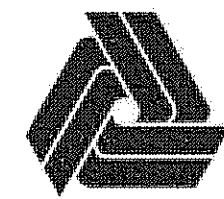


THE STATE OF DELAWARE DEPARTMENT OF TRANSPORTATION



CONSTRUCTION AND RIGHT-OF-WAY PLANS FOR: NEW CASTLE INDUSTRIAL TRACK TRAIL, PHASE 3

CONTRACT NUMBER: T201330009
FEDERAL AID PROJECT NUMBER: ESTP-N061(01)
COUNTY: NEW CASTLE **M.R. #: NA**

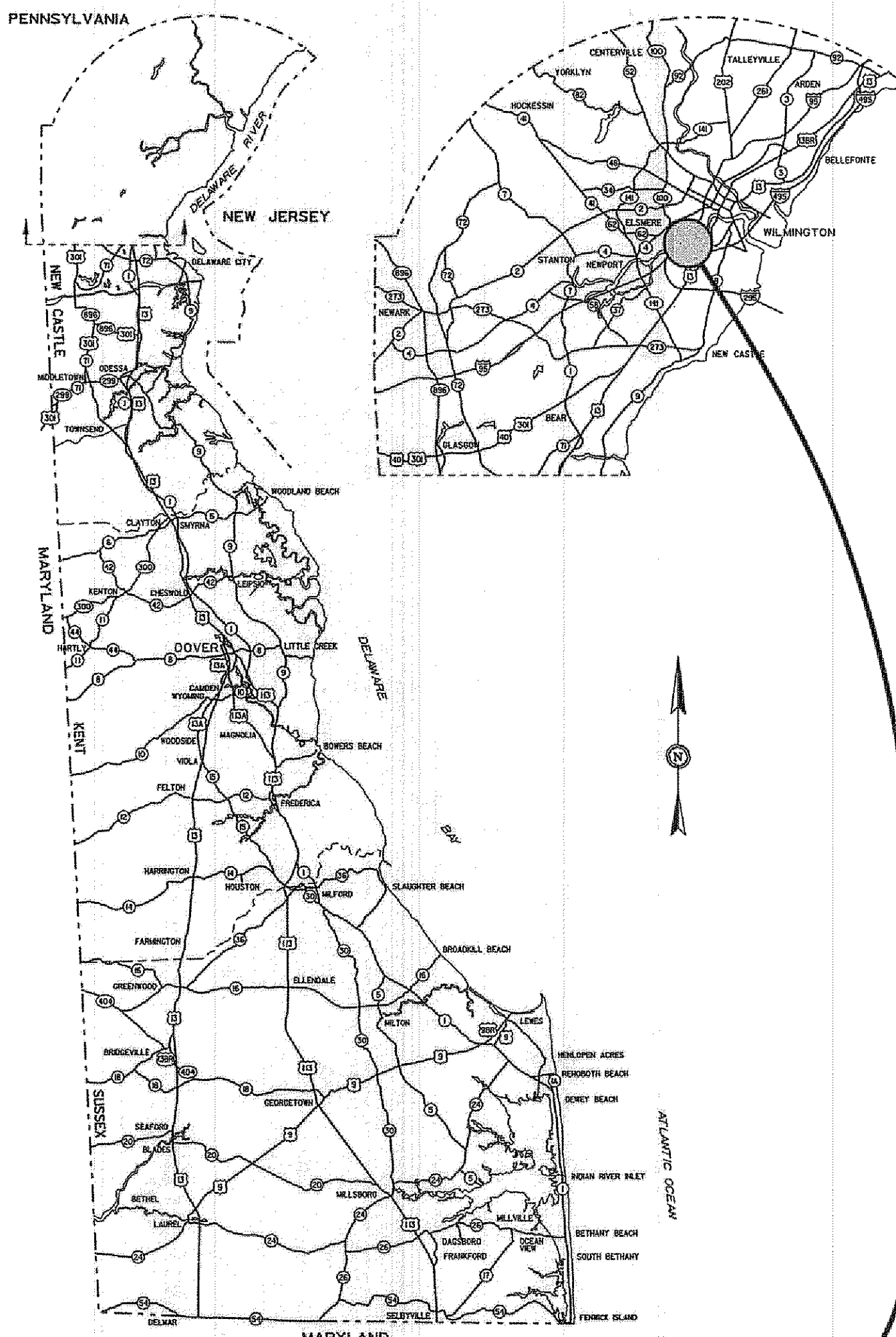
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UNITS

DESIGN DESIGNATION

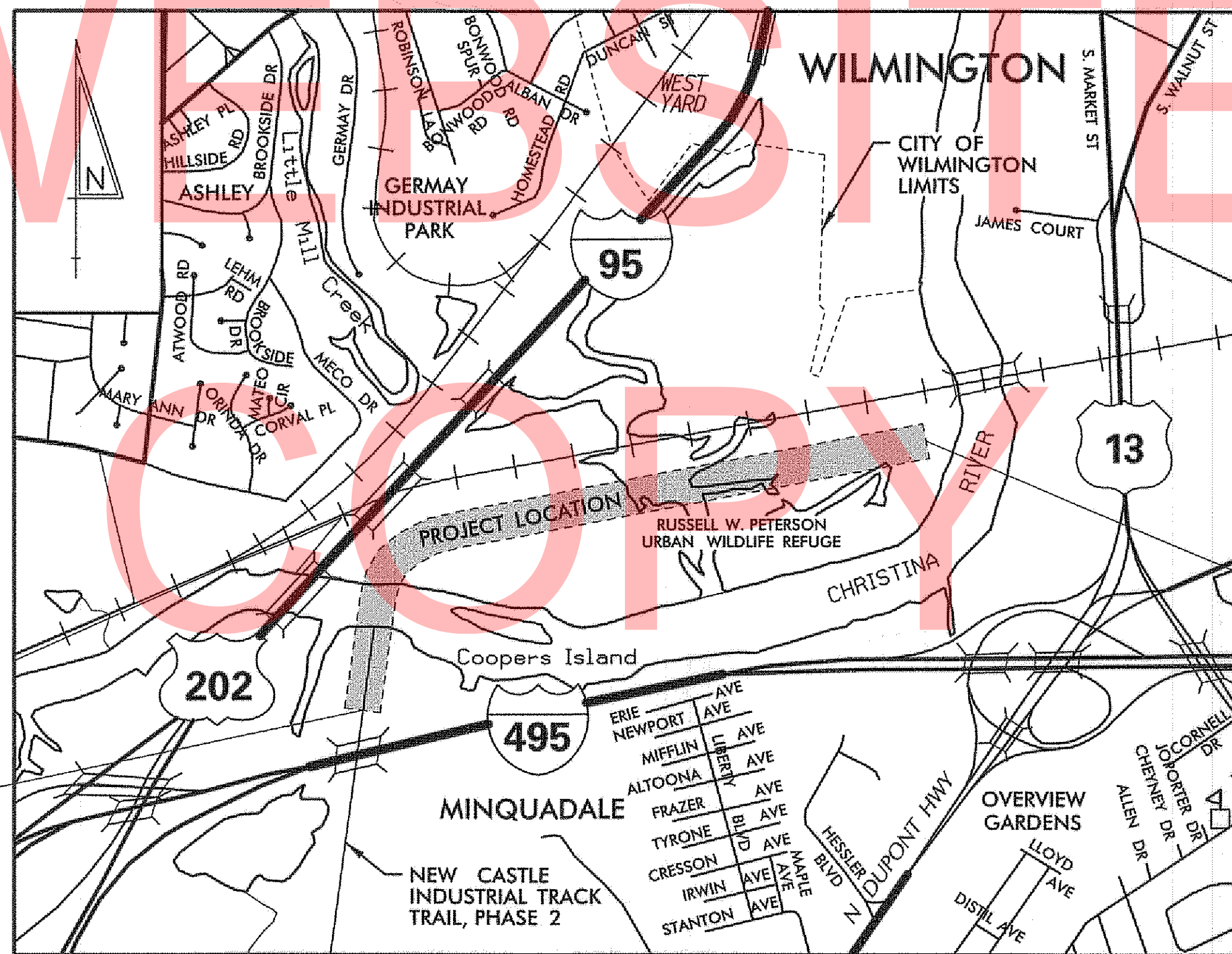
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|---|-----------------------|--------------------------------|
| FUNCTIONAL CLASS: N/A | D.H.V. PROJECTED: N/A | YEAR: N/A |
| TYPE OF CONSTRUCTION: MULTI-MODAL TRAIL | DESIGN SPEED: N/A | |
| A.A.D.T. CURRENT: N/A | YEAR: N/A | TRUCKS: N/A |
| A.A.D.T. PROJECTED: N/A | YEAR: N/A | DIRECTION OF DISTRIBUTION: N/A |

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GENERAL LOCATION OF CONTRACT



LOCATION MAP
1" = 1000'

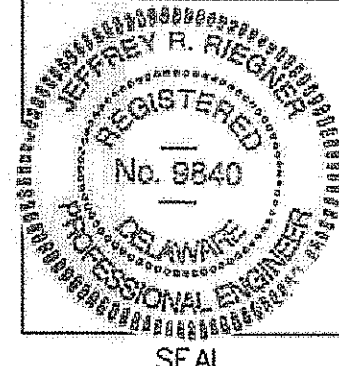
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PREPARED BY
THE CONSULTING FIRM OF



Whitman, Reardon & Associates, LLP
1013 Centre Road, Suite 302, Wilmington, Delaware 19805



Jeffrey R. Rieger
RECOMMENDED 06/16/2016
DATE

RECOMMENDED

Vernon J. Luter
SQUAD MANAGER, CONSTRUCTION 6/22/16
DATE

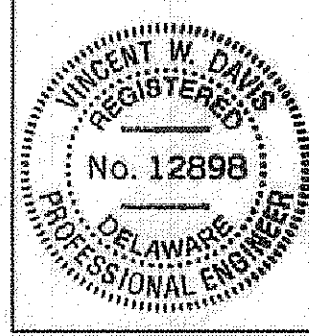
James F. [Signature]
GROUP ENGINEER, CONSTRUCTION 6/22/16
DATE

James A. [Signature]
ASSISTANT DIRECTOR, TRANSPORTATION SOLUTIONS (CONSTRUCTION) 6/22/16
DATE

RECOMMENDED

Vincent W. Davis
STORMWATER ENGINEER

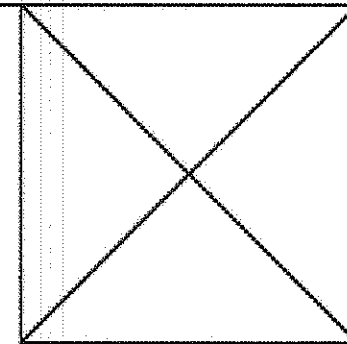
DATE 22 JUNE 2016



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AS TO PROCESS

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BRIDGE DESIGN ENGINEER

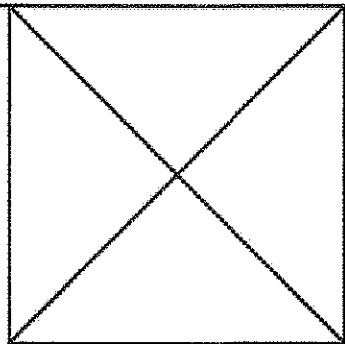
DATE 6/22/16



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ASSISTANT DIRECTOR, PLANNING

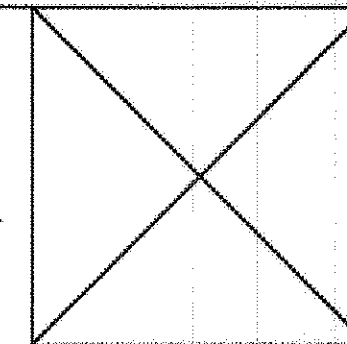
DATE 6-22-16



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[Signature]
CHIEF ENGINEER

DATE 6/22/16



TOTAL SHEETS: 205

APPROVED DESIGN EXCEPTIONS

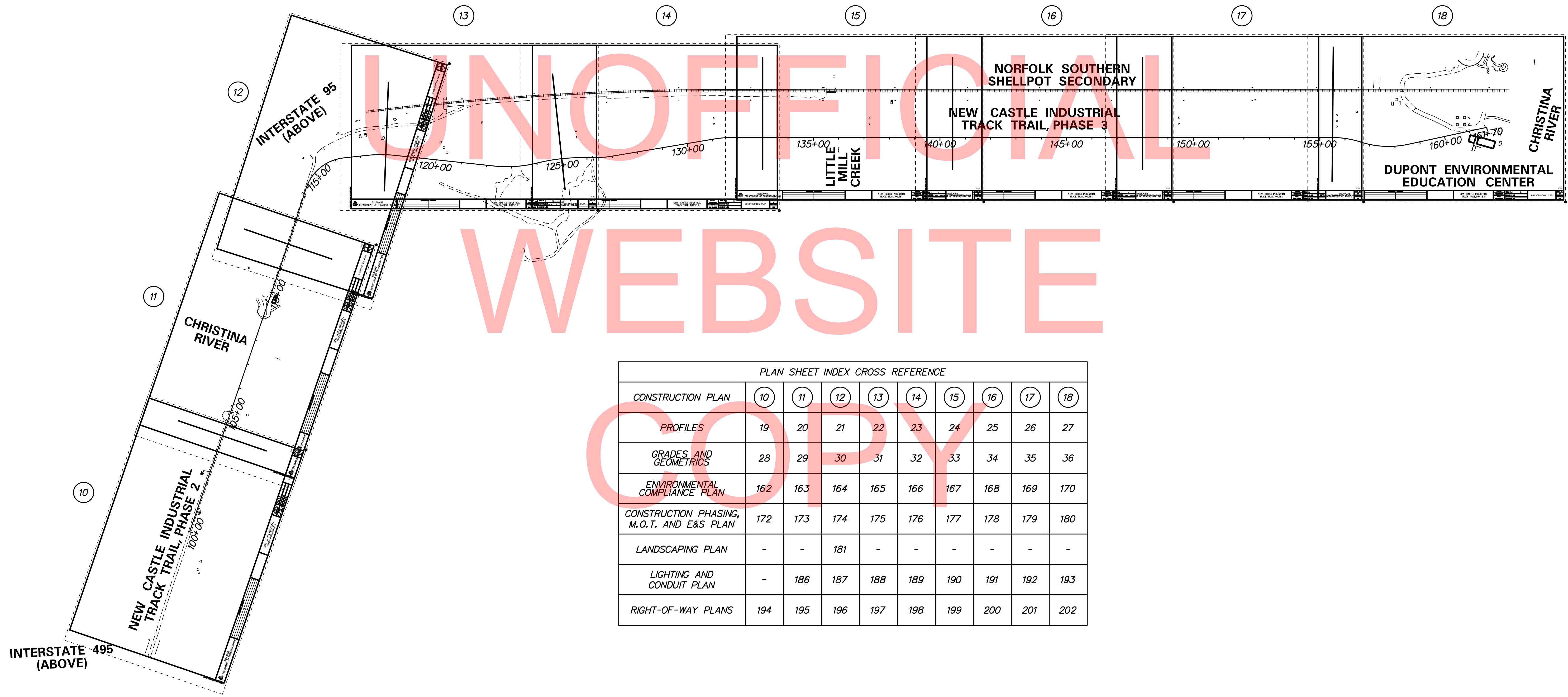
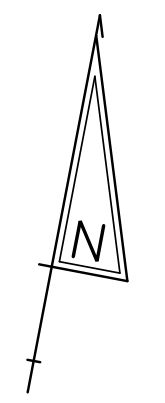
| DESIGN PARAMETER | REQUIRED | PROVIDED | DATE |
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ADDENDA & REVISIONS

| DESCRIPTION | NAME & DATE |
|-------------|-------------|
| | |
| | |
| | |
| | |

ASSOCIATED CONTRACTS

| CONTRACT NO. | CONTRACT NAME |
|-----------------|---|
| 120515 | INDUSTRIAL TRACK TRAIL (NEW CASTLE COUNTY, CAPITAL PROJECT) |
| 2005253.01 | RUSSELL W. PETERSON URBAN WILDLIFE REFUGE EDUCATION CENTER (RIVERFRONT DEVELOPMENT CORPORATION) |
| 28-177 | CHRISTINA RIVER FORCE MAIN (NEW CASTLE COUNTY, DEPARTMENT OF PUBLIC WORKS) |
| V-3/30 & V-3/31 | P.B.&W.R.R. SHELLPOT BRANCH (RIGHT OF WAY AND TRACK VALUATION MAP) |
| V-1/1 | P.B.&W.R.R. DELAWARE RAILROAD (RIGHT OF WAY AND TRACK VALUATION MAP) |
| I-2(2) | INTERSTATE HIGHWAY ROUTE I-95 |



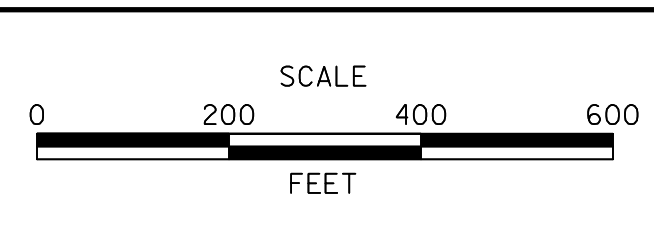
PLAN SHEET INDEX CROSS REFERENCE

| CONSTRUCTION PLAN | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 |
|---|-----|-----|-----|-----|-----|-----|-----|-----|-----|
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| ENVIRONMENTAL COMPLIANCE PLAN | 162 | 163 | 164 | 165 | 166 | 167 | 168 | 169 | 170 |
| CONSTRUCTION PHASING, M.O.T. AND E&S PLAN | 172 | 173 | 174 | 175 | 176 | 177 | 178 | 179 | 180 |
| LANDSCAPING PLAN | - | - | 181 | - | - | - | - | - | - |
| LIGHTING AND CONDUIT PLAN | - | 186 | 187 | 188 | 189 | 190 | 191 | 192 | 193 |
| RIGHT-OF-WAY PLANS | 194 | 195 | 196 | 197 | 198 | 199 | 200 | 201 | 202 |

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| ADDENDUMS / REVISIONS | |
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**NEW CASTLE INDUSTRIAL
TRACK TRAIL, PHASE 3**

| | | |
|------------|------------------|----------|
| CONTRACT | BRIDGE NO. | X |
| T201330009 | DESIGNED BY: DAD | |
| COUNTY | CHECKED BY: JRR | |
| NEW CASTLE | | |

PLAN SHEET INDEX

| |
|-------------|
| IS-01 |
| SHEET NO. |
| 2 |
| TOTAL SHTS. |
| 205 |

GENERAL NOTES

1. THIS PROJECT IS TO BE CONSTRUCTED IN ACCORDANCE WITH THE DELAWARE DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS", DATED AUGUST 2001 AND THE DELAWARE DEPARTMENT OF TRANSPORTATION "STANDARD CONSTRUCTION DETAILS", DATED 2001, INCLUDING ALL REVISIONS UP TO THE DATE OF ADVERTISEMENT.

| EROSION POTENTIAL FOR THIS PROJECT | CONTRACTOR ESC SUPERVISOR REQUIREMENT |
|------------------------------------|---|
| () INSIGNIFICANT | NONE |
| () MINOR | CONTRACTOR TRAINING PROGRAM, AS DEFINED IN SECTION 6.2 OF THE DELAWARE SEDIMENT AND STORMWATER REGULATIONS. |
| () MEDIUM | CONTRACTOR TRAINING PROGRAM, AS DEFINED IN SECTION 6.2 OF THE DELAWARE SEDIMENT AND STORMWATER REGULATIONS. |
| (X) MAJOR | CERTIFIED CONSTRUCTION REVIEWER (CCR), AS DEFINED IN SECTION 6.3 OF THE DELAWARE SEDIMENT AND STORMWATER REGULATIONS. |

3. ELECTRONIC PROJECT FILES THAT WILL BE MADE AVAILABLE TO THE AWARDED CONTRACTOR, INCLUDE:

| | |
|-------|--|
| () | NONE |
| (X) | ASCII DATA FILES WITH COORDINATES AND ELEVATIONS FOR PROPOSED POINTS AS SELECTED BY THE ENGINEER. |
| (X) | ALL PLAN SHEETS, IN PDF FORMAT. |
| () | EXISTING DIGITAL TERRAIN MODEL, IN .DTM FILE FORMAT, COMPATIBLE WITH SOFTWARE CURRENTLY USED BY DELDOT. |
| () | PROPOSED DIGITAL TERRAIN MODEL, IN .DTM FILE FORMAT, COMPATIBLE WITH SOFTWARE CURRENTLY USED BY DELDOT. |
| () | DESIGN FILE, IN .DGN FILE FORMAT, CONTAINING ONLY THE PROPOSED 3D TRIANGLES OF THE PROPOSED DIGITAL TERRAIN MODEL (DTM). |

NOTE: THE DOCUMENT ENTITLED "RELEASE FOR DELIVERY OF DOCUMENTS IN ELECTRONIC FORM TO A CONTRACTOR" MUST BE SIGNED BY ALL PARTIES PRIOR TO THE DELIVERY OF ANY ELECTRONIC PROJECT FILES.

4. PROJECT FILES THAT WILL BE MADE AVAILABLE TO THE CONTRACTOR, INCLUDE:

| | |
|-------|---|
| () | CROSS SECTIONS |
| (X) | RIGHT-OF-WAY PLANS (WILL BE MADE AVAILABLE TO THE AWARDED CONTRACTOR) |

5. AMERICAN TRAFFIC SAFETY SERVICES ASSOCIATION (ATSSA) CERTIFIED TRAFFIC CONTROL SUPERVISOR REQUIREMENT FOR THIS PROJECT.

| | |
|-------|--|
| (X) | THE CONTRACTOR SHALL NOT BE REQUIRED TO HAVE AN ATSSA SUPERVISOR ASSIGNED TO THIS PROJECT. |
| () | THE CONTRACTOR SHALL HAVE AN ATSSA SUPERVISOR ASSIGNED TO THIS PROJECT. THE CONTRACTOR'S GENERAL SUPERINTENDENT FOR THIS PROJECT OR ANOTHER ATSSA CERTIFIED MEMBER OF THE CONTRACTOR'S PROJECT STAFF MAY BE THE ATSSA SUPERVISOR. PAYMENT FOR ATSSA SUPERVISOR IS INCIDENTAL TO ITEM 743000. |
| () | THE CONTRACTOR SHALL HAVE AN ATSSA SUPERVISOR ASSIGNED TO THIS PROJECT. THE ATSSA SUPERVISOR'S SOLE JOB SHALL BE SUPERVISION OF THE INSTALLATION, OPERATION AND MAINTENANCE OF TRAFFIC CONTROL DEVICES FOR THIS PROJECT. THE CONTRACTOR'S GENERAL SUPERINTENDENT FOR THIS PROJECT SHALL NOT BE THE ATSSA SUPERVISOR. PAYMENT FOR ATSSA SUPERVISOR SHALL BE PAID FOR UNDER ITEM 743031. |

6. THE DISTURBED AREA FOR THIS PROJECT IS 1.9505 ACRES.
7. THE SEDIMENT AND STORMWATER MANAGEMENT PLANS HAVE BEEN APPROVED BY DELDOT'S STORMWATER ENGINEER UNDER DELDOT'S DELEGATED AUTHORITY. THE SEDIMENT AND STORMWATER MANAGEMENT PLANS ARE VALID FOR A THREE YEAR PERIOD, BEGINNING ON THE DATE THE STORMWATER ENGINEER SIGNED THE CONSTRUCTION TITLE SHEET. IF THE FINAL ACCEPTANCE OF THE PROJECT IS ANTICIPATED TO EXTEND BEYOND THE THREE YEARS, THE CONTRACTOR WILL INFORM THE ENGINEER THREE MONTHS PRIOR TO THE EXPIRATION OF THE APPROVED SEDIMENT AND STORMWATER MANAGEMENT PLANS. THE STORMWATER ENGINEER WILL REVIEW THE CURRENT SEDIMENT AND STORMWATER MANAGEMENT PLAN AND ISSUE AN EXTENSION WITH ANY APPROPRIATE MODIFICATIONS.

PROJECT NOTES

SECTION 100

1. ANY DAMAGE TO ITEMS NOTED TO BE RELOCATED OR RESET BY THE CONTRACTOR, AT THE DISCRETION OF THE ENGINEER, SHALL BE REPAIRED AND/OR REPLACED IN KIND AT THE CONTRACTOR'S EXPENSE.

SECTION 200

2. IN AREAS WHERE TREES OR SHRUBS WILL BE OVERHANGING THE PROPOSED TRAIL, PRUNING MAY BE NECESSARY TO ACHIEVE A VERTICAL CLEAR SPACE OF 10 FEET ABOVE THE PROPOSED SIDEWALK ELEVATION. THE CONTRACTOR SHALL PRUNE EXISTING TREE AND SHRUB BRANCHES, WHICH OVERHANG THE SIDEWALK, IN ACCORDANCE WITH I.S.A. STANDARDS. THE CONTRACTOR SHALL NOTIFY DELDOT'S ROADSIDE ENVIRONMENTALIST ADMINISTRATOR, EUGENE 'CHIP' ROSAN, JR. AT (302) 760-2185 AND/OR HIS DESIGNEE, AT LEAST TWO (2) DAYS PRIOR TO THE PRUNING OPERATION. ALL COSTS ASSOCIATED WITH THE ABOVE WORK TO BE PAID UNDER ITEM 201000 - CLEARING AND GRUBBING.
3. THIS PROJECT IS COVERED UNDER AN NPDES GENERAL PERMIT FOR CONSTRUCTION. UNDER THE GENERAL PERMIT, COMPLIANCE WITH DELDOT'S APPROVED SEDIMENT AND STORMWATER MANAGEMENT PLANS WILL CONSTITUTE COMPLIANCE WITH THE NPDES INDUSTRIAL PERMITTING REQUIREMENTS FOR THIS CONSTRUCTION PROJECT. A COPY OF THE NPDES GENERAL PERMIT AND NOI'S KEPT ON FILE IN EACH OF THE CONSTRUCTION OFFICES AND THE DEPARTMENT'S STORMWATER SECTION. A COPY OF THE GENERAL PERMIT OR THE NOI CAN BE OBTAINED UPON REQUEST FROM EITHER THE DEPARTMENT'S STORMWATER ENGINEER OR THE APPROPRIATE CONSTRUCTION ENGINEER.

4. ITEMS TO BE REMOVED UNDER ITEM 211000 - REMOVAL OF STRUCTURES AND OBSTRUCTIONS SHALL INCLUDE, BUT NOT BE LIMITED TO THE FOLLOWING:
- MISC. SMALL STRUCTURES AND DEBRIS AT THE BANKS OF THE CHRISTINA RIVER OR ELSEWHERE WITHIN THE LOC.

MISCELLANEOUS

5. THE PARTNERSHIP FOR THE DELAWARE ESTUARY MAINTAINS MONITORING EQUIPMENT LOCATED AT STA. 147+00, 21.5' RT. THE CONTRACTOR SHALL INSTALL ITEM 727014 - CONSTRUCTION SAFETY FENCE SURROUNDING THIS EQUIPMENT PRIOR TO WORKING AT THIS LOCATION. THE SAFETY FENCE SHALL BE INSTALLED ALONG THE LOC AND MAINTAIN A 6-FOOT PERIMETER AROUND THE EQUIPMENT. THE CONTRACTOR SHALL CONTACT MS. ANGELA PADELETTI, PARTNERSHIP FOR THE DELAWARE ESTUARY, AT 302-655-4990 EXT. 103 TO COORDINATE WORK IN THIS AREA.
6. CONTRACTOR PARKING AND STORAGE OF EQUIPMENT AND MATERIALS WITHIN THE DUPONT ENVIRONMENTAL EDUCATION CENTER PARKING LOT IS PROHIBITED WITHOUT PRIOR APPROVAL FROM THE ENGINEER.
7. THE CONTRACTOR SHALL CONSTRUCT A THICKER TRAIL PAVEMENT SECTION FROM STA. 110+94 TO STA. 116+20 AS SHOWN ON THE TYPICAL SECTIONS. THIS SECTION WILL PROVIDE ACCESS FOR MAINTENANCE VEHICLES TO THE PETERSON WILDLIFE REFUGE, DELMARVA POWER GAS AND TRANSMISSION FACILITIES AND CLEAR CHANNEL OUTDOOR FACILITIES. THE USE OF TIMBER MATTING ON TOP OF THE PAVEMENT SURFACE IS RECOMMENDED FOR TRACKED VEHICLE ACCESS.
8. THE CONTRACTOR SHALL PLACE FLEXIBLE DELINEATORS AT FOUR LOCATIONS ALONG THE THICKER PAVEMENT SECTION TO INDICATE THE MAINTENANCE VEHICLE CROSSING LOCATION. THE DELINEATORS SHALL BE LOCATED AT STA. 115+40 AND STA. 116+20 ON BOTH SIDES OF THE TRAIL AND EMBEDDED INTO THE GROUND APPROXIMATELY 2.5 FEET OFFSET FROM THE EDGE OF THE PAVED TRAIL. PRIOR TO INSTALLATION, THE CONTRACTOR SHALL CONTACT MR. BOB MEADOWS, DNREC, AT (302) 893-3647 REGARDING COLOR AND INSTALLED HEIGHT. PAYMENT SHALL BE UNDER ITEM 720611 - FLEXIBLE DELINEATOR, PERMANENT.
9. PRIOR TO REMOVING ANY TREES OR SHRUBS NEAR THE DUPONT ENVIRONMENTAL EDUCATION CENTER (STA. 159+00 TO STA. 161+00 RT.), THE CONTRACTOR SHALL CONTACT MR. BOB MEADOWS, DNREC, AT (302) 893-3647 AND MEET ON-SITE TO DISCUSS TREE PROTECTION MEASURES FOR TREES NEAR THE LIMIT OF CONSTRUCTION (LOC).
10. THE CONTRACTOR SHALL INSTALL ONE PEDESTRIAN/BICYCLE TRAFFIC COUNTER AT APPROXIMATELY STA. 103+00. SEE SPECIFICATION FOR ITEM 763510 - SITE FURNISHINGS FOR DETAILS.
11. PRIOR TO CONSTRUCTION OF THE PROJECT AND WITHIN 20 DAYS OF EXECUTION OF THE CONTRACT, A VIDEO SHALL BE TAKEN OF THE SITE BY THE CONTRACTOR AND COPY (DVD) GIVEN TO THE DELDOT PROJECT ENGINEER. THE VIDEO SHALL CLEARLY SHOW THE PRECONSTRUCTION CONDITIONS OF THE WORKSITE AND ADJOINING AREAS. THE VIDEO WILL BE SUBJECT TO THE APPROVAL OF THE ENGINEER. THE COST OF THE VIDEO SHALL BE INCIDENTAL TO ITEM 763501 - CONSTRUCTION ENGINEERING.
12. PRIOR TO CONSTRUCTION OF THE PROJECT, THE CONTRACTOR SHALL CONTACT DELDOT'S HAZMAT PROGRAM MANAGER'S OFFICE AT (302) 760-2463 TO SET UP AN ON-SITE MEETING TO DISCUSS HANDLING OF HAZARDOUS MATERIALS. WORK SHALL BE IN CONFORMANCE WITH ITEM 202560 - CONTAMINATED MATERIAL.

CONSTRUCTION ACCESS, NEWPORT BOAT RAMP SITE

- 13A. CONSTRUCTION ACCESS VIA THE NEWPORT BOAT RAMP SITE IS PERMITTED. THE SITE IS LOCATED APPROXIMATELY 1,600 FEET SOUTH OF THE EAST END OF WATER STREET IN THE TOWN OF NEWPORT.
- 13B. AT NO TIME SHALL THE CONTRACTOR BE PERMITTED TO USE THE BOAT RAMP FOR ANY CONSTRUCTION ACTIVITIES OR BLOCK ACCESS TO BOAT RAMP. IN ADDITION, THE CONTRACTOR SHALL NOT BE PERMITTED TO TIE-OFF OR MOOR ANY WORK VESSEL TO THE BOAT RAMP AT ANY TIME.
- 13C. THE CONTRACTOR MAY CLOSE THE PAVED CUL-DE-SAC AREA AT THE WESTERN END OF THE BOAT RAMP PARKING LOT (JUST WEST OF THE BOAT RAMP) FOR CONSTRUCTION ACTIVITIES. THE CONTRACTOR SHALL COORDINATE CLOSURE DURATIONS WITH THE ENGINEER AND MR. LARRY HORAN, DNREC CONSTRUCTION PROJECT MANAGER, AT (302) 739-9914 (OFFICE).
- 13D. THE CONTRACTOR SHALL REQUEST AN ON-SITE FIELD MEETING WITH MR. LARRY HORAN (DNREC) AND THE ENGINEER TO REVIEW AND DOCUMENT EXISTING SITE CONDITIONS PRIOR TO USE OF THE SITE. AS-BUILT CONSTRUCTION PLANS FOR THE BOAT RAMP SITE ARE AVAILABLE FROM DNREC.
- 13E. ANY DAMAGE TO THE BOAT RAMP SITE FACILITIES OR THE PARKING LOT INCURRED DURING USE SHALL BE REPAIRED AND REPLACED IN-KIND AT THE CONTRACTOR'S EXPENSE TO THE SATISFACTION OF DNREC. ANTICIPATED CONSTRUCTION ACTIVITIES TO REPAIR THE SITE FACILITIES INCLUDE, BUT ARE NOT LIMITED TO, FULL DEPTH PAVEMENT RECONSTRUCTION AND/OR MILL AND OVERLAY WITHIN THE WORK AREA AND ACCESS TO THE WORK AREA, RE-STRIPING, RE-SEEDING, CURB RECONSTRUCTION, ETC.
- 13F. ACCESS TO, OR STORAGE OF EQUIPMENT AND MATERIALS ANYWHERE OTHER THAN DESIGNATED STAGING AREAS OF THE BOAT RAMP SITE IS PROHIBITED WITHOUT PRIOR APPROVAL FROM MR. LARRY HORAN (DNREC) AND THE ENGINEER.
- 13G. THE CONTRACTOR SHALL PLACE CONSTRUCTION SAFETY FENCE AROUND THE PERIMETER OF THE INTERIOR UN-PAVED AREA OF THE CUL-DE-SAC. AT NO TIME SHALL THE CONTRACTOR ACCESS OR STORE EQUIPMENT OR MATERIALS WITHIN THIS AREA. PAYMENT FOR THE SAFETY FENCE SHALL BE INCIDENTAL TO ITEM 743000 - MAINTENANCE OF TRAFFIC.

CONSTRUCTION ACCESS, DUPONT ENVIRONMENTAL EDUCATION CENTER

- 14A. CONSTRUCTION ACCESS VIA THE DUPONT ENVIRONMENTAL EDUCATION CENTER DRIVEWAY IS PERMITTED. PRIOR TO USE OF THIS ACCESS POINT, THE CONTRACTOR SHALL CONTACT DELDOT'S RAILROAD ENGINEER, MR. BOB PERRINE, AT (302) 760-2183 REGARDING REQUIREMENTS FOR CROSSING THE NORFOLK SOUTHERN RAILROAD.
- 14B. THE CONTRACTOR SHALL CONDUCT AN ON-SITE FIELD MEETING WITH MR. JOHN HARRROD, MANAGER OF THE DUPONT ENVIRONMENTAL EDUCATION CENTER, AT (302) 656-1490 AND THE ENGINEER TO REVIEW AND DOCUMENT EXISTING SITE CONDITIONS PRIOR TO CONSTRUCTION.
- 14C. PRIOR TO CONSTRUCTION OF THE PROJECT AND WITHIN 20 DAYS OF EXECUTION OF THE CONTRACT, A VIDEO SHALL BE TAKEN OF THE DUPONT ENVIRONMENTAL EDUCATION CENTER PARKING LOT AND ACCESS DRIVEWAY AND ANY OTHER AREAS WHERE WHERE CONSTRUCTION ACCESS WILL OCCUR. THE VIDEO SHALL SHOW EXISTING SITE CONDITIONS AND WILL BE SUBJECT TO THE APPROVAL OF THE ENGINEER. THE COST OF THE VIDEO SHALL BE INCIDENTAL TO ITEM 763501 - CONSTRUCTION ENGINEERING.
- 14D. ANY DAMAGE TO THE DUPONT ENVIRONMENTAL EDUCATION CENTER SITE INCURRED DURING USE SHALL BE REPAIRED AND REPLACED IN-KIND AT THE CONTRACTOR'S EXPENSE TO THE SATISFACTION OF DNREC AND THE ENGINEER.
- 14E. STORAGE OF EQUIPMENT AND MATERIALS WITHIN THE DUPONT ENVIRONMENTAL EDUCATION CENTER SITE AND OUTSIDE OF THE LIMITS OF CONSTRUCTION IS PROHIBITED WITHOUT PRIOR APPROVAL FROM MR. JOHN HARRROD AND THE ENGINEER.

PROJECT NOTES (CONTINUED)

CONSTRUCTION ACCESS, NORFOLK SOUTHERN RIGHT-OF-WAY

- 15A. ALL WORK ON, OVER, UNDER, OR ADJACENT TO NORFOLK SOUTHERN (NS) RIGHT-OF-WAY SHALL BE DONE IN ACCORDANCE WITH THE NORFOLK SOUTHERN "SPECIAL PROVISIONS FOR THE PROTECTION OF RAILWAY INTERESTS" (NS SPECIAL PROVISIONS).
- 15B. "ONE CALL" SERVICES DO NOT LOCATE BURIED RAILROAD SIGNAL AND COMMUNICATIONS LINES. THE CONTRACTOR SHALL CONTACT THE RAILROAD'S REPRESENTATIVE TWO (2) DAYS IN ADVANCE OF THOSE PLACES WHERE EXCAVATION, PILE DRIVING, OR HEAVY LOADS MAY DAMAGE RAILROAD UNDERGROUND LINES ON RAILROAD PROPERTY. UPON REQUEST FROM THE CONTRACTOR OR AGENCY, RAILROAD SIGNAL FORCES WILL LOCATE AND PAINT MARK OR FLAG RAILROAD UNDERGROUND SIGNAL, COMMUNICATION, AND POWER LINES IN THE AREA TO BE DISTURBED FOR THE CONTRACTOR. THE CONTRACTOR SHALL AVOID EXCAVATION OR OTHER DISTURBANCE OF THESE LINES WHICH ARE CRITICAL TO THE SAFETY OF THE RAILROAD AND THE PUBLIC. IF DISTURBANCE OR EXCAVATION IS REQUIRED NEAR A BURIED RAILROAD SIGNAL, COMMUNICATION, OR POWER LINE, THE LINE SHALL BE POTHOLED MANUALLY WITH CAREFUL HAND EXCAVATION BY THE CONTRACTOR AND PROTECTED BY THE CONTRACTOR DURING THE COURSE OF THE DISTURBANCE UNDER THE SUPERVISION AND DIRECTION OF A RAILROAD SIGNAL REPRESENTATIVE.
- 15C. ALL UTILITY INSTALLATIONS OR RELOCATIONS THAT ARE REQUIRED IN CONJUNCTION WITH THIS PROJECT CAN BE INSTALLED OR RELOCATED AS PART OF THE PROJECT PROVIDED THE CONSTRUCTION IS PERFORMED BY THE PROJECT CONTRACTOR OR PROJECT CONTRACTOR'S SUB-CONTRACTOR. HOWEVER, THE UTILITY MUST SUBMIT AN APPLICATION FOR THE INSTALLATION OR RELOCATION TO AECOM FOR APPROPRIATE HANDLING FOR LICENSE AGREEMENT AND APPLICABLE FEES. FOR UTILITY APPLICATIONS GO TO: WWW.NSCORP.COM > REAL ESTATE > NS SERVICES > WIRE, PIPELINE, & FIBER OPTIC PROJECTS > AECOM. NOTE: LICENSE AGREEMENT MUST BE EXECUTED PRIOR TO UTILITY BEING INSTALLED OR RELOCATED.
- 15D. ALL WORK ON, OVER, UNDER OR ADJACENT TO NORFOLK SOUTHERN RIGHT-OF-WAY THAT IS NOT SPECIFICALLY DENOTED ON THE APPROVED PLANS SHALL BE SUBMITTED TO NORFOLK SOUTHERN FOR REVIEW AND APPROVAL PRIOR TO BEGINNING THE WORK.
- 15E. FOR PROJECTS EXCEEDING 30 DAYS OF CONSTRUCTION, THE FLAGMAN SHALL BE PROVIDED A SMALL WORK AREA WITH A DESK/COUNTER AND CHAIR WITHIN THE FIELD/SITE TRAILER, INCLUDING THE USE OF BATHROOM FACILITIES, WHERE THE FLAGMAN CAN CHECK IN/OUT WITH THE PROJECT, AS WELL AS TO THE FLAGMAN'S HOME TERMINAL. THE WORK AREA SHOULD PROVIDE ACCESS TO TWO (2) ELECTRICAL OUTLETS FOR RECHARGING RADIOS, AND A LAPTOP COMPUTER; AND HAVE THE ABILITY TO PRINT OFF NEEDED DOCUMENTATION AND ORDERS AS NEEDED AT THE FIELD/SITE TRAILER. THIS SHOULD AID IN MAXIMIZING THE FLAGMAN'S TIME AND EFFICIENCY ON THE PROJECT.

CONSTRUCTION ACCESS,
EXISTING TRAIL SOUTH OF THE CHRISTINA RIVER

- 16A. CONSTRUCTION ACCESS VIA THE EXISTING TRAIL BETWEEN BAYLOR BOULEVARD AND THE CHRISTINA RIVER IS PERMITTED.
- 16B. PRIOR TO CONSTRUCTION OF THE PROJECT AND WITHIN 20 DAYS OF EXECUTION OF THE CONTRACT, A VIDEO SHALL BE TAKEN OF THE EXISTING TRAIL BETWEEN BAYLOR BOULEVARD AND THE CHRISTINA RIVER. THE VIDEO SHALL SHOW PAVEMENT CONDITIONS AND THE GRASS AREA ADJACENT TO THE TRAIL. THE VIDEO WILL BE SUBJECT TO THE APPROVAL OF THE ENGINEER. THE COST OF THE VIDEO SHALL BE INCIDENTAL TO ITEM 763501 - CONSTRUCTION ENGINEERING.
- 16C. ANY DAMAGE TO THE TRAIL PAVEMENT, SUB-BASE OR GRASS (TOPSOIL AND SEED) ADJACENT TO THE TRAIL SHALL BE REPAIRED IN-KIND AND SHALL BE PAID FOR USING THE RESPECTIVE BID ITEMS. ANY DAMAGE TO DRAINAGE FACILITIES, FENCING, TRAIL AMENITIES (KIOSK, BENCHES, SIGNS, ETC.), OR THE GATE AT BAYLOR BOULEVARD, INCURRED DURING USE SHALL BE REPAIRED AND REPLACED IN-KIND AT THE CONTRACTOR'S EXPENSE.
- 16D. THE TYPICAL SECTION OF THIS EXISTING PAVED TRAIL IS 3" TYPE C ASPHALT OVER 6" TYPE B, GABC.
- 16E. AFTER COMPLETION OF THE CHRISTINA RIVER BRIDGE, THE CONTRACTOR MAY USE THIS BRIDGE TO TRANSPORT MATERIALS OVER THE CHRISTINA RIVER. SEE BRIDGE PLANS (SHEET PN-101) FOR REQUIREMENTS. ALL REQUIREMENTS MUST BE STRICTLY ADHERED TO.

UNOFFICIAL
WEBSITE
COPY

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ADDENDUMS / REVISIONS

NOT TO SCALE

NEW CASTLE INDUSTRIAL
TRACK TRAIL, PHASE 3

| | | |
|------------|------------------|----------|
| CONTRACT | BRIDGE NO. | X |
| T201330009 | DESIGNED BY: DAD | |
| COUNTY | CHECKED BY: JRR | |
| NEW CASTLE | | |

NOTES

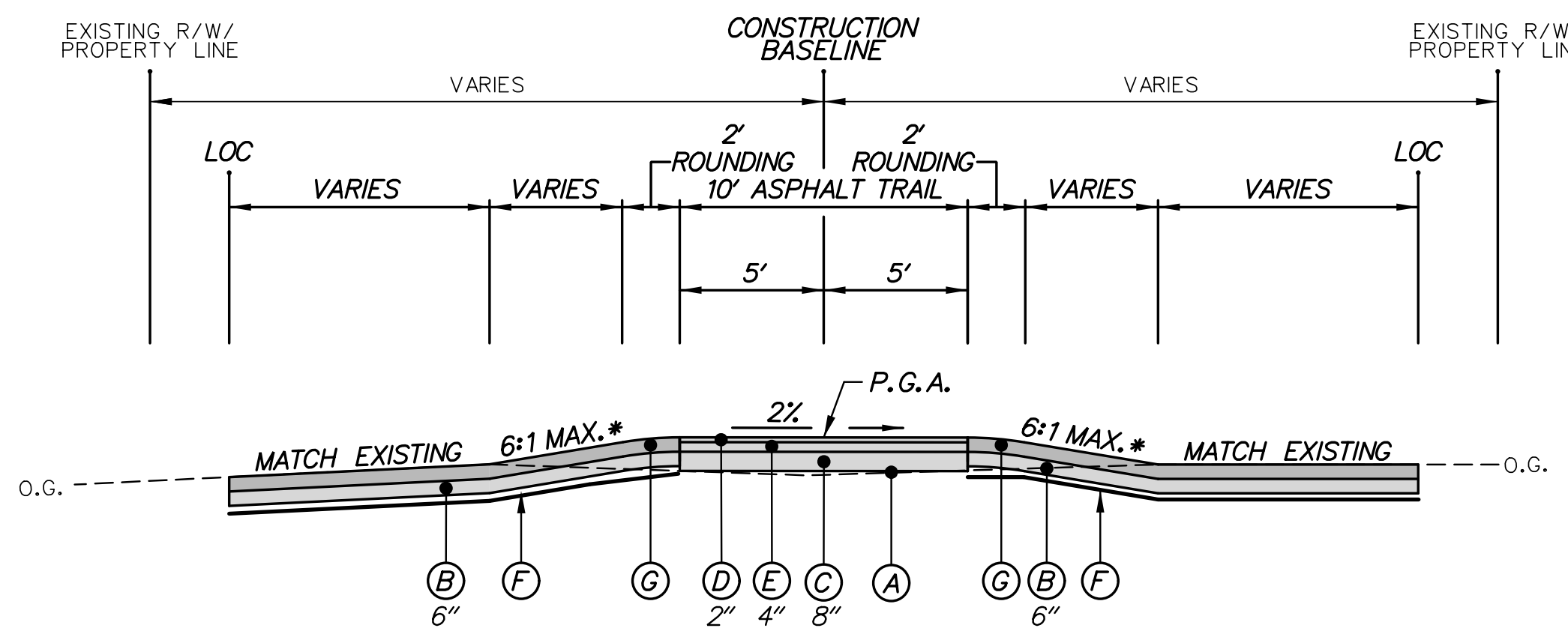
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|-------------|
| PN-02 |
| SHEET NO. |
| 5 |
| TOTAL SHTS. |
| 205 |

| MATERIAL | LIFT THICKNESS | |
|---------------------------------|----------------|---------|
| | MINIMUM | MAXIMUM |
| BITUMINOUS CONCRETE, TYPE 'C' | 1.25" | 2" |
| BITUMINOUS CONCRETE, TYPE 'B' | 2.25" | 4" |
| BITUMINOUS CONCRETE BASE COURSE | 3" | 6" |
| GRADED AGGREGATE BASE COURSE | 3" | 8" |

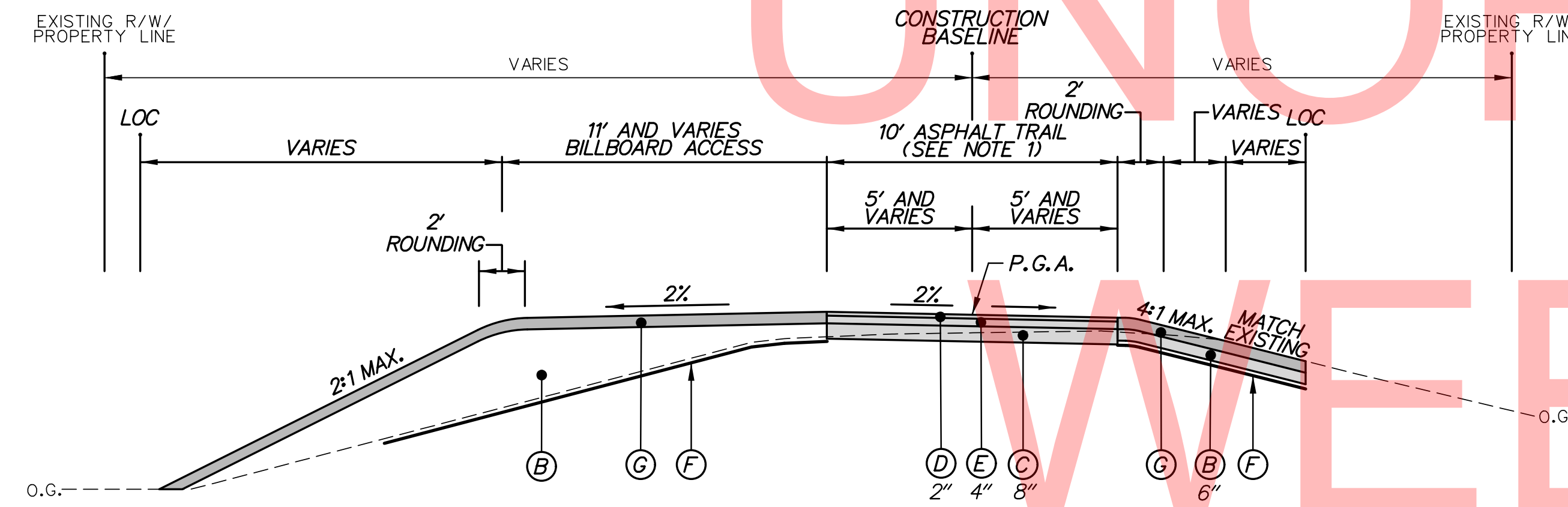
| LEGEND | |
|--------|---|
| (A) | ITEM 209001 - BORROW, TYPE A |
| (B) | ITEM 209006 - BORROW, TYPE F |
| (C) | ITEM 302007 - GRADED AGGREGATE BASE COURSE, TYPE B |
| (D) | ITEM 401800 - BITUMINOUS CONCRETE, SUPERPAVE, TYPE C, 115 GYRATIONS, PG 64-22 (CARBONATE STONE) |
| (E) | ITEM 401809 - BITUMINOUS CONCRETE, SUPERPAVE, TYPE B, 115 GYRATIONS, PG 64-22 |
| (F) | ITEM 713500 - GEOTEXTILE STABILIZATION, SPECIAL |
| (G) | ITEM 908004 - TOPSOIL, 6" DEPTH |
| | ITEM 908512 - TEMPORARY GRASS SEEDING, WET GROUND |

| *RIGHT FILL SLOPE CHART | |
|-------------------------|-------|
| STATION | SLOPE |
| 112+50 TO 112+80 | 5:1 |
| 112+90 TO 113+00 | 4:1 |

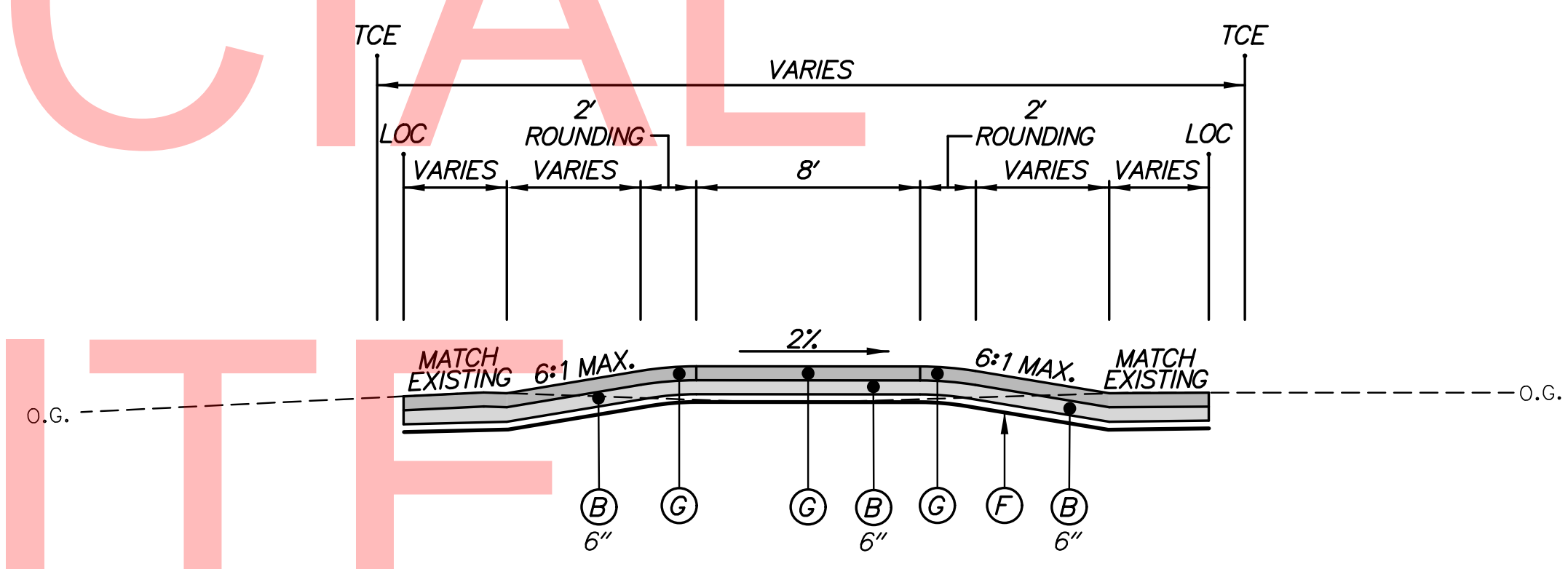
| *LEFT FILL SLOPE CHART | |
|------------------------|-------|
| STATION | SLOPE |
| 113+70 TO 114+20 | 4:1 |



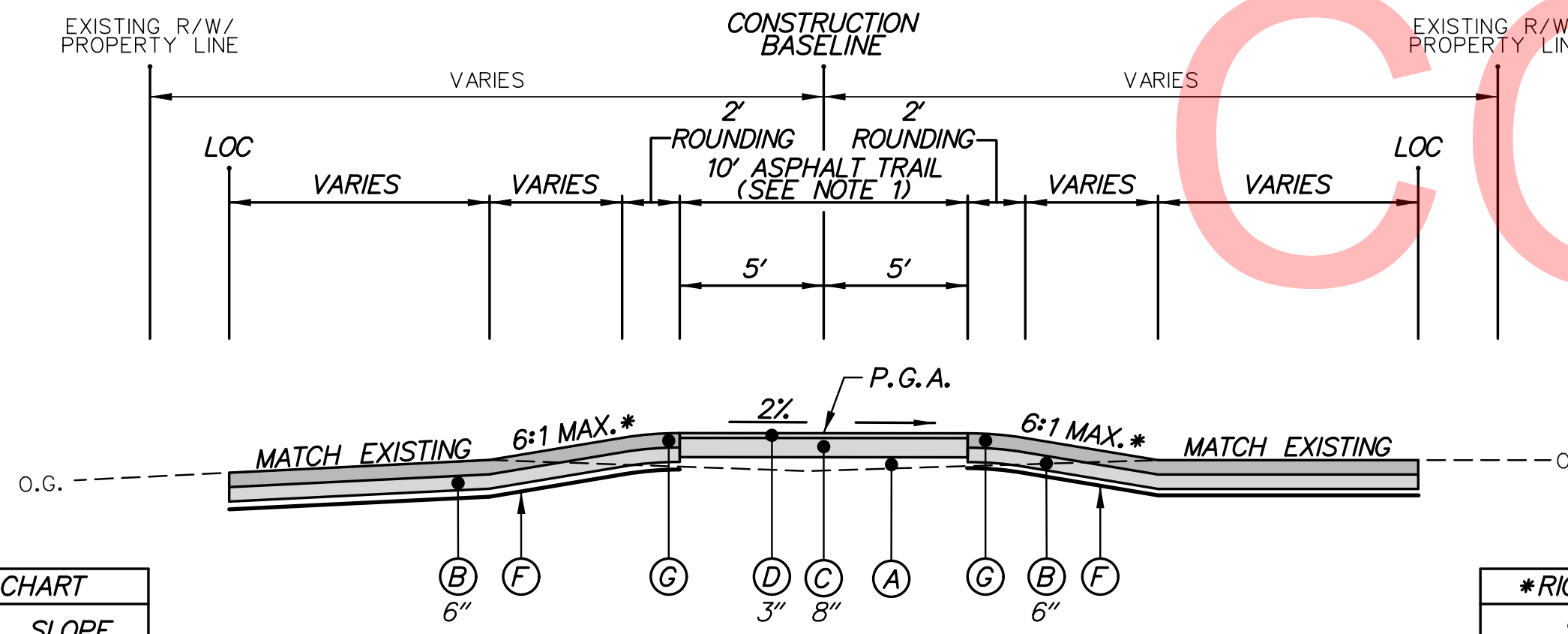
NEW CASTLE INDUSTRIAL TRACK TRAIL
STATION 111+50 TO STATION 116+20



NEW CASTLE INDUSTRIAL TRACK TRAIL
STATION 110+94 TO STATION 111+50



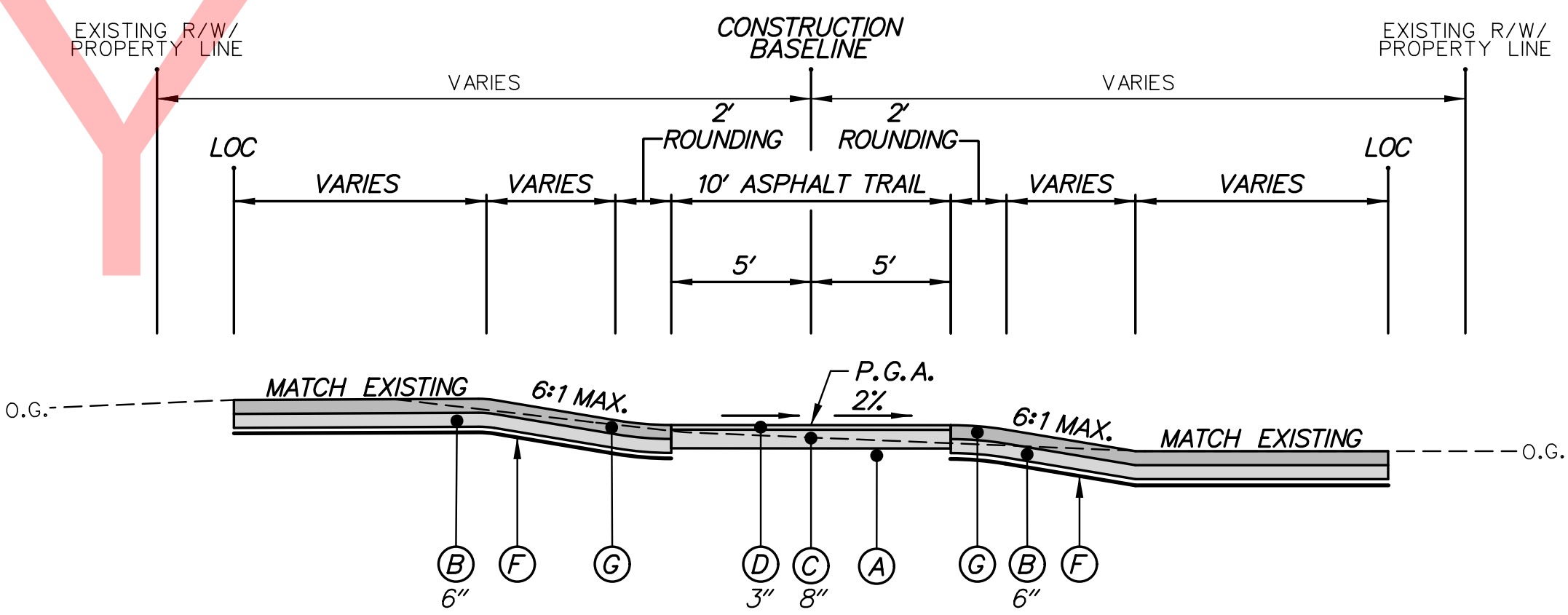
RE-ALIGNED REFUGE ENTRANCE PATH
STATION 125+78 TO STATION 125+86
(EXTENDS SOUTH OF ASPHALT TRAIL)



NEW CASTLE INDUSTRIAL TRACK TRAIL
STATION 102+50 TO STATION 103+71
STATION 116+20 TO STATION 122+10
STATION 122+75 TO STATION 126+12

| *RIGHT FILL SLOPE CHART | |
|-------------------------|-------|
| STATION | SLOPE |
| 103+40 TO 103+71 | 5:1 |
| 126+00 TO 126+12 | 5:1 |

| *LEFT FILL SLOPE CHART | |
|------------------------|-------|
| STATION | SLOPE |
| 103+40 TO 103+54 | 5:1 |
| 103+64 TO 103+71 | 4:1 |
| 121+90 TO 122+00 | 4:1 |
| 126+00 TO 126+12 | 5:1 |



NEW CASTLE INDUSTRIAL TRACK TRAIL
STATION 122+10 TO STATION 122+75

NOTES:
1. THE TRAIL WIDTH TRANSITIONS FROM 10' TO 14' AT THE FOLLOWING LOCATIONS:
- STA. 103+60 TO STA. 103+70
- STA. 110+94 TO STA. 111+19

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| ADDENDUMS / REVISIONS | |
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NOT TO SCALE

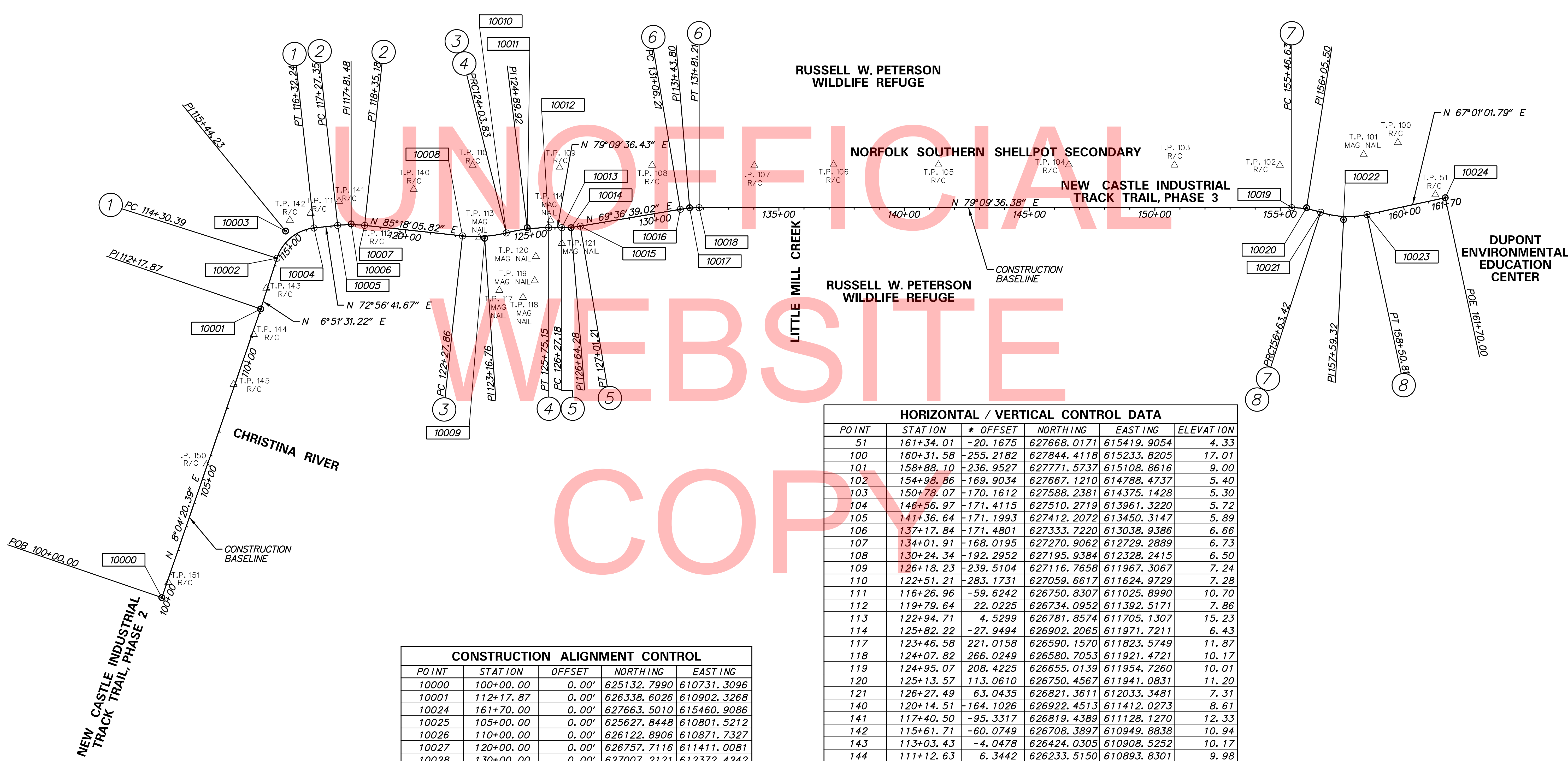
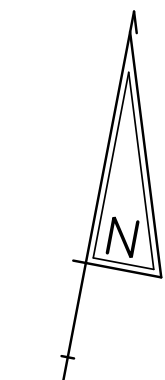
NEW CASTLE INDUSTRIAL TRACK TRAIL, PHASE 3

| | | |
|------------|------------------|----------|
| CONTRACT | BRIDGE NO. | X |
| T201330009 | DESIGNED BY: DAD | |
| COUNTY | CHECKED BY: JRR | |
| NEW CASTLE | | |

TYPICAL SECTIONS

| |
|-------------|
| TS-01 |
| SHEET NO. |
| 7 |
| TOTAL SHTS. |
| 205 |

DATUM REFERENCE:
 HORIZONTAL - THIS PROJECT IS REFERENCED TO THE DELAWARE STATE
 PLANE COORDINATE SYSTEM (NAD 83/91).
 VERTICAL - THIS PROJECT IS REFERENCED TO NAVD 88.



| HORIZONTAL / VERTICAL CONTROL DATA | | | | | |
|------------------------------------|-----------|-----------|-------------|-------------|-----------|
| POINT | STATION | * OFFSET | NORTHING | EASTING | ELEVATION |
| 51 | 161+34.01 | -20.1675 | 627668.0171 | 615419.9054 | 4.33 |
| 100 | 160+31.58 | -255.2182 | 627844.4118 | 615233.8205 | 17.01 |
| 101 | 158+88.10 | -236.9527 | 627771.5737 | 615108.8616 | 9.00 |
| 102 | 154+98.86 | -169.9034 | 627667.1210 | 614788.4737 | 5.40 |
| 103 | 150+78.07 | -170.1612 | 627588.2381 | 614375.1428 | 5.30 |
| 104 | 146+56.97 | -171.4115 | 627510.2719 | 613961.3220 | 5.72 |
| 105 | 141+36.64 | -171.1993 | 627412.2072 | 613450.3147 | 5.89 |
| 106 | 137+17.84 | -171.4801 | 627333.7220 | 613038.9386 | 6.66 |
| 107 | 134+01.91 | -168.0195 | 627270.9062 | 612729.2889 | 6.73 |
| 108 | 130+24.34 | -192.2952 | 627195.9384 | 612328.2415 | 6.50 |
| 109 | 126+18.23 | -239.5104 | 627116.7658 | 611967.3067 | 7.24 |
| 110 | 122+51.21 | -283.1731 | 627059.6617 | 611624.9729 | 7.28 |
| 111 | 116+26.96 | -59.6242 | 626750.8307 | 611025.8990 | 10.70 |
| 112 | 119+79.64 | 22.0225 | 626734.0952 | 611392.5171 | 7.86 |
| 113 | 122+94.71 | 4.5299 | 626781.8574 | 611705.1307 | 15.23 |
| 114 | 125+82.22 | -27.9494 | 626902.2065 | 611971.7211 | 6.43 |
| 117 | 123+46.58 | 221.0158 | 626590.1570 | 611823.5749 | 11.87 |
| 118 | 124+07.82 | 266.0249 | 626580.7053 | 611921.4721 | 10.17 |
| 119 | 124+95.07 | 208.4225 | 626655.0139 | 611954.7260 | 10.01 |
| 120 | 125+13.57 | 113.0610 | 626750.4567 | 611941.0831 | 11.20 |
| 121 | 126+27.49 | 63.0435 | 626821.3611 | 612033.3481 | 7.31 |
| 140 | 120+14.51 | -164.1026 | 626922.4513 | 611412.0273 | 8.61 |
| 141 | 117+40.50 | -95.3317 | 626819.4389 | 611128.1270 | 12.33 |
| 142 | 115+61.71 | -60.0749 | 626708.3897 | 610949.8838 | 10.94 |
| 143 | 113+03.43 | -4.0478 | 626424.0305 | 610908.5252 | 10.17 |
| 144 | 111+12.63 | 6.3442 | 626233.5150 | 610893.8301 | 9.98 |
| 145 | 108+97.70 | -5.0339 | 626022.3112 | 610852.3834 | 9.63 |
| 150 | 105+59.24 | -3.7753 | 625687.0313 | 610806.1024 | 9.56 |
| 151 | 100+65.23 | 5.1969 | 625196.6512 | 610745.6146 | 9.17 |

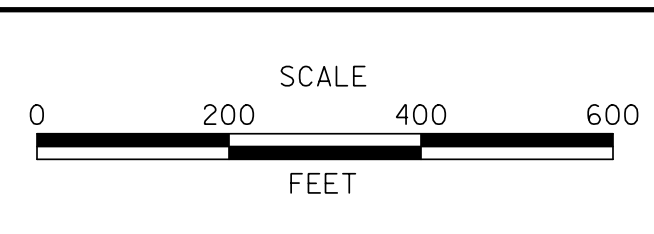
* OFFSETS SHOWN WITH A NEGATIVE SIGN ARE TO THE LEFT OF THE BASELINE

| CONSTRUCTION ALIGNMENT CONTROL | | | | | |
|--------------------------------|-----------|--------|-------------|-------------|--|
| POINT | STATION | OFFSET | NORTHING | EASTING | |
| 10000 | 100+00.00 | 0.00' | 625132.7990 | 610731.3096 | |
| 10001 | 112+17.87 | 0.00' | 626338.6026 | 610902.3268 | |
| 10024 | 161+70.00 | 0.00' | 627663.5010 | 615460.9086 | |
| 10025 | 105+00.00 | 0.00' | 625627.8448 | 610801.5212 | |
| 10026 | 110+00.00 | 0.00' | 626122.8906 | 610871.7327 | |
| 10027 | 120+00.00 | 0.00' | 626757.7116 | 611411.0081 | |
| 10028 | 130+00.00 | 0.00' | 627007.2121 | 612372.4242 | |
| 10029 | 135+00.00 | 0.00' | 627124.3327 | 612857.2301 | |
| 10030 | 140+00.00 | 0.00' | 627218.3653 | 613348.3083 | |
| 10031 | 145+00.00 | 0.00' | 627312.3979 | 613839.3866 | |
| 10032 | 150+00.00 | 0.00' | 627406.4305 | 614330.4649 | |

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| ADDENDUMS / REVISIONS | |
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| | |



NEW CASTLE INDUSTRIAL TRACK TRAIL, PHASE 3

| | | |
|------------|------------------|----------|
| CONTRACT | BRIDGE NO. | X |
| T201330009 | DESIGNED BY: DAD | |
| COUNTY | CHECKED BY: JRR | |
| NEW CASTLE | | |

HORIZONTAL AND VERTICAL CONTROL

| |
|-------------|
| HV-01 |
| SHEET NO. |
| 8 |
| TOTAL SHTS. |
| 205 |

N:\31896-002\CADD\HV02_LIT3.DGN

CIRCULAR CURVE NO. (1)

Table with columns: Element: Circular, STATION, NORTHING, EASTING. Data includes PC (10002), PI (10003), CC, PT (10004), Radius, Delta, Degree of Curvature (Arc), Length, Tangent, Chord, Middle Ordinate, External, Tangent Direction, Radial Direction, Chord Direction, Radial Direction, Tangent Direction.

CIRCULAR CURVE NO. (5)

Table with columns: Element: Circular, STATION, NORTHING, EASTING. Data includes PC (10013), PI (10014), CC, PT (10015), Radius, Delta, Degree of Curvature (Arc), Length, Tangent, Chord, Middle Ordinate, External, Tangent Direction, Radial Direction, Chord Direction, Radial Direction, Tangent Direction.

CIRCULAR CURVE NO. (2)

Table with columns: Element: Circular, STATION, NORTHING, EASTING. Data includes PC (10005), PI (10006), CC, PT (10007), Radius, Delta, Degree of Curvature (Arc), Length, Tangent, Chord, Middle Ordinate, External, Tangent Direction, Radial Direction, Chord Direction, Radial Direction, Tangent Direction.

CIRCULAR CURVE NO. (6)

Table with columns: Element: Circular, STATION, NORTHING, EASTING. Data includes PC (10016), PI (10017), CC, PT (10018), Radius, Delta, Degree of Curvature (Arc), Length, Tangent, Chord, Middle Ordinate, External, Tangent Direction, Radial Direction, Chord Direction, Radial Direction, Tangent Direction.

CIRCULAR CURVE NO. (3)

Table with columns: Element: Circular, STATION, NORTHING, EASTING. Data includes PC (10008), PI (10009), CC, PRC (10010), Radius, Delta, Degree of Curvature (Arc), Length, Tangent, Chord, Middle Ordinate, External, Tangent Direction, Radial Direction, Chord Direction, Radial Direction, Tangent Direction.

CIRCULAR CURVE NO. (7)

Table with columns: Element: Circular, STATION, NORTHING, EASTING. Data includes PC (10019), PI (10020), CC, PRC (10021), Radius, Delta, Degree of Curvature (Arc), Length, Tangent, Chord, Middle Ordinate, External, Tangent Direction, Radial Direction, Chord Direction, Radial Direction, Tangent Direction.

CIRCULAR CURVE NO. (4)

Table with columns: Element: Circular, STATION, NORTHING, EASTING. Data includes PRC (10010), PI (10011), CC, PT (10012), Radius, Delta, Degree of Curvature (Arc), Length, Tangent, Chord, Middle Ordinate, External, Tangent Direction, Radial Direction, Chord Direction, Radial Direction, Tangent Direction.

CIRCULAR CURVE NO. (8)

Table with columns: Element: Circular, STATION, NORTHING, EASTING. Data includes PRC (10021), PI (10022), CC, PT (10023), Radius, Delta, Degree of Curvature (Arc), Length, Tangent, Chord, Middle Ordinate, External, Tangent Direction, Radial Direction, Chord Direction, Radial Direction, Tangent Direction.

UNOFFICIAL WEBSITE



ADDENDUMS / REVISIONS

NOT TO SCALE

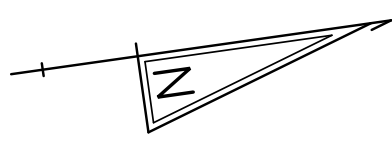
NEW CASTLE INDUSTRIAL TRACK TRAIL, PHASE 3

CONTRACT T201330009 COUNTY NEW CASTLE

BRIDGE NO. X DESIGNED BY: DAD CHECKED BY: JRR

HORIZONTAL AND VERTICAL CONTROL

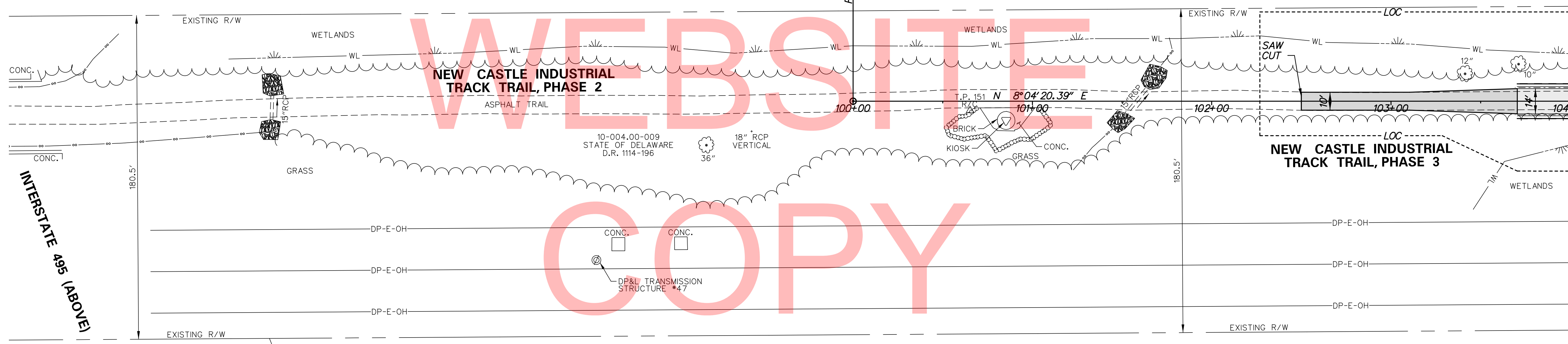
HV-02 SHEET NO. 9 TOTAL SHTS. 205



UNOFFICIAL

WEBSITE

COPY

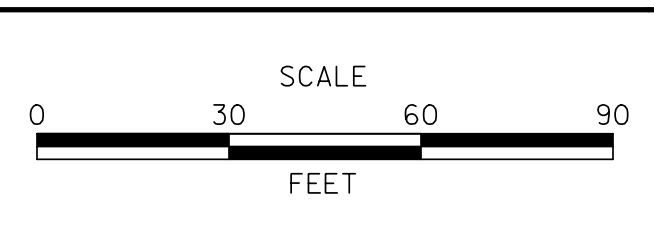


MATCH LINE STA. 104+00 (CP-02)

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| ADDENDUMS / REVISIONS | |
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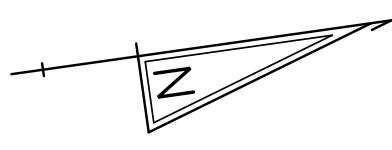


NEW CASTLE INDUSTRIAL TRACK TRAIL, PHASE 3

| | | |
|------------|------------------|----------|
| CONTRACT | BRIDGE NO. | X |
| T201330009 | DESIGNED BY: DAD | |
| COUNTY | CHECKED BY: JRR | |
| NEW CASTLE | | |

CONSTRUCTION PLAN

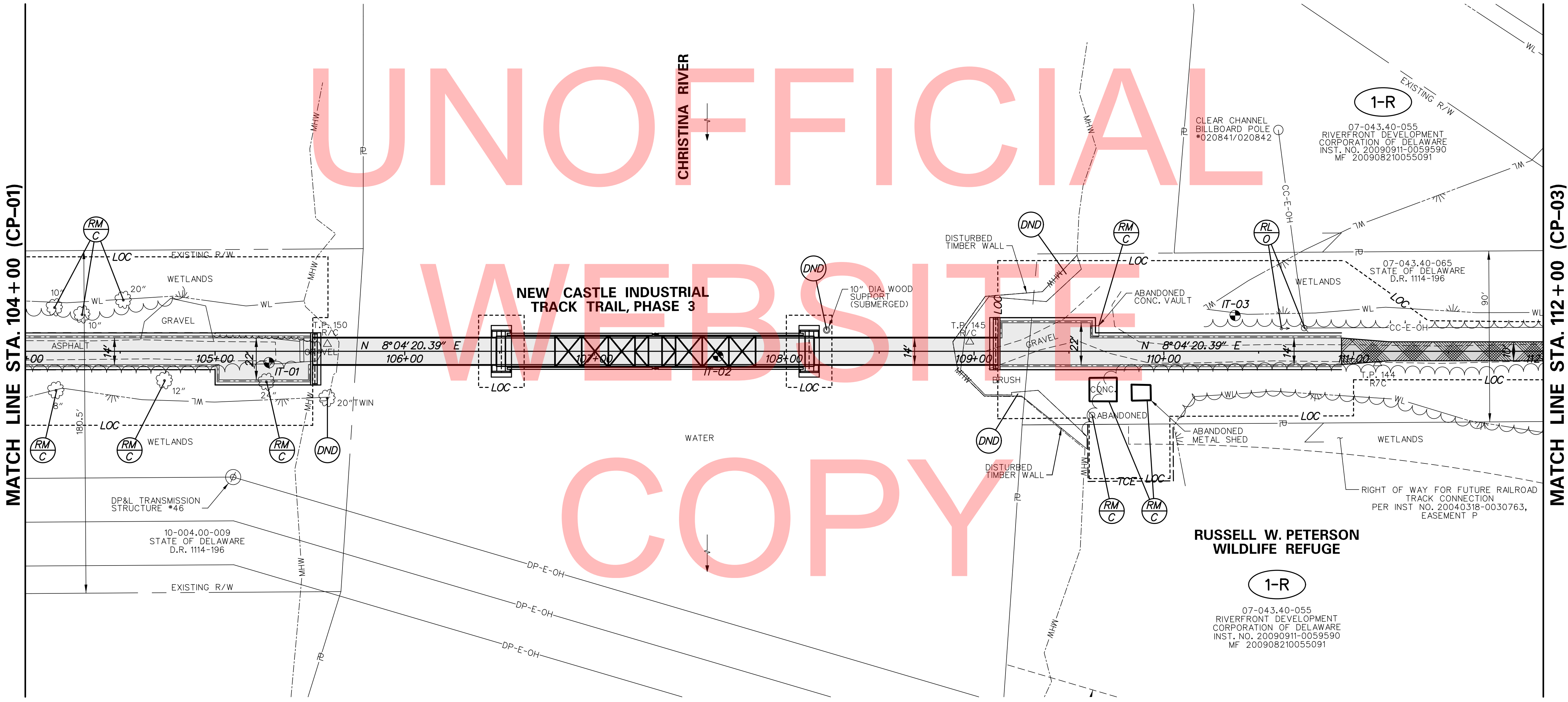
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| CP-01 |
| SHEET NO. |
| 10 |
| TOTAL SHTS. |
| 205 |



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WEBSITE

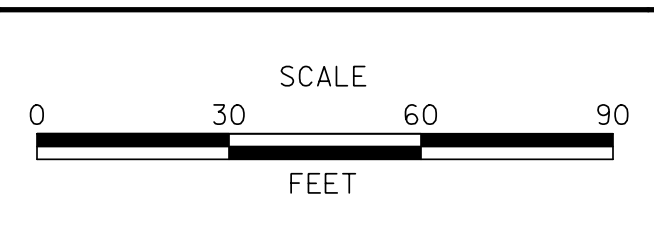
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| ADDENDUMS / REVISIONS |
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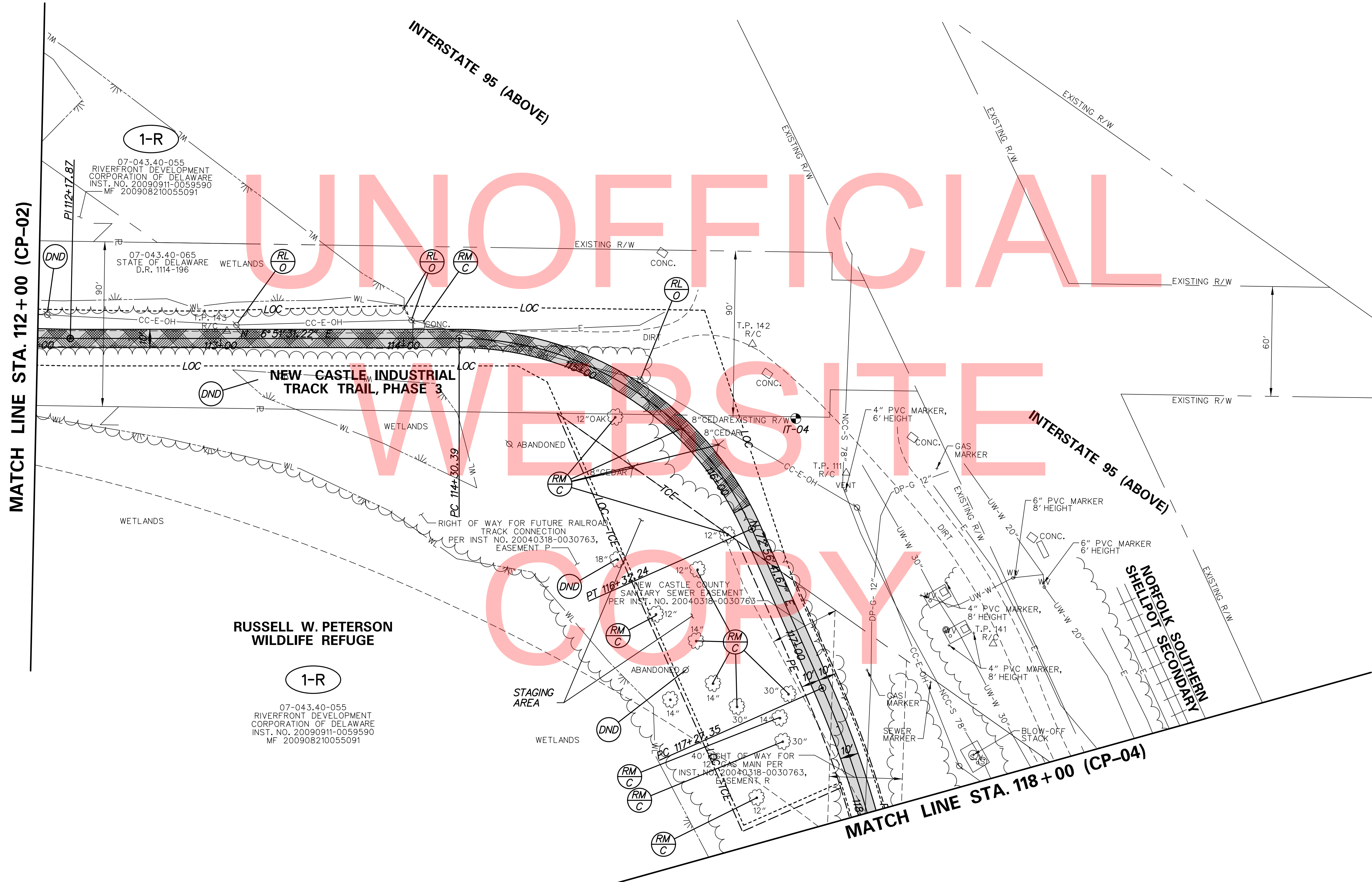
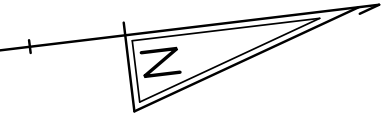


**NEW CASTLE INDUSTRIAL
TRACK TRAIL, PHASE 3**

| | | |
|------------------------|------------------|----------|
| CONTRACT T201330009 | BRIDGE NO. | X |
| COUNTY NEW CASTLE | DESIGNED BY: DAD | |
| | CHECKED BY: JRR | |

CONSTRUCTION PLAN

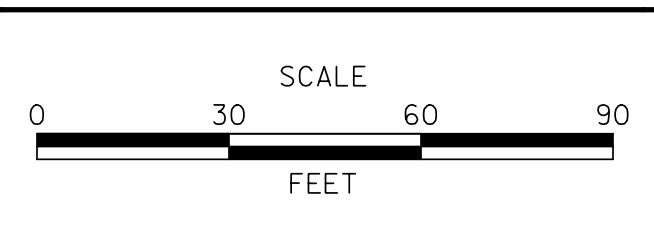
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| CP-02 |
| SHEET NO. 11 |
| TOTAL SHTS. 205 |



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| ADDENDUMS / REVISIONS | |
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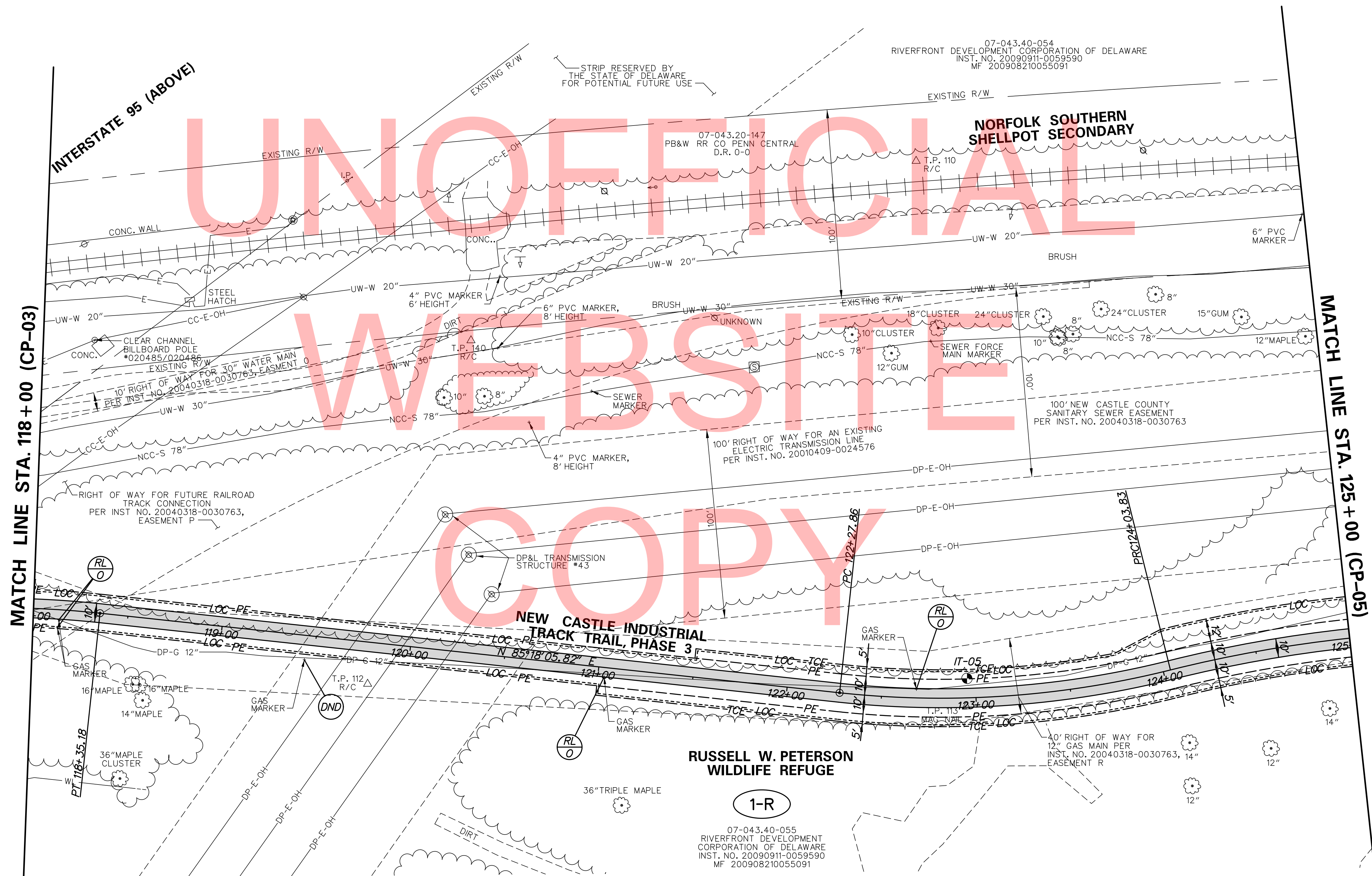
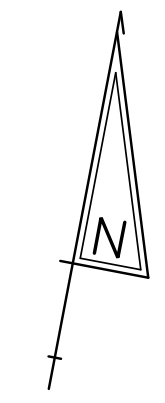


NEW CASTLE INDUSTRIAL TRACK TRAIL, PHASE 3

| | | |
|------------|--------------|----------|
| CONTRACT | BRIDGE NO. | X |
| T201330009 | DESIGNED BY: | DAD |
| COUNTY | CHECKED BY: | JRR |
| NEW CASTLE | | |

CONSTRUCTION PLAN

| |
|-------------|
| CP-03 |
| SHEET NO. |
| 12 |
| TOTAL SHTS. |
| 205 |



UNOFFICIAL WEBSITE COPY

07-043.40-054
RIVERFRONT DEVELOPMENT CORPORATION OF DELAWARE
INST. NO. 20090911-0059590
MF 200908210055091

07-043.20-147
PB&W RR CO PENN CENTRAL
D.R. 0-0

**NORFOLK SOUTHERN
SHELLPOT SECONDARY**

**NEW CASTLE INDUSTRIAL
TRACK TRAIL, PHASE 3**

**RUSSELL W. PETERSON
WILDLIFE REFUGE**

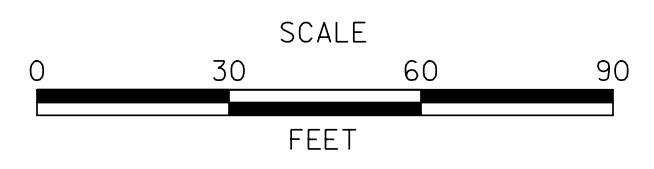
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07-043.40-055
RIVERFRONT DEVELOPMENT CORPORATION OF DELAWARE
INST. NO. 20090911-0059590
MF 200908210055091

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| ADDENDUMS / REVISIONS | |
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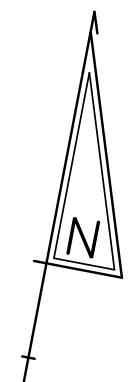


**NEW CASTLE INDUSTRIAL
TRACK TRAIL, PHASE 3**

| | | |
|------------------------|------------------|-----------------|
| CONTRACT T201330009 | BRIDGE NO. | X |
| COUNTY NEW CASTLE | DESIGNED BY: DAD | CHECKED BY: JRR |

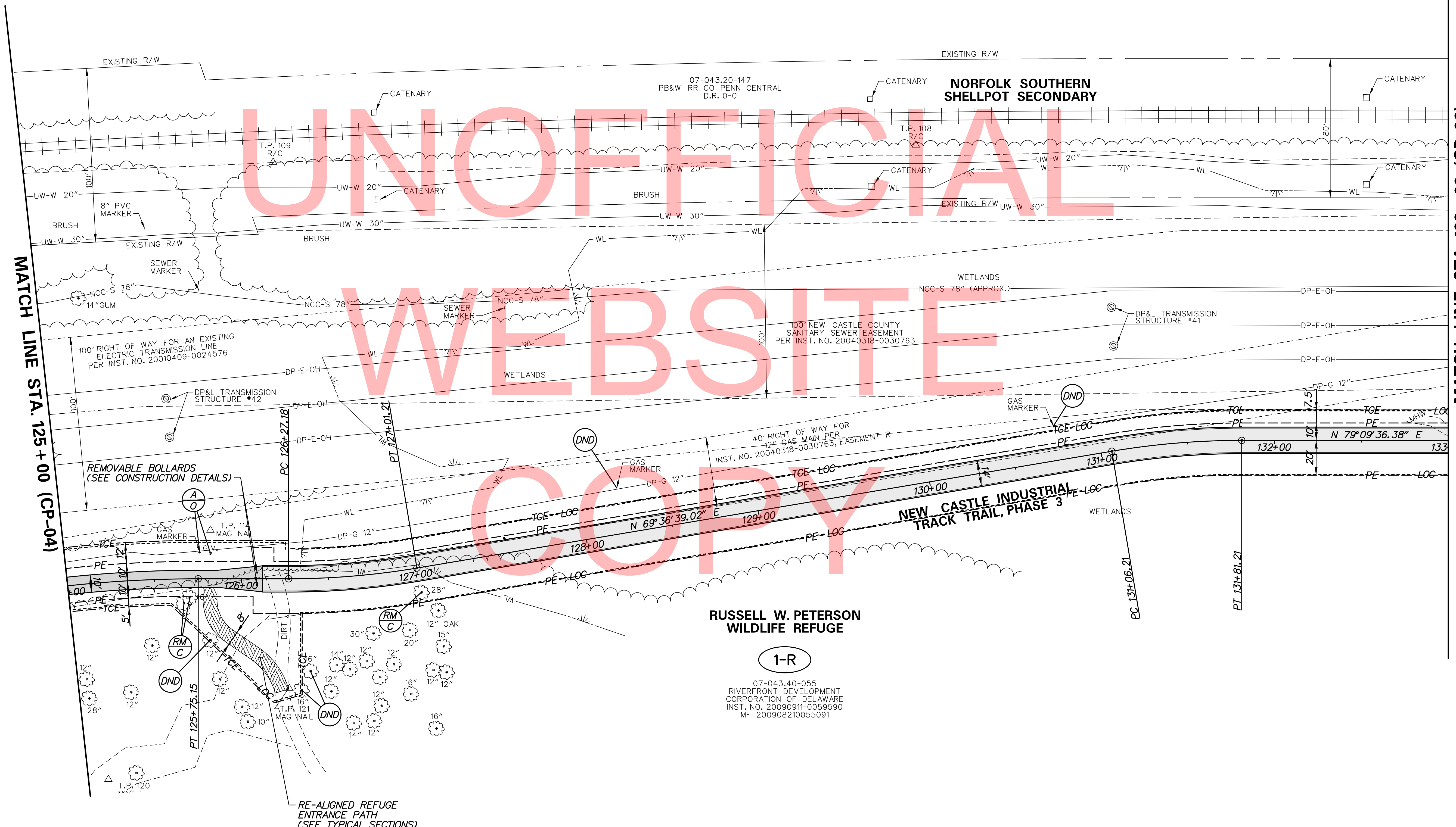
CONSTRUCTION PLAN

| |
|--------------------|
| CP-04 |
| SHEET NO. 13 |
| TOTAL SHTS. 205 |



07-043.40-054
RIVERFRONT DEVELOPMENT CORPORATION OF DELAWARE
INST. NO. 20090911-0059590
MF 200908210055091

**RUSSELL W. PETERSON
WILDLIFE REFUGE**



MATCH LINE STA. 125 + 00 (CP-04)

MATCH LINE STA. 133 + 00 (CP-06)

UNOFFICIAL
WEBSITE
COPY

**RUSSELL W. PETERSON
WILDLIFE REFUGE**

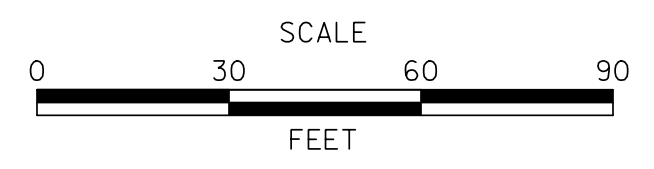
1-R

07-043.40-055
RIVERFRONT DEVELOPMENT
CORPORATION OF DELAWARE
INST. NO. 20090911-0059590
MF 200908210055091

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| ADDENDUMS / REVISIONS | |
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**NEW CASTLE INDUSTRIAL
TRACK TRAIL, PHASE 3**

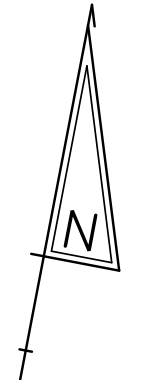
| | | |
|------------|------------------|----------|
| CONTRACT | BRIDGE NO. | X |
| T201330009 | DESIGNED BY: DAD | |
| COUNTY | CHECKED BY: JRR | |
| NEW CASTLE | | |

CONSTRUCTION PLAN

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|-------------|
| CP-05 |
| SHEET NO. |
| 14 |
| TOTAL SHTS. |
| 205 |

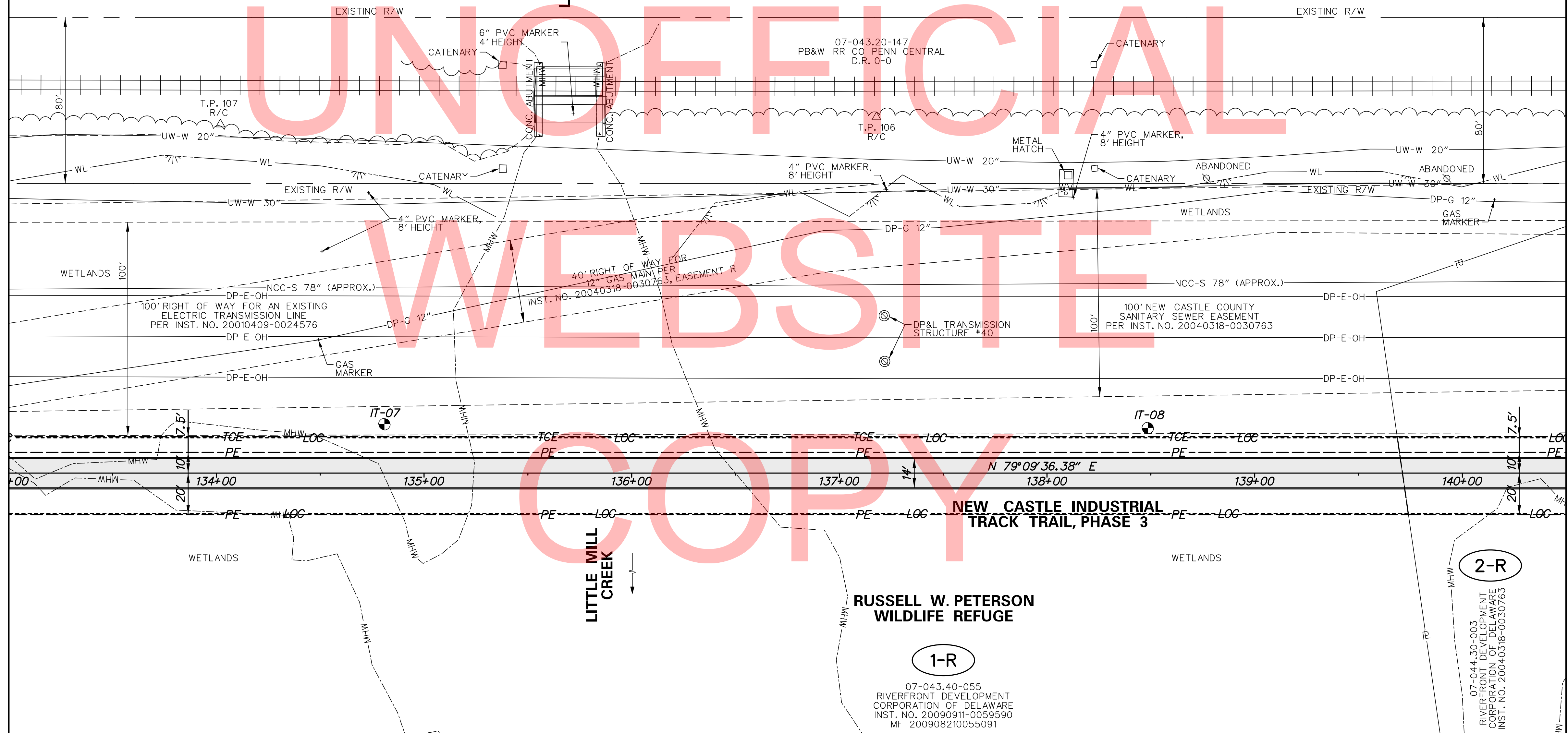
07-043.40-054
 RIVERFRONT DEVELOPMENT CORPORATION OF DELAWARE
 INST. NO. 20090911-0059590
 MF 200908210055091

**RUSSELL W. PETERSON
 WILDLIFE REFUGE**



MATCH LINE STA. 133 + 00 (CP-05)

MATCH LINE STA. 140 + 50 (CP-07)



UNOFFICIAL
 WEBSITE
 COPY

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| ADDENDUMS / REVISIONS | |
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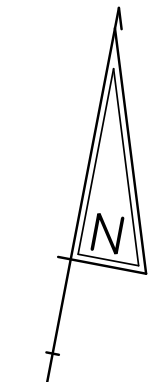


**NEW CASTLE INDUSTRIAL
 TRACK TRAIL, PHASE 3**

| | | |
|------------|------------------|----------|
| CONTRACT | BRIDGE NO. | X |
| T201330009 | DESIGNED BY: DAD | |
| COUNTY | CHECKED BY: JRR | |
| NEW CASTLE | | |

CONSTRUCTION PLAN

| |
|-------------|
| CP-06 |
| SHEET NO. |
| 15 |
| TOTAL SHTS. |
| 205 |



07-043.40-054
RIVERFRONT DEVELOPMENT CORPORATION OF DELAWARE
INST. NO. 20090911-0059590
MF 200908210055091

07-044.30-001
DELMARVA POWER & LIGHT COMPANY
D.R. 1428-117
MF 1750
25' R.R. EASEMENT PER MF 1750

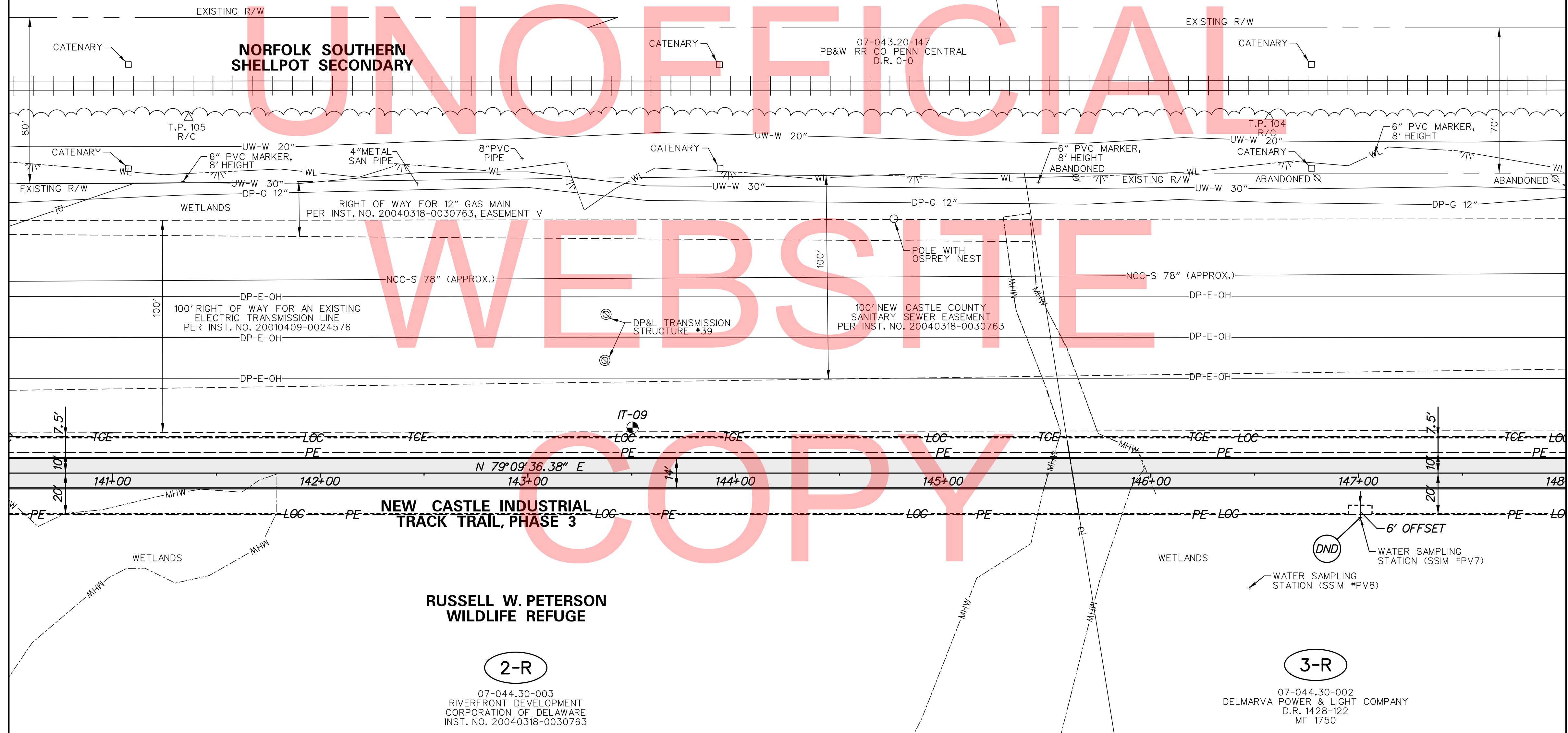
**RUSSELL W. PETERSON
WILDLIFE REFUGE**

**NORFOLK SOUTHERN
SHELLPOT SECONDARY**

07-043.20-147
PB&W RR CO PENN CENTRAL
D.R. 0-0

MATCH LINE STA. 140+50 (CP-06)

MATCH LINE STA. 148+00 (CP-08)



**NEW CASTLE INDUSTRIAL
TRACK TRAIL, PHASE 3**

**RUSSELL W. PETERSON
WILDLIFE REFUGE**

2-R

07-044.30-003
RIVERFRONT DEVELOPMENT
CORPORATION OF DELAWARE
INST. NO. 20040318-0030763

3-R

07-044.30-002
DELMARVA POWER & LIGHT COMPANY
D.R. 1428-122
MF 1750

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| ADDENDUMS / REVISIONS | |
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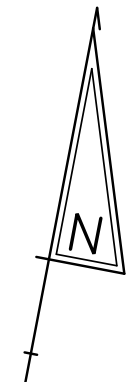


**NEW CASTLE INDUSTRIAL
TRACK TRAIL, PHASE 3**

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|------------|------------------|----------|
| CONTRACT | BRIDGE NO. | X |
| T201330009 | DESIGNED BY: DAD | |
| COUNTY | CHECKED BY: JRR | |
| NEW CASTLE | | |

CONSTRUCTION PLAN

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| CP-07 |
| SHEET NO. |
| 16 |
| TOTAL SHTS. |
| 205 |

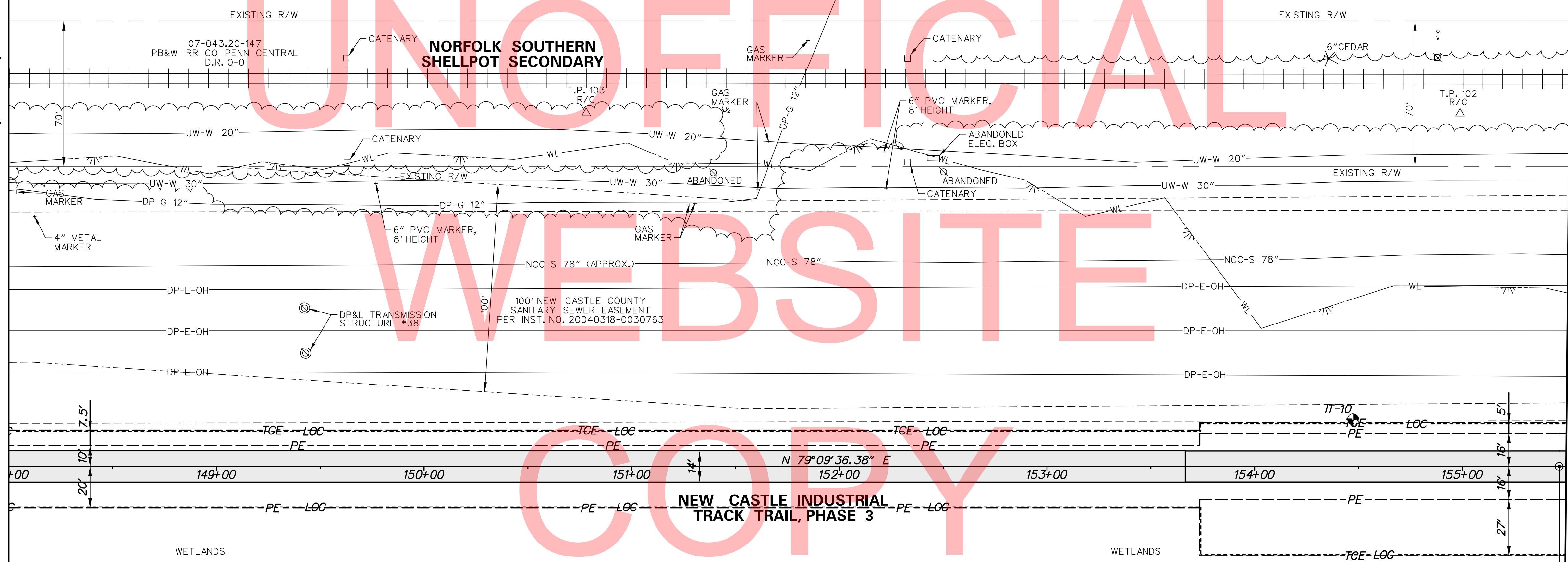


07-044.30-001
 DELMARVA POWER & LIGHT COMPANY
 D.R. 1428-117
 MF 1750
 25' R.R. EASEMENT PER MF 1750

07-043.40-054
 RIVERFRONT DEVELOPMENT
 CORPORATION OF DELAWARE
 INST. NO. 20090911-0059590
 MF 200908210055091
 20' UTILITY EASEMENT AREA FOR NORFOLK
 SOUTHERN RAILWAY COMPANY

MATCH LINE STA. 148+00 (CP-07)

MATCH LINE STA. 155+50 (CP-09)



RUSSELL W. PETERSON
 WILDLIFE REFUGE

3-R

07-044.30-002
 DELMARVA POWER & LIGHT COMPANY
 D.R. 1428-122
 MF 1750

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| ADDENDUMS / REVISIONS | |
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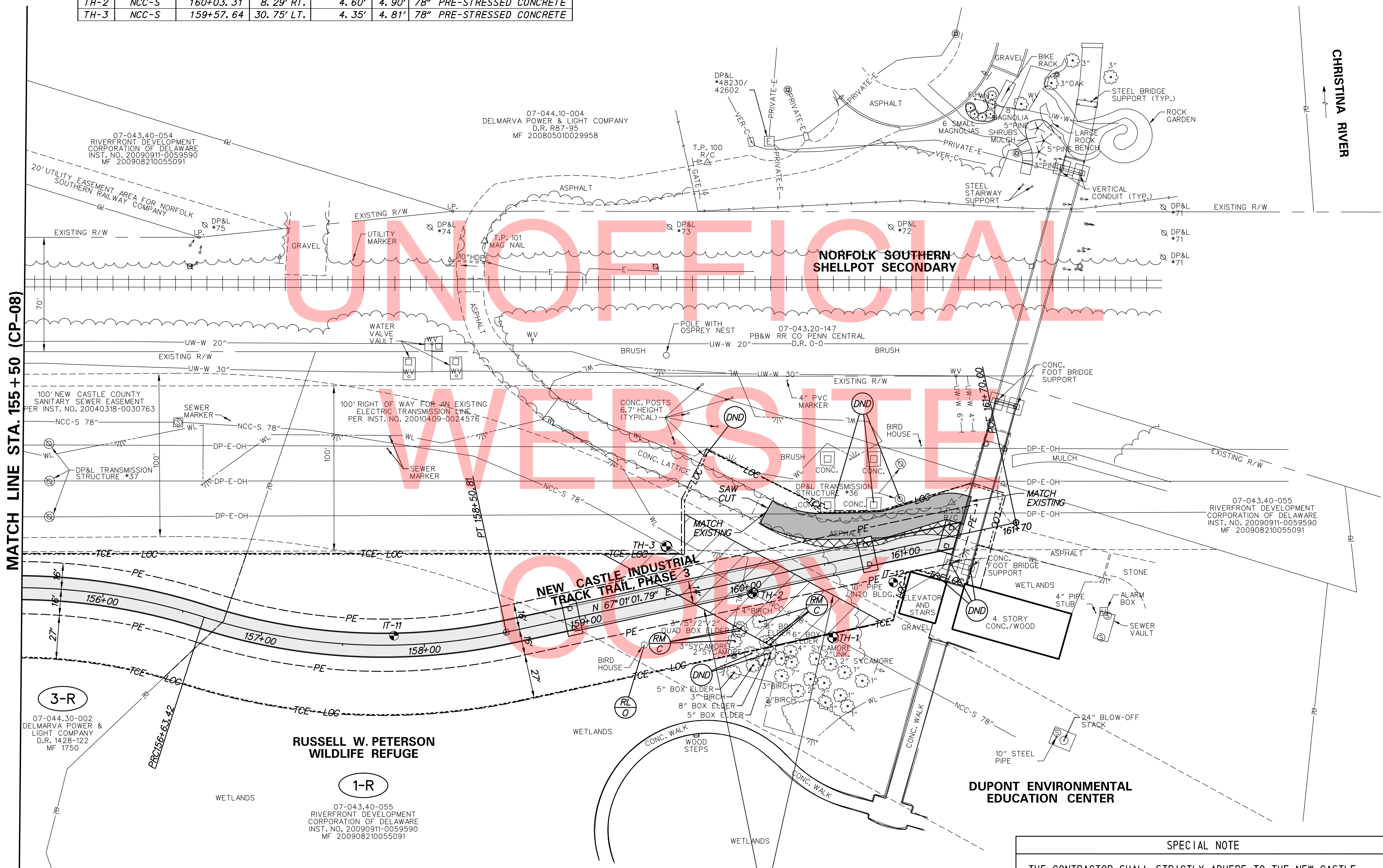
NEW CASTLE INDUSTRIAL
 TRACK TRAIL, PHASE 3

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|------------|------------------|----------|
| CONTRACT | BRIDGE NO. | X |
| T201330009 | DESIGNED BY: DAD | |
| COUNTY | CHECKED BY: JRR | |
| NEW CASTLE | | |

CONSTRUCTION PLAN

| |
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| CP-08 |
| SHEET NO. |
| 17 |
| TOTAL SHTS. |
| 205 |

| UTILITY TEST HOLE SCHEDULE | | | | | | |
|----------------------------|---------|-----------|------------|----------|-------|---------------------------|
| NO. | UTILITY | STATION | OFFSET | GRND EL. | COVER | O. D. & MATERIAL |
| TH-1 | NCC-S | 160+45.63 | 45.18' RT. | 5.35' | 5.31' | 78" PRE-STRESSED CONCRETE |
| TH-2 | NCC-S | 160+03.31 | 8.29' RT. | 4.60' | 4.90' | 78" PRE-STRESSED CONCRETE |
| TH-3 | NCC-S | 159+57.64 | 30.75' LT. | 4.35' | 4.81' | 78" PRE-STRESSED CONCRETE |



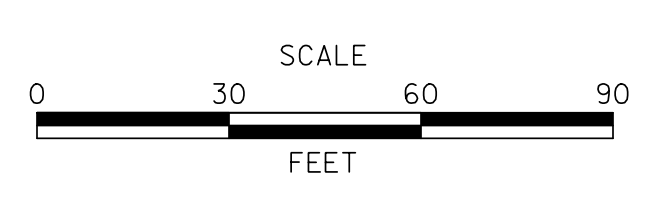
SPECIAL NOTE

THE CONTRACTOR SHALL STRICTLY ADHERE TO THE NEW CASTLE COUNTY CHRISTINA RIVER FORCE MAIN (CRFM) PROTECTIVE MEASURES AS NOTED IN THE PLANS AND SPECIFICATIONS.

APPROXIMATE LIMITS OF 78" NCC-S CRFM PROTECTIVE BUFFER AREA. (SEE SPECIAL NOTE, THIS SHEET)

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| ADDENDUMS / REVISIONS | |
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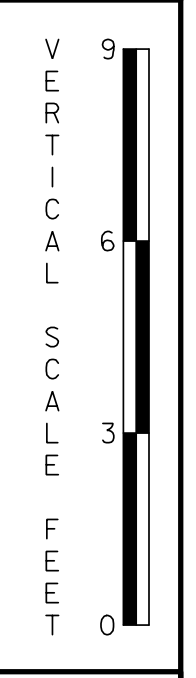


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| CONTRACT | BRIDGE NO. | X |
| T201330009 | DESIGNED BY: DAD | |
| COUNTY | CHECKED BY: JRR | |
| NEW CASTLE | | |

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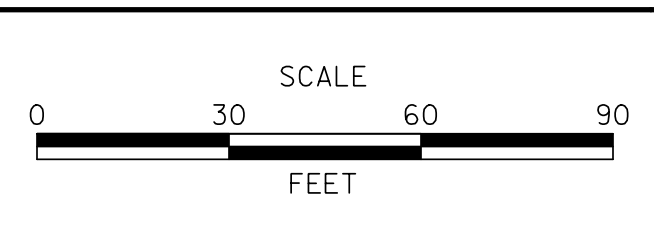
NEW CASTLE INDUSTRIAL TRACK TRAIL, PHASE 3



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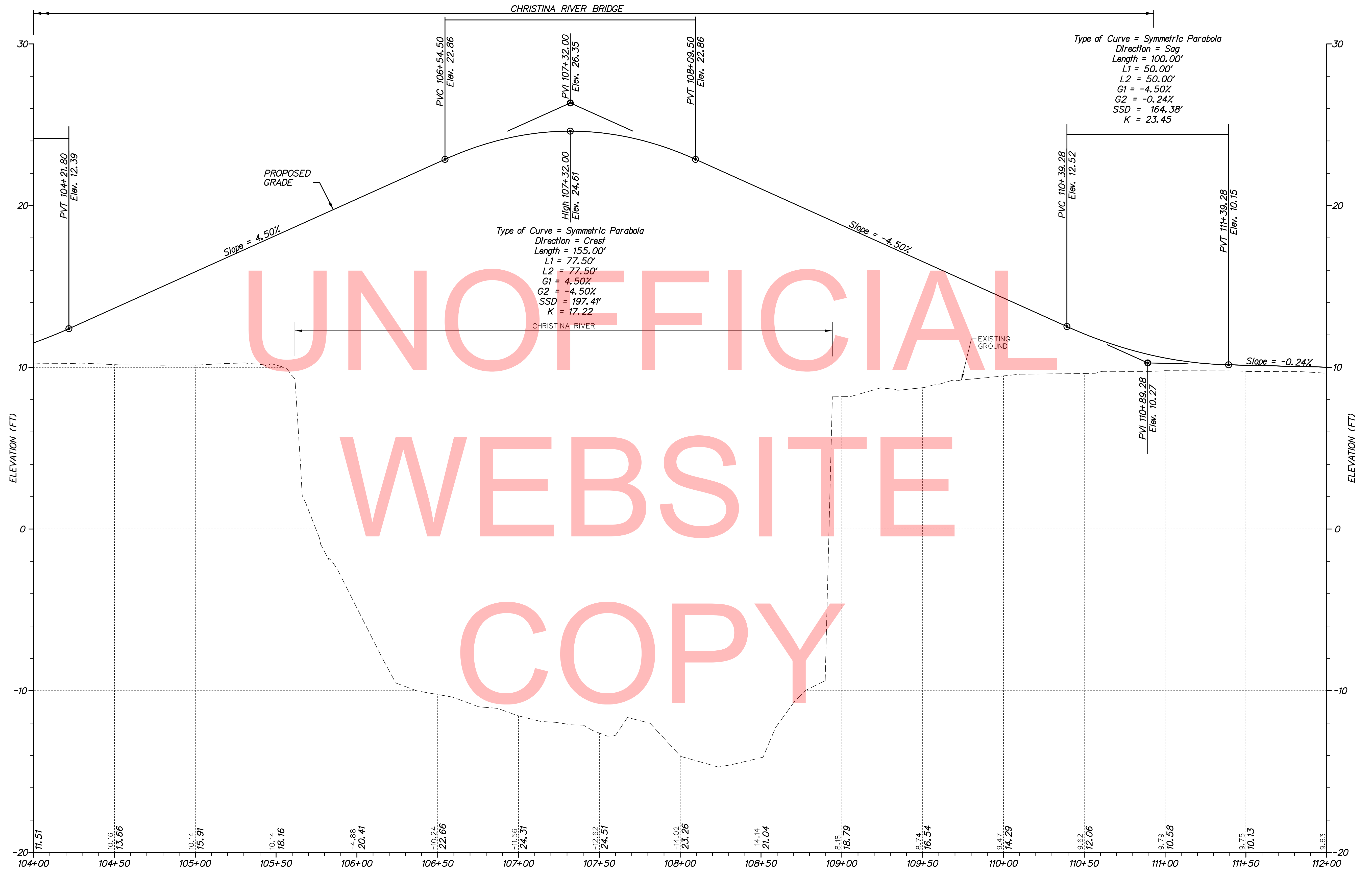
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**NEW CASTLE INDUSTRIAL
TRACK TRAIL, PHASE 3**

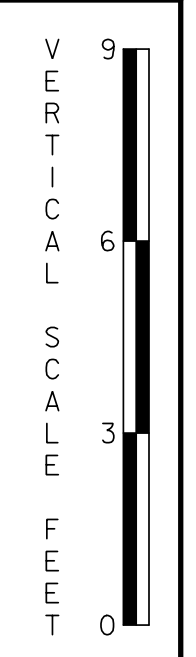
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|------------------------|------------------|----------|-----------------|
| CONTRACT T201330009 | BRIDGE NO. | X | PROFILES |
| COUNTY NEW CASTLE | DESIGNED BY: DAD | | |
| | CHECKED BY: JRR | | |

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| PF-01 |
| SHEET NO. 19 |
| TOTAL SHTS. 205 |



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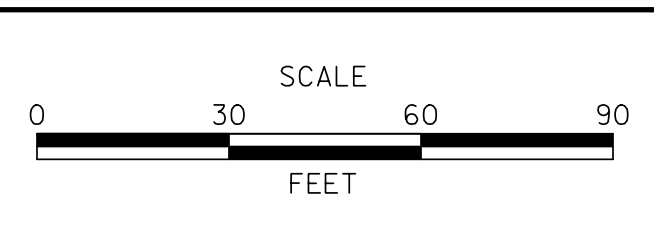
NEW CASTLE INDUSTRIAL TRACK TRAIL, PHASE 3



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| ADDENDUMS / REVISIONS | |
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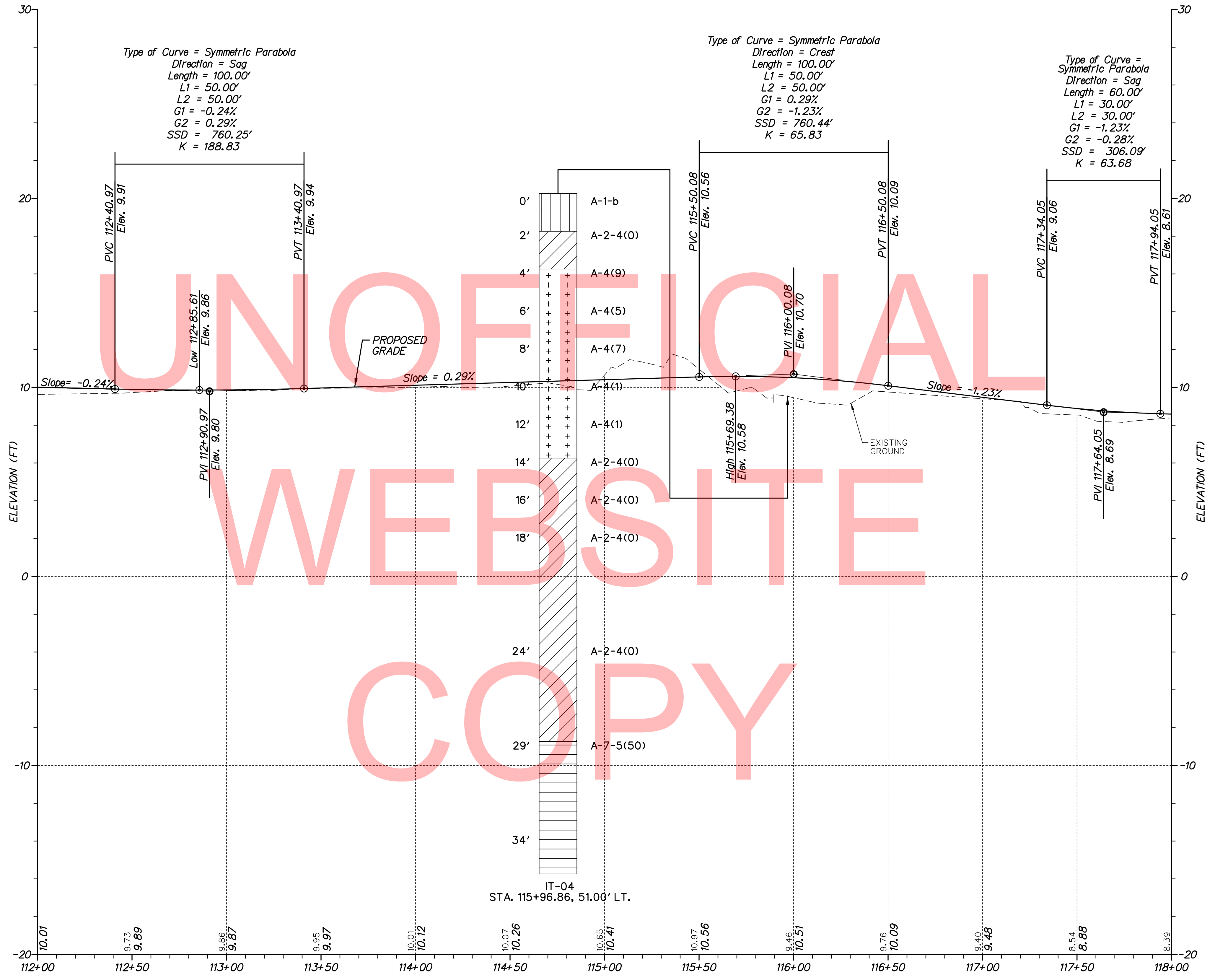


NEW CASTLE INDUSTRIAL TRACK TRAIL, PHASE 3

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| CONTRACT | BRIDGE NO. | X |
| T201330009 | DESIGNED BY: DAD | |
| COUNTY | CHECKED BY: JRR | |
| NEW CASTLE | | |

PROFILES

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| PF-02 |
| SHEET NO. |
| 20 |
| TOTAL SHTS. |
| 205 |



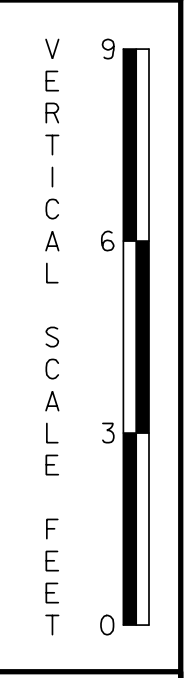
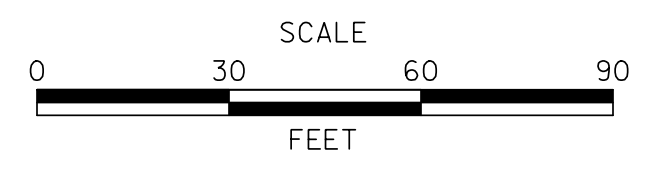
Type of Curve = Symmetric Parabola
 Direction = Sag
 Length = 100.00'
 L1 = 50.00'
 L2 = 50.00'
 G1 = -0.24%
 G2 = 0.29%
 SSD = 760.25'
 K = 188.83

Type of Curve = Symmetric Parabola
 Direction = Crest
 Length = 100.00'
 L1 = 50.00'
 L2 = 50.00'
 G1 = 0.29%
 G2 = -1.23%
 SSD = 760.44'
 K = 65.83

Type of Curve = Symmetric Parabola
 Direction = Sag
 Length = 60.00'
 L1 = 30.00'
 L2 = 30.00'
 G1 = -1.23%
 G2 = -0.28%
 SSD = 306.09'
 K = 63.68

NEW CASTLE INDUSTRIAL TRACK TRAIL, PHASE 3

IT-04
 STA. 115+96.86, 51.00' LT.



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| ADDENDUMS / REVISIONS | |
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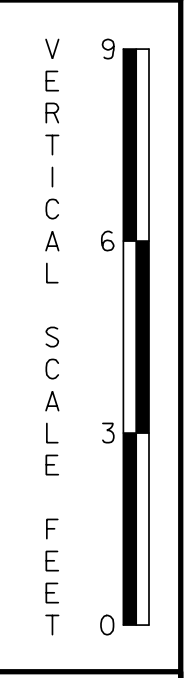
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|------------|------------------|----------|
| CONTRACT | BRIDGE NO. | X |
| T201330009 | DESIGNED BY: DAD | |
| COUNTY | CHECKED BY: JRR | |
| NEW CASTLE | | |



Type of Curve = Symmetric Parabola
 Direction = Sag
 Length = 250.00'
 L1 = 125.00'
 L2 = 125.00'
 G1 = -0.28%
 G2 = 2.78%
 SSD = 442.99'
 K = 81.52

Type of Curve = Symmetric Parabola
 Direction = Crest
 Length = 80.00'
 L1 = 40.00'
 L2 = 40.00'
 G1 = 2.78%
 G2 = -3.49%
 SSD = 212.06'
 K = 12.76

NEW CASTLE INDUSTRIAL TRACK TRAIL, PHASE 3



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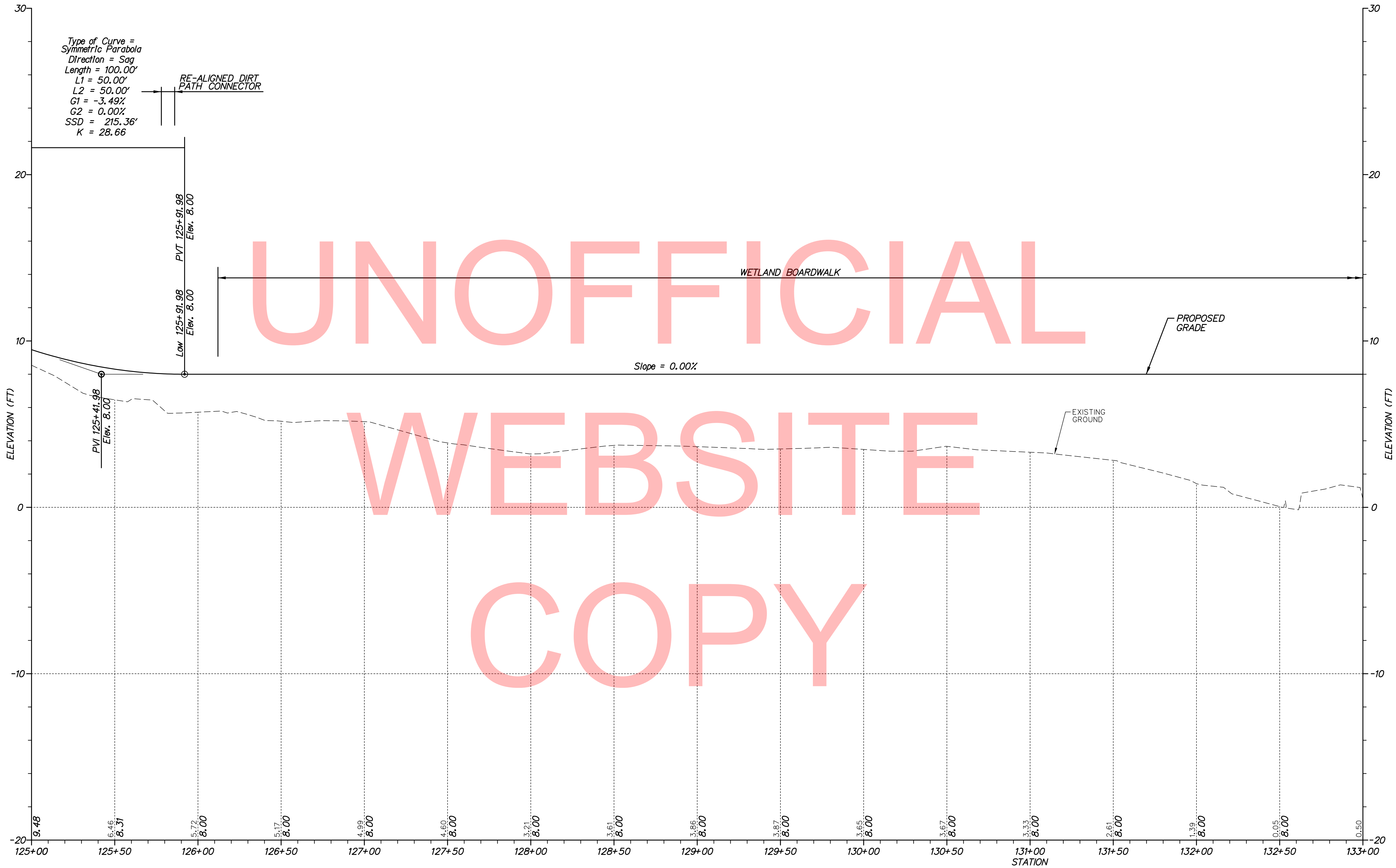
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NEW CASTLE INDUSTRIAL TRACK TRAIL, PHASE 3

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| CONTRACT | BRIDGE NO. | X |
| T201330009 | DESIGNED BY: DAD | |
| COUNTY | CHECKED BY: JRR | |
| NEW CASTLE | | |

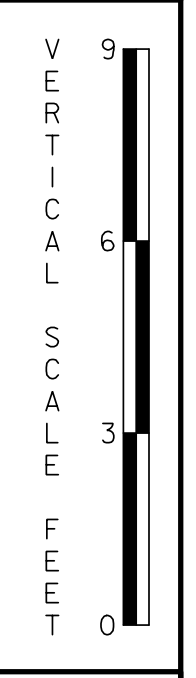
PROFILES

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| PF-04 |
| SHEET NO. |
| 22 |
| TOTAL SHTS. |
| 205 |



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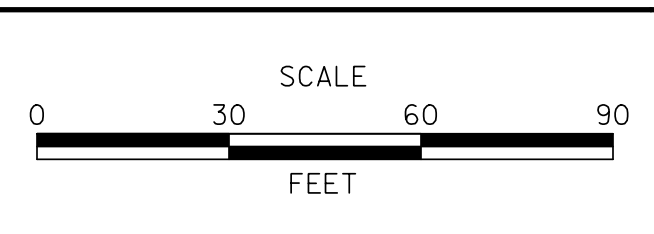
NEW CASTLE INDUSTRIAL TRACK TRAIL, PHASE 3



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| ADDENDUMS / REVISIONS | |
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NEW CASTLE INDUSTRIAL
 TRACK TRAIL, PHASE 3

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| CONTRACT | BRIDGE NO. | X |
| T201330009 | DESIGNED BY: DAD | |
| COUNTY | CHECKED BY: JRR | |
| NEW CASTLE | | |

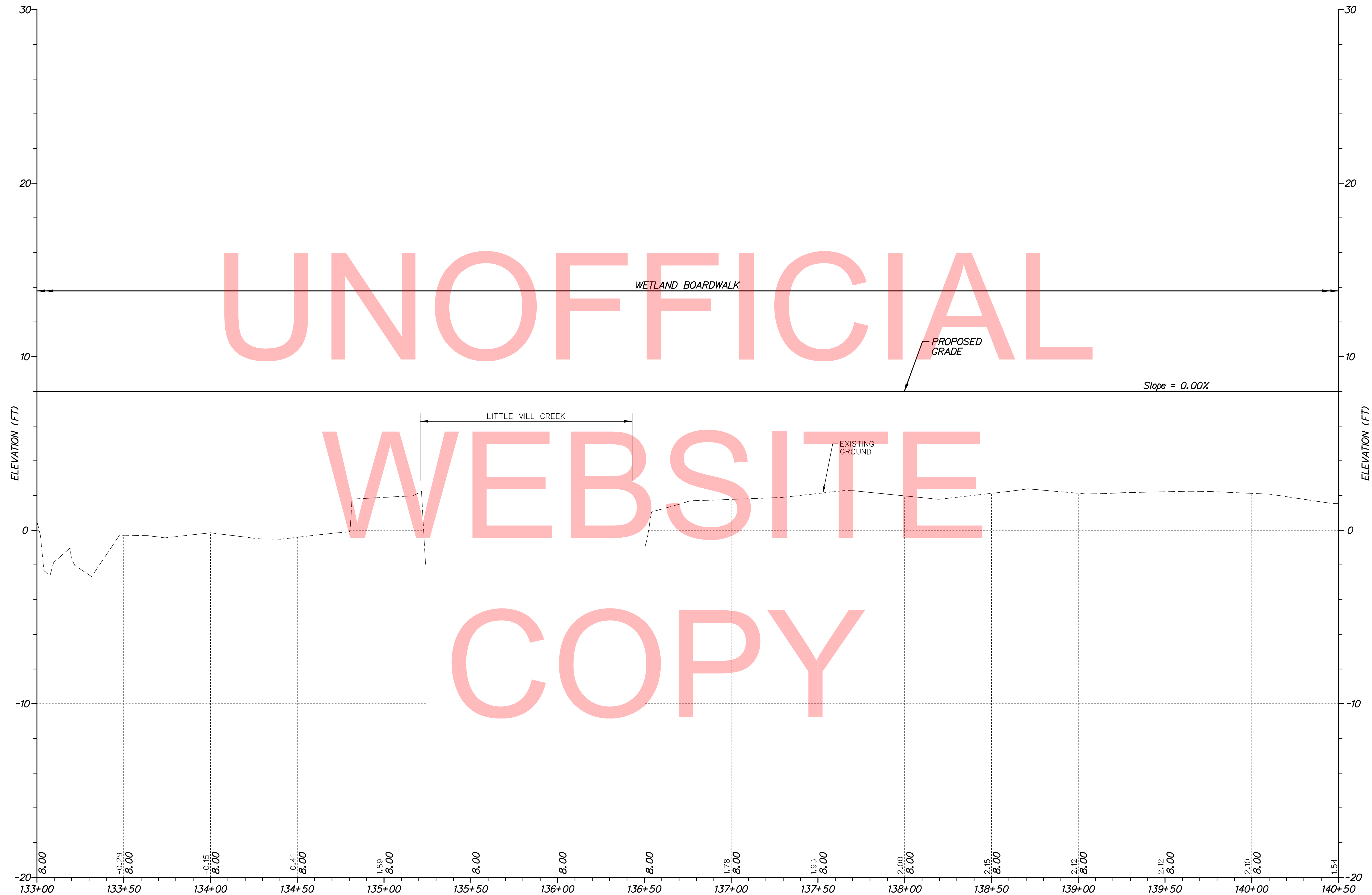
PROFILES

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| PF-05 |
| SHEET NO. 23 |
| TOTAL SHTS. 205 |

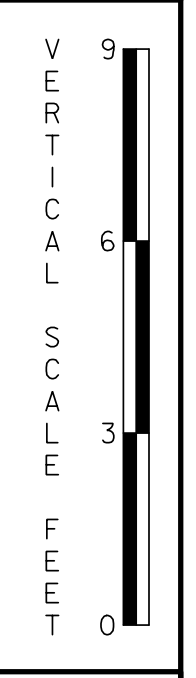
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NEW CASTLE INDUSTRIAL TRACK TRAIL, PHASE 3



| ADDENDUMS / REVISIONS | |
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NEW CASTLE INDUSTRIAL TRACK TRAIL, PHASE 3

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| CONTRACT | BRIDGE NO. | X |
| T201330009 | DESIGNED BY: | DAD |
| COUNTY | CHECKED BY: | JRR |
| NEW CASTLE | | |

PROFILES

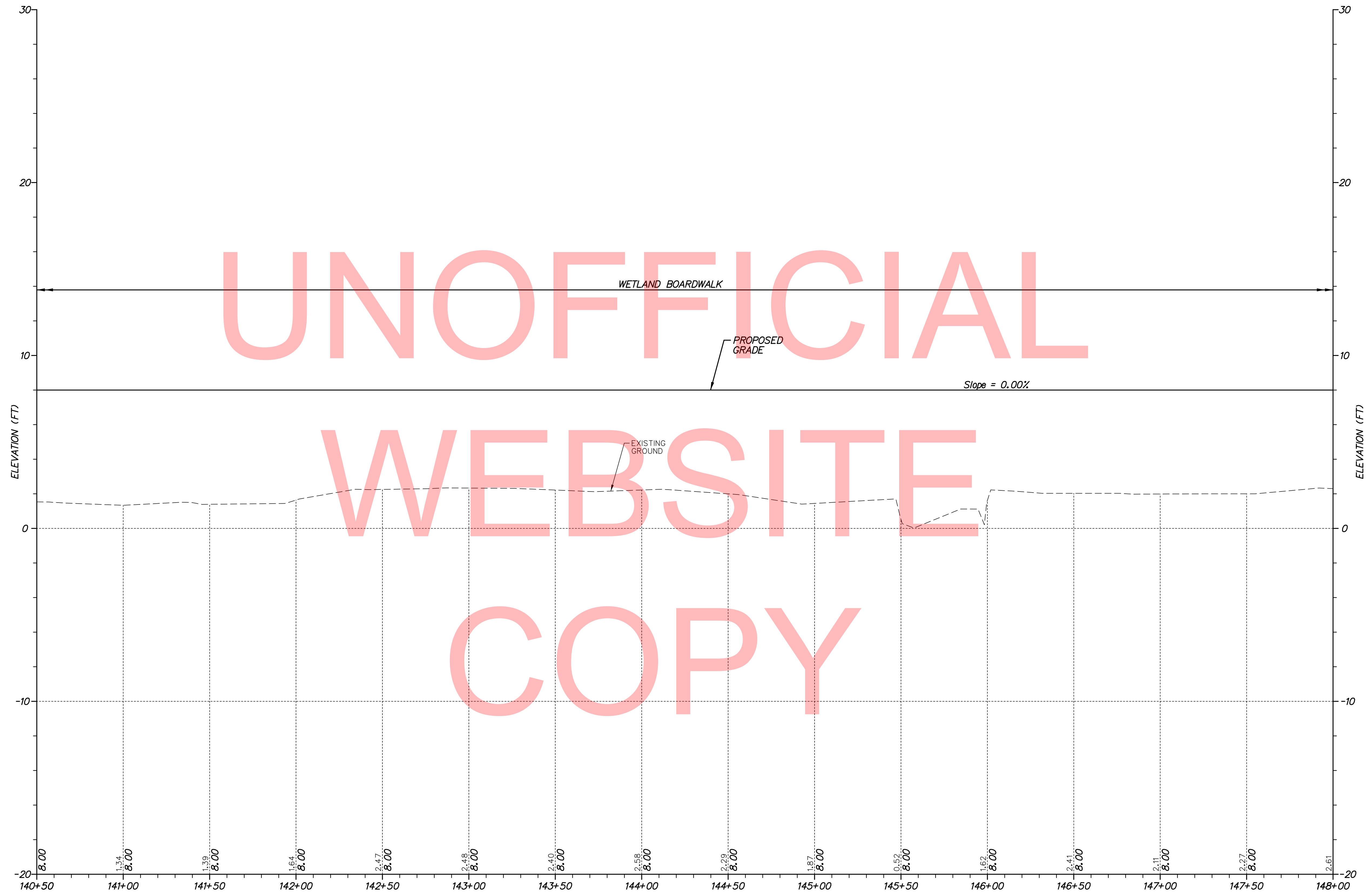
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| PF-06 |
| SHEET NO. |
| 24 |
| TOTAL SHTS. |
| 205 |

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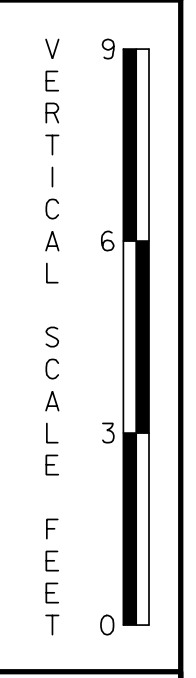
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NEW CASTLE INDUSTRIAL TRACK TRAIL, PHASE 3



| ADDENDUMS / REVISIONS | |
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NEW CASTLE INDUSTRIAL TRACK TRAIL, PHASE 3

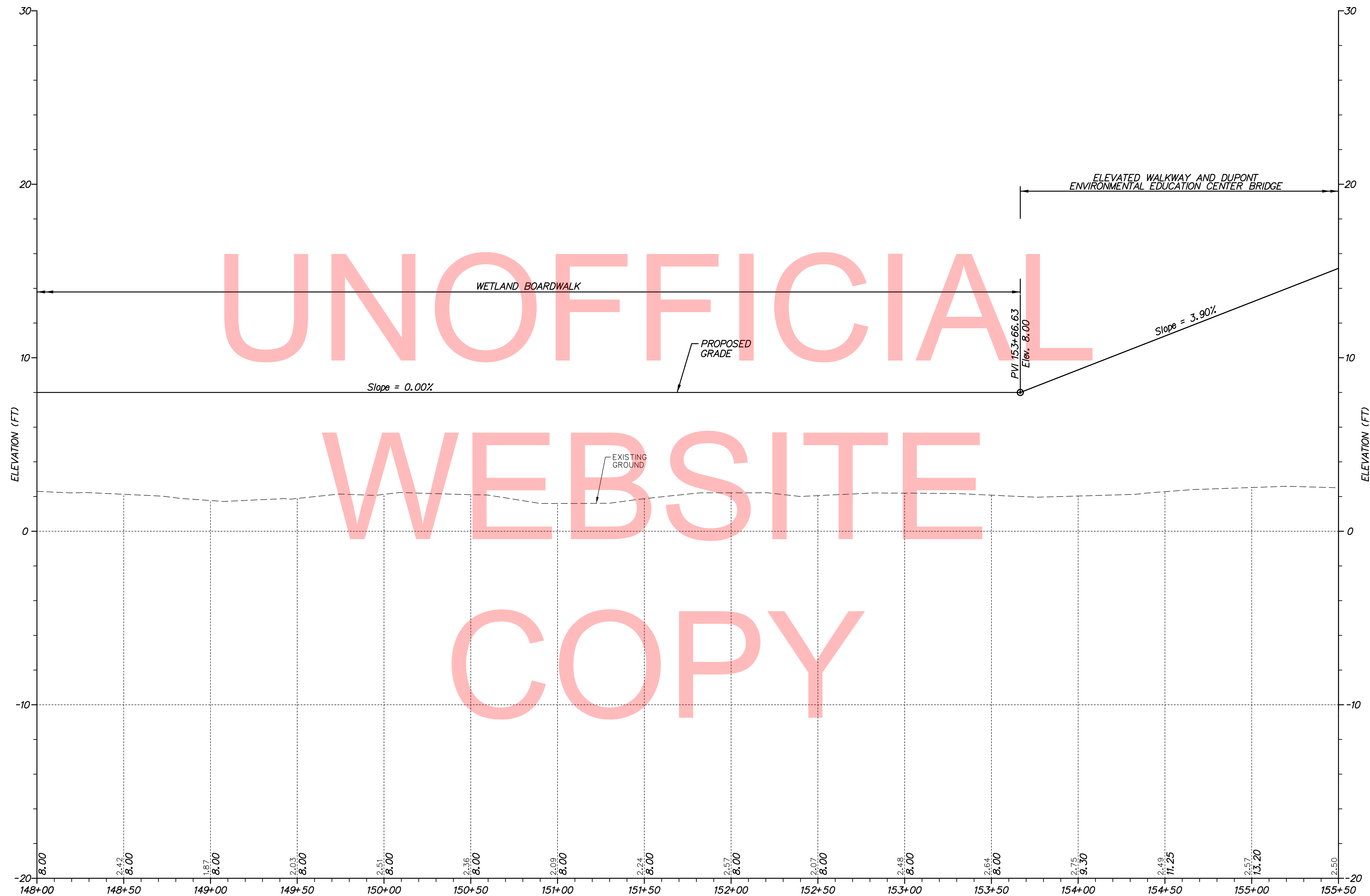
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| CONTRACT | BRIDGE NO. | X |
| T201330009 | DESIGNED BY: | DAD |
| COUNTY | CHECKED BY: | JRR |
| NEW CASTLE | | |

PROFILES

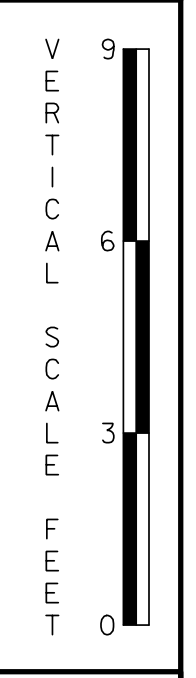
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| PF-07 |
| SHEET NO. |
| 25 |
| TOTAL SHTS. |
| 205 |

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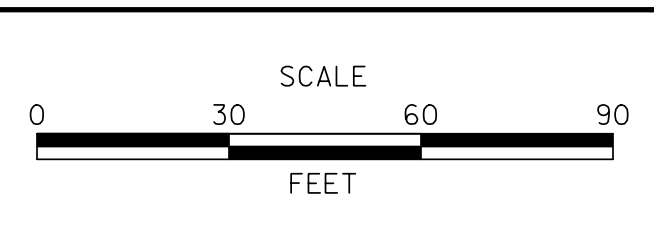
NEW CASTLE INDUSTRIAL TRACK TRAIL, PHASE 3



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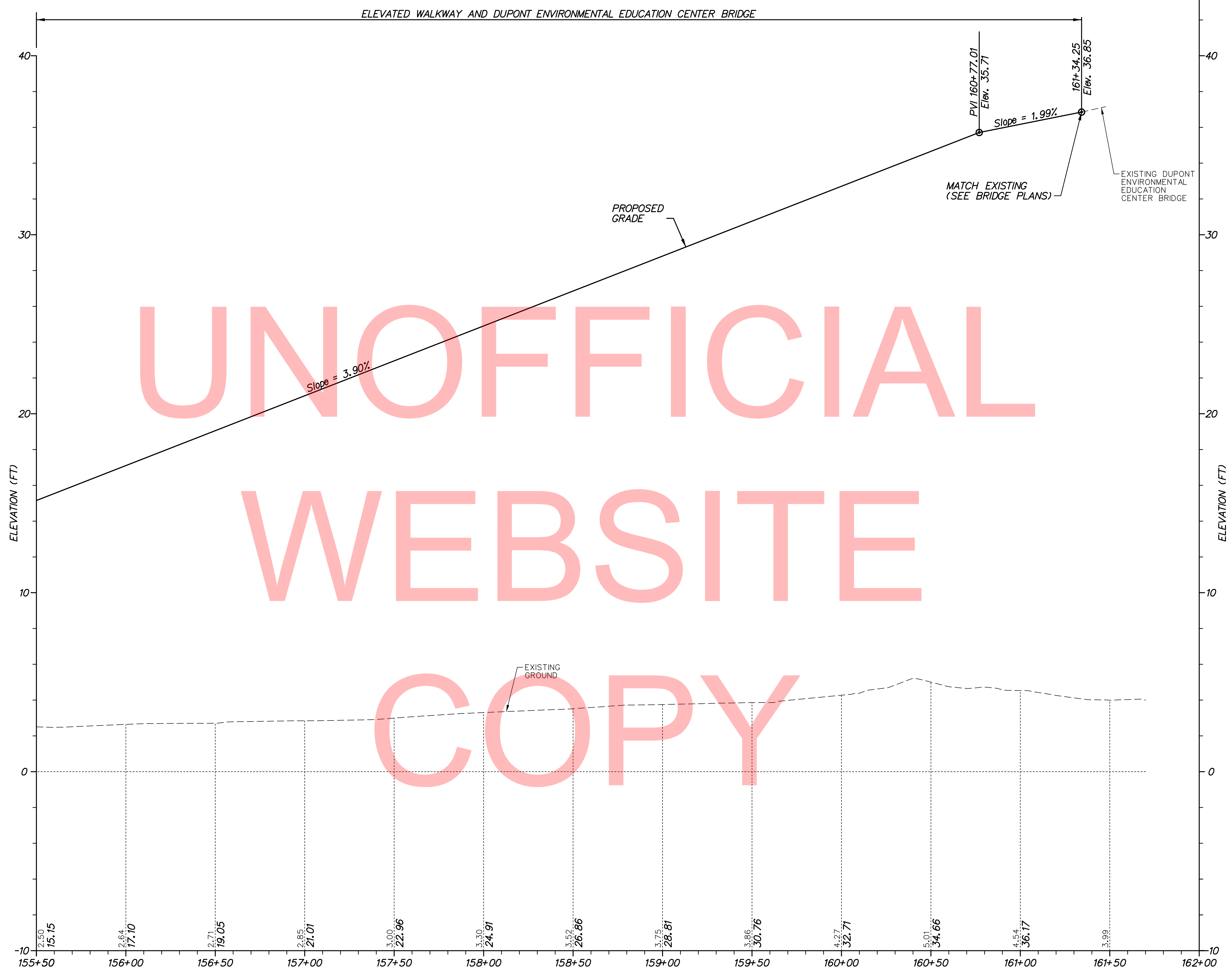
| ADDENDUMS / REVISIONS | |
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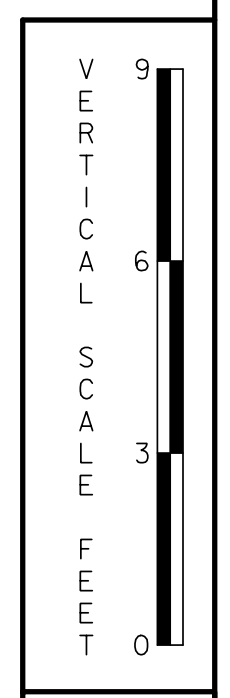
**NEW CASTLE INDUSTRIAL
TRACK TRAIL, PHASE 3**

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|------------------------|------------------|----------|-----------------|
| CONTRACT T201330009 | BRIDGE NO. | X | PROFILES |
| COUNTY NEW CASTLE | DESIGNED BY: DAD | | |
| | CHECKED BY: JRR | | |

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| PF-08 |
| SHEET NO. 26 |
| TOTAL SHTS. 205 |



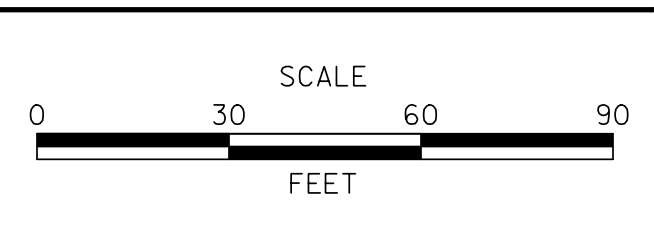
NEW CASTLE INDUSTRIAL TRACK TRAIL, PHASE 3



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| ADDENDUMS / REVISIONS | |
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NEW CASTLE INDUSTRIAL TRACK TRAIL, PHASE 3

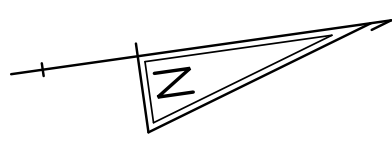
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|------------|------------------|----------|
| CONTRACT | BRIDGE NO. | X |
| T201330009 | DESIGNED BY: DAD | |
| COUNTY | CHECKED BY: JRR | |
| NEW CASTLE | | |

PROFILES

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|--------------|
| PF-09 |
| SHEET NO. |
| 27 |
| TOTAL SHTS. |
| 205 |

| COORDINATE LIST | | | | |
|-----------------|-----------|---------|-------------|-------------|
| POINT NO. | STATION | OFFSET | NORTHING | EASTING |
| 81101 | 102+50.00 | -5.0000 | 625381.0240 | 610761.4649 |
| 81102 | 102+50.00 | 5.0000 | 625379.6198 | 610771.3658 |
| 81103 | 103+10.38 | -5.0000 | 625440.8079 | 610769.9440 |
| 81104 | 103+10.37 | 5.0000 | 625439.3962 | 610779.8438 |
| 81105 | 103+70.42 | -7.0000 | 625500.5317 | 610776.3945 |
| 81106 | 103+70.42 | 7.0000 | 625498.5658 | 610790.2558 |

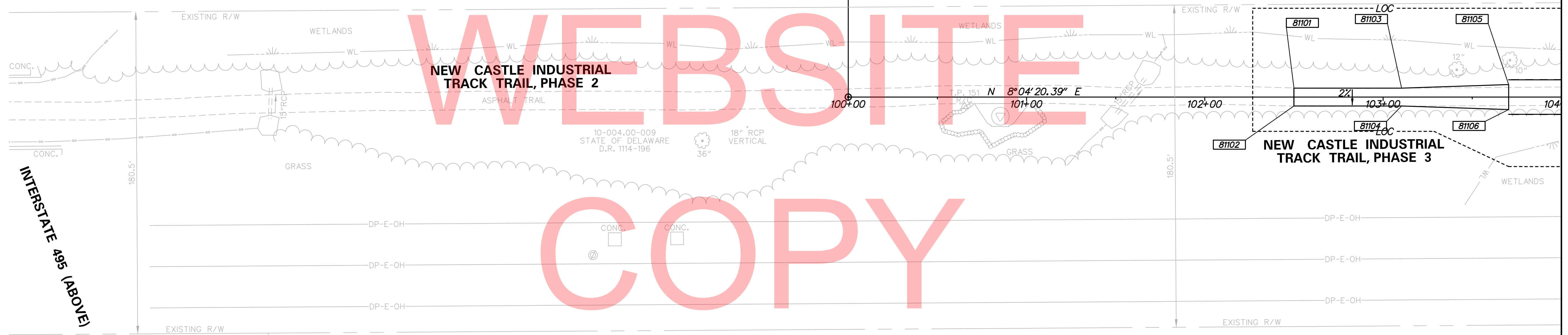
NOTE: OFFSETS SHOWN WITH A NEGATIVE SIGN ARE TO THE LEFT OF THE CONSTRUCTION BASELINE



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MATCH LINE STA. 104+00 (GG-02)

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| ADDENDUMS / REVISIONS | |
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NEW CASTLE INDUSTRIAL TRACK TRAIL, PHASE 3

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| CONTRACT | BRIDGE NO. | X |
| T201330009 | DESIGNED BY: DAD | |
| COUNTY | CHECKED BY: JRR | |
| NEW CASTLE | | |

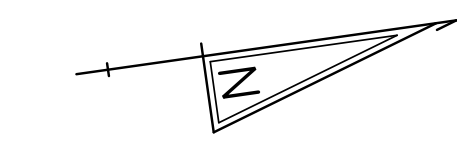
GRADES AND GEOMETRICS

| |
|-------------|
| GG-01 |
| SHEET NO. |
| 28 |
| TOTAL SHTS. |
| 205 |

COORDINATE LIST

| POINT NO. | STATION | OFFSET | NORTHING | EASTING |
|-----------|-----------|---------|-------------|-------------|
| 81201 | 110+93.67 | -7.0000 | 626216.6154 | 610877.9555 |
| 81202 | 110+93.67 | 7.0000 | 626214.6495 | 610891.8168 |
| 81203 | 111+18.75 | 5.0000 | 626239.7570 | 610893.3577 |
| 81204 | 111+18.75 | -5.0000 | 626241.1612 | 610883.4568 |

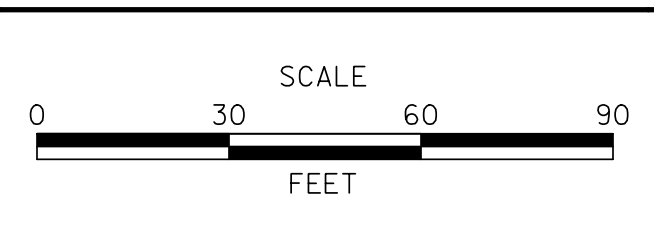
NOTE: OFFSETS SHOWN WITH A NEGATIVE SIGN ARE TO THE LEFT OF THE CONSTRUCTION BASELINE



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DELAWARE DEPARTMENT OF TRANSPORTATION

| ADDENDUMS / REVISIONS | |
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NEW CASTLE INDUSTRIAL TRACK TRAIL, PHASE 3

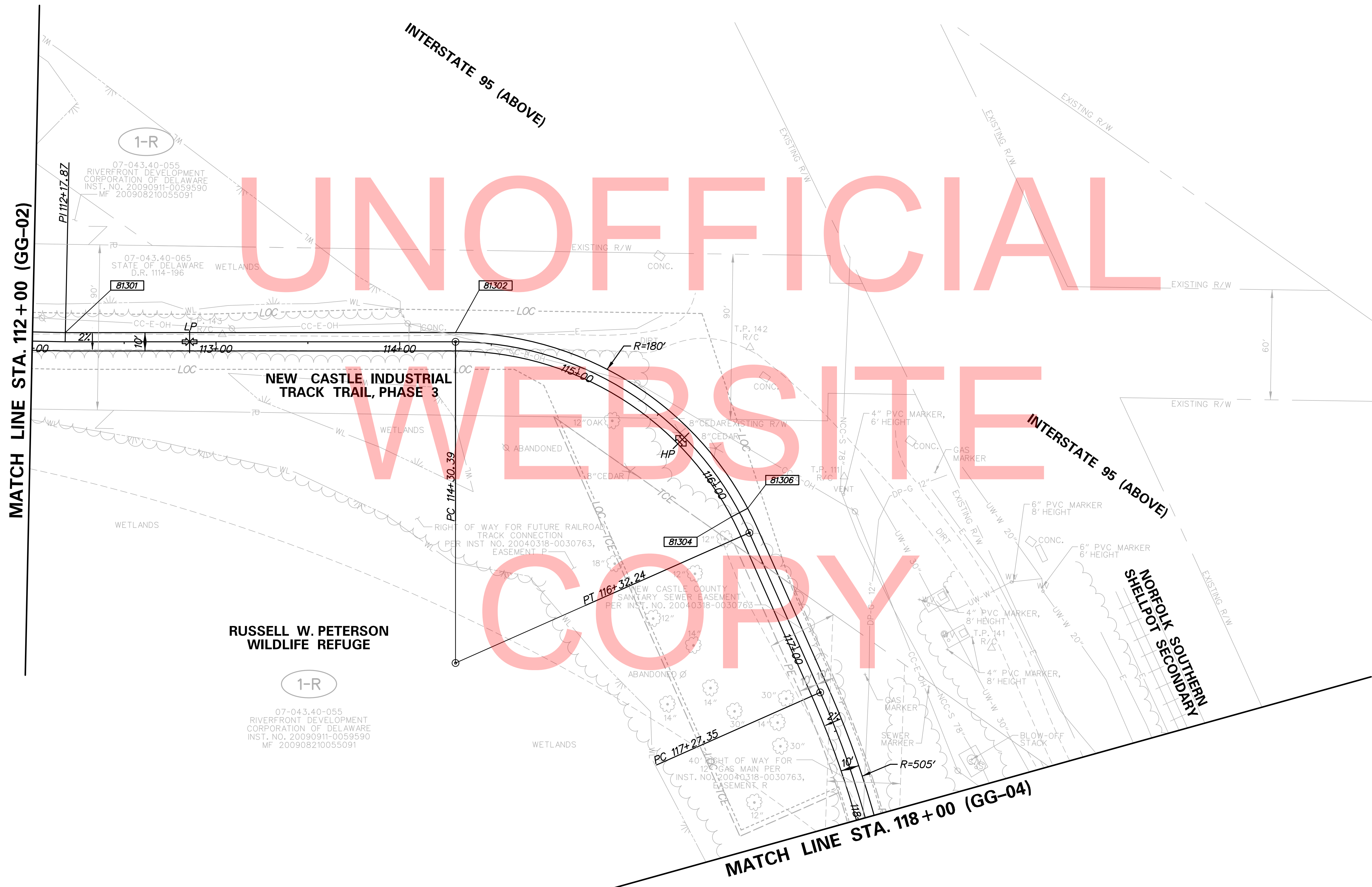
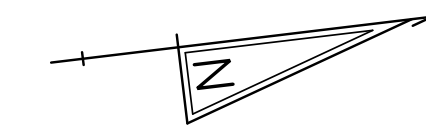
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|------------|------------------|----------|
| CONTRACT | BRIDGE NO. | X |
| T201330009 | DESIGNED BY: DAD | |
| COUNTY | CHECKED BY: JRR | |
| NEW CASTLE | | |

GRADES AND GEOMETRICS

| |
|--------------|
| GG-02 |
| SHEET NO. |
| 29 |
| TOTAL SHTS. |
| 205 |

| COORDINATE LIST | | | | |
|-----------------|-----------|---------|-------------|-------------|
| POINT NO. | STATION | OFFSET | NORTHING | EASTING |
| 81301 | 112+17.82 | -5.0000 | 626339.2523 | 610897.3689 |
| 81302 | 114+30.39 | -5.0000 | 626550.2005 | 610922.7421 |
| 81304 | 116+20.00 | 5.0000 | 626687.3473 | 611040.3592 |
| 81306 | 116+20.00 | -5.0000 | 626696.6792 | 611036.7654 |

NOTE: OFFSETS SHOWN WITH A NEGATIVE SIGN ARE TO THE LEFT OF THE CONSTRUCTION BASELINE

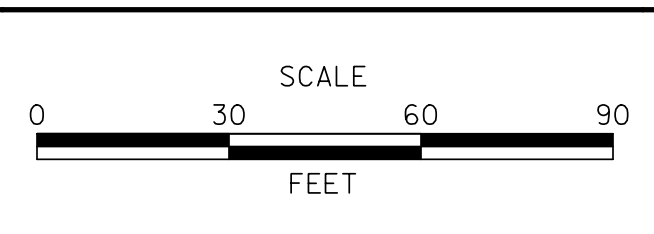


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DELAWARE
DEPARTMENT OF TRANSPORTATION

| ADDENDUMS / REVISIONS |
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**NEW CASTLE INDUSTRIAL
TRACK TRAIL, PHASE 3**

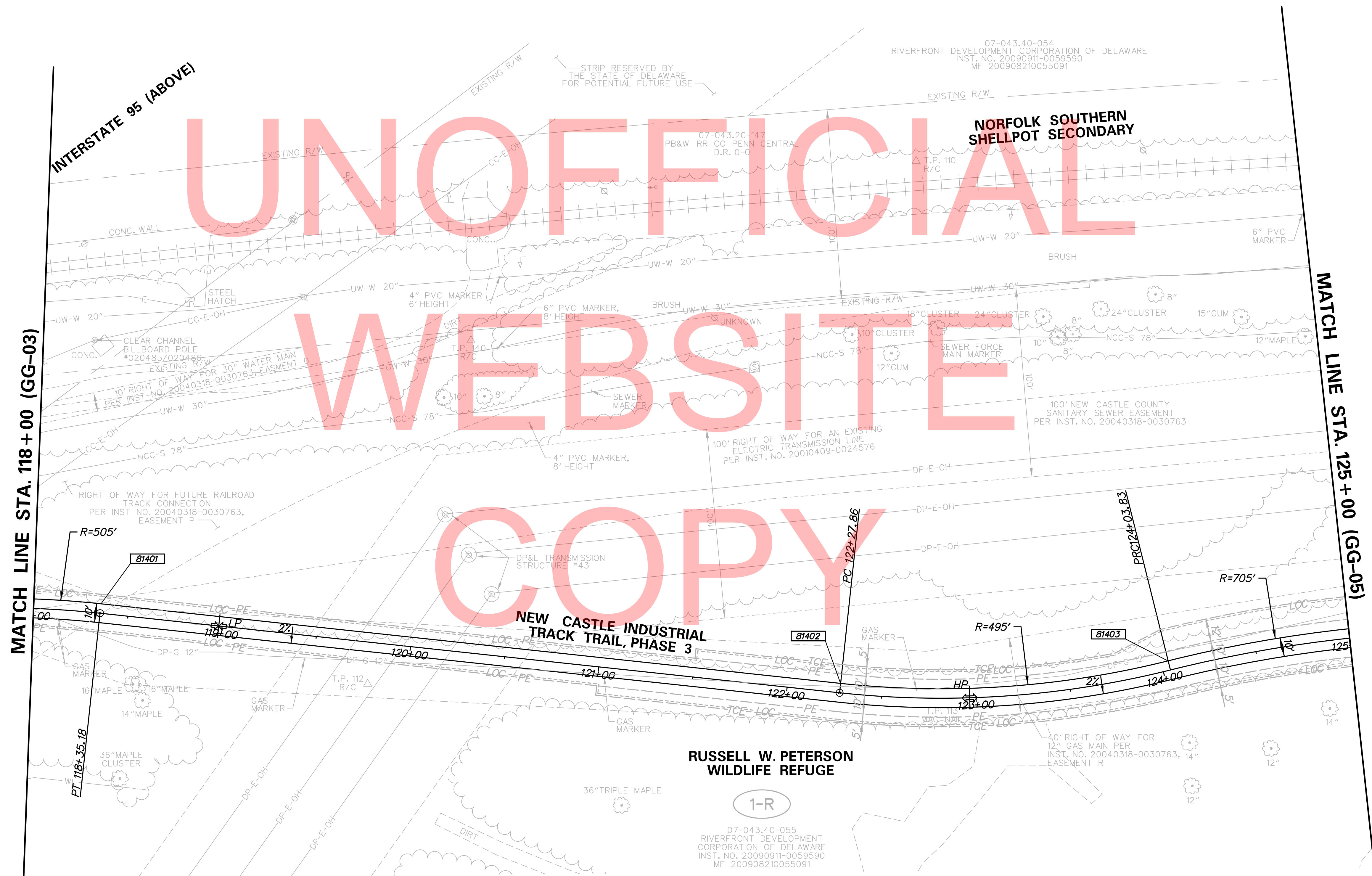
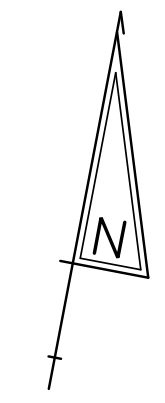
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|------------------------|-------------------------------------|
| CONTRACT T201330009 | BRIDGE NO. X |
| COUNTY NEW CASTLE | DESIGNED BY: DAD CHECKED BY: JRR |

GRADES AND GEOMETRICS

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| GG-03 |
| SHEET NO. 30 |
| TOTAL SHTS. 205 |

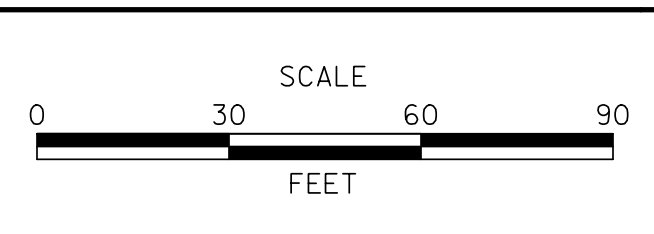
| COORDINATE LIST | | | | |
|-----------------|-----------|---------|-------------|-------------|
| POINT NO. | STATION | OFFSET | NORTHING | EASTING |
| 81401 | 118+35.18 | -5.0000 | 626749.1945 | 611246.3341 |
| 81402 | 122+27.86 | -5.0000 | 626781.3586 | 611637.6890 |
| 81403 | 124+03.69 | -5.0000 | 626825.5183 | 611805.1461 |

NOTE: OFFSETS SHOWN WITH A NEGATIVE SIGN ARE TO THE LEFT OF THE CONSTRUCTION BASELINE



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| ADDENDUMS / REVISIONS |
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| CONTRACT | BRIDGE NO. | X |
| T201330009 | DESIGNED BY: DAD | |
| COUNTY | CHECKED BY: JRR | |
| NEW CASTLE | | |

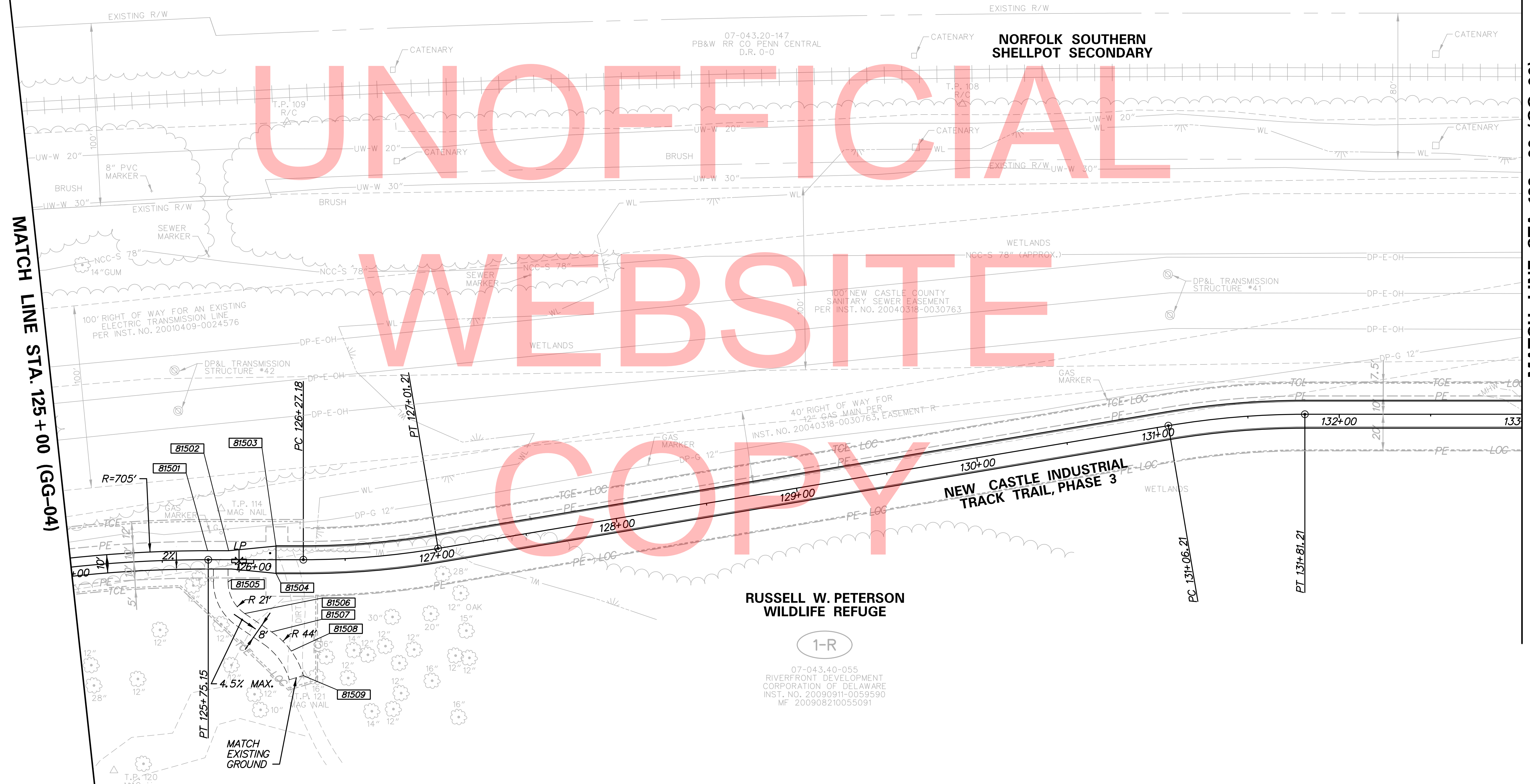
| |
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| GG-04 |
| SHEET NO. |
| 31 |
| TOTAL SHTS. |
| 205 |

| COORDINATE LIST | | | | | |
|-----------------|-----------|---------|-------------|-------------|--|
| POINT NO. | STATION | OFFSET | NORTHING | EASTING | |
| 81501 | 125+74.84 | -4.9213 | 626878.2018 | 611968.8062 | |
| 81502 | 125+86.32 | -4.9212 | 626880.3613 | 611980.0839 | |
| 81503 | 126+12.19 | -7.4583 | 626887.7188 | 612005.0174 | |
| 81504 | 126+12.19 | 7.4584 | 626873.0683 | 612007.8227 | |
| 81505 | 125+86.00 | 12.1347 | 626863.5492 | 611982.9757 | |
| 81506 | 125+95.13 | 29.4605 | 626848.2503 | 611995.2044 | |
| 81507 | 126+09.83 | 39.5284 | 626841.1265 | 612011.5351 | |
| 81508 | 126+20.57 | 49.9715 | 626832.8888 | 612024.0437 | |
| 81509 | 126+27.18 | 63.4107 | 626820.9327 | 612033.0644 | |

NOTE: OFFSETS SHOWN WITH A NEGATIVE SIGN ARE TO THE LEFT OF THE CONSTRUCTION BASELINE

07-043.40-054
RIVERFRONT DEVELOPMENT CORPORATION OF DELAWARE
INST. NO. 20090911-0059590
MF 200908210055091

RUSSELL W. PETERSON
WILDLIFE REFUGE



UNOFFICIAL

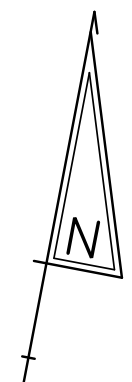
WEBSITE

COPY

RUSSELL W. PETERSON
WILDLIFE REFUGE

1-R

07-043.40-055
RIVERFRONT DEVELOPMENT CORPORATION OF DELAWARE
INST. NO. 20090911-0059590
MF 200908210055091



MATCH LINE STA. 125+00 (GG-04)

MATCH LINE STA. 133+00 (GG-06)

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| ADDENDUMS / REVISIONS |
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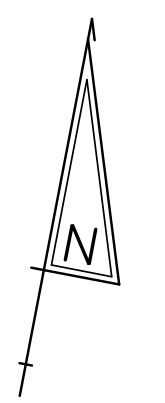


NEW CASTLE INDUSTRIAL
TRACK TRAIL, PHASE 3

| | | |
|------------|------------------|---|
| CONTRACT | BRIDGE NO. | X |
| T201330009 | DESIGNED BY: DAD | |
| COUNTY | CHECKED BY: JRR | |
| NEW CASTLE | | |

GRADES AND GEOMETRICS

| |
|-------------|
| GG-05 |
| SHEET NO. |
| 32 |
| TOTAL SHTS. |
| 205 |

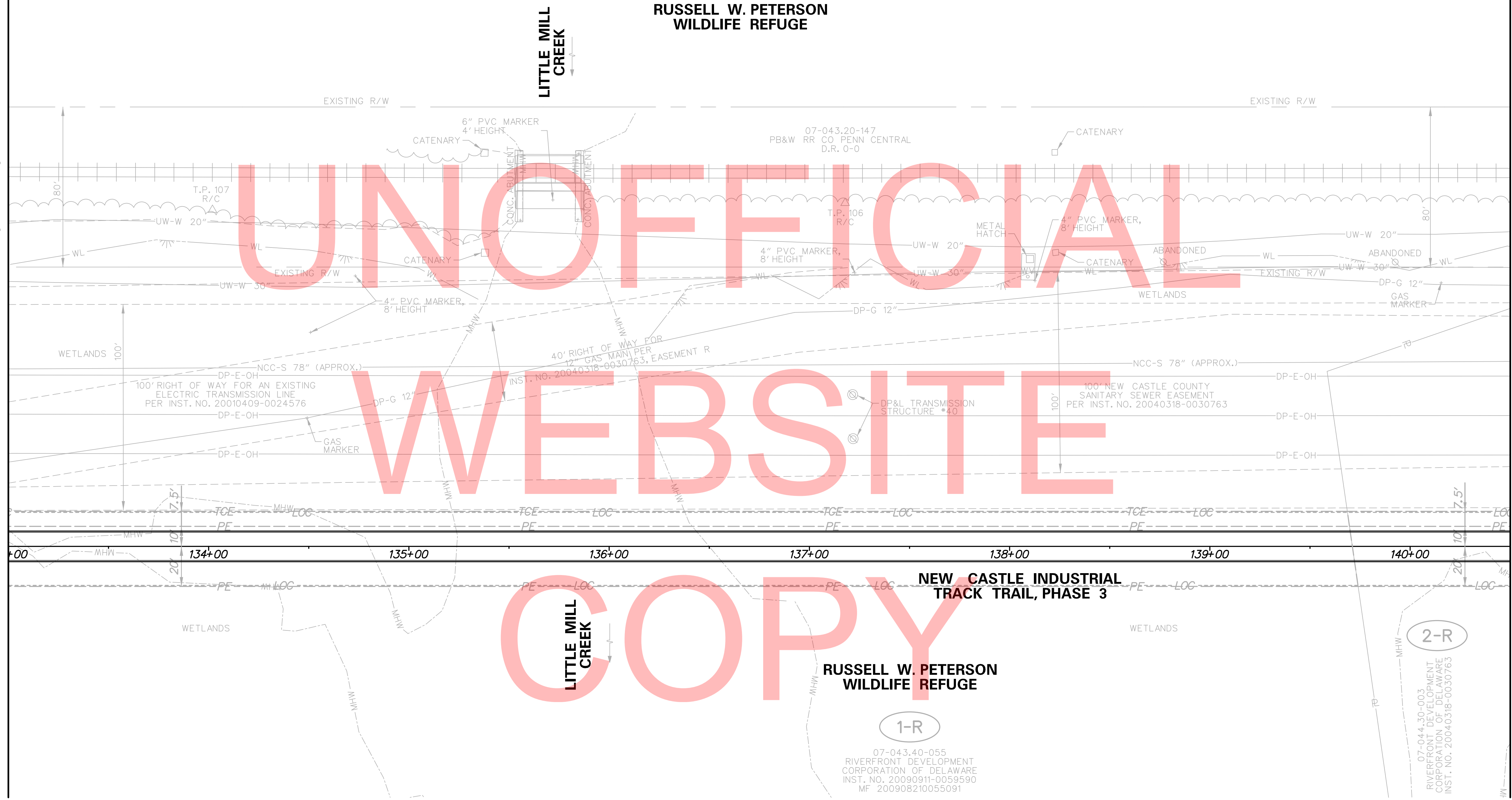


07-043.40-054
RIVERFRONT DEVELOPMENT CORPORATION OF DELAWARE
INST. NO. 20090911-0059590
MF 200908210055091

RUSSELL W. PETERSON WILDLIFE REFUGE

MATCH LINE STA. 133 + 00 (GG-05)

MATCH LINE STA. 140 + 50 (GG-07)



UNOFFICIAL

WEBSITE

COPY

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| ADDENDUMS / REVISIONS | |
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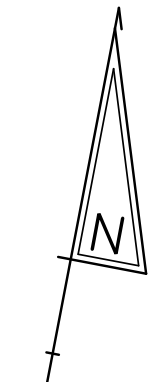


NEW CASTLE INDUSTRIAL TRACK TRAIL, PHASE 3

| | | |
|------------|------------------|----------|
| CONTRACT | BRIDGE NO. | X |
| T201330009 | DESIGNED BY: DAD | |
| COUNTY | CHECKED BY: JRR | |
| NEW CASTLE | | |

GRADES AND GEOMETRICS

| |
|-------------|
| GG-06 |
| SHEET NO. |
| 33 |
| TOTAL SHTS. |
| 205 |



07-043.40-054
RIVERFRONT DEVELOPMENT CORPORATION OF DELAWARE
INST. NO. 20090911-0059590
MF 200908210055091

07-044.30-001
DELMARVA POWER & LIGHT COMPANY
D.R. 1428-117
MF 1750
25' R.R. EASEMENT PER MF 1750

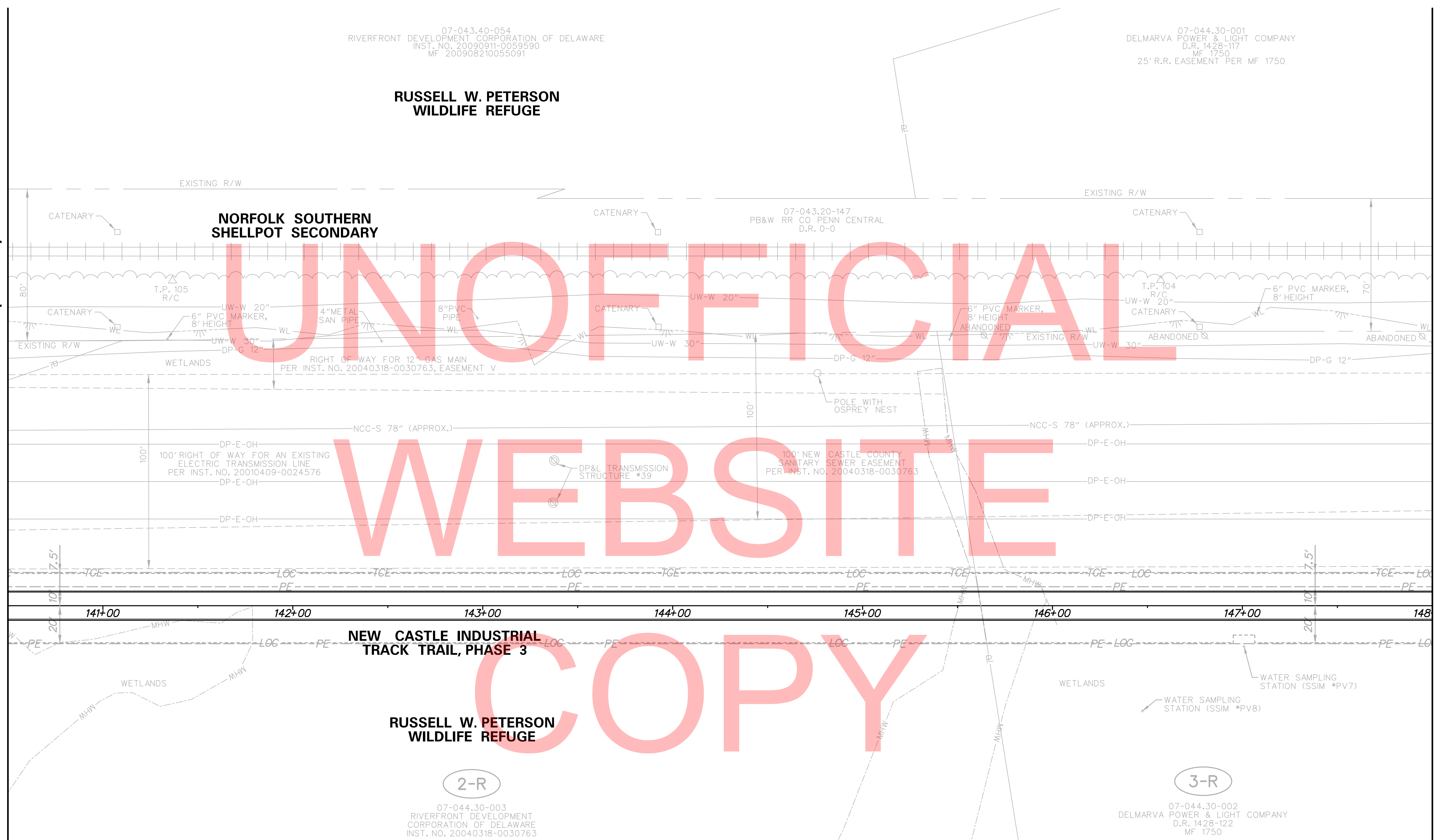
**RUSSELL W. PETERSON
WILDLIFE REFUGE**

**NORFOLK SOUTHERN
SHELLPOT SECONDARY**

07-043.20-147
PB&W RR CO PENN CENTRAL
D.R. 0-0

MATCH LINE STA. 140 + 50 (GG-06)

MATCH LINE STA. 148 + 00 (GG-08)



UNOFFICIAL WEBSITE COPY

**NEW CASTLE INDUSTRIAL
TRACK TRAIL, PHASE 3**

**RUSSELL W. PETERSON
WILDLIFE REFUGE**

2-R

07-044.30-003
RIVERFRONT DEVELOPMENT CORPORATION OF DELAWARE
INST. NO. 20040318-0030763

3-R

07-044.30-002
DELMARVA POWER & LIGHT COMPANY
D.R. 1428-122
MF 1750

N:\31896-002\CADD\GG07_LIT3.DGN



| ADDENDUMS / REVISIONS | |
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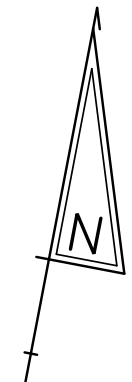


**NEW CASTLE INDUSTRIAL
TRACK TRAIL, PHASE 3**

| | | |
|------------|------------------|----------|
| CONTRACT | BRIDGE NO. | X |
| T201330009 | DESIGNED BY: DAD | |
| COUNTY | CHECKED BY: JRR | |
| NEW CASTLE | | |

GRADES AND GEOMETRICS

| |
|--------------|
| GG-07 |
| SHEET NO. |
| 34 |
| TOTAL SHTS. |
| 205 |

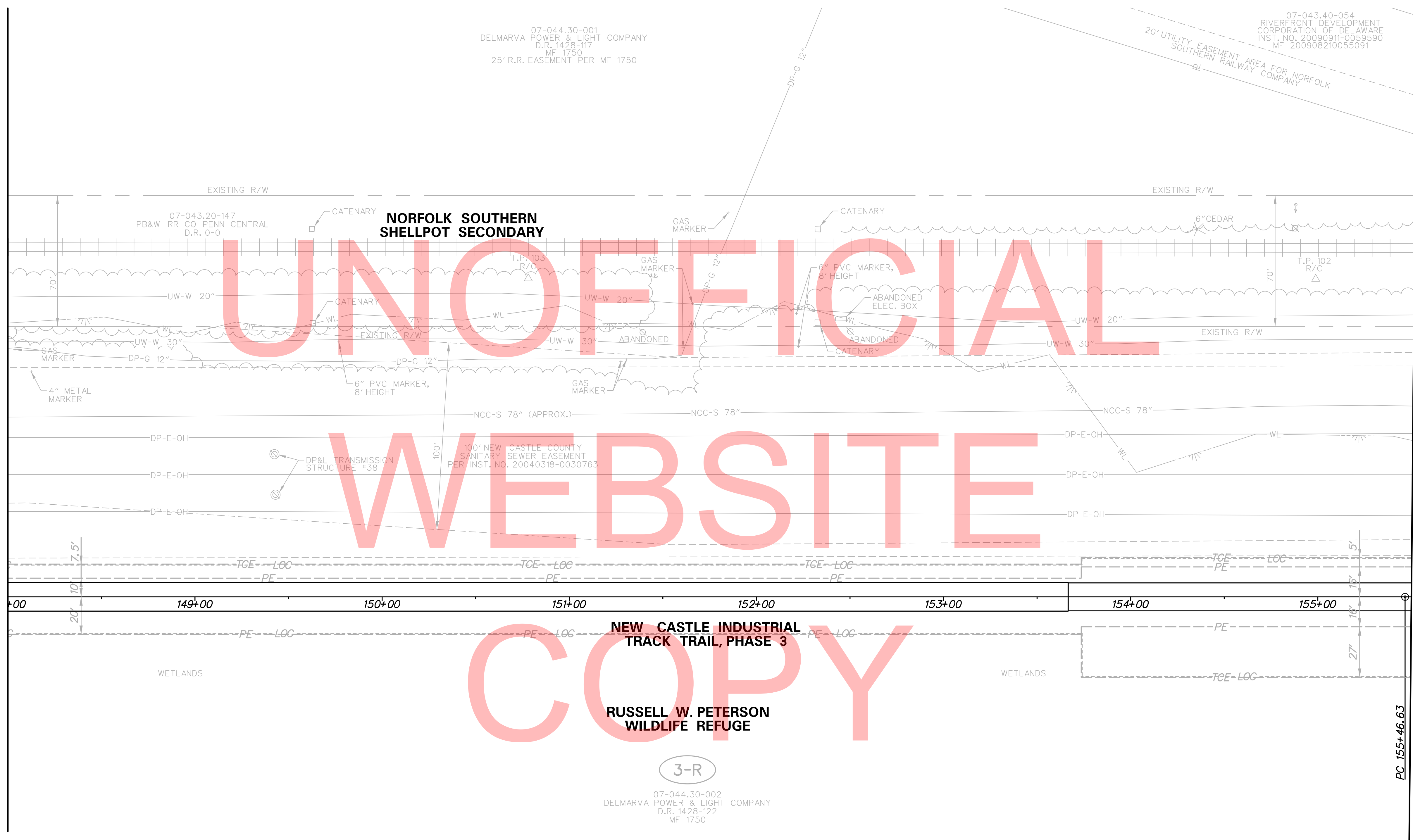


07-044.30-001
 DELMARVA POWER & LIGHT COMPANY
 D.R. 1428-117
 MF 1750
 25' R.R. EASEMENT PER MF 1750

07-043.40-054
 RIVERFRONT DEVELOPMENT CORPORATION OF DELAWARE
 INST. NO. 20090911-005590
 MF 200908210055091
 20' UTILITY EASEMENT AREA FOR NORFOLK SOUTHERN RAILWAY COMPANY

MATCH LINE STA. 148+00 (GG-07)

MATCH LINE STA. 155+50 (GG-09)



UNOFFICIAL

WEBSITE

COPY

NEW CASTLE INDUSTRIAL TRACK TRAIL, PHASE 3

RUSSELL W. PETERSON WILDLIFE REFUGE

3-R

07-044.30-002
 DELMARVA POWER & LIGHT COMPANY
 D.R. 1428-122
 MF 1750

N:\31896-002\CADD\GG08_1TT3.DGN



| ADDENDUMS / REVISIONS | |
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NEW CASTLE INDUSTRIAL TRACK TRAIL, PHASE 3

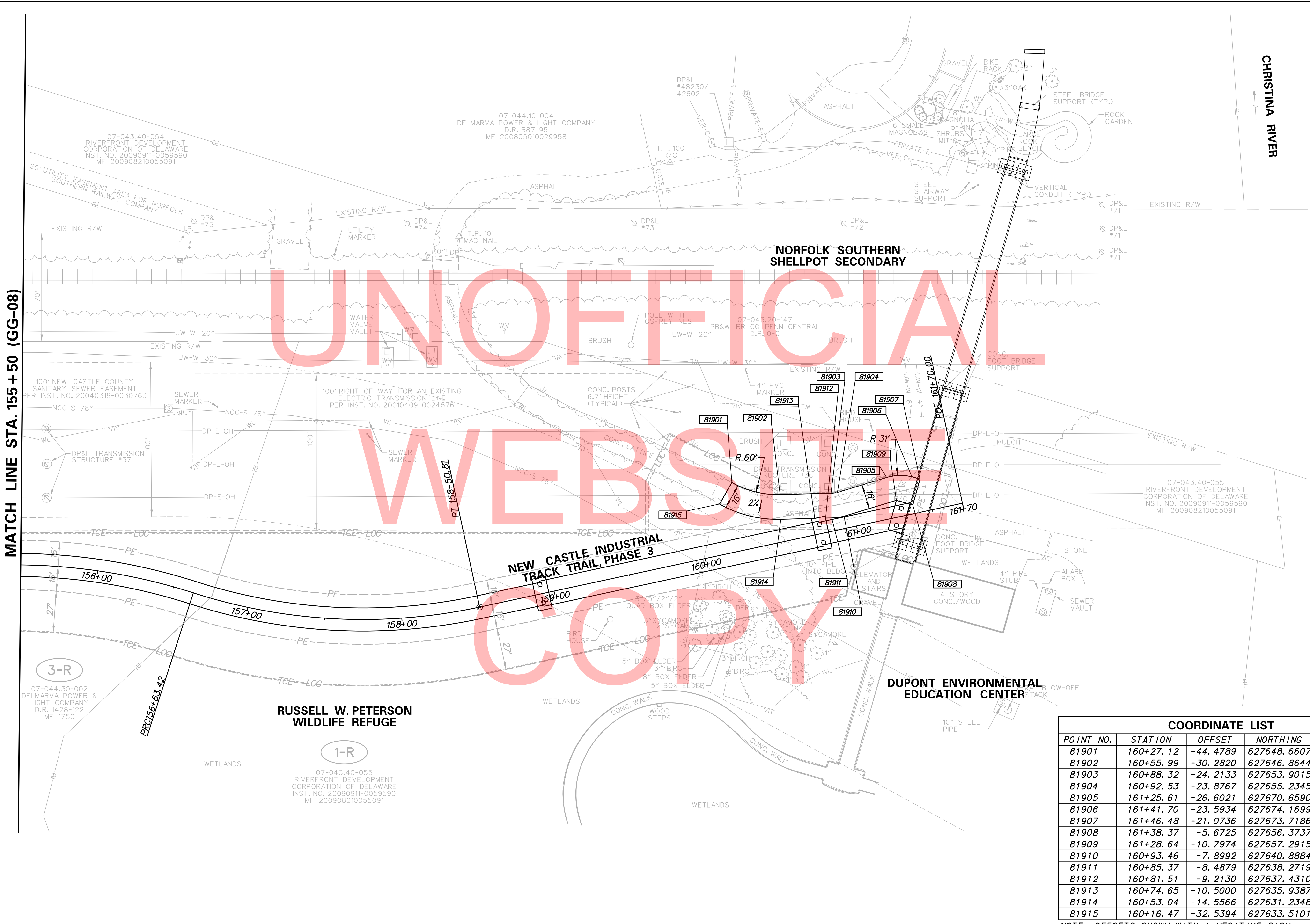
| | | |
|------------|------------------|----------|
| CONTRACT | BRIDGE NO. | X |
| T201330009 | DESIGNED BY: DAD | |
| COUNTY | CHECKED BY: JRR | |
| NEW CASTLE | | |

GRADES AND GEOMETRICS

| |
|-------------|
| GG-08 |
| SHEET NO. |
| 35 |
| TOTAL SHTS. |
| 205 |

MATCH LINE STA. 155 + 50 (GG-08)

UNOFFICIAL
WEBSITE
COPY

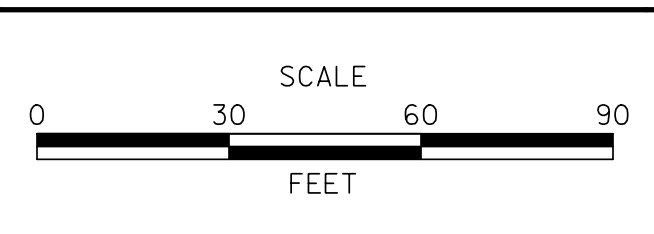


| COORDINATE LIST | | | | |
|-----------------|-----------|----------|-------------|-------------|
| POINT NO. | STATION | OFFSET | NORTHING | EASTING |
| 81901 | 160+27.12 | -44.4789 | 627648.6607 | 615312.0024 |
| 81902 | 160+55.99 | -30.2820 | 627646.8644 | 615344.1270 |
| 81903 | 160+88.32 | -24.2133 | 627653.9015 | 615376.2618 |
| 81904 | 160+92.53 | -23.8767 | 627655.2345 | 615380.2666 |
| 81905 | 161+25.61 | -26.6021 | 627670.6590 | 615409.6548 |
| 81906 | 161+41.70 | -23.5934 | 627674.1699 | 615425.6385 |
| 81907 | 161+46.48 | -21.0736 | 627673.7186 | 615431.0281 |
| 81908 | 161+38.37 | -5.6725 | 627656.3737 | 615429.5758 |
| 81909 | 161+28.64 | -10.7974 | 627657.2915 | 615418.6142 |
| 81910 | 160+93.46 | -7.8992 | 627640.8884 | 615387.3616 |
| 81911 | 160+85.37 | -8.4879 | 627638.2719 | 615379.6845 |
| 81912 | 160+81.51 | -9.2130 | 627637.4310 | 615375.8447 |
| 81913 | 160+74.65 | -10.5000 | 627635.9387 | 615369.0302 |
| 81914 | 160+53.04 | -14.5566 | 627631.2348 | 615347.5497 |
| 81915 | 160+16.47 | -32.5394 | 627633.5101 | 615306.8586 |

NOTE: OFFSETS SHOWN WITH A NEGATIVE SIGN ARE TO THE LEFT OF THE CONSTRUCTION BASELINE



| ADDENDUMS / REVISIONS |
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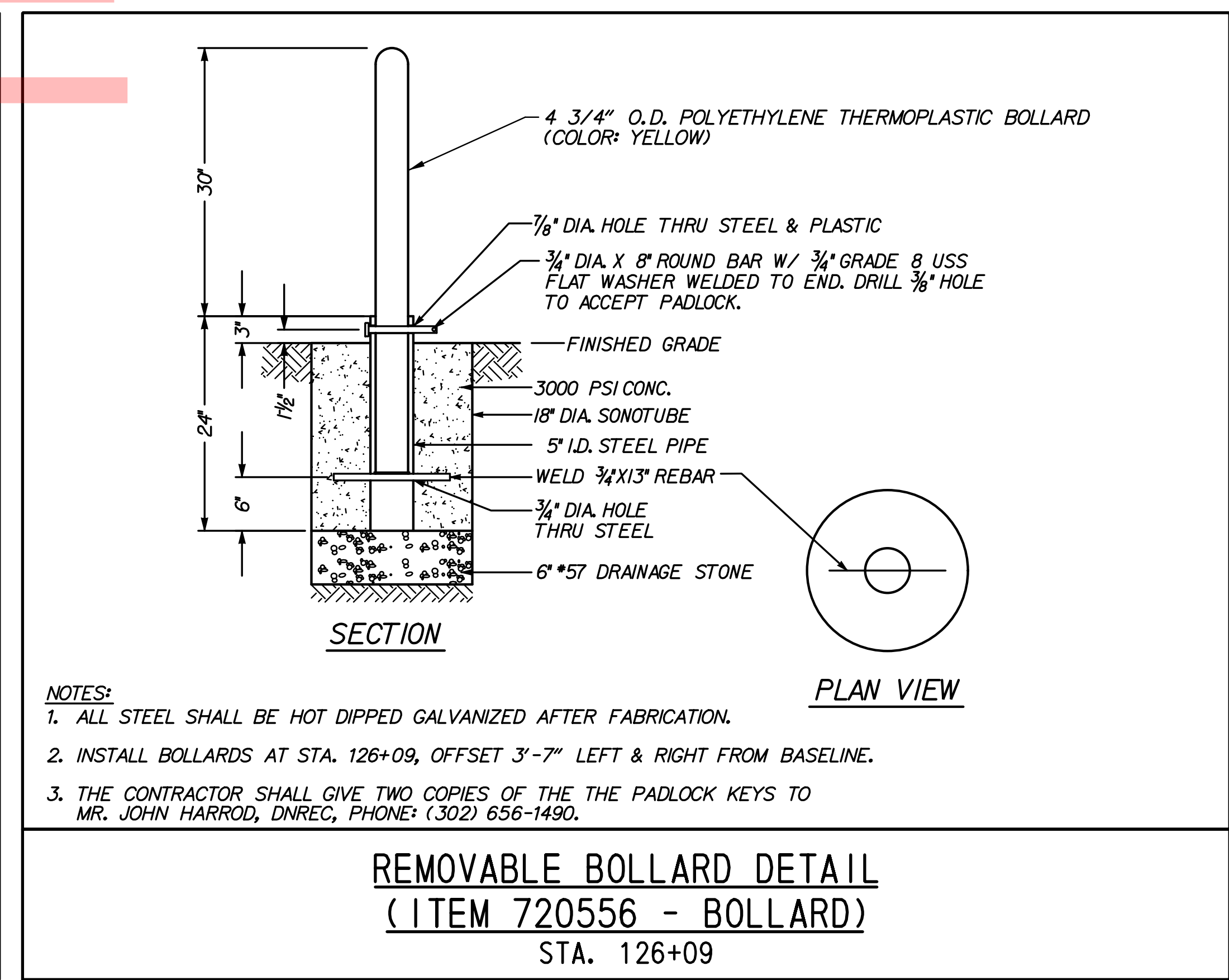
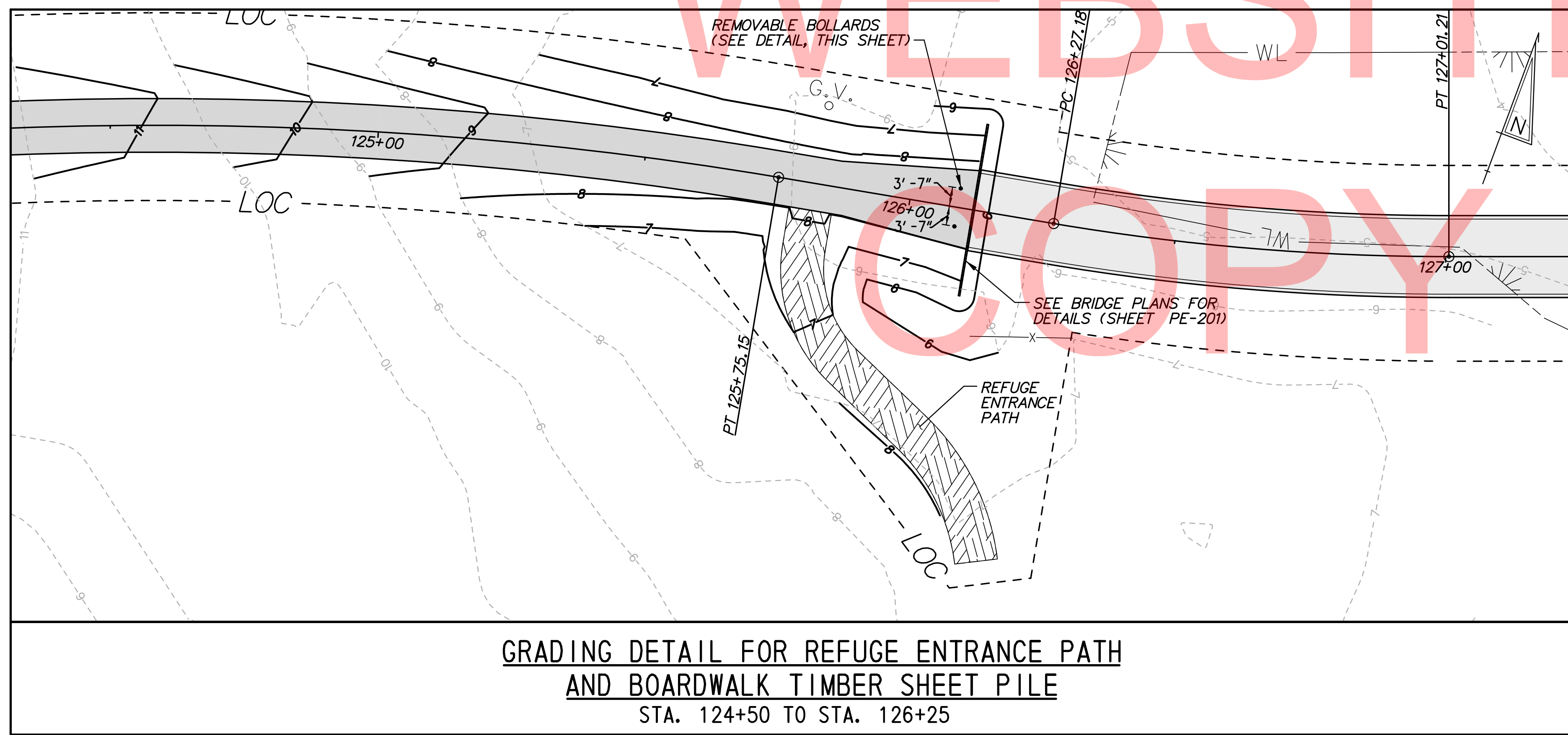
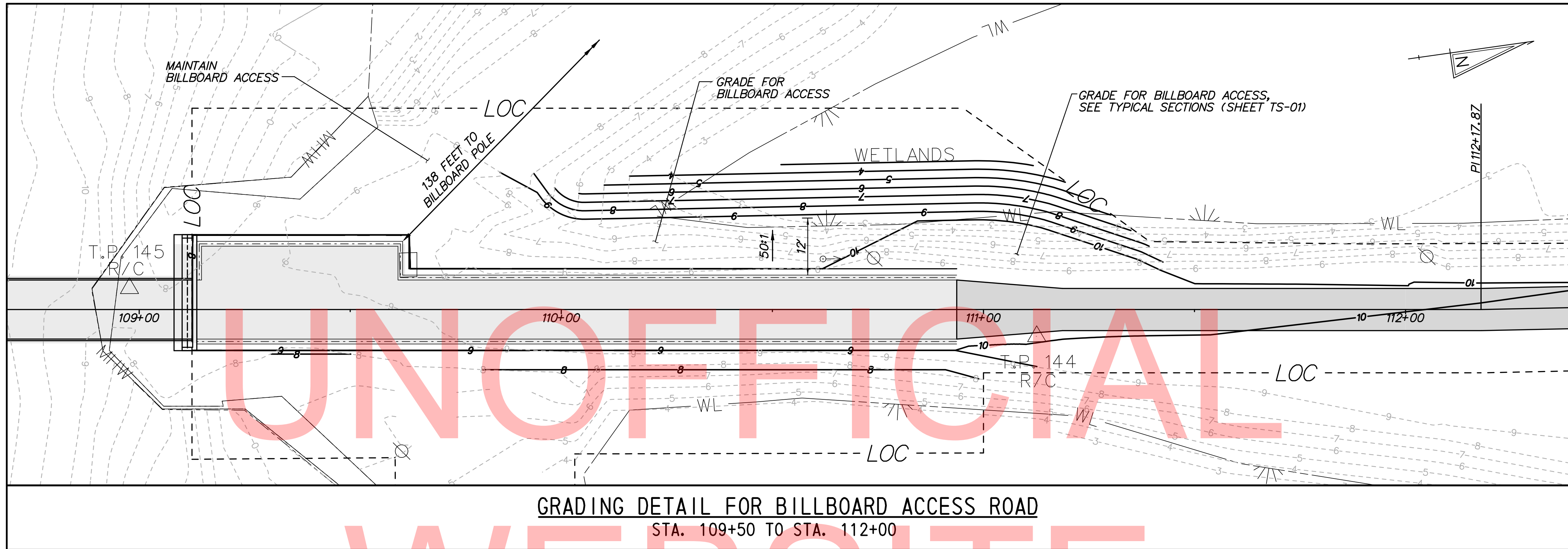


NEW CASTLE INDUSTRIAL TRACK TRAIL, PHASE 3

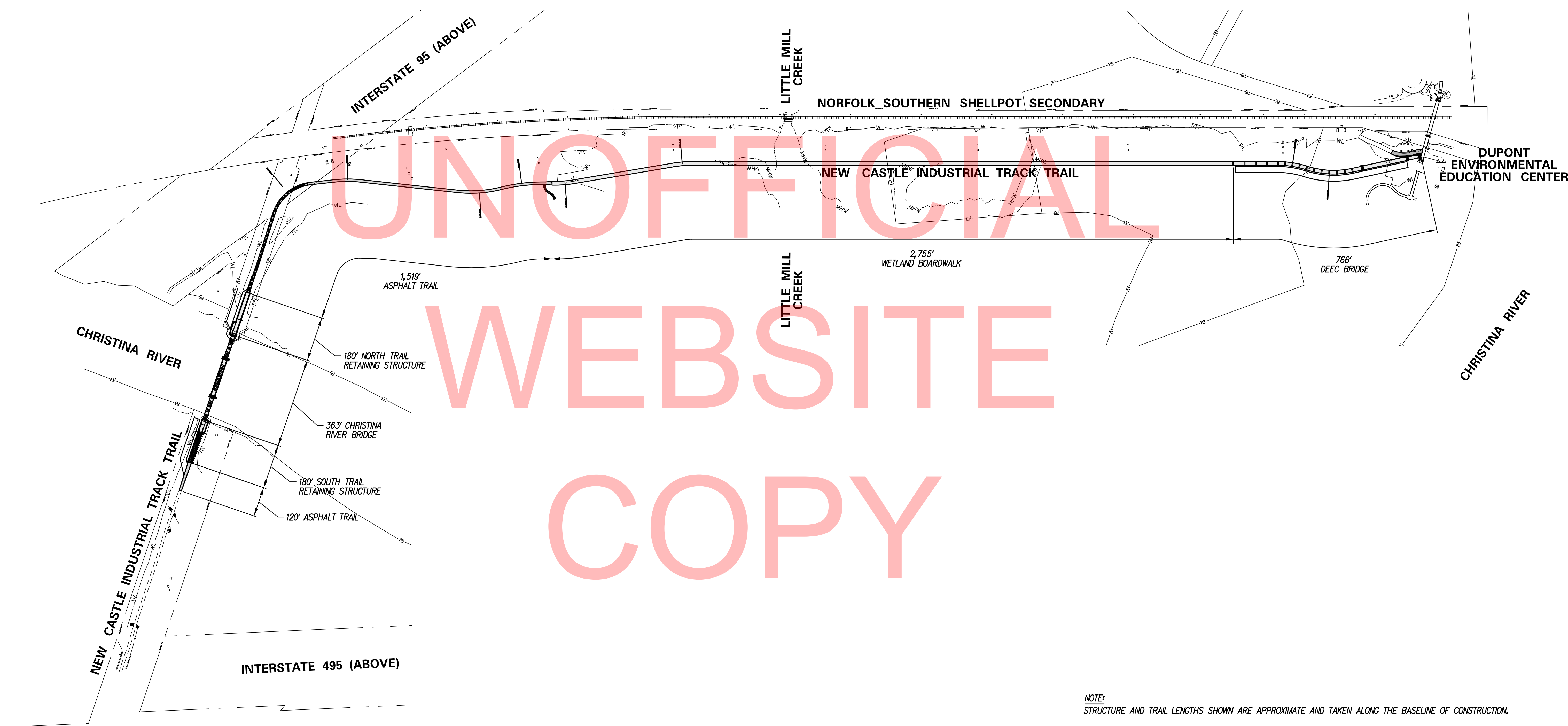
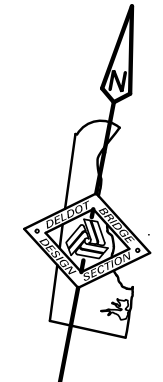
| | | |
|------------|------------------|-----------------------|
| CONTRACT | BRIDGE NO. | X |
| T201330009 | DESIGNED BY: DAD | GRADES AND GEOMETRICS |
| COUNTY | CHECKED BY: JRR | |
| NEW CASTLE | | |

| |
|-------------|
| GG-09 |
| SHEET NO. |
| 36 |
| TOTAL SHTS. |
| 205 |

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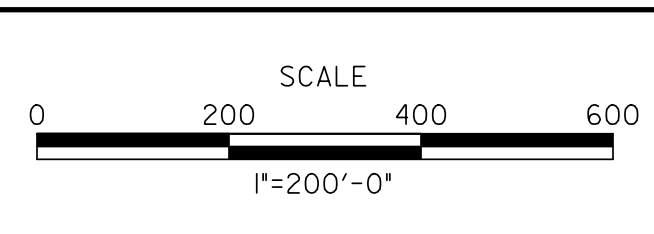
UNOFFICIAL
WEBSITE
COPY

NOTE:
STRUCTURE AND TRAIL LENGTHS SHOWN ARE APPROXIMATE AND TAKEN ALONG THE BASELINE OF CONSTRUCTION.

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| ADDENDUMS / REVISIONS | |
|-----------------------|--|
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**NEW CASTLE INDUSTRIAL
TRACK TRAIL, PHASE 3**

| | | |
|------------|--------------|----------|
| CONTRACT | BRIDGE NO. | X |
| T201330009 | DESIGNED BY: | NAH |
| COUNTY | CHECKED BY: | WAG |
| NEW CASTLE | | |

**STRUCTURES
LOCATION MAP**

| |
|-------------|
| SLM-01 |
| SHEET NO. |
| 38 |
| TOTAL SHTS. |
| 205 |

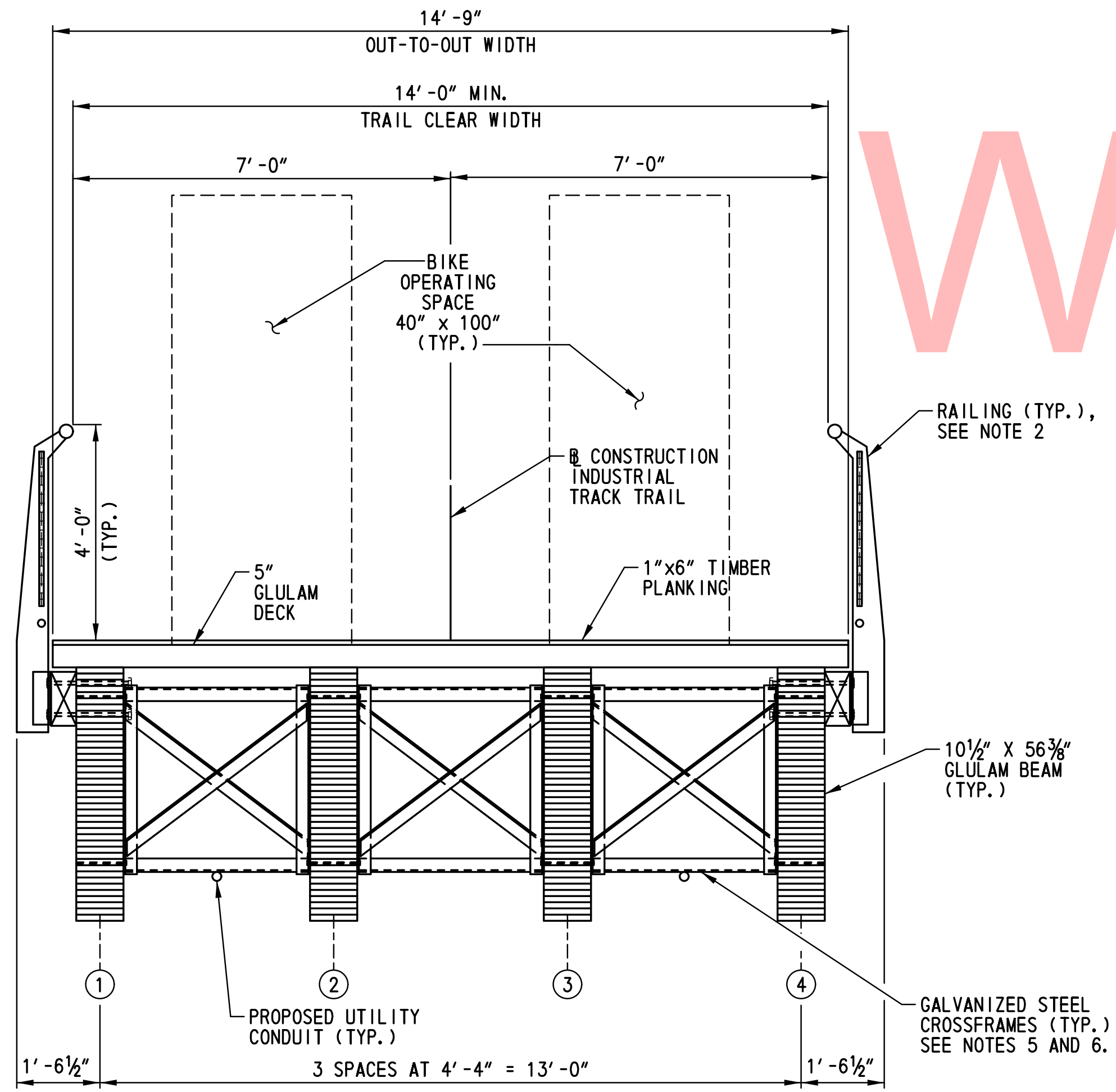
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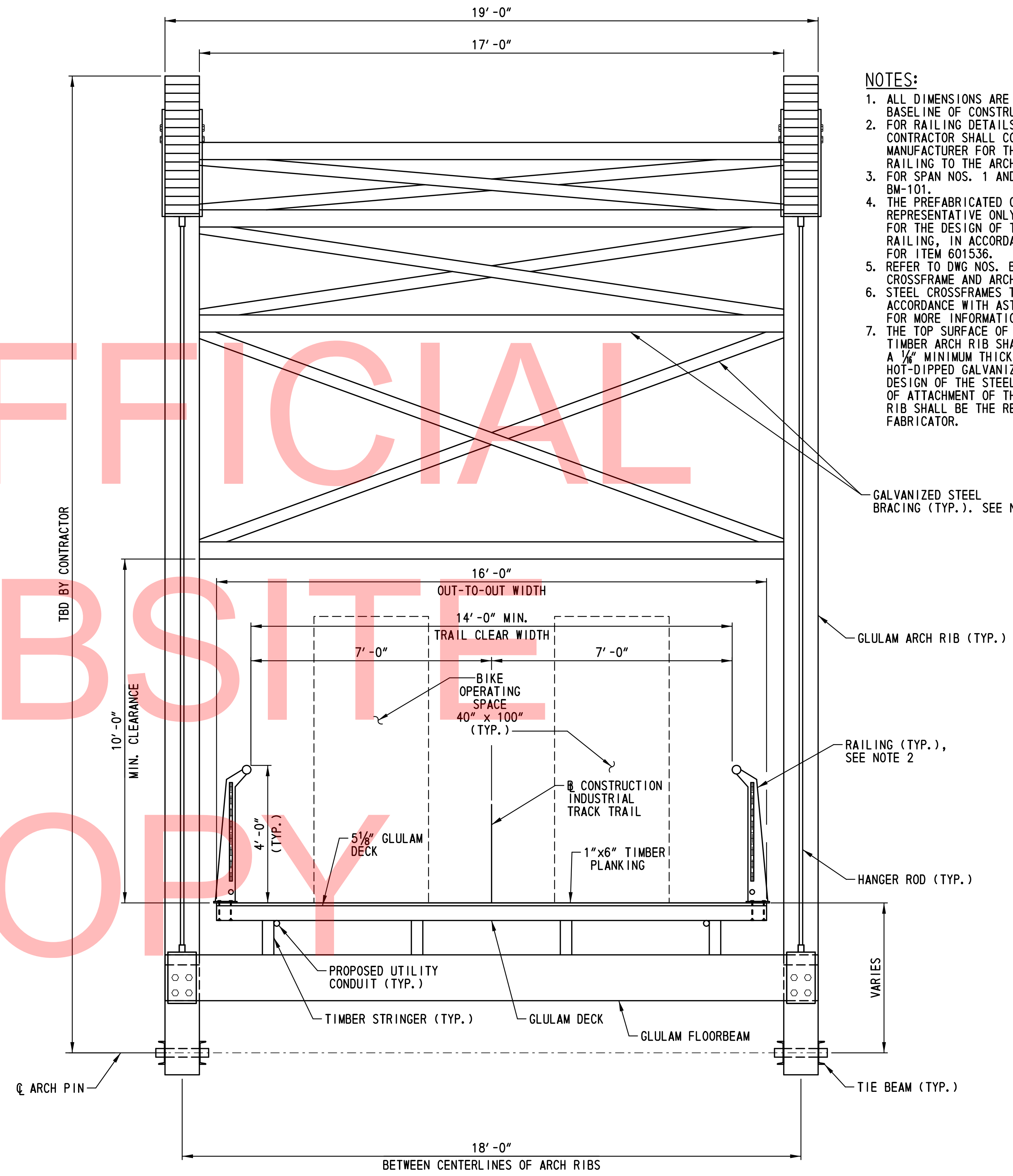
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NOTES:

1. ALL DIMENSIONS ARE MEASURED PERPENDICULAR TO THE BASELINE OF CONSTRUCTION INDUSTRIAL TRACK TRAIL.
2. FOR RAILING DETAILS, SEE DWG. NO. RL-101. THE CONTRACTOR SHALL COORDINATE WITH THE ARCH MANUFACTURER FOR THE DESIGN AND ATTACHMENT OF THE RAILING TO THE ARCH.
3. FOR SPAN NOS. 1 AND 3 BEAM ELEVATIONS, SEE DWG. NO. BM-101.
4. THE PREFABRICATED GLULAM TIMBER ARCH SHOWN IS REPRESENTATIVE ONLY. THE CONTRACTOR IS RESPONSIBLE FOR THE DESIGN OF THIS STRUCTURE, INCLUDING RAILING, IN ACCORDANCE WITH THE SPECIAL PROVISIONS FOR ITEM 601536.
5. REFER TO DWG NOS. BM-102 AND PN-101 FOR STEEL CROSSFRAME AND ARCH BRACING INFORMATION.
6. STEEL CROSSFRAMES TO BE HOT-DIPPED GALVANIZED IN ACCORDANCE WITH ASTM 123. REFER TO DRAWING BM-102 FOR MORE INFORMATION.
7. THE TOP SURFACE OF EACH PREFABRICATED GLULAM TIMBER ARCH RIB SHALL BE PROTECTED FULL LENGTH BY A 1/4" MINIMUM THICKNESS STEEL SHEET PROTECTION CAP, HOT-DIPPED GALVANIZED IN ACCORDANCE WITH ASTM A123. DESIGN OF THE STEEL PROTECTION CAP AND THE METHOD OF ATTACHMENT OF THE PROTECTIVE CAP TO EACH ARCH RIB SHALL BE THE RESPONSIBILITY OF THE ARCH FABRICATOR.

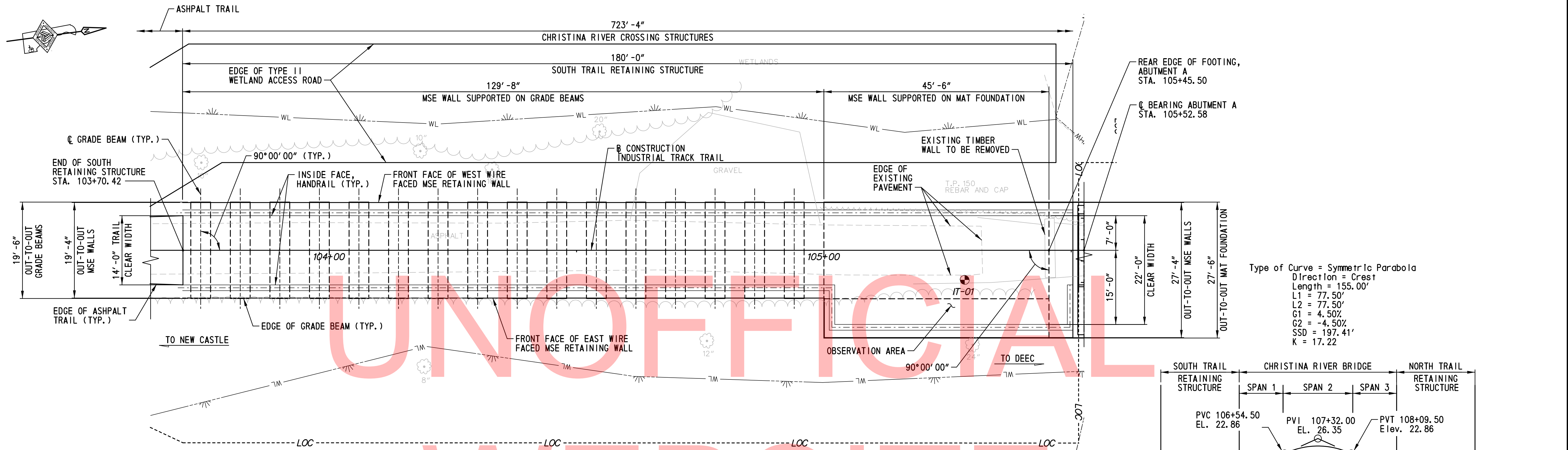


TYPICAL SECTION - SPANS 1 AND 3
SCALE: 1/2" = 1'-0"

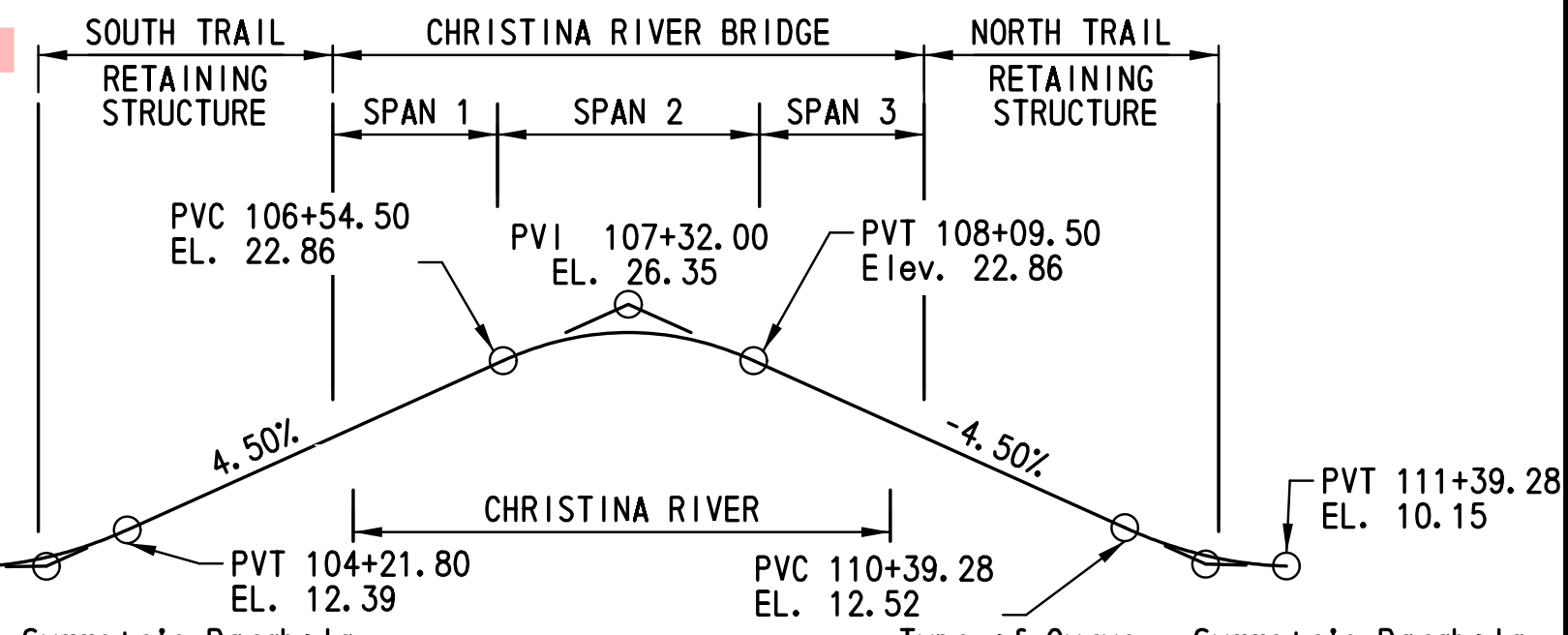


TYPICAL SECTION - SPAN 2 (GLULAM ARCH)
SCALE: 1/2" = 1'-0"

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Type of Curve = Symmetric Parabola
 Direction = Crest
 Length = 155.00'
 L1 = 77.50'
 L2 = 77.50'
 G1 = 4.50%
 G2 = -4.50%
 SSD = 197.41'
 K = 17.22

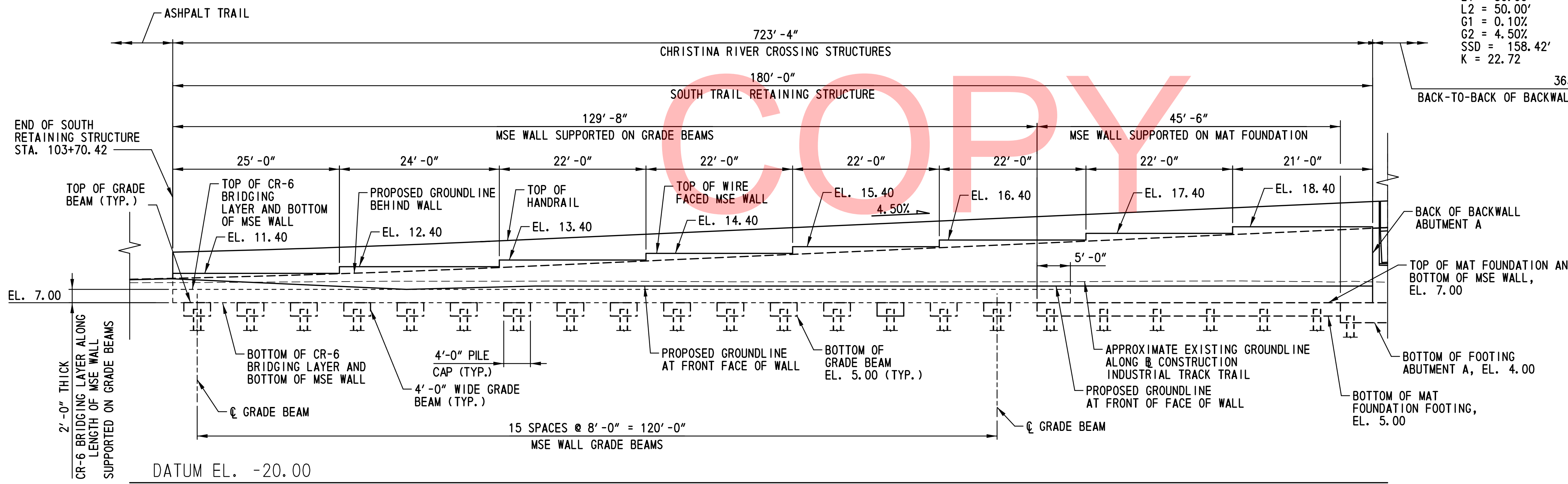


Type of Curve = Symmetric Parabola
 Direction = Sag
 Length = 100.00'
 L1 = 50.00'
 L2 = 50.00'
 G1 = 0.10%
 G2 = 4.50%
 SSD = 158.42'
 K = 22.72

Type of Curve = Symmetric Parabola
 Direction = Sag
 Length = 100.00'
 L1 = 50.00'
 L2 = 50.00'
 G1 = -4.50%
 G2 = -0.24%
 SSD = 164.38'
 K = 23.45

PLAN
SCALE: 1"=10'-0"

VERTICAL CURVE DATA

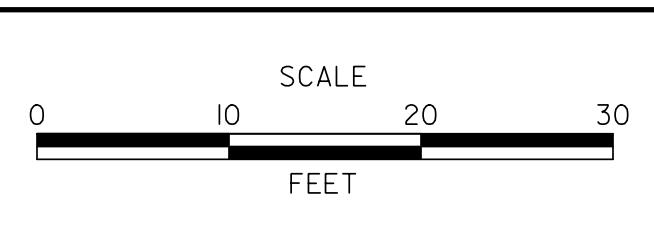


EAST WALL ELEVATION
SCALE: 1"=10'-0"

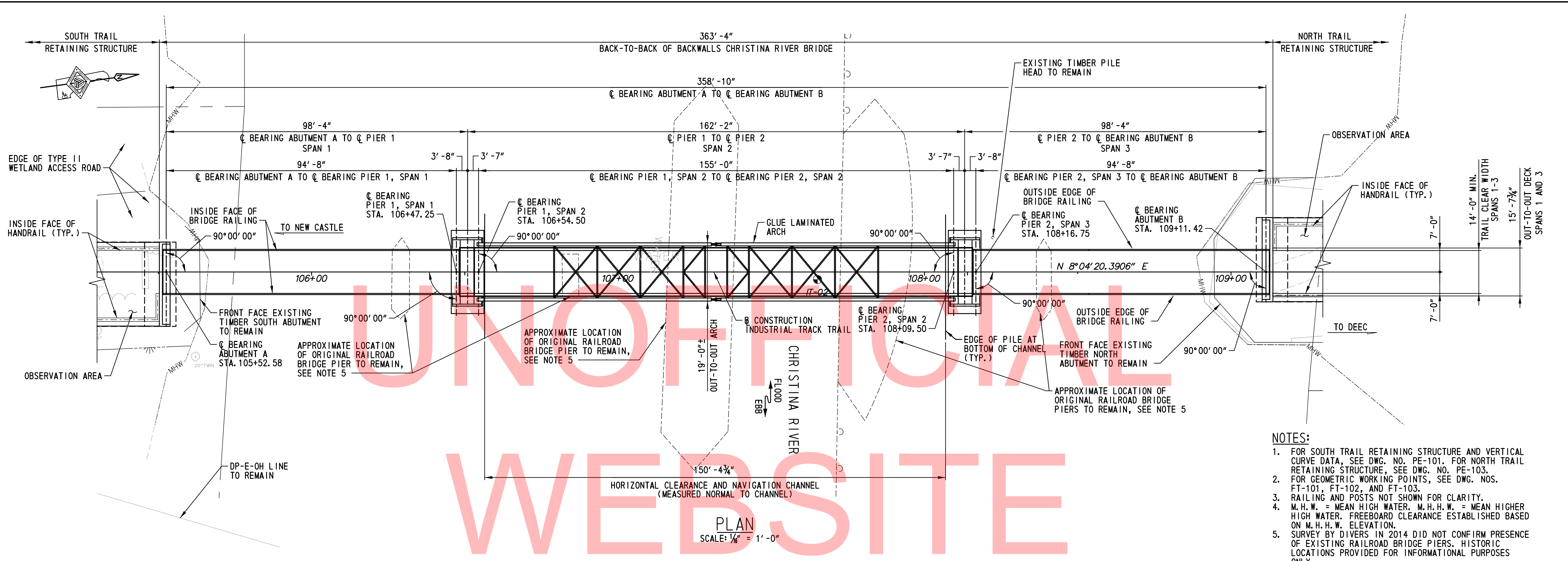
- NOTES:
- FOR CHRISTINA RIVER BRIDGE, SEE DWG. NO. PE-102. FOR NORTH TRAIL RETAINING STRUCTURE, SEE DWG. NO. PE-103.
 - EAST WALL ELEVATION SHOWN. WEST WALL ELEVATION IS SIMILAR TO EAST ELEVATION OF THE NORTH TRAIL RETAINING STRUCTURE, BUT OPPOSITE HAND. SEE DWG. NO. PE-103.
 - FOR GEOMETRIC WORKING POINTS, SEE DWG. NOS. FT-101, FT-102, AND FT-103.
 - RAILING AND POSTS NOT SHOWN FOR CLARITY. SEE DWG. NO. RL-102 FOR RAILING DETAILS.
 - THE HIGH STRENGTH GEOTEXTILE BRIDGING LAYER IS CONTINUOUS FROM STA. 103+70.42 TO STA. 105+05.00.

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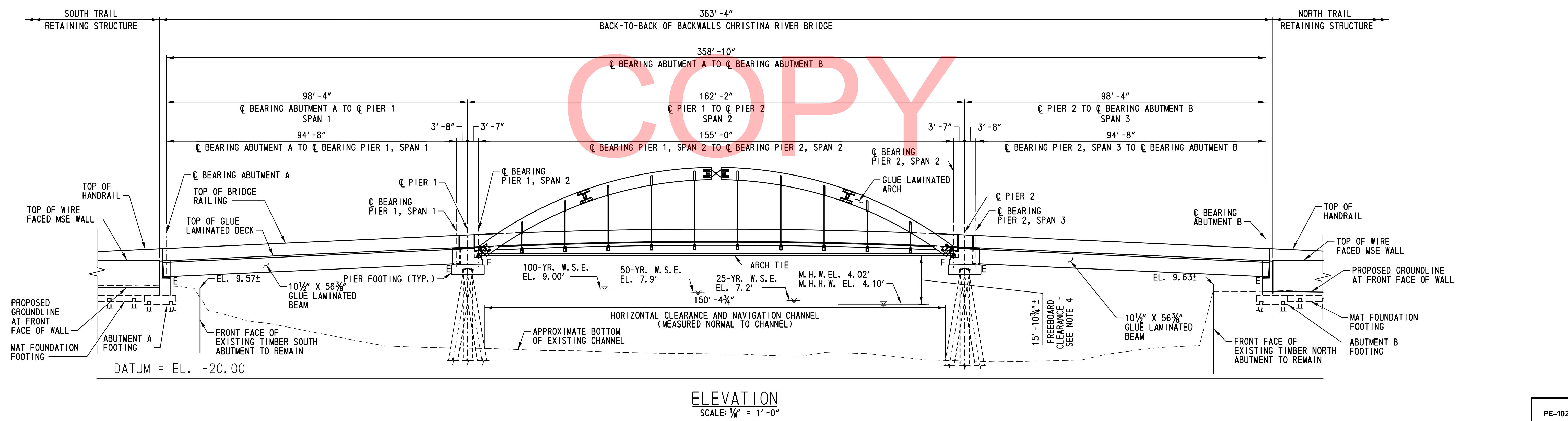
| ADDENDUMS / REVISIONS | |
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|------------------------|-------------------------------------|
| CONTRACT T201330009 | BRIDGE NO. X |
| COUNTY NEW CASTLE | DESIGNED BY: NAH CHECKED BY: WAG |

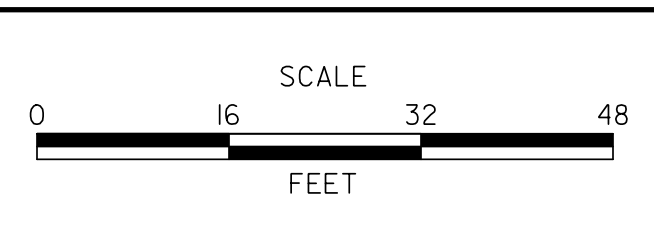


- NOTES:**
1. FOR SOUTH TRAIL RETAINING STRUCTURE AND VERTICAL CURVE DATA, SEE DWG. NO. PE-101. FOR NORTH TRAIL RETAINING STRUCTURE, SEE DWG. NO. PE-103.
 2. FOR GEOMETRIC WORKING POINTS, SEE DWG. NOS. FT-101, FT-102, AND FT-103.
 3. RAILING AND POSTS NOT SHOWN FOR CLARITY.
 4. M.H.W. = MEAN HIGH WATER. M.H.H.W. = MEAN HIGHER HIGH WATER. FREEBOARD CLEARANCE ESTABLISHED BASED ON M.H.H.W. ELEVATION.
 5. SURVEY BY DIVERS IN 2014 DID NOT CONFIRM PRESENCE OF EXISTING RAILROAD BRIDGE PIERS. HISTORIC LOCATIONS PROVIDED FOR INFORMATIONAL PURPOSES ONLY.

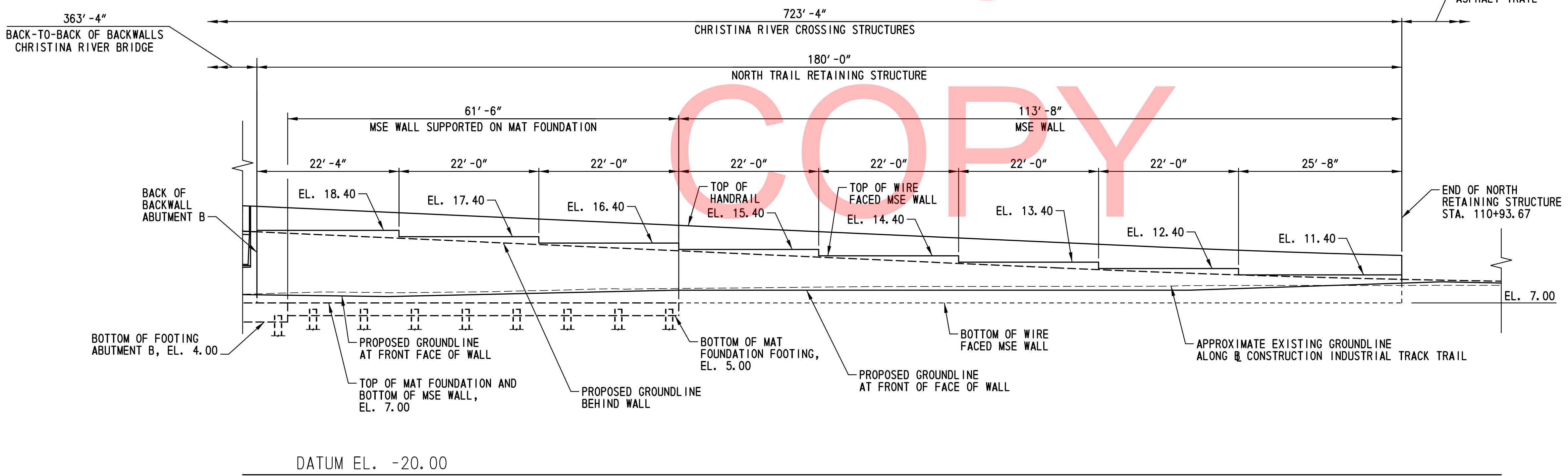
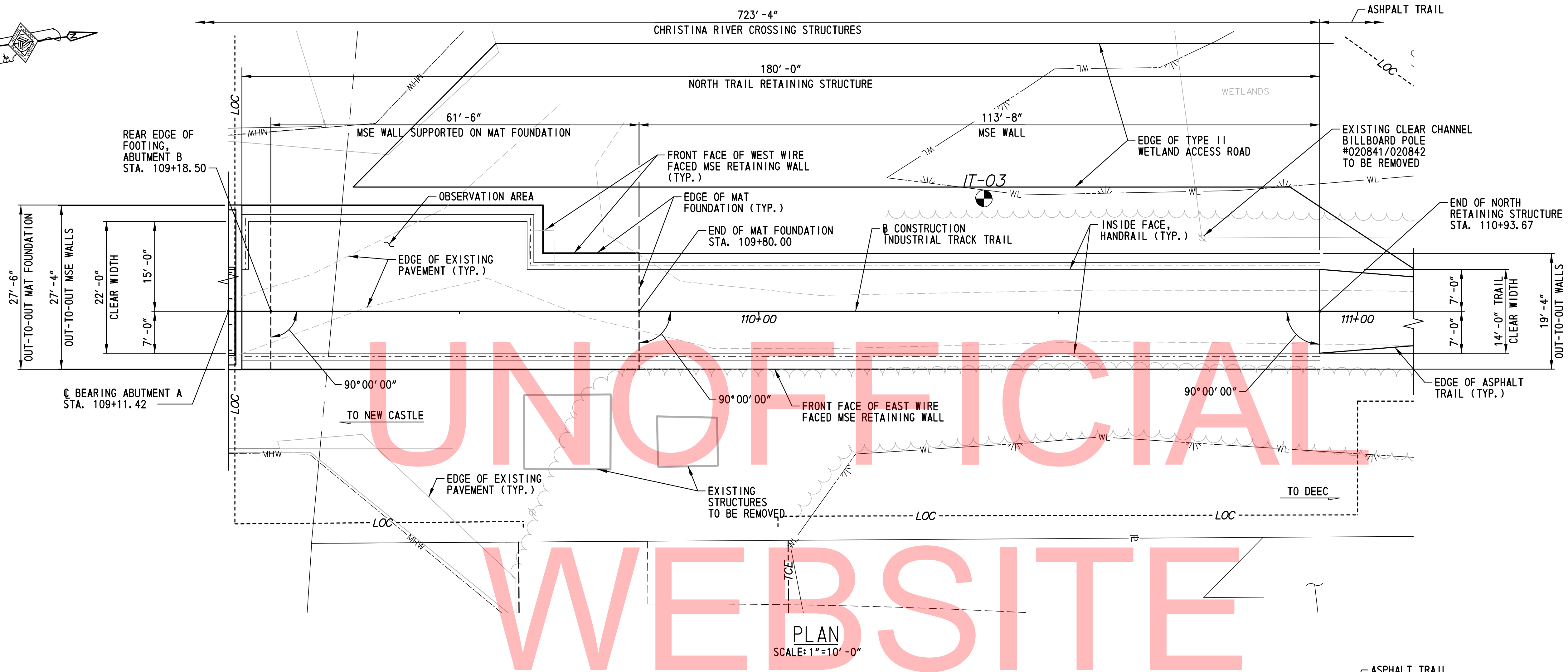
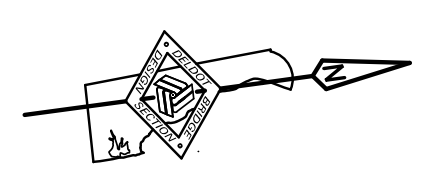


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| ADDENDUMS / REVISIONS |
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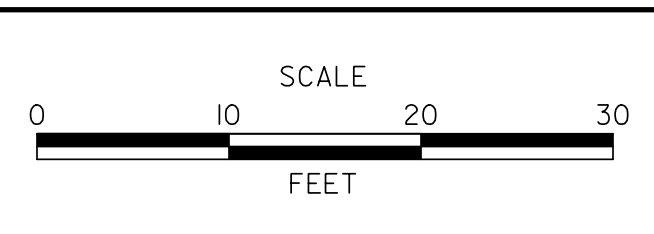
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| CONTRACT T201330009 | BRIDGE NO. X |
| COUNTY NEW CASTLE | DESIGNED BY: NAH CHECKED BY: WAG |



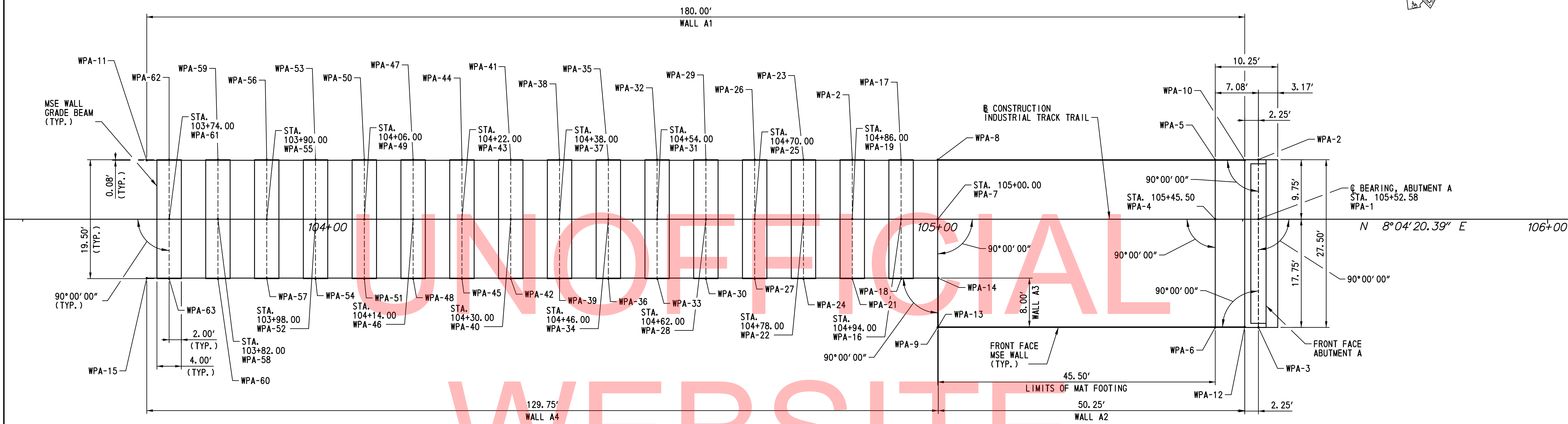
- NOTES:**
- FOR CHRISTINA RIVER BRIDGE, SEE DWG. NO. PE-102. FOR SOUTH TRAIL RETAINING STRUCTURE AND VERTICAL CURVE DATA, SEE DWG. NO. PE-101.
 - EAST WALL ELEVATION SHOWN. WEST WALL ELEVATION IS SIMILAR TO EAST WALL ELEVATION OF THE SOUTH TRAIL RETAINING STRUCTURE, BUT OPPOSITE HAND. SEE DWG. NO. PE-101.
 - FOR GEOMETRIC WORKING POINTS, SEE DWG. NOS. FT-101, FT-102, AND FT-103.
 - RAILING AND POSTS NOT SHOWN FOR CLARITY. REFER TO DWG. NO. RL-102 FOR RAILING DETAILS.

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| ADDENDUMS / REVISIONS | |
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|------------------------|-------------------------------------|
| CONTRACT T201330009 | BRIDGE NO. X |
| COUNTY NEW CASTLE | DESIGNED BY: NAH CHECKED BY: WAG |



GEOMETRIC AND FOOTING LAYOUT PLAN

SCALE: 1/8" = 1' - 0"

| WORKING POINT | COORDINATES | |
|---------------|-------------|-------------|
| | NORTHING | EASTING |
| WPA-1 | 625679.9071 | 610808.9051 |
| WPA-2 | 625681.2795 | 610799.2288 |
| WPA-3 | 625677.4146 | 610826.4792 |
| WPA-4 | 625672.8940 | 610807.9104 |
| WPA-5 | 625674.2631 | 610798.2573 |
| WPA-6 | 625670.4015 | 610825.4845 |
| WPA-7 | 625627.8448 | 610801.5212 |
| WPA-8 | 625629.2139 | 610791.8680 |
| WPA-9 | 625625.3523 | 610819.0953 |
| WPA-10 | 625679.0368 | 610799.0181 |
| WPA-11 | 625500.8203 | 610773.7421 |
| WPA-12 | 625675.1986 | 610826.0808 |
| WPA-13 | 625625.4465 | 610819.0246 |
| WPA-14 | 625626.5699 | 610811.1038 |
| WPA-15 | 625498.1055 | 610792.8838 |
| WPA-16 | 625621.9042 | 610800.6786 |
| WPA-17 | 625623.2733 | 610791.0254 |
| WPA-18 | 625620.5701 | 610810.3372 |
| WPA-19 | 625613.9834 | 610799.5554 |
| WPA-20 | 625615.3526 | 610789.9020 |
| WPA-21 | 625612.6143 | 610809.2088 |
| WPA-22 | 625606.0627 | 610798.4320 |
| WPA-23 | 625607.4318 | 610788.7786 |
| WPA-24 | 625604.6936 | 610808.0854 |

| WORKING POINT | COORDINATES | |
|---------------|-------------|-------------|
| | NORTHING | EASTING |
| WPA-25 | 625598.1420 | 610797.3085 |
| WPA-26 | 625599.5111 | 610787.6552 |
| WPA-27 | 625596.7728 | 610806.9620 |
| WPA-28 | 625590.2213 | 610796.2109 |
| WPA-29 | 625591.5904 | 610786.5318 |
| WPA-30 | 625588.8521 | 610805.8386 |
| WPA-31 | 625582.3005 | 610795.0618 |
| WPA-32 | 625583.6696 | 610785.4084 |
| WPA-33 | 625580.9314 | 610804.7152 |
| WPA-34 | 625574.3798 | 610793.9384 |
| WPA-35 | 625575.7489 | 610784.2850 |
| WPA-36 | 625573.0106 | 610803.5918 |
| WPA-37 | 625566.4590 | 610792.8150 |
| WPA-38 | 625567.8282 | 610783.1616 |
| WPA-39 | 625565.0899 | 610802.4684 |
| WPA-40 | 625558.5383 | 610791.6916 |
| WPA-41 | 625559.9074 | 610782.0382 |
| WPA-42 | 625557.1692 | 610801.3450 |
| WPA-43 | 625550.6176 | 610790.5682 |
| WPA-44 | 625551.9867 | 610780.9148 |
| WPA-45 | 625549.2485 | 610800.2216 |
| WPA-46 | 625542.6968 | 610789.4448 |
| WPA-47 | 625544.0660 | 610779.7914 |
| WPA-48 | 625541.3277 | 610799.0982 |

| WORKING POINT | COORDINATES | |
|---------------|-------------|-------------|
| | NORTHING | EASTING |
| WPA-49 | 625534.7761 | 610788.3214 |
| WPA-50 | 625536.1452 | 610778.6680 |
| WPA-51 | 625533.4070 | 610797.9748 |
| WPA-52 | 625526.8554 | 610787.1980 |
| WPA-53 | 625528.2245 | 610777.5446 |
| WPA-54 | 625525.4863 | 610796.8514 |
| WPA-55 | 625518.9347 | 610786.0746 |
| WPA-56 | 625520.3038 | 610776.4212 |
| WPA-57 | 625517.5655 | 610795.7280 |
| WPA-58 | 625511.0139 | 610784.9512 |
| WPA-59 | 625512.3830 | 610775.2978 |
| WPA-60 | 625509.6448 | 610794.6046 |
| WPA-61 | 625503.1217 | 610783.8060 |
| WPA-62 | 625504.4623 | 610774.1744 |
| WPA-63 | 625501.7241 | 610793.4812 |

WORKING POINT LEGEND

- WPA-1 = WORKING POINT 1, ABUTMENT A
- WPA-2 = WORKING POINT 2, ABUTMENT A
- WPA-3 = WORKING POINT 3, ABUTMENT A

*ALL COORDINATES SET PERPENDICULAR TO B CONSTRUCTION INDUSTRIAL TRACK TRAIL LOOKING STATION AHEAD

WORKING POINTS 1-6 = LIMITS OF ABUTMENT A FOOTING

WORKING POINTS 5-9 = LIMITS OF ABUTMENT A MSE WALL MAT FOOTING

WORKING POINTS 10-15 = FRONT FACE OF MSE WALLS A1-A4

WORKING POINTS 16-63 = ABUTMENT A MSE WALL GRADE BEAMS

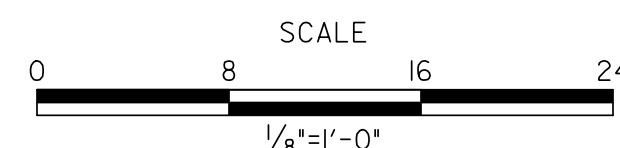
NOTES:

- FOR PILE LAYOUT PLANS, SEE DWG. NOS. PL-101, PL-102, AND PL-103.

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ADDENDUMS / REVISIONS



NEW CASTLE INDUSTRIAL TRACK TRAIL, PHASE 3

| | | |
|------------|------------------|---|
| CONTRACT | BRIDGE NO. | X |
| T201330009 | DESIGNED BY: ADD | |
| COUNTY | CHECKED BY: WAG | |
| NEW CASTLE | | |

GEOMETRIC AND FOOTING LAYOUT PLAN - 1

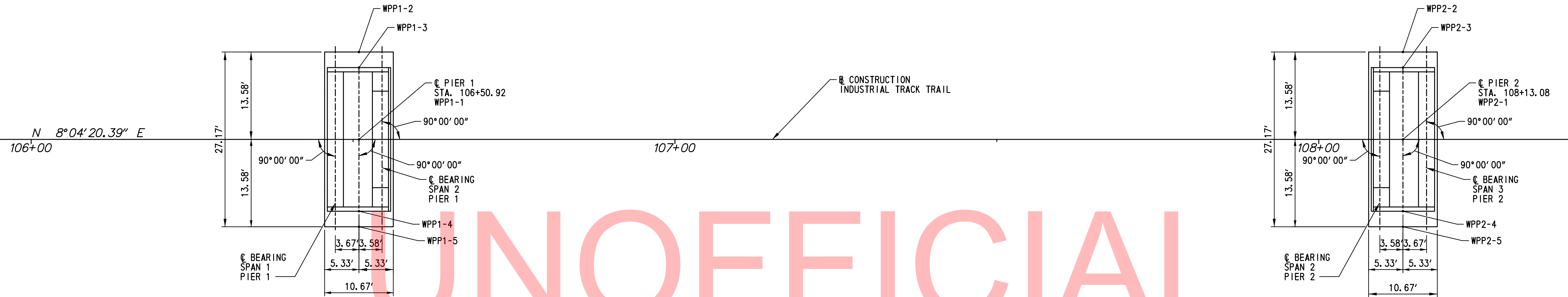
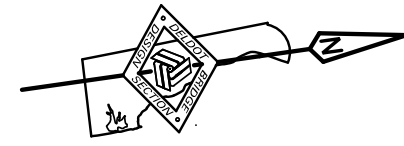
FT-101

SHEET NO.

44

TOTAL SHTS.

205



GEOMETRIC AND FOOTING LAYOUT PLAN
SCALE: 1/8" = 1' - 0"

UNOFFICIAL
WEBSITE
COPY

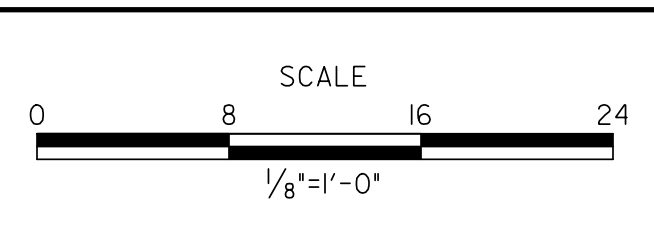
| WORKING POINT | COORDINATES | |
|---------------|-------------|-------------|
| | NORTHING | EASTING |
| WPP1-1 | 625777.2661 | 610822.7134 |
| WPP1-2 | 625779.1735 | 610809.2646 |
| WPP1-3 | 625778.8342 | 610811.6574 |
| WPP1-4 | 625775.6981 | 610833.7694 |
| WPP1-5 | 625775.3587 | 610836.1620 |
| WPP2-1 | 625937.8260 | 610845.4852 |
| WPP2-2 | 625939.7334 | 610832.0365 |
| WPP2-3 | 625939.3940 | 610834.4292 |
| WPP2-4 | 625936.2579 | 610856.5413 |
| WPP2-5 | 625935.9186 | 610858.9340 |

WORKING POINT LEGEND
 WPP1-1 = WORKING POINT 1, PIER 1
 WPP1-2 = WORKING POINT 2, PIER 1 FOOTING
 WPP1-3 = WORKING POINT 3, PIER 1
 WPP1-4 = WORKING POINT 4, PIER 1
 WPP1-5 = WORKING POINT 5, PIER 1 FOOTING
 WPP2-1 = WORKING POINT 1, PIER 2
 WPP2-2 = WORKING POINT 2, PIER 2 FOOTING
 WPP2-3 = WORKING POINT 3, PIER 2
 WPP2-4 = WORKING POINT 4, PIER 2
 WPP2-5 = WORKING POINT 5, PIER 2 FOOTING
 *ALL COORDINATES SET PERPENDICULAR TO
 B CONSTRUCTION INDUSTRIAL TRACK TRAIL LOOKING
 STATION AHEAD

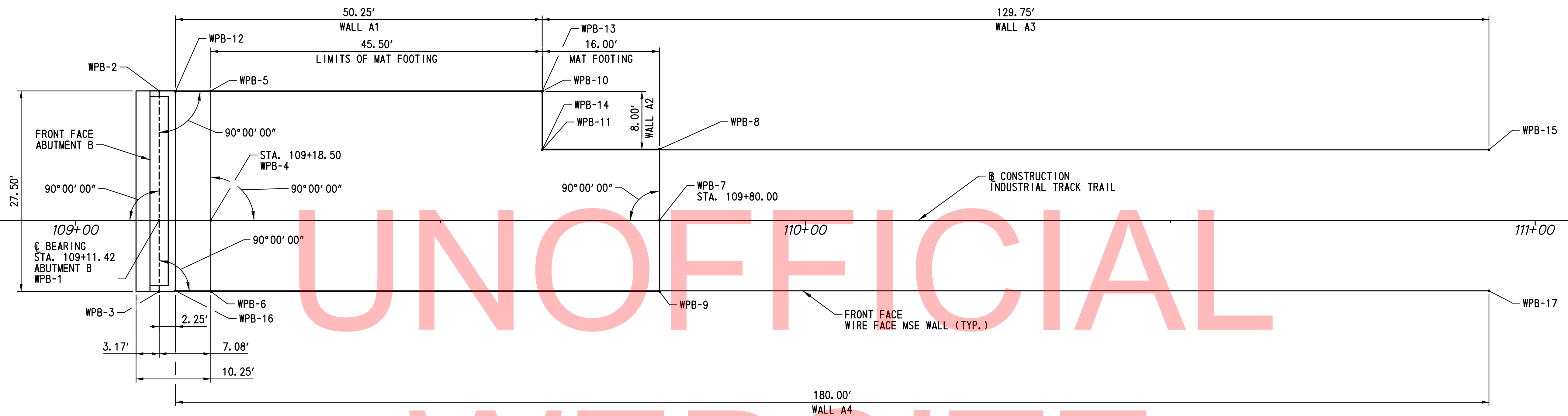
NOTES:
 1. FOR PILE LAYOUT PLANS, SEE DWG. NOS. PL-101,
 PL-102, AND PL-103.

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| ADDENDUMS / REVISIONS | |
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| CONTRACT | BRIDGE NO. | X |
| T201330009 | DESIGNED BY: ADD | |
| COUNTY | CHECKED BY: WAG | |
| NEW CASTLE | | |



UNOFFICIAL
WEBSITE
COPY

GEOMETRIC AND FOOTING LAYOUT PLAN
SCALE: 1/8" = 1' - 0"

| WORKING POINT | COORDINATES | |
|---------------|-------------|-------------|
| | NORTHING | EASTING |
| WPB-1 | 626035.1850 | 610859.2936 |
| WPB-2 | 626037.6775 | 610841.7195 |
| WPB-3 | 626033.8159 | 610868.9470 |
| WPB-4 | 626042.1981 | 610860.2882 |
| WPB-5 | 626044.6906 | 610842.7141 |
| WPB-6 | 626040.8290 | 610869.9416 |
| WPB-7 | 626103.0888 | 610868.9243 |
| WPB-8 | 626104.4579 | 610859.2710 |
| WPB-9 | 626101.7196 | 610878.5777 |
| WPB-10 | 626090.6456 | 610849.1741 |
| WPB-11 | 626088.5222 | 610857.0950 |
| WPB-12 | 626039.8935 | 610842.1178 |
| WPB-13 | 626090.7398 | 610849.1043 |
| WPB-14 | 626088.6164 | 610857.0242 |
| WPB-15 | 626216.9866 | 610875.3149 |
| WPB-16 | 626036.0553 | 610869.1804 |
| WPB-17 | 626214.2717 | 610894.4566 |

WORKING POINT LEGEND

WPB-1 = WORKING POINT 1, ABUTMENT B
 WPB-2 = WORKING POINT 2, ABUTMENT B
 WPA-3 = WORKING POINT 3, ABUTMENT B

*ALL COORDINATES SET PERPENDICULAR TO
 B CONSTRUCTION INDUSTRIAL TRACK TRAIL LOOKING
 STATION AHEAD

WORKING POINTS 1-6 = LIMITS OF ABUTMENT B FOOTING

WORKING POINTS 5-11 = LIMITS
 OF ABUTMENT B MSE WALL MAT FOOTING

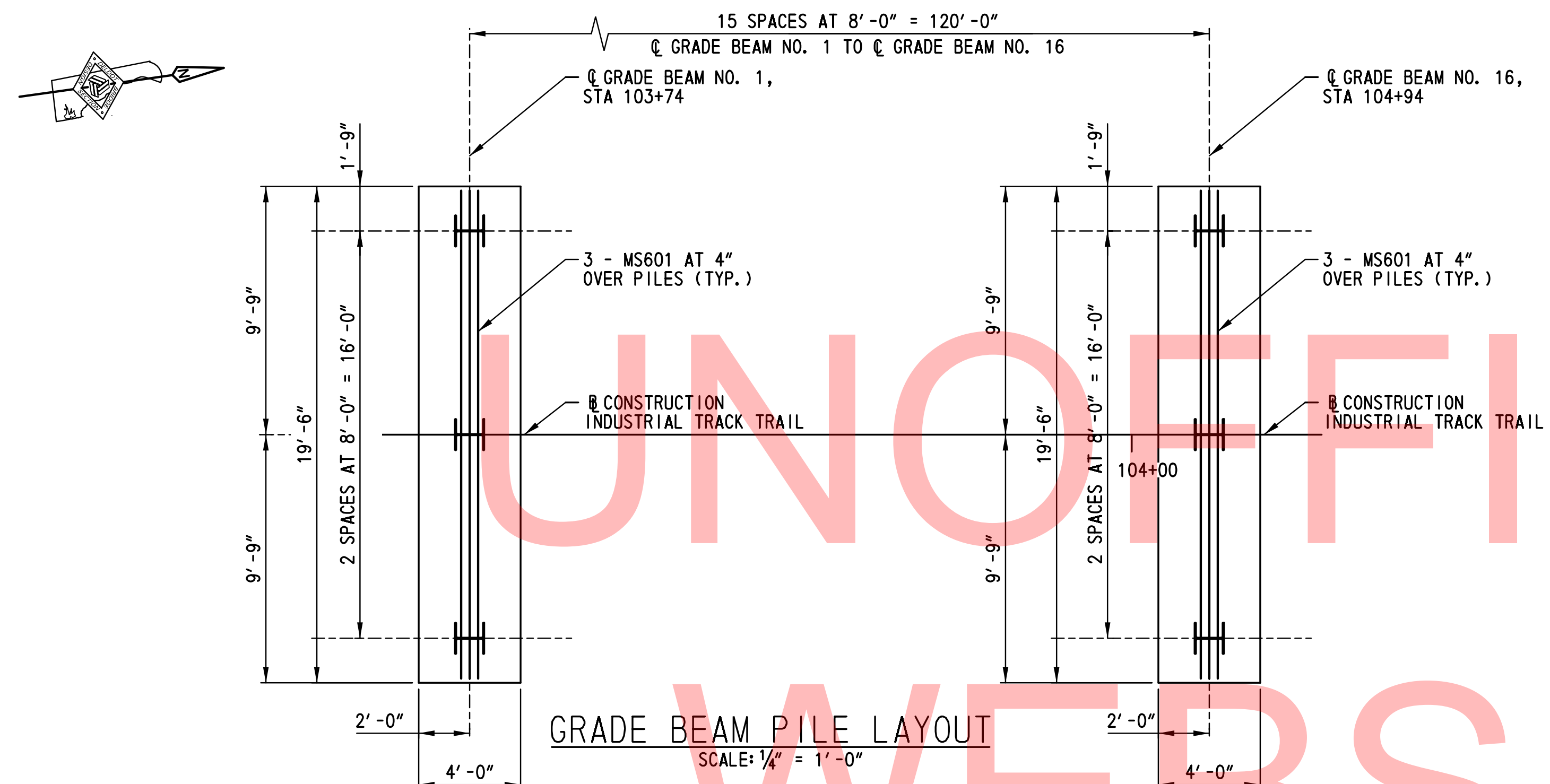
WORKING POINTS 12-17 = FRONT FACE OF MSE WALLS A1-A4

NOTES:

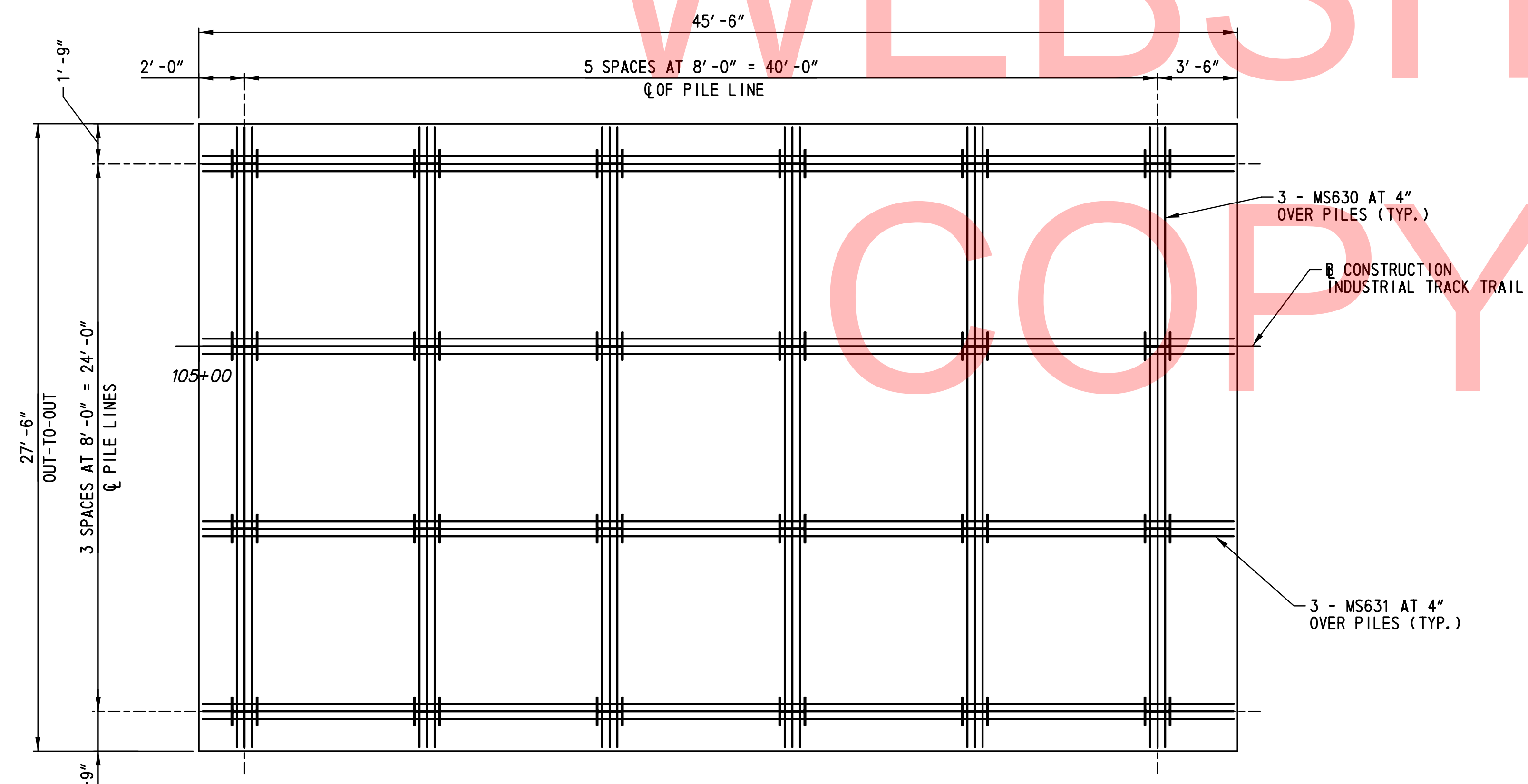
1. FOR PILE LAYOUT PLANS, SEE DWG. NOS. PL-101,
 PL-102, AND PL-103.

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| SOUTH MSE WALL PILE DRIVING | |
|--|-------------------------------|
| PILE SIZE AND TYPE: | HP14X89 |
| ACTUAL BEARING OBTAINED: | |
| HAMMER TYPE: | |
| AVERAGE ACTUAL BLOWS/FT.: | |
| PILE HAMMER ENERGY: | 60,000 LB-FT TO 110,000 LB-FT |
| SPECIAL DRIVING CONDITIONS AND COMMENTS: | X |



GRADE BEAM PILE LAYOUT
SCALE: 1/4" = 1'-0"



MSE WALL MAT FOUNDATION PILE LAYOUT
SCALE: 1/4" = 1'-0"

PILE LEGEND:

- 1. H DENOTES PLUMB HP14x89 STEEL PILE.

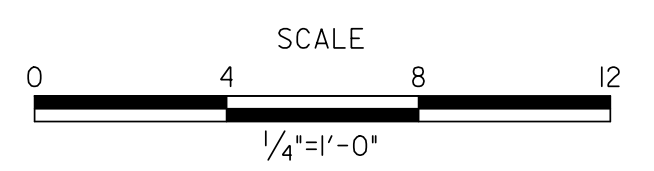
PILE NOTES:

1. THE FACTORED RESISTANCE OF THE HP 14x89 STEEL PILING IS 68 TONS FOR THE GRADE BEAMS AND 85 TONS FOR THE SOUTH FOOTING. PILES SHALL BE DRIVEN AND TESTED IN CONFORMANCE WITH SECTION 619 AND THE SPECIAL PROVISIONS TO A NOMINAL PILE DRIVING RESISTANCE OF 104 TONS FOR THE GRADE BEAMS AND 131 TONS FOR THE SOUTH FOOTING.
2. PILES SHALL BE DRIVEN TO THE DRIVING CRITERIA DEVELOPED FROM DYNAMIC PILE TESTING AND AS SPECIFIED BY THE ENGINEER TO ACHIEVE A NOMINAL PILE DRIVING RESISTANCE AS SPECIFIED IN NOTE 1 BELOW THE SPECIFIED MINIMUM TIP ELEVATION. PILES MEETING THE AFOREMENTIONED CRITERIA WILL BE CONSIDERED SATISFACTORY.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SUBMITTING A WAVE EQUATION ANALYSIS AND ALL OTHER INCIDENTALS IN ACCORDANCE WITH SECTION 619 AND THE SPECIAL PROVISIONS. THE WAVE EQUATION ANALYSIS AND DYNAMIC PILE TESTING MUST BE SIGNED AND SEALED BY A REGISTERED PROFESSIONAL ENGINEER LICENSED IN THE STATE OF DELAWARE IN ACCORDANCE WITH THE SPECIAL PROVISIONS.
4. THE DEPARTMENT RESERVES THE RIGHT TO PERFORM DYNAMIC PILE TESTING OF RESTRIKES.

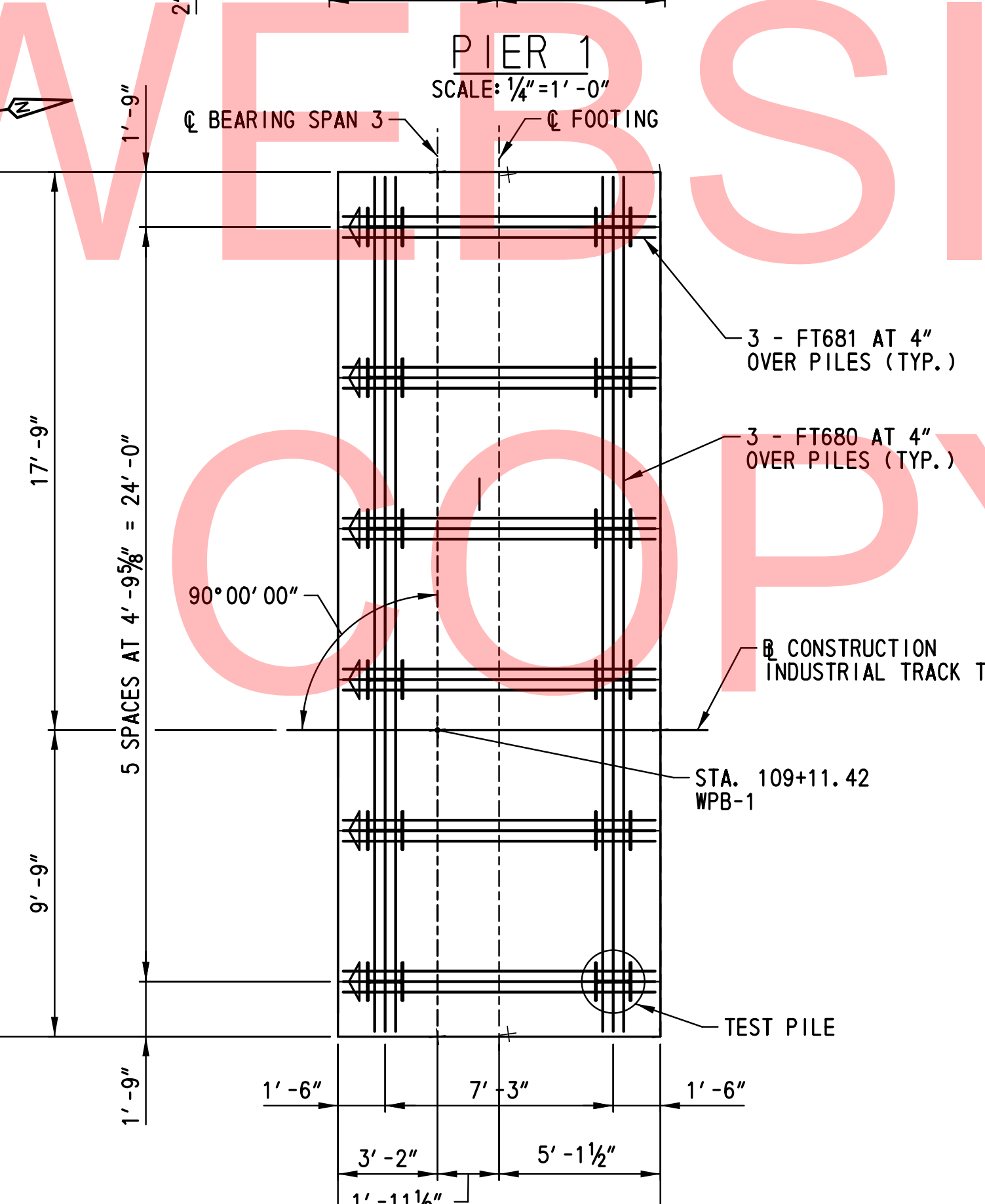
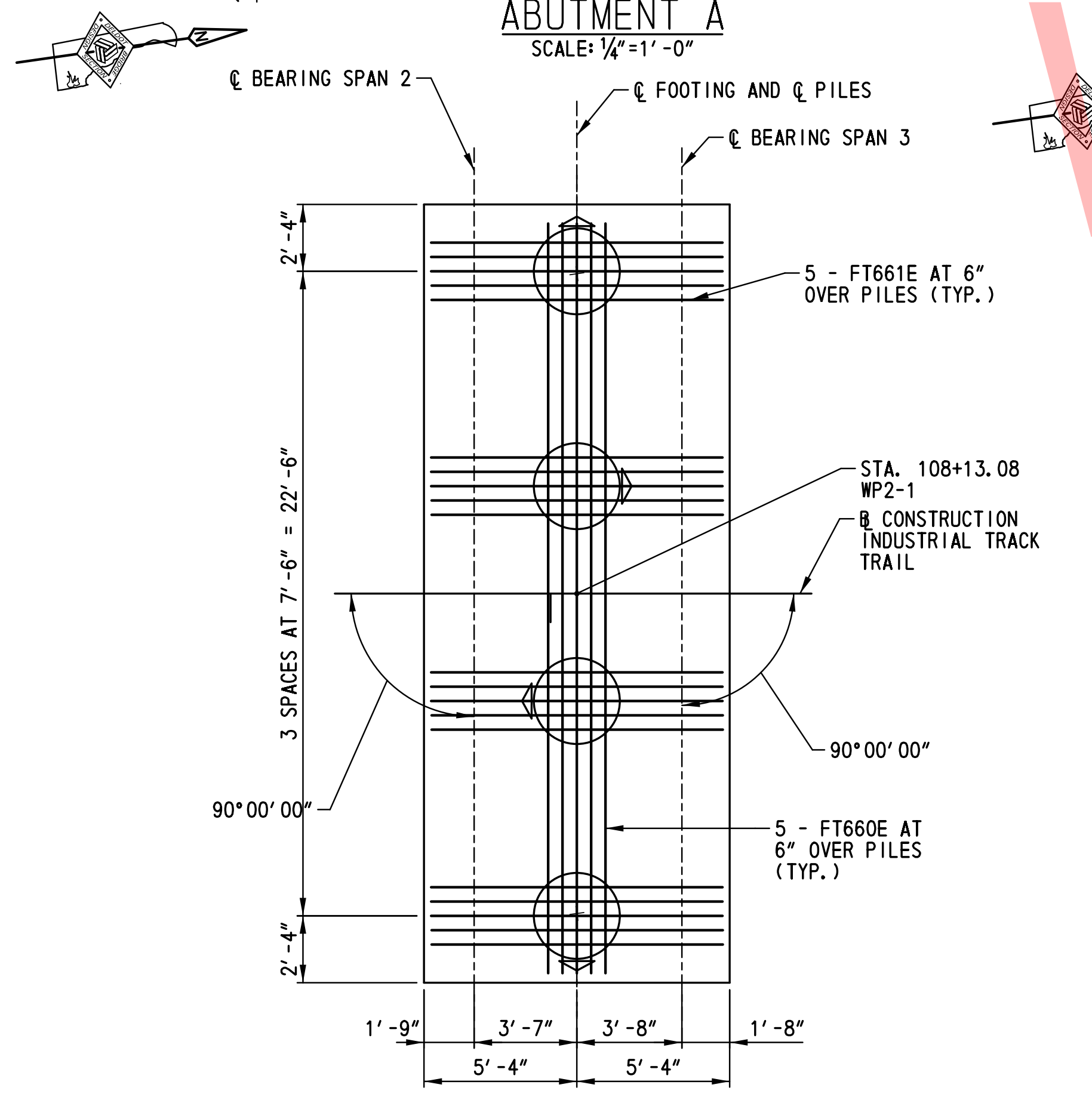
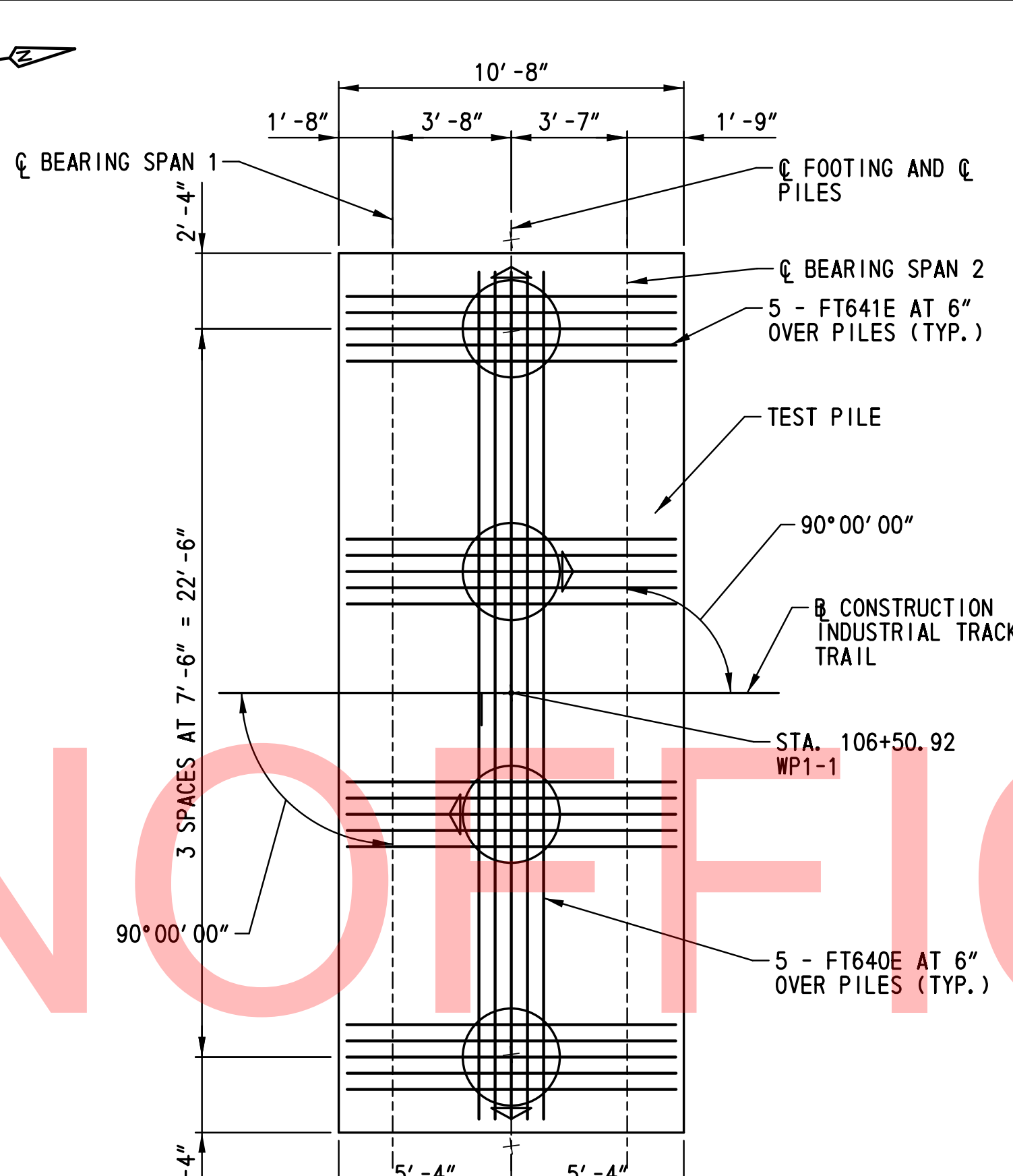
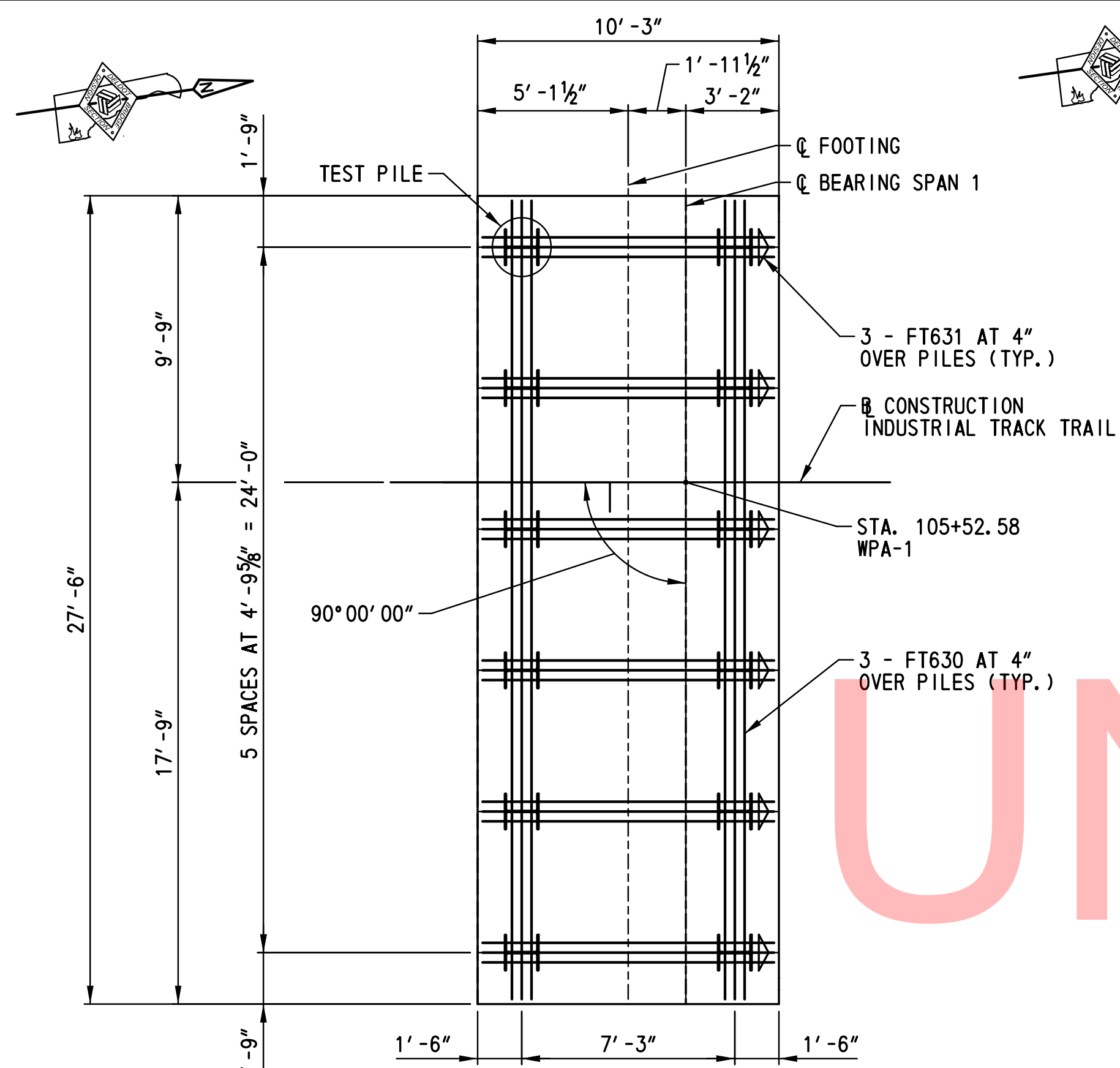
| PILE TIP DATA | | | | |
|-------------------|-----------------------|-------------------------|--------------------------------------|--------------------------------------|
| SUBSTRUCTURE UNIT | DESIGN DATA | | ACTUAL FIELD DATA | |
| | MINIMUM TIP ELEVATION | ESTIMATED TIP ELEVATION | AVERAGE ACTUAL MINIMUM TIP ELEVATION | AVERAGE ACTUAL MAXIMUM TIP ELEVATION |
| GRADE BEAMS | -34.0 | -44.5 | | |
| S. FOOTING | -34.0 | -44.5 | | |

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| ADDENDUMS / REVISIONS |
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| CONTRACT | BRIDGE NO. | X |
| T201330009 | DESIGNED BY: | ZMG |
| COUNTY | CHECKED BY: | WAG |
| NEW CASTLE | | |

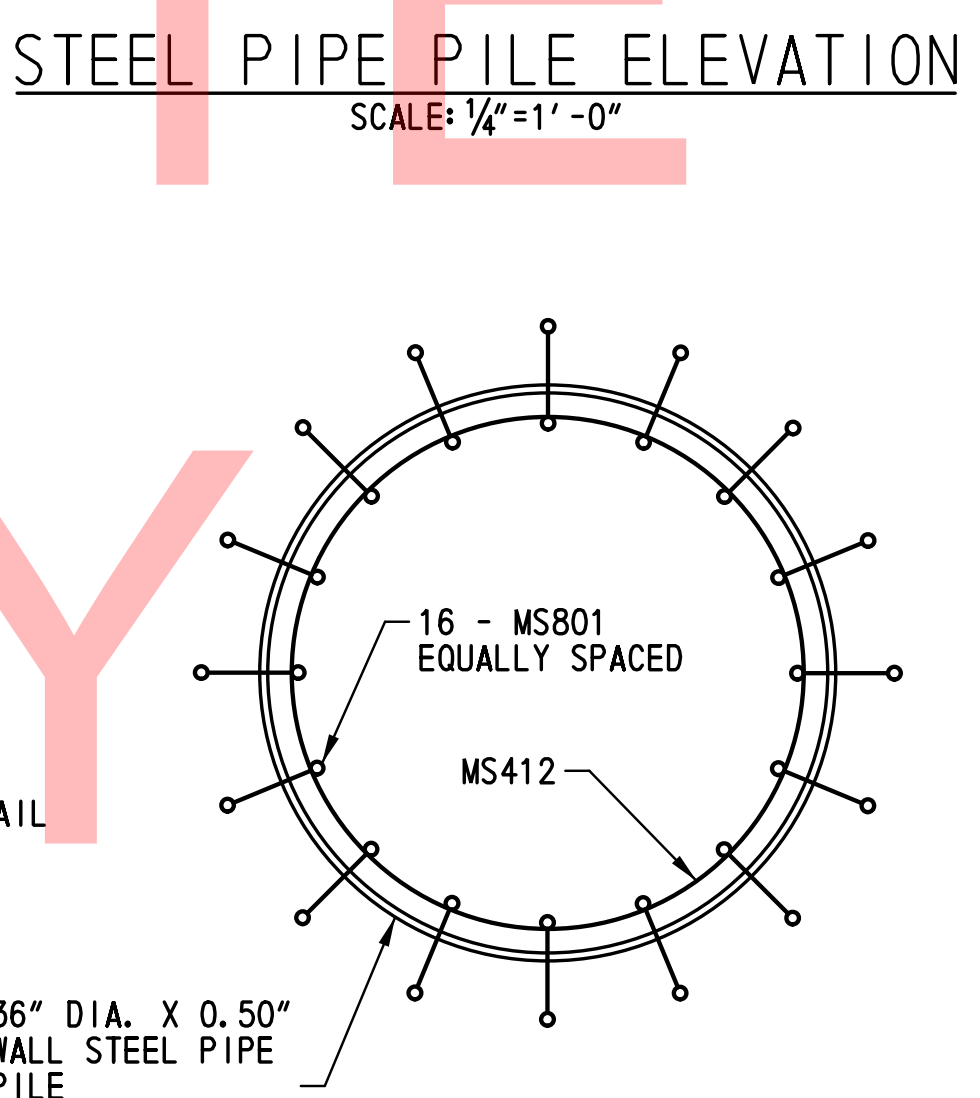
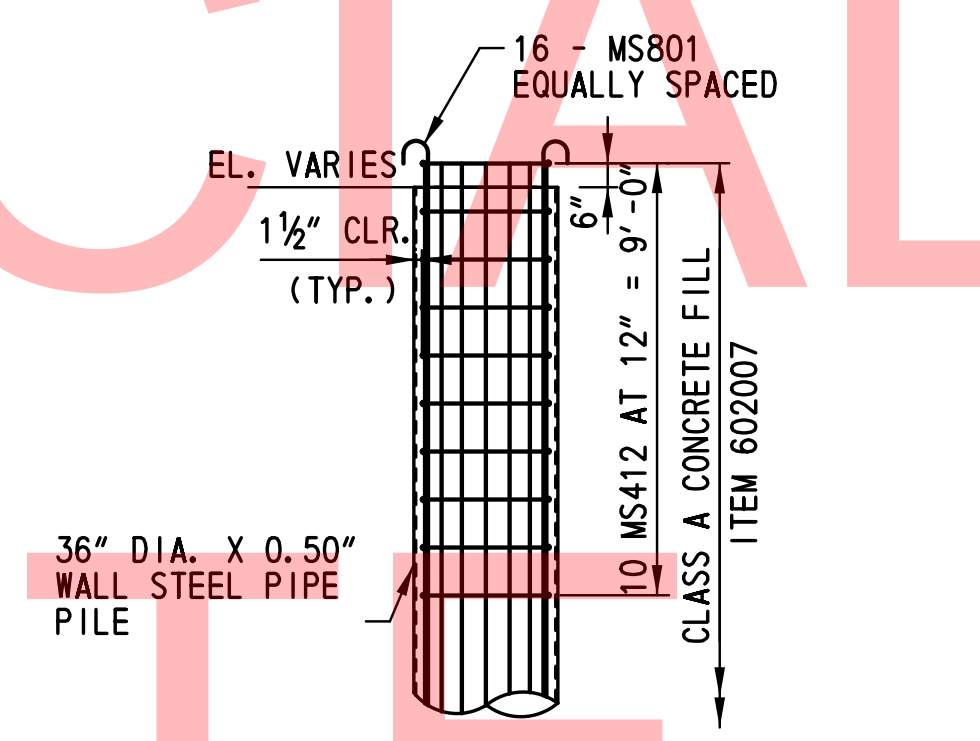


| ABUTMENT A PILE DRIVING INFORMATION | |
|--|-------------------------------|
| PILE SIZE AND TYPE: | HP14X89 |
| ACTUAL BEARING OBTAINED: | |
| HAMMER TYPE: | |
| AVERAGE ACTUAL BLOWS/FT.: | |
| PILE HAMMER ENERGY: | 60,000 LB-FT TO 110,000 LB-FT |
| SPECIAL DRIVING CONDITIONS AND COMMENTS: | X |

| PIER 1 PILE DRIVING INFORMATION | |
|--|-------------------------------|
| PILE SIZE AND TYPE: | 36" OD PIPE PILE 0.50" TH. |
| ACTUAL BEARING OBTAINED: | |
| HAMMER TYPE: | |
| AVERAGE ACTUAL BLOWS/FT.: | |
| PILE HAMMER ENERGY: | 60,000 LB-FT TO 110,000 LB-FT |
| SPECIAL DRIVING CONDITIONS AND COMMENTS: | X |

| PIER 2 PILE DRIVING INFORMATION | |
|--|-------------------------------|
| PILE SIZE AND TYPE: | 36" OD PIPE PILE 0.50" TH. |
| ACTUAL BEARING OBTAINED: | |
| HAMMER TYPE: | |
| AVERAGE ACTUAL BLOWS/FT.: | |
| PILE HAMMER ENERGY: | 60,000 LB-FT TO 110,000 LB-FT |
| SPECIAL DRIVING CONDITIONS AND COMMENTS: | X |

| ABUTMENT B PILE DRIVING INFORMATION | |
|--|-------------------------------|
| PILE SIZE AND TYPE: | HP14X89 |
| ACTUAL BEARING OBTAINED: | |
| HAMMER TYPE: | |
| AVERAGE ACTUAL BLOWS/FT.: | |
| PILE HAMMER ENERGY: | 60,000 LB-FT TO 110,000 LB-FT |
| SPECIAL DRIVING CONDITIONS AND COMMENTS: | X |



- PILE LEGEND:**
- H DENOTES PLUMB HP14x89 STEEL PILE.
 - H DENOTES BATTERED HP14x89 STEEL PILE PILE BATTERED 6:1 IN DIRECTION OF ARROW
 - H DENOTES LOCATION OF PLUMB HP 14x89 PILE, DYNAMIC PILE TESTING AND SIGNAL MATCHING ANALYSIS.
 - O DENOTES BATTERED 36" DIAMETER OPEN ENDED STEEL PIPE PILE BATTERED 6:1 IN DIRECTION OF ARROW

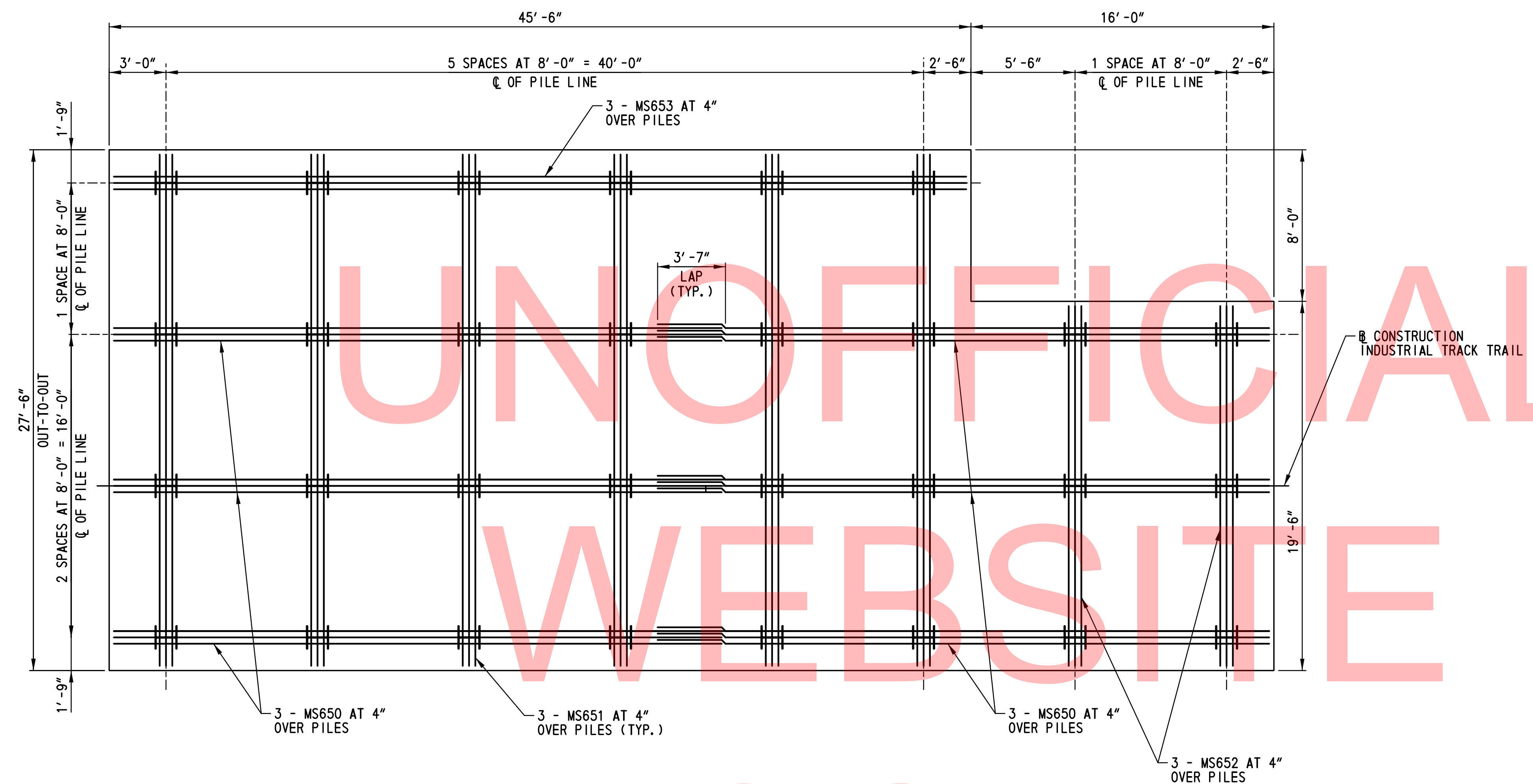
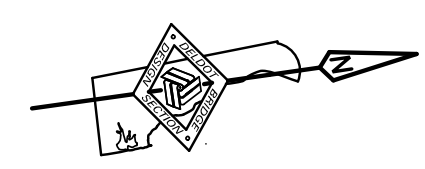
- PILE NOTES:**
- THE FACTORED RESISTANCE OF THE HP 14x89 STEEL PILING IS 53 TONS FOR ABUTMENTS A AND B. THE FACTORED RESISTANCE OF THE 36" DIA PIPE PILES IS 157.5 TONS FOR PIERS 1 AND 2. PILES SHALL BE DRIVEN AND TESTED IN CONFORMANCE WITH SECTION 619 AND THE SPECIAL PROVISIONS FOR HIGH STRAIN DYNAMIC PILE TESTING TO A NOMINAL PILE DRIVING RESISTANCE OF 82 TONS FOR ABUTMENTS A AND B AND 700 TONS FOR PIERS 1 AND 2.
 - PILES SHALL BE DRIVEN TO THE DRIVING CRITERIA DEVELOPED FROM DYNAMIC PILE TESTING AND AS SPECIFIED BY THE ENGINEER TO ACHIEVE A NOMINAL PILE DRIVING RESISTANCE AS SPECIFIED IN NOTE 1 BELOW THE SPECIFIED MINIMUM TIP ELEVATION. PILES MEETING THE AFORESAID CRITERIA WILL BE CONSIDERED SATISFACTORY.
 - THE CONTRACTOR SHALL BE RESPONSIBLE FOR SUBMITTING A WAVE EQUATION ANALYSIS AND ALL OTHER INCIDENTALS IN ACCORDANCE WITH SECTION 619 AND THE SPECIAL PROVISIONS. THE WAVE EQUATION ANALYSIS AND DYNAMIC PILE TESTING MUST BE SIGNED AND SEALED BY A REGISTERED PROFESSIONAL ENGINEER LICENSED IN THE STATE OF DELAWARE IN ACCORDANCE WITH THE SPECIAL PROVISIONS.
 - THE DEPARTMENT RESERVES THE RIGHT TO PERFORM DYNAMIC PILE TESTING OF RESTRIKES.
 - THE CONTRACTOR SHALL CONSTRUCT A FIXED TEMPLATE AT EACH PIER AND ABUTMENT LOCATION IN ORDER TO DRIVE PILES AT THE SPECIFIED ALIGNMENT AND LOCATION.
 - APPLY PROTECTIVE COATING TO PILES INSTALLED AT PIERS 1 & 2 LOCATIONS TO THE STEEL PIPE PILE SURFACES WITHIN THE UPPER 20.0'. COATING SHALL CONSIST OF COAL TAR EPOXY MEETING THE REQUIREMENTS OF SECTION 618.10.
 - THE CONTRACTOR SHALL REMOVE ALL SOIL MATERIAL WITHIN EACH PIPE PILE TO THE MINIMUM PILE TIP ELEVATION. EACH PIPE PILE SHALL THEN BE INSPECTED THROUGH USE OF A WATERPROOF DOWNHOLE CAMERA TO VERIFY INTEGRITY OF THE SECTION WELDS WITHIN THE INSIDE OF THE PILE IMMEDIATELY AFTER THE PILE IS FOUND SATISFACTORY AND PRIOR TO PLACING CONCRETE AND STEEL REINFORCEMENT. COST WILL BE INCIDENTAL TO ITEM 618548.

| SUBSTRUCTURE UNIT | DESIGN DATA | | ACTUAL FIELD DATA | |
|-------------------|-----------------------|-------------------------|--------------------------------------|--------------------------------------|
| | MINIMUM TIP ELEVATION | ESTIMATED TIP ELEVATION | AVERAGE ACTUAL MINIMUM TIP ELEVATION | AVERAGE ACTUAL MAXIMUM TIP ELEVATION |
| ABUTMENT A | -34.0 | -44.5 | | |
| PIER 1 | -36.0 | -41.0 | | |
| PIER 2 | -36.0 | -41.0 | | |
| ABUTMENT B | -27.0 | -38.0 | | |

NOTE:
MINIMUM TIP ELEVATION IS REQUIRED FOR LONG TERM LATERAL RESISTANCE AND STABILITY.

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| NORTH MSE WALL PILE DRIVING | |
|--|-------------------------------|
| PILE SIZE AND TYPE: | HP14X89 |
| ACTUAL BEARING OBTAINED: | |
| HAMMER TYPE: | |
| AVERAGE ACTUAL BLOWS/FT.: | |
| PILE HAMMER ENERGY: | 60,000 LB-FT TO 110,000 LB-FT |
| SPECIAL DRIVING CONDITIONS AND COMMENTS: | X |



PILE LEGEND:
 1. H DENOTES PLUMB HP14x89 STEEL PILE.

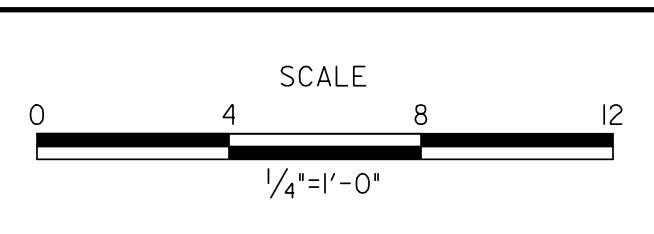
- PILE NOTES:**
1. THE FACTORED RESISTANCE OF THE HP 14x89 STEEL PILING IS 85 TONS FOR THE NORTH FOOTING. PILES SHALL BE DRIVEN AND TESTED IN CONFORMANCE WITH SECTION 619 TO A NOMINAL PILE DRIVING RESISTANCE OF 131 TONS FOR THE NORTH FOOTING.
 2. PILES SHALL BE DRIVEN TO THE DRIVING CRITERIA DEVELOPED FROM DYNAMIC PILE TESTING AND AS SPECIFIED BY THE ENGINEER TO ACHIEVE A NOMINAL PILE DRIVING RESISTANCE AS SPECIFIED IN NOTE 1 BELOW THE SPECIFIED MINIMUM TIP ELEVATION. PILES MEETING THE AFOREMENTIONED CRITERIA WILL BE CONSIDERED SATISFACTORY.
 3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SUBMITTING A WAVE EQUATION ANALYSIS AND ALL OTHER INCIDENTALS IN ACCORDANCE WITH SECTION 619 AND THE SPECIAL PROVISIONS. THE WAVE EQUATION ANALYSIS AND DYNAMIC PILE TESTING MUST BE SIGNED AND SEALED BY A REGISTERED PROFESSIONAL ENGINEER LICENSED IN THE STATE OF DELAWARE IN ACCORDANCE WITH THE SPECIAL PROVISIONS.
 4. THE DEPARTMENT RESERVES THE RIGHT TO PERFORM DYNAMIC PILE TESTING OF RESTRIKES.

MSE WALL MAT FOUNDATION PILE LAYOUT
 SCALE: 1/4" = 1'-0"

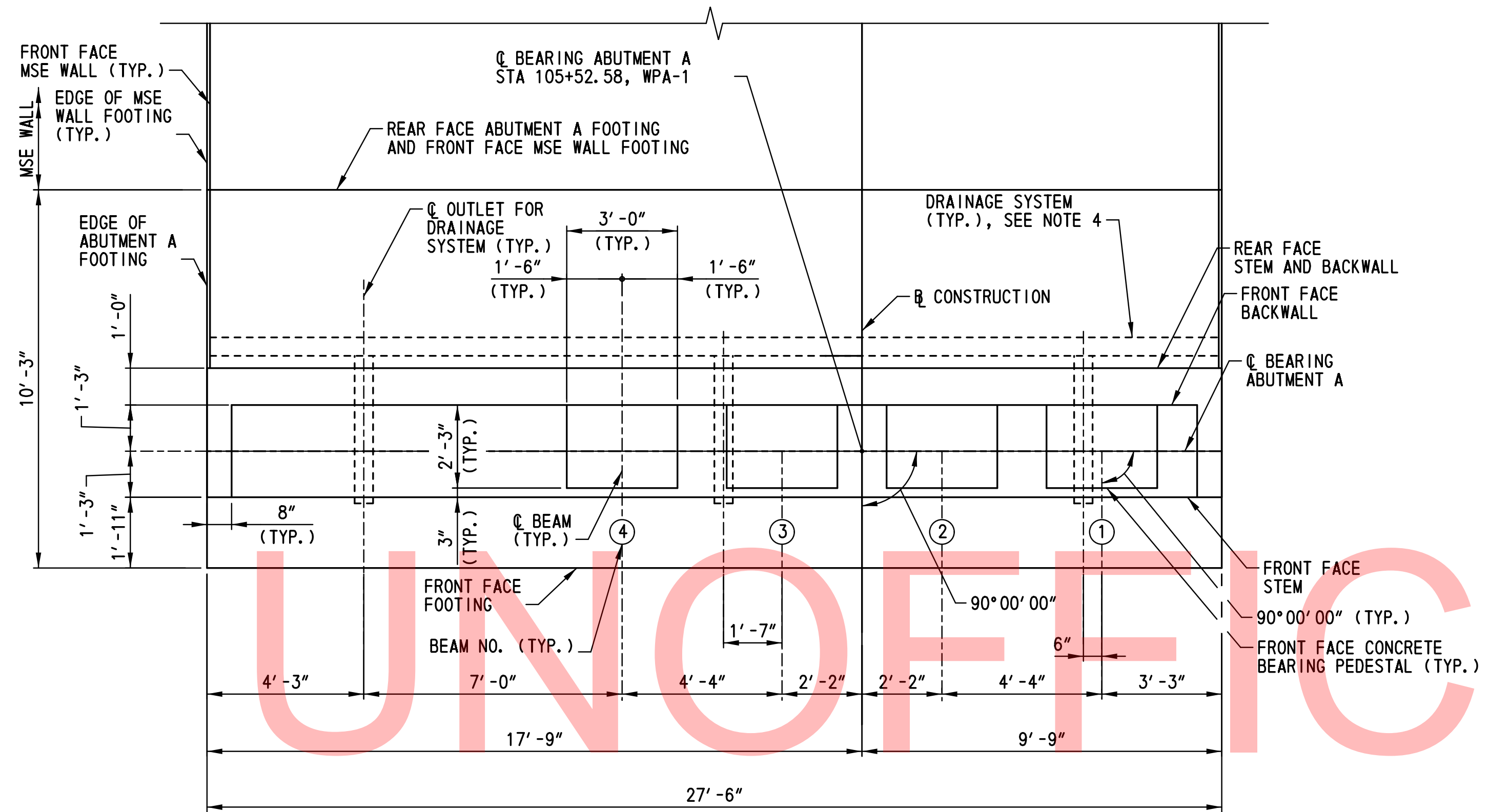
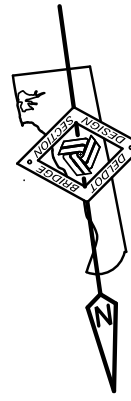
| PILE TIP DATA | | | | |
|-------------------|-----------------------|-------------------------|--------------------------------------|--------------------------------------|
| SUBSTRUCTURE UNIT | DESIGN DATA | | ACTUAL FIELD DATA | |
| | MINIMUM TIP ELEVATION | ESTIMATED TIP ELEVATION | AVERAGE ACTUAL MINIMUM TIP ELEVATION | AVERAGE ACTUAL MAXIMUM TIP ELEVATION |
| N. FOOTING | -27.0 | -38.0 | | |

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| ADDENDUMS / REVISIONS |
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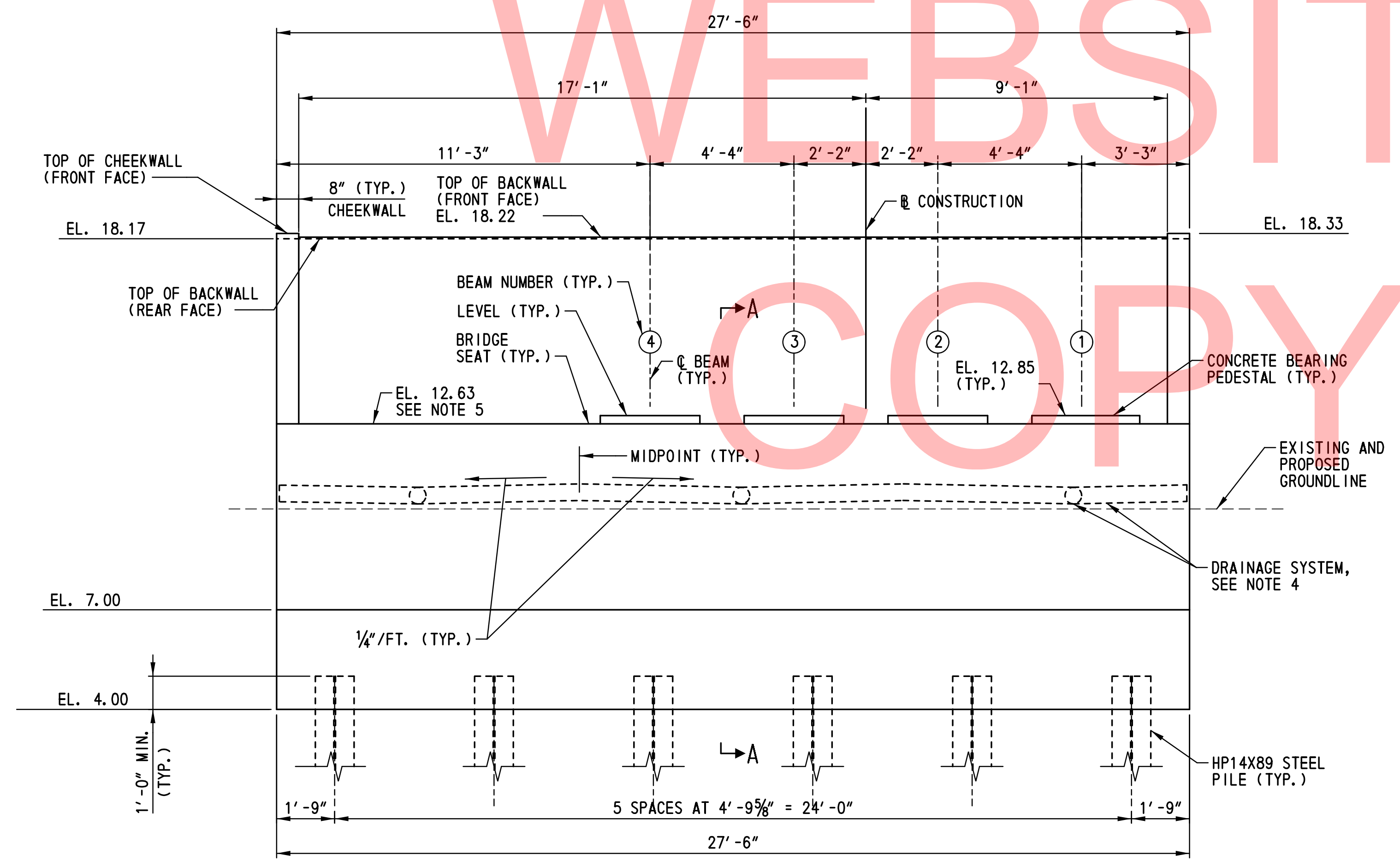


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| CONTRACT | BRIDGE NO. | X |
| T201330009 | DESIGNED BY: | ZMG |
| COUNTY | CHECKED BY: | WAG |
| NEW CASTLE | | |



PLAN
SCALE: 3/8"=1'-0"

NOTE:
PILES NOT SHOWN IN
PLAN FOR CLARITY.

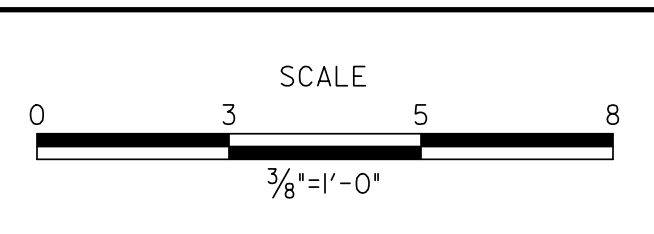


ELEVATION
SCALE: 3/8"=1'-0"

- NOTES:
1. FOR PILE LAYOUT, SEE DWG. NO. PL-102.
 2. FOR SOUTH ABUTMENT SECTION A-A, SEE DWG. NO. AB-103.
 3. FOR MSE WALL ELEVATIONS, SEE DWG. NO. PE-101.
 4. FOR DRAINAGE SYSTEM DETAILS, SEE DWG. NO. AB-103.
 5. BEAM SEAT ELEVATION IS AT THE BACK OF THE BEAM SEAT.
 6. FOR LOCATION OF WPA-1, SEE DWG. NO. FT-101.

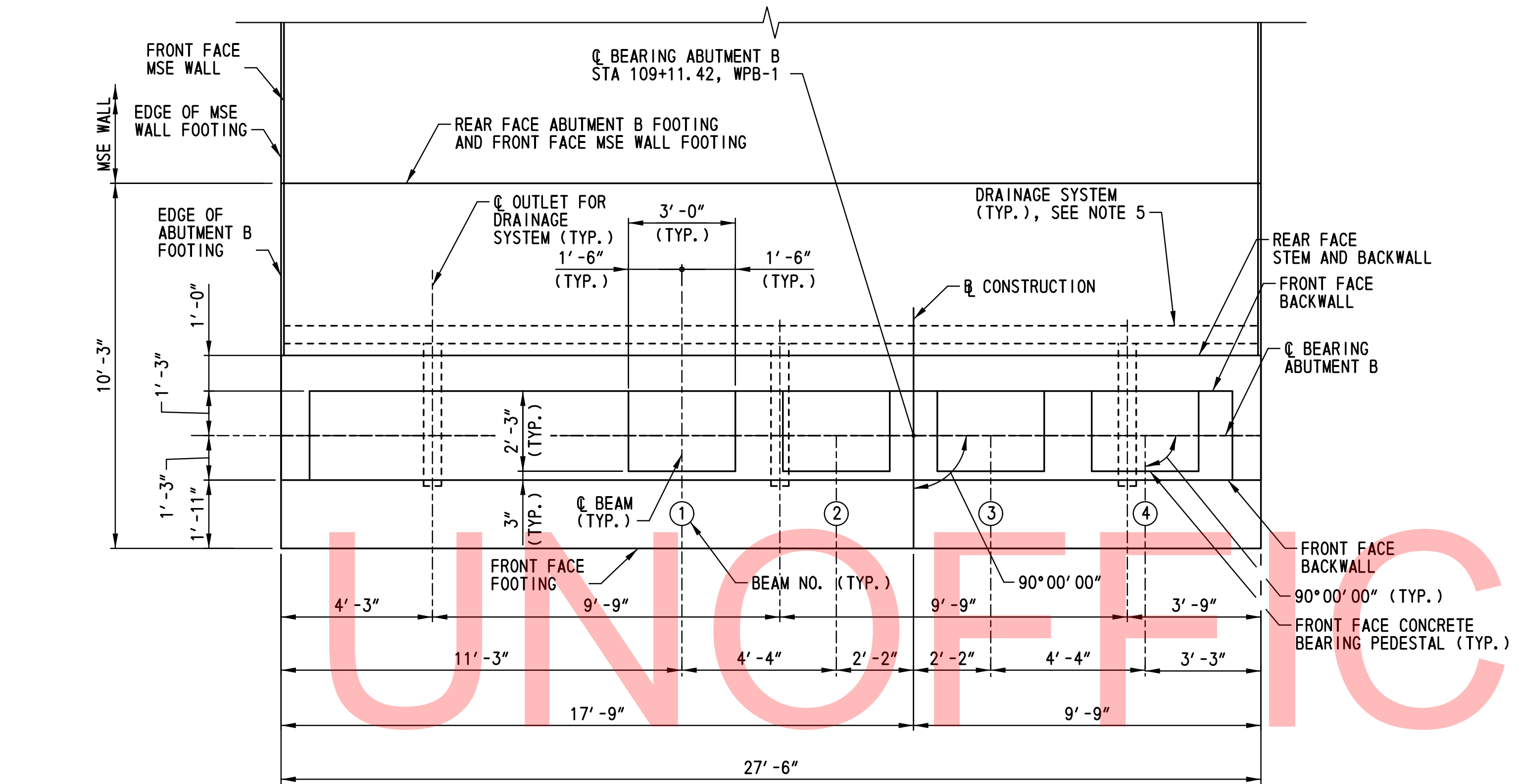
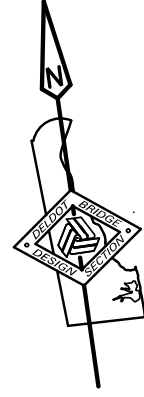
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| ADDENDUMS / REVISIONS | |
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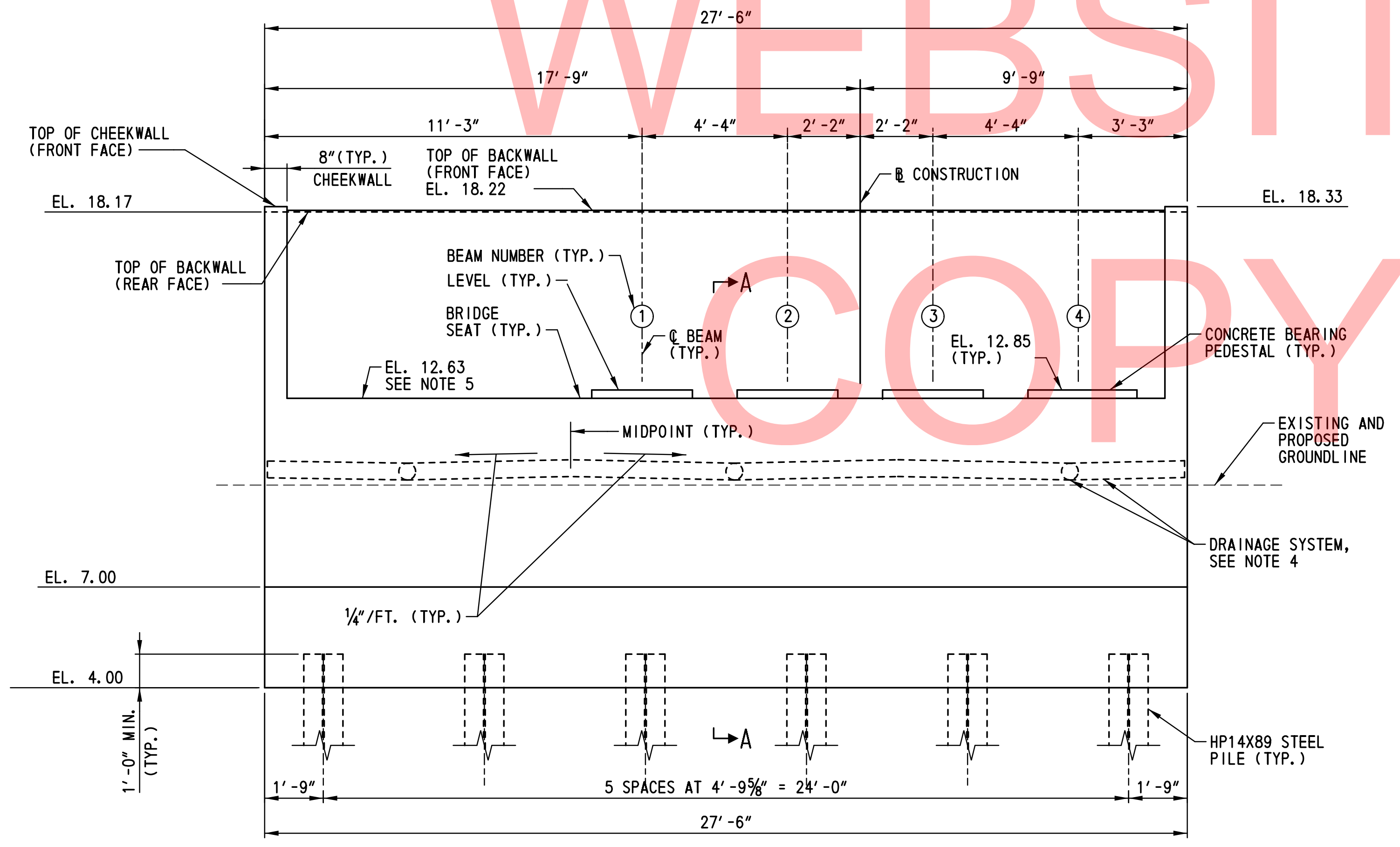
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| CONTRACT T201330009 | BRIDGE NO. X |
| COUNTY NEW CASTLE | DESIGNED BY: NAH CHECKED BY: WAG |

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|--------------------|
| AB-101 |
| SHEET NO. 50 |
| TOTAL SHTS. 205 |



PLAN
SCALE: 3/8"=1'-0"

NOTE:
PILES NOT SHOWN IN
PLAN FOR CLARITY.

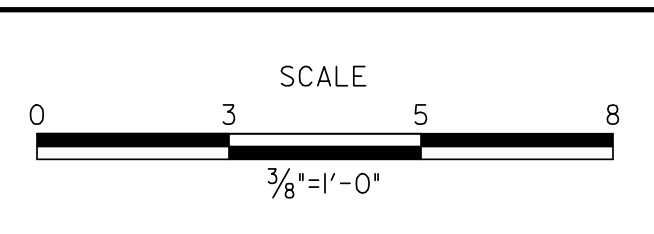


ELEVATION
SCALE: 3/8"=1'-0"

- NOTES:
1. FOR PILE LAYOUT, SEE DWG. NO. PL-102.
 2. FOR SOUTH ABUTMENT SECTION A-A, SEE DWG. NO. AB-103.
 3. FOR MSE WALL ELEVATIONS, SEE DWG. NO. PE-103.
 4. FOR DRAINAGE SYSTEM DETAILS, SEE DWG. NO. AB-103.
 5. BEAM SEAT ELEVATION IS AT THE BACK OF THE BEAM SEAT.
 6. FOR LOCATION OF WPB-1, SEE DWG. NO. FT-103.

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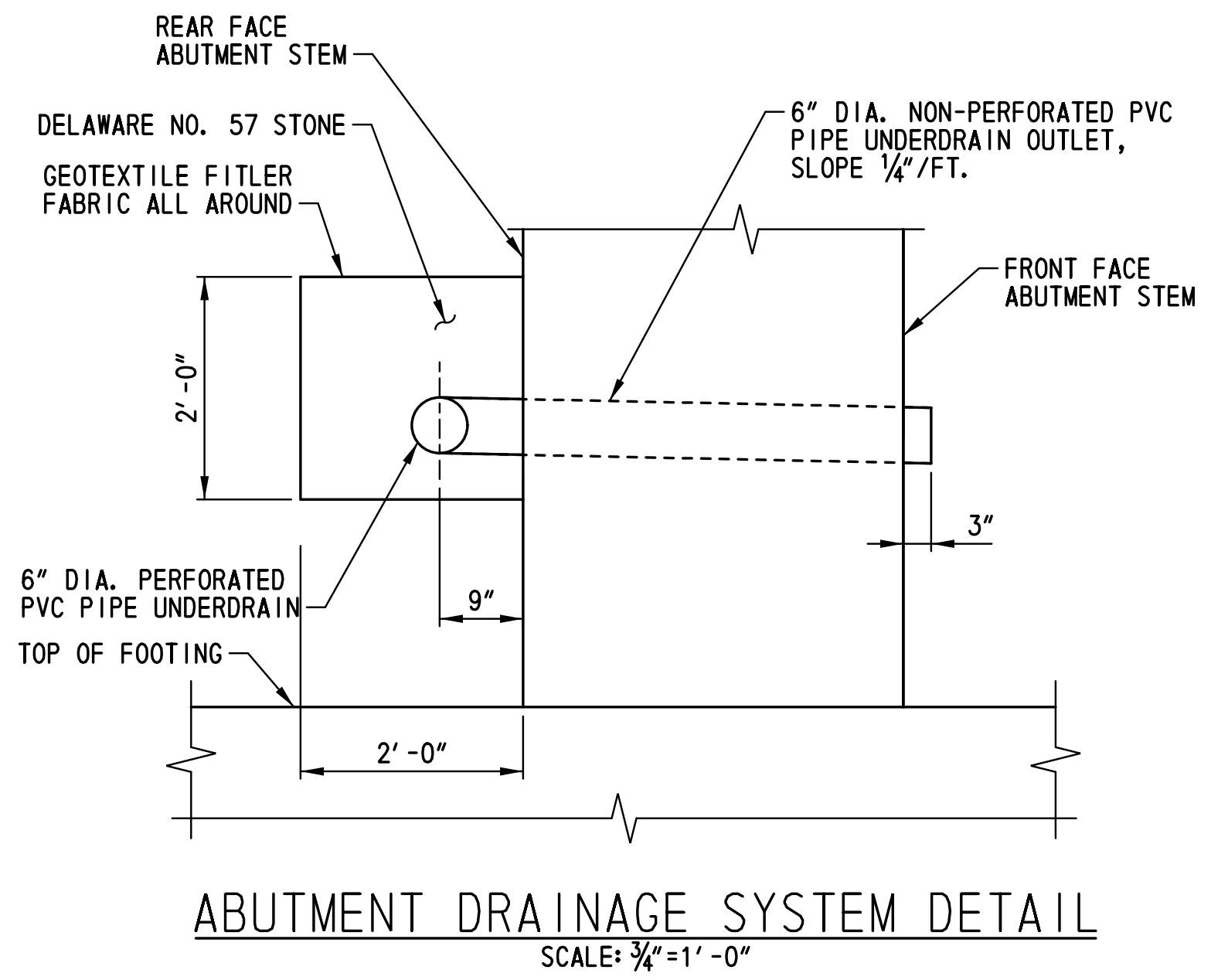
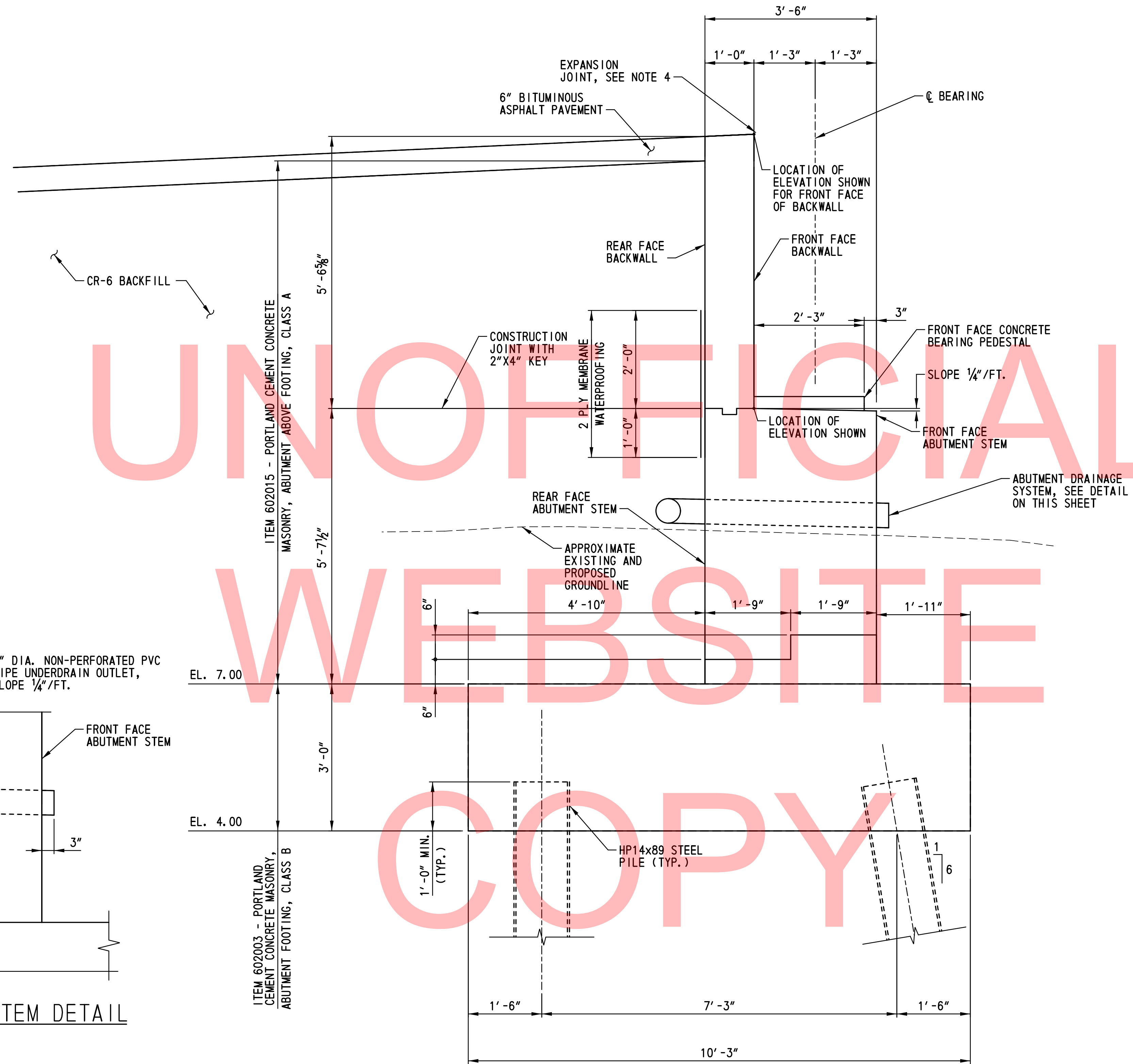
| ADDENDUMS / REVISIONS |
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| CONTRACT T201330009 | BRIDGE NO. X |
| COUNTY NEW CASTLE | DESIGNED BY: NAH CHECKED BY: WAG |

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| AB-102 |
| SHEET NO. 51 |
| TOTAL SHTS. 205 |

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- NOTES:**
- FOR PILE LAYOUT, SEE DWG. NO. PL-102.
 - FOR ABUTMENT A PLAN AND ELEVATION, SEE DWG. NO. AB-101. FOR ABUTMENT B PLAN AND ELEVATION, SEE DWG. NO. AB-102.
 - TOP OF BACKWALL SHALL BE LEVEL PARALLEL TO THE WORKING LINE.
 - FOR EXPANSION JOINT DETAILS, SEE DWG. NO. EX-101.
 - 2-PLY MEMBRANE WATERPROOFING SHALL CONFORM TO THE FOLLOWING REQUIREMENTS:

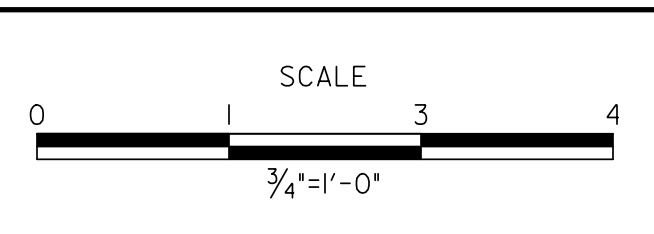
| TEST PROPERTY | TEST METHOD | SPECIFICATION LIMITS |
|---|--------------------------------------|----------------------------------|
| GRAB TENSILE STRENGTH, LB/IN. @ 12 IN./MINUTE RATE OF LOADING, MIN. | D 5034 | 70 |
| PLIABILITY, 180° BEND, 1 IN. MANDREL @ 20°F | D 146 | UNAFFECTED |
| RESISTANCE TO PUNCTURE, LB MIN. | E 154 (SQUARE MOUNTING FRAME METHOD) | 40 |
| PERMEANCE, PERM (Kg/Pa * s * m ²), MAX. | E 96, METHOD B | 0.1 |
| WEIGHT, oz/yd ² MIN. | D 3776 | 40 |
| PRIMER | - | AS SPECIFIED BY THE MANUFACTURER |

THE ADHESIVE SIDE OF THE MEMBRANE SHALL BE PROTECTED WITH A SPECIAL RELEASE PAPER THAT CAN BE EASILY REMOVED FOR INSTALLATION. COST OF 2-PLY MEMBRANE WATERPROOFING SHALL BE INCIDENTAL TO ITEM 602015 -PORTLAND CEMENT CONCRETE MASONRY, ABUTMENT ABOVE FOOTING, CLASS A.

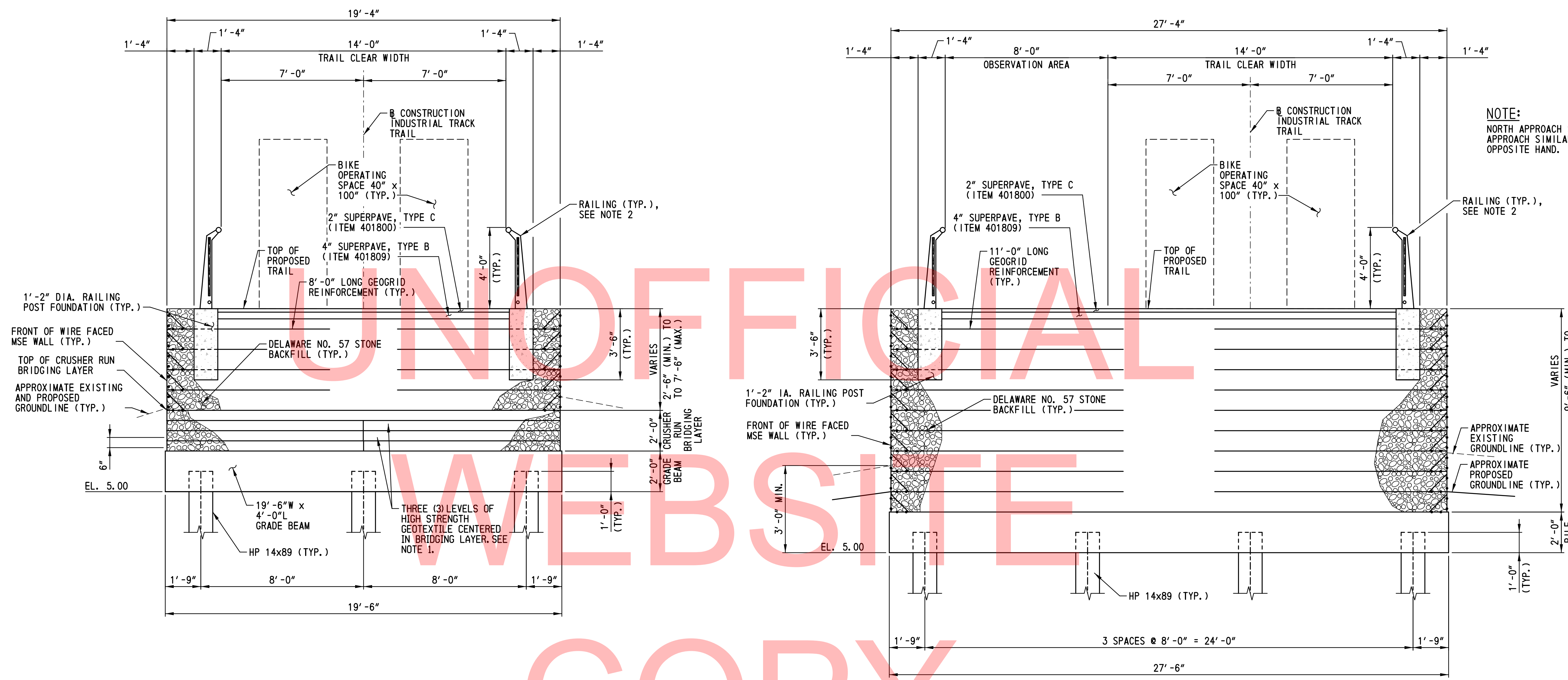
- DRAINAGE SYSTEM NOTES:**
- COST OF PVC PIPE UNDERDRAIN, DELAWARE NO. 57 STONE, GEOTEXTILE FILTER FABRIC, BAR REINFORCEMENT, AND THREADED COUPLERS WILL BE INCIDENTAL TO ITEM 602015 - PORTLAND CEMENT CONCRETE MASONRY, ABUTMENT ABOVE FOOTING, CLASS A.
 - PERFORATED AND NON-PERFORATED PVC PIPE UNDERDRAIN SHALL CONFORM TO ASTM F758, TYPE PS 28.
 - GEOTEXTILE FILTER FABRIC SHALL CONFORM TO AASHTO M 288, CLASS 2.

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| ADDENDUMS / REVISIONS |
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| CONTRACT T201330009 | BRIDGE NO. X |
| COUNTY NEW CASTLE | DESIGNED BY: NAH CHECKED BY: WAG |



TYPICAL SECTION - SOUTH MSE WALL SUPPORTED BY PILE GRADE BEAM
SCALE: 3/8" = 1'-0"

TYPICAL SECTION - MSE OBSERVATION AREA SUPPORTED BY PILE FOOTING
SCALE: 3/8" = 1'-0"

GRADE BEAMS: STA. 103+74.42 TO 105+00.00 SPACED AT 8'-0"

SOUTH OBSERVATION AREA: STA. 105+00.00 TO 105+45.50
NORTH OBSERVATION AREA: STA. 109+18.50 TO 109+64.00

WIRE-FACED MSE RETAINING WALL DESIGN PARAMETERS:

- A. BACKFILL:
 - NO. 57 STONE:
 - $\phi = 34^\circ$
 - $c = 0$ PSF
 - UNIT WEIGHT = 110 PCF
- B. WIRE-FACED DEFORMATION:
 - 2" MAXIMUM BULGING FROM THE THEORETICAL FACE OF WALL IN BOTH THE HORIZONTAL AND VERTICAL DIRECTIONS.
- C. MINIMUM REINFORCEMENT LENGTH: $0.8 \times H_{wall}$ OR 8'-0", WHICHEVER IS GREATER.
- D. FACTORED BEARING RESISTANCES FROM STA. 109+80 TO STA. 110+93.67: 3.0 KSF (STRENGTH), 1.5 KSF (SERVICE).

WIRE-FACED MSE RETAINING NOTES:

1. THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER FOR APPROVAL COMPUTATIONS THAT HAVE BEEN SIGNED AND SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF DELAWARE TOGETHER WITH THE SHOP DRAWINGS FOR THE WIRE-FACED MSE RETAINING WALL. ALL COMPUTATIONS SHALL BE IN CONFORMANCE WITH 2014 AASHTO LRFD DESIGN SPECIFICATIONS, INCLUDING 2015 INTERIM REVISIONS.
2. SEE SPECIAL PROVISIONS FOR ADDITIONAL INFORMATION.
3. SEE DWG. NO. PL-103 FOR DETAILS ON RESISTANCE FROM PILE SUPPORTS WITHIN STA. 109+64.00 AND STA. 109+80.00.
4. SEE DWG. PL-101 FOR DETAILS ON RESISTANCE FROM PILE SUPPORTS.
5. BRIDGING LAYER IS CONTINUOUS FROM STA. 103+70.42 TO STA. 105+05.00 AND SHALL CONFORM TO SECTION 821, TYPE B CRUSHER RUN.
6. SEE SPECIAL PROVISION 209503 FOR ADDITIONAL INFORMATION ON THE BRIDGING LAYER.

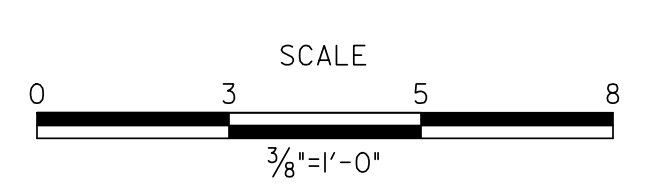
NOTES:

1. THE HIGH STRENGTH GEOTEXTILE BRIDGING LAYER IS CONTINUOUS FROM STA. 103+70.42 TO STA. 105+05.00
2. FOR RAILING DETAILS, SEE DWG. NOS. RL-101 AND RL-102.

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| ADDENDUMS / REVISIONS | |
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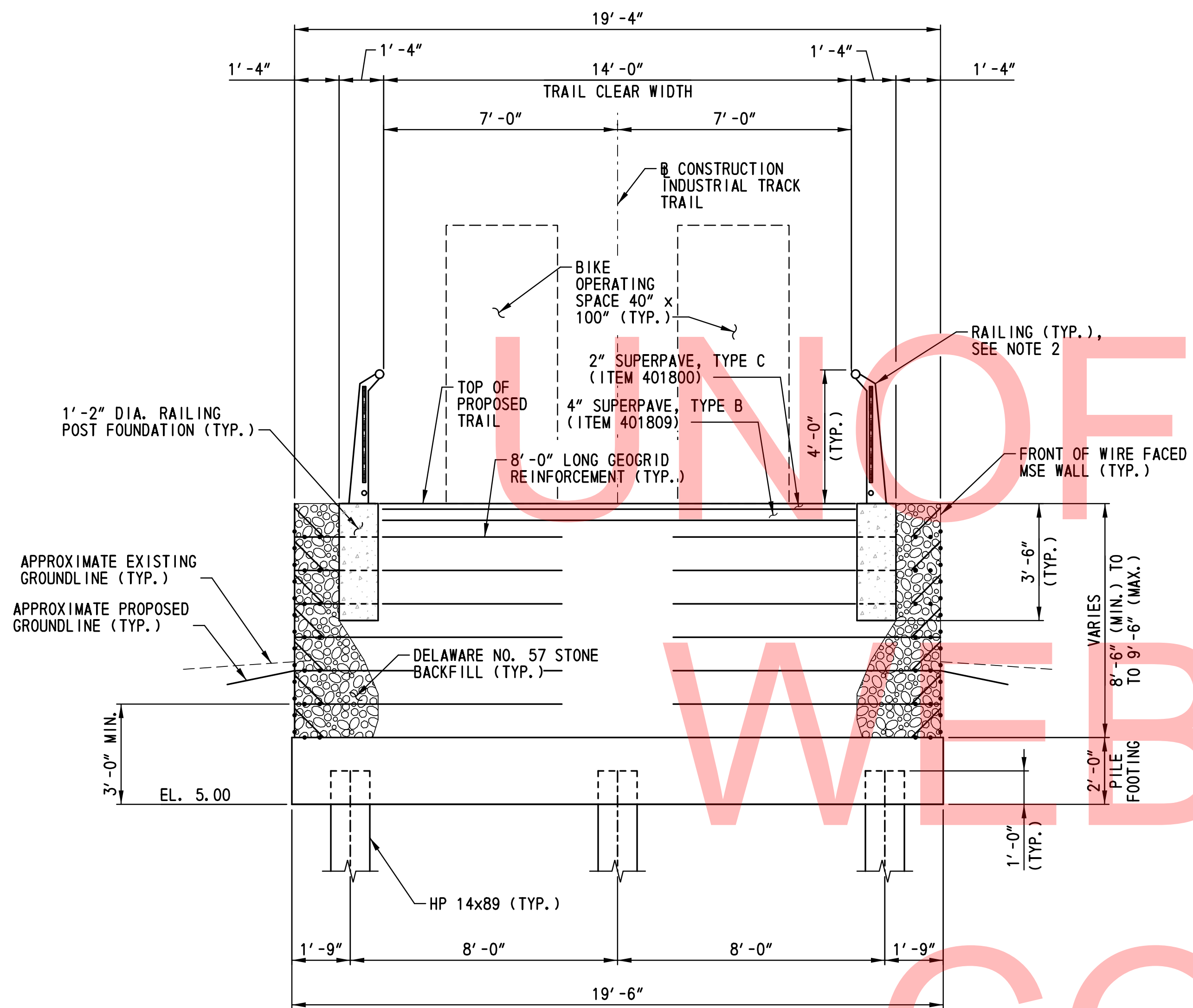


NEW CASTLE INDUSTRIAL TRACK TRAIL, PHASE 3

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| CONTRACT | BRIDGE NO. | X |
| T201330009 | DESIGNED BY: ZMG | |
| COUNTY | CHECKED BY: WAG | |
| NEW CASTLE | | |

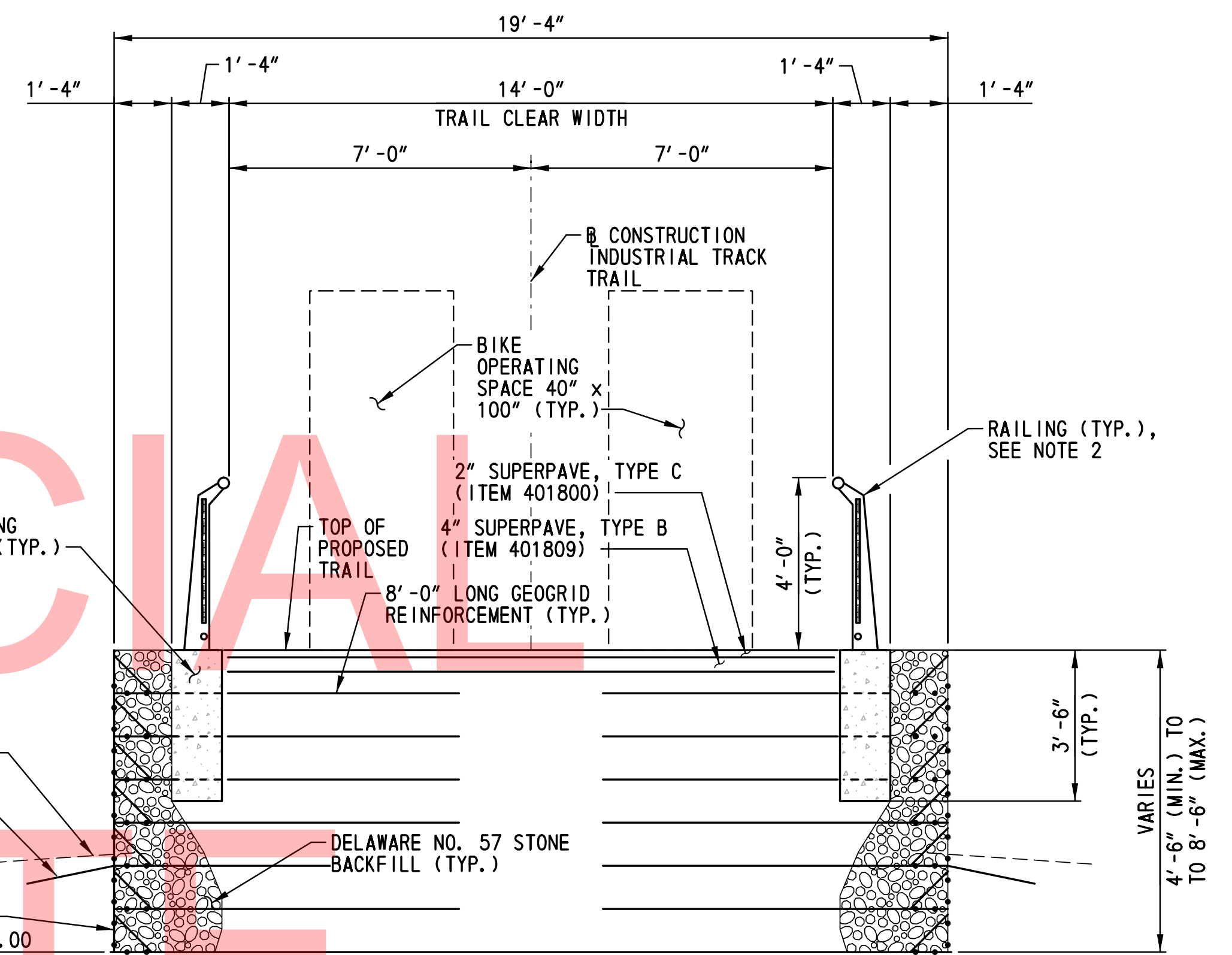
TRAIL RETAINING STRUCTURES TYPICAL SECTIONS - 1

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| AB-104 |
| SHEET NO. |
| 53 |
| TOTAL SHTS. |
| 205 |



TYPICAL SECTION - NORTH MSE WALL SUPPORTED BY PILE FOOTING
SCALE: 3/8" = 1'-0"

NORTH PILE FOOTING MSE WALL: STA. 109+64.00 TO 109+80.00 NORTH APPROACH



TYPICAL SECTION - NORTH MSE WALL
SCALE: 3/8" = 1'-0"

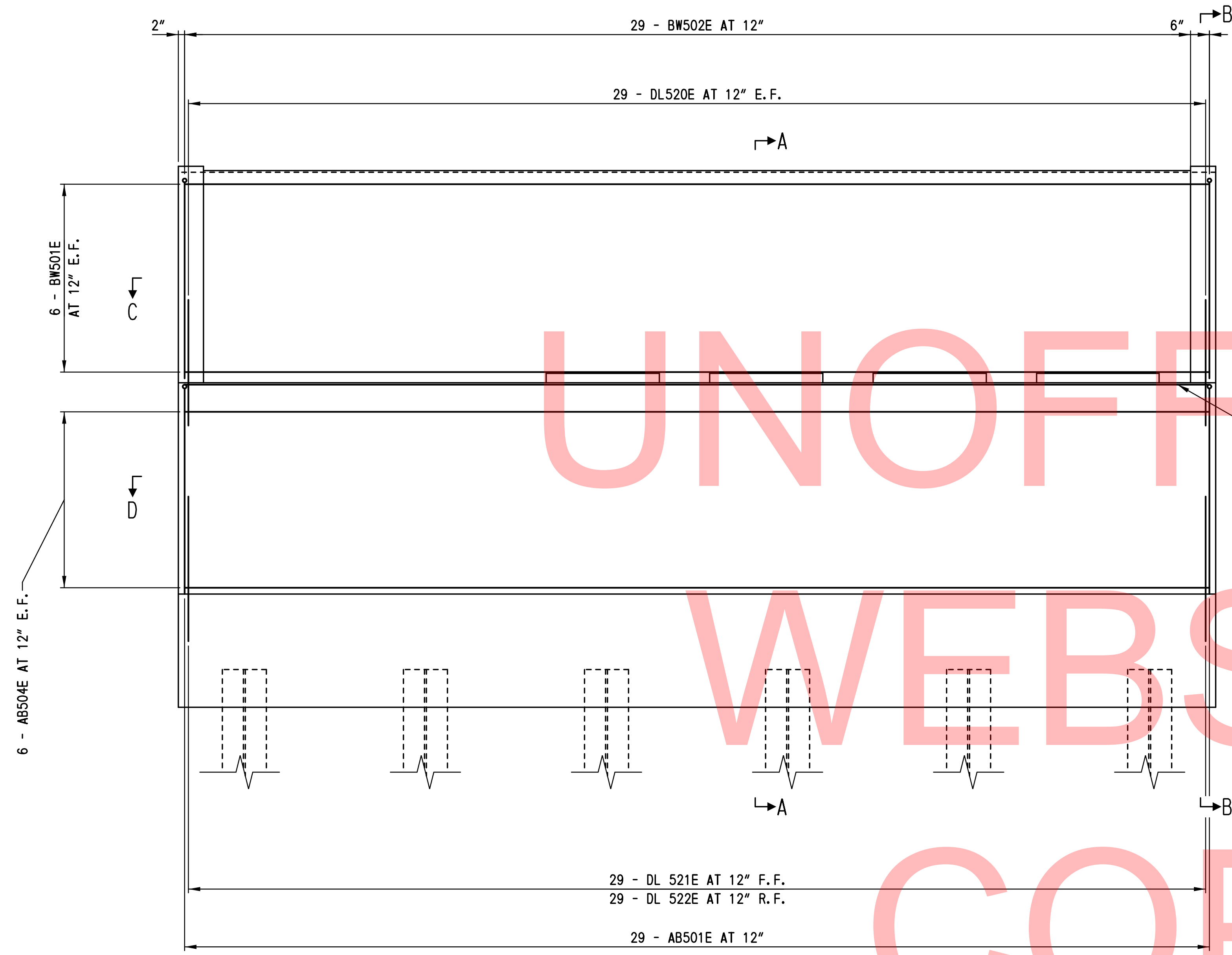
NORTH MSE WALL: STA. 109+80.00 TO 110+93.67

NOTES:

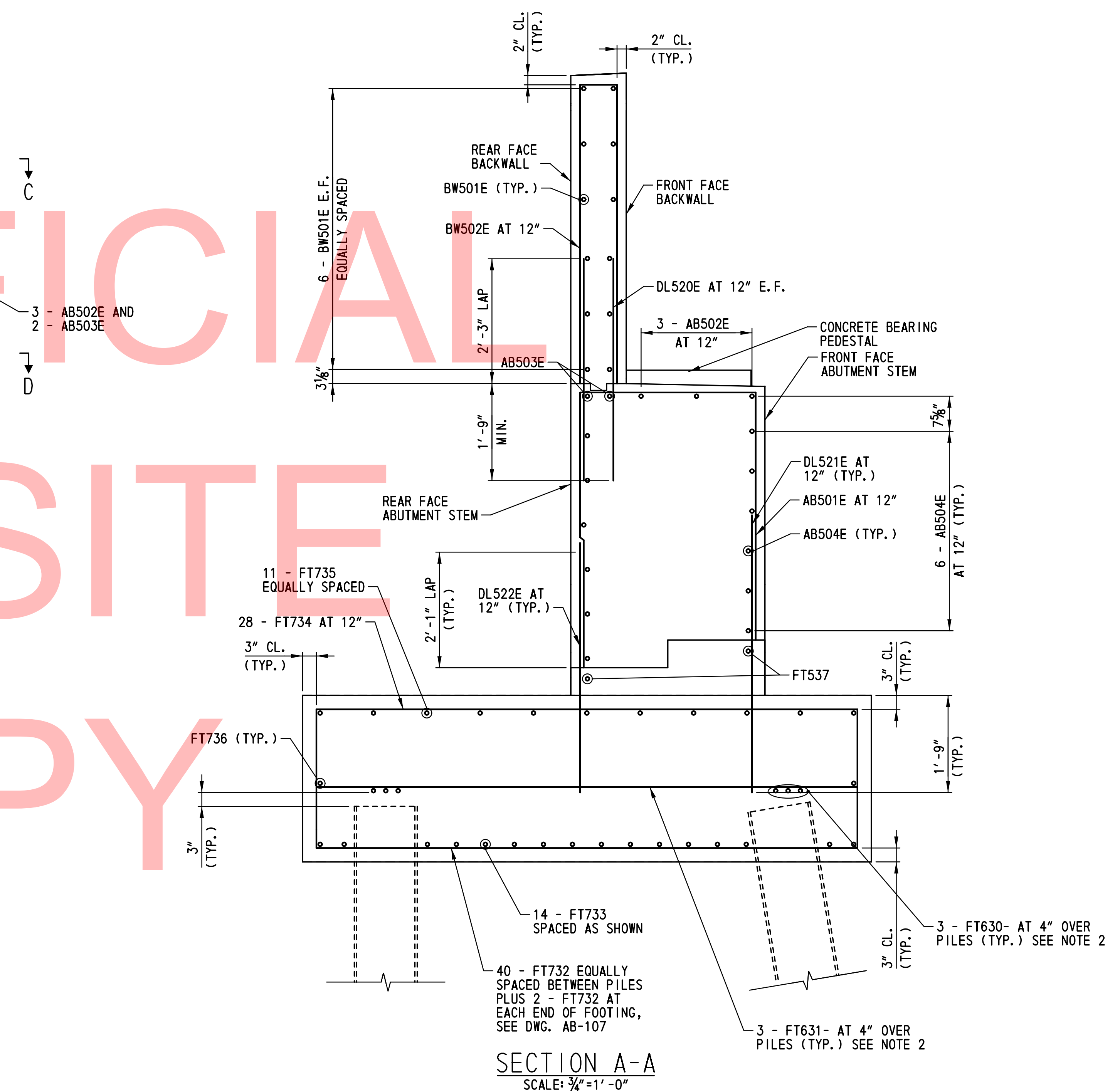
1. FOR WIRE-FACED MSE WALL RETAINING WALL DESIGN NOTES AND WIRE-FACED MSE WALL RETAINING WALL NOTES, SEE DWG. NO. AB-104.
2. FOR RAILING DETAILS, SEE DWG. NOS. RL-101 AND RL-102.

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- NOTES:**
- FOR ADDITIONAL REINFORCEMENT DETAILS, SEE DWG. NOS. AB-107 AND AB-108.
 - REINFORCING STEEL IN FOOTING NOT SHOWN IN ELEVATION VIEW FOR CLARITY. SEE DWG. NOS. AB-107 AND PL-102.
 - F.F. = FRONT FACE
R.F. = REAR FACE
E.F. = EACH FACE



REINFORCEMENT ELEVATION
SCALE: 1/2" = 1' - 0"



SECTION A-A
SCALE: 3/4" = 1' - 0"

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| ADDENDUMS / REVISIONS | |
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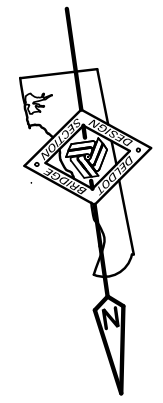
SCALE AS NOTED

NEW CASTLE INDUSTRIAL TRACK TRAIL, PHASE 3

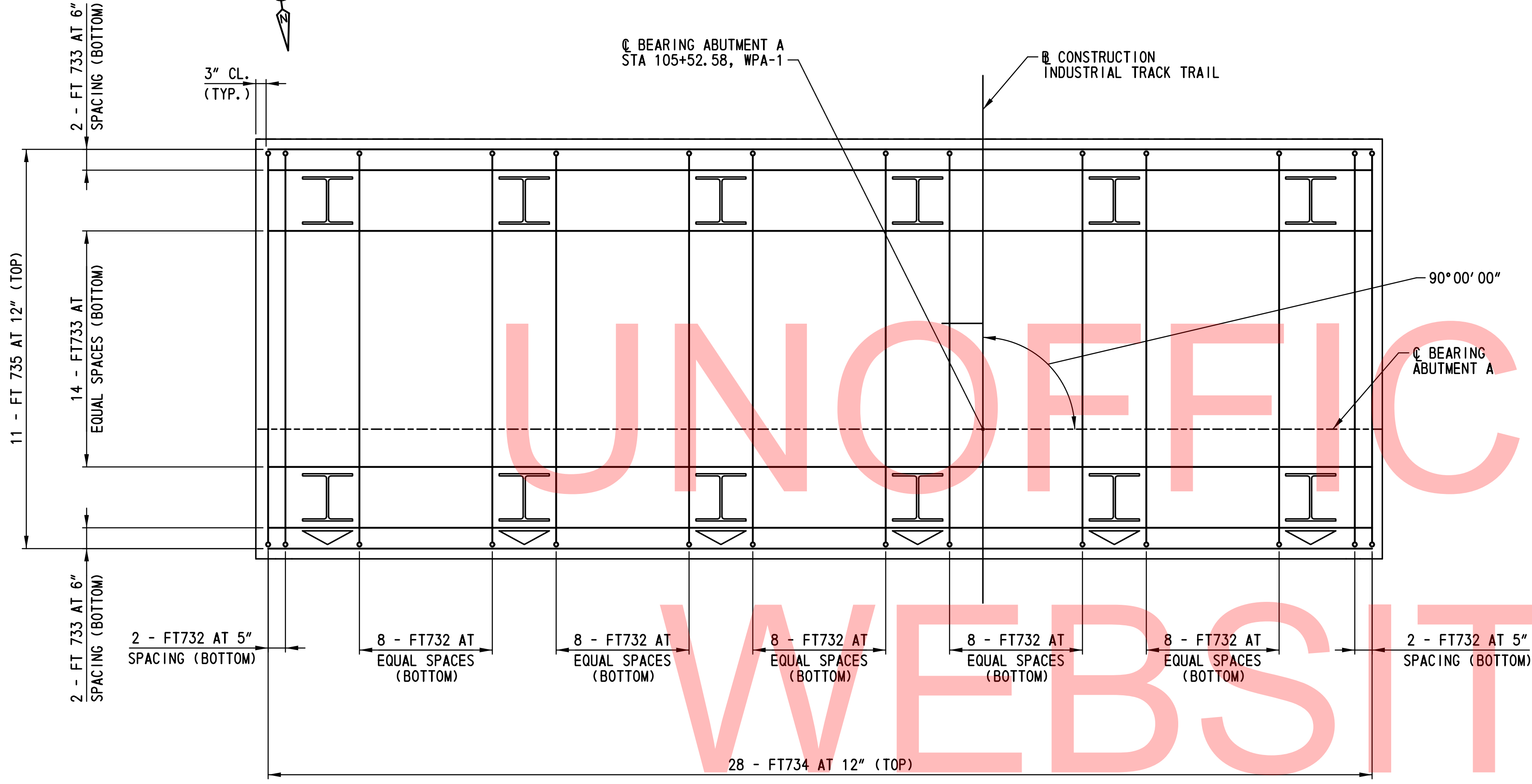
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| CONTRACT | BRIDGE NO. | X |
| T201330009 | DESIGNED BY: NAH | |
| COUNTY | CHECKED BY: WAG | |
| NEW CASTLE | | |

ABUTMENT A REINFORCEMENT DETAILS - 1

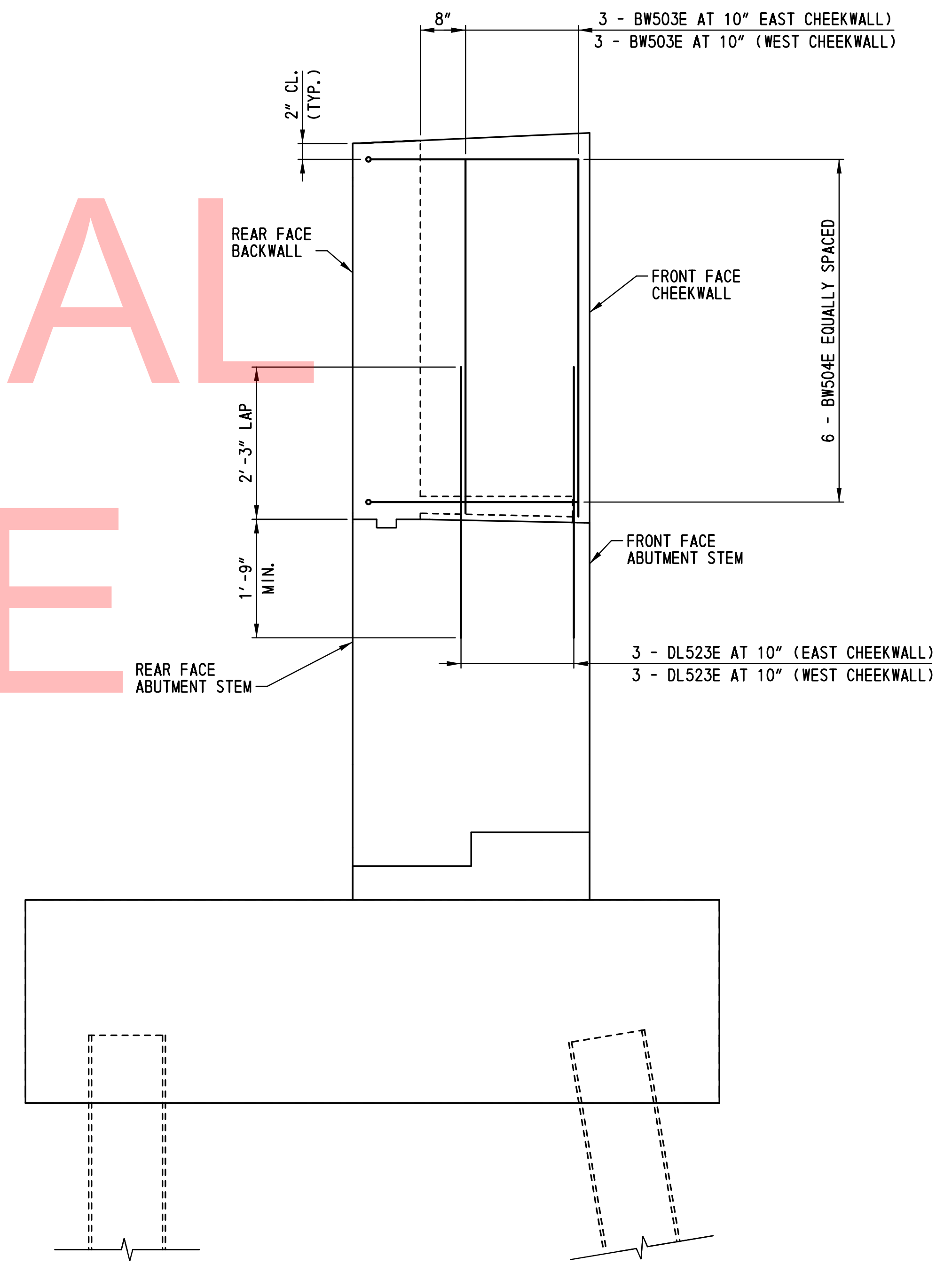
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| AB-106 |
| SHEET NO. |
| 55 |
| TOTAL SHTS. |
| 205 |



- NOTES:**
1. REINFORCEMENT OVER PILES NOT SHOWN FOR CLARITY. FOR PILE LAYOUT AND REINFORCEMENT OVER PILES, SEE DWG. NO. PL-102.
 2. FOR ADDITIONAL REINFORCEMENT DETAILS, SEE DWG. NOS. AB-106 AND AB-108.
 3. MSE WALLS AND MSE WALL FOOTING NOT SHOWN FOR CLARITY.



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



SECTION B-B
SCALE: 3/4" = 1' - 0"

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| ADDENDUMS / REVISIONS | |
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SCALE AS NOTED

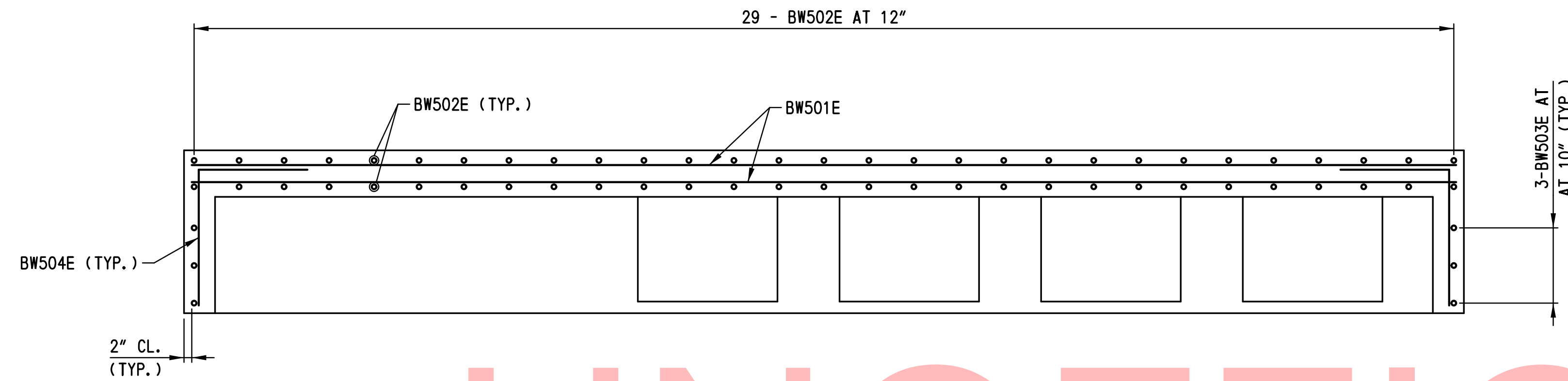
NEW CASTLE INDUSTRIAL TRACK TRAIL, PHASE 3

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| CONTRACT T201330009 | BRIDGE NO. X |
| COUNTY NEW CASTLE | DESIGNED BY: NAH CHECKED BY: WAG |

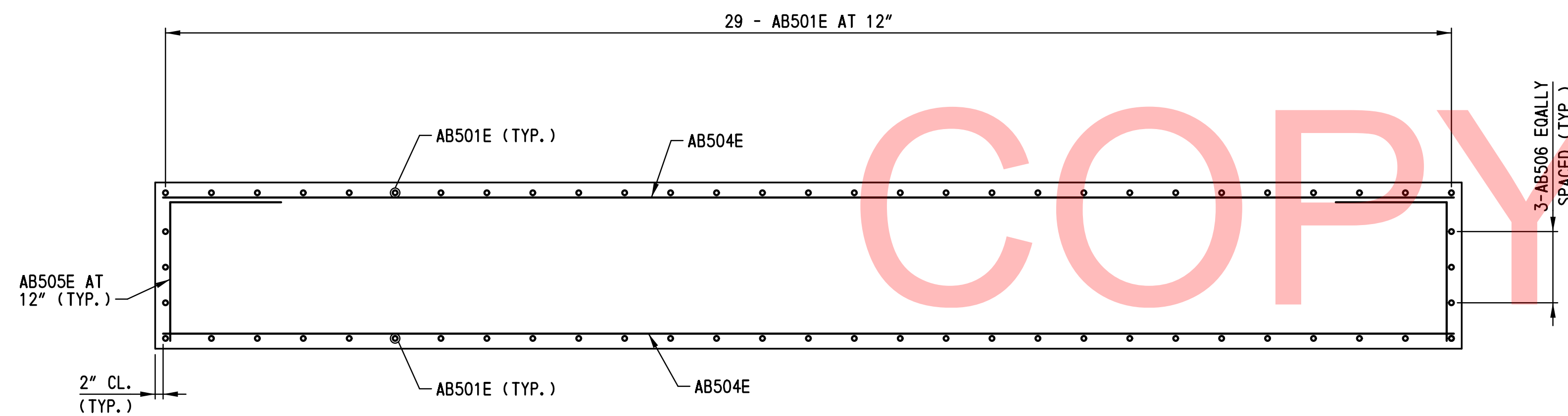
ABUTMENT A REINFORCEMENT DETAILS - 2

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| AB-107 |
| SHEET NO. 56 |
| TOTAL SHTS. 205 |

NOTES:
 1. FOR ADDITIONAL REINFORCEMENT DETAILS, SEE DWG. NOS. AB-106 AND AB-107.



SECTION C-C
 SCALE: 1/2" = 1'-0"

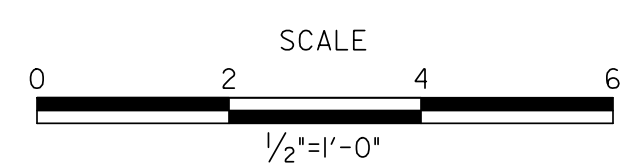


SECTION D-D
 SCALE: 1/2" = 1'-0"

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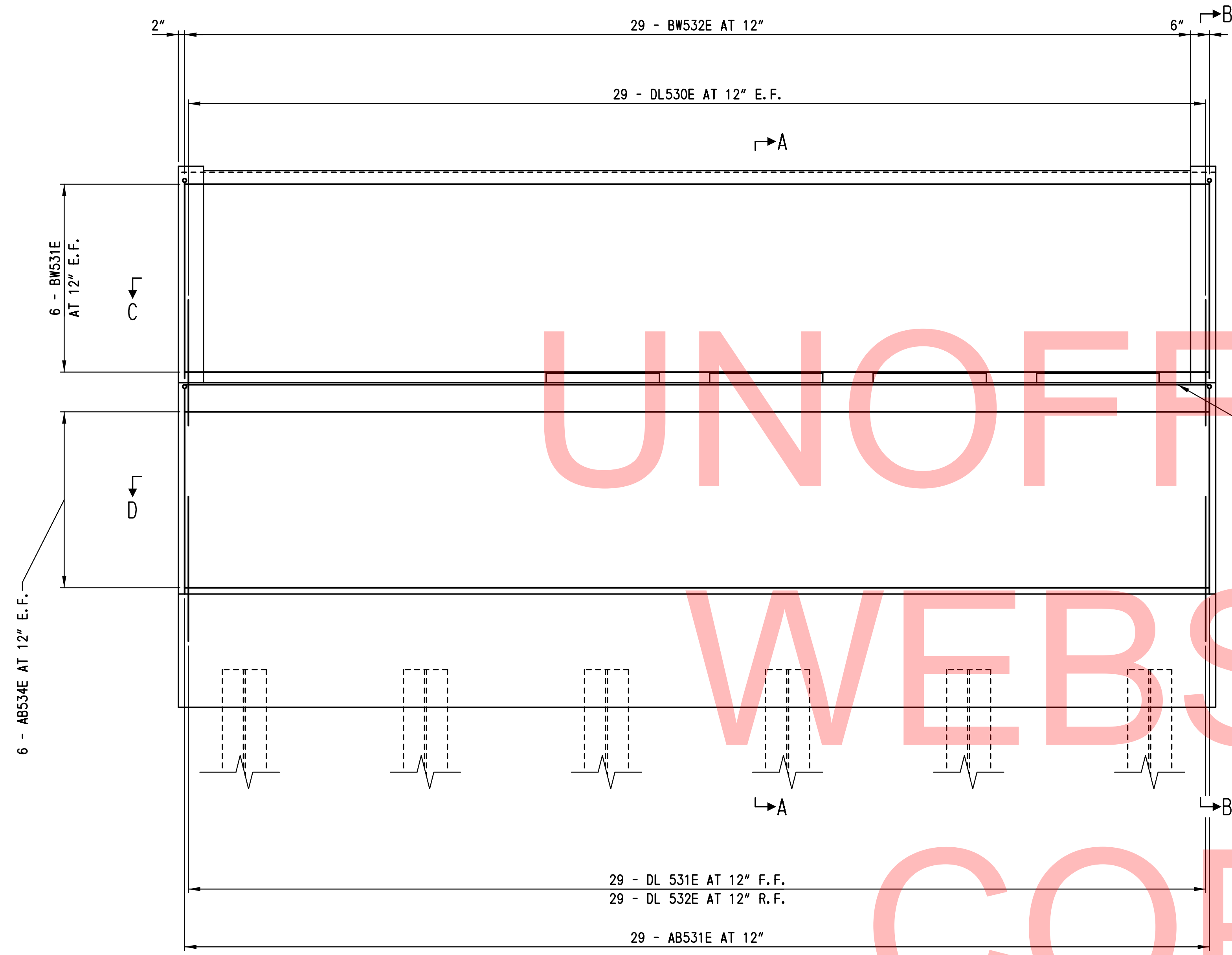
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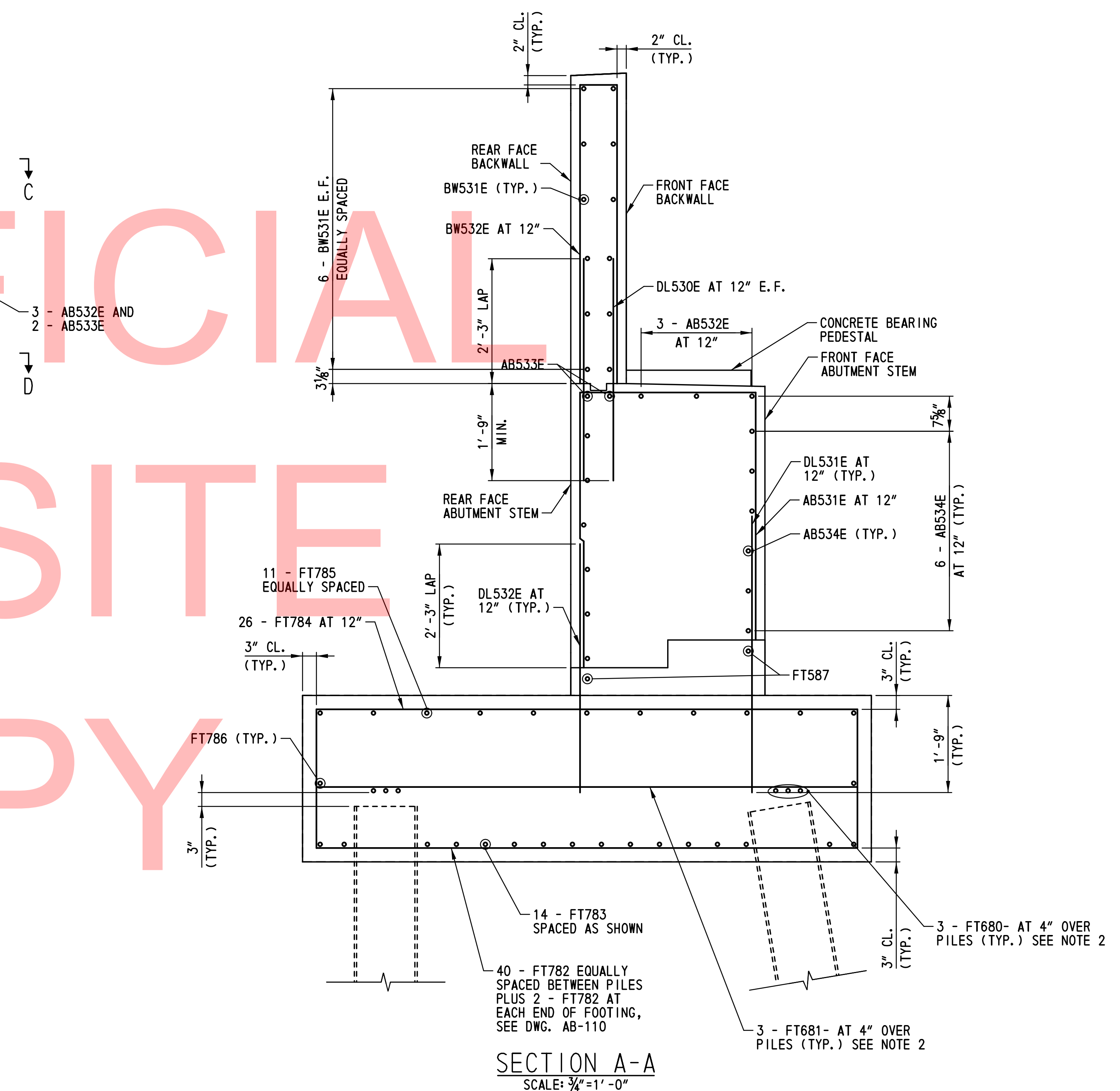
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| CONTRACT | BRIDGE NO. | X |
| T201330009 | DESIGNED BY: NAH | |
| COUNTY | CHECKED BY: WAG | |
| NEW CASTLE | | |

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| AB-108 |
| SHEET NO. |
| 57 |
| TOTAL SHTS. |
| 205 |

- NOTES:**
- FOR ADDITIONAL REINFORCEMENT DETAILS, SEE DWG. NOS. AB-110 AND AB-111.
 - REINFORCING STEEL IN FOOTING NOT SHOWN IN ELEVATION VIEW FOR CLARITY. SEE DWG. NOS. AB-110 AND PL-102.
 - F.F. = FRONT FACE
R.F. = REAR FACE
E.F. = EACH FACE



REINFORCEMENT ELEVATION
SCALE: 1/2" = 1' - 0"



SECTION A-A
SCALE: 3/4" = 1' - 0"

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| ADDENDUMS / REVISIONS | |
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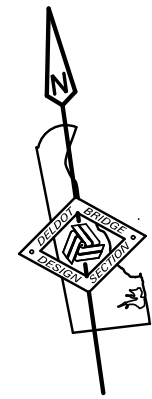
SCALE AS NOTED

NEW CASTLE INDUSTRIAL TRACK TRAIL, PHASE 3

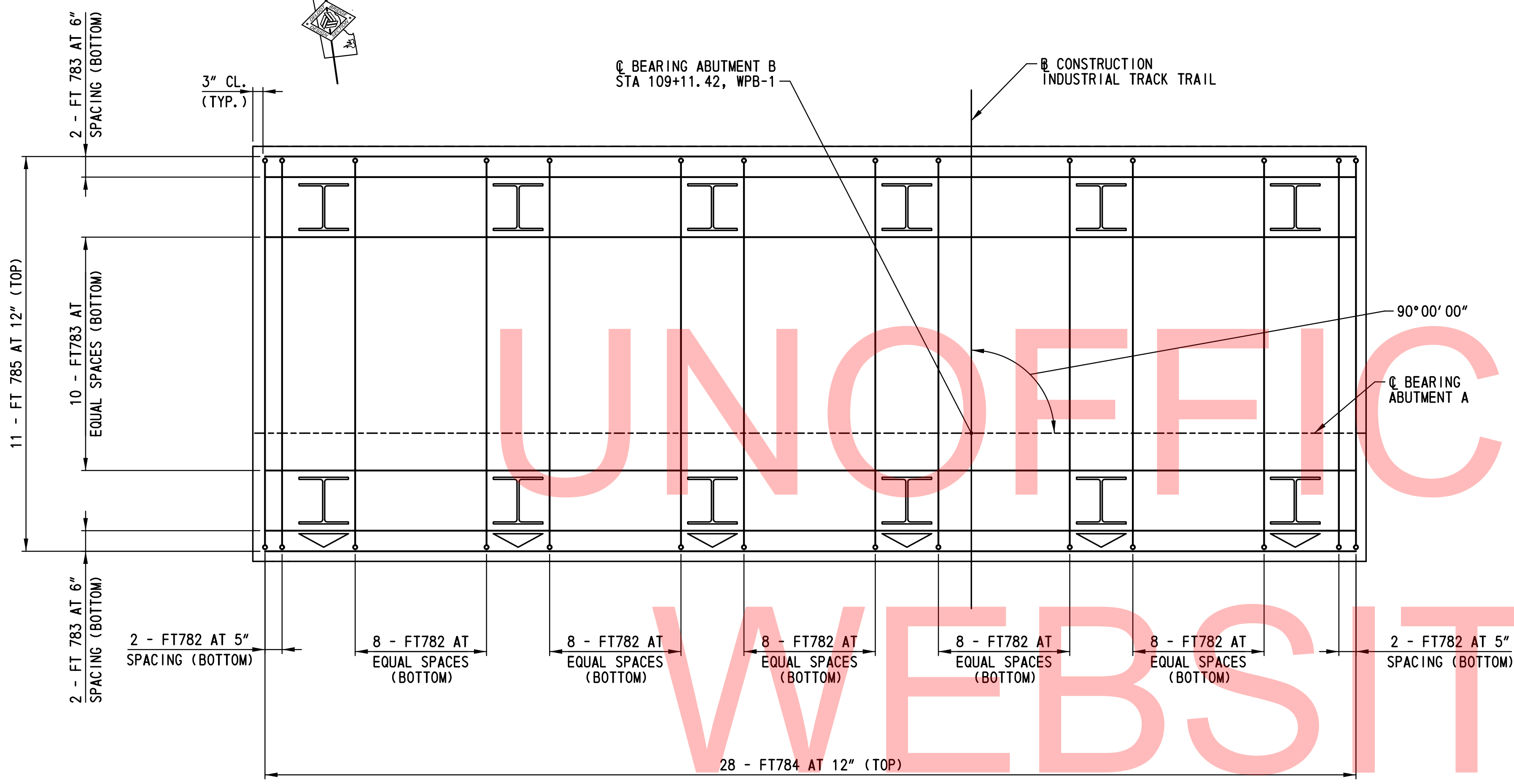
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| CONTRACT | BRIDGE NO. | X |
| T201330009 | DESIGNED BY: NAH | |
| COUNTY | CHECKED BY: WAG | |
| NEW CASTLE | | |

ABUTMENT B REINFORCEMENT DETAILS - 1

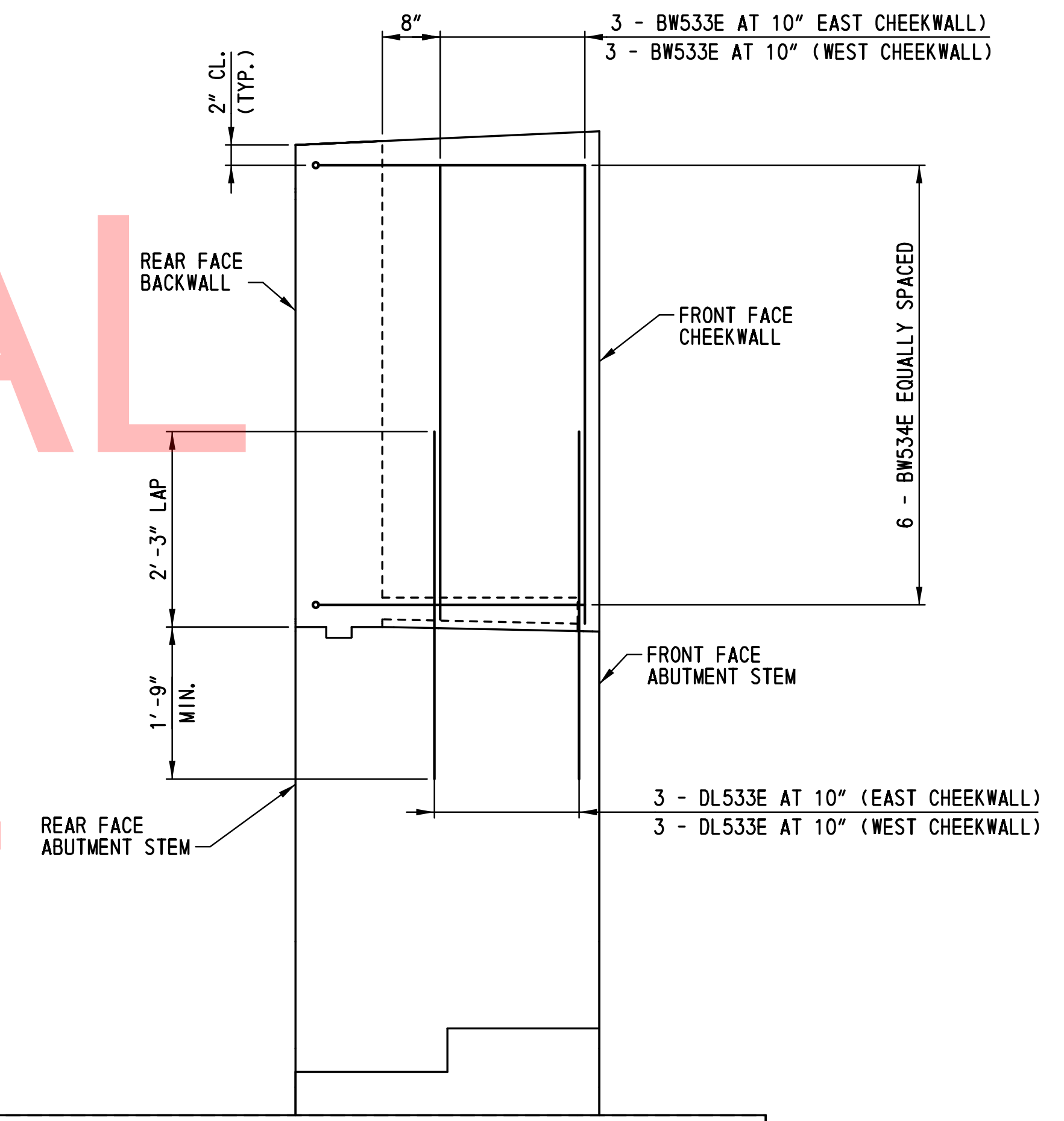
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| AB-109 |
| SHEET NO. |
| 58 |
| TOTAL SHTS. |
| 205 |



- NOTES:**
1. REINFORCEMENT OVER PILES NOT SHOWN FOR CLARITY. FOR PILE LAYOUT AND REINFORCEMENT OVER PILES, SEE DWG. NO. PL-102.
 2. FOR ADDITIONAL REINFORCEMENT DETAILS, SEE DWG. NOS. AB-109 AND AB-111.
 3. MSE WALLS AND MSE WALL FOOTING NOT SHOWN FOR CLARITY.



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



SECTION B-B
SCALE: 3/4" = 1' - 0"

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| ADDENDUMS / REVISIONS | |
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SCALE AS NOTED

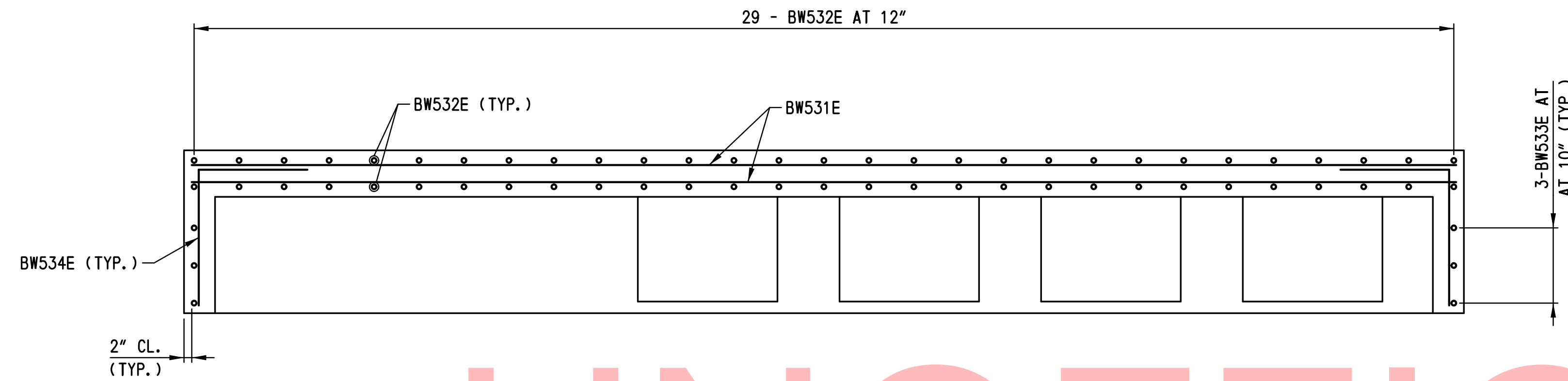
NEW CASTLE INDUSTRIAL TRACK TRAIL, PHASE 3

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| CONTRACT T201330009 | BRIDGE NO. X |
| COUNTY NEW CASTLE | DESIGNED BY: NAH CHECKED BY: WAG |

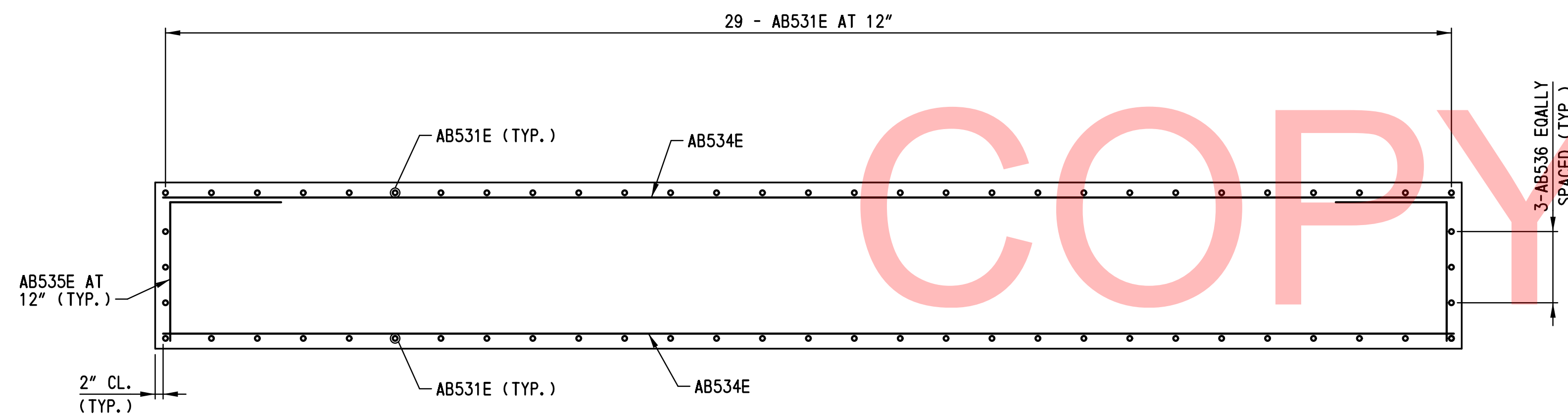
ABUTMENT B REINFORCEMENT DETAILS - 2

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| AB-110 |
| SHEET NO. 59 |
| TOTAL SHTS. 205 |

- NOTES:**
 1. FOR ADDITIONAL REINFORCEMENT DETAILS, SEE DWG. NOS. AB-109 AND AB-110.



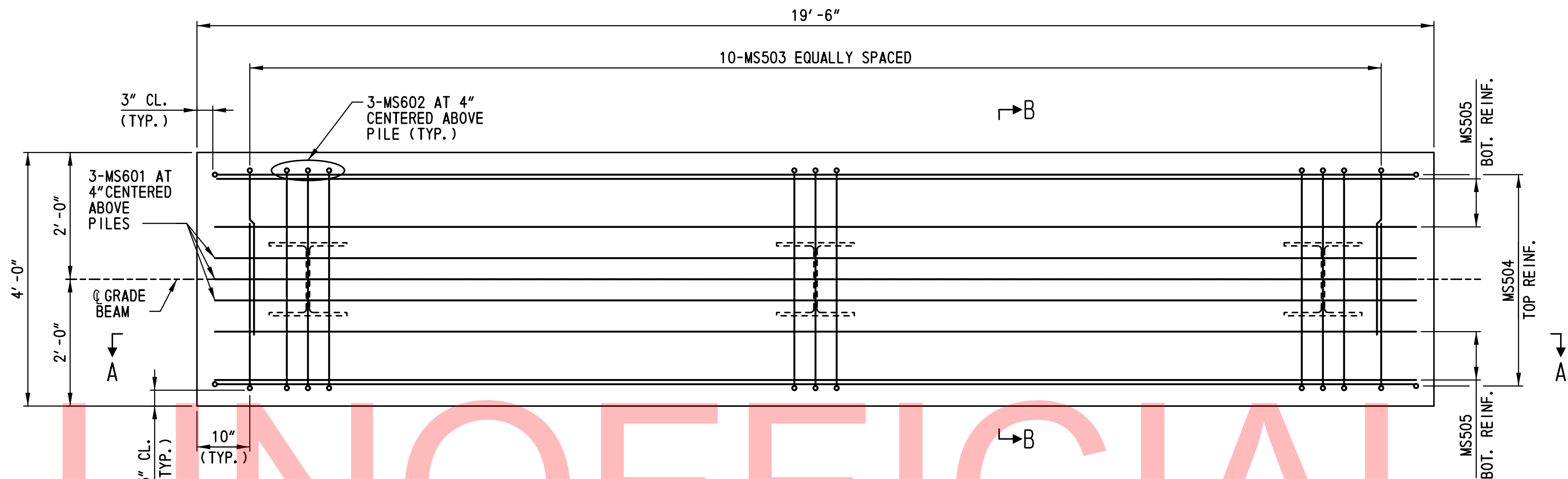
SECTION C-C
 SCALE: 1/2" = 1' - 0"



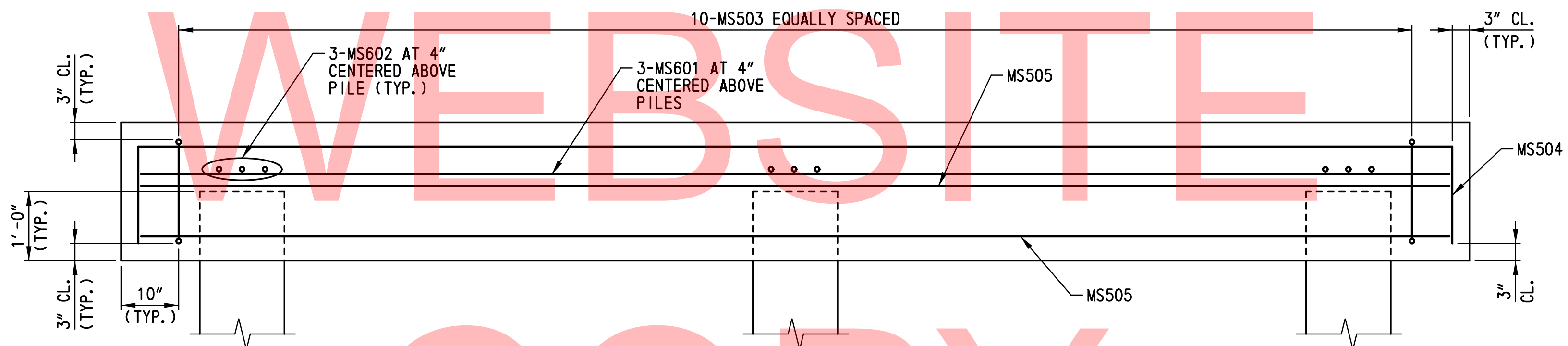
SECTION D-D
 SCALE: 1/2" = 1' - 0"

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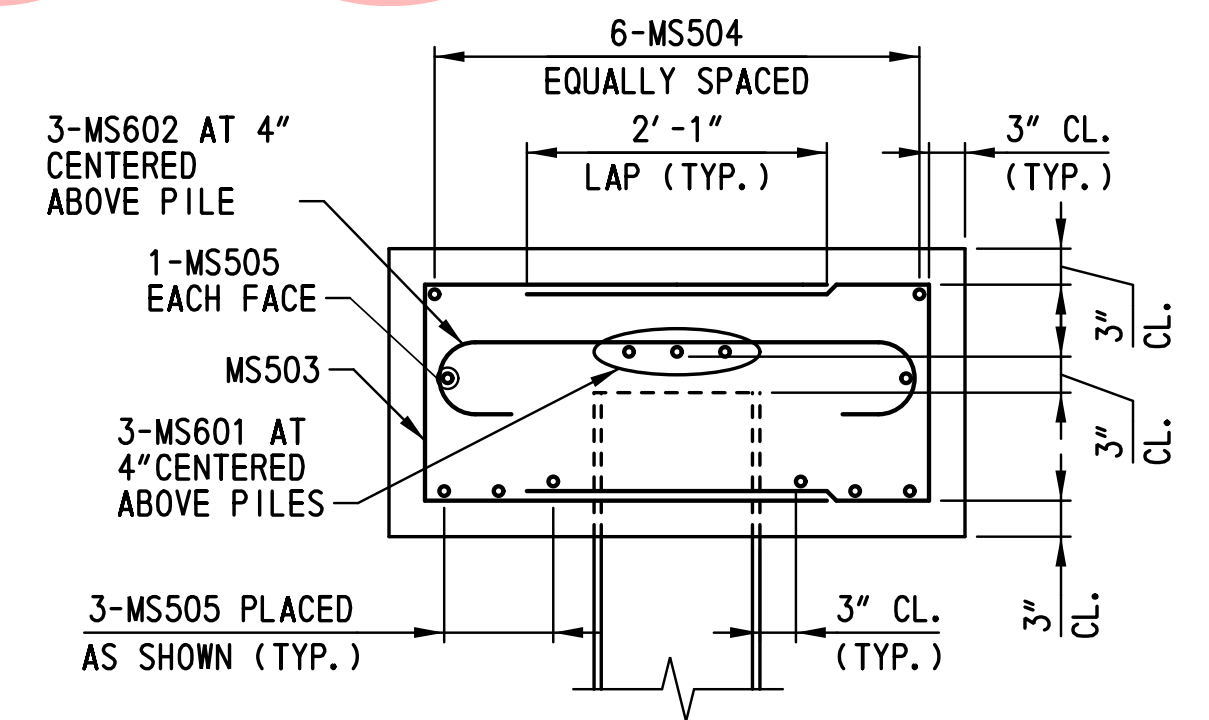
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GRADE BEAM REINFORCEMENT PLAN
SCALE: 3/4"=1'-0"



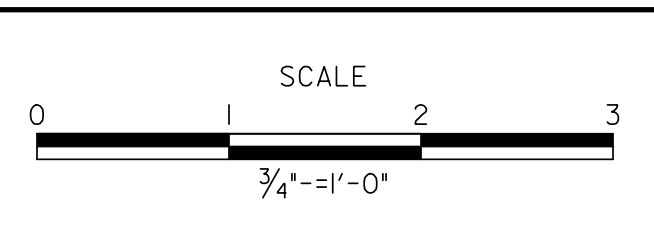
GRADE BEAM TYPICAL REINFORCEMENT SECTION A-A
SCALE: 3/4"=1'-0"



GRADE BEAM TYPICAL REINFORCEMENT SECTION B-B
SCALE: 3/4"=1'-0"

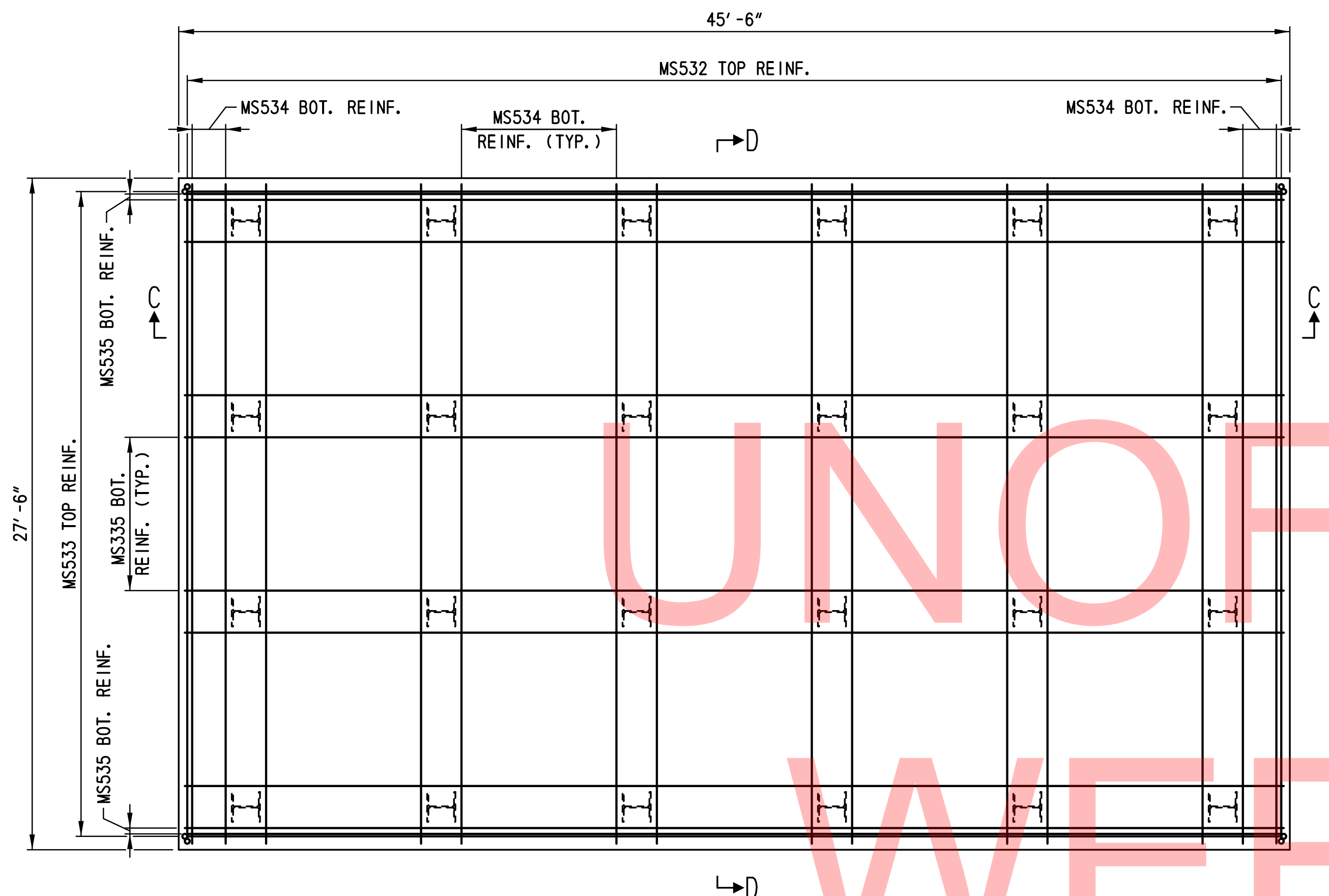
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| ADDENDUMS / REVISIONS |
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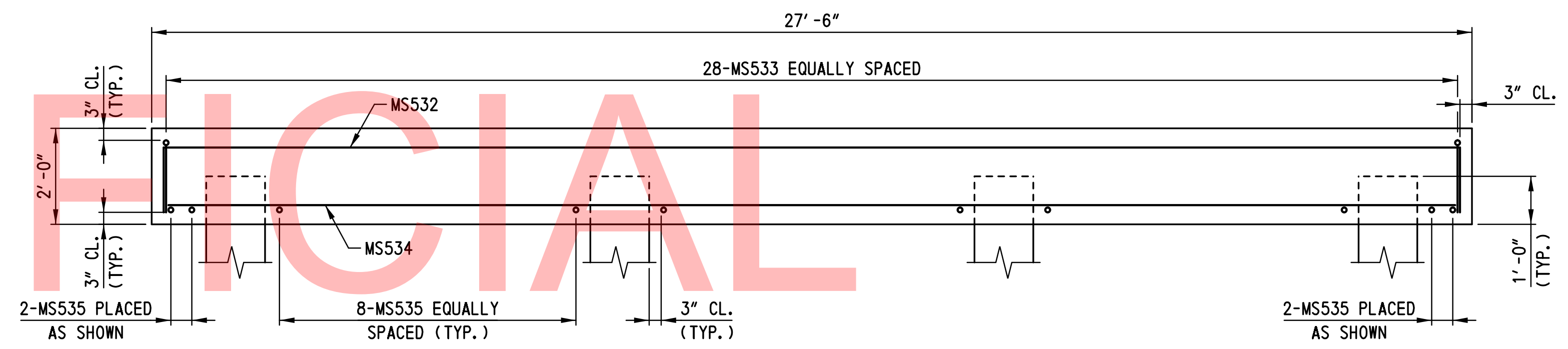


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| CONTRACT T201330009 | BRIDGE NO. X |
| COUNTY NEW CASTLE | DESIGNED BY: ZMG CHECKED BY: WAG |

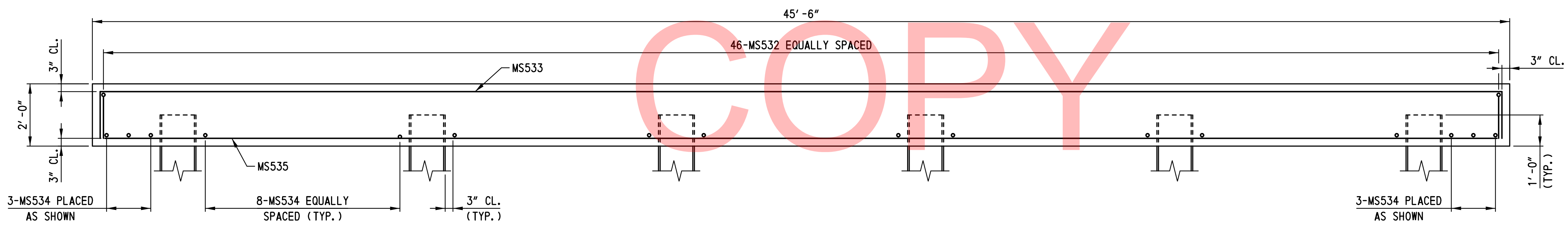
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| AB-112 |
| SHEET NO. 61 |
| TOTAL SHTS. 205 |



SOUTH MAT REINFORCEMENT PLAN
SCALE: 1/4" = 1'-0"



SOUTH MAT TYPICAL REINFORCEMENT SECTION D-D
SCALE: 1/2" = 1'-0"



SOUTH MAT TYPICAL REINFORCEMENT SECTION C-C
SCALE: 1/2" = 1'-0"

- NOTES:
- SPACE REINFORCING STEEL AS NECESSARY TO CLEAR PILES. FOR ADDITIONAL INFORMATION, SEE DWG. NO. PL-101.
 - REINFORCEMENT OVER PILES NOT SHOWN FOR CLARITY. FOR PILE LAYOUT AND REINFORCEMENT OVER PILES, SEE DWG. NO. PL-101.

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| ADDENDUMS / REVISIONS |
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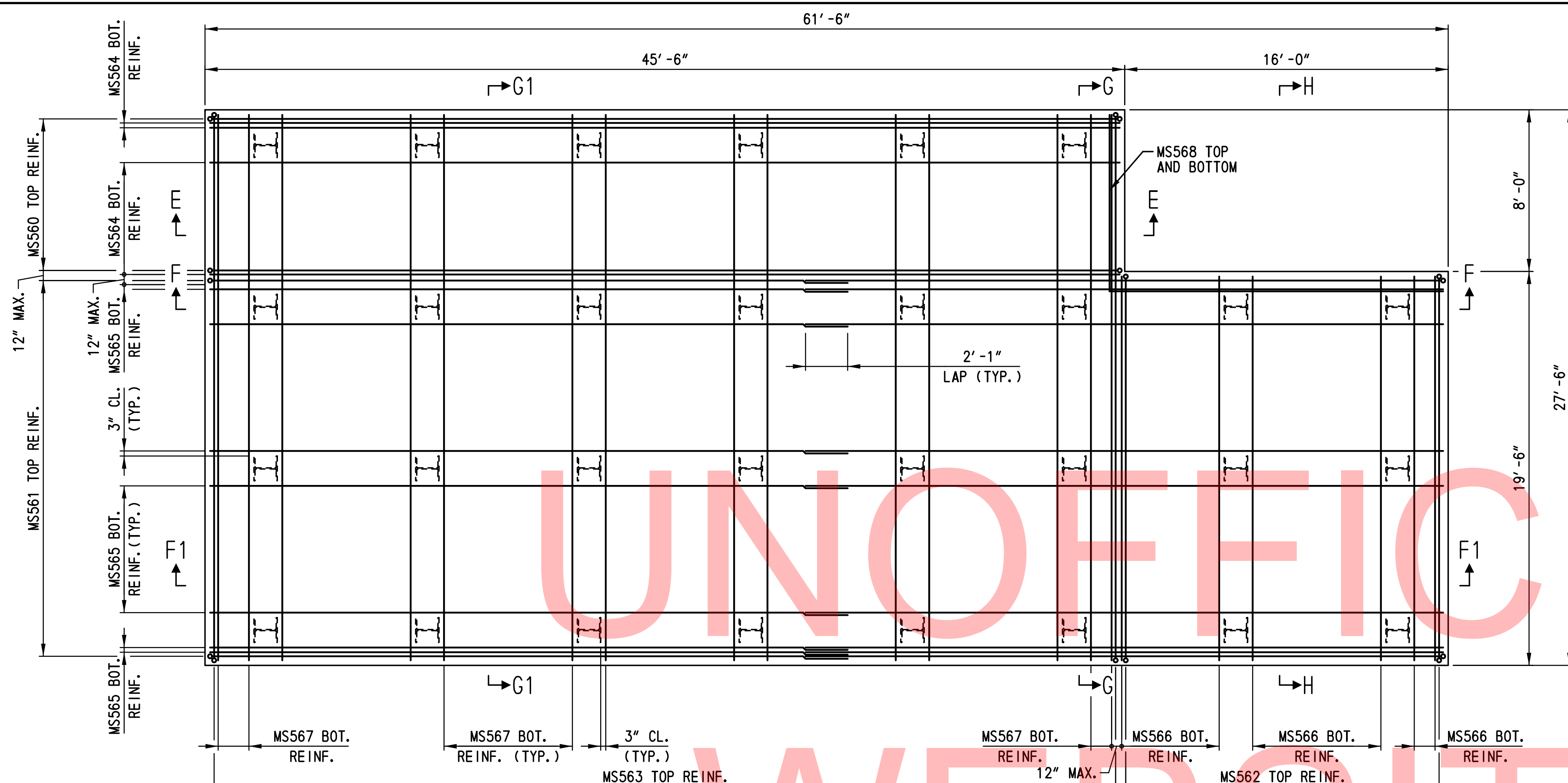
SCALE AS NOTED

NEW CASTLE INDUSTRIAL TRACK TRAIL, PHASE 3

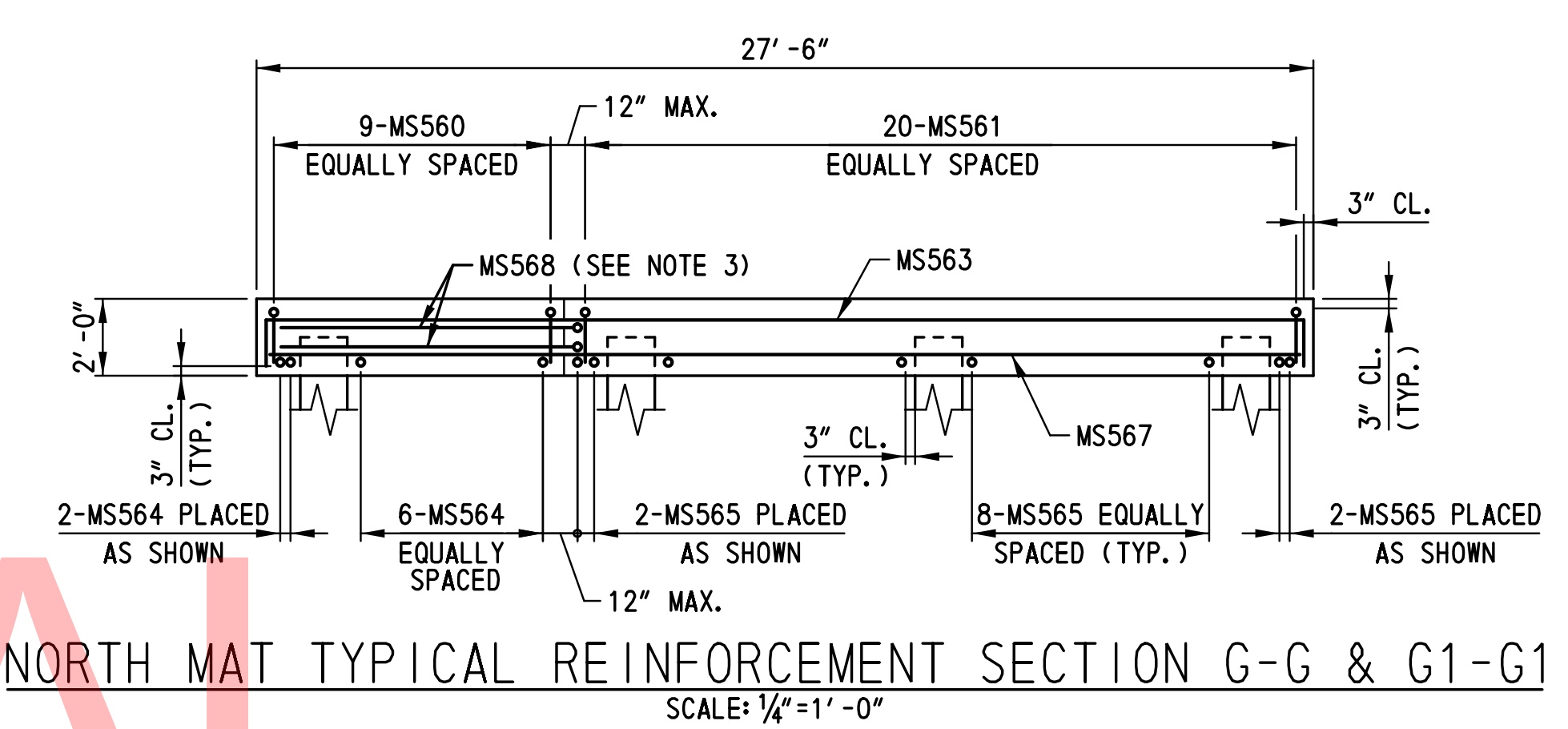
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| CONTRACT | BRIDGE NO. | X |
| T201330009 | DESIGNED BY: | ZMG |
| COUNTY | CHECKED BY: | WAG |
| NEW CASTLE | | |

MSE WALL SOUTH MAT FOUNDATION REINFORCEMENT DETAILS

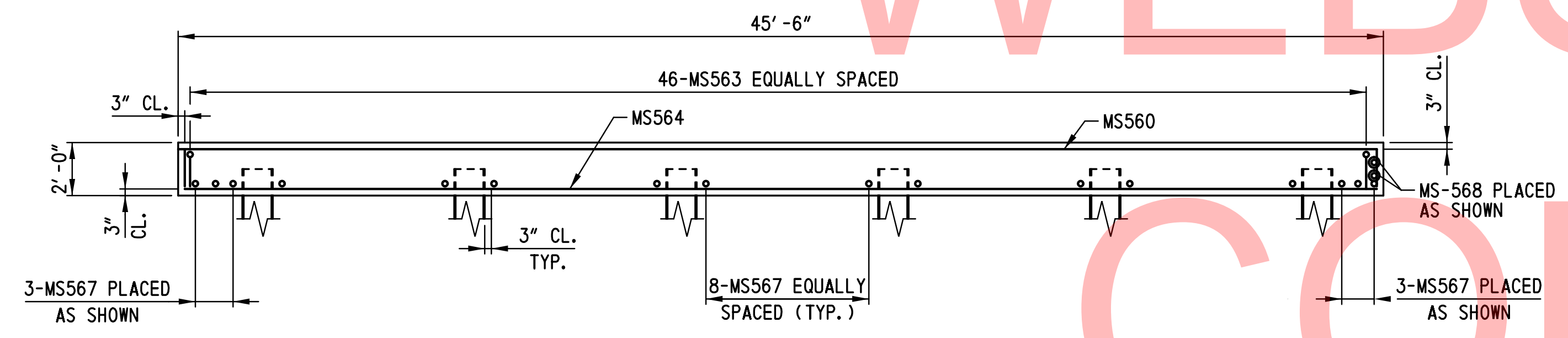
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| AB-113 |
| SHEET NO. |
| 62 |
| TOTAL SHTS. |
| 205 |



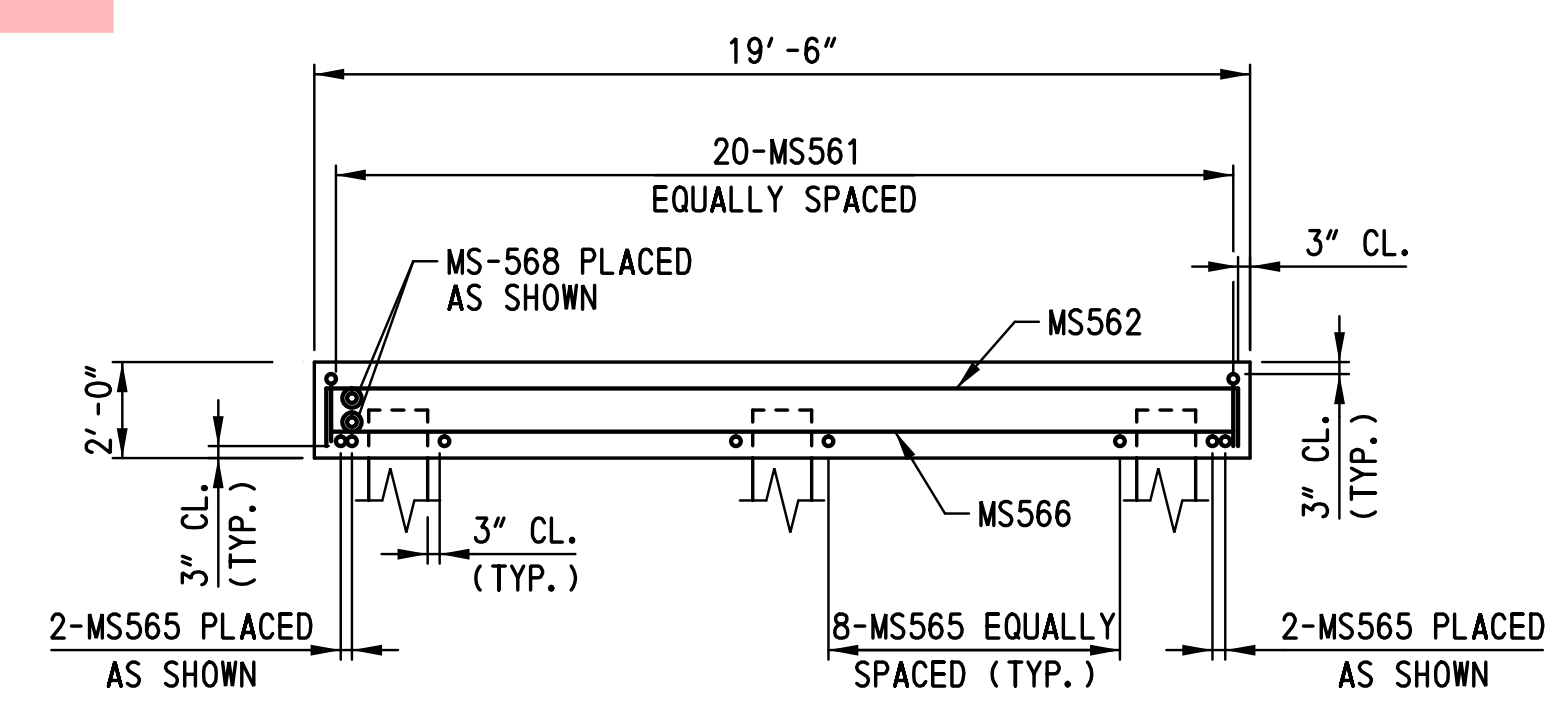
NORTH MAT REINFORCEMENT PLAN
SCALE: 1/4"=1'-0"



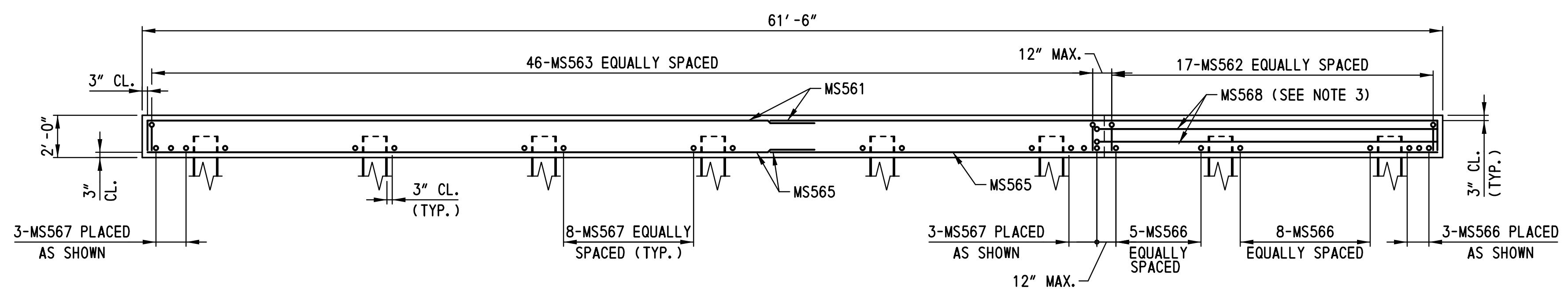
NORTH MAT TYPICAL REINFORCEMENT SECTION G-G & G1-G1
SCALE: 1/4"=1'-0"



NORTH MAT TYPICAL REINFORCEMENT SECTION E-E
SCALE: 1/4"=1'-0"



NORTH MAT TYPICAL REINFORCEMENT SECTION H-H
SCALE: 1/4"=1'-0"



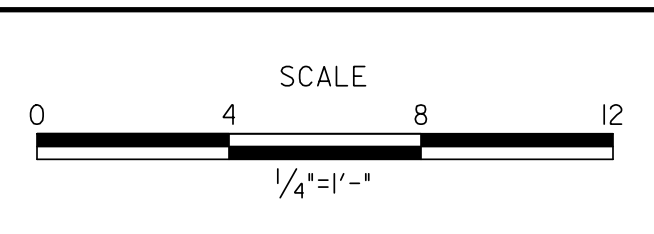
NORTH MAT TYPICAL REINFORCEMENT SECTION F-F & F1-F1
SCALE: 1/4"=1'-0"

NOTES:

1. SPACE REINFORCING STEEL AS NECESSARY TO CLEAR PILES. FOR ADDITIONAL INFORMATION, SEE DWG. NO. PL-103.
2. REINFORCEMENT OVER PILES NOT SHOWN FOR CLARITY. FOR PILE LAYOUT AND REINFORCEMENT OVER PILES, SEE DWG. NO. PL-103.
3. MS568 BAR IS NOT PRESENT IN SECTION G1-G1 OR SECTION F1-F1.

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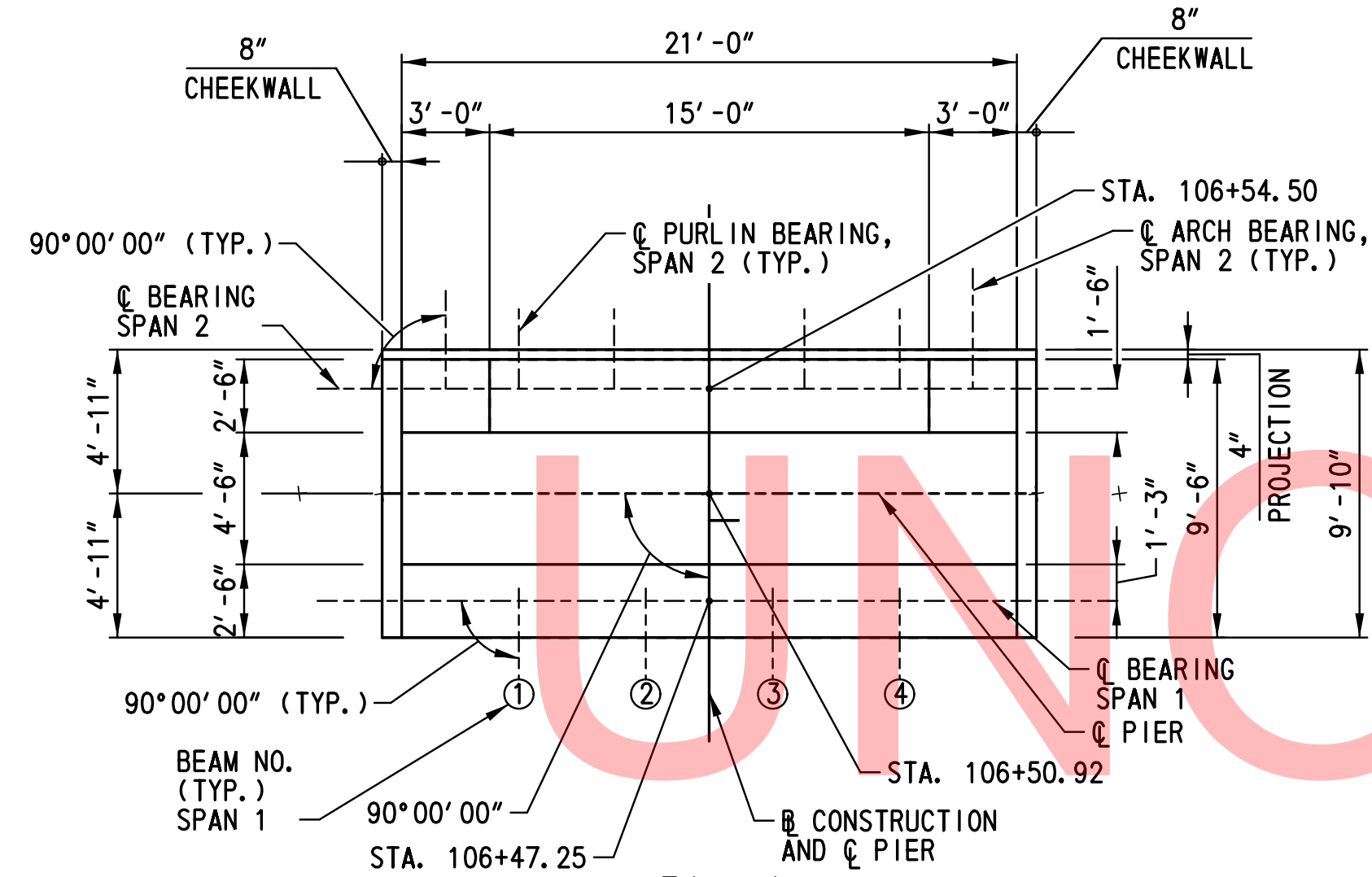
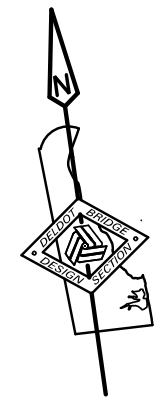
| ADDENDUMS / REVISIONS |
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| CONTRACT T201330009 | BRIDGE NO. X |
| COUNTY NEW CASTLE | DESIGNED BY: ZMG CHECKED BY: WAG |

NOTES:

1. FOR PILE LAYOUT PLAN, SEE DWG. NO. PL-102.
2. FOR PIER REINFORCEMENT DETAILS, SEE DWG. NO. PR-103.
3. ELEVATION OF ARCH BEAM SEATS AND PURLIN BEAM SEAT SHALL BE DETERMINED BY CONTRACTOR BASED ON FINAL DESIGN OF GLULAM ARCH.

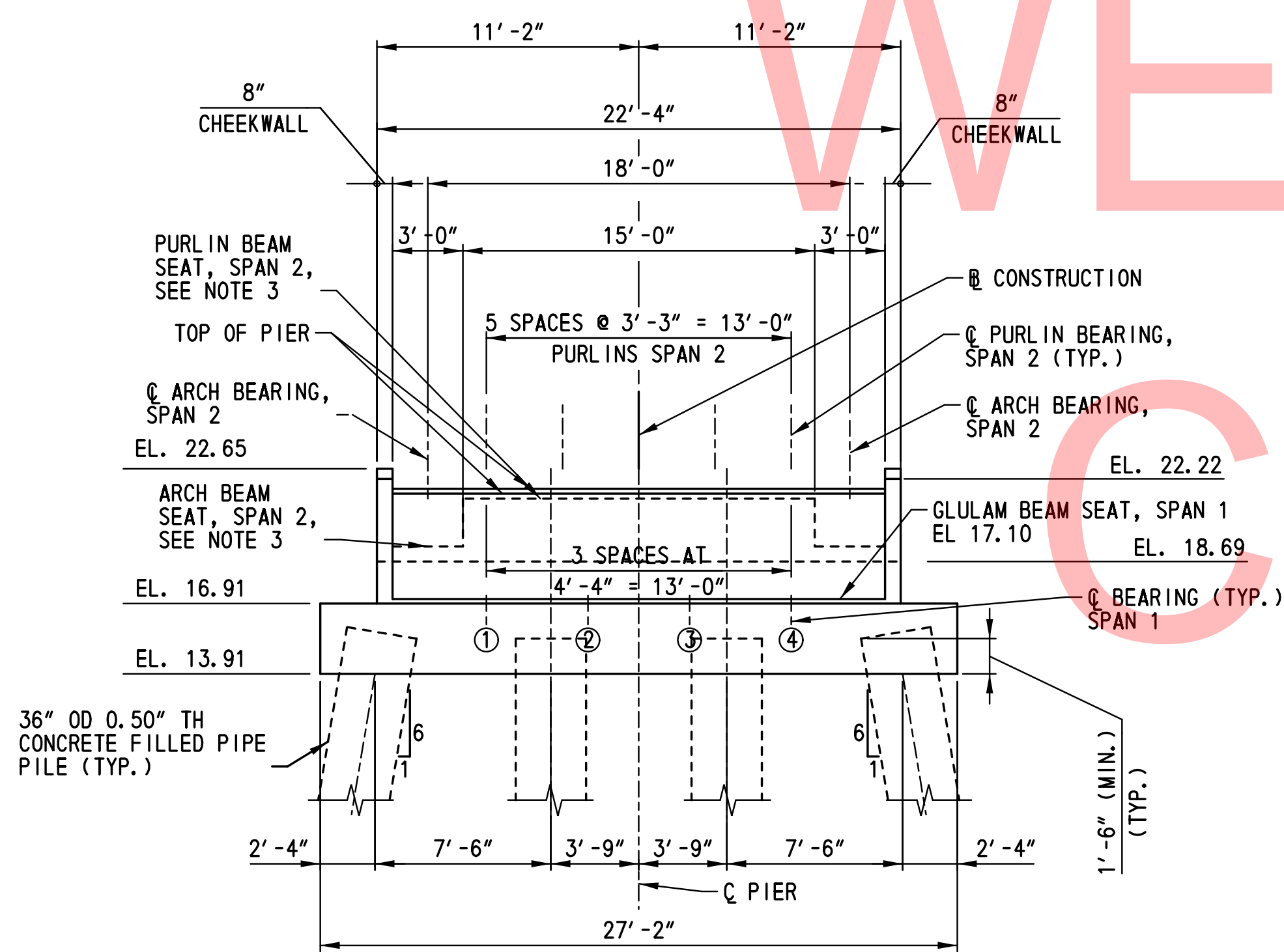


PLAN

SCALE: 3/16" = 1'-0"

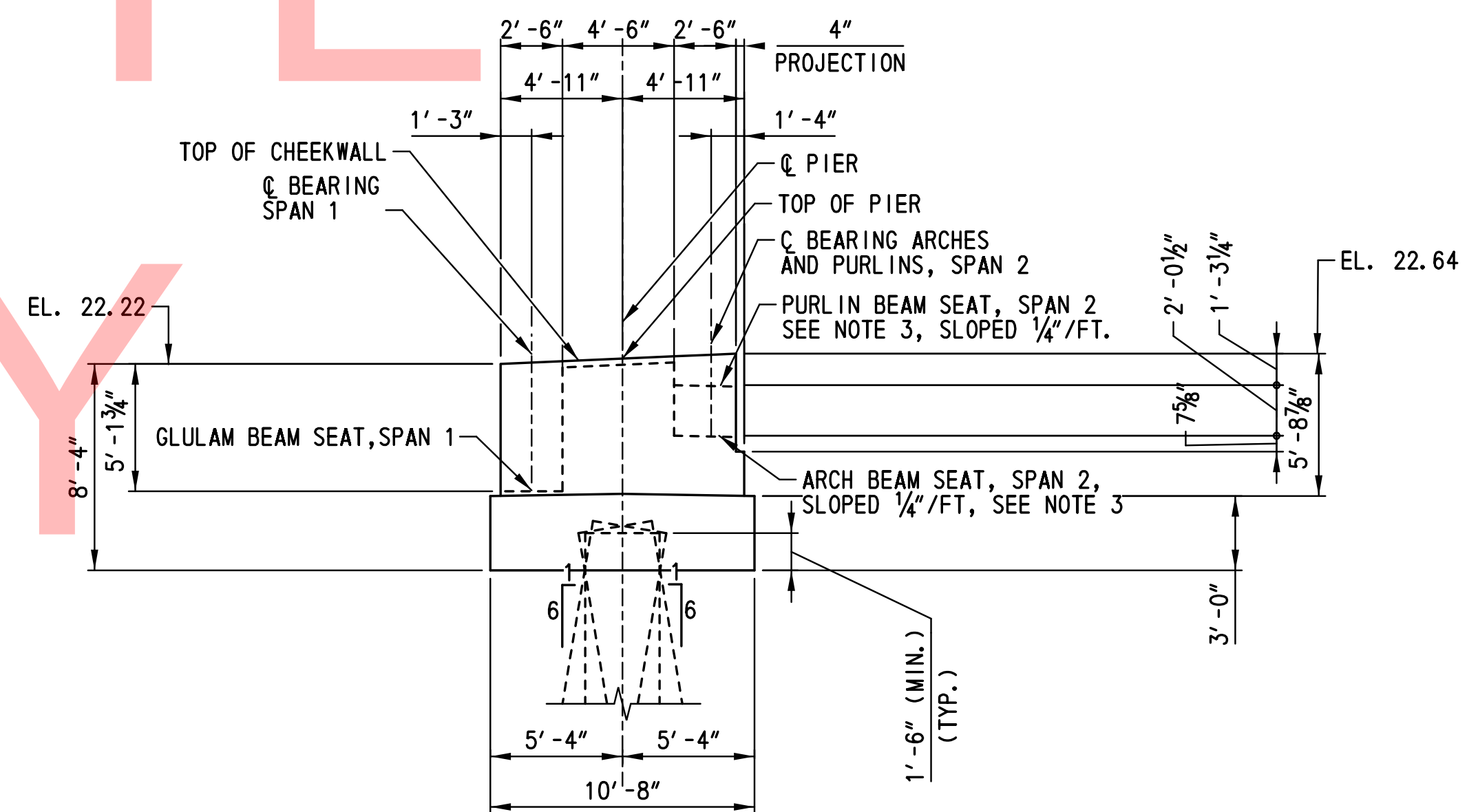
NOTE:

FOOTING NOT SHOWN FOR CLARITY.



ELEVATION (LOOKING UPSTATION)

SCALE: 3/16" = 1'-0"



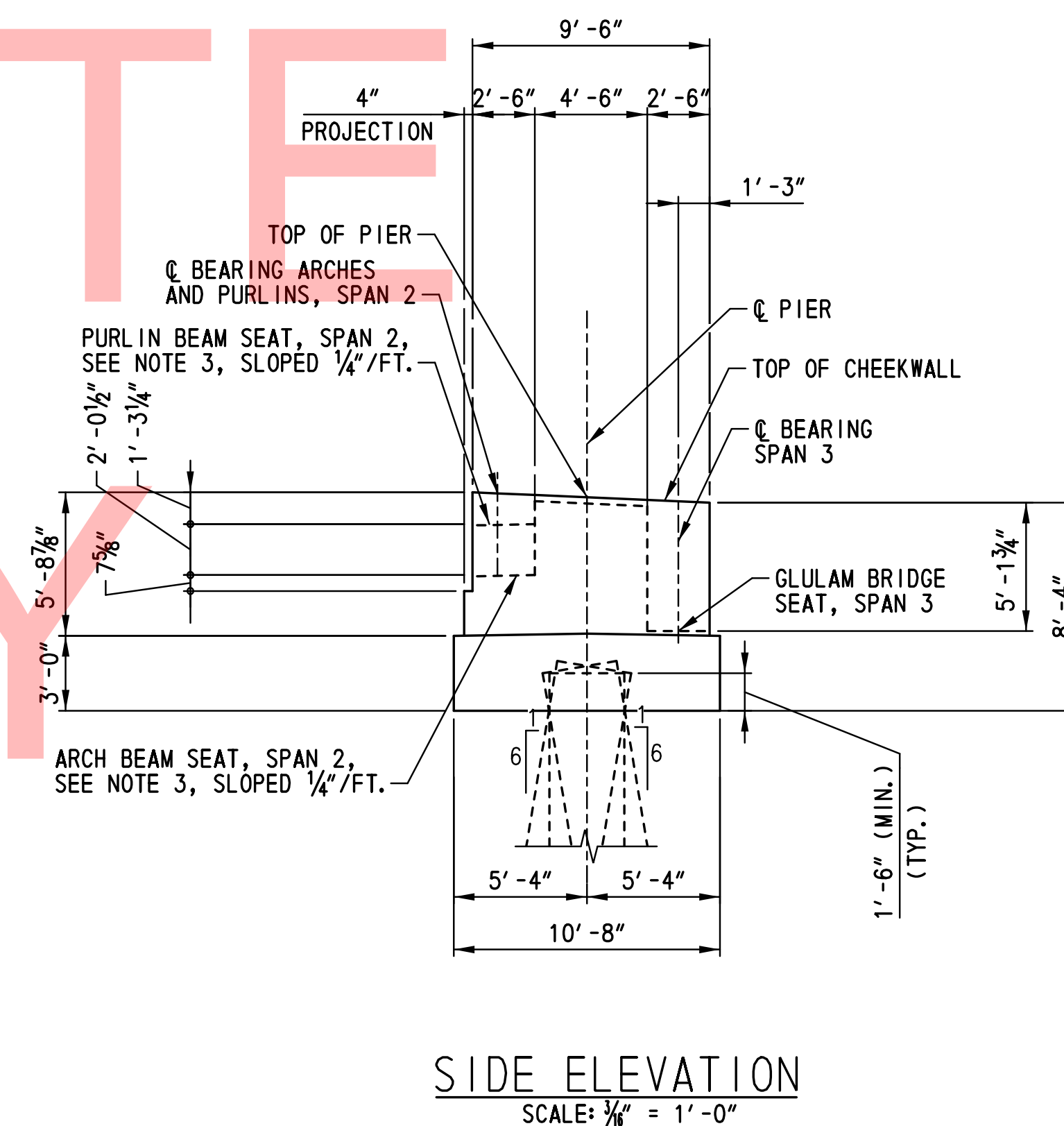
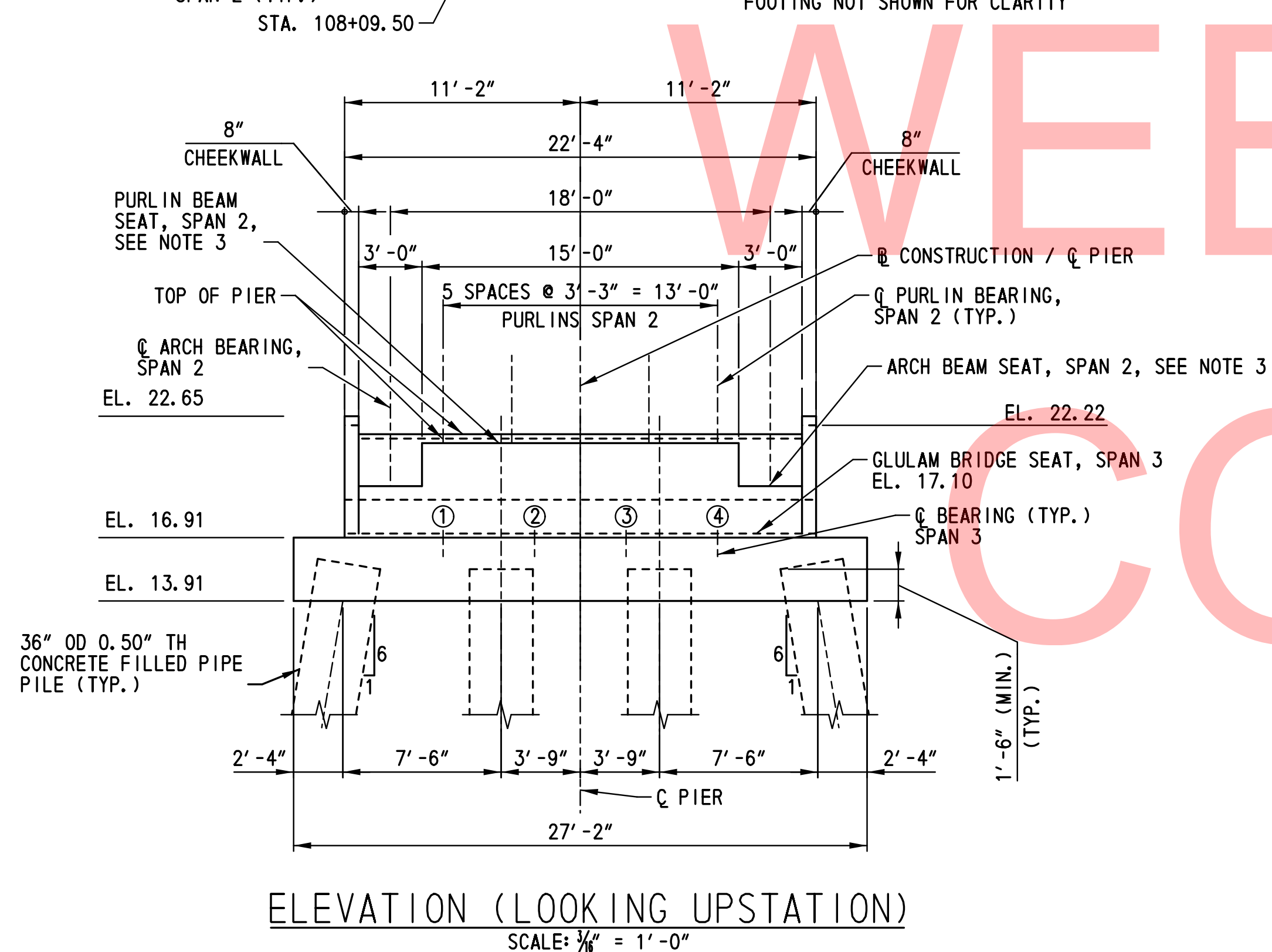
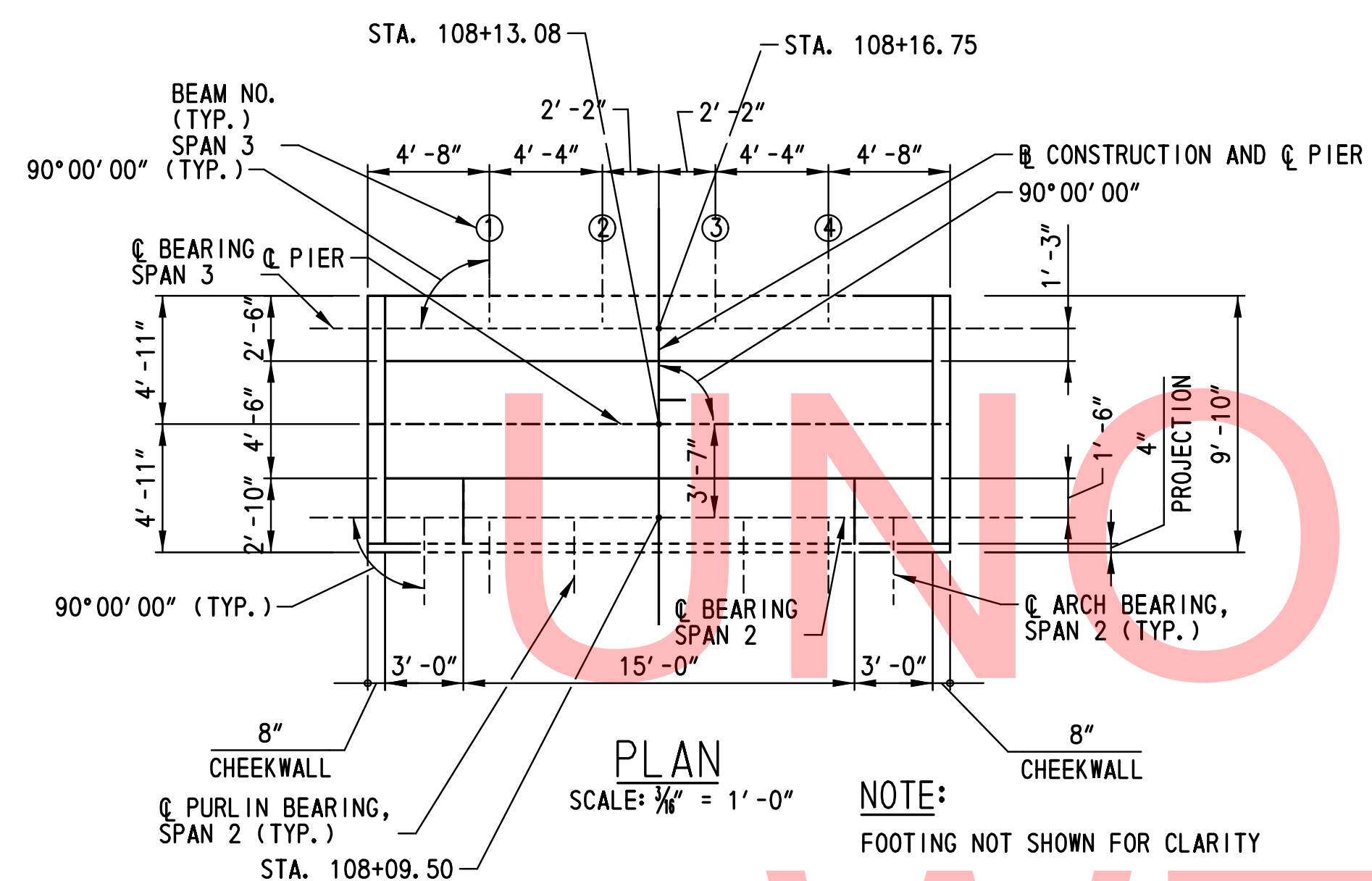
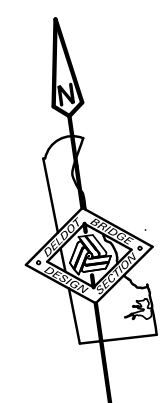
SIDE ELEVATION

SCALE: 3/16" = 1'-0"

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NOTES:

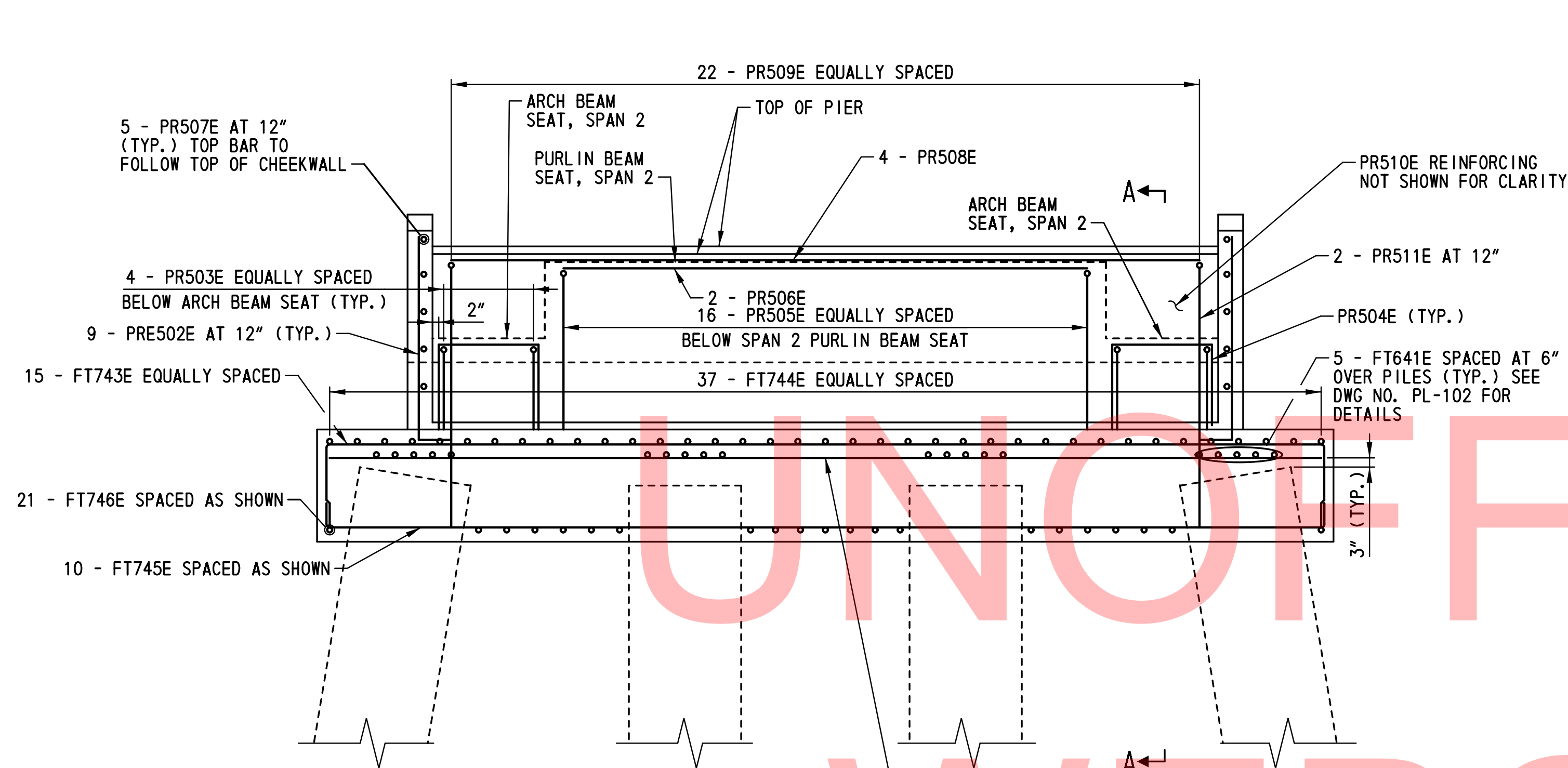
1. FOR PILE LAYOUT PLAN, SEE DWG. NO. PL-102.
2. FOR PIER REINFORCEMENT DETAILS, SEE DWG. NO. PR-104.
3. ELEVATION OF ARCH BEAM SEATS AND PURLIN BEAM SEAT SHALL BE DETERMINED BY CONTRACTOR BASED ON FINAL DESIGN OF GLULAM ARCH.



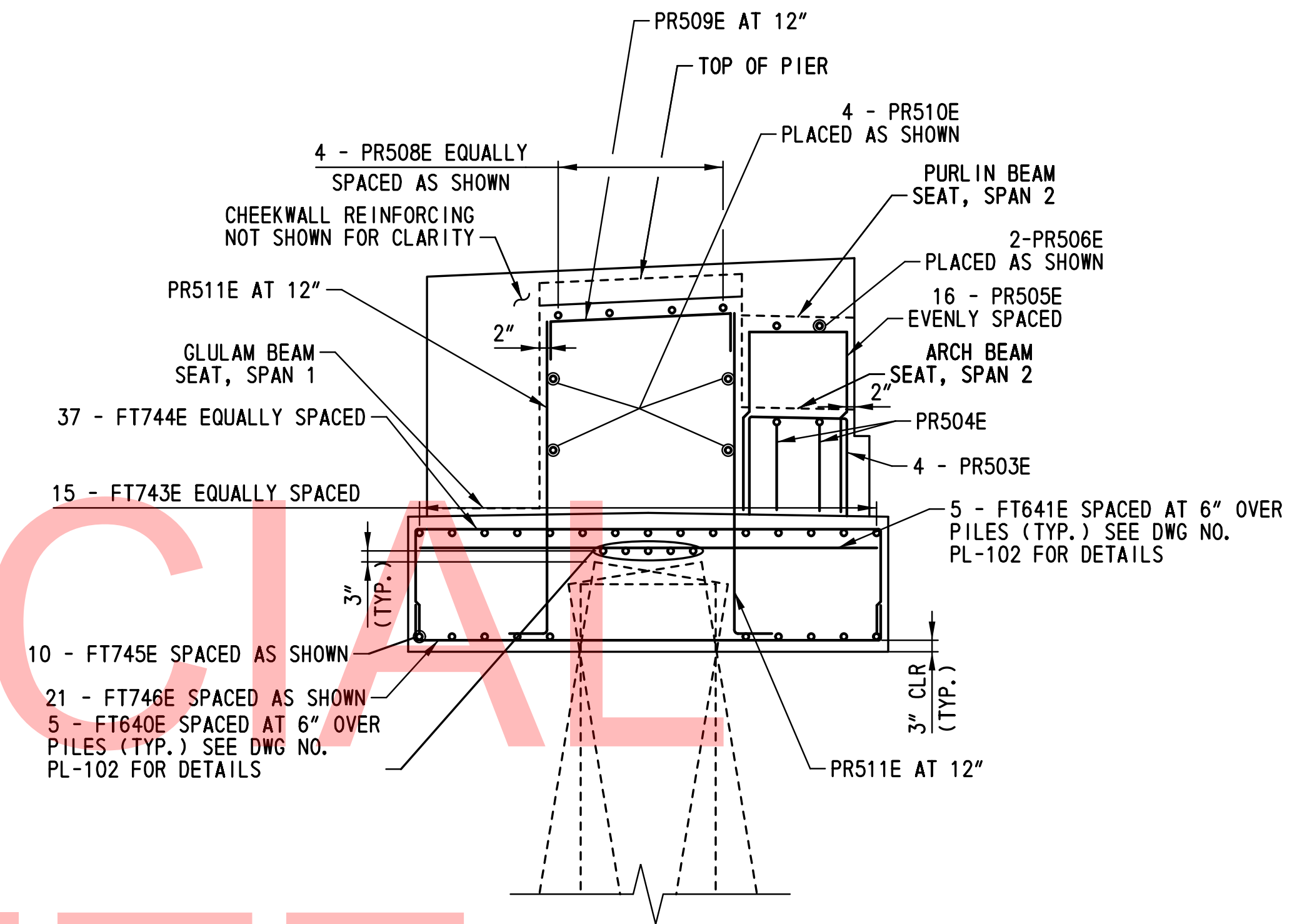
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NOTES:

1. SPACE REINFORCING STEEL AS NECESSARY TO CLEAR ANCHOR BOLTS. FOR ADDITIONAL INFORMATION, SEE DWG. NOS. PR-101 AND BM-101.



ELEVATION
SCALE: 3/8"=1'-0"



SECTION A-A
SCALE: 3/8"=1'-0"

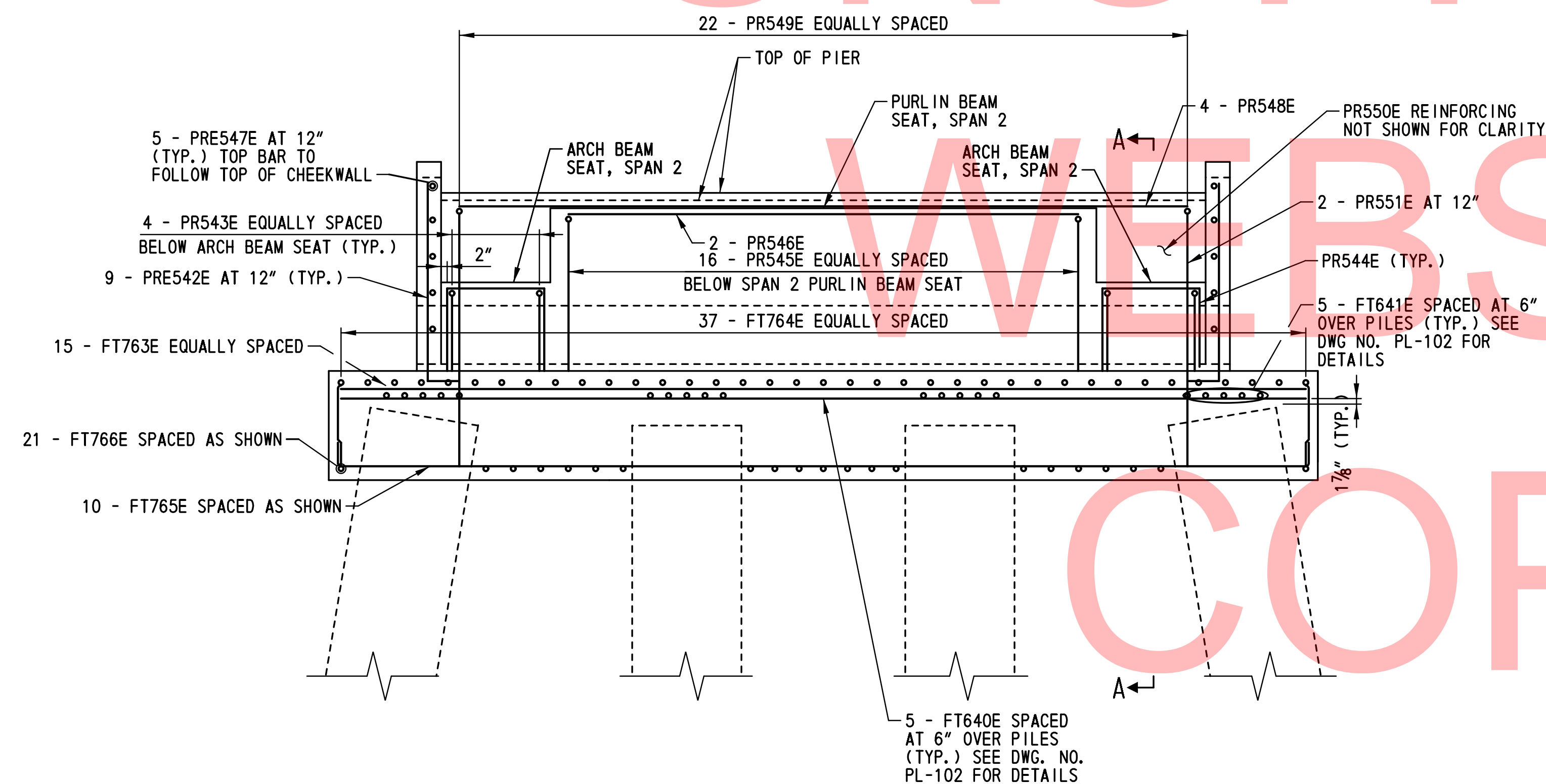
UNOFFICIAL WEBSITE COPY

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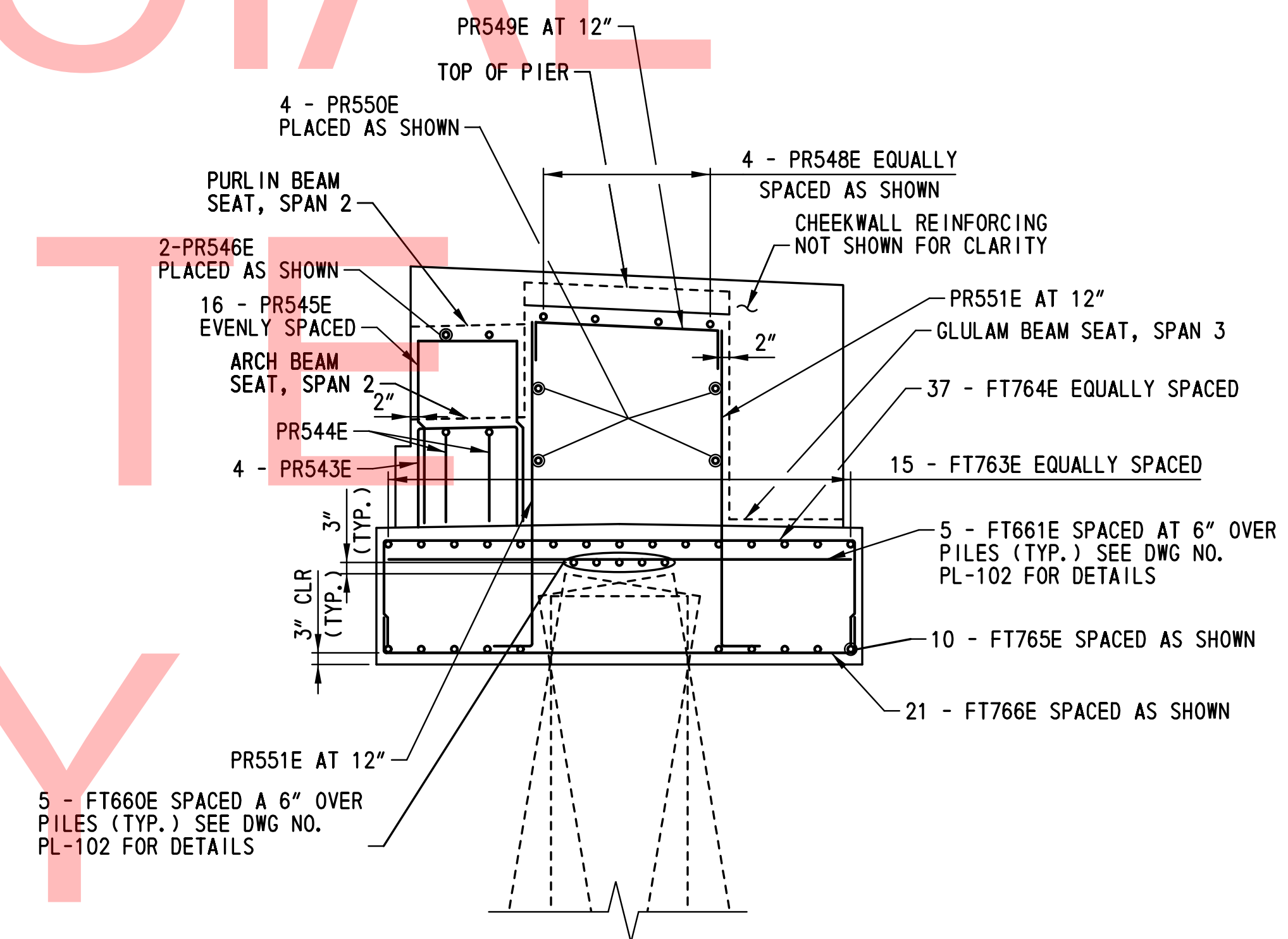
NOTES:

1. SPACE REINFORCING STEEL AS NECESSARY TO CLEAR ANCHOR BOLTS. FOR ADDITIONAL INFORMATION, SEE DWG. NOS. PR-102 AND BM-101.

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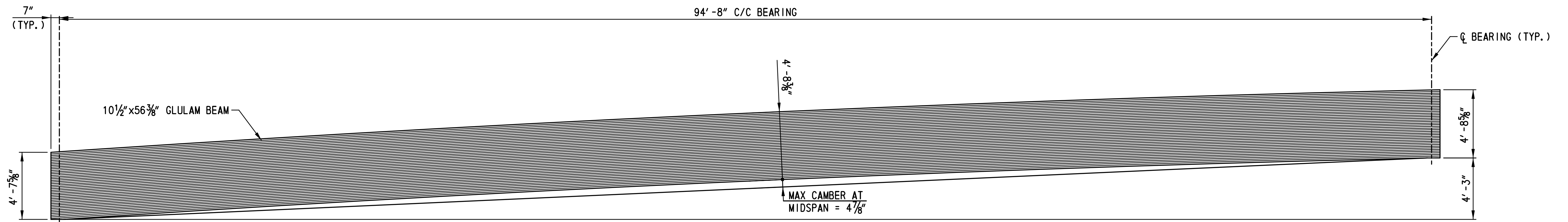


ELEVATION
SCALE: 3/8"=1'-0"

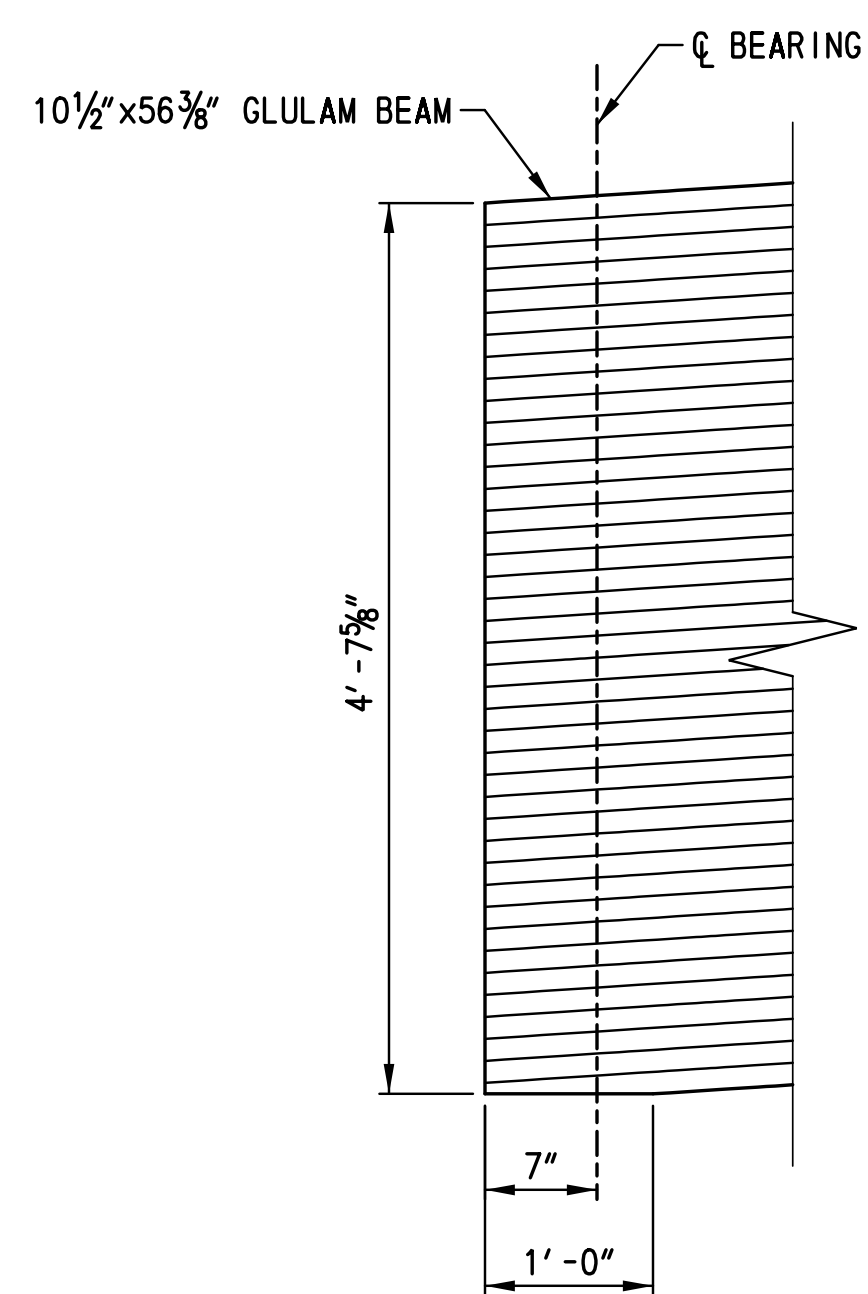


SECTION A-A
3/8"=1'-0" SCALE:

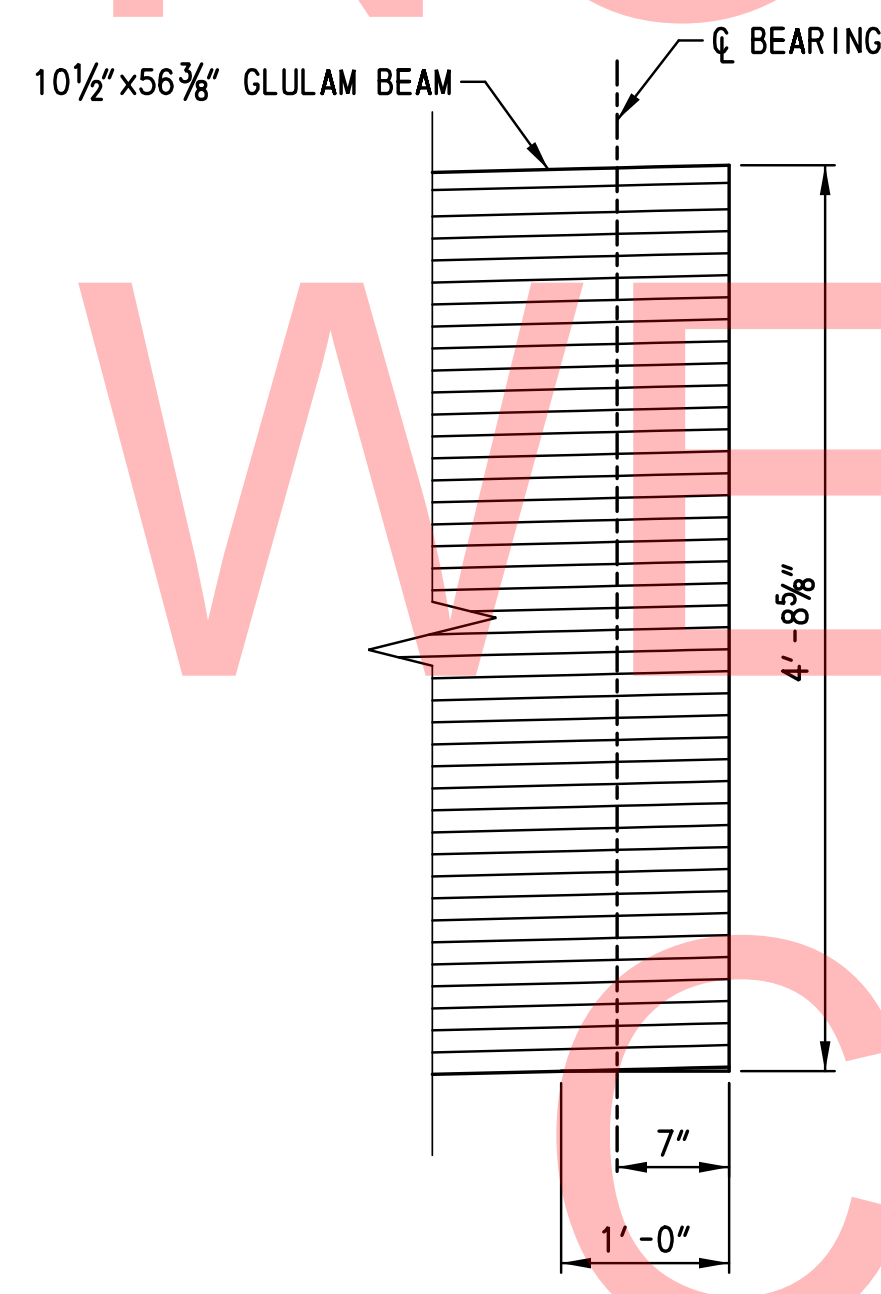
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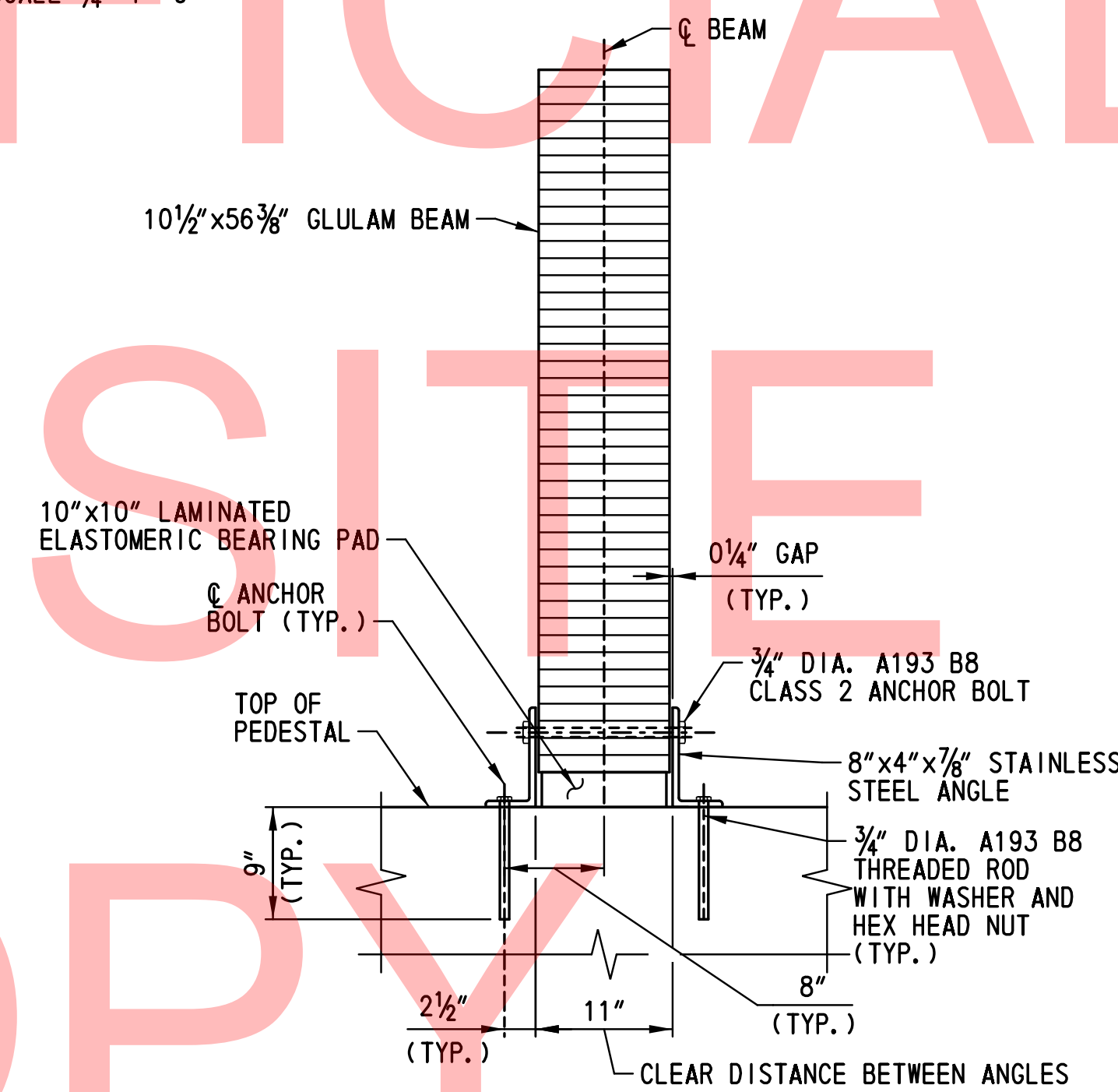
UNOFFICIAL
WEBSITE
COPY



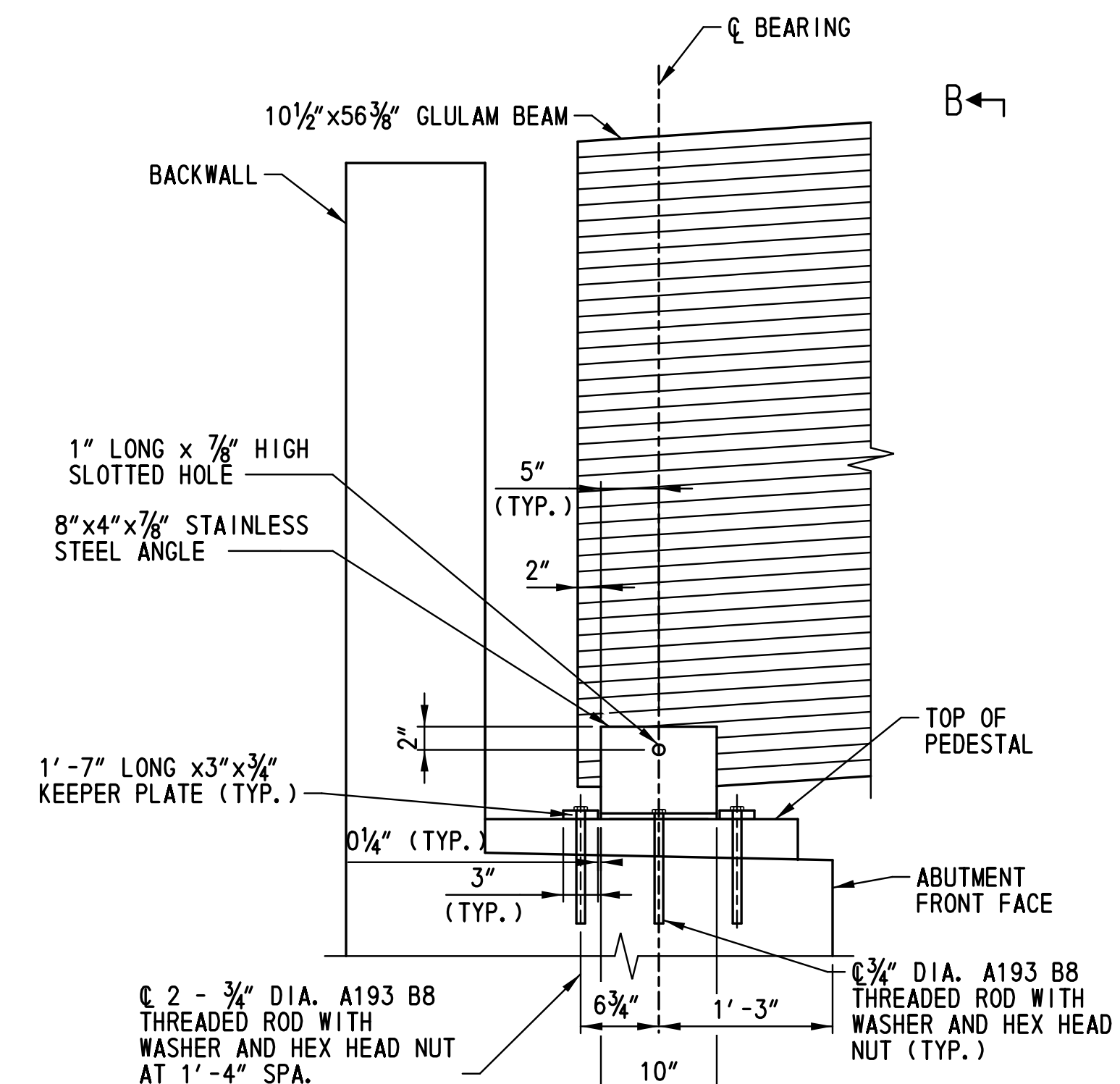
BEAM LOW END BEARING DETAIL
SCALE: 1"=1'-0"



BEAM HIGH END BEARING DETAIL
SCALE: 1"=1'-0"

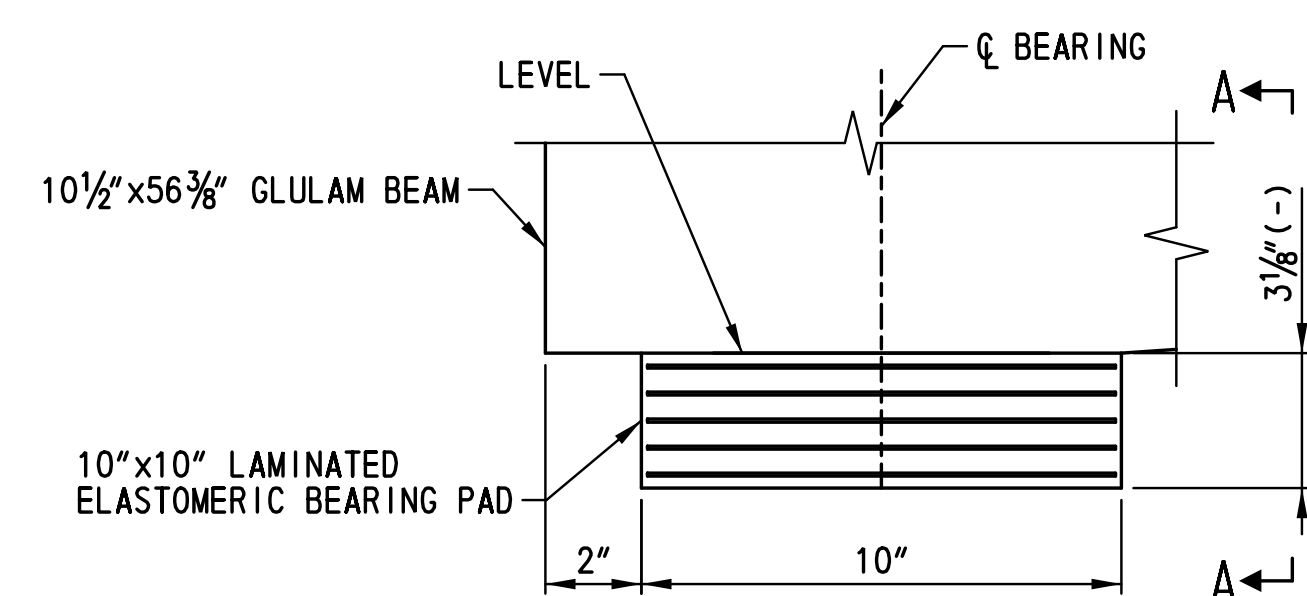


VIEW B-B
SCALE: 1"=1'-0"
NOTE: KEEPER PLATES NOT SHOWN FOR CLARITY.

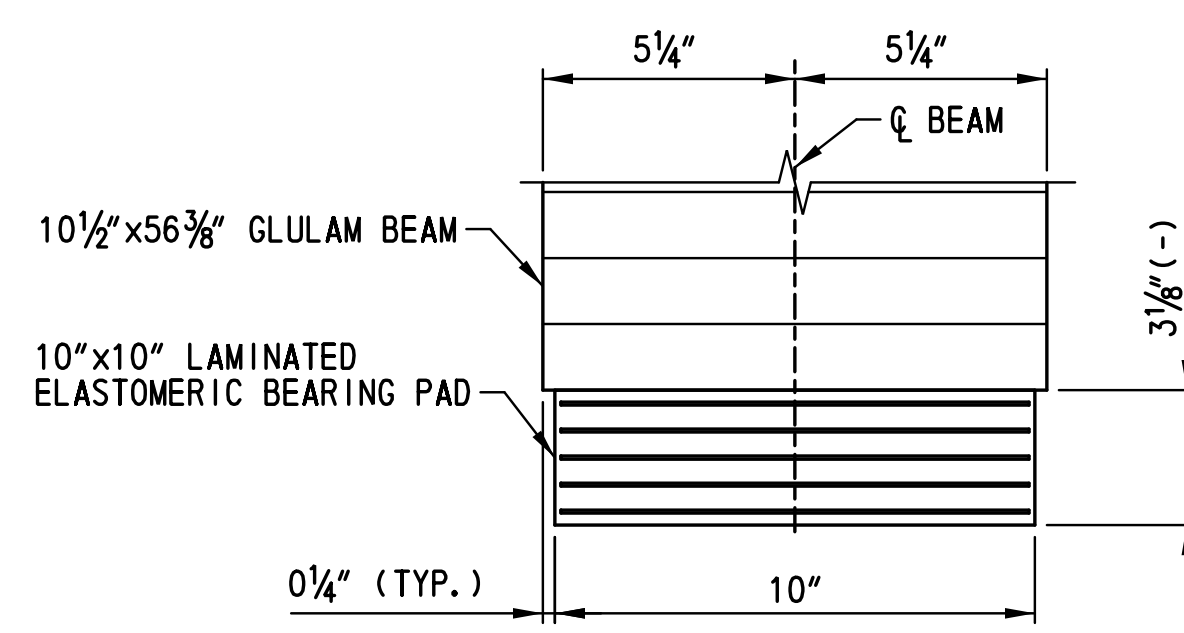


EXPANSION BEARING ANGLE
SCALE: 1"=1'-0"

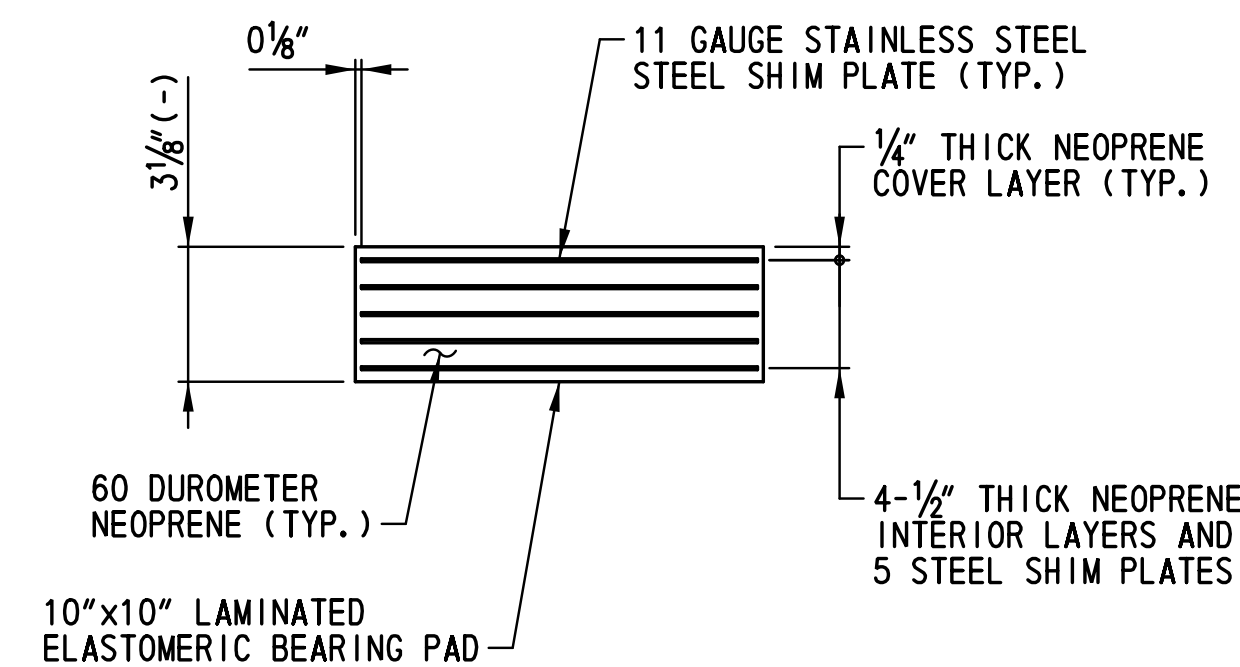
NOTE: ANGLE DETAILS TYPICAL FOR BOTH ENDS OF BEAM.



BEARING ELEVATION
SCALE: 3"=1'-0"



VIEW A-A
SCALE: 3"=1'-0"



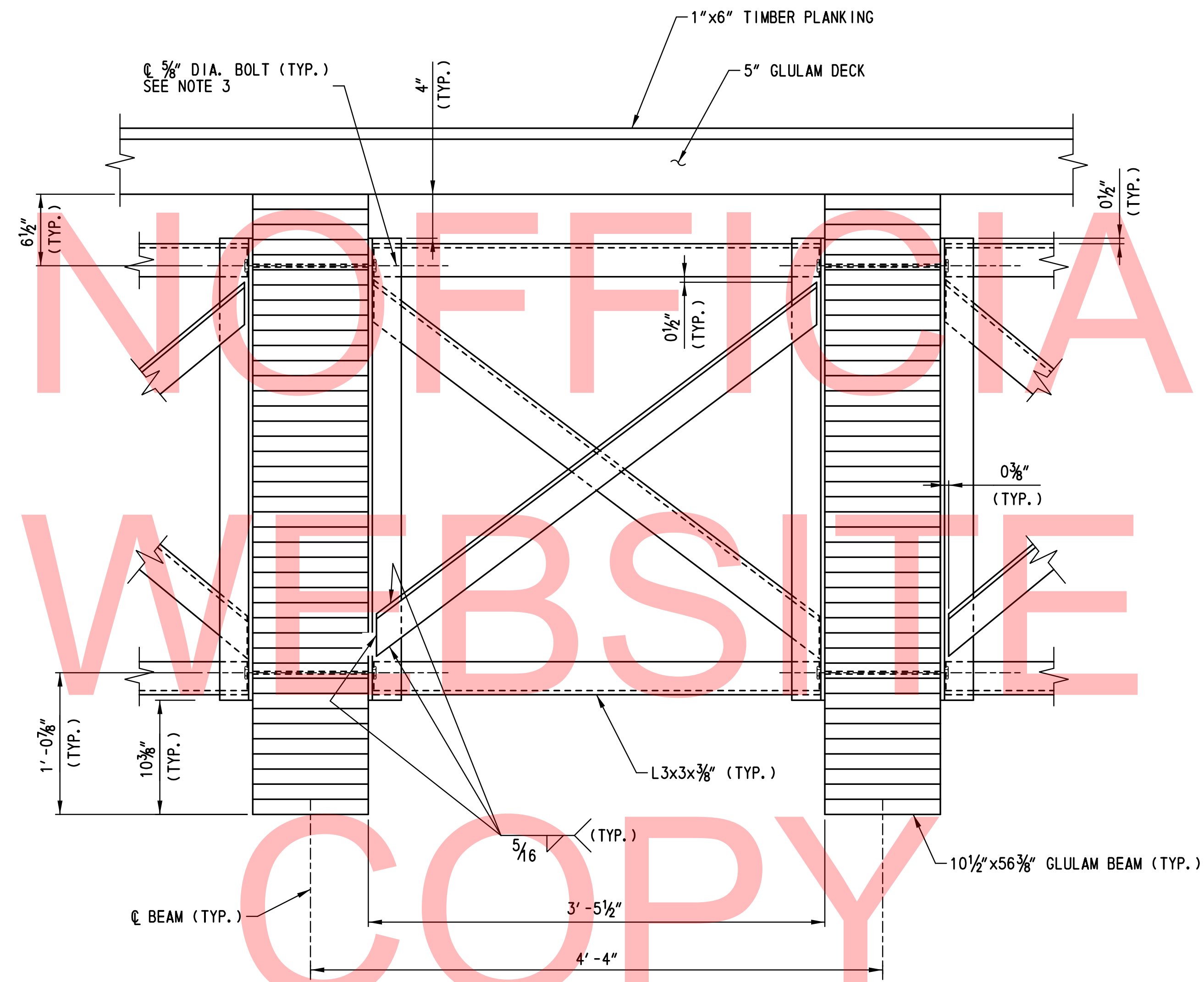
BEARING PAD DETAIL
SCALE: 3"=1'-0"

NOTES:

- PAYMENT FOR STEEL ANGLES AND KEEPER PLATES, 3/4" DIAMETER ANCHOR BOLT, 3/4" DIAMETER THREADED ROD, AND ASSOCIATED HARDWARE WILL BE INCIDENTAL TO ITEM NO. 601003.
- STEEL ANGLE BEARING SHOES AND KEEPER PLATES TO BE GRADE A304 STAINLESS STEEL.
- ANCHOR BOLTS, THREADED ROD, AND PLATE WASHERS SHALL BE STAINLESS STEEL CONFORMING TO ASTM A193 B8 CLASS 2. ANCHOR NUTS SHALL BE ASTM A194 GRADE 8 STAINLESS STEEL.
- ELASTOMERIC BEARINGS PADS SHALL CONFORM TO AASHTO M 251 AND THE ELASTOMER SHALL BE 60 DUROMETER NEOPRENE.
- FOR DESIGN STRESSES OF GLULAM BEAM SEE DWG. NO. PN-101.
- HOLES THROUGH GLULAM BEAMS FOR ANCHOR BOLTS, RAILING CONNECTION BOLTS, AND CROSS-FRAME CONNECTION BOLTS SHALL BE 3/4" DIA. AND BE SHOP-DRILLED PRIOR TO PRESERVATIVE TREATMENT IN ACCORDANCE WITH AASHTO M 133. SEE DWG. NO. BM-102 FOR CROSS-FRAME DETAILS. SEE DWG. NOS. RL-101 AND RL-102 FOR RAILING DETAILS.
- DIMENSIONS STATED FOR GLULAM BEAMS ARE NET DIMENSIONS.

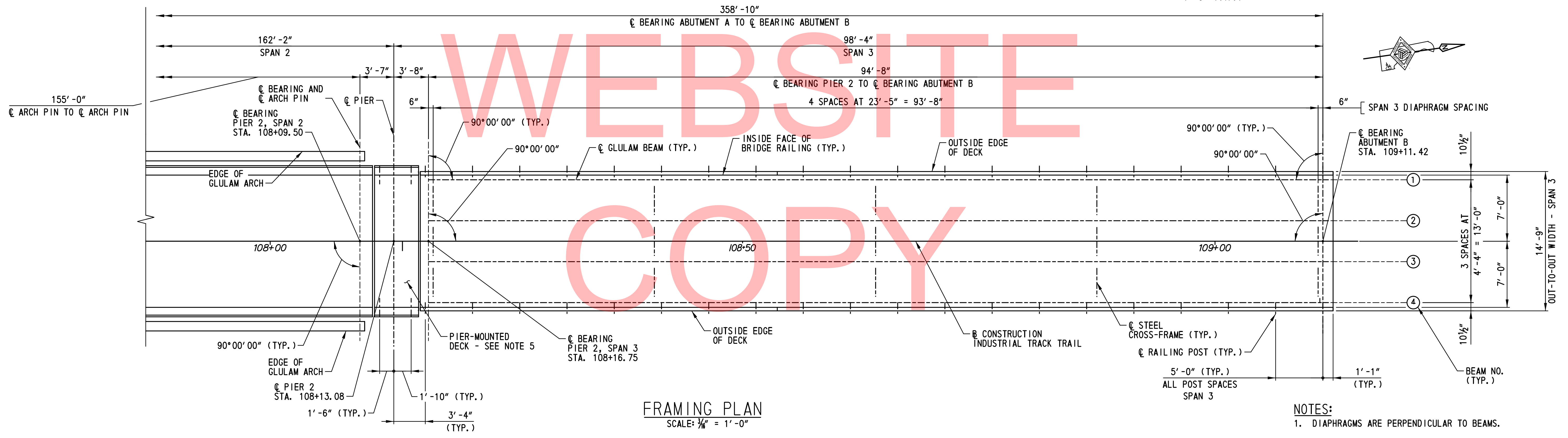
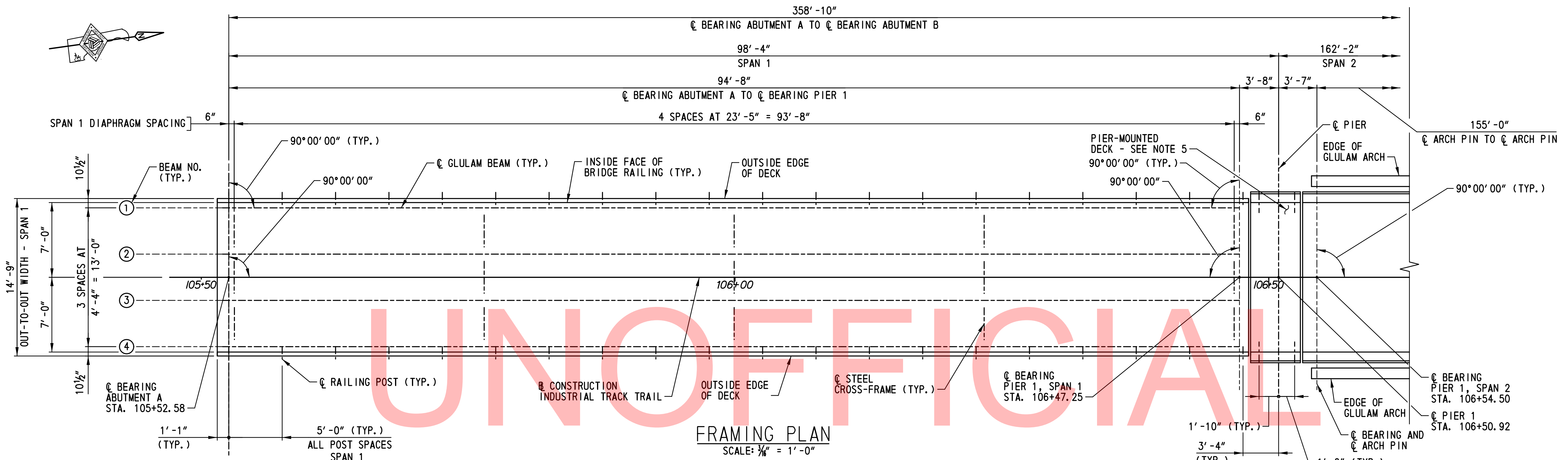
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- NOTES:**
1. FOR CROSS FRAME LOCATIONS, SEE DWG. NO. FR-101.
 2. ALL STEEL ANGLES SHALL BE ASTM A36 STEEL, HOT-DIP GALVANIZED IN ACCORDANCE WITH ASTM A123.
 3. ALL BOLTS SHALL BE ASTM A449 TYPE 1, HOT-DIP GALVANIZED IN ACCORDANCE WITH ASTM A123.
 4. HOLES THROUGH GLULAM BEAMS FOR CROSS-FRAME CONNECTION BOLTS SHALL BE $\frac{1}{4}$ " DIA. AND BE SHOP-DRILLED PRIOR TO PRESERVATIVE TREATMENT. SEE DWG. NO. BM-101 FOR GLULAM BEAM DETAILS.
 5. THE CROSS-FRAMES SHALL BE PLACED PLUMB.



INTERMEDIATE AND END CROSS FRAME DETAIL - SPANS 1 AND 3
SCALE: 1-1/2"=1'-0"

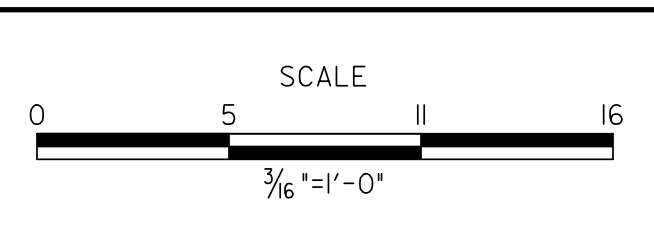
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- NOTES:**
- DIAPHRAGMS ARE PERPENDICULAR TO BEAMS.
 - RAILING POST AND CONNECTION PLATES ARE NOT SHOWN. FOR RAILING DETAILS, SEE DWG. NOS. RL-101 AND RL-102.
 - FOR CROSS-FRAME DETAILS, SEE DWG. NO. BM-102.
 - FOR BEAM ELEVATIONS, SEE DWG. NO. BM-101.
 - FOR PIER-MOUNTED DECK DETAILS, SEE DWG. NO. DK-101.

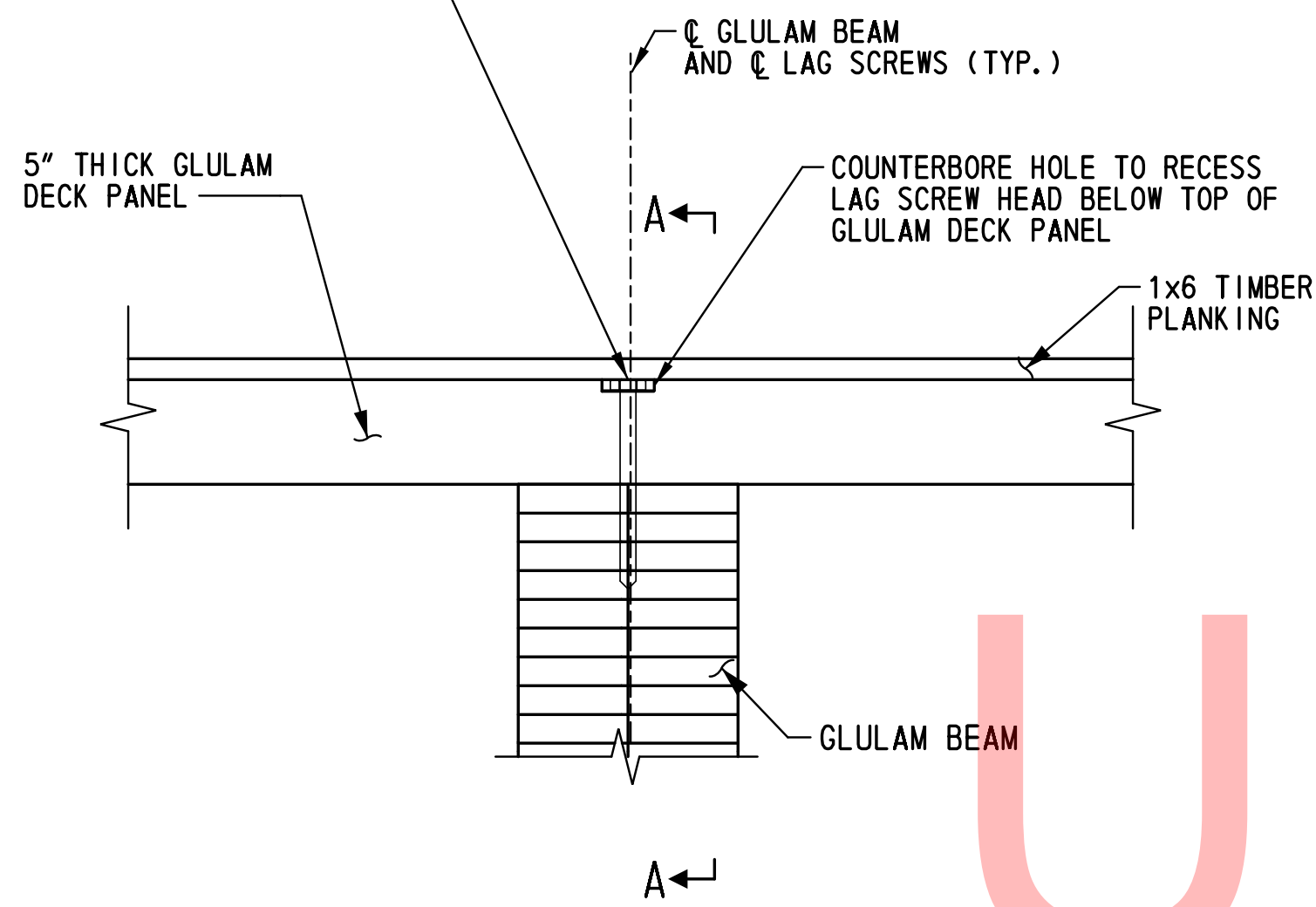
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| ADDENDUMS / REVISIONS |
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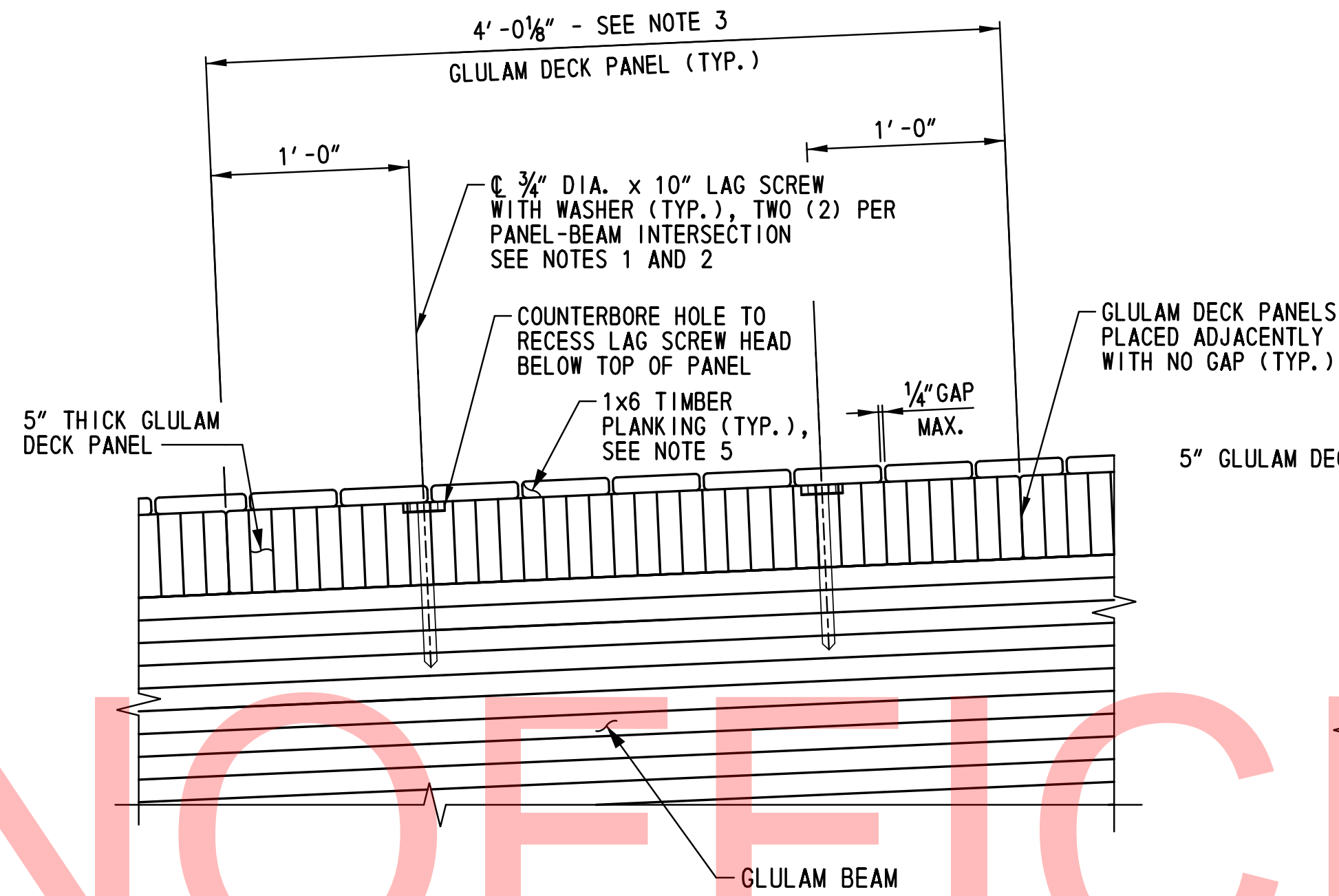


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| CONTRACT T201330009 | BRIDGE NO. X |
| COUNTY NEW CASTLE | DESIGNED BY: NAH CHECKED BY: WAG |

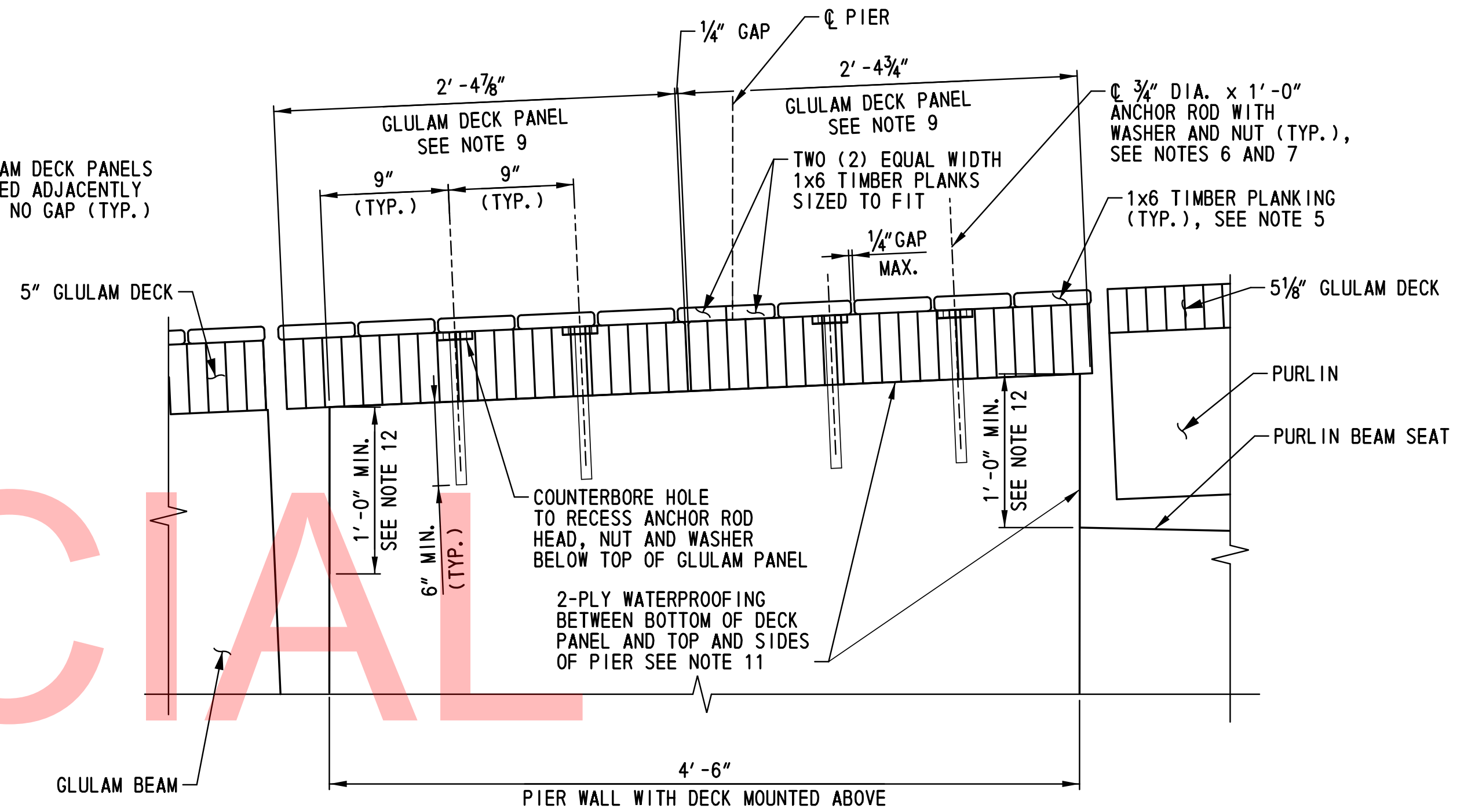
3/4" DIA. x 10" LAG SCREW WITH WASHER, TWO (2) PER PANEL-BEAM INTERSECTION, SEE NOTES 1 AND 2



GLULAM DECK CONNECTION DETAIL
SCALE: 1 1/2" = 1' - 0"

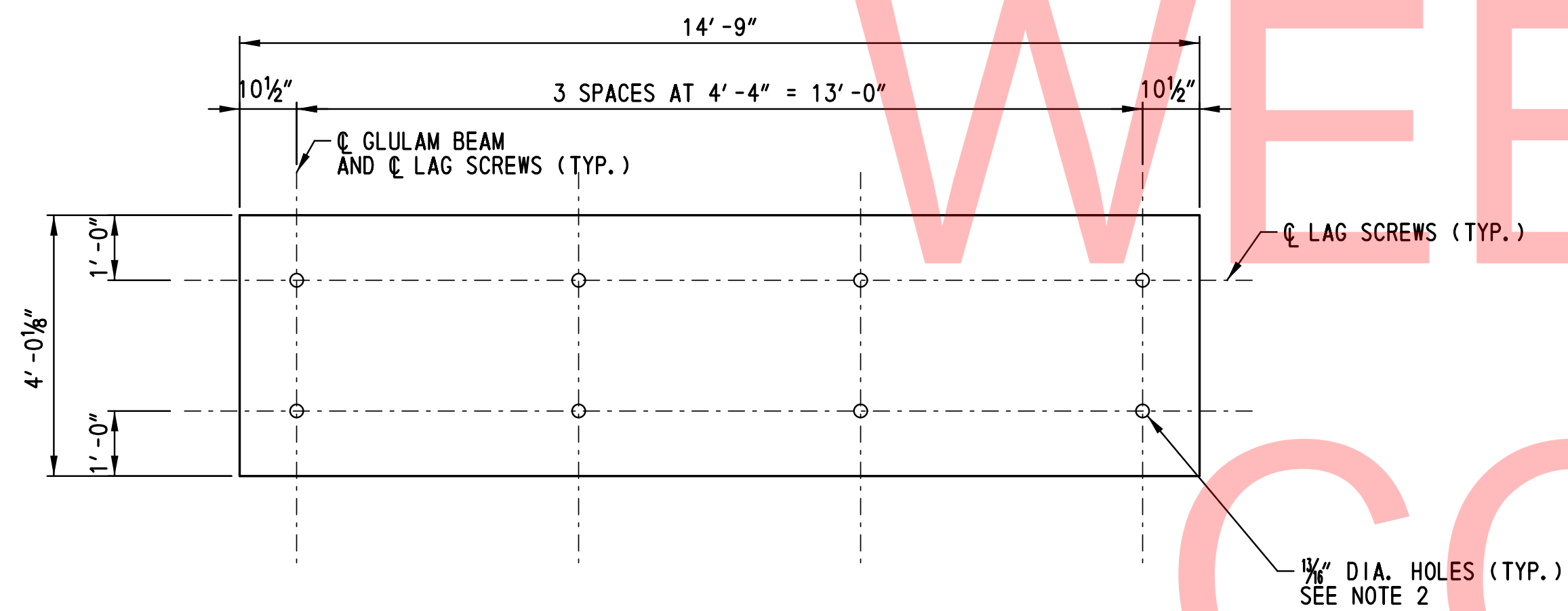


SECTION A-A
SCALE: 1 1/2" = 1' - 0"

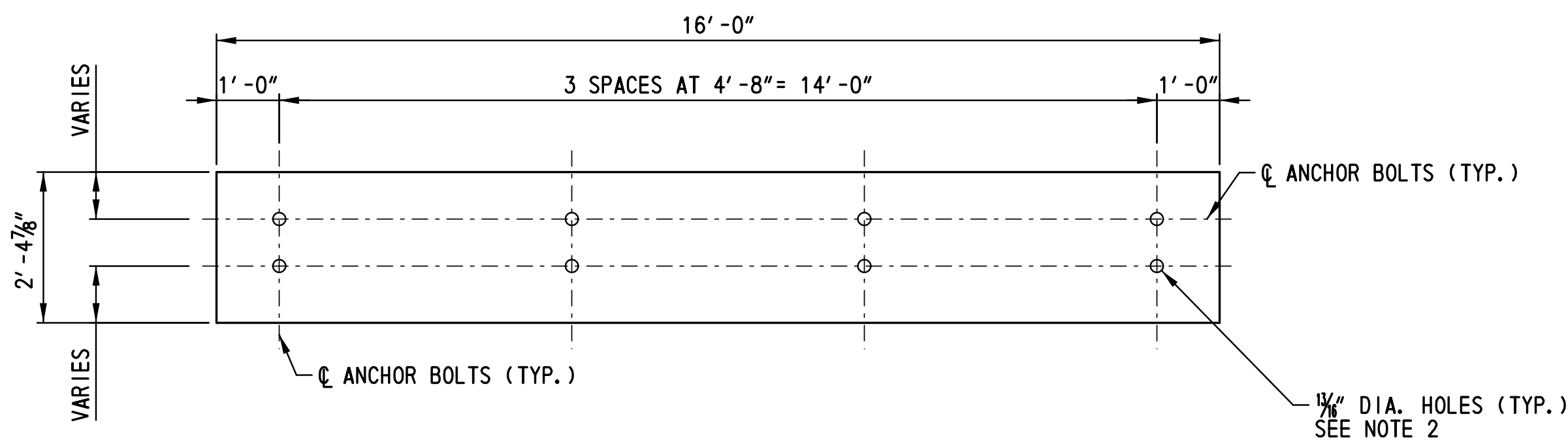


PIER-MOUNTED DECK DETAIL
SCALE: 1 1/2" = 1' - 0"

NOTE:
PIER 1 EAST ELEVATION SHOWN. PIER 2 EAST ELEVATION IS SIMILAR, OPPOSITE HAND. EXPANSION JOINTS NOT SHOWN FOR CLARITY, SEE NOTE 8.



TYPICAL GLULAM DECK PANEL PLAN
SCALE: 1/2" = 1' - 0"

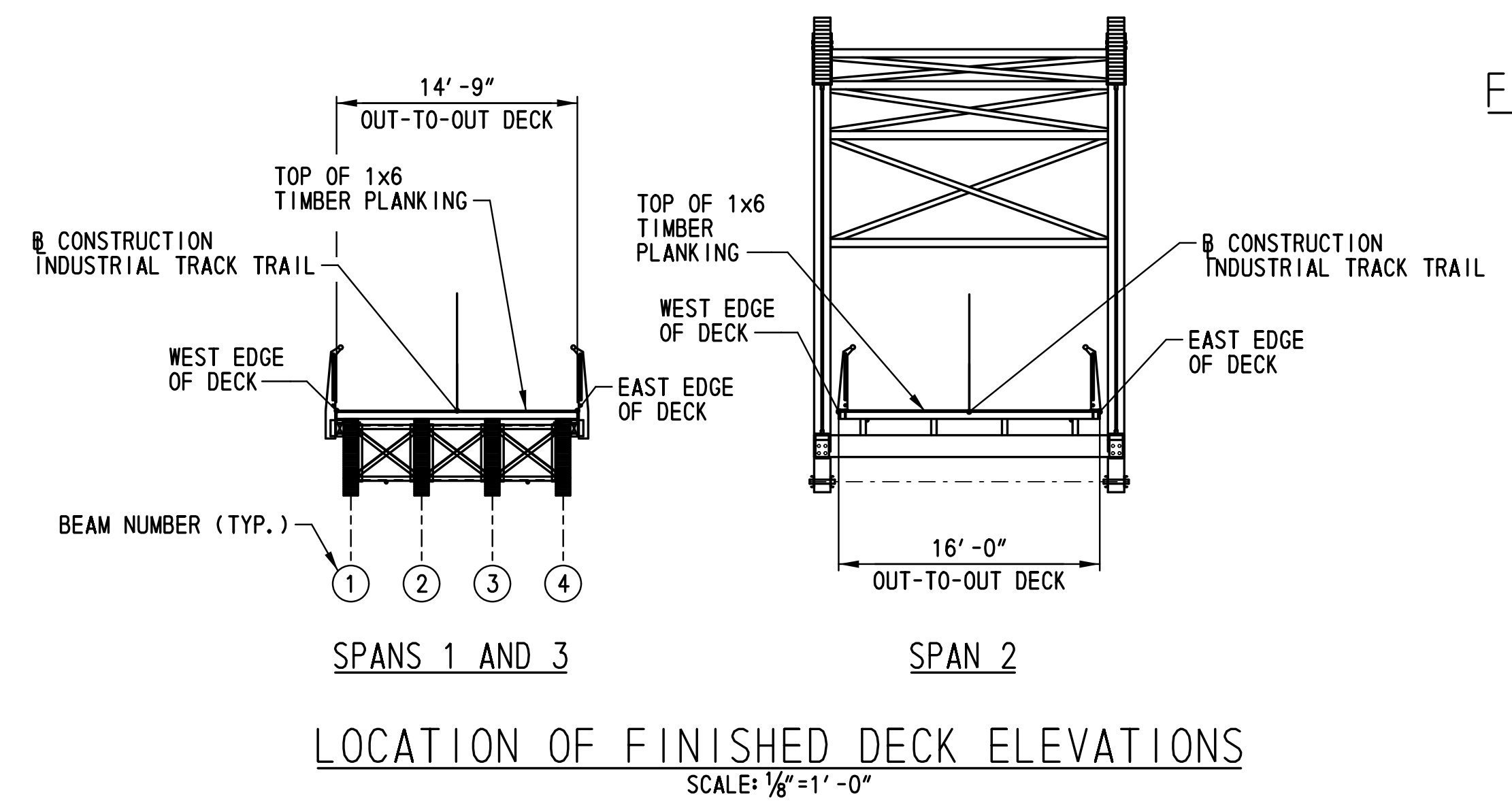
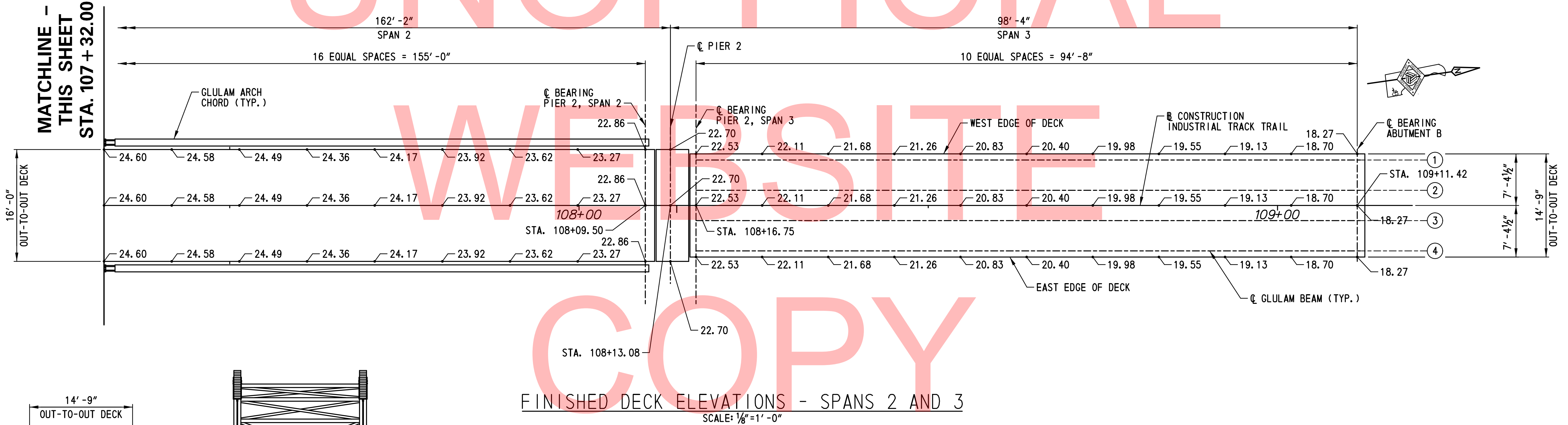
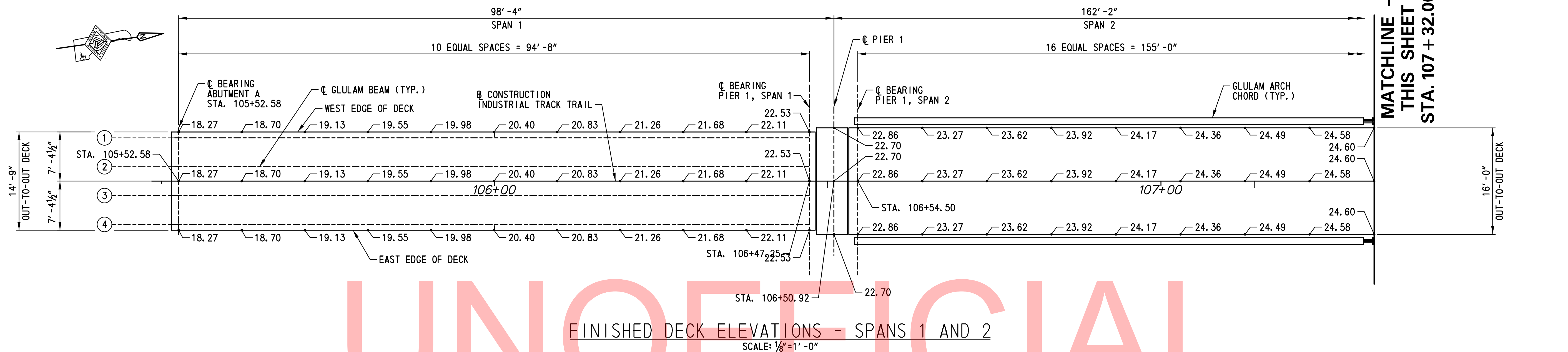


TYPICAL PIER-MOUNTED GLULAM DECK PANEL PLAN
SCALE: 1/2" = 1' - 0"

NOTES:

- LAG SCREWS SHALL BE STEEL CONFORMING TO ASTM A449, HOT-DIPPED GALVANIZED IN ACCORDANCE WITH ASTM A123. LAG SCREW WASHERS SHALL CONFORM TO ASTM F436, HOT-DIPPED GALVANIZED IN ACCORDANCE WITH ASTM A123.
- ALL DIMENSIONED HOLES IN GLULAM DECK PANELS SHALL BE MADE PRIOR TO PRESSURE TREATMENT IN ACCORDANCE WITH AASHTO M 133. ANY FIELD-DRILLED HOLES IN GLULAM DECK PANELS SHALL BE TREATED WITH A FIELD APPLIED COPPER NAPHTHENATE PRESERVATIVE TREATMENT IN ACCORDANCE WITH AASHTO M 133.
- SUGGESTED GLULAM DECK PANEL LENGTH IS 4'-0 1/8". DECK PANELS SHALL NOT BE LESS THAN 24" LONG.
- GLULAM DECK PANEL SHALL BE CONTINUOUS ACROSS THE FULL DECK WIDTH.
- 1x6 TIMBER PLANKS SHALL BE CONTINUOUS ACROSS FULL DECK WIDTH. 1x6 TIMBER PLANKS SHALL BE FASTENED TO GLULAM DECK WITH TWO (2) #10 x 2 1/2" SCREWS AT EACH END OF BOARD, AND TWO ROWS OF SCREWS AT 3'-0" CENTER-TO-CENTER (STAGGERED 1'-6").
- ANCHOR RODS AND PLATE WASHERS SHALL BE STAINLESS STEEL CONFORMING TO ASTM A193 B8 CLASS 2 WITH STAINLESS STEEL NUTS CONFORMING TO ASTM A194 GRADE 8. GROUT OR CHEMICAL ADHESIVE ANCHOR RODS SHALL BE PROPOSED BY CONTRACTOR AND SUBMITTED FOR APPROVAL BY THE ENGINEER. INSTALLATION OF ADHESIVE ANCHOR RODS SHALL BE PER THE MANUFACTURER'S SPECIFICATION AND TO THE SATISFACTION OF THE ENGINEER.
- CONTRACTOR SHALL UTILIZE TEMPLATES TO LOCATE THE ANCHOR RODS SUCH THAT THEY ACCURATELY COINCIDE WITH DRILLED HOLES IN THE GLULAM PANELS.
- FOR EXPANSION JOINT DETAILS, SEE DWG. EX-101.
- AT THE CONTRACTOR'S OPTION, EACH PAIR OF PROPOSED PIER-MOUNTED DECK PANELS MAY BE REPLACED WITH A SINGLE, 4'-9 7/8" WIDE DECK PANEL AT NO ADDITIONAL COST TO THE DEPARTMENT.
- THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER FOR APPROVAL SHOP DRAWINGS FOR THE GLULAM DECK PANELS.
- 2-PLY WATERPROOFING MEMBRANE SHALL EXTEND THE FULL WIDTH OF THE PIER CAP IN CONTACT WITH THE UNDERSIDE OF THE GLULAM PANEL AND SHALL CONFORM TO THE TABULATED REQUIREMENTS SHOWN ON DWG. AB-103. THE ADHESIVE SIDE OF THE MEMBRANE SHALL BE PROTECTED WITH A SPECIAL RELEASE PAPER THAT CAN BE EASILY REMOVED FOR INSTALLATION. COST OF 2-PLY MEMBRANE WATERPROOFING WILL BE INCIDENTAL TO ITEM 602007 -PORTLAND CEMENT CONCRETE MASONRY, PIER ABOVE FOOTING, CLASS A.
- 2-PLY WATERPROOFING MEMBRANE SHALL EXTEND TO THE MINIMUM DIMENSIONS SHOWN AND CONSIST OF ONE CONTINUOUS WRAPPING OF THE PIER CAP TOP AND SIDE FACES.

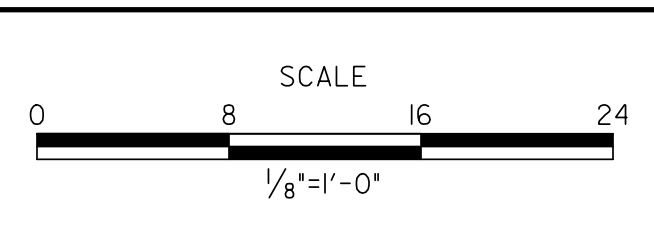
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- NOTES:**
1. FINISHED BRIDGE DECK ELEVATIONS SHOWN ARE TOP OF PROPOSED 1x6 TIMBER PLANKING.
 2. FOR VERTICAL CURVE DATA, SEE DWG. NO. PE-101.
 3. ALL LINES OF ELEVATIONS SHOWN ARE PERPENDICULAR TO @ CONSTRUCTION.
 4. BRIDGE RAILING, AND GLULAM ARCH CROSS-BRACING IN SPAN 2, ARE NOT SHOWN IN DECK PLANS.

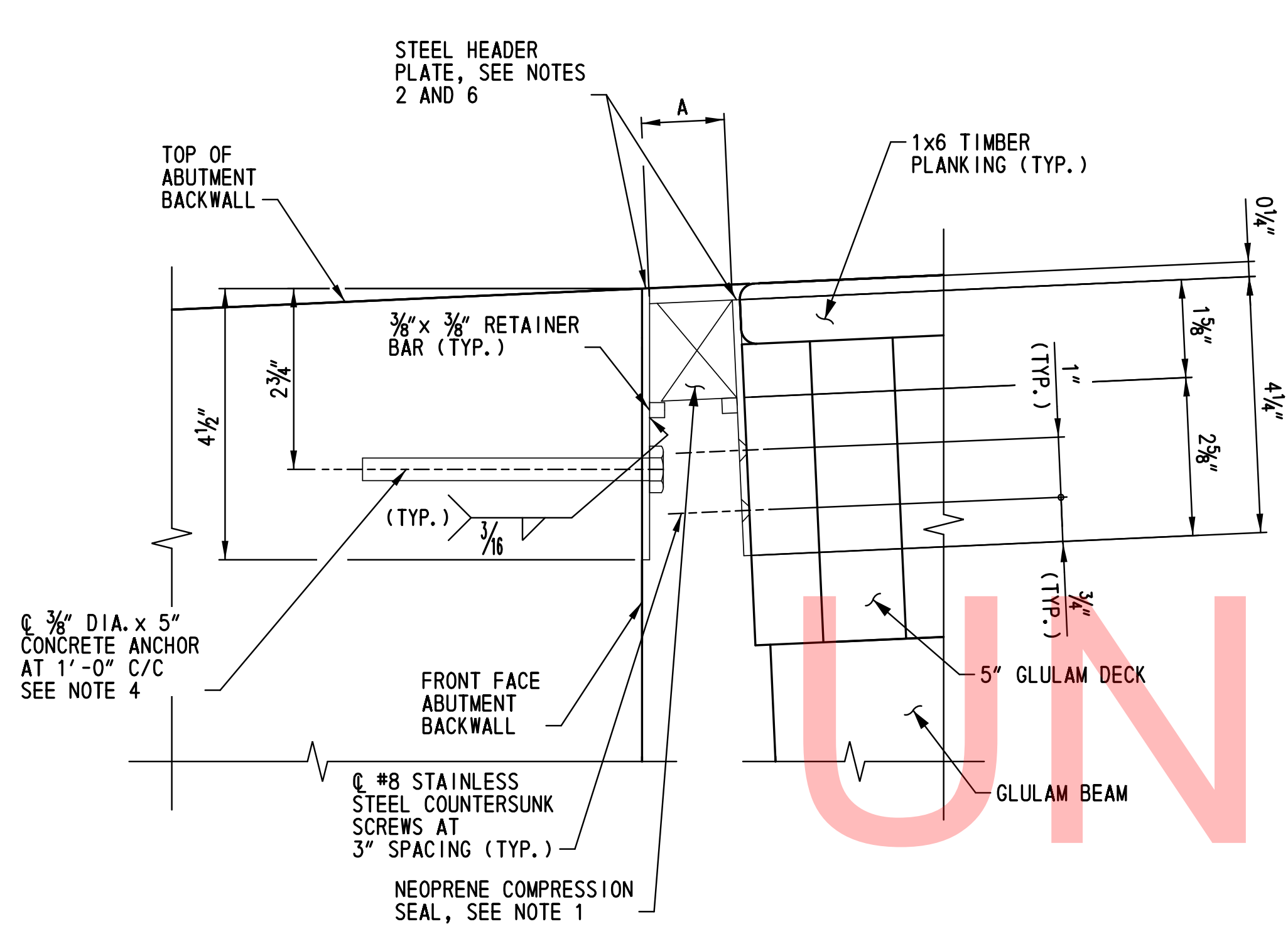
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| ADDENDUMS / REVISIONS |
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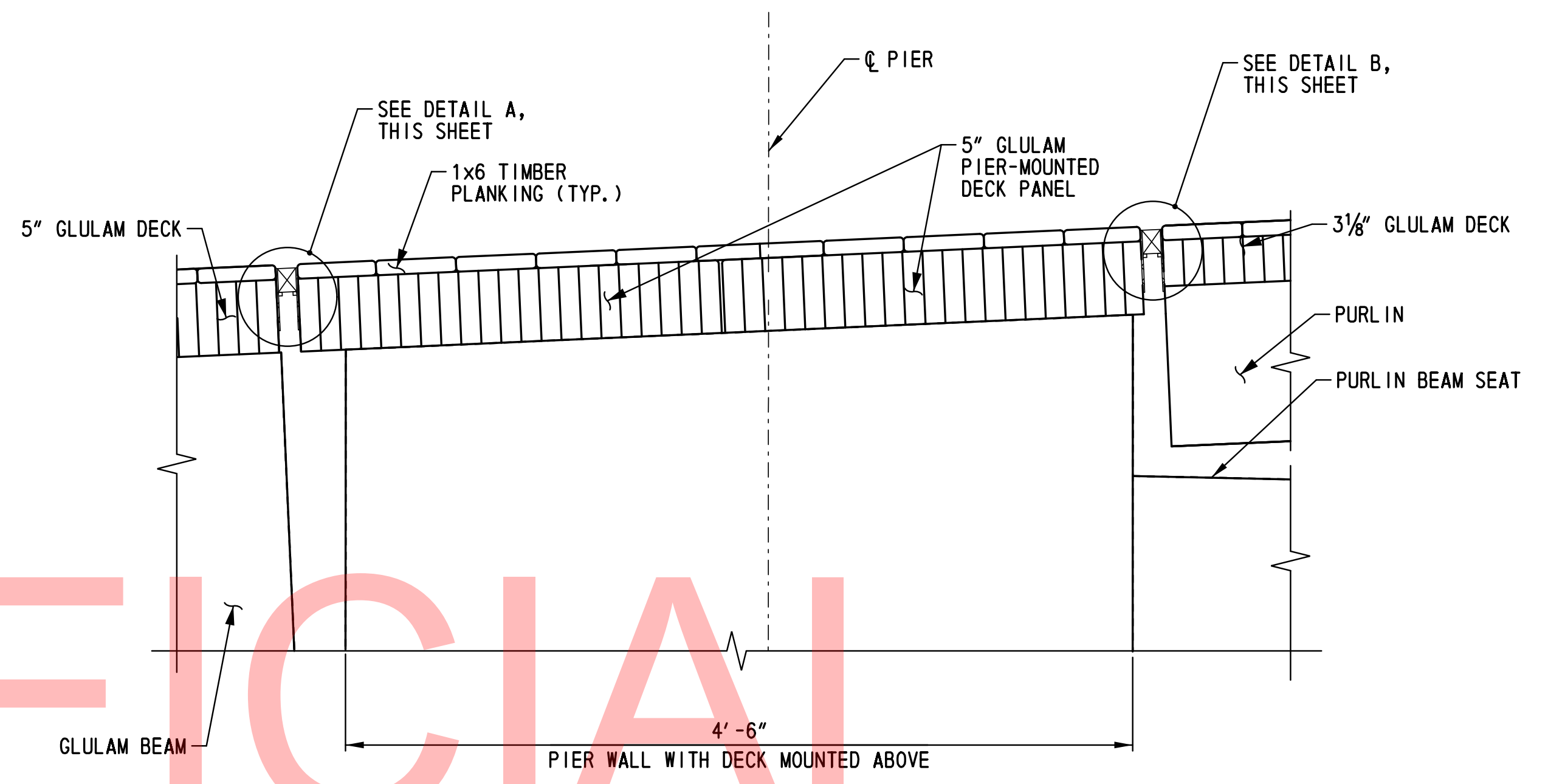
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| CONTRACT T201330009 | BRIDGE NO. X |
| COUNTY NEW CASTLE | DESIGNED BY: NAH CHECKED BY: WAG |

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|--------------------|
| FD-101 |
| SHEET NO. 74 |
| TOTAL SHTS. 205 |



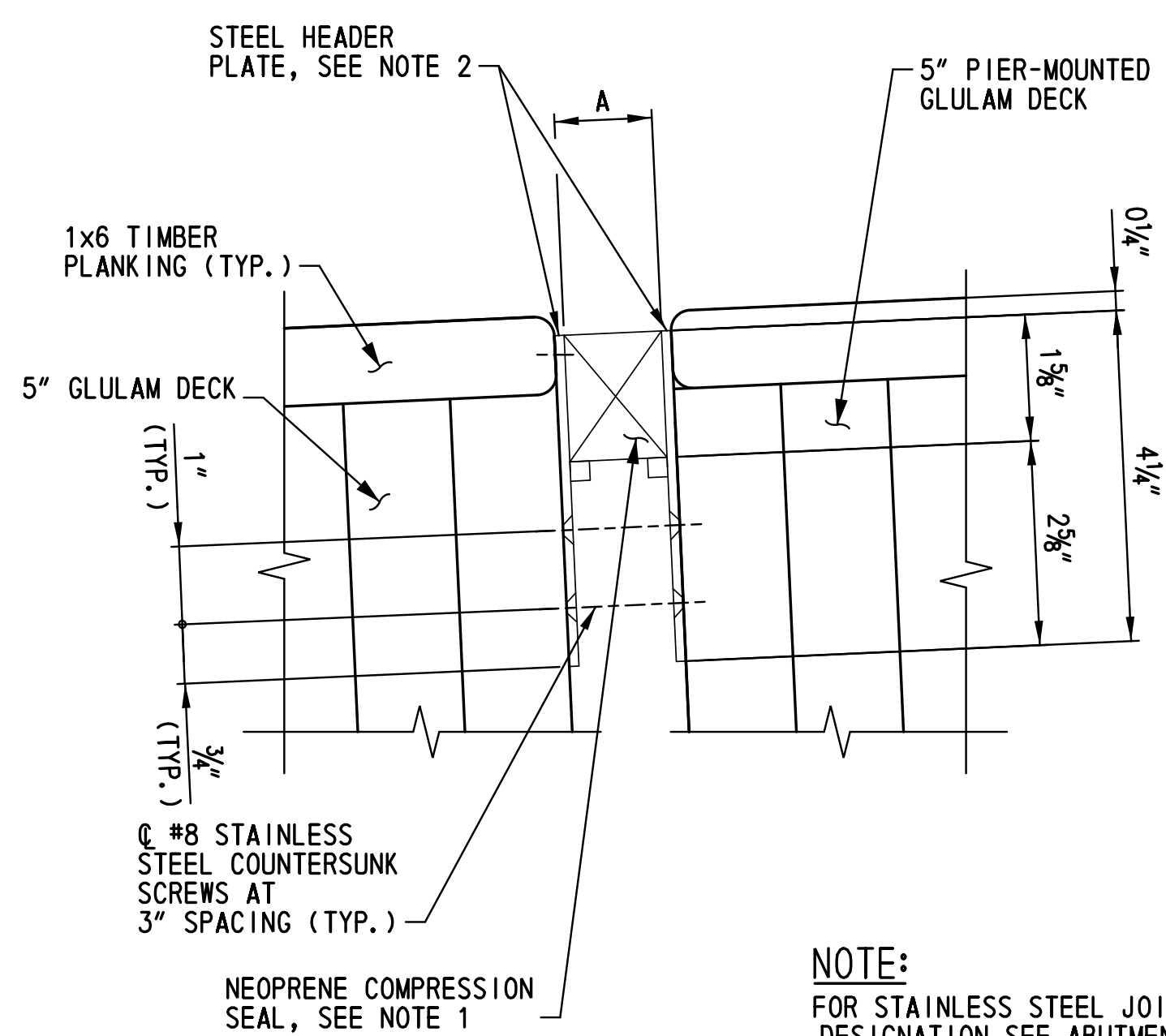
ABUTMENT EXPANSION JOINT DETAIL
SCALE: 6"=1'-0"

NOTE:
ABUTMENT A EAST ELEVATION SHOWN. ABUTMENT B EAST ELEVATION IS SIMILAR, OPPOSITE HAND.



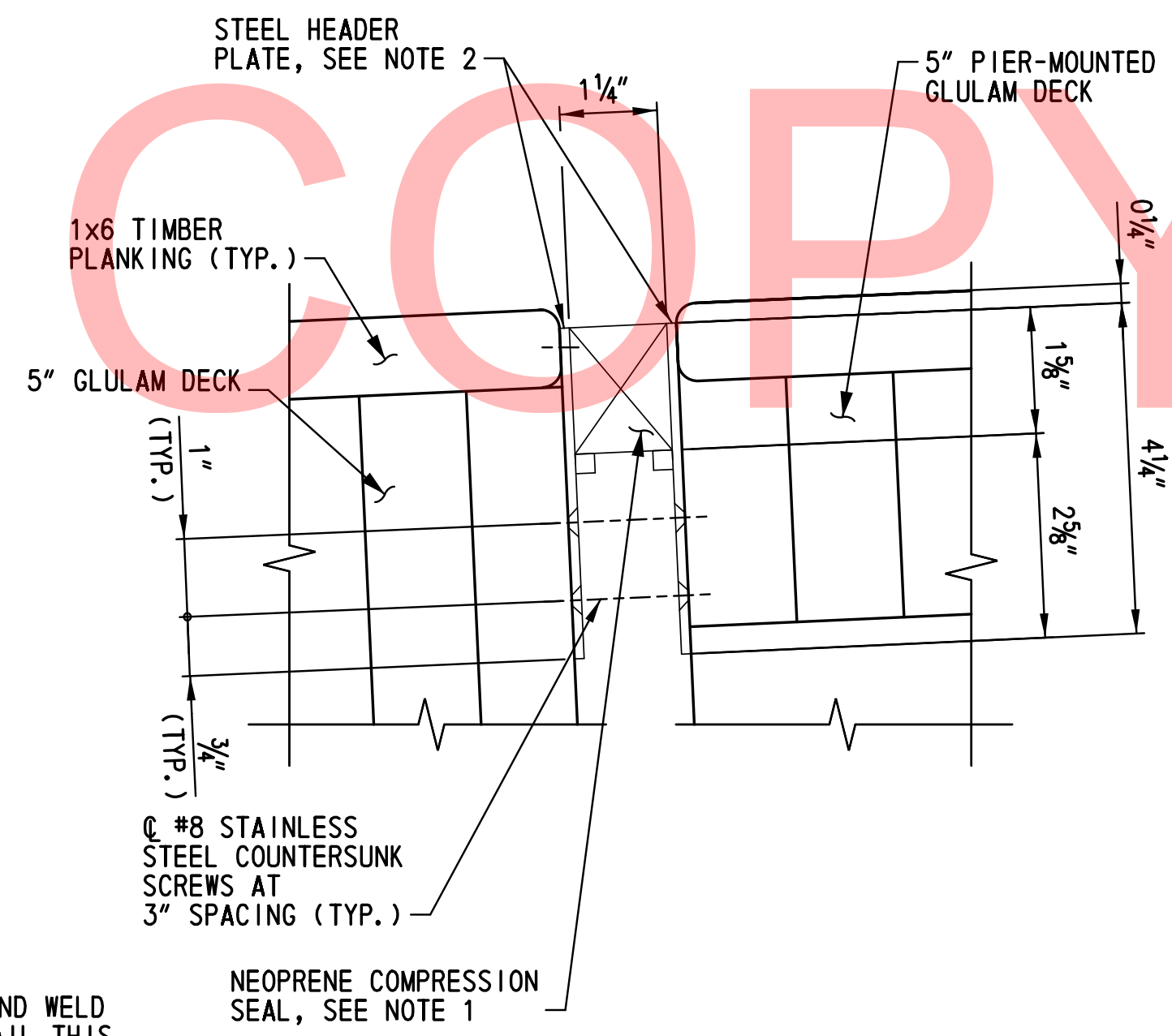
PIER EXPANSION JOINT DETAIL
SCALE: 1 1/2"=1'-0"

NOTE:
PIER 1 EAST ELEVATION SHOWN. PIER 2 EAST ELEVATION IS SIMILAR, OPPOSITE HAND. FOR STAINLESS STEEL JOINT RETAINER BAR SIZE AND WELD DESIGNATION SEE ABUTMENT EXPANSION JOINT DETAIL THIS SHEET.



DETAIL A
SCALE: 6"=1'-0"

NOTE:
FOR STAINLESS STEEL JOINT RETAINER BAR SIZE AND WELD DESIGNATION SEE ABUTMENT EXPANSION JOINT DETAIL THIS SHEET.



DETAIL B
SCALE: 6"=1'-0"

| DIMENSION REFERENCE TABLE | |
|-------------------------------|--------|
| INSTALLATION TEMPERATURE (°F) | A |
| 0 | 1 1/2" |
| 30 | 1 3/8" |
| 60 | 1 1/4" |
| 90 | 1 1/8" |
| 120 | 1" |

- NOTES:
- NEOPRENE COMPRESSION SEAL SHALL HAVE A MINIMUM MOVEMENT CAPACITY OF 1/2".
 - STEEL HEADER PLATE SHALL BE MINIMUM 1/8" THICK GALVANIZED STEEL. COUNTERSUNK HOLES TO ACCOMMODATE #8 COUNTERSUNK SCREWS SHALL BE PROVIDED IN HEADER PLATE AT ENDS OF TIMBER DECKING. RETAINER BARS SHALL CONFORM TO ASTM A304. DIMENSION A IS TAKEN AT THE 1/4" SETTING DEPTH OF NEOPRENE COMPRESSION SEAL BELOW TOP OF JOINT AT THE ABUTMENT.
 - CONCRETE ANCHORS AND WASHER PLATES SHALL BE STAINLESS STEEL CONFORMING TO ASTM A193 B8 CLASS 2 OR APPROVED EQUAL. CONCRETE ANCHORS SHALL BE PROPOSED BY CONTRACTOR AND SUBMITTED FOR APPROVAL BY THE ENGINEER.
 - STAINLESS STEEL GROUT OR CHEMICAL ADHESIVE ANCHORS WITH WASHER PLATES CONFORMING TO ASTM A193 B8 CLASS 2 OR APPROVED EQUAL MAY BE SUBMITTED FOR APPROVAL BY THE ENGINEER IN LIEU OF CONCRETE ANCHORS. INSTALLATION OF GROUT OR ADHESIVE ANCHORS SHALL BE PER THE MANUFACTURER'S SPECIFICATION AND TO THE SATISFACTION OF THE ENGINEER.
 - MINIMUM EDGE DISTANCE BETWEEN THE CENTERLINE OF PROPOSED ANCHORS AND ANY EDGE OF THE STEEL HEADER PLATE IS 1 1/2". HOLES IN STEEL HEADER PLATES FOR PROPOSED ANCHORS SHALL BE 1/8" DIAMETER.

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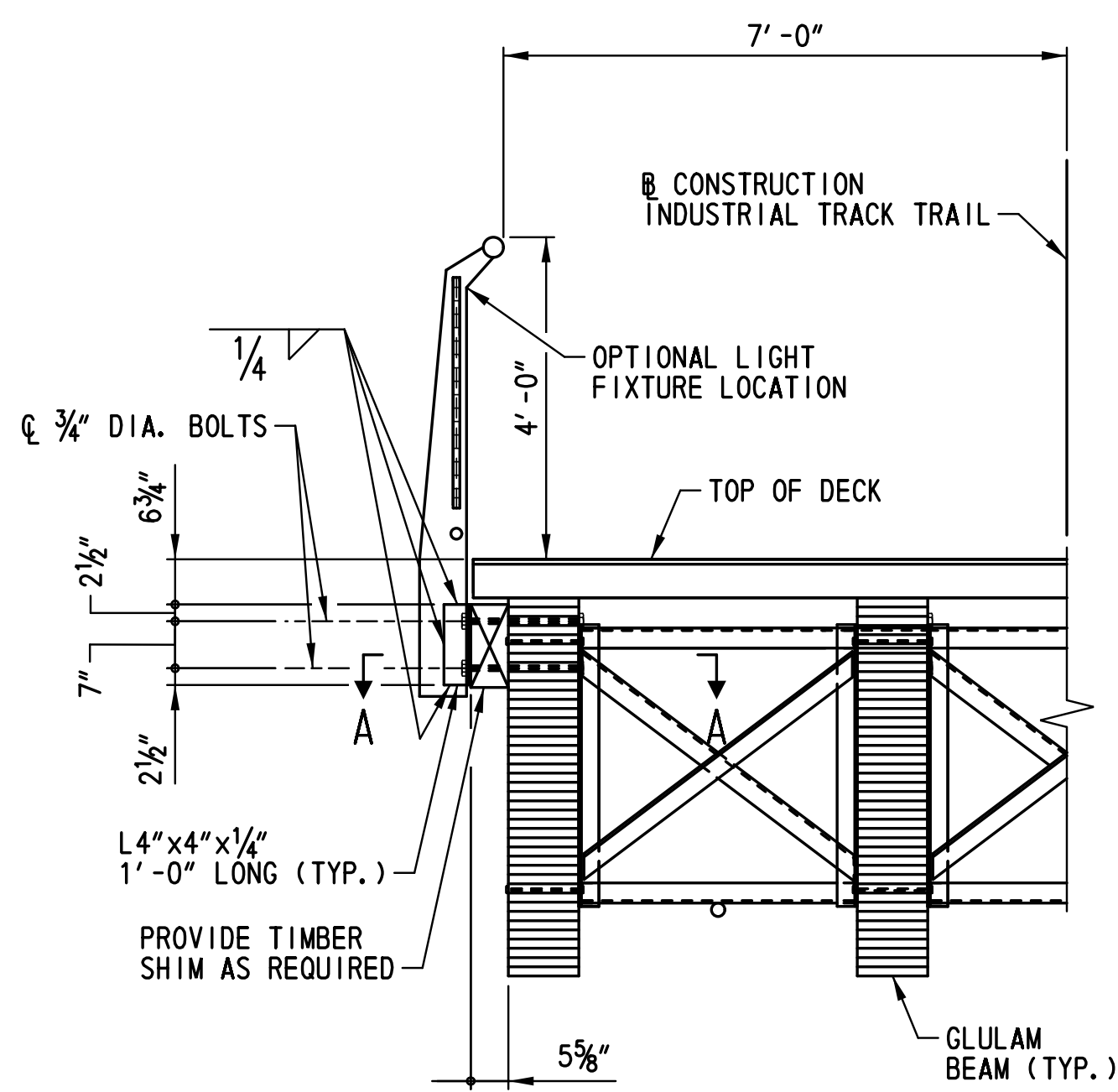
| ADDENDUMS / REVISIONS |
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SCALE AS NOTED

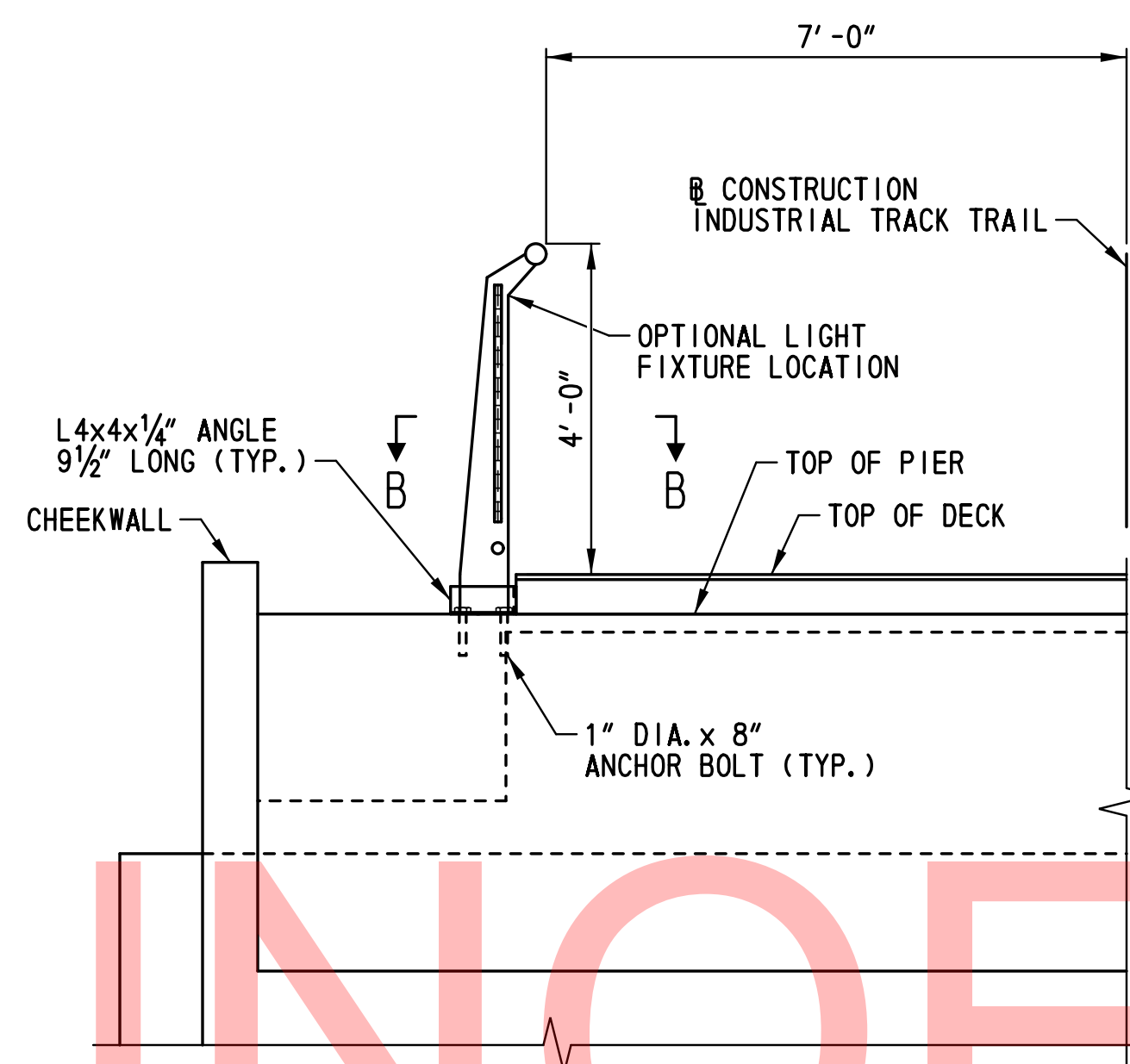
NEW CASTLE INDUSTRIAL TRACK TRAIL, PHASE 3

| | | |
|------------|------------------|---|
| CONTRACT | BRIDGE NO. | X |
| T201330009 | DESIGNED BY: NAH | |
| COUNTY | CHECKED BY: WAG | |
| NEW CASTLE | | |

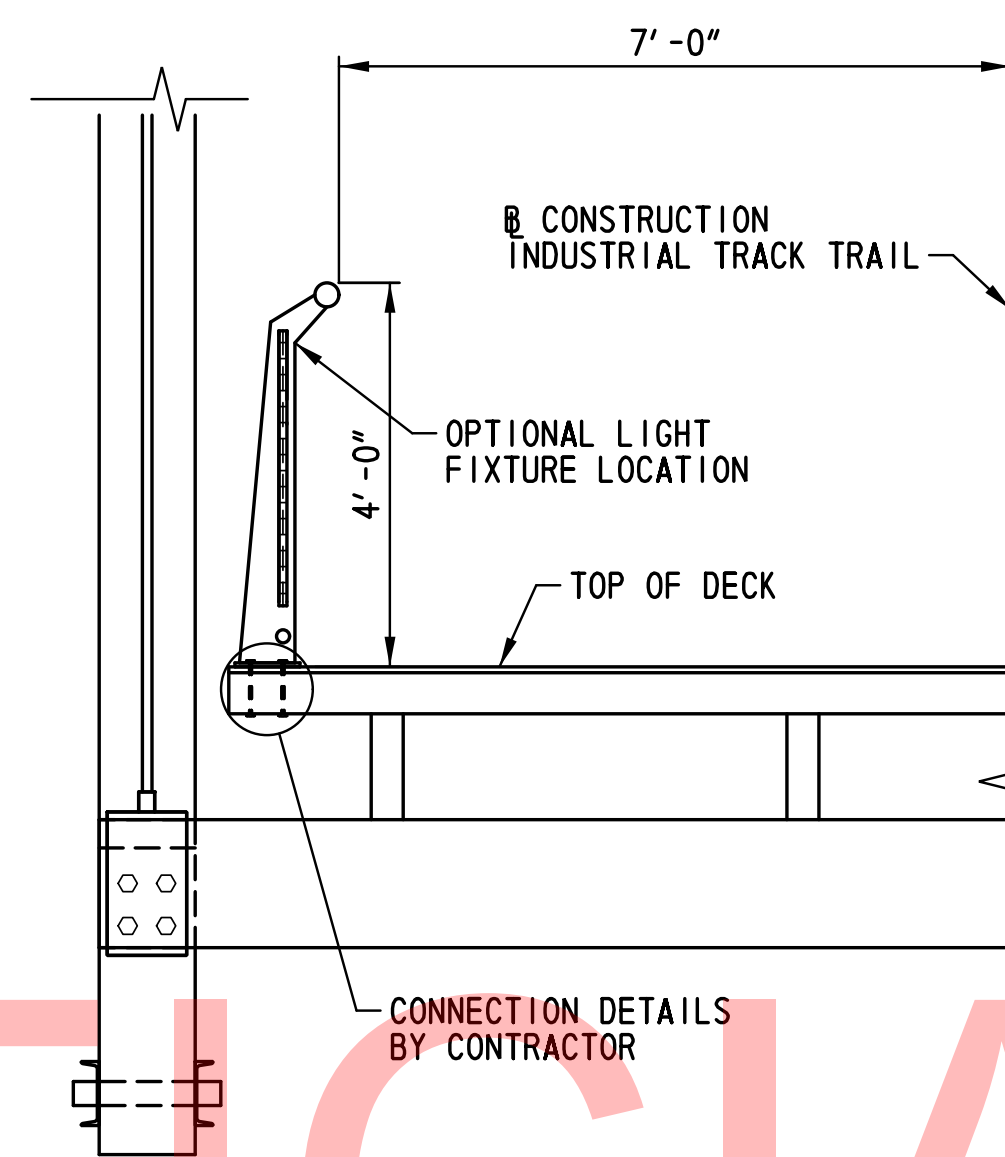
TRANSVERSE JOINT DETAILS



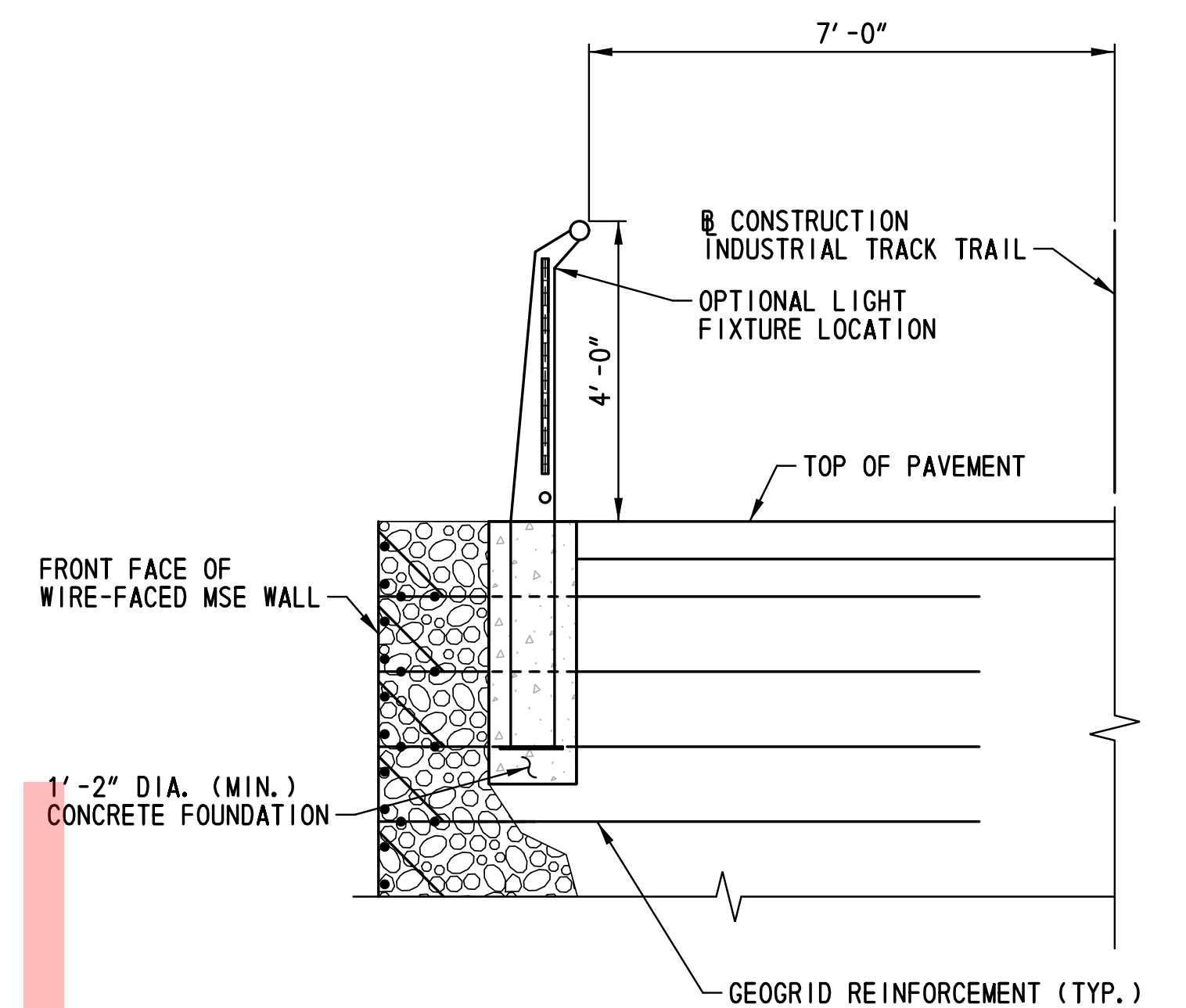
HALF SECTION - SPANS 1 AND 3
SCALE: 1/2" = 1'-0"



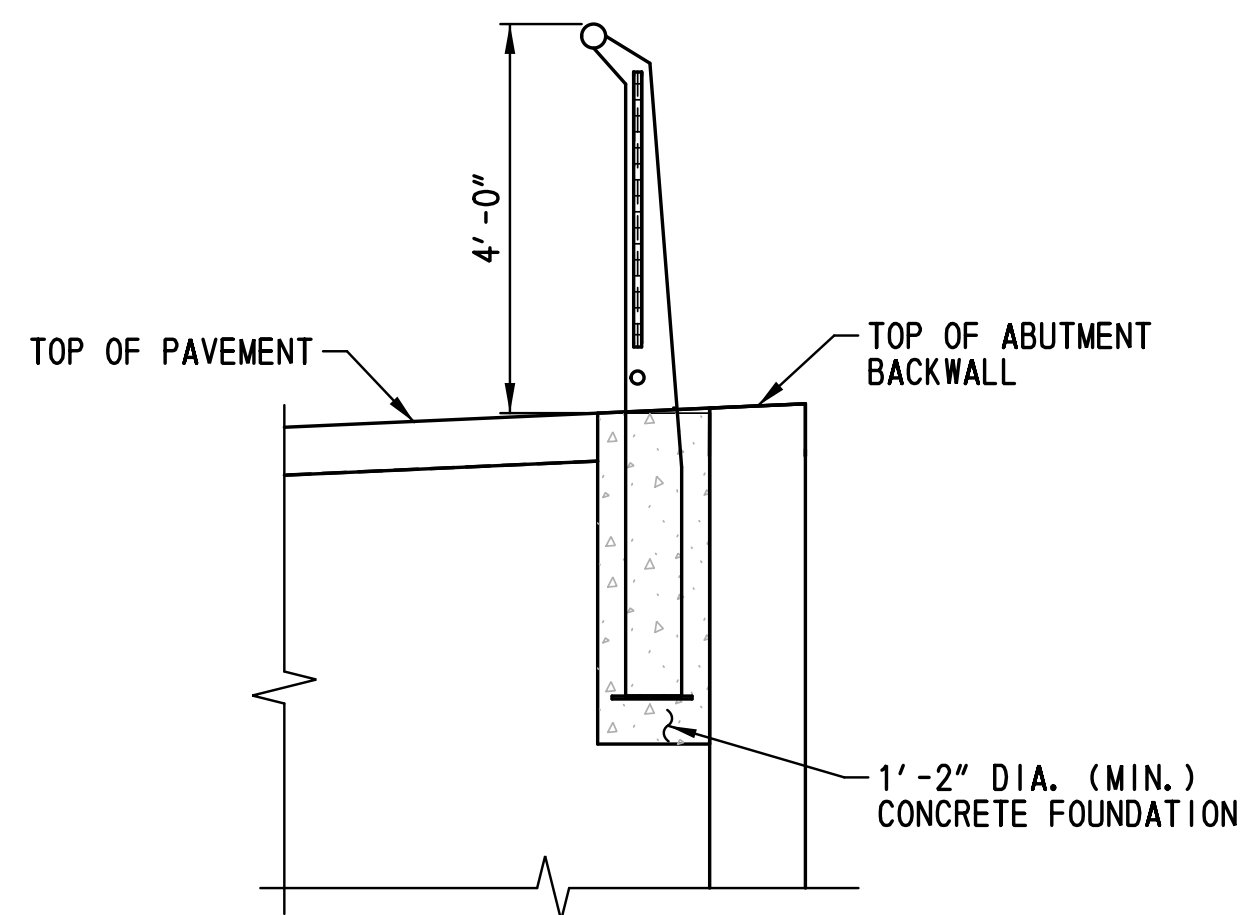
HALF SECTION - PIERS 1 AND 2
SCALE: 1/2" = 1'-0"



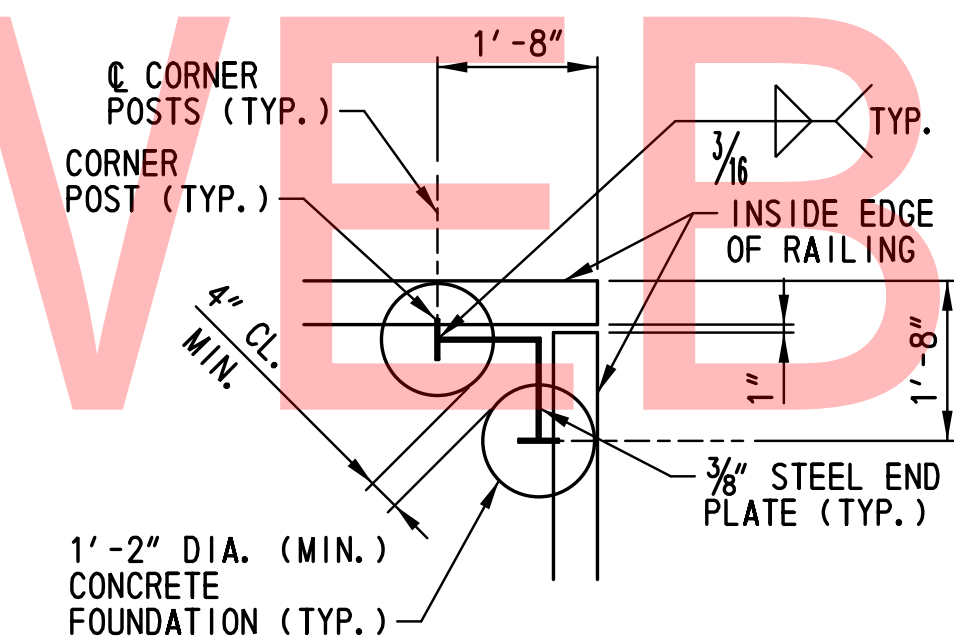
HALF SECTION - SPAN 2
SCALE: 1/2" = 1'-0"



HALF SECTION - TRAIL RETAINING STRUCTURES
SCALE: 1/2" = 1'-0"

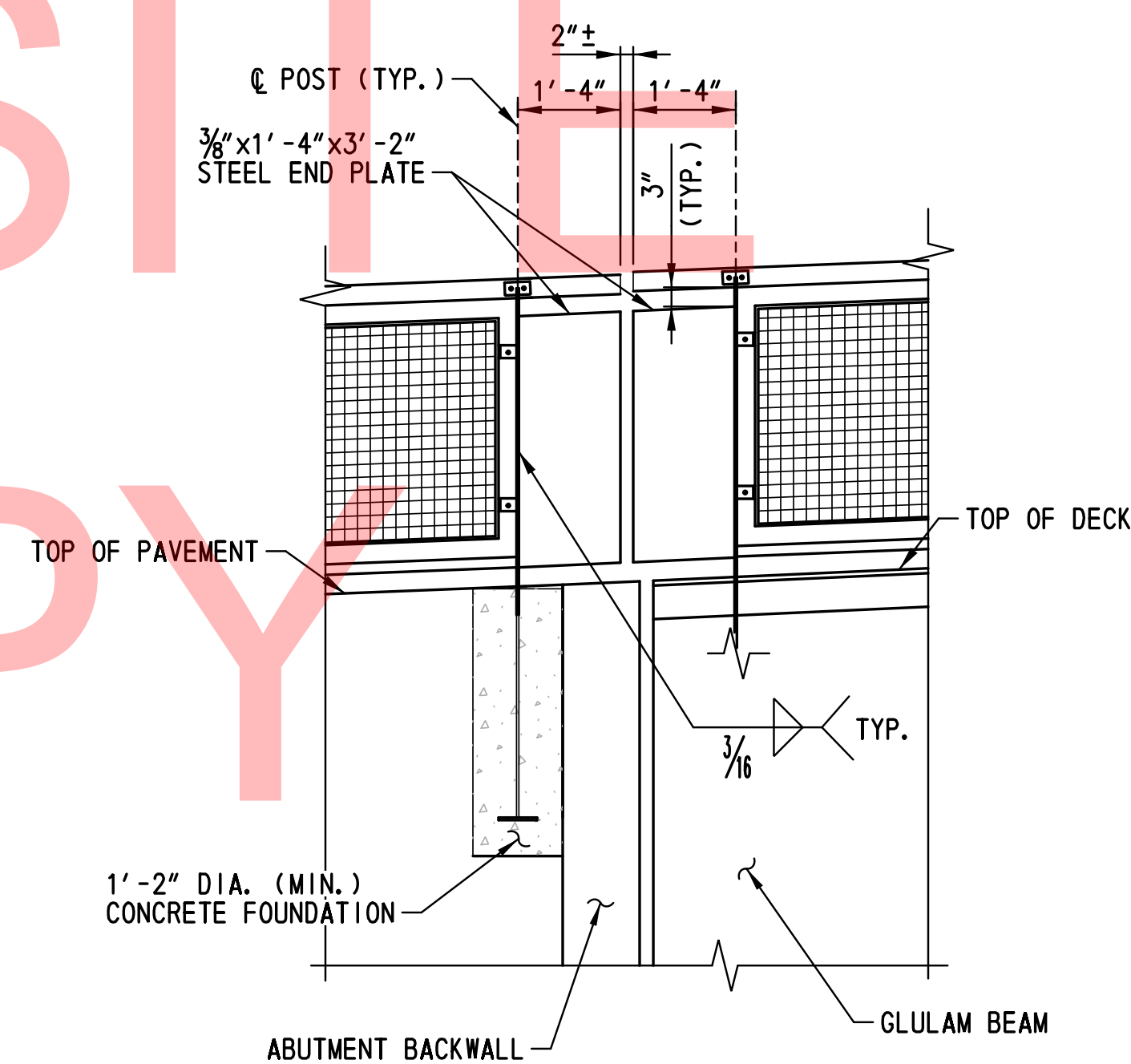


SECTION - OBSERVATION AREAS AT ABUTMENTS
SCALE: 1/2" = 1'-0"



TYPICAL CORNER POST DETAIL
SCALE: 1/2" = 1'-0"

NOTE:
TYPICAL OUTSIDE RAILING CORNER DETAIL IS SHOWN. TYPICAL INSIDE CORNER DETAIL IS SIMILAR. SEE NOTE 2 FOR ADDITIONAL INFORMATION ABOUT RAILING CORNER DETAILS.

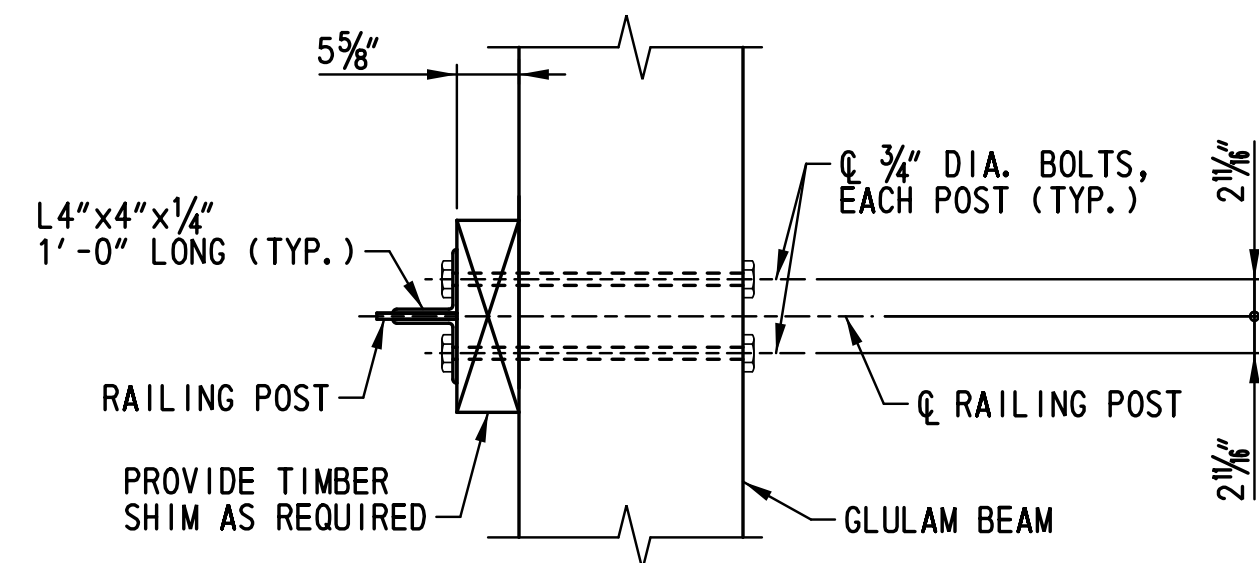


RAILING DETAIL AT ABUTMENT JOINTS
SCALE: 1/2" = 1'-0"

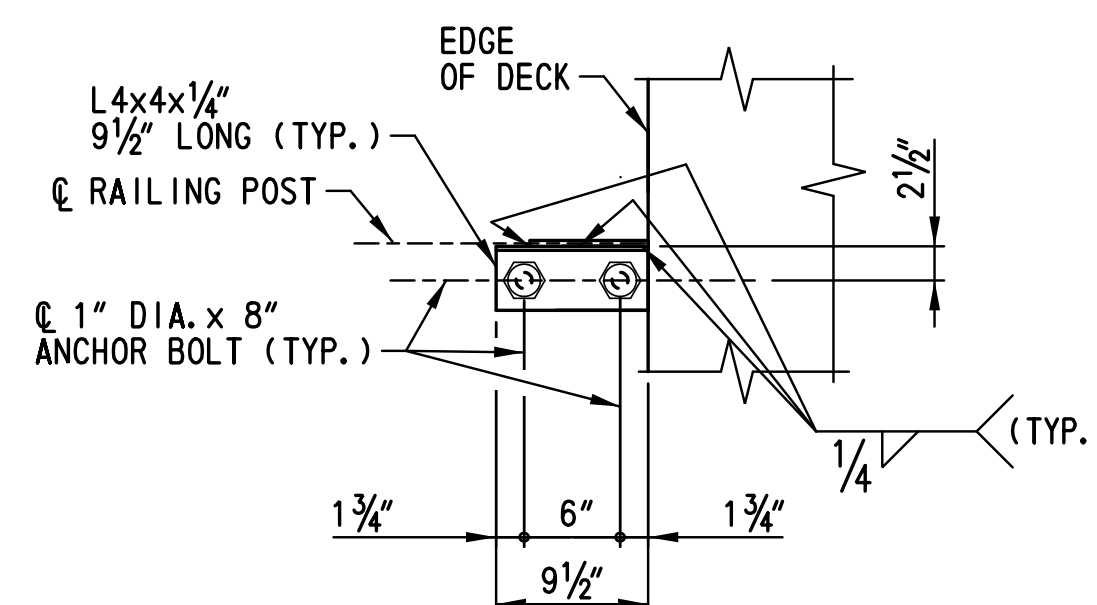
NOTE:
RAILING SECTION AT ABUTMENT A SHOWN. RAILING SECTION AT ABUTMENT B NOT SHOWN BUT IS SIMILAR. STEEL END PLATES SHALL BE PROVIDED AT PIER JOINTS SIMILAR TO THAT SHOWN IN THIS DETAIL.

NOTES:

1. FOR RAILING POST, WIRE PANEL, AND CONNECTION HARDWARE DETAILS SEE DWG. NO RL-102.
2. THE 'TYPICAL CORNER POST DETAIL', THIS SHEET, APPLIES TO ALL CORNER RAILING POSTS AT TRAIL OBSERVATION AREAS ADJACENT TO ABUTMENTS A AND B. FOR OUTSIDE CORNER RAILINGS, BREAK SHARP EDGES MIN. 1/2" CHAMFER. THE HEIGHT AND POSITIONING OF CORNER POST END PLATES SHALL MATCH THE END PLATE SHOWN IN 'RAILING DETAIL AT ABUTMENT JOINTS' DETAIL, THIS SHEET. THE CORNER POST END PLATE DETAILS FOR OUTSIDE AND INSIDE CORNERS SHALL BE SUBMITTED IN SHOP DRAWINGS FOR REVIEW AND APPROVAL BY THE ENGINEER.



SECTION A-A
SCALE: 1" = 1'-0"



SECTION B-B
SCALE: 1" = 1'-0"

ADDENDUMS / REVISIONS

SCALE AS NOTED

NEW CASTLE INDUSTRIAL TRACK TRAIL, PHASE 3

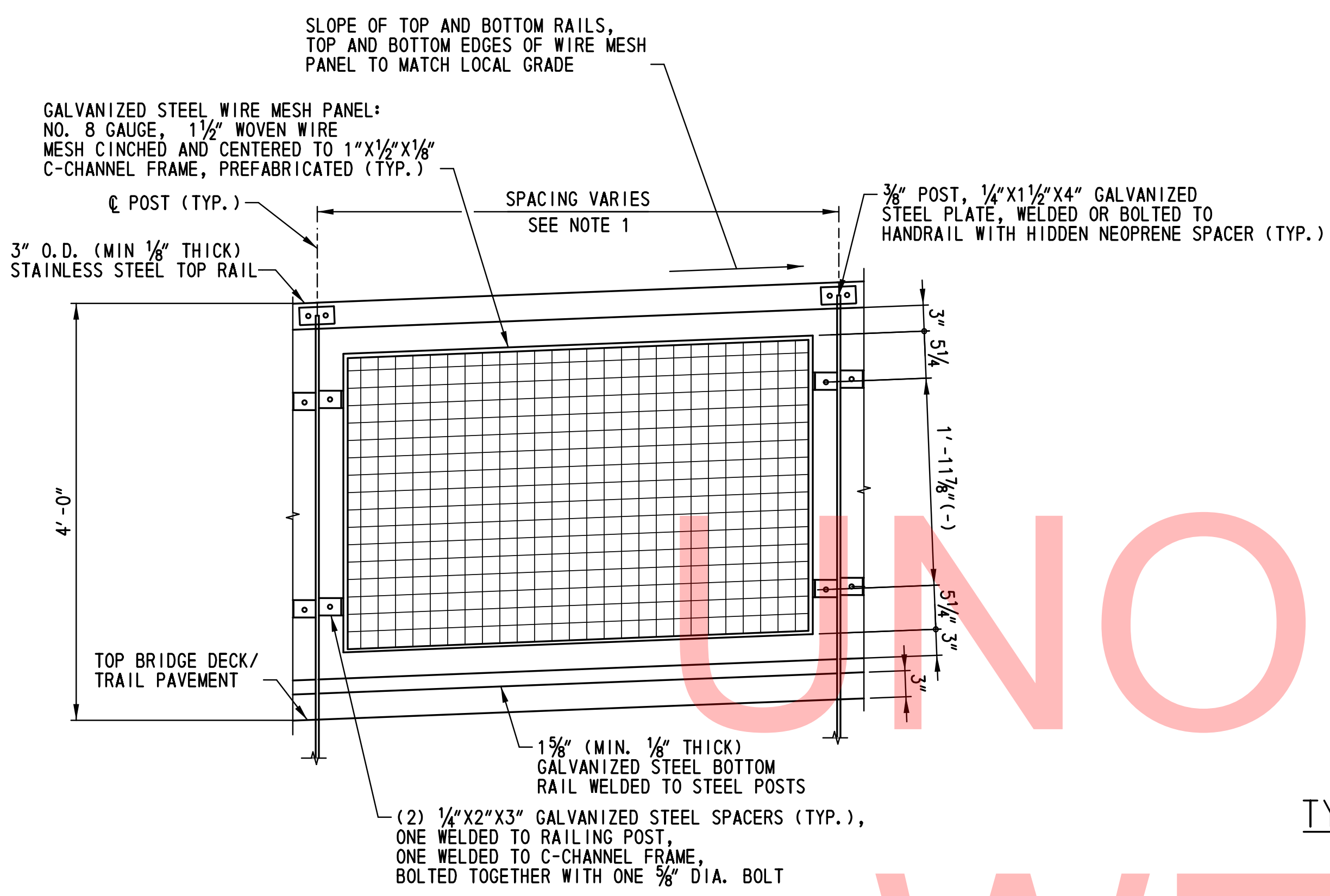
| | | |
|------------|------------------|---|
| CONTRACT | BRIDGE NO. | X |
| T201330009 | DESIGNED BY: ADD | |
| COUNTY | CHECKED BY: WAG | |
| NEW CASTLE | | |

RAILING DETAILS - 1

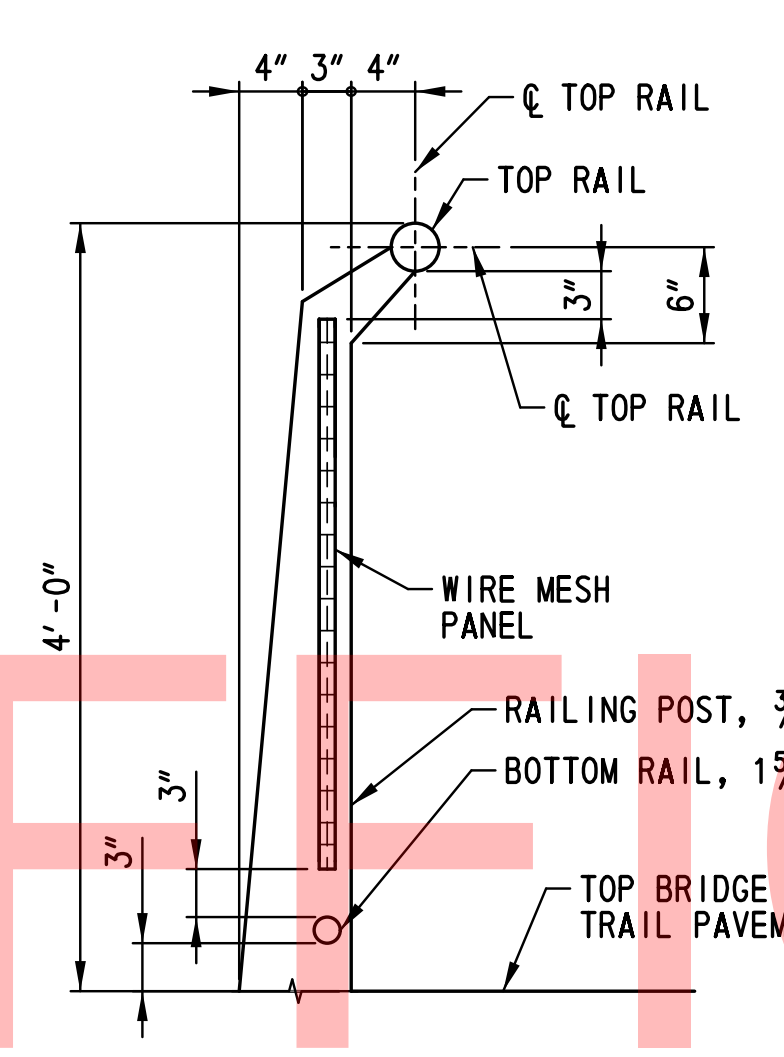
| |
|-------------|
| RL-101 |
| SHEET NO. |
| 76 |
| TOTAL SHTS. |
| 205 |

NOTES:

1. FOR BRIDGE RAILING POST SPACING AND LAYOUT, SEE DWG. NO. FR-101. POST SPACING ALONG GROUND-MOUNTED RAILING ON BRIDGE APPROACH RETAINING STRUCTURES SHALL BE 5'-0" MAX. POST SPACING FOR PREFABRICATED GLUE LAMINATED ARCH SHALL BE 5'-0" MAX.
2. FOR RAILING POST CONNECTION DETAILS, SEE DWG. NO. RL-101.
3. TOP AND BOTTOM EDGES OF WIRE MESH PANEL AND RAILS SHALL BE SLOPED TO MATCH BRIDGE DECK. ALL OTHER RAILING ELEMENTS SHALL BE PLACED PLUMB.
4. UNLESS OTHERWISE NOTED, ALL BOLTS SHALL BE 3/4" DIA. HIGH STRENGTH BOLTS CONFORMING TO A325, HOT-DIPPED GALVANIZED IN ACCORDANCE WITH ASTM A153. ALL HOLES SHALL BE 3/8" DIA. MISCELLANEOUS FASTENERS USED FOR SPACER AND RAILING CONNECTIONS SHALL CONFORM TO ASTM A307 GRADE A, HOT-DIPPED GALVANIZED IN ACCORDANCE WITH ASTM A153.
5. ALL ANCHOR BOLTS SHALL BE 1" DIA. CONFORMING TO ASTM F1554 GRADE 55, HOT-DIPPED GALVANIZED IN ACCORDANCE WITH ASTM A153.
6. RAILING POST, PLATES, ANGLES, AND BOTTOM RAILING TUBE MATERIALS SHALL BE ASTM A36 STEEL OR APPROVED EQUAL AND GALVANIZED IN ACCORDANCE WITH ASTM 123. ALL STAINLESS STEEL TOP RAILING TUBE SHALL BE TYPE 304 STAINLESS STEEL, CONFORMING TO ASTM A269 OR APPROVED EQUAL, WITH NO. 4 BRUSH FINISH. WOVEN WIRE MESH INFILL PANELS SHALL CONSIST OF NO. 8 GAUGE WIRE MATERIAL MEETING THE REQUIREMENTS OF ASTM A 853 AND GALVANIZED IN ACCORDANCE WITH A 123.
7. THE CONTRACTOR SHALL COORDINATE WITH THE ARCH FABRICATOR FOR DESIGN OF THE RAILING AND POST CONNECTION TO THE GLULAM DECKING. SEE SPECIAL PROVISIONS FOR ITEM 601536, PREFABRICATED GLUED LAMINATED TIMBER ARCH FOR RAILING DESIGN LOADS.
8. THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS OF RAILING SYSTEM FOR APPROVAL BY THE ENGINEER.



RAILING DETAIL ELEVATION
SCALE: 1" = 1'-0"



TYPICAL RAILING SECTION
SCALE: 1" = 1'-0"

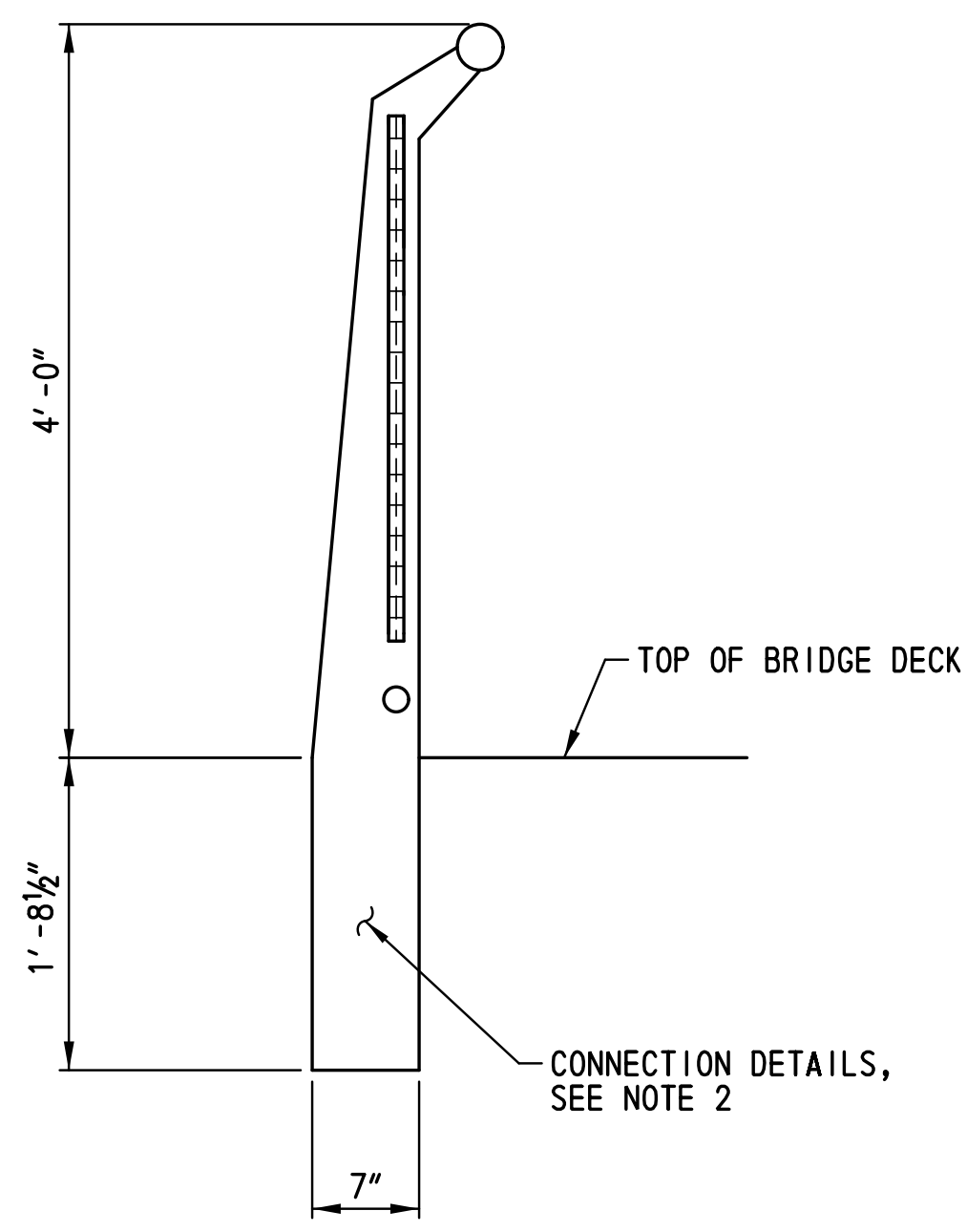


PLATE POST - SPANS 1 AND 3
SCALE: 1" = 1'-0"

NOTE: FOR RAILING DETAILS NOT SHOWN, SEE 'TYPICAL RAILING SECTION' THIS SHEET

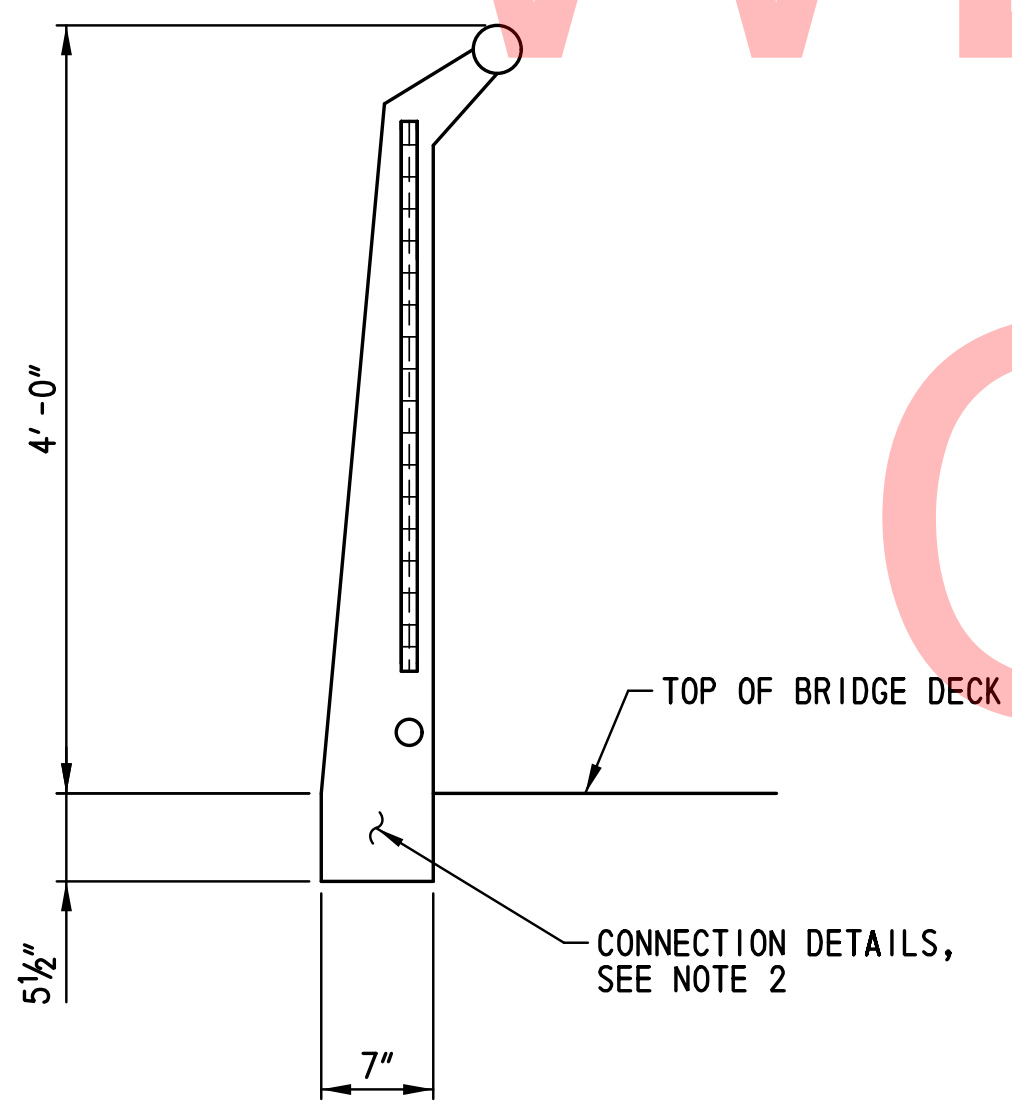


PLATE POST - PIERS
SCALE: 1" = 1'-0"

NOTE: FOR RAILING DETAILS NOT SHOWN, SEE 'TYPICAL RAILING SECTION' THIS SHEET

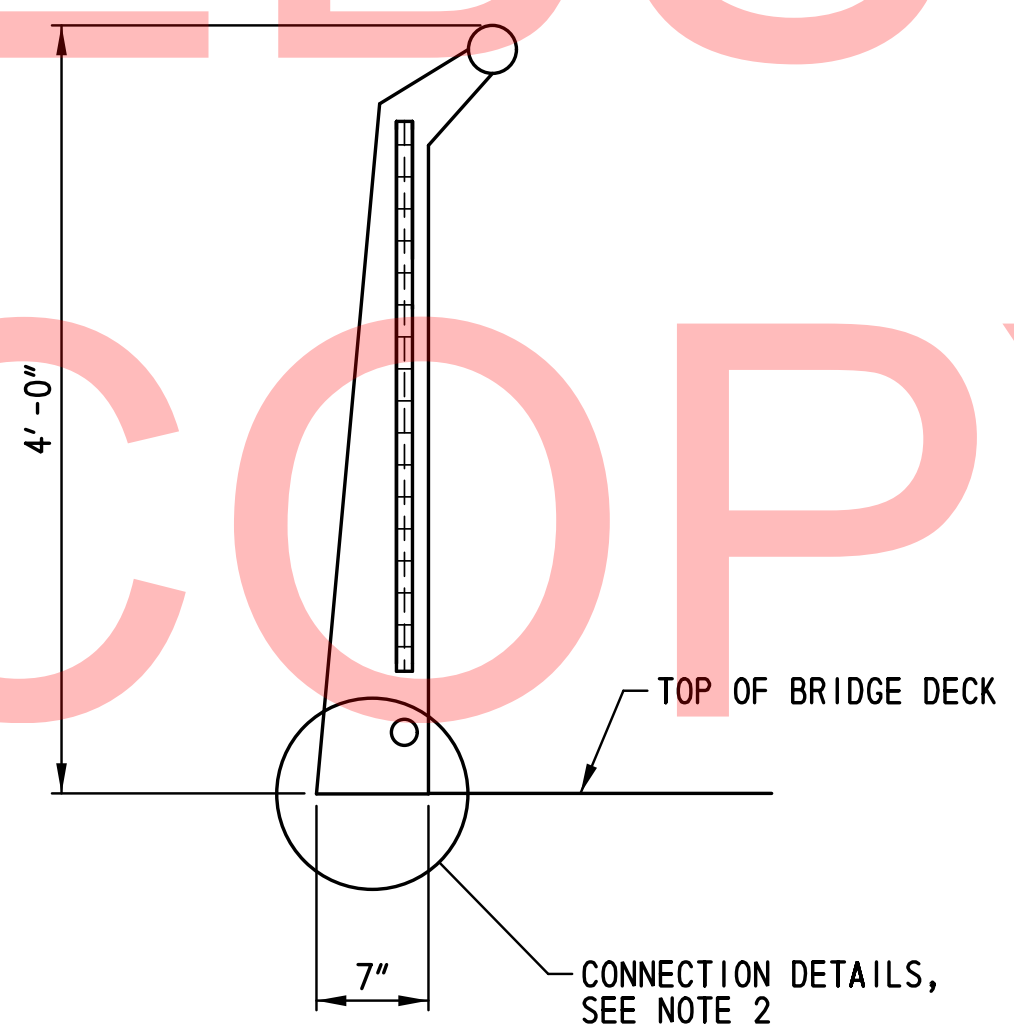


PLATE POST - SPAN 2
SCALE: 1" = 1'-0"

NOTE: FOR RAILING DETAILS NOT SHOWN, SEE 'TYPICAL RAILING SECTION' THIS SHEET

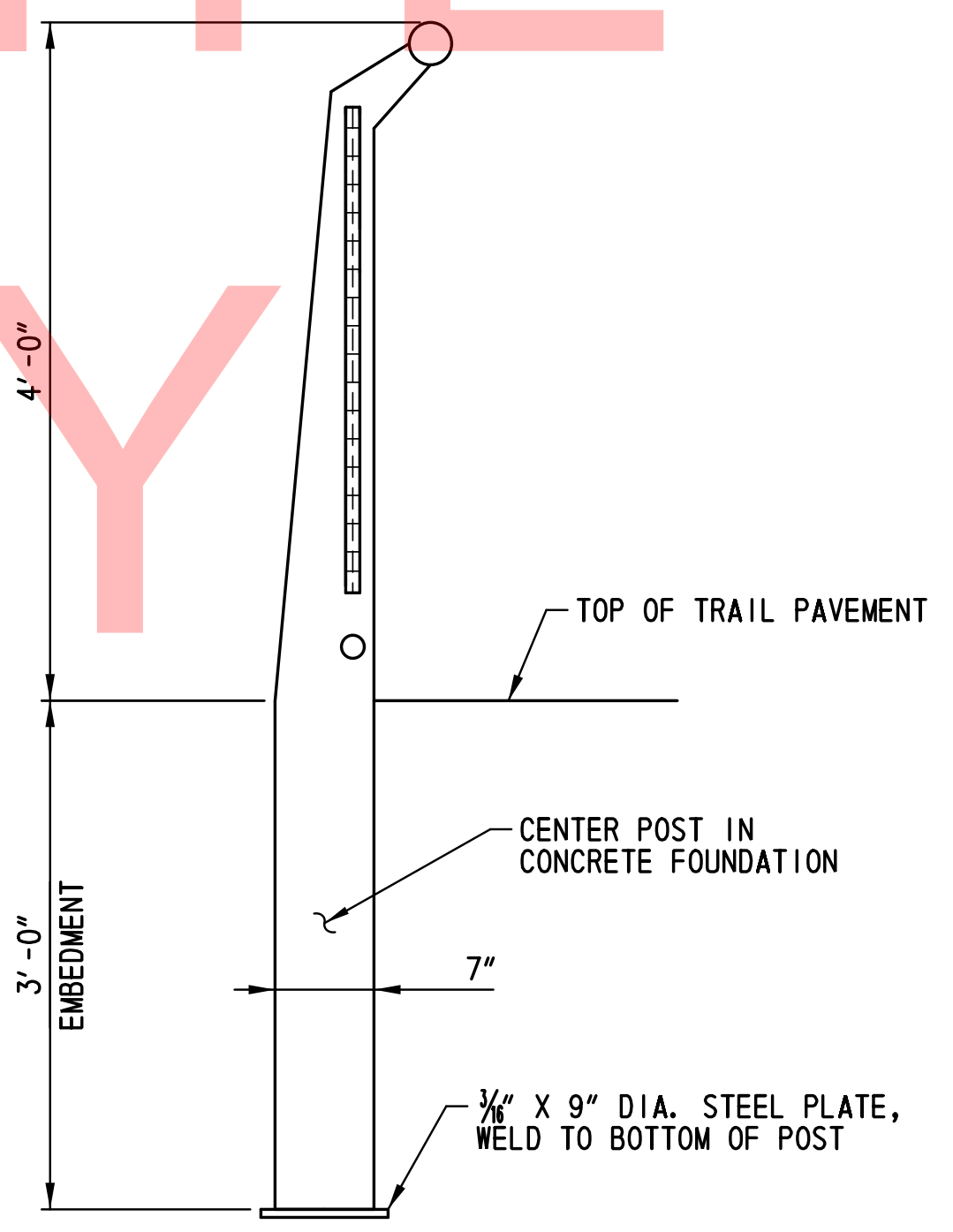
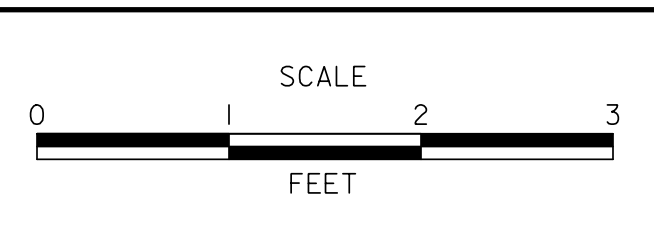


PLATE POST - GROUND-MOUNTED
SCALE: 1" = 1'-0"

NOTE: FOR RAILING DETAILS NOT SHOWN, SEE 'TYPICAL RAILING SECTION' THIS SHEET

N:\31896-002\CADD\BRIDGE\RL102_JTC.DGN

| ADDENDUMS / REVISIONS | |
|-----------------------|--|
| | |
| | |



| | | |
|------------|--------------|-----|
| CONTRACT | BRIDGE NO. | X |
| T201330009 | DESIGNED BY: | ADD |
| COUNTY | CHECKED BY: | WAG |
| NEW CASTLE | | |

| |
|-------------|
| RL-102 |
| SHEET NO. |
| 77 |
| TOTAL SHTS. |
| 205 |

BORING: IT-01 DATE DRILLED: 9/17/13 STATION: 105+28.46 OFFSET: 5.99' RT. ELEVATION: 10.12' NORTHING: 625655.1860 EASTING: 610811.4450 COMMENTS: N/A

| SAMPLE INFORMATION | | | | | |
|--------------------|-------|-----------|---|-------------|---|
| NO. | DEPTH | BLOWS /6" | DESCRIPTION | CLASS /G.I. | REMARKS |
| 1 | 0.0 | 6 | MOIST MEDIUM DENSE BROWN COARSE SAND AND FINE GRAVEL W/SOME FINE SAND AND SILT. | A-1-B | |
| 2 | 2.0 | 47 | MOIST DENSE BROWN FINE GRAVELLY COARSE SAND W/SOME FINE SAND AND SILT. | A-1-B | |
| 3 | 4.0 | 1 | NO SIEVE ANALYSIS - INDICATION OF MOIST VERY LOOSE BROWN SILTY SAND. | | EL. 5.00 B.O.F. SOUTH RETAINING STRUCTURE MAT FOUNDATION AND GRADE BEAMS |
| 4 | 6.0 | 2 | NO RECOVERY | | EL. 4.00 B.O.F. ABUTMENT A |
| 5 | 8.0 | 1 | WET VERY LOOSE LIGHT GRAY SILTY COARSE TO FINE SAND W/SOME FINE GRAVEL, TRACE OF CLAY. | A-2-4(0) | |
| 6 | 10.0 | 1 | WET VERY LOOSE LIGHT GRAY SILTY COARSE TO FINE SAND W/SOME FINE GRAVEL, TRACE OF CLAY. | A-2-4(0) | |
| 7A | 12.0 | 1 | WET VERY LOOSE GRAY SILTY COARSE SAND W/SOME FINE SAND, FINE GRAVEL AND CLAY. | A-2-4(0) | |
| 7B | 13.5 | 1 | SATURATED SOFT GRAY CLAY W/SOME SILT AND FINE GRAVEL, TRACE OF FINE TO COARSE SAND. | A-7-5(13) | |
| U-1 | 14.0 | | | A-4(6) | |
| 8 | 16.0 | WH | SATURATED SOFT GRAY CLAYEY SILT W/TRACE OF FINE TO COARSE SAND AND FINE GRAVEL. | A-4(10) | |
| 9 | 18.0 | WH | SATURATED SOFT GRAY CLAYEY SILT W/SOME FINE SAND, TRACE OF COARSE SAND AND FINE GRAVEL. | A-4(9) | |
| 10 | 24.0 | WH | SATURATED SOFT GRAY SILT W/SOME FINE SAND, TRACE OF COARSE SAND, FINE GRAVEL AND CLAY. | A-4(2) | EL. -15.89, 100 YR. FLOOD SCOUR DEPTH, SOUTH ABUTMENT. |
| 11 | 29.0 | 2 | SATURATED STIFF GRAY CLAYEY SILT W/SOME FINE SAND, TRACE OF COARSE SAND. | A-4(7) | EL. -18.55, 500 YR. FLOOD SCOUR DEPTH, SOUTH ABUTMENT. |
| 12 | 34.0 | 7 | SATURATED MEDIUM DENSE GRAY FINE TO COARSE SAND W/SOME SILT. | A-2-4(0) | |
| 13 | 39.0 | 6 | SATURATED LOOSE GRAY FINE TO COARSE SAND W/SOME FINE GRAVEL, TRACE OF SILT. | A-3 | |
| 14 | 44.0 | 35 | SATURATED VERY DENSE GRAY FINE GRAVEL W/SOME FINE TO COARSE SAND, TRACE OF SILT. | A-1-A | EL. -34.00 MIN. HP14x89 STEEL PILE TIP ELEVATION SOUTH RETAINING STRUCTURE MAT FOUNDATION, GRADE BEAM FOUNDATION AND ABUTMENT A. |
| 15A | 49.0 | 7 | SATURATED STIFF GRAY CLAY W/SOME FINE SAND AND SILT, TRACE OF COARSE SAND. | A-7-5(17) | |
| 15B | 50.0 | 6 | SATURATED VERY STIFF BROWN FINE SANDY CLAY W/SOME SILT AND COARSE SAND, TRACE OF FINE GRAVEL. | A-7-5(9) | |
| 16 | 54.0 | 16 | SATURATED HARD WHITE FINE SANDY SILT W/TRACE OF COARSE SAND AND FINE GRAVEL. | A-4(0) | EL. -44.50 ESTIMATED HP14x89 STEEL PILE TIP ELEVATION SOUTH RETAINING STRUCTURE MAT FOUNDATION, GRADE BEAM FOUNDATION AND ABUTMENT A. |
| CR-1 | 56.0 | 50 | BLUE AND WHITE GRANITE | | |
| | 58.0 | | | | |
| | 65.0 | | | | |
| END BORING | | | | | |

BORING: IT-02 DATE DRILLED: 11/20/13 STATION: 107+65.08 OFFSET: 2.44' RT. ELEVATION: -12.00' NORTHING: 625889.9553 EASTING: 610841.1554 COMMENTS: + 14' -15' OF WATER @ LOW TIDE/ + 17' -18' @ HIGH TIDE. FIRST SAMPLE WILL BE TAKEN @ BOTTOM OF RIVER BED AND WILL BE CONSIDERED ELEVATION AND/ OR WATER LINE DEPENDING ON TIDE.

| SAMPLE INFORMATION | | | | | |
|--------------------|-------|-----------|--|-------------|--|
| NO. | DEPTH | BLOWS /6" | DESCRIPTION | CLASS /G.I. | REMARKS |
| 1 | 0.0 | 7 | WET MEDIUM DENSE BLACK FINE SAND W/TRACE OF COARSE SAND, FINE GRAVEL AND SILT. | A-3 | |
| 2 | 2.0 | 25 | WET MEDIUM DENSE GRAY FINE TO COARSE SAND AND FINE GRAVEL W/SOME SILT. | A-1-B | |
| 3 | 4.0 | 11 | WET VERY DENSE DARK GRAY COARSE SANDY FINE GRAVEL W/SOME FINE SAND, TRACE OF SILT. | A-1-A | |
| 4 | 6.0 | 9 | WET MEDIUM DENSE DARK GRAY COARSE SANDY FINE GRAVEL W/SOME FINE SAND, TRACE OF SILT. | A-1-B | |
| 5 | 8.0 | 30 | WET VERY DENSE DARK GRAY COARSE SANDY FINE GRAVEL W/TRACE OF FINE SAND AND SILT. | A-1-A | |
| 6 | 10.0 | 25 | WET MEDIUM DENSE DARK GRAY COARSE SANDY FINE GRAVEL W/SOME FINE SAND, TRACE OF SILT. | A-1-A | |
| 7 | 12.0 | 23 | WET VERY DENSE DARK GRAY COARSE SANDY FINE GRAVEL W/SOME FINE SAND, TRACE OF SILT. | A-1-B | |
| 8 | 14.0 | 6 | SATURATED VERY STIFF YELLOWISH BROWN FINE SANDY CLAY W/SOME SILT AND COARSE SAND. | A-7-6(31) | EL. -25.00, 100 YR. FLOOD SCOUR DEPTH PIERS 1 & 2 |
| 9 | 16.0 | 6 | SATURATED HARD YELLOWISH BROWN CLAY W/SOME FINE SAND, TRACE OF COARSE SAND AND SILT. | A-7-5(31) | |
| 10 | 18.0 | 9 | SATURATED STIFF REDDISH BROWN CLAY W/TRACE OF FINE TO COARSE SAND AND FINE GRAVEL. | A-7-5(46) | EL. -28.00, 500 YR. FLOOD SCOUR DEPTH, PIERS 1 AND 2. |
| 11 | 24.0 | 4 | SATURATED HARD BROWN CLAY W/SOME COARSE TO FINE SAND AND SILT. | A-7-5(14) | EL. -36.00 MIN. 36" OD STEEL PIPE PILE TIP ELEVATION PIERS 1 AND 2. |
| 12 | 29.0 | 50 | SATURATED VERY DENSE GRAY SILTY FINE TO COARSE SAND W/TRACE OF FINE GRAVEL. | A-2-4(0) | EL. -41.00 ESTIMATED 36" OD STEEL PIPE PILE TIP ELEVATION PIERS 1 AND 2. |
| R-1 | 29.5 | | BLUE GRANITE | | |
| R-2 | 34.5 | | BLUE GRANITE | | |
| R-3 | 39.5 | | BLUE GRANITE | | |
| | 42.5 | | | | END BORING |

BORING: IT-03 DATE DRILLED: 9/20/13 STATION: 110+37.58 OFFSET: 18.84' LT. ELEVATION: 6.14 NORTHING: 626162.7480 EASTING: 610858.3550 COMMENTS: N/A

| SAMPLE INFORMATION | | | | | |
|--------------------|-------|-----------|--|-------------|---|
| NO. | DEPTH | BLOWS /6" | DESCRIPTION | CLASS /G.I. | REMARKS |
| 1 | 0.0 | 19 | MOIST MEDIUM DENSE BROWN FINE GRAVEL AND COARSE SAND W/SOME FINE SAND AND SILT. | A-1-B | EL. 5.00 B.O.F. NORTH RETAINING STRUCTURE MAT FOUNDATION |
| 2 | 2.0 | 12 | MOIST MEDIUM DENSE BROWN COARSE SAND AND FINE GRAVEL W/SOME FINE SAND AND SILT. | A-1-B | EL. 4.00 B.O.F. ABUTMENT B |
| 3 | 4.0 | 18 | MOIST MEDIUM DENSE BROWN SILTY COARSE TO FINE SAND AND FINE GRAVEL. | A-1-B | |
| 4 | 6.0 | 1 | WET SOFT GRAY CLAYEY COARSE SANDY SILT W/SOME FINE SAND AND FINE GRAVEL. | A-4(0) | |
| 5 | 8.0 | 4 | SATURATED SOFT GRAY CLAY W/SOME SILT, TRACE OF FINE TO COARSE SAND. | A-7-5(22) | |
| U-1 | 10.0 | | | A-7-5(16) | |
| | 10.0 | | | | |
| 6 | 12.0 | WH | SATURATED SOFT GRAY CLAY W/SOME SILT, TRACE OF COARSE TO FINE SAND. | A-7-5(17) | |
| | 14.0 | | | | |
| 7 | 14.0 | WH | SATURATED SOFT GRAY CLAY W/SOME SILT, TRACE OF COARSE TO FINE SAND. | A-7-5(15) | |
| | 16.0 | | | | |
| 8 | 16.0 | 1 | SATURATED FIRM GRAY CLAYEY SILT W/TRACE OF FINE TO COARSE SAND. | A-4(5) | |
| | 18.0 | | | | |
| U-2 | 18.0 | | | | |
| | 20.0 | | | | |
| 9 | 20.0 | 5 | SATURATED MEDIUM DENSE BROWN FINE GRAVELLY COARSE SAND W/SOME FINE SAND, TRACE OF SILT. | A-1-B | EL. -15.89, 100 YR. FLOOD SCOUR DEPTH, SOUTH ABUTMENT. |
| | 22.0 | | | | |
| 10 | 24.0 | 17 | SATURATED DENSE BROWN COARSE SAND AND FINE GRAVEL W/SOME FINE SAND, TRACE OF SILT. | A-1-B | EL. -18.55, 500 YR. FLOOD SCOUR DEPTH, SOUTH ABUTMENT. |
| | 26.0 | | | | |
| 11 | 29.0 | 27 | SATURATED DENSE BROWN COARSE SAND AND FINE GRAVEL W/SOME FINE SAND, TRACE OF SILT. | A-1-B | EL. -27.00 MIN. HP14x89 STEEL PILE TIP ELEVATION ABUTMENT B AND NORTH RETAINING STRUCTURE MAT FOUNDATION. |
| 12 | 34.0 | 10 | SATURATED STIFF BROWN FINE SANDY SILT W/SOME COARSE SAND, TRACE OF CLAY AND FINE GRAVEL. | A-4(0) | |
| | 36.0 | | | | |
| 13 | 39.0 | 5 | SATURATED STIFF BROWN FINE SANDY CLAY W/SOME COARSE SAND AND SILT. | A-6(4) | |
| | 41.0 | | | | |
| 14 | 44.0 | 50 | SATURATED HARD LIGHT GRAY FINE TO COARSE SANDY CLAY W/SOME SILT, TRACE OF FINE GRAVEL. | A-6(3) | EL. -38.00 ESTIMATED. HP14x89 STEEL PILE TIP ELEVATION ABUTMENT B AND NORTH RETAINING STRUCTURE MAT FOUNDATION. |
| C-1 | 46.0 | | BLUE GRANITE | | |
| | 46.5 | | | | |
| | 51.5 | | | | |
| C-2 | 51.5 | | BLUE GRANITE | | |
| | 57.1 | | | | |
| END BORING | | | | | |

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DELAWARE DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS

SCALE: NONE

NEW CASTLE INDUSTRIAL TRACK TRAIL, PHASE 3

CONTRACT T201330009 COUNTY NEW CASTLE BRIDGE NO. X DESIGNED BY: ADD CHECKED BY: WAG

BORING LOG - 1

BO-101

SHEET NO.

78

TOTAL SHTS.

205

PROJECT NOTES:

1. LOCATION
PROPOSED NEW PEDESTRIAN STRUCTURE CARRYING THE INDUSTRIAL TRACK TRAIL (PHASE 3) AT THE FOLLOWING LOCATION:

- SAWN TIMBER STRINGER AND GLULAM TIMBER BEAM STRUCTURE OVER WETLAND AND LITTLE MILL CREEK
2. ELEVATIONS
VERTICAL DATUM IS REFERENCED TO NAVD 88.
3. DESIGN CRITERIA

2014 AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS SEVENTH EDITION, INCLUDING 2015 INTERIM REVISIONS.

2009 AASHTO LRFD GUIDE SPECIFICATIONS FOR THE DESIGN OF PEDESTRIAN BRIDGES, INCLUDING 2015 INTERIM PROVISIONS.

2005 DELDOT BRIDGE DESIGN MANUAL

WELDS SHALL CONFORM TO AWS D1.5.
4. LOADING
PEDESTRIAN LIVE LOAD IS 90 PSF.
5. FOUNDATION
THE FOUNDATIONS SHOWN IN THE CONTRACT DOCUMENTS (HELICAL PILES) SHALL BE DESIGNED AND PROVIDED BY THE CONTRACTOR BASED ON THE FOLLOWING SERVICE LOADS:

15' SPAN LENGTHS - WETLAND BOARDWALK

| PILE LOADS - HELICAL PILES | | | |
|----------------------------|-----------------------|-------------------------|---------------------------|
| LOAD | VERTICAL (UNFACTORED) | HORIZONTAL (UNFACTORED) | LONGITUDINAL (UNFACTORED) |
| DL | 2.7 KIP/PILE | | |
| LL (PEDESTRIAN) | 9.5 KIP/PILE | | |
| WS (20 PSF UPLIFT) | -3.8 KIP/PILE | | |
| WS | +/-0.55 KIP/PILE | 1.0 KIP/PILE | 0.30 KIP/PILE |

HELICAL PILES FOR INFORMATION REGARDING DESIGN AND CONSTRUCTION OF HELICAL PILES REFER TO THE SPECIAL PROVISIONS FOR ITEM NO. 619562. FOR INFORMATION REGARDING THE USE OF HELICAL PILES SEE DWG. NOS. PL-201 AND PR-201.

6. TIMBER
STRUCTURAL TIMBER SHALL BE STRUCTURAL LUMBER CONFORMING TO THE FOLLOWING MINIMUM ALLOWABLE DRY UNIT STRESSES, EXCEPT AS NOTED:

STRUCTURAL TIMBER FOR WETLAND BOARDWALK LONGITUDINAL BEAMS, BEAM END BOLSTERS, DIAPHRAGMS, AND BEAM BEARING AREA SHIMS SHALL BE SOUTHERN YELLOW PINE NO. 1:

- BENDING (F_{bo}) = 1,250 PSI
- HORIZONTAL SHEAR (F_{vo}) = 175 PSI
- MODULUS OF ELASTICITY (E_o) = 1,700,000 PSI

STRUCTURAL TIMBER FOR WETLAND BOARDWALK PLANK DECKING, RAIL TOP PLATE, AND PIER BRACING SHALL BE SOUTHERN YELLOW PINE NO. 1:

- BENDING (F_{bo}) = 1,500 PSI
- HORIZONTAL SHEAR (F_{vo}) = 175 PSI
- MODULUS OF ELASTICITY (E_o) = 1,700,000 PSI

STRUCTURAL TIMBER FOR WETLAND BOARDWALK PILE BENT CAPS AND ABUTMENT CAP SHALL BE DOUGLAS FIR-LARCH NO. 1:

- BENDING (F_{bo}) = 1,200 PSI
- HORIZONTAL SHEAR (F_{vo}) = 170 PSI
- MODULUS OF ELASTICITY (E_o) = 1,600,000 PSI

GLUE LAMINATED BEAMS AND DIAPHRAGMS FOR WETLAND BOARDWALK SHALL CONFORM TO AASHTO COMBINATION SYMBOL 24F-V3, SOUTHERN PINE:

- BENDING (F_{bo}) = 2,400 PSI
- HORIZONTAL SHEAR (F_{vo}) = 300 PSI
- MODULUS OF ELASTICITY (E_o) = 1,800,000 PSI

STRUCTURAL TIMBER FOR COMPONENTS OF THE WETLAND BOARDWALK RAILING, EXCEPT RAIL CAP, SHALL BE SOUTHERN YELLOW PINE NO. 1:

RAIL POSTS AND RAIL POST SHIMS:
- BENDING (F_{bo}) = 1,350 PSI
- HORIZONTAL SHEAR (F_{vo}) = 165 PSI
- MODULUS OF ELASTICITY (E_o) = 1,500,000 PSI

TOP HORIZONTAL CAP RAIL AND KICKER/CURB:
- BENDING (F_{bo}) = 1,650 PSI
- HORIZONTAL SHEAR (F_{vo}) = 175 PSI
- MODULUS OF ELASTICITY (E_o) = 1,700,000 PSI

STRUCTURAL TIMBER FOR COMPONENTS OF THE WETLAND BOARDWALK ABUTMENT SHEETING WALL SHALL BE SOUTHERN YELLOW PINE NO. 1:

- BENDING (F_{bo}) = 1,500 PSI
- HORIZONTAL SHEAR (F_{vo}) = 175 PSI
- MODULUS OF ELASTICITY (E_o) = 1,700,000 PSI

TREATED ROUND TIMBER PILES SHALL BE SOUTHERN PINE MEETING THE FOLLOWING VALUES FOR WET CONDITIONS OF USE:

- COMPRESSION (F_c) = 1,200 PSI
- BENDING (F_{bo}) = 2,400 PSI
- HORIZONTAL SHEAR (F_{vo}) = 110 PSI
- MODULUS OF ELASTICITY (E_o) = 1,500,000 PSI

ALL TIMBER PILES SHALL BE CLASS B PILES WITH A MINIMUM TIP CIRCUMFERENCE OF 25" (8" MINIMUM TIP DIAMETER) IN ACCORDANCE WITH ASTM D25.

TREAT TIMBER PILES WITH CHROMATED COPPER ARSENATE (CCA) IN CONFORMANCE WITH AASHTO M 133 AND THE AWWA PRESERVATION STANDARDS SPECIFIED THEREIN. THE MINIMUM CCA PRESERVATIVE TREATMENT RETENTION OF TIMBER PILES SHALL BE 2.5 P.C.F. IN ACCORDANCE WITH DELDOT SPECIFICATION SECTION 618.

TREAT GLUE LAMINATED BEAMS AND BRACING, SAWN LUMBER BEAMS, SHIMS AND BRACING, AND LUMBER PIER CAPS AND BRACING WITH 5% PENTACHLOROPHENOL TYPE 'A' TO A MINIMUM NET RETENTION OF 0.6 PCF OR COPPER NAPHTHENATE OILBORNE PRESERVATIVE TO A MINIMUM NET RETENTION OF 0.075 PCF PER AWWA USER SPECIFICATION U1-15, USE CATEGORY 4B AND DELDOT SPECIFICATION SECTION 814.

TREAT TIMBER DECK PLANKS WITH 5% PENTACHLOROPHENOL TYPE 'C' TO A MINIMUM NET RETENTION OF 0.5 PCF PER AWWA USER SPECIFICATION U1-15, USE CATEGORY 4B AND DELDOT SPECIFICATION SECTION 814. TREAT ABUTMENT TIMBER SHEETING AND ALL TIMBER NAILING COMPONENTS WITH A COPPER NAPHTHENATE OILBORNE PRESERVATIVE TO A MINIMUM NET RETENTION OF 0.075 PCF PER AWWA USER SPECIFICATION U1-15, USE CATEGORY 4B AND DELDOT SPECIFICATION SECTION 814.

PRESERVATIVES FOR PRESSURE TREATMENT PROCESS SHALL CONFORM TO AWWA STANDARD P35 (PENTACHLOROPHENOL) AND P36 (COPPER NAPHTHENATE). ALL TREATED WOOD SHALL CONFORM TO BEST MANAGEMENT PRACTICES (BMP'S). ISSUE CERTIFICATIONS OF TREATMENT.

TIMBER STOCKPILED AT THE JOB SITE MUST BE NEATLY STACKED IN DRY, LEVEL AREAS THAT ARE CLEAR OF PLANT GROWTH AND DEBRIS. THE BOTTOM LAYER OF MATERIAL IN ANY STOCKPILE SHOULD BE AT LEAST 8 INCHES ABOVE GROUND LEVEL AND SUPPORTED ON SPACER BLOCKS SPACED NOT MORE THAN 10 FEET IN ANY DIRECTION OF THE STOCKPILE. IF MATERIAL SAGGING BETWEEN SPACER BLOCKS IS EVIDENT, ADDITIONAL SPACER BLOCKS MUST BE ADDED TO REMOVE SAGGING. STICKERS SPACED NOT MORE THAN 6 FEET IN ANY DIRECTION OF THE STOCKPILE SHALL BE ADDED BETWEEN LAYERS OF STOCKPILED MATERIAL. STICKERS SHALL BE SPACED AT REGULAR INTERVALS TO EXTEND ACROSS THE FULL WIDTH OF THE STOCKPILE IN ANY DIRECTION AND MUST BE ALIGNED VERTICALLY.

TIMBER STOCKPILED IN HOT DRY CLIMATES SHALL BE PROTECTED WITH A PLYWOOD OR MATERIAL COVERING.

7. STABILIZING STRUCTURAL EXCAVATIONS
IN LIEU OF A 2:1 SLOPE, THE CONTRACTOR MAY USE SHORING FOR EXCAVATIONS EXCEEDING 5 FEET IN HEIGHT. THE COST OF SHORING SHALL BE INCIDENTAL TO ITEM 207000 - EXCAVATION AND BACKFILL FOR STRUCTURES.
8. HYDRAULIC DATA
DRAINAGE AREA = 9.53 SQ. MI.
25-YR FLOOD ELEVATION = 7.2 (TIDALLY INFLUENCED BACKWATER ELEVATION)
DESIGN FREQUENCY = 25-YEAR
DESIGN DISCHARGE = 4,500 CFS
DESIGN HEADWATER ELEVATION = 7.2 (TIDALLY INFLUENCED BACKWATER ELEVATION)
DESIGN VELOCITY, CHANNEL = 6.55 FPS
AVAILABLE FLOW AREA OF PROPOSED OPENING = VARIES, 65 SQ. FT. (TYP.) PER 15 FT SPAN;
260 SQ. FT. (TYP.) PER 30 FT SPAN

NOTE: SEE REPORT TITLED, "NEW CASTLE COUNTY INDUSTRIAL TRACK TRAIL, PHASE 3, HYDROLOGIC AND HYDRAULIC REPORT FOR PEDESTRIAN BRIDGE OVER THE CHRISTINA RIVER AND FOR THE BOARDWALK OVER LITTLE MILL CREEK," DATED MARCH 2015
9. SCOUR DATA
STRUCTURE HAS BEEN ANALYZED FOR THE EFFECTS OF SCOUR IN ACCORDANCE WITH THE PROCEDURES DESCRIBED IN FHWA'S HEC-18 MANUAL, "EVALUATING SCOUR AT BRIDGES" (2012).

DESIGN STORM EVENT = 100 YEAR FLOOD
DESIGN STORM DISCHARGE = 5,800 CFS
DESIGN STORM VELOCITY, CHANNEL = 7.76 FPS
DESIGN STORM MAXIMUM DEPTH OF FLOW = 9.5 FT
DESIGN STORM HEADWATER ELEVATION = 9.0 (FEMA, TIDALLY INFLUENCED BACKWATER ELEVATION)

CHECK STORM EVENT = 500 YEAR FLOOD
CHECK STORM DISCHARGE = 9,500 CFS
CHECK STORM VELOCITY, CHANNEL = 9.02 FPS
CHECK STORM MAXIMUM DEPTH OF FLOW = 11.1 FT
CHECK STORM HEADWATER ELEVATION = 10.6 (FEMA, TIDALLY INFLUENCED BACKWATER ELEVATION)
10. UTILITIES
BEFORE BEGINNING WORK, THE CONTRACTOR SHALL GIVE NOTIFICATION BY TELEPHONE BY CALLING "MISS UTILITY" AT 1-800-282-8555 A MINIMUM OF 48 HOURS PRIOR TO THE START OF WORK. VERIFY AND LOCATE ALL UTILITIES PRIOR TO STARTING WORK.

COORDINATE THE REQUIREMENTS FOR PROTECTION OF ANY UTILITY WITH THE UTILITY OWNER PRIOR TO STARTING WORK.

CONDUCT OPERATIONS IN A MANNER WHICH ENSURES THAT THE UTILITIES WILL NOT BE DISTURBED OR ENDANGERED. ANY DAMAGE INCURRED TO THESE UTILITIES OR ANY OTHER UTILITIES, SHOWN OR NOT SHOWN ON THE PLANS, DUE TO THE CONTRACTOR'S OPERATIONS SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE TO THE SATISFACTION OF THE APPROPRIATE UTILITY COMPANY. THE DEPARTMENT DOES NOT ASSUME RESPONSIBILITY FOR REIMBURSEMENT, PARTICIPATION IN DESIGN AND/OR REVISIONS, OR LIABILITY FOR ACCURACY OF TYPE, SIZE, AND LOCATION OF ANY UTILITY.

THE CONTRACTOR IS RESPONSIBLE FOR TEMPORARILY SUPPORTING, PROTECTING, OR RELOCATING ANY UTILITIES DURING CONSTRUCTION. WHERE NECESSARY, THE COST FOR THIS WORK SHALL BE INCIDENTAL TO THE CONTRACT.
11. STAGING AREAS
ANY STAGING AREAS OUTSIDE OF THOSE SHOWN ON THESE CONTRACT PLANS AND/OR OUTSIDE OF THE LIMITS OF CONSTRUCTION (LOC) DEPICTED HEREON SHALL HAVE EROSION AND SEDIMENT CONTROLS IMPLEMENTED TO PREVENT DISCHARGE OF SEDIMENT-LADEN RUNOFF FROM ANY SUCH AREAS. THE CONTRACTOR SHALL SUBMIT PLANS DEPICTING EROSION AND SEDIMENT CONTROLS AROUND AND WITHIN ANY SUCH STAGING AREAS TO THE ENGINEER FOR APPROVAL PRIOR TO USE.

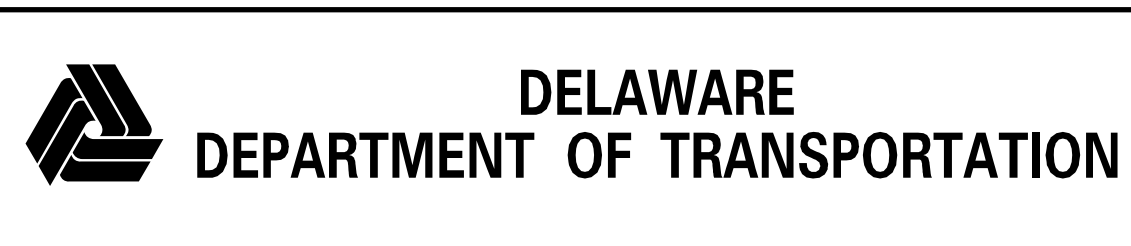
THERE SHALL BE NO STOCKPILING OF CONSTRUCTION MATERIALS OR TEMPORARY FILLS IN WETLANDS OR SUBAQUEOUS LANDS UNLESS OTHERWISE SPECIFIED ON PROJECT PLANS AND APPROVED BY PERMITTING AGENCIES THAT GOVERN THEM. IT IS THE CONTRACTOR'S RESPONSIBILITY TO COORDINATE AND SECURE THOSE ADDITIONAL PERMITS/AMENDMENTS IF DEVIATING FROM THE PLANS.

WETLAND BOARDWALK STRUCTURES INDEX OF SHEETS

| SHEET NO. | DWG. NO. | TABLE OF CONTENTS |
|-----------|----------|--|
| 79 | PN-201 | PROJECT NOTES WETLAND BOARDWALK |
| 80 | TS-201 | TYPICAL SECTIONS |
| 81 | PE-201 | WETLAND BOARDWALK GENERAL PLAN AND ELEVATION - 1 |
| 82 | PE-202 | WETLAND BOARDWALK GENERAL PLAN AND ELEVATION - 2 |
| 83 | PE-203 | WETLAND BOARDWALK GENERAL PLAN AND ELEVATION - 3 |
| 84 | PE-204 | WETLAND BOARDWALK GENERAL PLAN AND ELEVATION - 4 |
| 85 | PE-205 | WETLAND BOARDWALK GENERAL PLAN AND ELEVATION - 5 |
| 86 | PE-206 | WETLAND BOARDWALK GENERAL PLAN AND ELEVATION - 6 |
| 87 | PE-207 | WETLAND BOARDWALK GENERAL PLAN AND ELEVATION - 7 |
| 88 | PE-208 | WETLAND BOARDWALK GENERAL PLAN AND ELEVATION - 8 |
| 89 | PE-209 | WETLAND BOARDWALK GENERAL PLAN AND ELEVATION - 9 |
| 90 | PE-210 | WETLAND BOARDWALK GENERAL PLAN AND ELEVATION - 10 |
| 91 | PL-201 | GEOMETRIC, PIER, AND PILE LAYOUT PLAN - 1 |
| 92 | PL-202 | GEOMETRIC, PIER, AND PILE LAYOUT PLAN - 2 |
| 93 | PL-203 | GEOMETRIC, PIER, AND PILE LAYOUT PLAN - 3 |
| 94 | PL-204 | GEOMETRIC, PIER, AND PILE LAYOUT PLAN - 4 |
| 95 | PL-205 | GEOMETRIC, PIER, AND PILE LAYOUT PLAN - 5 |
| 96 | PL-206 | GEOMETRIC, PIER, AND PILE LAYOUT PLAN - 6 |
| 97 | PL-207 | GEOMETRIC, PIER, AND PILE LAYOUT PLAN - 7 |
| 98 | PL-208 | GEOMETRIC, PIER, AND PILE LAYOUT PLAN - 8 |
| 99 | AB-201 | ABUTMENT PLAN, ELEVATION, AND TYPICAL SECTION |
| 100 | PR-201 | BOARDWALK PIER PLAN, ELEVATION, AND SECTION PIER TYPES A AND B |
| 101 | PR-202 | BOARDWALK PIER PLAN, ELEVATION, AND SECTION PIER TYPES C AND D |
| 102 | BM-201 | BEAM ELEVATIONS AND BEARING DETAILS |
| 103 | BM-202 | BEAM DETAILS |
| 104 | FR-201 | FRAMING PLAN - 1 |
| 105 | FR-202 | FRAMING PLAN - 2 |
| 106 | FR-203 | FRAMING PLAN - 3 |
| 107 | DK-201 | TIMBER PLANK DECK - 1 |
| 108 | DK-202 | TIMBER PLANK DECK - 2 |
| 109 | SD-201 | SUPERSTRUCTURE DETAILS - 1 |
| 110 | SD-202 | SUPERSTRUCTURE DETAILS - 2 |
| 111 | SD-203 | SUPERSTRUCTURE DETAILS - 3 |
| 112 | FD-201 | FINISHED BRIDGE DECK ELEVATIONS |
| 113 | RL-201 | RAILING DETAILS |
| 114 | BO-201 | BORING LOG - 2 |

12. THE CONTRACTOR MAY SUBMIT AN ALTERNATE FRAMING PLAN TO THAT SHOWN HEREIN, OR ALTERNATE PORTIONS OF ASSOCIATED DETAILS THEREOF, TO THE DEPARTMENT AS A VALUE ENGINEERING PROPOSAL IN ACCORDANCE WITH SECTION 104.12 OF THE STANDARD SPECIFICATIONS. THE DEPARTMENT MAKES NO GUARANTEE THAT THE CONTRACTOR'S VALUE ENGINEERING REQUEST(S) WILL BE APPROVED.

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| ADDENDUMS / REVISIONS | |
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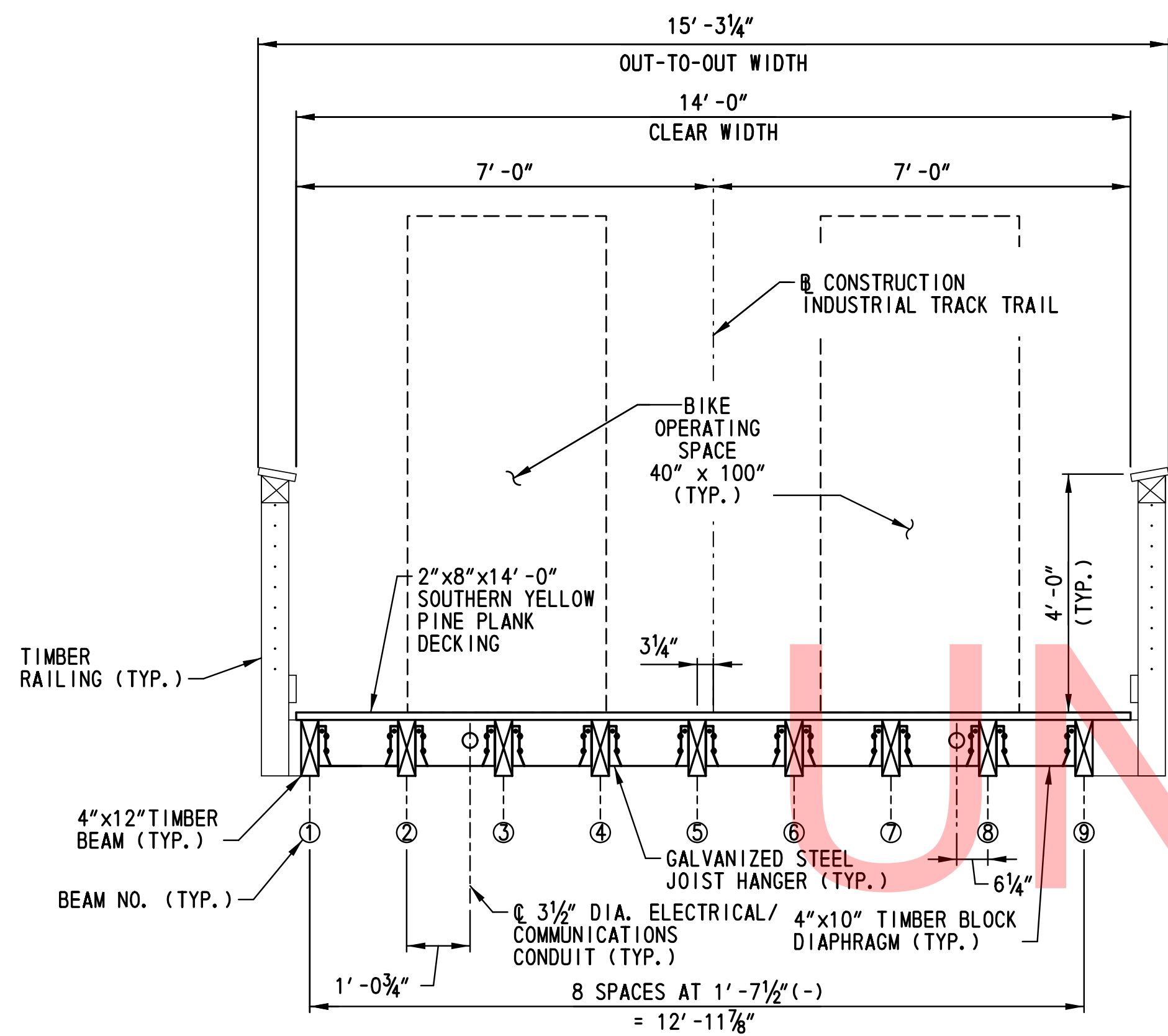
SCALE: NONE

NEW CASTLE INDUSTRIAL TRACK TRAIL, PHASE 3

| | | |
|------------|------------------|----------|
| CONTRACT | BRIDGE NO. | X |
| T201330009 | DESIGNED BY: NAH | |
| COUNTY | CHECKED BY: WAG | |
| NEW CASTLE | | |

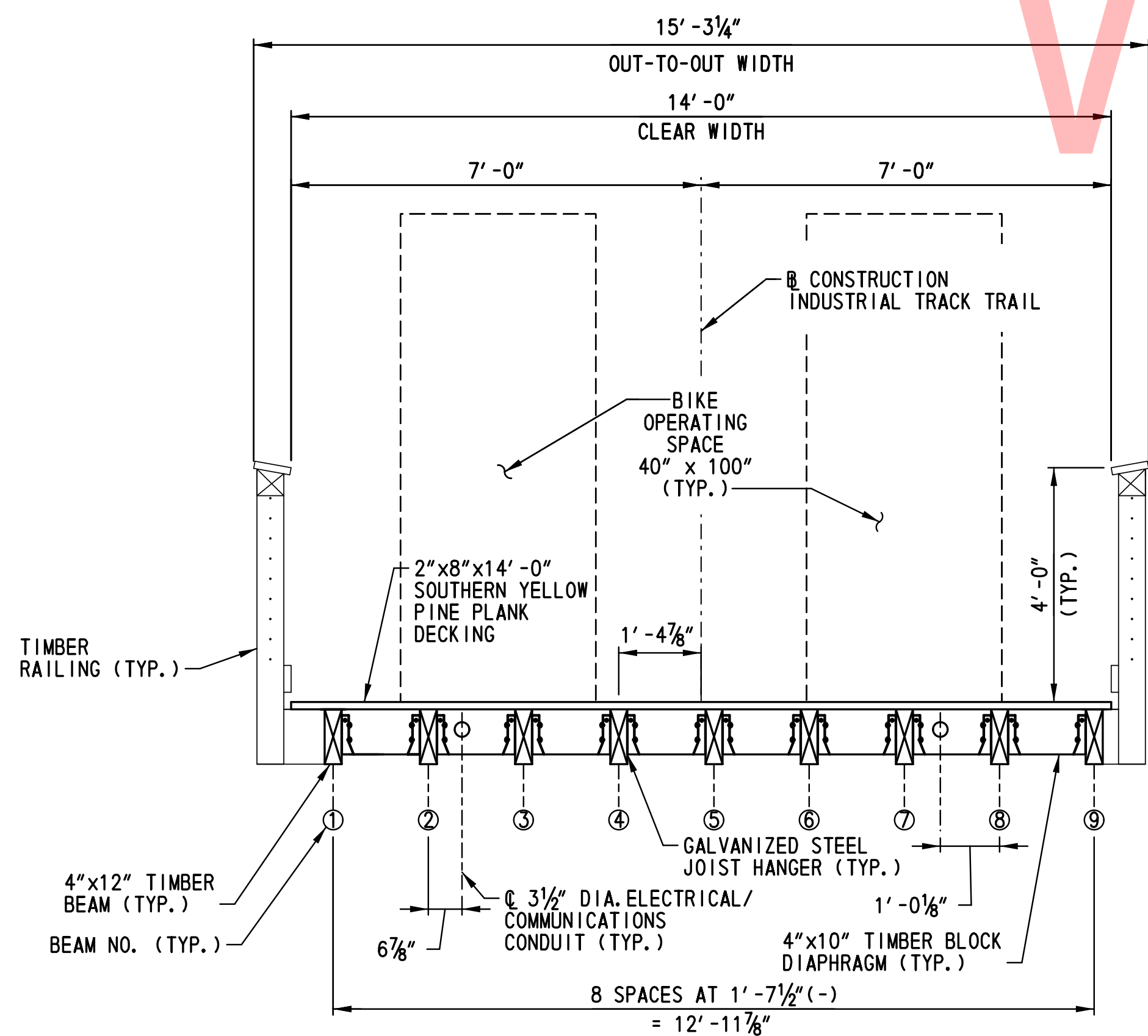
PROJECT NOTES WETLAND BOARDWALK

| |
|-------------|
| PN-201 |
| SHEET NO. |
| 79 |
| TOTAL SHTS. |
| 205 |



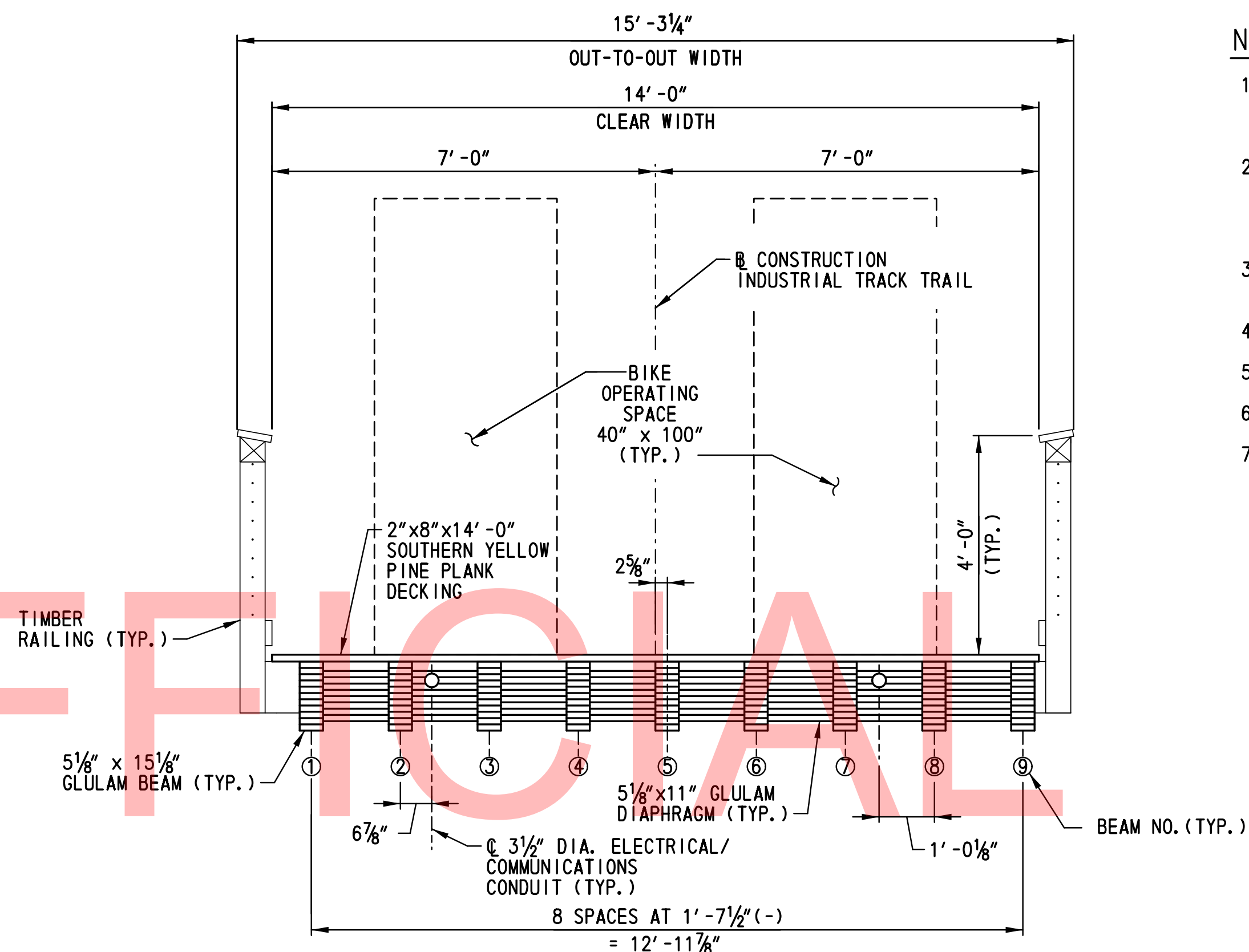
TYPICAL SECTIONS - SPAN NOS. 1-45 AND 66-164 (SEE NOTE 1)

SCALE: 1/2" = 1'-0"



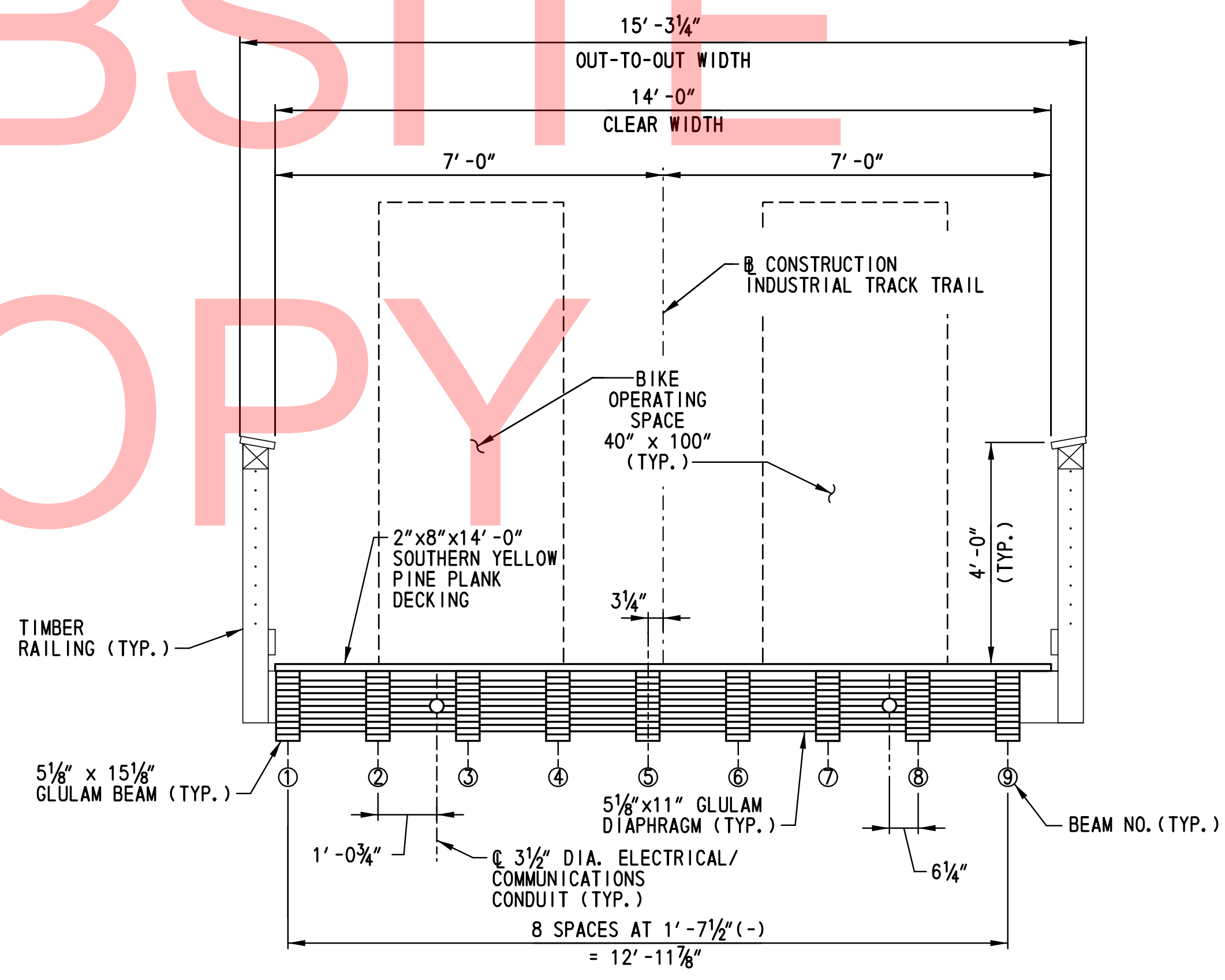
TYPICAL SECTIONS - SPAN NOS. 1-45 AND 66-164 (SEE NOTE 1)

SCALE: 1/2" = 1'-0"



TYPICAL SECTIONS - SPAN NOS. 46-65 (SEE NOTE 1)

SCALE: 1/2" = 1'-0"



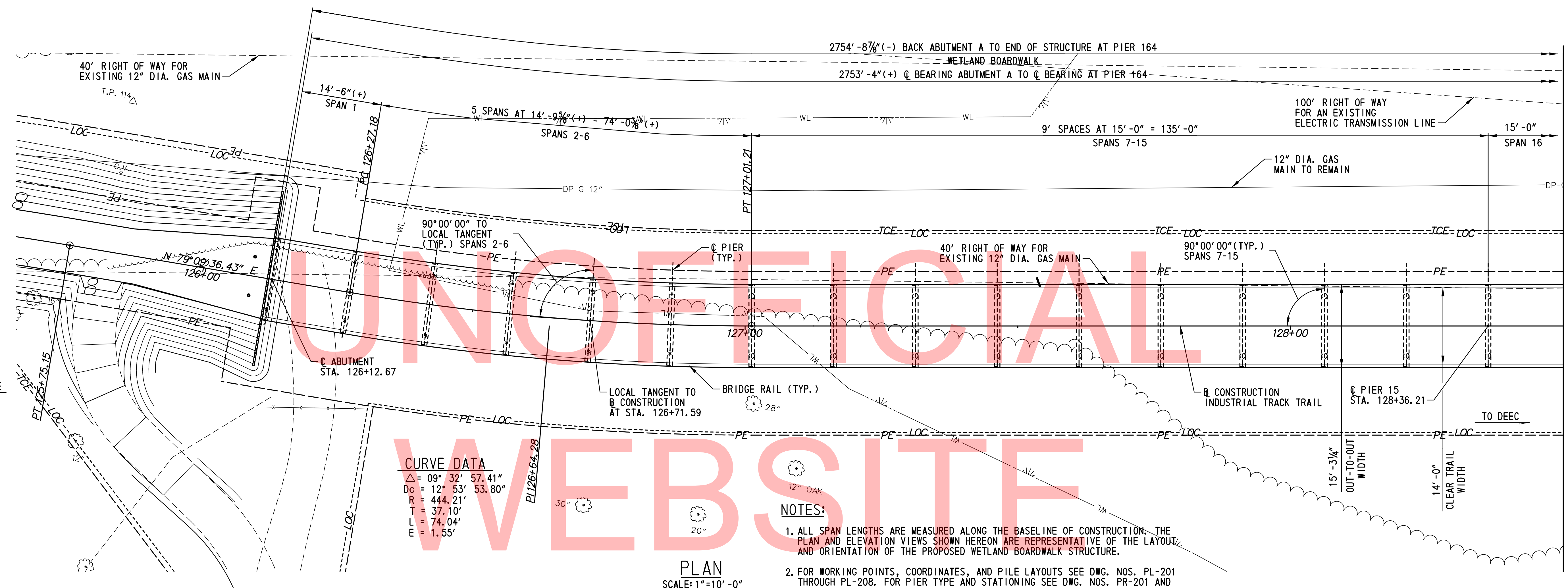
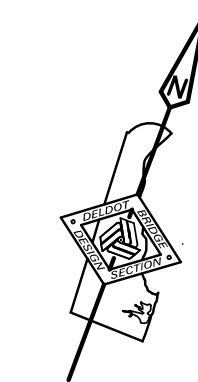
TYPICAL SECTIONS - SPAN NOS. 46-65 (SEE NOTE 1)

SCALE: 1/2" = 1'-0"

NOTES:

1. TYPICAL SECTIONS SHOWN DISPLAY BEAM LAYOUTS IN PRIMARY SPAN (TOP) AND OFFSET SPAN (BOTTOM). FOR MORE INFORMATION REGARDING BEAM LAYOUTS, SEE DWG. NOS. FR-201 THROUGH FR-203.
2. BEAMS SHALL BE LAPPED SIDE-BY-SIDE OVER CENTERLINE OF PIER AS SHOWN ON DWG. NOS. SD-201 AND SD-202. FOR MORE INFORMATION REGARDING BEAM LAPS OVER PIERS, SEE DWG. NOS. FR-201 THROUGH FR-203 AND DWG. NOS. BM-201 AND BM-202.
3. FOR DIAPHRAGM DETAILS, SEE DWG. NOS. SD-201, SD-202 AND SD-203.
4. FOR DIAPHRAGM SPACING SEE DWG. NOS. FR-201 THROUGH FR-203.
5. FOR BEAM BEARING DETAILS SEE DWG. NO. BM-201.
6. FOR TIMBER RAILING DETAILS, SEE DWG. NO. RL-201.
7. FOR ELECTRICAL AND COMMUNICATIONS CONDUIT INFORMATION SEE DRAWINGS L1-05 THROUGH L1-12.

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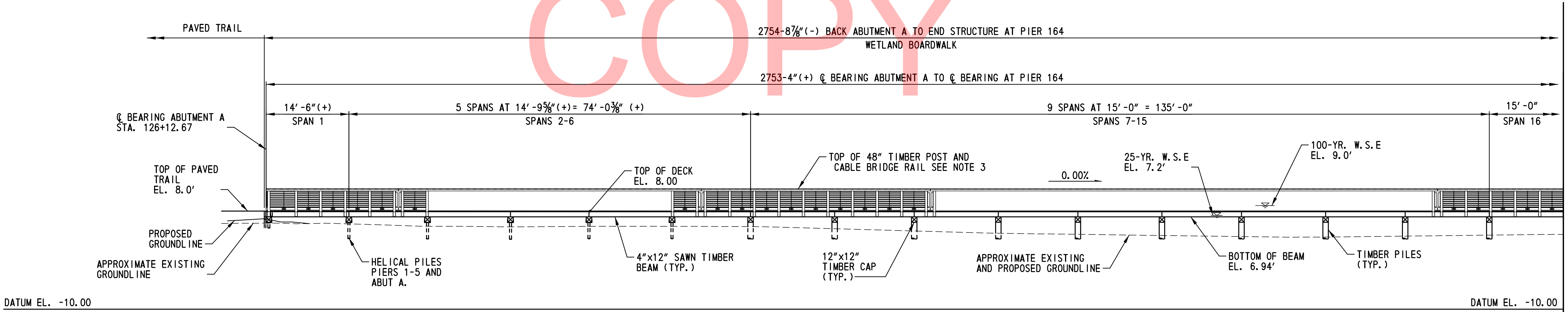


CURVE DATA
 $\Delta = 09^\circ 32' 57.41''$
 $D_c = 12^\circ 53' 53.80''$
 $R = 444.21'$
 $T = 37.10'$
 $L = 74.04'$
 $E = 1.55'$

NOTES:

1. ALL SPAN LENGTHS ARE MEASURED ALONG THE BASELINE OF CONSTRUCTION. THE PLAN AND ELEVATION VIEWS SHOWN HEREON ARE REPRESENTATIVE OF THE LAYOUT AND ORIENTATION OF THE PROPOSED WETLAND BOARDWALK STRUCTURE.
2. FOR WORKING POINTS, COORDINATES, AND PILE LAYOUTS SEE DWG. NOS. PL-201 THROUGH PL-208. FOR PIER TYPE AND STATIONING SEE DWG. NOS. PR-201 AND PR-202.
3. 6"X6" TIMBER RAIL POSTS AND HORIZONTAL CABLE RAIL NOT SHOWN IN ALL SPANS FOR CLARITY.

PLAN
 SCALE: 1"=10'-0"

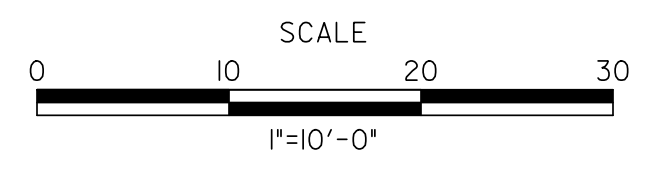


ELEVATION
 SCALE: 1"=10'-0"

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| ADDENDUMS / REVISIONS | |
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NEW CASTLE INDUSTRIAL TRACK TRAIL, PHASE 3

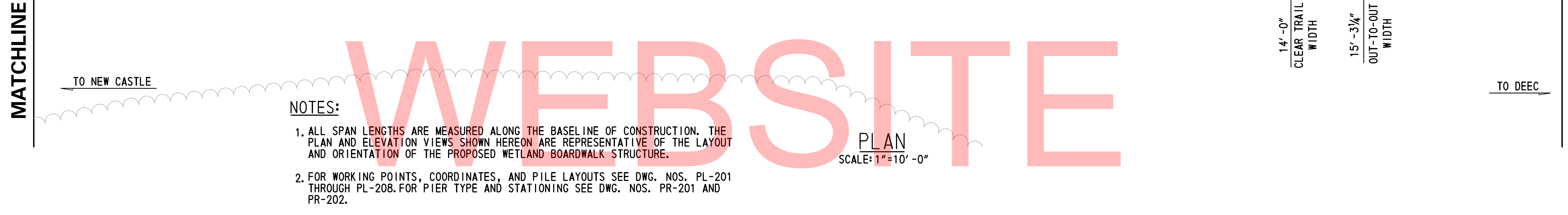
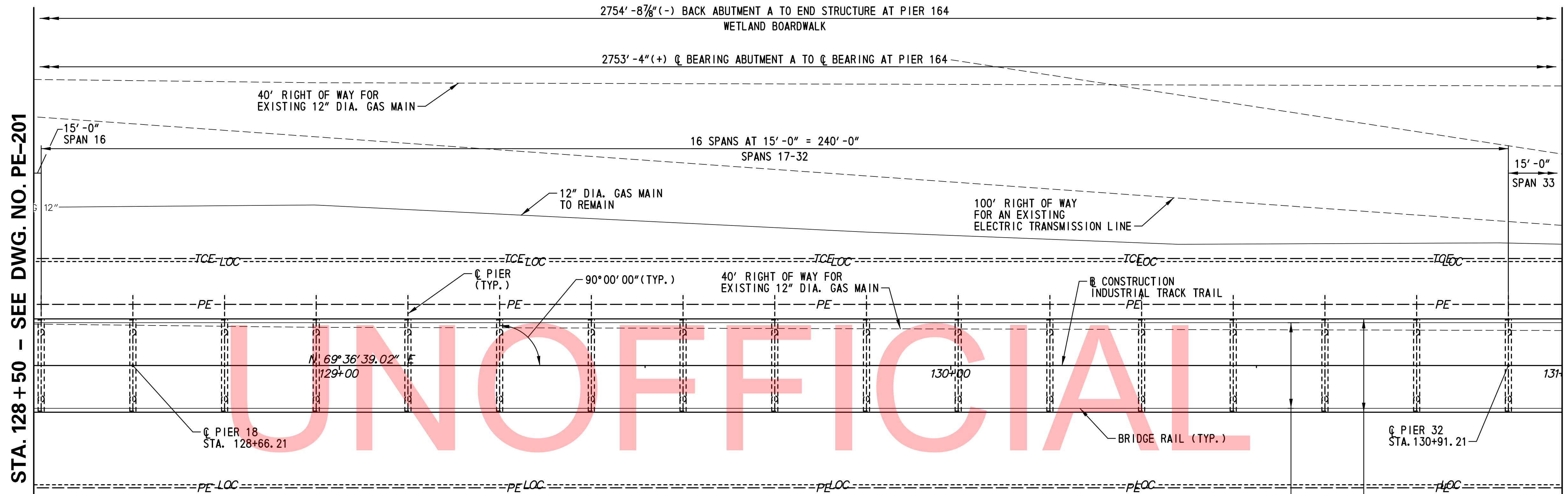
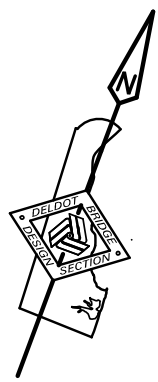
| | |
|------------------------|-------------------------------------|
| CONTRACT T201330009 | BRIDGE NO. X |
| COUNTY NEW CASTLE | DESIGNED BY: ADD CHECKED BY: WAG |

WETLAND BOARDWALK GENERAL PLAN AND ELEVATION - 1

| |
|--------------------|
| PE-201 |
| SHEET NO. 81 |
| TOTAL SHTS. 205 |

MATCHLINE STA. 128+50 - SEE DWG. NO. PE-202

MATCHLINE STA. 128+50 - SEE DWG. NO. PE-202

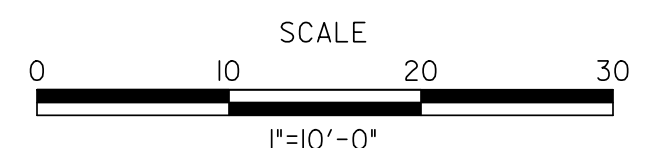


NOTES:

1. ALL SPAN LENGTHS ARE MEASURED ALONG THE BASELINE OF CONSTRUCTION. THE PLAN AND ELEVATION VIEWS SHOWN HEREON ARE REPRESENTATIVE OF THE LAYOUT AND ORIENTATION OF THE PROPOSED WETLAND BOARDWALK STRUCTURE.
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3. 6"x6" TIMBER RAIL POSTS AND HORIZONTAL CABLE RAIL NOT SHOWN IN ALL SPANS FOR CLARITY.

PLAN
SCALE: 1"=10'-0"

ELEVATION
SCALE: 1"=10'-0"



| ADDENDUMS / REVISIONS | |
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DELAWARE DEPARTMENT OF TRANSPORTATION

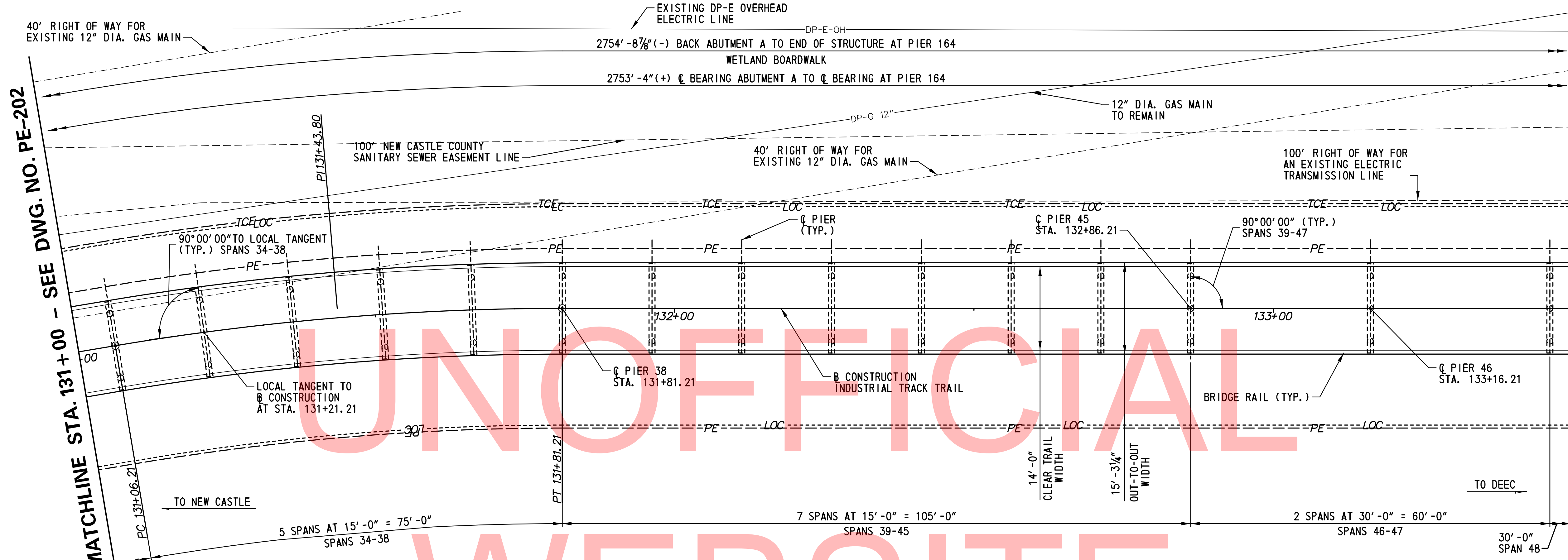
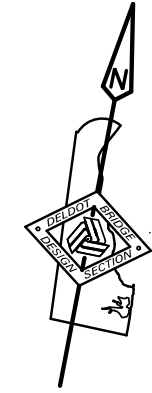
NEW CASTLE INDUSTRIAL TRACK TRAIL, PHASE 3

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| CONTRACT T201330009 | BRIDGE NO. X |
| COUNTY NEW CASTLE | DESIGNED BY: ADD CHECKED BY: WAG |

WETLAND BOARDWALK GENERAL PLAN AND ELEVATION - 2

| |
|--------------------|
| PE-202 |
| SHEET NO. 82 |
| TOTAL SHTS. 205 |

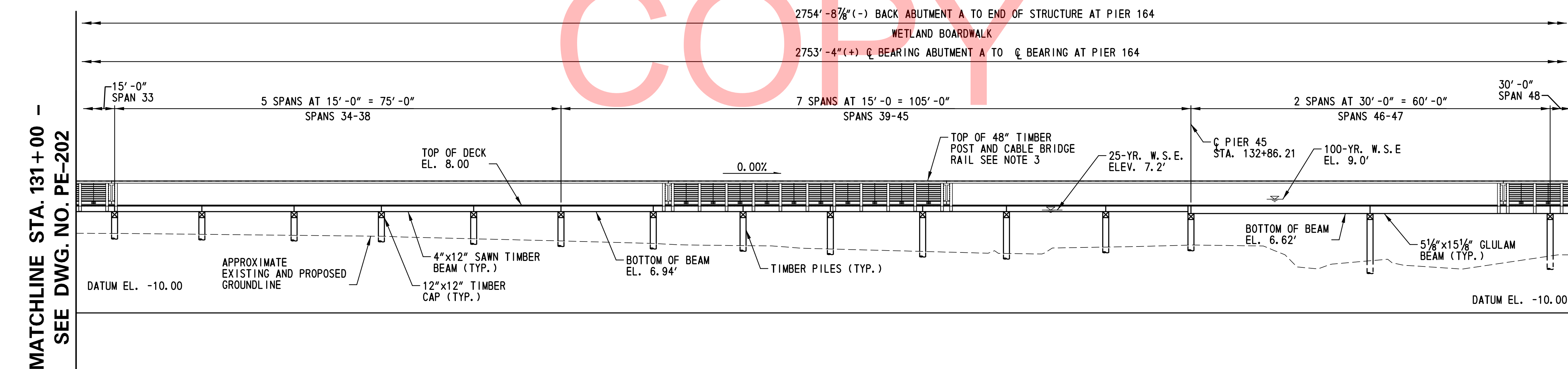
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CURVE DATA
 $\Delta = 09^\circ 32' 57.36''$
 $D_c = 12^\circ 43' 56.62''$
 $R = 450.00'$
 $T = 37.59'$
 $L = 75.00'$
 $E = 1.57'$

- NOTES:**
1. ALL SPAN LENGTHS ARE MEASURED ALONG THE BASELINE OF CONSTRUCTION. THE PLAN AND ELEVATION VIEWS SHOWN HEREON ARE REPRESENTATIVE OF THE LAYOUT AND ORIENTATION OF THE PROPOSED WETLAND BOARDWALK STRUCTURE.
 2. FOR WORKING POINTS, COORDINATES, AND PILE LAYOUTS SEE DWG. NOS. PL-201 THROUGH PL-208. FOR PIER TYPE AND STATIONING SEE DWG. NOS. PR-201 AND PR-202.
 3. 6"x6" TIMBER RAIL POSTS AND HORIZONTAL CABLE RAIL NOT SHOWN IN ALL SPANS FOR CLARITY.



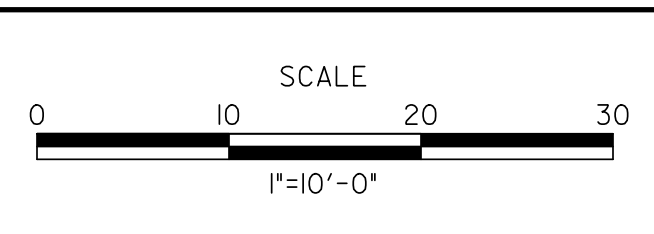
ELEVATION
 SCALE: 1" = 10' - 0"

MATCHLINE STA. 131+00 - SEE DWG. NO. PE-202

MATCHLINE STA. 133+50 - SEE DWG. NO. PE-204

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| ADDENDUMS / REVISIONS | |
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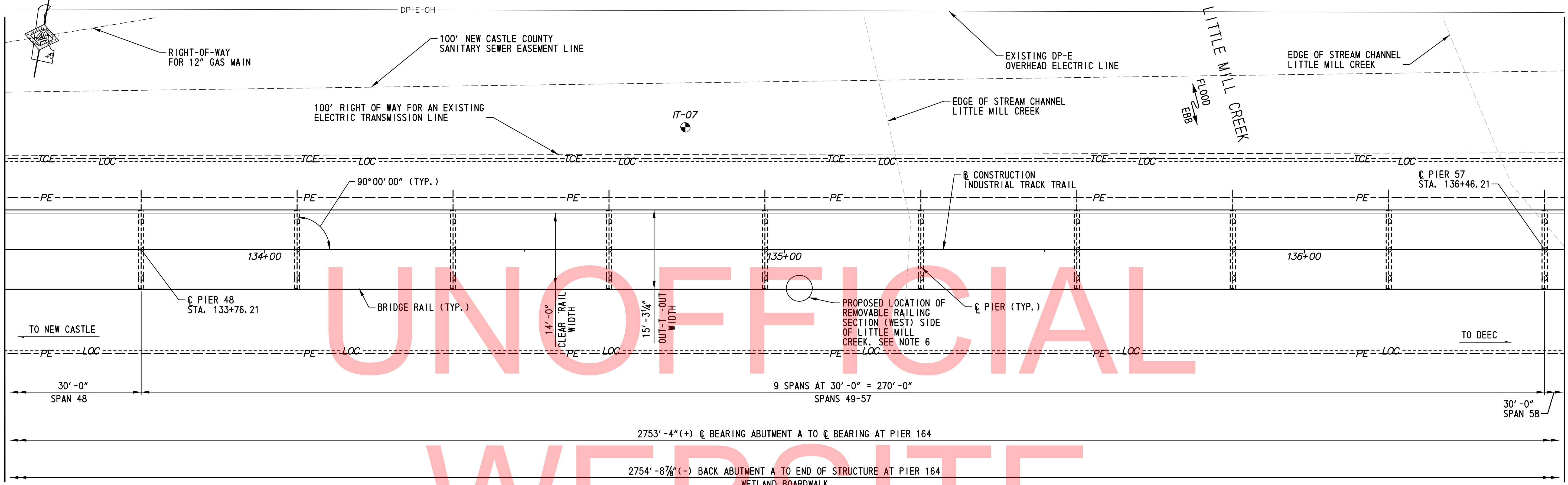


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| CONTRACT T201330009 | BRIDGE NO. X |
| COUNTY NEW CASTLE | DESIGNED BY: ADD |
| | CHECKED BY: WAG |

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|--------------------|
| PE-203 |
| SHEET NO. 83 |
| TOTAL SHTS. 205 |

MATCHLINE STA. 133+50 - SEE DWG. NO. PE-203

MATCHLINE STA. 136+50 - SEE DWG. NO. PE-205



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WEBSITE

COPY

NOTES:

1. ALL SPAN LENGTHS ARE MEASURED ALONG THE BASELINE OF CONSTRUCTION. THE PLAN AND ELEVATION VIEWS SHOWN HEREON ARE REPRESENTATIVE OF THE LAYOUT AND ORIENTATION OF THE PROPOSED WETLAND BOARDWALK STRUCTURE.
2. FOR WORKING POINTS, COORDINATES, AND PILE LAYOUTS SEE DWG. NO. PL-201 THROUGH PL-208. FOR PIER TYPE AND STATIONING SEE DWG. NOS. PR-201 AND PR-202.
3. 100-YR. W.S.E. VARIES FROM EL. 9.0 TO 10.0 AT APPROXIMATE STA. 134+00.

4. 6"x6" TIMBER RAIL POSTS AND HORIZONTAL CABLE RAIL NOT SHOWN IN ALL SPANS FOR CLARITY.
5. M.H.W. = MEAN HIGH WATER. M.H.H.W. = MEAN HIGHER HIGH WATER. FREEBOARD CLEARANCE ESTABLISHED BASED ON M.H.H.W. ELEVATION.
6. FOR REMOVABLE RAILING SECTION DETAILS, SEE DWG. NO. RL-201.

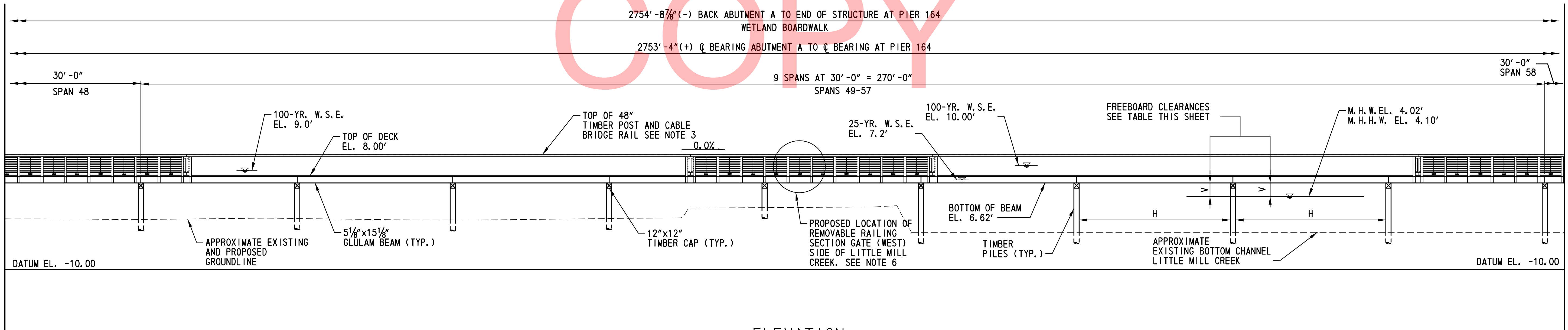
PLAN
SCALE: 1"=10'-0"

| FREEBOARD CLEARANCES (SPANS 56-57)* | |
|-------------------------------------|------------|
| DIRECTION | DIMENSION |
| HORIZONTAL, H | 29'-0"± |
| VERTICAL, V | 2'-6 1/4"± |

* SEE NOTE 5

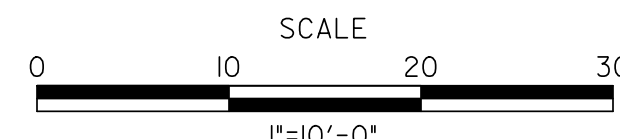
MATCHLINE STA. 133+50 - SEE DWG. NO. PE-203

MATCHLINE STA. 136+50 - SEE DWG. NO. PE-205



ELEVATION
SCALE: 1"=10'-0"

ADDENDUMS / REVISIONS



NEW CASTLE INDUSTRIAL TRACK TRAIL, PHASE 3

| | |
|------------------------|-------------------------------------|
| CONTRACT T201330009 | BRIDGE NO. X |
| COUNTY NEW CASTLE | DESIGNED BY: ADD CHECKED BY: WAG |

WETLAND BOARDWALK GENERAL PLAN AND ELEVATION - 4

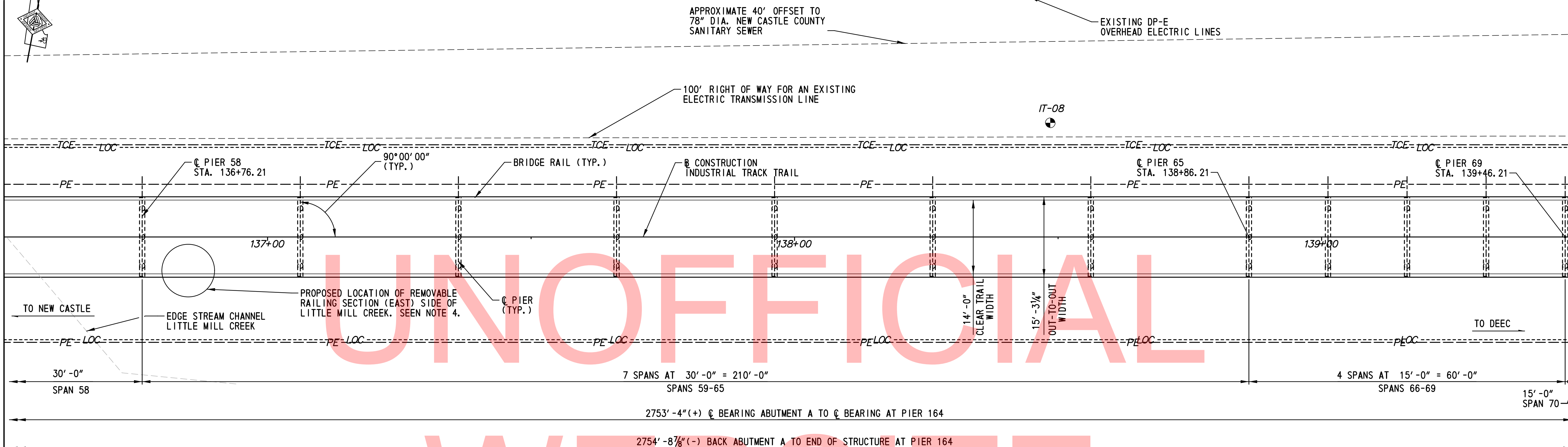
| |
|--------------------|
| PE-204 |
| SHEET NO. 84 |
| TOTAL SHTS. 205 |

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N:\31896-002\CADD\BRIDGE\PE205_JTG.DGN

MATCHLINE STA. 136+50 - SEE DWG. NO. PE-204

MATCHLINE STA. 139+50 - SEE DWG. NO. PE-206

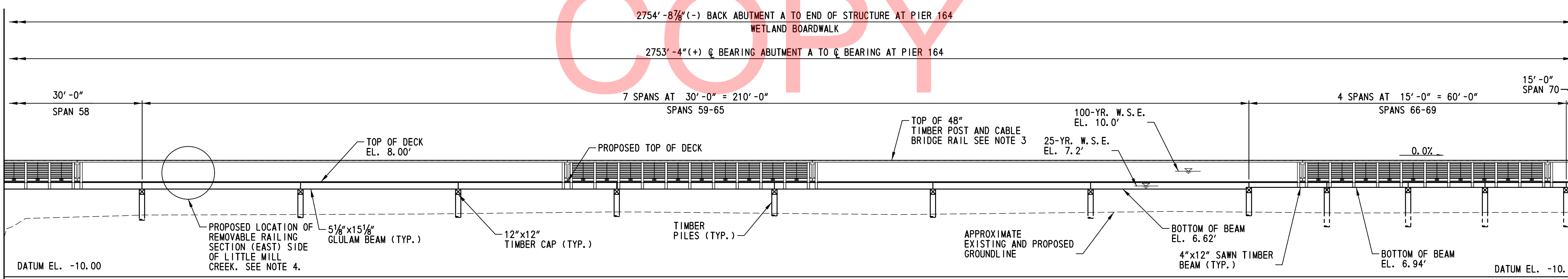


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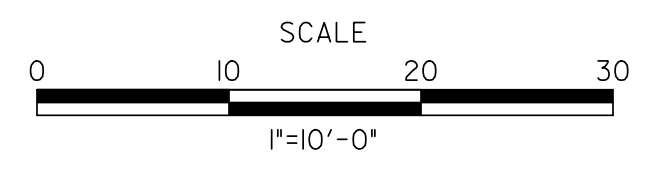
1. ALL SPAN LENGTHS ARE MEASURED ALONG THE BASELINE OF CONSTRUCTION. THE PLAN AND ELEVATION VIEWS SHOWN HEREON ARE REPRESENTATIVE OF THE LAYOUT AND ORIENTATION OF THE PROPOSED WETLAND BOARDWALK STRUCTURE.
2. FOR WORKING POINTS, COORDINATES, AND PILE LAYOUTS SEE DWG. NOS. PL-201 THROUGH PL-208. FOR PIER TYPE AND STATIONING SEE DWG. NOS. PR-201 AND PR-202.
3. 6"x6" TIMBER RAIL POST AND HORIZONTAL CABLE RAIL NOT SHOWN IN ALL SPANS FOR CLARITY.
4. FOR REMOVABLE RAILING SECTION DETAILS, SEE DWG. NO. RL-201.

MATCHLINE STA. 136+50 - SEE DWG. NO. PE-204

MATCHLINE STA. 139+50 - SEE DWG. NO. PE-206



| ADDENDUMS / REVISIONS | |
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NEW CASTLE INDUSTRIAL TRACK TRAIL, PHASE 3

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|------------------------|-------------------------------------|
| CONTRACT T201330009 | BRIDGE NO. X |
| COUNTY NEW CASTLE | DESIGNED BY: ADD CHECKED BY: WAG |

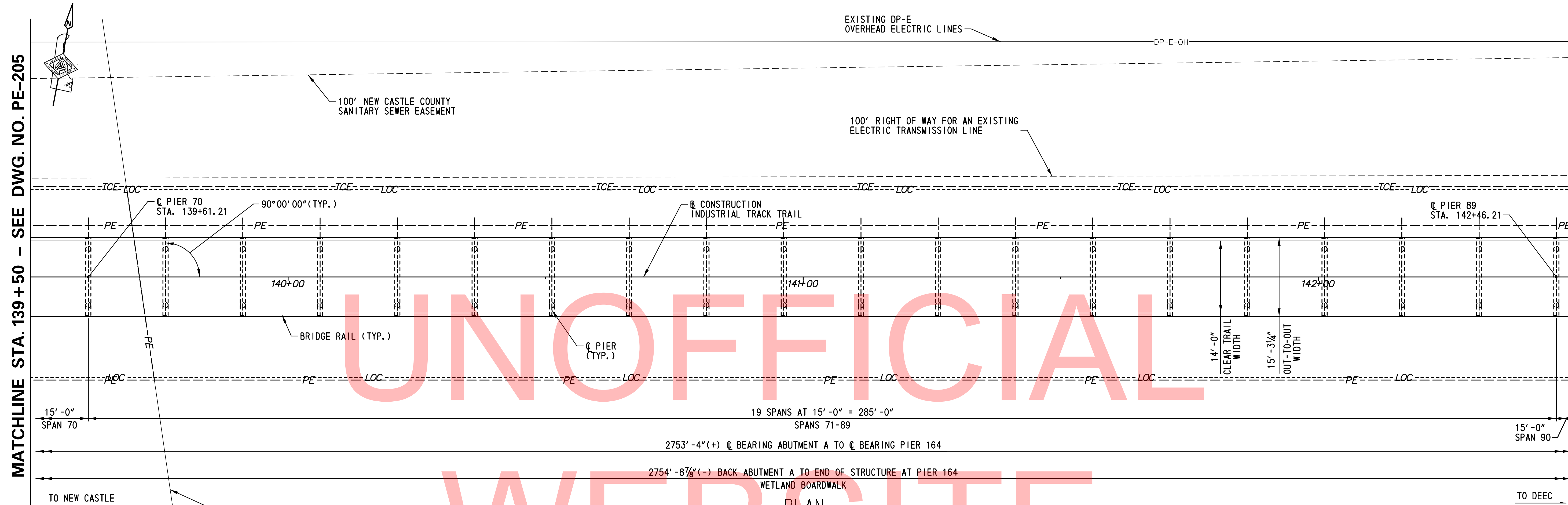
WETLAND BOARDWALK GENERAL PLAN AND ELEVATION - 5

| |
|--------------------|
| PE-205 |
| SHEET NO. 85 |
| TOTAL SHTS. 205 |

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MATCHLINE STA. 139+50 - SEE DWG. NO. PE-205

MATCHLINE STA. 142+50 - SEE DWG. NO. PE-207

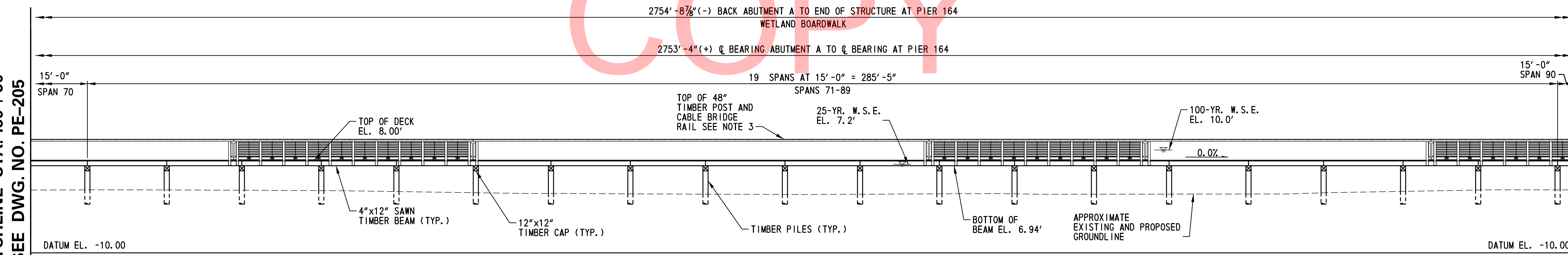


NOTES:

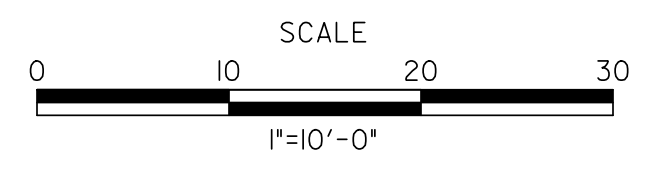
1. ALL SPAN LENGTHS ARE MEASURED ALONG THE BASELINE OF CONSTRUCTION. THE PLAN AND ELEVATION VIEWS SHOWN HEREON ARE REPRESENTATIVE OF THE LAYOUT AND ORIENTATION OF THE PROPOSED WETLAND BOARDWALK STRUCTURE.
2. FOR WORKING POINTS, COORDINATES, AND PILE LAYOUTS SEE DWG. NOS. PL-201 THROUGH PL-208. FOR PIER TYPE AND STATIONING SEE DWG. NOS. PR-201 AND PR-202.
3. 6"x6" TIMBER RAIL POSTS AND HORIZONTAL CABLE RAIL NOT SHOWN IN ALL SPANS FOR CLARITY.

MATCHLINE STA. 139+50 - SEE DWG. NO. PE-205

MATCHLINE STA. 142+50 - SEE DWG. NO. PE-207



| ADDENDUMS / REVISIONS | |
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NEW CASTLE INDUSTRIAL TRACK TRAIL, PHASE 3

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|------------|------------------|---|
| CONTRACT | BRIDGE NO. | X |
| T201330009 | DESIGNED BY: ADD | |
| COUNTY | CHECKED BY: WAG | |
| NEW CASTLE | | |

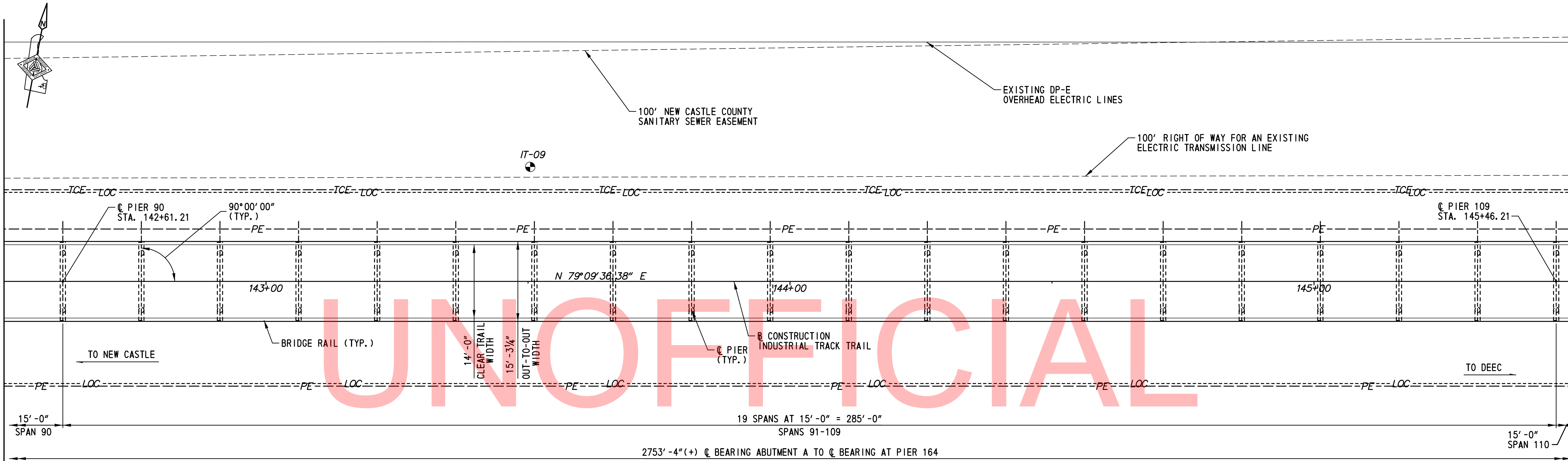
WETLAND BOARDWALK GENERAL PLAN AND ELEVATION - 6

| |
|-------------|
| PE-206 |
| SHEET NO. |
| 86 |
| TOTAL SHTS. |
| 205 |

N:\31896-002\CADD\BRIDGE\PE207_JTG.DGN

MATCHLINE STA. 142+50 - SEE DWG. NO. PE-206

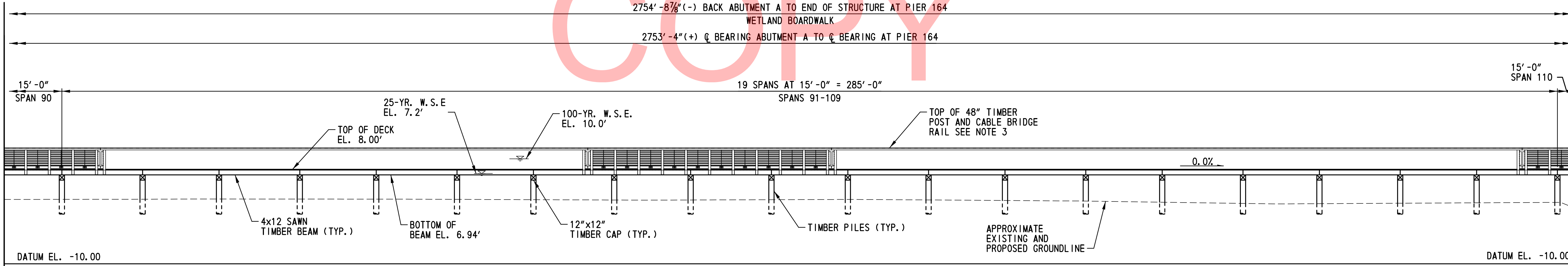
MATCHLINE STA. 145+50 - SEE DWG. NO. PE-208



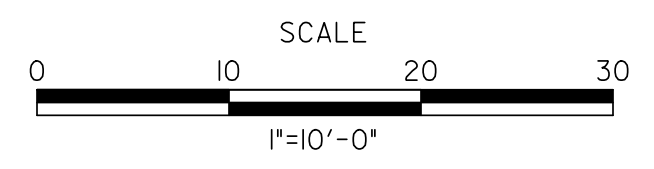
- NOTES:
1. ALL SPAN LENGTHS ARE MEASURED ALONG THE BASELINE OF CONSTRUCTION. THE PLAN AND ELEVATION VIEWS SHOWN HEREON ARE REPRESENTATIVE OF THE LAYOUT AND ORIENTATION OF THE PROPOSED WETLAND BOARDWALK STRUCTURE.
 2. FOR WORKING POINTS, COORDINATES, AND PILE LAYOUTS SEE DWG. NOS. PL-201 THROUGH PL-208. FOR PIER TYPE AND STATIONING SEE DWG. NOS. PR-201 AND PR-202.
 3. 6"x6" TIMBER RAIL POSTS AND HORIZONTAL CABLE RAIL NOT SHOWN IN ALL SPANS FOR CLARITY.

MATCHLINE STA. 142+50 - SEE DWG. NO. PE-206

MATCHLINE STA. 145+50 - SEE DWG. NO. PE-208



| ADDENDUMS / REVISIONS | |
|-----------------------|--|
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| | |



NEW CASTLE INDUSTRIAL TRACK TRAIL, PHASE 3

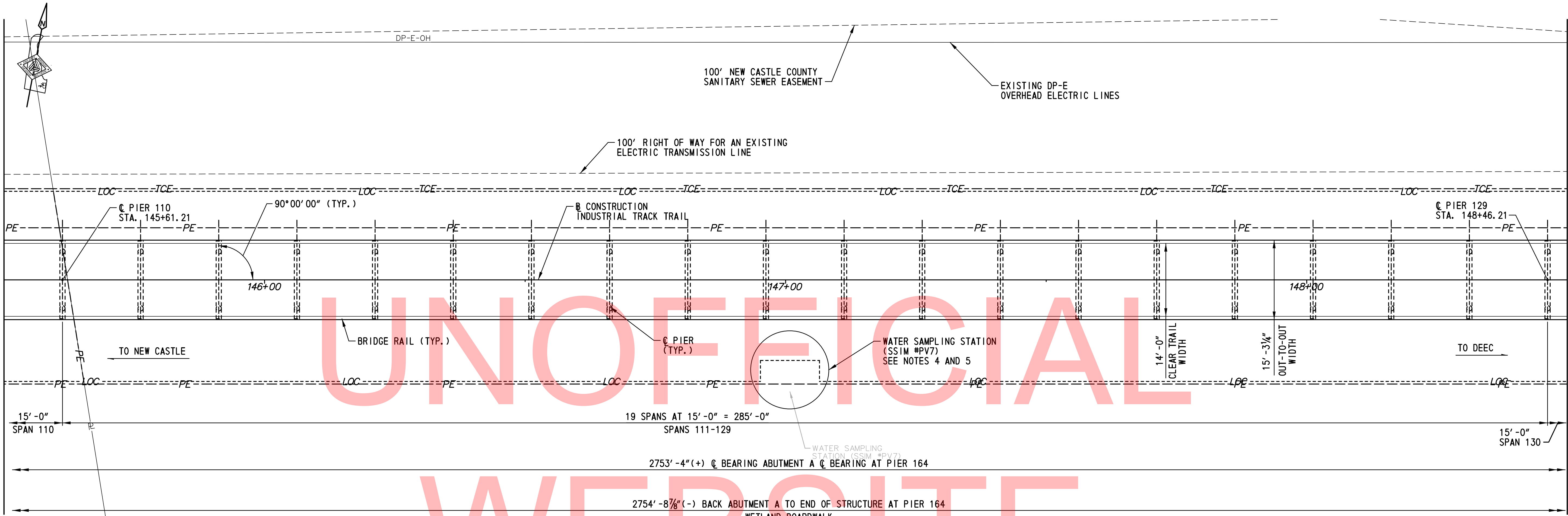
| | | |
|------------|------------------|---|
| CONTRACT | BRIDGE NO. | X |
| T201330009 | DESIGNED BY: ADD | |
| COUNTY | CHECKED BY: WAG | |
| NEW CASTLE | | |

WETLAND BOARDWALK GENERAL PLAN AND ELEVATION - 7

| |
|-------------|
| PE-207 |
| SHEET NO. |
| 87 |
| TOTAL SHTS. |
| 205 |

MATCHLINE STA. 145 + 50 - SEE DWG. NO. PE-207

MATCHLINE STA. 148 + 50 - SEE DWG. NO. PE-209



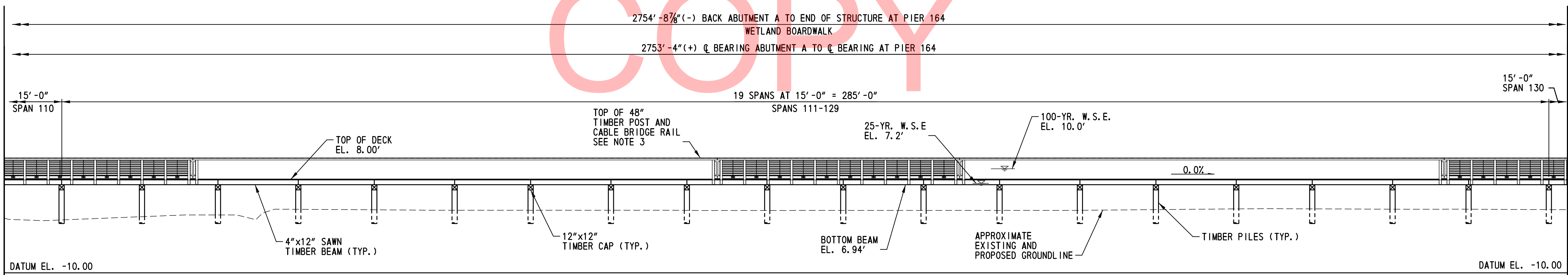
PLAN SCALE: 1"=10'-0"

NOTES:

1. ALL SPAN LENGTHS ARE MEASURED ALONG THE BASELINE OF CONSTRUCTION. THE PLAN AND ELEVATION VIEWS SHOWN HEREON ARE REPRESENTATIVE OF THE LAYOUT AND ORIENTATION OF THE PROPOSED WETLAND BOARDWALK STRUCTURE.
2. FOR WORKING POINTS, COORDINATES, AND PILE LAYOUTS SEE DWG. NOS. PL-201 THROUGH PL-208. FOR PIER TYPE AND STATIONING SEE DWG. NOS. PR-201 AND PR-202.
3. 6"x6" TIMBER RAIL POSTS AND HORIZONTAL CABLE RAIL NOT SHOWN IN ALL SPANS FOR CLARITY.
4. WATER SAMPLING STATION TO REMAIN. CONTRACTOR SHALL TAKE CARE IN PROTECTING AND NOT DISTURBING STATION DURING CONSTRUCTION. REFER TO NOTE 10 ON PROJECT NOTES FOR MORE INFORMATION.
5. WATER SAMPLING STATION SHALL NOT BE DISTURBED BY PILE INSTALLATION. BATTERED PILES, IF REQUIRED, SHALL BE ORIENTED TO NOT DISTURB WATER SAMPLING STATION.

MATCHLINE STA. 145 + 50 - SEE DWG. NO. PE-207

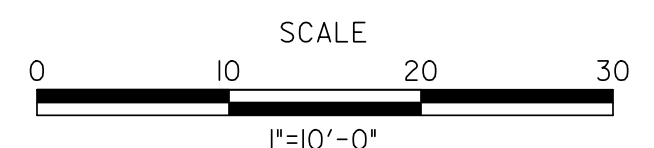
MATCHLINE STA. 148 + 50 - SEE DWG. NO. PE-209



ELEVATION SCALE: 1"=10'-0"



| ADDENDUMS / REVISIONS | |
|-----------------------|--|
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| | |



NEW CASTLE INDUSTRIAL TRACK TRAIL, PHASE 3

| | |
|------------------------|------------------|
| CONTRACT T201330009 | BRIDGE NO. X |
| COUNTY NEW CASTLE | DESIGNED BY: ADD |
| | CHECKED BY: WAG |

WETLAND BOARDWALK GENERAL PLAN AND ELEVATION - 8

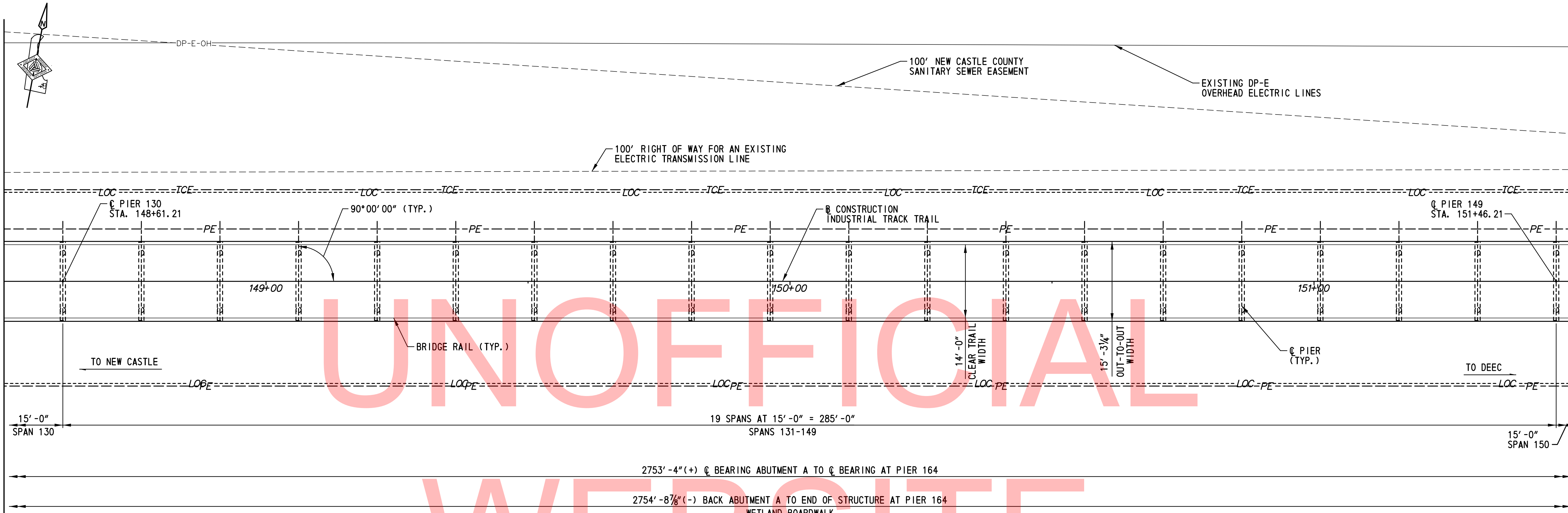
| |
|--------------------|
| PE-208 |
| SHEET NO. 88 |
| TOTAL SHTS. 205 |

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N:\31896-002\CADD\BRIDGE\PE209_JTG.DGN

MATCHLINE STA. 148+50 - SEE DWG. NO. PE-208

MATCHLINE STA. 151+50 - SEE DWG. NO. PE-210



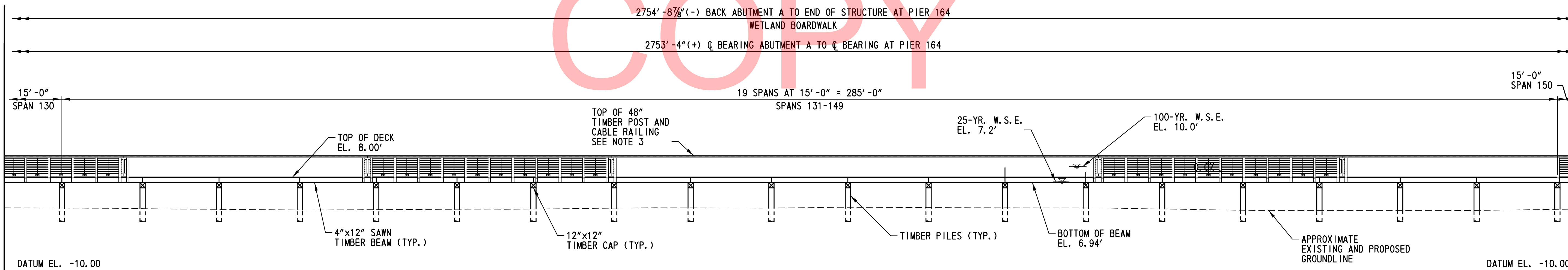
NOTES:

1. ALL SPAN LENGTHS ARE MEASURED ALONG THE BASELINE OF CONSTRUCTION. THE PLAN AND ELEVATION VIEWS SHOWN HEREON ARE REPRESENTATIVE OF THE LAYOUT AND ORIENTATION OF THE PROPOSED WETLAND BOARDWALK STRUCTURE.
2. FOR WORKING POINTS, COORDINATES, AND PILE LAYOUTS SEE DWG. NOS. PL-201 THROUGH PL-208. FOR PIER TYPE AND STATIONING SEE DWG. NOS. PR-201 AND PR-202.
3. 6"x6" TIMBER RAIL POST AND HORIZONTAL CALBE RAIL NOT SHOWN IN ALL SPANS FOR CLARITY.

PLAN
SCALE: 1"=10'-0"

MATCHLINE STA. 148+50 - SEE DWG. NO. PE-208

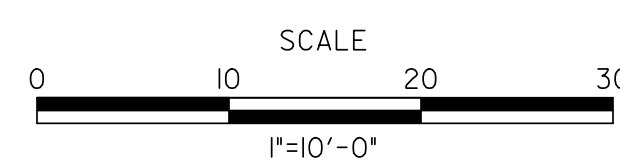
MATCHLINE STA. 151+50 - SEE DWG. NO. PE-210



ELEVATION
SCALE: 1"=10'-0"



ADDENDUMS / REVISIONS

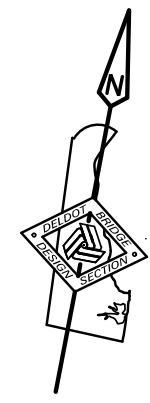


NEW CASTLE INDUSTRIAL TRACK TRAIL, PHASE 3

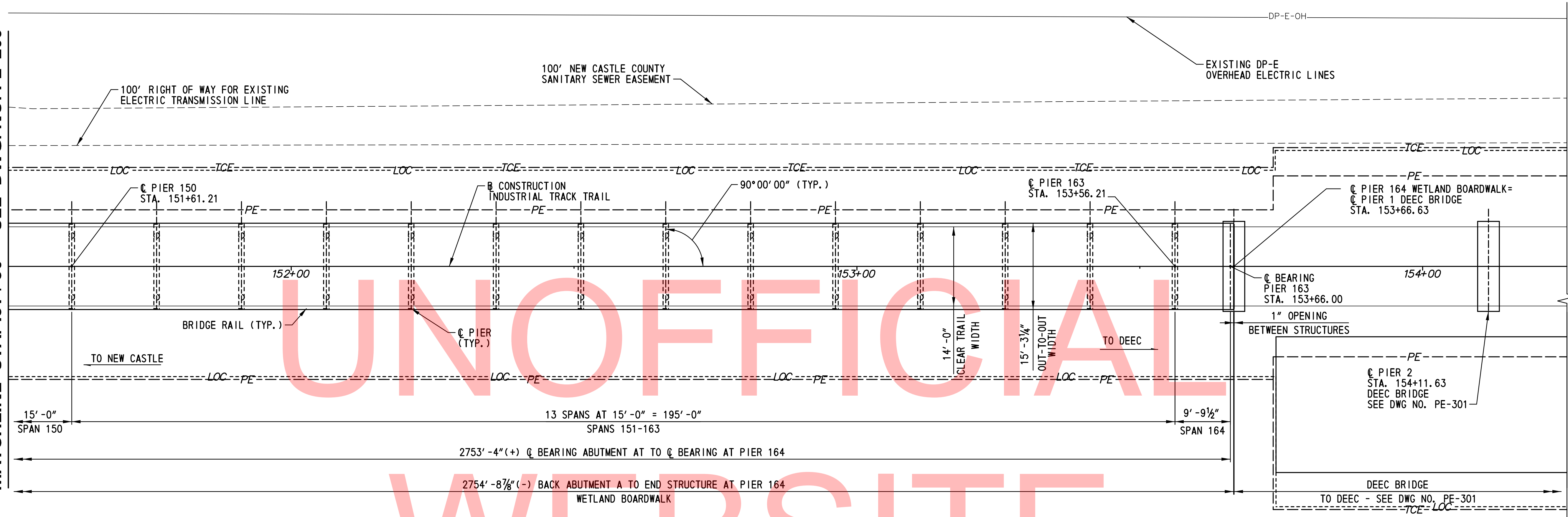
| | |
|------------------------|-------------------------------------|
| CONTRACT T201330009 | BRIDGE NO. X |
| COUNTY NEW CASTLE | DESIGNED BY: ADD CHECKED BY: WAG |

WETLAND BOARDWALK GENERAL PLAN AND ELEVATION - 9

| |
|--------------------|
| PE-209 |
| SHEET NO. 89 |
| TOTAL SHTS. 205 |



MATCHLINE STA. 151+50 - SEE DWG. NO. PE-209

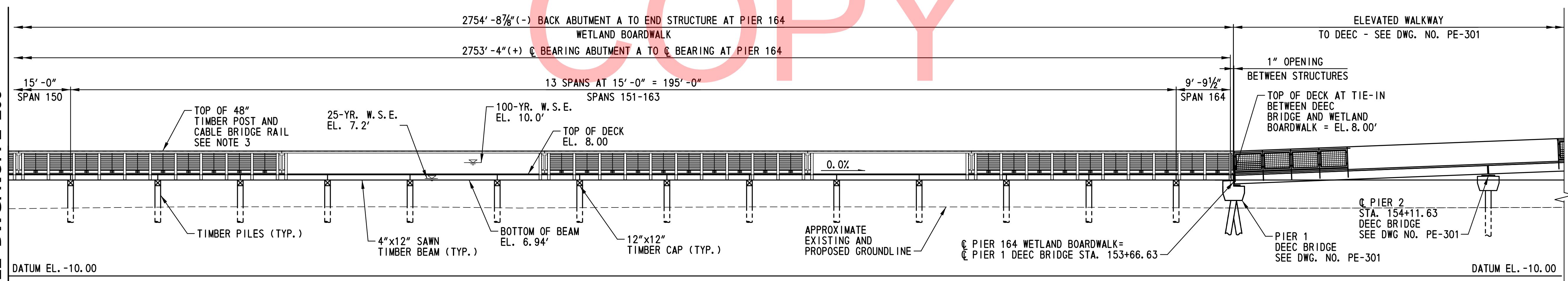


NOTES:

1. ALL SPAN LENGTHS ARE MEASURED ALONG THE BASELINE OF CONSTRUCTION. THE PLAN AND ELEVATION VIEWS SHOWN HEREON ARE REPRESENTATIVE OF THE LAYOUT AND ORIENTATION OF THE PROPOSED WETLAND BOARDWALK STRUCTURE.
2. FOR WORKING POINTS, COORDINATES, AND PILE LAYOUTS SEE DWG. NOS. PL-201 THROUGH PL-208. FOR PIER TYPE AND STATIONING SEE DWG. NOS. PR-201 AND PR-202.
3. 6"x6" TIMBER RAIL POSTS AND HORIZONTAL CABLE RAIL NOT SHOWN IN ALL SPANS FOR CLARITY.

PLAN
SCALE: 1"=10'-0"

MATCHLINE STA. 151+50 -
SEE DWG. NO. PE-209

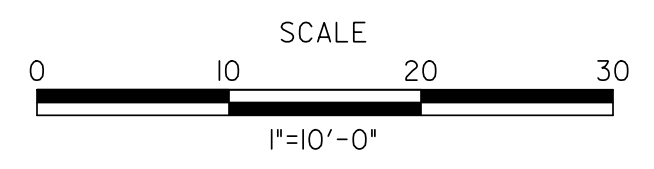


ELEVATION
SCALE: 1"=10'-0"

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| ADDENDUMS / REVISIONS | |
|-----------------------|--|
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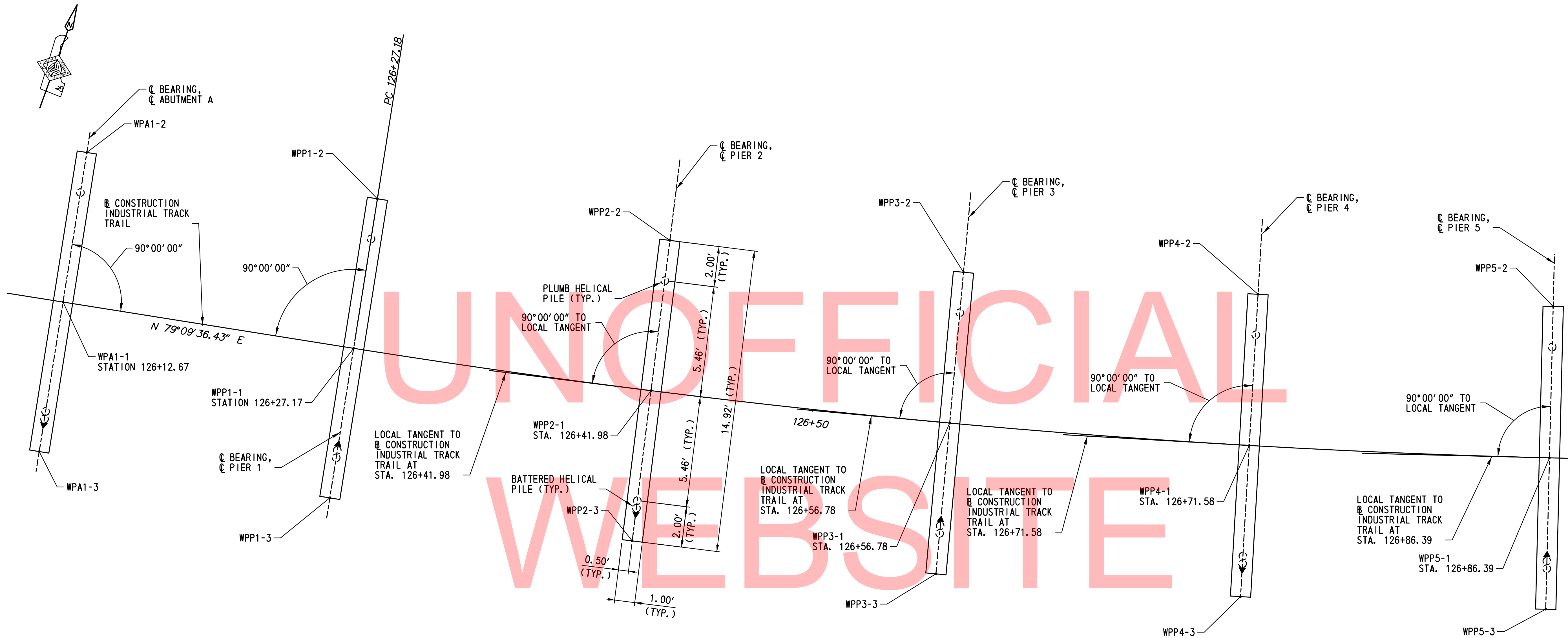
**NEW CASTLE INDUSTRIAL
TRACK TRAIL, PHASE 3**

| | |
|------------------------|-------------------------------------|
| CONTRACT T201330009 | BRIDGE NO. X |
| COUNTY NEW CASTLE | DESIGNED BY: ADD CHECKED BY: WAG |

**WETLAND BOARDWALK
GENERAL PLAN AND
ELEVATION - 10**

| |
|--------------------|
| PE-210 |
| SHEET NO. 90 |
| TOTAL SHTS. 205 |

MATCHLINE STA. 126+94 - SEE DWG. NO. PL202



UNOFFICIAL
WEBSITE
COPY

| WORKING POINT | COORDINATES | | PIER NO. | PIER TYPE |
|---------------|-------------|-------------|----------|-----------|
| | NORTHING | EASTING | | |
| WPA1-1 | 626880.4837 | 612006.8907 | | |
| WPA1-2 | 626887.8089 | 612005.4880 | ABUT | B |
| WPA1-3 | 626873.1584 | 612008.2933 | | |
| WPP1-1 | 626883.2112 | 612021.1350 | | |
| WPP1-2 | 626890.5364 | 612019.7323 | 1 | A |
| WPP1-3 | 626875.8860 | 612022.5376 | | |
| WPP2-1 | 626886.2377 | 612035.6287 | | |
| WPP2-2 | 626893.5122 | 612033.9827 | 2 | B |
| WPP2-3 | 626878.9633 | 612037.2747 | | |
| WPP3-1 | 626889.7456 | 612050.0136 | | |
| WPP3-2 | 626896.9611 | 612048.1260 | 3 | A |
| WPP3-3 | 626882.5301 | 612051.9011 | | |
| WPP4-1 | 626893.7310 | 612064.2735 | | |
| WPP4-2 | 626900.8796 | 612062.1466 | 4 | B |
| WPP4-3 | 626886.5824 | 612066.4004 | | |
| WPP5-1 | 626898.1893 | 612078.3927 | | |
| WPP5-2 | 626905.2631 | 612076.0287 | 5 | A |
| WPP5-3 | 626891.1156 | 612080.7567 | | |

CURVE DATA
 $\Delta = 09^\circ 32' 57.41''$
 $D_c = 12^\circ 53' 53.80''$
 $R = 444.21'$
 $T = 37.10'$
 $L = 74.04'$
 $E = 1.55'$

GEOMETRIC, PIER AND PILE LAYOUT PLAN
 SCALE: 3/8" = 1'-0"

WORKING POINT LEGEND
 WPA-1 = WORKING POINT 1, ABUTMENT A
 WPA-2 = WORKING POINT 2, ABUTMENT A
 WPA-3 = WORKING POINT 3, ABUTMENT A
 WPP1-1 = WORKING POINT 1, PIER 1
 WPP1-2 = WORKING POINT 2, PIER 1
 WPP1-3 = WORKING POINT 3, PIER 1
 POINT 1 = @ PIER/ABUTMENT AT @ CONSTRUCTION
 POINT 2 = @ PIER/ABUTMENT AT LEFT END OF CAP
 POINT 3 = @ PIER/ABUTMENT AT RIGHT END OF CAP
 OTHER TABULATED POINTS SIMILAR

***ALL COORDINATES SET PERPENDICULAR TO @ CONSTRUCTION INDUSTRIAL TRACK TRAIL LOOKING STATION AHEAD**

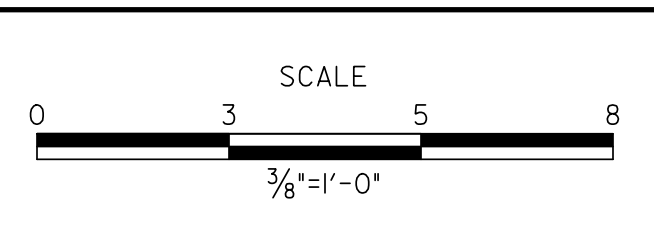
PILE LEGEND
 ○ DENOTES PLUMB PILE (HELICAL PILE)
 ◑ DENOTES BATTERED PILE (HELICAL PILE)

- NOTES:**
- THE CONTRACTOR SHALL PROVIDE HELICAL PILES DESIGNED IN ACCORDANCE WITH THE HELICAL PILE DESIGN LOADS SHOWN ON DWG. NO. PN-201. FOR MORE INFORMATION REGARDING HELICAL PILES AND INSTALLATION REFER TO THE SPECIAL PROVISIONS.
 - SEE DWG. NO. PR-201 FOR PIER DETAILS.
 - LOCATION AND DIRECTION OF BATTERED HELICAL PILES IS PROVIDED FOR INFORMATIONAL PURPOSES ONLY. ACTUAL LOCATION AND NUMBER OF BATTERED PILES SHALL BE DETERMINED BY THE CONTRACTOR AND INSTALLED TO AVOID CONFLICTS WITH EXISTING UTILITY LOCATIONS AND EASEMENTS AS SHOWN ON DWG. NO. PE-201.
 - LOCATIONS OF HELICAL PILES TO BE CONSIDERED AS TEST PILES NOT SHOWN. REFER TO SPECIAL PROVISIONS FOR INFORMATION REGARDING LOCATION AND NUMBER OF TEST PILES.

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| ADDENDUMS / REVISIONS |
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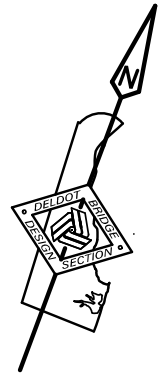


NEW CASTLE INDUSTRIAL TRACK TRAIL, PHASE 3

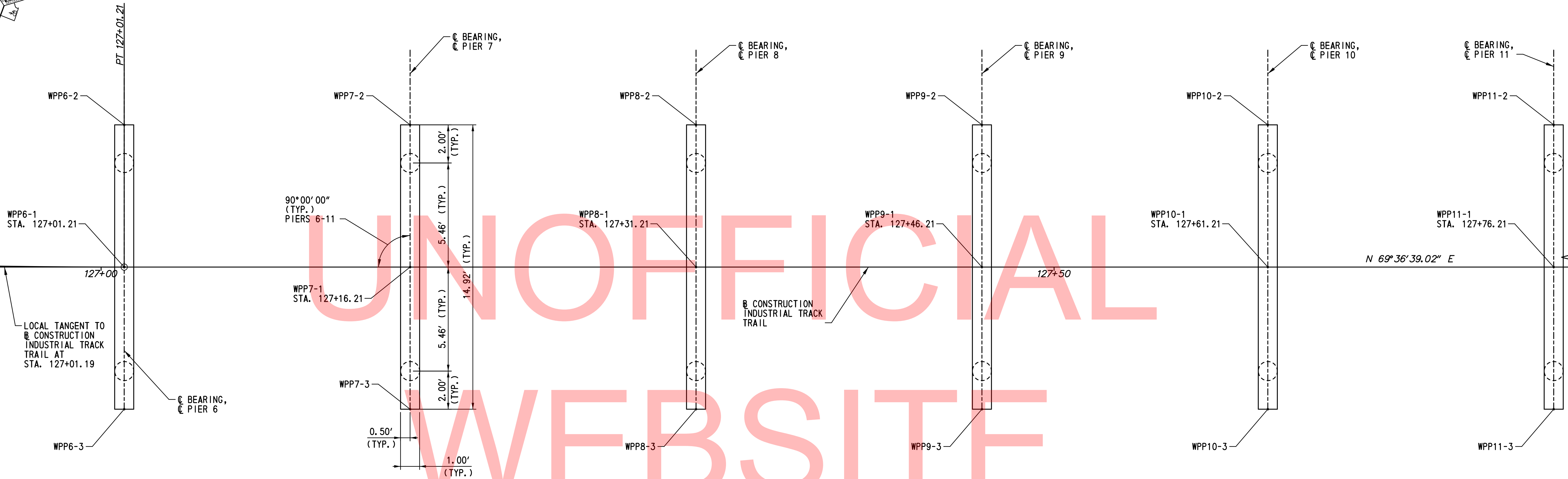
| | |
|------------------------|-------------------------------------|
| CONTRACT T201330009 | BRIDGE NO. X |
| COUNTY NEW CASTLE | DESIGNED BY: ADD CHECKED BY: WAG |

GEOMETRIC, PIER AND PILE LAYOUT PLAN - 1

| |
|--------------------|
| PL-201 |
| SHEET NO. 91 |
| TOTAL SHTS. 205 |



MATCHLINE STA. 126 + 94 -
SEE DWG. NO. PL201



CURVE DATA

$\Delta = 09^\circ 32' 57.41''$
 $D_c = 12^\circ 53' 53.80''$
 $R = 444.21'$
 $T = 37.10'$
 $L = 74.04'$
 $E = 1.55'$

WORKING POINT LEGEND

WPP6-1 = WORKING POINT 1, PIER 6
 WPP6-2 = WORKING POINT 2, PIER 6
 WPP6-3 = WORKING POINT 3, PIER 6
 POINT 1 = C PIER AT CONSTRUCTION
 POINT 2 = C PIER AT LEFT END OF CAP
 POINT 3 = C PIER AT RIGHT END OF CAP

OTHER TABULATED POINTS SIMILAR

*ALL COORDINATES SET PERPENDICULAR TO
 CONSTRUCTION INDUSTRIAL TRACK TRAIL LOOKING
 AHEAD STATION

GEOMETRIC, PIER AND PILE LAYOUT

SCALE: 3/8"=1'-0"

PILE LEGEND

DENOTES 12"x3'x8" PLUMB TIMBER PILE

NOTES:

1. WORKING POINTS, PILE LAYOUTS, AND DIMENSIONS FOR PIERS 12-32 NOT SHOWN GRAPHICALLY. COORDINATES, PIER NO. AND PIER TYPE TABULATED ON THIS SHEET.
2. BEARING OF CONSTRUCTION INDUSTRIAL TRACK TRAIL CONTINUES WITHOUT CHANGE THROUGH PIER 32 AS SHOWN.
3. FOR PIER DETAILS, SEE DWG. NO. PR-202.

| WORKING POINT | COORDINATES | | PIER NO. | PIER TYPE |
|---------------|-------------|-------------|----------|-----------|
| | NORTHING | EASTING | | |
| WPP6-1 | 626903.1156 | 612092.3555 | 6 | C |
| WPP6-2 | 626910.1067 | 612089.7571 | | |
| WPP6-3 | 626896.1245 | 612094.9540 | | |
| WPP7-1 | 626908.3415 | 612106.4158 | 7 | C |
| WPP7-2 | 626915.3326 | 612103.8173 | | |
| WPP7-3 | 626901.3505 | 612109.0142 | | |
| WPP8-1 | 626913.5675 | 612120.4760 | 8 | C |
| WPP8-2 | 626920.5585 | 612117.8775 | | |
| WPP8-3 | 626906.5764 | 612123.0744 | | |
| WPP9-1 | 626918.7934 | 612134.5362 | 9 | C |
| WPP9-2 | 626925.7844 | 612131.9377 | | |
| WPP9-3 | 626911.8023 | 612137.1346 | | |
| WPP10-1 | 626924.0193 | 612148.5964 | 10 | C |
| WPP10-2 | 626931.0104 | 612145.9980 | | |
| WPP10-3 | 626917.0282 | 612151.1949 | | |

| WORKING POINT | COORDINATES | | PIER NO. | PIER TYPE |
|---------------|-------------|-------------|----------|-----------|
| | NORTHING | EASTING | | |
| WPP11-1 | 626929.2452 | 612162.6566 | 11 | C |
| WPP11-2 | 626936.2363 | 612160.0582 | | |
| WPP11-3 | 626922.2542 | 612165.2551 | | |
| WPP12-1 | 626934.4712 | 612176.7168 | 12 | C |
| WPP12-2 | 626941.4622 | 612174.1184 | | |
| WPP12-3 | 626927.4801 | 612179.3153 | | |
| WPP13-1 | 626939.6971 | 612190.7771 | 13 | C |
| WPP13-2 | 626946.6882 | 612188.1786 | | |
| WPP13-3 | 626932.7060 | 612193.3755 | | |
| WPP14-1 | 626944.9230 | 612204.8373 | 14 | C |
| WPP14-2 | 626951.9141 | 612202.2388 | | |
| WPP14-3 | 626937.9320 | 612207.4357 | | |
| WPP15-1 | 626950.1490 | 612218.8975 | 15 | C |
| WPP15-2 | 626957.1400 | 612216.2990 | | |
| WPP15-3 | 626943.1579 | 612221.4959 | | |
| WPP16-1 | 626955.3749 | 612232.9577 | 16 | C |
| WPP16-2 | 626962.3659 | 612230.3593 | | |
| WPP16-3 | 626948.3838 | 612235.5562 | | |

| WORKING POINT | COORDINATES | | PIER NO. | PIER TYPE |
|---------------|-------------|-------------|----------|-----------|
| | NORTHING | EASTING | | |
| WPP17-1 | 626960.6008 | 612247.0179 | 17 | C |
| WPP17-2 | 626967.5919 | 612244.4195 | | |
| WPP17-3 | 626953.6097 | 612249.6164 | | |
| WPP18-1 | 626965.8267 | 612261.0781 | 18 | C |
| WPP18-2 | 626972.8178 | 612258.4797 | | |
| WPP18-3 | 626958.8357 | 612263.6766 | | |
| WPP19-1 | 626971.0527 | 612275.1384 | 19 | C |
| WPP19-2 | 626978.0437 | 612272.5399 | | |
| WPP19-3 | 626964.0616 | 612277.7368 | | |
| WPP20-1 | 626976.2786 | 612289.1986 | 20 | C |
| WPP20-2 | 626983.2697 | 612286.6001 | | |
| WPP20-3 | 626969.2875 | 612291.7970 | | |
| WPP21-1 | 626981.5045 | 612303.2588 | 21 | C |
| WPP21-2 | 626988.4956 | 612300.6603 | | |
| WPP21-3 | 626974.5135 | 612305.8572 | | |
| WPP22-1 | 626986.7304 | 612317.3190 | 22 | C |
| WPP22-2 | 626993.7215 | 612314.7205 | | |
| WPP22-3 | 626979.7394 | 612319.9175 | | |

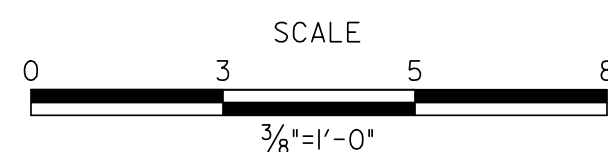
| WORKING POINT | COORDINATES | | PIER NO. | PIER TYPE |
|---------------|-------------|-------------|----------|-----------|
| | NORTHING | EASTING | | |
| WPP23-1 | 626991.9564 | 612331.3792 | 23 | C |
| WPP23-2 | 626998.9474 | 612328.7808 | | |
| WPP23-3 | 626984.9653 | 612333.9777 | | |
| WPP24-1 | 626997.1823 | 612345.4394 | 24 | C |
| WPP24-2 | 627004.1734 | 612342.8410 | | |
| WPP24-3 | 626990.1912 | 612348.0379 | | |
| WPP25-1 | 627002.4082 | 612359.4996 | 25 | C |
| WPP25-2 | 627009.3993 | 612356.9012 | | |
| WPP25-3 | 626995.4172 | 612362.0981 | | |
| WPP26-1 | 627007.6342 | 612373.5599 | 26 | C |
| WPP26-2 | 627014.6252 | 612370.9614 | | |
| WPP26-3 | 627000.6431 | 612376.1583 | | |
| WPP27-1 | 627012.8601 | 612387.6201 | 27 | C |
| WPP27-2 | 627019.8512 | 612385.0216 | | |
| WPP27-3 | 627005.8690 | 612390.2185 | | |
| WPP28-1 | 627018.0860 | 612401.6803 | 28 | C |
| WPP28-2 | 627025.0771 | 612399.0818 | | |
| WPP28-3 | 627011.0950 | 612404.2787 | | |

| WORKING POINT | COORDINATES | | PIER NO. | PIER TYPE |
|---------------|-------------|-------------|----------|-----------|
| | NORTHING | EASTING | | |
| WPP29-1 | 627023.3119 | 612415.7405 | 29 | C |
| WPP29-2 | 627030.3030 | 612413.1421 | | |
| WPP29-3 | 627016.3209 | 612418.3390 | | |
| WPP30-1 | 627028.5379 | 612429.8007 | 30 | C |
| WPP30-2 | 627035.5289 | 612427.2023 | | |
| WPP30-3 | 627021.5468 | 612432.3992 | | |
| WPP31-1 | 627033.7638 | 612443.8609 | 31 | C |
| WPP31-2 | 627040.7549 | 612441.2625 | | |
| WPP31-3 | 627026.7727 | 612446.4594 | | |
| WPP32-1 | 627038.9897 | 612457.9212 | 32 | C |
| WPP32-2 | 627045.9808 | 612455.3227 | | |
| WPP32-3 | 627031.9987 | 612460.5196 | | |

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ADDENDUMS / REVISIONS



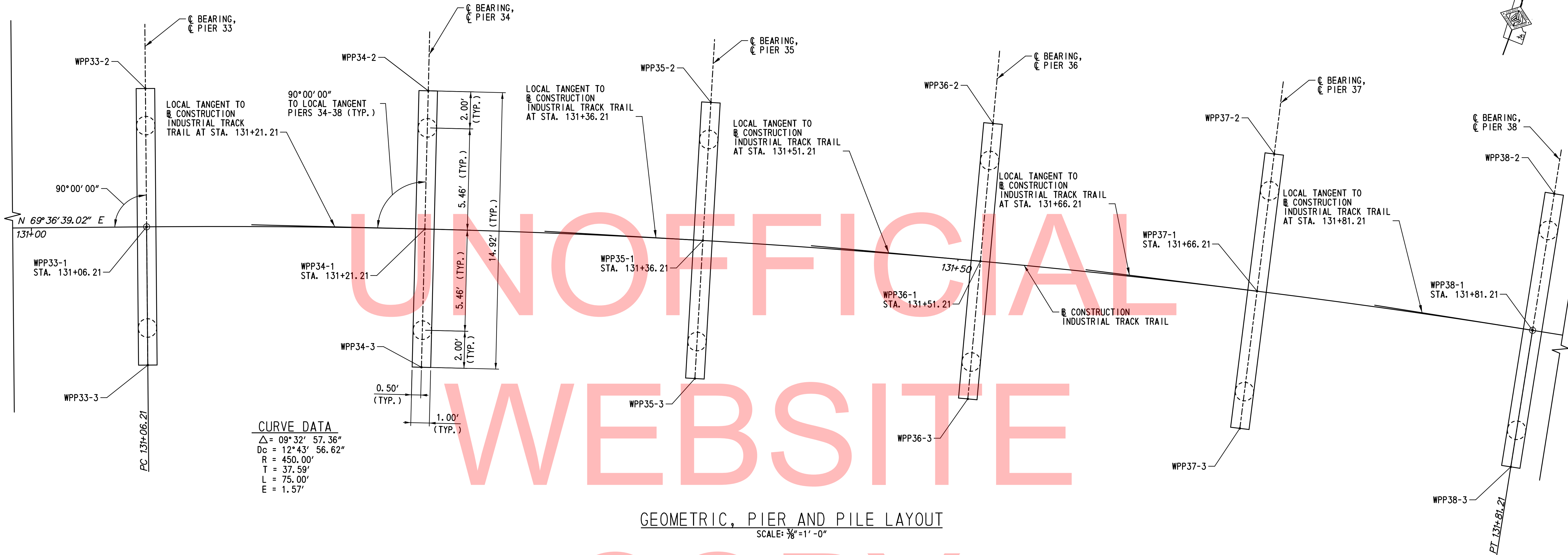
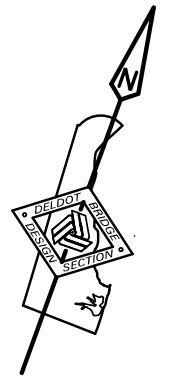
NEW CASTLE INDUSTRIAL TRACK TRAIL, PHASE 3

| | | |
|------------|------------------|----------|
| CONTRACT | BRIDGE NO. | X |
| T201330009 | DESIGNED BY: ADD | |
| COUNTY | CHECKED BY: WAG | |
| NEW CASTLE | | |

GEOMETRIC, PIER AND PILE LAYOUT PLAN - 2

PL-202

| | |
|-------------|-----|
| SHEET NO. | 92 |
| TOTAL SHTS. | 205 |



CURVE DATA
 $\Delta = 09^\circ 32' 57.36''$
 $Dc = 12^\circ 43' 56.62''$
 $R = 450.00'$
 $T = 37.59'$
 $L = 75.00'$
 $E = 1.57'$

GEOMETRIC, PIER AND PILE LAYOUT
 SCALE: $\frac{3}{8}'' = 1' - 0''$

PILE LEGEND

DENOTES 12"x3' x8" PLUMB TIMBER PILE

WORKING POINT LEGEND

WPP33-1 = WORKING POINT 1, PIER 33
 WPP33-2 = WORKING POINT 2, PIER 33
 WPP33-3 = WORKING POINT 3, PIER 33
 POINT 1 = C PIER AT B CONSTRUCTION
 POINT 2 = C PIER AT LEFT END OF CAP
 POINT 3 = C PIER AT RIGHT END OF CAP

OTHER TABULATED POINTS SIMILAR

*ALL COORDINATES SET PERPENDICULAR TO
 B CONSTRUCTION INDUSTRIAL TRACK TRAIL LOOKING
 AHEAD STATION

NOTES:

1. WORKING POINTS, COORDINATES, AND PIER TYPE FOR PIERS 12-32 SHOWN TABULATED ON DWG. NO. PL-202.
2. FOR PIER DETAILS, SEE DWG. NO. PR-202.

| WORKING POINT | COORDINATES | | PIER NO. | PIER TYPE |
|---------------|-------------|-------------|----------|-----------|
| | NORTHING | EASTING | | |
| WPP33-1 | 627044.2157 | 612471.9814 | 33 | C |
| WPP33-2 | 627051.2067 | 612469.3829 | | |
| WPP33-3 | 627037.2246 | 612474.5798 | | |
| WPP34-1 | 627049.2059 | 612486.1249 | 34 | C |
| WPP34-2 | 627056.2797 | 612483.7608 | | |
| WPP34-3 | 627042.1321 | 612488.4889 | | |
| WPP35-1 | 627053.7225 | 612500.4283 | 35 | C |
| WPP35-2 | 627060.8711 | 612498.3014 | | |
| WPP35-3 | 627046.5739 | 612502.5553 | | |
| WPP36-1 | 627057.7599 | 612514.8744 | 36 | C |
| WPP36-2 | 627064.9754 | 612512.9868 | | |
| WPP36-3 | 627050.5443 | 612516.7619 | | |
| WPP37-1 | 627061.3136 | 612529.4470 | 37 | C |
| WPP37-2 | 627068.5880 | 612527.8009 | | |
| WPP37-3 | 627054.0391 | 612531.0930 | | |
| WPP38-1 | 627064.3796 | 612544.1299 | 38 | C |
| WPP38-2 | 627071.7050 | 612542.7273 | | |
| WPP38-3 | 627057.0543 | 612545.5326 | | |

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| PILE TIP DATA | | | | | | | |
|-------------------|------------------------------------|------------------------------|--------------------------------|--------------------------------------|--------------------------------------|--------------------------------------|--------------------------------------|
| SUBSTRUCTURE UNIT | DESIGN DATA | | | ACTUAL FIELD DATA | | | |
| | HELICAL PILE MINIMUM TIP ELEVATION | TIMBER PILE MINIMUM TIP DATA | TIMBER PILE ESTIMATED TIP DATA | HELICAL PILE | | TIMBER PILE | |
| | | | | AVERAGE ACTUAL MINIMUM TIP ELEVATION | AVERAGE ACTUAL MAXIMUM TIP ELEVATION | AVERAGE ACTUAL MINIMUM TIP ELEVATION | AVERAGE ACTUAL MAXIMUM TIP ELEVATION |
| PIER 130 | | -12.0 | -22.0 | | | | |
| PIER 131 | | -12.0 | -22.0 | | | | |
| PIER 132 | | -12.0 | -22.0 | | | | |
| PIER 133 | | -12.0 | -22.0 | | | | |
| PIER 134 | | -12.0 | -22.0 | | | | |
| PIER 135 | | -12.0 | -22.0 | | | | |
| PIER 136 | | -12.0 | -22.0 | | | | |
| PIER 137 | | -12.0 | -22.0 | | | | |
| PIER 138 | | -12.0 | -22.0 | | | | |
| PIER 139 | | -12.0 | -22.0 | | | | |
| PIER 140 | | -12.0 | -22.0 | | | | |
| PIER 141 | | -12.0 | -22.0 | | | | |
| PIER 142 | | -12.0 | -22.0 | | | | |
| PIER 143 | | -12.0 | -22.0 | | | | |
| PIER 144 | | -12.0 | -22.0 | | | | |
| PIER 145 | | -12.0 | -22.0 | | | | |
| PIER 146 | | -12.0 | -22.0 | | | | |
| PIER 147 | | -12.0 | -22.0 | | | | |
| PIER 148 | | -12.0 | -22.0 | | | | |
| PIER 149 | | -12.0 | -22.0 | | | | |
| PIER 150 | | -12.0 | -22.0 | | | | |
| PIER 151 | | -12.0 | -22.0 | | | | |
| PIER 152 | | -12.0 | -22.0 | | | | |
| PIER 153 | | -12.0 | -22.0 | | | | |
| PIER 154 | | -12.0 | -22.0 | | | | |
| PIER 155 | | -12.0 | -22.0 | | | | |
| PIER 156 | | -12.0 | -22.0 | | | | |
| PIER 157 | | -12.0 | -22.0 | | | | |
| PIER 158 | | -12.0 | -22.0 | | | | |
| PIER 159 | | -12.0 | -22.0 | | | | |
| PIER 160 | | -12.0 | -22.0 | | | | |
| PIER 161 | | -12.0 | -22.0 | | | | |
| PIER 162 | | -12.0 | -22.0 | | | | |
| PIER 163 | | -12.0 | -22.0 | | | | |

| | |
|--|-----------------------------|
| PIERS 6-163 PILE DRIVING INFORMATION | |
| PILE SIZE AND TYPE: | 12" x 3' x 8" TIMBER PILE |
| ACTUAL BEARING OBTAINED: | |
| HAMMER TYPE: | |
| AVERAGE ACTUAL BLOWS/FT.: | |
| PILE HAMMER ENERGY: | 5,000 LB-FT TO 10,000 LB-FT |
| SPECIAL DRIVING CONDITIONS AND COMMENTS: | |

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WEBSITE
COPY

PILE NOTES:

- PILES SHALL BE INSTALLED TO THE MINIMUM PILE TIP ELEVATIONS SPECIFIED ON THIS SHEET FOR ANY PILE SYSTEM DESIGNED BY THE CONTRACTOR. FOR MORE INFORMATION REGARDING HELICAL PILES REFER TO THE SPECIAL PROVISIONS.
- FOR PILE LAYOUT AND WORKING POINT COORDINATES FOR EACH PIER SEE DWG. NOS. PL-201 THROUGH PL-206.
- FOR PIER AND PILE DETAILS, INCLUDING HELICAL PILE BATTER, SEE DWG NOS. PR-201 AND PR-202.
- HELICAL PILES SHALL BE DESIGNED IN ACCORDANCE WITH THE HELICAL PILE DESIGN LOADS SHOWN TABULATED ON SHEET PN-201.
- THE FACTORED RESISTANCE OF THE TIMBER PILES IS 12.5 TONS FOR PIERS 6 THROUGH 44 AND PIERS 66 THROUGH 163, AND 20 TONS FOR PIERS 45 THROUGH 65. TIMBER PILES FOR PIERS 45 THROUGH 65 SHALL BE DRIVEN TO A NOMINAL DRIVING RESISTANCE OF 50 TONS FOLLOWING A BLOW COUNT CRITERIA DEVELOPED FROM USE OF GATES DYNAMIC FORMULA FOR THE PROPOSED PILE DRIVING HAMMER. TIMBER PILES FOR PIERS 6 THROUGH 44 AND PIERS 66 THROUGH 163 SHALL BE DRIVEN TO A NOMINAL DRIVING RESISTANCE OF 31.5 TONS.
- BLOW COUNT DRIVING CRITERIA FOR THE TIMBER PILES SHALL BE APPROVED BY THE ENGINEER PRIOR TO USE AND SHALL ONLY BE APPLIED BELOW MINIMUM TIP ELEVATIONS SPECIFIED HEREIN.
- THE ENGINEER MAY ALLOW THE CONTRACTOR TO PREDRILL IN ORDER TO ACHIEVE MINIMUM TIP ELEVATION IF, IN THE OPINION OF THE ENGINEER, DIFFICULT DRIVING CONDITIONS ARE ENCOUNTERED.
- TIMBER PILES SHALL BE EQUIPPED WITH STEEL PROTECTION, CONSISTING OF STEEL CAP (OR BOOT) AND SHOE (OR POINT) TO PROTECT THE BUTT AND TIP OF THE PILE DURING DRIVING.
- VIBRATIONS SHALL BE MONITORED AT THE 12 INCH GAS LINE LOCATED NORTH OF THE TIMBER BOARDWALK DURING TIMBER PILE DRIVING OPERATIONS AT PIER 6 IN ACCORDANCE WITH SPECIAL PROVISION 763620.
- TIMBER PILES SHALL BE DRIVEN TO THE MINIMUM TOP ELEVATIONS SPECIFIED ON THESE PLANS. TIMBER PILES MAY NOT BE SPLICED.

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ADDENDUMS / REVISIONS

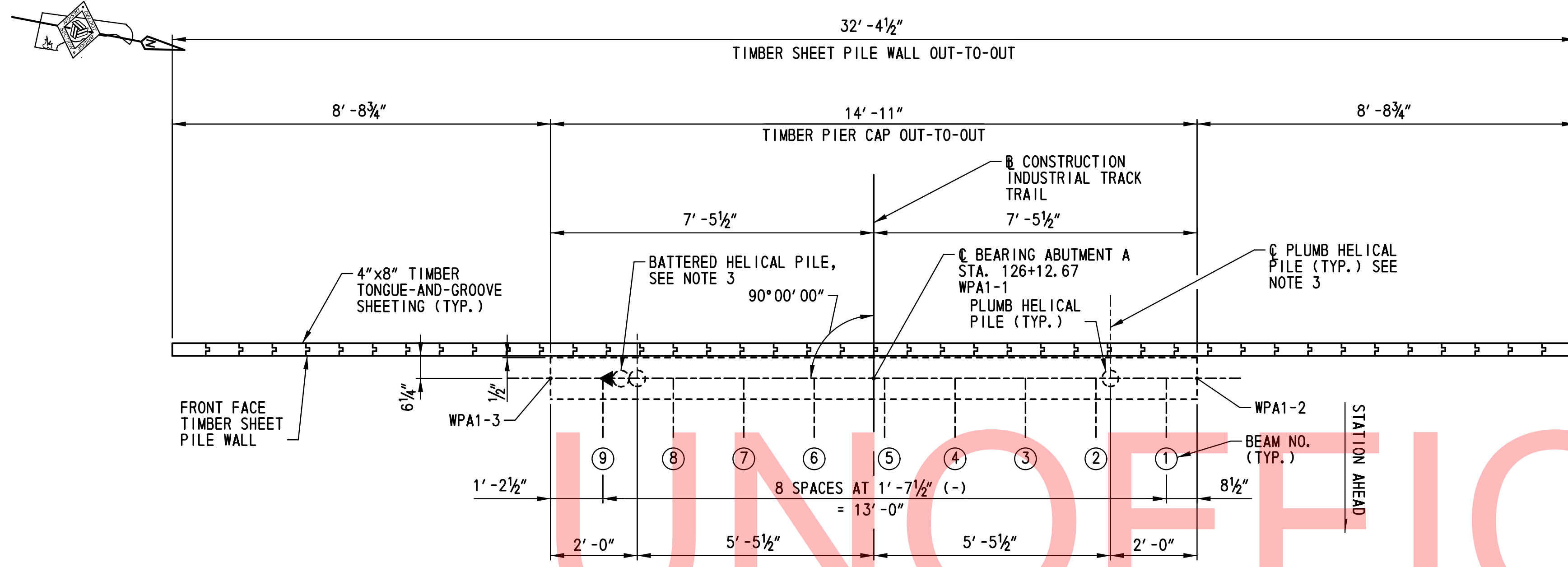
SCALE: NONE

NEW CASTLE INDUSTRIAL TRACK TRAIL, PHASE 3

| | | |
|------------|------------------|----------|
| CONTRACT | BRIDGE NO. | X |
| T201330009 | DESIGNED BY: ADD | |
| COUNTY | CHECKED BY: WAG | |
| NEW CASTLE | | |

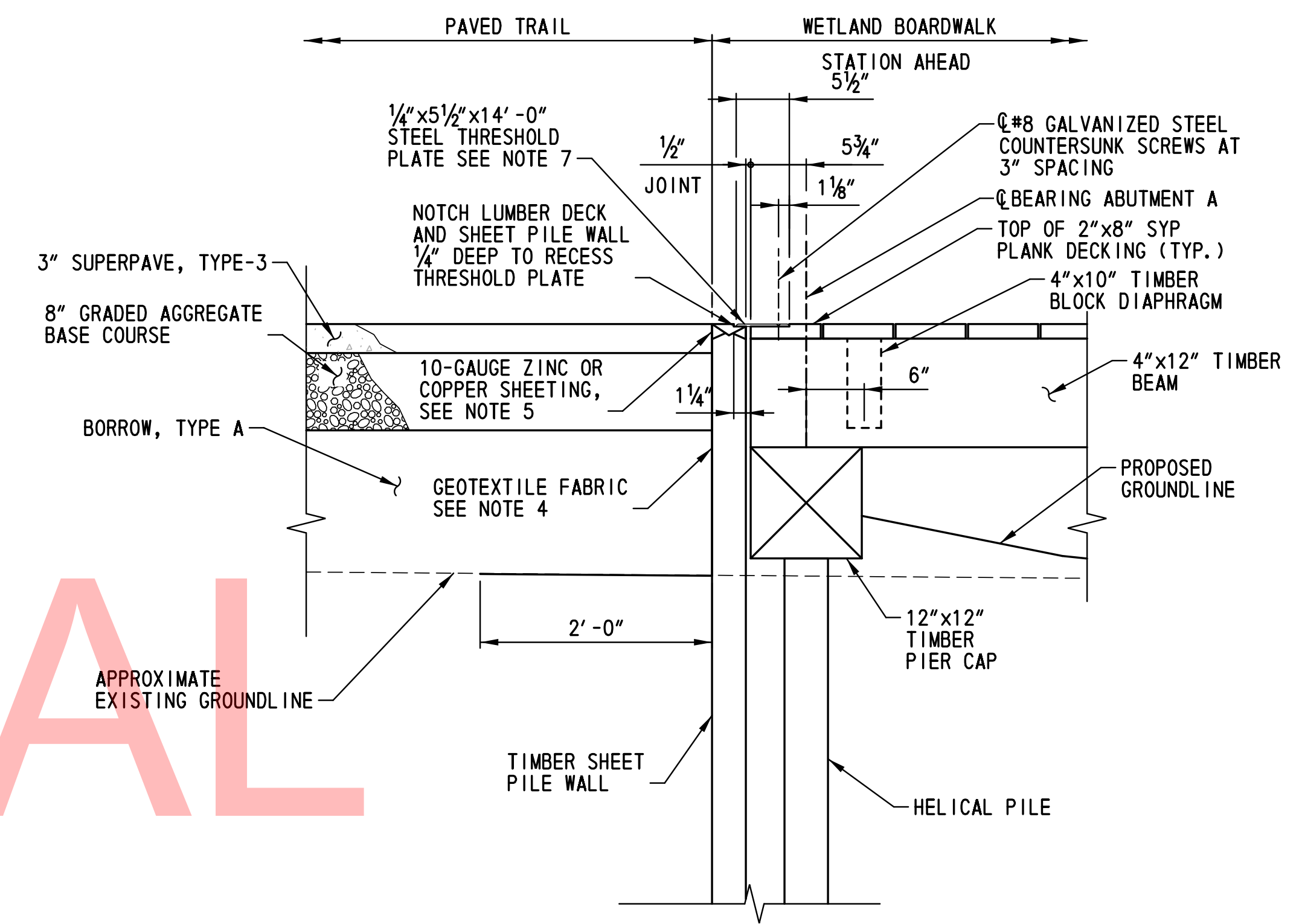
GEOMETRIC, PIER AND PILE LAYOUT PLAN - 8

| |
|-------------|
| PL-208 |
| SHEET NO. |
| 98 |
| TOTAL SHTS. |
| 205 |



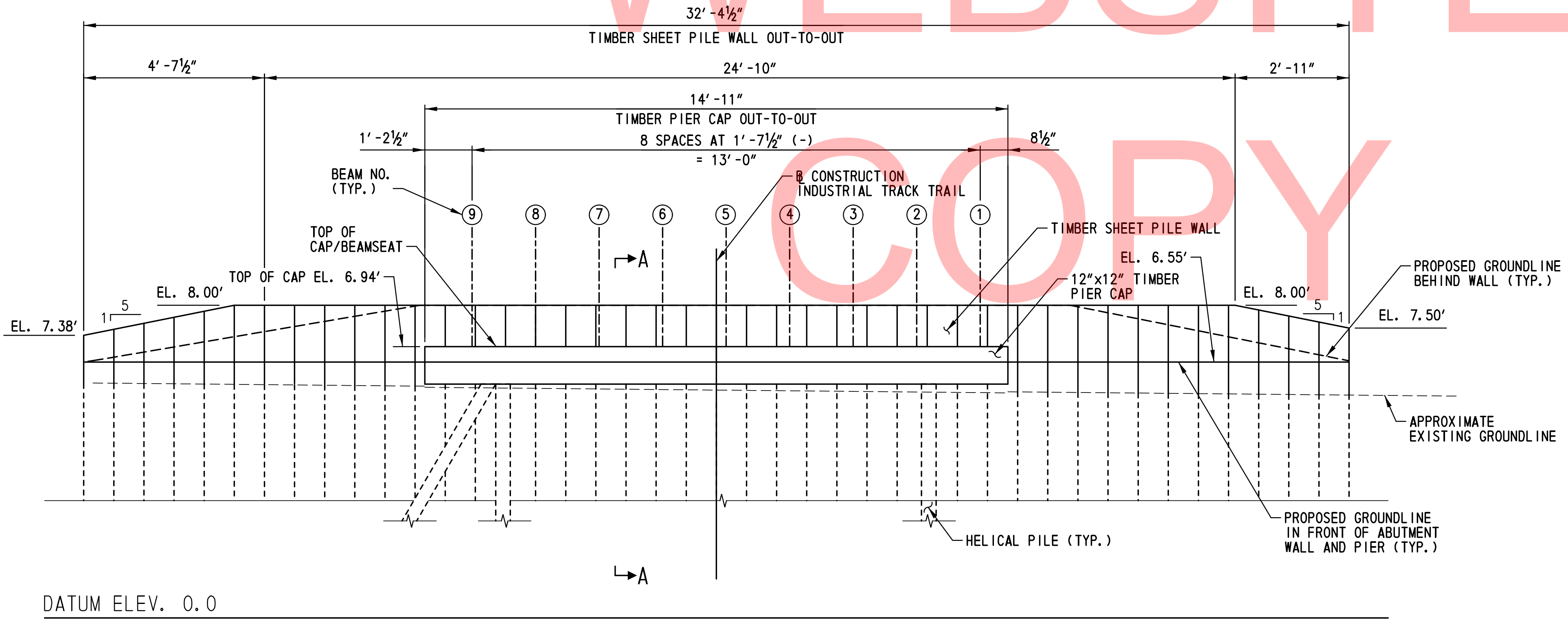
ABUTMENT - PLAN
SCALE: 1/2" = 1'-0"

| WORKING POINT | COORDINATES | | PIER NO. | PIER TYPE |
|---------------|-------------|-------------|----------|-----------|
| | NORTHING | EASTING | | |
| WPA1-1 | 626880.4837 | 612006.8907 | ABUT | B |
| WPA1-2 | 626887.8089 | 612005.4880 | | |
| WPA1-3 | 626873.1584 | 612008.2933 | | |



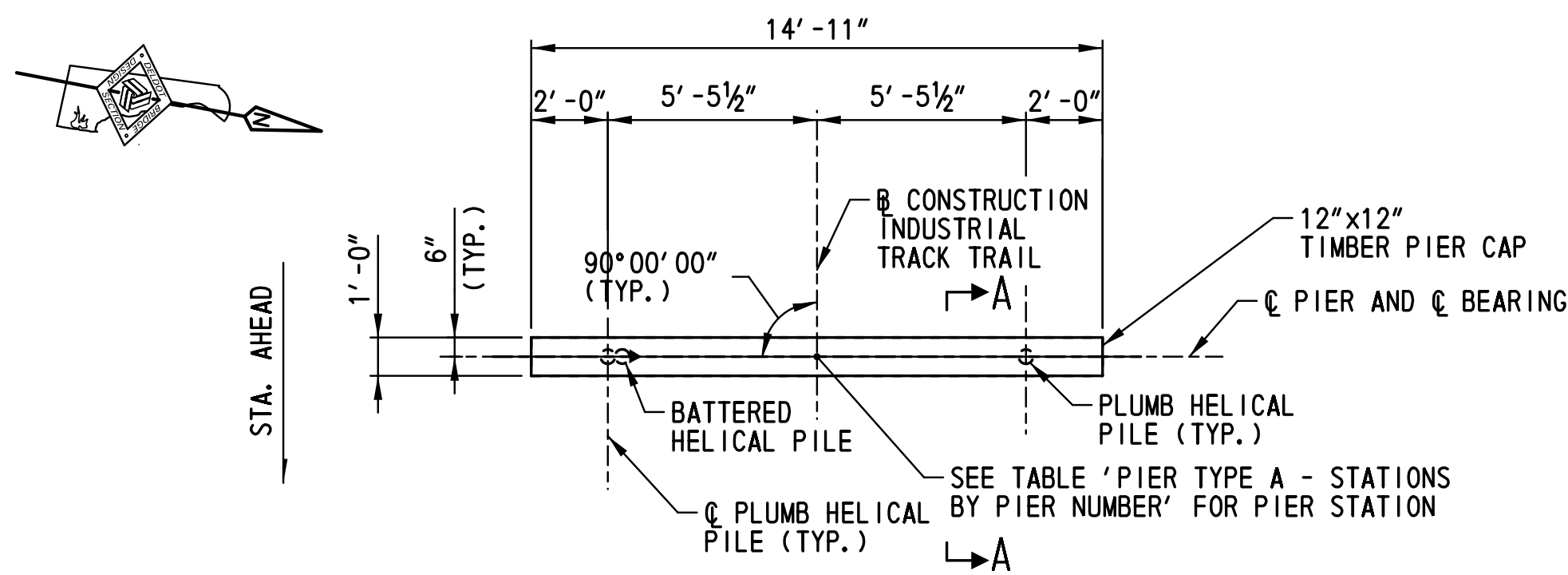
TYPICAL SECTION A-A
SCALE: 1" = 1'-0"

- NOTES:
- SUPERSTRUCTURE NOT SHOWN FOR CLARITY. FOR BROADWALK SUPERSTRUCTURE TYPICAL SECTIONS SEE DWG. NO. TS-201.
 - MINIMUM TIP ELEVATION FOR TIMBER SHEET PILE WALL IS ELEV. -10.0'. MINIMUM TIP ELEVATION FOR HELICAL PILES IS -12.0'.
 - FOR ABUTMENT STATION, WORKING POINTS, COORDINATES AND PILE LAYOUTS, SEE DWG. NO. PL-201 AND PR-201.
 - GEOTEXTILE FABRIC SHALL BE PLACED ALONG FILL FACE OF SHEET PILE WALL TO EXISTING GROUND LINE. GEOTEXTILE FABRIC SHALL EXTEND 2'-0" FROM WALL AT EXISTING GROUNDLINE, AS SHOWN. GEOTEXTILE SHALL CONFORM TO SECTION 827 OF THE DELAWARE STANDARD SPECIFICATIONS. THE COST OF THE GEOTEXTILE FABRIC WILL BE INCIDENTAL TO THE TIMBER SHEET PILE WALL.
 - SHEET OF 10-GAUGE ZINC OR COPPER SHEETING SECURED TO TOP SURFACE OF TIMBER SHEET PILE WALL WITH LARGE HEADED GALVANIZED OR COPPER ROOFING NAILS. THE COST OF THE COPPER SHEET WILL BE INCIDENTAL TO THE TIMBER SHEET PILE WALL.
 - SEE DWG. NO. PR-201 FOR INFORMATION REGARDING THE TIMBER ABUTMENT CAP AND HELICAL PILES.
 - STEEL THRESHOLD PLATE SHALL BE 1/4" GALVANIZED STEEL PLATE WITH COUNTERSUNK HOLES TO ACCOMMODATE #8 COUNTERSUNK SCREWS. THE TOP SURFACE OF THE PLATE SHALL HAVE A SHOP APPLIED EPOXY COATING WITH GRIT TO PRODUCE A NON-SKID SURFACE. THRESHOLD PLATE SHALL EXTEND TO THE WIDTH OF DECK PLANK.
 - PAYMENT FOR THRESHOLD PLATE WILL BE INCIDENTAL TO ITEM 601002.

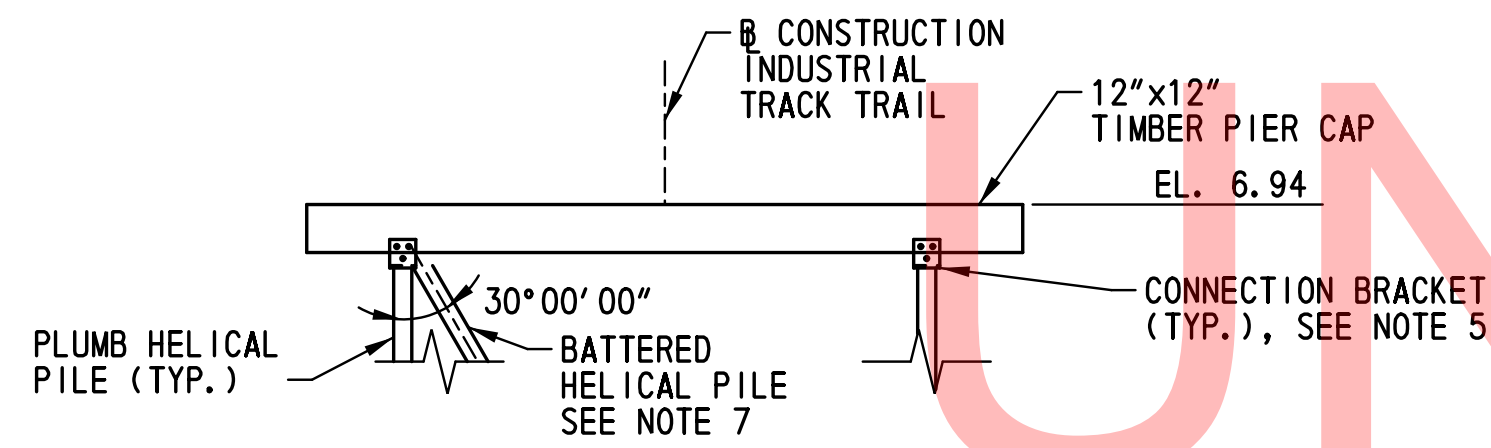


ABUTMENT A - ELEVATION
SCALE: 1/2" = 1'-0"

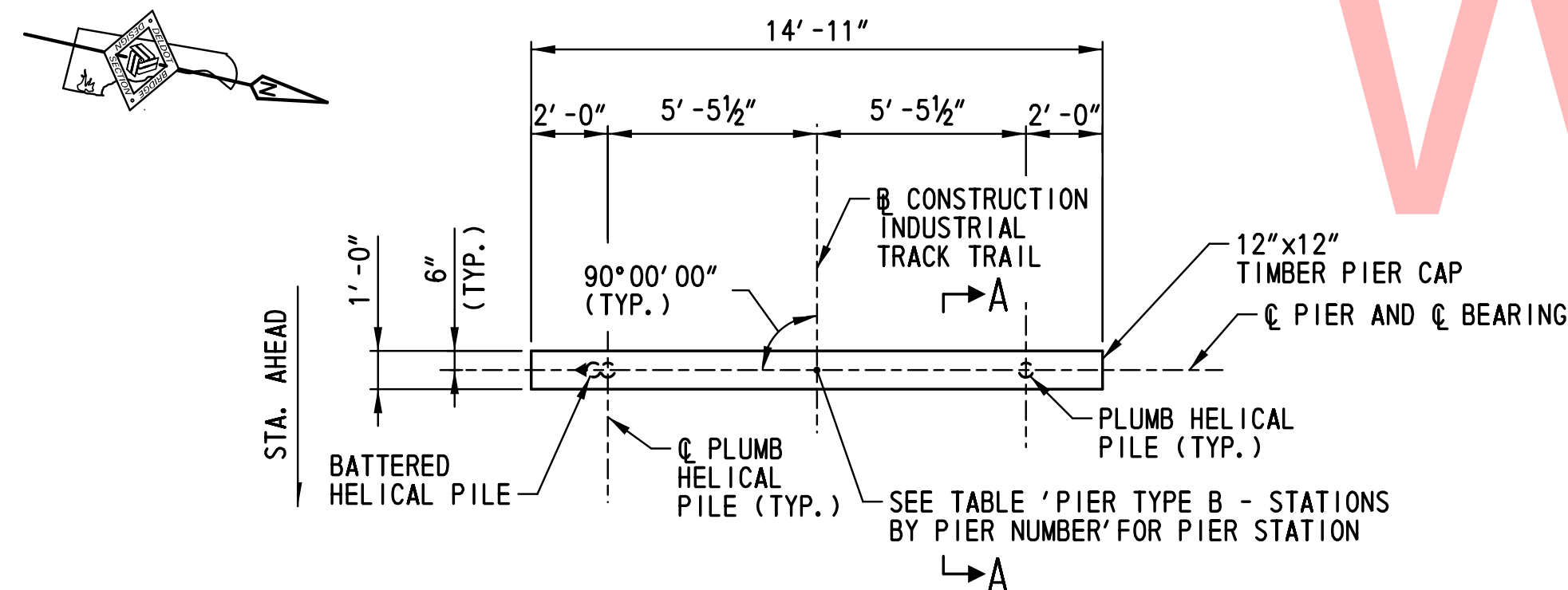
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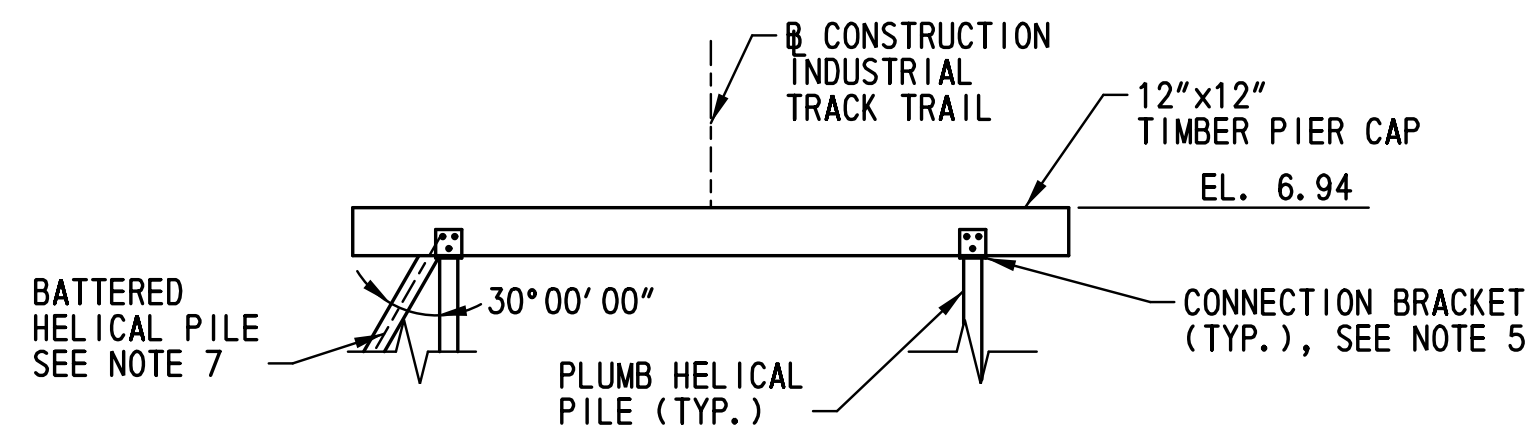
TYPICAL PLAN - PIER TYPE A (PIER 1 SHOWN)
SCALE: 1/4" = 1' - 0"



TYPICAL ELEVATION - PIER TYPE A (PIER 1 SHOWN)
SCALE: 1/4" = 1' - 0"



TYPICAL PLAN - PIER TYPE B (PIER 2 SHOWN)
SCALE: 1/4" = 1' - 0"



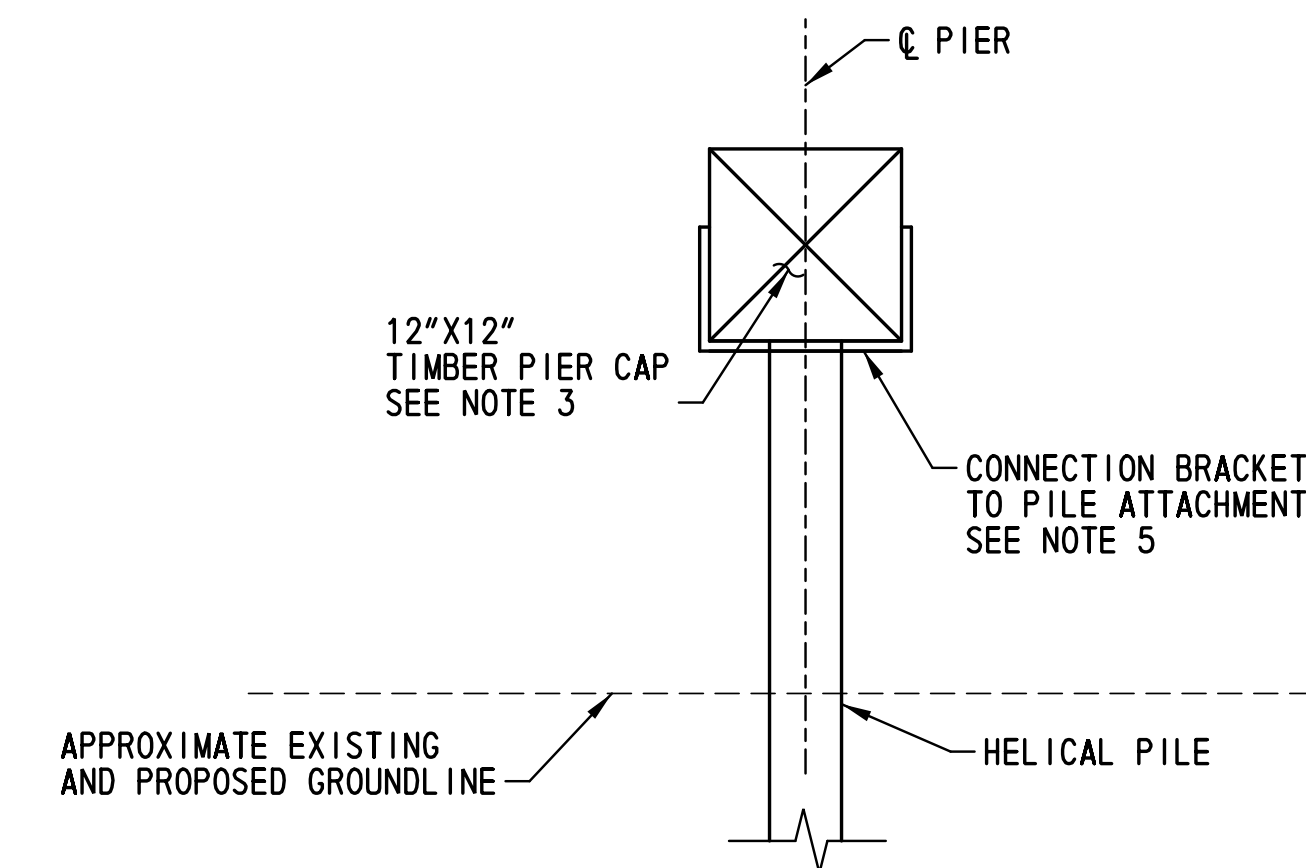
TYPICAL ELEVATION - PIER TYPE B (PIER 2 SHOWN)
SCALE: 1/4" = 1' - 0"

| PIER TYPE A - STATIONS BY PIER NUMBER | |
|---------------------------------------|-----------|
| PIER NO. | STATION |
| 1 | 126+27.18 |
| 3 | 126+56.79 |
| 5 | 126+86.40 |

| PIER TYPE B - STATIONS BY PIER NUMBER | |
|---------------------------------------|-----------|
| PIER NO. | STATION |
| ABUT. A | 126+12.67 |
| 2 | 126+41.98 |
| 4 | 126+71.60 |

NOTES:

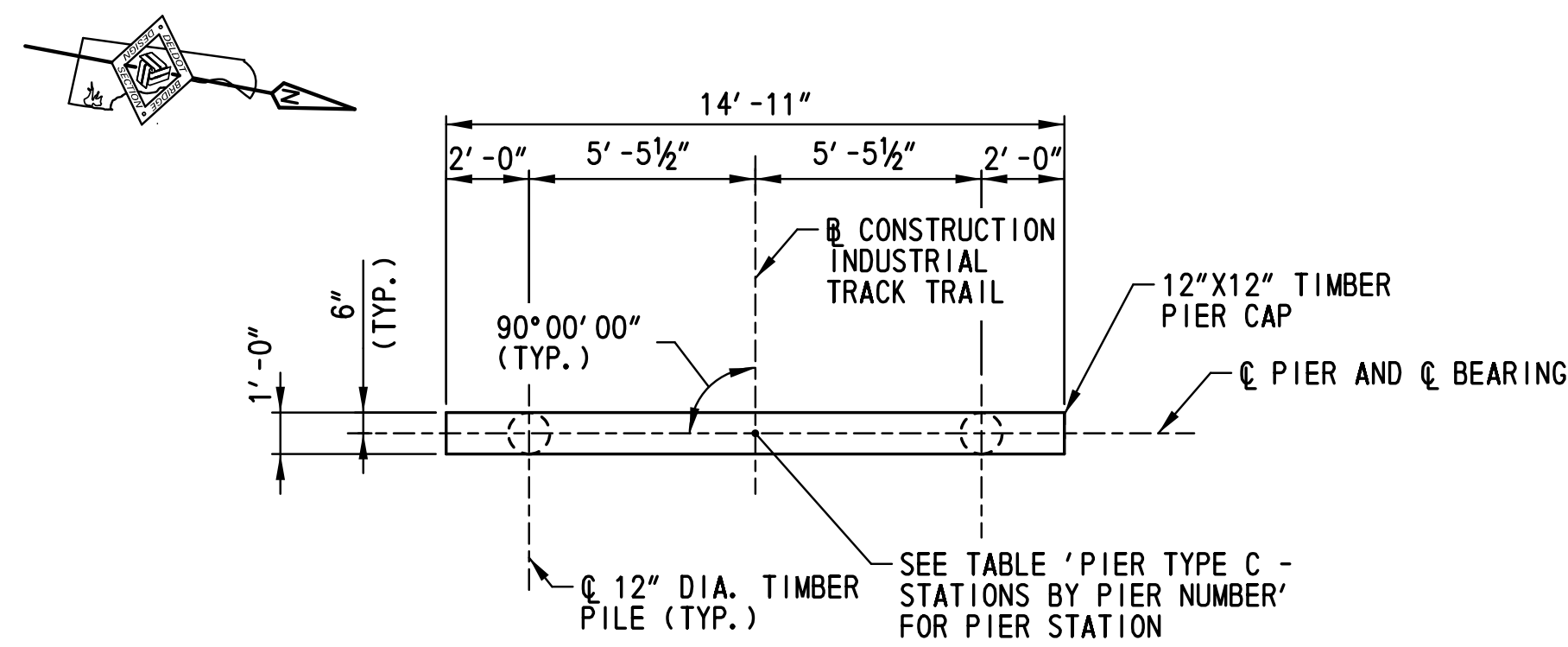
- PIER ORIENTATION VARIES. SEE DWG. NO. PL-201 FOR PIER GEOMETRY, PILE LAYOUT, AND WORKING POINT COORDINATES
- HELICAL PILE CONNECTION BRACKET TO BE ZINC HOT-DIPPED GALVANIZED IN ACCORDANCE WITH ASTM A123. THE COST OF THE CONNECTION BRACKETS, AND ASSOCIATED ATTACHMENT HARDWARE WILL BE INCIDENTAL TO ITEM 619562. REFER TO THE SPECIAL PROVISIONS FOR MORE INFORMATION REGARDING THE HELICAL PILES.
- 12"x12" PILE CAP SHALL BE DOUGLASS FIR-LARCH NO.1. THE CONTRACTOR MAY PROPOSE AN ALTERNATE PIER CAP TIMBER SPECIES AND/OR SIZE IN LIEU OF THAT SPECIFIED AS A VALUE ENGINEERING PROPOSAL IN ACCORDANCE WITH SECTION 104.12 OF THE STANDARD SPECIFICATIONS. THE DEPARTMENT MAKES NO GUARANTEE THAT THE CONTRACTOR'S VALUE ENGINEERING PROPOSAL REQUEST WILL BE APPROVED.
- FOR TIMBER CAP DESIGN STRESSES SEE DWG. NO. PN-201.
- THE CONTRACTOR SHALL DESIGN THE CONNECTION OF THE PILE CAP TO THE HELICAL PILE, INCLUDING THE BRACKET AND ALL INCIDENTAL HARDWARE, IN ACCORDANCE WITH THE HELICAL PILE DESIGN LOADS SHOWN ON DWG. NO. PN-201.
- THE CONTRACTOR SHALL PROVIDE HELICAL PILES DESIGNED IN ACCORDANCE WITH THE DESIGN LOADS SHOWN ON DWG. NO. PN-201 AND TO THE MINIMUM TIP ELEVATIONS SPECIFIED IN DWG. NO. PL-207. FOR MORE INFORMATION REGARDING HELICAL PILES REFER TO THE SPECIAL PROVISIONS.
- ANGLE OF PILE BATTER IS A SUGGESTED METHOD OF CONSTRUCTION ONLY. ANGLE OF BATTERED PILES SHALL BE DESIGNED TO DEVELOP THE REQUIRED DESIGN LOADS SHOWN ON DWG. NO. PN-201 AND TO AVOID CONFLICTS WITH EXISTING UTILITY LOCATIONS AND EASEMENTS. BATTERED HELICAL PILES SHALL BE DESIGNED BY THE CONTRACTOR TO ATTACH TO PIER CAPS OR PLUMB PILES TO AVOID CONFLICT WITH ADJACENT PILES.



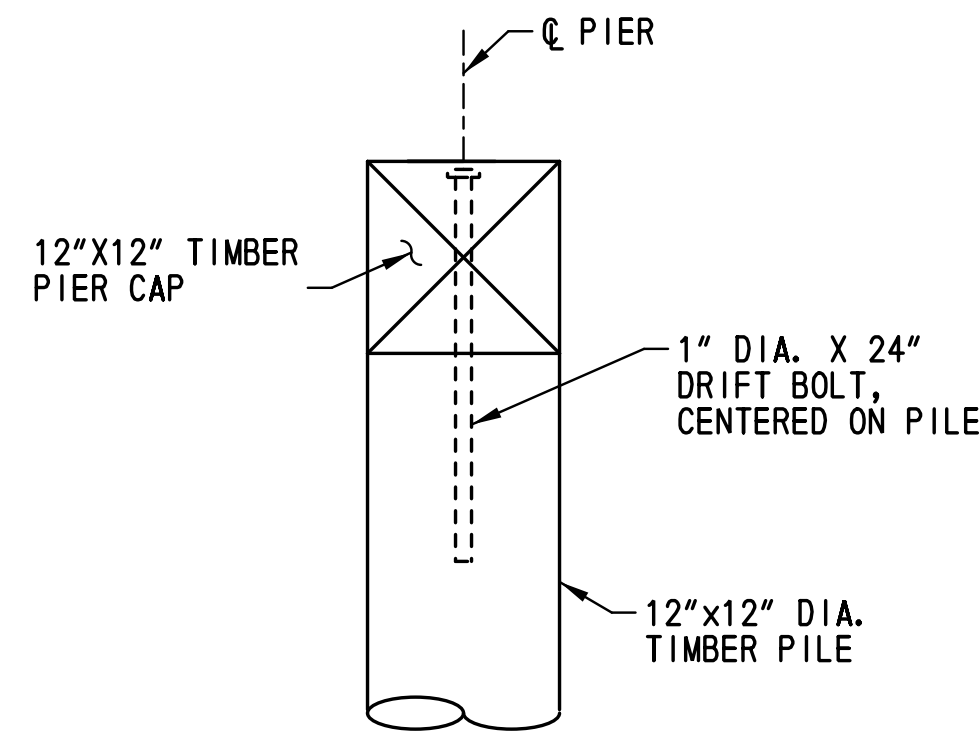
TYPICAL SECTION A-A
SCALE: 1" = 1' - 0"

UNOFFICIAL WEBSITE COPY

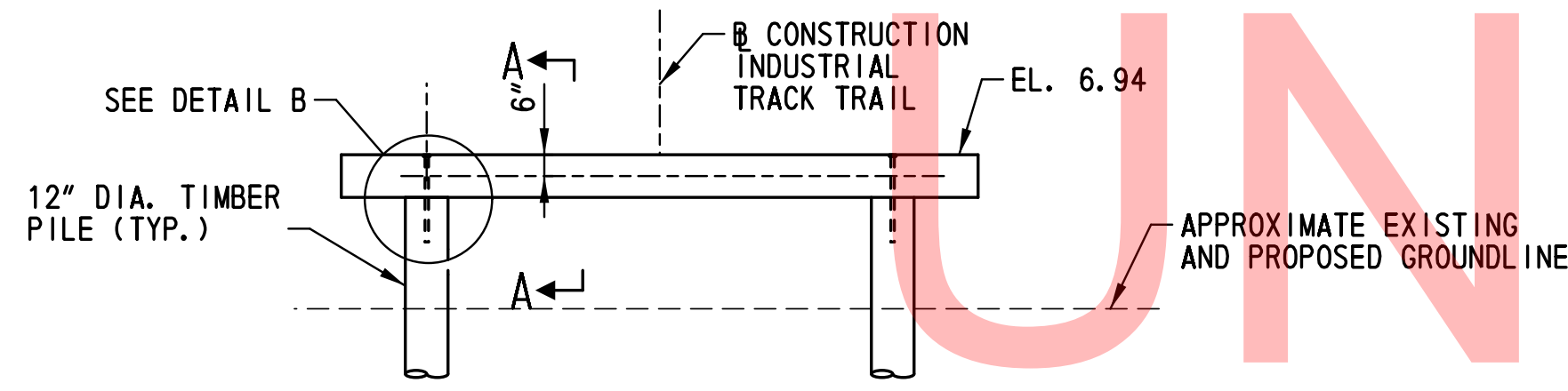
N:\31896-002\CADD\BRIDGE\PR201\ITG.DGN



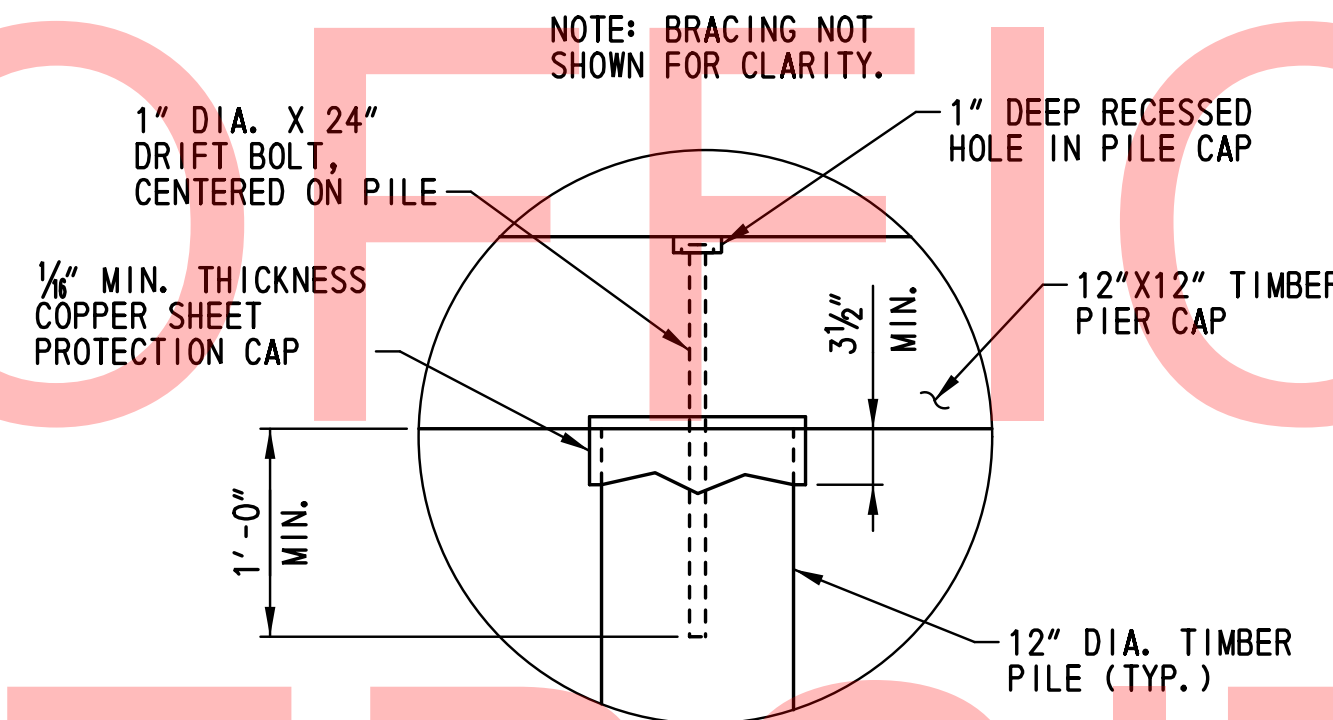
TYPICAL PLAN - PIER TYPE C
 SCALE: 1/4" = 1'-0"



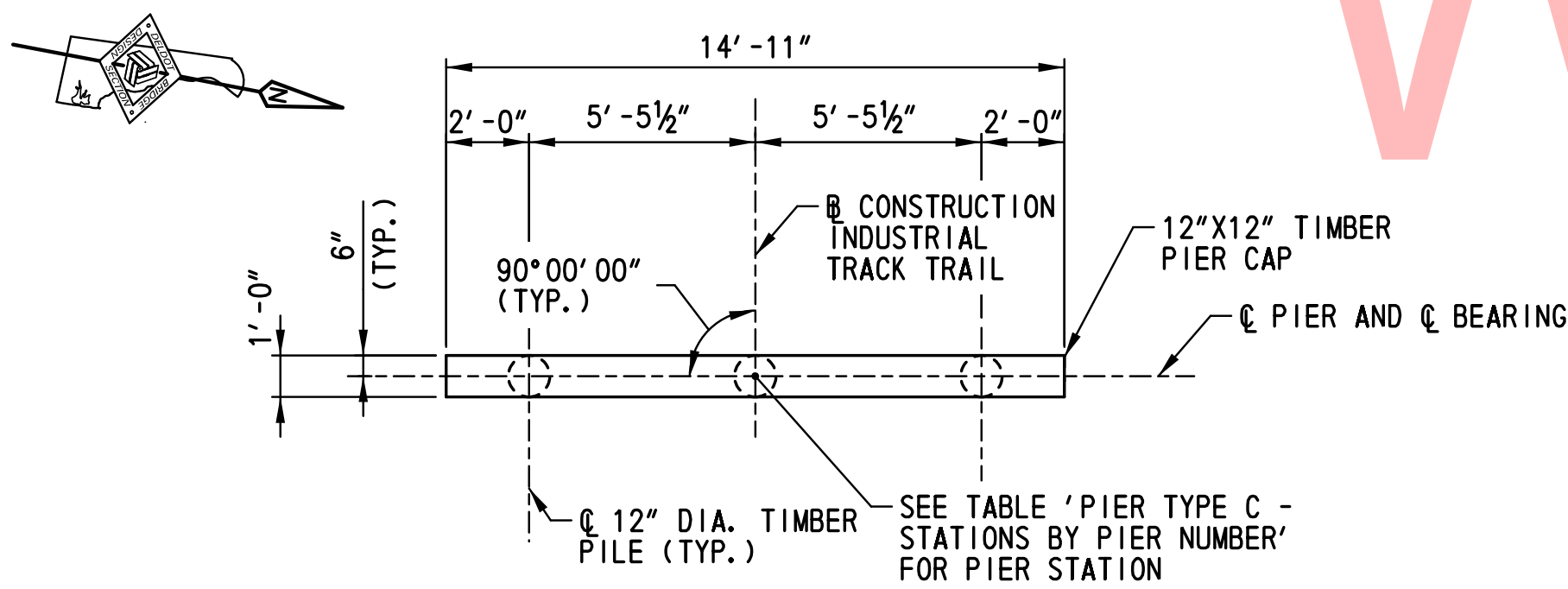
TYPICAL SECTION A-A
 SCALE: 1" = 1'-0"



TYPICAL ELEVATION - PIER TYPE C
 SCALE: 1/4" = 1'-0"

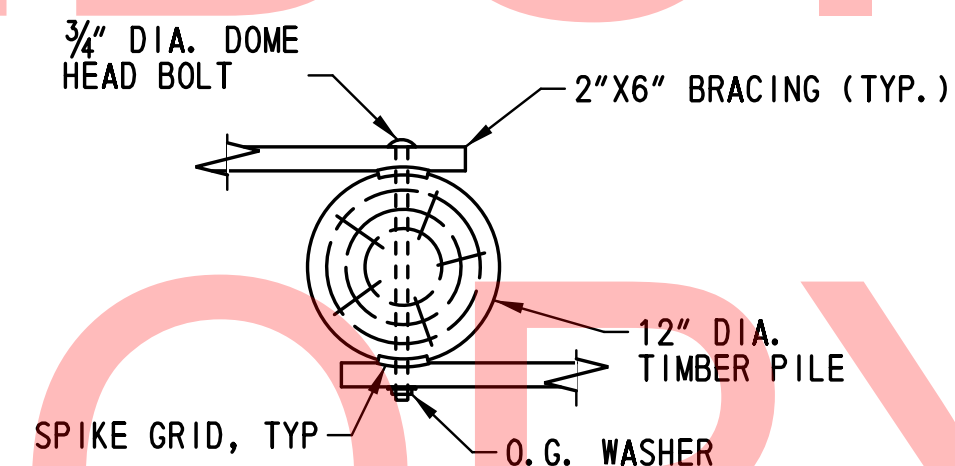


DETAIL B
 SCALE: 1" = 1'-0"
 NOTE: BRACING NOT SHOWN FOR CLARITY.



TYPICAL PLAN - PIER TYPE D
 SCALE: 1/4" = 1'-0"

NOTE: BRACING NOT SHOWN FOR CLARITY.



DETAIL C
 SCALE: 1" = 1'-0"

NOTE: CONNECTION DETAIL FOR LOCATIONS WITH BRACING ON ONE FACE OF PILE IS SIMILAR.

NOTES:

- PIER ORIENTATION VARIES. SEE DWG. NOS. PL-202 THROUGH PL-208 FOR PIER GEOMETRY, PILE LAYOUT, AND WORKING POINT COORDINATES
- FOR TIMBER CAP DESIGN STRESSES SEE DWG. NO. PN-201.
- DRIFT BOLTS SHALL CONFORM TO ASTM A307, HOT-DIPPED GALVANIZED IN ACCORDANCE WITH ASTM A123. DRIFT BOLTS SHALL BE DRIVEN INTO PRE-BORED 7/8" DIA. HOLES IN PILES. DRIFT BOLTS AND COPPER SHEET PROTECTION CAP WILL BE INCIDENTAL TO ITEM 619005.
- 2"X8" BRACING SHALL BE SOUTHERN YELLOW PINE NO. 1. DOME HEAD BOLTS FOR BRACING CONNECTIONS SHALL BE 3/4" DIA. CONFORMING TO ASTM A307. DOME HEAD BOLT, NUTS, O.G. WASHERS, AND SPIKE GRID SHALL BE HOT-DIPPED GALVANIZED IN ACCORDANCE WITH ASTM A123 AND WILL BE INCIDENTAL TO ITEM 601002.
- 12"X12" PIER CAP SHALL BE DOUGLAS FIR-LARCH NO.1. THE CONTRACTOR MAY PROPOSE AN ALTERNATE PIER CAP TIMBER SPECIES AND/OR SIZE IN LIEU OF THAT SPECIFIED AS A VALUE ENGINEERING PROPOSAL IN ACCORDANCE WITH SECTION 104.12 OF THE STANDARD SPECIFICATIONS. THE DEPARTMENT MAKES NO GUARANTEE THAT THE CONTRACTOR'S VALUE ENGINEERING PROPOSAL REQUEST WILL BE APPROVED.

PIER TYPE C - STATIONS BY PIER NUMBER

| PIER NO. | STATION | PIER NO. | STATION | PIER NO. | STATION | PIER NO. | STATION |
|----------|-----------|----------|-----------|----------|-----------|----------|-----------|
| 6 | 127+01.21 | 41 | 132+26.21 | 97 | 143+66.21 | 132 | 148+91.21 |
| 7 | 127+16.21 | 42 | 132+41.21 | 98 | 143+81.21 | 133 | 149+06.21 |
| 8 | 127+31.21 | 43 | 132+56.21 | 99 | 143+96.21 | 134 | 149+21.21 |
| 9 | 127+46.21 | 44 | 132+71.21 | 100 | 144+11.21 | 135 | 149+36.21 |
| 10 | 127+61.21 | 66 | 139+01.21 | 101 | 144+26.21 | 136 | 149+51.21 |
| 11 | 127+76.21 | 67 | 139+16.21 | 102 | 144+41.21 | 137 | 149+66.21 |
| 12 | 127+91.21 | 68 | 139+31.21 | 103 | 144+56.21 | 138 | 149+81.21 |
| 13 | 128+06.21 | 69 | 139+46.21 | 104 | 144+71.21 | 139 | 149+96.21 |
| 14 | 128+21.21 | 70 | 139+61.21 | 105 | 144+86.21 | 140 | 150+11.21 |
| 15 | 128+36.21 | 71 | 139+76.21 | 106 | 145+01.21 | 141 | 150+26.21 |
| 16 | 128+51.21 | 72 | 139+91.21 | 107 | 145+16.21 | 142 | 150+41.21 |
| 17 | 128+66.21 | 73 | 140+06.21 | 108 | 145+31.21 | 143 | 150+56.21 |
| 18 | 128+81.21 | 74 | 140+21.21 | 109 | 145+46.21 | 144 | 150+71.21 |
| 19 | 128+96.21 | 75 | 140+36.21 | 110 | 145+61.21 | 145 | 150+86.21 |
| 20 | 129+11.21 | 76 | 140+51.21 | 111 | 145+76.21 | 146 | 151+01.21 |
| 21 | 129+26.21 | 77 | 140+66.21 | 112 | 145+91.21 | 147 | 151+16.21 |
| 22 | 129+41.21 | 78 | 140+81.21 | 113 | 146+06.21 | 148 | 151+31.21 |
| 23 | 129+56.21 | 79 | 140+96.21 | 114 | 146+21.21 | 149 | 151+46.21 |
| 24 | 129+71.21 | 80 | 141+11.21 | 115 | 146+36.21 | 150 | 151+61.21 |
| 25 | 129+86.21 | 81 | 141+26.21 | 116 | 146+51.21 | 151 | 151+76.21 |
| 26 | 130+01.21 | 82 | 141+41.21 | 117 | 146+66.21 | 152 | 151+91.21 |
| 27 | 130+16.21 | 83 | 141+56.21 | 118 | 146+81.21 | 153 | 152+06.21 |
| 28 | 130+31.21 | 84 | 141+71.21 | 119 | 146+96.21 | 154 | 152+21.21 |
| 29 | 130+46.21 | 85 | 141+86.21 | 120 | 147+11.21 | 155 | 152+36.21 |
| 30 | 130+61.21 | 86 | 142+01.21 | 121 | 147+26.21 | 156 | 152+51.21 |
| 31 | 130+76.21 | 87 | 142+16.21 | 122 | 147+41.21 | 157 | 152+66.21 |
| 32 | 130+91.21 | 88 | 142+31.21 | 123 | 147+56.21 | 158 | 152+81.21 |
| 33 | 131+06.21 | 89 | 142+46.21 | 124 | 147+71.21 | 159 | 152+96.21 |
| 34 | 131+21.21 | 90 | 142+61.21 | 125 | 147+86.21 | 160 | 153+11.21 |
| 35 | 131+36.21 | 91 | 142+76.21 | 126 | 148+01.21 | 161 | 153+26.21 |
| 36 | 131+51.21 | 92 | 142+91.21 | 127 | 148+16.21 | 162 | 153+41.21 |
| 37 | 131+66.21 | 93 | 143+06.21 | 128 | 148+31.21 | 163 | 153+56.21 |
| 38 | 131+81.21 | 94 | 143+21.21 | 129 | 148+46.21 | | |
| 39 | 131+96.21 | 95 | 143+36.21 | 130 | 148+61.21 | | |
| 40 | 132+11.21 | 96 | 143+51.21 | 131 | 148+76.21 | | |

PIER TYPE D - STATIONS BY PIER NUMBER

| PIER NO. | STATION | PIER NO. | STATION |
|----------|-----------|----------|-----------|
| 45 | 132+86.21 | 56 | 136+16.21 |
| 46 | 133+16.21 | 57 | 136+46.21 |
| 47 | 133+46.21 | 58 | 136+76.21 |
| 48 | 133+76.21 | 59 | 137+06.21 |
| 49 | 134+06.21 | 60 | 137+36.21 |
| 50 | 134+36.21 | 61 | 137+66.21 |
| 51 | 134+66.21 | 62 | 137+96.21 |
| 52 | 134+96.21 | 63 | 138+26.21 |
| 53 | 135+26.21 | 64 | 138+56.21 |
| 54 | 135+56.21 | 65 | 138+86.21 |
| 55 | 135+86.21 | | |

BRACING HEIGHT

| PIER NO. | A |
|----------|-------|
| 45-52 | 2'-0" |
| 53-57 | 4'-0" |
| 58-65 | 2'-0" |

ADDENDUMS / REVISIONS

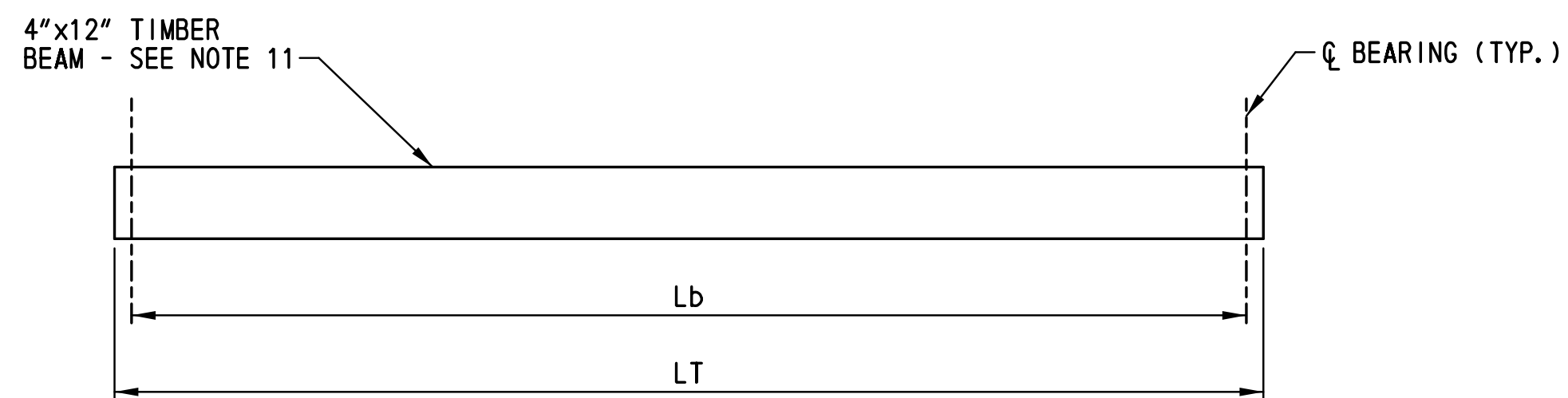
SCALE AS NOTED

NEW CASTLE INDUSTRIAL TRACK TRAIL, PHASE 3

| | |
|------------------------|------------------|
| CONTRACT T201330009 | BRIDGE NO. X |
| COUNTY NEW CASTLE | DESIGNED BY: ZMG |
| | CHECKED BY: WAG |

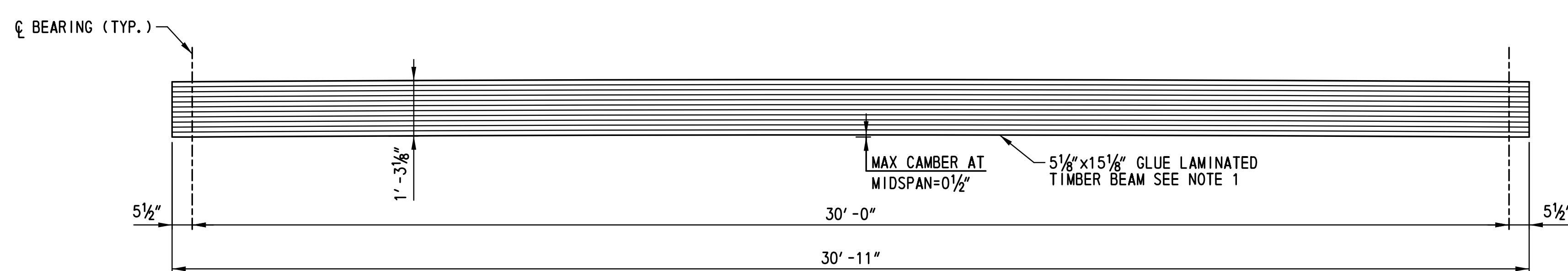
BOARDWALK PIER PLAN, ELEVATION, AND SECTION PIER TYPES C AND D

| |
|--------------------|
| PR-202 |
| SHEET NO. 101 |
| TOTAL SHTS. 205 |



BEAM ELEVATION - SAWN TIMBER BEAMS

SCALE: 1/2" = 1'-0"



BEAM ELEVATION - GLULAM BEAMS

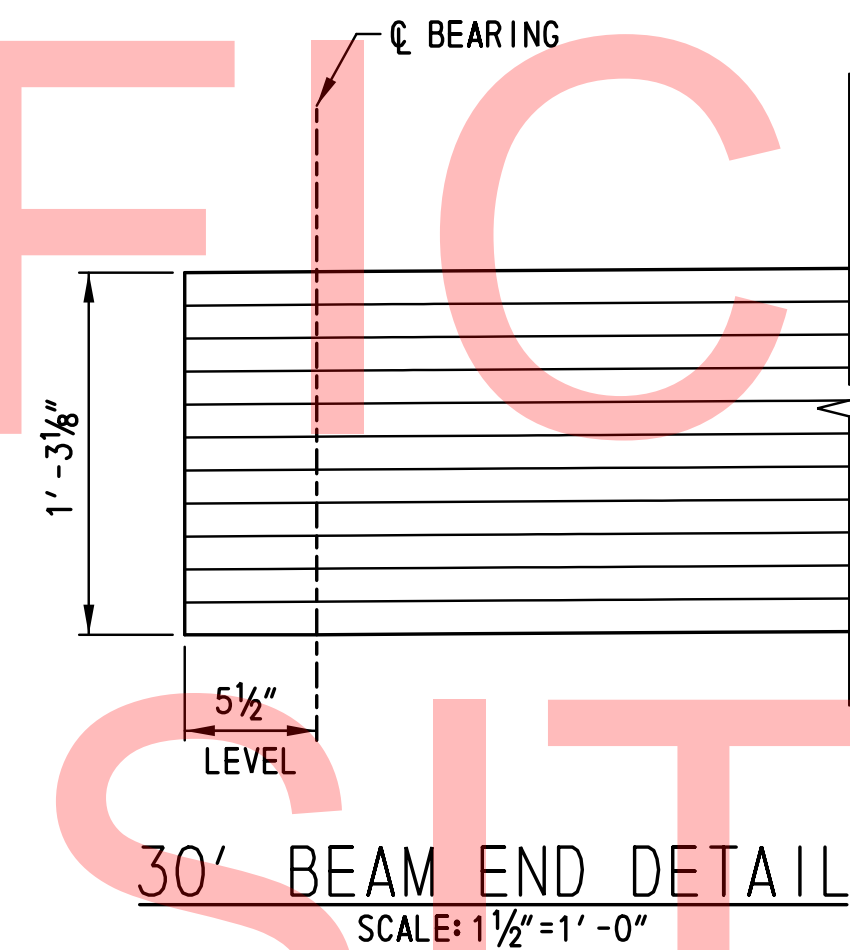
SCALE: 1/2" = 1'-0"

| BEAM DIMENSIONS: L_T | | | | | |
|----------------------|--------------|------------------|------------------|----------|--------------------------------------|
| BEAM | SPAN | | | | |
| | 1 | 2-6 | 34-38 | 164 | ALL OTHER SPANS NOT INDICATED (TYP.) |
| 1-9 | 15' - 3 1/4" | 15' - 7 3/8" (+) | 15' - 9 5/8" (+) | 10' - 7" | 15' - 7" |

| BEAM DIMENSIONS: L_b | | | |
|----------------------|--------------|-------------|--------------------------------------|
| BEAM | SPAN | | |
| | 1 | 164 | ALL OTHER SPANS NOT INDICATED (TYP.) |
| 1-9 | 14' - 8 1/4" | 9' - 9 1/2" | 15' |

| BEAM DIMENSIONS: L_b | | | | | |
|----------------------|---------------|---------------|---------------|---------------|---------------|
| BEAM | SPAN | | | | |
| | 2 | 3 | 4 | 5 | 6 |
| 1 | 14' - 7 1/8" | 14' - 7" | 14' - 7 1/8" | 14' - 7" | 14' - 7 1/4" |
| 2 | 14' - 7 7/8" | 14' - 7 7/8" | 14' - 7 7/8" | 14' - 7 7/8" | 14' - 7 7/8" |
| 3 | 14' - 8 1/2" | 14' - 8 1/4" | 14' - 8 1/2" | 14' - 8 1/4" | 14' - 8 1/2" |
| 4 | 14' - 9 1/8" | 14' - 9" | 14' - 9 1/8" | 14' - 9" | 14' - 9 1/8" |
| 5 | 14' - 9 3/4" | 14' - 9 5/8" | 14' - 9 3/4" | 14' - 9 5/8" | 14' - 9 3/4" |
| 6 | 14' - 10 3/8" | 14' - 10 1/4" | 14' - 10 3/8" | 14' - 10 1/4" | 14' - 10 3/8" |
| 7 | 14' - 11 1/8" | 14' - 10 7/8" | 14' - 11 1/8" | 14' - 10 7/8" | 14' - 11 1/8" |
| 8 | 14' - 11 3/4" | 14' - 11 1/2" | 14' - 11 3/4" | 14' - 11 1/2" | 14' - 11 3/4" |
| 9 | 15' - 0 3/8" | 15' - 0 1/4" | 15' - 0 3/8" | 15' - 0 1/4" | 15' - 0 3/8" |

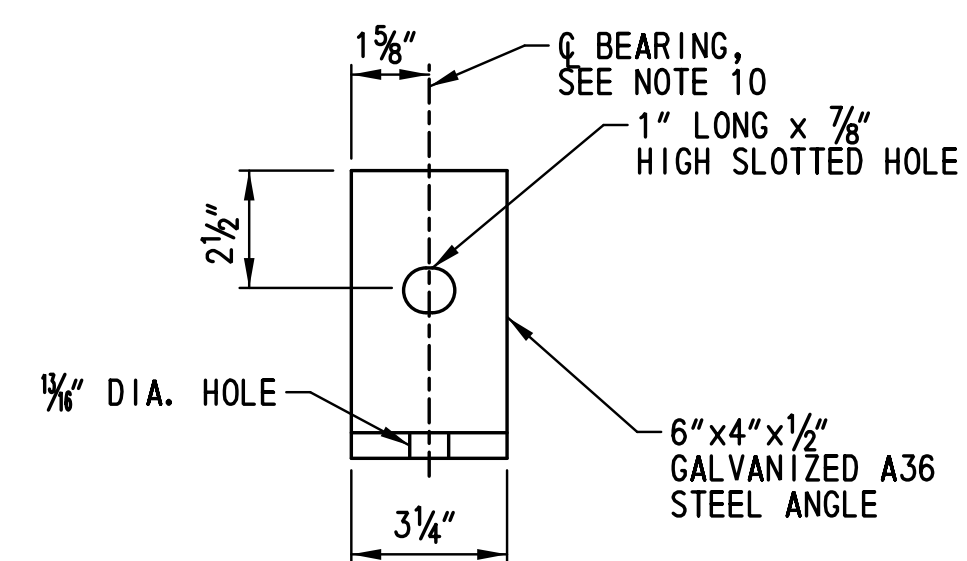
| BEAM DIMENSIONS: L_b | | | | | |
|----------------------|---------------|---------------|---------------|---------------|---------------|
| BEAM | SPAN | | | | |
| | 34 | 35 | 36 | 37 | 38 |
| 1 | 15' - 2 1/2" | 15' - 2 3/4" | 15' - 2 1/2" | 15' - 2 3/4" | 15' - 2 1/2" |
| 2 | 15' - 1 7/8" | 15' - 2" | 15' - 1 7/8" | 15' - 2" | 15' - 1 7/8" |
| 3 | 15' - 1 1/4" | 15' - 1 3/8" | 15' - 1 1/4" | 15' - 1 3/8" | 15' - 1 1/4" |
| 4 | 15' - 0 1/2" | 15' - 0 3/4" | 15' - 0 1/2" | 15' - 0 3/4" | 15' - 0 1/2" |
| 5 | 14' - 11 7/8" | 15' - 0 1/8" | 14' - 11 7/8" | 15' - 0 1/8" | 14' - 11 7/8" |
| 6 | 14' - 11 1/4" | 14' - 11 1/2" | 14' - 11 1/4" | 14' - 11 1/2" | 14' - 11 1/4" |
| 7 | 14' - 10 5/8" | 14' - 10 3/4" | 14' - 10 5/8" | 14' - 10 3/4" | 14' - 10 5/8" |
| 8 | 14' - 10" | 14' - 10 1/8" | 14' - 10" | 14' - 10 1/8" | 14' - 10" |
| 9 | 14' - 9 1/4" | 14' - 9 1/2" | 14' - 9 1/4" | 14' - 9 1/2" | 14' - 9 3/8" |



30' BEAM END DETAIL
SCALE: 1 1/2" = 1'-0"

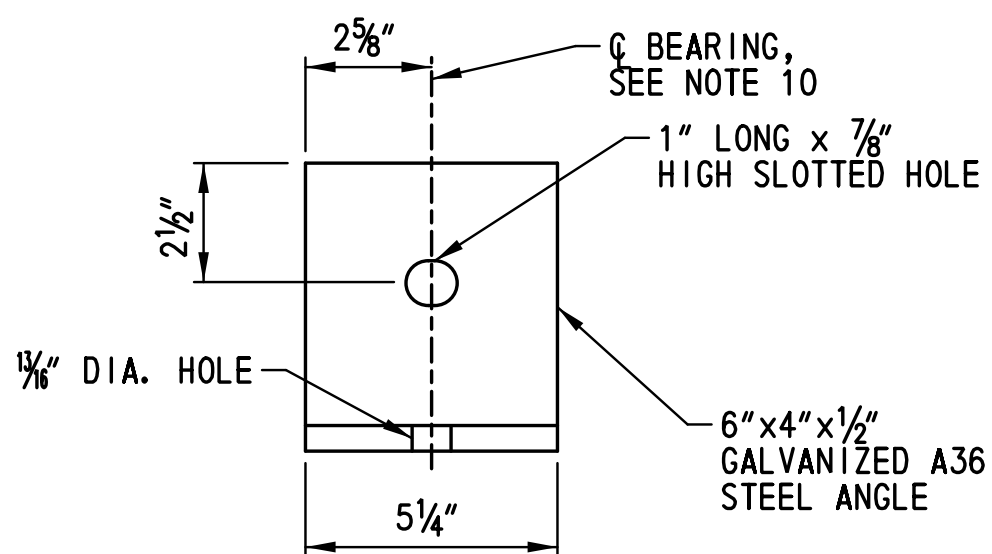
NOTES:

- 'BEAM ELEVATION - GLULAM BEAMS', THIS SHEET, APPLIES TO SPAN NOS. 46-65.
- SEE DWG. NOS. FR-201 THROUGH FR-203 FOR FRAMING PLAN AND DWG. NOS. SD-201 TO SD-202 FOR BEAM LAP INFORMATION AT PIERS.
- 30' GLULAM BEAM IS SYMMETRIC. END DETAIL APPLIES TO BOTH ENDS OF GLULAM BEAM.
- BEARING SHOE DETAILS (TYP.) AT BOTH ENDS OF 15' AND 30' SPAN BEAMS.
- PAYMENT FOR GALVANIZED A36 STEEL ANGLES, 3/4" DIA. ANCHOR BOLT, AND ASSOCIATED HARDWARE WILL BE INCIDENTAL TO PERTINENT ITEMS 601002 AND 601003.
- STEEL ANGLES TO BE HOT-DIPPED GALVANIZED IN ACCORDANCE WITH ASTM 123.
- ANCHOR BOLTS SHALL BE 3/4" DIA. HIGH STRENGTH BOLTS CONFORMING TO ASTM A325 AND GALVANIZED IN ACCORDANCE WITH ASTM A153.
- LAG SCREWS SHALL BE IN COMPLIANCE WITH ANSI/ASME B18.2.1 FOR DIMENSIONAL AND MATERIAL REQUIREMENTS AND SHALL BE IN COMPLIANCE WITH SAE-J429, GRADE 1 FOR STRENGTH REQUIREMENTS. LAG SCREWS AND WASHERS SHALL BE GALVANIZED IN ACCORDANCE WITH AASHTO ASTM A153.
- HOLES IN GLULAM BEAMS, SAWN TIMBER BEAMS, AND TIMBER SHIM BLOCKS FOR ANCHOR ROD INSTALLATION SHALL BE MADE PRIOR TO PRESSURE TREATMENT IN ACCORDANCE WITH AASHTO M 133. PROPOSED HOLE DIAMETERS SHALL BE A MINIMUM OF 1/8" GREATER THAN THE GLULAM BEAM ANCHOR ROD DIAMETERS AND 1/4" GREATER THAN THE SAWN TIMBER BEAM ANCHOR ROD DIAMETERS AND MUST ACCOUNT FOR FABRICATION TOLERANCES AND FIELD FIT-UP DURING CONSTRUCTION. SUBMIT SHOP DRAWINGS TO THE ENGINEER FOR APPROVAL INDICATING THE SIZE OF THE PROPOSED ANCHOR BOLT HOLES IN THE BEAMS. FIELD MODIFICATIONS TO THE PROPOSED HOLES IS PERMITTED. FIELD MODIFIED HOLES SHALL BE TREATED WITH A FIELD APPLIED COPPER NAPHTHENATE PRESERVATIVE TREATMENT IN ACCORDANCE WITH AASHTO M 133.
- FOR PLACEMENT OF BEARING SHOES ON PIERS, SEE DWG. NOS. SD-201 AND SD-202.
- 4" x 12" SAWN TIMBER BEAM DETAIL SHOWN IN "BEAM ELEVATION - SAWN TIMBER BEAMS", THIS SHEET, APPLIES TO BEAMS IN SPAN NOS. 1-44 AND 66-164. FOR 4" x 12" SAWN TIMBER BEAM ELEVATION IN SPAN NOS. 45 AND 66, SEE DWG. NO. BM-202.
- TIMBER SHIM BLOCKS SHALL COMPLETELY CLOSE GAP BETWEEN ADJACENT BEAMS. APPROXIMATE BEAM GAPS ARE SHOWN.
- THREADED RODS SHALL BE UNPAINTED ASTM A 307, GRADE A STEEL. PLATE WASHERS SHALL BE ASTM A 709, GRADE 36 STEEL. NUTS SHALL BE UNPAINTED ASTM A 563 STEEL. ALL HARDWARE SHALL BE GALVANIZED IN ACCORDANCE WITH A153.
- FOR EXTERIOR BEAM PLATE ATTACHMENT AT ABUTMENT A AND PIER 163 SEE DWG. NO. RL-201.



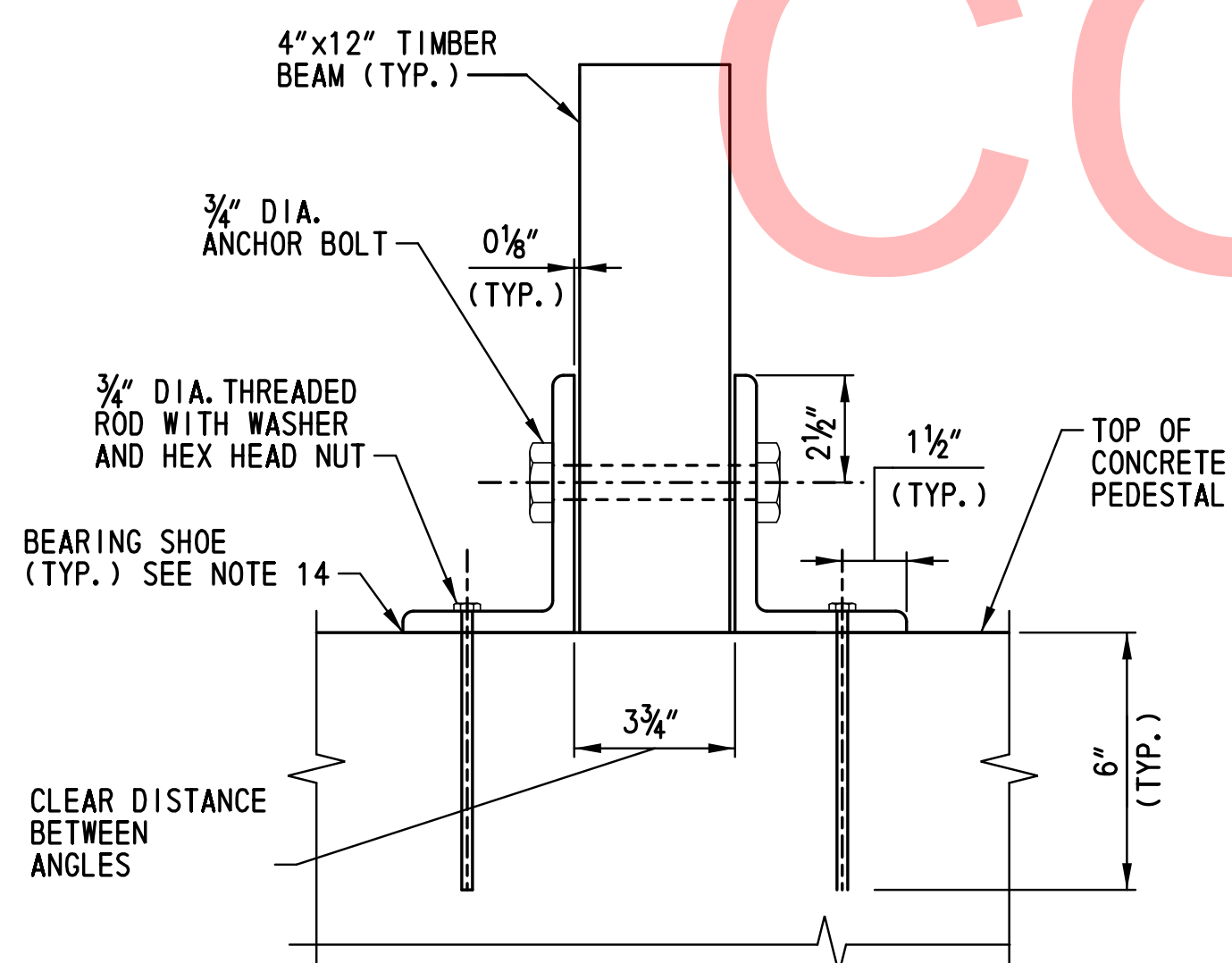
15' SPAN BEARING SHOE

SCALE: 3" = 1'-0"



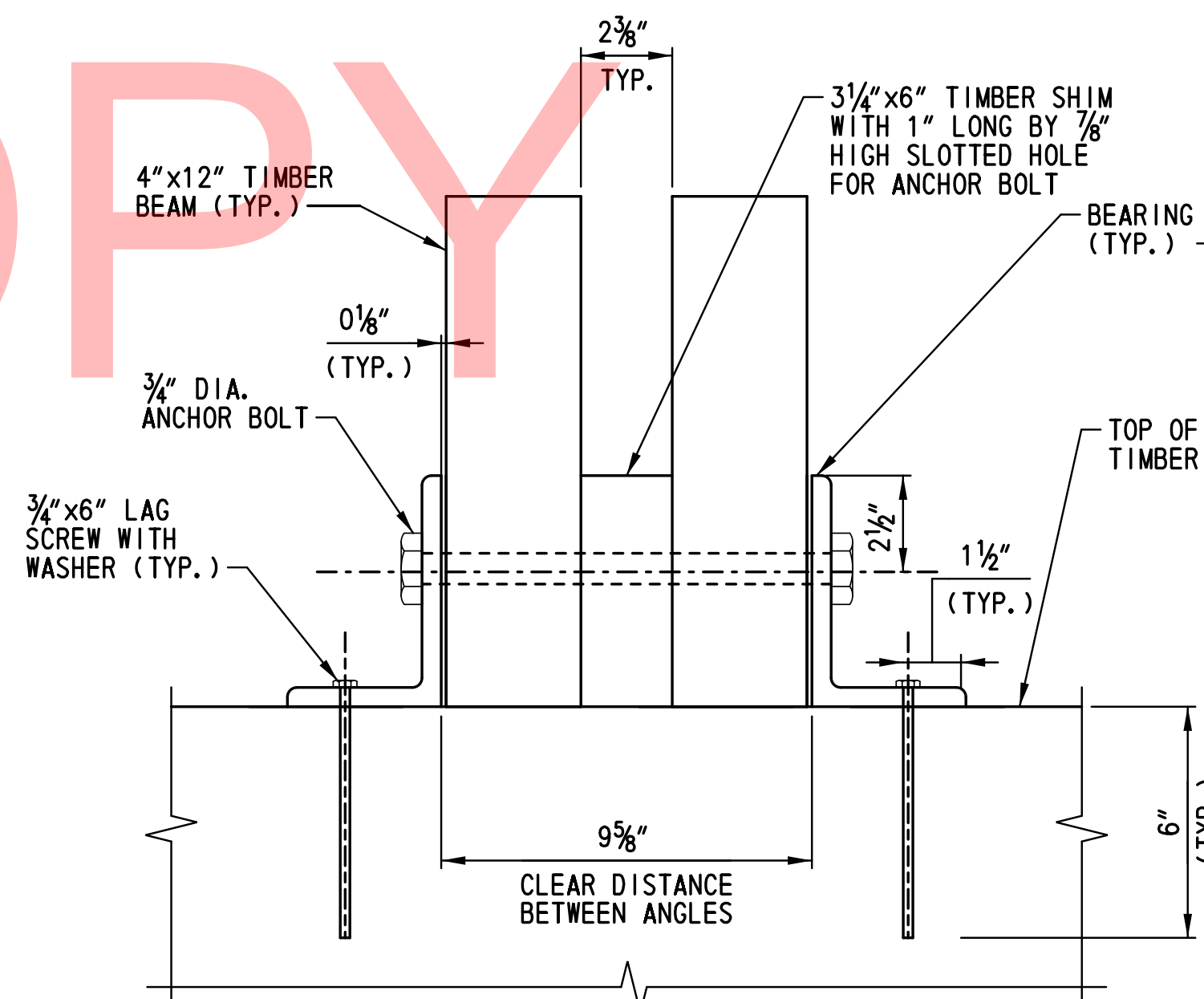
30' BEARING SHOE

SCALE: 3" = 1'-0"



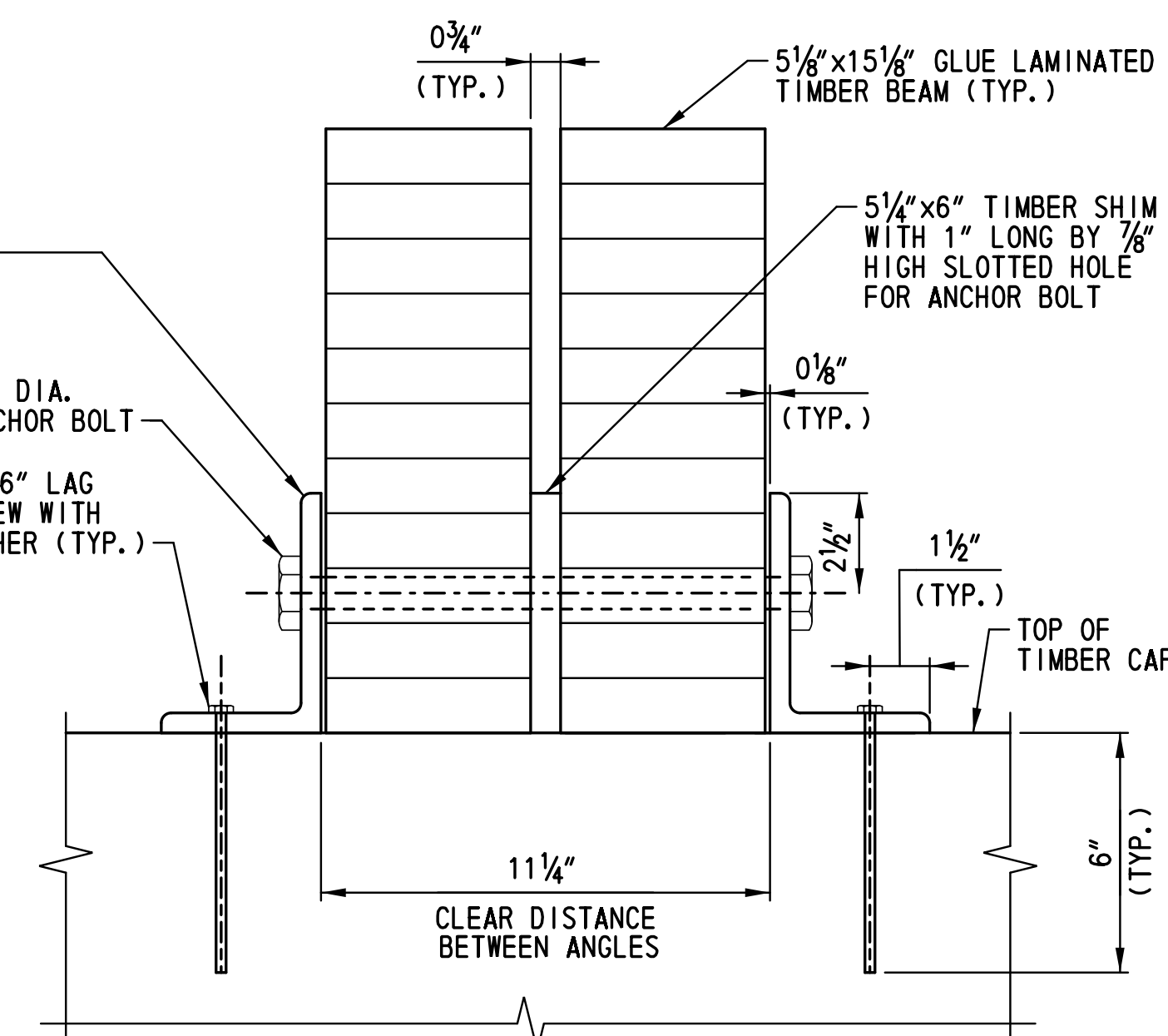
15' SPAN BEARING DETAIL - ABUT. A AND PIER 163

SCALE: 3" = 1'-0"



15' SPAN BEARING DETAIL

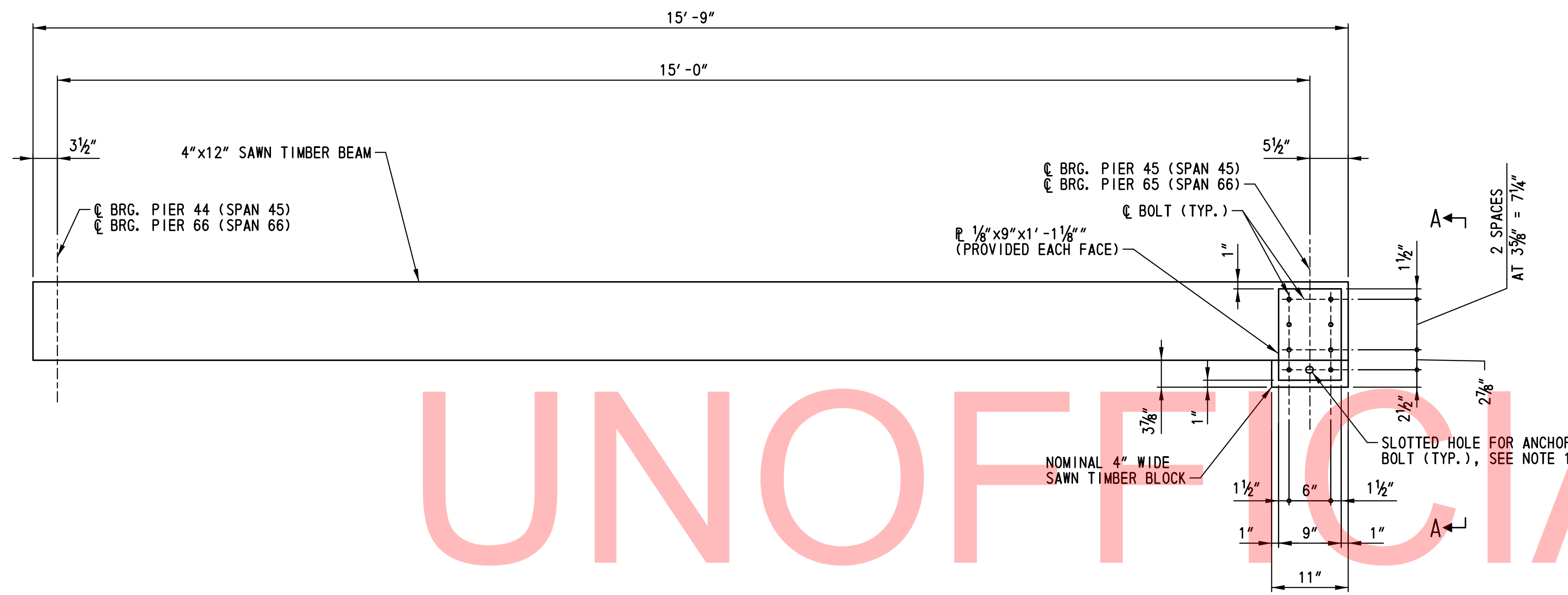
SCALE: 3" = 1'-0"



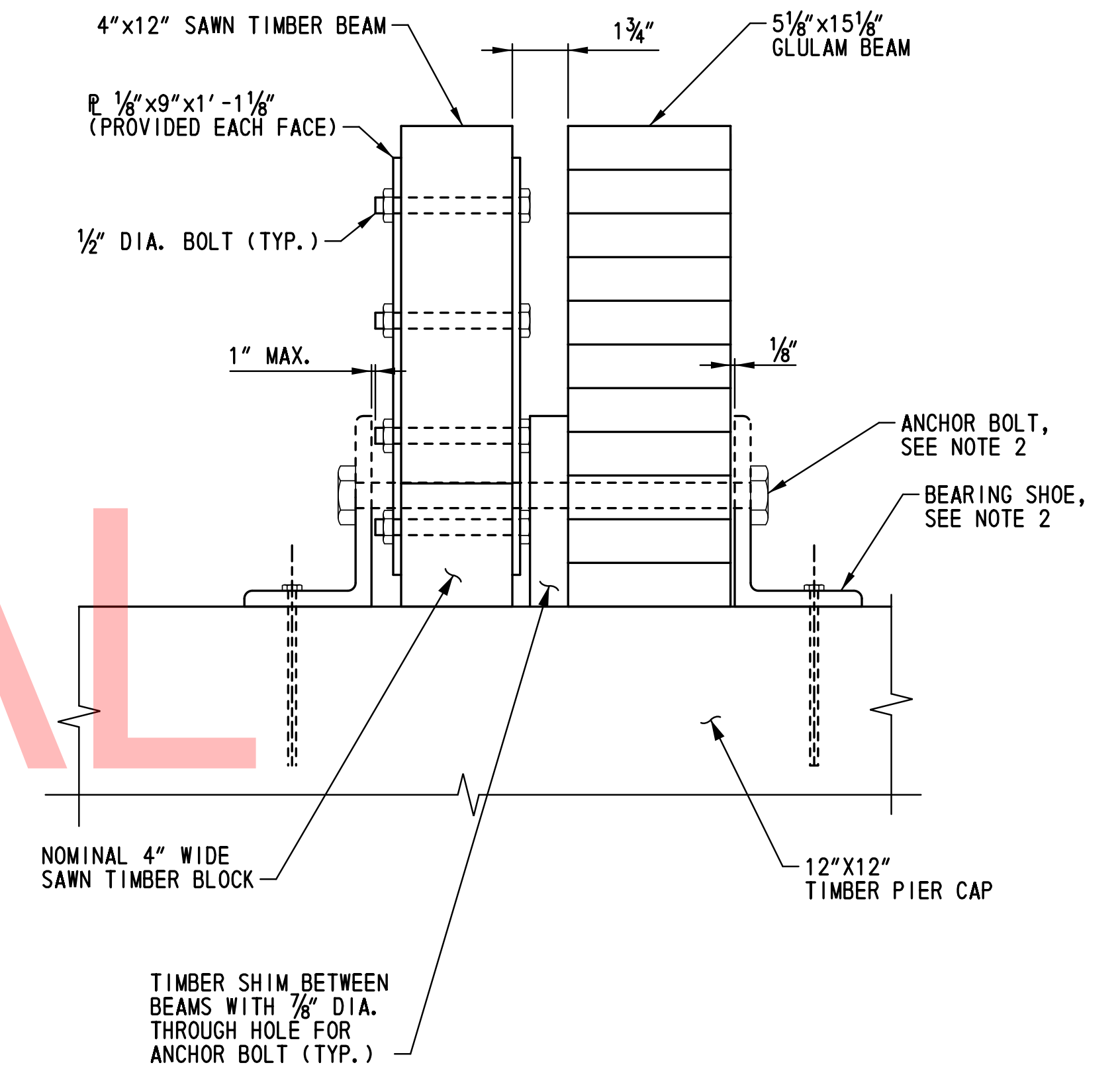
30' SPAN BEARING DETAIL

SCALE: 3" = 1'-0"

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SAWN TIMBER BEAM DETAIL - SPAN NOS. 45 AND 66
SCALE: 1"=1'-0"



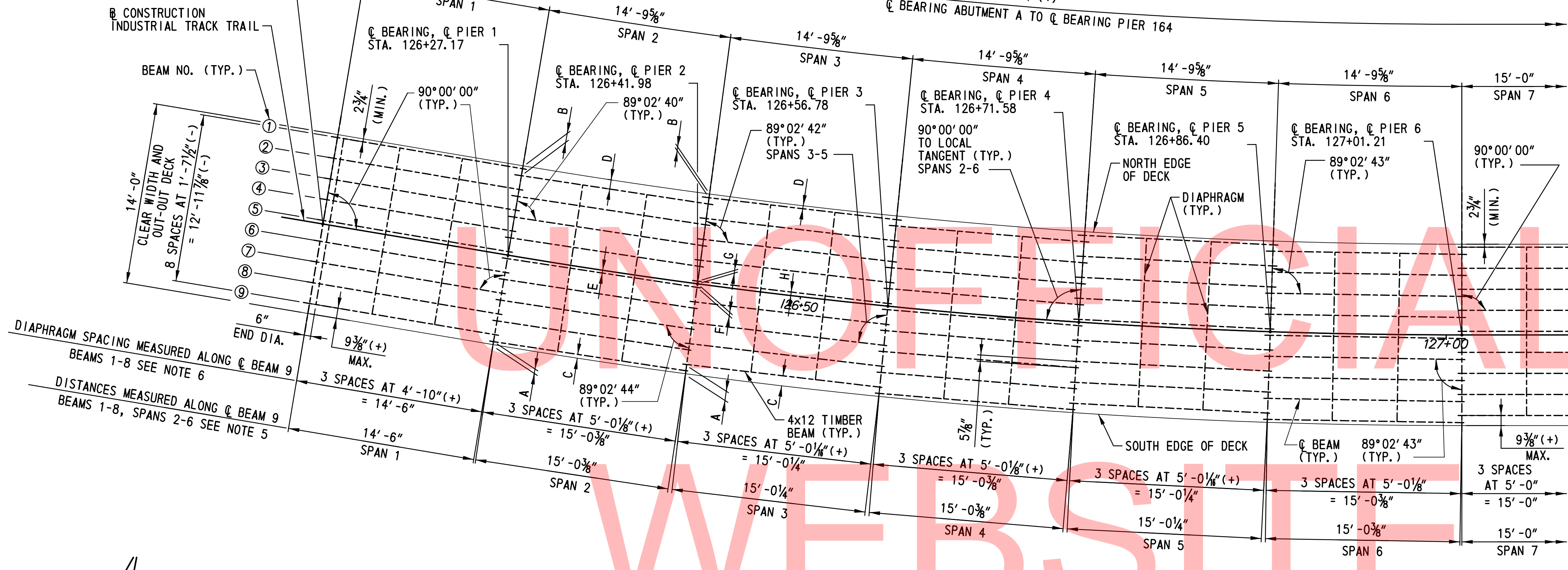
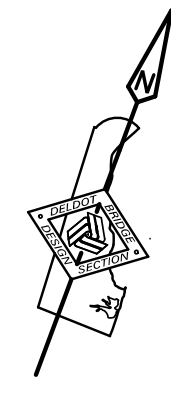
VIEW A-A
SCALE: 3"=1'-0"

UNOFFICIAL
WEBSITE
COPY

NOTES:

1. FOR LOCATION AND DETAILS OF SLOTTED HOLE FOR ANCHOR BOLTS, SEE DWG. NO. BM-201.
2. FOR BEARING SHOE AND LAG SCREW DETAILS, SEE DWG. BM-201.
3. FOR FABRICATED HOLES IN GLULAM BEAMS FOR ANCHOR BOLT INSTALLATION SEE DWG. BM-201.

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| DIMENSION REFERENCE TABLE - SPANS 2,4,6 | |
|---|-----------------|
| DIMENSION | DIMENSION |
| A | 0' - 2 3/8" (+) |
| B | 0' - 9 1/4" (+) |
| C | 0' - 3 1/2" |
| D | 0' - 8 5/8" (+) |

| DIMENSION REFERENCE TABLE - SPANS 3,5 | |
|---------------------------------------|-----------------|
| DIMENSION | DIMENSION |
| A | 0' - 8 5/8" (+) |
| B | 0' - 3 1/2" (+) |
| C | 0' - 9 3/8" (+) |
| D | 0' - 2 3/4" |

| DIMENSION REFERENCE TABLE - SPANS 2,4,(6) | |
|---|-----------------|
| DIMENSION | DIMENSION |
| E | 0' - 2 1/2" |
| F | 0' - 3 1/4" |
| (E) | 0' - 2 3/8" |
| (F) | 0' - 3 1/4" (+) |

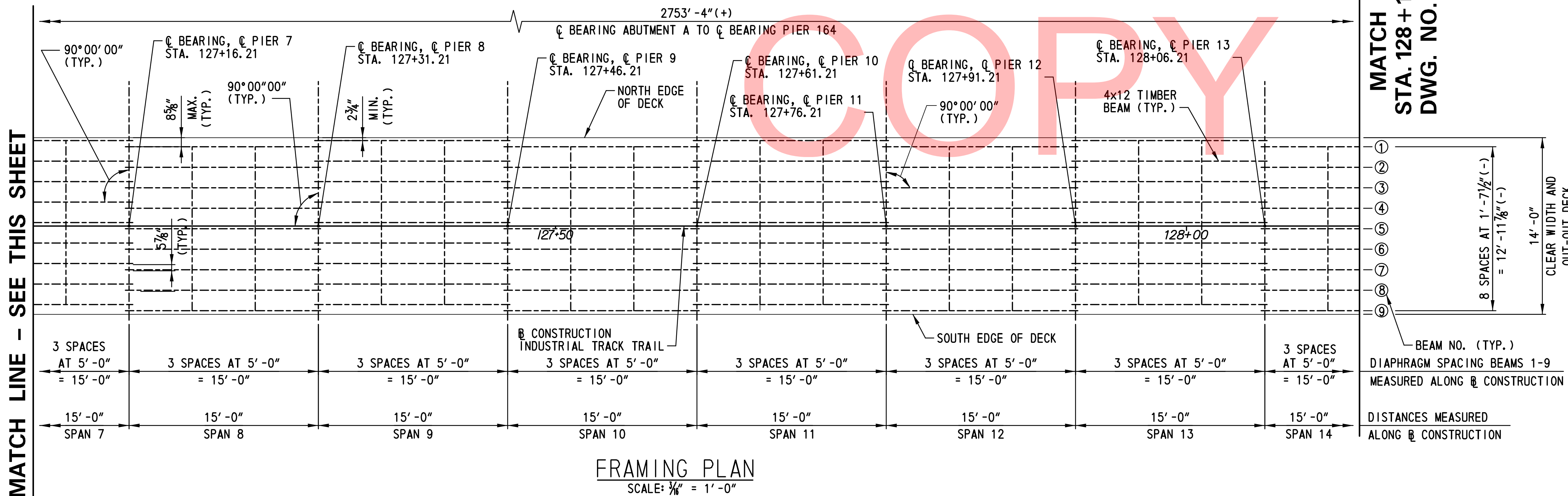
| DIMENSION REFERENCE TABLE - SPANS 3,5 | |
|---------------------------------------|-------------|
| DIMENSION | DIMENSION |
| H | 0' - 3 3/8" |
| G | 0' - 2 3/8" |

FRAMING PLAN
SCALE: 3/8" = 1' - 0"

MATCH LINE - SEE THIS SHEET

MATCH LINE
STA. 128 + 13.71 SEE
DWG. NO. FR-202

MATCH LINE - SEE THIS SHEET

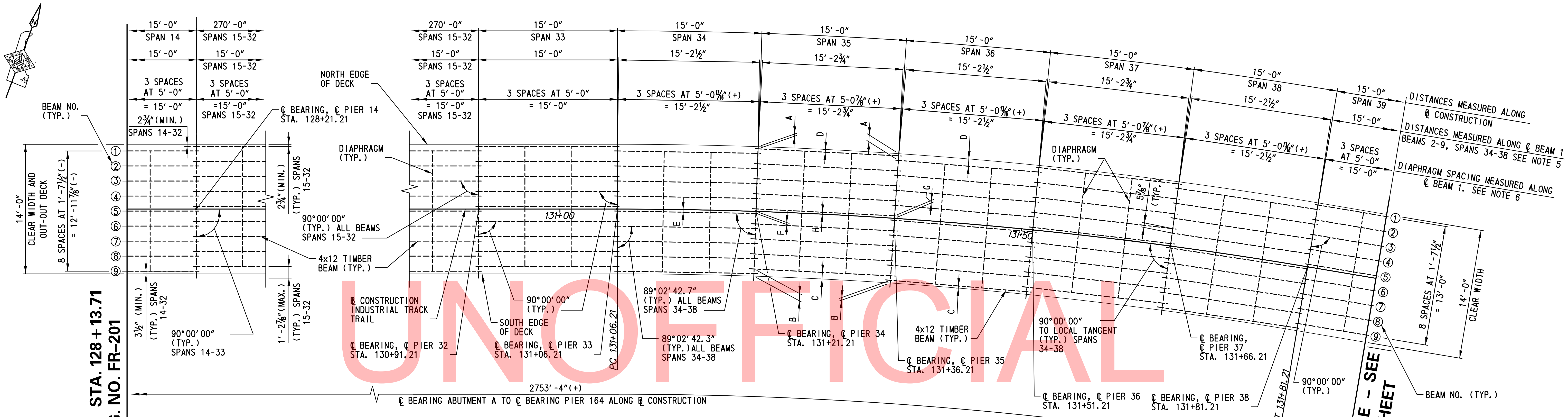


FRAMING PLAN
SCALE: 3/8" = 1' - 0"

NOTES:

1. SPACING OF LAPPED BEAMS OVER PIERS IS 5/8" MEASURED PERPENDICULAR TO BEAMS ALONG CENTERLINE OF PIER. SEE TYPICAL SECTION ON DWG. NO. TS-201 FOR MORE INFORMATION.
2. DIAPHRAGMS ARE PERPENDICULAR TO BEAMS.
3. 4x12 SAWN BEAMS ARE TO BE LAPPED A MIN OF 3 1/2' OVER @ PIER. SEE DWG. NOS. SD-201 AND SD-202.
4. FOR BEAM ELEVATIONS, SEE DWG. NO. BM-201.
5. FOR CENTER-CENTER BEARING LENGTHS AND TOTAL LENGTHS OF BEAMS 1-8 IN SPANS 2-6 SEE DWG. NO. BM-201.
6. INTERIOR DIAPHRAGMS SPACED EQUALLY AT THIRD POINTS BETWEEN CENTERLINES OF BEARING. FOR END DIAPHRAGM PLACEMENT SEE DWG. NOS. SD-201 AND SD-202.

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MATCH LINE STA. 128 + 13.71
SEE DWG. NO. FR-201

MATCH LINE - SEE THIS SHEET
STA. 133 + 31.21
SEE DWG. NO. FR-203

DIMENSION REFERENCE TABLE - SPANS 34, 36, 38

| DIMENSION | DIMENSION |
|-----------|-----------------|
| E | 0' - 3 3/8" (+) |
| F | 0' - 2 1/8" (+) |

DIMENSION REFERENCE TABLE - SPANS 35, 37

| DIMENSION | DIMENSION |
|-----------|-----------------|
| H | 0' - 2 1/2" (-) |
| G | 0' - 3 1/4" (-) |

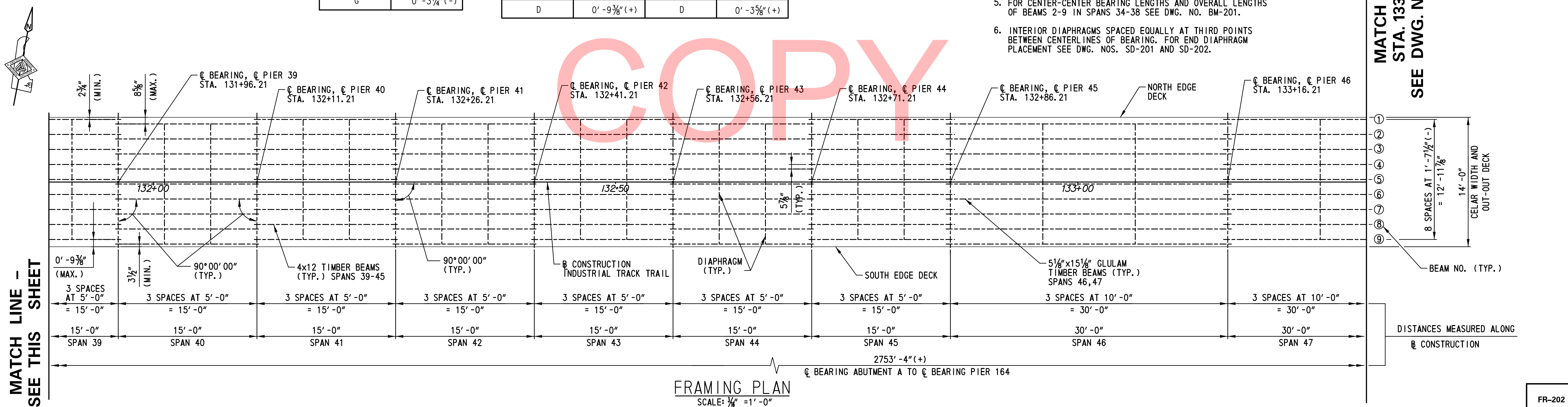
FRAMING PLAN
SCALE: 3/8" = 1'-0"

DIMENSION REFERENCE TABLE - SPANS 34, 36, 38

| DIMENSION | DIMENSION | DIMENSION | DIMENSION |
|-----------|-----------------|-----------|-----------------|
| A | 0' - 8 5/8" (-) | A | 0' - 2 3/4" (-) |
| B | 0' - 3 1/2" (-) | B | 0' - 9 1/4" (+) |
| C | 0' - 2 3/4" (-) | C | 0' - 8 1/2" (+) |
| D | 0' - 9 3/8" (+) | D | 0' - 3 3/8" (+) |

NOTES:

1. SPACING OF LAPPED BEAMS OVER PIERS IS 5 7/8" MEASURED PERPENDICULAR TO BEAMS ALONG CENTERLINE OF PIER. SEE TYPICAL SECTION ON DWG. NO. TS-201 FOR MORE INFORMATION.
2. DIAPHRAGMS ARE PERPENDICULAR TO BEAMS.
3. 4x12 SAWN BEAMS ARE TO BE LAPPED A MIN. OF 3 1/2' OVER PIER. SEE DWG. NOS. SD-201 AND SD-202.
4. FOR BEAM ELEVATIONS, SEE DWG. NO. BM-201.
5. FOR CENTER-CENTER BEARING LENGTHS AND OVERALL LENGTHS OF BEAMS 2-9 IN SPANS 34-38 SEE DWG. NO. BM-201.
6. INTERIOR DIAPHRAGMS SPACED EQUALLY AT THIRD POINTS BETWEEN CENTERLINES OF BEARING. FOR END DIAPHRAGM PLACEMENT SEE DWG. NOS. SD-201 AND SD-202.

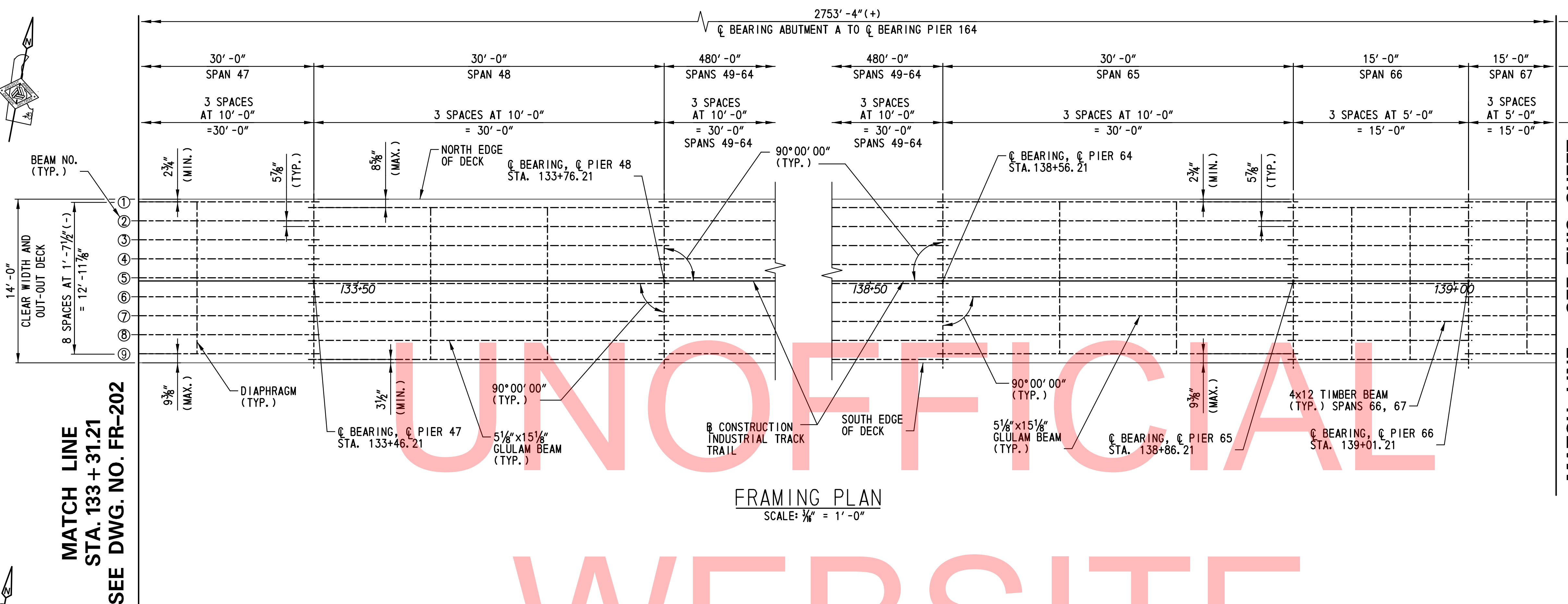
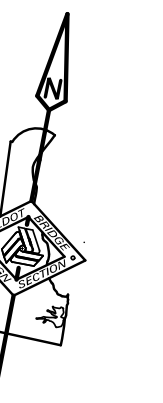
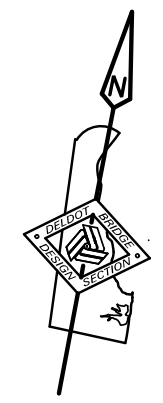


MATCH LINE - SEE THIS SHEET

FRAMING PLAN
SCALE: 3/8" = 1'-0"

MATCH LINE - SEE THIS SHEET
DISTANCES MEASURED ALONG @ CONSTRUCTION

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DISTANCES MEASURED ALONG
☒ CONSTRUCTION

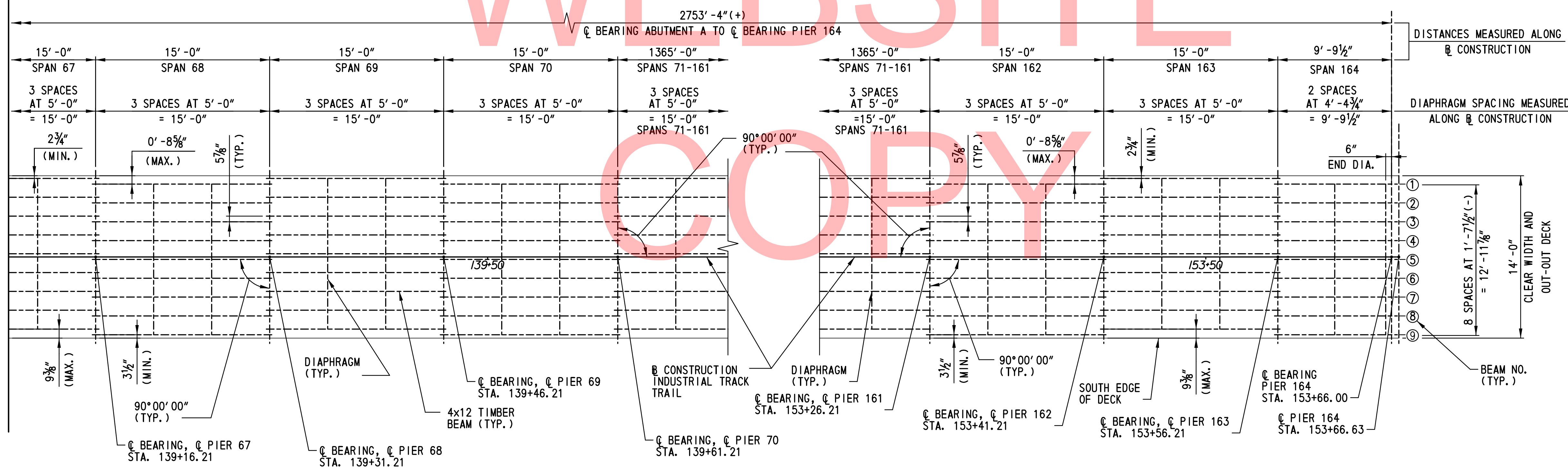
DIAPHRAGM SPACING MEASURED
ALONG ☒ CONSTRUCTION

MATCH LINE - SEE THIS SHEET

NOTES:

1. SPACING OF LAPPED BEAMS OVER PIERS IS 5/8" MEASURED PERPENDICULAR TO BEAMS ALONG CENTERLINE OF PIER. SEE TYPICAL SECTION ON DWG. NO. TS-201 FOR MORE INFORMATION.
2. DIAPHRAGMS ARE PERPENDICULAR TO BEAMS.
3. 4x12 SAWN BEAMS ARE TO BE LAPPED A MIN. OF 3 1/2' OVER ☒ PIER. SEE DWG. NOS. SD-201 AND SD-202.
4. FOR BEAM ELEVATIONS, CENTER-CENTER BEARING LENGTHS, AND OVERALL LENGTHS OF BEAMS SEE DWG. NO. BM-201.
5. INTERIOR DIAPHRAGMS SPACED EQUALLY AT THIRD POINTS BETWEEN CENTERLINES OF BEARING. FOR END DIAPHRAGM PLACEMENT SEE DWG. NOS. SD-201 AND SD-202.

MATCH LINE - SEE THIS SHEET

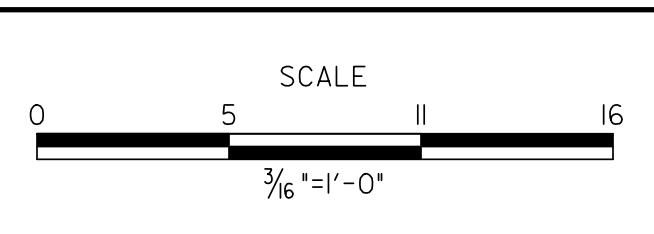


DISTANCES MEASURED ALONG
☒ CONSTRUCTION

DIAPHRAGM SPACING MEASURED
ALONG ☒ CONSTRUCTION

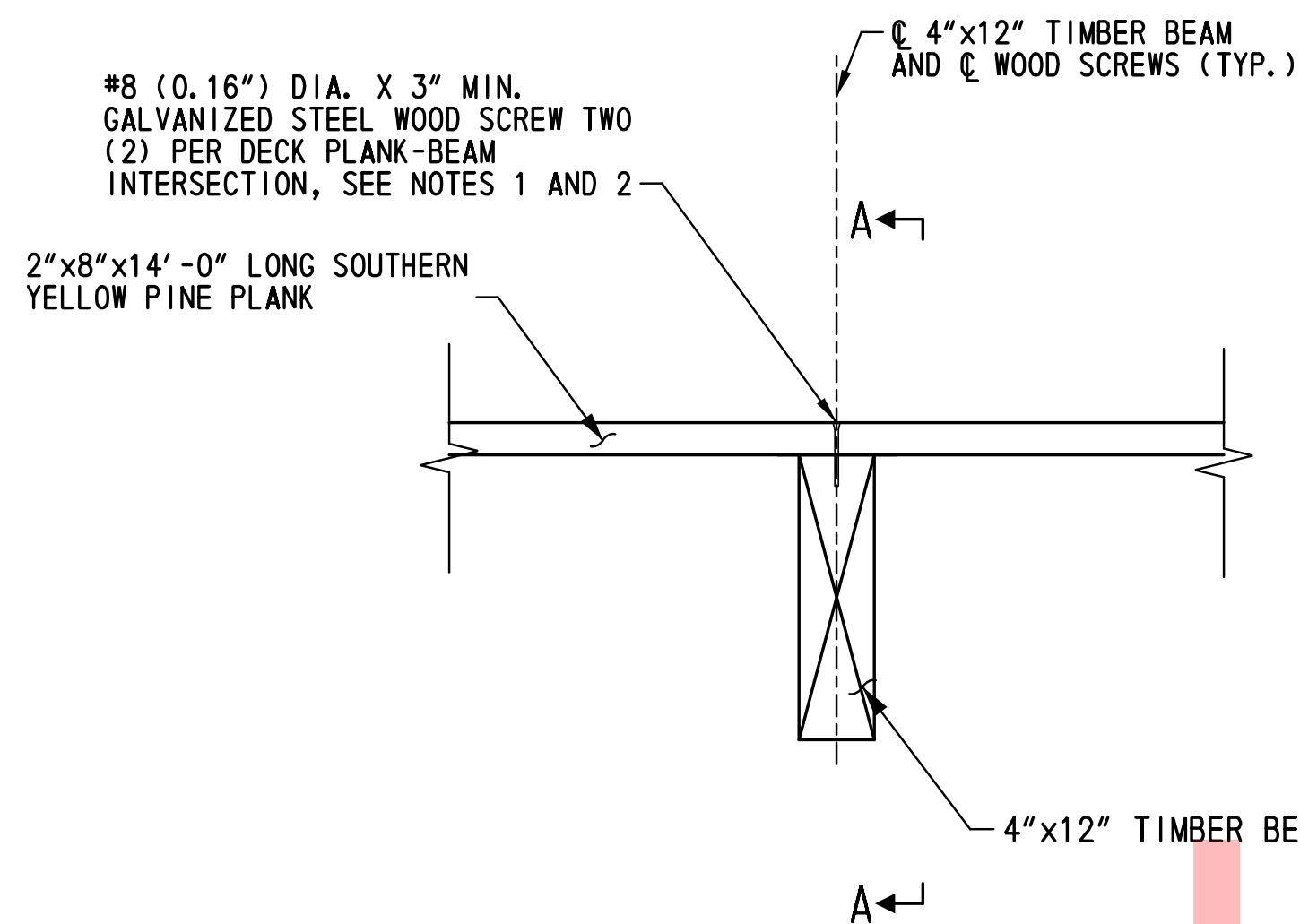
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| ADDENDUMS / REVISIONS |
|-----------------------|
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| |
| |

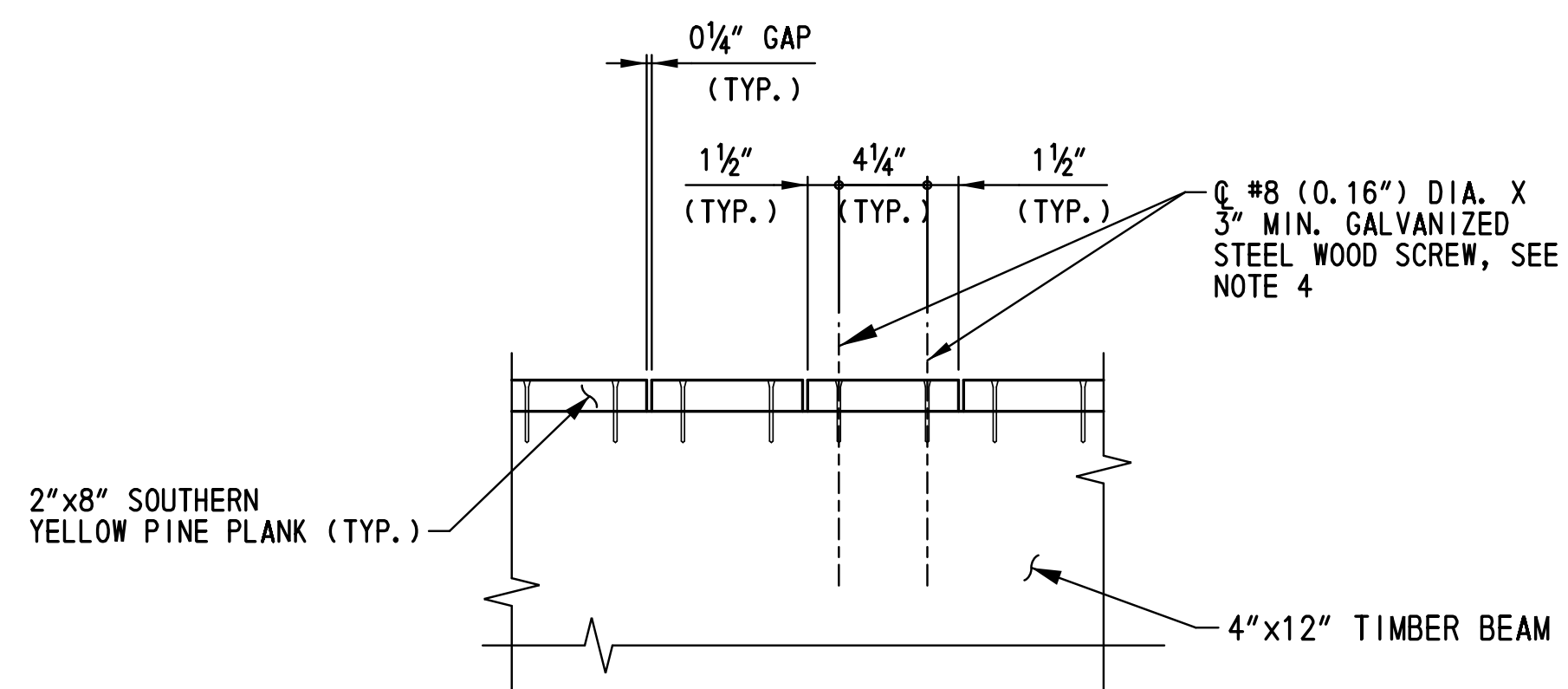


| | |
|------------------------|-------------------------------------|
| CONTRACT T201330009 | BRIDGE NO. X |
| COUNTY NEW CASTLE | DESIGNED BY: ADD CHECKED BY: WAG |

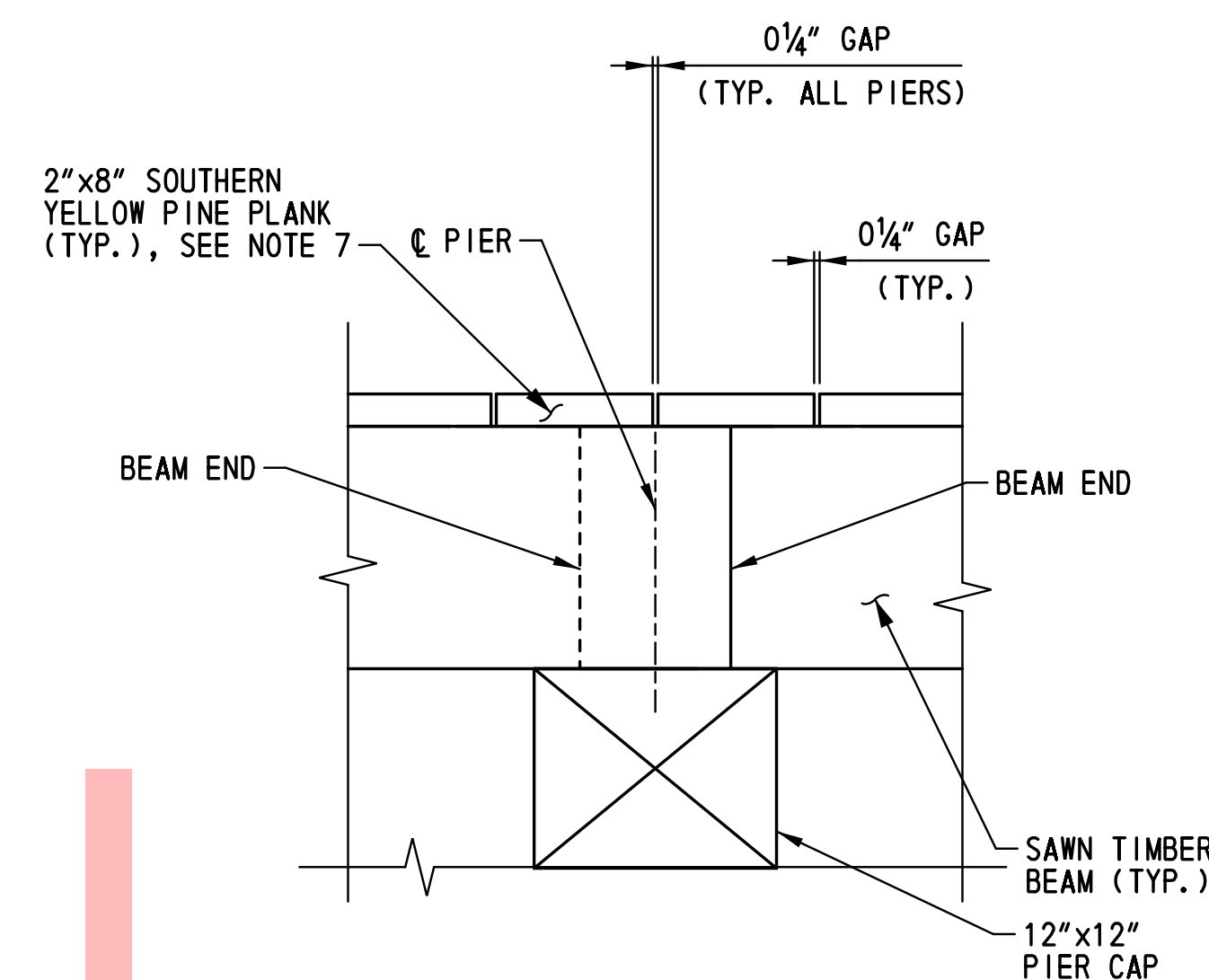
| |
|--------------------|
| FR-203 |
| SHEET NO. 106 |
| TOTAL SHTS. 205 |



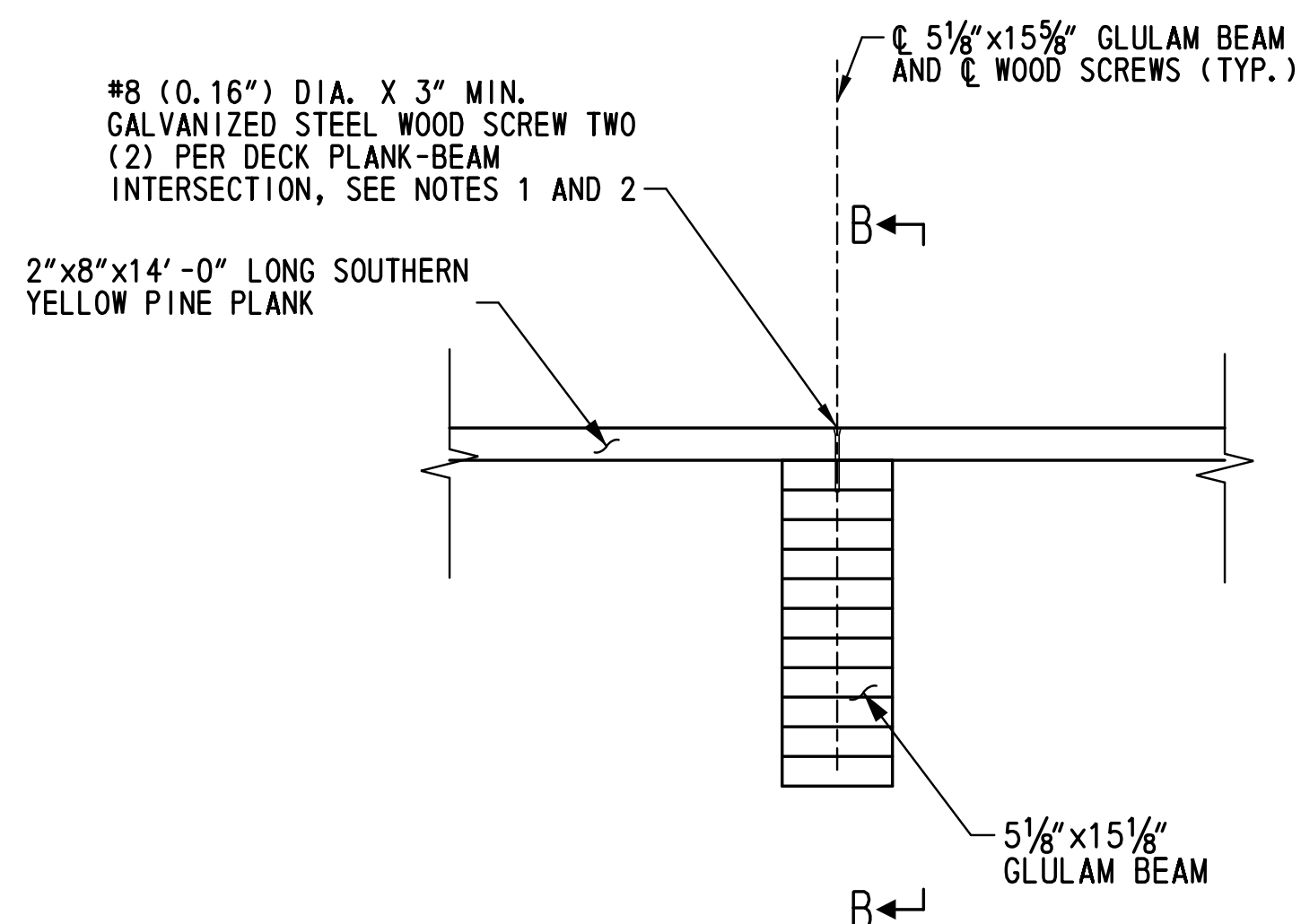
DECK CONNECTION TO SAWN TIMBER BEAM DETAIL
SCALE: 1 1/2" = 1' - 0"



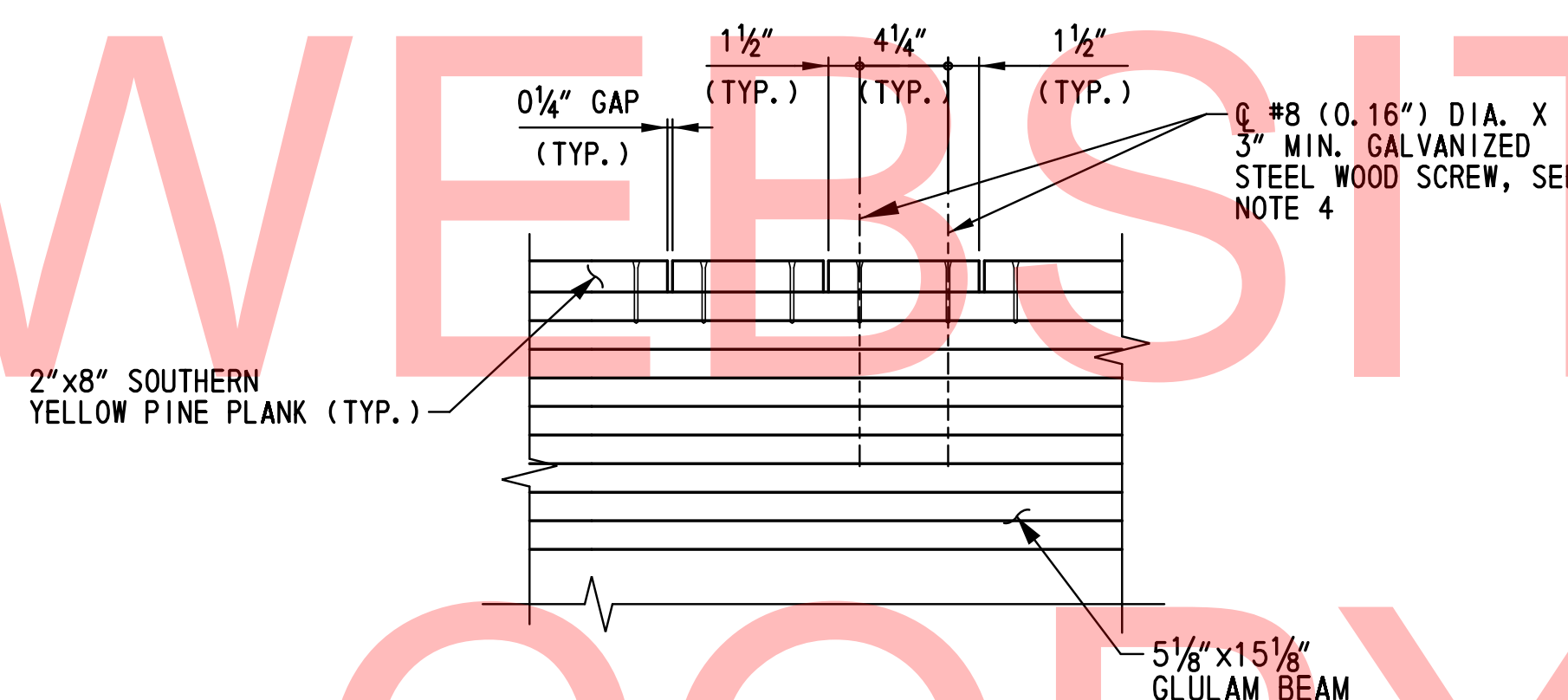
SECTION A-A
SCALE: 1 1/2" = 1' - 0"



DECK DETAIL AT BEAM END
SCALE: 1 1/2" = 1' - 0"



DECK CONNECTION TO GLULAM BEAM DETAIL
SCALE: 1 1/2" = 1' - 0"



SECTION B-B
SCALE: 1 1/2" = 1' - 0"

NOTE:
SAWN TIMBER BEAM SPANS SHOWN. DECK DETAIL AT GLULAM BEAM ENDS IS SIMILAR.

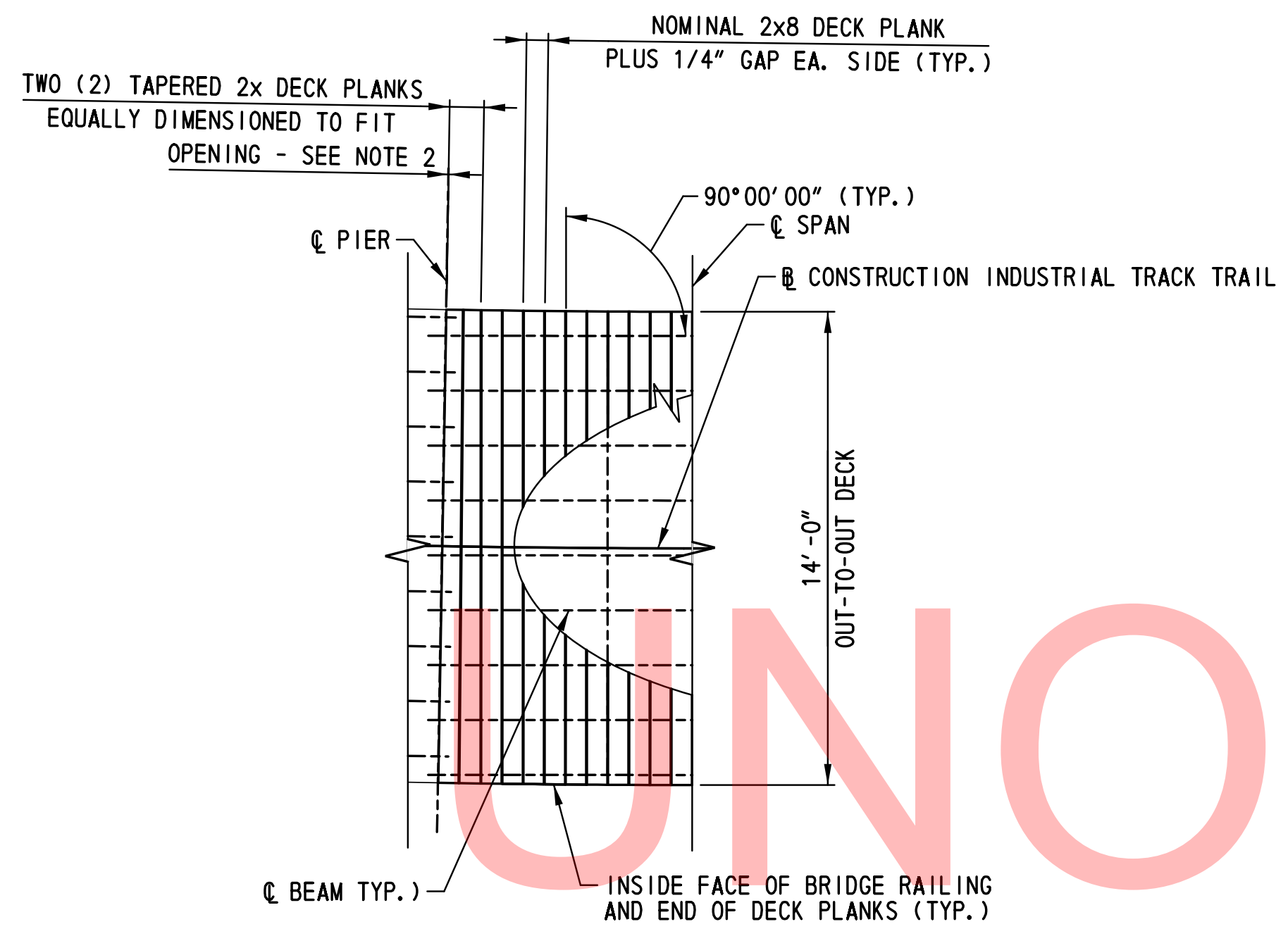
NOTES:

- SCREWS FOR TIMBER DECK PLANKS SHALL BE FLAT HEAD SELF TAPPING SIZE #8 (0.16") DIA. x 3" MIN. LONG HIGH STRENGTH WOOD SCREWS CONFORMING TO ASTM D 1761-88 AND HOT DIPPED GALVANIZED IN ACCORDANCE WITH AASHTO ASTM A153. DECK SCREWS SHALL BE IN COMPLIANCE WITH ANSI/ASME B18.2.1 FOR DIMENSIONAL REQUIREMENTS. CONTRACTOR MAY PROPOSE CONSTRUCTION LAG SCREWS AS A SUBSTITUTE. ANY SUBSTITUTE MUST MEET THE REQUIREMENTS OF AC257 AND BE DOMESTICALLY SOURCED. CONTRACTOR SHALL SUBMIT WITHDRAWAL LOADS FOR SUBSTITUTE CONSTRUCTION LAG SCREWS WITH SHOP DRAWINGS FOR REVIEW AND APPROVAL BY THE ENGINEER.
- SCREWS FOR TIMBER DECK SHALL BE COUNTERSUNK TO ESTABLISH A FLUSH SURFACE BETWEEN THE TOP OF THE SCREW HEAD AND THE TOP OF THE TIMBER DECK PLANK.
- ALL FIELD DRILLED HOLES IN TIMBER DECK SHALL BE TREATED WITH A FIELD APPLIED COPPER NAPHTHENATE PRESERVATIVE TREATMENT IN ACCORDANCE WITH AASHTO M 133.
- TWO (2) SCREWS CONNECTING DECK PLANKS TO BEAMS SHALL BE PROVIDED AT EACH DECK TO BEAM INTERSECTION. IF MINIMUM SPACING BETWEEN TWO ADJACENT SCREWS IN A SINGLE LINE ACROSS A DECK PLANK IS NOT ACHIEVABLE CONTRACTOR SHALL STAGGER WOOD SCREWS IN A SINGLE LINE ACROSS PLANK BY 5/8" CENTERED OVER CENTERLINE OF BEAM.
- MINIMUM SPACING AND EDGE DISTANCES OF SCREWS ARE AS NOTED ON THESE PLANS.
- DECK PLANK LENGTH SHALL BE CONTINUOUS ACROSS THE FULL DECK WIDTH. DECK PLANKS SHALL BE CUT SQUARE TO FRONT FACE OF RAILING. FOR MORE INFORMATION SEE DWG. NO. RL-201.
- DECK PLANKS AT SPAN ENDS MAY BE RIPPED TO WIDTH AS REQUIRED. DECK PLANKS SHALL NOT BE LESS THAN 4" WIDE. FOR RIPPED END DECK PLANKS, SCREWS SHALL BE PLACED AT THE CENTERLINE OF PLANK AT EACH DECK PLANK TO BEAM INTERSECTION. FOR MORE INFORMATION SEE DWG. NO. DK-202.

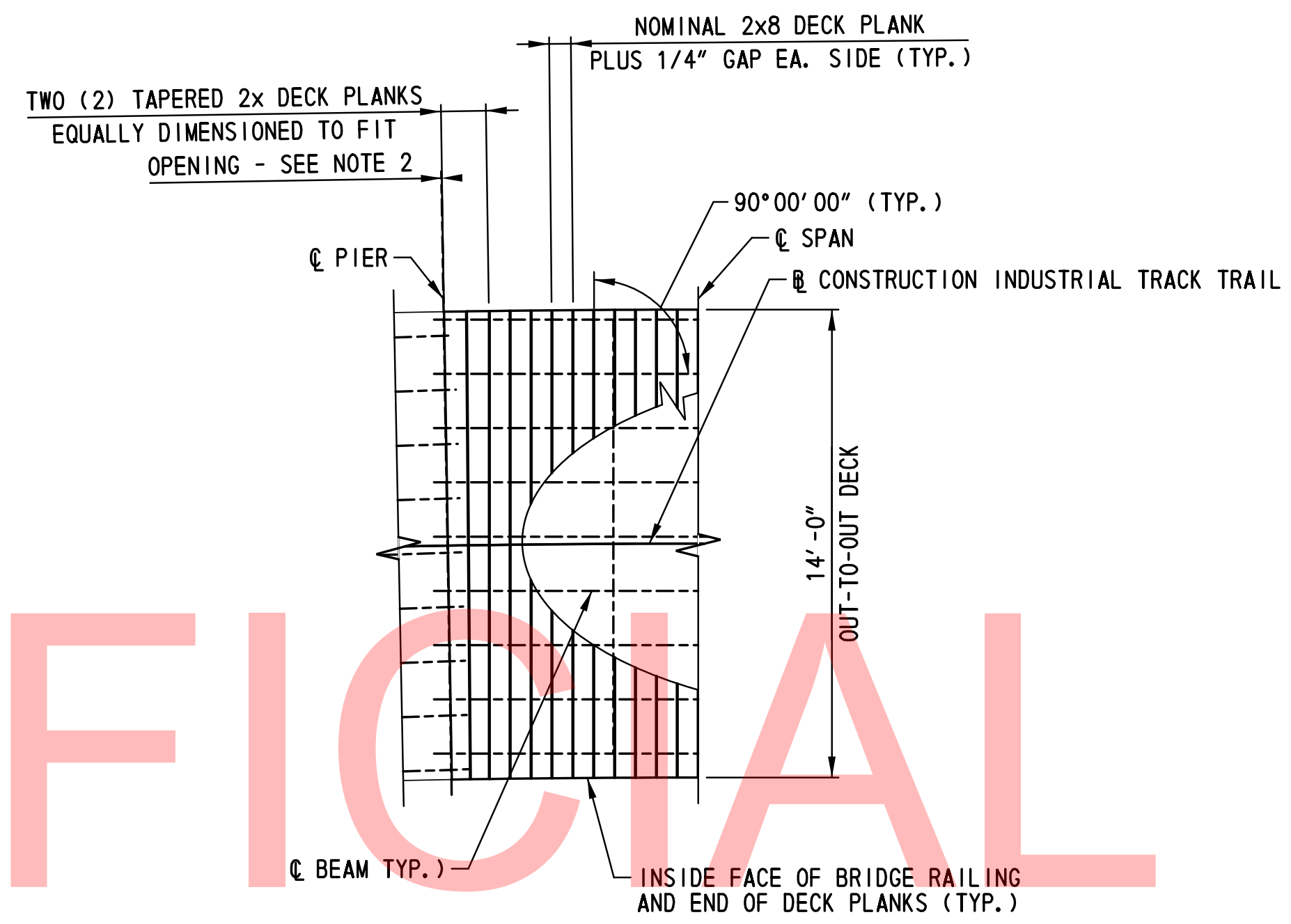
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NOTES:

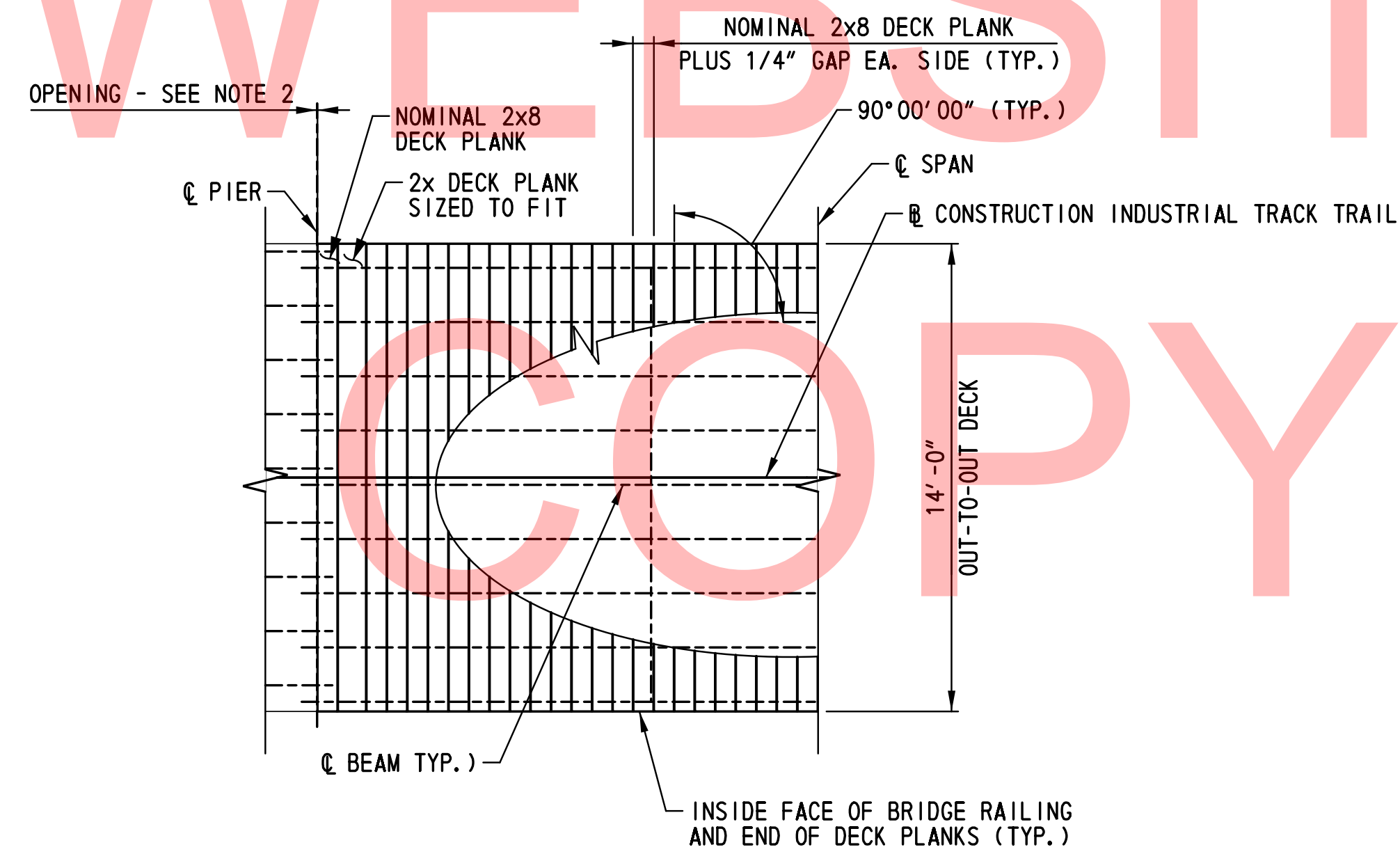
1. THE CONTRACTOR SHALL VERIFY THE DIMENSIONS OF TAPERED PLANKS PRIOR TO CUTTING. THE MINIMUM ALLOWABLE PLANK WIDTH IS 4".
2. 1/4" MINIMUM CLEAR OPENING BETWEEN DECK PLANKS AT THE PIERS.



SPANS 2-6 TYPICAL HALF-DECK PLAN
SCALE: 1/4" = 1'-0"



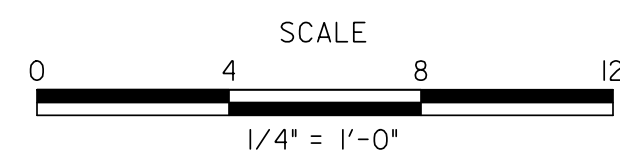
SPANS 34-38 TYPICAL HALF-DECK PLAN
SCALE: 1/4" = 1'-0"



SPANS 1, 7-33, 39-164 TYPICAL HALF-DECK PLAN
SCALE: 1/4" = 1'-0"

NOTE:
STRAIGHT 30' SPAN SHOWN, STRAIGHT 15' SPANS SIMILAR.

ADDENDUMS / REVISIONS

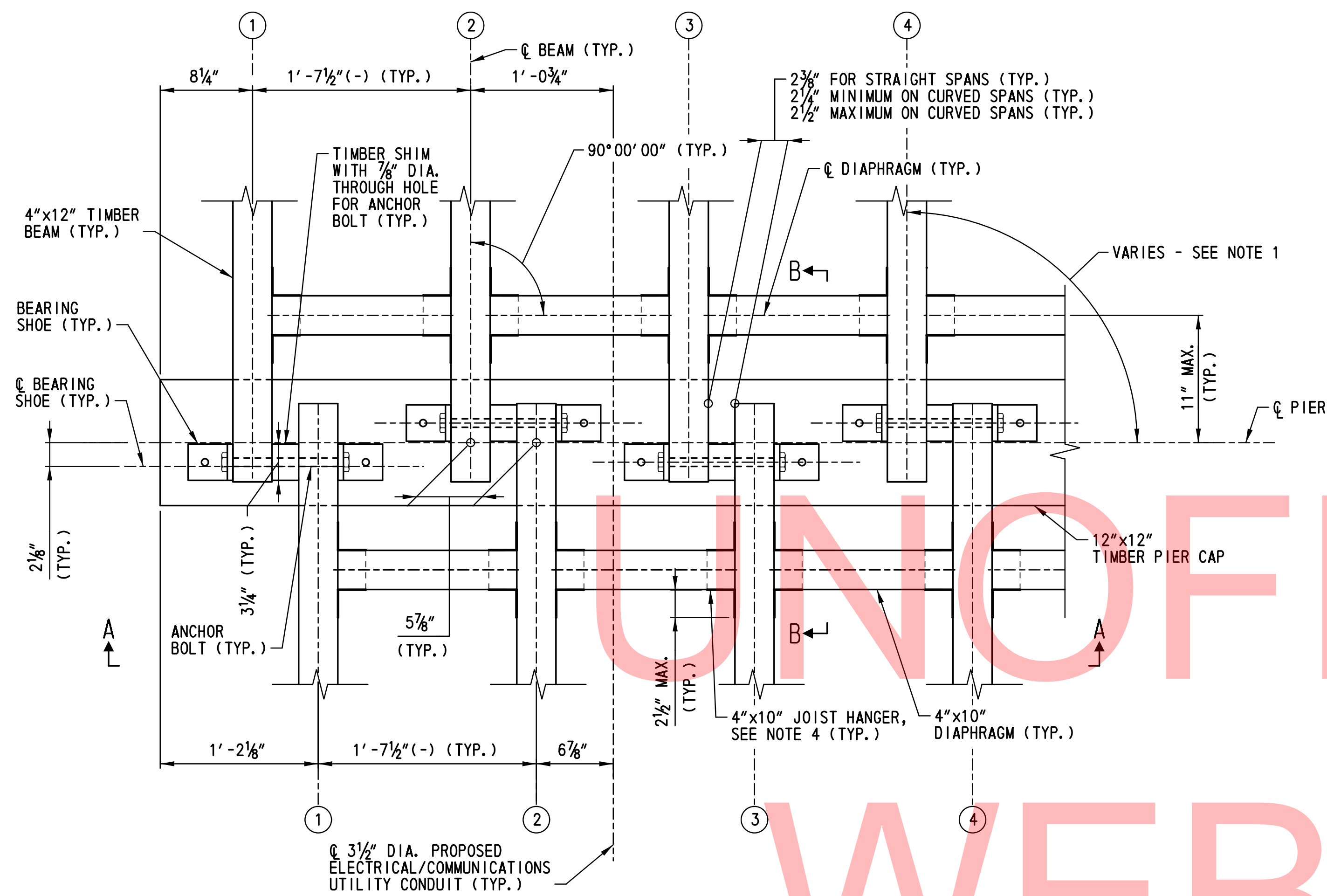


**NEW CASTLE INDUSTRIAL
TRACK TRAIL, PHASE 3**

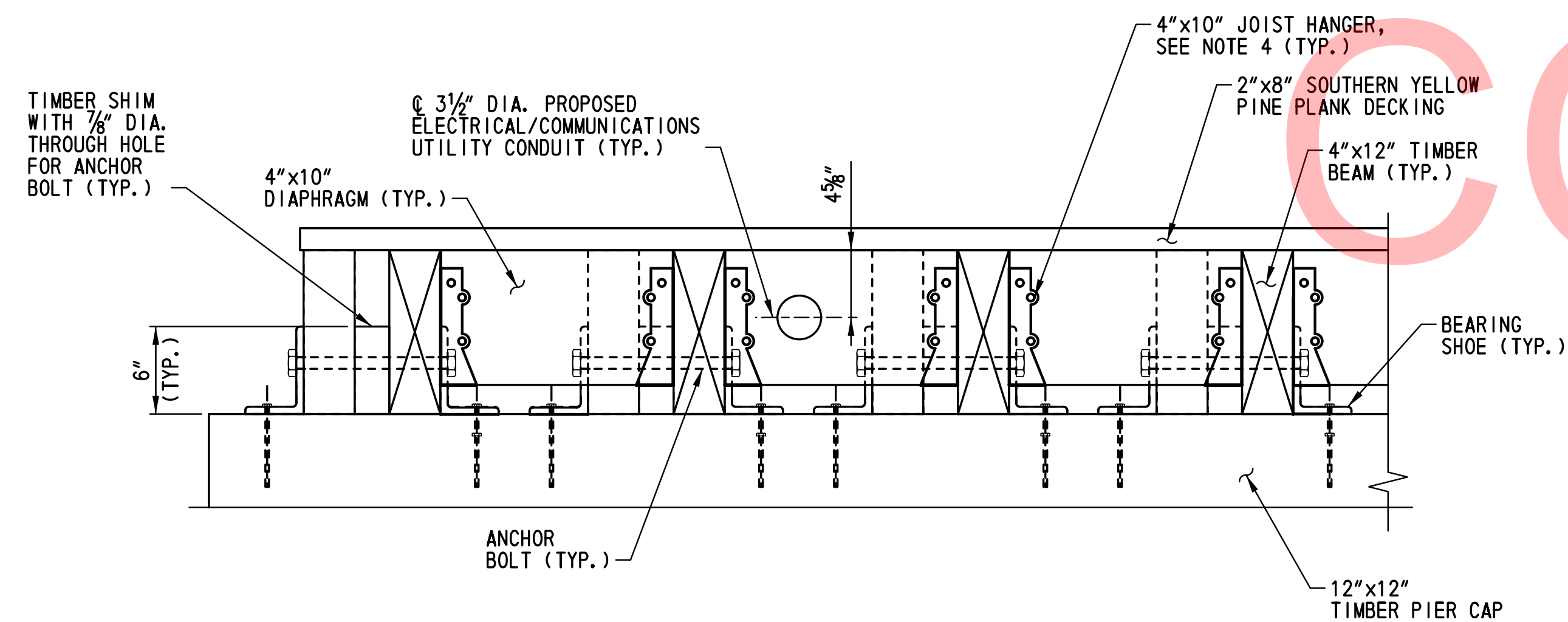
| | | |
|------------|--------------|----------|
| CONTRACT | BRIDGE NO. | X |
| T201330009 | DESIGNED BY: | CZK |
| COUNTY | CHECKED BY: | WAG |
| NEW CASTLE | | |

TIMBER PLANK DECK - 2

| |
|-------------|
| DK-202 |
| SHEET NO. |
| 108 |
| TOTAL SHTS. |
| 205 |

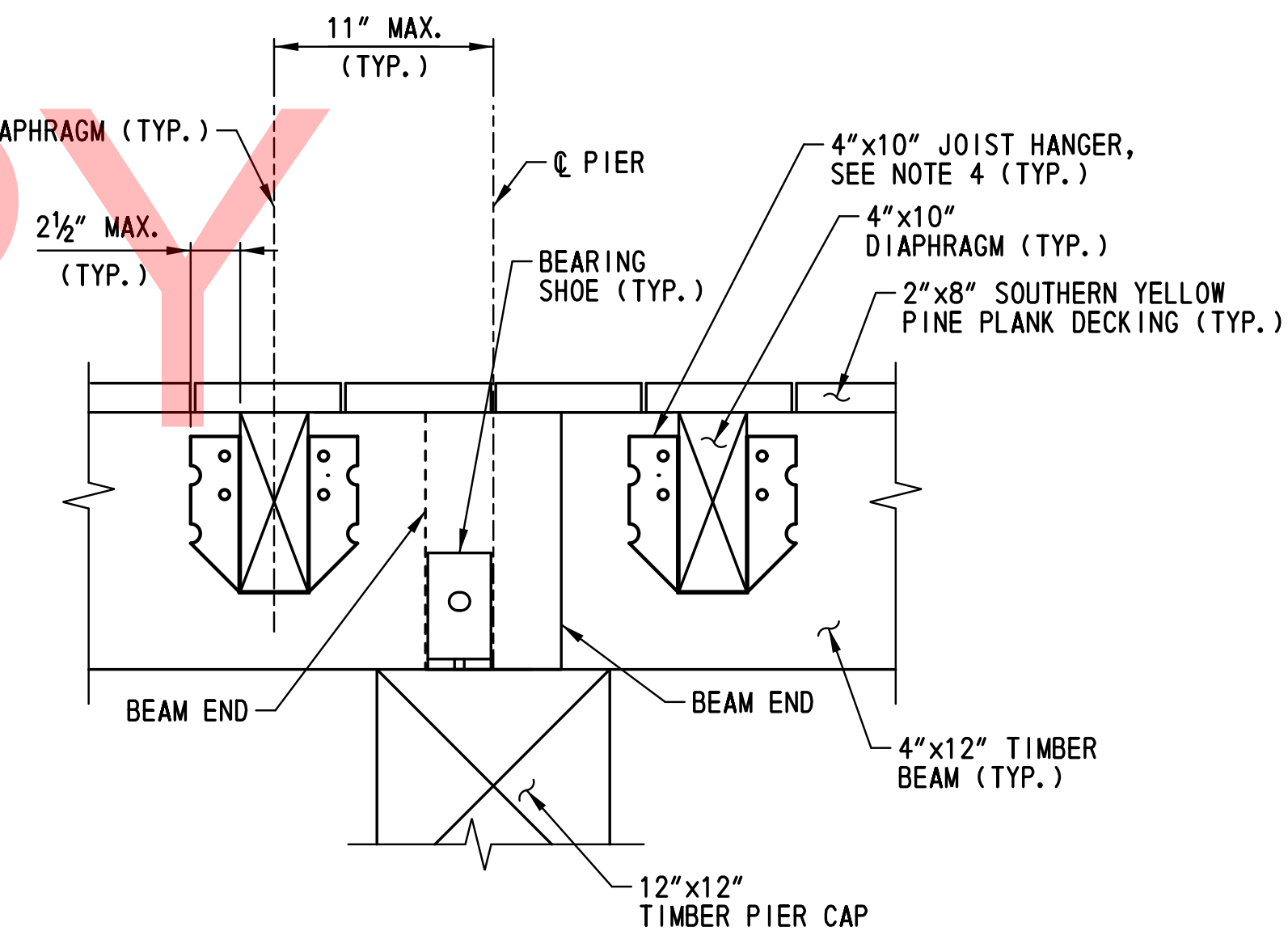


END DIAPHRAGM DETAILS (PLAN VIEW) - SPAN NOS. 1-45 AND 66-164
SCALE: 1-1/2"=1'-0"



VIEW A-A
SCALE: 1-1/2"=1'-0"

NOTE: RAILING NOT SHOWN FOR CLARITY.

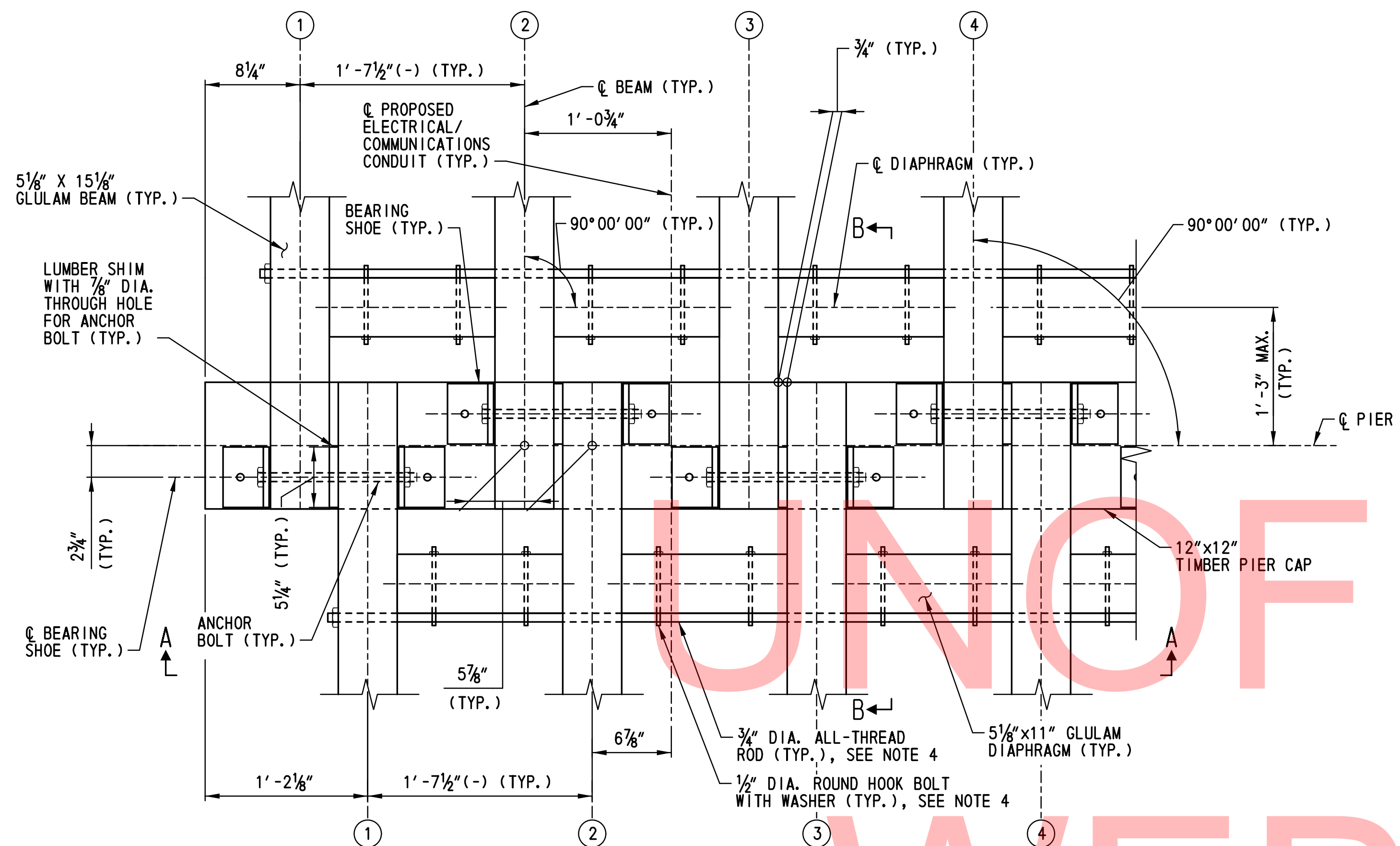


SECTION B-B
SCALE: 1-1/2"=1'-0"

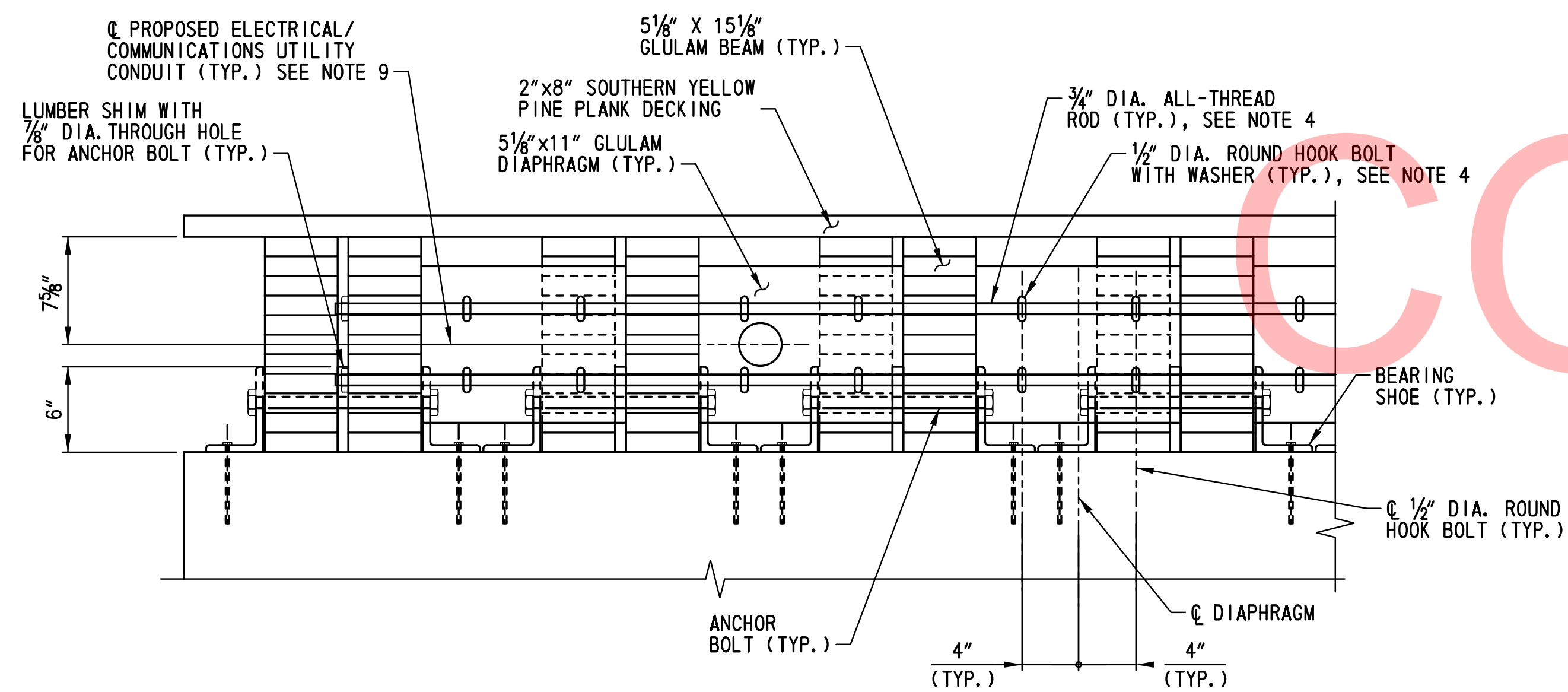
NOTES:

- FOR DIAPHRAGM LOCATIONS AND FRAMING DETAILS, SEE DWG. NOS. FR-201 THRU FR-203.
- FOR BEARING SHOE AND ANCHOR BOLT DETAILS, SEE DWG. NO. BM-201.
- FOR RAILING LAYOUT AND DETAILS, SEE DWG. NO. RL-201.
- STEEL JOIST HANGERS SHALL BE ICC-ES APPROVED WITH MINIMUM 14 GAGE STEEL, HOT-DIPPED GALVANIZED IN ACCORDANCE WITH ASTM A123. JOIST HANGERS TO BE FASTENED TO BEAMS WITH JOIST HANGER NAILS IN ACCORDANCE WITH MANUFACTURER GUIDELINES. JOIST HANGER NAILS SHALL BE HOT DIPPED GALVANIZED IN ACCORDANCE WITH ASTM A123. THE COST OF THE STEEL JOIST HANGERS AND HARDWARE WILL BE INCIDENTAL TO ITEM 601003.
- 4x10" DIAPHRAGMS SHALL BE PROVIDED BETWEEN ALL BEAMS.
- THE ELECTRICAL AND COMMUNICATIONS CONDUIT SHALL BE AFFIXED TO THE SIDES OF BEAMS WITHIN INTERIOR BAYS. THE CONTRACTOR SHALL SUBMIT FOR APPROVAL A CONDUIT HANGER DEVICE, AND THE COST OF CONDUIT HANGERS SHALL BE INCIDENTAL TO ITEM 601002. CONDUITS MUST PASS THROUGH DIAPHRAGMS AND NOT BE SUPPORTED BY THEM.
- FOR ELECTRICAL AND COMMUNICATIONS CONDUIT INFORMATION SEE DRAWING NOS. LI-05 THROUGH LI-12.

N:\31896-002\CADD\BRIDGE\SD201\ITG.DGN

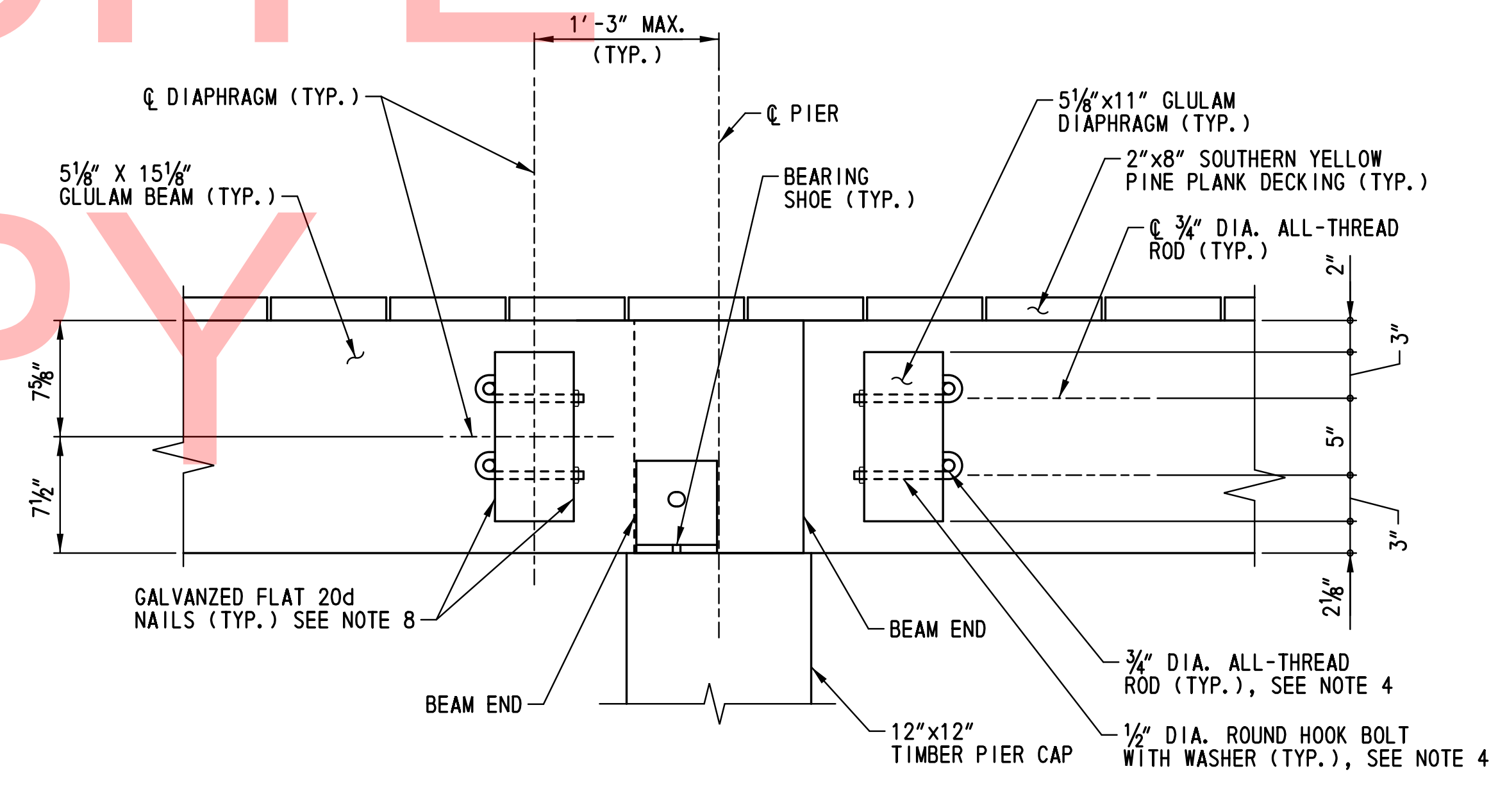


END DIAPHRAGM DETAILS (PLAN VIEW) - SPAN NOS. 46-65
SCALE: 1-1/2"=1'-0"



VIEW A-A
SCALE: 1-1/2"=1'-0"

NOTE:
RAILING NOT SHOWN FOR CLARITY.

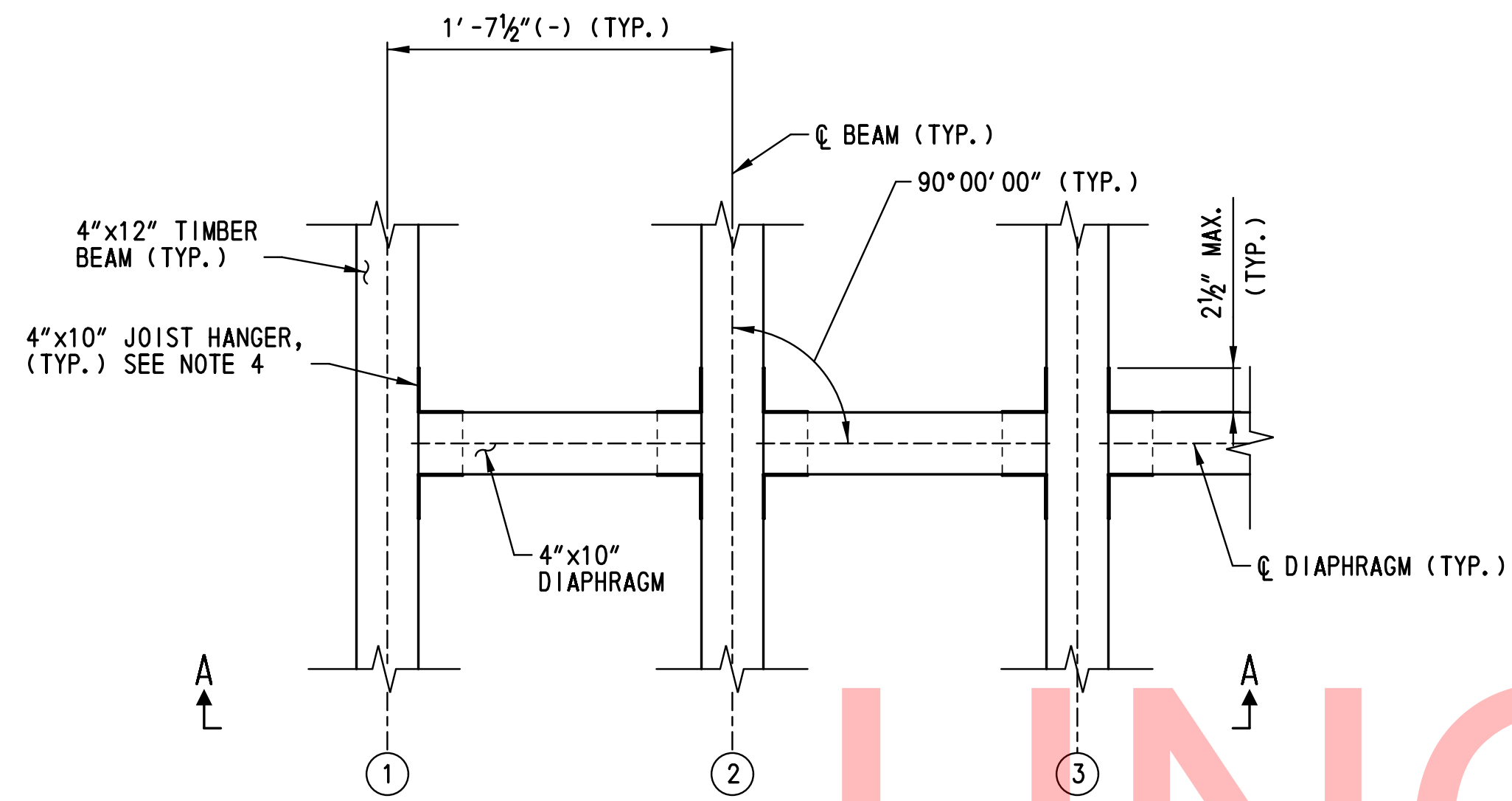


SECTION B-B
SCALE: 1-1/2"=1'-0"

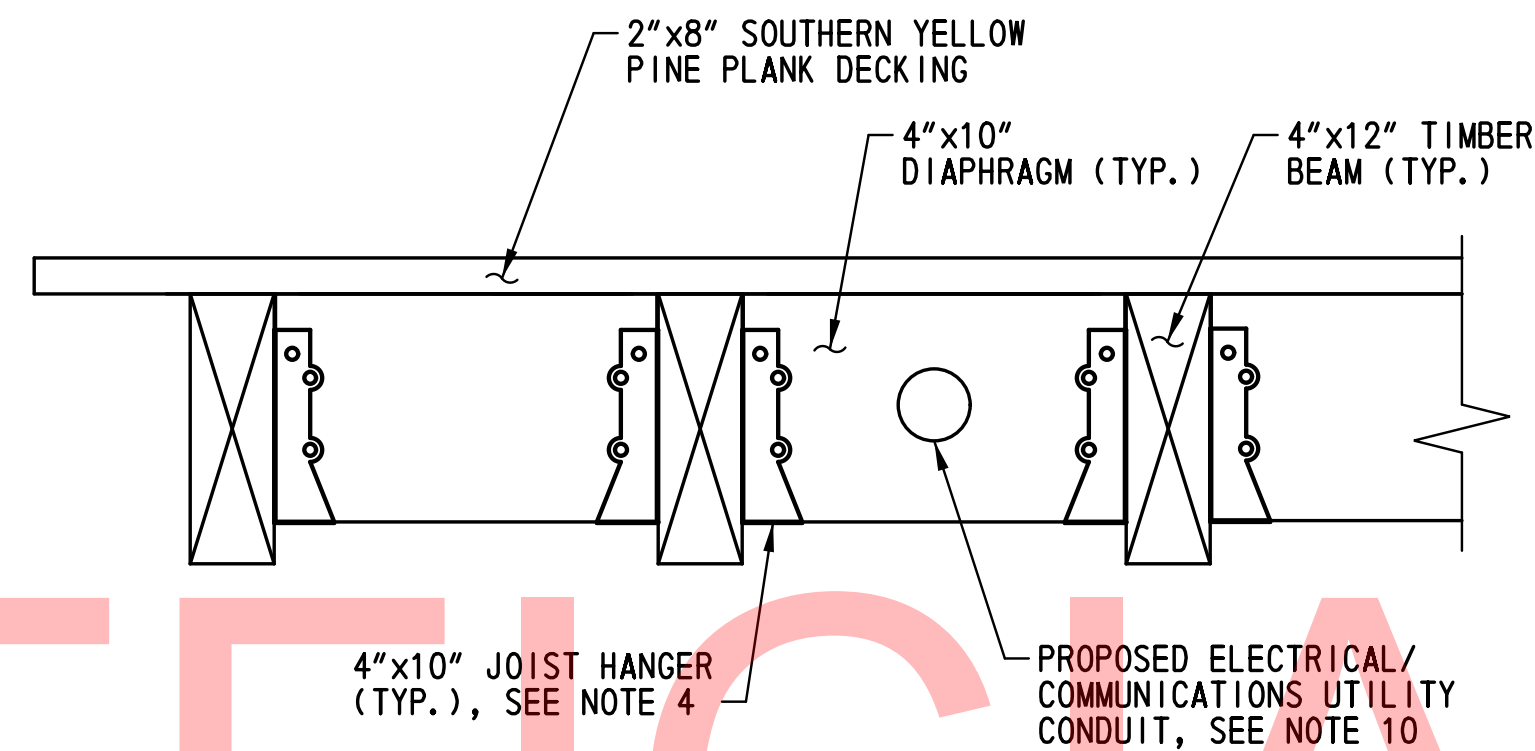
NOTES:

- FOR DIAPHRAGM LOCATIONS AND FRAMING DETAILS, SEE DWG. NOS. FR-201 THRU FR-203.
- FOR BEARING SHOE AND ANCHOR BOLT DETAILS, SEE DWG. NO. BM-201.
- FOR RAILING LAYOUT AND DETAILS, SEE DWG. NO. RL-201.
- 3/4" DIA. ALL-THREAD RODS AND 1/2" DIA. ROUND HOOK BARS SHALL BE UNPAINTED ASTM F 1554, GRADE 36 GALVANIZED STEEL WITH ASTM F436 PLATE WASHERS AND ASTM A563 NUTS. WASHERS AND NUTS SHALL COMPLY WITH ANSI/ASME B18.2.1 FOR DIMENSIONAL REQUIREMENTS.
- A JAM NUT SHALL BE PROVIDED AT BOTH ENDS OF EACH ALL-THREAD ROD.
- ALL-THREAD RODS, ROUND HOOK BARS, PLATE WASHERS, AND NUTS SHALL BE HOT-DIPPED GALVANIZED IN ACCORDANCE WITH ASTM A153/A153M.
- HOLES IN GLULAM BEAMS AND DIAPHRAGMS FOR ALL-THREAD ROD AND HOOK BAR INSTALLATIONS SHALL BE MADE PRIOR TO PRESSURE TREATMENT IN ACCORDANCE WITH AASHTO M 133. PROPOSED HOLE DIAMETERS SHALL BE A MINIMUM OF 1/8" GREATER THAN ALL-THREAD OR HOOK BAR DIAMETER AND MUST ACCOUNT FOR FABRICATION TOLERANCES AND FIELD FIT-UP DURING CONSTRUCTION. SUBMIT SHOP DRAWINGS TO THE ENGINEER FOR APPROVAL INDICATING THE LOCATION AND SIZE OF THE PROPOSED HOLES IN THE GLULAM BEAMS AND DIAPHRAGMS. FIELD MODIFICATIONS TO PROPOSED HOLES IS PERMITTED. FIELD MODIFIED HOLES SHALL BE TREATED WITH A FIELD APPLIED COPPER NAPHTHENATE PRESERVATIVE TREATMENT IN ACCORDANCE WITH AASHTO M 133.
- AFTER EACH GLULAM DIAPHRAGM IS PLACED IN ITS FINAL POSITION BY CONNECTION BETWEEN ROUND HOOK BOLTS AND ALL-THREAD RODS, EACH DIAPHRAGM SHALL BE SECURED TO THE GLULAM BEAMS BY TOE-NAILING ALONG EACH FACE OF THE DIAPHRAGM. SHOP DRAWINGS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL INDICATING A PROPOSED NUMBER AND SPACING OF NAILS ALONG EACH DIAPHRAGM FACE.
- THE ELECTRICAL AND COMMUNICATIONS CONDUIT SHALL BE AFFIXED TO THE SIDES OF BEAMS WITHIN INTERIOR BAYS. THE CONTRACTOR SHALL SUBMIT FOR APPROVAL A CONDUIT HANGER DEVICE, AND THE COST OF CONDUIT HANGERS SHALL BE INCIDENTAL TO ITEM 601003. CONDUITS MUST PASS THROUGH DIAPHRAGMS AND NOT BE SUPPORTED BY THEM.
- FOR ELECTRICAL AND COMMUNICATIONS CONDUIT INFORMATION SEE DRAWING NOS. LI-05 THROUGH LI-12.

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INTERMEDIATE DIAPHRAGM DETAILS (PLAN VIEW) - SPAN NOS. 1-45 AND 66-164
SCALE: 1-1/2"=1'-0"

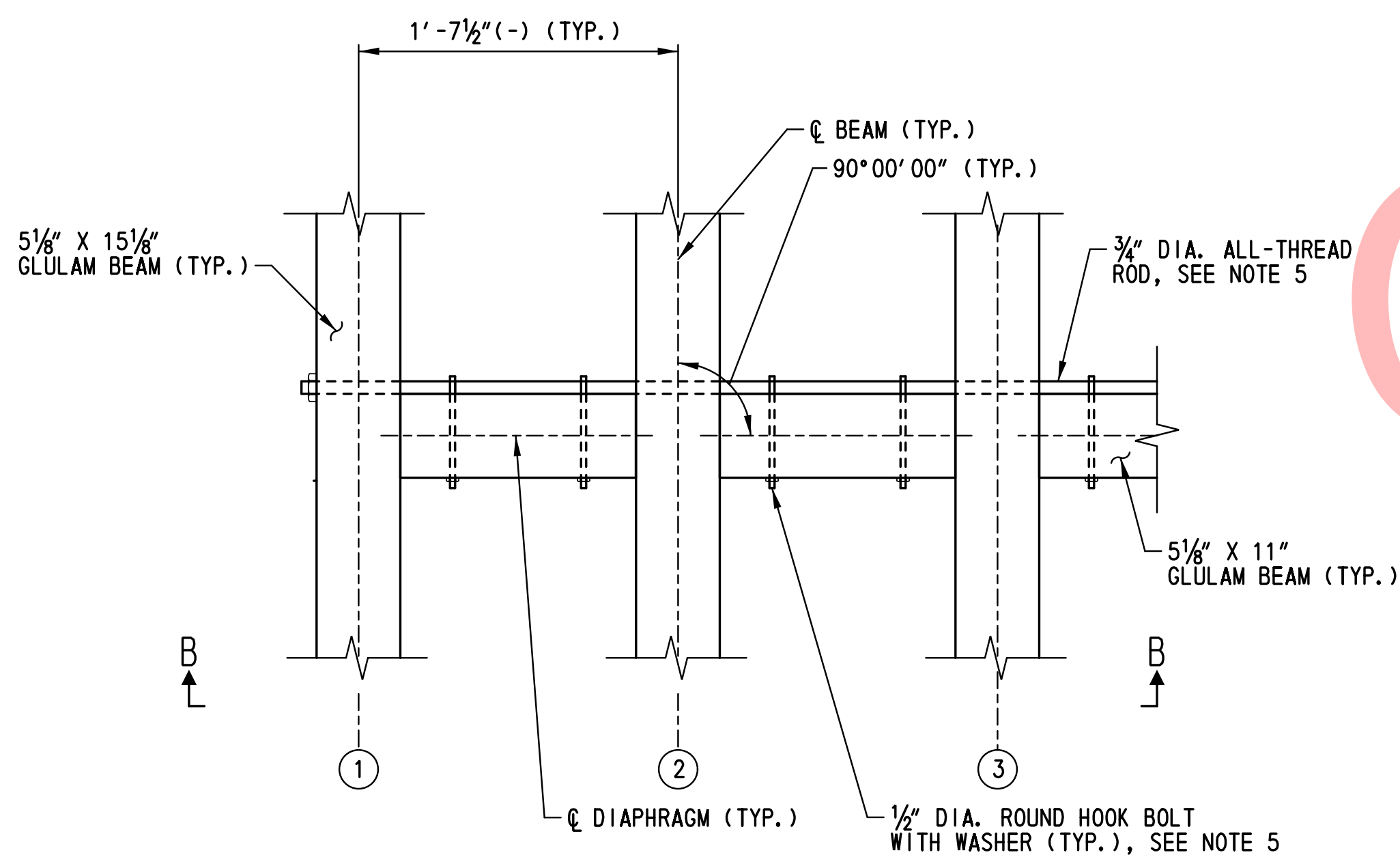


VIEW A-A
SCALE: 1-1/2"=1'-0"

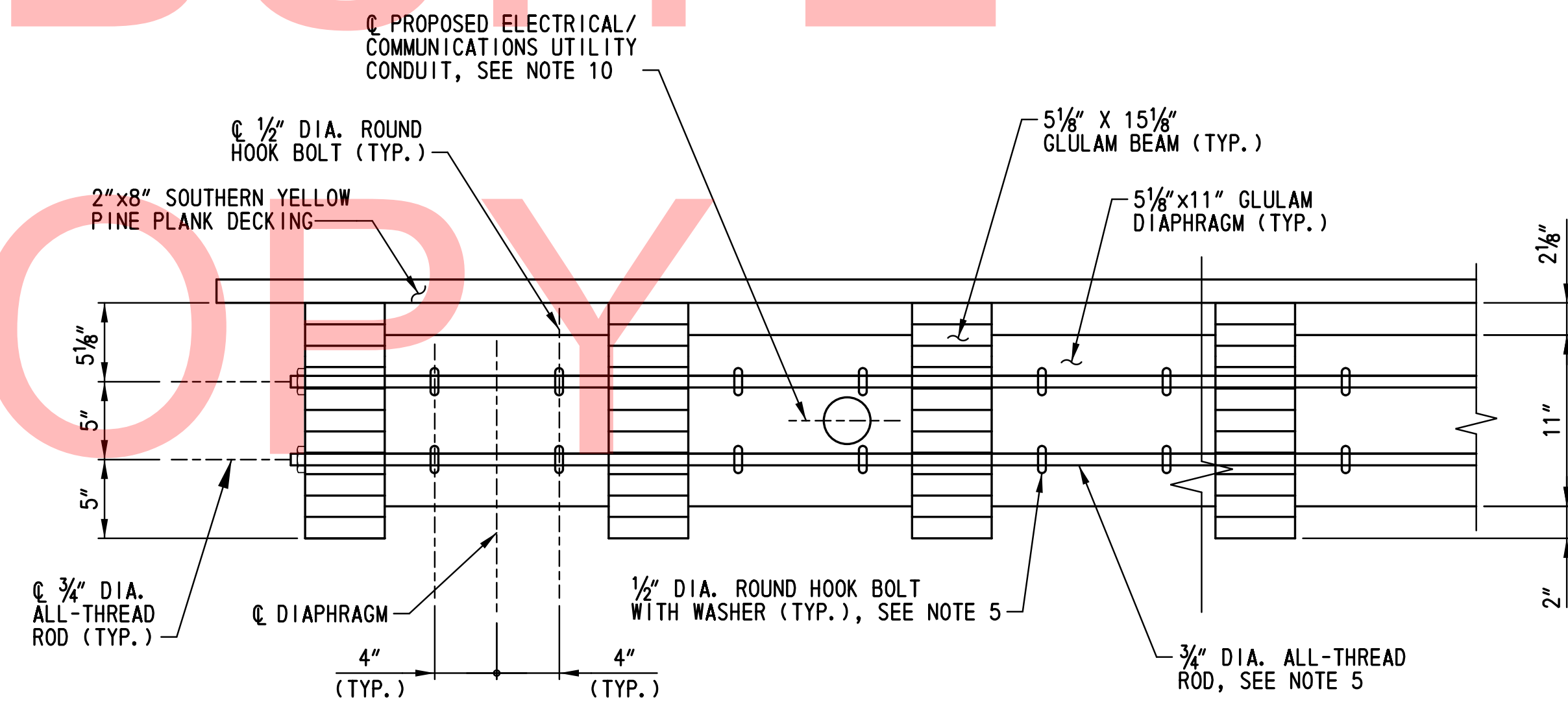
NOTE:
RAILING NOT SHOWN FOR CLARITY.

NOTES:

- FOR DIAPHRAGM LOCATIONS AND FRAMING DETAILS, SEE DWG. NOS. FR-201 THRU FR-203.
- FOR BEARING SHOE AND ANCHOR BOLT DETAILS, SEE DWG. NO. BM-201.
- FOR RAILING LAYOUT AND DETAILS, SEE DWG. NO. RL-201.
- STEEL JOIST HANGERS SHALL BE ICC-ES APPROVED WITH MINIMUM 14 GAGE STEEL, ZINC HOT-DIPPED GALVANIZED IN ACCORDANCE WITH ASTM A123. JOIST HANGERS TO BE FASTENED TO BEAMS WITH JOIST HANGER NAILS IN ACCORDANCE WITH MANUFACTURER'S GUIDELINES. JOIST HANGER NAILS SHALL BE HOT DIPPED GALVANIZED IN ACCORDANCE WITH ASTM A123. THE COST FOR THE STEEL JOIST HANGERS AND HARDWARE WILL BE INCIDENTAL TO ITEM 601002.
- 3/4" DIA. ALL-THREAD RODS AND 1/2" DIA. ROUND HOOK BARS SHALL BE UNPAINTED ASTM F 1554, GRADE 36 GALVANIZED STEEL WITH ASTM F436 PLATE WASHERS AND ASTM A563 NUTS. WASHERS AND NUTS SHALL COMPLY WITH ANSI/ASME B18.2.1 FOR DIMENSIONAL REQUIREMENTS.
- A JAM NUT SHALL BE PROVIDED AT BOTH ENDS OF EACH ALL-THREAD ROD.
- ALL-THREAD RODS, ROUND HOOK BARS, PLATE WASHERS, AND NUTS SHALL BE HOT-DIPPED GALVANIZED IN ACCORDANCE WITH ASTM A153.
- HOLES IN GLULAM BEAMS AND DIAPHRAGMS FOR ALL-THREAD ROD AND HOOK BAR INSTALLATIONS SHALL BE MADE PRIOR TO PRESSURE TREATMENT IN ACCORDANCE WITH AASHTO M 133. PROPOSED HOLE DIAMETERS SHALL BE A MINIMUM OF 1/8" GREATER THAN ALL-THREAD OR HOOK BAR DIAMETER AND MUST ACCOUNT FOR FABRICATION TOLERANCES AND FIELD FIT-UP DURING CONSTRUCTION. SUBMIT SHOP DRAWINGS TO THE ENGINEER FOR APPROVAL INDICATING THE LOCATION AND SIZE OF THE PROPOSED HOLES IN THE GLULAM BEAMS AND DIAPHRAGMS. FIELD MODIFICATIONS TO PROPOSED HOLES IS PERMITTED. FIELD MODIFIED HOLES SHALL BE TREATED WITH A FIELD APPLIED COPPER NAPHTHENATE PRESERVATIVE TREATMENT IN ACCORDANCE WITH AASHTO M 133.
- AFTER EACH GLULAM DIAPHRAGM IS PLACED IN ITS FINAL POSITION BY CONNECTION BETWEEN ROUND HOOK BOLTS AND ALL-THREAD RODS, EACH DIAPHRAGM SHALL BE SECURED TO THE GLULAM BEAMS BY TOE-NAILING ALONG EACH FACE OF THE DIAPHRAGM. SHOP DRAWINGS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL INDICATING A PROPOSED NUMBER AND SPACING OF NAILS ALONG EACH DIAPHRAGM FACE.
- THE ELECTRICAL AND COMMUNICATIONS CONDUIT SHALL BE AFFIXED TO THE SIDES OF BEAMS WITHIN INTERIOR BAYS. THE CONTRACTOR SHALL SUBMIT FOR APPROVAL A CONDUIT HANGER DEVICE, AND THE COST OF CONDUIT HANGERS SHALL BE INCIDENTAL TO ITEM 601003. CONDUITS MUST PASS THROUGH DIAPHRAGMS AND NOT BE SUPPORTED BY THEM.



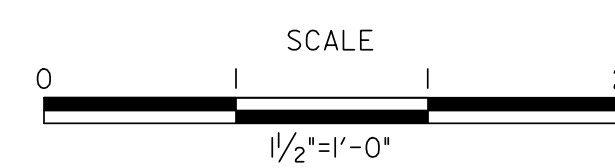
INTERMEDIATE DIAPHRAGM DETAILS (PLAN VIEW) - SPAN NOS. 46-65
SCALE: 1-1/2"=1'-0"



VIEW B-B
SCALE: 1-1/2"=1'-0"

NOTE:
RAILING NOT SHOWN FOR CLARITY.

ADDENDUMS / REVISIONS

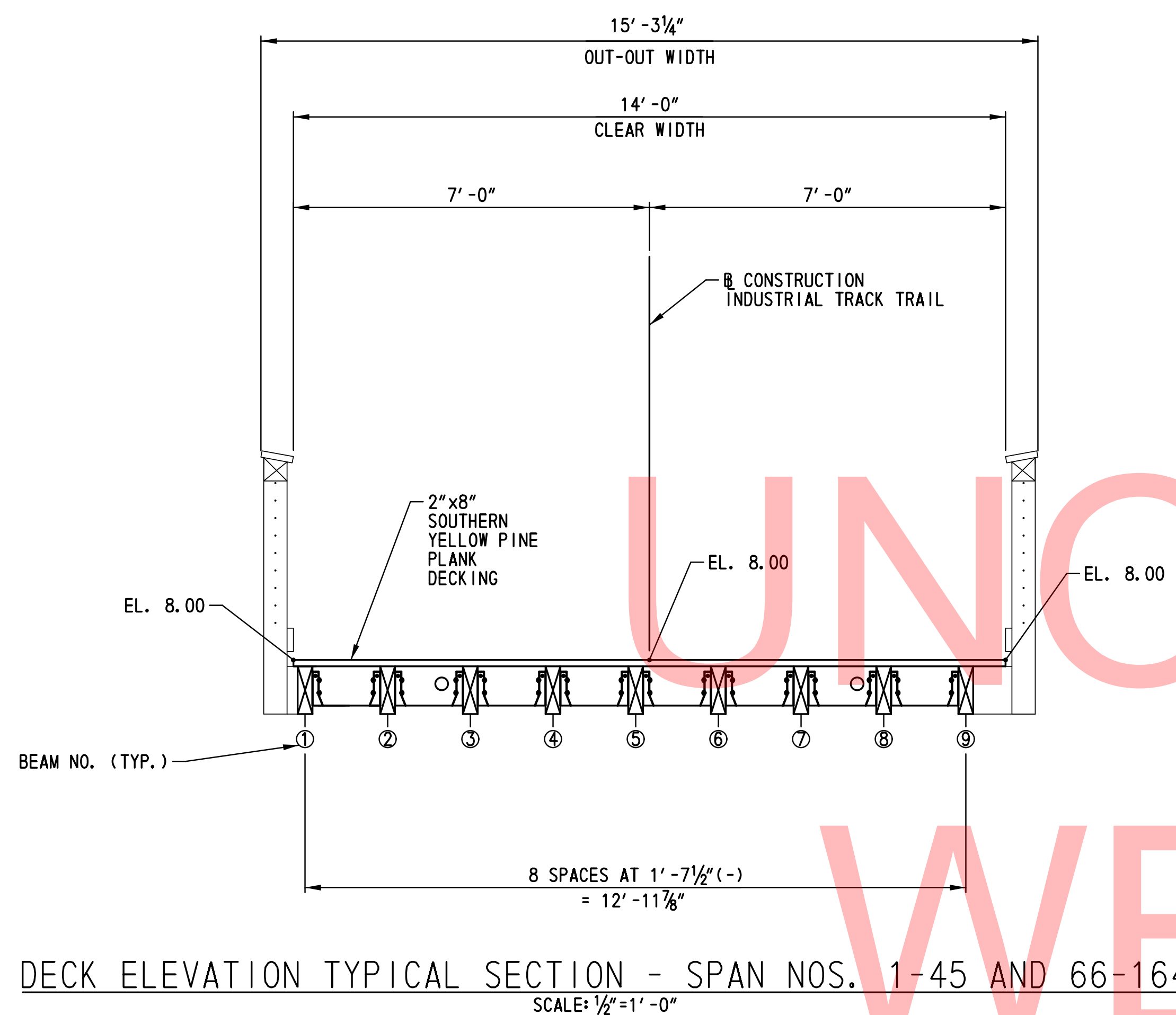


NEW CASTLE INDUSTRIAL
TRACK TRAIL, PHASE 3

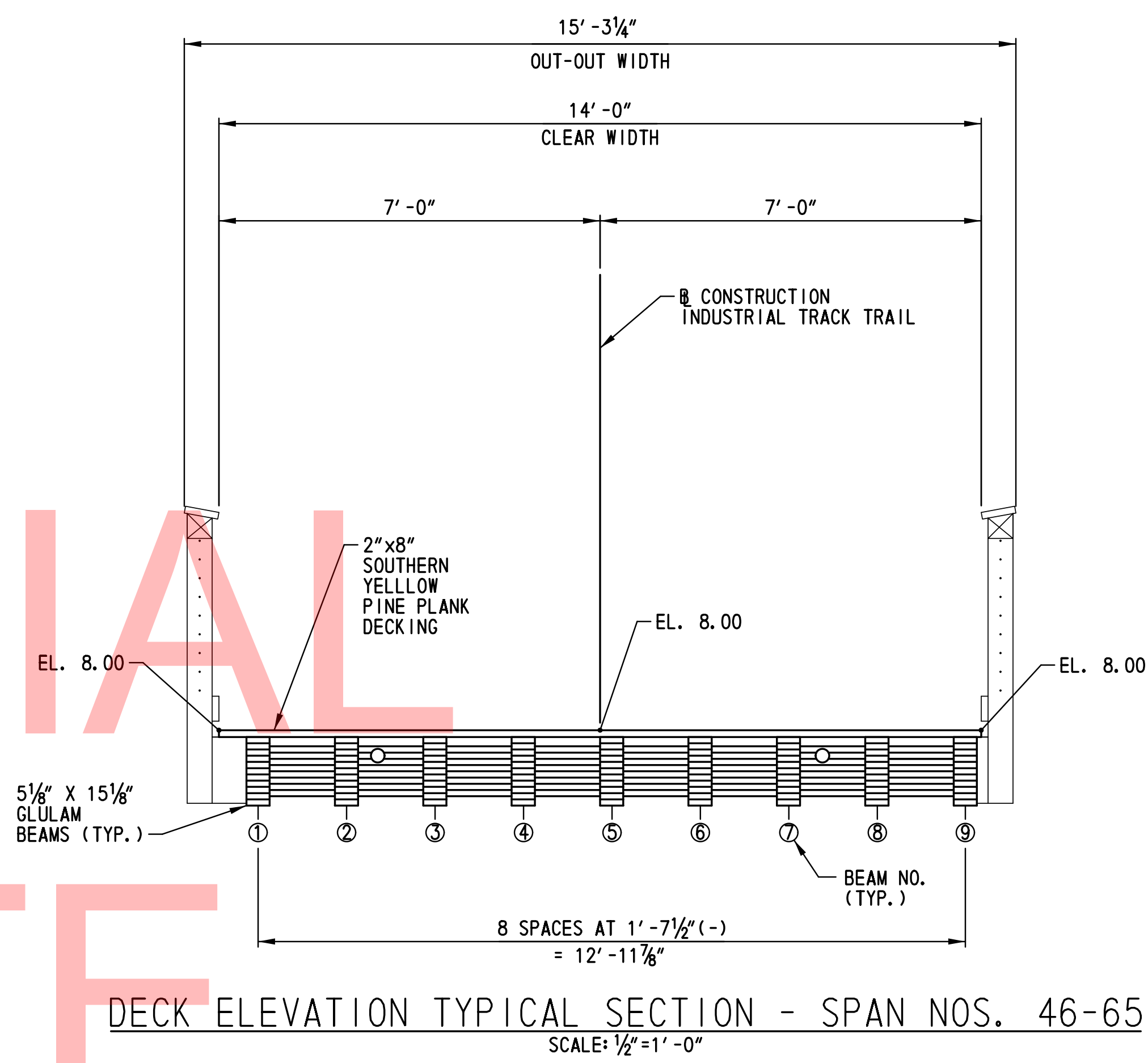
| | | |
|------------|------------------|---|
| CONTRACT | BRIDGE NO. | X |
| T201330009 | DESIGNED BY: NAH | |
| COUNTY | CHECKED BY: WAG | |
| NEW CASTLE | | |

SUPERSTRUCTURE
DETAILS - 3

| |
|-------------|
| SD-203 |
| SHEET NO. |
| 111 |
| TOTAL SHTS. |
| 205 |



DECK ELEVATION TYPICAL SECTION - SPAN NOS. 1-45 AND 66-164
SCALE: 1/2" = 1'-0"



DECK ELEVATION TYPICAL SECTION - SPAN NOS. 46-65
SCALE: 1/2" = 1'-0"

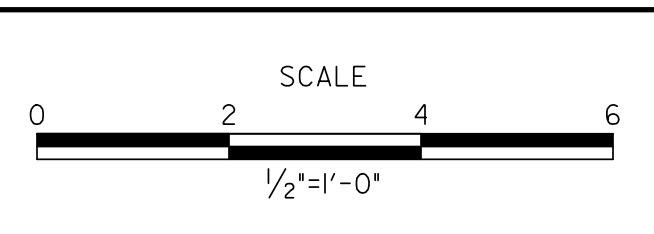
UNOFFICIAL
WEBSITE
COPY

NOTES:

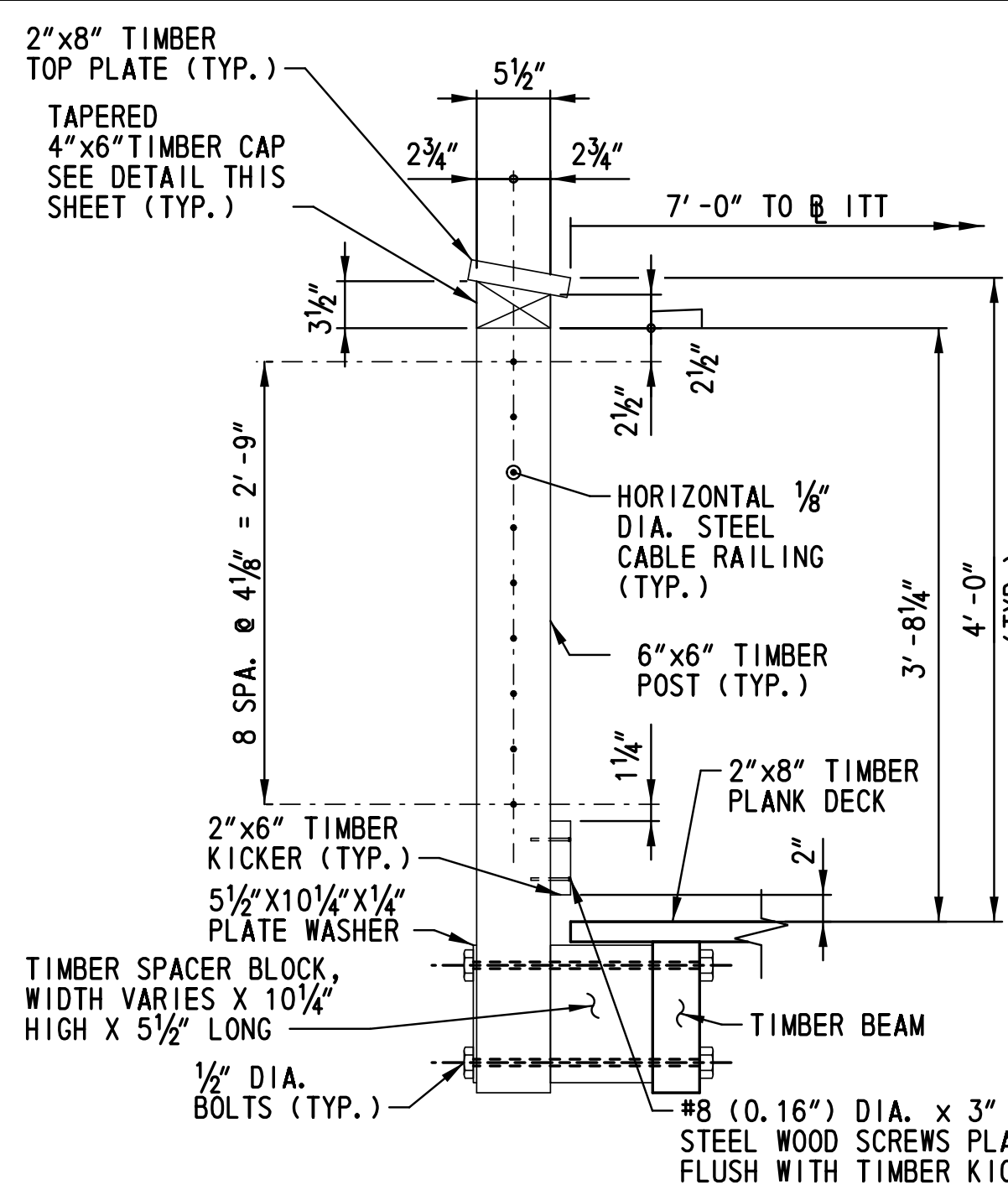
1. FINISHED BRIDGE DECK ELEVATIONS SHOWN ARE TOP OF PROPOSED 2" x 8" SOUTHERN YELLOW PINE PLANK DECKING.

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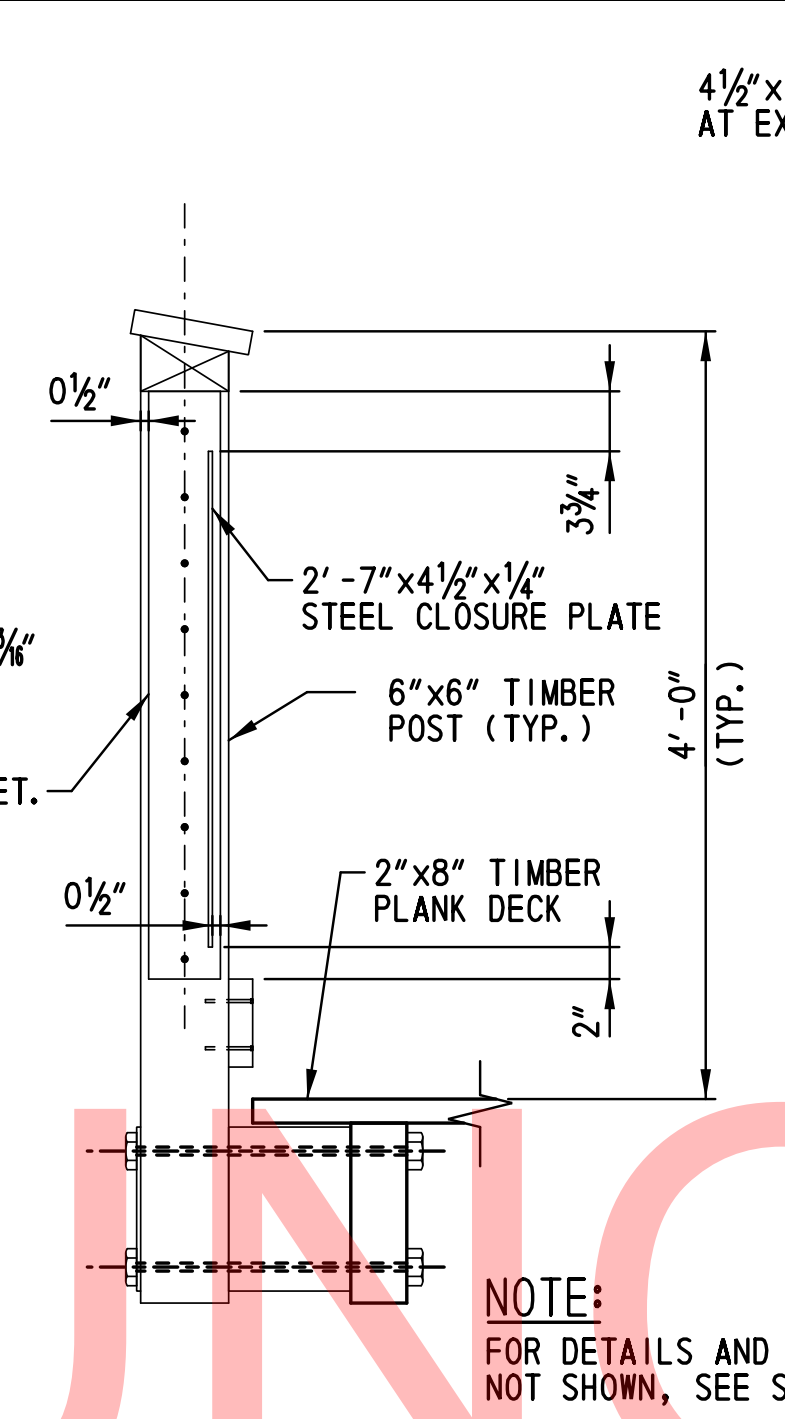
| ADDENDUMS / REVISIONS | |
|-----------------------|--|
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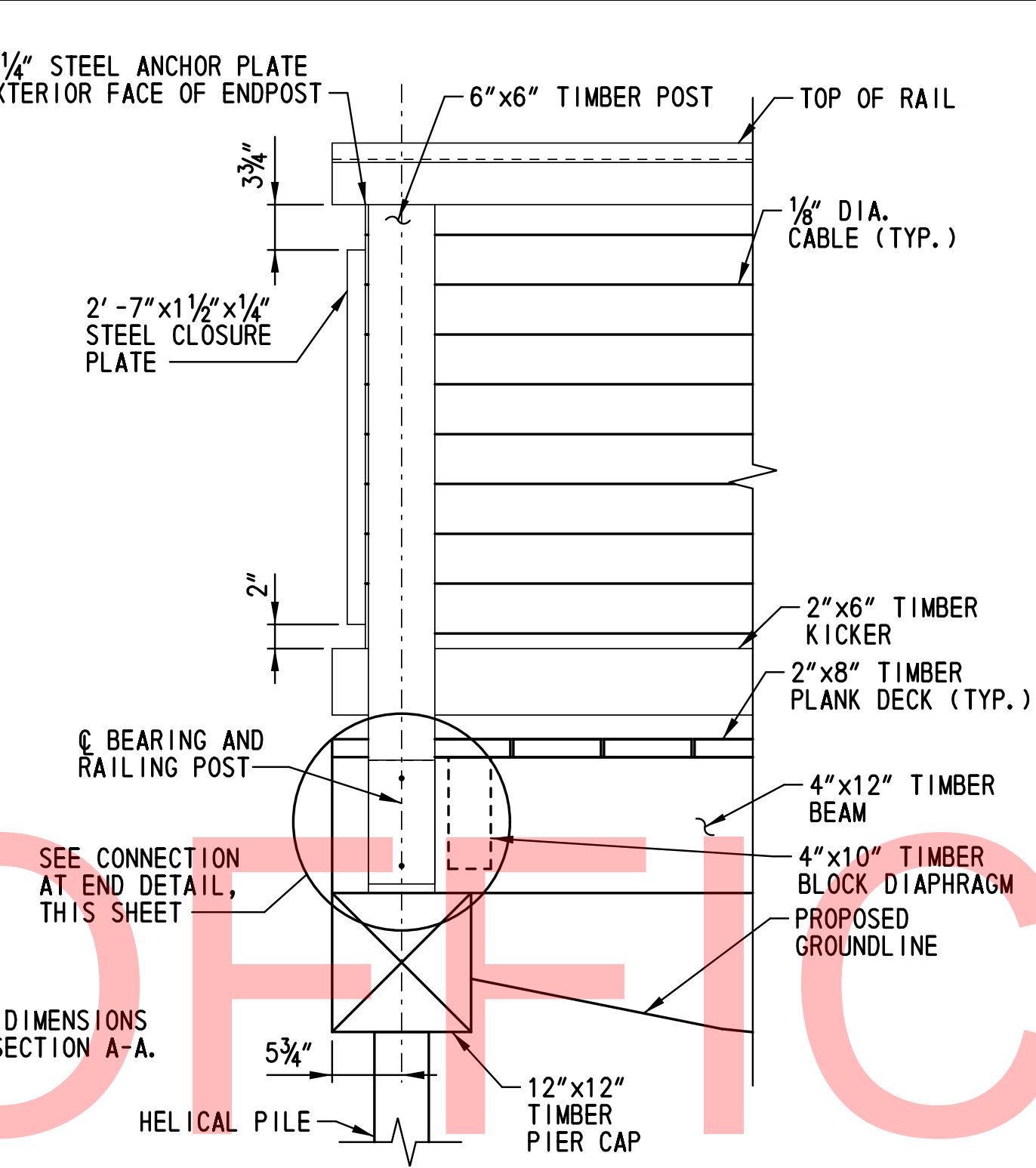
| | |
|------------------------|-------------------------------------|
| CONTRACT T201330009 | BRIDGE NO. X |
| COUNTY NEW CASTLE | DESIGNED BY: ADD CHECKED BY: WAG |



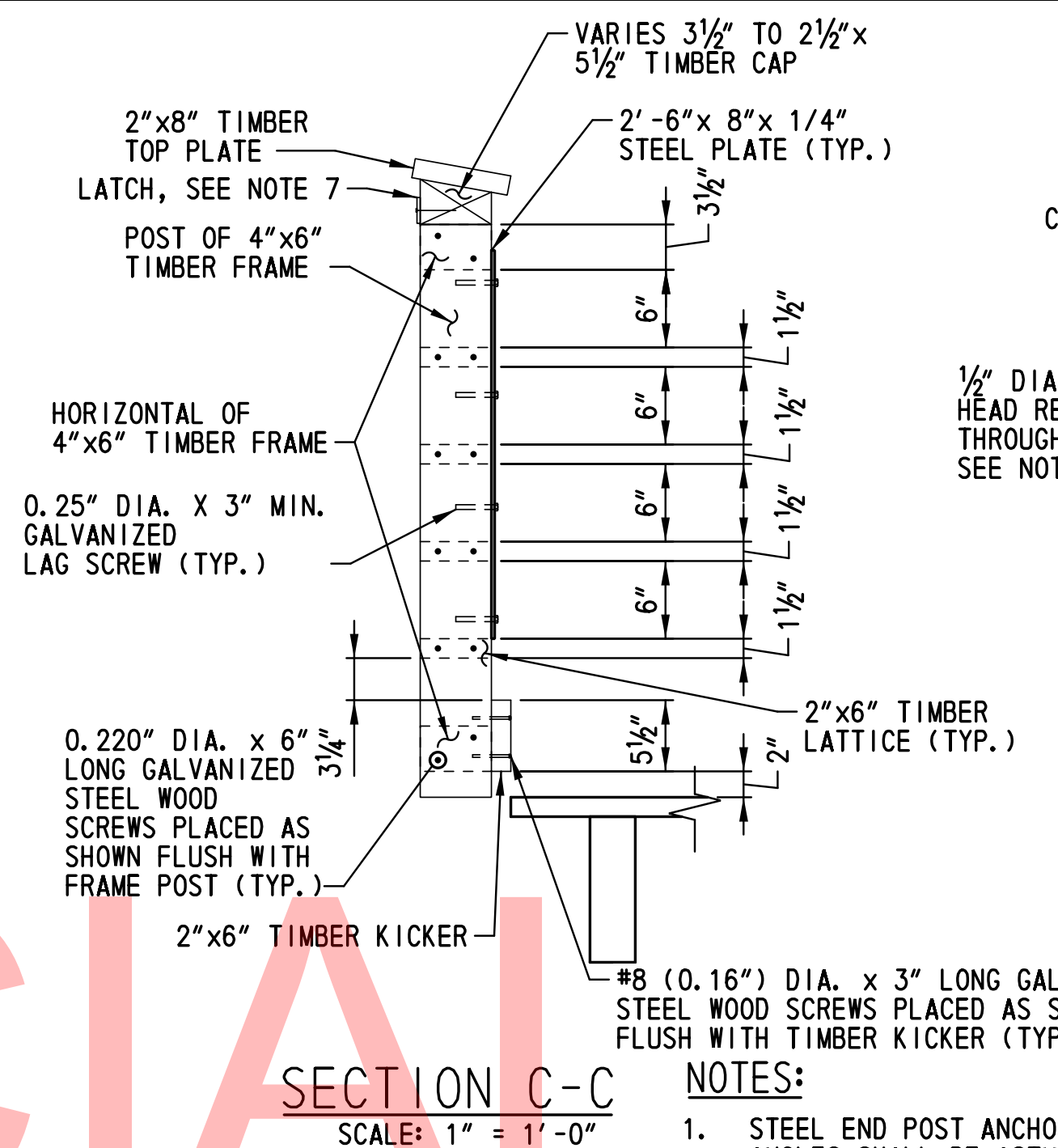
SECTION A-A
SCALE: 1" = 1'-0"



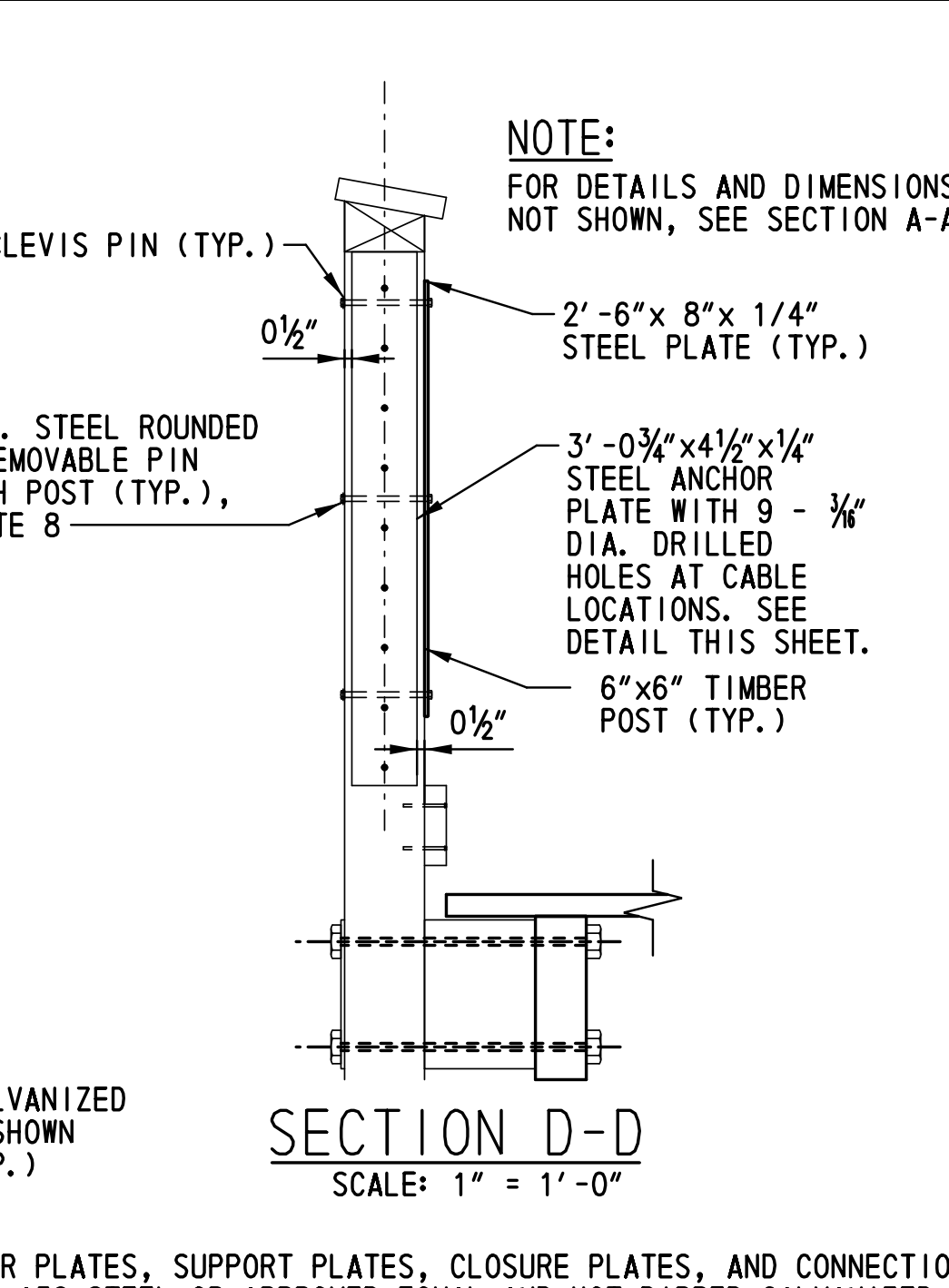
SECTION B-B
SCALE: 1" = 1'-0"



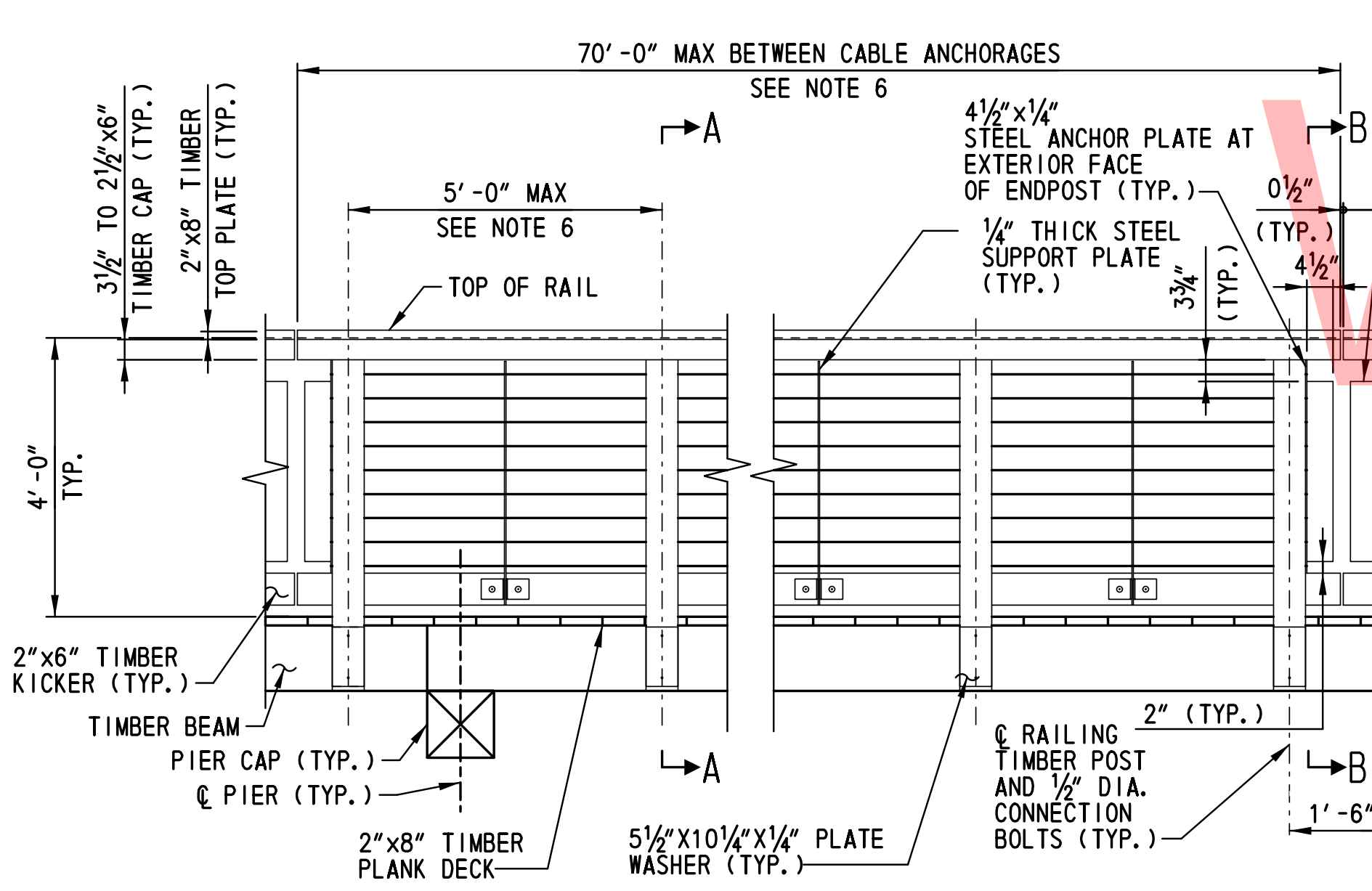
END POST AT TRAIL
SCALE: 1" = 1'-0"



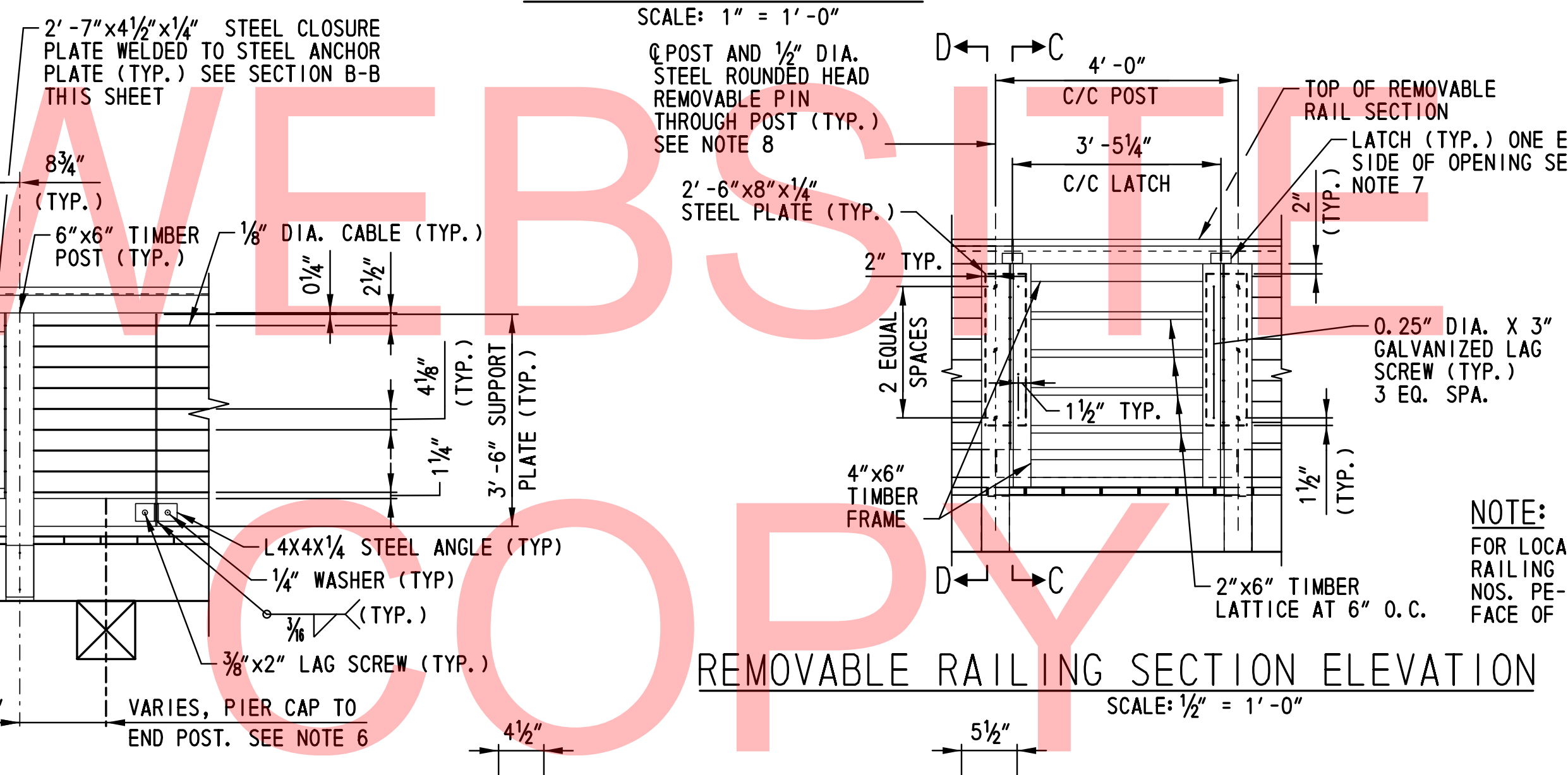
SECTION C-C
SCALE: 1" = 1'-0"



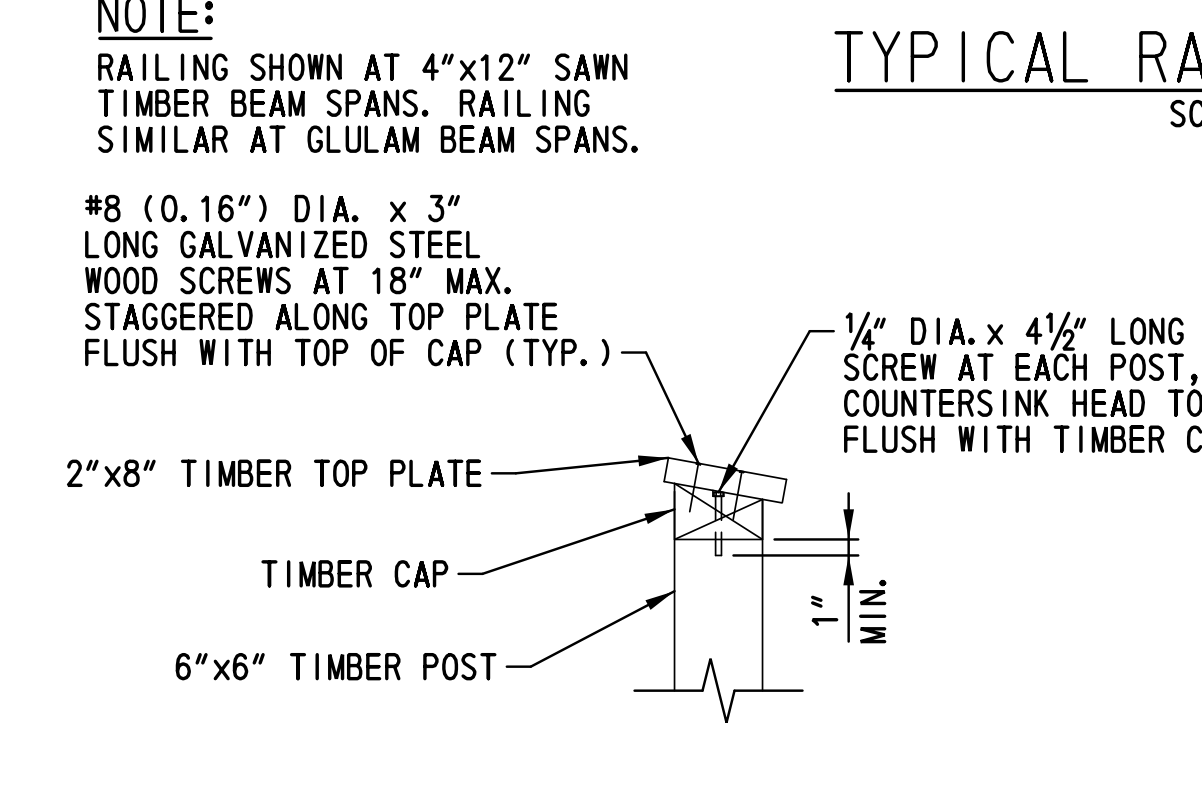
SECTION D-D
SCALE: 1" = 1'-0"



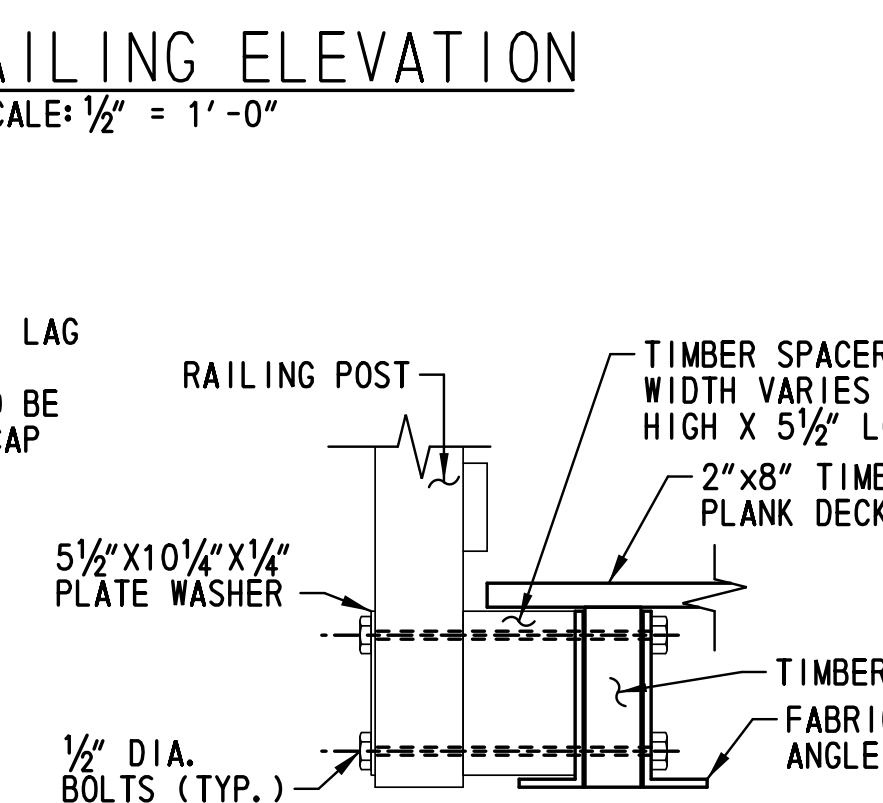
TYPICAL RAILING ELEVATION
SCALE: 1/2" = 1'-0"



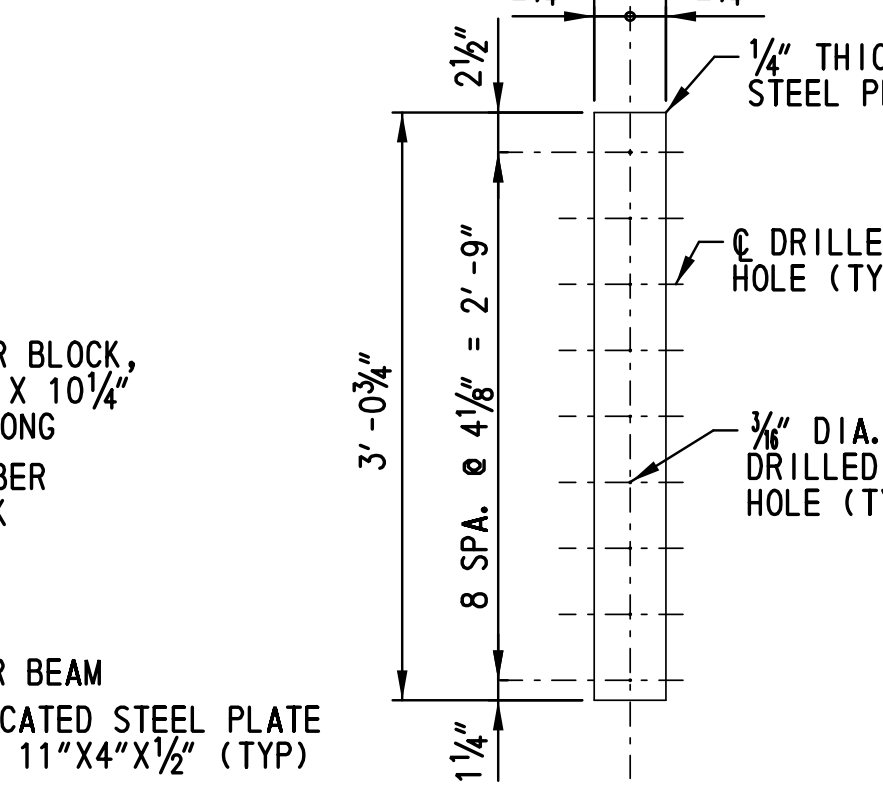
REMOVABLE RAILING SECTION ELEVATION
SCALE: 1/2" = 1'-0"



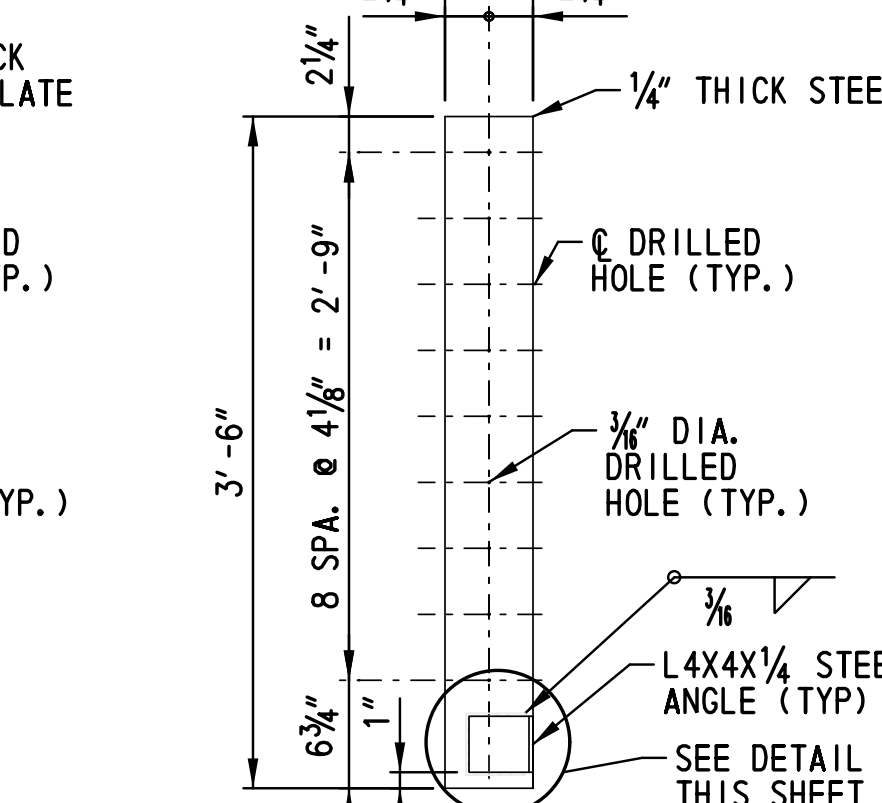
CAP RAILING CONNECTION
SCALE: 1" = 1'-0"



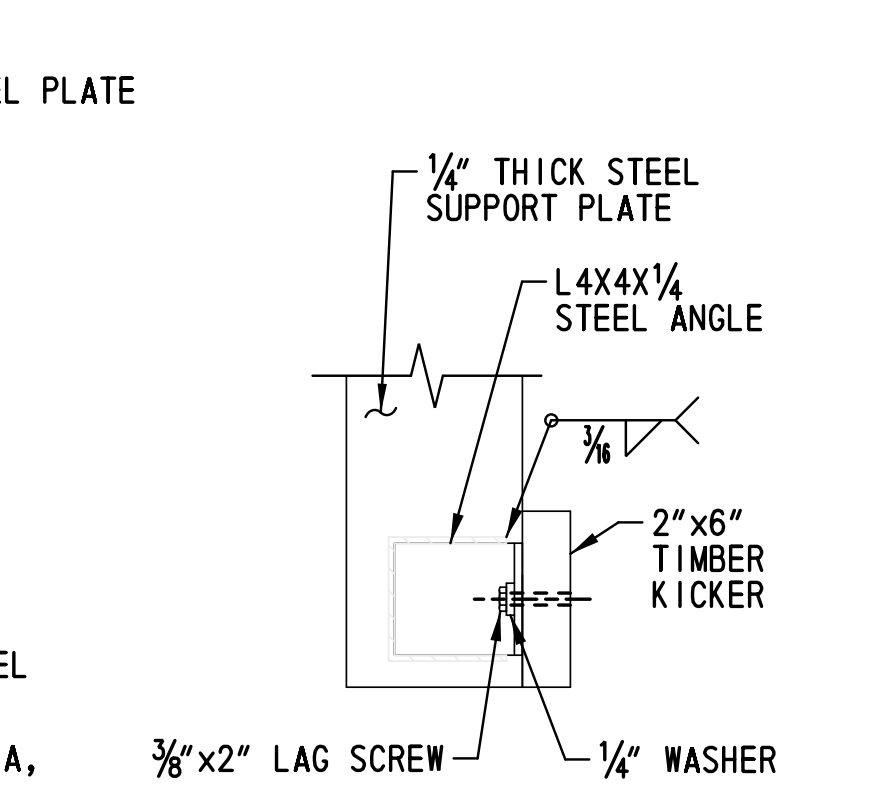
CONNECTION AT END
SCALE: 1" = 1'-0"



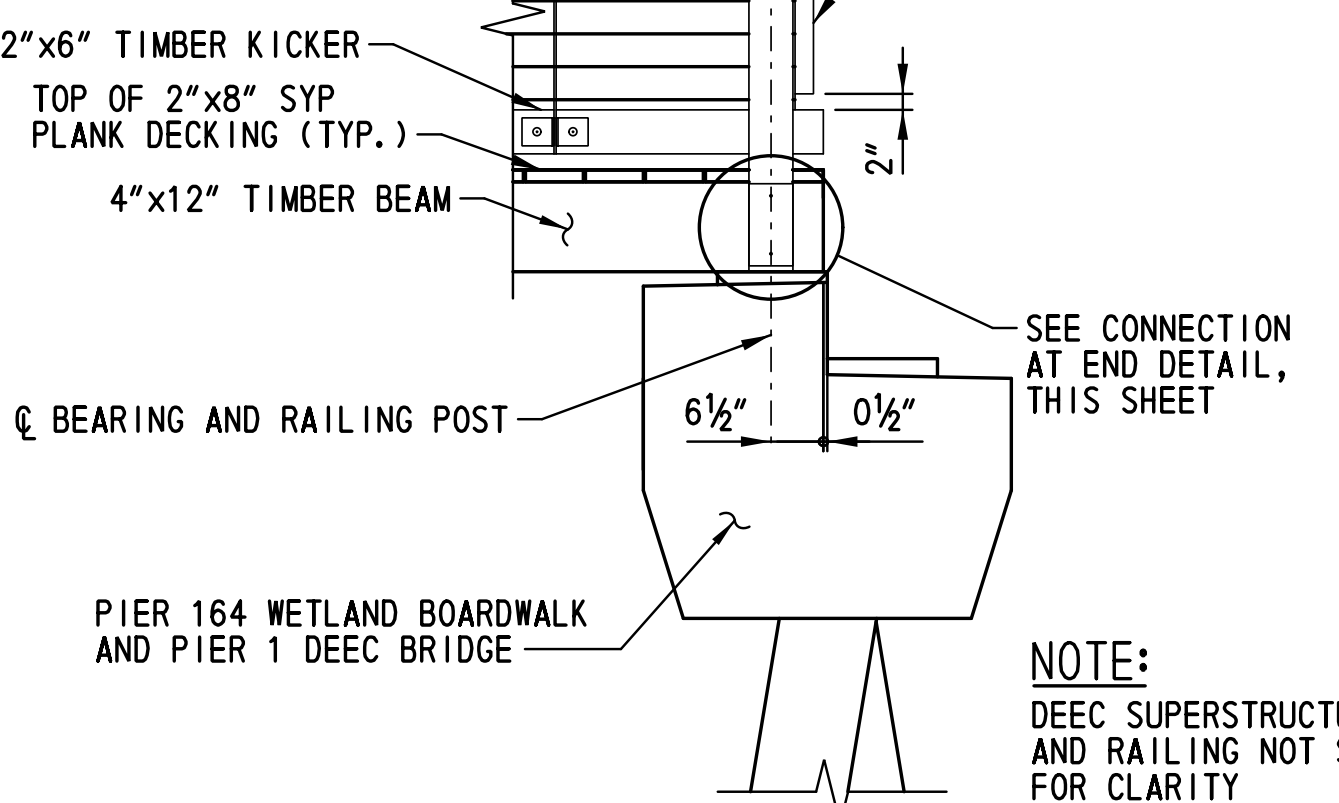
ANCHOR PLATE DETAIL
SCALE: 1" = 1'-0"



SUPPORT PLATE DETAIL
SCALE: 1" = 1'-0"



DETAIL A
SCALE: 2" = 1'-0"



END POST AT DEEC
SCALE: 1/2" = 1'-0"

- NOTES:**
- STEEL END POST ANCHOR PLATES, SUPPORT PLATES, CLOSURE PLATES, AND CONNECTION ANGLES SHALL BE ASTM A36 STEEL OR APPROVED EQUAL AND HOT-DIPPED GALVANIZED IN ACCORDANCE WITH ASTM 123.
 - BOLTS, WASHERS, LAG SCREWS, WOOD SCREWS, LATCHES, AND CLEVIS PINS SHALL BE HIGH STRENGTH CONFORMING TO ASTM A325 AND HOT-DIPPED GALVANIZED IN ACCORDANCE WITH ASTM A153. LAG SCREWS, BOLTS, AND CLEVIS PINS SHALL BE IN COMPLIANCE WITH ANSI/ASME B18.2.1 FOR DIMENSIONAL REQUIREMENTS.
 - ALL TIMBER RAILING ELEMENTS SHALL BE VISUALLY GRADED NO. 1 SOUTHERN YELLOW PINE. REFER TO DWG. PN-201 AND THE SPECIAL PROVISIONS FOR MORE INFORMATION.
 - CABLES AND ATTACHMENT HARDWARE SHALL BE STAINLESS STEEL IN CONFORMANCE WITH GRADE REQUIREMENTS SPECIFIED IN THE SPECIAL PROVISIONS FOR ITEM NO. 606702. A NEOPRENE SPACER SHALL BE PROVIDED BETWEEN THE ANCHOR PLATE AND THE STAINLESS STEEL CABLE HARDWARE.
 - CABLES SHALL BE TENSIONED AS SPECIFIED PER THE MANUFACTURER'S SPECIFICATIONS TO ENSURE A MAXIMUM GAP BETWEEN ADJACENT CABLES OF 4" UNDER APPLIED LOADS. CABLE INSTALLATION INCLUDING TIGHTENING SEQUENCE SHALL BE PER THE MANUFACTURER'S SPECIFICATIONS AND SUBMITTED WITH WORKING DRAWINGS FOR REVIEW AND APPROVAL BY THE ENGINEER. REFER TO ITEM 606702 SPECIAL PROVISIONS FOR MORE INFORMATION.
 - THE CONTRACTOR SHALL PREPARE AND SUBMIT WORKING DRAWINGS OF THE TIMBER RAILING AND CABLE SYSTEM FOR REVIEW AND APPROVAL BY THE ENGINEER. RAILING POST SPACING TO BE PROVIDED BY THE CONTRACTOR.
 - GALVANIZED STEEL LATCHES SHALL BE SPECIFIED WITHIN SUBMITTED WORKING DRAWINGS FOR REVIEW AND APPROVAL BY THE ENGINEER. LATCHES SHALL BE LOCKABLE AND PROVIDED ONE-EACH SIDE OF REMOVABLE RAILING SECTIONS ON THE OUTSIDE FACE OF RAILING.
 - GALVANIZED STEEL REMOVABLE PINS SHALL BE SPECIFIED WITHIN SUBMITTED WORKING DRAWINGS FOR REVIEW AND APPROVAL BY THE ENGINEER AND SHALL CONSIST OF CLEVIS PINS WITH BOW-TIE COTTER PINS OR APPROVED EQUAL. PINS SHALL BE ORIENTED WITH COTTER PIN PLACED ON THE OUTSIDE FACE OF RAILING. HEADS FOR PINS SHALL BE FLUSH WITH INSIDE FACE OF RAILING WHEN IN THE LOCKED POSITION.

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| ADDENDUMS / REVISIONS |
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| |

SCALE: AS NOTED

NEW CASTLE INDUSTRIAL TRACK TRAIL, PHASE 3

| | | | |
|----------|------------|--------------|-----|
| CONTRACT | T201330009 | BRIDGE NO. | X |
| COUNTY | NEW CASTLE | DESIGNED BY: | CZK |
| | | CHECKED BY: | WAG |

RAILING DETAILS

| | | |
|--------|-------------|-----|
| RL-201 | SHEET NO. | 113 |
| | TOTAL SHTS. | 205 |

| BORING: IT-07 | | DATE DRILLED: 2/10/14 | | | |
|--------------------|--------------------|-----------------------|---|----------------------|--|
| STATION: 134+80.91 | OFFSET: 23.54' LT. | ELEVATION: 2.14' | NORTHING: 627143.8658 | EASTING: 612834.0539 | |
| COMMENTS: N/A | | | | | |
| SAMPLE INFORMATION | | | | | |
| NO. | DEPTH | BLOWS /6" | DESCRIPTION | CLASS /G.I. | REMARKS |
| 1 | 0.0 | 3 | NO RECOVERY | | |
| 2 | 2.0 | 2 | SATURATED FIRM BLACK CLAYEY FINE TO COARSE SANDY SILT W/TRACE FINE GRAVEL. | A-4(0) | |
| 3 | 4.0 | 2 | SATURATED SOFT BLACK COARSE SANDY CLAY W/SOME FINE SAND, FINE GRAVEL AND SILT. | A-7-5(1) | |
| 4 | 6.0 | 1 | SATURATED VERY LOOSE BLACK ORGANIC SILTY COARSE TO FINE SAND W/TRACE FINE GRAVEL. | A-2-5(0) | |
| 5 | 8.0 | 1 | SATURATED VERY LOOSE BLACK ORGANIC SILTY COARSE TO FINE SAND W/SOME FINE GRAVEL. | A-1-B | |
| 6 | 10.0 | 1 | SATURATED VERY LOOSE GRAY CLAYEY FINE SAND AND FINE GRAVEL W/SOME SILT AND COARSE SAND. | A-2-4(0) | |
| 7 | 12.0 | 2 | SATURATED MEDIUM DENSE GRAY COARSE TO FINE SANDY FINE GRAVEL W/SOME SILT. | A-1-B | |
| 8 | 14.0 | 7 | SATURATED DENSE BROWN COARSE TO FINE SAND AND FINE GRAVEL W/TRACE SILT. | A-1-B | EL. -12.00 MIN. HELICAL PILE TIP ELEVATION FOR TIMBER PILES PIERS 6 THROUGH 44 |
| 9 | 16.0 | 1 | SATURATED LOOSE BROWN SILTY COARSE SAND W/SOME FINE SAND AND FINE GRAVEL. | A-1-B | |
| 10 | 18.0 | 2 | SATURATED LOOSE BROWN ORGANIC COARSE SAND W/SOME FINE SAND, FINE GRAVEL AND SILT. | A-1-B | EL. -22.00 EST. TIP ELEVATION FOR TIMBER PILES (ALL PIERS) |
| 11 | 24.0 | 25 | SATURATED VERY DENSE GRAY COARSE SANDY FINE GRAVEL W/SOME FINE SAND, TRACE OF SILT. | A-1-A | |
| 12 | 29.0 | 30 | SATURATED VERY DENSE BROWN FINE GRAVEL W/SOME COARSE TO FINE SAND, TRACE OF SILT. | A-1-A | |
| 13 | 34.0 | 10 | SATURATED VERY STIFF RED CLAYEY FINE SANDY SILT W/TRACE COARSE SAND AND FINE GRAVEL. | A-4(1) | |
| 14 | 39.0 | 10 | SATURATED VERY STIFF BROWN CLAYEY FINE SANDY SILT W/TRACE COARSE SAND AND FINE GRAVEL. | A-4(0) | |
| 15 | 44.0 | 8 | SATURATED MEDIUM DENSE BROWN SILTY FINE SAND W/SOME COARSE SAND, TRACE OF FINE GRAVEL. | A-2-4(0) | |
| 16 | 49.0 | 8 | SATURATED MEDIUM DENSE BROWN COARSE TO FINE SAND W/SOME SILT AND FINE GRAVEL. | A-1-B | |
| 17 | 54.0 | 7 | SATURATED DENSE BROWN SILTY FINE TO COARSE SAND W/SOME FINE GRAVEL. | A-2-4(0) | |
| 18 | 59.0 | 13 | SATURATED DENSE BROWN SILTY COARSE TO FINE SAND AND FINE GRAVEL. | A-2-4(0) | |
| 19 | 64.0 | 37 | SATURATED VERY DENSE BROWN FINE SAND W/SOME COARSE SAND, FINE GRAVEL AND SILT. | A-2-4(0) | |
| 20 | 69.0 | 12 | SATURATED VERY STIFF BROWN FINE SANDY CLAY W/SOME SILT, TRACE OF COARSE SAND AND FINE GRAVEL. | A-6(2) | |
| 21 | 74.0 | 16 | SATURATED HARD BROWN CLAYEY FINE SANDY SILT W/TRACE COARSE SAND. | A-4(1) | |
| 22 | 79.0 | 32 | SATURATED HARD BROWN FINE SANDY SILT W/SOME COARSE SAND. | A-4(0) | |
| END BORING | | | | | |

| BORING: IT-08 | | DATE DRILLED: 1/23/14 | | | |
|--------------------|--------------------|-----------------------|--|----------------------|--|
| STATION: 138+48.52 | OFFSET: 21.67' LT. | ELEVATION: 2.26' | NORTHING: 627211.1604 | EASTING: 613195.4568 | |
| COMMENTS: N/A | | | | | |
| SAMPLE INFORMATION | | | | | |
| NO. | DEPTH | BLOWS /6" | DESCRIPTION | CLASS /G.I. | REMARKS |
| 1 | 0.0 | | NO SAMPLE | | |
| 2 | 2.0 | | SATURATED SOFT BLACK ORGANIC SILTY CLAY W/SOME COARSE SAND, TRACE OF FINE SAND. | A-7-5(17) | |
| 3 | 4.0 | | SATURATED SOFT BLACK ORGANIC SILTY CLAY W/SOME COARSE SAND, TRACE OF FINE SAND. | A-7-5(16) | |
| 4 | 6.0 | | SATURATED SOFT BLACK ORGANIC SILTY COARSE SANDY CLAY W/SOME FINE SAND. | A-7-5(16) | |
| 5 | 8.0 | | NO SIEVE ANALYSIS - INDICATION OF SATURATED SOFT BLACK ORGANIC SILTY COARSE SANDY CLAY W/SOME FINE SAND. | | |
| 6 | 10.0 | | SATURATED SOFT BLACK ORGANIC CLAYEY SILT W/SOME FINE SAND, TRACE OF COARSE SAND AND FINE GRAVEL. | A-4(5) | |
| 7 | 12.0 | 3 | SATURATED STIFF BLACK ORGANIC CLAYEY SILT W/SOME FINE TO COARSE SAND, TRACE OF FINE GRAVEL. | A-4(2) | |
| 8 | 14.0 | 8 | SATURATED MEDIUM DENSE GRAY COARSE TO FINE SAND AND FINE GRAVEL W/TRACE SILT. | A-1-B | |
| 9 | 16.0 | 4 | SATURATED LOOSE GRAY FINE TO COARSE SAND AND FINE GRAVEL W/SOME SILT. | A-1-B | |
| 10 | 18.0 | 16 | SATURATED VERY DENSE GRAY FINE SANDY FINE GRAVEL W/SOME COARSE SAND, TRACE OF SILT. | A-1-B | EL. -16.00 MIN. TIMBER PILE TIP ELEVATION PIERS 45 THROUGH 65. |
| 11 | 24.0 | 36 | SATURATED VERY DENSE GRAY FINE GRAVEL W/SOME FINE TO COARSE SAND, TRACE OF SILT. | A-1-A | EL. -22.00 EST. TIP FOR TIMBER PILES (ALL PIERS) |
| 12 | 29.0 | 32 | SATURATED VERY DENSE GRAY FINE SAND AND FINE GRAVEL W/SOME COARSE SAND AND SILT. | A-1-B | |
| 13 | 34.0 | 5 | SATURATED MEDIUM DENSE BROWN SILTY FINE TO COARSE SAND W/SOME FINE GRAVEL. | A-2-4(0) | |
| 14 | 39.0 | 5 | SATURATED MEDIUM DENSE BROWN SILTY COARSE TO FINE SAND W/TRACE FINE GRAVEL. | A-2-4(0) | |
| 15 | 44.0 | 4 | SATURATED LOOSE BROWN SILTY FINE TO COARSE SAND W/SOME FINE GRAVEL. | A-2-4(0) | |
| 16 | 49.0 | 5 | SATURATED VERY STIFF BROWN FINE SANDY CLAY W/SOME SILT, TRACE OF COARSE SAND. | A-6(3) | |
| 17 | 54.0 | 17 | SATURATED HARD BROWN FINE SANDY CLAY W SOME SILT, TRACE OF COARSE SAND AND FINE GRAVEL. | A-6(6) | |
| 18 | 59.0 | 8 | SATURATED HARD BROWN FINE SANDY SILT W SOME CLAY AND COARSE SAND. | A-4(0) | |
| 19 | 64.0 | 13 | SATURATED HARD BROWN SILTY FINE SANDY CLAY W/TRACE COARSE SAND. | A-7-6(16) | |
| 20 | 69.0 | 17 | SATURATED HARD BROWN FINE SANDY CLAY W SOME SILT AND COARSE SAND. | A-7-6(9) | |
| 21 | 74.0 | 14 | SATURATED HARD BROWN COARSE SANDY CLAY W/SOME SILT AND FINE GRAVEL, TRACE OF FINE SAND. | A-7-6(8) | |
| 22 | 79.0 | 16 | SATURATED HARD BROWN SILTY FINE SANDY CLAY W/TRACE COARSE SAND AND FINE GRAVEL. | A-7-5(19) | |
| 23 | 84.0 | 21 | SATURATED HARD BROWN FINE SANDY CLAY W SOME SILT, TRACE OF COARSE SAND. | A-7-5(8) | |
| 24 | 89.0 | 19 | SATURATED HARD BROWN COARSE TO FINE SANDY CLAY W/SOME SILT, TRACE OF FINE GRAVEL. | A-7-5(4) | |
| END BORING | | | | | |

| BORING: IT-09 | | DATE DRILLED: 1/14/14 | | | |
|--------------------|--------------------|-----------------------|---|----------------------|--|
| STATION: 143+50.41 | OFFSET: 21.87' LT. | ELEVATION: 2.63' | NORTHING: 627305.7456 | EASTING: 613688.3554 | |
| COMMENTS: N/A | | | | | |
| SAMPLE INFORMATION | | | | | |
| NO. | DEPTH | BLOWS /6" | DESCRIPTION | CLASS /G.I. | REMARKS |
| 1 | 0.0 | | TIDAL WATER AND MARSH | | |
| 2 | 2.0 | | SATURATED SOFT BLACK COARSE SANDY CLAY W/SOME SILT, TRACE OF FINE SAND. | A-7-5(13) | |
| 3 | 4.0 | | SATURATED SOFT BLACK SILTY COARSE SANDY CLAY W/TRACE FINE SAND. | A-7-5(13) | |
| 4 | 6.0 | | SATURATED SOFT BLACK COARSE SANDY CLAY W/SOME SILT, TRACE OF FINE SAND. | A-7-5(11) | |
| 5 | 8.0 | | SATURATED SOFT BLACK SILT W/SOME CLAY AND COARSE TO FINE SAND. | A-5(3) | |
| 6 | 10.0 | 2 | SATURATED VERY SOFT BLACK CLAYEY FINE GRAVEL W/SOME COARSE TO FINE SAND AND SILT. | A-2-7(1) | |
| 7 | 12.0 | 2 | SATURATED VERY STIFF BLACK CLAYEY SILT W/SOME FINE TO COARSE SAND AND FINE GRAVEL. | A-5(4) | |
| 8 | 14.0 | 4 | SATURATED HARD BLACK CLAYEY SILT W/SOME COARSE TO FINE SAND, TRACE OF FINE GRAVEL. | A-5(5) | EL. -12.00 MIN. TIMBER PILE TIP ELEVATION PIERS 6 THROUGH 163. |
| 9 | 16.0 | 10 | SATURATED DENSE BLACK COARSE SANDY FINE GRAVEL W/SOME FINE SAND, TRACE OF SILT. | A-1-B | |
| 10 | 18.0 | 3 | SATURATED MEDIUM DENSE GRAY COARSE SAND AND FINE GRAVEL W/SOME FINE SAND, TRACE OF SILT. | A-1-B | EL. -16.00 MIN. TIMBER PILE TIP ELEVATION PIERS 45 THROUGH 65. |
| 11 | 24.0 | 30 | SATURATED VERY DENSE GRAY FINE TO COARSE SAND AND FINE GRAVEL, TRACE OF SILT. | A-1-B | EL. -22.00 EST. TIP FOR TIMBER PILES (ALL PIERS) |
| 12 | 29.0 | 9 | SATURATED MEDIUM DENSE BROWN SILTY FINE SAND W/SOME COARSE SAND AND CLAY, TRACE OF FINE GRAVEL. | A-2-4(0) | |
| 13 | 34.0 | 9 | SATURATED DENSE BROWN SILTY FINE TO COARSE SAND W/TRACE FINE GRAVEL. | A-2-4(0) | |
| 14 | 39.0 | 17 | SATURATED VERY STIFF BROWN FINE SANDY SILT W/SOME CLAY, TRACE OF COARSE SAND AND FINE GRAVEL. | A-4(0) | |
| 15 | 44.0 | 15 | SATURATED DENSE BROWN COARSE TO FINE SAND W/SOME SILT, TRACE OF FINE GRAVEL. | A-2-4(0) | |
| 16 | 49.0 | 12 | SATURATED DENSE GRAY SILTY FINE TO COARSE SAND W/TRACE FINE GRAVEL AND CLAY. | A-2-4(0) | |
| 17 | 54.0 | 14 | SATURATED HARD BROWN CLAYEY FINE SANDY SILT W/SOME COARSE SAND, TRACE OF FINE GRAVEL. | A-4(0) | |
| 18 | 59.0 | 11 | SATURATED VERY STIFF RED FINE SANDY CLAY W/SOME SILT AND COARSE SAND. | A-6(5) | |
| 19 | 64.0 | 22 | SATURATED VERY DENSE RED FINE TO COARSE SAND W/SOME SILT, TRACE OF FINE GRAVEL. | A-2-4(0) | |
| 20 | 69.0 | 22 | SATURATED HARD BROWN FINE SANDY CLAY W/SOME COARSE SAND AND SILT, TRACE OF FINE GRAVEL. | A-6(2) | |
| 21 | 74.0 | 16 | NO SAMPLE | A-6(4) | |
| 22 | 84.0 | 30 | SATURATED VERY DENSE RED CLAYEY FINE SAND W/SOME SILT AND COARSE SAND, TRACE OF FINE GRAVEL. | A-2-6(1) | |
| 23 | 88.0 | 15 | SATURATED HARD RED FINE SANDY CLAY W/SOME COARSE SAND AND SILT, TRACE OF FINE GRAVEL. | A-6(4) | |
| END BORING | | | | | |

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ADDENDUMS / REVISIONS

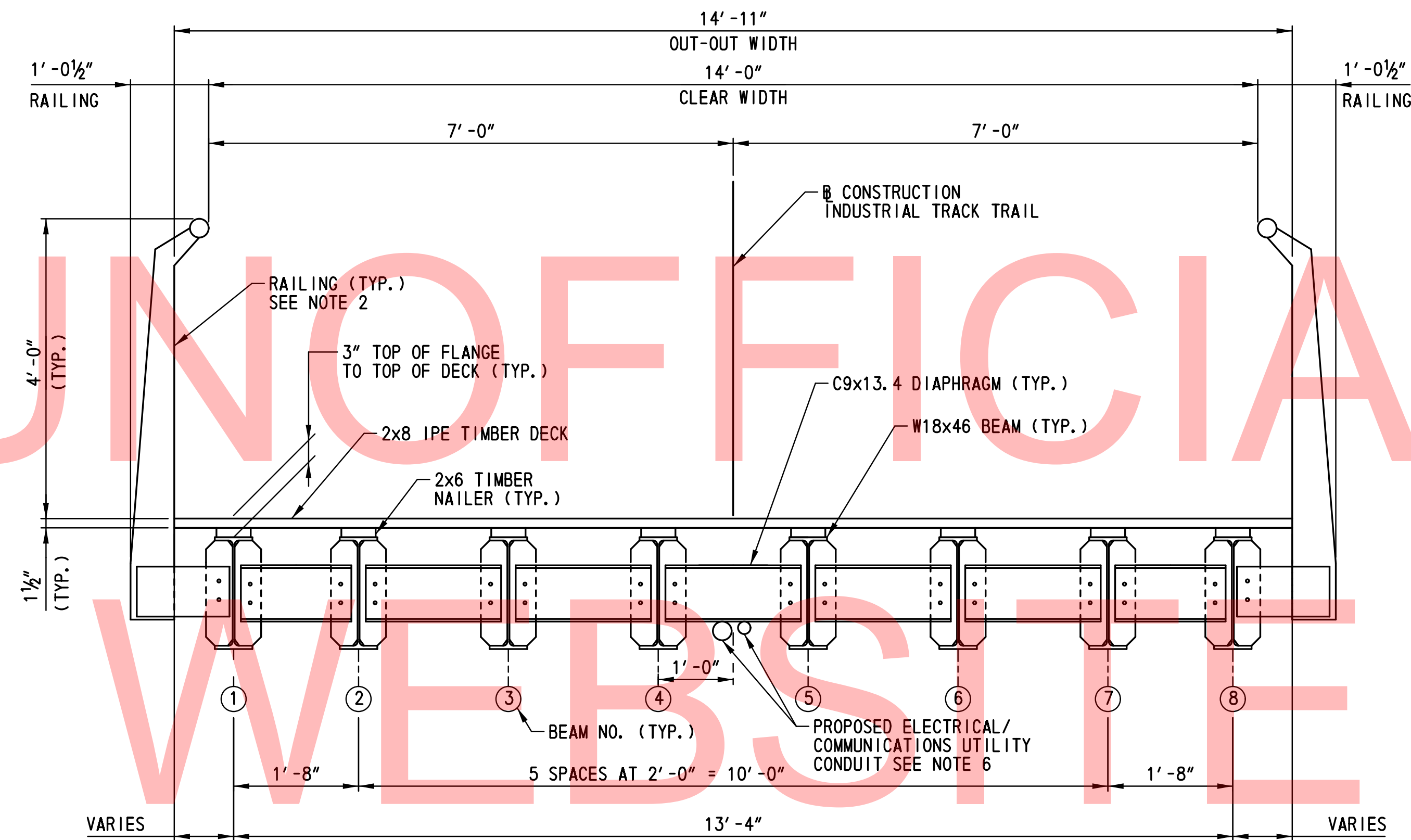
SCALE: NONE

NEW CASTLE INDUSTRIAL TRACK TRAIL, PHASE 3

| | | |
|------------|------------------|---|
| CONTRACT | BRIDGE NO. | X |
| T201330009 | DESIGNED BY: ADD | |
| COUNTY | CHECKED BY: WAG | |
| NEW CASTLE | | |

BORING LOG - 2

| |
|-------------|
| BO-201 |
| SHEET NO. |
| 114 |
| TOTAL SHTS. |
| 205 |

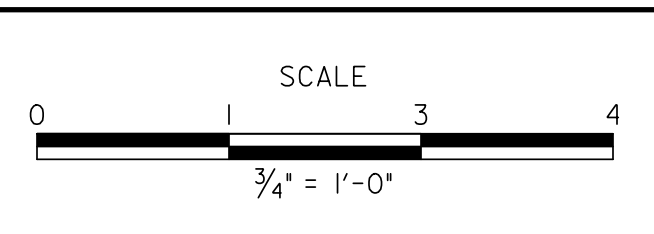


TYPICAL SECTION - SPANS 1-14
SCALE: 3/4" = 1'-0"

- NOTES:**
1. ALL DIMENSIONS ARE MEASURED RADIAL TO THE BASELINE OF CONSTRUCTION INDUSTRIAL TRACK TRAIL.
 2. FOR RAILING DETAILS, SEE DWG. NO. RL-301.
 3. FOR CONNECTION PLATE AND DIAPHRAGM DETAILS, SEE DWG. NO. BM-304.
 4. FOR BEAM ELEVATIONS, SEE DWG. NO. BM-301.
 5. FOR IPE TIMBER DECK DETAILS, SEE DWG. NOS. DK-301 AND DK-302.
 6. FOR UTILITY ELECTRICAL AND COMMUNICATIONS UTILITY CONDUIT INFORMATION SEE DRAWINGS LI-05 THROUGH LI-12.

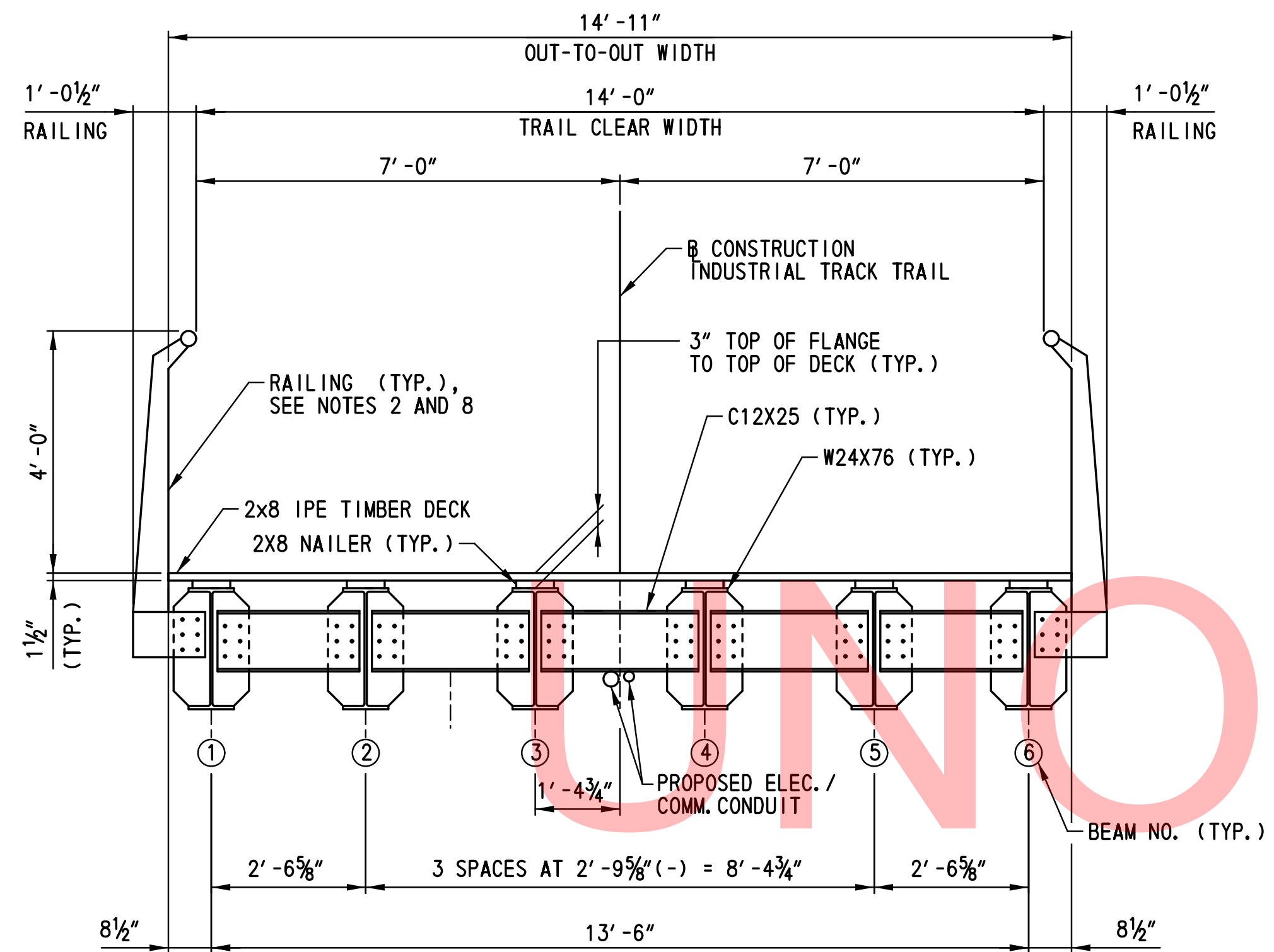
N:\31896-002\CADD\BRIDGE\TS301.LITG.DGN

| ADDENDUMS / REVISIONS | |
|-----------------------|--|
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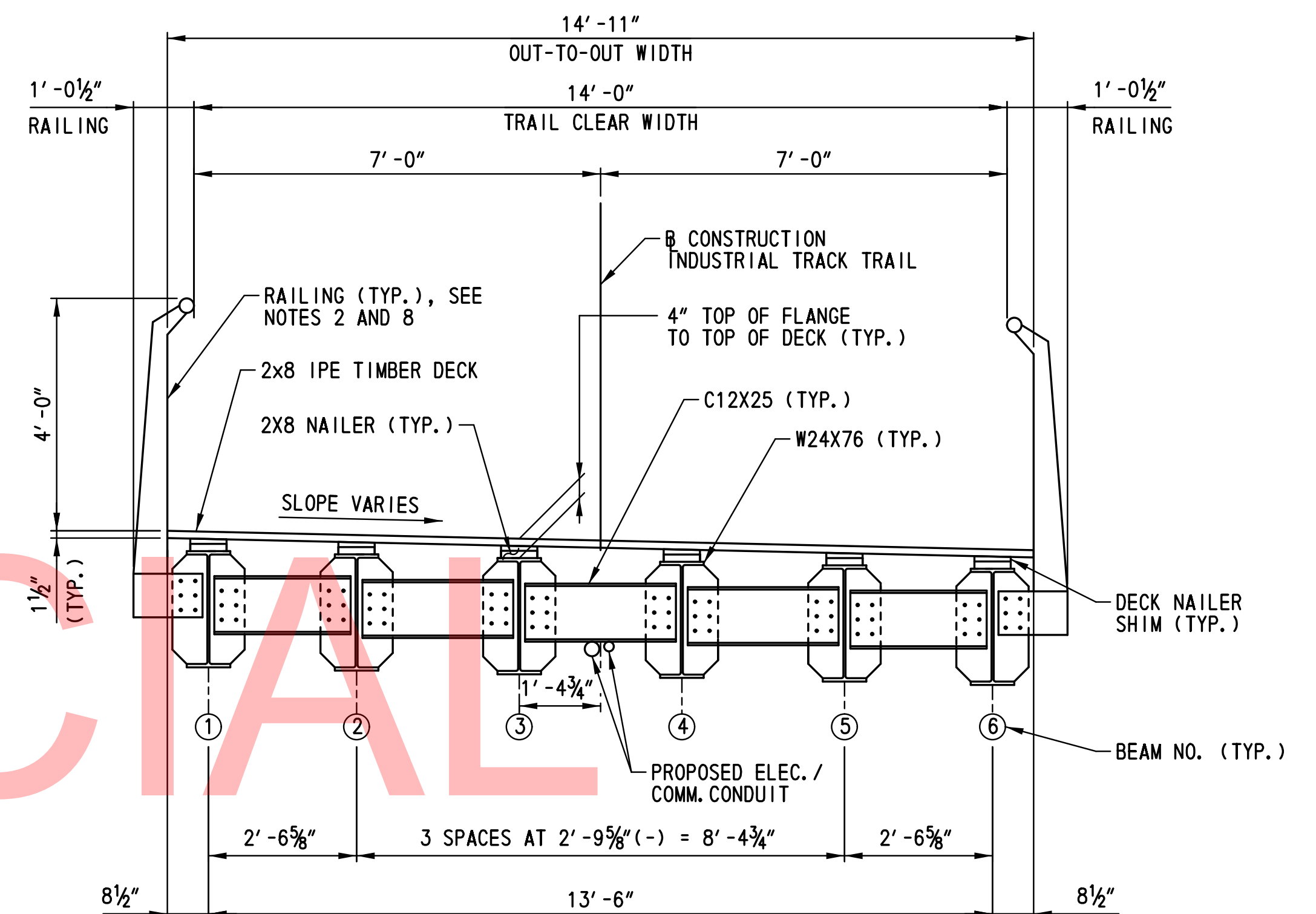


| | | |
|------------|------------------|----------|
| CONTRACT | BRIDGE NO. | X |
| T201330009 | DESIGNED BY: NAH | |
| COUNTY | CHECKED BY: WAG | |
| NEW CASTLE | | |

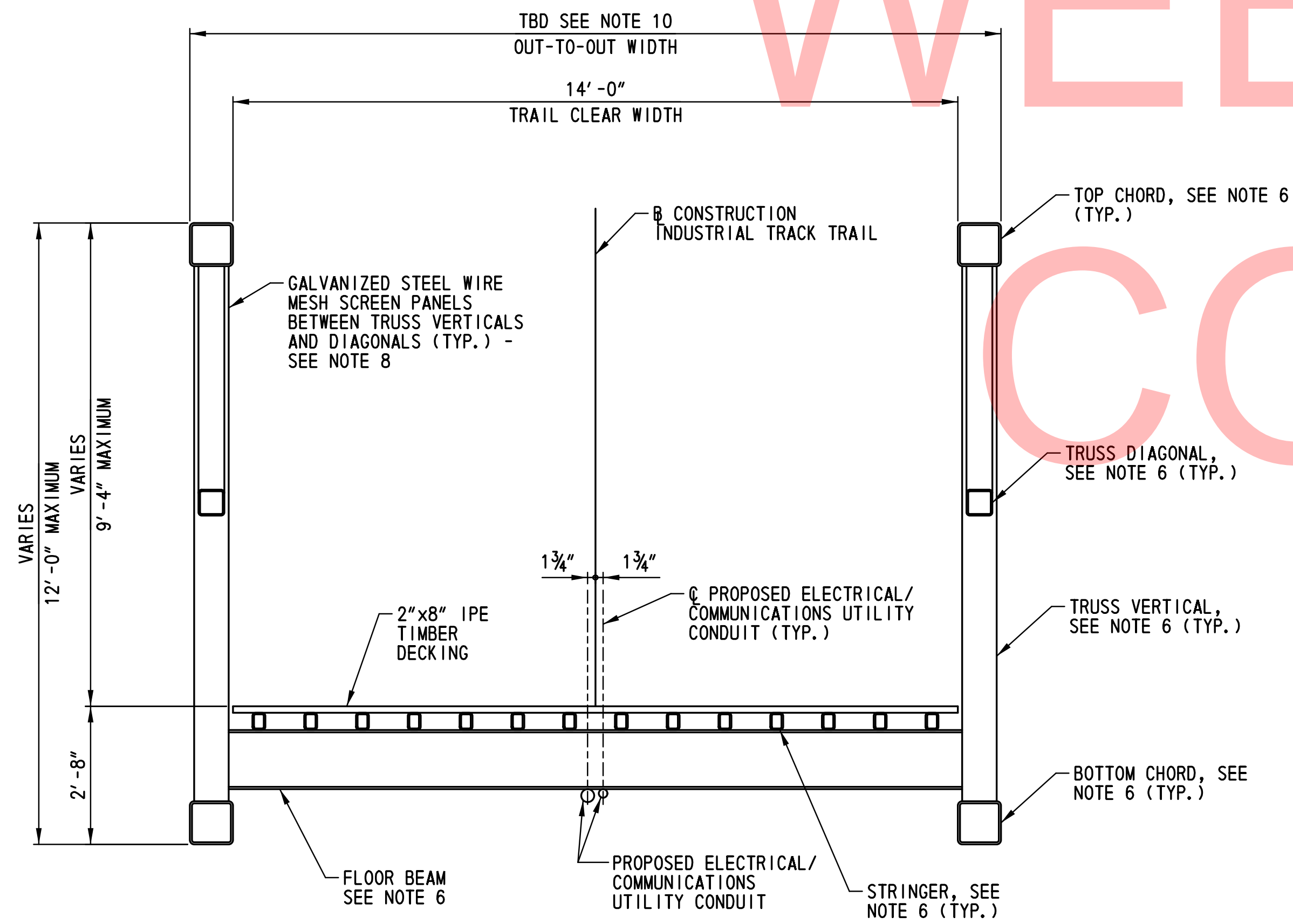
| |
|---------------|
| TS-301 |
| SHEET NO. |
| 116 |
| TOTAL SHTS. |
| 205 |



TYPICAL SECTION - SPAN 15
SCALE: 1/2" = 1'-0"



TYPICAL SECTION - SPAN 17
SCALE: 1/2" = 1'-0"

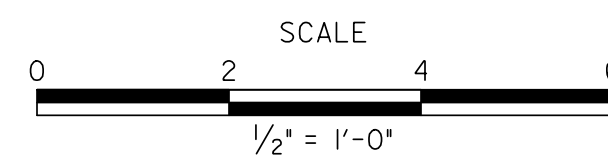


TYPICAL SECTION - SPAN 16
SCALE: 1/2" = 1'-0"

NOTES:

1. ALL DIMENSIONS ARE MEASURED PERPENDICULAR TO THE BASELINE OF CONSTRUCTION INDUSTRIAL TRACK TRAIL.
2. FOR SPAN NOS. 15 AND 17 RAILING DETAILS, SEE DWG. NO. RL-301.
3. FOR SPAN NOS. 15 AND 17 CONNECTION PLATE AND DIAPHRAGM DETAILS, SEE DWG. NO. BM-304.
4. FOR SPAN NOS. 15 AND 17 BEAM ELEVATIONS, SEE DWG. NO. BM-302 AND BM-303.
5. FOR IPE TIMBER DECK DETAILS, SEE DWG. NO. DK-301 AND DK-302.
6. PREFABRICATED TRUSS DESIGN TO BE PROVIDED BY CONTRACTOR. SEE PROJECT NOTES.
7. UTILITY CONDUIT PLACED AS SHOWN. CONDUIT FOR ELECTRICAL/COMMUNICATIONS.
8. RAILING SHALL BE GALVANIZED STEEL WOVEN WIRE MESH INFILL PANELS. SEE DRAWING RL-301 FOR RAILING DETAILS.
9. FOR ELECTRICAL AND COMMUNICATIONS CONDUIT INFORMATION SEE DRAWING NOS. LI-05 THROUGH LI-12.
10. OUT TO OUT WIDTH TO BE DETERMINED BY THE FABRICATOR.

ADDENDUMS / REVISIONS

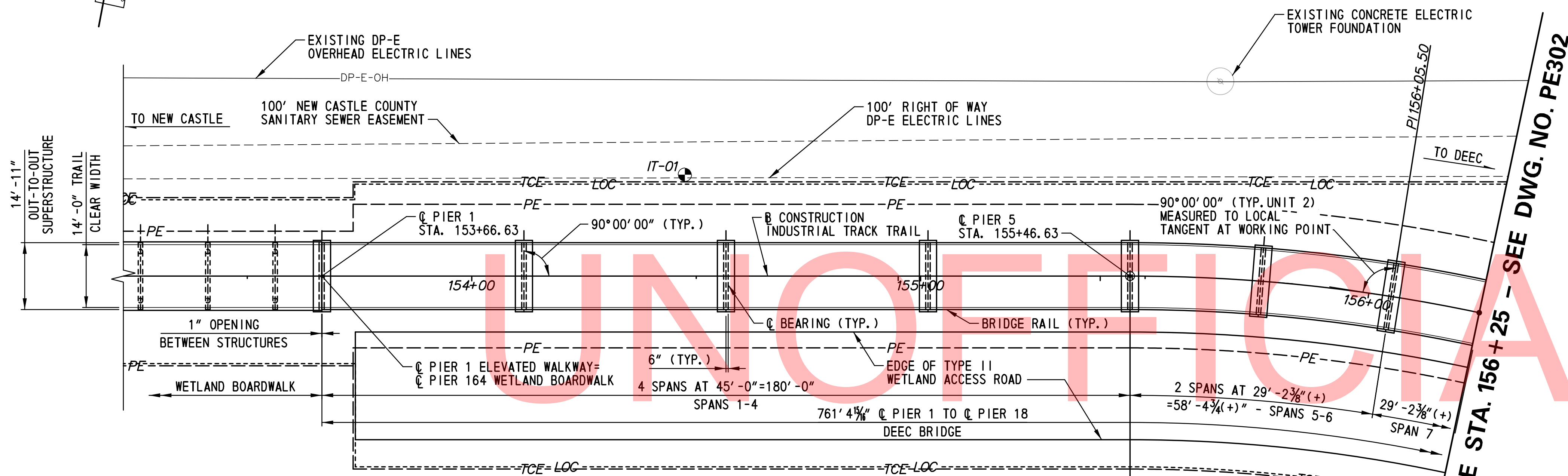
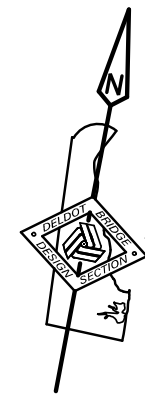


NEW CASTLE INDUSTRIAL TRACK TRAIL, PHASE 3

| | | |
|------------|------------------|---|
| CONTRACT | BRIDGE NO. | X |
| T201330009 | DESIGNED BY: NAH | |
| COUNTY | CHECKED BY: WAG | |
| NEW CASTLE | | |

TYPICAL SECTIONS - 2

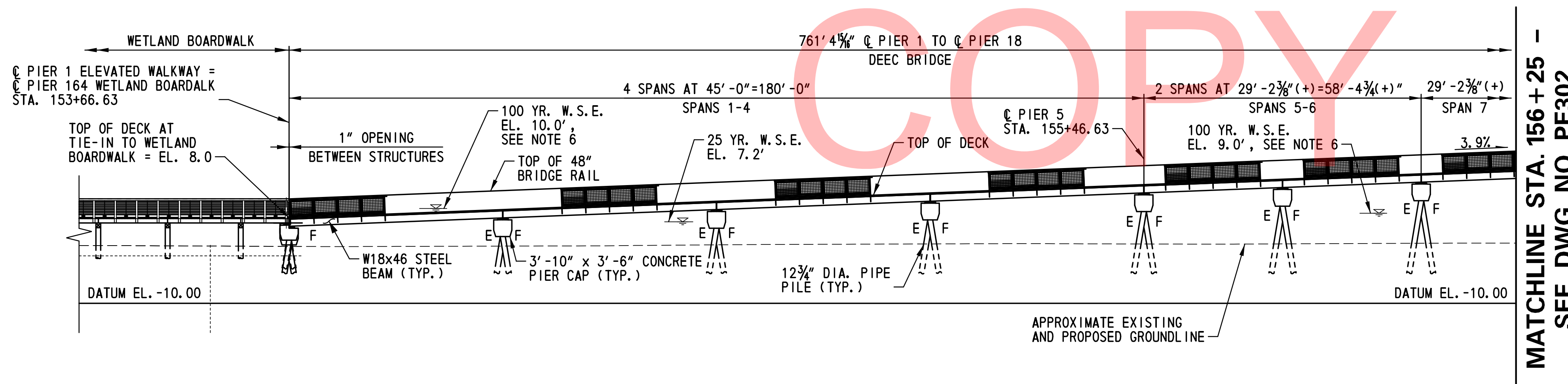
| |
|-------------|
| TS-302 |
| SHEET NO. |
| 117 |
| TOTAL SHTS. |
| 205 |



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

CURVE DATA

| | |
|------|-------------|
| Δ = | 17° 50' 41" |
| Dc = | 15° 16' 44" |
| R = | 375.00' |
| T = | 58.87' |
| L = | 116.79 |
| E = | 4.59 |



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

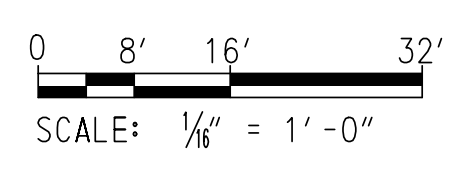
NOTES:

1. ALL SPAN LENGTHS MEASURED ALONG BASELINE OF CONSTRUCTION AT C PIER. SEE DWG NOS. FR 301 THROUGH FR-304 FOR CENTER-CENTER BEARING LENGTH OF EACH SPAN.
2. FOR PIER STATIONS, WORKING POINTS, AND COORDINATES, SEE DWG. NOS. FT-301 THROUGH FT-306.
3. FOR DETAILS AND BOTTOM OF CAP ELEVATIONS OF PIERS 1-15, SEE DWG. NO. PR-301.
4. FOR PILE LAYOUT OF PIERS 1-15 SEE DWG. NO. PL-301.
5. RALING NOT SHOWN THROUGHOUT ALL SPANS FOR CLARITY.
6. 100 YEAR STORM ELEVATION CHANGES AS NOTED AT STATION 155+50.00

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| ADDENDUMS / REVISIONS | |
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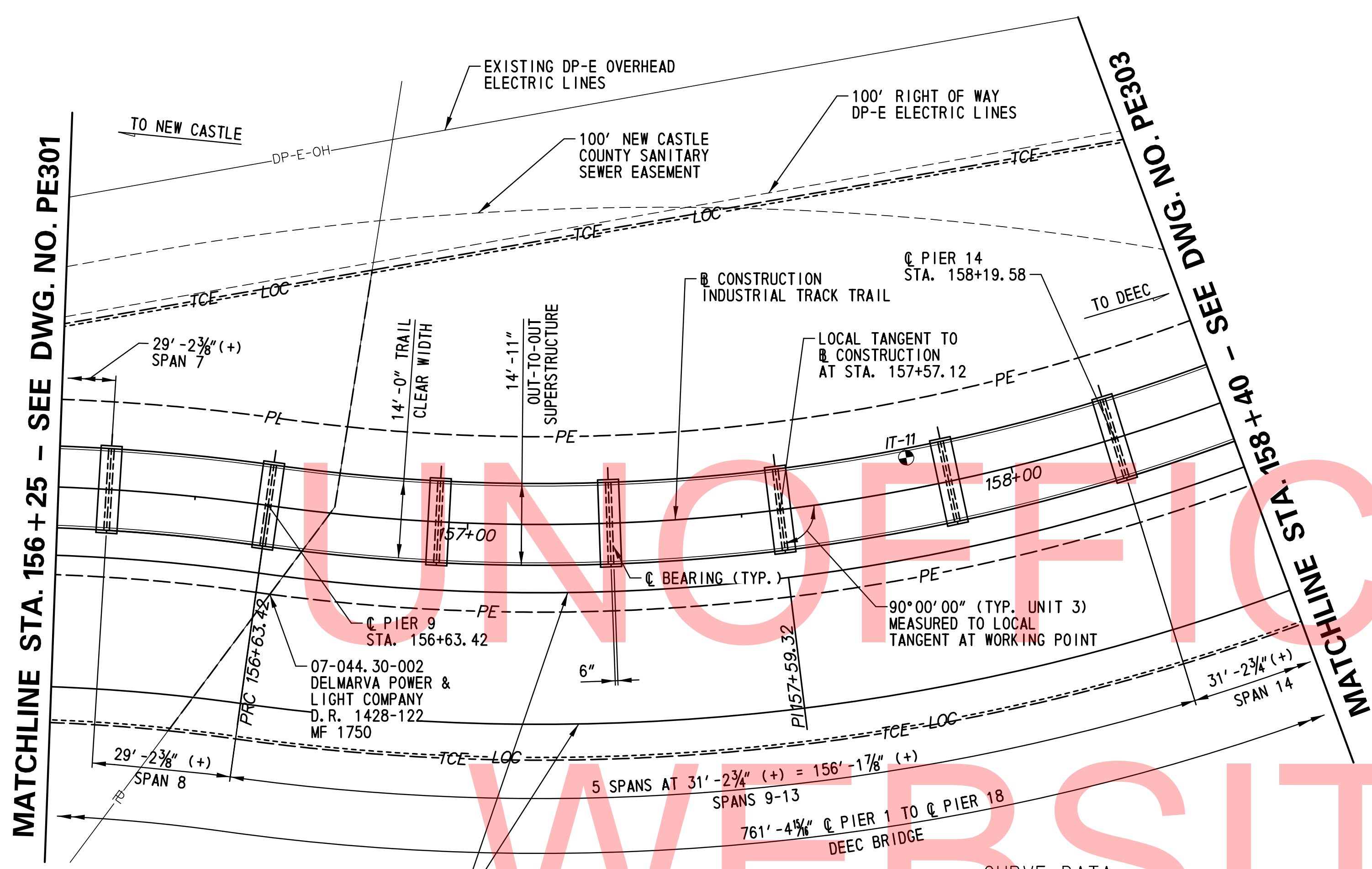


NEW CASTLE INDUSTRIAL TRACK TRAIL, PHASE 3

| | | |
|------------|--------------|-----|
| CONTRACT | BRIDGE NO. | X |
| T201330009 | DESIGNED BY: | NAH |
| COUNTY | CHECKED BY: | WAG |
| NEW CASTLE | | |

DEEC BRIDGE
GENERAL PLAN AND
ELEVATION - 1

| |
|-------------|
| PE-301 |
| SHEET NO. |
| 118 |
| TOTAL SHTS. |
| 205 |



CURVE DATA

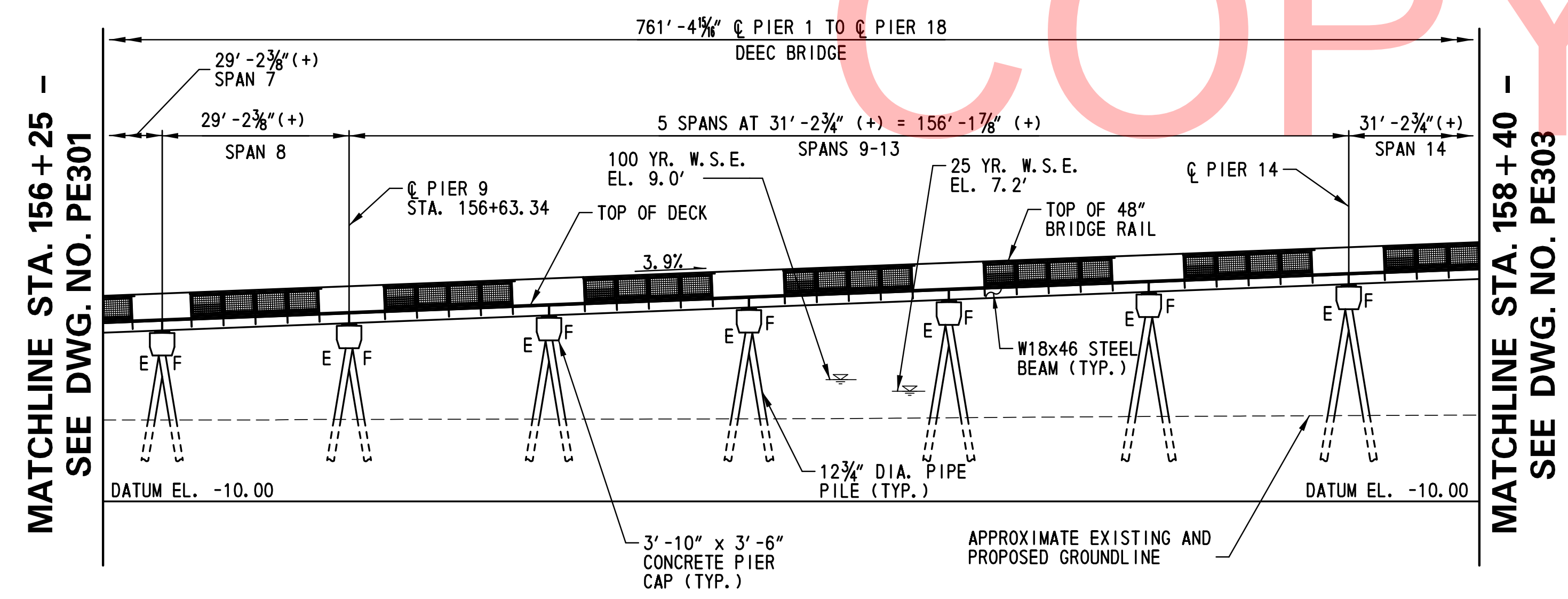
| | |
|------|-------------|
| Δ = | 17° 50' 41" |
| Dc = | 15° 16' 44" |
| R = | 375.00' |
| T = | 58.87' |
| L = | 116.79' |
| E = | 4.59' |

EDGE OF TYPE II WETLAND ACCESS ROAD

PLAN
SCALE: 1/8" = 1' - 0"

CURVE DATA

| | |
|------|-------------|
| Δ = | 29° 59' 15" |
| Dc = | 16° 00' 10" |
| R = | 358.04' |
| T = | 95.89' |
| L = | 187.39' |
| E = | 12.62' |



ELEVATION
SCALE: 1/8" = 1' - 0"

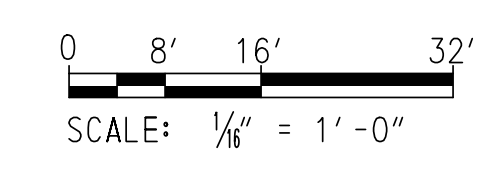
NOTES:

1. ALL SPAN LENGTHS MEASURED ALONG BASELINE OF CONSTRUCTION AT @ PIER. SEE DWG NOS. FR-301 THROUGH FR-304 FOR CENTER-CENTER BEARING LENGTH OF EACH SPAN.
2. FOR PIER STATIONS, WORKING POINTS, AND COORDINATES, SEE DWG. NOS. FT-301 THROUGH FT-306.
3. FOR DETAILS AND BOTTOM OF CAP ELEVATIONS OF PIERS 1-15, SEE DWG. NO. PR-301.
4. FOR PILE LAYOUT OF PIERS 1-15 SEE DWG. NO. PL-301.
5. RALING NOT SHOWN THROUGHOUT ALL SPANS FOR CLARITY.

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| ADDENDUMS / REVISIONS | |
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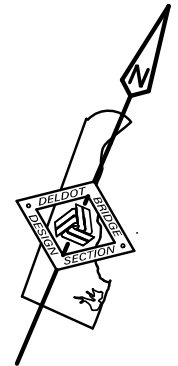


NEW CASTLE INDUSTRIAL TRACK TRAIL, PHASE 3

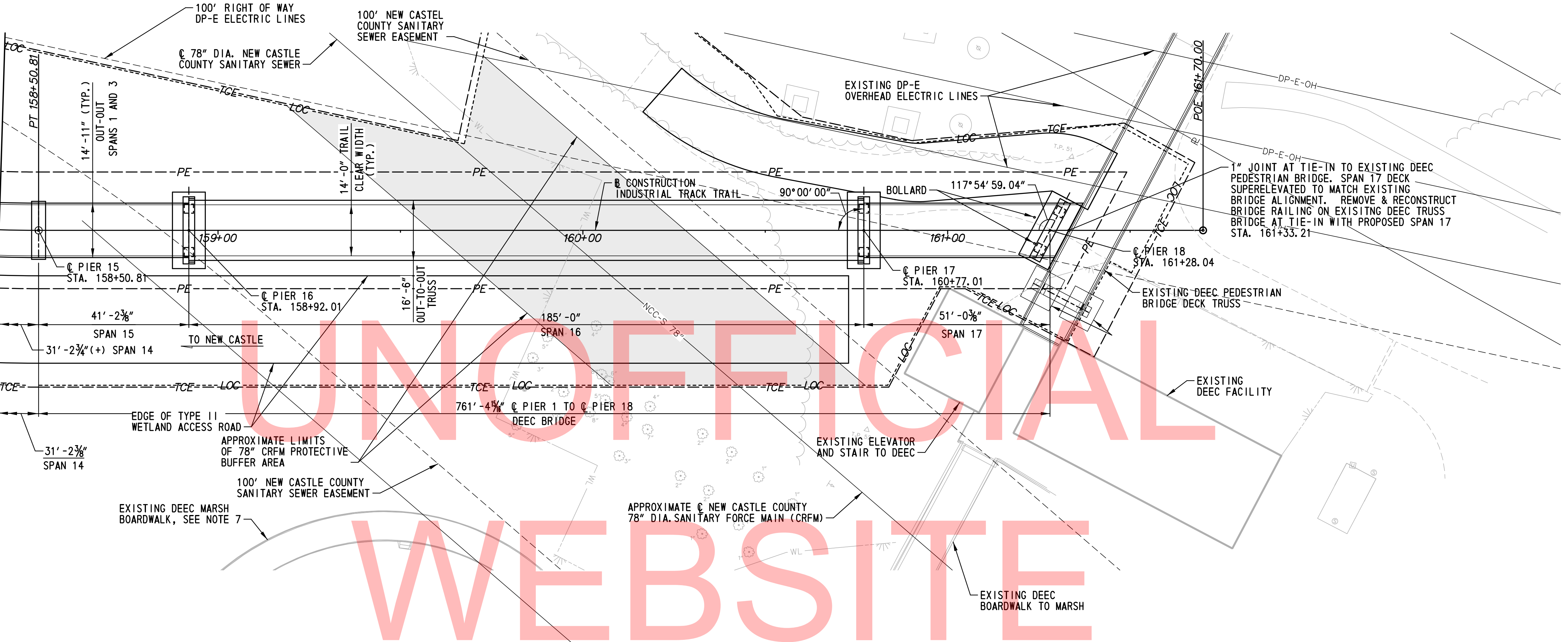
| | |
|------------------------|-------------------------------------|
| CONTRACT T201330009 | BRIDGE NO. X |
| COUNTY NEW CASTLE | DESIGNED BY: NAH CHECKED BY: WAG |

DEEC BRIDGE GENERAL PLAN AND ELEVATION - 2

| |
|--------------------|
| PE-302 |
| SHEET NO. 119 |
| TOTAL SHTS. 205 |

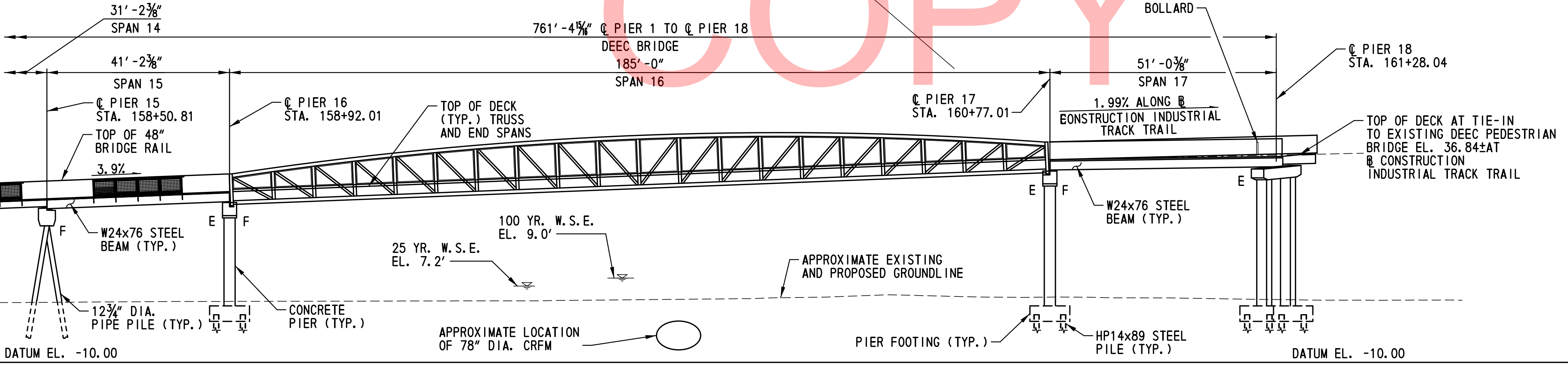


MATCHLINE STA. 158+40 - SEE DWG. NO. PE302



PLAN SCALE: 1/8"=1'-0"

MATCHLINE STA. 158+40 - SEE DWG. NO. PE302



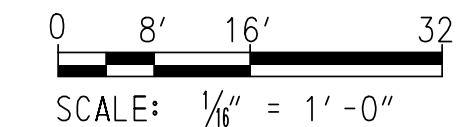
ELEVATION SCALE: 1/8"=1'-0"

- NOTES:
1. ALL SPAN LENGTHS MEASURED ALONG BASELINE OF CONSTRUCTION AT C PIER. SEE DWG NOS. FR 301 THROUGH FR-304 FOR CENTER-CENTER BEARING LENGTH OF EACH SPAN.
 2. FOR PIER STATIONS, WORKING POINTS, AND COORDINATES, SEE DWG. NOS. FT-301 THROUGH FT-306.
 3. FOR DETAILS OF PIERS 16-18, SEE DWG. NOS. PR-302 THROUGH PR-304.
 4. FOR PILE LAYOUT OF PIERS 16-18 SEE DWG. NOS. PL-303 AND PL-304.
 5. FOR MAXIMUM UNFACTORED REACTIONS PER TRUSS BEARING, SEE DWG. NO. PN-301. SEE SPECIAL PROVISIONS FOR MORE INFORMATION.
 6. RALING NOT SHOWN THROUGHOUT ALL SPANS FOR CLARITY.
 7. DEEC MARSH BOARDWALK TO REMAIN. CONTRACTOR SHALL NOT DISTURB THIS BOARDWALK AT ANY TIME. ANY DAMAGE INCURRED TO THE BOARDWALK AS A RESULT OF THE CONTRACTOR'S ACTIONS SHALL BE REPAIRED TO THE SATISFACTION OF THE DEPARTMENT ALL AT THE CONTRACTOR'S EXPENSE.

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| ADDENDUMS / REVISIONS | |
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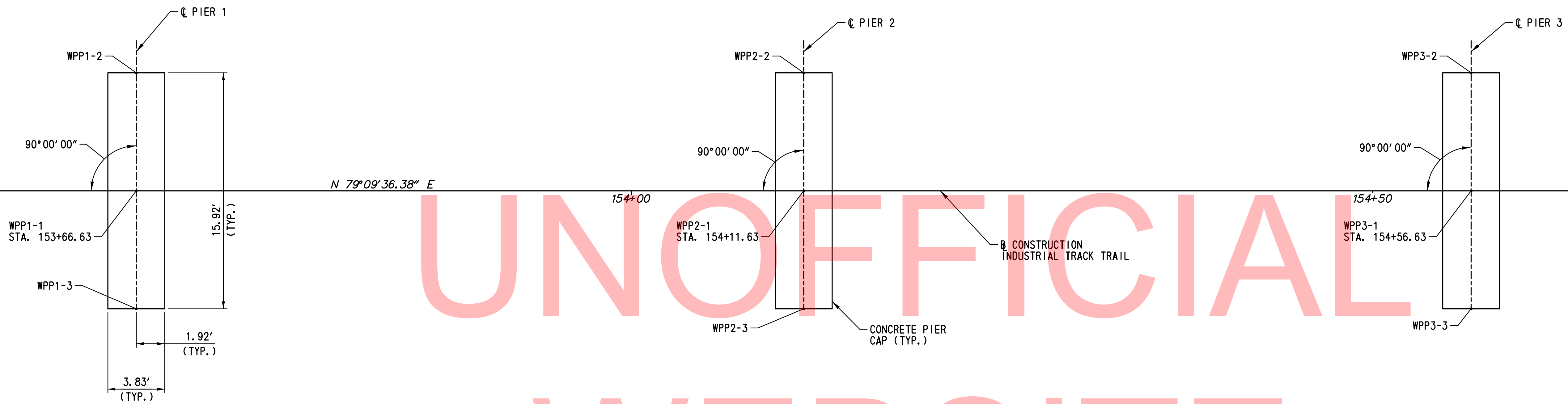
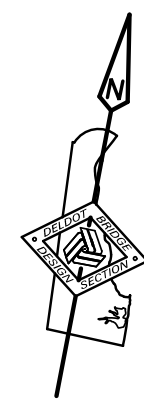


NEW CASTLE INDUSTRIAL TRACK TRAIL, PHASE 3

| | |
|------------------------|-------------------------------------|
| CONTRACT T201330009 | BRIDGE NO. X |
| COUNTY NEW CASTLE | DESIGNED BY: NAH CHECKED BY: WAG |

DEEC BRIDGE GENERAL PLAN AND ELEVATION - 3

| |
|--------------------|
| PE-303 |
| SHEET NO. 120 |
| TOTAL SHTS. 205 |



UNOFFICIAL

WEBSITE

COPY

GEOMETRIC AND PIER CAP LAYOUT PLAN
SCALE: 1/4" = 1' - 0"

MATCHLINE STA. 154 + 75 -
SEE DWG. NO. FT-302

| WORKING POINT | COORDINATES | |
|---------------|-------------|-------------|
| | NORTHING | EASTING |
| WPP1-1 | 627475.3812 | 614690.5548 |
| WPP1-2 | 627483.1976 | 614689.0581 |
| WPP1-3 | 627467.5648 | 614692.0515 |
| WPP2-1 | 627483.8441 | 614734.7518 |
| WPP2-2 | 627491.6605 | 614733.2551 |
| WPP2-3 | 627476.0277 | 614736.2485 |
| WPP3-1 | 627492.3071 | 614778.9489 |
| WPP3-2 | 627500.1235 | 614777.4522 |
| WPP3-3 | 627484.4907 | 614780.4456 |

WORKING POINT LEGEND:

- WPP1-1 = WORKING POINT 1, PIER 1
- WPP1-2 = WORKING POINT 2, PIER 1
- WPP1-3 = WORKING POINT 3, PIER 1
- POINT 1 = C PIER AT B CONSTRUCTION
- POINT 2 = C PIER AT LEFT END OF PIER CAP
- POINT 3 = C PIER AT RIGHT END OF PIER CAP

OTHER TABULATED POINTS SIMILAR

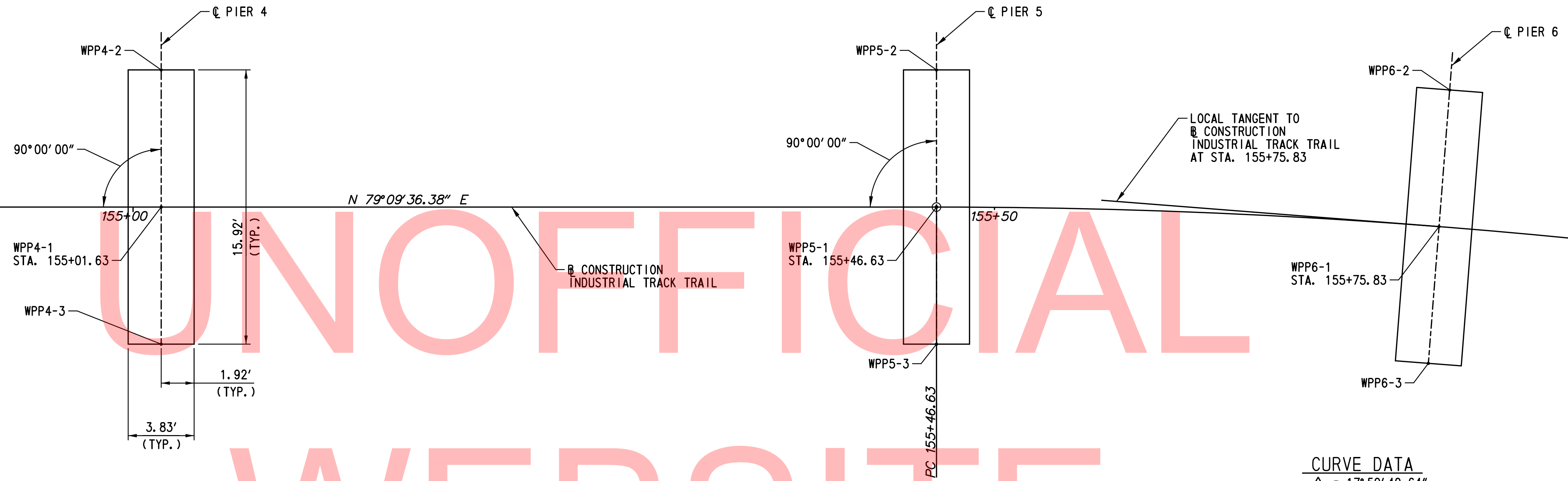
*ALL COORDINATES SET PERPENDICULAR TO
B CONSTRUCTION INDUSTRIAL TRACK TRAIL
LOOKING AHEAD STATION.

NOTES:

1. PIER CAP DIMENSIONS TYPICAL AT PIERS 1-15.
2. FOR STEEL PIPE PILE DETAILS, LAYOUT, AND BATTER, SEE DWG. NO. PL-301.
3. FOR PIER CAP DETAILS, SEE DWG. NO. PR-301.

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MATCHLINE STA. 154 + 75 -
SEE DWG. NO. FT-301



CURVE DATA

| | |
|----|------------------|
| Δ | = 17° 50' 40.64" |
| Dc | = 15° 16' 43.95" |
| R | = 375.00' |
| T | = 58.87' |
| L | = 116.79' |
| E | = 4.59' |

GEOMETRIC AND PIER CAP LAYOUT PLAN
SCALE: 1/4" = 1' - 0"

WORKING POINT LEGEND

- WPP4-1 = WORKING POINT 1, PIER 4
- WPP4-2 = WORKING POINT 2, PIER 4
- WPP4-3 = WORKING POINT 3, PIER 4
- POINT 1 = C PIER AT B CONSTRUCTION
- POINT 2 = C PIER AT LEFT END OF PIER CAP
- POINT 3 = C PIER AT RIGHT END OF PIER CAP

OTHER TABULATED POINTS SIMILAR

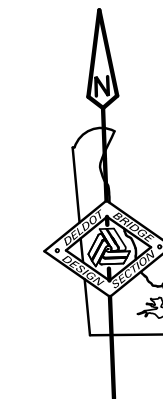
*ALL COORDINATES SET PERPENDICULAR TO
B CONSTRUCTION INDUSTRIAL TRACK TRAIL
LOOKING AHEAD STATION.

| WORKING POINT | COORDINATES | |
|---------------|-------------|-------------|
| | NORTHING | EASTING |
| WPP4-1 | 627500.7700 | 614823.1459 |
| WPP4-2 | 627508.5864 | 614821.6492 |
| WPP4-3 | 627492.9536 | 614824.6426 |
| WPP5-1 | 627509.2329 | 614867.3430 |
| WPP5-2 | 627517.0493 | 614865.8462 |
| WPP5-3 | 627501.4165 | 614868.8396 |
| WPP6-1 | 627513.6027 | 614896.2049 |
| WPP6-2 | 627521.5097 | 614895.3209 |
| WPP6-3 | 627505.6915 | 614897.0893 |

NOTES

1. PIER CAP DIMENSIONS TYPICAL AT PIERS 1-15.
2. FOR STEEL PIPE PILE DETAILS, LAYOUT, AND BATTER, SEE DWG. NO. PL-301.
3. FOR PIER CAP DETAILS, SEE DWG. NO. PR-301.

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MATCHLINE STA. 155+90 -
SEE DWG. NO. FT-302

MATCHLINE STA. 157+10 -
SEE DWG. NO. FT-304

CURVE DATA
 $\Delta = 29^\circ 59' 15.23''$
 $Dc = 16^\circ 00' 10.12''$
 $R = 187.39'$
 $T = 95.89'$
 $L = 187.39'$
 $E = 12.62'$

CURVE DATA
 $\Delta = 17^\circ 50' 40.64''$
 $Dc = 15^\circ 16' 43.95''$
 $R = 375.00'$
 $T = 58.87'$
 $L = 116.79'$
 $E = 4.59'$

UNOFFICIAL
WEBSITE
COPY

GEOMETRIC AND PIER CAP LAYOUT PLAN
SCALE: 1/4"=1'-0"

WORKING POINT LEGEND

WPP7-1 = WORKING POINT 1, PIER 7
WPP7-2 = WORKING POINT 2, PIER 7
WPP7-3 = WORKING POINT 3, PIER 7
POINT 1 = C PIER AT B CONSTRUCTION
POINT 2 = C PIER AT LEFT END OF PIER CAP
POINT 3 = C PIER AT RIGHT END OF PIER CAP
OTHER TABULATED POINTS SIMILAR
*ALL COORDINATES SET PERPENDICULAR TO
B CONSTRUCTION INDUSTRIAL TRACK TRAIL
LOOKING AHEAD STATION.

| WORKING POINT | COORDINATES | |
|---------------|-------------|-------------|
| | NORTHING | EASTING |
| WPP7-1 | 627515.7142 | 614925.3192 |
| WPP7-2 | 627523.6661 | 614925.0530 |
| WPP7-3 | 627507.7582 | 614925.5856 |
| WPP8-1 | 627515.5548 | 614954.5096 |
| WPP8-2 | 627523.5032 | 614954.8627 |
| WPP8-3 | 627507.6021 | 614954.1563 |
| WPP9-1 | 627513.1253 | 614983.5991 |
| WPP9-2 | 627521.0243 | 614984.5696 |
| WPP9-3 | 627505.2263 | 614982.6286 |
| WPP10-1 | 627510.6725 | 615014.7243 |
| WPP10-2 | 627518.6282 | 615015.0030 |
| WPP10-3 | 627502.7212 | 615014.4456 |

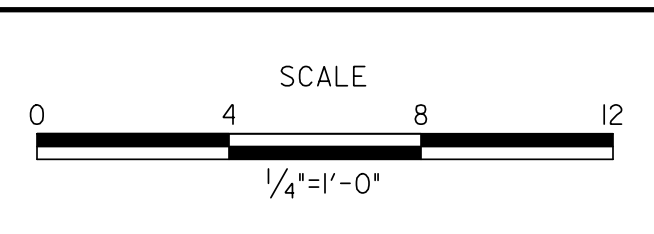
NOTES

- PIER CAP DIMENSIONS TYPICAL AT PIERS 1-15.
- FOR STEEL PIPE PILE DETAILS, LAYOUT, AND BATTER, SEE DWG. NO. PL-301.
- FOR PIER CAP DETAILS, SEE DWG. NO. PR-301.

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| ADDENDUMS / REVISIONS |
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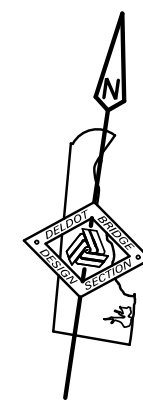


NEW CASTLE INDUSTRIAL TRACK TRAIL, PHASE 3

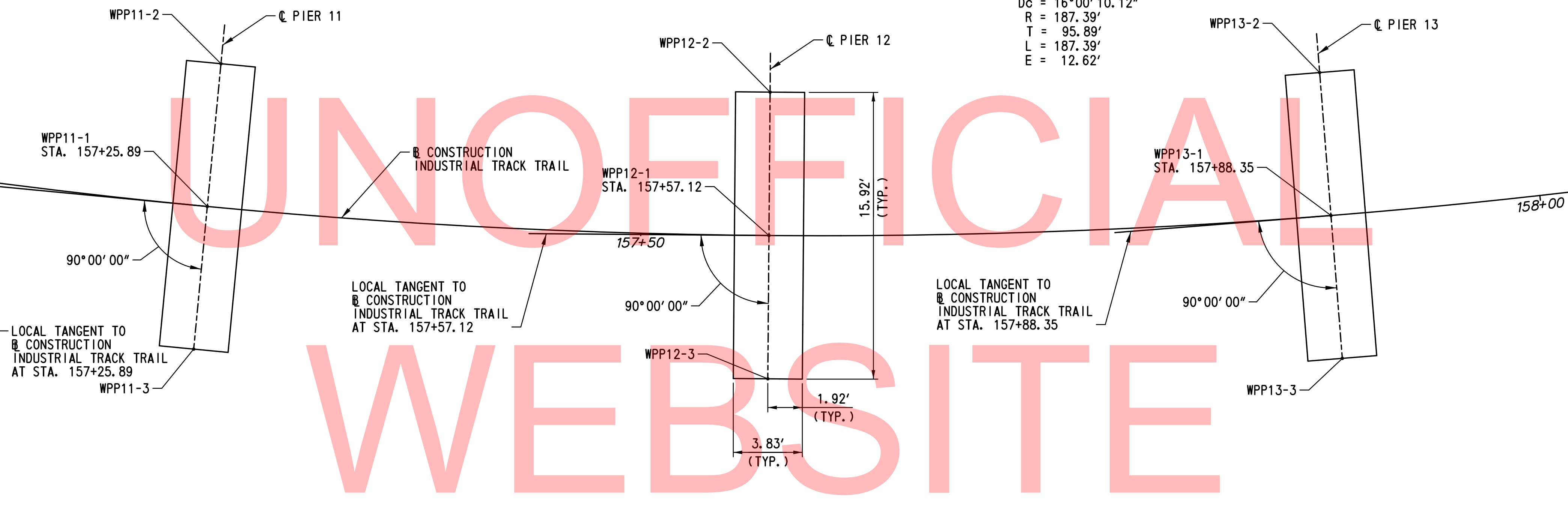
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|------------------------|-------------------------------------|
| CONTRACT T201330009 | BRIDGE NO. X |
| COUNTY NEW CASTLE | DESIGNED BY: ADD CHECKED BY: WAG |

GEOMETRIC AND PIER CAP LAYOUT PLAN - 3

| |
|--------------------|
| FT-303 |
| SHEET NO. 123 |
| TOTAL SHTS. 205 |



MATCHLINE STA. 157+10 -
SEE DWG. NO. FT-303



CURVE DATA
 $\Delta = 29^\circ 59' 15.23''$
 $D_c = 16^\circ 00' 10.12''$
 $R = 187.39'$
 $T = 95.89'$
 $L = 187.39'$
 $E = 12.62'$

MATCHLINE STA. 158+10 -
SEE DWG. NO. FT-305

GEOMETRIC AND PIER CAP LAYOUT PLAN
 SCALE: 1/4" = 1' - 0"

NOTES:

1. PIER CAP DIMENSIONS TYPICAL AT PIERS 1-15.
2. FOR STEEL PIPE PILE DETAILS, LAYOUT, AND BATTER, SEE DWG. NO. PL-301.
3. FOR PIER CAP DETAILS, SEE DWG. NO. PR-301.

WORKING POINT LEGEND

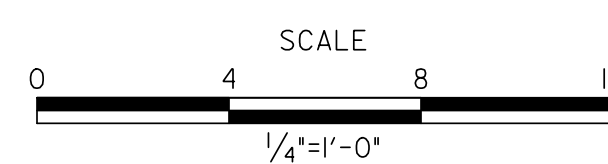
WPP11-1 = WORKING POINT 1, PIER 11
 WPP11-2 = WORKING POINT 2, PIER 11
 WPP11-3 = WORKING POINT 3, PIER 11
 POINT 1 = C PIER AT B CONSTRUCTION
 POINT 2 = C PIER AT LEFT END OF PIER CAP
 POINT 3 = C PIER AT RIGHT END OF PIER CAP

OTHER TABULATED POINTS SIMILAR

*ALL COORDINATES SET PERPENDICULAR TO B CONSTRUCTION INDUSTRIAL TRACK TRAIL LOOKING AHEAD STATION.

| WORKING POINT | COORDINATES | |
|---------------|-------------|-------------|
| | NORTHING | EASTING |
| WPP11-1 | 627510.9407 | 615045.9448 |
| WPP11-2 | 627518.8904 | 615045.5294 |
| WPP11-3 | 627502.9953 | 615046.3599 |
| WPP12-1 | 627513.9278 | 615077.0232 |
| WPP12-2 | 627521.8111 | 615075.9168 |
| WPP12-3 | 627506.0488 | 615078.1290 |
| WPP13-1 | 627519.6110 | 615107.7232 |
| WPP13-2 | 627527.3680 | 615105.9342 |
| WPP13-3 | 627511.8584 | 615109.5112 |

ADDENDUMS / REVISIONS

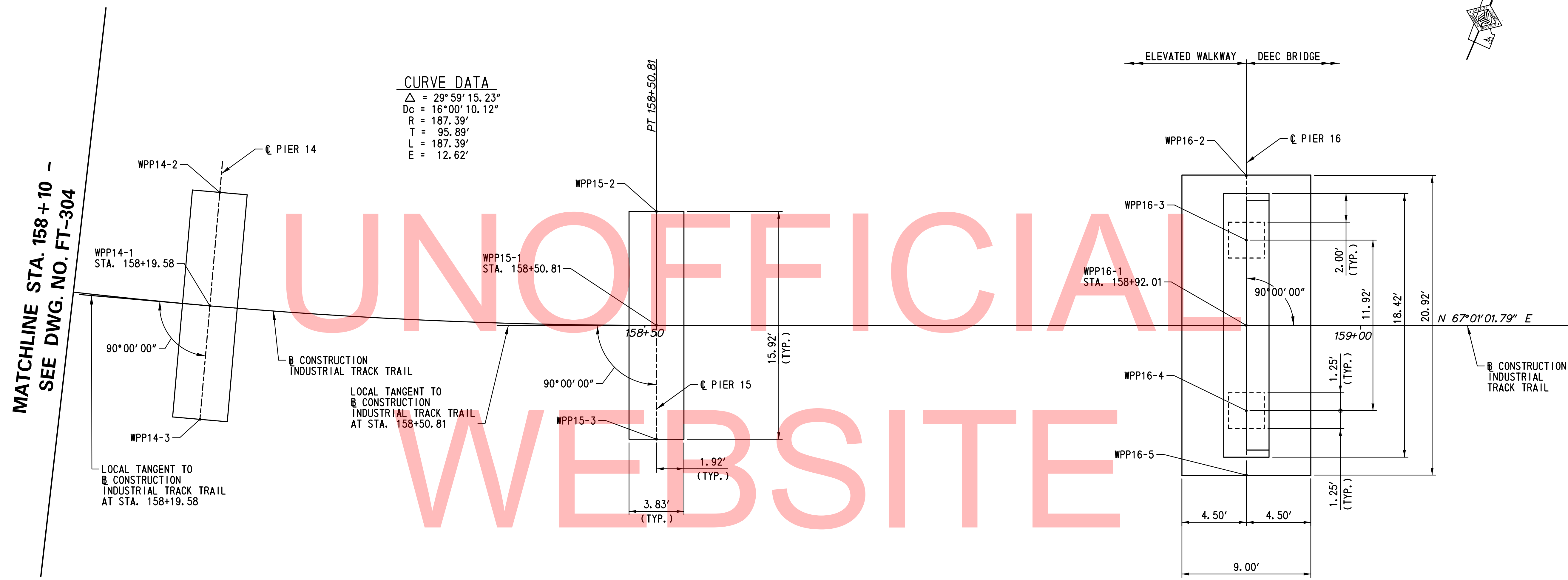
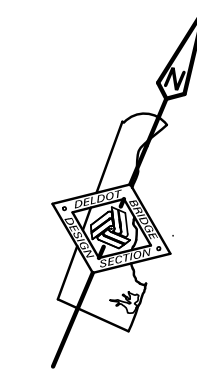


NEW CASTLE INDUSTRIAL TRACK TRAIL, PHASE 3

| | | |
|------------|------------------|----------|
| CONTRACT | BRIDGE NO. | X |
| T201330009 | DESIGNED BY: ADD | |
| COUNTY | CHECKED BY: WAG | |
| NEW CASTLE | | |

GEOMETRIC AND PIER CAP LAYOUT PLAN - 4

| |
|-------------|
| FT-304 |
| SHEET NO. |
| 124 |
| TOTAL SHTS. |
| 205 |



CURVE DATA
 $\Delta = 29^\circ 59' 15.23''$
 $D_c = 16^\circ 00' 10.12''$
 $R = 187.39'$
 $T = 95.89'$
 $L = 187.39'$
 $E = 12.62'$

MATCHLINE STA. 158 + 10 -
 SEE DWG. NO. FT-304

MATCHLINE STA. 159 + 15.27
 SEE DWG. NO. FT-306

GEOMETRIC, PIER CAP AND FOOTING LAYOUT PLAN
 SCALE: 1/4" = 1' - 0"

WORKING POINT LEGEND

WPP14-1 = WORKING POINT 1, PIER 14
 WPP14-2 = WORKING POINT 2, PIER 14
 WPP14-3 = WORKING POINT 3, PIER 14
 POINT 1 = C PIER AT CONSTRUCTION INDUSTRIAL TRACK TRAIL
 POINT 2 = C PIER AT LEFT END OF PIER CAP
 POINT 3 = C PIER AT RIGHT END OF PIER CAP
 OTHER TABULATED POINTS SIMILAR
 *ALL COORDINATES SET PERPENDICULAR TO CONSTRUCTION INDUSTRIAL TRACK TRAIL LOOKING AHEAD STATION.

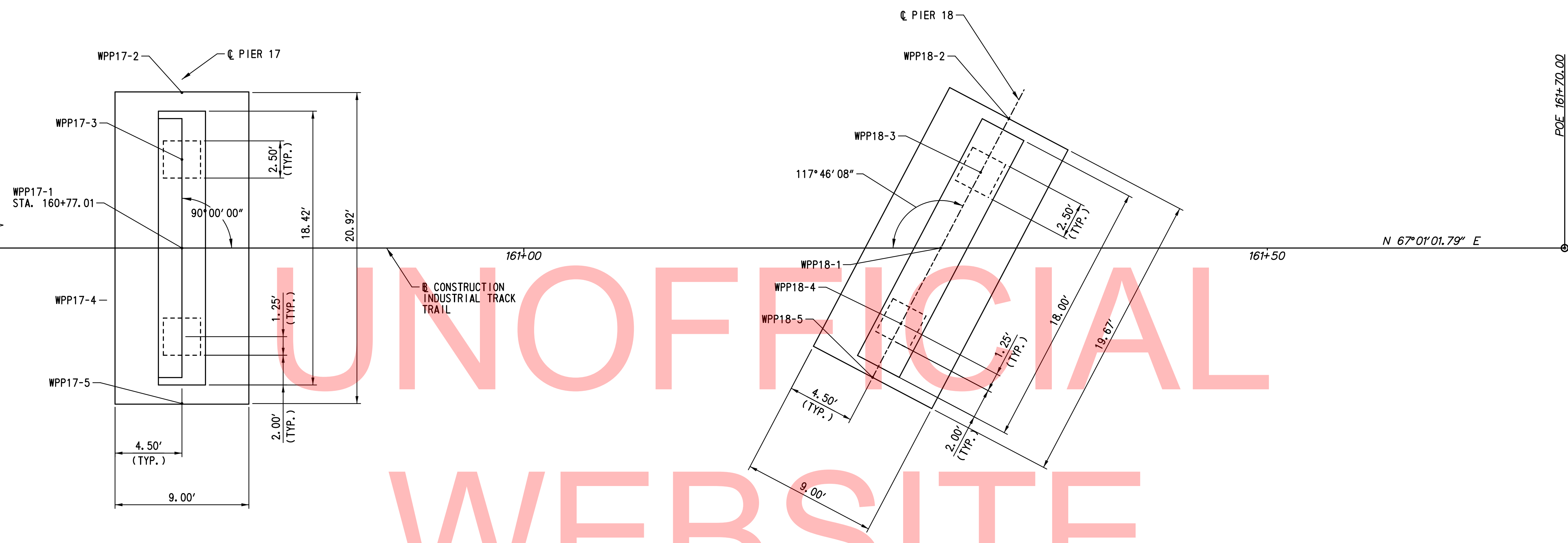
| WORKING POINT | COORDINATES | |
|---------------|-------------|-------------|
| | NORTHING | EASTING |
| WPP14-1 | 627527.9473 | 615137.8114 |
| WPP14-2 | 627535.5189 | 615135.3534 |
| WPP14-3 | 627520.3799 | 615140.2680 |
| WPP15-1 | 627538.8731 | 615167.0590 |
| WPP15-2 | 627546.2008 | 615163.9511 |
| WPP15-3 | 627531.5475 | 615170.1659 |
| WPP16-1 | 627554.9580 | 615204.9842 |
| WPP16-2 | 627564.5862 | 615200.9007 |
| WPP16-3 | 627560.4434 | 615202.6577 |
| WPP16-4 | 627549.4727 | 615207.3106 |
| WPP16-5 | 627545.3299 | 615209.0677 |

NOTES:

- PIER CAP DIMENSIONS TYPICAL AT PIERS 1-15.
- FOR STEEL PIPE PILE DETAILS, LAYOUT, AND BATTER AT PIERS 1-15, SEE DWG. NO. PL-301.
- FOR PIER CAP DETAILS FOR PIERS 1-15, SEE DWG. NO. PR-301.
- FOR PIER 16-18 DETAILS, SEE DWG. NOS. PR-302 THROUGH PR-304.
- FOR PILE LAYOUT AND PILE DETAILS AT PIERS 16-18, SEE DWG. NOS. PL-303 AND PL-304.

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MATCHLINE STA. 159 + 15.27
SEE DWG. NO. FT-305



UNOFFICIAL WEBSITE COPY

GEOMETRIC AND FOOTING LAYOUT PLAN
SCALE: 1/4" = 1' - 0"

- NOTES:**
- FOR PIER 16-18 DETAILS, SEE DWG. NOS. PR-302 THROUGH PR-304.
 - FOR PILE LAYOUT AND PILE DETAILS AT PIERS 16-18, SEE DWG. NOS. PL-303 AND PL-304.

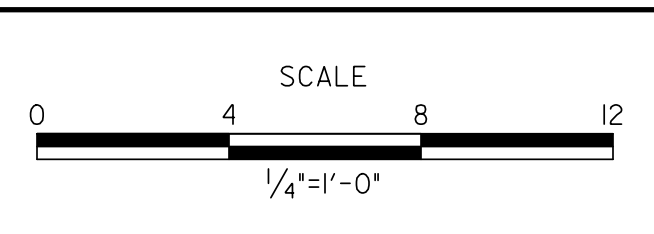
WORKING POINT LEGEND

WPP17-1 = WORKING POINT 1, PIER 17
WPP17-2 = WORKING POINT 2, PIER 17
WPP17-3 = WORKING POINT 3, PIER 17
POINT 1 = C PIER AT B CONSTRUCTION
POINT 2 = C PIER AT LEFT END OF PIER CAP
POINT 3 = C PIER AT RIGHT END OF PIER CAP
OTHER TABULATED POINTS SIMILAR
*ALL COORDINATES SET PERPENDICULAR TO
B CONSTRUCTION INDUSTRIAL TRACK TRAIL
LOOKING AHEAD STATION.

| WORKING POINT | COORDINATES | |
|---------------|-------------|-------------|
| | NORTHING | EASTING |
| WPP17-1 | 627627.1923 | 615375.2992 |
| WPP17-2 | 627636.8239 | 615371.2240 |
| WPP17-3 | 627632.6798 | 615372.9795 |
| WPP17-4 | 627621.6933 | 615377.6519 |
| WPP17-5 | 627617.5641 | 615379.3827 |
| WPP18-1 | 627647.1170 | 615422.2781 |
| WPP18-2 | 627656.9160 | 615423.0985 |
| WPP18-3 | 627652.8584 | 615422.7588 |
| WPP18-4 | 627641.3853 | 615421.7982 |
| WPP18-5 | 627637.3179 | 615421.4576 |

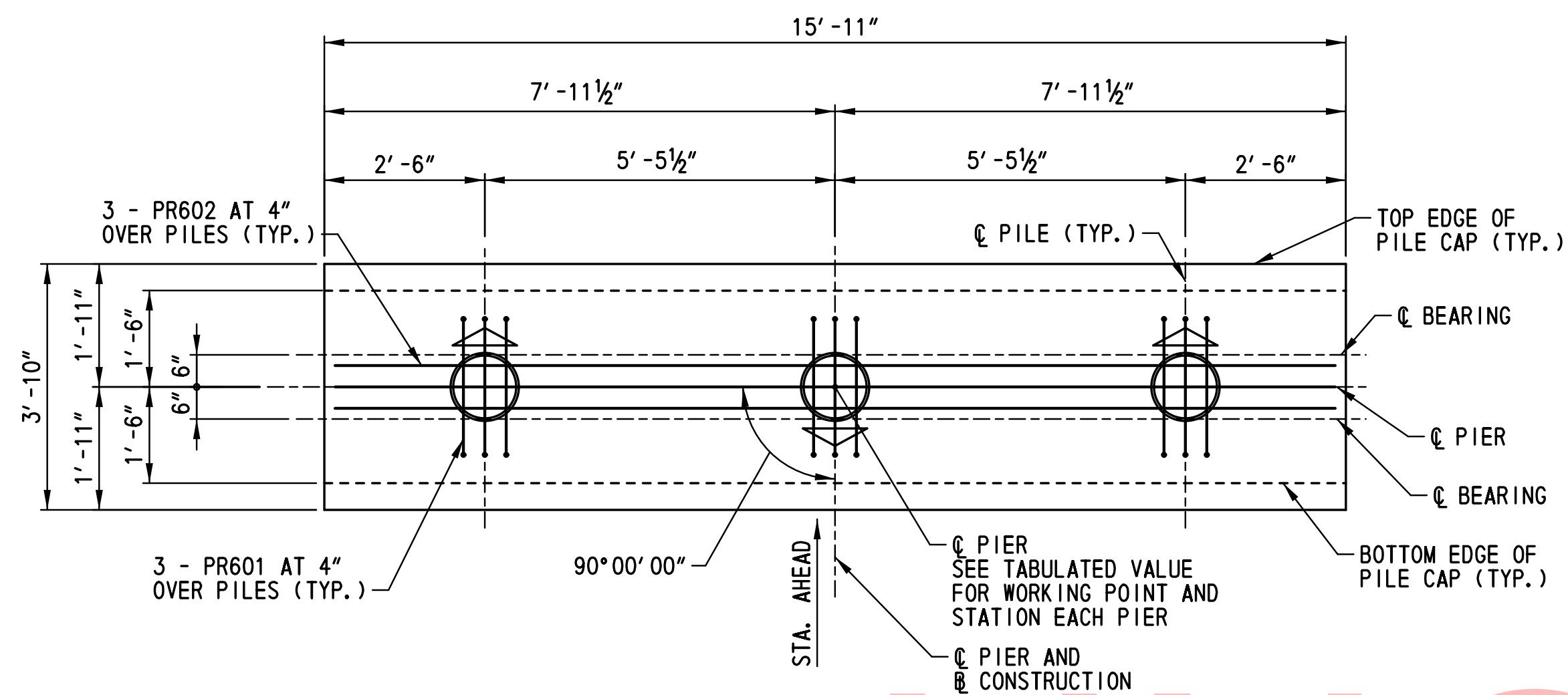
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| ADDENDUMS / REVISIONS |
|-----------------------|
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| |

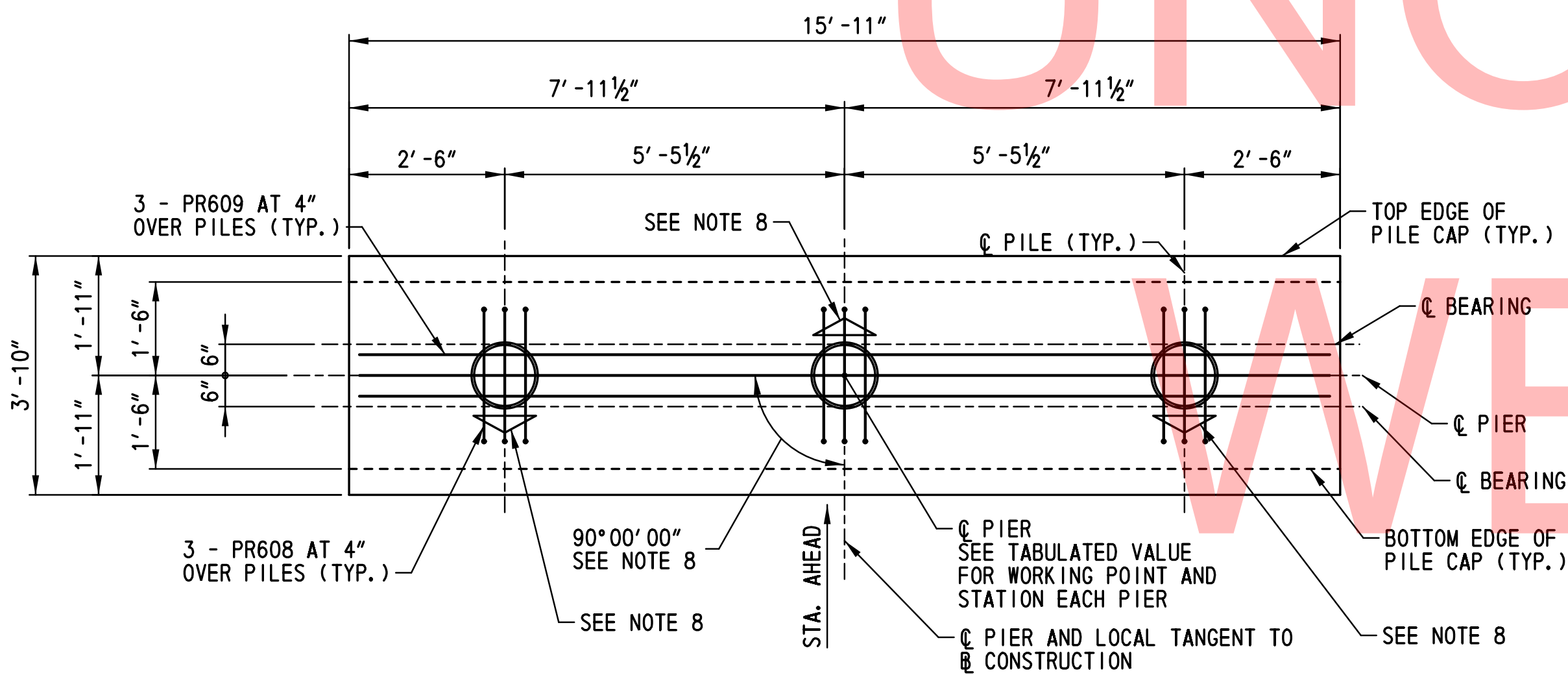


| | | |
|------------|------------------|----------|
| CONTRACT | BRIDGE NO. | X |
| T201330009 | DESIGNED BY: ADD | |
| COUNTY | CHECKED BY: WAG | |
| NEW CASTLE | | |

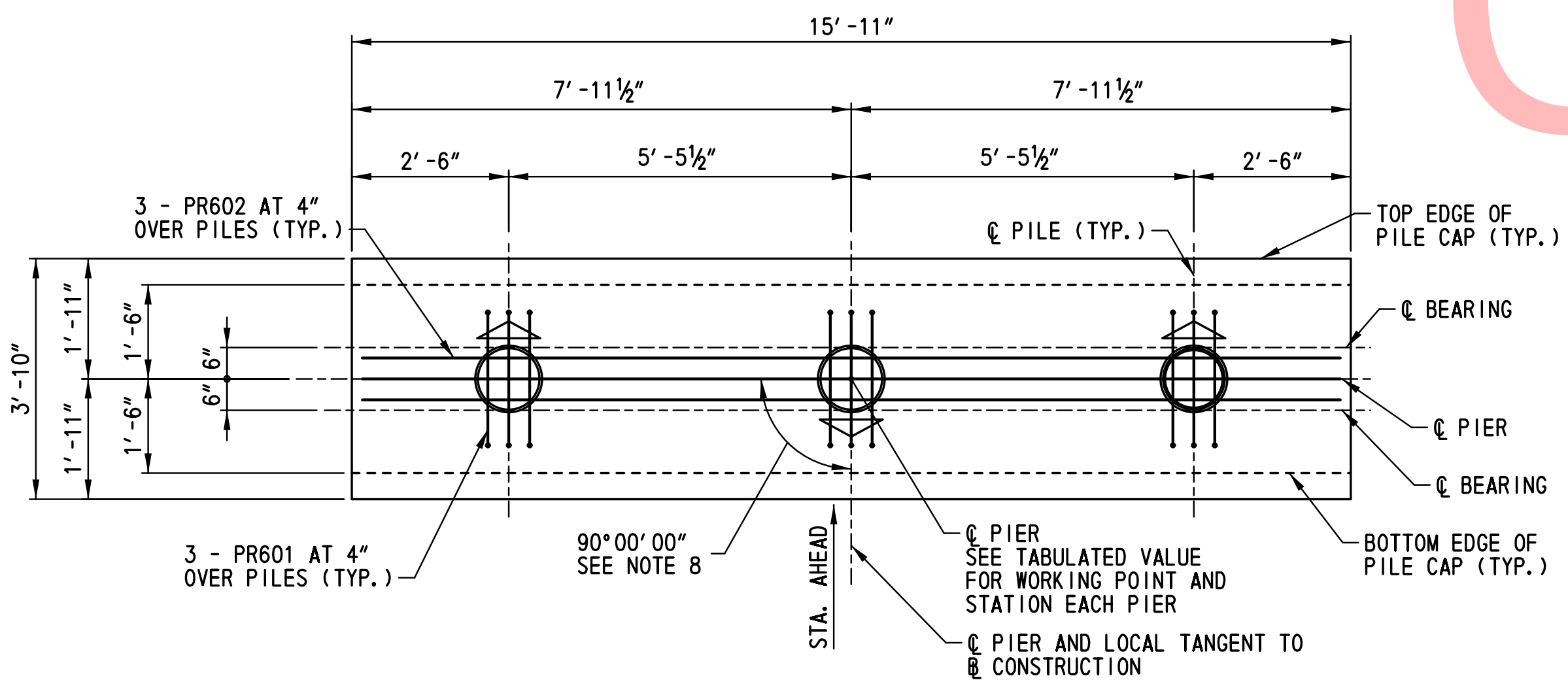
| |
|-------------|
| FT-306 |
| SHEET NO. |
| 126 |
| TOTAL SHTS. |
| 205 |



PILE LAYOUT PLAN - PIER 1
SCALE: 1/2" = 1'-0"



TYPICAL PILE LAYOUT PLAN - PIERS 2-14
SCALE: 1/2" = 1'-0"



PILE LAYOUT PLAN - PIER 15
SCALE: 1/2" = 1'-0"

| STATIONING REFERENCE TABLE | | |
|----------------------------|---------------|-----------|
| PIER NO. | WORKING POINT | STATION |
| 1 | WPP1 | 153+66.63 |
| 2 | WPP2 | 154+11.63 |
| 3 | WPP3 | 154+56.63 |
| 4 | WPP4 | 155+1.63 |
| 5 | WPP5 | 155+46.63 |
| 6 | WPP6 | 155+75.83 |
| 7 | WPP7 | 156+5.83 |
| 8 | WPP8 | 156+34.23 |
| 9 | WPP9 | 156+63.43 |
| 10 | WPP10 | 156+94.66 |
| 11 | WPP11 | 157+25.89 |
| 12 | WPP12 | 157+57.12 |
| 13 | WPP13 | 157+88.35 |
| 14 | WPP14 | 158+19.58 |
| 15 | WPP15 | 158+50.81 |

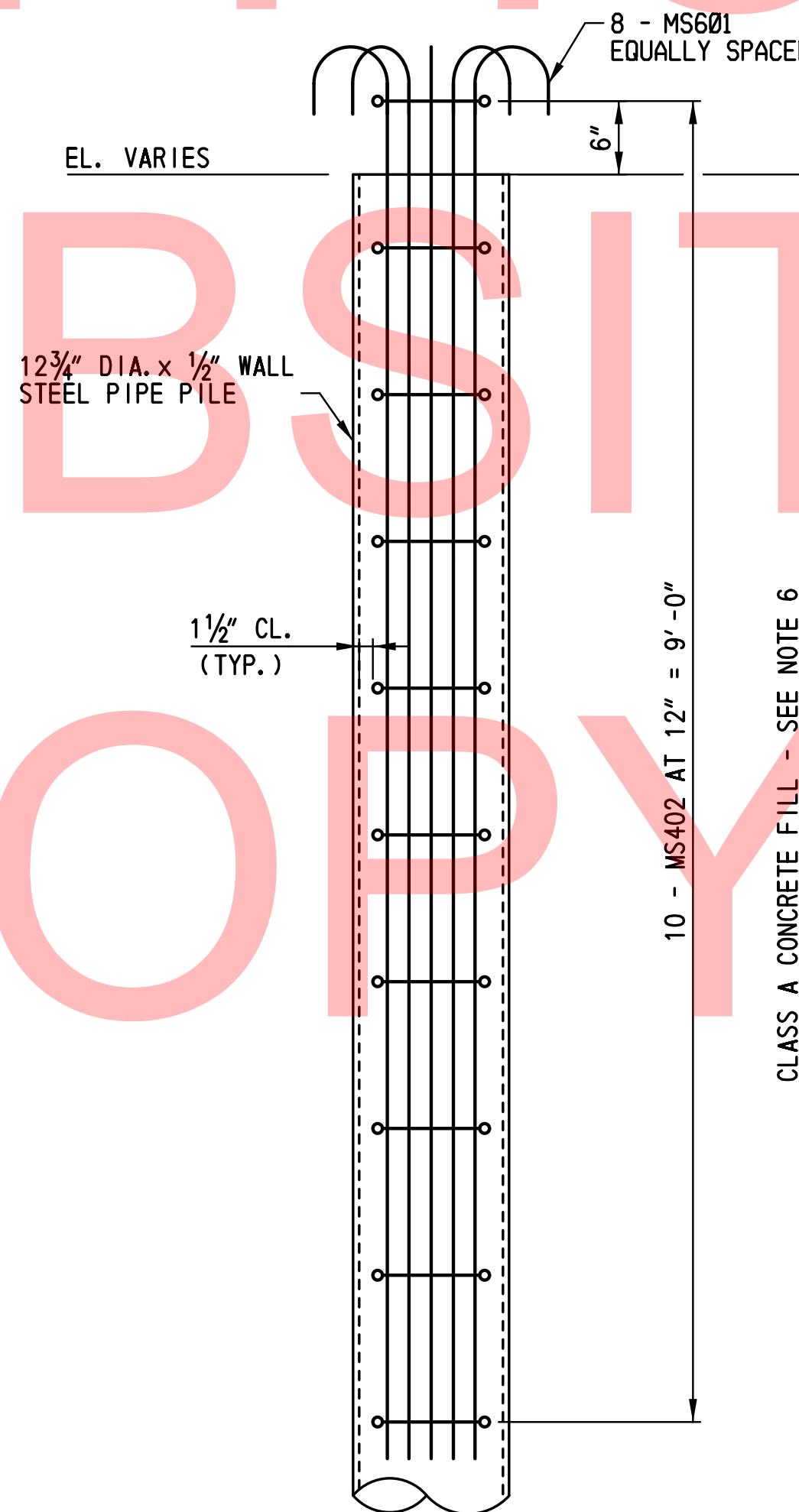
| PILE TIP DATA | | | | |
|-------------------|-----------------------|-------------------------|--------------------------------------|--------------------------------------|
| SUBSTRUCTURE UNIT | DESIGN DATA | | ACTUAL FIELD DATA | |
| | MINIMUM TIP ELEVATION | ESTIMATED TIP ELEVATION | AVERAGE ACTUAL MINIMUM TIP ELEVATION | AVERAGE ACTUAL MAXIMUM TIP ELEVATION |
| PIER 1 | -57.0 | -71.0 | | |
| PIER 2 | -57.0 | -71.0 | | |
| PIER 3 | -57.0 | -71.0 | | |
| PIER 4 | -57.0 | -71.0 | | |
| PIER 5 | -57.0 | -71.0 | | |
| PIER 6 | -57.0 | -71.0 | | |
| PIER 7 | -57.0 | -71.0 | | |
| PIER 8 | -57.0 | -71.0 | | |
| PIER 9 | -57.0 | -71.0 | | |
| PIER 10 | -57.0 | -71.0 | | |
| PIER 11 | -36.0 | -51.0 | | |
| PIER 12 | -36.0 | -51.0 | | |
| PIER 13 | -36.0 | -51.0 | | |
| PIER 14 | -36.0 | -51.0 | | |
| PIER 15 | -40.0 | -51.0 | | |

PILE LEGEND:

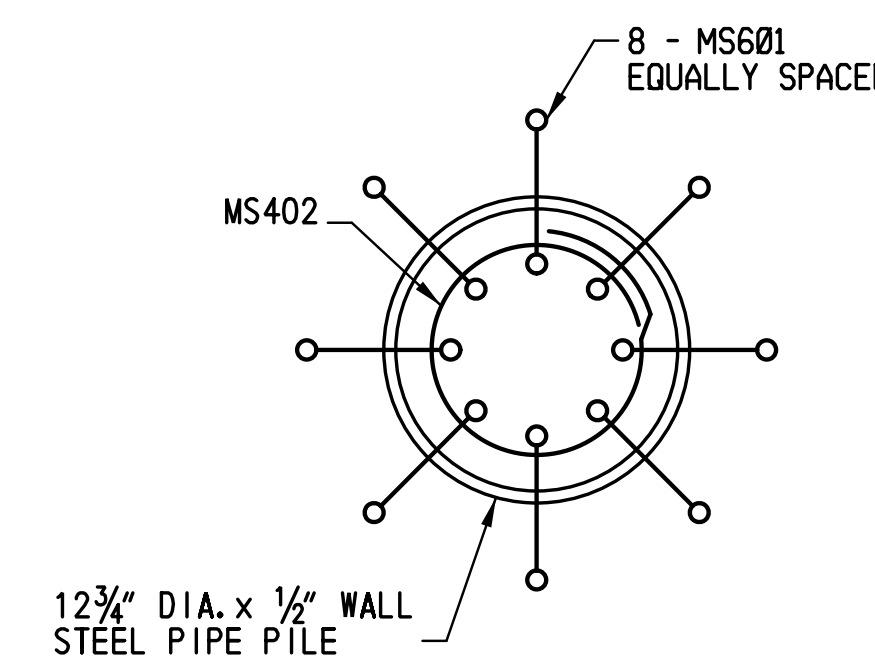
- ⊙ DENOTES BATTERED 12 3/4" DIA. STEEL CLOSED END PIPE PILE BATTERED 6:1 IN DIRECTION OF ARROW

STEEL PIPE PILE NOTES:

- THE FACTORED RESISTANCE OF THE 12 3/4" INCH DIAMETER STEEL (0.5 INCH WALL THICKNESS) PILING IS 62 TONS FOR PIERS 1 THRU 15. PILES SHALL BE DRIVEN IN CONFORMANCE WITH THE STANDARD SPECIFICATIONS SECTION 619 TO A NOMINAL PILE DRIVING RESISTANCE OF 124 TONS FOR PIERS 1 AND 15.
- PILES SHALL BE DRIVEN TO THE DRIVING CRITERIA DEVELOPED FROM WAVE EQUATION ANALYSIS AND AS SPECIFIED BY THE ENGINEER TO ACHIEVE A NOMINAL PILE DRIVING RESISTANCE AS SPECIFIED IN NOTE 1 BELOW. THE SPECIFIED MINIMUM TIP ELEVATION. PILES MEETING THE AFOREMENTIONED CRITERIA WILL BE CONSIDERED SATISFACTORY.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR SUBMITTING A WAVE EQUATION ANALYSIS AND ALL OTHER INCIDENTALS IN ACCORDANCE WITH THE SPECIAL PROVISIONS. THE WAVE EQUATION ANALYSIS SHALL BE SIGNED AND SEALED BY A REGISTERED PROFESSIONAL ENGINEER LICENSED IN THE STATE OF DELAWARE IN ACCORDANCE WITH STANDARD SPECIFICATIONS SECTION 619.
- THE DEPARTMENT RESERVES THE RIGHT TO PERFORM DYNAMIC PILE TESTING OF RESTRIKES.
- ALL PILES ARE TO BE DRIVEN CLOSED-ENDED. THE CONTRACTOR SHALL PROVIDE DETAILS OF THE PROPOSED PILE TIP, INCLUDING WELD CONNECTIONS TO THE PILE.
- STEEL PIPE PILES TO BE FILLED WITH CLASS A CONCRETE.
- THE CONTRACTOR SHALL CONSTRUCT A FIXED TEMPLATE AT EACH PIER LOCATION IN ORDER TO DRIVE PILES AT THE SPECIFIED ALIGNMENT AND LOCATION.
- THE PILE BATTER DIRECTION SHOWN IN THE TYPICAL PILE LAYOUT PLAN - PIERS 2-14 DETAIL, THIS SHEET, IS FOR PIER NOS. 2, 4, 6, 8, 10, 12, AND 14. THE BATTER DIRECTION FOR EACH PILE SHALL BE REVERSED BY 180° FOR PIERS 3, 5, 7, 9, 11, AND 13.
- APPLY PROTECTIVE COATING TO PILES OUTER SURFACES WITHIN THE UPPER 35.0' OF DRIVEN SECTION BELOW THE GROUND SURFACE. COATING SHALL CONSIST OF COAL TAR EPOXY MEETING THE REQUIREMENTS OF SECTION 618.10.

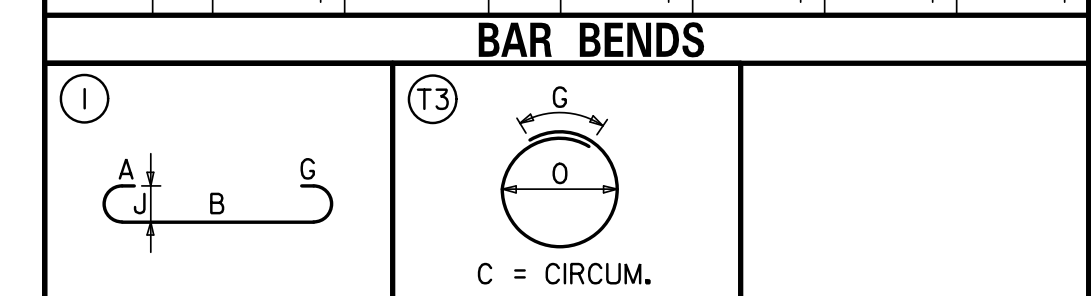


STEEL PIPE PILE ELEVATION
SCALE: 1" = 1'-0"



STEEL PIPE PILE PLAN
SCALE: 1-1/2" = 1'-0"

| SPECIFICATIONS | | | | BENDING DIMENSIONS (FEET-INCHES) | | | | |
|----------------------------|------|--------|-------|----------------------------------|------|------|------|------|
| QTY. | SIZE | LENGTH | MARK | TYPE | A/C | B | G | O/J |
| ALL PILES, PIERS 1 THRU 15 | | | | | | | | |
| 8 | 6 | 10-40 | MS601 | 1 | 0-60 | 9-72 | | 0-60 |
| 10 | 4 | 03-92 | MS402 | T3 | | | 1-60 | 0-83 |



#EACH PILE
NOTE: ALL BAR BENDS ARE MEASURED OUT TO OUT

N:\31896-002\CADD\BRIDGE\PL301.ITG.DGN

| PIER 1 PILE DRIVING INFORMATION |
|--|
| PILE SIZE AND TYPE: 12¾" DIA. STEEL CLOSED END PIPE PILE |
| ACTUAL BEARING OBTAINED: |
| HAMMER TYPE: |
| AVERAGE ACTUAL BLOWS/FT.: |
| PILE HAMMER ENERGY: 60,000 LB-FT TO 110,000 LB-FT |
| SPECIAL DRIVING CONDITIONS AND COMMENTS: X |

| PIER 7 PILE DRIVING INFORMATION |
|--|
| PILE SIZE AND TYPE: 12¾" DIA. STEEL CLOSED END PIPE PILE |
| ACTUAL BEARING OBTAINED: |
| HAMMER TYPE: |
| AVERAGE ACTUAL BLOWS/FT.: |
| PILE HAMMER ENERGY: 60,000 LB-FT TO 110,000 LB-FT |
| SPECIAL DRIVING CONDITIONS AND COMMENTS: X |

| PIER 13 PILE DRIVING INFORMATION |
|--|
| PILE SIZE AND TYPE: 12¾" DIA. STEEL CLOSED END PIPE PILE |
| ACTUAL BEARING OBTAINED: |
| HAMMER TYPE: |
| AVERAGE ACTUAL BLOWS/FT.: |
| PILE HAMMER ENERGY: 60,000 LB-FT TO 110,000 LB-FT |
| SPECIAL DRIVING CONDITIONS AND COMMENTS: X |

| PIER 2 PILE DRIVING INFORMATION |
|--|
| PILE SIZE AND TYPE: 12¾" DIA. STEEL CLOSED END PIPE PILE |
| ACTUAL BEARING OBTAINED: |
| HAMMER TYPE: |
| AVERAGE ACTUAL BLOWS/FT.: |
| PILE HAMMER ENERGY: 60,000 LB-FT TO 110,000 LB-FT |
| SPECIAL DRIVING CONDITIONS AND COMMENTS: X |

| PIER 8 PILE DRIVING INFORMATION |
|--|
| PILE SIZE AND TYPE: 12¾" DIA. STEEL CLOSED END PIPE PILE |
| ACTUAL BEARING OBTAINED: |
| HAMMER TYPE: |
| AVERAGE ACTUAL BLOWS/FT.: |
| PILE HAMMER ENERGY: 60,000 LB-FT TO 110,000 LB-FT |
| SPECIAL DRIVING CONDITIONS AND COMMENTS: X |

| PIER 14 PILE DRIVING INFORMATION |
|--|
| PILE SIZE AND TYPE: 12¾" DIA. STEEL CLOSED END PIPE PILE |
| ACTUAL BEARING OBTAINED: |
| HAMMER TYPE: |
| AVERAGE ACTUAL BLOWS/FT.: |
| PILE HAMMER ENERGY: 60,000 LB-FT TO 110,000 LB-FT |
| SPECIAL DRIVING CONDITIONS AND COMMENTS: X |

| PIER 3 PILE DRIVING INFORMATION |
|--|
| PILE SIZE AND TYPE: 12¾" DIA. STEEL CLOSED END PIPE PILE |
| ACTUAL BEARING OBTAINED: |
| HAMMER TYPE: |
| AVERAGE ACTUAL BLOWS/FT.: |
| PILE HAMMER ENERGY: 60,000 LB-FT TO 110,000 LB-FT |
| SPECIAL DRIVING CONDITIONS AND COMMENTS: X |

| PIER 9 PILE DRIVING INFORMATION |
|--|
| PILE SIZE AND TYPE: 12¾" DIA. STEEL CLOSED END PIPE PILE |
| ACTUAL BEARING OBTAINED: |
| HAMMER TYPE: |
| AVERAGE ACTUAL BLOWS/FT.: |
| PILE HAMMER ENERGY: 60,000 LB-FT TO 110,000 LB-FT |
| SPECIAL DRIVING CONDITIONS AND COMMENTS: X |

| PIER 15 PILE DRIVING INFORMATION |
|--|
| PILE SIZE AND TYPE: 12¾" DIA. STEEL CLOSED END PIPE PILE |
| ACTUAL BEARING OBTAINED: |
| HAMMER TYPE: |
| AVERAGE ACTUAL BLOWS/FT.: |
| PILE HAMMER ENERGY: 60,000 LB-FT TO 110,000 LB-FT |
| SPECIAL DRIVING CONDITIONS AND COMMENTS: X |

| PIER 4 PILE DRIVING INFORMATION |
|--|
| PILE SIZE AND TYPE: 12¾" DIA. STEEL CLOSED END PIPE PILE |
| ACTUAL BEARING OBTAINED: |
| HAMMER TYPE: |
| AVERAGE ACTUAL BLOWS/FT.: |
| PILE HAMMER ENERGY: 60,000 LB-FT TO 110,000 LB-FT |
| SPECIAL DRIVING CONDITIONS AND COMMENTS: X |

| PIER 10 PILE DRIVING INFORMATION |
|--|
| PILE SIZE AND TYPE: 12¾" DIA. STEEL CLOSED END PIPE PILE |
| ACTUAL BEARING OBTAINED: |
| HAMMER TYPE: |
| AVERAGE ACTUAL BLOWS/FT.: |
| PILE HAMMER ENERGY: 60,000 LB-FT TO 110,000 LB-FT |
| SPECIAL DRIVING CONDITIONS AND COMMENTS: X |

| PIER 5 PILE DRIVING INFORMATION |
|--|
| PILE SIZE AND TYPE: 12¾" DIA. STEEL CLOSED END PIPE PILE |
| ACTUAL BEARING OBTAINED: |
| HAMMER TYPE: |
| AVERAGE ACTUAL BLOWS/FT.: |
| PILE HAMMER ENERGY: 60,000 LB-FT TO 110,000 LB-FT |
| SPECIAL DRIVING CONDITIONS AND COMMENTS: X |

| PIER 11 PILE DRIVING INFORMATION |
|--|
| PILE SIZE AND TYPE: 12¾" DIA. STEEL CLOSED END PIPE PILE |
| ACTUAL BEARING OBTAINED: |
| HAMMER TYPE: |
| AVERAGE ACTUAL BLOWS/FT.: |
| PILE HAMMER ENERGY: 60,000 LB-FT TO 110,000 LB-FT |
| SPECIAL DRIVING CONDITIONS AND COMMENTS: X |

| PIER 6 PILE DRIVING INFORMATION |
|--|
| PILE SIZE AND TYPE: 12¾" DIA. STEEL CLOSED END PIPE PILE |
| ACTUAL BEARING OBTAINED: |
| HAMMER TYPE: |
| AVERAGE ACTUAL BLOWS/FT.: |
| PILE HAMMER ENERGY: 60,000 LB-FT TO 110,000 LB-FT |
| SPECIAL DRIVING CONDITIONS AND COMMENTS: X |

| PIER 12 PILE DRIVING INFORMATION |
|--|
| PILE SIZE AND TYPE: 12¾" DIA. STEEL CLOSED END PIPE PILE |
| ACTUAL BEARING OBTAINED: |
| HAMMER TYPE: |
| AVERAGE ACTUAL BLOWS/FT.: |
| PILE HAMMER ENERGY: 60,000 LB-FT TO 110,000 LB-FT |
| SPECIAL DRIVING CONDITIONS AND COMMENTS: X |

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NOTES:
 1. SEE DWG. NO. PL-301 FOR PILE LAYOUT PLAN FOR PIERS 1 THROUGH 15.

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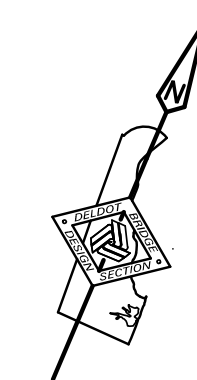
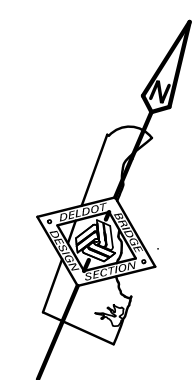
| ADDENDUMS / REVISIONS |
|-----------------------|
| |
| |
| |

SCALE: NONE

NEW CASTLE INDUSTRIAL TRACK TRAIL, PHASE 3

| | | |
|------------|------------------|----------|
| CONTRACT | BRIDGE NO. | X |
| T201330009 | DESIGNED BY: NAH | |
| COUNTY | CHECKED BY: WAG | |
| NEW CASTLE | | |

| |
|-------------|
| PL-302 |
| SHEET NO. |
| 128 |
| TOTAL SHTS. |
| 205 |

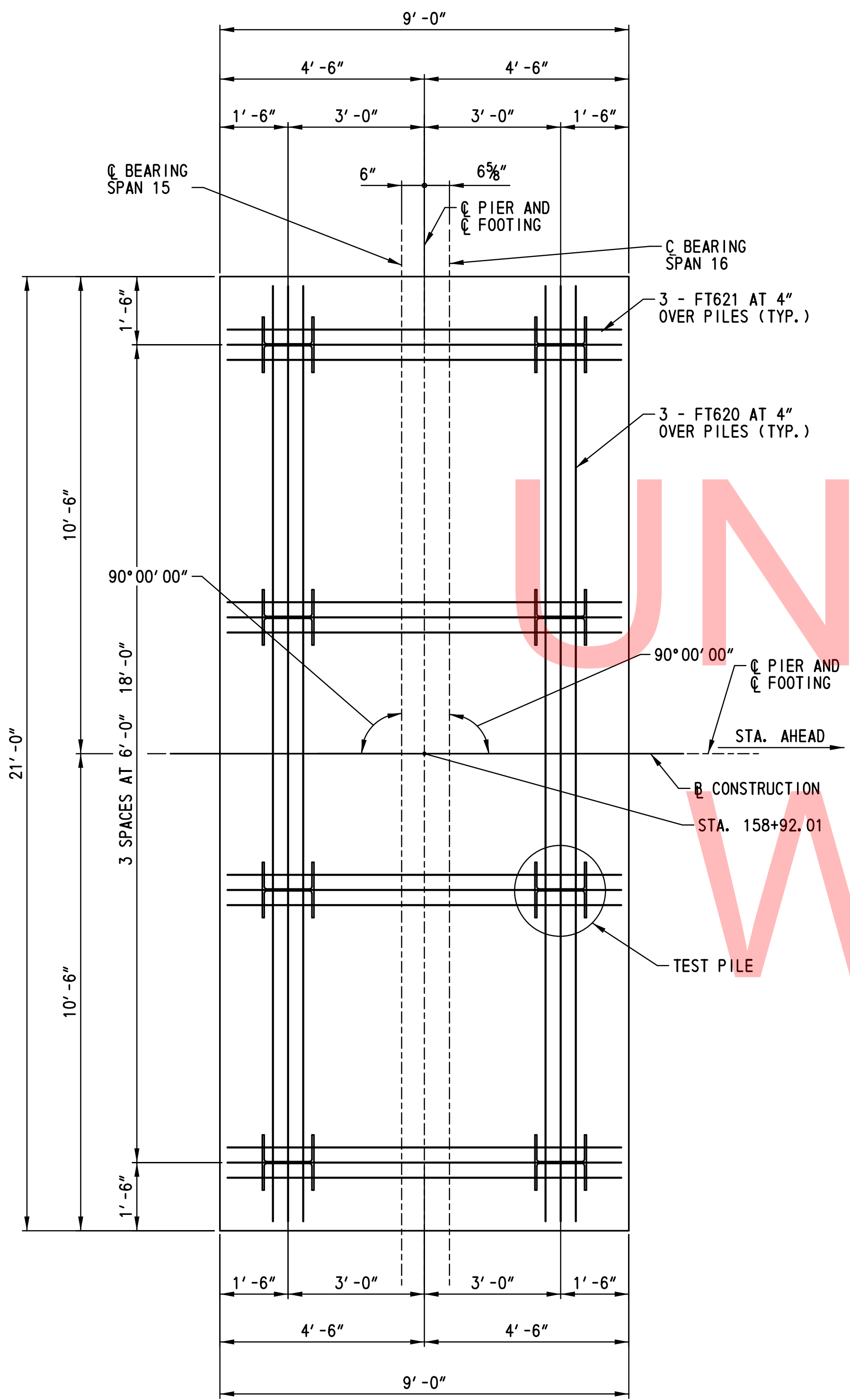


| PIER 16 PILE DRIVING INFORMATION | |
|--|-------------------------------|
| PILE SIZE AND TYPE: | HP14X89 |
| ACTUAL BEARING OBTAINED: | |
| HAMMER TYPE: | |
| AVERAGE ACTUAL BLOWS/FT.: | |
| PILE HAMMER ENERGY: | 60,000 LB-FT TO 110,000 LB-FT |
| SPECIAL DRIVING CONDITIONS AND COMMENTS: | X |

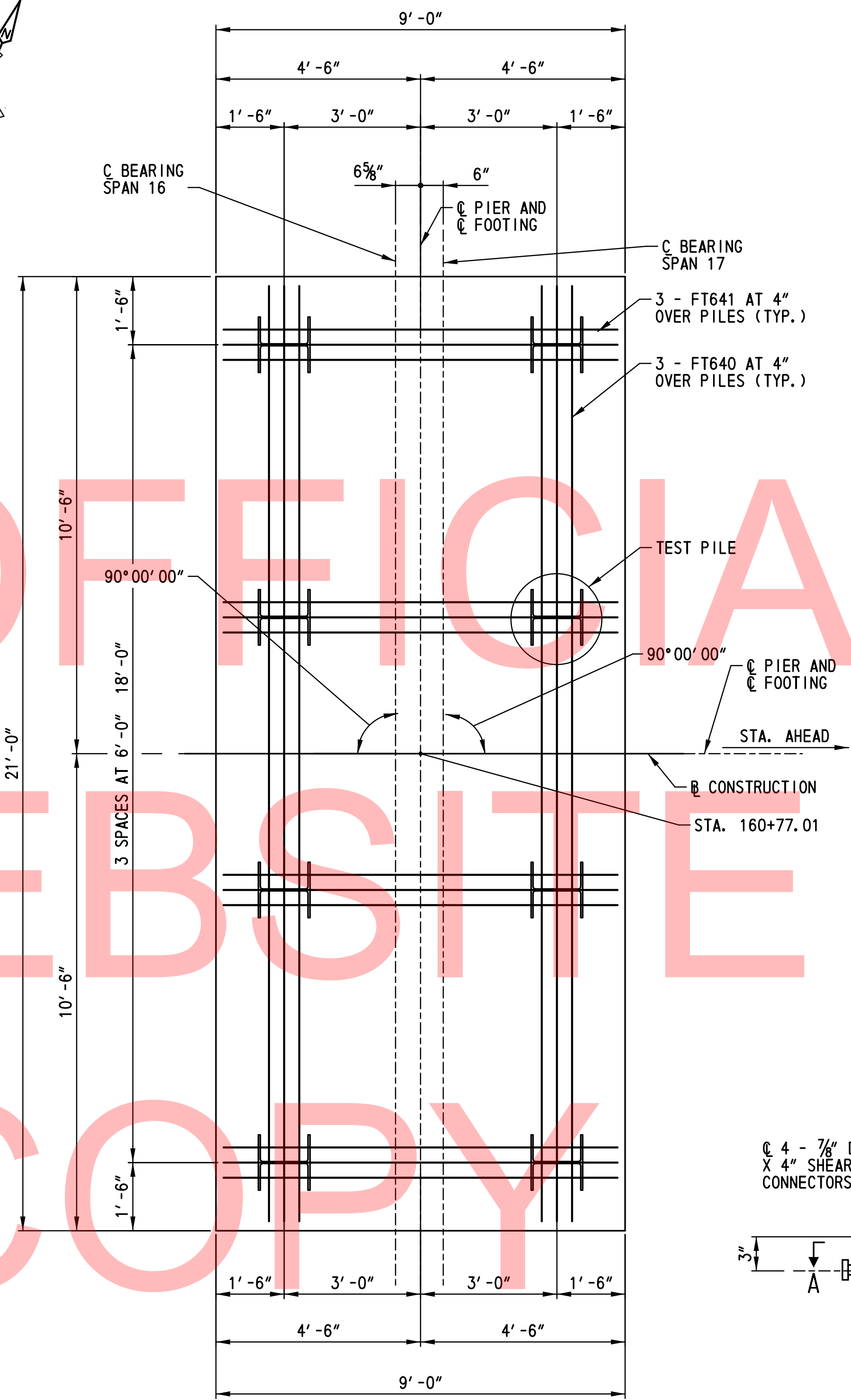
| PIER 17 PILE DRIVING INFORMATION | |
|--|-------------------------------|
| PILE SIZE AND TYPE: | HP14X89 |
| ACTUAL BEARING OBTAINED: | |
| HAMMER TYPE: | |
| AVERAGE ACTUAL BLOWS/FT.: | |
| PILE HAMMER ENERGY: | 60,000 LB-FT TO 110,000 LB-FT |
| SPECIAL DRIVING CONDITIONS AND COMMENTS: | X |

- PILE LEGEND:**
- H DENOTES PLUMB HP14x89 STEEL PILE.
 - ⊕ DENOTES LOCATION OF PLUMB HP 14x89 PILE, DYNAMIC PILE TESTING AND SIGNAL MATCHING ANALYSIS.

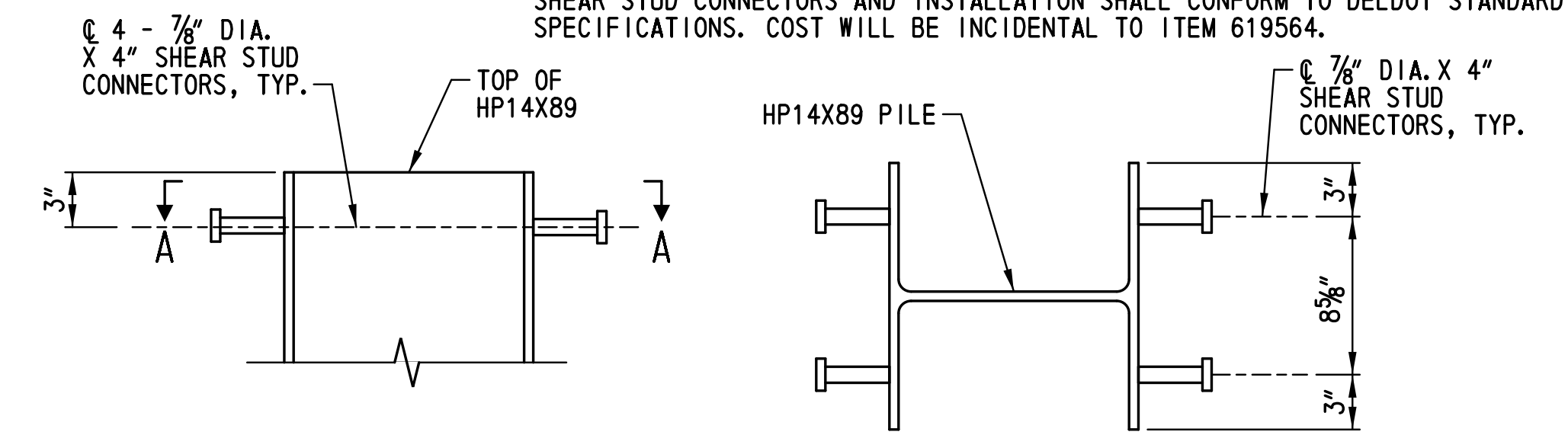
- PILE NOTES:**
- THE FACTORED RESISTANCE OF THE HP 14x89 STEEL PILING IS 89 TONS. PILES SHALL BE DRIVEN IN CONFORMANCE WITH STANDARD SPECIFICATIONS SECTION 619 TO A NOMINAL PILE DRIVING RESISTANCE OF 137 TONS.
 - PILES SHALL BE DRIVEN TO THE DRIVING CRITERIA DEVELOPED FROM DYNAMIC PILE TESTING AND AS SPECIFIED BY THE ENGINEER TO ACHIEVE A NOMINAL PILE DRIVING RESISTANCE AS SPECIFIED IN NOTE 1 BELOW THE SPECIFIED MINIMUM TIP ELEVATION. PILES MEETING THE AFOREMENTIONED CRITERIA WILL BE CONSIDERED SATISFACTORY.
 - THE CONTRACTOR SHALL BE RESPONSIBLE FOR SUBMITTING A WAVE EQUATION ANALYSIS AND ALL OTHER INCIDENTALS IN ACCORDANCE WITH SECTION 619 AND THE SPECIAL PROVISIONS. THE WAVE EQUATION ANALYSIS AND DYNAMIC PILE TESTING MUST BE SIGNED AND SEALED BY A REGISTERED PROFESSIONAL ENGINEER LICENSED IN THE STATE OF DELAWARE IN ACCORDANCE WITH THE SPECIAL PROVISIONS.
 - THE DEPARTMENT RESERVES THE RIGHT TO PERFORM DYNAMIC PILE TESTING OF RESTRIKES.
 - THE CONTRACTOR SHALL CONSTRUCT A FIXED TEMPLATE AT EACH PIER LOCATION IN ORDER TO DRIVE PILES AT THE SPECIFIED ALIGNMENT AND LOCATION.
 - SHEAR STUD CONNECTORS SHALL BE FIELD WELDED TO THE TOP OF EACH PILE AFTER DRIVING IS COMPLETE. SEE 'TOP OF PILE DETAIL', THIS DWG., FOR DETAILS. SHEAR STUD CONNECTORS AND INSTALLATION SHALL CONFORM TO DELDOT STANDARD SPECIFICATIONS. COST WILL BE INCIDENTAL TO ITEM 619564.



PIER 16
SCALE: 1/2" = 1'-0"



PIER 17
SCALE: 1/2" = 1'-0"



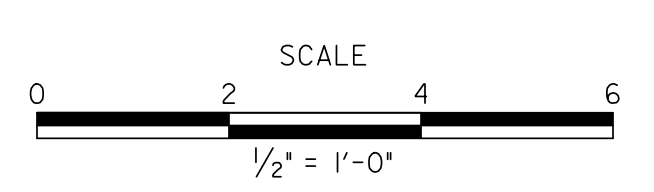
TOP OF PILE DETAIL
SCALE: 1-1/2" = 1'-0"

SECTION A-A
SCALE: 1-1/2" = 1'-0"

| SUBSTRUCTURE UNIT | DESIGN DATA | | ACTUAL FIELD DATA | |
|-------------------|-----------------------|-------------------------|--------------------------------------|--------------------------------------|
| | MINIMUM TIP ELEVATION | ESTIMATED TIP ELEVATION | AVERAGE ACTUAL MINIMUM TIP ELEVATION | AVERAGE ACTUAL MAXIMUM TIP ELEVATION |
| PIER 16 | -46.0 | -51.0 | | |
| PIER 17 | -46.0 | -51.0 | | |

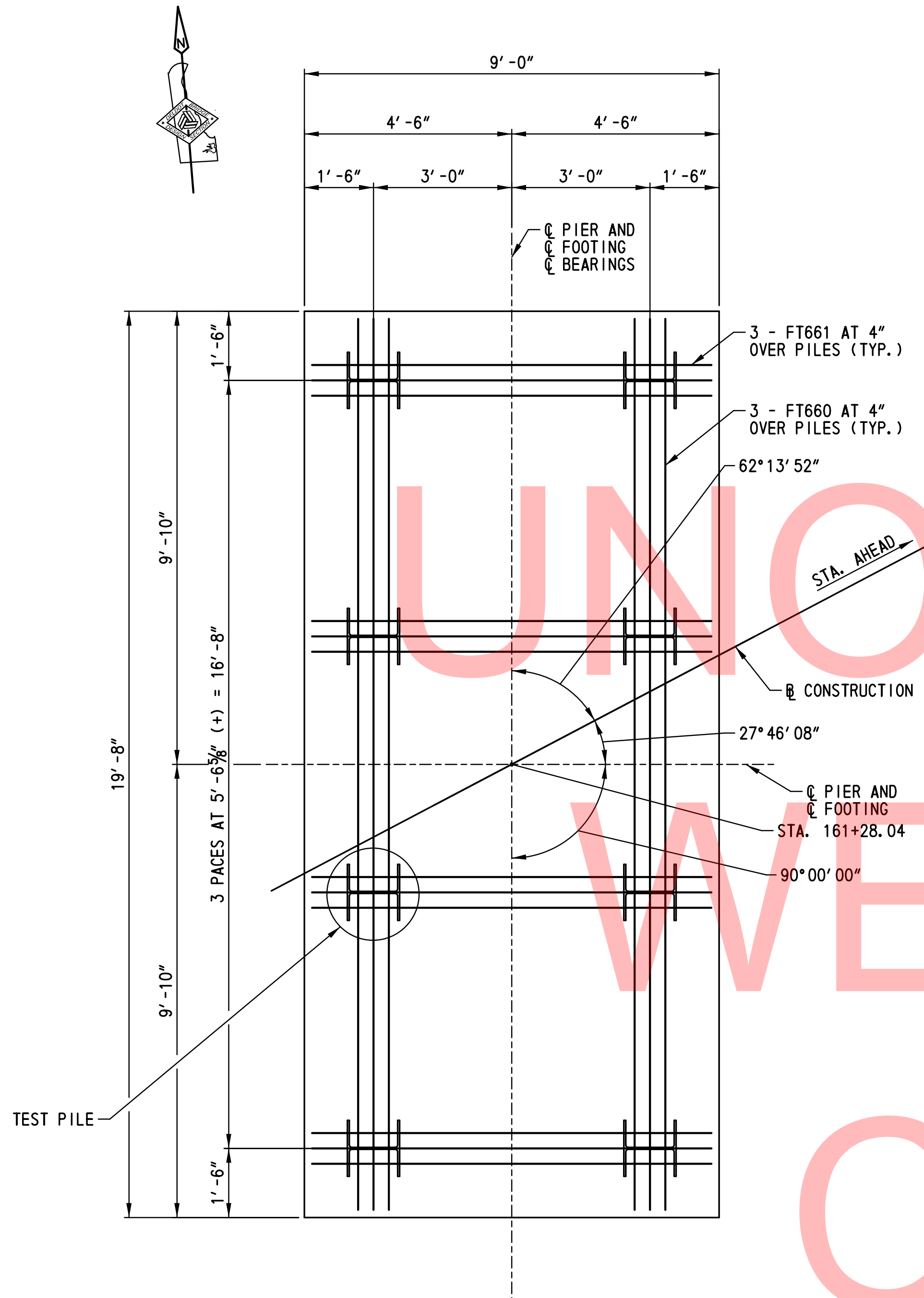
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| ADDENDUMS / REVISIONS |
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| CONTRACT | BRIDGE NO. | X |
| T201330009 | DESIGNED BY: | NAH |
| COUNTY | CHECKED BY: | WAG |
| NEW CASTLE | | |

| PIER 18 PILE DRIVING INFORMATION | |
|--|-------------------------------|
| PILE SIZE AND TYPE: | HP14X89 |
| ACTUAL BEARING OBTAINED: | |
| HAMMER TYPE: | |
| AVERAGE ACTUAL BLOWS/FT.: | |
| PILE HAMMER ENERGY: | 60,000 LB-FT TO 110,000 LB-FT |
| SPECIAL DRIVING CONDITIONS AND COMMENTS: | X |



PIER 18
SCALE: 1/2" = 1'-0"

PILE LEGEND:

- H DENOTES PLUMB HP14x89 STEEL PILE.
- ⊕ DENOTES LOCATION OF PLUMB HP 14x89 PILE, DYNAMIC PILE TESTING AND SIGNAL MATCHING ANALYSIS.

PILE NOTES:

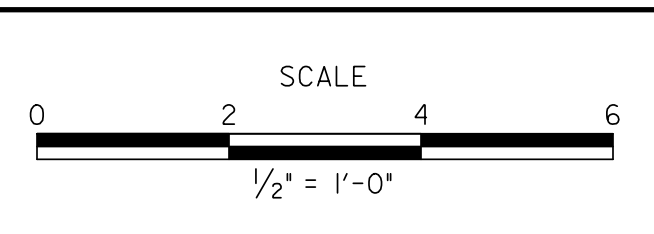
- THE FACTORED RESISTANCE OF THE HP 14x89 STEEL PILING IS 89 TONS. PILES SHALL BE DRIVEN IN CONFORMANCE WITH STANDARD SPECIFICATIONS SECTION 619 TO A NOMINAL PILE DRIVING RESISTANCE OF 137 TONS.
- PILES SHALL BE DRIVEN TO THE DRIVING CRITERIA DEVELOPED FROM DYNAMIC PILE TESTING AND AS SPECIFIED BY THE ENGINEER TO ACHIEVE A NOMINAL PILE DRIVING RESISTANCE AS SPECIFIED IN NOTE 1 BELOW THE SPECIFIED MINIMUM TIP ELEVATION. PILES MEETING THE AFOREMENTIONED CRITERIA WILL BE CONSIDERED SATISFACTORY.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR SUBMITTING A WAVE EQUATION ANALYSIS AND ALL OTHER INCIDENTALS IN ACCORDANCE WITH SECTION 619 AND THE SPECIAL PROVISIONS. THE WAVE EQUATION ANALYSIS AND DYNAMIC PILE TESTING MUST BE SIGNED AND SEALED BY A REGISTERED PROFESSIONAL ENGINEER LICENSED IN THE STATE OF DELAWARE IN ACCORDANCE WITH THE SPECIAL PROVISIONS.
- THE DEPARTMENT RESERVES THE RIGHT TO PERFORM DYNAMIC PILE TESTING OF RESTRIKES.
- THE CONTRACTOR SHALL CONSTRUCT A FIXED TEMPLATE AT EACH PIER LOCATION IN ORDER TO DRIVE PILES AT THE SPECIFIED ALIGNMENT AND LOCATION.
- SHEAR STUD CONNECTORS SHALL BE FIELD WELDED TO THE TOP OF EACH PILE AFTER DRIVING IS COMPLETE. SEE 'TOP OF PILE DETAIL', DWG. NO. PL-303, FOR DETAILS. SHEAR STUD CONNECTORS AND INSTALLATION SHALL CONFORM TO DELDOT STANDARD SPECIFICATIONS. COST WILL BE INCIDENTAL TO ITEM 619564.

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| PILE TIP DATA | | | | |
|-------------------|-----------------------|-------------------------|--------------------------------------|--------------------------------------|
| SUBSTRUCTURE UNIT | DESIGN DATA | | ACTUAL FIELD DATA | |
| | MINIMUM TIP ELEVATION | ESTIMATED TIP ELEVATION | AVERAGE ACTUAL MINIMUM TIP ELEVATION | AVERAGE ACTUAL MAXIMUM TIP ELEVATION |
| PIER 18 | -46.0 | -51.0 | | |

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| ADDENDUMS / REVISIONS |
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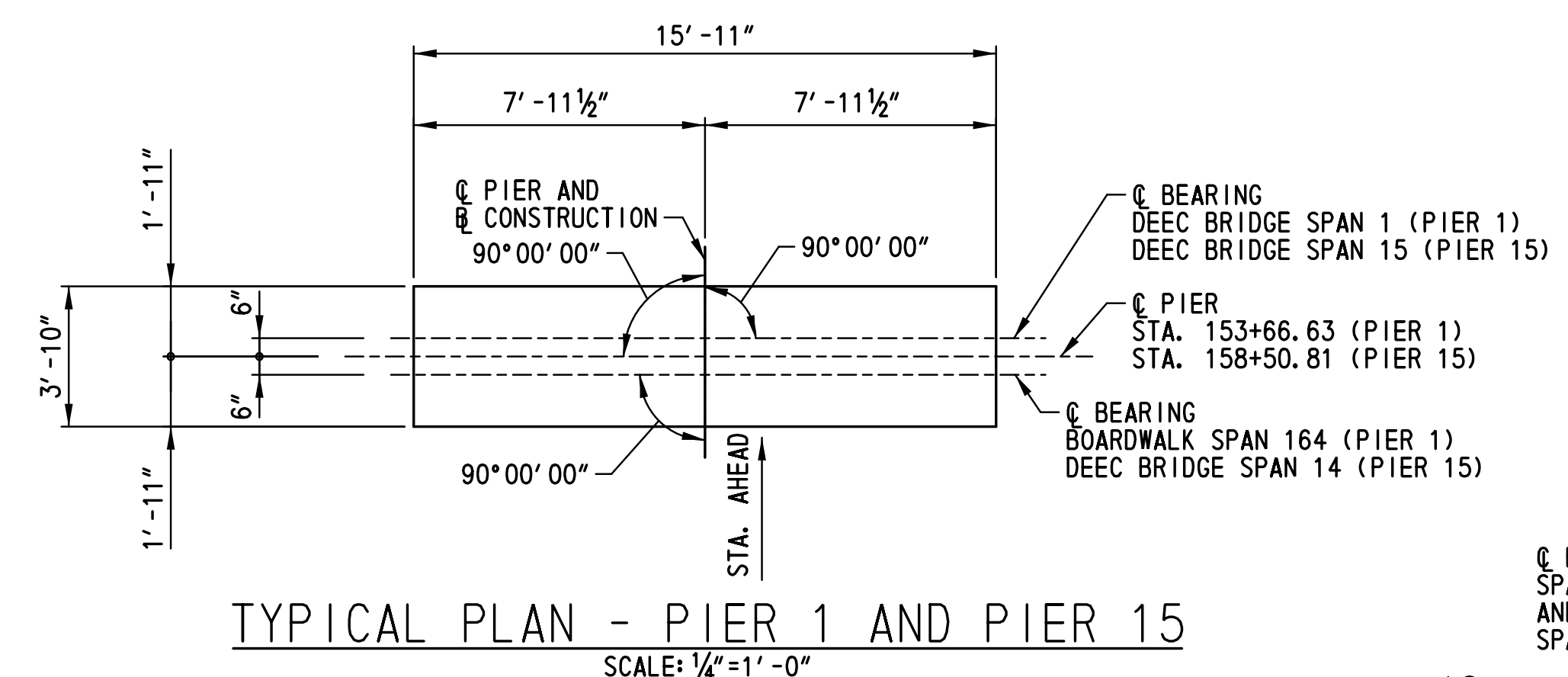


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| CONTRACT | BRIDGE NO. | X |
| T201330009 | DESIGNED BY: | NAH |
| COUNTY | CHECKED BY: | WAG |
| NEW CASTLE | | |

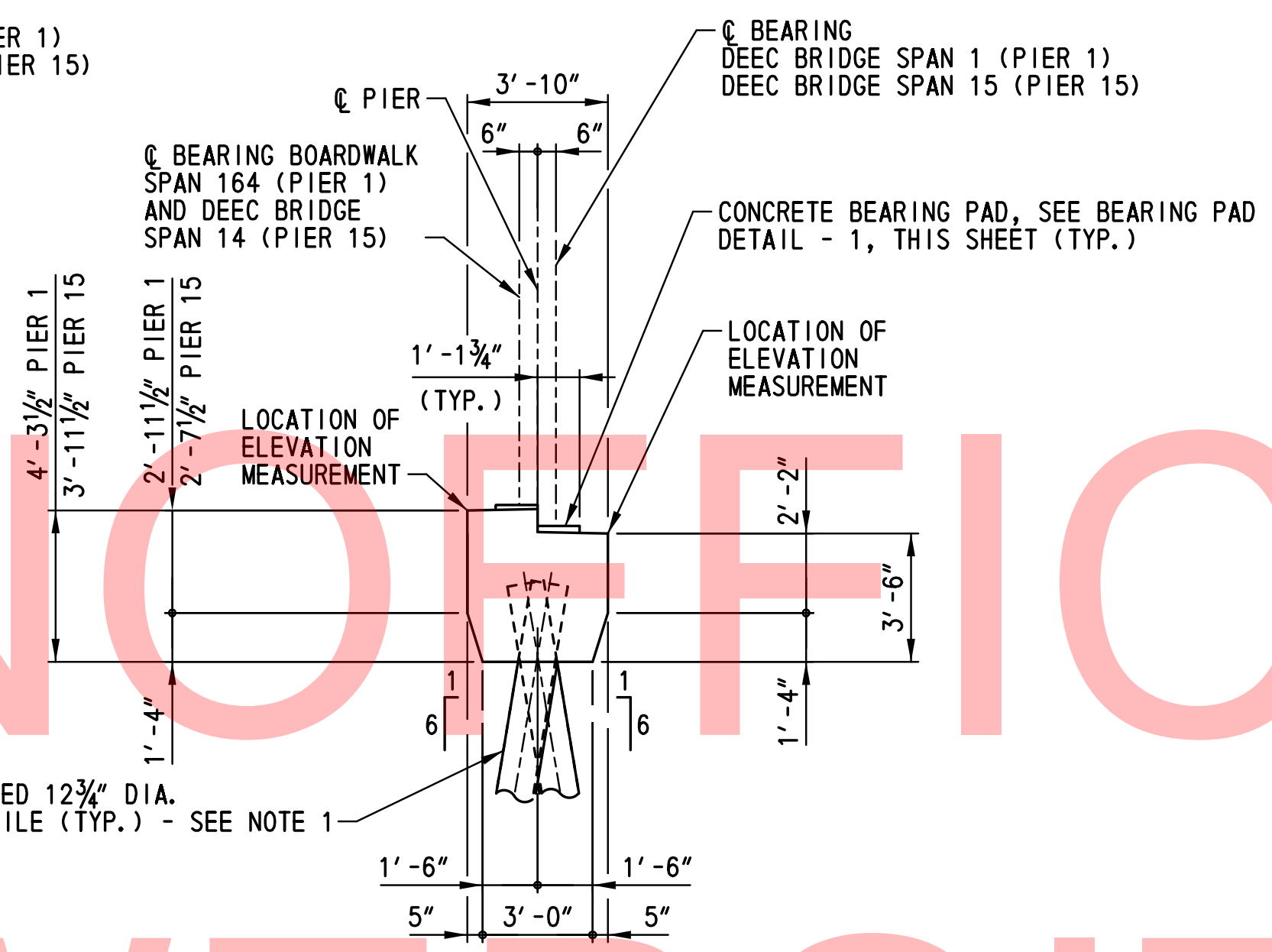
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| PL-304 |
| SHEET NO. |
| 130 |
| TOTAL SHTS. |
| 205 |

| DIMENSION REFERENCE TABLE - SEE NOTE 4 | | | | | |
|--|-------|-------|-------|-------|-----------|
| PIER NO. | EL. A | EL. B | EL. C | EL. D | STATION X |
| 2 | 4.08 | 7.58 | 7.75 | 7.79 | 154+11.63 |
| 3 | 5.84 | 9.34 | 9.51 | 9.55 | 154+56.63 |
| 4 | 7.59 | 11.09 | 11.26 | 11.30 | 155+1.63 |
| 5 | 9.35 | 12.85 | 13.02 | 13.06 | 155+46.63 |
| 6 | 10.49 | 13.99 | 14.16 | 14.20 | 155+75.83 |
| 7 | 11.63 | 15.13 | 15.30 | 15.34 | 156+5.83 |
| 8 | 12.77 | 16.27 | 16.44 | 16.48 | 156+34.23 |
| 9 | 13.90 | 17.40 | 17.57 | 17.61 | 156+63.43 |
| 10 | 14.12 | 18.62 | 18.79 | 18.83 | 156+94.66 |
| 11 | 16.34 | 19.84 | 20.01 | 20.05 | 157+25.89 |
| 12 | 17.56 | 21.06 | 21.23 | 21.27 | 157+57.12 |
| 13 | 18.78 | 22.28 | 22.45 | 22.49 | 157+88.35 |
| 14 | 20.00 | 23.50 | 23.67 | 23.71 | 158+19.58 |

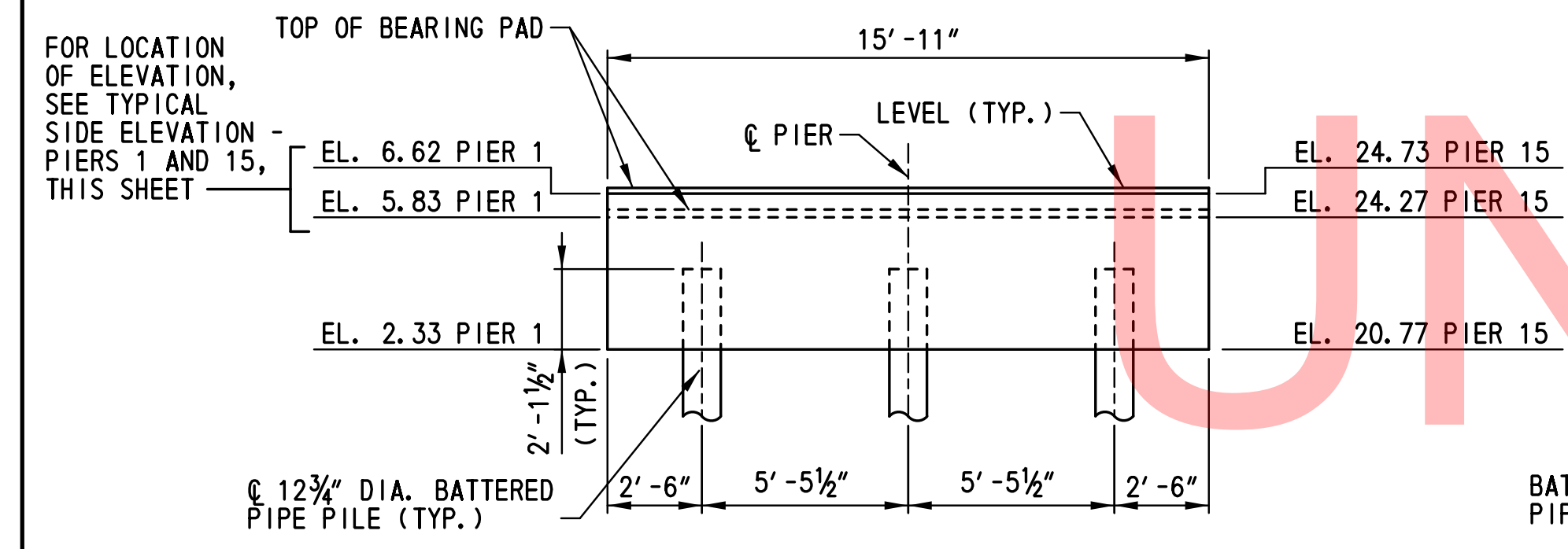
- NOTES:**
- FOR PILE LAYOUT PLAN, SEE DWG. NO. PL-301.
 - FOR PIER REINFORCEMENT DETAILS, SEE DWG. NO. PR-305.
 - PIER ORIENTATION VARIES. SEE DWG. NOS. FT-301 THRU FT-305 FOR PIER GEOMETRIC AND FOOTING LAYOUT PLANS.
 - THE TABULATED VALUES (EL. A, EL. B, EL. C, EL. D, STA. X) APPLY TO PIERS 2 THROUGH 14.
 - LOCATION OF \bar{C} BEAM VARIES. SEE DWG. NOS. FR-301 THROUGH FR-304 FOR DETAILS.



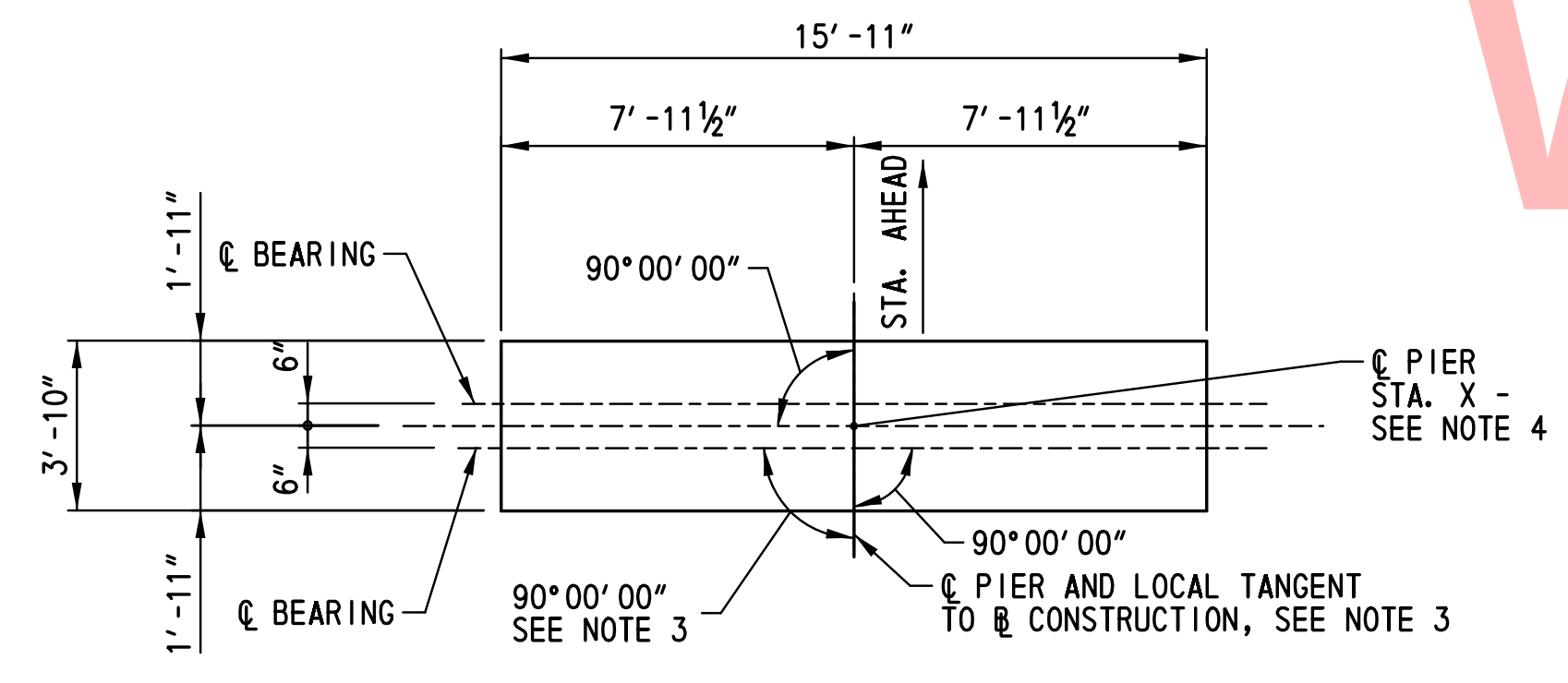
TYPICAL PLAN - PIER 1 AND PIER 15
SCALE: 1/4"=1'-0"



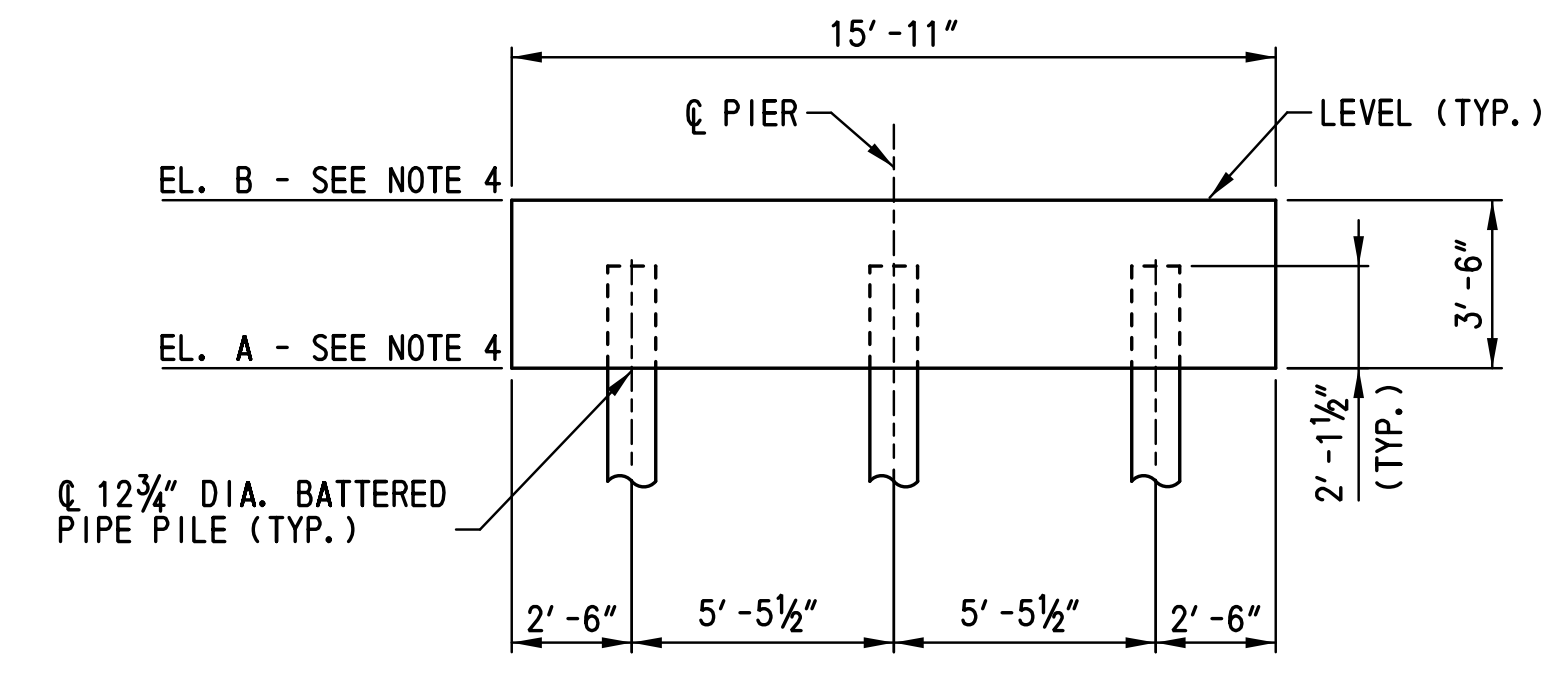
TYPICAL SIDE ELEVATION - PIERS 1 AND 15
SCALE: 1/4"=1'-0"



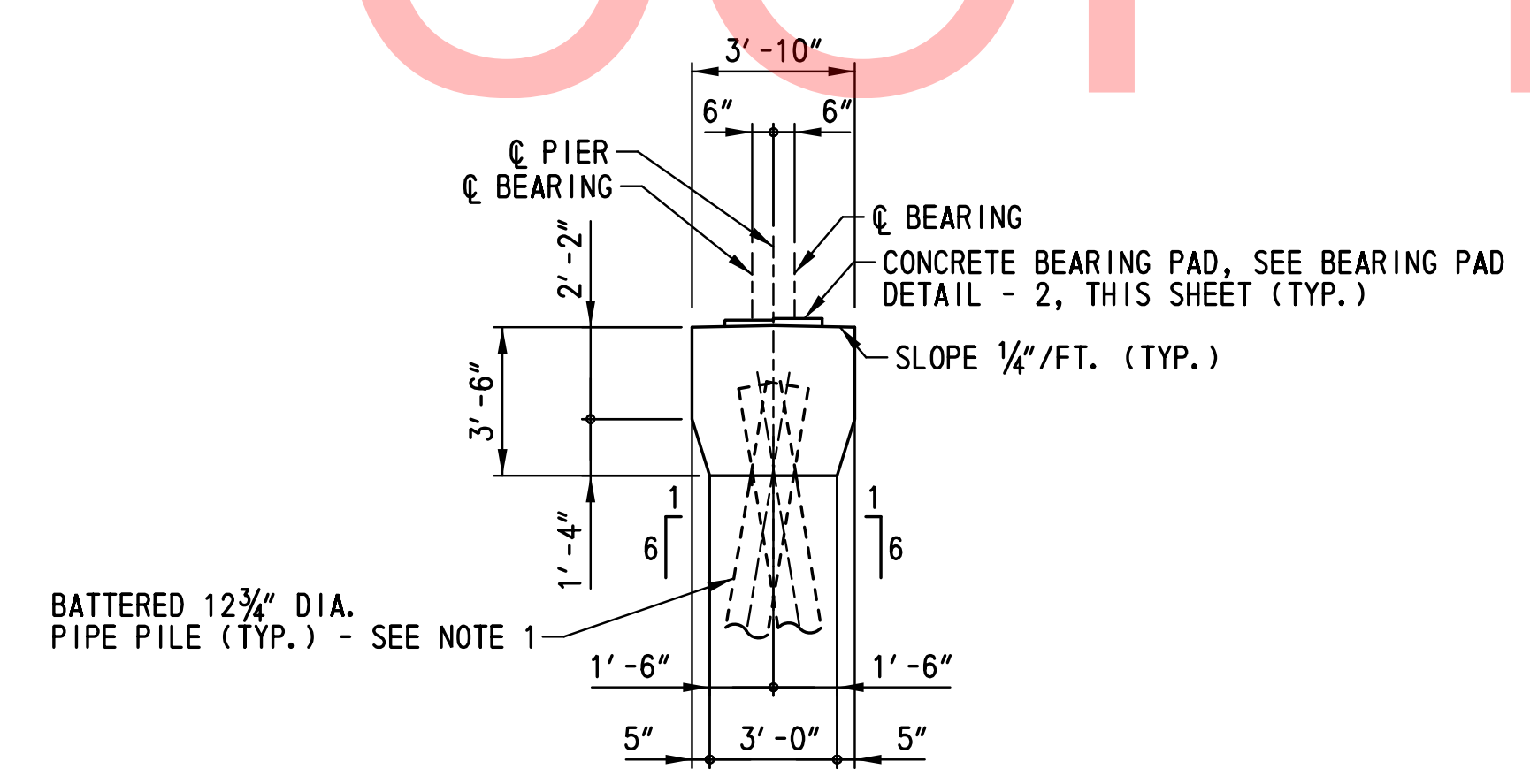
TYPICAL ELEVATION - PIERS 1 AND 15
SCALE: 1/4"=1'-0"



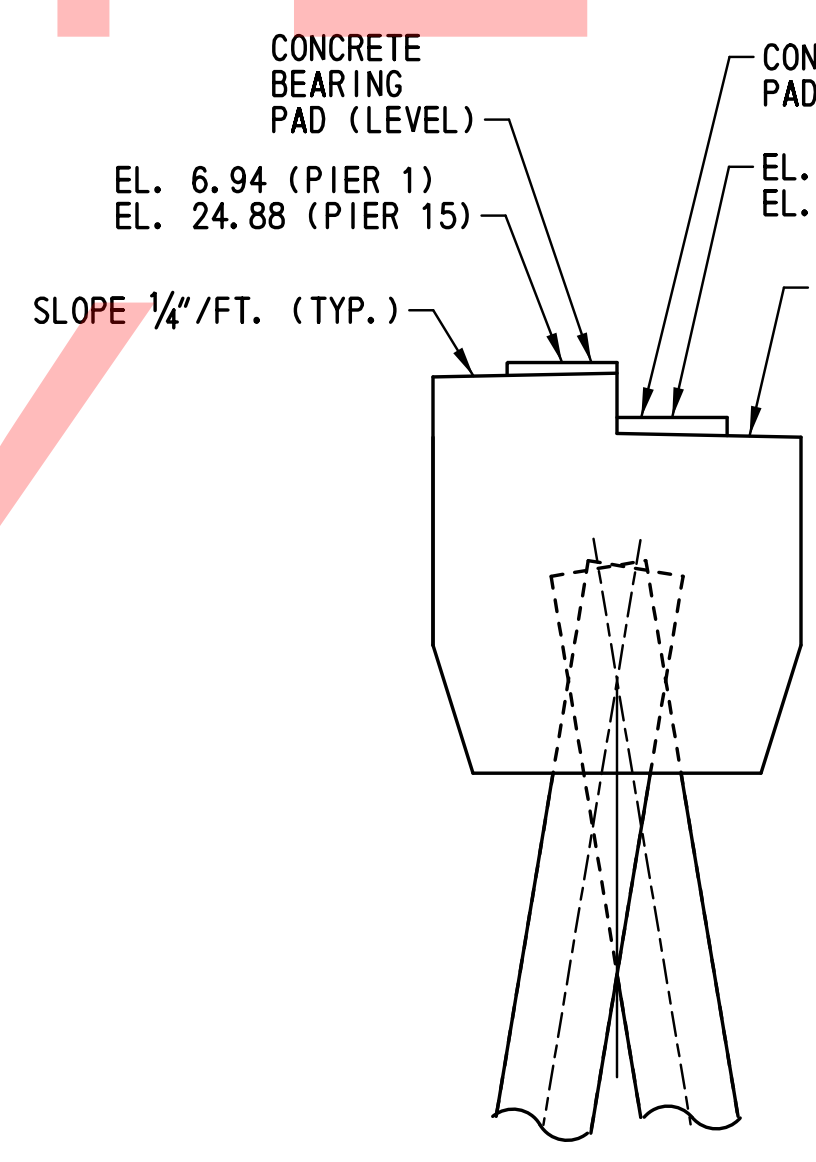
TYPICAL PLAN - PIERS 2-14
SCALE: 1/4"=1'-0"



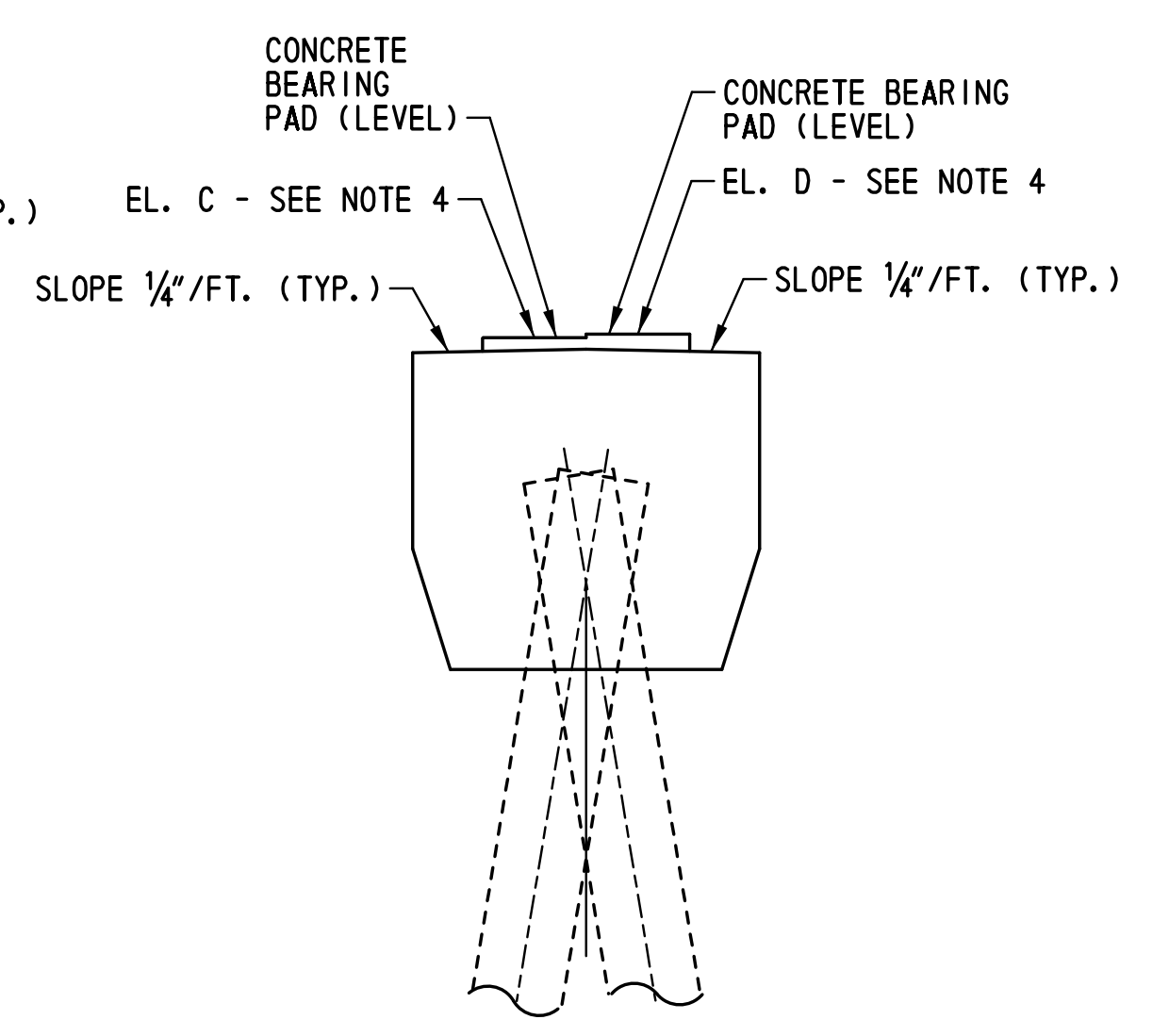
TYPICAL ELEVATION - PIERS 2-14
SCALE: 1/4"=1'-0"



TYPICAL SIDE ELEVATION - PIERS 2-14
SCALE: 1/4"=1'-0"



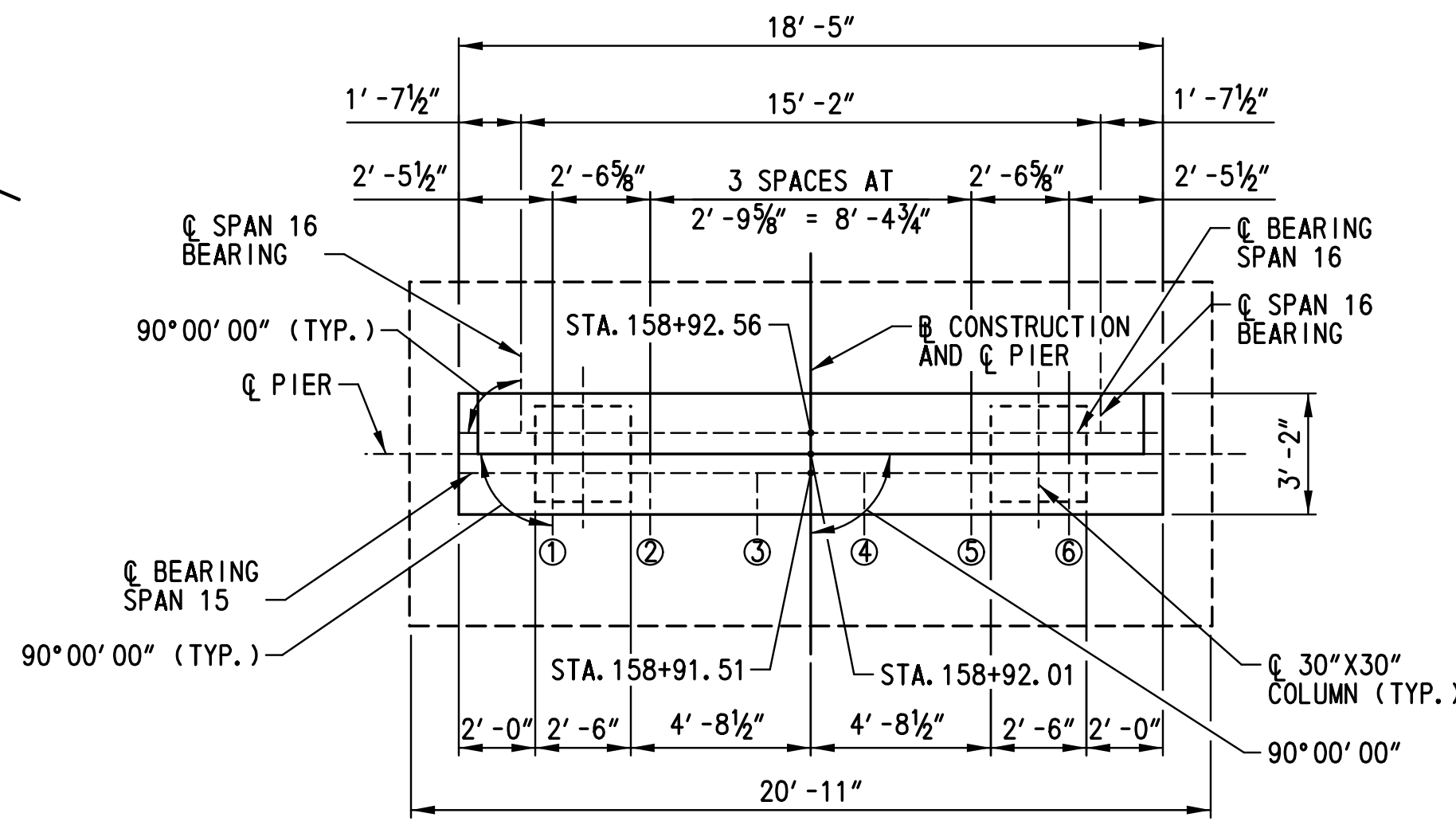
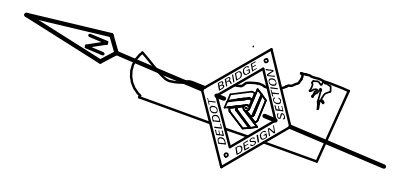
BEARING PAD DETAIL - 1
SCALE: 1/2"=1'-0"



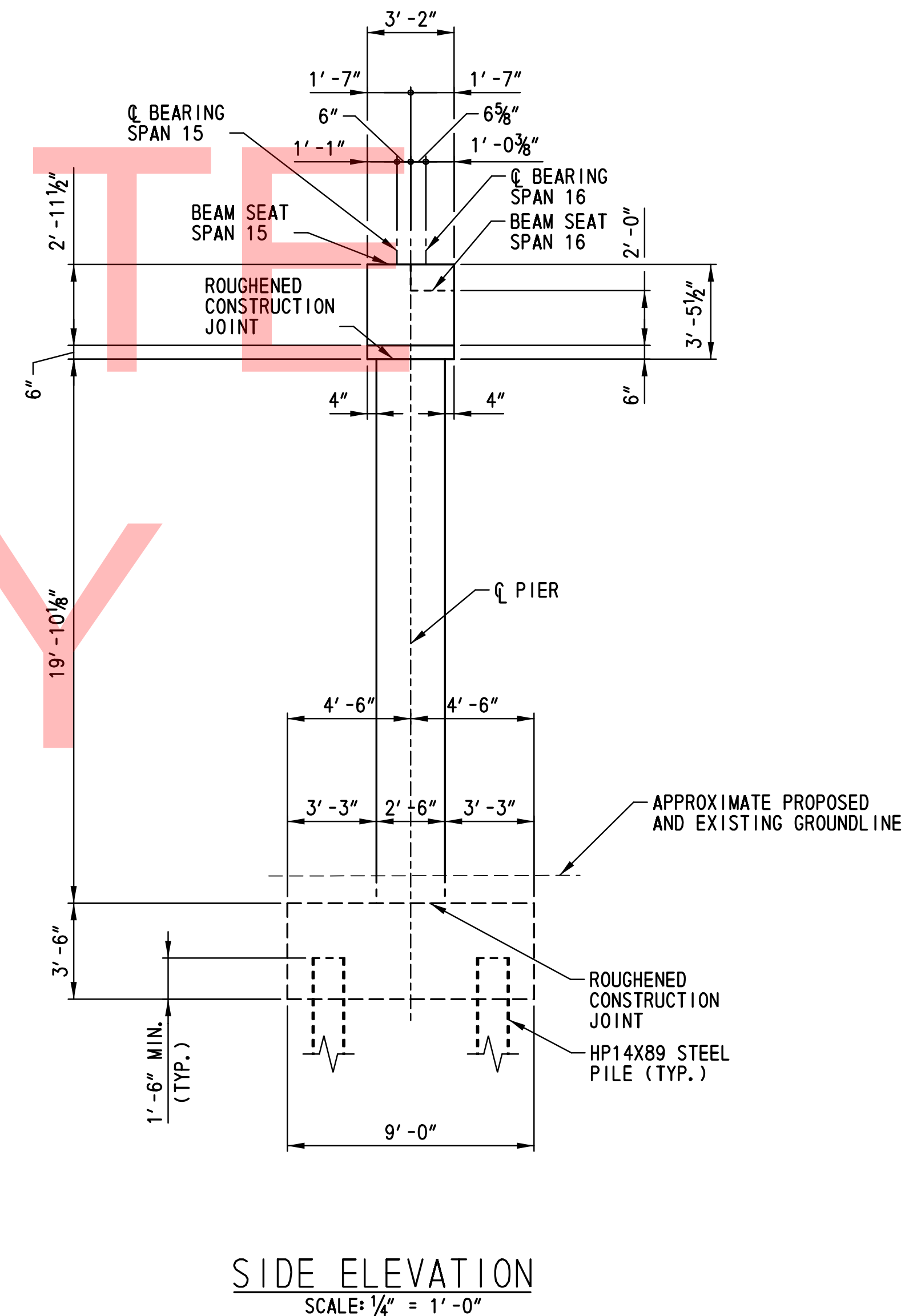
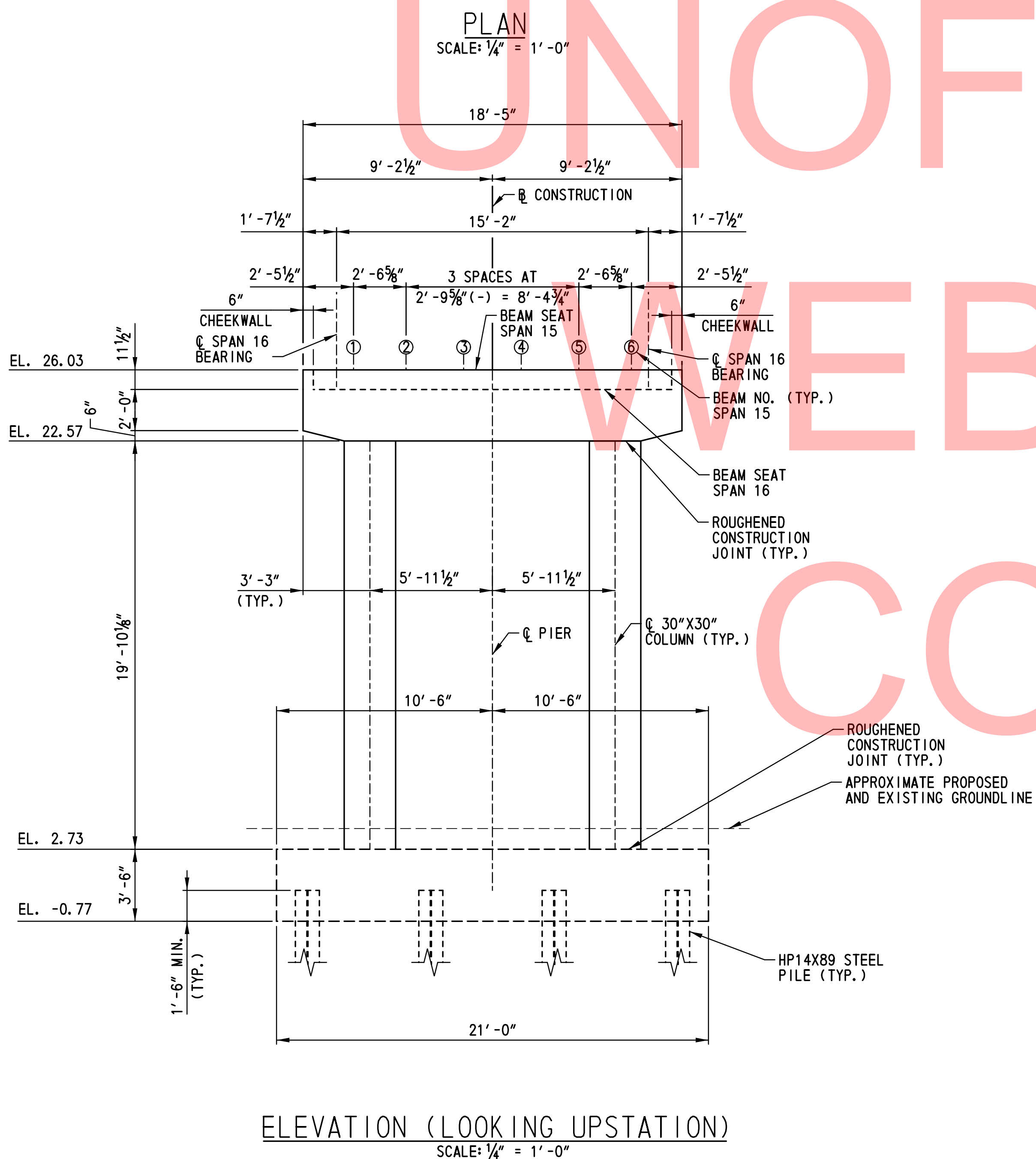
BEARING PAD DETAIL - 2
SCALE: 1/2"=1'-0"

NOTE:
CONCRETE BEARING PADS NOT SHOWN FOR CLARITY. BEARING PADS ARE FULL WIDTH OF PILE CAP.

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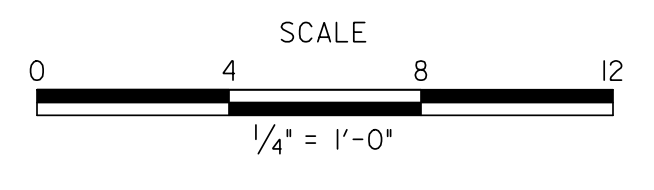


- NOTES:**
1. FOR PILE LAYOUT PLAN, SEE DWG. NO. PL-303.
 2. FOR PIER REINFORCEMENT DETAILS, SEE DWG. NO. PR-306.

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| ADDENDUMS / REVISIONS | |
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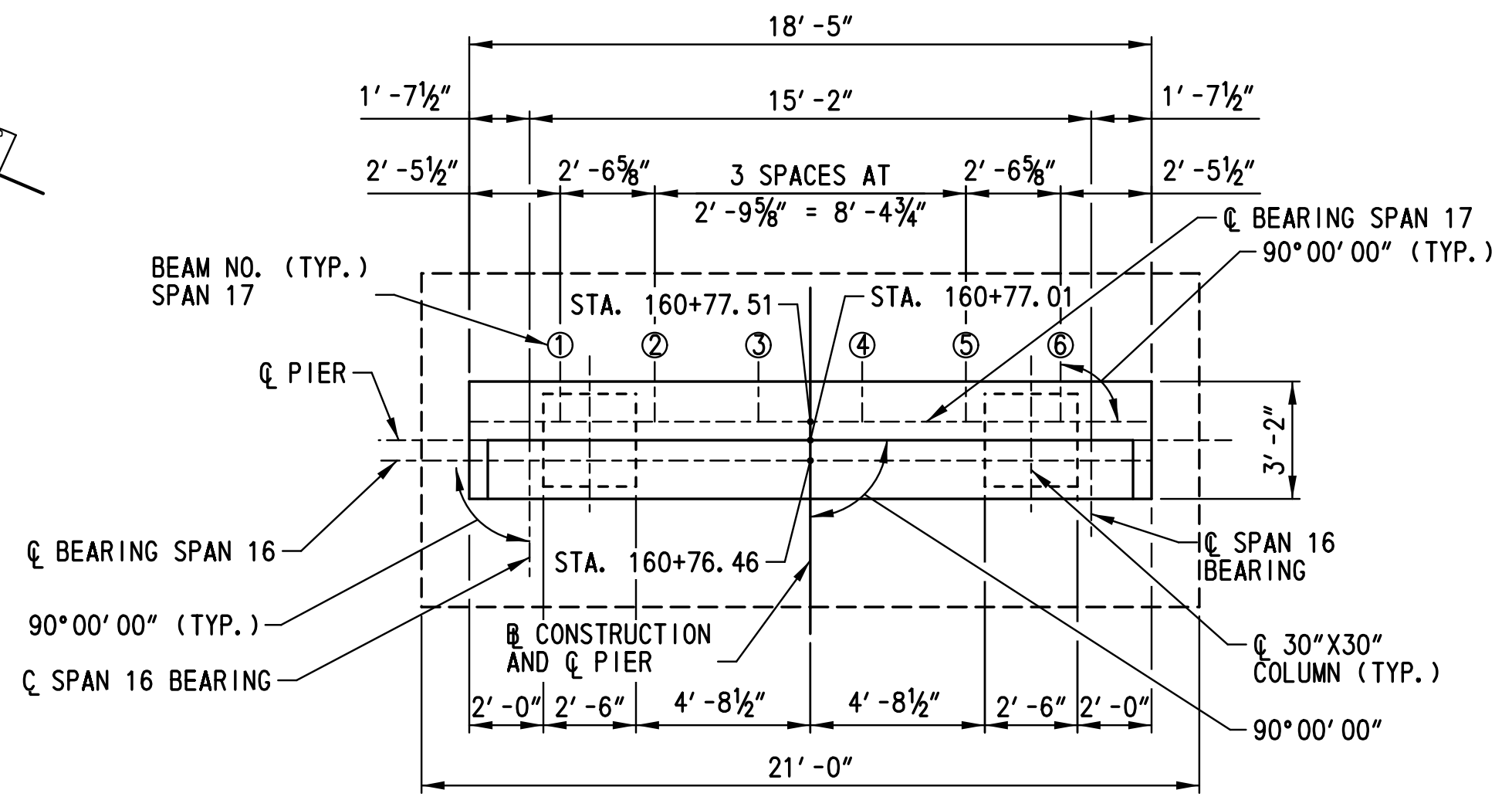
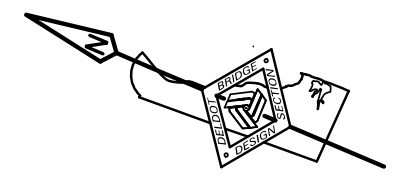


**NEW CASTLE INDUSTRIAL
TRACK TRAIL, PHASE 3**

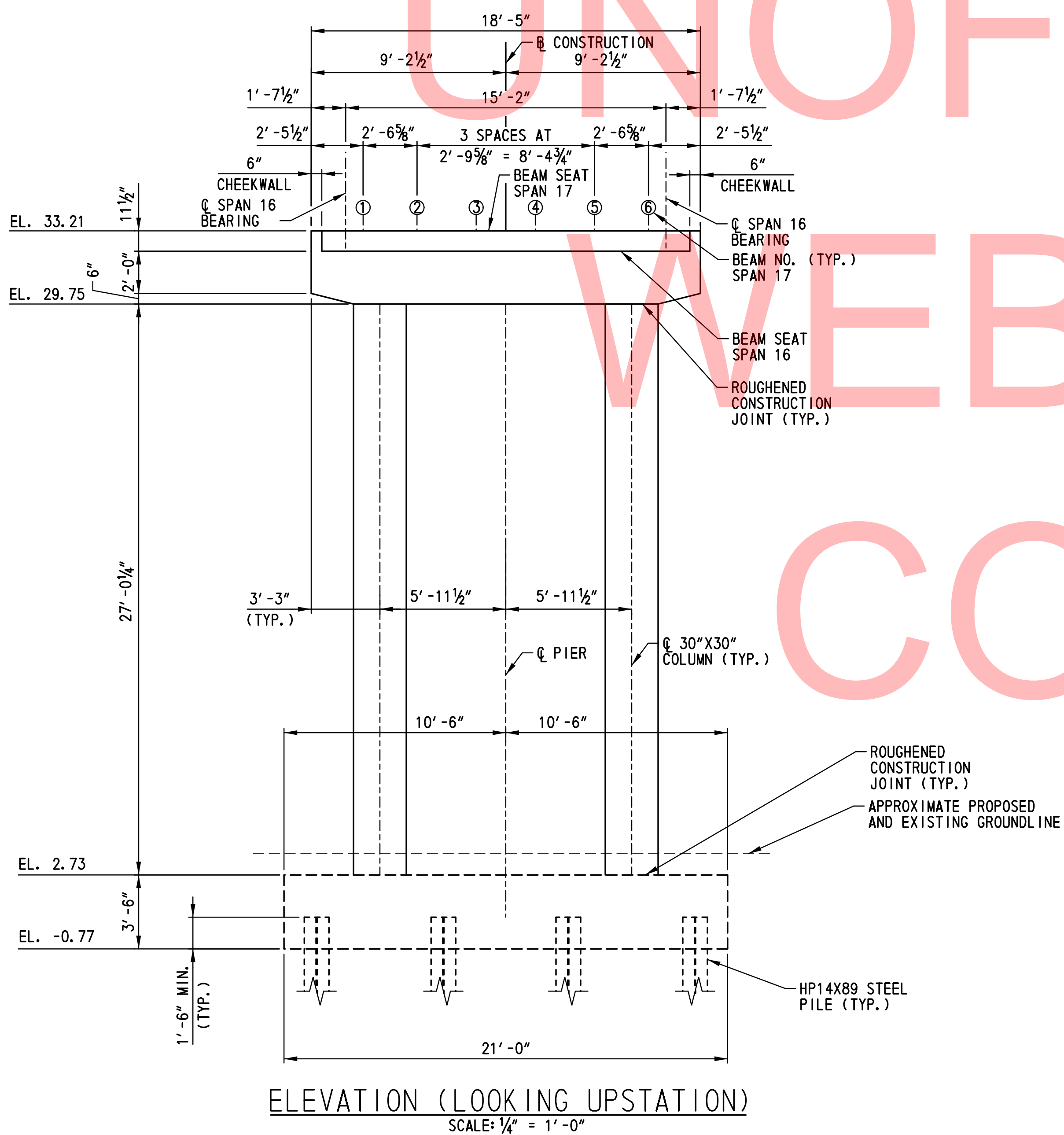
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| CONTRACT T201330009 | BRIDGE NO. | X | |
| COUNTY NEW CASTLE | DESIGNED BY: NAH | | |
| | CHECKED BY: WAG | | |

**PIER 16
PLAN AND ELEVATION**

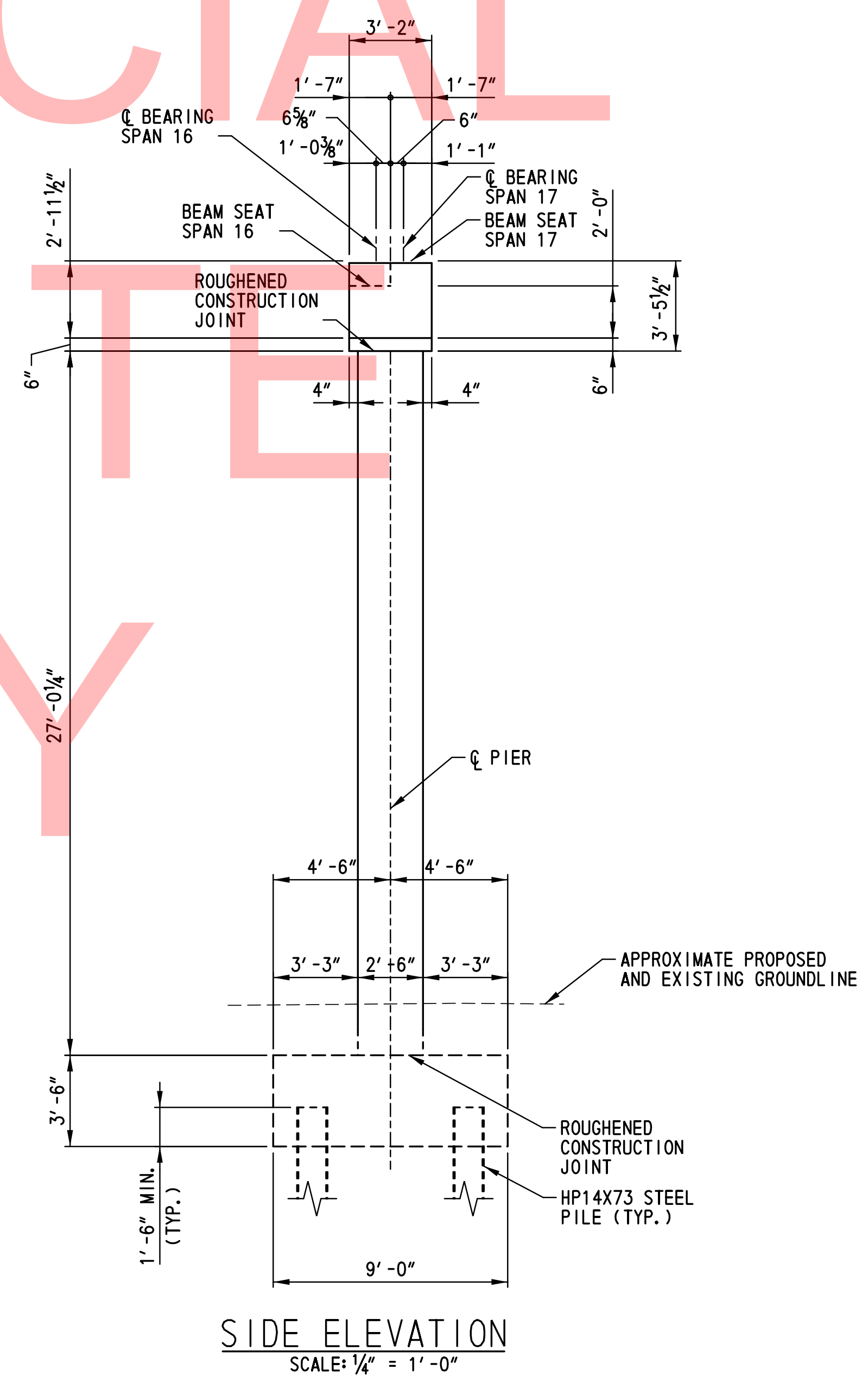
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| PR-302 |
| SHEET NO. 132 |
| TOTAL SHTS. 205 |



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



ELEVATION (LOOKING UPSTATION)
SCALE: 1/4" = 1'-0"



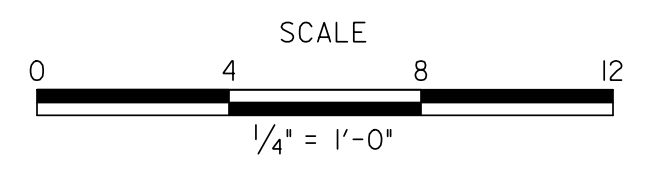
SIDE ELEVATION
SCALE: 1/4" = 1'-0"

- NOTES:
1. FOR PILE LAYOUT PLAN, SEE DWG. NO. PL-303.
 2. FOR PIER REINFORCEMENT DETAILS, SEE DWG. NO. PR-307.

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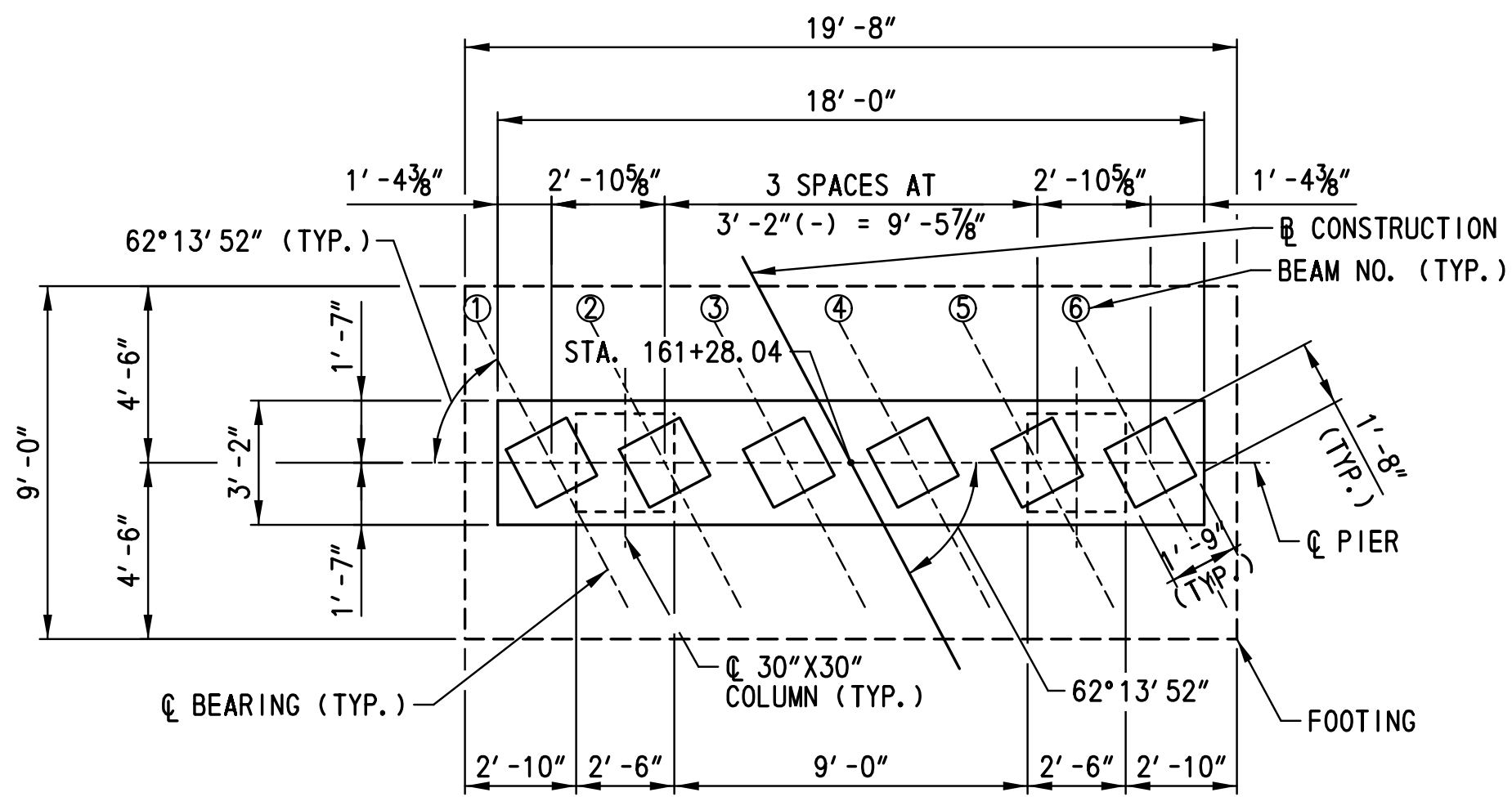
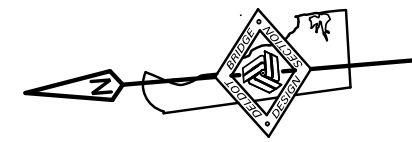
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| ADDENDUMS / REVISIONS | |
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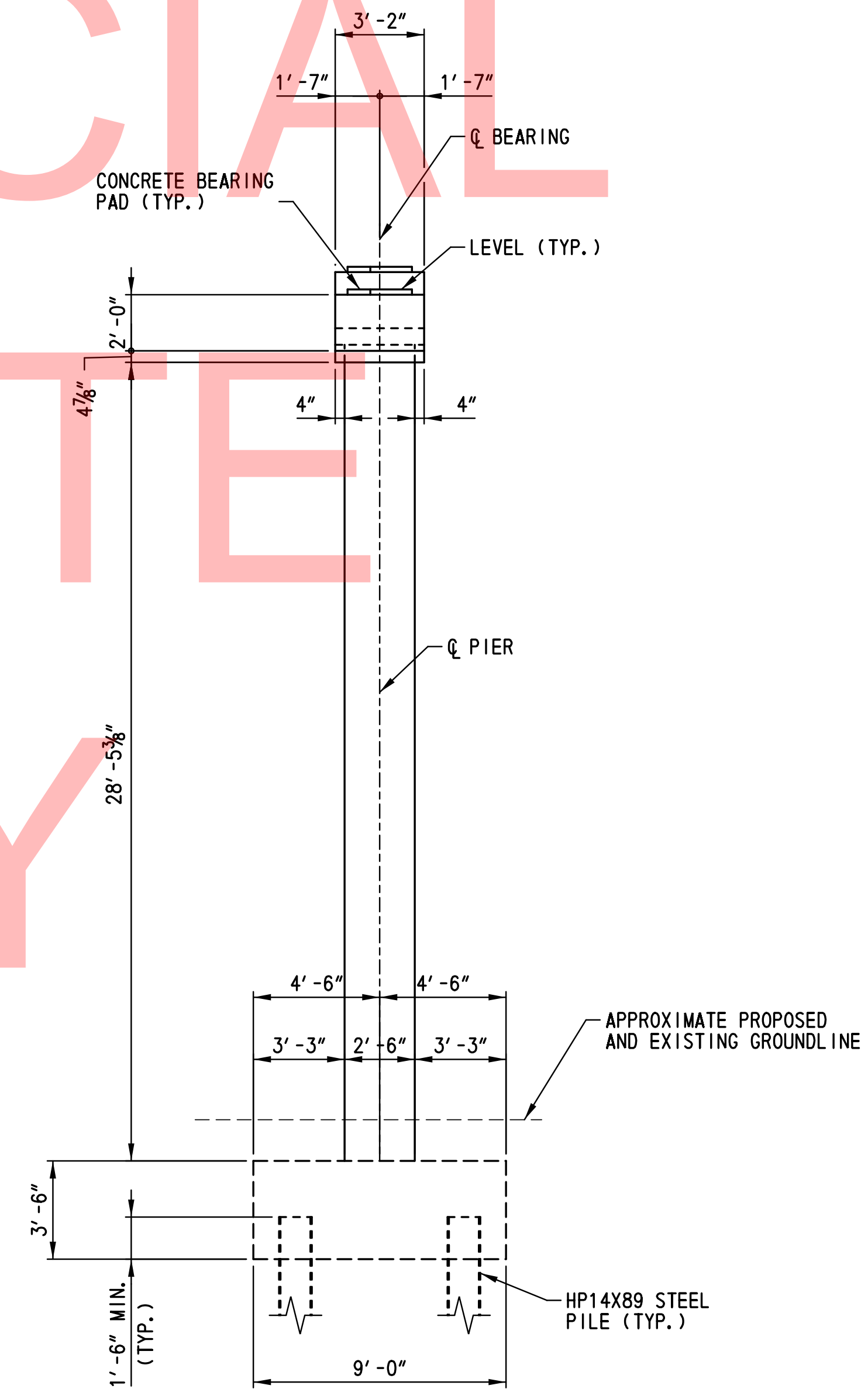
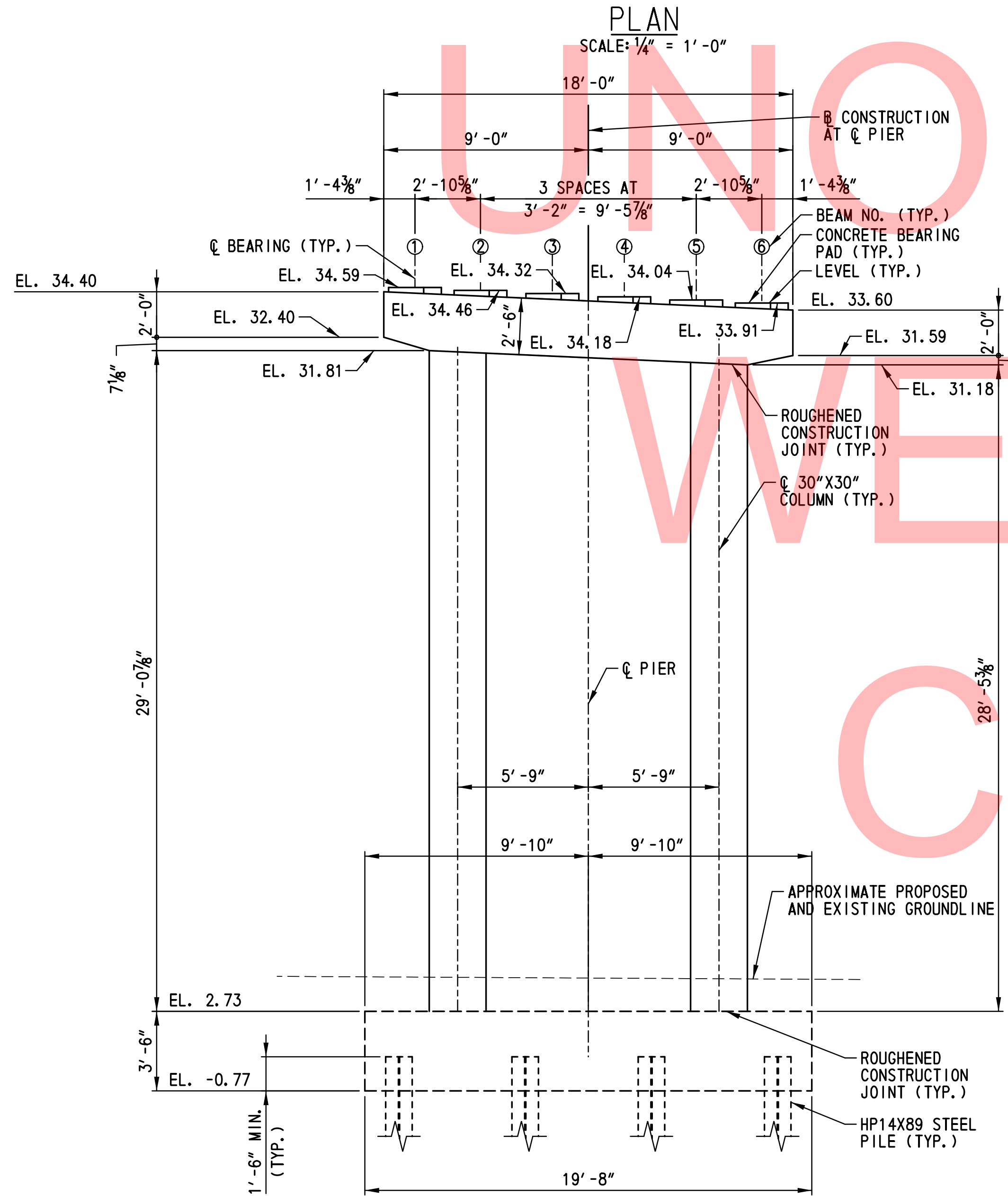


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| CONTRACT T201330009 | BRIDGE NO. X |
| COUNTY NEW CASTLE | DESIGNED BY: NAH CHECKED BY: WAG |

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| PR-303 |
| SHEET NO. 133 |
| TOTAL SHTS. 205 |



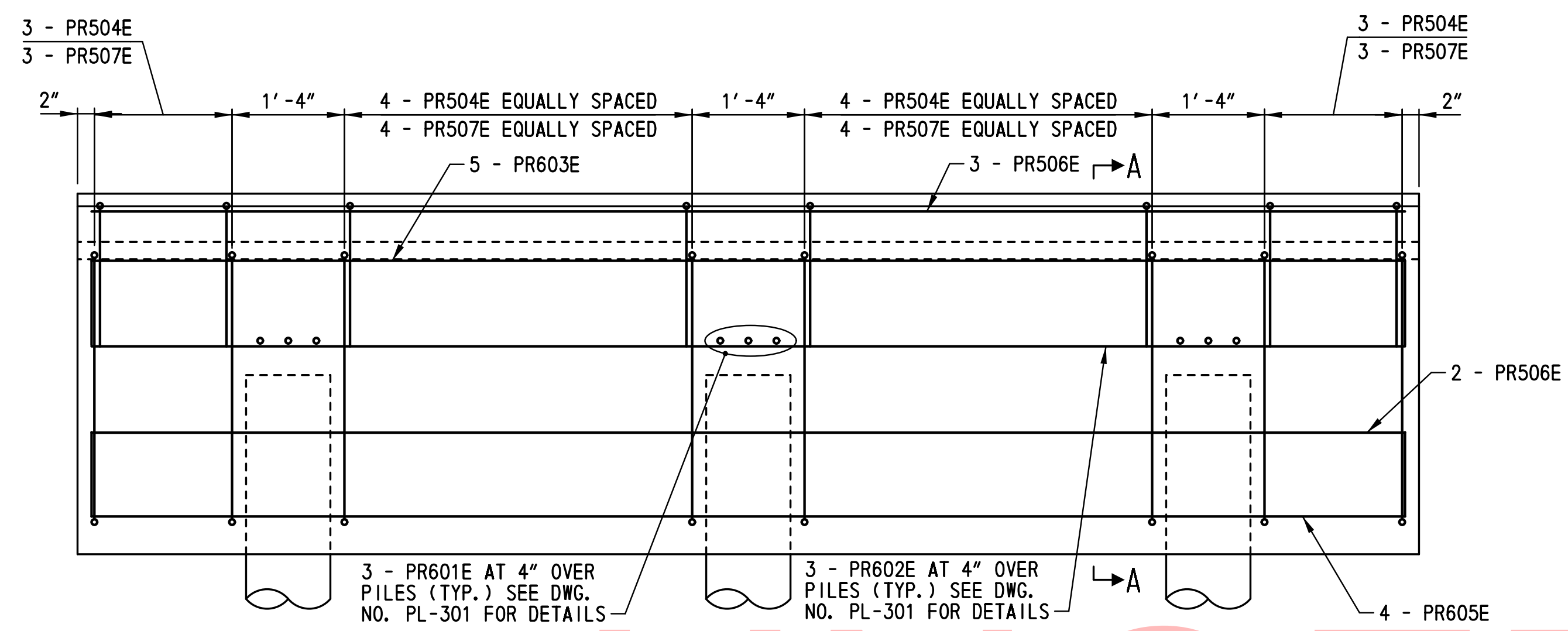
- NOTES:**
1. FOR PILE LAYOUT PLAN, SEE DWG. NO. PL-304.
 2. FOR PIER REINFORCEMENT DETAILS, SEE DWG. NO. PR-308.
 3. ALL PIER CAP AND BEARING PAD ELEVATIONS ARE APPROXIMATE. CONTRACTOR SHALL FIELD VERIFY EXISTING BRIDGE DECK ELEVATIONS AND ADJUST PIER CAP AND/OR CONCRETE BEARING PAD DIMENSIONS AS NECESSARY.



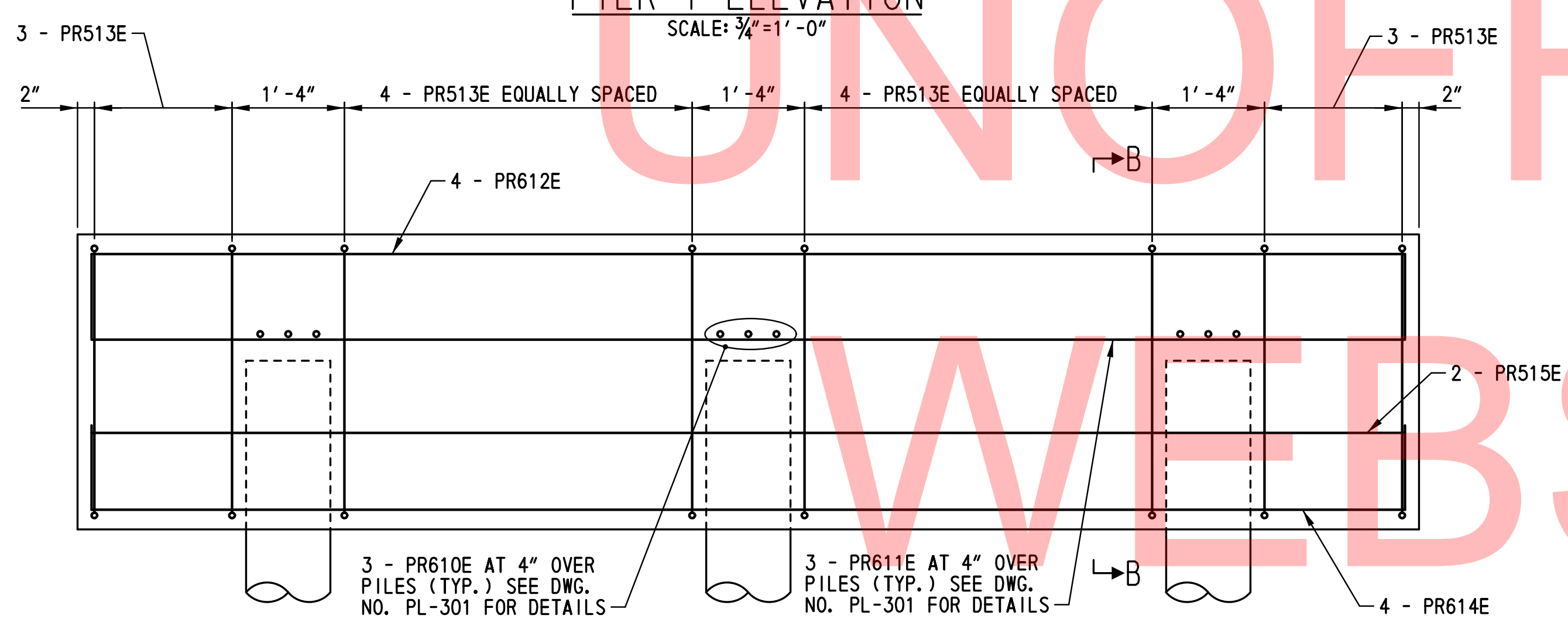
ELEVATION (LOOKING UPSTATION)
SCALE: 1/4" = 1'-0"

SIDE ELEVATION
SCALE: 1/4" = 1'-0"

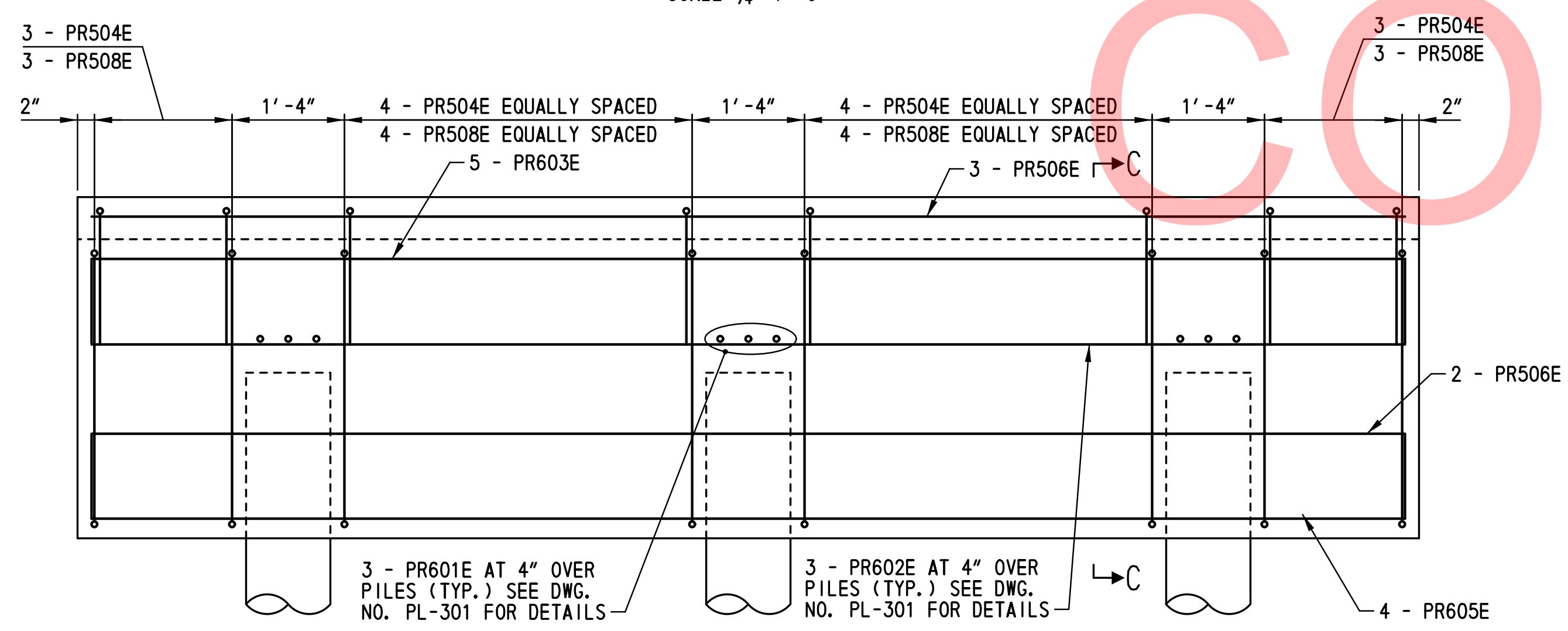
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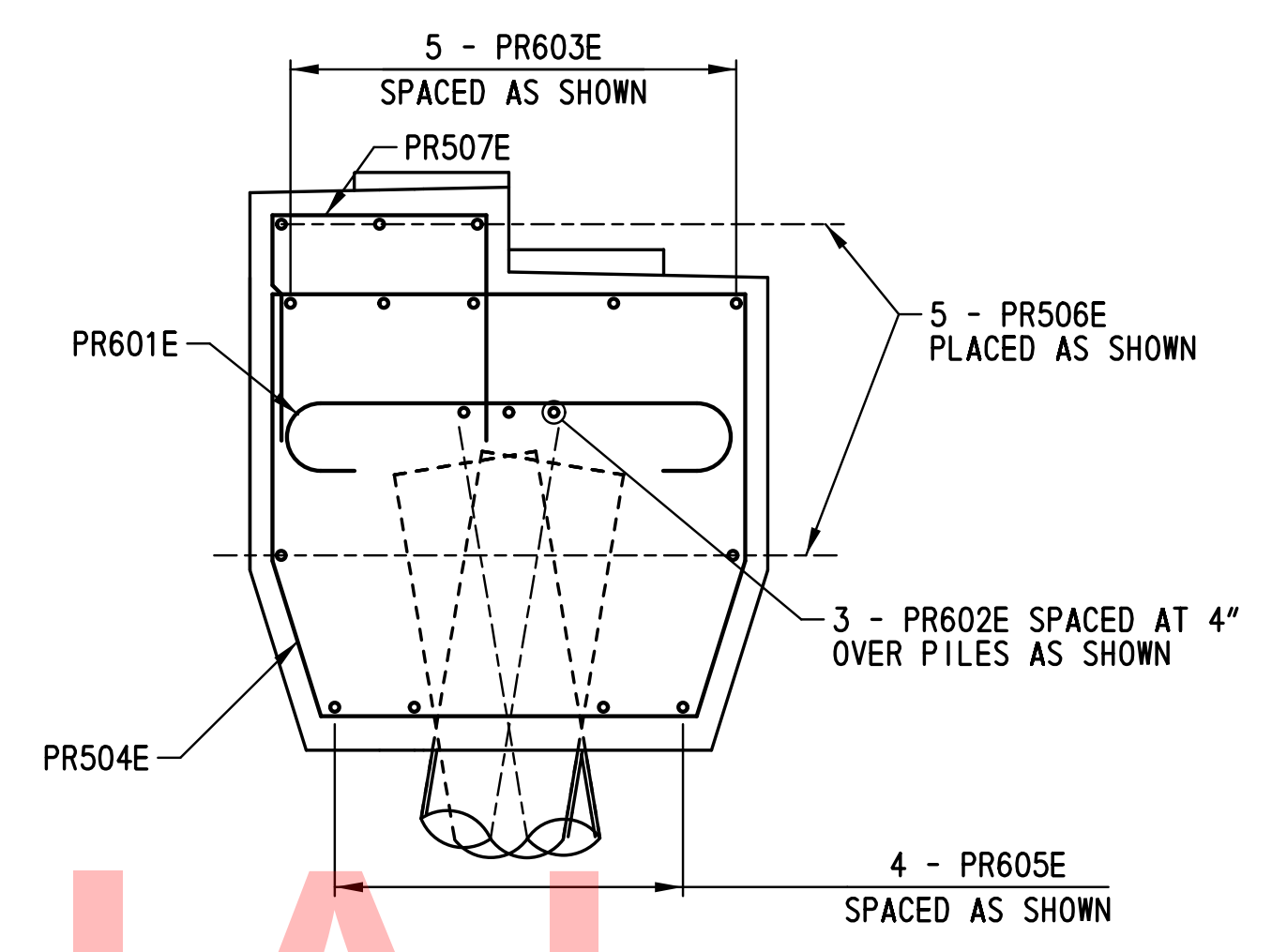
PIER 1 ELEVATION
SCALE: 3/4"=1'-0"



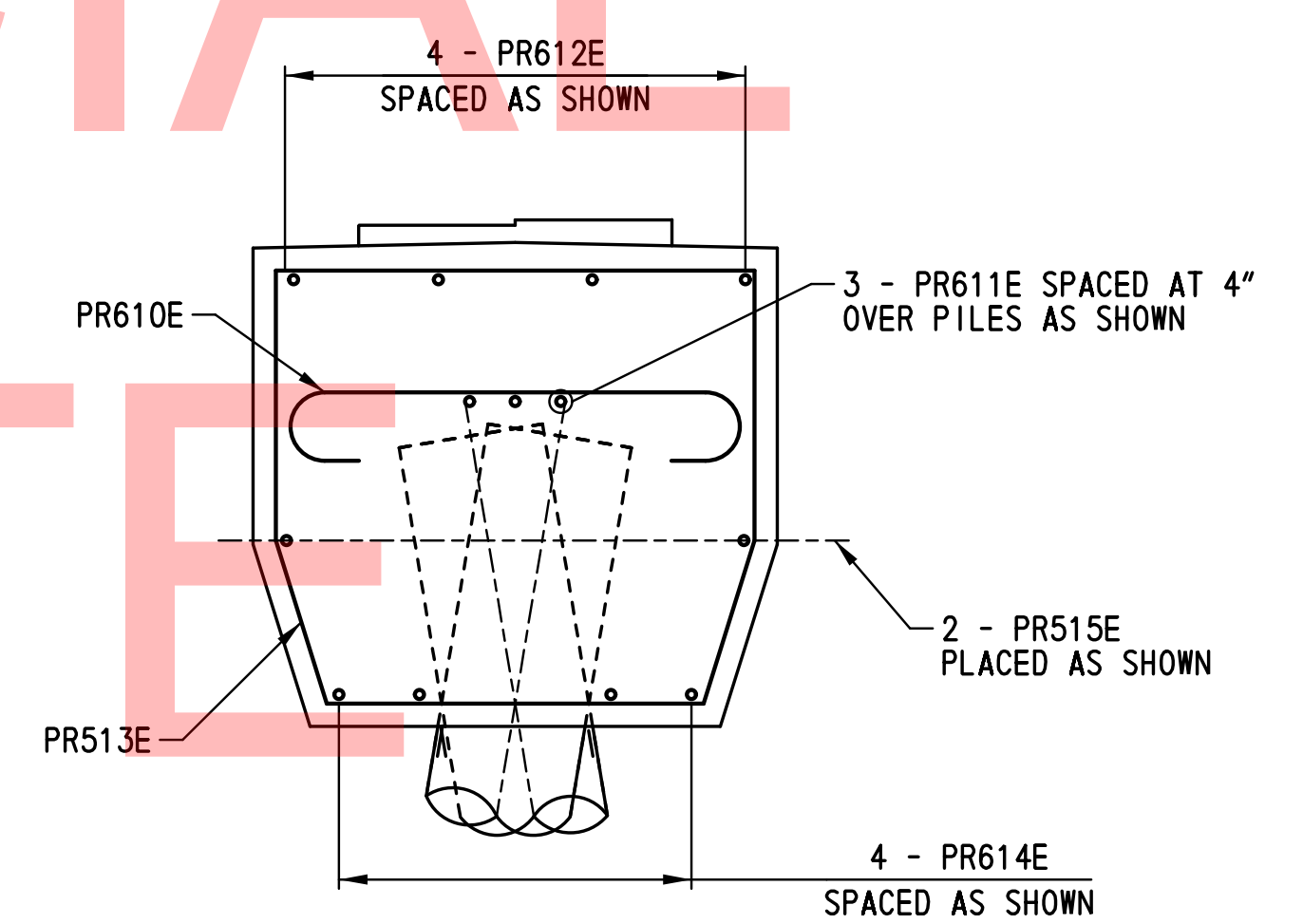
PIERS 2-14 TYPICAL ELEVATION
SCALE: 3/4"=1'-0"



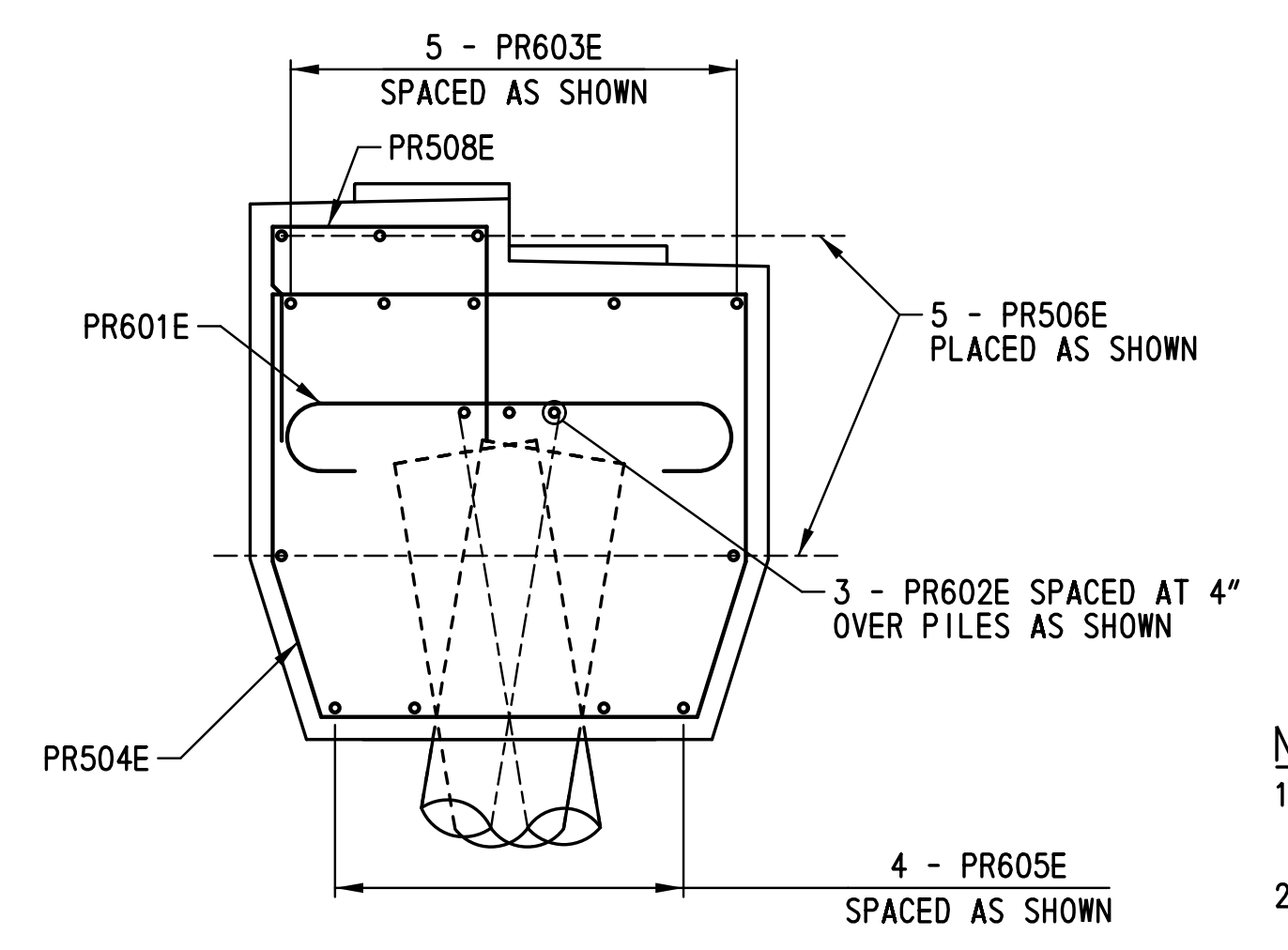
PIER 15 ELEVATION
SCALE: 3/4"=1'-0"



SECTION A-A
SCALE: 3/4"=1'-0"



SECTION B-B
SCALE: 3/4"=1'-0"

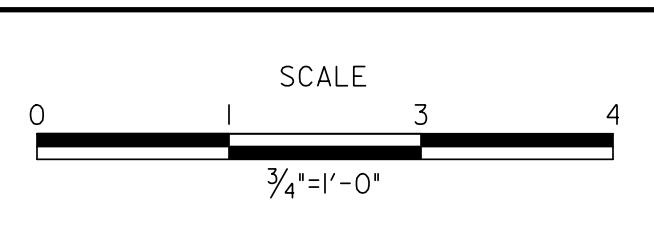


SECTION C-C
SCALE: 3/4"=1'-0"

- NOTES:
1. SPACE REINFORCING STEEL AS NECESSARY TO CLEAR ANCHOR BOLTS. FOR PIER PLAN AND ELEVATIONS, SEE DWG. NO. PR-301.
 2. REINFORCEMENT IN PILES IS NOT SHOWN FOR CLARITY. FOR PILE REINFORCEMENT DETAILS, SEE DWG. NO. PL-301.

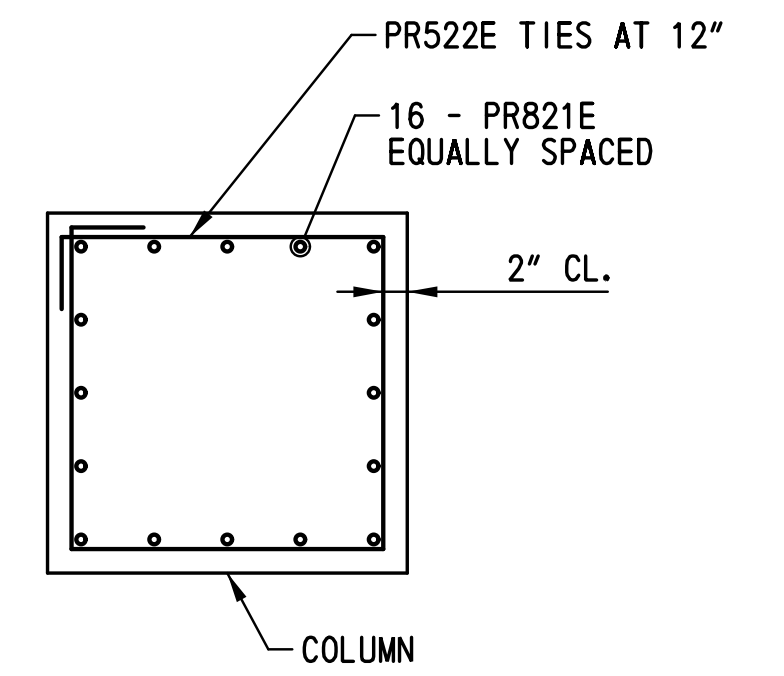
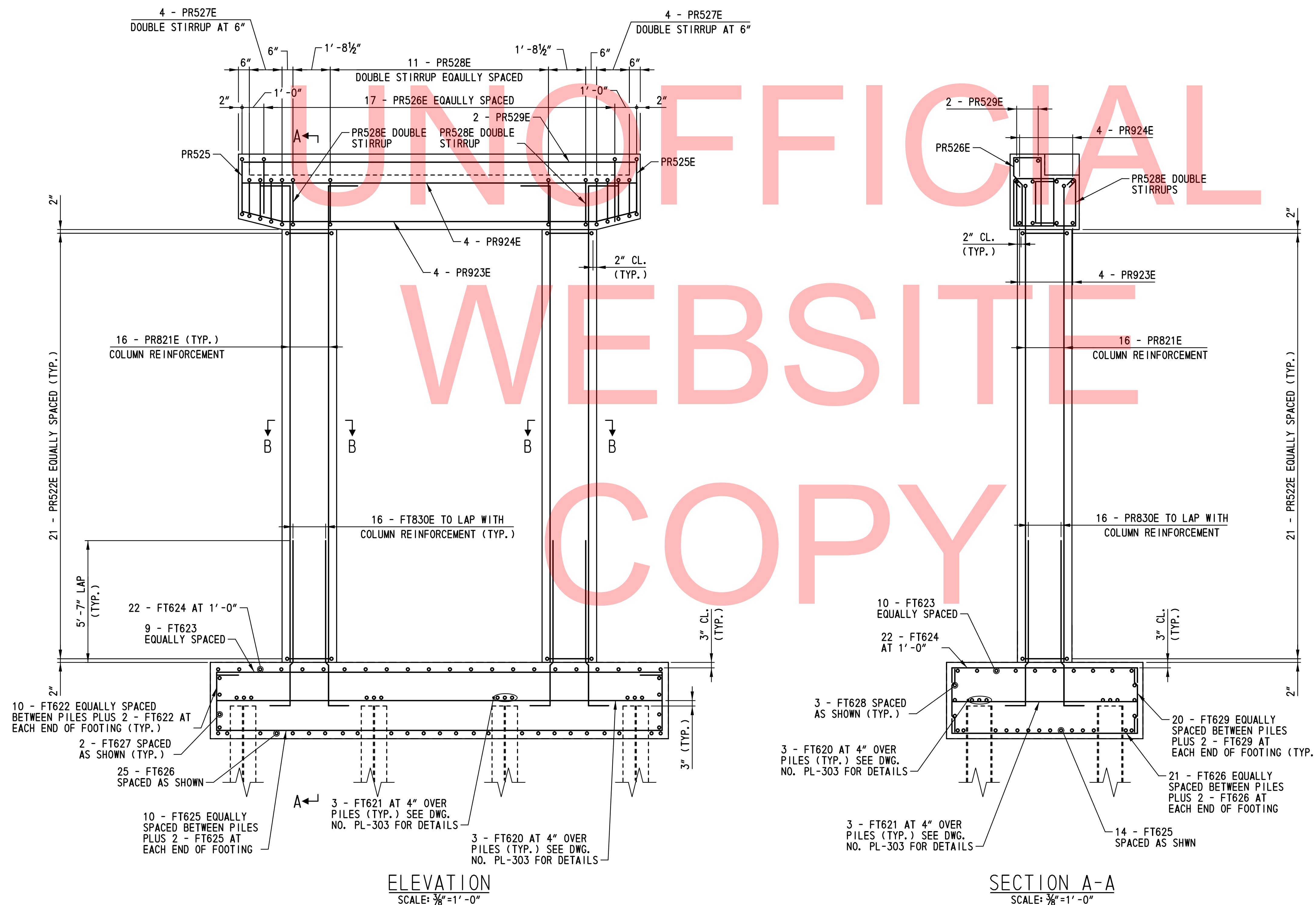
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| ADDENDUMS / REVISIONS |
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| CONTRACT T201330009 | BRIDGE NO. X |
| COUNTY NEW CASTLE | DESIGNED BY: NAH CHECKED BY: WAG |

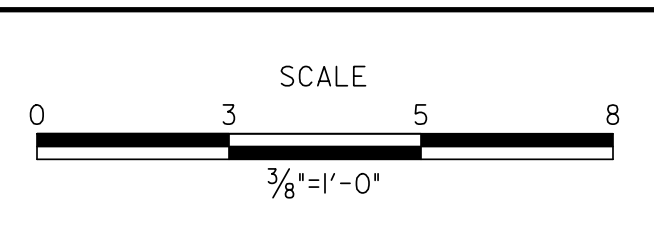
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| PR-305 |
| SHEET NO. 135 |
| TOTAL SHTS. 205 |



NOTES:
1. SPACE REINFORCING STEEL AS NECESSARY TO CLEAR ANCHOR BOLTS. FOR ADDITIONAL INFORMATION, SEE DWG. NO. PR-303.

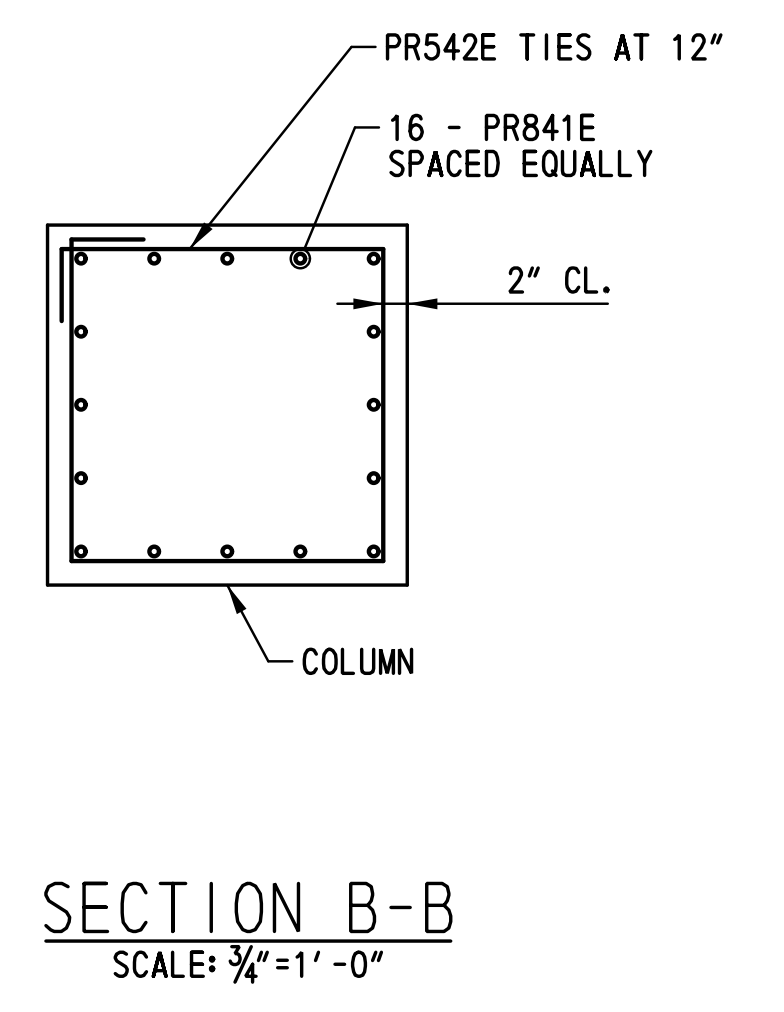
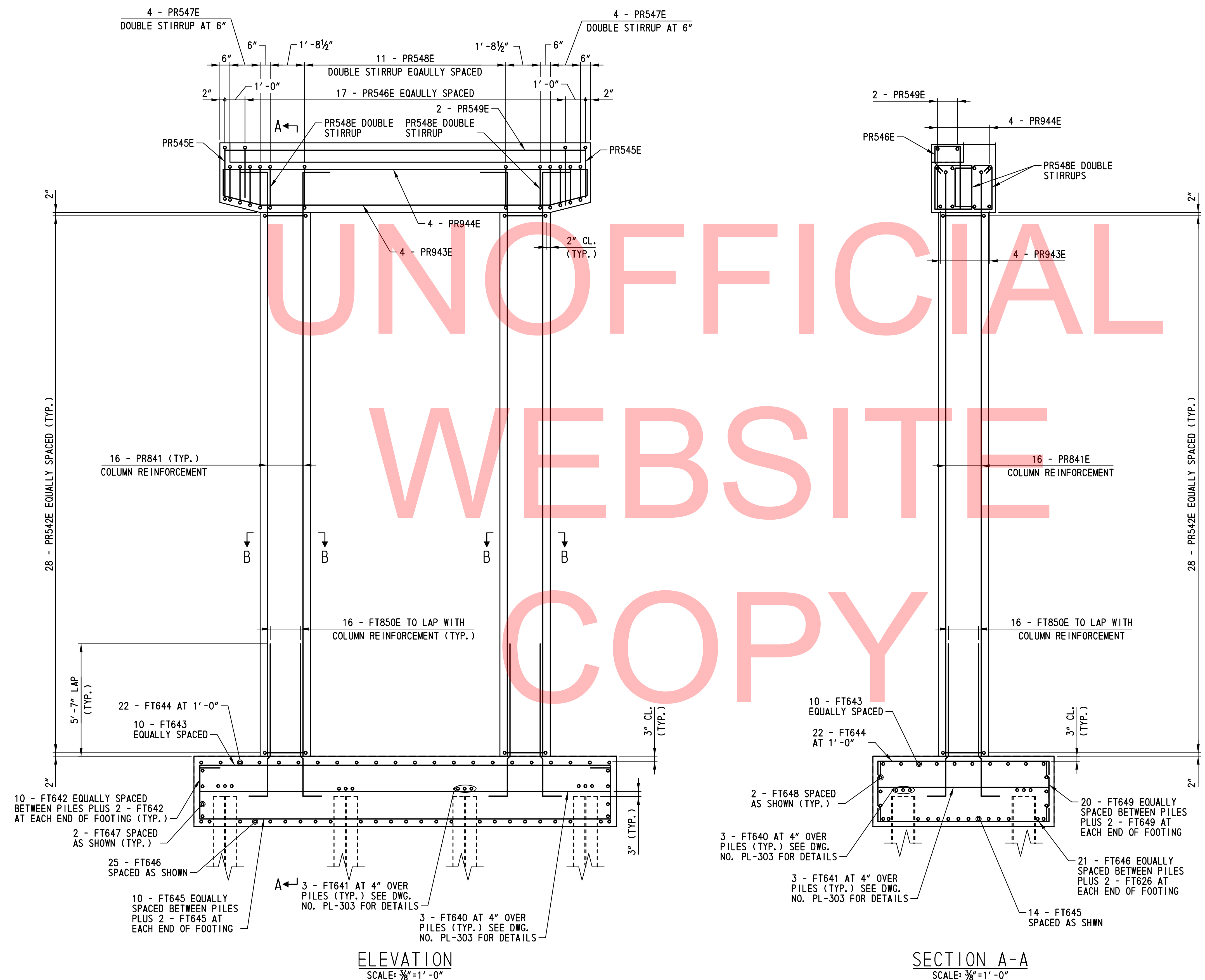
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| ADDENDUMS / REVISIONS |
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| CONTRACT T201330009 | BRIDGE NO. X |
| COUNTY NEW CASTLE | DESIGNED BY: NAH CHECKED BY: WAG |

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| PR-306 |
| SHEET NO. 136 |
| TOTAL SHTS. 205 |



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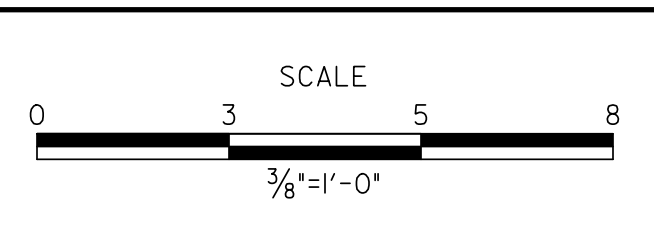
NOTES:
 1. SPACE REINFORCING STEEL AS NECESSARY TO CLEAR ANCHOR BOLTS. FOR ADDITIONAL INFORMATION, SEE DWG. NO. PR-303.

ELEVATION
SCALE: 3/8" = 1'-0"

SECTION A-A
SCALE: 3/8" = 1'-0"

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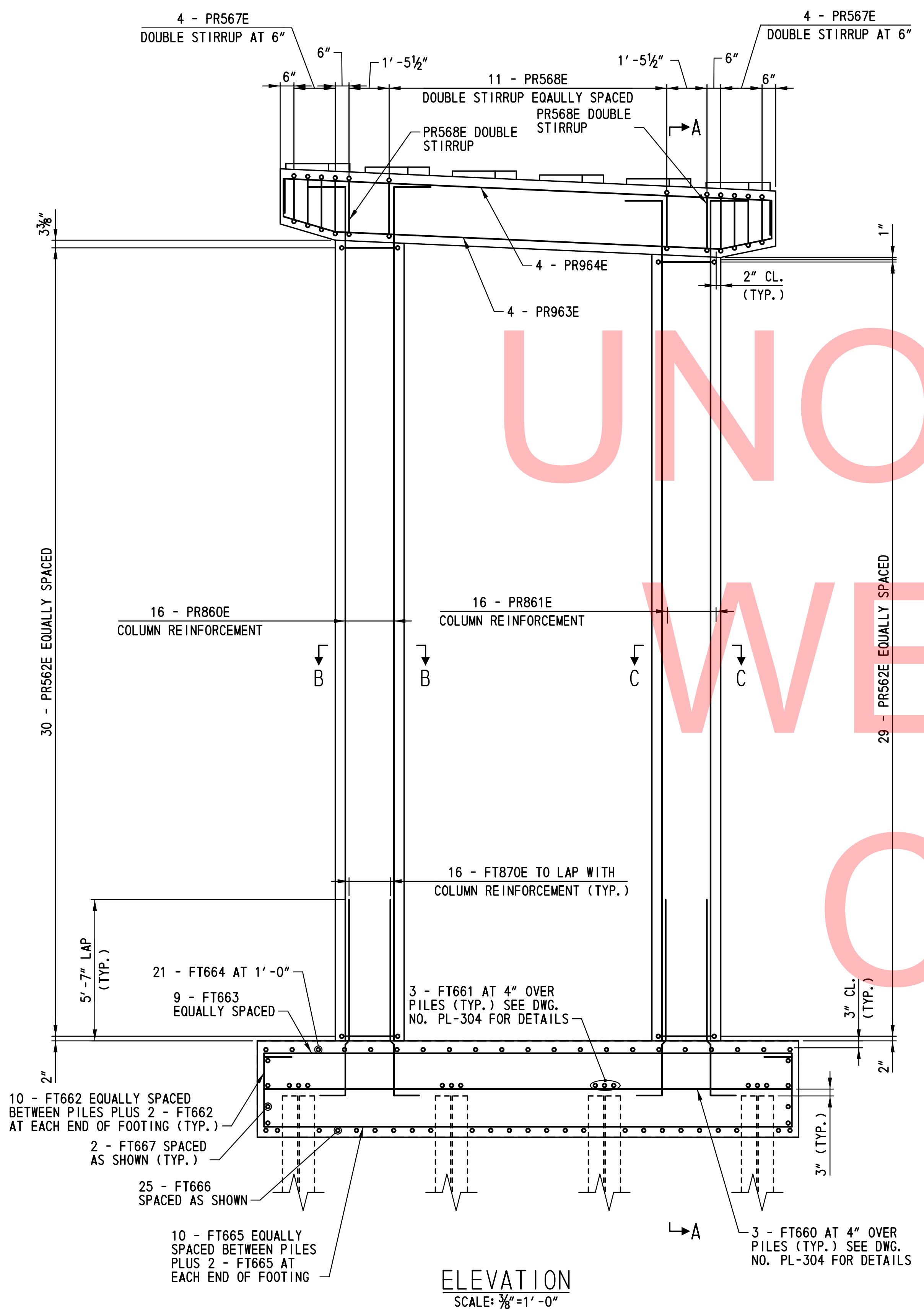
| ADDENDUMS / REVISIONS |
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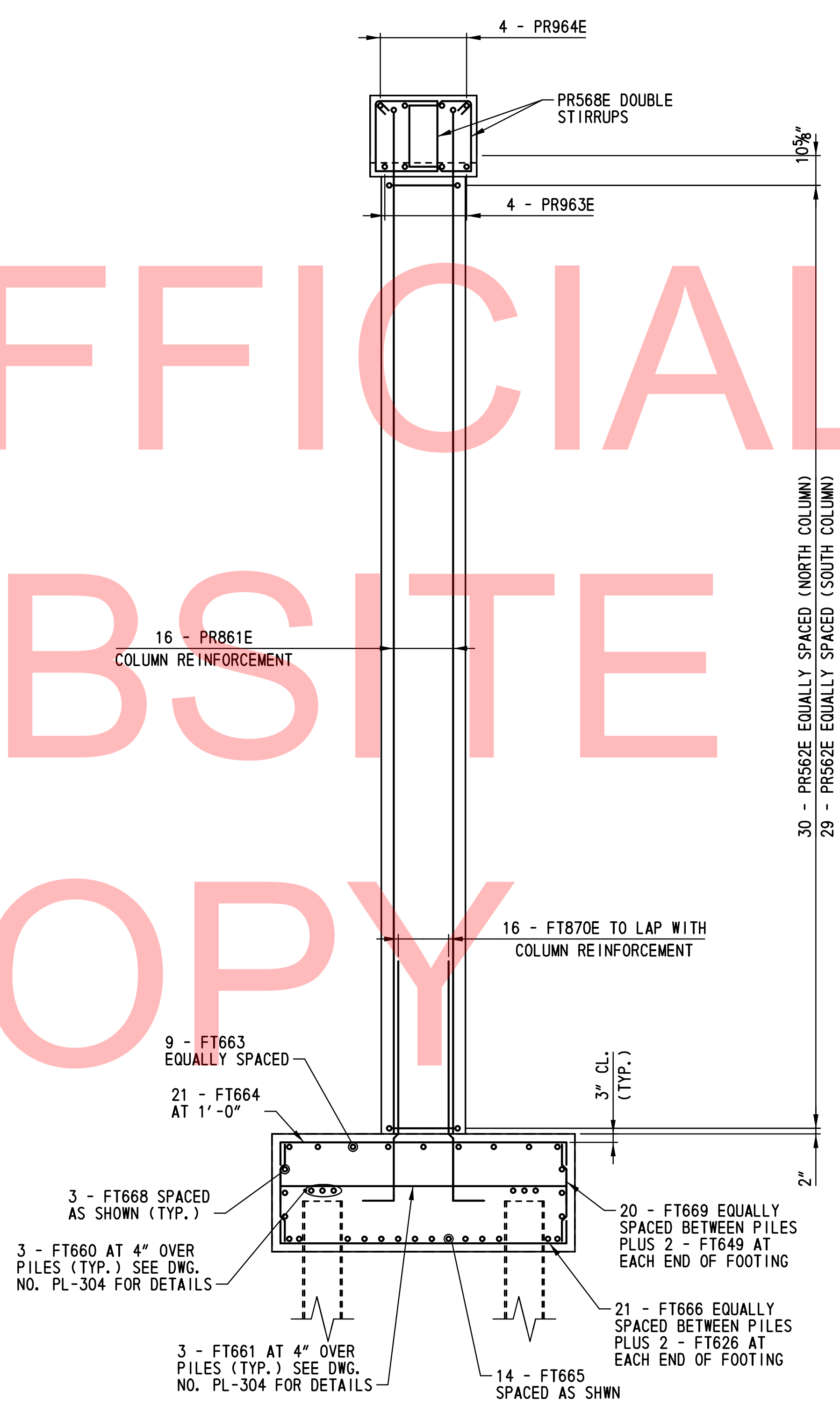
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|------------------------|-------------------------------------|
| CONTRACT T201330009 | BRIDGE NO. X |
| COUNTY NEW CASTLE | DESIGNED BY: NAH CHECKED BY: WAG |

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| PR-307 |
| SHEET NO. 137 |
| TOTAL SHTS. 205 |

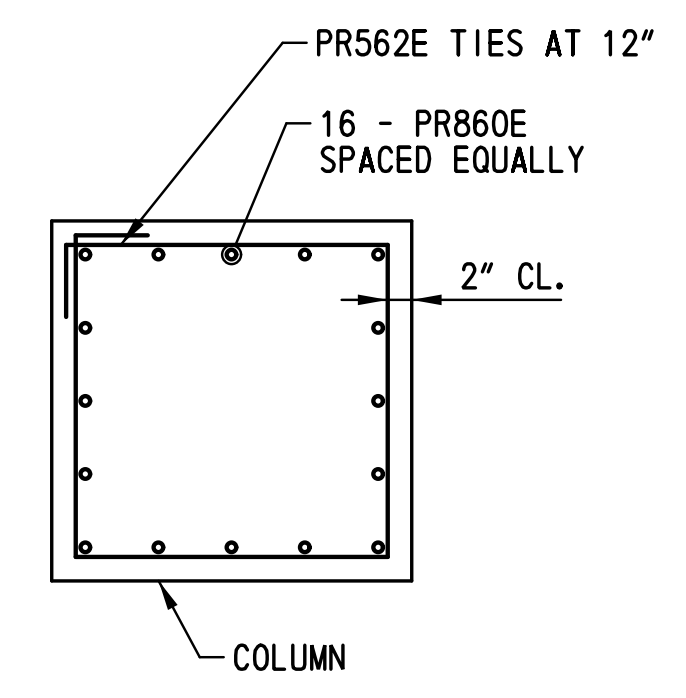
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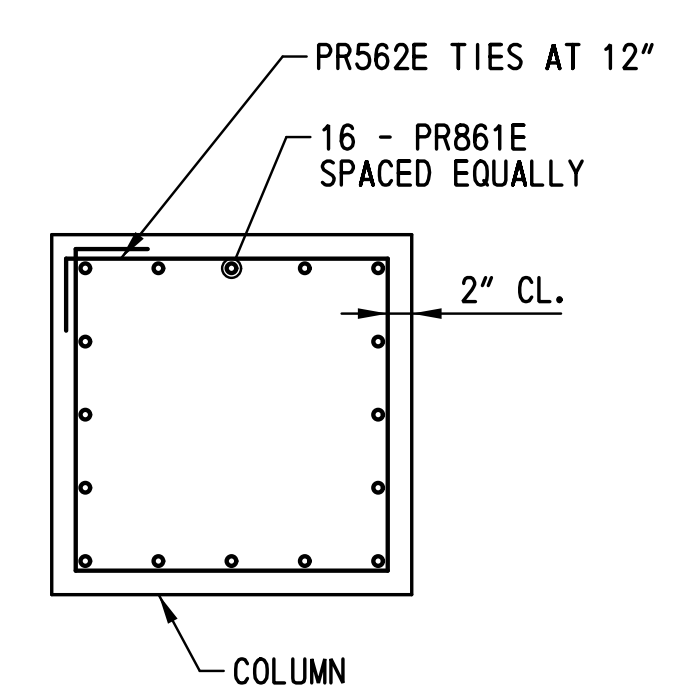
ELEVATION
SCALE: 3/8"=1'-0"



SECTION A-A
SCALE: 3/8"=1'-0"



SECTION B-B
SCALE: 3/4"=1'-0"

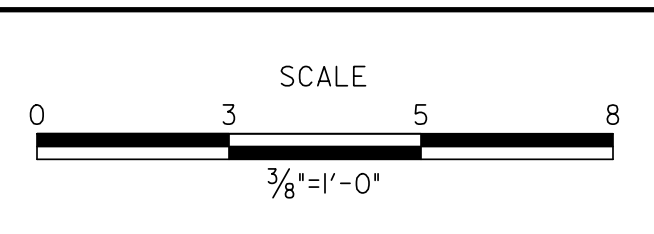


SECTION C-C
SCALE: 3/4"=1'-0"

NOTES:
1. SPACE REINFORCING STEEL AS NECESSARY TO CLEAR ANCHOR BOLTS. FOR ADDITIONAL INFORMATION, SEE DWG. NO. PR-304.

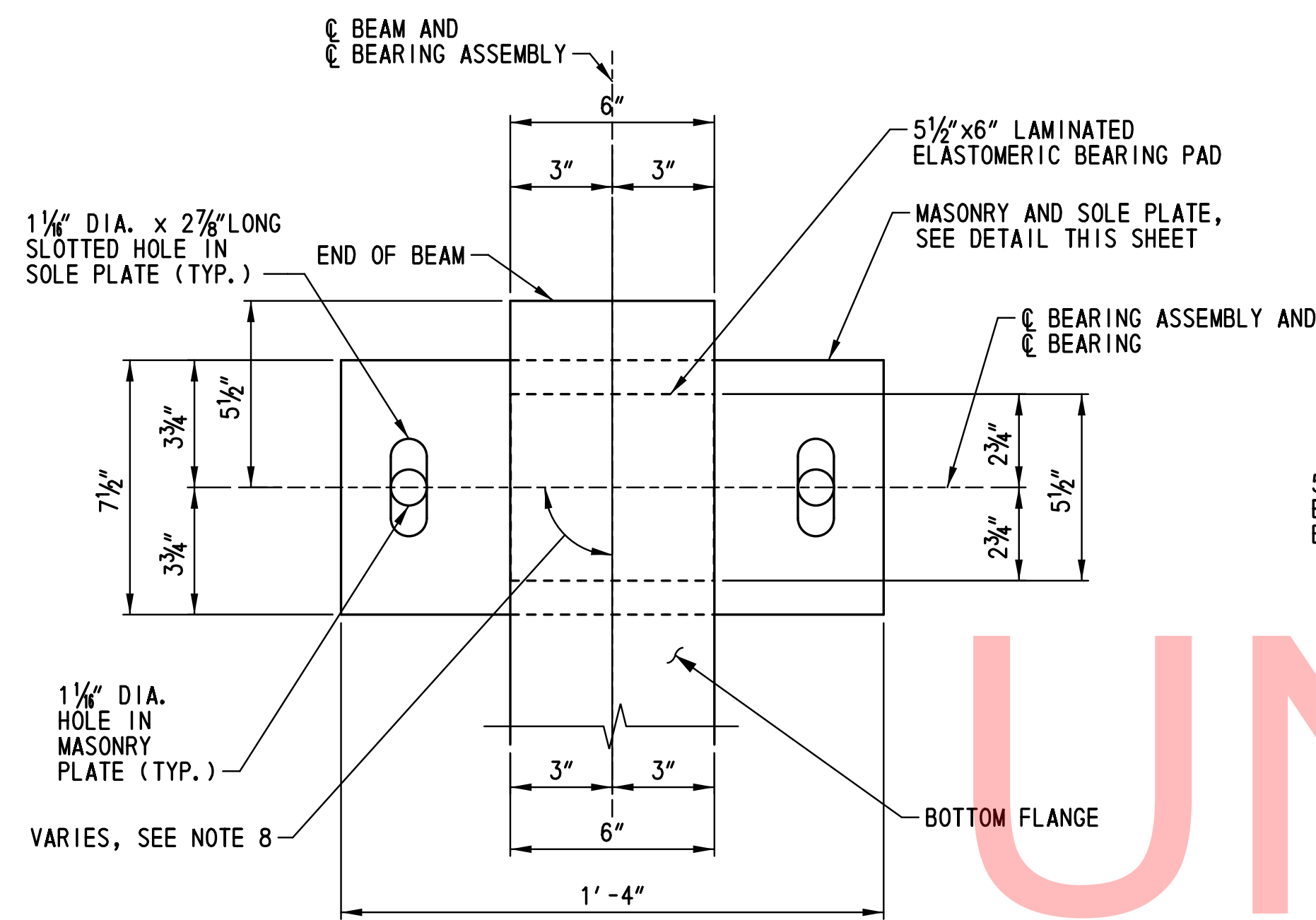
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| ADDENDUMS / REVISIONS |
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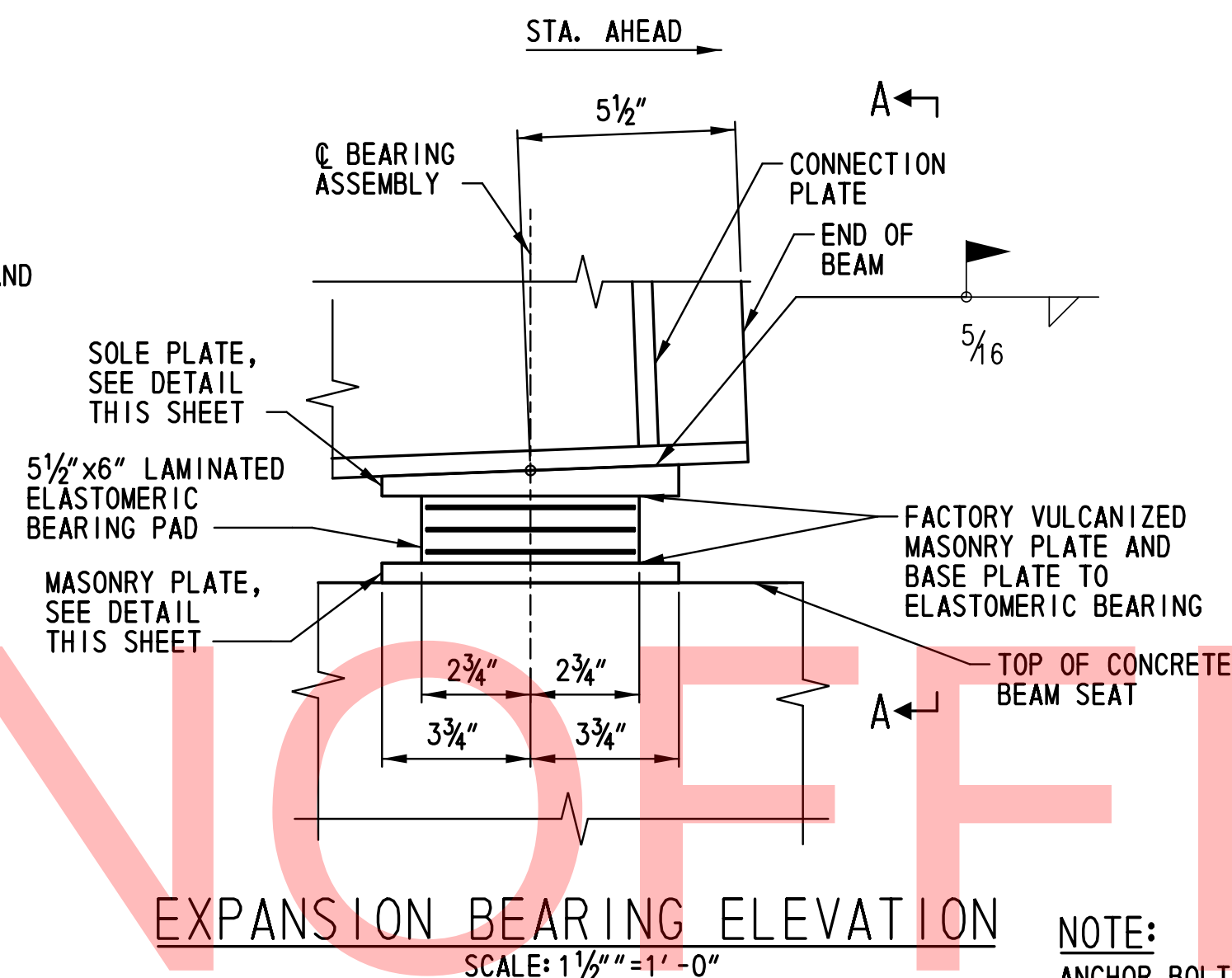


| | | |
|------------|------------------|----------|
| CONTRACT | BRIDGE NO. | X |
| T201330009 | DESIGNED BY: NAH | |
| COUNTY | CHECKED BY: WAG | |
| NEW CASTLE | | |

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| PR-308 |
| SHEET NO. |
| 138 |
| TOTAL SHTS. |
| 205 |

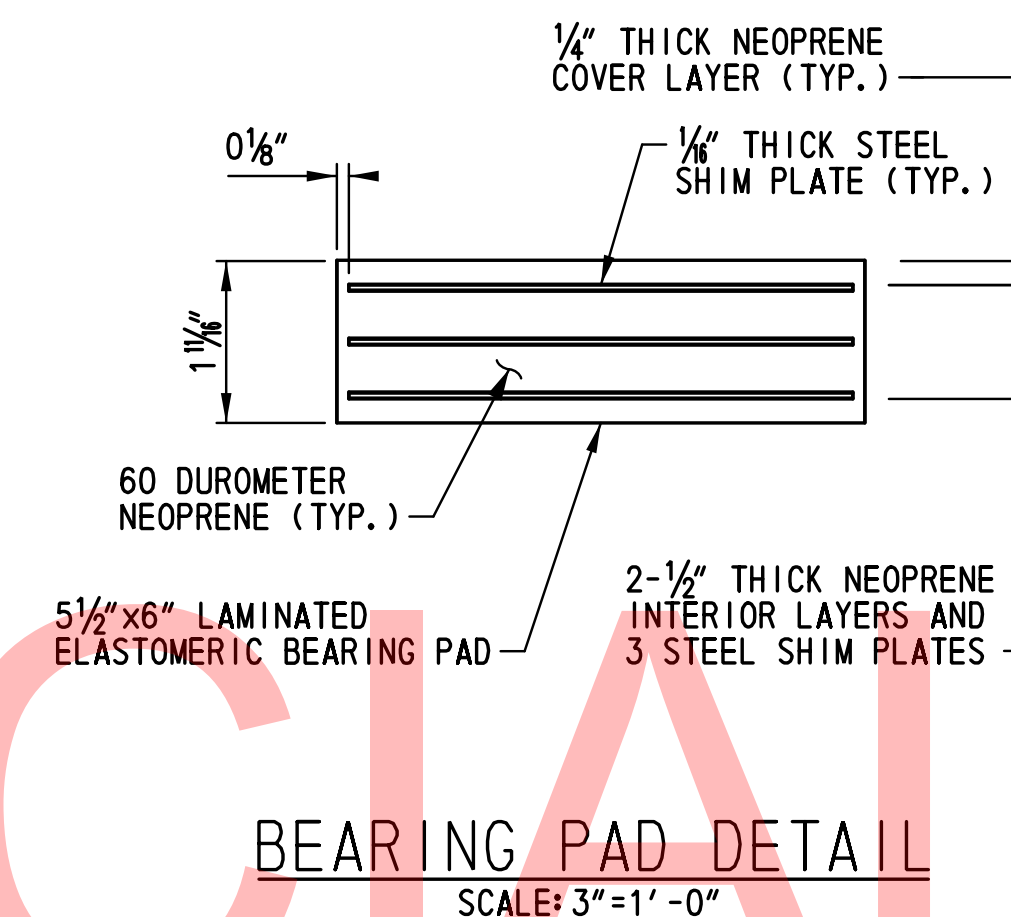


EXPANSION BEARING PLAN
SCALE: 1 1/2" = 1'-0"

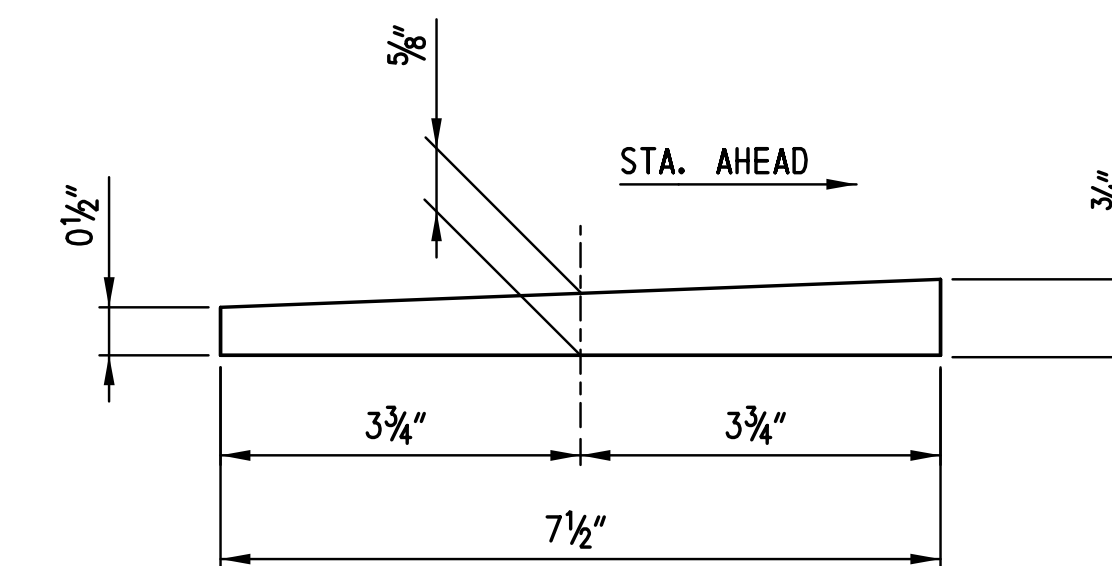


EXPANSION BEARING ELEVATION
SCALE: 1 1/2" = 1'-0"

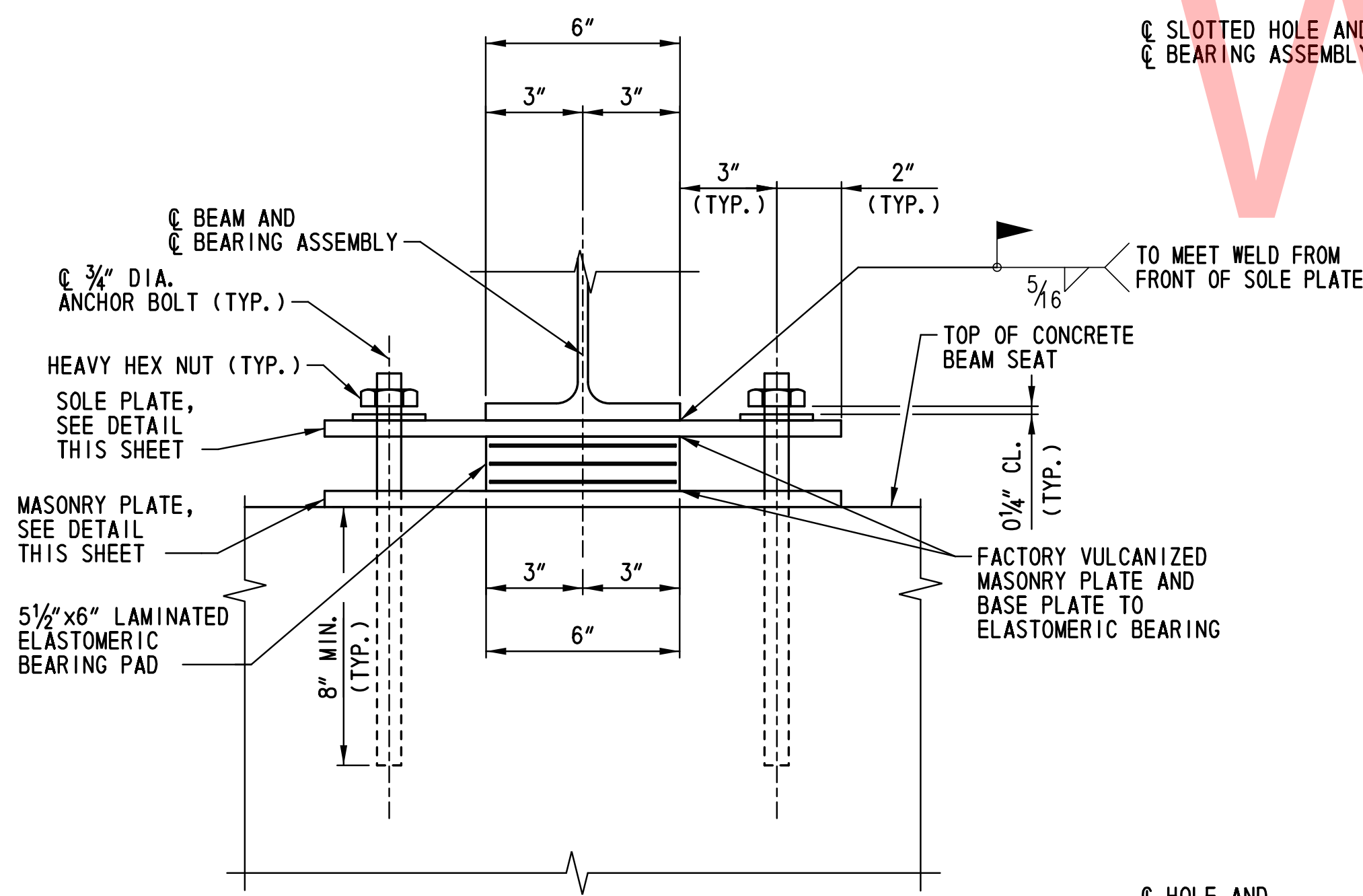
NOTE:
ANCHOR BOLTS, NUTS, AND PLATE WASHERS NOT SHOWN FOR CLARITY.



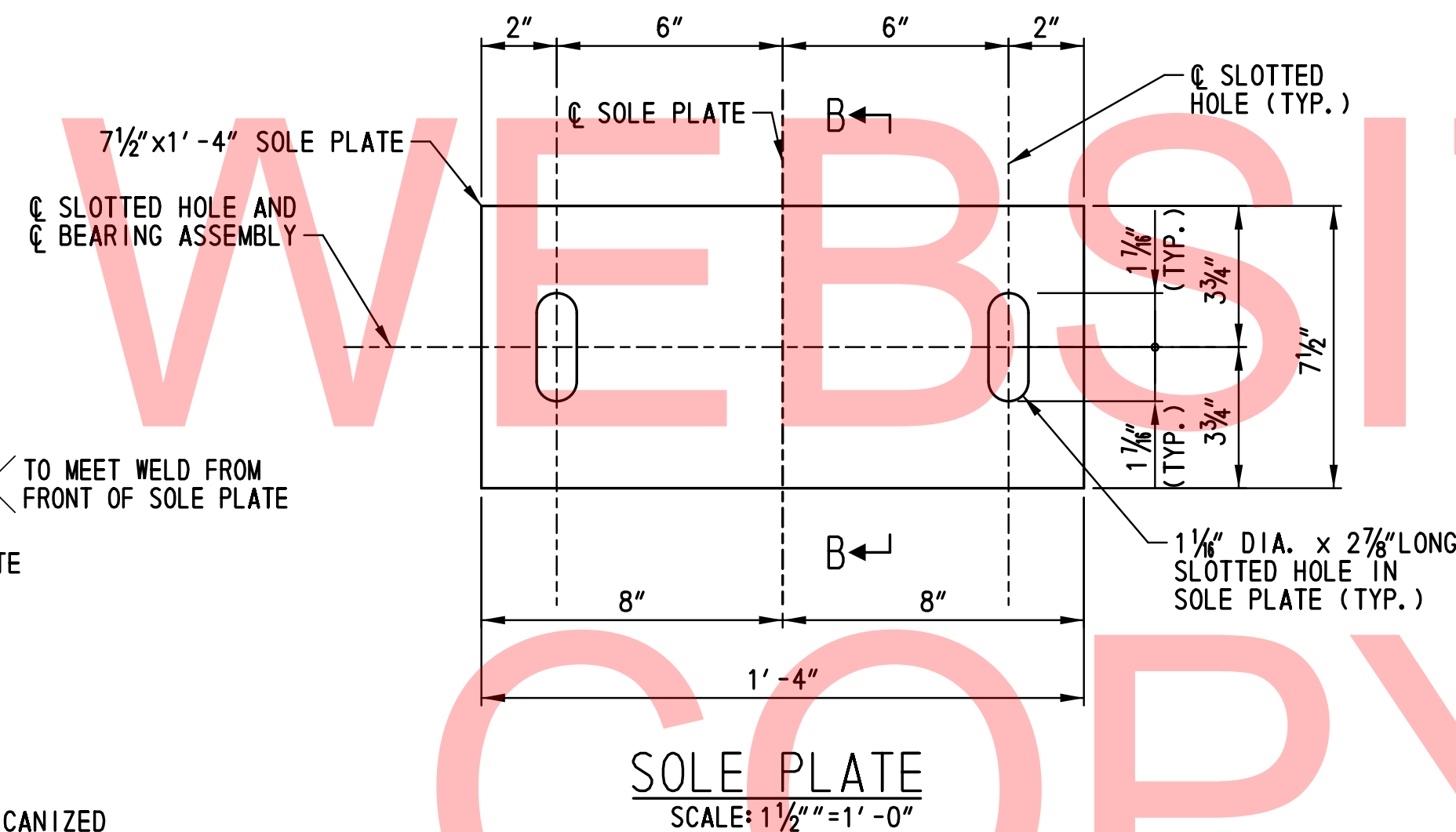
BEARING PAD DETAIL
SCALE: 3" = 1'-0"



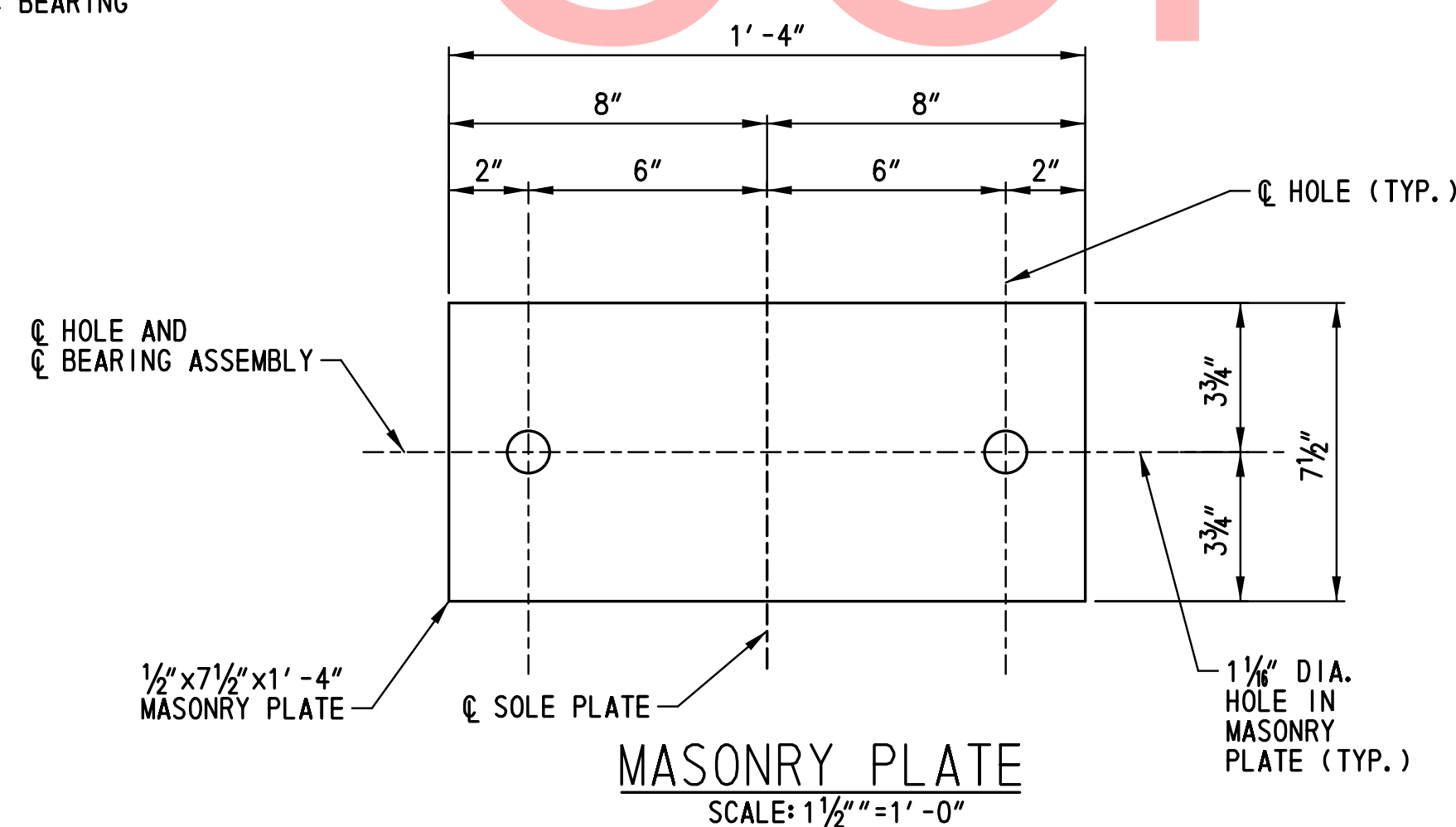
SECTION B-B
SCALE: 3" = 1'-0"



VIEW A-A
SCALE: 1 1/2" = 1'-0"



SOLE PLATE
SCALE: 1 1/2" = 1'-0"

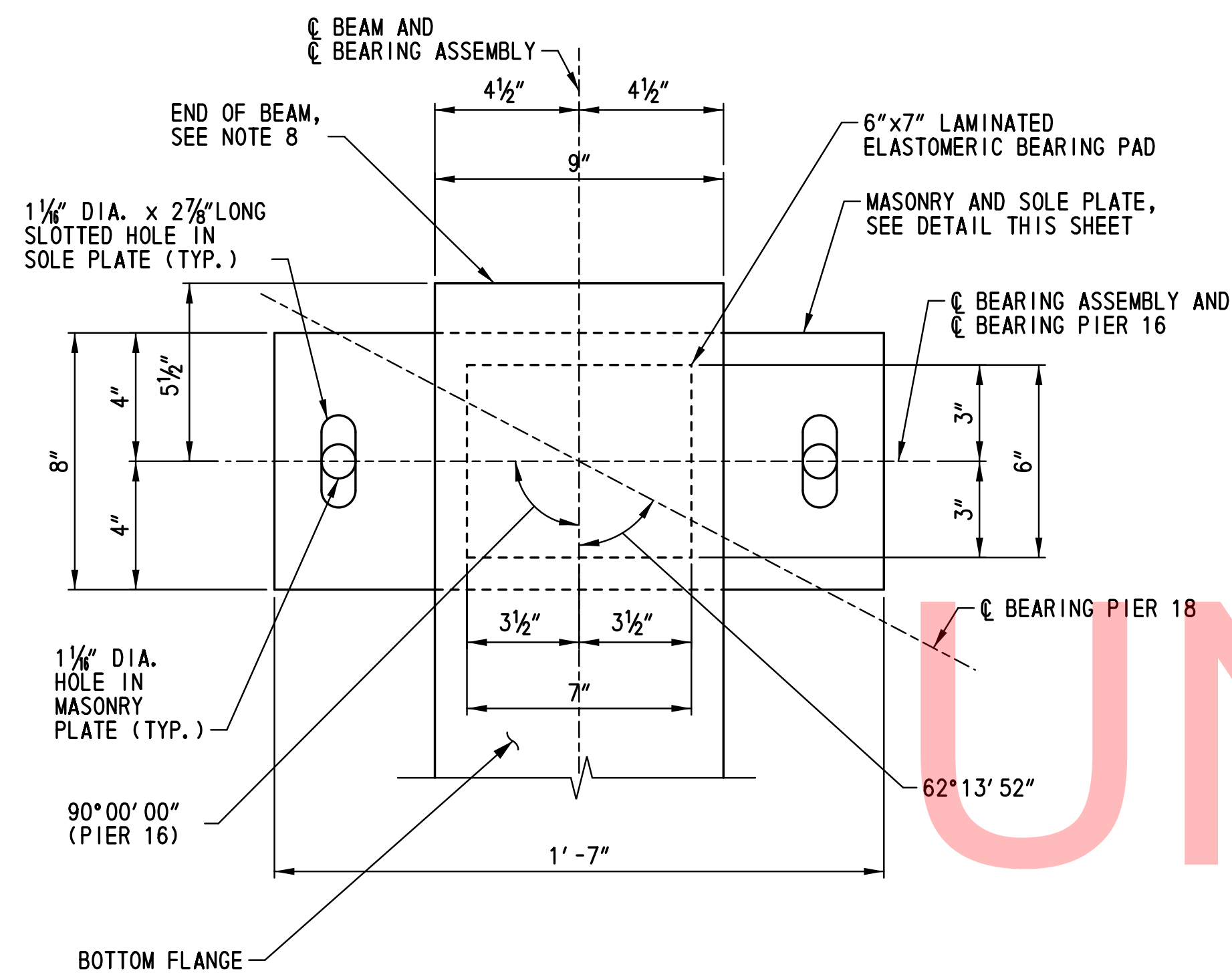


MASONRY PLATE
SCALE: 1 1/2" = 1'-0"

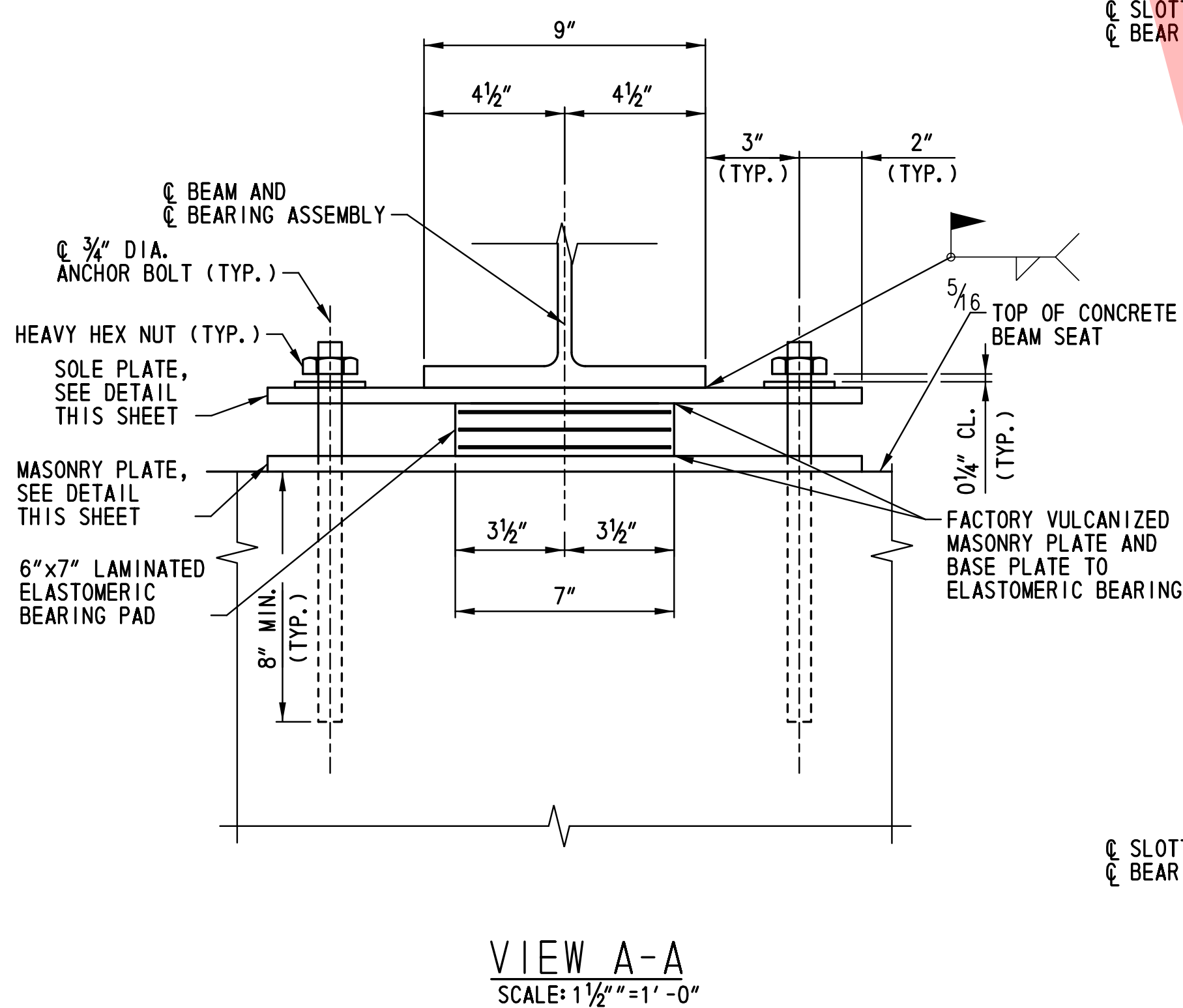
NOTES:

- BEARING ASSEMBLIES SHALL BE PLACED PERPENDICULAR TO THE CENTERLINE OF GIRDER.
- SOLE PLATES, BASE PLATES AND MASONRY PLATES SHALL BE ASTM A 709, GRADE 36 STEEL PAINTED TO MATCH WEATHERING STEEL COLOR.
- FILL SLOTS AND HOLES AROUND ANCHOR BOLTS WITH NONHARDENING CAULKING COMPOUND OR ELASTIC JOINT SEALER.
- ANCHOR BOLTS SHALL BE UNPAINTED ASTM F 1554, GRADE 105 GALVANIZED STEEL. PLATE WASHERS SHALL BE UNPAINTED ASTM A 709, GRADE 36 GALVANIZED STEEL. NUTS SHALL BE UNPAINTED ASTM A 563 GALVANIZED STEEL.
- ELASTOMERIC BEARINGS SHALL CONFORM TO M 251 AND THE ELASTOMER SHALL BE 60 DUROMETER NEOPRENE. SHIMS SHALL BE 11 GAGE STEEL.
- THE BASE PLATE AND MASONRY PLATE SHALL BE FACTORY VULCANIZED TO THE ELASTOMERIC BEARING, AND BEARINGS ARE TO BE SHIPPED ASSEMBLED AS UNITS.
- CONTRACTOR SHALL TOUCH UP SOLE PLATE PAINT SYSTEM AFTER WELDING THE SOLE PLATE TO THE GIRDER.
- SKREW ANGLE BETWEEN BEARING AND BEAM VARIES IN SPANS 1 THROUGH 15. SEE DWG. NOS. FR-301 THRU FR-303.

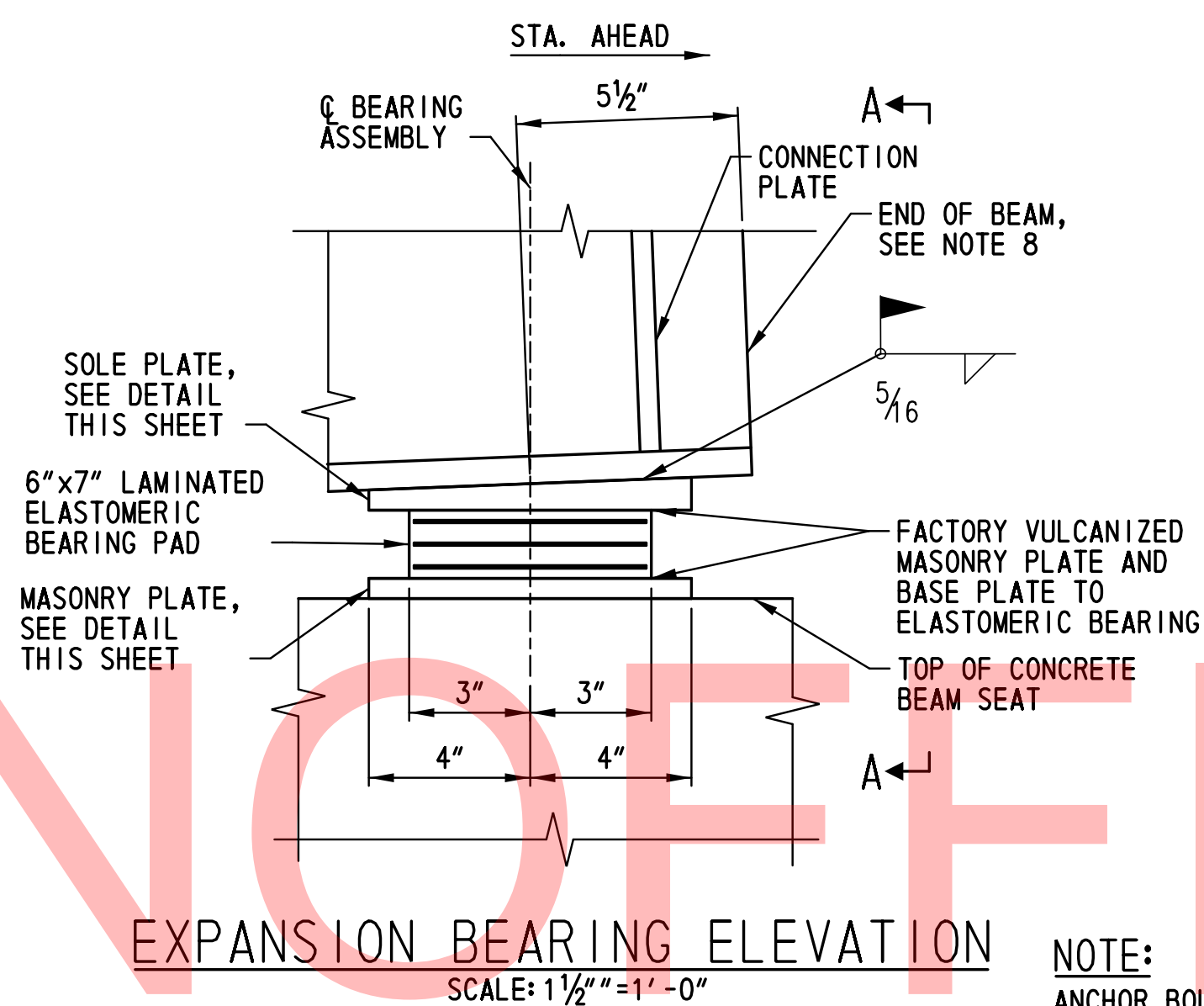
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EXPANSION BEARING PLAN
SCALE: 1 1/2" = 1'-0"

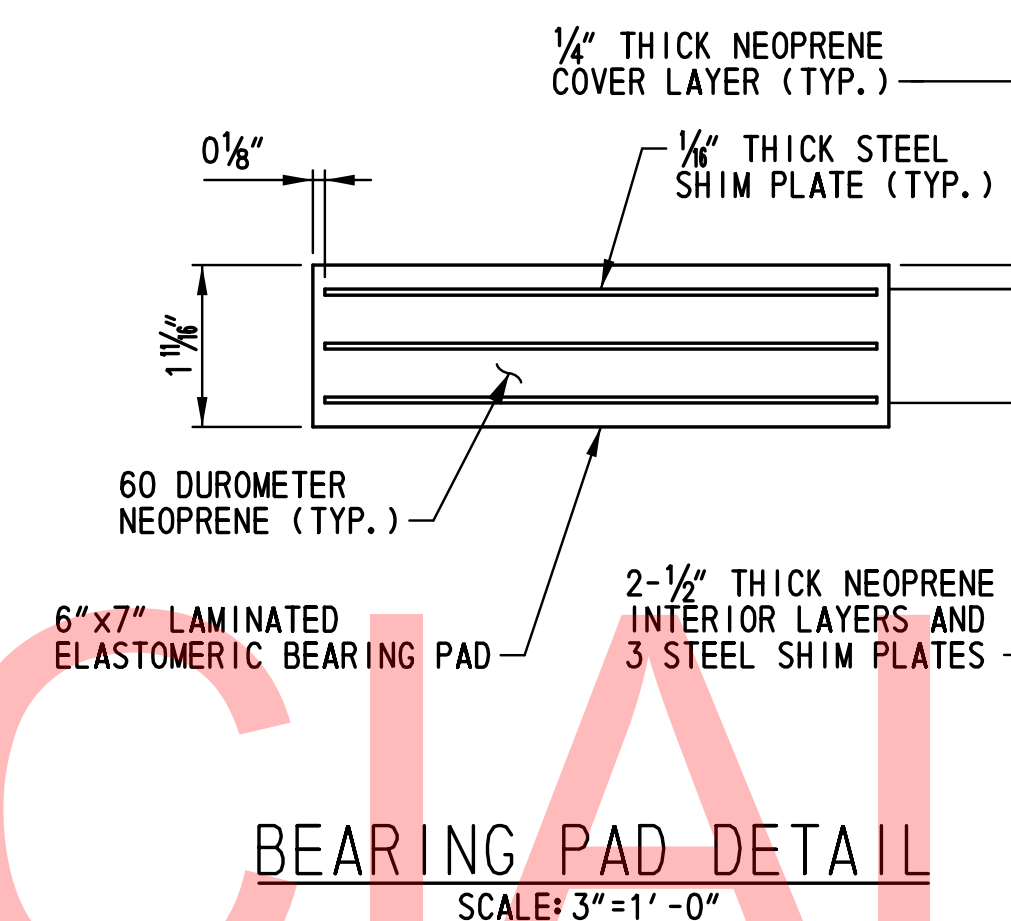


VIEW A-A
SCALE: 1 1/2" = 1'-0"

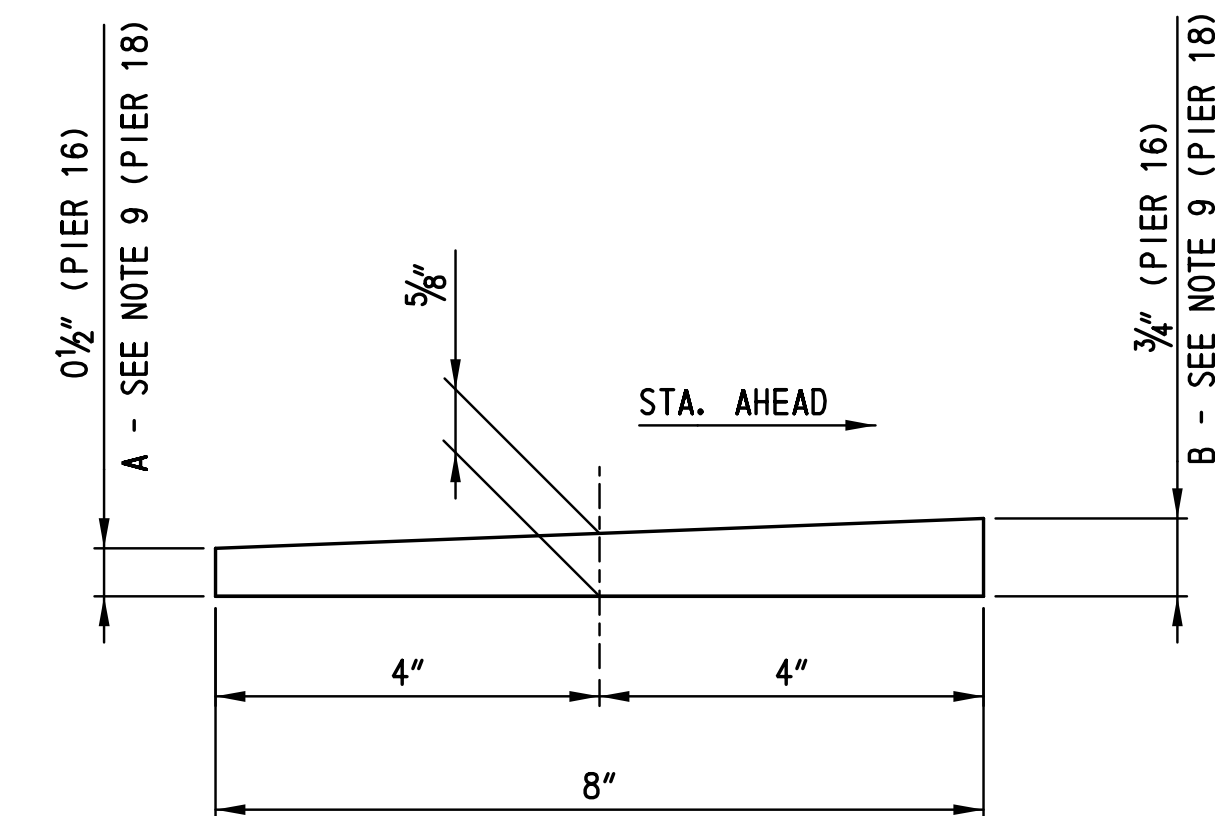


EXPANSION BEARING ELEVATION
SCALE: 1 1/2" = 1'-0"

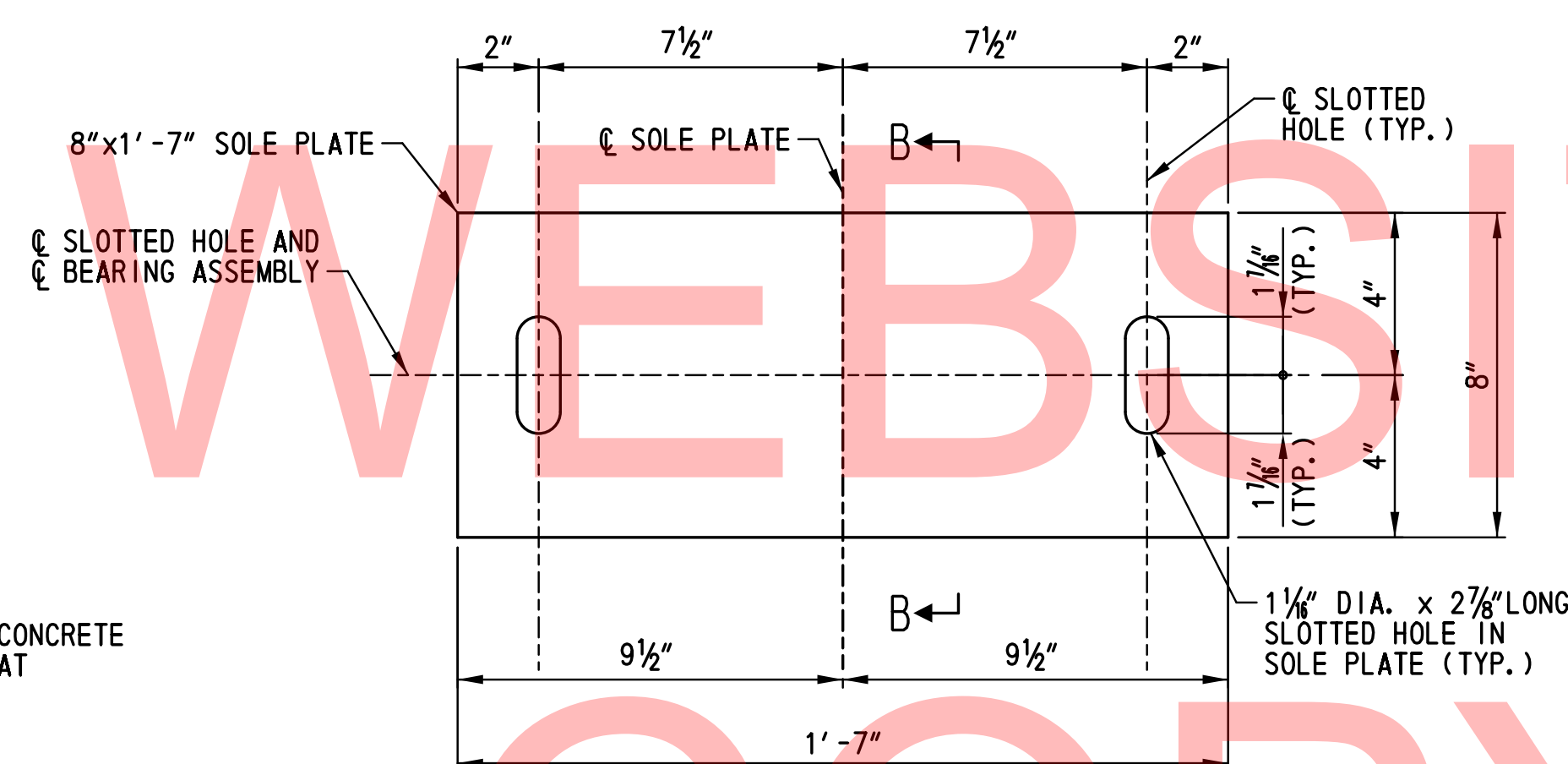
NOTE:
ANCHOR BOLTS, NUTS, AND PLATE
WASHERS NOT SHOWN FOR CLARITY.



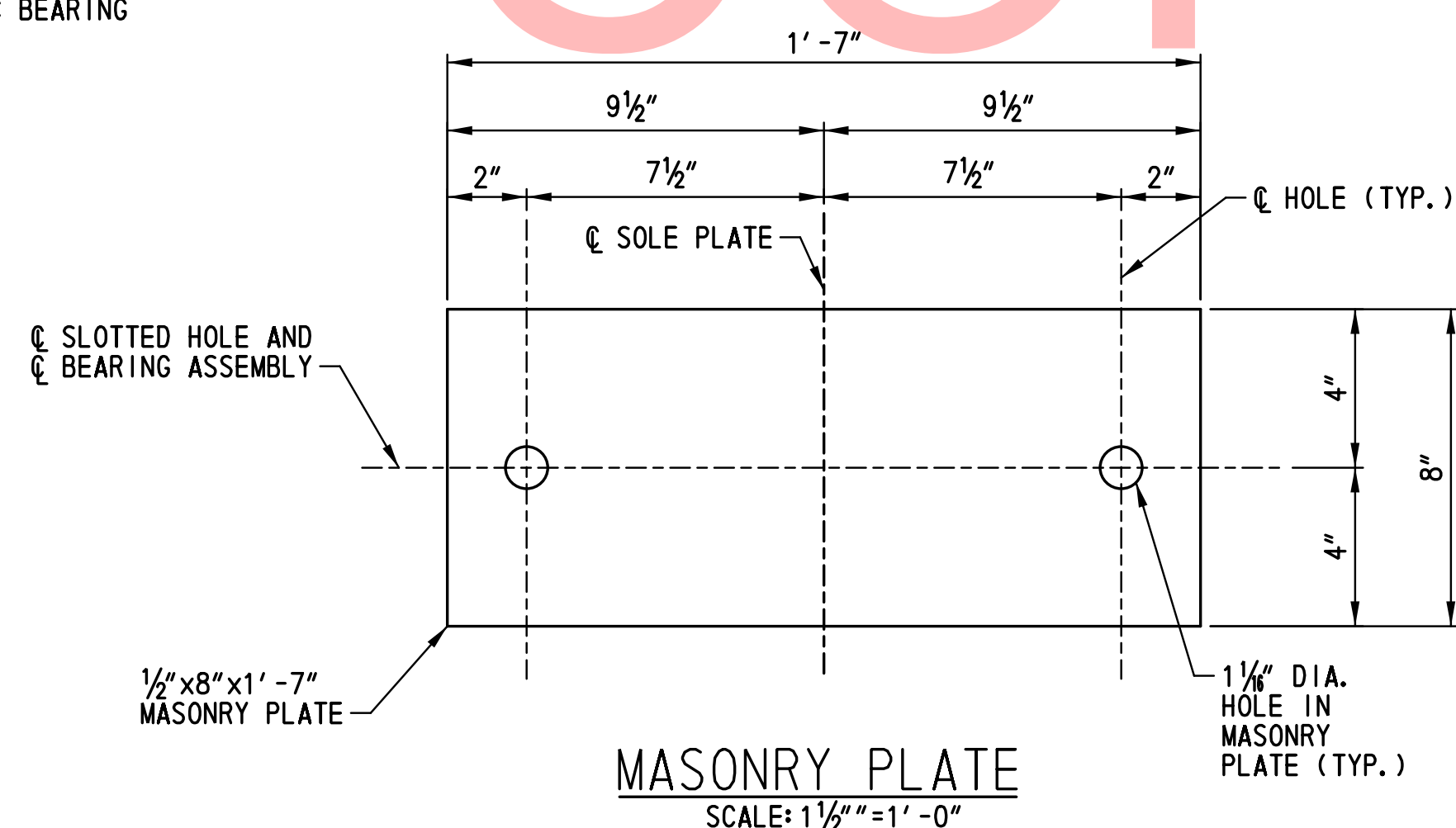
BEARING PAD DETAIL
SCALE: 3" = 1'-0"



SECTION B-B
SCALE: 3" = 1'-0"



SOLE PLATE
SCALE: 1 1/2" = 1'-0"



MASONRY PLATE
SCALE: 1 1/2" = 1'-0"

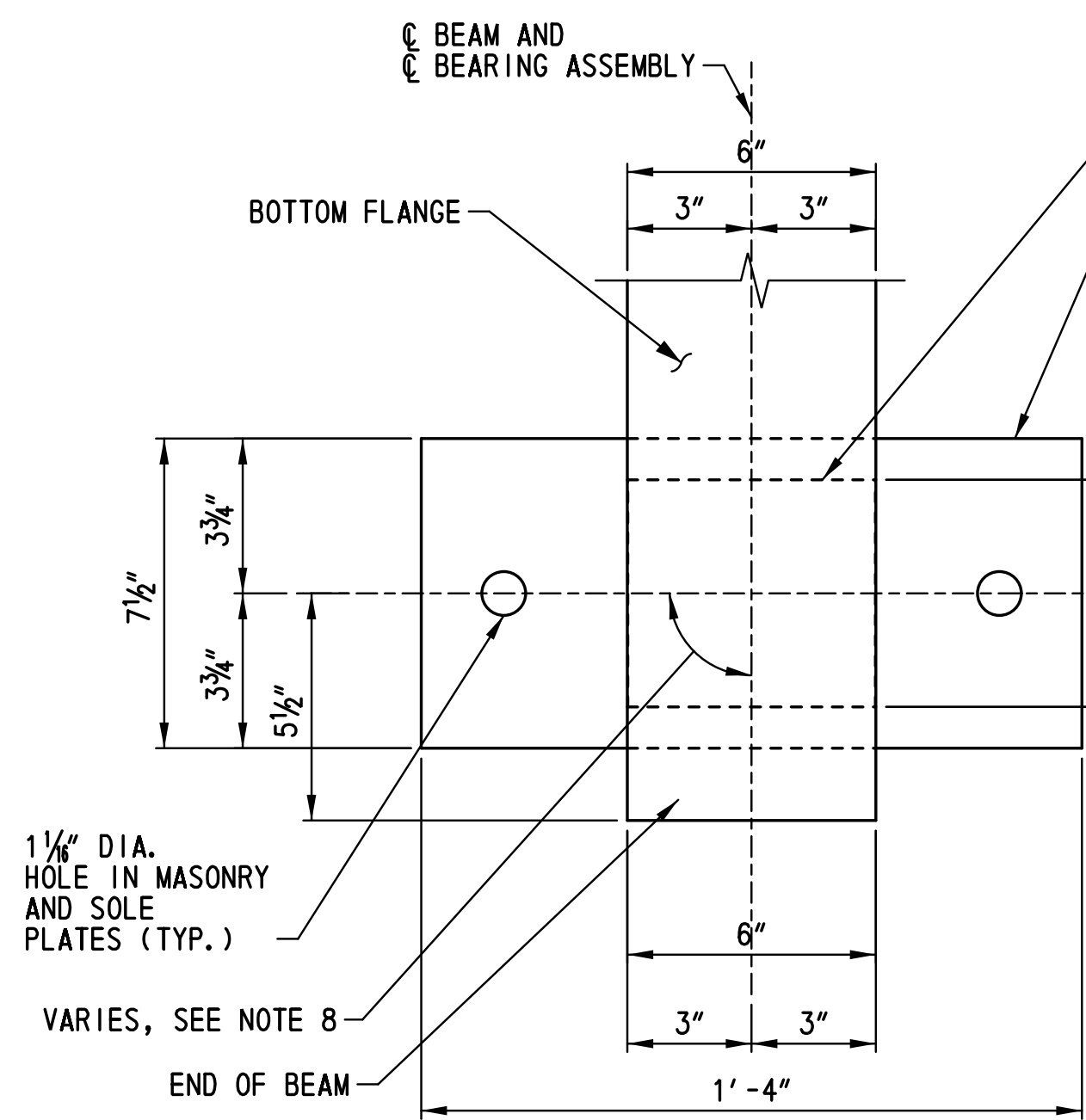
DIMENSION REFERENCE TABLE - SEE NOTE 9

| BEAM | A | B |
|------|------|------|
| ① | 1/2" | 3/4" |
| ② | 3/8" | 1/8" |
| ③ | 3/8" | 1/8" |
| ④ | 3/8" | 1/8" |
| ⑤ | 3/8" | 1/8" |
| ⑥ | 3/8" | 1/8" |

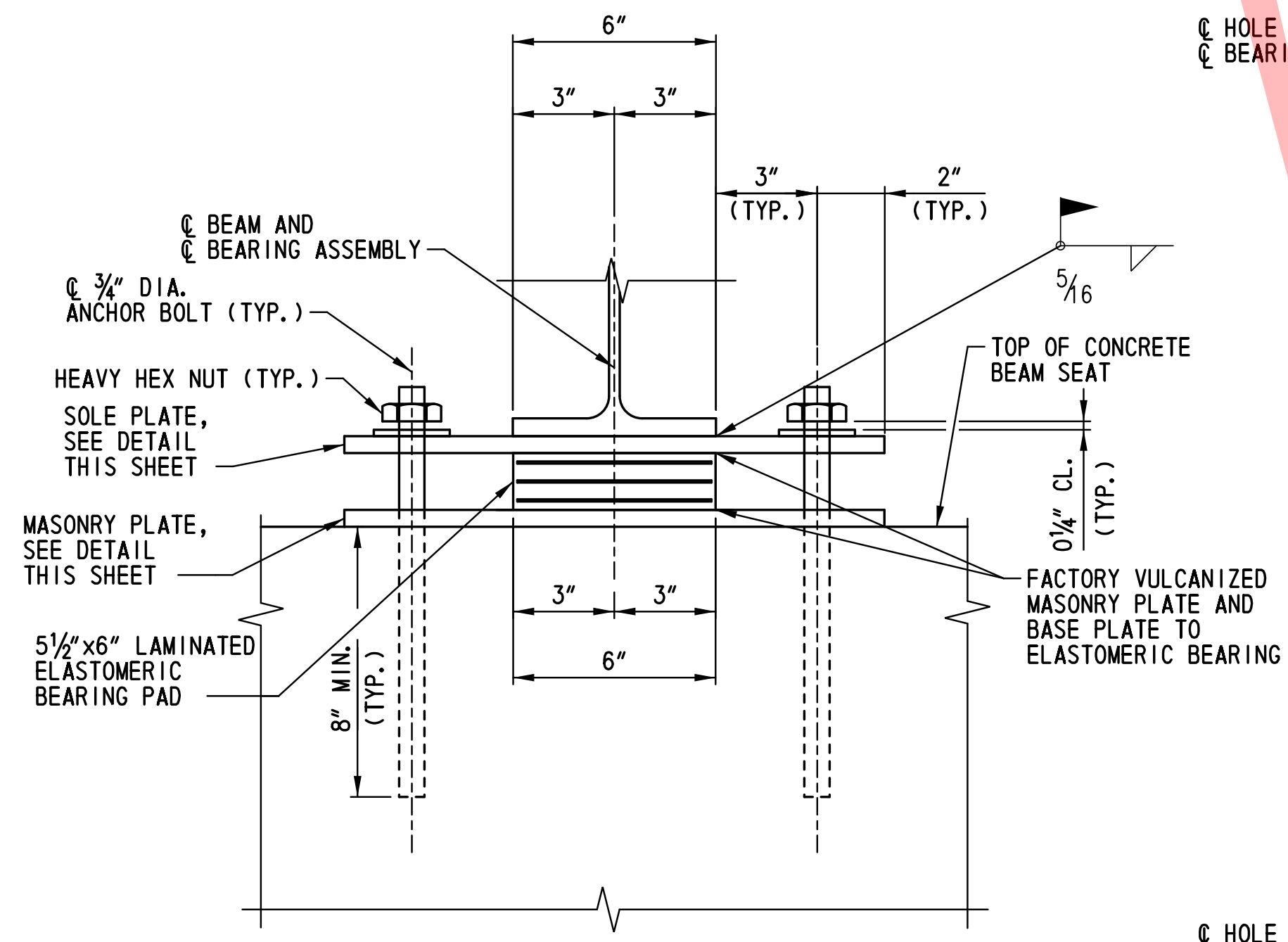
NOTES:

- BEARING ASSEMBLIES SHALL BE PLACED PERPENDICULAR TO THE CENTERLINE OF GIRDER.
- SOLE PLATES, BASE PLATES AND MASONRY PLATES SHALL BE ASTM A 709, GRADE 36 STEEL PAINTED TO MATCH WEATHERING STEEL COLOR.
- FILL SLOTS AND HOLES AROUND ANCHOR BOLTS WITH NONHARDENING CAULKING COMPOUND OR ELASTIC JOINT SEALER.
- ANCHOR BOLTS SHALL BE UNPAINTED ASTM F 1554, GRADE 105 GALVANIZED STEEL. PLATE WASHERS SHALL BE UNPAINTED ASTM A 709, GRADE 36 GALVANIZED STEEL. NUTS SHALL BE UNPAINTED ASTM A 563 GALVANIZED STEEL.
- ELASTOMERIC BEARINGS SHALL CONFORM TO M 251 AND THE ELASTOMER SHALL BE 60 DUROMETER NEOPRENE. SHIMS SHALL BE 11 GAGE STEEL.
- THE BASE PLATE AND MASONRY PLATE SHALL BE FACTORY VULCANIZED TO THE ELASTOMERIC BEARING, AND BEARINGS ARE TO BE SHIPPED ASSEMBLED AS UNITS.
- CONTRACTOR SHALL TOUCH UP SOLE PLATE PAINT SYSTEM AFTER WELDING THE SOLE PLATE TO THE GIRDER.
- END OF BEAM IS SHOWN FOR EXPANSION BEARINGS AT PIER 16. BEAMS ARE CONTINUOUS OVER EXPANSION BEARINGS AT PIER 18.
- DIMENSION "A" AND "B" VARIES BY BEAM. SEE TABULATED VALUES FOR DIMENSION "A" ON PIER 18 SOLE PLATES. CONTRACTOR SHALL VERIFY AND ADJUST DIMENSION "A" AS NECESSARY BASED UPON FIELD VERIFICATION OF TIE-IN ELEVATIONS TO EXISTING BRIDGE.

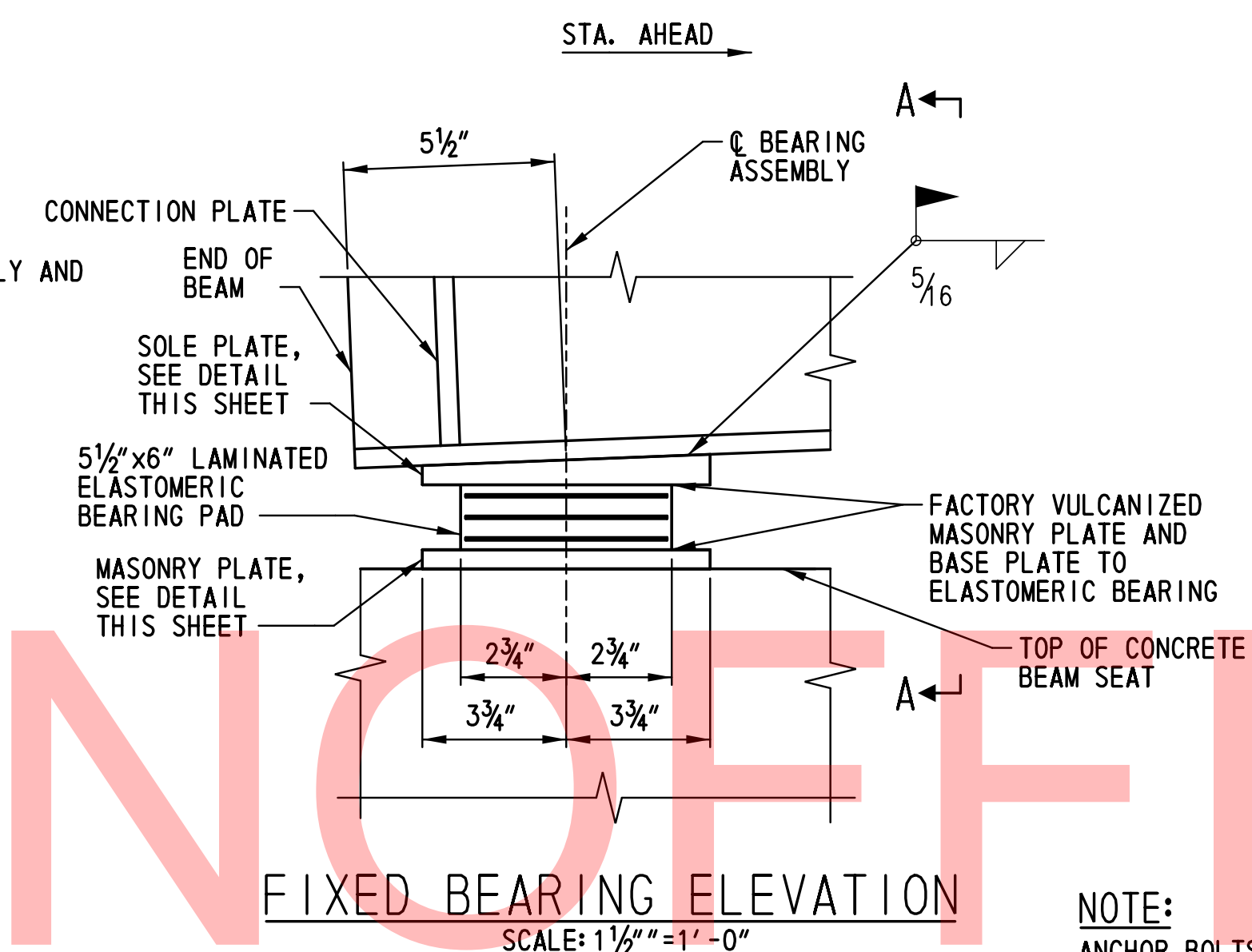
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FIXED BEARING PLAN
SCALE: 1 1/2" = 1'-0"

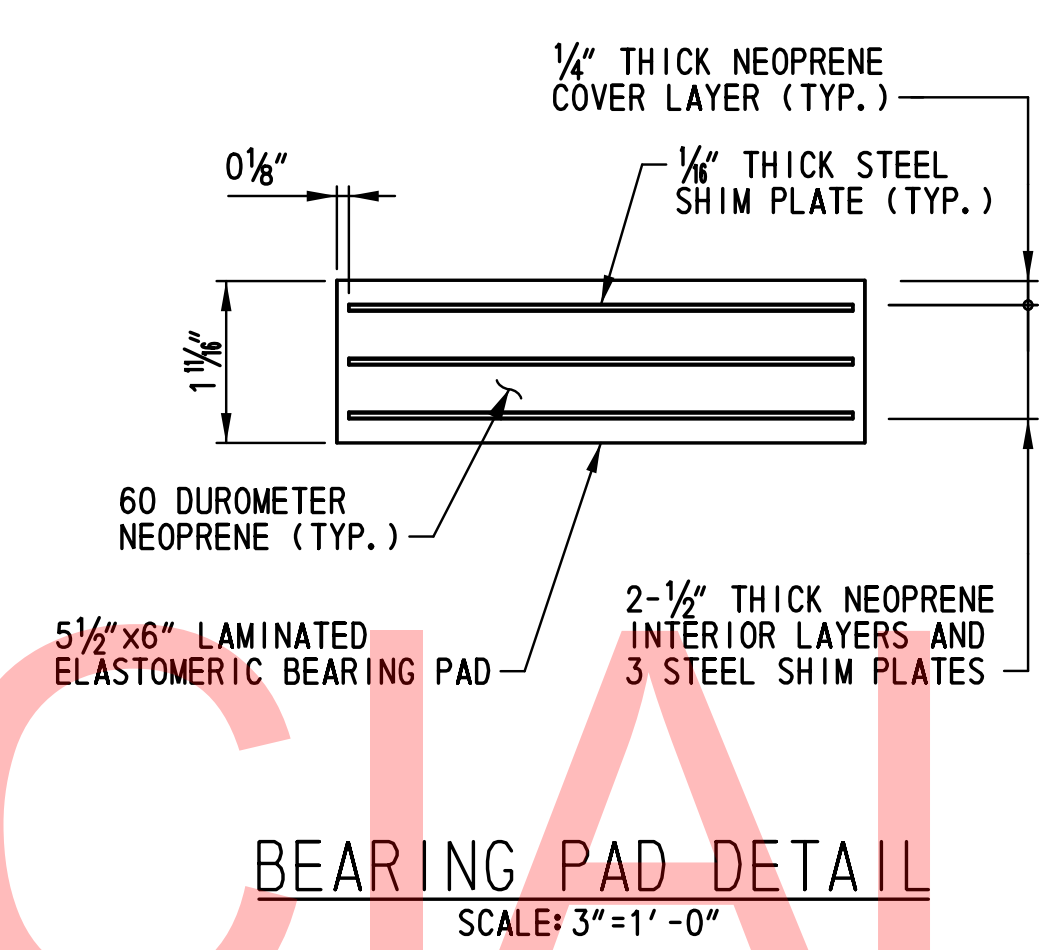


VIEW A-A
SCALE: 1 1/2" = 1'-0"

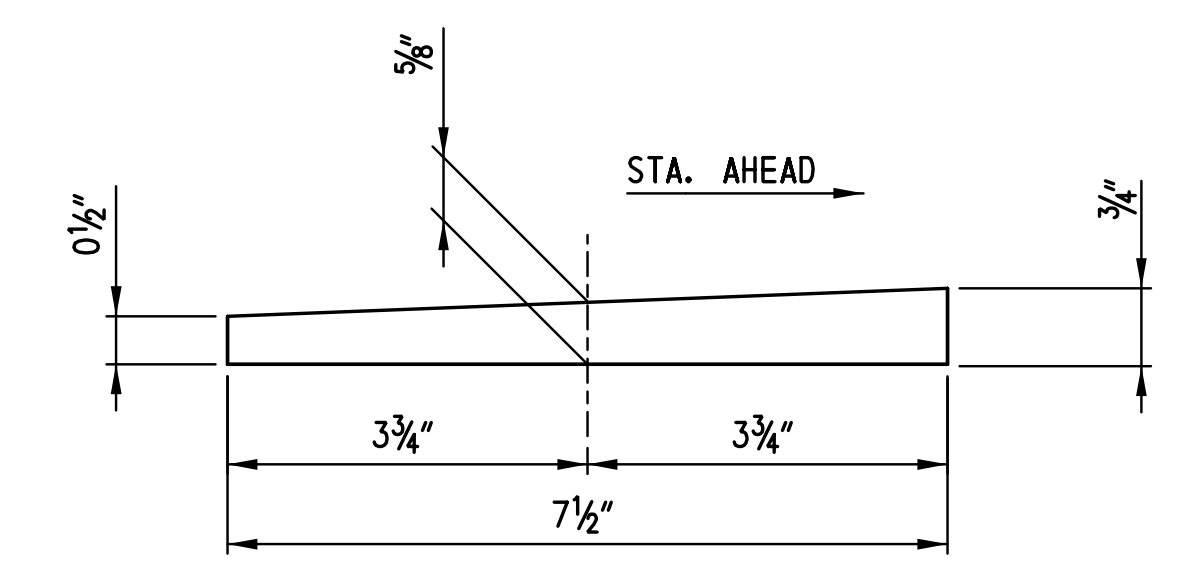


FIXED BEARING ELEVATION
SCALE: 1 1/2" = 1'-0"

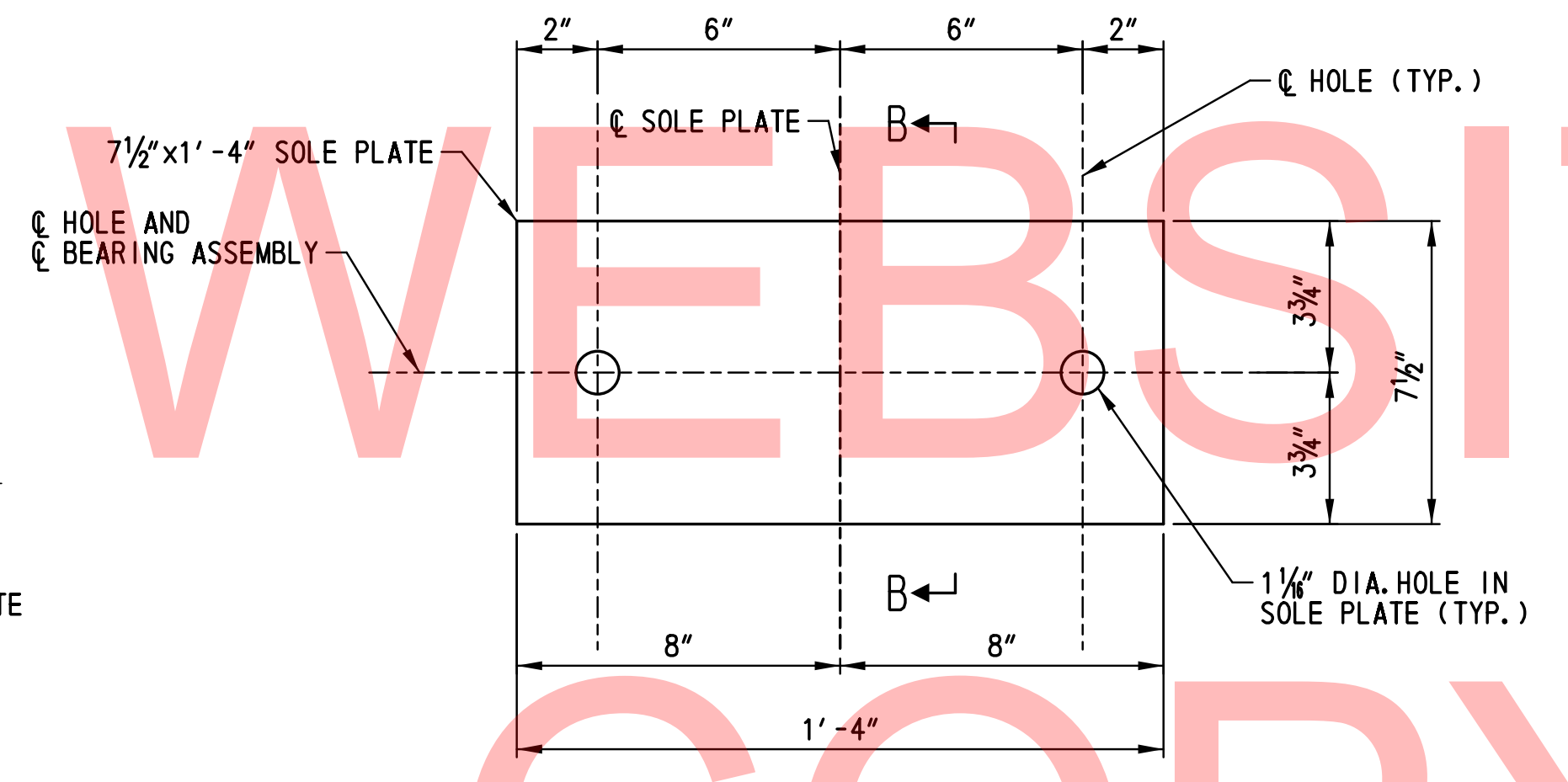
NOTE:
ANCHOR BOLTS, NUTS, AND PLATE WASHERS NOT SHOWN FOR CLARITY.



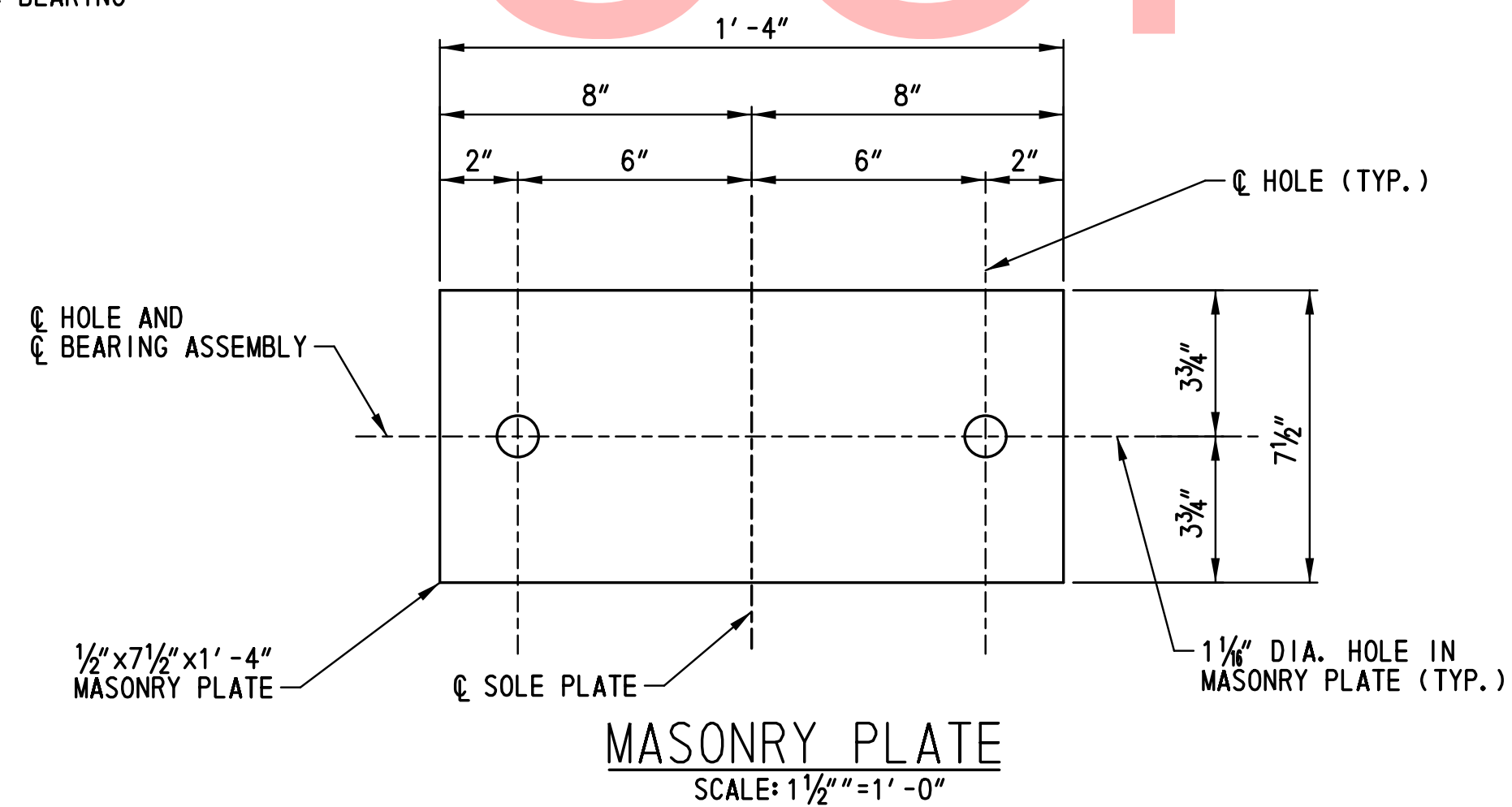
BEARING PAD DETAIL
SCALE: 3" = 1'-0"



SECTION B-B
SCALE: 3" = 1'-0"



SOLE PLATE
SCALE: 1 1/2" = 1'-0"



MASONRY PLATE
SCALE: 1 1/2" = 1'-0"

- NOTES:**
- BEARING ASSEMBLIES SHALL BE PLACED PERPENDICULAR TO THE CENTERLINE OF GIRDER.
 - SOLE PLATES, BASE PLATES AND MASONRY PLATES SHALL BE ASTM A 709, GRADE 36 STEEL PAINTED TO MATCH WEATHERING STEEL COLOR.
 - FILL SLOTS AND HOLES AROUND ANCHOR BOLTS WITH NONHARDENING CAULKING COMPOUND OR ELASTIC JOINT SEALER.
 - ANCHOR BOLTS SHALL BE UNPAINTED ASTM F 1554, GRADE 105 GALVANIZED STEEL. PLATE WASHERS SHALL BE UNPAINTED ASTM A 709, GRADE 36 GALVANIZED STEEL. NUTS SHALL BE UNPAINTED ASTM A 563 GALVANIZED STEEL.
 - ELASTOMERIC BEARINGS SHALL CONFORM TO M 251 AND THE ELASTOMER SHALL BE 60 DUROMETER NEOPRENE. SHIMS SHALL BE 11 GAGE STEEL.
 - THE BASE PLATE AND MASONRY PLATE SHALL BE FACTORY VULCANIZED TO THE ELASTOMERIC BEARING, AND BEARINGS ARE TO BE SHIPPED ASSEMBLED AS UNITS.
 - CONTRACTOR SHALL TOUCH UP SOLE PLATE PAINT SYSTEM AFTER WELDING THE SOLE PLATE TO THE GIRDER.
 - SKREW ANGLE BETWEEN C BEARING AND C BEAM VARIES IN SPANS 1 THROUGH 15. SEE DWG. NOS. FR-301 THRU FR-303.

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| ADDENDUMS / REVISIONS |
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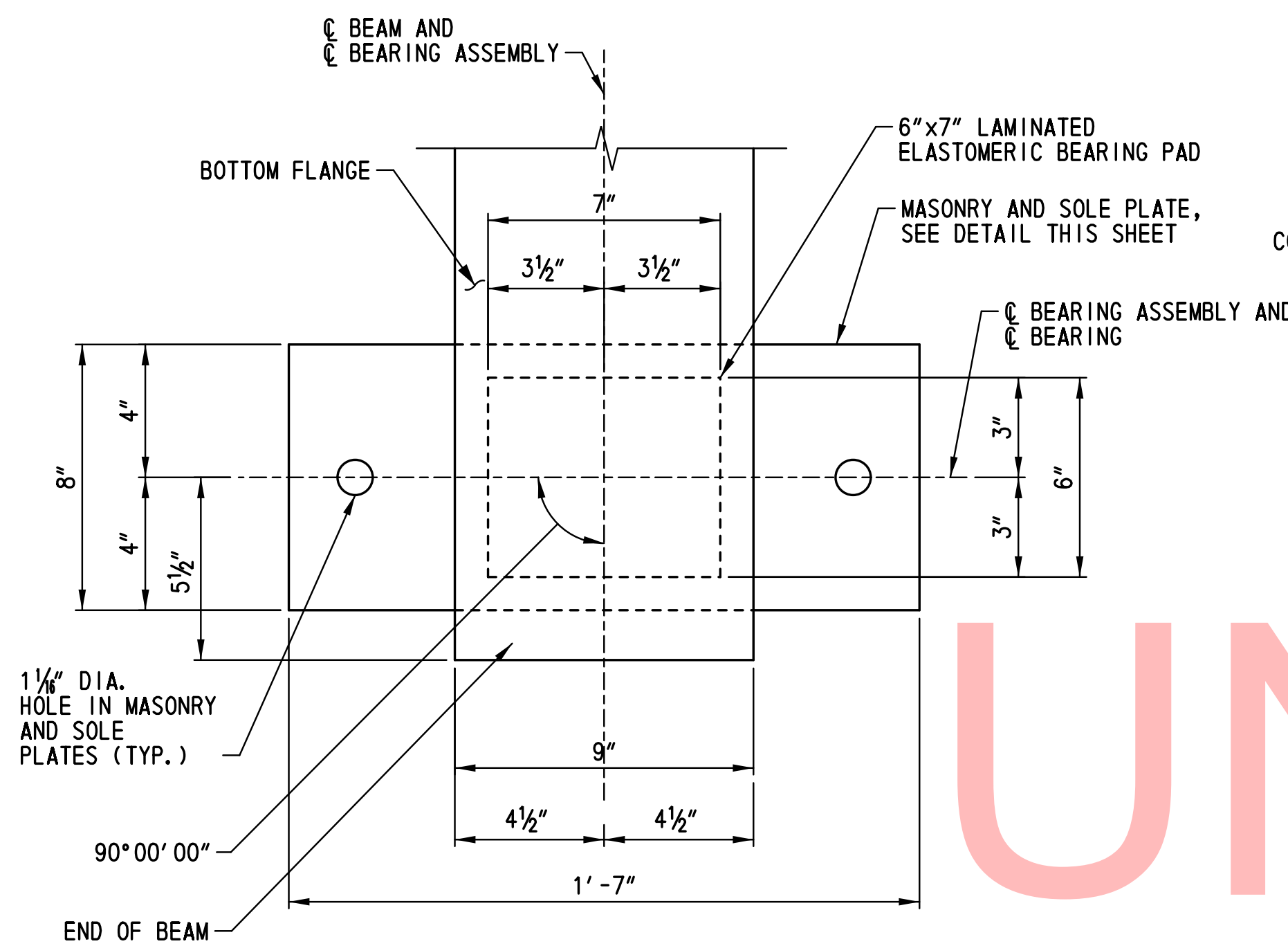
SCALE AS NOTED

NEW CASTLE INDUSTRIAL TRACK TRAIL, PHASE 3

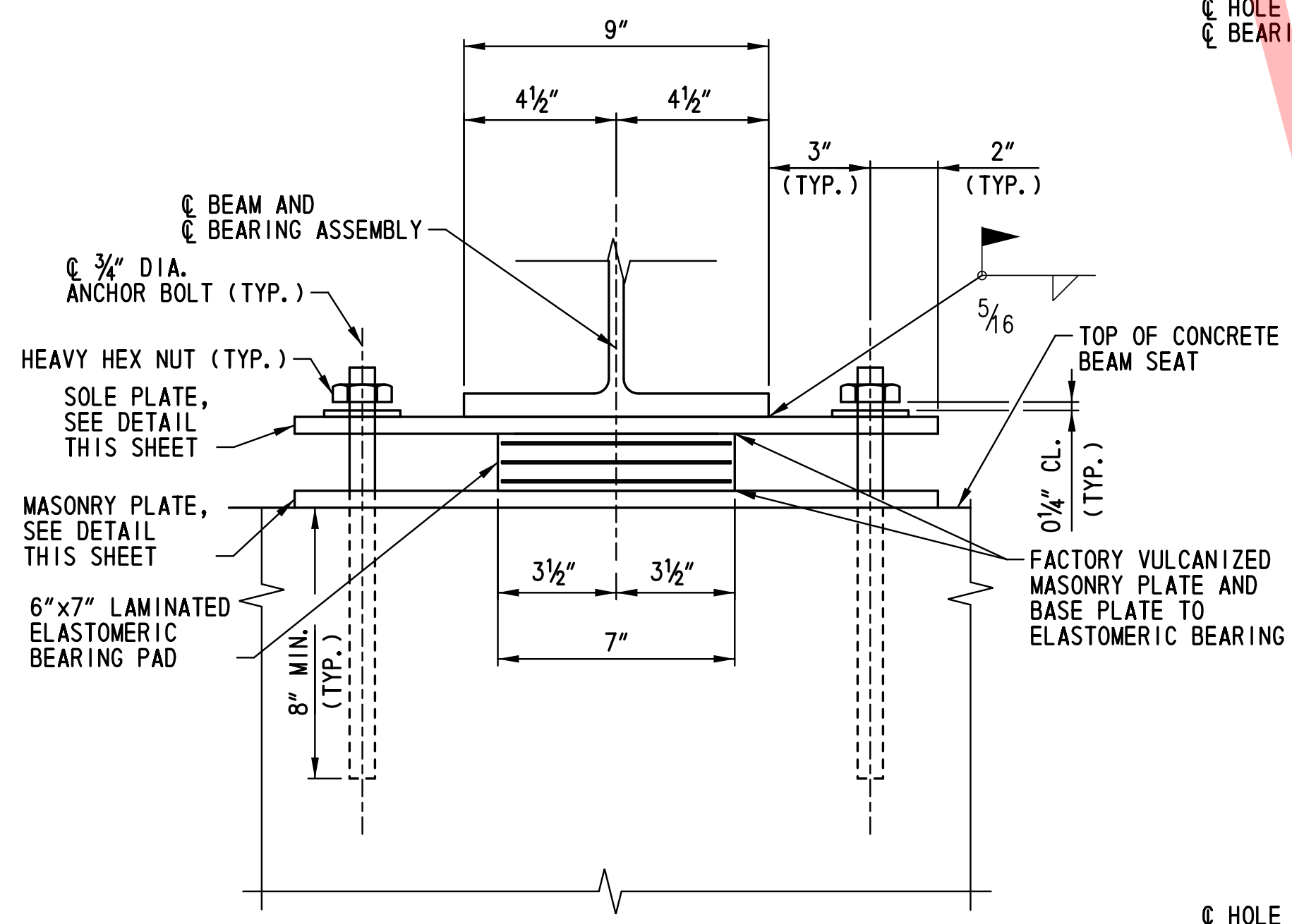
| | | |
|------------|------------------|----------|
| CONTRACT | BRIDGE NO. | X |
| T201330009 | DESIGNED BY: NAH | |
| COUNTY | CHECKED BY: WAG | |
| NEW CASTLE | | |

FIXED BEARING DETAILS - PIERS 1-14

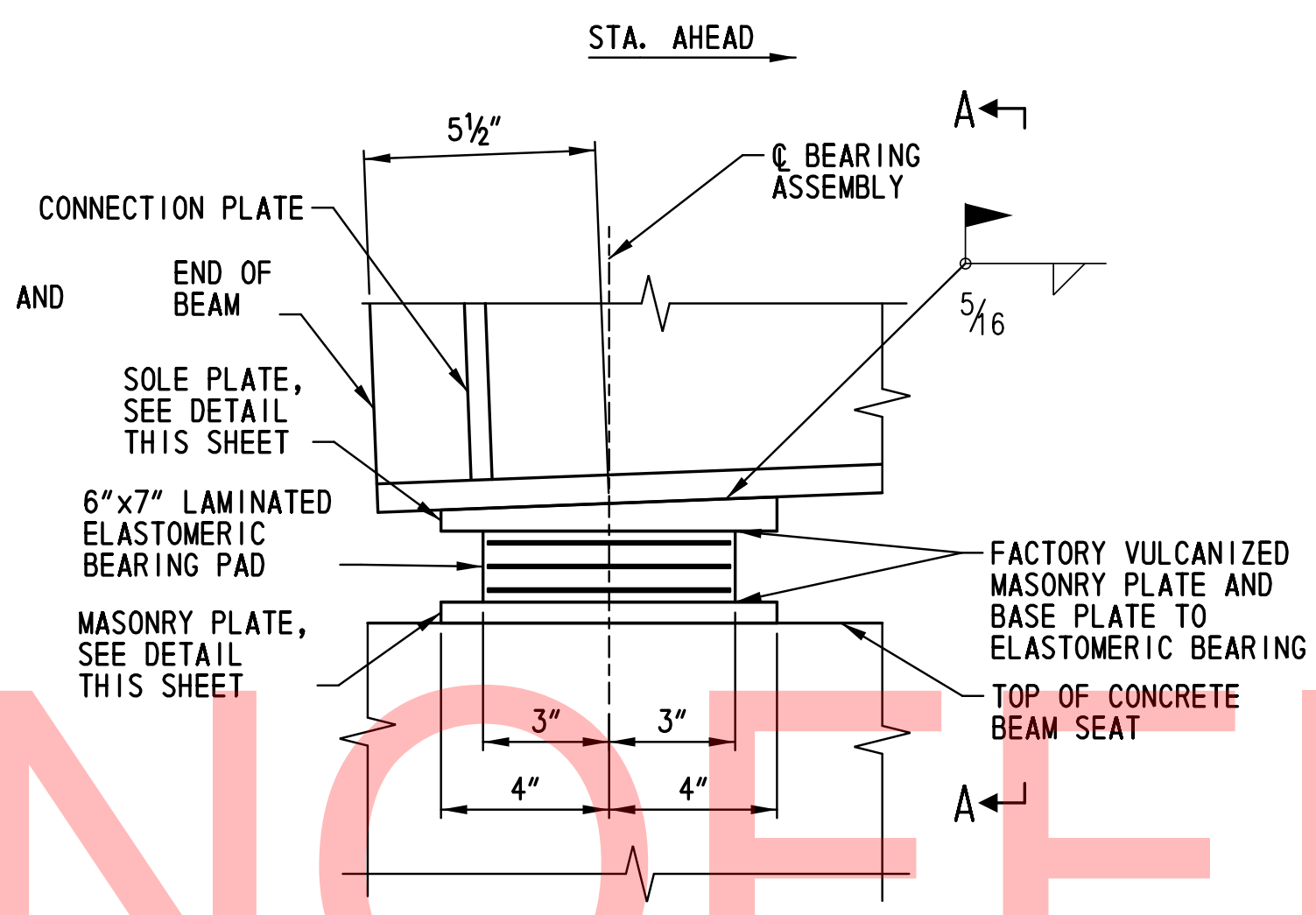
| |
|-------------|
| BB-303 |
| SHEET NO. |
| 142 |
| TOTAL SHTS. |
| 205 |



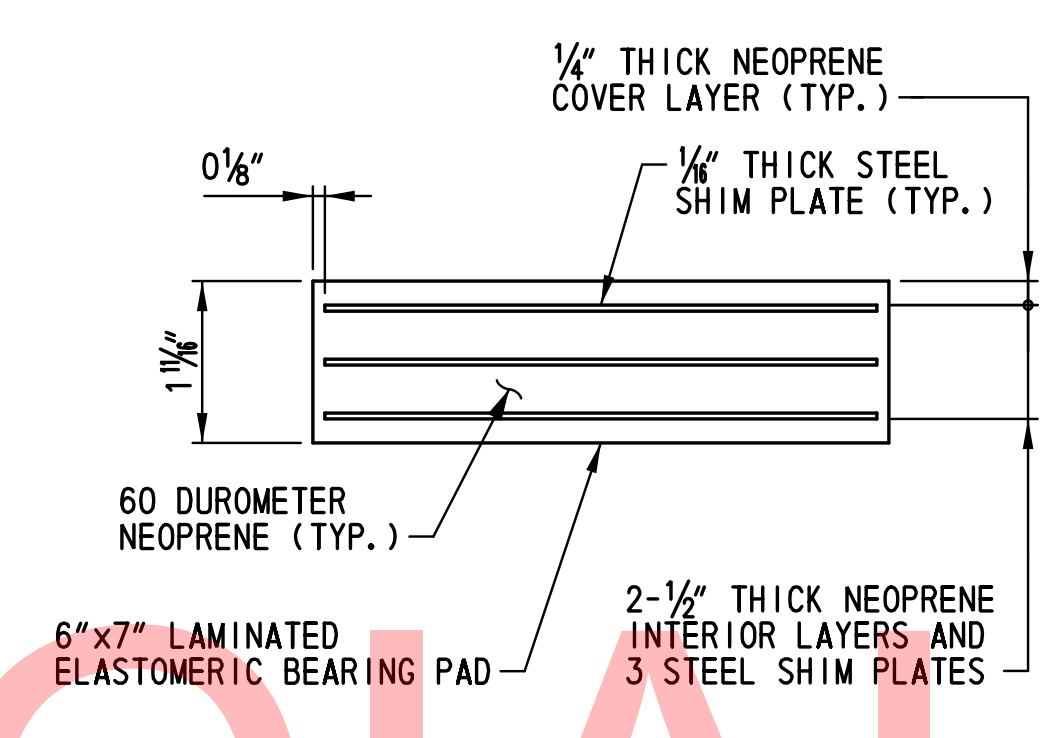
FIXED BEARING PLAN
SCALE: 1 1/2" = 1'-0"



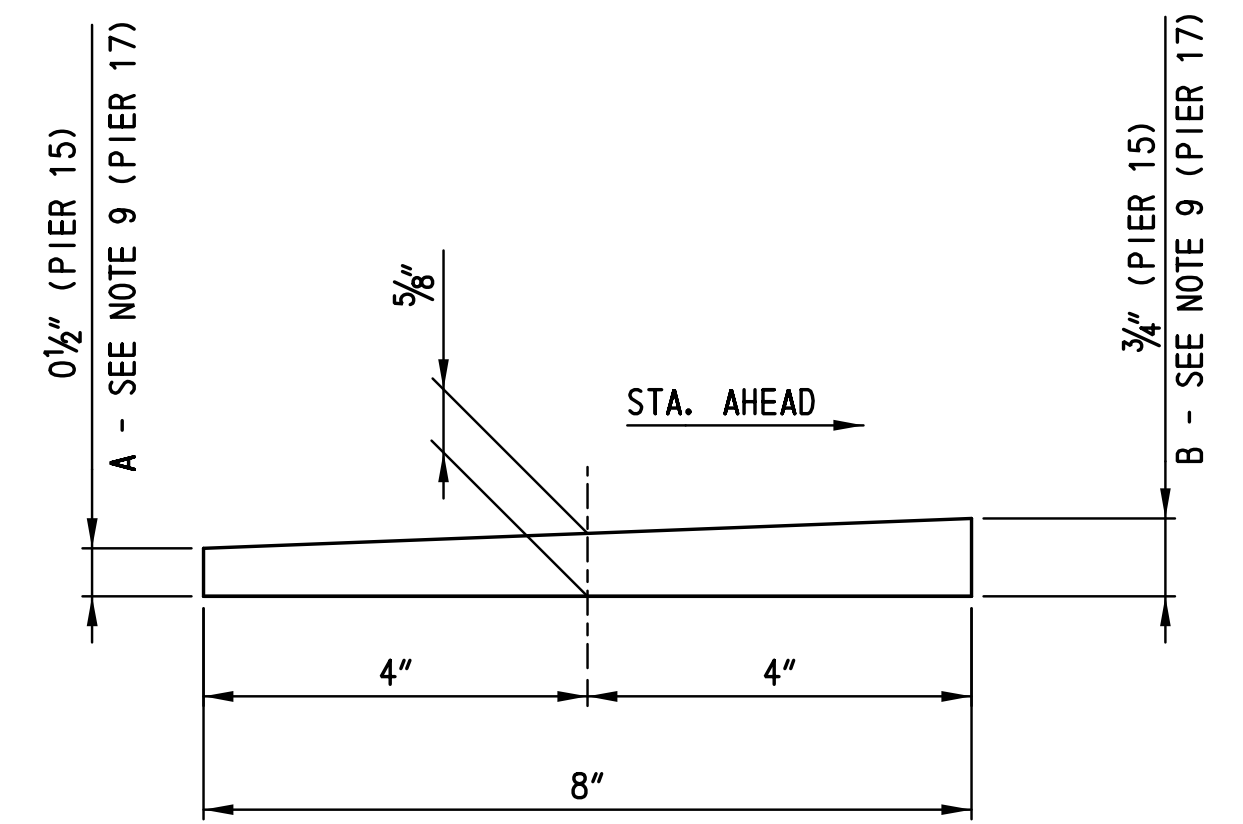
VIEW A-A
SCALE: 1 1/2" = 1'-0"



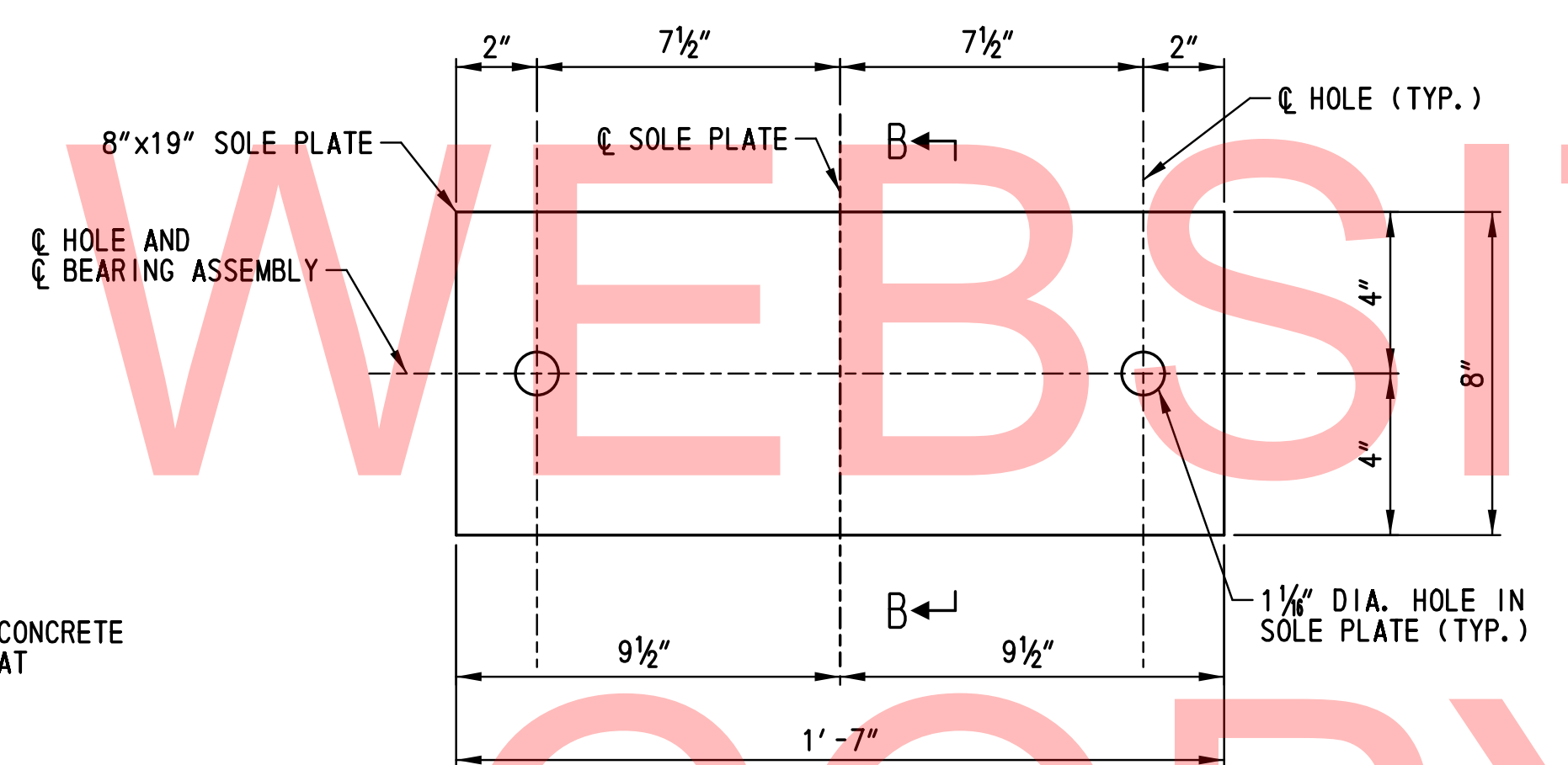
FIXED BEARING ELEVATION
SCALE: 1 1/2" = 1'-0"



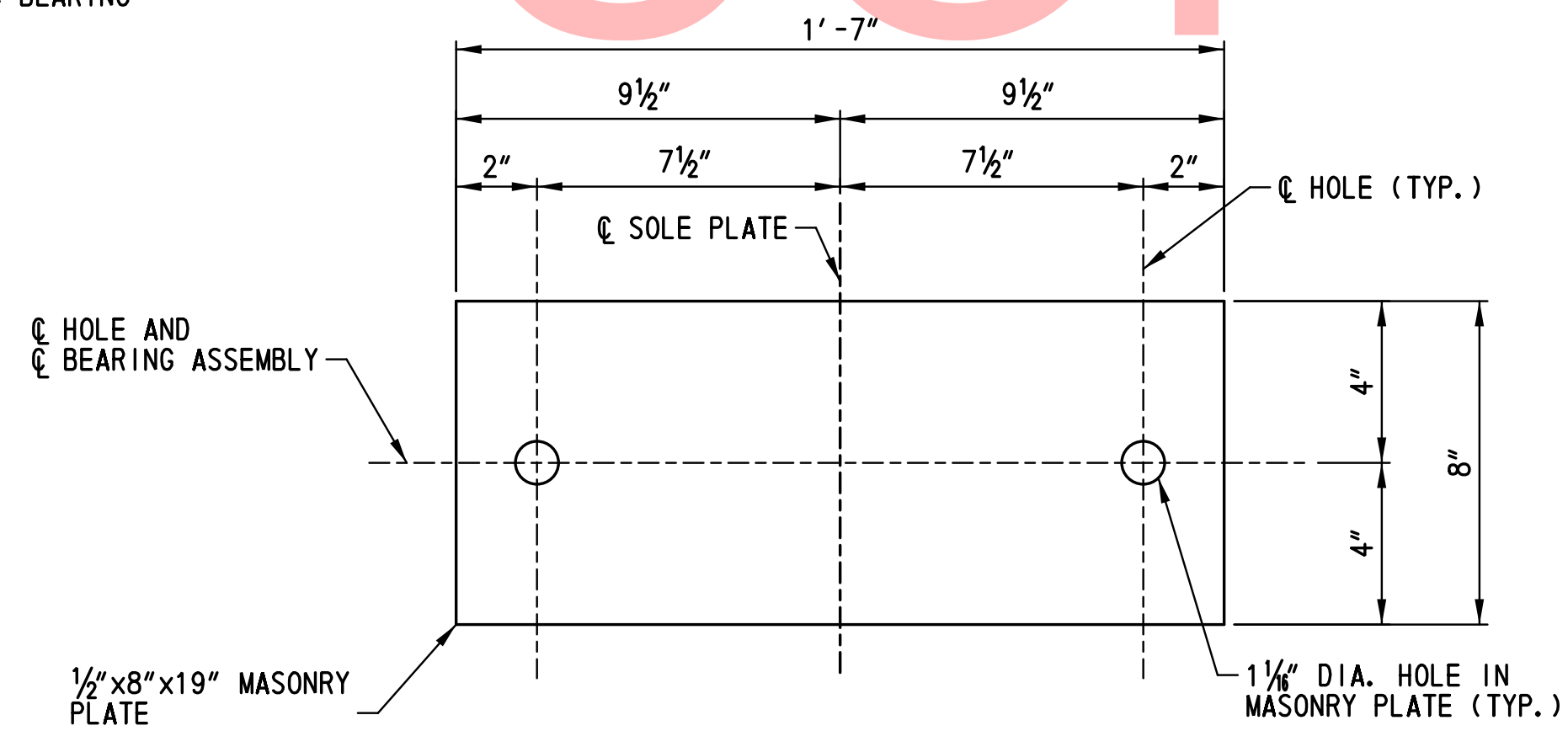
BEARING PAD DETAIL
SCALE: 3" = 1'-0"



SECTION B-B
SCALE: 3" = 1'-0"



SOLE PLATE
SCALE: 1 1/2" = 1'-0"



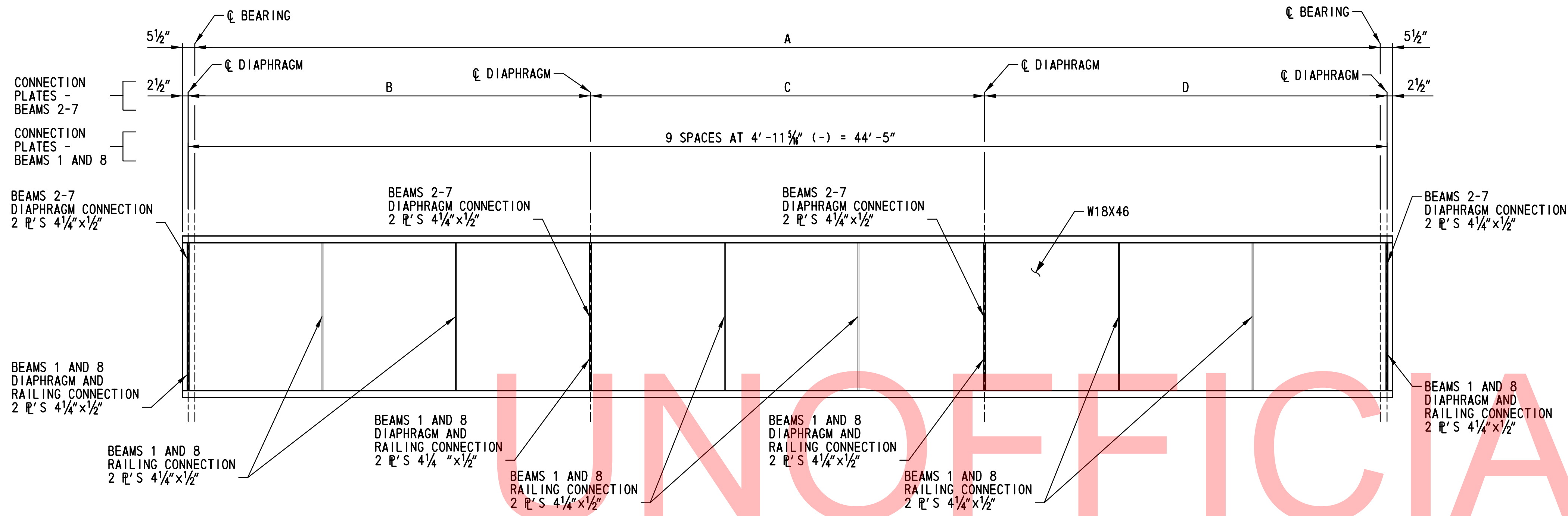
MASONRY PLATE
SCALE: 1 1/2" = 1'-0"

DIMENSION REFERENCE TABLE - SEE NOTE 9

| BEAM | A | B |
|------|------|------|
| ① | 1/2" | 3/4" |
| ② | 3/8" | 1/8" |
| ③ | 3/8" | 1/8" |
| ④ | 3/8" | 1/8" |
| ⑤ | 3/8" | 1/8" |
| ⑥ | 3/8" | 1/8" |

- NOTES:**
- BEARING ASSEMBLIES SHALL BE PLACED PERPENDICULAR TO THE CENTERLINE OF GIRDER.
 - SOLE PLATES, BASE PLATES AND MASONRY PLATES SHALL BE ASTM A 709, GRADE 36 STEEL PAINTED TO MATCH WEATHERING STEEL COLOR.
 - FILL SLOTS AND HOLES AROUND ANCHOR BOLTS WITH NONHARDENING CAULKING COMPOUND OR ELASTIC JOINT SEALER.
 - ANCHOR BOLTS SHALL BE UNPAINTED ASTM F 1554, GRADE 105 GALVANIZED STEEL. PLATE WASHERS SHALL BE UNPAINTED ASTM A 709, GRADE 36 GALVANIZED STEEL. NUTS SHALL BE UNPAINTED ASTM A 563 GALVANIZED STEEL.
 - ELASTOMERIC BEARINGS SHALL CONFORM TO M 251 AND THE ELASTOMER SHALL BE 60 DUROMETER NEOPRENE. SHIMS SHALL BE 11 GAGE STEEL.
 - THE BASE PLATE AND MASONRY PLATE SHALL BE FACTORY VULCANIZED TO THE ELASTOMERIC BEARING, AND BEARINGS ARE TO BE SHIPPED ASSEMBLED AS UNITS.
 - CONTRACTOR SHALL TOUCH UP SOLE PLATE PAINT SYSTEM AFTER WELDING THE SOLE PLATE TO THE GIRDER.

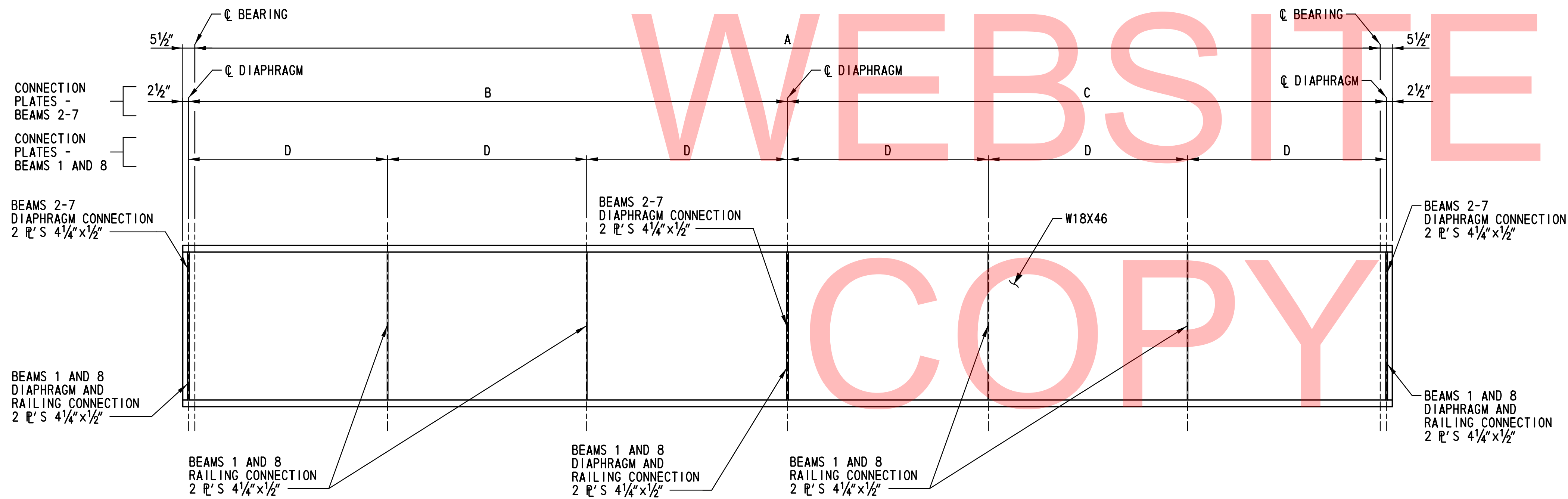
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BEAM ELEVATION - SPANS 1-4
SCALE: NOT TO SCALE

| BEAM ELEVATION SCHEDULE - SPANS 1-4 | | | | |
|-------------------------------------|--------|---------|---------|---------|
| BEAM | A | B | C | D |
| ① | 44'-0" | 14'-10" | 14'-10" | 14'-10" |
| ② | 44'-0" | 14'-10" | 14'-10" | 14'-10" |
| ③ | 44'-0" | 14'-10" | 14'-10" | 14'-10" |
| ④ | 44'-0" | 14'-10" | 14'-10" | 14'-10" |
| ⑤ | 44'-0" | 14'-10" | 14'-10" | 14'-10" |
| ⑥ | 44'-0" | 14'-10" | 14'-10" | 14'-10" |
| ⑦ | 44'-0" | 14'-10" | 14'-10" | 14'-10" |
| ⑧ | 44'-0" | 14'-10" | 14'-10" | 14'-10" |

| BEAM ELEVATION SCHEDULE - SPANS 5-8 | | | | |
|-------------------------------------|-----------------|----------------|----------------|---------------|
| BEAM | A | B | C | D |
| ① | 28'-8 5/8" | | | 4'-10 1/8" |
| ② | 28'-7 1/8" (+) | 14'-6 3/8" (-) | 14'-6 3/8" (-) | |
| ③ | 28'-5 3/8" (+) | 14'-5 5/8" (-) | 14'-5 5/8" (-) | |
| ④ | 28'-3 3/8" (+) | 14'-4 1/8" (-) | 14'-4 1/8" (-) | |
| ⑤ | 28'-1 1/8" (+) | 14'-3 3/4" (-) | 14'-3 3/4" (-) | |
| ⑥ | 27'-11 3/8" (+) | 14'-2 1/8" (-) | 14'-2 1/8" (-) | |
| ⑦ | 27'-9 3/4" (-) | 14'-1 7/8" (-) | 14'-1 7/8" (-) | |
| ⑧ | 27'-8 3/8" (-) | | | 4'-8 3/8" (-) |



BEAM ELEVATION - SPANS 5-14
SCALE: NOT TO SCALE

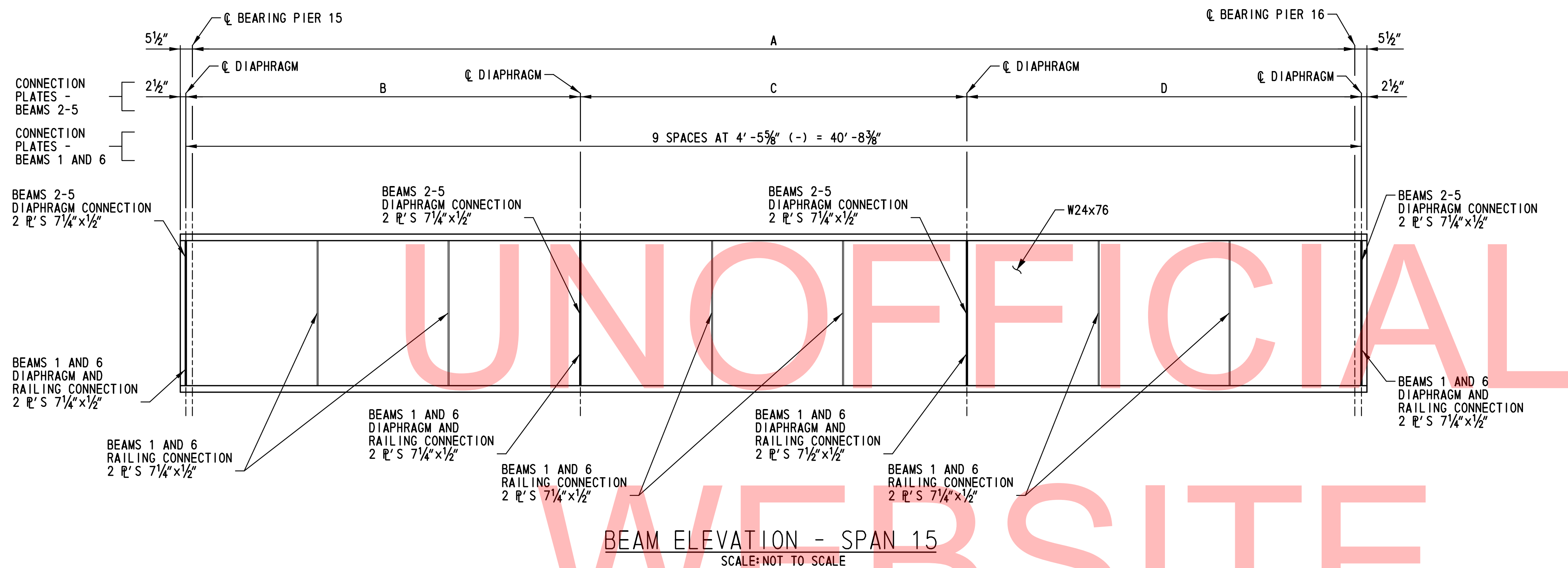
| BEAM ELEVATION SCHEDULE - SPANS 9-14 | | | | |
|--------------------------------------|-----------------|----------------|----------------|---------------|
| BEAM | A | B | C | D |
| ① | 29'-7 7/8" (-) | | | 5'-0 3/8" |
| ② | 29'-9 5/8" (-) | 15'-1 1/8" (-) | 15'-1 1/8" (-) | |
| ③ | 29'-11 1/8" (+) | 15'-2 7/8" (-) | 15'-2 7/8" (-) | |
| ④ | 30'-1 1/8" (-) | 15'-3 7/8" (-) | 15'-3 7/8" (-) | |
| ⑤ | 30'-3 7/8" (+) | 15'-4 5/8" (+) | 15'-4 5/8" (+) | |
| ⑥ | 30'-6" (-) | 15'-6" (+) | 15'-6" (+) | |
| ⑦ | 30'-8 1/8" (+) | 15'-7 1/8" | 15'-7 1/8" | |
| ⑧ | 30'-9 1/8" (+) | | | 5'-2 5/8" (+) |

NOTES:

- STRUCTURAL STEEL SHALL BE AASHTO M270 (ASTM A 709) GRADE 50W.
- FOR INTERMEDIATE AND END DIAPHRAGM CONNECTION PLATE DETAILS, SEE DWG. NO. BM-304.
- FOR RAILING CONNECTION PLATE DETAILS, SEE DWG. NO. RL-301.
- FOR BEAM NUMBERING AND SPAN NUMBERING, SEE DWG. NOS. FR-301 THRU FR-303.
- BEAM ENDS, BEARING STIFFENERS, AND CONNECTION PLATES ARE REQUIRED TO BE VERTICAL UNDER FULL DEAD LOAD.

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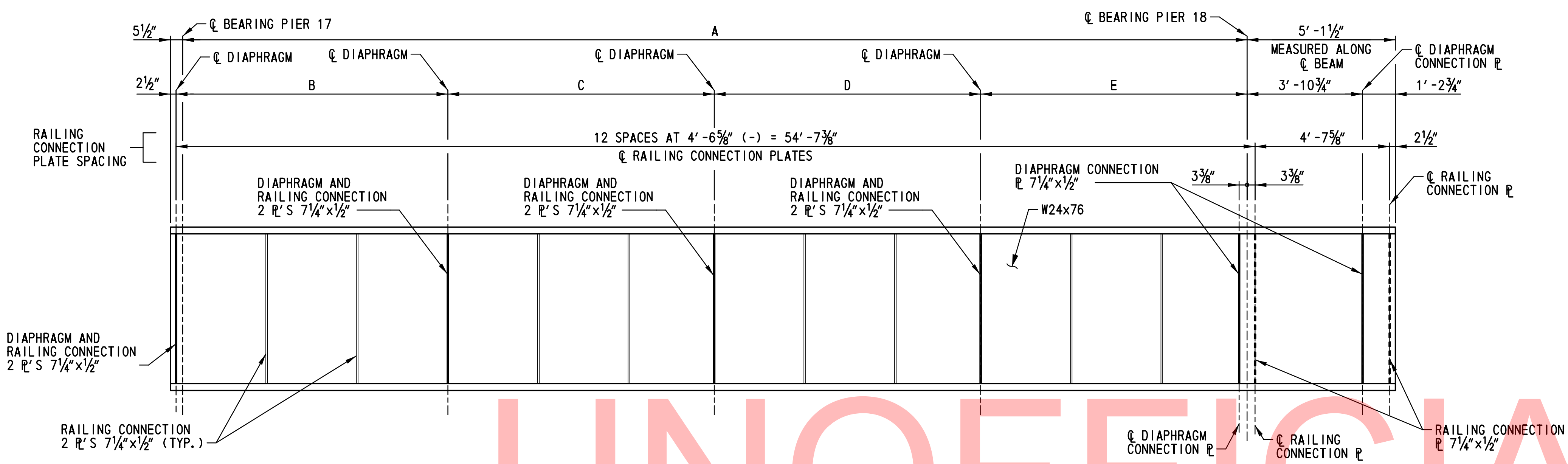
| BEAM ELEVATION SCHEDULE - SPAN 15 | | | | |
|-----------------------------------|--------------|------------------|------------------|------------------|
| BEAM | A | B | C | D |
| ① | 40' - 2 3/8" | 13' - 6 1/8" (-) | 13' - 6 1/8" (-) | 13' - 6 1/8" (-) |
| ② | 40' - 2 3/8" | 13' - 6 1/8" (-) | 13' - 6 1/8" (-) | 13' - 6 1/8" (-) |
| ③ | 40' - 2 3/8" | 13' - 6 1/8" (-) | 13' - 6 1/8" (-) | 13' - 6 1/8" (-) |
| ④ | 40' - 2 3/8" | 13' - 6 1/8" (-) | 13' - 6 1/8" (-) | 13' - 6 1/8" (-) |
| ⑤ | 40' - 2 3/8" | 13' - 6 1/8" (-) | 13' - 6 1/8" (-) | 13' - 6 1/8" (-) |
| ⑥ | 40' - 2 3/8" | 13' - 6 1/8" (-) | 13' - 6 1/8" (-) | 13' - 6 1/8" (-) |



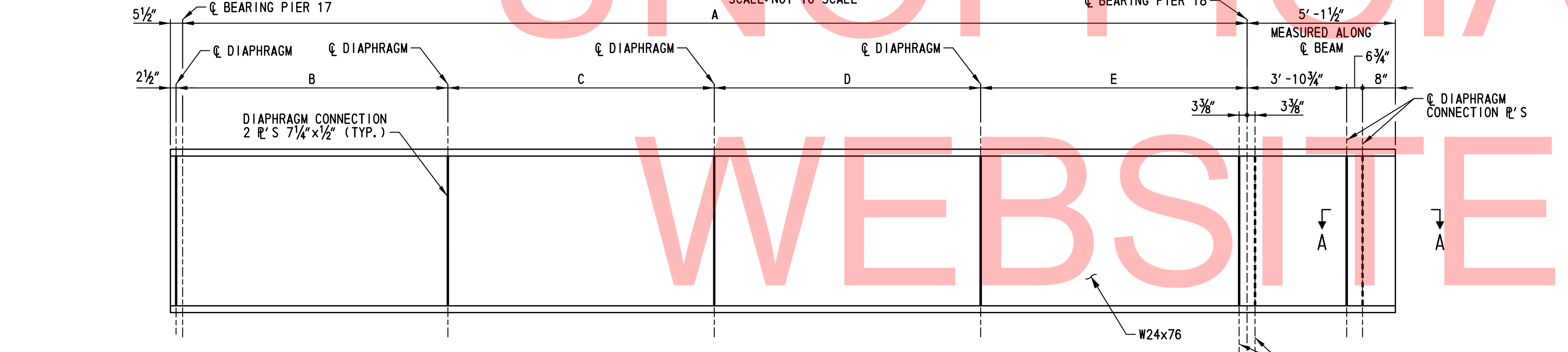
- NOTES:**
- STRUCTURAL STEEL SHALL BE AASHTO M270 (ASTM A 709) GRADE 50W.
 - FOR INTERMEDIATE AND END DIAPHRAGM CONNECTION PLATE DETAILS, SEE DWG. BM-304.
 - FOR RAILING CONNECTION PLATE DETAILS, SEE DWG. NO. RL-301.
 - FOR BEAM NUMBERING AND SPAN NUMBERING, SEE DWG. NO. FR-304.
 - BEAM ENDS, BEARING STIFFENERS, AND CONNECTION PLATES ARE REQUIRED TO BE VERTICAL UNDER FULL DEAD LOAD.

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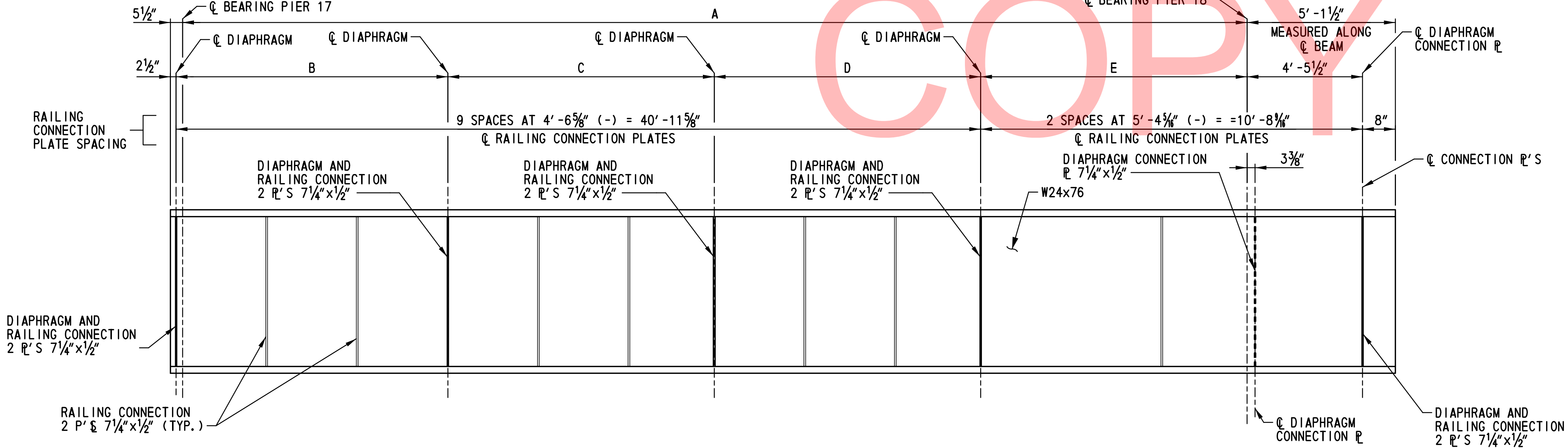
| BEAM ELEVATION SCHEDULE - SPAN 17 | | | | | |
|-----------------------------------|--|-------------------------------------|-------------------------------------|-------------------------------------|---|
| BEAM | A | B | C | D | E |
| ① | 54'-1" | 13'-7 ⁷ / ₈ " | 13'-7 ⁷ / ₈ " | 13'-7 ⁷ / ₈ " | 13'-4 ³ / ₈ " |
| ② | 52'-8 ⁷ / ₈ " (+) | 13'-7 ⁷ / ₈ " | 13'-7 ⁷ / ₈ " | 13'-7 ⁷ / ₈ " | 12'-0 ¹ / ₄ " (+) |
| ③ | 51'-3 ³ / ₈ " (+) | 13'-7 ⁷ / ₈ " | 13'-7 ⁷ / ₈ " | 13'-7 ⁷ / ₈ " | 10'-6 ³ / ₈ " (+) |
| ④ | 49'-9 ¹ / ₂ " (+) | 13'-7 ⁷ / ₈ " | 13'-7 ⁷ / ₈ " | 13'-7 ⁷ / ₈ " | 9'-0 ⁷ / ₈ " (+) |
| ⑤ | 48'-3 ³ / ₈ " (+) | 13'-7 ⁷ / ₈ " | 13'-7 ⁷ / ₈ " | 13'-7 ⁷ / ₈ " | 7'-7 ³ / ₈ " (+) |
| ⑥ | 46'-11 ¹ / ₈ " (+) | 13'-7 ⁷ / ₈ " | 13'-7 ⁷ / ₈ " | 13'-7 ⁷ / ₈ " | 6'-3 ¹ / ₈ " (+) |



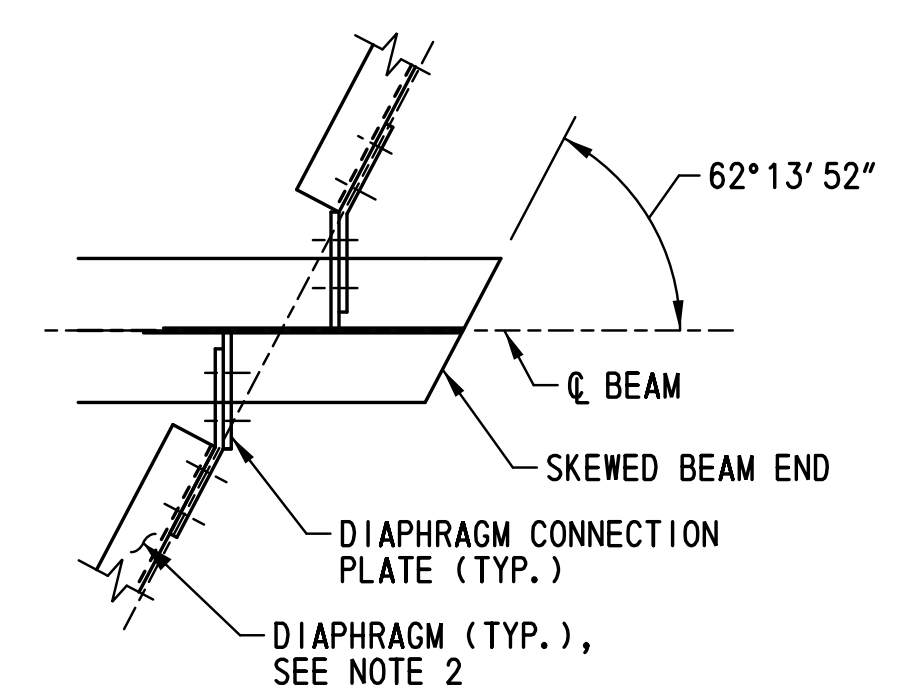
BEAM 1 ELEVATION - SPAN 17
SCALE: NOT TO SCALE



BEAMS 2-5 ELEVATION - SPAN 17
SCALE: NOT TO SCALE



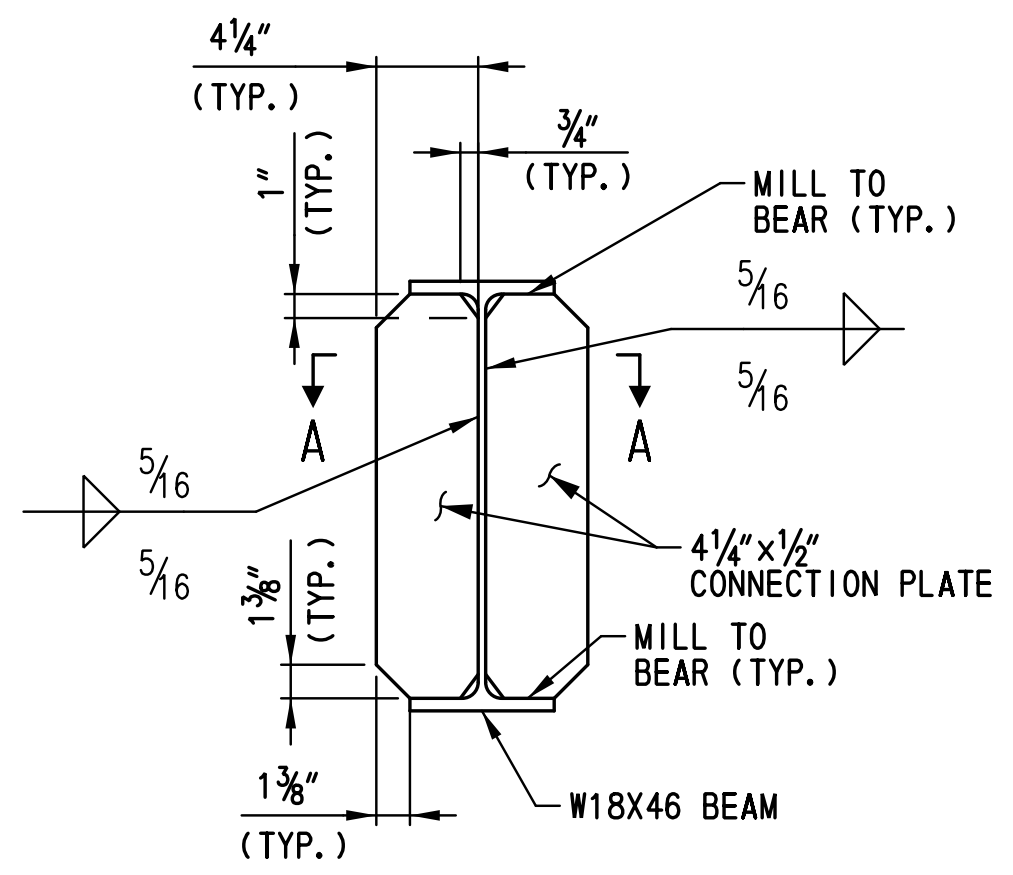
BEAM 6 ELEVATION - SPAN 17
SCALE: NOT TO SCALE



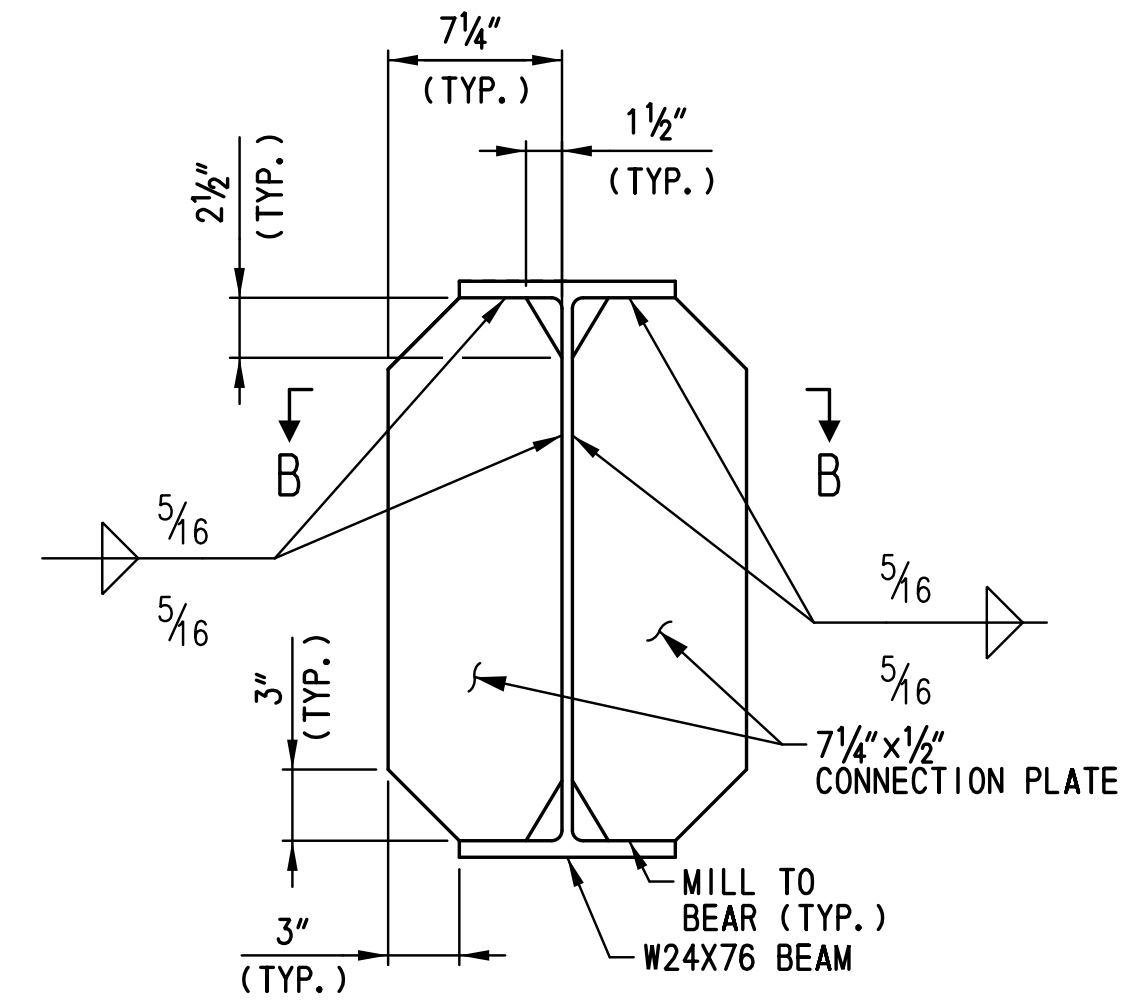
SECTION A-A
SCALE: NOT TO SCALE

- NOTES:
- STRUCTURAL STEEL SHALL BE AASHTO M270 (ASTM A 709) GRADE 50W.
 - FOR INTERMEDIATE AND END DIAPHRAGM CONNECTION PLATE DETAILS, SEE DWG. BM-304.
 - FOR RAILING CONNECTION PLATE DETAILS, SEE DWG. NO. RL-301.
 - FOR BEAM NUMBERING AND SPAN NUMBERING, SEE DWG. NO. FR-304.
 - BEAM ENDS, BEARING STIFFENERS, AND CONNECTION PLATES ARE REQUIRED TO BE VERTICAL UNDER FULL DEAD LOAD.

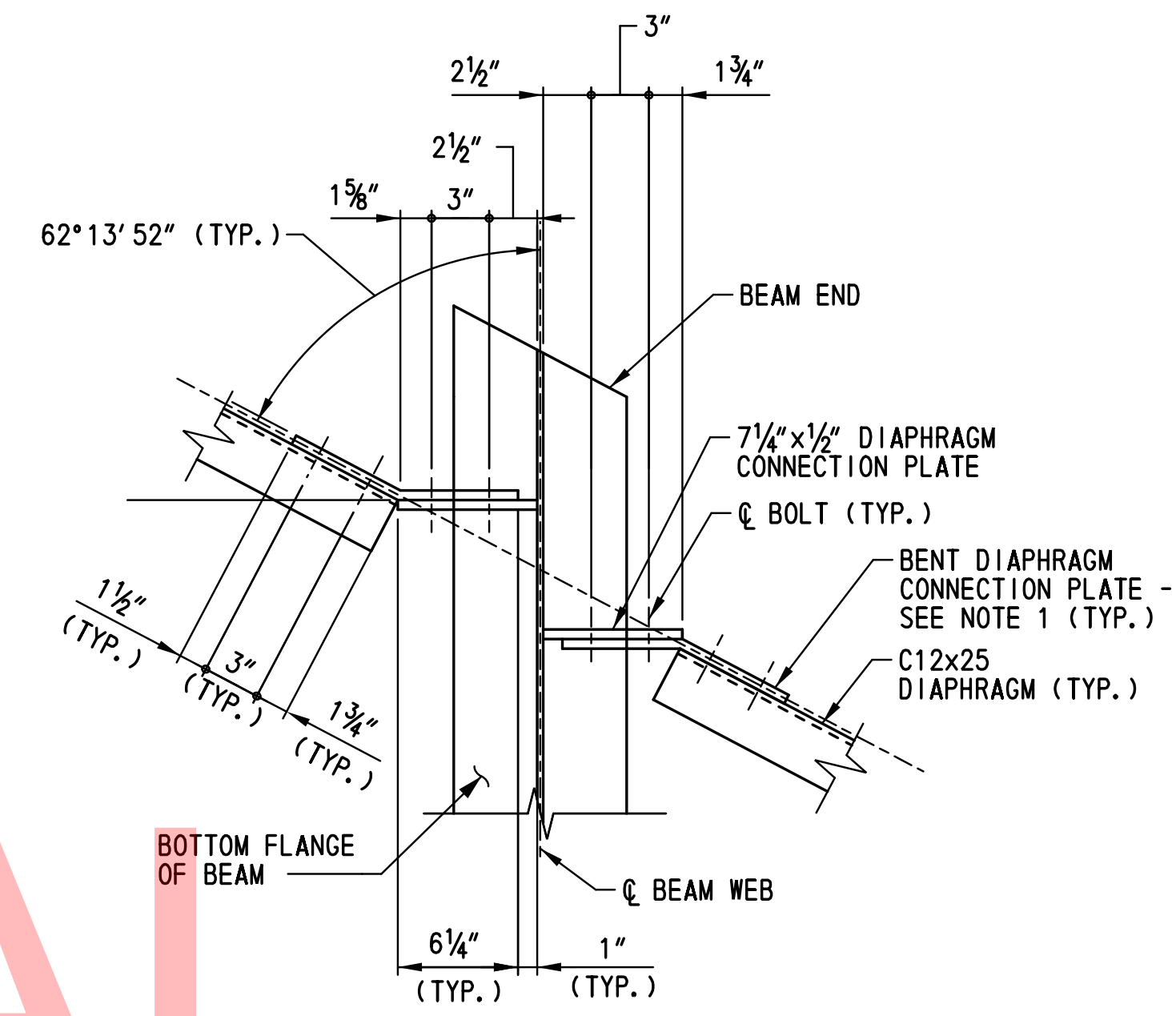
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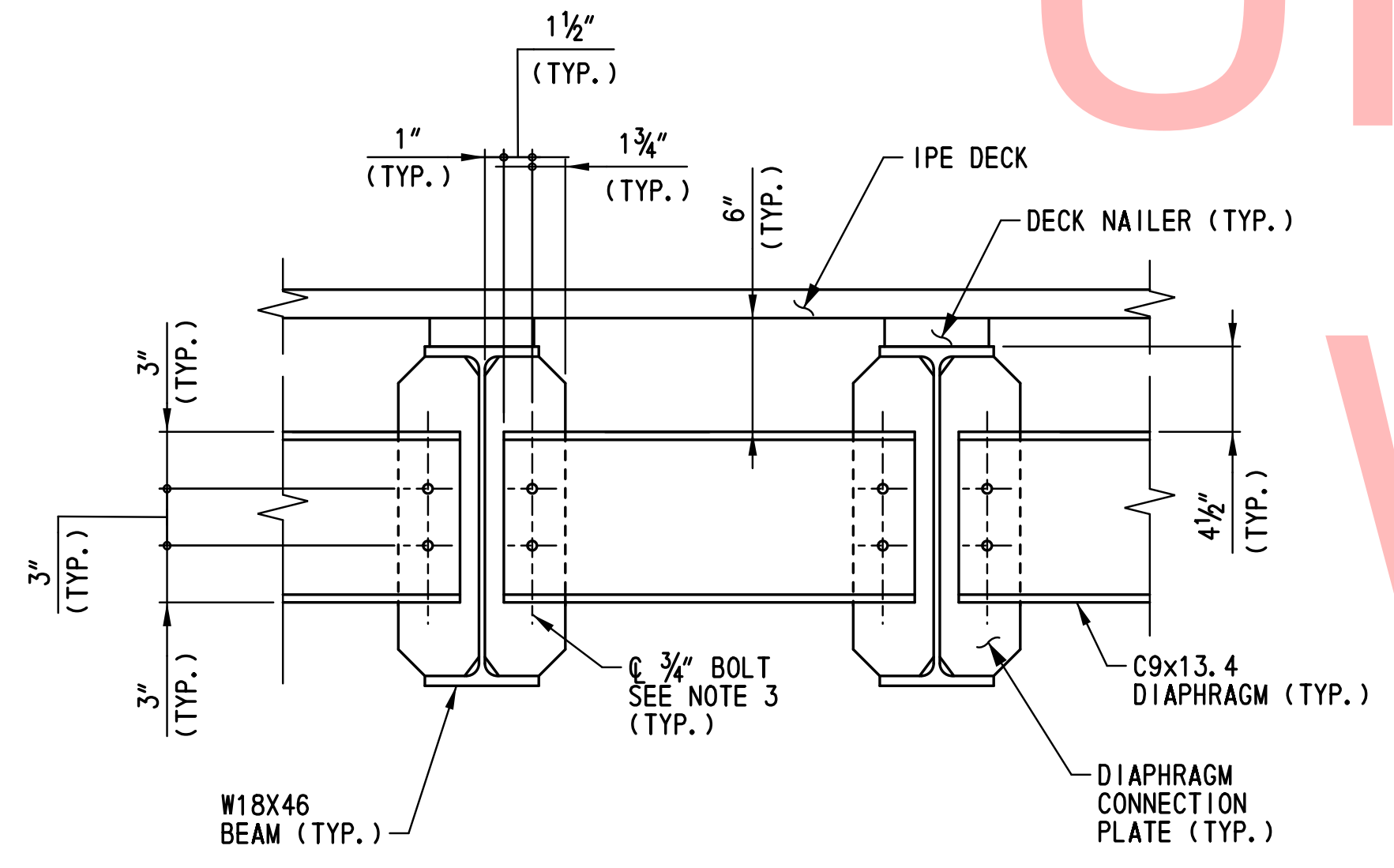
RAILING, INTERMEDIATE AND END
DIAPHRAGM CONNECTION PLATES - SPANS 1-14
SCALE: 1 1/2"=1'-0"



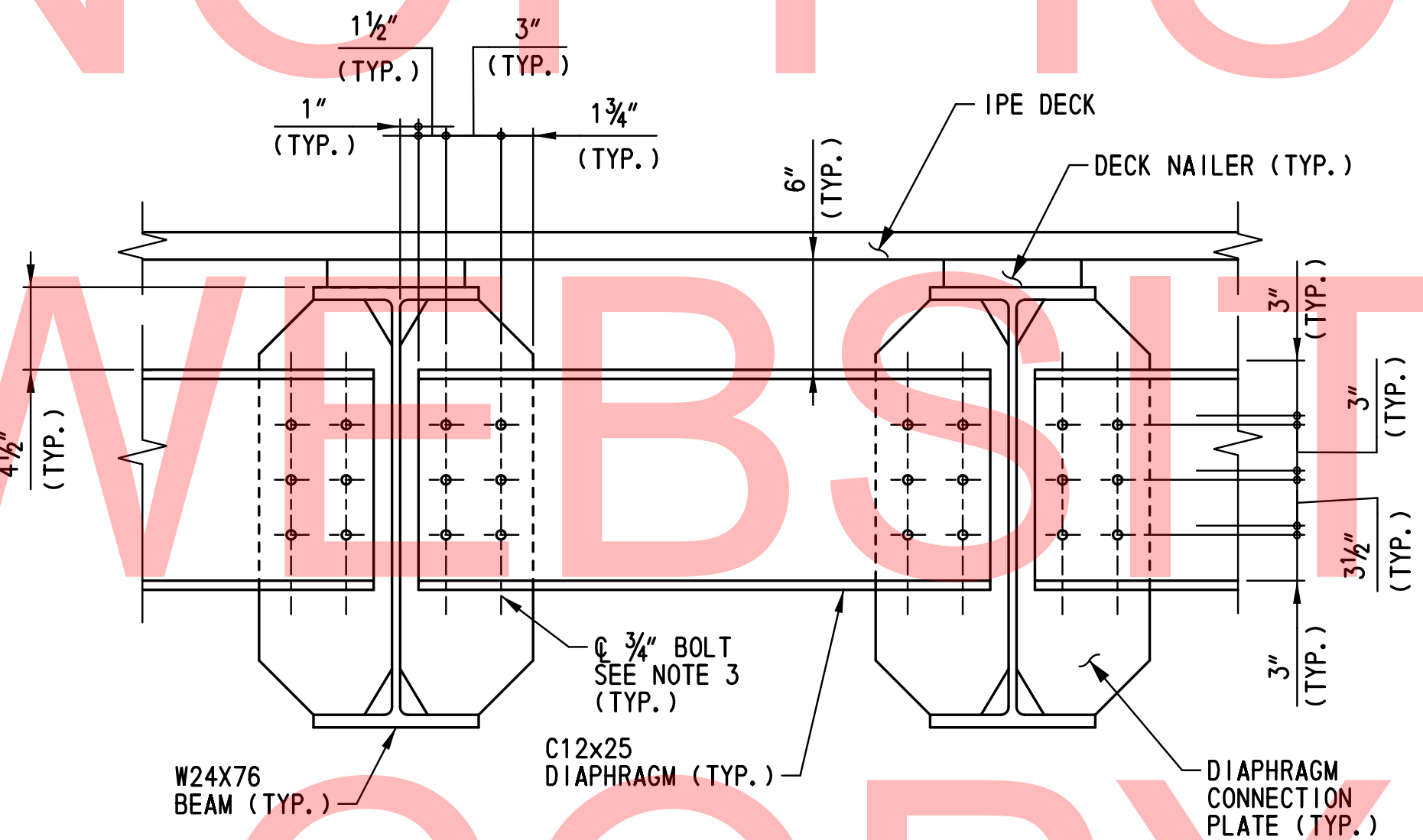
RAILING, INTERMEDIATE AND END
DIAPHRAGM CONNECTION PLATES - SPANS 15 AND 17
SCALE: 1 1/2"=1'-0"



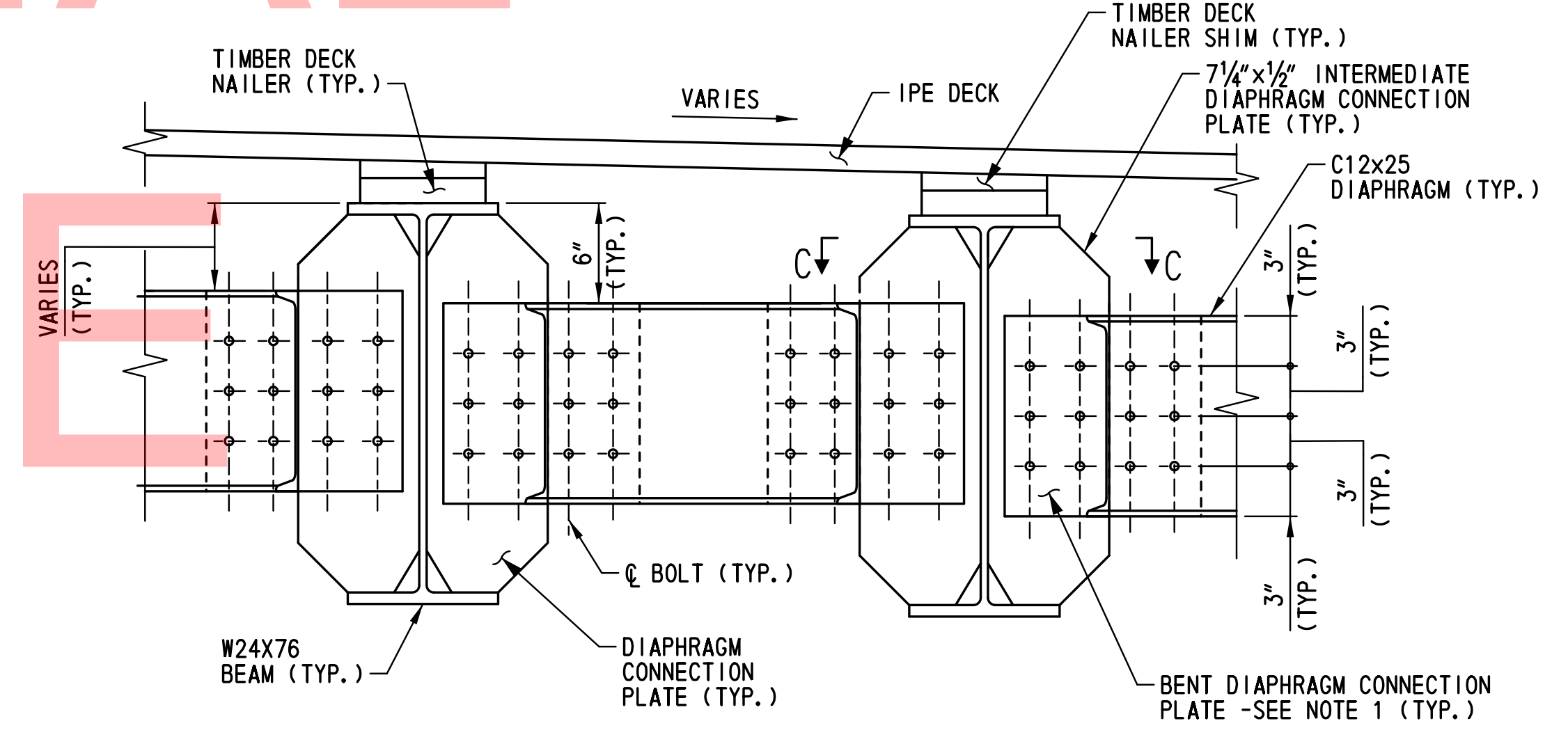
SECTION C-C
SCALE: 1 1/2"=1'-0"



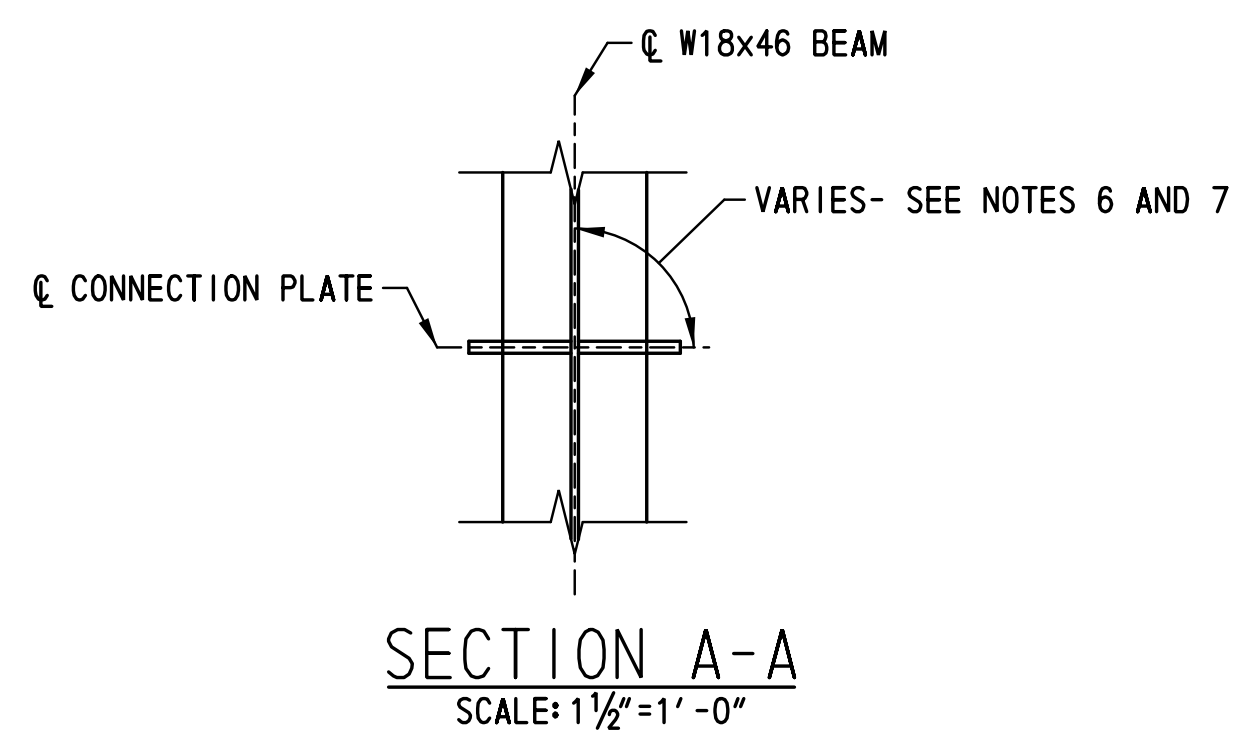
INTERMEDIATE AND END
DIAPHRAGM DETAIL - SPANS 1-14
SCALE: 1 1/2"=1'-0"



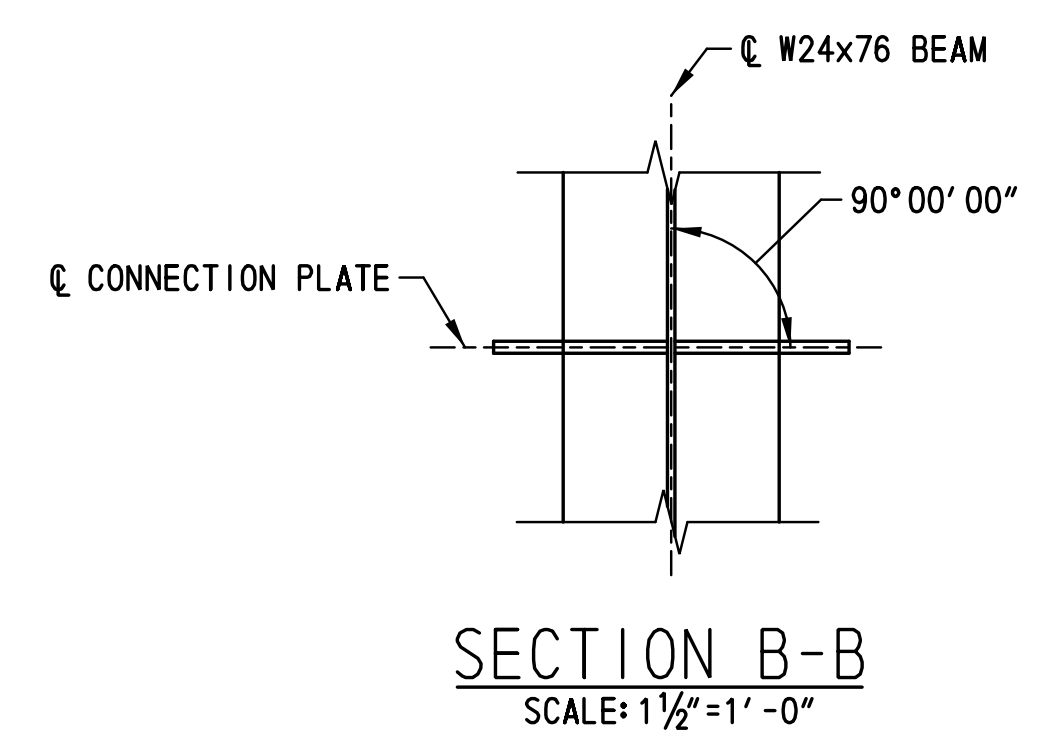
INTERMEDIATE AND END
DIAPHRAGM DETAIL - SPAN 15
SCALE: 1 1/2"=1'-0"



INTERMEDIATE AND END
DIAPHRAGM DETAIL - SPAN 17
SCALE: 1 1/2"=1'-0"



SECTION A-A
SCALE: 1 1/2"=1'-0"



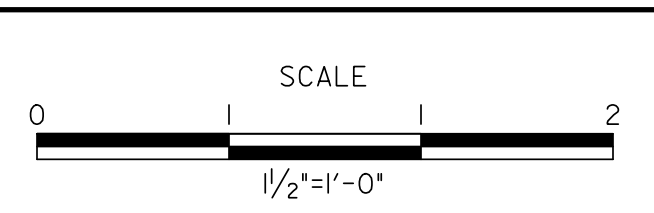
SECTION B-B
SCALE: 1 1/2"=1'-0"

NOTES:

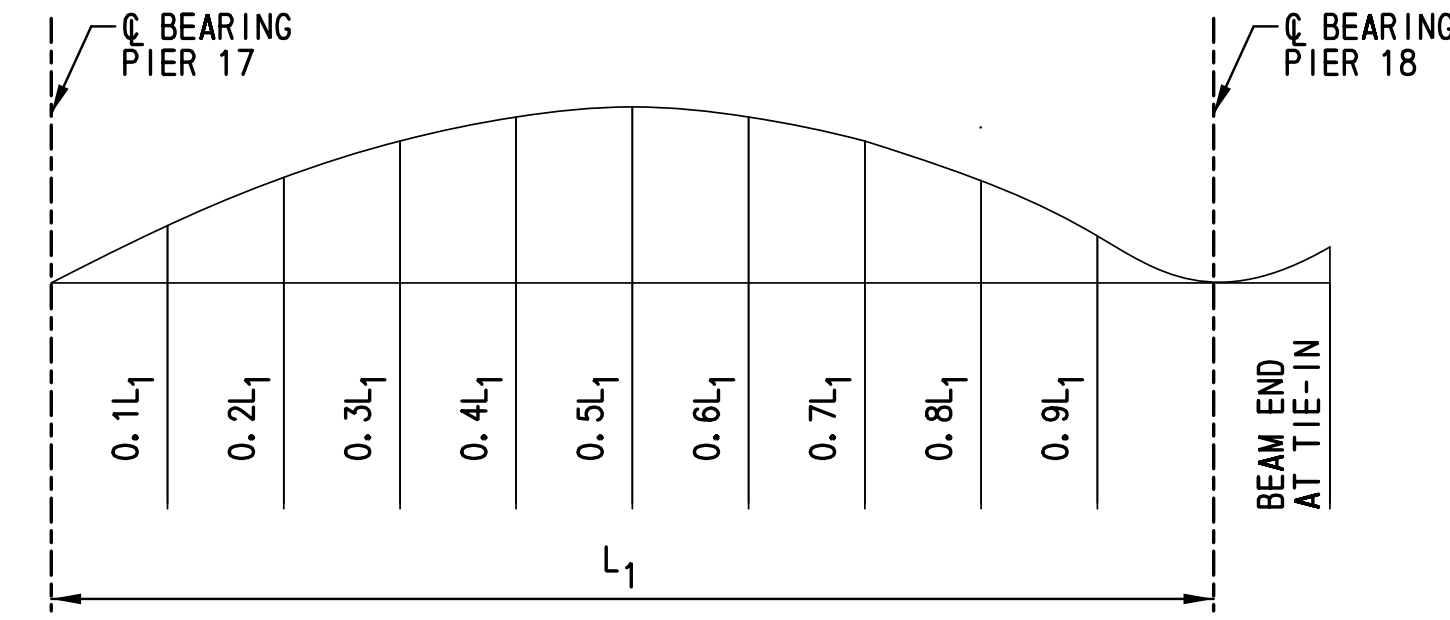
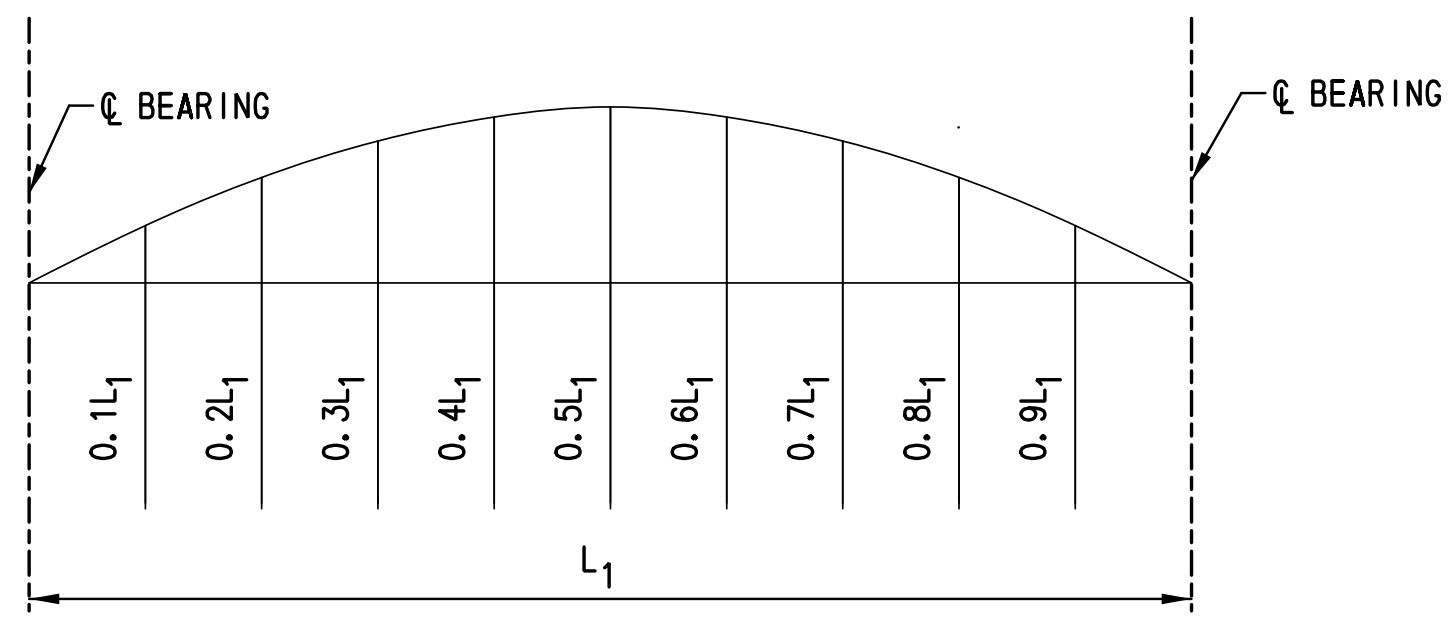
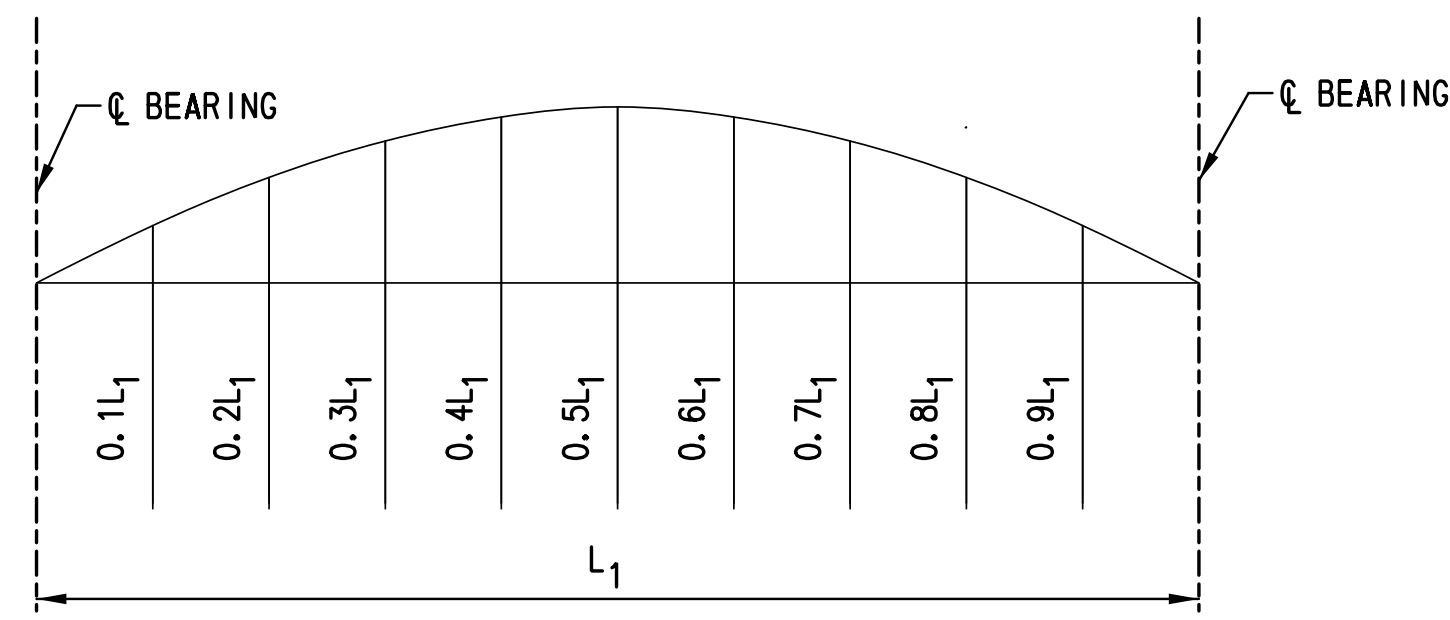
1. BENT CONNECTION PLATES ARE ONLY REQUIRED AT PIER 18 AND LAST DIAPHRAGM AT TIE-IN TO EXISTING BRIDGE. ALL OTHER CONNECTIONS IN SPAN 17 WILL BE AS SHOWN FOR THE DIAPHRAGM DETAIL - SPAN 15, EXCEPT THAT DIAPHRAGMS ARE STEPPED TO ACCOMMODATE DECK SLOPE AS SHOWN IN DIAPHRAGM DETAIL - SPAN 17. OMIT BENT CONNECTION PLATE AT EXTERIOR FACE OF EXTERIOR BEAMS.
2. FOR DIAPHRAGM LOCATIONS, SEE DWG. NOS. FR-301 THRU FR-304.
3. ALL BOLTS TO BE 3/4" DIA. HIGH STRENGTH BOLTS CONFORMING TO A325, HOT-DIPPED GALVANIZED. ALL BOLT HOLES SHALL BE 1/4" DIA.
4. THE MINIMUM ACCEPTABLE EDGE DISTANCE FOR ANY HOLE SHALL BE 1 1/2".
5. BOLTS NOT SHOWN IN DIAPHRAGMS AND CONNECTION PLATES.
6. CONNECTION PLATES FOR END DIAPHRAGMS SHALL MATCH ANGLE BETWEEN C BEARING AND C BEAM AS SHOWN IN DWG. NOS. FR-301 THROUGH FR-304. CONNECTION PLATES FOR ALL INTERMEDIATE DIAPHRAGMS SHALL BE PLACED AT 90°00'00" TO C BEAM.
7. FOR RAILING DETAILS, SEE RL-301. ALL RAILING CONNECTION PLATES SHALL BE PLACED PERPENDICULAR TO BEAM WEB.

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| ADDENDUMS / REVISIONS | |
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|------------------------|-------------------------------------|
| CONTRACT T201330009 | BRIDGE NO. X |
| COUNTY NEW CASTLE | DESIGNED BY: NAH CHECKED BY: WAG |



| SPANS 1-4 | | | | | | | | | | | | |
|------------------------------------|------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|
| DEFLECTION AND TOTAL CAMBERS (IN.) | | | | | | | | | | | | |
| LOCATION | | C BRG. | 0.1L1 | 0.2L1 | 0.3L1 | 0.4L1 | 0.5L1 | 0.6L1 | 0.7L1 | 0.8L1 | 0.9L1 | C BRG. |
| BEAMS 1, 2, 4, 5, 7, 8 | DLS | 0 | | | | | 3/8 | | | | | 0 |
| | SDL | 0 | | | | | 3/8 | | | | | 0 |
| | TD&C | 0 | | | | | 3/8 | | | | | 0 |
| LOCATION | | C BRG. | 0.1L1 | 0.2L1 | 0.3L1 | 0.4L1 | 0.5L1 | 0.6L1 | 0.7L1 | 0.8L1 | 0.9L1 | C BRG. |
| BEAMS 3 & 6 | DLS | 0 | | | | | 3/8 | | | | | 0 |
| | SDL | 0 | | | | | 1/4 | | | | | 0 |
| | TD&C | 0 | | | | | 1/2 | | | | | 0 |

| SPANS 9-14 | | | | | | | | | | | | |
|------------------------------------|------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|
| DEFLECTION AND TOTAL CAMBERS (IN.) | | | | | | | | | | | | |
| LOCATION | | C BRG. | 0.1L1 | 0.2L1 | 0.3L1 | 0.4L1 | 0.5L1 | 0.6L1 | 0.7L1 | 0.8L1 | 0.9L1 | C BRG. |
| BEAMS 1, 2, 4, 5, 7, 8 | DLS | 0 | | | | | 1/8 | | | | | 0 |
| | SDL | 0 | | | | | 1/8 | | | | | 0 |
| | TD&C | 0 | | | | | 1/8 | | | | | 0 |
| LOCATION | | C BRG. | 0.1L1 | 0.2L1 | 0.3L1 | 0.4L1 | 0.5L1 | 0.6L1 | 0.7L1 | 0.8L1 | 0.9L1 | C BRG. |
| BEAMS 3 & 6 | DLS | 0 | | | | | 1/8 | | | | | 0 |
| | SDL | 0 | | | | | 1/8 | | | | | 0 |
| | TD&C | 0 | | | | | 1/8 | | | | | 0 |

| SPAN 17 | | | | | | | | | | | | | |
|------------------------------------|------|----------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|----------------|--------------------|
| DEFLECTION AND TOTAL CAMBERS (IN.) | | | | | | | | | | | | | |
| LOCATION | | C BRG. PIER 17 | 0.1L1 | 0.2L1 | 0.3L1 | 0.4L1 | 0.5L1 | 0.6L1 | 0.7L1 | 0.8L1 | 0.9L1 | C BRG. PIER 18 | BEAM END AT TIE-IN |
| BEAM 1 | DLS | 0 | | | | | 1/4 | | | | | 0 | 0 |
| | SDL | 0 | | | | | 3/8 | | | | | 0 | 0 |
| | TD&C | 0 | | | | | 7/8 | | | | | 0 | 0 |
| LOCATION | | C BRG. PIER 17 | 0.1L1 | 0.2L1 | 0.3L1 | 0.4L1 | 0.5L1 | 0.6L1 | 0.7L1 | 0.8L1 | 0.9L1 | C BRG. PIER 18 | BEAM END AT TIE-IN |
| BEAM 2 | DLS | 0 | | | | | 3/8 | | | | | 0 | 0 |
| | SDL | 0 | | | | | 3/8 | | | | | 0 | 0 |
| | TD&C | 0 | | | | | 7/8 | | | | | 0 | 0 |
| LOCATION | | C BRG. PIER 17 | 0.1L1 | 0.2L1 | 0.3L1 | 0.4L1 | 0.5L1 | 0.6L1 | 0.7L1 | 0.8L1 | 0.9L1 | C BRG. PIER 18 | BEAM END AT TIE-IN |
| BEAMS 3-4 | DLS | 0 | | | | | 3/8 | | | | | 0 | 0 |
| | SDL | 0 | | | | | 1/8 | | | | | 0 | 0 |
| | TD&C | 0 | | | | | 3/8 | | | | | 0 | 0 |
| LOCATION | | C BRG. PIER 17 | 0.1L1 | 0.2L1 | 0.3L1 | 0.4L1 | 0.5L1 | 0.6L1 | 0.7L1 | 0.8L1 | 0.9L1 | C BRG. PIER 18 | BEAM END AT TIE-IN |
| BEAM 5 | DLS | 0 | | | | | 1/8 | | | | | 0 | 0 |
| | SDL | 0 | | | | | 1/8 | | | | | 0 | 0 |
| | TD&C | 0 | | | | | 3/8 | | | | | 0 | 0 |
| LOCATION | | C BRG. PIER 17 | 0.1L1 | 0.2L1 | 0.3L1 | 0.4L1 | 0.5L1 | 0.6L1 | 0.7L1 | 0.8L1 | 0.9L1 | C BRG. PIER 18 | BEAM END AT TIE-IN |
| BEAM 6 | DLS | 0 | | | | | 1/8 | | | | | 0 | 0 |
| | SDL | 0 | | | | | 1/8 | | | | | 0 | 0 |
| | TD&C | 0 | | | | | 1/4 | | | | | 0 | 0 |

| SPANS 5-8 | | | | | | | | | | | | |
|------------------------------------|------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|
| DEFLECTION AND TOTAL CAMBERS (IN.) | | | | | | | | | | | | |
| LOCATION | | C BRG. | 0.1L1 | 0.2L1 | 0.3L1 | 0.4L1 | 0.5L1 | 0.6L1 | 0.7L1 | 0.8L1 | 0.9L1 | C BRG. |
| BEAMS 1, 6-8 | DLS | 0 | | | | | 1/8 | | | | | 0 |
| | SDL | 0 | | | | | 0 | | | | | 0 |
| | TD&C | 0 | | | | | 1/8 | | | | | 0 |
| LOCATION | | C BRG. | 0.1L1 | 0.2L1 | 0.3L1 | 0.4L1 | 0.5L1 | 0.6L1 | 0.7L1 | 0.8L1 | 0.9L1 | C BRG. |
| BEAMS 3-5 | DLS | 0 | | | | | 1/8 | | | | | 0 |
| | SDL | 0 | | | | | 1/8 | | | | | 0 |
| | TD&C | 0 | | | | | 1/8 | | | | | 0 |

| SPAN 15 | | | | | | | | | | | | |
|------------------------------------|------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|
| DEFLECTION AND TOTAL CAMBERS (IN.) | | | | | | | | | | | | |
| LOCATION | | C BRG. | 0.1L1 | 0.2L1 | 0.3L1 | 0.4L1 | 0.5L1 | 0.6L1 | 0.7L1 | 0.8L1 | 0.9L1 | C BRG. |
| BEAMS 1-6 | DLS | 0 | | | | | 1/8 | | | | | 0 |
| | SDL | 0 | | | | | 1/8 | | | | | 0 |
| | TD&C | 0 | | | | | 1/8 | | | | | 0 |

NOTES:

1. BEAM DEAD LOAD DEFLECTIONS AND CAMBERS ARE SHOWN FOR INFORMATION ONLY. THE CONTRACTOR SHALL INSTALL BEAMS CAMBER UP AND INSTALL SHIMS BETWEEN THE DECK BOARDS AND BEAM NAILER AS NECESSARY TO MATCH PROPOSED GRADE. FOR DECK DETAILS, REFER TO DWG. NOS. DK-301 AND DK-302.
2. CAMBERS ARE SHOWN IN INCHES.
3. POSITIVE DEFLECTIONS ARE MEASURED IN THE DOWNWARD DIRECTION.

LEGEND:

- DLS - DENOTES DEFLECTION DUE TO STRUCTURAL STEEL
- SDL - DENOTES DEFLECTION DUE TO DECK, RAILING, STRINGERS
- TD&C - DENOTES TOTAL DEAD LOAD DEFLECTION AND CAMBER

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ADDENDUMS / REVISIONS

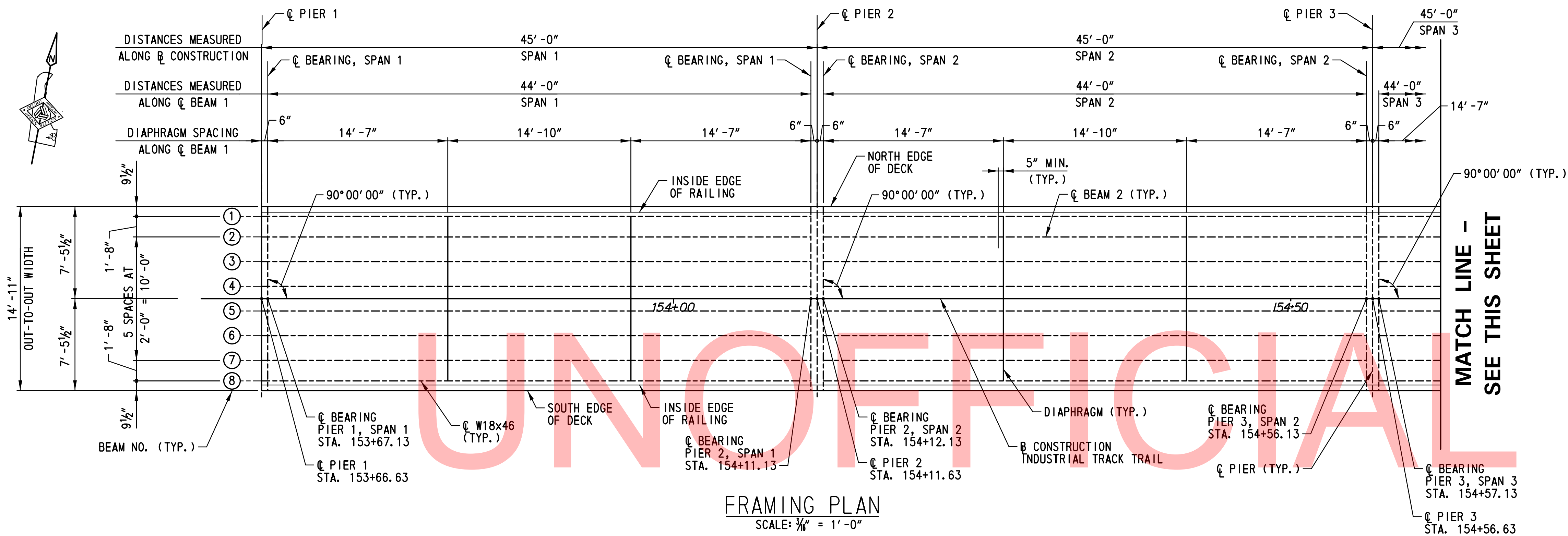
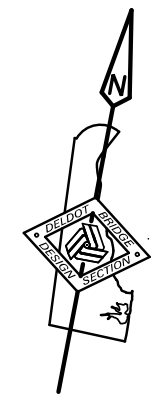
SCALE: NONE

NEW CASTLE INDUSTRIAL TRACK TRAIL, PHASE 3

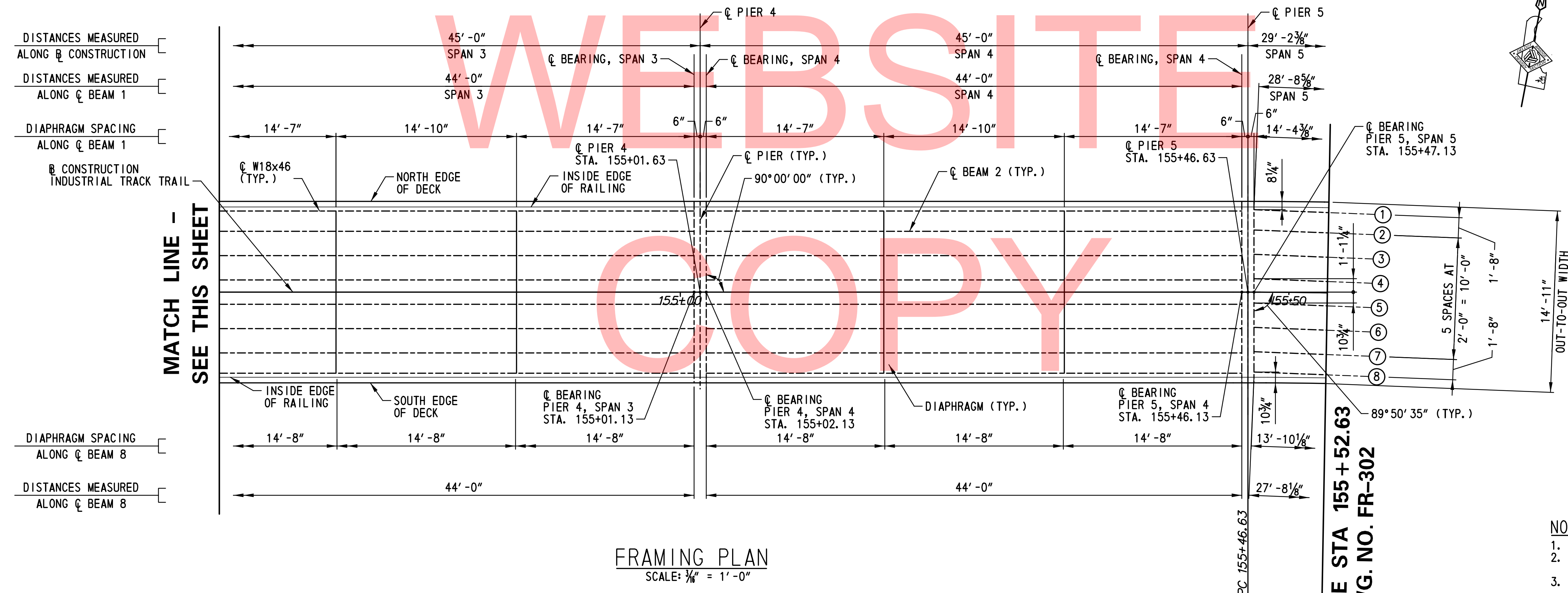
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| CONTRACT | BRIDGE NO. | X |
| T201330009 | DESIGNED BY: NAH | |
| COUNTY | CHECKED BY: WAG | |
| NEW CASTLE | | |

CAMBER DIAGRAMS

| |
|-------------|
| CT-301 |
| SHEET NO. |
| 148 |
| TOTAL SHTS. |
| 205 |



MATCH LINE -
SEE THIS SHEET



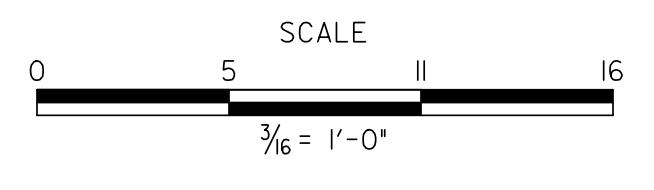
MATCH LINE -
SEE THIS SHEET

MATCH LINE STA 155+52.63
SEE DWG. NO. FR-302

- NOTES:**
1. DIAPHRAGMS ARE PERPENDICULAR TO BEAMS.
 2. RAILING POST AND CONNECTION PLATES ARE NOT SHOWN. FOR RAILING DETAILS, SEE DWG. NO. RL-301.
 3. FOR CONNECTION PLATE AND DIAPHRAGM DETAILS, SEE DWG. NO. BM-304.
 4. FOR BEAM ELEVATIONS, SEE DWG. NO. BM-301.

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| ADDENDUMS / REVISIONS |
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| CONTRACT T201330009 | BRIDGE NO. X |
| COUNTY NEW CASTLE | DESIGNED BY: NAH CHECKED BY: WAG |

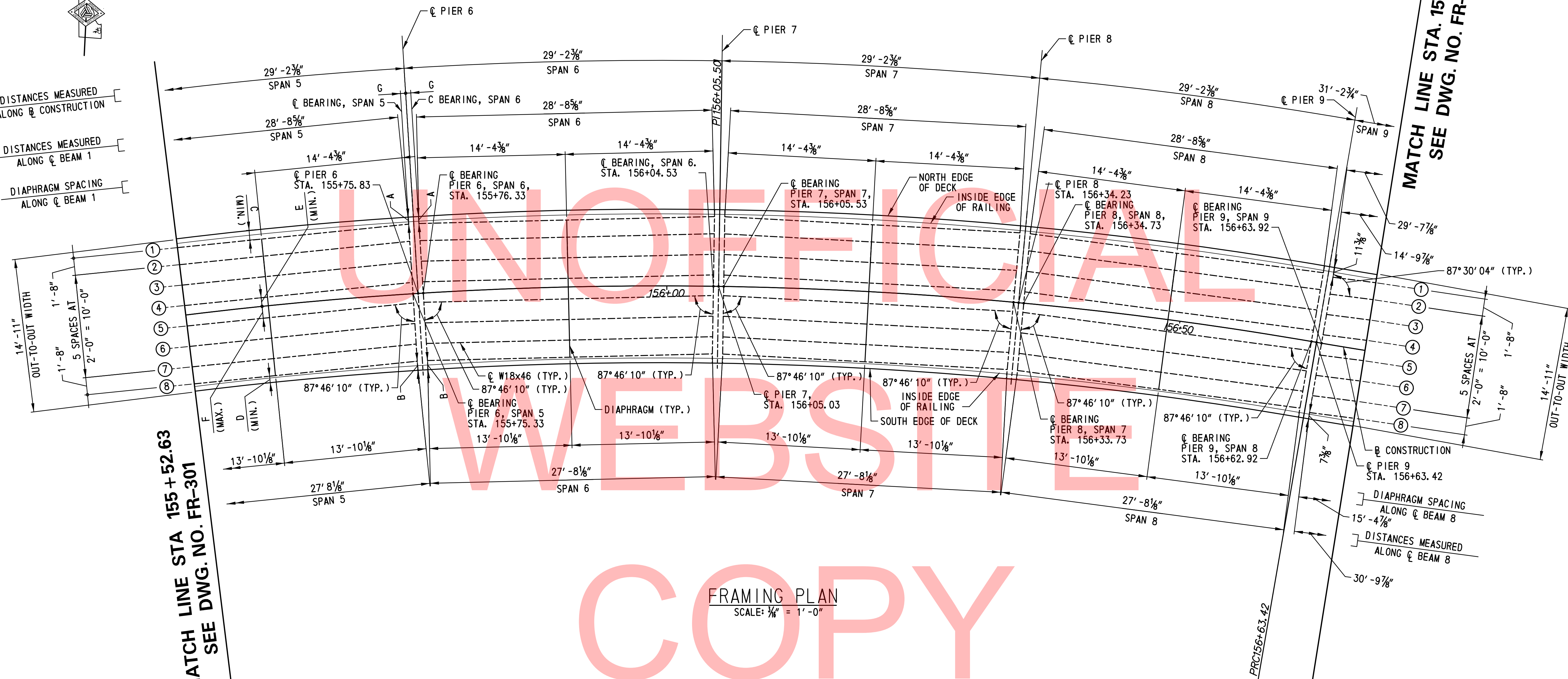
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|--------------------|
| FR-301 |
| SHEET NO. 149 |
| TOTAL SHTS. 205 |



DISTANCES MEASURED
ALONG ϕ CONSTRUCTION

DISTANCES MEASURED
ALONG ϕ BEAM 1

DIAPHRAGM SPACING
ALONG ϕ BEAM 1



MATCH LINE STA 155 + 52.63
SEE DWG. NO. FR-301

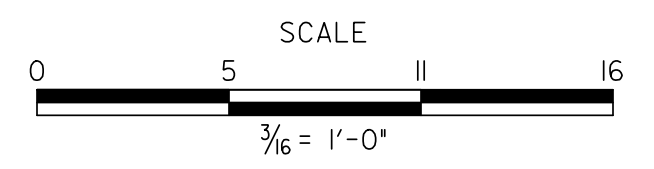
MATCH LINE STA. 156 + 68.49
SEE DWG. NO. FR-303

| DIMENSION REFERENCE TABLE - SEE NOTE 5 | |
|---|--------------------------|
| DIMENSION | DIMENSION |
| A | 0' - 8 $\frac{1}{4}$ '' |
| B | 0' - 10 $\frac{5}{8}$ '' |
| C | 0' - 11 $\frac{3}{8}$ '' |
| D | 0' - 7 $\frac{9}{8}$ '' |
| E | 0' - 10 $\frac{1}{8}$ '' |
| F | 1' - 1 $\frac{7}{8}$ '' |
| G | 0' - 6'' |

- NOTES:
- DIAPHRAGMS ARE PERPENDICULAR TO BEAMS.
 - RAILING POST AND CONNECTION PLATES ARE NOT SHOWN. FOR RAILING DETAILS, SEE DWG. NO. RL-301.
 - FOR CONNECTION PLATE AND DIAPHRAGM DETAILS, SEE DWG. NO. BM-304.
 - FOR BEAM ELEVATIONS, SEE DWG. NO. BM-301.
 - THE TABULATED DIMENSIONS ARE TYPICAL FOR SPANS 5 THROUGH 8.

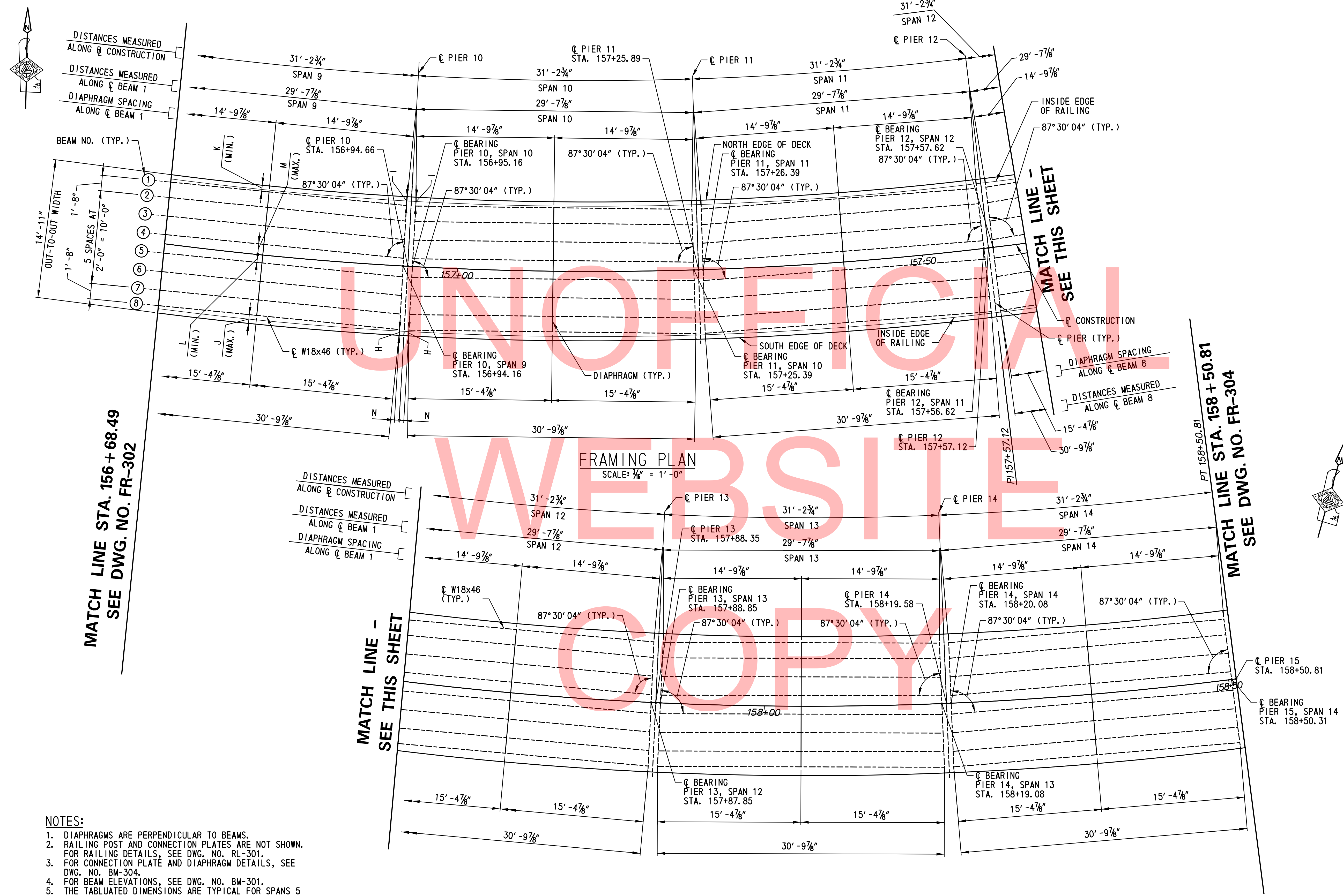
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| ADDENDUMS / REVISIONS |
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| CONTRACT T201330009 | BRIDGE NO. X |
| COUNTY NEW CASTLE | DESIGNED BY: NAH CHECKED BY: WAG |

| DIMENSION REFERENCE TABLE - SEE NOTE 5 | |
|--|---------------------------------------|
| DIMENSION | DIMENSION |
| H | 0' - 7 ³ / ₈ " |
| I | 0' - 11 ³ / ₈ " |
| J | 0' - 11 ³ / ₈ " |
| K | 0' - 7 ⁵ / ₈ " |
| L | 0' - 10 ¹ / ₈ " |
| M | 1' - 1 ⁷ / ₈ " |
| N | 0' - 6" |



MATCH LINE STA. 156 + 68.49
SEE DWG. NO. FR-302

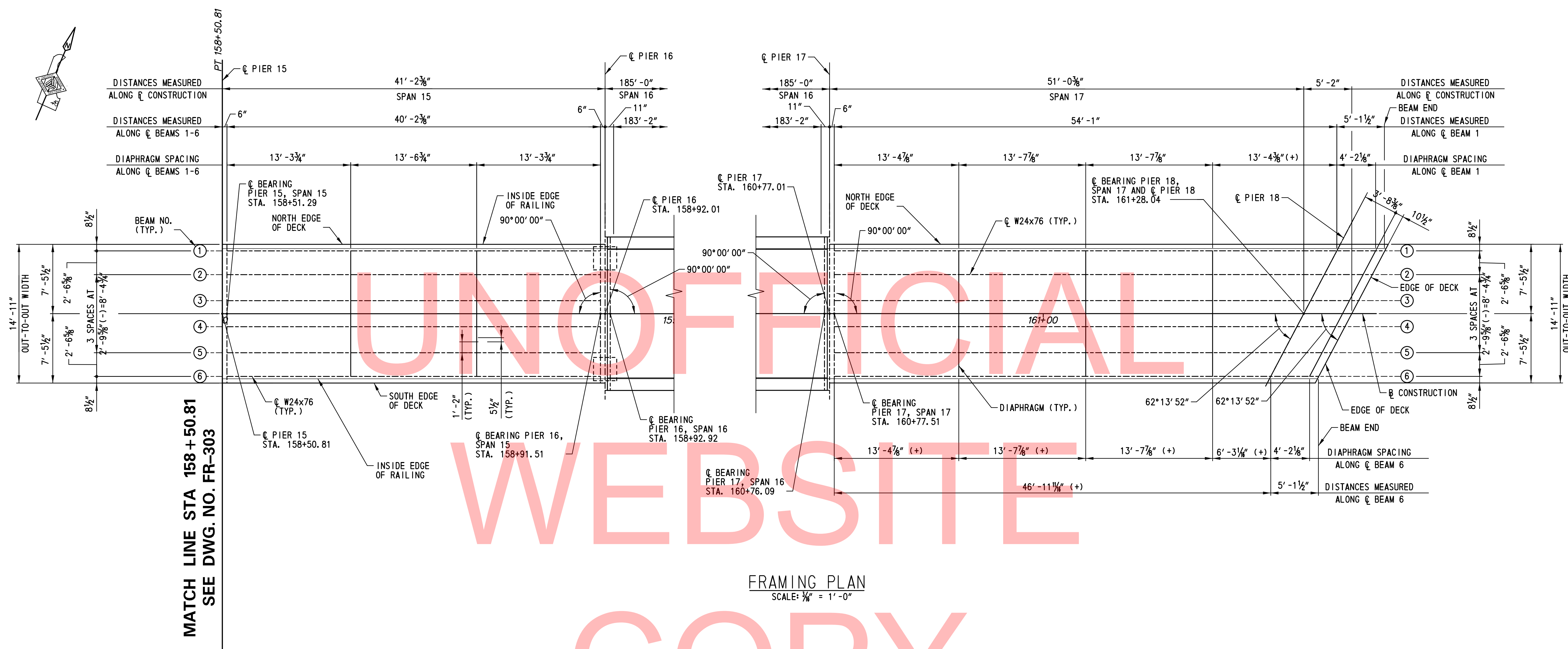
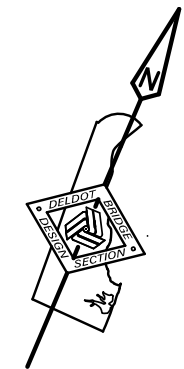
MATCH LINE -
SEE THIS SHEET

MATCH LINE -
SEE THIS SHEET

MATCH LINE STA. 158 + 50.81
SEE DWG. NO. FR-304

- NOTES:**
1. DIAPHRAGMS ARE PERPENDICULAR TO BEAMS.
 2. RAILING POST AND CONNECTION PLATES ARE NOT SHOWN. FOR RAILING DETAILS, SEE DWG. NO. RL-301.
 3. FOR CONNECTION PLATE AND DIAPHRAGM DETAILS, SEE DWG. NO. BM-304.
 4. FOR BEAM ELEVATIONS, SEE DWG. NO. BM-301.
 5. THE TABULATED DIMENSIONS ARE TYPICAL FOR SPANS 5 THROUGH 8.

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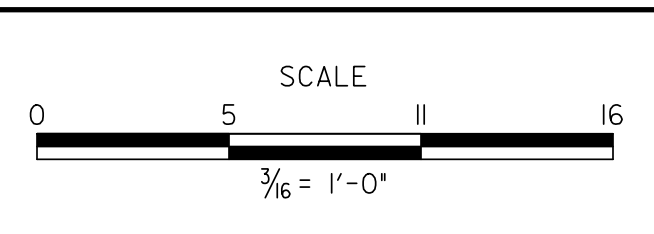
MATCH LINE STA 158 + 50.81
SEE DWG. NO. FR-303

FRAMING PLAN
SCALE: 3/16" = 1'-0"

- NOTES:**
1. DIAPHRAGMS ARE PERPENDICULAR TO BEAMS EXCEPT AS NOTED.
 2. RAILING POST AND CONNECTION PLATES ARE NOT SHOWN. FOR RAILING DETAILS, SEE DWG. NO. RL-301.
 3. FOR CONNECTION PLATE AND DIAPHRAGM DETAILS, SEE DWG. NO. BM-304.
 4. FOR BEAM ELEVATIONS, SEE DWG. NOS. BM-302 AND BM-303.

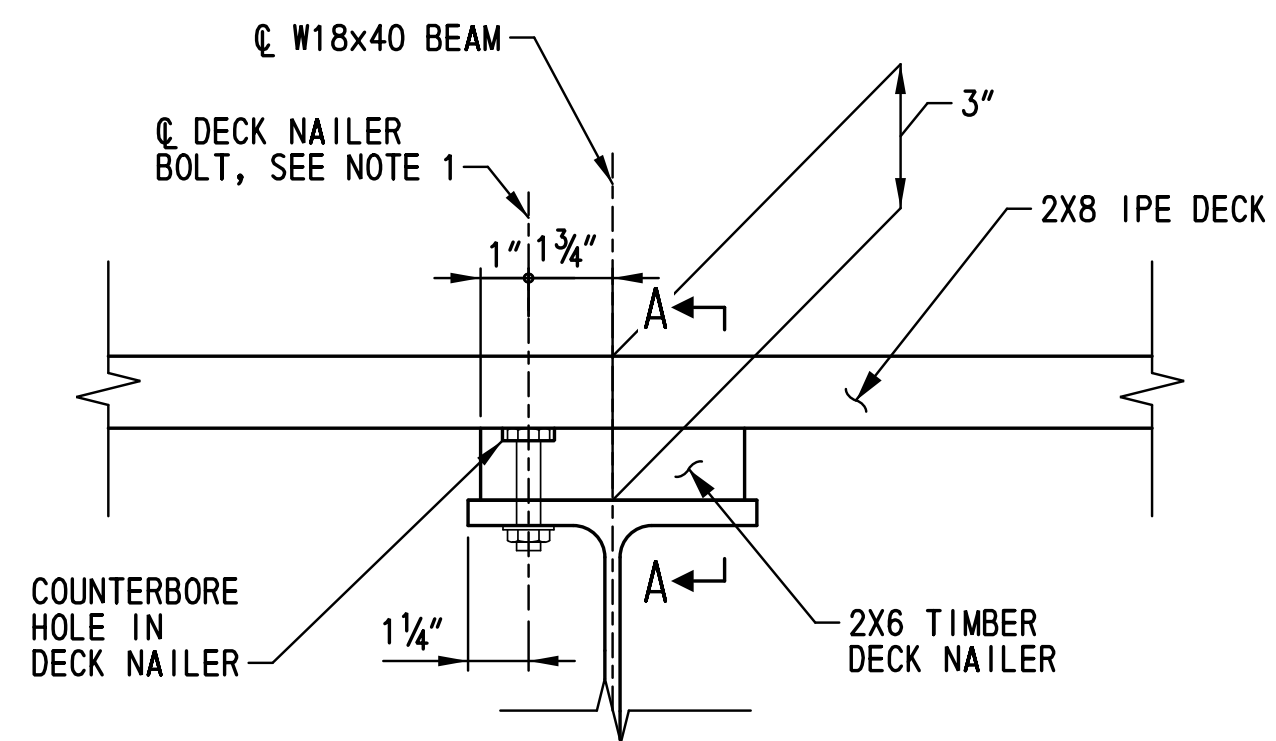
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| ADDENDUMS / REVISIONS |
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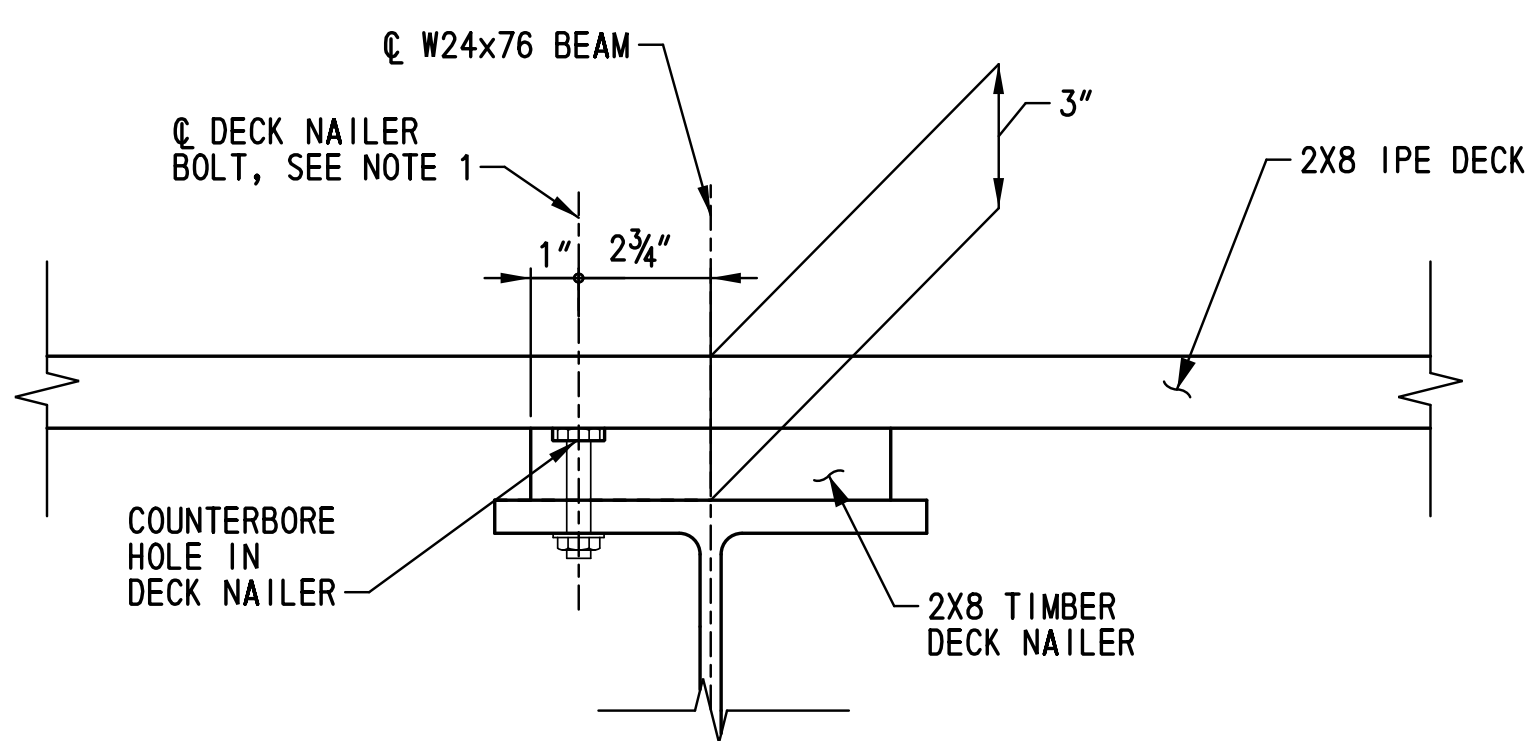


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|------------------------|-------------------------------------|
| CONTRACT T201330009 | BRIDGE NO. X |
| COUNTY NEW CASTLE | DESIGNED BY: NAH CHECKED BY: WAG |

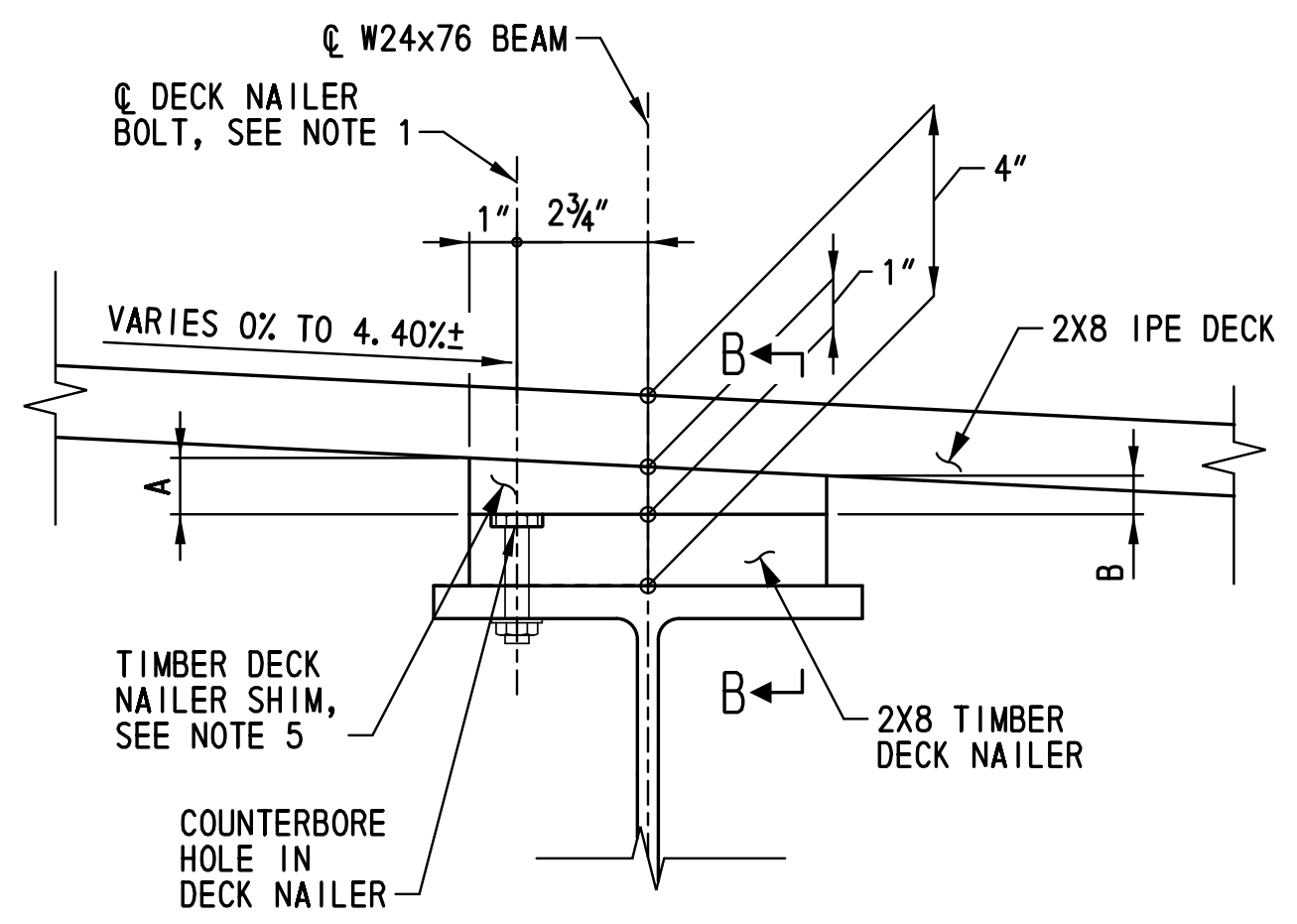
| |
|--------------------|
| FR-304 |
| SHEET NO. 152 |
| TOTAL SHTS. 205 |



DECK TO BEAM CONNECTION
DETAIL SPANS 1-14
SCALE: 3"=1'-0"

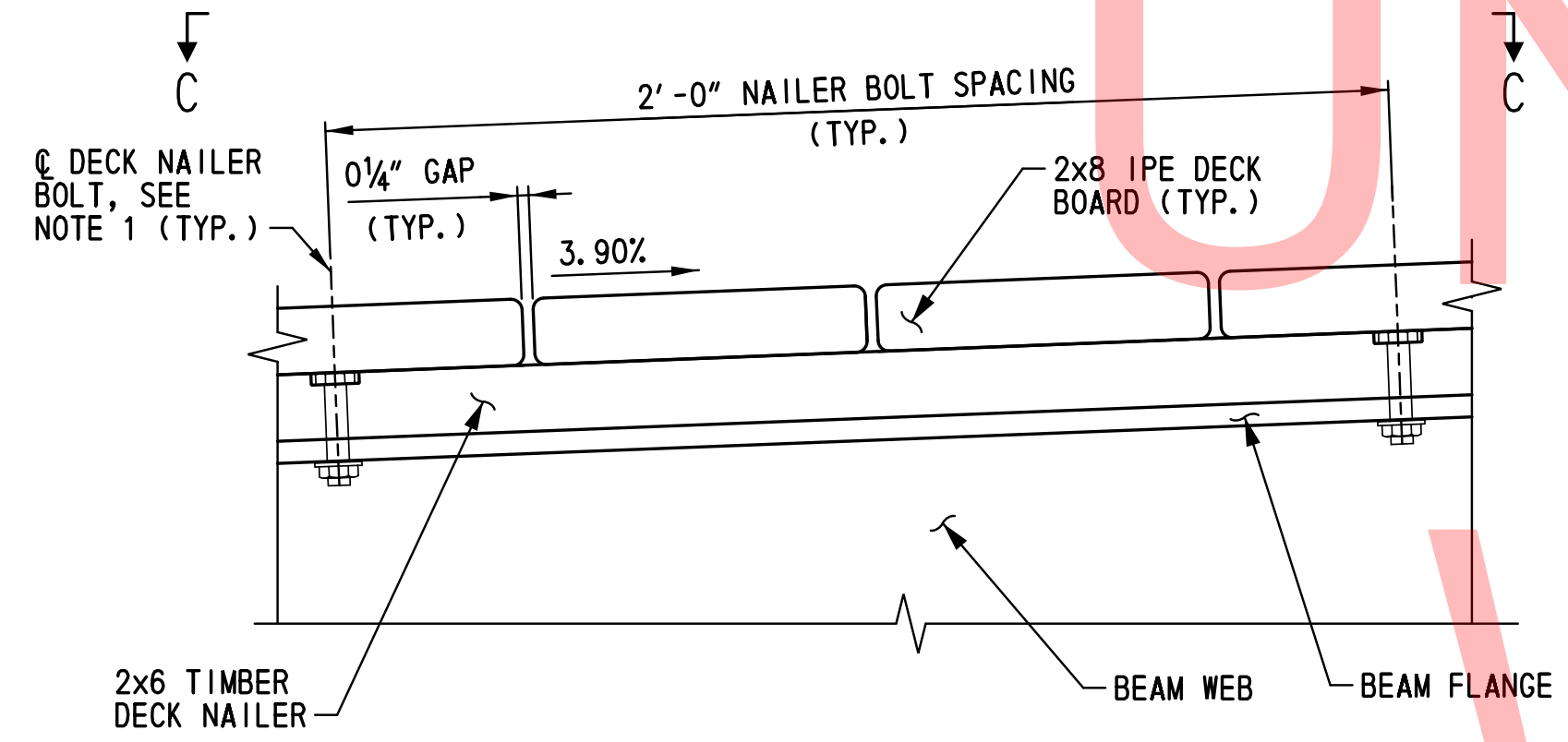


DECK TO BEAM CONNECTION
DETAIL SPAN 15
SCALE: 3"=1'-0"



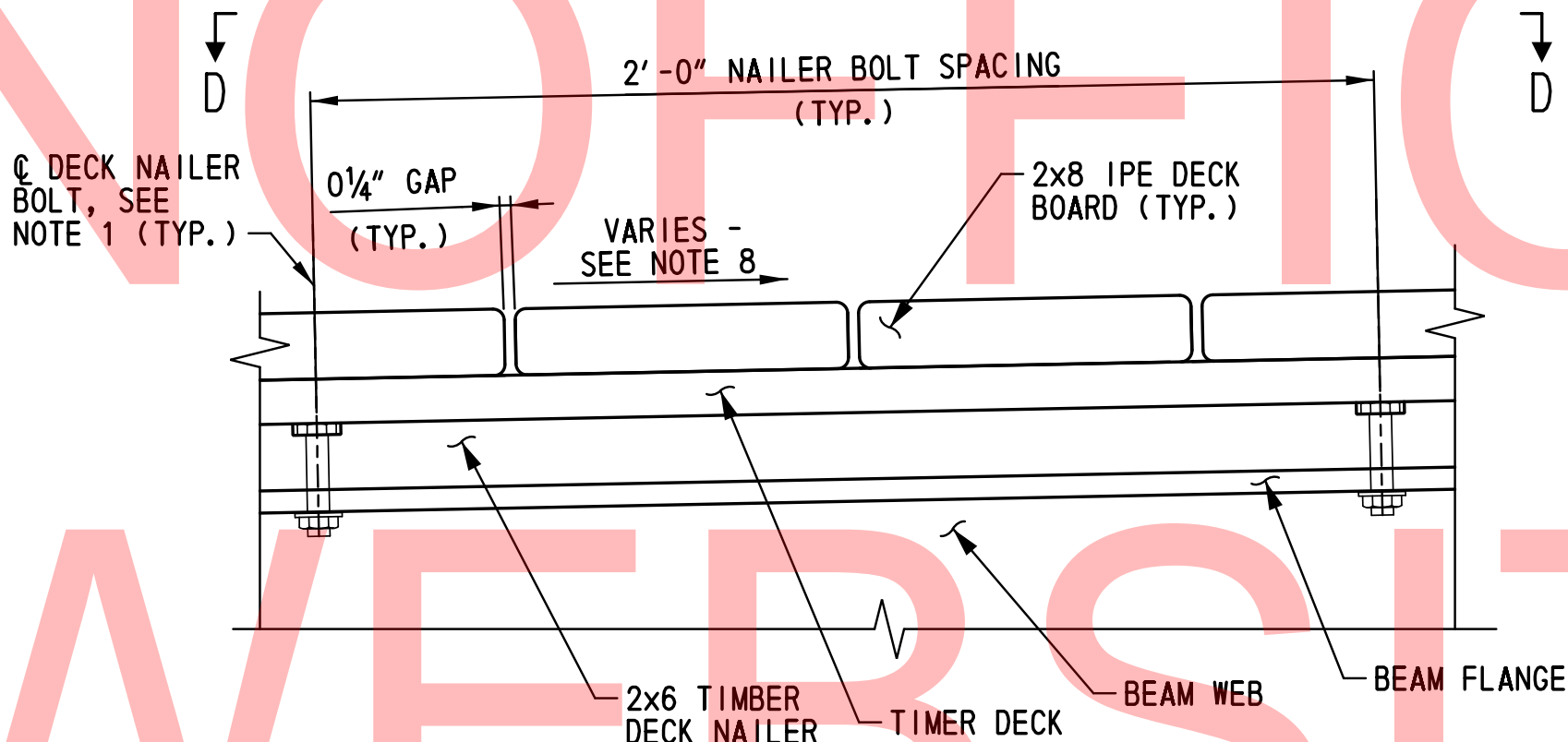
DECK TO BEAM CONNECTION
DETAIL SPAN 17
SCALE: 3"=1'-0"

NOTE:
VIEW IS LOOKING UPSTATION.

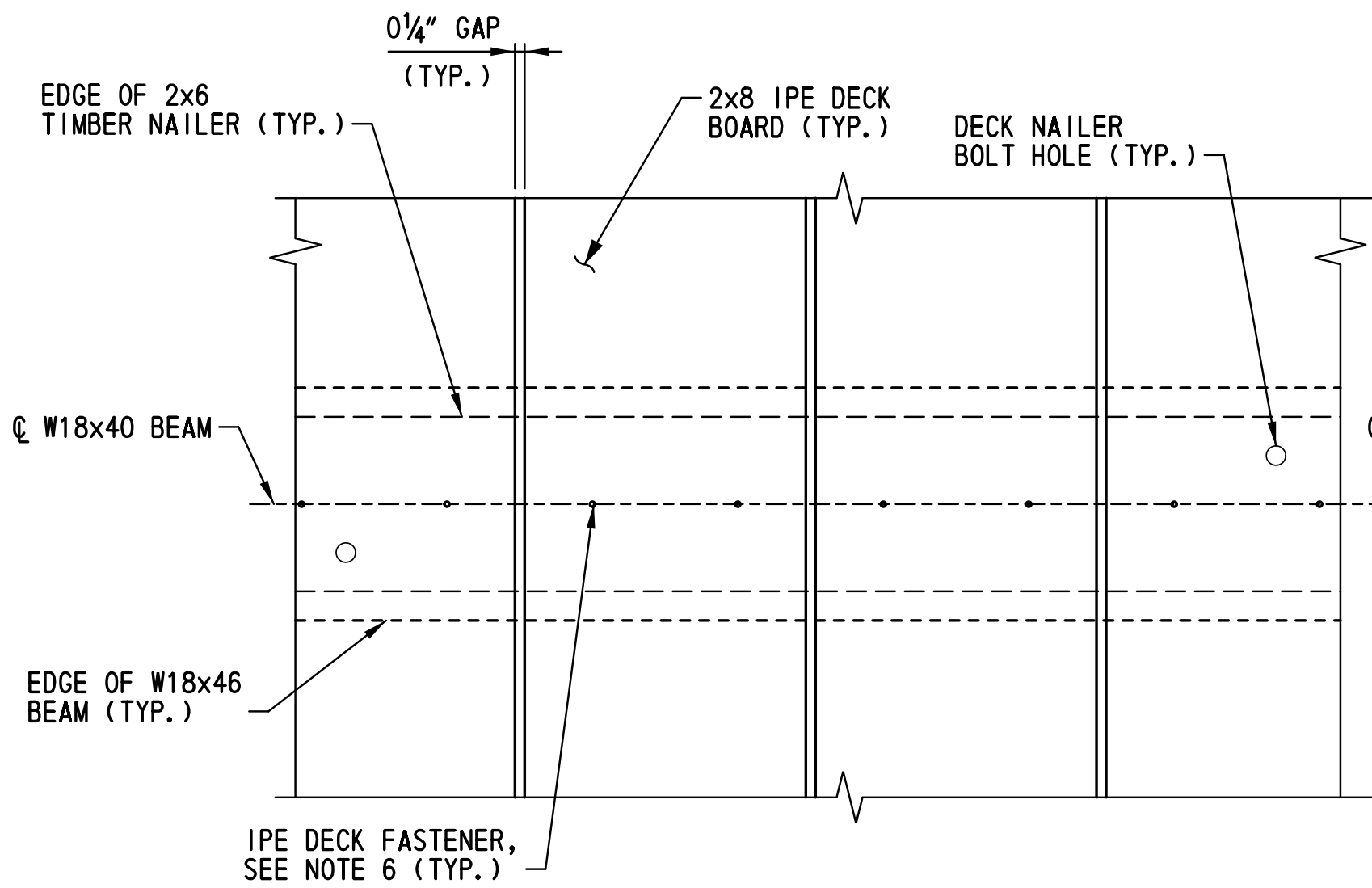


SECTION A-A
SCALE: 3"=1'-0"

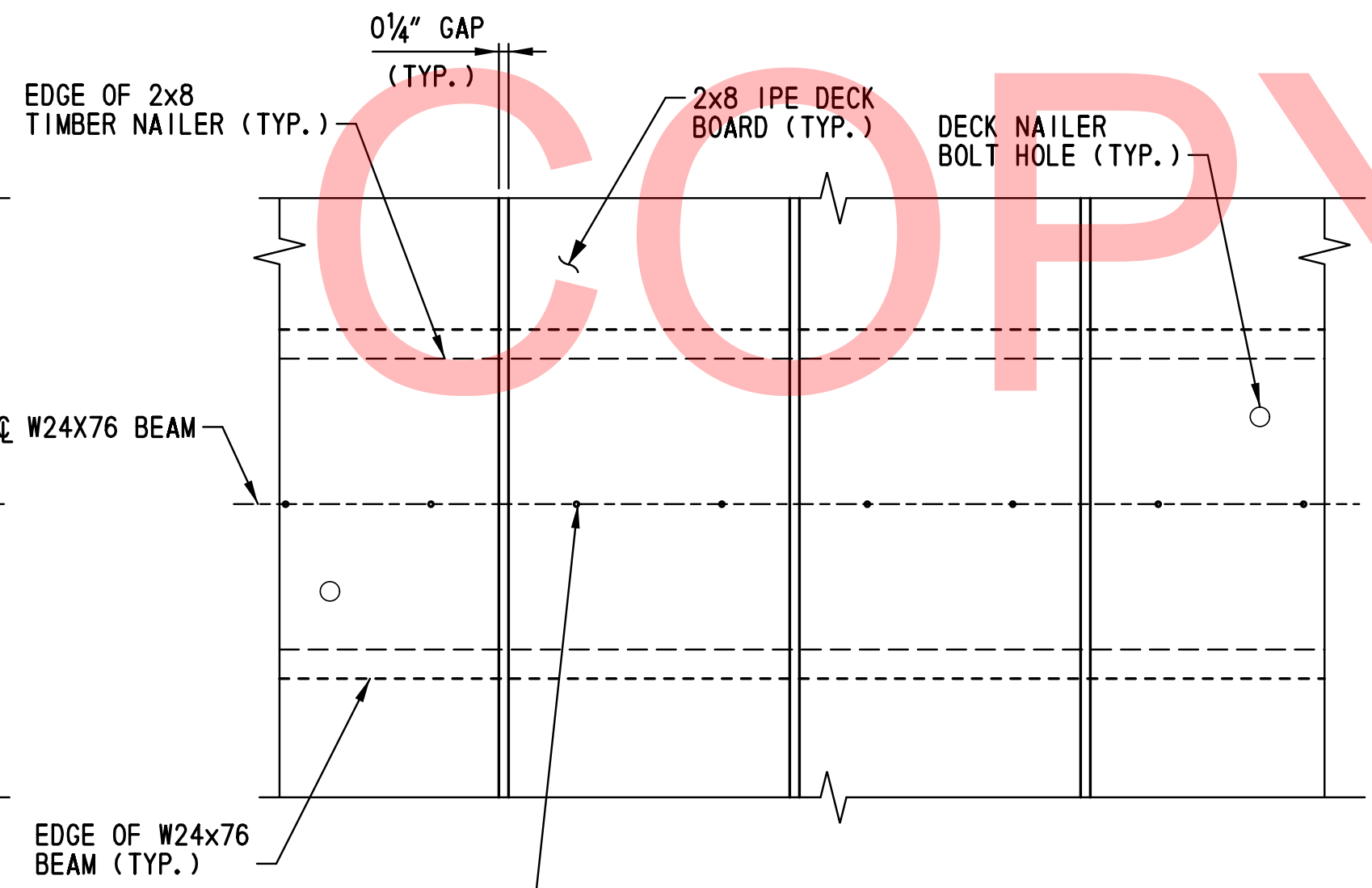
NOTE:
SECTION A-A APPLIES TO SPANS 1-14.
SPAN 15 SIMILAR.



SECTION B-B
SCALE: 3"=1'-0"



VIEW C-C
SCALE: 3"=1'-0"



VIEW D-D
SCALE: 3"=1'-0"

NOTE:
VIEW D-D APPLIES TO SPAN 17. SPAN 15 SIMILAR.

DECK NAILER SHIM DIMENSION SCHEDULE - SPAN 17

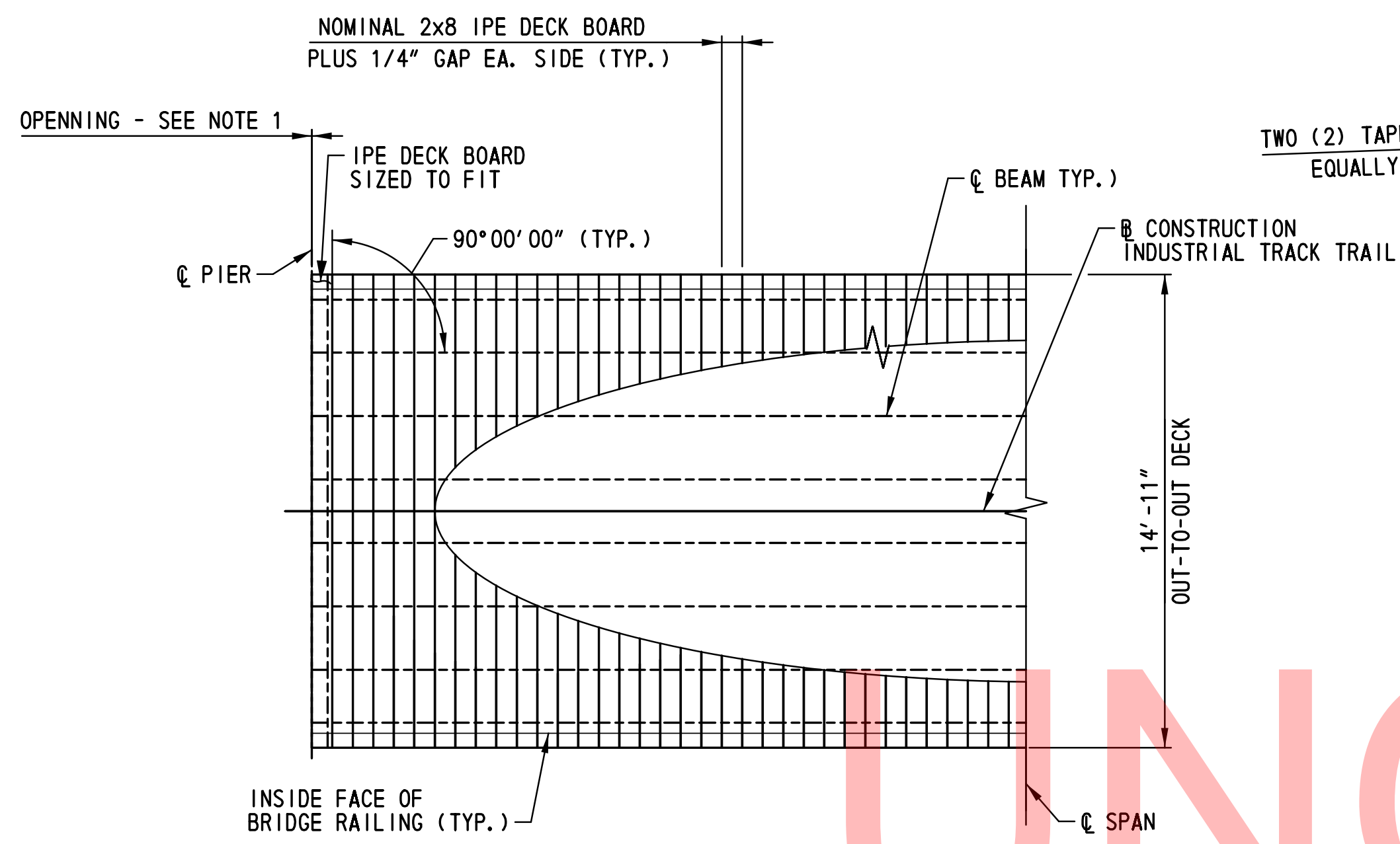
| DIMENSION A | | | | | | | | | | | | |
|-------------|----------------|-------|-------|--------|--------|--------|--------|--------|--------|--------|----------------|--------|
| BEAM | ¢ BRG. PIER 17 | 0. 1L | 0. 2L | 0. 3L | 0. 4L | 0. 5L | 0. 6L | 0. 7L | 0. 8L | 0. 9L | ¢ BRG. PIER 18 | TIE-IN |
| ① | 1" | 1" | 1" | 1 1/8" | 1 1/8" | 1 1/8" | 1 1/8" | 1 1/8" | 1 1/8" | 1 1/8" | 1 1/8" | 1 3/8" |
| ② | 1" | 1" | 1" | 1 1/8" | 1 1/8" | 1 1/8" | 1 1/8" | 1 1/8" | 1 1/8" | 1 1/8" | 1 1/8" | 1 3/8" |
| ③ | 1" | 1" | 1" | 1 1/8" | 1 1/8" | 1 1/8" | 1 1/8" | 1 1/8" | 1 1/8" | 1 1/8" | 1 1/8" | 1 3/8" |
| ④ | 1" | 1" | 1" | 1 1/8" | 1 1/8" | 1 1/8" | 1 1/8" | 1 1/8" | 1 1/8" | 1 1/8" | 1 1/8" | 1 1/8" |
| ⑤ | 1" | 1" | 1" | 1 1/8" | 1 1/8" | 1 1/8" | 1 1/8" | 1 1/8" | 1 1/8" | 1 1/8" | 1 1/8" | 1 1/8" |
| ⑥ | 1" | 1" | 1" | 1 1/8" | 1 1/8" | 1 1/8" | 1 1/8" | 1 1/8" | 1 1/8" | 1 1/8" | 1 1/8" | 1 1/8" |

| DIMENSION B | | | | | | | | | | | | |
|-------------|----------------|-------|-------|--------|--------|--------|--------|-------|-------|-------|----------------|--------|
| BEAM | ¢ BRG. PIER 17 | 0. 1L | 0. 2L | 0. 3L | 0. 4L | 0. 5L | 0. 6L | 0. 7L | 0. 8L | 0. 9L | ¢ BRG. PIER 18 | TIE-IN |
| ① | 1" | 1" | 1" | 1 5/8" | 1 5/8" | 1 5/8" | 1 5/8" | 7/8" | 7/8" | 7/8" | 7/8" | 1 1/8" |
| ② | 1" | 1" | 1" | 1 5/8" | 1 5/8" | 1 5/8" | 1 5/8" | 7/8" | 7/8" | 7/8" | 7/8" | 1 1/8" |
| ③ | 1" | 1" | 1" | 1 5/8" | 1 5/8" | 1 5/8" | 1 5/8" | 7/8" | 7/8" | 7/8" | 7/8" | 1 1/8" |
| ④ | 1" | 1" | 1" | 1 5/8" | 1 5/8" | 1 5/8" | 1 5/8" | 7/8" | 7/8" | 7/8" | 7/8" | 7/8" |
| ⑤ | 1" | 1" | 1" | 1 5/8" | 1 5/8" | 1 5/8" | 1 5/8" | 7/8" | 7/8" | 7/8" | 7/8" | 7/8" |
| ⑥ | 1" | 1" | 1" | 1 5/8" | 1 5/8" | 1 5/8" | 1 5/8" | 7/8" | 7/8" | 7/8" | 7/8" | 7/8" |

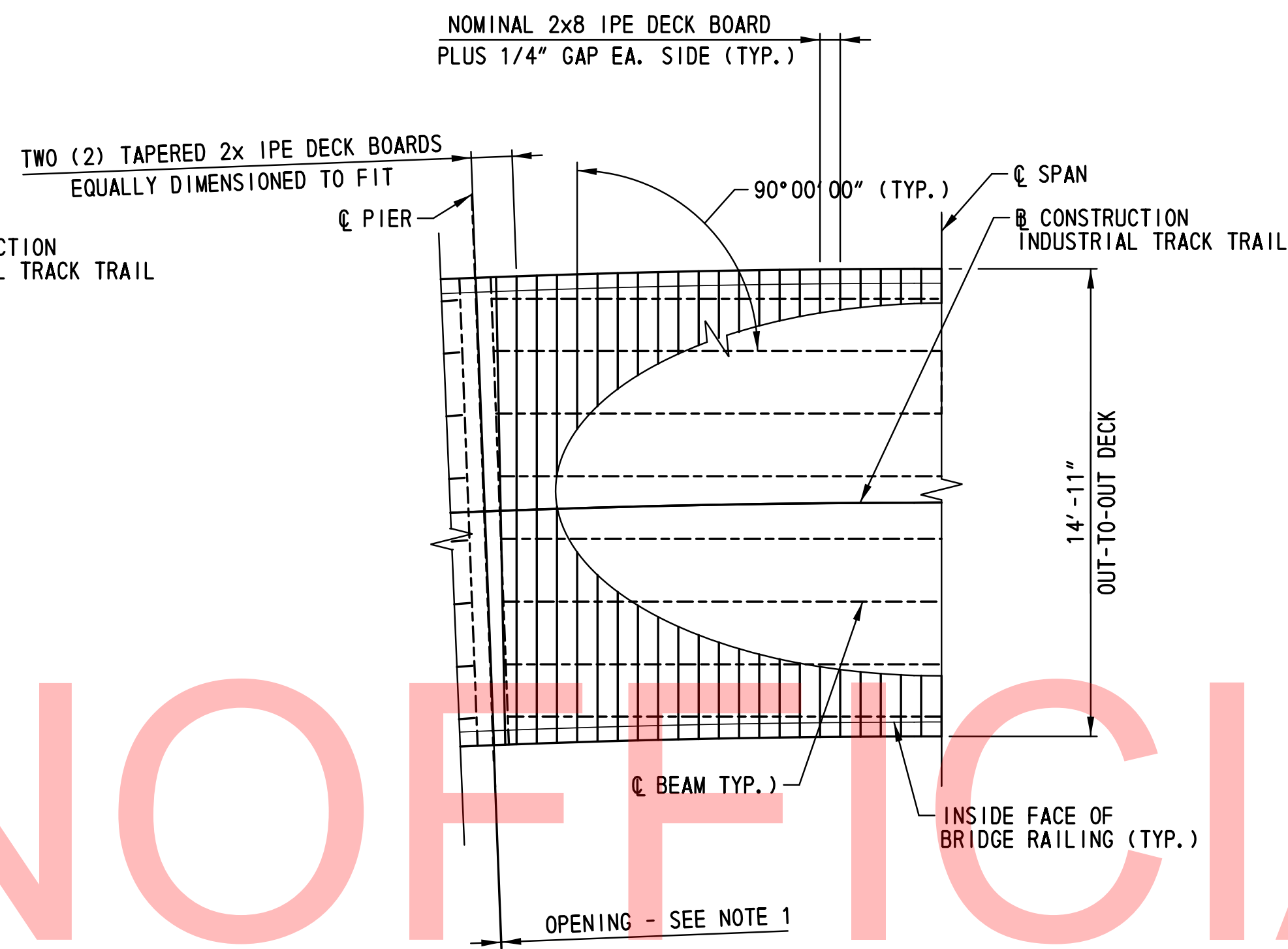
NOTES:

- DECK NAILER BOLTS SHALL BE LONGITUDINALLY SPACED AT NOT MORE THAN 2'-0" CENTER-TO-CENTER, ALTERNATE SIDES OF BEAM.
- ALL DECK NAILER BOLTS SHALL BE 1/2" DIA. HIGH STRENGTH BOLTS CONFORMING TO A325, HOT-DIP GALVANIZED. ALL BOLT HOLES SHALL BE 3/8" DIA.
- COUNTERBORE HOLES IN DECK NAILERS SHALL BE SIZED TO RECESS DECK NAILER BOLTS BELOW TOP SURFACE OF DECK NAILER.
- THE MINIMUM ACCEPTABLE EDGE DISTANCE FOR ANY HOLE SHALL BE 1".
- REFER TO TABULATED VALUES FOR DIMENSIONS "A" AND "B", WHICH ARE APPROXIMATE AND VARY ALONG BEAM LENGTH. CONTRACTOR SHALL VERIFY AND ADJUST DIMENSION "A" AS NECESSARY BASED UPON FIELD VERIFICATION OF TIE-IN ELEVATIONS TO EXISTING BRIDGE.
- IPE DECK FASTENERS SHALL BE STAINLESS STEEL GRADE 305 OR 316 SELF-TAPPING SCREWS, MINIMUM SCREW SIZE #8 (0.16" DIA.). REFER TO SPECIAL PROVISIONS. A MINIMUM OF TWO (2) IPE DECK FASTENERS SHALL BE PROVIDED FOR EACH IPE DECK BOARD ABOVE BEAMS 1,3,4, AND 6.
- FOR ADDITIONAL IPE DECK DETAILS, SEE DWG. DK-302.
- REFER TO TABULATED FINISHED BRIDGE DECK ELEVATIONS ON FD-301 AND FD-302.

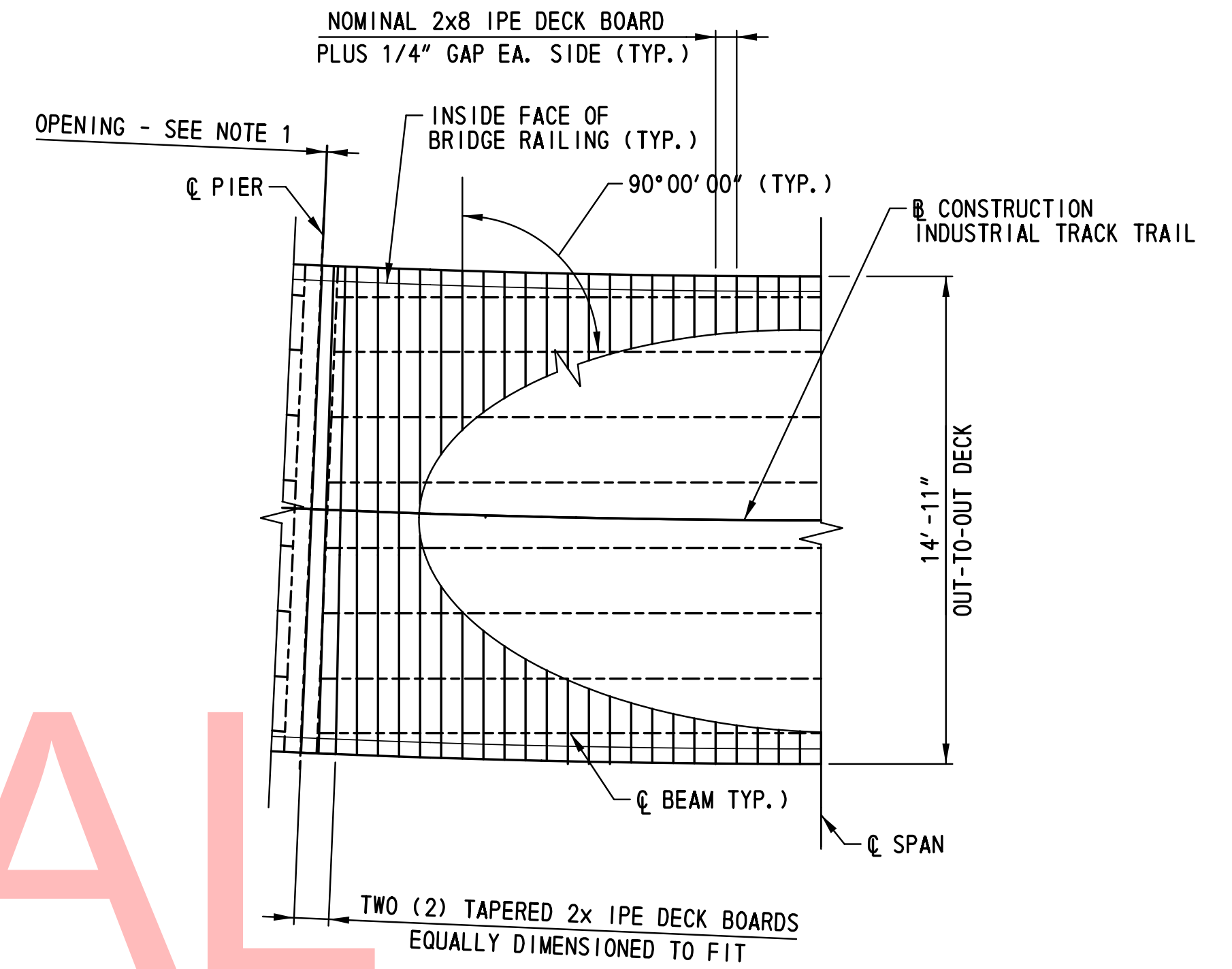
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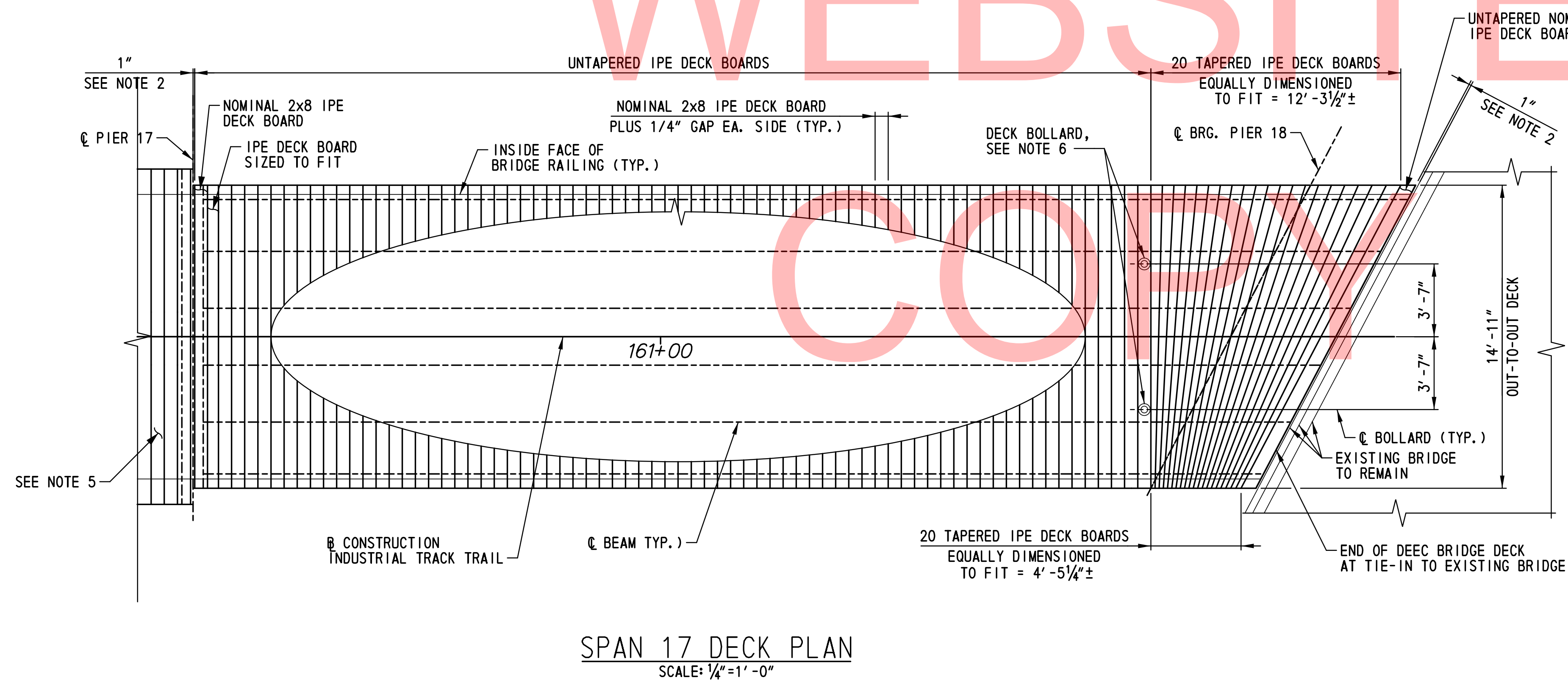
SPANS 1-4 TYPICAL HALF-DECK PLAN
SCALE: 1/4"=1'-0"



SPANS 5-8 TYPICAL HALF-DECK PLAN
SCALE: 1/4"=1'-0"



SPANS 9-14 TYPICAL HALF-DECK PLAN
SCALE: 1/4"=1'-0"

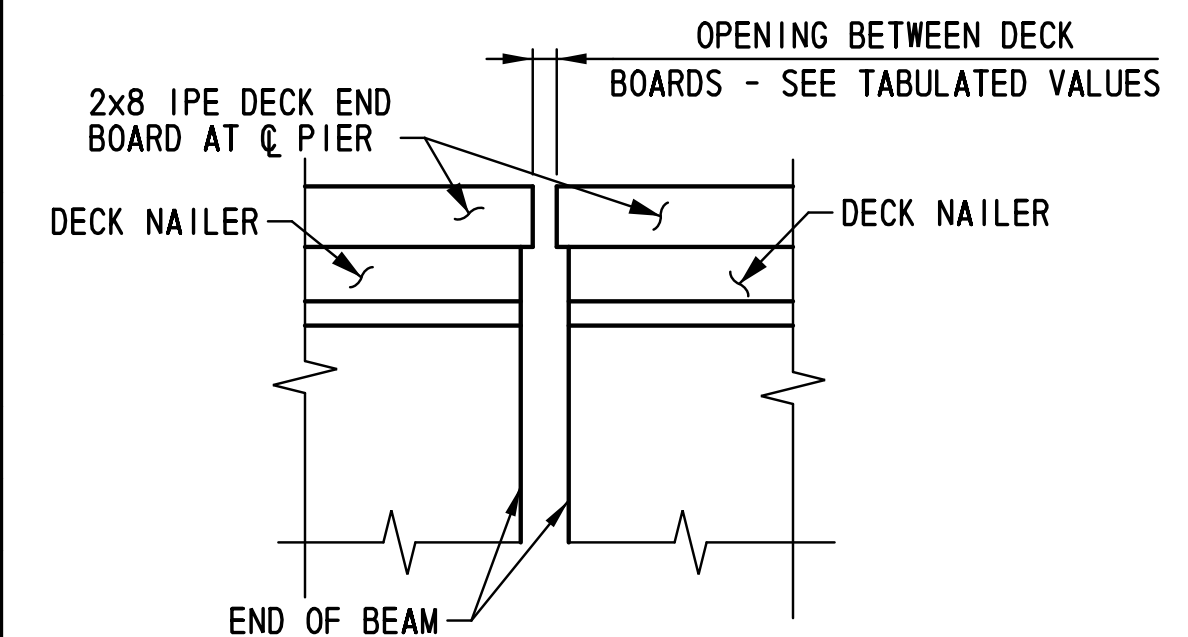


SPAN 17 DECK PLAN
SCALE: 1/4"=1'-0"

DIMENSION REFERENCE TABLE - SEE NOTE 1

| INSTALLATION TEMPERATURE (°F) | OPENING BETWEEN DECK BOARDS |
|-------------------------------|-----------------------------|
| 0 | 1/2" |
| 30 | 3/8" |
| 60 | 1/4" |
| 90 | 1/8" |
| 120 | 0" |

NOTE: SEE DECK OPENING DETAIL, THIS DRAWING, FOR ADDITIONAL INFORMATION

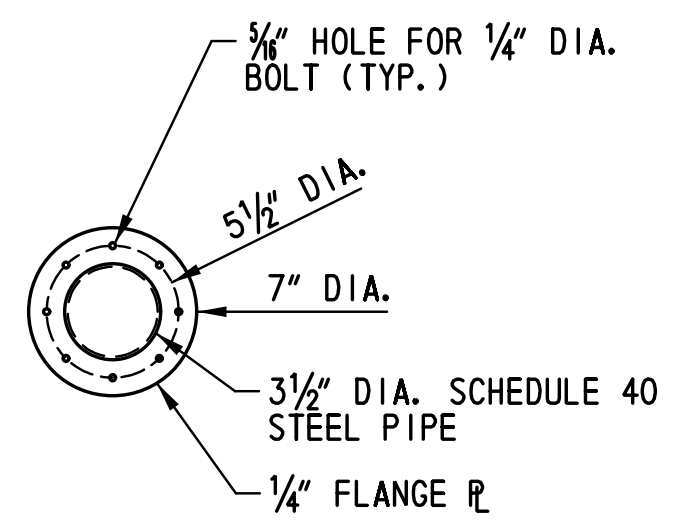
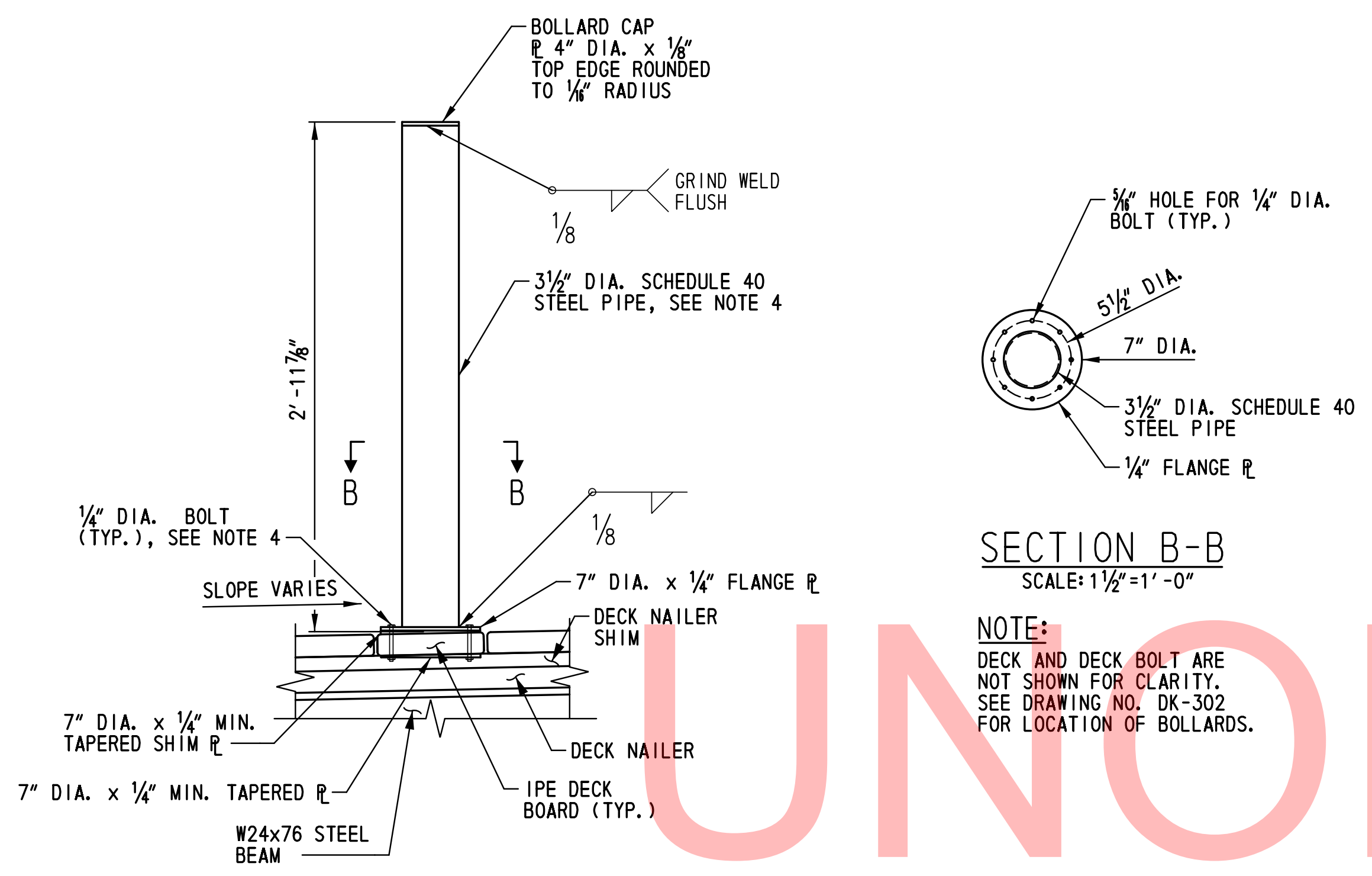


DECK OPENING DETAIL
SCALE: NONE

- NOTES:
- FOR THE CLEAR OPENING BETWEEN IPE DECK BOARDS AT PIERS, SEE TABULATED VALUES THIS DRAWING.
 - FOR JOINT THRESHOLD DETAIL AT PIER 17 AND TIE-IN TO EXISTING BRIDGE, SEE DWG. NO. SD-301.
 - FOR ADDITIONAL IPE DECK DETAILS, SEE DWG. DK-301.
 - DECK PLAN FOR SPAN 15 IS NOT SHOWN, BUT SIMILAR TO DECK PLAN FOR SPANS 1-4.
 - IPE DECK DETAILS FOR PREFABRICATED TRUSS, SPAN 16, SHALL BE SUBMITTED BY THE CONTRACTOR FOR REVIEW AND APPROVAL BY THE ENGINEER. DECK DETAILS FOR PREFABRICATED TRUSS SHALL BE SIMILAR TO DETAILS INCLUDED ON THIS DRAWING AND DWG. NO. DK-301. IPE DECK BOARDS AT EACH END OF TRUSS SHALL BE FULL WIDTH (NOMINAL 8" WIDE).
 - FOR DECK BOLLARD DETAILS, SEE DWG. NO. SD-301.

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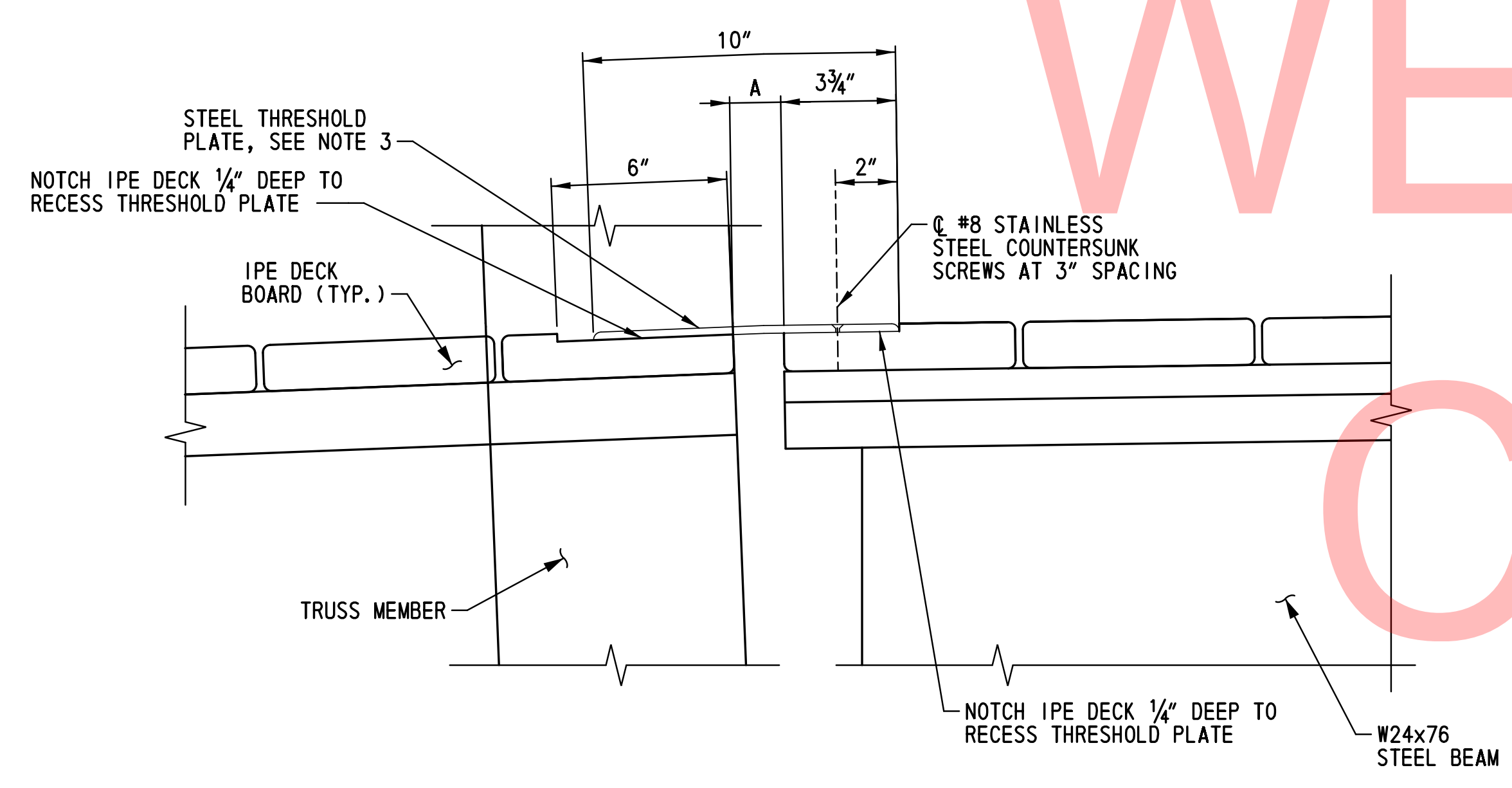
| DIMENSION REFERENCE TABLE | | |
|-------------------------------|--------|--------|
| INSTALLATION TEMPERATURE (°F) | A | B |
| 0 | 2 1/2" | 1 1/8" |
| 30 | 2 1/6" | 1 1/8" |
| 60 | 1 5/8" | 1 1/4" |
| 90 | 1 3/8" | 1 1/8" |
| 120 | 3/4" | 1/8" |



SECTION B-B
SCALE: 1 1/2"=1'-0"

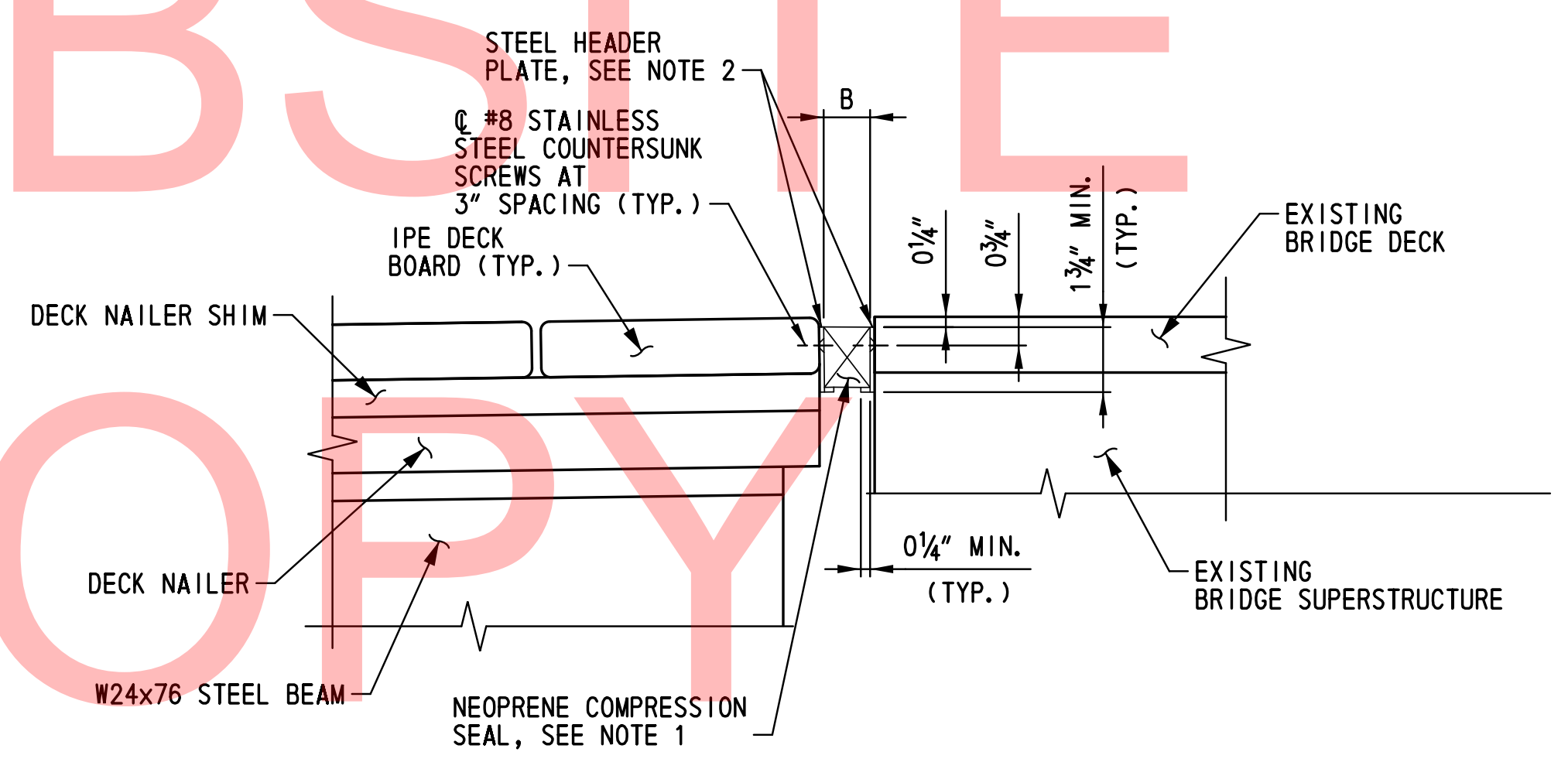
NOTE:
DECK AND DECK BOLT ARE NOT SHOWN FOR CLARITY. SEE DRAWING NO. DK-302 FOR LOCATION OF BOLLARDS.

BOLLARD DETAIL
SCALE: 1 1/2"=1'-0"



PIER 17 THRESHOLD DETAIL
SCALE: 3"=1'-0"

NOTE:
VIEW IS PERPENDICULAR TO @ CONSTRUCTION, INDUSTRIAL TRACK TRAIL.

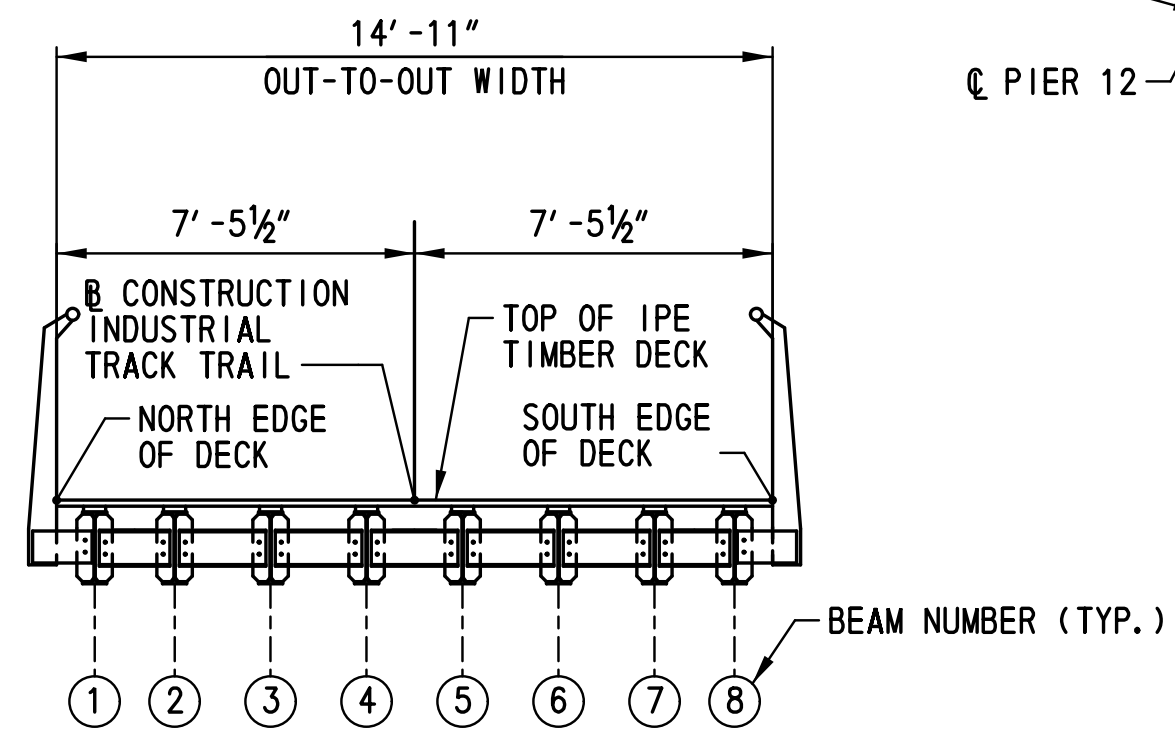
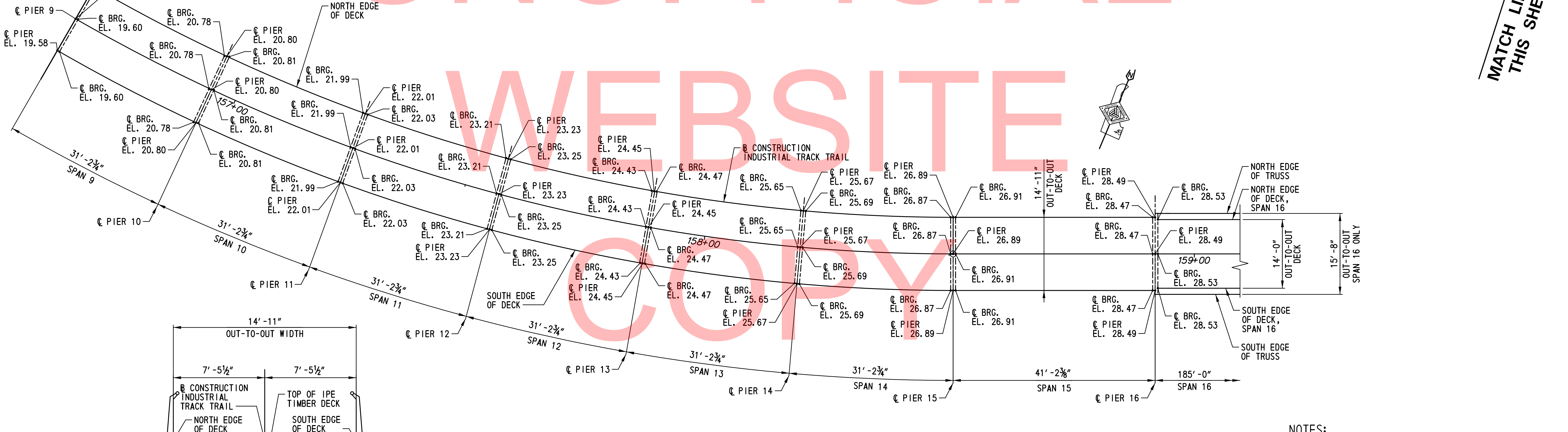
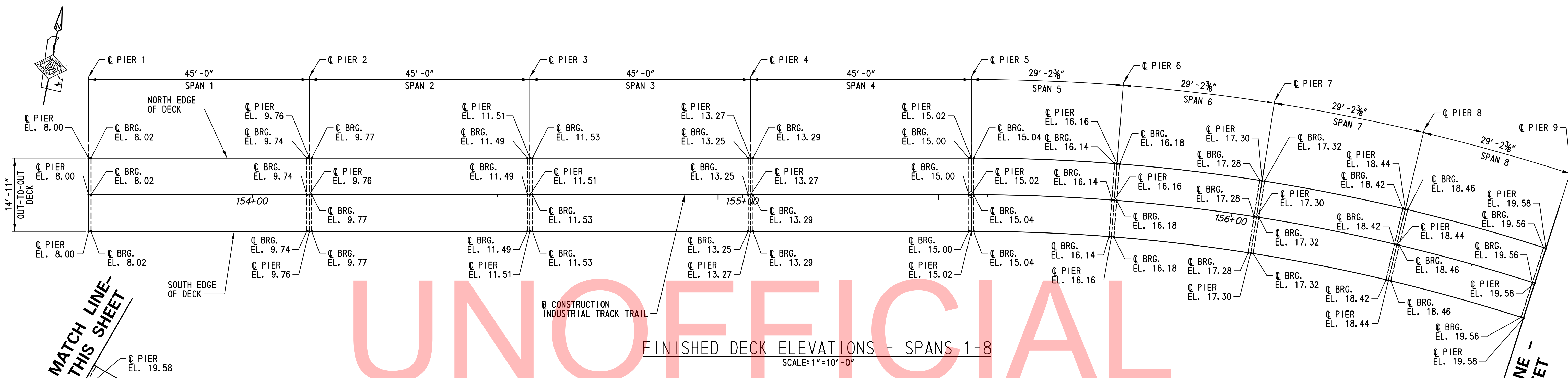


JOINT DETAIL AT TIE-IN TO EXISTING BRIDGE
SCALE: 3"=1'-0"

NOTE:
VIEW IS PERPENDICULAR TO @ CONSTRUCTION, INDUSTRIAL TRACK TRAIL.

- NOTES:
1. NEOPRENE COMPRESSION SEAL SHALL HAVE A MOVEMENT CAPACITY OF MINIMUM 1/2".
 2. STEEL HEADER PLATE SHALL BE MINIMUM 1/8" THICK GALVANIZED STEEL WITH COUNTERSUNK HOLES TO ACCOMMODATE #8 COUNTERSUNK SCREWS.
 3. STEEL THRESHOLD PLATE SHALL BE 1/4" GALVANIZED STEEL PLATE WITH COUNTERSUNK HOLES TO ACCOMMODATE #8 COUNTERSUNK SCREWS. THE TOP SURFACE OF THE PLATE SHALL HAVE A SHOP-APPLIED EPOXY COATING WITH CRIT TO PRODUCE A NON-SKID SURFACE. BEND PLATE TO FIT GRADE.
 4. STEEL PIPE AND PLATE FOR DECK BOLLARD SHALL BE HOT-DIP GALVANIZED IN ACCORDANCE WITH ASTM A123. OBJECT MARKERS SHALL BE AFFIXED TO THE UPSTATION AND DOWNSTATION SIDE OF EACH BOLLARD. OBJECT MARKERS SHALL BE TYPE 3 IN COMPLIANCE WITH DELAWARE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) SECTION 2C.63. 1/4" BOLTS SHALL BE HOT DIP GALVANIZED IN ACCORDANCE WITH ASTM A153. PAYMENT FOR THRESHOLD AND JOINTS WILL BE INCIDENTAL TO ITEM 601537.
 5. PAYMENT FOR BOLLARDS WILL BE INCIDENTAL TO ITEM 606701.

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NOTE:
TYPICAL SECTION FOR SPANS 1-14 IS SHOWN. LOCATION OF FINISHED DECK ELEVATIONS IS SIMILAR FOR SPANS 15 AND 16.

- NOTES:
1. FINISHED BRIDGE DECK ELEVATIONS SHOWN ARE TOP OF OF PROPOSED IPE TIMBER DECK.
 2. FOR VERTICAL GRADE DATA, SEE DWG. NOS. PE-301 THRU PE-303.
 3. ALL LINES OF ELEVATIONS SHOWN ARE PERPENDICULAR TO CONSTRUCTION.
 4. BRIDGE RAILING IS NOT SHOWN IN DECK PLANS.
 5. FOR ADDITIONAL FINISHED DECK ELEVATIONS, SEE DWG. NO. FD-302.

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| ADDENDUMS / REVISIONS | |
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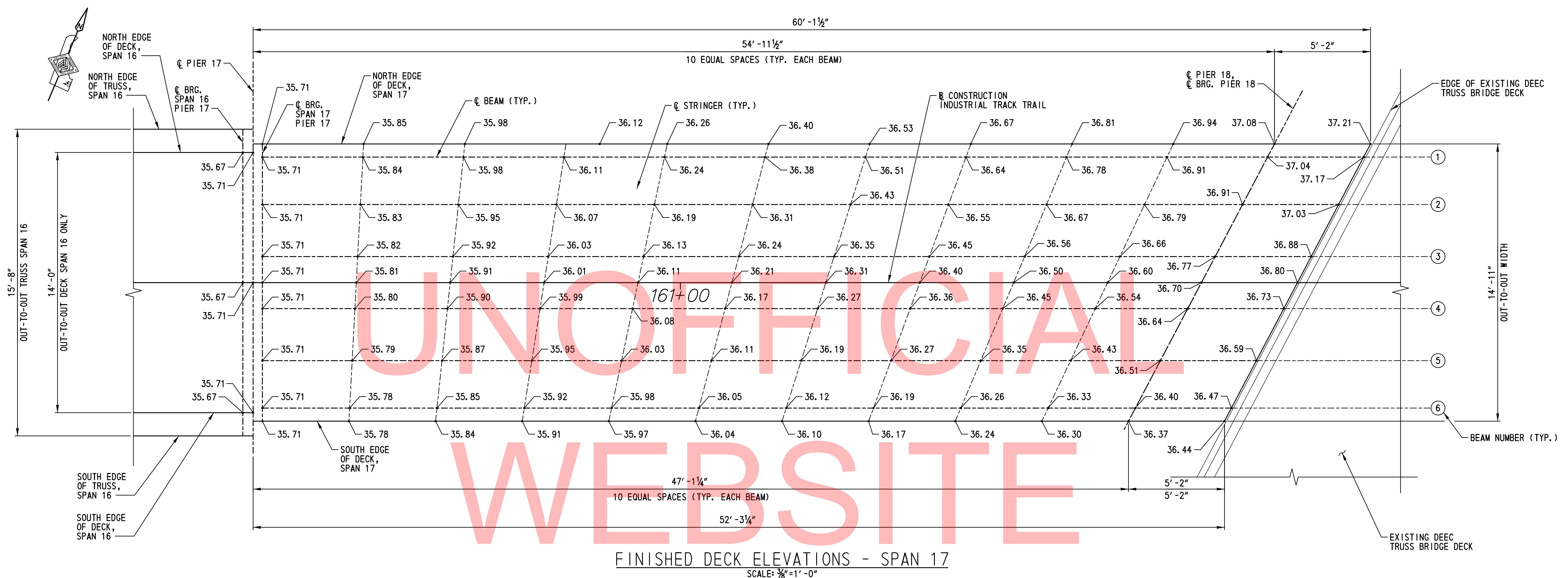
SCALE AS NOTED

NEW CASTLE INDUSTRIAL TRACK TRAIL, PHASE 3

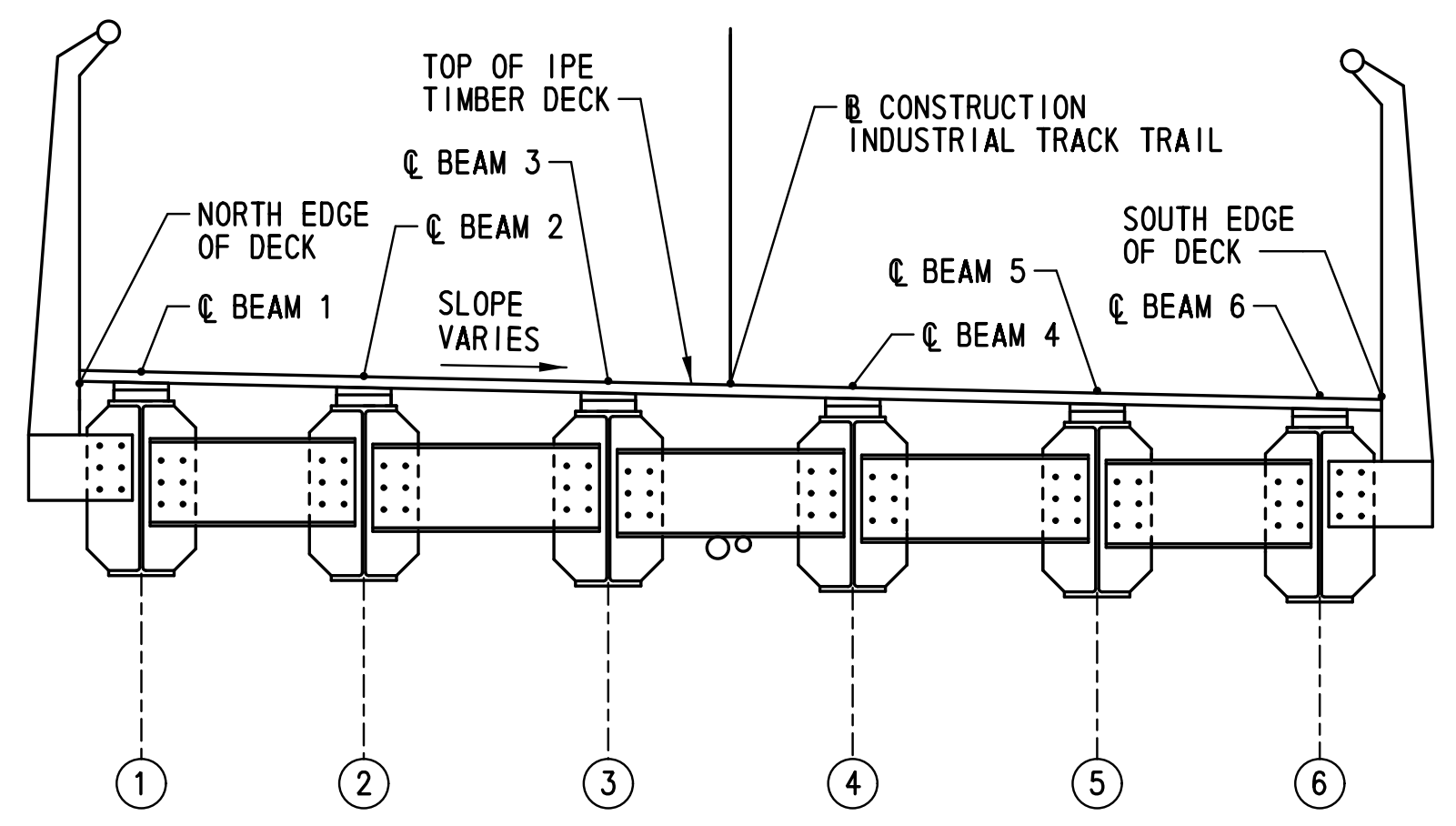
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|------------------------|------------------|---|
| CONTRACT T201330009 | BRIDGE NO. | X |
| COUNTY NEW CASTLE | DESIGNED BY: NAH | |
| | CHECKED BY: WAG | |

FINISHED BRIDGE DECK ELEVATIONS - 1

| |
|--------------------|
| FD-301 |
| SHEET NO. 156 |
| TOTAL SHTS. 205 |



FINISHED DECK ELEVATIONS - SPAN 17
SCALE: 3/8"=1'-0"



LOCATION OF FINISHED DECK ELEVATIONS
SCALE: 1/2"=1'-0"

NOTE:
TYPICAL SECTION FOR SPAN 17 IS SHOWN.

- NOTES:
1. FINISHED BRIDGE DECK ELEVATIONS SHOWN ARE TOP OF OF PROPOSED IPE TIMBER DECK.
 2. FOR VERTICAL GRADE DATA, SEE DWG. NO. PE-303.
 3. ALL LINES OF ELEVATIONS SHOWN ARE PERPENDICULAR TO B CONSTRUCTION.
 4. BRIDGE RAILING IS NOT SHOWN IN DECK PLANS.
 5. FOR ADDITIONAL FINISHED DECK ELEVATIONS, SEE DWG. NO. FD-301.
 6. ALL DECK ELEVATIONS IN SPAN 17 ARE APPROXIMATE. CONTRACTOR SHALL FIELD VERIFY EXISTING BRIDGE DECK ELEVATIONS AND ADJUST FINISHED BRIDGE DECK ELEVATIONS AS NECESSARY.

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| ADDENDUMS / REVISIONS |
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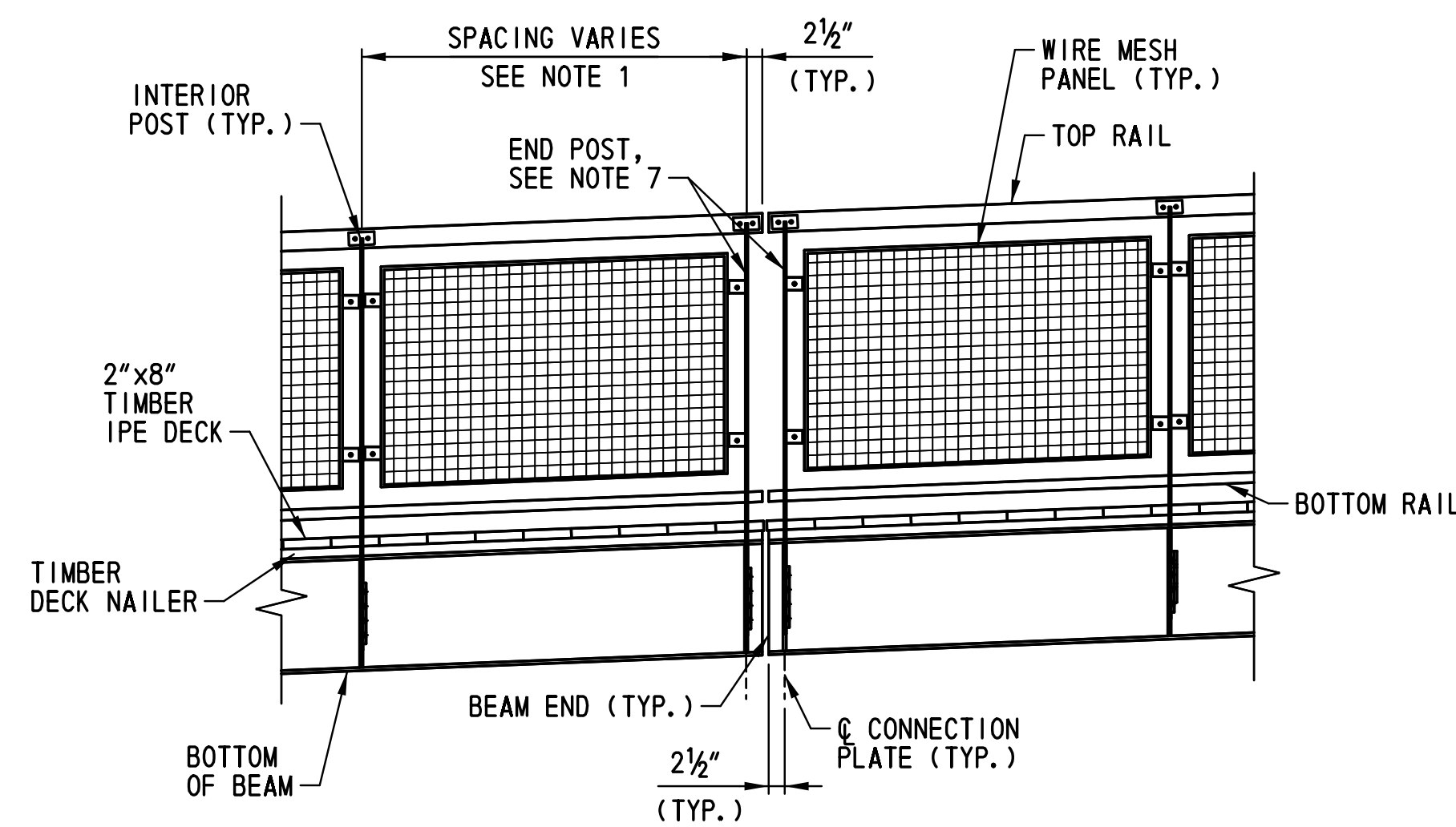
SCALE AS NOTED

**NEW CASTLE INDUSTRIAL
TRACK TRAIL, PHASE 3**

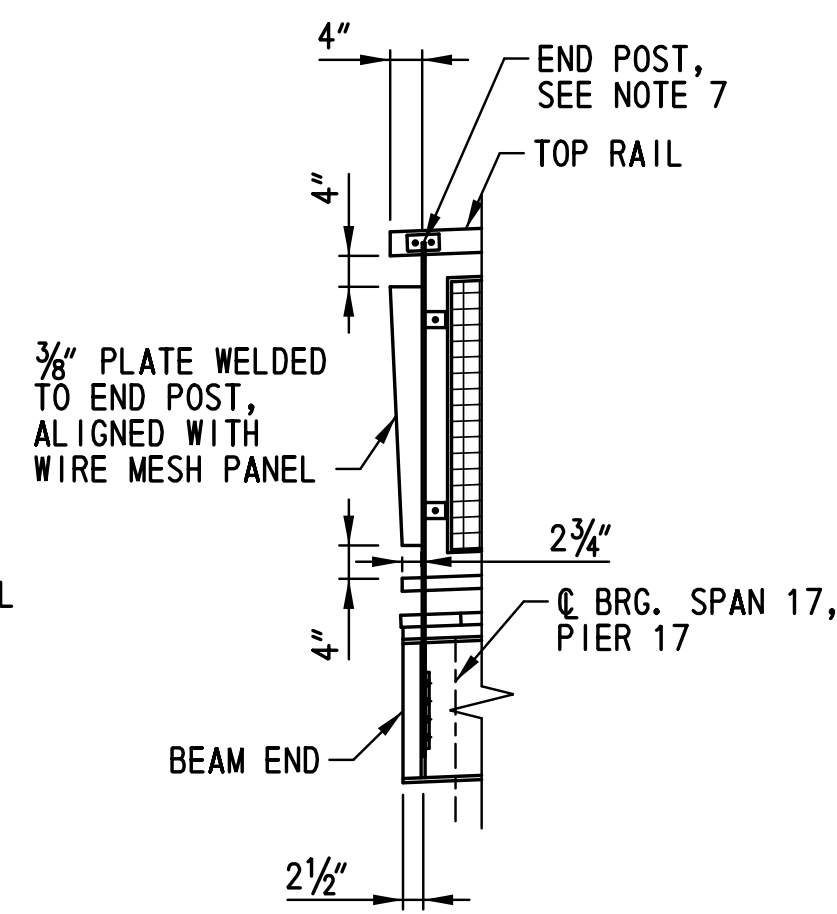
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|------------------------|-------------------------------------|
| CONTRACT T201330009 | BRIDGE NO. X |
| COUNTY NEW CASTLE | DESIGNED BY: NAH CHECKED BY: WAG |

**FINISHED BRIDGE DECK
ELEVATIONS - 2**

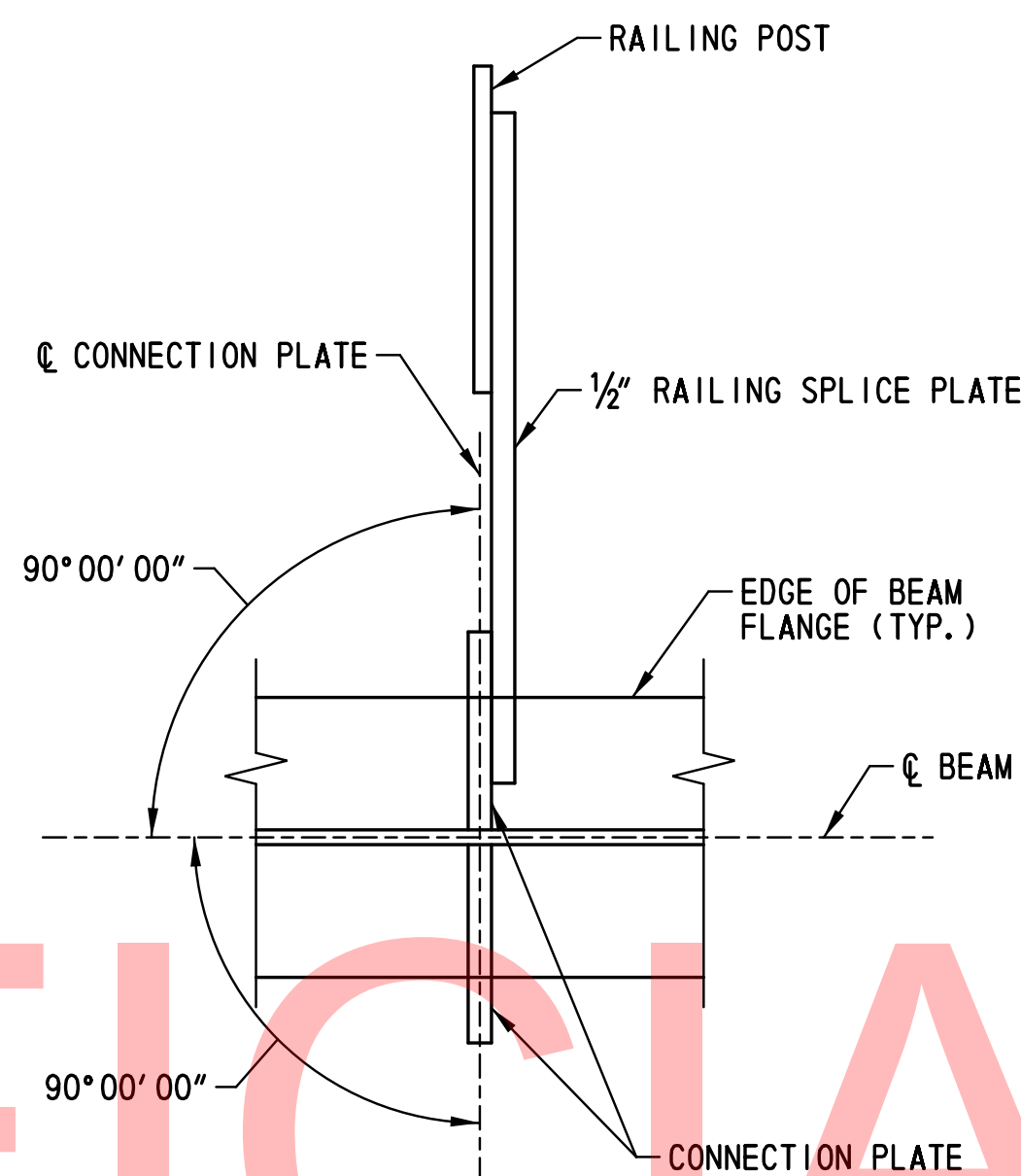
| |
|--------------------|
| FD-302 |
| SHEET NO. 157 |
| TOTAL SHTS. 205 |



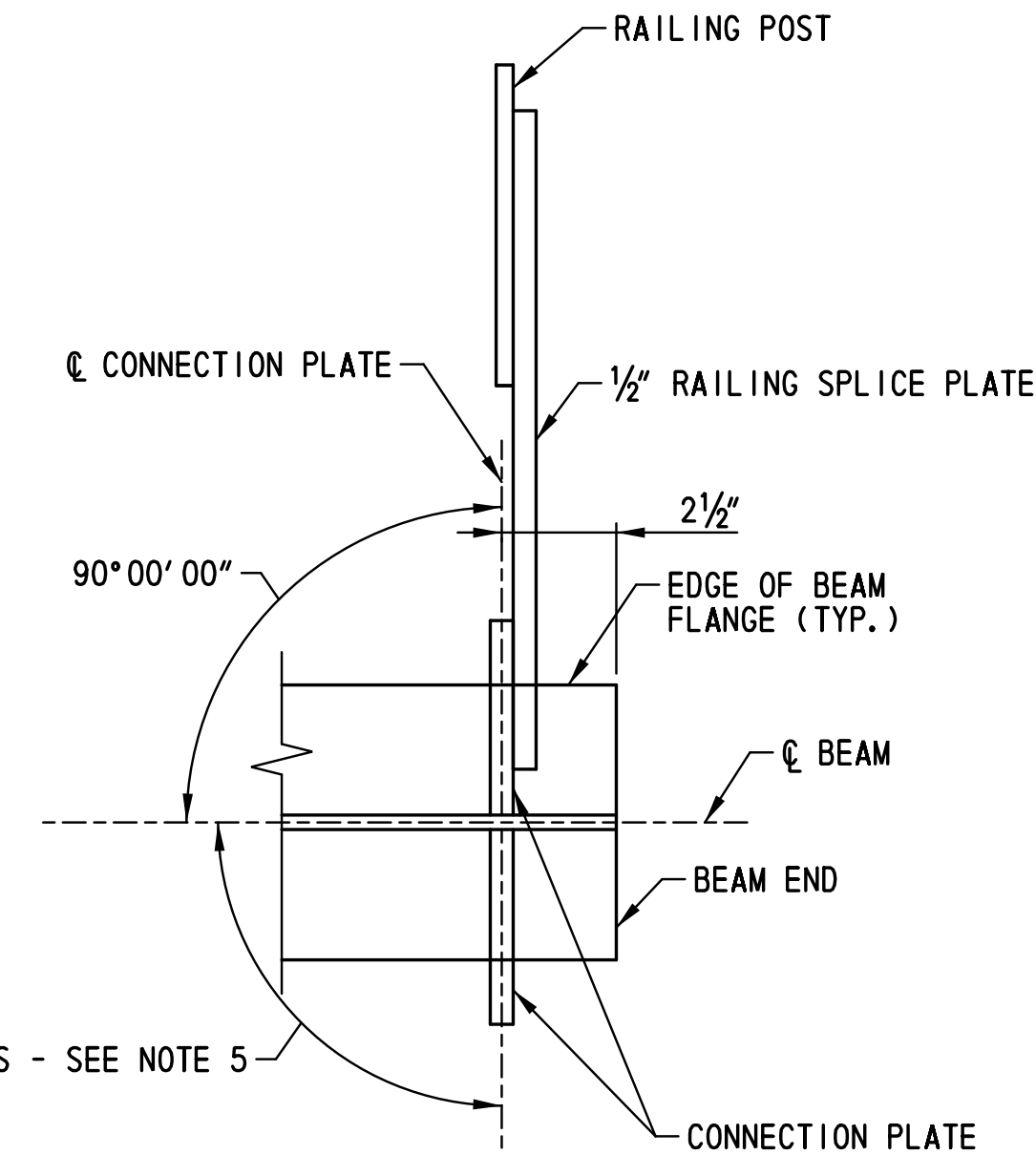
TYPICAL RAILING LAYOUT - ELEVATION
SCALE: 1/2"=1'-0"



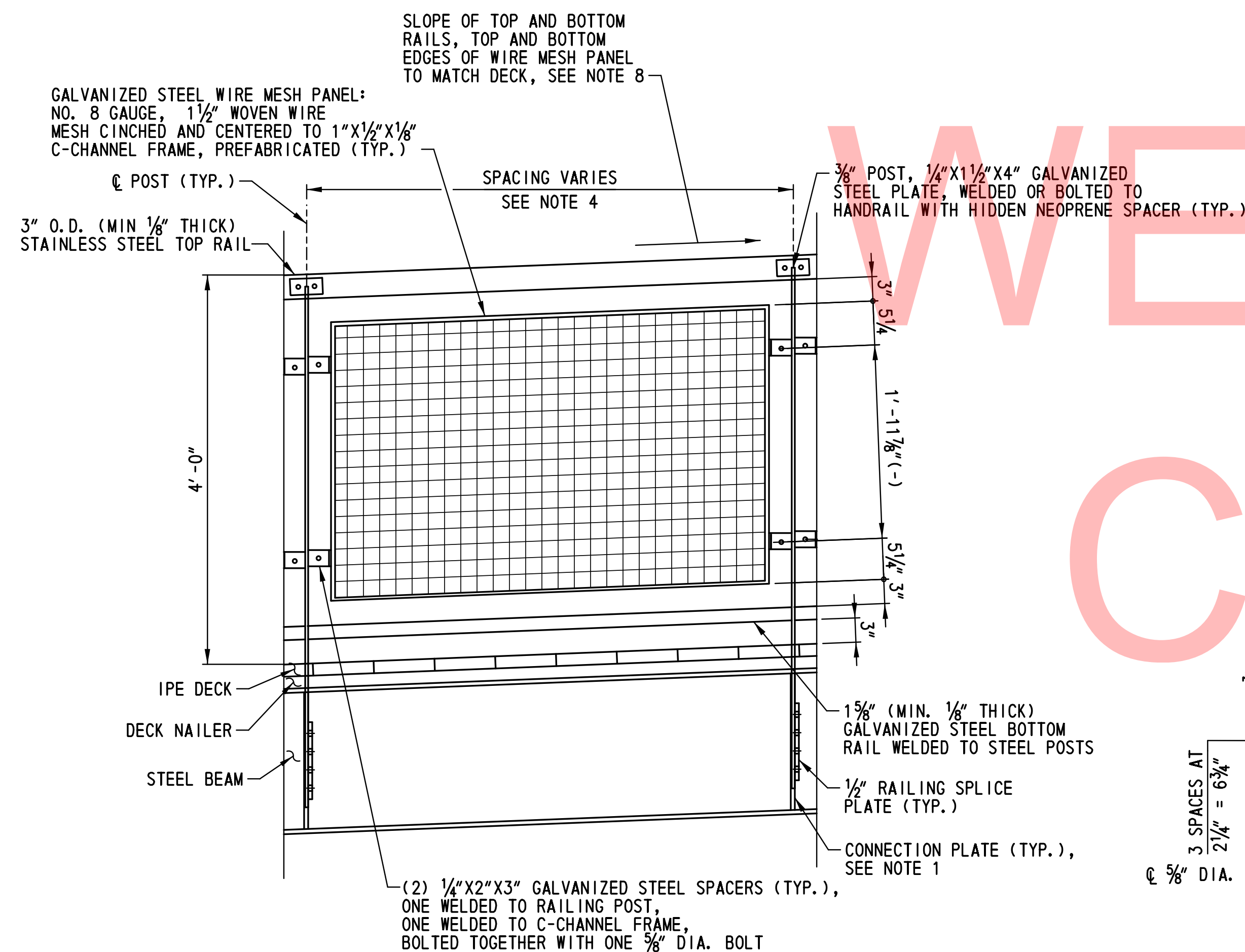
DETAIL A
SCALE: 1/2"=1'-0"



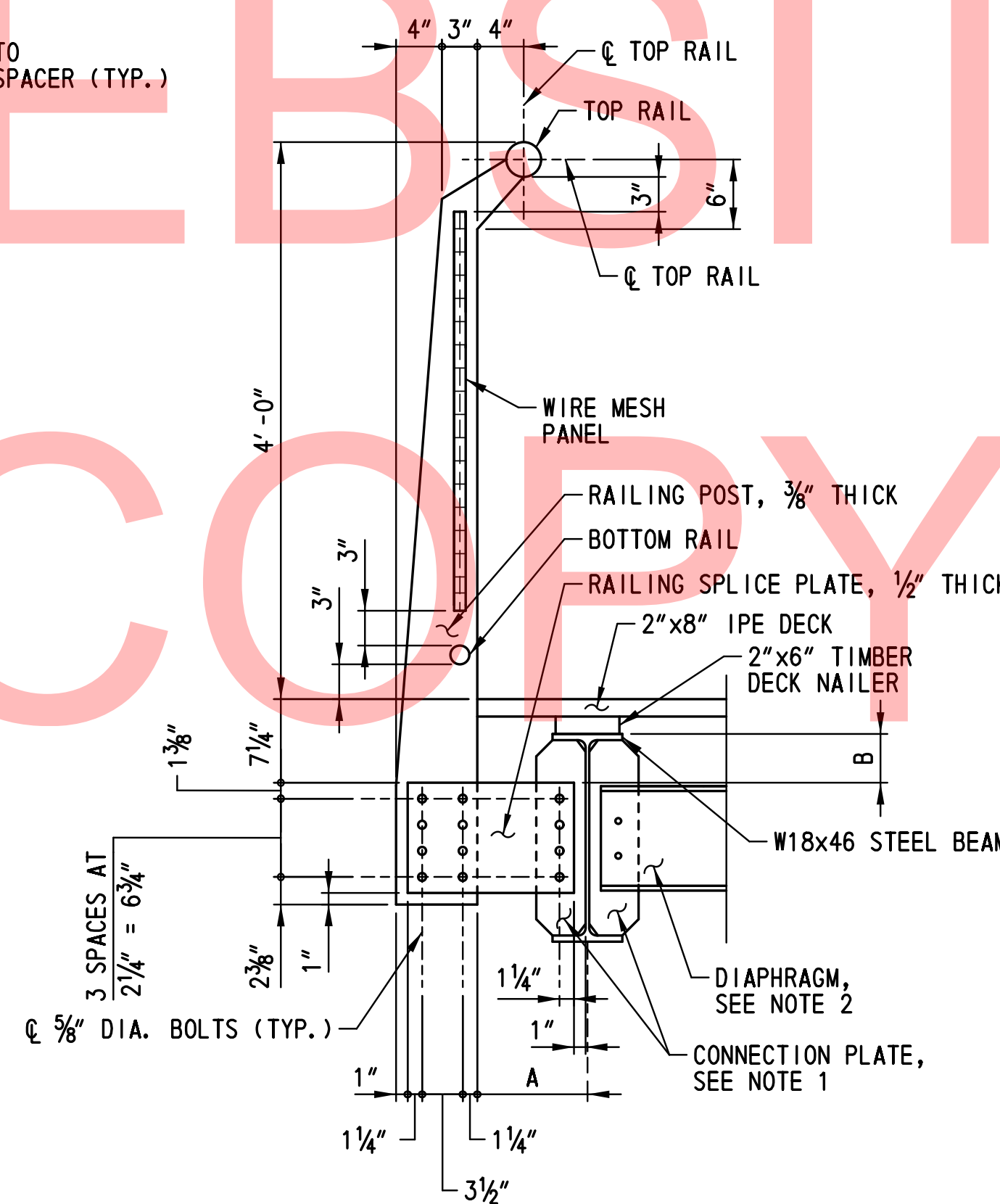
INTERIOR POST CONNECTION PLATE - PLAN
SCALE: 3"=1'-0"



END POST CONNECTION PLATE - PLAN
SCALE: 3"=1'-0"



RAILING DETAIL ELEVATION
SCALE: 1"=1'-0"



TYPICAL RAILING SECTION
SCALE: 1"=1'-0"

NOTE:
TYPICAL RAILING SECTION FOR SPANS 1-14 IS SHOWN.
TYPICAL RAILING SECTION FOR SPANS 15 AND 17 IS SIMILAR.

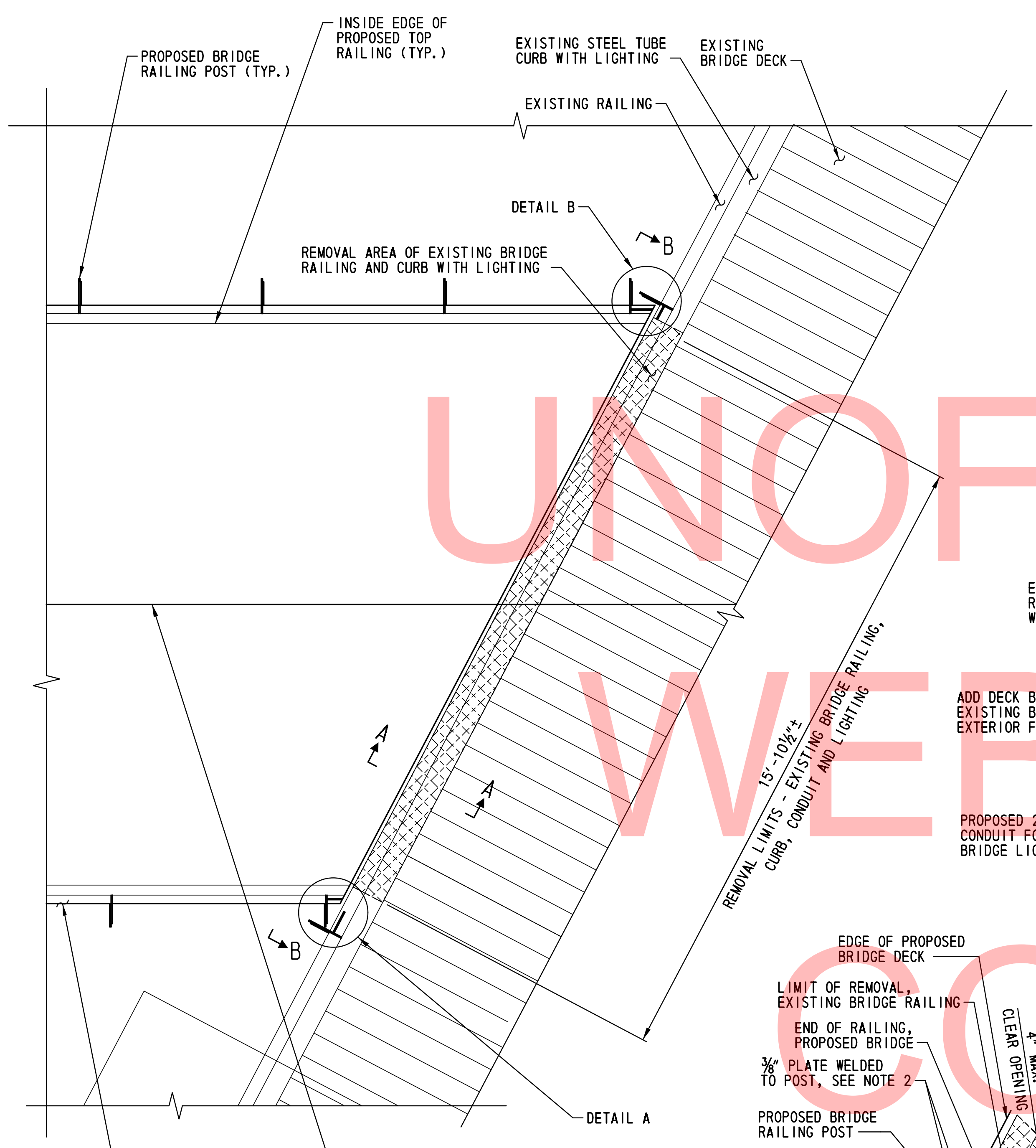
| DIMENSION REFERENCE TABLE | | | | | | |
|---------------------------|-----------------------------|-----------------------------|--|--|---------------------|---------------------|
| SPAN | A (MIN./MAX.) NORTH RAILING | A (MIN./MAX.) SOUTH RAILING | B (MIN./MAX.) NORTH RAILING SEE NOTE 6 | B (MIN./MAX.) SOUTH RAILING SEE NOTE 6 | SLOPE NORTH RAILING | SLOPE SOUTH RAILING |
| 1-4 | 9 1/2" / 9 1/2" | 9 1/2" / 9 1/2" | 4 1/4" / 4 1/4" | 4 1/4" / 4 1/4" | 3.9% | 3.9% |
| 5-8 | 8 1/4" / 11 3/8" | 7 7/8" / 10 3/4" | 4 1/4" / 4 1/4" | 4 1/4" / 4 1/4" | 3.9% | 3.9% |
| 9-14 | 7 7/8" / 11 3/8" | 7 3/8" / 11 3/8" | 4 1/4" / 4 1/4" | 4 1/4" / 4 1/4" | 3.9% | 3.9% |
| 15 | 8 1/2" / 8 1/2" | 8 1/2" / 8 1/2" | 4 1/4" / 4 1/4" | 4 1/4" / 4 1/4" | 3.9% | 3.9% |
| 17 | 8 1/2" / 8 1/2" | 8 1/2" / 8 1/2" | 2 7/8" / 3 1/4" | 3 1/8" / 3 3/8" | 2.52% ± | 1.41% ± |

NOTES:

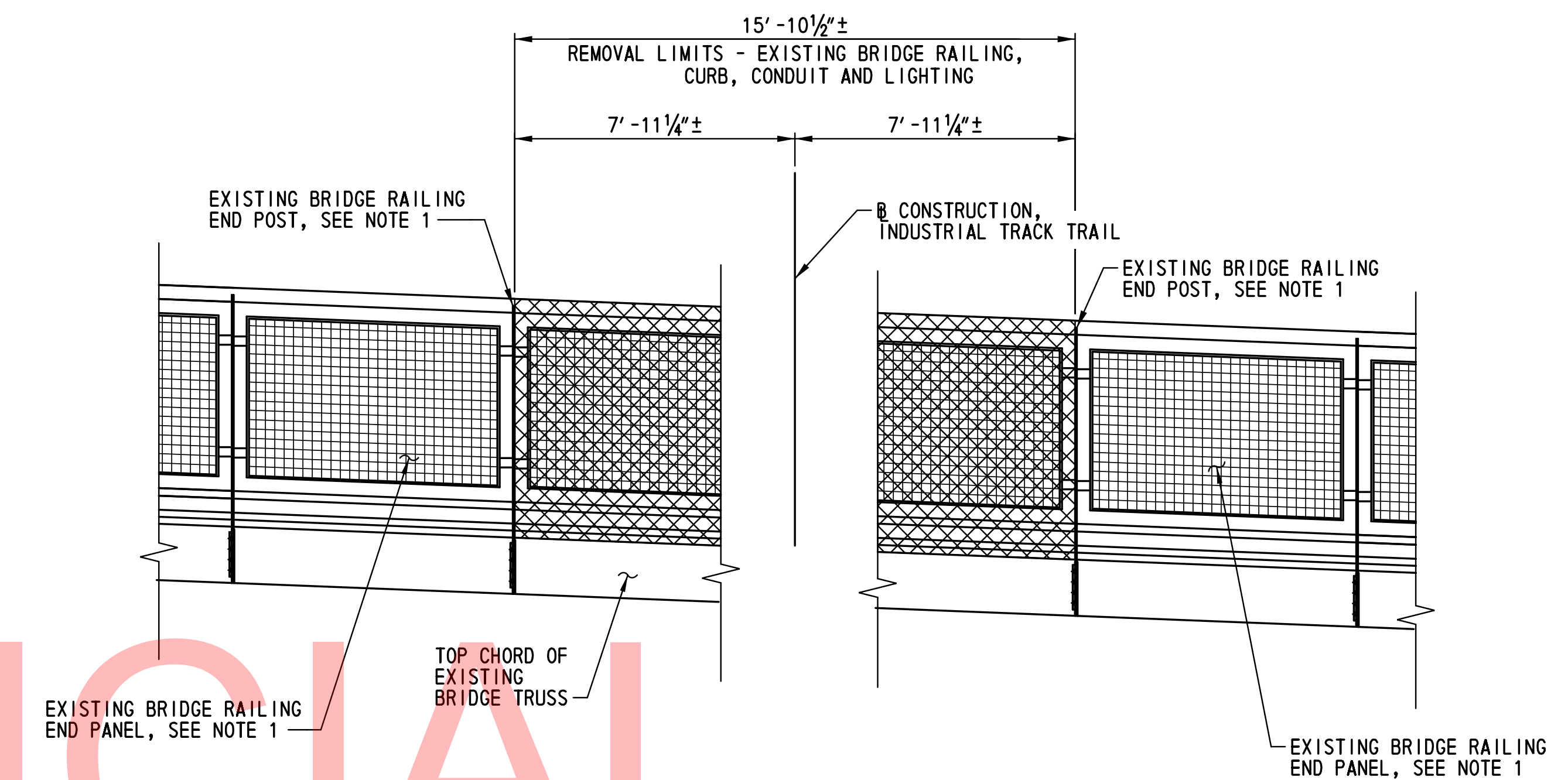
- TWO CONNECTION PLATES SHALL BE PROVIDED AT EACH RAILING POST CONNECTION LOCATION, INCLUDING LOCATIONS WITHOUT DIAPHRAGMS. FOR CONNECTION PLATE DETAILS, SEE DWG. NOS. BM-301 THRU BM-304.
- FOR LOCATION OF DIAPHRAGMS, SEE DWG. NOS. FR-301 THRU FR-304. FOR DIAPHRAGM CONNECTION PLATE AND DIAPHRAGM DETAILS, SEE DWG. NOS. BM-301 THRU BM-304.
- RAILING SPLICE PLATE LENGTH VARIES, SEE TABULATED VALUES.
- POST SPACING VARIES. FOR LOCATION OF RAILING CONNECTION PLATES, SEE DWG. NOS. BM-301 THRU BM-303.
- THE ANGLE BETWEEN THE CONNECTION PLATE AND BEAM WEB FOR END DIAPHRAGMS VARIES. FOR ADDITIONAL DETAILS, SEE DWG. NO. BM-304.
- DIMENSION "B" IS APPROXIMATE AND PROVIDED FOR INFORMATION ONLY. DIMENSION "B" SHALL BE ADJUSTED IF NECESSARY TO ENSURE THAT THE TOP OF THE TOP RAIL IS 4'-0" ABOVE THE TOP OF DECK.
- END POST LAYOUT AND DETAILS SHOWN IN "TYPICAL RAILING LAYOUT - ELEVATION", THIS SHEET, APPLIES TO ALL END POSTS EXCEPT THE END POSTS AT SPAN 17, PIER 17. FOR END POST DETAILS AT SPAN 17, SEE DETAIL A.
- SEE TABULATED VALUES FOR SLOPE OF TOP AND BOTTOM RAILS, TOP AND BOTTOM EDGES OF WIRE MESH PANEL, WHICH SHALL BE SLOPED TO MATCH BRIDGE DECK. ALL OTHER RAILING ELEMENTS SHALL BE PLACED PLUMB.
- ALL BOLTS SHALL BE 5/8" DIA. HIGH STRENGTH BOLTS CONFORMING TO A325, HOT-DIPPED GALVANIZED. ALL HOLES SHALL BE 1/4" DIA. MISCELLANEOUS FASTENERS USED FOR SPACER AND RAILING CONNECTIONS SHALL CONFORM TO ASTM A307 GRADE A, HOT-DIPPED GALVANIZED IN ACCORDANCE WITH A153.
- RAILING POST, PLATE, AND BOTTOM RAILING TUBE MATERIALS SHALL BE ASTM A36 STEEL OR APPROVED EQUAL AND GALVANIZED IN ACCORDANCE WITH ASTM 123. ALL STAINLESS STEEL TOP RAILING TUBE SHALL BE TYPE 304 STAINLESS STEEL, CONFORMING TO ASTM A269 OR APPROVED EQUAL, WITH NO. 4 BRUSH FINISH. WOVEN WIRE MESH INFILL PANELS SHALL CONSIST OF NO. 8 GAUGE WIRE MATERIAL MEETING THE REQUIREMENTS OF ASTM A 853 AND GALVANIZED IN ACCORDANCE WITH A 123.
- THE CONTRACTOR SHALL COORDINATE WITH THE SPAN 16 TRUSS FABRICATOR FOR DESIGN OF STEEL WIRE MESH PANELS BETWEEN TRUSS VERTICALS AND DIAGONALS INCLUDING CONNECTION OF WIRE MESH PANELS TO TRUSS MEMBERS. THE WIRE MESH PANELS BETWEEN TRUSS VERTICALS AND DIAGONALS SHALL MEET THE REQUIREMENTS OF ASTM A 853 AND BE GALVANIZED IN ACCORDANCE WITH ASTM 123. STEEL WIRE MESH PANELS SHALL BE NO. 8 GAUGE, 1 1/2" WOVEN WIRE MESH CINCHED AND CENTERED TO 1" X 1 1/2" X 1 1/8" C-CHANNEL FRAME. SEE DWG. PN-301 FOR PREFABRICATED TRUSS DESIGN NOTES.
- THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS OF RAILING SYSTEM FOR APPROVAL BY THE ENGINEER.

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|--|-----------------------|------------------|-----------------|---|-------------|------------|---|-------------------------------|-----------|
| <p>DELAWARE DEPARTMENT OF TRANSPORTATION</p> | ADDENDUMS / REVISIONS | | SCALE: AS NOTED | NEW CASTLE INDUSTRIAL TRACK TRAIL, PHASE 3 | CONTRACT | BRIDGE NO. | X | RAILING LAYOUT AND DETAILS | SHEET NO. |
| | T201330009 | DESIGNED BY: NAH | | | 158 | | | | |
| | COUNTY | CHECKED BY: WAG | | | TOTAL SHTS. | | | | |
| | NEW CASTLE | | | | 205 | | | | |

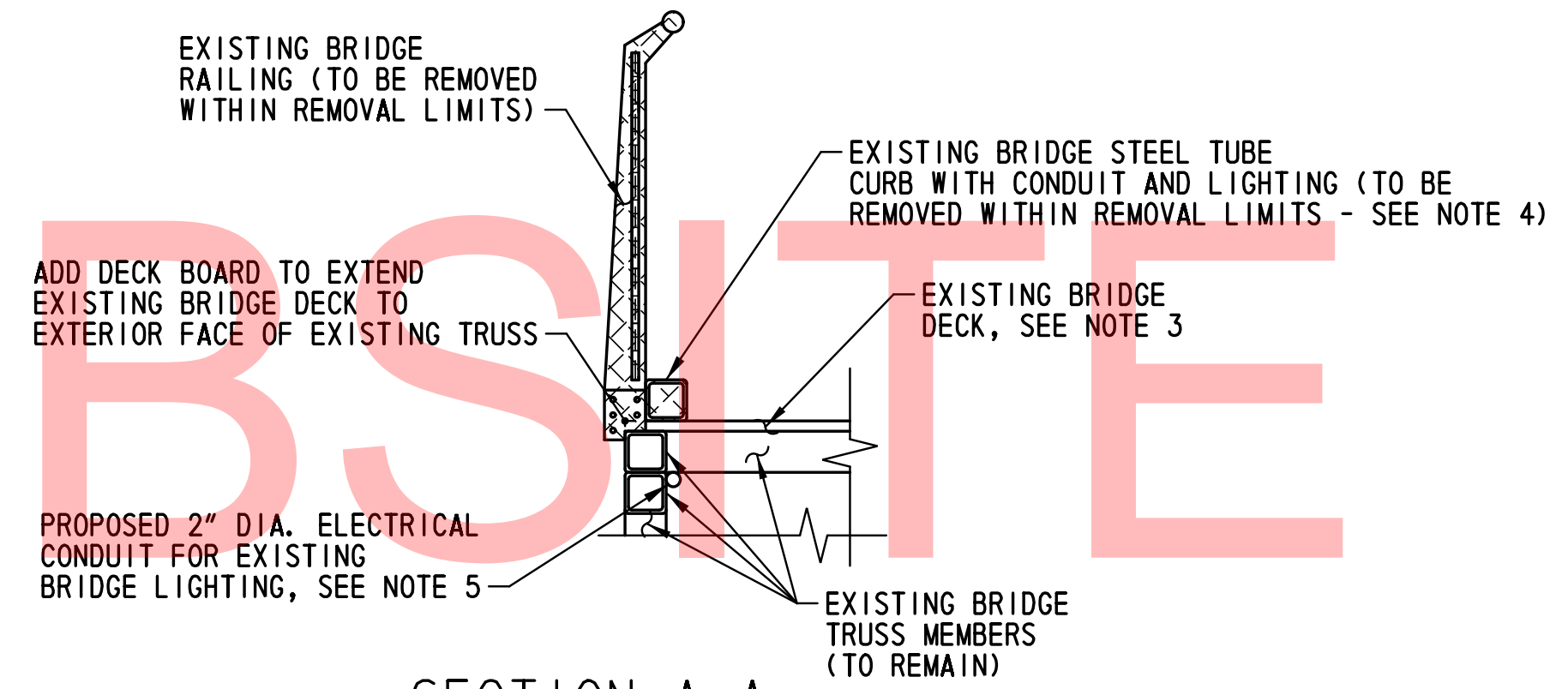


PARTIAL PLAN
SCALE: 1/2"=1'-0"

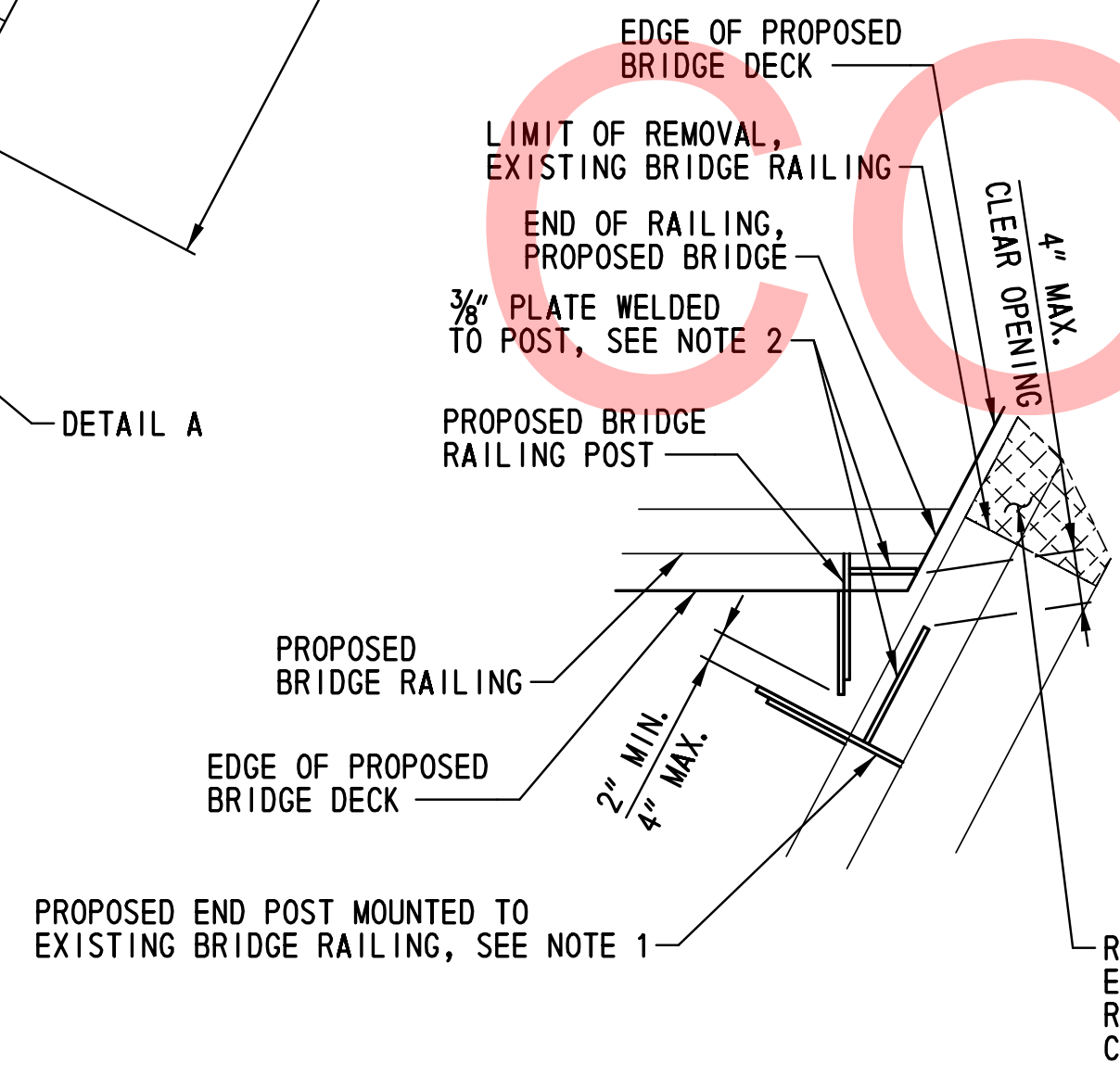


VIEW B-B
SCALE: 1/2"=1'-0"

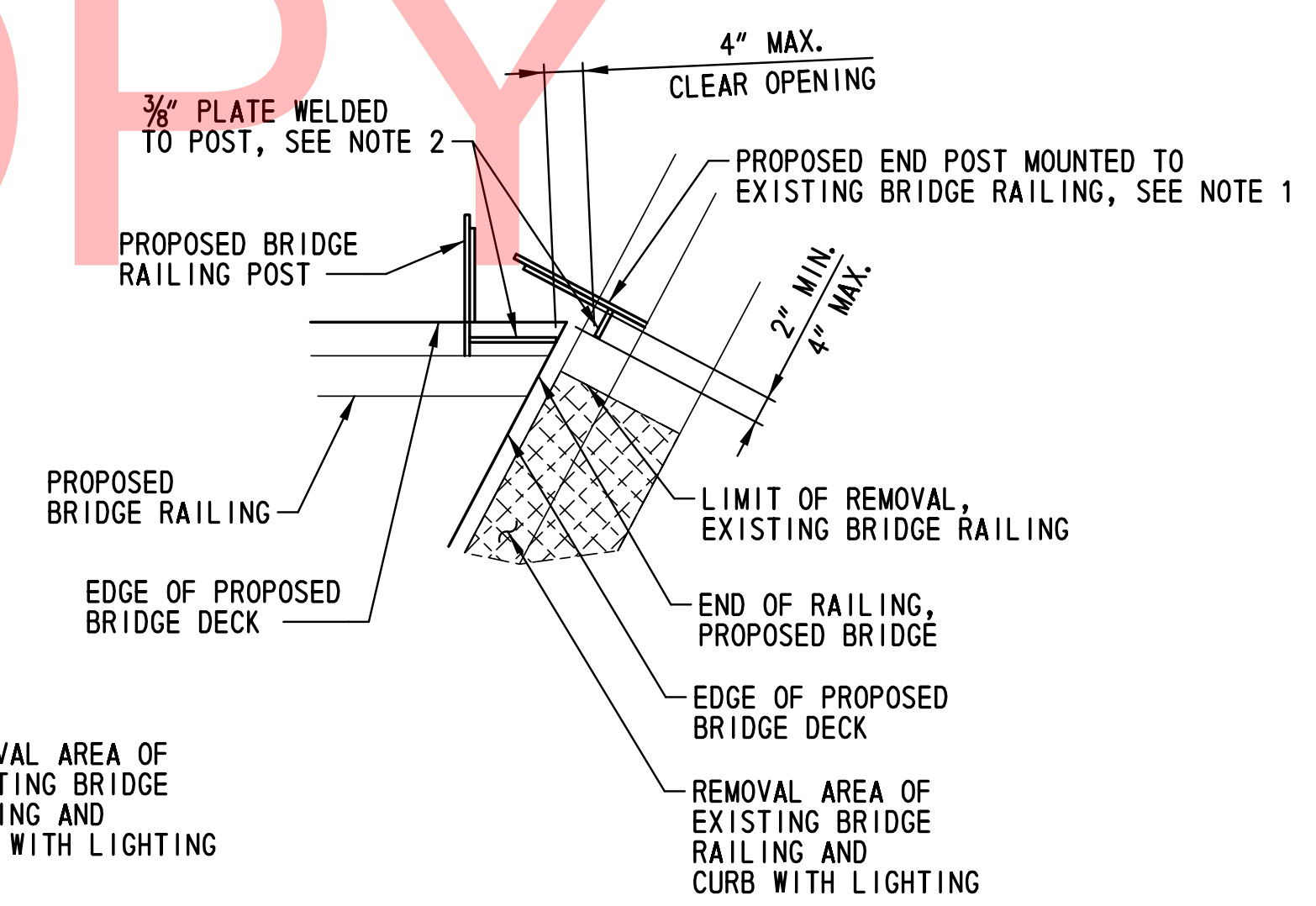
NOTE:
VIEW IS LOOKING UPSTATION. PROPOSED STRUCTURES NOT SHOWN FOR CLARITY. DIMENSIONS ARE MEASURED ALONG SKEW.



SECTION A-A
SCALE: 1/2"=1'-0"



DETAIL A
SCALE: 1"=1'-0"



DETAIL B
SCALE: 1"=1'-0"

- NOTES:**
1. THE END POSTS AND END WIRE MESH PANELS CONNECTED TO THE EXISTING BRIDGE SHALL MATCH EXISTING RAILING AND PROVIDE A TIE-IN TO PROPOSED BRIDGE DECK AND RAILING.
 2. PLATES WELDED TO END POSTS ON PROPOSED AND EXISTING BRIDGE RAILING SHALL NOT EXCEED 12" IN WIDTH. THE PLATES SHALL BE PROPORTIONED TO ALLOW A 3" GAP BETWEEN THE BRIDGE DECK AND BOTTOM OF PLATE, AND A 3" GAP BETWEEN THE TOP OF THE PLATE AND BOTTOM OF THE TOP RAILING. ALL WELDS SHALL BE 3/8", FULL HEIGHT.
 3. EXISTING BRIDGE DECK PLANKS WITHIN THE LIMITS OF RAILING REMOVAL SHALL BE RECONSTRUCTED AS NECESSARY IN ORDER TO EXTEND TO THE EXTERIOR FACE OF THE EXISTING TRUSS MEMBERS.
 4. EXISTING LIGHTING SHALL BE MAINTAINED DURING CONSTRUCTION.
 5. THE CONTRACTOR SHALL SUBMIT WORKING DRAWINGS FOR THE PROPOSED ELECTRICAL CONDUIT MOUNTED TO THE EXISTING BRIDGE. FLEXIBLE CONDUIT MAY BE PROVIDED TO SPLICE EXISTING CONDUIT BEYOND RAILING REMOVAL LIMITS WITH RE-LOCATED CONDUIT WITHIN RAILING REMOVAL LIMITS. THE CONTRACTOR SHALL WELD A COVER PLATE AT EACH CUT END OF THE CURB TUBES, WITH ALLOWANCE PROVIDED FOR CONDUIT TO PASS.
 6. FOR RAILING DETAILS ON PROPOSED BRIDGE, SEE DWG. RL-301.
 7. FOR DECK DETAILS ON THE PROPOSED BRIDGE, SEE DK-301 AND DK-302.
 8. PAYMENT FOR EXISTING RAILING DEMOLITION AND RECONFIGURATION OF EXISTING BRIDGE RAILING SHALL BE INCIDENTAL TO ITEM 606701.
 9. PAYMENT FOR DEMOLITION AND RECONFIGURATION OF EXISTING BRIDGE DECK SHALL BE INCIDENTAL TO ITEM 601537 (HARDWOOD IPE PLANK DECKING).
 10. TEMPORARY RAILING SHALL BE INSTALLED AND MAINTAINED ON THE EXISTING BRIDGE DECK PRIOR TO DECK AND RAILING DEMOLITION AND REMAIN IN PLACE UNTIL NEW BRIDGE CONSTRUCTION IS COMPLETED. THE TEMPORARY RAILING SYSTEM SHALL BE DESIGNED IN ACCORDANCE WITH AASHTO LRFD REQUIREMENTS, AND MAINTAIN AT LEAST 8'-0" CLEAR PATH ON THE EXISTING BRIDGE DECK. HIGH VISIBILITY OBJECT MARKERS SHALL BE INSTALLED AND MAINTAINED ON TEMPORARY RAILING. TEMPORARY RAILING DESIGN AND WORKING DRAWINGS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL. PAYMENT FOR TEMPORARY RAILING SHALL BE INCIDENTAL TO ITEM 606701.

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| ADDENDUMS / REVISIONS |
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SCALE: AS NOTED

NEW CASTLE INDUSTRIAL TRACK TRAIL, PHASE 3

| | | |
|------------|------------------|----------|
| CONTRACT | BRIDGE NO. | X |
| T201330009 | DESIGNED BY: NAH | |
| COUNTY | CHECKED BY: WAG | |
| NEW CASTLE | | |

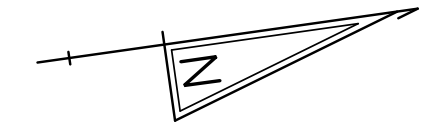
DEMOLITION PLAN

| |
|-------------|
| DE-301 |
| SHEET NO. |
| 159 |
| TOTAL SHTS. |
| 205 |

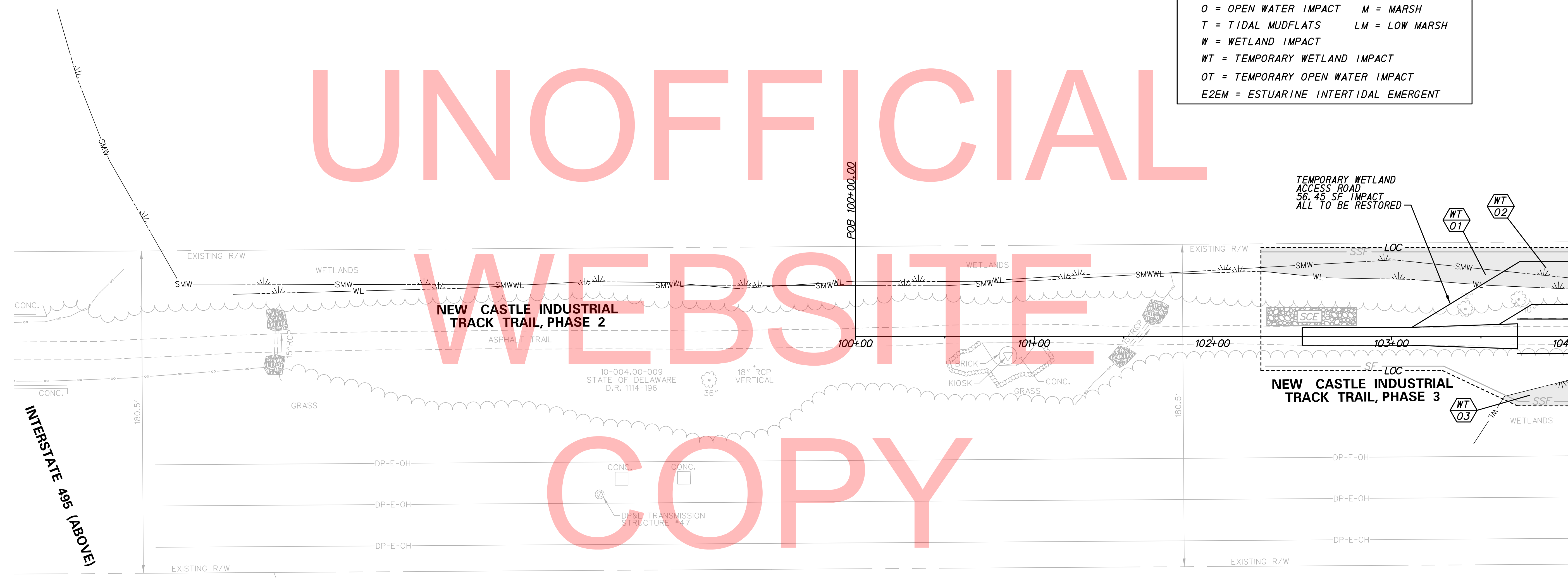
| TEMPORARY WETLAND IMPACT AREA SCHEDULE | | | | | | |
|--|---------------------------------|-----------|-----------|-------------|---------------|------|
| ID | IMPACT DESCRIPTION | AREA (SF) | AREA (AC) | VOLUME (CY) | JURISDICTION | TYPE |
| 2-WT-01 | MATS, ACCESS, MSC WALL, STORAGE | 1,378.14 | 0.0316 | N/A | USACE | E2EM |
| 2-WT-02 | MATS, ACCESS, MSC WALL, STORAGE | 1,867.95 | 0.0429 | N/A | USACE/DNREC-M | E2EM |
| 2-WT-03 | MATS, SMALL VEHICLE, MSC WALL | 356.03 | 0.0082 | N/A | USACE | E2EM |

TOTAL DNREC IMPACTS FOR THIS SHEET = 0.0429 AC. (ALL M)
 TOTAL USACE IMPACTS FOR THIS SHEET = 0.0827 AC. (ALL E2EM)

| LEGEND | |
|---------------|----------------------------------|
| | PERMANENT IMPACT AREA |
| | TEMPORARY IMPACT AREA |
| -----MHW----- | MEAN HIGH WATER |
| -----SML----- | STATE MAPPED LINE |
| -----SMW----- | STATE MAPPED WETLAND |
| -----WL----- | USACE WETLAND BOUNDARY |
| | IMPACT AREA TYPE ID. (SEE BELOW) |
| | IMPACT AREA ID. AND/OR NUMBER |
| O | OPEN WATER IMPACT |
| M | MARSH |
| T | TIDAL MUDFLATS |
| LM | LOW MARSH |
| W | WETLAND IMPACT |
| WT | TEMPORARY WETLAND IMPACT |
| OT | TEMPORARY OPEN WATER IMPACT |
| E2EM | ESTUARINE INTERTIDAL EMERGENT |



UNOFFICIAL
WEBSITE
COPY

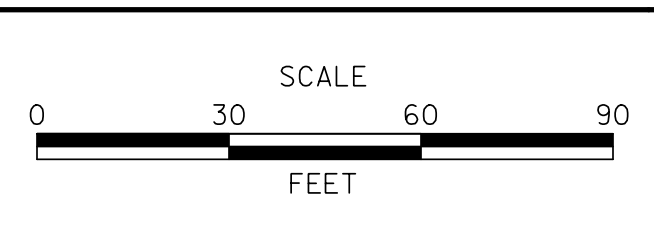


MATCH LINE STA. 104+00 (EC-03)

N:\31896-002\CADD\EC02_LTT3.DGN

DELAWARE DEPARTMENT OF TRANSPORTATION

| ADDENDUMS / REVISIONS | |
|-----------------------|--|
| | |
| | |
| | |



NEW CASTLE INDUSTRIAL TRACK TRAIL, PHASE 3

| | | |
|------------|--------------|----------|
| CONTRACT | BRIDGE NO. | X |
| T201330009 | DESIGNED BY: | LCC |
| COUNTY | CHECKED BY: | JRR |
| NEW CASTLE | | |

ENVIRONMENTAL COMPLIANCE PLAN

| |
|-------------|
| EC-02 |
| SHEET NO. |
| 162 |
| TOTAL SHTS. |
| 205 |

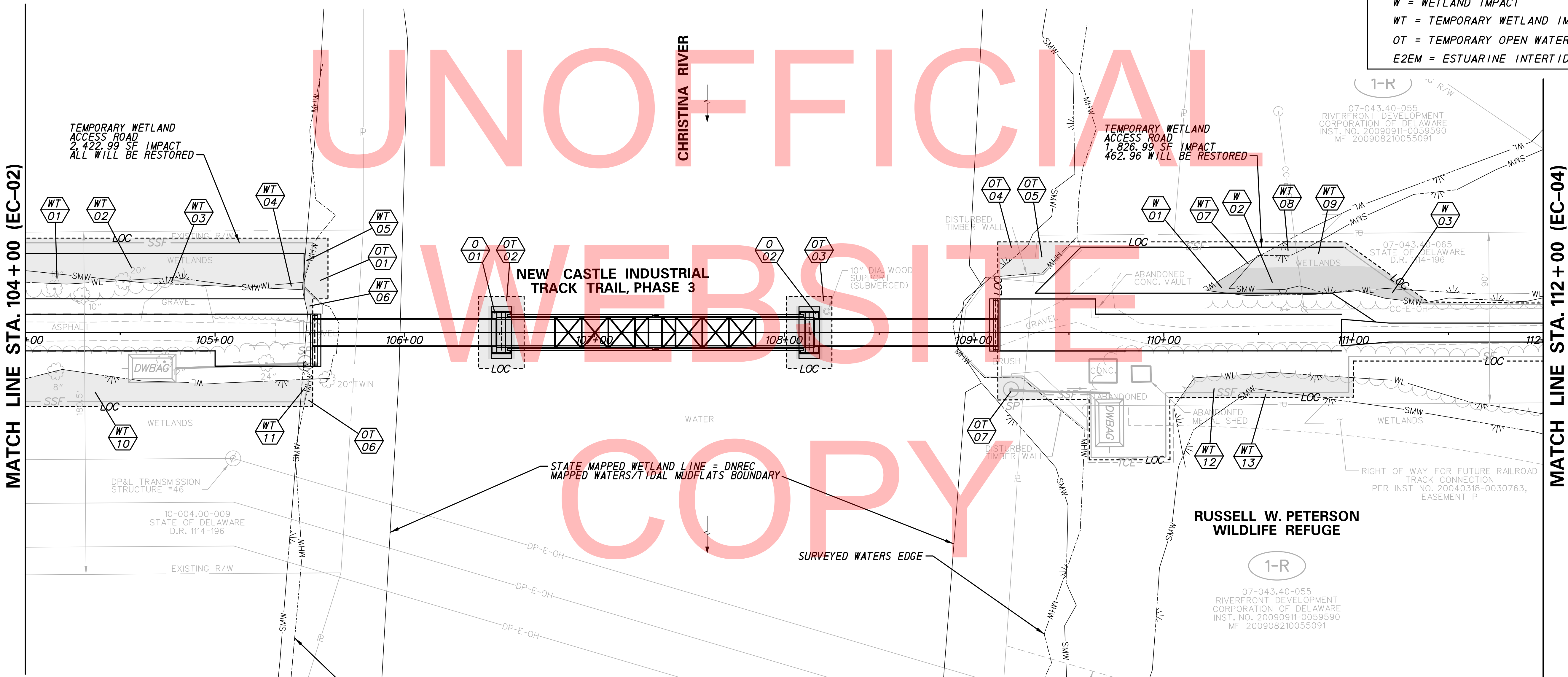
| TEMPORARY WETLAND IMPACT AREA SCHEDULE | | | | | | |
|--|---------------------------------|-----------|-----------|-------------|---------------|------|
| ID | IMPACT DESCRIPTION | AREA (SF) | AREA (AC) | VOLUME (CY) | JURISDICTION | TYPE |
| 3-WT-01 | MATS, ACCESS, MSE WALL, STORAGE | 190.26 | 0.0044 | N/A | USACE | E2EM |
| 3-WT-02 | WETLAND ACCESS RD, ACCESS | 3241.99 | 0.0744 | N/A | USACE/DNREC-M | E2EM |
| 3-WT-03 | MATS, ACCESS, MSE WALL, STORAGE | 121.16 | 0.0028 | N/A | DNREC-M | E2EM |
| 3-WT-04 | MATS, ACCESS, MSE WALL, STORAGE | 57.11 | 0.0013 | N/A | DNREC-M | E2EM |
| 3-WT-05 | MATS, ACCESS, MSE WALL, STORAGE | 66.91 | 0.0015 | N/A | USACE/DNREC-T | E2EM |
| 3-WT-06 | MATS, ACCESS, MSE WALL, STORAGE | 55.75 | 0.0013 | N/A | USACE/DNREC-T | E2EM |
| 3-WT-07 | WETLAND ACCESS RD, MSE WALL | 12.27 | 0.0003 | N/A | USACE | E2EM |
| 3-WT-08 | WETLAND ACCESS RD, MSE WALL | 120.37 | 0.0028 | N/A | USACE/DNREC-T | E2EM |
| 3-WT-09 | WETLAND ACCESS RD, MSE WALL | 554.39 | 0.0127 | N/A | USACE/DNREC-T | E2EM |
| 3-WT-10 | MATS, SMALL VEHICLE, MSE WALL | 2122.36 | 0.0487 | N/A | USACE | E2EM |
| 3-WT-11 | MATS, SMALL VEHICLE, MSE WALL | 37.58 | 0.0009 | N/A | USACE/DNREC-T | E2EM |
| 3-WT-12 | MATS, SMALL VEHICLE, MSE WALL | 938.15 | 0.0215 | N/A | USACE | E2EM |
| 3-WT-13 | MATS, SMALL VEHICLE, MSE WALL | 101.83 | 0.0023 | N/A | USACE/DNREC-T | E2EM |

| PERMANENT WETLAND IMPACT AREA SCHEDULE | | | | | | |
|--|---------------------|-----------|-----------|-------------|---------------|------|
| ID | IMPACT DESCRIPTION | AREA (SF) | AREA (AC) | VOLUME (CY) | JURISDICTION | TYPE |
| 3-W-01 | BILLBOARD ACCESS RD | 260.58 | 0.0060 | 28 | USACE | E2EM |
| 3-W-02 | BILLBOARD ACCESS RD | 1002.09 | 0.0230 | 61 | USACE/DNREC-T | E2EM |
| 3-W-03 | BILLBOARD ACCESS RD | 144.37 | 0.0033 | 9 | DNREC-T | E2EM |

| LEGEND | |
|--------|----------------------------------|
| | PERMANENT IMPACT AREA |
| | TEMPORARY IMPACT AREA |
| | MHW - MEAN HIGH WATER |
| | SML - STATE MAPPED LINE |
| | SMW - STATE MAPPED WETLAND |
| | WL - USACE WETLAND BOUNDARY |
| | IMPACT AREA TYPE ID. (SEE BELOW) |
| | IMPACT AREA ID. AND/OR NUMBER |
| O | OPEN WATER IMPACT |
| M | MARSH |
| T | TIDAL MUDFLATS |
| LM | LOW MARSH |
| W | WETLAND IMPACT |
| WT | TEMPORARY WETLAND IMPACT |
| OT | TEMPORARY OPEN WATER IMPACT |
| E2EM | ESTUARINE INTERTIDAL EMERGENT |

0.0785 AC. (DNREC M)
0.0187 AC. (DNREC T)
TOTAL TEMPORARY DNREC WETLAND IMPACTS THIS SHEET = 0.0973 AC.
TOTAL TEMPORARY USACE WETLAND IMPACTS THIS SHEET = 0.1708 AC. (ALL E2EM)

TOTAL PERMANENT DNREC WETLAND IMPACTS THIS SHEET = 0.0263 AC. (ALL DNREC T)
TOTAL PERMANENT USACE WETLAND IMPACTS THIS SHEET = 0.0290 AC. (ALL E2EM)



| PERMANENT OPEN WATER IMPACT AREA SCHEDULE | | | | | | |
|---|--------------------------|-----------|-----------|-------------|-------------------|-------|
| ID | IMPACT DESCRIPTION | AREA (SF) | AREA (AC) | VOLUME (CY) | JURISDICTION | TYPE |
| 3-0-01 | BRIDGE PIER/STEEL SHEETS | 515.00 | 0.0118 | 270 | USACE/DNREC-WATER | TIDAL |
| 3-0-02 | BRIDGE PIER/STEEL SHEETS | 515.00 | 0.0118 | 326 | USACE/DNREC-WATER | TIDAL |

| TEMPORARY OPEN WATER IMPACT AREA SCHEDULE | | | | | | |
|---|----------------------------|-----------|-----------|-------------|------------------------|-------|
| ID | IMPACT DESCRIPTION | AREA (SF) | AREA (AC) | VOLUME (CY) | JURISDICTION | TYPE |
| 3-OT-01 | BULKHEAD ACCESS | 303.26 | 0.0070 | 22 | USACE/DNREC-T | TIDAL |
| 3-OT-02 | BARGE ACCESS, PIER CONST | 396.87 | 0.0119 | 0 | USACE/DNREC-WATER | TIDAL |
| 3-OT-03 | BARGE ACCESS, PIER CONST | 397.00 | 0.0119 | 0 | USACE/DNREC-WATER | TIDAL |
| 3-OT-04 | BULKHEAD CONST, WTR ACCESS | 139.21 | 0.0032 | 15 | USACE/DNREC-T | TIDAL |
| 3-OT-05 | BULKHEAD CONST, WTR ACCESS | 394.55 | 0.0091 | 42 | USACE/DNREC-NOT MAPPED | TIDAL |
| 3-OT-06 | MSE WALL, BRIDGE ABUTMENT | 42.97 | 0.0010 | 0 | USACE/DNREC-T | TIDAL |
| 3-OT-07 | MSE WALL, BRIDGE ABUTMENT | 224.71 | 0.0052 | 0 | USACE/DNREC-NOT MAPPED | TIDAL |

0.0182 AC. (DNREC WATER)
0.0111 AC. (DNREC T)
0.0142 AC. (DNREC NOT MAPPED)

TOTAL TEMPORARY DNREC AND USACE OPEN WATER IMPACTS THIS SHEET = 0.0436 AC.

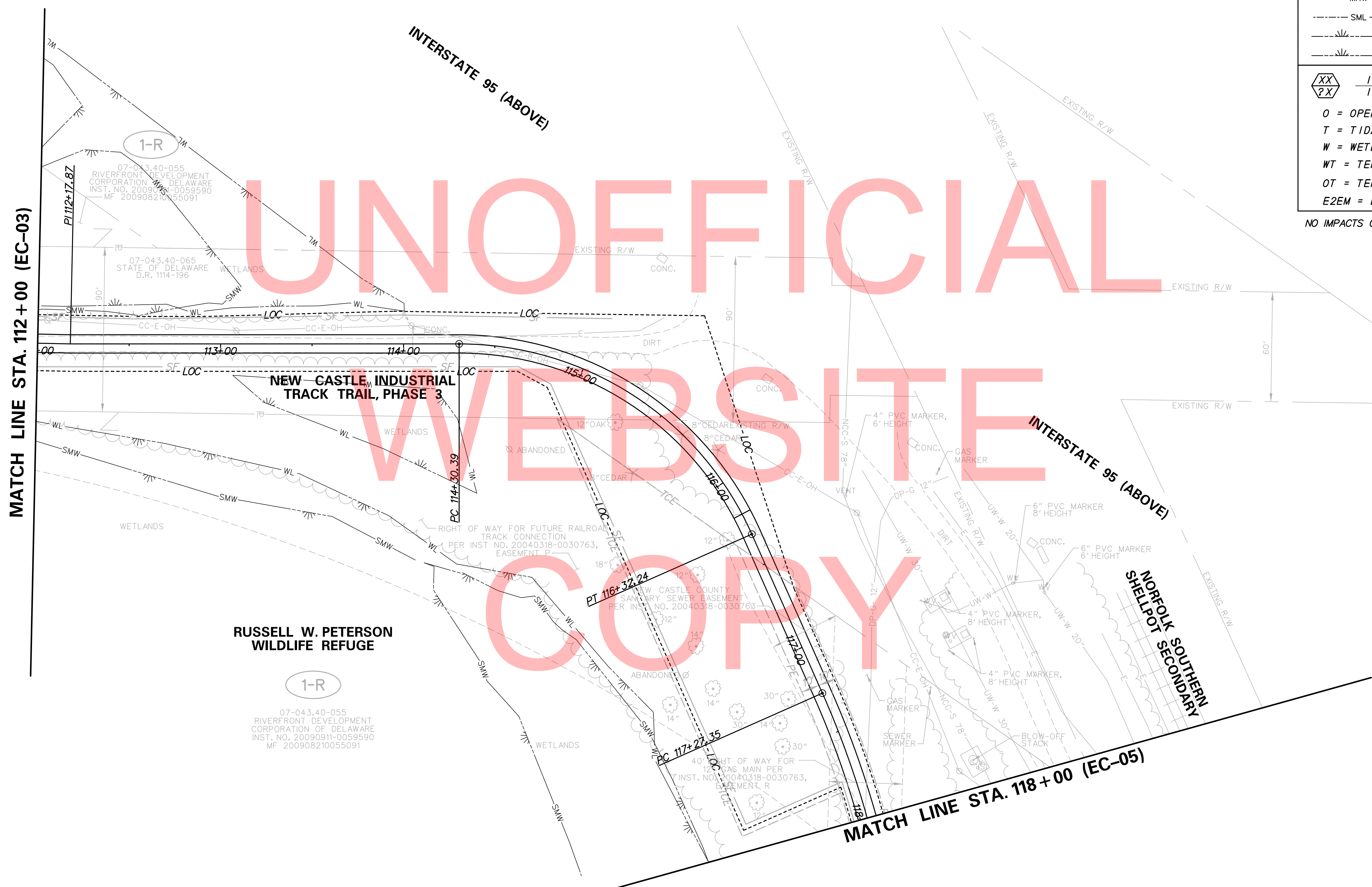
TOTAL PERMANENT DNREC AND USACE OPEN WATER IMPACTS THIS SHEET = 0.0236 AC. (ALL DNREC WATER)

| | | | | | | | |
|--|-----------------------|--|-----------------------------|------------------------|------------------|----------------------------------|-------------|
| | ADDENDUMS / REVISIONS | | SCALE 0 30 60 90 FEET | CONTRACT T201330009 | BRIDGE NO. X | ENVIRONMENTAL COMPLIANCE PLAN | SHEET NO. |
| | | | | COUNTY NEW CASTLE | DESIGNED BY: LCC | | 163 |
| | | | | | CHECKED BY: JRR | | TOTAL SHTS. |
| | | | | | | | 205 |

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| LEGEND | |
|--------------------------------------|----------------------------------|
| | PERMANENT IMPACT AREA |
| | TEMPORARY IMPACT AREA |
| -----MHW----- | MEAN HIGH WATER |
| -----SML----- | STATE MAPPED LINE |
| -----SMW----- | STATE MAPPED WETLAND |
| -----WL----- | USACE WETLAND BOUNDARY |
| | IMPACT AREA TYPE ID. (SEE BELOW) |
| | IMPACT AREA ID. AND/OR NUMBER |
| O = OPEN WATER IMPACT | M = MARSH |
| T = TIDAL MUDFLATS | LM = LOW MARSH |
| W = WETLAND IMPACT | |
| WT = TEMPORARY WETLAND IMPACT | |
| OT = TEMPORARY OPEN WATER IMPACT | |
| E2EM = ESTUARINE INTERTIDAL EMERGENT | |

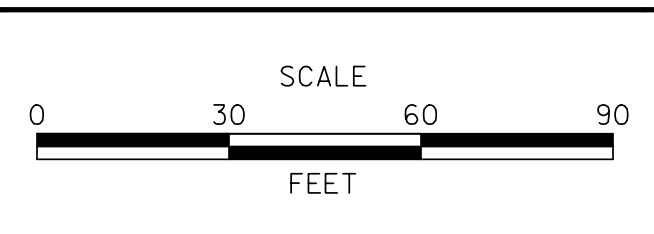
NO IMPACTS OCCUR ON THIS SHEET.



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DELAWARE DEPARTMENT OF TRANSPORTATION

| ADDENDUMS / REVISIONS | |
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NEW CASTLE INDUSTRIAL TRACK TRAIL, PHASE 3

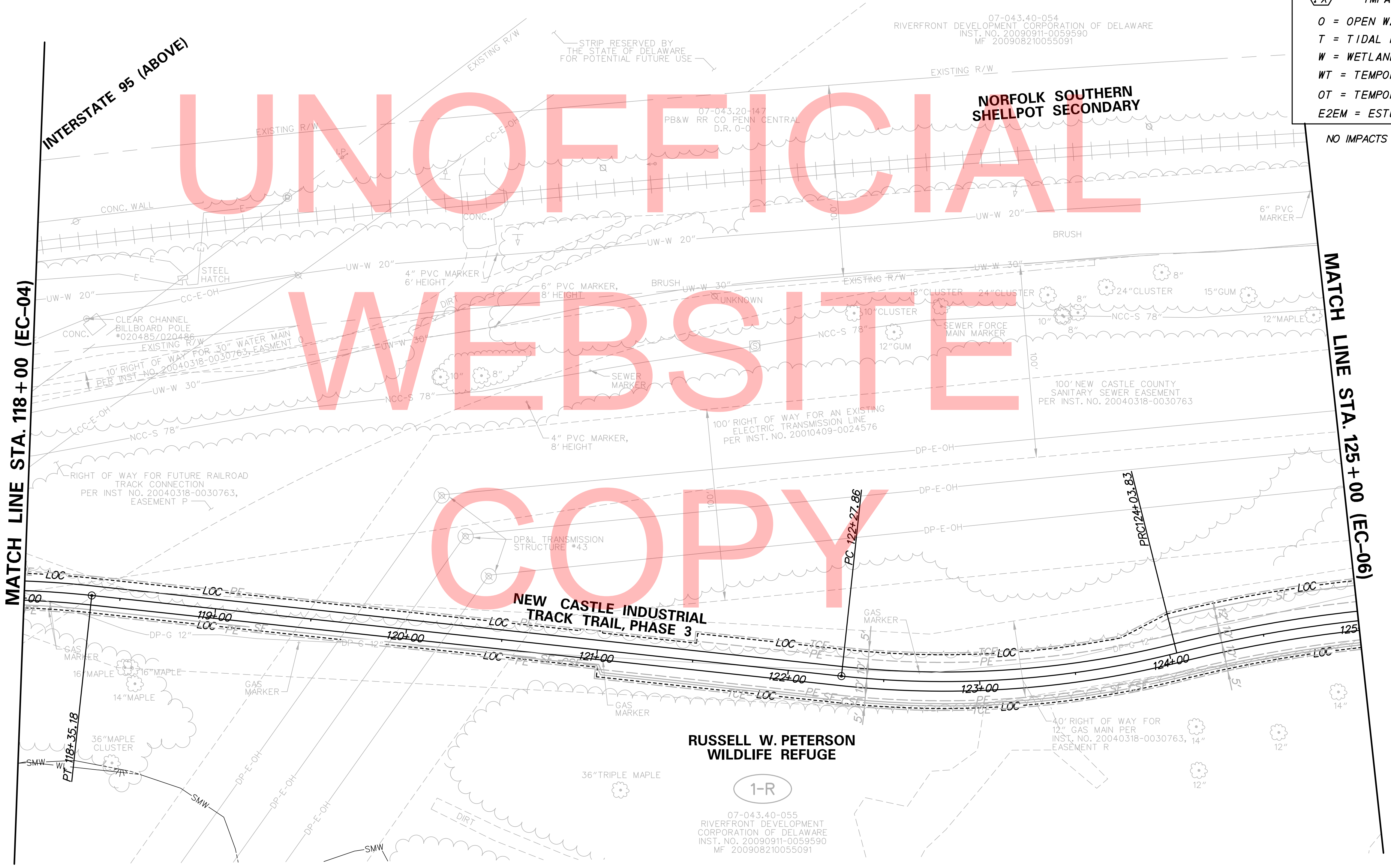
| | | |
|------------|--------------|----------|
| CONTRACT | BRIDGE NO. | X |
| T201330009 | DESIGNED BY: | LCC |
| COUNTY | CHECKED BY: | JRR |
| NEW CASTLE | | |

ENVIRONMENTAL COMPLIANCE PLAN

| |
|-------------|
| EC-04 |
| SHEET NO. |
| 164 |
| TOTAL SHTS. |
| 205 |

| LEGEND | |
|--------|---|
| | PERMANENT IMPACT AREA |
| | TEMPORARY IMPACT AREA |
| | MHW - MEAN HIGH WATER |
| | SML - STATE MAPPED LINE |
| | SMW - STATE MAPPED WETLAND |
| | WL - USACE WETLAND BOUNDARY |
| | IMPACT AREA TYPE ID. (SEE BELOW) IMPACT AREA ID. AND/OR NUMBER |
| O | OPEN WATER IMPACT |
| M | MARSH |
| T | TIDAL MUDFLATS |
| LM | LOW MARSH |
| W | WETLAND IMPACT |
| WT | TEMPORARY WETLAND IMPACT |
| OT | TEMPORARY OPEN WATER IMPACT |
| E2EM | ESTUARINE INTERTIDAL EMERGENT |

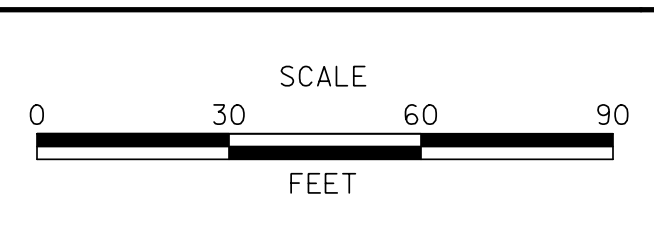
NO IMPACTS OCCUR ON THIS SHEET.



N:\31896-002\CADD\EC05_1TT3.DGN

DELAWARE
DEPARTMENT OF TRANSPORTATION

| ADDENDUMS / REVISIONS |
|-----------------------|
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NEW CASTLE INDUSTRIAL TRACK TRAIL, PHASE 3

| | | |
|------------|------------------|----------|
| CONTRACT | BRIDGE NO. | X |
| T201330009 | DESIGNED BY: LCC | |
| COUNTY | CHECKED BY: JRR | |
| NEW CASTLE | | |

ENVIRONMENTAL COMPLIANCE PLAN

| |
|-------------|
| EC-05 |
| SHEET NO. |
| 165 |
| TOTAL SHTS. |
| 205 |

| TEMPORARY WETLAND IMPACT AREA SCHEDULE | | | | | | |
|--|-----------------------------|-----------|-----------|-------------|---------------|------|
| ID | IMPACT DESCRIPTION | AREA (SF) | AREA (AC) | VOLUME (CY) | JURISDICTION | TYPE |
| 6-WT-01 | CRANE MAT, PILES, BOARDWALK | 8329.35 | 0.1912 | N/A | USACE | E2EM |
| 6-WT-02 | CRANE MAT, PILES, BOARDWALK | 3405.15 | 0.0782 | N/A | USACE/DNREC-M | E2EM |
| 6-WT-03 | CRANE MAT, PILES, BOARDWALK | 364.25 | 0.0084 | N/A | USACE/DNREC-T | E2EM |
| 6-WT-04 | CRANE MAT, PILES, BOARDWALK | 4700.38 | 0.1079 | N/A | USACE* | E2EM |
| 6-WT-05 | CRANE MAT, PILES, BOARDWALK | 3196.62 | 0.0734 | N/A | USACE/DNREC-M | E2EM |
| 6-WT-06 | CRANE MAT, PILES, BOARDWALK | 1175.49 | 0.0270 | N/A | USACE* | E2EM |
| 6-WT-07 | CRANE MAT, PILES, BOARDWALK | 1134.06 | 0.0260 | N/A | USACE/DNREC-T | E2EM |

| PERMANENT WETLAND IMPACT AREA SCHEDULE | | | | | | |
|--|--------------------|-----------|-----------|-------------|--------------|------|
| ID | IMPACT DESCRIPTION | AREA (SF) | AREA (AC) | VOLUME (CY) | JURISDICTION | TYPE |
| 6-W-01 | BOARDWALK SHADING | 4700.38 | 0.1079 | N/A | DNREC-M | E2EM |
| 6-W-02 | BOARDWALK SHADING | 1175.49 | 0.0270 | N/A | DNREC-T | E2EM |

TOTAL PERMANENT DNREC WETLAND IMPACTS THIS SHEET = 0.1349 AC.
 0.1079 AC. (DNREC M)
 0.0270 AC. (DNREC T)

LEGEND

PERMANENT IMPACT AREA

TEMPORARY IMPACT AREA

MHW MEAN HIGH WATER

SML STATE MAPPED LINE

SMW STATE MAPPED WETLAND

WL USACE WETLAND BOUNDARY

XX IMPACT AREA TYPE ID. (SEE BELOW)

2X IMPACT AREA ID. AND/OR NUMBER

O = OPEN WATER IMPACT M = MARSH

T = TIDAL MUDFLATS LM = LOW MARSH

W = WETLAND IMPACT

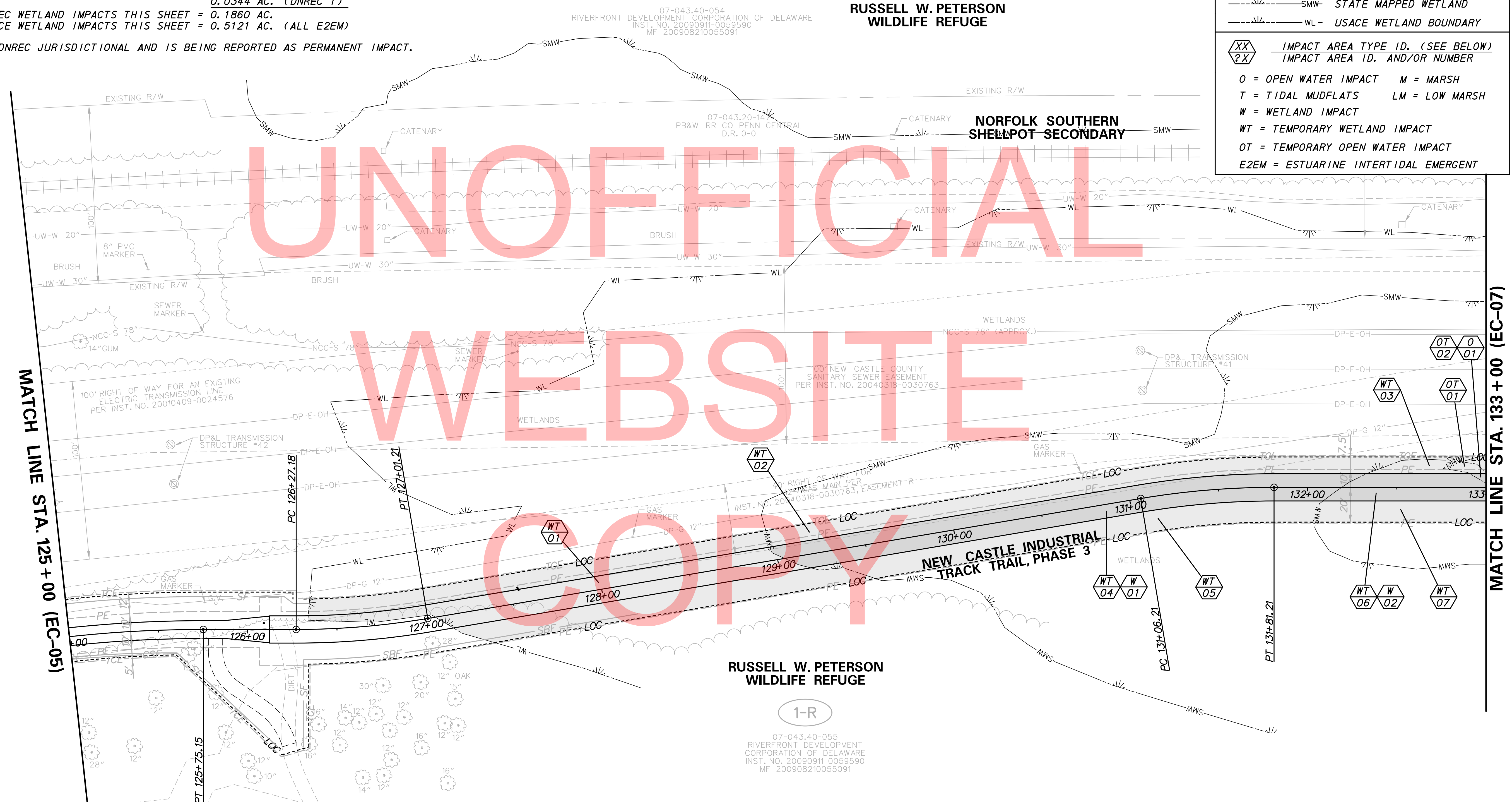
WT = TEMPORARY WETLAND IMPACT

OT = TEMPORARY OPEN WATER IMPACT

E2EM = ESTUARINE INTERTIDAL EMERGENT

TOTAL TEMPORARY DNREC WETLAND IMPACTS THIS SHEET = 0.1860 AC.
 TOTAL TEMPORARY USACE WETLAND IMPACTS THIS SHEET = 0.5121 AC. (ALL E2EM)

*THIS AREA IS ALSO DNREC JURISDICTIONAL AND IS BEING REPORTED AS PERMANENT IMPACT.



| TEMPORARY OPEN WATER IMPACT AREA SCHEDULE | | | | | | |
|---|-----------------------------|-----------|-----------|-------------|---------------|-------|
| ID | IMPACT DESCRIPTION | AREA (SF) | AREA (AC) | VOLUME (CY) | JURISDICTION | TYPE |
| 6-OT-01 | CRANE MAT, PILES, BOARDWALK | 98.89 | 0.0023 | N/A | USACE/DNREC-T | TIDAL |
| 6-OT-02 | CRANE MAT, PILES, BOARDWALK | 22.67 | 0.0005 | N/A | USACE* | TIDAL |

TOTAL TEMPORARY DNREC OPEN WATER IMPACTS THIS SHEET = 0.0023 AC. (ALL DNREC T)
 TOTAL TEMPORARY USACE OPEN WATER IMPACTS THIS SHEET = 0.0028 AC. (ALL E2EM)

*THIS AREA IS ALSO DNREC JURISDICTIONAL AND IS BEING REPORTED AS PERMANENT IMPACT.

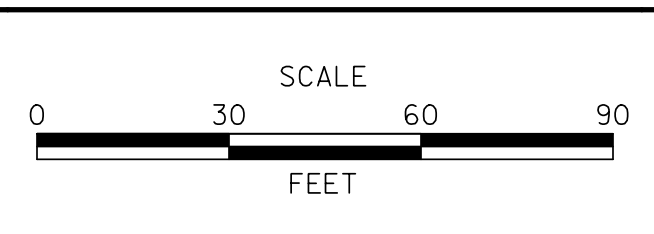
| PERMANENT OPEN WATER IMPACT AREA SCHEDULE | | | | | | |
|---|--------------------|-----------|-----------|-------------|--------------|-------|
| ID | IMPACT DESCRIPTION | AREA (SF) | AREA (AC) | VOLUME (CY) | JURISDICTION | TYPE |
| 6-O-01 | BOARDWALK SHADING | 22.67 | 0.0005 | N/A | DNREC-T | TIDAL |

TOTAL PERMANENT DNREC OPEN WATER IMPACTS THIS SHEET = 0.0005 AC. (ALL DNREC T)

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| ADDENDUMS / REVISIONS | |
|-----------------------|--|
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NEW CASTLE INDUSTRIAL TRACK TRAIL, PHASE 3

| | | |
|------------|------------------|----------|
| CONTRACT | BRIDGE NO. | X |
| T201330009 | DESIGNED BY: LCC | |
| COUNTY | CHECKED BY: JRR | |
| NEW CASTLE | | |

ENVIRONMENTAL COMPLIANCE PLAN

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|-------------|
| EC-06 |
| SHEET NO. |
| 166 |
| TOTAL SHTS. |
| 205 |

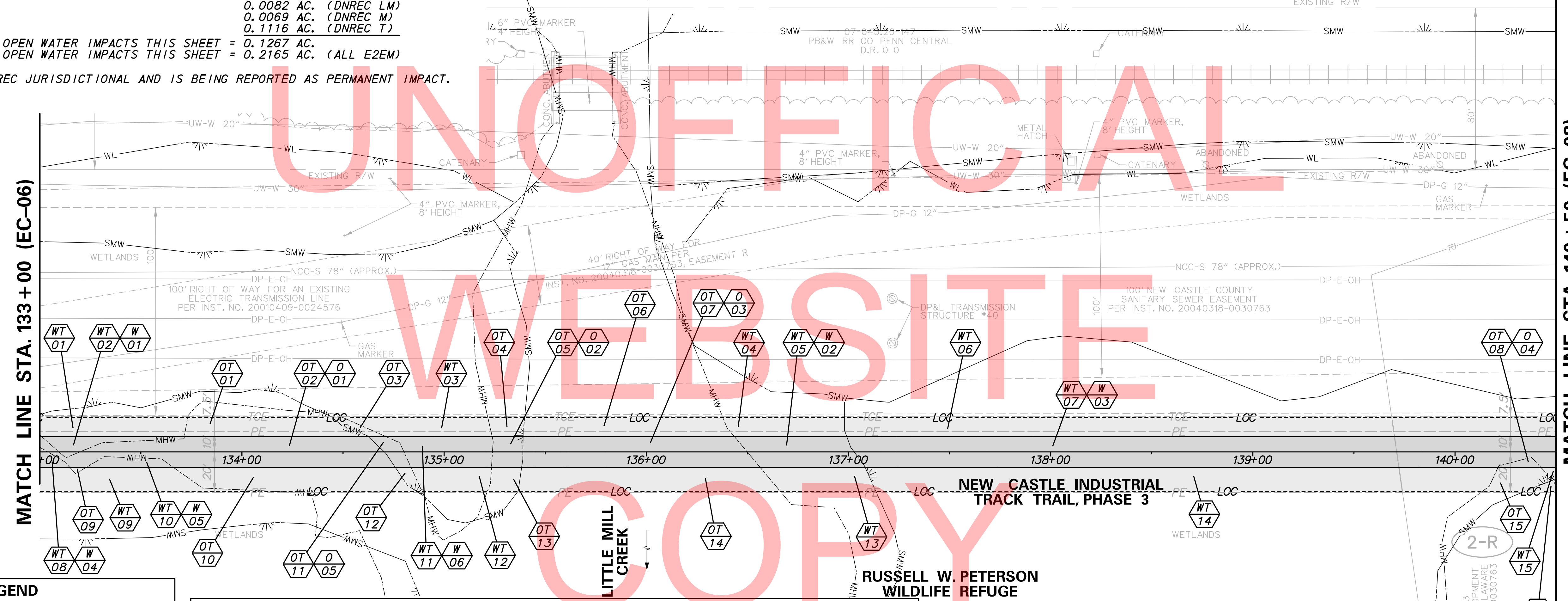
| TEMPORARY OPEN WATER IMPACT AREA SCHEDULE | | | | | | |
|---|-------------------------|-----------|-----------|-------------|----------------|-------|
| ID | IMPACT DESCRIPTION | AREA (SF) | AREA (AC) | VOLUME (CY) | JURISDICTION | TYPE |
| 7-OT-01 | BARGE, PILES, BOARDWALK | 763.75 | 0.0175 | N/A | USACE/DNREC-T | TIDAL |
| 7-OT-02 | BARGE, PILES, BOARDWALK | 2032.09 | 0.0467 | N/A | USACE* | TIDAL |
| 7-OT-03 | BARGE, PILES, BOARDWALK | 79.56 | 0.0018 | N/A | USACE/DNREC-M | TIDAL |
| 7-OT-04 | BARGE, PILES, BOARDWALK | 158.26 | 0.0036 | N/A | USACE/DNREC-T | TIDAL |
| 7-OT-05 | BARGE, PILES, BOARDWALK | 223.85 | 0.0051 | N/A | USACE* | TIDAL |
| 7-OT-06 | BARGE, PILES, BOARDWALK | 963.45 | 0.0221 | N/A | USACE/DNREC-T | TIDAL |
| 7-OT-07 | BARGE, PILES, BOARDWALK | 1656.04 | 0.0380 | N/A | USACE* | TIDAL |
| 7-OT-08 | BARGE, PILES, BOARDWALK | 54.04 | 0.0012 | N/A | USACE/DNREC-LM | TIDAL |
| 7-OT-09 | BARGE, PILES, BOARDWALK | 14.03 | 0.0003 | N/A | USACE/DNREC-T | TIDAL |
| 7-OT-10 | BARGE, PILES, BOARDWALK | 1245.95 | 0.0286 | N/A | USACE/DNREC-T | TIDAL |
| 7-OT-11 | BARGE, PILES, BOARDWALK | 146.15 | 0.0034 | N/A | USACE/DNREC-M | TIDAL |
| 7-OT-12 | BARGE, PILES, BOARDWALK | 74.66 | 0.0017 | N/A | USACE/DNREC-M | TIDAL |
| 7-OT-13 | BARGE, PILES, BOARDWALK | 176.00 | 0.0040 | N/A | USACE/DNREC-T | TIDAL |
| 7-OT-14 | BARGE, PILES, BOARDWALK | 1490.40 | 0.0342 | N/A | USACE/DNREC-T | TIDAL |
| 7-OT-15 | BARGE, PILES, BOARDWALK | 304.40 | 0.0070 | N/A | USACE/DNREC-LM | TIDAL |
| 7-OT-16 | BARGE, PILES, BOARDWALK | 48.70 | 0.0011 | N/A | USACE/DNREC-T | TIDAL |

| PERMANENT OPEN WATER IMPACT AREA SCHEDULE | | | | | | |
|---|--------------------|-----------|-----------|-------------|--------------|-------|
| ID | IMPACT DESCRIPTION | AREA (SF) | AREA (AC) | VOLUME (CY) | JURISDICTION | TYPE |
| 7-0-01 | BOARDWALK SHADING | 2032.09 | 0.0467 | N/A | DNREC-T | TIDAL |
| 7-0-02 | BOARDWALK SHADING | 223.85 | 0.0051 | N/A | DNREC-M | TIDAL |
| 7-0-03 | BOARDWALK SHADING | 1656.04 | 0.0380 | N/A | DNREC-T | TIDAL |
| 7-0-04 | BOARDWALK SHADING | 54.04 | 0.0012 | N/A | DNREC-LM | TIDAL |
| 7-0-05 | BOARDWALK SHADING | 146.15 | 0.0034 | N/A | DNREC-M | TIDAL |

0.0082 AC. (DNREC LM)
0.0069 AC. (DNREC M)
0.1116 AC. (DNREC T)
TOTAL TEMPORARY DNREC OPEN WATER IMPACTS THIS SHEET = 0.1267 AC.
TOTAL TEMPORARY USACE OPEN WATER IMPACTS THIS SHEET = 0.2165 AC. (ALL E2EM)

0.0012 AC. (DNREC LM)
0.0085 AC. (DNREC M)
0.0847 AC. (DNREC T)
TOTAL PERMANENT DNREC OPEN WATER IMPACTS THIS SHEET = 0.0944 AC.

*THIS AREA IS ALSO DNREC JURISDICTIONAL AND IS BEING REPORTED AS PERMANENT IMPACT.



| TEMPORARY WETLAND IMPACT AREA SCHEDULE | | | | | | |
|--|-----------------------------|-----------|-----------|-------------|----------------|------|
| ID | IMPACT DESCRIPTION | AREA (SF) | AREA (AC) | VOLUME (CY) | JURISDICTION | TYPE |
| 7-WT-01 | CRANE MAT, PILES, BOARDWALK | 687.67 | 0.0158 | N/A | USACE/DNREC-M | E2EM |
| 7-WT-02 | CRANE MAT, PILES, BOARDWALK | 259.48 | 0.0060 | N/A | USACE* | E2EM |
| 7-WT-03 | CRANE MAT, PILES, BOARDWALK | 589.92 | 0.0135 | N/A | USACE/DNREC-M | E2EM |
| 7-WT-04 | CRANE MAT, PILES, BOARDWALK | 553.12 | 0.0127 | N/A | USACE/DNREC-T | E2EM |
| 7-WT-05 | CRANE MAT, PILES, BOARDWALK | 793.68 | 0.0182 | N/A | USACE* | E2EM |
| 7-WT-06 | CRANE MAT, PILES, BOARDWALK | 3356.36 | 0.0771 | N/A | USACE/DNREC-LM | E2EM |
| 7-WT-07 | CRANE MAT, PILES, BOARDWALK | 5120.39 | 0.1175 | N/A | USACE* | E2EM |
| 7-WT-08 | CRANE MAT, PILES, BOARDWALK | 79.19 | 0.0018 | N/A | USACE* | E2EM |
| 7-WT-09 | CRANE MAT, PILES, BOARDWALK | 908.62 | 0.0209 | N/A | USACE/DNREC-M | E2EM |
| 7-WT-10 | CRANE MAT, PILES, BOARDWALK | 162.78 | 0.0037 | N/A | USACE* | E2EM |
| 7-WT-11 | CRANE MAT, PILES, BOARDWALK | 661.66 | 0.0152 | N/A | USACE* | E2EM |
| 7-WT-12 | CRANE MAT, PILES, BOARDWALK | 439.91 | 0.0101 | N/A | USACE/DNREC-M | E2EM |
| 7-WT-13 | CRANE MAT, PILES, BOARDWALK | 597.63 | 0.0137 | N/A | USACE/DNREC-T | E2EM |
| 7-WT-14 | CRANE MAT, PILES, BOARDWALK | 3702.63 | 0.0850 | N/A | USACE/DNREC-LM | E2EM |
| 7-WT-15 | CRANE MAT, PILES, BOARDWALK | 29.71 | 0.0007 | N/A | USACE/DNREC-LM | E2EM |

| PERMANENT WETLAND IMPACT AREA SCHEDULE | | | | | | |
|--|--------------------|-----------|-----------|-------------|--------------|------|
| ID | IMPACT DESCRIPTION | AREA (SF) | AREA (AC) | VOLUME (CY) | JURISDICTION | TYPE |
| 7-W-01 | BOARDWALK SHADING | 259.48 | 0.0060 | N/A | DNREC-M | E2EM |
| 7-W-02 | BOARDWALK SHADING | 793.30 | 0.0182 | N/A | DNREC-T | E2EM |
| 7-W-03 | BOARDWALK SHADING | 5120.39 | 0.1175 | N/A | DNREC-LM | E2EM |
| 7-W-04 | BOARDWALK SHADING | 79.19 | 0.0018 | N/A | DNREC-T | E2EM |
| 7-W-05 | BOARDWALK SHADING | 162.78 | 0.0037 | N/A | DNREC-T | E2EM |
| 7-W-06 | BOARDWALK SHADING | 661.66 | 0.0152 | N/A | DNREC-M | E2EM |

0.1627 AC. (DNREC LM)
0.0603 AC. (DNREC M)
0.0264 AC. (DNREC T)
TOTAL TEMPORARY DNREC WETLAND IMPACTS THIS SHEET = 0.2494 AC.
TOTAL TEMPORARY USACE WETLAND IMPACTS THIS SHEET = 0.4119 AC.
*THIS AREA IS ALSO DNREC JURISDICTIONAL AND IS BEING REPORTED AS PERMANENT IMPACT.

TOTAL PERMANENT DNREC WETLAND IMPACTS THIS SHEET = 0.1625 AC.

LEGEND

- PERMANENT IMPACT AREA
- TEMPORARY IMPACT AREA
- MHW - MEAN HIGH WATER
- SML - STATE MAPPED LINE
- SMW - STATE MAPPED WETLAND
- WL - USACE WETLAND BOUNDARY

XX - IMPACT AREA TYPE ID. (SEE BELOW)
?X - IMPACT AREA ID. AND/OR NUMBER

O = OPEN WATER IMPACT M = MARSH
T = TIDAL MUDFLATS LM = LOW MARSH
W = WETLAND IMPACT
WT = TEMPORARY WETLAND IMPACT
OT = TEMPORARY OPEN WATER IMPACT
E2EM = ESTUARINE INTERTIDAL EMERGENT

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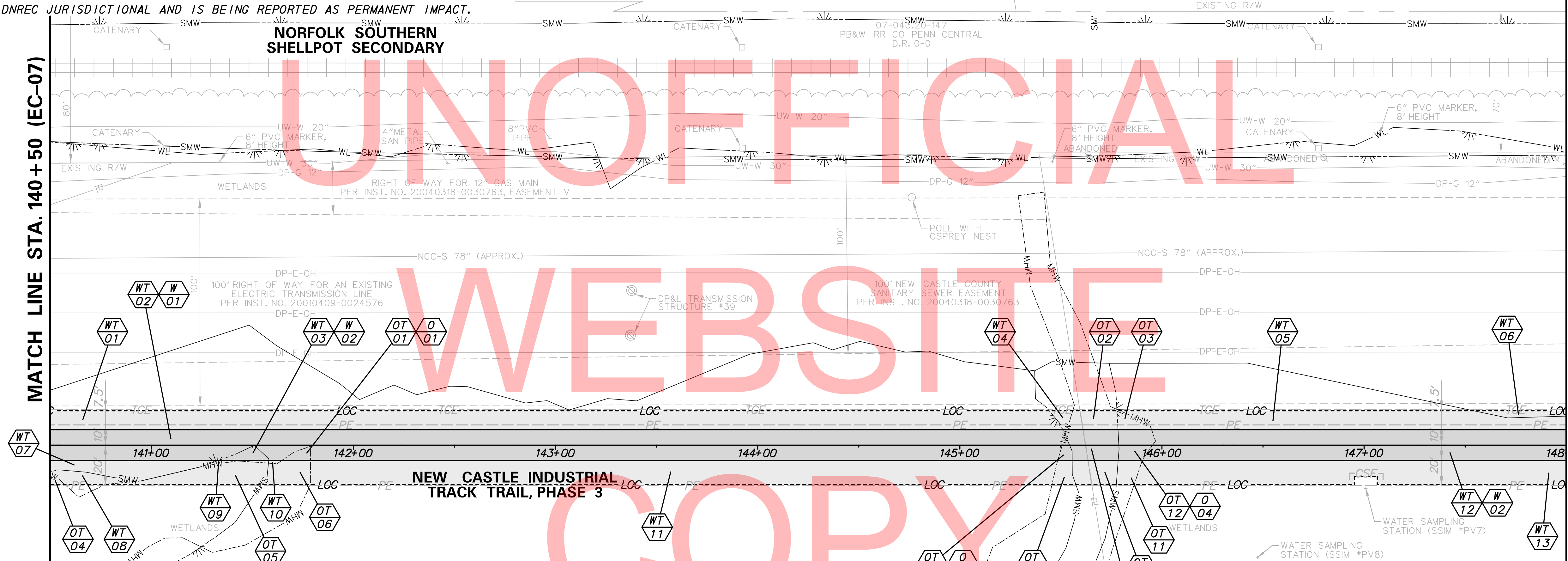
| TEMPORARY OPEN WATER IMPACT AREA SCHEDULE | | | | | | |
|---|-----------------------------|-----------|-----------|-------------|----------------|-------|
| ID | IMPACT DESCRIPTION | AREA (SF) | AREA (AC) | VOLUME (CY) | JURISDICTION | TYPE |
| 8-OT-01 | CRANE MAT, PILES, BOARDWALK | 55.93 | 0.0013 | N/A | USACE* | TIDAL |
| 8-OT-02 | CRANE MAT, PILES, BOARDWALK | 224.97 | 0.0052 | N/A | USACE/DNREC-T | TIDAL |
| 8-OT-03 | CRANE MAT, PILES, BOARDWALK | 106.59 | 0.0024 | N/A | USACE/DNREC-LM | TIDAL |
| 8-OT-04 | CRANE MAT, PILES, BOARDWALK | 22.92 | 0.0005 | N/A | USACE/DNREC-T | TIDAL |
| 8-OT-05 | CRANE MAT, PILES, BOARDWALK | 521.44 | 0.0120 | N/A | USACE/DNREC-T | TIDAL |
| 8-OT-06 | CRANE MAT, PILES, BOARDWALK | 251.63 | 0.0058 | N/A | USACE/DNREC-LM | TIDAL |
| 8-OT-07 | CRANE MAT, PILES, BOARDWALK | 50.14 | 0.0012 | N/A | USACE* | TIDAL |
| 8-OT-08 | CRANE MAT, PILES, BOARDWALK | 108.04 | 0.0025 | N/A | USACE/DNREC-LM | TIDAL |
| 8-OT-09 | CRANE MAT, PILES, BOARDWALK | 366.59 | 0.0084 | N/A | USACE* | TIDAL |
| 8-OT-10 | CRANE MAT, PILES, BOARDWALK | 263.62 | 0.0061 | N/A | USACE/DNREC-T | TIDAL |
| 8-OT-11 | CRANE MAT, PILES, BOARDWALK | 125.09 | 0.0029 | N/A | USACE/DNREC-LM | TIDAL |
| 8-OT-12 | CRANE MAT, PILES, BOARDWALK | 236.46 | 0.0054 | N/A | USACE* | TIDAL |

| PERMANENT OPEN WATER IMPACT AREA SCHEDULE | | | | | | |
|---|--------------------|-----------|-----------|-------------|--------------|-------|
| ID | IMPACT DESCRIPTION | AREA (SF) | AREA (AC) | VOLUME (CY) | JURISDICTION | TYPE |
| 8-0-01 | BOARDWALK SHADING | 55.93 | 0.0013 | N/A | DNREC-LM | TIDAL |
| 8-0-02 | BOARDWALK SHADING | 50.14 | 0.0012 | N/A | DNREC-LM | TIDAL |
| 8-0-03 | BOARDWALK SHADING | 366.59 | 0.0084 | N/A | DNREC-T | TIDAL |
| 8-0-04 | BOARDWALK SHADING | 236.46 | 0.0054 | N/A | DNREC-T | TIDAL |

0.0136 AC. (DNREC LM)
0.0237 AC. (DNREC T)
TOTAL TEMPORARY DNREC OPEN WATER IMPACTS THIS SHEET = 0.0373 AC.
TOTAL TEMPORARY USACE OPEN WATER IMPACTS THIS SHEET = 0.0536 AC. (ALL E2EM)

0.0024 AC. (DNREC LM)
0.0138 AC. (DNREC T)
TOTAL PERMANENT DNREC OPEN WATER IMPACTS THIS SHEET = 0.0163 AC.

*THIS AREA IS ALSO DNREC JURISDICTIONAL AND IS BEING REPORTED AS PERMANENT IMPACT.



| TEMPORARY WETLAND IMPACT AREA SCHEDULE | | | | | | |
|--|-----------------------------|-----------|-----------|-------------|----------------|------|
| ID | IMPACT DESCRIPTION | AREA (SF) | AREA (AC) | VOLUME (CY) | JURISDICTION | TYPE |
| 8-WT-01 | CRANE MAT, PILES, BOARDWALK | 4752.28 | 0.1091 | N/A | USACE/DNREC-LM | E2EM |
| 8-WT-02 | CRANE MAT, PILES, BOARDWALK | 7325.52 | 0.1682 | N/A | USACE* | E2EM |
| 8-WT-03 | CRANE MAT, PILES, BOARDWALK | 88.85 | 0.0020 | N/A | USACE* | E2EM |
| 8-WT-04 | CRANE MAT, PILES, BOARDWALK | 61.00 | 0.0014 | N/A | USACE/DNREC-T | E2EM |
| 8-WT-05 | CRANE MAT, PILES, BOARDWALK | 1891.56 | 0.0434 | N/A | USACE/DNREC-LM | E2EM |
| 8-WT-06 | CRANE MAT, PILES, BOARDWALK | 120.15 | 0.0028 | N/A | USACE/DNREC-M | E2EM |
| 8-WT-07 | CRANE MAT, PILES, BOARDWALK | 534.78 | 0.0123 | N/A | USACE/DNREC-LM | E2EM |
| 8-WT-08 | CRANE MAT, PILES, BOARDWALK | 181.74 | 0.0042 | N/A | USACE/DNREC-T | E2EM |
| 8-WT-09 | CRANE MAT, PILES, BOARDWALK | 30.30 | 0.0007 | N/A | USACE/DNREC-T | E2EM |
| 8-WT-10 | CRANE MAT, PILES, BOARDWALK | 8.95 | 0.0002 | N/A | USACE/DNREC-LM | E2EM |
| 8-WT-11 | CRANE MAT, PILES, BOARDWALK | 4435.65 | 0.1018 | N/A | USACE/DNREC-LM | E2EM |
| 8-WT-12 | CRANE MAT, PILES, BOARDWALK | 3066.96 | 0.0704 | N/A | USACE* | E2EM |
| 8-WT-13 | CRANE MAT, PILES, BOARDWALK | 2503.85 | 0.0575 | N/A | USACE/DNREC-LM | E2EM |

| PERMANENT WETLAND IMPACT AREA SCHEDULE | | | | | | |
|--|--------------------|-----------|-----------|-------------|--------------|------|
| ID | IMPACT DESCRIPTION | AREA (SF) | AREA (AC) | VOLUME (CY) | JURISDICTION | TYPE |
| 8-W-01 | BOARDWALK SHADING | 7325.52 | 0.1682 | N/A | DNREC-LM | E2EM |
| 8-W-02 | BOARDWALK SHADING | 88.85 | 0.0020 | N/A | DNREC-T | E2EM |
| 8-W-03 | BOARDWALK SHADING | 3066.96 | 0.0704 | N/A | DNREC-LM | E2EM |

0.3243 AC. (DNREC LM)
0.0028 AC. (DNREC M)
0.0063 AC. (DNREC T)
TOTAL TEMPORARY DNREC WETLAND IMPACTS THIS SHEET = 0.3333 AC.
TOTAL TEMPORARY USACE WETLAND IMPACTS THIS SHEET = 0.5740 AC. (ALL E2EM)

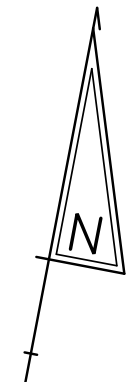
0.2386 AC. (DNREC LM)
0.0020 AC. (DNREC T)
TOTAL PERMANENT DNREC WETLAND IMPACTS THIS SHEET = 0.2406 AC.

*THIS AREA IS ALSO DNREC JURISDICTIONAL AND IS BEING REPORTED AS PERMANENT IMPACT.

LEGEND

- PERMANENT IMPACT AREA
- TEMPORARY IMPACT AREA
- MHW - MEAN HIGH WATER
- SML - STATE MAPPED LINE
- SMW - STATE MAPPED WETLAND
- WL - USACE WETLAND BOUNDARY
- XX - IMPACT AREA TYPE ID. (SEE BELOW)
- XX - IMPACT AREA ID. AND/OR NUMBER
- O = OPEN WATER IMPACT M = MARSH
- T = TIDAL MUDFLATS LM = LOW MARSH
- W = WETLAND IMPACT
- WT = TEMPORARY WETLAND IMPACT
- OT = TEMPORARY OPEN WATER IMPACT
- E2EM = ESTUARINE INTERTIDAL EMERGENT

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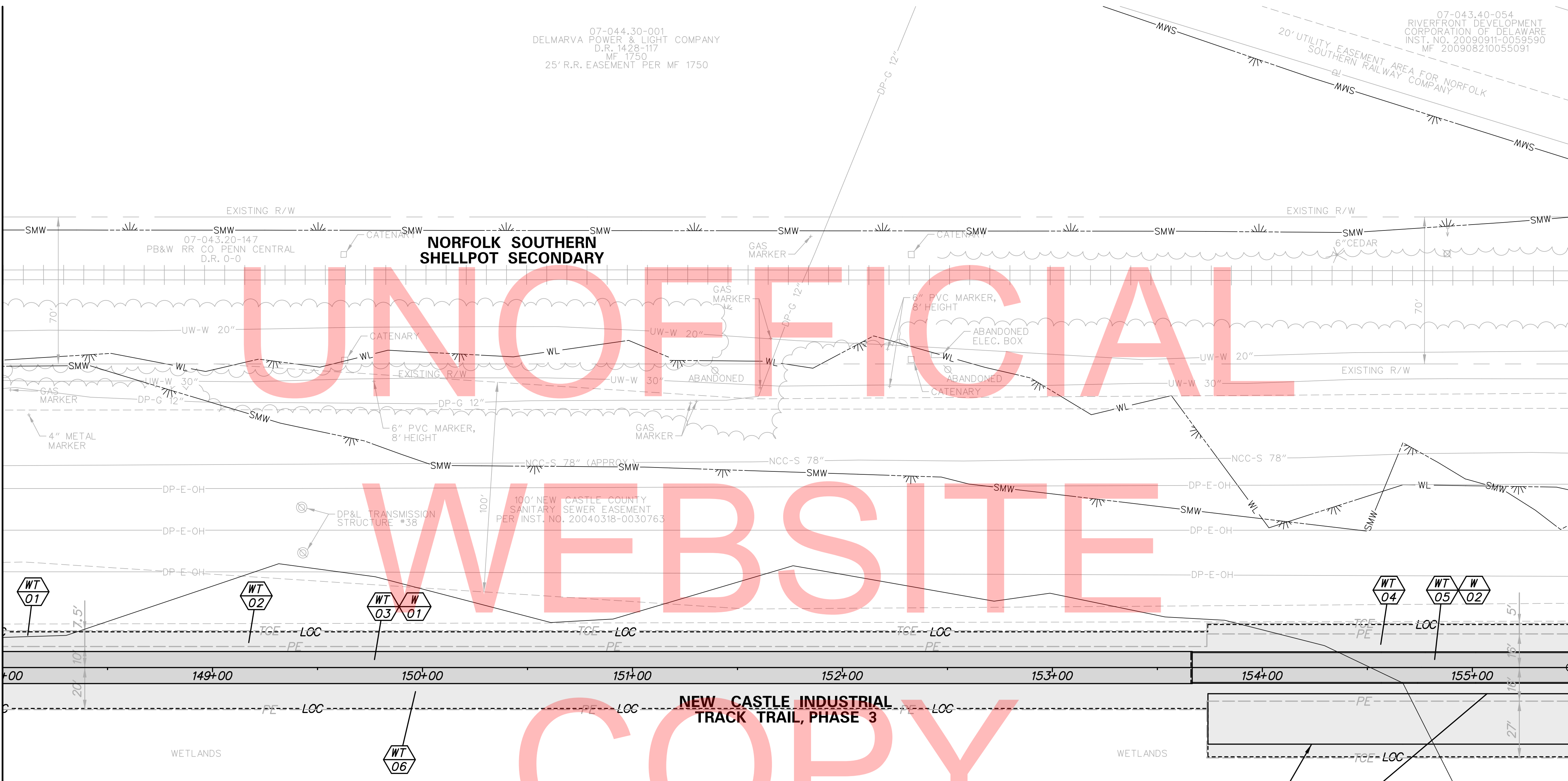


07-044.30-001
 DELMARVA POWER & LIGHT COMPANY
 D.R. 1428-117
 MF 1750
 25' R.R. EASEMENT PER MF 1750

07-043.40-054
 RIVERFRONT DEVELOPMENT CORPORATION OF DELAWARE
 INST. NO. 20090911-005590
 MF 200908210055091

MATCH LINE STA. 148+00 (EC-08)

MATCH LINE STA. 155+50 (EC-10)



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NEW CASTLE INDUSTRIAL TRACK TRAIL, PHASE 3

RUSSELL W. PETERSON WILDLIFE REFUGE

3-R

07-044.30-002
 DELMARVA POWER & LIGHT COMPANY
 D.R. 1428-122
 MF 1750

TEMPORARY WETLAND ACCESS ROAD
 4,216.90 SF IMPACT
 ALL TO BE RESTORED

| LEGEND | |
|---------------|----------------------------------|
| | PERMANENT IMPACT AREA |
| | TEMPORARY IMPACT AREA |
| -----MHW----- | MEAN HIGH WATER |
| -----SML----- | STATE MAPPED LINE |
| -----SMW----- | STATE MAPPED WETLAND |
| -----WL----- | USACE WETLAND BOUNDARY |
| | IMPACT AREA TYPE ID. (SEE BELOW) |
| | IMPACT AREA ID. AND/OR NUMBER |
| O | = OPEN WATER IMPACT |
| M | = MARSH |
| T | = TIDAL MUDFLATS |
| LM | = LOW MARSH |
| W | = WETLAND IMPACT |
| WT | = TEMPORARY WETLAND IMPACT |
| OT | = TEMPORARY OPEN WATER IMPACT |
| E2EM | = ESTUARINE INTERTIDAL EMERGENT |

| TEMPORARY WETLAND IMPACT AREA SCHEDULE | | | | | | |
|--|-----------------------------|-----------|-----------|-------------|----------------|------|
| ID | IMPACT DESCRIPTION | AREA (SF) | AREA (AC) | VOLUME (CY) | JURISDICTION | TYPE |
| 9-WT-01 | CRANE MAT, PILES, BOARDWALK | 70.66 | 0.0016 | N/A | USACE/DNREC-M | E2EM |
| 9-WT-02 | CRANE MAT, PILES, BOARDWALK | 5937.14 | 0.1363 | N/A | USACE/DNREC-LM | E2EM |
| 9-WT-03 | CRANE MAT, PILES, BOARDWALK | 9715.83 | 0.2230 | N/A | USACE* | E2EM |
| 9-WT-04 | CRANE MAT, PILES, BOARDWALK | 1767.05 | 0.0406 | N/A | USACE/DNREC-M | E2EM |
| 9-WT-05 | CRANE MAT, PILES, BOARDWALK | 1471.34 | 0.0338 | N/A | USACE* | E2EM |
| 9-WT-06 | CRANE MAT, PILES, BOARDWALK | 10477.82 | 0.2405 | N/A | USACE/DNREC-LM | E2EM |
| 9-WT-07 | CRANE MAT, PILES, BOARDWALK | 2593.76 | 0.0595 | N/A | USACE/DNREC-M | E2EM |

| PERMANENT WETLAND IMPACT AREA SCHEDULE | | | | | | |
|--|--------------------|-----------|-----------|-------------|--------------|------|
| ID | IMPACT DESCRIPTION | AREA (SF) | AREA (AC) | VOLUME (CY) | JURISDICTION | TYPE |
| 9-W-01 | BOARDWALK SHADING | 9715.83 | 0.2230 | N/A | DNREC-LM | E2EM |
| 9-W-02 | BOARDWALK SHADING | 1471.34 | 0.0338 | N/A | DNREC-M | E2EM |

0.3768 AC. (DNREC LM)
 0.1017 AC. (DNREC M)
 TOTAL TEMPORARY DNREC WETLAND IMPACTS THIS SHEET = 0.4786 AC.
 TOTAL TEMPORARY USACE WETLAND IMPACTS THIS SHEET = 0.7354 AC. (ALL E2EM)

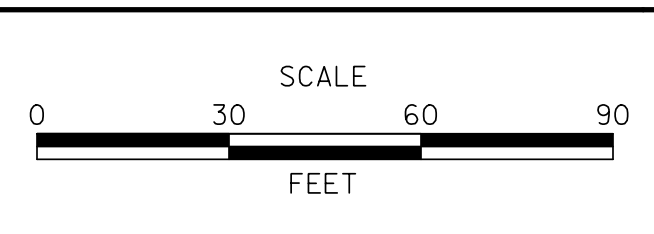
TOTAL PERMANENT DNREC WETLAND IMPACTS THIS SHEET = 0.2568 AC.

*THIS AREA IS ALSO DNREC JURISDICTIONAL AND IS BEING REPORTED AS PERMANENT IMPACT.

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| ADDENDUMS / REVISIONS |
|-----------------------|
| |
| |
| |



NEW CASTLE INDUSTRIAL TRACK TRAIL, PHASE 3

| | | |
|------------|------------------|----------|
| CONTRACT | BRIDGE NO. | X |
| T201330009 | DESIGNED BY: LCC | |
| COUNTY | CHECKED BY: JRR | |
| NEW CASTLE | | |

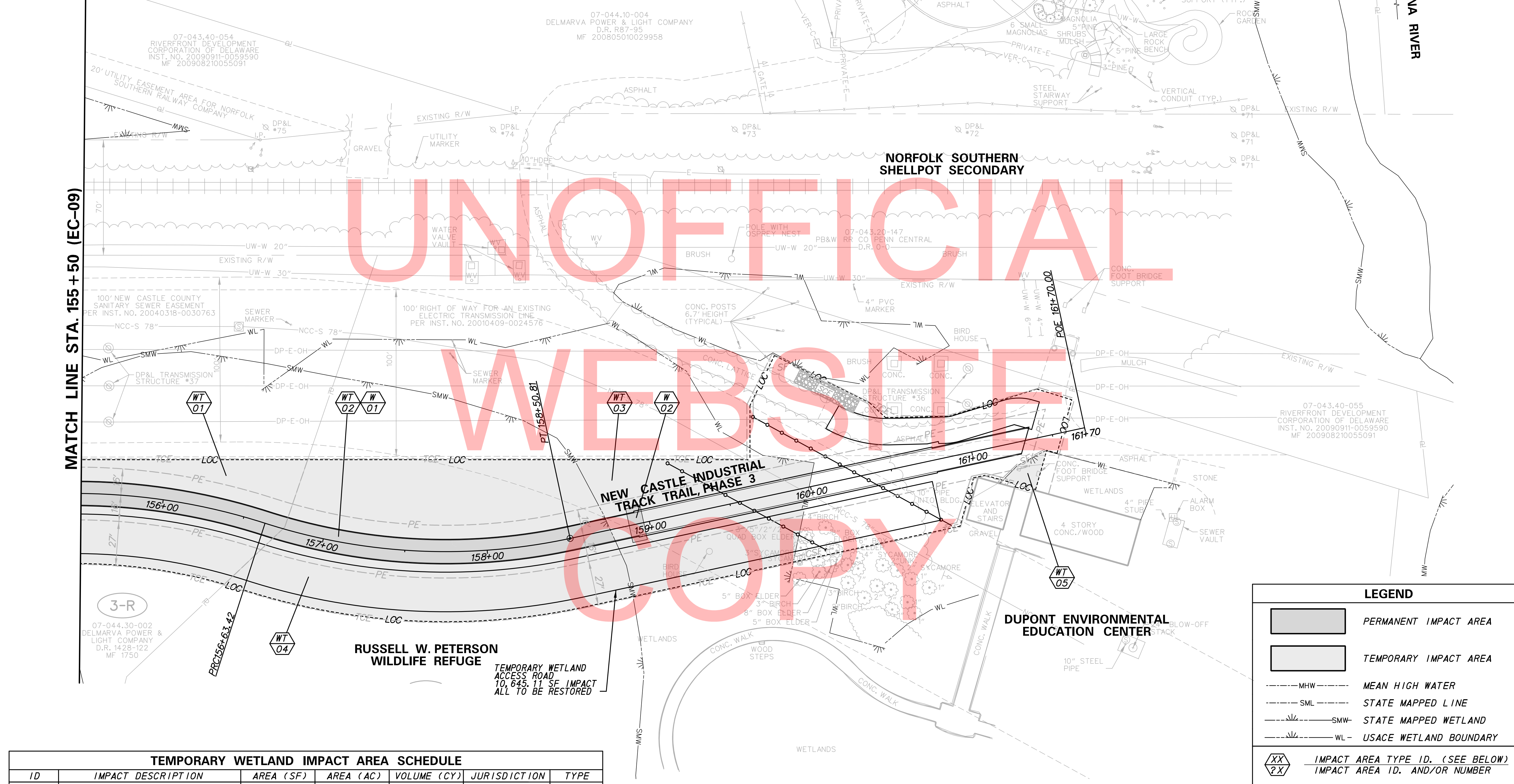
ENVIRONMENTAL COMPLIANCE PLAN

| |
|-------------|
| EC-09 |
| SHEET NO. |
| 169 |
| TOTAL SHTS. |
| 205 |

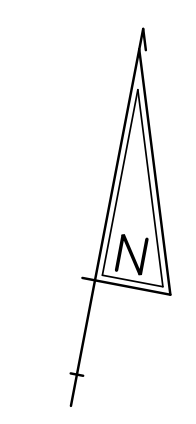
MATCH LINE STA. 155+50 (EC-09)

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CHRISTINA RIVER



TEMPORARY WETLAND IMPACT AREA SCHEDULE

| ID | IMPACT DESCRIPTION | AREA (SF) | AREA (AC) | VOLUME (CY) | JURISDICTION | TYPE |
|----------|---------------------------|-----------|-----------|-------------|---------------|------|
| 10-WT-01 | ACCESS, PILE, DEEC BRIDGE | 10692.12 | 0.2455 | N/A | USACE/DNREC-M | E2EM |
| 10-WT-02 | ACCESS, PILE, DEEC BRIDGE | 4844.58 | 0.1112 | N/A | USACE* | E2EM |
| 10-WT-03 | ACCESS, PILE, DEEC BRIDGE | 8551.49 | 0.1963 | N/A | USACE | E2EM |
| 10-WT-04 | ACCESS, PILE, DEEC BRIDGE | 11756.53 | 0.2699 | N/A | USACE/DNREC-M | E2EM |
| 10-WT-05 | ACCESS, PILE, DEEC BRIDGE | 294.17 | 0.0068 | N/A | USACE | E2EM |

TOTAL TEMPORARY DNREC WETLAND IMPACTS THIS SHEET = 0.5154 AC. (ALL DNREC M)
 TOTAL TEMPORARY USACE WETLAND IMPACTS THIS SHEET = 0.8296 AC.

*THIS AREA IS ALSO DNREC JURISDICTIONAL AND IS BEING REPORTED AS PERMANENT IMPACT.

PERMANENT WETLAND IMPACT AREA SCHEDULE

| ID | IMPACT DESCRIPTION | AREA (SF) | AREA (AC) | VOLUME (CY) | JURISDICTION | TYPE |
|---------|--------------------|-----------|-----------|-------------|--------------|------|
| 10-W-01 | BOARDWALK SHADING | 4844.58 | 0.1112 | N/A | DNREC-M | E2EM |
| 10-W-02 | CONCRETE PILE CAP | 189.00 | 0.0043 | 48 | USACE | E2EM |

TOTAL PERMANENT DNREC WETLAND IMPACTS THIS SHEET = 0.1112 AC. (ALL DNREC M)
 TOTAL PERMANENT USACE WETLAND IMPACTS THIS SHEET = 0.0043 AC.

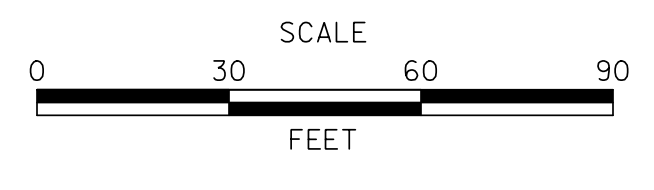
LEGEND

- PERMANENT IMPACT AREA
- TEMPORARY IMPACT AREA
- MHW----- MEAN HIGH WATER
- SML----- STATE MAPPED LINE
- SMW----- STATE MAPPED WETLAND
- WL----- USACE WETLAND BOUNDARY
- XX IMPACT AREA TYPE ID. (SEE BELOW)
- ?X IMPACT AREA ID. AND/OR NUMBER

- O = OPEN WATER IMPACT M = MARSH
- T = TIDAL MUDFLATS LM = LOW MARSH
- W = WETLAND IMPACT
- WT = TEMPORARY WETLAND IMPACT
- OT = TEMPORARY OPEN WATER IMPACT
- E2EM = ESTUARINE INTERTIDAL EMERGENT



ADDENDUMS / REVISIONS



NEW CASTLE INDUSTRIAL TRACK TRAIL, PHASE 3

| | | | |
|----------|------------|--------------|-----|
| CONTRACT | T201330009 | BRIDGE NO. | X |
| COUNTY | NEW CASTLE | DESIGNED BY: | LCC |
| | | CHECKED BY: | JRR |

ENVIRONMENTAL COMPLIANCE PLAN

| |
|-------------|
| EC-10 |
| SHEET NO. |
| 170 |
| TOTAL SHTS. |
| 205 |

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WARNING SIGN LEGEND



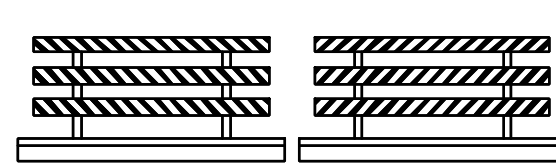
W20-1-CUSTOM
48" x 48"
①

ON BRIDGE

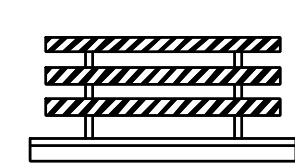
G20-2 MODIFIED
(SEE SIGN DETAIL)
②



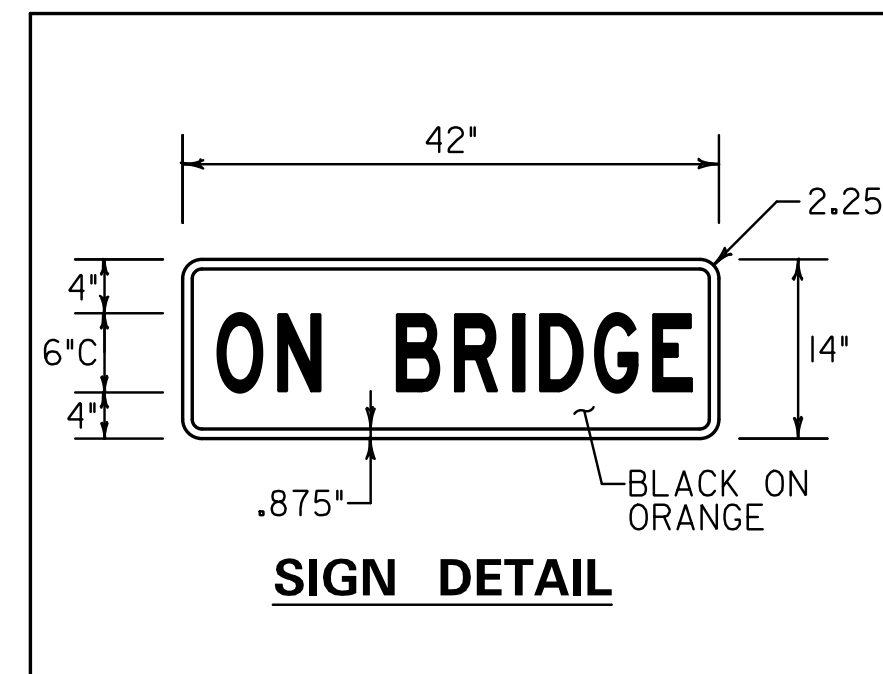
R11-2-CUSTOM
48" x 30"
③



BARRICADE
(FULL WIDTH OF TRAIL)
④



BARRICADE
(6-FOOT WIDTH NEXT
TO TRAIL/SIDEWALK)
⑤



GENERAL TRAFFIC CONTROL NOTES

1. THE CONTRACTOR SHALL NOTIFY MR. JON HUSBAND WITH NEW CASTLE COUNTY AT (302) 395-5746 AT LEAST TWO WEEKS PRIOR TO THE START OF CONSTRUCTION.

2. DURING WORK AT THE PROPOSED TRAIL BRIDGE TIE-IN WITH THE EXISTING PEDESTRIAN BRIDGE AT THE DUPONT ENVIRONMENTAL EDUCATION CENTER, THE CONTRACTOR SHALL MAINTAIN PEDESTRIAN ACCESS TO AND FROM THE DUPONT ENVIRONMENTAL EDUCATION CENTER AS FOLLOWS:

- AT LEAST TWO WEEKS PRIOR TO WORK, THE CONTRACTOR SHALL CONTACT MR. JOHN HARROD, MANAGER OF THE DUPONT ENVIRONMENTAL EDUCATION CENTER, AT (302) 656-1490. THE CONTRACTOR SHALL PROVIDE MR. HARROD WITH WEEKLY UPDATES REGARDING WORK IN THE VICINITY OF THE CENTER.

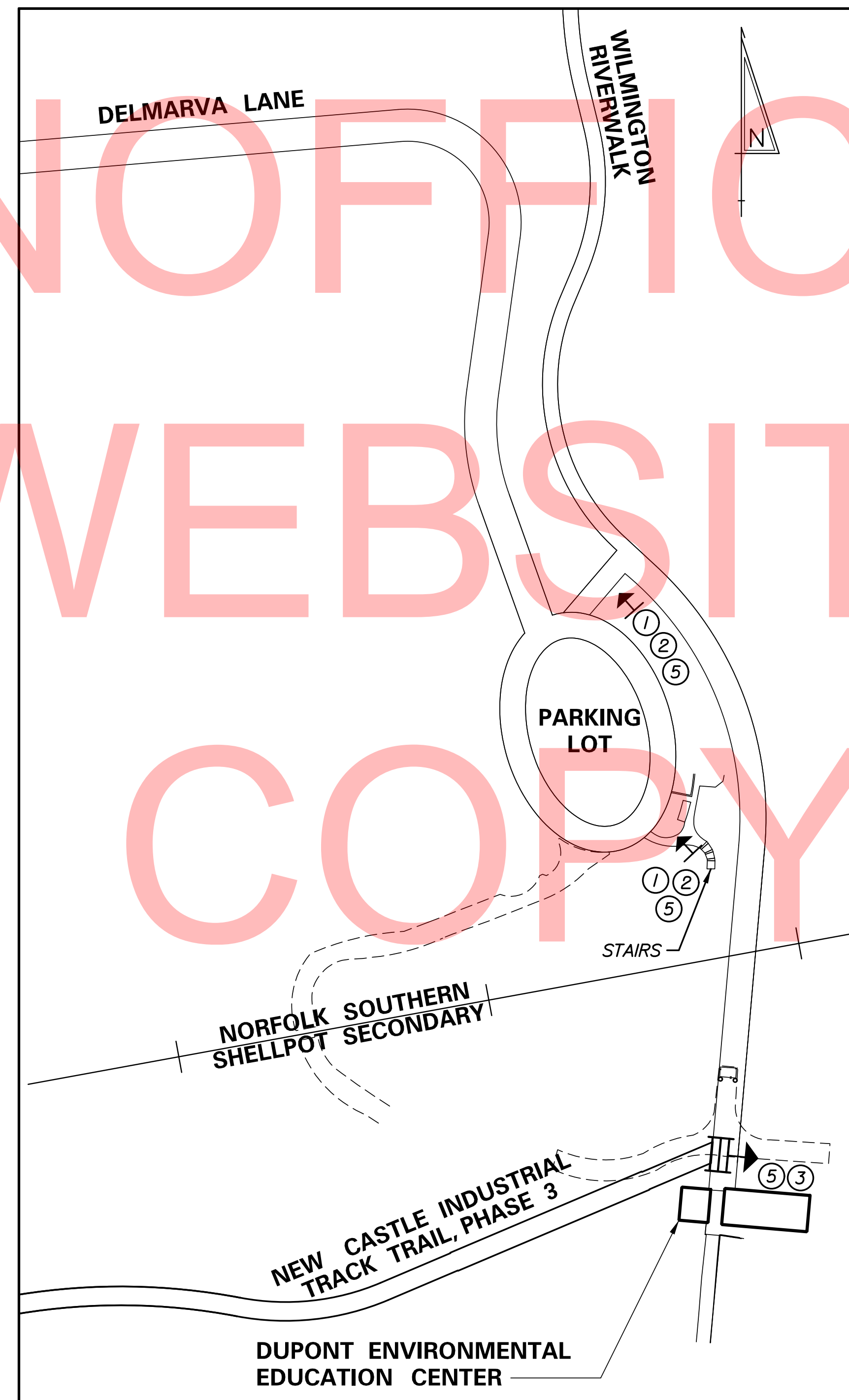
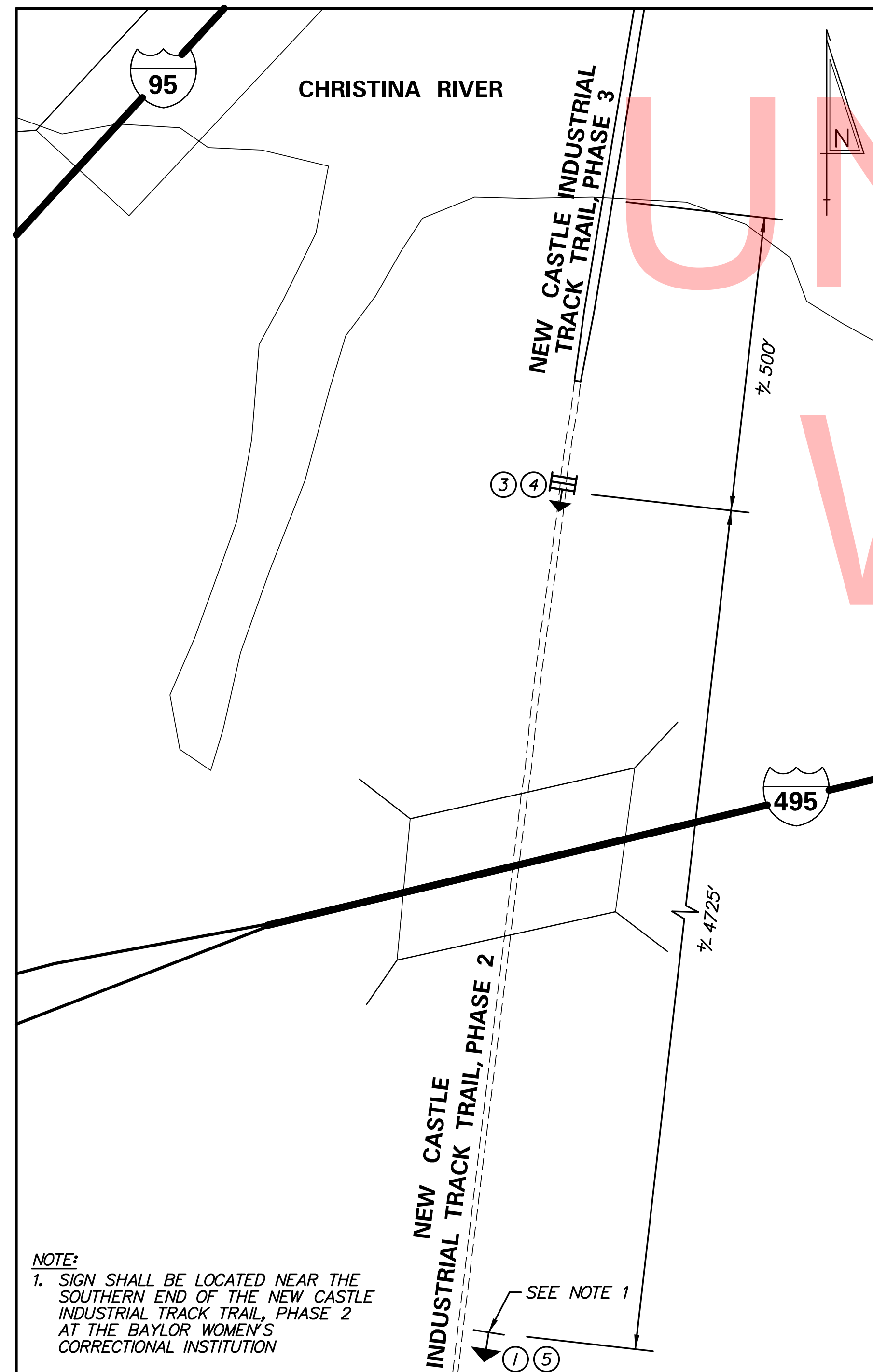
- ONE FLAGGER SHALL BE POSITIONED AT EACH END OF THE WORK ZONE AND SHALL OPERATE EXCLUSIVELY FOR PEDESTRIANS. THE FLAGGERS SHALL GUIDE PEDESTRIANS THROUGH THE WORK ZONE. THE CONTRACTOR SHALL MAINTAIN A FIVE-FOOT WIDE WALKWAY AT ALL TIMES.

- DURING NON-WORKING HOURS, THE CONTRACTOR SHALL SECURE THE WORK ZONE IN ORDER TO PROHIBIT PEDESTRIANS FROM ENTERING THE WORK AREA. ALL MOT SHALL BE APPROVED BY THE ENGINEER AT THE END OF EACH WORK DAY. THE CONTRACTOR SHALL MAINTAIN A FIVE-FOOT WIDE WALKWAY AT ALL TIMES. ALL DEVICES AND MATERIALS USED TO SECURE THE WORK ZONE SHALL BE INCIDENTAL TO ITEM 743000 - MAINTENANCE OF TRAFFIC AND ARE TO BE APPROVED BY ENGINEER.

3. THE CONTRACTOR SHALL PROVIDE ACCESS FOR DELIVERIES ALONG THE ACCESS ROADWAY/DRIVEWAY BETWEEN THE DUPONT ENVIRONMENTAL EDUCATION CENTER PARKING LOT AND BUILDING. THE CONTRACTOR SHALL PROVIDE A CONTACT NAME AND PHONE NUMBER TO MR. JOHN HARROD, MANAGER OF THE DUPONT ENVIRONMENTAL EDUCATION CENTER, (302) 656-1490, TO COORDINATE DELIVERY DATES AND TIMES.

4. CONSTRUCTION SAFETY FENCE SHALL BE INSTALLED AS SHOWN ON THE PLANS. THE FENCE HEIGHT SHALL EXTEND FROM THE EXISTING GROUND UP TO A HEIGHT OF 8 FEET ABOVE EXISTING GROUND. THE ADDITIONAL HEIGHT OF THE FENCE POST AND THE ADDITIONAL ORANGE FENCE REQUIRED TO EXTEND THE FENCE UP TO 8 FEET SHALL BE INCIDENTAL TO ITEM 727014 - CONSTRUCTION SAFETY FENCE.

5. ALL COSTS ASSOCIATED WITH FURNISHING AND INSTALLATION OF PORTABLE CONCRETE SAFETY BARRIER SHALL BE INCIDENTAL TO ITEM 743000 - MAINTENANCE OF TRAFFIC



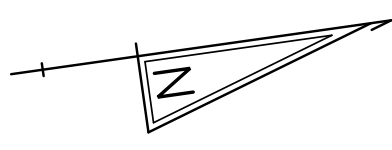
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| EROSION & SEDIMENT CONTROL | |
|----------------------------|----------------------------------|
| | DEWATERING BAG |
| | STABILIZED CONSTRUCTION ENTRANCE |
| | SILT FENCE / LENGTH |
| | SILT FENCE |
| | SUPER SILT FENCE / LENGTH |
| | SUPER SILT FENCE |
| | SANDBAG SILT FENCE / LENGTH |
| | SANDBAG SILT FENCE |
| | SUMP PIT |
| | TURBIDITY CURTAIN / LENGTH |
| | TURBIDITY CURTAIN |

| CONSTRUCTION PHASING & M.O.T | |
|------------------------------|------------------------------------|
| | WORK AREA - ACTIVE PHASE |
| | BARRICADE, TYPE 3 |
| | CONCRETE SAFETY BARRIER - PORTABLE |
| | CONSTRUCTION WARNING SIGN LOCATION |
| | CONSTRUCTION SAFETY FENCE |

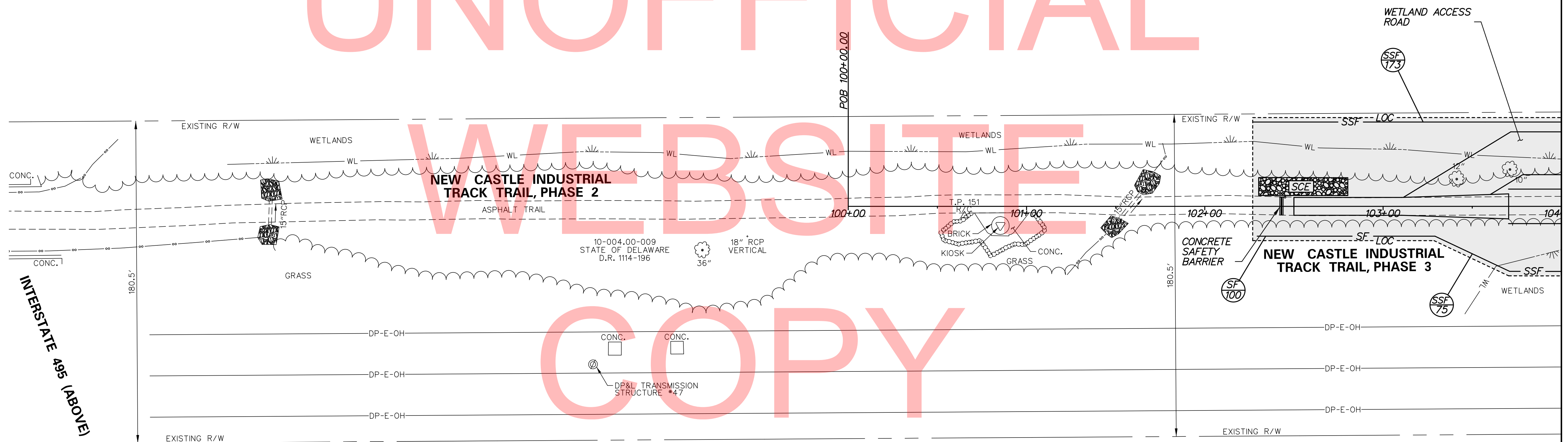
| SEQUENCE OF CONSTRUCTION | |
|--------------------------|---|
| ① | PLACE ALL PERTINENT TRAFFIC CONTROL DEVICES AS SHOWN ON THIS PLAN. COORDINATE ACTIVITIES DURING THIS PHASE WITH THE ENVIRONMENTAL COMPLIANCE PLANS. |
| ② | INSTALL EROSION AND SEDIMENT CONTROL MEASURES AS SHOWN. |
| ③ | CONSTRUCT PROPOSED TRAIL AND STRUCTURES. |
| ④ | STABILIZE ALL DISTURBED AREAS AS DIRECTED ON THE PLANS. REMOVE EROSION AND SEDIMENT DEVICES AFTER CONCURRENCE FROM THE STORMWATER ENGINEER. |



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WEBSITE

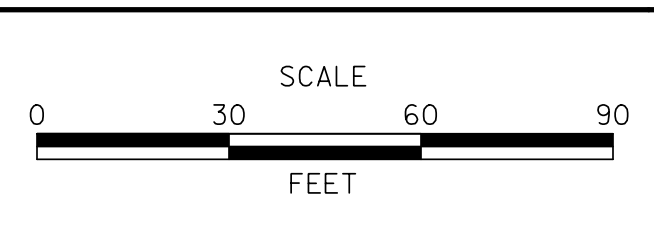
COPY



| STABILIZED CONSTRUCTION ENTRANCE | | | |
|----------------------------------|---------|---------|------|
| NO. | STATION | OFFSET | TONS |
| 1 | 102+50 | 11' LT. | 25 |

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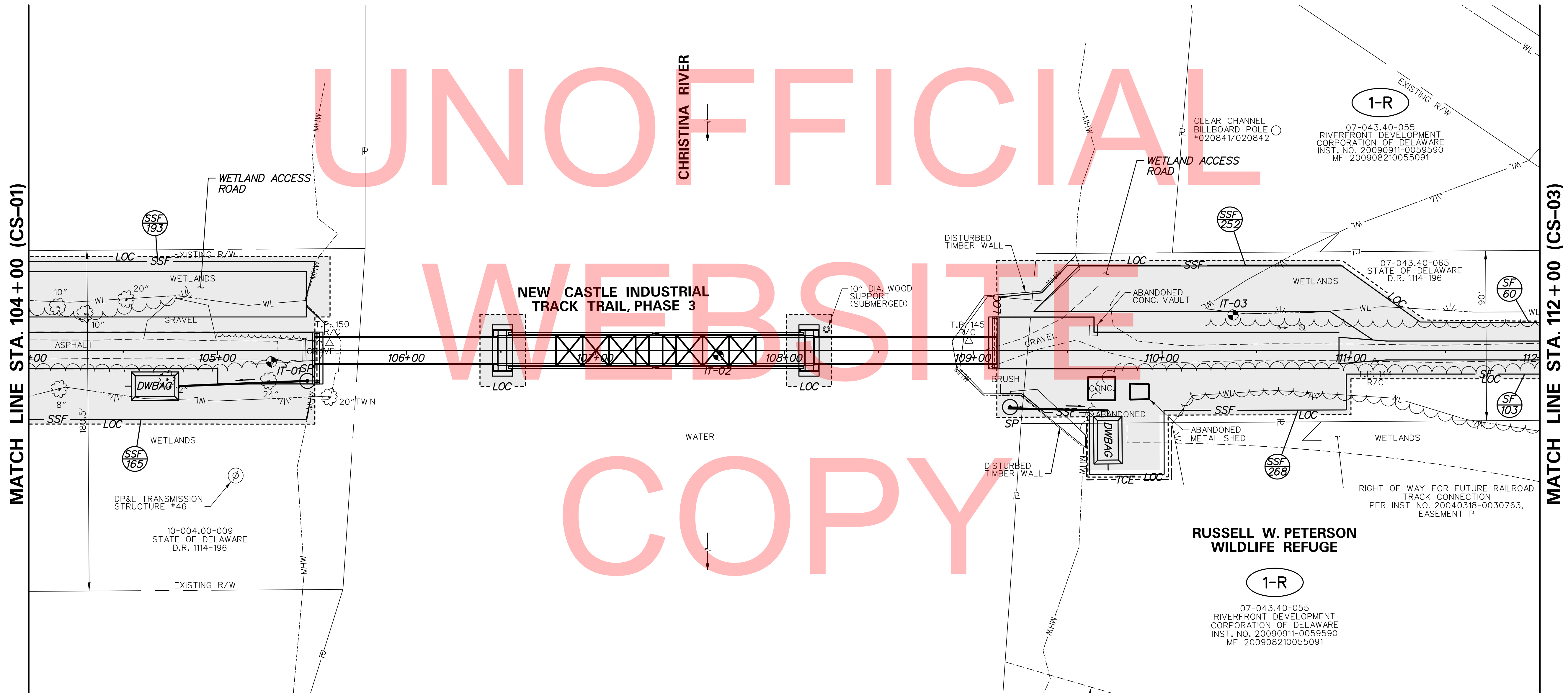
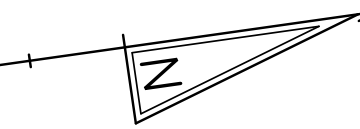
| ADDENDUMS / REVISIONS | |
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| CONTRACT | BRIDGE NO. | X |
| T201330009 | DESIGNED BY: DAD | |
| COUNTY | CHECKED BY: JRR | |
| NEW CASTLE | | |

SEQUENCE OF CONSTRUCTION

- ① PLACE ALL PERTINENT TRAFFIC CONTROL DEVICES AS SHOWN ON THIS PLAN. COORDINATE ACTIVITIES DURING THIS PHASE WITH THE ENVIRONMENTAL COMPLIANCE PLANS.
- ② INSTALL EROSION AND SEDIMENT CONTROL MEASURES AS SHOWN.
- ③ CONSTRUCT PROPOSED TRAIL AND STRUCTURES.
- ④ STABILIZE ALL DISTURBED AREAS AS DIRECTED ON THE PLANS. REMOVE EROSION AND SEDIMENT DEVICES AFTER CONCURRENCE FROM THE STORMWATER ENGINEER.



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| ADDENDUMS / REVISIONS | |
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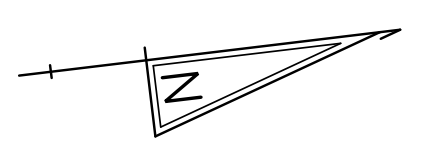
NEW CASTLE INDUSTRIAL TRACK TRAIL, PHASE 3

| | | |
|------------|------------------|----------|
| CONTRACT | BRIDGE NO. | X |
| T201330009 | DESIGNED BY: DAD | |
| COUNTY | CHECKED BY: JRR | |
| NEW CASTLE | | |

CONSTRUCTION PHASING, M.O.T., AND EROSION CONTROL PLAN

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|-------------|
| CS-02 |
| SHEET NO. |
| 173 |
| TOTAL SHTS. |
| 205 |

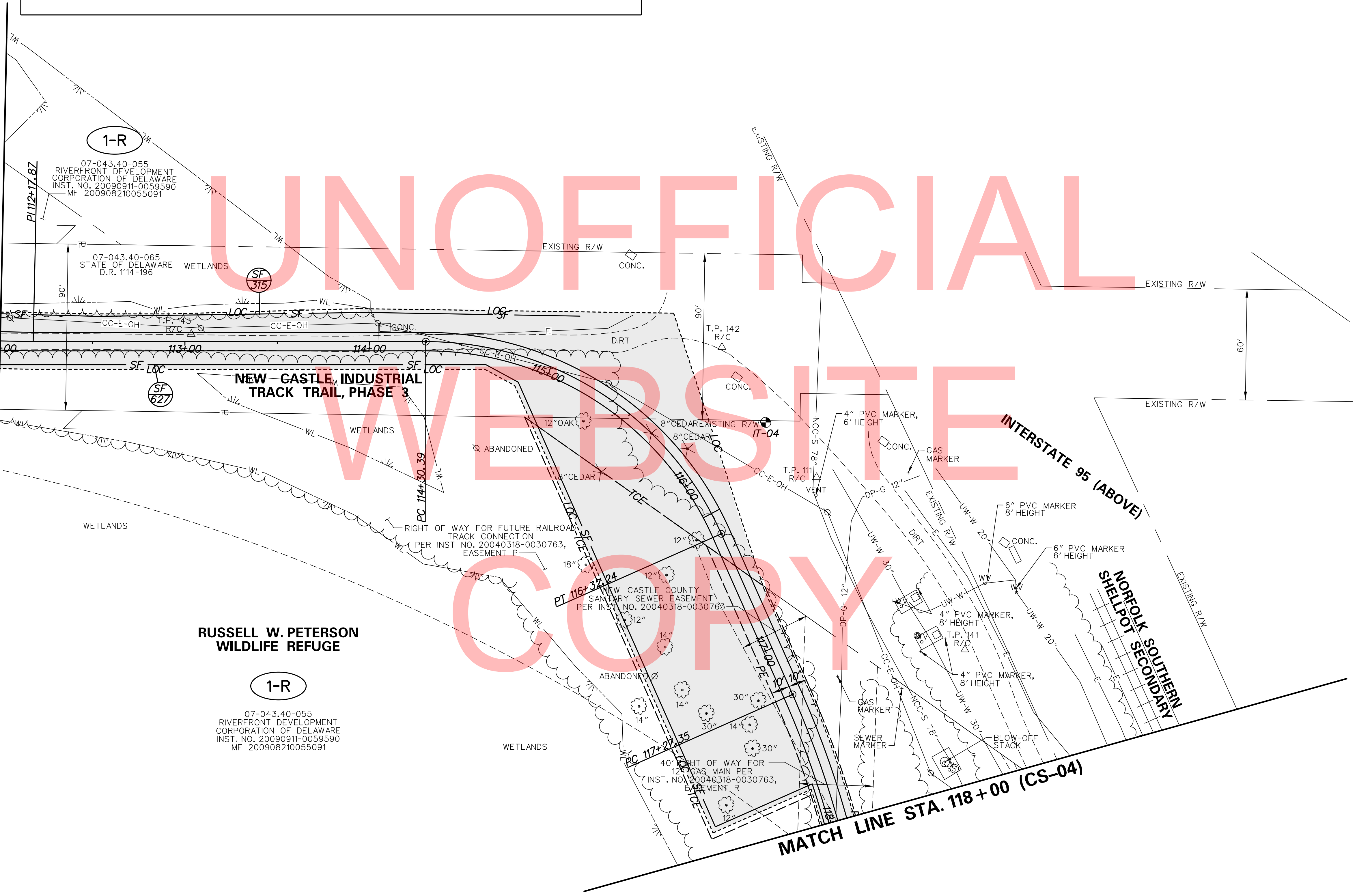
- SEQUENCE OF CONSTRUCTION**
- ① PLACE ALL PERTINENT TRAFFIC CONTROL DEVICES AS SHOWN ON THIS PLAN. COORDINATE ACTIVITIES DURING THIS PHASE WITH THE ENVIRONMENTAL COMPLIANCE PLANS.
 - ② INSTALL EROSION AND SEDIMENT CONTROL MEASURES AS SHOWN.
 - ③ CONSTRUCT PROPOSED TRAIL AND STRUCTURES.
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MATCH LINE STA. 112+00 (CS-02)

MATCH LINE STA. 118+00 (CS-04)

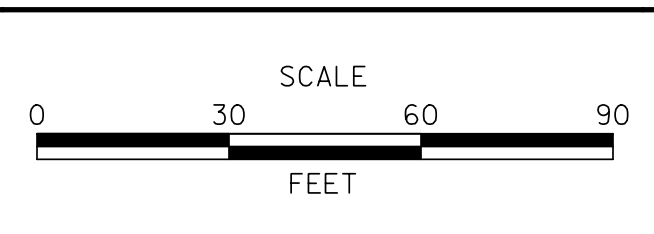
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| ADDENDUMS / REVISIONS | |
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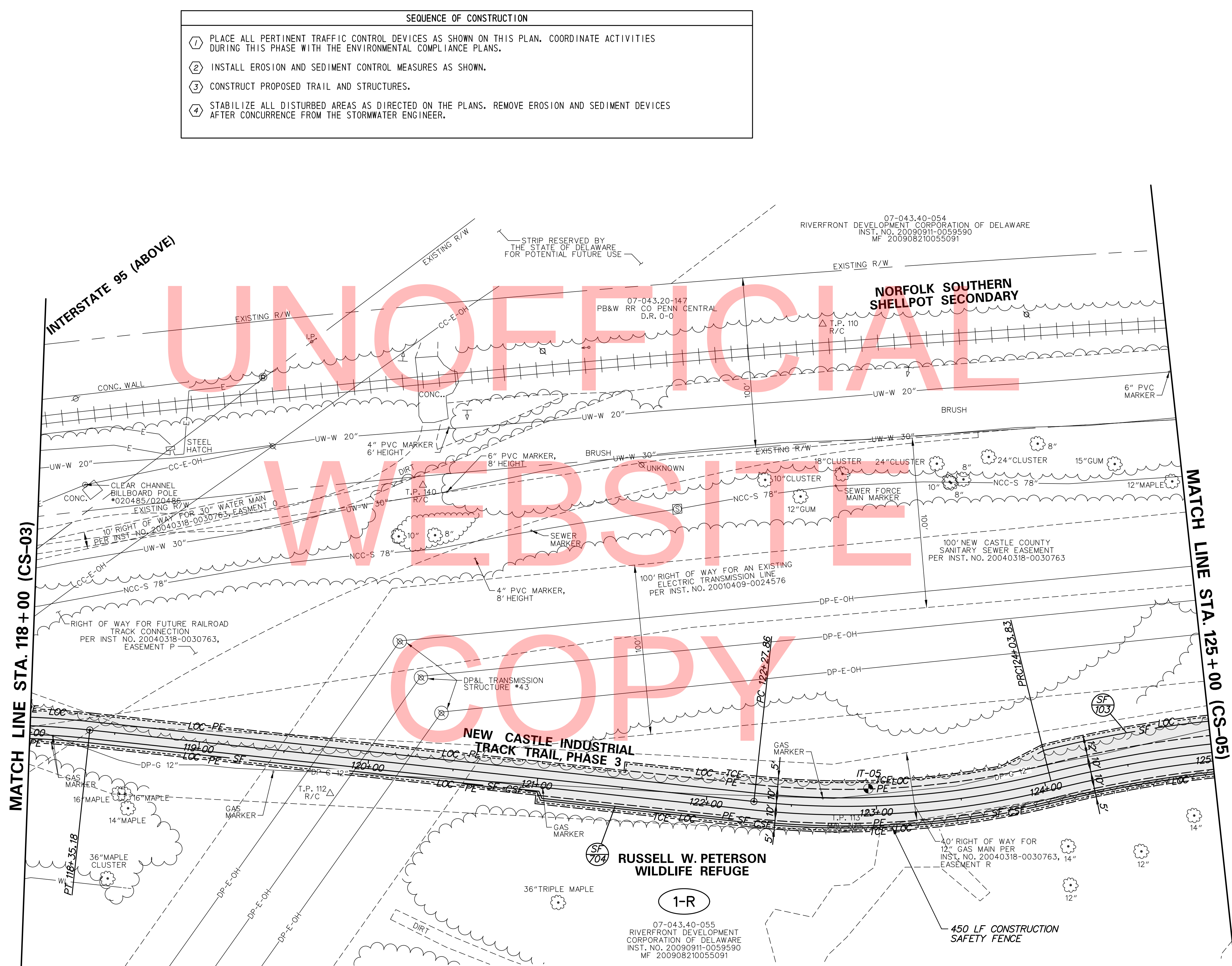
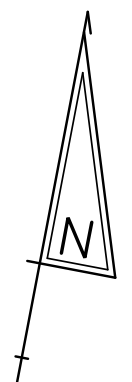
**NEW CASTLE INDUSTRIAL
TRACK TRAIL, PHASE 3**

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| CONTRACT T201330009 | BRIDGE NO. | X |
| COUNTY NEW CASTLE | DESIGNED BY: DAD | CHECKED BY: JRR |

**CONSTRUCTION PHASING,
M.O.T., AND EROSION
CONTROL PLAN**

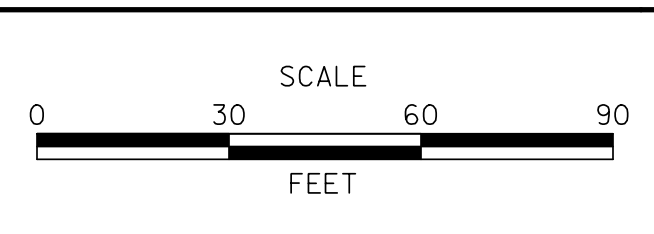
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|--------------------|
| CS-03 |
| SHEET NO. 174 |
| TOTAL SHTS. 205 |

- SEQUENCE OF CONSTRUCTION**
- ① PLACE ALL PERTINENT TRAFFIC CONTROL DEVICES AS SHOWN ON THIS PLAN. COORDINATE ACTIVITIES DURING THIS PHASE WITH THE ENVIRONMENTAL COMPLIANCE PLANS.
 - ② INSTALL EROSION AND SEDIMENT CONTROL MEASURES AS SHOWN.
 - ③ CONSTRUCT PROPOSED TRAIL AND STRUCTURES.
 - ④ STABILIZE ALL DISTURBED AREAS AS DIRECTED ON THE PLANS. REMOVE EROSION AND SEDIMENT DEVICES AFTER CONCURRENCE FROM THE STORMWATER ENGINEER.



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| ADDENDUMS / REVISIONS | |
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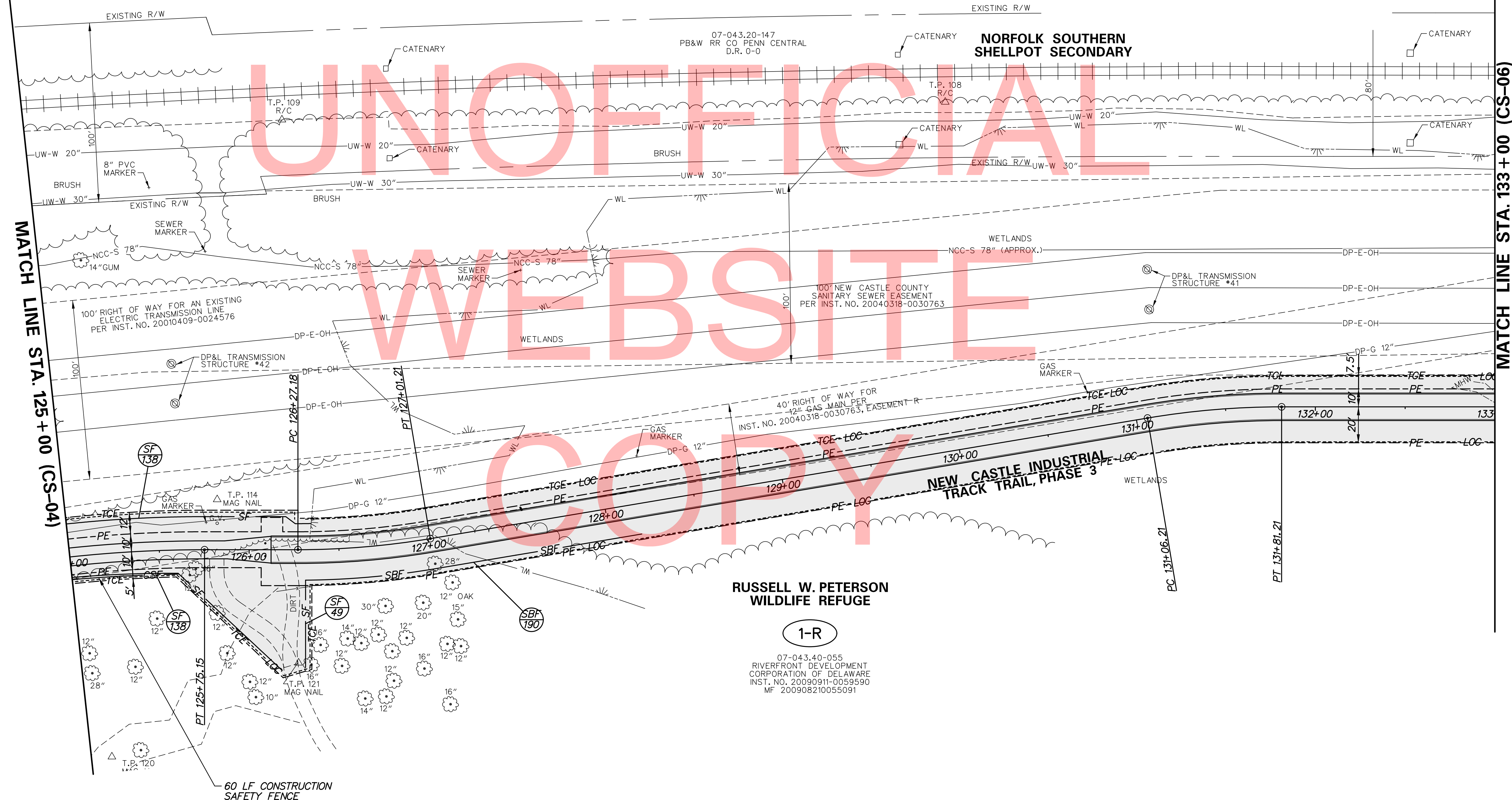
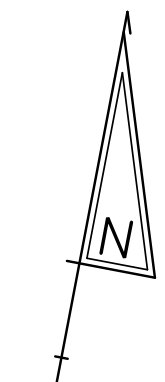
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|------------|------------------|----------|
| CONTRACT | BRIDGE NO. | X |
| T201330009 | DESIGNED BY: DAD | |
| COUNTY | CHECKED BY: JRR | |
| NEW CASTLE | | |

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|-------------|
| CS-04 |
| SHEET NO. |
| 175 |
| TOTAL SHTS. |
| 205 |

- SEQUENCE OF CONSTRUCTION**
- ① PLACE ALL PERTINENT TRAFFIC CONTROL DEVICES AS SHOWN ON THIS PLAN. COORDINATE ACTIVITIES DURING THIS PHASE WITH THE ENVIRONMENTAL COMPLIANCE PLANS.
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07-043.40-054
RIVERFRONT DEVELOPMENT CORPORATION OF DELAWARE
INST. NO. 20090911-0059590
MF 200908210055091

**RUSSELL W. PETERSON
WILDLIFE REFUGE**



**RUSSELL W. PETERSON
WILDLIFE REFUGE**

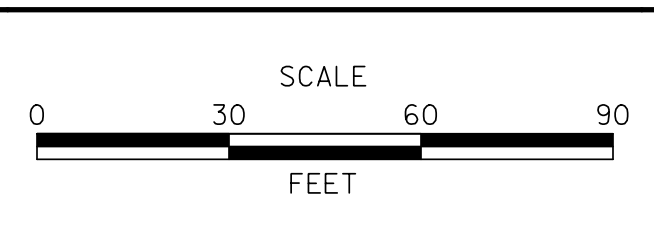
1-R

07-043.40-055
RIVERFRONT DEVELOPMENT CORPORATION OF DELAWARE
INST. NO. 20090911-0059590
MF 200908210055091

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| ADDENDUMS / REVISIONS | |
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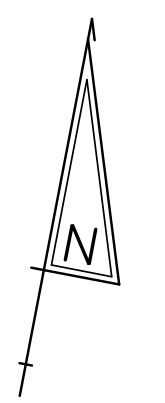


**NEW CASTLE INDUSTRIAL
TRACK TRAIL, PHASE 3**

| | | |
|------------|------------------|----------|
| CONTRACT | BRIDGE NO. | X |
| T201330009 | DESIGNED BY: DAD | |
| COUNTY | CHECKED BY: JRR | |
| NEW CASTLE | | |

**CONSTRUCTION PHASING,
M.O.T., AND EROSION
CONTROL PLAN**

| |
|-------------|
| CS-05 |
| SHEET NO. |
| 176 |
| TOTAL SHTS. |
| 205 |

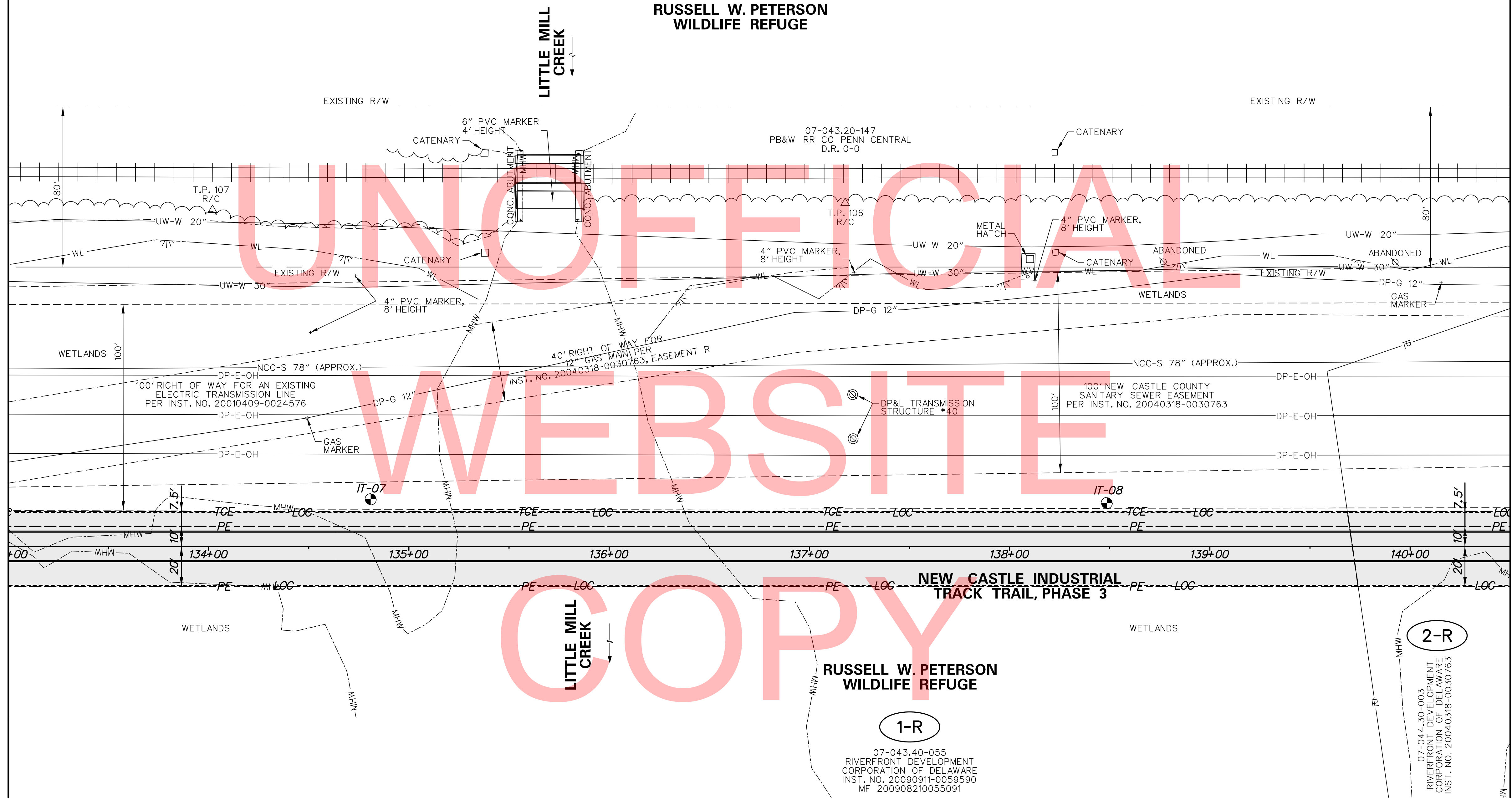


07-043.40-054
 RIVERFRONT DEVELOPMENT CORPORATION OF DELAWARE
 INST. NO. 20090911-0059590
 MF 200908210055091

**RUSSELL W. PETERSON
 WILDLIFE REFUGE**

MATCH LINE STA. 133+00 (CS-05)

MATCH LINE STA. 140+50 (CS-07)



**RUSSELL W. PETERSON
 WILDLIFE REFUGE**

1-R

07-043.40-055
 RIVERFRONT DEVELOPMENT CORPORATION OF DELAWARE
 INST. NO. 20090911-0059590
 MF 200908210055091

2-R

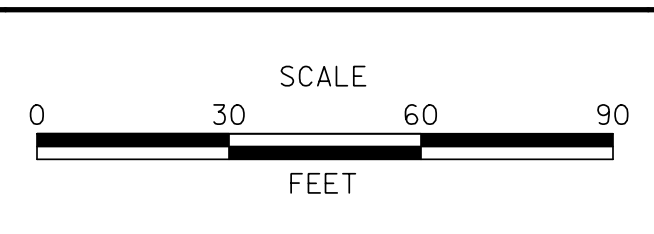
07-044.30-003
 RIVERFRONT DEVELOPMENT CORPORATION OF DELAWARE
 INST. NO. 20040318-0030763

| SEQUENCE OF CONSTRUCTION | |
|--------------------------|---|
| ① | PLACE ALL PERTINENT TRAFFIC CONTROL DEVICES AS SHOWN ON THIS PLAN. COORDINATE ACTIVITIES DURING THIS PHASE WITH THE ENVIRONMENTAL COMPLIANCE PLANS. |
| ② | INSTALL EROSION AND SEDIMENT CONTROL MEASURES AS SHOWN. |
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| ④ | STABILIZE ALL DISTURBED AREAS AS DIRECTED ON THE PLANS. REMOVE EROSION AND SEDIMENT DEVICES AFTER CONCURRENCE FROM THE STORMWATER ENGINEER. |

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| ADDENDUMS / REVISIONS |
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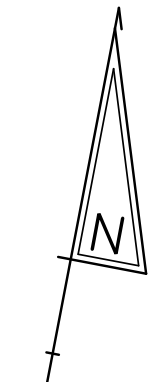


**NEW CASTLE INDUSTRIAL
 TRACK TRAIL, PHASE 3**

| | | |
|------------|------------------|----------|
| CONTRACT | BRIDGE NO. | X |
| T201330009 | DESIGNED BY: DAD | |
| COUNTY | CHECKED BY: JRR | |
| NEW CASTLE | | |

**CONSTRUCTION PHASING,
 M.O.T., AND EROSION
 CONTROL PLAN**

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|-------------|
| CS-06 |
| SHEET NO. |
| 177 |
| TOTAL SHTS. |
| 205 |



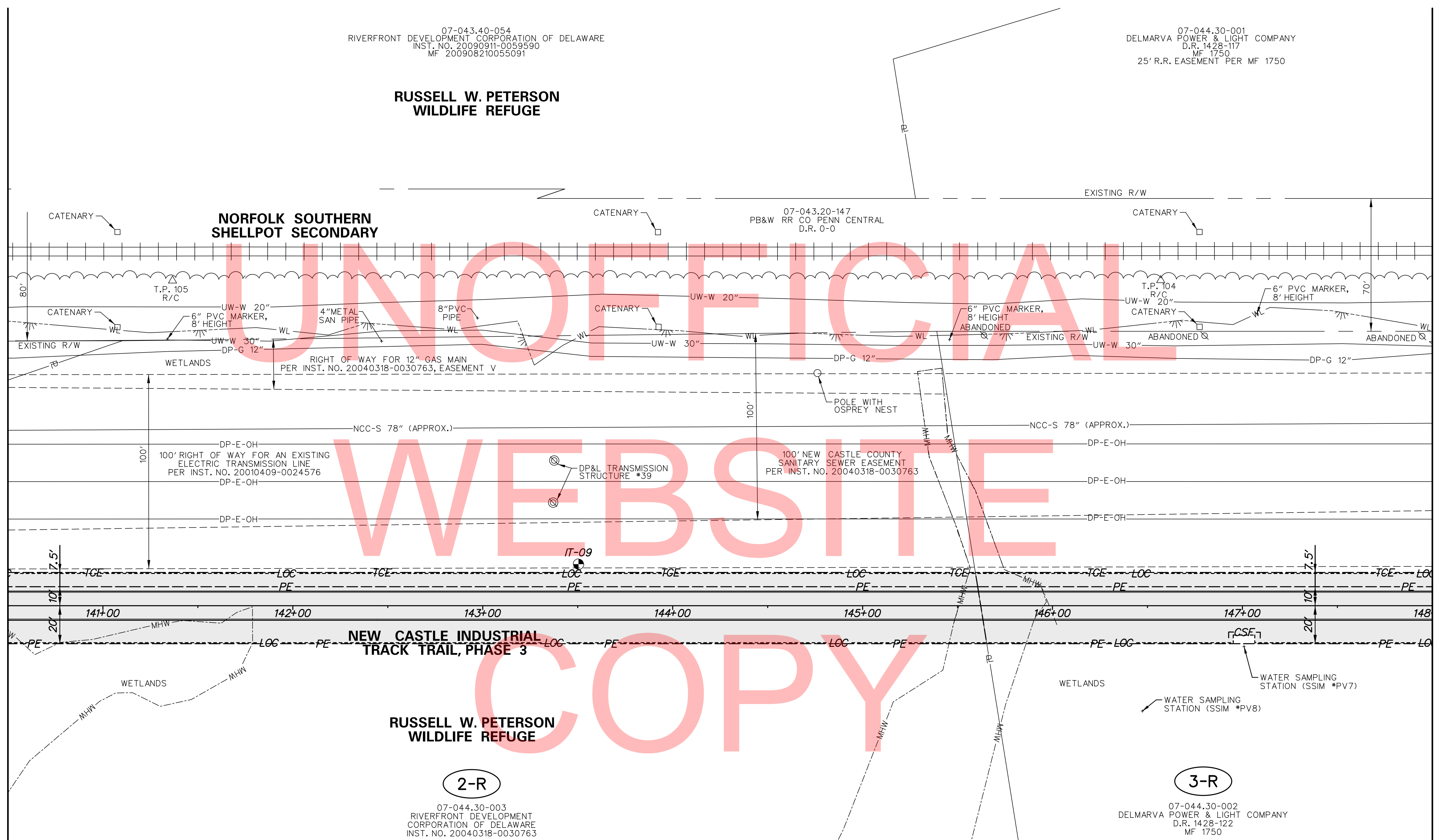
07-043.40-054
RIVERFRONT DEVELOPMENT CORPORATION OF DELAWARE
INST. NO. 20090911-0059590
MF 200908210055091

07-044.30-001
DELMARVA POWER & LIGHT COMPANY
D.R. 1428-117
MF 1750
25' R.R. EASEMENT PER MF 1750

**RUSSELL W. PETERSON
WILDLIFE REFUGE**

MATCH LINE STA. 140 + 50 (CS-06)

MATCH LINE STA. 148 + 00 (CS-08)



**RUSSELL W. PETERSON
WILDLIFE REFUGE**

2-R

07-044.30-003
RIVERFRONT DEVELOPMENT CORPORATION OF DELAWARE
INST. NO. 20040318-0030763

3-R

07-044.30-002
DELMARVA POWER & LIGHT COMPANY
D.R. 1428-122
MF 1750

SEQUENCE OF CONSTRUCTION

- ① PLACE ALL PERTINENT TRAFFIC CONTROL DEVICES AS SHOWN ON THIS PLAN. COORDINATE ACTIVITIES DURING THIS PHASE WITH THE ENVIRONMENTAL COMPLIANCE PLANS.
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ADDENDUMS / REVISIONS

| NO. | DATE | DESCRIPTION |
|-----|------|-------------|
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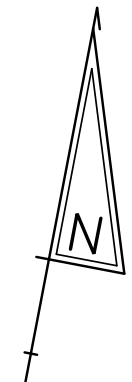
**NEW CASTLE INDUSTRIAL
TRACK TRAIL, PHASE 3**

| | | |
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| CONTRACT | BRIDGE NO. | X |
| T201330009 | DESIGNED BY: DAD | |
| COUNTY | CHECKED BY: JRR | |
| NEW CASTLE | | |

**CONSTRUCTION PHASING,
M.O.T., AND EROSION
CONTROL PLAN**

| |
|--------------|
| CS-07 |
| SHEET NO. |
| 178 |
| TOTAL SHTS. |
| 205 |

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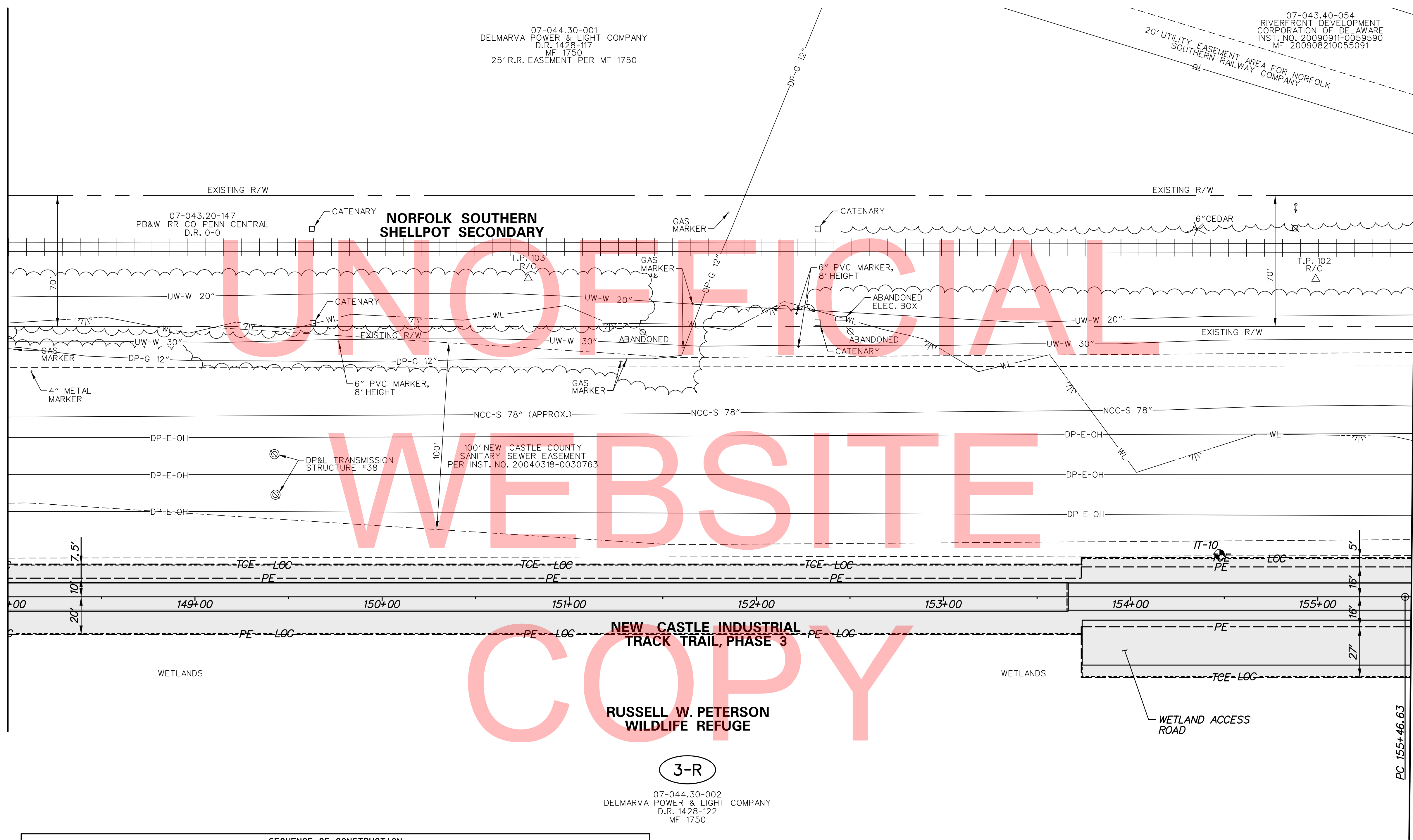


07-044.30-001
 DELMARVA POWER & LIGHT COMPANY
 D.R. 1428-117
 MF 1750
 25' R.R. EASEMENT PER MF 1750

07-043.40-054
 RIVERFRONT DEVELOPMENT CORPORATION OF DELAWARE
 INST. NO. 20090911-0059590
 MF 200908210055091
 20' UTILITY EASEMENT AREA FOR NORFOLK SOUTHERN RAILWAY COMPANY

MATCH LINE STA. 148 + 00 (CS-07)

MATCH LINE STA. 155 + 50 (CS-09)



3-R

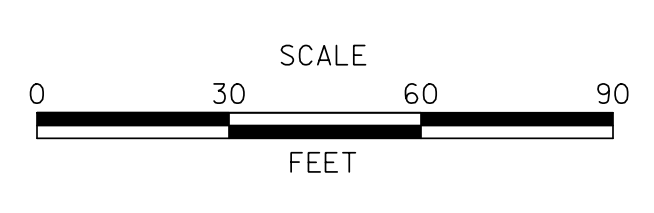
07-044.30-002
 DELMARVA POWER & LIGHT COMPANY
 D.R. 1428-122
 MF 1750

| SEQUENCE OF CONSTRUCTION | |
|--------------------------|---|
| ① | PLACE ALL PERTINENT TRAFFIC CONTROL DEVICES AS SHOWN ON THIS PLAN. COORDINATE ACTIVITIES DURING THIS PHASE WITH THE ENVIRONMENTAL COMPLIANCE PLANS. |
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| ④ | STABILIZE ALL DISTURBED AREAS AS DIRECTED ON THE PLANS. REMOVE EROSION AND SEDIMENT DEVICES AFTER CONCURRENCE FROM THE STORMWATER ENGINEER. |

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| ADDENDUMS / REVISIONS | |
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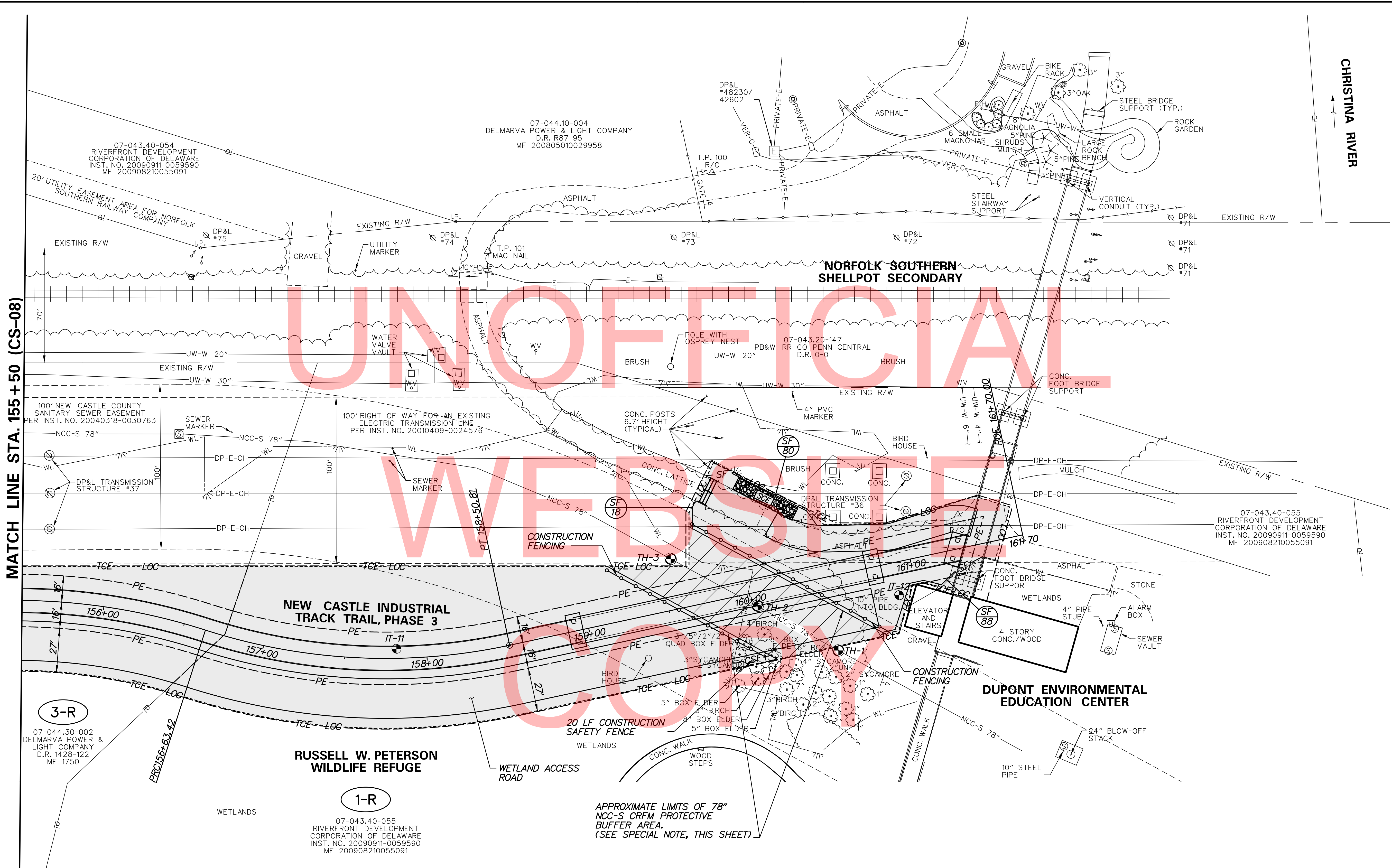
NEW CASTLE INDUSTRIAL TRACK TRAIL, PHASE 3

| | | | |
|----------|------------|--------------|-----|
| CONTRACT | T201330009 | BRIDGE NO. | X |
| COUNTY | NEW CASTLE | DESIGNED BY: | DAD |
| | | CHECKED BY: | JRR |

CONSTRUCTION PHASING, M.O.T., AND EROSION CONTROL PLAN

| |
|-------------|
| CS-08 |
| SHEET NO. |
| 179 |
| TOTAL SHTS. |
| 205 |

MATCH LINE STA. 155 + 50 (CS-08)



| STABILIZED CONSTRUCTION ENTRANCE | | | |
|----------------------------------|---------|---------|------|
| NO. | STATION | OFFSET | TONS |
| 2 | 160+20 | 55' LT. | 25 |

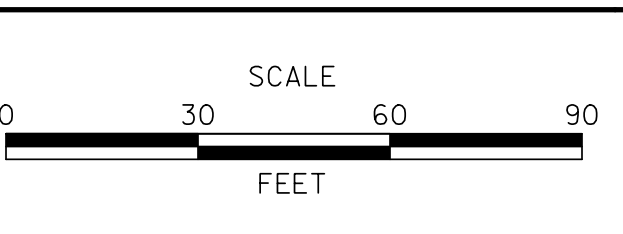
| CONSTRUCTION PHASING & M.O.T | |
|------------------------------|--|
| | WORK AREA - ACTIVE PHASE |
| | SEWER PROTECTIVE BUFFER AREA (APPROX.) |

| SEQUENCE OF CONSTRUCTION | |
|--------------------------|---|
| ① | PLACE ALL PERTINENT TRAFFIC CONTROL DEVICES AS SHOWN ON THIS PLAN. COORDINATE ACTIVITIES DURING THIS PHASE WITH THE ENVIRONMENTAL COMPLIANCE PLANS. |
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SPECIAL NOTE

THE CONTRACTOR SHALL STRICTLY ADHERE TO THE NEW CASTLE COUNTY CHRISTINA RIVER FORCE MAIN (CRFM) PROTECTIVE MEASURES AS NOTED IN THE PLANS AND SPECIFICATIONS.

| ADDENDUMS / REVISIONS |
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NEW CASTLE INDUSTRIAL TRACK TRAIL, PHASE 3

| | | | |
|----------|------------|--------------|-----|
| CONTRACT | T201330009 | BRIDGE NO. | X |
| COUNTY | NEW CASTLE | DESIGNED BY: | DAD |
| | | CHECKED BY: | JRR |

CONSTRUCTION PHASING, M.O.T., AND EROSION CONTROL PLAN

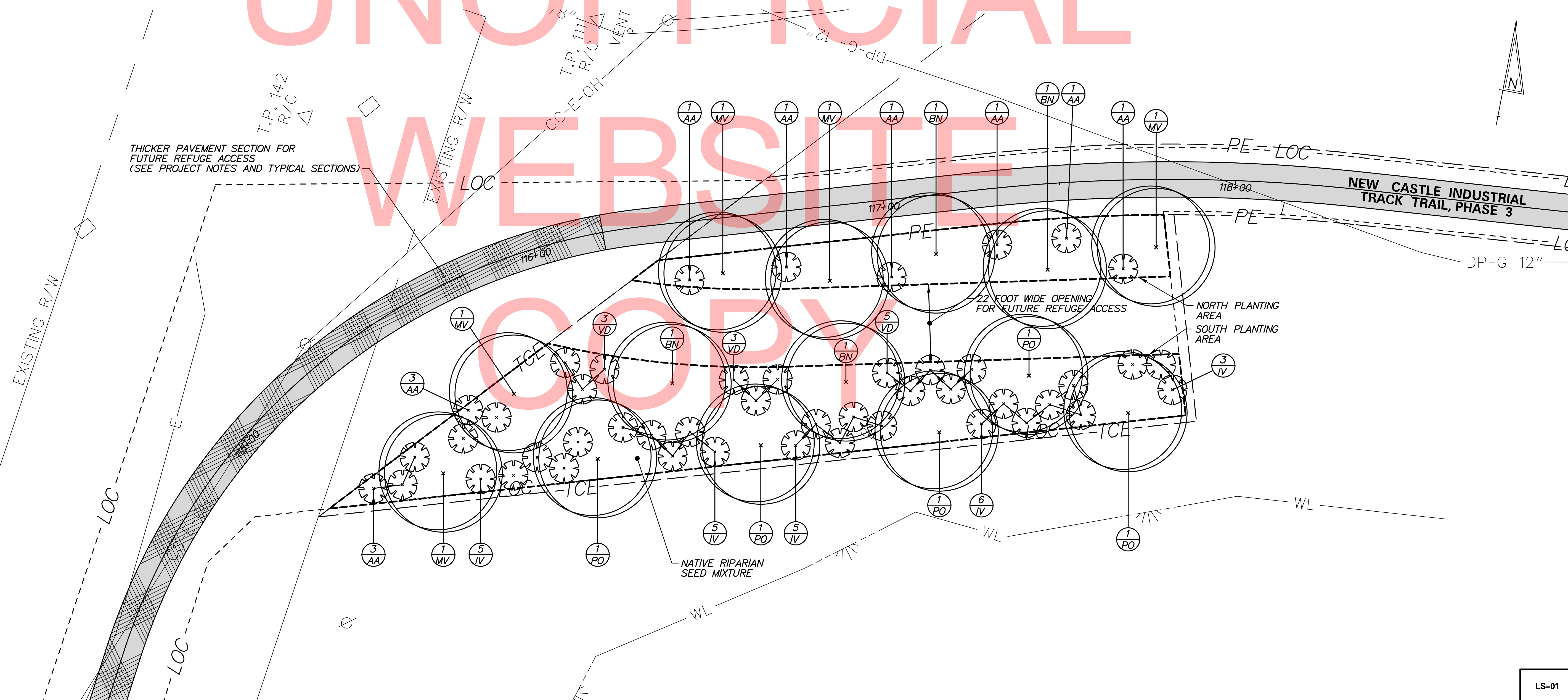
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| CS-09 |
| SHEET NO. |
| 180 |
| TOTAL SHTS. |
| 205 |

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| LANDSCAPE PLANTING SCHEDULE | | | | | | |
|--------------------------------------|------|-----------------------|--------------------|---------|-----------|------------------------|
| SYMBOL | QTY. | SCIENTIFIC NAME | COMMON NAME | SIZE | ROOT | REMARKS |
| SHADE TREES | | | | | | |
| BN | 4 | BETULA NIGRA | RIVER BIRCH | 3" CAL. | B&B | SPACE MINIMUM 30' O.C. |
| MV | 5 | MAGNOLIA VIRGINIANA | SWEETBAY MAGNOLIA | 3" CAL. | B&B | SPACE MINIMUM 30' O.C. |
| PO | 5 | PLATANUS OCCIDENTALIS | AMERICAN SYCAMORE | 3" CAL. | B&B | SPACE MINIMUM 30' O.C. |
| UNDERSTORY TREES/LARGE SHRUBS | | | | | | |
| AA | 12 | AMELANCHIER ARBOREA | DOWNY SERVICEBERRY | NO. 25 | CONTAINER | SPACE MINIMUM 10' O.C. |
| IV | 24 | ILEX VERTICILLATA | WINTERBERRY | NO. 20 | CONTAINER | SPACE MINIMUM 10' O.C. |
| VD | 11 | VIBURNUM DENTATUM | ARROWWOOD VIBURNUM | NO. 25 | CONTAINER | SPACE MINIMUM 10' O.C. |

- NOTES:**
1. PLANT IN ACCORDANCE WITH THE DELDOT STANDARD DETAIL L-1, LATEST EDITION.
 2. PLANTINGS MUST BE PLACED A MINIMUM OF 10 FEET OFFSET FROM THE EDGE OF THE PAVED TRAIL.
 3. FOR FUTURE REFUGE ACCESS, MAINTAIN A 22-FOOT WIDE OPENING BETWEEN THE NORTH AND SOUTH PLANTING AREAS AS SHOWN.

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| DELAWARE DEPARTMENT OF TRANSPORTATION | ADDENDUMS / REVISIONS | SCALE 0 15 30 45 FEET | NEW CASTLE INDUSTRIAL TRACK TRAIL, PHASE 3 | CONTRACT T201330009 COUNTY NEW CASTLE | BRIDGE NO. X DESIGNED BY: MC CHECKED BY: DAD | LANDSCAPING PLAN | SHEET NO. 181 TOTAL SHTS. 205 |
| | DELAWARE DEPARTMENT OF TRANSPORTATION | | | | | | |

LS-01

PROJECT LIGHTING NOTES:

1. CONDUIT RUNS ARE SHOWN IN APPROXIMATE LOCATIONS. THE CONTRACTOR SHALL LOCATE THE SERVICE RUNS IN A MANNER THAT AVOIDS CONFLICTS WITH ALL EXISTING AND PROPOSED FEATURES AS FIELD CONDITIONS DICTATE AND AS APPROVED BY THE ENGINEER.
2. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS PRIOR TO WORK.
3. THE LIGHTING CONTRACTOR SHALL COORDINATE HIS WORK WITH ALL THE CONTRACTORS INVOLVED ON THIS PROJECT. THE LIGHTING CONTRACTOR SHALL COORDINATE WITH THE ENGINEER AND THE GENERAL SUPERINTENDENT ON THE LOCATIONS OF ALL CONDUIT, JUNCTION WELLS AND POLE BASES TO ELIMINATE CONSTRUCTION CONFLICTS.
4. EXISTING UTILITY LOCATIONS SHOWN ON THE PLANS ARE APPROXIMATE. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE EXACT LOCATIONS PRIOR TO COMMENCING WORK.
5. THE CONTRACTOR SHALL USE CAUTION WHEN CROSSING EXISTING OR PROPOSED UTILITIES AND DRAINAGE PIPES WITH PROPOSED CONDUIT RUNS. THE CONTRACTOR SHALL HAND DIG TRENCHES IN THE VICINITY OF THESE FEATURES. IF A CONFLICT IS PERCEIVED THE CONTRACTOR SHALL NOTIFY THE ENGINEER TO DETERMINE THE PROPER RESOLUTION.
6. COLOR CODING SHALL BE PROVIDED THROUGHOUT THE ENTIRE NETWORK FOR SERVICE, FEEDER, BRANCH AND CONTROL CONDUCTORS. EACH PHASE SHALL BE AN INDEPENDENT COLOR. CONDUCTORS SHALL HAVE FACTORY IMPREGNATED COLOR THROUGHOUT THEIR ENTIRE LENGTH.
7. ALL CONDUITS SHALL BE BONDED IN A CONTINUOUS RUN FROM THE SOURCE BY A BARE COPPER GROUNDING CONDUCTOR WITH SIZE AS NOTED ON PLANS.
8. ALL LIGHTING FIXTURES, LAMPS AND RELATED DEVICES FURNISHED UNDER THIS CONTRACT SHALL CARRY THE APPROVAL LABEL OF UL OR ETL FOR THE SPECIFIC APPLICATION IN WHICH THEY ARE USED.
9. THE STATEMENT "FINISH SHALL BE SELECTED BY DESIGN PROFESSIONAL" SHALL BE INTERPRETED TO MEAN THAT THE FINISH OF THE LUMINAIRE SHALL MATCH THE APPEARANCE OF A PAINT CHIP, COLOR NUMBER, OR METAL SWATCH FURNISHED BY THE DESIGN PROFESSIONAL DURING THE SUBMITTAL REVIEW PROCESS.
10. WHITE L.E.D.'S SHALL MEET, AT A MINIMUM, CHROMATICITY STANDARDS SET BY ANSI/NEMA/ANSI C79.377-2011. L.E.D. LUMEN MAINTENANCE SHALL BE MEASURED IN ACCORDANCE WITH IESNA LM-80 STANDARDS. PHOTOMETRIC TESTING FOR SOLID STATE LUMINAIRES SHALL BE IN ACCORDANCE WITH IESNA LM-79 STANDARDS.
11. CONTRACTOR SHALL CONFIRM FIXTURE VOLTAGES AND MOUNTING HARDWARE ARE COMPATIBLE WITH THEIR APPLICATION AS DETERMINED BY THE DESIGN PROFESSIONAL PRIOR TO ORDERING FIXTURES.
12. CONTRACTOR SHALL PROVIDE THE FOLLOWING WITH THEIR BID:
 - A. THE UNIT PRICE FOR EACH LIGHTING FIXTURE TYPE LISTED WITHIN THE LIGHTING FIXTURE SCHEDULE. THE UNIT PRICE SHALL BE FOR ONE OF THE LISTED MANUFACTURERS FOR THAT PARTICULAR FIXTURE. THE MANUFACTURER SHALL BE IDENTIFIED. SUBSTITUTIONS FOR FIXTURES PROVIDED BY MANUFACTURERS NOT LISTED IN THE SCHEDULE ARE NOT ACCEPTABLE. SEE BELOW FOR REQUIREMENTS ASSOCIATED WITH SUBMITTING LIGHTING FIXTURE SUBSTITUTIONS.
 - B. THE TOTAL QUANTITY OF EACH FIXTURE TYPE WITH THE EXTENDED COST FOR THAT QUANTITY.
13. WITHIN 21 DAYS OF CONTRACT AWARD, THE CONTRACTOR SHALL FURNISH SUBMITTALS FOR ALL SPECIFIED LIGHTING FIXTURES FOR REVIEW BY THE DESIGN PROFESSIONAL. THE SUBMITTALS SHALL INCLUDE LUMINAIRE CATALOG CUTS, SUBMITTAL SHEETS, OR MANUFACTURERS' SHOP DRAWINGS INCLUDING THE FOLLOWING:
 - A. MANUFACTURER'S NAME AND COMPLETE CATALOG NUMBER
 - B. FIXTURE TYPE, DIMENSIONS AND FINISHES
 - C. FIXTURE PHOTOMETRIC TEST DATA FROM AN INDEPENDENT TEST LABORATORY
 - D. FIXTURE ACCESSORIES, COMPONENTS, AND HARDWARE WHEN SPECIFIED
 - E. LAMP TYPE, QUANTITY, WATTAGE, LUMEN OUTPUT, RATED LIFE, COLOR TEMPERATURE, COLOR RENDERING INDEX, AND BEAM SPREAD AS APPLICABLE
 - F. BALLAST TYPE AND FIXTURE VOLTAGE
14. SUBMITTALS FOR LIGHTING FIXTURES MOUNTED WITHIN ARCHITECTURAL COVES OR CASEWORK, VARIABLE LENGTH FIXTURES, AND FOR NON-STANDARD, OR CUSTOM FIXTURES, SHALL ALSO INCLUDE SCALED DRAWINGS SHOWING THE LAYOUT AND DIMENSIONS OF ALL FIXTURE COMPONENTS AND ACCESSORIES, THE METHOD OF INSTALLATION, AND A COMPLETE BILL OF MATERIALS.

LIGHTING FIXTURE SUBSTITUTION REQUESTS MUST BE SENT TO AND RECEIVED BY THE LIGHTING DESIGNER FOR REVIEW 14 DAYS PRIOR TO BID DATE. FAILURE TO SUBMIT WITHIN THIS DEADLINE SHALL CONSTITUTE A GUARANTEE THAT THE SPECIFIED FIXTURES WILL BE SUPPLIED. THE SUBMITTAL SHALL INCLUDE THE FOLLOWING:

- A. SIX HARD COPIES OF THE SUBMITTALS REQUIRED ABOVE FOR BOTH THE SPECIFIED FIXTURE AND THE PROPOSED SUBSTITUTION.
- B. ONE NON-RETURNABLE WORKING SAMPLE OF THE PROPOSED SUBSTITUTE FIXTURE WITH CORD AND PLUG CONNECTION FOR 120 VOLT OPERATION, AND SPECIFIED LAMP(S).
- C. CONTRACTOR'S STATEMENT INDICATING THE EFFECT OF THE SUBSTITUTION ON THE CONSTRUCTION SCHEDULE COMPARED TO THE SCHEDULE WITHOUT THE APPROVAL OF THE PROPOSED SUBSTITUTION.
- D. CONTRACTOR'S CERTIFICATION STATING THAT THE PROPOSED SUBSTITUTION CONFORMS TO THE REQUIREMENTS OF THE CONTRACT DOCUMENTS IN EVERY RESPECT AND IS APPROPRIATE FOR THE APPLICATIONS INDICATED IN THE DOCUMENTS.
- E. CONTRACTOR'S CERTIFICATION STATING THAT ANY MODIFICATIONS TO ANY BUILDING SYSTEM OR EQUIPMENT THAT MAY RESULT FROM THE PROPOSED LIGHTING FIXTURE SUBSTITUTION WILL BE DESIGNED AND CONSTRUCTED AT THE CONTRACTOR'S EXPENSE.
- F. CONTRACTOR'S WAIVER OF RIGHTS TO ADDITIONAL PAYMENT OR TIME THAT MAY BECOME NECESSARY SHOULD THE PROPOSED SUBSTITUTION FAIL TO PERFORM IN A MANNER THAT MATCHES THE SPECIFIED FIXTURE.
- G. CONTRACTOR-NET UNIT PRICE FOR THE SPECIFIED FIXTURE AND FOR THE PROPOSED SUBSTITUTE FIXTURE.

LIGHTING DEFINITIONS:

1. CORRELATED COLOR TEMPERATURE (CCT): THE ABSOLUTE TEMPERATURE, MEASURED IN DEGREES KELVIN, OF A BLACKBODY RADIATOR HAVING CHROMATICITY RESEMBLING THAT OF AN ELECTRIC LIGHT SOURCE. FOR LED SOURCES CCT SHALL NOT DEVIATE FROM THE REFERENCE COLOR TEMPERATURE BY MORE THAN THREE MACADAM ELLIPSES, AS DEFINED BY NEMA/ANSI/ANSI C38.377-2011
2. COLOR RENDERING INDEX (CRI): MEASURE OF COLOR SHIFT OBJECTS UNDERGO WHEN ILLUMINATED BY AN ELECTRIC LIGHT SOURCE AS COMPARED WITH THE COLOR OF THE SAME OBJECTS ILLUMINATED BY A REFERENCE SOURCE AT THE SAME COLOR TEMPERATURE. CRI VALUES FOR ELECTRIC LIGHT SOURCES RANGE FROM APPROXIMATELY 20 (LOW PRESSURE SODIUM) TO 99 (HALOGEN). CRI VALUES FOR LED SOURCES SHALL BE MEASURED AFTER 6000 HOURS AND SHALL NOT DEVIATE MORE THAN 3 POINTS FROM THE RATED VALUE.
3. LED LIGHT ENGINE: THE COMBINED LED LIGHT SOURCE AND ITS ASSOCIATED ELECTRONIC DRIVER. THE LED LIGHT ENGINE MAY HAVE AN INTEGRAL DRIVER OR THE DRIVER MAY BE HOUSED IN A SEPARATE ENCLOSURE.
4. LED DRIVER: CONTROL DEVICE THAT MAINTAINS CONSTANT AMOUNT OF CURRENT TO THE LED LIGHT SOURCE. LED DRIVERS GENERALLY OPERATE AT 12VDC OR 24VDC. SOME DRIVERS MAY BE DESIGNED TO ACCEPT BRANCH CIRCUIT VOLTAGE RANGING FROM 120VAC THROUGH 277VDC OR MAY REQUIRE A SEPARATE TRANSFORMER.
5. TRANSFORMER (LIGHTING): ELECTROMAGNETIC OR ELECTRONIC DEVICE THAT STEPS DOWN PRIMARY VOLTAGE TO A LOWER SECONDARY VOLTAGE. GENERALLY SECONDARY VOLTAGE WILL BE 12V OR 24V.
6. DIMMING: THE REDUCTION OF LIGHT INTENSITY OF A LIGHT SOURCE. ALL SOURCES SHALL HAVE A SMOOTH, FLICKER-FREE AND CONTINUOUS DIMMING CURVE FROM FULL-OFF TO 100% OUTPUT. LED SOURCES MAY BE DIMMED BY EITHER CONSTANT CURRENT REDUCTION (CCR) OR BY PULSE WIDTH MODULATION (PWM) DIMMING FOR CONSTANT CURRENT DRIVERS.
7. RATED LUMEN MAINTENANCE LIFE: THE ELAPSED OPERATING TIME OVER WHICH AN LED LIGHT SOURCE WILL MAINTAIN THE PERCENTAGE OF ITS INITIAL LUMEN OUTPUT.
 - L70: TIME, IN HOURS, TO 70% LUMEN MAINTENANCE
 - L50: TIME, IN HOURS, TO 50% LUMEN MAINTENANCE

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ADDENDUMS / REVISIONS

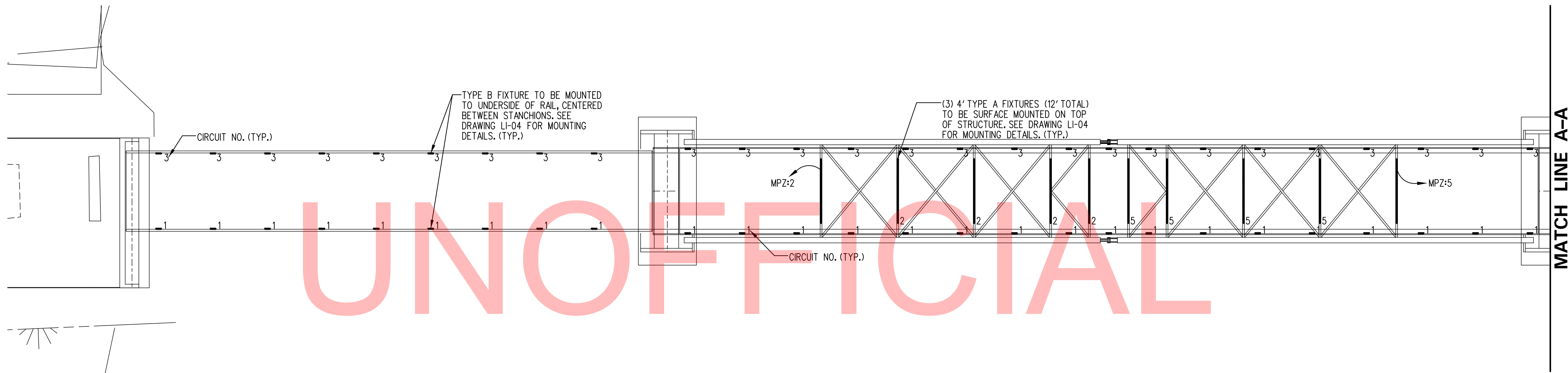
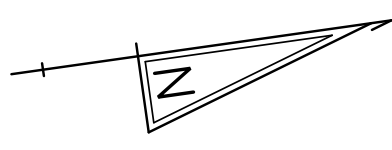
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NEW CASTLE INDUSTRIAL TRACK TRAIL, PHASE 3

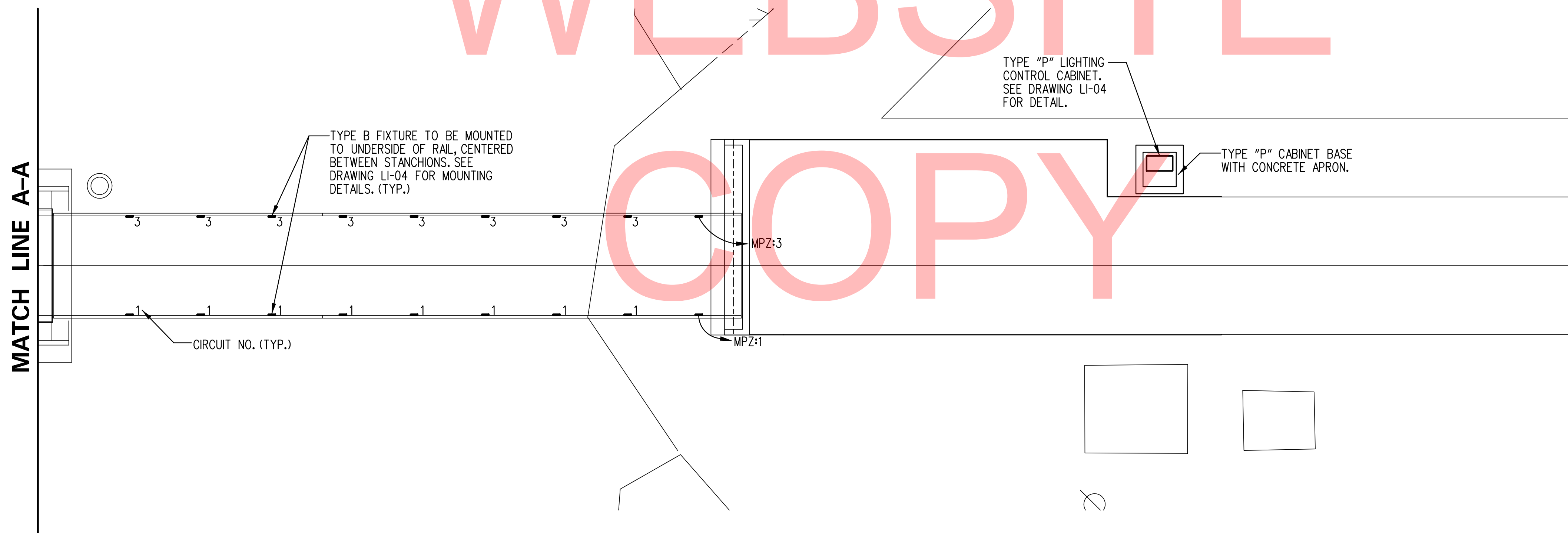
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|------------|-----------------|----------|
| CONTRACT | BRIDGE NO. | X |
| T201330009 | DESIGNED BY: AK | |
| COUNTY | CHECKED BY: IK | |
| NEW CASTLE | | |




LIGHTING DETAILS AND GENERAL NOTES

| |
|-------------|
| LI-01 |
| SHEET NO. |
| 182 |
| TOTAL SHTS. |
| 205 |



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COPY

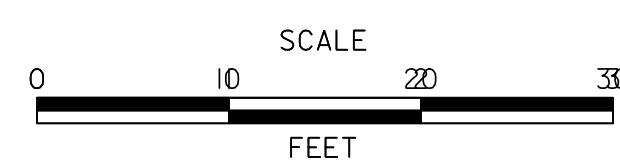


| LEGEND | |
|---|--|
|  | 4' LED LIGHT FIXTURE (TYPE A) |
|  | 1' LED LIGHT FIXTURE (TYPE B) |
|  | PNL:# CIRCUIT HOMERUN INDICATOR (SOURCE PANEL:CKT NO.) |

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| ADDENDUMS / REVISIONS | |
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NEW CASTLE INDUSTRIAL TRACK TRAIL, PHASE 3

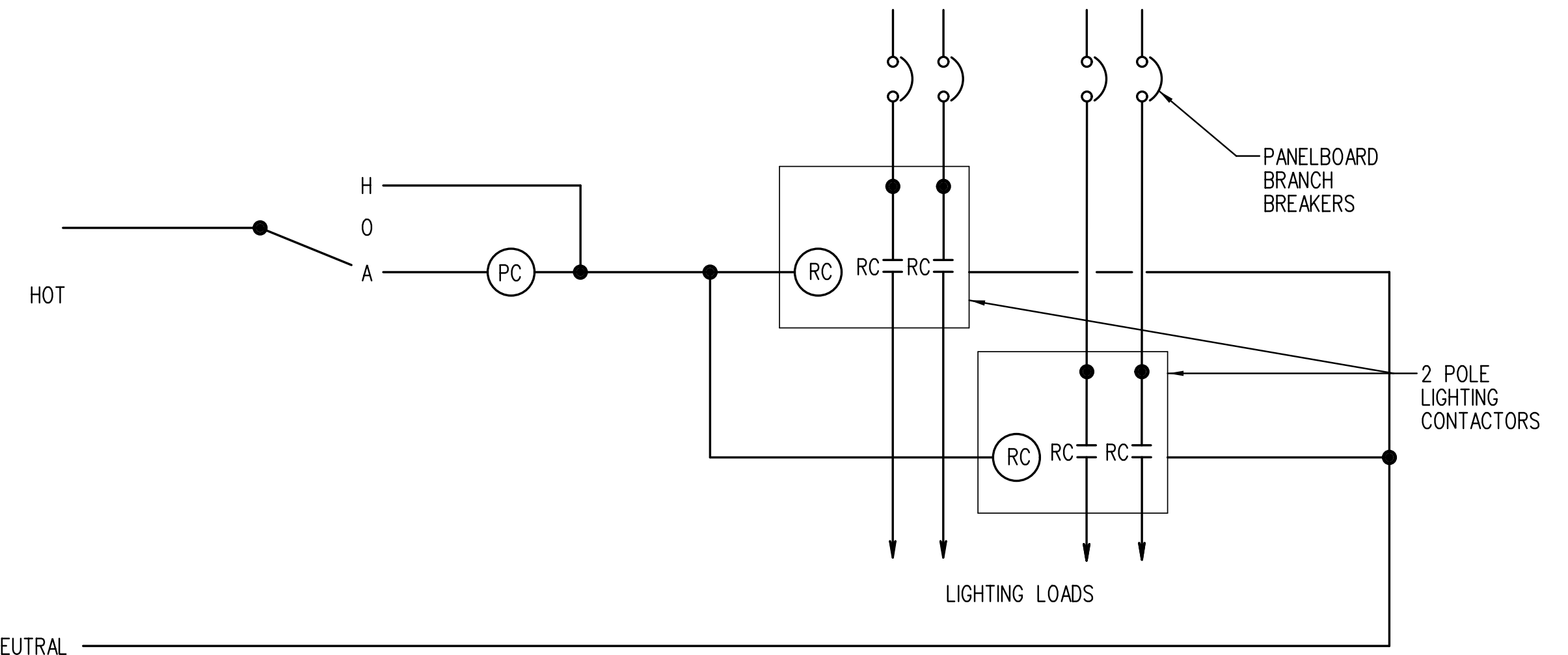
| | | |
|------------|--------------|----------|
| CONTRACT | BRIDGE NO. | X |
| T201330009 | DESIGNED BY: | AK |
| COUNTY | CHECKED BY: | IK |
| NEW CASTLE | | |

BRIDGE LIGHTING PLAN

| |
|-------------|
| LI-02 |
| SHEET NO. |
| 183 |
| TOTAL SHTS. |
| 205 |

LIGHTING FIXTURE SCHEDULE

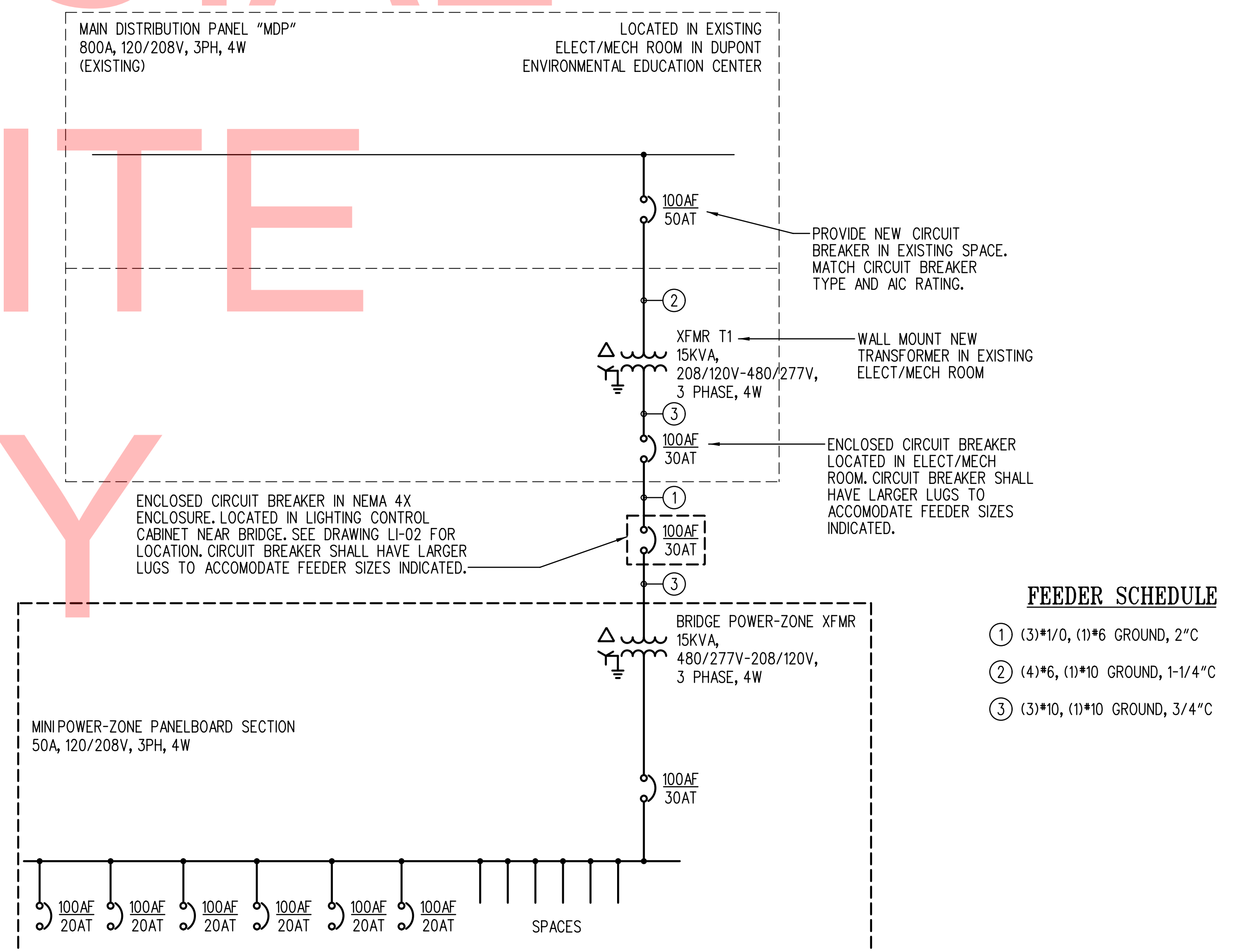
| FIX. TYPE | DESCRIPTION | MOUNTING | LAMPS | | | VOLTS | MAUNFACTURER AND CATALOG NUMBER |
|-----------|---|----------|-------|-------|----------------------|-------|---|
| | | | NO. | WATTS | TYPE | | |
| A | LED LINEAR DIRECT-VIEW LUMINAIRE, MAXIMUM 47.2 INCH LONG X 2.6 INCH WIDE X 3.5 INCHES HIGH, EXTRUDED ALUMINUM HOUSING, MACHINED ALUMINUM END CAPS WITH PLASTIC/RUBBER OVERMOLD, SILICONE SEALED FROSTED POLYCARBONATE LENS, MALE/FEMALE PIGTAIL PLUGS FOR CONTINUOUS END-TO-END POWER FEED, INTEGRAL LINE VOLTAGE POWER SUPPLY, CORROSION-RESISTANT SILVER POWDER COAT FINISH ACROSS MAIN FIXTURE HOUSING, ETL LISTED FOR WET LOCATION, IP 65 RATED, FIXTURE TO BE SURFACE MOUNTED END-TO-END ON TOP OF HORIZONTAL STRUCTURE, REFER TO DRAWINGS FOR MOUNTING DETAILS. ELECTRICAL CONTRACTOR TO PROVIDE LENGTH AND QUANTITY OF LEADER AND JUMPER CABLES AND MOUNTING ACCESSORIES AS REQUIRED. CONTRACTOR TO COORDINATE MOUNTING METHOD AS INDICATED IN MOUNTING DETAILS, AND PROVIDE ALL REQUIRED ACCESSORIES FOR FULLY FUNCTIONING SYSTEM. LED REQUIREMENTS: 2700K CORRELATED COLOR TEMPERATURE, L70 RATED LIFE OF 50,000 HOURS, AND 5-YEAR WARRANTY. | SURFACE | - | 20 | LEDs BY MANUFACTURER | 120 | ACCLAIM LIGHTING ABA.232.ABHN (MODIFIED TO STATIC 2700K) + LEADER/JUMPER CABLES OR APPROVED EQUAL |
| B | LED LINEAR LUMINAIRE, MAXIMUM 12 INCH LONG X 2.0 INCH WIDE X 2.0 INCH HIGH, EXTRUDED ALUMINUM HOUSING, MACHINED ALUMINUM END CAPS WITH SILICONE GASKETING, SILICONE-SEALED CLEAR TEMPERED GLASS LENS, STAINLESS STEEL HARDWARE, 120° x 120° BEAM OPTICS, INTEGRAL LINE VOLTAGE POWER SUPPLY, DIRECT CONDUIT CONNECTION, ETL LISTED FOR WET LOCATION, IP 66 RATED, FLAT MOUNTING BRACKETS FIXTURE TO BE MOUNTED TO UNDERSIDE OF HANDRAIL, REFER TO DRAWINGS FOR MOUNTING DETAILS. CONTRACTOR TO COORDINATE MOUNTING METHOD AS INDICATED IN MOUNTING DETAILS, AND PROVIDE ALL REQUIRED ACCESSORIES FOR FULLY FUNCTIONING SYSTEM. LED REQUIREMENTS: 2700K CORRELATED COLOR TEMPERATURE, 560 MINIMUM INITIAL DELIVERED LUMENS, 190 MINIMUM CENTERBEAM CANDLEPOWER, 80+ CRI, L70 RATED LIFE OF 60,000 HOURS, AND 5-YEAR WARRANTY. | SURFACE | - | 8 | LEDs BY MANUFACTURER | 120 | ECOSENSE HPEL-CC-12-27-120-120 MOUNTING: EXT-A-MNT-FLAT OR APPROVED EQUAL |



LIGHTING CONTROL DIAGRAM
SCALE: NOT TO SCALE

BRIDGE POWER ZONE CENTER PANEL SCHEDULE

| LOAD SERVED | LOAD (AMPS) | | | CB TRIP | WIRE SIZE | CKT | PHASE | | | CKT | WIRE SIZE | CB TRIP | LOAD (AMPS) | | | LOAD SERVED | |
|-------------------------|-------------|------------|------------|---------|-----------|--------|-------|---|--------|-----|-----------|---------|-------------|------------|----------|-------------------------|--|
| | A | B | C | | | | A | B | C | | | | A | B | C | | |
| EAST RAILING LIGHTS | 2.3 | | | 20 | 10 | 1 | | | | 2 | 10 | 20 | 2.5 | | | SOUTH BRIDGE TOP LIGHTS | |
| WEST RAILING LIGHTS | | 2.3 | | 20 | 10 | 3 | | | | 4 | 12 | 20 | | 1.5 | | RECEPTACLE | |
| NORTH BRIDGE TOP LIGHTS | | | 2.5 | 20 | 10 | 5 | | | | 6 | | 20 | | | | SPACE | |
| SPACE | | | | - | | 7 | | | | 8 | | - | | | | SPACE | |
| SPACE | | | | - | | 9 | | | | 10 | | - | | | | SPACE | |
| SPACE | | | | - | | 11 | | | | 12 | | - | | | | SPACE | |
| TOTAL | 2.3 | 2.3 | 2.5 | | | | | | | | | | 2.5 | 1.5 | 0 | TOTAL | |
| TOTAL CONNECTED AMPS: | | | A= 4.8 | | | B= 3.8 | | | C= 2.5 | | | | | | | | |



ELECTRICAL SINGLE LINE DIAGRAM
SCALE: NOT TO SCALE

- FEEDER SCHEDULE**
- ① (3)*1/0, (1)*6 GROUND, 2" C
 - ② (4)*6, (1)*10 GROUND, 1-1/4" C
 - ③ (3)*10, (1)*10 GROUND, 3/4" C

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| ADDENDUMS / REVISIONS |
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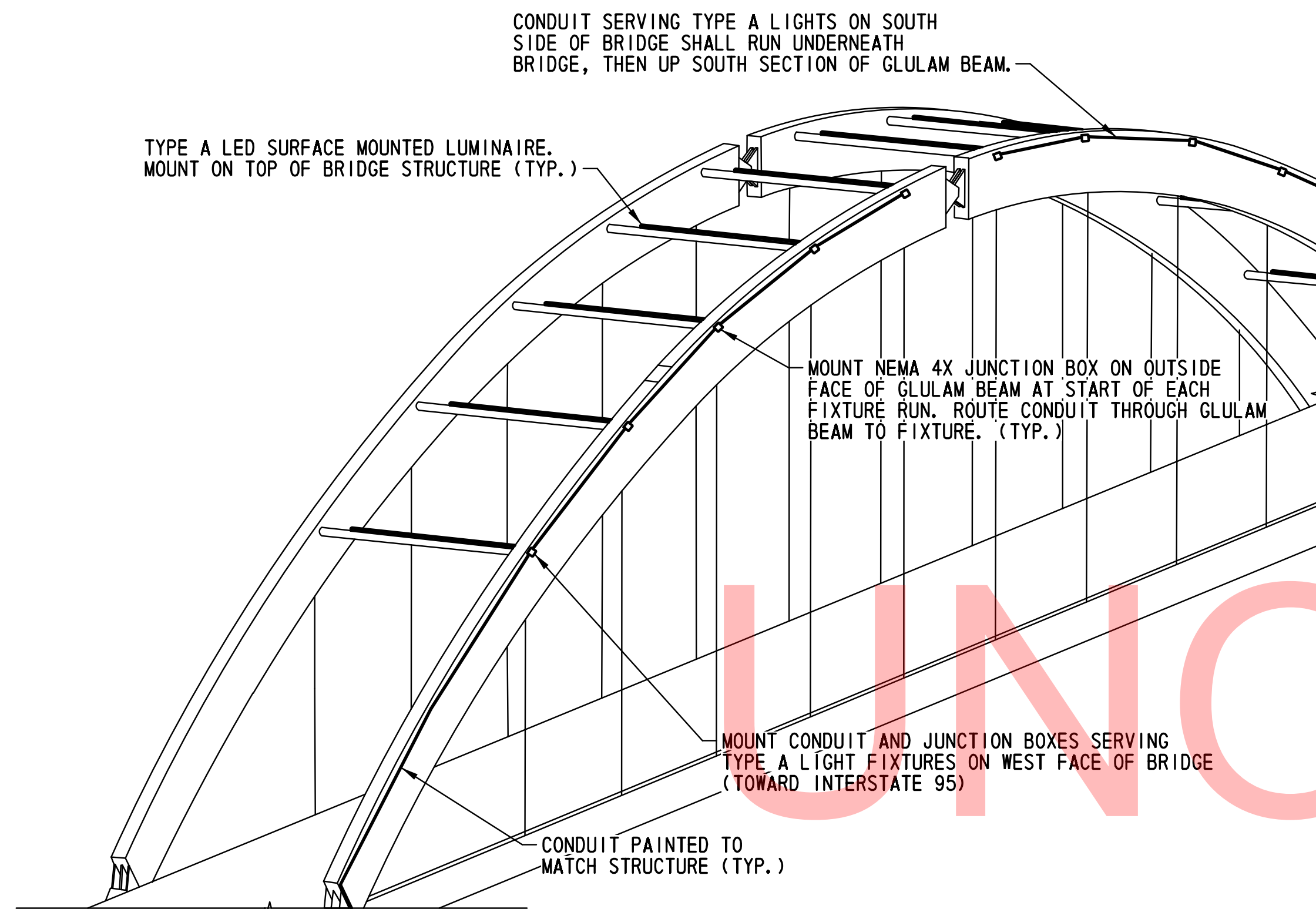
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NEW CASTLE INDUSTRIAL TRACK TRAIL, PHASE 3

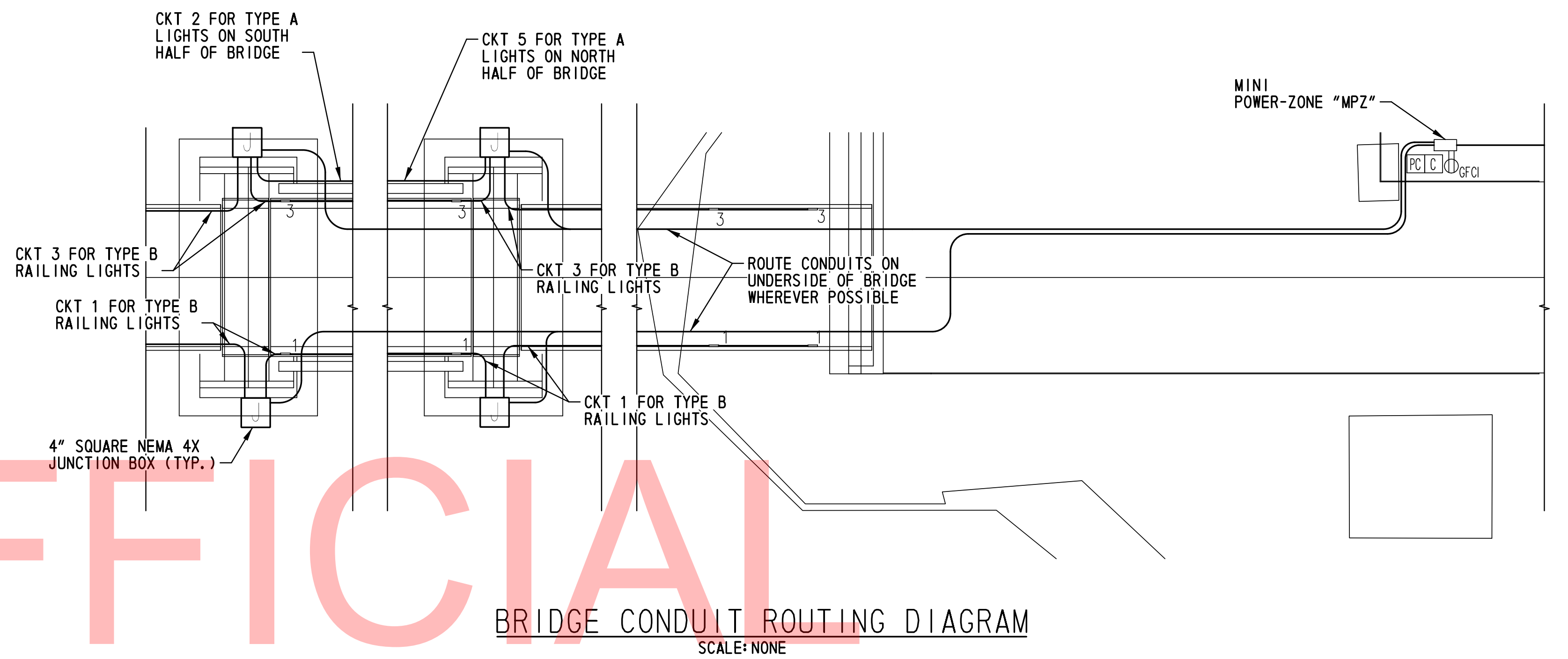
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|------------------------|-----------------------------------|
| CONTRACT T201330009 | BRIDGE NO. X |
| COUNTY NEW CASTLE | DESIGNED BY: AK CHECKED BY: IK |

ELECTRICAL DETAILS

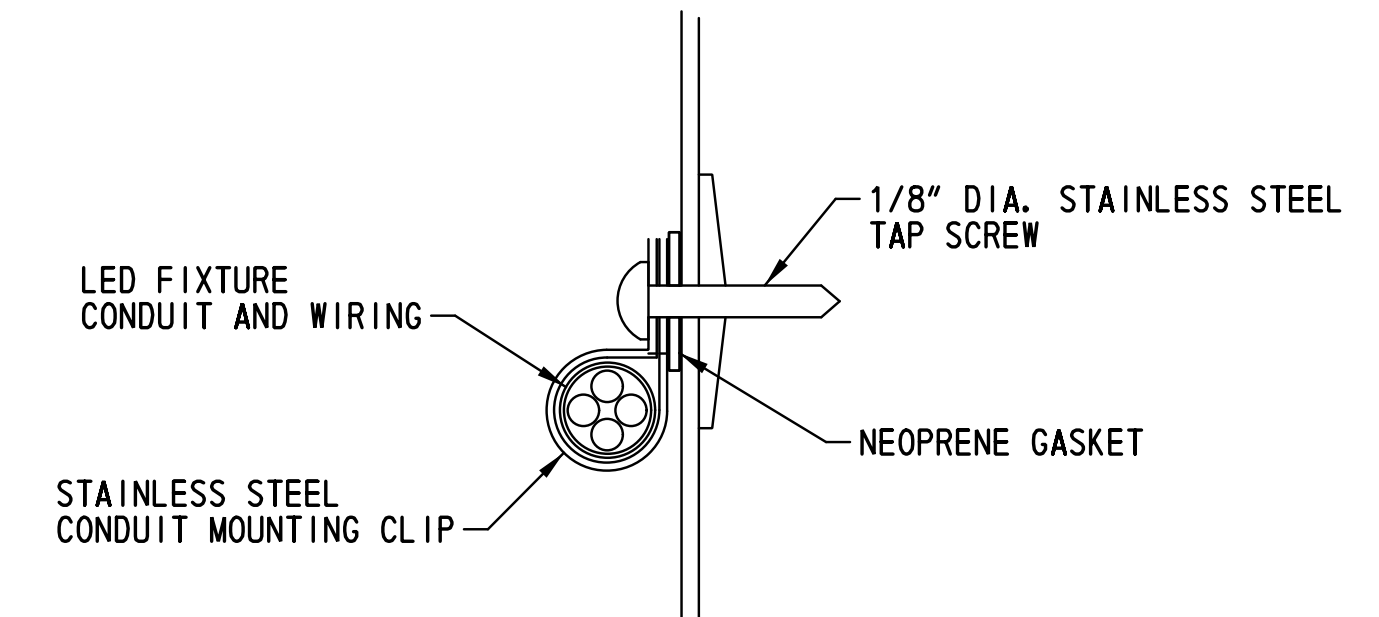
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| LI-03 |
| SHEET NO. 184 |
| TOTAL SHTS. 205 |



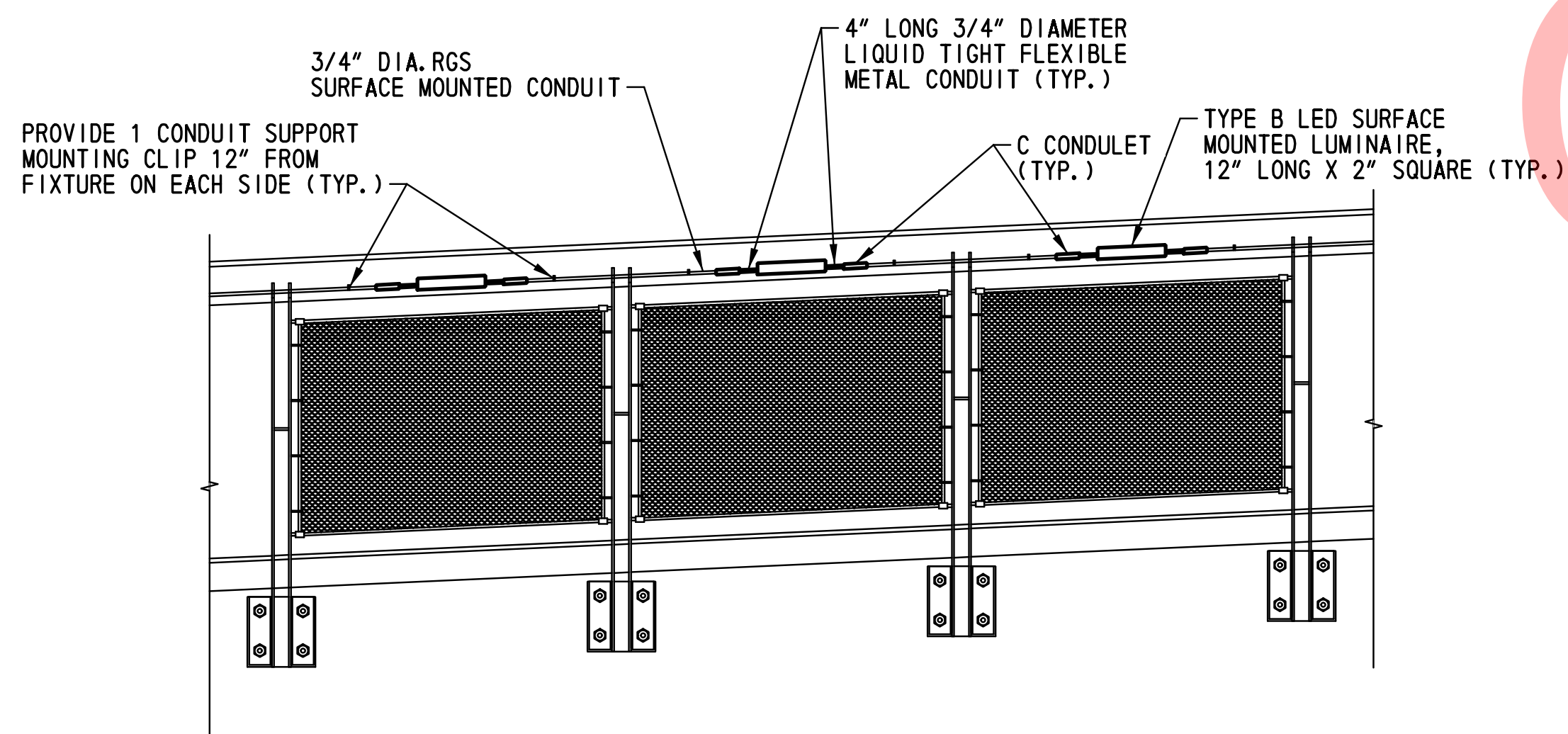
TYPE A FIXTURE INSTALLATION AND WIRING DIAGRAM
SCALE: NONE



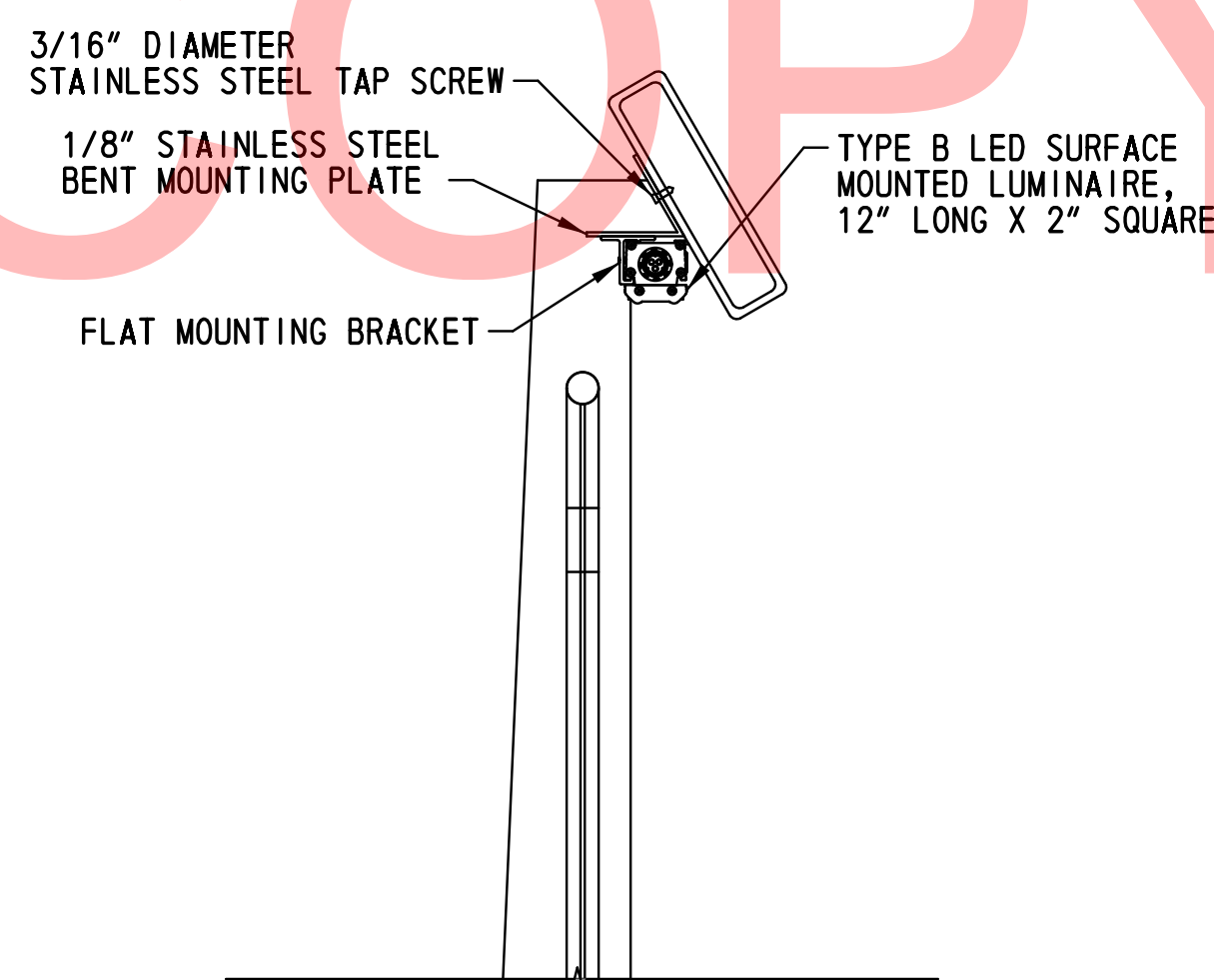
BRIDGE CONDUIT ROUTING DIAGRAM
SCALE: NONE



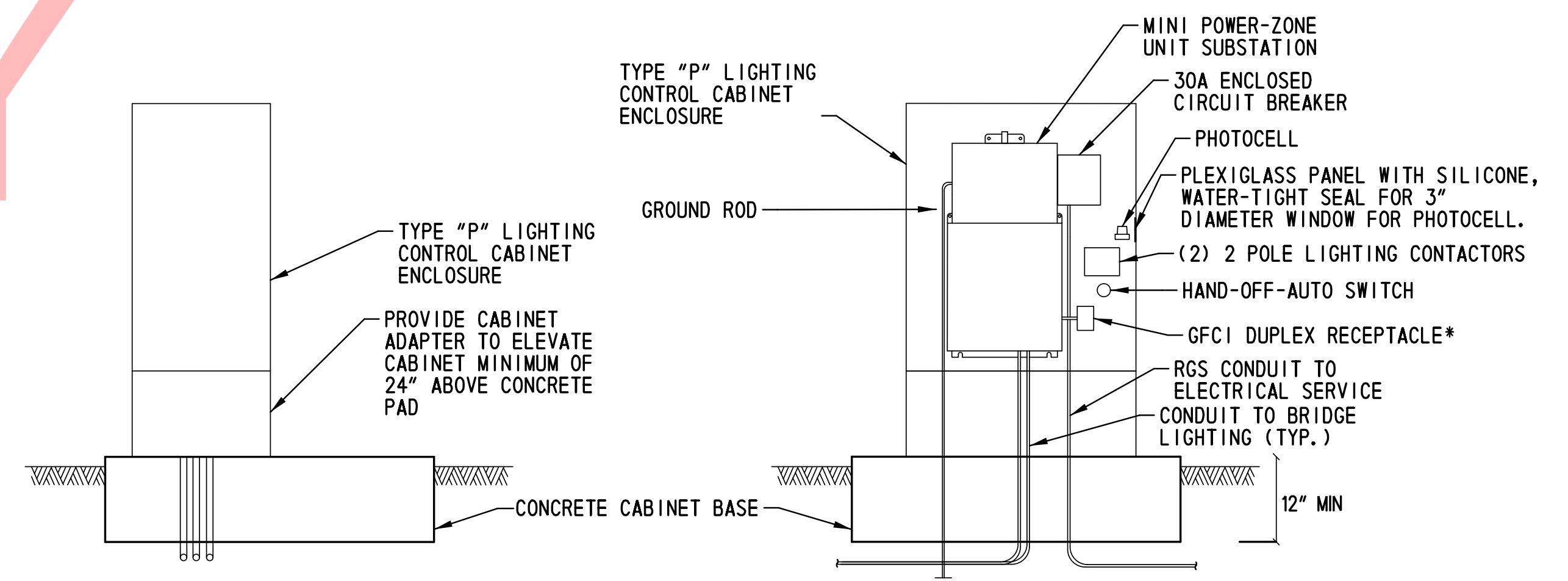
CONDUIT SUPPORT MOUNTING CLIP DETAIL AT RAILING
SCALE: NONE



TYPE B FIXTURE INSTALLATION AT RAILING
SCALE: 1/2" = 1'-0"



TYPE B INSTALLATION SECTION
SCALE: 2" = 1'-0"



BRIDGE LIGHTING CONTROL AND DISTRIBUTION
SCALE: NONE

*PROVIDE HEAVY DUTY NEMA 5-20R GROUND FAULT CIRCUIT INTERRUPTING DUPLEX RECEPTACLE IN WEATHERPROOF WHILE IN USE ENCLOSURE. RECEPTACLE: LEVITON, MODEL #G5362-WTE OR EQUAL. ENCLOSURE: LEVITON, MODEL #002-05981-UGY OR EQUAL.

ADDENDUMS / REVISIONS

NOT TO SCALE

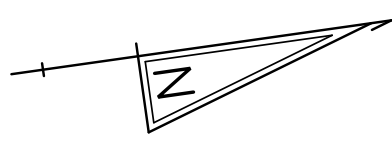
NEW CASTLE INDUSTRIAL TRACK TRAIL, PHASE 3

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|------------|--------------|----|
| CONTRACT | BRIDGE NO. | X |
| T201330009 | DESIGNED BY: | AK |
| COUNTY | CHECKED BY: | IK |
| NEW CASTLE | | |

ELECTRICAL DETAILS

| |
|-------------|
| LI-04 |
| SHEET NO. |
| 185 |
| TOTAL SHTS. |
| 205 |

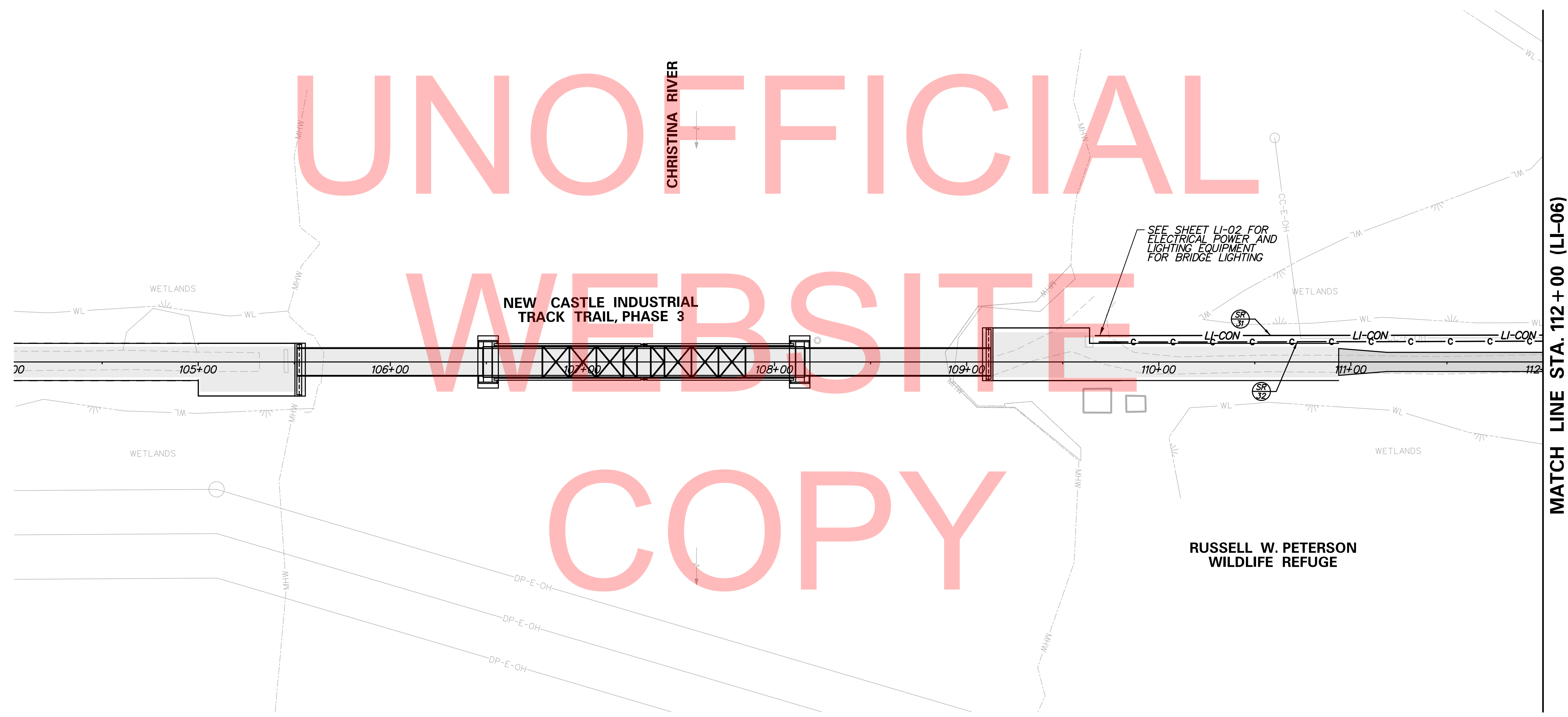
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| LEGEND | |
|--------|---|
| | SERVICE RUN IDENTIFIER |
| | JUNCTION WELL IDENTIFIER (TYPE OF JUNCTION WELL) |
| | LIGHTING CONDUIT |
| | COMMUNICATIONS CONDUIT |

| LIGHTING SERVICE SCHEDULE | | | |
|---------------------------|-----------------|-----------------------|------------------------|
| SERVICE RUN | DISTANCE (L.F.) | DESCRIPTION | INSTALLATION |
| 31 | 358* | (3)#1/0, (1)#6 GROUND | 2" SCH80 PVC IN TRENCH |
| 32 | 362* | EMPTY | 3" SCH80 PVC IN TRENCH |

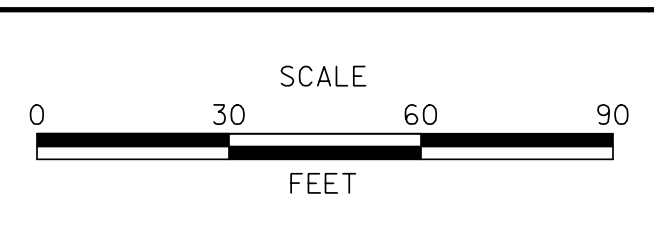
*DISTANCE CONTINUES ON ADJACENT PLAN SHEET
 NOTE: SERVICE RUN DISTANCE REFLECTS CONDUIT LENGTH ONLY.



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| ADDENDUMS / REVISIONS | |
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NEW CASTLE INDUSTRIAL TRACK TRAIL, PHASE 3

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| CONTRACT | BRIDGE NO. | X |
| T201330009 | DESIGNED BY: | AK |
| COUNTY | CHECKED BY: | IK |
| NEW CASTLE | | |

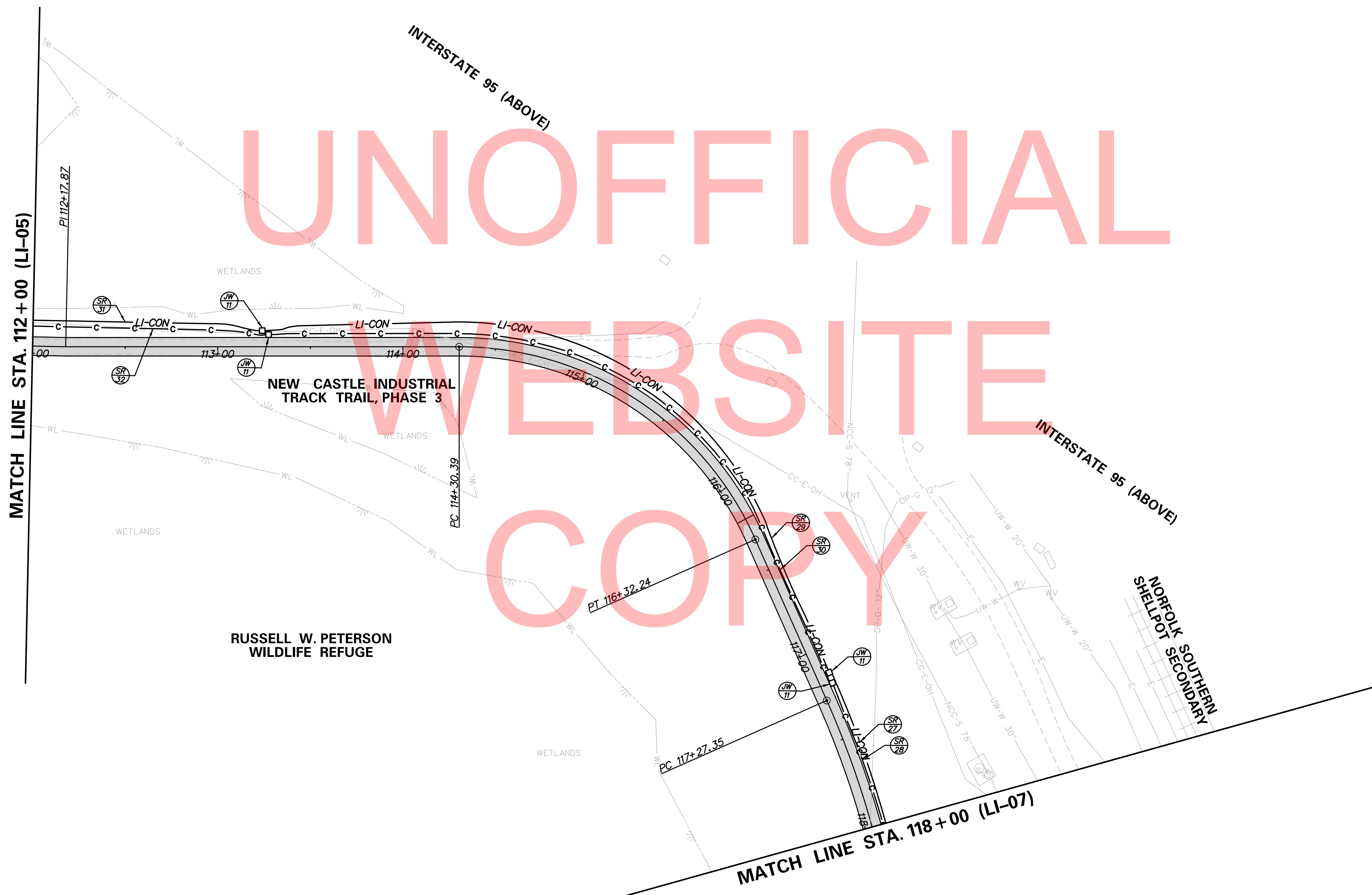
LIGHTING AND CONDUIT PLAN

| |
|-------------|
| LI-05 |
| SHEET NO. |
| 186 |
| TOTAL SHTS. |
| 205 |

| LEGEND | |
|--------|---|
| | SERVICE RUN IDENTIFIER |
| | JUNCTION WELL IDENTIFIER (TYPE OF JUNCTION WELL) |
| | LIGHTING CONDUIT |
| | COMMUNICATIONS CONDUIT |

| LIGHTING SERVICE SCHEDULE | | | |
|---------------------------|-----------------|-----------------------|------------------------|
| SERVICE RUN | DISTANCE (L.F.) | DESCRIPTION | INSTALLATION |
| 27 | 377* | (3)*1/0, (1)*6 GROUND | 2" SCH80 PVC IN TRENCH |
| 28 | 377* | EMPTY | 3" SCH80 PVC IN TRENCH |
| 29 | 399 | (3)*1/0, (1)*6 GROUND | 2" SCH80 PVC IN TRENCH |
| 30 | 398 | EMPTY | 3" SCH80 PVC IN TRENCH |
| 31 | 358* | (3)*1/0, (1)*6 GROUND | 2" SCH80 PVC IN TRENCH |
| 32 | 362* | EMPTY | 3" SCH80 PVC IN TRENCH |

*DISTANCE CONTINUES ON ADJACENT PLAN SHEET
NOTE: SERVICE RUN DISTANCE REFLECTS CONDUIT LENGTH ONLY.



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DELAWARE DEPARTMENT OF TRANSPORTATION

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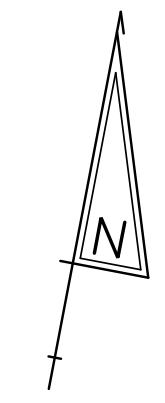


NEW CASTLE INDUSTRIAL TRACK TRAIL, PHASE 3

| | | |
|------------|--------------|----------|
| CONTRACT | BRIDGE NO. | X |
| T201330009 | DESIGNED BY: | AK |
| COUNTY | CHECKED BY: | IK |
| NEW CASTLE | | |

LIGHTING AND CONDUIT PLAN

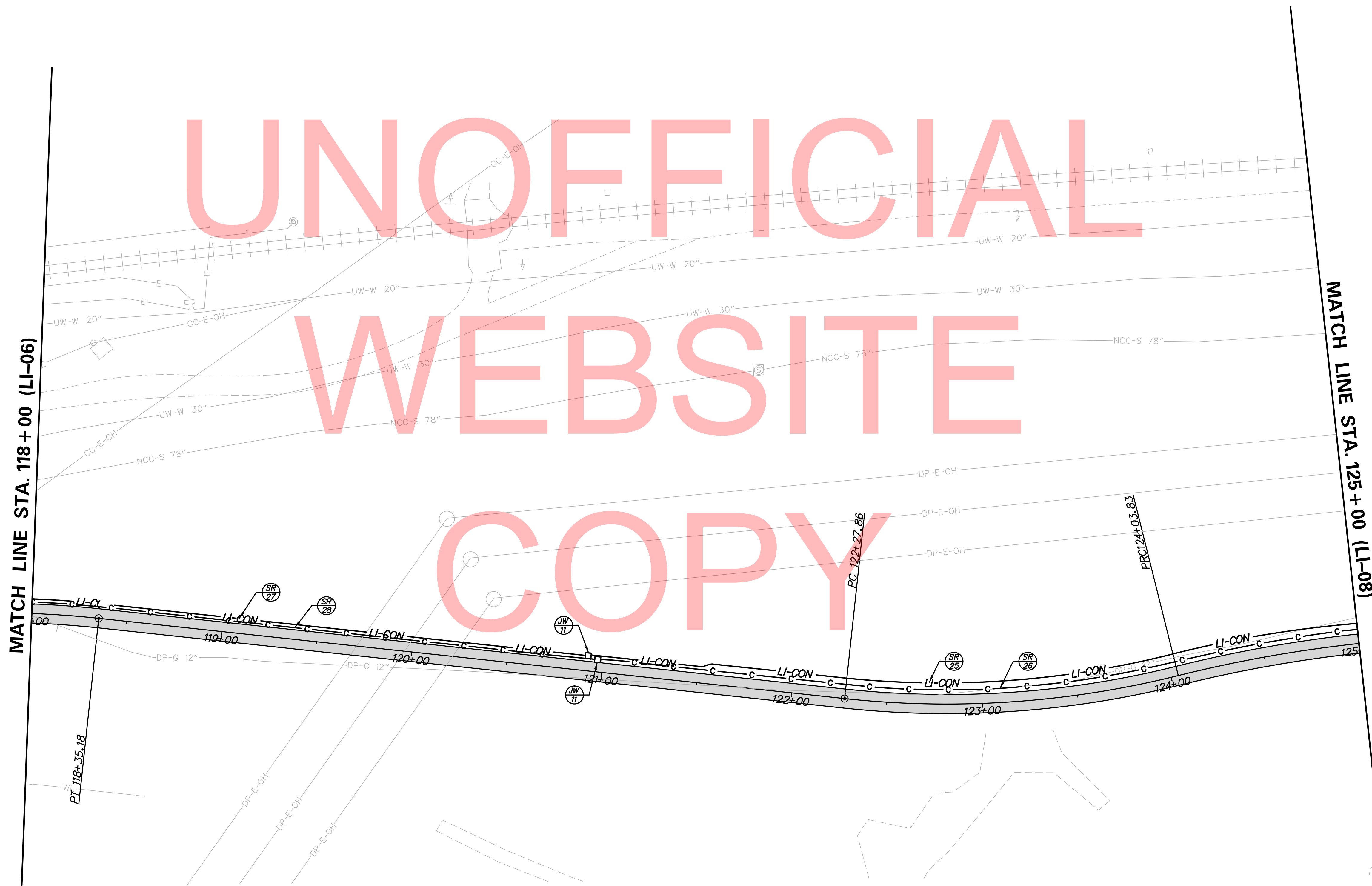
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|-------------|
| LI-06 |
| SHEET NO. |
| 187 |
| TOTAL SHTS. |
| 205 |



| LEGEND | |
|--------|---|
| | SERVICE RUN IDENTIFIER |
| | JUNCTION WELL IDENTIFIER (TYPE OF JUNCTION WELL) |
| | LIGHTING CONDUIT |
| | COMMUNICATIONS CONDUIT |

| LIGHTING SERVICE SCHEDULE | | | |
|---------------------------|-----------------|-----------------------|------------------------|
| SERVICE RUN | DISTANCE (L.F.) | DESCRIPTION | INSTALLATION |
| 25 | 428* | (3)*1/0, (1)*6 GROUND | 2" SCH80 PVC IN TRENCH |
| 26 | 428* | EMPTY | 3" SCH80 PVC IN TRENCH |
| 27 | 377* | (3)*1/0, (1)*6 GROUND | 2" SCH80 PVC IN TRENCH |
| 28 | 377* | EMPTY | 3" SCH80 PVC IN TRENCH |

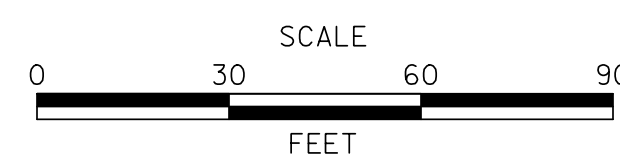
*DISTANCE CONTINUES ON ADJACENT PLAN SHEET
NOTE: SERVICE RUN DISTANCE REFLECTS CONDUIT LENGTH ONLY.



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ADDENDUMS / REVISIONS



NEW CASTLE INDUSTRIAL
TRACK TRAIL, PHASE 3

| | | |
|------------|--------------|----------|
| CONTRACT | BRIDGE NO. | X |
| T201330009 | DESIGNED BY: | AK |
| COUNTY | CHECKED BY: | IK |
| NEW CASTLE | | |

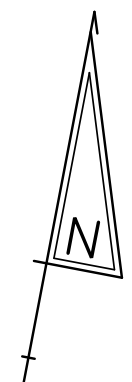
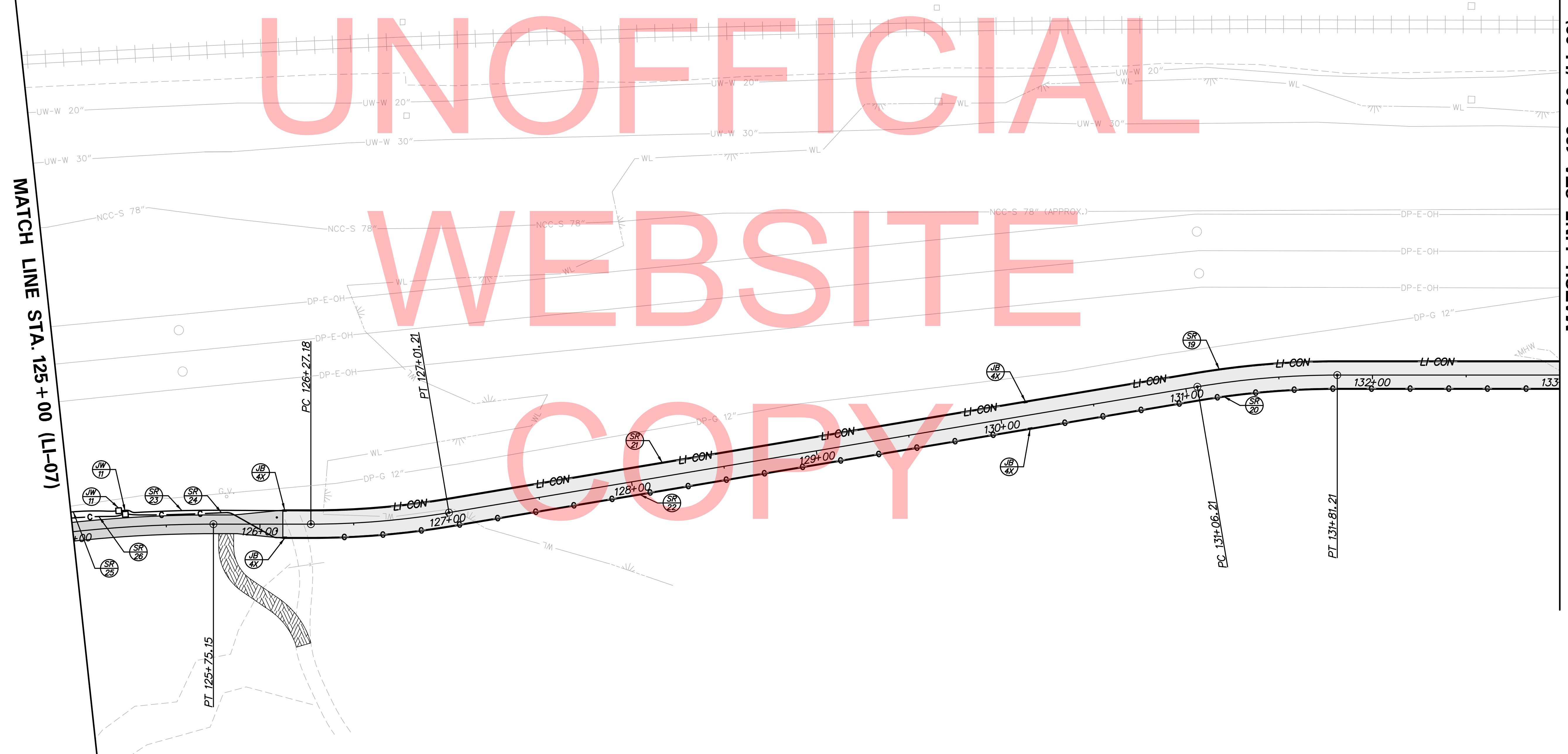
LIGHTING AND
CONDUIT PLAN

| |
|-------------|
| LI-07 |
| SHEET NO. |
| 188 |
| TOTAL SHTS. |
| 205 |

| LEGEND | |
|--------|---|
| | SERVICE RUN IDENTIFIER |
| | JUNCTION WELL IDENTIFIER (TYPE OF JUNCTION WELL) |
| | NEMA JUNCTION BOX IDENTIFIER (NEMA ENCLOSURE RATING) |
| | LIGHTING CONDUIT |
| | COMMUNICATIONS CONDUIT |

| LIGHTING SERVICE SCHEDULE | | | |
|---------------------------|-----------------|-----------------------|--------------------------|
| SERVICE RUN | DISTANCE (L.F.) | DESCRIPTION | INSTALLATION |
| 19 | 404* | (3)#1/0, (1)#6 GROUND | 2" PVC-CTD-RMC SUSPENDED |
| 20 | 402* | EMPTY | 3" PVC-CTD-RMC SUSPENDED |
| 21 | 399 | (3)#1/0, (1)#6 GROUND | 2" PVC-CTD-RMC SUSPENDED |
| 22 | 398 | EMPTY | 3" PVC-CTD-RMC SUSPENDED |
| 23 | 87 | (3)#1/0, (1)#6 GROUND | 2" SCH80 PVC IN TRENCH |
| 24 | 87 | EMPTY | 3" SCH80 PVC IN TRENCH |
| 25 | 428* | (3)#1/0, (1)#6 GROUND | 2" SCH80 PVC IN TRENCH |
| 26 | 428* | EMPTY | 3" SCH80 PVC IN TRENCH |

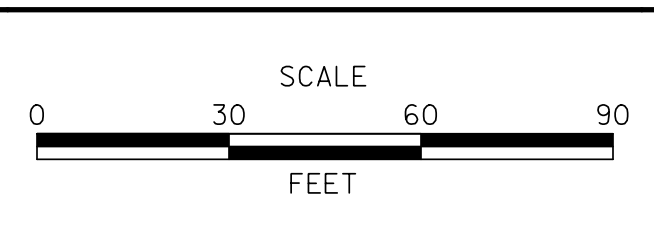
*DISTANCE CONTINUES ON ADJACENT PLAN SHEET
NOTE: SERVICE RUN DISTANCE REFLECTS CONDUIT LENGTH ONLY.



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DELAWARE DEPARTMENT OF TRANSPORTATION

| ADDENDUMS / REVISIONS |
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NEW CASTLE INDUSTRIAL TRACK TRAIL, PHASE 3

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|------------------------|-----------------|
| CONTRACT T201330009 | BRIDGE NO. X |
| COUNTY NEW CASTLE | DESIGNED BY: AK |
| | CHECKED BY: IK |

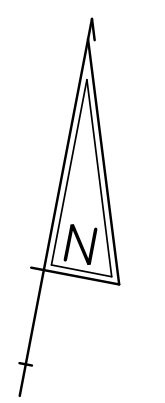
LIGHTING AND CONDUIT PLAN

| |
|--------------------|
| LI-08 |
| SHEET NO. 189 |
| TOTAL SHTS. 205 |

| LEGEND | |
|--------|---|
| | SERVICE RUN IDENTIFIER |
| | JUNCTION WELL IDENTIFIER (TYPE OF JUNCTION WELL) |
| | NEMA JUNCTION BOX IDENTIFIER (NEMA ENCLOSURE RATING) |
| | LIGHTING CONDUIT |
| | COMMUNICATIONS CONDUIT |

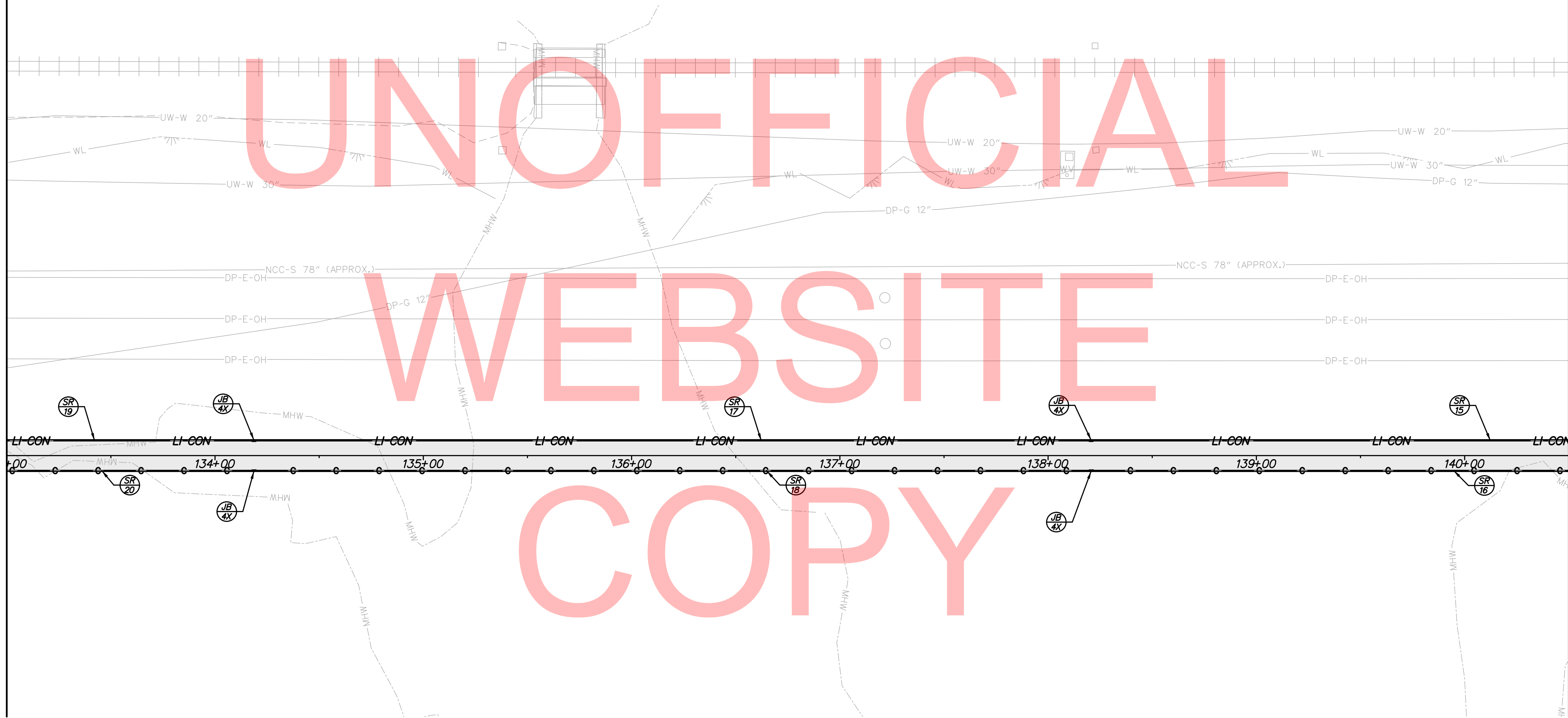
| LIGHTING SERVICE SCHEDULE | | | |
|---------------------------|-----------------|-----------------------|--------------------------|
| SERVICE RUN | DISTANCE (L.F.) | DESCRIPTION | INSTALLATION |
| 15 | 400* | (3)#1/0, (1)#6 GROUND | 2" PVC-CTD-RMC SUSPENDED |
| 16 | 400* | EMPTY | 3" PVC-CTD-RMC SUSPENDED |
| 17 | 400 | (3)#1/0, (1)#6 GROUND | 2" PVC-CTD-RMC SUSPENDED |
| 18 | 400 | EMPTY | 3" PVC-CTD-RMC SUSPENDED |
| 19 | 404* | (3)#1/0, (1)#6 GROUND | 2" PVC-CTD-RMC SUSPENDED |
| 20 | 402* | EMPTY | 3" PVC-CTD-RMC SUSPENDED |

*DISTANCE CONTINUES ON ADJACENT PLAN SHEET
NOTE: SERVICE RUN DISTANCE REFLECTS CONDUIT LENGTH ONLY.



MATCH LINE STA. 133+00 (LI-08)

MATCH LINE STA. 140+50 (LI-10)

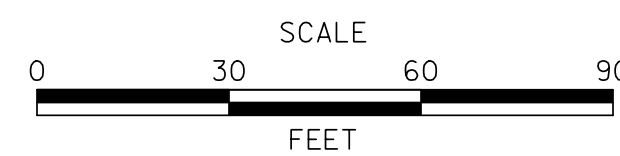


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DELAWARE
DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS

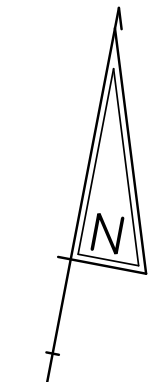


NEW CASTLE INDUSTRIAL
TRACK TRAIL, PHASE 3

| | | |
|------------|--------------|----------|
| CONTRACT | BRIDGE NO. | X |
| T201330009 | DESIGNED BY: | AK |
| COUNTY | CHECKED BY: | IK |
| NEW CASTLE | | |

LIGHTING AND
CONDUIT PLAN

| |
|--------------|
| LI-09 |
| SHEET NO. |
| 190 |
| TOTAL SHTS. |
| 205 |



| LEGEND | |
|--------|---|
| | SERVICE RUN IDENTIFIER |
| | JUNCTION WELL IDENTIFIER (TYPE OF JUNCTION WELL) |
| | NEMA JUNCTION BOX IDENTIFIER (NEMA ENCLOSURE RATING) |
| | LIGHTING CONDUIT |
| | COMMUNICATIONS CONDUIT |

| LIGHTING SERVICE SCHEDULE | | | |
|---------------------------|-----------------|-----------------------|--------------------------|
| SERVICE RUN | DISTANCE (L.F.) | DESCRIPTION | INSTALLATION |
| 11 | 400* | (3)#1/0, (1)#6 GROUND | 2" PVC-CTD-RMC SUSPENDED |
| 12 | 400* | EMPTY | 3" PVC-CTD-RMC SUSPENDED |
| 13 | 400 | (3)#1/0, (1)#6 GROUND | 2" PVC-CTD-RMC SUSPENDED |
| 14 | 400 | EMPTY | 3" PVC-CTD-RMC SUSPENDED |
| 15 | 400* | (3)#1/0, (1)#6 GROUND | 2" PVC-CTD-RMC SUSPENDED |
| 16 | 400* | EMPTY | 3" PVC-CTD-RMC SUSPENDED |

*DISTANCE CONTINUES ON ADJACENT PLAN SHEET
NOTE: SERVICE RUN DISTANCE REFLECTS CONDUIT LENGTH ONLY.

MATCH LINE STA. 140+50 (LI-09)

MATCH LINE STA. 148+00 (LI-11)



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| ADDENDUMS / REVISIONS | |
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NEW CASTLE INDUSTRIAL TRACK TRAIL, PHASE 3

| | | |
|------------|-----------------|----------|
| CONTRACT | BRIDGE NO. | X |
| T201330009 | DESIGNED BY: AK | |
| COUNTY | CHECKED BY: IK | |
| NEW CASTLE | | |

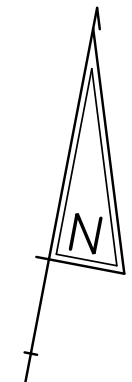
LIGHTING AND CONDUIT PLAN

| |
|-------------|
| LI-10 |
| SHEET NO. |
| 191 |
| TOTAL SHTS. |
| 205 |

| LEGEND | |
|--------|---|
| | SERVICE RUN IDENTIFIER |
| | JUNCTION WELL IDENTIFIER (TYPE OF JUNCTION WELL) |
| | NEMA JUNCTION BOX IDENTIFIER (NEMA ENCLOSURE RATING) |
| | LIGHTING CONDUIT |
| | COMMUNICATIONS CONDUIT |

| LIGHTING SERVICE SCHEDULE | | | |
|---------------------------|-----------------|-----------------------|--------------------------|
| SERVICE RUN | DISTANCE (L.F.) | DESCRIPTION | INSTALLATION |
| 7 | 401* | (3)#1/0, (1)#6 GROUND | 2" PVC-CTD-RMC SUSPENDED |
| 8 | 403* | EMPTY | 3" PVC-CTD-RMC SUSPENDED |
| 9 | 400 | (3)#1/0, (1)#6 GROUND | 2" PVC-CTD-RMC SUSPENDED |
| 10 | 400 | EMPTY | 3" PVC-CTD-RMC SUSPENDED |
| 11 | 400* | (3)#1/0, (1)#6 GROUND | 2" PVC-CTD-RMC SUSPENDED |
| 12 | 400* | EMPTY | 3" PVC-CTD-RMC SUSPENDED |

*DISTANCE CONTINUES ON ADJACENT PLAN SHEET
NOTE: SERVICE RUN DISTANCE REFLECTS CONDUIT LENGTH ONLY.



UNOFFICIAL

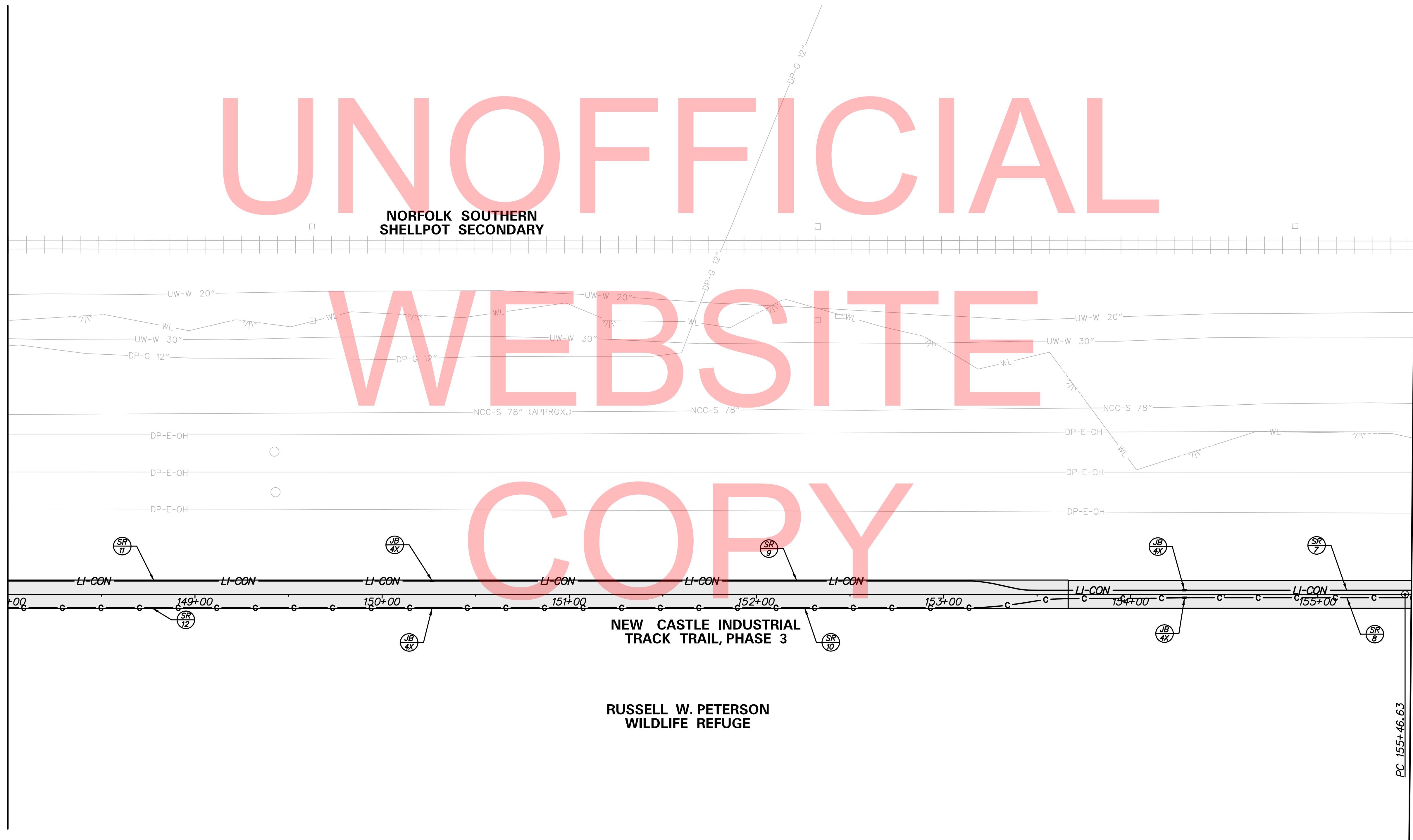
NORFOLK SOUTHERN SHELLPOT SECONDARY

WEBSITE

COPY

MATCH LINE STA. 148 + 00 (LI-10)

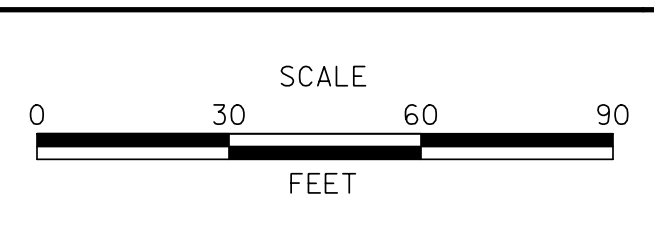
MATCH LINE STA. 155 + 50 (LI-12)



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| ADDENDUMS / REVISIONS | |
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NEW CASTLE INDUSTRIAL TRACK TRAIL, PHASE 3

| | | |
|------------|--------------|----------|
| CONTRACT | BRIDGE NO. | X |
| T201330009 | DESIGNED BY: | AK |
| COUNTY | CHECKED BY: | IK |
| NEW CASTLE | | |

LIGHTING AND CONDUIT PLAN

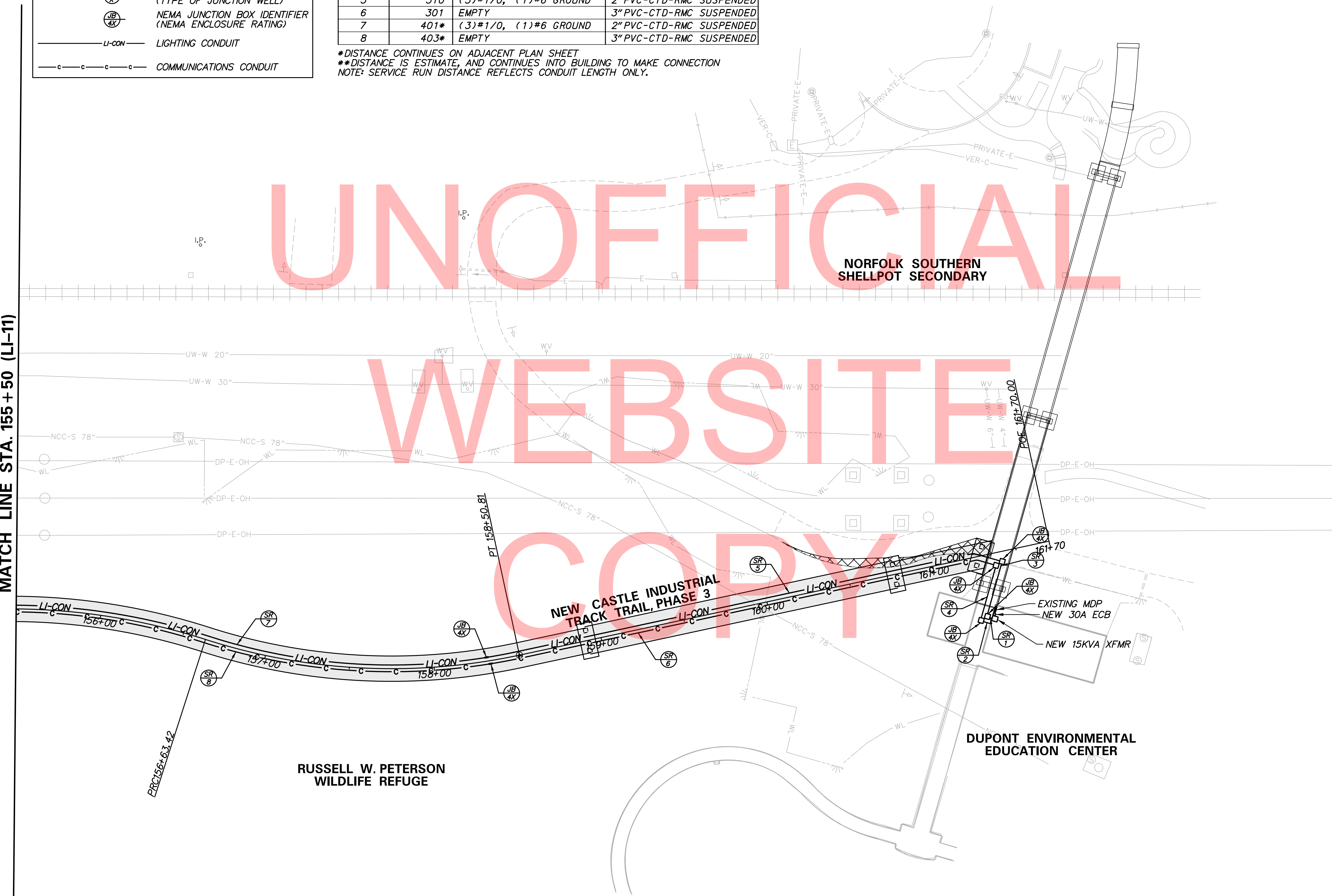
| |
|-------------|
| LI-11 |
| SHEET NO. |
| 192 |
| TOTAL SHTS. |
| 205 |

| LEGEND | |
|--------|---|
| | LIGHTING SERVICE IDENTIFIER |
| | SERVICE RUN IDENTIFIER |
| | JUNCTION WELL IDENTIFIER (TYPE OF JUNCTION WELL) |
| | NEMA JUNCTION BOX IDENTIFIER (NEMA ENCLOSURE RATING) |
| | LIGHTING CONDUIT |
| | COMMUNICATIONS CONDUIT |

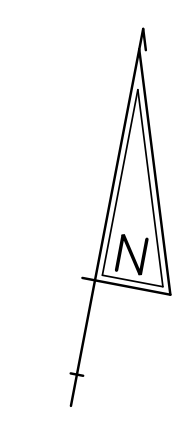
| LIGHTING SERVICE SCHEDULE | | | |
|---------------------------|-----------------|-----------------------|--------------------------|
| SERVICE RUN | DISTANCE (L.F.) | DESCRIPTION | INSTALLATION |
| 1 | 25** | (3)#1/0, (1)#6 GROUND | 2" PVC-CTD-RMC SUSPENDED |
| 2 | 25** | EMPTY | 3" PVC-CTD-RMC SUSPENDED |
| 3 | 35 | (3)#1/0, (1)#6 GROUND | 2" PVC-CTD-RMC SUSPENDED |
| 4 | 26 | EMPTY | 3" PVC-CTD-RMC SUSPENDED |
| 5 | 310 | (3)#1/0, (1)#6 GROUND | 2" PVC-CTD-RMC SUSPENDED |
| 6 | 301 | EMPTY | 3" PVC-CTD-RMC SUSPENDED |
| 7 | 401* | (3)#1/0, (1)#6 GROUND | 2" PVC-CTD-RMC SUSPENDED |
| 8 | 403* | EMPTY | 3" PVC-CTD-RMC SUSPENDED |

*DISTANCE CONTINUES ON ADJACENT PLAN SHEET
 **DISTANCE IS ESTIMATE, AND CONTINUES INTO BUILDING TO MAKE CONNECTION
 NOTE: SERVICE RUN DISTANCE REFLECTS CONDUIT LENGTH ONLY.

MATCH LINE STA. 155 + 50 (LI-11)



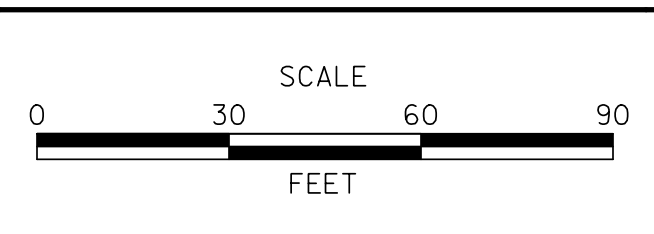
UNOFFICIAL WEBSITE COPY



CHRISTINA RIVER

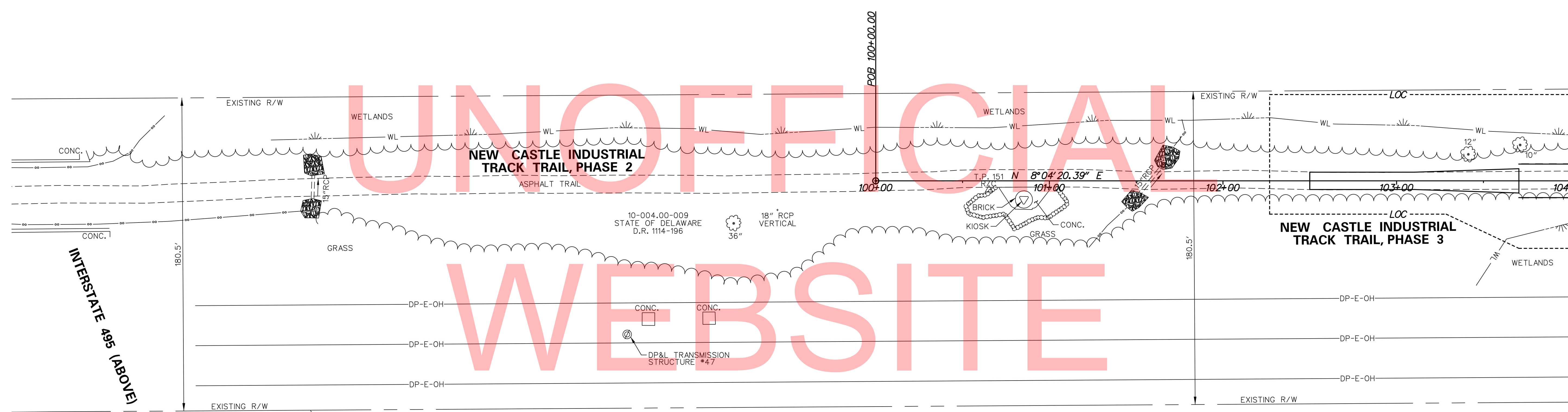
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| ADDENDUMS / REVISIONS |
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| | | |
|------------|--------------|----------|
| CONTRACT | BRIDGE NO. | X |
| T201330009 | DESIGNED BY: | AK |
| COUNTY | CHECKED BY: | IK |
| NEW CASTLE | | |

| |
|-------------|
| LI-12 |
| SHEET NO. |
| 193 |
| TOTAL SHTS. |
| 205 |



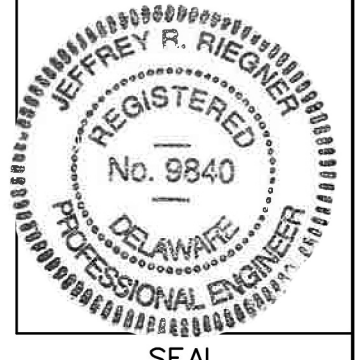
MATCH LINE STA. 104+00 (RW-02)

UNOFFICIAL WEBSITE COPY

PREPARED BY
THE CONSULTING FIRM OF



Whitman, Requardt & Associates, LLP
1013 Centre Road, Suite 302, Wilmington, Delaware 19805



Jeffrey P. Riegner
RECOMMENDED

06/16/2016
DATE



| ADDENDUMS / REVISIONS | |
|-----------------------|--|
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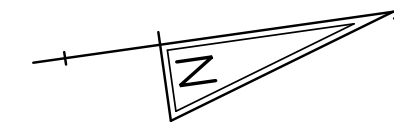
**NEW CASTLE INDUSTRIAL
TRACK TRAIL, PHASE 3**

| | |
|------------------------|-------------------------------------|
| CONTRACT T201330009 | BRIDGE NO. X |
| COUNTY NEW CASTLE | DESIGNED BY: DAD CHECKED BY: JRR |

**RIGHT OF WAY PLAN
SHEET 1 OF 12**

| |
|--------------------|
| RW-01 |
| SHEET NO. 194 |
| TOTAL SHTS. 205 |

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MATCH LINE STA. 104 + 00 (RW-01)

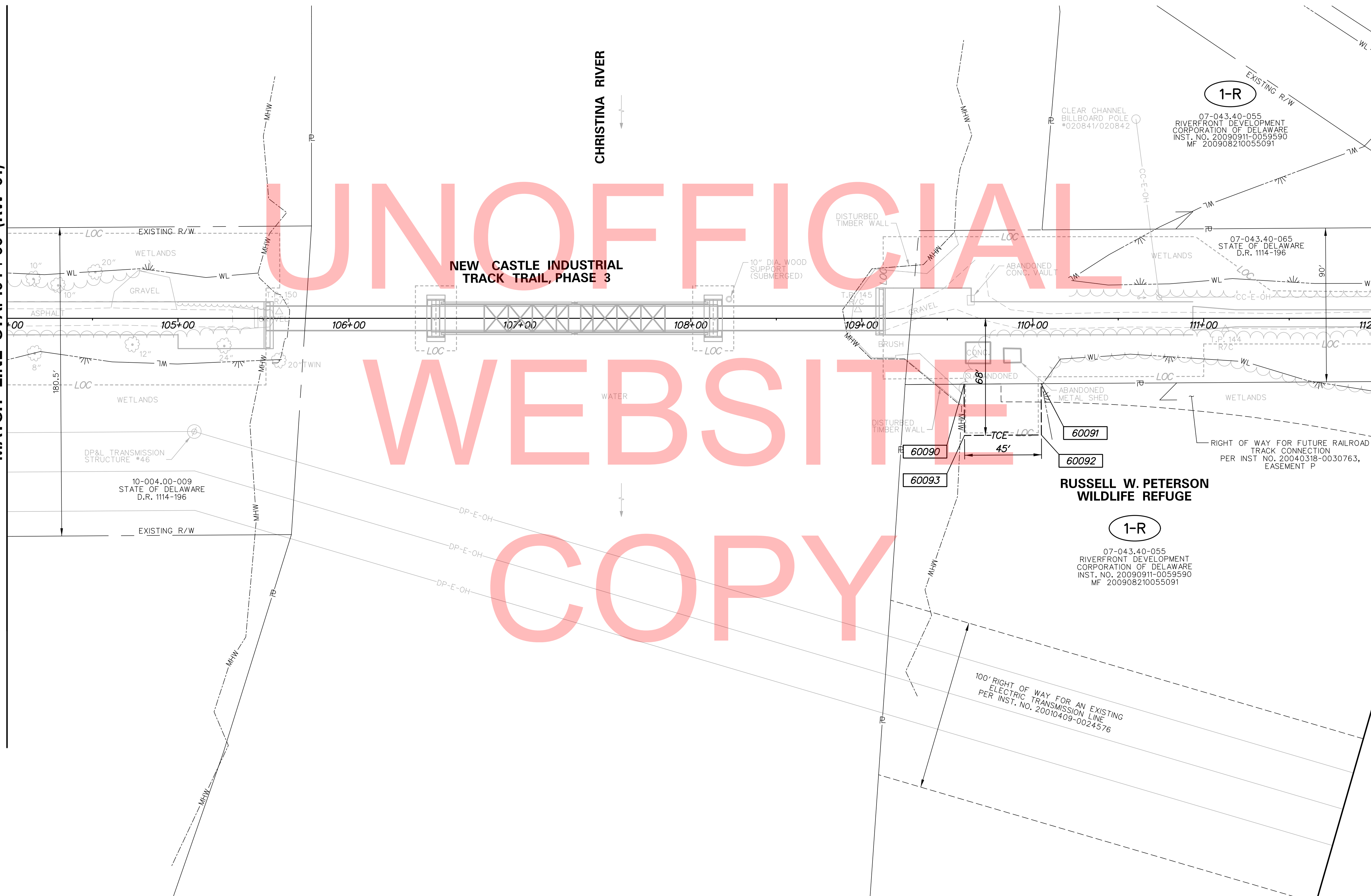
MATCH LINE STA. 112 + 00 (RW-03)

UNOFFICIAL WEBSITE COPY

CHRISTINA RIVER

NEW CASTLE INDUSTRIAL TRACK TRAIL, PHASE 3

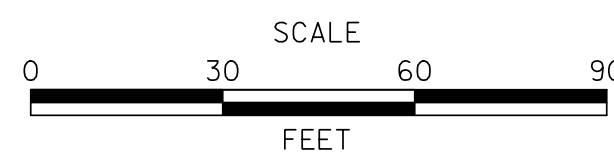
RUSSELL W. PETERSON WILDLIFE REFUGE



N:\31896-002\CADD\RW02_1TT3.DGN



ADDENDUMS / REVISIONS

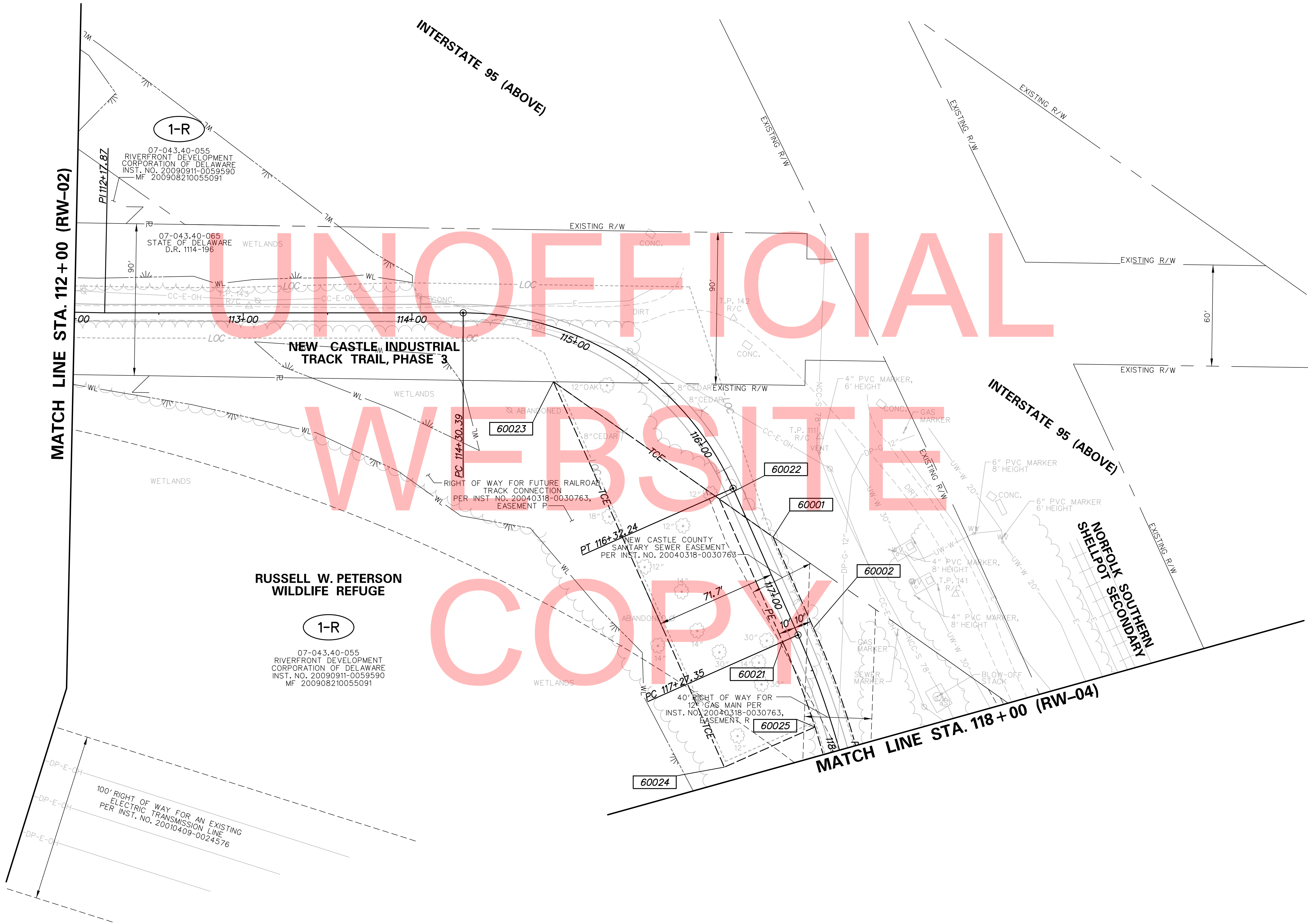
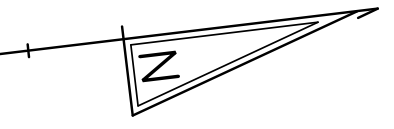


NEW CASTLE INDUSTRIAL TRACK TRAIL, PHASE 3

| | | |
|------------|------------------|----------|
| CONTRACT | BRIDGE NO. | X |
| T201330009 | DESIGNED BY: DAD | |
| COUNTY | CHECKED BY: JRR | |
| NEW CASTLE | | |

RIGHT OF WAY PLAN SHEET 2 OF 12

| |
|--------------|
| RW-02 |
| SHEET NO. |
| 195 |
| TOTAL SHTS. |
| 205 |



UNOFFICIAL

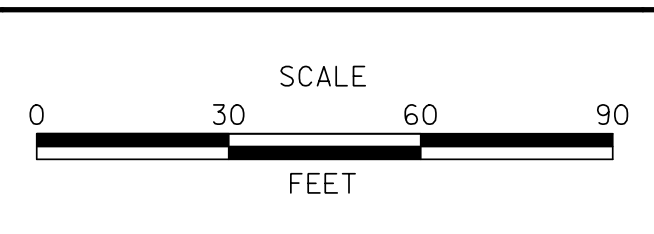
WEBSITE

COPY

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| ADDENDUMS / REVISIONS | |
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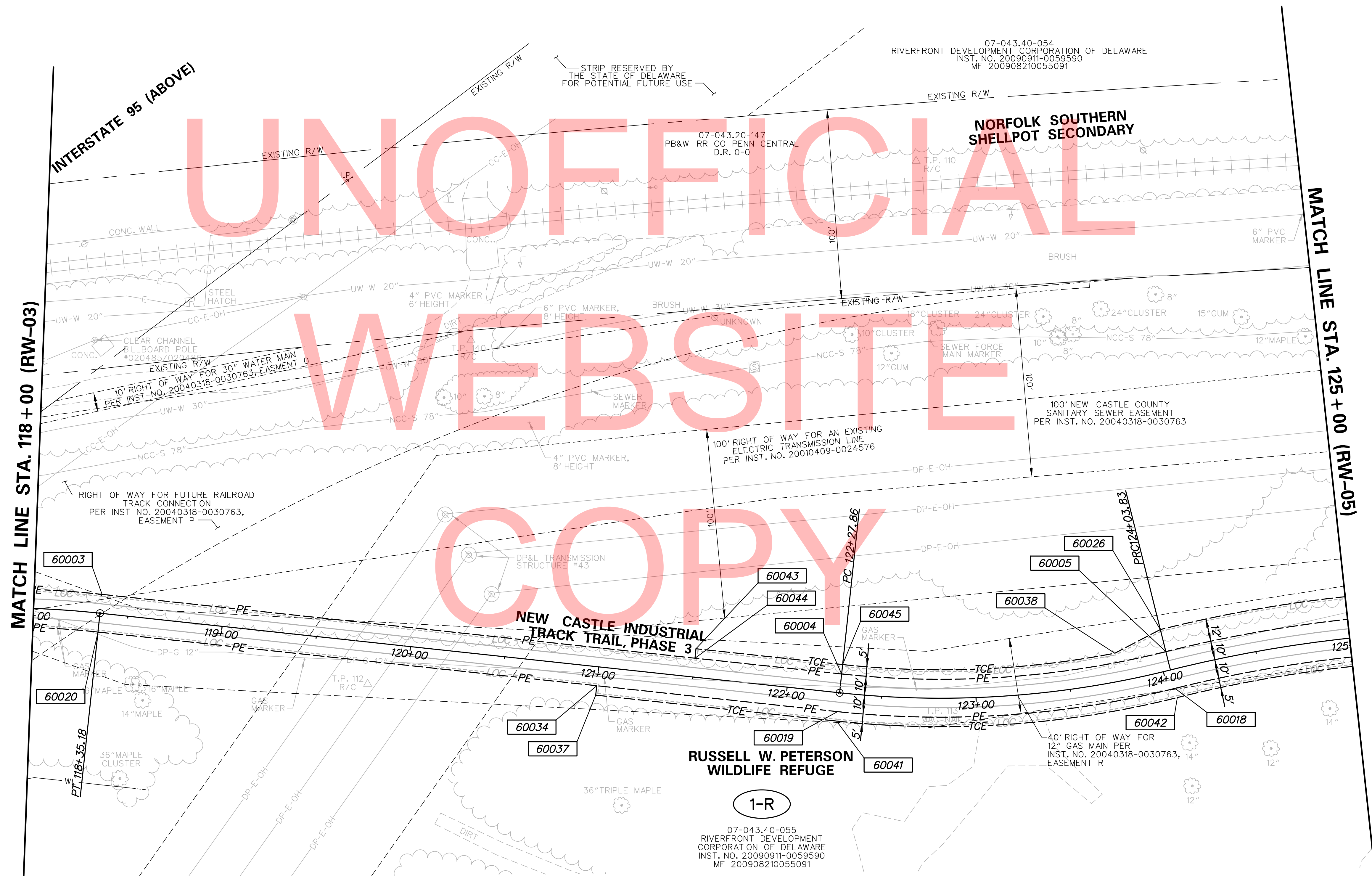
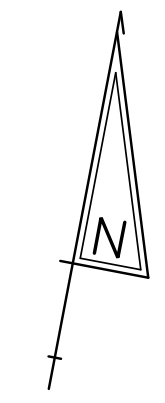


**NEW CASTLE INDUSTRIAL
TRACK TRAIL, PHASE 3**

| | |
|------------------------|-------------------------------------|
| CONTRACT T201330009 | BRIDGE NO. X |
| COUNTY NEW CASTLE | DESIGNED BY: DAD CHECKED BY: JRR |

**RIGHT OF WAY PLAN
SHEET 3 OF 12**

| |
|--------------------|
| RW-03 |
| SHEET NO. 196 |
| TOTAL SHTS. 205 |



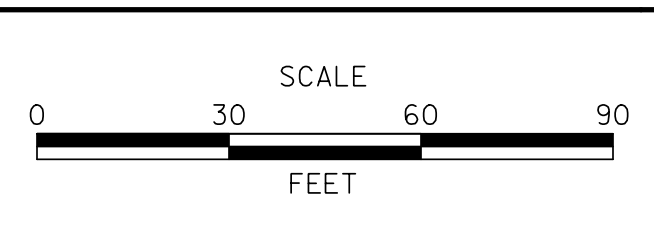
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WEBSITE

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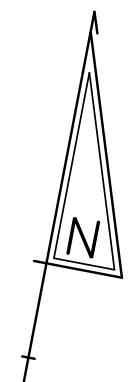
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| ADDENDUMS / REVISIONS | |
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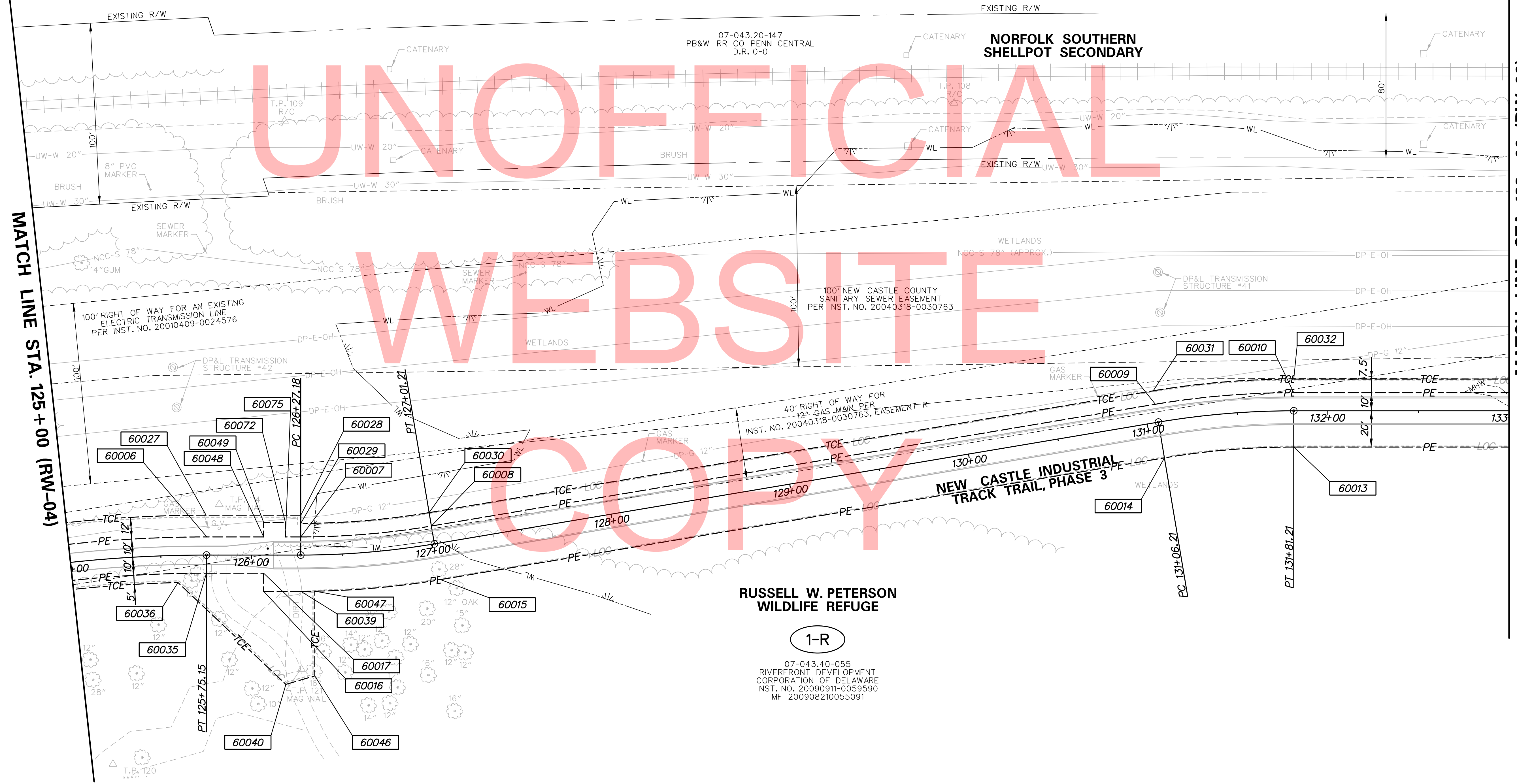
| | | |
|------------|------------------|----------|
| CONTRACT | BRIDGE NO. | X |
| T201330009 | DESIGNED BY: DAD | |
| COUNTY | CHECKED BY: JRR | |
| NEW CASTLE | | |

| |
|--------------|
| RW-04 |
| SHEET NO. |
| 197 |
| TOTAL SHTS. |
| 205 |



07-043.40-054
RIVERFRONT DEVELOPMENT CORPORATION OF DELAWARE
INST. NO. 20090911-0059590
MF 200908210055091

**RUSSELL W. PETERSON
WILDLIFE REFUGE**



UNOFFICIAL

WEBSITE

COPY

MATCH LINE STA. 125 + 00 (RW-04)

MATCH LINE STA. 133 + 00 (RW-06)

**RUSSELL W. PETERSON
WILDLIFE REFUGE**

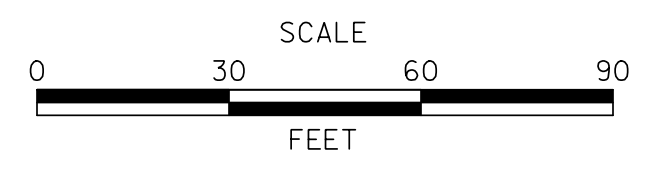
1-R

07-043.40-055
RIVERFRONT DEVELOPMENT CORPORATION OF DELAWARE
INST. NO. 20090911-0059590
MF 200908210055091

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| ADDENDUMS / REVISIONS | |
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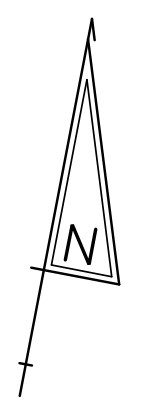


**NEW CASTLE INDUSTRIAL
TRACK TRAIL, PHASE 3**

| | | |
|------------|------------------|----------|
| CONTRACT | BRIDGE NO. | X |
| T201330009 | DESIGNED BY: DAD | |
| COUNTY | CHECKED BY: JRR | |
| NEW CASTLE | | |

**RIGHT OF WAY PLAN
SHEET 5 OF 12**

| |
|--------------|
| RW-05 |
| SHEET NO. |
| 198 |
| TOTAL SHTS. |
| 205 |

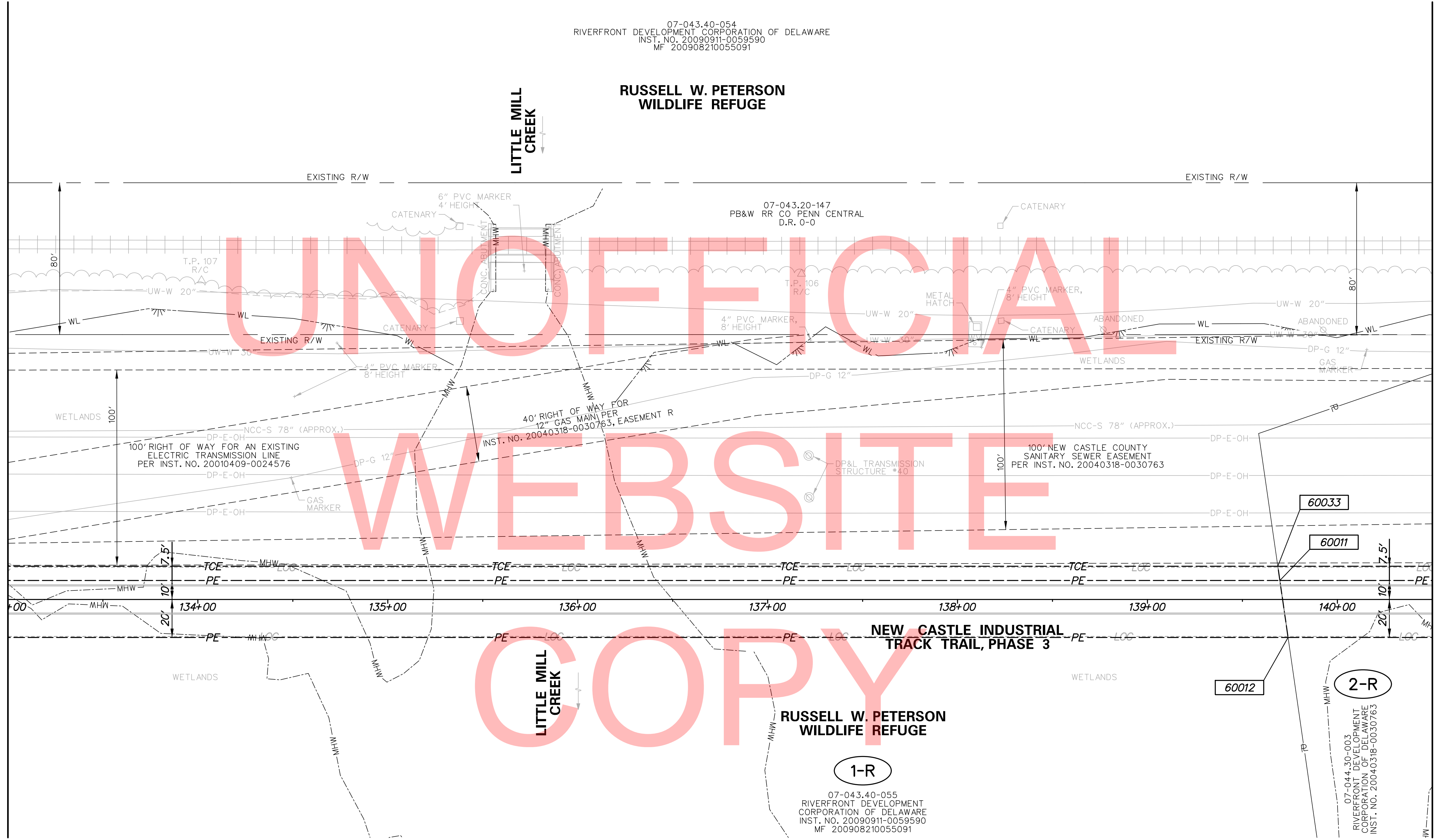


07-043.40-054
 RIVERFRONT DEVELOPMENT CORPORATION OF DELAWARE
 INST. NO. 20090911-0059590
 MF 200908210055091

**RUSSELL W. PETERSON
 WILDLIFE REFUGE**

MATCH LINE STA. 133+00 (RW-05)

MATCH LINE STA. 140+50 (RW-07)



**NEW CASTLE INDUSTRIAL
 TRACK TRAIL, PHASE 3**

**RUSSELL W. PETERSON
 WILDLIFE REFUGE**

1-R

07-043.40-055
 RIVERFRONT DEVELOPMENT CORPORATION OF DELAWARE
 INST. NO. 20090911-0059590
 MF 200908210055091

07-044.30-003
 RIVERFRONT DEVELOPMENT CORPORATION OF DELAWARE
 INST. NO. 20040318-0030763

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ADDENDUMS / REVISIONS

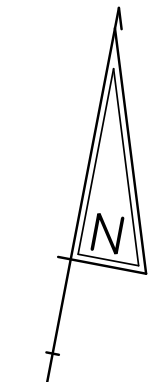


**NEW CASTLE INDUSTRIAL
 TRACK TRAIL, PHASE 3**

| | | |
|------------|------------------|----------|
| CONTRACT | BRIDGE NO. | X |
| T201330009 | DESIGNED BY: DAD | |
| COUNTY | CHECKED BY: JRR | |
| NEW CASTLE | | |

**RIGHT OF WAY PLAN
 SHEET 6 OF 12**

| |
|--------------|
| RW-06 |
| SHEET NO. |
| 199 |
| TOTAL SHTS. |
| 205 |



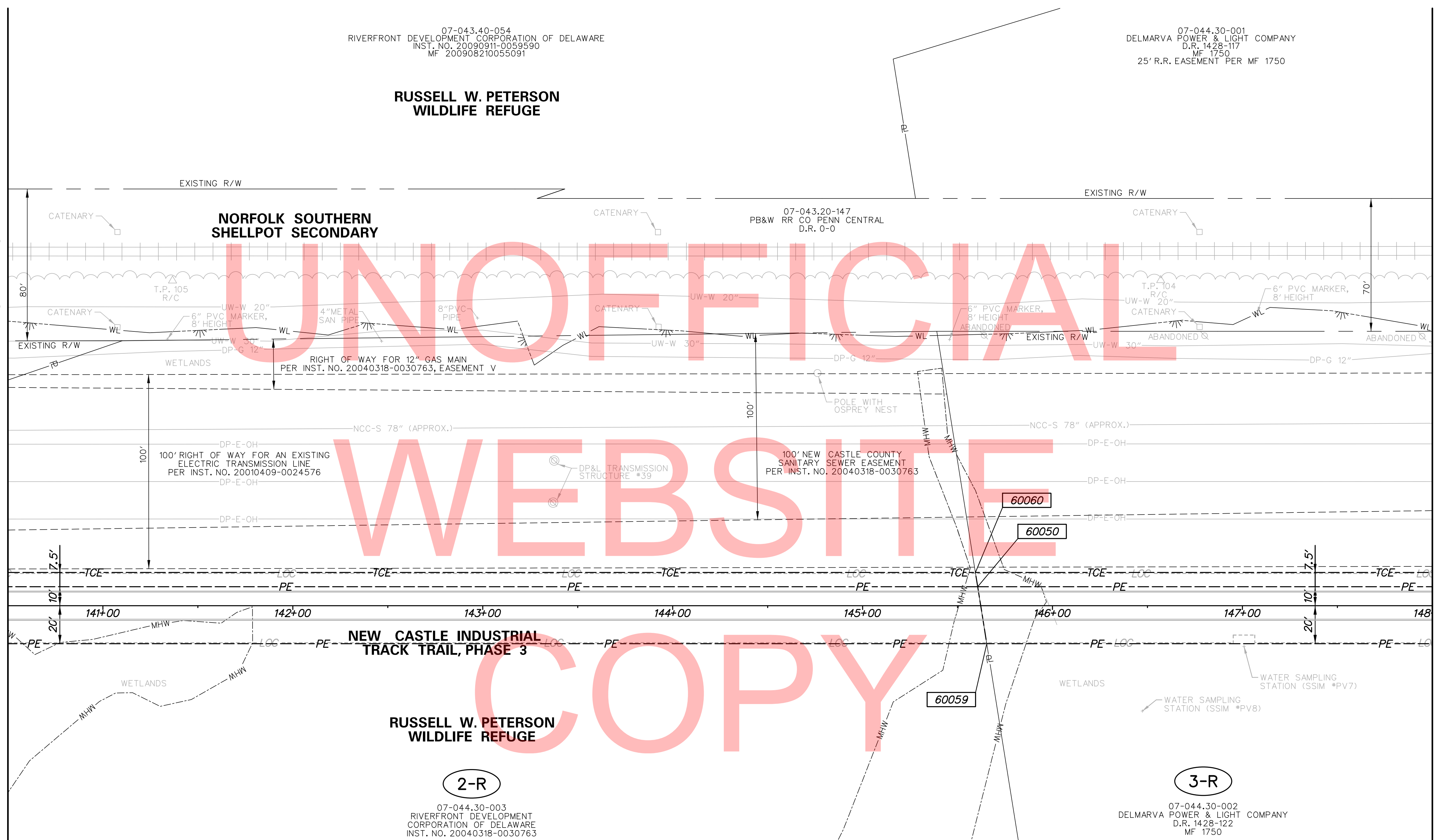
07-043.40-054
RIVERFRONT DEVELOPMENT CORPORATION OF DELAWARE
INST. NO. 20090911-0059590
MF 200908210055091

07-044.30-001
DELMARVA POWER & LIGHT COMPANY
D.R. 1428-117
MF 1750
25' R.R. EASEMENT PER MF 1750

**RUSSELL W. PETERSON
WILDLIFE REFUGE**

MATCH LINE STA. 140 + 50 (RW-06)

MATCH LINE STA. 148 + 00 (RW-08)



UNOFFICIAL WEBSITE COPY

**RUSSELL W. PETERSON
WILDLIFE REFUGE**

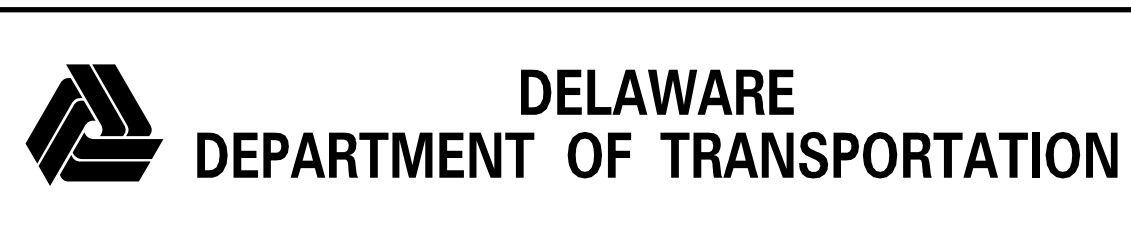
2-R

07-044.30-003
RIVERFRONT DEVELOPMENT CORPORATION OF DELAWARE
INST. NO. 20040318-0030763

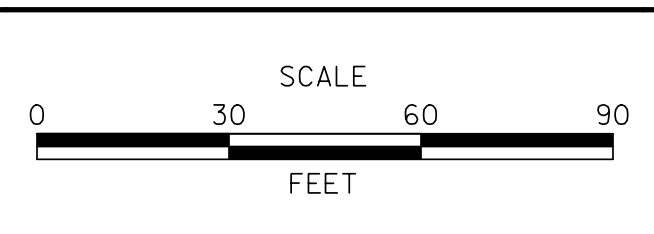
3-R

07-044.30-002
DELMARVA POWER & LIGHT COMPANY
D.R. 1428-122
MF 1750

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| ADDENDUMS / REVISIONS | |
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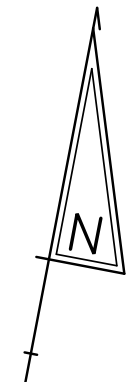


**NEW CASTLE INDUSTRIAL
TRACK TRAIL, PHASE 3**

| | | |
|------------|------------------|----------|
| CONTRACT | BRIDGE NO. | X |
| T201330009 | DESIGNED BY: DAD | |
| COUNTY | CHECKED BY: JRR | |
| NEW CASTLE | | |

**RIGHT OF WAY PLAN
SHEET 7 OF 12**

| |
|--------------|
| RW-07 |
| SHEET NO. |
| 200 |
| TOTAL SHTS. |
| 205 |

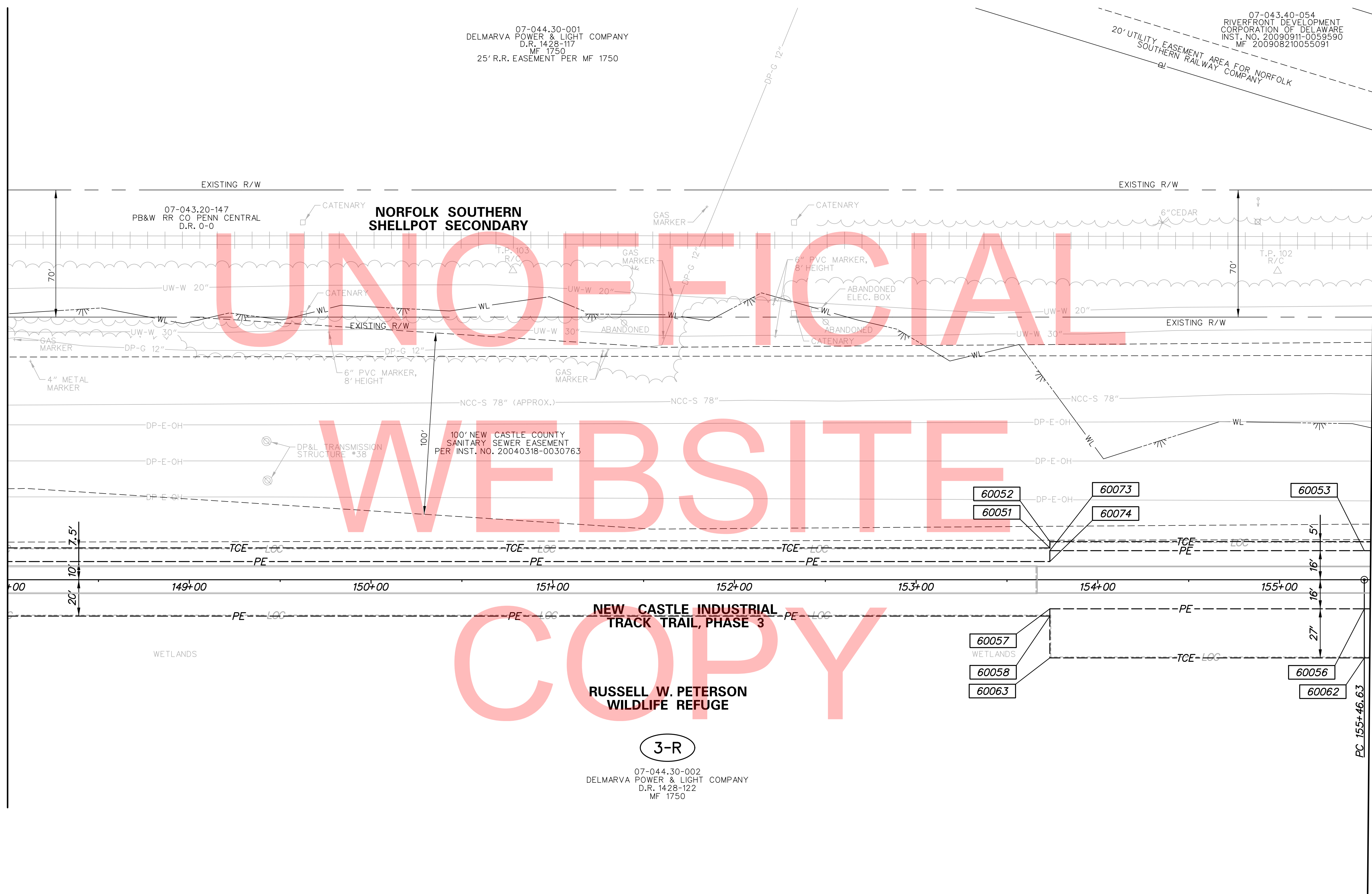


07-044.30-001
 DELMARVA POWER & LIGHT COMPANY
 D.R. 1428-117
 MF 1750
 25' R.R. EASEMENT PER MF 1750

07-043.40-054
 RIVERFRONT DEVELOPMENT
 CORPORATION OF DELAWARE
 INST. NO. 20090911-0059590
 MF 200908210055091
 20' UTILITY EASEMENT AREA FOR NORFOLK
 SOUTHERN RAILWAY COMPANY

MATCH LINE STA. 148 + 00 (RW-07)

MATCH LINE STA. 155 + 50 (RW-09)



UNOFFICIAL WEBSITE COPY

07-044.30-002
 DELMARVA POWER & LIGHT COMPANY
 D.R. 1428-122
 MF 1750

3-R



ADDENDUMS / REVISIONS



NEW CASTLE INDUSTRIAL TRACK TRAIL, PHASE 3

| | | |
|------------|------------------|----------|
| CONTRACT | BRIDGE NO. | X |
| T201330009 | DESIGNED BY: DAD | |
| COUNTY | CHECKED BY: JRR | |
| NEW CASTLE | | |

RIGHT OF WAY PLAN SHEET 8 OF 12

| |
|--------------|
| RW-08 |
| SHEET NO. |
| 201 |
| TOTAL SHTS. |
| 205 |

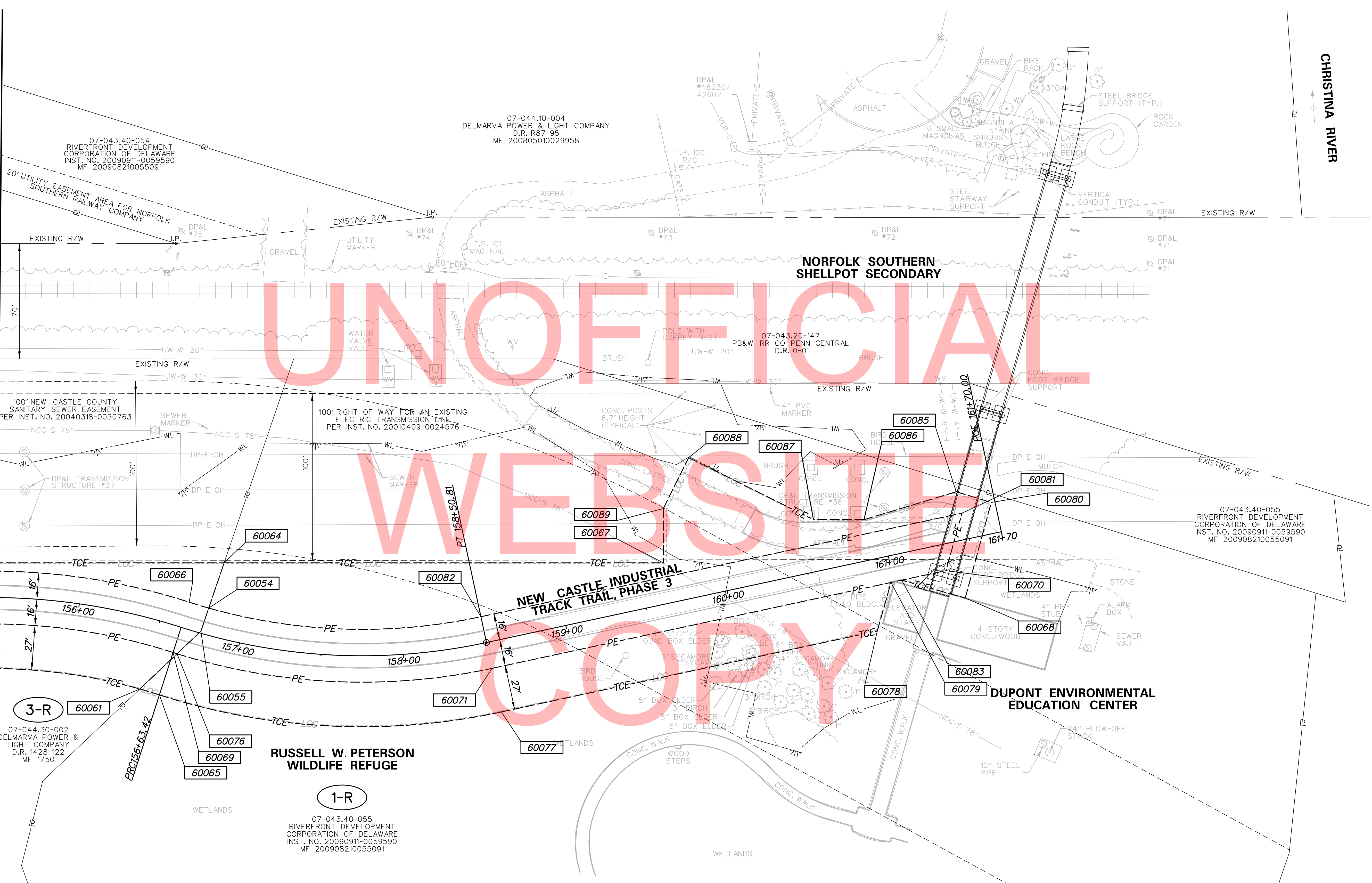
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CHRISTINA RIVER

UNOFFICIAL
WEBSITE
COPY

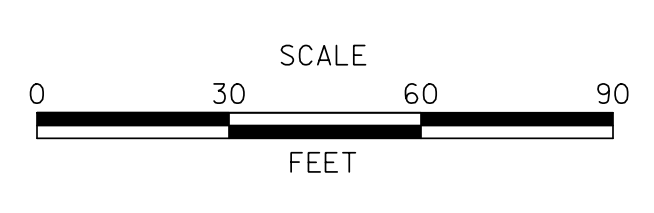
MATCH LINE STA. 155+50 (RW-08)



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| ADDENDUMS / REVISIONS | |
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NEW CASTLE INDUSTRIAL TRACK TRAIL, PHASE 3

| | | |
|------------|------------------|----------|
| CONTRACT | BRIDGE NO. | X |
| T201330009 | DESIGNED BY: DAD | |
| COUNTY | CHECKED BY: JRR | |
| NEW CASTLE | | |

RIGHT OF WAY PLAN SHEET 9 OF 12

| |
|--------------|
| RW-09 |
| SHEET NO. |
| 202 |
| TOTAL SHTS. |
| 205 |

| COUNTY ASSESSMENT PARCEL NUMBER | PLAN SHEET NUMBER | OWNERSHIP OF RECORD | TITLE SOURCE | PROPERTY AREA BEFORE ACQUISITION (ACRE) D=DEED C=CALCULATED A=ASSESSMENT | ACQUISITION CODE FEE, R/W, P/E, TCE | AREA TO BE ACQUIRED | | | | PROPERTY AREA REMAINING (SQ. FEET /ACRES) | DEED RECORD OF ACQUISITION | REMARKS |
|------------------------------------|-------------------------|--|------------------|---|--|----------------------------------|--|--------------------------------|--------------------------------|---|----------------------------------|-------------------|
| | | | | | | ACQUISITION (SQ. FEET /ACRES) | AREA OCCUPIED BY EXISTING RIGHT OF WAY (SQ. FEET /ACRES) | EASEMENT | | | | |
| | | | | | | | | PERMANENT (SQ. FEET /ACRES) | TEMPORARY (SQ. FEET /ACRES) | | | |
| 07-043.40-055 | 197-201,204 | (1-R) RIVERFRONT DEVELOPMENT CORPORATION OF DELAWARE | 20090911-0059590 | D - 117.58 | P/E-1 | | | | 60155.1888 / 1.38 | | | |
| | | | | | P/E-2 | | | | 14964.1954 / 0.34 | | | |
| | | | | | TCE-1 | | | | 12185.0633 / 0.28 | | | |
| | | | | | TCE-2 | | | | 14038.4752 / 0.32 | | | |
| | | | | | TCE-3 | | | | 4941.6246 / 0.11 | | | |
| | | | | | TCE-4 | | | | 14432.3829 / 0.33 | | | |
| | | | | | TCE-5 | | | | 12093.079 / 0.28 | | | |
| TCE-6 | 1350.00 / 0.03 | 5121697.68 / 117.58 | | | | | | | | | | |
| 07-044.30-003 | 201-202 | (2-R) RIVERFRONT DEVELOPMENT CORPORATION OF DELAWARE | 20040318-0030763 | A - 4.58 | P/E | | | 17733.9068 / 0.41 | | | | |
| | | | | | TCE | | | 4431.2667 / 0.10 | | | | 199504.80 / 4.58 |
| 07-044.30-002 | 202-204 | (3-R) DELMARVA POWER & LIGHT COMPANY | 1428-122 | D - 15.23 | P/E | | | 33899.0243 / 0.78 | | | | |
| | | | | | TCE-1 | | | 8740.8385 / 0.20 | | | | |
| | | | | | TCE-2 | | | 7446.0111 / 0.17 | | | | 663201.00 / 15.23 |

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|--|-----------------------|---------------------|---|------------------------|------------------------|---|------------------|--------------------|
| DELAWARE DEPARTMENT OF TRANSPORTATION | ADDENDUMS / REVISIONS | NOT TO SCALE | NEW CASTLE INDUSTRIAL TRACK TRAIL, PHASE 3 | CONTRACT T201330009 | BRIDGE NO. X | RIGHT OF WAY DATA SHEET SHEET 12 OF 12 | SHEET NO. 205 | |
| | | | | | COUNTY NEW CASTLE | | DESIGNED BY: DAD | TOTAL SHTS. 205 |
| | | | | | | | CHECKED BY: JRR | |

ACQUISITION CODES
 FEE - ACQUISITION
 R/W - AREA OCCUPIED BY EXISTING R/W
 P/E - PERMANENT EASEMENT
 TCE - TEMPORARY EASEMENT