

MARYLAND DEPARTMENT OF TRANSPORTATION
MARYLAND TRANSIT ADMINISTRATION



FACILITIES ENGINEERING, ADA & SUSTAINABILITY DIVISION

PURPLE LINE LIGHT RAIL TRANSIT SYSTEM

PRELIMINARY ENGINEERING

VOLUME 9 - SYSTEMS

CONTRACT NO. T-1042-0220

ADA DESIGN CERTIFICATION

"I HEREBY CERTIFY THAT THIS PLAN HAS BEEN DESIGNED IN ACCORDANCE WITH THE REQUIREMENTS OF THE AMERICANS WITH DISABILITIES ACT (ADA).

DATE _____ DESIGNER'S SIGNATURE _____
MD. REGISTRATION NO. _____
P.E. R.L.S. OR R.L.A. (CIRCLE) PRINTED NAME _____

DESIGN CERTIFICATION

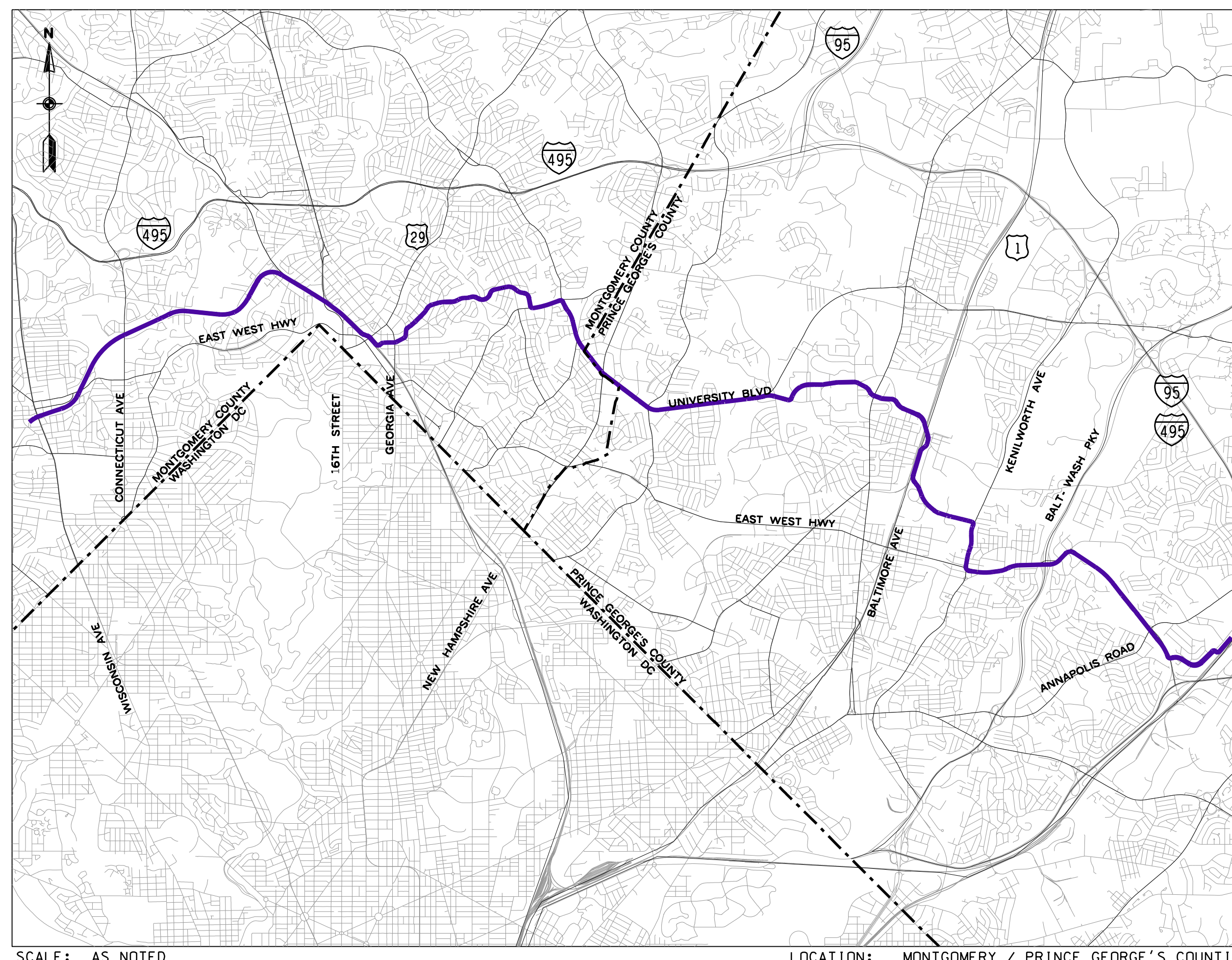
"I HEREBY CERTIFY THAT THIS PLAN HAS BEEN DESIGNED IN ACCORDANCE WITH THE MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL, THE 2000 MARYLAND STORMWATER DESIGN MANUAL, VOLUMES I AND II INCLUDING SUPPLEMENTS, THE ENVIRONMENT ARTICLE SECTIONS 4-101 THROUGH 116 AND SECTIONS 4-201 AND 215, AND THE CODE OF MARYLAND REGULATIONS (COMAR) 26.17.01 AND 26.17.02 FOR EROSION AND SEDIMENT CONTROL AND STORMWATER MANAGEMENT, RESPECTIVELY"

DATE _____ DESIGNER'S SIGNATURE _____
MD. REGISTRATION NO. _____
P.E. R.L.S. OR R.L.A. (CIRCLE) PRINTED NAME _____

OWNERS / DEVELOPER CERTIFICATION

"I/WE HEREBY CERTIFY THAT ALL CLEARING, CONSTRUCTION AND/OR DEVELOPMENT WILL BE DONE PURSUANT TO THIS PLAN AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A MARYLAND DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I HEREBY AUTHORIZE THE RIGHT OF ENTRY FOR PERIODIC ON-SITE EVALUATION BY STATE OF MARYLAND, DEPARTMENT OF THE ENVIRONMENT, COMPLIANCE INSPECTORS."

DATE _____ ROBERT L. BURRIS, ASSISTANT MANAGER,
Facilities Engineering, ADA & Sustainability
OWNER/DEVELOPER SIGNATURES
43667
CERT. NO. PRINTED NAME AND TITLE _____



VICINITY MAP



DRAFT: Information shown is based on 30 percent preliminary engineering plans and may be subject to further revision pending refinements to the plans during the completion of the design phase. Any reliance upon any of these plans is made with full understanding of its draft status.

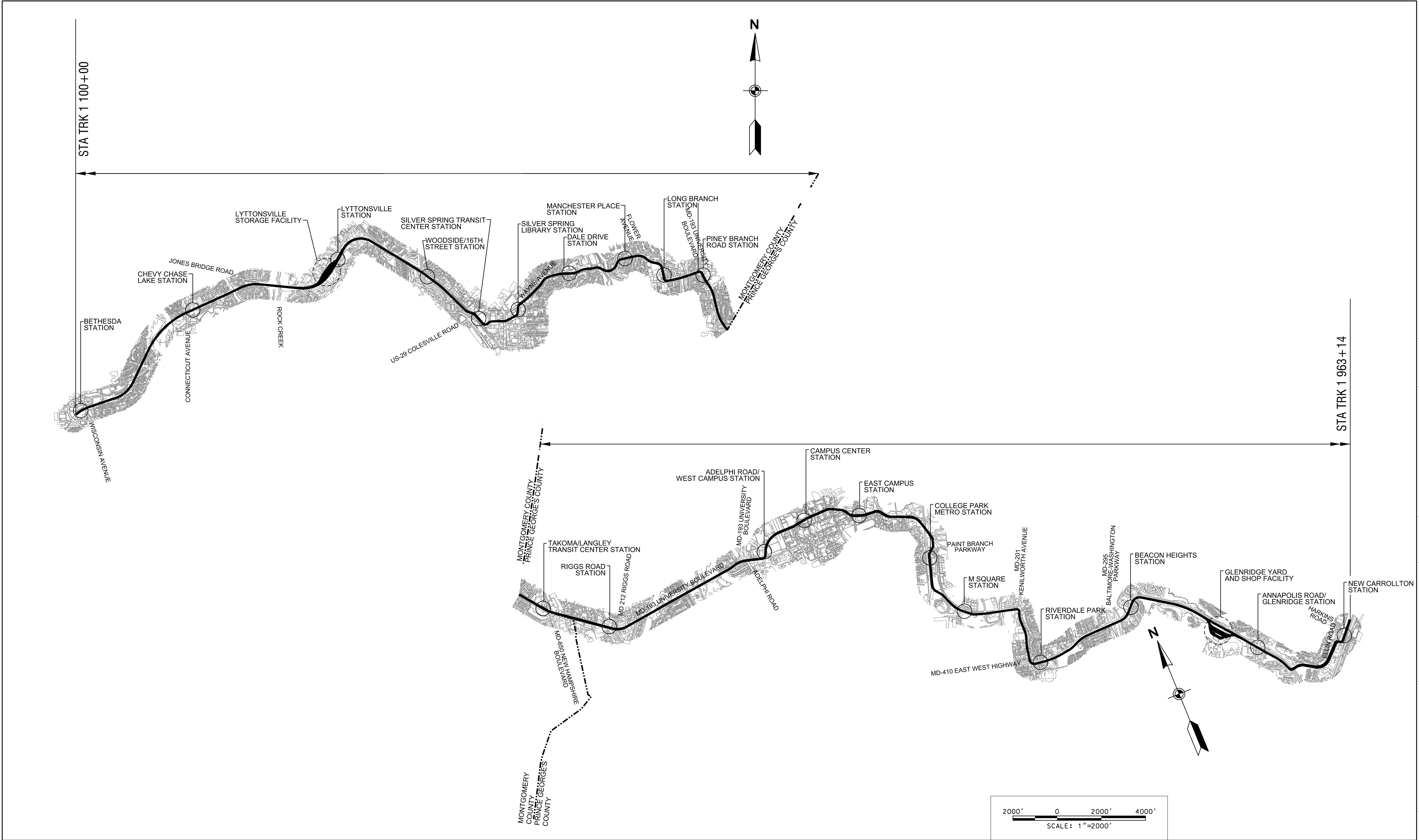
**PRELIMINARY
ENGINEERING
SUBMISSION
DECEMBER 2013**

MARYLAND TRANSIT ADMINISTRATION

DATE: _____ APPROVED: _____

Purple Line
General Engineering Consultant Team
100 North Charles Street, 8th Floor ■ Baltimore, MD 21202
P: 410-244-6046

CONTRACT NO.
T-1042-0220
DRAWING NO.
TI-9001
SHEET NO.
1 OF 474



<div>MARYLAND DEPARTMENT OF TRANSPORTATION</div> <div><div></div><div>MTA Maryland</div></div>	<div></div> <div></div>	<div>PROFESSIONAL CERTIFICATION</div> <div>I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland</div> <div>License No. Expiration Date</div>	<div>DRAFT: Information shown is based on 30 percent preliminary engineering plans and may be subject to further revision pending refinements to the plans during the completion of the design phase. Any reliance upon any of these plans is made with full understanding of its draft status.</div>	DESIGN	BLH	PRELIMINARY ENGINEERING PURPLE LINE LIGHT RAIL	CONTRACT NO.	T-1042-0220
				DRAWN	PJK		DRAWING NO.	GN-9001
				CHECK	KCS		SHEET NO.	2 OF 474
APPR				DATE: DECEMBER 2013	SCALE: AS SHOWN			

GENERAL NOTES

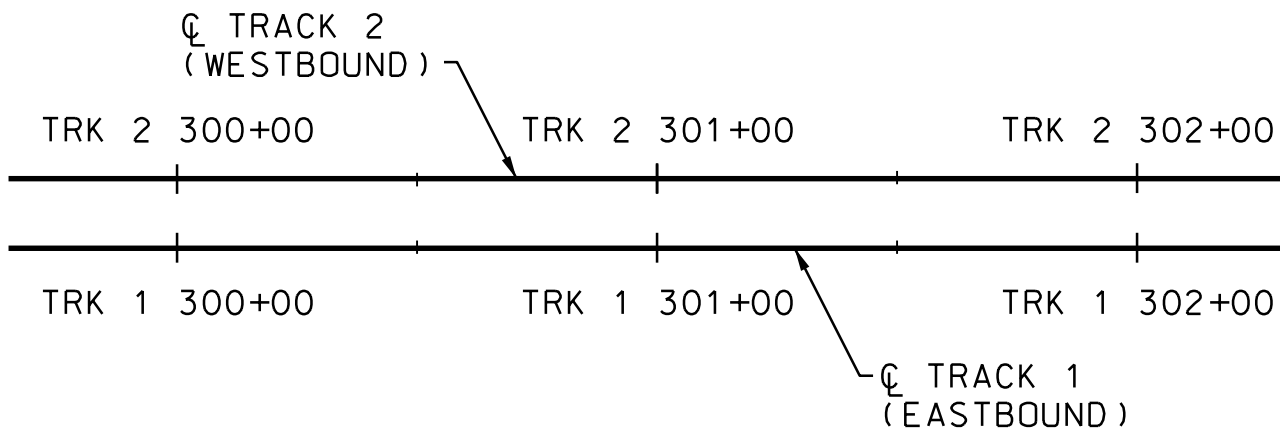
1. HORIZONTAL CONTROL: THIS PROJECT IS ORIENTATED TO THE MARYLAND STATE PLANE COORDINATE SYSTEM NAD 83/91.
2. VERTICAL CONTROL: THE LOCATION AND ELEVATION OF BENCH MARKS ARE SHOWN ON THE PLANS. ALL ELEVATIONS ARE IN FEET AND ARE BASED ON NAVD 1988 DATUM.
3. BASE TOPOGRAPHIC SURVEY INFORMATION FOR THIS CONTRACT WAS ESTABLISHED FROM AERIAL PHOTOGRAMMETRIC MAPPING IN MARCH OF 2007. SUPPLEMENTAL FIELD SURVEYS WERE PERFORMED AND PLOTTED BY PINNACLE MAPPING TECHNOLOGIES IN MARCH OF 2007.
4. ALL INVERT ELEVATIONS ARE APPROXIMATE. INVERT ELEVATIONS OF DRAINAGE INLETS AND PIPES MAY BE MODIFIED AS DIRECTED BY THE ENGINEER TO MEET CONDITIONS ENCOUNTERED DURING INSTALLATION OF DRAINAGE STRUCTURES.
5. ALL DRAINAGE PIPES AND DITCHES SHALL BE CONSTRUCTED ON A UNIFORM GRADE BETWEEN INVERT ELEVATIONS NOTED ON THE PLANS. UNLESS INDICATED OTHERWISE ON THE PLANS OR DETAILS.
6. THE LOCATION AND LENGTH OF DRAINAGE PIPE SHALL BE VERIFIED BY THE CONTRACTOR BEFORE ORDERING.
7. TYPE AND INVERT OF DITCHES ARE NOTED ON THE PLANS. DITCHES WILL BE IN ACCORDANCE WITH THE DETAILS SHOWN ON THE PLANS.
8. THE CONTRACTOR SHALL BE RESPONSIBLE TO GRADE FOR POSITIVE DRAINAGE WITHIN THE PARKING LOT, AT ALL ENTRANCES, AND ALONG ALL CURB LINES IN ACCORDANCE WITH THE PROPOSED DRAINAGE PATTERNS AS SHOWN ON THE PLANS, AND THOSE EXISTING WHERE APPLICABLE. IN NO CASE SHALL THIS REQUIREMENT RELIEVE THE CONTRACTOR FROM HIS RESPONSIBILITY TO CONSTRUCT ALL FACILITIES WITHIN ADA REGULATIONS.
9. ALL EXISTING STORM DRAIN STRUCTURES, SEWER MANHOLES, UTILITY MANHOLES, INLETS, VALVE BOXES, VAULTS, ETC. SHALL BE ADJUSTED BY THE CONTRACTOR TO MEET THE FINISHED GRADE ELEVATION AS NOTED ON THE PLANS, UNLESS THESE APPURTENANCES ARE ABANDONED UNDER THIS CONTRACT.
- 10.THE EXISTING UTILITIES AND OBSTRUCTIONS SHOWN ON THESE PLANS ARE FROM THE BEST AVAILABLE RECORDS AND SHALL BE VERIFIED BY THE CONTRACTOR TO HIS OWN SATISFACTION PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL NOTIFY ALL CONCERNED UTILITY OWNERS PRIOR TO GRADING OPERATIONS.
- 11.REPAIRS TO UTILITIES OR PROPERTY DAMAGE AS A RESULT OF CONTRACTOR’S NEGLIGENCE OR METHOD OF OPERATION SHALL BE MADE AT THE CONTRACTOR’S EXPENSE BEFORE PROCEEDING WITH CONSTRUCTION.
- 12.ANY DISTURBED AREAS NOT PAVED OR LANDSCAPED SHALL RECEIVE 4” TOPSOIL, SEEDING AND MULCH, UNLESS OTHERWISE NOTED ON THE PLANS.
- 13.THE CONTRACTOR SHALL BE RESPONSIBLE FOR STAGING CONSTRUCTION SUCH THAT A SOIL STOCKPILE SUITABLE FOR FILL MATERIAL AND TOPSOIL CAN BE MAINTAINED ON-SITE.
- 14.MATERIAL REMOVED DURING CONSTRUCTION INCLUDING ASPHALT, SIGNS, LIGHT POLES, ETC. SHALL BECOME THE CONTRACTOR’S PROPERTY UNLESS OTHERWISE NOTED ON THE PLANS OR IN THE SPECIAL PROVISIONS.
- 15.THE CONTRACTOR SHALL BE RESPONSIBLE TO RESET ANY SIGN POST OR OTHER APPURTENANCES REMOVED DURING THE CONSTRUCTION TO FACILITATE HIS WORK, EXCEPT WHERE SPECIFIED ON THE PLANS OR AS DIRECTED BY THE ENGINEER.
- 16.THE CONTRACTOR SHALL PERFORM ALL WORK IN A MANNER THAT WILL INSURE THE SAFETY OF THE GENERAL PUBLIC, COMMUTERS, AND EMPLOYEES OF THE CONTRACTOR, MTA, ETC.
- 17.ANY DAMAGE TO EXISTING CURBING ADJACENT TO NEW PAVING SHALL BE REPAIRED OR REPLACED IN KIND AT THE CONTRACTOR’S EXPENSE.
- 18.UNLESS OTHERWISE NOTED, ALL SAW CUTTING SHALL BE FULL DEPTH.
- 19.PRIOR TO PERFORMING EXCAVATION OR GRADING AT ANY LOCATION, CONTACT “MISS UTILITY”, 1-800-257-7777 AT LEAST 48 HOURS IN ADVANCE OF THE PROPOSED WORK.
- 20.THE CONTRACTOR SHALL NOTE THE HISTORIC NATURE OF THE SURROUNDING COMMUNITY. THE CONTRACTOR SHALL MAKE EVERY EFFORT TO MINIMIZE NOISE FROM CONSTRUCTION ACTIVITY ON-SITE.
- 21.A COPY OF THE CONTRACTOR’S SITE SPECIFIC PROJECT SAFETY PLAN SHOULD BE SUBMITTED TO THE OFFICE OF SAFETY & RISK MANAGEMENT (OSRM) FOR REVIEW AND COMMENT. A COPY SHOULD BE FORWARDED TO DENNIS RAFFERTY/DAVID AUCHU IN THE OFFICE OF SAFETY & RISK MANAGEMENT. THE CONTRACTOR SHALL NOT BEGIN ANY WORK ACTIVITIES ON SITE UNTIL THE PROJECT SAFETY PLAN HAS BEEN REVIEWED AND FOUND TO BE ACCEPTABLE BY REPRESENTATIVES FROM THE OSRM.

22. OCS SUPPORT LOCATIONS ARE PRESENTED ON THE CIVIL PLANS FOR GRAPHICAL REPRESENTATION ONLY. AS-DESIGNED SUPPORT LAYOUTS AND CONFIGURATIONS TO BE DEVELOPED IN THE NEXT PHASE OF DESIGN.

ADA SUMMARY

REFER TO ADA GENERAL NOTES SHEET

STATIONING KEY



LEGEND - EXISTING

- EXISTING BUILDING
- EXISTING SIDEWALK
- EXISTING RIGHT OF WAY
- EXISTING WETLAND BOUNDARY
- EXISTING TRAFFIC SIGNAL TO REMAIN
- EXISTING TRAFFIC SIGNAL TO BE REMOVED
- EXISTING ACTIVE RECOVERY WELL IN LOWER ZONE
- EXISTING ACTIVE RECOVERY WELL IN UPPER ZONE
- EXISTING LEFT TURN ELIMINATED WITH PROPOSED IMPROVEMENTS
- EXISTING TRAFFIC PATTERN

LEGEND - PROPOSED

- PROPOSED BUILDING DISPLACEMENT
- BY-OTHERS PROPOSED IMPROVEMENTS BY OTHERS
- PROPOSED CONCRETE
- PAVEMENT REMOVAL
- PERMEABLE PAVEMENT
- PROPOSED FULL DEPTH ASPHALT PAVEMENT
- PROPOSED WEDGE/LEVEL OR MILL AND OVERLAY
- PROPOSED CATENARY POLE
- PROPOSED TRAFFIC SIGNAL
- PROPOSED TRAFFIC PATTERN
- PROPOSED BUMPING POST



PROFESSIONAL CERTIFICATION

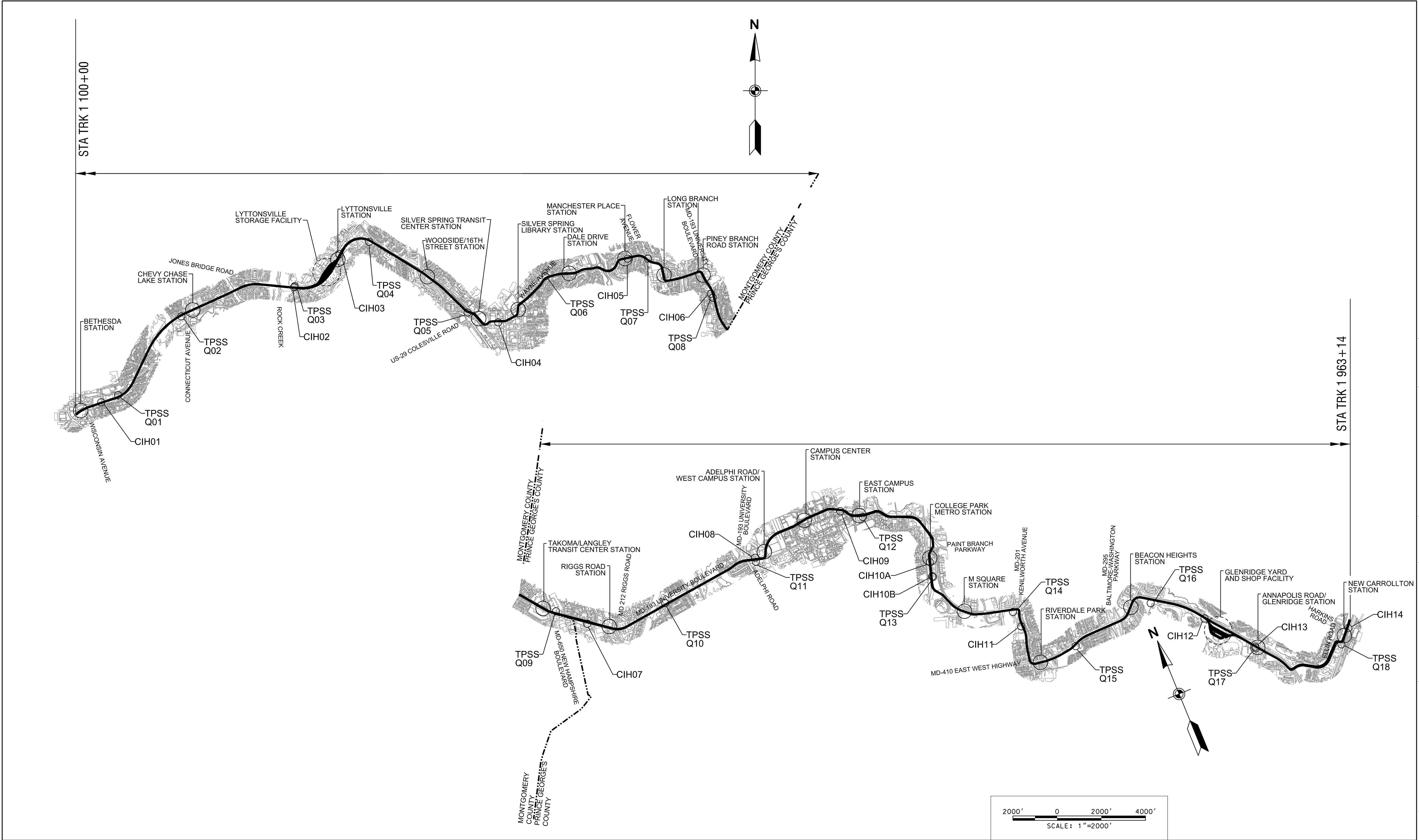
I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland



License No. Expiration Date

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DESIGN	BLH	PRELIMINARY ENGINEERING PURPLE LINE LIGHT RAIL	CONTRACT NO. T-1042-0220
DRAWN	PJK		DRAWING NO. GN-9002
CHECK	KCS		SHEET NO. 3 OF 474
APPR		DATE: DECEMBER 2013 SCALE: NONE	

ABBREVIATIONS				SYMBOLS																							
<div><div>△</div><div>△c</div><div>AASHTO</div><div>AC</div><div>ABAN</div><div>ABUT</div><div>ADAAG</div><div>AGIP</div><div>AGG</div><div>AH,AHD</div><div>AISC</div><div>APPROX</div><div>ASPH</div><div>ASTM</div><div>@</div><div>BIT</div><div>BCCMP</div><div> </div><div>BK</div><div>BLDG</div><div>ℙ</div><div>BLVD</div><div>BM</div><div>BOT</div><div>BRG</div><div>BSMT</div><div>CB</div><div>CCT</div><div>C/C</div><div>CD</div><div>CEM</div><div>CG</div><div>C&G</div><div>CGSP</div><div>CIP</div><div>℄</div><div>CL</div><div>CMP</div><div>CLR</div><div>CO</div><div>COL</div><div>COMB</div><div>CONC</div><div>CONN</div><div>CONST</div><div>CRB</div><div>CSXT</div><div>C/T</div><div>CTB</div><div>Dc</div><div>DEFL</div><div>DEG. °</div><div>D/I</div><div>DIA</div><div>DIP</div><div>DN</div><div>DRWY</div><div>DWG</div><div>DWLG</div><div>E</div><div>EA</div><div>EB</div><div>EL</div><div>ELCP</div><div>ELEC</div><div>EM</div><div>EMB</div><div>E/P</div><div>EQ</div><div>EQL</div><div>EON</div><div>E/R</div><div>E/S</div><div>ESMT</div><div>EXIST</div><div>EXP</div><div>EXT</div><div>FC</div></div> <div><div>TOTAL CENTRAL ANGLE OF SPIRAL AND CIRCULAR CURVES</div><div>CENTRAL ANGLE OF CIRCULAR CURVE</div><div>AMERICAN SOCIETY OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS</div><div>ASPHALT CONCRETE</div><div>ABANDONED</div><div>ABUTMENT</div><div>ADA ACCESSIBILITY GUIDELINES</div><div>AT GRADE INLET PROTECTION</div><div>AGGREGATE</div><div>AHEAD</div><div>AMERICAN INSTITUTE OF STEEL CONSTRUCTION</div><div>APPROXIMATE</div><div>ASPHALT</div><div>AMERICAN SOCIETY FOR TESTING AND MATERIALS</div><div>AT</div><div>BITUMINOUS</div><div>BITUMINOUS COATED CORRUGATED METAL PIPE</div><div> </div><div>BACK</div><div>BUILDING</div><div>BASELINE</div><div>BOULEVARD</div><div>BENCHMARK</div><div>BOTTOM</div><div>BEARING</div><div>BASEMENT</div><div>CATCH BASIN</div><div>CAPITAL CRESCENT TRAIL</div><div>CENTER TO CENTER</div><div>STONE CHECK DAM</div><div>CEMENT</div><div>CONCRETE GUTTER</div><div>CURB AND GUTTER</div><div>CORR. GALVANIZED STEEL PIPE</div><div>CAST IRON PIPE</div><div>CENTERLINE</div><div>CLASS</div><div>CORRUGATED METAL PIPE</div><div>CLEAR</div><div>CLEAN OUT</div><div>COLUMN</div><div>COMBINED SEWER</div><div>CONCRETE</div><div>CONNECTION</div><div>CONSTRUCTION</div><div>CURB LINE</div><div>CSX TRANSPORTATION INCORPORATED</div><div>CROSSOVER TRACK</div><div>CEMENT TREATED BASE</div><div>DEGREE OF CIRCULAR CURVE</div><div>DEFLECTION</div><div>DEGREES</div><div>DROP INLET</div><div>DIAMETER</div><div>DUCTILE IRON PIPE</div><div>DOWNSPOUT</div><div>DRIVEWAY</div><div>DRAWING</div><div>DWELLING</div><div>EAST</div><div>EACH</div><div>EASTBOUND</div><div>ELEVATION</div><div>ELLIPTICAL CONCRETE PIPE</div><div>ELECTRIC</div><div>ELECTRIC METER</div><div>EMBANKMENT</div><div>EDGE OF PAVEMENT</div><div>EQUAL</div><div>EQUILATERAL</div><div>EQUATION</div><div>EDGE OF ROAD</div><div>EDGE OF STREAM</div><div>EASEMENT</div><div>EXISTING</div><div>EXPANSION</div><div>EXTERIOR</div><div>FIELD CONNECTION</div></div>	<div><div>FF</div><div>FG</div><div>FH</div><div>FL</div><div>FR</div><div>FT. '</div><div>F/T</div><div>FUT</div><div>GALV</div><div>GM</div><div>GND</div><div>GR</div><div>GV</div><div>GW</div><div>H</div><div>HBX</div><div>HDOPE</div><div>HMA</div><div>HORIZ</div><div>HP</div><div>H/W</div><div>I</div><div>ID</div><div>IN. "</div><div>INT</div><div>INV</div><div>JB</div><div>LB</div><div>Lc</div><div>LF</div><div>LOD</div><div>LP</div><div>LPLG</div><div>LR</div><div>LRT</div><div>LRV</div><div>LT</div><div>MARC</div><div>MAX</div><div>MH</div><div>MIN</div><div>MIN. '</div><div>MISC</div><div>MON</div><div>MPH</div><div>MSL</div><div>MTA</div><div>N</div><div>N/A</div><div>NB</div><div>N/E</div><div>NF</div><div>N/F</div><div>NIC</div><div>NO. #</div><div>NTS</div><div>N/W</div><div>OD</div><div>OPP</div><div>PAVT</div><div>PC</div><div> </div><div>PCC</div><div>PED</div><div>PERF</div><div>PERM</div><div>PGE</div><div>PGL</div><div>PI</div><div> </div><div>PK</div><div>PKG</div><div>ℙ</div><div>PLAT</div><div>POB</div><div>POC</div><div>POE</div><div>POL</div><div>POT</div><div>PRC</div></div> <div><div>FAR FACE</div><div>FINISH GRADE</div><div>FIRE HYDRANT</div><div>FLOOR, FLOWLINE</div><div>FRAME</div><div>FOOT, FEET</div><div>FUTURE TRACK</div><div>FUTURE</div><div>GALVANIZED</div><div>GAS METER</div><div>GROUND</div><div>GRADE</div><div>GAS VALVE</div><div>GUY WIRE</div><div>HEIGHT</div><div>HAND BOX</div><div>HIGH DENSITY POLYETHYLENE</div><div>HOT MIX ASPHALT</div><div>HORIZONTAL</div><div>HIGH POINT</div><div>HEAD WALL</div><div>INLET</div><div>INSIDE DIAMETER</div><div>INCH</div><div>INTERIOR</div><div>INVERT</div><div>JUNCTION BOX</div><div>POUND</div><div>TOTAL LENGTH OF CIRCULAR CURVE, IN FEET</div><div>LINEAR FEET</div><div>LIMIT OF DISTURBANCE</div><div>LOW POINT</div><div>LEAD PLUG (SURVEY MONUMENT)</div><div>LONG RADIUS</div><div>LIGHT RAIL TRANSIT</div><div>LIGHT RAIL VEHICLE</div><div>LEFT</div><div>MARYLAND RAIL COMMUTER</div><div>MAXIMUM</div><div>MANHOLE</div><div>MINIMUM</div><div>MINUTE</div><div>MISCELLANEOUS</div><div>MONUMENT</div><div>MILES PER HOUR</div><div>MEAN SEA LEVEL</div><div>MARYLAND TRANSIT ADMINISTRATION</div><div>NORTH</div><div>NOT APPLICABLE</div><div>NORTHBOUND</div><div>NORTH LINE - EAST TRACK</div><div>NEAR FACE</div><div>NOW OR FORMERLY</div><div>NOT IN CONTRACT</div><div>NUMBER</div><div>NOT TO SCALE</div><div>NORTH LINE-WEST TRACK</div><div>OUTSIDE DIAMETER</div><div>OPPOSITE</div><div>PAVEMENT</div><div>POINT OF CHANGE FROM TANGENT TO CIRCULAR CURVE</div><div>POINT OF COMPOUND CIRCULAR CURVES</div><div> </div><div>PEDESTRIAN</div><div>PERFORATED</div><div>PERMANENT</div><div>PROFILE GRADE ELEVATION</div><div>PROFILE GRADE LINE</div><div>POINT OF INTERSECTION OF TWO TANGENTS</div><div>PARKER-KALON NAIL (SURVEY MARKER)</div><div>PARKING</div><div>PROPERTY LINE</div><div>PLATFORM</div><div>POINT OF BEGINNING</div><div>POINT ON CURVE</div><div>POINT OF ENDING</div><div>POINT ON LINE</div><div>POINT ON TANGENT</div><div>POINT OF REVERSE CURVES</div></div>	<div><div>PROP</div><div>PST</div><div>PT</div><div> </div><div>PV</div><div>PVC</div><div>R</div><div>RCEP</div><div> </div><div>RCP</div><div>REF</div><div>REINF</div><div>REOD</div><div>RET</div><div>RP</div><div>RR</div><div>RT</div><div>R/W</div><div>S</div><div>SAN</div><div>SB</div><div>SCE</div><div> </div><div>SCH</div><div>SD</div><div>S/E</div><div>SEC. "</div><div>SECT</div><div>SF</div><div>S.F.</div><div>SG</div><div>SHA</div><div>SHLD</div><div>SHT</div><div>SIG</div><div>SLP</div><div>SP</div><div>STA</div><div>STD</div><div>STL</div><div>STR</div><div>SURF</div><div>SW</div><div>S/W</div><div>SWM</div><div>TB</div><div>Tc</div><div> </div><div>T/C</div><div>TEL</div><div>TEMP</div><div>T/G</div><div>T.G.</div><div>TOPO</div><div>TP</div><div>T/P</div><div>T/R</div><div>TRK</div><div>TR SIG</div><div>T.S.</div><div>TYP</div><div>UD</div><div>UNO</div><div>V</div><div>VAR</div><div>VCP</div><div>VERT</div><div>W</div><div>W/</div><div>W/O</div><div>WAT</div><div>WB</div><div>WHSE</div><div>WM</div><div>WMATA</div><div> </div><div>WP</div><div>WS</div><div>WV</div><div>X-ING</div><div>X-OVER</div></div> <div><div>PROPOSED</div><div>PORTABLE SEDIMENT TANK</div><div>POINT OF CHANGE FROM CIRCULAR CURVE TO TANGENT</div><div>PETROLEUM VALVE</div><div>POLYVINYL CHLORIDE</div><div>RADIUS</div><div>REINFORCED CONCRETE ELLIPTICAL PIPE</div><div>REINFORCED CONCRETE PIPE</div><div>REFERENCE</div><div>REINFORCED</div><div>REQUIRED</div><div>RETAINING</div><div>RAMP</div><div>RAILROAD</div><div>RIGHT</div><div>RIGHT OF WAY</div><div>SOUTH</div><div>SANITARY</div><div>SOUTHBOUND</div><div>STABILIZED CONSTRUCTION ENTRANCE</div><div>SCHEDULE</div><div>STORM DRAIN</div><div>SOUTH LINE - EAST TRACK</div><div>SECOND</div><div>SECTION</div><div>SILT FENCE</div><div>SQUARE FOOT</div><div>SUBGRADE</div><div>STATE HIGHWAY ADMINISTRATION</div><div>SHOULDER</div><div>SHEET</div><div>SIGNAL</div><div>SLOPE</div><div>SPACING</div><div>STATION</div><div>STANDARD</div><div>STEEL</div><div>STRUCTURE</div><div>SURFACE</div><div>SIDE WALK</div><div>SOUTH LINE - WEST TRACK</div><div>STORMWATER MANAGEMENT</div><div>TEST BORING</div><div>TANGENT LENGTH OF CIRCULAR CURVE</div><div>TOP OF CURB</div><div>TELEPHONE</div><div>TEMPORARY</div><div>TOP OF GROUND</div><div>TOP OF GRATE</div><div>TOPOGRAPHY</div><div>TEST PIT</div><div>TOP OF PAVEMENT</div><div>TOP OF RAIL</div><div>TRACK</div><div>TRAFFIC SIGNAL</div><div>TOP OF STRUCTURE</div><div>TYPICAL</div><div>UNDERDRAIN</div><div>UNLESS NOTED OTHERWISE</div><div>VELOCITY</div><div>VARIES</div><div>VITRIFIED CLAY PIPE</div><div>VERTICAL</div><div>WEST</div><div>WITH</div><div>WITHOUT</div><div>WATER</div><div>WESTBOUND</div><div>WAREHOUSE</div><div>WATER METER</div><div>WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY</div><div>WORK POINT</div><div>WATER SURFACE</div><div>WATER VALVE</div><div>CROSSING</div><div>CROSSOVER</div></div>	<div><div>EXISTING</div><div>-----</div><div>RIGHT-OF-WAY</div><div>-----ℙ-----</div><div>PROPERTY LINE</div><div>-----</div><div>PARCEL NUMBER</div><div>#500</div><div> </div><div>MATCHLINE AND SECTION LINE</div><div>-----</div><div>TRACK CENTER LINE</div><div>-----℄ TRACK 1-----</div><div> </div><div>CENTER LINE</div><div>-----℄-----</div><div>BASE LINE</div><div>-----B-----</div><div> </div><div>POINT OF INTERSECTION OF TANGENTS</div><div>-----○-----</div><div> </div><div>STATION EQUATION</div><div>STA AH = <div><div> </div><div> </div></div> STA BK <div><div> </div><div> </div></div></div><div> </div><div>TRAV PT. 10 △</div><div>PRIMARY HORIZONTAL CONTROL - TRAVERSE POINT</div><div> </div><div>℄</div><div>BENCH MARK</div><div> </div><div>TB 18</div><div>TEST BORING 18</div><div> </div><div>TP 22</div><div>TEST PIT</div><div> </div><div>-----</div><div>STRUCTURE OUTLINE</div><div>-----</div><div>-----X-----X-----X-----</div><div>METAL FENCE (CHAIN LINK)</div><div>-----</div><div>ORNAMENTAL METAL FENCE</div><div>-----</div><div>-----○-----○-----○-----</div><div>WOOD FENCE</div><div>-----</div><div> </div><div>RAILROAD TRACKS</div><div>-----</div><div>CC</div><div>CONCRETE CURB</div><div>-----</div><div>C&G</div><div>CONCRETE CURB AND GUTTER</div></div>	<div><div>EXISTING</div><div>----- 140 -----</div><div>MAJOR CONTOUR LINE</div><div>----- 140 -----</div><div>----- 141 -----</div><div>MINOR CONTOUR LINE</div><div>----- 141 -----</div><div>103.1 x</div><div>SPOT ELEVATION</div><div>103.1</div><div>▽ EL.</div><div>HIGH WATER</div><div>▽ EL.</div><div>-----</div><div>DITCH</div><div>-----</div><div>SWALE</div><div>-----</div><div>2</div><div>SURFACE FLOW DIRECTION</div><div>27" RCP</div><div>STORM DRAIN LINE</div><div>27" RCP</div><div>UD</div><div>UNDERDRAIN LINE</div><div>UD</div><div>1-1</div><div>DROP INLET, CATCH BASIN OR DRAIN</div><div>1-1</div><div>CULVERT WITH HEADWALLS</div><div>CULVERT WITH HEADWALLS</div><div>ⓔ ⓐ ⓑ ⓓ ⓔ ⓖ ⓓ</div><div>MANHOLE (TYPE AS NOTED)</div><div>M-1</div><div>CO</div><div>CLEANOUT</div><div>CO</div><div>WM 8" W WV</div><div>WATER LINE</div><div>12" W</div><div>12" G GV</div><div>GAS LINE</div><div>6" G</div><div>8" SAN S</div><div>SANITARY LINE</div><div>12" S</div><div>T</div><div>UNDERGROUND TELEPHONE LINE</div><div>2" T</div><div>T</div><div>OVERHEAD TELEPHONE LINE</div><div>T</div><div>E</div><div>UNDERGROUND ELECTRIC LINE</div><div>E</div><div>E</div><div>OVERHEAD ELECTRIC LINE</div><div>E</div><div>E JB</div><div>ELECTRICAL JUNCTION BOX</div><div>JB</div><div>E</div><div>ELECTRIC METER</div><div>M</div><div>F</div><div>UNDERGROUND FIBER OPTIC LINE</div><div>F</div><div>F</div><div>OVERHEAD FIBER OPTIC LINE</div><div>F</div><div>POLE NO.</div><div>UTILITY POLE</div><div>POLE NO.</div><div>LIGHT POLE</div><div>LIGHT POLE</div><div>FH WV</div><div>FIRE HYDRANT</div><div>FH</div><div>WM</div><div>ITEM TO BE REMOVED</div><div>Ⓡ</div></div>																							
				<div><div>DETAIL NO. 2</div><div>CURRENT SHEET</div><div>DETAIL 1</div><div>SCALE: 1"=30'</div><div>REF: A105</div><div>DETAILS</div></div>				<div><div>SECTION LETTER A</div><div>CURRENT SHEET</div><div>SECTION</div><div>SCALE: 1"=30'</div><div>REF: A105</div><div>SECTIONS</div></div>																			
<div><div>MARYLAND DEPARTMENT OF TRANSPORTATION</div><div>MARYLAND TRANSIT ADMINISTRATION</div><div>MTA Maryland</div></div>				<div><div>Gannett Fleming</div><div>WR&A</div></div>				<div><div>PROFESSIONAL CERTIFICATION</div><div>I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland.</div><div>License No. Expiration Date</div></div>				<div><div>DRAFT: Information shown is based on 30 percent preliminary engineering plans and may be subject to further revision pending refinements to the plans during the completion of the design phase. Any reliance upon any of these plans is made with full understanding of its draft status.</div></div>				<div><div>BLH</div><div>PJK</div><div>KCS</div><div>APPR</div></div>				<div><div>PRELIMINARY ENGINEERING</div><div>PURPLE LINE LIGHT RAIL</div><div>CIVIL ABBREVIATIONS AND SYMBOLS</div><div>DATE: DECEMBER 2013</div><div>SCALE: NONE</div></div>				<div><div>CONTRACT NO. T-1042-0220</div><div>DRAWING NO. GN-9003</div><div>SHEET NO. 4 OF 474</div></div>			



MARYLAND DEPARTMENT OF TRANSPORTATION  MTA Maryland	 WR&A	PROFESSIONAL CERTIFICATION I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland. License No. Expiration Date	<i>DRAFT: Information shown is based on 30 percent preliminary engineering plans and may be subject to further revision pending refinements to the plans during the completion of the design phase. Any reliance upon any of these plans is made with full understanding of its draft status.</i>	DESIGN PJK	PRELIMINARY ENGINEERING PURPLE LINE LIGHT RAIL	CONTRACT NO. T-1042-0220
				DRAWN EN		DRAWING NO. GN-9004
APPROVED KCS	CHECKED KCS	KEY MAP SYSTEMS	DATE: DECEMBER 2013	SCALE: AS SHOWN	SHEET NO. 5 OF 474	

GENERAL NOTES:

1.
- THE CONTRACTOR & FABRICATOR ARE RESPONSIBLE FOR THE SITE SAFETY AND MUST COMPLY WITH ALL SAFETY & HEALTH REQUIREMENTS.
2.
- ALL WORK SHALL BE PROVIDED AS DETAILED ON THE PLAN & SPECIFICATIONS, SUBJECT TO THE TERMS & CONDITIONS SET FORTH IN THE INSTRUCTIONS TO BIDDERS & CONTRACT DOCUMENTS.
3.
- ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH INTERNATIONAL BUILDING CODE (IBC-2006).
4.
- ALL WELDS SHALL CONFORM AMERICAN WELDING SOCIETY, STRUCTURAL WELDING CODE AWS D1 & D1-4, LATEST EDITION. ELECTRODES SHALL BE E70XX.

STRUCTURES:

1.
- SIZE OF THE BOLT HOLES SHALL BE 1/16" LARGER THAN BOLT DIAMETER, UNLESS OTHERWISE NOTED.
2.
- ALL DIMENSIONS, DETAILS & ELEVATIONS OF EXISTING ITEMS SHALL BE VERIFIED BY THE CONTRACTOR IN THE FIELD PRIOR TO THE FABRICATION OF CATENARY STRUCTURES & OTHER ASSOCIATED EQUIPMENT.
3.
- THE CONTRACTOR SHALL VERIFY THE LOCATION, OFFSET, ELEVATION & FOUNDATION TYPES INCLUDING THE ANCHOR BOLT PATTERNS, PRIOR TO FINAL FABRICATION & INSTALLATION OF POLES, GUYS & HARDWARE.
4.
- POLES SHALL BE RAKED AND/OR ADJUSTED TO COMPENSATE AGAINST STATIC LOADS DEFLECTION SUCH THAT THE STATIC POSITION THE POLE IS PLUMB OR UP TO 1 DEGREE LEAN AGAINST THE DEFLECTION OF THE STATIC LOADS.

CATENARY:

1.
- THE ASSEMBLIES & COMPONENTS IN THE DESIGN DRAWING PACKAGE ARE INTENDED TO BE SERVICE PROVEN HARDWARE. THE DETAIL DESIGN OF THE ASSEMBLIES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR & SHALL BE REVIEWED & APPROVED BY THE ENGINEER. ALL OVERHEAD CONTACT SYSTEM ASSEMBLIES SHALL CLEAR THE PANTOGRAPH DYNAMIC ENVELOPE.
2.
- ALL PROPOSED MATERIAL, ASSEMBLIES & COMPONENTS ARE SUBJECT TO THE APPROVAL OF THE ENGINEER.
3.
- OVERHEAD CONTACT WIRE HEIGHTS ARE REFERENCED TO THE TOP OF LOW RAIL LEVEL OF THE TRACK AT EACH SUPPORT LOCATION.
4.
- INSTALLATION OF THE OVERHEAD CONTACT SYSTEM SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE SPECIFICATIONS & THE APPLICABLE LOCAL CODES.
5.
- THE SET OUT DIMENSIONS OF CATENARY POLE & DOWN GUY ANCHOR ARE MEASURED FROM THE CENTERLINE OF TRACK TO THE CENTERLINE OF POLE AT TRACK LEVEL & MUST BE VERIFIED PRIOR TO THE FABRICATION OF ANY CATENARY ASSEMBLIES.
6.
- GENERAL ARRANGEMENT DRAWINGS ARE PROVIDED FOR GUIDANCE. SPECIFIC POLE LOCATIONS & WIRE HEIGHTS ARE GIVEN ON THE OCS LAYOUT DRAWINGS.
7.
- DIRECTIONS OF STAGGER IS REFERENCED FROM THE CENTERLINE OF TRACK, LOOKING TOWARD THE SUPPORT IN THE DIRECTION OF INCREASING STATIONING.

GROUND GRID:

1.
- THE TRACTION POWER SUBSTATION GROUND GRID DESIGNS SHALL BE SUBMITTED TO MTA FOR REVIEW & COMMENT.



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APPR	CHECK	DRAWN	DESIGN	MRW	PRELIMINARY ENGINEERING PURPLE LINE LIGHT RAIL	CONTRACT NO. T-1042-0220
				PJK		DRAWING NO. GN-9005
				JHM		SHEET NO.
					GENERAL NOTES OVERHEAD CONTACT SYSTEM	6 OF 474
DATE: DECEMBER 2013					SCALE: NONE	

COMMUNICATIONS INFORMATION BACKBONE (CIB) NOTES:

1. THE CIB FIBER CABLES (MDOT AND PL NETWORK) SHALL BE INSTALLED IN A RING CONFIGURATION IN SEPARATE CONDUITS #1 FOR THE WB TACK AND #6 FOR THE EB TACK. SEE SYSTEMS DUCT BANK DRAWING FOR CONDUIT DESIGNATION.
2. THE LYTTONSVILLE AND GLENRIDGE Y&S LOCATIONS ARE THE PRIMARY CONTROL CENTER AND BACKUP CONTROL CENTER FOR ALL SYSTEMS CONTROL AND OPERATIONS EQUIPMENT.
3. THE FIBER CABLE SHALL CROSS OVER FROM CONDUIT #1 TO CONDUIT #6 AT BETHESDA AND NEW CARROLLTON LOCATIONS.
4. INNERDUCT SHALL BE PROVIDED FOR EACH CONDUIT.
5. CIB BACKBONE CONNECTIVITY TO ALL STATIONS, PLATFORMS, TPSS, SIGNAL CABINETS (CIH) ON ROW, CIH IN Y&S, INCLUDING OCC, BOCC, COMMUNICATIONS FOR YARDS AND SHOPS. ETHERNET SWITCHES SHARED FOR ALL SYSTEMS. CONNECTIVITY TO MDOT NETWORK.
6. SYSTEM WIDE REDUNDANT CIB DUCTBANK FOR PROJECT AND TO ALL WAYSIDE FACILITIES, STATIONS REQUIRED CONNECTIVITY INCLUDING MANHOLES AND HANDHOLES.
7. CIB SYSTEM DESIGN FOR FIBER OPTIC CABLES AND CONNECTIVITY FOR FIBER OPTIC CABLE.
8. CIB CONNECTIVITY FOR TRAFFIC CROSSINGS, FIBER OPTIC CABLE AND OTHER REQUIRED EQUIPMENT, SYSTEMS AND PARTS BY P3 CONTRACTOR.
9. SIGNAL CONNECTIVITY OF CABINETS (CIH) COLOCATED NEAR A TPSS CABINETS (CIH) IN YARDS AND SHOPS – CIB CONNECTIVITY OF FIBER OPTIC CABLES ONLY FOR TC AND SCADA.
10. FIBER CABLE CONNECTED TO STATIONS AND TPSS AND SIGNAL HUTS FOR CONNECTIVITY TO CIB.
11. ALL COMMUNICATION EQUIPMENTS TO BE INSTALLED IN CABINETS MOUNTED ON OR NEAR EACH PLATFORM.
12. ALL SCADA DEVICES AND CONNECTIVITY BY TPSS. TRAIN CONTROL, SIGNAL AND TRAFFIC CONTROL FOR REQUIREMENTS. FIBER OPTIC CABLES ONLY TO ALL LOCATIONS.
13. THE ELECTRICAL SYSTEM INCLUDES ALL POWER, LIGHTING AND CONTROL SYSTEMS SHALL BE PROVIDED FOR ALL FACILITIES.
14. TPSS TO PROVIDE ROOM FOR CABINETS FOR COMMUNICATIONS EQUIPMENT, ETHERNET SWITCHES, FACP, IAC PANEL IN CLOSE PROXIMITY TO DOOR.
15. YARD TOWER AND SHOP HAS SEPARATE CONNECTIVITY TO TOWER CONTROL AREA FOR CIB AND ALL SERVICES.
16. ETHERNET SWITCH AT ALL STATIONS PLATFORMS, TPSS, CIH’S, YARDS AND SHOPS.
17. ALL EXTERNAL CARD READERS, CAMERAS, SPEAKERS AND MOTION DETECTORS SHALL BE WEATHER PROOF.

OCC, BOCC AND COMMUNICATIONS EQUIPMENT ROOM NOTES:

1. LADDER RACK FOR COMMUNICATION ROOM ADJACENT TO OCC AND BOCC.
2. SETS, WETS AND IP TELEPHONE SYSTEM HEADEND EQUIPMENT TO BE LOCATED IN OCC, BOCC.
3. RADIO BASE STATION AND SYSTEM TO BE LOCATED IN OCC, BOCC.
4. ENTERPRISE ETHERNET SWITCHES AND SYSTEM FOR CIB TO BE LOCATED IN COMMUNICATION ROOM AT OCC, BOCC.
5. CONSOLE AND MISC. CABINETS PROVIDED FOR CONNECTIVITY AND EQUIPMENT SUPPLIED.
6. PA-VMS SYSTEM TO BE INSTALLED IN OCC AND WORKSTATIONS. MONITORS AND SOFTWARE PART OF PA-VMS SYSTEM.
7. CCTV SYSTEM AND MONITORS TO BE INSTALLED IN PMF. CCTV VIEWING WORKSTATION AND CONNECTIVITY TO WALL LCD MONITORS IN OCC AND BOCC.
8. UPS IS FOR ENTIRE OCC, BOCC FOR ALL COMMUNICATION AND CONTROL SYSTEMS – 15 MINUTES BACKUP TIME IS REQUIRED.
9. GENERATOR AT OCC, BOCC FOR ALL SYSTEMS AND LOADS – COMMUNICATIONS NETWORK, SECURITY LOAD, CCTV, IAC, TC, CONSOLES.

RADIO SYSTEM NOTES:

1. RADIO SYSTEM HAS TWO ANTENNA MASTS, ONE LOCATED IN EACH OF THE YARDS AND SWITCHING POINT IN THE OCC.
2. BDA’s TO BE INSTALLED FOR COVERAGE OF UNDERGROUND AREAS.
3. MTA TO LEASE SPACE ON OTHERS TOWER FOR COVERAGE, IF REQUIRED.

WI-FI / WI-MAX NOTES:

1. WI-FI ACCESS POINTS SPACED 400 FT APART ALONG ROW AND AT PASSENGER STATIONS.

PASSENGER INFORMATION SYSTEMS – PA-VMS NOTES:

1. AMBIENT NOISE MICROPHONE – SENSORS ON EACH STATION PLATFORM PA SYSTEM TO HAVE AUTOMATIC VOLUME ADJUSTMENT CONTROLS. PA SYSTEM SHALL NOT GENERATE ANY ADVERSE EFFECTS IN COMMUNITIES NEAR THE STATIONS.
2. PA SPEAKERS SHALL HAVE ALTERNATING CIRCUITS AND SEPARATE AND REDUNDANT AMPLIFIERS. BLOCK DIAGRAMS SHOW CONNECTIVITY NOT REDUNDANCY.
3. UPS AND BATTERY FOR ALL COMMUNICATIONS SYSTEMS AT COMMUNICATION ROOM IN OCC AND BOCC.
4. PA SPEAKERS PER PRELIMINARY DESIGN FOR STATIONS PLATFORMS INCLUDED.
5. LOCAL CONTROL STATION PER STATION.
6. PA IN YARD AND SHOP SEPARATE FROM STATION PA SYSTEM.

CCTV SYSTEM NOTES:

1. NVR LOCATED AT SECURITY CENTER.
2. DVR LOCATED AT STATIONS AND Y&S.
3. FINAL SECURITY DEVICE LOCATIONS, TYPE & QUANTITY TO BE DETERMINED BASED ON THREAT & VULNERABILITY ANALYSIS.
4. NVR FOR CCTV AT OCC.
5. ETHERNET SWITCHES INSTALLED WITH POE CAPABILITY.
6. LOCAL CCTV IN YARDS AND SHOPS TO SECURITY OFFICE.
7. CCTV ALONG PERIMETER OF FENCE PROPERTY FOR YARDS AND SHOPS – CAMERA ON LIGHT POLES.
8. CCTV VIDEO VIEWING AND STORAGE AT SECURITY CENTER, SECONDARY FACILITY IS OCC, BOCC.
9. CCTV VIDEO ANALYTICS SHALL BE PROVIDED.
10. CCTV SYSTEM & SOFTWARE LOCATED AT SECURITY CENTER, OCC.
11. CCTV REQUIRED AT TPSS AND CIH’S.

STATION PLATFORM:

1. LIGHT POLE SHALL HAVE WITHIN THE POLE MOUNT AND POLE HAVE SEPARATE CABLE RACEWAYS FOR ELECTRICAL WIRE, PA WIRE, AND COMMUNICATION WIRE INCLUDING FIBER OPTIC AND CAT 5E.



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DESIGN	KWJ
DRAWN	EN
CHECK	WJG
APPR	

PRELIMINARY ENGINEERING
PURPLE LINE LIGHT RAIL

GENERAL NOTES
COMMUNICATIONS – SHEET 1 OF 2

DATE: DECEMBER 2013 SCALE: NONE

CONTRACT NO. T-1042-0220
DRAWING NO. GN-9006
SHEET NO. 7 OF 474

INTRUSION AND ACCESS CONTROL SYSTEM NOTES:

- 1. CONNECTIVITY OF ALL DEVICES.
- 2. FINAL SECURITY DEVICE LOCATION, TYPE & QUANTITY TO BE DETERMINED BASED ON THREAT & VULNERABILITY ANALYSIS.
- 3. IAC CONTROL UNIT AT EACH STATION FOR ACCESS AND ALARM REPORTING AS REQUIRED.
- 4. IAC CONTROL UNIT AT EACH YARD & SHOP FOR ACCESS AND ALARM REPORTING AND CONNECTIVITY TO DEVICES.
- 5. LOCAL ALARM DEVICE ON COMMUNICATION CABINETS IN STATIONS.
- 6. IAC CONTROL UNIT AT EACH TPSS, SIGNAL CIH FOR ACCESS AND ALARM REPORTING AS REQUIRED TO MDOT.
- 7. CONNECTIVITY TO BOTH PLATFORMS REQUIRED FOR SIDE PLATFORM STATIONS FOR IAC SYSTEM CONDUIT BY MEP.

WAYSIDE EMERGENCY TELEPHONE SYSTEM NOTES:

- 1. EMERGENCY TRIP STATION – BLS AT ALL ELEVATED AND UNDERGROUND STATIONS AND PORTALS TO TUNNELS AND AT TPSS.
- 2. BLS AS PER NFPA 130 FOR ALL TUNNEL SECTIONS
- 3. DIRECT CONNECTION TO OCC.
- 4. FINAL SAFETY/FIRE LIFE SAFETY DEVICE LOCATIONS TO BE DETERMINED BASED ON FINAL PRELIMINARY HAZARD ANALYSIS.

STATION EMERGENCY TELEPHONE SYSTEM NOTES:

- 1. SETS – EMERGENCY CALL BOX LOCATED ON ALL PLATFORMS.
- 2. DIRECT CONNECTION TO OCC.
- 3. FINAL SAFETY/FIRE LIFE SAFETY DEVICE LOCATIONS TO BE DETERMINED BASED ON FINAL PRELIMINARY HAZARD ANALYSIS.

VOIP TELEPHONE SYSTEM NOTES:

- 1. VOIP TELEPHONES WILL BE PROVIDED AT TPSS, CIH, VENT ROOMS.
- 2. VOIP TELEPHONE IN YARDS AND SHOPS OFFICES AND CUBICLES.

YARD AND SHOP OTHER SYSTEMS NOTES:

- 1. YARD & SHOP TELEPHONE / DATA JACK – CAT 5E/6 FOR ALL ROOMS EXCEPT RESTROOMS, LOCKER ROOM AND CLOSETS.
- 2. YARD & SHOP WORKSTATIONS INCLUDED.
- 3. CIH’S WILL BE PROVIDED IN YARDS AND SHOPS.
- 4. SWITCH HEATER IN Y&S – SCADA CONNECTIVITY.
- 5. TRAIN YARD CONTROL SYSTEM COPPER WIRE.
- 6. SOME AREAS IN Y&S REQUIRE ELECTROSTATIC FREE SURFACE AND POWER STRIPS.
- 7. OFFICE EQUIPMENT YARD CONTROL, MAINTENANCE SHOPS, SYSTEM ADMINISTRATION.
- 8. YARD AND SHOP TOWER – CONTROL AREA CONNECTION TO OCC – SEALED EMERGENCY RELEASE BUTTON – BYPASS OCC AND YARD TOWER.

FIRE ALARM SYSTEM NOTES:

- 1. FIRE PROTECTION, SPECIAL HAZARDS BY OTHERS
- 2. FIRE ALARM IN YARD AND SHOP, TPSS,CIH, AND COMPLEX STATIONS.
- 3. FIRE COMMAND AT OCC, BOCC – SEPARATE SYSTEM RECEIVING ALL OTHER FACP’S FROM YARDS, SHOPS, STATIONS, TPSS, CIH’S.
- 4. FIRE ALARM TO CCTV, PA AND IAC INTERFACE AT STATIONS.
- 5. FIRE ALARM TO CCTV, PA INTERFACE IN YARDS AND SHOPS.
- 6. FIRE COMMAND PANEL LOCATED AT GROUND (GRADE) LEVEL FOR FIRE COMMAND AND EMERGENCY RESPONDERS.
- 7. FINAL SAFETY/FIRE LIFE SAFETY DEVICE LOCATIONS TO BE DETERMINED BASED ON FINAL PRELIMINARY HAZARD ANALYSIS.

UNINTERRUPTIBLE POWER SUPPLY NOTES:

- 1. THE OCC AND BOCC SHALL HAVE A UPS FOR ALL EQUIPMENT IN ALL COMMUNICATION ROOM AND CONTROL CENTER.
- 2. A UPS SHALL BE INSTALLED IN EACH COMMUNICATION CABINET, RACK, CIC, CIH AND TPSS. THE UPS WILL BE FOR COMMUNICATION EQUIPMENT AT EACH SITE.
- 3. SYSTEM BLOCK DIAGRAM SHOWS ONLY THE UPS AND NOT PHYSICAL CONNECTIVITY.
- 4. UPS SIZED TO SUPPORT ALL COMMUNICATION EQUIPMENT AND CONNECTED TO NETWORK FOR MONITORING.



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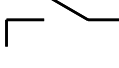

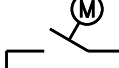







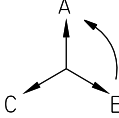
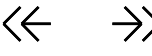

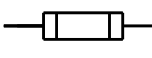

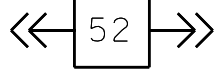

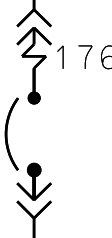







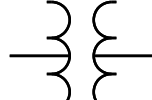

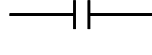

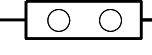

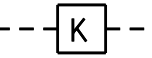









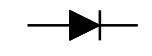

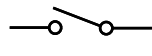

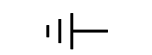



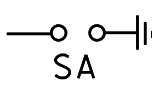

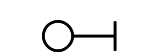

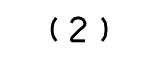






































































DRAFT: Information shown is based on 30 percent preliminary engineering plans and may be subject to further revision pending refinements to the plans during the completion of the design phase. Any reliance upon any of these plans is made with full understanding of its draft status.

DESIGN	KWJ
DRAWN	EN
CHECK	WJG
APPR	

PRELIMINARY ENGINEERING
PURPLE LINE LIGHT RAIL

GENERAL NOTES
COMMUNICATIONS – SHEET 2 OF 2
DATE: DECEMBER 2013 SCALE: NONE

CONTRACT NO. T-1042-0220
DRAWING NO. GN-9007
SHEET NO. 8 OF 474

ELECTRICAL SYMBOLS AND ABBREVIATIONS			
	ANNUNCIATION (TO SCADA)		VARIABLE RESISTOR
	RELAY – SEE IEEE DEVICE TABLE		OCS SECTION BREAK
	AMMETER		OCS DISC. SWITCH (NO-LOAD BREAK)
	VOLTMETER		MOTOR-OPERATED OCS DISC. SW. (NO-LOAD BREAK)
	CURRENT TRANSDUCER		DELTA-CONNECTED TRANSFORMER
	VOLTAGE TRANSDUCER		WYE-CONNECTED TRANSFORMER
	AMMETER SELECTOR SWITCH		OPEN DELTA-CONNECTED TRANSFORMER
	VOLTAGE SELECTOR SWITCH		PHASE ROTATION DIAGRAM
	DRAWOUT DEVICE		TRANSIENT VOLTAGE SURGE SUPPRESSOR
	FUSE		PUSHBUTTON
	AC POWER CIRCUIT BREAKER		WHITE LIGHT
	DC CKT. BKR. WITH DIRECT ACTING TRIP		RED LIGHT
	LOW VOLTAGE AC CIRCUIT BREAKER		GREEN LIGHT
	POTENTIAL/VOLTAGE TRANSFORMER (VT)		PUSH BUTTON
	CURRENT TRANSFORMER (CT)		AMPERE
	TRANSFORMER		ALTERNATING CURRENT
	CONTACTOR OR CONTACT		ANNUNCIATOR
	DC CURRENT MEASURING SHUNT		AMMETER SWITCH
	KEY INTERLOCK		AUTOMATIC TRANSFER SWITCH
	ELECTRICAL INTERLOCK		AUXILIARY
	LOAD-MEASURING RESISTOR		AMERICAN WIRE GAUGE
	CURRENT TEST BLOCK		BREAKER
	VOLTAGE TEST BLOCK		CIRCUIT
	POWER DIODE		CURRENT-LIMITING FUSE
	MANUAL DISCONNECT SWITCH		CONTROL
	EARTH GROUND		COMPARTMENT
	CABLE TERMINATION		CONTROL POWER TRANSFORMER
	SURGE ARRESTER WITH GROUND CONNECTION		CURRENT TEST BLOCK
	NEON GLOW-TUBE		CONTROL SWITCH
	DENOTES QUANTITY		DIRECT CURRENT
			DIAMETER
			DISCONNECT
			DRAWING
			EXHAUST FAN
			EMERGENCY
			ETHYLENE PROPYLENE RUBBER
			EMERGENCY TRIP STATION
			FIRE/SMOKE DETECTOR
			FIBERGLASS REINFORCED EPOXY
			FUTURE
			GROUND
			GROUNDING, PHASING AND TESTING DEVICE
			HORN
			HEATER
			HERTZ
			INTELLIGENT ELECTRONIC DEVICE
			INTERFACE TERMINAL CABINET (SCADA)
			INTERPHASE TRANSFORMER
			JUNCTION BOX
			THOUSAND CIRCULAR MILS
			KILOVOLT
			KILOWATT
			KILOVOLT-AMPERE
			LOAD-BREAK SWITCH
			LOAD-MEASURING RESISTOR
			LOCKOUT
			LIMIT SWITCH
			MANUAL DISCONNECT SWITCH
			MANHOLE
			MINIMUM
			MOTOR-OPERATED DISCONNECT
			MANUAL TRANSFER SWITCH
			MILLIVOLT
			NOT IN CONTRACT
			NORMALLY-CLOSED
			NEGATIVE
			NEUTRAL
			NORMALLY-OPEN
			NEGATIVE GROUNDING DEVICE
			NOT TO SCALE
			OVERHEAD CONTACT SYSTEM
			PUSHBUTTON
			PHASE
			POTOMAC ELECTRIC POWER CO
			PANEL
			POSITIVE
			POUND PER SQUARE INCH
			POLYVINYL CHLORIDE
			QUANTITY
			RECTIFIER
			RIGID GALVANIZED STEEL
			RIGHT OF WAY
			SURGE ARRESTER
			SINGLE POLE DOUBLE THROW
			SINGLE POLE SINGLE THROW
			SWITCH
			SWITCHGEAR
			TO BE DETERMINED
			TRACTION POWER
			TRACTION POWER SUBSTATION
			TRANSIENT VOLTAGE SURGE SUPPRESSOR
			TYPICAL
			VOLT, VOLTMETER
			VOLT-AMPERE
			VOLTAGE TRANSFORMER
			VOLTMETER SWITCH
			TRANSFORMER
			CROSS-LINKED POLYETHYLENE, ZERO HALOGEN
			TRANSFER SWITCH

IEEE DEVICE NUMBER TABLE		
DEVICE#	DESCRIPTION	DEVICE FUNCTION
26R1	RECTIFIER DIODE OVERTEMPERATURE – 1ST STAGE	ANNUNCIATES
26R2	RECTIFIER DIODE OVERTEMPERATURE – 2ND STAGE	TRIPS 86R & ANNUNCIATES
27	UNDERVOLTAGE RELAY	–
27A	AUX. POWER CONTROL CABINET: LOSS OF VOLTAGE (120/208V)	ANNUNCIATES
27AC	INVERTER FAILURE: LOSS OF VOLTAGE (EMER. 120VAC)	ANNUNCIATES
27BI	BATTERY CHARGER FAILURE: IMMEDIATE (INSTANTANEOUS)	ANNUNCIATES
27B	BATTERY CHARGER FAILURE AFTER 8 HOUR TIME DELAY	TRIPS 86M & ANNUNCIATES
27L	LOSS OF 13.2 KV UTILITY SUPPLY	TRIPS 52L & ANNUNCIATES
27DC-1	125VDC CONTROL POWER UNDERVOLTAGE – AC SWGR	ANNUNCIATES
27DC-2	125VDC CONTROL POWER UNDERVOLTAGE – DC SWGR	ANNUNCIATES
27DC-AP	125VDC CONTROL POWER UNDERVOLTAGE – AUX. POWER	ANNUNCIATES
27DC-IF	125VDC CONTROL POWER UNDERVOLTAGE – IFTC	ANNUNCIATES
27DC-R	125VDC CONTROL POWER UNDERVOLTAGE – RECTIFIER	ANNUNCIATES
32	REVERSE POWER RELAY – MAIN DC BREAKER (DIRECT-ACTING)	TRIPS DEV. 72 & ANNUNCIATES
32X	AUXILIARY RELAY FOR DEVICE 32	TRIPS 86R & ANNUNCIATES
33R	RECTIFIER ENCLOSURE DOOR SWITCH	TRIPS 86R & ANNUNCIATES
33T	RECTIFIER TRANSFORMER ENCLOSURE DOOR SWITCH	TRIPS 86R & ANNUNCIATES
43-1	LOCAL/REMOTE SWITCH – AC MAIN BREAKER 52	ANNUNCIATES
43-2	LOCAL/REMOTE SWITCH – DC MAIN BREAKER 72	ANNUNCIATES
47L	13.2 KV VOLTAGE PHASE LOSS	TRIPS 86M & ANNUNCIATES
49A	RECT. XFMR WINDING OVERTEMPERATURE – 1ST STAGE	ANNUNCIATES
49T	RECT. XFMR WINDING OVERTEMPERATURE – 2ND STAGE	TRIPS 86R & ANNUNCIATES
49AT	AUX. POWER TRANSFORMER OVERTEMPERATURE	ANNUNCIATES
50/51	INST. & TIME OVERCURRENT RELAY, PHASE (SINGLE PHASE)	TRIPS 86R & ANNUNCIATES
50N/51N	INSTANTANEOUS & TIME OVERCURRENT RELAY, NEUTRAL	TRIPS 86R & ANNUNCIATES
51R	RECTIFIER 3-PHASE TIME OVERCURRENT PROTECTION RELAY	TRIPS 86R & ANNUNCIATES
52R	RECTIFIER CIRCUIT BREAKER	–
52L	13.2 KV LINE CIRCUIT BREAKER	–
59	OVERVOLTAGE RELAY	–
64G	RECTIFIER ENCLOSURE GROUNDED	ANNUNCIATES
64	RECTIFIER ENCLOSURE ENERGIZED (HOT)	TRIPS 86R ANNUNCIATES
72	RECTIFIER (MAIN) DC BREAKER	–
86R	LOCKOUT RELAY FOR RECTIFIER & RECTIFIER TRANSFORMER	TRIPS 52R, 72 & ANNUNCIATES
86M	LOCKOUT RELAY FOR ALL DC EQUIP.	TRIPS ALL DC BKRS & RECT. BKRS
89	AC HIGH VOLTAGE LOAD BREAK DISCONNECT SWITCH	–
89N	RECTIFIER NEGATIVE DISCONNECT SWITCH	–
98A	RECTIFIER DIODE FAILURE, FIRST STAGE	ANNUNCIATES
98T	RECTIFIER DIODE FAILURE, SECOND STAGE	TRIPS 86R & ANNUNCIATES
99A	RECTIFIER SURGE PROTECTION FAILURE – FIRST STAGE	ANNUNCIATES
99T	RECTIFIER SURGE PROTECTION FAILURE – 2ND STAGE	TRIPS 86R AND ANNUNCIATES
99E	TPSS EMERGENCY TRIP	TRIPS 86M & ANNUNCIATES
129	DC FEEDER BREAKER LOAD MEASURING CONTACTOR	–
143	LOCAL/REMOTE SWITCH – DC FEEDER BREAKER	–
150M	DC FEEDER MULTI-FUNCTION RELAY	TRIPS 172 & ANNUNCIATES
164	DC SWGR ENCL. ENERGIZED (MULTIPLE RECTIFIERS ONLY)	TRIPS 86M & ANNUNCIATES
164G	DC SWGR ENCL. GROUNDED (MULTIPLE RECTIFIERS ONLY)	ANNUNCIATES
172	DC FEEDER CIRCUIT BREAKER	–
176	DC FEEDER BREAKER DIRECT ACTING TRIP DEVICE	TRIPS 172 & ANNUNCIATES
182	DC FEEDER BREAKER LOAD MEASURING RELAY	–
183	DC FEEDER BREAKER VOLTAGE SENSING RELAY	–
185	DC FEEDER BREAKER TRANSFER TRIP	TRIPS ASSOC. BKR. & ANNUNCIATES
186	DC FEEDER LOCKOUT RELAY	LOCKS OUT DEVICE 172
189N	DC DRAINAGE DISCONNECT SWITCH	–
194	NEGATIVE GROUNDING DEVICE	ANNUNCIATES

A

AREMA

AMERICAN RAILWAY ENGINEERING & MAINTENANCE OF WAY ASSOCIATION (FORMERLY AREA)

ASSY

ASSEMBLY

ASTM

AMERICAN SOCIETY OF TESTING & MATERIALS

A/T

AUTO TENSION

ATM

ALONG TRACK MOVEMENT

ATSC

AUTO-TENSIONED SIMPLE CATENARY

ATSC-LP

AUTO-TENSIONED SIMPLE CATENARY, LOW PROFILE

AWG

AMERICAN WIRE GAUGE

AWS

AMERICAN WELDING SOCIETY

B

BC

BOLT CIRCLE/BATTERY CHARGER

BL

BASELINE

B.O.S.

BOTTOM OF STEEL

BR

BRIDGE

BRKT

BRACKET

BWA

BALANCE WEIGHT ANCHOR

C

CANT

CANTILEVER

CAT.

CATENARY (Ⓢ CAT.)

CCT

CAPITAL CRESCENT TRAIL

Ⓢ

CENTERLINE

C TO C

CENTERLINE TO CENTERLINE

CLF

CHAIN LINK FENCE

CLR

CLEARANCE, CLEAR

COMM

COMMUNICATIONS

CONC

CONCRETE

CND

CONDUIT

CS

CURVE-TO-SPIRAL

CTR

CENTER

CU

COPPER

C/W

CONTACT WIRE

CWA

COUNTER WEIGHT ASSEMBLY

D

DEG

DEGREE

DET

DETAIL

DGA

DOWN GUY ANCHOR

DIA

DIAMETER, Ø

DIM.

DIMENSION (Ⓢ DIM)

DISC

DISCONNECT

DISC SW

DISCONNECT SWITCH

DOC

DEGREE OF CURVATURE

DWG

DRAWING

E

E

EAST

EA

EACH

EB

EASTBOUND

Eo

SUPERELEVATION IN INCHES

EHS

EXTRA HIGH STRENGTH

ELEC

ELECTRICAL

EL

ELEVATION

EOL

END OF LINE

EQ

EQUAL

ES

EXTRA STRENGTH

EXIST.

EXISTING

F

F

FAHRENHEIT

FDN

FOUNDATION

FDR

FEEDER

FOP

FACE OF POLE

F.O.S.

FACTOR OF SAFETY

FP

FEEDER POLE

FS

FAR SIDE

FT

FEET, FOOT

F/T

FIXED TERMINATION (F.T.)

FTA

FIXED ANCHOR

FTSCW

FIXED TERMINATION SINGLE CONTACT WIRE

G

GALV

GALVANIZED

G/L

GROUND LINE

GND

GROUND

GRS

GALVANIZED RIGID STEEL

GRSC

GALVANIZED RIGID STEEL CONDUIT

H

H

HEIGHT

H.D.

HARD DRAWN

HDG

HOT DIPPED GALVANIZED AFTER FABRICATION

HDPE

HIGH DENSITY POLYETHYLENE

HEX

HEXAGONAL

HO

HAND OPERATED

HORIZ

HORIZONTAL

H.R.L.

HIGH RAIL LEVEL

H-SPAN

HEAD SPAN

HSS

HIGH STRENGTH STEEL

HV

HIGH VOLTAGE

Hz

HERTZ

J

ID

INSIDE DIAMETER

IEEE

INSTITUTE OF ELECTRICAL AND ELECTRONIC ENGINEERS

I/L

INTERLOCKING

IJ

INSULATED JOINT

IN

INCH, INCHES

INSUL

INSULATION

I.R.

IN RUNNING (RIDING CONTACT WIRE)

J

J

JUMPER

JB

JUNCTION BOX

K

KCMIL

THOUSAND CIRCULAR MILS

kA

KILOAMPERE

kV

KILOVOLT

kVA

KILOVOLT AMPERE

KSF

KIPS PER SQUARE FOOT

KSI

KIPS PER SQUARE INCH

kW

KILOWATT

L

LA

LIGHTNING ARRESTER

LB

POUND, POUNDS

LB/FT

POUNDS PER FOOT

LED

LIGHT EMITTING DIODE

LF

LINEAR FEET

LG

LONG, LENGTH

LOC

LOCATION

LPT

LOW POINT

LRL

LOW RAIL LEVEL

LRT

LIGHT RAIL TRANSIT

LT

LIGHT OR LEFT

LV

LOW VOLTAGE

M

M

METER

MAX

MAXIMUM

MCM

THOUSAND CIRCULAR MIL

MDOT

MARYLAND DEPARTMENT OF TRANSPORTATION

MH

MANHOLE

MIN

MINIMUM

MISC

MISCELLANEOUS

M/L

MAIN LINE

MO

MOTOR OPERATED

MP

MILE POST - MORE PERMISSIVE SPEED

MPA

MID POINT ANCHOR

MPH

MILES PER HOUR

MTA

MARYLAND TRANSIT ADMINISTRATION

MTG

MOUNTING

mV

MILLIVOLT

MW

MEGAWATT

M/W

MESSANGER WIRE

N

N

NORTH, NEUTRAL

N/A

NOT APPLICABLE

NBR

NON-BRIDGING

N.C.

NORMALLY CLOSED

NEC

NATIONAL ELECTRICAL CODE

NEG

NEGATIVE

NESC

NATIONAL ELECTRICAL SAFETY CODE

NIC

NOT IN CONTRACT

N.O.

NORMALLY OPEN

NOM

NOMINAL

NS

NEAR SIDE

NTS

NOT TO SCALE

Q

OC

ON CENTER

OCS

OVERHEAD CONTACT SYSTEM

OD

OUTSIDE DIAMETER

OH

OVERHEAD

OHB

OVERHEAD BRIDGE

O/L

OVERLAP

O/R

OUT OF RUNNING (NON-RIDING CONTACT WIRE)

P

PAN

PANTOGRAPH

PB

PULLBOX

PC

POINT OF CURVE

PF

POINT OF FROG

PI

POINT OF INTERSECTION

PITO

POINT OF INTERSECTION OF TURNOUT

PL

PLATE

P/L

PROPERTY LINE

PLAT.

PLATFORM

POS

POSITIVE

PROP

PROPOSED

PS

POINT OF SWITCH

PSF

POUNDS PER SQUARE FEET

PSI

POUNDS PER SQUARE INCH

PVC

POLYVINYL CHLORIDE COUNDUIT (PVCC) OR POINT OF VERTICAL CURVE

POWER

POWER

Q

QTY

QUANTITY

R

R

RADIUS

REOD

REQUIRED

RT

RIGHT

RTU

REMOTE TERMINAL UNIT

RR

RAILROAD

RRX

RAILROAD GRADE CROSSING

RW

RETAINING WALL

R/W

RIGHT OF WAY

S

S

SOUTH

SA

SURGE ARRESTER

SB

SPLICE BOX

SC

SPIRAL TO CURVE OR SIGNAL/COMMUNICATION

SCADA

SUPERVISORY CONTROL AND DATA ACQUISITION

SECT

SECTION

SI

SECTION INSULATOR

SIG

SIGNAL

SOL

START OF LINE

SPEC

SPECIFICATION

SPST

SINGLE POLE SINGLE THROW

Sq Ft

SQUARE FEET

Sq In

SQUARE INCHES

S/S

STAINLESS STEEL

ST

SPIRAL TO TANGENT (CONFLICT STREET)

STA

STATION, STATIONING

STD

STANDARD

STRUCT

STRUCTURE

SW

SWITCH

SWA

SINGLE WIRE ANCHOR

SWH

SWITCH HEATER

SWHT

SWITCH HEATER TRANSFORMER

T

T

TIE SWITCH

TBD

TO BE DETERMINED

TBR

TO BE REMOVED

TEM

TEMPORARY

T/F

TOP OF FOUNDATION

T/G

TOP OF GROUND LINE

TL

TENSION LENGTH OR TRACK LIGHTING

T/LR

TOP OF LOW RAIL

TO.

TURNOUT

TOC

TOP OF CONCRETE

TORW

TOP OF RETAINING WALL

T/R

TOP OF RAIL

TRK

TRACK

TS

TANGENT TO SPIRAL

U

UG

UNDERGRADE, UNDERGROUND

UNO

UNLESS NOTED OTHERWISE

U/S

UNDERSIDE

UTIL

UTILITY (Ⓢ UTIL)

V

V

VOLT

VA

VOLT AMPS

VERT

VERTICAL

V/S

VERSINE

W

W

WATT, WIDTH OR WIRE

W/

WITH

WB

WESTBOUND

WI

WEIGHT - WROUGHT IRON

W/O

WITHOUT

WF

WIDE FLANGE

X

X-BOND

CROSS BOND

XFMR

TRANSFORMER

X-ING

CROSSING

X-OVER

CROSSOVER

X-SECT

CROSS SECTION

X-SPAN

CROSS SPAN

S

S

SYMBOLS

○-----○

HEAD SPAN STRUCTURE

≡-----≡-----≡

HEAD SPAN ARRANGEMENT AT WALLS

○-----○

PORTAL STRUCTURE

○-----

SINGLE CANTILEVER
(SIDE POLE ARRANGEMENT)

○-----

OVERLAP CANTILEVER
(SIDE POLE ARRANGEMENT)

○-----○

DOUBLE CANTILEVER
(CENTER POLE ARRANGEMENT)

○-----○

OVERLAP CANTILEVER
(CENTER POLE ARRANGEMENT)

○

OCS BRIDGE OR TUNNEL
ATTACHMENT

—/—

IN-RIDING OCS WIRE

- - - - -

OUT-OF-RIDING OCS WIRE

III

CATENARY INSULATOR

⊠

SECTION INSULATOR

□

OVERLAP (INSULATED)

■

OVERLAP (UN-INSULATED)

└-----

GUY ASSEMBLY

▨

OR

■

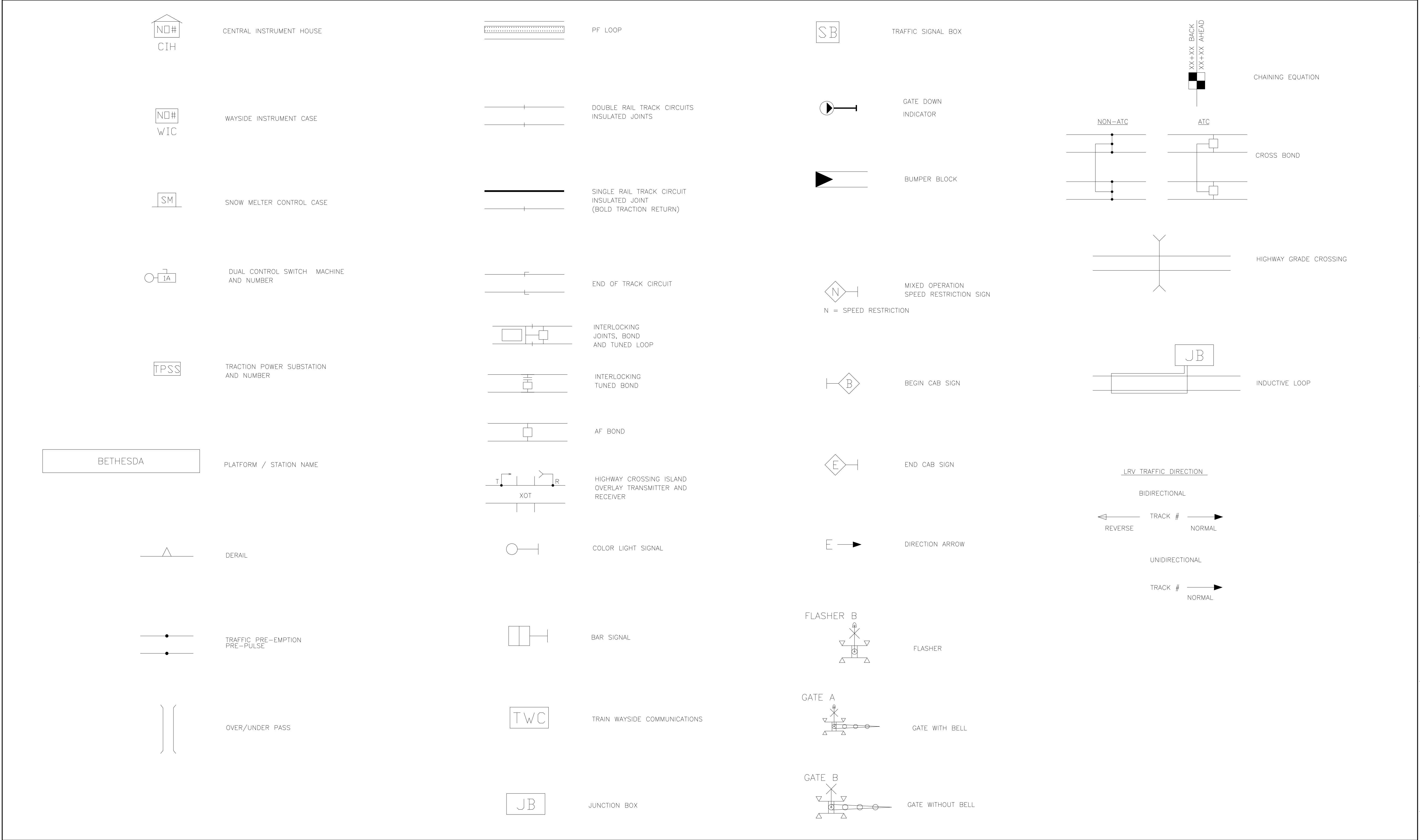
PASSENGER STATION

⏏

GROUND

ABN	ABSOLUTE BLOCK NORMAL (RELAY OUTPUT)	RFP	REVERSE TRAFFIC (RELAY INPUT)
ABP	ABSOLUTE BLOCK (RELAY INPUT)	RN	NEGATIVE TRACK CIRCUIT RECEIVER CONNECTION
ABR	ABSOLUTE BLOCK REVERSE (RELAY OUTPUT)	RNO	NEGATIVE TRACK CIRCUIT RECEIVER BATTERY – 28–30VDC
B12	POSTIVE ENERGY – 12VDC	RWCR	REVERSE SWITCH CORRESPONDENCE RELAY
B12–L	POSTIVE LIGHTING ENERGY – 12VDC	RWM	AUXILIARY REVERSE SWITCH MAINTENANCE INPUT
BPRB	POSTIVE B–POINT TRACK CIRCUIT RECEIVER CONNECTION	RWP	REVERSE SWITCH POSITION INPUT
BPRN	NEGATIVE B–POINT TRACK CIRCUIT RECEIVER CONNECTION	RWR	REVERSE SWITCH OUTPUT RELAY
BX120	AC ENERGY – 120VAC	SIGSTOP	VITAL SIGNAL DRIVER CONTROL RELAY
BX240	AC ENERGY – 240VAC	SMK	SNOW MELTER INDICATION
GE	GREEN LAMP OUTPUT	SMZ	SNOW MELTER CONTROL
GND	GROUND	TB	POSITIVE TRACK CIRCUIT TRANSMITTER CONNECTION
GNDK	GROUND INDICATION	TBO	POSITIVE TRACK CIRCUIT TRANSMITTER BATTERY – 28–30VDC
LOOPCB	POSITIVE LOOP TRACK CAB TRANSMITTER CONNECTION	TCB	POSITIVE TRACK CAB TRANSMITTER CONNECTION
LOOPCN	NEGATIVE LOOP TRACK CAB TRANSMITTER CONNECTION	TCN	NEGATIVE TRACK CAB TRANSMITTER CONNECTION
MAS	MAXIMUM ALLOWABLE SPEED	TCT	TRACK CAB ENABLE CONNECTION
N12	NEGATIVE ENERGY – 12VDC	TN	NEGATIVE TRACK CIRCUIT TRANSMITTER CONNECTION
N12–L	NEGATIVE LIGHTING ENERGY – 12VDC	TNO	NEGATIVE TRACK CIRCUIT TRANSMITTER BATTERY – 28–30VDC
NF	NORMAL TRAFFIC (RELAY OUTPUT)	TRCB	POSITIVE TRACK REVERSE CAB TRANSMITTER CONNECTION
NFP	NORMAL TRAFFIC (RELAY INPUT)	TRCN	NEGATIVE TRACK REVERSE CAB TRANSMITTER CONNECTION
NWM	AUXILIARY NORMAL SWITCH MAINTENANCE INPUT	WJ	POWER OPERATED SWITCH HAND–THROW INPUT
NWP	NORMAL SWITCH POSITION INPUT	XHN	EXIT HOLD NORMAL (RELAY OUTPUT)
NWR	NORMAL SWITCH OUTPUT RELAY	XHREL	EXIT HOLD RELEASE (RELAY INPUT)
NX120	AC ENERGY – 120VAC	XNR	EXIT HOLD REVERSE (RELAY OUTPUT)
NX240	AC ENERGY – 240VAC	XRB	POSITIVE XOVER/TURNOUT TRACK RECEIVER CONNECTION
PB	PUSHBUTTON	XRN	NEGATIVE XOVER/TURNOUT TRACK RECEIVER CONNECTION
PBE	PUSHBUTTON INDICATOR LAMP	XTB	POSITIVE XOVER/TURNOUT TRACK TRANSMITTER CONNECTION
POK	POWER OFF INDICATION	XTN	NEGATIVE XOVER/TURNOUT TRACK TRANSMITTER CONNECTION
RB	POSITIVE TRACK CIRCUIT RECEIVER CONNECTION	YE	YELLOW LAMP OUTPUT
RBO	POSITIVE TRACK CIRCUIT RECEIVER BATTERY – 28–30VDC		
RE	RED LAMP OUTPUT		
RF	REVERSE TRAFFIC (RELAY OUTPUT)		

<div><div><div><div><div>MARYLAND DEPARTMENT OF TRANSPORTATION</div><div><div><div><div></div><div>MARYLAND TRANSIT ADMINISTRATION</div></div><div><div>MTA</div><div>Maryland</div></div></div></div><div><div><div><div></div><div>Gannett Fleming</div></div><div><div>WR&A</div></div></div></div></div></div></div></div>		<div>PROFESSIONAL CERTIFICATION</div> <div>I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland</div> <div><div>License No.</div><div>Expiration Date</div></div>		<div><div><div><div><div></div><div>DRAFT: Information shown is based on 30 percent preliminary engineering plans and may be subject to further revision pending refinements to the plans during the completion of the design phase. Any reliance upon any of these plans is made with full understanding of its draft status.</div></div></div></div></div>	DESIGN	EDS	<div>PRELIMINARY ENGINEERING</div> <div>PURPLE LINE LIGHT RAIL</div>	CONTRACT NO.
					DRAWN	RMM		DRAWING NO.
					CHECK	WRS		GN-9010
					APPR			SHEET NO.
<div>DATE: DECEMBER 2013</div> <div>SCALE: NONE</div>						11	OF 474	



ABBREVIATIONS:

AC	ACCESS CONTROL
AC&ID	ACCESS CONTROL & INTRUSION DETECTION
AP	ACCESS POINT
ATP	AUTOMATIC TRAIN PROTECTION
ATS	AUTOMATIC TRANSFER SWITCH
BDA	BI DIRECTIONAL AMPLIFIER
BOCC	BACK-UP OPERATIONAL CONTROL CENTER
BLS	BLUE LIGHT SYSTEM
CAB	CABINET / RACK
CAT 5E	TWISTED PAIR CABLES FOR CARRYING SIGNALS
CCTV	CLOSED CIRCUIT TELEVISION
CIB	COMMUNICATIONS INFRASTRUCTURE BACKBONE
CIC	COMMUNICATIONS INTERFACE CABINET
CIH	CENTRAL INSTRUMENT HOUSE
COMM	COMMUNICATIONS
CP	CENTER PLATFORM
DCM	DESIGN CRITERIA MANUAL
DVR	DIGITAL VIDEO RECORDER
ECS	EMERGENCY CALL STATION
EMB'T	EMBEDDMENT
EOL	END OF LINE
ETS	EMERGENCY TRIP STATION
FACP	FIRE ALARM CONTROL PANEL
FDP	FIBER DISTRIBUTION PANEL
FMS	FIRE MANAGEMENT SYSTEM
F/O	FIBER OPTIC CABLE - SMF
FORX	FIBER OPTIC RECEIVER
FOTX	FIBER OPTIC TRANSMITTER
FTP	FIBER TERMINATION PANEL
GB	GIGABIT
GBE	GIGABIT ETHERNET
HVAC	HEATING, VENTILATION, AIR CONDITIONING
IAC	INTRUSION ACCESS CONTROL
IP	INTERNET PROTOCOL
LAN	LOCAL AREA NETWORK
LF	LINEAR FEET
MDOT	MARYLAND DEPARTMENT OF TRANSPORTATION
NTS	NOT TO SCALE
NVR	NETWORK VIDEO RECORDER
OCC	OPERATIONAL CONTROL CENTER
OCS	OVERHEAD CONTACT SYSTEM
PA	PUBLIC ADDRESS
PMF	POLICE MONITORING FACILITY
POE	POWER OVER ETHERNET
PIS	PASSENGER INFORMATION SYSTEMS
PLN	PURPLE LINE NETWORK
PSLAN	PASSENGER STATION LOCAL AREA NETWORK
PTT	PUSH TO TALK
PTZ	PAN TKT ZOOM
PTSN	PUBLIC SWITCHED TELEPHONE NETWORK
REQ'D	REQUIRED
RF	RADIO FREQUENCY
RTV	REMOTE TERMINAL UNIT
RX	RECEIVE
SCADA	SUPERVISORY CONTROL AND DATA ACQUISITION
SETS	STATION EMERGENCY TELEPHONE SYSTEM
SMF	SINGLE MODE FIBER
SP	SIDE PLATFORM
TBD	TO BE DETERMINED
TC	TRAIN CONTROL
TK	THICK
TYP	TYPICAL
TPSS	TRACTION POWER SUBSTATION
TVM	TICKET VENDING MACHINE
TX	TRANSMIT
UPS	UNINTERRUPTIBLE POWER SUPPLY
VMS	VARAIBLE MESSAGE SIGN
Y&S	YARD AND SHOP
WETS	WAYSIDE EMERGENCY TELEPHONE SYSTEM

SYMBOLS:

	6'x6'x6' MANHOLE SPLICE BOX
---24---	24 STRAND SM F/O DROP
---48---	48 STRAND SM F/O DROP
	JUNCTION BOX
	ELECTRICAL MANHOLE
	COMMUNICATIONS MANHOLE
	HANDHOLE
	COMMUNICATION EQUIPMENT HOUSE
	CCTV CAMERA (FIXED)
	CCTV PTZ CAMERA
	SPEAKER
	AMBIENT NOISE SENSOR
	STATION EMERGENCY TELEPHONE SYSTEM
	WAYSIDE EMERGENCY TELEPHONE SYSTEM
	VoIP PHONE
	TELEPHONE/DATA OUTLET
	BLUE LIGHT STATION (INCLUDES WETS)
	TICKET VENDING MACHINE
	VARIABLE MESSAGE SIGN
	(4)-2" C BETWEEN CABINETS AND/OR PULL BOX
	SEE ELEC. DRAWINGS FOR ELEC. CONDUIT SCHEDULE
	(1)-1" C FOR DEVICE POWER
	(1)-1" C FOR DEVICE DATA
	(1)-1" C FOR CCTV POWER AND DATA
	(1)-1" C FOR DEVICE AUDIO
	(1)-2" C FOR DEVICE
	A
	B
	CENTER LINE
	CARD READERS
	POLE

	24 FIBER CABLE
	48 FIBER CABLE
	144 FIBER CABLE
	WI-FI ACCESS POINT
	FIBER SPLICE BOX
	MOTION DETECTOR
	RF/BDA ANTENNA

INDEX OF DRAWINGS - VOLUME 9





SHEET NO. DWG. NO. DESCRIPTION			SHEET NO. DWG. NO. DESCRIPTION			SHEET NO. DWG. NO. DESCRIPTION		
GENERAL			OVERHEAD CONTACT SYSTEM (CONTINUED)			OVERHEAD CONTACT SYSTEM (CONTINUED)		
1	TI-9001	TITLE SHEET	67	OC-0014	CATENARY LAYOUT PLAN 3 STA. EB 123+00 TO STA. EB 135+00	139	OC-0086	CATENARY LAYOUT PLAN 75 STA. EB 877+00 TO STA. EB 888+00
2	GN-9001	KEY MAP	68	OC-0015	CATENARY LAYOUT PLAN 4 STA. EB 135+00 TO STA. EB 147+00	140	OC-0087	CATENARY LAYOUT PLAN 76 STA. EB 888+00 TO STA. EB 898+00
3	GN-9002	GENERAL NOTES AND LEGEND	69	OC-0016	CATENARY LAYOUT PLAN 5 STA. EB 147+00 TO STA. EB 159+00	141	OC-0088	CATENARY LAYOUT PLAN 77 STA. EB 898+00 TO STA. EB 909+00
4	GN-9003	CIVIL ABBREVIATIONS AND SYMBOLS	70	OC-0017	CATENARY LAYOUT PLAN 6 STA. EB 159+00 TO STA. EB 171+00	142	OC-0089	CATENARY LAYOUT PLAN 78 STA. EB 909+00 TO STA. EB 919+00
5	GN-9004	KEY MAP SYSTEMS	71	OC-0018	CATENARY LAYOUT PLAN 7 STA. EB 171+00 TO STA. EB 183+00	143	OC-0090	CATENARY LAYOUT PLAN 79 STA. EB 919+00 TO STA. EB 930+00
6	GN-9005	GENERAL NOTES OVERHEAD CONTACT SYSTEM	72	OC-0019	CATENARY LAYOUT PLAN 8 STA. EB 183+00 TO STA. EB 195+00	144	OC-0091	CATENARY LAYOUT PLAN 80 STA. EB 930+00 TO STA. EB 939+50
7	GN-9006	GENERAL NOTES COMMUNICATIONS - SHEET 1 OF 2	73	OC-0020	CATENARY LAYOUT PLAN 9 STA. EB 195+00 TO STA. EB 207+00	145	OC-0092	CATENARY LAYOUT PLAN 81 STA. EB 939+50 TO STA. EB 949+50
8	GN-9007	GENERAL NOTES COMMUNICATIONS - SHEET 2 OF 2	74	OC-0021	CATENARY LAYOUT PLAN 10 STA. EB 207+00 TO STA. EB 219+00	146	OC-0093	CATENARY LAYOUT PLAN 82 STA. EB 949+50 TO STA. EB 957+50
9	GN-9008	SYMBOLS AND ABBREVIATIONS TRACTION POWER	75	OC-0022	CATENARY LAYOUT PLAN 11 STA. EB 219+00 TO STA. EB 231+00	147	OC-0094	CATENARY LAYOUT PLAN 83 STA. EB 957+50 TO STA. EB 963+35
10	GN-9009	SYMBOLS AND ABBREVIATIONS OVERHEAD CONTACT SYSTEM	76	OC-0023	CATENARY LAYOUT PLAN 12 STA. EB 231+00 TO STA. EB 243+00	148	OC-0095	CATENARY LAYOUT PLAN - LYTTONSVILLE YARD SHEET 1 OF 3
11	GN-9010	ABBREVIATIONS TRAIN CONTROL / SIGNALING	77	OC-0024	CATENARY LAYOUT PLAN 13 STA. EB 243+00 TO STA. EB 255+00	149	OC-0096	CATENARY LAYOUT PLAN - LYTTONSVILLE YARD SHEET 2 OF 3
12	GN-9011	SYMBOLS TRAIN CONTROL / SIGNALING	78	OC-0025	CATENARY LAYOUT PLAN 14 STA. EB 255+00 TO STA. EB 267+00	150	OC-0097	CATENARY LAYOUT PLAN - LYTTONSVILLE YARD SHEET 3 OF 3
13	GN-9012	SYMBOLS AND ABBREVIATIONS COMMUNICATIONS / DUCT BANK	79	OC-0026	CATENARY LAYOUT PLAN 15 STA. EB 267+00 TO STA. EB 279+00	151	OC-0098	CATENARY LAYOUT PLAN - GLENRIDGE SHOP SHEET 1 OF 3
14	GI-9101	INDEX OF SHEETS - VOLUME 9 SHEET 1 OF 3	80	OC-0027	CATENARY LAYOUT PLAN 16 STA. EB 279+00 TO STA. EB 291+00	152	OC-0099	CATENARY LAYOUT PLAN - GLENRIDGE SHOP SHEET 2 OF 3
15	GI-9102	INDEX OF SHEETS - VOLUME 9 SHEET 2 OF 3	81	OC-0028	CATENARY LAYOUT PLAN 17 STA. EB 291+00 TO STA. EB 303+00	153	OC-0100	CATENARY LAYOUT PLAN - GLENRIDGE SHOP SHEET 3 OF 3
16	GI-9103	INDEX OF SHEETS - VOLUME 9 SHEET 3 OF 3	82	OC-0029	CATENARY LAYOUT PLAN 18 STA. EB 303+00 TO STA. EB 315+00	154	OC-0101	CONDUCTOR PARTICULARS AUTO-TENSIONED SIMPLE CATENARY
TRACTION POWER			83	OC-0030	CATENARY LAYOUT PLAN 19 STA. EB 315+00 TO STA. EB 327+00	155	OC-0102	CONDUCTOR PARTICULARS FIXED TERMINATION CATENARY
17	TP-0001	SINGLE LINE DIAGRAM - TYPICAL MAIN LINE 750 VDC TPSS	84	OC-0031	CATENARY LAYOUT PLAN 20 STA. EB 327+00 TO STA. EB 336+00	156	OC-0103	STRUCTURE SPACING CHART AUTO-TENSIONED CATENARY
18	TP-0002	SINGLE LINE DIAGRAM - MAIN LINE DOUBLE-ENDED TPSS, SHEET 1 OF 2	85	OC-0032	CATENARY LAYOUT PLAN 21 STA. EB 336+00 TO STA. EB 344+43	157	OC-0104	STRUCTURE SPACING CHART FIXED TENSION SINGLE CONTACT
19	TP-0003	SINGLE LINE DIAGRAM - MAIN LINE DOUBLE-ENDED TPSS, SHEET 2 OF 2	86	OC-0033	CATENARY LAYOUT PLAN 22 STA. EB 344+43 TO STA. EB 354+00	158	OC-0105	WIND, ICE AND RADIAL LOADS AUTO-TENSIONED CATENARY
20	TP-0004	SINGLE LINE DIAGRAM - TYPICAL YARD 750 VDC TPSS	87	OC-0034	CATENARY LAYOUT PLAN 23 STA. EB 354+00 TO STA. EB 364+00	159	OC-0106	WIND, ICE AND RADIAL LOADS SINGLE CONTACT WIRE
21	TP-0005	SINGLE LINE DIAGRAM - TYPICAL SHOP 750 VDC TPSS	88	OC-0035	CATENARY LAYOUT PLAN 24 STA. EB 364+00 TO STA. EB 372+00	160	OC-0107	ALONG TRACK MOVEMENT, STAGGER CHANGE & EFFECT, A/T CATENARY
22	TP-0006	EQUIPMENT LAYOUT - TYPICAL MAIN LINE 750 VDC TPSS	89	OC-0036	CATENARY LAYOUT PLAN 25 STA. EB 372+00 TO STA. EB 383+00	161	OC-0108	ERECTION TENSIONS AUTO-TENSIONED CATENARY
23	TP-0007	EQUIPMENT LAYOUT - TYPICAL MAIN LINE 750 VDC DOUBLE-ENDED TPSS	90	OC-0037	CATENARY LAYOUT PLAN 26 STA. EB 383+00 TO STA. EB 392+00	162	OC-0109	SAG AND ERECTION TENSIONS SINGLE CONTACT WIRE
24	TP-0008	EQUIPMENT LAYOUT - TYPICAL YARD 750 VDC TPSS	91	OC-0038	CATENARY LAYOUT PLAN 27 STA. EB 392+00 TO STA. EB 402+00	163	OC-0110	HANGER LENGTHS AND ADJUSTMENTS AUTO-TENSIONED CATENARY
25	TP-0009	EQUIPMENT LAYOUT - TYPICAL SHOP 750 VDC TPSS	92	OC-0039	CATENARY LAYOUT PLAN 28 STA. EB 402+00 TO STA. EB 408+50	164	OC-0111	HANGER LENGTHS AND ADJUSTMENTS LOW PROFILE CATENARY
26	TP-0010	GROUND GRID DESIGN TYPE 1 - TYPICAL MAIN LINE & YARD TPSS	93	OC-0040	CATENARY LAYOUT PLAN 29 STA. EB 408+50 TO STA. EB 417+00	165	OC-0112	PANTOGRAPH SECURITY AND MAXIMUM WIRE DISPLACEMENT
27	TP-0011	GROUND GRID DESIGN TYPE 2 - TYPICAL MAIN LINE & YARD TPSS	94	OC-0041	CATENARY LAYOUT PLAN 30 STA. EB 417+00 TO STA. EB 428+00	166	OC-0113	NESC CLEARANCE CHART
28	TP-0012	GROUNDING DESIGN - SHOP TPSS	95	OC-0042	CATENARY LAYOUT PLAN 31 STA. EB 428+00 TO STA. EB 436+00	167	OC-0114	TYPICAL ARRANGEMENT INSULATED OVERLAP WITH CENTER POLES
29	TP-0013	GROUNDING DETAILS	96	OC-0043	CATENARY LAYOUT PLAN 32 STA. EB 436+00 TO STA. EB 444+00	168	OC-0115	TYPICAL ARRANGEMENT INSULATED OVERLAP WITH SIDE POLES
30	TP-0020	DUCT BANK SECTIONS AND DETAILS - TYPICAL	97	OC-0044	CATENARY LAYOUT PLAN 33 STA. EB 444+00 TO STA. EB 449+00	169	OC-0116	TYPICAL ARRANGEMENT INSULATED OVERLAP WITH HEADSPANS
31	TP-0021	750 VDC DUCT BANK SECTIONS - TYPICAL DETAILS	98	OC-0045	CATENARY LAYOUT PLAN 34 STA. EB 449+00 TO STA. EB 461+50	170	OC-0117	TYPICAL ARRANGEMENT UN-INSULATED OVERLAP WITH CENTER POLES
32	TP-0022	13.2 KV DISTRIBUTION MANHOLES - TYPICAL DETAILS	99	OC-0046	CATENARY LAYOUT PLAN 35 STA. EB 461+50 TO STA. EB 472+50	171	OC-0118	TYPICAL ARRANGEMENT UN-INSULATED OVERLAP WITH SIDE POLES
33	TP-0024	750 VDC DISTRIBUTION MANHOLES - TYPICAL DETAILS	100	OC-0047	CATENARY LAYOUT PLAN 36 STA. EB 472+50 TO STA. EB 483+50	172	OC-0119	TYPICAL ARRANGEMENT UN-INSULATED OVERLAP WITH HEADSPANS
34	TP-0025	FOUNDATION PLAN TYPICAL MAIN LINE & YARD TPSS	101	OC-0048	CATENARY LAYOUT PLAN 37 STA. EB 483+50 TO STA. EB 494+50	173	OC-0120	TYPICAL ARRANGEMENT MID-POINT ANCHOR W/CENTER OR SIDE POLES
35	TP-0026	FOUNDATION PLAN TYPICAL DOUBLE-ENDED TPSS	102	OC-0049	CATENARY LAYOUT PLAN 38 STA. EB 494+50 TO STA. EB 505+50	174	OC-0121	TYPICAL ARRANGEMENT (ATSC) SINGLE CROSSOVER WITH SIDE POLES
36	TP-0027	FOUNDATION DETAILS	103	OC-0050	CATENARY LAYOUT PLAN 39 STA. EB 505+50 TO STA. EB 516+50	175	OC-0122	TYPICAL ARRANGEMENT DOUBLE CROSSOVER WITH SIDE POLES
37	TP-0028	SCADA SYSTEM BLOCK DIAGRAM - TYPICAL TPSS	104	OC-0051	CATENARY LAYOUT PLAN 40 STA. EB 516+50 TO STA. EB 528+00	176	OC-0123	TYPICAL CANTILEVER ARRANGEMENT W/CENTER OR SIDE POLES
38	TP-0029	SCADA SYSTEM POINTS LIST - TYPICAL TPSS	105	OC-0052	CATENARY LAYOUT PLAN 41 STA. EB 528+00 TO STA. EB 539+50	177	OC-0124	TYPICAL CANTILEVER OVERLAP ARRANGEMENT W/CENTER OR SIDE POLES
39	TP-0030	TRACTION POWER NEGATIVE RETURN FOR BALLASTED TRACK - TYPICAL	106	OC-0053	CATENARY LAYOUT PLAN 42 STA. EB 539+50 TO STA. EB 551+50	178	OC-0125	TYPICAL CANTILEVER ARRANGEMENTS SHEET 1 OF 3
40	TP-0031	TRACTION POWER NEGATIVE RETURN FOR EMBEDDED TRACK - TYPICAL	107	OC-0054	CATENARY LAYOUT PLAN 43 STA. EB 551+50 TO STA. EB 563+50	179	OC-0126	TYPICAL CANTILEVER ARRANGEMENTS SHEET 2 OF 3
41	TP-0040	SHOP 750 VDC POWER - TYPICAL CABLE REEL CONTROL CIRCUIT	108	OC-0055	CATENARY LAYOUT PLAN 44 STA. EB 563+50 TO STA. EB 575+00	180	OC-0127	TYPICAL CANTILEVER ARRANGEMENTS SHEET 3 OF 3
42	TP-0041	SHOP 750 VDC POWER - TYPICAL SHOP ETS CONTROL CIRCUIT	109	OC-0056	CATENARY LAYOUT PLAN 45 STA. EB 575+00 TO STA. EB 586+50	181	OC-0128	TYPICAL BWA ASSEMBLY EXTERNAL
43	TP-0042	SHOP 750 VDC POWER - CONTROL CIRCUIT FOR TRACK 3W & 3E	110	OC-0057	CATENARY LAYOUT PLAN 46 STA. EB 586+50 TO STA. EB 598+00	182	OC-0129	TYPICAL BWA ASSEMBLY INTERNAL
44	TP-0043	SHOP 750 VDC POWER - CONTROL CIRCUIT FOR TRACK 4W & 4E	111	OC-0058	CATENARY LAYOUT PLAN 47 STA. EB 598+00 TO STA. EB 604+00	183	OC-0130	TYPICAL HEADSPAN ARRANGEMENTS SHEET 1 OF 2
45	TP-0044	SHOP 750 VDC POWER - CONTROL CIRCUIT FOR TRACK 5W & 5E	112	OC-0059	CATENARY LAYOUT PLAN 48 STA. EB 604+00 TO STA. EB 611+50	184	OC-0131	TYPICAL HEADSPAN ARRANGEMENTS SHEET 2 OF 2
46	TP-0045	SHOP 750 VDC POWER - CONTROL CIRCUIT FOR TRACK 6W & 6E	113	OC-0060	CATENARY LAYOUT PLAN 49 STA. EB 611+50 TO STA. EB 622+50	185	OC-0132	DISCONNECT SWITCH
47	TP-0046	SHOP 750 VDC POWER - CONTROL CIRCUIT FOR TRACK 7W	114	OC-0061	CATENARY LAYOUT PLAN 50 STA. EB 622+50 TO STA. EB 634+00	186	OC-0133	TYPICAL FEEDER / DISCONNECT SWITCH DETAILS
48	TP-0047	SHOP 750 VDC POWER - CONTROL CIRCUIT FOR TRACK 8 IN MDW	115	OC-0062	CATENARY LAYOUT PLAN 51 STA. EB 634+00 TO STA. EB 643+00	187	OC-0134	SINGLE FEEDING ARRANGEMENT DETAILS
49	TP-0048	SHOP 750 VDC POWER - CONTROL CIRCUIT FOR TEST PANEL IN PANTO SHOP	116	OC-0063	CATENARY LAYOUT PLAN 52 STA. EB 643+00 TO STA. EB 653+50	188	OC-0135	OCS SUPPORT ASSEMBLIES TUNNEL
50	TP-0049	GLENRIDGE SHOP 750 VDC DISTRIBUTION SECTIONALIZING PLAN	117	OC-0064	CATENARY LAYOUT PLAN 53 STA. EB 653+50 TO STA. EB 664+50	189	OC-0136	TYPICAL SSTC HEADSPAN ARRANGEMENTS
51	TP-0050	CABLE SCHEDULE - MAIN LINE TPSS, SHEET 1 OF 2	118	OC-0065	CATENARY LAYOUT PLAN 54 STA. EB 664+50 TO STA. EB 676+00	190	OC-0137	OCS SUPPORT ASSEMBLY ELASTIC BRIDGE SUPPORT
52	TP-0051	CABLE SCHEDULE - MAIN LINE TPSS, SHEET 2 OF 2	119	OC-0066	CATENARY LAYOUT PLAN 55 STA. EB 676+00 TO STA. EB 687+00	191	OC-0138	SHOP OCS ASSEMBLY DETAILS
53	TP-0052	CABLE SCHEDULE - YARD & SHOP TPSS	120	OC-0067	CATENARY LAYOUT PLAN 56 STA. EB 687+00 TO STA. EB 696+00	192	OC-0139	DOOR BRIDGE ARRANGEMENT
OVERHEAD CONTACT SYSTEM			121	OC-0068	CATENARY LAYOUT PLAN 57 STA. EB 696+00 TO STA. EB 705+50	193	OC-0140	DOWN GUY DETAILS
54	OC-0001	MASTER OVERLAP PLAN SHEET 1 OF 6	122	OC-0069	CATENARY LAYOUT PLAN 58 STA. EB 705+50 TO STA. EB 715+50	194	OC-0141	OCS SUPPORT ASSEMBLY PLAN AND PROFILE AT CSX OVERHEAD BRIDGE
55	OC-0002	MASTER OVERLAP PLAN SHEET 2 OF 6	123	OC-0070	CATENARY LAYOUT PLAN 59 STA. EB 715+50 TO STA. EB 726+50	195	OC-0142	POLE SIGNS
56	OC-0003	MASTER OVERLAP PLAN SHEET 3 OF 6	124	OC-0071	CATENARY LAYOUT PLAN 60 STA. EB 726+50 TO STA. EB 737+50	196	OC-0143	MID POINT ANCHOR DETAILS
57	OC-0004	MASTER OVERLAP PLAN SHEET 4 OF 6	125	OC-0072	CATENARY LAYOUT PLAN 61 STA. EB 737+50 TO STA. EB 747+50	197	OC-0144	SECTION INSULATOR DETAILS
58	OC-0005	MASTER OVERLAP PLAN SHEET 5 OF 6	126	OC-0073	CATENARY LAYOUT PLAN 62 STA. EB 747+50 TO STA. EB 758+00	198	OC-0200	TUBULAR POLE ASSEMBLY
59	OC-0006	MASTER OVERLAP PLAN SHEET 6 OF 6	127	OC-0074	CATENARY LAYOUT PLAN 63 STA. EB 758+00 TO STA. EB 769+00	199	OC-0201	TUBULAR FEEDER POLE ASSEMBLY
60	OC-0007	SECTIONALIZING PLAN SHEET 1 OF 3	128	OC-0075	CATENARY LAYOUT PLAN 64 STA. EB 769+00 TO STA. EB 779+00	200	OC-0202	TYPICAL WIDE FLANGE POLE ASSEMBLY
61	OC-0008	SECTIONALIZING PLAN SHEET 2 OF 3	129	OC-0076	CATENARY LAYOUT PLAN 65 STA. EB 779+00 TO STA. EB 788+00	201	OC-0203	REINFORCED WIDE FLANGE POLE ASSEMBLY
62	OC-0009	SECTIONALIZING PLAN SHEET 3 OF 3	130	OC-0077	CATENARY LAYOUT PLAN 66 STA. EB 788+00 TO STA. EB 797+00	202	OC-0204	INTERNAL BALANCE WEIGHT POLE DETAILS
63	OC-0010	SECTIONALIZING PLAN LYTTONSVILLE YARD	131	OC-0078	CATENARY LAYOUT PLAN 67 STA. EB 797+00 TO STA. EB 807+00	203	OC-0205	F1 - SHAFT FOUNDATION
64	OC-0011	SECTIONALIZING PLAN GLENRIDGE YARD	132	OC-0079	CATENARY LAYOUT PLAN 68 STA. EB 807+00 TO STA. EB 818+00	204	OC-0206	F2 & F3 - SHAFT FOUNDATIONS
65	OC-0012	CATENARY LAYOUT PLAN 1 STA. EB 100+00 TO STA. EB 111+00	133	OC-0080	CATENARY LAYOUT PLAN 69 STA. EB 818+00 TO STA. EB 828+00	205	OC-0207	STRUCTURAL ANCHORAGE ON BRIDGE DECK
66	OC-0013	CATENARY LAYOUT PLAN 2 STA. EB 111+00 TO STA. EB 123+00	134	OC-0081	CATENARY LAYOUT PLAN 70 STA. EB 828+00 TO STA. EB 837+00	206	OC-0208	GF-1 GUY FOUNDATION (TYPICAL)
			135	OC-0082	CATENARY LAYOUT PLAN 71 STA. EB 837+00 TO STA. EB 846+50	207	OC-0209	TYPICAL ARRANGEMENT DROP TUBE SUPPORT
			136	OC-0083	CATENARY LAYOUT PLAN 72 STA. EB 846+50 TO STA. EB 857+00			
			137	OC-0084	CATENARY LAYOUT PLAN 73 STA. EB 857+00 TO STA. EB 867+00			
			138	OC-0085	CATENARY LAYOUT PLAN 74 STA. EB 867+00 TO STA. EB 877+00			
<div>MARYLAND DEPARTMENT OF TRANSPORTATION</div>								

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TRAIN CONTROL / SIGNALING						TRAIN CONTROL / SIGNALING (CONTINUED)						COMMUNICATIONS (CONTINUED)					
208	SG-0004	DOUBLE LINE TRACK PLAN STA. 100+00 TO STA. 113+70.44	280	SG-0076	BAR SIGNAL CROSSING WARNING TYPICAL TRAFFIC ROW	349	CM-0491	GLENRIDGE YARD & SHOP FACILITY FIRST FLOOR PLAN									
209	SG-0005	DOUBLE LINE TRACK PLAN STA. 113+70.44 TO STA. 127+00	281	SG-0077	VITAL PROCESSOR BLOCK DIAGRAM	350	CM-0492	GLENRIDGE YARD & SHOP FACILITY SECOND FLOOR PLAN									
210	SG-0006	DOUBLE LINE TRACK PLAN STA. 127+00 TO STA. 147+00	282	SG-0079	TYPICAL TRAIN CONTROL ROOM LAYOUT	351	CM-0493	GLENRIDGE YARD & SHOP FACILITY THIRD FLOOR PLAN									
211	SG-0007	DOUBLE LINE TRACK PLAN STA. 147+00 TO STA. 159+00	283	SG-0080	TYPICAL BUNGALOW LAYOUT	352	CM-0500	ANNAPOLIS ROAD COMMUNICATION SIDE PLATFORM PLAN									
212	SG-0008	DOUBLE LINE TRACK PLAN STA. 159+00 TO STA. 172+50	284	SG-0081	TYPICAL CASE LAYOUT	353	CM-0510	NEW CARROLLTON STATION COMMUNICATION CENTER PLATFORM PLAN									
213	SG-0009	DOUBLE LINE TRACK PLAN STA. 172+50 TO STA. 187+00	285	SG-0082	TYPICAL SWITCH LAYOUT BALLAST AND DF	354	CM-0600	TYPICAL CIH LAYOUT									
214	SG-0010	DOUBLE LINE TRACK PLAN STA. 187+00 TO STA. 202+00	286	SG-0083	TYPICAL SWITCH LAYOUT EMBEDDED	355	CM-0601	TYPICAL TRAIN CONTROL ROOM LAYOUT									
215	SG-0011	DOUBLE LINE TRACK PLAN STA. 202+00 TO STA. 219+00	287	SG-0084	TYPICAL SIGNAL LYOUT POLE MOUNTED	356	CM-0602	EQUIPMENT LAYOUT TYPICAL MAIN LINE 750 VDC TPSS									
216	SG-0012	DOUBLE LINE TRACK PLAN STA. 219+00 TO STA. 231+00	288	SG-0085	TYPICAL SIGNAL LAYOUT TUNNEL MOUNTED	357	CM-0603	EQUIPMENT LAYOUT TYPICAL MAIN LINE 750 VDC DOUBLE-ENDED TPSS									
217	SG-0013	DOUBLE LINE TRACK PLAN STA. 231+00 TO STA. 247+50	289	SG-0086	TYPICAL CROSSING GATE LAYOUT	DUCT BANK											
218	SG-0014	DOUBLE LINE TRACK PLAN STA. 247+78 TO STA. 267+00	290	SG-0087	TYPICAL PEDESTRIAN FLASHER LAYOUT												
219	SG-0015	DOUBLE LINE TRACK PLAN STA. 267+00 TO STA. 279+00	291	SG-0088	TYPICAL BAR SIGNAL LAYOUT												
220	SG-0016	DOUBLE LINE TRACK PLAN STA. 279+00 TO STA. 291+00	COMMUNICATIONS														
221	SG-0017	DOUBLE LINE TRACK PLAN STA. 291+00 TO STA. 307+00															
222	SG-0018	DOUBLE LINE TRACK PLAN STA. 307+00 TO STA. 322+00															
223	SG-0019	DOUBLE LINE TRACK PLAN STA. 322+00 TO STA. 337+00	292	CM-0105	PURPLE LINE MDOT NETWORK BLOCK DIAGRAM	358	CM-1005	SYSTEM DUCT BANK DIAGRAM									
224	SG-0020	DOUBLE LINE TRACK PLAN STA. 337+00 TO STA. 344+43	293	CM-0106	PURPLE LINE SIGNAL NETWORK BLOCK DIAGRAM	359	CM-1010	TYPICAL SECTION DUCT BANK - SHEET 1 OF 2									
225	SG-0021	DOUBLE LINE TRACK PLAN STA. 344+43 TO STA. 354+00	294	CM-0107	PURPLE LINE COMMUNICATIONS NETWORK BLOCK DIAGRAM	360	CM-1011	TYPICAL SECTION DUCT BANK - SHEET 2 OF 2									
226	SG-0022	DOUBLE LINE TRACK PLAN STA. 354+00 TO STA. 364+00	295	CM-0120	SCADA BLOCK DIAGRAM	361	CM-1020	MANHOLE AND HANDHOLE DETAILS									
227	SG-0023	DOUBLE LINE TRACK PLAN STA. 364+00 TO STA. 383+00	296	CM-0130	TELEPHONE SYSTEM BLOCK DIAGRAM	362	CM-1101	DUCTBANK LAYOUT PLAN STA. EB 100+00 TO STA. EB 111+00									
228	SG-0024	DOUBLE LINE TRACK PLAN STA. 383+00 TO STA. 398+50	297	CM-0140	PA/ VMS BLOCK DIAGRAM	363	CM-1102	DUCTBANK LAYOUT PLAN STA. EB 111+00 TO STA. EB 123+00									
229	SG-0025	DOUBLE LINE TRACK PLAN STA. 398+50 TO STA. 410+00	298	CM-0150	CCTV SYSTEM BLOCK DIAGRAM	364	CM-1103	DUCTBANK LAYOUT PLAN STA. EB 123+00 TO STA. EB 135+00									
230	SG-0026	DOUBLE LINE TRACK PLAN STA. 410+00 TO STA. 426+00	299	CM-0160	INTRUSION ACCESS CONTROL BLOCK DIAGRAM	365	CM-1104	DUCTBANK LAYOUT PLAN STA. EB 135+00 TO STA. EB 147+00									
231	SG-0027	DOUBLE LINE TRACK PLAN STA. 426+00 TO STA. 442+00	300	CM-0170	FIRE ALARM BLOCK DIAGRAM	366	CM-1105	DUCTBANK LAYOUT PLAN STA. EB 147+00 TO STA. EB 159+00									
232	SG-0028	DOUBLE LINE TRACK PLAN STA. 442+00 TO STA. 456+00	301	CM-0200	RADIO SYSTEM BLOCK DIAGRAM	367	CM-1106	DUCTBANK LAYOUT PLAN STA. EB 159+00 TO STA. EB 171+00									
233	SG-0029	DOUBLE LINE TRACK PLAN STA. 456+00 TO STA. 470+00	302	CM-0201	RADIO SYSTEM ARCHITECTURE	368	CM-1107	DUCTBANK LAYOUT PLAN STA. EB 171+00 TO STA. EB 183+00									
234	SG-0030	DOUBLE LINE TRACK PLAN STA. 470+00 TO STA. 487+00	303	CM-0202	COMMUNICATIONS WIRELESS LAN ACCESS POINT DIAGRAMS	369	CM-1108	DUCTBANK LAYOUT PLAN STA. EB 183+00 TO STA. EB 195+00									
235	SG-0031	DOUBLE LINE TRACK PLAN STA. 487+00 TO STA. 502+00	304	CM-0211	STATION SIDE PLATFORM RISER DIAGRAM	370	CM-1109	DUCTBANK LAYOUT PLAN STA. EB 195+00 TO STA. EB 207+00									
236	SG-0032	DOUBLE LINE TRACK PLAN STA. 502+00 TO STA. 517+00	305	CM-0212	STATION - TYPICAL EQUIPMENT CONDUIT/ WIRE RISER DIAGRAM	371	CM-1110	DUCTBANK LAYOUT PLAN STA. EB 207+00 TO STA. EB 219+00									
237	SG-0033	DOUBLE LINE TRACK PLAN STA. 517+00 TO STA. 532+00	306	CM-0231	OCC DISPATCH ROOM DETAILS AND TYPICAL DRAWING	372	CM-1111	DUCTBANK LAYOUT PLAN STA. EB 219+00 TO STA. EB 231+00									
238	SG-0034	DOUBLE LINE TRACK PLAN STA. 517+00 TO STA. 547+00	307	CM-0250	TYPICAL STATION SIDE PLATFORM SINGLE CANOPY LOCAL CONDUIT	373	CM-1112	DUCTBANK LAYOUT PLAN STA. EB 231+00 TO STA. EB 243+00									
239	SG-0035	DOUBLE LINE TRACK PLAN STA. 547+00 TO STA. 563+00	308	CM-0251	TYPICAL STATION SIDE PLATFORM DOUBLE CANOPY LOCAL CONDUIT	374	CM-1113	DUCTBANK LAYOUT PLAN STA. EB 243+00 TO STA. EB 255+00									
240	SG-0036	DOUBLE LINE TRACK PLAN STA. 563+00 TO STA. 576+00	309	CM-0252	TYPICAL STATION CENTER PLATFORM SINGLE CANOPY LOCAL CONDUIT	375	CM-1114	DUCTBANK LAYOUT PLAN STA. EB 255+00 TO STA. EB 267+00									
241	SG-0037	DOUBLE LINE TRACK PLAN STA. 576+00 TO STA. 590+00	310	CM-0253	TYPICAL STATION CENTER PLATFORM DOUBLE CANOPY LOCAL CONDUIT	376	CM-1115	DUCTBANK LAYOUT PLAN STA. EB 267+00 TO STA. EB 279+00									
242	SG-0038	DOUBLE LINE TRACK PLAN STA. 590+00 TO STA. 606+00	311	CM-0300	BETHESDA STATION OVERALL PLAN	377	CM-1116	DUCTBANK LAYOUT PLAN STA. EB 279+00 TO STA. EB 291+00									
243	SG-0039	DOUBLE LINE TRACK PLAN STA. 606+00 TO STA. 621+00	312	CM-0301	BETHESDA STATION COMMUNICATION CENTER PLATFORM PLAN	378	CM-1117	DUCTBANK LAYOUT PLAN STA. EB 291+00 TO STA. EB 303+00									
244	SG-0040	DOUBLE LINE TRACK PLAN STA. 621+00 TO STA. 638+00	313	CM-0302	BETHESDA STATION CENTRAL CORE FLOOR PLAN	379	CM-1118	DUCTBANK LAYOUT PLAN STA. EB 303+00 TO STA. EB 315+00									
245	SG-0041	DOUBLE LINE TRACK PLAN STA. 638+00 TO STA. 651+00	314	CM-0306	CHEVY CHASE LAKE STATION COMMUNICATION SIDE PLATFORM PLAN	380	CM-1119	DUCTBANK LAYOUT PLAN STA. EB 315+00 TO STA. EB 327+00									
246	SG-0042	DOUBLE LINE TRACK PLAN STA. 651+00 TO STA. 666+00	315	CM-0307	CHEVY CHASE LAKE STATION COMMUNICATION SIDE PLAZA PLAN	381	CM-1120	DUCTBANK LAYOUT PLAN STA. EB 327+00 TO STA. EB 336+00									
247	SG-0043	DOUBLE LINE TRACK PLAN STA. 666+00 TO STA. 682+00	316	CM-0308	CHEVY CHASE LAKE STATION ENLARGED PLATFORM PLAN	382	CM-1121	DUCTBANK LAYOUT PLAN STA. EB 336+00 TO STA. EB 344+43									
248	SG-0044	DOUBLE LINE TRACK PLAN STA. 682+00 TO STA. 696+00	317	CM-0310	LYTTONSVILLE STATION COMMUNICATION CENTER PLATFORM PLAN	383	CM-1122	DUCTBANK LAYOUT PLAN STA. EB 344+43 TO STA. EB 354+00									
249	SG-0045	DOUBLE LINE TRACK PLAN STA. 696+00 TO STA. 714+00	318	CM-0315	LYTTONSVILLE YARD LEVEL PLAN	384	CM-1123	DUCTBANK LAYOUT PLAN STA. EB 354+00 TO STA. EB 364+00									
250	SG-0046	DOUBLE LINE TRACK PLAN STA. 714+00 TO STA. 730+00	319	CM-0316	LYTTONSVILLE DECK LEVEL PLAN	385	CM-1124	DUCTBANK LAYOUT PLAN STA. EB 364+00 TO STA. EB 372+00									
251	SG-0047	DOUBLE LINE TRACK PLAN STA. 730+00 TO STA. 744+00	320	CM-0317	LYTTONSVILLE YARD LEVEL FLOOR PLAN	386	CM-1125	DUCTBANK LAYOUT PLAN STA. EB 372+00 TO STA. EB 383+00									
252	SG-0048	DOUBLE LINE TRACK PLAN STA. 744+00 TO STA. 759+00	321	CM-0318	LYTTONSVILLE OFFICE FIRST FLOOR	387	CM-1126	DUCTBANK LAYOUT PLAN STA. EB 383+00 TO STA. EB 392+00									
253	SG-0049	DOUBLE LINE TRACK PLAN STA. 759+00 TO STA. 774+00	322	CM-0320	LYTTONSVILLE WASH BUILDING FLOOR PLAN	388	CM-1127	DUCTBANK LAYOUT PLAN STA. EB 392+00 TO STA. EB 402+00									
254	SG-0050	DOUBLE LINE TRACK PLAN STA. 774+00 TO STA. 791+00	323	CM-0331	WOODSIDE STATION COMMUNICATION SIDE PLATFORM PLAN	389	CM-1128	DUCTBANK LAYOUT PLAN STA. EB 402+00 TO STA. EB 408+00									
255	SG-0051	DOUBLE LINE TRACK PLAN STA. 791+00 TO STA. 804+00	324	CM-0341	SILVER SPRING TRANSIT CENTER COMMUNICATION CENTER PLATFORM LEVEL	390	CM-1129	DUCTBANK LAYOUT PLAN STA. EB 408+00 TO STA. EB 417+00									
256	SG-0052	DOUBLE LINE TRACK PLAN STA. 804+00 TO STA. 821+00	325	CM-0342	SILVER SPRING TRANSIT CENTER COMMUNICATION MEZZANINE LEVEL	391	CM-1130	DUCTBANK LAYOUT PLAN STA. EB 417+00 TO STA. EB 428+00									
257	SG-0053	DOUBLE LINE TRACK PLAN STA. 821+00 TO STA. 834+00	326	CM-0343	SILVER SPRING TRANSIT CENTER COMMUNICATION TRANSIT LEVEL 02 PLAN	392	CM-1131	DUCTBANK LAYOUT PLAN STA. EB 428+00 TO STA. EB 436+00									
258	SG-0054	DOUBLE LINE TRACK PLAN STA. 834+00 TO STA. 849+00	327	CM-0344	SILVER SPRING TRANSIT CENTER COMMUNICATION TRANSIT LEVEL 01 PLAN	393	CM-1132	DUCTBANK LAYOUT PLAN STA. EB 436+00 TO STA. EB 444+00									
259	SG-0055	DOUBLE LINE TRACK PLAN STA. 849+00 TO STA. 864+00	328	CM-0351	SILVER SPRING LIBRARY STATION COMMUNICATION SIDE PLATFORM PLAN	394	CM-1133	DUCTBANK LAYOUT PLAN STA. EB 444+00 TO STA. EB 449+00									
260	SG-0056	DOUBLE LINE TRACK PLAN STA. 864+00 TO STA. 879+00	329	CM-0360	DALE DRIVE STATION COMMUNICATION STATION SITE PLAN	395	CM-1134	DUCTBANK LAYOUT PLAN STA. EB 449+00 TO STA. EB 461+50									
261	SG-0057	DOUBLE LINE TRACK PLAN STA. 879+00 TO STA. 894+00	330	CM-0370	MANCHESTER PLACE STATION COMMUNICATION STATION SITE PLAN	396	CM-1135	DUCTBANK LAYOUT PLAN STA. EB 461+50 TO STA. EB 472+50									
262	SG-0058	DOUBLE LINE TRACK PLAN STA. 894+00 TO STA. 909+00	331	CM-0371	MANCHESTER PLACE STATION COMMUNIACTION SIDE PLATFORM PLAN	397	CM-1136	DUCTBANK LAYOUT PLAN STA. EB 472+50 TO STA. EB 483+50									
263	SG-0059	DOUBLE LINE TRACK PLAN STA. 909+00 TO STA. 926+00	332	CM-0372	MANCHESTER PLACE STATION COMMUNICATION ENLARGED PLANS	398	CM-1137	DUCTBANK LAYOUT PLAN STA. EB 483+50 TO STA. EB 494+50									
264	SG-0060	DOUBLE LINE TRACK PLAN STA. 926+00 TO STA. 940+00	333	CM-0373	MANCHESTER PLACE STATION MEZZANINE LEVEL	399	CM-1138	DUCTBANK LAYOUT PLAN STA. EB 494+50 TO STA. EB 505+50									
265	SG-0061	DOUBLE LINE TRACK PLAN STA. 940+00 TO STA. 954+00	334	CM-0376	PLYMOUTH TUNNEL COMMUNICATION SITE PLAN SHEET 1 OF 2	400	CM-1139	DUCTBANK LAYOUT PLAN STA. EB 505+50 TO STA. EB 516+50									
266	SG-0062	DOUBLE LINE TRACK PLAN STA. 954+00 TO STA. 963+14	335	CM-0377	PLYMOUTH TUNNEL COMMUNICATION SITE PLAN SHEET 2 OF 2	401	CM-1140	DUCTBANK LAYOUT PLAN STA. EB 516+50 TO STA. EB 528+00									
267	SG-0063	LYTTONSVILLE YARD TRACK PLAN SHEET-1 OF 2	336	CM-0380	LONG BRANCH STATION COMMUNICATION CENTER PLATFORM PLAN	402	CM-1141	DUCTBANK LAYOUT PLAN STA. EB 528+00 TO STA. EB 539+50									
268	SG-0064	LYTTONSVILLE YARD TRACK PLAN SHEET-2 OF 2	337	CM-0390	PINEY BRANCH ROAD STATION COMMUNICATION CENTER PLATFORM PLAN	403	CM-1142	DUCTBANK LAYOUT PLAN STA. EB 539+50 TO STA. EB 551+50									
269	SG-0065	WEST GLENRIDGE YARD TRACK PLAN SHEET-1 OF 2	338	CM-0400	TAKOMA/LANGLEY TRANSIT CENTER STATION COMM CENTER PLATFORM PLAN	404	CM-1143	DUCTBANK LAYOUT PLAN STA. EB 551+50 TO STA. EB 563+50									
270	SG-0066	EAST GLENRIDGE YARD TRACK PLAN SHEET-2 OF 2	339	CM-0410	RIGGS ROAD STATION COMMUNICATION CENTER PLATFORM PLAN	405	CM-1144	DUCTBANK LAYOUT PLAN STA. EB 563+50 TO STA. EB 575+00									
271	SG-0067	TYPICAL CABLE PLAN FOR SINGLE CROSSOVER INTERLOCKING	340	CM-0420	WEST CAMPUS STATION COMMUNICATION CENTER PLATFORM PLAN	406	CM-1145	DUCTBANK LAYOUT PLAN STA. EB 575+50 TO STA. EB 586+50									
272	SG-0068	TYPICAL CABLE PLAN FOR TAIL TRACK INTERLOCKING	341	CM-0431	CAMPUS CENTER STATION COMMUNICATION SIDE PLATFORM PLAN	407	CM-1146	DUCTBANK LAYOUT PLAN STA. EB 575+00 TO STA. EB 586+50									
273	SG-0069	TYPICAL CABLE PLAN FOR SCISSORS CROSSOVER INTERLOCKING	342	CM-0441	EAST CAMPUS STATION COMMUNICATION SIDE PLATFORM PLAN	408	CM-1147	DUCTBANK LAYOUT PLAN STA. EB 598+00 TO STA. EB 604+00									
274	SG-0070	TYPICAL ROUTE & ASPECT CHART FOR SINGLE CROSSOVER INTERLOCKING	343	CM-0450	COLLEGE PARK METRO STATION COMMUNICATION STATION SITE PLAN	409	CM-1148	DUCTBANK LAYOUT PLAN STA. EB 604+00 TO STA. EB 611+50									
275	SG-0071	TYPICAL ROUTE & ASPECT CHART FOR POCKET TRACK INTERLOCKING	344	CM-0460	M SQUARE STATION COMMUNICATION STATION SITE PLAN	410	CM-1149	DUCTBANK LAYOUT PLAN STA. EB 611+50 TO STA. EB 622+50									
276	SG-0072	TYPICAL ROUTE & ASPECT CHART FOR SCISSORS CROSSOVER INTERLOCKING	345	CM-0471	RIVERDALE PARK STATION COMMUNICATION SIDE PLAZA PLAN	411	CM-1150	DUCTBANK LAYOUT PLAN STA. EB 622+50 TO STA. EB 634+00									
277	SG-0073	DEDICATED RIGHT OF WAY GATE WARNING CROSSING	346	CM-0472	RIVERDALE PARK STATION COMMUNICATION SIDE PLATFORM PLAN	412	CM-1151	DUCTBANK LAYOUT PLAN STA. EB 634+00 TO STA. EB 643+50									
278	SG-0074	DEDICATED RIGHT OF WAY NON-GATE SIGNAL CROSSING WARNING	347	CM-0480	BEACON HEIGHTS STATION COMMUNICATION SIDE PLATFORM PLAN	413	CM-1152	DUCTBANK LAYOUT PLAN STA. EB 643+00 TO STA. EB 653+50									
279	SG-0075	DEDICATED RIGHT OF WAY GATE WARNING CROSSING	348	CM-0490	GLENRIDGE YARD & SHOP FACILITY COMMUNICATIONS SITE PLAN	414	CM-1153	DUCTBANK LAYOUT PLAN STA. EB 653+50 TO STA. EB 664+50									
						415	CM-1154	DUCTBANK LAYOUT PLAN STA. EB 664+50 TO STA. EB 676+00									
						416	CM-1155	DUCTBANK LAYOUT PLAN STA. EB 676+00 TO STA. EB 687+00									
						417	CM-1156	DUCTBANK LAYOUT PLAN STA. EB 687+50 TO STA. EB 696+00									

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418	CM-1157	DUCTBANK LAYOUT PLAN STA. EB 696+00 TO STA. EB 705+00															
419	CM-1158	DUCTBANK LAYOUT PLAN STA. EB 705+00 TO STA. EB 715+50															
420	CM-1159	DUCTBANK LAYOUT PLAN STA. EB 715+50 TO STA. EB 726+50															
421	CM-1160	DUCTBANK LAYOUT PLAN STA. EB 726+50 TO STA. EB 737+50															
422	CM-1161	DUCTBANK LAYOUT PLAN STA. EB 737+50 TO STA. EB 747+50															
423	CM-1162	DUCTBANK LAYOUT PLAN STA. EB 747+50 TO STA. EB 758+00															
424	CM-1163	DUCTBANK LAYOUT PLAN STA. EB 758+00 TO STA. EB 769+00															
425	CM-1164	DUCTBANK LAYOUT PLAN STA. EB 769+00 TO STA. EB 779+00															
426	CM-1165	DUCTBANK LAYOUT PLAN STA. EB 779+00 TO STA. EB 788+00															
427	CM-1166	DUCTBANK LAYOUT PLAN STA. EB 788+00 TO STA. EB 797+00															
428	CM-1167	DUCTBANK LAYOUT PLAN STA. EB 797+00 TO STA. EB 807+00															
429	CM-1168	DUCTBANK LAYOUT PLAN STA. EB 807+00 TO STA. EB 818+00															
430	CM-1169	DUCTBANK LAYOUT PLAN STA. EB 818+00 TO STA. EB 828+00															
431	CM-1170	DUCTBANK LAYOUT PLAN STA. EB 828+00 TO STA. EB 837+00															
432	CM-1171	DUCTBANK LAYOUT PLAN STA. EB 837+00 TO STA. EB 846+50															
433	CM-1172	DUCTBANK LAYOUT PLAN STA. EB 846+50 TO STA. EB 857+00															
434	CM-1173	DUCTBANK LAYOUT PLAN STA. EB 857+00 TO STA. EB 867+00															
435	CM-1174	DUCTBANK LAYOUT PLAN STA. EB 867+00 TO STA. EB 877+00															
436	CM-1175	DUCTBANK LAYOUT PLAN STA. EB 877+00 TO STA. EB 888+00															
437	CM-1176	DUCTBANK LAYOUT PLAN STA. EB 888+00 TO STA. EB 898+00															
438	CM-1177	DUCTBANK LAYOUT PLAN STA. EB 898+00 TO STA. EB 909+00															
439	CM-1178	DUCTBANK LAYOUT PLAN STA. EB 909+00 TO STA. EB 919+00															
440	CM-1179	DUCTBANK LAYOUT PLAN STA. EB 919+00 TO STA. EB 930+00															
441	CM-1180	DUCTBANK LAYOUT PLAN STA. EB 930+00 TO STA. EB 939+50															
442	CM-1181	DUCTBANK LAYOUT PLAN STA. EB 939+50 TO STA. EB 949+50															
443	CM-1182	DUCTBANK LAYOUT PLAN STA. EB 949+50 TO STA. EB 957+50															
444	CM-1183	DUCTBANK LAYOUT PLAN STA. EB 957+50 TO STA. EB 964+14															
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445	FC-0100	FARE COLLECTION - TVM LOCATIONS ON SIDE AND CENTER PLATFORMS															
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473	SC-0026	STRAY CURRENT CONTROL TESTING 1															
474	SC-0027	STRAY CURRENT CONTROL TESTING 2															
<div>MARYLAND DEPARTMENT OF TRANSPORTATION</div> <div><div><div> MARYLAND TRANSIT ADMINISTRATION</div><div></div></div></div>			<div></div>			<div>PROFESSIONAL CERTIFICATION</div> <div>I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland</div> <div><div>License No.</div><div>Expiration Date</div></div>			<div><i>DRAFT: Information shown is based on 30 percent preliminary engineering plans and may be subject to further revision pending refinements to the plans during the completion of the design phase. Any reliance upon any of these plans is made with full understanding of its draft status.</i></div>			<div><div>CHECK DRAWN DESIGN</div><div>PJK</div><div>EN</div><div>KCS</div><div>APPR</div></div>		<div>PRELIMINARY ENGINEERING PURPLE LINE LIGHT RAIL</div> <div>INDEX OF SHEETS – VOLUME 9 SHEET 3 OF 3</div> <div>DATE: DECEMBER 2013SCALE: NONE</div>		<div>CONTRACT NO. T-1042-0220</div> <div>DRAWING NO. GI-9103</div> <div>SHEET NO. 16 OF 474</div>	

FARE COLLECTION

445

FC-0100

FARE COLLECTION - TVM LOCATIONS ON SIDE AND CENTER PLATFORMS

446

FC-0106

FARE COLLECTION - TYPICAL EQUIPMENT INSTALLATION/MOUNTING REQUIRMENTS

447

FC-0107

FARE COLLECTION COMMUNICATION & POWER

CORROSION CONTROL

448

SC-0001

REINFORCEMENT BONDING FOR TRACK INVERTS 1

449

SC-0002

REINFORCEMENT BONDING FOR TRACK INVERTS 2

450

SC-0003

REINFORCEMENT BONDING FOR TRACK INVERTS 3

451

SC-0004

REINFORCEMENT BONDING FOR TRACK INVERTS 4

452

SC-0005

REINFORCEMENT BONDING FOR TRACK INVERTS 5

453

SC-0006

REINFORCEMENT BONDING FOR TRACK INVERTS 6

454

SC-0007

REINFORCEMENT BONDING FOR CAST-IN-PLACE RETAINING WALLS

455

SC-0008

STRAY CURRENT CONTROL MSE WALL

456

SC-0009

STRAY CURRENT CONTROL FOR MSE WINGWALL AND TRACK SLAB WITH RETAINING WALL

457

SC-0010

STRAY CURRENT CONTROL FOR SHEET PILE WALLS

458

SC-0011

REINFORCEMENT BONDING FOR SEGMENTAL BOX GIRDER

459

SC-0012

REINFORCEMENT BONDING FOR H-PILES

460

SC-0013

REINFORCEMENT BONDING FOR BRIDGES

461

SC-0014

STRAY CURRENT CONTROL FOR GREEN TRACK

462

SC-0015

STRAY CURRENT DETAILS 1

463

SC-0016

STRAY CURRENT DETAILS 2

464

SC-0017

STRAY CURRENT DETAILS 3

465

SC-0018

STRAY CURRENT DETAILS 4

466

SC-0019

STRAY CURRENT DETAILS 5

467

SC-0020

STRAY CURRENT DETAILS 6

468

SC-0021

STRAY CURRENT DETAILS 7

469

SC-0022

CATHODIC PROTECTION DETAILS 1

470

SC-0023

CATHODIC PROTECTION DETAILS 2

471

SC-0024

CATHODIC PROTECTION DETAILS 3

472

SC-0025

CATHODIC PROTECTION DETAILS 4

473

SC-0026

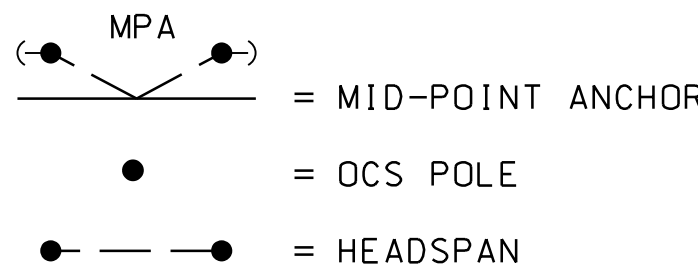
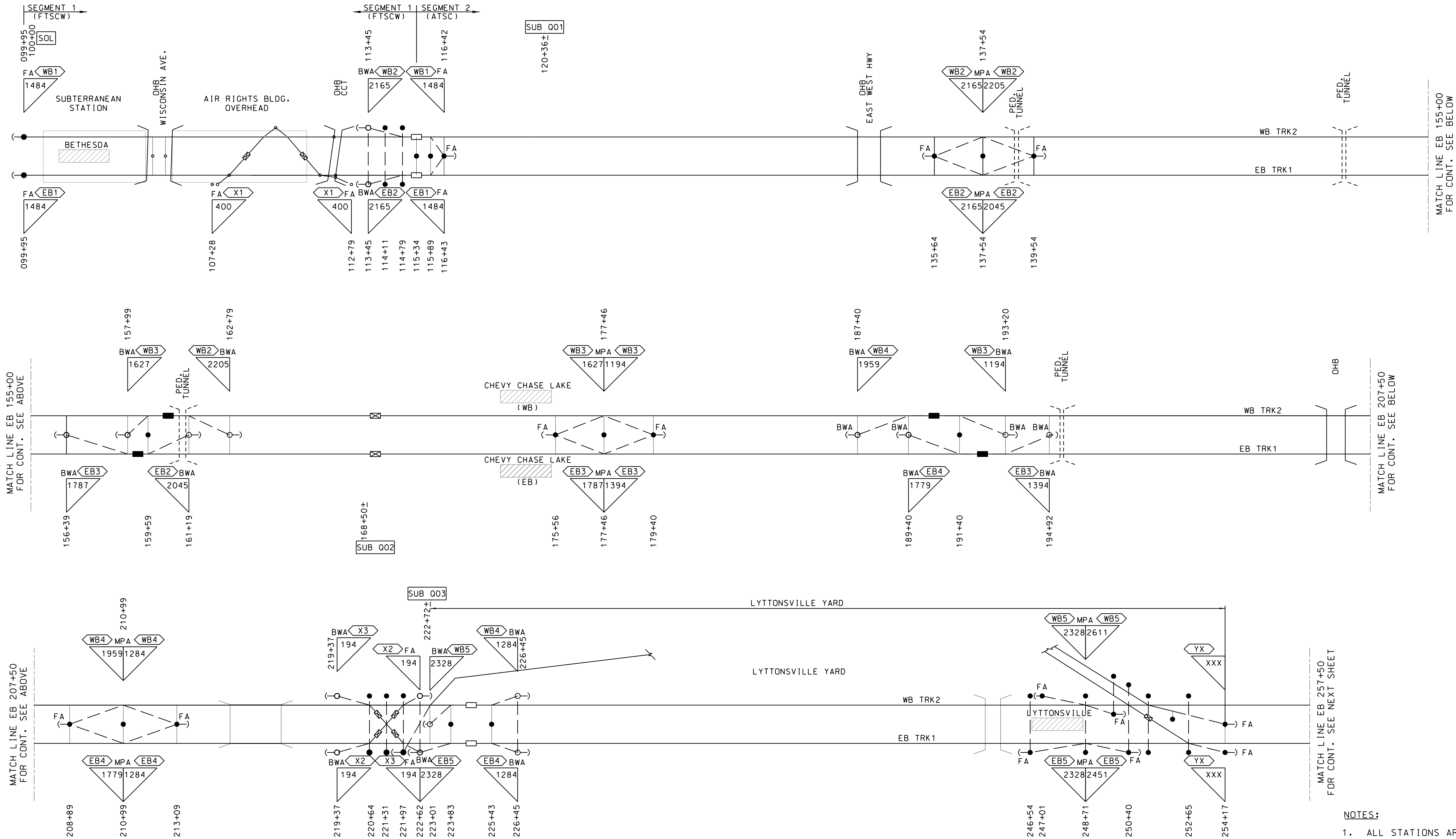
STRAY CURRENT CONTROL TESTING 1

474

SC-0027

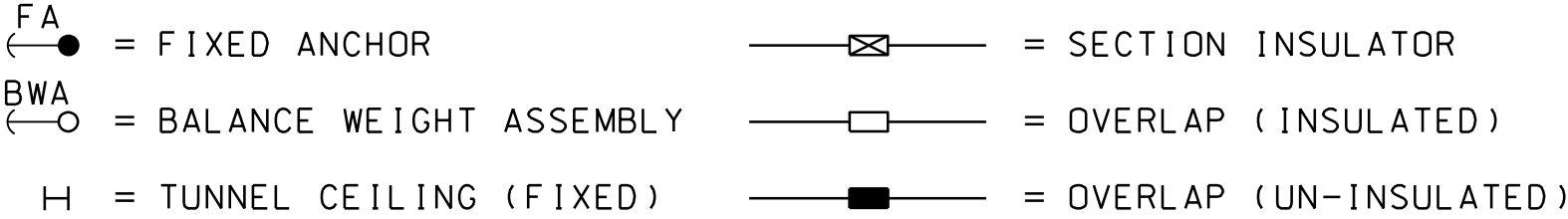
STRAY CURRENT CONTROL TESTING 2

pw:\00 - Current Projects\1042 - Purple Line Light Rail\131 CEC Master CADD Files\Submittals\002 - Preliminary Engineering\Volume 09\1042pG9103.dgn 11/18/2013



FTSCW = FIXED TERMINATION SINGLE CONTACT WIRE
ATSC = AUTO-TENSIONED SIMPLE CATENARY
ATSC-LP = AUTO-TENSIONED SIMPLE CATENARY, LOW PROFILE

LEGEND



- NOTES:
- ALL STATIONS ARE REFERENCED TO THE EASTBOUND CENTERLINE.
 - ALL TENSION LENGTHS ARE BASED ON LAST IN RUNNING REGISTRATION LOCATION.



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DESIGN MRW
PJK
JHM
APPR

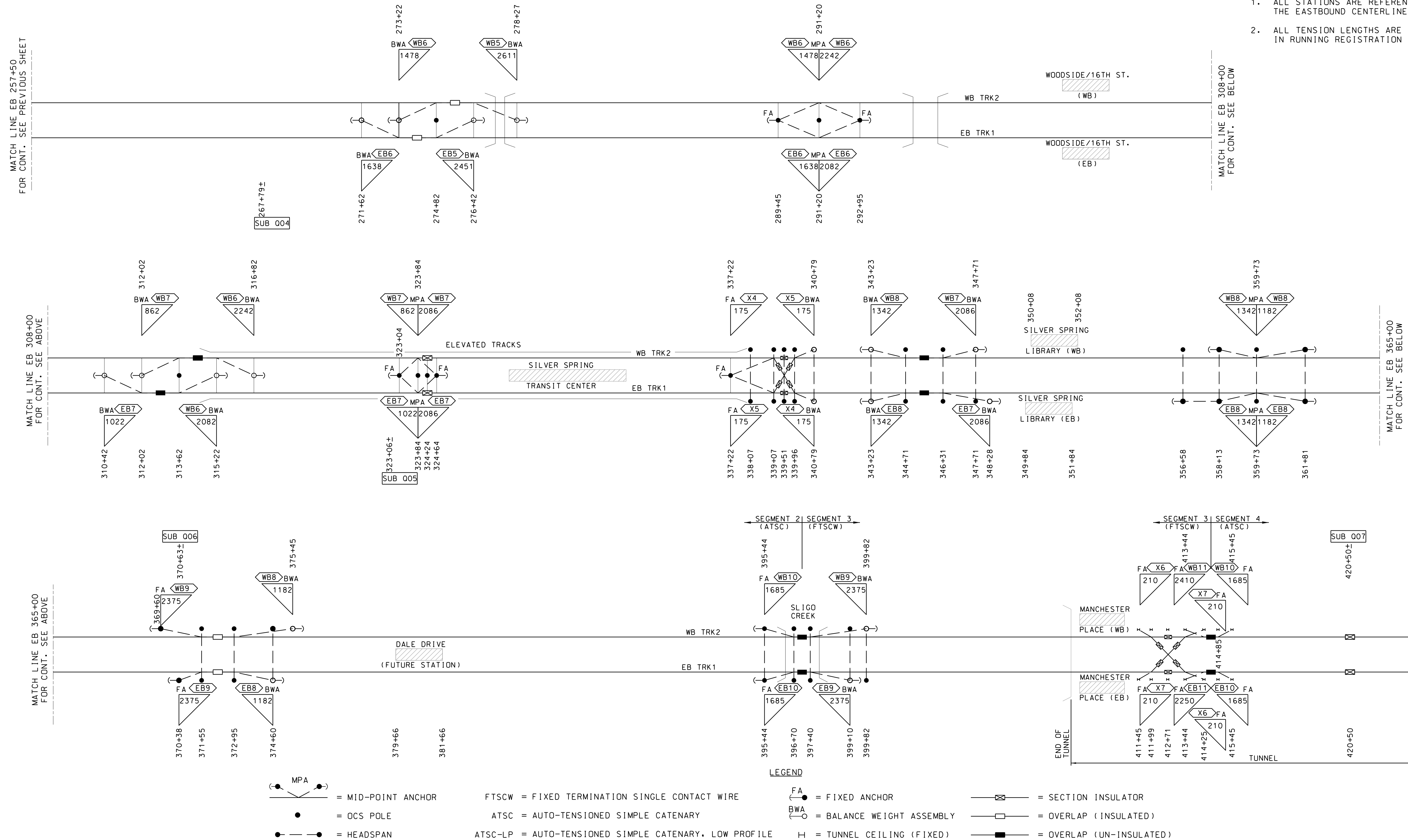
PRELIMINARY ENGINEERING
PURPLE LINE LIGHT RAIL

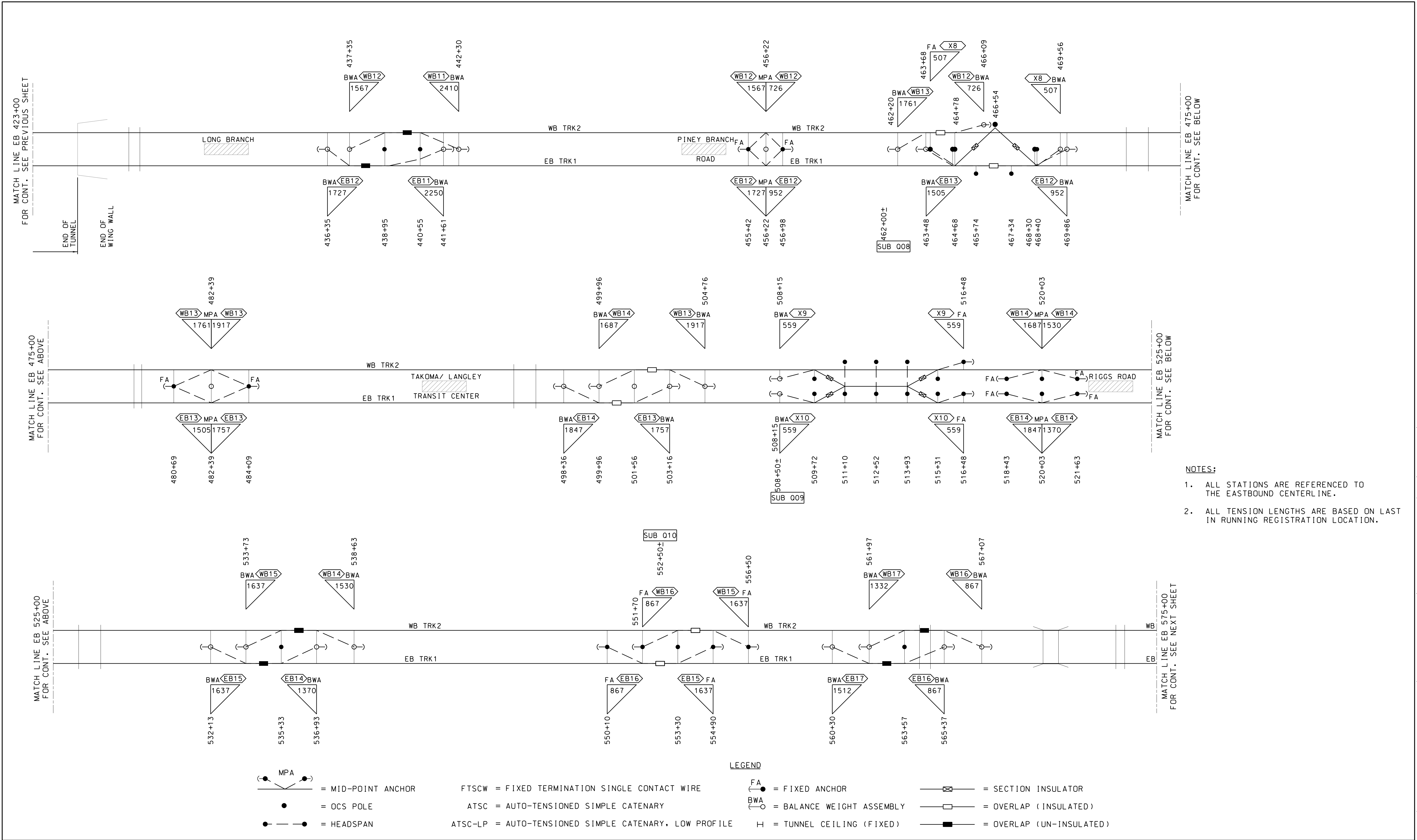
MASTER OVERLAP PLAN
SHEET 1 OF 6

DATE: DECEMBER 2013 SCALE: NTS

CONTRACT NO.
T-1042-0220
DRAWING NO.
OC-0001
SHEET NO.
54 OF 474

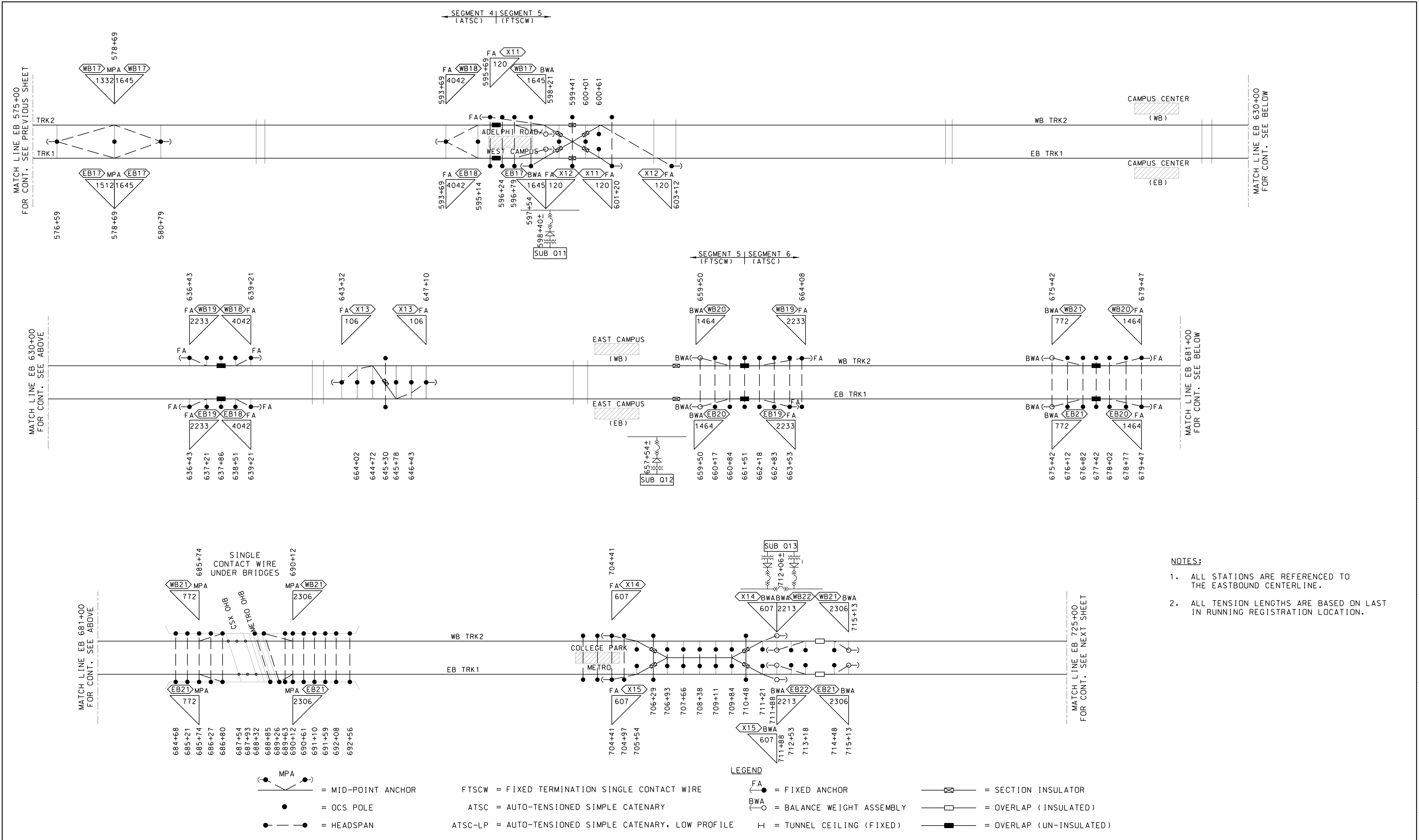
- NOTES:
1. ALL STATIONS ARE REFERENCED TO THE EASTBOUND CENTERLINE.
 2. ALL TENSION LENGTHS ARE BASED ON LAST IN RUNNING REGISTRATION LOCATION.

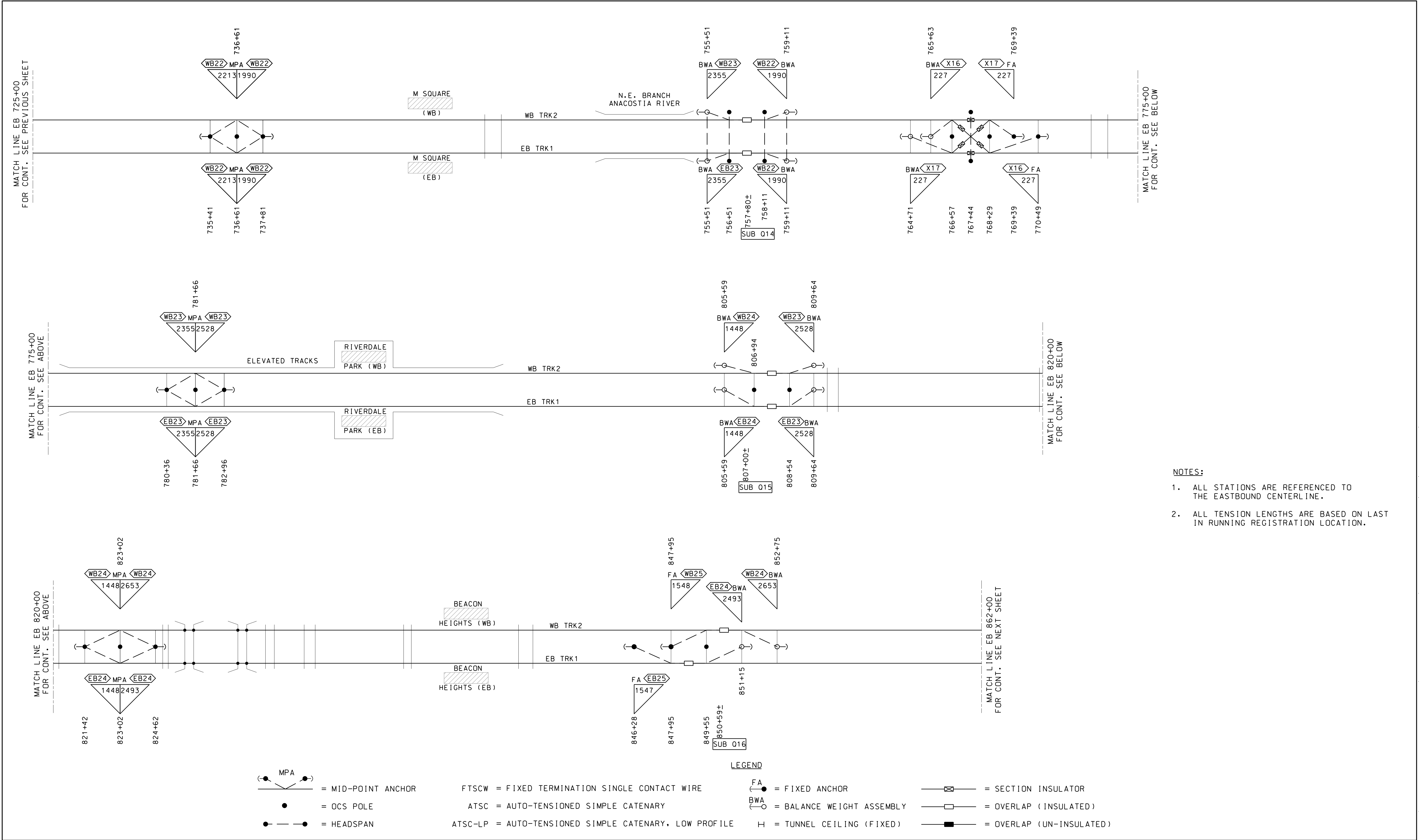




- NOTES:
1. ALL STATIONS ARE REFERENCED TO THE EASTBOUND CENTERLINE.
 2. ALL TENSION LENGTHS ARE BASED ON LAST IN RUNNING REGISTRATION LOCATION.

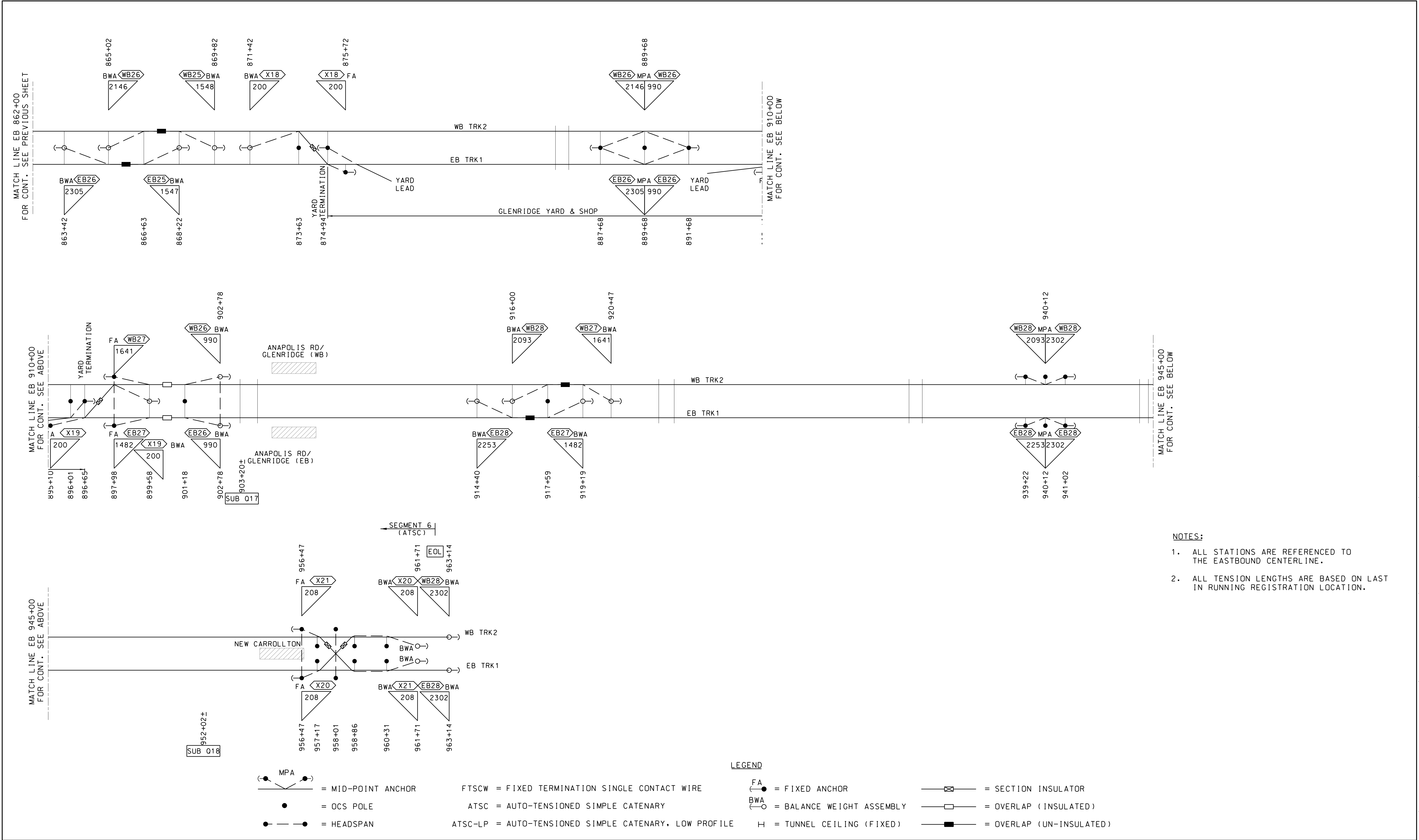
<div>MARYLAND DEPARTMENT OF TRANSPORTATION</div> <div>MARYLAND TRANSIT ADMINISTRATION</div> <div>MTA Maryland</div>	<div>Gannett Fleming</div> <div>WR&A</div>	<div>JACOBS</div>	<div>PROFESSIONAL CERTIFICATION</div> <div>I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland</div> <div>License No. Expiration Date</div>	<div>DRAFT: Information shown is based on 30 percent preliminary engineering plans and may be subject to further revision pending refinements to the plans during the completion of the design phase. Any reliance upon any of these plans is made with full understanding of its draft status.</div>	DESIGN	MRW	PRELIMINARY ENGINEERING PURPLE LINE LIGHT RAIL	CONTRACT NO. T-1042-0220
					CHECK	PJK		DRAWING
						DATE: DECEMBER 2013	SCALE: NTS	SHEET NO. 56 OF 474

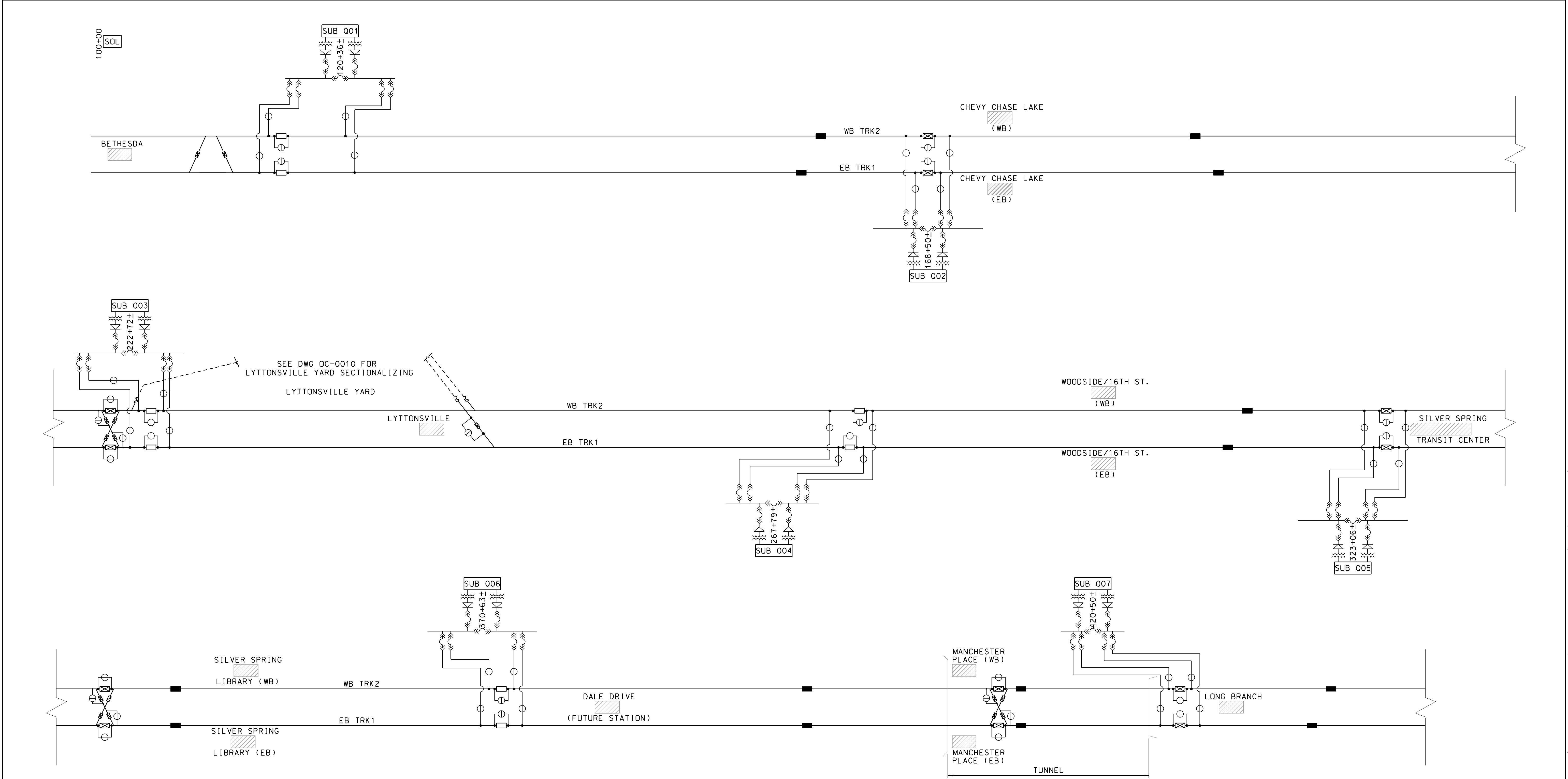




- NOTES:**
- 1. ALL STATIONS ARE REFERENCED TO THE EASTBOUND CENTERLINE.
 - 2. ALL TENSION LENGTHS ARE BASED ON LAST IN RUNNING REGISTRATION LOCATION.

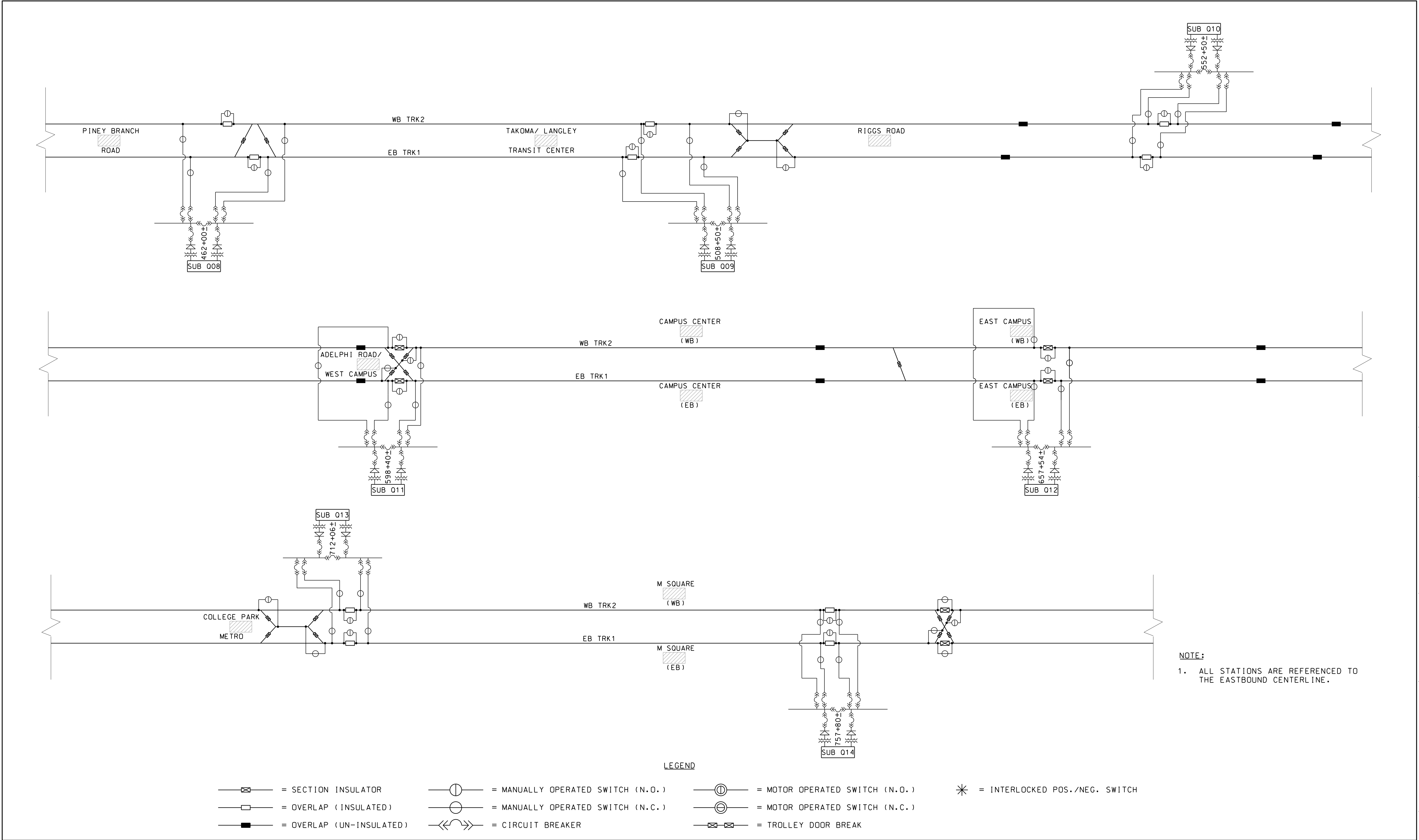
 MARYLAND DEPARTMENT OF TRANSPORTATION MARYLAND TRANSIT ADMINISTRATION 	 Gannett Fleming 	 JACOBS	PROFESSIONAL CERTIFICATION I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland. License No. Expiration Date	<i>DRAFT: Information shown is based on 30 percent preliminary engineering plans and may be subject to further revision pending refinements to the plans during the completion of the design phase. Any reliance upon any of these plans is made with full understanding of its draft status.</i>	APPR	CHECK	DRAWN	DESIGN	MRW	PRELIMINARY ENGINEERING PURPLE LINE LIGHT RAIL	CONTRACT NO. T-1042-0220
								PJK	DRAWING NO. OC-0005		
							JHM	SHEET NO. 58 OF 474			
										DATE: DECEMBER 2013	SCALE: NTS

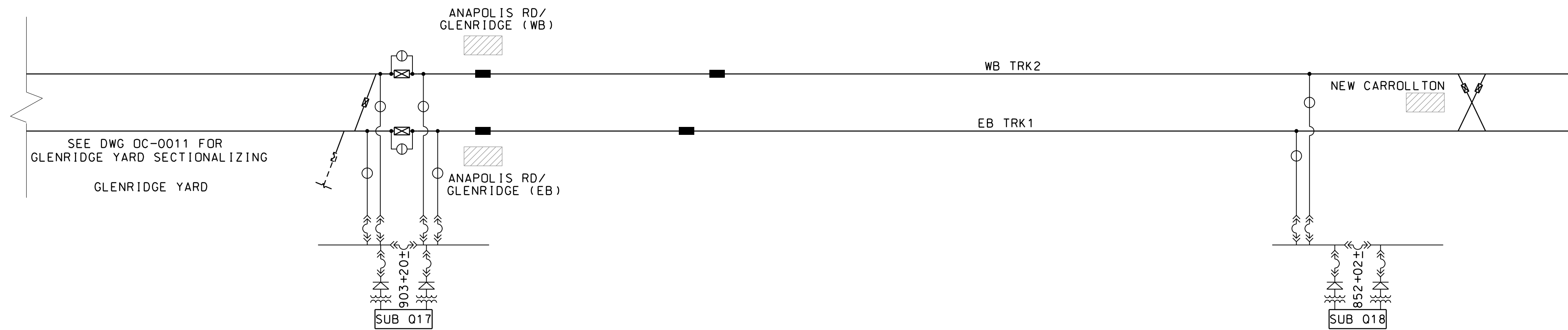
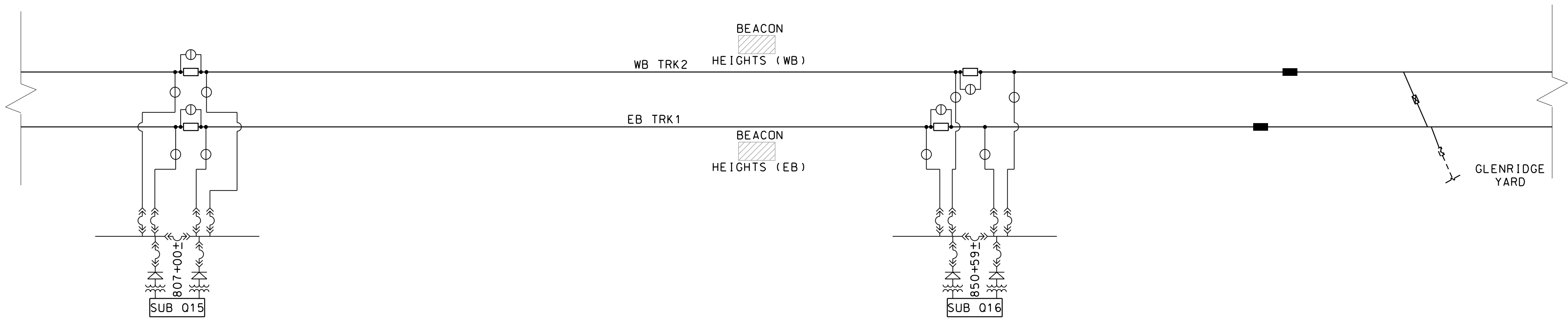




LEGEND

- | | | | |
|--------------------------------|---|--------------------------------------|----------------------------------|
| —[X]— = SECTION INSULATOR | —(⊖)— = MANUALLY OPERATED SWITCH (N.O.) | —(Ⓜ)— = MOTOR OPERATED SWITCH (N.O.) | * = INTERLOCKED POS./NEG. SWITCH |
| —[]— = OVERLAP (INSULATED) | —(⊕)— = MANUALLY OPERATED SWITCH (N.C.) | —(Ⓜ)— = MOTOR OPERATED SWITCH (N.C.) | |
| —[■]— = OVERLAP (UN-INSULATED) | —(⌞)⌞— = CIRCUIT BREAKER | —[X]— = TROLLEY DOOR BREAK | |





NOTE:
1. ALL STATIONS ARE REFERENCED TO THE EASTBOUND CENTERLINE.

LEGEND

- = SECTION INSULATOR

= OVERLAP (INSULATED)

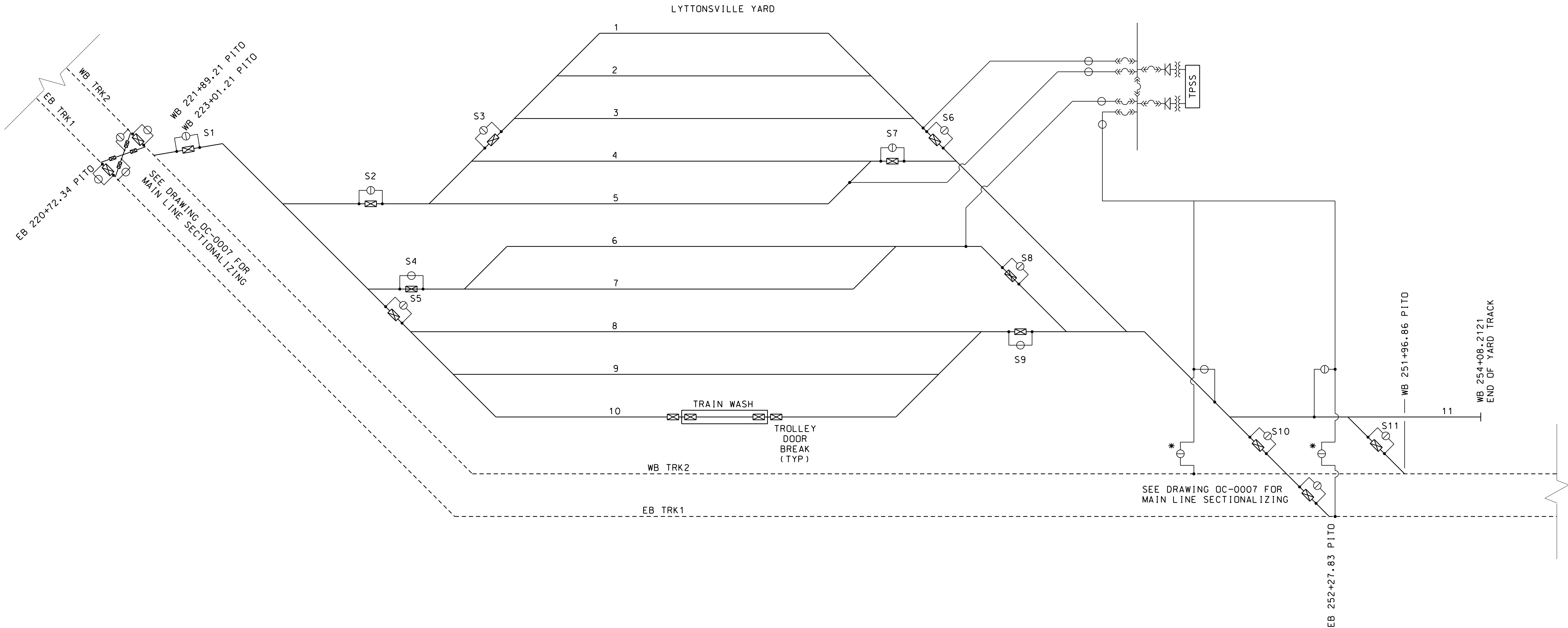
= OVERLAP (UN-INSULATED)
- = MANUALLY OPERATED SWITCH (N.O.)

= MANUALLY OPERATED SWITCH (N.C.)

= CIRCUIT BREAKER
- = MOTOR OPERATED SWITCH (N.O.)

= MOTOR OPERATED SWITCH (N.C.)

= TROLLEY DOOR BREAK
- = INTERLOCKED POS./NEG. SWITCH

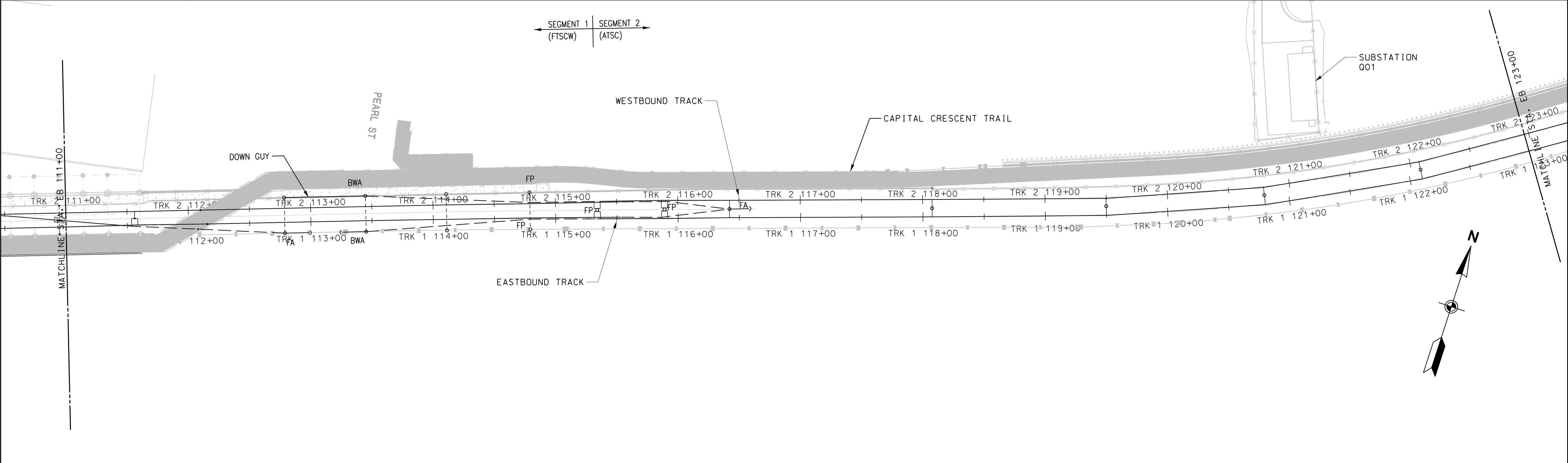


NOTE:

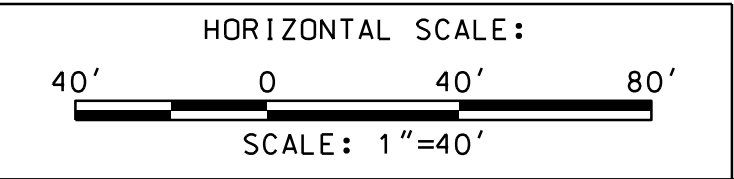
1. STATIONS ARE REFERENCED TO THE EB OR WB CENTERLINE AS NOTED.

- LEGEND
- | | | | |
|--------------------------|-----------------------------------|--------------------------------|--------------------------------|
| = SECTION INSULATOR | = MANUALLY OPERATED SWITCH (N.O.) | = MOTOR OPERATED SWITCH (N.O.) | = INTERLOCKED POS./NEG. SWITCH |
| = OVERLAP (INSULATED) | = MANUALLY OPERATED SWITCH (N.C.) | = MOTOR OPERATED SWITCH (N.C.) | |
| = OVERLAP (UN-INSULATED) | = CIRCUIT BREAKER | = TROLLEY DOOR BREAK | |

MISC. ASSEMBLIES	
MISC. ASSEMBLIES AND FEEDERS 2	
MISC. ASSEMBLIES AND FEEDERS 1	
JUMPERS	
HANGERS	
SUPPORT REGISTRATION REFERENCE	
DOWN GUY ASSEMBLY	
IN-SPAN ASSEMBLIES	
TERMINATION HEIGHT	
FOUNDATION REFERENCE	
POLE REFERENCE	
STAGGER	
MESSANGER WIRE HEIGHT	
TROLLEY WIRE HEIGHT	
FACE OF POLE TO CENTERLINE TRK	
STATIONING	
STRUCTURE NO.	



STRUCTURE NO.														
STATIONING	111+56	112+08	112+15	112+79	113+45	114+11	114+79	115+34	115+89	116+43	118+08	119+50	120+80	122+10
FACE OF POLE TO CENTERLINE TRK														
TROLLEY WIRE HEIGHT	15'-0"	15'-0"	15'-0"	15'-0"	15'-0"	15'-0"	15'-0"	15'-0"	15'-0"	15'-3"	15'-6"	16'-0"	16'-6"	17'-0"
MESSANGER WIRE HEIGHT	N/A	N/A	N/A	N/A	N/A	N/A	16'-6"	16'-6"	16'-6"	16'-9"	19'-0"	19'-6"	20'-0"	20'-6"
STAGGER														
POLE REFERENCE				TFP-	BW-	TP-	TFP-	TFP-	TFP-	TP-	TP-	TP-	TP-	TP-
FOUNDATION REFERENCE				F1-	F3-	F1-	F1-	F3-	F3-	F1-	F1-	F1-	F1-	F1-
TERMINATION HEIGHT														
IN-SPAN ASSEMBLIES														
DOWN GUY ASSEMBLY				DG-1	DG-1					DG-1				
SUPPORT REGISTRATION REFERENCE				HS-	HS-	HS-	CA-	CA-	CA-	CA-	CA-	CA-	CA-	CA-
HANGERS														
JUMPERS														
MISC. ASSEMBLIES AND FEEDERS 1														
MISC. ASSEMBLIES AND FEEDERS 2														
MISC. ASSEMBLIES				GF-1	GF-1									



MARYLAND DEPARTMENT OF TRANSPORTATION

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MTA

Maryland

Gannett Fleming

WR&A

JACOBS

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APPR

CHECK

DRAWN

DESIGN

MRW

PJK

JHM

PRELIMINARY ENGINEERING

PURPLE LINE LIGHT RAIL

CATENARY LAYOUT PLAN 2

STA. EB 111+00 TO STA. EB 123+00

DATE: DECEMBER 2013

SCALE: AS SHOWN

CONTRACT NO.

T-1042-0220

DRAWING NO.

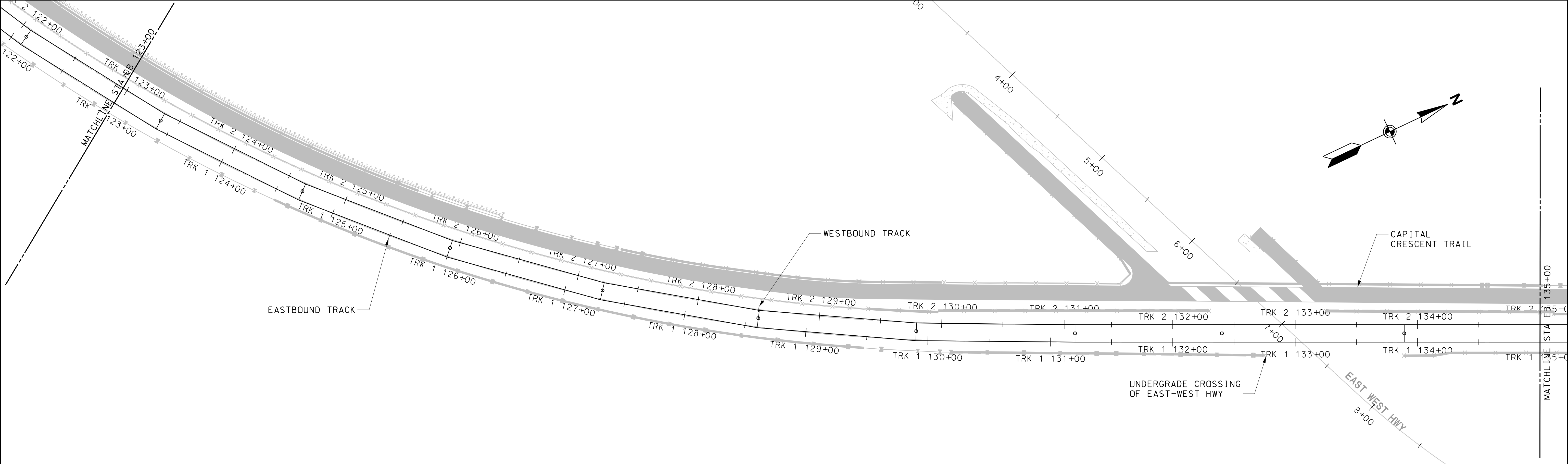
OC-0013

SHEET NO.

66 OF 474

pw:\00 - Current Projects\1042 - Purple Line Light Rail\130 GEC CADD Files\Zone 00-Project Wide\OCS\Sheet Files\1042pOC1031.dgn 12/13/2013

MISC. ASSEMBLIES	
MISC. ASSEMBLIES AND FEEDERS 2	
MISC. ASSEMBLIES AND FEEDERS 1	
JUMPERS	
HANGERS	
SUPPORT REGISTRATION REFERENCE	
DOWN GUY ASSEMBLY	
IN-SPAN ASSEMBLIES	
TERMINATION HEIGHT	
FOUNDATION REFERENCE	
POLE REFERENCE	
STAGGER	
MESSENGER WIRE HEIGHT	
TROLLEY WIRE HEIGHT	
FACE OF POLE TO CENTERLINE TRK	
STATIONING	
STRUCTURE NO.	



STRUCTURE NO.									
STATIONING	123+40	124+70	126+00	127+30	128+60	129+90	131+20	132+40	133+89
FACE OF POLE TO CENTERLINE TRK									
TROLLEY WIRE HEIGHT	17'-6"	18'-0"	18'-0"	18'-0"	18'-0"	18'-0"	18'-0"	18'-0"	18'-0"
MESSENGER WIRE HEIGHT	21'-0"	21'-6"	21'-6"	21'-6"	21'-6"	21'-6"	21'-6"	21'-6"	21'-6"
STAGGER									
POLE REFERENCE	TP-	TP-	TP-	TP-	TP-	TP-	TP-	TP-	TP-
FOUNDATION REFERENCE	F1-	F1-	F1-	F1-	F1-	F1-	F1-	F1-	F1-
TERMINATION HEIGHT									
IN-SPAN ASSEMBLIES									
DOWN GUY ASSEMBLY									
SUPPORT REGISTRATION REFERENCE									
HANGERS									
JUMPERS									
MISC. ASSEMBLIES AND FEEDERS 1									
MISC. ASSEMBLIES AND FEEDERS 2									
MISC. ASSEMBLIES									

HORIZONTAL SCALE:

40'

0

40'

80'

SCALE: 1"=40'

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APPR

CHECK

DRAWN

DESIGN

MRW

PJK

JHM

PRELIMINARY ENGINEERING

PURPLE LINE LIGHT RAIL

CATENARY LAYOUT PLAN 3

STA. EB 123+00 TO STA. EB 135+00

DATE: DECEMBER 2013

SCALE: AS SHOWN

CONTRACT NO.

T-1042-0220

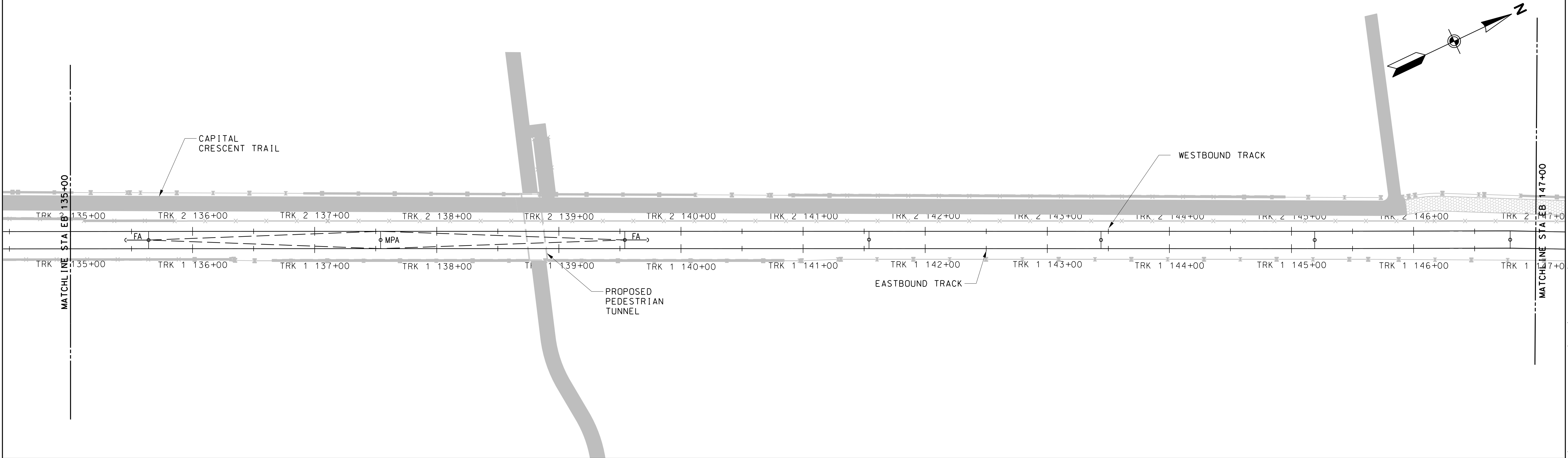
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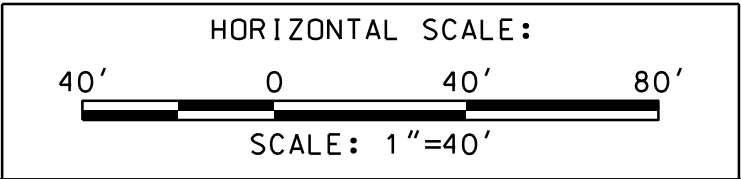
SHEET NO.

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MISC. ASSEMBLIES	
MISC. ASSEMBLIES AND FEEDERS 2	
MISC. ASSEMBLIES AND FEEDERS 1	
JUMPERS	
HANGERS	
SUPPORT REGISTRATION REFERENCE	
DOWN GUY ASSEMBLY	
IN-SPAN ASSEMBLIES	
TERMINATION HEIGHT	
FOUNDATION REFERENCE	
POLE REFERENCE	
STAGGER	
MESSENGER WIRE HEIGHT	
TROLLEY WIRE HEIGHT	
FACE OF POLE TO CENTERLINE TRK	
STATIONING	
STRUCTURE NO.	



STRUCTURE NO.							
STATIONING	135+64	137+54	139+54	141+54	143+44	145+19	146+79
FACE OF POLE TO CENTERLINE TRK							
TROLLEY WIRE HEIGHT	18'-0"	18'-0"	18'-0"	18'-0"	18'-0"	18'-0"	18'-0"
MESSENGER WIRE HEIGHT	22'-0"	22'-0"	22'-0"	22'-0"	22'-0"	21'-6"	21'-6"
STAGGER							
POLE REFERENCE	TP-	TP-	TP-	TP-	TP-	TP-	TP-
FOUNDATION REFERENCE	F1-	F1-	F1-	F1-	F1-	F1-	F1-
TERMINATION HEIGHT							
IN-SPAN ASSEMBLIES							
DOWN GUY ASSEMBLY	DG-1	DG-1					
SUPPORT REGISTRATION REFERENCE							
HANGERS							
JUMPERS							
MISC. ASSEMBLIES AND FEEDERS 1							
MISC. ASSEMBLIES AND FEEDERS 2							
MISC. ASSEMBLIES	GF-1	GF-1					



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APPR

CHECK

DRAWN

DESIGN

MRW

PJK

JHM

PRELIMINARY ENGINEERING
PURPLE LINE LIGHT RAIL

CATENARY LAYOUT PLAN 4
STA. EB 135+00 TO STA. EB 147+00
DATE: DECEMBER 2013 SCALE: AS SHOWN

CONTRACT NO.
T-1042-0220

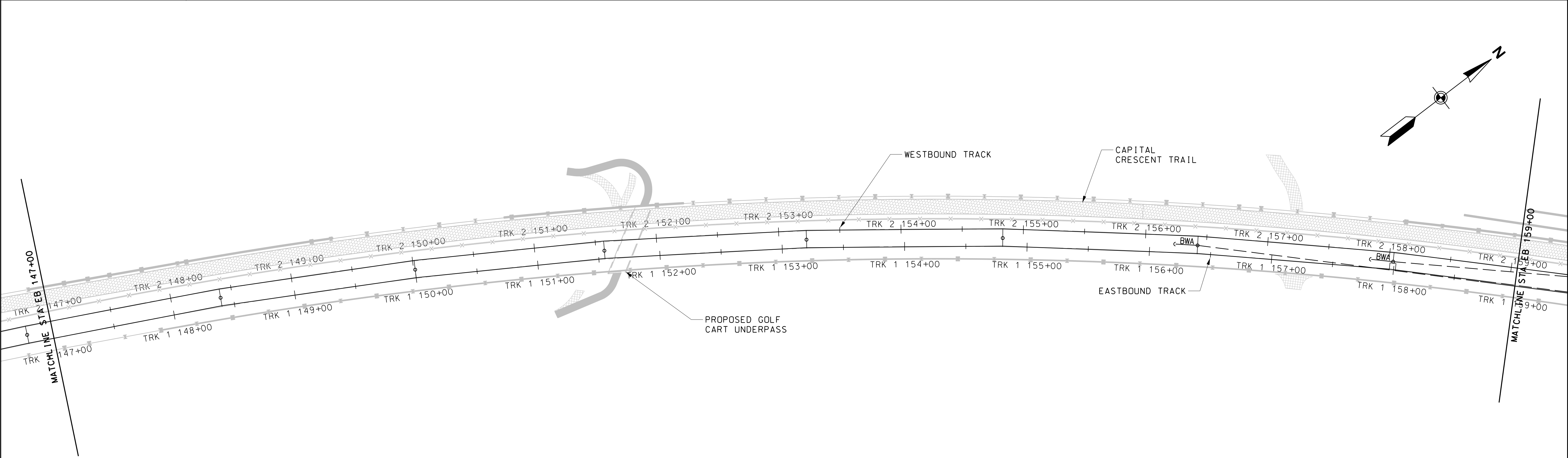
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OC-0015

SHEET NO.
68 OF 474

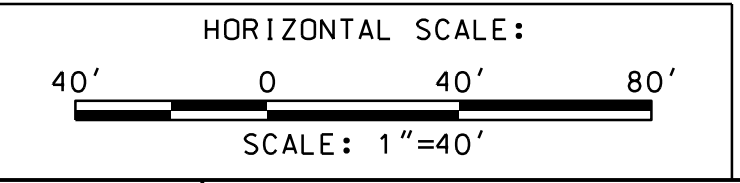
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12/13/2013

MISC. ASSEMBLIES	
MISC. ASSEMBLIES AND FEEDERS 2	
MISC. ASSEMBLIES AND FEEDERS 1	
JUMPERS	
HANGERS	
SUPPORT REGISTRATION REFERENCE	
DOWN GUY ASSEMBLY	
IN-SPAN ASSEMBLIES	
TERMINATION HEIGHT	
FOUNDATION REFERENCE	
POLE REFERENCE	
STAGGER	
MESSENGER WIRE HEIGHT	
TROLLEY WIRE HEIGHT	
FACE OF POLE TO CENTERLINE TRK	
STATIONING	
STRUCTURE NO.	



STRUCTURE NO.							
STATIONING	148+40	150+00	151+55	153+20	154+80	156+39	157+99
FACE OF POLE TO CENTERLINE TRK							
TROLLEY WIRE HEIGHT	18'-0"	18'-0"	18'-0"	18'-0"	18'-0"	18'-0"	18'-0"
MESSENGER WIRE HEIGHT	21'-6"	21'-6"	21'-6"	21'-6"	21'-6"	21'-6"	22'-0"
STAGGER							
POLE REFERENCE	TP-	TP-	TP-	TP-	TP-	TP-	TP-
FOUNDATION REFERENCE	F1-	F1-	F1-	F1-	F1-	F1-	F1-
TERMINATION HEIGHT							
IN-SPAN ASSEMBLIES							
DOWN GUY ASSEMBLY							
SUPPORT REGISTRATION REFERENCE							
HANGERS							
JUMPERS							
MISC. ASSEMBLIES AND FEEDERS 1							
MISC. ASSEMBLIES AND FEEDERS 2							
MISC. ASSEMBLIES							



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APPR

CHECK

DRAWN

DESIGN

MRW

PJK

JHM

PRELIMINARY ENGINEERING

PURPLE LINE LIGHT RAIL

CATENARY LAYOUT PLAN 5

STA. EB 147+00 TO STA. EB 159+00

DATE: DECEMBER 2013

SCALE: AS SHOWN

CONTRACT NO.

T-1042-0220

DRAWING NO.

OC-0016

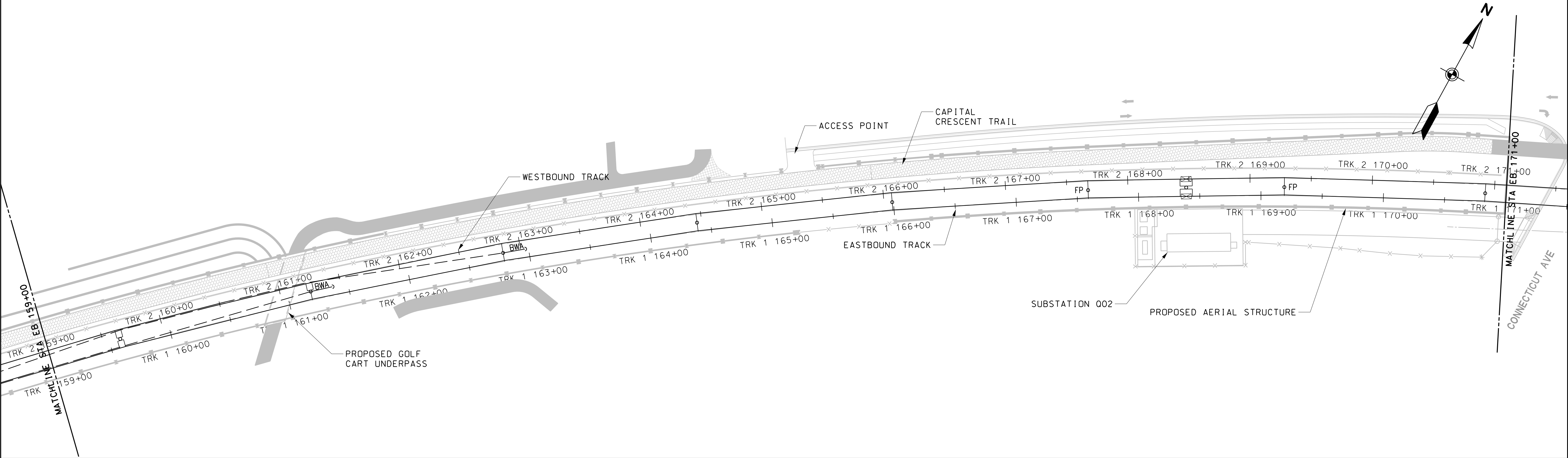
SHEET NO.

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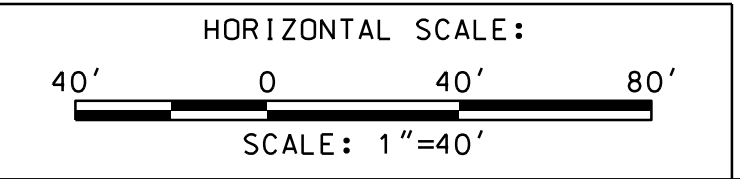
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12/13/2013

MISC. ASSEMBLIES	
MISC. ASSEMBLIES AND FEEDERS 2	
MISC. ASSEMBLIES AND FEEDERS 1	
JUMPERS	
HANGERS	
SUPPORT REGISTRATION REFERENCE	
DOWN GUY ASSEMBLY	
IN-SPAN ASSEMBLIES	
TERMINATION HEIGHT	
FOUNDATION REFERENCE	
POLE REFERENCE	
STAGGER	
MESSANGER WIRE HEIGHT	
TROLLEY WIRE HEIGHT	
FACE OF POLE TO CENTERLINE TRK	
STATIONING	
STRUCTURE NO.	



STRUCTURE NO.									
STATIONING	159+59	161+19	162+79	164+39	165+99	167+59	168+39	169+19	170+83
FACE OF POLE TO CENTERLINE TRK									
TROLLEY WIRE HEIGHT	18'-0"	18'-0"	18'-0"	18'-0"	18'-0"	18'-0"	18'-0"	18'-0"	18'-0"
MESSANGER WIRE HEIGHT	22'-0"	21'-6"	21'-6"	21'-6"	21'-6"	21'-6"	21'-6"	21'-6"	22'-0"
STAGGER									
POLE REFERENCE	TP-	TP-	TP-	TP-	TP-	TFP-	TP-	TFP-	TP-
FOUNDATION REFERENCE	F1-	F1-	F1-	F1-	F1-	F3-	F1-	F3-	F1-
TERMINATION HEIGHT									
IN-SPAN ASSEMBLIES									
DOWN GUY ASSEMBLY		DG-1	DG-1						
SUPPORT REGISTRATION REFERENCE									
HANGERS									
JUMPERS									
MISC. ASSEMBLIES AND FEEDERS 1		BWA-E	BWA-E						
MISC. ASSEMBLIES AND FEEDERS 2									
MISC. ASSEMBLIES		GF-1	GF-1						



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APPR

CHECK

DRAWN

DESIGN

MRW

PJK

JHM

PRELIMINARY ENGINEERING
PURPLE LINE LIGHT RAIL

CATENARY LAYOUT PLAN 6
STA. EB 159+00 TO STA. EB 171+00
DATE: DECEMBER 2013 SCALE: AS SHOWN

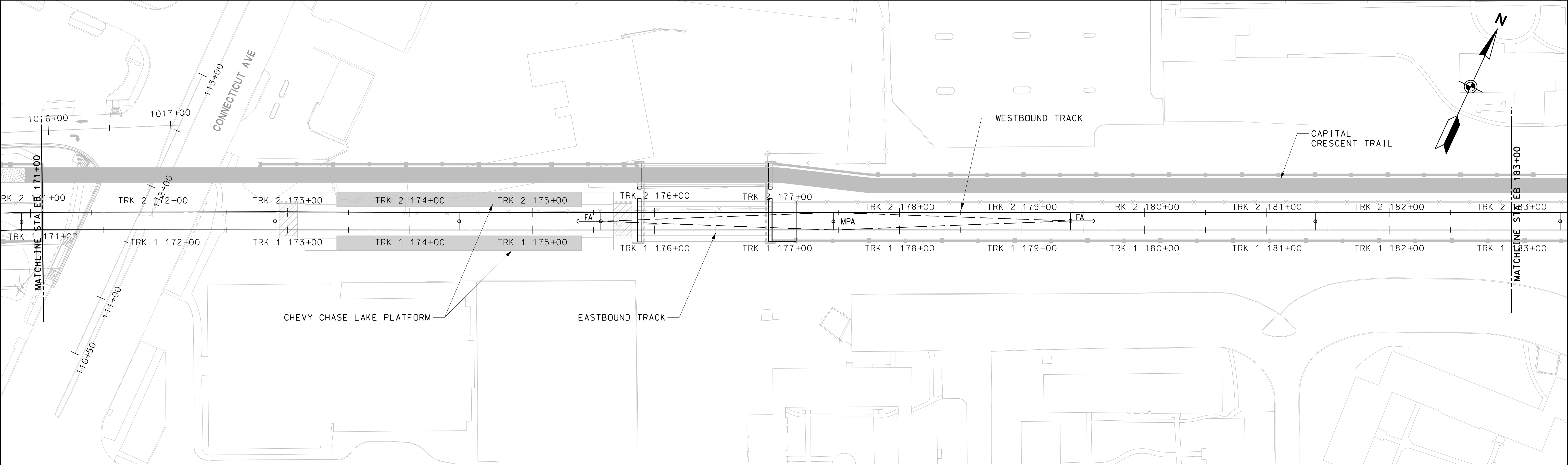
CONTRACT NO.
T-1042-0220

DRAWING NO.
OC-0017

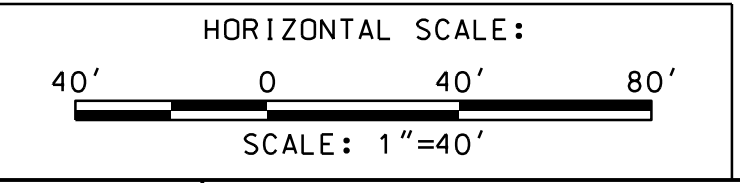
SHEET NO.
70 OF 474

pw:\00 - Current Projects\1042 - Purple Line Light Rail\130 CEC CADD Files\Zone 00-Project Wide\OCS\Sheet Files\1042pOC1035.dgn 12/13/2013

MISC. ASSEMBLIES	
MISC. ASSEMBLIES AND FEEDERS 2	
MISC. ASSEMBLIES AND FEEDERS 1	
JUMPERS	
HANGERS	
SUPPORT REGISTRATION REFERENCE	
DOWN GUY ASSEMBLY	
IN-SPAN ASSEMBLIES	
TERMINATION HEIGHT	
FOUNDATION REFERENCE	
POLE REFERENCE	
STAGGER	
MESSENGER WIRE HEIGHT	
TROLLEY WIRE HEIGHT	
FACE OF POLE TO CENTERLINE TRK	
STATIONING	
STRUCTURE NO.	



STRUCTURE NO.						
STATIONING	172+90	174+23	175+56	177+46	179+40	181+40
FACE OF POLE TO CENTERLINE TRK						
TROLLEY WIRE HEIGHT	18'-0"	18'-0"	18'-0"	18'-0"	18'-0"	18'-0"
MESSENGER WIRE HEIGHT	22'-0"	22'-0"	22'-0"	22'-0"	22'-0"	22'-0"
STAGGER						
POLE REFERENCE	TP-	TP-	TP-	TP-	TP-	TP-
FOUNDATION REFERENCE	F1-	F1-	F1-	F1-	F1-	F1-
TERMINATION HEIGHT						
IN-SPAN ASSEMBLIES						
DOWN GUY ASSEMBLY	DG-1				DG-1	
SUPPORT REGISTRATION REFERENCE						
HANGERS						
JUMPERS						
MISC. ASSEMBLIES AND FEEDERS 1						
MISC. ASSEMBLIES AND FEEDERS 2						
MISC. ASSEMBLIES	GF-1				GF-1	



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APPR

CHECK

DRAWN

DESIGN

MRW

PJK

JHM

PRELIMINARY ENGINEERING
PURPLE LINE LIGHT RAIL

CATENARY LAYOUT PLAN 7
STA. EB 171+00 TO STA. EB 183+00
DATE: DECEMBER 2013 SCALE: AS SHOWN

CONTRACT NO.
T-1042-0220

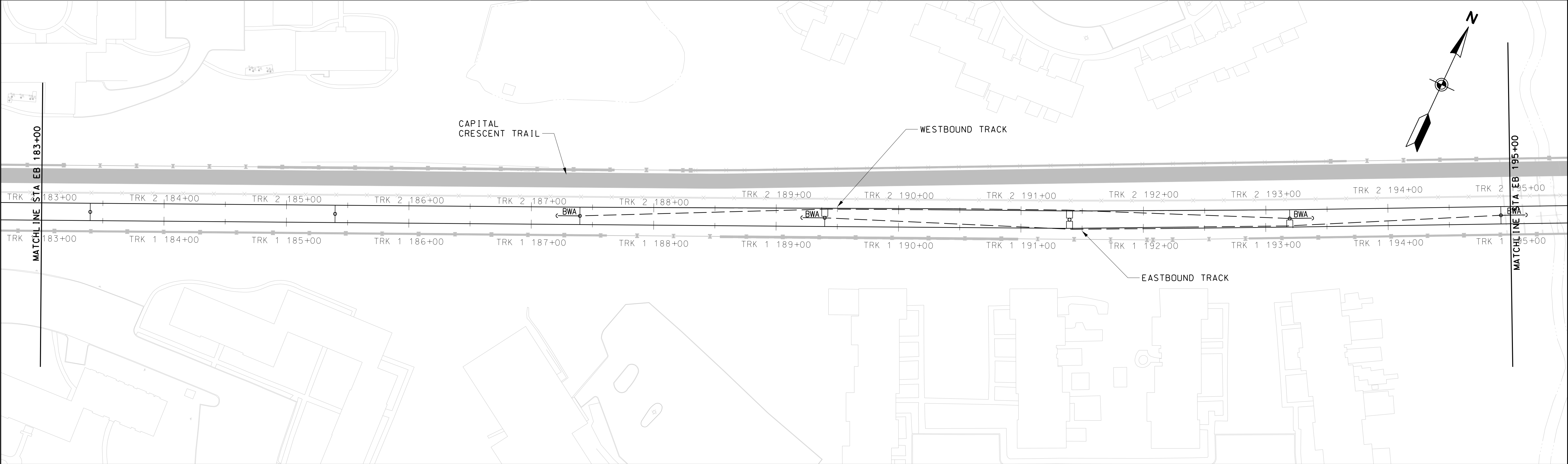
DRAWING NO.
OC-0018

SHEET NO.
71 OF 474

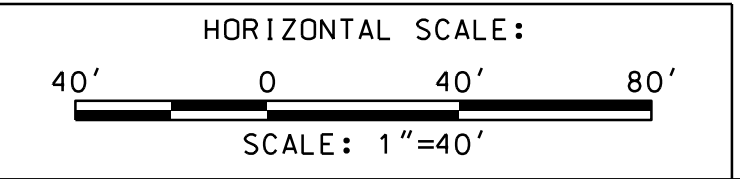
pw:\00 - Current Projects\1042 - Purple Line Light Rail\130 CEC CADD Files\Zone 00-Project Wide\OCS\Sheet Files\1042pOC1036.dgn

11/21/2013

MISC. ASSEMBLIES	
MISC. ASSEMBLIES AND FEEDERS 2	
MISC. ASSEMBLIES AND FEEDERS 1	
JUMPERS	
HANGERS	
SUPPORT REGISTRATION REFERENCE	
DOWN GUY ASSEMBLY	
IN-SPAN ASSEMBLIES	
TERMINATION HEIGHT	
FOUNDATION REFERENCE	
POLE REFERENCE	
STAGGER	
MESSENGER WIRE HEIGHT	
TROLLEY WIRE HEIGHT	
FACE OF POLE TO CENTERLINE TRK	
STATIONING	
STRUCTURE NO.	



STRUCTURE NO.						
STATIONING	183+40	185+40	187+40	189+40	191+40	193+20
FACE OF POLE TO CENTERLINE TRK						194+92
TROLLEY WIRE HEIGHT	18'-0"	18'-0"	18'-0"	18'-0"	18'-0"	18'-0"
MESSENGER WIRE HEIGHT	22'-0"	22'-0"	22'-0"	22'-0"	22'-0"	21'-6"
STAGGER						
POLE REFERENCE	TP-	TP-	TP-	TP-	TP-	TP-
FOUNDATION REFERENCE	F1-	F1-	F1-	F1-	F1-	F1-
TERMINATION HEIGHT						
IN-SPAN ASSEMBLIES						
DOWN GUY ASSEMBLY						
SUPPORT REGISTRATION REFERENCE						
HANGERS						
JUMPERS						
MISC. ASSEMBLIES AND FEEDERS 1			BWA-E	BWA-E		BWA-E
MISC. ASSEMBLIES AND FEEDERS 2						
MISC. ASSEMBLIES						



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APPR

CHECK

DRAWN

DESIGN

MRW

PJK

JHM

PRELIMINARY ENGINEERING

PURPLE LINE LIGHT RAIL

CATENARY LAYOUT PLAN 8

STA. EB 183+00 TO STA. EB 195+00

DATE: DECEMBER 2013

SCALE: AS SHOWN

CONTRACT NO.

T-1042-0220

DRAWING NO.

OC-0019

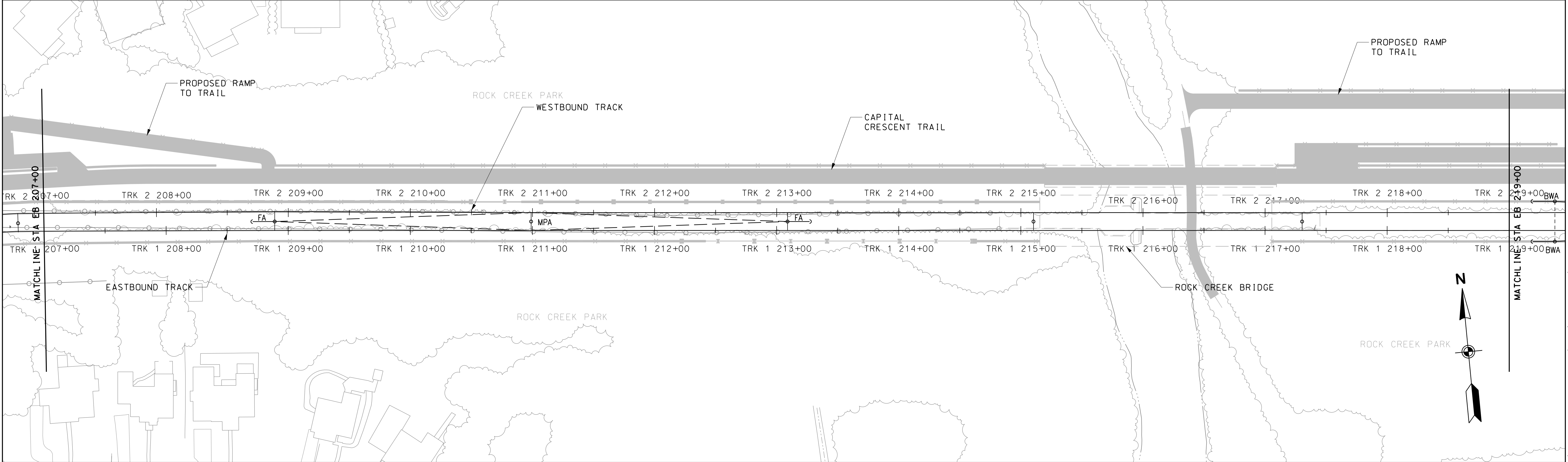
SHEET NO.

72 OF 474

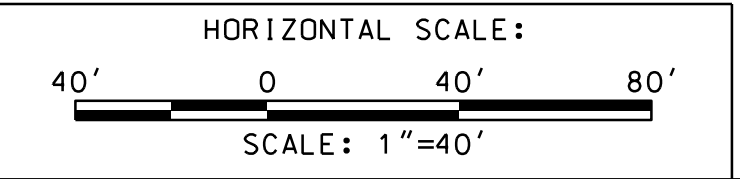
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12/13/2013

MISC. ASSEMBLIES	
MISC. ASSEMBLIES AND FEEDERS 2	
MISC. ASSEMBLIES AND FEEDERS 1	
JUMPERS	
HANGERS	
SUPPORT REGISTRATION REFERENCE	
DOWN GUY ASSEMBLY	
IN-SPAN ASSEMBLIES	
TERMINATION HEIGHT	
FOUNDATION REFERENCE	
POLE REFERENCE	
STAGGER	
MESSENGER WIRE HEIGHT	
TROLLEY WIRE HEIGHT	
FACE OF POLE TO CENTERLINE TRK	
STATIONING	
STRUCTURE NO.	



STRUCTURE NO.					
STATIONING	208+89	210+99	213+09	215+10	217+30
FACE OF POLE TO CENTERLINE TRK					
TROLLEY WIRE HEIGHT	16'-3"	16'-9"	17'-3"	17'-9"	18'-0"
MESSENGER WIRE HEIGHT	19'-9"	20'-9"	21'-3"	21'-9"	22'-0"
STAGGER					
POLE REFERENCE	TP-	TP-	TP-	TP-	TP-
FOUNDATION REFERENCE	F1-	F1-	F1-	F1-	F1-
TERMINATION HEIGHT					
IN-SPAN ASSEMBLIES					
DOWN GUY ASSEMBLY	DG-1		DG-1		
SUPPORT REGISTRATION REFERENCE					
HANGERS					
JUMPERS					
MISC. ASSEMBLIES AND FEEDERS 1					
MISC. ASSEMBLIES AND FEEDERS 2					
MISC. ASSEMBLIES	GF-1		GF-1		



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DESIGNMRW

DRAWNPJK

CHECKJHM

APPR

PRELIMINARY ENGINEERING

PURPLE LINE LIGHT RAIL

CATENARY LAYOUT PLAN 10

STA. EB. 207+00 TO STA. EB. 219+00

DATE: DECEMBER 2013

SCALE: AS SHOWN

CONTRACT NO.

T-1042-0220

DRAWING NO.

OC-0021

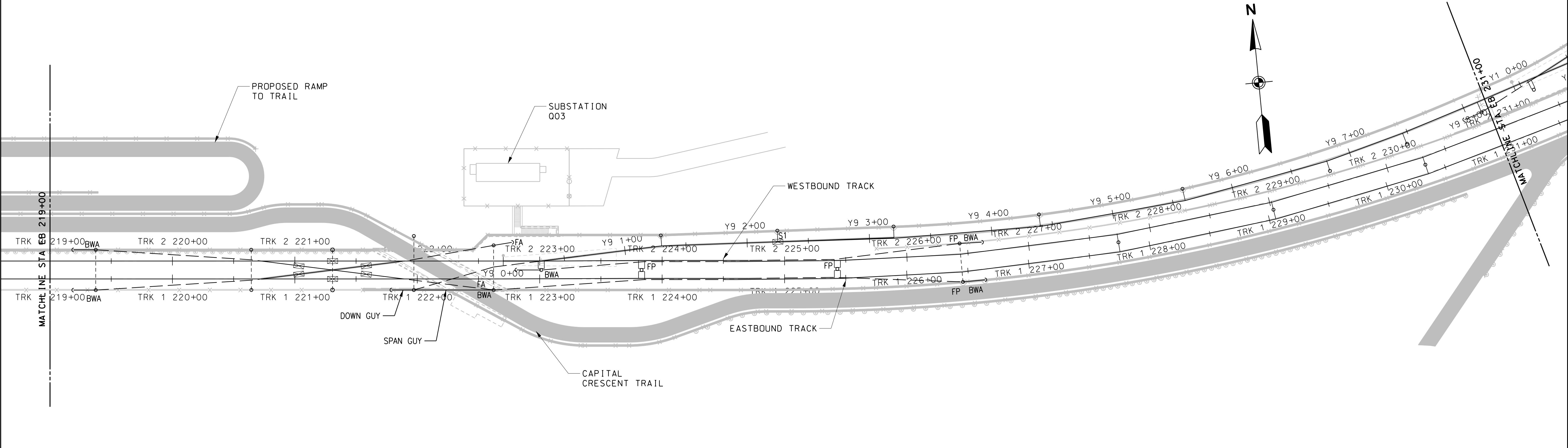
SHEET NO.

74 OF 474

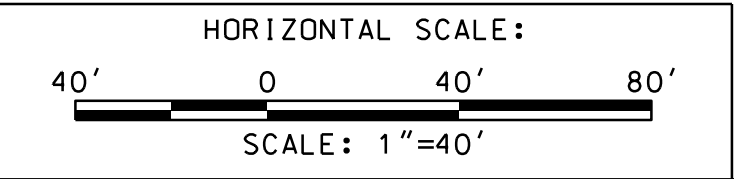
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11/21/2013

MISC. ASSEMBLIES	
MISC. ASSEMBLIES AND FEEDERS 2	
MISC. ASSEMBLIES AND FEEDERS 1	
JUMPERS	
HANGERS	
SUPPORT REGISTRATION REFERENCE	
DOWN GUY ASSEMBLY	
IN-SPAN ASSEMBLIES	
TERMINATION HEIGHT	
FOUNDATION REFERENCE	
POLE REFERENCE	
STAGGER	
MESSENGER WIRE HEIGHT	
TROLLEY WIRE HEIGHT	
FACE OF POLE TO CENTERLINE TRK	
STATIONING	
STRUCTURE NO.	



STRUCTURE NO.												
STATIONING	219+37	220+64	221+31	221+97	222+62	223+01	223+83	225+43	226+45	227+75	229+05	230+35
FACE OF POLE TO CENTERLINE TRK												
TROLLEY WIRE HEIGHT	18'-0"	18'-0"		18'-0"	18'-0"	18'-0"	18'-0"	18'-0"	18'-0"	18'-0"	18'-0"	18'-0"
MESSENGER WIRE HEIGHT	22'-0"	21'-6"		21'-6"	21'-6"	21'-6"	21'-6"	21'-6"	21'-6"	21'-6"	21'-6"	21'-6"
STAGGER												
POLE REFERENCE	TP-	TP-	TP-	TP-	BW-	BW-	TFP-	TFP-	TFP-	TP-	TP-	TP-
FOUNDATION REFERENCE	F1-	F1-		F1-	F1-		F3-	F3-	F3-	F1-	F1-	F1-
TERMINATION HEIGHT												
IN-SPAN ASSEMBLIES			SI-	SI-	SI-							
DOWN GUY ASSEMBLY	DG-1				DG-1	DG-2						
SUPPORT REGISTRATION REFERENCE	HS-	HS-	HS-	HS-	HS-	CA-	CA-	CA-	CA-	HS-	CA-	CA-
HANGERS												
JUMPERS												
MISC. ASSEMBLIES AND FEEDERS 1	BWA-E				BWA-E				BWA-E			
MISC. ASSEMBLIES AND FEEDERS 2												
MISC. ASSEMBLIES	GF-1								GF-1			



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APPR

CHECK

DRAWN

DESIGN

MRW

PJK

JHM

PRELIMINARY ENGINEERING
PURPLE LINE LIGHT RAIL

CATENARY LAYOUT PLAN 11
STA. EB 219+00 TO STA. EB 231+00
DATE: DECEMBER 2013 SCALE: AS SHOWN

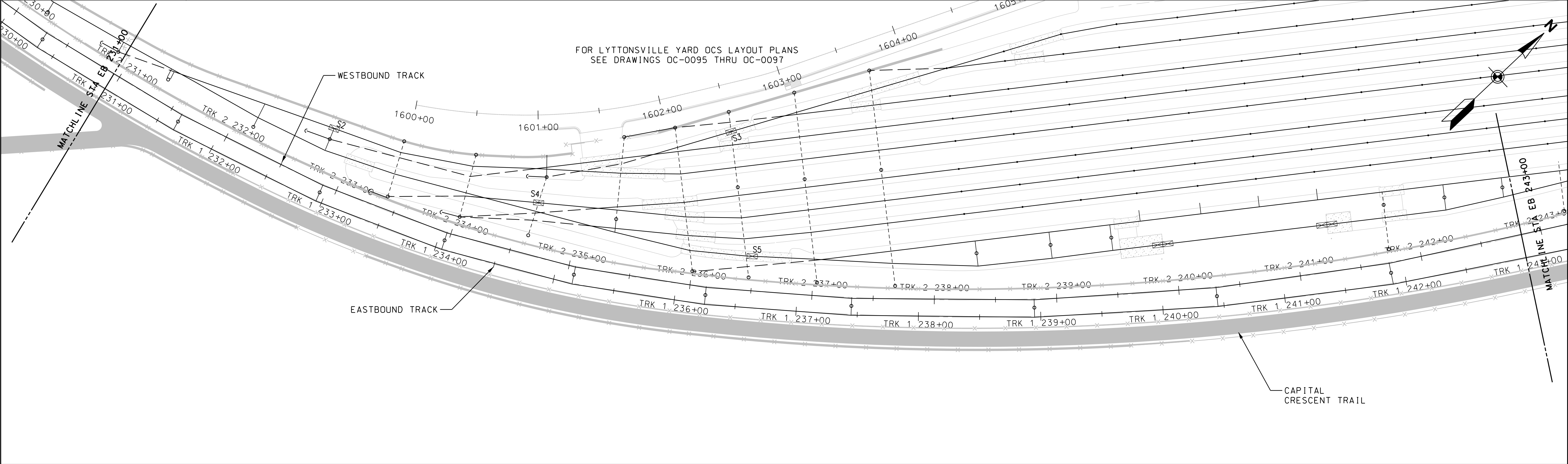
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T-1042-0220

DRAWING NO.
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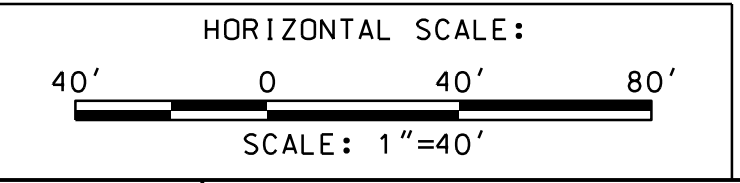
SHEET NO.
75 OF 474

pw:\00 - Current Projects\1042 - Purple Line Light Rail\130 CEC CADD Files\Zone 00-Project Wide\OCS\Sheet Files\1042pOC1040.dgn 12/13/2013

MISC. ASSEMBLIES	
MISC. ASSEMBLIES AND FEEDERS 2	
MISC. ASSEMBLIES AND FEEDERS 1	
JUMPERS	
HANGERS	
SUPPORT REGISTRATION REFERENCE	
DOWN GUY ASSEMBLY	
IN-SPAN ASSEMBLIES	
TERMINATION HEIGHT	
FOUNDATION REFERENCE	
POLE REFERENCE	
STAGGER	
MESSENGER WIRE HEIGHT	
TROLLEY WIRE HEIGHT	
FACE OF POLE TO CENTERLINE TRK	
STATIONING	
STRUCTURE NO.	



STRUCTURE NO.									
STATIONING	231+65	232+95	234+05	235+15	236+25	237+45	238+95	240+45	241+89
FACE OF POLE TO CENTERLINE TRK									
TROLLEY WIRE HEIGHT	18'-0"	18'-0"	18'-0"	18'-0"	18'-0"	18'-0"	18'-0"	18'-0"	18'-0"
MESSENGER WIRE HEIGHT	21'-6"	21'-6"	21'-6"	21'-6"	21'-6"	21'-6"	21'-6"	21'-6"	21'-6"
STAGGER									
POLE REFERENCE	TP-	TP-	TP-	TP-	TP-	TP-	TP-	TP-	TP-
FOUNDATION REFERENCE	F1-	F1-	F1-	F1-	F1-	F1-	F1-	F1-	F1-
TERMINATION HEIGHT									
IN-SPAN ASSEMBLIES									
DOWN GUY ASSEMBLY									
SUPPORT REGISTRATION REFERENCE	CA-	CA-	CA-	CA-	CA-	CA-	CA-	CA-	CA-
HANGERS									
JUMPERS									
MISC. ASSEMBLIES AND FEEDERS 1									
MISC. ASSEMBLIES AND FEEDERS 2									
MISC. ASSEMBLIES									



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DRAWN

DESIGN

MRW

PJK

JHM

PRELIMINARY ENGINEERING

PURPLE LINE LIGHT RAIL

CATENARY LAYOUT PLAN 12

STA. EB 231+00 TO STA. EB 243+00

DATE: DECEMBER 2013 SCALE: AS SHOWN

CONTRACT NO.

T-1042-0220

DRAWING NO.

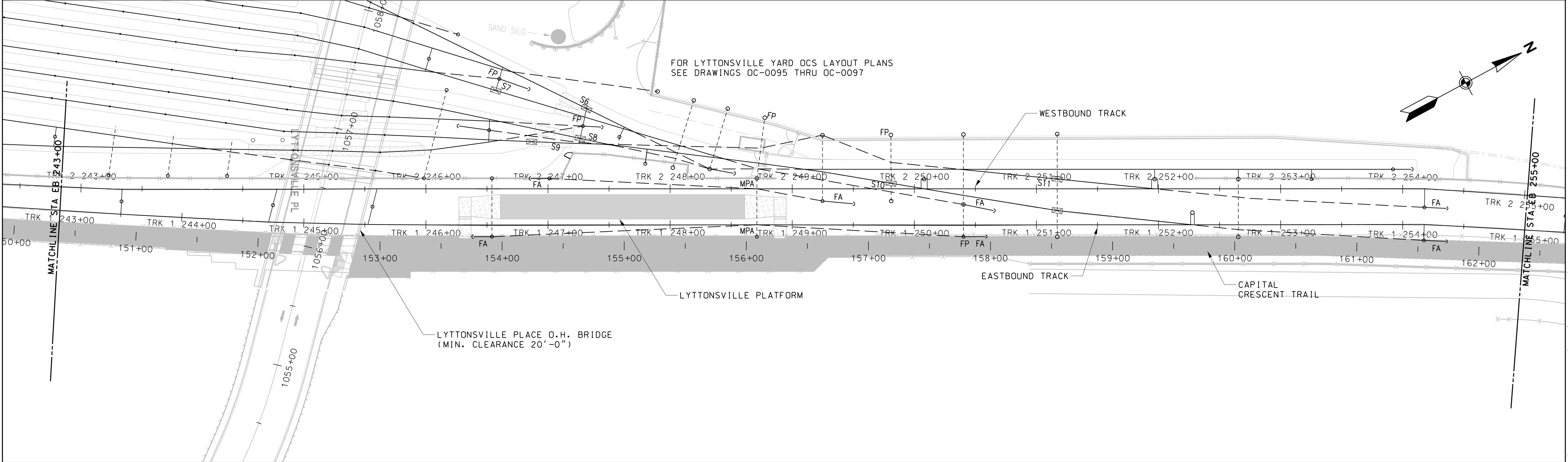
OC-0023

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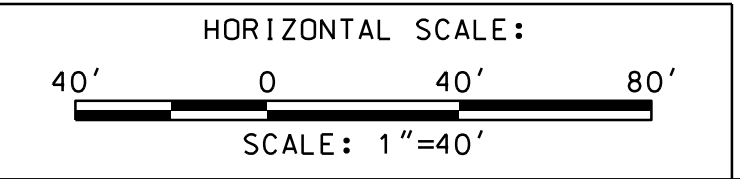
76 OF 474

pw:\00 - Current Projects\1042 - Purple Line Light Rail\130 CEC CADD Files\Zone 00-Project Wide\OCS\Sheet Files\1042pOC1041.dgn 11/21/2013

MISC. ASSEMBLIES	
MISC. ASSEMBLIES AND FEEDERS 2	
MISC. ASSEMBLIES AND FEEDERS 1	
JUMPERS	
HANGERS	
SUPPORT REGISTRATION REFERENCE	
DOWN GUY ASSEMBLY	
IN-SPAN ASSEMBLIES	
TERMINATION HEIGHT	
FOUNDATION REFERENCE	
POLE REFERENCE	
STAGGER	
MESSENGER WIRE HEIGHT	
TROLLEY WIRE HEIGHT	
FACE OF POLE TO CENTERLINE TRK	
STATIONING	
STRUCTURE NO.	



STRUCTURE NO.												
STATIONING	243+50	244+71	245+53	246+54	248+71	249+22	249+81	250+40	251+17	252+28	252+75	254+17
FACE OF POLE TO CENTERLINE TRK												
TROLLEY WIRE HEIGHT	18'-0"	18'-0"	18'-0"	18'-0"	18'-0"			18'-0"		18'-0"	18'-0"	18'-0"
MESSENGER WIRE HEIGHT	21'-6"	19'-6"	19'-6"	21'-6"	22'-0"			22'-0"		22'-0"	22'-0"	21'-6"
STAGGER												
POLE REFERENCE	TP-	TP-	TP-	TP-	TP-			TP-		TP-	TP-	TP-
FOUNDATION REFERENCE	F1-	F1-	F1-	F1-	F1-			F1-		F1-	F1-	F1-
TERMINATION HEIGHT												
IN-SPAN ASSEMBLIES												
DOWN GUY ASSEMBLY												
SUPPORT REGISTRATION REFERENCE	CA-	CA-	CA-	DG-1	HS-			DG-1		CA-1	HS-	DG-1
HANGERS				HS-				HS-				CA-
JUMPERS												
MISC. ASSEMBLIES AND FEEDERS 1					MPA-1							
MISC. ASSEMBLIES AND FEEDERS 2												
MISC. ASSEMBLIES				GF-1				GF-1				GF-1



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APPR

CHECK

DRAWN

DESIGN

MRW

PJK

JHM

PRELIMINARY ENGINEERING

PURPLE LINE LIGHT RAIL

CATENARY LAYOUT PLAN 13

STA. EB 243+00 TO STA. EB 255+00

DATE: DECEMBER 2013

SCALE: AS SHOWN

CONTRACT NO.

T-1042-0220

DRAWING NO.

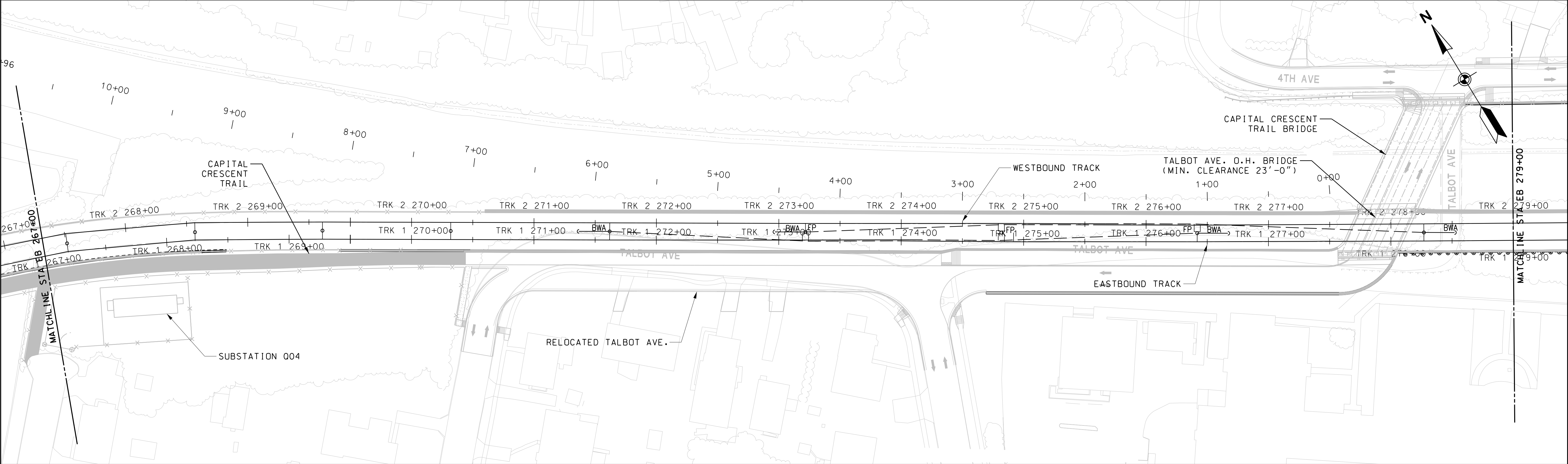
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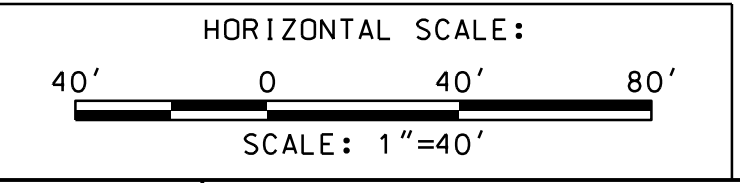
77 OF 474

p:\00 - Current Projects\1042 - Purple Line Light Rail\130 CEC CADD Files\Zone 00-Project Wide\OCS\Sheet Files\1042pOC1042.dgn 11/21/2013

MISC. ASSEMBLIES	
MISC. ASSEMBLIES AND FEEDERS 2	
MISC. ASSEMBLIES AND FEEDERS 1	
JUMPERS	
HANGERS	
SUPPORT REGISTRATION REFERENCE	
DOWN GUY ASSEMBLY	
IN-SPAN ASSEMBLIES	
TERMINATION HEIGHT	
FOUNDATION REFERENCE	
POLE REFERENCE	
STAGGER	
MESSENGER WIRE HEIGHT	
TROLLEY WIRE HEIGHT	
FACE OF POLE TO CENTERLINE TRK	
STATIONING	
STRUCTURE NO.	



STRUCTURE NO.										
STATIONING	267+19	268+23	269+27	270+32	271+62	273+22	274+82	276+42	278+27	
FACE OF POLE TO CENTERLINE TRK										
TROLLEY WIRE HEIGHT	17'-6"	17'-0"	16'-6"	16'-0"	16'-0"	16'-6"	17'-0"	17'-6"	18'-0"	
MESSENGER WIRE HEIGHT	21'-0"	20'-6"	20'-0"	17'-6"	17'-6"	20'-0"	20'-6"	21'-0"	21'-6"	
STAGGER										
POLE REFERENCE	TP-	TP-	TP-	TP-	BW-	TFP-	TFP-	TFP-	BW-	
FOUNDATION REFERENCE	F1-	F1-	F1-	F1-	F1-	F3-	F3-	F3-	F1-	
TERMINATION HEIGHT										
IN-SPAN ASSEMBLIES										
DOWN GUY ASSEMBLY										
SUPPORT REGISTRATION REFERENCE	CA-	CA-	CA-	CA-	DG-1	DG-1	CA-	DG-1	DG-1	
HANGERS										
JUMPERS										
MISC. ASSEMBLIES AND FEEDERS 1										
MISC. ASSEMBLIES AND FEEDERS 2										
MISC. ASSEMBLIES										



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APPR

CHECK

DRAWN

DESIGN

MRW

PJK

JHM

PRELIMINARY ENGINEERING

PURPLE LINE LIGHT RAIL

CATENARY LAYOUT PLAN 15

STA. EB 267+00 TO STA. EB 279+00

DATE: DECEMBER 2013

SCALE: AS SHOWN

CONTRACT NO.

T-1042-0220

DRAWING NO.

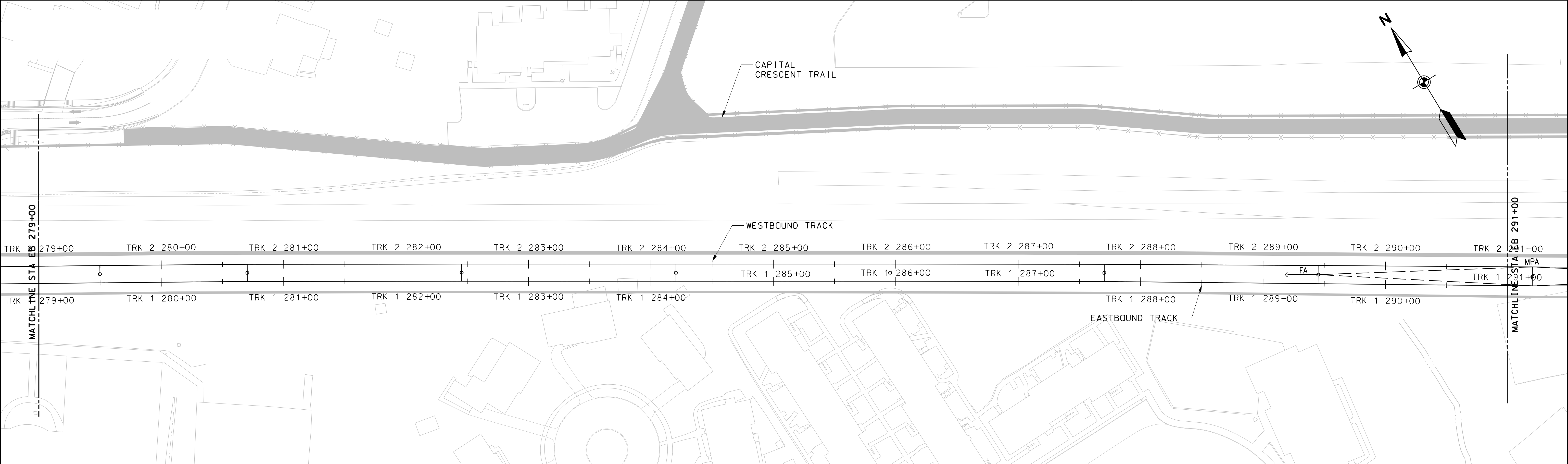
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SHEET NO.

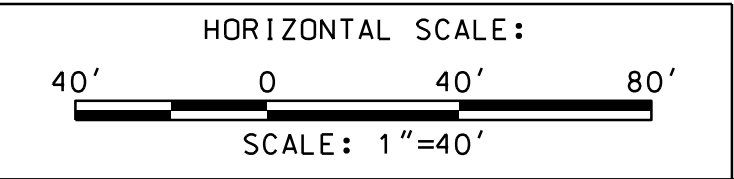
79 OF 474

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MISC. ASSEMBLIES	
MISC. ASSEMBLIES AND FEEDERS 2	
MISC. ASSEMBLIES AND FEEDERS 1	
JUMPERS	
HANGERS	
SUPPORT REGISTRATION REFERENCE	
DOWN GUY ASSEMBLY	
IN-SPAN ASSEMBLIES	
TERMINATION HEIGHT	
FOUNDATION REFERENCE	
POLE REFERENCE	
STAGGER	
MESSENGER WIRE HEIGHT	
TROLLEY WIRE HEIGHT	
FACE OF POLE TO CENTERLINE TRK	
STATIONING	
STRUCTURE NO.	



STRUCTURE NO.							
STATIONING	279+50	280+70	282+45	284+20	285+95	287+70	289+45
FACE OF POLE TO CENTERLINE TRK							
TROLLEY WIRE HEIGHT	18'-0"	18'-0"	18'-0"	18'-0"	18'-0"	18'-0"	18'-0"
MESSENGER WIRE HEIGHT	21'-6"	21'-6"	21'-6"	21'-6"	21'-6"	21'-6"	21'-6"
STAGGER							
POLE REFERENCE	TP-	TP-	TP-	TP-	TP-	TP-	TP-
FOUNDATION REFERENCE	F1-	F1-	F1-	F1-	F1-	F1-	F1-
TERMINATION HEIGHT							
IN-SPAN ASSEMBLIES							
DOWN GUY ASSEMBLY							DG-1
SUPPORT REGISTRATION REFERENCE							
HANGERS							
JUMPERS							
MISC. ASSEMBLIES AND FEEDERS 1							
MISC. ASSEMBLIES AND FEEDERS 2							
MISC. ASSEMBLIES							GF-1



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DRAWN

DESIGN

MRW

PJK

JHM

PRELIMINARY ENGINEERING

PURPLE LINE LIGHT RAIL

CATENARY LAYOUT PLAN 16

STA. EB 279+00 TO STA. EB 291+00

DATE: DECEMBER 2013

SCALE: AS SHOWN

CONTRACT NO.

T-1042-0220

DRAWING NO.

OC-0027

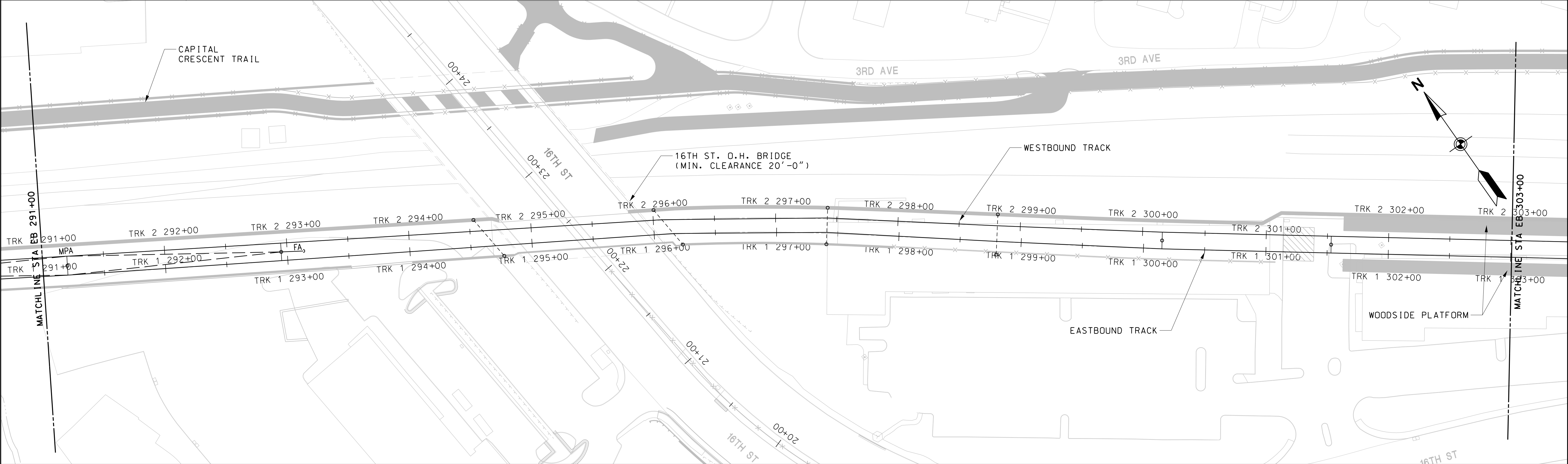
SHEET NO.

80 OF 474

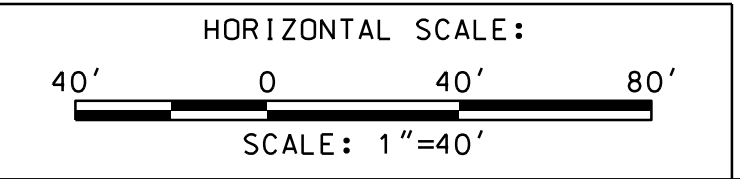
pw:\00 - Current Projects\1042 - Purple Line Light Rail\130 CEC CADD Files\Zone 00-Project Wide\OCS\Sheet Files\1042pOC2045.dgn

11/21/2013

MISC. ASSEMBLIES	
MISC. ASSEMBLIES AND FEEDERS 2	
MISC. ASSEMBLIES AND FEEDERS 1	
JUMPERS	
HANGERS	
SUPPORT REGISTRATION REFERENCE	
DOWN GUY ASSEMBLY	
IN-SPAN ASSEMBLIES	
TERMINATION HEIGHT	
FOUNDATION REFERENCE	
POLE REFERENCE	
STAGGER	
MESSENGER WIRE HEIGHT	
TROLLEY WIRE HEIGHT	
FACE OF POLE TO CENTERLINE TRK	
STATIONING	
STRUCTURE NO.	



STRUCTURE NO.								
STATIONING	291+20	292+95	294+70	296+16	297+41	298+80	300+15	301+53
FACE OF POLE TO CENTERLINE TRK								
TROLLEY WIRE HEIGHT	18'-0"	18'-0"	17'-9"	17'-9"	18'-0"	18'-0"	18'-0"	18'-0"
MESSENGER WIRE HEIGHT	21'-6"	21'-6"	19'-6"	19'-6"	21'-6"	21'-6"	21'-6"	22'-0"
STAGGER								
POLE REFERENCE	TP-	TP-	TP-	TP-	TP-	TP-	TP-	TP-
FOUNDATION REFERENCE	F1-	F1-	F1-	F1-	F1-	F1-	F1-	F1-
TERMINATION HEIGHT								
IN-SPAN ASSEMBLIES								
DOWN GUY ASSEMBLY		DG-						
SUPPORT REGISTRATION REFERENCE	CA-	CA-	HS-	HS-	HS-	HS-	CA-	CA-
HANGERS								
JUMPERS								
MISC. ASSEMBLIES AND FEEDERS 1	MPA-1							
MISC. ASSEMBLIES AND FEEDERS 2								
MISC. ASSEMBLIES		GF-1						



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DRAWN

DESIGN

MRW

PJK

JHM

PRELIMINARY ENGINEERING
PURPLE LINE LIGHT RAIL

CATENARY LAYOUT PLAN 17
STA. EB 291+00 TO STA. EB 303+00
DATE: DECEMBER 2013 SCALE: AS SHOWN

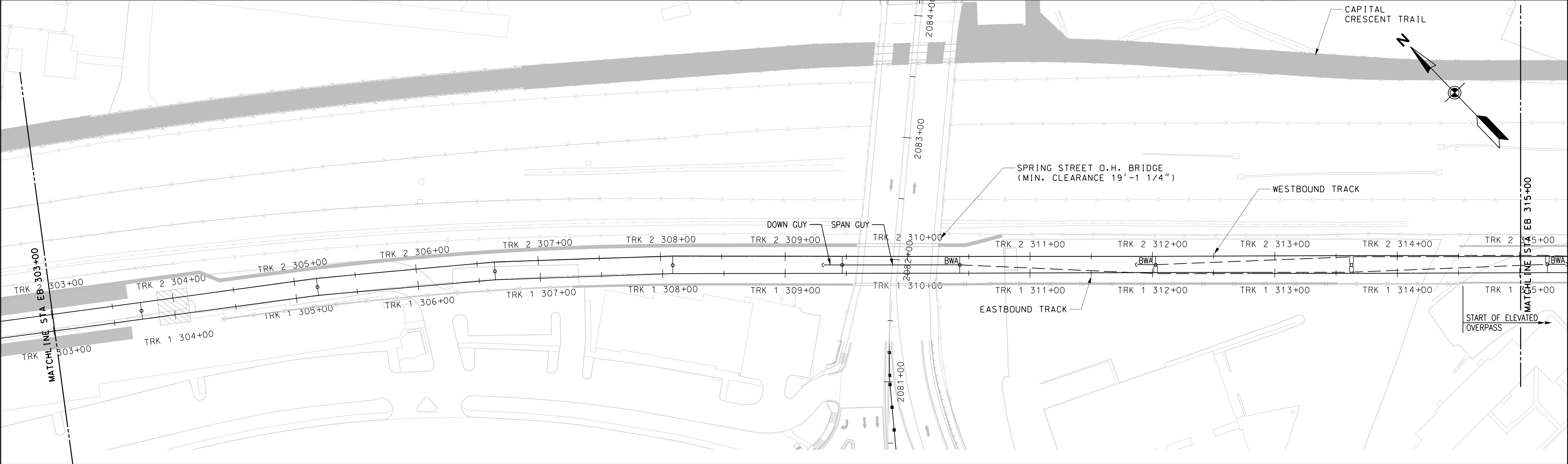
CONTRACT NO.
T-1042-0220

DRAWING NO.
OC-0028

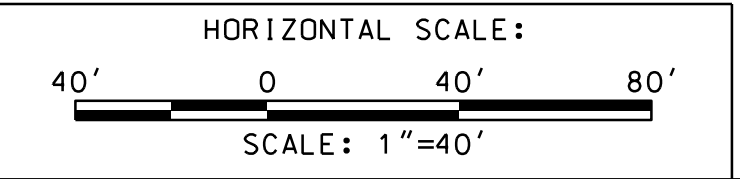
SHEET NO.
81 OF 474

pw:\00 - Current Projects\1042 - Purple Line Light Rail\130 CEC CADD Files\Zone 00-Project Wide\OCS\Sheet Files\1042pOC2046.dgn 11/21/2013

MISC. ASSEMBLIES	
MISC. ASSEMBLIES AND FEEDERS 2	
MISC. ASSEMBLIES AND FEEDERS 1	
JUMPERS	
HANGERS	
SUPPORT REGISTRATION REFERENCE	
DOWN GUY ASSEMBLY	
IN-SPAN ASSEMBLIES	
TERMINATION HEIGHT	
FOUNDATION REFERENCE	
POLE REFERENCE	
STAGGER	
MESSENGER WIRE HEIGHT	
TROLLEY WIRE HEIGHT	
FACE OF POLE TO CENTERLINE TRK	
STATIONING	
STRUCTURE NO.	



STRUCTURE NO.								
STATIONING	303+73	305+17	306+62	308+08	309+46	310+42	312+02	313+62
FACE OF POLE TO CENTERLINE TRK								
TROLLEY WIRE HEIGHT	18'-0"	18'-0"	18'-0"	17'-6"	17'-0"	17'-0"	17'-0"	17'-0"
MESSENGER WIRE HEIGHT	22'-0"	21'-6"	21'-6"	21'-0"	18'-6"	18'-6"	20'-6"	20'-6"
STAGGER								
POLE REFERENCE	TP-	TP-	TP-	TP-	TP-	TP-	TP-	TP-
FOUNDATION REFERENCE	F1-	F1-	F1-	F1-	F1-	F1-	F1-	F1-
TERMINATION HEIGHT								
IN-SPAN ASSEMBLIES								
DOWN GUY ASSEMBLY								
SUPPORT REGISTRATION REFERENCE	CA-	CA-	CA-	CA-	CA-	DG-2	DG-1	CA-
HANGERS						CA-	CA-	
JUMPERS								
MISC. ASSEMBLIES AND FEEDERS 1						BWA-E	BWA-E	
MISC. ASSEMBLIES AND FEEDERS 2								
MISC. ASSEMBLIES					GF-1		GF-1	



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DRAWN

DESIGN

MRW

PJK

JHM

PRELIMINARY ENGINEERING
PURPLE LINE LIGHT RAIL

CATENARY LAYOUT PLAN 18
STA. EB. 303+00 TO STA. EB. 315+00
DATE: DECEMBER 2013 SCALE: AS SHOWN

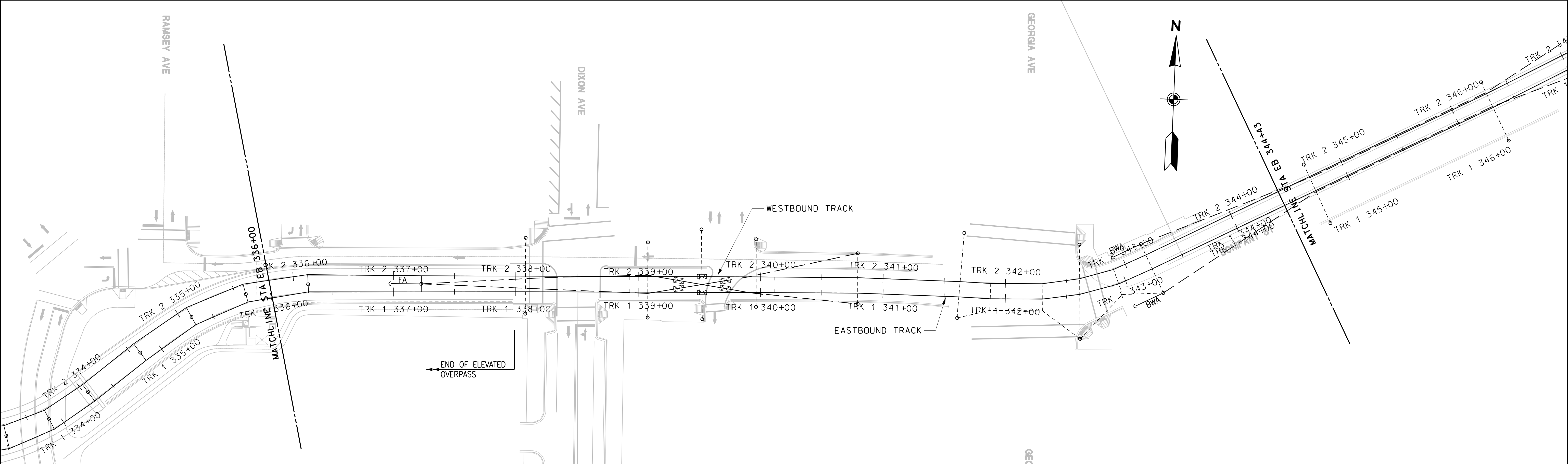
CONTRACT NO.
T-1042-0220

DRAWING NO.
OC-0029

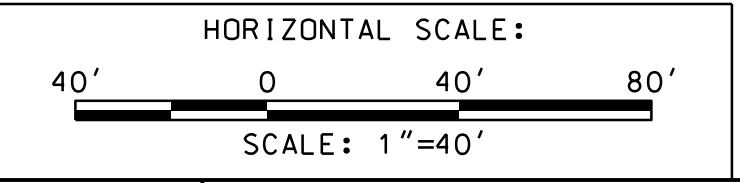
SHEET NO.
82 OF 474

pw:\00 - Current Projects\1042 - Purple Line Light Rail\130 CEC CADD Files\Zone 00-Project Wide\Files\Sheet Files\1042pOC2047.dgn 12/13/2013

MISC. ASSEMBLIES	
MISC. ASSEMBLIES AND FEEDERS 2	
MISC. ASSEMBLIES AND FEEDERS 1	
JUMPERS	
HANGERS	
SUPPORT REGISTRATION REFERENCE	
DOWN GUY ASSEMBLY	
IN-SPAN ASSEMBLIES	
TERMINATION HEIGHT	
FOUNDATION REFERENCE	
POLE REFERENCE	
STAGGER	
MESSENGER WIRE HEIGHT	
TROLLEY WIRE HEIGHT	
FACE OF POLE TO CENTERLINE TRK	
STATIONING	
STRUCTURE NO.	



STRUCTURE NO.										
STATIONING	336+30	337+22	338+07	339+07	339+51	339+96	340+79	341+61	342+60	343+23
FACE OF POLE TO CENTERLINE TRK										
TROLLEY WIRE HEIGHT	16'-0"	17'-6"	18'-0"	18'-0"	18'-0"	18'-0"	18'-3"	18'-6"	18'-6"	18'-6"
MESSENGER WIRE HEIGHT	17'-0"	18'-6"	19'-0"	20'-6"	20'-6"	20'-6"	19'-9"	20'-0"	20'-0"	20'-0"
STAGGER										
POLE REFERENCE	TP-	TP-	TP-	TP-	TP-	TP-	TP-	TP-	TP-	TP-
FOUNDATION REFERENCE	F1-	F1-	F1-	F1-	F1-	F1-	F1-	F1-	F1-	F1-
TERMINATION HEIGHT										
IN-SPAN ASSEMBLIES	(2)SI (2)SI (2)SI									
DOWN GUY ASSEMBLY										
SUPPORT REGISTRATION REFERENCE	CA-	DGA-1 CA-	HS-	HS-	HS-	HS-	HS-	HS-	HS-	DGA-1 HS-
HANGERS										
JUMPERS										
MISC. ASSEMBLIES AND FEEDERS 1										
MISC. ASSEMBLIES AND FEEDERS 2										
MISC. ASSEMBLIES	GF-1									



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CHECK

DRAWN

DESIGN

MRW

PJK

JHM

PRELIMINARY ENGINEERING
PURPLE LINE LIGHT RAIL

CATENARY LAYOUT PLAN 21
STA. EB 336+00 TO STA. EB 344+43
DATE: DECEMBER 2013 SCALE: AS SHOWN

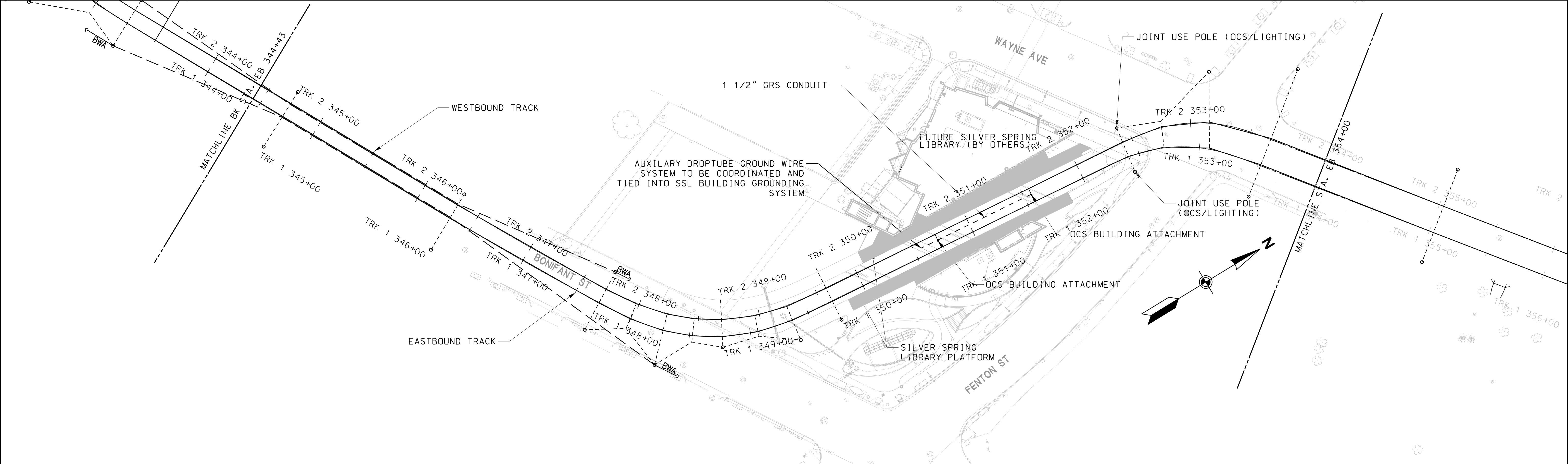
CONTRACT NO.
T-1042-0220

DRAWING NO.
OC-0032

SHEET NO.
85 OF 474

pw:\00 - Current Projects\1042 - Purple Line Light Rail\130 GEC CADD Files\Zone 00-Project Wide\OCS\Sheet Files\1042pOC2050.dgn 12/13/2013

MISC. ASSEMBLIES	
MISC. ASSEMBLIES AND FEEDERS 2	
MISC. ASSEMBLIES AND FEEDERS 1	
JUMPERS	
HANGERS	
SUPPORT REGISTRATION REFERENCE	
DOWN GUY ASSEMBLY	
IN-SPAN ASSEMBLIES	
TERMINATION HEIGHT	
FOUNDATION REFERENCE	
POLE REFERENCE	
STAGGER	
MESSENGER WIRE HEIGHT	
TROLLEY WIRE HEIGHT	
FACE OF POLE TO CENTERLINE TRK	
STATIONING	
STRUCTURE NO.	



STRUCTURE NO.																
STATIONING	344+71	346+31	347+71	348+00	348+28	348+52	348+77	349+06	349+36	349+72	350+71	351+56	352+41	353+52		
FACE OF POLE TO CENTERLINE TRK											5.89' TRK	CL TO CL SUPPORT	5.89' TRK	CL TO CL SUPPORT	13.21' TRK	CL TO CL FDN
TROLLEY WIRE HEIGHT	18'-6"	18'-6"	18'-6"	18'-6"	18'-6"	18'-6"	18'-6"	18'-6"	18'-6"	18'-6"	18'-6"	18'-6"	18'-6"	18'-6"	18'-6"	18'-6"
MESSENGER WIRE HEIGHT	22'-0"	22'-0"	22'-0"				20'-0"			20'-0"	20'-0"	20'-0"	20'-0"	20'-0"	22'-0"	22'-0"
STAGGER			▼9"	▼6"	▼6"	▼6"	▼6"	▼6"	▼6"						▲6"	▲10"
POLE REFERENCE	TP-	TP-	TP-		TP-		TP-		TP-	TP-						
FOUNDATION REFERENCE	F1-	F1-	F1-		F1-		F1-		F1-	F1-					TBD	
TERMINATION HEIGHT																
IN-SPAN ASSEMBLIES																
DOWN GUY ASSEMBLY	DG-1															
SUPPORT REGISTRATION REFERENCE	HS-	HS-	HS-	PO-2	PO-2	PO-2	HS-	PO-2	PO-2	HS-	DS-1	DS-1	DS-1	DS-1		
HANGERS																
JUMPERS																
MISC. ASSEMBLIES AND FEEDERS 1					BWA-I						2/0 GROUND WIRE	2/0 GROUND WIRE	2/0 GROUND WIRE			
MISC. ASSEMBLIES AND FEEDERS 2											1 1/2" GRS CONDUIT	1 1/2" GRS CONDUIT	1 1/2" GRS CONDUIT			
MISC. ASSEMBLIES					GF-1											

HORIZONTAL SCALE:

40'

0

40'

80'

SCALE: 1"=40'

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MRW

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PRELIMINARY ENGINEERING

PURPLE LINE LIGHT RAIL

CATENARY LAYOUT PLAN 22

STA. EB 344+43 TO STA. EB 354+00

DATE: DECEMBER 2013

SCALE: AS SHOWN

CONTRACT NO.

T-1042-0220

DRAWING NO.

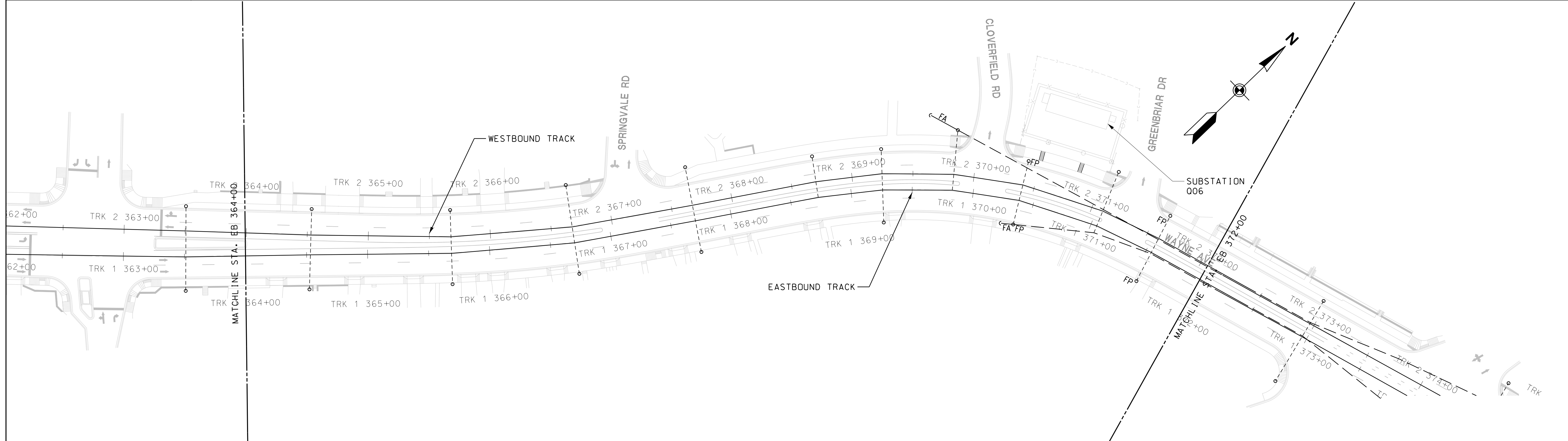
OC-0033

SHEET NO.

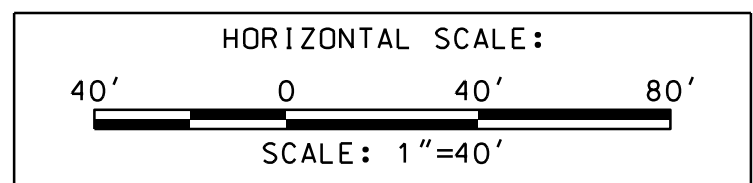
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pw:\00 - Current Projects\1042 - Purple Line Light Rail\130 CEC CADD Files\Zone 00-Project Wide\OCS\Sheet Files\1042pOC3051.dgn 12/13/2013

MISC. ASSEMBLIES		GF-1	
MISC. ASSEMBLIES AND FEEDERS 2			
MISC. ASSEMBLIES AND FEEDERS 1			
JUMPERS			
HANGERS			
SUPPORT REGISTRATION REFERENCE	P0-2	P0-2	P0-2
DOWN GUY ASSEMBLY		DG-1	
IN-SPAN ASSEMBLIES			
TERMINATION HEIGHT			
FOUNDATION REFERENCE	F1-	F1-	F1-
POLE REFERENCE	TP-	TP-	TP-
STAGGER			
MESSENGER WIRE HEIGHT			
TROLLEY WIRE HEIGHT	18'-6"	18'-6"	18'-6"
FACE OF POLE TO CENTERLINE TRK			
STATIONING	368+73	369+60	371+05
STRUCTURE NO.			



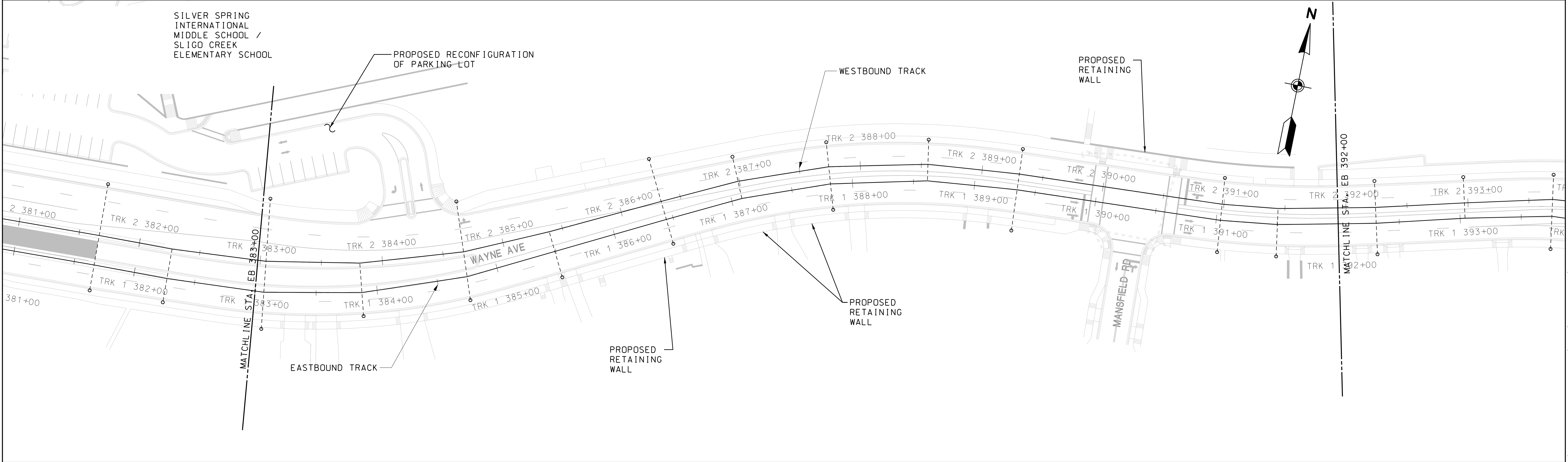
STRUCTURE NO.							
STATIONING	364+53	365+69	366+70	367+20	369+26	370+38	371+55
FACE OF POLE TO CENTERLINE TRK							
TROLLEY WIRE HEIGHT	18' -6"	18' -6"	18' -6"	18' -6"	18' -6"	18' -6"	18' -6"
MESSENGER WIRE HEIGHT	22' -0"	22' -6"	22' -0"	22' -0"	22' -6"	22' -0"	22' -0"
STAGGER							
POLE REFERENCE	TP-	TP-	TP-	TP-	TP-	TFP-	TFP-
FOUNDATION REFERENCE	F1-	F1-	F1-	F1-	F1-	F2-	F2-
TERMINATION HEIGHT							
IN-SPAN ASSEMBLIES							
DOWN GUY ASSEMBLY						DG-1	
SUPPORT REGISTRATION REFERENCE	HS-	HS-	HS-	HS-	HS-		HS-
HANGERS							
JUMPERS							
MISC. ASSEMBLIES AND FEEDERS 1							
MISC. ASSEMBLIES AND FEEDERS 2							
MISC. ASSEMBLIES						GF-1	



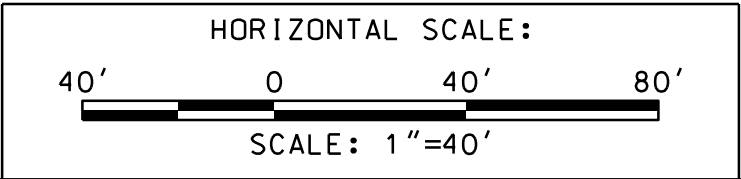
			PROFESSIONAL CERTIFICATION I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland License No. _____ Expiration Date _____	<i>DRAFT: Information shown is based on 30 percent preliminary engineering plans and may be subject to further revision pending refinements to the plans during the completion of the design phase. Any reliance upon any of these plans is made with full understanding of its draft status.</i>	DESIGN	MRW	PRELIMINARY ENGINEERING PURPLE LINE LIGHT RAIL	CONTRACT NO. T-1042-0220
					DRAWN	PJK		DRAWING NO. OC-0035
					CHECK	JHM	CATENARY LAYOUT PLAN 24 STA. EB 364+00 TO STA. EB 372+00 DATE: DECEMBER 2013 SCALE: AS SHOWN	SHEET NO. 88 OF 474
					APPR			

pw:\00 - Current Projects\1042 - Purple Line Light Rail\130 GEC CADD Files\Zone 00-Project Wide\OCS\Sheet Files\1042pOC3053.dgn
12/13/2013

MISC. ASSEMBLIES		
MISC. ASSEMBLIES AND FEEDERS 2		
MISC. ASSEMBLIES AND FEEDERS 1		
JUMPERS		
HANGERS		
SUPPORT REGISTRATION REFERENCE	P0-2	P0-2
DOWN GUY ASSEMBLY		
IN-SPAN ASSEMBLIES		
TERMINATION HEIGHT		
FOUNDATION REFERENCE	F1-	F1-
POLE REFERENCE	TP-	TP-
STAGGER		
MESSENGER WIRE HEIGHT		
TROLLEY WIRE HEIGHT	18'-6"	
FACE OF POLE TO CENTERLINE TRK		
STATIONING	387+09	388+61
STRUCTURE NO.		



STRUCTURE NO.											
STATIONING	383+07	383+87	384+73	385+49	386+29	387+09	387+82	388+61	389+35	391+03	391+50
FACE OF POLE TO CENTERLINE TRK											
TROLLEY WIRE HEIGHT	18'-6"	18'-6"	18'-6"	18'-6"	18'-6"	18'-6"	18'-6"	18'-6"	18'-6"	18'-6"	18'-6"
MESSENGER WIRE HEIGHT	22'-0"		22'-0"		22'-0"		22'-0"		22'-0"		
STAGGER											
POLE REFERENCE	TP-	TP-	TP-	TP-	TP-		TP-		TP-	TP-	
FOUNDATION REFERENCE	F1-	F1-	F1-	F1-	F1-		F1-		F1-	F1-	
TERMINATION HEIGHT											
IN-SPAN ASSEMBLIES											
DOWN GUY ASSEMBLY											
SUPPORT REGISTRATION REFERENCE	HS-	P0-2	HS-	P0-2	HS-		HS-		HS-	P0-2	
HANGERS											
JUMPERS											
MISC. ASSEMBLIES AND FEEDERS 1											
MISC. ASSEMBLIES AND FEEDERS 2											
MISC. ASSEMBLIES											



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DRAWN

DESIGN

MRW

PJK

JHM

PRELIMINARY ENGINEERING

PURPLE LINE LIGHT RAIL

CATENARY LAYOUT PLAN 26

STA. EB 383+00 TO STA. EB 392+00

DATE: DECEMBER 2013 SCALE: AS SHOWN

CONTRACT NO.

T-1042-0220

DRAWING NO.

OC-0037

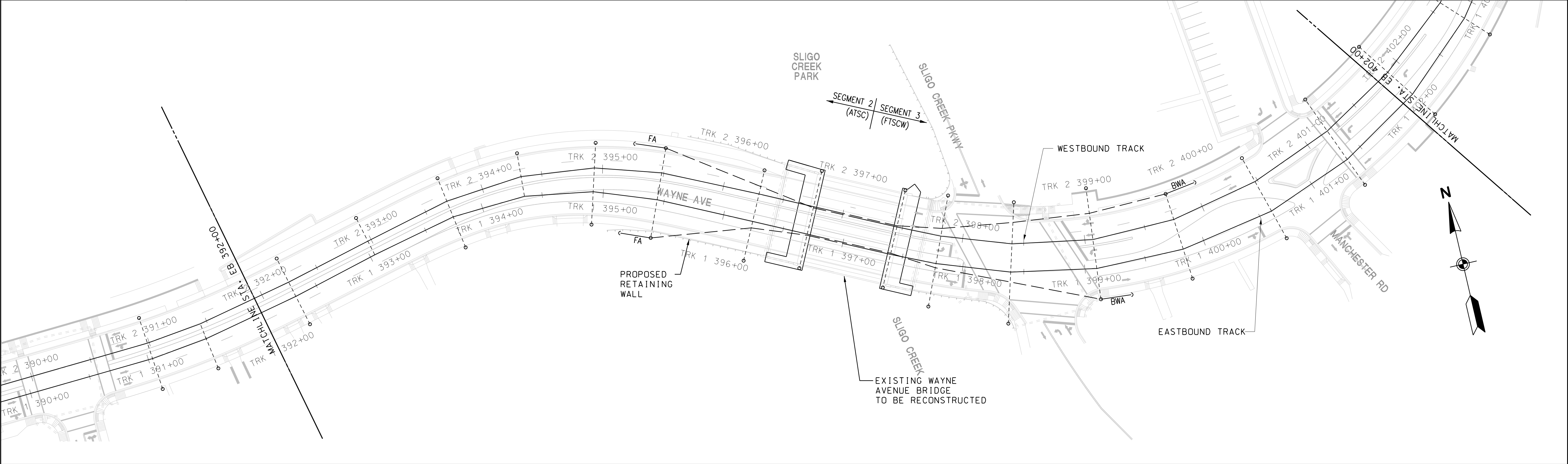
SHEET NO.

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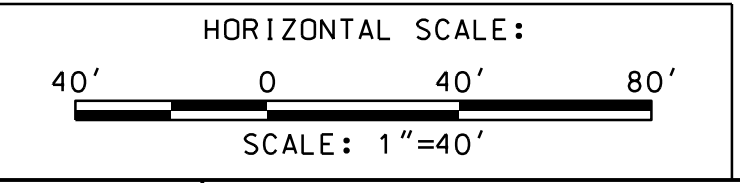
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11/22/2013

MISC. ASSEMBLIES		
MISC. ASSEMBLIES AND FEEDERS 2		
MISC. ASSEMBLIES AND FEEDERS 1		
JUMPERS		
HANGERS		
SUPPORT REGISTRATION REFERENCE	P0-2	P0-2
DOWN GUY ASSEMBLY		
IN-SPAN ASSEMBLIES		
TERMINATION HEIGHT		
FOUNDATION REFERENCE	F1-	F1-
POLE REFERENCE	TP-	TP-
STAGGER		
MESSENGER WIRE HEIGHT		
TROLLEY WIRE HEIGHT	18'-6"	18'-6"
FACE OF POLE TO CENTERLINE TRK		
STATIONING	393+07	394+36
STRUCTURE NO.		



STRUCTURE NO.															
STATIONING	392+31	393+07	393+75	394+36	394+94	395+44	396+24	396+70	397+40	397+78	398+39	399+10	399+82	400+60	401+36
FACE OF POLE TO CENTERLINE TRK															
TROLLEY WIRE HEIGHT	18'-6"	18'-6"	18'-6"	18'-6"	19'-0"	19'-0"	19'-0"	19'-0"	19'-0"	19'-0"	19'-0"	19'-0"	19'-0"	19'-0"	19'-0"
MESSENGER WIRE HEIGHT	22'-0"		22'-0"		22'-6"		22'-6"			N/A	N/A	N/A	N/A	N/A	N/A
STAGGER															
POLE REFERENCE	TP-		TP-		TP-	TP-	TP-	TP-	TFP-	TP-		BW-	TFP-	TP-	TFP-
FOUNDATION REFERENCE	F1-		F1-		F1-	F1-	F1-	AB-	AB-	F3-	F1-	F1-	F3-	F1-	F3-
TERMINATION HEIGHT															
IN-SPAN ASSEMBLIES															
DOWN GUY ASSEMBLY															
SUPPORT REGISTRATION REFERENCE	HS-		HS-		HS-	DG-1	HS-	HS-	HS-	HS-	HS-	DG-1	HS-	HS-	HS-
HANGERS															
JUMPERS															
MISC. ASSEMBLIES AND FEEDERS 1												BWA-I			
MISC. ASSEMBLIES AND FEEDERS 2															
MISC. ASSEMBLIES						GF-1						GF-1			



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DRAWN

DESIGN

MRW

PJK

JHM

PRELIMINARY ENGINEERING

PURPLE LINE LIGHT RAIL

CATENARY LAYOUT PLAN 27

STA. EB 392+00 TO STA. EB 402+00

DATE: DECEMBER 2013

SCALE: AS SHOWN

CONTRACT NO.

T-1042-0220

DRAWING NO.

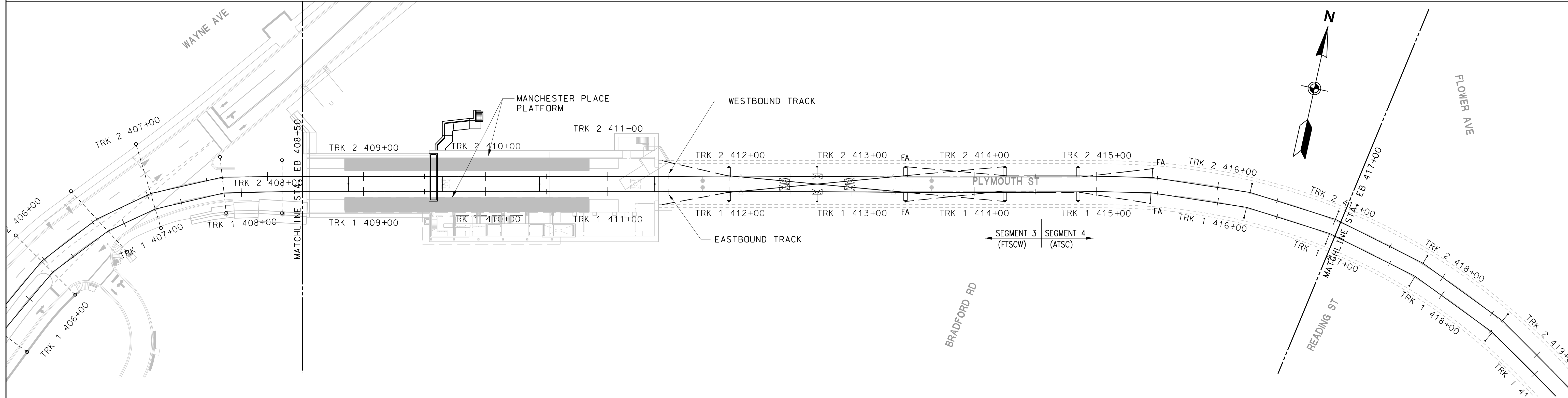
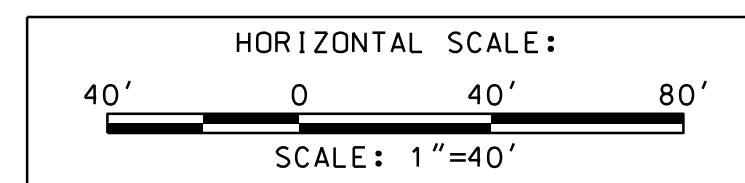
OC-0038




SHEET NO.

91 OF 474

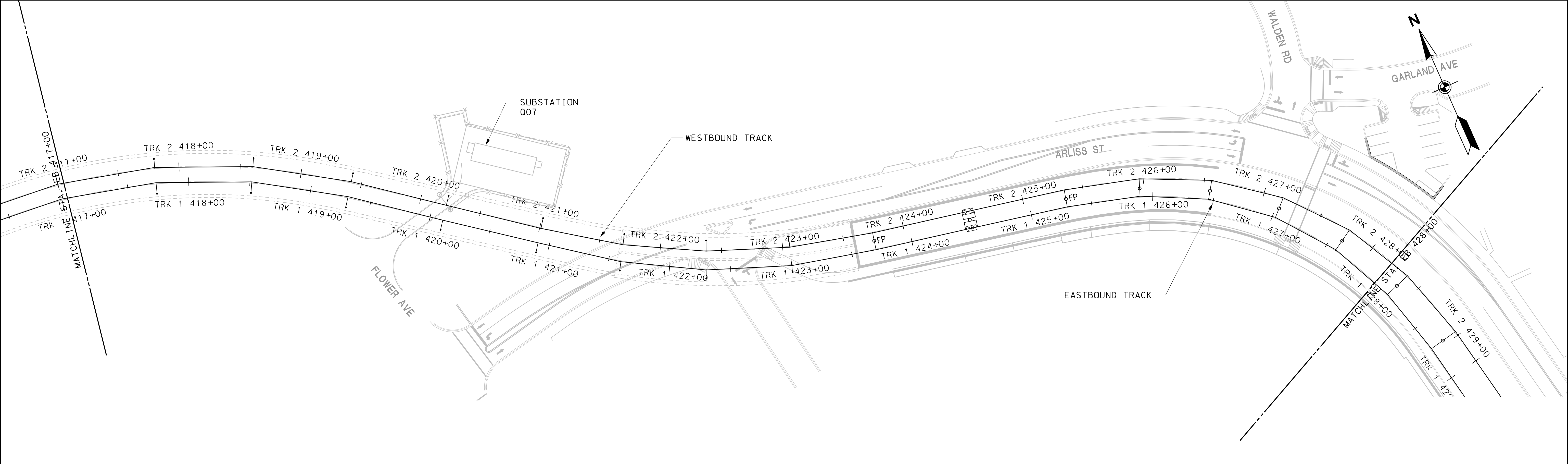
pw:\00 - Current Projects\1042 - Purple Line Light Rail\130 CEC CADD Files\Zone 00-Project Wide\OCS\Sheet Files\1042pOC3056.dgn 12/13/2013

MISC. ASSEMBLIES	
MISC. ASSEMBLIES AND FEEDERS 2	
MISC. ASSEMBLIES AND FEEDERS 1	
JUMPERS	
HANGERS	
SUPPORT REGISTRATION REFERENCE	
DOWN GUY ASSEMBLY	
IN-SPAN ASSEMBLIES	
TERMINATION HEIGHT	
FOUNDATION REFERENCE	
POLE REFERENCE	
STAGGER	
MESSENGER WIRE HEIGHT	
TROLLEY WIRE HEIGHT	
FACE OF POLE TO CENTERLINE TRK	
STATIONING	
STRUCTURE NO.	

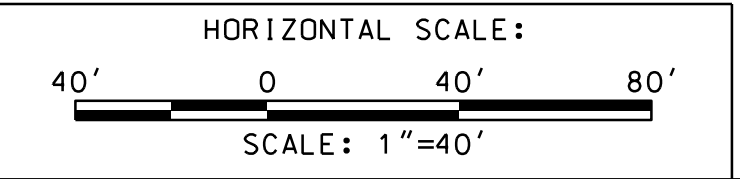
[illegible]

			PROFESSIONAL CERTIFICATION I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland License No. Expiration Date	<i>DRAFT: Information shown is based on 30 percent preliminary engineering plans and may be subject to further revision pending refinements to the plans during the completion of the design phase. Any reliance upon any of these plans is made with full understanding of its draft status.</i>	DESIGN	MRW	PRELIMINARY ENGINEERING PURPLE LINE LIGHT RAIL	CONTRACT NO.	T-1042-0220
					DRAWN	PJK		DRAWING NO.	OC-0040
					CHECK	JHM	CATENARY LAYOUT PLAN 29 STA. EB 408+50 TO STA. EB 417+00 DATE: DECEMBER 2013 SCALE: AS SHOWN	SHEET NO.	93 OF 474
					APPR				

MISC. ASSEMBLIES	
MISC. ASSEMBLIES AND FEEDERS 2	
MISC. ASSEMBLIES AND FEEDERS 1	
JUMPERS	
HANGERS	
SUPPORT REGISTRATION REFERENCE	
DOWN GUY ASSEMBLY	
IN-SPAN ASSEMBLIES	
TERMINATION HEIGHT	
FOUNDATION REFERENCE	
POLE REFERENCE	
STAGGER	
MESSENGER WIRE HEIGHT	
TROLLEY WIRE HEIGHT	
FACE OF POLE TO CENTERLINE TRK	
STATIONING	
STRUCTURE NO.	



STRUCTURE NO.															
STATIONING	417+73	418+52	419+31	420+11	420+91	421+59	422+29	423+00	423+70	424+50	425+30	425+90	426+46	427+03	427+59
FACE OF POLE TO CENTERLINE TRK															
TROLLEY WIRE HEIGHT	16'-0"	16'-0"	16'-0"	16'-0"	16'-0"	16'-0"	16'-0"	16'-0"	16'-0"	16'-0"	16'-0"	16'-0"	16'-0"	16'-3"	17'-0"
MESSENGER WIRE HEIGHT	17'-6"	17'-6"	17'-6"	17'-6"	17'-6"	17'-6"	17'-6"	17'-6"	17'-6"	17'-6"	17'-6"	17'-6"	17'-6"	17'-9"	18'-6"
STAGGER															
POLE REFERENCE									TFP-	TP-	TFP-	TP-	TP-	TP-	TP-
FOUNDATION REFERENCE									F3-	F1-	F3-	F1-	F1-	F1-	F1-
TERMINATION HEIGHT															
IN-SPAN ASSEMBLIES	SI														
DOWN GUY ASSEMBLY															
SUPPORT REGISTRATION REFERENCE									CA-						
HANGERS															
JUMPERS															
MISC. ASSEMBLIES AND FEEDERS 1															
MISC. ASSEMBLIES AND FEEDERS 2															
MISC. ASSEMBLIES															



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APPR

CHECK

DRAWN

DESIGN

MRW

PJK

JHM

PRELIMINARY ENGINEERING

PURPLE LINE LIGHT RAIL

CATENARY LAYOUT PLAN 30

STA. EB. 417+00 TO STA. EB. 428+00

DATE: DECEMBER 2013

SCALE: AS SHOWN

CONTRACT NO.

T-1042-0220

DRAWING NO.

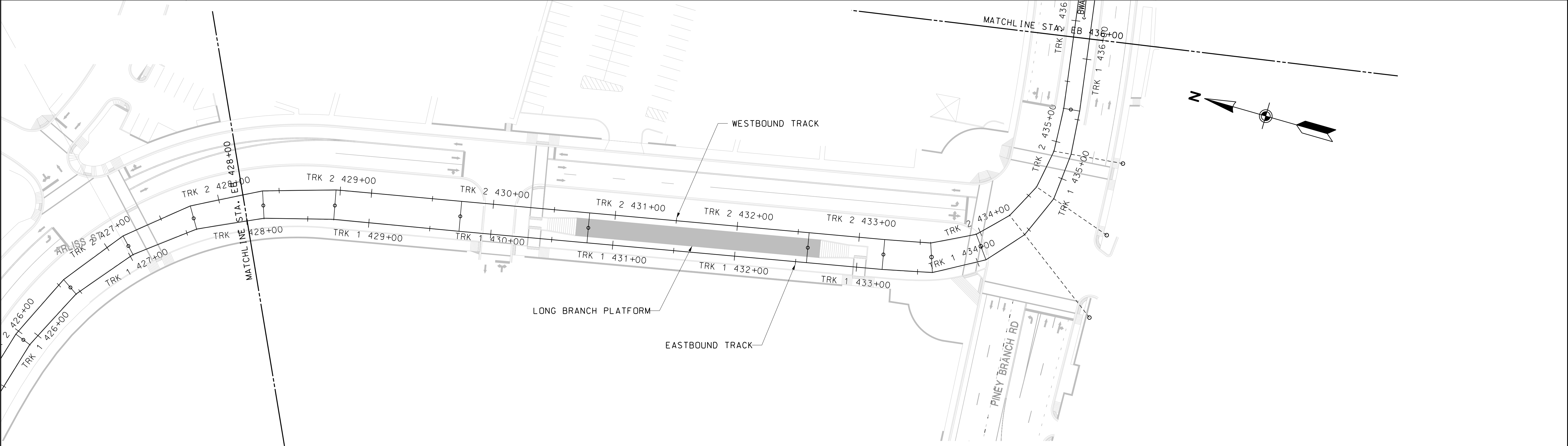
OC-0041

SHEET NO.

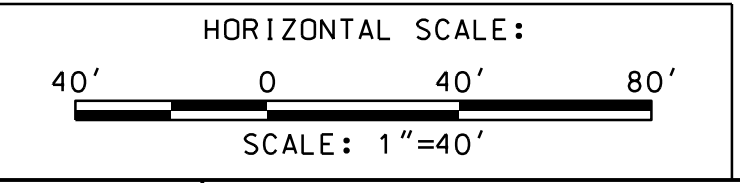
94 OF 474

pw:\00 - Current Projects\1042 - Purple Line Light Rail\130 CEC CADD Files\Zone 00-Project Wide\OCS\Sheet Files\1042pOC4059.dgn 11/22/2013

MISC. ASSEMBLIES	
MISC. ASSEMBLIES AND FEEDERS 2	
MISC. ASSEMBLIES AND FEEDERS 1	
JUMPERS	
HANGERS	
SUPPORT REGISTRATION REFERENCE	
DOWN GUY ASSEMBLY	
IN-SPAN ASSEMBLIES	
TERMINATION HEIGHT	
FOUNDATION REFERENCE	
POLE REFERENCE	
STAGGER	
MESSENGER WIRE HEIGHT	
TROLLEY WIRE HEIGHT	
FACE OF POLE TO CENTERLINE TRK	
STATIONING	
STRUCTURE NO.	



STRUCTURE NO.												
STATIONING	428+14	428+71	429+74	430+79	432+59	433+21	433+62	434+07	434+45	434+79	435+21	435+57
FACE OF POLE TO CENTERLINE TRK												
TROLLEY WIRE HEIGHT	17'-6"	18'-0"	18'-6"	18'-6"	18'-6"	18'-6"	18'-6"	18'-6"	18'-6"	18'-6"	18'-6"	18'-6"
MESSENGER WIRE HEIGHT	19'-0"	19'-6"	20'-0"	22'-0"	22'-0"	20'-0"	20'-0"	20'-0"	20'-0"			22'-0"
STAGGER												
POLE REFERENCE	TP-	TP-	TP-	TP-	TP-	TP-	TP-	TP-	TP-	TP-	TP-	TP-
FOUNDATION REFERENCE	F1-	F1-	F1-	F1-	F1-	F1-	F1-	F1-	F1-	F1-	F1-	F1-
TERMINATION HEIGHT												
IN-SPAN ASSEMBLIES												
DOWN GUY ASSEMBLY												
SUPPORT REGISTRATION REFERENCE	CA-	CA-	CA-	CA-	CA-	CA-	CA-	CA-	PO-	PO-	PO-	CA-
HANGERS												
JUMPERS												
MISC. ASSEMBLIES AND FEEDERS 1												
MISC. ASSEMBLIES AND FEEDERS 2												
MISC. ASSEMBLIES												



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DESIGNMRW

DRAWNPJK

CHECKJHM

APPR

PRELIMINARY ENGINEERING

PURPLE LINE LIGHT RAIL

CATENARY LAYOUT PLAN 31

STA. EB 428+00 TO STA. EB 436+00

DATE: DECEMBER 2013 SCALE: AS SHOWN

CONTRACT NO.

T-1042-0220

DRAWING NO.

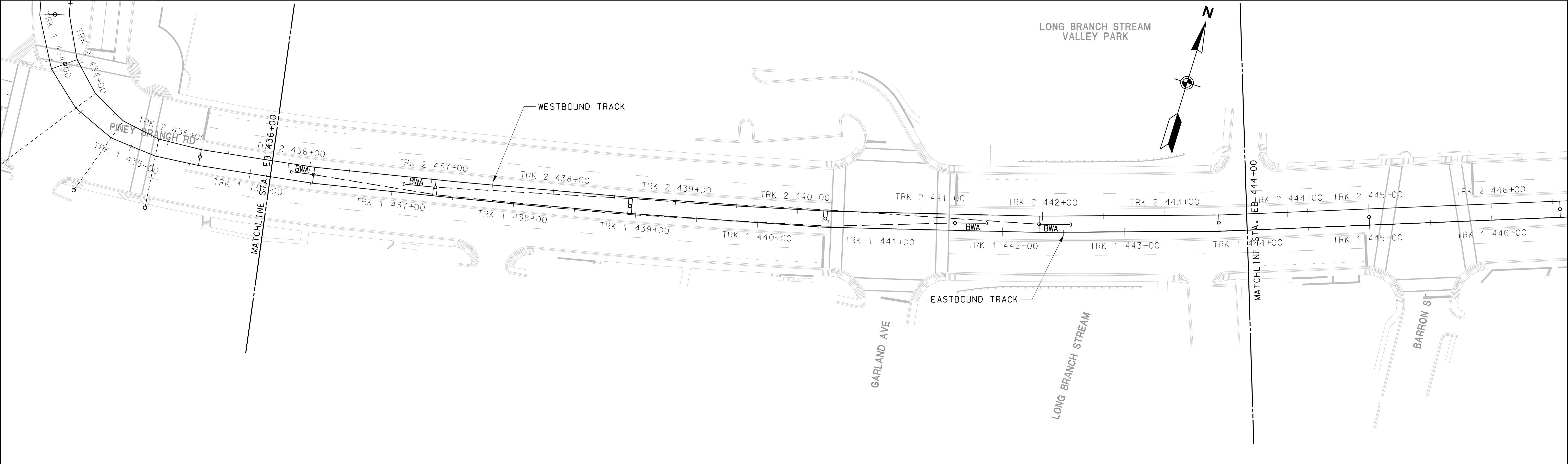
OC-0042

SHEET NO.

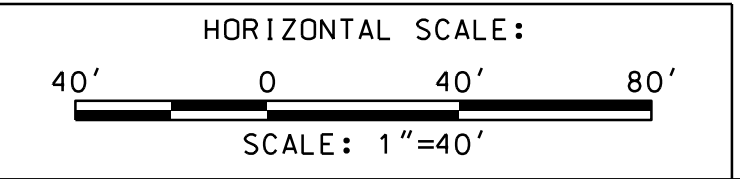
95 OF 474

pw:\00 - Current Projects\1042 - Purple Line Light Rail\130 CEC CADD Files\Zone 00-Project Wide\OCS\Sheet Files\1042pOC5060.dgn 11/22/2013

MISC. ASSEMBLIES	
MISC. ASSEMBLIES AND FEEDERS 2	
MISC. ASSEMBLIES AND FEEDERS 1	
JUMPERS	
HANGERS	
SUPPORT REGISTRATION REFERENCE	
DOWN GUY ASSEMBLY	
IN-SPAN ASSEMBLIES	
TERMINATION HEIGHT	
FOUNDATION REFERENCE	
POLE REFERENCE	
STAGGER	
MESSENGER WIRE HEIGHT	
TROLLEY WIRE HEIGHT	
FACE OF POLE TO CENTERLINE TRK	
STATIONING	
STRUCTURE NO.	



STRUCTURE NO.							
STATIONING	436+35	437+35	438+95	440+55	441+61	442+30	443+77
FACE OF POLE TO CENTERLINE TRK							
TROLLEY WIRE HEIGHT	18'-6"	18'-6"	18'-6"	18'-6"		18'-6"	18'-6"
MESSENGER WIRE HEIGHT	22'-0"	22'-0"	22'-0"	22'-0"		22'-0"	22'-0"
STAGGER							
POLE REFERENCE	TP-	TP-	TP-	TP-	TP-	TP-	TP-
FOUNDATION REFERENCE	BW-	BW-	F1-	F1-	BW-	BW-	F1-
TERMINATION HEIGHT							
IN-SPAN ASSEMBLIES							
DOWN GUY ASSEMBLY	DG-1	DG-1				DG-1	DG-1
SUPPORT REGISTRATION REFERENCE	CA-	CA- , CA-	CA- , CA-	CA- , CA-		CA-	CA-
HANGERS							
JUMPERS							
MISC. ASSEMBLIES AND FEEDERS 1	BWA-E	BWA-E			BWA-E	BWA-E	
MISC. ASSEMBLIES AND FEEDERS 2							
MISC. ASSEMBLIES	GF-1	GF-1			GF-1	GF-1	



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APPR

CHECK

DRAWN

DESIGN

MRW

PJK

JHM

PRELIMINARY ENGINEERING
PURPLE LINE LIGHT RAIL

CATENARY LAYOUT PLAN 32
STA. EB 436+00 TO STA. EB 444+00
DATE: DECEMBER 2013 SCALE: AS SHOWN

CONTRACT NO.
T-1042-0220

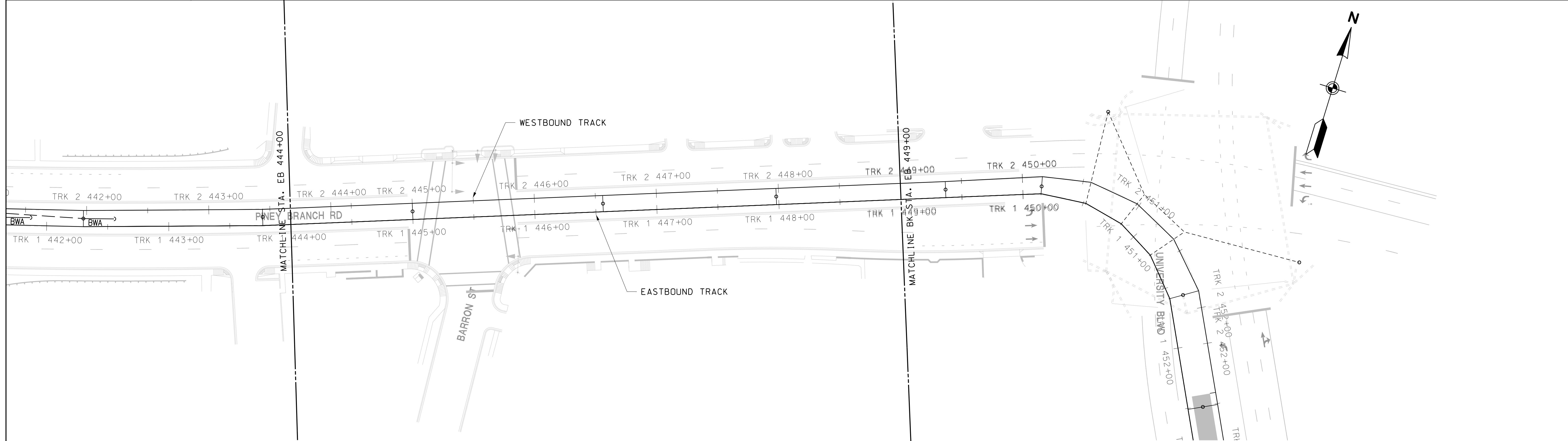
DRAWING NO.
OC-0043

SHEET NO.
96 OF 474

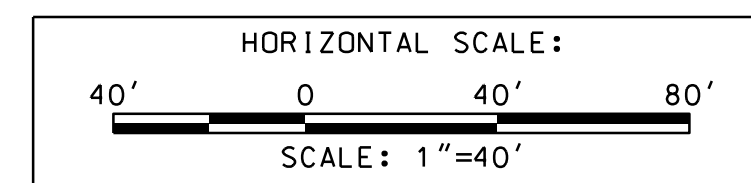
pw:\00 - Current Projects\1042 - Purple Line Light Rail\130 CEC CADD Files\Zone 00-Project Wide\OCS\Sheet Files\1042pOC5061.dgn




11/22/2013

MISC. ASSEMBLIES	
MISC. ASSEMBLIES AND FEEDERS 2	
MISC. ASSEMBLIES AND FEEDERS 1	
JUMPERS	
HANGERS	
SUPPORT REGISTRATION REFERENCE	
DOWN GUY ASSEMBLY	
IN-SPAN ASSEMBLIES	
TERMINATION HEIGHT	
FOUNDATION REFERENCE	
POLE REFERENCE	
STAGGER	
MESSENGER WIRE HEIGHT	
TROLLEY WIRE HEIGHT	
FACE OF POLE TO CENTERLINE TRK	
STATIONING	
STRUCTURE NO.	

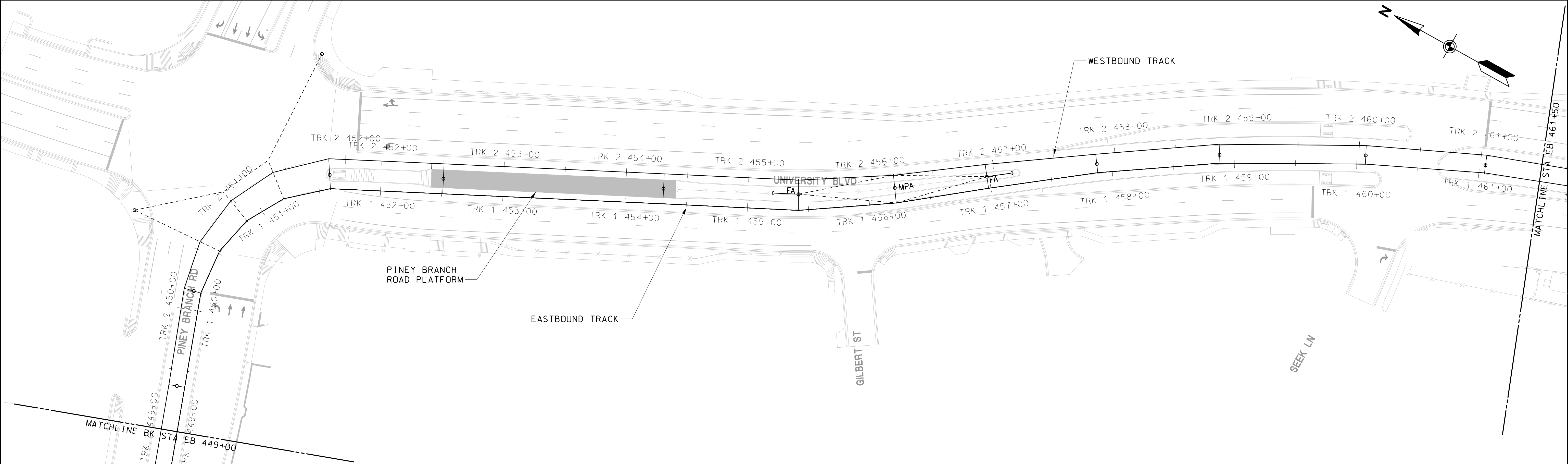


STRUCTURE NO.			
STATIONING	445+00	446+56	447+97
FACE OF POLE TO CENTERLINE TRK			
TROLLEY WIRE HEIGHT	18' -6"	18' -6"	18' -6"
MESSENGER WIRE HEIGHT	22' -0"	22' -0"	22' -0"
STAGGER			
POLE REFERENCE	TP-	TP-	TP-
FOUNDATION REFERENCE	F1-	F1-	F1-
TERMINATION HEIGHT			
IN-SPAN ASSEMBLIES			
DOWN GUY ASSEMBLY			
SUPPORT REGISTRATION REFERENCE	CA-	CA-	CA-
HANGERS			
JUMPERS			
MISC. ASSEMBLIES AND FEEDERS 1			
MISC. ASSEMBLIES AND FEEDERS 2			
MISC. ASSEMBLIES			

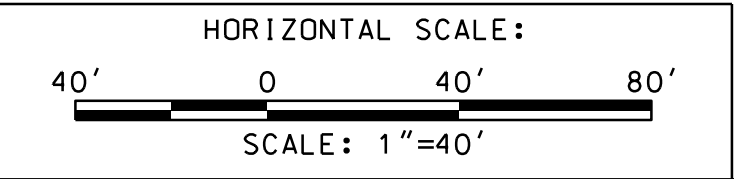


			PROFESSIONAL CERTIFICATION I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland License No. Expiration Date	<i>DRAFT: Information shown is based on 30 percent preliminary engineering plans and may be subject to further revision pending refinements to the plans during the completion of the design phase. Any reliance upon any of these plans is made with full understanding of its draft status.</i>	DESIGN	MRW	PRELIMINARY ENGINEERING PURPLE LINE LIGHT RAIL	CONTRACT NO.	T-1042-0220
					DRAWN	PJK		DRAWING NO.	OC-0044
					CHECK	JHM	CATENARY LAYOUT PLAN 33 STA. EB 444+00 TO STA. EB 449+00 DATE: DECEMBER 2013 SCALE: AS SHOWN	SHEET NO.	97 OF 474
					APPR				

MISC. ASSEMBLIES	
MISC. ASSEMBLIES AND FEEDERS 2	
MISC. ASSEMBLIES AND FEEDERS 1	
JUMPERS	
HANGERS	
SUPPORT REGISTRATION REFERENCE	
DOWN GUY ASSEMBLY	
IN-SPAN ASSEMBLIES	
TERMINATION HEIGHT	
FOUNDATION REFERENCE	
POLE REFERENCE	
STAGGER	
MESSENGER WIRE HEIGHT	
TROLLEY WIRE HEIGHT	
FACE OF POLE TO CENTERLINE TRK	
STATIONING	
STRUCTURE NO.	



STRUCTURE NO.												
STATIONING	449+37	450+15	451+59	452+51	454+31	455+42	456+22	456+98	457+88	458+88	460+07	461+05
FACE OF POLE TO CENTERLINE TRK												
TROLLEY WIRE HEIGHT	18'-6"	18'-6"	18'-6"	18'-6"	18'-6"	18'-6"	18'-6"	18'-6"	18'-6"	18'-6"	18'-6"	18'-6"
MESSENGER WIRE HEIGHT	22'-0"	22'-0"	22'-0"	22'-0"	22'-0"	22'-0"	22'-0"	22'-0"	22'-0"	22'-0"	22'-0"	22'-0"
STAGGER												
POLE REFERENCE	TP-	TP-	TP-	TP-	TP-	TP-	TP-	TP-	TP-			
FOUNDATION REFERENCE	F1-	F1-	F1-	F1-	F1-	F1-	F1-	F1-	F1-			
TERMINATION HEIGHT												
IN-SPAN ASSEMBLIES												
DOWN GUY ASSEMBLY												
SUPPORT REGISTRATION REFERENCE						DG-1		DG-1				
HANGERS						CA-	CA-	CA-	CA-			
JUMPERS												
MISC. ASSEMBLIES AND FEEDERS 1							MPA-1					
MISC. ASSEMBLIES AND FEEDERS 2												
MISC. ASSEMBLIES						GF-1		GF-1				



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CHECK

DRAWN

DESIGN

MRW

PJK

JHM

PRELIMINARY ENGINEERING

PURPLE LINE LIGHT RAIL

CATENARY LAYOUT PLAN 34

STA. EB. 449+00 TO STA. EB. 461+50

DATE: DECEMBER 2013

SCALE: AS SHOWN

CONTRACT NO.

T-1042-0220

DRAWING NO.

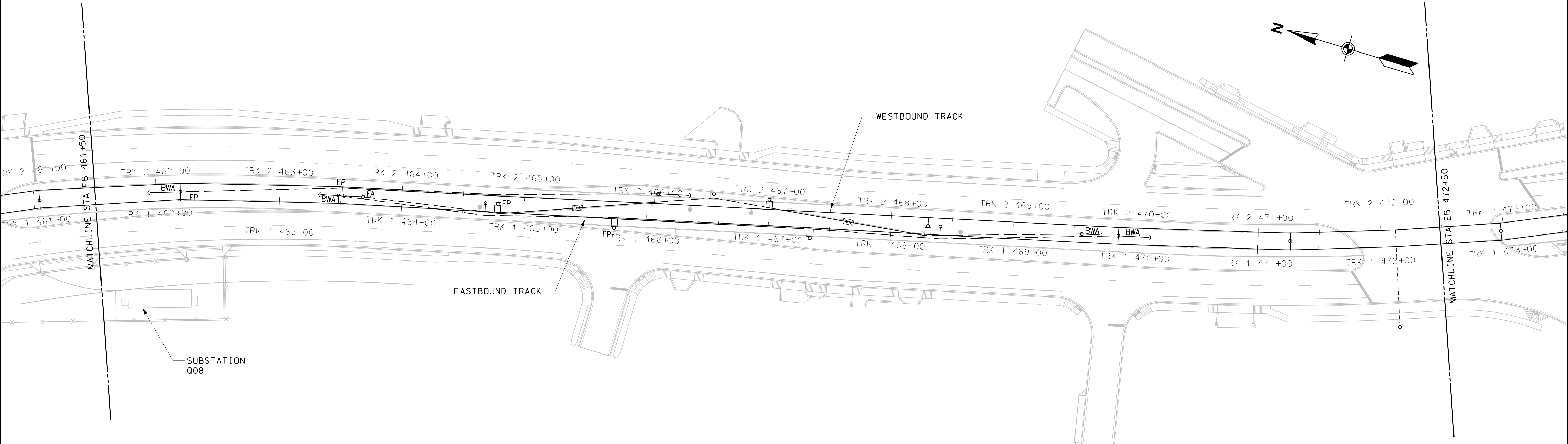
OC-0045

SHEET NO.

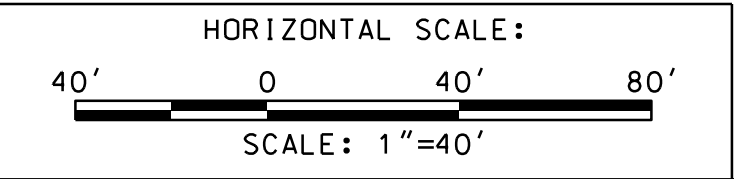
98 OF 474

pw:\00 - Current Projects\1042 - Purple Line Light Rail\130 CEC CADD Files\Zone 00-Project Wide\OCS\Sheet Files\1042pOC6063.dgn 12/13/2013

MISC. ASSEMBLIES	
MISC. ASSEMBLIES AND FEEDERS 2	
MISC. ASSEMBLIES AND FEEDERS 1	
JUMPERS	
HANGERS	
SUPPORT REGISTRATION REFERENCE	
DOWN GUY ASSEMBLY	
IN-SPAN ASSEMBLIES	
TERMINATION HEIGHT	
FOUNDATION REFERENCE	
POLE REFERENCE	BW-
STAGGER	
MESSENGER WIRE HEIGHT	
TROLLEY WIRE HEIGHT	
FACE OF POLE TO CENTERLINE TRK	
STATIONING	
STRUCTURE NO.	



STRUCTURE NO.													
STATIONING	462+20	463+48	463+68	464+68	464+78	465+74	467+34	468+30	468+40	469+56	469+86	471+27	472+13
FACE OF POLE TO CENTERLINE TRK													
TROLLEY WIRE HEIGHT	18'-6"	18'-6"			18'-6"	18'-6"	18'-6"	18'-6"			18'-6"	18'-6"	18'-6"
MESSENGER WIRE HEIGHT	22'-0"	22'-0"			22'-0"	22'-0"	22'-0"	22'-0"			22'-0"	22'-0"	22'-0"
STAGGER													
POLE REFERENCE	TFP-	TFP-	TP-	TP-	TFP-	TFP-	TP-	TP-	TP-	TP-	TP-	TP-	TP-
FOUNDATION REFERENCE	F3-	F3-	F1-	F1-	F3-	F3-	F1-	F1-	F1-	F1-	F1-	F1-	F1-
TERMINATION HEIGHT													
IN-SPAN ASSEMBLIES						SI				SI			
DOWN GUY ASSEMBLY	DG-1	DG-1	DG-1								DG-1	DG-1	
SUPPORT REGISTRATION REFERENCE	CA-	CA-		CA-	CA- , CA-	CA- , CA-	CA- , CA-	CA- , CA-	CA-		CA-		PO-2
HANGERS													
JUMPERS													
MISC. ASSEMBLIES AND FEEDERS 1	BWA-E	BWA-E											
MISC. ASSEMBLIES AND FEEDERS 2													
MISC. ASSEMBLIES	GF-1	GF-1	GF-1								GF-1	GF-1	



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APPR

CHECK

DRAWN

DESIGN

MRW

PJK

JHM

PRELIMINARY ENGINEERING
PURPLE LINE LIGHT RAIL

CATENARY LAYOUT PLAN 35
STA. EB. 461+50 TO STA. EB. 472+50
DATE: DECEMBER 2013 SCALE: AS SHOWN

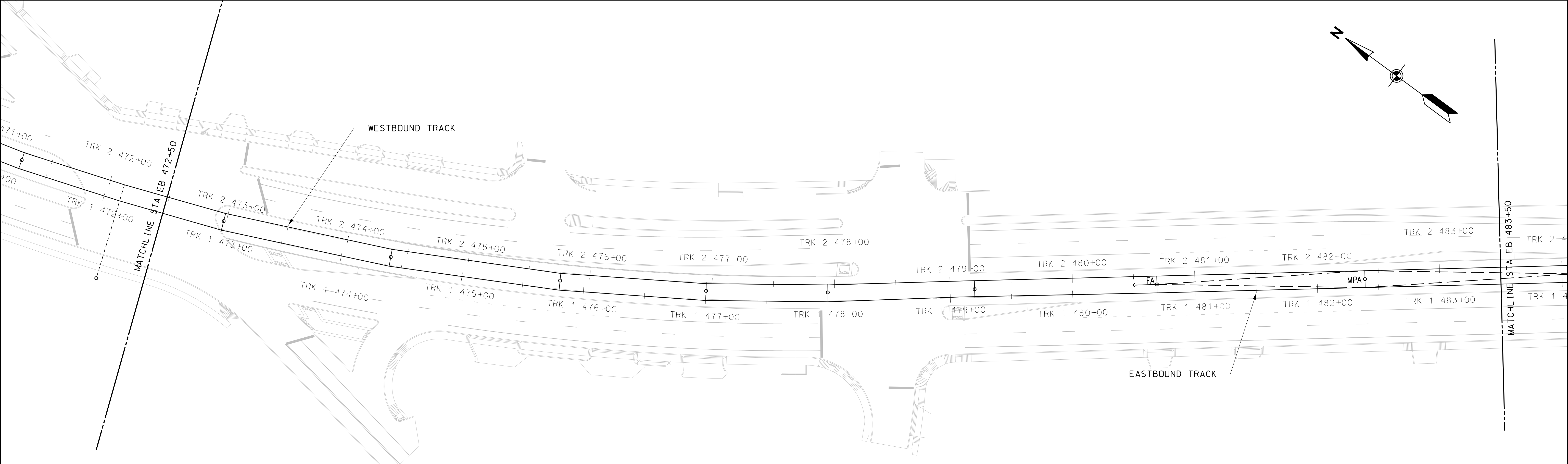
CONTRACT NO.
T-1042-0220

DRAWING NO.
OC-0046

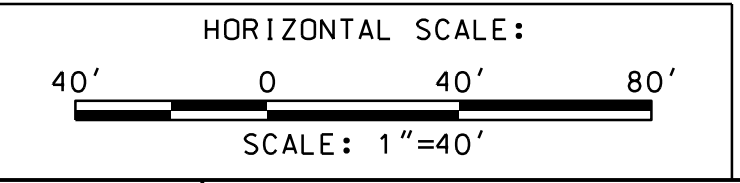
SHEET NO.
99 OF 474

pw:\00 - Current Projects\1042 - Purple Line Light Rail\130 CEC CADD Files\Zone 00-Project Wide\OCS\Sheet Files\1042pOC6064.dgn 12/13/2013

MISC. ASSEMBLIES	
MISC. ASSEMBLIES AND FEEDERS 2	
MISC. ASSEMBLIES AND FEEDERS 1	
JUMPERS	
HANGERS	
SUPPORT REGISTRATION REFERENCE	
DOWN GUY ASSEMBLY	
IN-SPAN ASSEMBLIES	
TERMINATION HEIGHT	
FOUNDATION REFERENCE	
POLE REFERENCE	
STAGGER	
MESSENGER WIRE HEIGHT	
TROLLEY WIRE HEIGHT	
FACE OF POLE TO CENTERLINE TRK	
STATIONING	
STRUCTURE NO.	



STRUCTURE NO.								
STATIONING	473+00	474+40	475+80	477+00	478+00	479+20	480+69	482+39
FACE OF POLE TO CENTERLINE TRK								
TROLLEY WIRE HEIGHT	18'-6"	18'-6"	18'-6"	18'-6"	18'-6"	18'-6"	18'-6"	18'-6"
MESSENGER WIRE HEIGHT	22'-0"	22'-0"	22'-0"	22'-0"	22'-0"	22'-0"	22'-0"	22'-0"
STAGGER								
POLE REFERENCE	TP-	TP-	TP-	TP-	TP-	TP-	TP-	TP-
FOUNDATION REFERENCE	F1-	F1-	F1-	F1-	F1-	F1-	F1-	F1-
TERMINATION HEIGHT								
IN-SPAN ASSEMBLIES								
DOWN GUY ASSEMBLY								
SUPPORT REGISTRATION REFERENCE	CA-	CA-	CA-	CA-	CA-	CA-	DG-1 CA-	CA-
HANGERS								
JUMPERS								
MISC. ASSEMBLIES AND FEEDERS 1								
MISC. ASSEMBLIES AND FEEDERS 2								MPA-1
MISC. ASSEMBLIES								GF-1



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APPR

CHECK

DRAWN

DESIGN

MRW

PJK

JHM

PRELIMINARY ENGINEERING
PURPLE LINE LIGHT RAIL

CATENARY LAYOUT PLAN 36
STA. EB 472+50 TO STA. EB 483+50
DATE: DECEMBER 2013 SCALE: AS SHOWN

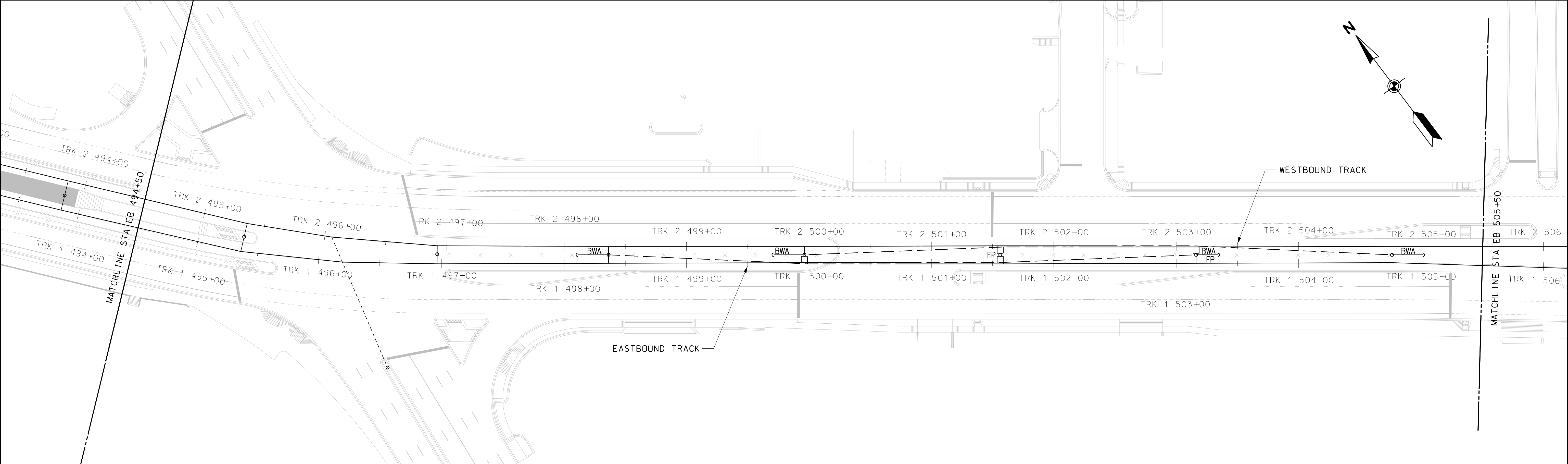
CONTRACT NO.
T-1042-0220

DRAWING NO.
OC-0047

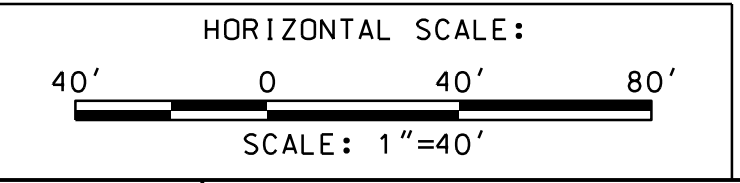
SHEET NO.
100 OF 474

pw:\00 - Current Projects\1042 - Purple Line Light Rail\130 CEC CADD Files\Zone 00-Project Wide\OCS\Sheet Files\1042pOC6065.dgn 11/22/2013

MISC. ASSEMBLIES	
MISC. ASSEMBLIES AND FEEDERS 2	
MISC. ASSEMBLIES AND FEEDERS 1	
JUMPERS	
HANGERS	
SUPPORT REGISTRATION REFERENCE	
DOWN GUY ASSEMBLY	
IN-SPAN ASSEMBLIES	
TERMINATION HEIGHT	
FOUNDATION REFERENCE	
POLE REFERENCE	
STAGGER	
MESSENGER WIRE HEIGHT	
TROLLEY WIRE HEIGHT	
FACE OF POLE TO CENTERLINE TRK	
STATIONING	
STRUCTURE NO.	



STRUCTURE NO.								
STATIONING	495+36	496+57	496+96	498+36	499+96	501+56	503+16	504+76
FACE OF POLE TO CENTERLINE TRK								
TROLLEY WIRE HEIGHT	18'-6"	18'-6"	18'-6"	18'-6"	18'-6"	18'-6"	18'-6"	18'-6"
MESSENGER WIRE HEIGHT	22'-0"		22'-0"	22'-0"	22'-0"	22'-0"	22'-0"	22'-0"
STAGGER								
POLE REFERENCE	TP-		TP-	TP-	TP-	TFP-	TFP-	TP-
FOUNDATION REFERENCE	F1-		F1-	F1-	F1-	F3-	F3-	F1-
TERMINATION HEIGHT								
IN-SPAN ASSEMBLIES								
DOWN GUY ASSEMBLY								
SUPPORT REGISTRATION REFERENCE	CA-	PD-2	CA-	DG-1 CA-	DG-1 CA- , CA-	CA- , CA-	DG-1 CA-	DG-1 CA-
HANGERS								
JUMPERS								
MISC. ASSEMBLIES AND FEEDERS 1				BWA-E			BWA-E	BWA-E
MISC. ASSEMBLIES AND FEEDERS 2								
MISC. ASSEMBLIES				GF-1			GF-1	GF-1



MARYLAND DEPARTMENT OF TRANSPORTATION

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License No. Expiration Date

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APPR

CHECK

DRAWN

DESIGN

PJK

JHM

PRELIMINARY ENGINEERING
PURPLE LINE LIGHT RAIL

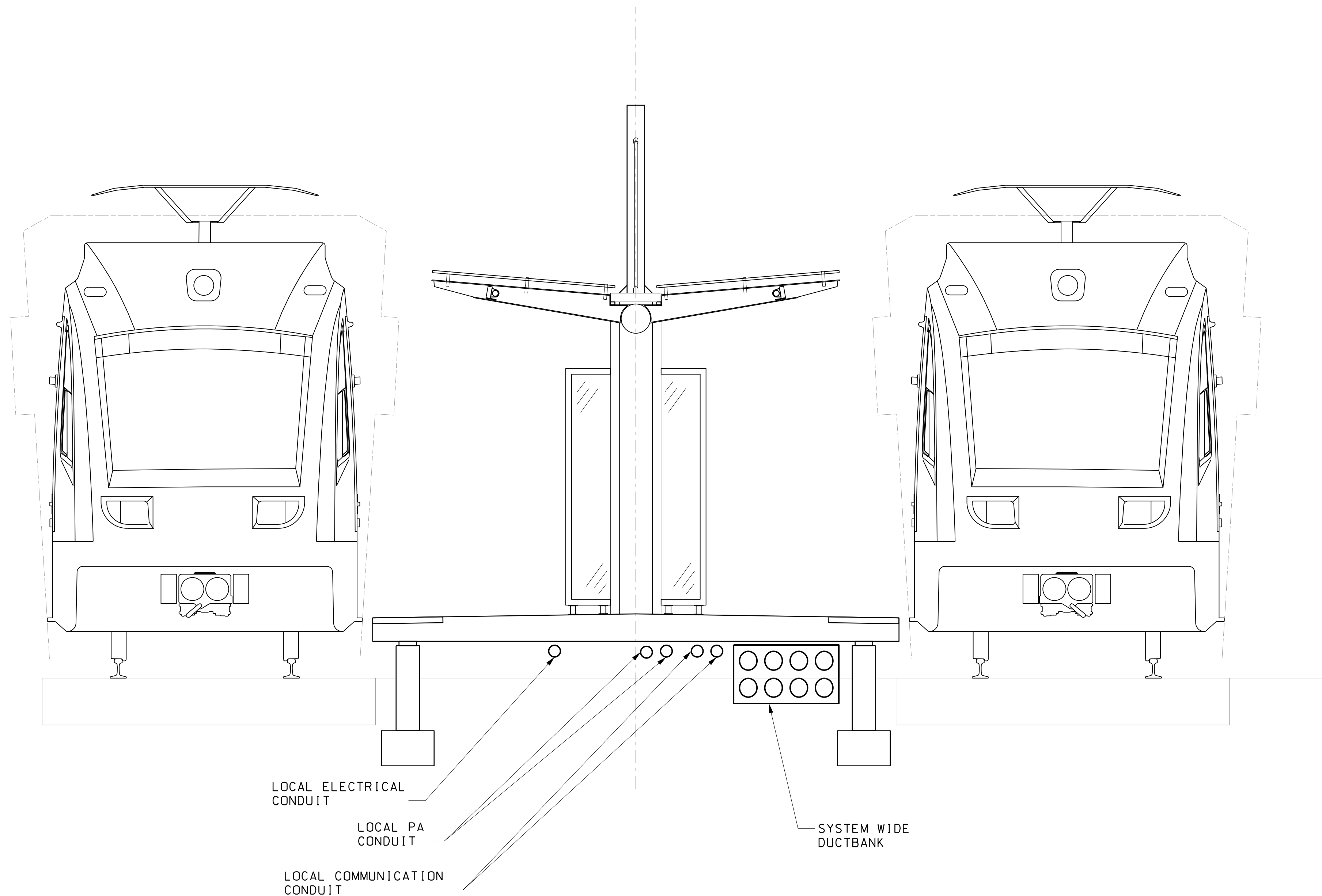
CATENARY LAYOUT PLAN 38
STA. EB 494+50 TO STA. EB 505+50
DATE: DECEMBER 2013 SCALE: AS SHOWN

CONTRACT NO.
T-1042-0220

DRAWING NO.
OC-0049

SHEET NO.
102 OF 474

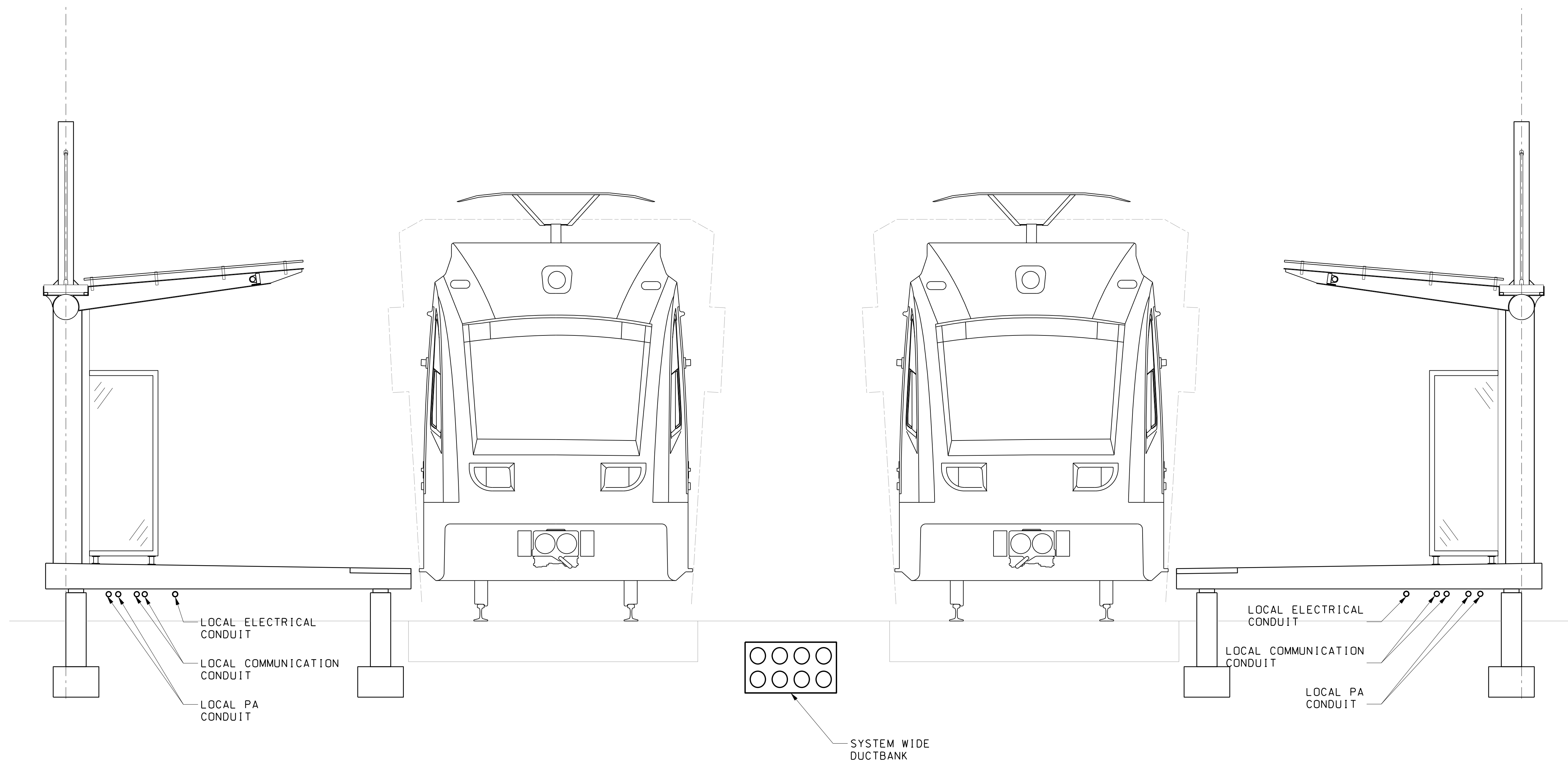
pw:\00 - Current Projects\1042 - Purple Line Light Rail\130 CEC CADD Files\Zone 00-Project Wide\OCS\Sheet Files\1042pOC6067.dgn 12/13/2013



TYPICAL STATION (CENTER PLATFORM)

NOTES

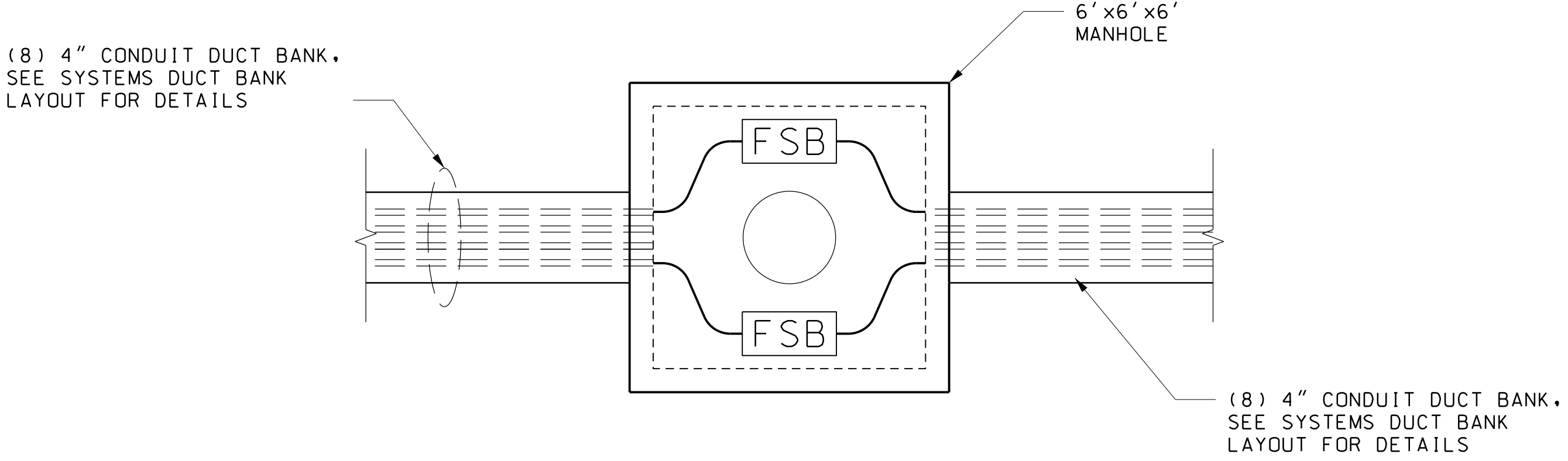
- 1. SEE GENERAL NOTES GN-9006 AND GN-9007 FOR ADDITIONAL REQUIREMENTS.
- 2. FOR SYMBOLS AND ABBREVIATIONS, SEE DRAWING GN-9012.



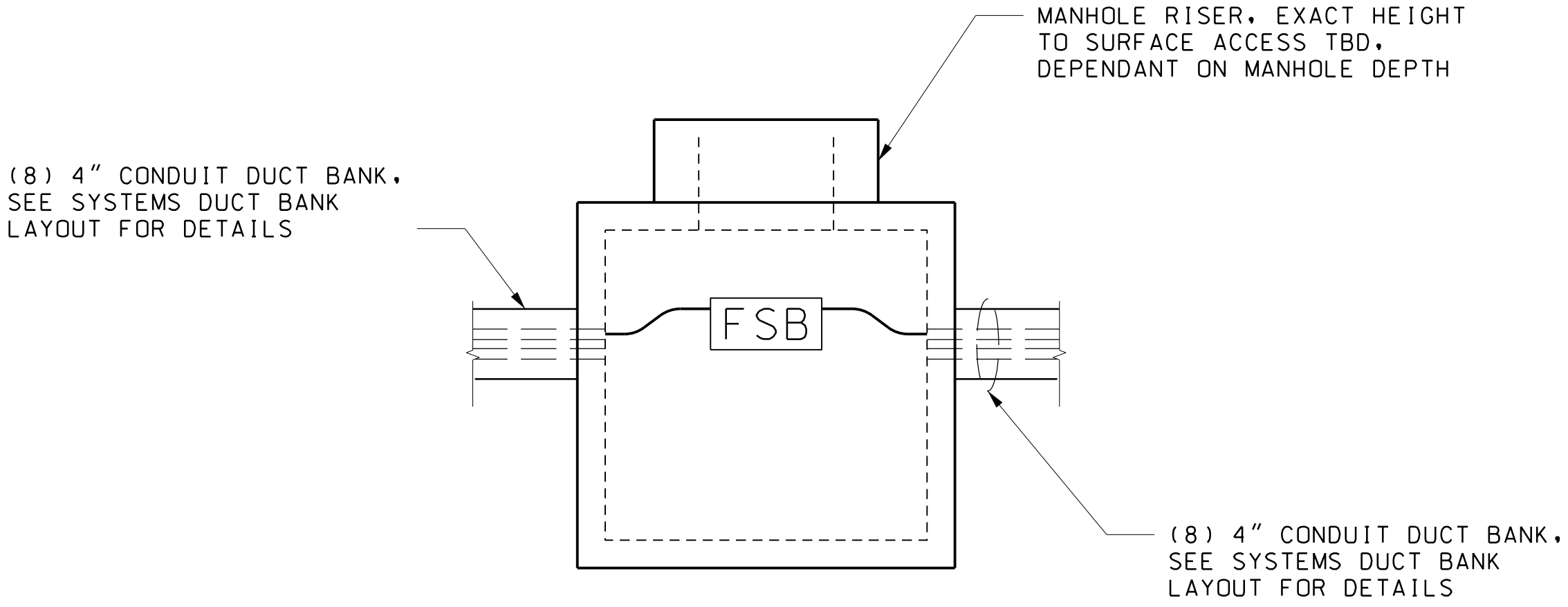
TYPICAL STATION (SIDE PLATFORM)

NOTES

- SEE GENERAL NOTES GN-9006 AND GN-9007 FOR ADDITIONAL REQUIREMENTS.
- FOR SYMBOLS AND ABBREVIATIONS, SEE DRAWING GN-9012.

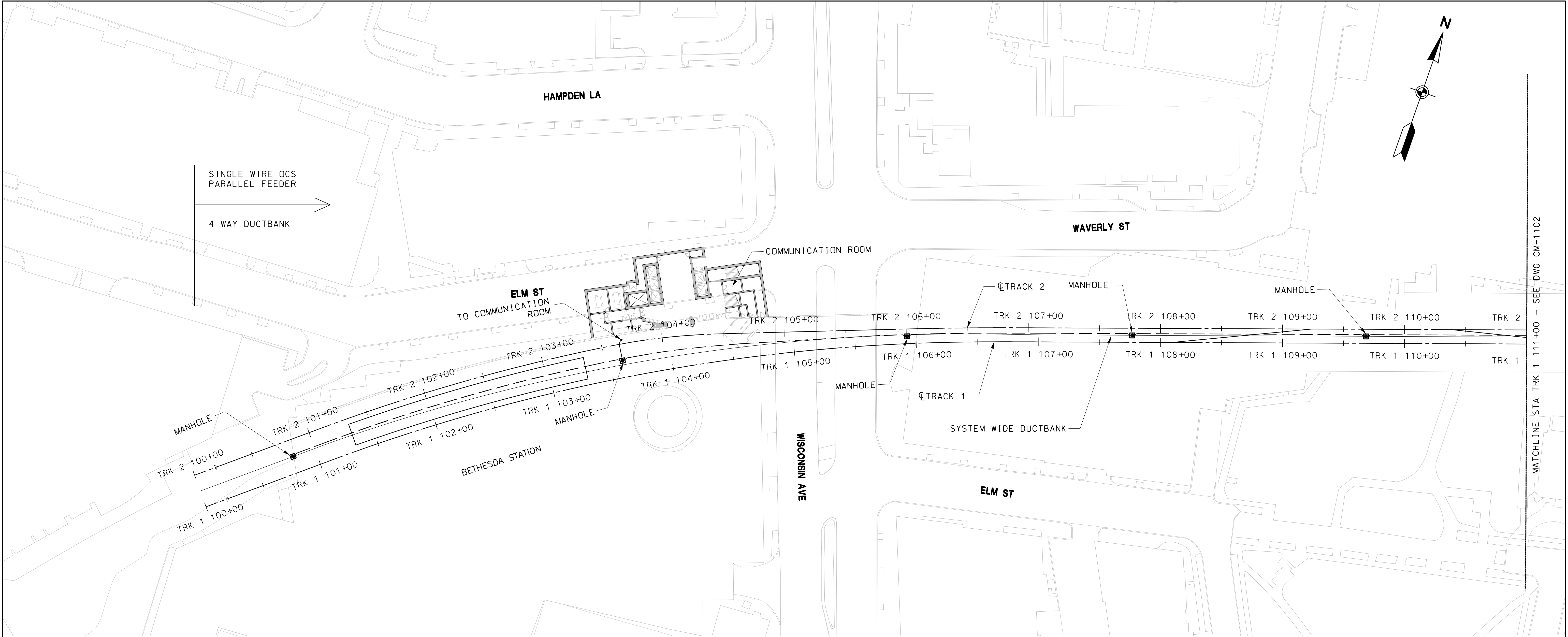


PLAN VIEW



ELEVATION

- NOTES:
1. ALL MANHOLE ACCESS POINTS ARE TO BE EQUIPPED WITH INTRUSION DETECTION.
 2. SEE GENERAL NOTES GN-9006 AND GN-9007 FOR ADDITIONAL REQUIREMENTS.
 3. FOR SYMBOLS AND ABBREVIATIONS, SEE DRAWING GN-9012.

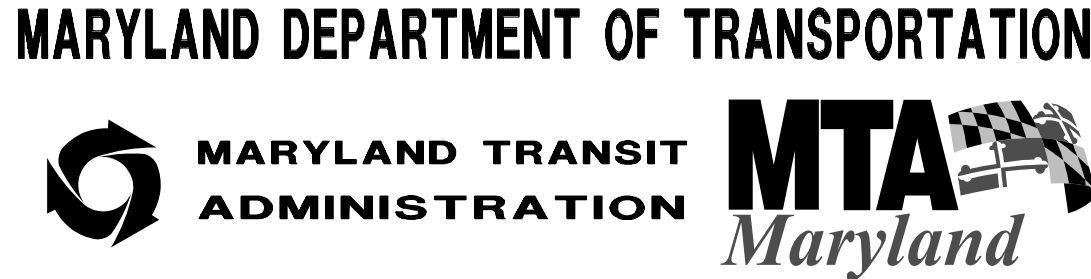
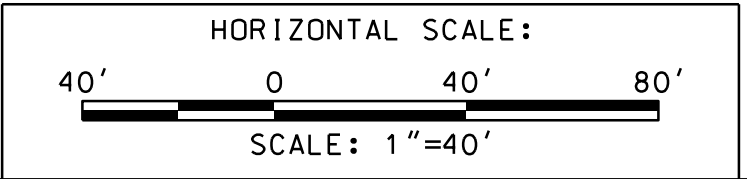


LEGEND

- - - SYSTEM WIDE DUCTBANK
- MANHOLE
- MH 13.2KV AC MANHOLE
- P POSITIVE FEEDER POLE
- N NEGATIVE FEEDER POLE
- C COMMUNICATION MANHOLE

NOTES

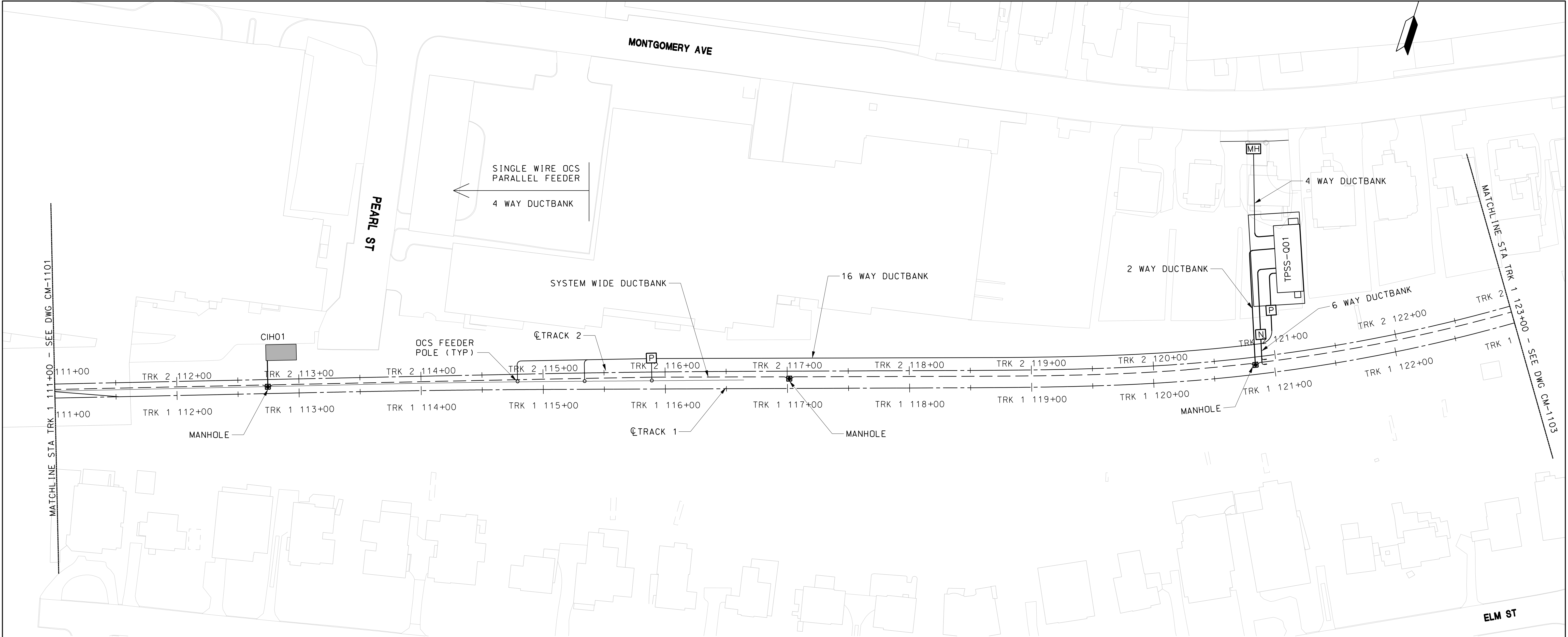
1. LOCAL CABLES FOR SIGNAL SYSTEM & GATED CROSSINGS ARE NOT SHOWN.
2. FOR DUCTBANK DETAILS SEE DRAWING TP-0020, TP-0021 AND CM-1005.
3. FOR MANHOLE DETAILS SEE DRAWING TP-0022, TP-0024 AND CM-1020
4. FOR STATION DETAILS SEE DRAWING CM-0301.
5. FOR CONDUIT LOCATIONS WITHIN THE INTERLOCKING SEE DRAWING CM-1135.



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APPR CHECK DRAWN DESIGN	KJ	PRELIMINARY ENGINEERING PURPLE LINE LIGHT RAIL	CONTRACT NO. T-1042-0220
	EN		DRAWING NO. CM-1101
	WJG	DUCTBANK LAYOUT PLAN STA. EB 100+00 TO STA. EB 111+00 DATE: DECEMBER 2013 SCALE: AS SHOWN	SHEET NO. 362 OF 474

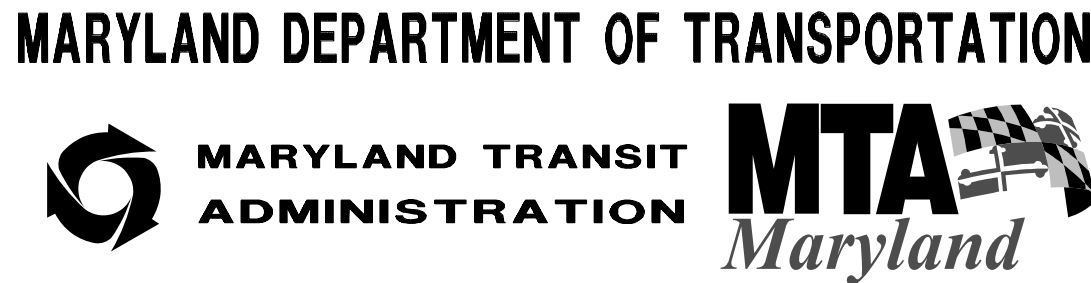


LEGEND

- — — SYSTEM WIDE DUCTBANK
- MANHOLE
- MH 13.2KV AC MANHOLE
- P POSITIVE FEEDER MAHOLE
- N NEGATIVE FEEDER MANHOLE
- C COMMUNICATION MANHOLE

NOTES

1. LOCAL CABLES FOR SIGNAL SYSTEM & GATED CROSSINGS ARE NOT SHOWN.
2. FOR DUCTBANK DETAILS SEE DRAWING TP-0020, TP-0021 AND CM-1005.
3. FOR MANHOLE DETAILS SEE DRAWING TP-0022, TP-0024 AND CM-1020
4. SEE CIVIL DRAWING CVB012 FOR CIH LAYOUT.
5. SEE CIVIL DRAWING CV1M12 FOR SUBSTATION LAYOUT.
6. FOR CONDUIT LOCATIONS WITHIN THE INTERLOCKING SEE DRAWING CM-1135

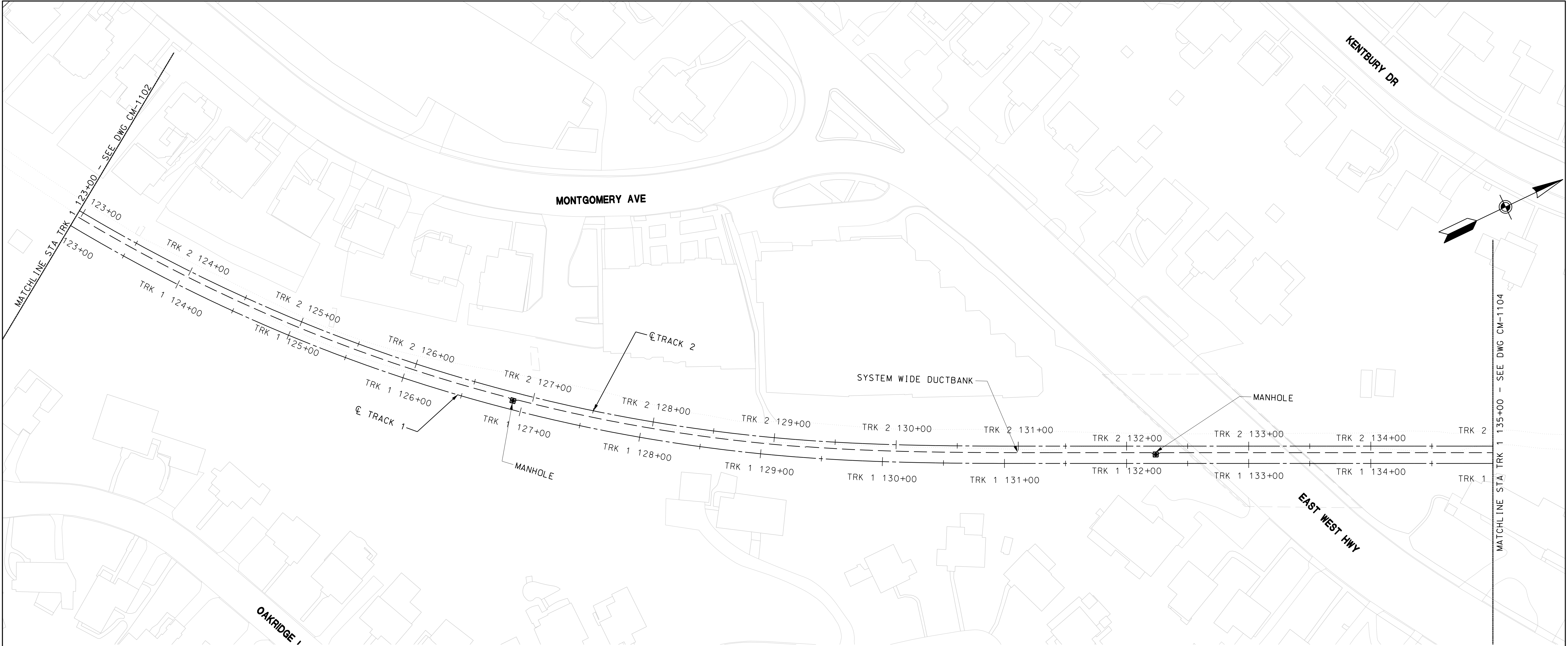


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APPR	CHECK	DRAWN	DESIGN	PRELIMINARY ENGINEERING PURPLE LINE LIGHT RAIL		CONTRACT NO. T-1042-0220
				DUCTBANK LAYOUT PLAN STA. EB 111+00 TO STA. EB 123+00		DRAWING NO. CM-1102
				DATE: DECEMBER 2013	SCALE: AS SHOWN	SHEET NO. 363 OF 474

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11/22/2013



LEGEND

- - SYSTEM WIDE DUCTBANK
- MANHOLE
- MH 13.2KV AC MANHOLE
- P POSITIVE FEEDER MAHOLE
- N NEGATIVE FEEDER MANHOLE
- C COMMUNICATION MANHOLE

NOTES

1. LOCAL CABLES FOR SIGNAL SYSTEM & GATED CROSSINGS ARE NOT SHOWN.
2. FOR DUCTBANK DETAILS SEE DRAWING TP-0020, TP-0021 AND CM-1005.
3. FOR MANHOLE DETAILS SEE DRAWING TP-0022, TP-0024 AND CM-1020.



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					DRAWN	EN		DRAWING NO.	CM-1103
					CHECK	WJG		SHEET NO.	364 OF 474
APPR			STA. EB 123+00 TO STA. EB 135+00		DATE: DECEMBER 2013		SCALE: AS SHOWN		

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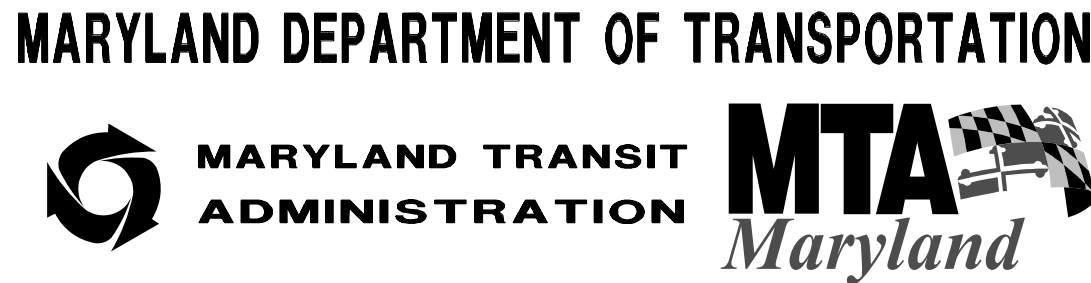
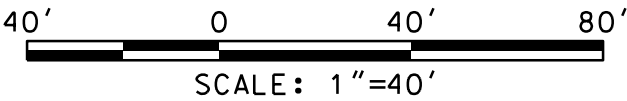


LEGEND

- - SYSTEM WIDE DUCTBANK
- MANHOLE
- MH 13.2KV AC MANHOLE
- P POSITIVE FEEDER MANHOLE
- N NEGATIVE FEEDER MANHOLE
- C COMMUNICATION MANHOLE

NOTES

1. LOCAL CABLES FOR SIGNAL SYSTEM & GATED CROSSLINGS ARE NOT SHOWN.
2. FOR DUCTBANK DETAILS SEE DRAWING TP-0020, TP-0021 AND CM-1005.
3. FOR MANHOLE DETAILS SEE DRAWING TP-0022, TP-0024 AND CM-1020



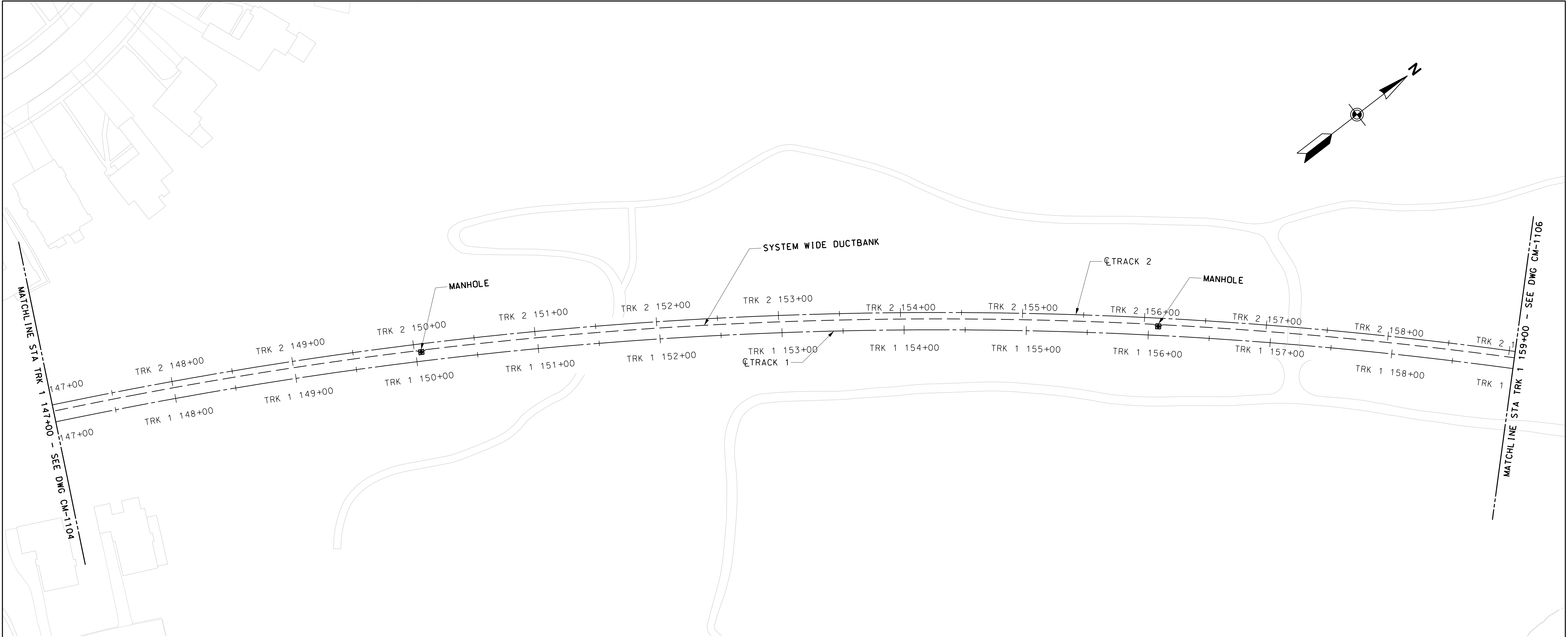
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License No. Expiration Date

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DESIGN	KJ	PRELIMINARY ENGINEERING PURPLE LINE LIGHT RAIL	CONTRACT NO. T-1042-0220
DRAWN	EN		DRAWING NO. CM-1104
CHECK	WJG		SHEET NO. 365 OF 474
APPR		DUCTBANK LAYOUT PLAN STA. EB 135+00 TO STA. EB 147+00 DATE: DECEMBER 2013	SCALE: AS SHOWN



LEGEND


- SYSTEM WIDE DUCTBANK
- MANHOLE
- MH 13.2KV AC MANHOLE
- P POSITIVE FEEDER MANHOLE
- N NEGATIVE FEEDER MANHOLE
- C COMMUNICATION MANHOLE


NOTES

- 1. LOCAL CABLES FOR SIGNAL SYSTEM & GATED CROSSINGS ARE NOT SHOWN.
- 2. FOR DUCTBANK DETAILS SEE DRAWING TP-0020, TP-0021 AND CM-1005.
- 3. FOR MANHOLE DETAILS SEE DRAWING TP-0022, TP-0024 AND CM-1020



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DESIGN	KJ
DRAWN	EN
CHECK	WJG
APPR	

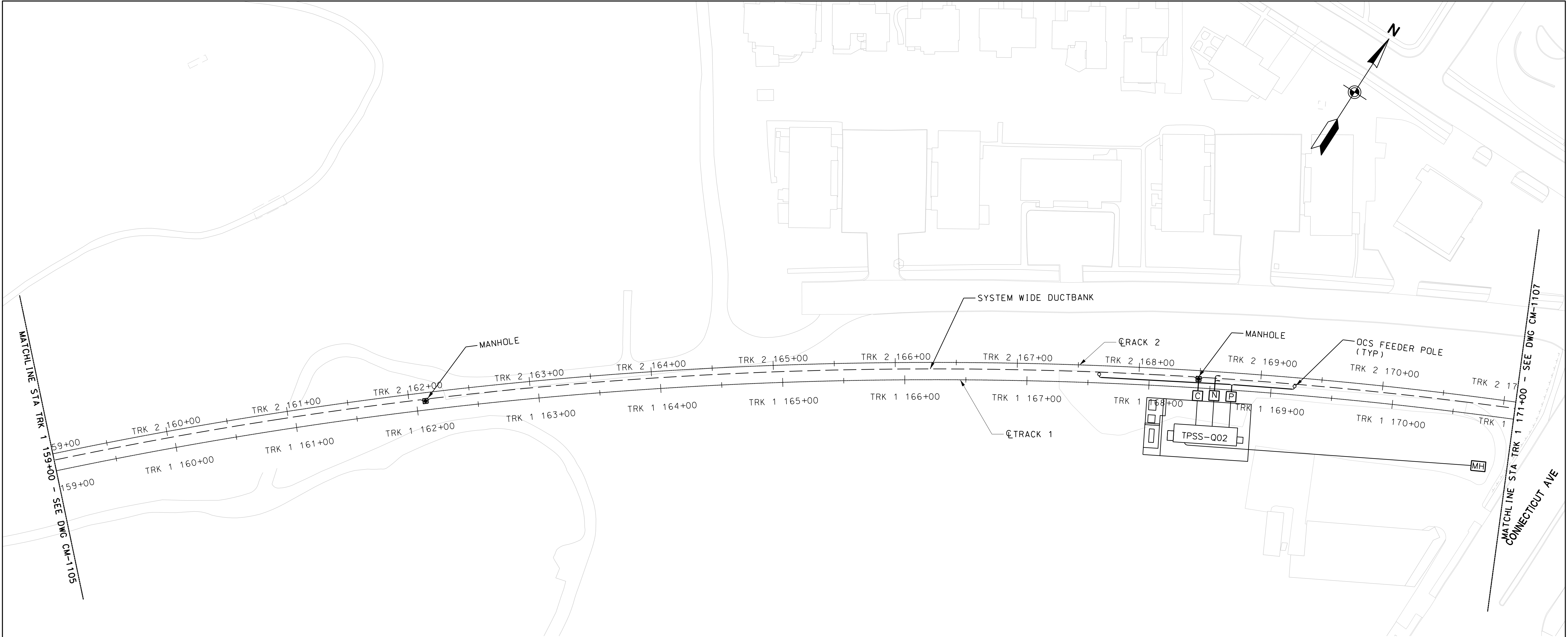
PRELIMINARY ENGINEERING
PURPLE LINE LIGHT RAIL

DUCTBANK LAYOUT PLAN
STA. EB 147+00 TO STA. EB 159+00
DATE: DECEMBER 2013 SCALE: AS SHOWN

CONTRACT NO.
T-1042-0220

DRAWING NO.
CM-1105

SHEET NO.
366 OF 474



LEGEND

- SYSTEM WIDE DUCTBANK
- MANHOLE
- MH 13.2KV AC MANHOLE
- P POSITIVE FEEDER MAHOLE
- N NEGATIVE FEEDER MANHOLE
- C COMMUNICATION MANHOLE

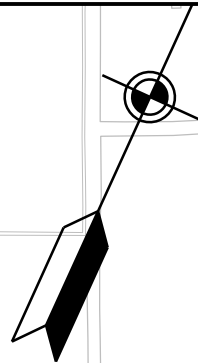
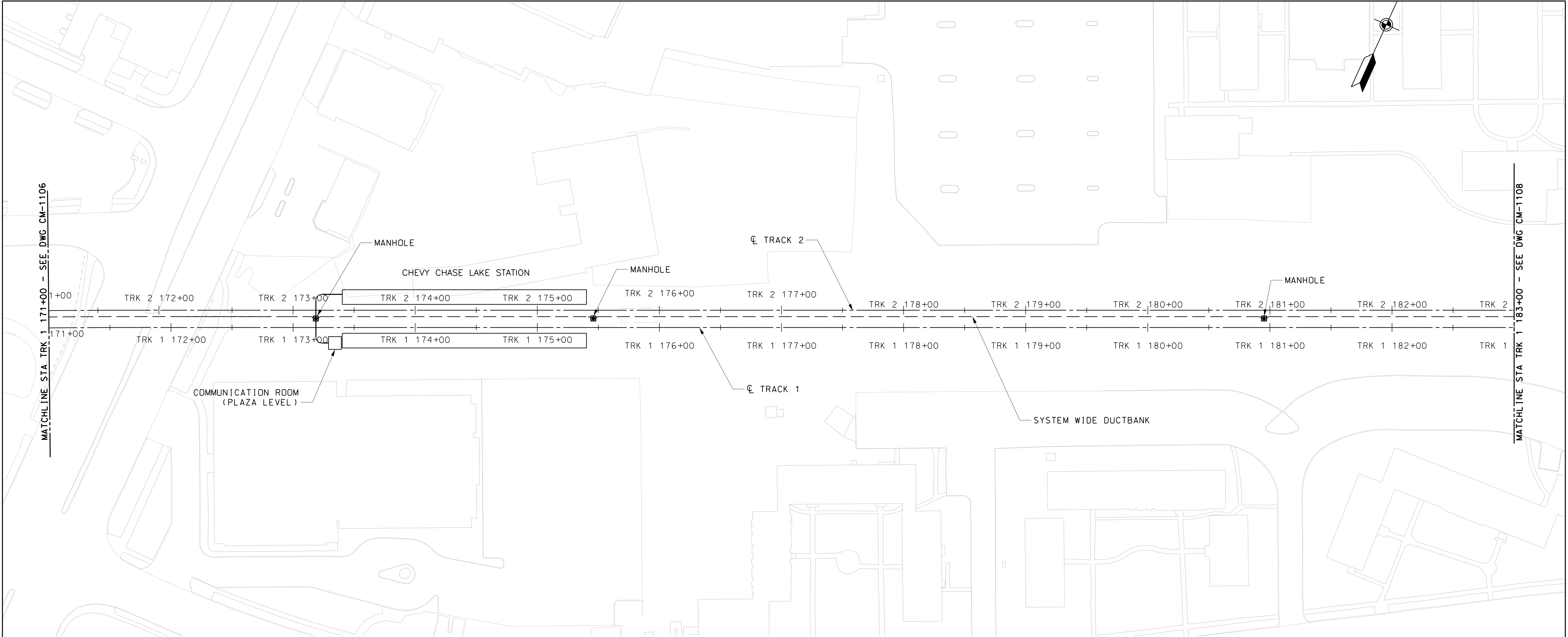
NOTES

1. LOCAL CABLES FOR SIGNAL SYSTEM & GATED CROSSINGS ARE NOT SHOWN.
2. FOR DUCTBANK DETAILS SEE DRAWING TP-0020, TP-0021 AND CM-1005.
3. FOR MANHOLE DETAILS SEE DRAWING TP-0022, TP-0024 AND CM-1020
4. SEE CIVIL DRAWING CV1W12 FOR SUBSTATION LAYOUT.



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					DRAWN	EN		DRAWING NO.	CM-1106
					CHECK	WJG		SHEET NO.	367 OF 474
APPR			<div>DUCTBANK LAYOUT PLAN</div> <div>STA. EB 159+00 TO STA. EB 171+00</div> <div>DATE: DECEMBER 2013</div>		SCALE: AS SHOWN				

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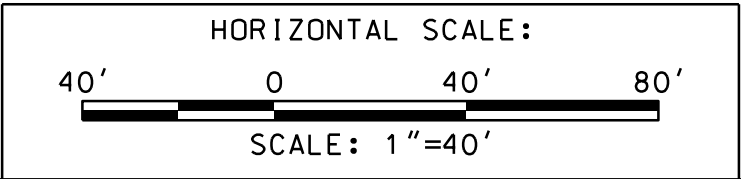


LEGEND

- SYSTEM WIDE DUCTBANK
- MANHOLE
- MH 13.2KV AC MANHOLE
- P POSITIVE FEEDER MAHOLE
- N NEGATIVE FEEDER MANHOLE
- C COMMUNICATION MANHOLE

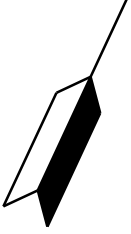
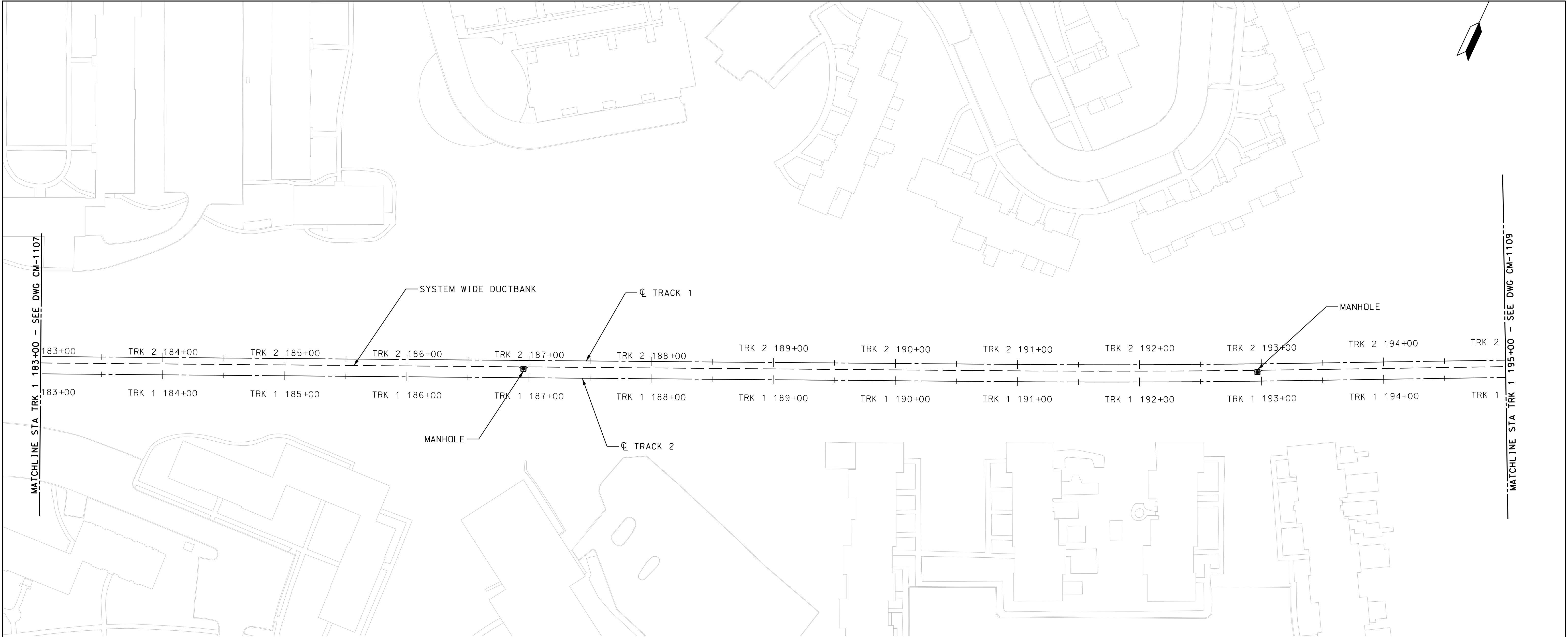
NOTES

- 1. LOCAL CABLES FOR SIGNAL SYSTEM & GATED CROSSINGS ARE NOT SHOWN.
- 2. FOR DUCTBANK DETAILS SEE DRAWING TP-0020, TP-0021 AND CM-1005.
- 3. FOR MANHOLE DETAILS SEE DRAWING TP-0022, TP-0024 AND CM-1020.
- 4. FOR STATION DETAILS SEE DRAWING CM-0306.



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					DRAWN	EN		DRAWING NO.	CM-1107
					CHECK	WJG		SHEET NO.	368 OF 474
APPR				DATE: DECEMBER 2013		SCALE: AS SHOWN			

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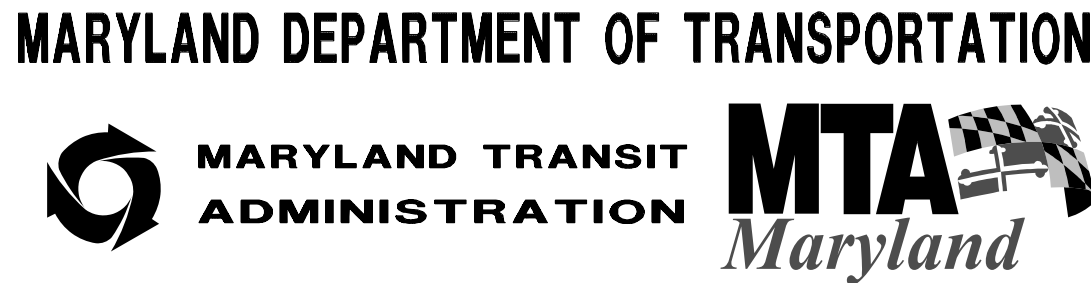
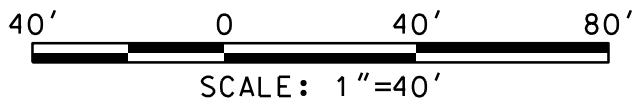


LEGEND

- SYSTEM WIDE DUCTBANK
- MANHOLE
- MH 13.2KV AC MANHOLE
- P POSITIVE FEEDER MAHOLE
- N NEGATIVE FEEDER MANHOLE
- C COMMUNICATION MANHOLE

NOTES

1. LOCAL CABLES FOR SIGNAL SYSTEM & GATED CROSSINGS ARE NOT SHOWN.
2. FOR DUCTBANK DETAILS SEE DRAWING TP-0020, TP-0021 AND CM-1005.
3. FOR MANHOLE DETAILS SEE DRAWING TP-0022, TP-0024 AND CM-1020



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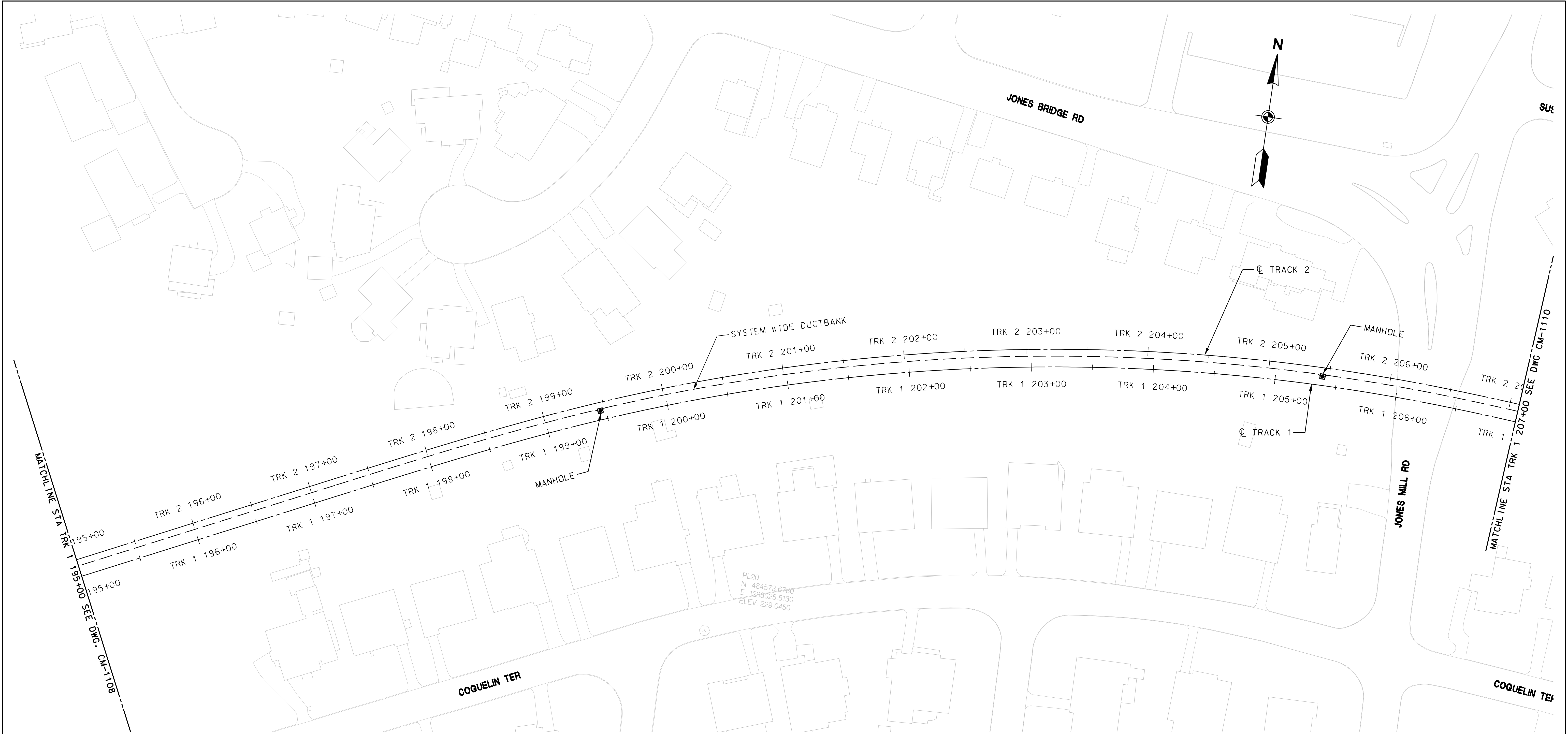
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DESIGN	KJ
DRAWN	EN
CHECK	WJG
APPR	

PRELIMINARY ENGINEERING
PURPLE LINE LIGHT RAIL

DUCTBANK LAYOUT PLAN
STA. EB 183+00 TO STA. EB 195+00
DATE: DECEMBER 2013 SCALE: AS SHOWN

CONTRACT NO. T-1042-0220
DRAWING NO. CM-1108
SHEET NO. 369 OF 474

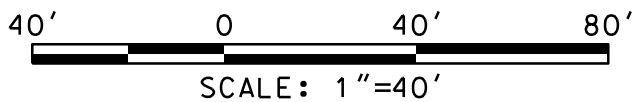


LEGEND

- SYSTEM WIDE DUCTBANK
- MANHOLE
- MH 13.2KV AC MANHOLE
- P POSITIVE FEEDER MAHOLE
- N NEGATIVE FEEDER MANHOLE
- C COMMUNICATION MANHOLE

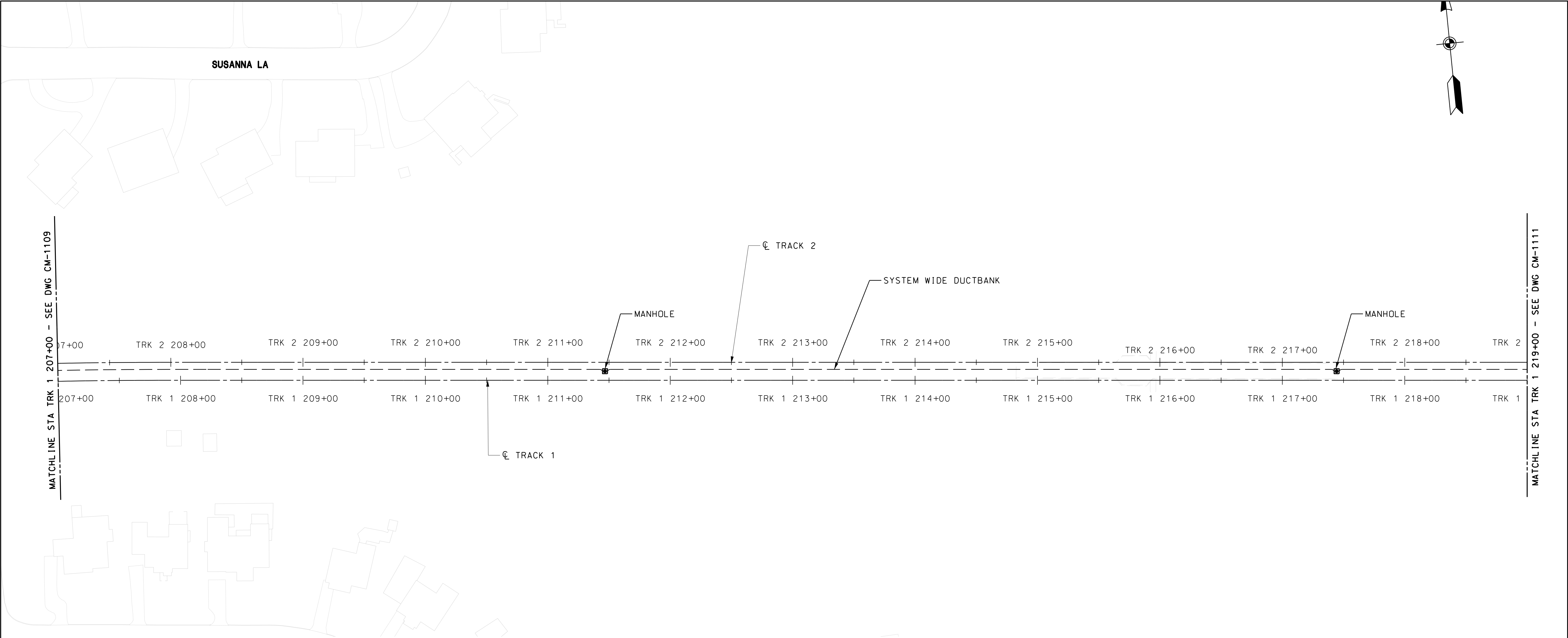
NOTES

1. LOCAL CABLES FOR SIGNAL SYSTEM & GATED CROSSINGS ARE NOT SHOWN.
2. FOR DUCTBANK DETAILS SEE DRAWING TP-0020, TP-0021 AND CM-1005.
3. FOR MANHOLE DETAILS SEE DRAWING TP-0022, TP-0024 AND CM-1020



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					<div>STA. EB 195+00 TO STA. EB 207+00</div> <div>DATE: DECEMBER 2013</div>		<div>DUCTBANK LAYOUT PLAN</div> <div>SCALE: AS SHOWN</div>			<div>DRAWING NO.</div> <div>CM-1109</div>			
										<div>SHEET NO.</div> <div>370 OF 474</div>			

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LEGEND

- — - SYSTEM WIDE DUCTBANK
- MANHOLE
- MH 13.2KV AC MANHOLE
- P POSITIVE FEEDER MAHOLE
- N NEGATIVE FEEDER MANHOLE
- C COMMUNICATION MANHOLE

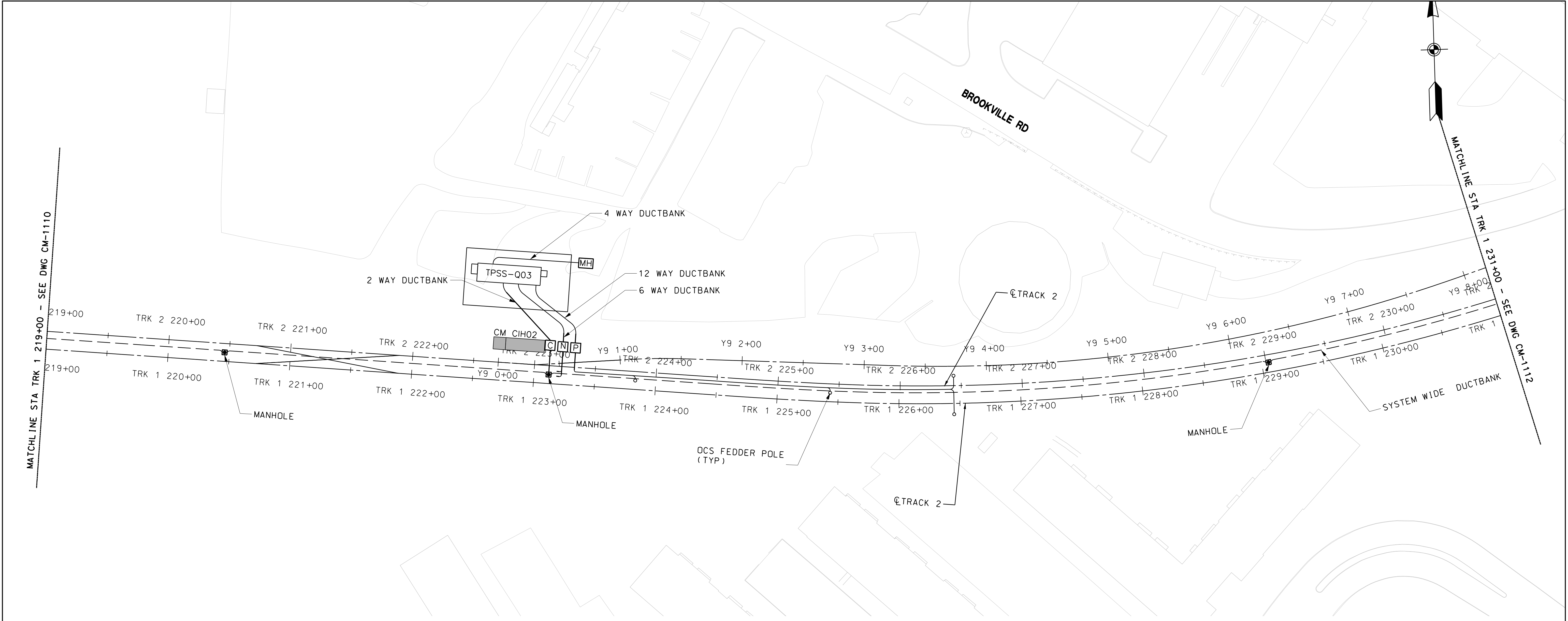
NOTES

1. LOCAL CABLES FOR SIGNAL SYSTEM & GATED CROSSINGS ARE NOT SHOWN.
2. FOR DUCTBANK DETAILS SEE DRAWING TP-0020, TP-0021 AND CM-1005.
3. FOR MANHOLE DETAILS SEE DRAWING TP-0022, TP-0024 AND CM-1020



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										DRAWING NO.	CM-1110
										SHEET NO.	371 OF 474

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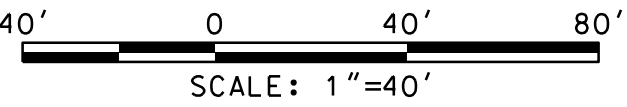


LEGEND

- SYSTEM WIDE DUCTBANK
- MANHOLE
- MH 13.2KV AC MANHOLE
- P POSITIVE FEEDER MAHOLE
- N NEGATIVE FEEDER MANHOLE
- C COMMUNICATION MANHOLE

NOTES

- 1. LOCAL CABLES FOR SIGNAL SYSTEM & GATED CROSSINGS ARE NOT SHOWN.
- 2. FOR DUCTBANK DETAILS SEE DRAWING TP-0020, TP-0021 AND CM-1005.
- 3. FOR MANHOLE DETAILS SEE DRAWING TP-0022, TP-0024 AND CM-1020
- 4. SEE CIVIL DRAWING CVB022 FOR CM & CIH LAYOUT.
- 5. SEE CIVIL DRAWING CV1X12 FOR SUBSTATION LAYOUT.
- 6. FOR CONDUIT LOCATIONS WITHIN INTERLOCKING SEE DRAWING CM-1121



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MARYLAND TRANSIT ADMINISTRATION

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JACOBS

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License No.

Expiration Date

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APPR

CHECK

DRAWN

DESIGN

EN

WJG

KJ

PRELIMINARY ENGINEERING

PURPLE LINE LIGHT RAIL

DUCTBANK LAYOUT PLAN

STA. EB 219+00 TO STA. EB 231+00

DATE: DECEMBER 2013

SCALE: AS SHOWN

CONTRACT NO.

T-1042-0220

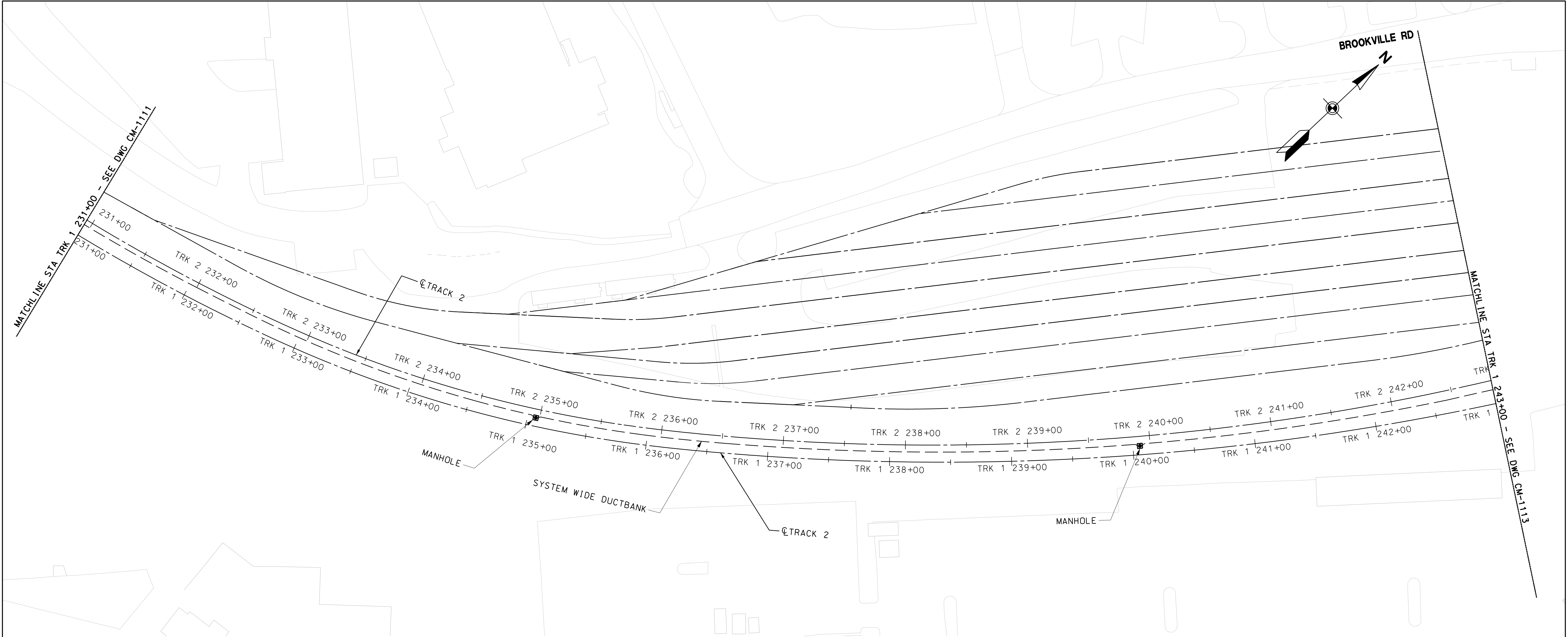
DRAWING NO.

CM-1111

SHEET NO.

372 OF 474

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LEGEND

- — - SYSTEM WIDE DUCTBANK
- MANHOLE
- MH 13.2KV AC MANHOLE
- P POSITIVE FEEDER MAHOLE
- N NEGATIVE FEEDER MANHOLE
- C COMMUNICATION MANHOLE

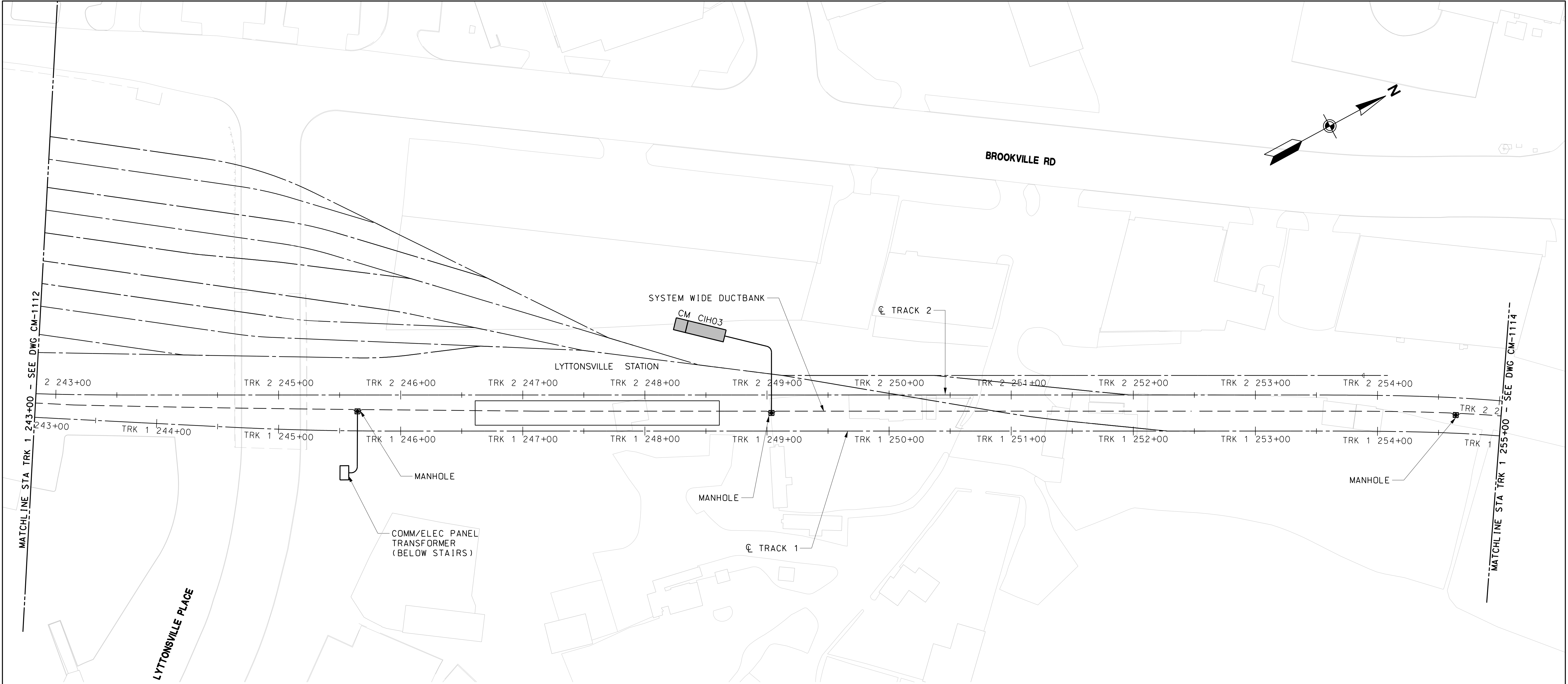
NOTES

- 1. LOCAL CABLES FOR SIGNAL SYSTEM & GATED CROSSINGS ARE NOT SHOWN.
- 2. FOR DUCTBANK DETAILS SEE DRAWING TP-0020, TP-0021 AND CM-1005.
- 3. FOR MANHOLE DETAILS SEE DRAWING TP-0022, TP-0024 AND CM-1020



<div>MARYLAND DEPARTMENT OF TRANSPORTATION</div> <div>MARYLAND TRANSIT ADMINISTRATION</div> <div>MTA Maryland</div>	<div>Gannett Fleming</div> <div>WR&A</div>	<div>JACOBS</div>	<div>PROFESSIONAL CERTIFICATION</div> <div>I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland</div> <div>License No. Expiration Date</div>	<div>DRAFT: Information shown is based on 30 percent preliminary engineering plans and may be subject to further revision pending refinements to the plans during the completion of the design phase. Any reliance upon any of these plans is made with full understanding of its draft status.</div>	DESIGN	KJ	<div>PRELIMINARY ENGINEERING</div> <div>PURPLE LINE LIGHT RAIL</div>	CONTRACT NO.	T-1042-0220
					DRAWN	EN		DRAWING NO.	CM-1112
					CHECK	WJG		SHEET NO.	373 OF 474
APPR				STA. EB 231+00 TO STA. EB 243+00		DATE: DECEMBER 2013	SCALE: AS SHOWN		

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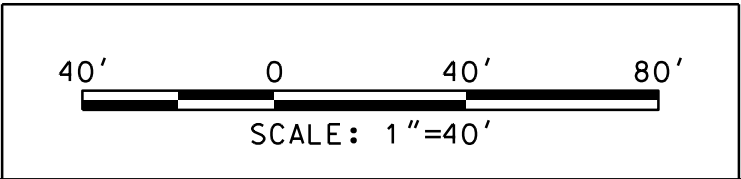


LEGEND

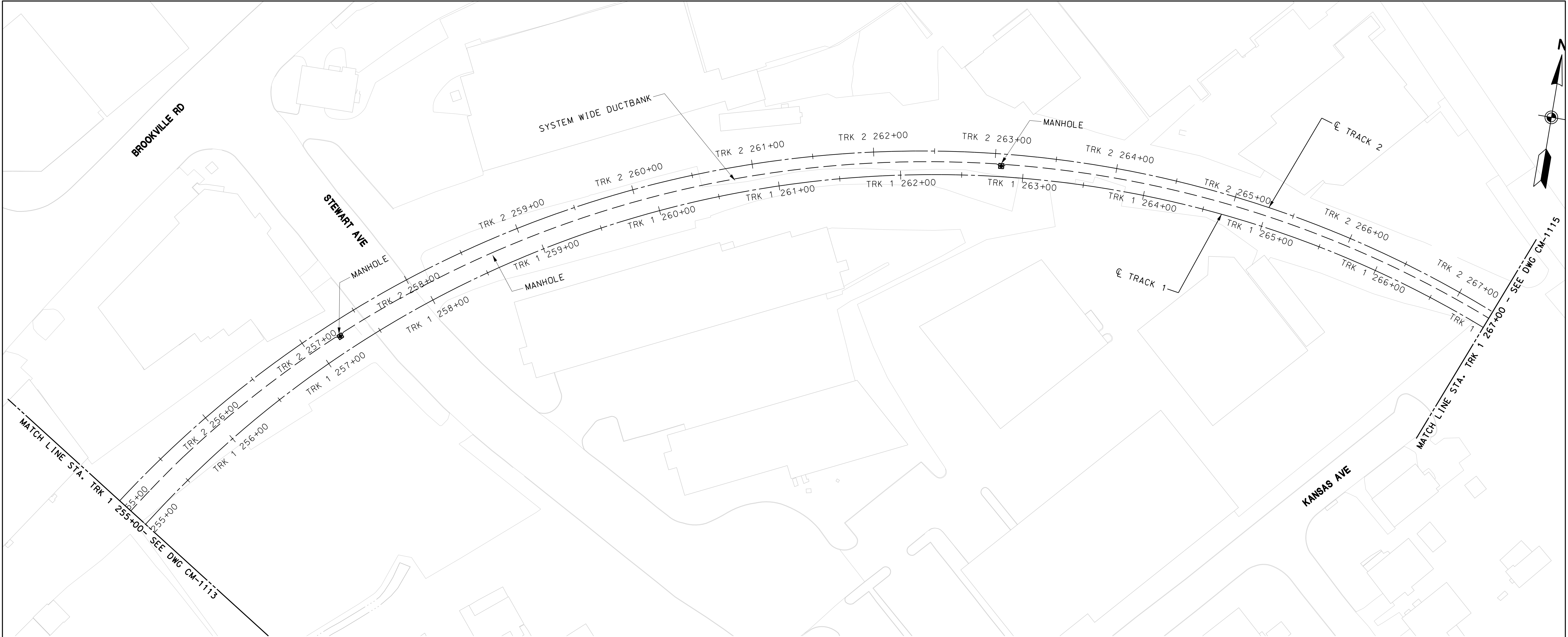
- SYSTEM WIDE DUCTBANK
- MANHOLE
- MH 13.2KV AC MANHOLE
- P POSITIVE FEEDER MAHOLE
- N NEGATIVE FEEDER MANHOLE
- C COMMUNICATION MANHOLE

NOTES

1. LOCAL CABLES FOR SIGNAL SYSTEM & GATED CROSSINGS ARE NOT SHOWN.
2. FOR DUCTBANK DETAILS SEE DRAWING TP-0020, TP-0021 AND CM-1005.
3. FOR MANHOLE DETAILS SEE DRAWING TP-0022, TP-0024 AND CM-1020
4. FOR STATION DETAILS SEE DRAWING CM-0310.
5. SEE CIVIL DRAWING CVB032 FOR CIH LAYOUT.



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					DRAWN	EN		DRAWING NO.	CM-1113
					CHECK	WJG		SHEET NO.	374 OF 474
APPR				DATE: DECEMBER 2013		SCALE: AS SHOWN			

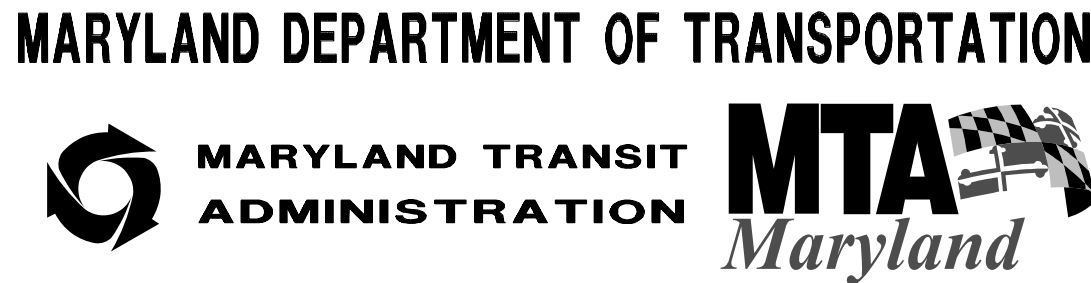


LEGEND

- SYSTEM WIDE DUCTBANK
- MANHOLE
- MH 13.2KV AC MANHOLE
- P POSITIVE FEEDER MAHOLE
- N NEGATIVE FEEDER MANHOLE
- C COMMUNICATION MANHOLE

NOTES

1. LOCAL CABLES FOR SIGNAL SYSTEM & GATED CROSSINGS ARE NOT SHOWN.
2. FOR DUCTBANK DETAILS SEE DRAWING TP-0020, TP-0021 AND CM-1005.
3. FOR MANHOLE DETAILS SEE DRAWING TP-0022, TP-0024 AND CM-1020



PROFESSIONAL CERTIFICATION

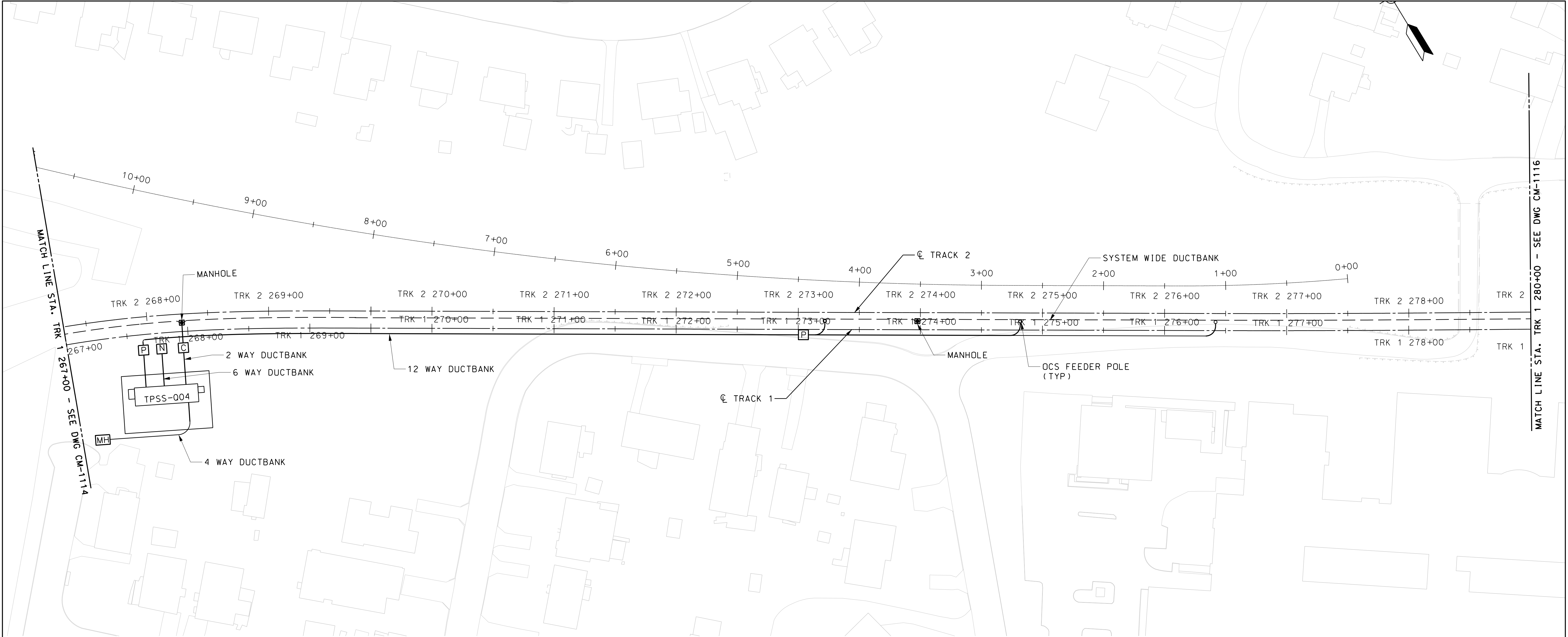
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License No. Expiration Date

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APPR CHECK DRAWN DESIGN	KJ	PRELIMINARY ENGINEERING PURPLE LINE LIGHT RAIL	CONTRACT NO. T-1042-0220
	EN		DRAWING NO. CM-1114
	WJG	DUCTBANK LAYOUT PLAN STA. EB 255+00 TO STA. EB 267+00 DATE: DECEMBER 2013 SCALE: AS SHOWN	SHEET NO. 375 OF 474

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11/22/2013



LEGEND

- SYSTEM WIDE DUCTBANK
- MANHOLE
- MH 13.2KV AC MANHOLE
- P POSITIVE FEEDER MAHOLE
- N NEGATIVE FEEDER MANHOLE
- C COMMUNICATION MANHOLE

NOTES

1. LOCAL CABLES FOR SIGNAL SYSTEM & GATED CROSSINGS ARE NOT SHOWN.
2. FOR DUCTBANK DETAILS SEE DRAWING TP-0020, TP-0021 AND CM-1005.
3. FOR MANHOLE DETAILS SEE DRAWING TP-0022, TP-0024 AND CM-1020
4. SEE CIVIL DRAWING CV2P12 FOR SUBSTATION LAYOUT.



<div>MARYLAND DEPARTMENT OF TRANSPORTATION</div> <div><div></div><div>MTA Maryland</div></div>	<div></div> <div></div>	<div>JACOBS</div>	<div>PROFESSIONAL CERTIFICATION</div> <div>I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland</div> <div>License No. Expiration Date</div>	<div>DRAFT: Information shown is based on 30 percent preliminary engineering plans and may be subject to further revision pending refinements to the plans during the completion of the design phase. Any reliance upon any of these plans is made with full understanding of its draft status.</div>	DESIGN	KJ	<div>PRELIMINARY ENGINEERING</div> <div>PURPLE LINE LIGHT RAIL</div>	CONTRACT NO.	T-1042-0220
					DRAWN	EN		DRAWING NO.	CM-1115
					CHECK	WJG		SHEET NO.	376 OF 474
APPR				DUCTBANK LAYOUT PLAN		STA. EB 267+00 TO STA. EB 279+00		SCALE: AS SHOWN	
				DATE: DECEMBER 2013					

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LEGEND

- — - SYSTEM WIDE DUCTBANK
- MANHOLE
- MH 13.2KV AC MANHOLE
- P POSITIVE FEEDER MAHOLE
- N NEGATIVE FEEDER MANHOLE
- C COMMUNICATION MANHOLE

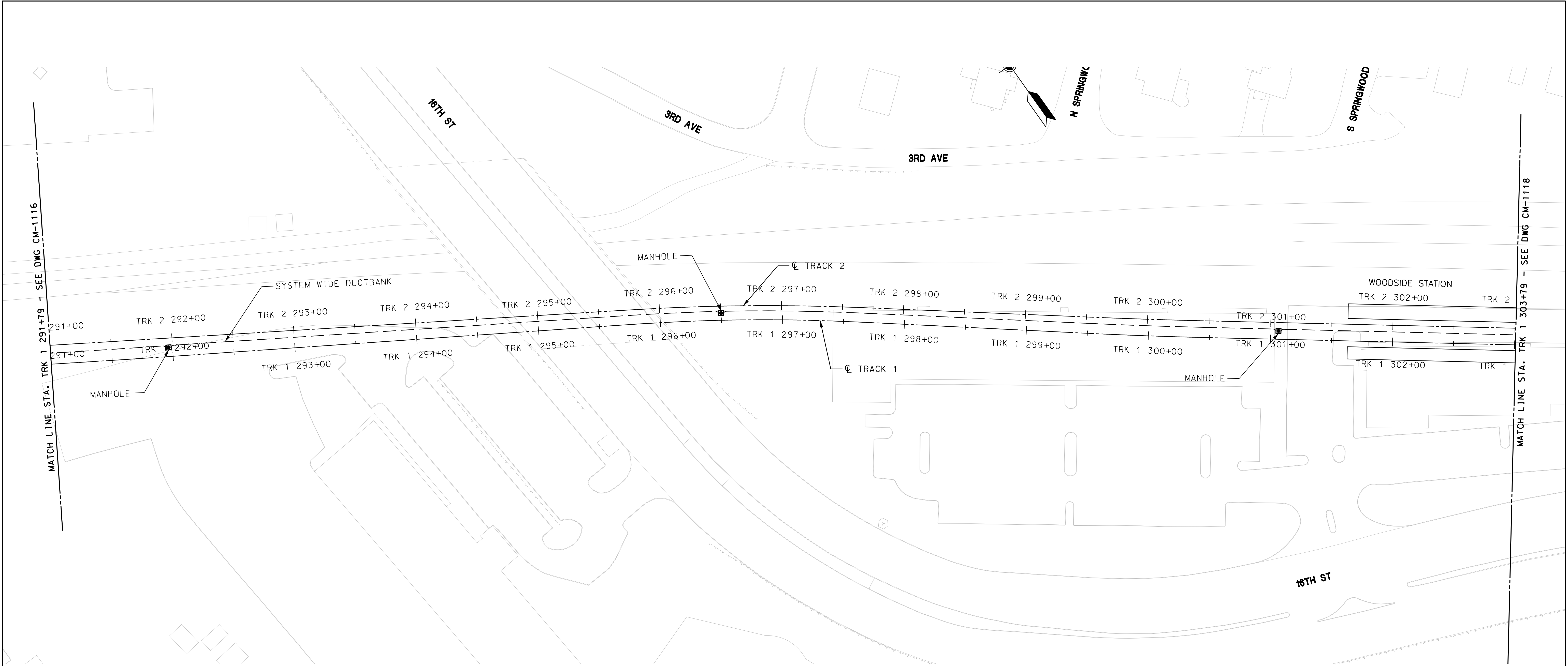
NOTES

1. LOCAL CABLES FOR SIGNAL SYSTEM & GATED CROSSINGS ARE NOT SHOWN.
2. FOR DUCTBANK DETAILS SEE DRAWING TP-0020, TP-0021 AND CM-1005.
3. FOR MANHOLE DETAILS SEE DRAWING TP-0022, TP-0024 AND CM-1020



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						<div>EN</div>		<div>DRAWING NO.</div> <div>CM-1116</div>
						<div>WJG</div>		<div>SHEET NO.</div> <div>377 OF 474</div>
<div>STA. EB 279+00 TO STA. EB 291+00</div> <div>DATE: DECEMBER 2013</div> <div>SCALE: AS SHOWN</div>								

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LEGEND

- — - SYSTEM WIDE DUCTBANK
- MANHOLE
- MH 13.2KV AC MANHOLE
- P POSITIVE FEEDER MAHOLE
- N NEGATIVE FEEDER MANHOLE
- C COMMUNICATION MANHOLE

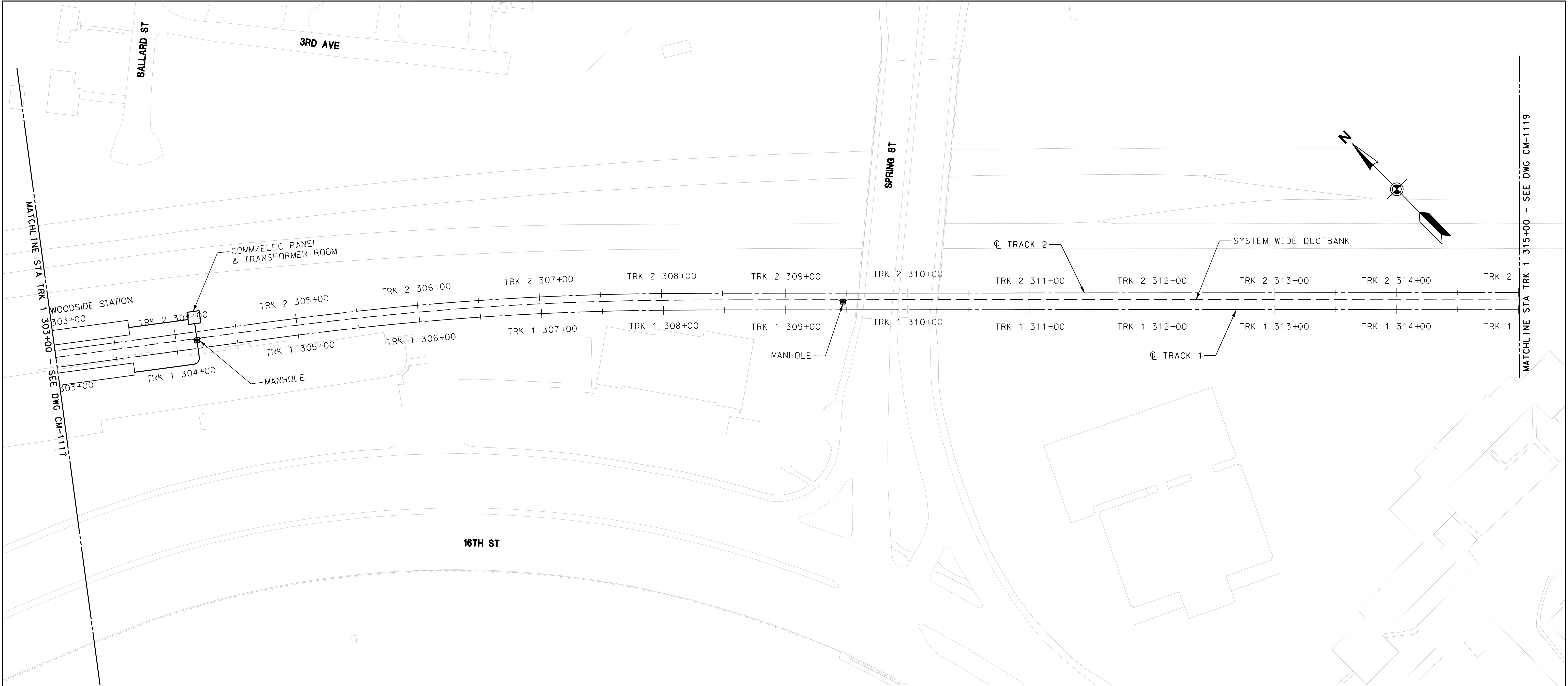
NOTES

1. LOCAL CABLES FOR SIGNAL SYSTEM & GATED CROSSINGS ARE NOT SHOWN.
2. FOR DUCTBANK DETAILS SEE DRAWING TP-0020, TP-0021 AND CM-1005.
3. FOR MANHOLE DETAILS SEE DRAWING TP-0022, TP-0024 AND CM-1020
4. FOR STATION DETAILS SEE DRAWING CM-0331.



<div>MARYLAND DEPARTMENT OF TRANSPORTATION</div> <div>MARYLAND TRANSIT ADMINISTRATION</div> <div>MTA Maryland</div>	<div>Gannett Fleming</div> <div>WR&A</div>	<div>JACOBS</div>	<div>PROFESSIONAL CERTIFICATION</div> <div>I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland</div> <div>License No. Expiration Date</div>	<div>DRAFT: Information shown is based on 30 percent preliminary engineering plans and may be subject to further revision pending refinements to the plans during the completion of the design phase. Any reliance upon any of these plans is made with full understanding of its draft status.</div>	APPR	CHECK	DRAWN	DESIGN	<div>PRELIMINARY ENGINEERING</div> <div>PURPLE LINE LIGHT RAIL</div> <div>DUCTBANK LAYOUT PLAN</div> <div>STA. EB 291+00 TO STA. EB 303+00</div> <div>DATE: DECEMBER 2013</div> <div>SCALE: AS SHOWN</div>	CONTRACT NO.	T-1042-0220
										DRAWING NO.	CM-1117
										SHEET NO.	378 OF 474

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LEGEND

- — - SYSTEM WIDE DUCTBANK
- MANHOLE
- MH 13.2KV AC MANHOLE
- P POSITIVE FEEDER MAHOLE
- N NEGATIVE FEEDER MANHOLE
- C COMMUNICATION MANHOLE

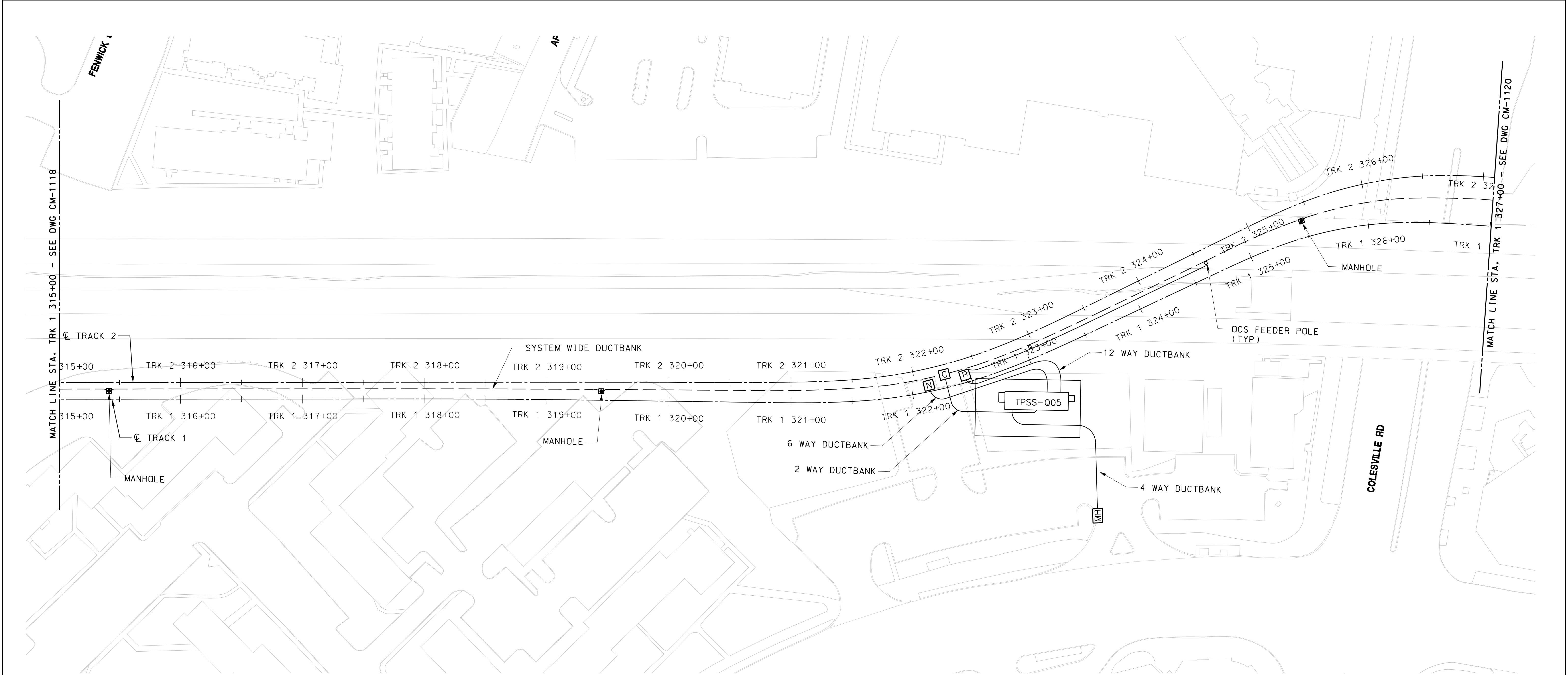
NOTES

1. LOCAL CABLES FOR SIGNAL SYSTEM & GATED CROSSINGS ARE NOT SHOWN.
2. FOR DUCTBANK DETAILS SEE DRAWING TP-0020, TP-0021 AND CM-1005.
3. FOR MANHOLE DETAILS SEE DRAWING TP-0022, TP-0024 AND CM-1020
4. FOR STATION DETAILS SEE DRAWING CM-0331.



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										DRAWING NO.	CM-1118
										SHEET NO.	379 OF 474

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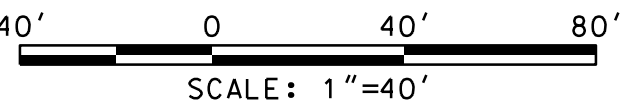


LEGEND

- SYSTEM WIDE DUCTBANK
- MANHOLE
- MH 13.2KV AC MANHOLE
- P POSITIVE FEEDER MAHOLE
- N NEGATIVE FEEDER MANHOLE
- C COMMUNICATION MANHOLE

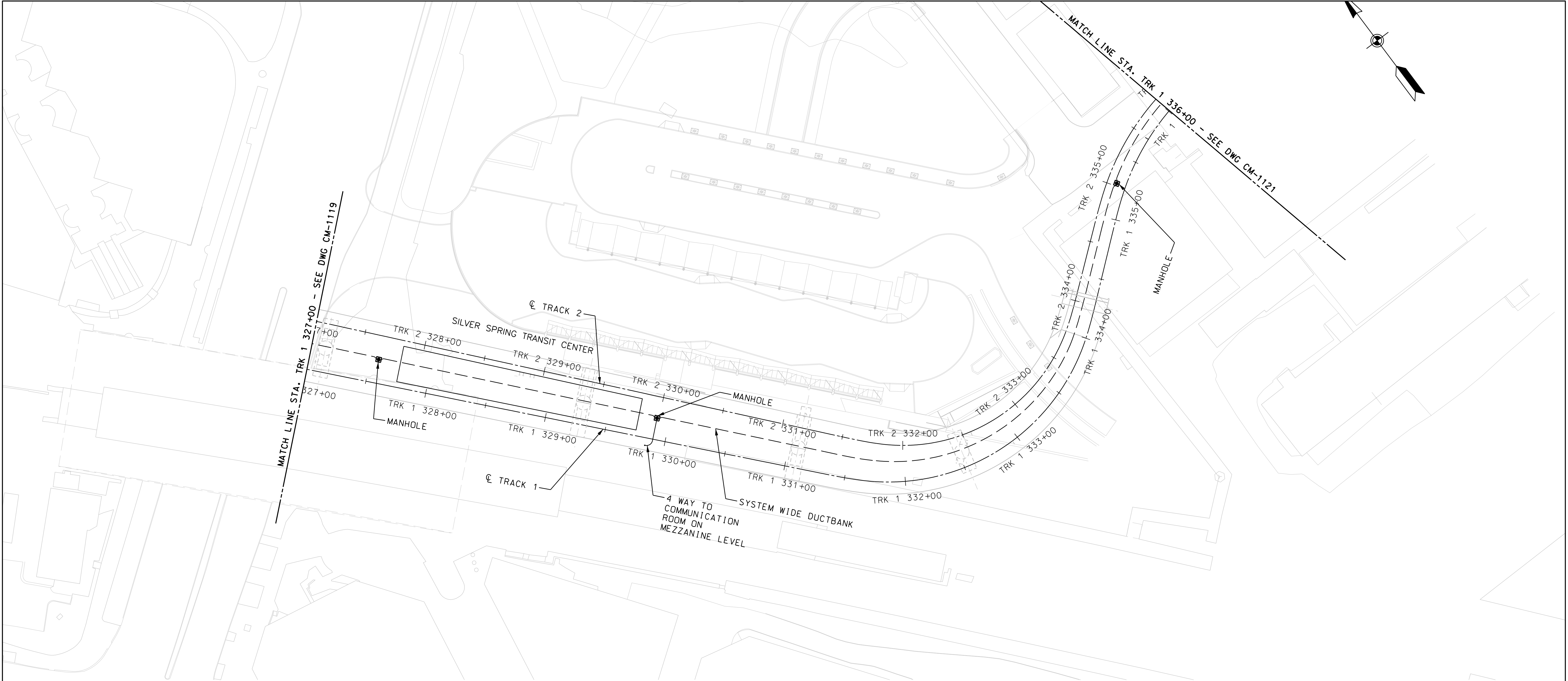
NOTES

1. LOCAL CABLES FOR SIGNAL SYSTEM & GATED CROSSINGS ARE NOT SHOWN.
2. FOR DUCTBANK DETAILS SEE DRAWING TP-0020, TP-0021 AND CM-1005.
3. FOR MANHOLE DETAILS SEE DRAWING TP-0022, TP-0024 AND CM-1020
4. SEE CIVIL DRAWING CV2012 FOR SUBSTAION LAYOUT.



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			DRAWN				EN	DRAWING NO.		CM-1119	
			CHECK				WJG	SHEET NO.		380 OF 474	
APPR				DUCTBANK LAYOUT PLAN STA. EB 315+00 TO STA. EB 327+00		DATE: DECEMBER 2013		SCALE: AS SHOWN			

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LEGEND


- — - SYSTEM WIDE DUCTBANK
- MANHOLE
- MH 13.2KV AC MANHOLE
- P POSITIVE FEEDER MAHOLE
- N NEGATIVE FEEDER MANHOLE
- C COMMUNICATION MANHOLE


NOTES

1. LOCAL CABLES FOR SIGNAL SYSTEM & GATED CROSSINGS ARE NOT SHOWN.
2. FOR DUCTBANK DETAILS SEE DRAWING TP-0020, TP-0021 AND CM-1005.
3. FOR MANHOLE DETAILS SEE DRAWING TP-0022, TP-0024 AND CM-1020
4. FOR STATION DETAILS SEE DRAWING CM-0341.



MARYLAND DEPARTMENT OF TRANSPORTATION

 MARYLAND TRANSIT ADMINISTRATION




WR&A

JACOBS

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DESIGN	KJ
DRAWN	EN
CHECK	WJG
APPR	

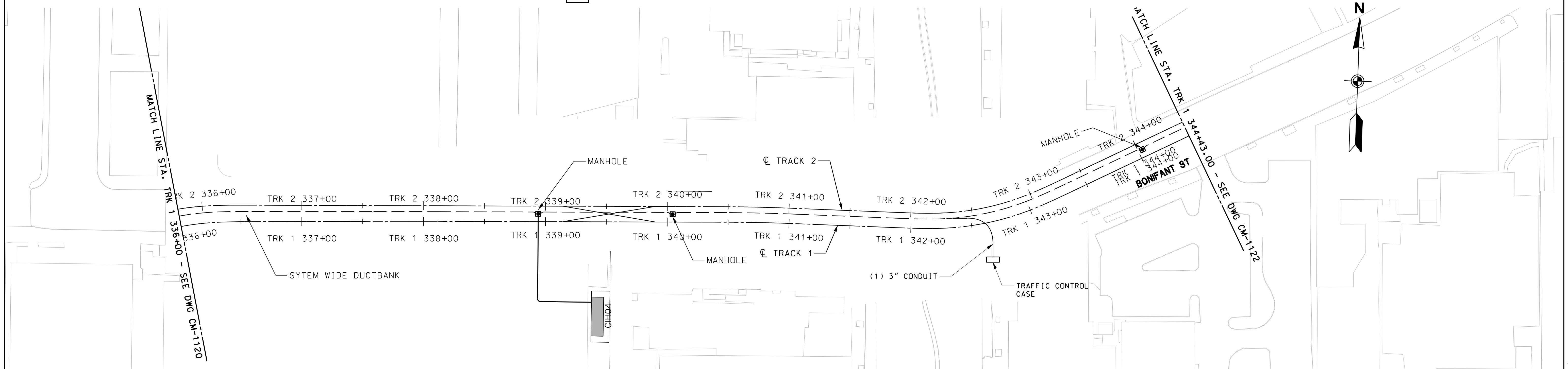
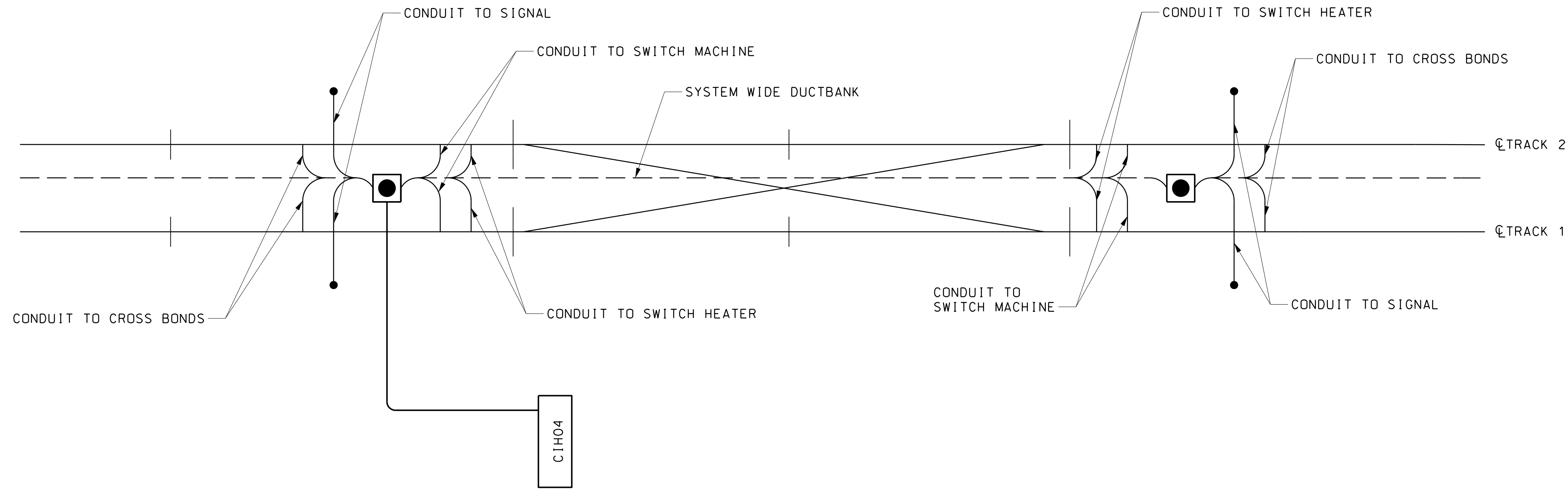
PRELIMINARY ENGINEERING
PURPLE LINE LIGHT RAIL

DUCTBANK LAYOUT PLAN
STA. EB 327+00 TO STA. EB 336+00

DATE: DECEMBER 2013 SCALE: AS SHOWN

CONTRACT NO. T-1042-0220
DRAWING NO. CM-1120
SHEET NO. 381 OF 474

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11/22/2013

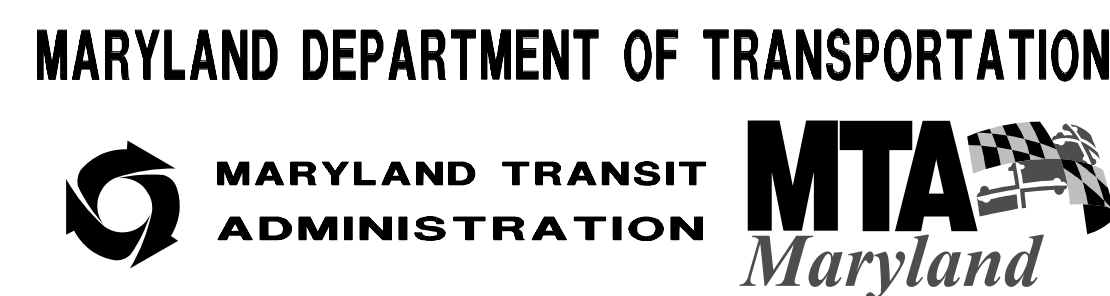


LEGEND

- SYSTEM WIDE DUCTBANK
- MANHOLE
- MH 13.2KV AC MANHOLE
- P POSITIVE FEEDER MAHOLE
- N NEGATIVE FEEDER MANHOLE
- C COMMUNICATION MANHOLE

NOTES

1. LOCAL CABLES FOR SIGNAL SYSTEM & GATED CROSSINGS ARE NOT SHOWN.
2. FOR DUCTBANK DETAILS SEE DRAWING TP-0020, TP-0021 AND CM-1005.
3. FOR MANHOLE DETAILS SEE DRAWING TP-0022, TP-0024 AND CM-1020
4. SEE CIVIL DRAWING DRAWING CVB042 FOR CIH LAYOUT.



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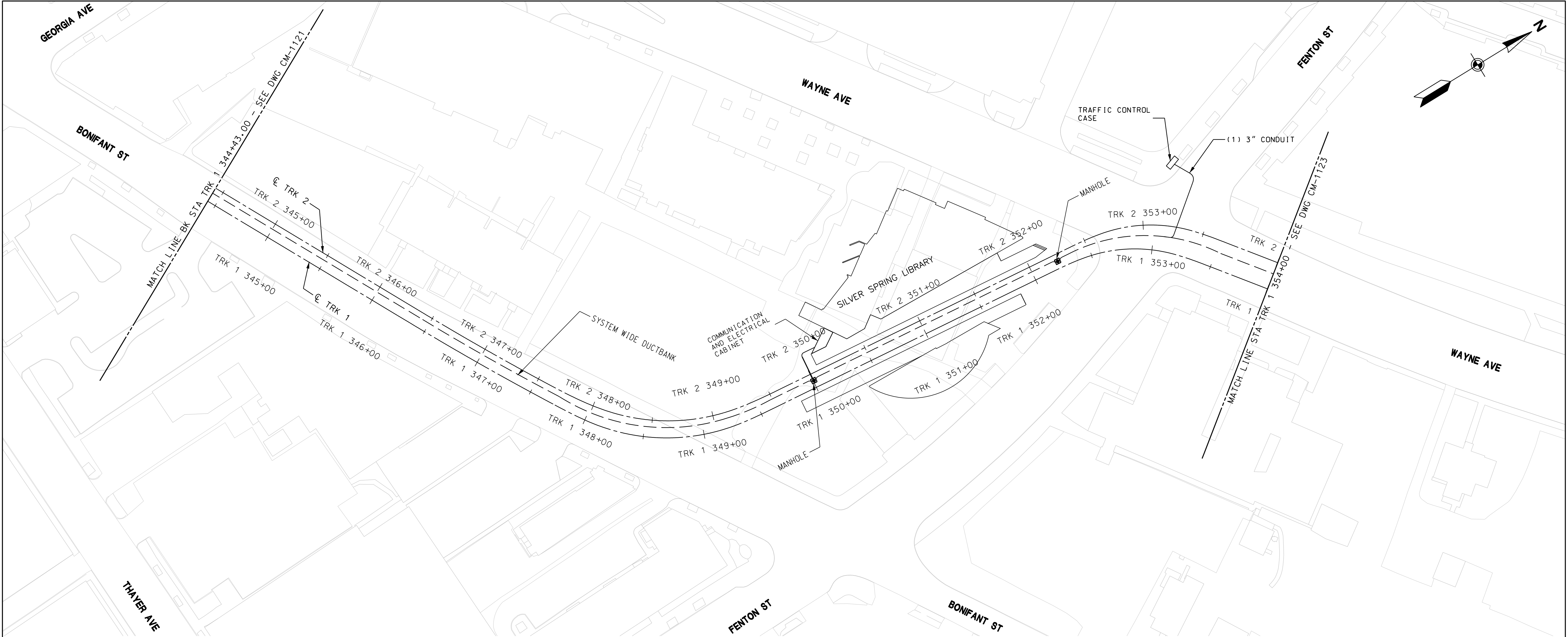
DESIGN	KJ
DRAWN	EN
CHECK	WJG
APPR	

PRELIMINARY ENGINEERING
PURPLE LINE LIGHT RAIL

DUCTBANK LAYOUT PLAN
STA. EB 336+00 TO STA. EB 344+43
DATE: DECEMBER 2013 SCALE: AS SHOWN

CONTRACT NO. T-1042-0220
DRAWING NO. CM-1121
SHEET NO. 382 OF 474

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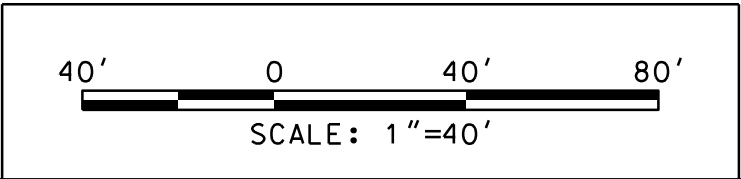


LEGEND

- — - SYSTEM WIDE DUCTBANK
- MANHOLE
- MH 13.2KV AC MANHOLE
- P POSITIVE FEEDER MAHOLE
- N NEGATIVE FEEDER MANHOLE
- C COMMUNICATION MANHOLE

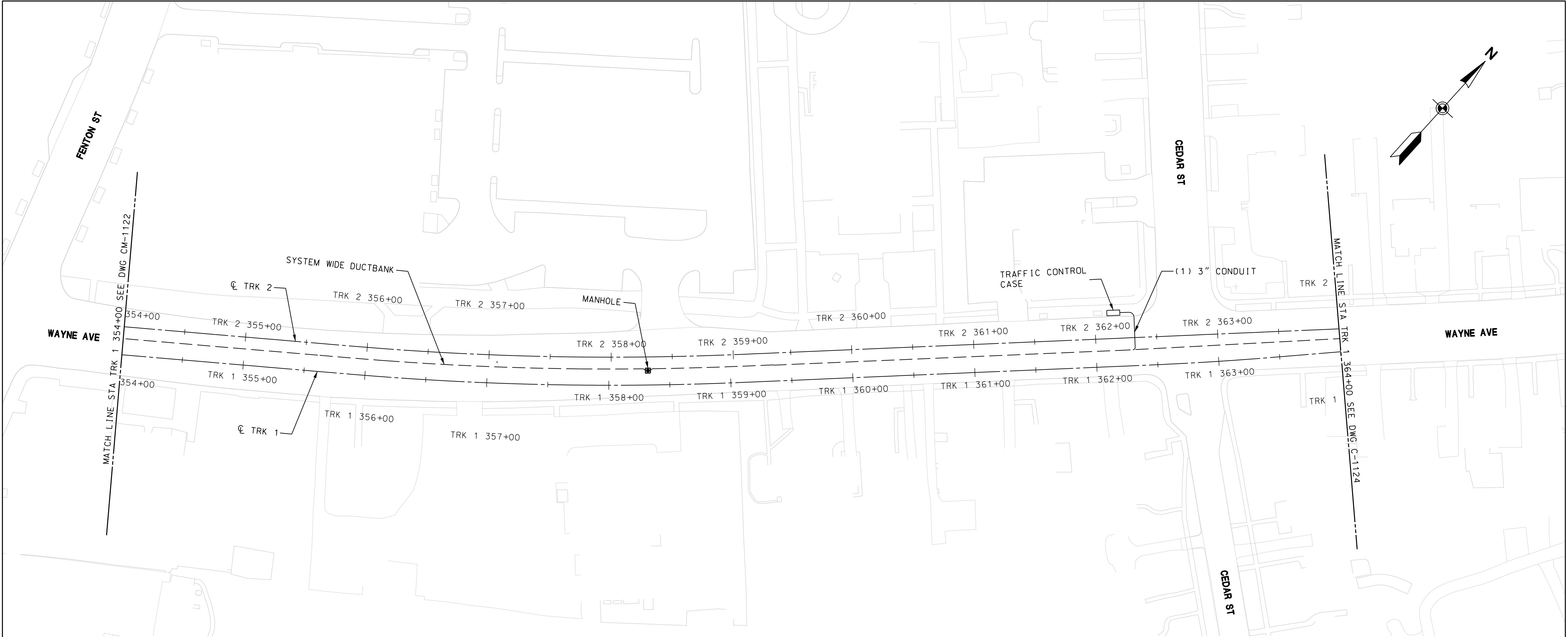
NOTES

1. LOCAL CABLES FOR SIGNAL SYSTEM & GATED CROSSINGS ARE NOT SHOWN.
2. FOR DUCTBANK DETAILS SEE DRAWING TP-0020, TP-0021 AND CM-1005.
3. FOR MANHOLE DETAILS SEE DRAWING TP-0022, TP-0024 AND CM-1020
4. FOR STATION DETAILS SEE DRAWING CM-0351.



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					DRAWN	EN		DRAWING NO.	CM-1122
					CHECK	WJG		SHEET NO.	383 OF 474
					APPR		DUCTBANK LAYOUT PLAN		
							STA. EB 344+43 TO STA. EB 354+00		
							DATE: DECEMBER 2013		SCALE: AS SHOWN

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LEGEND

- SYSTEM WIDE DUCTBANK
- MANHOLE
- MH 13.2KV AC MANHOLE
- P POSITIVE FEEDER MAHOLE
- N NEGATIVE FEEDER MANHOLE
- C COMMUNICATION MANHOLE

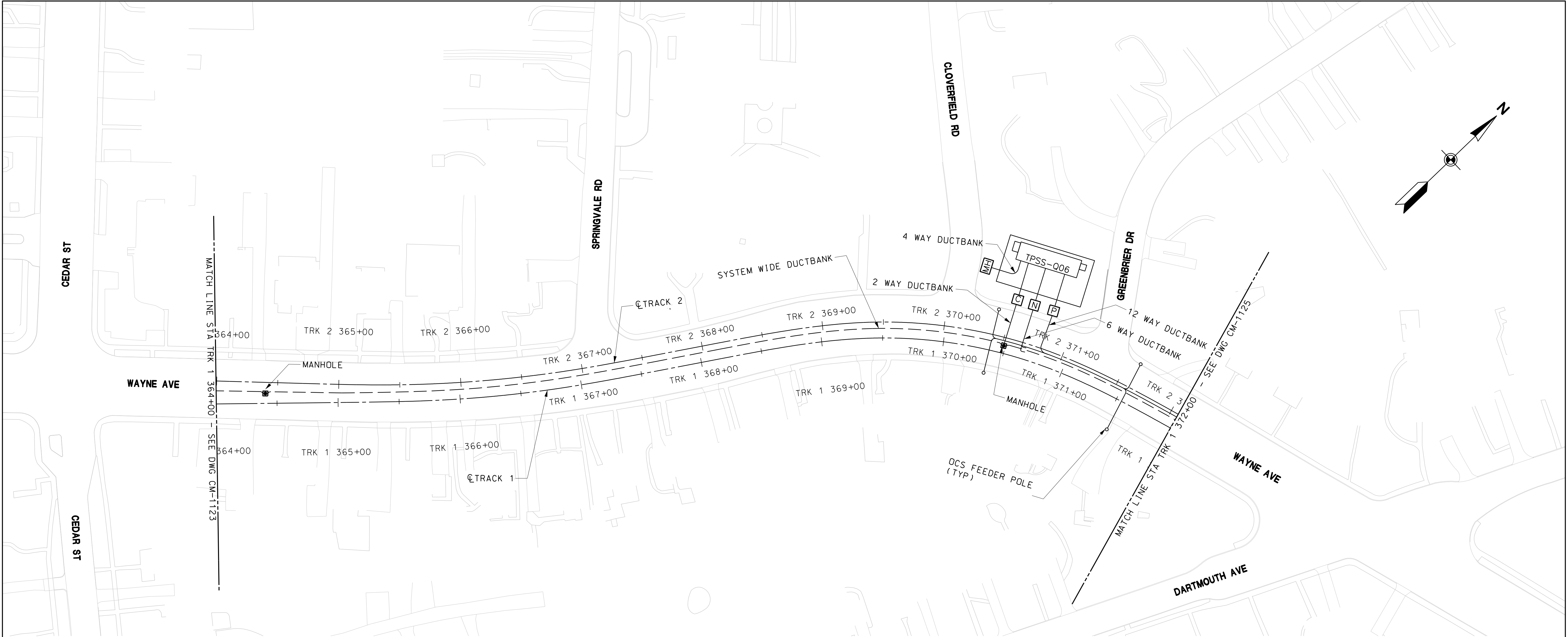
NOTES

1. LOCAL CABLES FOR SIGNAL SYSTEM & GATED CROSSINGS ARE NOT SHOWN.
2. FOR DUCTBANK DETAILS SEE DRAWING TP-0020, TP-0021 AND CM-1005.
3. FOR MANHOLE DETAILS SEE DRAWING TP-0022, TP-0024 AND CM-1020



<div>MARYLAND DEPARTMENT OF TRANSPORTATION</div> <div>MARYLAND TRANSIT ADMINISTRATION</div> <div>MTA Maryland</div>	<div>Gannett Fleming</div> <div>WR&A</div>	<div>JACOBS</div>	<div>PROFESSIONAL CERTIFICATION</div> <div>I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland</div> <div>License No. Expiration Date</div>	<div>DRAFT: Information shown is based on 30 percent preliminary engineering plans and may be subject to further revision pending refinements to the plans during the completion of the design phase. Any reliance upon any of these plans is made with full understanding of its draft status.</div>	DESIGN	KJ	<div>PRELIMINARY ENGINEERING</div> <div>PURPLE LINE LIGHT RAIL</div>	CONTRACT NO.	T-1042-0220
					DRAWN	EN		DRAWING NO.	CM-1123
					CHECK	WJG		SHEET NO.	384 OF 474
APPR			DUCTBANK LAYOUT PLAN		STA. EB 354+00 TO STA. EB 364+00		SCALE: AS SHOWN		
					DATE: DECEMBER 2013				

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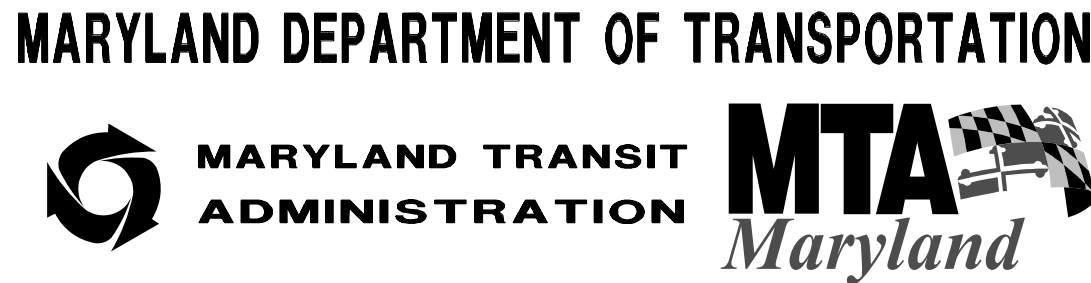


LEGEND

- SYSTEM WIDE DUCTBANK
- MANHOLE
- MH 13.2KV AC MANHOLE
- P POSITIVE FEEDER MAHOLE
- N NEGATIVE FEEDER MANHOLE
- C COMMUNICATION MANHOLE

NOTES

1. LOCAL CABLES FOR SIGNAL SYSTEM & GATED CROSSINGS ARE NOT SHOWN.
2. FOR DUCTBANK DETAILS SEE DRAWING TP-0020, TP-0021 AND CM-1005.
3. FOR MANHOLE DETAILS SEE DRAWING TP-0022, TP-0024 AND CM-1020
4. SEE CIVIL DRAWING CV3C12 FOR SUBSTATION LAYOUT.



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License No. Expiration Date

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DESIGN	KJ
DRAWN	EN
CHECK	WJG
APPR	

PRELIMINARY ENGINEERING
PURPLE LINE LIGHT RAIL

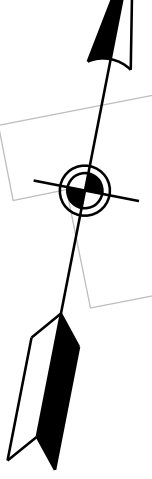
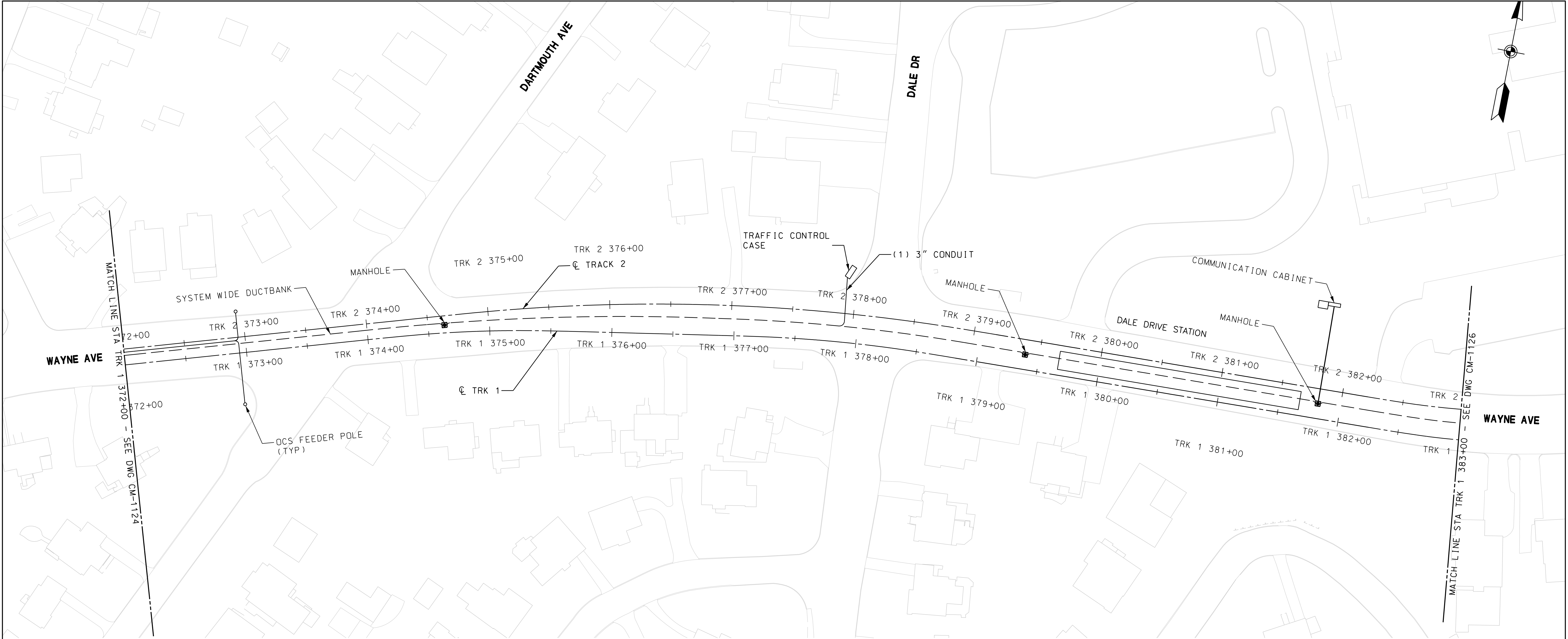
DUCTBANK LAYOUT PLAN
STA. EB 364+00 TO STA. EB 372+00
DATE: DECEMBER 2013 SCALE: AS SHOWN

CONTRACT NO.
T-1042-0220

DRAWING NO.
CM-1124

SHEET NO.
385 OF 474

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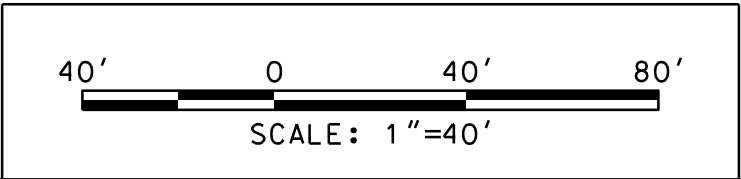


LEGEND

- SYSTEM WIDE DUCTBANK
- MANHOLE
- MH 13.2KV AC MANHOLE
- P POSITIVE FEEDER MAHOLE
- N NEGATIVE FEEDER MANHOLE
- C COMMUNICATION MANHOLE

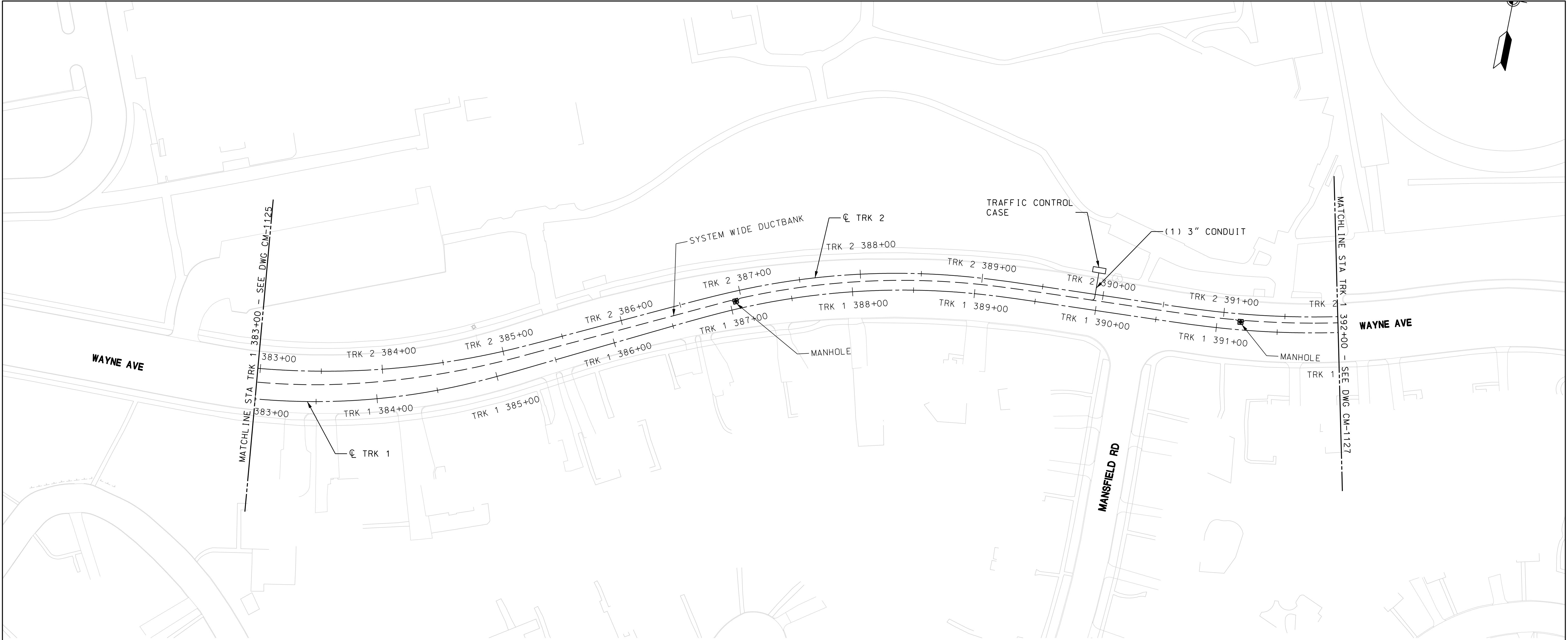
NOTES

1. LOCAL CABLES FOR SIGNAL SYSTEM & GATED CROSSINGS ARE NOT SHOWN.
2. FOR DUCTBANK DETAILS SEE DRAWING TP-0020, TP-0021 AND CM-1005.
3. FOR MANHOLE DETAILS SEE DRAWING TP-0022, TP-0024 AND CM-1020
4. FOR STATION DETAILS SEE DRAWING CM-0360.



<div>MARYLAND DEPARTMENT OF TRANSPORTATION</div> <div>MARYLAND TRANSIT ADMINISTRATION</div> <div>MTA Maryland</div>	<div>Gannett Fleming</div> <div>WR&A</div>	<div>JACOBS</div>	<div>PROFESSIONAL CERTIFICATION</div> <div>I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland</div> <div>License No. Expiration Date</div>	<div>DRAFT: Information shown is based on 30 percent preliminary engineering plans and may be subject to further revision pending refinements to the plans during the completion of the design phase. Any reliance upon any of these plans is made with full understanding of its draft status.</div>	DESIGN	KJ	<div>PRELIMINARY ENGINEERING</div> <div>PURPLE LINE LIGHT RAIL</div>	CONTRACT NO.	T-1042-0220
					DRAWN	EN		DRAWING NO.	CM-1125
					CHECK	WJG		SHEET NO.	386 OF 474
APPR			DUCTBANK LAYOUT PLAN		STA. EB 372+00 TO STA. EB 383+00		DATE: DECEMBER 2013		SCALE: AS SHOWN

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LEGEND

- — — SYSTEM WIDE DUCTBANK
- MANHOLE
- MH 13.2KV AC MANHOLE
- P POSITIVE FEEDER MAHOLE
- N NEGATIVE FEEDER MANHOLE
- C COMMUNICATION MANHOLE

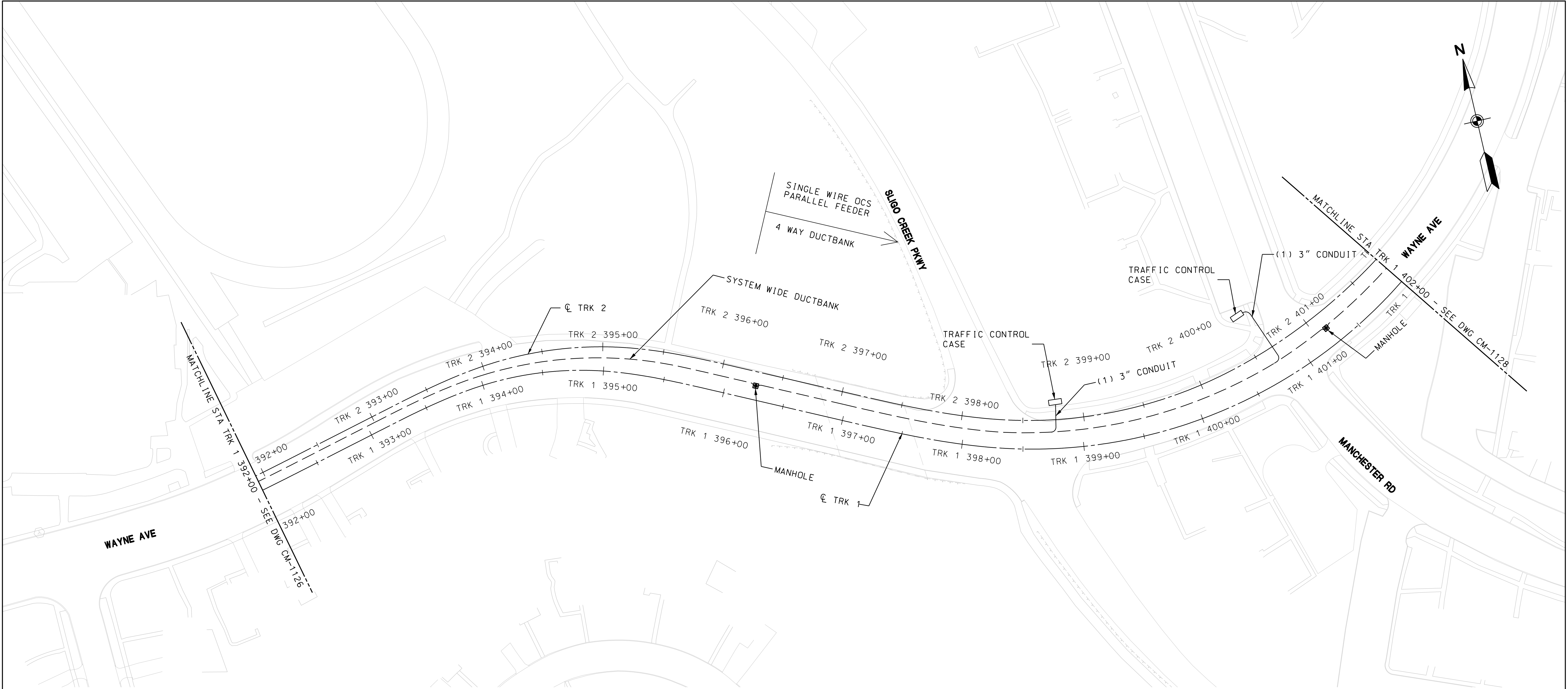
NOTES

- 1. LOCAL CABLES FOR SIGNAL SYSTEM & GATED CROSSINGS ARE NOT SHOWN.
- 2. FOR DUCTBANK DETAILS SEE DRAWING TP-0020, TP-0021 AND CM-1005.
- 3. FOR MANHOLE DETAILS SEE DRAWING TP-0022, TP-0024 AND CM-1020



<div>MARYLAND DEPARTMENT OF TRANSPORTATION</div> <div>MARYLAND TRANSIT ADMINISTRATION</div> <div>MTA Maryland</div>	<div>Gannett Fleming</div> <div>WR&A</div>	<div>JACOBS</div>	PROFESSIONAL CERTIFICATION	<p>I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland</p>	License No. Expiration Date		<p>DRAFT: Information shown is based on 30 percent preliminary engineering plans and may be subject to further revision pending refinements to the plans during the completion of the design phase. Any reliance upon any of these plans is made with full understanding of its draft status.</p>	DESIGN	KJ	<div>PRELIMINARY ENGINEERING</div> <div>PURPLE LINE LIGHT RAIL</div>	CONTRACT NO.	T-1042-0220	
			DRAWN					EN	DRAWING NO.		CM-1126		
			CHECK					WJG	SHEET NO.		387 OF 474		
APPR										DUCTBANK LAYOUT PLAN	STA. EB 383+00 TO STA. EB 392+00	DATE: DECEMBER 2013	SCALE: AS SHOWN

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LEGEND

- — - SYSTEM WIDE DUCTBANK
- MANHOLE
- MH 13.2KV AC MANHOLE
- P POSITIVE FEEDER MAHOLE
- N NEGATIVE FEEDER MANHOLE
- C COMMUNICATION MANHOLE

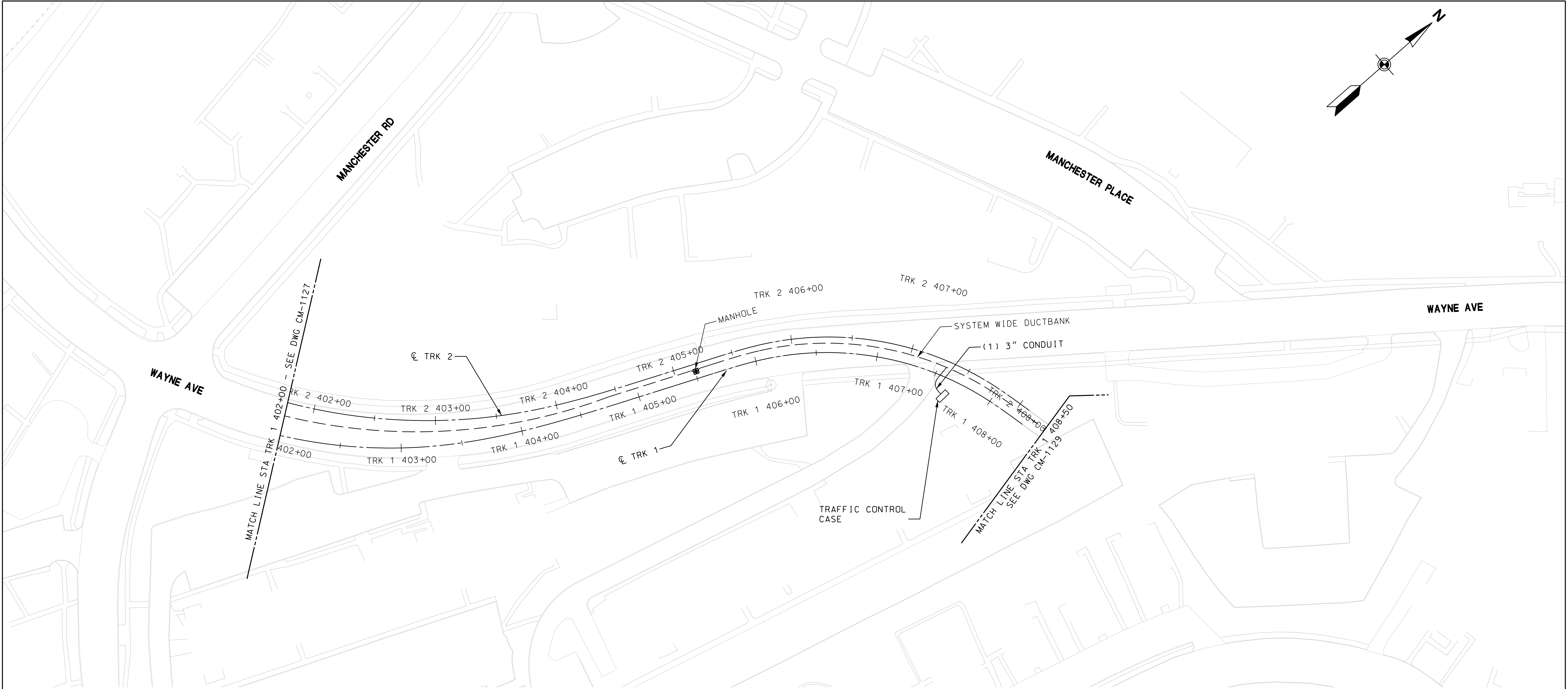
NOTES

1. LOCAL CABLES FOR SIGNAL SYSTEM & GATED CROSSINGS ARE NOT SHOWN.
2. FOR DUCTBANK DETAILS SEE DRAWING TP-0020, TP-0021 AND CM-1005.
3. FOR MANHOLE DETAILS SEE DRAWING TP-0022, TP-0024 AND CM-1020



<div>MARYLAND DEPARTMENT OF TRANSPORTATION</div> <div>MARYLAND TRANSIT ADMINISTRATION</div> <div>MTA Maryland</div>	<div>Gannett Fleming</div> <div>WR&A</div>	<div>JACOBS</div>	<div>PROFESSIONAL CERTIFICATION</div> <div>I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland</div> <div>License No. Expiration Date</div>	<div>DRAFT: Information shown is based on 30 percent preliminary engineering plans and may be subject to further revision pending refinements to the plans during the completion of the design phase. Any reliance upon any of these plans is made with full understanding of its draft status.</div>	APPR	CHECK	DRAWN	DESIGN	<div>PRELIMINARY ENGINEERING</div> <div>PURPLE LINE LIGHT RAIL</div> <div>DUCTBANK LAYOUT PLAN</div> <div>STA. EB 392+00 TO STA. EB 402+00</div> <div>DATE: DECEMBER 2013</div> <div>SCALE: AS SHOWN</div>	CONTRACT NO.	T-1042-0220
										DRAWING NO.	CM-1127
										SHEET NO.	388 OF 474

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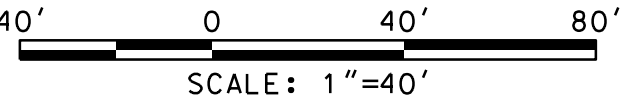


LEGEND


- — - SYSTEM WIDE DUCTBANK
- MANHOLE
- MH 13.2KV AC MANHOLE
- P POSITIVE FEEDER MAHOLE
- N NEGATIVE FEEDER MANHOLE
- C COMMUNICATION MANHOLE


NOTES

1. LOCAL CABLES FOR SIGNAL SYSTEM & GATED CROSSINGS ARE NOT SHOWN.
2. FOR DUCTBANK DETAILS SEE DRAWING TP-0020, TP-0021 AND CM-1005.
3. FOR MANHOLE DETAILS SEE DRAWING TP-0022, TP-0024 AND CM-1020



MARYLAND DEPARTMENT OF TRANSPORTATION

 MARYLAND TRANSIT ADMINISTRATION







JACOBS

PROFESSIONAL CERTIFICATION

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License No. Expiration Date

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DESIGN	KJ
DRAWN	EN
CHECK	WJG
APPR	

PRELIMINARY ENGINEERING
PURPLE LINE LIGHT RAIL

DUCTBANK LAYOUT PLAN
STA. EB 402+00 TO STA. EB 408+00

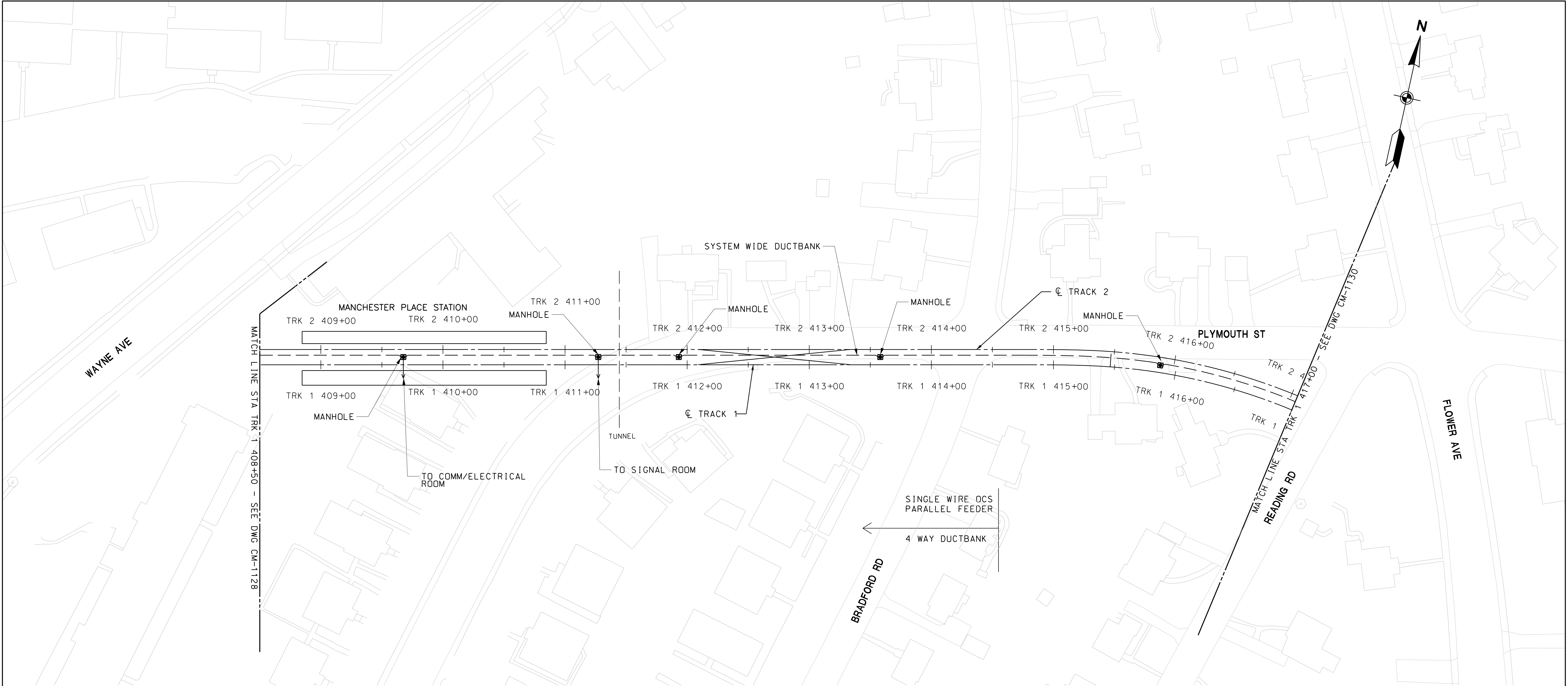
DATE: DECEMBER 2013SCALE: AS SHOWN

CONTRACT NO.
T-1042-0220

DRAWING NO.
CM-1128

SHEET NO.
389 OF 474

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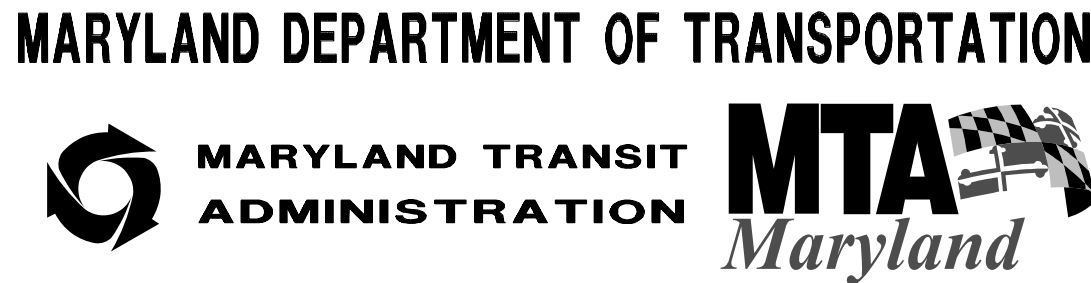
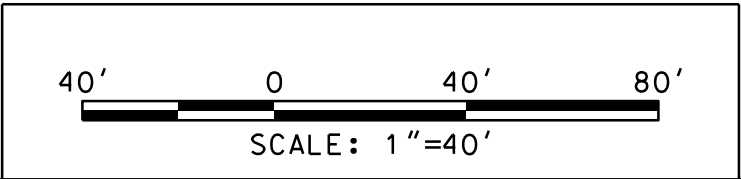


LEGEND

- — SYSTEM WIDE DUCTBANK
- MANHOLE
- MH 13.2KV AC MANHOLE
- P POSITIVE FEEDER MAHOLE
- N NEGATIVE FEEDER MANHOLE
- C COMMUNICATION MANHOLE

NOTES

1. LOCAL CABLES FOR SIGNAL SYSTEM & GATED CROSSINGS ARE NOT SHOWN.
2. FOR DUCTBANK DETAILS SEE DRAWING TP-0020, TP-0021 AND CM-1005.
3. FOR MANHOLE DETAILS SEE DRAWING TP-0022, TP-0024 AND CM-1020.
4. SEE ARCHITECTURAL AR4C11 FOR COMM AND SIGNAL ROOM.
5. FOR STATION DETAILS SEE DRAWING CM-0371.
6. FOR CONDUIT LOCATIONS WITHIN THE INTERLOCKING SEE DRAWING CM-1121.

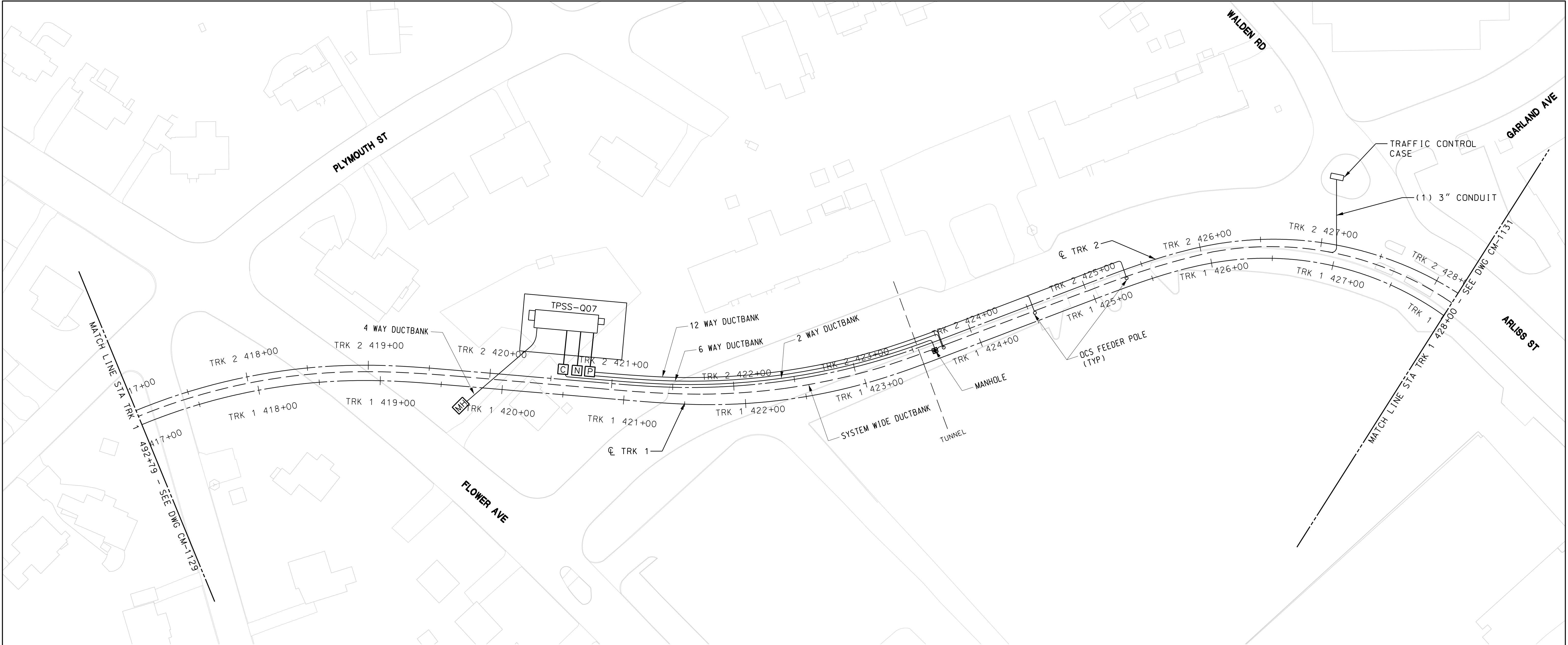


PROFESSIONAL CERTIFICATION
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License No. Expiration Date

DRAFT: Information shown is based on 30 percent preliminary engineering plans and may be subject to further revision pending refinements to the plans during the completion of the design phase. Any reliance upon any of these plans is made with full understanding of its draft status.

APPR CHECK DRAWN DESIGN	KJ	PRELIMINARY ENGINEERING PURPLE LINE LIGHT RAIL	CONTRACT NO. T-1042-0220
	EN		DRAWING NO. CM-1129
	WJG	DUCTBANK LAYOUT PLAN STA. EB 408+00 TO STA. EB 417+00 DATE: DECEMBER 2013 SCALE: AS SHOWN	SHEET NO. 390 OF 474

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11/22/2013

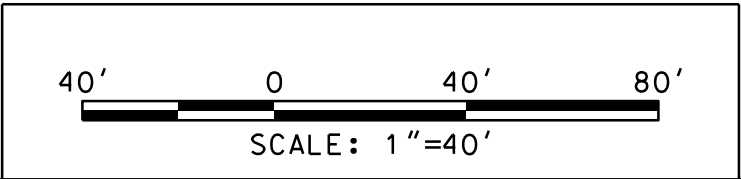


LEGEND

- — — SYSTEM WIDE DUCTBANK
- MANHOLE
- MH 13.2KV AC MANHOLE
- P POSITIVE FEEDER POLE
- N NEGATIVE FEEDER POLE
- C COMMUNICATION MANHOLE

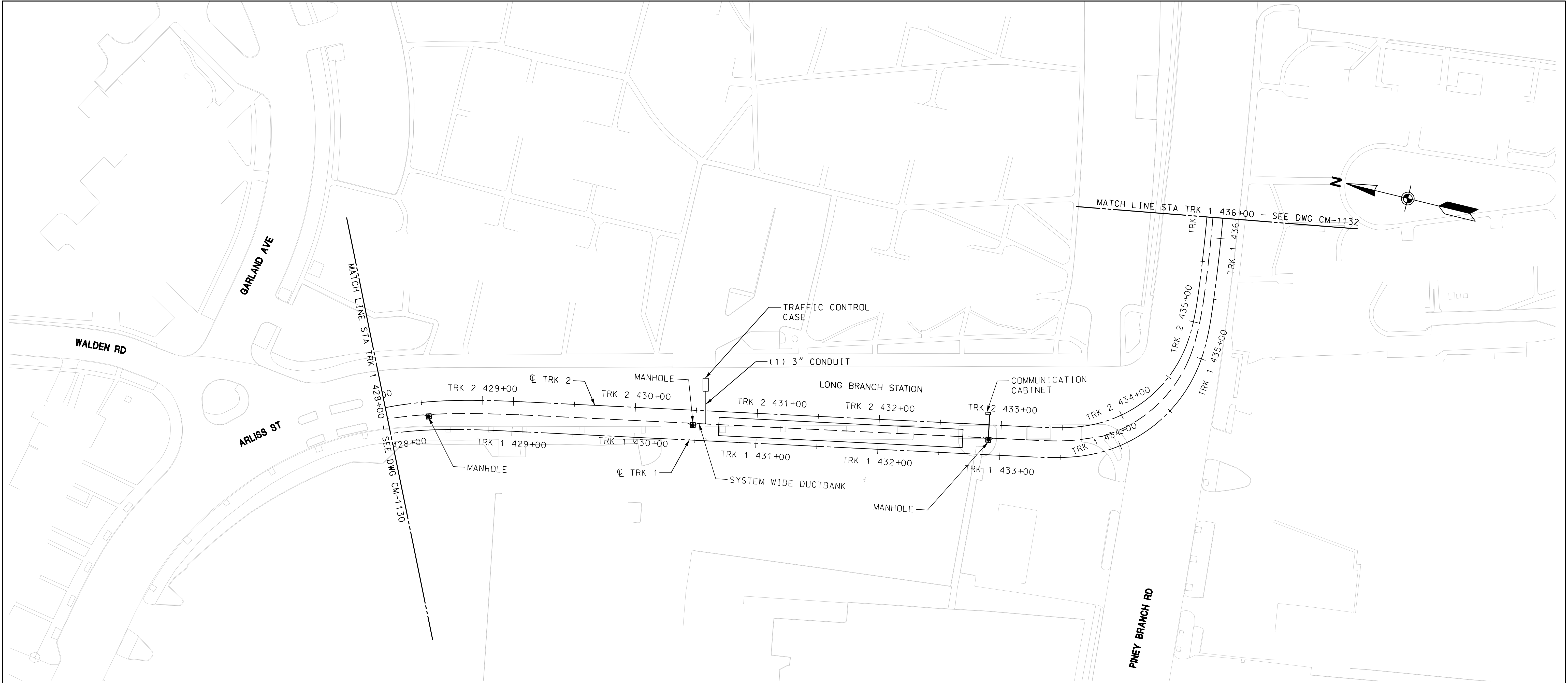
NOTES

- 1. LOCAL CABLES FOR SIGNAL SYSTEM & GATED CROSSINGS ARE NOT SHOWN.
- 2. FOR DUCTBANK DETAILS SEE DRAWING TP-0020, TP-0021 AND CM-1005.
- 3. FOR MANHOLE DETAILS SEE DRAWING TP-0022, TP-0024 AND CM-1020
- 4. SEE CIVIL DRAWING CV4D12 FOR SUBSTATION LAYOUT.



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					DRAWN	EN		DRAWING NO.	CM-1130
					CHECK	WJG		SHEET NO.	391 OF 474
APPR				<div>DUCTBANK LAYOUT PLAN</div> <div>STA. EB 417+00 TO STA. EB 428+00</div> <div>DATE: DECEMBER 2013 SCALE: AS SHOWN</div>					

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LEGEND

- — — SYSTEM WIDE DUCTBANK
- MANHOLE
- MH 13.2KV AC MANHOLE
- P POSITIVE FEEDER MAHOLE
- N NEGATIVE FEEDER MANHOLE
- C COMMUNICATION MANHOLE

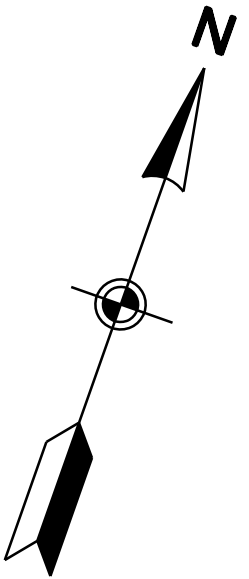
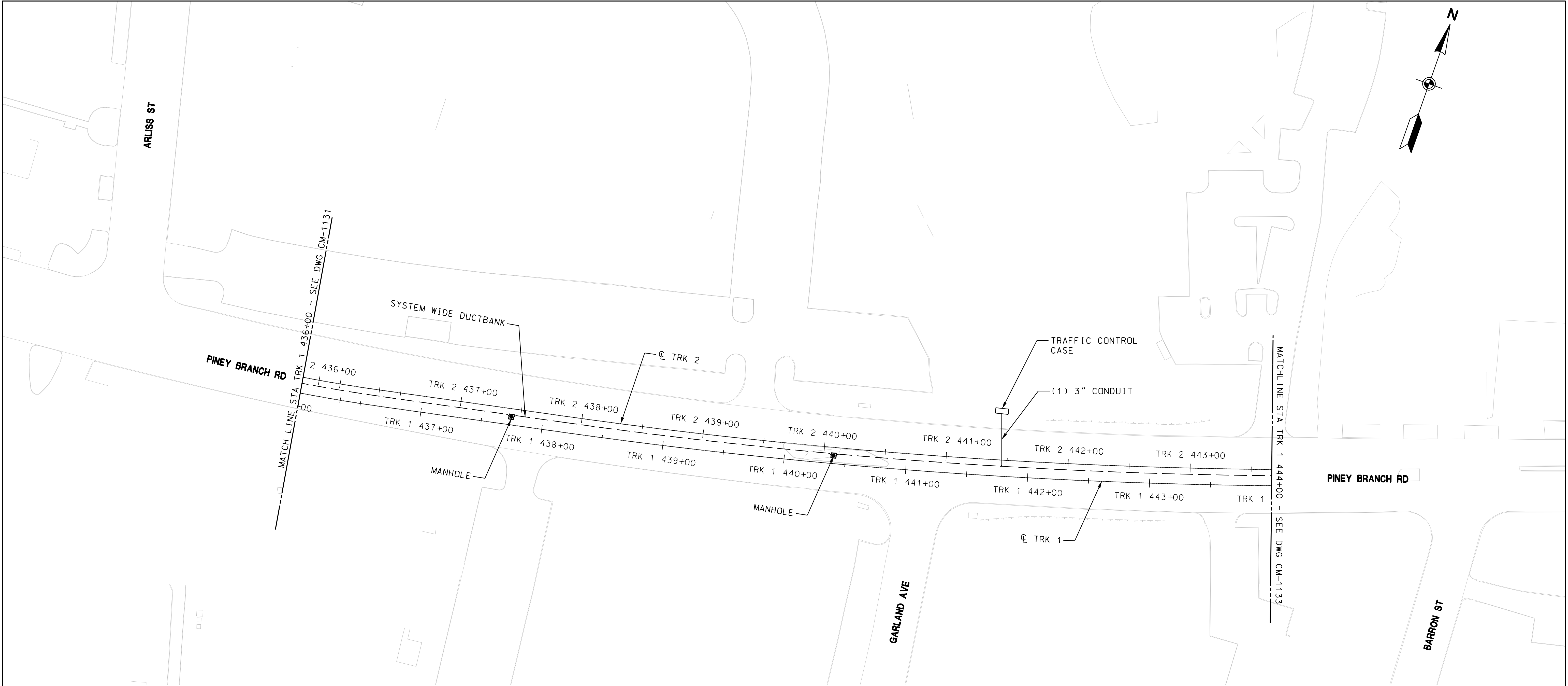
NOTES

- 1. LOCAL CABLES FOR SIGNAL SYSTEM & GATED CROSSINGS ARE NOT SHOWN.
- 2. FOR DUCTBANK DETAILS SEE DRAWING TP-0020, TP-0021 AND CM-1005.
- 3. FOR MANHOLE DETAILS SEE DRAWING TP-0022, TP-0024 AND CM-1020.
- 4. FOR STATION DETAILS SEE DRAWING CM-0336.



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					DRAWN	EN		DRAWING NO.	CM-1131
					CHECK	WJG		SHEET NO.	392 OF 474
APPR				STA. EB 428+00 TO STA. EB 436+00		DUCTBANK LAYOUT PLAN	DATE: DECEMBER 2013		SCALE: AS SHOWN

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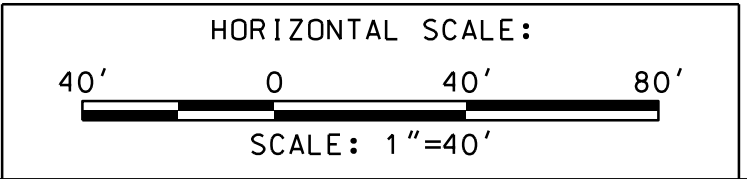


LEGEND

- — - SYSTEM WIDE DUCTBANK
- MANHOLE
- MH 13.2KV AC MANHOLE
- P POSITIVE FEEDER MAHOLE
- N NEGATIVE FEEDER MANHOLE
- C COMMUNICATION MANHOLE

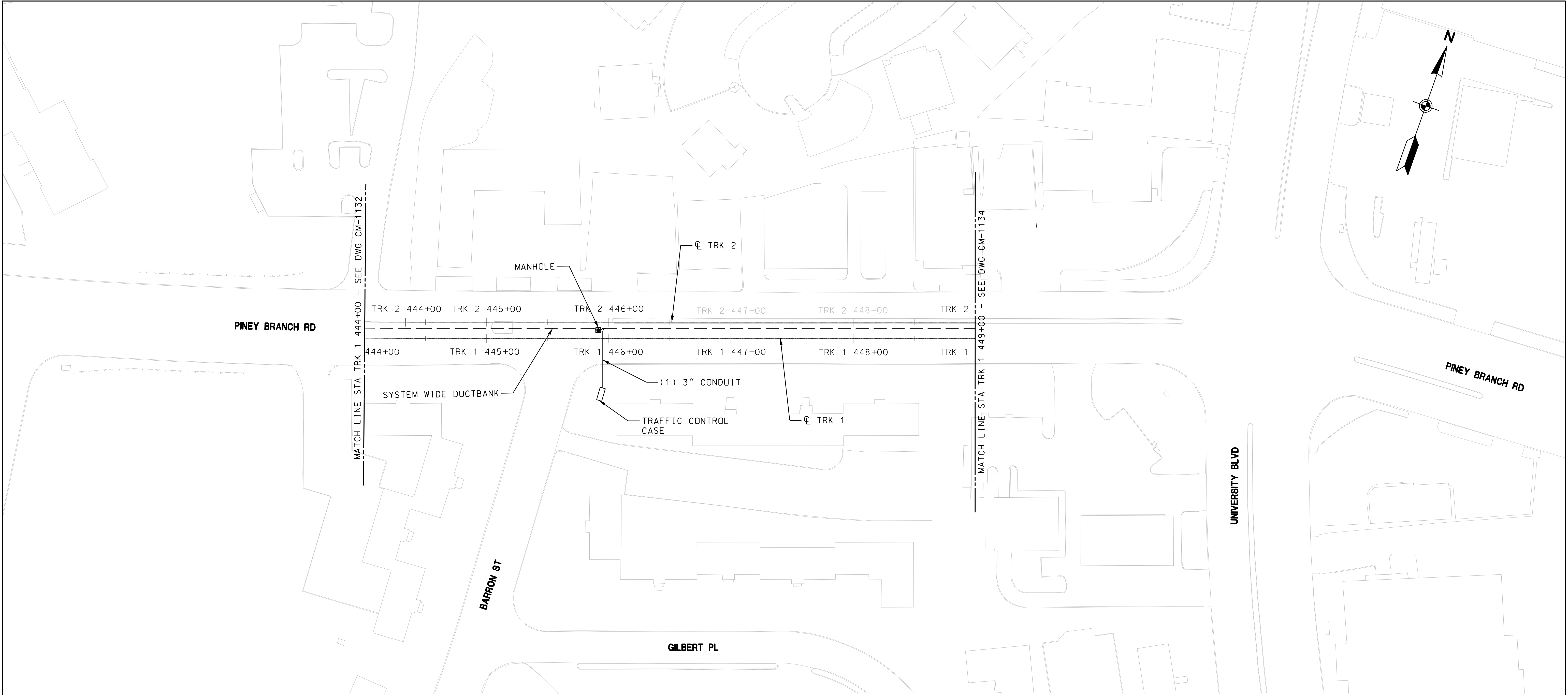
NOTES

1. LOCAL CABLES FOR SIGNAL SYSTEM & GATED CROSSINGS ARE NOT SHOWN.
2. FOR DUCTBANK DETAILS SEE DRAWING TP-0020, TP-0021 AND CM-1005.
3. FOR MANHOLE DETAILS SEE DRAWING TP-0022, TP-0024 AND CM-1020.



<div>MARYLAND DEPARTMENT OF TRANSPORTATION</div> <div>MARYLAND TRANSIT ADMINISTRATION</div> <div>MTA Maryland</div>	<div>Gannett Fleming</div> <div>WR&A</div>	<div>JACOBS</div>	<div>PROFESSIONAL CERTIFICATION</div> <div>I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland</div> <div>License No. Expiration Date</div>	<div>DRAFT: Information shown is based on 30 percent preliminary engineering plans and may be subject to further revision pending refinements to the plans during the completion of the design phase. Any reliance upon any of these plans is made with full understanding of its draft status.</div>	DESIGN	KJ	<div>PRELIMINARY ENGINEERING</div> <div>PURPLE LINE LIGHT RAIL</div>	CONTRACT NO.	T-1042-0220
					DRAWN	EN		DRAWING NO.	CM-1132
					CHECK	WJG		SHEET NO.	393 OF 474
APPR			DUCTBANK LAYOUT PLAN		STA. EB 436+00 TO STA. EB 444+00		DATE: DECEMBER 2013		SCALE: AS SHOWN

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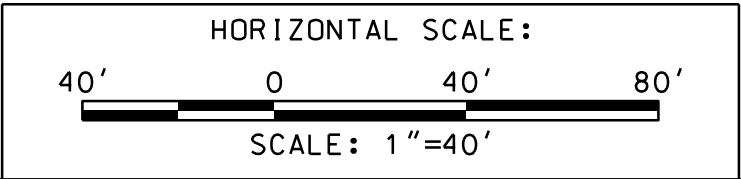


LEGEND

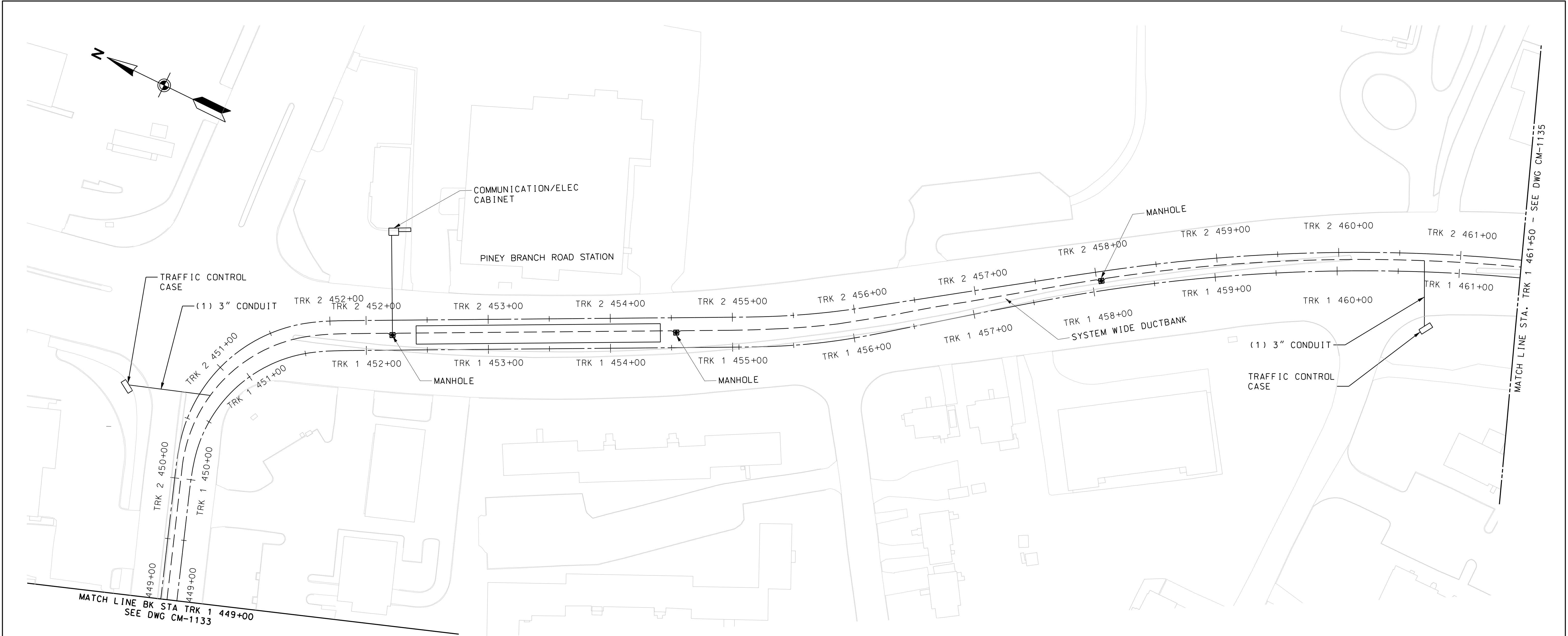
- SYSTEM WIDE DUCTBANK
- MANHOLE
- MH 13.2KV AC MANHOLE
- P POSITIVE FEEDER MAHOLE
- N NEGATIVE FEEDER MANHOLE
- C COMMUNICATION MANHOLE

NOTES

1. LOCAL CABLES FOR SIGNAL SYSTEM & GATED CROSSINGS ARE NOT SHOWN.
2. FOR DUCTBANK DETAILS SEE DRAWING TP-0020, TP-0021 AND CM-1005.
3. FOR MANHOLE DETAILS SEE DRAWING TP-0022, TP-0024 AND CM-1020.



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					DRAWN	EN		DRAWING NO.	CM-1133		
					CHECK	WJG		SHEET NO.	394 OF 474		
APPR				STA. EB 444+00 TO STA. EB 449+00		DUCTBANK LAYOUT PLAN		DATE: DECEMBER 2013		SCALE: AS SHOWN	



LEGEND

- SYSTEM WIDE DUCTBANK
- MANHOLE
- MH 13.2KV AC MANHOLE
- P POSITIVE FEEDER MAHOLE
- N NEGATIVE FEEDER MANHOLE
- C COMMUNICATION MANHOLE

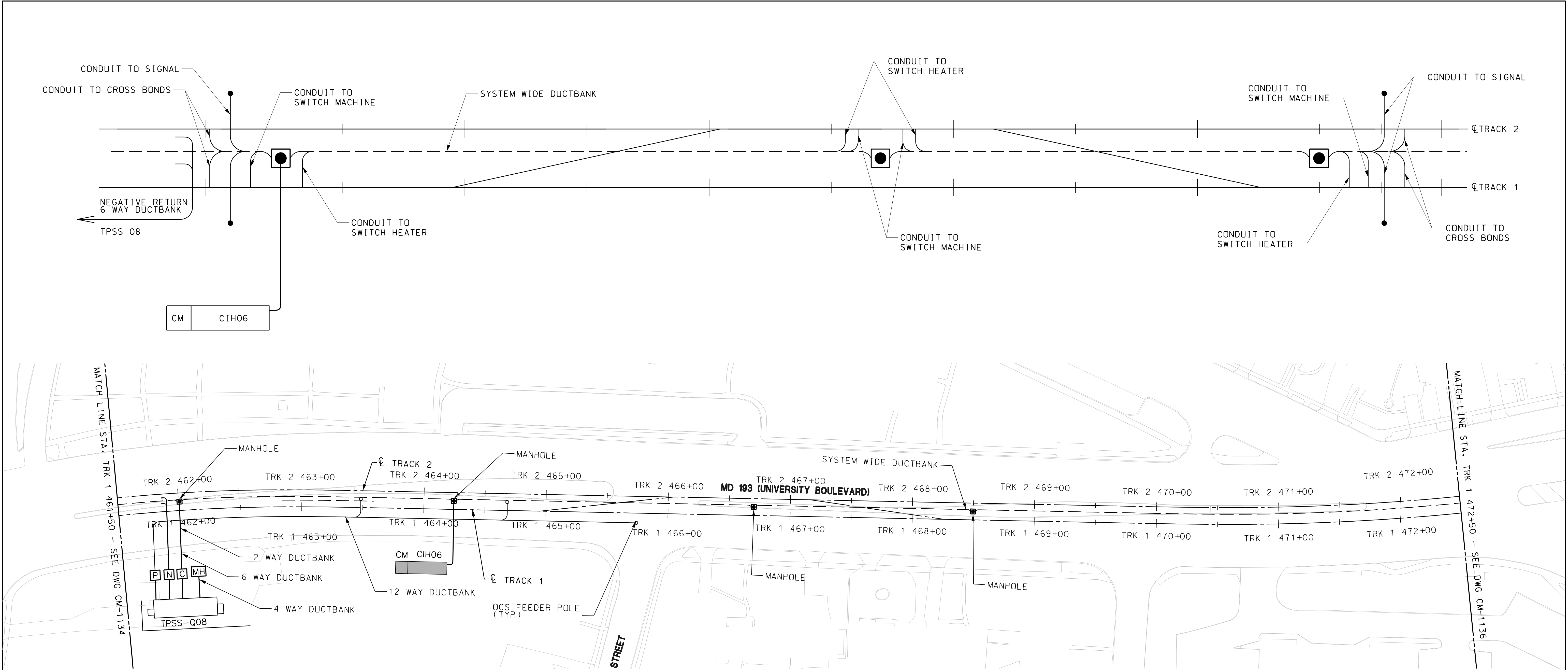


NOTES

1. LOCAL CABLES FOR SIGNAL SYSTEM & GATED CROSSINGS ARE NOT SHOWN.
2. FOR DUCTBANK DETAILS SEE DRAWING TP-0020, TP-0021 AND CM-1005.
3. FOR MANHOLE DETAILS SEE DRAWING TP-0022, TP-0024 AND CM-1020.
4. FOR STATION DETAILS SEE DRAWING CM-0390.

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					DRAWN	EN		DRAWING NO.	CM-1134
					CHECK	WJG		SHEET NO.	395 OF 474
APPR				DUCTBANK LAYOUT PLAN		STA. EB 449+00 TO STA. EB 461+50		SCALE: AS SHOWN	
				DATE: DECEMBER 2013					

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LEGEND

- SYSTEM WIDE DUCTBANK
- MANHOLE
- MH 13.2KV AC MANHOLE
- P POSITIVE FEEDER MAHOLE
- N NEGATIVE FEEDER MANHOLE
- C COMMUNICATION MANHOLE

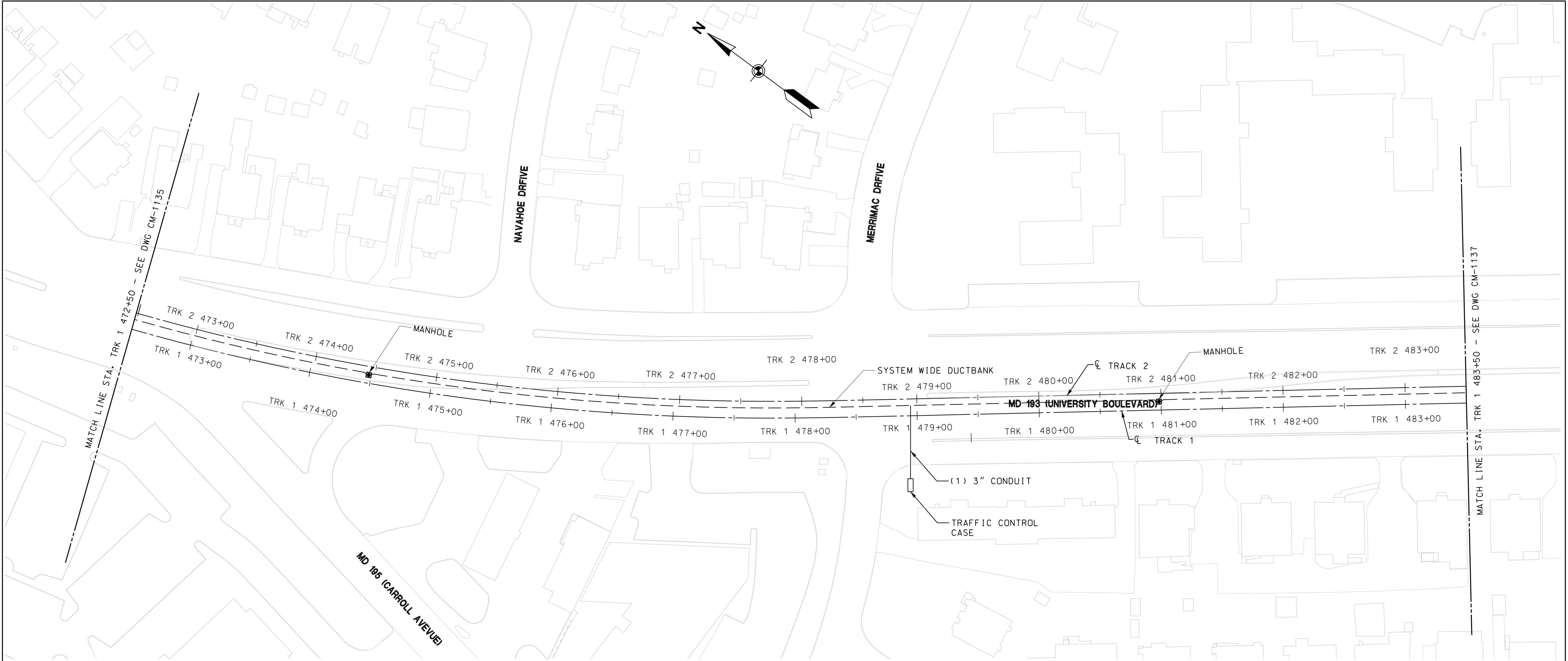
NOTES

1. LOCAL CABLES FOR SIGNAL SYSTEM & GATED CROSSINGS ARE NOT SHOWN.
2. FOR DUCTBANK DETAILS SEE DRAWING TP-0020, TP-0021 AND CM-1005.
3. FOR MANHOLE DETAILS SEE DRAWING TP-0022, TP-0024 AND CM-1020.
4. SEE CIVIL DRAWING CV6F12 FOR SUBSTATION LAYOUT.
5. SEE CIVIL DRAWING CVB062 FOR CM AND CIH LAYOUT.



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						<div>EN</div>		<div>DRAWING NO.</div> <div>CM-1135</div>
						<div>WJG</div>		<div>SHEET NO.</div> <div>396 OF 474</div>

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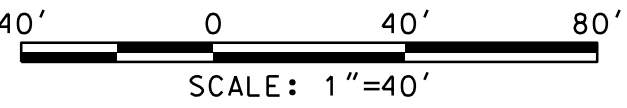







LEGEND

- SYSTEM WIDE DUCTBANK
- MANHOLE
- MH 13.2KV AC MANHOLE
- P POSITIVE FEEDER MAHOLE
- N NEGATIVE FEEDER MANHOLE
- C COMMUNICATION MANHOLE

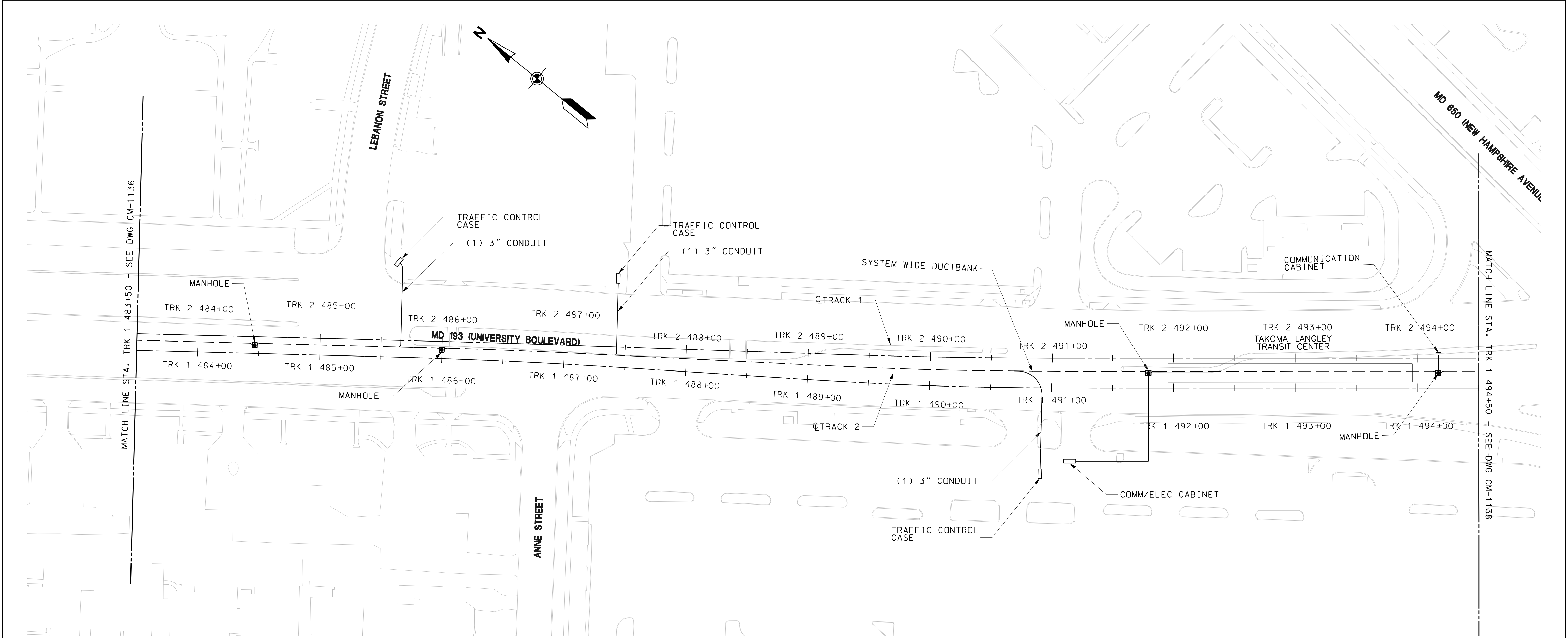
NOTES

- 1. LOCAL CABLES FOR SIGNAL SYSTEM & GATED CROSSINGS ARE NOT SHOWN.
- 2. FOR DUCTBANK DETAILS SEE DRAWING TP-0020, TP-0021 AND CM-1005.
- 3. FOR MANHOLE DETAILS SEE DRAWING TP-0022, TP-0024 AND CM-1020.



<div>MARYLAND DEPARTMENT OF TRANSPORTATION</div> <div> MARYLAND TRANSIT ADMINISTRATION</div> <div></div>	 		PROFESSIONAL CERTIFICATION I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland License No. Expiration Date	<p><i>DRAFT: Information shown is based on 30 percent preliminary engineering plans and may be subject to further revision pending refinements to the plans during the completion of the design phase. Any reliance upon any of these plans is made with full understanding of its draft status.</i></p>	DESIGN	KJ	PRELIMINARY ENGINEERING PURPLE LINE LIGHT RAIL	CONTRACT NO. T-1042-0220
					DRAWN	EN		DRAWING NO. CM-1136
					CHECK	WJG		SHEET NO. 397 OF 474
APPR			STA. EB 472+50 TO STA. EB 483+50 DATE: DECEMBER 2013		SCALE: AS SHOWN			

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11/22/2013

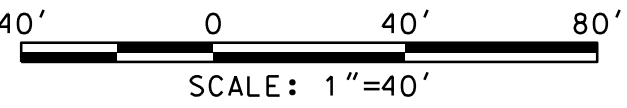


LEGEND

- SYSTEM WIDE DUCTBANK
- MANHOLE
- MH 13.2KV AC MANHOLE
- P POSITIVE FEEDER MAHOLE
- N NEGATIVE FEEDER MANHOLE
- C COMMUNICATION MANHOLE

NOTES

- 1. LOCAL CABLES FOR SIGNAL SYSTEM & GATED CROSSINGS ARE NOT SHOWN.
- 2. FOR DUCTBANK DETAILS SEE DRAWING TP-0020, TP-0021 AND CM-1005.
- 3. FOR MANHOLE DETAILS SEE DRAWING TP-0022, TP-0024 AND CM-1020.
- 4. FOR STATION DETAILS SEE DRAWING CM-0390.



MARYLAND DEPARTMENT OF TRANSPORTATION

MARYLAND TRANSIT ADMINISTRATION

MTA

Maryland

Gannett Fleming

WR&A

JACOBS

PROFESSIONAL CERTIFICATION

I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland

License No. Expiration Date

DRAFT: Information shown is based on 30 percent preliminary engineering plans and may be subject to further revision pending refinements to the plans during the completion of the design phase. Any reliance upon any of these plans is made with full understanding of its draft status.

APPR

CHECK

DRAWN

DESIGN

KJ

EN

WJG

PRELIMINARY ENGINEERING

PURPLE LINE LIGHT RAIL

DUCTBANK LAYOUT PLAN

STA. EB 483+50 TO STA. EB 494+50

DATE: DECEMBER 2013

SCALE: AS SHOWN

CONTRACT NO.

T-1042-0220

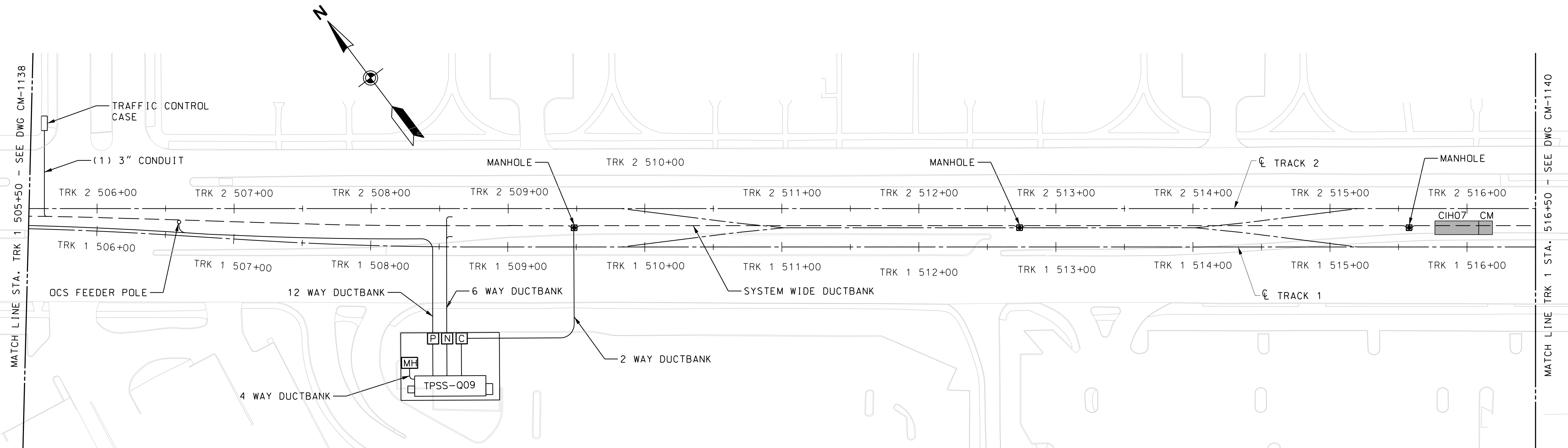
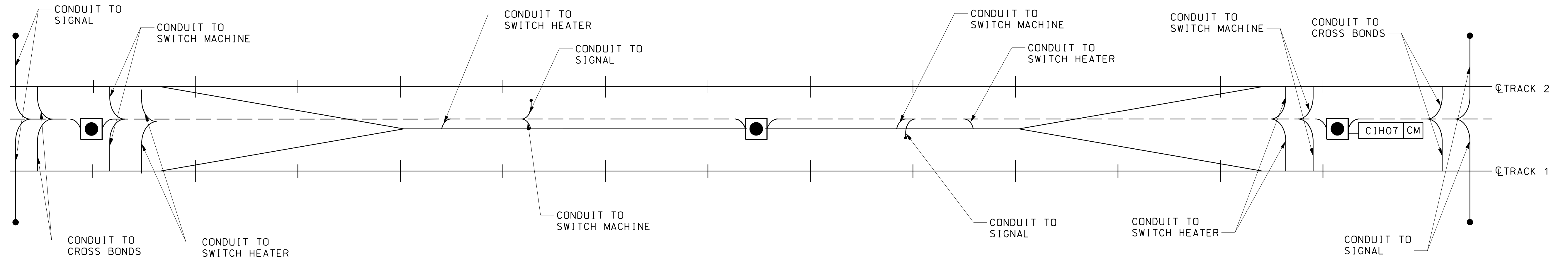
DRAWING NO.

CM-1137

SHEET NO.

398 OF 474

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LEGEND

- SYSTEM WIDE DUCTBANK
- MANHOLE
- MH 13.2KV AC MANHOLE
- P POSITIVE FEEDER MAHOLE
- N NEGATIVE FEEDER MANHOLE
- C COMMUNICATION MANHOLE

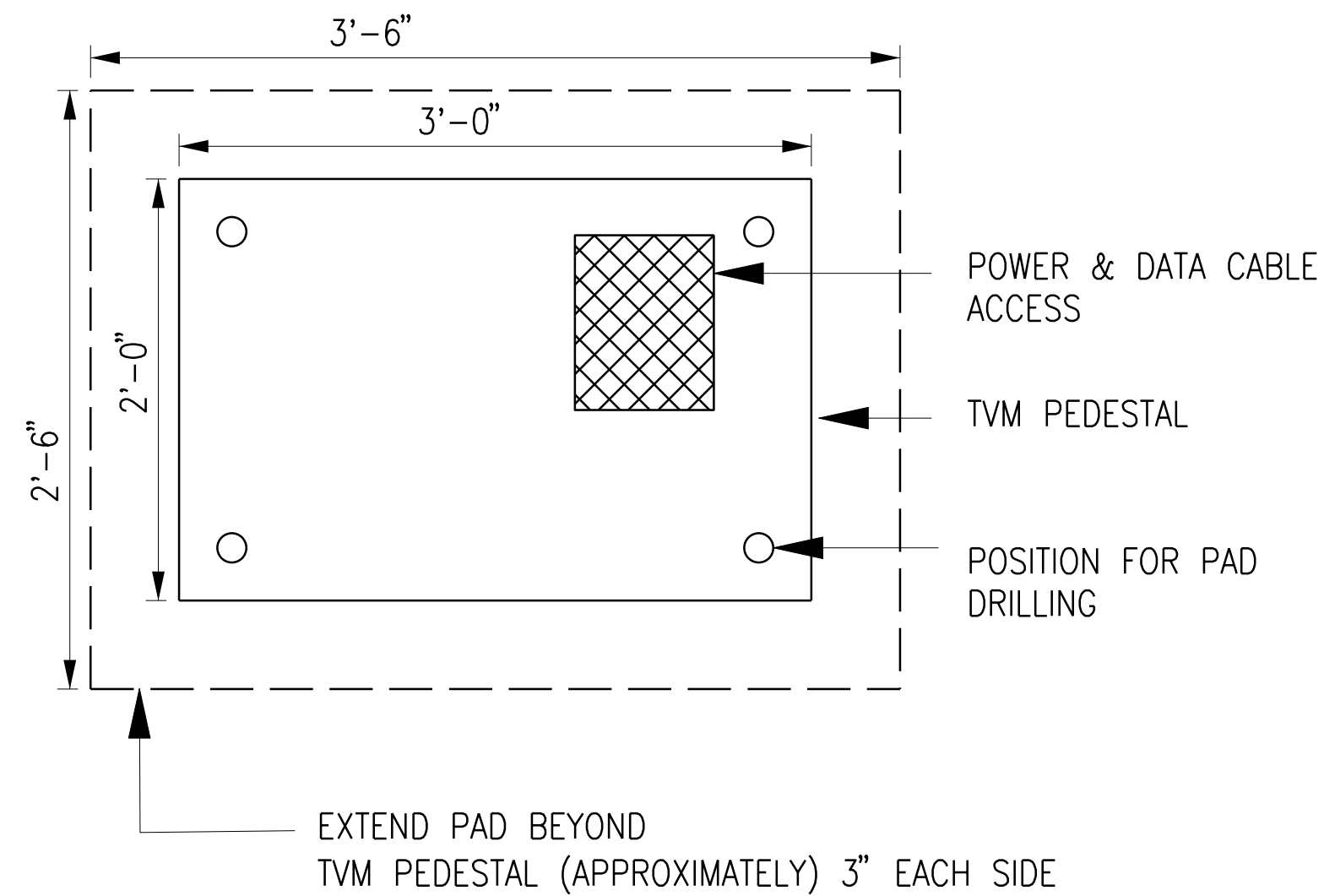
NOTES

1. LOCAL CABLES FOR SIGNAL SYSTEM & GATED CROSSINGS ARE NOT SHOWN.
2. FOR DUCTBANK DETAILS SEE DRAWING TP-0020, TP-0021 AND CM-1005.
3. FOR MANHOLE DETAILS SEE DRAWING TP-0022, TP-0024 AND CM-1020.
4. SEE CIVIL DRAWING CVB072 FOR CM AND CIH LAYOUT.





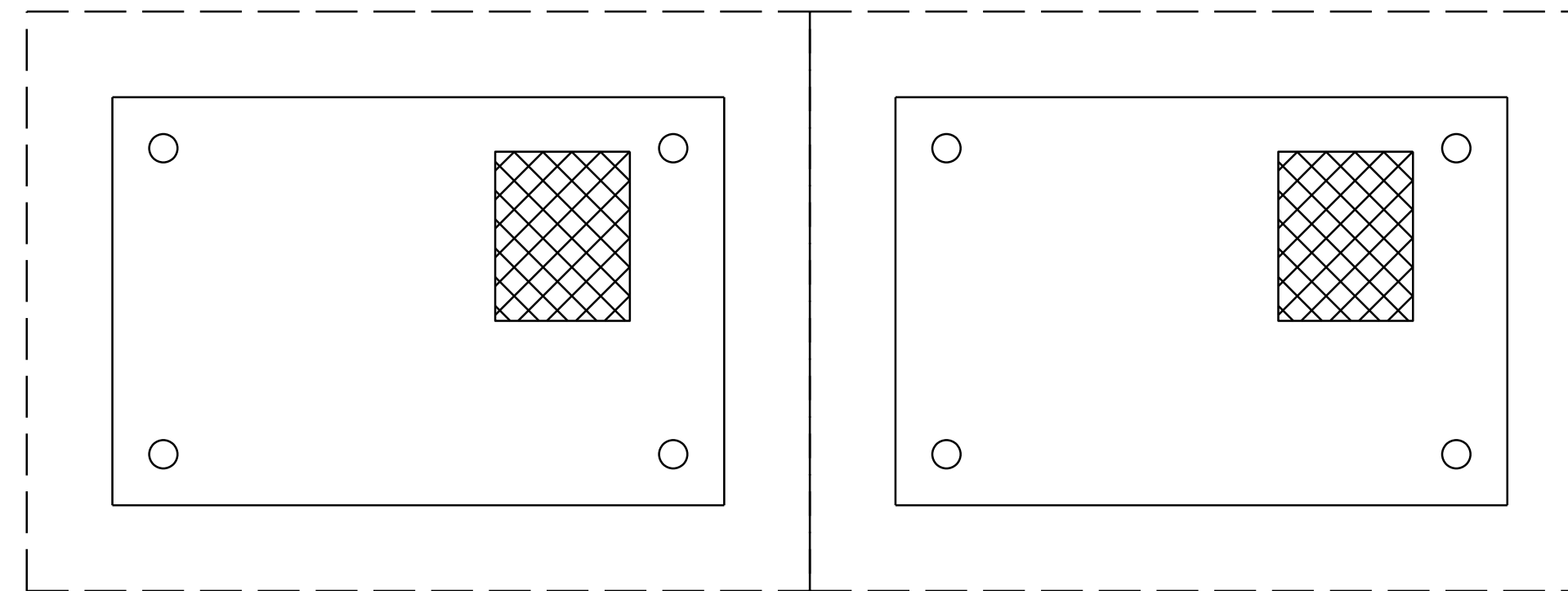
- INDICATES FACING DIRECTION



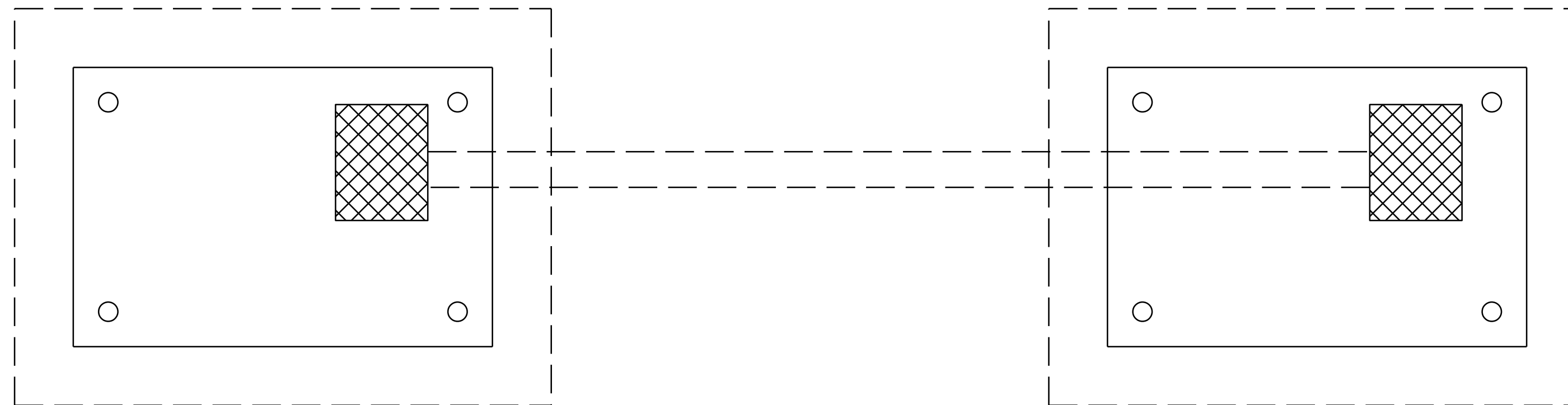
SINGLE TVM

NOTES:

1. PAD & TVM PEDESTAL (BASE) MUST BE LEVEL.
2. BOLT TEMPLATE SHALL BE PROVIDED BY FARE COLLECTION CONTRACTOR.
3. MINIMUM OF 6' OF POWER AND DATA CABLES MUST BE PROVIDED PRIOR TO TVM INSTALLATION.
4. PEDESTAL/PAD INTERFACE MUST BE SEALED.
5. UNDERGROUND CONDUIT IS PERFERRED LINKAGE BETWEEN ADJACENT MACHINES. UNLESS MACHINES ARE FLUSH BACK-TO-BACK OR SIDE-TO-SIDE THEN CABLES MAY PASS BETWEEN PEDESTAL SIDE WALLS AND APPROPRIATE BUSHINGS/CABLE PROTECTION APPLIED.
6. PEDESTAL ACCESS HATCH IS ON THE FRONT PANEL OF THE PEDESTAL.
7. POWER & DATA CABLE CAN PASS BETWEEN PEDESTAL SIDE.
8. TVM MAY FACE THE SAME DIRECTION OR OPPISITE DIRECTIONS.
9. UNDERGROUND CONDUIT (— — —) BETWEEN MACHINES PREFERRED.



SIDE-BY-SIDE (FLUSH)
(SEE NOTES 9, 10)



SIDE-BY-SIDE (SEPERATE)
(SEE NOTES 9, 10, 11)