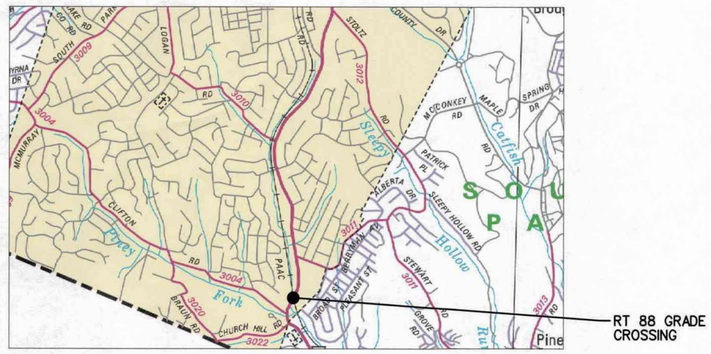
Port Authority
connecting people to life

# PORT AUTHORITY OF ALLEGHENY COUNTY

## CONTRACT DRAWINGS

## RT 88 GRADE CROSSING IMPROVEMENT PROJECT




LOCATION MAP - RT 88 GRADE CROSSING
NTS

**PROJECT NO. SYS-26-02**
**AUGUST 20, 2026**

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
ERIC R. HOLLAND
ENGINEER
PE079465

Project Manager
REG. PROF. ENGINEER PENNSYLVANIA

8/11/2026
Date

GFT

GFT INFRASTRUCTURE, INC.
Foster Plaza 8
Suite 400
730 Holiday Drive
Pittsburgh, PA. 15220

PORT AUTHORITY OF ALLEGHENY COUNTY
APPROVED Gregory J. O'Hare DATE 8/13/2026
CHIEF ENGINEER

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DATE: 8/11/2026 TIME: 10:21:25 AM

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# GENERAL NOTES:

## 1. MATERIALS AND WORKMANSHIP

1. ALL MATERIALS SUPPLIED ARE TO BE NEW AND MEET OR EXCEED ALL APPLICABLE INDUSTRY STANDARDS. WHERE SPECIFIC PRODUCTS OR MANUFACTURERS ARE NOT NOTED OR SPECIFIED, THE CONTRACTOR IS TO NOTIFY THE ENGINEER IN ORDER TO OBTAIN STANDARD OF QUALITY FROM THE ENGINEER.
2. THE CONTRACTOR SHALL ORDER ALL MATERIALS IN SUFFICIENT TIME TO AVOID DELAYING THE COMPLETION OF THE PROJECT. DELAY IN DELIVERIES WILL NOT BE CONSIDERED A JUSTIFIABLE REASON FOR SUBMISSION OF SUBSTITUTE MATERIALS.
3. ALL WORK IS TO BE DONE WITH THE APPROPRIATE TOOLS AND MATERIALS. THE ENGINEER HAS THE RIGHT TO REJECT ANY WORK NOT DONE APPROPRIATELY.
4. CONTRACTOR IS RESPONSIBLE FOR THE SAFETY OF THEIR WORKERS, SAFETY OF OTHER ON-SITE PERSONNEL, AND THE SAFE CONDITIONS OF THE CONSTRUCTION SITE IN GENERAL.
5. PERFORM ALL WORK IN COMPLIANCE WITH LATEST SAFETY AND HEALTH (OSHA) STANDARDS AND ACCESSIBILITY (ADA) REGULATIONS.
6. CONTRACTOR WILL BE RESPONSIBLE FOR KEEPING THE JOB SITE IN A CLEAN AND ORDERLY CONDITION AT ALL TIMES. A REQUEST FROM THE ENGINEER TO CLEAN AND PLACE A PORTION OF THE JOB SITE IN AN ORDERLY CONDITION WILL BE EXECUTED IMMEDIATELY BY THE CONTRACTOR. THE ENGINEER MAY STOP WORK (AT NO COST TO THE AUTHORITY) FOR SAFETY REASONS UNTIL SUCH A REQUEST HAS BEEN PERFORMED.
7. THE CONTRACTOR IS RESPONSIBLE FOR THE REMOVAL OF ALL CONSTRUCTION WASTE FROM THE SITE. ANY MATERIAL REMOVED FROM THE SITE IS TO BE LEGALLY DISPOSED OF BY THE CONTRACTOR. PROVIDE EVIDENCE OF LEGAL DISPOSAL.
8. CONTRACTOR IS SOLELY RESPONSIBLE TO REPAIR DAMAGE TO EXISTING AND PROPOSED CONSTRUCTION TO THE SATISFACTION OF THE ENGINEER AND AT NO ADDITIONAL COST TO THE AUTHORITY.
9. CONTRACTOR IS NOT PERMITTED TO STAGE ANY EQUIPMENT, MATERIALS, OR VEHICLES WITHIN THE PROPERTY LIMITS OF THE PORT AUTHORITY OF ALLEGHENY COUNTY EXCEPT WITHIN THE ACTIVE WORK ZONE AS DELINEATED ON THE PLANS. THE PROJECT FOREMAN MAY PARK ONE (1) AUTOMOBILE ON SITE IN A PLACE DESIGNATED BY THE PORT AUTHORITY. ALL OTHER PERSONAL TRANSPORTATION VEHICLES ARE PROHIBITED ON SITE. CONTRACTOR IS RESPONSIBLE FOR LEGALLY ESTABLISHING AN OFF-SITE STAGING AREA FOR ANY AND ALL EQUIPMENT, MATERIALS, AND VEHICLES, IF REQUIRED. AT THE END OF EACH WORKING DAY, ANY CONTRACTOR EQUIPMENT, MATERIALS, AND VEHICLES THAT CANNOT BE STORED WHOLLY WITHIN THE ACTIVE WORK ZONE AS DELINEATED ON THE PLANS MUST BE REMOVED FROM THE PROJECT SITE.
10. AN OVERHEAD CATENARY SYSTEM (OCS) OUTAGE WILL BE REQUIRED WHEN THE CONTRACTOR IS WORKING WITHIN 10 FEET OF THE OVERHEAD CATENARY SYSTEM. CONTRACTOR IS TO SUBMIT FORMS IN ACCORDANCE WITH THE AUTHORITY'S STANDARD OPERATING PROCEDURES, INCLUDING BUT NOT LIMITED TO THE "TIE SWITCH/CIRCUIT BREAKER LOCKOUT/TAGOUT FORM".
11. ALL WORK WITHIN 10 FEET OF THE CENTERLINE OF THE CLOSEST SET OF TRACKS WILL REQUIRE THE CONTRACTOR TO FOLLOW THE RIGHT-OF-WAY ALLOCATION PROCEDURE AS OUTLINED IN THE AUTHORITY'S STANDARD OPERATING PROCEDURES. THIS INCLUDES BUT IS NOT LIMITED TO SUBMITTING A COMPLETED "RIGHT-OF-WAY ALLOCATION REQUEST FORM" AND ATTENDING A RIGHT-OF-WAY ALLOCATION MEETING TO DISCUSS IN FULL DETAIL THE PROPOSED WORK.

## 2. DRAWINGS AND DIMENSIONS

1. ALL DIMENSIONS SHOWN ARE MEASURED HORIZONTALLY UNLESS NOTED OTHERWISE.
2. THE DRAWINGS ARE GENERALLY DIAGRAMMATIC AND INDICATIVE OF THE WORK TO BE PERFORMED. DRAWINGS ARE NOT SCALE DRAWINGS. NUMERICAL DIMENSIONS AND ELEVATIONS SHOWN WILL SUPERCEDE ANY DISCREPANCY IN THE SCALING ON THE DRAWINGS.
3. CONTRACTOR IS RESPONSIBLE TO FIELD-VERIFY ACCURACY OF ALL REQUIRED DIMENSIONS, ELEVATIONS, AND GEOMETRY OF THE EXISTING SITE ELEMENTS IN THE FIELD PRIOR TO THE START OF WORK AND THE SUBMITTAL OF SHOP DRAWINGS. CONTRACTOR IS TO NOTIFY THE ENGINEER OF ANY DISCREPANCIES BETWEEN EXISTING CONDITIONS, DRAWINGS, AND SPECIFICATIONS. NO WORK WILL COMMENCE PRIOR TO RESOLUTION OF DISCREPANCIES.
4. CONTRACTOR IS RESPONSIBLE TO FIELD-VERIFY ACCURACY OF DRAWINGS PRIOR TO ANY WORK.
5. THE SCOPE OF WORK SHALL INCLUDE ALL WORK INDICATED ON THE CONTRACT DOCUMENTS AND COORDINATION OF WORK WITH ALL OTHER TRADES. THE CONTRACT DOCUMENTS INCLUDE ALL DRAWINGS WHICH ARE COMPLIMENTARY. WORK SHOWN ON OTHER TRADES' DOCUMENTS SHALL BE INCLUDED AS IF SHOWN HERE. WHERE CONTRACT DOCUMENTS CONFLICT WITH THEMSELVES, CODES, AND/OR REGULATIONS, THE CONTRACTOR SHALL FOLLOW THE STRICTER REQUIREMENTS, HIGHER QUANTITY REQUIREMENT, AND/OR HIGHER QUALITY REQUIREMENT.

## 3. DESIGN SPECIFICATIONS

1. ALL WORK PERFORMED ON THIS PROJECT SHALL BE IN COMPLIANCE WITH ALL PERTINENT CODES, ORDINANCES, AND REGULATIONS OF LOCAL, STATE, AND FEDERAL GOVERNING AUTHORITIES, INCLUDING BUT NOT LIMITED TO:
   - A. AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)
   - B. AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)
   - C. ENVIRONMENTAL PROTECTION AGENCY (EPA)
   - D. NATIONAL BUREAU OF STANDARDS (NBS)
   - E. NATIONAL ELECTRICAL CODE (NEC)
   - F. NATIONAL FIRE PROTECTION AGENCY (NFPA)
   - G. UNDERWRITERS LABORATORIES INC. (UL)
   - H. AMERICAN RAILWAY ENGINEERING AND MAINTENANCE-OF-WAY ASSOCIATION (AREMA)
   - I. PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION CODE CHAPTER 102
   - J. PENNSYLVANIA DEPARTMENT OF TRANSPORTATION PUB. 408 SPECIFICATIONS
   - K. BETHEL PARK BOROUGH ORDINANCES

## 4. DESIGN CRITERIA

1. PROVIDE MATERIALS AND PERFORM WORK IN ACCORDANCE WITH SPECIFICATIONS, PENNDOT PUBLICATION 408, AASHTO/AWS/D1.5M/D1.5: 2008 WELDING CODE (USE AASHTO/AWS D1.1/D1M: 2008 FOR WELDING NOT COVERED IN AASHTO/AWS D1.5M/D1.5: 2008) AND THE CONTRACT TECHNICAL PROVISIONS.

## 5. PERMITS

1. CONTRACTOR IS RESPONSIBLE FOR APPLYING FOR, OBTAINING, AND THE COST OF ALL APPLICABLE PERMITS REQUIRED TO COMPLETE THIS WORK FROM THE APPROPRIATE LOCAL, STATE, AND FEDERAL AUTHORITIES HAVING JURISDICTION.

## 6. RIGHT OF WAY

1. ALL WORK MUST BE PERFORMED WITHIN THE PROPERTY LIMITS OF THE PORT AUTHORITY OF ALLEGHENY COUNTY AND THE PENNSYLVANIA DEPARTMENT OF TRANSPORTATION LEGAL RIGHT-OF-WAY OF SR 0088. DO NOT ENCROACH ANY WORK OR STAGING OF EQUIPMENT OR MATERIALS ONTO ADJACENT PROPERTIES OR PUBLICLY-OWNED LAND.
2. ALL WORK MUST BE PERFORMED IN ACCORDANCE TO THE AUTHORITY'S STANDARD OPERATING PROCEDURES, INCLUDING BUT NOT LIMITED TO THE RIGHT-OF-WAY ALLOCATION PROCEDURE.

## 7. DEMOLITION

1. CONDUCT DEMOLITION AND REMOVAL OPERATIONS AS INDICATED ON THE CONTRACT DRAWINGS.
2. THE CONTRACTOR SHALL PROPERLY TRANSPORT, TREAT, AND DISPOSE OF ALL CONSTRUCTION MATERIALS, EQUIPMENT, AND DEBRIS IN ACCORDANCE WITH ALL FEDERAL, STATE, AND LOCAL LAWS AND REGULATIONS.
3. ANY REGULATED FILL MATERIAL NOT RE-USED ON SITE MUST BE DISPOSED OF IN ACCORDANCE WITH DEPARTMENT OF ENVIRONMENTAL PROTECTION CLEAN FILL ACT.
4. THE CONTRACTOR SHALL PROVIDE TO THE ENGINEER ALL WASTE MANIFESTS AND WASTE PROFILES AS REQUIRED.

## 8. EXCAVATION

1. PRIOR TO EXCAVATION, VERIFY LOCATIONS OF UNDERGROUND UTILITIES WITH THE UTILITY COMPANIES AND/OR THE AUTHORITY. EXCAVATE OR SURVEY TO ESTABLISH EXACT UTILITY LOCATIONS. THE UTILITY LOCATIONS SHOWN ON THE CONTRACT DRAWINGS ARE ONLY APPROXIMATE AND CANNOT BE USED TO ASSURE THE CONTRACTOR OF ADEQUATE CLEARANCE IN CASES OF CLOSE PROXIMITY. COORDINATE ALL WORK WITH THE UTILITIES TO ASSURE THEIR UNINTERRUPTED FUNCTION.
2. THE CONTRACTOR SHALL OBSERVE WATER CONDITIONS AT THE SITE AND TAKE THE NECESSARY PRECAUTIONS TO ENSURE THAT THE FOUNDATION EXCAVATIONS REMAIN DRY DURING CONSTRUCTION.
3. DIRECT ALL SURFACE WATER AWAY FROM EXCAVATIONS. PROTECT MATERIALS AT BOTTOM OF FOUNDATION ELEVATION FROM RAINWATER PRIOR TO CONCRETE PLACEMENT.
4. CONTRACTOR IS SOLELY RESPONSIBLE FOR THE STABILITY OF ALL EXCAVATIONS. CONTRACTOR IS RESPONSIBLE FOR PROVIDING TEMPORARY SHORING AS REQUIRED.
5. BACKFILL IN ACCORDANCE WITH THE PENNDOT PUBLICATION 408, EXCEPT AS MODIFIED BY THE EQUIPMENT MANUFACTURER.

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REVISIONS

GFT INFRASTRUCTURE, INC.
Foster Plaza 8
Suite 400
730 Holiday Drive
Pittsburgh, PA. 15220

COMMONWEALTH OF PENNSYLVANIA — REGISTERED PROFESSIONAL — ERIC R. HOLLAND — ENGINEER — PE079465

SIGNATURE

APPROVED DATE

| | |
|---|---|
| DESIGNED | RRH |
| DRAWN | RRH |
| CHECKED | ERH |
| IN CHARGE | ERH |
| DATE | AUGUST 2026 |
| SCALE | NOT TO SCALE |

PORT AUTHORITY OF ALLEGHENY COUNTY
PITTSBURGH PENNSYLVANIA

RT 88 GRADE CROSSING
**IMPROVEMENT PROJECT**
INDEX OF DRAWINGS AND GENERAL NOTES

Port Authority — connecting people to life

CONTRACT NO. SYS-26-02
DWG. NO. G001 SHT. 2

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# GENERAL NOTES (CONTINUED):

## 9. UTILITIES

1. COORDINATE, LOCATE, AND CONDUCT ALL WORK RELATED TO PUBLIC AND PRIVATE UTILITIES IN ACCORDANCE WITH THE CONTRACT'S TERMS AND CONDITIONS.
2. VERIFY AND LOCATE ALL EXISTING UTILITIES PRIOR TO STARTING WORK. CONDUCT OPERATIONS IN MANNER WHICH ENSURES THAT THE UTILITIES WILL NOT BE DISTURBED OR ENDANGERED AND ASSUME FULL RESPONSIBILITY FOR ANY DAMAGE TO THE UTILITIES DURING CONSTRUCTION. THE AUTHORITY DOES NOT ASSUME RESPONSIBILITY FOR REIMBURSEMENT, PARTICIPATION IN DESIGN AND/OR REVISIONS, OR LIABILITY FOR ACCURACY OF TYPE, SIZE, AND LOCATION OF ANY UTILITY.
3. CONTACT THE PA ONE CALL SYSTEM (1-800-242-1776) TEN DAYS PRIOR TO ANY EXCAVATION OR DEMOLITION WORK. COMPLY WITH THE PROVISIONS OF PA ACT 287 (1994) AS AMENDED BY ACT 187 (1996). IDENTIFY ALL LINES OVER AND UNDER THE SITE. NOTIFY THE APPLICABLE UTILITY COMPANIES AND COMPLY WITH CLEARANCE REQUIREMENTS.
4. ACTIVE UTILITIES, WHETHER PUBLIC, PRIVATE, OR AUTHORITY-OWNED, SHALL BE ADEQUATELY PROTECTED FROM DAMAGE. WHERE ACTIVE UTILITIES ARE ENCOUNTERED BUT NOT SHOWN ON DRAWINGS. THE ENGINEER, THE AUTHORITY, AND UTILITY OWNER SHALL BE ADVISED: WORK SHALL BE PROTECTED OR SUPPORTED AS DIRECTED. INACTIVE AND ABANDONED UTILITIES ENCOUNTERED SHALL BE REPORTED TO THE ENGINEER: UTILITIES SHALL BE REMOVED, PLUGGED OR CAPPED AS DIRECTED BY THE AUTHORITY. IN ABSENCE OF SPECIFIC REQUIREMENTS, PLUG OR CAP SUCH UTILITY LINES AS REQUIRED BY THE UTILITY OWNER.
5. CONTACT AUTHORITY TO LOCATE AUTHORITY OWNED UTILITIES ON SITE A MINIMUM OF 14 DAYS PRIOR TO PERFORMING WORK.
6. CONTRACTOR SHALL NOTIFY THE AUTHORITY A MINIMUM OF 72 HOURS PRIOR TO PERFORMING WORK INVOLVING UTILITIES.

## 10. ELECTRICAL

1. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH APPLICABLE PROVISIONS OF THE NATIONAL ELECTRICAL CODE (NEC) AND ANY LOCAL CODES AND ORDINANCES, CONNECTING UTILITY, MANUFACTURER'S INSTRUCTIONS, AND PROFESSIONAL WORK PRACTICES. THE CONTRACTOR SHALL HAVE THE COMPLETED ELECTRICAL INSTALLATION INSPECTED AND APPROVED BY THE CONNECTING UTILITY. CONTRACTOR SHALL CORRECT ANY AND ALL DEFICIENCIES NOTED BY SUCH INSPECTION.
2. LOCATIONS OF EQUIPMENT, CONDUIT, ETC. SHOWN ON THE DRAWINGS IS APPROXIMATE AND IS NOT INTENDED TO SHOW EXACT LOCATIONS. CHECK AND VERIFY ALL DIMENSIONS AND EXISTING CONDITIONS AT THE SITE. PROVIDE ALL NECESSARY OFFSETS AND FITTINGS FOR A COMPLETE INSTALLATION.
3. INSTALL ALL EQUIPMENT AND MATERIALS IN STRICT ACCORDANCE WITH RESPECTIVE MANUFACTURER'S WRITTEN INSTRUCTIONS.
4. COORDINATE ELECTRICAL WORK WITH THE WORK OF ALL OTHER TRADES.
5. INSTALL ALL WORK IN ACCORDANCE WITH ALL APPLICABLE CODES AND REGULATIONS, LOCAL, STATE, AND FEDERAL.
6. UNLESS OTHERWISE NOTED, CONSTRUCTION MATERIALS AND EQUIPMENT DEMOLISHED SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE LEGALLY DISPOSED OF OFF THE SITE.
7. EXISTING EQUIPMENT AND MATERIALS SHALL REMAIN, UNLESS OTHERWISE NOTED.




CONTRACTOR LAYDOWN AREA
AND CONSTRUCTION FIELD OFFICE — 1

| NO. | DATE | DESCRIPTION |
|---|---|---|
| | | REVISIONS |

GFT INFRASTRUCTURE, INC.
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COMMONWEALTH OF PENNSYLVANIA — REGISTERED PROFESSIONAL — ERIC R. HOLLAND — ENGINEER — PE079465

SIGNATURE

APPROVED

DATE

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| DESIGNED | RRH |
| DRAWN | RRH |
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| IN CHARGE | ERH |
| DATE | AUGUST 2026 |
| SCALE | NOT TO SCALE |

PORT AUTHORITY OF ALLEGHENY COUNTY
PITTSBURGH PENNSYLVANIA

RT 88 GRADE CROSSING
**IMPROVEMENT PROJECT**
GENERAL NOTES (CONTINUED)

Port Authority — connecting people to life

CONTRACT NO. SYS-26-02
DWG. NO. G002 SHT. 3

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## A

| | |
|---|---|
| ABD. | ABANDONED |
| A.F.F. | ABOVE FINISHED FLOOR |
| ABUT. | ABUTMENT |
| A.DR. | ACCESS DOOR |
| A.P. | ACCESS PANEL |
| ACCEL. | ACCELERATION |
| ACOUST. | ACOUSTICAL |
| ADD. | ADDITION |
| ADJ. | ADJUSTING OR ADJUSTABLE |
| P.M. | AFTERNOON |
| AGGR. | AGGREGATE |
| AHD. | AHEAD |
| AC | AIR CONDITIONING |
| ACU | AIR CONDITIONING UNIT |
| A.V. | AIR VALVE |
| ALIGN. | ALIGNMENT |
| AB | ALIGNMENT BEARING |
| ALLOW. | ALLOWANCE |
| ALUM. | ALUMINUM |
| ALT. | ALTERNATE |
| A.C. | ALTERNATING CURRENT |
| AMP | AMPERE |
| ANCH. | ANCHOR |
| A.B. | ANCHOR BOLT |
| ∠ | ANGLE |
| ANT. | ANTENNA |
| AMT. | AMOUNT |
| APPL. | APPLICATION |
| APPR. | APPROACH |
| APP'D. | APPROVED |
| APPROX. | APPROXIMATE |
| ARCH. | ARCHITECTURAL AREA |
| A.D. | AREA DRAIN |
| A.C.D. | ASBESTOS CEMENT DUCT (CONDUIT) |
| A.C.P. | ASBESTOS CEMENT PIPE |
| ASPH. | ASPHALT |
| ASSY. | ASSEMBLY |
| ASST. | ASSISTANT |
| ASSOC. | ASSOCIATE |
| ASSN. | ASSOCIATION |
| @ | AT |
| AUTO. | AUTOMATIC |
| A.A.V. | AUTOMATIC AIR VALVE |
| A.T.C. | AUTOMATIC TEMPERATURE CONTROL |
| AUX. | AUXILIARY |
| AVE. | AVENUE |
| AVG. | AVERAGE |
| A.W.G. | AMERICAN WIRE GAUGE |

## B

| | |
|---|---|
| BK. | BACK |
| B'FILL | BACKFILL |
| B.S. | BACKSIGHT |
| B.TO B. | BACK TO BACK |
| B.D.D. | BACK DRAFT DAMPER |
| B&O | BALTIMORE AND OHIO RR. |
| BBL. | BARREL |
| ℄ | BASE LINE |
| BSM'T. | BASEMENT |
| BRG. | BEARING |
| B&X | BELL AND SPIGOT |
| B.T.C. | BELL TELEPHONE COMPANY |
| BM | BENCH MARK |
| BTWN. | BETWEEN |
| BEV. | BEVELED |
| BIT. | BITUMINOUS |
| BCCMP | BITUMINOUS COATED CORRUGATED GALVANIZED STEEL PIPE |
| BCBC | BITUMINOUS CONCRETE BASE COURSE |
| B.S.C. | BITUMINOUS SURFACE COURSE |
| BLK. | BLOCK |
| BLKG. | BLOCKING |
| B.O.V. | BLOW OFF VALVE |
| BD. | BOARD |
| F.B.M. | BOARD FEET |
| BC | BOLT CIRCLE |
| BORO. | BOROUGH |
| B.E.F.B. | BORROW EXCAVATION BRIDGE FOUNDATION |
| B.F. | BOTH FACES |
| B.W. | BOTH WAYS |
| BOT. | BOTTOM |
| B/B | BOTTOM OF BANK |
| B/C | BOTTOM OF CURB |
| B.C. | BOTTOM CUT |
| B.F. | BOTTOM FILL |
| B.W. | BOTTOM WALL |
| B/D | BOTTOM OF DUCT |

## B CONTINUED

| | |
|---|---|
| B/P | BOTTOM OF PANEL |
| B/S | BOTTOM OF STAKE |
| B.H. | BORE HOLE |
| B | BOULDER |
| BLVD. | BOULEVARD |
| BDY. | BOUNDARY |
| B.I.G. | BREAK IN GRADE |
| BRKR. | BREAKER |
| BRKT. | BRACKET |
| B.M.U. | BRICK MASONRY UNIT |
| B.T.U. | BRITISH THERMAL UNIT |
| BRN. | BROWN |
| BLDG. | BUILDING |
| B.L. | BUILDING LINE |
| B.U. | BUILT-UP |
| BLKHD. | BULKHEAD |
| B.H. | BUSH HAMMER |

## C

| | |
|---|---|
| cd | CANDELA |
| CLKG. | CAULKING |
| CAP. | CAPACITY |
| C.I. | CAST IRON |
| C.I.P. | CAST IRON PIPE |
| C-I-P | CAST-IN-PLACE |
| CAT. | CATALOG |
| CAT | CATENARY |
| C.B. | CATCH BASIN |
| CLG. | CEILING |
| C.D. | CEILING DIFFUSER |
| °C | CELSIUS |
| CEM. | CEMENT |
| C.T.B. | CEMENT TREATED BASE |
| CEM | CEMETERY |
| CTR. | CENTER |
| CTRS. | CENTERS |
| ℄ | CENTER LINE |
| C TO C | CENTER TO CENTER |
| C.G. | CENTER OF GRAVITY |
| CH. | CHAIN |
| CHAM. | CHAMFER |
| CHG. | CHANGE |
| C OR CHAN. | CHANNEL |
| CVN | CHARPY-V-NOTCH |
| CHKD. | CHECKED |
| CHKD.PL. | CHECKERED PLATE |
| CSX | CHESSIE SYSTEM RR OR CSX TRANSPORTATION CO |
| CH | CHURCH |
| CIR. | CIRCLE OR CIRCULAR |
| CKT. | CIRCUIT |
| C/B | CIRCUIT BREAKER |
| C/P | CITY OF PITTSBURGH |
| CL. | CLASS |
| CO | CLEAN OUT |
| C.O.D. | CLEAN OUT DOOR |
| CL. | CLEAR OR CLEARANCE |
| CTD. | COATED |
| COEF. | COEFFICIENT |
| C.G.C. | COLUMBIA GAS COMPANY |
| COL. | COLUMN |
| COMB. | COMBINATION |
| COMB. S. | COMBINATION SEWER |
| COMM. | COMMUNICATION |
| COMP. | COMPUTATION |
| CONC. | CONCRETE |
| CONC. C. | CONCRETE CONDUIT |
| C.G. | CONCRETE GUTTER |
| CONC. P. | CONCRETE PIPE |
| C.M.U. | CONCRETE MASONRY UNIT |
| CON. | CONDENSER |
| COND. | CONDITION |
| COND | CONDUCTOR |
| CONN. | CONNECTION OR CONNECT |
| CONRAIL | CONSOLIDATED RAIL CORP. |
| CONST. | CONSTRUCT OR CONSTRUCTION |
| C.J. | CONSTRUCTION JOINT |
| CONT'D. | CONTINUED |
| CONT. | CONTINUOUS OR CONTINUATION |
| CONTR. | CONTRACTION |
| CONT'R. | CONTRACTOR |
| CRC | CONTINUOUSLY REINFORCED CONCRETE |
| C.JT. | CONTROL JOINT |
| C. PNL. | CONTROL PANEL |
| COORD. | COORDINATE |
| CW. | COPPERWELD (SURVEY MARKER) |
| COR. | CORNER |

## C CONTINUED

| | |
|---|---|
| CORR. | CORRUGATED |
| C.G.S.P. | CORRUGATED GALVANIZED STEEL PIPE |
| C.M. | CORRUGATED METAL |
| C.M.P. | CORRUGATED METAL PIPE |
| c | COULOMB |
| CTR. | COUNTER |
| CSK. | COUNTERSUNK |
| CO. | COUNTY OR COMPANY |
| CPLG. | COUPLING |
| CRSE. | COURSE |
| C.C.J. | CRACK CONTROL JOINT |
| CK. | CREEK |
| C.W.D. | CREOSOTED WOOD DUCT |
| X-RD. | CROSS ROAD |
| X-SECT. | CROSS SECTION |
| CR. | CRUSHED |
| CU. | CUBIC |
| C.F. OR CU.FT. | CUBIC FOOT |
| CFS | CUBIC FEET PER SECOND |
| CFM | CUBIC FEET PER MINUTE |
| C.I. OR CU.IN. | CUBIC INCH |
| C.Y. OR CU.YD. | CUBIC YARD |
| $m^3$ | CUBIC METERS |
| $m^3$ / S | CUBIC METERS PER SECOND |
| $mm^3$ | CUBIC MILLIMETERS |
| CULV. | CULVERT |
| C&G | CURB & GUTTER |
| CUR. | CURRENT |
| C.L.F. | CURRENT LIMITING FUSE |
| C | CUT |

## D

| | |
|---|---|
| DPR. | DAMPER |
| D.L. | DEAD LOAD |
| DEFL. | DEFLECTION |
| DEG. OR (°) | DEGREE |
| △ | DELTA |
| DEPT. | DEPARTMENT |
| DPW | DEPT. OF PUBLIC WORKS (C/P) |
| DEP. | DEPARTURE |
| DET. | DETAIL |
| DSGN. | DESIGN |
| DIAG. | DIAGONAL |
| DIA. OR Ø | DIAMETER |
| DIAG. | DIAGRAM |
| DIAP. | DIAPHRAGM |
| DIM. | DIMENSION |
| DIR. | DIRECTIONAL OR DIRECT |
| DISC. | DISCONNECT |
| DISP. | DISPENSER |
| DIST. | DISTANCE |
| DP | DISTRIBUTION PANEL |
| do | DITTO |
| DR. | DOOR |
| DBL. | DOUBLE |
| DBL. T. | DOUBLE THROW |
| DWLS. | DOWELS |
| DR. | DRAIN |
| DN. | DOWN |
| D.S. | DOWNSPOUT |
| D.I. | DRAIN INLET |
| DWG. | DRAWING |
| DWGS. | DRAWINGS |
| Dmin | DRILLED SHAFT EMBEDMENT MINIMUM (SOIL & ROCK) |
| Dsr | DRILLED SHAFT EMBEDMENT MINIMUM (SOUND ROCK) |
| D.F. | DRINKING FOUNTAIN |
| DR | DRIVE |
| DRWY. | DRIVE WAY |
| DP. I. | DROP INLET |
| D.I. | DRAIN INLET |
| D.F. | DUCT FURNACE |
| D.I.P. | DUCTILE IRON PIPE |
| D.L.C. | DUQUESNE LIGHT COMPANY |
| DWLG. | DWELLING |

## E

| | |
|---|---|
| EA. | EACH |
| E.F. | EACH FACE |
| E.W. | EACH WAY |
| ESMT. | EASEMENT |
| E | EAST |
| E.B. | EAST BOUND |
| E/C | EDGE OF CONCRETE |
| E/R | EDGE OF ROAD |

## E CONTINUED

| | |
|---|---|
| E/P | EDGE OF PAVEMENT |
| E/S | EDGE OF SHOULDER |
| E/STR. | EDGE OF STREAM |
| ELL. | ELBOW |
| ELEC. | ELECTRIC OR ELECTRICAL |
| E.P.B. | ELECTRIC PANEL BOARD |
| E.RWY. | ELECTRIC RAILWAY |
| E.T.L. | ELECTRIC TROLLEY LINE |
| E.W.C. | ELECTRIC WATER COOLER |
| E.U.H. | ELECTRIC UNIT HEATER |
| E.MH. | ELECTRIC MANHOLE |
| EL. OR ELEV. | ELEVATION |
| EMB | EMBANKMENT |
| EMB. | EMBED OR EMBEDMENT |
| EMER'G. | EMERGENCY |
| ENCL | ENCLOSURE |
| E.D. | ENERGY DISSIPATER |
| E.O.L. | END LINE RESISTOR |
| E TO E | END TO END |
| ED.W. | END WALL |
| ENGR. | ENGINEER |
| ENT. | ENTRANCE |
| EQ. OR (=) | EQUAL |
| EQ | EQUALITY |
| EQU. | EQUATION |
| EQUIP. | EQUIPMENT |
| E.G.C. | EQUITABLE GAS COMPANY |
| EQUIV. | EQUIVALENT |
| ESC. | ESCALATOR |
| EST. | ESTIMATE |
| EXC. | EXCAVATION |
| EXH. | EXHAUST |
| E-A | EXHAUST AIR |
| E-F | EXHAUST FAN |
| E-R | EXHAUST REGISTER |
| EXIST. | EXISTING |
| EXP. | EXPANSION |
| EXP.BT. | EXPANSION BOLT |
| EXP.JT. | EXPANSION JOINT |
| XP | EXPLOSION PROOF |
| EXP.BLK. | EXPOSED BLOCK |
| EXT. | EXTENSION |
| EXT | EXTERNAL |
| EXT. D. | EXTERNAL DISTANCE |
| EXT | EXTERIOR |
| XHVY | EXTRA HEAVY |
| XSTR | EXTRA STRENGTH |

## F

| | |
|---|---|
| FAB. | FABRICATE |
| F TO F | FACE TO FACE |
| F/C | FACE OF CURB |
| F | FAHRENHEIT |
| F.C.U. | FAN COIL UNIT |
| F.F. | FAR FACE |
| FED. | FEDERAL |
| FED. A. | FEDERAL AID |
| FEMA | FED. EMERGENCY MANAGEMENT ADMINISTRATION |
| FTA | FED. TRANSIT ADMINISTRATION |
| FIS | FED. EMERGENCY MANAGEMENT ADMINISTRATION FLOOD INSURANCE STUDY |
| FT. OR (') | FEET |
| FPS | FEET PER SECOND |
| FPM | FEET PER MINUTE |
| FP | FENCE POST |
| FY. | FERRY |
| F.D. | FIBER DUCT, CONDUIT |
| F.B. | FIELD BOOK |
| FIG. | FIGURE |
| F | FILL |
| FIN. | FINISH |
| F.G. | FINISH GRADE |
| FIN. FL. | FINISHED FLOOR |
| F.T.R. | FINNED TUBE RADIATION |
| F.A. | FIRE ALARM |
| F.D. | FIRE DAMPER |
| F.H.V. | FIRE HOSE VALVE |
| F.H. | FIRE HYDRANT |
| F.P. | FIRE PROTECTION |
| FIX. | FIXED |
| FIXT. | FIXTURES |
| F.P. | FLAG POLE |
| FLG. | FLANGE OR FLANGED |
| FLASH | FLASHING |
| FLEX. | FLEXIBLE |
| FL. | FLOOR |
| FL.D. | FLOOR DRAIN |
| FL.L. | FLOOR LINE |
| F.L. | FLOW LINE |

## F CONTINUED

| | |
|---|---|
| FLUOR. | FLUORESCENT |
| FT. OR (') | FOOT |
| FTG. | FOOTING |
| FD. | FORD |
| A.M. | FORENOON |
| F.S. | FORESIGHT |
| FWD. | FORWARD |
| FDN. | FOUNDATION |
| FR. | FRAME |
| FR.DWLG. | FRAME DWELLING |
| FR.D. | FRENCH DRAIN |
| FRWY. | FREEWAY |
| FREQ. | FREQUENCY |
| F.A. | FRESH AIR |
| FS | FULL SCALE |
| F. | FUSE |
| FUT. | FUTURE |
| F/T | FUTURE TRACK |

## G

| | |
|---|---|
| GA. | GAGE, GAUGE |
| GAL. | GALLON |
| GPM | GALLONS PER MINUTE |
| GPS | GALLONS PER SECOND |
| GALV. | GALVANIZED |
| G.I. | GALVANIZED IRON |
| G.S. | GALVANIZED STEEL |
| G.S.P. | GALVANIZED STEEL PIPE |
| GAR. | GARAGE |
| GSKT. | GASKET |
| G.M. | GAS METER |
| G.V. | GAS VALVE |
| GEN. | GENERAL |
| G.A.E.C. | GENERAL ARCHITECTURAL/ ENGINEERING CONSULTANT |
| G.C. | GENERAL CONTRACTOR |
| GIR. | GIRDER |
| G | GIGA |
| GL. | GLASS |
| G.R.C. | GLASS REINFORCED CONC. |
| GOVT. | GOVERNMENT |
| GR | GRADE |
| G.P. | GRADE POINT |
| GRAD. | GRADUATION |
| g | GRAM |
| GRTG. | GRATING |
| GRN. | GREEN |
| GR. | GRILLE |
| GRD. | GRIND |
| GRD. | GROUND |
| G.F. | GROUND FAULT |
| G.F.I. | GROUND FAULT INTERRUPTER |
| G.R. | GUIDE RAIL (FORMERLY GUARD RAIL) |
| GP | GUARD POST |
| GYP. | GYPSUM |
| GYP. BD. | GYPSUM BOARD |

## H

| | |
|---|---|
| HCP. | HANDICAPPED |
| H.R. | HANDRAIL |
| HDW. | HARDWARE |
| HDWD. | HARDWOOD |
| HD. | HEAD |
| HDR. | HEADER |
| H.W. | HEAD WALL |
| HGR. | HANGER |
| HTR. | HEATER |
| HV | HEATING AND VENTILATING |
| HVY. | HEAVY |
| ha | HECTARE |
| HGT. | HEIGHT |
| Hz | HERTZ |
| HEX. | HEXAGON, HEXAGONAL |
| H.I. | HEIGHT OF INSTRUMENT |
| HDPE | HIGH DENSITY POLYETHYLENE |
| H.I.D. | HIGH INTENSITY DISCHARGE |
| H.P. | HIGH POINT |
| HP | HIGH PRESSURE |
| H.P.S. | HIGH PRESSURE SODIUM |
| H.W. | HIGH WATER |
| H.W.M. | HIGH WATER MARK |
| HWY. | HIGHWAY |
| H.M. | HOLLOW METAL |
| HOR. | HORIZONTAL |
| H.E. | HORIZONTAL ELLIPTICAL |
| HP. | HORSEPOWER |
| H.W.T. | HOT WATER TANK |
| HR. | HOUR |
| HSE. | HOUSE |
| HYD. | HYDRANT |

## I

| | |
|---|---|
| IB. | INBOUND |
| IN. OR (") | INCH |
| INCL. | INCLUDING |
| INC. | INCORPORATED |
| INFO. | INFORMATION |
| I.D. | INSIDE DIAMETER |
| I.F. | INSIDE FACE |
| INST. | INSTRUMENT |
| INSUL. | INSULATION |
| INTEG. | INTEGRAL |
| INT. | INTERIOR |
| INTER. | INTERMEDIATE |
| INV. | INVERT |
| I.E. | INVERT ELEVATION |
| I.PIN | IRON PIN |
| I.P. | IRON PIPE |

## J

| | |
|---|---|
| JAN. CLO. | JANITORS CLOSET |
| JT. | JOINT |
| J | JOULE |
| JCT. | JUNCTION |
| J.B. | JUNCTION BOX |

## K

| | |
|---|---|
| k | KILO |
| kg | KILOGRAM |
| km | KILOMETER |
| km/h | KILOMETER PER HOUR |
| kN | KILO NEWTON |
| KV | KILOVOLT |
| KVA | KILO-VOLT-AMPHERE |
| KW | KILOWATT |
| K | KIP OR KIPS |
| KSF | KIPS PER SQUARE FOOT |
| KSI | KIPS PER SQUARE INCH |
| KLF | KIPS PER LINEAR FOOT |
| K.O. | KNOCK OUT |

## L

| | |
|---|---|
| LAB. | LABORATORY |
| LAM. | LAMINATE |
| LAV. | LAVATORY |
| LAT. | LATITUDE |
| LT. | LEFT |
| L.H. | LEFT HAND |
| L/T | LEFT TRACK |
| LGTH. | LENGTH |
| Lb | LENGTH (MINIMUM BONDED) |
| ld. | LENGTH OF DEVELOPMENT |
| Lt | LENGTH (ESTIMATED TOTAL) |
| Lu | LENGTH (MINIMUM UNBONDED) |
| LGT. | LIGHT |
| LTG | LIGHTING |
| LED | LIGHT EMITTING DIODE |
| LTG. S | LIGHT STANDARD |
| LRT | LIGHT RAIL TRANSIT |
| LRV | LIGHT RAIL VEHICLE |
| LIN. | LINEAR OR LINEAL |
| L.A. | LIMITED ACCESS |
| L.F. OR LIN.FT. | LINEAR FOOT |
| L | LITER |
| L.L. | LIVE LOAD |
| LOCA. | LOCATION |
| LG. | LONG |
| LONG. | LONGITUDE OR LONGITUDINAL |
| LV. | LOUVER |
| L.P. | LOW POINT |
| LP | LOW PRESSURE |
| L.P.S. | LOW PRESSURE SODIUM |
| L.W.M. | LOW WATER MARK |
| LUB. | LUBRICATE |
| LBR. | LUMBER |
| lm | LUMEN |
| LS | LUMP SUM |
| lx | LUX |

## M

| | |
|---|---|
| MACH. | MACHINE |
| MAG. | MAGNETIC |
| MAINT. | MAINTENANCE |
| MH. | MANHOLE |
| MAN. | MANUAL |
| MFR. | MANUFACTURER |
| MK. | MARK |
| MAS. | MASONRY |
| MAS. O. | MASONRY OPENING |
| MAT'L. | MATERIAL |

## M CONTINUED

| | |
|---|---|
| MAX. | MAXIMUM |
| M.H.W. | MEAN HIGH WATER |
| M.L.W. | MEAN LOW WATER |
| M.S.L. | MEAN SEA LEVEL |
| MECH. | MECHANICAL |
| MSE | MECHANICALLY STABILIZED EARTH |
| M. | MEGA |
| MER. | MERIDIAN |
| MET. | METAL |
| m | METER |
| m/s | METERS PER SECOND |
| tonne | METRIC TON |
| MEZZ. | MEZZANINE |
| MI | MILE |
| M.P.H. | MILE PER HOUR |
| m | MILLI |
| mm | MILLIMETER |
| MIN. | MINIMUM |
| MIN. | MINUTE |
| MISC. | MISCELLANEOUS |
| M.C.C. | MOTOR CONTROL CENTER |
| M.D. | MOTOR DAMPER |
| MTN. | MOUNTAIN |
| MON. | MONUMENT |
| MTD. | MOUNTED |
| M.H. | MOUNTED HEIGHT |
| MTG. | MOUNTING |
| MTBLE. | MOUNTABLE |
| M.J. | MOVEMENT JOINT |
| M.C.D. | MULTIPLE CONCRETE DUCT |
| M.T.D. | MULTIPLE TILE DUCT |

## N

| | |
|---|---|
| NAT'L. | NATIONAL |
| N.G.V.D. | NATIONAL GEODETIC VERTICAL DATUM |
| N.G.S. | NATIONAL GEODETIC SURVEY |
| NAT. | NATIVE OR NATURAL |
| N.F. | NEAR FACE |
| N.S. | NEAR SIDE |
| NEG. | NEGATIVE |
| NEUT. | NEUTRAL |
| n | NEWTON |
| NOM. | NOMINAL |
| NOM.NF | NOMINAL NON-FUSED |
| N&W | NORFOLK & WESTERN RAILWAY |
| NS | NORFOLK SOUTHERN RAILWAY |
| NOR. | NORMAL |
| N.C. | NORMALLY CLOSED |
| N.O. | NORMALLY OPEN |
| N | NORTH |
| N.B. | NORTH BOUND |
| N.E. | NORTHEAST |
| N.W. | NORTHWEST |
| N.A. | NOT APPLICABLE |
| N.I.C. | NOT IN CONTRACT |
| NTS | NOT TO SCALE |
| NO. OR #() | NUMBER |
| NOS. | NUMBERS |

## O

| | |
|---|---|
| O.C. | ON CENTER |
| / | OF |
| OFF. | OFFSET |
| OPNG. | OPENING |
| OGS | OPEN GRADAGE SUBBASE |
| OPP. | OPPOSITE |
| OPP.HD. | OPPOSITE HAND |
| OPT. | OPTIONAL |
| ORN. | ORANGE |
| ORIG. | ORIGINAL |
| O.G. | ORIGINAL GRADE |
| OZ. | OUNCE |
| OB. | OUTBOUND |
| O.A. | OUTSIDE AIR |
| O.D. | OUTSIDE DIAMETER |
| O.F. | OUTSIDE FENCE |
| O TO O | OUTSIDE TO OUTSIDE OR OUT TO OUT |
| OS&Y | OUTSIDE SCREW AND YOKE |
| OA. | OVERALL |
| O.H. | OVERHEAD |

| NO. | DATE | DESCRIPTION |
|---|---|---|
| | | |

REVISIONS

GFT
GFT INFRASTRUCTURE, INC.
Foster Plaza 8
Suite 400
730 Holiday Drive
Pittsburgh, PA. 15220

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
ERIC R. HOLLAND
ENGINEER
PE079465

SIGNATURE

APPROVED DATE

| | |
|---|---|
| DESIGNED | RRH |
| DRAWN | RRH |
| CHECKED | ERH |
| IN CHARGE | ERH |
| DATE | AUGUST 2026 |
| SCALE | NOT TO SCALE |

PORT AUTHORITY OF ALLEGHENY COUNTY
PITTSBURGH PENNSYLVANIA

RT 88 GRADE CROSSING
IMPROVEMENT PROJECT
ABBREVIATIONS

Port Authority
connecting people to life

CONTRACT NO. SYS-26-02
DWG. NO. G003 SHT. 4

FILE: pw:\\gfnet-pw.bentley.com:gfnet-pw-01\Documents\Projects\62984-037\OUTPUT\COMP_01\CIVIL\SGNL\PLOT\Rt 88 Grade Crossing General Notes and Index
DATE: 8/18/2026 TIME: 3:37:47 PM

## P

| | |
|---|---|
| P. | PAGE |
| PP. | PAGES |
| PR. | PAIR |
| PNL. | PANEL |
| PAR. | PARAGRAPH |
| PAR | PARALLEL |
| PK | PARKER-KALON NAIL (SURVEY MARKER) |
| PKG. | PARKING |
| PKG.M. | PARKING METER |
| PKWY. | PARKWAY |
| PARTN. | PARTITION |
| PAT. | PATENT |
| Pq | PASCAL |
| PAV'T. | PAVEMENT |
| PBD | PAVEMENT BASE DRAIN |
| PAV'G. | PAVING |
| PED. | PEDESTRIAN |
| PA | PENNSYLVANIA |
| P.A.W.C. | PENNSYLVANIA AMERICAN WATER COMPANY |
| PADER | PENNSYLVANIA DEPT. OF ENVIRONMENTAL RESOURCES |
| PENNDOT | PENNSYLVANIA DEPARTMENT OF TRANSPORTATION |
| PNGCO. | PEOPLES NATURAL GAS COMPANY |
| % | PERCENT |
| P.C.M.P. | PERFORATED CORRUGATED METAL PIPE |
| PERF. | PERFORATED |
| PERM. | PERMANENT |
| PERP. | PERPENDICULAR |
| PGH | PITTSBURGH |
| PWSA | PGH. WATER & SEWER AUTHORITY |
| PL | PLANE OR PLAIN |
| PCC OR PLCC | PLAIN CEMENT CONCRETE |
| P.D. | PLASTIC CONDUIT DUCT |
| PL. | PLATE |
| PLATF. | PLATFORM |
| PLMB. | PLUMBING (PLUMBER) |
| PLWD. | PLYWOOD |
| P/T | POCKET TRACK |
| PT. | POINT |
| P.C. | POINT OF CURVE |
| PT | POINT OF TANGENT |
| P.C.B. | POLICE CALL BOX |
| PVC | POLYVINYL CHORIDE |
| PAT OR PAAC | PORT AUTHORITY OF ALLEGHENY COUNTY |
| P.C.C. | PORTLAND CEMENT CONCRETE |
| POS. | POSITION |
| LB. OR LBS. | POUND OR POUNDS |
| PCF | POUNDS PER CUBIC FOOT |
| PSF | POUNDS PER SQUARE FOOT |
| PSI | POUNDS PER SQUARE INCH |
| PWR. | POWER |
| PP | POWER PANEL |
| PPB | POWER PANEL BOARD |
| P.P. | POWER POLE |
| PRI. | PRIMARY |
| PCST. | PRECAST |
| PREFAB. | PREFABRICATED |
| PRELIM. | PRELIMINARY |
| PMLD. | PREMOLDED |
| PRESS. | PRESSURE |
| P/S | PRESTRESSED |
| P.C.P. | PRESTRESSED CONCRETE PIPE |
| PROC. | PROCESS |
| PROD. | PRODUCTION |
| PG | PROFILE GRADE |
| PGL | PROFILE GRADE LINE |
| PROJ. | PROJECTION |
| ℙ | PROPERTY LINE |
| PROP. | PROPOSED |
| PUB. | PUBLICATION |
| PD | PUMP DISCHARGE |
| P.B. | PUSH-BUTTON |

## Q

| | |
|---|---|
| QUAD. | QUADRANT |
| QUAL. | QUALITY |
| QT. | QUART |
| QTR. | QUARTER |

## R

| | |
|---|---|
| RAD. | RADIAL |
| rad | RADIAN |
| R. | RADIUS |
| R.W.C. | RAIN WATER CONDUCTOR |
| R.R. | RAILROAD |
| RWY. | RAILWAY |
| REC'D. | RECEIVED |
| REC. | RECESSED |
| REC. LTG. | RECESSED LIGHTING |
| RECONSTR. | RECONSTRUCT |
| RECT. | RECTANGLE |
| REDR. | REDRESSED |
| REF. | REFERENCE |
| R.N. | REFERENCE NORTH |
| REFL. | REFLECTION OR REFLECTOR |
| REG. | REGULAR |
| REG | REGISTER |
| REINF. | REINFORCED, REINFORCEMENT OR REINFORCING |
| R.C.C. | REINFORCED CEMENT CONCRETE |
| R.C.P. | REINFORCED CONCRETE PIPE |
| R.E.C.P. | REINFORCED ELLIPTICAL CONCRETE PIPE |
| REM. | REMOVAL OR REMOVE |
| REQ'D. | REQUIRED |
| RET. | RETAINING |
| RET | RETURN |
| R.A. | RETURN AIR |
| RLS. | RETURN LINE, STEAM |
| REV | REVERSE |
| REV. | REVISION |
| RPM | REVOLUTION PER MINUTE |
| RT. | RIGHT |
| R.H. | RIGHT HAND |
| R/W | RIGHT-OF-WAY |
| R/T | RIGHT TRACK |
| R. | RISER |
| RD. | ROAD |
| RDWY. | ROADWAY |
| RM. | ROOM |
| RAC | ROOM AIR CONDITIONER |
| RF. | ROOF |
| RF.D. | ROOF DRAIN |
| RFG. | ROOFING |
| RD | ROUND |
| R.T.D. | ROUND TILE DUCT |
| R.O. | ROUGH OPENING |
| RTE. | ROUTE |

## S

| | |
|---|---|
| SAN.S | SANITARY SEWER |
| SAN.MH. | SANITARY SEWER MANHOLE |
| SCH. | SCHEDULE |
| SCR | SCREW |
| SEC. | SECOND |
| SECT. | SECTION |
| SEG | SEGMENT |
| SEL. | SELECT |
| SEP. | SEPARATE |
| SERV. | SERVICE |
| SERV. S. | SERVICE SINK |
| SHT. | SHEET |
| SHLD. | SHOULDER |
| SH. | SHOWER |
| SH.D. | SHOWER DRAIN |
| SWALK.OR SDWK. | SIDEWALK |
| SIG. | SIGNAL |
| S.P. | SINGLE POLE |
| S.TW. | SINGLE THROW |
| SIM. | SIMILAR |
| SK | SKETCH |
| SLV. | SLEEVE |
| SL. | SLOPE |
| SL.S. | SLOPE STAKE |
| S.D. | SMOKE DETECTOR |
| SPTC | SOLDIER-PILE-TREMIE-CONCRETE |
| S | SOUTH |
| S.E. | SOUTHEAST |
| S.W. | SOUTHWEST |
| S.B. | SOUTH BOUND |
| SPA | SPACE OR SPACING |
| SPCS | SPACES |
| SP. | SPARE |
| SPEC. | SPECIFICATION |
| S.L. | SPRING LINE |
| SAP | SPRINKLER ALARM PANEL |
| SQ. | SQUARE |
| SQ.FT. OR S.F. | SQUARE FOOT |

## S CONTINUED

| | |
|---|---|
| SQ. IN. OR S.I. | SQUARE INCH |
| $km^2$ | SQUARE KILOMETERS |
| $m^2$ | SQUARE METERS |
| $mm^2$ | SQUARE MILLIMETERS |
| STAG | STAGGERED |
| STWY. | STAIRWAY |
| S.P. | STAND PIPE |
| STD. | STANDARD |
| SR | STATE ROUTE |
| STA. | STATION |
| STM. | STEAM |
| STL. | STEEL |
| STL.P. | STEEL PIPE, DUCT, CONDUIT |
| STIFF. | STIFFENER |
| STIR. | STIRRUP |
| STG. | STORAGE |
| S.A. | STORAGE AREA |
| STR. | STRINGER |
| STR.RM. | STORAGE ROOM |
| SS | STORM SEWER |
| STY. | STORY |
| STR | STREAM |
| ST. | STREET |
| S.L. | STREET LIGHTING |
| STRUCT. | STRUCTURAL |
| STR | STRUCTURE |
| SUBG. OR S.G. | SUBGRADE |
| SUBSTR. | SUBSTRUCTURE |
| S.P. | SUMP PUMP |
| SE | SUPER ELEVATION |
| SUPT | SUPERINTENDENT |
| SUPERSTR. | SUPERSTRUCTURE |
| S.A. | SUPPLY AIR |
| SUP. | SUPPORT |
| SURF. | SURFACE |
| S.M. | SURFACE MOUNTED |
| SURV. | SURVEY |
| SUSP. | SUSPENDED |
| SW. | SWITCH |
| SYM. | SYMMETRICAL |

## T

| | |
|---|---|
| TAN. | TANGENT |
| TRP. | TAPER |
| TECH. | TECHNICAL |
| TEL. | TELEPHONE |
| T.B. | TELEPHONE BOOTH |
| T.P. | TELEPHONE POLE |
| TEMP. | TEMPERATURE |
| TEMP.C. | TEMPERATURE CONTROL |
| TEMP | TEMPORARY |
| TENS. | TENSION |
| TERM. | TERMINAL |
| T.C. | TERRA COTTA |
| TCMD | TERRA COTTA MULTIPLE DUCTS |
| TCP | TERRA COTTA PIPE |
| TCSD | TERRA COTTA SINGLE DUCT |
| T.B. | TEST BORING |
| THK. | THICK |
| M | THOUSAND |
| THD. | THREAD |
| THRESH. | THRESHOLD |
| THRU | THROUGH |
| TOL. | TOLERANCE |
| T&G | TONGUE AND GROOVE |
| T | TOP |
| T&B | TOP AND BOTTOM |
| TOPO | TOPOGRAPHY |
| T/B | TOP OF BANK |
| T/CONC. | TOP OF CONCRETE |
| T/C | TOP OF CURB |
| T/G | TOP OF GRATE |
| T/GRTG. | TOP OF GRATING |
| T/F | TOP OF FILL |
| T/R | TOP OF RAIL |
| T/W | TOP OF WALL |
| TF | TOTAL FILL |
| TWP. | TOWNSHIP |
| TRK. | TRACK |
| TR. | TRAFFIC |
| T.C.B. | TRAFFIC CALL BOX |
| TS | TRAFFIC SIGNAL |
| TRANS. | TRANSFORMER |
| T.A. | TRANSFER AIR |
| TRANV. | TRANSVERSE |
| T. | TREAD |
| TR. | TRIP |
| T.P. | TURNING POINT |
| TW | THERMOPLASTIC WATER-RESISTANT |
| TYP. | TYPICAL |

## U

| | |
|---|---|
| UD OR U-DRAIN | UNDERDRAIN |
| U.P.V. | UNDER PLATFORM VENTILATION |
| UNFIN. | UNFINISHED |
| U.H. | UNIT HEATER |
| U.P.S. | UNINTERRUPTED POWER SUPPLY |
| U.S.G.S. | U.S. GEOLOGICAL SURVEY |
| UNIV. | UNIVERSAL |
| U.N. | UNLESS NOTED |
| U.O.N. | UNLESS OTHERWISE NOTED |
| UPSTRE | UPSTREAM |
| U.M.T.A. | URBAN MASS TRANSPORTATION ADMINISTRATION |
| UPL | UTILITY POLE WITH LUMINARIES |

## V

| | |
|---|---|
| VAC. | VACANT |
| VAC | VACUUM |
| VAL. | VALVE |
| VP. | VAPOR OR VAPOR PROOF |
| VAR. | VARIABLE |
| VE | VENT |
| V.T.R. | VENT THRU ROOF |
| VENT. | VENTILATION |
| VIF | VERIFY IN FIELD |
| VERT. | VERTICAL |
| V.C.L. | VERTICAL CONTROL LINE |
| V.C. | VERTICAL CURVE |
| Vm | VERTICAL METER |
| VCP | VITRIFIED CLAY PIPE |
| VCPX | VITRIFIED CLAY PIPE EXTRA STRENGTH |
| VCPXR | VITRIFIED CLAY PIPE EXTRA STRENGTH RUBBER GASKET |
| VM | VITRIFIED MATERIAL |
| VTP | VITRIFIED TILE PIPE |
| V | VOLT |
| VOL. | VOLUME |
| VOL.D. | VOLUME DAMPER |

## W

| | |
|---|---|
| WK. | WALK |
| W.H. | WALL HEATER |
| WHSE. | WAREHOUSE |
| W.B. | WATER BOX |
| W.C. | WATER CLOSET |
| W.M. | WATER METER |
| WP. | WATERPROOFING |
| W.S. | WATER SPIGOT |
| W.T. | WATER TABLE |
| WV | WATER VALVE |
| w | WATT |
| W.S. | WEARING SURFACE |
| W.P. | WEATHERPROOF |
| W.H. | WEEP HOLES |
| WT. | WEIGHT |
| WWF | WELDED WIRE FABRIC |
| WSP | WELDED STEEL PIPE |
| WSPC | WELDED STEEL PIPE, COATED |
| WSPCC | WELDED STEEL PIPE, COATED ,CEMENT LINED |
| W | WEST |
| W.B. | WEST BOUND |
| W.P.P.C. | WEST PENN POWER COMPANY |
| W.U. | WESTERN UNION TELEGRAPH COMPANY |
| W.S.P. | WET STAND PIPE |
| W&LE R.R. | WHEELING AND LAKE ERIE RAILROAD |
| WDW. | WINDOW |
| W.W. | WING WALL |
| W.GL. | WIRE GLASS |
| W/ | WITH |
| W/O | WITHOUT |
| W. | WIDTH |
| WD. | WOOD |
| W.P. | WORK POINT |
| W.I. | WROUGHT IRON |
| W.I.P. | WROUGHT IRON PIPE |

## Y

| | |
|---|---|
| YD. | YARD |
| YR. | YEAR |
| YEL. | YELLOW |

## SURVEY TERMS

| | |
|---|---|
| H.I. | HEIGHT OF INSTRUMENT |
| B.S. | BACK SIGHT |
| F.S. | FRONT SIGHT |
| T.P. | TURNING POINT |
| ∠ | ANGLE |
| X-SECT. | CROSS SECTION |
| DEFL. | DEFLECTION |
| MAG. | MAGNETIC |
| T.S. | TOP OF STAKE |
| B.S. | BOTTOM OF STAKE |
| AZ. | AZIMUTH |
| TBM | TEMPORARY BENCH MARK |
| CW. | COPPERWELD (SURVEY MARKER) |
| F.B. | FIELDBOOK |
| I.PIN | IRON PIN (SURVEY MARKER) |
| I.P. | IRON PIPE (SURVEY MARKER) |
| PK | PARKER-KALON NAIL (SURVEY MARKER) |
| MSL | MEAN SEA LEVEL |
| MER. | MERIDAN |
| LAT. | LATITUDE |
| LONG. | LONGITUDE |
| MON. | MONUMENT |
| NAD | NORTH AMERICAN DATUM |
| N.G.V.D. | NATIONAL GEODETIC VERTICAL DATUM |
| N.G.S. | NATIONAL GEODETIC SURVEY |

## CURVE DATA TERMS (ROADWAY)

### HORIZONTAL

| | |
|---|---|
| STA. | STATION |
| R | RADIUS |
| L | LENGTH OF CURVE |
| P.O.S. | POINT ON SPIRAL |
| P.O.T. | POINT ON TANGENT |
| P.O.C. | POINT ON CURVE |
| P.O.S.T. | POINT ON SUBTANGENT |
| P.C.C. | POINT OF COMPOUND CURVE |
| P.R.C. | POINT OF REVERSE CURVE |
| S.S.D. | HORIZONTAL STOPPING SIGHT DISTANCE (REQUIRED) |
| H.S.S.D. | HORIZONTAL STOPPING SIGHT DISTANCE (ACTUAL) |

### SIMPLE CURVE (ARC METHOD)

| | |
|---|---|
| P.I. | POINT OF INTERSECTION |
| P.C. | POINT OF CURVATURE |
| P.T. | POINT OF TANGENCY |
| △ | DEFLECTION ANGLE BETWEEN THE TANGENTS |
| T | TANGENT DISTANCE |
| E | EXTERNAL DISTANCE |
| R | RADIUS OF THE CIRCULAR ARC |
| M | MIDDLE ORDINATE |
| L.C. | LONG CHORD (DISTANCE BETWEEN P.C. AND P.T.) |
| C | MIDPOINT OF LONG CHORD |
| D | DEGREE OF CURVATURE |
| S.E. | SUPERELEVATION |
| EQ. | EQUATION |
| ℄ | CENTERLINE |
| D.S. | DESIGN SPEED |
| H.S.S.D. | HORIZONTAL STOPPING SIGHT DISTANCE (ACTUAL) |

### SPIRAL CURVE

| | |
|---|---|
| Rc | RADIUS OF CIRCULAR CURVE |
| Dc | DEGREE OF CURVATURE OF THE CIRCULAR CURVE |
| △ | DEFLECTION ANGLE BETWEEN THE TANGENTS |
| θS | SPIRAL ANGLE |
| $△_c$ | CENTERAL ANGLE BETWEEN THE S.C. AND C.S. |
| ES | EXTERNAL DISTANCE |
| L.C. | LONG CHORD |
| L.T. | LONG TANGENT |
| S.T. | SHORT TANGENT |
| x | TANGENT DISTANCE FOR S.C. |
| y | TANGENT OFFSET OF THE S.C. |
| k | SIMPLE CURVE CO-ORDINATE (ABSCISSAL) |
| p | SIMPLE CURVE CO-ORDINATE (ORDINATE) |
| T.S. | TANGENT TO SPIRAL |
| S.C. | SPIRAL TO CIRCULAR CURVE |
| C.S. | CIRCULAR CURVE TO SPIRAL |
| S.T. | SPIRAL TO TANGENT |
| D.S. | DESIGN SPEED |

### VERTICAL

| | |
|---|---|
| P.V.I. | POINT OF VERTICAL INTERSECTION |
| P.V.C. | POINT OF VERTICAL CURVE |
| P.V.T. | POINT OF VERTICAL TANGENT |
| V.C. | LENGTH OF VERTICAL CURVE |
| M.O. | MIDDLE ORDINATE |
| S.S.D. | STOPPING SIGHT DISTANCE |
| H.L.S.D. | HEAD LIGHT SIGHT DISTANCE |
| ELEV. | ELEVATION |
| P.G. | PROFILE GRADE |
| D.S. | DESIGN SPEED |
| P.R.V.C. | POINT OF REVERSE VERTICAL CURVE |

| NO. | DATE | DESCRIPTION |
|---|---|---|
| | | |

REVISIONS

GFT

GFT INFRASTRUCTURE, INC.
Foster Plaza 8
Suite 400
730 Holiday Drive
Pittsburgh, PA. 15220

COMMONWEALTH OF PENNSYLVANIA — REGISTERED PROFESSIONAL ENGINEER — ERIC R. HOLLAND — PE079465

SIGNATURE

APPROVED DATE

| | |
|---|---|
| DESIGNED | RRH |
| DRAWN | RRH |
| CHECKED | ERH |
| IN CHARGE | ERH |
| DATE | AUGUST 2026 |
| SCALE | NOT TO SCALE |

PORT AUTHORITY OF ALLEGHENY COUNTY
PITTSBURGH PENNSYLVANIA

RT 88 GRADE CROSSING
IMPROVEMENT PROJECT
ABBREVIATIONS, CURVE DATA & SURVEY TERMS

Port Authority — connecting people to life

CONTRACT NO. SYS-26-02
DWG. NO. G004 SHT. 5

FILE: pw:\\gfnet-pw.bentley.com:gfnet-pw-01\Documents\Projects\62984-037\OUTPUT\COMP_01\CIVIL\SGNL\PLOT\Rt 88 Grade Crossing GeneralNotes and Index
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| EXISTING | | NEW |
|---|---|---|
| | INLET | |
| MH | MANHOLE | |
| CO | CLEAN OUT | CO |
| 12" SAN. S. OR 12" COMB. S. | SEWER LINE AND OR DRAIN LINE, FOR LINES UP TO 18" DIA. | 12" |
| 21" SS OR 21" COMB. S. | SEWER LINE AND OR DRAIN LINE, FOR LINES 21" DIA. AND LARGER DRAW TO SCALE | 21" |
| | CULVERT WITH HEAD WALL | |
| | HEADWALLS | |
| 12"W | WATER | 12"W |
| | WATER VALVE | |
| W.M. F.H. 12"W | REDUCER,WATER BOX, WATER METER,FIRE HYDRANT, CAP, OR PLUG | W.M. F.H. 12"W |
| 16"G | GAS | 16"G |
| GV 16"G | REDUCER, GAS VALVE, CAP, OR PLUG | GV 16"G |
| G | ABANDONED UTILITY LINE | |
| | UTILITY LINE TO BE ABANDONED | G |
| C LABEL | CONDUIT | C LABEL |
| CTV LABEL | CABLE TV | CTV LABEL |
| CTVU LABEL | CABLE TV UNDERGROUND | CTVU LABEL |
| T LABEL | TELEPHONE | T LABEL |
| TU LABEL | TELEPHONE UNDERGROUND | TU LABEL |
| E LABEL | ELECTRIC | E LABEL |
| FO LABEL | FIBER OPTICS | FO LABEL |
| FOU LABEL | FIBER OPTICS UNDERGROUND | FOU LABEL |

| EXISTING | | NEW |
|---|---|---|
| | AERIAL CABLES | |
| LABEL ✳ — UNDERGROUND, DIRECT BURIED, ENCASED, OR ETC. | | |
| OR — PLACE THE TYPE OF CABLE ELECTRIC, TELEPHONE, OR ETC. | | |
| TMH,6203 EMH | MANHOLE, PULL BOX OR SPLICING CHAMBER, COMPANY DESIGNATION (TO SCALE) | TMH,6203 EMH |
| JB 23 | JUNCTION BOX | JB 23 |
| | PRIVATE VAULT (TO SCALE) | |
| ℄ OR ℄ | CENTER LINE OR BASE LINE | ℄ OR ℄ |
| SURVEY ℄ | SURVEY CENTER LINE | SURVEY ℄ |
| ℙ ℙ | PROPERTY LINE | ℙ ℙ |
| LEGAL R/W LINE | LEGAL RIGHT OF WAY LINE | |
| | REQUIRED RIGHT OF WAY LINE | REQ'D. R/W LINE |
| | STATE, COUNTY, TOWNSHIP, OR BOROUGH LINES | |
| | FOR CITY OF PITTSBURGH, WARD LINES | |
| | EMBEDDED TRACK | EMBEDDED TRACK ℄ |
| | BALLASTED TRACK | BALLASTED TRACK ℄ |
| | DIRECT FIXATION TRACK | DIRECT FIXATION TRACK ℄ |

| EXISTING | | NEW |
|---|---|---|
| | RAILROAD CROSSING SIGNAL LIGHT | |
| | RAILROAD CROSSING GATE | |
| | RAILROAD SIGN | |
| F.A. | FIRE ALARM BOX | F.A. |
| | FIRE SERVICE STAND PIPE SIAMESE CONNECTION | |
| F.P. | FLAG POLE | F.P. |
| F.P. | FLAG POLE IN CONCRETE BASE | F.P. |
| WD. P OR ST'L. | POLE | WD. P OR ST'L. P |
| | UTILITY POLE | |
| | SIGN POLE OR ROADWAY SIGN | |
| | MAST ARM | |
| | SIGNAL | |
| | SIGNAL WITH LOUVERS | |
| 12 | POLE NUMBER | 12 |
| | OVERHEAD SIGN | |
| T.S. | TRAFFIC SIGNAL | T.S. |

NOTES:

1. WHERE A CONFLICT ARISES BETWEEN THE DRAWING SHEETS AND THE SYMBOL SHEETS, THE DRAWING SHEETS SHALL GOVERN.
2. THE SIZE OF SEWER, WATER AND GAS LINES SHOWN ON DRAWING ARE FOR REFERENCE ONLY. NUMBERS SHOWN FOR MANHOLES, PULL BOXES AND JUNCTION BOXES ARE FOR REFERENCE ONLY.

| NO. | DATE | DESCRIPTION |
|---|---|---|
| | | |

REVISIONS

GFT INFRASTRUCTURE, INC.
Foster Plaza 8
Suite 400
730 Holiday Drive
Pittsburgh, PA. 15220

COMMONWEALTH OF PENNSYLVANIA — REGISTERED PROFESSIONAL — ERIC R. HOLLAND — ENGINEER — PE079465

SIGNATURE

APPROVED DATE

| | |
|---|---|
| DESIGNED | RRH |
| DRAWN | RRH |
| CHECKED | ERH |
| IN CHARGE | ERH |
| DATE | AUGUST 2026 |
| SCALE | NOT TO SCALE |

PORT AUTHORITY OF ALLEGHENY COUNTY
PITTSBURGH PENNSYLVANIA

RT 88 GRADE CROSSING
**IMPROVEMENT PROJECT**
**SYMBOLS - SHEET 1 OF 4**

Port Authority — connecting people to life

CONTRACT NO. SYS-26-02
DWG. NO. G005 SHT. 6

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| EXISTING | | NEW |
|---|---|---|
| WALL | WALL | WALL |
| | DITCHES | |
| WALL | WALL WITH PAVED DITCH OR GUTTER | WALL |
| | GUIDE RAIL | |
| | FENCE | |
| LABEL | EDGE OF PAVEMENT | LABEL |
| LABEL | SHOULDER LINE | LABEL |
| DEPRESSED CURB | DEPRESSED CURB | DEPRESSED CURB |
| CURB LINE | CURB LINE | TYPE OF CURB |
| OR | CATENARY POLE | OR |
| | TEMPORARY BARRIER | |
| BILLBOARD | SINGLE FACE, BILLBOARD | |
| BILLBOARD | DOUBLE FACE, BILLBOARD | |
| LABEL | FOUNDATION, OLD RUINS | |

| EXISTING | | NEW |
|---|---|---|
| LABEL | BUILDINGS | LABEL |
| 840 | CONTOUR LINE | 840 |
| 840.2 x | SPOT ELEVATION | 840.2 |
| S | SWALE | S |
| | CUT SLOPE | C |
| | FILL SLOPE | F |
| | SURFACE FLOW DIRECTION | |
| | TEMPORARY CONSTRUCTION EASEMENT | LABEL |
| | REQUIRED LIMIT OF SLOPE LINE | LABEL |
| | WOODED AREA | |
| LABEL | INDIVIDUAL TREES OR SHRUBS | LABEL |
| | RIVER, CREEK, OR STREAM | |
| | DRAINAGE DRAW, DITCHES, OR RAVINES, NORMALLY DRY | |
| OR | WET AREA | |

## ROADWAY AND WALKWAY LIGHTING

| EXISTING | | NEW |
|---|---|---|
| | POLE AND LUMINAIRE | |
| | LUMINAIRE FOR ROADWAY LIGHTING | |
| | PEDESTRAIN LUMINAIRE - WALL MOUNTED | |
| | PEDESTRAIN LUMINAIRE - POLE MOUNTED | |
| | LUMINAIRE RECTANGULAR CUTOFF - POLE MOUNTED | |
| | LUMINAIRE - WALL MOUNTED WITHOUT J.B. | |
| | LUMINAIRE - WALL MOUNTED WITH J.B. | |
| JB 23 | ELECTRICAL JUNCTION BOX | JB 23 |

MATCH LINE

MATCH LINE DWG _ _ _

NORTH ARROW

DIMENSION LINE

DRAWING BORDER

SHEET BREAK INDEX MAP

PLAN SHEET INDEX MAP

PROFILE SHEET INDEX MAP

PARCEL IDENTIFICATION NUMBER

NOTE:

WHERE A CONFLICT ARISES BETWEEN THE DRAWING SHEETS AND THE SYMBOL SHEETS, THE DRAWING SHEETS SHALL GOVERN.

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| | | |

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PORT AUTHORITY OF ALLEGHENY COUNTY
PITTSBURGH PENNSYLVANIA

RT 88 GRADE CROSSING
IMPROVEMENT PROJECT
SYMBOLS - SHEET 2 OF 4

Port Authority — connecting people to life

CONTRACT NO. SYS-26-02
DWG. NO. G006 SHT. 7

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# EROSION AND SEDIMENTATION CONTROL

INLET FILTER BAG

SILT BARRIER FENCE — SF — SF — SF

ROCK CONSTRUCTION ENTRANCE — RCE

INLET

LIMIT OF EXCAVATION — --- ---C--- ---

LIMIT OF EMBANKMENT — F

ROCK

EARTH

GRANULAR MATERIAL

CEMENT / SAND / MORTAR

CONCRETE - PRECAST AND POURED IN PLACE

MASONRY UNIT

FINISHED WOOD

ROUGH WOOD

WOOD BLOCKING

INSULATION

INSULATION RIGID BATT / LOOSE FILL

INSULATION SPRAY / FOAM

IRON OR STEEL

PARTITION INDICATION WOOD STUD

PARTITION INDICATION METAL STUD

STRUCTURAL MEMBERS PLAN AND SECTIONS

STRUCTURAL MEMBERS LARGE SECTIONS AND DETAILS

GLASS

GLASS (ELEVATION)

DENOTES NEW

DENOTES EXISTING

BUILDING CENTER LINE

SECTION MARK LETTER

DWG. NO. ON WHICH SECT. APPEARS

A / A001

SYMBOL

SECTION A / A004

SECTION MARK LETTER

DWG. NO. ON WHICH THE SECTION SYMBOL IS SHOWN

TITLE

DETAIL NO. 1 / S001

DWG. NO. ON WHICH DETAIL APPEARS

SYMBOL

DETAIL 1 / S001

DETAIL NUMBER

DWG. NO. ON WHICH THE DETAIL SYMBOL IS SHOWN

TITLE

ELEVATION NO. 1 / A001

DWG. NO. ON WHICH ELEVATION APPEARS

SYMBOL

ELEVATION 1 / A004

ELEVATION NUMBER

DWG. NO. ON WHICH THE ELEVATION SYMBOL IS SHOWN

TITLE

SECTION MARK LETTER

SECTION APPEARS ON DWG. FROM WHICH IT WAS CUT

A / —

SYMBOL

SECTION A / —

SECTION MARK LETTER

THE SECTION SYMBOL IS SHOWN ON SAME DWG. WHERE SECTION APPEARS

TITLE

NOTE:

WHERE A CONFLICT ARISES BETWEEN THE DRAWING SHEETS AND THE SYMBOL SHEETS, THE DRAWING SHEETS SHALL GOVERN.

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PORT AUTHORITY OF ALLEGHENY COUNTY
PITTSBURGH PENNSYLVANIA

RT 88 GRADE CROSSING
IMPROVEMENT PROJECT
SYMBOLS - SHEET 3 OF 4

Port Authority — connecting people to life

CONTRACT NO. SYS-26-02

DWG. NO. G007 SHT. 8

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DATE: 8/18/2026 TIME: 3:37:49 PM

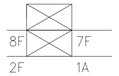
## ALL RELAYS SHOWN WITH COIL CONNECTION NUMBERS



VITAL BIASED RELAY



NONVITAL RELAY



2 ELEMENT A.C. VANE RELAY



TIME ELEMENT RELAY



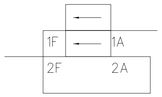
FLASHER RELAY



BIASED SLOW RELEASE RELAY



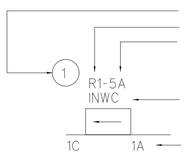
DOUBLE COIL PARALLEL CONNECTED VITAL BIASED RELAY



DOUBLE COIL SERIES CONNECTED VITAL BIASED RELAY


TRIP STOP COIL

## TYPICAL COIL/CONTACT SYMBOLOGY



APPARATUS TABULATION REFERENCE NUMBER
RACK NUMBER
RACK ROW AND COLUMN POSITION
RELAY FUNCTION AND NAME
COIL CONNECTION POINTS


NORMALLY CLOSED FRONT CONTACT

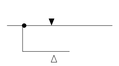

NORMALLY OPEN FRONT CONTACT

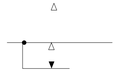

NORMALLY CLOSED BACK CONTACT

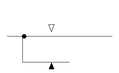

NORMALLY OPEN BACK CONTACT

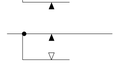

MAGNETIC BLOWOUT CONTACT


HEAVY DUTY CONTACT


NORMALLY ENERGIZED TRANSFER CONTACT


NORMALLY ENERGIZED TRANSFER CONTACT


NORMALLY DE-ENERGIZED TRANSFER CONTACT


NORMALLY DE-ENERGIZED TRANSFER CONTACT

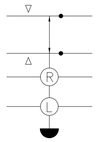

FLASHING CONTACT


FLASHING CONTACT (HIGHWAY CROSSING)



EMERGENCY START PUSH BUTTON CONTACT


PUSH BUTTON CONTACT (PUSH/PULL)



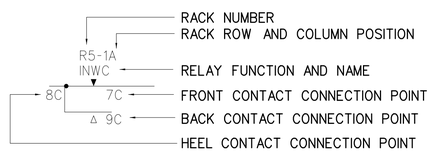
PUSH BUTTON CONTACT (PUSH/PULL/TURN)


NORMALLY CLOSED SWITCH LOCK ARMATURE CONTACT


NORMALLY OPEN SWITCH LOCK ARMATURE CONTACT


NORMALLY OPEN SWITCH LOCK PADLOCK CONTACT


NORMALLY CLOSED SWITCH LOCK PADLOCK CONTACT



RACK NUMBER
RACK ROW AND COLUMN POSITION
RELAY FUNCTION AND NAME
FRONT CONTACT CONNECTION POINT
BACK CONTACT CONNECTION POINT
HEEL CONTACT CONNECTION POINT


KNIFE SWITCH


TOGGLE SWITCH (ON/OFF)


TOGGLE SWITCH (3 POSITIONS)

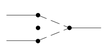

KEY OPERATED SWITCH (CLOSED)


KEY OPERATED SWITCH (OPEN)

## SIGNAL POWER SYMBOLOGY


VOLT OR AMP METER


SWITCH MACHINE CIRCUIT CONTROLLER


YARD SWITCH CIRCUIT CONTROLLER



SWITCH MACHINE MOTOR



HAND CRANK CUTOUT


INTERIOR OF HOUSING


EQUIPMENT HOUSING


POSITIVE ENERGY BUSS


NEGATIVE ENERGY BUSS


TWISTED PAIR OF CONDUCTORS


PHONE JACK


LIGHTNING ARRESTOR


NON-INDICATING FUSE


INDICATING FUSE


INDICATING FUSETRON


HIGH VOLTAGE FUSE


ADJUSTABLE RESISTOR


RESISTOR


CURRENT TRANSFORMER


DIODE


CAPACITOR


PLUG RECEPTACLE (SINGLE)


PLUG RECEPTACLE (DOUBLE)


GROUND


TERMINAL POST


BUSS STRAP


TEST STRAP


TEST STRAP


PLUG OR CARD EDGE CONNECTION


POWER BUSS FEED


BATTERY


SUBSTATION (SINGLE LINE)



SUBSTATION (DOUBLE LINE)


CATENARY POLE SIGNAL BOX


CATENARY POLE



TIE BREAKER (SINGLE LINE)



TIE BREAKER (DOUBLE LINE)



COMMUNICATION EQUIPMENT SHELTER

NOTE:

WHERE A CONFLICT ARISES BETWEEN THE DRAWING SHEETS AND THE SYMBOL SHEETS, THE DRAWING SHEETS SHALL GOVERN.

| NO. | DATE | DESCRIPTION |
|---|---|---|
| | | REVISIONS |

GFT INFRASTRUCTURE, INC.
Foster Plaza 8
Suite 400
730 Holiday Drive
Pittsburgh, PA. 15220

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL ERIC R. HOLLAND ENGINEER PE079465

SIGNATURE

APPROVED DATE

| | |
|---|---|
| DESIGNED | RRH |
| DRAWN | RRH |
| CHECKED | ERH |
| IN CHARGE | ERH |
| DATE | AUGUST 2026 |
| SCALE | NOT TO SCALE |

PORT AUTHORITY OF ALLEGHENY COUNTY
PITTSBURGH PENNSYLVANIA

RT 88 GRADE CROSSING
IMPROVEMENT PROJECT
SYMBOLS - SHEET 4 OF 4

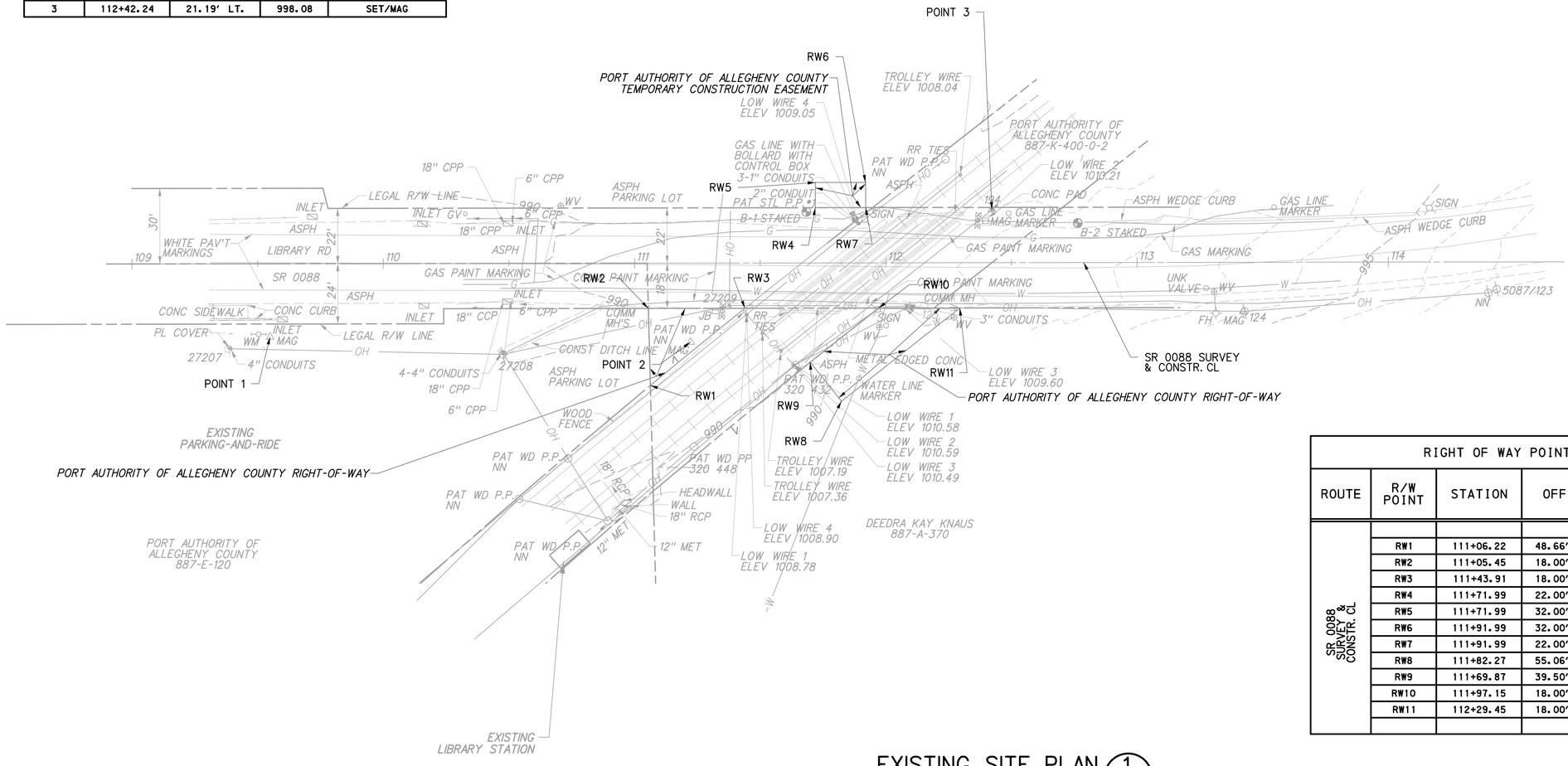
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CONTRACT NO. SYS-26-02
DWG. NO. G008 SHT. 9

FILE: pw:\\gfnet-pw.bentley.com:gfnet-pw-01\Documents\Projects\62984_037\OUTPUT\COMP_01\CIVIL\SGNL\PLOT\RL 88 Grade Crossing GeneralNotes and Index
DATE: 8/18/2026 TIME: 3:37:49 PM

| ROUTE | STATION | POINT | COORDINATES | | BEARING |
|---|---|---|---|---|---|
| | | | NORTH | EAST | |
| SR 0088 SURVEY & CONSTR. CL | | | | | |
| | 108+41.88 | POB | 358114.7072 | 1332410.9417 | N 28°55'52" E |
| | 114+70.00 | POE | 358664.4396 | 1332714.7986 | |
| | | | | | |

| BENCHMARKS | | | | |
|---|---|---|---|---|
| POINT NUMBER | STATION | OFFSET | ELEV. | DESCRIPTION |
| 1 | 109+54.88 | 29.12' RT. | 989.33 | SET/MAG |
| 2 | 111+22.24 | 31.45' RT. | 990.45 | SET/MAG |
| 3 | 112+42.24 | 21.19' LT. | 998.08 | SET/MAG |




EXISTING SITE PLAN 1

25' 0 25' 50'

| RIGHT OF WAY POINT STAKEOUT DATA | | | | | |
|---|---|---|---|---|---|
| ROUTE | R/W POINT | STATION | OFFSET | COORDINATES | |
| | | | | NORTH | EAST |
| SR 0088 SURVEY & CONSTR. CL | | | | | |
| | RW1 | 111+06.22 | 48.66', RT. | 358322.5183 | 1332581.4007 |
| | RW2 | 111+05.45 | 18.00', RT. | 358336.6771 | 1332554.1992 |
| | RW3 | 111+43.91 | 18.00', RT. | 358370.3356 | 1332572.8034 |
| | RW4 | 111+71.99 | 22.00', LT. | 358414.2641 | 1332551.3806 |
| | RW5 | 111+71.99 | 32.00', LT. | 358419.1016 | 1332542.6285 |
| | RW6 | 111+91.99 | 32.00', LT. | 358436.6057 | 1332552.3037 |
| | RW7 | 111+91.99 | 22.00', LT. | 358431.7681 | 1332561.0557 |
| | RW8 | 111+82.27 | 55.06', RT. | 358385.9809 | 1332623.7979 |
| | RW9 | 111+69.87 | 39.50', RT. | 358382.6541 | 1332604.1780 |
| | RW10 | 111+97.15 | 18.00', RT. | 358416.9371 | 1332598.5617 |
| | RW11 | 112+29.45 | 18.00', RT. | 358445.2062 | 1332614.1871 |
| | | | | | |

| NO. | DATE | DESCRIPTION |
|---|---|---|
| | | |

REVISIONS

GFT INFRASTRUCTURE, INC.
Foster Plaza 8
Suite 400
730 Holiday Drive
Pittsburgh, PA. 15220

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL ENGINEER ERIC R. HOLLAND PE079465

SIGNATURE

APPROVED DATE

| | |
|---|---|
| DESIGNED | ERH |
| DRAWN | ERH |
| CHECKED | TAB |
| IN CHARGE | ERH |
| DATE | AUGUST 2026 |
| SCALE | NOT TO SCALE |

PORT AUTHORITY OF ALLEGHENY COUNTY
PITTSBURGH PENNSYLVANIA

RT 88 GRADE CROSSING
IMPROVEMENT PROJECT
EXISTING SITE PLAN

Port Authority connecting people to life

CONTRACT NO. SYS-26-02
DWG. NO. G009 SHT. 10

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DATE: 8/18/2026
TIME: 3:37:51 PM

## MAINTENANCE AND PROTECTION OF TRAFFIC NOTES:

FURNISH, ERECT, PLACE, AND MAINTAIN TRAFFIC CONTROL SIGNS AND DEVICES, MAINTAIN TRAFFIC DURING HOURS OF CONSTRUCTION AND AT ALL OTHER TIMES CONSISTENT WITH THE FOLLOWING:
1. PA CODE, TITLE 67, CHAPTER 212, OFFICIAL TRAFFIC CONTROL DEVICES.
2. PENNDOT PUBLICATION 213, TEMPORARY TRAFFIC CONTROL GUIDELINES.
3. PENNDOT PUBLICATION NO. 35, APPROVED CONSTRUCTION MATERIALS (BULLETIN 15).
4. PENNDOT PUBLICATION 408/2026, SPECIFICATIONS.
5. PENNDOT PUBLICATION 236, HANDBOOK OF APPROVED SIGNS.

UTILIZE PATA 107 SHORT TERM STATIONARY OPERATIONS ON CONVENTIONAL HIGHWAY.

REMOVE THESE DEVICES IMMEDIATELY UPON COMPLETION OF WORK. INSPECT ALL TRAFFIC CONTROL DEVICES PRIOR TO START OF WORK.

COVER OR REMOVE ALL CONFLICTING SIGNS AND ERADICATE ALL CONFLICTING PAVEMENT MARKINGS.

ALL SIGNS AND DEVICES TO BE MAINTAINED IN NEW OR LIKE NEW CONDITION. DRIVEWAYS WILL BE KEPT ACCESSIBLE AT ALL TIMES. LOCATE ALL SIGNS SO THAT SIGHT DISTANCES WILL NOT BE OBSTRUCTED AT DRIVEWAYS AND LOCAL ROADS.

DO NOT RESTRICT TRAFFIC ON SR 0088 FROM 6:00 AM TO 8:00 AM AND FROM 4:00 PM TO 6:00 PM MONDAY THROUGH FRIDAY.

CONTRACTOR IS RESPONSIBLE FOR ALL PERMITS AND APPROVALS OF TEMPORARY TRAFFIC CONTROL DEVICES, INCLUDING BUT NOT LIMITED TO, TEMPORARY SIGNS, FLAGGING, CHANNELIZING DEVICES, PAVEMENT MARKINGS, PEDESTRIAN RAMPS, ETC., FROM THE APPROPRIATE MUNICIPALITIES AND AGENCIES.

ALL APPLICABLE STANDARDS, REQUIREMENTS AND PENNDOT PUBLICATION 213 TYPICAL APPLICATIONS SHALL BE FOLLOWED AS APPLICABLE EVEN IF NOT SPECIFICALLY LISTED HEREIN.

CONTRACTOR IS RESPONSIBLE FOR PROCURING A HIGHWAY OCCUPANCY PERMIT (HOP) FROM PENNDOT PRIOR TO BEGINNING WORK WITHIN THE PENNDOT RIGHT-OF-WAY.

CONTRACTOR IS ONLY PERMITTED TO WORK WITHIN AUTHORITY PROPERTY AND EASEMENTS WITH THE PRESENCE OF AN AUTHORITY REPRESENTATIVE. COORDINATE WITH THE AUTHORITY OPERATIONS DEPARTMENT AND WAY DEPARTMENT PRIOR TO BEGINNING CONSTRUCTION.

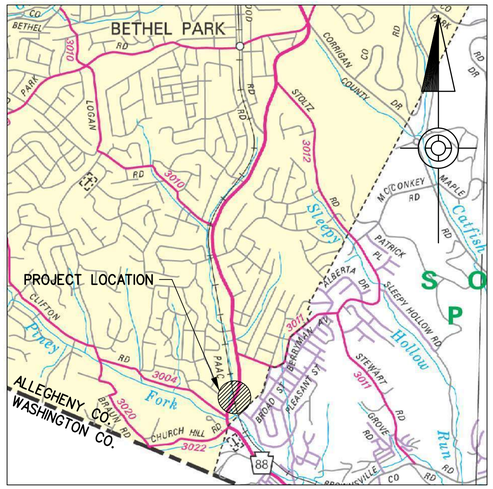
CONTRACTOR SHALL ENSURE THAT AUTHORITY OPERATIONS WITHIN THE WORKSITE, WHILE ENTERING AND EXITING, ARE NOT STOPPED, REROUTED, INTERRUPTED, DELAYED OR OTHERWISE DISRUPTED. THE CONTRACTOR SHALL ENSURE THAT THERE IS NO INTERRUPTION OR DELAY OF TRANSIT SERVICE, INCLUDING LRT AND AUTHORIZED USERS OF TRANSIT FACILITIES, AS WELL AS MAINTENANCE AND OPERATION SUPPORT VEHICLES. REFER TO SPECIFICATIONS FOR PROCEDURES TO BE FOLLOWED FOR WORK PERFORMED ADJACENT TO OR ON TRACK OR FACILITIES.

CONTRACTOR MUST ATTEND AN INITIAL RIGHT-OF-WAY MEETING WITH THE PORT AUTHORITY OF ALLEGHENY COUNTY A MINIMUM OF TWO (2) WEEKS PRIOR TO MOBILIZATION. THESE ARE HELD EVERY MONDAY AT 9:00 AM. CONTRACTOR MAY NEED TO ATTEND SUBSEQUENT MEETINGS AT LEAST TWO (2) WEEKS PRIOR TO A CHANGE IN PHASE.

CONTRACTOR SHALL ATTEND AN ON-SITE SAFETY MEETING WITH THE AUTHORITY AT LEAST ONE (1) WEEK (5 BUSINESS DAYS) PRIOR TO MOBILIZATION.

CONTRACTOR IS NOT PERMITTED TO DIRECT LRT TRAFFIC. COORDINATE WORK WITHIN THE LRT RIGHT-OF-WAY WITH FLAGGERS/SPOTTERS FROM THE AUTHORITY WAY DEPARTMENT.

NOTIFICATION - EVERY TIME WORK RESTRICTS SR 0088, CONTACT THE REGIONAL TRAFFIC MANAGEMENT CENTER (RTMC) AT 412-429-6030 AT LEAST 15 MINUTES PRIOR TO THE ROAD RESTRICTION AND IMMEDIATELY AFTER THE ROAD RESTRICTION IS REMOVED. REPORT THE WORK LOCATION, BEGINNING TIME AND TYPE OF ROAD RESTRICTIONS, AND WHAT PA PUB 213 PATA FIGURE IS BEING USED. THIS INFORMATION IS A VITAL COMPONENT IN THE DEPARTMENTS ABILITY TO MAINTAIN SITUATIONAL AWARENESS OF ROAD CONDITIONS AND WILL ALLOW FOR MORE EFFICIENT OPERATIONS. THE RTMC IS CONTINUALLY STAFFED 24 HOURS PER DAY, 365 DAYS PER YEAR. NOTIFY DISTRICT PERMIT OFFICE THROUGH DROPDOWN MENU (NOTIFY PENNDOT) WITHIN APPLICATION AND CALL, PERMIT SUPERVISOR @ 412-429-4805 AT LEAST 3 DAYS PRIOR TO START OF WORK. PROVIDE DEPARTMENT WITH RESPONSIBLE PERSON ON PROJECT CONTACT INFORMATION AS WELL AS CONTACT INFORMATION FOR THE CONTRACTOR AND ANY SUBS. NOTIFY PROPERTY OWNERS AND /OR BUSINESSES 10 DAYS IN ADVANCE OF DRIVEWAY RESTRICTIONS AFFECTING THEIR PROPERTIES. MAINTAIN ONGOING COMMUNICATION WITH INSPECTOR REGARDING OPERATIONS AND WORK SCHEDULE.




LOCATION MAP
SCALE 1" = 1/2 MILE

## MAINTENANCE AND PROTECTION OF TRAFFIC CONTROL - GENERAL NOTES

| NO. | DATE | DESCRIPTION |
|---|---|---|
| | | |

REVISIONS

Prepared by:
MARKOSKY
3689 Route 711
Ligonier, PA 15658

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL DOUGLAS GOFFMAN ENGINEER PE-042769-E
SIGNATURE

APPROVED DATE

| | |
|---|---|
| DESIGNED | DAC |
| DRAWN | HMC |
| CHECKED | BLW |
| IN CHARGE | ERH |
| DATE | AUGUST 2026 |
| SCALE | AS NOTED |

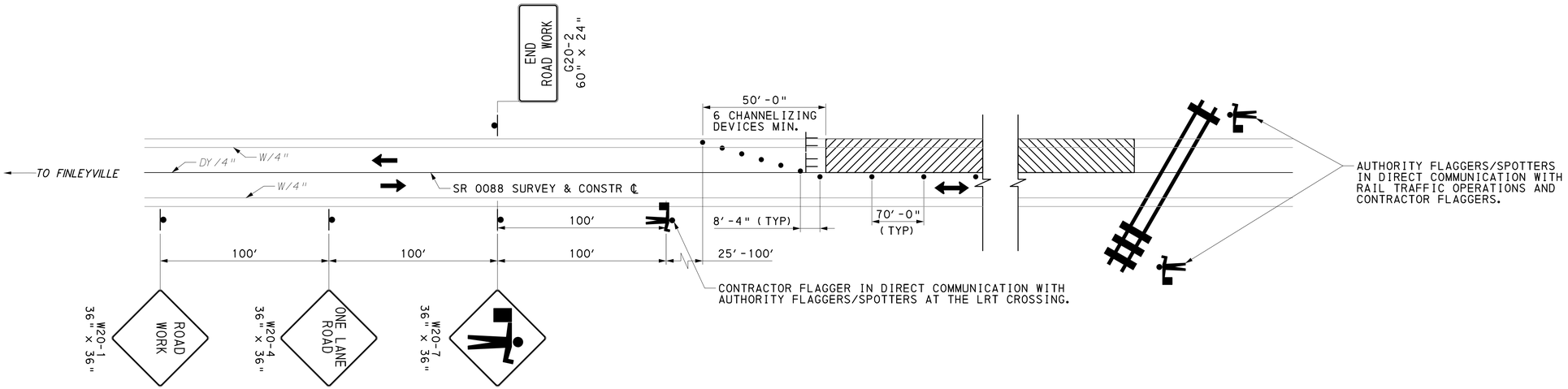
PORT AUTHORITY OF ALLEGHENY COUNTY
PITTSBURGH PENNSYLVANIA

RT 88 GRADE CROSSING
IMPROVEMENT PROJECT
MAINTENANCE AND PROTECTION OF TRAFFIC CONTROL PLAN
NOTES

Port Authority
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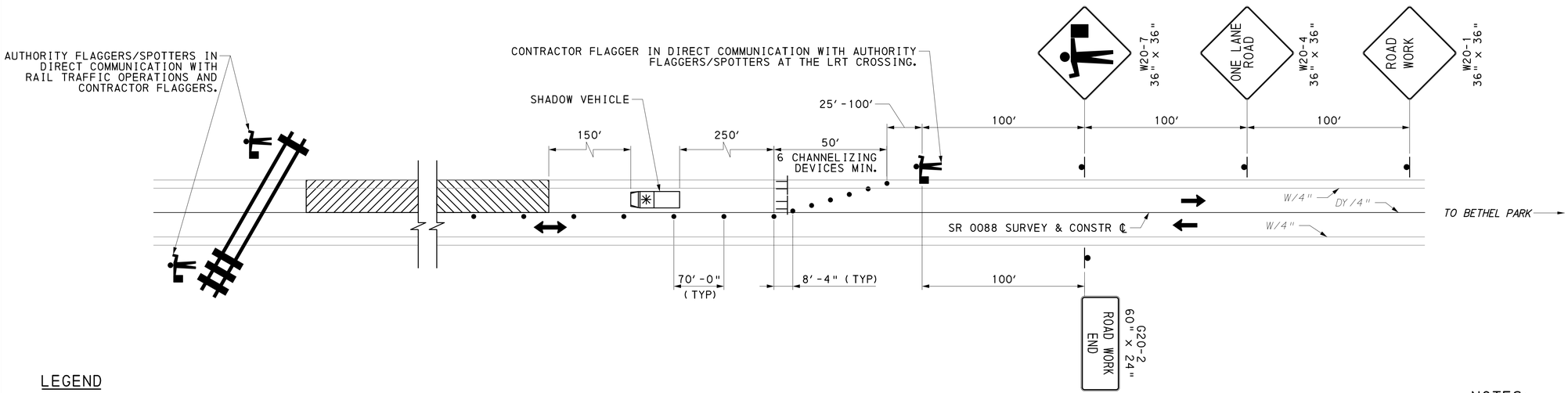
CONTRACT NO. SYS-26-02
DWG. NO. MT001 SHT. 11

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DATE: 8/12/2026 TIME: 1:00:27 PM




## ADVANCED SIGNING DETAIL - NORTHBOUND APPROACH

NOT TO SCALE




## ADVANCED SIGNING DETAIL - SOUTHBOUND APPROACH

NOT TO SCALE

### LEGEND

| | |
|---|---|
| DY/4" | DOUBLE YELLOW PAVEMENT MARKING/WIDTH |
| W/4" | WHITE PAVEMENT MARKING/WIDTH |
| | WORK AREA |
| | TEMPORARY SIGN WITH TYPE III BARRICADE |
| | TEMPORARY SIGN |
| | TRAFFIC FLOW |
| | FLAGGER LOCATION |
| | CHANNELIZING DEVICE |
| | BREAKLINE |

### NOTES:

CONTRACTOR SHALL COORDINATE WITH THE AUTHORITY FOR THE AUTHORITY TO PROVIDE FLAGGERS/SPOTTERS IN DIRECT COMMUNICATION WITH RAIL TRAFFIC OPERATIONS TO BE ALERTED TO AN APPROACHING LIGHT RAIL VEHICLE (LRV).

CONTRACTOR SHALL PROVIDE FLAGGERS WITH DIRECT COMMUNICATION TO THE AUTHORITY FLAGGERS/SPOTTERS TO STOP TRAFFIC ON SR 0088 WHEN A LRV IS APPROACHING THE INTERSECTION. CONTRACTOR IS ONLY PERMITTED TO DIRECT VEHICULAR TRAFFIC ON SR 0088 AND NOT LRV TRAFFIC.

## MAINTENANCE AND PROTECTION OF TRAFFIC PLAN - PLAN VIEW

| NO. | DATE | DESCRIPTION |
|---|---|---|
| | | REVISIONS |

Prepared by:
MARKOSKY
3689 Route 711
Ligonier, PA 15658

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL DOUGLAS COFFMAN ENGINEER PE-073193-E
SIGNATURE

APPROVED DATE

| | |
|---|---|
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| DRAWN | NJP |
| CHECKED | DAC |
| IN CHARGE | ERH |
| DATE | AUGUST 2026 |
| SCALE | AS NOTED |

PORT AUTHORITY OF ALLEGHENY COUNTY
PITTSBURGH PENNSYLVANIA

RT 88 GRADE CROSSING IMPROVEMENT PROJECT
MAINTENANCE AND PROTECTION OF TRAFFIC CONTROL PLAN DETAILS

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CONTRACT NO. SYS-26-02
DWG. NO. MT002 SHT. 12

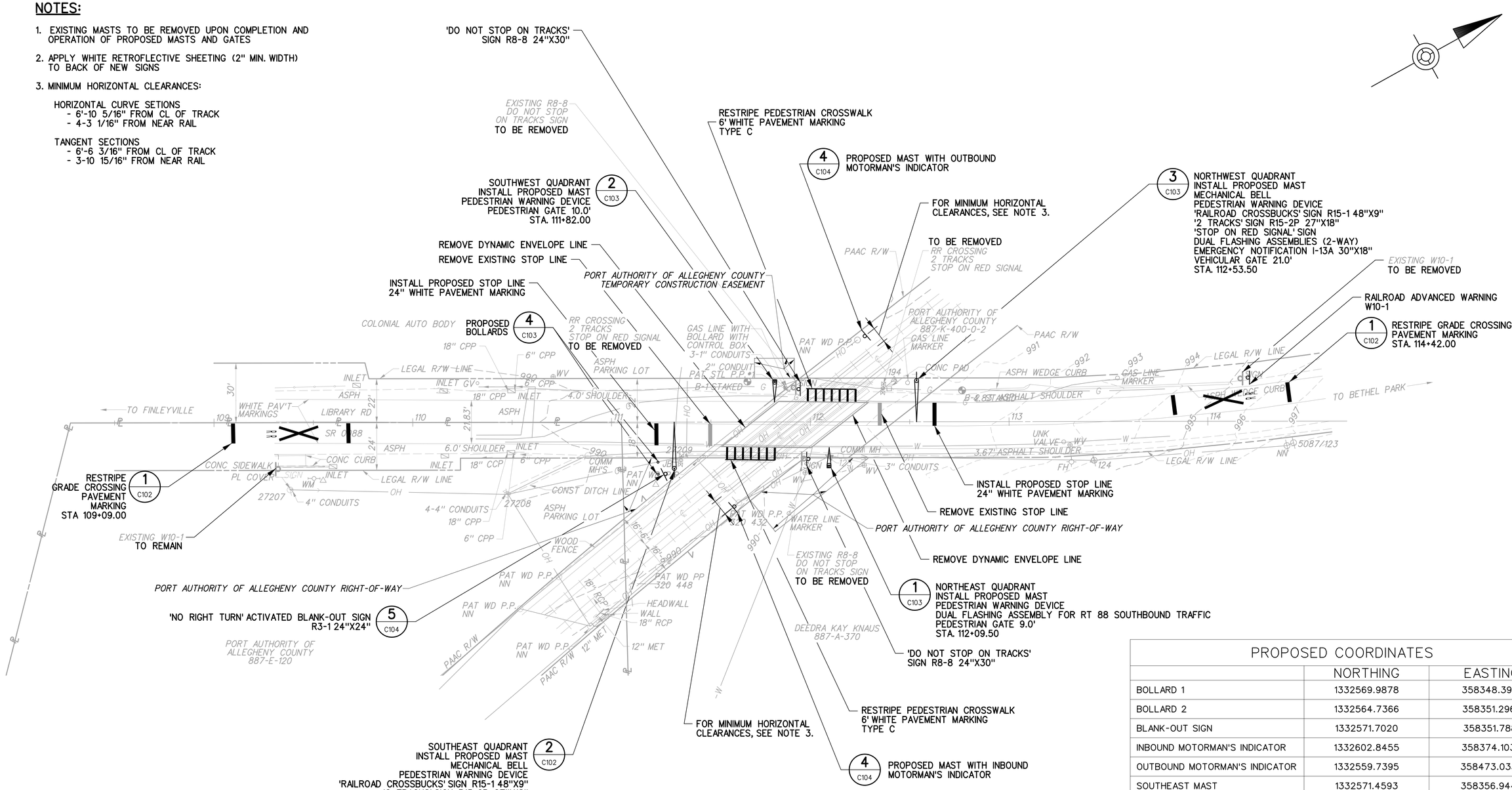
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DATE: 8/12/2026
TIME: 11:01:05 PM

## NOTES:

1. EXISTING MASTS TO BE REMOVED UPON COMPLETION AND OPERATION OF PROPOSED MASTS AND GATES
2. APPLY WHITE RETROFLECTIVE SHEETING (2" MIN. WIDTH) TO BACK OF NEW SIGNS
3. MINIMUM HORIZONTAL CLEARANCES:

   HORIZONTAL CURVE SETIONS
   - 6'-10 5/16" FROM CL OF TRACK
   - 4-3 1/16" FROM NEAR RAIL

   TANGENT SECTIONS
   - 6'-6 3/16" FROM CL OF TRACK
   - 3-10 15/16" FROM NEAR RAIL




## SIGNING AND PAVEMENT MARKING PLAN - PLAN VIEW

25' 0 25' 50'

| PROPOSED COORDINATES | | |
|---|---|---|
| | NORTHING | EASTING |
| BOLLARD 1 | 1332569.9878 | 358348.3941 |
| BOLLARD 2 | 1332564.7366 | 358351.2966 |
| BLANK-OUT SIGN | 1332571.7020 | 358351.7881 |
| INBOUND MOTORMAN'S INDICATOR | 1332602.8455 | 358374.1034 |
| OUTBOUND MOTORMAN'S INDICATOR | 1332559.7395 | 358473.0330 |
| SOUTHEAST MAST | 1332571.4593 | 358356.9440 |
| SOUTHWEST MAST | 1332558.0338 | 358422.1666 |
| NORTHEAST MAST | 1332607.8364 | 358425.7851 |
| NORTHWEST MAST | 1332591.8964 | 358484.9950 |

| NO. | DATE | DESCRIPTION |
|---|---|---|
| | | REVISIONS |

Prepared by:
MARKOSKY
3689 Route 711
Ligonier, PA 15658

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL DOUGLAS COFFMAN ENGINEER PE-042592-E
SIGNATURE

APPROVED DATE

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| DRAWN | HMC |
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| IN CHARGE | ERH |
| DATE | AUGUST 2026 |
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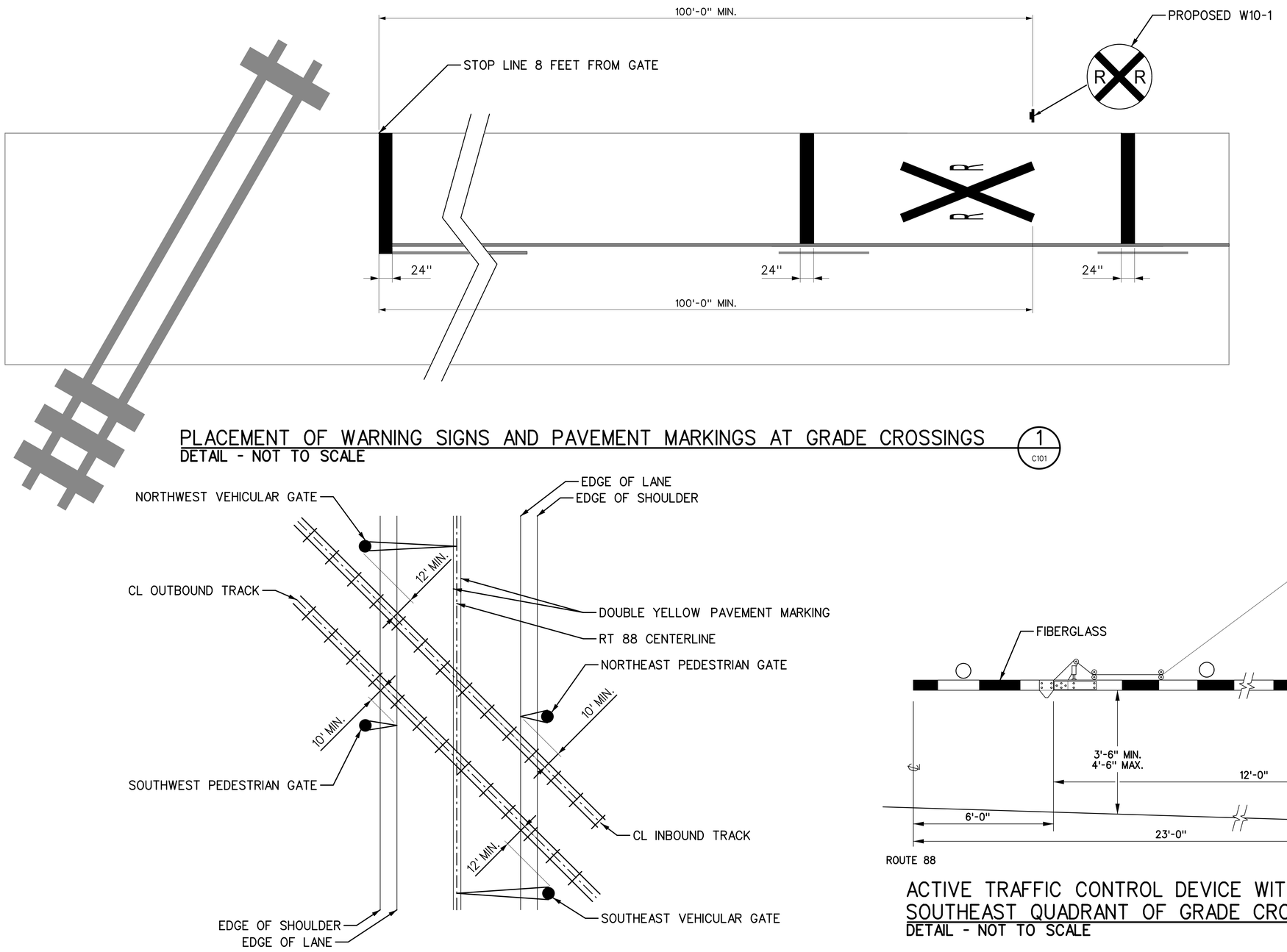
PORT AUTHORITY OF ALLEGHENY COUNTY
PITTSBURGH PENNSYLVANIA

RT 88 GRADE CROSSING IMPROVEMENT PROJECT
SIGNING & PAVEMENT MARKING PLAN
PLAN VIEW

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## PLACEMENT OF WARNING SIGNS AND PAVEMENT MARKINGS AT GRADE CROSSINGS
DETAIL - NOT TO SCALE

1 / C101

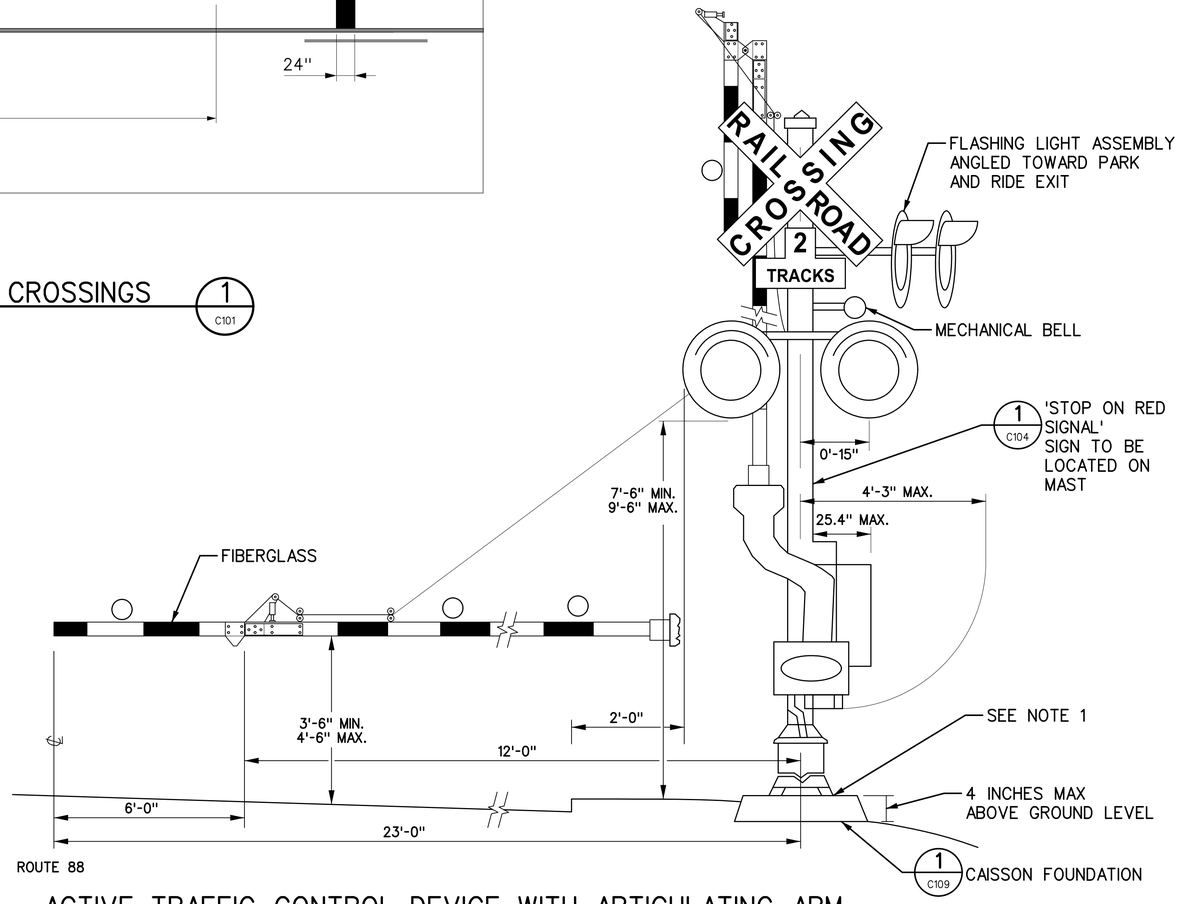



## LOCATION PLAN FOR FLASHING-LIGHT SIGNALS AND FOUR-QUADRANT GATES - ACUTE ANGLE
DETAIL - NOT TO SCALE

3 / C101

NOTES:

1) THE CONTRACTOR IS RESPONSIBLE FOR INCORPORATING THE ANCHOR BOLT PATTERN WITHIN THE FOUNDATION PER MANUFACTURER DESIGN.




## ACTIVE TRAFFIC CONTROL DEVICE WITH ARTICULATING ARM SOUTHEAST QUADRANT OF GRADE CROSSING LOOKING STATIONS AHEAD
DETAIL - NOT TO SCALE

2 / C101

| NO. | DATE | DESCRIPTION |
|---|---|---|
| | | REVISIONS |

Prepared by:
MARKOSKY
3689 Route 711
Ligonier, PA 15658

COMMONWEALTH OF REGISTERED PROFESSIONAL DOUGLAS COFFMAN ENGINEER PE-043700-E
SIGNATURE

APPROVED | DATE

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| DESIGNED | DAC |
| DRAWN | HMC |
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| IN CHARGE | ERH |
| DATE | AUGUST 2026 |
| SCALE | AS NOTED |

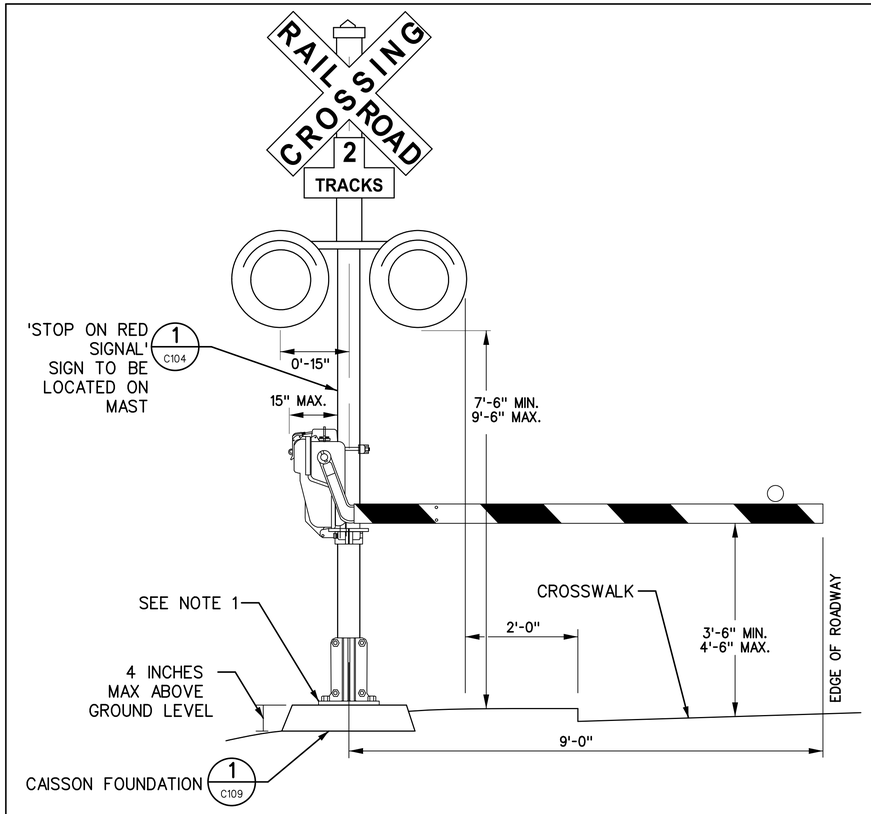
PORT AUTHORITY OF ALLEGHENY COUNTY
PITTSBURGH PENNSYLVANIA

RT 88 GRADE CROSSING
IMPROVEMENT PROJECT
SIGNING & PAVEMENT MARKING PLAN
DETAILS SHEET 1 OF 3

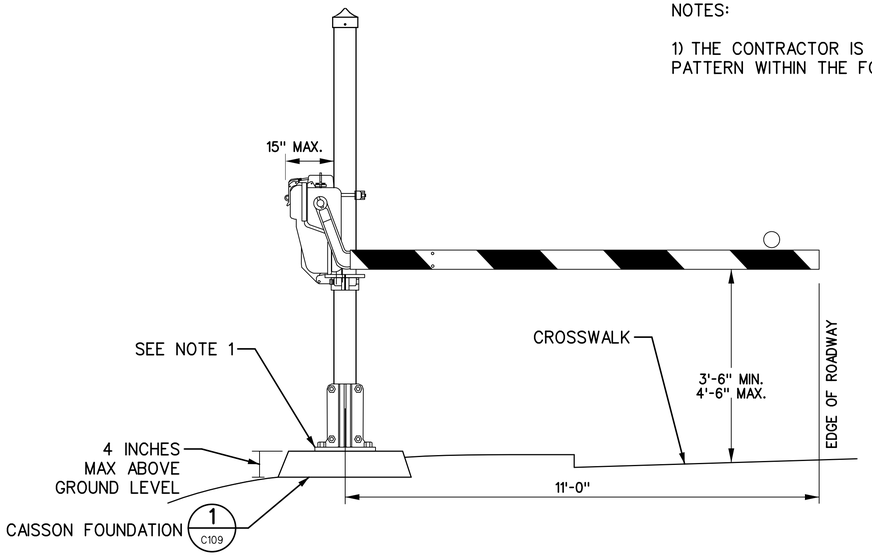
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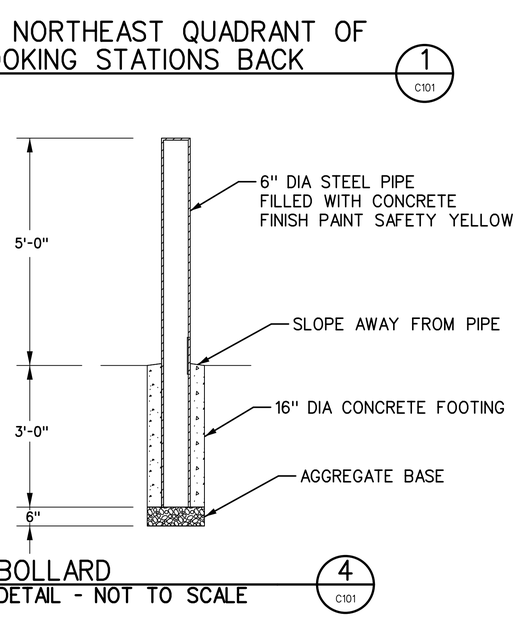

PEDESTRIAN GATE AT NORTHEAST QUADRANT OF GRADE CROSSINGS LOOKING STATIONS BACK
DETAIL - NOT TO SCALE
1 C101




PEDESTRIAN GATE AT SOUTHWEST QUADRANT OF GRADE CROSSINGS LOOKING STATIONS AHEAD
DETAIL - NOT TO SCALE
2 C101

NOTES:

1) THE CONTRACTOR IS RESPONSIBLE FOR INCORPORATING THE ANCHOR BOLT PATTERN WITHIN THE FOUNDATION PER MANUFACTURER DESIGN.




BOLLARD
DETAIL - NOT TO SCALE
4 C101




ACTIVE TRAFFIC CONTROL DEVICES AT GRADE CROSSING NORTHWEST QUADRANT OF GRADE CROSSINGS LOOKING STATIONS BACK
DETAIL - NOT TO SCALE
3 C101

| NO. | DATE | DESCRIPTION |
|---|---|---|
| | | REVISIONS |

Prepared by:
MARKOSKY
3689 Route 711
Ligonier, PA 15658

COMMONWEALTH OF REGISTERED PROFESSIONAL
DOUGLAS COFFMAN
ENGINEER
PE-043093-E
SIGNATURE

APPROVED DATE

| | |
|---|---|
| DESIGNED | DAC |
| DRAWN | HMC |
| CHECKED | BLW |
| IN CHARGE | ERH |
| DATE | AUGUST 2026 |
| SCALE | AS NOTED |

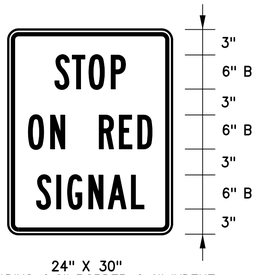
PORT AUTHORITY OF ALLEGHENY COUNTY
PITTSBURGH PENNSYLVANIA

RT 88 GRADE CROSSING
IMPROVEMENT PROJECT
SIGNING & PAVEMENT MARKING PLAN
DETAILS SHEET 2 OF 3

Port Authority
connecting people to life

CONTRACT NO. SYS-26-02
DWG. NO. C103 SHT. 15

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DATE: 8/12/2026 TIME: 1:01:08 PM




24" X 30"
1.5" RADIUS, 0.6" BORDER, 0.4" INDENT
SERIES B FONT
BLACK REFLECTORIZED LEGEND AND BORDER ON
WHITE REFLECTORIZED BACKGROUND

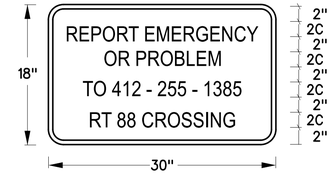
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|---|---|---|---|---|---|
| | 5.5 | | 2.1 | | 2.5 |
| S | 3.4 | O | 3.9 | S | 3.7 |
| T | 3.2 | N | 2.5 | I | 1.9 |
| O | 3.9 | | 4.0 | G | 3.7 |
| P | 2.5 | R | 3.7 | N | 3.4 |
| | 5.5 | E | 3.2 | A | 4.1 |
| | | D | 2.5 | L | 2.3 |
| | | | 2.1 | | 2.4 |

## STOP ON RED SIGN (1, C102)
DETAIL - NOT TO SCALE




R8-8
24" X 30"
4" SERIES D FONT
BLACK REFLECTORIZED LEGEND AND BORDER ON
WHITE REFLECTORIZED BACKGROUND

## DO NOT STOP ON TRACKS SIGN (2, C103)
DETAIL - NOT TO SCALE




I-13A
30" x 18"
1.5" RADIUS, 0.6" BORDER, 0.4" INDENT
2" SERIES C FONT
WHITE REFLECTORIZED LEGEND AND BORDER ON
BLUE REFLECTORIZED BACKGROUND

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | 3.3 | | 7.6 | | 4.9 | | 5.1 |
| R | 1.5 | O | 1.6 | T | 1.4 | R | 1.5 |
| E | 1.4 | R | 1.1 | O | 1.2 | T | 1.0 |
| P | 1.5 | | 2.0 | | 2.0 | | 2.0 |
| O | 1.6 | P | 1.5 | 4 | 1.6 | 8 | 1.5 |
| R | 1.5 | R | 1.5 | 1 | 0.9 | 8 | 1.1 |
| T | 1.0 | O | 1.6 | 2 | 1.1 | | 2.0 |
| | 2.0 | B | 1.5 | - | 1.5 | C | 1.5 |
| E | 1.4 | L | 1.4 | 2 | 1.5 | R | 1.5 |
| M | 1.7 | E | 1.4 | 5 | 1.5 | O | 1.5 |
| E | 1.4 | M | 1.3 | 5 | 1.1 | S | 1.5 |
| R | 1.5 | | 7.5 | - | 1.5 | S | 1.5 |
| G | 1.5 | | | 1 | 0.9 | I | 0.7 |
| E | 1.4 | | | 3 | 1.5 | N | 1.5 |
| N | 1.5 | | | 8 | 1.5 | G | 1.1 |
| C | 1.3 | | | 5 | 1.1 | | 5.0 |
| Y | 1.3 | | | | 4.8 | | |
| | 3.2 | | | | | | |

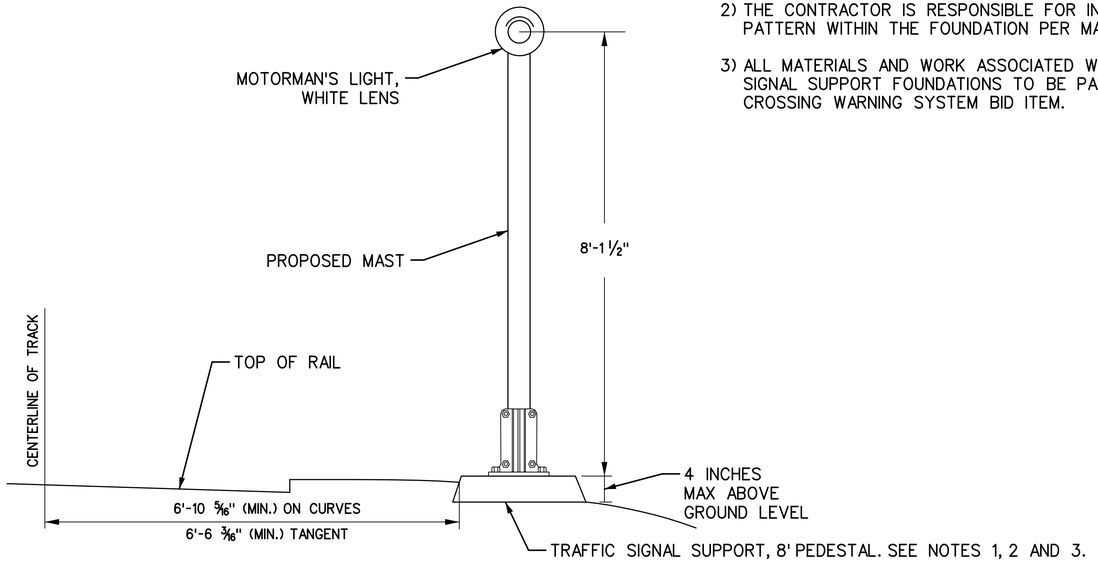
## EMERGENCY NOTIFICATION SIGN (3, C102)
DETAIL - NOT TO SCALE

NOTES:

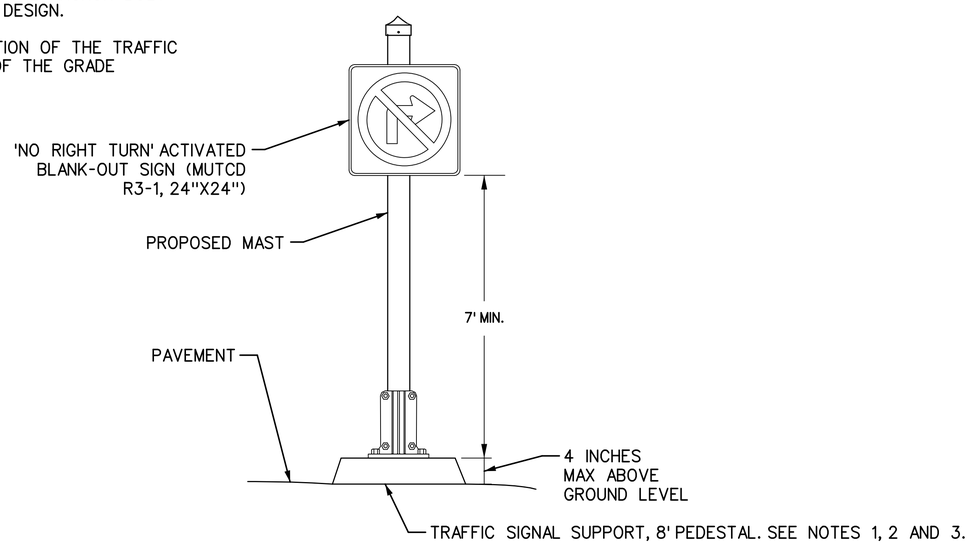
1) FOUNDATIONS TO BE IN ACCORDANCE WITH PENNDOT PUBLICATION 408, SECTION 951 AND PENNDOT PUBLICATION 148 (TC STANDARDS) TC-8801 SHEETS 3-5 OF 10 AND TC-8804 SHEETS 1-2 OF 2. MINIMUM DIMENSIONS: 2'-0" DIAMETER AND 5'-0" DEPTH.

2) THE CONTRACTOR IS RESPONSIBLE FOR INCORPORATING THE ANCHOR BOLT PATTERN WITHIN THE FOUNDATION PER MANUFACTURER DESIGN.

3) ALL MATERIALS AND WORK ASSOCIATED WITH INSTALLATION OF THE TRAFFIC SIGNAL SUPPORT FOUNDATIONS TO BE PAID AS PART OF THE GRADE CROSSING WARNING SYSTEM BID ITEM.




## HIGHWAY CROSSING MOTORMAN'S INDICATOR (4, C101)
DETAIL - NOT TO SCALE




## 'NO RIGHT TURN' ACTIVATED BLANK-OUT SIGN (5, C101)
DETAIL - NOT TO SCALE

| NO. | DATE | DESCRIPTION |
|---|---|---|
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |

REVISIONS

Prepared by:
MARKOSKY
3689 Route 711
Ligonier, PA 15658

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL ENGINEER DOUGLAS COFFMAN PE-037910-E
SIGNATURE

APPROVED DATE

| | |
|---|---|
| DESIGNED | HMC |
| DRAWN | HMC |
| CHECKED | DCC |
| IN CHARGE | ERH |
| DATE | AUGUST 2026 |
| SCALE | AS NOTED |

PORT AUTHORITY OF ALLEGHENY COUNTY
PITTSBURGH PENNSYLVANIA

RT 88 GRADE CROSSING
IMPROVEMENT PROJECT
SIGNING & PAVEMENT MARKING PLAN
DETAILS SHEET 3 OF 3

Port Authority
connecting people to life

CONTRACT NO. SYS-26-02
DWG. NO. C104 SHT. 16

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DATE: 8/12/2026 TIME: 1:01:09 PM

## UTILITY INFORMATION

SERIAL NUMBER: 20220701445-000
COUNTY: ALLEGHENY
MUNICIPALITY: BETHEL PARK BORO

COMPANY: PEOPLES GAS COMPANY LLC
ADDRESS: 375 NORTH SHORE DR
PITTSBURGH, PA 15212
CONTACT: MICHAEL DENNY
EMAIL: MICHAEL.DENNY@PEOPLES-GAS.COM

COMPANY: VERIZON PENNSYLVANIA LLC
ADDRESS: 1026 HAY ST
PITTSBURGH, PA 15221
CONTACT: DEBORAH BARUM
EMAIL: DEBORAH.D.DELIA@VERIZON.COM

COMPANY: BETHEL PARK MUNICIPALITY
ADDRESS: 5100 W LIBRARY AVE
BETHEL PARK, PA 15102
CONTACT: SUSAN DOLINAR
EMAIL: SDOLINAR@BETHELPARK.NET

COMPANY: COLUMBIA GAS OF PA INC
ADDRESS: 1600 DUBLIN RD
COLUMBUS, OH 43215
CONTACT: LISA COLLINS
EMAIL: LDUGAN@NISOURCE.COM

COMPANY: FIRST ENERGY PENELEC
ADDRESS: 21 S MAIN ST
AKRON, OH 44308
CONTACT: CARA WARREN
EMAIL: CARAWARREN@FIRSTENERGYCORP.COM

SERIAL NUMBER: 20220701445-000
COUNTY: ALLEGHENY
MUNICIPALITY: BETHEL PARK BORO

COMPANY: PORT AUTHORITY OF ALLEGHENY COUNTY
ADDRESS: 345 6TH AVE 3RD FLOOR
PITTSBURGH, PA 15222
CONTACT: JOHN MURPHY
EMAIL: JMURPHY@PORTAUTHORITY.ORG

COMPANY: COMCAST
ADDRESS: 460 WASHINGTON RD
WASHINGTON, PA 15301
CONTACT: ADAM ARMSTRONG
EMAIL: ADAM_ARMSTRONG@CABLE.COMCAST.COM

COMPANY: PENNSYLVANIA AMERICAN WATER
ADDRESS: 500 NOBLESTOWN RD
CARNEGIE, PA 15106
CONTACT: LUCIAN CAPPETTA
EMAIL: LUCIAN.CAPPETTA@AMWATER.COM

SERIAL NUMBER: 20220701446-000
COUNTY: ALLEGHENY
MUNICIPALITY: SOUTH PARK TWP

COMPANY: PEOPLES GAS COMPANY LLC
ADDRESS: 375 NORTH SHORE DR
PITTSBURGH, PA 15212
CONTACT: MICHAEL DENNY
EMAIL: MICHAEL.DENNY@PEOPLES-GAS.COM

COMPANY: VERIZON PENNSYLVANIA LLC
ADDRESS: 1026 HAY ST
PITTSBURGH, PA 15221
CONTACT: DEBORAH BARUM
EMAIL: DEBORAH.D.DELIA@VERIZON.COM

COMPANY: BETHEL PARK MUNICIPALITY
ADDRESS: 5100 W LIBRARY AVE
BETHEL PARK, PA 15102
CONTACT: SUSAN DOLINAR
EMAIL: SDOLINAR@BETHELPARK.NET

COMPANY: COLUMBIA GAS OF PA INC
ADDRESS: 1600 DUBLIN RD
COLUMBUS, OH 43215
CONTACT: LISA COLLINS
EMAIL: LDUGAN@NISOURCE.COM

SERIAL NUMBER: 20220701446-000
COUNTY: ALLEGHENY
MUNICIPALITY: SOUTH PARK TWP

COMPANY: USIC LOCATING SERVICES
ADDRESS: 1737 W TRINDLE RD
CARLISLE, PA 17015
CONTACT: AARON DIERDORFF
EMAIL: AARONDIERDORFF@USICLLC.COM

COMPANY: SOUTH PARK TOWNSHIP
ADDRESS: 2675 BROWNSVILLE RD
SOUTH PARK, PA 15129
CONTACT: AARON LAUGHLIN
EMAIL: PUBLICWORKS@SOUTHPARKTWP.COM

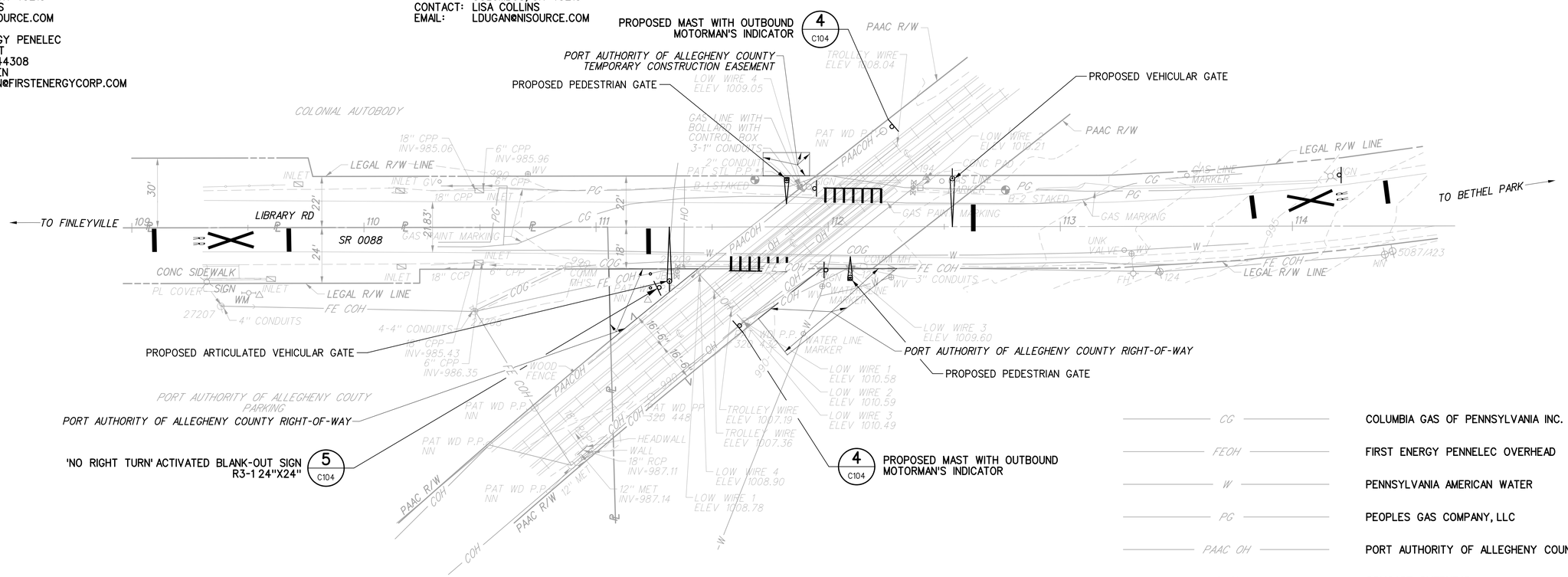
COMPANY: FIRST ENERGY PENELEC
ADDRESS: 21 S MAIN ST
AKRON, OH 44308
CONTACT: CARA WARREN
EMAIL: CARAWARREN@FIRSTENERGYCORP.COM

SERIAL NUMBER: 20220701446-000
COUNTY: ALLEGHENY
MUNICIPALITY: SOUTH PARK TWP

COMPANY: PORT AUTHORITY OF ALLEGHENY COUNTY
ADDRESS: 345 6TH AVE 3RD FLOOR
PITTSBURGH, PA 15222
CONTACT: JOHN MURPHY
EMAIL: JMURPHY@PORTAUTHORITY.ORG

COMPANY: COMCAST
ADDRESS: 460 WASHINGTON RD
WASHINGTON, PA 15301
CONTACT: ADAM ARMSTRONG
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COMPANY: PENNSYLVANIA AMERICAN WATER
ADDRESS: 500 NOBLESTOWN RD
CARNEGIE, PA 15106
CONTACT: LUCIAN CAPPETTA
EMAIL: LUCIAN.CAPPETTA@AMWATER.COM




| | |
|---|---|
| CG | COLUMBIA GAS OF PENNSYLVANIA INC. |
| FEOH | FIRST ENERGY PENNELEC OVERHEAD |
| W | PENNSYLVANIA AMERICAN WATER |
| PG | PEOPLES GAS COMPANY, LLC |
| PAAC OH | PORT AUTHORITY OF ALLEGHENY COUNTY OVERHEAD |
| C OH | COMCAST OVERHEAD |
| FE COH | FIRST ENERGY PENNELEC / COMCAST OVERHEAD |
| COG | COMCAST UNDERGROUND |

## UTILITY PLAN - PLAN VIEW

25' 0 25' 50'

| NO. | DATE | DESCRIPTION |
|---|---|---|
| | | REVISIONS |

Prepared by:
MARKOSKY
3689 Route 711
Ligonier, PA 15658

COMMONWEALTH OF REGISTERED PROFESSIONAL DOUGLAS COFFMAN ENGINEER PE-042769-E
SIGNATURE

APPROVED DATE

| | |
|---|---|
| DESIGNED | DAC |
| DRAWN | HMC |
| CHECKED | BLW |
| IN CHARGE | ERH |
| DATE | AUGUST 2026 |
| SCALE | AS NOTED |

PORT AUTHORITY OF ALLEGHENY COUNTY
PITTSBURGH PENNSYLVANIA

RT 88 GRADE CROSSING
IMPROVEMENT PROJECT
UTILITY PLAN
PLAN VIEW

Port Authority
connecting people to life

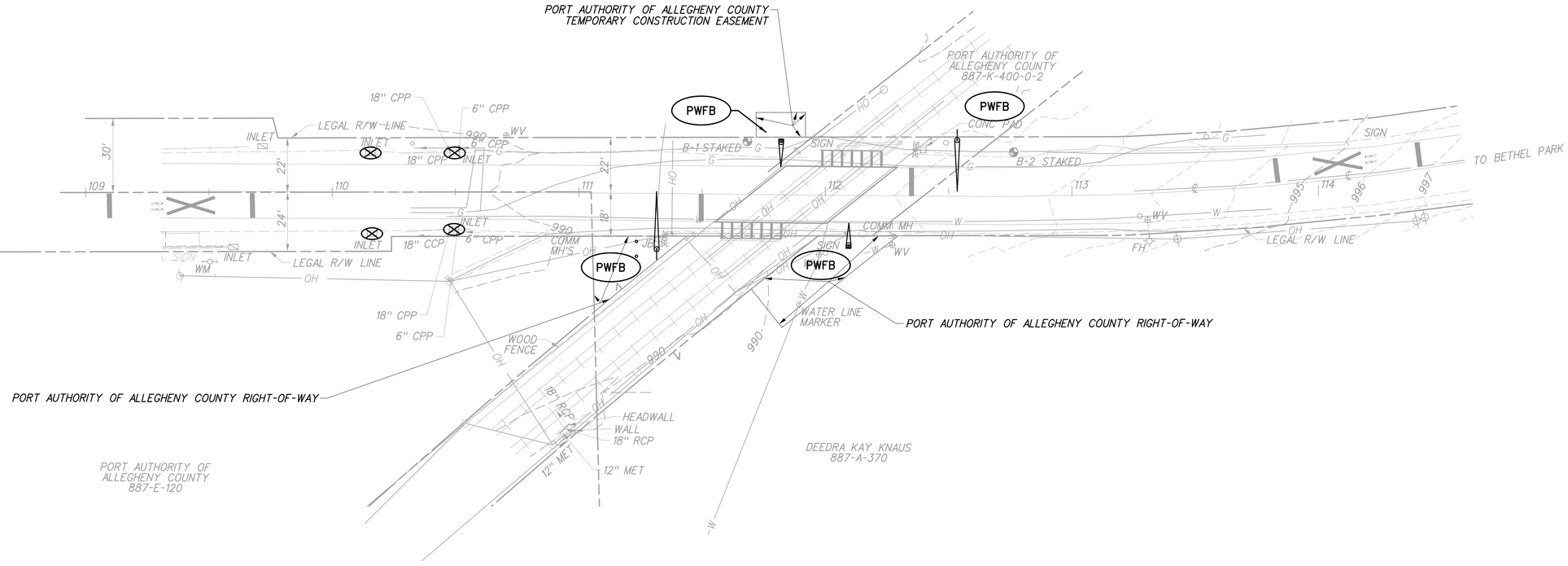
CONTRACT NO. SYS-26-02
DWG. NO. C105 SHT. 17

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DATE: 8/12/2026
TIME: 1:01:10 PM

## LEGEND

1 / C202 — ⊗ INLET FILTER BAG

2 / C202 — PWFB PUMPED WATER FILTER BAG




## EROSION & SEDIMENT POLLUTION CONTROL PLAN

25' 0 25' 50'

| NO. | DATE | DESCRIPTION |
|---|---|---|
| | | REVISIONS |

GFT INFRASTRUCTURE, INC.
Foster Plaza 8
Suite 400
730 Holiday Drive
Pittsburgh, PA. 15220

COMMONWEALTH OF PENNSYLVANIA — REGISTERED PROFESSIONAL — ERIC R. HOLLAND — ENGINEER — PE079465

SIGNATURE

APPROVED DATE

| | |
|---|---|
| DESIGNED | ERH |
| DRAWN | KMH |
| CHECKED | ERH |
| IN CHARGE | ERH |
| DATE | AUGUST 2026 |
| SCALE | NOT TO SCALE |

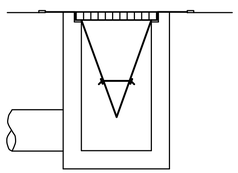
PORT AUTHORITY OF ALLEGHENY COUNTY
PITTSBURGH PENNSYLVANIA

RT 88 GRADE CROSSING
IMPROVEMENT PROJECT
EROSION AND SEDIMENT POLLUTION CONTROL PLAN
PLAN VIEW

Port Authority — connecting people to life

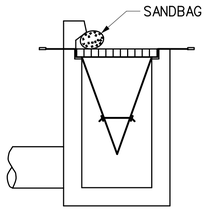
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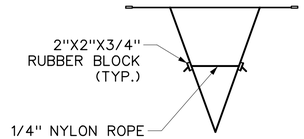
TYPE M INLET OR TYPE S INLET

INSTALLATION (TYP)

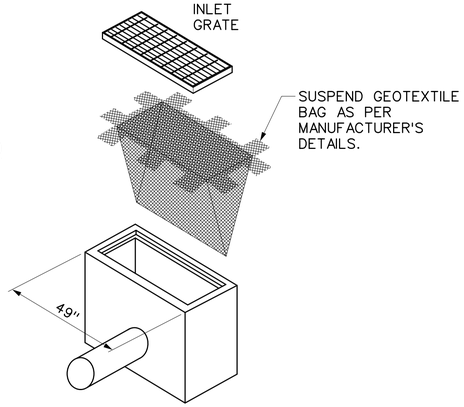



TYPE C INLET

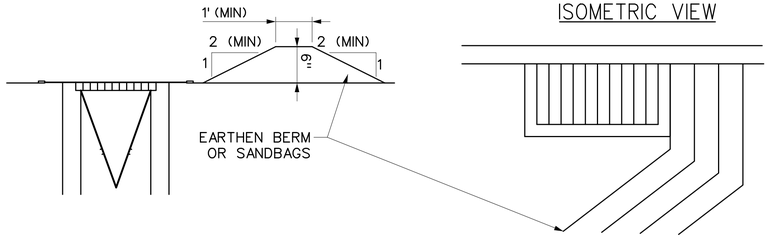
INSTALLATION (TYP)




BAG DETAIL




ISOMETRIC VIEW



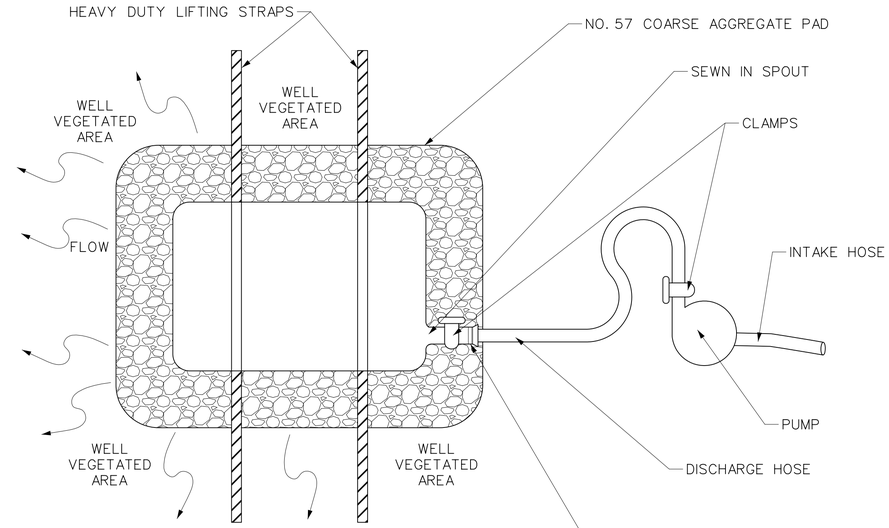



NOTES:

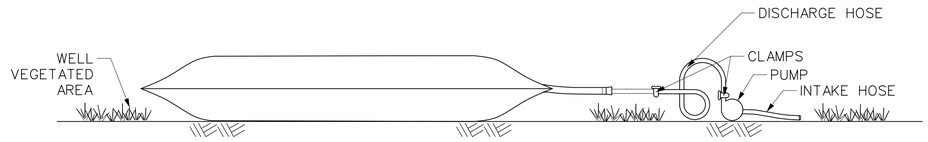
1. INSPECT INLET FILTER BAG AFTER EACH RUNOFF EVENT. MAINTAIN AS REQUIRED TO ENSURE PROPER FUNCTIONING OF THE BAG.
2. REMOVE ACCUMULATED SEDIMENT/DEBRIS OR REPLACE WHEN THE INLET FILTER BAG REACHES ONE-HALF MAXIMUM CAPACITY.
3. REPLACE INLET FILTER BAG IF RIPPED OR TORN.
4. DOWN GRADIENT BERM AS INDICATED ON PENNDOT PUBLICATION 72M, RC-72M, SHEET 1 OF 7, IS NOT REQUIRED FOR THIS APPLICATION. DO NOT USE IN SAG OR SUMP CONDITIONS.
5. USE SANDBAGS AT TYPE C INLET CURB OPENINGS TO PREVENT BYPASS FLOW.
6. REMOVE AND PROPERLY DISPOSE OF INLET FILTER BAG WHEN NO LONGER NEEDED.
7. FOR DETAILS NOT SHOWN, SEE PENNDOT PUBLICATION 72M.

## INLET FILTER BAG
DETAIL - NOT TO SCALE

1 / C201




TOP VIEW




ELEVATION VIEW

NOTES:

1. LOCATE BAG IN LEVEL AREAS (LESS THAN 5% GRADE). PLACE NO. 57 COARSE AGGREGATE ON A STABILIZED AREA.
2. LOCATE BAG IN A WELL VEGETATED AREA. DISCHARGE ONTO A STABLE, EROSION RESISTANT AREA. WHEN VEGETATED AREA IS NOT AVAILABLE, PROVIDE A GEOTEXTILE (CLASS 4, TYPE A) LINED FLOW PATH TO A STABLE EROSION RESISTANT RECEIVING WATER COURSE OR A WELL VEGETATED AREA.
3. LOCATE BAG IN AN AREA ACCESSIBLE BY EQUIPMENT FOR MAINTENANCE AND REMOVAL PURPOSES.
4. DO NOT INSERT MORE THAN ONE HOSE INTO A BAG.
5. REPLACE THE BAG WHEN 50% OF THE SEDIMENT CAPACITY HAS BEEN FILLED AND/OR WHEN THERE IS A FAILURE. THE ADDITIONAL BAGS WILL BE PAID AS EACH.
6. REMOVE AND PROPERLY DISPOSE OF THE SEDIMENT FILTER BAG. RESTORE THE AREA AS SPECIFIED IN SECTION 105.14. DO NOT CUT FILTER BAG OR DISTRIBUTE AND SEED SEDIMENT.
7. DO NOT PERMIT DISCHARGE FROM THE BAG TO DRAIN BACK INTO WORK OR ACCESS AREAS OF THE PROJECT.
8. USE PUMPED WATER FILTER BAGS IN ANY AREA NOT SHOWN ON THE PLAN WHERE WATER NEEDS TO BE REMOVED FROM EXCAVATED AREAS.

## PUMPED WATER FILTER BAG
DETAIL - NOT TO SCALE

2 / C201

| NO. | DATE | DESCRIPTION |
|---|---|---|
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |

REVISIONS

GFT INFRASTRUCTURE, INC.
Foster Plaza 8
Suite 400
730 Holiday Drive
Pittsburgh, PA. 15220

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL ENGINEER
ERIC R. HOLLAND
PE079465

SIGNATURE

APPROVED DATE

| | |
|---|---|
| DESIGNED | ERH |
| DRAWN | KMH |
| CHECKED | ERH |
| IN CHARGE | ERH |
| DATE | AUGUST 2026 |
| SCALE | NOT TO SCALE |

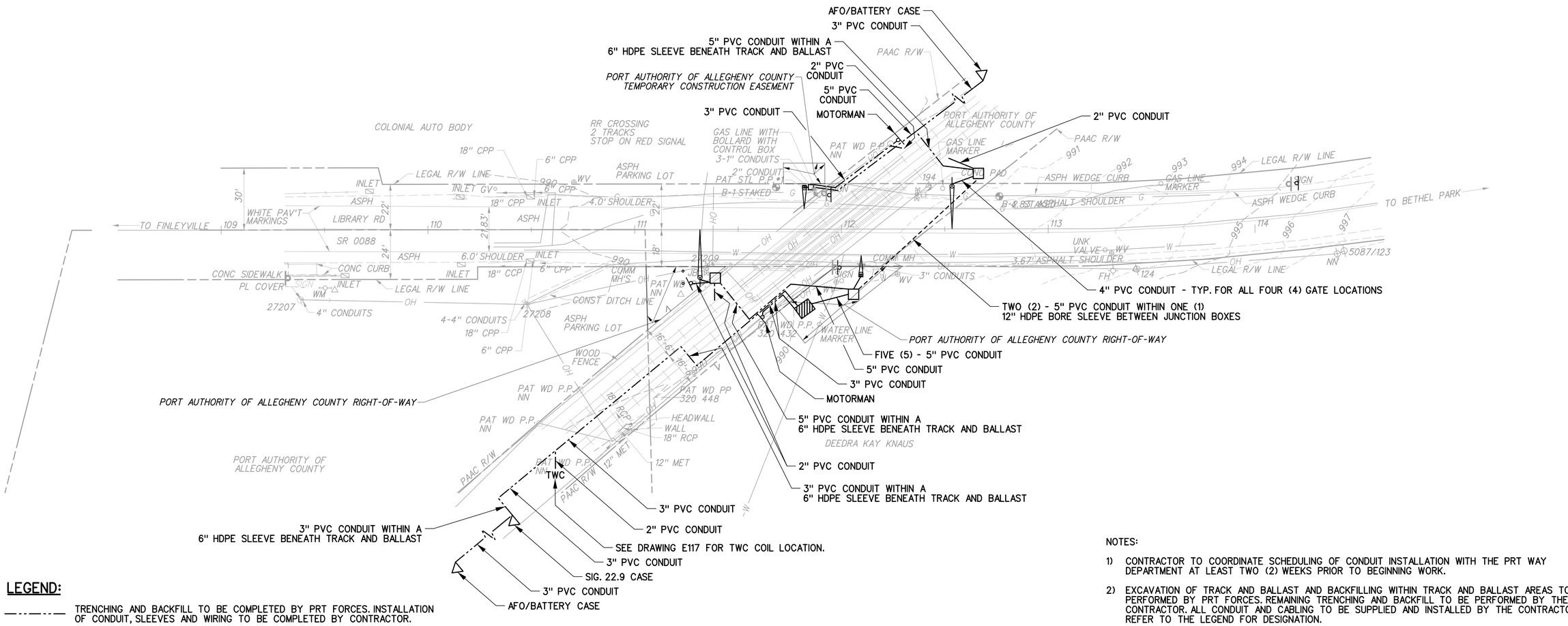
PORT AUTHORITY OF ALLEGHENY COUNTY
PITTSBURGH PENNSYLVANIA

RT 88 GRADE CROSSING
IMPROVEMENT PROJECT
EROSION AND SEDIMENT POLLUTION CONTROL PLAN
DETAILS

Port Authority
connecting people to life

CONTRACT NO. SYS-26-02
DWG. NO. C107 SHT. 19

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DATE: 8/18/2026 TIME: 3:39:18 PM




## LEGEND:

- TRENCHING AND BACKFILL TO BE COMPLETED BY PRT FORCES. INSTALLATION OF CONDUIT, SLEEVES AND WIRING TO BE COMPLETED BY CONTRACTOR.
- TRENCHING, BACKFILL, AND INSTALLATION OF CONDUIT, SLEEVES AND WIRING TO BE COMPLETED BY CONTRACTOR.
- HORIZONTAL DIRECTIONAL DRILLING, BORE SLEEVE, AND INSTALLATION OF CONDUIT AND WIRING TO BE COMPLETED BY CONTRACTOR.
- JUNCTION BOX
- 6'X8' SIGNAL HOUSE AND BATTERY CABINET

## SIGNAL PLAN - PLAN VIEW

25' 0 25' 50'

NOTES:

1) CONTRACTOR TO COORDINATE SCHEDULING OF CONDUIT INSTALLATION WITH THE PRT WAY DEPARTMENT AT LEAST TWO (2) WEEKS PRIOR TO BEGINNING WORK.
2) EXCAVATION OF TRACK AND BALLAST AND BACKFILLING WITHIN TRACK AND BALLAST AREAS TO BE PERFORMED BY PRT FORCES. REMAINING TRENCHING AND BACKFILL TO BE PERFORMED BY THE CONTRACTOR. ALL CONDUIT AND CABLING TO BE SUPPLIED AND INSTALLED BY THE CONTRACTOR. REFER TO THE LEGEND FOR DESIGNATION.
3) PROVIDE DETECTABLE WARNING TAPE 1' ABOVE UNDERGROUND CONDUIT RUNS/DUCTBANKS.
4) EXISTING ANGEL WINGS TO BE DEMOLISHED BY PRT FORCES.
5) MAINTAIN EXISTING SIGNAL OPERATION UNTIL NEW SYSTEM IS COMMISSIONED.

| NO. | DATE | DESCRIPTION |
|---|---|---|
| | | REVISIONS |

GFT INFRASTRUCTURE, INC.
Foster Plaza 8
Suite 400
730 Holiday Drive
Pittsburgh, PA. 15220

COMMONWEALTH OF PENNSYLVANIA — REGISTERED PROFESSIONAL — ERIC R. HOLLAND — ENGINEER — PE079465

SIGNATURE

APPROVED DATE

| | |
|---|---|
| DESIGNED | KMH |
| DRAWN | KMH |
| CHECKED | ERH |
| IN CHARGE | ERH |
| DATE | AUGUST 2026 |
| SCALE | NOT TO SCALE |

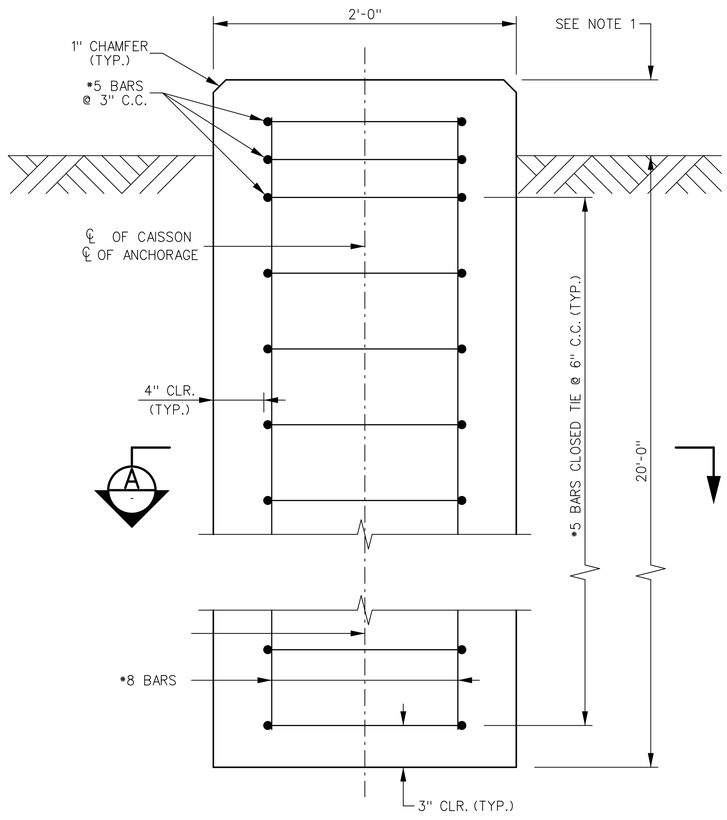
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PITTSBURGH PENNSYLVANIA

RT 88 GRADE CROSSING IMPROVEMENT PROJECT
CONDUIT LAYOUT PLAN
PLAN VIEW

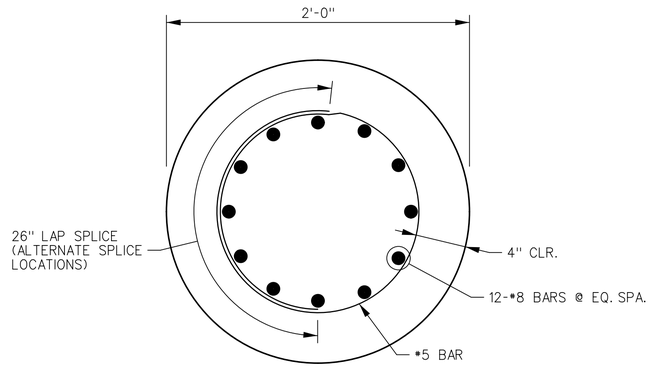
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CONTRACT NO. SYS-26-02
DWG. NO. C108 SHT. 20

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TIME: 3:39:20 PM




CAISSON FOUNDATION DETAIL - NOT TO SCALE (1 / C102)




SECTION A -

## NOTES:

1. IN A PAVED AREA, PLACE THE TOP OF FOUNDATION FLUSH WITH THE SURFACE OF THE ADJACENT PAVEMENT. GRADE ADJACENT PAVEMENT AWAY FROM ANCHOR BOLTS FOR DRAINAGE. IN UNPAVED AREAS TOP OF FOUNDATION TO BE 4" ABOVE TOP OF GROUND.
2. MAST MOUNTING ANCHORAGE (NOT SHOWN). CONTRACTOR TO INCORPORATE ANCHOR BOLT PATTERN WITHIN TOP OF CAISSON FOUNDATIONS. SUBMIT ANCHOR BOLT DESIGN AND SHOP DRAWINGS TO THE ENGINEER FOR REVIEW AND APPROVAL PRIOR TO BEGINNING CAISSON INSTALLATION ACTIVITIES.
3. CONCRETE TO HAVE A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 4,000 PSI.
4. REINFORCEMENT BARS TO BE ASTM A615/A615M-96A, GRADE 60. SPLICING OF REINFORCING BARS ARE NOT PERMITTED.
5. ALL REINFORCEMENT TO BE EPOXY COATED.
6. SOCKET THE CAISSONS A MINIMUM OF 3 FEET INTO INTACT CLAYSTONE ROCK. GEOTECHNICAL BORINGS AT THE SITE YIELDED A DEPTH OF 12-17 FEET TO THE TOP OF CLAYSTONE ROCK.
7. CONTRACTOR IS RESPONSIBLE FOR COORDINATION WITH UTILITY COMPANIES AND ASSOCIATED PROTECTION OR RELOCATION, IF REQUIRED, FOR MAST AND FOUNDATION INSTALLATION.

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GFT INFRASTRUCTURE, INC.
Foster Plaza 8
Suite 400
730 Holiday Drive
Pittsburgh, PA. 15220

COMMONWEALTH OF PENNSYLVANIA — REGISTERED PROFESSIONAL — ERIC R. HOLLAND — ENGINEER — PE079465

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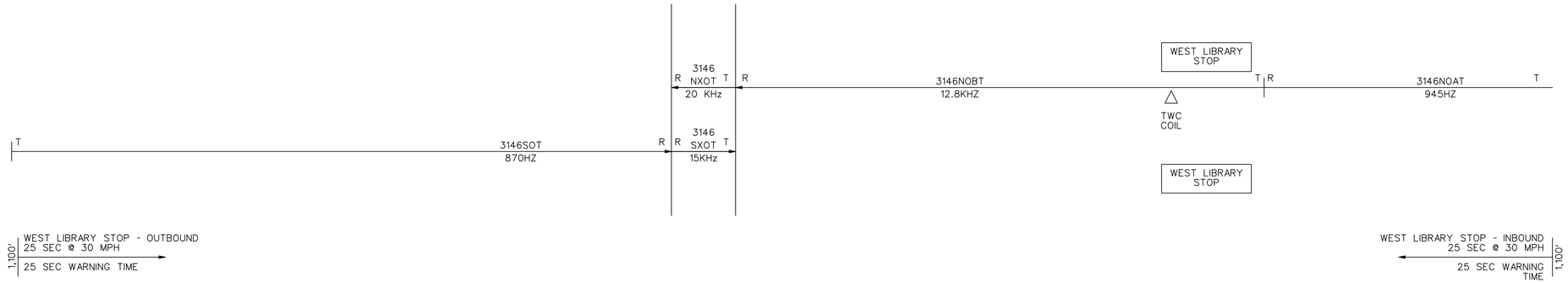
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| DRAWN | CRB |
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| DATE | AUGUST 2026 |
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RT 88 GRADE CROSSING
**IMPROVEMENT PROJECT**
FOUNDATION DETAILS

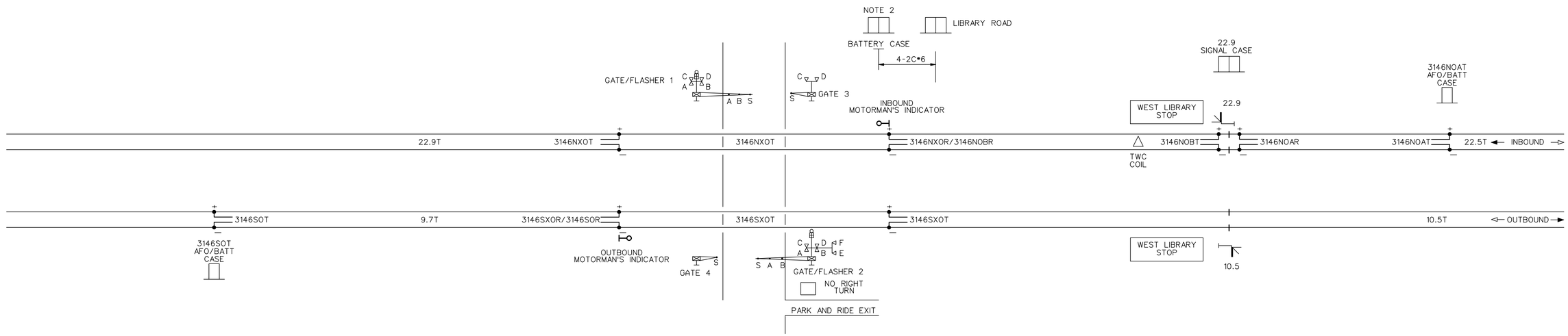
Port Authority — connecting people to life

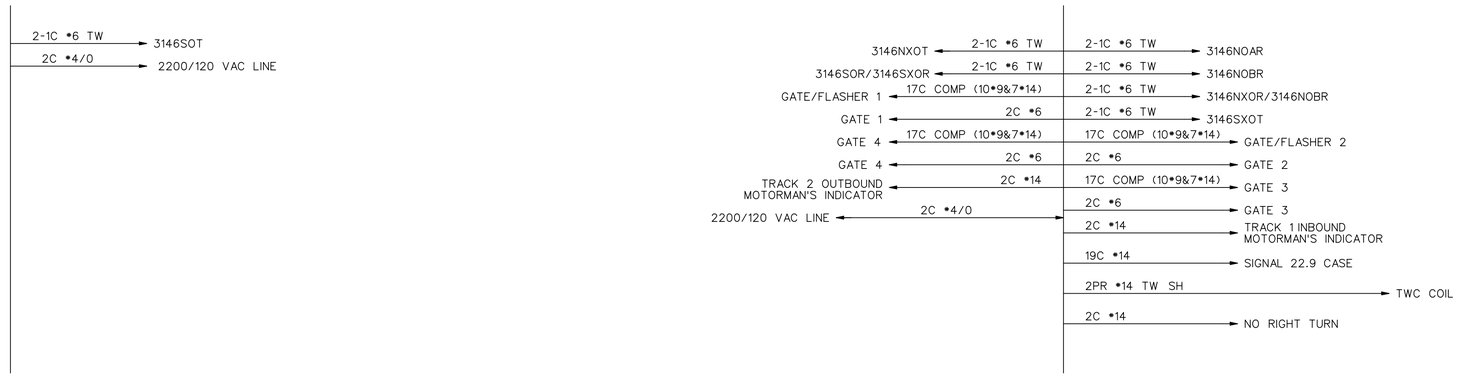
CONTRACT NO. SYS-26-02
DWG. NO. C109 SHT. 21




NOTES:
1. ALL APPROACH DISTANCES ARE FROM TRACK LEADS.
2. BATTERIES TO BE MOUNTED NO LESS THEN 2' ABOVE BOTTOM OF CASE.
3. TW - THERMOPLASTIC WATER-RESISTANT WIRE.

## LIBRARY ROAD GRADE CROSSING




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SIGNATURE

APPROVED DATE

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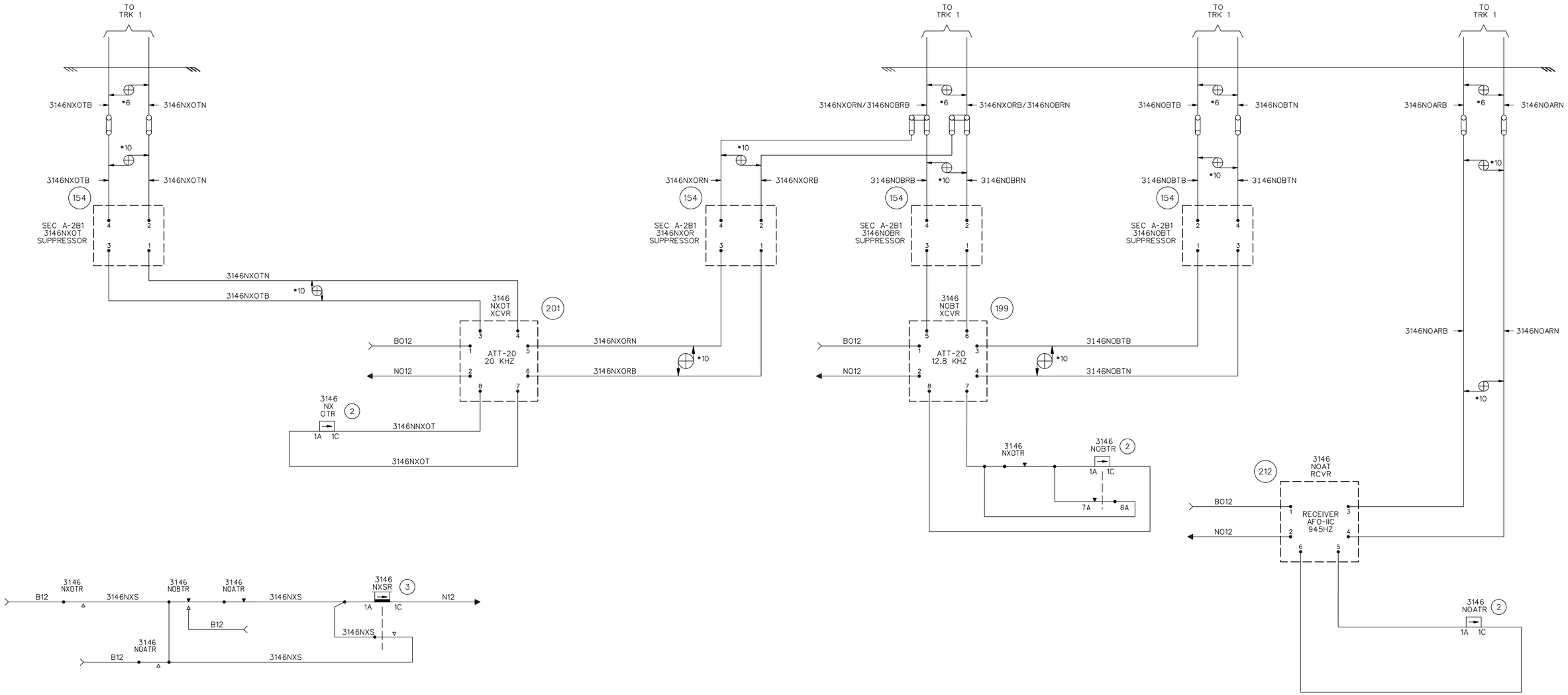
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PITTSBURGH PENNSYLVANIA

RT 88 GRADE CROSSING
IMPROVEMENT PROJECT
TRACK AND CABLE PLAN
PLAN VIEW

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CONTRACT NO. SYS-26-02
DWG. NO. E101 SHT. 22

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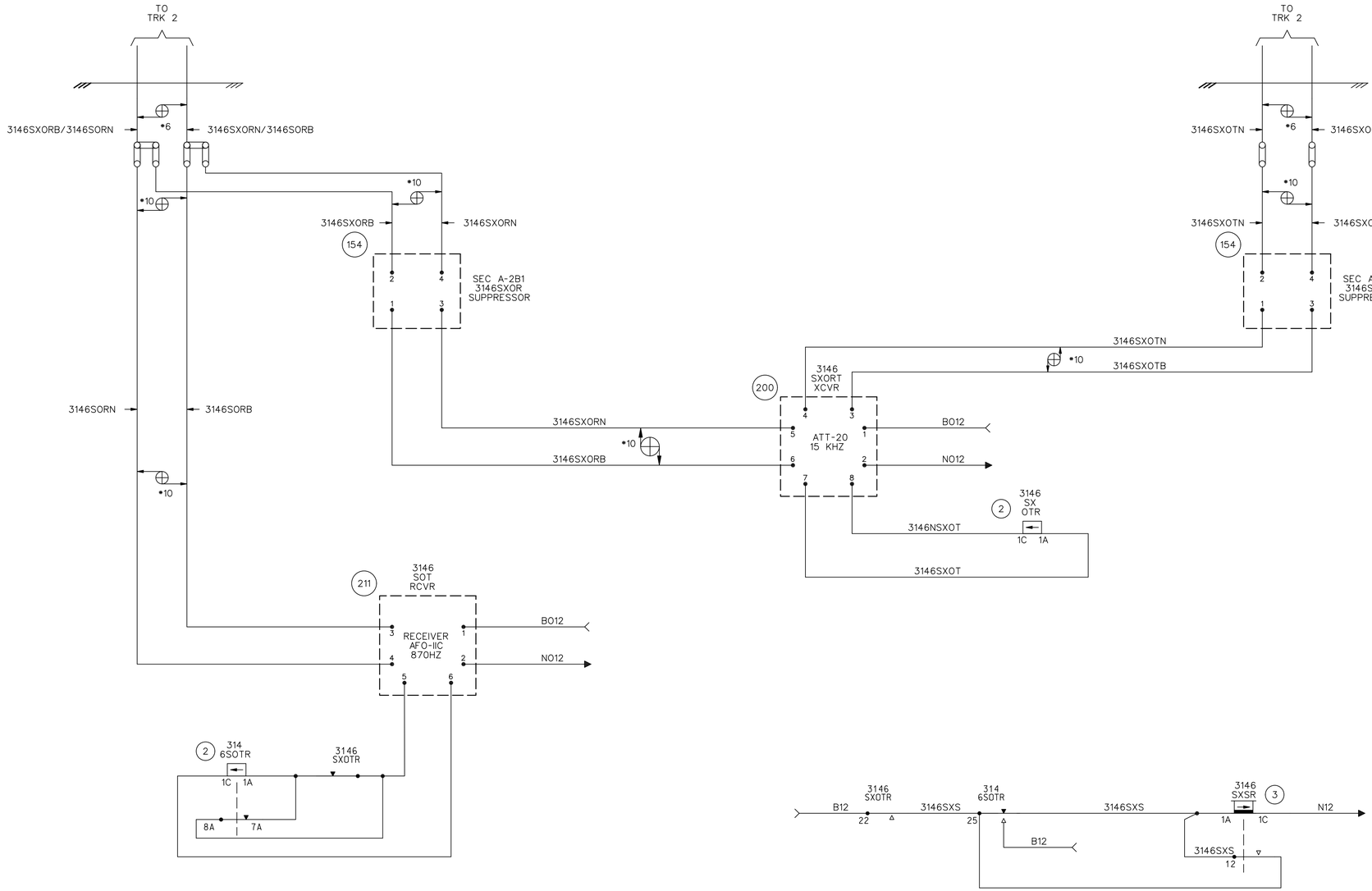
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RT 88 GRADE CROSSING
**IMPROVEMENT PROJECT**
TRACK 1 CROSSING OVERLAY CIRCUITS

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CONTRACT NO. SYS-26-02
DWG. NO. E102 SHT. 23




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PE088721

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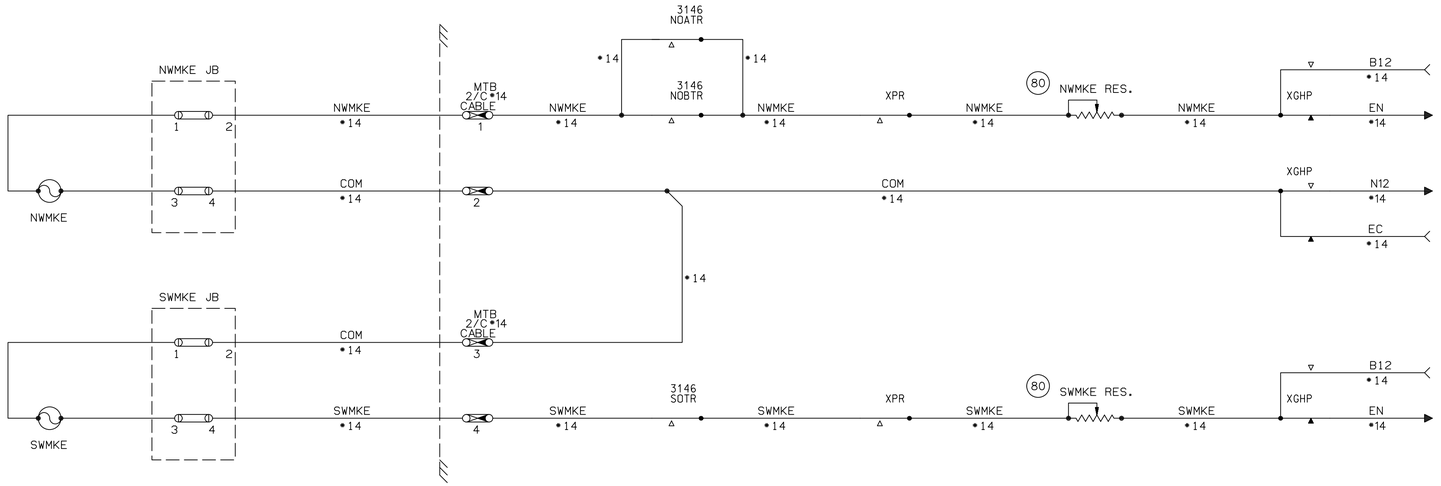
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PITTSBURGH PENNSYLVANIA

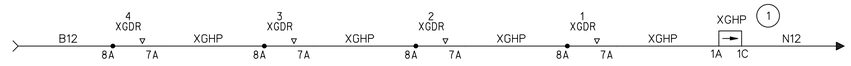
RT 88 GRADE CROSSING
**IMPROVEMENT PROJECT**
TRACK 2 CROSSING OVERLAY CIRCUITS

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CONTRACT NO. SYS-26-02
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PE088721

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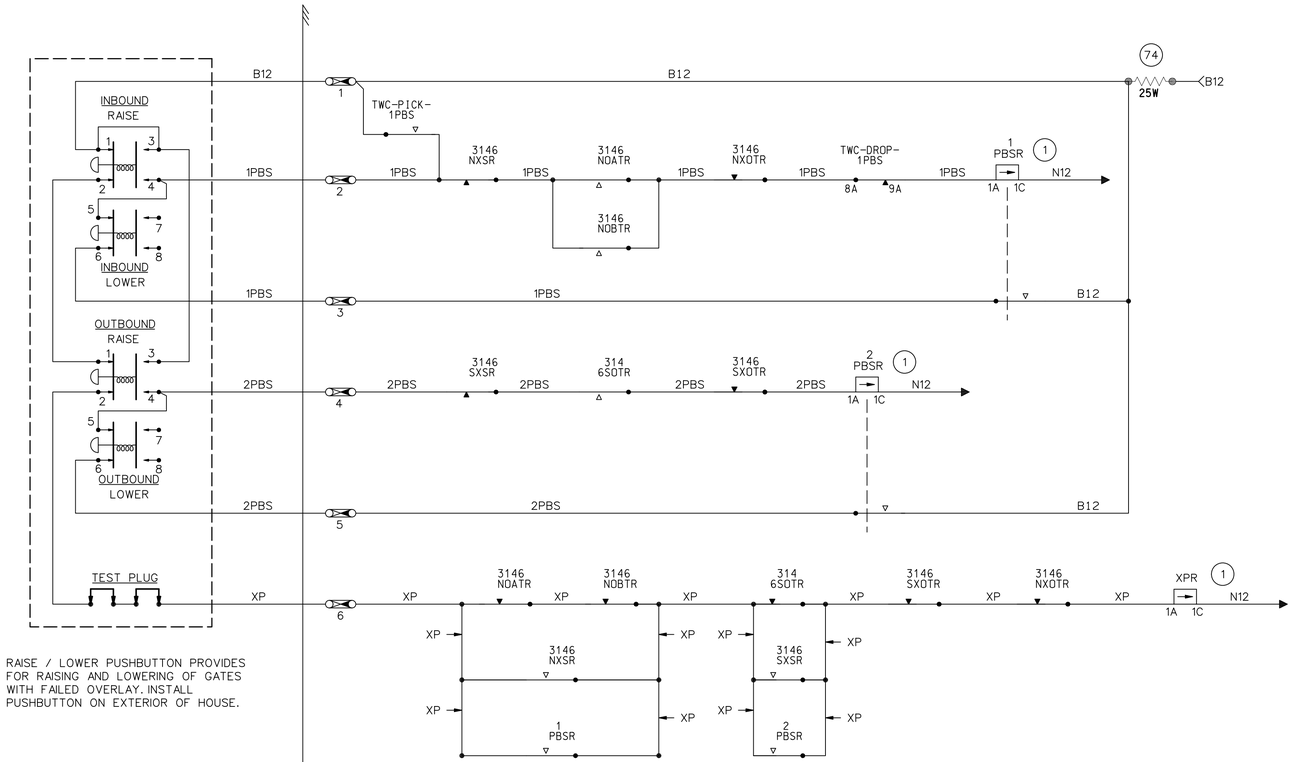
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PITTSBURGH PENNSYLVANIA

RT 88 GRADE CROSSING
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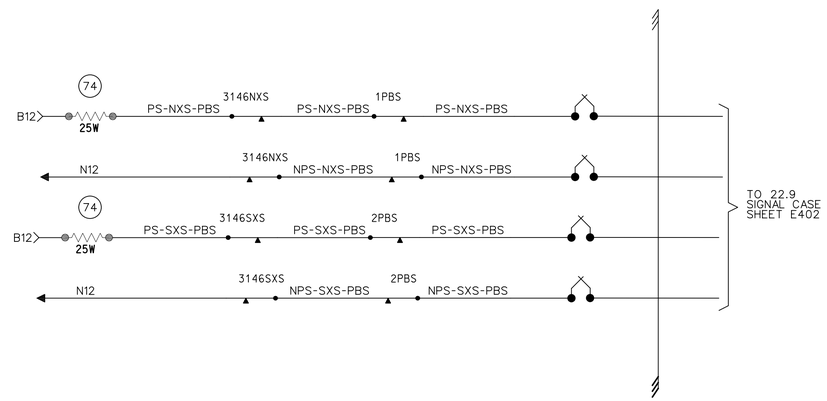
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RAISE / LOWER PUSHBUTTON PROVIDES FOR RAISING AND LOWERING OF GATES WITH FAILED OVERLAY. INSTALL PUSHBUTTON ON EXTERIOR OF HOUSE.




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ERIC W. GREENE
ENGINEER
PE088721
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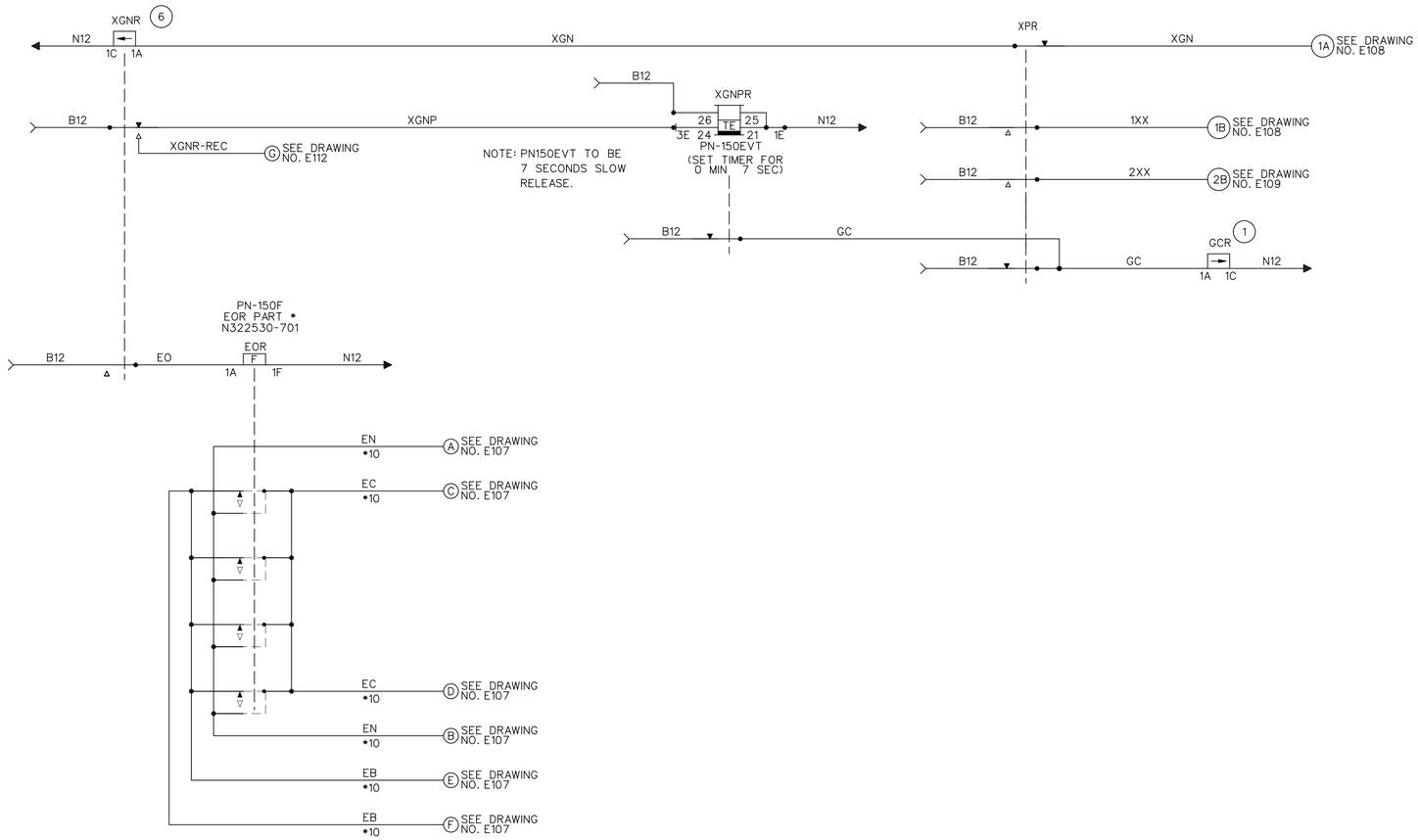
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RT 88 GRADE CROSSING
**IMPROVEMENT PROJECT**
CROSSING CONTROL CIRCUITS

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CONTRACT NO. SYS-26-02
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NOTE:
ALL WIRING •16 UNLESS NOTED.

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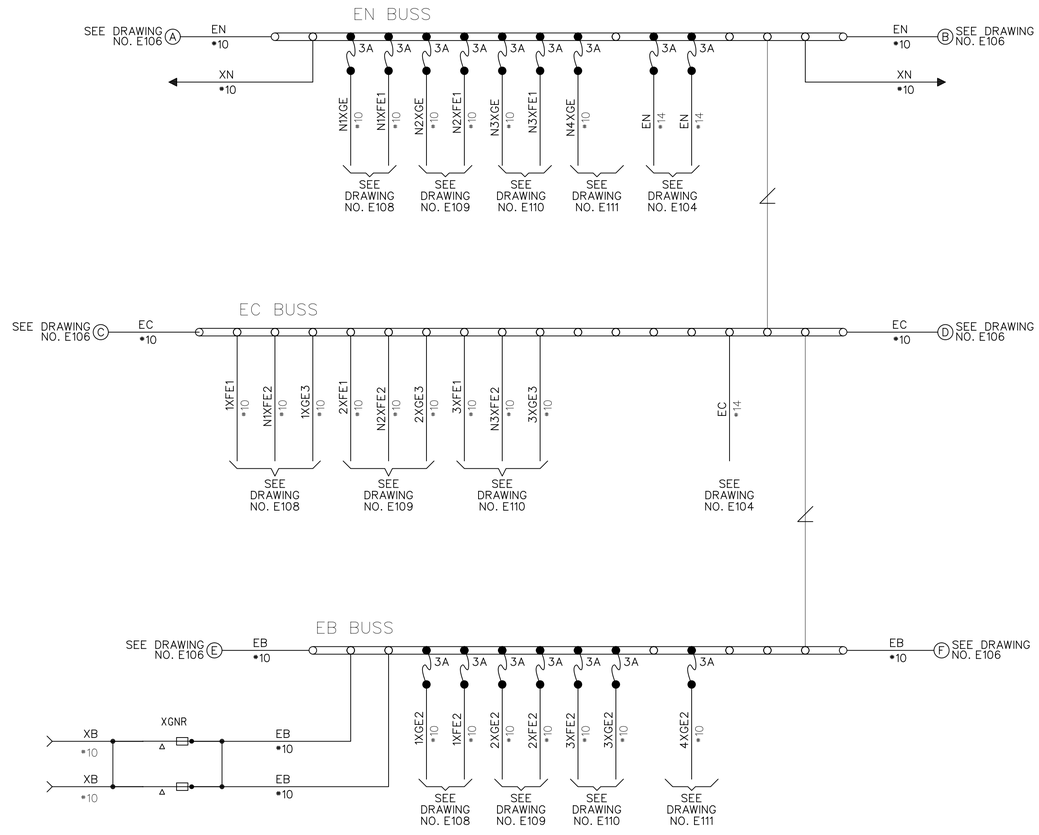
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PORT AUTHORITY OF ALLEGHENY COUNTY
PITTSBURGH PENNSYLVANIA

RT 88 GRADE CROSSING
IMPROVEMENT PROJECT
GATE LIGHTING & CONTROL
SHEET 1 OF 6

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CONTRACT NO. SYS-26-02
DWG. NO. E106 SHT. 27




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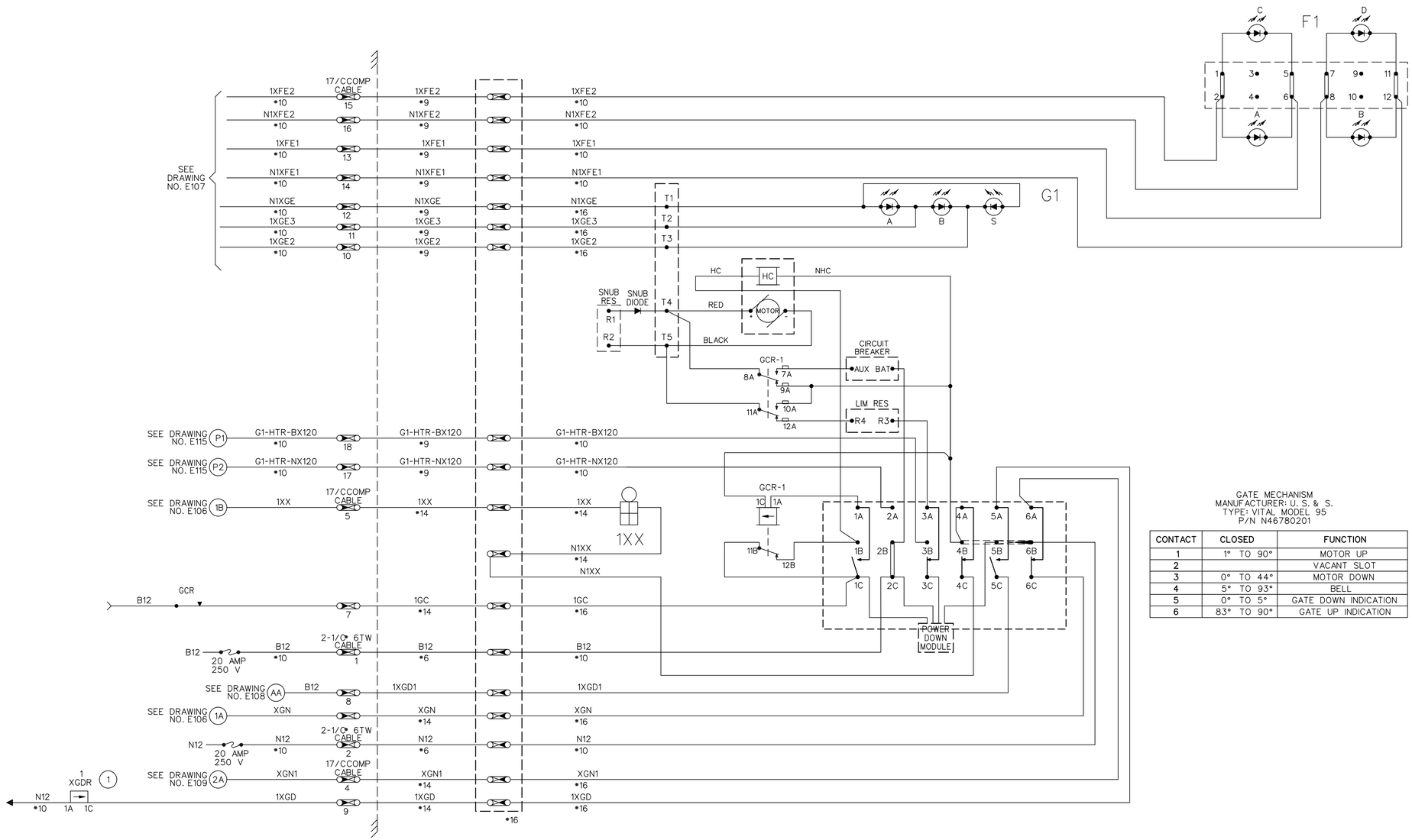
PORT AUTHORITY OF ALLEGHENY COUNTY
PITTSBURGH PENNSYLVANIA

RT 88 GRADE CROSSING
IMPROVEMENT PROJECT
GATE LIGHTING & CONTROL
SHEET 2 OF 6

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CONTRACT NO. SYS-26-02
DWG. NO. E107 SHT. 28

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GATE MECHANISM
MANUFACTURER: U. S. & S.
TYPE: VITAL MODEL 95
P/N N46780201

| CONTACT | CLOSED | FUNCTION |
|---|---|---|
| 1 | 1° TO 90° | MOTOR UP |
| 2 | | VACANT SLOT |
| 3 | 0° TO 44° | MOTOR DOWN |
| 4 | 5° TO 93° | BELL |
| 5 | 0° TO 5° | GATE DOWN INDICATION |
| 6 | 83° TO 90° | GATE UP INDICATION |

NOTE:
ALL WIRING •16 UNLESS NOTED.

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ERIC M. GREENE
PE088721

SIGNATURE

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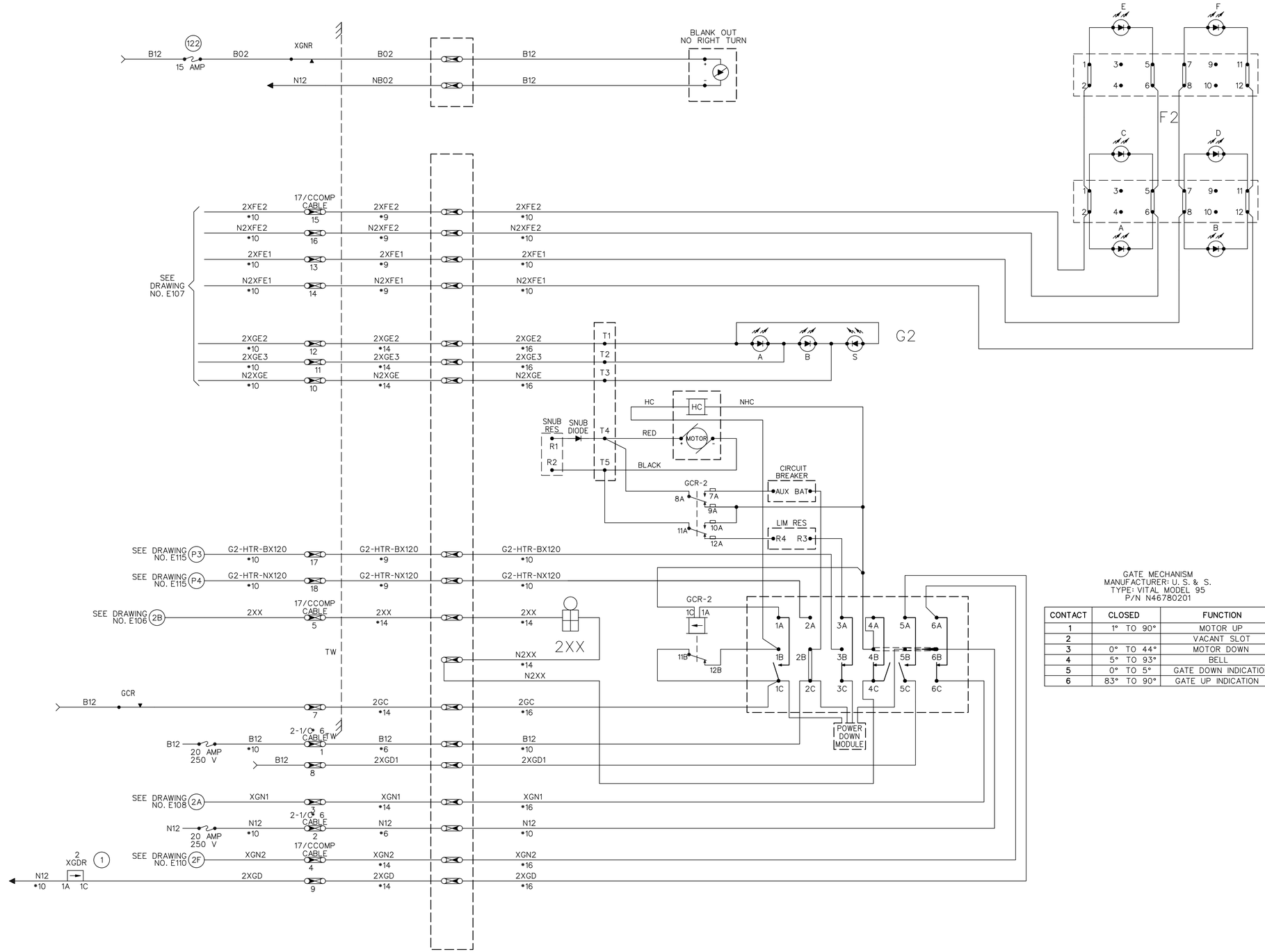
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| DATE | AUGUST 2026 |
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PORT AUTHORITY OF ALLEGHENY COUNTY
PITTSBURGH PENNSYLVANIA

RT 88 GRADE CROSSING
IMPROVEMENT PROJECT
GATE LIGHTING & CONTROL
SHEET 3 OF 6

Port Authority
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CONTRACT NO. SYS-26-02
DWG. NO. E108 SHT. 29




GATE MECHANISM
MANUFACTURER: U. S. & S.
TYPE: VITAL MODEL 95
P/N N46780201

| CONTACT | CLOSED | FUNCTION |
|---|---|---|
| 1 | 1° TO 90° | MOTOR UP |
| 2 | | VACANT SLOT |
| 3 | 0° TO 44° | MOTOR DOWN |
| 4 | 5° TO 93° | BELL |
| 5 | 0° TO 5° | GATE DOWN INDICATION |
| 6 | 83° TO 90° | GATE UP INDICATION |

NOTE:
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Pittsburgh, PA. 15220

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL ENGINEER
ERIC W. GREENE
PE088721

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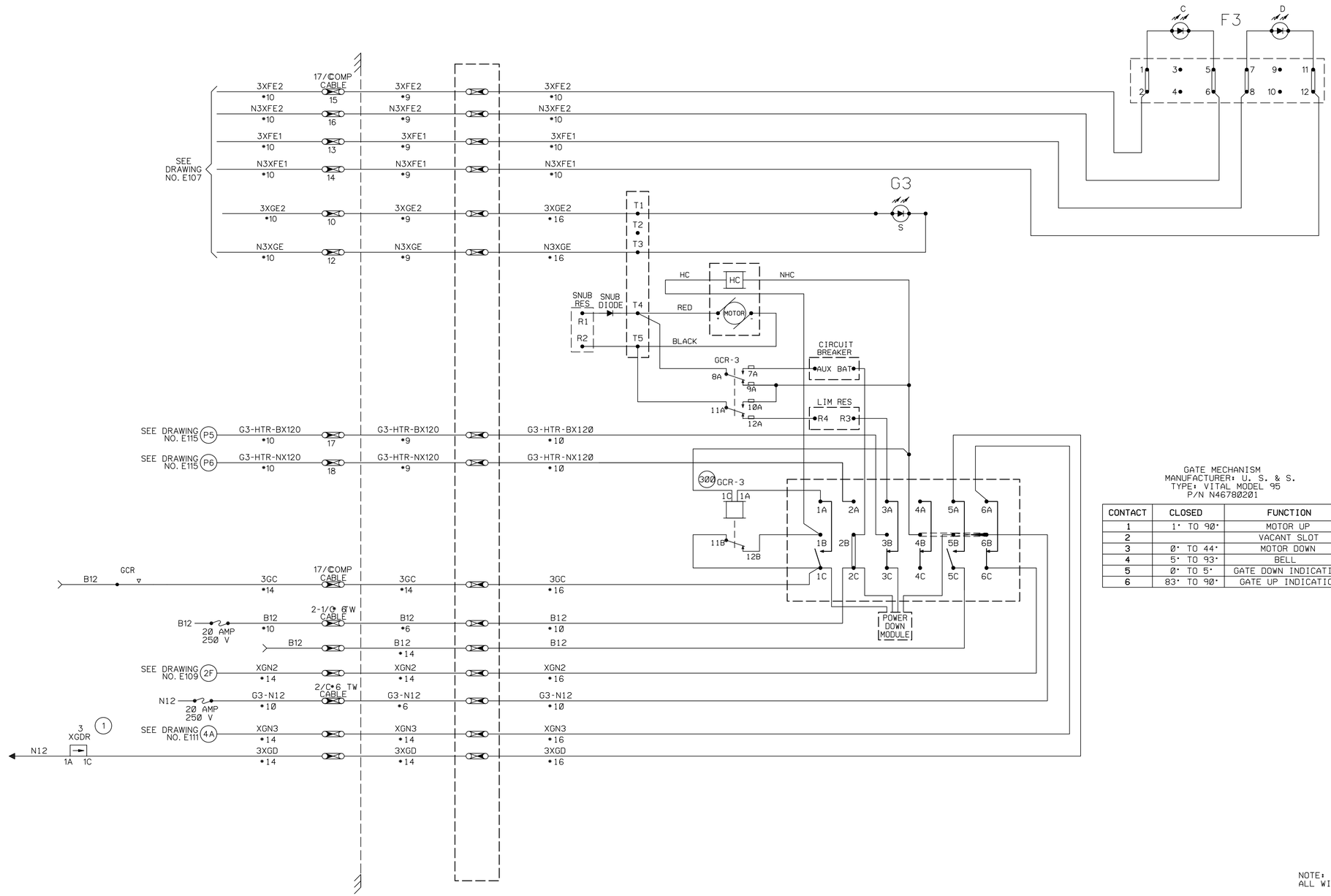
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PITTSBURGH PENNSYLVANIA

RT 88 GRADE CROSSING
IMPROVEMENT PROJECT
GATE LIGHTING & CONTROL
SHEET 4 OF 6

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CONTRACT NO. SYS-26-02
DWG. NO. E109 SHT. 30




GATE MECHANISM
MANUFACTURER: U. S. & S.
TYPE: VITAL MODEL 95
P/N N46780201

| CONTACT | CLOSED | FUNCTION |
|---|---|---|
| 1 | 1° TO 90° | MOTOR UP |
| 2 | | VACANT SLOT |
| 3 | 0° TO 44° | MOTOR DOWN |
| 4 | 5° TO 93° | BELL |
| 5 | 0° TO 5° | GATE DOWN INDICATION |
| 6 | 83° TO 90° | GATE UP INDICATION |

NOTE:
ALL WIRING •16 UNLESS NOTED.

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ERIC M. GREENE
ENGINEER
PE088721

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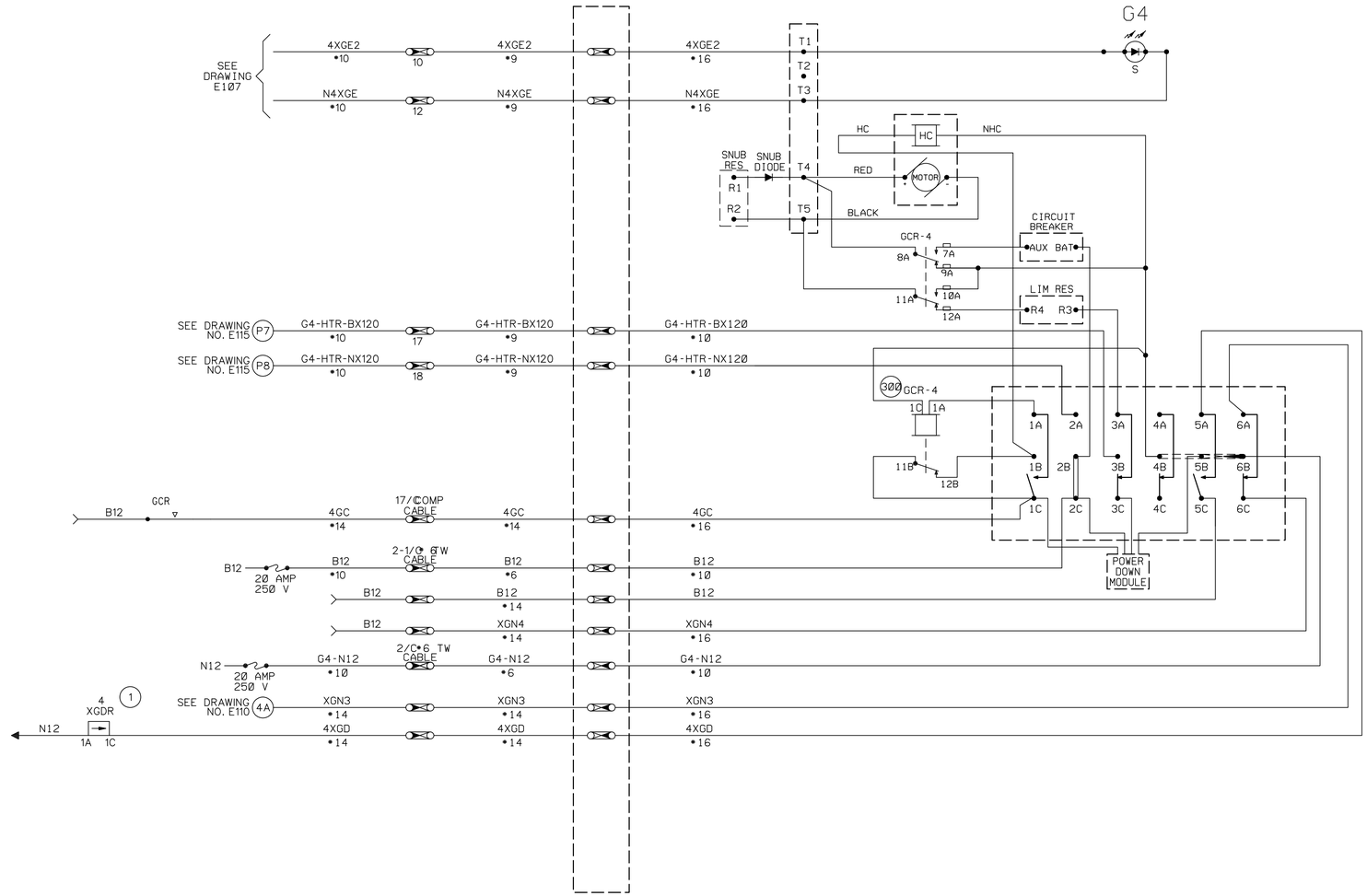
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PORT AUTHORITY OF ALLEGHENY COUNTY
PITTSBURGH PENNSYLVANIA

RT 88 GRADE CROSSING
IMPROVEMENT PROJECT
GATE LIGHTING & CONTROL
SHEET 5 OF 6

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CONTRACT NO. SYS-26-02
DWG. NO. E110 SHT. 31




GATE MECHANISM
MANUFACTURER: U. S. & S.
TYPE: VITAL MODEL 95
P/N N467Ø2Ø1

| CONTACT | CLOSED | FUNCTION |
|---|---|---|
| 1 | 1° TO 9Ø° | MOTOR UP |
| 2 | | VACANT SLOT |
| 3 | Ø° TO 44° | MOTOR DOWN |
| 4 | 5° TO 93° | BELL |
| 5 | Ø° TO 5° | GATE DOWN INDICATION |
| 6 | 83° TO 9Ø° | GATE UP INDICATION |

NOTE:
ALL WIRING •16 UNLESS NOTED.

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COMMONWEALTH OF PENNSYLVANIA
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ERIC M. GREENE
ENGINEER
PE088721

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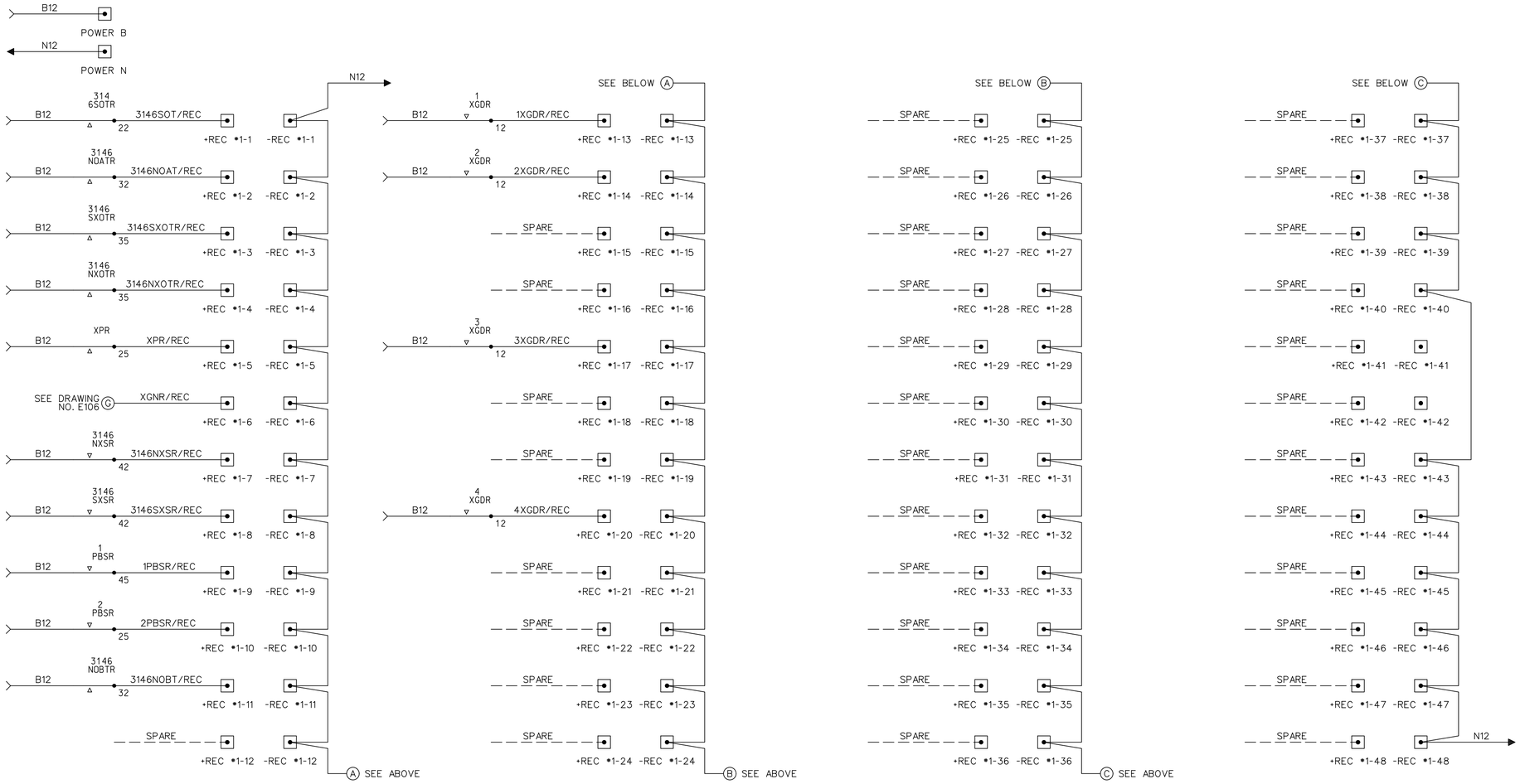
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| IN CHARGE | ERH |
| DATE | AUGUST 2026 |
| SCALE | NOT TO SCALE |

PORT AUTHORITY OF ALLEGHENY COUNTY
PITTSBURGH PENNSYLVANIA

RT 88 GRADE CROSSING
IMPROVEMENT PROJECT
GATE LIGHTING & CONTROL
SHEET 6 OF 6

Port Authority
connecting people in life

CONTRACT NO. SYS-26-02
DWG. NO. E111 SHT. 32




NOTE:
ALL WIRING *16 UNLESS NOTED.

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DATE: 8/18/2026 TIME: 3:39:47 PM

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| | | REVISIONS |

GFT INFRASTRUCTURE, INC.
Foster Plaza 8
Suite 400
730 Holiday Drive
Pittsburgh, PA. 15220

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
ERIC M. GREENE
ENGINEER
PE088721

SIGNATURE

APPROVED DATE

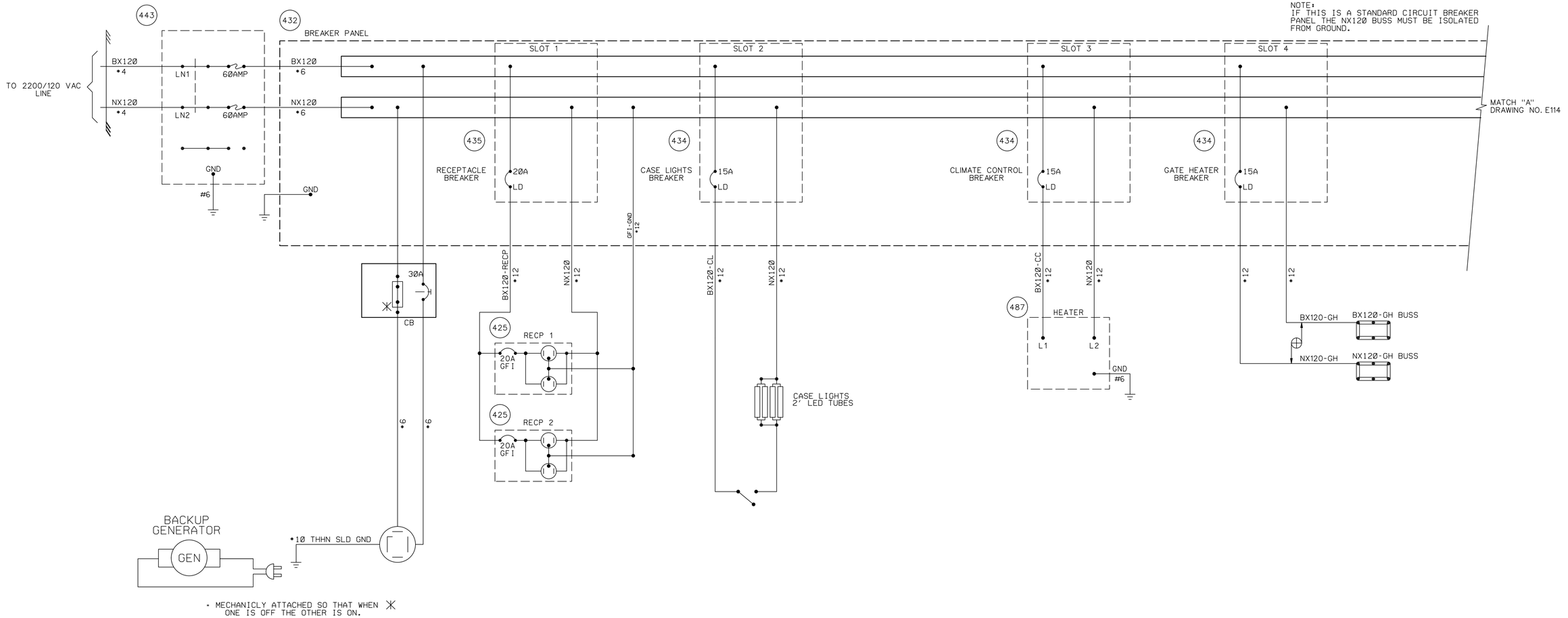
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| DATE | AUGUST 2026 |
| SCALE | NOT TO SCALE |

PORT AUTHORITY OF ALLEGHENY COUNTY
PITTSBURGH PENNSYLVANIA

RT 88 GRADE CROSSING
**IMPROVEMENT PROJECT**
RECORDER CIRCUITS

Port Authority
connecting people to life

CONTRACT NO. SYS-26-02
DWG. NO. E112 SHT. 33




NOTE

1. ALL WIRES •14 UNLESS NOTED.
2. • = WIRE AS SHOWN.

| NO. | DATE | DESCRIPTION |
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GFT INFRASTRUCTURE, INC.
Foster Plaza 8
Suite 400
730 Holiday Drive
Pittsburgh, PA. 15220

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
ERIC M. GREENE
ENGINEER
PE088721

SIGNATURE

APPROVED DATE

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| CHECKED | JPO |
| IN CHARGE | ERH |
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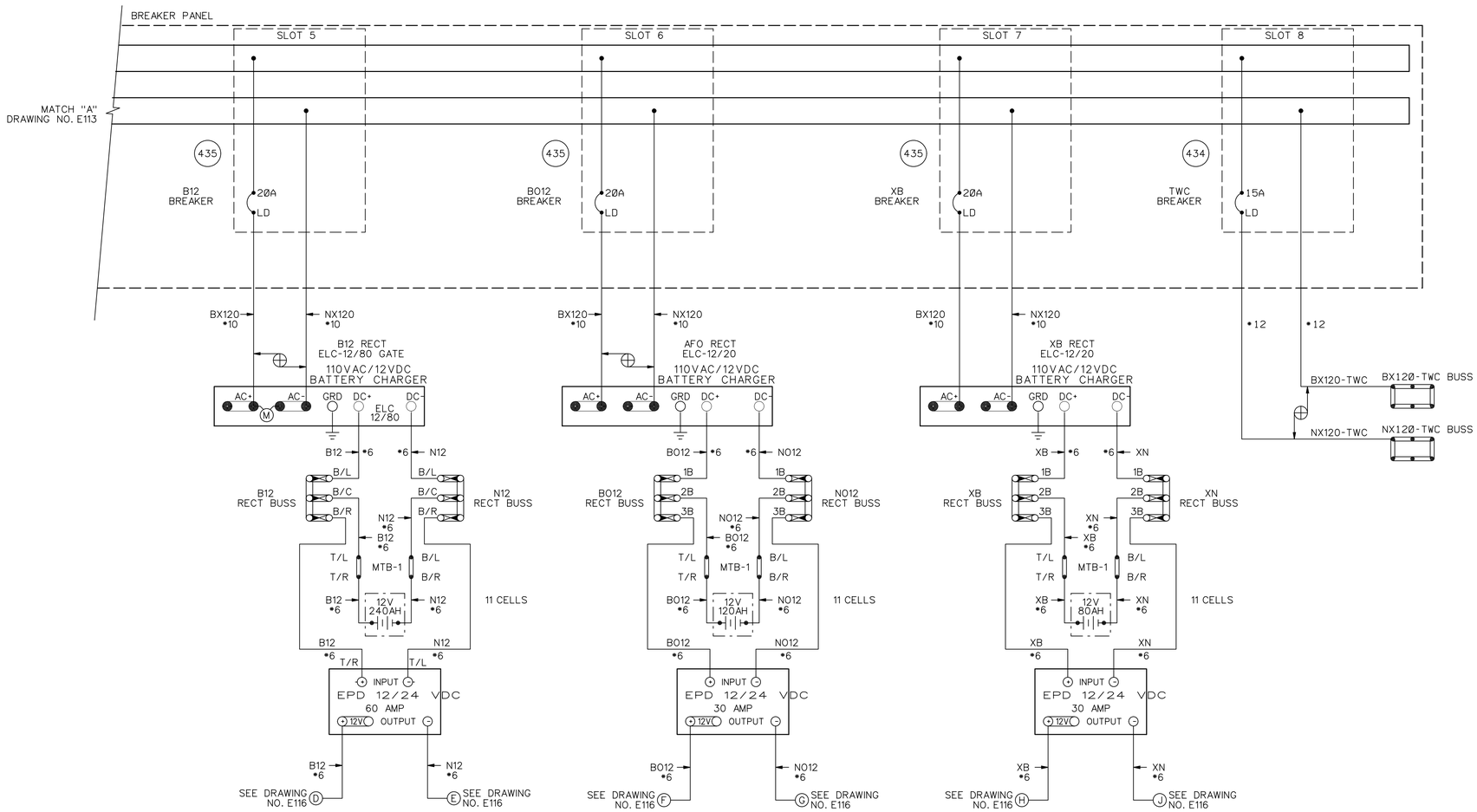
PORT AUTHORITY OF ALLEGHENY COUNTY
PITTSBURGH PENNSYLVANIA

RT 88 GRADE CROSSING
IMPROVEMENT PROJECT
POWER DISTRIBUTION
SHEET 1 OF 3

Port Authority
connecting people to life

CONTRACT NO. SYS-26-02
DWG. NO. E113 SHT. 34

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DATE: 8/18/2026 TIME: 3:39:49 PM




NOTES:
1. ALL 110V WIRES TO BE •10 MIN.
2. ALL OTHER CIRCUIT BREAKERS TO BE SIZED AS NEEDED.
3. FOR ALL GATE ARMS MORE THAN 24', USE 11 CELL NICAD FOR B12

| NO. | DATE | DESCRIPTION |
|---|---|---|
| | | REVISIONS |

GFT INFRASTRUCTURE, INC.
Foster Plaza 8
Suite 400
730 Holiday Drive
Pittsburgh, PA. 15220

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL ERIC M. GREENE ENGINEER PE088721

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| CHECKED | JPO |
| IN CHARGE | ERH |
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| SCALE | NOT TO SCALE |

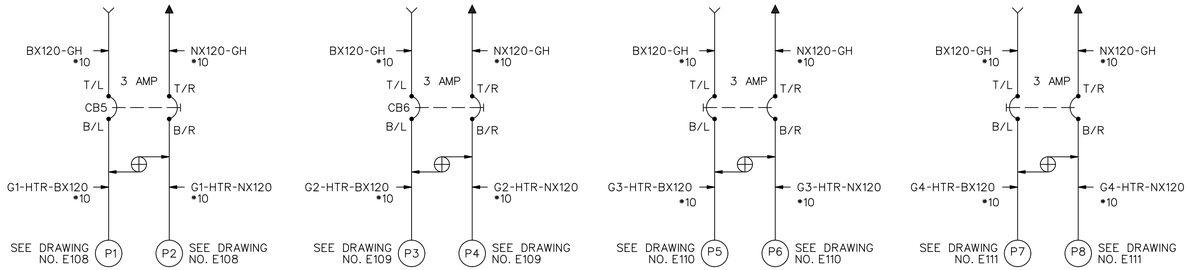
PORT AUTHORITY OF ALLEGHENY COUNTY
PITTSBURGH PENNSYLVANIA

RT 88 GRADE CROSSING IMPROVEMENT PROJECT
POWER DISTRIBUTION
SHEET 2 OF 3

Port Authority
connecting people to life

CONTRACT NO. SYS-26-02
DWG. NO. E114 SHT. 35

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REGISTERED PROFESSIONAL ENGINEER
ERIC M. GREENE
PE088721

SIGNATURE

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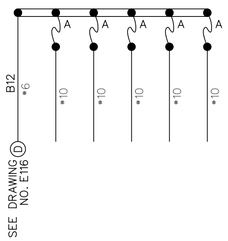
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PITTSBURGH PENNSYLVANIA

RT 88 GRADE CROSSING
IMPROVEMENT PROJECT
POWER DISTRIBUTION
SHEET 3 OF 3

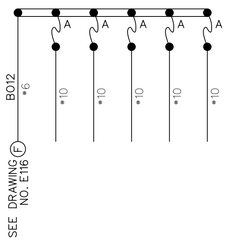
Port Authority
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CONTRACT NO. SYS-26-02
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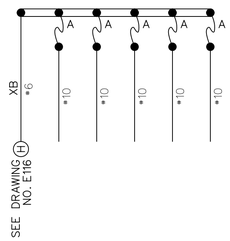
B12 BUSS



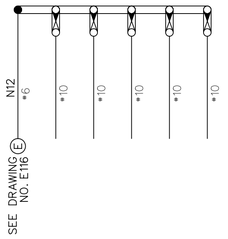

B012 BUSS



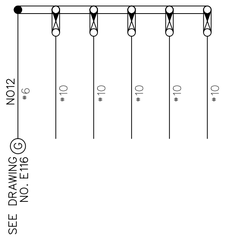

XB BUSS



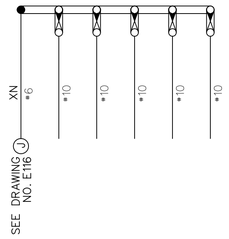

N12 BUSS




NO12 BUSS




XN BUSS




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REVISIONS

GFT

GFT INFRASTRUCTURE, INC.
Foster Plaza 8
Suite 400
730 Holiday Drive
Pittsburgh, PA. 15220

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL ENGINEER
ERIC M. GREENE
PE088721

SIGNATURE

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| CHECKED | JPO |
| IN CHARGE | ERH |
| DATE | AUGUST 2026 |
| SCALE | NOT TO SCALE |

PORT AUTHORITY OF ALLEGHENY COUNTY
PITTSBURGH PENNSYLVANIA

RT 88 GRADE CROSSING
**IMPROVEMENT PROJECT**
BATTERY DISTRIBUTION

Port Authority
connecting people to life

CONTRACT NO. SYS-26-02
DWG. NO. E116 SHT. 37

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DATE: 8/18/2026
TIME: 3:39:55 PM

FIELD

WEST LIBRARY STOP (I/B)

22.9

22.9T

TRACK 2

•12

NOTE 3

IN

OUT

507 22.9T-TWC FILTER

22.9T TWC JUNCTION BOX

22.9T-TWC+

22.9T-TWC-

SPARE

SPARE

NOTE:
TWC COIL TO BE LOCATED AT THE NORTH END OF WEST LIBRARY STOP WITH REMAINDER OF COIL TO THE SOUTH.

LIBRARY ROAD CROSSING CASE

22.9T-TWC POWER SUPPLY UNIT

I I0VAC

L — +I I0 — 258 — 358 — BX120-TWC — I2

N — -I I0 — 261 — 361 — NX120-TWC — I5

GND — GND — 264 — 364 — GND — 20

INTERROGATOR ( I ) ASSEMBLY

505 22.9T-TWC CABLE

101 401 W 22.9T-TWC+ #22

102 402 BR 22.9T-TWC- #22

LOOP 1

LOOP 2

LOOP 3

LOOP 4

OFF

8 7 6 5 4 3 2 1

BX120-TWC

NX120-TWC

GND

506 22.9 TWC COMM CABLE

RS232 / RS485

TWCI-RXD A4

TWCI-TXD B4

TWCI-GND C4

TWCI-RTS D4

TWCI-CTS E4

FUTURE

CONTINUED ON DRAWING 141-41

500 508

22.9 CARDFILE

1 2 3 7 8 9

POWER SUPPLY UNIT

INT I

RLY I

502 501 503

NOTES

1. ALL WIRES #14 UNLESS NOTED.
2. TWISTED PAIR
3. TWIST TO RAIL.
4. TAG & TAPE BACK

| NO. | DATE | DESCRIPTION |
|---|---|---|
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REVISIONS

GFT INFRASTRUCTURE, INC.
Foster Plaza 8
Suite 400
730 Holiday Drive
Pittsburgh, PA. 15220

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL ENGINEER ERIC M. GREENE PE088721

SIGNATURE

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| CHECKED | JPO |
| IN CHARGE | ERH |
| DATE | AUGUST 2026 |
| SCALE | NOT TO SCALE |

PORT AUTHORITY OF ALLEGHENY COUNTY
PITTSBURGH PENNSYLVANIA

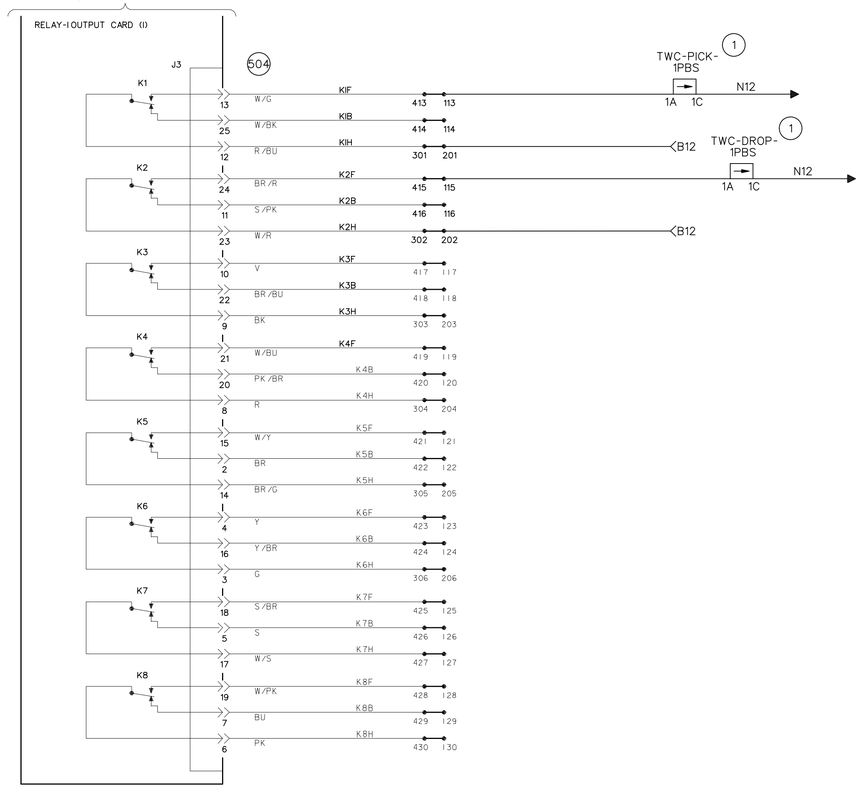
RT 88 GRADE CROSSING
IMPROVEMENT PROJECT
TWCI CIRCUITS

Port Authority
connecting people to life

CONTRACT NO. SYS-26-02
DWG. NO. E117 SHT. 38

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CONTINUED ON
DRAWING 141-40




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730 Holiday Drive
Pittsburgh, PA. 15220

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
ERIC M. GREENE
ENGINEER
PE088721

SIGNATURE

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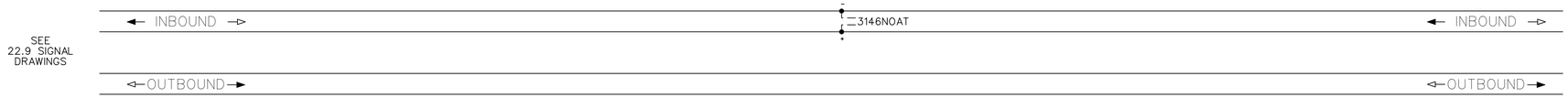
PORT AUTHORITY OF ALLEGHENY COUNTY
PITTSBURGH PENNSYLVANIA

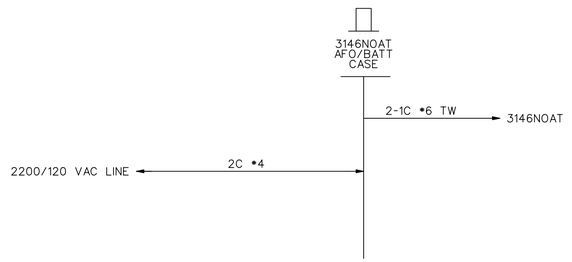
RT 88 GRADE CROSSING
**IMPROVEMENT PROJECT**
TWC CIRCUITS

Port Authority
connecting people to life

CONTRACT NO. SYS-26-02
DWG. NO. E118 SHT. 39

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REVISIONS

GFT INFRASTRUCTURE, INC.
Foster Plaza 8
Suite 400
730 Holiday Drive
Pittsburgh, PA. 15220

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
ERIC M. GREENE
ENGINEER
PE088721

SIGNATURE

APPROVED DATE

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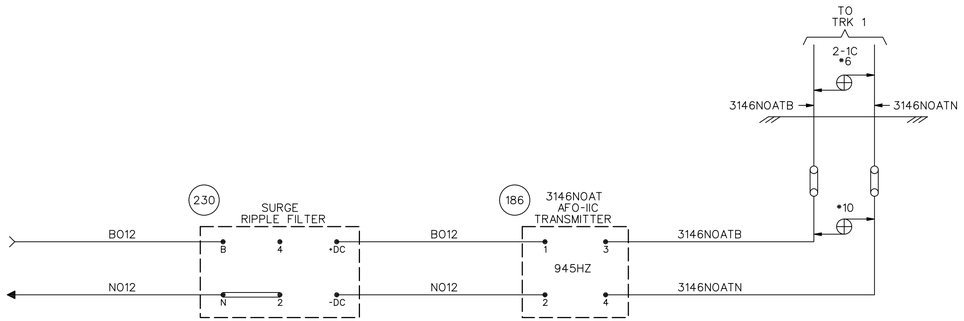
PORT AUTHORITY OF ALLEGHENY COUNTY
PITTSBURGH PENNSYLVANIA

RT 88 GRADE CROSSING
IMPROVEMENT PROJECT
3146NOAT AFO CASE
TRACK AND CABLE PLAN VIEW

Port Authority
connecting people to life

CONTRACT NO. SYS-26-02
DWG. NO. E201 SHT. 40

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REVISIONS

GFT INFRASTRUCTURE, INC.
Foster Plaza 8
Suite 400
730 Holiday Drive
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COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL ENGINEER
ERIC M. GREENE
PE088721

SIGNATURE

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| IN CHARGE | ERH |
| DATE | AUGUST 2026 |
| SCALE | NOT TO SCALE |

PORT AUTHORITY OF ALLEGHENY COUNTY
PITTSBURGH PENNSYLVANIA

RT 88 GRADE CROSSING
IMPROVEMENT PROJECT
3146NOAT AFO CASE
LIBRARY STREET CROSSING APPROACH TRANSMITTERS

Port Authority
connecting people to life

CONTRACT NO. SYS-26-02

DWG. NO. E202 SHT. 41

NOTE:
IF THIS IS A STANDARD CIRCUIT BREAKER PANEL THE NX120 BUSS MUST BE ISOLATED FROM GROUND.

(443)
TO 2200/120 VAC LINE
BX120 •4
NX120 •4
LN1
LN2
20AMP
20AMP
GND
#6

(432) BREAKER PANEL
BX120 •6
NX120 •6
GND
SLOT 1
SLOT 2
SLOT 3

(435) RECEPTACLE BREAKER
20A
LD

(434) CASE LIGHTS BREAKER
15A
LD

(435) AFO BREAKER
20A
LD

BX120-RECP •12
NX120 •12
GFI-GND •12
BX120-CL •12
NX120 •12

(425) RECP 1
20A GFI

(425) RECP 2
20A GFI

CASE LIGHTS 2' LED TUBES

BX120 •10
NX120 •10
AFO RECT 12/20
110VAC/12VDC BATTERY CHARGER
AC+ AC- GRD DC+ DC-

BO12 •6
NO12 •6
1B 2B 3B
BO12 RECT BUSS
NO12 RECT BUSS
T/L T/R B/L B/R
MTB-1
12V 80AH
11 CELLS

EPD1224ATAAR
EPD 12/24 Vdc 30A
INPUT
OUTPUT

THIS SHEET (C)
(D) THIS SHEET

BO12 BUSS
BO12 •6
THIS SHEET (C)

NO12 BUSS
NO12 •6
THIS SHEET (D)

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GFT INFRASTRUCTURE, INC.
Foster Plaza 8
Suite 400
730 Holiday Drive
Pittsburgh, PA. 15220

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
ERIC W. GREENE
ENGINEER
PE088121

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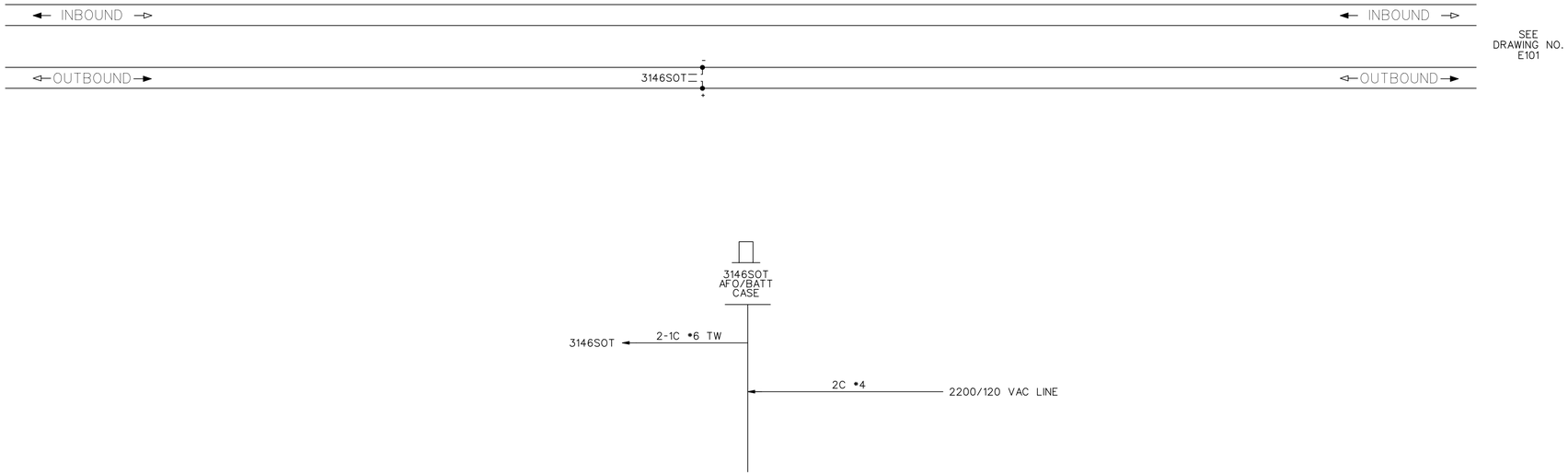
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| DATE | AUGUST 2026 |
| SCALE | NOT TO SCALE |

PORT AUTHORITY OF ALLEGHENY COUNTY
PITTSBURGH PENNSYLVANIA

RT 88 GRADE CROSSING
IMPROVEMENT PROJECT
3146NOAT AFO CASE
POWER DISTRIBUTION

Port Authority
connecting people to life

CONTRACT NO. SYS-26-02
DWG. NO. E203 SHT. 42




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GFT INFRASTRUCTURE, INC.
Foster Plaza 8
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730 Holiday Drive
Pittsburgh, PA. 15220

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL ENGINEER
ERIC M. GREENE
PE088721

SIGNATURE

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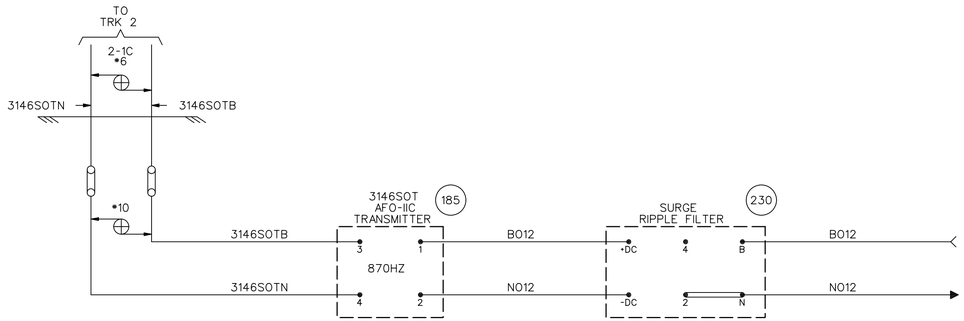
PORT AUTHORITY OF ALLEGHENY COUNTY
PITTSBURGH PENNSYLVANIA

RT 88 GRADE CROSSING
IMPROVEMENT PROJECT
3146SOT AFO CASE
TRACK AND CABLE PLAN VIEW

Port Authority
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CONTRACT NO. SYS-26-02
DWG. NO. E301 SHT. 43

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REVISIONS

GFT

GFT INFRASTRUCTURE, INC.
Foster Plaza 8
Suite 400
730 Holiday Drive
Pittsburgh, PA. 15220

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL ENGINEER
ERIC M. GREENE
PE088721

SIGNATURE

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PORT AUTHORITY OF ALLEGHENY COUNTY
PITTSBURGH PENNSYLVANIA

RT 88 GRADE CROSSING
IMPROVEMENT PROJECT
3146SOT AFO CASE
LIBRARY STREET CROSSING APPROACH TRANSMITTERS

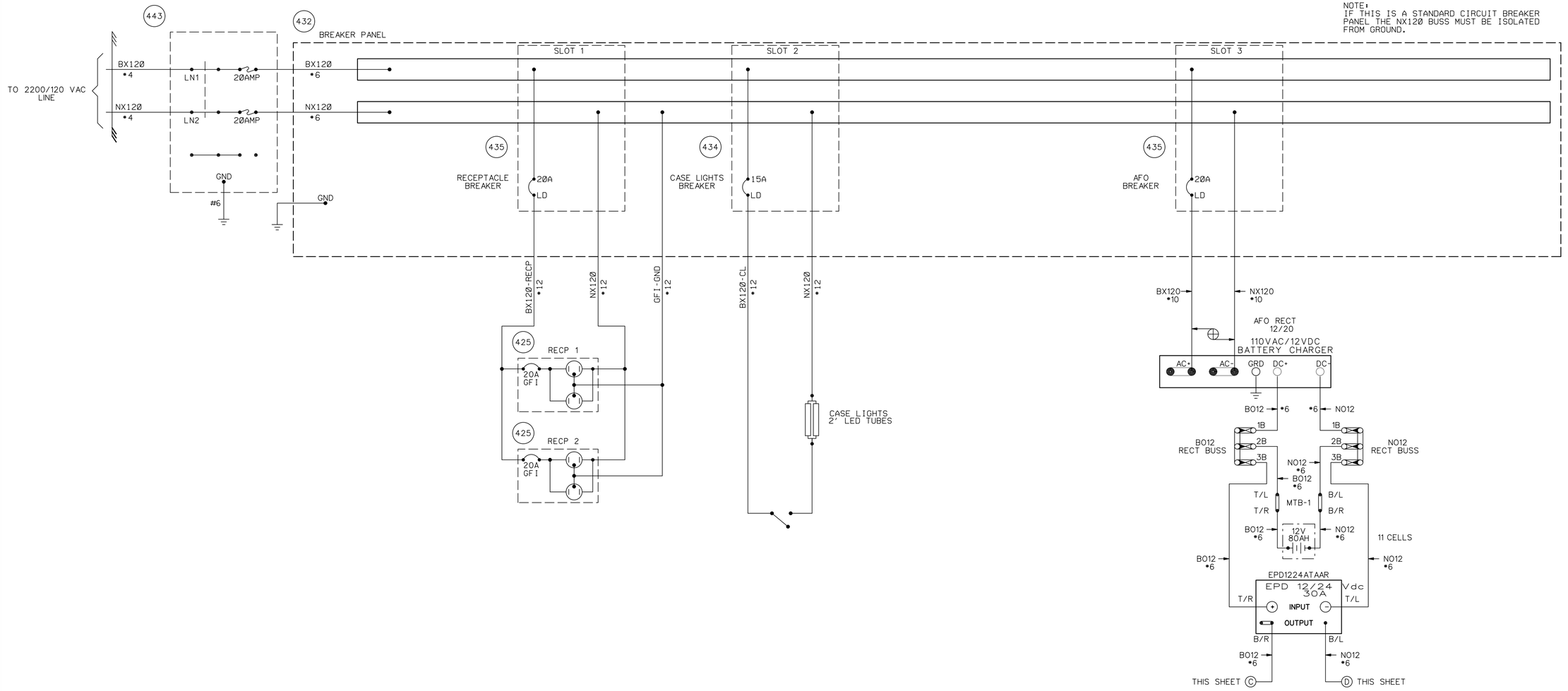
Port Authority
connecting people to life

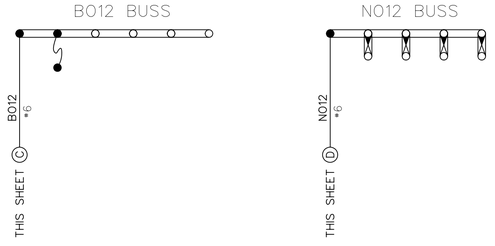
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NOTE:
IF THIS IS A STANDARD CIRCUIT BREAKER PANEL THE NX120 BUSS MUST BE ISOLATED FROM GROUND.




| NO. | DATE | DESCRIPTION |
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REVISIONS

GFT INFRASTRUCTURE, INC.
Foster Plaza 8
Suite 400
730 Holiday Drive
Pittsburgh, PA. 15220

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
ERIC W. GREENE
ENGINEER
PE088121

SIGNATURE

APPROVED DATE

| | |
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| DESIGNED | TGC |
| DRAWN | TGC |
| CHECKED | JPO |
| IN CHARGE | ERH |
| DATE | AUGUST 2026 |
| SCALE | NOT TO SCALE |

PORT AUTHORITY OF ALLEGHENY COUNTY
PITTSBURGH PENNSYLVANIA

RT 88 GRADE CROSSING
IMPROVEMENT PROJECT
3146SOT AFO CASE
POWER DISTRIBUTION

Port Authority
connecting people to life

CONTRACT NO. SYS-26-02
DWG. NO. E303 SHT. 45

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TO WASHINGTON JUNCTION

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10.5T

TO LIBRARY END OF LINE

•8 •8 •8 •8

22.9 SIGNAL CASE

C1 0000 C2

C2 0000 C1

CX110 BX110

L2 L1 22.9TR

22.5T XFRM 0000

CX110 BX110

L2 L1 10.5TR

4P 2P 3P 0000 0000

BX110

22.9H

B12 22.9HP RES 22.9H •14 22.9HP

N12 •14 N22.9HP

•14 •14 •14 •14

TO 22.5 SIGNAL CASE

SIG 22.9

G Y R

22.9TR 22.9H

N R

CX110

B12 RECTIFIER

BX110 B12

AC DC

CX110 N12

CPR-1

BX110 CX110

TO 2200 VAC LINE

22.9 H PS-NXS-PBS 22.9TR BX110

N R

CX110

10.5 H CX110

PS-SXS-PBS BX110

4P 2P 3P 0000 0000 0000

10.5 H 10.5TR BX110

N R

CX110

10.5 H 10.5TR

N R

CX110

PS-SXS-PBS 10.5 H BX110

CX110

SIG 10.5

G Y R

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GFT INFRASTRUCTURE, INC.
Foster Plaza 8
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730 Holiday Drive
Pittsburgh, PA. 15220

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL ENGINEER ERIC M. GREENE PE088721

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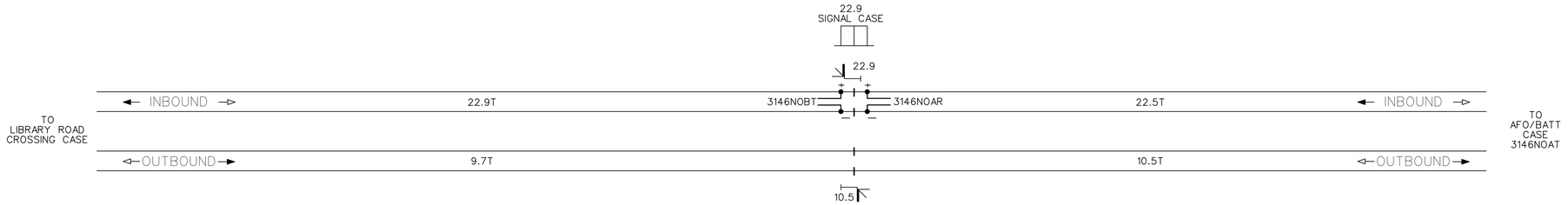
PORT AUTHORITY OF ALLEGHENY COUNTY
PITTSBURGH PENNSYLVANIA

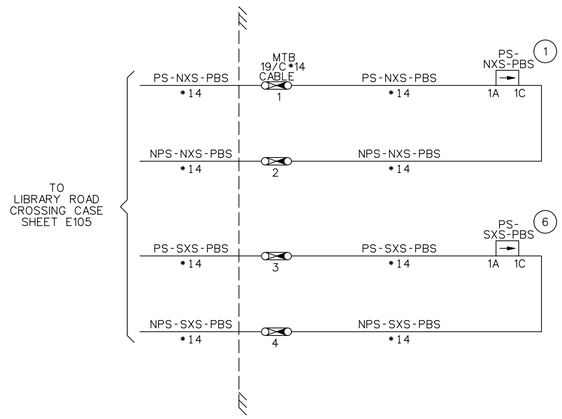
RT 88 GRADE CROSSING IMPROVEMENT PROJECT
SIGNAL CASE 22.9
SHEET 1 OF 2

Port Authority connecting people to life

CONTRACT NO. SYS-26-02

DWG. NO. E401 SHT. 46




ALL NEW WORK

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COMMONWEALTH OF PENNSYLVANIA
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ERIC M. GREENE
PE088721

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PORT AUTHORITY OF ALLEGHENY COUNTY
PITTSBURGH PENNSYLVANIA

RT 88 GRADE CROSSING
IMPROVEMENT PROJECT
SIGNAL CASE 22.9
SHEET 2 OF 2

Port Authority
connecting people to life

CONTRACT NO. SYS-26-02
DWG. NO. E402 SHT. 47

| REF. NO. | APPARATUS | RESISTANCE OR VOLTAGE | CONTACTS OR CAPACITY | DESCRIPTION | PART NUMBER | PLUG COUPLER OR BASE NUMBER | APPLICATION |
|---|---|---|---|---|---|---|---|
| 1 | PN-150B RELAY | 800Ω | 6FB | ORD. BIASED | N322500-802 | N451376-0302 | LINE,LOGIC |
| 2 | PN-150B RELAY | 400Ω | 4FB-2F-1B | ORD. BIASED | N322500-809 | N451376-0302 | ATT-10 |
| 3 | PN-150BSR RELAY | 250Ω | 6FB | SLOW RELEASE | N322503-802 | N451376-0302 | LINE,LOGIC |
| 4 | PN-150BM RELAY | 240Ω | 2F-2B MAG. H.D. | MAG. BLOWOUT | N322524-001 | N451376-0302 | SWITCH CONTROL |
| 5 | | | | | | | |
| 6 | PN-150HD RELAY | 800Ω | 4FB H.D. 2FB STD. | HEAVY DUTY | N322505-702 | N451376-0302 | XING GATE |
| 7 | PN-150T RELAY | 12 VDC | 2F | 3-30 SEC. | N322523-302 | N451376-0302 | ELECTRONIC TIMER TRACK LOSS OF SHUNT |
| 8 | PN-150T RELAY | 12 VDC | 2F | 30 SEC.- 5 MIN. | N322523-305 | N451376-0302 | ELECTRONIC TIMER |
| 9 | PN-150EVT RELAY | 9-30 VDC | 3F-1B | 0-59 MIN. | N40101-701 | X40102-001 | MICROPROCESSOR BASED TIMER RELAY |
| 10 | PN-152S0 RELAY | 110 VDC | | OVERLOAD | N322522-802 | N451376-0302 | SWITCH CONTROL |
| 11 | PV-250 RELAY | 115 V - 60 HZ. | 2F-2B | 2 ELEMENT A.C. VANE | N342555-803 | N438689-003 | TRACK |
| 12 | | | | | | | |
| 13 | PN-250B RELAY | 250Ω MULTIPLE | 8FB 4F-2B | ORD. BIASED | N322554-802 | N438689-003 | LOGIC |
| 14 | | | | | | | |
| 15 | | | | | | | |
| 16 | PF-256 RELAY | 87.5 - 87.5Ω | 4NR | FLASHER | N322561-001 | N438689-001 | XING SIGNALS |
| 17 | PF-256 RELAY | 87.5 - 87.5Ω | 4NR | FLASHER | N322561-002 | N438689-001 | FLASHING SIGNALS |
| 18 | PN-259SRA RELAY | 225Ω | 4FB H.D. | BIASED SLOW RELEASE | N322562-001 | N438689-001 | XING REPEATER |
| 19 | PD-63AC RELAY | | | WITH 12 V LAMPS | N287463-003 | N287545 | A.C. GND. DET. |
| 20 | | | | | | | |
| 21 | | | | | | | |
| 22 | PV-250 RELAY | 115 V - 60 HZ | 6F-4B | 2 ELEMENT A.C. VANE | N322555-805 | N438689-003 | GND. DET. |
| 23 | | | | | | | |
| 24 | | | | | | | |
| 25 | NON-VITAL RELAY BASE | | | AE RELAY BASE | J726153-0152 | | YARD RELAY BASE |
| 26 | | | | | | | |
| 27 | | | | | | | |
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| 36 | | | | | | | |
| 37 | TRANSFORMER | | | | ADEMCO #1320 | | INTRUSION ALARM |
| 38 | W-2 TRANSFORMER | | | | N437093-001 | | POWER OFF |
| 39 | | | | | | | |
| 40 | W400 TRANSFORMER | 120/114 V 60/100 HZ. | 360 VA | AIR COOLED | N451428-0101 | | TRACK FEED |
| 41 | | | | | | | |
| 42 | TRANSFORMER | | | MATCHING 1:1 | N393992 | | TRACK REACTOR |
| 43 | TRANSFORMER | | 2 KVA | G.E. #9T51B32 | J731400-0044 | | SIGNAL LIGHTING |
| 44 | | | | | | | |
| 45 | | | | | | | |
| 46 | TRANSFORMER | | 10 KVA | 6E-5539 WESTINGHOUSE | J731400-0038 | | 120 VAC BX BUSS |
| 47 | TRANSFORMER | | 10 KVA | G.E. #9T21B101502 | J731400-0048 | | 480 VAC |

| REF. NO. | APPARATUS | RESISTANCE OR VOLTAGE | CONTACTS OR CAPACITY | DESCRIPTION | PART NUMBER | PLUG COUPLER OR BASE NUMBER | APPLICATION |
|---|---|---|---|---|---|---|---|
| 48 | | | | | | | |
| 49 | NL-10 TRANSFORMER | 5 VAC | | 1:20 | N116867 | | RELAY TRANSFORMER |
| 50 | | | | | | | |
| 51 | | | | | | | |
| 52 | | | | | | | |
| 53 | | | | | | | |
| 54 | | | | | | | |
| 55 | | | | | | | |
| 56 | CURRENT TRANSFORMER | | 2 VA | 100:5 | J731400-0027 | WITH BRACKETS | 120V AMMETER |
| 57 | CURRENT TRANSFORMER | | 2 VA | 50:5 | J731400-0035 | WITH BRACKETS | 600V AMMETER |
| 58 | | | | | | | |
| 59 | | | | | | | |
| 60 | | | | | | | |
| 61 | CPR-4 RECTIFIER | 115/120 VAC 60/100 HZ. | 10-18 VDC 4.0 A | | N451372-0501 | | LOGIC RECTIFIER |
| 62 | | | | | | | |
| 63 | | | | | | | |
| 64 | | | | | | | |
| 65 | RN-2D RECTIFIER | 110 VAC | 110 VDC | | N435449 | | SWITCH RECTIFIER |
| 66 | | | | | | | |
| 67 | | | | | | | |
| 68 | | | | | | | |
| 69 | | | | | | | |
| 70 | ADJ. RESISTOR | 1.25 Ω | 125 WATTS | | M438112 | | LIGHTING CIRCUITS |
| 71 | ADJ. RESISTOR | 5Ω | | CURRENT LIMITING | N451140-0102 | | TRACK CIRCUIT |
| 72 | ADJ. RESISTOR | 2.5Ω | 160 WATTS | CURRENT LIMITING | J073730 | | TRACK CIRCUIT |
| 73 | ADJ. RESISTOR | .5Ω | | CURRENT LIMITING | J073585 | | TRACK CIRCUIT |
| 74 | RESISTOR | 25Ω | 27 WATTS | CURRENT LIMITING | J073966 | | LINE RELAY |
| 75 | RESISTOR | 50Ω | 27 WATTS | CURRENT LIMITING | J072167 | | TIMER RELAY |
| 76 | RESISTOR | 35Ω | | CURRENT LIMITING | J073593 | | A.C. GND. DET. |
| 77 | RESISTOR | 100Ω | | | J073895 | | A.C. GND. DET. |
| 78 | RESISTOR | 500Ω | | | J720246 | | A.C. GND. DET. |
| 79 | ADJ. RESISTOR | 2Ω | 240 WATTS | CURRENT LIMITING | J072119 | | TRACK CIRCUIT |
| 80 | ADJ. RESISTOR | 2.5Ω | 12 WATTS | | N156682 | | TRACK CIRCUIT |
| 81 | RESISTOR | 600Ω | 3¼ WATTS | | J586152 | | CODE LINE TERMINATION |
| 82 | RESISTOR | 1000Ω | 2 WATTS | | J720912 | | BLOWN FUSE |
| 83 | RESISTOR | 82Ω | 3¼ WATTS | | J720042 | | |
| 84 | RESISTOR | 200Ω | 2 WATTS | SNUBBING | J721161 | | SNUB RESISTOR FOR CODE RELAYS |
| 85 | RESISTOR | 510Ω | 2 WATTS | SNUBBING | N230269 | | SWITCH CONTROL CALL ON |

| NO. | DATE | DESCRIPTION |
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SHEET 1 OF 6

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|---|---|---|---|---|---|---|---|
| 86 | RESISTOR | 400Ω | 12 WATTS | | J073616 | | SIGNAL BLOWN FUSE |
| 87 | | | | | | | |
| 88 | RESISTOR | 1Ω | 3¼ WATTS | | J723210 | J077058 | ATT-20 |
| 89 | RESISTOR | 2Ω | 3¼ WATTS | | J723592 | J077058 | ATT-20 |
| 90 | RESISTOR | 3Ω | 3¼ WATTS | | J723582 | J077058 | ATT-20 |
| 91 | | | | | | | |
| 92 | | | | | | | |
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| 103 | | | | | | | |
| 104 | | | | | | | |
| 105 | | | | | | | |
| 106 | CAPACITOR | 500 V | 8 MFD | | J700844 | | BLOWN FUSE |
| 107 | CAPACITOR | | 5 MFD | | N215730 | | A.C. GND. DET. |
| 108 | CAPACITOR | 25 V | 25 MFD | | J702465 | | BLOWN FUSE |
| 109 | CAPACITOR | 100 V | 5 MFD | | | | D.C. GND. DET. BASE |
| 110 | | | | | | | |
| 111 | | | | | | | |
| 112 | | | | | | | |
| 113 | | | | | | | |
| 114 | | | | | | | |
| 115 | TRANS.-CAP. UNIT | | | | N285909 | | A.C. GND. DET. |
| 116 | | | | | | | |
| 117 | | | | | | | |
| 118 | DIODE | | | SILICON IN4007 | J723912 | | RECTIFIER |
| 119 | FUSE | 250 V | 3 A | NONINDICATING | J713159 | | |
| 120 | FUSE | 250 V | 10 A | NONINDICATING | J071013 | SAFETRAN FUSE BLK J725858 | |
| 121 | FUSE | 250 V | 6 A | NONINDICATING | J071178 | | |
| 122 | FUSE | 250 V | 15 A | NONINDICATING | J071018 | | |
| 123 | FUSE | 250 V | 20 A | NONINDICATING | J071115 | | |
| 124 | FUSE | 250 V | 1 A | NONINDICATING | J710002 | | SW.HEATER METER PROTECTION |
| 125 | FUSE | 250 V | 1 A | INDICATING | J710057 | | TPO |
| 126 | FUSE | 250 V | 3 A | INDICATING | J710058 | | TRACK RELAY SIGNAL LIGHTING |
| 127 | FUSE | 250 V | 5 A | INDICATING | J710061 | | CIRCUITS |
| 128 | FUSE | 250 V | 10 A | INDICATING | J710059 | | CIRCUITS |
| 129 | FUSE | 250 V | 15 A | INDICATING | J710062 | | CIRCUITS |
| 130 | FUSE | 250 V | 20 A | INDICATING | J710060 | | CIRCUITS |
| 131 | FUSE | 125 V | 25 A | INDICATING | J710190 | | CIRCUITS |
| 132 | FUSE | 125 V | 30 A | INDICATING | J710063 | | SWITCH JCT. BOX |
| 133 | FUSETRON | 250V | 6.25 A | NON INDICATING | J071162 | | SW. CONTROL |
| 134 | FUSE PANEL | | | | N433872-002 | | BLOCK WITH DIODE |
| 135 | FUSE PANEL | | | | N399270-002 | | BLOCK WITHOUT DIODE |
| 136 | FUSE | | 2 A | | BUSS TYPE W | | INTRUSION & FIRE ALARMS |
| 137 | FUSE | 1000 V | 10 A | | J710146 | N451143-2401 | TRACK RELAY |
| 138 | FUSE | 1000 V | 20 A | | J710147 | N451143-2401 | TRACK TRANSFORMER |
| 139 | FUSE | 600 V | 1 A | | BUSSMAN KTKI J710193 | SAFETRAN FUSE BLOCK J725858 | A.C. POWER 480 VAC |
| 140 | | | | | | | |
| 141 | IMPEDENCE BOND | | 1500 A | .036" AIR GAP | N397149 | | DOUBLE RAIL TRACK CIRCUIT |
| 142 | IMPEDANCE BOND | | 1500A | | 98065311 | | DOUBLE RAIL TRACK CIRCUIT |
| 143 | | | | | | | |
| 144 | LIGHTNING ARRESTOR | LINE VOLTAGE | | S-3 | J725885 | K-4 BLOCK | 480V A.C. LINE |
| 145 | LIGHTNING ARRESTOR | LINE VOLTAGE | | USG-A | N451552-0401 | WITH BLOCK X451552-0306 | 120V A.C. LINE |
| 146 | LIGHTNING ARRESTOR | LOW VOLTAGE | | USG-A | N451552-0101 | WITH BLOCK X451552-0301 | SHUNT ARRESTOR |
| 147 | LIGHTNING ARRESTOR | HIGH VOLTAGE | | USG-A | N451552-0201 | WITH BLOCK X451552-0302 | SERIES ARRESTOR |
| 148 | LIGHTNING ARRESTER | HIGH VOLTAGE | | JOSLIN TRI PATH | J792736-0024 | | SERIES-SHUNT ARRESTER |
| 149 | POWER SUPPLY | 110 VAC | 12 VDC | | J725709-0094 | | XING |
| 150 | POWER SUPPLY | 110 VAC | 12 VDC | | LAMARCHE # A29-30 | | XING |
| 151 | POWER SUPPLY | 110 VAC | 12 VDC | 20A | J725709-0092 | | B12 BUSS |
| 152 | | | | | | | |
| 153 | | | | | | | |
| 154 | USSP-20 | 7 VDC | 50 A | | N451552-0527 | | SURGE SUPPRESSOR |
| 155 | USSP-11 | 12VDC | 7 A | | N451552-0502 | | SURGE SUPPRESSOR |
| 156 | SURGE SUPPRESSOR | | | | N437353 | | CODE LINE SUPPRESSOR |
| 157 | | | | | | | |
| 158 | | | | | | | |
| 159 | | | | | | | |
| 160 | CIRCUIT BREAKER | 250 VAC | 6 A | 2 POLE | J725694-0034 | | |
| 161 | CIRCUIT BREAKER | 250 VAC | 10 A | 2 POLE | J725694-0035 | | |
| 162 | CIRCUIT BREAKER | 250 VAC | 15 A | 2 POLE | J725694-0036 | | |
| 163 | CIRCUIT BREAKER | 250 VAC | 20 A | 2 POLE | J725694-0037 | | |
| 164 | CIRCUIT BREAKER | 250 VAC | 30 A | 2 POLE | J725694-0038 | | |
| 165 | | | | | | | |
| 166 | | | | | | | |
| 167 | | | | | | | |
| 168 | 3 WAY SWITCH | | | | | | AUX. SWITCH LEVER |
| 169 | 3 WAY SWITCH | 600 VAC | 6 A | 4PDT | J725707-0321 | | METER PANEL |
| 170 | DISCONNECT SWITCH | 240 VAC | 100 A | DISC. SW. WESCO | J725707-0318 | | |

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|---|---|---|---|---|---|---|---|
| 171 | PUSH BUTTON SWITCH | | | | N451106-0801 | | MANUAL TEST |
| 172 | DISCONNECT SWITCH | 600_VAC | 100 A | FUSED | J725858-0001 | | |
| 173 | AUTOMATIC TRANSFER PANEL | 480 VAC | 100 A | | ZENITH ZTS-10B-53 | | |
| 174 | AUTOMATIC TRANSFER PANEL | 120 VAC | 100 A | | ZENITH ZTS-10B-1 | | |
| 175 | BYPASS SWITCH | 120 VAC | 100 A | | J725707-0319 | | ISOLATION |
| 176 | LAMP | | | | J714012 | | A.C. GND. DET. |
| 177 | BYPASS SWITCH | 480 VAC | 100 A | | J725707-0320 | | |
| 178 | | | | | | | |
| 179 | | | | | | | |
| 180 | AC LINE PROTECTOR | 120V - 1 PHASE | 340V PEAK | SINGLE PHASE | J792736-0144 | | PRIMARY AC LINE PROTECTION |
| 181 | AC LINE PROTECTOR | 120/208V - 3 PHASE | 340V PEAK | THREE PHASE | J792736-0145 | | PRIMARY AC LINE PROTECTION |
| 182 | AC LINE PROTECTOR | 120/240V - 1 PHASE | 710V PEAK | SPLIT SINGLE PHASE | J792736-0147 | | PRIMARY AC LINE PROTECTION |
| 183 | | | | | | | |
| 184 | | | | | | | |
| 185 | TRANSMITTER | | 870 HZ. | CLASS 1 | N451052-2935 | | AFO II C |
| 186 | TRANSMITTER | | 945 HZ. | CLASS II | N451052-2936 | | AFO II C |
| 187 | | | | | | | |
| 188 | | | | | | | |
| 189 | | | | | | | |
| 190 | TRANSMITTER | | 1285 HZ. | CLASS 1 | N451052-2940 | | AFO II C |
| 191 | TRANSMITTER | | 1520 HZ. | CLASS II | N451052-2941 | | AFO II C |
| 192 | | | | | | | |
| 193 | TRANSMITTER | | 1945 HZ. | CLASS 1 | N451052-2943 | | AFO II C |
| 194 | TRANSMITTER | | 2365 HZ. | CLASS II | N451052-2944 | | AFO II C |
| 195 | | | | | | | |
| 196 | | | | | | | |
| 197 | | | | | | | |
| 198 | | | | | | | |
| 199 | ATT-20 | | 12.28 KHZ. | | N451052-3901 | | TRACK OVERLAY |
| 200 | ATT-20 | | 15 KHZ. | | N451052-3902 | | TRACK OVERLAY |
| 201 | ATT-20 | | 20 KHZ. | | N451052-3903 | | TRACK OVERLAY |
| 202 | | | | | | | |
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| 210 | | | | | | | |
| 211 | RECEIVER | | 870 HZ. | CLASS 1 | N451052-3135 | | AFO II C |
| 212 | RECEIVER | | 945 HZ. | CLASS II | N451052-3136 | | AFO II C |
| 213 | | | | | | | |
| 214 | | | | | | | |
| 215 | | | | | | | |
| 216 | RECEIVER | | 1285 HZ. | CLASS 1 | N451052-3140 | | AFO II C |
| 217 | RECEIVER | | 1520 HZ. | CLASS II | N451052-3141 | | AFO II C |

| REF. NO. | APPARATUS | RESISTANCE OR VOLTAGE | CONTACTS OR CAPACITY | DESCRIPTION | PART NUMBER | PLUG COUPLER OR BASE NUMBER | APPLICATION |
|---|---|---|---|---|---|---|---|
| 218 | | | | | | | |
| 219 | RECEIVER | | 1945 HZ. | CLASS 1 | N451052-3143 | | AFO II C |
| 220 | RECEIVER | | 2365 HZ. | CLASS II | N451052-3144 | | AFO II C |
| 221 | | | | | | | |
| 222 | | | | | | | |
| 223 | | | | | | | |
| 224 | | | | | | | |
| 225 | | | | | | | |
| 226 | | | | | | | |
| 227 | | | | | | | |
| 228 | | | | | | | |
| 229 | FILTER | | 60 HZ. | BAND PASS | N451561-0203 | | A.C. TRACK CIRCUITS |
| 230 | FILTER | | | SURGE RIPPLE | N451590-0301 | | AFO II C |
| 231 | | | | | | | |
| 232 | | | | | | | |
| 233 | | | | | | | |
| 234 | | | | | | | |
| 235 | SNOW MELTER CONTROL CASE | | | | ASCO BUL. # 1025-128 CAT. # 128AC | | DOUBLE |
| 236 | SNOW MELTER CONTROL CASE | | | | ASCO BUL. # 1025-128 CAT. # 128AC | | SINGLE |
| 237 | SNOW MELTER DISCONNECT SWITCH | | 1000 VDC | | | | SNOW MELTER |
| 238 | | | | | | | |
| 239 | | | | | | | |
| 240 | | | | | | | |
| 241 | | | | | | | |
| 242 | TRACK COUPLING UNIT # 3 | | | CLASS 1 FREQ. | N451052-1903 | | AFO II C |
| 243 | TRACK COUPLING UNIT # 4 | | | CLASS 2 FREQ. | N451052-1904 | | AFO II C |
| 244 | | | | | | | |
| 245 | | | | | | | |
| 246 | SOLID STATE GROUND DETECTOR | 12 V | | | X451400-1706 | | D.C. GND. DET. |
| 247 | | | | | | | |
| 248 | | | | | | | |
| 249 | | | | | | | |
| 250 | | | | | | | |
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REVISIONS

GFT INFRASTRUCTURE, INC.
Foster Plaza 8
Suite 400
730 Holiday Drive
Pittsburgh, PA. 15220

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
ERIC M. GREENE
ENGINEER
PE088721

SIGNATURE

APPROVED DATE

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| DESIGNED | TGC |
| DRAWN | TGC |
| CHECKED | JPO |
| IN CHARGE | ERH |
| DATE | AUGUST 2026 |
| SCALE | NOT TO SCALE |

PORT AUTHORITY OF ALLEGHENY COUNTY
PITTSBURGH PENNSYLVANIA

RT 88 GRADE CROSSING IMPROVEMENT PROJECT
APPARATUS TABULATION
SHEET 3 OF 6

Port Authority
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CONTRACT NO. SYS-26-02
DWG. NO. E503 SHT. 50

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| REF. NO. | APPARATUS | RESISTANCE OR VOLTAGE | CONTACTS OR CAPACITY | DESCRIPTION | PART NUMBER | PLUG COUPLER OR BASE NUMBER | APPLICATION |
|---|---|---|---|---|---|---|---|
| 256 | | | | | | | |
| 257 | | | | | | | |
| 258 | | | | | | | |
| 259 | | | | | | | |
| 260 | UNIT CAPACITOR-RESISTOR | | | 3000 MFD. 15# | N389400 | | FLASHING SIGNAL CIRCUITS |
| 261 | | | | | | | |
| 262 | | | | | | | |
| 263 | M23-A SWITCH LAYOUT | 120VDC | | L.H. WOOD TIE | X451567-7802 | | |
| 264 | M23-A SWITCH LAYOUT | 120VDC | | R.H. WOOD TIE | X451567-7801 | | |
| 265 | M23-A SWITCH LAYOUT | 120VDC | | L.H. DIRECT FIX | X451567-7902 | | |
| 266 | M23-A SWITCH LAYOUT | 120VDC | | R.H. DIRECT FIX | X451567-7901 | | |
| 267 | | | | | | | |
| 268 | ELECTRIC LOCK | | | T-200SL-21 (L.H.) | X451021-8902 | | |
| 269 | ELECTRIC LOCK | | | T-200SL-21 (R.H.) | X451021-8901 | | |
| 270 | SIGNAL | | | 2 ASPECT DWARF | N451357-9801 | | |
| 271 | SIGNAL | | | INTERLOCKING HIGH | X451635-0202 | | |
| 272 | SIGNAL | | | AUTOMATIC HIGH | X451635-0201 | | |
| 273 | SIGNAL | | | INTERLOCKING SUBWAY | N451625-2602 | | |
| 274 | SIGNAL | | | AUTOMATIC SUBWAY | N451625-2601 | | |
| 275 | SIGNAL | | | MOTORMANS INDICATOR | X451635-0203 | | HWY. XING |
| 276 | | | | | | | |
| 277 | COILED CORD | | | 10 FT. W/MALE ENDS | | | MAINTAINANCE TELEPHONE SYSTEM |
| 278 | COILED CORD | | | 50 FT. W/MALE ENDS | | | MAINTAINANCE TELEPHONE SYSTEM |
| 279 | ADAPTER CORD | | | CLIP END TO FEMALE END | | | MAINTAINANCE TELEPHONE SYSTEM |
| 280 | SPEAKER PHONE | | | M.S.A. PAGER III | | | MAINTAINANCE TELEPHONE SYSTEM |
| 281 | TELEPHONE JACK | | | SWITCHCRAFT # N-112B | J713816 | DUST COVER J705156 | RACKS |
| 282 | TELEPHONE PLUG - MALE | | | SWITCHCRAFT # 267 | | | ROOM TO ROOM |
| 283 | TELEPHONE PLUG - FEMALE | | | SWITCHCRAFT # | | | |
| 284 | | | | | | | |
| 285 | LAMP | 10V | 25WATT | | J071574 | | FLASHING SIGNAL |
| 286 | LAMP | 10V | 13WATT & 3.5WATT | DOUBLE FILAMENT | J071656 | | SIGNAL |
| 287 | | | | | | | |
| 288 | | | | | | | |
| 289 | | | | | | | |
| 290 | KNIFE SWITCH | | 30 A | D.P.D.T. | J072616 | | CODE ISOLATION |
| 291 | TEST LINK | | | | J071682 | | CABLE TERMINATION |
| 292 | | | | | | | |
| 293 | | | | | | | |
| 294 | | | | | | | |
| 295 | SHUNT BAR | | | | | | |
| 296 | | | | | | | |
| 297 | | | | | | | |
| 298 | | | | | | | |
| 299 | | | | | | | |
| 300 | AMMETER | | DIAL 0 - 100 A | F.S. 5 A CAP. ACC. + OR - 2% | J726256-0004 | | ABX BUSS |
| 301 | AMMETER | 480 V | DIAL 0 - 25 A | F.S. 2.5 A CAP. ACC. + OR - 2% | J620943 | | |
| 302 | | | | | | | |

| REF. NO. | APPARATUS | RESISTANCE OR VOLTAGE | CONTACTS OR CAPACITY | DESCRIPTION | PART NUMBER | PLUG COUPLER OR BASE NUMBER | APPLICATION |
|---|---|---|---|---|---|---|---|
| 303 | | | | | | | |
| 304 | VOLTMETER | | DIAL 0 - 600 V | F.S. 600 VAC ACC. + OR - 2% | J620942 | | 480VAC |
| 305 | VOLTMETER | 125#/VOLT | DIAL 0 - 150 V | F.S. 150 VAC ACC. + OR - 2% | J726256-0006 | | 120VAC ABX BUSS |
| 306 | METER PANEL | | | | | | |
| * * * REFERENCE NUMBERS 307 THRU 315 ARE NOT USED * * * | | | | | | | |
| 316 | AUTOMATIC ELECTRIC RELAY | 85# | 6FB | | J726153-0118 | J725916 | NON-VITAL |
| 317 | | | | | | | |
| 318 | | | | | | | |
| 319 | TTW CARDFILE | | | | N451082-3601 | | |
| 320 | POWER SUPPLY PCB | | | AC TO DC POWER SUPPLY | N451441-6101 | | |
| 321 | COIL PROCESSOR PCB | | | | N451441-6201 | | |
| 322 | | | | | | | |
| 323 | RECEIVER JCT. BOX | | | C/W PCB | | | |
| 324 | WAYSIDE ANTENNA | | | | N451127-0401 | | |
| 325 | | | | | | | |
| 326 | DECODER CARDFILE | | | | J703507 | | |
| 327 | DECODER PCB | | | | J776616-384 | | |
| 328 | | | | | | | |
| 329 | | | | | | | |
| * * * REFERENCE NUMBERS 330 THRU 349 ARE NOT USED * * * | | | | | | | |
| 350 | GENISYS CARDFILE | | | | N085718-1009 | | |
| 351 | CONTROLLER PCB | | | NVLE PCB | N451441-5602 | | |
| 352 | CONTROL PCB | | | CONSTANT CONTROL DELIVERY PCB | N451441-4401 | | |
| 353 | INDICATION PCB | | | INDICATION OPTO INTERFACE PCB | N451441-5803 | | |
| 354 | POWER SUPPLY PCB | 120VAC | | AC TO DC POWER SUPPLY | N451441-4601 | | |
| 355 | | | | | | | |
| 356 | | | | | | | |
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REVISIONS

GFT
GFT INFRASTRUCTURE, INC.
Foster Plaza 8
Suite 400
730 Holiday Drive
Pittsburgh, PA. 15220

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL ENGINEER
ERIC M. GREENE
PE088721

SIGNATURE

APPROVED DATE

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| DRAWN | TGC |
| CHECKED | JPO |
| IN CHARGE | ERH |
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PORT AUTHORITY OF ALLEGHENY COUNTY
PITTSBURGH PENNSYLVANIA

RT 88 GRADE CROSSING
IMPROVEMENT PROJECT
APPARATUS TABULATION
SHEET 4 OF 6

Port Authority
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CONTRACT NO. SYS-26-02
DWG. NO. E504 SHT. 51

| REF. NO. | APPARATUS | RESISTANCE OR VOLTAGE | CONTACTS OR CAPACITY | DESCRIPTION | PART NUMBER | PLUG COUPLER OR BASE NUMBER | APPLICATION |
|---|---|---|---|---|---|---|---|
| 368 | CARDFILE | | | AF904 | NI2200204 | | AF TRACK CKT |
| 369 | PCB, PWR SUPPLY | | | AF904 | NI2360501 | | AF TRACK CKT |
| 370 | PCB, CONTROLLER | | | AF904 | NI2360301 | | AF TRACK CKT |
| 371 | PCB, AUX | | | AF904 | NI2360401 | | AF TRACK CKT |
| 372 | CABLE, AF | | | AF904 | N5074650I | | AF SOCKET TO OPEN CARDFILE TO RACK PLUG |
| 373 | CABLE, AF | | | AF904 | N5074640I | | AF PIN TO OPEN CARDFILE TO RACK PLUG |
| 374 | CABLE, AF | | | AF904 | N507326XX | | AF 28 WAY RACK TO RACK |
| 375 | COUPLING UNIT | | | AF904 | N3750II02 | | AF TRACK CIRCUIT |
| 376 | CABLE, AF | | | AF904 | J7072420024 | | AF POWER |
| 377 | CABLE, MLK II | | | MLK II | N5074140I | | MLKII NV OUTPUT PCB TO OPEN |
| 378 | CABLE, MLK II | | | MLK II | N5074150I | | MLK II NV INPUT PCB TO OPEN |
| 379 | CABLE, MLK II | | | MLK II | N507295XX | | MLK II VITAL OUTPUT PCB TO OPEN |
| 380 | CABLE, MLK II | | | MLK II | N507484XX | | MLK II VITAL INPUT PCB TO OPEN |
| 381 | CABLE, MLK II | | | MLK II | N507314XX | | FSK INT. RK JMPR VITAL SERIAL COMM |
| 382 | CABLE, MLK II | | | MLK II | N507542XX | | TK MLKII TO FSK J3 RK TO RK V.S. COMM |
| 383 | CABLE, MLK II | | | MLK II | N507545XX | | NV SERIAL COMM INT MLKII TO OCC MOD. |
| 384 | CABLE, MLK II | | | MLK II | N5075470I | | VITAL SERIAL ADAPTER TO CPU |
| 385 | CABLE, MLK II | | | MLK II | N507546XX | | MLKII INTER RACK RS485 DB9 TO OPEN |
| 386 | CABLE, MLK II | | | MLK II | N507300XX | | MLK II POWER |
| 387 | CABLE, MLK II | | | MLK II | N507610 | | MLK II INTL. SER. LK RLY CONN TO OPEN |
| 388 | CABLE, MLK II | | | MLK II | N507568XX | | MLKII SLR DB9 TO RS232 MOD DB9 |
| 389 | CABLE, MLK II | | | MLK II | N507570XX | | MLKII SLR DB9 RS232 TO OPEN |
| 390 | CABLE, MLK II | | | MLK II | N507554XX | | 50 WAY LMCP TO OPEN |
| 391 | CABLE, MLK II | | | MLK II | N5075790I | | DYMEC DB9 TO OPEN |
| 392 | CABLE, MLK II | | | MLK II | N507541XX | | MLKII RS485 DB9 TO RS485 DB9 |
| 393 | CARDFILE | | | MLK II | NI6903101 | | CONTROL & MONITOR INTLKS & HWY XINGS |
| 394 | PCB, PWR SUPPLY | I2V | 3AMP | MLK II | NI6660301 | | CONTROL & MONITOR INTLKS & HWY XINGS |
| 395 | PCB, CPU | | | MLK II | NI7061301 | | CONTROL & MONITOR INTLKS & HWY XINGS |
| 396 | PCB, SERIAL LINK RELAY | | | MLK II | NI7062301 | | CONTROL & MONITOR INTLKS & HWY XINGS |
| 397 | | | | | | | |
| 398 | PCB, I6 BIT VITAL INPUT | I2 VOLT | | MLK II | NI7061001 | | CONTROL & MONITOR INTLKS & HWY XINGS |
| 399 | PCB, I6 BIT VITAL OUTPUT | I2 VOLT | | MLK II | NI7060501 | | CONTROL & MONITOR INTLKS & HWY XINGS |
| 400 | PCB, 32 BIT NONVITAL INPUT | I2 VOLT | | MLK II | NI7063701 | | CONTROL & MONITOR INTLKS & HWY XINGS |
| 401 | PCB, 32 BIT NONVITAL OUTPUT | I2 VOLT | | MLK II | NI7062701 | | CONTROL & MONITOR INTLKS & HWY XINGS |
| 402 | SERIAL LINK ISOLATION | I2 VOLT | | | NI6401101 | | POWER ISOLATION FOR EXTERNAL CONNECTIONS |
| 403 | RS232 MODEM, COPPER | | | | | | |
| 404 | RS422/485 MODEM, FIBEROPTIC | 9-I5 VOLT | | SINGLE-MODE | J7031050163 | | SERIAL NON-VITAL COMM |
| 405 | RS232 MODEM, FIBER OPTIC | 9-I5 VOLT | | SINGLE-MODE | J7031050164 | | SERIAL VITAL COMM |
| 406 | 72-WAY FIBER PATCH PANEL | | | ST ADAPTERS | J0702051494 | | REQ I2 MOUNTING PLATES J0702051495 |
| 407 | DUPLEX CABLE, FIBER | | | ST ADAPTERS | J0458510151 | | SINGLE-MODE DUPLEX CABLE 3 METERS |
| 408 | FILTER, COMMON MODE | | | | N451552-2001 | | MLK II OUTPUT POWER FILTER |
| 409 | | | | | | | |
| 410 | METAL OXIDE VARISTOR | | | | J735528 | | MLK II VCOR SNUB |
| 411 | BLANKING PLATE SINGLE POS | | | MLK II | N451850-2902 | | MLK CARDFILE |
| 412 | BLANKING PLATE DOUBLE POS | | | MLK II | N451850-2901 | | MLK CARDFILE |
| 413 | BLANKING PLATE TRIPLE POS | | | MLK II | N451850-2903 | | MLK CARDFILE |
| 414 | | | | | | | |

| REF. NO. | APPARATUS | RESISTANCE OR VOLTAGE | CONTACTS OR CAPACITY | DESCRIPTION | PART NUMBER | PLUG COUPLER OR BASE NUMBER | APPLICATION |
|---|---|---|---|---|---|---|---|
| 415 | 24-WAY FIBER PATCH PANEL | | | ST ADAPTERS | J0702051493 | | REQ 4 MOUNTING PLATE J0702051495 |
| 416 | I2-WAY FIBER PATCH PANEL | | | ST ADAPTERS | J0702051492 | | REQ 2 MOUNTING PLATE J0702051495 |
| 417 | | | | | | | |
| 418 | | | | | | | |
| 419 | | | | | | | |
| 420 | | | | | | | |
| 421 | | | | | | | |
| 422 | | | | | | | |
| 423 | TRANSFORMER | I20V 60HZ IN I20V 60HZ OUT | 5KVA | | J7314000122 | | SIGNAL AND TRACK ISOLATION |
| 424 | TRANSFORMER | I20V 60HZ IN I20V 60HZ OUT | IKVA | | J731400-0050 | | SIGNAL AND TRACK ISOLATION |
| 425 | RECEPT, GFI | I25 VOLT | 20 AMP | | J726272-0010 | J700245 | CONVENIENCE OUTLET |
| 426 | LAMP DRIVER, AC | | | | N4010490I | N438689-003 | MLK II CONTROLLED SOLID STATE SIGNAL LAMP DRIVER |
| 427 | SML-IIO UNIT | I20V | 20 AMP | | N4730230I | | INTERFACE VITAL LOGIC FOR CONTROL/LOCK FOR SW MACH |
| 428 | SSR UNIT | I20V | 20 AMP | | N4010360I | N451376-0302 | INTERFACE SML-IIO UNIT TO FIELD SW. MACH |
| 429 | BREAKER PANEL W/O MAIN BKR | | I00 AMP | | J7256940379 | | |
| 430 | LAMP DRIVER SURGE PROTECTION PCB | | | | N3990330I | | LIGHTING PRIMARY PROTECTION |
| 431 | BREAKER PANEL W/ MAIN BKR | | I00 AMP MAIN | | J725694-0246 | | |
| 432 | BREAKER PANEL W/O MAIN BKR | | I25 AMP | | J725694-0353 | | |
| 433 | BREAKER PANEL W/MAIN BKR | | 225 AMP MAIN | | J7256940365 | | |
| 434 | BREAKER, PLUG-IN | 250 VAC | I5 AMP | I-POLE/I" | J725694-0122 | | |
| 435 | BREAKER, PLUG-IN | 250 VAC | 20 AMP | I-POLE/I" | J725694-0345 | | |
| 436 | BREAKER, PLUG-IN | 250 VAC | 30 AMP | I-POLE/I" | J725694-0121 | | |
| 437 | BREAKER, PLUG-IN | 250 VAC | 50 AMP | I-POLE/I" | THQL150 | | |
| 438 | BREAKER, PLUG-IN | 250 VAC | I5 AMP | I-POLE/I/2" | J7256940184 | | |
| 439 | BREAKER, PLUG-IN | 250 VAC | 20 AMP | TIME DELAY I-POLE I" | J725694-0351 | | |
| 440 | BREAKER, PLUG-IN | 250 VAC | 20 AMP | 2-POLE/I" | J725694-0352 | | |
| 441 | 3-PHASE BREAKER PANEL W/MAIN BKR | | 300 AMP MAIN | | | | |
| 442 | DISCONNECT SW. FUSED | 250 VAC | 30 AMP | FUSED | J7257070701 | | YARD |
| 443 | DISCONNECT SW., FUSED | 600 VAC | 60 AMP | 3-POLE | J725707-0686 | | EMER. PANEL SERVICE |
| 444 | DISCONNECT SW., FUSED | 600 VAC | 30 AMP | 3-POLE | J725707-0154 | | SIGNAL CASE SERVICE |
| 445 | BREAKER PANEL W/O MAIN BKR | | 200 AMP | | | | |
| 446 | POWER SUPPLY | INPUT-II5 VAC OUTPUT-I2 VDC | 20 AMP | | J725709-0363 | | |
| 447 | POWER SUPPLY | INPUT-II5 VAC OUTPUT-I2 VDC | 8 AMP | | J725709-0384 | | |
| 448 | BREAKER - PLUG IN | I20/240 VAC | 20 AMP | I-POLE | J7256940116 | | YARD THROAT |
| 449 | BREAKER, PLUG-IN | 250 VAC | 50 AMP | 2-POLE | THQL250 | | |
| 450 | POWER TRANSFER SWITCH | | I00 AMP | | J7257070697 | | |
| 451 | | | | | | | |
| 452 | | | | | | | |

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REVISIONS

GFT INFRASTRUCTURE, INC.
Foster Plaza 8
Suite 400
730 Holiday Drive
Pittsburgh, PA. 15220

COMMONWEALTH OF PENNSYLVANIA — REGISTERED PROFESSIONAL ENGINEER — ERIC M. GREENE — PE088721

SIGNATURE

APPROVED DATE

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| DESIGNED | TGC |
| DRAWN | TGC |
| CHECKED | JPO |
| IN CHARGE | ERH |
| DATE | AUGUST 2026 |
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PORT AUTHORITY OF ALLEGHENY COUNTY
PITTSBURGH PENNSYLVANIA

RT 88 GRADE CROSSING
IMPROVEMENT PROJECT
APPARATUS TABULATION
SHEET 5 OF 6

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| REF. NO. | APPARATUS | RESISTANCE OR VOLTAGE | CONTACTS OR CAPACITY | DESCRIPTION | PART NUMBER | PLUG COUPLER OR BASE NUMBER | APPLICATION |
|---|---|---|---|---|---|---|---|
| 453 | RELAY | 24 VDC | | P & B | | | NON-VITAL MAKE BEFORE BREAK |
| 454 | RELAY | 24 VDC | 6 FB | P & B | | J070205-0008 | NON-VITAL |
| 455 | RELAY | 12 VDC | 6 FB | P & B | J726153-0320 | J070205-0008 | NONVITAL - HOLD DOWN SPRING J68016700010 |
| 456 | RELAY | 115 VAC | 6 FB | P & B | J726153-0321 | J070205-0106 | NONVITAL - HOLD DOWN SPRING J68016700010 |
| 457 | | | | | | | |
| 458 | | | | | | | |
| 459 | | | | | | | |
| 460 | FIRE/INTRUSION ALARM PANEL | 120V | 3.5A | | J705057075 | | FIRE/INTRUSION DETECTION |
| 461 | BATTERY, FIRE/INTRUSION ALARM PANEL | 12V | 5AH | | J705057076 | | FIRE/INTRUSION DETECTION |
| 462 | SMOKE DETECTOR | 12/24V | 60MA | | J705057077 | | SMOKE DETECTION |
| 463 | | | | | | | |
| 464 | DOOR SENSORS, INTRUSION | | | | J705057-019 | | INTRUSION SYSTEM |
| 465 | | | | | | | |
| 466 | | | | | | | |
| 467 | EEPROM | | | | N1700200I | | CONTROLS & MONITORS INTLKS & HWY XINGS |
| 468 | | | | | | | |
| 469 | | | | | | | |
| 470 | FUSE | 600 VAC | 40 AMP | | J7100380138 | MOUNTS IN REF. 443 | EMER. PANEL SERVICE |
| 471 | FUSE | 600 VAC | 20 AMP | | J7100380137 | MOUNTS IN REF. 443 | HWY CROSSING SERVICE |
| 472 | FUSE | 600 VAC | 30 AMP | | J7100380139 | MOUNTS IN REF 443 | HWY CROSSING SERVICE |
| 473 | FUSE | 600 VAC | 15 AMP | | J7100380140 | MOUNTS IN REF 444 | SIGNAL CASE |
| 474 | FUSE | 600 VAC | 60 AMP | | J7100380147 | MOUNTS IN REF. 443 | |
| 475 | FUSE | | 15 AMP | | | MOUNTS IN REF 442 | YARD |
| 476 | | | | | | | |
| 477 | | | | | | | |
| 478 | | | | | | | |
| 479 | | | | | | | |
| 480 | AC SURGE PANEL | 120 VAC | 20 AMP | | J776678-0013 | | HWY CROSSING |
| 481 | SOLID STATE CROSSING CONTROL | 120 VAC | 20 AMP | SAFETRAN # 91070-1 | J070205-1086 | | HWY CROSSING |
| 482 | BATTERY, 1 CELL | | | 240 AH | J705185-0032 | | HWY CROSSING |
| 483 | | | | | | | |
| 484 | PB BOX | | | | X51318002 | | HWY CROSSING |
| 485 | POWER OFF DIODE | | 70 AMP | | N51603402 | | POWER DETECTION DIODE ASSEMBLY |
| 486 | CHARGER, BATTERY | 12 VOLT | 20 AMP | | J726243-0061 | | HWY CROSSING BI2 |
| 487 | CASE HEATER | 120 VAC | 500 W | | J7131200010 | | HWY CROSSING CASE |
| 488 | | | | | | | |
| 489 | | | | | | | |
| 490 | BREAKER, PLUG-IN | 120/240 VAC | 30 AMP | 2-POLE/1" | J7256940366 | | |
| 491 | BREAKER, PLUG-IN | 120/240 VAC | 60 AMP | 2-POLE/1" | J7256940364 | | |
| 492 | BREAKER, PLUG-IN | 120/240 VAC | 40 AMP | 1-POLE/1" | | | |
| 493 | BREAKER, PLUG-IN | 120/240 VAC | 30 AMP | 1-POLE/1" | J7256940121 | | |
| 494 | BREAKER, PLUG-IN | 120/240 VAC | 80 AMP | 2-POLE/1" | | | |
| 495 | | | | | | | |
| 496 | DIODE BLOCK | 340 V | | WEIDMULLER SLICE | J070205-0002 | | DUAL MLK OUTPUT CONTROLS |
| 497 | | | | | | | |
| 498 | | | | | | | |
| 499 | | | | | | | |

| REF. NO. | APPARATUS | RESISTANCE OR VOLTAGE | CONTACTS OR CAPACITY | DESCRIPTION | PART NUMBER | PLUG COUPLER OR BASE NUMBER | APPLICATION |
|---|---|---|---|---|---|---|---|
| 500 | CARDFILE RACK | | | H&K | J0702051550 | | TWC |
| 501 | INTERROGATOR CARD | | | H&K | J0702051552 | | TWC |
| 502 | POWER SUPPLY | | | H&K | J0702051551 | | TWC |
| 503 | RELAY OUTPUT CARD | | | H&K | J0702051553 | | TWC |
| 504 | CABLE, H&K | | | H&K | J0702051544 | | TWC CABLE ASSEMBLY RELAY-CARD |
| 505 | CABLE, H&K | | | H&K | J0702051543 | | TWC CABLE ASSEMBLY LOOP |
| 506 | CABLE, RS232 | | | | N507567XX | | TWC RS232 TO FO MODEM |
| 507 | TUNING MODULE | | | H&K | | | TWC |
| 508 | INTERROGATOR BACKPLANE | | | H&K | | | |
| 509 | CABLE, RS232 | | | | N5075690I | | TWC RS232 TO OPEN |
| 510 | CABLE, RS232 | | | MOTOROLA | | | TWC RS232 TO COPPER MODEM |
| 511 | | | | | | | |
| 512 | | | | | | | |
| 513 | | | | | | | |
| 514 | | | | | | | |
| 515 | BACKPLANE, I/O SLOT | | | GE | J7034270019 | | YARD DATA ROUTER |
| 516 | POWER SUPPLY | | | GE | J725709041 7 | | YARD DATA ROUTER |
| 517 | CPU | | | GE | J0702051616 | | YARD DATA ROUTER |
| 518 | PCM | | | GE | J0702051615 | | YARD DATA ROUTER |
| 519 | DIGITAL I/O BOARD 8 IN/OUT | | | GE | J0702051621 | | YARD DATA ROUTER |
| 520 | CABLE, RS232-CAT5 | | | GE | | | YARD DATA ROUTER |
| 521 | CABLE, RS485-DB25 | | | | | | |
| 522 | CABLE, PORT 1 & 2 | | | GE | IC693CBL305B (COMES WITH PCM MODULE) | | WYE-CABLE |
| 523 | BREAKOUT BLOCK | | | | | | DB25 BREAKOUT |
| 524 | | | | | | | |
| 525 | | | | | | | |
| 526 | | | | | | | |
| 527 | | | | | | | |
| 528 | | | | | | | |
| 529 | | | | | | | |
| 530 | MOV | 14VDC | 80 JOULES | | J735550001 7 | | SURGE SUPPRESSOR |
| 531 | MOV | 18VDC | 100 JOULES | | J735550001 6 | | SURGE SUPPRESSOR |
| 532 | MOV | 130V RMS | 90 JOULES | | J7355500020 | | SURGE SUPPRESSOR |
| 533 | | | | | | | |
| 534 | | | | | | | |
| 535 | | | | | | | |
| 536 | TRANZORB | 12VDC | 5 KW | | J7927360120 | | SURGE SUPPRESSOR |
| 537 | TRANZORB | 16VDC | 5 KW | | J7927360030 | | SURGE SUPPRESSOR |

| NO. | DATE | DESCRIPTION |
|---|---|---|
| | | |
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| | | |

REVISIONS

GFT INFRASTRUCTURE, INC.
Foster Plaza 8
Suite 400
730 Holiday Drive
Pittsburgh, PA. 15220

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL ENGINEER
ERIC M. GREENE
PE088721

SIGNATURE

APPROVED DATE

| | |
|---|---|
| DESIGNED | TGC |
| DRAWN | TGC |
| CHECKED | JPO |
| IN CHARGE | ERH |
| DATE | AUGUST 2026 |
| SCALE | NOT TO SCALE |

PORT AUTHORITY OF ALLEGHENY COUNTY
PITTSBURGH PENNSYLVANIA

RT 88 GRADE CROSSING
IMPROVEMENT PROJECT
APPARATUS TABULATION
SHEET 6 OF 6

Port Authority
connecting people to life

CONTRACT NO. SYS-26-02
DWG. NO. E506 SHT. 53

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