GILMORE & ASSOCIATES, INC.
ENGINEERING & CONSULTING SERVICES

April 2, 2026

Project No.: 130-3057.01

VIA ELECTRONIC FILING:
Michael B. Scheib,
Public Utility Commission 400 North Street
Harrisburg, PA 17120

Re: **PUC Docket No. A-2025-3059504**

Application for Structure Reopening for the Randall Avenue Bridge Over Six (6) AMTRAK Railroad Tracks Located In Bristol Township, Bucks County, PA
PennDOT BMS # 09 7101 0090 6434
AAR # - AAR 530 983 U

Dear Mr. Scheib:

Enclosed for filing, please find the As-Built plans documenting the repairs to the Randall Avenue Bridge for the purpose of addressing the High Priority (Priority 1) and several other Priority Maintenance items identified during the October 2022 bridge inspection. Bristol Township has satisfactorily completed the Phase II repairs on Monday, December 22, and hereby request the bridge to be reopened. Phase I repairs were approved under Commission proceeding docketed at A-2024-3045880.

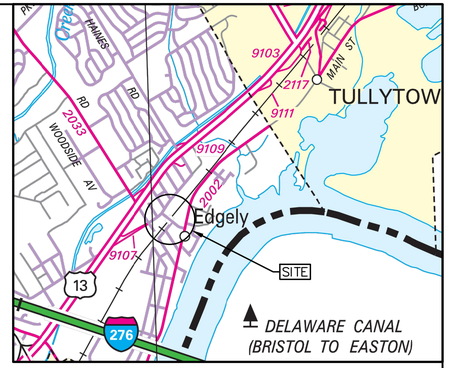
A copy of this Filing has been electronically transmitted to the parties in the Certificate of Service to the Application.

Should you have any questions or concerns, please feel free to contact Kurt Schroeder, Bristol Township Engineer at kschroeder@gilmore-assoc.com or Jacob Brink, Gilmore & Associates Structural Engineer at jbrink@gilmore-assoc.com.

Sincerely,

Kurt M. Schroeder, P.E.
Bristol Township Engineer
Gilmore & Associates, Inc.

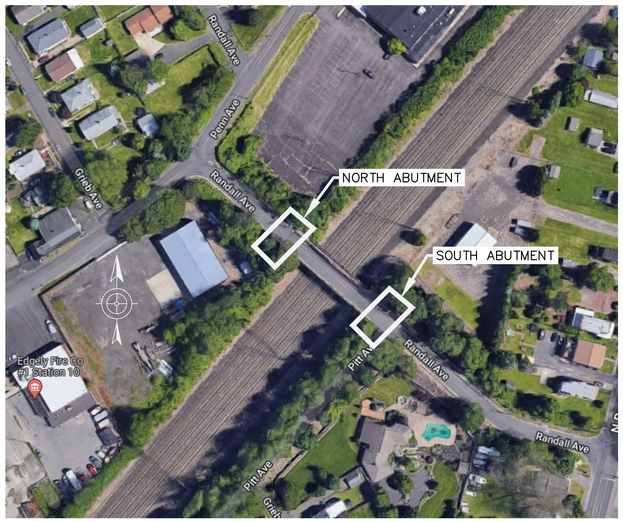
RANDALL AVENUE BRIDGE
PHASE II
ABUTMENT REPAIRS



LOCATION MAP

2000 00 2000 4000
SCALE IN FEET

SCALE: 1"=2000'



(COURTESY OF MICROSOFT CORPORATION 2023)

SHEET INDEX

LOCATION:
RANDALL AVENUE
BRISTOL TOWNSHIP, BUCKS COUNTY, PENNSYLVANIA

AS-BUILT PLANS: MARCH 2026

PREPARED BY:
GILMORE & ASSOCIATES, INC.
CONSULTING ENGINEERS & SURVEYORS
NEW BRITAIN, PENNSYLVANIA 18901

FILE NO. 1303057.01

AS-BUILT

GENERAL NOTES:

1. PROVIDE ALL MATERIALS AND PERFORM WORK IN ACCORDANCE WITH THE PENNSYLVANIA DEPARTMENT OF TRANSPORTATION PUBLICATION 408/2020 (PUB. 408), INCLUDING ALL SUPPLEMENTS, AASHTO AWS D1.5 BRIDGE WELDING CODE LATEST EDITION, ACI 506R LATEST EDITION AND CONTRACT SPECIAL AND TECHNICAL PROVISIONS.
2. DO NOT CONSIDER ANY OF THE DATA ON THE EXISTING STRUCTURE SUPPLIED IN THE ORIGINAL DESIGN DRAWINGS (IF AVAILABLE), OR MADE AVAILABLE BY THE TOWNSHIP OR ITS AUTHORIZED AGENTS AS POSITIVE REPRESENTATIONS OF ANY OF THE CONDITIONS THAT WILL BE ENCOUNTERED IN THE FIELD.
3. THE INFORMATION SHOWN AS "EXISTING" ON THE PLANS IS NOT PART OF THE PLANS, PROPOSAL, OR CONTRACT AND IS NOT TO BE CONSIDERED AS A BASIS FOR COMPUTATION OF UNIT PRICES FOR BIDDING PURPOSES. THERE IS NO EXPRESSED OR IMPLIED WARRANTY OR GUARANTEE THAT INFORMATION IS CORRECTLY SHOWN. THE BIDDER IS NOT TO RELY ON THIS INFORMATION, BUT IS TO ASSUME THE POSSIBILITY THAT CONDITIONS AFFECTING COST AND/OR QUANTITIES OF WORK TO BE PERFORMED MAY DIFFER FROM THOSE INDICATED.
4. CONTRACTOR IS SOLELY RESPONSIBLE FOR MEANS AND METHODS AND FOR PROTECTING ADJACENT STRUCTURES, OR PORTIONS THEREOF, DURING THE COURSE OF THE WORK. CONTRACTOR SHALL NOT DAMAGE OR ENDANGER THE STRUCTURAL INTEGRITY OF THE WORK OR ANY EXISTING STRUCTURE, UTILITY, FACILITY, EXISTING IMPROVEMENTS AND PROPERTY.
5. ANY DAMAGE TO THE EXISTING SITE, STRUCTURES, UTILITIES OR FACILITIES RESULTING FROM THE OPERATIONS OF THE CONTRACTOR SHALL BE REPAIRED AS DIRECTED BY THE TOWNSHIP'S REPRESENTATIVE AT NO ADDITIONAL COST TO THE TOWNSHIP.
6. VERIFY ALL DIMENSIONS AND GEOMETRY OF THE EXISTING STRUCTURE IN THE FIELD AS NECESSARY FOR PROPER FIT OF THE PROPOSED CONSTRUCTION.
7. DO NOT SCALE THIS DRAWING.
8. STATIONS AND ELEVATIONS ARE GIVEN IN FEET UNLESS NOTED OTHERWISE.
9. FOLLOW OSHA SAFETY REQUIREMENTS IN ALL EXCAVATION AREAS.
10. USE CLASS AAAP CEMENT CONCRETE IN DECK SLAB.
11. USE CLASS AA CEMENT CONCRETE IN BACKWALLS AND CHEEKWALLS.
12. USE SHOTCRETE OR CLASS A CEMENT CONCRETE IN ABUTMENTS BELOW BEAM SEAT, AND WINGWALLS.
13. A HIGHER CLASS CEMENT CONCRETE MAY BE SUBSTITUTED FOR A LOWER CLASS CONCRETE AT NO ADDITIONAL COST TO THE TOWNSHIP.
14. PROVIDE GRADE 60 REINFORCING STEEL BARS THAT MEET THE REQUIREMENTS OF ASTM A615/A615M, A996/A996M, OR A706/A706M. DO NOT WELD GRADE 60 REINFORCING STEEL BARS UNLESS SPECIFIED. GRADE 40 REINFORCING STEEL BARS MAY BE SUBSTITUTED WITH A PROPORTIONAL INCREASE IN CROSS-SECTIONAL AREA, IF APPROVED BY THE ENGINEER. DO NOT USE RAIL STEEL A996/A996M REINFORCEMENT BARS IN BRIDGE ABUTMENTS, FOOTINGS OR WHERE BENDING OR WELDING OF THE REINFORCEMENT BARS IS INDICATED.
15. PROVIDE WELDED WIRE REINFORCEMENT (WWR) MEETING THE REQUIREMENTS OF AASHTO M55, ASTM A1064/A1064M GRADE 70 OR HIGHER. ALL WELDED WIRE REINFORCEMENT IS TO BE GALVANIZED IN ACCORDANCE WITH ASTM A641 OR EPOXY COATED IN ACCORDANCE WITH ASTM A884.
16. PROVIDE MINIMUM EMBEDMENT AND SPLICE LENGTHS IN ACCORDANCE WITH STANDARD DRAWING BC-736M, UNLESS OTHERWISE INDICATED.
17. ALL REINFORCEMENT BARS, STEEL DOWELS AND WELDED WIRE REINFORCEMENT ARE TO BE GALVANIZED OR EPOXY COATED. GALVANIZE IN ACCORDANCE WITH PENNDOT 408/2020 SECTION 709. EPOXY COATED REINFORCING BARS SHALL CONFORM TO ASTM A775.
18. ALL EPOXY COATINGS THAT BECOME BREACHED DURING FABRICATION, HANDLING, TRANSPORTATION, INSTALLATION OR CONSTRUCTION MUST BE REPAIRED BY APPLYING TWO COATS OF AN APPROVED COMPATIBLE EPOXY COATING REPAIR COMPOUND/PAINT WITH INTEGRAL PRIMER.
19. FOR GALVANIZED STEEL TO RECEIVE WELDED CONNECTIONS, GALVANIZING LAYER SHALL BE REMOVED PRIOR TO WELDING. ALL EXISTING AND SHOP APPLIED GALVANIZED COATINGS THAT ARE BREACHED DURING CONSTRUCTION MUST BE REPAIRED BY THE CONTRACTOR BY APPLYING TWO (2) COATS OF A COLD-GALVANIZING COMPOUND/PAINT WITH INTEGRAL PRIMER.
20. COAT ALL EXISTING CONCRETE MATING SURFACES THAT ARE TO BE IN CONTACT WITH NEW CEMENT CONCRETE WITH EPOXY BONDING COMPOUND (ADHESIVE) IMMEDIATELY PRIOR TO PLACING THE NEW CONCRETE. CLEAN THE EXISTING CONCRETE THOROUGHLY PRIOR TO THE APPLICATION OF THE EPOXY BONDING COMPOUND (ADHESIVE). THE COST OF THE EPOXY BONDING COMPOUND (ADHESIVE) IS INCIDENTAL TO THE CLASS OF CONCRETE FOR WHICH IT IS APPLIED. PROVIDE EPOXY BONDING COMPOUND (ADHESIVE) ASTM C881 TYPE II, GRADE 2, ASTM C881 TYPE V, GRADE 2, OR APPROVED EQUAL.
21. PROVIDE 2 INCHES OF CONCRETE/SHOTCRETE COVER ON REINFORCEMENT BARS, EXCEPT AS NOTED.
22. RAKE-FINISH ALL HORIZONTAL CONSTRUCTION JOINTS, EXCEPT AS INDICATED.
23. CHAMFER EXPOSED CONCRETE EDGES 3/4" BY 3/4", EXCEPT AS NOTED.
24. PREPARE BEARING AREAS AS SPECIFIED IN PUBLICATION 408, SECTION 1001.3(K)9.
25. VERIFY LOCATION OF UNDERGROUND PIPES, CULVERTS AND UTILITIES PRIOR TO STARTING WORK. CONDUCT OPERATIONS IN A MANNER WHICH ENSURES THAT THE STRUCTURES OR UTILITIES WILL NOT BE DISTURBED OR ENDANGERED AND ASSUME FULL RESPONSIBILITY FOR ANY DAMAGE TO THESE FACILITIES DURING CONSTRUCTION. THE OWNER DOES NOT ASSUME RESPONSIBILITY FOR REIMBURSEMENT, PARTICIPATION IN DESIGN AND/OR REVISIONS, OR LIABILITY FOR ACCURACY OF TYPE, SIZE AND LOCATION OF ANY UTILITY OR BURIED AND/OR AERIAL FACILITIES. CONDUCT ALL WORK RELATED TO PUBLIC AND PRIVATE UTILITIES IN ACCORDANCE WITH PUBLICATION 408, SECTION 105.06 AND 107.12.
26. COORDINATE, TEMPORARILY SUPPORT AND PROTECT ANY EXISTING UTILITIES AND FACILITIES. CONTACT ALL UTILITY OWNERS AND COMPLY WITH EACH OWNERS REQUIREMENTS. FURNISH AND INSTALL TEMPORARY PROTECTION OF EXISTING UTILITIES & FACILITIES AND REMOVE TEMPORARY WORKS UPON COMPLETION. WHEN REQUIRED, TEMPORARILY RELOCATE OR BYPASS UTILITIES AS REQUIRED IN ORDER TO COMPLETE THE PROPOSED WORK. RESTORE ANY RELOCATED OR BYPASSED UTILITIES UPON COMPLETION OF WORK.
27. TEMPORARY SUPPORT, SHORING AND/OR UNDERPINNING (COLLECTIVELY KNOWN AS "TEMPORARY WORKS") IS REQUIRED AS A PART OF THIS PROJECT. CONTRACTOR IS RESPONSIBLE TO RETAIN A PROFESSIONAL ENGINEER LICENSED IN GOOD STANDING IN THE COMMONWEALTH OF PENNSYLVANIA TO PREPARE CALCULATIONS, DRAWINGS, SPECIFICATIONS AND ALL NECESSARY SUBMITTAL DOCUMENTS, FOR ALL TEMPORARY WORKS. THE TEMPORARY WORKS MUST BE DESIGNED USING CURRENT DESIGN CRITERIA AS PUBLISHED IN PENNDOT PUBLICATION 408, PENNDOT DESIGN MANUAL, PART 4, STRUCTURES, AASHTO REFERENCE DOCUMENTS CITED IN PENNDOT PUBLICATIONS AND DESIGN MANUALS AND INDUSTRY-RECOGNIZED DESIGN METHODOLOGIES AND CONSTRUCTION TECHNIQUES, AS APPLICABLE. ALL SUBMITTALS MUST BE COMPLETE AND MUST BE SIGNED AND SEALED BY THE PA PROFESSIONAL ENGINEER RESPONSIBLE FOR THE WORK. SUBMIT ELECTRONIC SETS OF DOCUMENTS IN PDF FORMAT TO THE OWNER AND THEIR ENGINEER OR OTHER DESIGNATED REPRESENTATIVES FOR REVIEW, COMMENT AND CONFORMANCE PRIOR TO STARTING ANY WORK AND AT LEAST 15 BUSINESS DAYS PRIOR TO THE START OF THE TEMPORARY WORKS ITEM THAT IS BEING SUBMITTED. COMPLY WITH ALL REVIEW COMMENTS; REVISE AND RESUBMIT UNTIL THE SUBMITTAL IS ACCEPTED BY THE TOWNSHIP.

PENNSYLVANIA ONE CALL SYSTEM, INC.

925 Irwin Run Road
West Mifflin, Pennsylvania
15122 – 1078

BEFORE YOU DIG ANYWHERE IN PENNSYLVANIA! CALL 1-800-242-1776

NON-MEMBERS MUST BE CONTACTED DIRECTLY

PA LAW REQUIRES THREE WORKING DAYS NOTICE TO UTILITIES BEFORE YOU EXCAVATE, DRILL, BLAST OR DEMOLISH

SERIAL NO. 20240801998

LOCATIONS OF EXISTING UNDERGROUND UTILITIES/FACILITIES SHOWN HEREON HAVE BEEN DEVELOPED FROM RECORDS, FIELD MARKOUTS BY UTILITY OWNERS, AND/OR ABOVE-GROUND OBSERVATION OF THE SITE. NO EXCAVATIONS WERE PERFORMED IN THE PREPARATION OF THESE DRAWINGS; THEREFORE ALL UTILITIES SHOWN SHOULD BE CONSIDERED APPROXIMATE IN LOCATION, DEPTH, AND SIZE. THE POTENTIAL EXISTS FOR OTHER UNDERGROUND UTILITIES/FACILITIES TO BE PRESENT WHICH ARE NOT SHOWN ON THE DRAWINGS. ONLY THE VISIBLE LOCATIONS OF UNDERGROUND UTILITIES/FACILITIES AT THE TIME OF FIELD SURVEY SHALL BE CONSIDERED TRUE AND ACCURATE. COMPLETENESS OR ACCURACY OF UNDERGROUND UTILITIES/FACILITIES ARE NOT GUARANTEED BY GILMORE & ASSOCIATES INC.

ALL CONTRACTORS WORKING ON THIS PROJECT SHALL VERIFY LOCATION AND DEPTH OF ALL UNDERGROUND UTILITIES/FACILITIES PRIOR TO START OF WORK AND SHALL COMPLY WITH THE REQUIREMENTS OF P.L. 852, NO. 287 DECEMBER 10, 1974 AS LAST AMENDED ON APRIL 28, 2018 PENNSYLVANIA ACT 50.

GILMORE & ASSOCIATES INC. HAS OBTAINED A PA-ONE CALL SERIAL NUMBER AS NOTED HEREON FOR DESIGN PURPOSES ONLY.

EXISTING BRIDGE NOTES:

1. THE INFORMATION SHOWN ON THESE DRAWINGS IS APPROXIMATE AND IS BASED UPON MEASUREMENTS TAKEN FROM CONVENTIONAL HAND MEASURING TOOLS. A TOPOGRAPHIC SURVEY WAS NOT PERFORMED DURING THE PREPARATION OF THESE PLANS. EXISTING INFORMATION AND DETAILS ARE SHOWN FOR INFORMATIONAL PURPOSES ONLY AND MUST BE VERIFIED IN THE FIELD BY THE CONTRACTOR.
2. CONTRACTOR MUST VERIFY ALL EXISTING DIMENSIONS AND ELEVATIONS BEFORE BEGINNING WORK OR PREPARING SHOP DRAWINGS. CONTRACTOR MUST SUBMIT A FIELD VERIFIED SURVEY TO ENGINEER PRIOR TO PREPARING SHOP DRAWINGS.
3. UTMOST CARE SHALL BE EXERCISED AT ALL TIMES WHEN WORKING ON EXISTING STRUCTURAL MEMBERS TO AVOID IMPAIRING THE CARRYING CAPACITY OF THE EXISTING STRUCTURE. PROVIDE TEMPORARY WORKS TO TEMPORARILY SUPPORT AFFECTED MEMBERS AS REQUIRED OR AS DIRECTED BY THE ENGINEER.
4. SHOULD THE ENGINEER DETERMINE THAT THE CARRYING CAPACITY OF THE EXISTING STRUCTURE HAS BEEN IMPAIRED BY, OR AS A RESULT OF, THE OPERATIONS OF THE CONTRACTOR, OR IS OTHERWISE NOT IN CONFORMANCE WITH THE CONTRACT DOCUMENTS, APPROPRIATE REMEDIAL WORK SHALL BE REQUIRED.
5. ANY DAMAGE RESULTING FROM THE OPERATIONS OF THE CONTRACTOR SHALL BE REPAIRED AS DIRECTED BY THE TOWNSHIP'S REPRESENTATIVE AT NO ADDITIONAL COST TO THE TOWNSHIP.
6. CONTRACTOR MUST NOTIFY THE ENGINEER BEFORE CUTTING OR REMOVING ANY PART OF THE EXISTING STRUCTURE NOT INDICATED TO BE MODIFIED OR DEMOLISHED.

DEMOLITION NOTES:

1. DURING REMOVAL OPERATIONS, THE CONTRACTOR IS NOT PERMITTED TO DROP WASTE, DEBRIS OR OTHER MATERIAL ONTO THE RAILROAD TRACKS OR WITHIN THE RAILROAD RIGHT-OF-WAY. FENCES, NETS, SCREENS OR OTHER PROTECTIVE DEVICES MUST BE USED. IF THE ENGINEER DETERMINES THAT ADEQUATE PROTECTIVE DEVICES ARE NOT BEING EMPLOYED, THE WORK SHALL BE SUSPENDED UNTIL ADEQUATE PROTECTION IS PROVIDED. THE SUSPENSION SHALL NOT BE A CAUSE TO EXTEND THE CONTRACT COMPLETION DATE.
2. THE CONTRACTOR SHALL REMOVE DEBRIS FROM THE WORK AREA TO AN APPROVED SITE FOR DISPOSAL PERIODICALLY TO MAINTAIN A SAFE WORK ENVIRONMENT. ON-SITE STORAGE OF DEBRIS IS NOT PERMITTED.
3. THE EXISTING PAINTED BRIDGE STRUCTURAL MEMBERS CONTAIN LEAD PAINT BASED UPON LABORATORY TESTING. THEREFORE, IT SHOULD BE ASSUMED THAT TOXIC MATERIALS CONTAINING LEAD, HAZARDOUS MATERIALS AND CONTAMINANTS ARE PRESENT AND PROPER CONTAINMENT, DISPOSAL OF WASTE AND WORKER HEALTH AND SAFETY PROTOCOLS MUST BE IMPLEMENTED.
4. EXISTING BRIDGE COMPONENTS TO BE REMOVED AND REPAIRED GENERALLY INCLUDE BUT ARE NOT LIMITED TO THE FOLLOWING:
   a. DETERIORATED PORTIONS OF THE EXISTING CONCRETE ABUTMENTS AS INDICATED
   b. BACKWALLS
   c. CHEEKWALLS
   d. STEEL BEARINGS BELOW GIRDERS AT THE ABUTMENTS
   e. END PORTIONS OF THE EXISTING BRIDGE DECK AND APPROACH ROADWAY WHERE INDICATED

STRUCTURAL STEEL:

1. STRUCTURAL STEEL SHALL BE DETAILED, FABRICATED, AND ERECTED IN ACCORDANCE WITH STANDARDS OF THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC).
2. PROVIDE STRUCTURAL STEEL CONFORMING TO AASHTO M270 (ASTM A709) GRADE 36 FOR PLATES AND ANGLES AND AASHTO M 270 (ASTM A709) GRADE 50 FOR ALL OTHER SHAPES.
3. MINIMUM SIZE WELDS SHALL BE IN ACCORDANCE WITH AISC AND AWS.
4. STRUCTURAL WELDING SHALL BE PERFORMED BY AWS CERTIFIED WELDERS.
5. ALL NEW BOLTS SHALL BE TIGHTENED IN ACCORDANCE WITH AISC STANDARDS AND PENNDOT SPECIFICATIONS.
6. FIELD CUTTING OR BURNING OF STRUCTURAL STEEL IS PROHIBITED WITHOUT THE PRIOR WRITTEN APPROVAL OF THE TOWNSHIP AND ENGINEER. ANY MODIFICATIONS TO FIELD CUT MEMBERS THAT ARE NOT STRUCTURALLY ACCEPTABLE TO THE ENGINEER SHALL BE REPAIRED BY THE CONTRACTOR AT NO COST TO THE TOWNSHIP.
7. WHERE PLATES, ANGLES OR OTHER MISCELLANEOUS MEMBERS REQUIRE WELDING (EITHER FIELD OR SHOP) OR FOR SLIP-CRITICAL CONNECTIONS, MASK CONNECTION SURFACES PRIOR TO SURFACE PREPARATION OR PRIMING, AND PAINT AFTER COMPLETING THE CONNECTION.
8. ALL FASTENERS ARE TO BE ASTM F3125, GRADE A325, 7/8" DIAMETER, U.N.O.
9. WELDING OF ANCHOR RODS DURING FABRICATION OR CONSTRUCTION IS NOT PERMITTED UNLESS SPECIFIED.
10. ALL WELDING SHALL BE IN ACCORDANCE WITH AASHTO/AWS D 1.5-2008 BRIDGE WELDING CODE, CONSISTENT WITH PENNDOT PUBLICATION 408/2016, SECTION 1105.03 (M) AND THE CONTRACT SPECIAL PROVISIONS.
11. ALL ELECTRODES FOR WELDING SHALL BE E70XX UNLESS NOTED OTHERWISE.
12. MAKE TACK WELDS WITH THE SAME TYPE OF ELECTRODE IN THE FINAL WELD. NO OTHER TACK WELDING WILL BE PERMITTED.
13. DO NOT WELD WHEN SURFACES TO BE WELDED ARE MOIST OR EXPOSED TO RAIN, SNOW OR WIND, OR WHEN WELDERS ARE EXPOSED TO INCLEMENT CONDITIONS THAT WILL ADVERSELY AFFECT THE QUALITY OF WORK.
14. DO NOT WELD OR BURN WHEN THE TEMPERATURE IS BELOW 0°F. PREHEAT AND MAINTAIN THE TEMPERATURE OF THE METAL TO AT LEAST 70°F WHEN THE TEMPERATURE OF THE METAL IS BETWEEN 0°F AND 32°F DURING WELDING OR BURNING.
15. PREHEAT THE STEEL TO THE SPECIFIED MINIMUM TEMPERATURE FOR A DISTANCE EQUAL TO THE THICKNESS OF THE PART BEING WELDED, BUT NOT LESS THAT 3 INCHES IN ALL DIRECTIONS FROM THE POINT OF WELDING.
16. REMOVE BY APPLICATION OF HEAT ANY MOISTURE PRESENT AT POINT OF WELD. PROVIDE WINDBREAKS FOR PROTECTION FROM DIRECT WIND.
17. PRIOR TO PLACING THE WELD, THOROUGHLY CLEAN ALL PORTIONS OF NEW AND EXISTING SURFACES TO RECEIVE WELDS OF ALL FOREIGN MATTER FOR A DISTANCE OF 2 INCHES FROM EACH SIDE OF THE OUTSIDE LINES OF THE WELD.
18. TEST COMPLETED WELDS USING VISUAL AND NONDESTRUCTIVE METHODS IN ACCORDANCE WITH AASHTO/AWS D 1.5-2008 BRIDGE WELDING CODE, CHAPTER 6.
19. FOR FAYING SURFACES, PROVIDE AN ORGANIC, ZINC-RICH PRIMER LISTED IN BULLETING 15 AND THE NORTHEAST PROTECTIVE COATINGS COMMITTEE (NEPCOAT) QUALIFIED PRODUCTS LIST B OR APPROVED EQUAL. VERIFY THE ORGANIC, ZINC-RICH PRIMER HAS A CLASS B CERTIFICATION, CERTIFIED WITHIN THE LAST 7 YEARS, FROM AN AASHTO APPROVED LABORATORY ACCORDING TO THE RESEARCH COUNCIL ON STRUCTURAL STEEL CONNECTIONS (RCSC) SPECIFICATION FOR STRUCTURAL JOINTS USING HIGH STREGNTH BOLTS APPENDIX.

POST INSTALLED ANCHORS:

1. DRILL AND INSTALL POST-INSTALLED ANCHORS ACCORDING TO MANUFACTURER'S INSTALLATION INSTRUCTIONS.
2. ALL POST-INSTALLED ANCHORS SHALL MEET ICC-ES COMPLIANCE FOR EACH TYPE OF APPLICATION. SUBMIT COMPLIANCE REPORT FOR THE RECORD.
3. ALL POST-INSTALLED ANCHORS SHALL BE SUITED FOR USE IN SEISMIC AND CRACKED CONCRETE APPLICATIONS.
4. CONCRETE AND MASONRY MUST BE AT LEAST 21 DAYS OLD BEFORE INSTALLATION OF POST-INSTALLED ANCHORS.
5. ANCHORS MUST BE INSTALLED IN THE FOLLOWING CONDITIONS:
   a. DRY CONCRETE, UNLESS NOTED OTHERWISE IN THE MANUFACTURER'S PUBLISHED INSTALLATION INSTRUCTIONS.
   b. CONCRETE TEMPERATURE AT TIME OF INSTALLATION MUST BE BETWEEN 41 DEGREES F AND 100 DEGREES F. SEE MANUFACTURER'S PRINTED INSTALLATION INSTRUCTIONS FOR ADHESIVE GEL AND CURE TIMES.
   c. ANCHOR HOLES ARE TO BE ROTARY HAMMER-DRILLED UTILIZING A PERCUSSION BIT TO DEVELOP A ROUGHENED TEXTURE PER MANUFACTURER'S PRINTED INSTALLATION INSTRUCTIONS. IF A CORE BIT IS UTILIZED TO DRILL, THE HOLE MUST BE MECHANICALLY ROUGHENED IN ACCORDANCE WITH THE ANCHOR MANUFACTURER'S INSTRUCTIONS.
   d. ANCHOR HOLES ARE TO BE CLEANED PER MANUFACTURER'S PRINTED INSTALLATION INSTRUCTIONS PRIOR TO ADHESIVE PLACEMENT OR INJECTION.
6. CHEMICAL GROUT ADHESIVE FOR ANCHORS IN CONCRETE SHALL BE PENNDOT-APPROVED FROM SUPPLIERS LISTED IN BULLETIN 15.

RAILROAD NOTES:

1. ALL WORK SHALL BE IN ACCORDANCE WITH APPLICABLE SECTIONS OF AMTRAK SPECIFICATIONS: EP 3014 AND 16064.
2. DURING WORK PERFORMED IN THE VICINITY OF ELECTRIFIED TRACKS AND/OR HIGH VOLTAGE WIRES, EXTREME CARE MUST BE EXERCISED. AMTRAK REQUIREMENTS REGARDING CLEARANCES MUST BE MAINTAINED BETWEEN EQUIPMENT, TRACKS, AND ENERGIZED WIRES AT ALL TIMES. THE CONTRACTOR MUST SUPPLY AN ADEQUATE LENGTH OF GROUNDING CABLE (4/0 COPPER WITH AMTRAK APPROVED CLAMPS) FOR EACH PIECE OF EQUIPMENT WORKING NEAR OR ADJACENT TO ANY OVERHEAD WIRE PER AMTRAK SPECIFICATION 16064.
3. ANY PROPOSED WORK WITHIN 25 FEET OF THE CENTERLINE OF TRACK REQUIRES AMTRAK RWP PROTECTION.
4. ANY WORK TO BE PERFORMED WITHIN 15 FEET OF THE OVERHEAD WIRES MUST BE DONE UNDER THE PROTECTION OF AN AMTRAK CLASS "A" EMPLOYEE.
5. ANY REQUESTED OUTAGES MUST BE APPROVED BY AMTRAK CM TEAM AND NY DIVISION PERSONNEL.
6. CONTRACTOR IS RESPONSIBLE TO PREPARE AND SUBMIT SITE-SPECIFIC WORK PLAN(S) (SSWP) TO AMTRAK FOR REVIEW AND APPROVAL A MINIMUM OF TWENTY-ONE (21) DAYS PRIOR TO START OF WORK. THE SSWPS MUST IDENTIFY TEMPORARY PROTECTIONS, WORK AREAS, SAFETY PRECAUTIONS, TEMPORARY SHORING, BRIDGE JACKING, GROUNDING AND BONDING (IF APPLICABLE) AND SCHEDULES OF SAME TO THE SATISFACTION OF AMTRAK PRIOR TO PROCEEDING WITH WORK.

SCOPE OF WORK – BASE BID:

1. INSTALL ALL TEMPORARY BARRICADES, PROTECTIVE FENCE, SCREENS AND/OR OTHER PROTECTIVE EQUIPMENT. MODIFY EXISTING FENCE AS REQUIRED TO PERFORM THIS WORK. SEE SHEET 5 OF 22 FOR ADDITIONAL INFORMATION.
2. EXCAVATE TO THE MINIMUM DEPTH INDICATED ON THE DRAWINGS AND AS REQUIRED TO PERFORM ABUTMENT REPAIRS.
3. CLEAN AND REMOVE ALL FOREIGN DEBRIS FROM EACH BRIDGE SEAT.
4. REMOVE PORTIONS OF THE EXISTING ABUTMENTS WITHIN THE LIMITS INDICATED ON THE DRAWINGS.
5. INSTALL STEEL REINFORCEMENT, CLASS A CEMENT CONCRETE OR SHOTCRETE AND CFRP WRAP WITHIN THE LIMITS INDICATED ON THE DRAWINGS.
6. INSTALL TEMPORARY SUPPORT FOR THE EXISTING BRIDGE EXPANSION ENDS (DESIGNED BY CONTRACTOR'S P.E., NOT G&A).
7. REMOVE CONCRETE ENCASEMENT AT THE BOTTOM FLANGE OF EACH EXISTING STEEL GIRDER WITHIN THE LIMITS IDENTIFIED ON THE DRAWINGS. CLEAN THE EXPOSED BOTTOM FLANGE SURFACE OF ANY CONCRETE DUST, PAINT, LAITANCE, ETC.
8. REMOVE THE EXISTING DETERIORATED STEEL BEARINGS INCLUDING ANY ANCHOR BOLTS, STUDS, PLATES, SHIMS, ETC.
9. INSTALL NEW REINFORCED CONCRETE PEDESTALS, ELASTOMERIC BEARING PADS, SOLE PLATES, BEVELED PLATES, ANCHOR BOLTS, STUDS, SHIMS, ETC., AND ATTACH TO EXISTING GIRDER.
10. TEMPORARY SUPPORT OF THE EXISTING BRIDGE EXPANSION ENDS MAY BE REMOVED UPON SATISFACTORY COMPLETION OF THE BEARING REPLACEMENT WITH WRITTEN APPROVAL OF THE ENGINEER.
11. REMOVE PORTIONS OF THE BRIDGE DECK INCLUDING THE PAVEMENT AND CONCRETE CURBS AND SIDEWALKS WITHIN THE LIMITS INDICATED ON THE DRAWINGS.
12. EXCAVATE BEHIND THE ABUTMENTS AS REQUIRED TO INSTALL THE NEW WINGS AND CHEEKWALLS. REMOVE EXISTING TIMBER FENCE, RETAINING WALLS AND RELOCATE STREET SIGNS AS REQUIRED. ALL RELOCATED SIGNS MUST BE INSTALLED ON NEW POSTS.
14. REMOVE EACH EXISTING CONCRETE BACKWALL AS INDICATED ON THE DRAWINGS.
15. INSTALL NEW REINFORCED CONCRETE, DECK EXTENSION, WINGS, CHEEKWALLS AND FOUNDATION DRAIN.
16. BACKFILL BEHIND THE EXISTING ABUTMENTS AND NEW WINGS AS REQUIRED WITH COMPACTED STRUCTURAL BACKFILL.
17. INSTALL CURBS, SIDEWALKS AND RESTORE PAVEMENT.
18. INSTALL NEW PEDESTRIAN GUARD RAILING AND CHAIN-LINK FENCING.
19. REINSTALL ALL SIGNS ON NEW POSTS AS REQUIRED.
20. CLEAN UP AND RESTORE SITE TO THE SATISFACTION OF THE TOWNSHIP.

SCOPE OF WORK – ADD-ALTERNATE:

1. EXCAVATE, DEMO AND REMOVE CURBS, EXISTING GUIDE RAIL POSTS, COMPONENTS, APPURTENANCES, AND OBSTRUCTIONS IN ORDER TO INSTALL NEW GUIDE RAIL WITHIN THE LIMITS IDENTIFIED ON THE DRAWINGS.
2. INSTALL NEW GUIDE RAIL, CURBS AND RESTORE PAVEMENT AS REQUIRED.
3. RESTORE THE SITE TO THE SATISFACTION OF THE TOWNSHIP.

UTILITY COORDINATION NOTES:

1. THE EXISTING PECO GAS MAIN IS SHOWN ON THE DRAWINGS FOR ILLUSTRATION PURPOSES ONLY. SEE EXISTING FEATURE NOTES #1 AND #3 THIS SHEET FOR ADDITIONAL INFORMATION.
2. THE PROPOSED PECO GAS MAIN IS CONCEPTUAL AND INCLUDED ON THE DRAWINGS FOR THE CONVENIENCE OF THE CONTRACTOR. THE DESIGN AND CONSTRUCTION OF THE PROPOSED PECO GAS MAIN IS THE SOLE RESPONSIBILITY OF PECO GAS DIVISION, NOT G&A. CONTRACTOR MUST COORDINATE WITH PECO DURING CONSTRUCTION. SEE SPECIAL PROVISIONS FOR MORE INFORMATION.

EXISTING FEATURE NOTES:

1. THE EXISTING INFORMATION THAT IS REPRESENTED ON THESE DRAWINGS IS INCLUDED FOR THE CONVENIENCE OF THE CONTRACTOR AND SHALL NOT BE CONSIDERED A PART OF THE CONTRACT DRAWINGS.
2. THE EXISTING INFORMATION SHOWN ON THESE DRAWINGS IS APPROXIMATE AND IS BASED UPON MEASUREMENTS TAKEN WITH CONVENTIONAL HAND MEASURING TOOLS. A TOPOGRAPHIC SITE SURVEY WAS NOT PERFORMED DURING THE PREPARATION OF THESE PLANS.
3. EXISTING INFORMATION, CONDITIONS, AND DETAILS ARE SHOWN FOR INFORMATIONAL PURPOSES ONLY AND MUST BE VERIFIED IN THE FIELD BY THE CONTRACTOR.

AS-BUILT

GILMORE & ASSOCIATES, INC.
ENGINEERING & CONSULTING SERVICES
LUXEMBOURG CORPORATE CENTER
508 CORPORATE DRIVE WEST, LANGHORNE, PA 19047 • (215) 369-3955 • www.gilmore-assoc.com

JOB NO.: 1303057.01	TAX MAP PARCEL NO.: N/A
MUNICIPAL FILE NO.: –	

CLIENT: BRISTOL TOWNSHIP
2501 BATH ROAD
BRISTOL, PA 19007
PHONE: 215-785-0500

TOTAL AREA:	TOTAL LOTS:	DATE:	SCALE:	DESIGNED BY:	DRAWN BY:	CHECKED BY:
–	–	03/27/2026	AS NOTED	JDB	RMM	RCJ

ABUTMENT REPAIRS

GENERAL NOTES

RANDALL AVENUE BRIDGE PHASE II

BRISTOL TOWNSHIP, BUCKS COUNTY, PENNSYLVANIA

REV.	DESCRIPTION	DATE	BY

SHOTCRETE NOTES (IF ELECTED IN LIEU OF CLASS A CEMENT CONCRETE):

1. CONTRACTOR SHALL FURNISH ALL MATERIALS, TOOLS, EQUIPMENT AND APPURTENANCES FOR THE INSTALLATION OF SHOTCRETE, THAT IS PNEUMATICALLY PLACED AT HIGH VELOCITY. SUBMIT SHOTCRETE PLAN, DETAILS, DESCRIPTIONS, MIX DESIGNS AND SUPPORTING TEST DOCUMENTATION TO THE ENGINEER AT LEAST FOURTEEN (14) DAYS PRIOR TO COMMENCEMENT OF WORK FOR REVIEW AND APPROVAL.
2. SHOTCRETE CONSTRUCTION SHALL FOLLOW THE REQUIREMENTS OF PENNDOT PUB. 408/2020, INCLUDING ALL SUPPLEMENTS AND ACI 506R, LATEST EDITION. FOLLOW ACI PROCEDURES FOR HOT AND COLD WEATHER CONCRETING IN ACCORDANCE WITH ACI 305R AND 306R, HOT WEATHER CONCRETING AND COLD WEATHER CONCRETING, RESPECTIVELY.
3. SHOTCRETE MAY BE FURNISHED AND APPLIED BY EITHER DRY–MIX OR A WET–MIX PROCESS.
4. SUBMIT SHOTCRETE PLAN, DETAILS, DESCRIPTIONS, MIX DESIGNS AND SUPPORTING TEST DOCUMENTATION TO THE ENGINEER AT LEAST FOURTEEN (14) DAYS PRIOR TO COMMENCEMENT OF WORK FOR REVIEW AND APPROVAL.
5. THE SHOTCRETE MIX DESIGN SHALL BE IN ACCORDANCE WITH REQUIREMENTS OF THE CONTRACT SPECIAL AND TECHNICAL PROVISIONS.
6. CURE SHOTCRETE NOT LESS THAN SEVEN (7) DAYS AND IN ACCORDANCE WITH THE PUBLICATION 408/2020 (PUB. 408), INCLUDING ALL SUPPLEMENTS, ACI 506R LATEST EDITION AND CONTRACT SPECIAL AND TECHNICAL PROVISIONS.
7. STRENGTH REQUIREMENTS: 4,000 PSI IN 28 DAYS. THE AVERAGE COMPRESSIVE STRENGTH OF EACH SET OF THREE (3) TEST CORES EXTRACTED FROM TEST PANELS (2.5'X 2.5'X 3.5"DEEP) OR BRIDGE MUST EQUAL OR EXCEED 85 PERCENT OF THE SPECIFIED COMPRESSIVE STRENGTH, WITH NO INDIVIDUAL CORE LESS THAN 75 PERCENT OF THE SPECIFIED COMPRESSIVE STRENGTH, IN ACCORDANCE WITH ACI 506.2.
8. THOROUGHLY CLEAN THE STEEL AND CONCRETE SURFACES OF ALL LOOSE, SCALY, OR THICK RUST, SCALE, GREASE, ASPHALT, LOOSE PIECES, GRAVEL AND MATERIAL THAT WILL IMPAIR THE BOND BETWEEN THE SURFACES TO BE COVERED AND THE SHOTCRETE MIXTURE. AFTER REMOVAL OF LOOSE MATERIAL, CLEAN BY DRY ABRASIVE BLASTING OR WATER BLASTING TO A SOUND SURFACE. DO NOT APPLY SHOTCRETE TO A SURFACE WITH FREE SURFACE WATER.
9. PROVIDE MINIMUM EMBEDMENT AND SPLICE LENGTHS IN ACCORDANCE WITH STANDARD DRAWING BC–736M, UNLESS OTHERWISE INDICATED
10. FOR WELDED WIRE REINFORCEMENT (WWR), LAP ADJACENT SHEETS OF WIRE REINFORCEMENT AT LEAST 6 INCHES FOR 3–INCH MESH AND AT LEAST 8 INCHES FOR 4–INCH MESH. FASTEN WIRE REINFORCEMENT TOGETHER WITH WIRE TIES AT INTERVALS OF NOT MORE THAN 18 INCHES. AVOID EXCESSIVE WWR LAYERS, THAT MAY CREATE PLANES OF WEAKNESS OR INTERNAL STRESSES.
11. PLACE REINFORCEMENT ABOVE THE SUBSTRATE SURFACE IN A UNIFORM MANNER AS SHOWN ON THE PLANS. TIE THE REINFORCEMENT TO EACH DOWEL BAR AND AT ALL INTERSECTIONS.
12. UNLESS OTHERWISE PERMITTED IN WRITING, DISCONTINUE SHOTCRETING OPERATIONS WHEN THE DESCENDING AIR TEMPERATURE, AWAY FROM ARTIFICIAL HEAT, FALLS TO 40 DEGREES FAHRENHEIT. DO NOT RESUME OPERATIONS UNTIL THE AIR TEMPERATURE, AWAY FROM ARTIFICIAL HEAT, RISES ABOVE 40 DEGREES FAHRENHEIT. DO NOT LET WATER WITH A TEMPERATURE ABOVE 90 DEGREES FAHRENHEIT TO COME IN DIRECT CONTACT WITH THE CEMENT, UNTIL THE CEMENT HAS BEEN MIXED WITH THE AGGREGATES. PLACE SHOTCRETE WHEN THE MIX TEMPERATURE IS BETWEEN 50 DEGREES FAHRENHEIT AND 100 DEGREES FAHRENHEIT. DO NOT USE MATERIALS CONTAINING FROST, LUMPS, OR CRUSTS OF HARDENED MATERIALS. DO NOT PLACE SHOTCRETE ON SURFACES WHICH ARE LESS THAN 40 DEGREES FAHRENHEIT.
13. WHEN THE AIR TEMPERATURE IN THE IMMEDIATE VICINITY OF OPERATION RISES TO 95 DEGREES FAHRENHEIT, TAKE THERMOMETER READINGS OF THE PLASTIC CONCRETE, AT 1/2–HOUR INTERVALS AND AT THE CONCLUSION OF THE MIXING CYCLES. DISCONTINUE SHOTCRETE OPERATIONS IF THE PLASTIC CONCRETE TEMPERATURE EXCEEDS 100 DEGREES FAHRENHEIT AFTER MIXING.
14. ALL SHOTCRETE SHALL BE APPLIED WITHIN 90 MINUTES AFTER ADDITION OF MIX WATER TO THE BATCH FOR WET–MIX SHOTCRETING.
15. APPLY ALL DRY–MIX SHOTCRETE WITHIN 45 MINUTES OF THE FIRST CONTACT OF CEMENT WITH WATER. AGED MATERIALS ARE TO BE DISCARDED AND NOT APPLIED IN THE WORK.
16. PERFORM A PRE–CONSTRUCTION TRIAL TO EVALUATE THE ABILITY OF THE PROPOSED MATERIALS, SHOTCRETE MIXTURE, EQUIPMENT AND CREW TO PRODUCE SHOTCRETE CONFORMING TO THE PROJECT SPECIFICATIONS. ACCEPTANCE OF THE PRE–CONSTRUCTION TRIAL RESULTS IS REQUIRED PRIOR TO APPLICATION OF ANY SHOTCRETE ON THE PROJECT.
17. CONTRACTOR IS RESPONSIBLE FOR FURNISHING THE REQUIRED MOCK–UPS, TEST PANELS AND CORES, LABORATORY TESTING AND FIELD TESTING IN ACCORDANCE WITH THE CONTRACT SPECIAL AND TECHNICAL PROVISIONS.

AS–BUILT PLAN NOTES:

1. COORDINATE THESE DRAWINGS WITH THE PHASE I DRAWINGS TITLED "PARTIAL CONCRETE ENCASEMENT REMOVAL", PREPARED BY GILMORE & ASSOCIATES, INC. ("G&A") ON 07/08/2024, AND ADDITIONAL DRAWINGS TITLED "CONTINGENT TEMPORARY SHIELDING AT SIDEWALK OVERHANG", PREPARED BY G&A, DATED 07/17/2024.
2. FIELD SURVEY WAS COMPLETED BY G&A ON 12/19/2025 AND WAS USED AS A REFERENCE TO PREPARE THESE AS–BUILT DRAWINGS.
3. COORDINATE THESE DRAWINGS WITH DRAWINGS OF OTHER TRADES INCLUDING BUT NOT LIMITED TO THE FOLLOWING:
   a. PECO GAS MAIN RELOCATION AS–BUILT DRAWINGS REF. W.O. NO. 18284729, PREPARED BY PECO, DATED 11/30/2022.
   b. CHAIN–LINK FENCE SHOP DRAWINGS PREPARED BY APEX FENCE, INC.
   c. PEDESTRIAN GUARD RAILING SHOP DRAWINGS PREPARED BY APEX FENCE, INC.
   d. ALL OTHER SUBMITTALS, SHOP DRAWINGS, CALCULATIONS, SUBMISSION DOCUMENTS, ETC., IN CONNECTION WITH THIS PROJECT.
3. THE TABULATION OF APPROXIMATE QUANTITIES IS SHOWN THIS SHEET FOR REFERENCE PURPOSES ONLY.

FRP REPAIR NOTES:

1. CONTRACTOR IS TO VERIFY WORK LIMITS AND REPAIR AREAS IN THE FIELD PRIOR TO CONSTRUCTION.
2. CONTRACTOR IS RESPONSIBLE FOR FURNISHING, DELIVERY, STORAGE, HANDLING, PREPARATION AND INSTALLATION OF THE FRP MATERIALS, PRIMERS, RESINS, PROTECTIVE COATINGS AND APPURTENANCES IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS, REPAIR PLANS AND APPROVED SHOP DRAWINGS AS INCIDENTAL TO THE REPAIRS.
3. FILL ANY SURFACE OUT OF FLATNESS DEPRESSION DEEPER THAN 1/8 INCH OVER A LENGTH OF 12 INCHES WITHIN THE FRP REPAIR LIMITS WITH REPAIR MORTAR SPECIFIED BY THE FRP MANUFACTURER AND APPROVED BY THE ENGINEER.
4. FILL ANY SURFACE VOID IN THE EXISTING CONCRETE WITH A DIAMETER LARGER THAN 1/2 INCH OR A DEPTH GREATER THAN 1/8 INCH WITHIN THE FRP REPAIR LIMITS WITH REPAIR MORTAR SPECIFIED BY THE FRP MANUFACTURER AND APPROVED BY THE ENGINEER.
5. PROVIDE A PROTECTION COATING SYSTEM OF SIMILAR COLOR AS THE SURROUNDING EXISTING CONCRETE AS INCIDENTAL TO THE FRP. THE COATING MUST BE A NON–VAPOR–BARRIER, FLEXIBLE, WATERPROOFING, AND COMPATIBLE WITH THE FRP SYSTEM. SUBMIT MANUFACTURER'S RECOMMENDATIONS, INSTALLATION INSTRUCTIONS, CATALOG CUTS, DATA SHEETS & TECHNICAL INFORMATION FOR REVIEW AND ACCEPTANCE BY THE TOWNSHIP AND ENGINEER.
6. PROVIDE 1/2 INCH MINIMUM CHAMFER OR 1/2 INCH MINIMUM RADIUS ROUNDING AT ALL CONCRETE CORNERS WITHIN FRP REPAIR AREA.
7. UNSOUND AREAS OF THE CONCRETE SUBSTRATE (SUCH AS SPALLS, CRACKS, DELAMINATED AREAS, ETC.) MUST BE REMOVED TO REVEAL SOUND MATERIAL.
8. IF CORROSION OF THE EXISTING STEEL REINFORCEMENT EXISTS, THE STEEL AND CONCRETE MUST BE REPAIRED BEFORE INSTALLATION OF THE FRP. DO NOT COVER DETERIORATED CONCRETE OR CORRODED REINFORCING STEEL WITH FRP.
9. ALL CEMENTITIOUS REPAIR MATERIALS SHOULD BE CURED PRIOR TO INSTALLING FRP OVER THE REPAIR AREA. CEMENTITIOUS REPAIR MATERIALS SHOULD BE WITHIN 85% OF THEIR SPECIFIED COMPRESSIVE STRENGTH PRIOR TO INSTALLING FRP OVER THE REPAIR.
10. CRACKS IN THE CONCRETE SUBSTRATE GREATER THAN 0.010 IN WIDE MUST BE PRESSURE INJECTED WITH EPOXY SPECIFIED BY THE FRP MANUFACTURER AND APPROVED BY THE ENGINEER.
11. FRP – FIELD QUALITY CONTROL
    a. BOND TESTING:
       DIRECT TENSION PULL–OFF TESTING SHALL BE CONDUCTED PER ASTM D 4541 OR THE TEST METHOD DESCRIBED IN ACI 440.3R–04 SECTION L.1.
       DIRECT TENSION PULL–OFF TESTS SHALL BE CONDUCTED UNDER THE FOLLOWING TEST CONDITIONS:
       THE FRP SYSTEM SHALL BE ALLOWED TO CURE A MINIMUM OF 72 HOURS BEFORE EXECUTION OF THE DIRECT TENSION PULL–OFF TEST.
       THE LOCATIONS OF THE PULL–OFF TEST SHALL BE REPRESENTATIVE AND ON FLAT SURFACES. IF POSSIBLE, PULL–OFF TESTS SHALL BE CONDUCTED ON AREAS OF THE FRP SYSTEM SUBJECTED TO RELATIVELY LOW STRESS DURING SERVICE.
    b. TEST FREQUENCY:
       PERFORM A MINIMUM OF ONE DIRECT TENSION PULL–OFF TEST PER 500 SQ. FT. OF INSTALLED FRP (SURFACE AREA).
       PULL–OFF TESTS MUST BE PERFORMED ON EACH TYPE OF CONCRETE SUBSTRATE OR FOR EACH SURFACE PREPARATION TECHNIQUE USED IF VARIATIONS IN SUCH CONDITIONS EXIST.
    c. CONDITIONS OF ACCEPTANCE:
       THE FAILURE MODE MUST BE COHESIVE FAILURE WITHIN THE CONCRETE
       THE TENSILE BOND STRENGTH MUST BE IN EXCESS OF 200 PSI
    d. REPAIR THE TESTED AREAS:
       THE TRAINED FIELD SUPERVISOR SHALL SUBMIT A QUALITY CONTROL REPORT TO THE ENGINEER DESCRIBING THE INSPECTION OF THE COMPLETED INSTALLATION AND DETAILING THE RESULTS OF THE BOND TESTING.
       SUBMIT MANUFACTURER'S PRODUCT DATA SHEETS INDICATING PHYSICAL, MECHANICAL, AND CHEMICAL CHARACTERISTICS OF ALL MATERIALS USED IN THE FRP SYSTEM.
       SUBMIT TENSILE PROPERTIES OF THE COMPOSITE MATERIAL AS DETERMINED BY TENSILE TESTING IN ACCORDANCE WITH ASTM D3039. ULTIMATE TENSILE STRENGTH AND RUPTURE STRAIN VALUES SHALL BE DETERMINED BY SUBTRACTING THREE (3) STANDARD DEVIATIONS FROM THE AVERAGE VALUES OF TWENTY (20) OR MORE TENSILE TESTS.
       SUBMIT INSTALLATION INSTRUCTIONS, MAINTENANCE INSTRUCTIONS, AND GENERAL RECOMMENDATIONS REGARDING EACH MATERIAL TO BE USED.
       SUBMIT A QUALITY CONTROL PLAN INDICATING THE TESTING THAT WILL BE PERFORMED AND IDENTIFYING THE PARTY OR PARTIES RESPONSIBLE FOR THIS TESTING.
       SUBMIT SHOP DRAWINGS DETAILING THE TYPE, LOCATIONS, DIMENSIONS, LAP DIMENSIONS, NUMBER OF LAYERS, ORIENTATIONS AND TERMINATION DETAILS OF ALL FRP MATERIALS TO BE INSTALLED.
       SUBMIT SHOP DRAWINGS DETAILING THE TYPE, LOCATIONS, DIMENSIONS, LAP DIMENSIONS, NUMBER OF LAYERS, ORIENTATIONS AND TERMINATION DETAILS OF ALL CFRP MATERIALS TO BE INSTALLED.

SUPPLEMENTAL DRAWINGS

DESCRIPTION	DWG. NO.	RECM'D. DATE
TYPICAL WATERPROOFING AND EXPANSION DETAILS	BC–788M	11–23–2024
BEARINGS	BC–755M	01–31–2019
BRIDGE DRAINAGE	BC–751M	01–31–2019
REINFORCEMENT BAR FABRICATION DETAILS	BC–736M	11–23–2022
WALL CONSTRUCTION & EXPANSION JOINT DETAILS	BC–735M	09–30–2016
DEWATERING DEVICES	RC–75M	06–01–2010
CHANNEL AND SLOPE PROTECTION	RC–73M	02–08–2019
PERIMETER CONTROL DEVICES	RC–70M	02–08–2019
CURB RAMPS AND SIDEWALKS	RC–67M	02–19–2021
SUBSURFACE DRAINS	RC–30M	11–30–2021
PAVEMENT RELIEF JOINT	RC–24M	02–19–2021
BRIDGE APPROACH SLABS	RC–23M	02–08–2019
BACKFILL AT STRUCTURES	RC–12M	02–08–2019
CLASSIFICATION OF EARTHWORK FOR STRUCTURES	RC–11M	06–01–2010

TABULATIONS OF APPROXIMATE QUANTITIES

ITEM	DESCRIPTION	QUANTITY (2)	UNIT
	BASE BID ITEMS		
0201-0001	CLEARING AND GRUBBING	1	LS
0203-0001	CLASS 1 EXCAVATION	160	CY
0204-0100	CLASS 3 EXCAVATION	65	CY
0205-0292	STRUCTURE BACKFILL	60	CY
0212-0014	GEOTEXTILE, CLASS 4, TYPE A	65	SY
0313-0424	SUPERPAVE ASPHALT MIXTURE DESIGN, BASE COURSE, PG 64S-22, 0.3 TO < 3 MILLION ESALS, 25.0 MM MIX, 5" DEPTH	65	SY
0350-0106	SUBBASE 6" DEPTH (NO. 2A)	65	SY
0413-0248	SUPERPAVE ASPHALT MIXTURE DESIGN, WEARING COURSE, PG 64S-22, 0.3 TO < 3 MILLION ESALS 9.5 MM FG MIX, 1 1/2" DEPTH, SRL-L	1100	SY
0413-6045	SUPERPAVE ASPHALT MIXTURE DESIGN, BINDER COURSE, PG 64S-22, 0.3 TO < 3 MILLION ESALS 19.0 MM MIX, 2 1/2" DEPTH	65	SY
0460-0001	ASPHALT TACK COAT	1100	SY
0461-0001	ASPHALT PRIME COAT	65	SY
0491-0012	MILLING OF ASPHALT PAVEMENT SURFACE, 1 1/2" DEPTH, MILLED MATERIAL RETAINED BY CONTRACTOR	1100	SY
0608-0001	MOBILIZATION	1	LS
4620-0500	RESET GUIDE RAIL, MODIFIED (7)	88	LF
0630-0035	PLAIN CEMENT CONCRETE CURB, 6" HEIGHT, INCLUDING REMOVAL OF EXISTING CURB	83	LF
4676-0001	CEMENT CONCRETE SIDEWALK, MODIFIED	20	SY
0680-0120	MEMBRANE WATERPROOFING SYSTEM INSTALLED ON BRIDGE DECK	40	SY
0686-0060	CONSTRUCTION SURVEYING, TYPE D, MODIFIED	1	LS
0698-0001	POST-INSTALLED CONCRETE ANCHORS, PERMANENT	8	EA
0698-0002	POST-INSTALLED CONCRETE ANCHORS, PERMANENT (11)	8	EA
0703-0025	NO. 57 COARSE AGGREGATE (1)	50	CY
0962-1005	4" YELLOW WATERBORNE PAVEMENT MARKINGS	1000	LF
1001-0611	6" STRUCTURE FOUNDATION DRAIN	250	LF
(1)	6" PVC PIPE (SCHEDULE 40)	250	LF
1001-1000	CLASS AAAP CEMENT CONCRETE	20	CY
1001-1080	CLASS AA CEMENT CONCRETE (3)	10	CY
1001-1120	CLASS A CEMENT CONCRETE (3)	100	CY
1002-0052	REINFORCEMENT BARS, EPOXY COATED	14500	LB
5003-0004	DOWEL HOLES, 10" DEPTH, MODIFIED (9)	1400	EA
5003-0005	DOWEL HOLES, 12" DEPTH, MODIFIED (9)	200	EA
5012-0001	PEDESTRIAN RAILING, MODIFIED	90	LF
1016-0005	BARRIER PROTECTIVE FENCE, STEEL (6)	400	LF
1018-0048	REMOVAL OF PORTION OF EXISTING BRIDGE (5)	1	LS
1050-0020	FABRICATED STRUCTURAL STEEL (8)	1030	LB
1050-0025	FABRICATED STRUCTURAL STEEL (8) (11)	330	LB
1050-0085	LAMINATED NEOPRENE BEARING PAD (4)	5	EA
1072-0100	CONTAINMENT	1	LS
1072-0200	WASTE MANAGEMENT	1	LS
1072-0300	WORKER HEALTH AND SAFETY	1	LS
9000-0010	RESTORATION OF AREAS DISTURBED DURING CONSTRUCTION	1	LS
9000-0020	FURNISH AND INSTALL ~~GLASS~~ FIBER REINFORCED POLYMER ~~(GFRP)~~ WRAP CARBON CFRP	1700	SF
9000-0030	TOPSOIL, SEED AND MULCH, FURNISHED AND PLACED	1	LS
9000-0040	PECO GAS MAIN	1	LS
9000-0050	TEMPORARY SUPPORT AND JACKING OF BRIDGE SUPERSTRUCTURE (10)	1	LS
9000-0060	CONTINGENT TYPE 2 CONCRETE REPAIRS	100	SF
9000-0070	CONTINGENT CLASS AA CEMENT CONCRETE BACKWALL	15	CY
9000-0080	CONTINGENT MEMBRANE WATERPROOFING SYSTEM INSTALLED ON OTHER SURFACES	60	SY
9000-0090	EROSION AND SEDIMENT CONTROLS	1	LS
9901-0100	RAILROAD COORDINATION AND PROTECTIVE SERVICES	1	LS
	ADD-ALTERNATE ITEMS		
0620-0400	TERMINAL SECTION, SINGLE	1	EA
0620-1600	TYPE 31-S GUIDE RAIL	88	LF
0620-1635	TYPE 31-SCC GUIDE RAIL	32	LF
9000-0110	REMOVAL OF EXISTING TERMINAL SECTION, SINGLE	4	EA

1 CLASS 1 GEOTEXTILE IS INCIDENTAL TO THIS ITEM.
2 QUANTITIES SHOWN ARE ESTIMATED.
3 CONTRACTOR MAY ELECT TO USE SHOTCRETE IN LIEU OF CLASS A CEMENT CONCRETE FOR ABUTMENT REPAIRS WHERE INDICATED ON THE DRAWINGS AND IN ACCORDANCE WITH THE PROJECT SPECIAL PROVISIONS.
4 INCLUDES ONE (1) TEST PAD.
5 REMOVAL OF EXISTING TIMBER RETAINING WALL AND FENCE, DETERIORATED METAL GUARD RAILING, CONCRETE ENCASEMENT, BEARINGS AND APPURTENANCES, SPOT PAINTING OF GIRDER, AND CLEANING AND PREPARATION OF BRIDGE SEAT AND ABUTMENT SURFACES ARE INCIDENTAL TO THIS ITEM. SEE PROJECT SPECIFICATIONS FOR MORE INFORMATION.
6 INCLUDES MODIFICATION OF EXISTING FENCES.
7 INCLUDES REMOVAL, REINSTALLATION AND/OR REPLACEMENT OF SEVEN (7) TERMINAL SECTION, SINGLES
8 INCLUDES SPOT PAINTING OF EXISTING STRUCTURAL STEEL WHERE INDICATED ON THE DRAWINGS.
9 FURNISHING AND INSTALLATION OF DOWEL REINFORCEMENT AS INDICATED ON THE DRAWINGS IS INCIDENTAL TO THIS ITEM.
10 SEE SPECIAL PROVISIONS FOR FURTHER INFORMATION.
11 SEE SHEET 10 OF 14 FOR ADDITIONAL INFORMATION.

AS-BUILT

GILMORE & ASSOCIATES, INC.
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508 CORPORATE DRIVE WEST, LANSHORNE, PA 19047 • (215) 369-3955 • www.gilmore-assoc.com

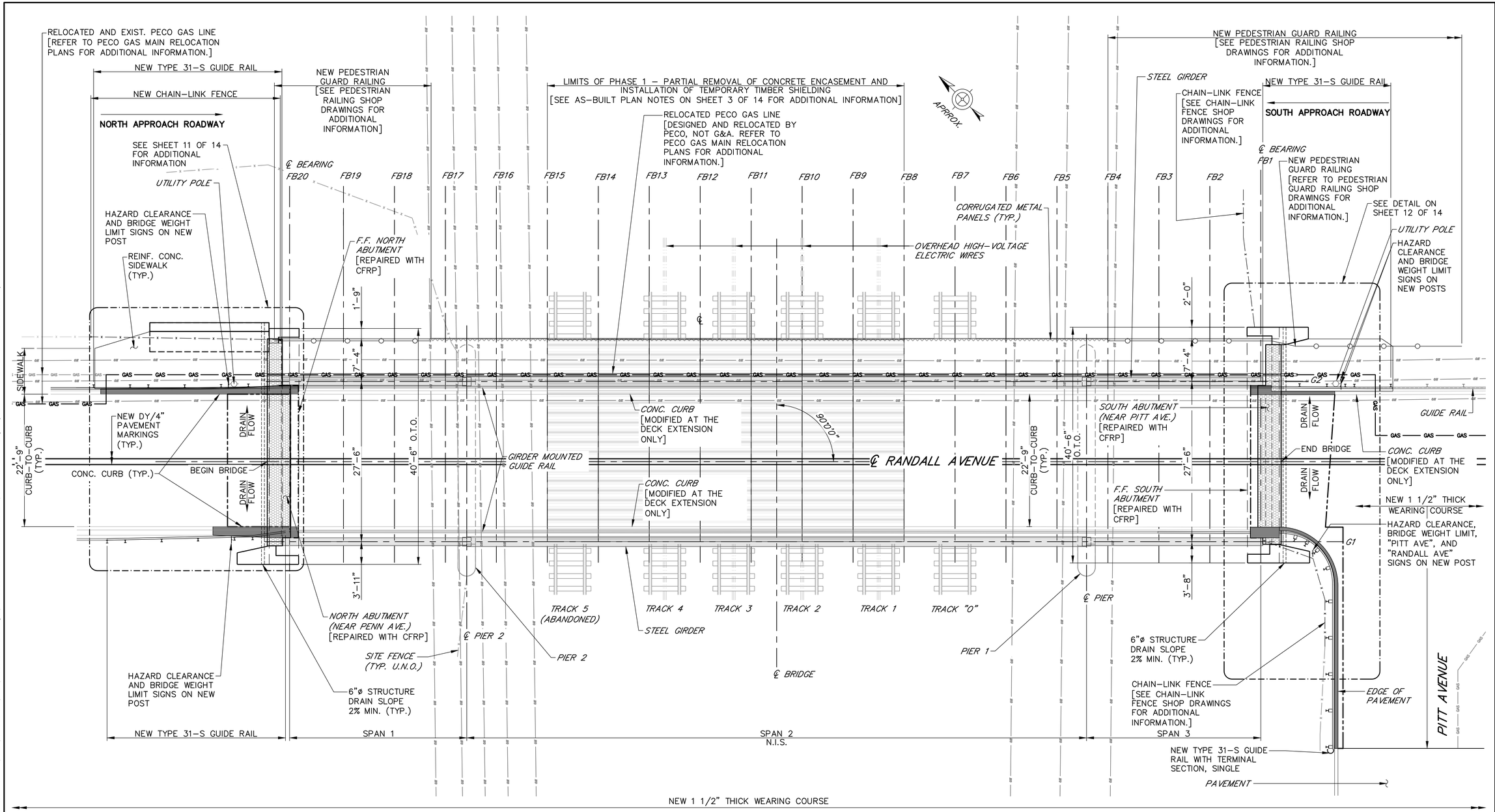
JOB NO.: 13O3057.01 | TAX MAP PARCEL NO.: N/A
MUNICIPAL FILE NO.: – | DESIGNED BY: JDB | DRAWN BY: RMM | CHECKED BY: RCJ

CLIENT: BRISTOL TOWNSHIP, 2501 BATH ROAD, BRISTOL, PA 19007, PHONE: 215–785–0500
TOTAL AREA: – | TOTAL LOTS: – | SCALE: AS NOTED | DATE: 03/27/2026

ABUTMENT REPAIRS
GENERAL NOTES & QUANTITIES
RANDALL AVENUE BRIDGE PHASE II
BRISTOL TOWNSHIP, BUCKS COUNTY, PENNSYLVANIA

REV.	DESCRIPTION	DATE	BY

SHEET NO.: 3 OF 14



LEGEND

APPROX.	=	APPROXIMATE	MAX.	=	MAXIMUM	SITE FENCE
B.O.	=	BOTTOM OF	MFG.	=	MANUFACTURER	CORRUGATED METAL PANELS
BOTT.	=	BOTTOM	MIN.	=	MINIMUM	PECO GAS LINE
C.C.	=	CENTER TO CENTER	N.I.S.	=	NOT IN SCOPE	OVERHEAD UTILITY LINE
CJ	=	CONSTRUCTION JOINT	R.C.C	=	REINFORCED CEMENT CONCRETE	
CL.	=	CLEAR	REINF.	=	REINFORCEMENT	FB# ℄ FLOORBEAM #
CONC.	=	CONCRETE	R.F.	=	REAR FACE	G# ℄ GIRDER #
EMB.	=	EMBEDMENT	SPA.	=	SPACING	OVERHEAD HIGH–VOLTAGE ELECTRIC WIRES
EQ.	=	EQUAL	S.S.	=	STAINLESS STEEL	LIMITS OF NEW PAVEMENT
EXIST.	=	EXISTING	T.C.	=	TOP OF	RELOCATED PECO GAS LINE
EXISTING	=	*ITALIC TEXT*	TYP.	=	TYPICAL	SIGN
EXP.	=	EXPANSION	U.N.O.	=	UNLESS NOTED OTHERWISE	
E.F.	=	EACH FACE	DY/4"	=	DOUBLE YELLOW PAVEMENT MARKINGS	DECK EXTENSION
F.F.	=	FRONT FACE				
FIN. GR.	=	FINISHED GRADE				PHASE I – PARTIAL REMOVAL OF CONCRETE ENCASEMENT AND INSTALLATION OF TEMPORARY TIMBER SHIELDING
FIN.	=	FINISH				
FTG.	=	FOOTING				
CFRP	=	CARBON FIBER REINFORCED POLYMER				
H.D.G.	=	HOT–DIP GALVANIZED				
JT.	=	JOINT				

GENERAL PLAN

SCALE: 1/8" = 1'–0"

AS-BUILT

GILMORE & ASSOCIATES, INC.
ENGINEERING & CONSULTING SERVICES
508 CORPORATE DRIVE WEST | LANGHORNE, PA 19047 • (215) 369-3555 • www.gilmore-assoc.com

JOB NO.: 13O3057.01
MUNICIPAL FILE NO.: –
TAX MAP PARCEL NO.: N/A
DESIGNED BY: JDB
DRAWN BY: RMM
CHECKED BY: RCJ

CLIENT: BRISTOL TOWNSHIP, 2501 BATH ROAD, BRISTOL, PA 19007, PHONE: 215–785–0500
TOTAL AREA: –
TOTAL LOTS: –
SCALE: AS NOTED
DATE: 03/27/2026

ABUTMENT REPAIRS

GENERAL PLAN

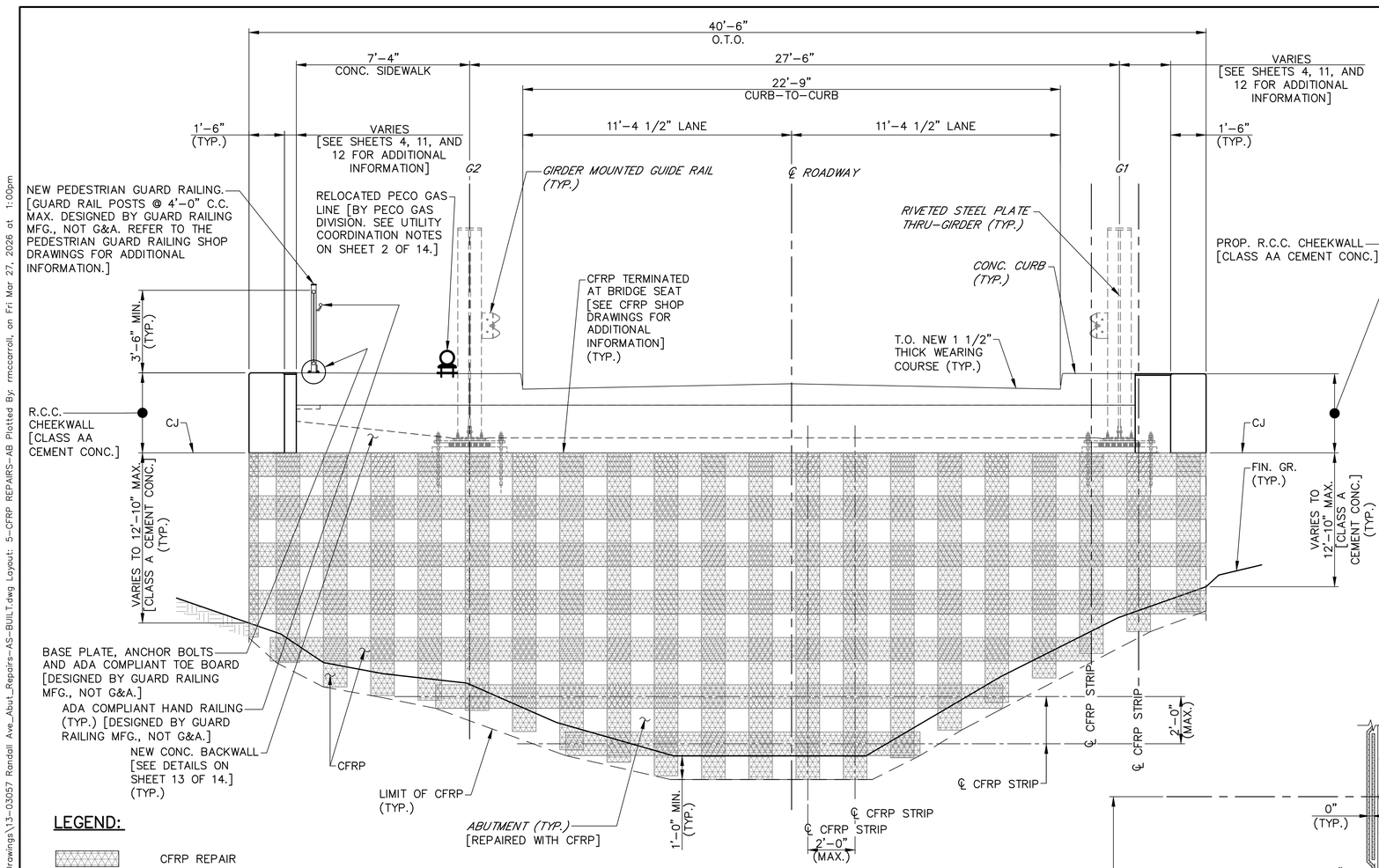
RANDALL AVENUE BRIDGE PHASE II

BRISTOL TOWNSHIP, BUCKS COUNTY, PENNSYLVANIA

REV.	DESCRIPTION	DATE	BY

SHEET NO.: 4 OF 14

P:\STRUCTURAL\PROJECTS\2013\13O3057O1 – Randall Ave Bridge Abutment Repairs\7.1 DESIGN\CAD\Production Drawings\13–03057 Randall Ave_Abut_Repairs–AS–BUILT.dwg Layout: 4–GENERAL PLAN–AB Plotted By: rmccarroll, on Fri Mar 27, 2026 at 1:00pm



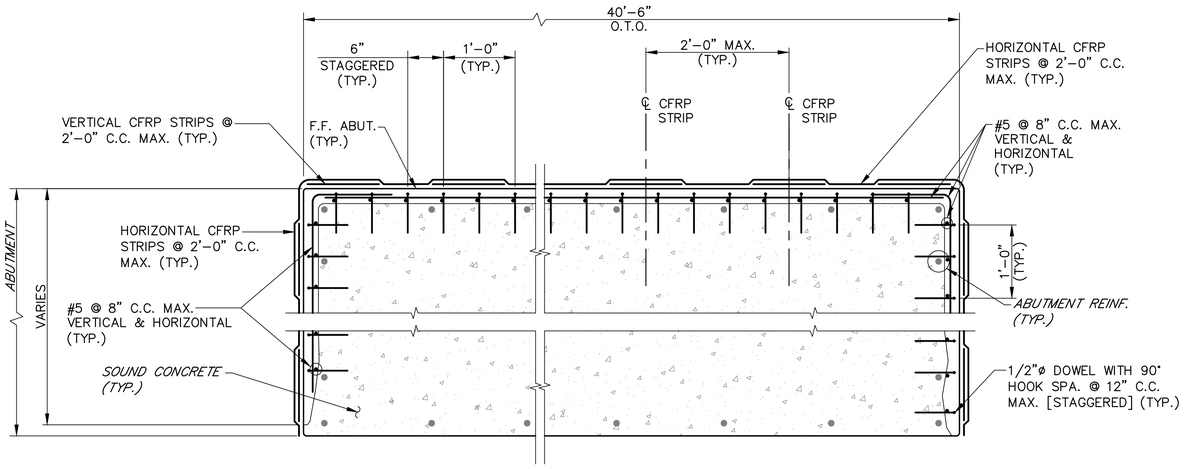
LEGEND:

CFRP REPAIR

ELEVATION – REPAIRED REINFORCED CONCRETE ABUTMENT WITH CFRP WRAP

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

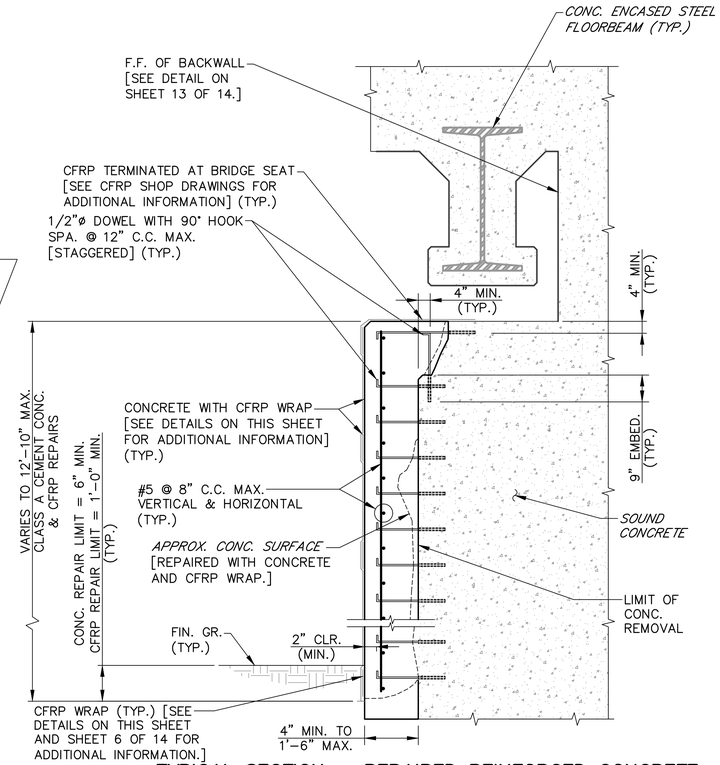
[SOUTH ABUTMENT SHOWN FOR ILLUSTRATION PURPOSES ONLY. NORTH ABUTMENT IS SIMILAR.]



PLAN – REPAIRED REINFORCED CONCRETE ABUTMENT WITH CFRP WRAP

NOT TO SCALE

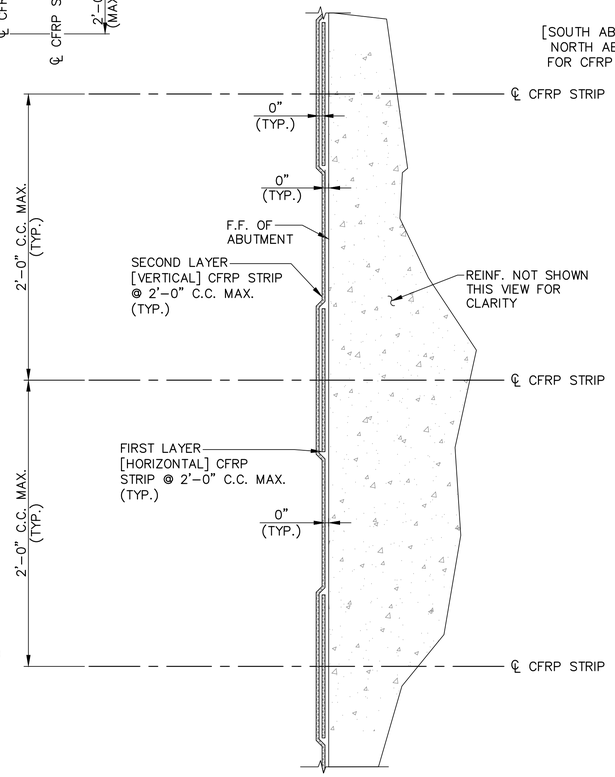
[SOUTH ABUTMENT IS SHOWN. NORTH ABUTMENT IS SIMILAR. REFER TO CFRP SHOP DRAWINGS FOR CFRP TERMINATION DETAILS.]



TYPICAL SECTION – REPAIRED REINFORCED CONCRETE ABUTMENT WITH CFRP WRAP

NO SCALE

[SOUTH ABUTMENT IS SHOWN FOR ILLUSTRATION PURPOSES ONLY. NORTH ABUTMENT IS SIMILAR. REFER TO CFRP SHOP DRAWINGS FOR CFRP TERMINATION DETAILS AND ADDITIONAL INFORMATION.]



TYPICAL CFRP DETAIL

NO SCALE

[SEE CFRP SHOP DRAWINGS FOR ADDITIONAL INFORMATION.]

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JOB NO.: 13030357.01
TAX MAP PARCEL NO.: N/A
MUNICIPAL FILE NO.: –
DESIGNED BY: JDB
DRAWN BY: RMM
CHECKED BY: RCJ

CLIENT: BRISTOL TOWNSHIP 2501 HAVILAND RD BRISTOL, PA 19007 PHONE: 215-785-0500
TOTAL AREA: –
TOTAL LOTS: –
DATE: 03/27/2026
SCALE: AS NOTED

ABUTMENT REPAIRS

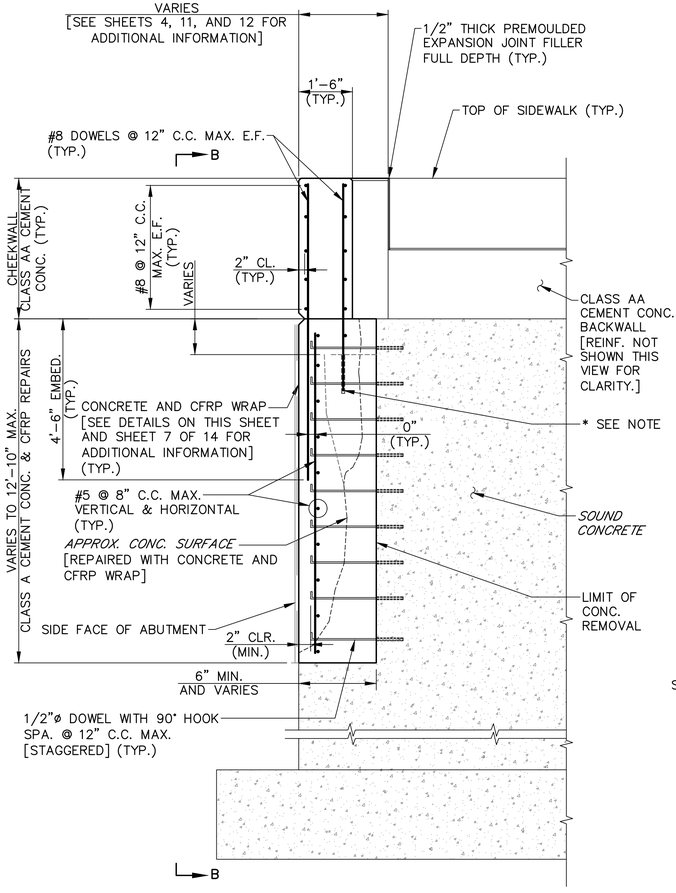
ABUTMENT REPAIR DETAILS

RANDALL AVENUE BRIDGE PHASE II

BRISTOL TOWNSHIP, BUCKS COUNTY, PENNSYLVANIA

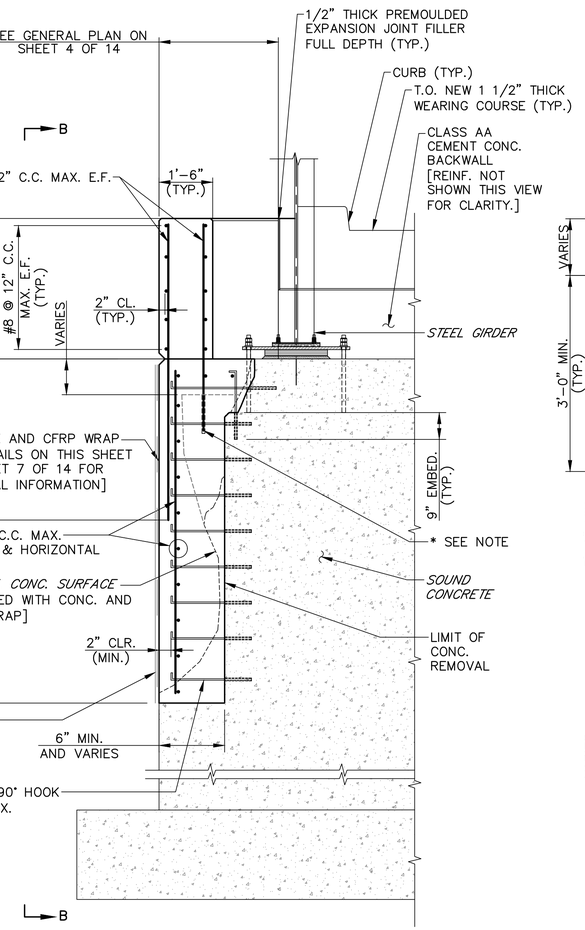
REV.	DESCRIPTION	DATE	BY

SHEET NO.: 5 OF 14



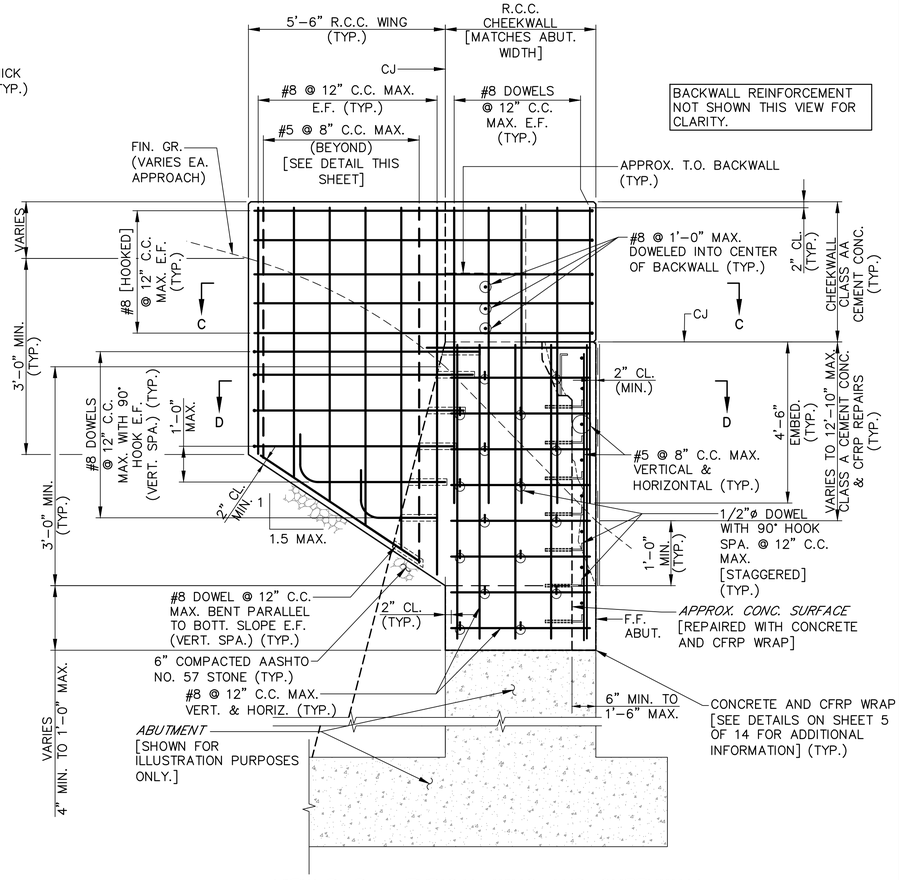
TYPICAL ELEVATION – CHEEKWALL ADJACENT TO SIDEWALK

NO SCALE



TYPICAL ELEVATION – CHEEKWALL ADJACENT TO CURB

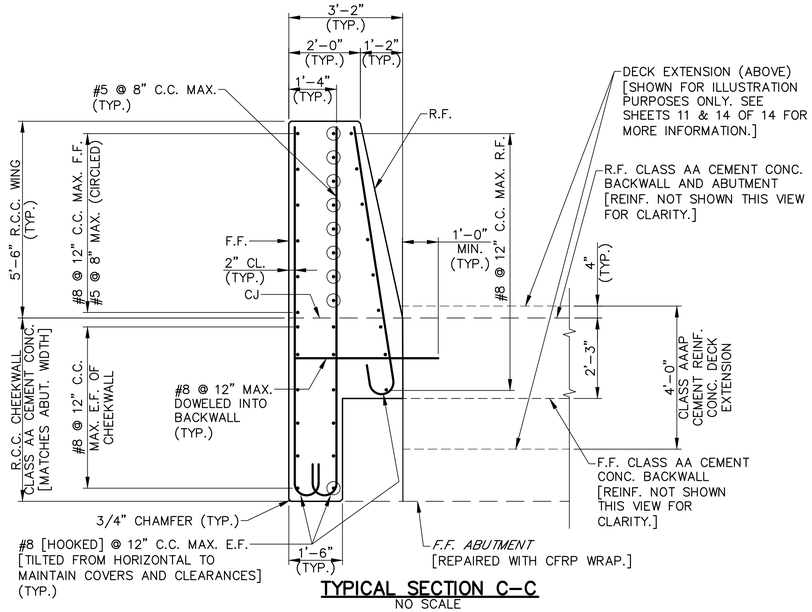
NO SCALE



VIEW B–B – TYPICAL WING AND CHEEKWALL

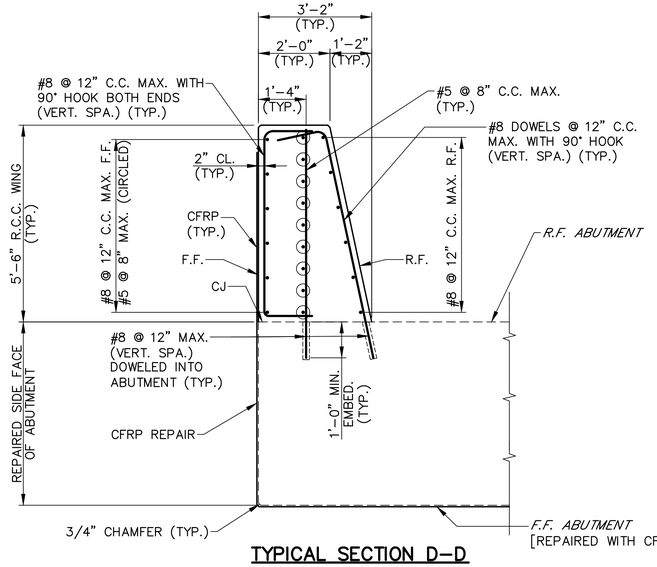
NO SCALE

[THIS VIEW IS TYPICAL FOR ALL NEW WINGS AND CHEEKWALLS EXCEPT FOR THE SOUTHWEST AND NORTHEAST CORNER. SEE SHEETS 7–9 OF 14 FOR SOUTHWEST AND NORTHEAST WING DETAILS.]



TYPICAL SECTION C–C

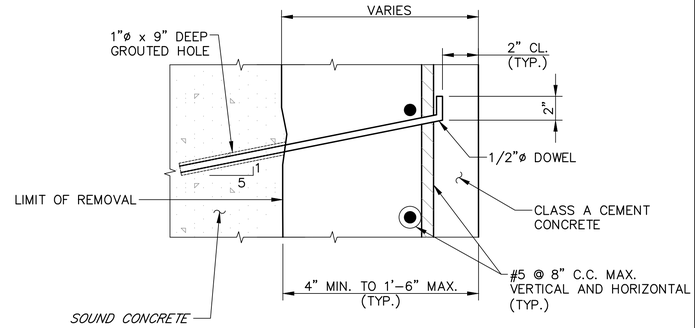
NO SCALE



TYPICAL SECTION D–D

NO SCALE

[ABUTMENT REPAIRS NOT SHOWN FOR CLARITY.]



TYPICAL DOWEL

NO SCALE

* SOUND CONCRETE ENCOUNTERED LESS THAN 1'–6" FROM THE VERTICAL FACES OF THE EXISTING ABUTMENT CONTAINS #8 VERTICAL OR HOOKED DOWELS @ 12" C.C. MAX. WITH 1'–0" MIN. EMBEDMENT INTO THE SOUND CONCRETE. DOWEL LENGTHS AND TYPES MAY VARY. SOUND CONCRETE MORE THAN 1'–6" FROM THE VERTICAL FACES OF THE EXISTING ABUTMENT CONTAINS #8 VERTICAL BARS @ 12" C.C. MAX. E.F. AND #5 HORIZONTAL BARS @ 8" C.C. MAX. E.F.

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CLIENT:
BRISTOL TOWNSHIP
2501 HAY ROAD
BRISTOL, PA 19007
PHONE: 215-785-0500

TOTAL AREA: –	TOTAL LOTS: –
DATE: 03/27/2026	SCALE: AS NOTED
DESIGNED BY: JDB	DRAWN BY: RMM
CHECKED BY: RCJ	
JOB NO.: 13030357.01	TAX MAP PARCEL NO.: N/A
MUNICIPAL FILE NO.: –	

ABUTMENT REPAIRS

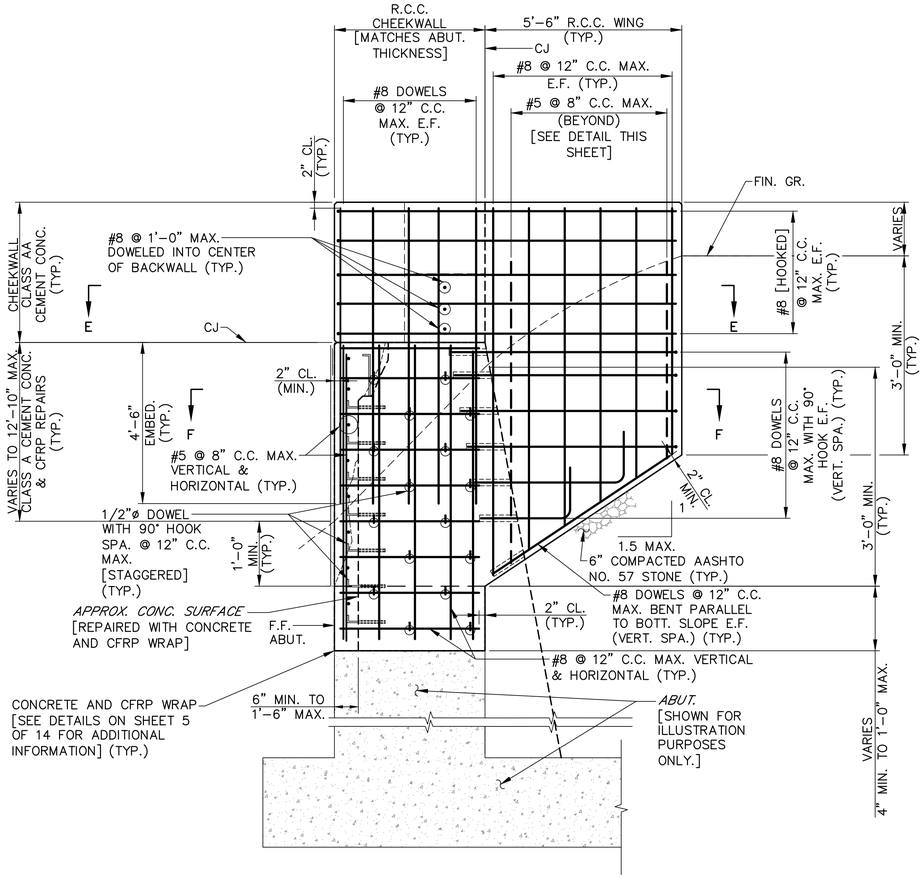
TYPICAL WING AND CHEEKWALL DETAILS

RANDALL AVENUE BRIDGE
PHASE II

BRISTOL TOWNSHIP, BUCKS COUNTY, PENNSYLVANIA

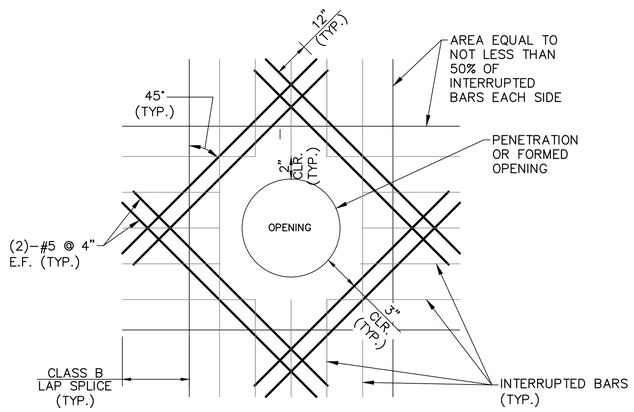
REV.	DESCRIPTION	DATE	BY

SHEET NO.:
6 OF 14



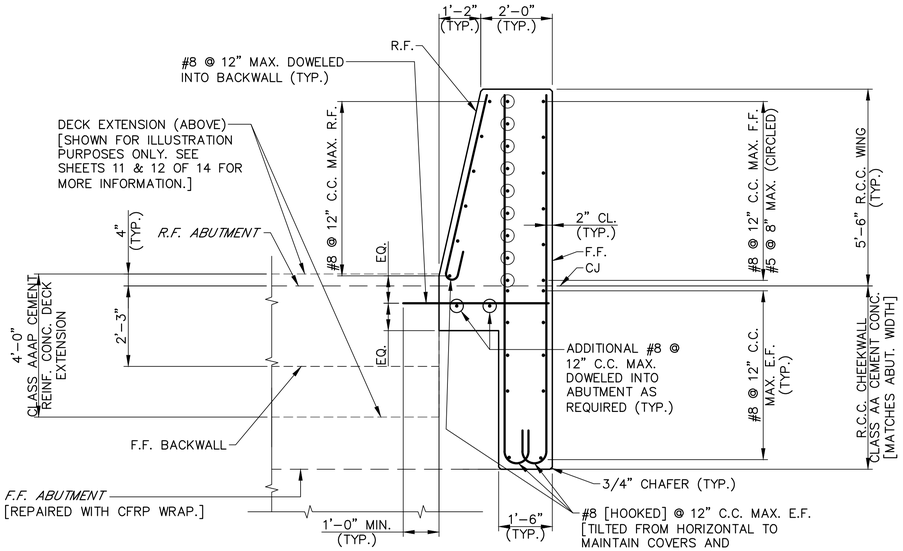
ELEVATION – SOUTHWEST WING AND CHEEKWALL

NO SCALE



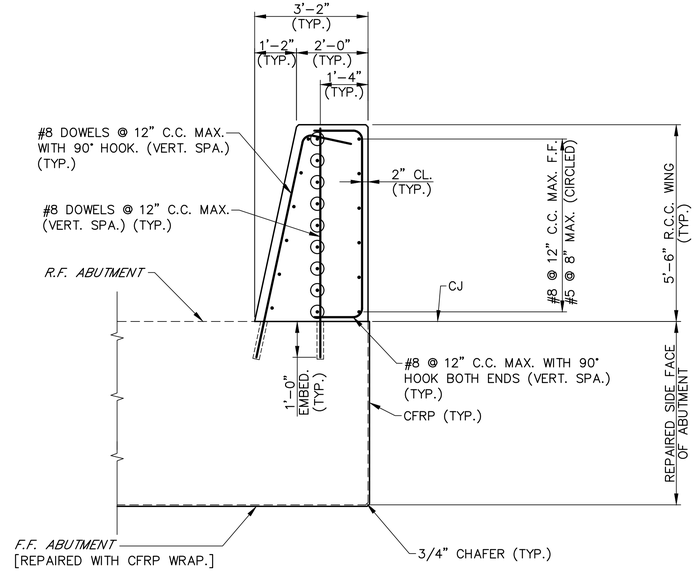
ADDITIONAL REINFORCING AT CIRCULAR OPENINGS

NO SCALE



TYPICAL SECTION E–E

NO SCALE



TYPICAL SECTION F–F

NO SCALE

[ABUTMENT REPAIRS NOT SHOWN FOR CLARITY]

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JOB NO.: 13030357.01
TAX MAP PARCEL NO.: N/A
MUNICIPAL FILE NO.: –
DESIGNED BY: JDB
DRAWN BY: RMM
CHECKED BY: RCJ

CLIENT:
BRISTOL TOWNSHIP
2501 BATH ROAD
BRISTOL, PA 19007
PHONE: 215-785-0500

TOTAL AREA: –
TOTAL LOTS: –
SCALE: AS NOTED
DATE: 03/27/2026

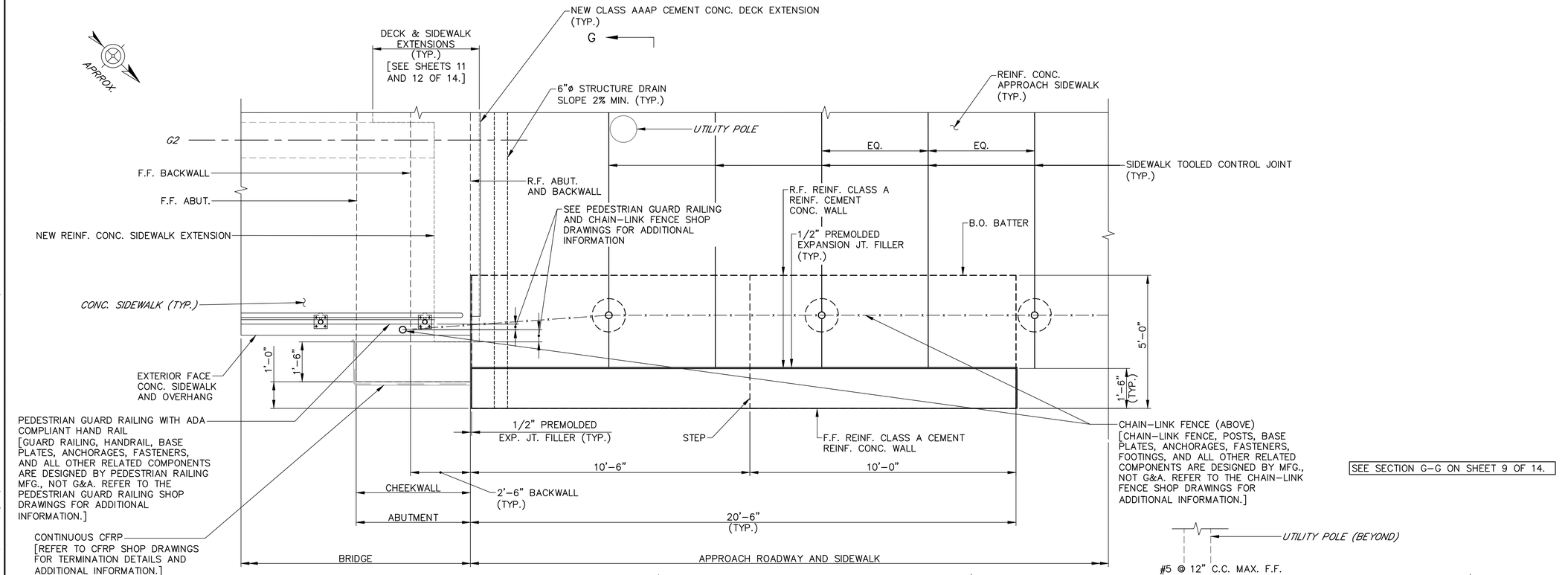
ABUTMENT REPAIRS

SOUTHWEST WING & CHEEKWALL DETAILS

RANDALL AVENUE BRIDGE
PHASE II
BRISTOL TOWNSHIP, BUCKS COUNTY, PENNSYLVANIA

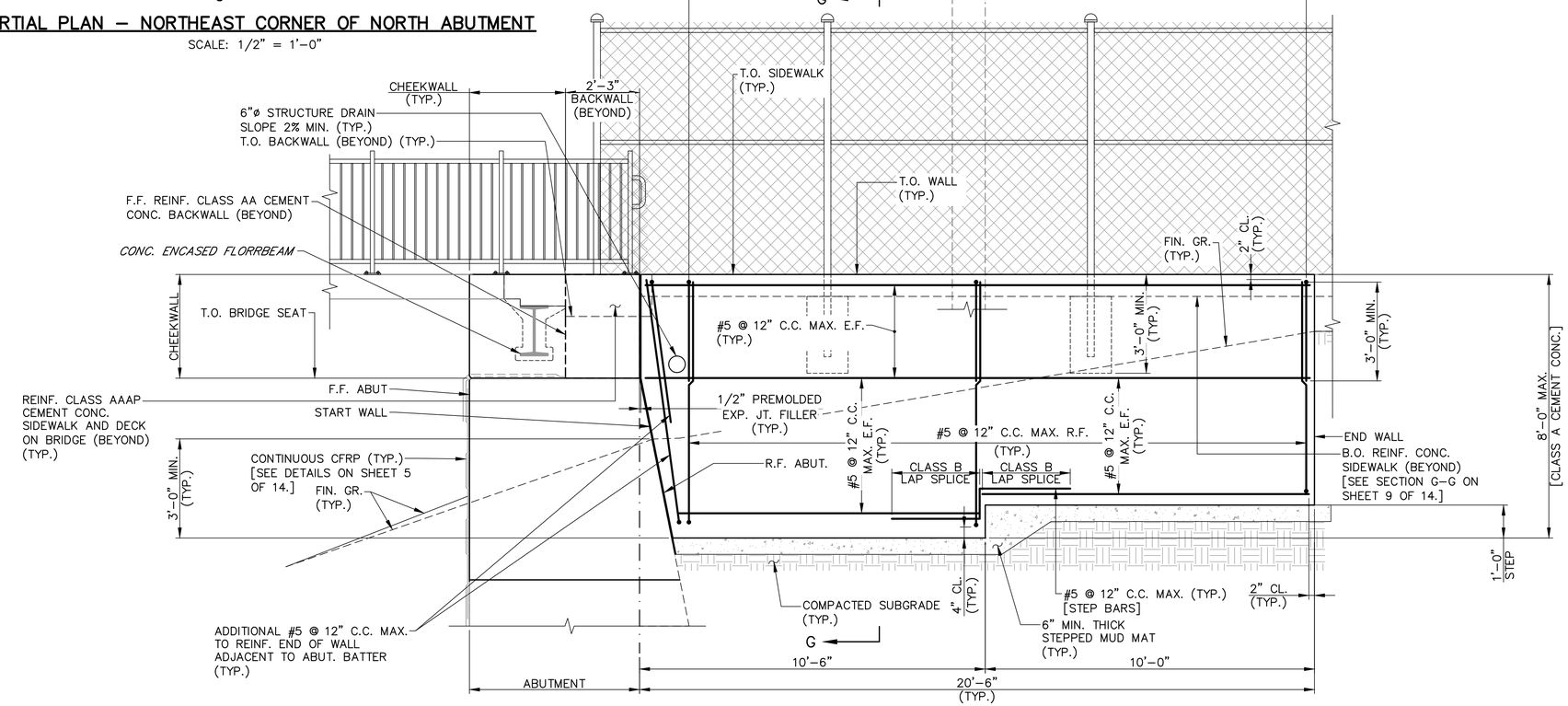
REV.	DESCRIPTION	DATE	BY

SHEET NO.:
7 OF 14



PARTIAL PLAN – NORTHEAST CORNER OF NORTH ABUTMENT

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



PARTIAL ELEVATION – NORTHEAST CORNER OF NORTH ABUTMENT

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

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JOB NO.: 13O3057.01
MUNICIPAL FILE NO.: –
TAX MAP PARCEL NO.: N/A
DESIGNED BY: JDB
DRAWN BY: RMM
CHECKED BY: RCJ

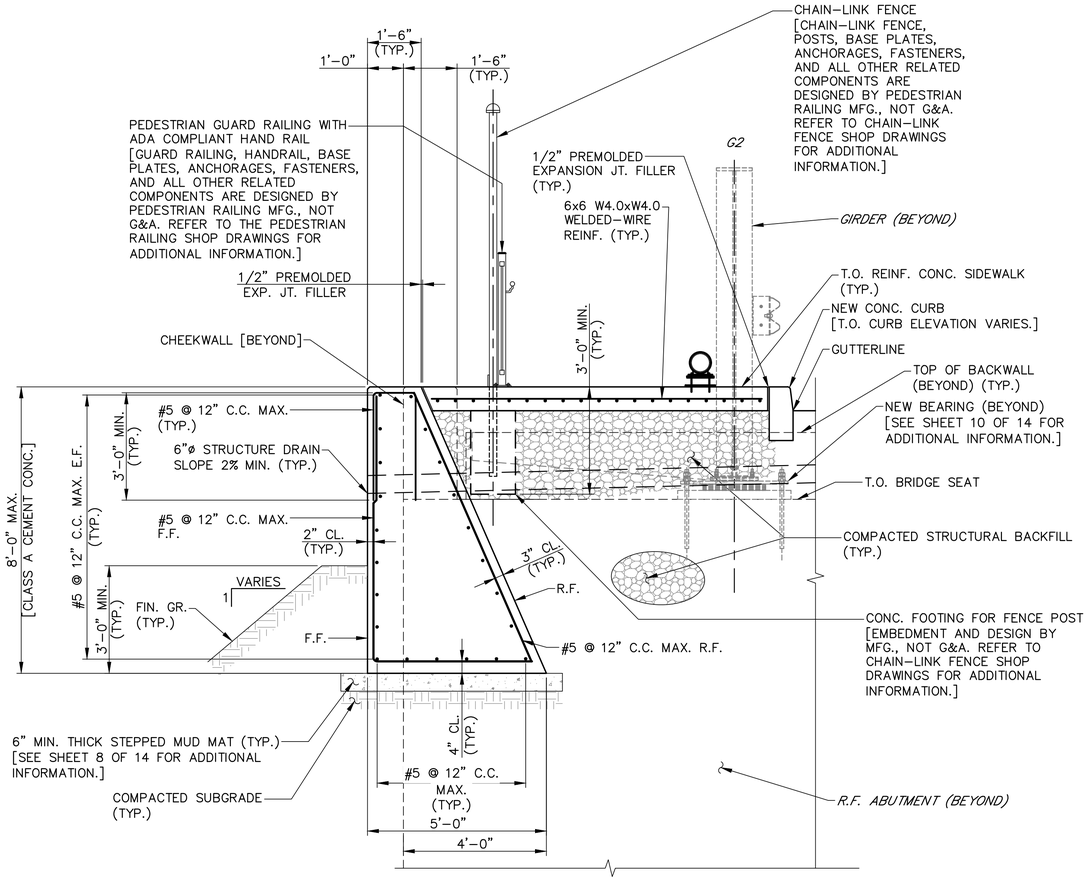
CLIENT: BRISTOL TOWNSHIP 2501 BATH ROAD BRISTOL, PA 19007 PHONE: 215-785-0500
TOTAL AREA: –
TOTAL LOTS: –
DATE: 03/27/2026
SCALE: AS NOTED

ABUTMENT REPAIRS
NORTHEAST REINF. CONC. WALL PLAN & LONGITUDINAL SECTION
RANDALL AVENUE BRIDGE PHASE II
BRISTOL TOWNSHIP, BUCKS COUNTY, PENNSYLVANIA

REV.	DESCRIPTION	DATE	BY

SHEET NO.: 8 OF 14

P:\STRUCTURAL\PROJECTS\2013\13O305701 – Randall Ave Bridge Abutment Repairs\7.1 DESIGN\CAD\Production Drawings\13-03057 Randall Ave_Abut_Repairs\but_RepairsV0.dwg Layout: 8_NE WALL PLAN AND ELEVATION Plotted By: rmccarroll, on Fri Mar 27, 2026 at 1:01pm



SECTION G-G

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

[LOWER STEP IS SHOWN. UPPER STEP IS SIMILAR.]

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JOB NO.: 13030357.01
TAX MAP PARCEL NO.: N/A
MUNICIPAL FILE NO.: –
DESIGNED BY: JDB
DRAWN BY: RMM
CHECKED BY: RCJ

CLIENT:
BRISTOL TOWNSHIP
2501 BATH ROAD
BRISTOL, PA 19007
PHONE: 215-785-0500

TOTAL AREA: –
TOTAL LOTS: –
SCALE: AS NOTED
DATE: 03/27/2026

ABUTMENT REPAIRS

SECTION G-G

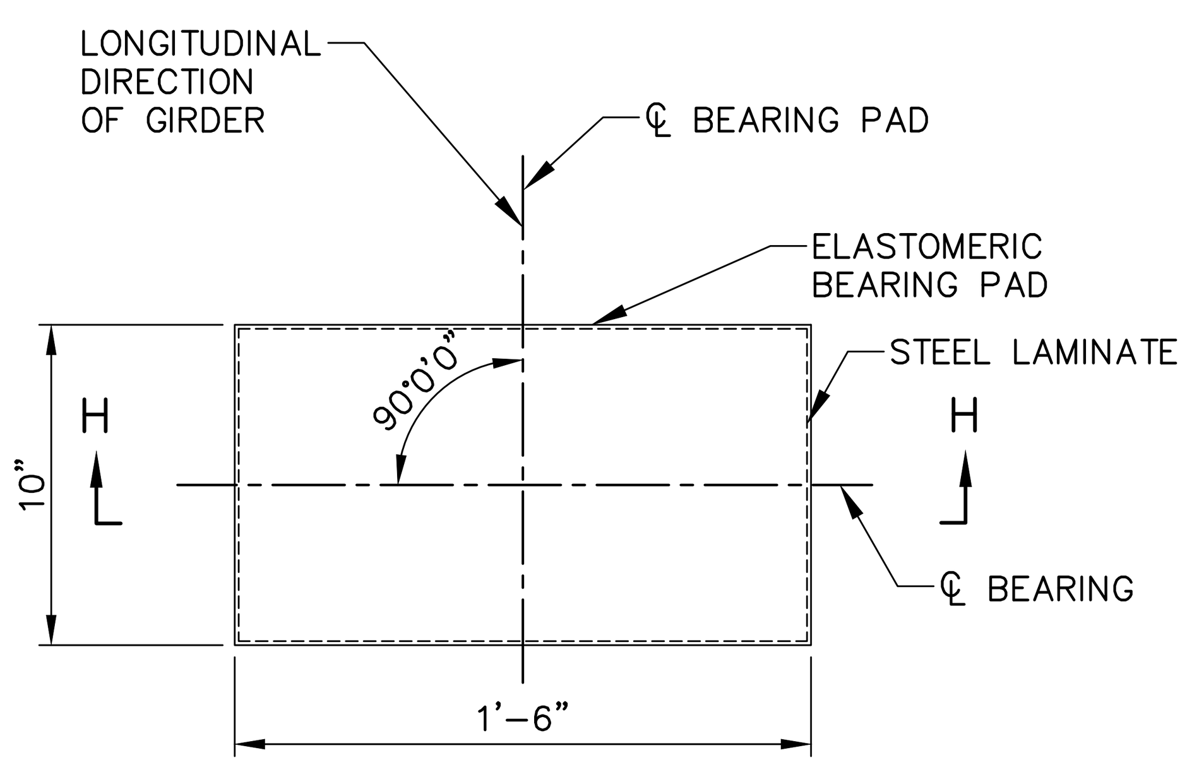
RANDALL AVENUE BRIDGE
PHASE II
BRISTOL TOWNSHIP, BUCKS COUNTY, PENNSYLVANIA

REV.	DESCRIPTION	DATE	BY

SHEET NO.:
9 OF 14

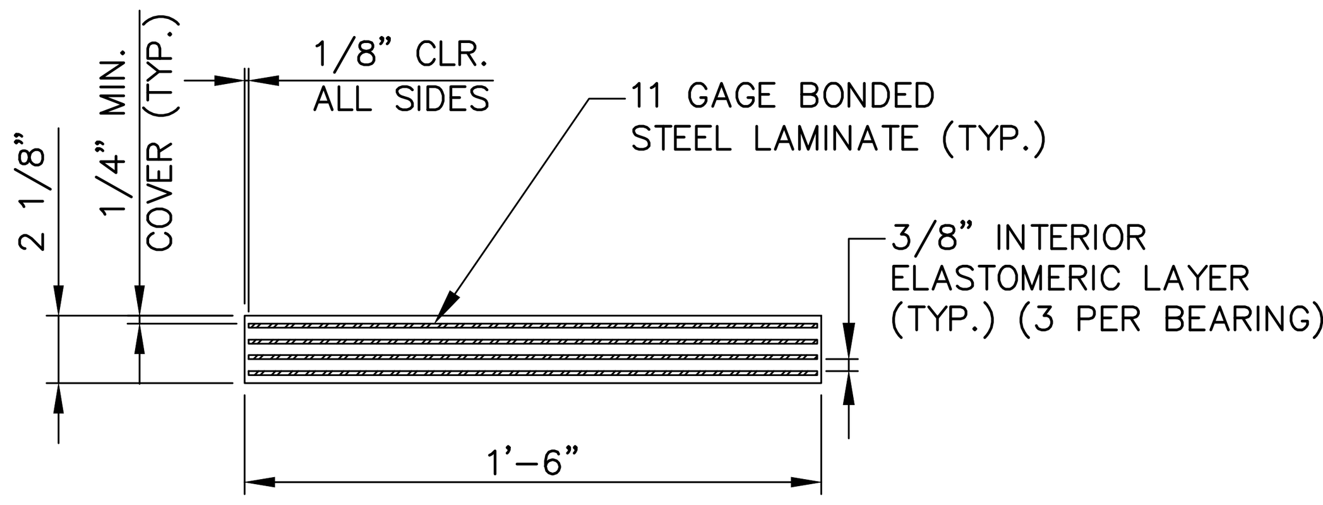
P:\STRUCTURAL\PROJECTS\2013\13030570l - Randall Ave Bridge Abutment Repairs\7.1 DESIGN\CAD\Production Drawings\13-03057 Randall Ave_Abut_RepairsV0.dwg Layout: 9- SECTION G-G Plotted By: rmccarroll, on Fri Mar 27, 2026 at 1:01pm

P:\STRUCTURAL\PROJECTS\2013\1303057\01 – Randall Ave Bridge Abutment Repairs\7.1 DESIGN\CAD\Production Drawings\13-03057 Randall Ave_Abut_Repairs-AS-BUILT.dwg Layout: 10-BEARING DETAILS-AB Plotted By: rmccarroll, on Fri Mar 27, 2026 at 1:01pm



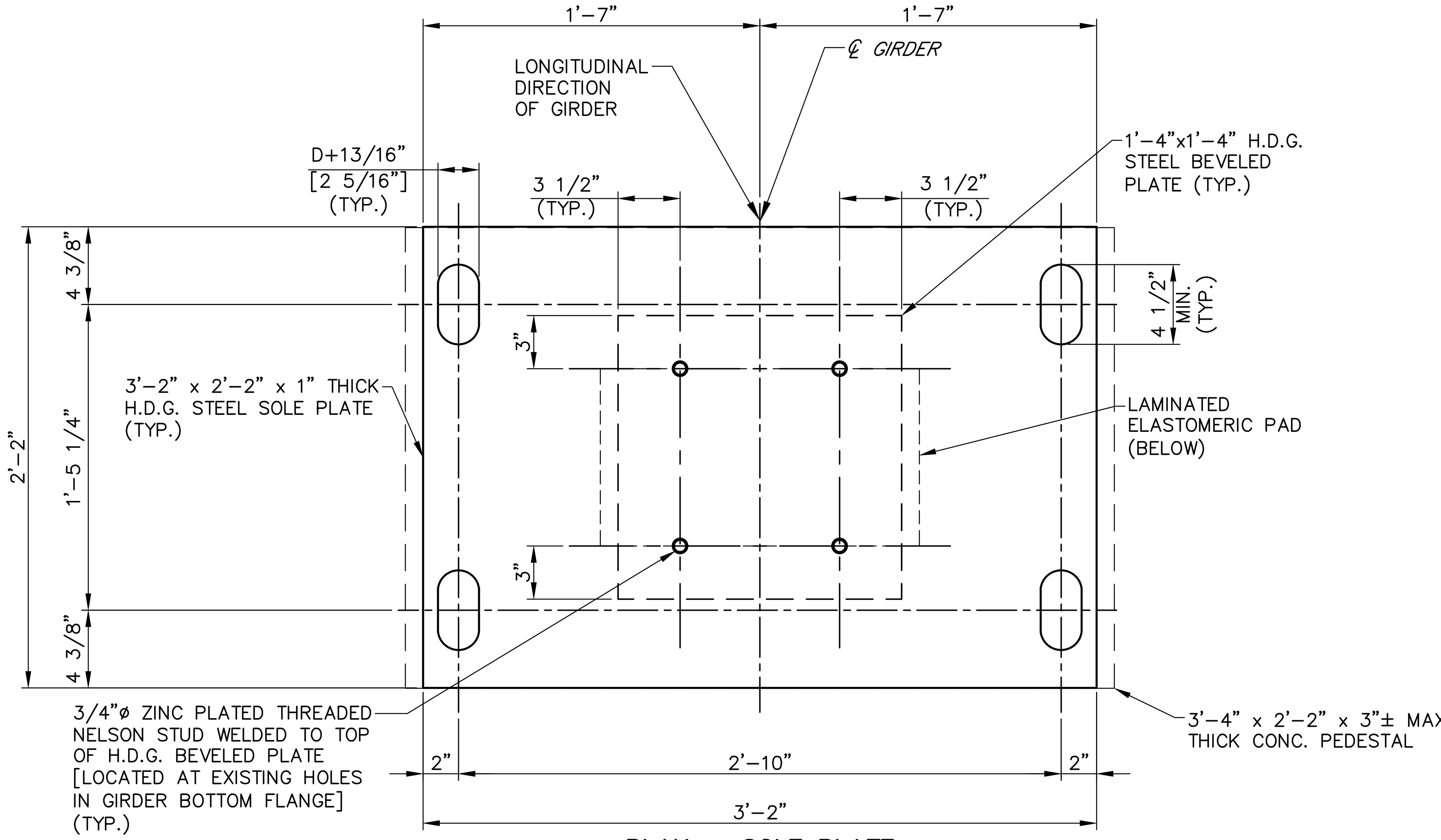
PLAN – TYPICAL BEARING PAD

NO SCALE



SECTION H-H

NO SCALE

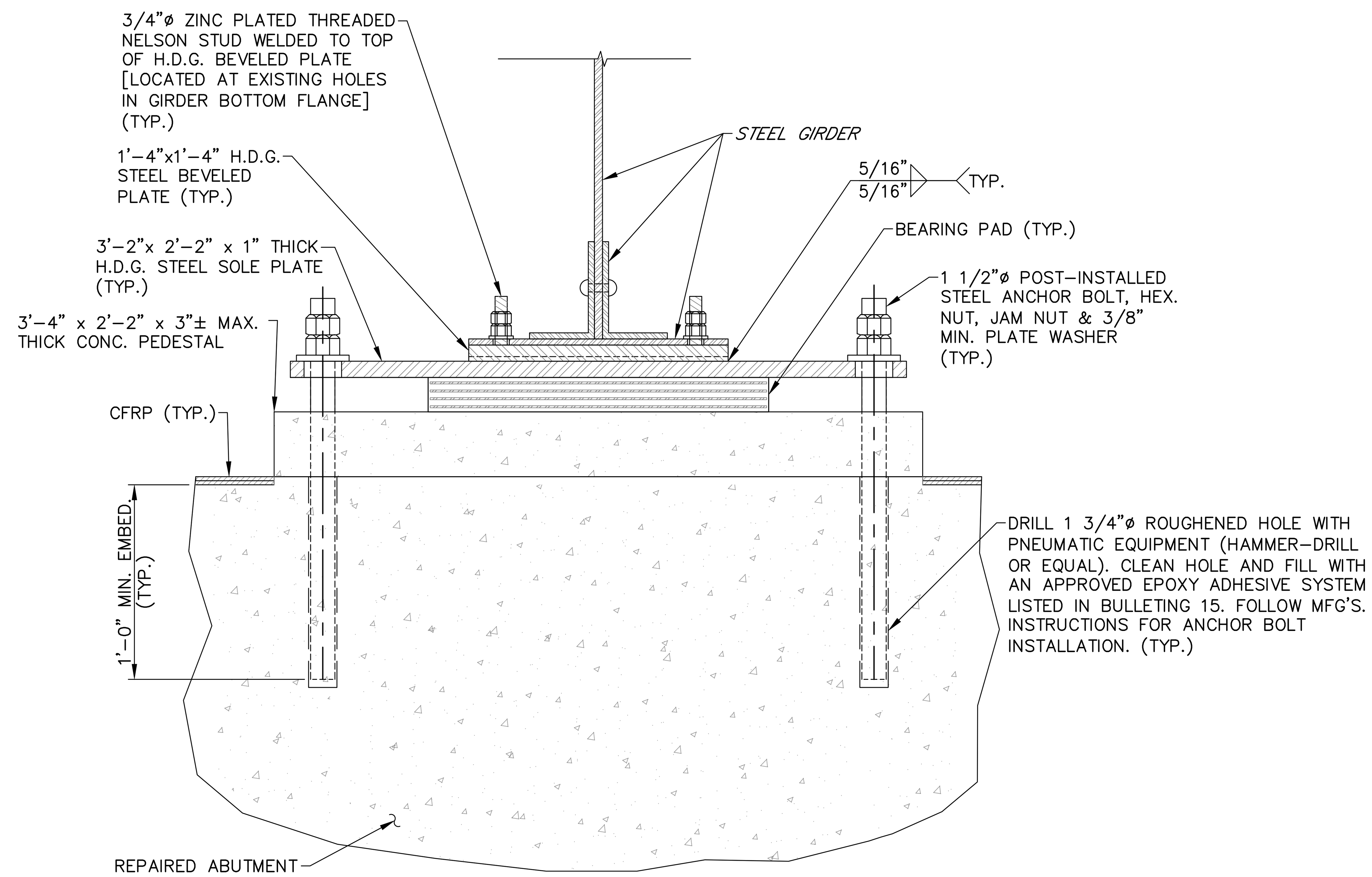


PLAN – SOLE PLATE

NO SCALE

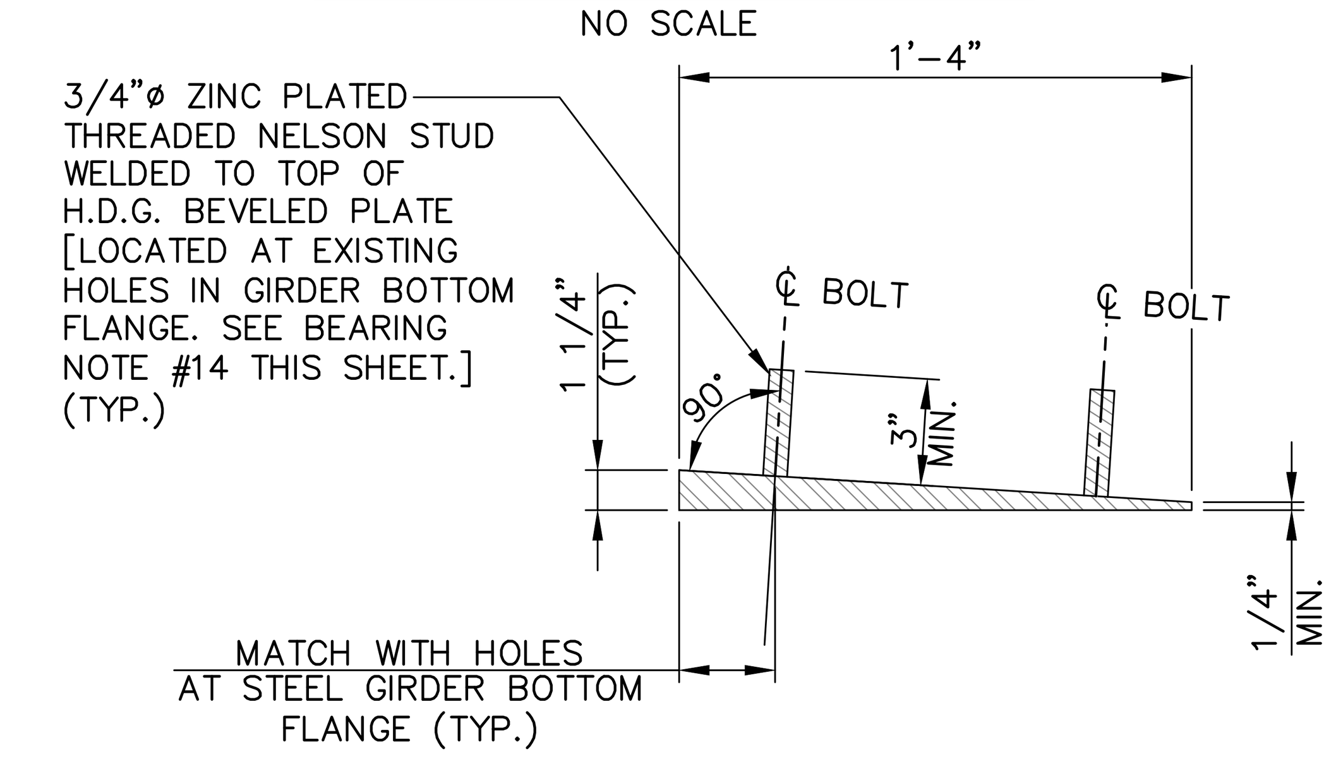
BEARING NOTES:

1. PREPARE BEARING AREAS AS SPECIFIED IN PUBLICATION 408, SECTION 1001.3(K)9.
2. SMOOTH CUT AND DEBURR METAL SHIMS.
3. GRIT BLAST AND DEGREASE METAL SHIMS.
4. MANUFACTURE ALL BEARINGS IN ACCORDANCE WITH THE COMMONWEALTH OF PENNSYLVANIA DEPARTMENT OF TRANSPORTATION PLANS AND SPECIFICATIONS PUB. 408/2020, SECTION 1107.02 AND DM-4.
5. ALL BEARINGS PADS ARE TO BE MOLDED TO DESIGN DIMENSIONS. CUTTING TO SIZE AFTER FABRICATION IS PROHIBITED.
6. MEET THE MATERIAL SPECIFICATION FOR ELASTOMERIC BEARING REQUIREMENTS OF CURRENT AASHTO (M-251-06 STANDARD SPECIFICATION FOR PLAIN AND LAMINATED ELASTOMERIC BRIDGE BEARINGS) LISTED UNDER SUBSECTION "MATERIALS AND TESTING".
7. PROVIDE NEOPRENE WITH A HARDNESS OF 50 ± 5 DUROMETER.
8. PROVIDE INTERNAL SHIMS CONFORMING TO ASTM A570/A570M (GRADE 36).
9. VULCANIZE PATCH PIN GROOVES.
10. BEARING PADS WILL BE SAMPLED FOR TESTING ACCORDING TO PTM #312.
11. FABRICATION TOLERANCES:
    a. OVERALL HEIGHT*: –0, +1/4"
    b. OVERALL HORIZONTAL DIMENSIONS*: –0, +1/4"
    c. THICKNESS OF INDIVIDUAL LAYERS OF ELASTOMER AT ANY POINT WITHIN THE BEARINGS*:
       INTERIOR LAYERS +1/16"
    d. PARALLELISM WITH OPPOSITE FACE*:
       TOP AND BOTTOM (RAD) 0.005
       SIDES (RAD) 0.02
    e. EDGE COVER TO EMBEDDED STEEL LAMINATE: –0, +1/8"
    f. THICKNESS OF TOP & BOTTOM COVER LAYERS: +1/16"
12. THE CONTRACT DRAWINGS MAY BE USED TO FABRICATE THE ELASTOMERIC PADS. NO ADDITIONAL SHOP DRAWINGS FOR BEARING PADS ARE REQUIRED.
13. NUMBER OF BEARINGS REQUIRED:
    a. ABUTMENT 1: (2) – 10" x 16" x 2.125"
    b. ABUTMENT 2: (2) – 10" x 16" x 2.125"
    c. TOTAL NUMBER OF BEARING PADS REQUIRED = 4
14. FOR ZINC-COATED AND/OR GALVANIZED STEEL THAT IS TO BE WELDED, THE ZINC COATING AND GALVANIZING LAYER MUST BE REMOVED PRIOR TO WELDING. AFTER WELDING HAS BEEN COMPLETED, ALL SHOP-APPLIED GALVANIZED OR ZINC COATINGS THAT ARE BREACHED DURING PREPARATION FOR, OR EXECUTION OF, THE WELDING PROCESS, OR THAT ARE DAMAGED DURING CONSTRUCTION, MUST BE REPAIRED BY THE CONTRACTOR BY APPLYING TWO (2) COATS OF A COLD-GALVANIZING COMPOUND/PAINT WITH INTEGRAL PRIMER.



ELEVATION – NEW BEARING

NO SCALE



TYPICAL SECTION – BEVELED STEEL PLATE

NO SCALE

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JOB NO.:	1303057.01
TAX MAP PARCEL NO.:	N/A
MUNICIPAL FILE NO.:	–
CLIENT:	BRISTOL TOWNSHIP, 2501 BATH ROAD, BRISTOL, PA 19007, PHONE: 215-785-0500
TOTAL AREA:	–
TOTAL LOTS:	–
DATE:	03/27/2026
SCALE:	AS NOTED
DESIGNED BY:	JOB
DRAWN BY:	RMM
CHECKED BY:	RCJ

ABUTMENT REPAIRS

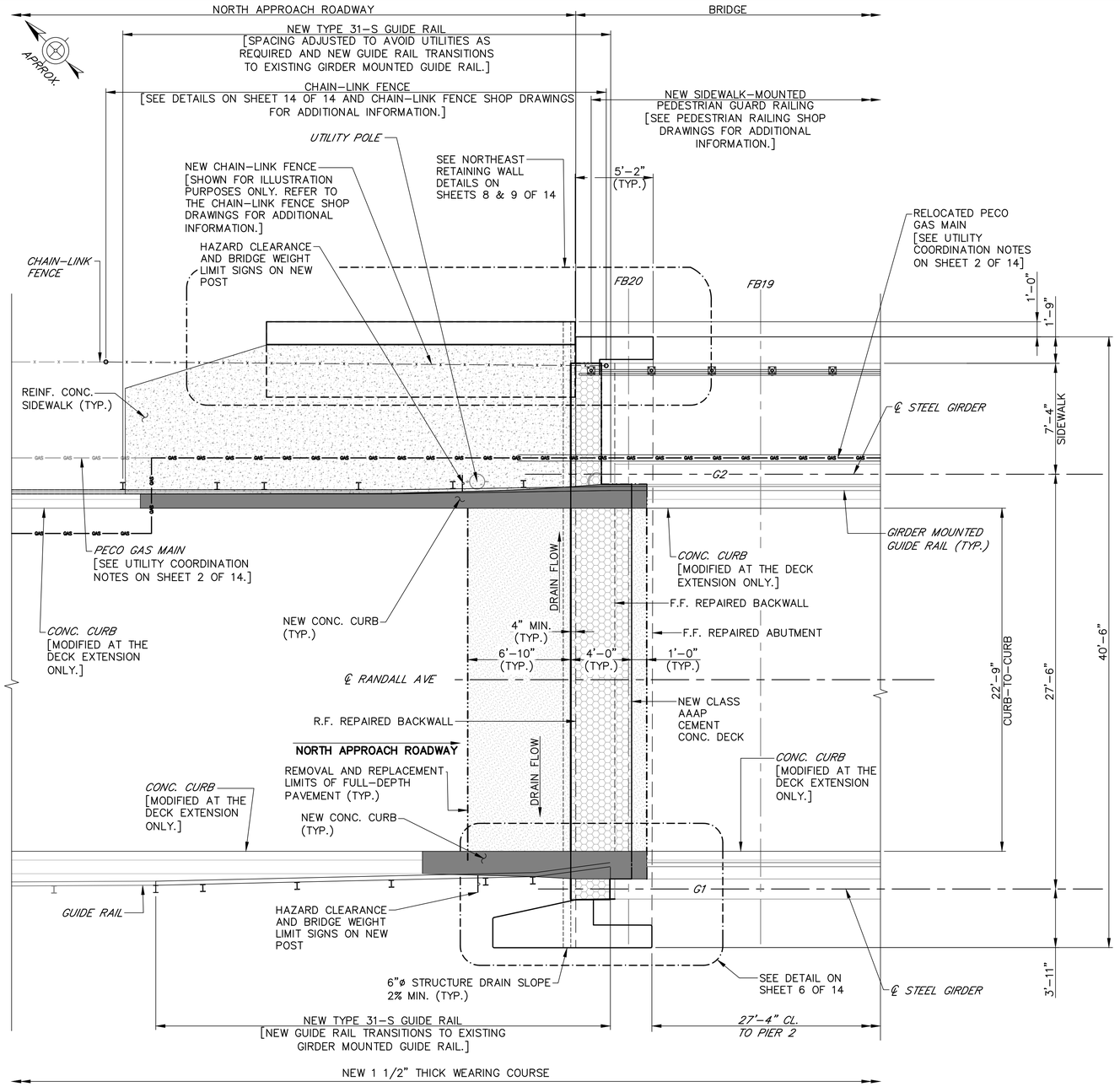
CONTINGENT BEARING DETAILS

RANDALL AVENUE BRIDGE PHASE II

BRISTOL TOWNSHIP, BUCKS COUNTY, PENNSYLVANIA

REV.	DESCRIPTION	DATE	BY

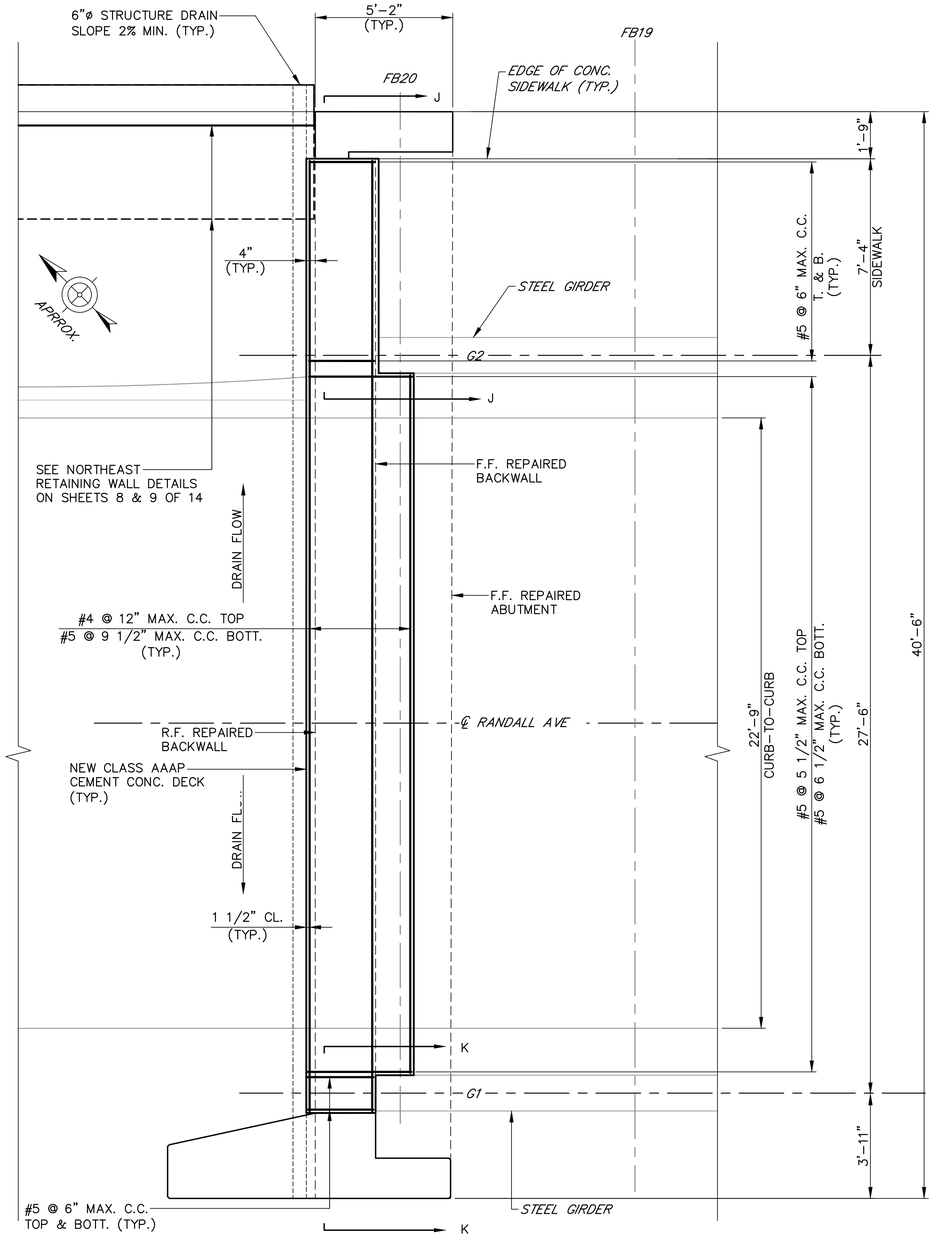
SHEET NO.: 10 OF 14



PARTIAL PLAN – NORTH DECK EXTENSION

SCALE: 1/4" = 1'–0"

[DECK EXTENSION REINFORCEMENT NOT SHOWN THIS VIEW FOR CLARITY. SEE DETAIL THIS SHEET FOR MORE INFORMATION.]
[SOME EXISTING FEATURES NOT SHOWN THIS VIEW FOR CLARITY. SEE GENERAL PLAN ON SHEET 4 OF 14 FOR ADDITIONAL INFORMATION.]



PARTIAL PLAN – NORTH DECK EXTENSION REINFORCEMENT

SCALE: 3/8" = 1'–0"

[SOME FEATURES ARE NOT SHOWN THIS VIEW FOR CLARITY. SEE PLAN THIS SHEET FOR MORE INFORMATION.
SEE SECTIONS J–J AND K–K ON SHEET 13 OF 14.]

LEGEND:

FB#	℄ FLOORBEAM #
G#	℄ GIRDER #
x — x	SITE FENCE
~~	METAL PANELS
OHP	OVERHEAD UTILITY LINE
GAS — GAS	PECO GAS LINE
	OVERHEAD HIGH–VOLTAGE ELECTRIC WIRES
GAS	RELOCATED PECO GAS LINE
	NEW CHAIN–LINK FENCE
	REMOVAL AND REPLACEMENT LIMIT OF PAVEMENT
	SIGN
	DECK EXTENSION
	ASPHALT OVERLAY
	CONC. CURB

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JOB NO.: 13O3057.01 | TAX MAP PARCEL NO.: N/A
MUNICIPAL FILE NO.: – | DESIGNED BY: JDB | DRAWN BY: RMM | CHECKED BY: RCJ

CLIENT: BRISTOL TOWNSHIP, 2501 BATH ROAD, BRISTOL, PA 19007, PHONE: 215-785-0500
TOTAL AREA: – | TOTAL LOTS: – | SCALE: AS NOTED | DATE: 03/27/2026

ABUTMENT REPAIRS

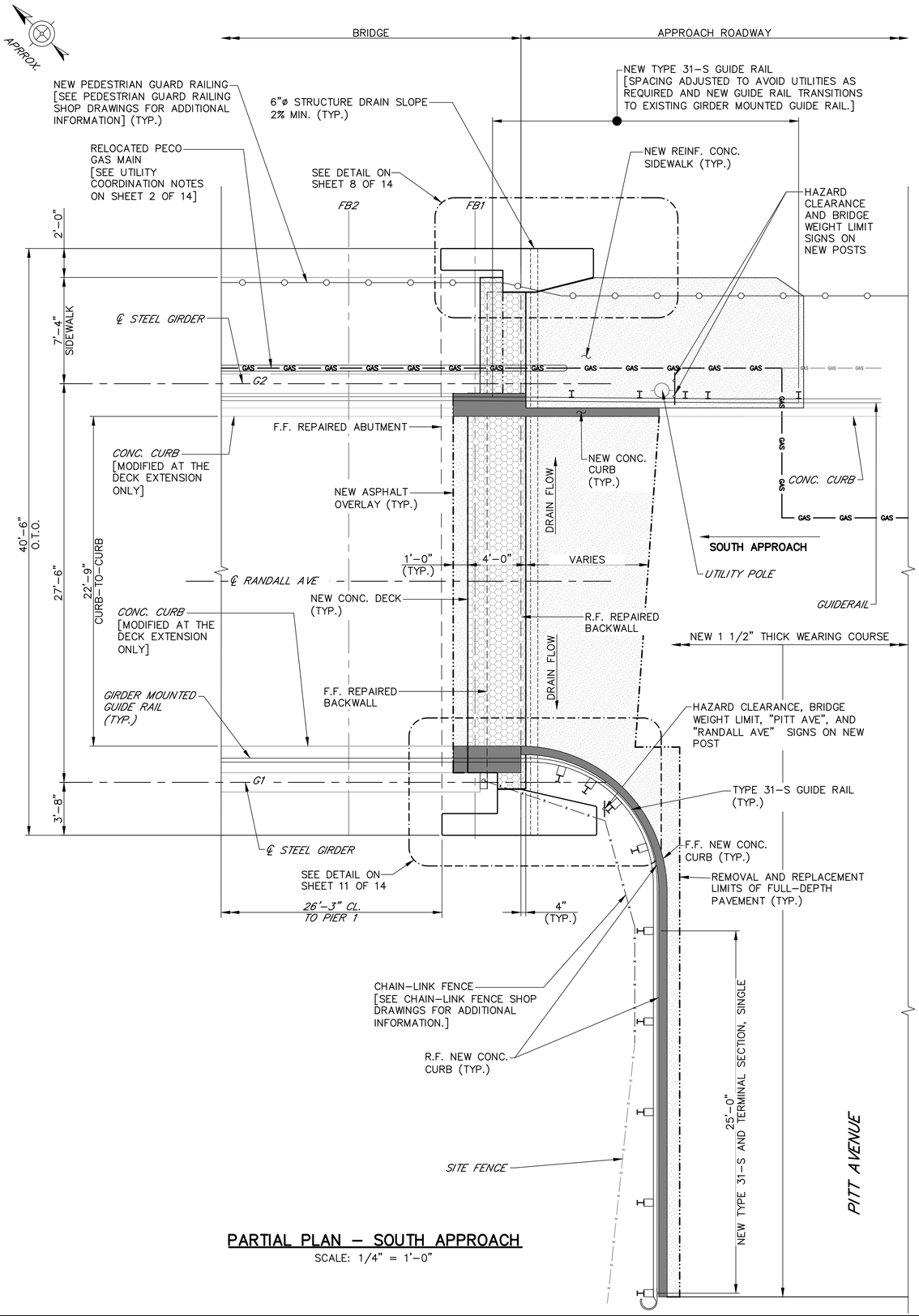
NORTH DECK EXTENSION PLAN

RANDALL AVENUE BRIDGE PHASE II

BRISTOL TOWNSHIP, BUCKS COUNTY, PENNSYLVANIA

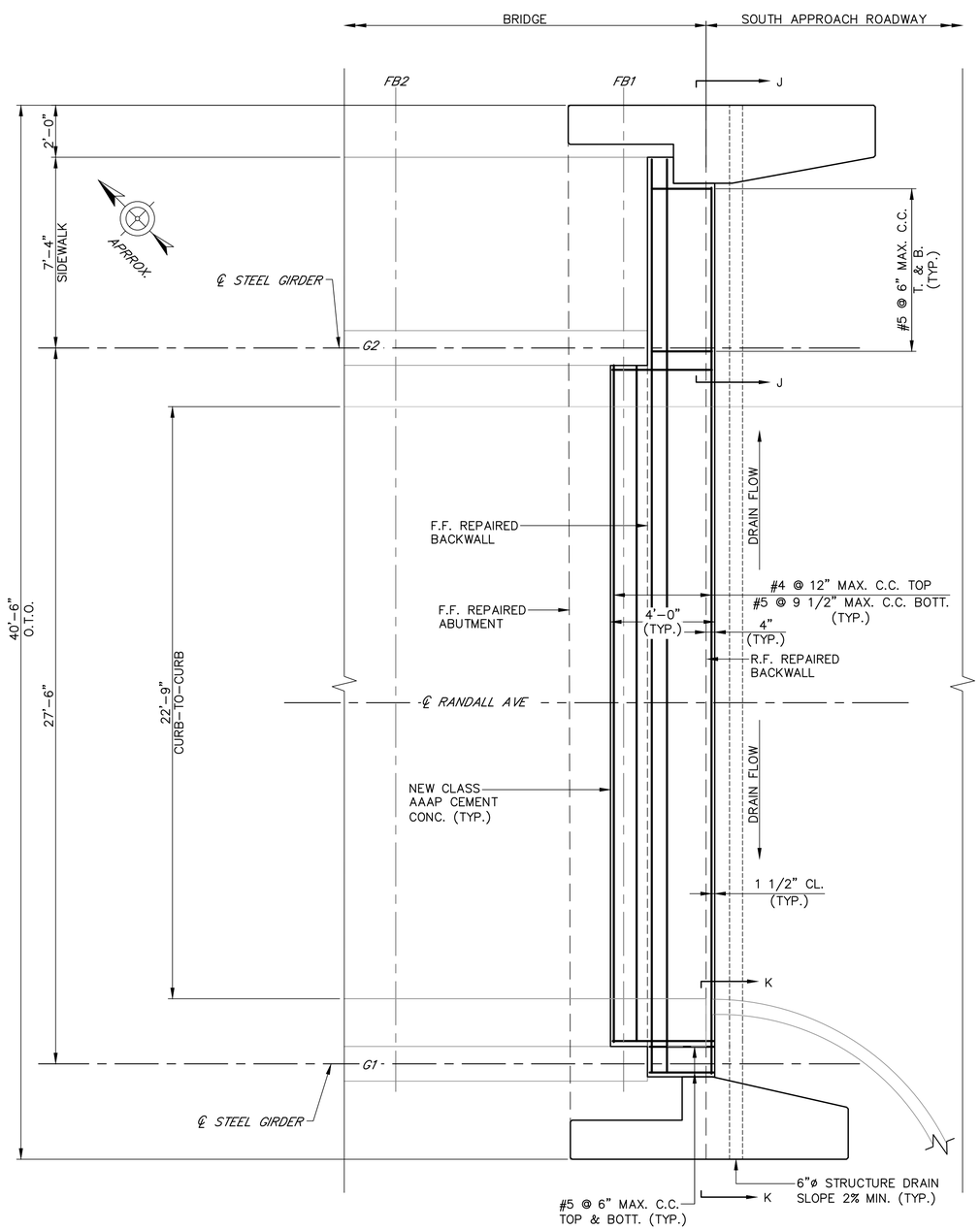
REV.	DESCRIPTION	DATE	BY

SHEET NO.: 11 OF 14



PARTIAL PLAN – SOUTH APPROACH

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



PARTIAL PLAN – SOUTH DECK EXTENSION REINFORCEMENT

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

[SOME FEATURES ARE NOT SHOWN THIS VIEW FOR CLARITY. SEE PLAN THIS SHEET FOR MORE INFORMATION. SEE SECTIONS J-J AND K-K ON SHEET 13 OF 14.]

LEGEND:

FB#	℄ FLOORBEAM #
G#	℄ GIRDER #
x — x	SITE FENCE
	METAL PANELS
OH	OVERHEAD UTILITY LINE
GAS GAS	PECO GAS LINE
	OVERHEAD HIGH-VOLTAGE ELECTRIC WIRES
GAS	RELOCATED PECO GAS LINE
	NEW CHAIN-LINK FENCE
	REMOVAL AND REPLACEMENT LIMIT OF PAVEMENT
	SIGN
	DECK EXTENSION
	ASPHALT OVERLAY
	CONC. CURB

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JOB NO.: 1303057.01
MUNICIPAL FILE NO.: -
TAX MAP PARCEL NO.: N/A
DESIGNED BY: JDB
DRAWN BY: RMM
CHECKED BY: RCJ

CLIENT:
BRISTOL TOWNSHIP
2501 BATH ROAD
BRISTOL, PA 19007
PHONE: 215-785-0500

TOTAL AREA: -
TOTAL LOTS: -
SCALE: AS NOTED
DATE: 03/27/2026

ABUTMENT REPAIRS

SOUTH DECK EXTENSION PLAN

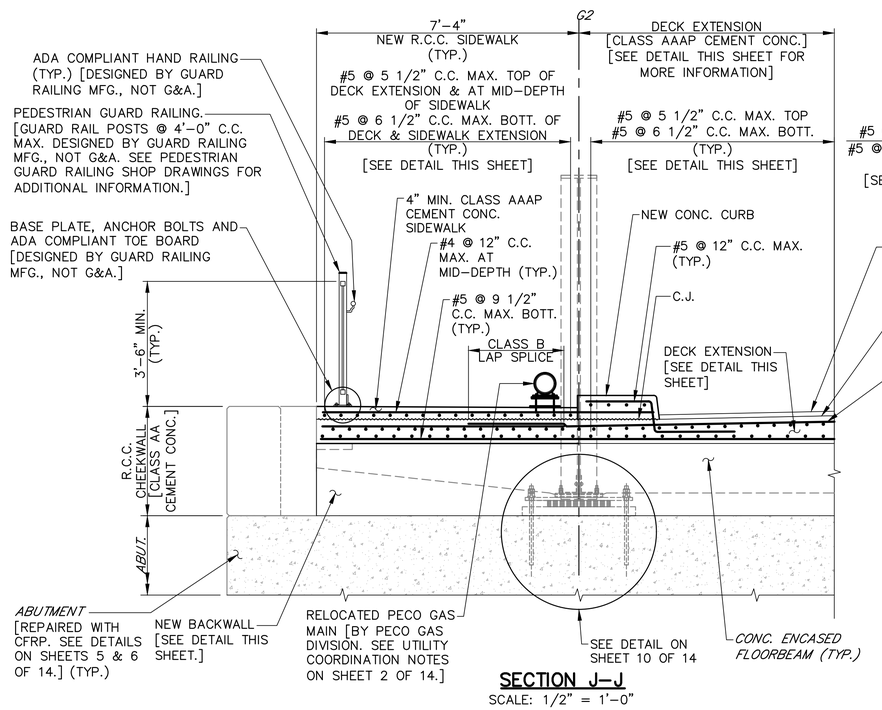
RANDALL AVENUE BRIDGE PHASE II

BRISTOL TOWNSHIP, BUCKS COUNTY, PENNSYLVANIA

REV.	DESCRIPTION	DATE	BY

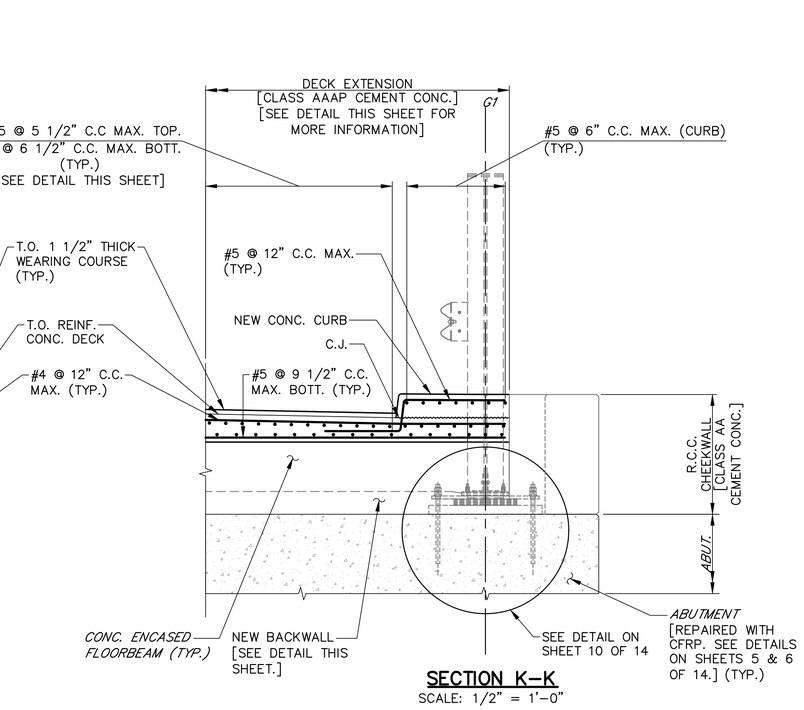
SHEET NO.:
12 OF 14

P:\STRUCTURAL\PROJECTS\2013\13030570I - Randall Ave Bridge Abutment Repairs\7.1 DESIGN\CAD\Production Drawings\13-03057 Randall Ave_Abut_Repairs-AS-BUILT.dwg Layout: 12-S DECKPLAN-AB Plotted By: rmccarroll, on Fri Mar 27, 2026 at 1:01pm



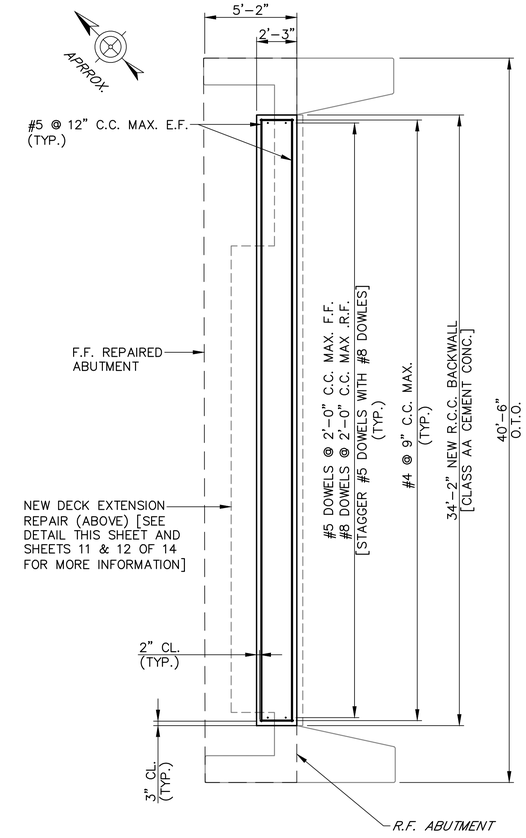
SECTION J–J

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



SECTION K–K

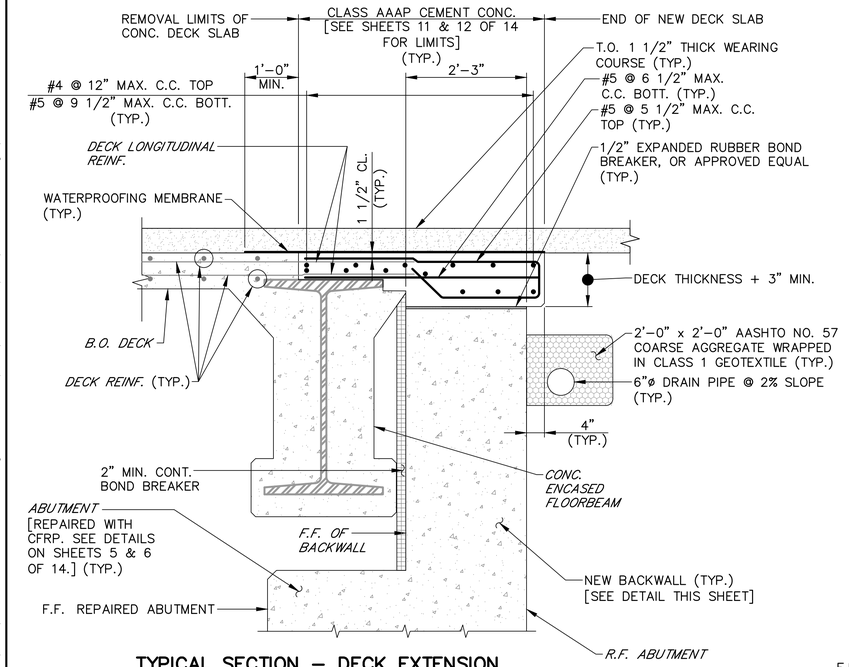
SCALE: 1/2" = 1'-0"



PLAN – BACKWALL

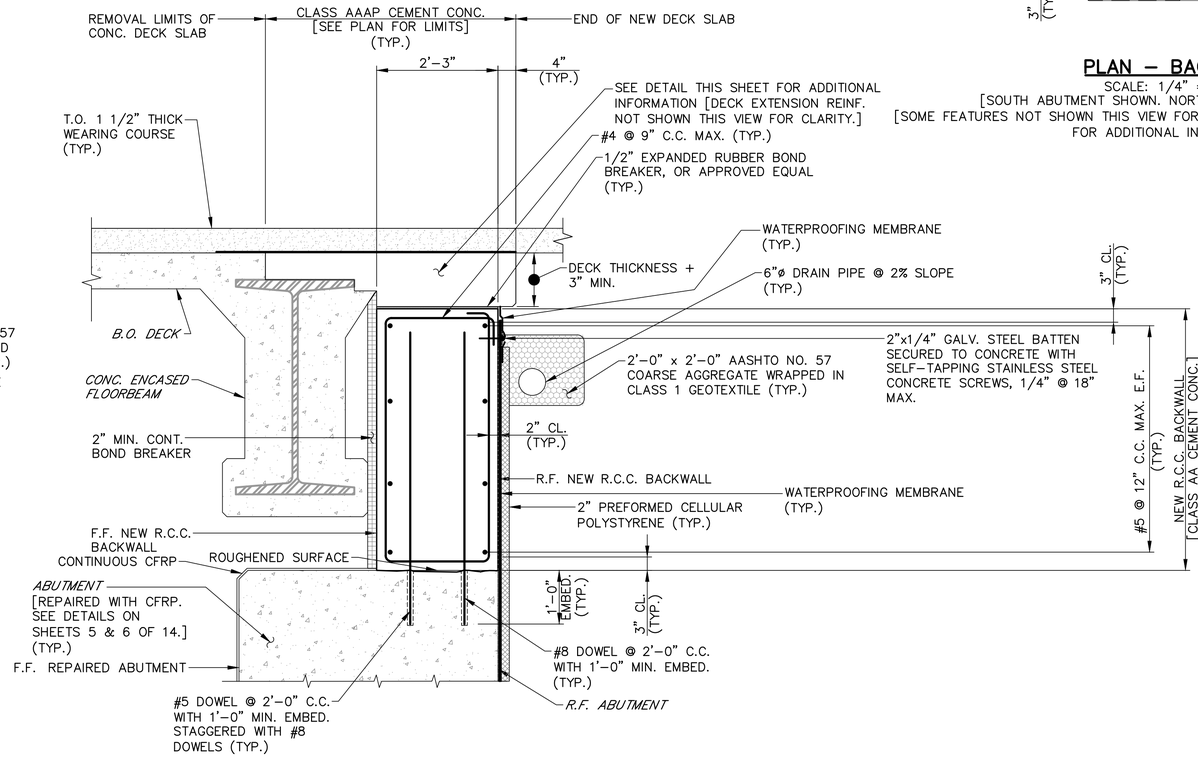
SCALE: 1/4" = 1'-0"

[SOUTH ABUTMENT SHOWN. NORTH ABUTMENT IS SIMILAR.]
[SOME FEATURES NOT SHOWN THIS VIEW FOR CLARITY. SEE SHEETS 11 & 12 OF 14 FOR ADDITIONAL INFORMATION.]



TYPICAL SECTION – DECK EXTENSION

NO SCALE



TYPICAL SECTION – BACKWALL

NO SCALE

AS-BUILT

GILMORE & ASSOCIATES, INC.
ENGINEERING & CONSULTING SERVICES
LUXEMBOURG CORPORATE CENTER
555 CORPORATE DRIVE WEST | LANGHORNE, PA 19047 • (215) 369-3055 • www.gilmore-assoc.com

JOB NO.: 1303057.01
MUNICIPAL FILE NO.: –
TAX MAP PARCEL NO.: N/A
DESIGNED BY: JDB
DRAWN BY: RMM
CHECKED BY: RCJ

CLIENT: BRISTOL TOWNSHIP
2501 BATH ROAD
BRISTOL, PA 19007
PHONE: 215-785-0500

TOTAL AREA: –
TOTAL LOTS: –
SCALE: AS NOTED
DATE: 03/27/2026

ABUTMENT REPAIRS

DECK EXTENSION AND BACKWALL DETAILS

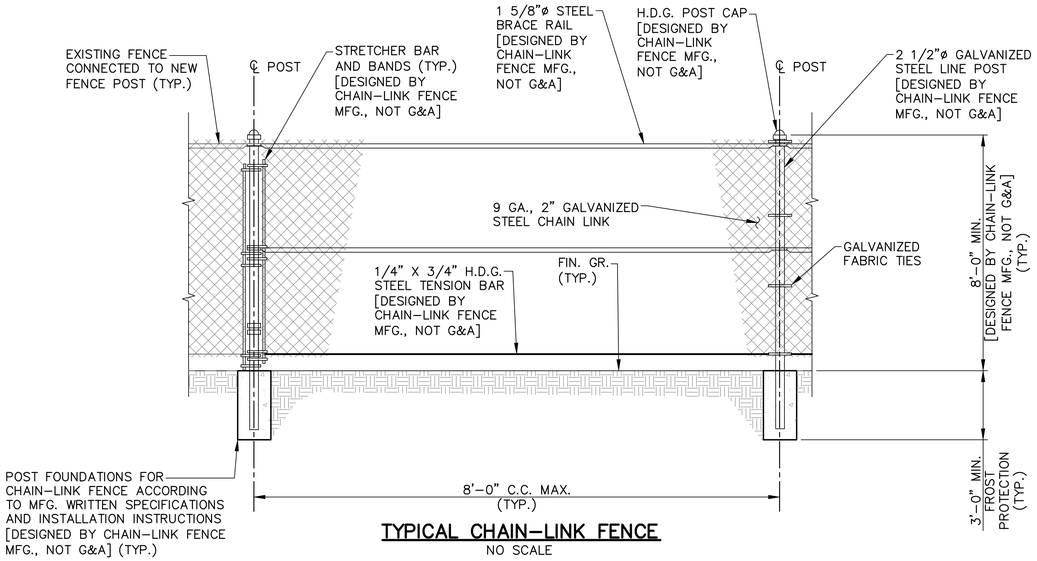
RANDALL AVENUE BRIDGE PHASE II

BRISTOL TOWNSHIP, BUCKS COUNTY, PENNSYLVANIA

REV.	DESCRIPTION	DATE	BY

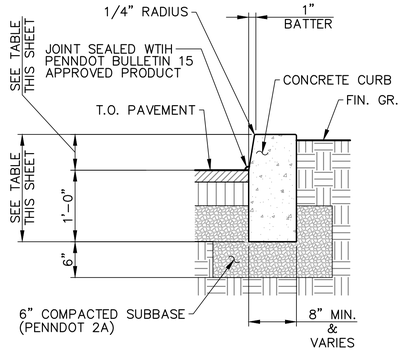
SHEET NO.: 13 OF 14

P:\STRUCTURAL\PROJECTS\2013\13030570I – Randall Ave Bridge Abutment Repairs\7.1 DESIGN\CAD\Production Drawings\13-03057 Randall Ave_Abut_Repairs-AS-BUILT.dwg Layout: 13-DECK AND BACKWALLAB Plotted By: rmccarroll, on Fri Mar 27, 2026 at 1:01pm



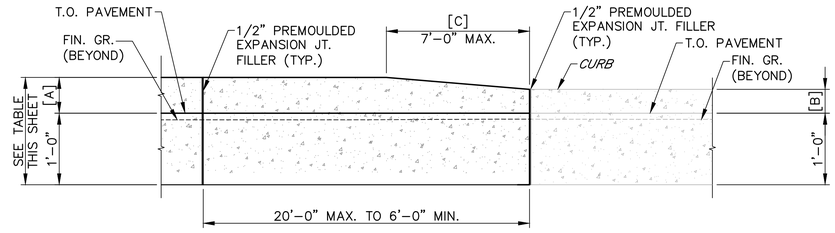
TYPICAL CHAIN–LINK FENCE
NO SCALE

NOTE: REFER TO THE CHAIN–LINK FENCE SHOP DRAWINGS FOR ADDITIONAL INFORMATION.

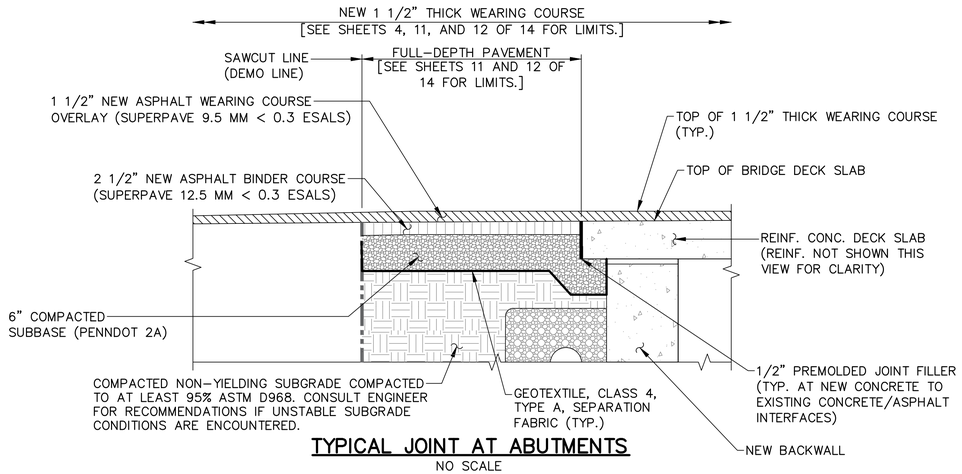


TYPICAL SECTION – PLAIN CEMENT CONCRETE CURB
NO SCALE

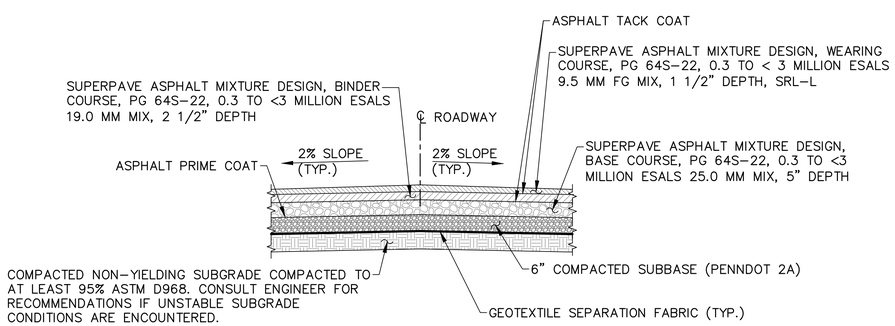
CURB TRANSITION LENGTH		
[A]	[B]	[C]
8"	6"	2'–0"
8"	4"	3'–6"
8"	0"	7'–0"
6"	4"	2'–0"
6"	0"	5'–0"
4"	0"	3'–6"



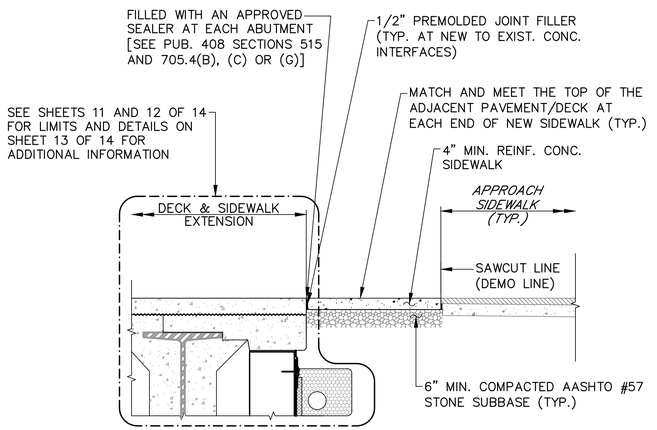
TYPICAL ELEVATION – PLAIN CEMENT CONCRETE CURB
NO SCALE



TYPICAL JOINT AT ABUTMENTS
NO SCALE



TYPICAL FULL DEPTH PAVEMENT
NO SCALE



TYPICAL APPROACH SIDEWALK REPLACEMENT
NO SCALE
[SEE RC–67M FOR FURTHER INFORMATION.]

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PHONE: 215–785–0500

TOTAL AREA: –
TOTAL LOTS: –
SCALE: AS NOTED
DATE: 03/27/2026

ABUTMENT REPAIRS

PAVEMENT, CURB AND FENCE DETAILS

RANDALL AVENUE BRIDGE PHASE II

BRISTOL TOWNSHIP, BUCKS COUNTY, PENNSYLVANIA

REV.	DESCRIPTION	DATE	BY

SHEET NO.:
14 OF 14

P:\STRUCTURAL\PROJECTS\2013\13030570I – Randall Ave Bridge Abutment Repairs\7.1 DESIGN\CAD\Production Drawings\13–03057 Randall Ave_Abut_Repairs–AS–BUILT.dwg Layout: 14–TYPICAL DETAILS–AB Plotted By: rmccarroll, on Fri Mar 27, 2026 at 1:02pm