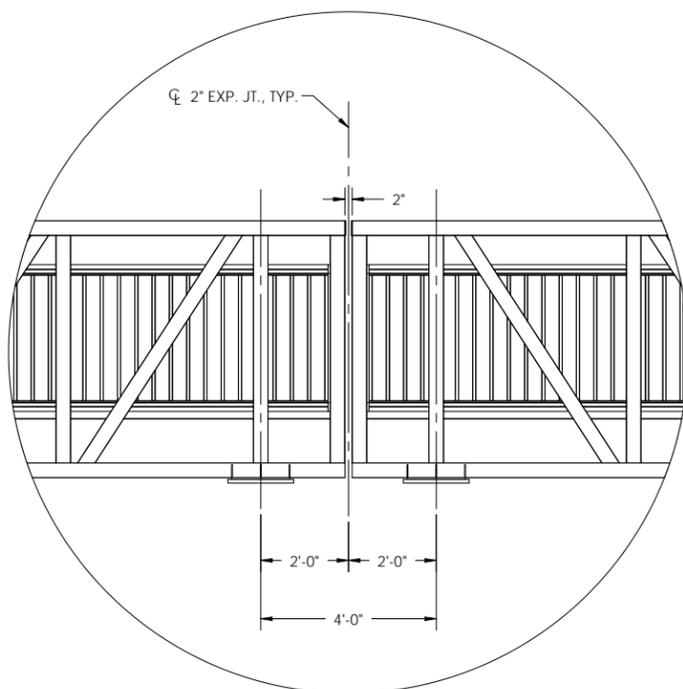
BRENDAN R. SHEPPARD  
DELAWARE PE #14366



PROJECT LAYOUT  
PLAN VIEW  
(AREA A)

**NOTES:**

1. INTERIOR SPANS: DIMENSIONS ARE MEASURED  $\zeta$ -TO- $\zeta$  OF EXPANSION JOINT.
2. END SPANS: DIMENSIONS ARE MEASURED FACE OF BACKWALL-TO- $\zeta$  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.



TYPICAL  
EXPANSION JOINT

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	05/26/2020
CHECKED BY:	MKL	05/29/2020
FABRICATION:	BRS	05/29/2020

DRAWING NO.:

**S-3B**

**PROJECT LAYOUT  
(AREA B)**

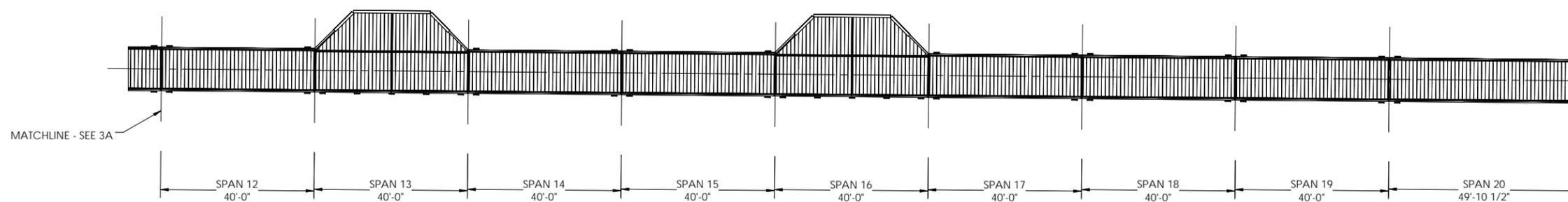
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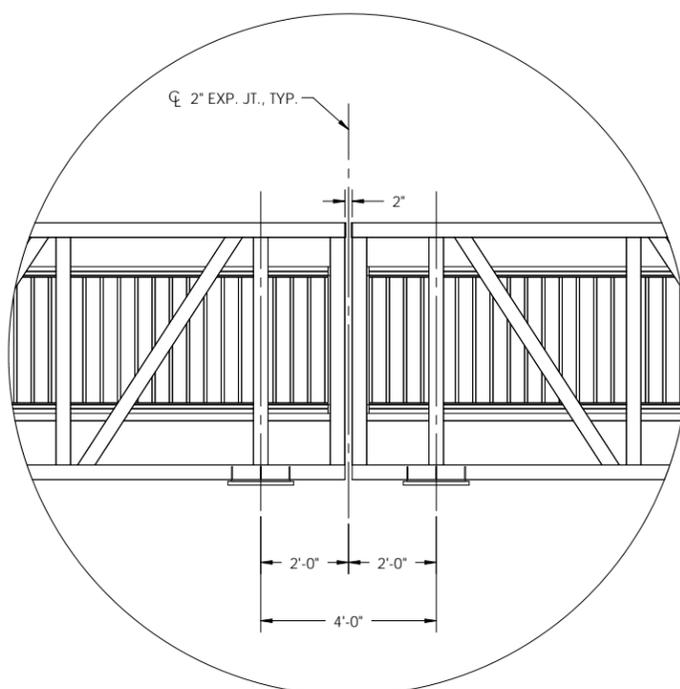
**BRENDAN R. SHEPPARD**  
DELAWARE PE #14366



**PROJECT LAYOUT  
PLAN VIEW  
(AREA B)**

**NOTES:**

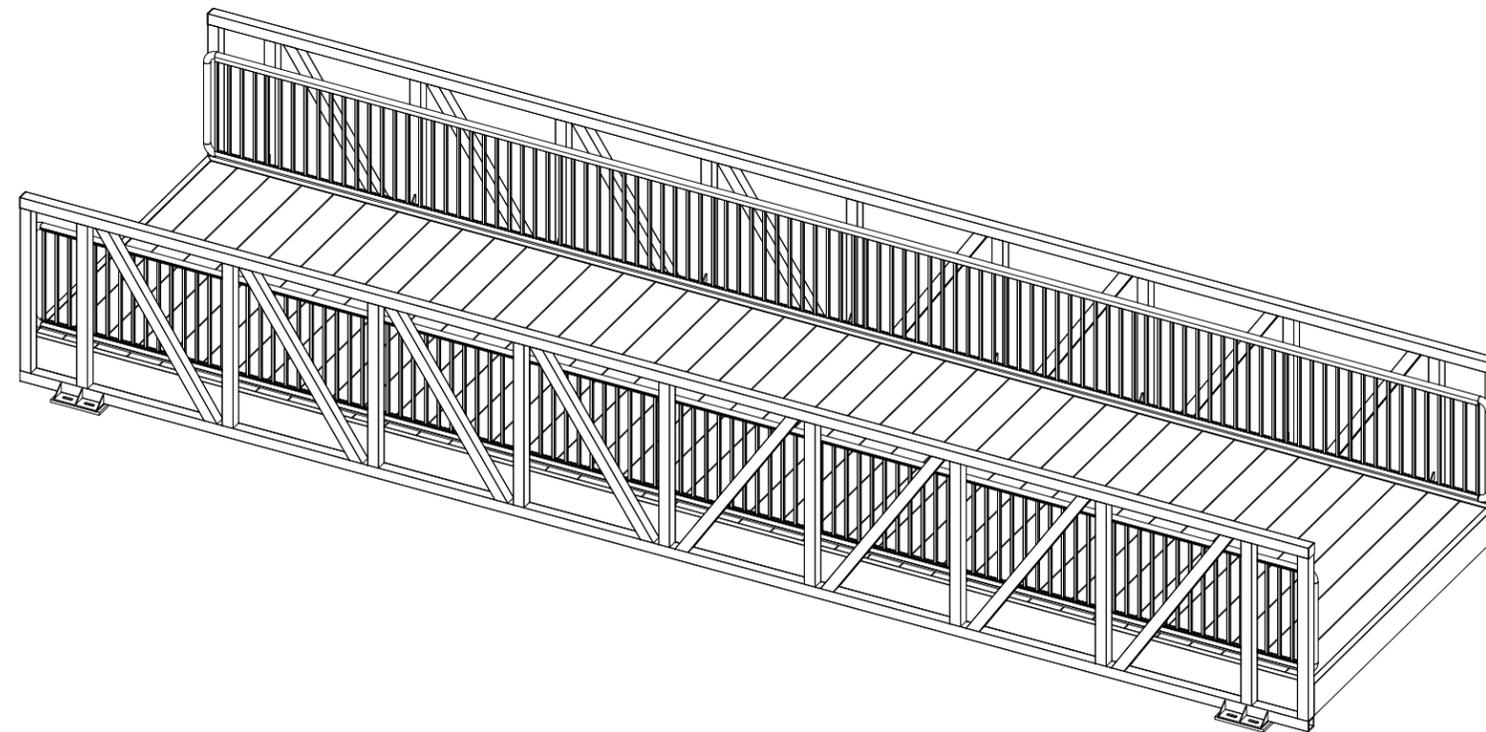
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3. SPANS 1 AND 20 HAVE ROTATED BASE PLATES TO ACCOMMODATE ELEVATION CHANGE.
4. SPAN 2: CONTRACTOR TO SHIM AS NEEDED TO ACCOMMODATE ELEVATION CHANGE.



**TYPICAL  
EXPANSION JOINT**

CUSTOMER  
INITIAL

BILL OF MATERIALS				
ITEM #	TYPE	DESCRIPTION	QTY/COMMENTS	WEIGHTS
<b>SPAN 11,12,14,15,17,18, AND 19</b>	<b>BRIDGE</b>	<b>10'x39'-10" CASCADE BRIDGE</b>	<b>7</b>	<b>~5,200 LBS</b>
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	---
<b>BP1</b>	<b>BEARING PAD</b>	<b>9 1/2"x1'-6"x1" UHMW PAD</b>	<b>4 x 7 = 28</b>	<b>~5 LBS (EACH)</b>



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5	05/29/2020	STAMPED SUBMITAL

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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**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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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-6**

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

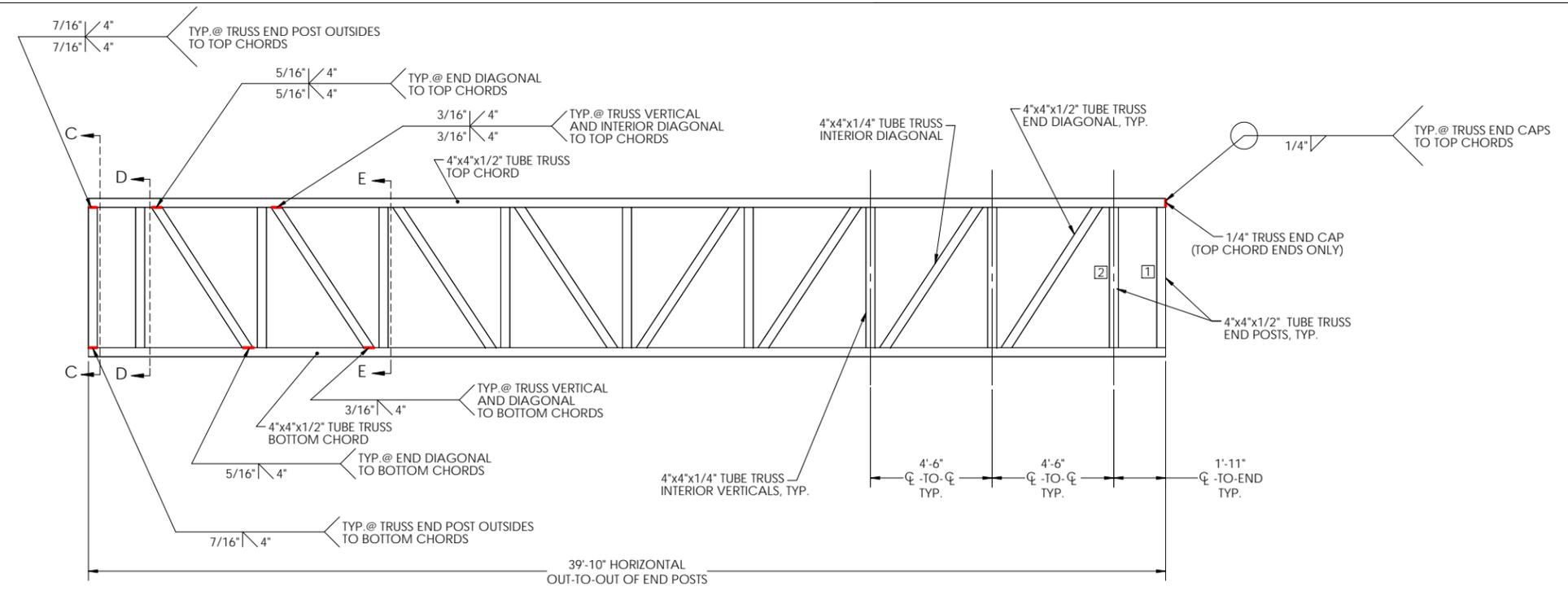
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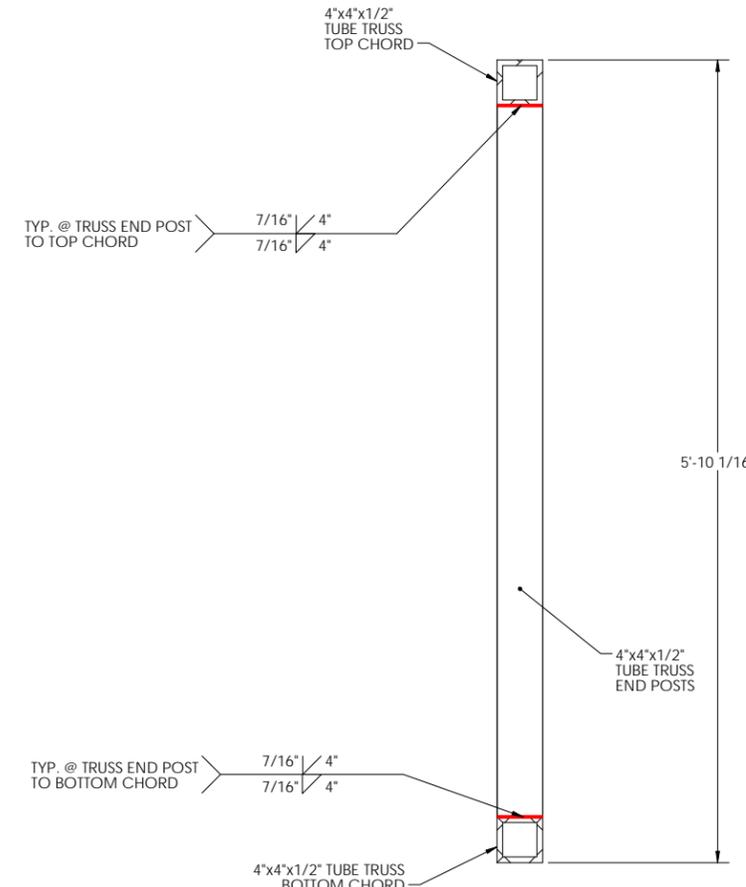
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COA #4043



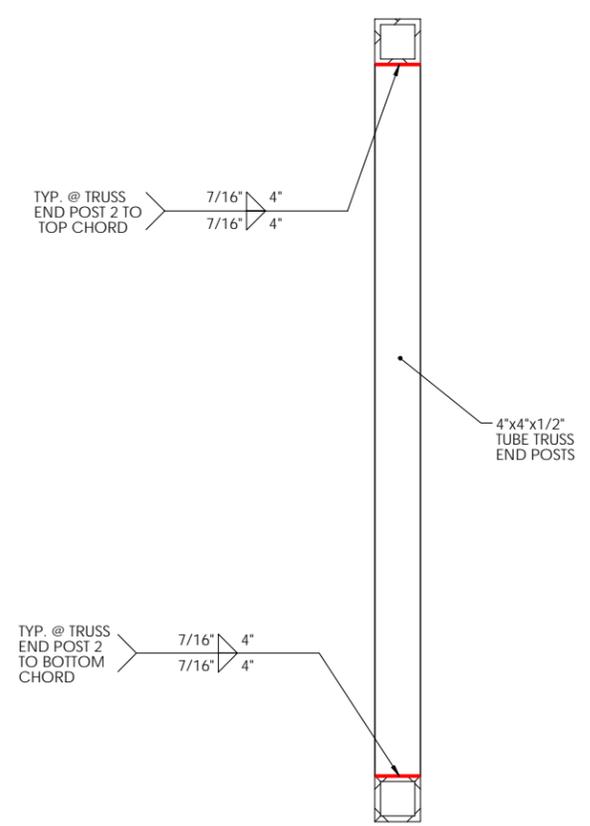
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DELAWARE PE #14366



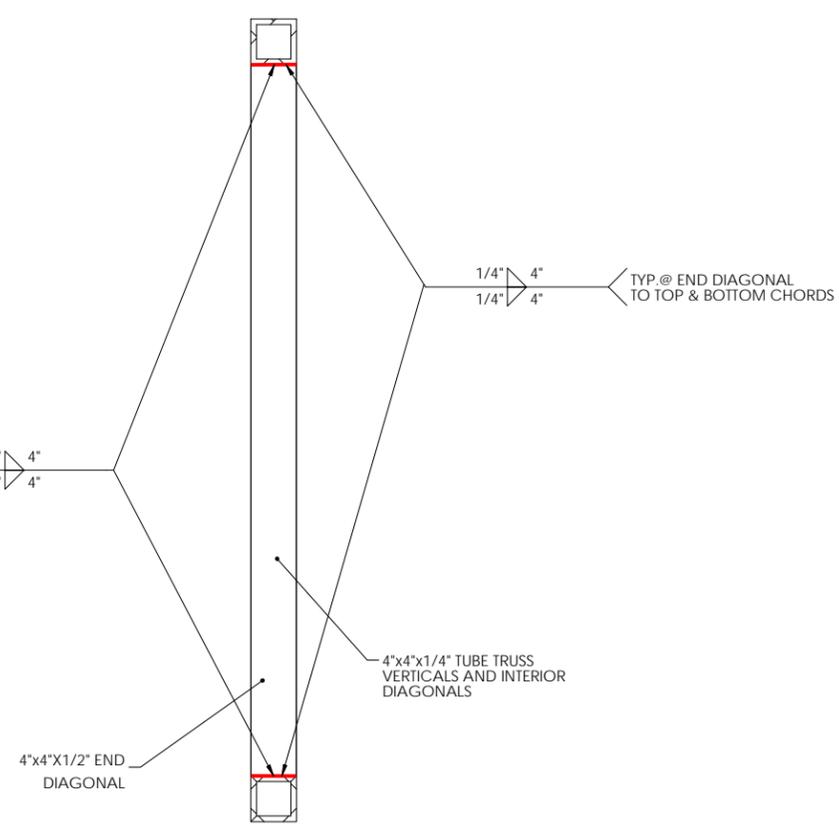
**TRUSS ELEVATION VIEW**  
(QUANTITY x2)



**TRUSS SECTION C-C**



**TRUSS SECTION D-D**

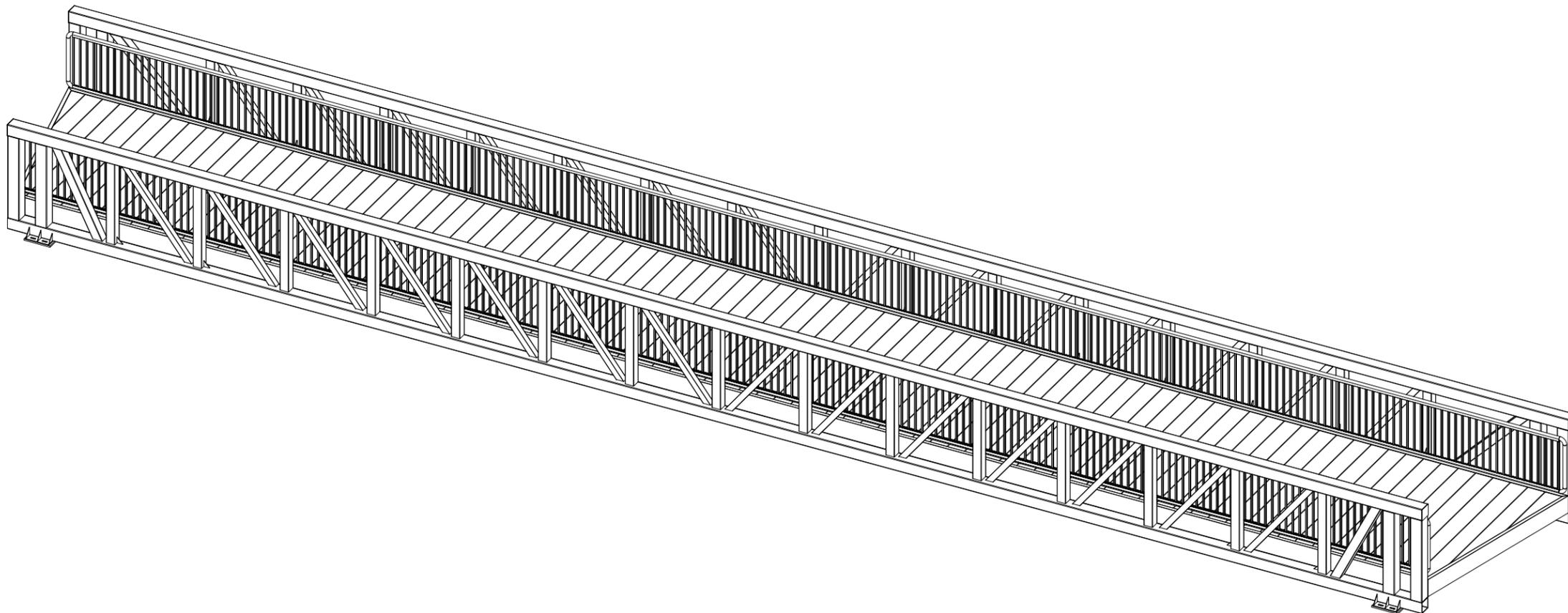


**TRUSS SECTION E-E**

CUSTOMER  
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BILL OF MATERIALS				
ITEM #	TYPE	DESCRIPTION	QTY/COMMENTS	WEIGHTS
<b>SPAN 6</b>	<b>BRIDGE</b>	<b>10'x83'-10" CASCADE BRIDGE</b>	<b>1</b>	<b>~15,600 LBS</b>
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	---
<b>BP2</b>	<b>BEARING PAD</b>	<b>1'-2"x1'-6"x1" UHMW PAD</b>	<b>4</b>	<b>~5 LBS (EACH)</b>



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

DRAWING NO.:  
**S-8**  
BRIDGE SPAN 6:  
MATERIAL LIST

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**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.:

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-9**  
**BRIDGE SPAN 6:**  
**ASSEMBLY DETAILS**

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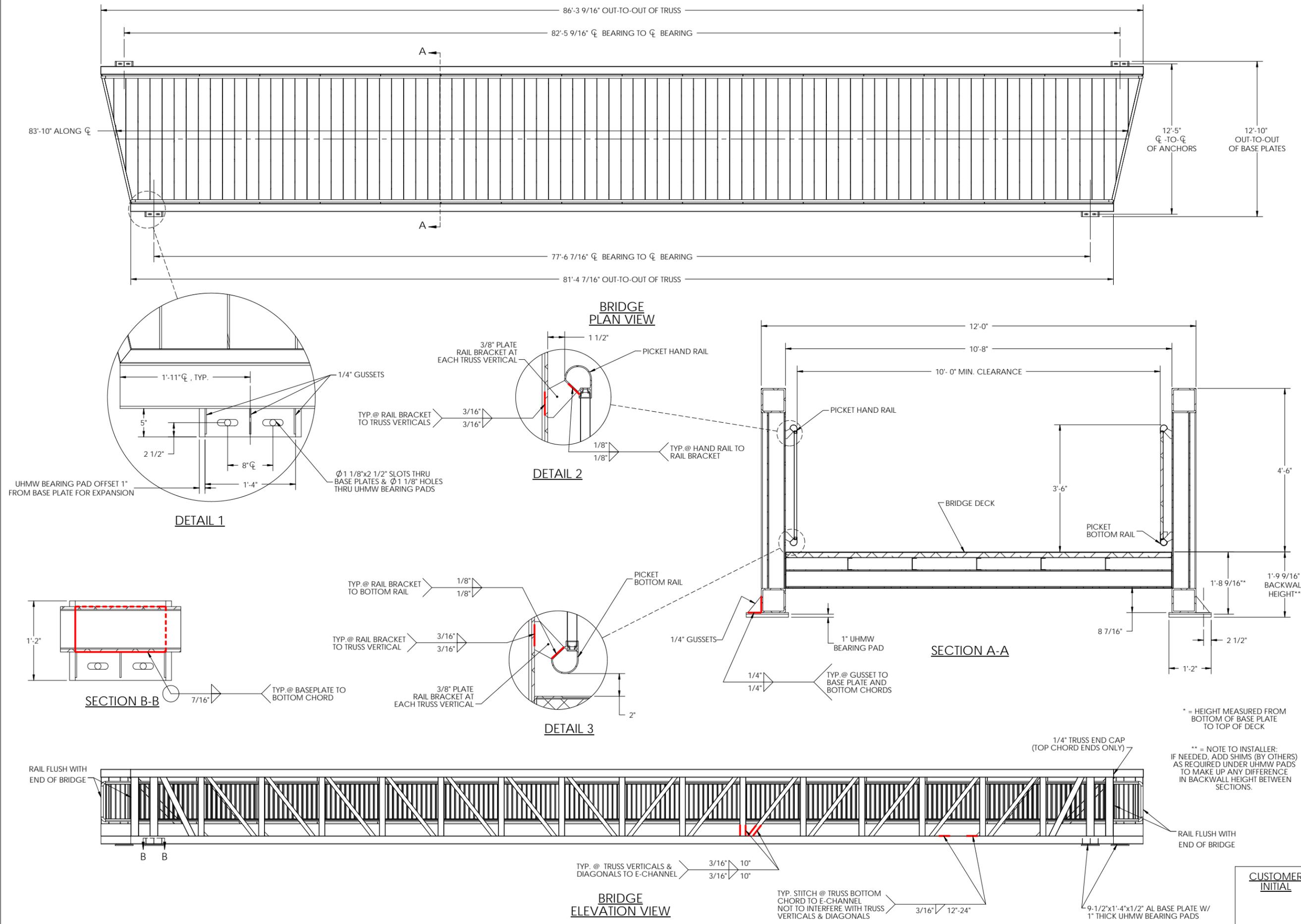
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WOODSTOCK, GA 30189  
PHONE: 770-933-8166

\* = HEIGHT MEASURED FROM BOTTOM OF BASE PLATE TO TOP OF DECK  
\*\* = NOTE TO INSTALLER: IF NEEDED, ADD SHIMS (BY OTHERS) AS REQUIRED UNDER UHMW PADS TO MAKE UP ANY DIFFERENCE IN BACKWALL HEIGHT BETWEEN SECTIONS.



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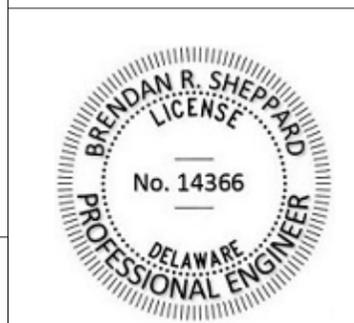
	NAME	DATE
DRAWN BY:	VRP	05/29/2020
CHECKED BY:	BRS	05/29/2020
FABRICATION:	BRS	05/29/2020

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**S-10**  
BRIDGE SPAN 6:  
SHORT SIDE TRUSS DETAILS

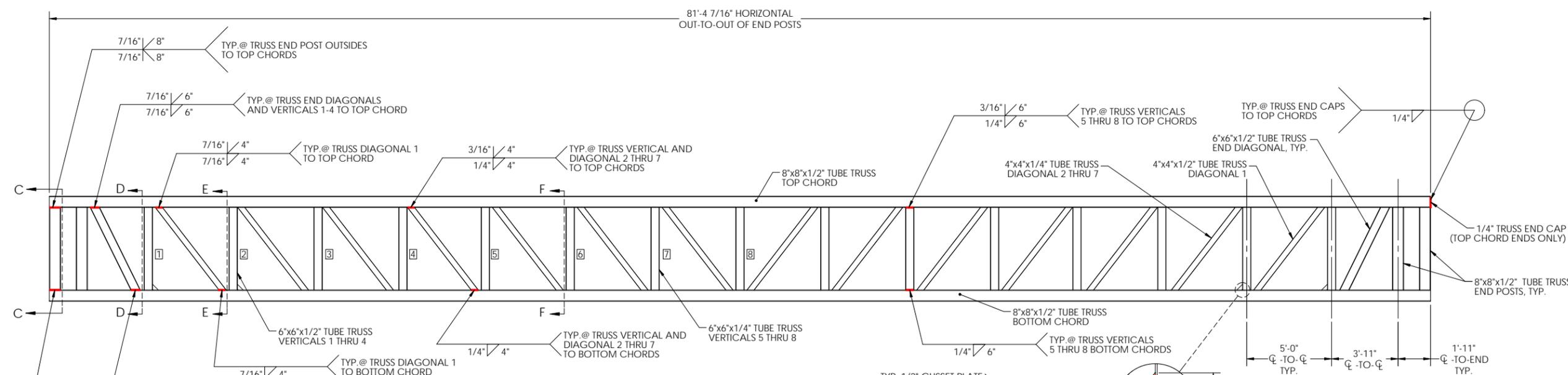
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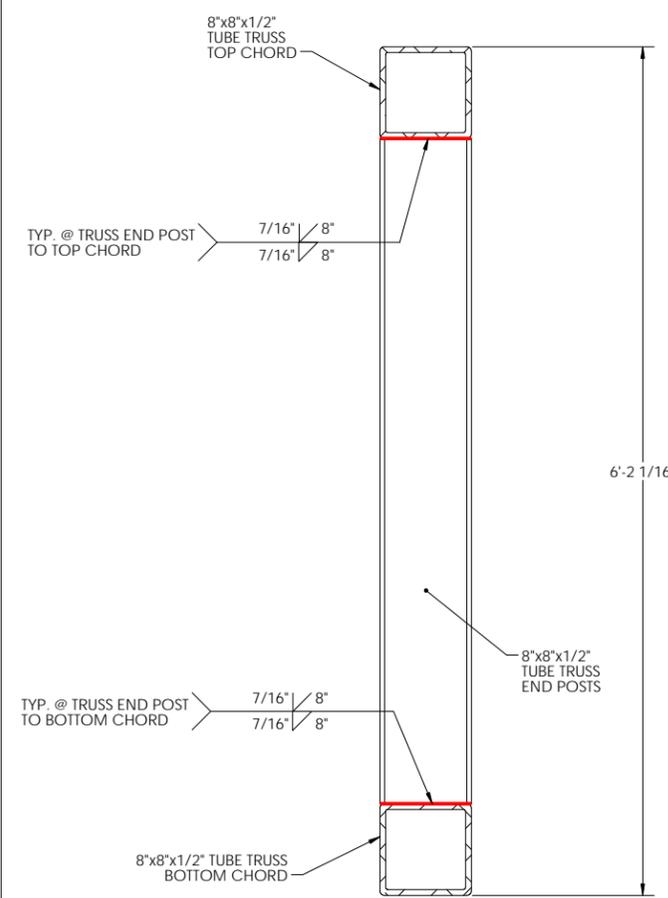
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PHONE: 770-933-8166



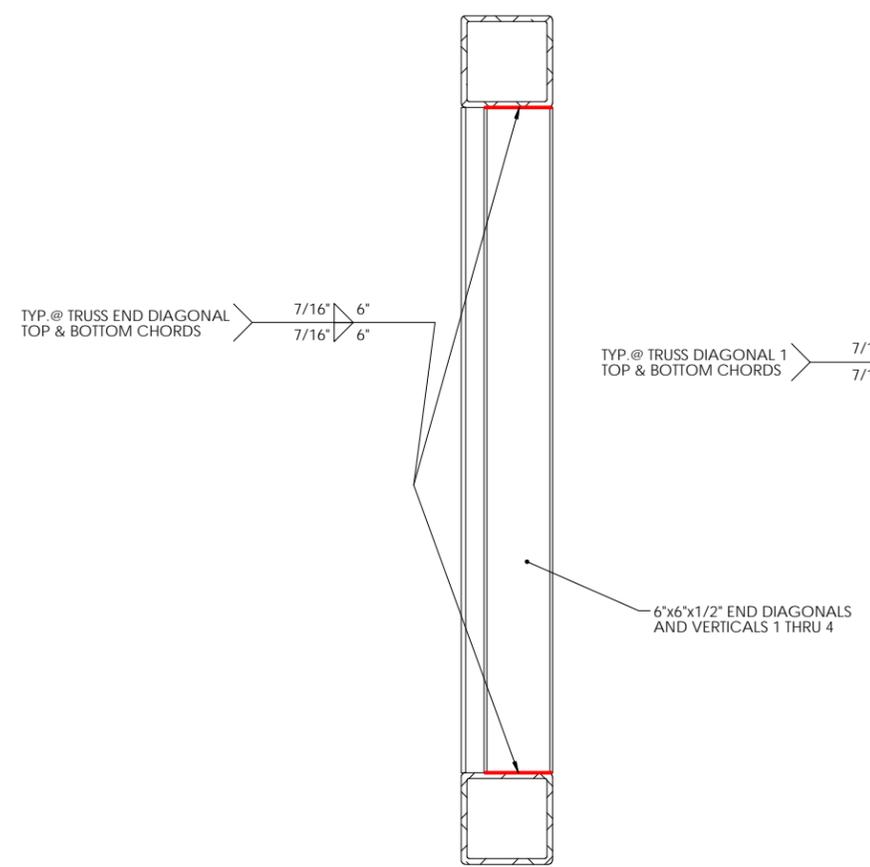
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DELAWARE PE #14366



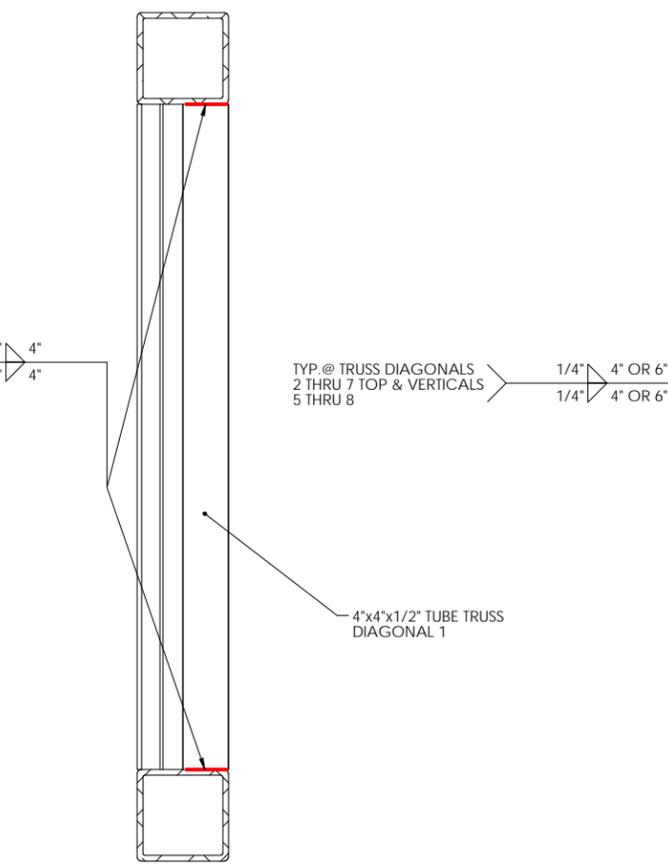
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(QUANTITY x1)



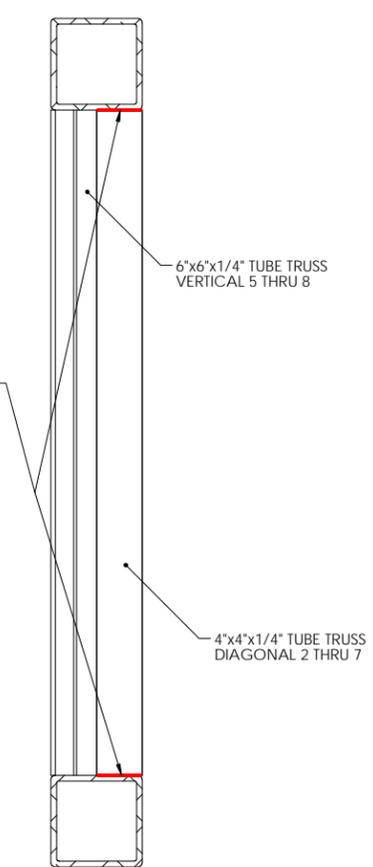
**TRUSS SECTION C-C**



**TRUSS SECTION D-D**



**TRUSS SECTION E-E**



**TRUSS SECTION F-F**

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**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

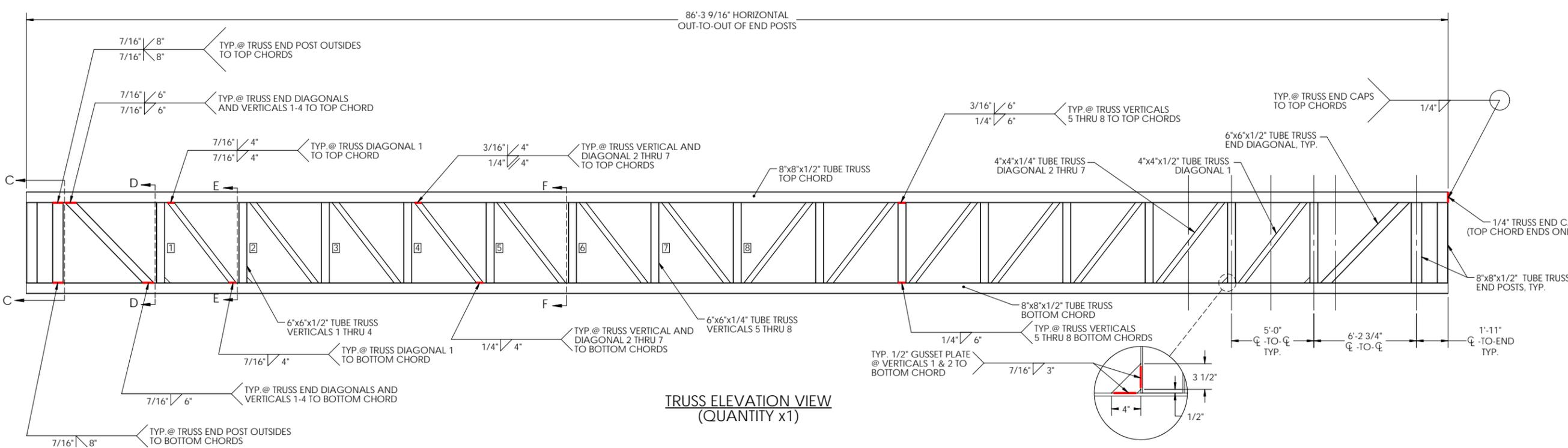
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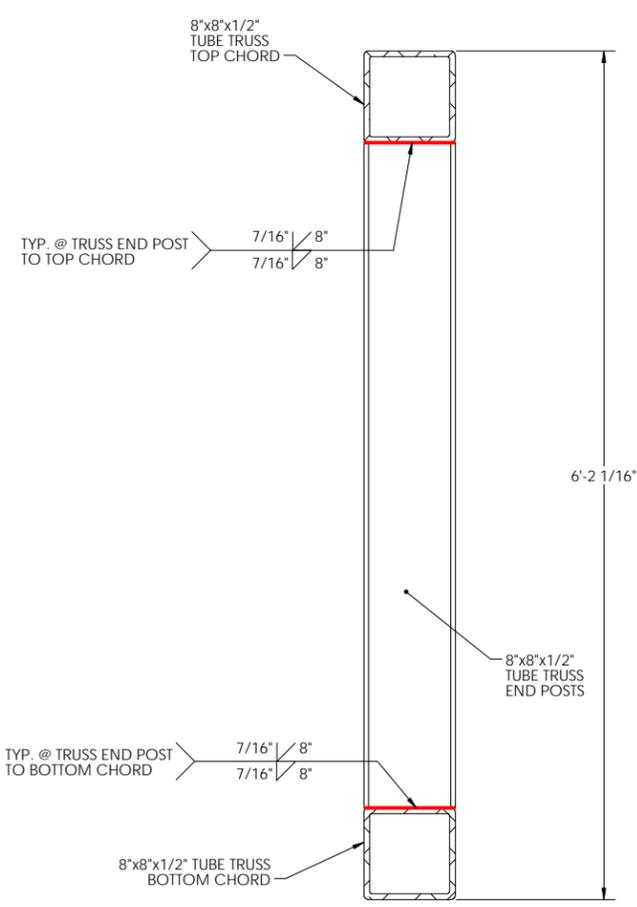
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PHONE: 770-933-8166



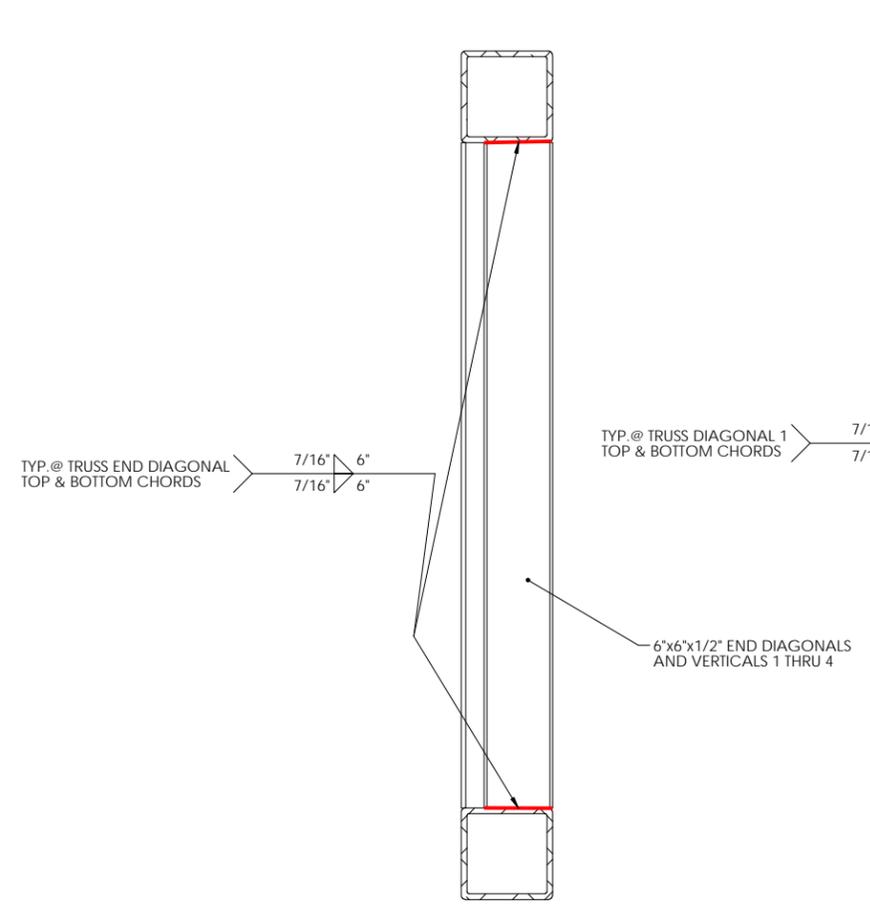
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DELAWARE PE #14366



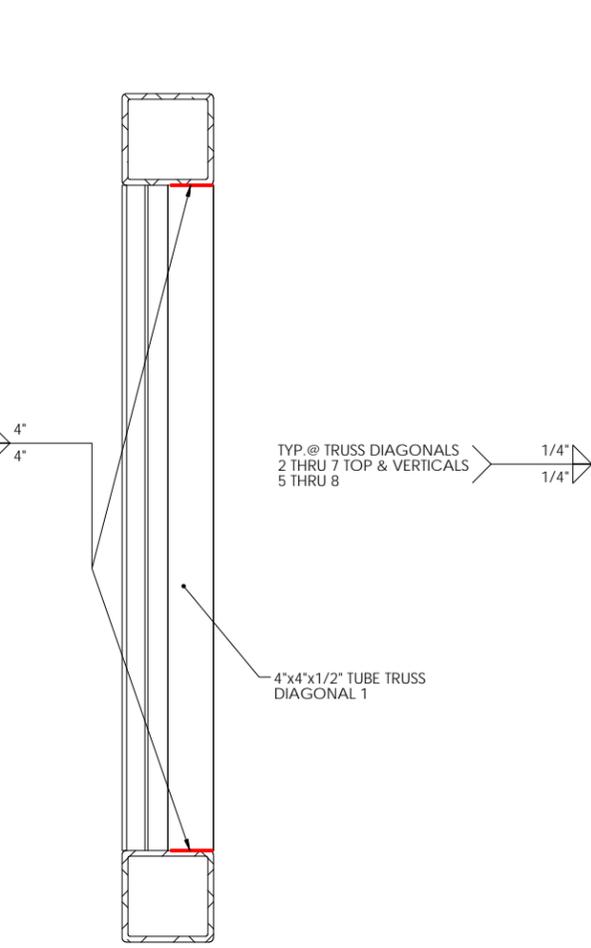
**TRUSS ELEVATION VIEW**  
(QUANTITY x1)



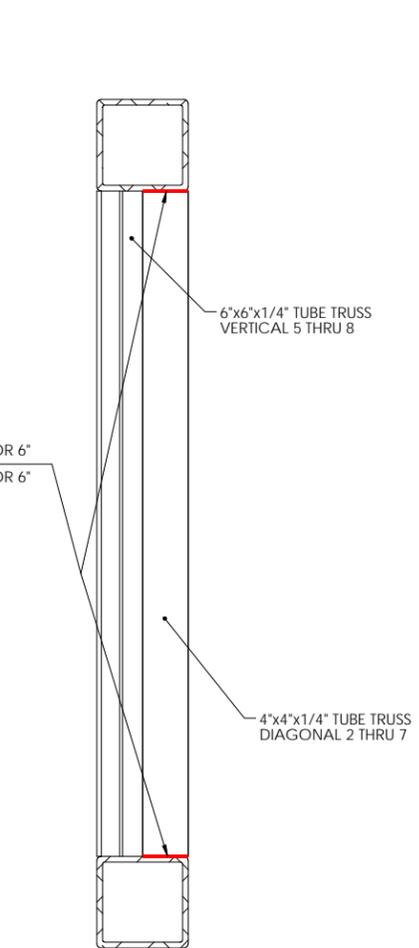
**TRUSS SECTION C-C**



**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-12**  
**BRIDGE SPAN 6:**  
**DECK DETAILS**

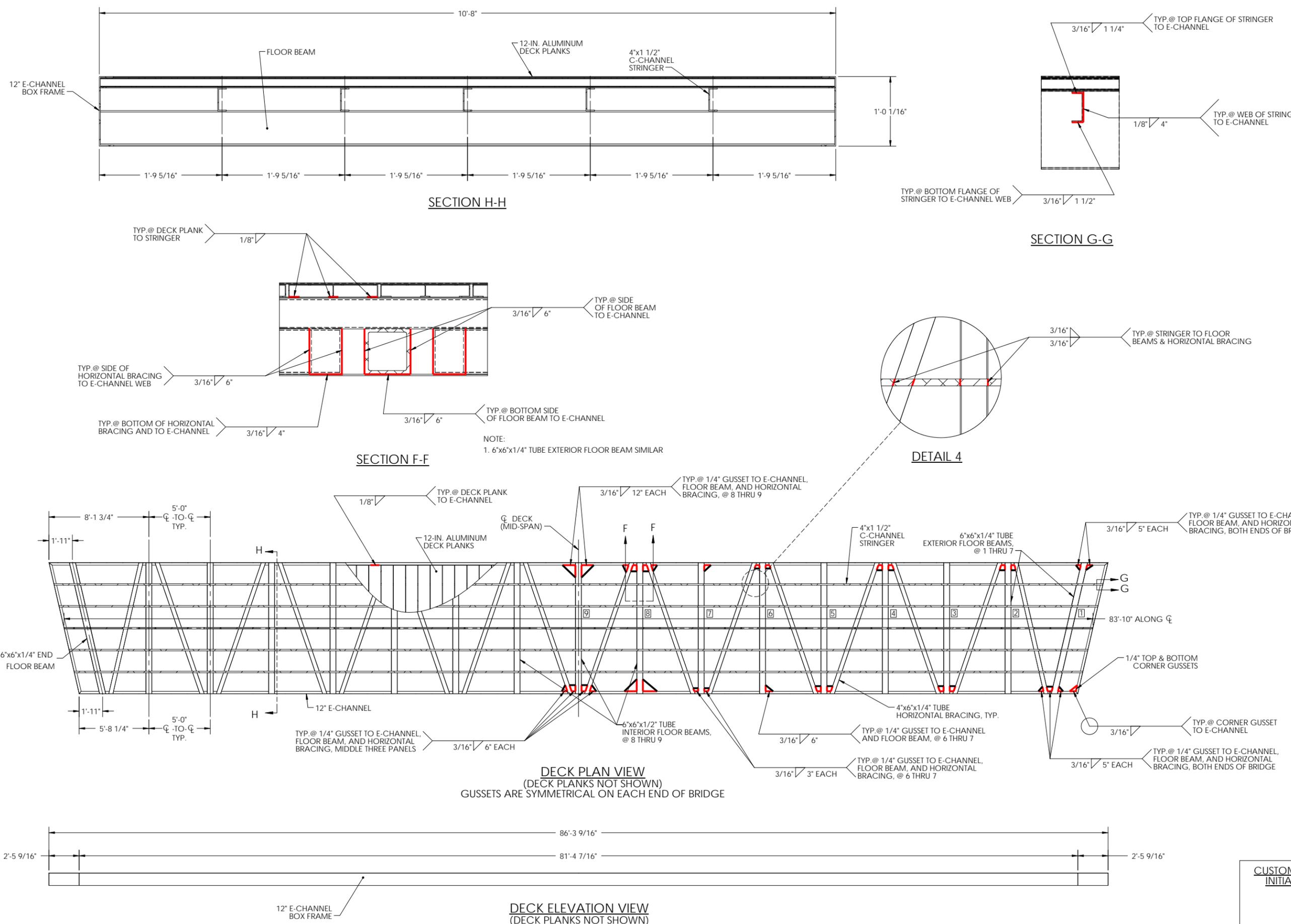
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**CMI LIMITED CO.**  
605 MOLLY LANE - SUITE 150  
WOODSTOCK, GA 30189  
PHONE: 770-933-8166



BRENDAN R. SHEPPARD  
DELAWARE PE #14366



CUSTOMER INITIAL

BILL OF MATERIALS				
ITEM #	TYPE	DESCRIPTION	QTY/COMMENTS	WEIGHTS
<b>SPAN 1</b>	<b>BRIDGE</b>	<b>10'x32'-10" CASCADE BRIDGE</b>	<b>1</b>	<b>~4,300 LBS</b>
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	---
<b>SPAN 20</b>	<b>BRIDGE</b>	<b>10'x49'-8.5" CASCADE BRIDGE</b>	<b>1</b>	<b>~6,200 LBS</b>
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	---
<b>BP1</b>	<b>BEARING PAD</b>	<b>9 1/2"x1'-6"x1" UHMW PAD</b>	<b>4 x 2 = 8</b>	<b>~5 LBS (EACH)</b>



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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	05/20/2020
CHECKED BY:	MKL	05/29/2020
FABRICATION:	BRS	05/29/2020

DRAWING NO.:

**S-13**

**SPANS 1 AND 20:  
MATERIAL LIST**

Physical properties are defined by ASTM testing standards, The Aluminum Association Design Manual, The Naval Facilities Design Manual DMA 7.2, and The US Army Corps of Engineers General Design Guide. PVC Sheet 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™, Clout Dock™, Shore AIP™, GatorGate™, GatorDock Elite™, ArmorWare™, ArmorKut™, Box Profile™, UltraComposite™, The Steel Alternator™, Elite Right™, Elite Panel™, Elite Panel Panel™, FishBarr™, KICK Technology™, KICK X-View™, GatorBridge™, GatorAluminum™, Gator Sheet Piling™, GatorDock™, I Beam Lock™, Textured Slate™, Crane Materials International™, I-Beam Sheet Piling™, Aqua Shear Systems™, Endurance™, Endurance CIP™, Polaris™, Edgus™, Gridstone™, 21 Poly™, PileCaw™, 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: 4,874,521; 4,490,585; 5,292,205; 5,145,287; 6,000,883; 6,033,155; 6,263,646; 6,260,344; 6,375,667; 7,059,807; 7,058,066; 7,025,519; 7,393,482; 5,501,503; 5,801,672; 6,211,271; 1,345,061CA; 7,914,217 and other patents pending. © 2005-2017 CMI Limited Co. All Rights Reserved.

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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

CUSTOMER  
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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	05/20/2020
CHECKED BY:	MKL	05/29/2020
FABRICATION:	BRS	05/29/2020

DRAWING NO.:

**S-14**

**SPANS 1 AND 20:  
ASSEMBLY DETAILS**

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 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 therefrom. ShoreGuard®, the ShoreGuard Sewall System®, C-Log®, TruSteel®, GatorDock®, GatorDock®, ShoreAll®, GatorWalk®, GatorDock Elite®, ArmorWaze®, ArmorRoad®, Box Profile®, UltraComposite®, The Steel Alternator®, Elite Wall®, Elite Panel®, Site Fence Panel®, RollForm®, XCR Technology®, XCR Xply®, GatorBridge®, GatorAluminum®, Gator Sheet Piling®, GatorDock™, I Beam Lock™, Ventured Slat™, Crane Materials™, International™, CMI Sheet Piling Solution™, Aqua Terra System™, Endurance™, Endurance CPM™, Palms™, E-Clog™, GridSpan™, 21 Poly™, PileCrew™, SheerScape™, SheerScape Retaining Wall System™, 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: 4,874,821; 4,895,588; 5,292,208; 5,145,287; 6,000,882; 6,013,155; 6,053,646; 6,062,154; 6,375,642; 7,059,807; 7,058,066; 7,025,539; 7,393,482; 5,503,302; 5,803,672; 6,233,271; 1,245,061CA; 7,914,237 and other patents pending. © 2005-2017 CMI Limited Co. All Rights Reserved.

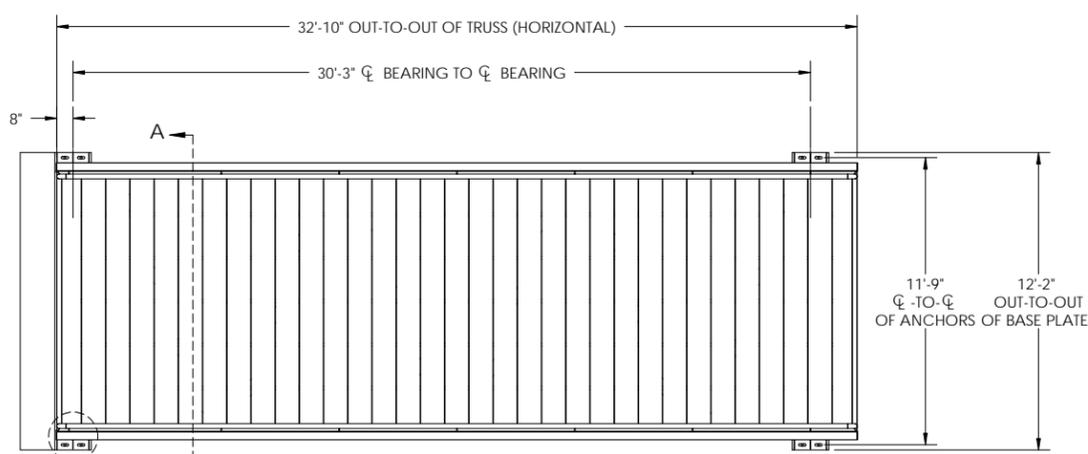
TOLERANCES UNLESS SPECIFIED OTHERWISE  
XXX = ± 1/4"; FRACTIONS = ± 1/8"; ANGULAR = ± 1°

\* = HEIGHT MEASURED FROM BOTTOM OF BASE PLATE TO TOP OF DECK  
\*\* = NOTE TO INSTALLER: IF NEEDED, ADD SHIMS (BY OTHERS) AS REQUIRED UNDER UHMW PADS TO MAKE UP ANY DIFFERENCE IN BACKWALL HEIGHT BETWEEN SECTIONS.

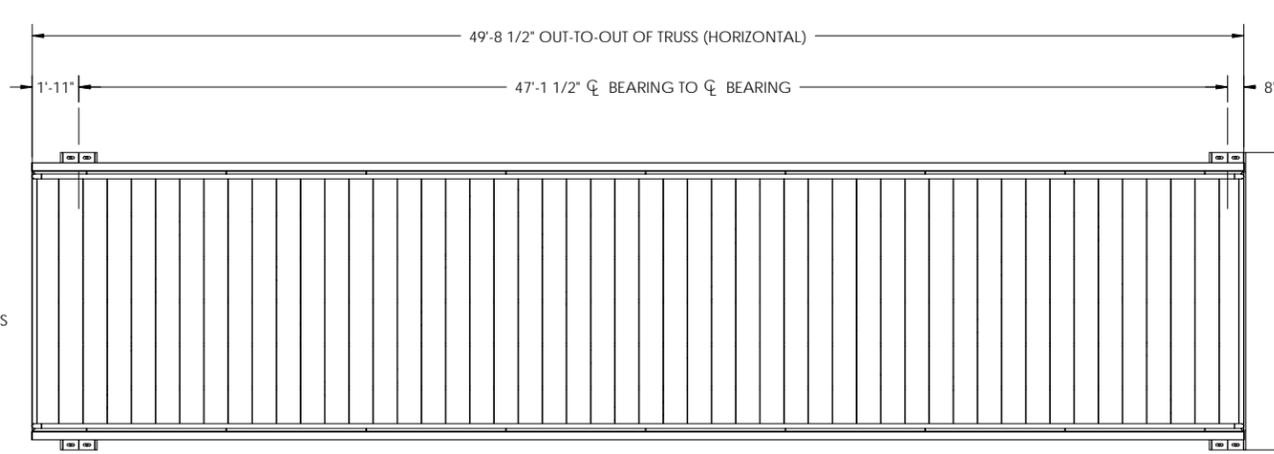
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WOODSTOCK, GA 30189  
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COA #4043



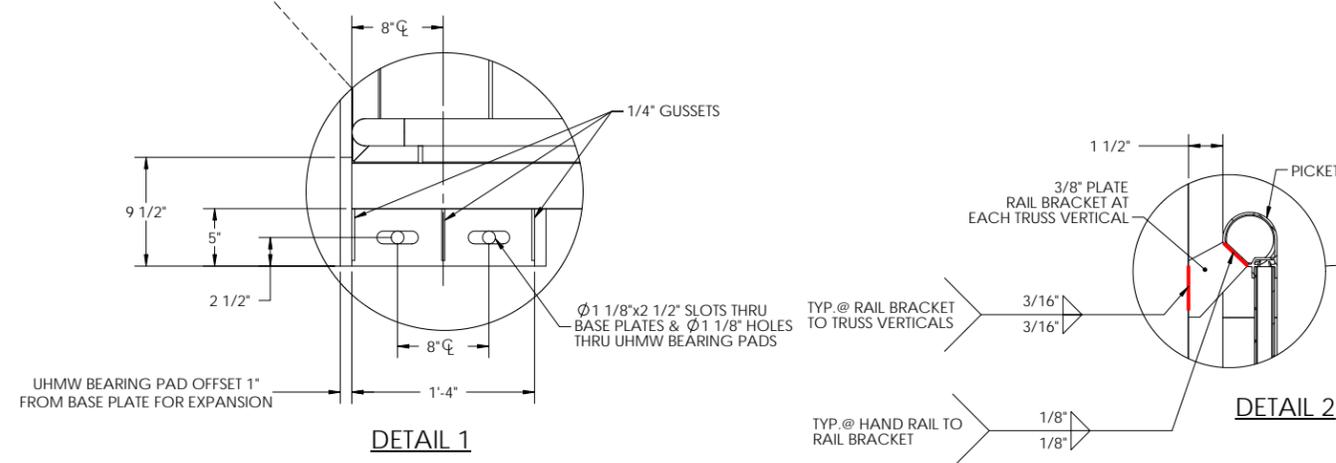
BRENDAN R. SHEPPARD  
DELAWARE PE #14366



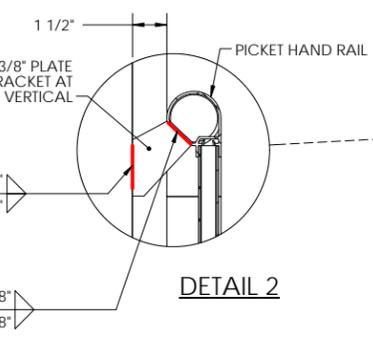
**BRIDGE SPAN 1  
PLAN VIEW**



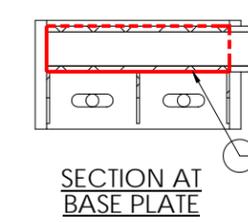
**BRIDGE SPAN 20  
PLAN VIEW**



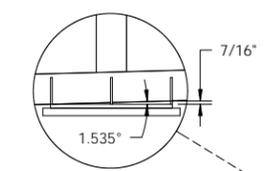
**DETAIL 1**



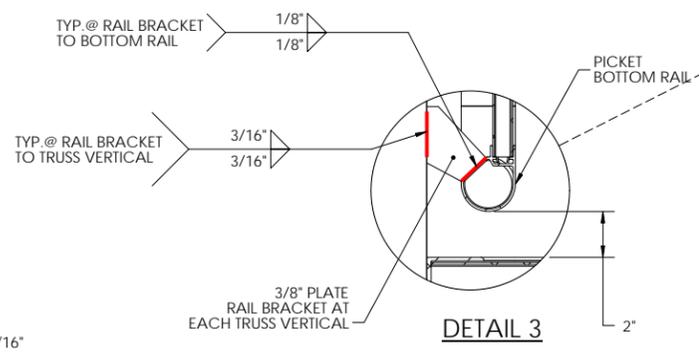
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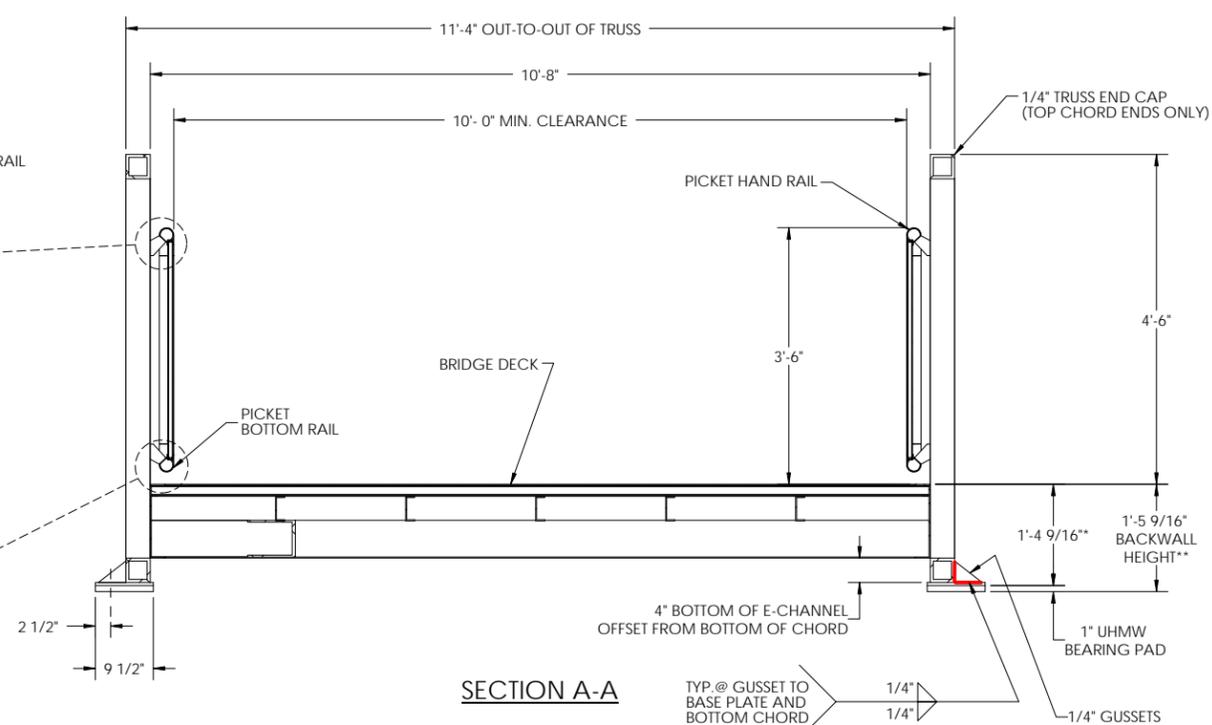
**SECTION AT  
BASE PLATE**



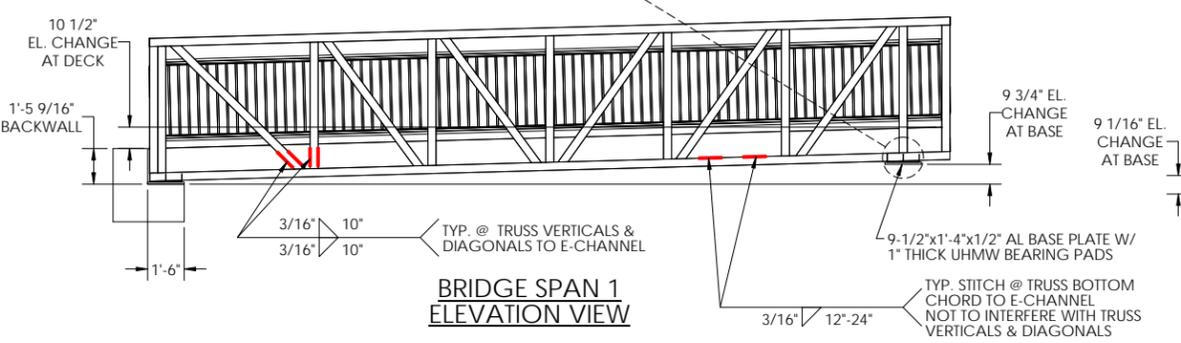
**TYP. @ BASEPLATE TO  
BOTTOM CHORD**



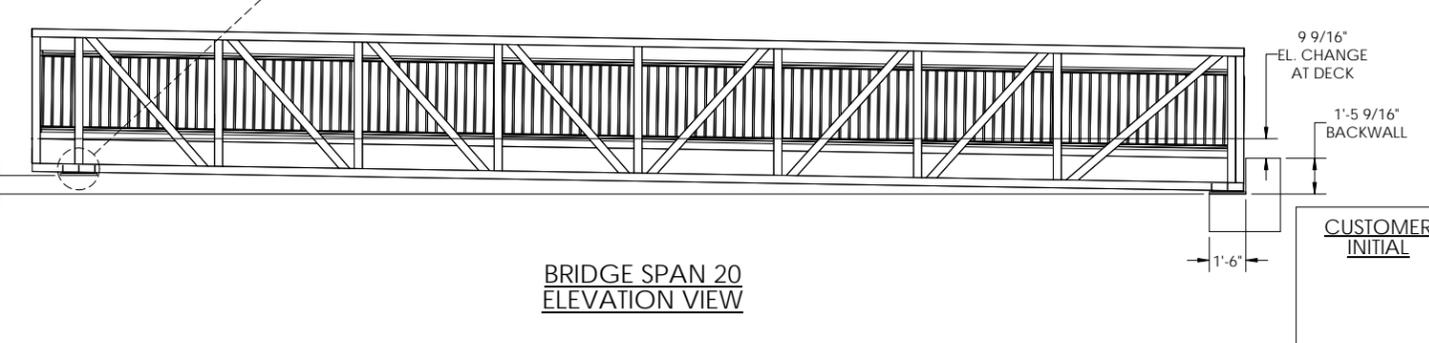
**DETAIL 3**



**SECTION A-A**



**BRIDGE SPAN 1  
ELEVATION VIEW**



**BRIDGE SPAN 20  
ELEVATION VIEW**

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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	05/20/2020
CHECKED BY:	MKL	05/29/2020
FABRICATION:	BRS	05/29/2020

DRAWING NO.:  
**S-15**  
SPANS 1 AND 20:  
TRUSS DETAILS

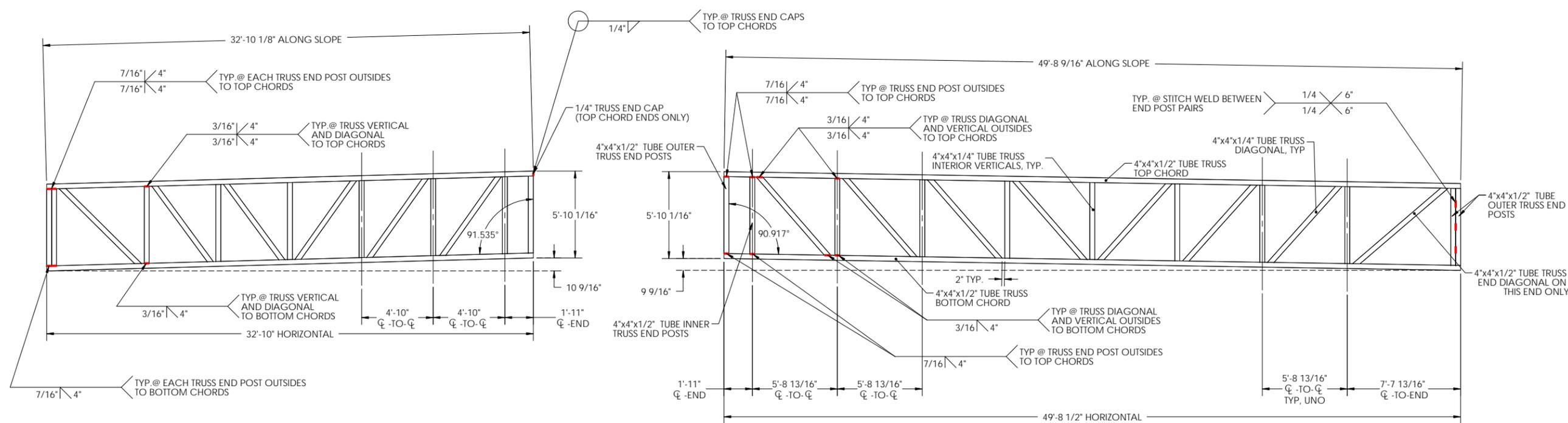
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WOODSTOCK, GA 30189  
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COA #4043

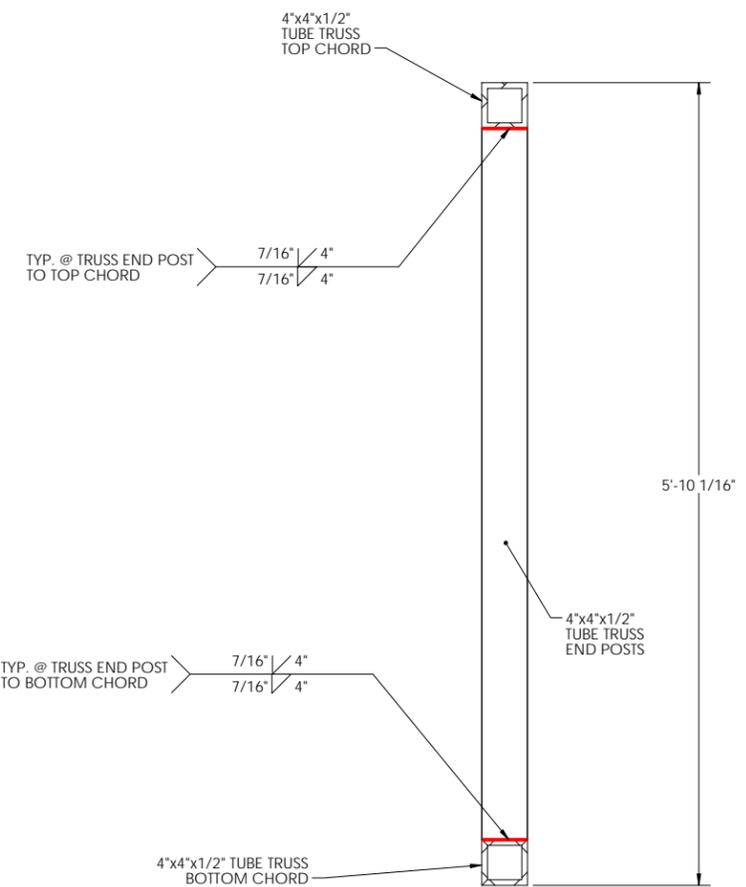


**BRENDAN R. SHEPPARD**  
DELAWARE PE #14366

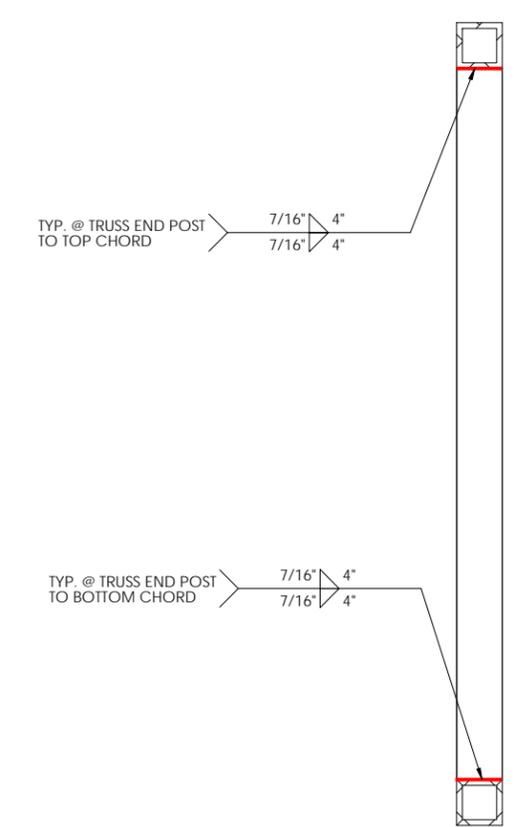


**SPAN 1 TRUSS ELEVATION VIEW (QUANTITY x2)**

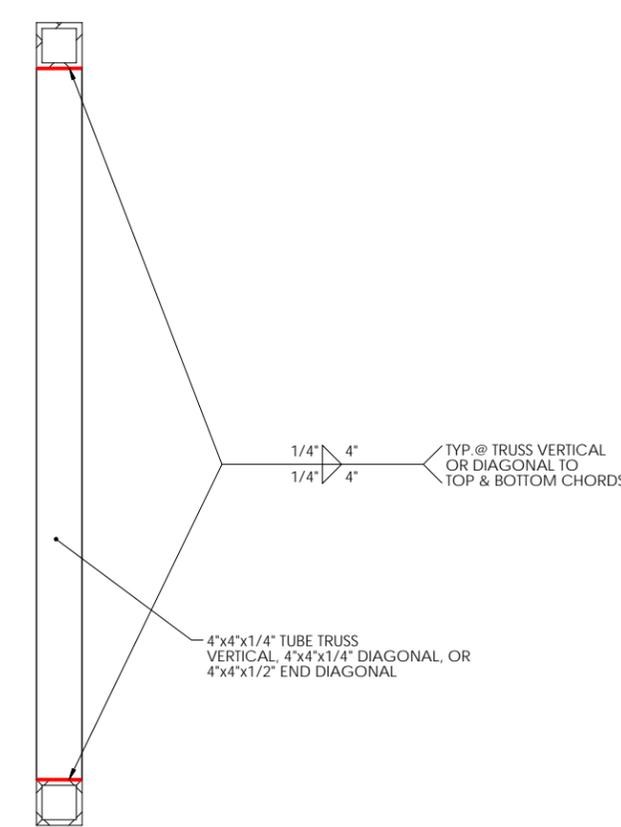
**SPAN 20 TRUSS ELEVATION VIEW (QUANTITY x2)**



**TRUSS SECTION AT OUTER END POSTS**



**TRUSS SECTION AT INNER END POST**



**TRUSS SECTION AT VERTICAL AND DIAGONAL**

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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.:

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-16**

**SPANS 1 AND 20: DECK DETAILS**

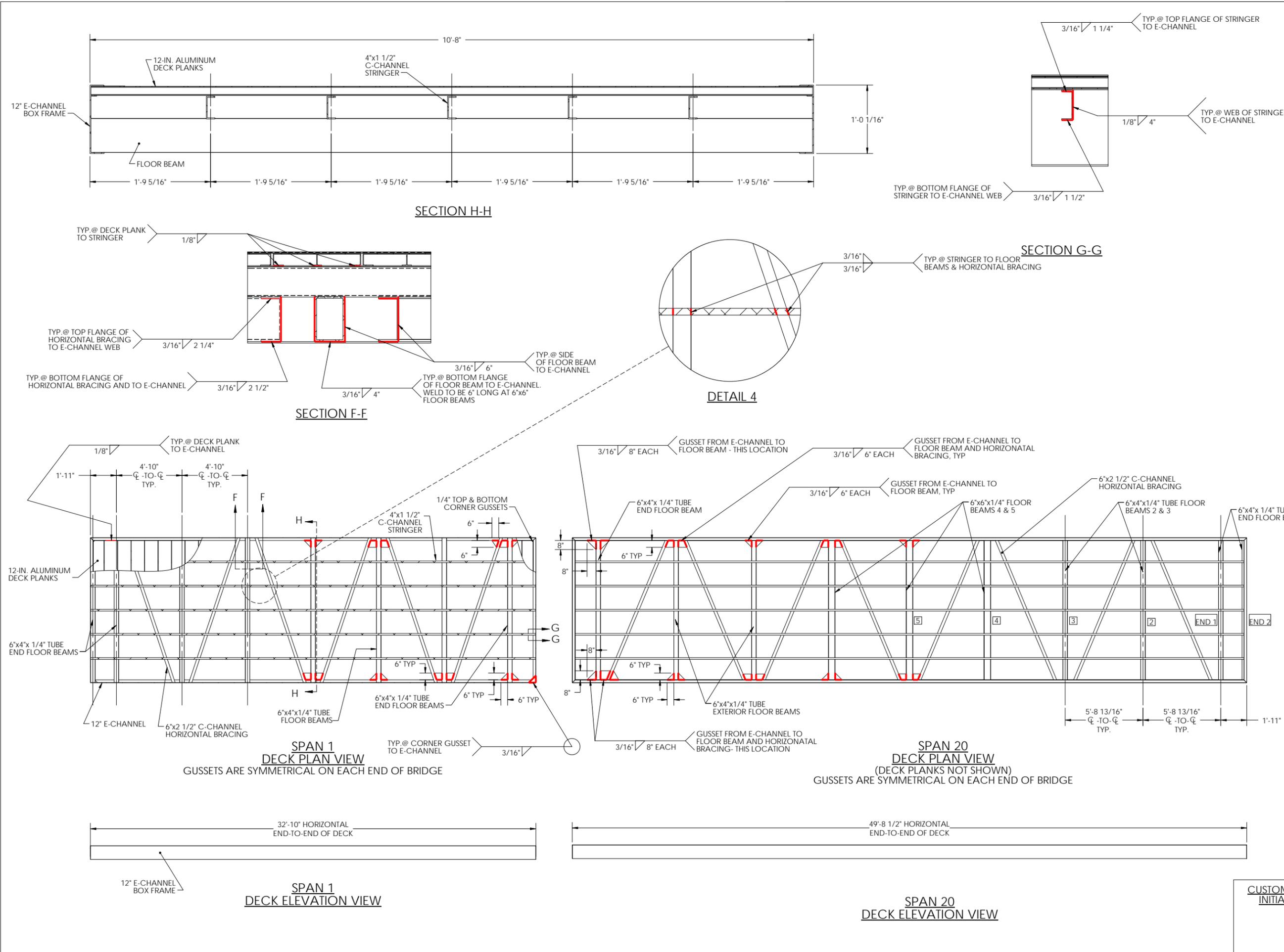
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COA #4043

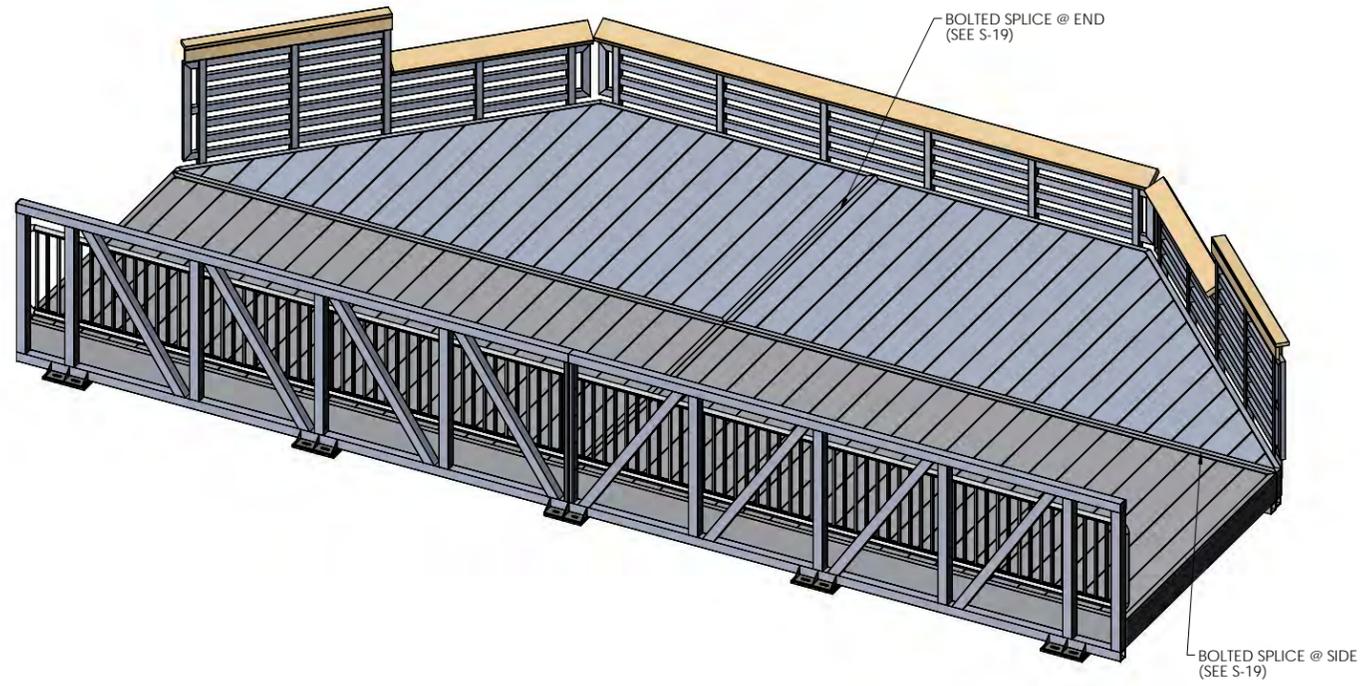


BRENDAN R. SHEPPARD  
DELAWARE PE #14366



CUSTOMER INITIAL

BILL OF MATERIALS				
ITEM #	TYPE	DESCRIPTION	QTY/COMMENTS	WEIGHTS
<b>SPAN 2, 10, 13, AND 16</b>	<b>BRIDGE</b>	<b>10'x39'-10" FISHING PIER BRIDGE</b>	<b>4</b>	<b>~4,100 LBS</b>
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	---
<b>FRAME</b>	<b>FRAME</b>	<b>10'x39'-10" FISHING PIER FRAME</b>	<b>4 SETS</b>	<b>~3,000 LBS</b>
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	---
<b>RAIL 1</b>	<b>FISHING RAIL 1</b>	<b>FISHING RAIL 20'-0"</b>	<b>1 x 4 = 4</b>	<b>~250 LBS</b>
<b>RAIL 2A</b>	<b>FISHING RAIL 2A</b>	<b>FISHING RAIL 13'-7"</b>	<b>1 x 4 = 4</b>	<b>~210 LBS</b>
<b>RAIL 2B</b>	<b>FISHING RAIL 2B</b>	<b>FISHING RAIL 13'-7"</b>	<b>1 x 4 = 4</b>	<b>~210 LBS</b>
<b>BP1</b>	<b>BEARING PAD</b>	<b>9 1/2"x1'-6"x1" UHMW PAD</b>	<b>14 x 4 = 56</b>	<b>~5 LBS (EACH)</b>
<b>BP3</b>	<b>BEARING PAD</b>	<b>9 1/2"x8"x1" UHMW PAD</b>	<b>8 x 4 = 32</b>	<b>~5 LBS (EACH)</b>





**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 SUBMITAL

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**

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 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®, TimberGuard®, GatorGuard®, Gator Dock®, Shore All®, GatorGate®, GatorDock Elite®, ArmorWear®, ArmorPad®, Box Profile®, UltraComposite®, The Steel Alternative®, Elite Right®, Elite Panel®, Elite Floor Panel®, FishBarr®, Kick Technology®, Kick Vinyl®, GatorBridge®, GatorAluminum®, Gator Sheet Piling®, GatorDock™, I Beam Lock™, Textured Stone™, Crane Materials International®, I-Beam Sheet Piling Solution™, Aqua Shear System™, Endurance™, Endurance CIP™, Polaris™, E-Clip™, GridStone™, 21 Poly™, PileCaw™, 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: 4,874,521; 4,490,585; 5,295,205; 5,145,287; 6,000,883; 6,033,155; 6,263,646; 6,260,354; 6,375,667; 7,059,807; 7,058,066; 7,025,516; 7,389,482; 5,501,505; 5,801,672; 6,233,271; 1,345,061CA; 7,914,237 and other patents pending. © 2020-2017 CMI Limited Co. All Rights Reserved.

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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  
PROFESSIONAL ENGINEER  
LICENSE  
No. 14366

**BRENDAN R. SHEPPARD**  
DELAWARE PE # 14366

CUSTOMER  
INITIAL

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**DELAWARE DIVISION OF PARKS & RECREATION**

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CHECKED BY:	MKL	5/29/2020
FABRICATION:	BRS	5/29/2020

DRAWING NO.:

**S-18**

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

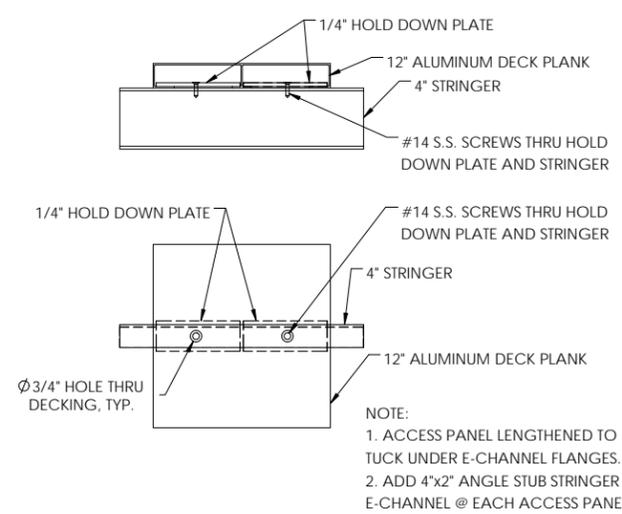
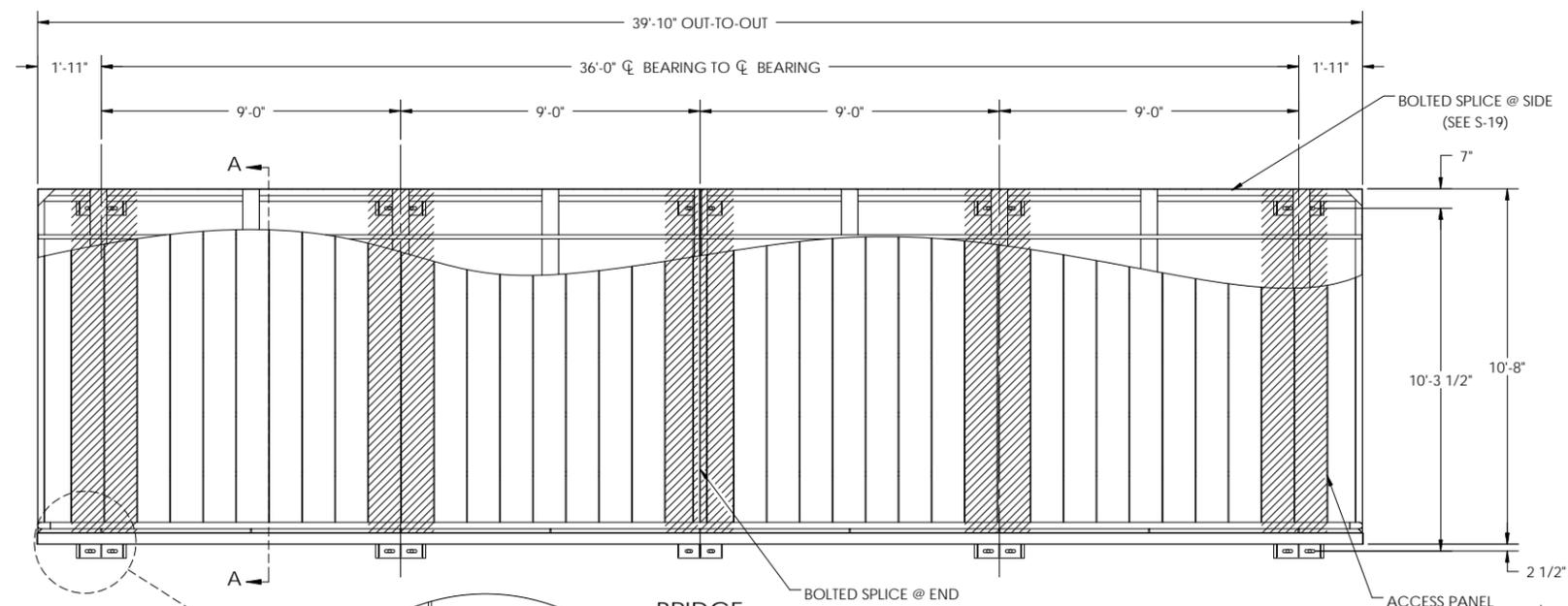
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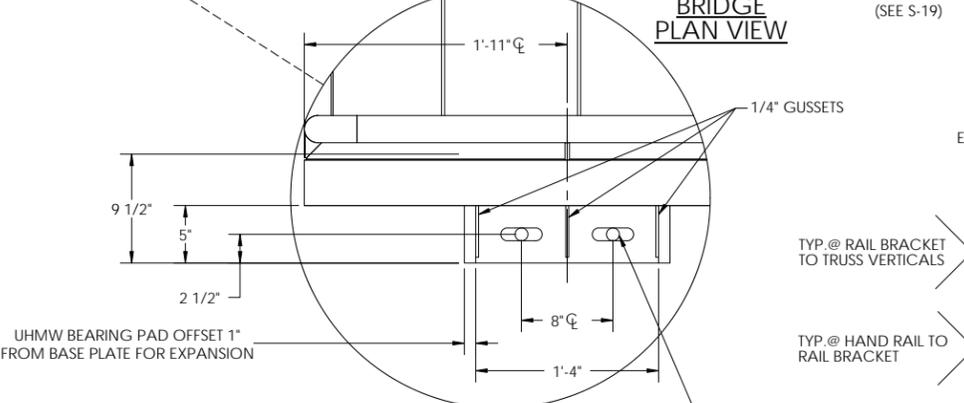
**CMI LIMITED CO.**  
605 MOLLY LANE - SUITE 150  
WOODSTOCK, GA 30189  
PHONE: 770-933-8166  
COA #4043



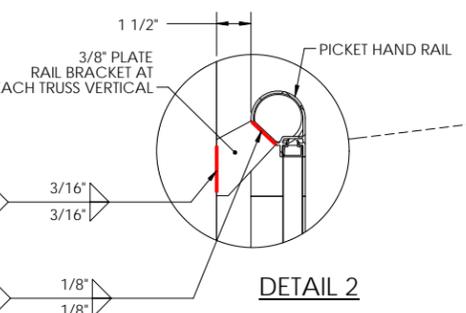
BRENDAN R. SHEPPARD  
DELAWARE PE # 14366



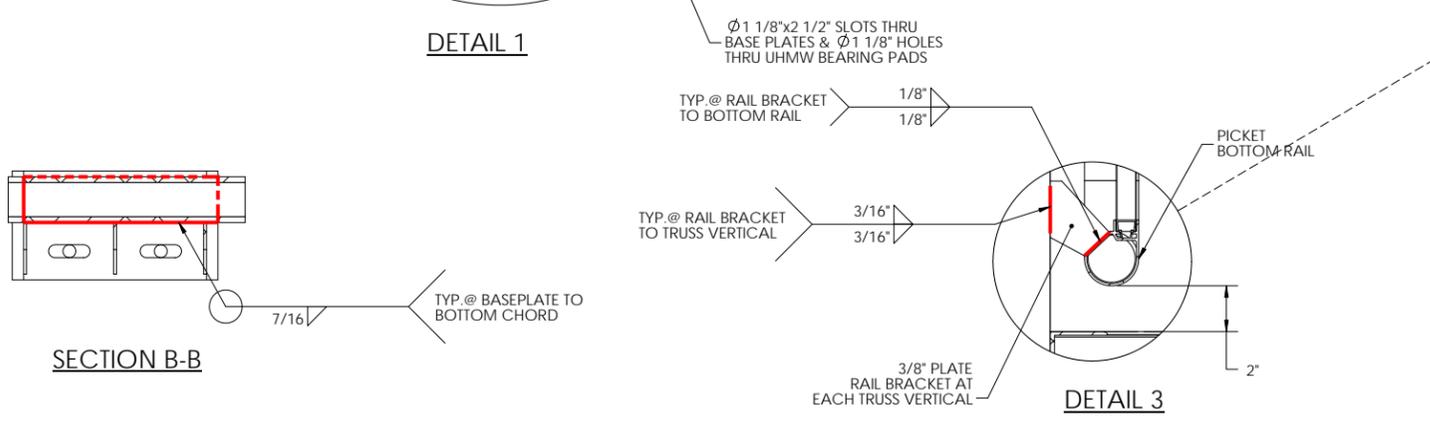
ACCESS PANEL DETAIL



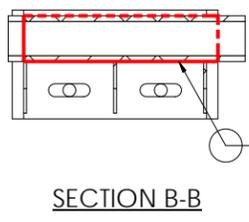
DETAIL 1



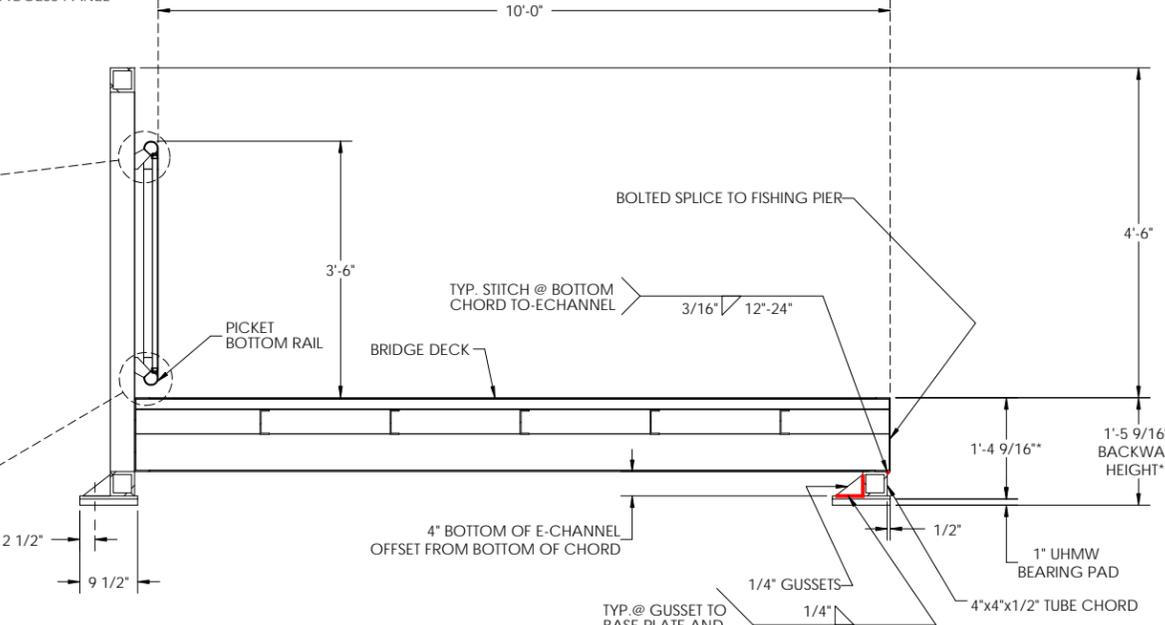
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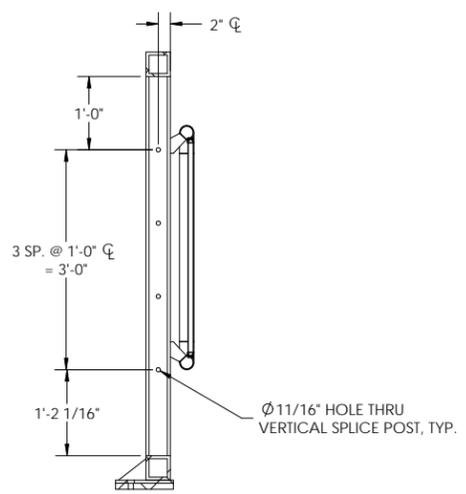
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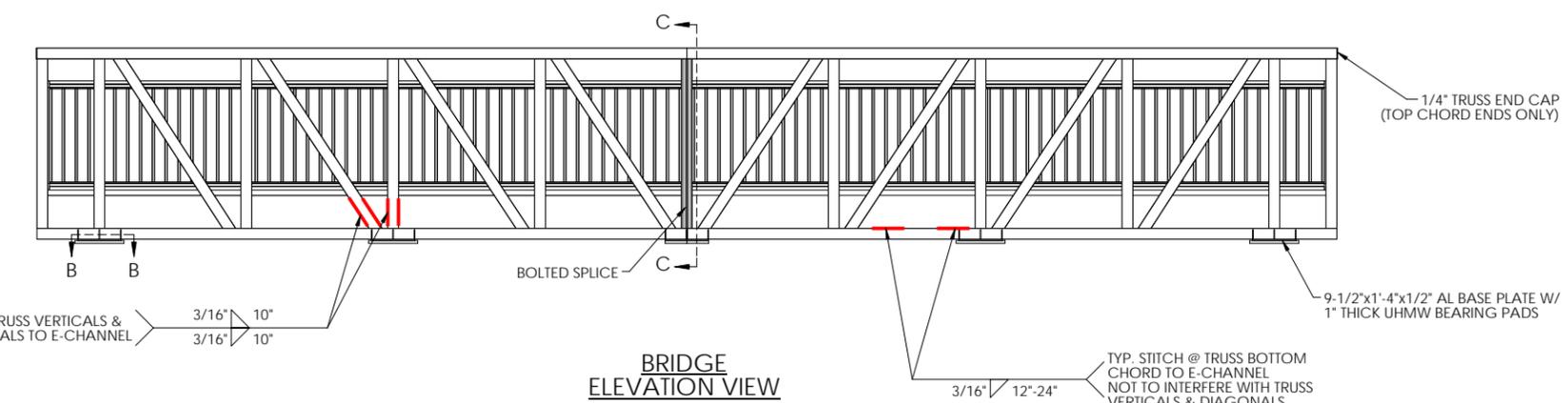
SECTION B-B



SECTION A-A



SECTION C-C



BRIDGE ELEVATION VIEW

\* = HEIGHT MEASURED FROM BOTTOM OF BASE PLATE TO TOP OF DECK  
\*\* = NOTE TO INSTALLER: IF NEEDED, ADD SHIMS (BY OTHERS) AS REQUIRED UNDER UHMW PADS TO MAKE UP ANY DIFFERENCE IN BACKWALL HEIGHT.

CUSTOMER INITIAL

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FABRICATION:	BRS	5/29/2020

DRAWING NO.:

**S-19**  
SPANS 2,10,13,16:  
ASSEMBLY DETAILS (2/2)

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**RECORD OF REVISIONS**

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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 SUBMITAL

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**

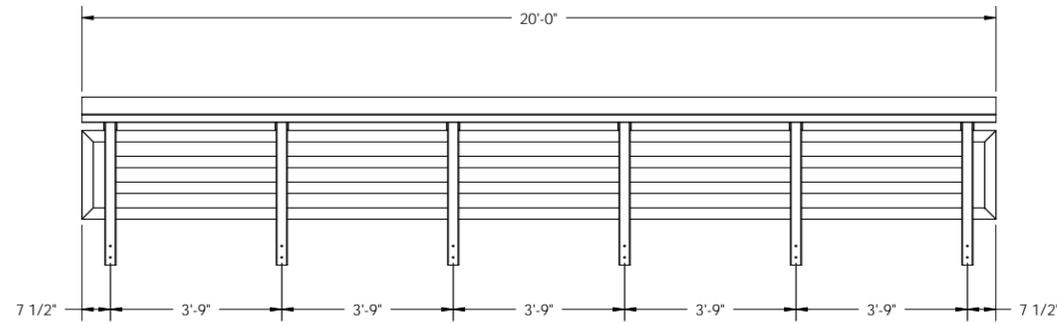
Physical properties are defined by ASTM testing standards, The Aluminum Association Design Manual, The Naval Facilities Design Manual DM 7-2, and The US Army Corps of Engineers General Design Guide: PVC Sheet Pile and/or standard engineering practice. The values shown are nominal and may vary. The information 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. "SheerScape", "SheerScape Retaining Wall System", "GateDock", "GateDock Elite", "ArmorWall", "ArmorLock", "Box Profile", "UltraComposite", "The Steel Alternative", "Elite Wall", "Elite Panel", "Elite Panel Panel", "Elite Panel", "KICK Technology", "KICK Wheel", "GatorBridge", "GatorAluminum", "Gator Sheet Piling", "GateDock", "Beam Lock", "TieRod Slab", "Crane Material", "Interlocking Lug", "CMI Sheet Piling Solution", "Aqua Terra System", "Endurance CPM", "Palms", "Klipac", "Gridspan", "21 Poly", "PileCap", "SheerScape", "SheerScape Retaining Wall System", "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: 4,974,857; 4,890,588; 5,292,208; 5,145,287; 6,000,883; 6,033,155; 6,036,646; 6,042,244; 6,375,647; 7,059,807; 7,059,066; 7,025,539; 7,393,482; 5,503,503; 5,803,672; 6,231,271; 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°

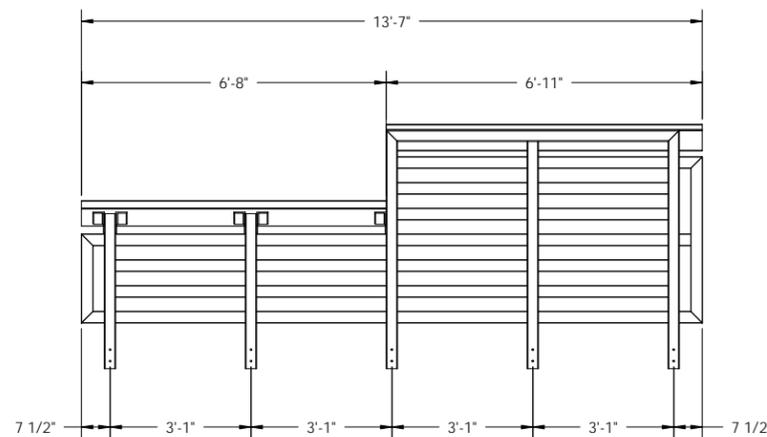
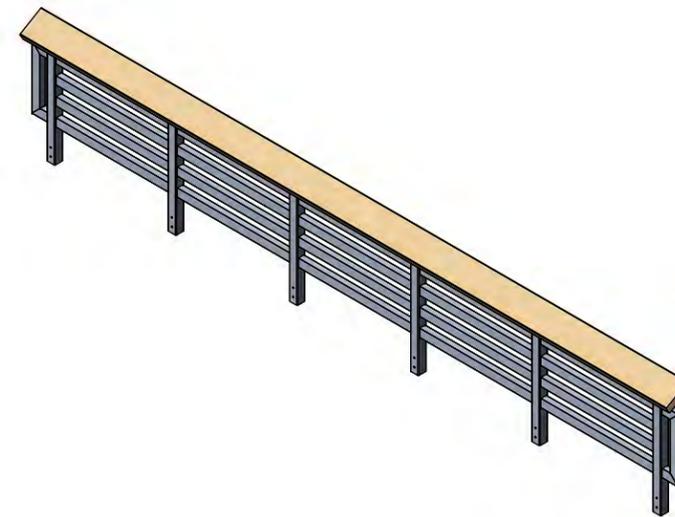
**CMI LIMITED CO.**  
605 MOLLY LANE - SUITE 150  
WOODSTOCK, GA 30189  
PHONE: 770-933-8166  
COA #4043



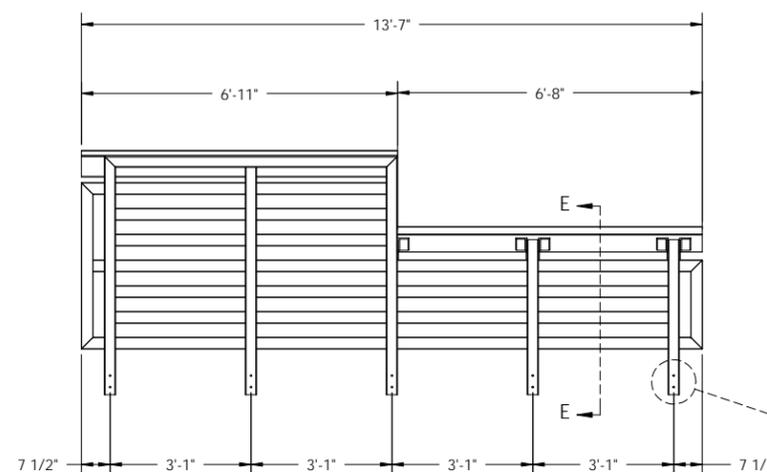
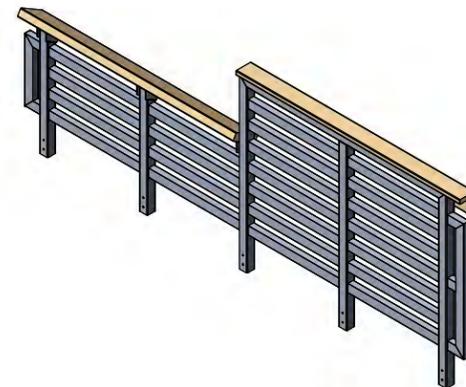
**BRENDAN R. SHEPPARD**  
DELAWARE PE # 14366



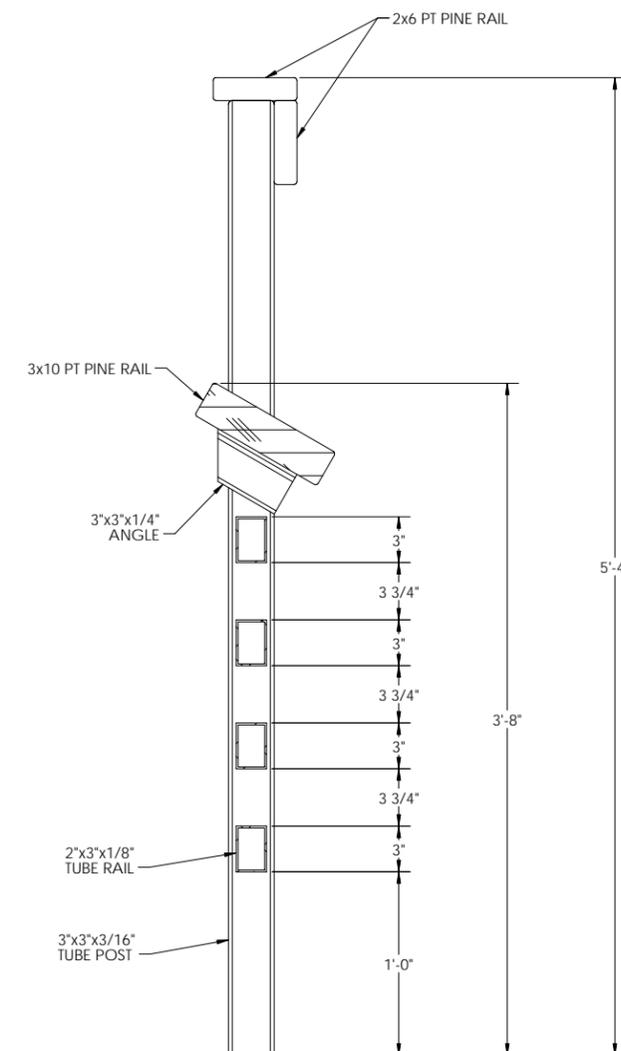
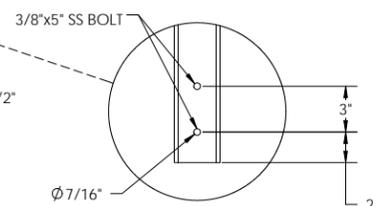
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ELEVATION VIEW: FRONT FACE  
(QUANTITY x1 PER PIER)**



**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  
INITIAL

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PROJECT NAME:  
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CUSTOMER NAME:  
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CUSTOMER ADDRESS:  
89 KINGS HIGHWAY  
DOVER, DELAWARE 19901

PROJECT LOCATION:  
5025 KILLENS POND ROAD  
FELTON, DE 19943

CMI ORDER NO.:  
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	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

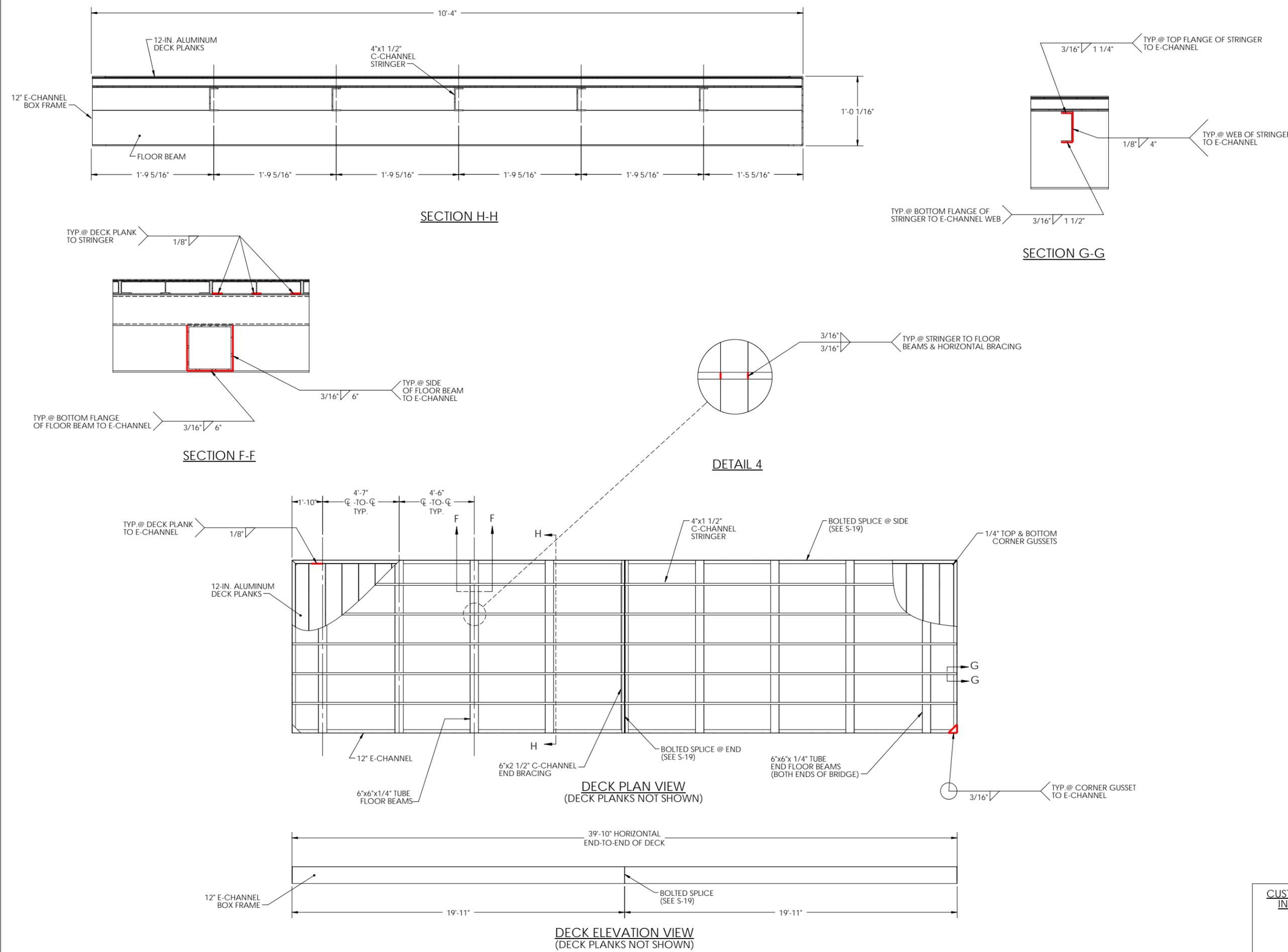
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**CMI LIMITED CO.**  
605 MOLLY LANE - SUITE 150  
WOODSTOCK, GA 30189  
PHONE: 770-933-8166  
COA #4043

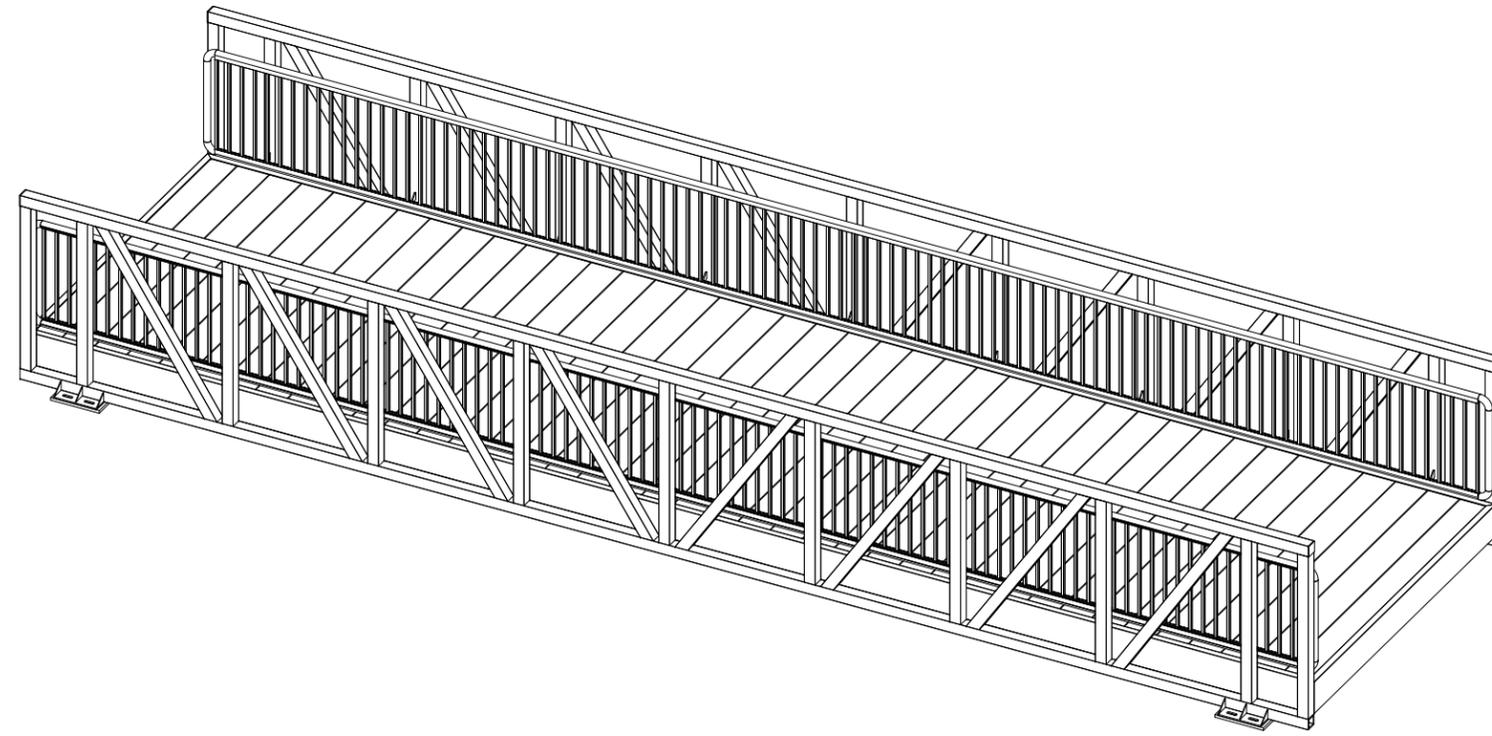


**BRENDAN R. SHEPPARD**  
DELAWARE PE # 14366



CUSTOMER INITIAL

BILL OF MATERIALS				
ITEM #	TYPE	DESCRIPTION	QTY/COMMENTS	WEIGHTS
<b>SPAN 3,4,5,7,8, AND 9</b>	<b>BRIDGE</b>	<b>10'x CASCADE BRIDGE</b>	<b>6 UNIQUE SPANS</b>	<b>~5,300 LBS TO ~5,600 LBS</b>
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	---
<b>BP1</b>	<b>BEARING PAD</b>	<b>9 1/2"x1'-6"x1" UHMW PAD</b>	<b>4 x 6 = 24</b>	<b>~5 LBS (EACH)</b>



2880 MELLONVILLE AVE, SANFORD, FL 32773  
800/256-8857 407/323-0190

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DOVER, DELAWARE 19901

PROJECT LOCATION:  
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FELTON, DE 19943

CMI ORDER NO.:  
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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

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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

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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 SUBMITAL

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**

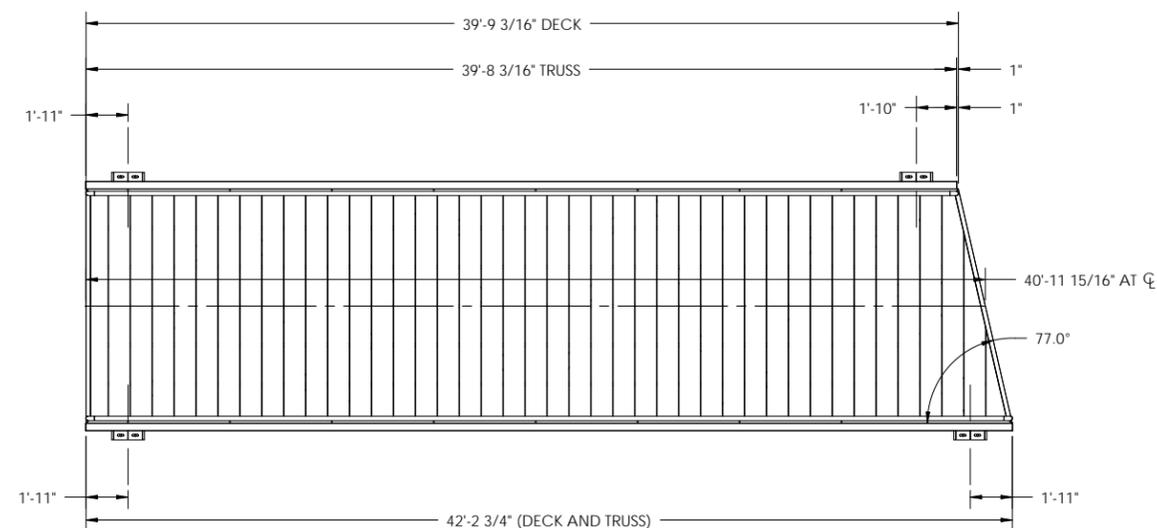
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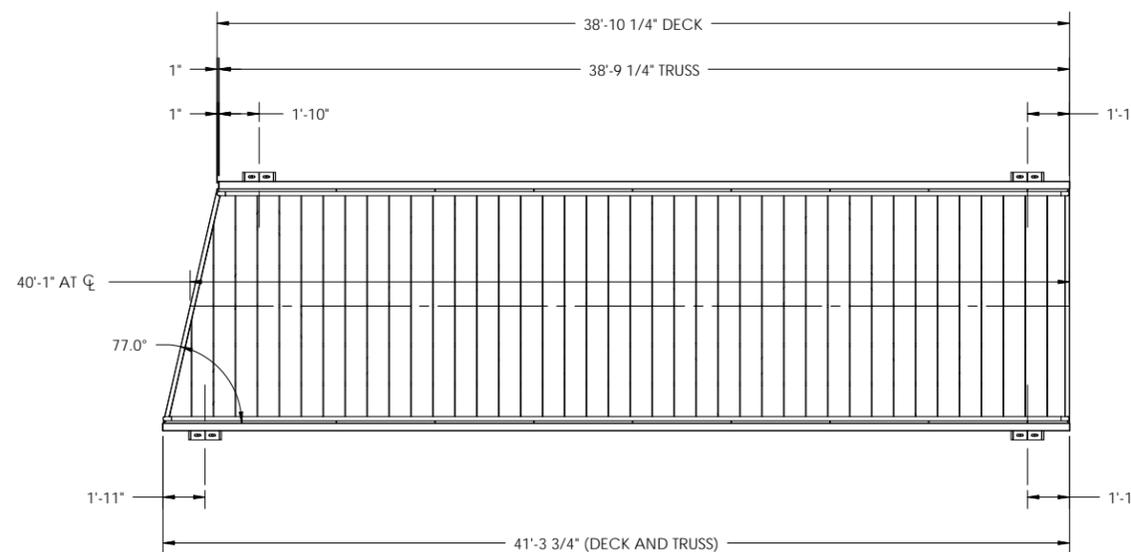
**CMI LIMITED CO.**  
605 MOLLY LANE - SUITE 150  
WOODSTOCK, GA 30189  
PHONE: 770-933-8166  
COA #4043



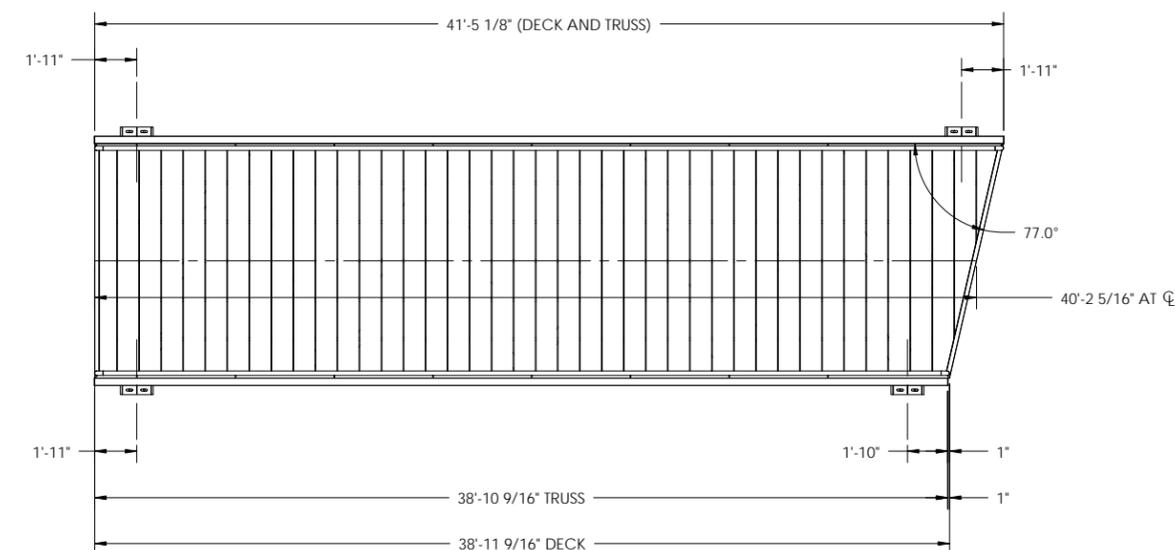
**BRENDAN R. SHEPPARD**  
DELAWARE PE #14366



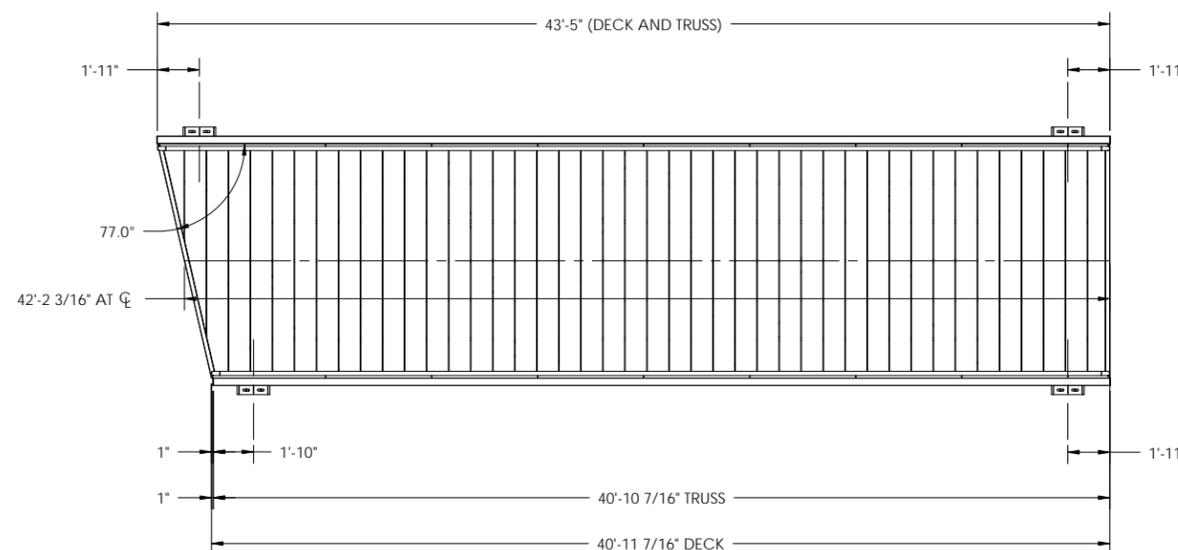
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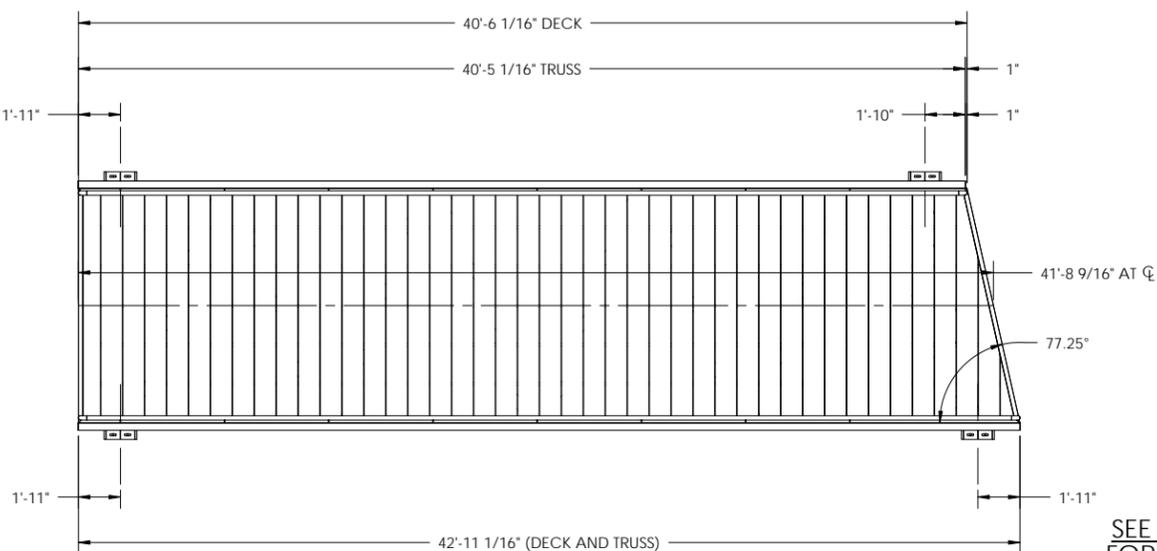
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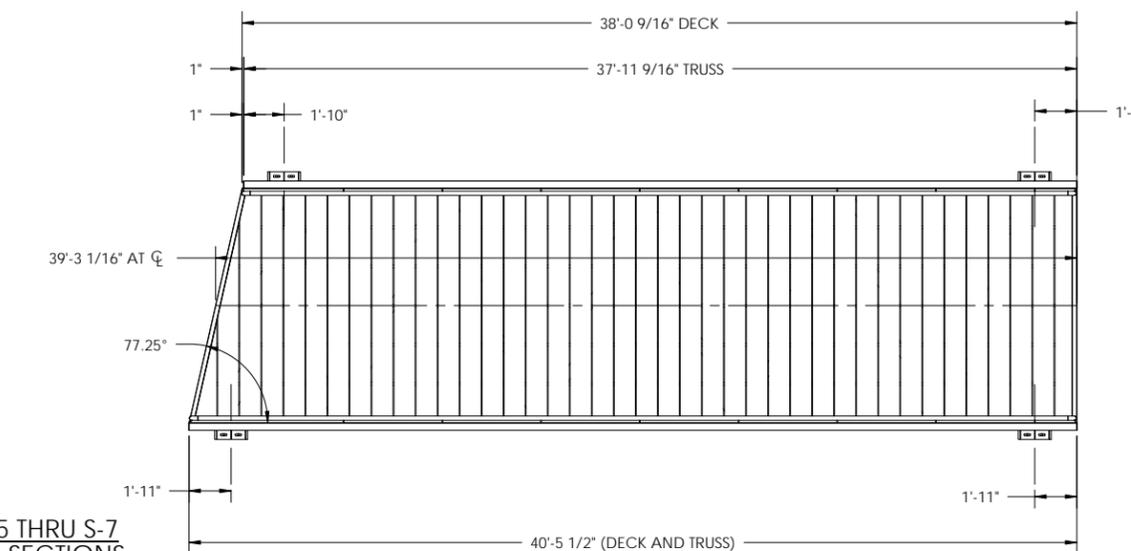
**SPAN 5**



**SPAN 7**



**SPAN 8**



**SPAN 9**

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

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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)

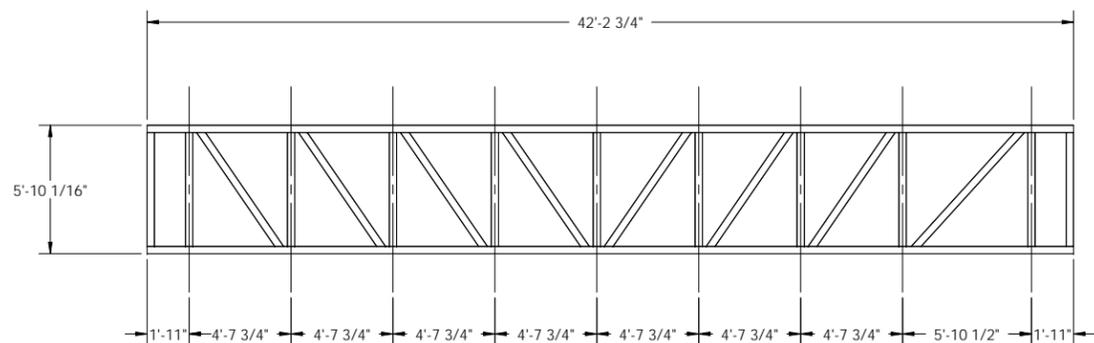
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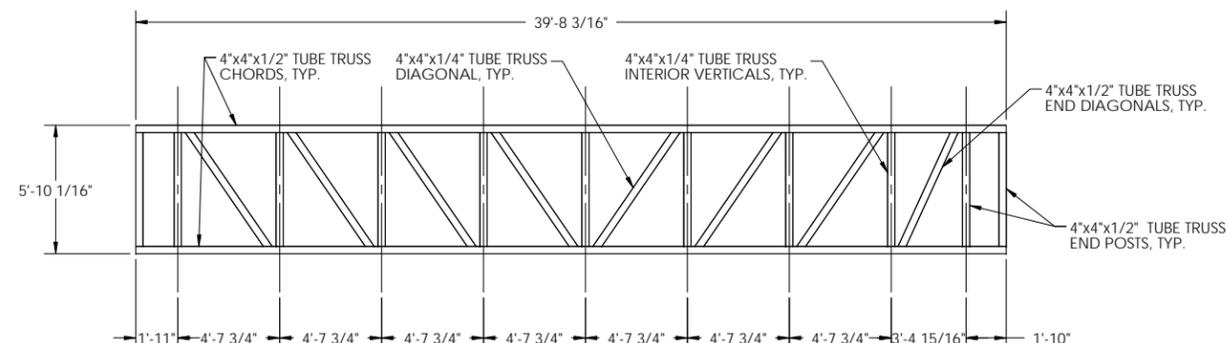
**CMI LIMITED CO.**  
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PHONE: 770-933-8166  
COA #4043



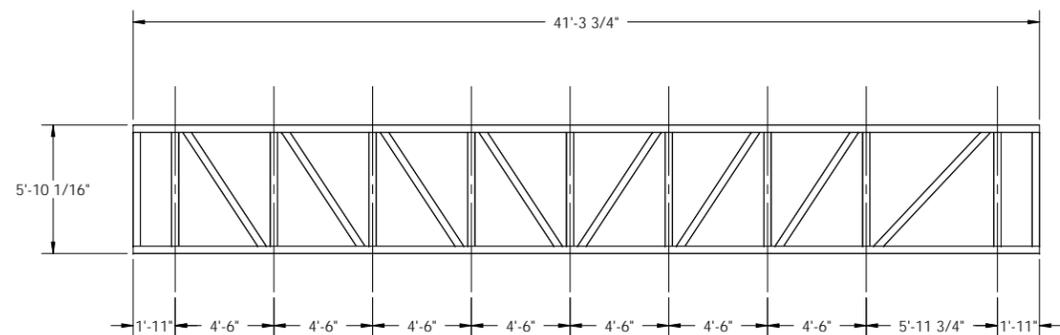
**BRENDAN R. SHEPPARD**  
DELAWARE PE #14366



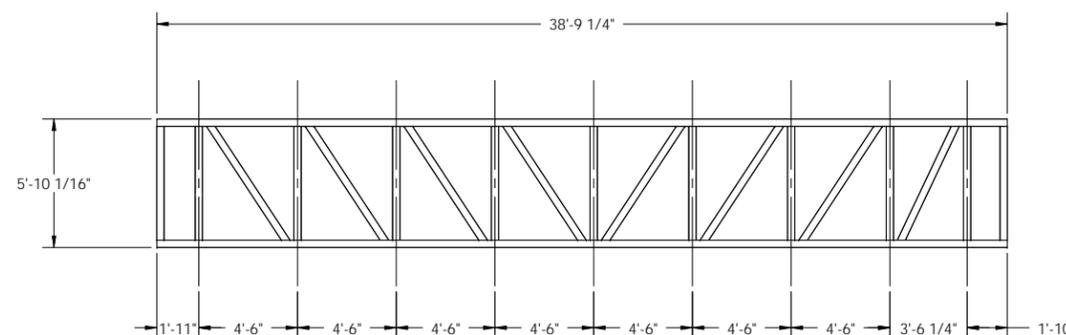
**SPAN 3 TRUSS  
LONG SIDE**



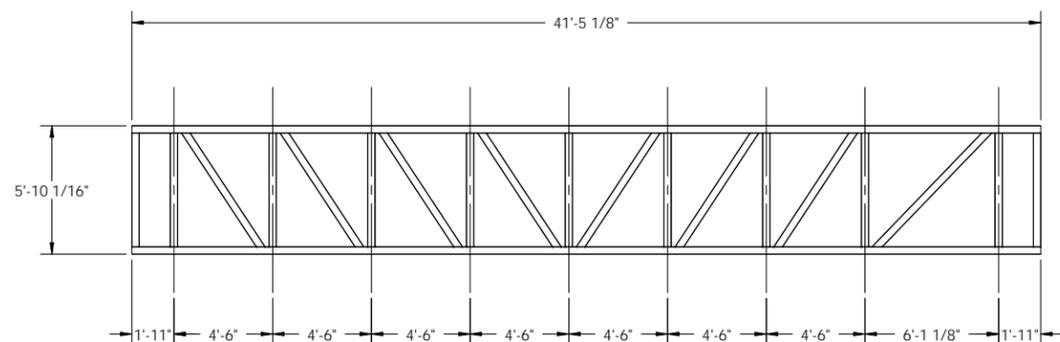
**SPAN 3 TRUSS  
SHORT SIDE**



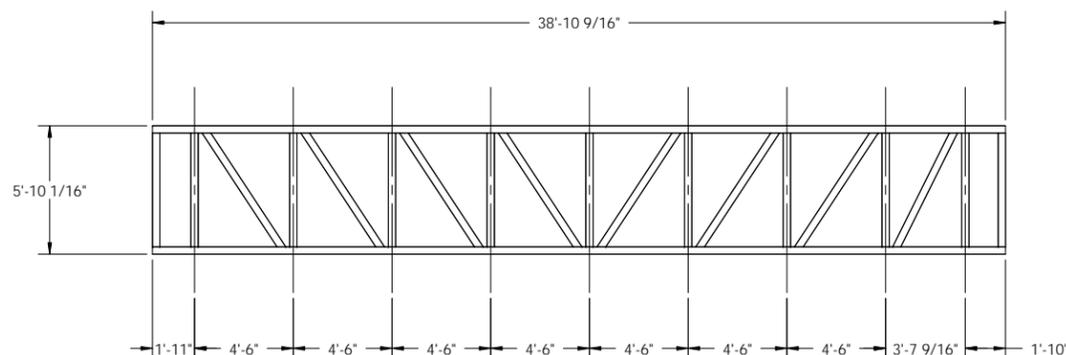
**SPAN 4 TRUSS  
LONG SIDE**



**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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	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)**

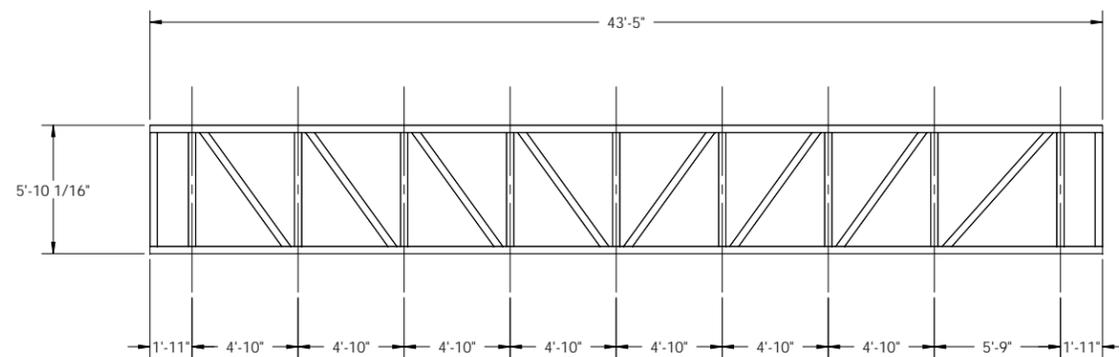
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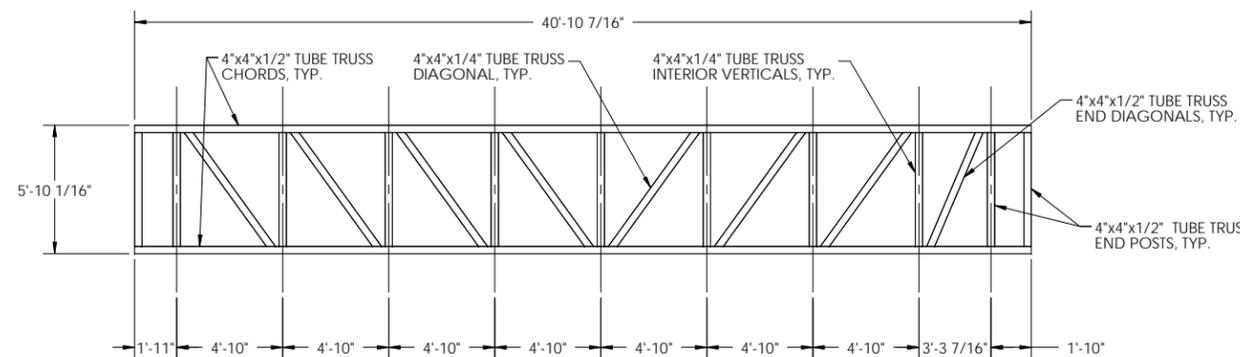
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WOODSTOCK, GA 30189  
PHONE: 770-933-8166  
COA #4043



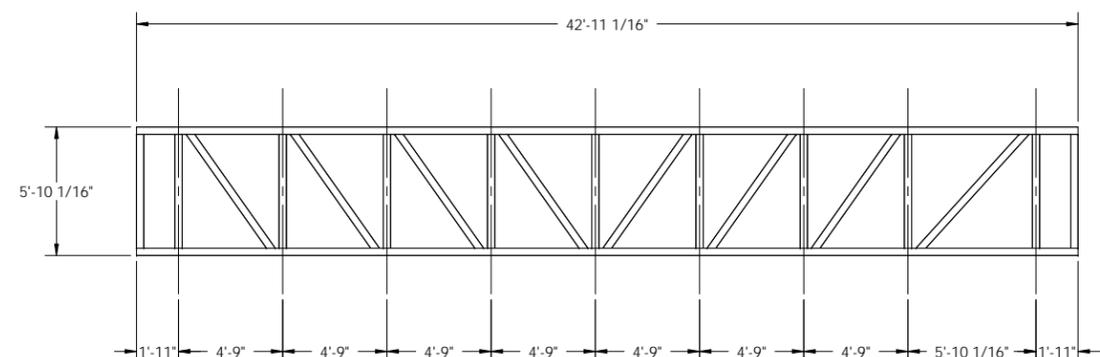
BRENDAN R. SHEPPARD  
DELAWARE PE #14366



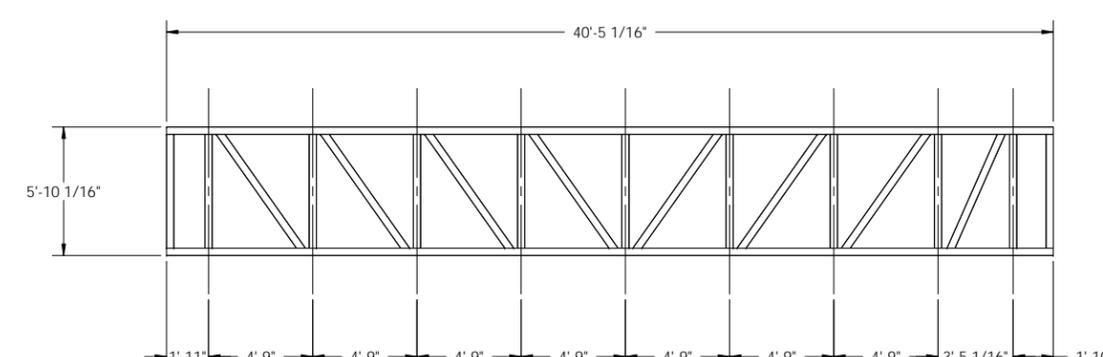
**SPAN 7 TRUSS  
LONG SIDE**



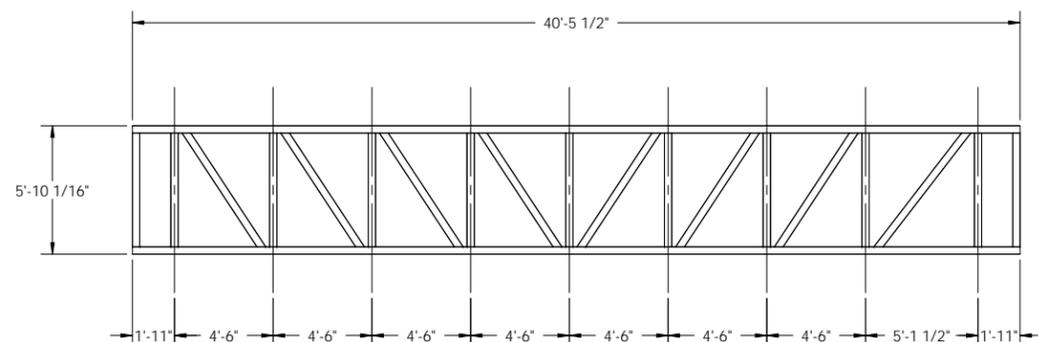
**SPAN 7 TRUSS  
SHORT SIDE**



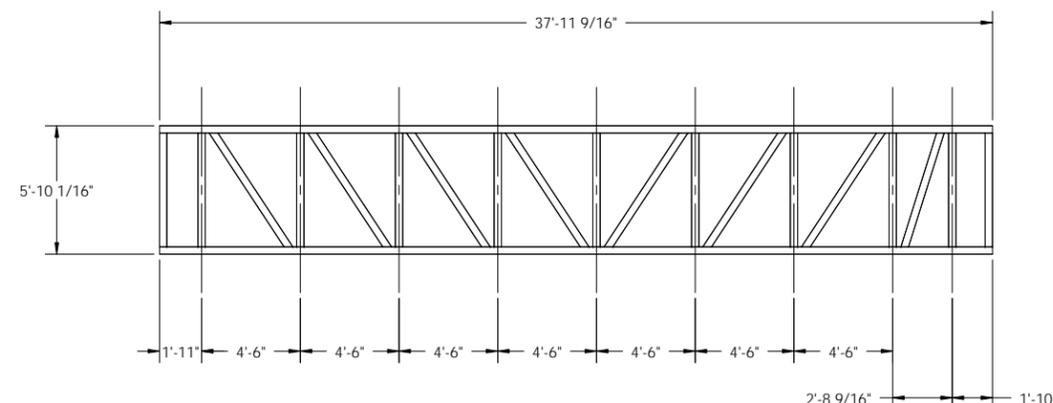
**SPAN 8 TRUSS  
LONG SIDE**



**SPAN 8 TRUSS  
SHORT SIDE**



**SPAN 9 TRUSS  
LONG SIDE**



**SPAN 9 TRUSS  
SHORT SIDE**

CUSTOMER  
INITIAL

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

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**DNREC KILLENS POND PEDESTRIAN BRIDGE**

CUSTOMER NAME:  
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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:	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

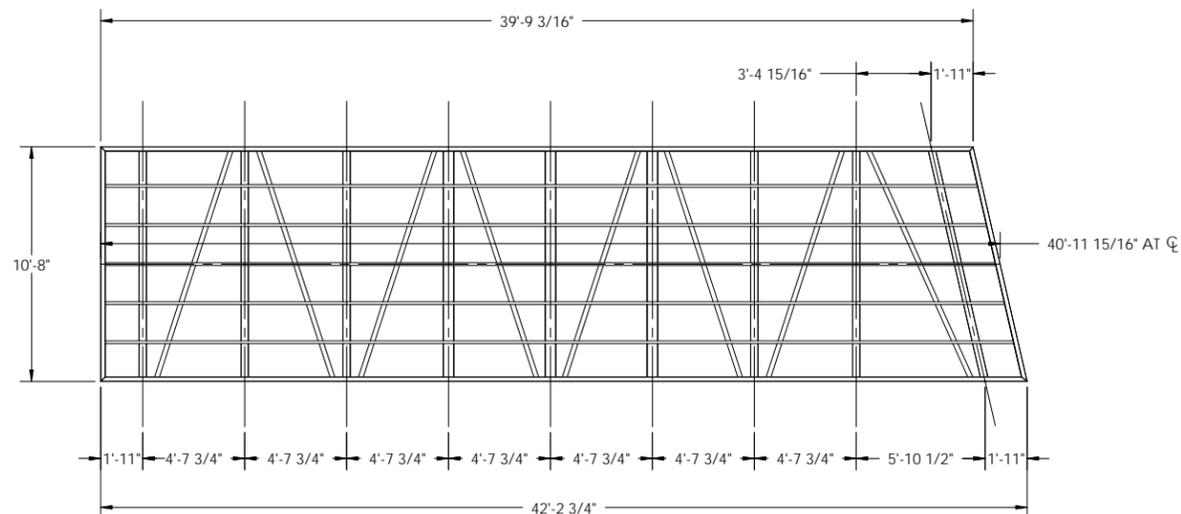
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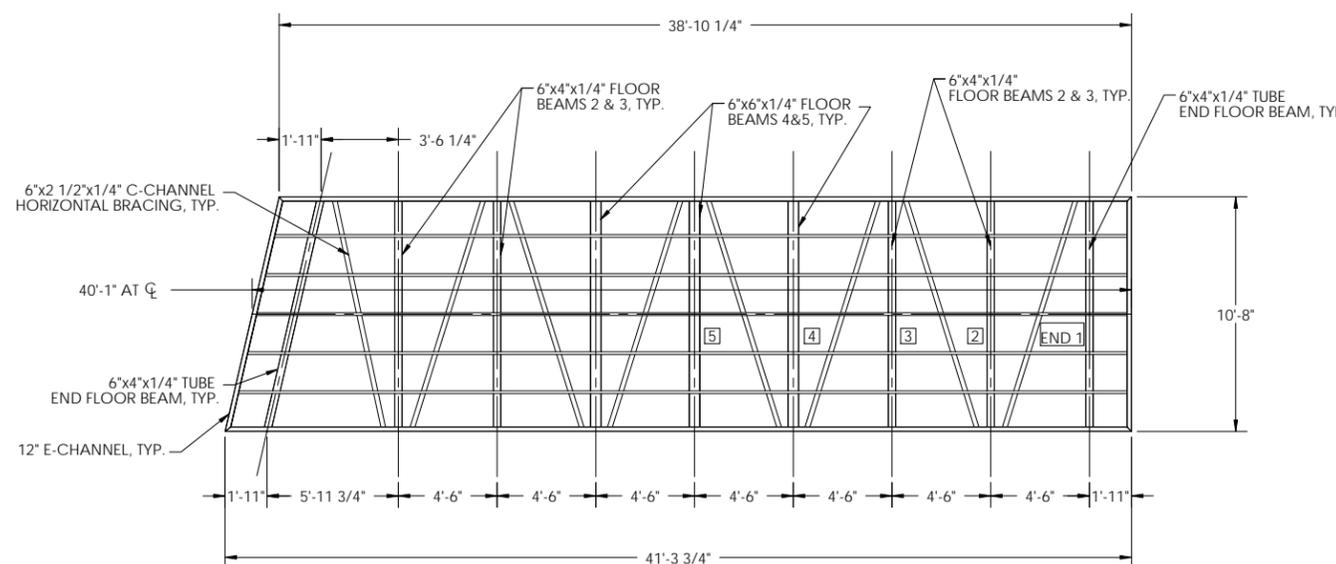
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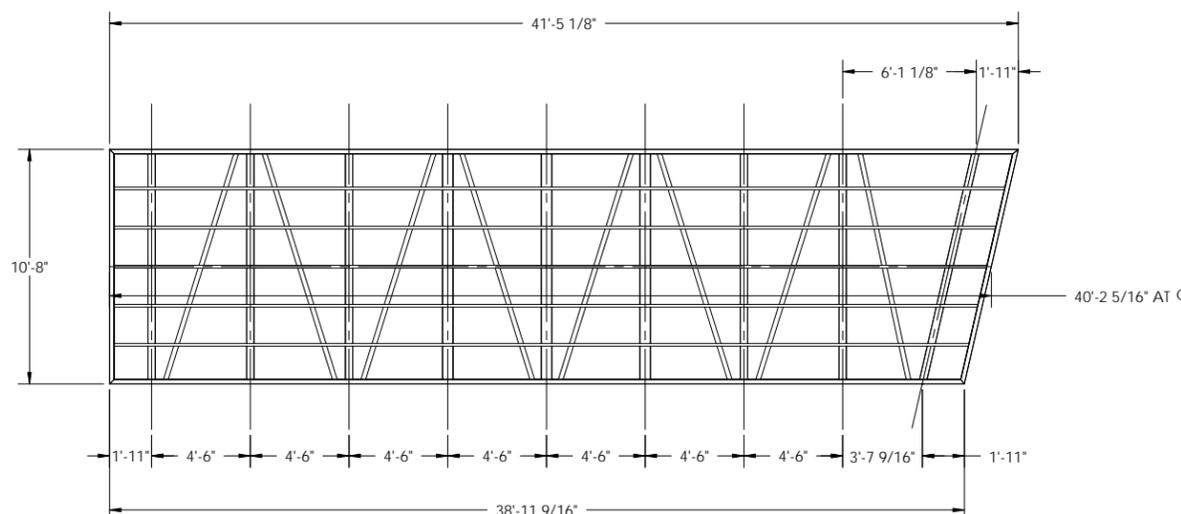
**BRENDAN R. SHEPPARD**  
DELAWARE PE #14366



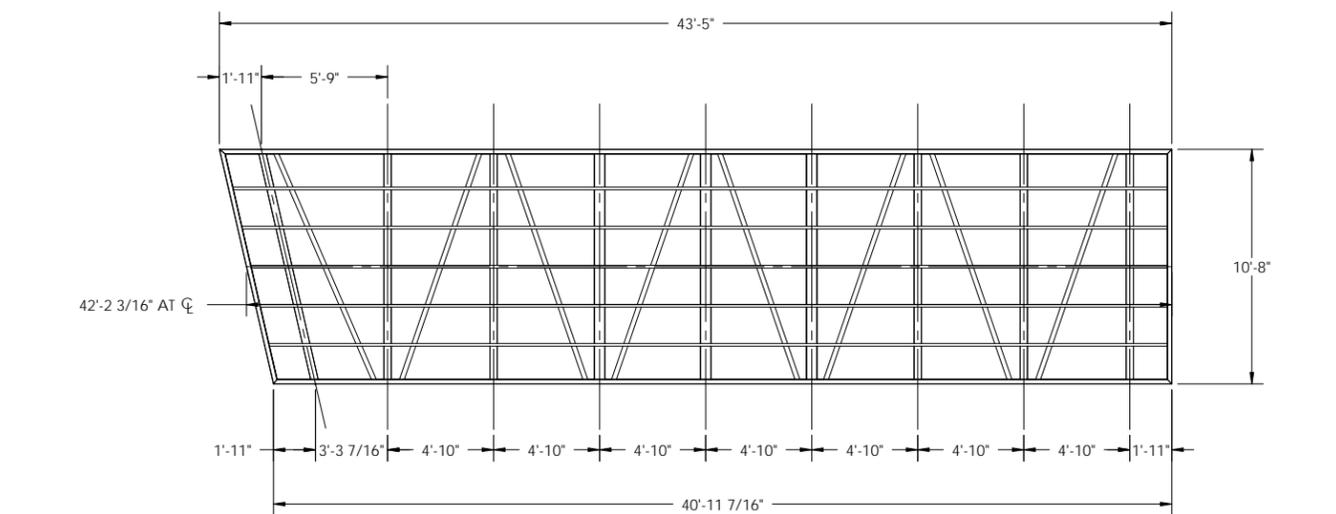
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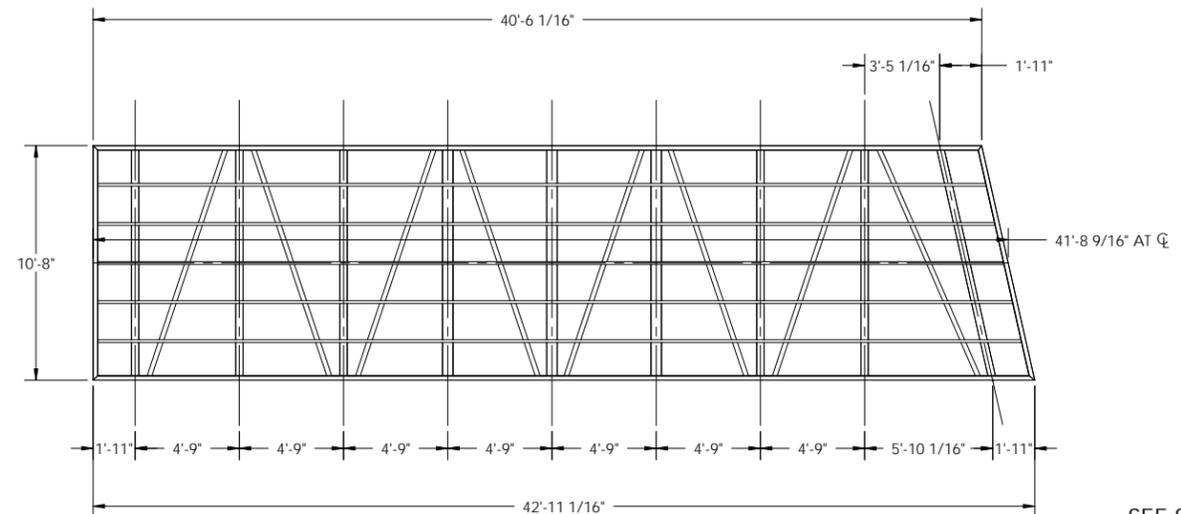
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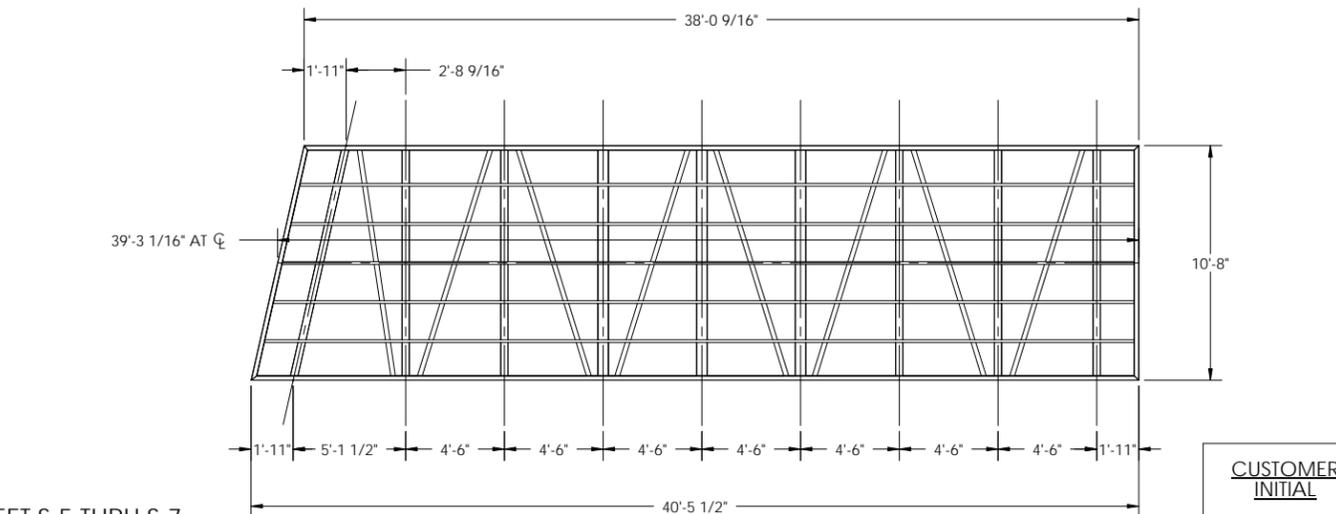
**SPAN 5**



**SPAN 7**



**SPAN 8**



**SPAN 9**

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

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

DRAWING NO.:  
**S-28**  
PICKET RAIL:  
DETAILS

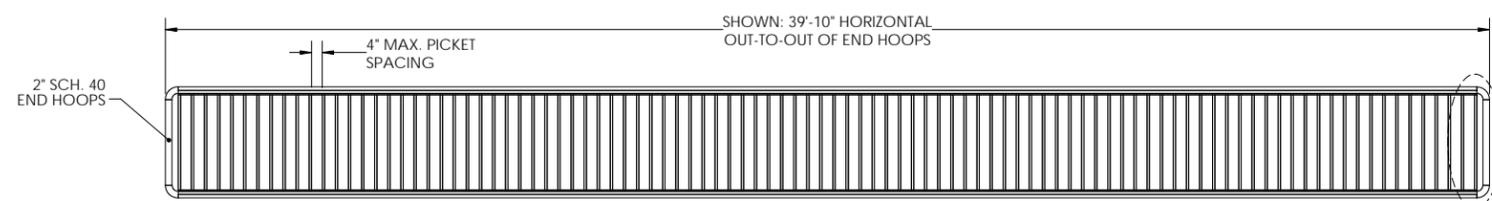
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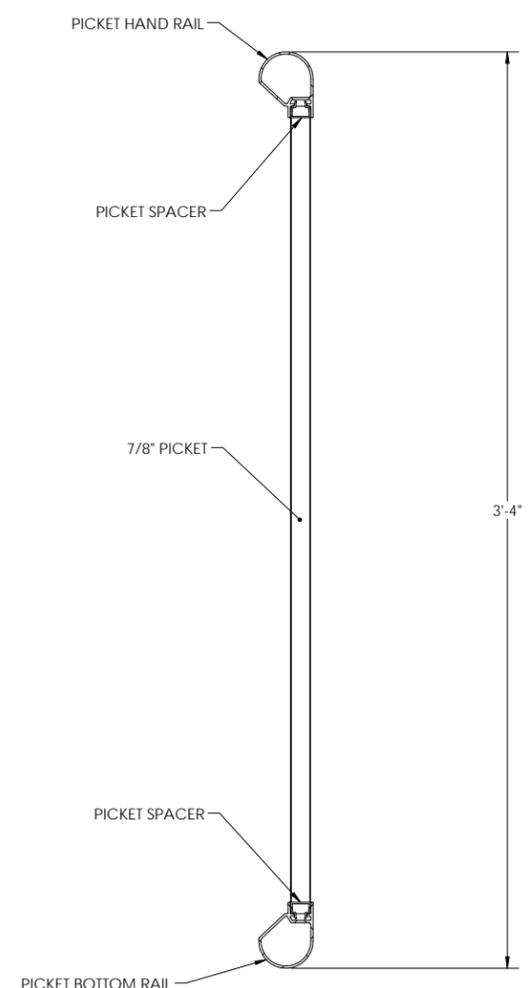


BRENDAN R. SHEPPARD  
DELAWARE PE #14366

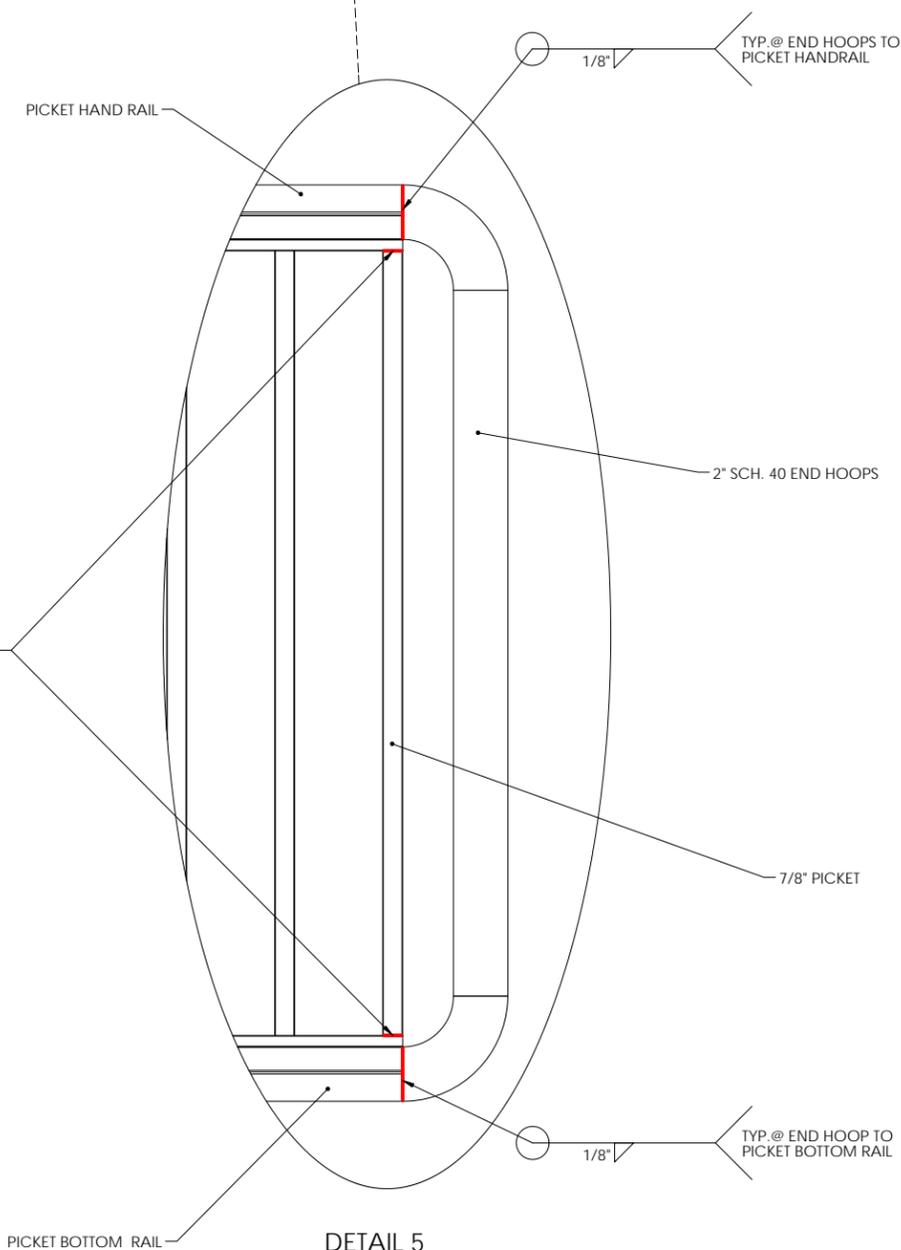


**RAIL ELEVATION VIEW**

**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**



**DETAIL 5**

\* US PATENTS NO. 6,811,146 & 7,168,689  
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 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-29

**PICKET RAIL:  
LENGTH CHART**
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 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 Shearlock® Sewall System™, C-Loq™, TruShield™, GatorGuard®, GatorDock®, Shore-AP®, GatorBridge®, GatorDock Elite™, ArmorWaze™, ArmorKnot™, Box Profile™, UltraComposite™, The Steel Alternative™, Elite Wall™, Elite Panel™, Elite Fence Panel™, PostFrame™, KICK™, KICK Technology™, KICK Klyp™, GatorBridge™, GatorAluminum™, Gator Sheet Piling™, GatorDock™, J Beam Lock™, Tealured State™, Crane Materials™, International™, CMI Sheet Piling Solution™, Aqua Terra System™, Endurance CPM™, Palanis™, Eclipse™, GridSpine™, J1 Poly™, PileClear™, 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: 4,874,821; 4,895,588; 5,292,208; 5,145,287; 6,000,882; 6,013,155; 6,263,646; 6,820,154; 6,575,642; 7,059,807; 7,258,066; 7,025,539; 7,393,482; 5,503,503; 5,803,672; 6,233,271; 1,245,061CA; 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

SPAN	RAIL LENGTH: LEFT SIDE	RAIL LENGTH: RIGHT SIDE
1	32'-10 1/8"	32'-10 1/8"
2	FISHING RAIL	39'-10"
3	39'-9 3/16"	42'-2 3/4"
4	38'-10 1/4"	41'-3 3/4"
5	41'-5 1/8"	38'-11 9/16"
6	86'-3 9/16"	81'-4 7/16"
7	43'-5"	40'-11 7/16"
8	40'-6 1/16"	42'-11 1/16"
9	38'-0 9/16"	40'-5 1/2"
10	FISHING RAIL	39'-10"
11	39'-10"	39'-10"
12	39'-10"	39'-10"
13	FISHING RAIL	39'-10"
14	39'-10"	39'-10"
15	39'-10"	39'-10"
16	FISHING RAIL	39'-10"
17	39'-10"	39'-10"
18	39'-10"	39'-10"
19	39'-10"	39'-10"
20	49'-8 9/16"	49'-8 9/16"

 CUSTOMER  
INITIAL

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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.:

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

DRAWING NO.:

**S-30**  
**APPROACH RAIL  
DETAILS**

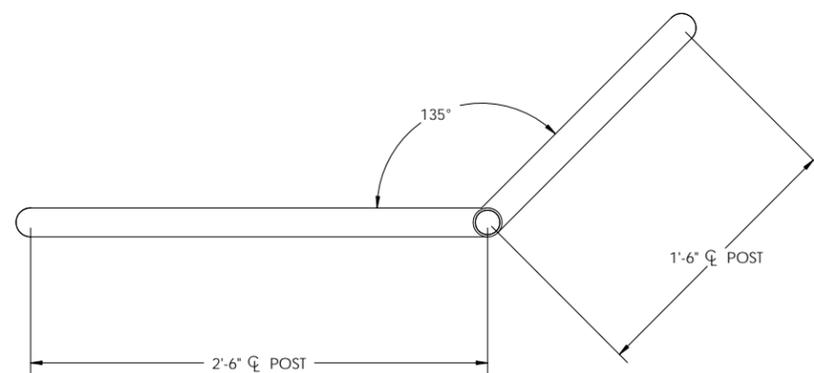
Physical properties are defined by ASTM testing standards, The Aluminum Association Design Manual, The Naval Facilities Design Manual GM 7.2, and The US Army Corps of Engineers General Design Guide: PVC Sheet Pipe and/or standard engineering practice. The values shown are nominal and may vary. The information found in this document is believed to be true and accurate. No warranties of any kind are made as to the suitability of CMI products for particular applications or the results obtained therefrom. "SheerScape", "SheerScape Retaining Wall System", "GatorDock Elite", "ArmorWare", "ArmorLock", "Box Profile", "UltraComposite", "The Steel Alternative", "Elite Wall", "Elite Panel", "Elite Panel System", "ElitePanel", "KICK Technology", "KICK Wheel", "GatorBridge", "GatorAluminum", "Gator Sheet Piling", "GatorDock", "Beam Lock", "SheerScape", "SheerScape Retaining Wall System", "Interlocking", "Gator Sheet Piling Solution", "Acad Terra System", "Endurance", "Endurance CSP", "Palanis", "Edgeline", "GridSpine", "21 Poly", "PileCrew", "SheerScape", "SheerScape Retaining Wall System", "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: 4,574,857; 4,895,588; 5,292,298; 5,145,287; 6,000,883; 6,031,155; 6,093,646; 6,942,244; 6,575,647; 7,059,807; 7,258,066; 7,025,539; 7,393,482; 5,503,502; 5,803,672; 6,231,271; 1,245,063CA; 7,914,237 and other patents pending. © 2005-2017 CMI Limited Co. All Rights Reserved.

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COA #4043

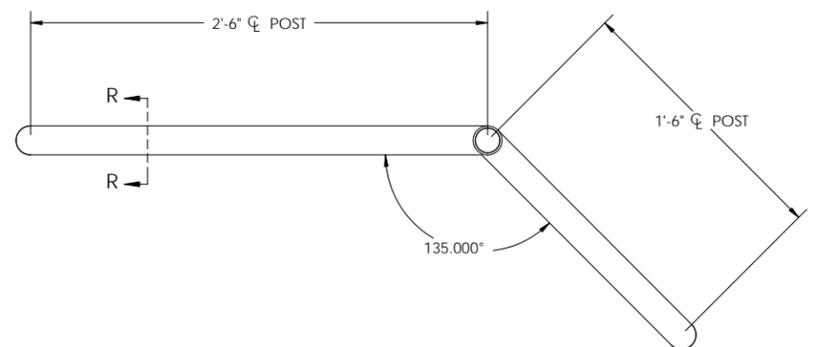


**BRENDAN R. SHEPPARD**  
DELAWARE PE #14366



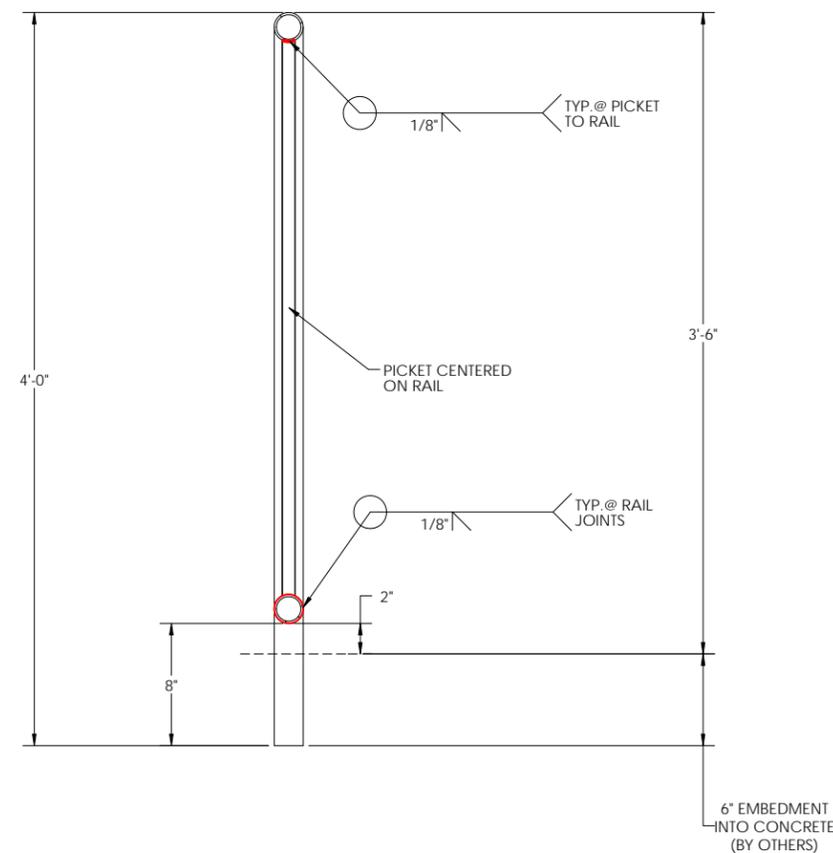
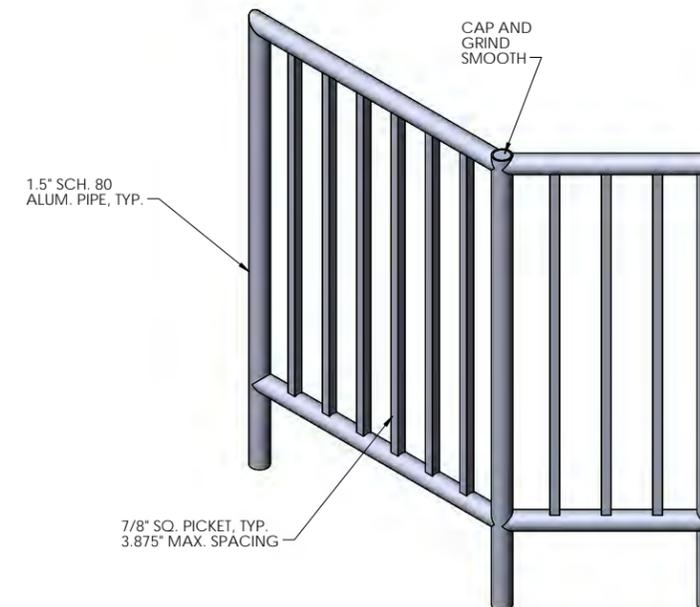
**APPROACH RAIL TYPE 1  
PLAN VIEW**

QTY. = 2



**APPROACH RAIL TYPE 2  
PLAN VIEW**

QTY. = 2



**SECTION R-R**

CUSTOMER  
INITIAL

