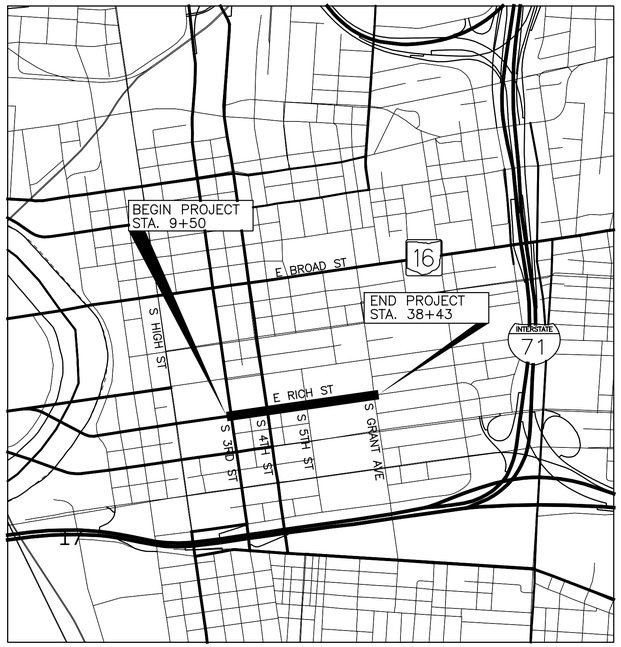
CITY OF COLUMBUS, OHIO

DEPARTMENT OF PUBLIC SERVICE
DIVISION OF DESIGN AND CONSTRUCTION

FRA E RICH ST SIGNALS

IMPROVEMENTS OF E. RICH STREET

FROM S 3RD ST TO S GRANT AVE



LOCATION MAP

P.O.B. = LATITUDE: 39° 57' 53" N LONGITUDE: 82° 59' 40" W

0 1/4 1/2 1

Portions to be Improved:

DESIGN DESIGNATION DATA

Current ADT 3951
Design Year ADT (2043) 3951
Design Hourly Volume 397
Directional Distribution 100% WB
Trucks (24 hour b&c) 3%
Design Speed 25 mph
Legal Speed 25 mph
Design Functional Classification Urban Minor Arterial

DESIGN EXCEPTION

None

ASSOCIATED PLANS

E03872

INDEX OF SHEETS

PROJECT DESCRIPTION

This project consists of replacing the existing traffic signals at the intersections of Rich Street at 3rd Street, 4th Street, 5th Street, and Grant Avenue with new decorative mast arm traffic signals, brick intersection corners, decorative street lighting, and interconnect. Additionally, some drainage structures are being replaced with new connections to the system.

EARTH DISTURBED AREA

TOTAL EDA = 0.20 AC
Pre–Impervious = 0.19 AC
Post–Impervious = 0.19 AC

NOTE: The Project Disturbs under 10,000 SF of impervious area and is below the threshold for detention requirements.

2018 SPECIFICATIONS

The City of Columbus Construction and Materials Specifications (CMSC), 2018 Edition including all revisions and supplements in effect at the time of signature by the Director of Public Service, shall govern all construction items that are a part of this pan unless noted otherwise.

"City of Columbus" signatures on this plan signify only concurrence with the purpose and general location of the project. All technical details remain the responsibility of the Engineer preparing the plans.

CITY OF COLUMBUS APPROVALS

Design Section Engineer, Division of Design and Construction — Date

Administrator, Division of Power — Date

Administrator, Division of Sewerage and Drainage — Date

Administrator, Division of Water — Date

Director, Department of Public Utilities — Date

Fire Prevention Bureau, Division of Fire — Date

Engineering Supervisor, Department of Technology — Date

Director, Department of Recreation and Parks — Date

City Engineer–Administrator, Division of Design and Construction — Date

Director, Department of Public Service — Date

PLAN PREPARED BY:
Lanham ENGINEERING LLC
2421 REGINALD CT
POWELL, OHIO 43065

ENGINEER'S SEAL

TRAFFIC SIGNAL ENGINEER'S SEAL (IF APPLICABLE)

Registered Engineer — Date

Registered Engineer — Date

X/X/XX = APPROVAL DATE

COLUMBUS STANDARD CONSTRUCTION DRAWINGS

AA–S102 12/6/13	AA–S126 12/6/13	1511 9/15/15	2185 7/1/22	4022 7/1/20	4163 7/1/21
AA–S106 7/9/12	AA–S128 8/8/14	1520 9/15/15	2300 7/1/23	4106 7/1/20	4164 10/1/20
AA–S107 7/9/12	AA–S149 10/15/14	1530 9/15/15	2301 7/1/23	4110 10/1/18	4200 8/1/15
AA–S112 12/6/13	AA–S150 7/9/12	1640 3/1/23	2303 7/1/21	4111 8/10/17	4205 5/1/14
AA–S117 7/9/12	AA–S151 7/9/12	1647 7/1/23	2320 4/13/18	4121 7/1/20	4230 10/1/18
AA–S119 8/8/14	1441 7/7/23	2000 7/1/23	2319 7/1/23	4122 10/1/18	4253 5/1/14
AA–S121 7/9/12	1442 7/1/23	2005 7/8/20	4000 8/10/17	4160 10/1/18	4650 7/1/20
AA–S125A 8/8/14	1500 9/15/15	2161 7/1/23	4001 8/1/15	4161 8/1/15	
AA–S125B 8/8/14	1510 9/15/15	2179 7/1/21	4021 7/1/20	4162 7/1/20	

COLUMBUS SUPPLEMENTAL SPECIFICATIONS

SS–1524		
SS–1611		
SS–1620		
SS–1630		

ODOT STANDARD CONSTRUCTION DRAWINGS

REV NO	Revision Description	Sheet(s)	Initial	Date

OHIO811.org Before You Dig

STAGE 3 SUBMITTAL, DATE 02/19/24

CITY 545003-100000
PID 113410

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TITLE SHEET

IMPROVEMENTS OF
E RICH STREET FROM S 3RD ST TO S GRANT AVE
FRA E RICH ST SIGNALS

3921-E

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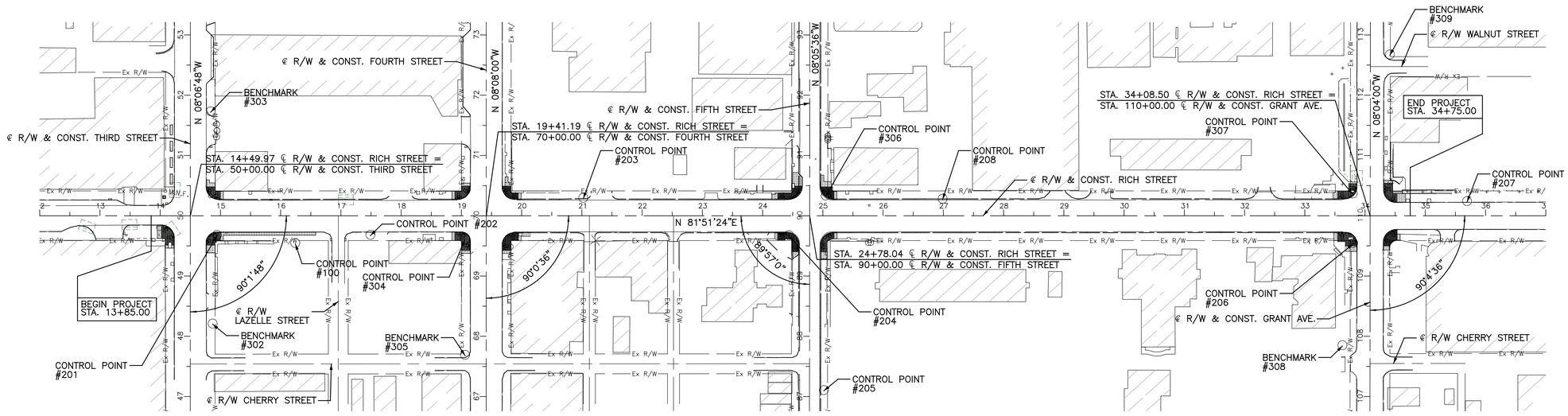

FLOODPLAIN

THE PROJECT IS LOCATED IN ZONE X AREA OF MINIMAL FLOOD HAZARD WITH NO DEFINED FLOODWAY AS SHOWN ON FIRM PANEL 39049C0328K, DATED 6/17/2008.

BASIS OF STATIONING

RICH STREET: CENTERLINE STATION SET = 14+49.97 AT INTERSECTION WITH CENTERLINE OF THIRD STREET AS ESTABLISHED FOR THIS PROJECT.

THIRD STREET: CENTERLINE STATION SET = 50+00.00 AT INTERSECTION WITH CENTERLINE OF RICH STREET AS ESTABLISHED FOR THIS PROJECT.

FOURTH STREET: CENTERLINE STATION SET = 70+00.00 AT INTERSECTION WITH CENTERLINE OF RICH STREET AS ESTABLISHED FOR THIS PROJECT.

FIFTH STREET: CENTERLINE STATION SET = 90+00.00 AT INTERSECTION WITH CENTERLINE OF RICH STREET AS ESTABLISHED FOR THIS PROJECT.

GRANT STREET: CENTERLINE STATION SET = 110+00.00 AT INTERSECTION WITH CENTERLINE OF RICH STREET AS ESTABLISHED FOR THIS PROJECT.

CENTERLINE REFERENCE POINTS

STATION	Alignment	Ground Northing	Ground Easting
13+00.00	C/L R/W & CONST. RICH STREET	713467.164	1829091.935
16+00.00	C/L R/W & CONST. RICH STREET	713509.659	1829388.910
49+00.00	C/L R/W & CONST. THIRD STREET	713389.412	1829254.533
51+00.00	C/L R/W & CONST. THIRD STREET	713587.41	1829226.307
18+00.00	C/L R/W & CONST. RICH STREET	713537.989	1829586.893
21+00.00	C/L R/W & CONST. RICH STREET	713580.483	1829883.868
69+00.00	C/L R/W & CONST. FOURTH STREET	713458.997	1829740.829
71+00.00	C/L R/W & CONST. FOURTH STREET	713656.985	1829712.534
24+00.00	C/L R/W & CONST. RICH STREET	713622.978	1830180.843
26+00.00	C/L R/W & CONST. RICH STREET	713651.308	1830378.827
89+00.00	C/L R/W & CONST. FIFTH STREET	713535.032	1830272.198
91+00.00	C/L R/W & CONST. FIFTH STREET	713733.04	1830244.041
33+00.00	C/L R/W & CONST. RICH STREET	713750.462	1831071.768
35+00.00	C/L R/W & CONST. RICH STREET	713778.792	1831269.752
109+00.00	C/L R/W & CONST. GRANT AVE.	713666.825	1831193.236
111+00.00	C/L R/W & CONST. GRANT AVE.	713864.846	1831165.171

SURVEYING PARAMETERS

PROJECT CONTROL

POSITIONING METHOD: LOCAL RTK AND CONVENTIONAL TOTAL STATION OFF OF PUBLISHED (VERIFIED) MONUMENTATION
MONUMENT TYPE: IRON PIN SET W/ ALUMINUM/PLASTIC CAP, MAG NAILS, CUT SQUARES

VERTICAL POSITIONING

ORTHOMETRIC HEIGHT DATUM: NAVD88
GEOID: GEOID18

HORIZONTAL POSITIONING

REFERENCE FRAME: NAD83 (2011) EPOCH: 2010.00
ELLIPSOID: GRS 80
MAP PROJECTION: LAMBERT CONIC CONFORMAL
COORDINATE SYSTEM: OHIO SOUTH 3402
COMBINED SCALE FACTOR: 0.999955142 (GROUND TO GRID)
PROJECT SCALE FACTOR: 1.00004486 (GRID TO GROUND)
ORIGIN OF COORDINATE SYSTEM: GRID COORDINATES SCALED ABOUT 0,0

VERTICAL CONTROL BENCHMARKS

VERTICAL CONTROL WAS BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88), WITH GEOID 18 USED TO MODEL ELEVATIONS. ALL ELEVATIONS ARE REFERENCED FRANKLIN COUNTY BENCHMARKS DISCOVERY, BROAD, COLUMBUS, AND R 308.

BENCHMARK	DESCRIPTION	GROUND NORTHING (US FEET)	GROUND EASTING (US FEET)	ELEVATION (US FEET)
301	CUT SQUARE	713421.130	1828544.693	761.740
302	CUT SQUARE	713316.636	1829302.410	756.096
303	CUT SQUARE	713664.677	1829249.437	755.721
304	CUT SQUARE	713515.167	1829696.968	755.627
305	CUT SQUARE	713324.580	1829724.569	754.229
306	CUT SQUARE	713670.970	1830279.831	757.103
308	CUT SQUARE	713546.696	1831164.028	764.094
309	CUT SQUARE	714035.422	1831173.658	763.909
501	CUT SQUARE	713545.738	1829434.163	757.428
502	CUT SQUARE	713629.262	1830012.984	758.594

HORIZONTAL CONTROL

PRIMARY HORZIONTAL CONTROL POINTS WERE EITHER ESTABLISHED BY REPEATED GNSS RTK MEASUREMENTS FROM EXSITING NGS MONUMENT CNTRL GAR, OR BY REPEATED TOTAL STATION MEASUREMENTS (FROM CONTROL STATIONS LINKED DEFINED BY CNTRL GAR).

ALL DISPLAYED HORIZONTAL COORDINATES ARE GROUND (SCALED) POSITIONS. GRID NAD83 (2011) OHIO STATE PLANE SOUTH POSITIONS WERE ORIGINALLY USED TO OBTAIN GROUND COORDINATES. IN ORDER TO OBTAIN SCALED (GROUND) POSITIONS, GRID COORDINATES WERE SCALED ABOUT 0,0 BY A FACTOR OF 1.00004486.

CONTROL POINT	DESCRIPTION	GROUND NORTHING (US FEET)	GROUND EASTING (US FEET)	ELEVATION (US FEET)
100	5/8"X 30" IRON PIN WITH PLASTIC CAP	713468.313	1829419.330	755.887
101	5/8"X 30" IRON PIN WITH PLASTIC CAP	713486.695	1828896.498	758.720
201	MAG NAIL SET	713463.314	1829288.629	755.195
202	MAG NAIL SET	713499.457	1829540.894	755.344
203	MAG NAIL SET	713610.355	1829881.938	755.823
204	MAG NAIL SET	713597.335	1830228.666	757.103
205	MAG NAIL SET	713351.012	1830322.332	757.991
206	MAG NAIL SET	713716.980	1831157.663	762.611
207	MAG NAIL SET	713812.693	1831334.911	764.005
208	MAG NAIL SET	713693.319	1830472.620	758.196
307	MAG NAIL FOUND	713798.303	1831145.256	762.322
310	5/8"X 30" IRON PIN WITH PLASTIC CAP	713825.486	1831773.657	768.452

0 100 200
Horiz 1 inch = 100 feet

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SCHEMATIC PLAN

IMPROVEMENTS OF
E RICH STREET FROM S 3RD ST TO S GRANT AVE
FRA E RICH ST SIGNALS

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Xref: Dr E Border

REFERENCE SPECIFICATIONS
THE CITY OF COLUMBUS CONSTRUCTION AND MATERIALS SPECIFICATIONS (CMSC), 2018 EDITION, INCLUDING ALL REVISIONS AND SUPPLEMENTS IN EFFECT AT THE TIME OF SIGNATURE BY THE DIRECTOR OF PUBLIC SERVICE, SHALL GOVERN ALL CONSTRUCTION ITEMS THAT ARE A PART OF THIS PLAN UNLESS NOTED OTHERWISE.

PERMITS
WHEN EXCAVATING WITHIN COLUMBUS PUBLIC RIGHT OF WAY LIMITS, THE CONTRACTOR SHALL OBTAIN AN EXCAVATION PERMIT FROM CITY OF COLUMBUS, DEPARTMENT OF PUBLIC SERVICE– PERMIT OFFICE BETWEEN THE HOURS OF 7:30 AM AND 4:00 PM MONDAY THROUGH FRIDAY.
PHONE (614) 645–7497; FAX: (614) 645–1876;
EMAIL: colspermits@columbus.gov

UTILITIES
THE IDENTITY AND LOCATION OF EXISTING UNDERGROUND UTILITIES LOCATED IN AND AROUND THE CONSTRUCTION AREA HAVE BEEN SHOWN AND LABELED ON THE PLANS BY USING INFORMATION PROVIDED BY THE RESPECTIVE UTILITY OWNERS. THE CITY OF COLUMBUS OR THE CONSULTING ENGINEER WILL NOT ASSUME RESPONSIBILITY FOR THE ACCURACY OF LOCATION OR DEPTH OF EXISTING UNDERGROUND UTILITIES AS SHOWN ON THE PLAN.

SUPPORT AND PROTECTION OF ALL UTILITIES AND APPURTENANCES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. COSTS FOR THE REPAIR AND RESTORATION OF EXISTING UTILITIES DAMAGED BY THE CONTRACTOR SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. THE CITY OF COLUMBUS UTILITIES WILL ONLY LOCATE AND MARK MAIN LINE FACILITIES. THE CONTRACTOR IS RESPONSIBLE FOR LOCATING ALL SERVICE LATERAL AND LINES. COSTS ASSOCIATED WITH THE ABOVE WORK AND RESPONSIBILITIES SHALL BE INCLUDED IN THE PRICE BID FOR VARIOUS ITEMS.

PRIOR TO EXCAVATION, THE CONTRACTOR SHALL GIVE A 48–HOUR NOTICE TO THE OHIO UTILITIES PROTECTION SERVICE (OUPS) BY CALLING (800) 362–2764. A 48–HOUR NOTICE SHALL BE GIVEN TO THE OWNERS OF UNDERGROUND UTILITIES SHOWN ON THE PLANS WHO ARE NOT MEMBERS OF A REGISTERED UNDERGROUND PROTECTION SERVICE.

LISTED BELOW ARE UTILITY COMPANIES THAT HAVE FACILITIES LOCATED WITHIN THE WORK LIMITS OF THIS PROJECT AND SUBSCRIBE TO OUPS.

AMERICAN ELECTRIC POWER
777 HOPEWELL DRIVE
HEATH, OHIO 43056
CONTACT: PAUL PAXTON
OFFICE: (740) 348–5322
ptpaxton@aep.com
AEP SOLUTION CENTER: (800) 277–2177

AMERICAN ELECTRIC POWER (TELECOM)
CONTACT: UNA BLANUSA
ohiofiberrelocate@aep.com

AMERICAN ELECTRIC POWER (TRANSMISSION)
8600 SMITHS MILL ROAD
NEW ALBANY, OHIO 43054
CONTACT: MICHAEL CARR
OFFICE: (380) 205–5072
tl_publicprojects@aep.com

AT&T
111 NORTH 4TH STREET
COLUMBUS, OHIO 43215
CONTACT: DONALD MARSHALL
CELL: (614) 216–2396
g01553@att.com
AT&T REPAIR SERVICE: (888) 611–4466
DAMAGE PREVENTION: (937) 296–3929

BREEZELINE
3675 CORPORATE DRIVE
COLUMBUS, OHIO 43231
dl_cmhfr@atlanticbb.com
jborreson@breezeline.com

CHARTER COMMUNICATIONS
3760 INTERCHANGE ROAD
COLUMBUS, OHIO 43204
dl–moh–construction–frelo–team@charter.com

COLUMBIA GAS OF OHIO
3550 JOHNNY APPLESEED COURT
COLUMBUS, OHIO 43231
CONTACT: ROB CALDWELL
OFFICE: (614) 818–2104
CELL: (614) 370–1906
rcaldwell@nisource.com
columbiagas_columbuseng@nisource.com
CUSTOMER SERVICE: (800) 344–4077
DAMAGE PREVENTION: (866) 632–6243

CROWN CASTLE
2 EASTON OVAL, SUITE 425
COLUMBUS, OHIO 43219
CONTACT: JON TARNOWSKI
OFFICE: (585) 445–5813
CELL: (614) 940–2462
jon.tarnowski@crowncastle.com

EVERSTREAM
240 NORTH 5TH STREET, SUITE 168
COLUMBUS, OHIO 43215
CONTACT: SCOTT LANCIA
OFFICE: (380) 204–5465
CELL: (614) 515–3479
slancia@everstream.com

LUMEN
250 W. OLD WILSON BRIDGE ROAD,
SUITE 130
WORTHINGTON, OHIO 43085
relocations@lumen.com
relocations@brightspeed.com
haley.wood@lumen.com

VERIZON BUSINESS (MCI)
7575 COMMERCE COURT
LEWIS CENTER, OHIO 43035
CONTACT: BRIAN ANSEL
brian.ansel@verizon.com
vz.net.columbus@verizon.com

WINDSTREAM–KDL
2165 STATE ROUTE 133 SOUTH
BLANCHESTER, OHIO 45107
CONTACT: LEON TAYLOR
CELL: (937) 725–5358
leon.taylor@windstream.com

ZAYO GROUP
251 NEILSTON STREET
COLUMBUS, OHIO 43215
CONTACT: ERIC ALEXANDER
CELL: (614) 989–9655
eric.alexander@zayo.com

CITY OF COLUMBUS
DEPARTMENT OF PUBLIC SERVICE
TRAFFIC SIGNALS
1820 EAST 17TH AVENUE
COLUMBUS, OHIO 43219
OFFICE: (614) 560–0839

CITY OF COLUMBUS
DEPARTMENT OF TECHNOLOGY
1355 McKINLEY AVENUE
BUILDING C
COLUMBUS, OHIO 43222
OFFICE: (614) 645–1501
CONTRACTOR LINE: (614) 645–7756

CITY OF COLUMBUS
SUPPORT SERVICES DIVISION – COMMUNICATIONS
4211 GROVES ROAD
COLUMBUS, OHIO 43232
OFFICE: (614) 645–7344
RADIO ROOM: (614) 724–4006

CITY OF COLUMBUS
DEPARTMENT OF PUBLIC UTILITIES
DIVISION OF WATER
910 DUBLIN ROAD
OFFICE: (614) 645–7788

CITY OF COLUMBUS
DEPARTMENT OF PUBLIC UTILITIES
DIVISION OF SEWERAGE AND DRAINAGE
1250 FAIRFIELD AVENUE
COLUMBUS, OHIO 43206
OFFICE: (614) 645–7102

CITY OF COLUMBUS
DEPARTMENT OF PUBLIC UTILITIES
DIVISION OF POWER
3568 INDIANOLA AVENUE
COLUMBUS, OHIO 43214
OFFICE: (614) 645–7569

EMERGENCY PROVISIONS
THE CONTRACTOR SHALL PROVIDE TO THE CITY OF COLUMBUS PROJECT REPRESENTATIVE A LIST OF 24 HOUR EMERGENCY TELEPHONE NUMBERS (IN WRITING) PRIOR TO THE START OF CONSTRUCTION.

SECURING EXCAVATIONS & TRENCHES FOR NON–WORKING HOURS
EXCAVATIONS AND TRENCHES OVER 24 INCHES DEEP SHALL BE SECURELY PLATED OR BACKFILLED DURING NON–WORKING HOURS.

CONSTRUCTION LIMITS
THE CONSTRUCTION LIMITS SHOWN ON THESE PLANS ARE FOR PHYSICAL CONSTRUCTION ONLY. THE INSTALLATION AND OPERATION OF ALL TEMPORARY TRAFFIC CONTROL AND TEMPORARY TRAFFIC CONTROL DEVICES REQUIRED BY THESE PLANS SHALL BE PROVIDED BY THE CONTRACTOR WHETHER INSIDE OR OUTSIDE OF THESE CONSTRUCTION LIMITS.

MISCELLANEOUS WORK ITEMS
THE CONTRACTOR SHALL PERFORM ALL ITEMS OF WORK CALLED FOR ON THE PLANS, FOR WHICH NO SPECIFIC METHOD OF PAYMENT IS PROVIDED. THE COST OF THESE ITEMS SHALL BE INCLUDED IN THE VARIOUS UNIT PRICES BID FOR THE PROJECT IMPROVEMENT.

BENCHMARKS AND SURVEY MONUMENTS
DO NOT DISTURB ANY FRANKLIN COUNTY CERTIFIED BENCHMARKS (VERTICAL AND/OR HORIZONTAL) LOCATED WITHIN THE WORKING LIMITS OF THE PROJECT. CONTRACTOR SHALL CONTACT THE FRANKLIN COUNTY SURVEY DEPARTMENT (614) 525–3026, PRIOR TO CONSTRUCTION, TO COORDINATE THE PROPER PROCEDURES FOR THE RESETTING, RELOCATION, OR REPLACEMENT OF ANY FRANKLIN COUNTY CERTIFIED BENCHMARK OR SURVEY MONUMENT.

SAW CUTTING IS INCLUDED
THE COST OF SAW CUTTING FOR THE REMOVAL OF PAVEMENT, CURB, WALKS, ETC. SHALL BE INCLUDED IN THE CONTRACT PRICE FOR ITEM 202 WORK ITEMS. SAW CUTTING IS REQUIRED TO PROVIDE SMOOTH STRAIGHT EDGES FOR REMOVAL PURPOSES.

NEW CURB RADIUS
INTERSECTION CORNERS OR HORIZONTAL CURVES SHALL MATCH THE EXISTING RADIUS UNLESS NOTED OTHER WISE.

COTA– SIGNS AND/OR BUS STOPS
PRIOR TO CONSTRUCTION THE CONTRACTOR SHALL CONTACT SENIOR SERVICE PLANNER OF THE CENTRAL OHIO TRANSIT AUTHORITY (COTA) @ PH– (614) 308–4373 OR FAX– (614) 275–5933 TO COORDINATE PROPER BUS MOVEMENTS THROUGH OR AROUND THE JOB SITE DURING THE PROJECT. THIS WILL INCLUDE, BUT NOT BE LIMITED TO, THE TEMPORARY RELOCATION OR REMOVAL OF COTA SIGNS AND/OR BUS STOP LOCATIONS.

GAS SERVICE VALVES ADJUSTED TO GRADE
THE CONTRACTOR SHALL CONTACT COLUMBIA GAS (614) 460–2244 TO COORDINATE THE ADJUSTMENT OF GAS SERVICE VALVES.

COLUMBIA GAS DAMAGE PREVENTION CENTER
FOR INFORMATION CONCERNING COLUMBIA GAS LINES OR EQUIPMENT, OR IF DAMAGE OCCURS TO GAS LINES OR EQUIPMENT, THE CONTRACTOR CAN CALL THE COLUMBIA GAS DAMAGE PREVENTION CENTER @ (614) 280–7372 OR TOLL FREE @ (866) 632–6243.

CONTINGENCY QUANTITIES
THE CONTRACTOR SHALL NOT ORDER MATERIALS OR PERFORM WORK SHOWN , LABELED, OR LISTED AS 'CONTINGENCY' OR REFERENCED BY PLAN NOTE TO BE USED 'AS DIRECTED BY THE ENGINEER,' UNLESS AUTHORIZED BY THE ENGINEER, OR A REPRESENTATIVE OF THE CITY OF COLUMBUS, DIVISION OF DESIGN AND CONSTRUCTION.

CONCRETE WALKS
ALL EXISTING CONCRETE SIDEWALKS BEING REPLACED WITH NEW CONCRETE SIDEWALKS SHALL BE REMOVED AT AN EXISTING JOINT AND REPLACED PER STANDARD DRAWING 2300. INSTALL EXPANSION JOINT WHERE NEW CONCRETE ADJOINS EXISTING SIDEWALK.

ALL EXISTING CONCRETE SIDEWALKS NOT SCHEDULED FOR REPLACEMENT BUT BEING CROSSED BY THE INSTALLATION OF TRAFFIC ITEMS, ELECTRICAL CONDUIT, PIPING, ETC. SHALL BE FULLY REMOVED AT AN EXISTING JOINT AND REPLACED PER STANDARD DRAWING 2300 UNLESS NOTED OTHERWISE.
PAYMENT SHALL BE INCLUDED IN THE PRICE BID FOR ITEM 608– CONCRETE WALK.

ITEM SPECIAL – BRICK PAVERS, INCLUDING 4" CONCRETE BASE, (SCD 2301–NON–RESIDENTIAL), COMPLETE

PAVERS SHALL BE INSTALLED IN ACCORDANCE WITH SCD 2301 AND AS DETAILED WITHIN PLANS. CONTRACTOR SHALL SUBMIT (5 EA) BRICK SAMPLES TO CITY OF COLUMBUS PRIOR TO ORDERING MATERIALS. PAYMENT FOR BRICK WALK, COMPLETE SHALL BE FULL COMPENSATION AND INCLUDE THE FOLLOWING ITEMS: EXCAVATION, BACKFILL, GRADING, FORMING, FINISHING, MATERIALS PER SCD 2301. REFERENCE SS–1524 FOR JOINTING SAND, JOINT SAND STABILIZER, BITUMINOUS SETTING BED, NEOPRENE ADHESIVE REQUIREMENTS. BRICK PAVERS, CONCRETE BASE, STEEL EDGE RESTRAINTS, CONCRETE SAWING & EXPANSION JOINT MATERIALS AND ANY INCIDENTALS REQUIRED TO COMPLETE THE INSTALLATION AS SPECIFIED.

THE CITY WILL MEASURE BRICK WALK BY THE NUMBER OF SQUARE FEET OF FINISHED SURFACE, COMPLETE IN PLACE.

ITEM SPECIAL – ABM PARKING SERVICES SIGN TO BE REMOVED

THE CONTRACTOR SHALL REMOVE THE ENCROACHING AERIAL ABM PARKING SERVICES SIGN. THE SIGN FOUNDATION AND POLE SHALL REMAIN AND SHALL NOT BE DISTURBED.

PAYMENT SHALL BE MADE AT THE UNIT PRICE BID PER EACH FOR ITEM SPECIAL – ABM PARKING SERVICES SIGN TO BE REMOVED AND SHALL INCLUDE ALL LABOR, EQUIPMENT, AND MATERIALS NECESSARY TO PERFORM THE WORK NOTED ABOVE.

ITEM SPECIAL – REMOVE AND REERECT MAILBOX

THE CONTRACTOR SHALL CAREFULLY REMOVE THE EXISTING MAILBOX AND REERECT AT THE NEW LOCATION SPECIFIED IN THE PLANS. IN ORDER TO PREVENT DISRUPTION TO MAIL SERVICE, THE CONTRACTOR SHALL IMMEDIATELY REERECT THE MAILBOX AT ITS PROPOSED LOCATION UPON REMOVAL FROM ITS EXISTING LOCATION.

PAYMENT SHALL BE MADE AT THE UNIT PRICE BID PER EACH FOR ITEM SPECIAL – REMOVE AND REERECT MAILBOX AND SHALL INCLUDE ALL LABOR, EQUIPMENT, AND MATERIALS NECESSARY TO PERFORM THE WORK NOTED ABOVE.

ITEM SPECIAL – ELECTRIC PULL BOX ADJUSTED TO GRADE

THE CONTRACTOR SHALL ADJUST THE DIVISION OF POWER ELECTRIC PULL BOX TO GRADE. PULL BOX LID SHALL BE ADJUSTED TO THE ELEVATIONS SHOWN ON THE INTERSECTION DETAILS.

PAYMENT SHALL BE MADE AT THE UNIT PRICE BID PER EACH FOR ITEM SPECIAL – ELECTRIC PULL BOX ADJUSTED TO GRADE AND SHALL INCLUDE ALL LABOR, EQUIPMENT, AND MATERIALS NECESSARY TO PERFORM THE WORK NOTED ABOVE.

ITEM SPECIAL – ELECTRIC VAULT GRATE ADJUSTED TO GRADE

THE CONTRACTOR SHALL ADJUST THE DIVISION OF POWER ELECTRIC VAULT GRATE TO GRADE. THE GRATE SHALL BE ADJUSTED TO THE ELEVATIONS SHOWN ON THE INTERSECTION DETAILS.

PAYMENT SHALL BE MADE AT THE UNIT PRICE BID PER EACH FOR ITEM SPECIAL – ELECTRIC VAULT GRATE ADJUSTED TO GRADE AND SHALL INCLUDE ALL LABOR, EQUIPMENT, AND MATERIALS NECESSARY TO PERFORM THE WORK NOTED ABOVE.

SUMMARY OF POST–CONSTRUCTION STORMWATER CONTROL FACILITIES (NO SCP'S)
POST CONSTRUCTION STORMWATER CONTROL PRACTICES (SCP) FOR STORM WATER QUANTITY AND QUALITY ARE NOT REQUIRED FOR THE 112 SF OF ADDITIONAL IMPERVIOUS AREA AND 8300 SF OF DISTURBED IMPERVIOUS AREA ON THIS PLAN, AS THE ADDITIONAL IMPERVIOUS AREA AND DISTURBED IMPERVIOUS AREA FOR THE PROJECT ARE BELOW THE DE MINIMIS LEVELS AS DEFINED IN THE 2022 STORM WATER DRAINAGE MANUAL (SWDM).

THE STORM WATER MANAGMEMENT FOR THIS PLAN WAS DESIGNED IN ACCORDANCE WITH THE DECEMBER 2022 STORM WATER DRAINAGE MANUAL.

CALCULATED ANC
CHECKED DKA

GENERAL NOTES

IMPROVEMENTS OF
E RICH STREET FROM S 3RD ST TO S GRANT AVE
FRA E RICH ST SIGNALS

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PUBLIC TREE PRESERVATION NOTE

ALL PUBLIC TREES AND THE GROUND BELOW THEIR RESPECTIVE DRIP LINES, WHETHER SHOWN OR NOT SHOWN ON THE PLANS, ARE TO BE PRESERVED UNLESS APPROVAL TO REMOVE OR PRUNE IS GIVEN IN WRITING BY COLUMBUS RECREATION & PARKS (CRPD)/CITY FORESTER OR IF THE PUBLIC TREE REMOVAL HAS BEEN DESIGNATED ON THE APPROVED FINAL SITE COMPLIANCE PLAN. TREES APPROVED FOR REMOVAL BY CRPD/CITY FORESTER SHALL BE PAID FOR UNDER CMSC ITEM 201, CLEARING AND GRUBBING, UNLESS OTHERWISE PROVIDED FOR BY UNIT PRICE BID UNDER ITEM 201. THE CONTRACTOR SHALL PROTECT TREES NEAR OR ADJACENT TO THE WORK AREA TO AVOID DAMAGE TO ALL TREES THAT ARE TO REMAIN. ALL TREES REMOVED SHALL INCLUDE STUMP REMOVAL TO EIGHTEEN (18) INCHES BELOW GRADE. ALL CLEARING AND GRUBBING PERFORMED ON CRPD PROPERTY, RIGHT-OF-WAY, OR ANY CITY OF COLUMBUS PROPERTY SHALL BE REMOVED AND DISPOSED OF BY THE CONTRACTOR. HEAVY EQUIPMENT WILL NOT BE ALLOWED TO COMPACT THE SOIL OVER THE ROOT ZONE OF EXISTING PUBLIC TREES. RESTRICTED EQUIPMENT ACCESS ROUTES SHALL BE COORDINATED WITH CRPD INSPECTOR, KEITH MAY, AT KAMAY@COLUMBUS.GOV BEFORE WORK IS BEGINS. TEMPORARY PAVING MATERIALS, SUCH AS PLYWOOD, LUMBER OR RUBBER MATTING, SPREAD OVER THE ROOT ZONE OF PUBLIC TREES MAY BE REQUIRED TO PREVENT COMPACTION. IF A PUBLIC TREE NEEDS TO BE REMOVED, THE CONTRACTOR SHALL PROVIDE A TREE MITIGATION PLAN TO THE CITY FORESTRY SECTION [(614) 724-1276] AND REFER TO THE CRPD TREE MITIGATION PLAN GUIDANCE, ANSI A300 AND/OR CITY OF COLUMBUS EXECUTIVE ORDER 2015-01 FOR TREE REPLACEMENT STANDARDS.

PUBLIC TREE PROTECTION NOTE

A TREE PROTECTION PLAN WITH A DRAWING OF ANY WORK LOCATED WITHIN THE DRIP LINE OF A PUBLIC TREE SHALL BE INCLUDED IN THE APPROVED FINAL SITE COMPLIANCE PLAN (FSCP). REFER TO CRPD STANDARD DRAWING FOR TREE PROTECTION. CONSTRUCTION MATERIALS, EXCAVATION DEBRIS, FUEL, EQUIPMENT, OR VEHICLES ARE NOT TO BE STOCKPILED, STORED, DUMPED, OR PARKED WITHIN THE DRIP LINE OF PUBLIC TREES. ALL TREES MUST BE PROTECTED AGAINST INJURY OR DAMAGE TO BRANCHES, TRUNKS, OR ROOTS FROM CONSTRUCTION AND EXCAVATION, AS DESCRIBED IN THE "BEST MANAGEMENT PRACTICES-MANAGING TREES DURING CONSTRUCTION" A COMPANION PUBLICATION TO ANSI A300 PART 5. IF THERE IS A QUESTION WHETHER A TREE OR NOT NEEDS TO BE PROTECTED, THE CONTRACTOR MUST CONTACT THE CITY FORESTRY SECTION AT (614) 724-1276. FAILURE TO CONTACT THE CITY FORESTRY REPRESENTATIVE IN ADVANCE OF CONSTRUCTION WILL RESULT IN THE CONTRACTOR REIMBURSING CITY FORESTRY FOR THE COST OF ANY AND ALL DAMAGE AS DETERMINED BY THE CURRENT ANSI A300/CITY OF COLUMBUS EXECUTIVE ORDER 2015-01 FOR TREE PROTECTION AND REPLACEMENT.

DOP NOTES

FOR THE DIVISION OF POWER: THE DIVISION OF POWER (DOP) MAY HAVE UNDERGROUND AND OVERHEAD PRIMARY, SECONDARY, AND STREET LIGHTING AT THIS WORK LOCATION. THE CONTRACTOR IS HEREBY REQUIRED TO CONTACT OUPS AT 811 OR 1-800-362-2764 FORTY-EIGHT HOURS PRIOR TO CONDUCTING ANY ACTIVITY WITHIN THE CONSTRUCTION AREA. ANY REQUIRED RELOCATION, SUPPORT, PROTECTION, OR ANY OTHER ACTIVITY CONCERNED WITH THE CITY'S ELECTRICAL FACILITIES IN THE CONSTRUCTION AREA IS TO BE PERFORMED BY THE CONTRACTOR UNDER THE 9 of 17 Version: October 1, 2022, DIRECTION OF DOP PERSONNEL AND AT THE EXPENSE OF THE PROJECT. THE CONTRACTOR SHALL USE MATERIAL AND MAKE REPAIRS TO A CITY OF COLUMBUS STREET LIGHTING SYSTEM BY FOLLOWING DOP'S "MATERIAL AND INSTALLATION SPECIFICATIONS" (MIS) AND THE CITY OF COLUMBUS "CONSTRUCTION AND MATERIAL SPECIFICATIONS" (CMSC). ANY NEW OR RE-INSTALLED UNDERGROUND STREETLIGHT SYSTEM SHALL REQUIRE TESTING AS REFERRED TO IN SECTION 1001.18 OF THE CMSC MANUAL. THE CONTRACTOR SHALL CONFORM TO DOP'S EXISTING STREET LIGHTING LOCKOUT/TAGOUT (LOTO) PROCEDURE MIS-01, COPIES OF WHICH ARE AVAILABLE FROM DOP. IF ANY ELECTRIC FACILITY BELONGING TO DOP IS DAMAGED IN ANY MANNER BY THE CONTRACTOR, ITS AGENTS, SERVANTS, OR EMPLOYEES, AND REQUIRES EMERGENCY REPAIRS, THE DOP DISPATCH OFFICE SHOULD BE CONTACTED IMMEDIATELY AT (614) 645-7627. DOP SHALL MAKE ALL NECESSARY REPAIRS, AND THE EXPENSE OF SUCH REPAIRS AND OTHER RELATED COSTS SHALL BE PAID BY THE CONTRACTOR TO THE DIVISION OF POWER, CITY OF COLUMBUS, OHIO.

SEEDING AND MULCHING

THE FOLLOWING QUANTITIES ARE PROVIDED TO PROMOTE GROWTH AND CARE OF PERMANENT SEEDED AREAS:

ITEM 659, SEEDING AND MULCHING, CLASS 1	100 SY
ITEM 659, TOPSOIL	12 CY
ITEM 659, COMMERCIAL FERTILIZER	0.02 TON
ITEM 659, WATER	1 M GAL

SEEDING AND MULCHING SHALL BE APPLIED TO ALL AREAS OF EXPOSED SOIL WITHIN THE CONSTRUCTION LIMITS. QUANTITY CALCULATIONS FOR SEEDING AND MULCHING ARE BASED ON THESE LIMITS.

WATER NOTES

THE CITY OF COLUMBUS, CONSTRUCTION AND MATERIAL SPECIFICATIONS, 2018 EDITION AND ALL REVISIONS, INCLUDING ALL SUPPLEMENTS THERETO, SHALL GOVERN ALL CONSTRUCTION ITEMS THAT ARE A PART OF THIS PLAN, UNLESS OTHERWISE NOTED.

ALL WATER MAIN MATERIALS AND INSTALLATIONS SHALL BE IN ACCORDANCE WITH THE CURRENT RULES AND REGULATIONS OF THE CITY OF COLUMBUS, DIVISION OF WATER. ALL CITY OF COLUMBUS, DIVISION OF WATER STANDARD DRAWINGS SHALL APPLY TO THE PROJECT, UNLESS OTHERWISE NOTED.

FOR ANY EMERGENCIES INVOLVING THE WATER DISTRIBUTION SYSTEM, PLEASE CONTACT THE DIVISION OF WATER DISTRIBUTION MAINTENANCE OFFICE AT 614-645-7788.

ALL BRASS FITTINGS ASSOCIATED WITH WATER WORK, INCLUDING REPAIRS TO THE EXISTING SYSTEM, SHALL CONFORM TO THE REVISED ALLOWABLE LEAD EXTRACTION LIMIT PER THE UPDATED NSF/ANSI 61 STANDARD. THE DIVISION OF WATER'S APPROVED MATERIALS LIST HAS BEEN UPDATED TO REFLECT THIS REQUIREMENT.

IT SHALL BE UNLAWFUL FOR ANY PERSON TO PERFORM ANY WORK ON CITY OF COLUMBUS WATER MAIN SYSTEMS WITHOUT FIRST SECURING LICENSE TO ENGAGE IN SUCH WORK, AS INDICATED IN COLUMBUS CITY CODE SECTION 1103.02 AND 1103.06. THIS WORK INCLUDES ANY ATTACHMENTS, ADDITIONS TO OR ALTERATIONS IN ANY CITY SERVICE PIPE OR APPURTENANCES (INCLUDING WATER SERVICE LINES AND TAPS). THIS REQUIREMENT MAY BE MET BY UTILIZATION OF A SUBCONTRACTOR WHO HOLDS A CITY OF COLUMBUS WATER CONTRACTOR LICENSE OR A COMBINED WATER/SEWER CONTRACTOR LICENSE TO PERFORM THIS WORK. UTILIZATION OF A SUBCONTRACTOR MUST MEET THE LICENSING REQUIREMENTS OF CITY OF COLUMBUS BUILDING CODE, IN PARTICULAR SECTION 4114.119 AND 4114.529.

NO PERSON SHALL BEGIN CONSTRUCTION OR INSTALLATION OF A PUBLIC WATER MAIN UNTIL PLANS HAVE BEEN APPROVED BY THE STATE OF OHIO ENVIRONMENTAL PROTECTION AGENCY (OEPA).

THE CONTRACTOR SHALL OBTAIN THE PROPER HYDRANT PERMIT(S), AND PAY ANY APPLICABLE FEES, FOR ANY APPROVED HYDRANT USAGE DEEMED NECESSARY FOR WORK UNDER THIS IMPROVEMENT. PERMITS MAY BE OBTAINED THROUGH THE DIVISION OF WATER PERMIT OFFICE (645-7330). THE CONTRACTOR SHALL ADHERE TO ALL RULES & REGULATIONS GOVERNING SAID PERMIT AND MUST HAVE THE ORIGINAL PERMIT ON SITE ANYTIME IN WHICH THE HYDRANT IS IN USE. PERMITS MAY BE OBTAINED BY ACCESSING HTTP://PORTAL.COLUMBUS.GOV/PERMITS/. COST TO BE INCLUDED IN THE VARIOUS BID ITEMS.

THE INSTALLATION OF PVC PIPING IS NOT PERMITTED IN THE "DOWNTOWN" DISTRICT COMMUNITY, AS DEFINED BY THE CITY OF COLUMBUS CODE OF ORDINANCES, CODE 3359.03. IT IS ALSO NOT PERMITTED FOR INSTALLATION ON ANY "PRIORITY 1" (HIGH TRAFFIC VOLUME) ARTERIAL STREETS, AS DEFINED BY THE COLUMBUS DEPARTMENT OF PUBLIC SERVICE PER THE FOLLOWING LINK: HTTPS://WWW.COLUMBUS.GOV/PUBLICSERVICE/SNOW-AND-ICE-CONTROL/. PVC PIPE MAY ONLY BE USED AS AN ALTERNATE FOR 6 AND 8-INCH DUCTILE IRON WATER MAINS, AND SHALL NOT BE USED FOR HYDRANT LEADS OR WATER TAPS.

ALL WATER MAIN VALVE BOXES, WATER TAP BOXES, TEST STATIONS, PITOMETER TAP STRUCTURES, METER PIT COVERS, AND OTHER SURFACE UTILITY STRUCTURES WITHIN THE DISTURBED AREA SHALL BE ADJUSTED TO GRADE. ANY OF THESE STRUCTURES LOCATED WITHIN PAVEMENT, DRIVEWAYS, OR OTHER TRAVELED AREAS, WHETHER EXISTING OR PROPOSED, SHALL BE EQUIPPED WITH A TRAFFIC RATED, HEAVY DUTY VALVE BOX AND/OR COVER IN ACCORDANCE WITH THE STANDARD DRAWINGS. EXISTING WATER TAP BOXES TO REMAIN THAT ARE ENCOUNTERED WITHIN THE PROJECT LIMITS SHALL BE CLEANED OUT, CENTERED OVER THE CURB STOP, AND ADJUSTED TO THE PROPOSED GRADE.

RISER RINGS WILL NOT BE PERMITTED ON ANY NEWLY INSTALLED VALVE BOXES TO BRING VALVES TO FINAL GRADE. THE CONTRACTOR SHALL ENSURE THAT THE BOXES ARE INSTALLED AT THE CORRECT GRADE FOR FINAL PAVING OPERATIONS AND THAT THEIR PAVING CONTRACTOR INSTALLS PAVEMENT CORRECTLY AT LIDS DURING PAVING OPERATIONS. VALVE LIDS ARE NOT PERMITTED TO SET ABOVE FINAL GRADE AND SHALL BE A MAXIMUM OF ¼" BELOW FINAL GRADE.

WHERE NEW CONDUIT IS PROPOSED TO CROSS AN EXISTING OR PROPOSED WATER MAIN OR WATER TAP/SERVICE LINE, A MINIMUM OF 12-INCHES OF VERTICAL CLEARANCE SHALL BE MAINTAINED BETWEEN THE CONDUIT AND THE WATER MAIN OR TAP/SERVICE LINE. A MINIMUM OF 3-FEET OF HORIZONTAL CLEARANCE (OUT TO OUT) IS REQUIRED AT LOCATIONS WHERE THE CONDUIT IS PARALLEL TO THE WATER MAIN AND AT LOCATIONS OF WATER MAIN THRUST BLOCKS.

A MINIMUM OF 3 FEET OF HORIZONTAL CLEARANCE (OUT TO OUT) SHALL BE MAINTAINED BETWEEN ALL EXISTING WATER MAINS AND FOUNDATIONS FOR POLES, PULL BOXES, PUSH BUTTON PEDESTALS, AND ANY OTHER MISCELLANEOUS ELECTRICAL STRUCTURE.

THE CONTRACTOR SHALL NOTIFY THE FOLLOWING DIVISIONS AT LEAST 24-HOURS IN ADVANCE OF ANTICIPATED START OF CONSTRUCTION:

DIVISION OF SEWERAGE AND DRAINAGE (614) 645-7102

DIVISION OF DESIGN AND CONSTRUCTION (CONSTRUCTION SECTION) (614) 645-0433

THE CONTRACTOR IS RESPONSIBLE FOR THE INVESTIGATION, LOCATION, SUPPORT, PROTECTION, AND RESTORATION OF ALL EXISTING UTILITIES AND APPURTENANCES WHETHER SHOWN ON THESE PLANS OR NOT. THE CONTRACTOR SHALL EXPOSE ALL UTILITIES OR STRUCTURES PRIOR TO CONSTRUCTION TO VERIFY THE VERTICAL AND HORIZONTAL EFFECT ON THE PROPOSED CONSTRUCTION. THE CONTRACTOR SHALL CALL, TOLL FREE, THE OHIO UTILITIES PROTECTION SERVICE (1-800-362-2764) 48-HOURS PRIOR TO CONSTRUCTION AND SHALL NOTIFY ALL UTILITY COMPANIES AT LEAST 48-HOURS PRIOR TO WORK IN THE VICINITY OF THEIR UNDERGROUND LINES.

ANY MODIFICATION TO THE WORK AS SHOWN ON THESE DRAWINGS MUST HAVE PRIOR WRITTEN APPROVAL BY THE ADMINISTRATOR, DIVISION OF SEWERAGE AND DRAINAGE.

ALL PLASTIC SEWER LINES SHALL BE DEFLECTION TESTED AFTER INSTALLATION IN CONFORMANCE WITH THE REQUIREMENTS OF ITEM 901 OF THE CITY OF COLUMBUS, CONSTRUCTION AND MATERIAL SPECIFICATIONS, CURRENT VERSION.

ALL CONCRETE PIPE, STORM AND SANITARY SEWER STRUCTURES WILL BE STAMPED OR HAVE SUCH IDENTIFICATION NOTING THAT SAID PIPE, STORM AND SANITARY STRUCTURES HAVE BEEN INSPECTED BY THE CITY OF COLUMBUS AND MEETS THEIR SPECIFICATIONS. PIPE AND STRUCTURES WITHOUT PROPER IDENTIFICATION WILL NOT BE PERMITTED FOR INSTALLATION.

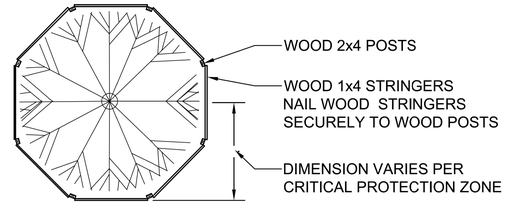
EROSION AND SEDIMENT CONTROL MEASURES ARE REQUIRED AS PART OF THIS PROJECT. EROSION AND SEDIMENT CONTROL MEASURES SPECIFIC TO THIS SITE MAY BE FOUND ON SHEET NO. 5 OF THIS PLAN. LAND-DISTURBING ACTIVITIES MUST COMPLY WITH ALL PROVISIONS OF THE DIVISION OF SEWERAGE AND DRAINAGE REGULATION FOR CONTROL OF STORMWATER POLLUTION FROM LAND DISTURBANCE. ALL LAND-DISTURBING ACTIVITIES SHALL BE SUBJECT TO INSPECTION AND SITE INVESTIGATION BY THE CITY OF COLUMBUS AND/OR THE OHIO EPA.

IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO NOTIFY THE CITY OF COLUMBUS TWO WORKING DAYS PRIOR TO COMMENCEMENT OF INITIAL SITE LAND DISTURBANCE ON ANY SITE OF ONE OR MORE ACRES. THIS INCLUDES SITE CLEARING, GRUBBING AND ANY EARTH MOVING. PRIMARY EROSION AND SEDIMENT CONTROL PRACTICES ARE MANDATED BY REGULATION TO BE IN PLACE FROM THE BEGINNING OF THE CONSTRUCTION ACTIVITY. PLEASE CONTACT THE STORMWATER AND REGULATORY MANAGEMENT SECTION AT (614) 645-6311. DETAILS OF THIS REQUIREMENT MAY BE FOUND IN THE REGULATION FOR CONTROL OF STORMWATER POLLUTION FROM LAND DISTURBANCE. FAILURE TO COMPLY MAY RESULT IN ENFORCEMENT ACTION..

THE CONTRACTOR SHALL ENSURE THERE IS A SURVEYOR'S LEVEL AND ROD ON THE PROJECT FOR USE IN PERFORMING GRADE CHECKS WHENEVER SEWER LINE STRUCTURES OR PIPE ARE BEING INSTALLED. THE CONTRACTOR SHALL MAKE THIS EQUIPMENT AVAILABLE FOR USE AND ASSIST THE CITY INSPECTOR IN PERFORMING GRADE CHECKS WHEN REQUESTED BY THE INSPECTOR. THE INSPECTOR WILL MAKE ALL REASONABLE ATTEMPTS TO CONFINE REQUESTS FOR ASSISTANCE IN PERFORMING GRADE CHECKS TO TIMES CONVENIENT TO THE CONTRACTOR.

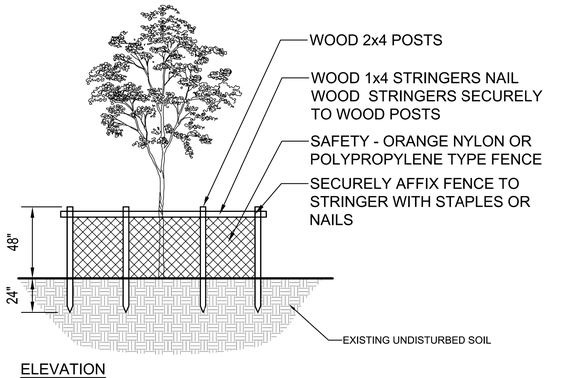
THESE CHECKS WILL BE PERFORMED TO ENSURE THE FOLLOWING:
1. PROPER PLACEMENT OF EACH STRUCTURE.
2. PROPER INSTALLATION OF INITIAL RUNS OF PIPE FROM A STRUCTURE.
3. GRADE, AFTER AN OVERNIGHT OR LONGER SHUTDOWN.
4. GRADE, AT ANY OTHER TIME THE INSPECTOR HAS REASON TO QUESTION GRADE OF INSTALLATION.

GRADE CHECKS PERFORMED BY THE CITY INSPECTOR IN NO WAY RELIEVE THE CONTRACTOR OF THE ULTIMATE RESPONSIBILITY TO ENSURE CONSTRUCTION TO THE PLAN GRADE.



PLAN

NOTE:
FOR GROUPS OF TREES PLACE BARRICADES BETWEEN TREES AND CONSTRUCTION ACTIVITY



ELEVATION

16 Tree Protection Detail
N.T.S.

NOTE:
1. FOR GROUPS OF TREES:
A. PLACE THE BARRICADES AT THE DRIPLINE AROUND THE GROUPS PERIMETER.

2. INSTALLATION OF TREE PROTECTION BARRICADES SHALL BE PERFORMED BEFORE ANY SITE DEVELOPMENT ACTIVITY TAKES PLACE.

3. THE TREE PROTECTION BARRICADES SHALL REMAIN IN PLACE THROUGHOUT THE CONSTRUCTION PHASE AND UNTIL ALL SITE DEVELOPMENT ACTIVITIES ARE FULLY COMPLETE.

4. ANY DAMAGE THAT MAY OCCUR TO THE BARRICADES SHALL BE REPAIRED OR REPLACED TO THE ORIGINAL SPECIFICATIONS WITHIN 24 HOURS OF THE DAMAGE OCCURRING.

5. THE AREA WITHIN THE TREE PROTECTION BARRICADES SHALL NOT BE USED FOR THE STORAGE OF ANY MATERIALS, SUPPLIES OR DEBRIS OR THE DISPOSAL OF ANY SOLID, LIQUID OR GASEOUS MATERIALS THAT COULD CAUSE HARM TO THE TREES.

6. ANY TREE SCHEDULED TO REMAIN IF DAMAGED DURING CONSTRUCTION SHALL BE REPLACED BY PROVIDING EQUIVALENT MONETARY VALUE TO THE CITY'S TREE FUND.

7. MONETARY TREE VALUE SHALL BE DETERMINED BY USING THE GUIDE FOR PLANT APPRAISAL, PUBLISHED BY THE INTERNATIONAL SOCIETY OF ARBORICULTURE. ON C HILL (SCIOTO) AS DETERMINED BY THE CITY FORESTER. ROUND UTILITIES SHALL BE ROUTED

8. BARRICADES SHALL PROTECT ALL TREES SCHEDULED TO REMAIN BEFORE AND DURING ALL CONSTRUCTION ACTIVITIES.

9. ANY PROPOSED UNDERGOUND UTILITIES SHALL BE ROUTED AROUND PROTECTED TREES TO THE OUTSIDE OF THE TREE'S DRIPLINE. IF THIS IS NOT FEASIBLE, AS DETERMINED BY THE CITY, A SLEEVE MAY BE USED UNDER THE TREE, PROVIDED THAT ALL ACCEPTABLE HORTICULTURAL/ARBORICULTURAL PRACTICES ARE ADHERED TO.

*TREE PROTECTION BARRICADES SHALL BE LOCATED TO PROTECT A MINIMUM OF 75% OF THE CRITICAL PROTECTION ZONE.

CALCULATED ANC
CHECKED DKA

GENERAL NOTES

IMPROVEMENTS OF
E RICH STREET FROM S 3RD ST TO S GRANT AVE
FRA E RICH ST SIGNALS

3921-E

EROSION AND SEDIMENT CONTROL

LAND DISTURBANCE AREAS LESS THAN ONE ACRE AND NOT PART OF A LARGER COMMON PLAN OF DEVELOPMENT ARE NOT REQUIRED TO SUBMIT TO THE CITY OF COLUMBUS A FULL SCALE EROSION AND SEDIMENT CONTROL PLAN FOR APPROVAL. HOWEVER, THE PROPOSED LAND DISTURBING ACTIVITIES MUST COMPLY WITH ALL OF THE PROVISIONS OF THE DIVISION OF SEWERAGE AND DRAINAGE EROSION AND SEDIMENT CONTROL REGULATION. ALL LAND DISTURBING ACTIVITIES SHALL BE SUBJECT TO INSPECTION AND SITE INVESTIGATION BY THE CITY OF COLUMBUS TO DETERMINE COMPLIANCE WITH CITY STANDARDS AND REGULATIONS. FAILURE TO COMPLY WITH THESE REGULATIONS MAY SUBJECT THE SITE TO ENFORCEMENT ACTION BY THE CITY. QUESTIONS REGARDING EROSION AND SEDIMENT CONTROL MAY BE REFERRED TO THE STORMWATER MANAGEMENT OFFICE AT 645-6311.

DIRECT DISCHARGE OF SEDIMENT LADEN WATER TO THE CITY'S SEWER SYSTEM OR A RECEIVING STREAM IS A VIOLATION OF THE OHIO EPA AND CITY OF COLUMBUS REGULATIONS. THE CONTRACTOR WILL BE HELD LIABLE FOR THE VIOLATION AND SUBSEQUENT FINES.

ON-SITE CONTACT: ANDREW FRANKHOUSER
PHONE: (614) 645-3006
E-MAIL: ACFRANKHOUSER@COLUMBUS.GOV
SITE IS TRIBUTARY TO: SCIOTO RIVER

PAVEMENT CUTTING, SAWING AND EXCAVATION OPERATIONS NOTE:

ALL PUBLIC AGENCIES AND PRIVATE CONTRACTORS PERFORMING PAVEMENT-CUTTING OPERATIONS ON CITY OF COLUMBUS STREETS AND ROADWAYS SHALL PROTECT THE ENVIRONMENT FROM DISCHARGES CREATED BY THEIR PAVEMENT CUTTING OPERATIONS. NOTE THAT COLUMBUS CITY CODE 1145 PROHIBITS NON-STORMWATER DISCHARGE INTO THE CITY OF COLUMBUS SEWER SYSTEM, CURB INLETS AND ANY PART OF ITS MS4 (MUNICIPAL SEPARATE STORM SEWER SYSTEM).

THE REQUIREMENT INCLUDES BUT IS NOT LIMITED TO WET OR DRY SAW-CUTTING, JACK HAMMERING, EXCAVATION EQUIPMENT USE, ETC. THE PUBLIC AGENCY AND/OR PRIVATE CONTRACTOR WORK CREWS SHALL RECOVER AND DISPOSE OF DETRITUS, POLLUTED WATERS, OR OTHER SUCH DISCHARGES RESULTING FROM THEIR PAVEMENT CUTTING OPERATIONS AND PROTECT ALL STORM SEWER INLETS FROM RECEIVING ANY DISCHARGES FROM THE CONSTRUCTION OPERATIONS. THE AGENCY OR CONTRACTOR RESPONSIBLE FOR EACH PAVEMENT CUTTING ACTIVITY SHALL BE SOLELY LIABLE FOR NOTICE OF VIOLATIONS (NOV/S) AND FINES ISSUED BY CITY OF COLUMBUS AND/OR STATE OF OHIO AUTHORITIES.

EQUIPMENT, MATERIALS AND METHODS SHALL BE PROVIDED BY THE RESPONSIBLE PUBLIC AGENCY AND/OR PRIVATE CONTRACTOR TO WORK CREWS PERFORMING THE PAVEMENT CUTTING ACTIVITY AND MADE AVAILABLE TO WORK CREWS FOR USE IN CLEANING UP DISCHARGES RESULTING FROM SUCH CUTTING ACTIVITIES AND PREVENTING RUNOFF. ALL WORK CREWS SHALL BE TRAINED TO EXERCISE AND EMPLOY EQUIPMENT, MATERIALS, AND ENVIRONMENTAL PROTECTIVE MEASURES TO PREVENT POLLUTED DISCHARGES FROM ENTERING THE CITY OF COLUMBUS STORM SEWER SYSTEM AND WATERS OF THE STATE OF OHIO.

THE PUBLIC AGENCY AND/OR PRIVATE CONTRACTOR IS SOLELY RESPONSIBLE FOR ENSURING THAT THE INLET PROTECTION IS ADEQUATE. THE MOST STRINGENT PROJECT PLANS, NOTES AND/OR DRAWINGS INCLUDING STORMWATER POLLUTION PREVENTION PLAN (SWP3) OR SPILL PREVENTION/REMEDIATION PLAN SHALL APPLY TO ALL PAVEMENT CUTTING, SAWING OR EXCAVATION OPERATIONS.

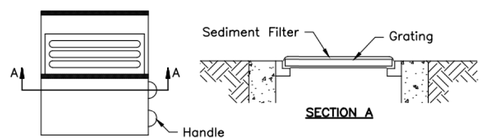
ITEM 207 INLET PROTECTION

PRIOR TO BEGINNING EARTH DISTURBANCE ACTIVITIES, THE CONTRACTOR SHALL PROVIDE AND INSTALL INLET PROTECTION FOR ALL EXISTING STORM WATER SEWER CATCH BASINS AND INLETS WITHIN THE PROJECT AREA.

INLET PROTECTION SHALL BE AS PER THE REQUIREMENTS OF ITEM 207 AND THE DETAILS ON THIS SHEET.

THE FOLLOWING QUANTITY HAS BEEN CARRIED TO THE GENERAL SUMMARY FOR THIS WORK:

ITEM 207 – INLET PROTECTION 22 EACH



Installation:
1. Stand grate on end. Place Catch Basin Protection Bag over grate. Roll grate over so that open end is up. Pull up slack. Tuck flap in. Be sure end of grate is completely covered by flap or Catch Basin Protection Bag will not fit properly. Holding handles, carefully place Catch Basin Protection Bag with grate inserted into catch basin frame so that red dot on the top of the Catch Basin Protection Bag is visible.

Maintenance:
1. With a stiff bristle broom or square point shovel, remove silt & other debris off surface after each event.

Note:
1. Dandy Bag, FryeFlow Systems Inlet Protection, FLEXSTORM Inlet Filter or approved equal are acceptable

To be used on Structures: N/A

CATCH BASIN SEDIMENT FILTER
SCALE: NONE

ITEM SPECIAL FILL AND PLUG EXISTING CONDUIT

THIS ITEM CONSISTS OF THE CONSTRUCTION OF BULKHEADS IN AN EXISTING 12 INCH DIAMETER CONDUIT AND FILLING THE AREA SEALED OFF WITH ITEM 613, SAND OR OTHER MATERIAL APPROVED BY THE ENGINEER.

LOCATE THE BULKHEADS AT THE LIMITS OF THE AREA TO BE FILLED, AS INDICATED ON THE PLANS. THE BULKHEADS CONSIST OF BRICK OR CONCRETE MASONRY WITH A MINIMUM THICKNESS OF 12 INCHES.

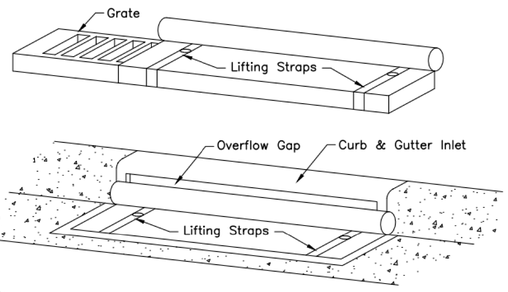
PUMP THE FILL MATERIAL INTO PLACE OR BY OTHER MEANS APPROVED BY THE ENGINEER, SO THAT AFTER SETTLEMENT, AT LEAST 90 PERCENT OF THE CROSS-SECTIONAL AREA OF THE CONDUIT, FOR ITS ENTIRE LENGTH IS FILLED. THE LENGTH OF FILLED AND PLUGGED CONDUIT TO BE PAID FOR IS THE ACTUAL NUMBER OF FEET (MEASURED ALONG THE CENTERLINE OF EACH CONDUIT FROM OUTER FACE TO OUTER FACE OF BULKHEADS) FILLED AND PLUGGED AS DESCRIBED ABOVE.

IN LIEU OF FILLING AND PLUGGING THE EXISTING CONDUIT, THE PIPE MAY BE CRUSHED AND BACKFILLED PER 203, OR IT MAY BE REMOVED. THE LENGTH, MEASURED AS PROVIDED ABOVE, WILL BE PAID FOR AT THE CONTRACT PRICE PER FOOT FOR, ITEM SPECIAL, FILL AND PLUG EXISTING CONDUIT.

ITEM 627 REBOUNDABLE TRAFFIC POST – REMOVED, AS PER PLAN

THE CONTRACTOR SHALL REMOVE AND STORE EXISTING REBOUNDABLE TRAFFIC POSTS THAT INTERFERE WITH CONSTRUCTION OF PROPOSED CURB AND PAVEMENT IMPROVEMENTS. UPON COMPLETION OF THE CURB AND PAVEMENT WORK, CONTRACTOR SHALL RE-ERECT REBOUNDABLE TRAFFIC POST AT ITS ORIGINAL LOCATION PER THE INSTALLATION REQUIREMENTS OF 627.

PAYMENT SHALL BE MADE AT THE UNIT PRICE BID PER EACH FOR ITEM 627 – REBOUNDABLE TRAFFIC POST – REMOVED, AS PER PLAN AND SHALL INCLUDE ALL LABOR, EQUIPMENT, AND MATERIALS NECESSARY TO REMOVE, STORE, AND REERECT THE TRAFFIC POSTS AS NOTED ABOVE.



Installation:
Stand grate on end. Slide the Curb Bag over top of the grate. Pull all excess down. Lay unit on its side. Carefully tuck flap in. Press Velcro strips together. Install the unit making sure front edge of grate is inserted in frame first then lower back into place. Press Velcro dots together which are located under lifting straps. This insures straps remain flush with gutter.

Maintenance:
With a stiff bristle broom sweep silt and other debris off surface after each event.

Note:
Dandy Bag, Fryeflow Systems Inlet Protection, FLEXSTORM Inlet Filter or approved equal are acceptable.

To be used on Structures: N/A

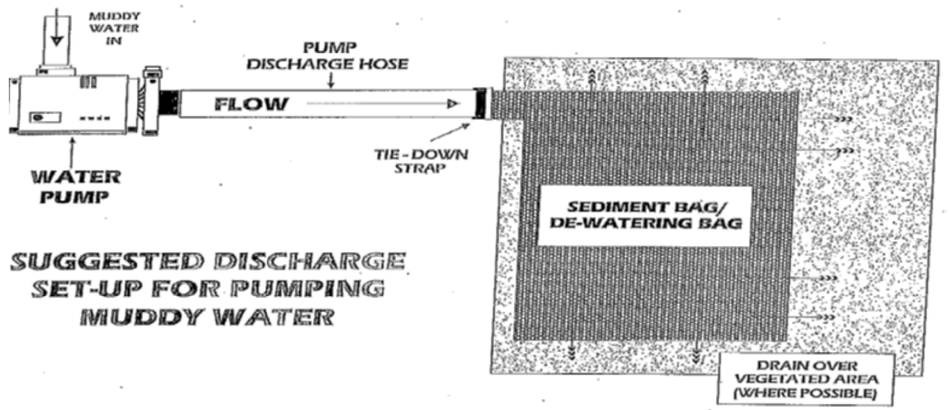
CURB & GUTTER INLET SEDIMENT PROTECTION
SCALE: NONE

NOTICE

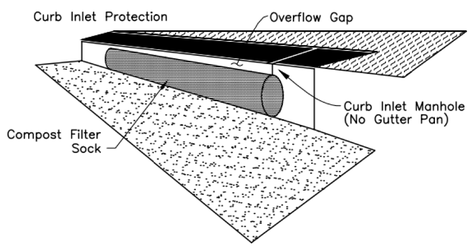
The pumping or direct discharge of sediment-laden (muddy) water to the City's sewer system or receiving stream is a violation of Ohio EPA and City of Columbus regulations.

All inlets receiving flow from runoff, pumping activities, or other direct discharges shall be fitted with an inlet protection device that is properly sized and secured to reduce the discharge of sediment into the storm sewer system and receiving stream. Inlet protection is required on all inlets receiving discharge regardless of whether or not the inlet is tributary to any downstream erosion and sediment controls.

Discharge hoses used during pumping activities shall be fitted with sediment bags that are properly sized per manufacturer's recommendations regardless of what other sediment controls are in place further downstream. Sediment bags must be properly secured to the discharge hose and placed over vegetated areas, where feasible, during discharge. See detail below of a typical sediment bag installation.



SUGGESTED DISCHARGE SET-UP FOR PUMPING MUDDY WATER



Maintenance: With a stiff bristle broom sweep silt and other debris off surface after each event.

To be used on Structures: N/A

CALCULATED ANC CHECKED DKA

GENERAL NOTES

IMPROVEMENTS OF
E RICH STREET FROM S 3RD ST TO S GRANT AVE
FRA E RICH ST SIGNALS

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EXISTING SYMBOLS

- FIRE HYDRANT
- WATER VALVE
- WATER REDUCER
- SANITARY MANHOLE
- COMBINATION MANHOLE
- SANITARY STRUCTURE NUMBER
- STORM MANHOLE
- GRATED STM MANHOLE
- CURB INLET MANHOLE
- CURB & GUTTER INLET
- CATCH BASIN
- STORM STRUCTURE NUMBER
- GAS VALVE
- GAS METER
- PULLBOX
- TRAFFIC PULL BOX
- SIGNAL CONTROLLER
- RAILROAD TRACKS
- VARIOUS UTILITY BOX
- UTILITY POLE
- LIGHT POLE
- SIGNAL POLE
- SIGNAL PEDESTAL SUPPORT
- MAILBOX
- SIGNS
- SOIL BORING
- GUY ANCHOR
- PARKING METER
- DOUBLE PARKING METER
- BENCHMARK/TEMPORARY BENCHMARK
- I.R.F. IRON PIN FOUND
- R.F. IRON PIPE FOUND
- M.N.F MAG NAIL FOUND
- MONUMENT BOX FOUND
- RAILROAD SPIKE FOUND
- STUMP
- BUSH

TREES

HEDGE/SHRUB

BUILDING

Ex XX" Tree (TBR) — TREE REMOVED — Ex XX" Tree (TBR)

PROPOSED SYMBOLS

- FIRE HYDRANT
- RELOC. FIRE HYDRANT
- WATER VALVE
- WATER REDUCER
- SANITARY MANHOLE
- SANITARY CLEANOUT
- SANITARY STRUCTURE NUMBER
- STORM MANHOLE
- STORM CLEANOUT
- CURB INLET
- CATCH BASIN
- STORM STRUCTURE NUMBER
- GAS VALVE
- DETECTABLE WARNING
- PULLBOX
- QUANTITY BUBBLE
- LIGHT POLE
- SIGNAL POLE
- SIGNAL PEDESTAL SUPPORT
- TRAFFIC PULL BOX
- SIGNAL CONTROLLER
- SIGNAL POWER METER CABINET
- GUY ANCHOR
- PARKING METER
- DOUBLE PARKING METER
- UTILITY POLE
- BENCHMARK/TEMPORARY BENCHMARK SET
- I.R.S. IRON PIN SET
- R.S. IRON PIPE SET
- M.N.S MAG NAIL SET
- MONUMENT BOX SET
- RAILROAD SPIKE SET

ABBREVIATIONS

ADA	AMERICANS WITH DISABILITY ACT	GM	GAS MAIN	RP	RECORD PLAN
AEP	AMERICAN ELECTRIC POWER	GRND	GROUND	RR	RAILROAD
ASPH	ASPHALT	X" GS	1" GAS SERVICE	RT	RIGHT
AVE	AVENUE	GV	GAS VALVE	SAN	SANITARY SEWER
BH	BULK HEAD	HORZ	HORIZONTAL	SCP	SITE COMPLIANCE PLAN
BLVD	BOULEVARD	HP	HIGH POINT	SF	SQUARE FEET
BM	BENCH MARK	HR	HOUR	SGNL	SIGNAL
BT	BOTH	HW	HEADWALL	SHLD	SHOULDER
CATV	CABLE TELEVISION	IN	INSTRUMENT NUMBER	SPEC	SPECIAL
CB	CATCH BASIN	INV	INVERT	X" SS	6" SANITARY SERVICE
CCXXXXX	CC PLAN	IRRG	IRRIGATION	ST	STREET
℄	CENTERLINE	LAT	LATERAL	STA	STATION
CI	CURB INLET	LBS	POUNDS	STM	STORM SEWER
CIMH	CURB INLET MANHOLE	LF	LINEAR FEET	SY	SQUARE YARDS
CkFT	CIRCUIT FEET	LN	LANE	TBM	TEMPORARY BENCH MARK
CNTRL	CONTROLLER	LP	LOW POINT	TC	TOP OF CASTING
CO	CLEANOUT	LS	LUMP SUM	TDC	TOP OF DROP CURB
COC	CITY OF COLUMBUS	LT	LEFT	TELE	TELEPHONE
COL GAS	COLUMBIA GAS	MB	MAILBOX	TEMP	TEMPORARY
COMB	COMBINED	MGAL	1000 GALLONS	TOC	TOP OF CURB
COMM	COMMUNICATION	MH	MANHOLE	TRAF	TRAFFIC
CONC	CONCRETE	MOD	MODIFIED	TYP	TYPICAL
CONST	CONSTRUCTION	NF	NOT FOUND	UD	UNDERDRAIN
CT	COURT	NTS	NOT TO SCALE	UG	UNDERGROUND
CY	CUBIC YARDS	OFF	OFFSET	UGE	UNDERGROUND ELECTRIC
DB	DUCT BANK	OH	OVERHEAD	UTIL	UTILITY
DEFL	DEFLECTION	OHC	OVERHEAD COMM	VC	VERTICAL CURVE
DI	DUCTILE IRON	OHD	OVERHEAD DOOR	VERT	VERTICAL
DOP	DIVISION OF POWER	OHE	OVERHEAD ELECTRIC	WM	WATER MAIN
DOT	DEPARTMENT OF TECHNOLOGY	OUPS	OHIO UTILITY PROTECTION SERVICES	WS	WATER SERVICE
DW	DEWATERING	ℙ	PROPERTY LINE	X" WS	1" WATER SERVICE
XXXX–E	E PLAN	PB	PULL BOX	WSB	WATER SERVICE BOX
EA	EACH	PC	POINT OF CURVATURE	WSP	WATER SERVICE PLAN
ELEC	ELECTRIC	PED	PEDESTRIAN	WV	WATER VALVE
ELIPT	ELLIPTICAL	PKWY	PARKWAY	(ATG)	ADJUST TO GRADE
EOP	EDGE OF PAVEMENT	PROP	PROPOSED	(APP)	AS PER PLAN
ESMT	EASEMENT	PT	POINT OF TANGENCY	(DND)	DO NOT DISTURB
EW	ENDWALL	PVI	POINT OF VERTICAL INTERSECT	(FIP)	FILL IN PLACE
EX	EXISTING	PVMT	PAVEMENT	(PA)	PREVIOUSLY ABANDONED
FDC	FIRE DEPARTMENT CONNECTION	R	RADIUS	(R&B)	REMOVE AND REBUILD
FDN	FOUNDATION	R/W	RIGHT–OF–WAY	(R&R)	REMOVE AND RESET
FFE	FINISHED FLOOR ELEVATION	RCC	ROLLER COMPACTED CONCRETE	(RELOC)	RELOCATE
FH	FIRE HYDRANT	RCP	ROCK CHANNEL PROTECTION	(RTG)	RECONSTRUCT TO GRADE
FO	FIBER OPTIC	RCP	REINFORCED CONCRETE PIPE	(TBA)	TO BE ABANDONED
GAL	GALLON	RD	ROAD	(TBR)	TO BE REMOVED
GB	GRADE BREAK	X" RD	6" ROOF DRAIN	(TBRL)	TO BE RELOCATED
				(TBRS)	TO BE REMOVED AND SALVAGED

	EXISTING CONDITIONS LINETYPES	PROPOSED LAYOUT LINETYPES
CENTERLINE SURVEY/CONSTRUCTION		
EDGE OF PAVEMENT		
CURB		
SIDEWALK/DRIVEWAY/SUP		
FENCE		
GUARDRAIL		
RIGHT OF WAY	EX R/W	R/W
UTILITY EASEMENT	EX U	U
PERMANENT EASEMENT	EX P	P
CHANNEL EASEMENT	EX CH	CH
HIGHWAY EASEMENT	EX SH	SH
L/A HIGHWAY EASEMENT	EX L/A	L/A
SEWER EASEMENT	EX S	S
DITCH FLOW LINE		
WATER	W	W
WATER ≥ 24"	W	W
WATER SERVICE	WS	WS
SANITARY		
SANITARY ≥ 24"		
STORM		
STORM ≥ 24"		
COMBINATION STORM & SEWER		
COMBINATION STORM & SEWER ≥ 24"		
GAS	GM	GM
COMMUNICATION	C	C
OVERHEAD COMMUNICATION	OHC	OHC
COMMUNICATION DUCT BANK	CDB	CDB
COMMUNICATION DUCT BANK ≥ 24"	C	CDB
ELECTRIC	E	E
OVERHEAD ELECTRIC	OHE	OHE
OVERHEAD ELECTRIC & COMMUNICATION	OHE–OHC	OHE–OHC
ELECTRIC DUCT BANK	EDB	EDB
ELECTRIC DUCT BANK ≥ 24"	EDB	EDB
CABLE TV	CATV	CATV
FIBER OPTIC	FO	FO
LIGHTING	L	L
OVERHEAD LIGHTING	OHL	OHL
TRAFFIC	TR	TR
TRAFFIC DUCT BANK	TRDB	TRDB
TRAFFIC DUCT BANK ≥ 24"	TRDB	TRDB
TRAFFIC INTERCONNECT	INT	INT
IRRIGATION	IRR	
LANDSCAPE BED		
PROPERTY LINE/LOT LINE	ℙ	
CORP LINE		
TEMP CONSTRUCTION EASEMENT		TMP
CONSTRUCTION LIMITS		

CALCULATED ANC
CHECKED DKA

LEGEND

IMPROVEMENTS OF
E RICH STREET FROM S 3RD ST TO S GRANT AVE
FRA E RICH ST SIGNALS

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TEMPORARY TRAFFIC CONTROL

1. ALL TEMPORARY TRAFFIC CONTROL (TTC) DEVICES SHALL BE FURNISHED, ERECTED, MAINTAINED AND REMOVED BY THE CONTRACTOR IN ACCORDANCE WITH THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS (CURRENT EDITION). COPIES ARE AVAILABLE FROM THE OHIO DEPARTMENT OF TRANSPORTATION, OFFICE OF CONTRACTS, 1980 WEST BROAD STREET, COLUMBUS, OHIO 43223. NOTE: ALL DEVICES SHALL COMPLY, FOR CONDITION AND LOCATION, WITH THE CURRENT EDITION OF THE NCHRP 350 AND MASH CRASH TESTING GUIDELINES.

2. CONSTRUCTION OPERATIONS SHALL NOT BEGIN UNTIL ALL TRAFFIC CONTROL IS IN PLACE AND APPROVED BY THE DEPARTMENT OF PUBLIC SERVICE INSPECTOR. IF THE CONTRACTOR DOES NOT COMPLY WITH THE STANDARDS, INCLUDING THE INSTALLATION OF TEMPORARY PAVEMENT MARKINGS AND THE REMOVAL OF CONFLICTING TRAFFIC CONTROLS, THEIR PERMIT SHALL BE REVOKED AND ALL WORK SHALL BE TERMINATED. TEMPORARY PAVEMENT MARKINGS TO INCLUDE, BUT NOT LIMITED TO, CHANNELIZING LINES, EDGE LINES, AND CENTERLINES SHALL BE INSTALLED AND MAINTAINED ON ALL CONSTRUCTION OPERATIONS LASTING A MINIMUM OF 14 CALENDAR DAYS OR AS DIRECTED BY THE TEMPORARY TRAFFIC CONTROL COORDINATOR OR THE PROJECT ENGINEER.

3. THE CONTRACTOR SHALL GIVE ADVANCE NOTICE (WRITTEN AND VERBALLY) TO THE TEMPORARY TRAFFIC CONTROL COORDINATOR AT 614–645–0355 OR 614–645–5845 AND THE DIVISION OF REFUSE COLLECTION?S OPERATION MANAGER AT 614–645–1675, PROJECT ENGINEER, AND THE SENIOR SERVICE PLANNER OF COTA AT 614–308–4373 OR FAX 614–275–5933, INFORMING THEM OF ALL UPCOMING MAINTENANCE OF TRAFFIC CHANGES ON A WEEKLY BASIS. NOTIFICATION SHALL INCLUDE, BUT NOT BE LIMITED TO, WHAT, WHERE, WHEN, AND HOW PEDESTRIAN AND VEHICULAR TRAFFIC WILL BE AFFECTED, AND THE TEMPORARY TRAFFIC CONTROL PROCEDURES THE CONTRACTOR IS PLANNING TO USE. THE TYPE OF TRAFFIC CHANGE SHALL DETERMINE THE LENGTH OF ADVANCE NOTIFICATION REQUIRED:

TYPE OF CHANGE	ADVANCED NOTIFICATION NEEDED
DETOUR/ROAD CLOSURES	30–DAY NOTIFICATION PRIOR TO CLOSURE
LANE CLOSURES LASTING 2 WEEKS OR MORE	2–WEEKS
LANE CLOSURES OF LESS THAN 2 WEEKS	3–DAYS
LANE CLOSURES OF 2 DAYS OR LESS	1–DAY

THE COTA SENIOR SERVICE PLANNER SHALL BE CONTACTED 30 DAYS PRIOR TO ANY PLANNED CLOSURE ON ASSIGNED COTA ROUTES. ANY OTHER UNFORESEEN IMPACTS TO TRAFFIC SHALL BE IMMEDIATELY REPORTED AS THEY OCCUR.

4. THE CONTRACTOR SHALL REPORT ANY LANE CLOSURE, PLANNED, CURRENT, AND EMERGENCY, LASTING ONE HOUR OR MORE, OR THE PLACEMENT OF A STEEL PLATE WITHIN THE CITY OF COLUMBUS RIGHT OF WAY USING THE CLOSED LANES OR STEEL PLATE EVENTS (CLOSE) PROGRAM FORM. THE FORM "TIPCARD" CAN BE FOUND AT WWW.COLUMBUS.GOV/CLOSE. REPORTING LANE CLOSURES AND/OR STEEL PLATE PLACEMENT IS MANDATORY. PLEASE CONTACT CLOSEPROGRAM@COLUMBUS.GOV

5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION AND SAFE MOVEMENT OF PEDESTRIANS THROUGH, AROUND, OR DETOURED AWAY FROM THE CONSTRUCTION SITE. TRAFFIC CONTROL FOR PEDESTRIAN MOVEMENT SHALL BE AS PER CITY OF COLUMBUS CONSTRUCTION AND MATERIAL SPECIFICATIONS, CITY OF COLUMBUS STANDARD CONSTRUCTION DRAWINGS, AND FIGURES 6H–28 (TA–28) AND 6H–29 (TA–29) OF PART VI OF THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES. WHEN NOT SHOWN ON A SIGNED PLAN, ALL SIDEWALK DIVERSIONS AND TEMPORARY MID–BLOCK CROSSINGS SHALL BE PRE–APPROVED BY THE PROJECT ENGINEER OR THE TEMPORARY TRAFFIC CONTROL COORDINATOR. ACCESS FOR PEDESTRIAN AND VEHICULAR TRAFFIC TO ALL ADJOINING PROPERTIES SHALL BE MAINTAINED AT ALL TIMES.

6. MAINTAINING TRAFFIC DURING HOLIDAYS AND SPECIAL EVENTS
NO WORK SHALL BE PERFORMED AND ALL EXISTING LANES SHALL BE OPEN TO TRAFFIC DURING DESIGNATED HOLIDAYS OR SPECIAL EVENTS INCLUDING THE OHIO STATE FOOTBALL HOME GAMES. THE PERIOD OF TIME THAT THE LANES ARE TO BE OPEN DEPENDS ON THE DAY OF THE WEEK ON WHICH THE HOLIDAY OR EVENT FALLS. CONTACT THE CITY OF COLUMBUS TEMPORARY TRAFFIC CONTROL COORDINATOR, 614–645–5845 OR CELL, 614–332–7472 FOR EVENT DATES, LOCATIONS, AND SCHEDULE. HOLIDAYS WILL CONSIST OF CHRISTMAS, NEW YEARS, FOURTH OF JULY–RED, WHITE AND BOOM FIREWORKS NIGHT (6:00AM–12MIDNIGHT), MEMORIAL DAY, LABOR DAY, AND THANKSGIVING. RED, WHITE AND BOOM, FIREWORKS CELEBRATION AND A MINIMUM OF ONE DAY PRIOR TO FIREWORKS NIGHT SHALL REQUIRE ALL TEMPORARY TRAFFIC CONTROL DEVICES TO BE REMOVED FROM THE PROJECT AREA AND PLACE EITHER IN A PRE–DETERMINED LOCATION APPROVED BY THE TEMPORARY TRAFFIC CONTROL COORDINATOR OR COMPLETELY REMOVED FROM THE SITE.

7. THE CONTRACTOR SHALL CONTACT THE CITY OF COLUMBUS TEMPORARY TRAFFIC CONTROL COORDINATOR FOR ANY ADDITIONAL MOT REQUIREMENTS FOR SPECIAL EVENTS, INCLUDING OSU FOOTBAL HOME GAMES.

8. THE CONTRACTOR SHALL MAINTAIN ALL PERMANENT TRAFFIC CONTROLS NOT IN CONFLICT WITH THE TEMPORARY TRAFFIC CONTROLS THROUGHOUT THIS PROJECT. PERMANENT TRAFFIC CONTROLS MAY BE TEMPORARILY RELOCATED OR COVERED, AS APPROVED BY THE ENGINEER. THE CONTRACTOR SHALL ASSUME ALL LIABILITY FOR MISSING, DAMAGED, OR IMPROPERLY PLACED SIGNS.

9. ANY WORK DONE BY THE DEPARTMENT OF PUBLIC SERVICE, INCLUDING INSTALLATION, RELOCATION, REMOVAL AND/OR REPLACEMENT OF TEMPORARY TRAFFIC CONTROL DEVICES AS A RESULT OF WORK DONE BY THE CONTRACTOR OR AS A RESULT OF NEGLIGENCE OF THE CONTRACTOR, SHALL BE AT THE CONTRACTORS' EXPENSE.

10. THE ROADWAY SHALL NOT BE OPENED TO NON–CONSTRUCTION TRAFFIC UNTIL THE CRITICAL PERMANENT TRAFFIC CONTROLS ARE IN PLACE, OR UNTIL TEMPORARY TRAFFIC CONTROLS APPROVED BY THE ENGINEER, ARE INSTALLED. THE CRITICAL PERMANENT TRAFFIC CONTROLS ARE STOP, YIELD, ONE – WAY, DO NOT ENTER, RESTRICTED TURN SIGNS AND ALL STREET NAME SIGNS. OTHER CRITICAL SIGNS MAY BE NOTED ON THE PLANS AS WELL. THE CONTRACTOR ASSUMES ALL LIABILITY FOR THE PREMATURE REMOVAL OF TEMPORARY TRAFFIC CONTROLS.

11. ITEM 614 – MAINTAINING TRAFFIC

ALL COSTS THAT CONSIST OF MAINTAINING AND PROTECTING VEHICULAR AND PEDESTRIAN TRAFFIC ACCORDING TO THE LATEST EDITION OF THE CITY OF COLUMBUS CONSTRUCTION AND MATERIAL SPECIFICATIONS, THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS (OMUTCD), AND PER THE REQUIREMENTS DESIGNATED IN THE PLAN INCLUDING ALL LAW ENFORCEMENT OFFICER (LEO) AND FLAGGER HOURS SHALL BE INCLUDED IN THE LUMP SUM ITEM 614.

IN ADDITION TO THE REQUIREMENTS HEREIN, AND THE LATEST EDITION OF THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES, A UNIFORMED LAW ENFORCEMENT OFFICER (LEO) SHALL BE PROVIDED FOR CONTROLLING TRAFFIC UNDER THE FOLLOWING CONDITIONS:

– WORK WITHIN A SIGNALIZED INTERSECTION, DEFINED AS THE AREA BOUNDED BY THE REAR X–WALK LINES
– WHEN FLAGGING WITHIN THE INTERSECTION OF TWO ARTERIAL ROADWAYS
– WHEN SPECIFIED IN THE MAINTENANCE OF TRAFFIC PLAN OR AS WHEN DIRECTED BY THE PROJECT ENGINEER
– WHEN SHIFTING TRAFFIC LEFT OF CENTER, THROUGH A SIGNALIZED INTERSECTION, WITHOUT SHIFTING SIGNAL HEADS

A FLAGGER SHALL BE UTILIZED TO ASSIST IN CONTROLLING TRAFFIC WHILE EQUIPMENT IS ENTERING OR EXITING AN INTERSECTION OR WORK ZONE. THE CONTRACTOR MAY UTILIZE HIS OWN FLAGGER OR LEO UNDER PAY ITEM 614 MAINTAINING TRAFFIC, LUMP SUM. FLAGGERS AND LEO'S SHALL BE EQUIPPED ACCORDING TO THE STANDARDS FOR FLAGGING TRAFFIC CONTAINED IN THE OMUTCD. FLAGGING OPERATIONS PERFORMED BY LEO'S OR DESIGNATED FLAGGERS SHALL ONLY BE PERMITTED AS LONG AS ALL TRAFFIC CONTROL IS IN PLACE ACCORDING TO FIGURE 6H–10 (TA–10) IN THE OHIO MANUAL. PATROL CARS SHALL NOT BE USED IN FLAGGING OPERATIONS. IF THE CONTRACTOR WISHES TO UTILIZE LEO'S WITH OR WITHOUT PATROL CARS FOR TRAFFIC CONTROL OTHER THAN FOR THAT REQUIRED IN THE PLANS, THEY MAY DO SO AT THEIR OWN EXPENSE. THE CONTRACTOR SHALL MAKE ARRANGEMENT THROUGH THE COLUMBUS POLICE DIVISION AT (614) 645–4795.

LEO'S SHALL BE CONSIDERED TO BE EMPLOYED BY THE CONTRACTOR AND THE CONTRACTOR SHALL BE RESPONSIBLE FOR THEIR ACTIONS. ALTHOUGH EMPLOYED BY THE CONTRACTOR, THE CITY REPRESENTATIVE SHALL HAVE CONTROL OVER THEIR PLACEMENT. LEO'S SHALL NOT HAVE THE AUTHORITY TO CHANGE, EDIT OR MODIFY ANY MAINTENANCE OF TRAFFIC SCHEME WITHOUT THE PERMISSION OF THE TEMPORARY TRAFFIC CONTROL COORDINATOR OR PROJECT ENGINEER UNLESS AN EMERGENCY DEVELOPS.

IF A SAFETY HAZARD DEVELOPS, A LEO MAY BE ASSIGNED BY THE COLUMBUS PUBLIC SAFETY AND/OR THE PUBLIC SERVICE DIRECTOR AT THE CONTRACTOR'S EXPENSE.

ITEM 614 – LAW ENFORCEMENT OFFICER (LEO) WITH PATROL CAR, AS PER PLAN

IN ADDITION TO LEO AND FLAGGER HOURS INCLUDED IN ITEM 614 MAINTAINING TRAFFIC, LUMP SUM; THE FOLLOWING QUANTITIES HAVE BEEN CARRIED TO THE GENERAL SUMMARY TO BE USED AS DIRECTED BY THE ENGINEER OR AN ACCEPTABLE REPRESENTATIVE FOR THE CITY OF COLUMBUS. THE OFFICIAL PATROL CAR WITH TOP MOUNTED EMERGENCY FLASHING LIGHTS SHALL BE A PUBLIC SAFETY VEHICLE AS REQUIRED BY THE OHIO REVISED CODE. THE CONTRACTOR SHALL BE PAID FOR THIS BID ITEM ONLY IF DIRECTED BY THE ENGINEER.

ITEM 614, LAW ENFORCEMENT OFFICER WITH PATROL CAR, AS PER PLAN–144 HOURS

12. TYPE C STEADY–BURN OR TYPE D 360–DEGREE STEADY–BURN WARNING LIGHTS SHALL BE REQUIRED ON ALL BARRICADES, DRUMS, AND SIMILAR TRAFFIC CONTROL DEVICES IN USE AT NIGHT. ONLY 42" REFLECTORIZED CHANNELIZING DEVICES (CONES) SHALL BE PERMITTED FOR NIGHTTIME WORK WITH THE APPROVAL OF THE TTC COORDINATOR AT 614–645–0355 OR 614–645–5845 PER O.D.O.T. STANDARDS.

13. A FLASHING ARROW PANEL (48" X 96"–TYPE C) SHALL BE USED IN LANE CLOSURES AS PER THE OHIO MANUAL.

14. ALL TRENCHES WITHIN THE ROAD RIGHT OF WAY SHALL BE BACKFILLED OR SECURELY PLATED PER (CITY OF COLUMBUS GENERAL POLICY ON STEEL PLATE USAGE DATED 11/15/2006 AND STD. DWG. 1441, LATEST EDITION) DURING NON–WORKING HOURS.

15. ALL TRAFFIC LANES SHALL BE FULLY OPEN TO TRAFFIC FROM 6:00 A.M. TO 9:00 A.M. AND 4:00 P.M. TO 6:00 P.M., OR 6:00 TO 9:00 A.M. AND 3:00 TO 6:00 P.M. IN THE COLUMBUS BUSINESS DISTRICT (CBD) PARKING AREA, MONDAY THROUGH FRIDAY ON RICH ST, 3RD ST, 4TH ST, 5TH ST, AND GRANT AVE. 1 LANE MAY BE CLOSED TO TRAFFIC DURING WORKING HOURS.

16. TWO–WAY, ONE–LANE TRAFFIC MAY BE MAINTAINED DURING CONSTRUCTION OPERATIONS ON 5TH ST, PER THE CITY OF COLUMBUS MAINTENANCE OF TRAFFIC, STANDARD CONSTRUCTION DRAWING 1550 AND FIGURE 6H–10 (TA–10) OF THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES.

17. THE DEPARTMENT OF PUBLIC SERVICE WILL REMOVE OR COVER ALL PARKING METER HEADS PUT OUT OF SERVICE BY THIS PROJECT. THERE IS A $60.00 DOLLAR CHARGE FOR THE REMOVAL AND REINSTALLATION OF EACH METER. IN ADDITION, A DAILY METER FEE WILL BE CHARGED FOR ALL ENFORCEMENT HOURS FOR EACH METER TAKEN OUT OF SERVICE, SEE THE PARKING METER OUT OF SERVICE FEES NOTE FOR MORE INFORMATION AND THE CALCULATION OF METERS TAKEN OUT OF SERVICE, PLUS THE METER POST AND CORE NOTE. THESE CHARGES WILL BE COLLECTED FROM THE CONTRACTOR IN ADVANCE WITH THE ISSUANCE OF THE STREET OCCUPANCY/EXCAVATION PERMIT FROM THE DEPARTMENT OF PUBLIC SERVICE?S PERMIT OFFICE. (614–645–7497) PARKING SERVICES SHALL BE NOTIFIED A MINIMUM OF FORTY–EIGHT (48) HOURS (EXCLUDING SAT, SUN, & HOLIDAYS) PRIOR TO BEGINNING WORK. CALL 614–645–4072. THIS COST IS TO BE INCLUDED IN THE BID FOR THIS PROJECT AS A PART OF ITEM 614 MAINTENANCE OF TRAFFIC, LUMP SUM.

18. FOR MOBILE PAYMENT ONLY ZONES, PLEASE REVIEW THE POSTED MOBILE PAYMENT ZONE SIGN AND PROVIDE THE MOBILE PAYMENT ZONE NUMBER FOR THE PARKING SPACE(S) THAT WILL BE REMOVED FROM SERVICE. IF "TICK–MARKS" ARE INCLUDED WITHIN THE PARKING ZONE, THEN COUNT THE NUMBER OF SPACES NEEDED TO BE OUT OF SERVICE. IF NO "TICK–MARKS" ARE WITHIN THE PARKING ZONE, THEN CALCULATE THE NUMBER OF "SPACES" NEEDED BY USING 20 FEET PER SPACE. ONCE ALL THE INFORMATION LISTED ABOVE HAS BEEN COLLECTED FOR THE PAID PARKING TO BE REMOVED FROM SERVICE, CONTACT THE CITY OF COLUMBUS, DIVISION OF PARKING SERVICES AT PARKINGSERVICES@COLUMBUS.GOV FOR ASSISTANCE WITH ESTIMATING THE DAILY PAID PARKING REVENUE RATE. PROVIDE THE PROJECT LOCATION IN THE SUBJECT LINE OF THE EMAIL. THE ONLINE METER MAP WILL ALSO INCLUDE THE HOURLY RATE FOR MOBILE PAYMENT ZONES. THIS COST IS TO BE INCLUDED IN THE BID FOR THIS PROJECT AS A PART OF ITEM 614 MAINTENANCE OF TRAFFIC, LUMP SUM. AT THE TIME THE CONTRACTOR SUBMITS FOR THE STREET OCCUPANCY/EXCAVATION PERMIT, ALONG WITH THE PAID PARKING IDENTIFICATION NUMBERS TO BE INCLUDED ON THE PERMIT REQUEST FORM, THE CONTRACTOR IS TO PROVIDE A LISTING OF THE METER IDENTIFICATION NUMBERS AND/OR MOBILE PAYMENT ONLY ZONE NUMBERS AND THE NUMBER OF DAYS THAT EACH PAID PARKING SPACE IS TO BE OUT OF SERVICE, TO THE DEPARTMENT OF PUBLIC SERVICE PERMIT OFFICE. THE PERMIT OFFICE WILL VERIFY THAT THE HOURLY RATES ARE CORRECT AND CALCULATE THE COST OF THE PERMIT.

19. TEMPORARY "EMERGENCY NO PARKING" SIGNS SHALL BE INSTALLED BY THE CONTRACTOR IN AREAS WITH NO PARKING METERS AND TO REMOVE PARKING FROM SERVICE IN AREAS WHERE PARKING METERS, KIOSKS, AND OR MOBILE PAYMENT ZONE(S) PARKING HAS BEEN TAKEN OUT OF SERVICE. THE SIGNS SHALL SHOW THE PERMIT NUMBER, INSTALLATION DATE, WORKING DATES, AND HOURS OF RESTRICTION ON EACH SIGN. SIGNS SHALL BE POSTED AT 50' C/C MINIMUM BY USE OF ANY OF THE FOLLOWING ITEMS: EXISTING SIGN POSTS, EXISTING UTILITY POLES, DRUMS AND/OR 42" CONES AND REMOVED BY THE CONTRACTOR IN AREAS WITH NO PARKING METERS. THE TEMPORARY SIGN(S) SHALL HAVE THE INSTALLATION DATE, WORKING DATES, AND HOURS OF RESTRICTION SHOWN ON EACH SIGN. THESE SIGNS MAY BE OBTAINED FROM THE DEPARTMENT OF PUBLIC SERVICE?S PERMIT OFFICE. THE POLICE DIVISION REQUIRES THE "EMERGENCY NO PARKING" SIGNS BE POSTED A MINIMUM OF SEVENTY–TWO (72) HOURS PRIOR TO ANY VEHICLES BEING TOWED. WITHIN TWENTY–FOUR (24) HOURS OF POSTING, THE CONTRACTOR SHALL SUPPLY THE DEPARTMENT OF PUBLIC SERVICE WITH A WRITTEN RECORD OF POSTED LOCATIONS (FAX: 614–645–3298).

20. THE CONTRACTOR SHALL CONTACT OHIO UTILITY PROTECTION SERVICE (OUPS), NOW "OHIO 811" TO LOCATE AND MARK ALL UNDERGROUND TRAFFIC CONTROL CABLES PRIOR TO THE BEGINNING OF ANY WORK WITHIN 450 FEET OF ANY SIGNALIZED INTERSECTION(S) OR WITHIN ANY POSTED AREA WHERE THE DEPARTMENT HAS UNDERGROUND CABLE. THE SIGNAL OPERATION ENGINEER (614–645–6418) SHALL BE NOTIFIED SIX (6) WEEKS IN ADVANCE FOR SIGNAL REVISIONS OR POLE RELOCATIONS.

21. THE CONTRACTOR SHALL CONTACT THE DIVISION OF REFUSE COLLECTION, OPERATIONS MANAGER MICHAEL PICKARD, 614–645–1675.

22. NO EXCAVATION SHALL BE MADE WITHIN FIVE (5) FEET OF ANY FOUNDATION THAT SUPPORTS SIGNAL POLES, TRAFFIC SIGNAL DISPLAYS OR SIGNS BY MAST ARM OR SIGNAL SPAN. EXCAVATION WITHIN EIGHT (8) FEET, BUT MORE THAN FIVE (5) FEET SHALL REQUIRE ADDITIONAL SUPPORT (DOWN GUY, HEAD GUY, BASE GUY, ETC.). THE CONTRACTOR SHALL CONTACT SIGNAL OPERATION PERSONNEL AT 614–645–0423 (CELL 614–419–4501) AT LEAST FORTY–EIGHT (48) HOURS (EXCLUDING SAT. & SUN.) PRIOR TO THE BEGINNING OF SUCH EXCAVATION SO THAT THE CITY CAN APPROVE THE STABILIZATION SETUP BY THE CONTRACTOR. IF UNABLE TO MAKE CONTACT THROUGH ABOVE NUMBERS, CALL 614–645–7393. STABILIZATION WILL BE DONE BY THE CONTRACTOR AT THE OWNERS'/CONTRACTING AGENCY'S EXPENSE.

23. SIGNAL CONDUIT CLEARANCE 3' HORIZONTAL AND 1' VERTICAL FROM ADJACENT UTILITIES SHALL BE MAINTAINED AT ALL TIMES.

24. WHEN ANY TRAFFIC CONTROL DEVICE, CONDUIT, OR CABLE IS DAMAGED, THE CONTRACTOR SHALL NOTIFY SIGNAL OPERATION PERSONNEL AT 614–645–0423 (CELL 614–419–4501) BETWEEN 7:00 AM AND 4:00 PM, MONDAY THROUGH FRIDAY. IF UNABLE TO MAKE CONTACT THROUGH THE OTHER NUMBERS, CALL 614–645–7393.

25. THE ROADWAY OR ANY SECTION OF ROADWAY SHALL NOT BE OPENED TO NON–CONSTRUCTION TRAFFIC UNTIL ALL TEMPORARY, NON–REFLECTIVE, BLACKOUT TAPE HAS BEEN COMPLETELY REMOVED FROM NON–CONFLICTING PERMANENT PAVEMENT MARKINGS FOR THAT AREA OF THE ROADWAY, OR UNLESS OTHERWISE DIRECTED IN WRITING BY THE ENGINEER. THIS IS SUPPLEMENTAL TO CITY OF COLUMBUS, CMS–614.11– G, AND SHALL BE PAID FOR THROUGH THE 614–LUMP SUM.

26. WHENEVER YELLOW CENTERLINES OR TURN–LANE LINES ARE PAVED OVER, REMOVED, OR OTHERWISE UNSERVICEABLE, THE CONTRACTOR SHALL INSTALL CLASS II TEMPORARY STRIPING (MINIMUM 4' LONG SEGMENTS). TEMPORARY PAINT SHALL BE USED ON ALL MILLED SURFACES. TEMPORARY TAPE SHALL BE USED ON ALL FINAL COURSES OF ASPHALT. PAINT OR TAPE MAY BE USED ON INTERMEDIATE COURSES OF ASPHALT. IF APPROVED BY THE ENGINEER, DRUMS WITH STEADY BURNING TYPE C OR TYPE D 360 DEGREE WARNING LIGHTS AND "KEEP RIGHT" SIGNS MAY BE SUBSTITUTED FOR CENTERLINE MARKINGS.

27. CLASS II TEMPORARY STRIPING (MINIMUM 4? LONG SEGMENTS) SHALL BE AS PER ITEM 614 – WORK ZONE PAVEMENT MARKING AND SHALL BE PLACED WITHIN ONE (1) FOOT LONGITUDINAL TOLERANCE OF THE PERMANENT STRIPE(S). ALL TEMPORARY STRIPING NOT TO WITHIN ONE (1) FOOT TOLERANCE SHALL BE REMOVED AND REPLACED IN THE PROPER LOCATION BY THE CONTRACTOR. CLASS II TEMPORARY STRIPING SHALL BE OF THE APPROPRIATE COLOR AND SPACED A MAXIMUM OF FORTY (40) FEET CENTER TO CENTER.

EXISTING PERMANENT TRAFFIC CONTROL

1. ANY WORK DONE BY THE DEPARTMENT OF PUBLIC SERVICE, INCLUDING INSTALLATION, RELOCATION, REMOVAL AND/OR REPLACEMENT OF PERMANENT TRAFFIC CONTROL DEVICES AS A RESULT OF WORK DONE BY THE CONTRACTOR OR AS A RESULT OF NEGLIGENCE OF THE CONTRACTOR, SHALL BE AT THE CONTRACTORS? EXPENSE.

2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REINSTALLATION AND/OR REPLACEMENT OF ALL PERMANENT TRAFFIC CONTROL DEVICES DAMAGED OR REMOVED DURING CONSTRUCTION. PERMANENT TRAFFIC CONTROL NO LONGER IN CONFLICT WITH TEMPORARY TRAFFIC CONTROL SHALL BE REPLACED IMMEDIATELY.

3. THE CONTRACTOR SHALL REPLACE ALL PAVEMENT MARKINGS, INCLUDING RAISED PAVEMENT MARKERS (RPM) SHOWN IN CONFLICT, REMOVED DUE TO CONSTRUCTION OR MAINTENANCE OF TRAFFIC SET UP, DESTROYED, OR RENDERED UNSERVICEABLE BY THE PROJECT ENGINEER OR THE PUBLIC SERVICE PAVEMENT MARKING MANAGER. ALL PAVEMENT MARKING MATERIALS SHALL BE REPLACED IN–LIKE KIND TO THE CURRENT CMSC SPECIFICATION REQUIREMENTS IF NOT SHOWN IN THE PLAN OR PERMIT INCLUDING RAISED PAVEMENT MARKERS. ALL PAVEMENT MARKINGS SHALL BE REPLACED IN FULL. NO PARTIAL LENGTH OR SECTIONS OF PAVEMENT MARKINGS SHALL BE REPLACED WITHOUT REMOVING THE ENTIRE MARKING BY USE OF THE WATER BLAST METHOD. REMOVAL BY ABRASIVE WHEEL GRINDING SHALL ONLY BE APPROVED BY THE PUBLIC SERVICE PAVEMENT MARKING MANAGER.

4. ALL OVERHEAD CABLE, AND DOWN GUYS OR BACK GUYS SHALL NOT BLOCK ANY PORTION OF A TRAFFIC SIGNAL, TRAFFIC CONTROL SIGN, OR OTHER TRAFFIC CONTROL DEVICE SUCH THAT VISIBILITY OR OPERATION OF THE TRAFFIC CONTROL DEVICE IS IMPAIRED.

5. ALL PERMANENT PAVEMENT MARKINGS AND TRAFFIC CONTROL SIGNS AS SHOWN ON THIS PLAN SHALL BE INSTALLED BY THE CONTRACTOR AT THE PROJECTS EXPENSE. THE PROJECT ENGINEER SHALL BE NOTIFIED TO DIRECT APPROPRIATE PERSONNEL A MINIMUM OF FORTY–EIGHT (48) HOURS (EXCLUDING SAT. & SUN.) PRIOR TO THE INSTALLATION OF PERMANENT MARKINGS TO INSPECT AND APPROVE THE PAVEMENT MARKING LAYOUT PRIOR TO PLACING THE PERMANENT MARKINGS.

6. PERMANENT STRIPING OR CLASS I TEMPORARY STRIPING SHALL BE INSTALLED NO LATER THAN FOURTEEN (14) CALENDAR DAYS AFTER THE FINAL PAVING COURSE IS COMPLETED. THE PAVING CONTRACTOR SHALL BE RESPONSIBLE TO NOTIFY THE STRIPING CONTRACTOR TO INSURE THE PERMANENT STRIPING IS INSTALLED WITHIN THE FOURTEEN (14) CALENDAR DAY LIMIT.

7. IF THE DEPARTMENT OF PUBLIC SERVICE IS TO INSTALL PERMANENT STRIPING, THE PROJECT ENGINEER SHALL BE NOTIFIED TO DIRECT APPROPRIATE PERSONNEL A MINIMUM OF TEN (10) WORKING DAYS PRIOR TO THE APPLICATION OF THE FINAL COURSE OF PAVEMENT.

CALCULATED JAR
CHECKED DKA

MAINTENANCE OF TRAFFIC
GENERAL NOTES

IMPROVEMENTS OF
E RICH STREET FROM S 3RD ST TO S GRANT AVE
FRA E RICH ST SIGNALS

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ITEM 614 SPECIAL – WORK ZONE TRAFFIC SIGNAL

UNDER THIS ITEM OF WORK, THE CONTRACTOR SHALL FURNISH, INSTALL, RELOCATE, MODIFY AND SUBSEQUENTLY REMOVE: TEMPORARY SIGNAL SUPPORTS, DOWN GUYS, GROUND RODS, SIGNAL CABLE, POWER CABLE, SERVICE CABLE, CONDUIT RISERS, MESSENGER WIRE, SIGNAL HEADS, COVERING OF VEHICULAR SIGNAL HEADS AND A TEMPORARY CONTROLLER AS NEEDED TO RENDER A FULLY FUNCTIONAL TEMPORARY SIGNALIZED INTERSECTION.

AS DETAILED WITHIN, TEMPORARY TRAFFIC SIGNALS OR TRAFFIC SIGNAL MODIFICATIONS TO ACCOMMODATE INDIVIDUAL MAINTENANCE OF TRAFFIC PHASES SHALL BE INSTALLED AT THE INTERSECTIONS LISTED BELOW.
- E RICH ST AT THIRD ST
- E RICH ST AT FOURTH ST
- E RICH ST AT FIFTH ST
- E RICH ST AT GRANT AVE

ALL TEMPORARY TRAFFIC SIGNAL EQUIPMENT SHALL COMPLY WITH THE SPECIFICATIONS OUTLINED FOR THE PERMANENT SIGNAL INSTALLATION INCLUDING GROUNDING AND BONDING AND "TRAFFIC SIGNAL PLAN AND SPECIFICATION COMPLIANCE". ALL METHODS OF TRAFFIC CONTROL SHALL BE APPROVED BY THE ENGINEER AND SHALL BE IN PLACE AND OPERATING PRIOR TO THE DEACTIVATION AND REMOVAL AND/OR RELOCATION OF ANY EXISTING SIGNAL EQUIPMENT. REFERENCE IS MADE TO THE REQUIREMENTS OF ITEM 614. ALL MODIFICATIONS TO SIGNALIZATION SHALL BE DONE UNDER THE PROTECTION OF A LAW ENFORCEMENT OFFICER. REFERENCE IS MADE TO ITEM 614 MAINTAINING TRAFFIC, AS PER PLAN.

ANY VEHICULAR TRAFFIC SIGNAL HEAD THAT WILL BE OUT OF OPERATION SHALL BE COVERED IN ACCORDANCE WITH 632.25. ANY EXISTING VEHICULAR OR PEDESTRIAN HEAD THAT IS NOT FUNCTIONAL SHALL BE REMOVED IMMEDIATELY OR COVERED. ANY PEDESTRIAN BUTTONS NOT IN USE SHALL ALSO BE COVERED.

EACH TEMPORARY SIGNAL POLE LOCATION SHALL BE STAKED AND THE LOCATION APPROVED BY THE CITY OF COLUMBUS. THE CONTRACTOR MAY REUSE EXISTING SPAN AND PIGTAILS OR INSTALL NEW AS REQUIRED. THE CONTRACTOR SHALL TRANSFER EXISTING SIGNAL ITEMS AND EXTEND EXISTING CABLE AS NEEDED. WEATHERPROOF CABLE SPLICING IS PERMITTED. DOWN GUYS SHALL BE SPECIFIED FOR ALL TEMPORARY WOOD POLES. ONE DOWN GUY PER POLE SHALL BE USED FOR A LAYOUT THAT CONTAINS A MAXIMUM OF 2 VEHICULAR SIGNAL HEADS PER SPAN. TWO DOWN GUYS PER POLE SHALL BE SPECIFIED FOR 3 OR MORE VEHICULAR SIGNAL HEADS PER SPAN. DOWN GUYS SHALL BE POSITIONED TO COUNTERACT THE MOMENT CREATED BY THE SPAN CONFIGURATION. ANY CHANGE TO THE PLANNED POLE LOCATION OR SPAN CONFIGURATION AS DETAILED IN THE PLAN SHALL BE APPROVED BY THE CITY OF COLUMBUS. THE CONTRACTOR SHALL SUBMIT A DIAGRAM TO THE CITY DOCUMENTING PROPOSED CHANGES.

INSTALL THE SPAN TO PROVIDE FOR A 5 TO 6 PERCENT SAG FOR WOOD POLES. ATTACH THE SPAN NO CLOSER THAN 2 FT. FROM THE TOP OF THE POLE. THE LOWEST VEHICULAR HEAD IN EACH DIRECTION SHALL BE 16.5 FT. ABOVE PAVEMENT SURFACE WITH THE REMAINING VEHICULAR HEADS MEETING THE REQUIREMENTS OF THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES.

THE CONTRACTOR SHALL SHIFT EXISTING SIGNAL HEADS TO ALIGN WITH LANES IN THE INDIVIDUAL MAINTENANCE OF TRAFFIC PHASES. DETAILED HEAD PLACEMENT HAS BEEN PROVIDED FOR EACH PHASE OF WORK IN THE MAINTENANCE OF TRAFFIC PLAN. THIS ITEM SHALL CONSIST OF ADJUSTING THE LOCATION OF TEMPORARY TRAFFIC SIGNAL HEADS FOR EACH PHASE OF CONSTRUCTION INCLUDING UNLASHING AND RELASHING ALL WIRING. ALL TEMPORARY AERIAL WIRING SHALL BE A MINIMUM OF 21 FT. ABOVE THE ROADWAY SURFACE.

VEHICULAR DETECTION SHALL BE MAINTAINED AT ALL TIMES AND DURING ALL PHASES OF CONSTRUCTION USING EITHER EXISTING LOOP DETECTORS OR TEMPORARY VIDEO OR RADAR DETECTION.

LOCATE THE NON–FUSED POWER SUPPLY VOLTAGE (120 VOLT) IN A SEPARATE CONDUIT. IN ADDITION, LOCATE THE LOOP DETECTOR, PUSH BUTTON, AND VIDEO DETECTION CABLES IN A SEPARATE CONDUIT FROM ALL OTHER CABLES.

THIS ITEM OF WORK SHALL INCLUDE ALL LABOR, EQUIPMENT AND MATERIAL NECESSARY TO PROVIDE POWER TO THE TRAFFIC SIGNAL CONTROLLER FROM THE PROPOSED OR EXISTING POWER SOURCES AS DETERMINED BY CONSTRUCTION SEQUENCING.

THIS ITEM OF WORK SHALL INCLUDE ALL LABOR, EQUIPMENT AND MATERIALS NECESSARY TO FURNISH, INSTALL, MODIFY, REMOVE, STORE, ERECT, RELOCATE, ADJUST AND REPAIR TEMPORARY TRAFFIC SIGNAL ITEMS AS DESCRIBED ABOVE.

ALL COSTS FOR THE ABOVE WORK SHALL BE INCLUDED IN THE PRICE BID FOR ITEM 614 SPECIAL – WORK ZONE TRAFFIC SIGNAL AND SHALL BE PER EACH INTERSECTION AT WHICH TEMPORARY SIGNALS OR MODIFICATIONS ARE INSTALLED.

– 8/27/21

SEQUENCE OF CONSTRUCTION

CONSTRUCTION OF RICH AT THIRD, FOURTH, AND GRANT SHALL FOLLOW THE ORDER OF OPERATIONS AS OUTLINED BELOW, AND ON THE MOT PLAN SHEETS:
- PHASE 1: NW CORNER
- PHASE 2: NE CORNER
- PHASE 3: SE CORNER
- PHASE 4: SW CORNER

CONSTRUCTION OF RICH AT FIFTH SHALL FOLLOW THE ORDER OF OPERATIONS AS OUTLINED BELOW, AND ON THE MOT PLAN SHEETS:
- PHASE 1: NE CORNER
- PHASE 2: SE CORNER
- PHASE 3: SW CORNER
- PHASE 4: NW CORNER

WITH APPROVAL BY THE ENGINEER, THE ORDER OF THE PHASES MAY BE REVISED SHOULD IT BENEFIT CONSTRUCTION, VEHICULAR MOVEMENTS, AND/OR PEDESTRIAN MOVEMENTS.

CONSTRUCTION SHALL BE LIMITED TO ONE CORNER AT ONE INTERSECTION AT A TIME. THE INTENT IS TO MINIMIZE IMPACTS TO PEDESTRIAN TRAVEL LENGTHS.

WORKING HOURS SHALL BE LIMITED TO:
- WEEKDAYS: 9AM–4PM
- WEEKEND: 7AM–10PM

AT THE END OF THE WORK DAY, ALL MOT ITEMS SHALL BE REMOVED FROM THE STREET AND PLACED ALONG THE CURB. ALL TRENCHING SHALL BE PLATED OR BACKFILLED PER ODOT STANDARDS AND AT THE APPROVAL OF THE CITY ENGINEER.

CALCULATED JAR
CHECKED DKA

MAINTENANCE OF TRAFFIC
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E RICH STREET FROM S 3RD ST TO S GRANT AVE
FRA E RICH ST SIGNALS

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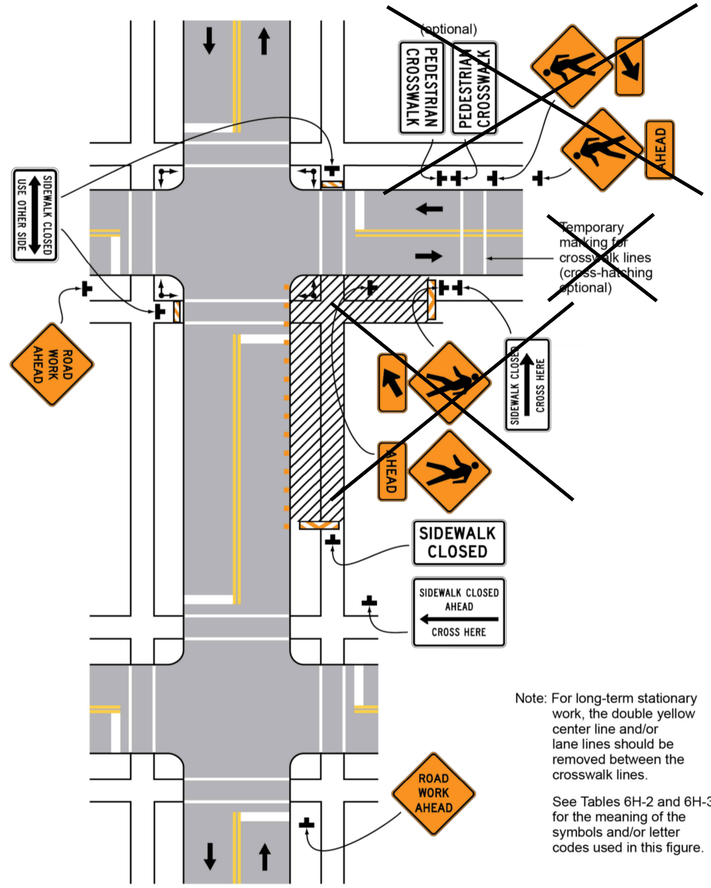
PEDESTRIAN DETOUR PLAN

THE CONTRACTOR SHALL BE PERMITTED TO CLOSE A SINGLE CORNER OF THE INTERSECTION AT ONE TIME AND DETOUR PEDESTRIAN TRAFFIC AROUND THE WORK ZONE. THE CONTRACTOR SHALL PROVIDE DETOUR PLANS FOR EACH INDIVIDUAL CORNER. THE PROJECT ENGINEER OR THE TEMPORARY TRAFFIC CONTROL COORDINATOR SHALL APPROVE THE DETOUR PLAN AND ROUTE PRIOR TO IMPLEMENTATION. DETOURS SHALL BE DEVELOPED PER TA-29 IN THE OMUTCD. MIDBLOCK TEMPORARY CROSSINGS SHALL NOT BE PERMITTED AS PART OF THE DETOUR ROUTE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION AND SAFE MOVEMENT OF PEDESTRIANS THROUGH, AROUND, OR DETOURED AWAY FROM THE CONTRUCTION SITE. ACCESS FOR PEDESTRIAN AND VEHICULAR TRAFFIC TO ALL ADJOINING PROPERTIES SHALL BE MAINTAINED AT ALL TIMES.

Figure 6H-29. Crosswalk Closures and Pedestrian Detours (TA-29)



Note: For long-term stationary work, the double yellow center line and/or lane lines should be removed between the crosswalk lines.

See Tables 6H-2 and 6H-3 for the meaning of the symbols and/or letter codes used in this figure.

Typical Application 29

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MAINTENANCE OF TRAFFIC NOTES

IMPROVEMENTS OF
E RICH STREET FROM S 3RD ST TO S GRANT AVE
FRA E RICH ST SIGNALS

3921-E

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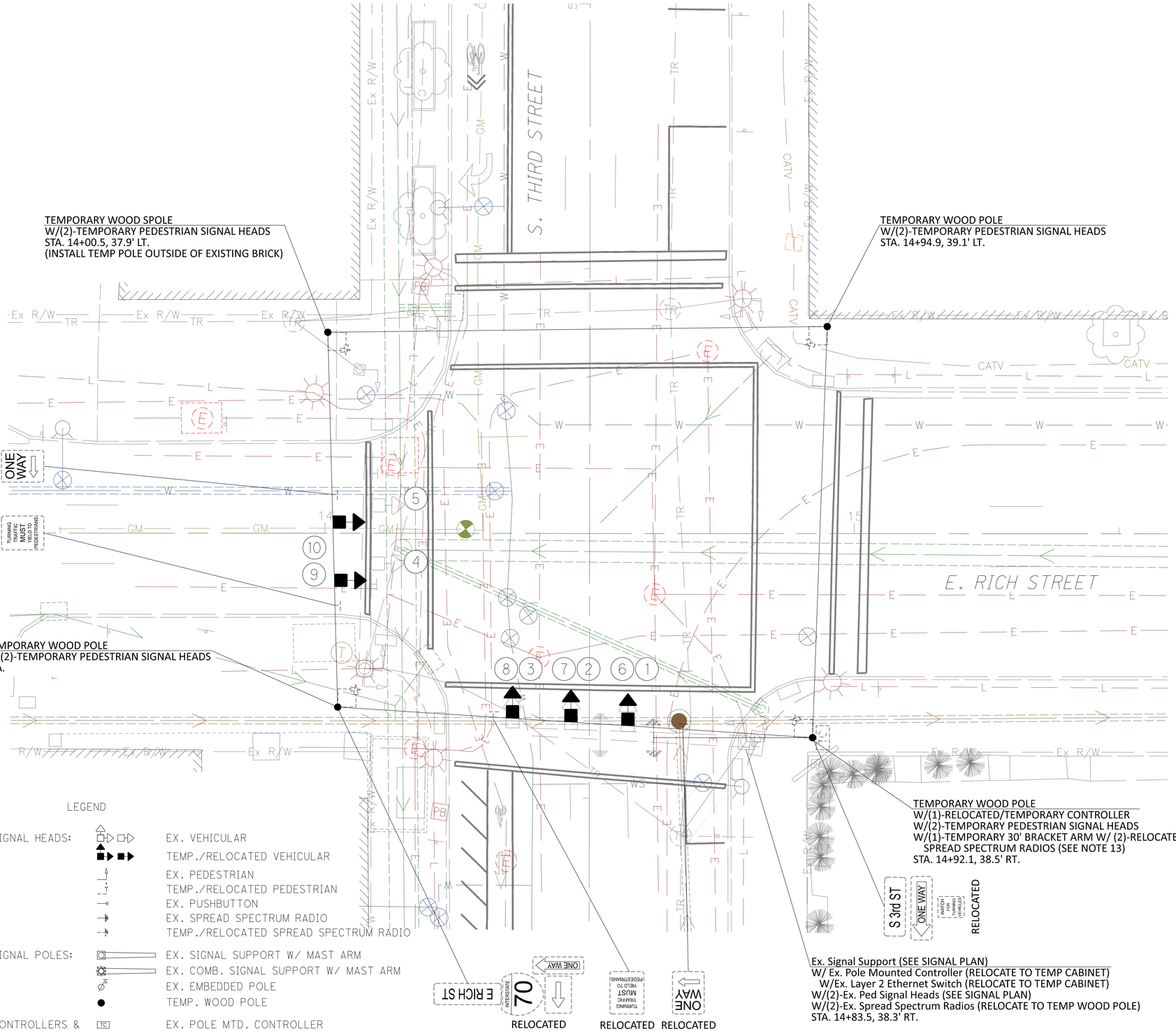
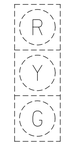


EXISTING VEHICULAR SIGNAL HEAD CONFIGURATIONS (REMOVE)



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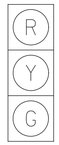
TEMPORARY VEHICULAR SIGNAL HEAD CONFIGURATIONS 12" HEADS



6 - 10

1. AN EXISTING TRAFFIC SIGNAL, OR ANY PART THEREOF, SHALL NOT BE TAKEN OUT OF SERVICE UNLESS ALTERNATE MEANS OF TRAFFIC CONTROL ARE IN PLACE AND OPERATIONAL. UNLESS DIRECTED BY THE CITY OF COLUMBUS CITY ENGINEER OR APPOINTED DESIGNEE, EXISTING TRAFFIC SIGNALS SHALL NOT BE TAKEN OUT OF SERVICE BETWEEN THE HOURS OF:
   - 7:00 AM TO 9:00 AM MONDAY THROUGH FRIDAY AND
   - 4:00 PM TO 6:00 PM, MONDAY THROUGH FRIDAY (3:30 PM – 6:00 PM FOR THE DOWNTOWN BUSINESS DISTRICT)
   - OR ONE HOUR BEFORE SUNSET THROUGH ONE-HALF HOUR AFTER SUN RISE, WHICHEVER IS THE LONGEST DURATION.
2. ANY UNUSED SIGNAL HEAD, PEDESTRIAN SIGNAL HEAD, PEDESTRIAN PUSHBUTTON, OR POLE OR SPAN/ARM MOUNTED SIGN SHALL BE COVERED AND DISCONNECTED. VEHICULAR SIGNAL HEADS AND PEDESTRIAN SIGNAL HEADS SHALL BE COVERED PER THE REQUIREMENTS OF CMSC 632.25.
3. VEHICULAR SIGNAL HEADS SHALL BE ALIGNED PER THE PLAN. NO TWO VEHICULAR SIGNAL HEADS SHALL BE LOCATED WITHIN EIGHT FEET OF ONE ANOTHER, MEASURED PERPENDICULAR TO THE TRAVEL LANE.
4. SIGNS SHALL BE ALIGNED PER THE PLANS. EXISTING SIGNS IN CONFLICT WITH THE PROPOSED TEMPORARY TRAFFIC CONTROL SETUP SHALL BE COVERED OR TEMPORARILY REMOVED
5. WEATHERPROOF SPLICES MAY BE INTRODUCED INTO SIGNAL CABLE IN ORDER TO RELOCATE EXISTING VEHICULAR SIGNAL HEADS. NO SPLICES SHALL REMAIN IN THE CABLE WHEN THE SIGNAL HEADS ARE RETURNED TO THEIR ORIGINAL POSITION.
6. ALL EXISTING VEHICULAR DETECTION SHALL BE MAINTAINED AT ALL TIMES. LOOPS THAT CANNOT BE USED AS A RESULT OF LANE SHIFTS, LANE CLOSURES, ETC. SHALL BE DEACTIVATED DURING CONSTRUCTION. TEMPORARY RADAR OR VIDEO DETECTION SHALL BE USED TO MAINTAIN DETECTION WHEN AN EXISTING LOOP CANNOT BE USED. IF THE EXISTING DETECTION IS RADAR OR VIDEO, THE ZONES ON THE EXISTING RADAR OR VIDEO UNIT SHALL BE RELOCATED TO THE NEW LANE ALIGNMENT. WHEN TEMPORARY RADAR DETECTION IS USED, DILEMMA ZONE DETECTION SHALL BE PROVIDED FOR APPROACHES WITH SPEEDS GREATER THAN 40 MPH.
7. EXISTING PEDESTRIAN PUSHBUTTONS, PUSHBUTTON SIGNS, AND SIGNAL HEADS SHALL BE MAINTAINED FOR ALL CROSSWALKS THAT REMAIN OPEN DURING CONSTRUCTION. TEMPORARY PUSHBUTTONS AND SIGNS OR RELOCATED PUSHBUTTONS AND SIGNS SHALL BE POSITIONED ACCORDING TO THE CITY OF COLUMBUS ADA RULES AND REGULATIONS. RELOCATED PEDESTRIAN SIGNAL HEADS SHALL BE POSITIONED SUCH THAT THE HEAD IS AIMED AT THE CENTER OF THE CROSSWALK AREA (NOT THE CURB RAMP) THAT IS OPPOSITE THE UNIT. A MINIMUM OF ONE CROSSWALK TO CROSS EACH STREET AT A SIGNALIZED INTERSECTION SHALL BE MAINTAINED AT ALL TIMES. FOR SIGNALIZED INTERSECTIONS WITH THREE LEGS, THE CROSSWALK TO CROSS THE DEAD END STREET MAY BE CLOSED AS LONG A PEDESTRIAN PATH IS PROVIDED ALONG THE "TOP SIDE" OF THE INTERSECTION.
8. UNLESS NOTED IN THE PLANS, THE TRAFFIC SIGNAL SHALL UTILIZE THE EXISTING TIMING AND PHASING.
9. IF ANY CHANGES ARE MADE TO THE SIGNAL OPERATION INCLUDING PHASING CHANGES, PHASE OMISSIONS, TIMING CHANGES, ETC., SIGNAL OPERATION CHANGED SIGNS (W23-H2B) SHALL BE INSTALLED ON THE SPAN OR ARM FOR ALL DIRECTIONS. CENTER THE SIGN OVER THE APPROACH. SIGN SHALL BE LEFT IN PLACE NO LONGER THAN THE DURATION SPECIFIED UNDER ITEM 630 SIGNING, MISC.: TRAFFIC SIGNAL SIGNS.
10. TEMPORARY WOOD SIGNAL POLES SHALL BE SIZED AND THE TEMPORARY SIGNAL SPAN SHALL BE ADJUSTED SUCH THAT THE MINIMUM ROADWAY CLEARANCE TO THE BOTTOM OF THE LOWEST SIGNAL HEAD IS 16.5' MINIMUM AND THE HIGHEST SIGNAL HEAD IS 19' MAXIMUM.
11. WHEN TEMPORARY TRAFFIC SIGNAL CABINETS ARE USED, BASE MOUNTED CABINETS SHALL BE MOUNTED ON A STURDY FOUNDATION SECURE FROM ANIMALS AND WEATHER. POLE MOUNTED CABINETS SHALL BE POSITIONED TO PREVENT AN OVERHANG GREATER THAN 4 IN. INTO A PEDESTRIAN PATHWAY.
12. THE CONTRACTOR IS RESPONSIBLE FOR LOCATING, COORDINATION, AND PAYING FOR POWER SERVICE AS NEEDED FOR THE MAINTENANCE OF TRAFFIC PHASES.
13. SIGNAL SHALL REMAIN CONNECTED TO THE CTSS THROUGHOUT CONSTRUCTION. THE CONTRACTOR SHALL INSTALL A TEMPORARY DROP CABLE OR RELOCATE THE EXISTING DROP CABLE TO THE TEMPORARY CABINET. ALTERNATIVELY THE CONTRACTOR MAY RELOCATE AND ACTIVATE THE EXISTING SPREAD SPECTRUM RADIOS AT THIS INTERSECTION AND THE ADJACENT INTERSECTIONS TO MAINTAIN INTERCONNECT CONNECTIVITY.
14. SEE PERMANENT SIGNAL PLANS FOR REMOVAL OF EXISTING SIGNAL ITEMS.

- 1/21/20

0 10 20
Hori: 1 inch = 10 feet

CALCULATED JAR
CHECKED DKA

TEMPORARY SIGNAL PLAN
RICH STREET AT THIRD STREET

IMPROVEMENTS OF
E RICH STREET FROM S 3RD ST TO S GRANT AVE
FRA E RICH ST SIGNALS

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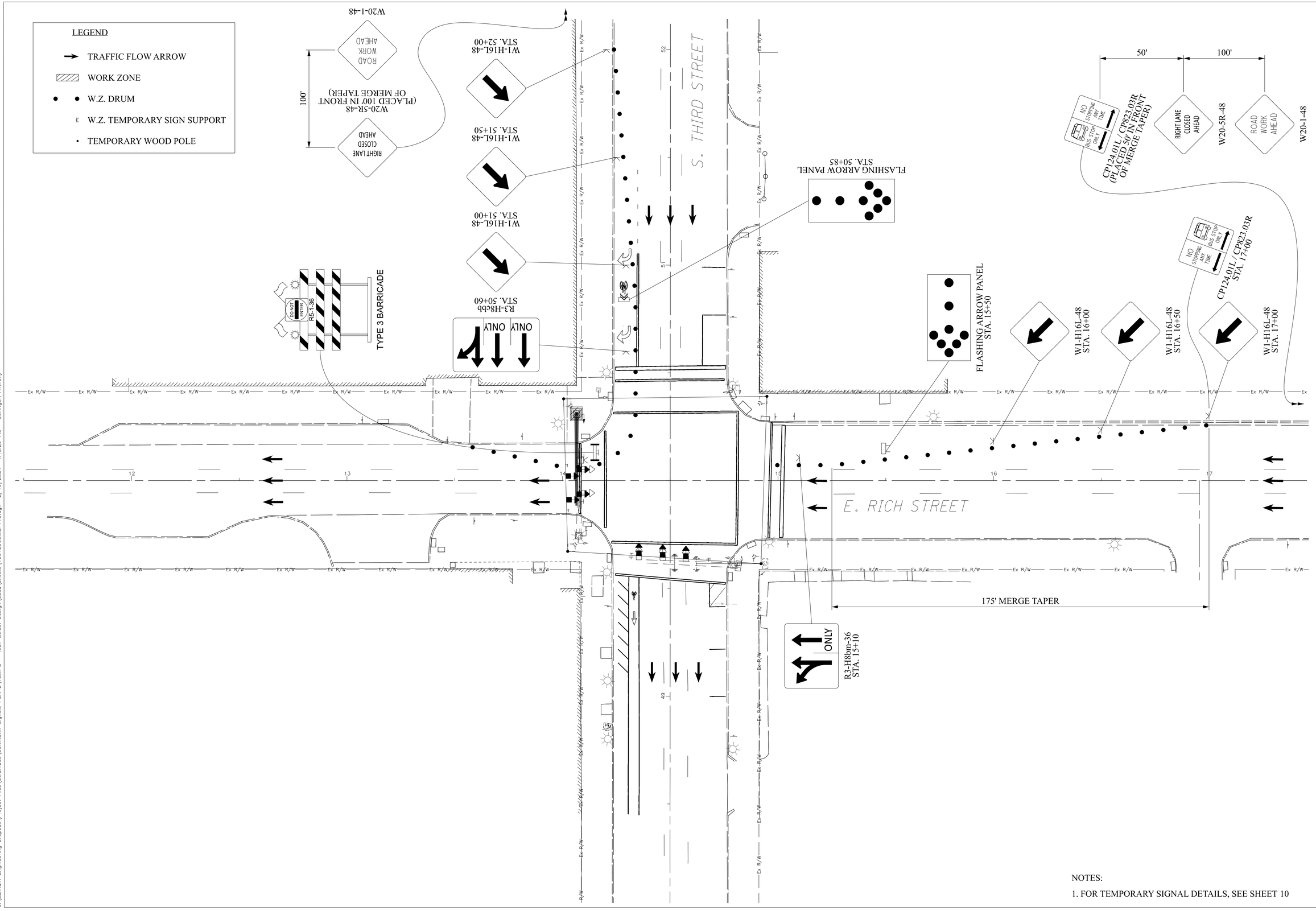

NOTES:

1. FOR TEMPORARY SIGNAL DETAILS, SEE SHEET 10

0 20 40
Horiz 1 inch = 20 Feet

CALCULATED JAR
CHECKED DKA

MAINTENANCE OF TRAFFIC PLAN - NW CORNER CONST.
E RICH ST AT S 3RD ST

IMPROVEMENTS OF
E RICH STREET FROM S 3RD ST TO S GRANT AVE
FRA E RICH ST SIGNALS

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LEGEND

- TRAFFIC FLOW ARROW
- WORK ZONE
- W.Z. DRUM
- K W.Z. TEMPORARY SIGN SUPPORT
- TEMPORARY WOOD POLE

S. THIRD STREET

W20-1-48
STA. 51+75
ROAD WORK AHEAD

W1-H16R-36
STA. 50+75

50'

CP124.01L / CP823.03R
(PLACED 50' IN FRONT OF MERGE TAPER)
NO STOPPING ANY TIME
BUS STOP ONLY
ROAD WORK AHEAD
W20-1-48

CP124.01L / CP823.03R
STA. 17+00
NO STOPPING ANY TIME
BUS STOP ONLY

W1-H16L-36
STA. 16+50

W1-H16L-48
STA. 17+00

50' TAPER

10' MIN.

E. RICH STREET

NOTES:

1. FOR TEMPORARY SIGNAL DETAILS, SEE SHEET 10

0 20 40
Horiz 1 inch = 20 feet

CALCULATED JAR
CHECKED DKA

MAINTENANCE OF TRAFFIC PLAN - NE CORNER CONST.
E RICH ST AT S 3RD ST

IMPROVEMENTS OF
E RICH STREET FROM S 3RD ST TO S GRANT AVE
FRA E RICH ST SIGNALS

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LEGEND

- TRAFFIC FLOW ARROW
- WORK ZONE
- W.Z. DRUM
- W.Z. TEMPORARY SIGN SUPPORT
- TEMPORARY WOOD POLE

S. THIRD STREET

E. RICH STREET

W20-1-48
STA. 51+80
ROAD WORK AHEAD

10' MIN.

10' MIN.

50' TAPER

W1-H16R-48
STA. 16+00

W1-H16R-48
STA. 16+65

W20-1-48
STA. 17+25
ROAD WORK AHEAD

NOTES:

1. FOR TEMPORARY SIGNAL DETAILS, SEE SHEET 10

Horiz 1 inch = 20 feet
0 20 40

CALCULATED JAR
CHECKED DKA

MAINTENANCE OF TRAFFIC PLAN - SE CORNER CONST.
E RICH ST AT S 3RD ST

IMPROVEMENTS OF
E RICH STREET FROM S 3RD ST TO S GRANT AVE
FRA E RICH ST SIGNALS

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LEGEND

- TRAFFIC FLOW ARROW
- WORK ZONE
- W.Z. DRUM
- W.Z. TEMPORARY SIGN SUPPORT
- TEMPORARY WOOD POLE

S. THIRD STREET

E. RICH STREET

W20-1-48
STA. 51+50
ROAD WORK AHEAD

W1-H16R-36
STA. 14+15

R3-H8ca-48
STA. 15+25
ONLY ONLY

R3-7L-36
STA. 16+25
LEFT LANE MUST TURN LEFT

R3-H8ca-48
STA. 17+25
ONLY ONLY

W20-1-48
ROAD WORK AHEAD

100'

NOTES:

1. FOR TEMPORARY SIGNAL DETAILS, SEE SHEET 10

0 20 40
Horiz 1 inch = 20 feet

CALCULATED JAR
CHECKED DKA

MAINTENANCE OF TRAFFIC PLAN - SW CORNER CONST.
E RICH ST AT S 3RD ST

IMPROVEMENTS OF
E RICH STREET FROM S 3RD ST TO S GRANT AVE
FRA E RICH ST SIGNALS

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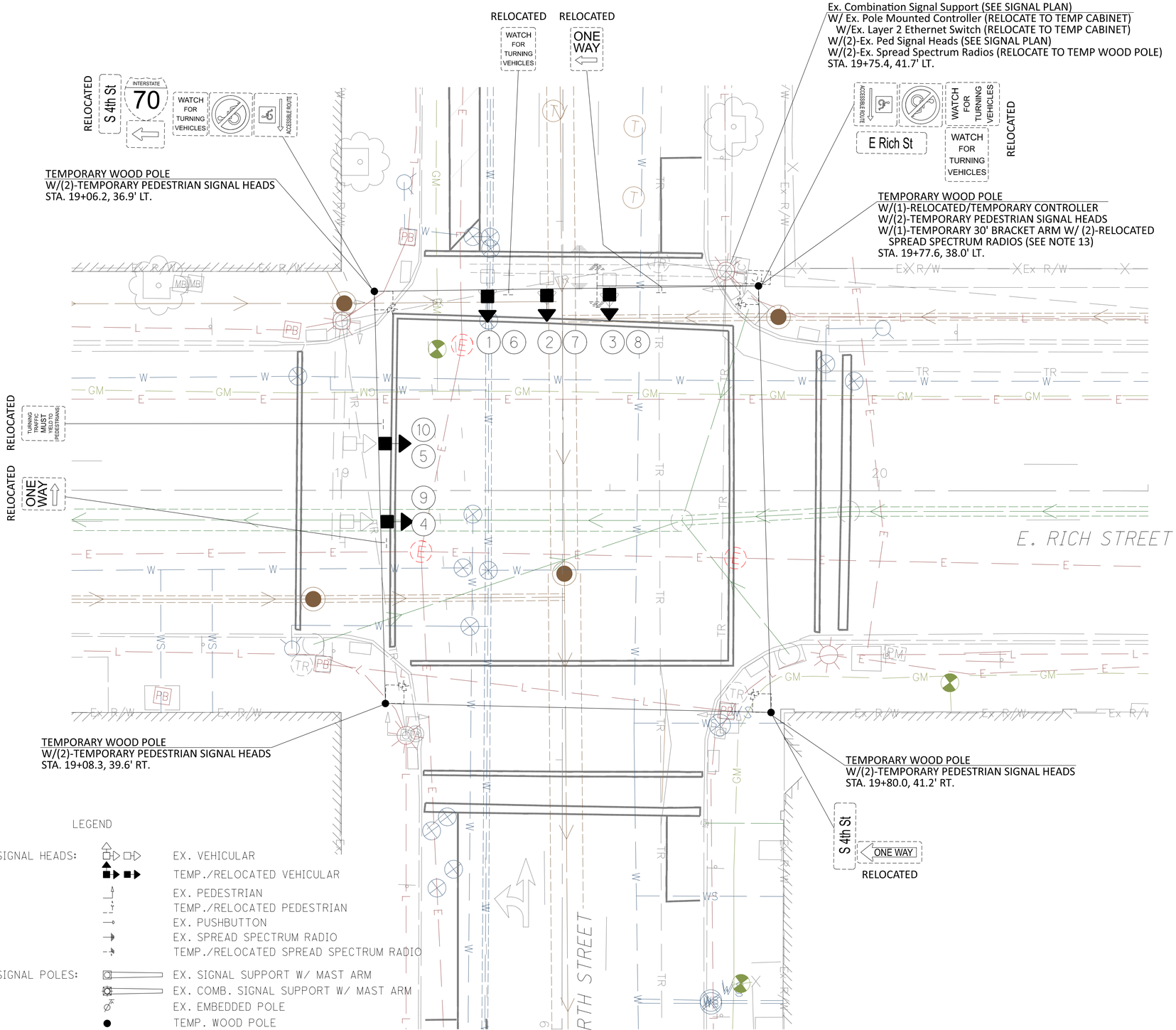

LEGEND

SIGNAL HEADS:		EX. VEHICULAR
		TEMP./RELOCATED VEHICULAR
		EX. PEDESTRIAN
		TEMP./RELOCATED PEDESTRIAN
		EX. PUSHBUTTON
		EX. SPREAD SPECTRUM RADIO
		TEMP./RELOCATED SPREAD SPECTRUM RADIO
SIGNAL POLES:		EX. SIGNAL SUPPORT W/ MAST ARM
		EX. COMB. SIGNAL SUPPORT W/ MAST ARM
		EX. EMBEDDED POLE
		TEMP. WOOD POLE
CONTROLLERS & CABINETS:	TC	EX. POLE MTD. CONTROLLER
	TC	TEMP./RELOCATED POLE MTD. CONTROLLER
PULL BOXES:	TR	EX. PULL BOX
DETECTION	SK	TEMP. STOP LINE RADAR DETECTION UNIT

EXISTING VEHICULAR SIGNAL HEAD CONFIGURATIONS (REMOVE)

R Y G

1 - 5

TEMPORARY VEHICULAR SIGNAL HEAD CONFIGURATIONS 12" HEADS

R Y G

6 - 10

1. AN EXISTING TRAFFIC SIGNAL, OR ANY PART THEREOF, SHALL NOT BE TAKEN OUT OF SERVICE UNLESS ALTERNATE MEANS OF TRAFFIC CONTROL ARE IN PLACE AND OPERATIONAL. UNLESS DIRECTED BY THE CITY OF COLUMBUS CITY ENGINEER OR APPOINTED DESIGNEE, EXISTING TRAFFIC SIGNALS SHALL NOT BE TAKEN OUT OF SERVICE BETWEEN THE HOURS OF:
   - 7:00 AM TO 9:00 AM MONDAY THROUGH FRIDAY AND
   - 4:00 PM TO 6:00 PM, MONDAY THROUGH FRIDAY (3:30 PM – 6:00 PM FOR THE DOWNTOWN BUSINESS DISTRICT)
   - OR ONE HOUR BEFORE SUNSET THROUGH ONE-HALF HOUR AFTER SUN RISE, WHICHEVER IS THE LONGEST DURATION.
2. ANY UNUSED SIGNAL HEAD, PEDESTRIAN SIGNAL HEAD, PEDESTRIAN PUSHBUTTON, OR POLE OR SPAN/ARM MOUNTED SIGN SHALL BE COVERED AND DISCONNECTED. VEHICULAR SIGNAL HEADS AND PEDESTRIAN SIGNAL HEADS SHALL BE COVERED PER THE REQUIREMENTS OF CMSC 632.25.
3. VEHICULAR SIGNAL HEADS SHALL BE ALIGNED PER THE PLAN. NO TWO VEHICULAR SIGNAL HEADS SHALL BE LOCATED WITHIN EIGHT FEET OF ONE ANOTHER, MEASURED PERPENDICULAR TO THE TRAVEL LANE.
4. SIGNS SHALL BE ALIGNED PER THE PLANS. EXISTING SIGNS IN CONFLICT WITH THE PROPOSED TEMPORARY TRAFFIC CONTROL SETUP SHALL BE COVERED OR TEMPORARILY REMOVED
5. WEATHERPROOF SPLICES MAY BE INTRODUCED INTO SIGNAL CABLE IN ORDER TO RELOCATE EXISTING VEHICULAR SIGNAL HEADS. NO SPLICES SHALL REMAIN IN THE CABLE WHEN THE SIGNAL HEADS ARE RETURNED TO THEIR ORIGINAL POSITION.
6. ALL EXISTING VEHICULAR DETECTION SHALL BE MAINTAINED AT ALL TIMES. LOOPS THAT CANNOT BE USED AS A RESULT OF LANE SHIFTS, LANE CLOSURES, ETC. SHALL BE DEACTIVATED DURING CONSTRUCTION. TEMPORARY RADAR OR VIDEO DETECTION SHALL BE USED TO MAINTAIN DETECTION WHEN AN EXISTING LOOP CANNOT BE USED. IF THE EXISTING DETECTION IS RADAR OR VIDEO, THE ZONES ON THE EXISTING RADAR OR VIDEO UNIT SHALL BE RELOCATED TO THE NEW LANE ALIGNMENT. WHEN TEMPORARY RADAR DETECTION IS USED, DILEMMA ZONE DETECTION SHALL BE PROVIDED FOR APPROACHES WITH SPEEDS GREATER THAN 40 MPH.
7. EXISTING PEDESTRIAN PUSHBUTTONS, PUSHBUTTON SIGNS, AND SIGNAL HEADS SHALL BE MAINTAINED FOR ALL CROSSWALKS THAT REMAIN OPEN DURING CONSTRUCTION. TEMPORARY PUSHBUTTONS AND SIGNS OR RELOCATED PUSHBUTTONS AND SIGNS SHALL BE POSITIONED ACCORDING TO THE CITY OF COLUMBUS ADA RULES AND REGULATIONS. RELOCATED PEDESTRIAN SIGNAL HEADS SHALL BE POSITIONED SUCH THAT THE HEAD IS AIMED AT THE CENTER OF THE CROSSWALK AREA (NOT THE CURB RAMP) THAT IS OPPOSITE THE UNIT. A MINIMUM OF ONE CROSSWALK TO CROSS EACH STREET AT A SIGNALIZED INTERSECTION SHALL BE MAINTAINED AT ALL TIMES. FOR SIGNALIZED INTERSECTIONS WITH THREE LEGS, THE CROSSWALK TO CROSS THE DEAD END STREET MAY BE CLOSED AS LONG A PEDESTRIAN PATH IS PROVIDED ALONG THE "TOP SIDE" OF THE INTERSECTION.
8. UNLESS NOTED IN THE PLANS, THE TRAFFIC SIGNAL SHALL UTILIZE THE EXISTING TIMING AND PHASING.
9. IF ANY CHANGES ARE MADE TO THE SIGNAL OPERATION INCLUDING PHASING CHANGES, PHASE OMISSIONS, TIMING CHANGES, ETC., SIGNAL OPERATION CHANGED SIGNS (W23-H2B) SHALL BE INSTALLED ON THE SPAN OR ARM FOR ALL DIRECTIONS. CENTER THE SIGN OVER THE APPROACH. SIGN SHALL BE LEFT IN PLACE NO LONGER THAN THE DURATION SPECIFIED UNDER ITEM 630 SIGNING, MISC.: TRAFFIC SIGNAL SIGNS.
10. TEMPORARY WOOD SIGNAL POLES SHALL BE SIZED AND THE TEMPORARY SIGNAL SPAN SHALL BE ADJUSTED SUCH THAT THE MINIMUM ROADWAY CLEARANCE TO THE BOTTOM OF THE LOWEST SIGNAL HEAD IS 16.5' MINIMUM AND THE HIGHEST SIGNAL HEAD IS 19' MAXIMUM.
11. WHEN TEMPORARY TRAFFIC SIGNAL CABINETS ARE USED, BASE MOUNTED CABINETS SHALL BE MOUNTED ON A STURDY FOUNDATION SECURE FROM ANIMALS AND WEATHER. POLE MOUNTED CABINETS SHALL BE POSITIONED TO PREVENT AN OVERHANG GREATER THAN 4 IN. INTO A PEDESTRIAN PATHWAY.
12. THE CONTRACTOR IS RESPONSIBLE FOR LOCATING, COORDINATION, AND PAYING FOR POWER SERVICE AS NEEDED FOR THE MAINTENANCE OF TRAFFIC PHASES.
13. SIGNAL SHALL REMAIN CONNECTED TO THE CTSS THROUGHOUT CONSTRUCTION. THE CONTRACTOR SHALL INSTALL A TEMPORARY DROP CABLE OR RELOCATE THE EXISTING DROP CABLE TO THE TEMPORARY CABINET. ALTERNATIVELY THE CONTRACTOR MAY RELOCATE AND ACTIVATE THE EXISTING SPREAD SPECTRUM RADIOS AT THIS INTERSECTION AND THE ADJACENT INTERSECTIONS TO MAINTAIN INTERCONNECT CONNECTIVITY.
14. SEE PERMANENT SIGNAL PLANS FOR REMOVAL OF EXISTING SIGNAL ITEMS.

- 1/21/20

N

0 10 20
Hori: 1 inch = 10 feet

CALCULATED JAR
CHECKED DKA

TEMPORARY SIGNAL PLAN
RICH STREET AT FOURTH STREET

IMPROVEMENTS OF
E RICH STREET FROM S 3RD ST TO S GRANT AVE
FRA E RICH ST SIGNALS

3921-E

15
95

LEGEND

- TRAFFIC FLOW ARROW
- WORK ZONE
- W.Z. DRUM
- K W.Z. TEMPORARY SIGN SUPPORT
- TEMPORARY WOOD POLE

S. FOURTH STREET

E. RICH STREET

W1-H16L-36
STA. 70+95

CONTRACTOR SHALL REMOVE THE EXISTING WHITE DOTTED LINES THROUGH THE INTERSECTION AND INSTALL TEMPORARY WHITE DOTTED LINES AS DETAILED ON THIS SHEET. THE TEMPORARY WHITE DOTTED LINES SHALL DIRECT BICYCLISTS INTO THE TRANSVERSE SECTION ON THE NORTH SIDE OF THE INTERSECTION. FROM THERE, DRUMS SHALL DIRECT THE BICYCLISTS BACK TO THE CURB LANE.

IMMEDIATELY UPON COMPLETING CONSTRUCTION OF THE NORTHWEST CORNER, THE CONTRACTOR SHALL REMOVE THE TEMPORARY WHITE DOTTED LINES AND INSTALL THE PROPOSED WHITE DOTTED LINES AS DETAILED IN THE TRAFFIC CONTROL PLANS.

FOR THIS PHASE ONLY, THE CONTRACTOR SHALL LEAVE DRUMS AND SIGNS UP DURING NON-WORKING HOURS.

ROAD WORK AHEAD
W20-1-48
STA. 21+00

ROAD WORK AHEAD
W20-1-48
STA. 68+50

5' MIN.

10' MIN.

WD

NOTES:

1. FOR TEMPORARY SIGNAL DETAILS, SEE SHEET 15

0 20 40
Horiz 1 inch = 20 Feet

CALCULATED JAR
CHECKED DKA

MAINTENANCE OF TRAFFIC PLAN - NW CORNER CONST.
E RICH ST AT S FOURTH ST

IMPROVEMENTS OF
E RICH STREET FROM S 3RD ST TO S GRANT AVE
FRA E RICH ST SIGNALS

3921-E

16
95

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LEGEND

- TRAFFIC FLOW ARROW
- WORK ZONE
- W.Z. DRUM
- K W.Z. TEMPORARY SIGN SUPPORT
- TEMPORARY WOOD POLE

S. FOURTH STREET

E. RICH STREET

50' TAPER

10' MIN.

W20-1-48
STA. 22+00

W1-H16L-36
STA. 20+50

W1-H16L-36
STA. 21+00

W20-1-48
STA. 68+50

NOTES:

1. FOR TEMPORARY SIGNAL DETAILS, SEE SHEET 15

0 20 40
Horiz 1 inch = 20 feet

CALCULATED JAR
CHECKED DKA

MAINTENANCE OF TRAFFIC PLAN - NE CORNER CONST.
E RICH ST AT S FOURTH ST

IMPROVEMENTS OF
E RICH STREET FROM S 3RD ST TO S GRANT AVE
FRA E RICH ST SIGNALS

3921-E

17
95

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LEGEND

- TRAFFIC FLOW ARROW
- WORK ZONE
- W.Z. DRUM
- W.Z. TEMPORARY SIGN SUPPORT
- TEMPORARY WOOD POLE

S. FOURTH STREET

E. RICH STREET

R6-1L-36
ONE WAY
STOP
R1-1-30
STA. 21+27

R6-1L-36
ONE WAY
STOP
R1-1-30
STA. 22+62

W1-H16R-36
STA. 20+50

FLASHING ARROW PANEL
STA. 21+00

W1-H16R-36
STA. 21+50

W1-H16R-36
STA. 22+00

FLASHING ARROW PANEL
STA. 22+40

W1-H16R-36
STA. 23+00

W1-H16R-36
STA. 23+50

10' MIN.

300' MERGE TAPER (25 MPH TAPER RATE)

ONE WAY
STOP

ONE WAY
STOP

ROAD WORK AHEAD
W20-1-48
STA. 68+40

W4-2L-48
(PLACED 100' AHEAD OF MERGE TAPER)

LEFT 2 LANES CLOSED AHEAD
W20-5a-48

ROAD WORK AHEAD
W20-1-48

100'

100'

NOTES:

1. FOR TEMPORARY SIGNAL DETAILS, SEE SHEET 15

0 20 40
Horiz 1 inch = 20 feet

CALCULATED JAR
CHECKED DKA

MAINTENANCE OF TRAFFIC PLAN - SE CORNER CONST.
E RICH ST AT S FOURTH ST

IMPROVEMENTS OF
E RICH STREET FROM S 3RD ST TO S GRANT AVE
FRA E RICH ST SIGNALS

3921-E

18
95

LEGEND

- TRAFFIC FLOW ARROW
- WORK ZONE
- W.Z. DRUM
- K W.Z. TEMPORARY SIGN SUPPORT
- TEMPORARY WOOD POLE

S. FOURTH STREET

E. RICH STREET

W1-H16R-36
STA. 19+00

10' MIN.

5' MIN.

ROAD WORK AHEAD
W20-1-48
STA. 20+75

ROAD WORK AHEAD
W20-1-48
STA. 68+25

NOTES:

1. FOR TEMPORARY SIGNAL DETAILS, SEE SHEET 15

0 20 40
Horiz 1 inch = 20 Feet

CALCULATED JAR
CHECKED DKA

MAINTENANCE OF TRAFFIC PLAN - SW CORNER CONST.
E RICH ST AT S FOURTH ST

IMPROVEMENTS OF
E RICH STREET FROM S 3RD ST TO S GRANT AVE
FRA E RICH ST SIGNALS

3921-E

19
95

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Ex. Embedded Strain Pole (SEE SIGNAL PLAN)
W/ Ex. Pole Mounted Controller (RELOCATE TO TEMP CABINET)
W/Ex. Layer 2 Ethernet Switch (RELOCATE TO TEMP CABINET)
W/(2)-Ex. Ped Signal Heads (SEE SIGNAL PLAN)
W/(1)-Ex. Spread Spectrum Radio (RELOCATE TO TEMP WOOD POLE)
STA. 24+52.9, 38.7' LT.

TEMPORARY WOOD POLE
W/(1)-RELOCATED/TEMPORARY CONTROLLER
W/(2)-TEMPORARY PEDESTRIAN SIGNAL HEADS
W/(1)-TEMPORARY 30' BRACKET ARM W/ (1)-RELOCATED SPREAD SPECTRUM RADIO (SEE NOTE 13)
STA. 24+36.6, 39.5' LT.

Ex. Strain Pole (REMAIN FOR TEMP. SIGNAL)
W/(2)-Ex. Ped Signal Heads (REMAIN FOR TEMP. SIGNAL)
STA. 25+11.8, 38.6' LT.

E Rich St
RELOCATED

S 5TH ST
ONE WAY
ONE WAY
ACCESSIBLE ROUTE
ACCESSIBLE ROUTE

RELOCATED
TURNING TRAFFIC MUST YIELD TO PEDESTRIANS

E. RICH STREET

S. FIFTH STREET

TEMPORARY WOOD POLE
W/(2)-TEMPORARY PEDESTRIAN SIGNAL HEADS
STA. 24+36.3, 36.8' RT.

ONE WAY
ONE WAY
S 5TH ST
E Rich St
(REMAIN FOR TEMP. SIGNAL)

Ex. Embedded Strain Pole (REMAIN FOR TEMP. SIGNAL)
W/(2)-Ex. Ped Signal Heads (REMAIN FOR TEMP. SIGNAL)
STA. 25+11.4, 43.2' RT.

TURNING TRAFFIC MUST YIELD TO PEDESTRIANS
RELOCATED

RELOCATED
ONE WAY

LEGEND

SIGNAL HEADS:		EX. VEHICULAR
		TEMP./RELOCATED VEHICULAR
		EX. PEDESTRIAN
		TEMP./RELOCATED PEDESTRIAN
		EX. PUSHBUTTON
		EX. SPREAD SPECTRUM RADIO
		TEMP./RELOCATED SPREAD SPECTRUM RADIO
SIGNAL POLES:		EX. SIGNAL SUPPORT W/ MAST ARM
		EX. COMB. SIGNAL SUPPORT W/ MAST ARM
		EX. EMBEDDED POLE
		TEMP. WOOD POLE
CONTROLLERS & CABINETS:	TC	EX. POLE MTD. CONTROLLER
	TC	TEMP./RELOCATED POLE MTD. CONTROLLER
PULL BOXES:	TR	EX. PULL BOX
DETECTION	SK	TEMP. STOP LINE RADAR DETECTION UNIT

EXISTING VEHICULAR SIGNAL HEAD CONFIGURATIONS (REMOVE)

R Y G

1 - 6

TEMPORARY VEHICULAR SIGNAL HEAD CONFIGURATIONS 12" HEADS

R Y G

7 - 12

1. AN EXISTING TRAFFIC SIGNAL, OR ANY PART THEREOF, SHALL NOT BE TAKEN OUT OF SERVICE UNLESS ALTERNATE MEANS OF TRAFFIC CONTROL ARE IN PLACE AND OPERATIONAL. UNLESS DIRECTED BY THE CITY OF COLUMBUS CITY ENGINEER OR APPOINTED DESIGNEE, EXISTING TRAFFIC SIGNALS SHALL NOT BE TAKEN OUT OF SERVICE BETWEEN THE HOURS OF:
   - 7:00 AM TO 9:00 AM MONDAY THROUGH FRIDAY AND
   - 4:00 PM TO 6:00 PM, MONDAY THROUGH FRIDAY (3:30 PM – 6:00 PM FOR THE DOWNTOWN BUSINESS DISTRICT)
   - OR ONE HOUR BEFORE SUNSET THROUGH ONE-HALF HOUR AFTER SUN RISE, WHICHEVER IS THE LONGEST DURATION.
2. ANY UNUSED SIGNAL HEAD, PEDESTRIAN SIGNAL HEAD, PEDESTRIAN PUSHBUTTON, OR POLE OR SPAN/ARM MOUNTED SIGN SHALL BE COVERED AND DISCONNECTED. VEHICULAR SIGNAL HEADS AND PEDESTRIAN SIGNAL HEADS SHALL BE COVERED PER THE REQUIREMENTS OF CMSC 632.25.
3. VEHICULAR SIGNAL HEADS SHALL BE ALIGNED PER THE PLAN. NO TWO VEHICULAR SIGNAL HEADS SHALL BE LOCATED WITHIN EIGHT FEET OF ONE ANOTHER, MEASURED PERPENDICULAR TO THE TRAVEL LANE.
4. SIGNS SHALL BE ALIGNED PER THE PLANS. EXISTING SIGNS IN CONFLICT WITH THE PROPOSED TEMPORARY TRAFFIC CONTROL SETUP SHALL BE COVERED OR TEMPORARILY REMOVED
5. WEATHERPROOF SPLICES MAY BE INTRODUCED INTO SIGNAL CABLE IN ORDER TO RELOCATE EXISTING VEHICULAR SIGNAL HEADS. NO SPLICES SHALL REMAIN IN THE CABLE WHEN THE SIGNAL HEADS ARE RETURNED TO THEIR ORIGINAL POSITION.
6. ALL EXISTING VEHICULAR DETECTION SHALL BE MAINTAINED AT ALL TIMES. LOOPS THAT CANNOT BE USED AS A RESULT OF LANE SHIFTS, LANE CLOSURES, ETC. SHALL BE DEACTIVATED DURING CONSTRUCTION. TEMPORARY RADAR OR VIDEO DETECTION SHALL BE USED TO MAINTAIN DETECTION WHEN AN EXISTING LOOP CANNOT BE USED. IF THE EXISTING DETECTION IS RADAR OR VIDEO, THE ZONES ON THE EXISTING RADAR OR VIDEO UNIT SHALL BE RELOCATED TO THE NEW LANE ALIGNMENT. WHEN TEMPORARY RADAR DETECTION IS USED, DILEMMA ZONE DETECTION SHALL BE PROVIDED FOR APPROACHES WITH SPEEDS GREATER THAN 40 MPH.
7. EXISTING PEDESTRIAN PUSHBUTTONS, PUSHBUTTON SIGNS, AND SIGNAL HEADS SHALL BE MAINTAINED FOR ALL CROSSWALKS THAT REMAIN OPEN DURING CONSTRUCTION. TEMPORARY PUSHBUTTONS AND SIGNS OR RELOCATED PUSHBUTTONS AND SIGNS SHALL BE POSITIONED ACCORDING TO THE CITY OF COLUMBUS ADA RULES AND REGULATIONS. RELOCATED PEDESTRIAN SIGNAL HEADS SHALL BE POSITIONED SUCH THAT THE HEAD IS AIMED AT THE CENTER OF THE CROSSWALK AREA (NOT THE CURB RAMP) THAT IS OPPOSITE THE UNIT. A MINIMUM OF ONE CROSSWALK TO CROSS EACH STREET AT A SIGNALIZED INTERSECTION SHALL BE MAINTAINED AT ALL TIMES. FOR SIGNALIZED INTERSECTIONS WITH THREE LEGS, THE CROSSWALK TO CROSS THE DEAD END STREET MAY BE CLOSED AS LONG A PEDESTRIAN PATH IS PROVIDED ALONG THE "TOP SIDE" OF THE INTERSECTION.
8. UNLESS NOTED IN THE PLANS, THE TRAFFIC SIGNAL SHALL UTILIZE THE EXISTING TIMING AND PHASING.
9. IF ANY CHANGES ARE MADE TO THE SIGNAL OPERATION INCLUDING PHASING CHANGES, PHASE OMISSIONS, TIMING CHANGES, ETC., SIGNAL OPERATION CHANGED SIGNS (W23-H2B) SHALL BE INSTALLED ON THE SPAN OR ARM FOR ALL DIRECTIONS. CENTER THE SIGN OVER THE APPROACH. SIGN SHALL BE LEFT IN PLACE NO LONGER THAN THE DURATION SPECIFIED UNDER ITEM 630 SIGNING, MISC.: TRAFFIC SIGNAL SIGNS.
10. TEMPORARY WOOD SIGNAL POLES SHALL BE SIZED AND THE TEMPORARY SIGNAL SPAN SHALL BE ADJUSTED SUCH THAT THE MINIMUM ROADWAY CLEARANCE TO THE BOTTOM OF THE LOWEST SIGNAL HEAD IS 16.5' MINIMUM AND THE HIGHEST SIGNAL HEAD IS 19' MAXIMUM.
11. WHEN TEMPORARY TRAFFIC SIGNAL CABINETS ARE USED, BASE MOUNTED CABINETS SHALL BE MOUNTED ON A STURDY FOUNDATION SECURE FROM ANIMALS AND WEATHER. POLE MOUNTED CABINETS SHALL BE POSITIONED TO PREVENT AN OVERHANG GREATER THAN 4 IN. INTO A PEDESTRIAN PATHWAY.
12. THE CONTRACTOR IS RESPONSIBLE FOR LOCATING, COORDINATION, AND PAYING FOR POWER SERVICE AS NEEDED FOR THE MAINTENANCE OF TRAFFIC PHASES.
13. SIGNAL SHALL REMAIN CONNECTED TO THE CTSS THROUGHOUT CONSTRUCTION. THE CONTRACTOR SHALL INSTALL A TEMPORARY DROP CABLE OR RELOCATE THE EXISTING DROP CABLE TO THE TEMPORARY CABINET. ALTERNATIVELY THE CONTRACTOR MAY RELOCATE AND ACTIVATE THE EXISTING SPREAD SPECTRUM RADIOS AT THIS INTERSECTION AND THE ADJACENT INTERSECTIONS TO MAINTAIN INTERCONNECT CONNECTIVITY.
14. SEE PERMANENT SIGNAL PLANS FOR REMOVAL OF EXISTING SIGNAL ITEMS.

- 1/21/20

N

0 10 20
Hori: 1 inch = 10 feet

CALCULATED JAR
CHECKED DKA

TEMPORARY SIGNAL PLAN
E RICH STREET AT FIFTH STREET

IMPROVEMENTS OF
E RICH STREET FROM S 3RD ST TO S GRANT AVE
FRA E RICH ST SIGNALS

3921-E

20
95

LEGEND

- TRAFFIC FLOW ARROW
- WORK ZONE
- W.Z. DRUM
- CHANNELIZER CONE (42" GRABBER)
- W.Z. TEMPORARY SIGN SUPPORT
- TEMPORARY WOOD POLE

S. FIFTH STREET

E. RICH STREET

W20-1-48
ROAD WORK AHEAD

100'

W20-7A-36
(PLACED 100' AHEAD OF SHOULDER CLOSURE)
FLAGGER AHEAD

50' SHIFT TAPER

50' TAPER

W1-H16L-36
STA. 25+50

W1-H16L-36
STA. 26+00

W20-1-48
ROAD WORK AHEAD
STA. 27+00

10' MIN.

LEO/ FLAGGER

W1-H16L-36
STA. 89+25

50' SHIFT TAPER

W1-H16L-36
STA. 88+70

W1-4L-48
(PLACED 100' AHEAD OF SHOULDER CLOSURE)

50'

FLAGGER AHEAD

W20-7A-36

50'

ROAD WORK AHEAD

W20-1-48

NOTES:

1. FOR TEMPORARY SIGNAL DETAILS, SEE SHEET 20

0 20 40
Horiz 1 inch = 20 feet

CALCULATED JAR
CHECKED DKA

MAINTENANCE OF TRAFFIC PLAN - NE CORNER CONST.
E RICH ST AT S FIFTH ST

IMPROVEMENTS OF
E RICH STREET FROM S 3RD ST TO S GRANT AVE
FRA E RICH ST SIGNALS

3921-E

21
95

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LEGEND

- TRAFFIC FLOW ARROW
- WORK ZONE
- W.Z. DRUM
- CHANNELIZER CONE (42" GRABBER)
- W.Z. TEMPORARY SIGN SUPPORT
- TEMPORARY WOOD POLE

W20-1-48
ROAD WORK AHEAD

50'

W20-7A-36
FLAGGER AHEAD

50'

W1-4R-48
(PLACED 100' AHEAD OF SHOULDER CLOSURE)

KEEP RIGHT
R4-7B-18
STA. 90+45

S. FIFTH STREET

R4-7B-18
STA. 91+25
KEEP RIGHT

50' SHIFT TAPER

10' MIN.

LEO/ FLAGGER

E. RICH STREET

W1-H16R-36
STA. 26+00

W1-H16R-36
STA. 26+50

10' MIN.

50' TAPER

W20-1-48
ROAD WORK AHEAD
STA. 27+50

50' SHIFT TAPER

W1-H16L-36
STA. 89+25

W1-4L-48
(PLACED 100' AHEAD OF SHOULDER CLOSURE)

50'

FLAGGER AHEAD

W20-7A-36

50'

W1-H16L-36
STA. 88+70

ROAD WORK AHEAD

W20-1-48

NOTES:

1. FOR TEMPORARY SIGNAL DETAILS, SEE SHEET 20

Horiz 1 inch = 20 Feet
0 20 40

CALCULATED JAR
CHECKED DKA

MAINTENANCE OF TRAFFIC PLAN - SE CORNER CONST.
E RICH ST AT S FIFTH ST

IMPROVEMENTS OF
E RICH STREET FROM S 3RD ST TO S GRANT AVE
FRA E RICH ST SIGNALS

3921-E

22
95

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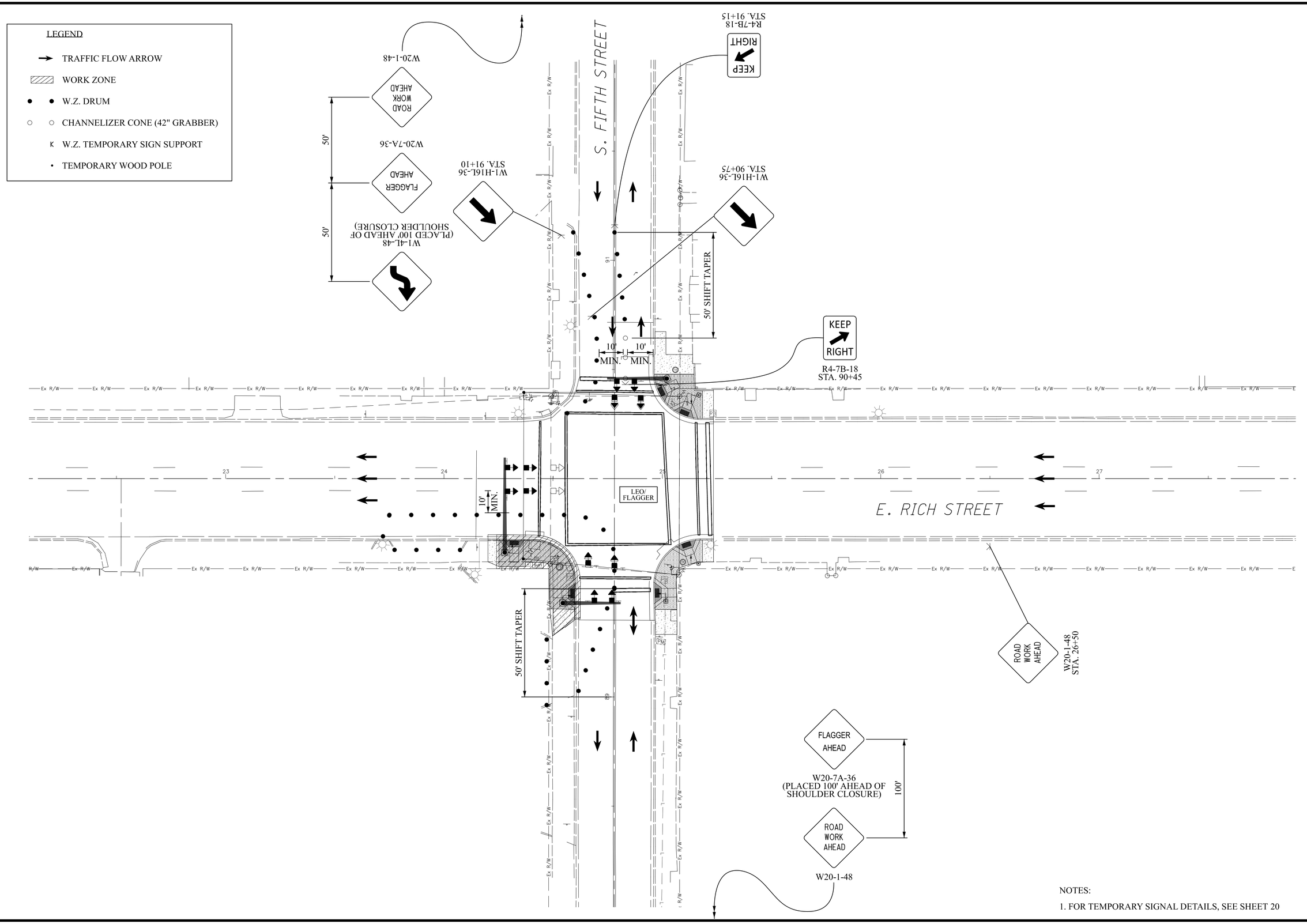

NOTES:

1. FOR TEMPORARY SIGNAL DETAILS, SEE SHEET 20

0 20 40
Horiz 1 inch = 20 Feet

CALCULATED JAR
CHECKED DKA

MAINTENANCE OF TRAFFIC PLAN - SW CORNER CONST.
E RICH ST AT S FIFTH ST

IMPROVEMENTS OF
E RICH STREET FROM S 3RD ST TO S GRANT AVE
FRA E RICH ST SIGNALS

3921-E

23
95

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LEGEND

- TRAFFIC FLOW ARROW
- WORK ZONE
- W.Z. DRUM
- CHANNELIZER CONE (42" GRABBER)
- W.Z. TEMPORARY SIGN SUPPORT
- TEMPORARY WOOD POLE

S. FIFTH STREET

E. RICH STREET

W20-1-48
ROAD WORK AHEAD

50'

W20-7A-36
FLAGGER AHEAD

50'

W1-4L-48
(PLACED 100' AHEAD OF SHOULDER CLOSURE)

W1-H16L-36
STA. 91+10

W1-H16L-36
STA. 90+75

50' SHIFT TAPER

ROAD WORK AHEAD
W20-1-48
STA. 26+05

10' MIN.

LEO/ FLAGGER

R4-7B-18
STA. 89+05
KEEP RIGHT

50' SHIFT TAPER

10' MIN.

KEEP RIGHT
R4-7B-18
STA. 88+95

W1-4R-48
(PLACED 100' AHEAD OF SHOULDER CLOSURE)
50'

FLAGGER AHEAD
W20-7A-36
50'

ROAD WORK AHEAD
W20-1-48

NOTES:

1. FOR TEMPORARY SIGNAL DETAILS, SEE SHEET 20

0 20 40
Horiz 1 inch = 20 feet

CALCULATED JAR
CHECKED DKA

MAINTENANCE OF TRAFFIC PLAN - NW CORNER CONST.
E RICH ST AT S FIFTH ST

IMPROVEMENTS OF
E RICH STREET FROM S 3RD ST TO S GRANT AVE
FRA E RICH ST SIGNALS

3921-E

24
95

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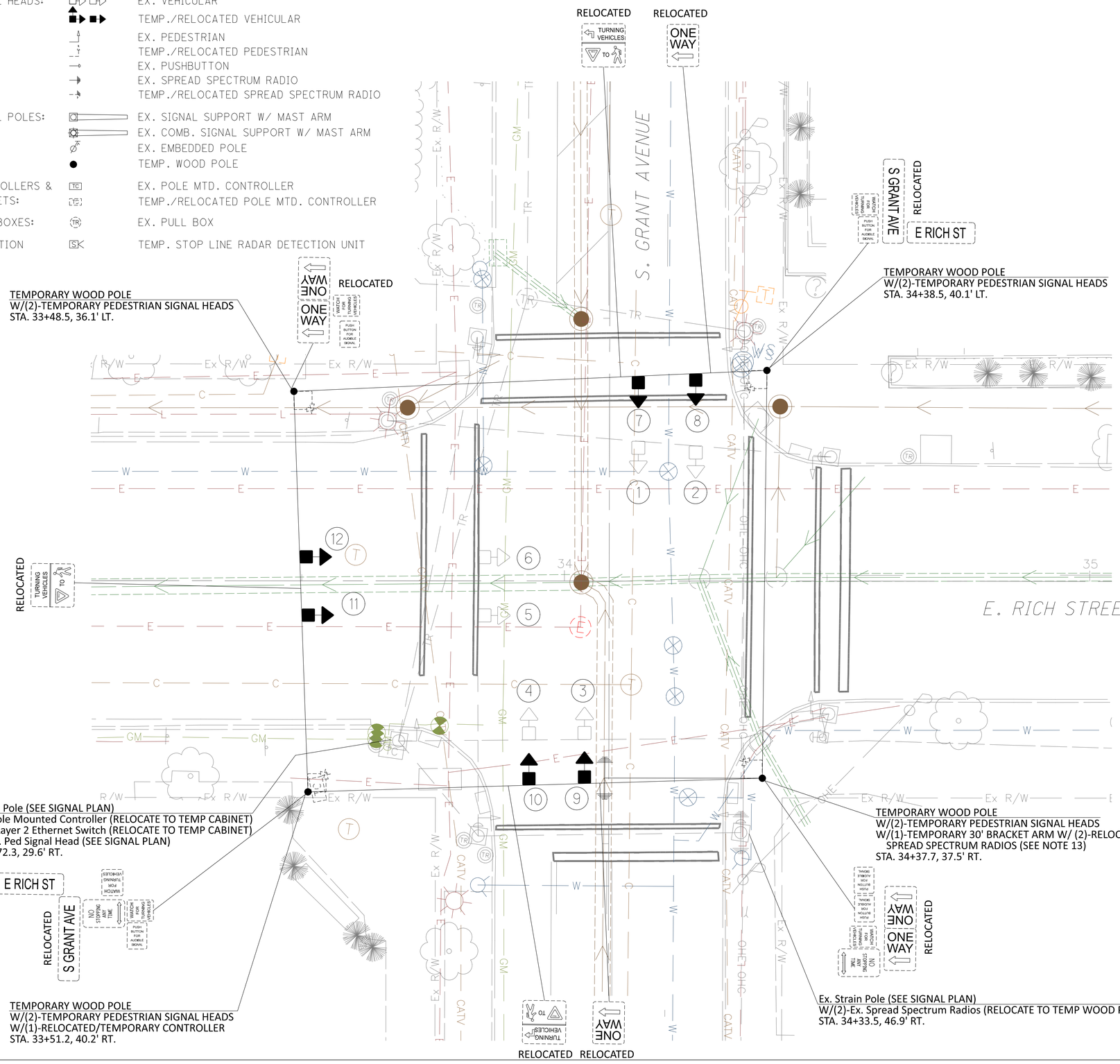
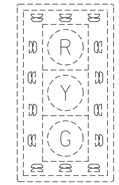
LEGEND

SIGNAL HEADS:		EX. VEHICULAR
		TEMP./RELOCATED VEHICULAR
		EX. PEDESTRIAN
		TEMP./RELOCATED PEDESTRIAN
		EX. PUSHBUTTON
		EX. SPREAD SPECTRUM RADIO
		TEMP./RELOCATED SPREAD SPECTRUM RADIO
SIGNAL POLES:		EX. SIGNAL SUPPORT W/ MAST ARM
		EX. COMB. SIGNAL SUPPORT W/ MAST ARM
		EX. EMBEDDED POLE
		TEMP. WOOD POLE
CONTROLLERS & CABINETS:	TC	EX. POLE MTD. CONTROLLER
	TC	TEMP./RELOCATED POLE MTD. CONTROLLER
PULL BOXES:	TR	EX. PULL BOX
DETECTION	SK	TEMP. STOP LINE RADAR DETECTION UNIT

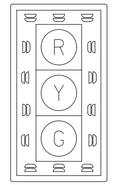


EXISTING VEHICULAR SIGNAL HEAD CONFIGURATIONS (REMOVE)



1 - 6

TEMPORARY VEHICULAR SIGNAL HEAD CONFIGURATIONS 12" HEADS



7 - 12

1. AN EXISTING TRAFFIC SIGNAL, OR ANY PART THEREOF, SHALL NOT BE TAKEN OUT OF SERVICE UNLESS ALTERNATE MEANS OF TRAFFIC CONTROL ARE IN PLACE AND OPERATIONAL. UNLESS DIRECTED BY THE CITY OF COLUMBUS CITY ENGINEER OR APPOINTED DESIGNEE, EXISTING TRAFFIC SIGNALS SHALL NOT BE TAKEN OUT OF SERVICE BETWEEN THE HOURS OF:
   - 7:00 AM TO 9:00 AM MONDAY THROUGH FRIDAY AND
   - 4:00 PM TO 6:00 PM, MONDAY THROUGH FRIDAY (3:30 PM – 6:00 PM FOR THE DOWNTOWN BUSINESS DISTRICT)
   - OR ONE HOUR BEFORE SUNSET THROUGH ONE-HALF HOUR AFTER SUN RISE, WHICHEVER IS THE LONGEST DURATION.
2. ANY UNUSED SIGNAL HEAD, PEDESTRIAN SIGNAL HEAD, PEDESTRIAN PUSHBUTTON, OR POLE OR SPAN/ARM MOUNTED SIGN SHALL BE COVERED AND DISCONNECTED. VEHICULAR SIGNAL HEADS AND PEDESTRIAN SIGNAL HEADS SHALL BE COVERED PER THE REQUIREMENTS OF CMSC 632.25.
3. VEHICULAR SIGNAL HEADS SHALL BE ALIGNED PER THE PLAN. NO TWO VEHICULAR SIGNAL HEADS SHALL BE LOCATED WITHIN EIGHT FEET OF ONE ANOTHER, MEASURED PERPENDICULAR TO THE TRAVEL LANE.
4. SIGNS SHALL BE ALIGNED PER THE PLANS. EXISTING SIGNS IN CONFLICT WITH THE PROPOSED TEMPORARY TRAFFIC CONTROL SETUP SHALL BE COVERED OR TEMPORARILY REMOVED
5. WEATHERPROOF SPLICES MAY BE INTRODUCED INTO SIGNAL CABLE IN ORDER TO RELOCATE EXISTING VEHICULAR SIGNAL HEADS. NO SPLICES SHALL REMAIN IN THE CABLE WHEN THE SIGNAL HEADS ARE RETURNED TO THEIR ORIGINAL POSITION.
6. ALL EXISTING VEHICULAR DETECTION SHALL BE MAINTAINED AT ALL TIMES. LOOPS THAT CANNOT BE USED AS A RESULT OF LANE SHIFTS, LANE CLOSURES, ETC. SHALL BE DEACTIVATED DURING CONSTRUCTION. TEMPORARY RADAR OR VIDEO DETECTION SHALL BE USED TO MAINTAIN DETECTION WHEN AN EXISTING LOOP CANNOT BE USED. IF THE EXISTING DETECTION IS RADAR OR VIDEO, THE ZONES ON THE EXISTING RADAR OR VIDEO UNIT SHALL BE RELOCATED TO THE NEW LANE ALIGNMENT. WHEN TEMPORARY RADAR DETECTION IS USED, DILEMMA ZONE DETECTION SHALL BE PROVIDED FOR APPROACHES WITH SPEEDS GREATER THAN 40 MPH.
7. EXISTING PEDESTRIAN PUSHBUTTONS, PUSHBUTTON SIGNS, AND SIGNAL HEADS SHALL BE MAINTAINED FOR ALL CROSSWALKS THAT REMAIN OPEN DURING CONSTRUCTION. TEMPORARY PUSHBUTTONS AND SIGNS OR RELOCATED PUSHBUTTONS AND SIGNS SHALL BE POSITIONED ACCORDING TO THE CITY OF COLUMBUS ADA RULES AND REGULATIONS. RELOCATED PEDESTRIAN SIGNAL HEADS SHALL BE POSITIONED SUCH THAT THE HEAD IS AIMED AT THE CENTER OF THE CROSSWALK AREA (NOT THE CURB RAMP) THAT IS OPPOSITE THE UNIT. A MINIMUM OF ONE CROSSWALK TO CROSS EACH STREET AT A SIGNALIZED INTERSECTION SHALL BE MAINTAINED AT ALL TIMES. FOR SIGNALIZED INTERSECTIONS WITH THREE LEGS, THE CROSSWALK TO CROSS THE DEAD END STREET MAY BE CLOSED AS LONG A PEDESTRIAN PATH IS PROVIDED ALONG THE "TOP SIDE" OF THE INTERSECTION.
8. UNLESS NOTED IN THE PLANS, THE TRAFFIC SIGNAL SHALL UTILIZE THE EXISTING TIMING AND PHASING.
9. IF ANY CHANGES ARE MADE TO THE SIGNAL OPERATION INCLUDING PHASING CHANGES, PHASE OMISSIONS, TIMING CHANGES, ETC., SIGNAL OPERATION CHANGED SIGNS (W23-H2B) SHALL BE INSTALLED ON THE SPAN OR ARM FOR ALL DIRECTIONS. CENTER THE SIGN OVER THE APPROACH. SIGN SHALL BE LEFT IN PLACE NO LONGER THAN THE DURATION SPECIFIED UNDER ITEM 630 SIGNING, MISC.: TRAFFIC SIGNAL SIGNS.
10. TEMPORARY WOOD SIGNAL POLES SHALL BE SIZED AND THE TEMPORARY SIGNAL SPAN SHALL BE ADJUSTED SUCH THAT THE MINIMUM ROADWAY CLEARANCE TO THE BOTTOM OF THE LOWEST SIGNAL HEAD IS 16.5' MINIMUM AND THE HIGHEST SIGNAL HEAD IS 19' MAXIMUM.
11. WHEN TEMPORARY TRAFFIC SIGNAL CABINETS ARE USED, BASE MOUNTED CABINETS SHALL BE MOUNTED ON A STURDY FOUNDATION SECURE FROM ANIMALS AND WEATHER. POLE MOUNTED CABINETS SHALL BE POSITIONED TO PREVENT AN OVERHANG GREATER THAN 4 IN. INTO A PEDESTRIAN PATHWAY.
12. THE CONTRACTOR IS RESPONSIBLE FOR LOCATING, COORDINATION, AND PAYING FOR POWER SERVICE AS NEEDED FOR THE MAINTENANCE OF TRAFFIC PHASES.
13. SIGNAL SHALL REMAIN CONNECTED TO THE CTSS THROUGHOUT CONSTRUCTION. THE CONTRACTOR SHALL INSTALL A TEMPORARY DROP CABLE OR RELOCATE THE EXISTING DROP CABLE TO THE TEMPORARY CABINET. ALTERNATIVELY THE CONTRACTOR MAY RELOCATE AND ACTIVATE THE EXISTING SPREAD SPECTRUM RADIOS AT THIS INTERSECTION AND THE ADJACENT INTERSECTIONS TO MAINTAIN INTERCONNECT CONNECTIVITY.
14. SEE PERMANENT SIGNAL PLANS FOR REMOVAL OF EXISTING SIGNAL ITEMS.

- 1/21/20

N

0 10 20
Hori: 1 inch = 10 feet

CALCULATED JAR
CHECKED DKA

TEMPORARY SIGNAL PLAN
RICH STREET AT GRANT AVENUE

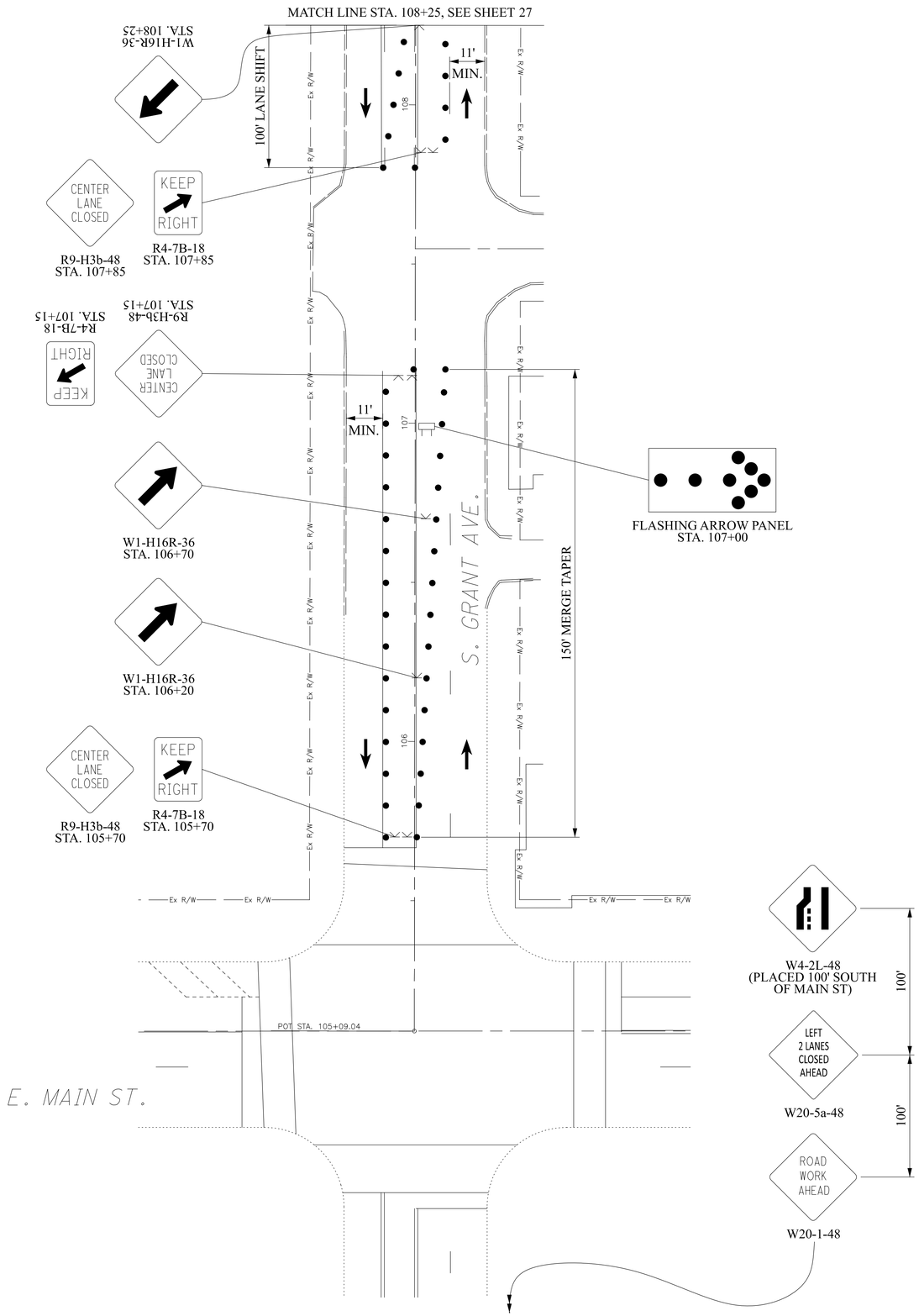
IMPROVEMENTS OF
E RICH STREET FROM S 3RD ST TO S GRANT AVE
FRA E RICH ST SIGNALS

3921-E

25
95

LEGEND

- TRAFFIC FLOW ARROW
- WORK ZONE
- W.Z. DRUM
- CHANNELIZER CONE (42" GRABBER)
- K W.Z. TEMPORARY SIGN SUPPORT
- TEMPORARY WOOD POLE



N

0 20 40
Horiz 1 inch = 20 feet

CALCULATED JAR
CHECKED DKA

MAINTENANCE OF TRAFFIC PLAN - NW CORNER CONST.
E RICH ST AT S GRANT ST

IMPROVEMENTS OF
E RICH STREET FROM S 3RD ST TO S GRANT AVE
FRA E RICH ST SIGNALS

3921-E

26
95

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LEGEND

- TRAFFIC FLOW ARROW
- WORK ZONE
- W.Z. DRUM
- CHANNELIZER CONE (42" GRABBER)
- W.Z. TEMPORARY SIGN SUPPORT
- TEMPORARY WOOD POLE

S. GRANT AVE.

W20-1-48
ROAD WORK AHEAD

100'

W1-4L-36
(PLACED 100' AHEAD OF LANE SHIFT)

W1-H16L-36
STA. 111+70

W1-H16L-36
STA. 111+20

100' LANE SHIFT

R4-7B-18
STA. 111+40
KEEP RIGHT

KEEP RIGHT
R4-7B-18
STA. 110+50

12' MIN.
11' MIN.
1' MIN.

ROAD WORK AHEAD
W20-1-48
STA. 35+50

E. RICH STREET

R4-7B-18
STA. 109+45
KEEP RIGHT

W1-H16R-36
STA. 108+75

100' LANE SHIFT

MATCH LINE STA. 108+25, SEE SHEET 26

NOTES:

1. FOR TEMPORARY SIGNAL DETAILS, SEE SHEET 25

0 20 40
Horiz 1 inch = 20 feet

CALCULATED JAR
CHECKED DKA

MAINTENANCE OF TRAFFIC PLAN - NW CORNER CONST.
E RICH ST AT S GRANT ST

IMPROVEMENTS OF
E RICH STREET FROM S 3RD ST TO S GRANT AVE
FRA E RICH ST SIGNALS

3921-E

27
95

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LEGEND

- TRAFFIC FLOW ARROW
- WORK ZONE
- W.Z. DRUM
- K W.Z. TEMPORARY SIGN SUPPORT
- TEMPORARY WOOD POLE

R4-7B-18
(PLACED ON YELLOW TRANSVERSE LINES AT STA. 112+15)

KEEP RIGHT

S. GRANT AVE.

R4-7B-18
STA. 110+50

12' MIN.

W1-H16L-36
STA. 34+75

W1-H16L-36
STA. 35+30

ROAD WORK AHEAD

W20-1-48
STA. 36+50

10' MIN.

E. RICH STREET

10' MIN.

FLASHING ARROW PANEL
STA. 109+35

W1-H16L-36
STA. 109+00

W1-H16L-36
STA. 108+50

125' MERGE TAPER

W1-H16L-36
(PLACED AT BEGINNING OF MERGE TAPER)

100'

RIGHT LANE CLOSED AHEAD

W20-5R-48

100'

ROAD WORK AHEAD

W20-1-48

NOTES:

1. FOR TEMPORARY SIGNAL DETAILS, SEE SHEET 25

0 20 40
Horiz 1 inch = 20 feet

CALCULATED JAR
CHECKED DKA

MAINTENANCE OF TRAFFIC PLAN - NE CORNER CONST.
E RICH ST AT S GRANT ST

IMPROVEMENTS OF
E RICH STREET FROM S 3RD ST TO S GRANT AVE
FRA E RICH ST SIGNALS

3921-E

28
95

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LEGEND

- TRAFFIC FLOW ARROW
- WORK ZONE
- W.Z. DRUM
- W.Z. TEMPORARY SIGN SUPPORT
- TEMPORARY WOOD POLE

S. GRANT AVE.

E. RICH STREET

W1-H16R-36
STA. 34+70

W1-H16R-36
STA. 35+20

10' MIN.

10' MIN.

FLASHING ARROW PANEL
STA. 109+35

W1-H16L-36
STA. 109+00

W1-H16L-36
STA. 108+50

125' MERGE TAPER

W1-H16L-36
(PLACED AT BEGINNING
OF MERGE TAPER)

100'

RIGHT LANE
CLOSED
AHEAD

W20-5R-48

100'

ROAD
WORK
AHEAD

W20-1-48

ROAD
WORK
AHEAD

W20-1-48
STA. 36+50

NOTES:

1. FOR TEMPORARY SIGNAL DETAILS, SEE SHEET 25

0 20 40
Horiz 1 inch = 20 feet

CALCULATED JAR
CHECKED DKA

MAINTENANCE OF TRAFFIC PLAN - SE CORNER CONST.
E RICH ST AT S GRANT ST

IMPROVEMENTS OF
E RICH STREET FROM S 3RD ST TO S GRANT AVE
FRA E RICH ST SIGNALS

3921-E

29
95

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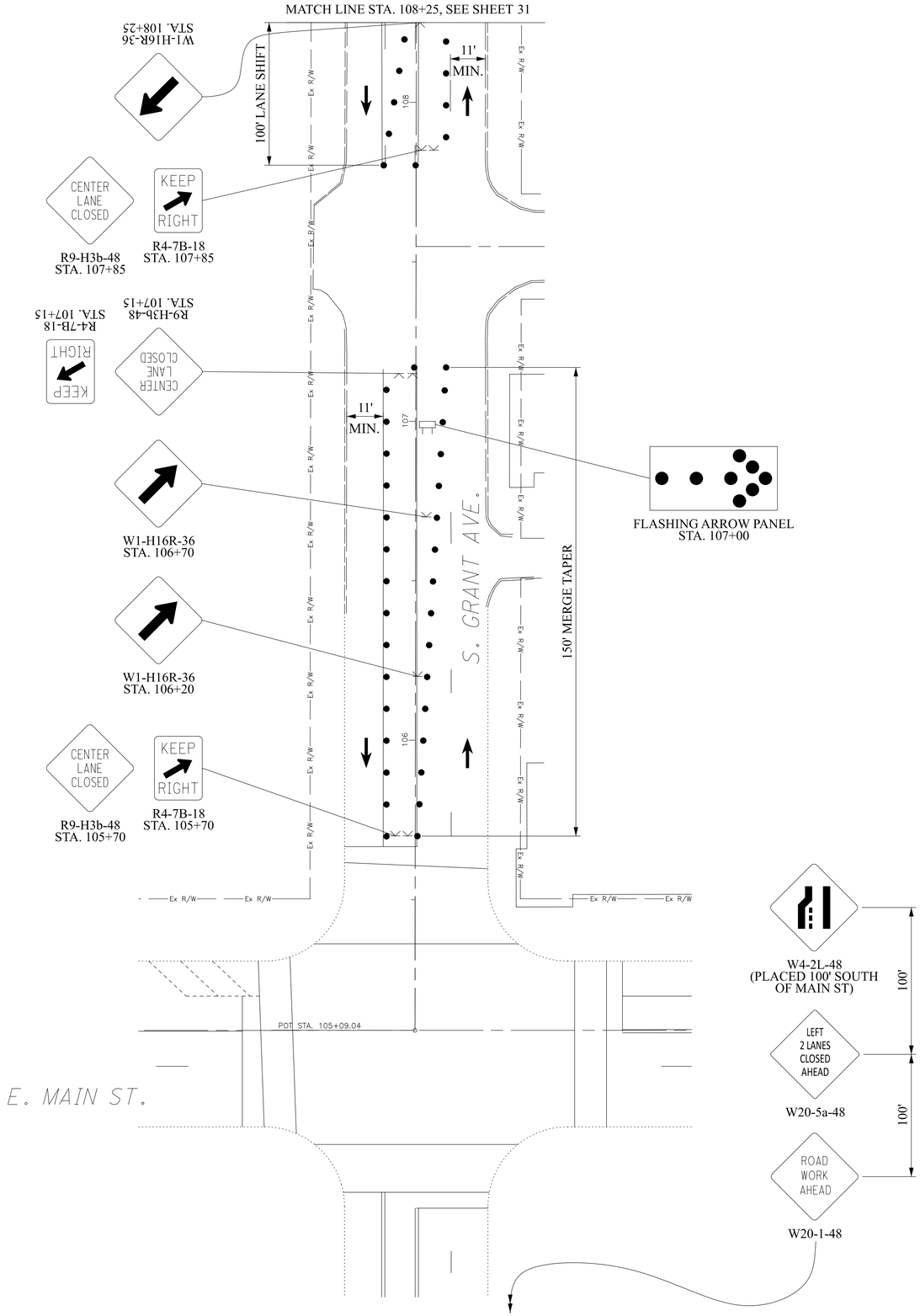
LEGEND

- TRAFFIC FLOW ARROW
- WORK ZONE
- W.Z. DRUM
- CHANNELIZER CONE (42" GRABBER)
- W.Z. TEMPORARY SIGN SUPPORT
- TEMPORARY WOOD POLE



0 20 40
Horiz 1 inch = 20 feet

CALCULATED JAR
CHECKED DKA

MAINTENANCE OF TRAFFIC PLAN - SW CORNER CONST.
E RICH ST AT S GRANT ST

IMPROVEMENTS OF
E RICH STREET FROM S 3RD ST TO S GRANT AVE
FRA E RICH ST SIGNALS

3921-E

30
95

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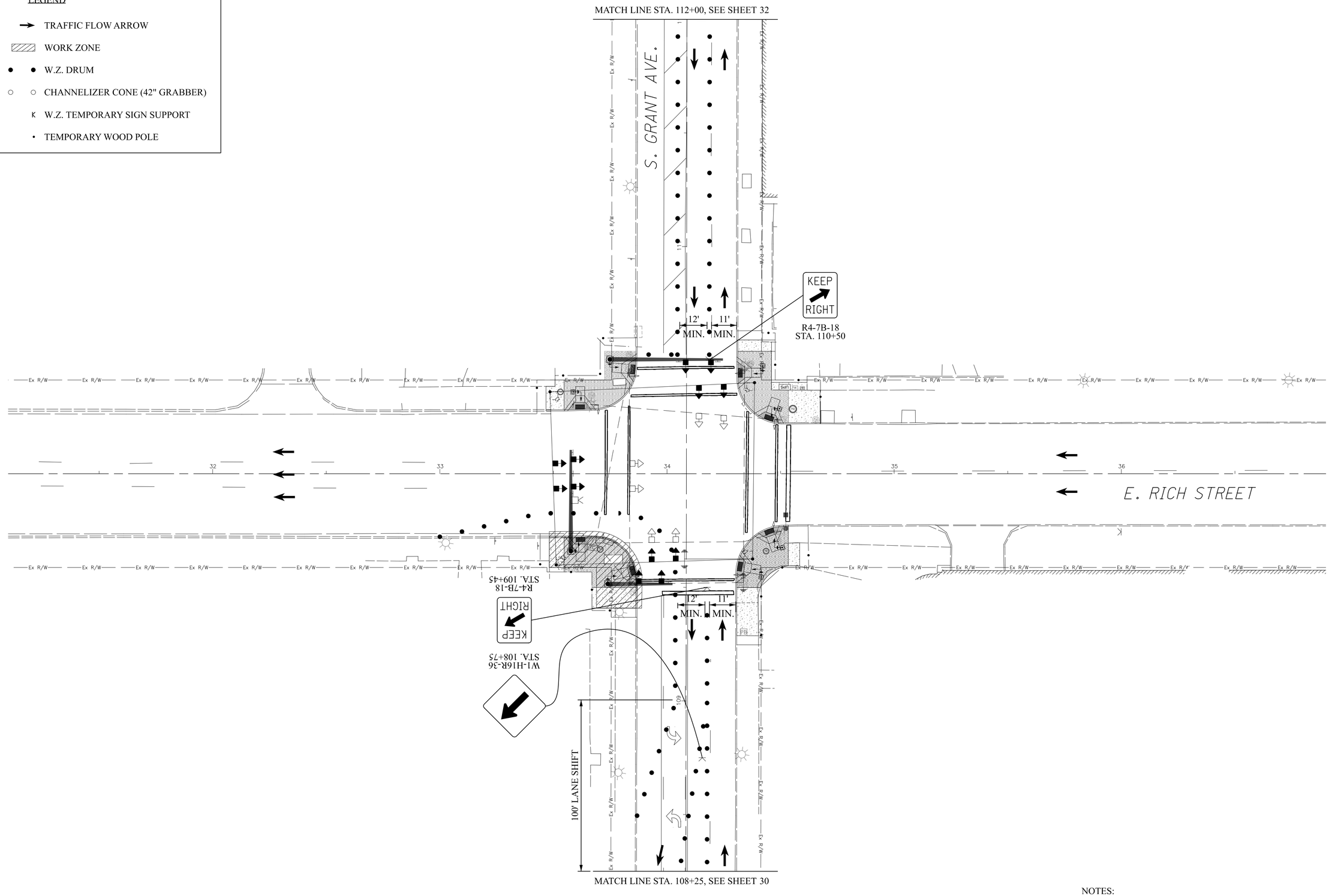
LEGEND

- TRAFFIC FLOW ARROW
- WORK ZONE
- W.Z. DRUM
- CHANNELIZER CONE (42" GRABBER)
- W.Z. TEMPORARY SIGN SUPPORT
- TEMPORARY WOOD POLE



NOTES:

1. FOR TEMPORARY SIGNAL DETAILS, SEE SHEET 25

0 20 40
Horiz 1 Inch = 20 Feet

CALCULATED JAR
CHECKED DKA

MAINTENANCE OF TRAFFIC PLAN - SW CORNER CONST.
E RICH ST AT S GRANT ST

IMPROVEMENTS OF
E RICH STREET FROM S 3RD ST TO S GRANT AVE
FRA E RICH ST SIGNALS

3921-E

31
95

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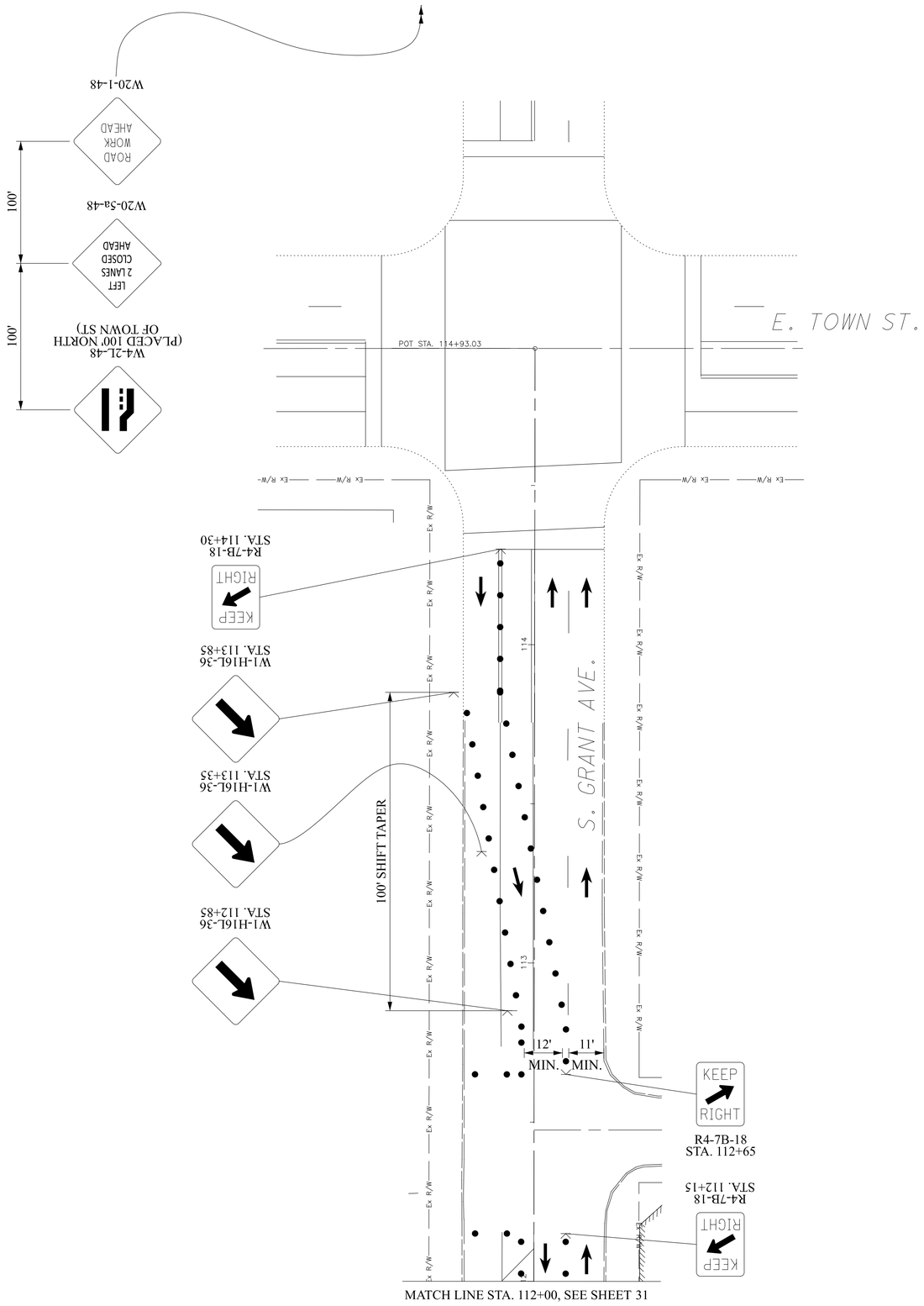
LEGEND

- TRAFFIC FLOW ARROW
- WORK ZONE
- W.Z. DRUM
- CHANNELIZER CONE (42" GRABBER)
- W.Z. TEMPORARY SIGN SUPPORT
- TEMPORARY WOOD POLE



N

0 20 40
Horiz 1 inch = 20 feet

CALCULATED JAR
CHECKED DKA

MAINTENANCE OF TRAFFIC PLAN - SW CORNER CONST.
E RICH ST AT S GRANT ST

IMPROVEMENTS OF
E RICH STREET FROM S 3RD ST TO S GRANT AVE
FRA E RICH ST SIGNALS

3921-E

32
95

SHEET NUM.												ITEM	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
	5	7	8	37	39	41	43	50	59	81						
															ROADWAY	
				2,627	2,361	2,360	2,829					202	10,177	SF	WALK REMOVED	
				154	192		194					202	540	FT	CURB REMOVED	
				8	46	256	37					202	347	FT	CURB AND GUTTER REMOVED	
				1	3	3	2					202	9	EA	INLET REMOVED	
						184						202	184	FT	FENCE REMOVED	
				1,408	641	989	940					608	3,978	SF	CONCRETE WALK WITH BUFF WASH FINISH (4")	
				132	176	176	176					608	660	SF	CONCRETE WALK WITH BUFF WASH FINISH (8")	
				6	8	8	8					608	30	EA	CURB RAMP	
				48	64	64	64					608	240	SF	DETECTABLE WARNING, TYPE E CAST IRON	
				1,075	1,575	1,532	1,742					SPEC	5,924	SF	BRICK PAVERS INCLUDING 4" CONCRETE BASE (SCD 2301-NON-RESIDENTIAL), COMPLETE	3
				1								SPEC	1	EA	ABM PARKING SERVICES SIGN TO BE REMOVED	3
						1						SPEC	1	EA	REMOVE AND REERECT MAILBOX	3
															PAVEMENT	
				367	755	999	1,012					254	3,133	SY	PAVEMENT PLANING, ASPHALT CONCRETE (T=1.5")	
				20	42	49	38					259	149	CY	PERMANENT PAVEMENT, TYPE I	
				31	64	85	86					407	266	GAL	NON-TRACKING TACK COAT	
				15	31	42	42					441	130	CY	ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (488), PG70-22M	
				162	238	262	231					609	893	FT	GRANITE CURB	
						21						609	21	FT	CURB WALL	
															MAINTENANCE OF TRAFFIC	
		144										614	144	HR	LAW ENFORCEMENT OFFICER WITH PATROL CAR, AS PER PLAN	7
			4									614	4	EA	WORK ZONE TRAFFIC SIGNAL, AS PER PLAN	8
															EROSION CONTROL	
	22											207	22	EA	INLET PROTECTION	5
	100											659	100	SY	SEEDING AND MULCHING, CLASS 1	4
	12											659	12	CY	TOPSOIL	4
	0.02											659	0.02	TON	COMMERCIAL FERTILIZER	4
	1											659	1	MGAL	WATER	4
															DRAINAGE	
				60	40	50	40					603	190	FT	4" CONDUIT, TYPE F FOR UNDERDRAIN OUTLETS	
					1							604	1	EA	CURB INLET MANHOLE (AA-S121)	
				1	1	3	1					604	6	EA	STANDARD CURB AND GUTTER INLET (AA-S125A WITH AA-S128 GRATE FOR GRANITE CURB)	
					1		1					604	2	EA	DOUBLE CURB AND GUTTER INLET (AA-S125A WITH AA-S128 GRATE FOR GRANITE CURB)	
					1	1						604	2	EA	MANHOLE, TYPE C (AA-S102)	
				1	1	2	2					604	6	EA	MANHOLE, ADJUSTED TO GRADE	
				2								604	2	EA	INLET ADJUSTED TO GRADE	
				102	198	212	191					605	703	FT	4" PIPE UNDERDRAINS	
				4	32	17	4					901	57	LF	12" STORM PIPE, WITH TYPE 1 BEDDING, WITH ITEM 912 COMPACTED GRANULAR MATERIAL	
							4					901	4	LF	15" STORM PIPE, WITH TYPE 1 BEDDING, WITH ITEM 912 COMPACTED GRANULAR MATERIAL	
						8	4					901	12	LF	18" STORM PIPE, WITH TYPE 1 BEDDING, WITH ITEM 912 COMPACTED GRANULAR MATERIAL	
					8							901	8	LF	21" STORM PIPE, WITH TYPE 1 BEDDING, WITH ITEM 912 COMPACTED GRANULAR MATERIAL	
					32	45						SPEC	77	LF	FILL AND PLUG EXISTING CONDUIT (12")	5
															WATER	
				5	9	5	5					807	24	EA	VALVE BOXES ADJUSTED TO GRADE	
					1		2					807	3	EA	CURB BOXES ADJUSTED TO GRADE	
															SANITARY	
				1	3	1	4					604	9	EA	MANHOLE, ADJUSTED TO GRADE (SANITARY)	

CALCULATED ANC
CHECKED DKA

GENERAL SUMMARY

IMPROVEMENTS OF
E RICH STREET FROM S 3RD ST TO S GRANT AVE
FRA E RICH ST SIGNALS

3921-E

33
95

SHEET NUM.												ITEM	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
	5	7	8	37	39	41	43	50	59	81						
															ELECTRICAL	
							2					SPEC	2	EA	ELECTRIC PULL BOX ADJUSTED TO GRADE	3
							1					SPEC	1	EA	ELECTRIC VAULT GRATE ADJUSTED TO GRADE	3
				1								604	1	EA	MANHOLE, ADJUSTED TO GRADE (ELECTRIC)	
															TRAFFIC CONTROL	
					6							627	6	EA	REBOUNDABLE TRAFFIC POST - REMOVED, AS PER PLAN	5
								100.5				630	100.5	LF	GROUND MOUNTED SUPPORT, No. 3 POST	
								39.0				630	39.0	LF	STREET NAME SIGN SUPPORT, No. 3 POST	
								5				630	5	EA	SIGN SUPPORT ASSEMBLY, POLE MOUNTED, AS PER PLAN	56
								100.3				630	100.3	SF	SIGN, FLAT SHEET, AS PER PLAN	56
								13.5				630	13.5	SF	STREET NAME SIGN	
								11				630	11	EA	REMOVAL OF GROUND MOUNTED SIGN AND DISPOSAL	
								11				630	11	EA	REMOVAL OF POLE MOUNTED SIGN AND DISPOSAL	
								9				630	9	EA	REMOVAL OF GROUND MOUNTED POST SUPPORT AND DISPOSAL	
								2,219				641	2,219	LF	REMOVAL OF PAVEMENT MARKING	
								399				644	399	LF	STOP LINE	
								1,652				644	1,652	LF	CROSSWALK LINE, 12"	
								204				644	204	LF	PARKING STALL MARKING, WHITE, 4"	
								141				644	141	LF	DOTTED LINE, WHITE, 6"	
															TRAFFIC SIGNALS	
				1	1	1	1					625	4	EA	PULL BOX ADJUSTED TO GRADE	
									43			625	43	EA	GROUND ROD	
									3,354			625	3,354	FT	NO. 4 AWG 600 VOLT DISTRIBUTION CABLE, AS PER PLAN	56
									4			625	4	EA	PULL BOX, 725.06, 12"X18" (TRAFFIC)	
									11			625	11	EA	PULL BOX, 27"	
									4			625	4	EA	PULL BOX, 32"	
									1,520			625	1,520	FT	TRENCH, AS PER PLAN	56
									805			625	805	FT	CONDUIT, 2", 725.051	
									145			625	145	FT	CONDUIT, 3", 725.051	
									1,490			625	1,490	FT	CONDUIT, CONCRETE ENCASED, 2", 725.051	
									279			625	279	FT	CONDUIT, CONCRETE ENCASED, 3", 725.051	
									2			625	2	EA	BRACKET ARM 25 FT, AS PER PLAN	55
									8			625	8	EA	BRACKET ARM - LUMINAIRE, 8 FT, AS PER PLAN	55
									1,178			625	1,178	FT	NO. 6 AWG 600 VOLT DISTRIBUTION CABLE	
									486			625	486	FT	NO. 10 AWG POLE AND BRACKET CABLE	
									8			625	8	EA	CONNECTION, FUSED PULL-APART	
									8			625	8	EA	CONNECTION, UNFUSED PULL-APART	
									8			625	8	EA	LUMINAIRE, LED, 120 V, TEARDROP (BLACK), AS PER PLAN	56
									8			625	8	EA	LIGHTING, MISC.: PHOTO CELL	56
									20			630	20	EA	SIGN HANGER ASSEMBLY, MAST ARM, AS PER PLAN	56
									22			630	22	EA	SIGN SUPPORT ASSEMBLY, POLE MOUNTED, AS PER PLAN	56
									164			630	164	SF	SIGN, FLAT SHEET, AS PER PLAN	56
									60			630	60	SF	STREET NAME SIGN	
									21			632	21	EA	VEHICULAR SIGNAL HEAD, L.E.D., 3-SECTION, 12" LENS, 1-WAY, POLYCARBONATE, AS PER PLAN	56
									32			632	32	EA	PEDESTRIAN SIGNAL HEAD	
									8			632	8	EA	SIGNALIZATION, MISC.: APS PUSHBUTTON STATION	56
									6			632	6	EA	SIGNAL SUPPORT FOUNDATION	
									4			632	4	EA	SIGNAL SUPPORT FOUNDATION (22'), AS PER PLAN	56
									21			632	21	EA	PEDESTAL FOUNDATION	
									31			632	31	EA	SIGNALIZATION, MISC.: FOUNDATION PRE-EXCAVATION	56
									1			632	1	EA	SIGNAL SUPPORT, TYPE 4121, DESIGN 12, AS PER PLAN	56

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CHECKED DKA

GENERAL SUMMARY

IMPROVEMENTS OF
E RICH STREET FROM S 3RD ST TO S GRANT AVE
FRA E RICH ST SIGNALS

3921-E

SHEET NUM.											ITEM	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
	5	7	8	37	39	41	43	50	59	81					
														TRAFFIC SIGNALS (CONT'D)	
									4		632	4	EA	COMBINATION SIGNAL SUPPORT, TYPE 4121, DESIGN 12, AS PER PLAN	56
									5		632	5	EA	COMBINATION SIGNAL SUPPORT, TYPE 4121, DESIGN 13, AS PER PLAN	56
									21		632	21	EA	PEDESTAL SUPPORT, 10.7'	
									136		632	136	FT	SIGNAL CABLE, 4 CONDUCTOR, NO. 14 AWG	
									4,234		632	4,234	FT	SIGNAL CABLE, 7 CONDUCTOR, NO. 14 AWG	
									1,531		632	1,531	FT	SIGNAL CABLE, 9 CONDUCTOR, NO. 14 AWG	
									1,055		632	1,055	FT	LOOP DETECTOR LEAD-IN CABLE, IMSA 50-2	
									160		632	160	FT	POWER CABLE, 2 CONDUCTOR, NO. 6 AWG	
									449		632	449	FT	POWER CABLE, 3 CONDUCTOR, NO. 6 AWG	
									4		632	4	EA	POWER SERVICE, AS PER PLAN	56
									4		632	4	EA	SIGNALIZATION, MISC.: POWER METER CABINET TYPE 1 OR 2, BASE MOUNT, WITH FOUNDATION	56
									21		632	21	EA	COVERING OF VEHICULAR SIGNAL HEAD	
									32		632	32	EA	COVERING OF PEDESTRIAN SIGNAL HEAD	
									8		632	8	EA	COVERING OF PEDESTRIAN PUSHBUTTON	
									4		632	4	EA	REMOVAL OF TRAFFIC SIGNAL INSTALLATION	
									2		632	2	EA	SIGNALIZATION, MISC.: CCTV IP-CAMERA SYSTEM	58
									4		633	4	EA	CONTROLLER UNIT TS2/A2, W/ P-UPS CABINET, 16 CH, SIZE 6, GROUND MOUNTED, AS PER PLAN	57
									4		633	4	EA	CABINET FOUNDATION	
									4		633	4	EA	UNINTERRUPTIBLE POWER SUPPLY (UPS), 1000 WATT, AS PER PLAN	57
														TRAFFIC SIGNAL INTERCONNECT	
									4		632	4	EA	INTERCONNECT, MISC.: RELOCATE EXISTING FIBER OPTIC CABLE, 24 STRAND	58
									559		632	559	FT	INTERCONNECT, MISC.: CAT 5E CABLE, OUTDOOR RATED	58
									7		633	7	EA	CONTROLLER ITEM, MISC.: FIBER OPTIC ETHERNET TRANSCEIVER, SHORT RANGE	58
									4		633	4	EA	CONTROLLER ITEM, MISC.: LAYER 2 ETHERNET SWITCH	58
									7		1620	7	EA	MISC.: TERMINATION PANEL, 24-FIBER	58
														LIGHTING	
										10	1001	10	EA	13 INCH X 24 INCH PULL BOX (MIS-54)	
										5	1001	5	EA	6' STREET LIGHT FOUNDATION, DOWNTOWN (MIS-203)	
										5	1001	5	EA	DOWNTOWN POLE (MIS-308)	
										755	1001	755	CK FT	2-WIRE UNDERGROUND CIRCUIT (MIS-403)	
										5	1001	5	EA	2-WIRE POLE TO BE WIRED (MIS-500)	
										1	1001	1	EA	2-WIRE 480V PEDESTAL MOUNT CONTROLLER (MIS-602)	
										425	1001	425	FT	2-INCH CONDUIT, CONCRETE ENCASED (MIS-700)	
										1	1001	1	EA	COBRA HEAD 480V LUMINAIRE (MIS-800)	
										5	1001	5	EA	TEARDROP 480V LED LUMINAIRE (MIS-801)	
										7	1001	7	EA	FOUNDATION REMOVAL (MIS-900)	
										LS	1001	LS	LS	EXISTING UNDERGROUND SYSTEM REMOVAL (MIS-902)	
										6	1001	6	EA	SMART NODE, AS PER PLAN	81
														MISCELLANEOUS	
											614	LS	LS	MAINTAINING TRAFFIC	7
											623	LS	LS	CONSTRUCTION LAYOUT STAKES	
											624	LS	LS	MOBILIZATION	

C:\Lanham Engineering Dropbox\Project Files\Columbus\Downtown Signals Part 2\Task 2 – Rich Street Design\cadd\sheets\10012980_GS003.dgn 2/19/2024 4:40:53 PM Collinger, Anthony

CALCULATED ANC
CHECKED DKA

GENERAL SUMMARY

IMPROVEMENTS OF
E RICH STREET FROM S 3RD ST TO S GRANT AVE
FRA E RICH ST SIGNALS

3921-E

NOTES:

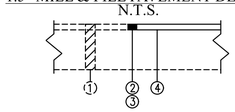
ANY EXISTING STORM INLETS IMPACTED BY THE NEW CONSTRUCTION ACTIVITY WILL NEED THE APPROPRIATE INLET PROTECTION FOR SEDIMENT CONTROL.

① EXPOSE EX. WATER MAIN(S) AND PROVIDE A MINIMUM OF 12" VERTICAL CLEARANCE.

② PROPOSED LIMIT OF 1.5" MILL AND FILL

③ END OF WATER LINE (ACCORDING TO PLAN)

1.5" MILL & FILL PAVEMENT DETAIL
N.T.S.



① EX. PAVEMENT

② ITEM 254 – PAVEMENT PLANING, ASPHALT CONCRETE (1.5")

③ ITEM 441 – ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (448), PG70-22M (1.5")

④ ITEM 407 – NON-TRACKING TACK COAT

0 10 20
Horiz 1 inch = 10 feet

CALCULATED MSS
CHECKED LMO

PLAN
RICH STREET AT THIRD STREET

IMPROVEMENTS OF
E RICH STREET FROM S 3RD ST TO S GRANT AVE
FRA E RICH ST SIGNALS

3921-E

36
95

LEGEND

- ITEM 259 – PERMANENT PAVEMENT, TYPE 1
- DETECTABLE WARNING, TYPE E, CAST IRON
- PROP. BRICK WALK
- PROP. 4" CONCRETE WALK, BUFF WASH FINISH
- PROP. 8" CONCRETE WALK, BUFF WASH FINISH

* DENOTES ENCROACHMENT

PLAN SHEET REFERENCES	
SHEET #	DESCRIPTION
37	PLAN SUBSUMMARY
44	CURB RAMP DETAILS
51	TRAFFIC CONTROL PLAN
60	SIGNAL REMOVAL PLAN
61	TRAFFIC SIGNAL PLAN
85	LIGHTING PLAN

010-296465
80 ON THE COMMONS LLC
80 E. RICH STREET

010-087718
CENTRAL OHIO TRANSIT AUTHORITY
111 E. TOWN STREET

010-205799
CAPITOL SOUTH COMM
URBAN REDEV CORP
237-289 S. THIRD STREET

010-020205
PFK COMPANY II LLC
TAMARACK ENTERPRISES II
246 S. THIRD STREET

RICH STREET

THIRD STREET

~ASPHALT PARKING LOT~

CONTROL POINT #201

CONTROL POINT #100

REF. NO.	SHEET NO.	STATION FROM	STATION TO	SIDE	202 WALK REMOVED SF	202 CURB REMOVED FT	202 CURB AND GUTTER REMOVED FT	202 INLET REMOVED EA	254 PAVEMENT PLANING, ASPHALT CONCRETE (1.5") SY	259 PERMANENT PAVEMENT, TYPE 1 CY	407 NON-TRACKING TACK COAT GAL	441 ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (448), PG70-22M CY	603 4" CONDUIT, TYPE F FOR UNDERDRAIN OUTLETS FT	604 STANDARD CURB AND GUTTER INLET (AA-S125A WITH AA-S128 GRATE FOR GRANITE CURB) EA	604 MANHOLE ADJUSTED TO GRADE EA	604 MANHOLE ADJUSTED TO GRADE (SANITARY) EA	604 MANHOLE ADJUSTED TO GRADE (ELECTRIC) EA	604 INLET ADJUSTED TO GRADE EA	605 4" PIPE UNDERDRAINS FT	608 CONCRETE WALK WITH BUFF WASH FINISH (4") SF	608 CONCRETE WALK WITH BUFF WASH FINISH (8") SF	608 CURB RAMP EA	608 DETECTABLE WARNING, TYPE E CAST IRON SF	609 GRANITE CURB FT	625 PULL BOX ADJUSTED TO GRADE EA	807 VALVE BOXES ADJUSTED TO GRADE EA	901 12" STORM PIPE, WITH TYPE I BEDDING, WITH 912 COMPACTED GRANULAR MATERIAL LF	SPECIAL BRICK PAVERS, INCLUDING 4" CONCRETE BASE (SCD 2301-NON-RESIDENTIAL), COMPLETE SF	SPECIAL ABM PARKING SERVICES SIGN TO BE REMOVED EA
C1	36	13+95.20	14+23.53	RT		58							20						38					58					
C2	36	14+76.34	15+04.80	LT		40	8						20						28					48					
C3	36	14+76.08	15+04.80	RT		56							20						36					56					
R1	36	14+04.00	14+09.00	LT	16																								
R2	36	14+84.26		LT				1																					
R3	36	14+76.34	15+04.80	LT	514																								
R4	36	13+95.20	14+23.53	RT	696																								
R5	36	14+92.67		RT																									1
R6	36	14+76.08	15+04.80	RT	634																								
R7	36	15+04.80	16+58.14	RT	767																								
D1	36	14+13.28		RT											1														
D2	36	14+82.83		LT										1														4	
D3	36	14+82.41		RT														1											
D4	36	14+19.26		RT														1											
E1	36	14+17.03		RT													1												
P1	36	13+95.20	15+04.80	RT					367		31	15																	
P2	36	13+95.20	14+23.53	RT						4																			
P3	36	14+76.34	15+04.80	LT						4																			
P4	36	14+76.08	15+04.80	RT						4																			
P5	36	14+24.07	14+74.12	RT						4																			
P6	36	14+40.52	14+74.12	RT						3																			
P7	36	14+69.63	14+79.70	LT						1																			
S1	36	14+66.92		RT												1													
SW1	36	14+04.00	14+09.00	LT																								16	
SW2	36	14+76.34	15+04.80	LT																186	44	2	16					284	
SW3	36	13+95.20	14+23.53	RT																199	44	2	16					453	
SW4	36	14+76.08	15+04.80	RT																256	44	2	16					322	
SW5	36	15+04.80	16+58.14	RT																767									
W1	36	14+34.39		RT																							1		
W2	36	14+35.01		RT																							1		
W3	36	14+40.56		RT																							1		
W4	36	14+71.43		RT																							1		
W5	36	14+91.21		RT																							1		
M1	36	14+69.75		RT																					1				
TOTALS CARRIED TO GENERAL SUMMARY					2627	154	8	1	367	20	31	15	60	1	1	1	1	2	102	1408	132	6	48	162	1	5	4	1075	1

CALCULATED MSS
CHECKED LMO

SUBSUMMARY

IMPROVEMENTS OF
E RICH STREET FROM S 3RD ST TO S GRANT AVE
FRA E RICH ST SIGNALS

3921-E

37
95

D:\2022\2022860\02 – Lanham CoC – DS Design Part 2\400–Engineering\Roadway\Sheets\10012960_GS001.dgn 3RD ST AND RICH ST 2/16/2024 11:12:44 AM msummerville

NOTES:

ANY EXISTING STORM INLETS IMPACTED BY THE NEW CONSTRUCTION ACTIVITY WILL NEED THE APPROPRIATE INLET PROTECTION FOR SEDIMENT CONTROL.

1. EXPOSE EX. WATER MAIN(S) AND PROVIDE A MINIMUM OF 12" VERTICAL CLEARANCE.
2. EXPOSE EX. WATER SERVICE AND PROVIDE A MINIMUM OF 12" VERTICAL CLEARANCE.
3. PROPOSED LIMIT OF 1.5" MILL AND FILL (SEE SHEET 36 FOR PAVEMENT DETAILS)

0 10 20
Horiz 1 inch = 10 feet

CALCULATED MSS
CHECKED LMO

PLAN
RICH STREET AT FOURTH STREET

IMPROVEMENTS OF
E RICH STREET FROM S 3RD ST TO S GRANT AVE
FRA E RICH ST SIGNALS

3921-E

38
95

LEGEND

- ITEM 259 – PERMANENT PAVEMENT, TYPE 1
- DETECTABLE WARNING, TYPE E, CAST IRON
- PROP. BRICK WALK
- PROP. 4" CONCRETE WALK, BUFF WASH FINISH
- PROP. 8" CONCRETE WALK, BUFF WASH FINISH

* DENOTES ENCROACHMENT

PLAN SHEET REFERENCES	
SHEET #	DESCRIPTION
39	PLAN SUBSUMMARY
45	CURB RAMP DETAILS
49	STORM SEWER PROFILE
52	TRAFFIC CONTROL PLAN
63	SIGNAL REMOVAL PLAN
64	TRAFFIC SIGNAL PLAN
87	LIGHTING PLAN

REF. NO.	SHEET NO.	STATION FROM	STATION TO	SIDE	202 WALK REMOVED SF	202 CURB REMOVED FT	202 CURB AND GUTTER REMOVED FT	202 INLET REMOVED EA	254 PAVEMENT PLANING, ASPHALT CONCRETE (1.5") SY	259 PERMANENT PAVEMENT, TYPE 1 CY	407 NON-TRACKING TACK COAT GAL	441 ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (448), PG70-22M CY	603 4" CONDUIT, TYPE F FOR UNDERDRAIN OUTLETS FT	604 CURB INLET MANHOLE (AA-S121) EA	604 STANDARD CURB AND GUTTER INLET (AA-S125A WITH AA-S128 GRATE FOR GRANITE CURB) EA	604 DOUBLE CURB AND GUTTER INLET (AA-S125B WITH AA-S128 GRATE FOR GRANITE CURB) EA	604 MANHOLE, TYPE C (AA-S102) EA	604 MANHOLE ADJUSTED TO GRADE EA	604 MANHOLE ADJUSTED TO GRADE (SANITARY) EA	605 4" PIPE UNDERDRAINS FT	608 CONCRETE WALK WITH BUFF WASH FINISH (4") SF	608 CONCRETE WALK WITH BUFF WASH FINISH (8") SF	608 CURB RAMP EA	608 DETECTABLE WARNING, TYPE E CAST IRON SF	609 GRANITE CURB FT	625 PULL BOX ADJUSTED TO GRADE EA	627 REBOUNDABLE TRAFFIC POST - REMOVED, AS PER PLAN EA	807 VALVE BOXES ADJUSTED TO GRADE EA	807 CURB BOXES ADJUSTED TO GRADE EA	901 12" STORM PIPE, WITH TYPE I BEDDING, WITH 912 COMPACTED GRANULAR MATERIAL LF	901 21" STORM PIPE, WITH TYPE I BEDDING, WITH 912 COMPACTED GRANULAR MATERIAL LF	SPECIAL BRICK PAVERS, INCLUDING 4" CONCRETE BASE (SCD 2301-NON-RESIDENTIAL), COMPLETE SF	SPECIAL FILL AND PLUG EXISTING CONDUIT (12") LF
C5	38	18+84.28	19+14.98	LT																50					50								
C6	38	19+67.55	19+99.31	LT									20							33					53								
C7	38	19+67.48	20+14.67	RT									10							64					74								
C8	38	18+84.28	19+15.11	RT									10							51					61								
R8	38	18+84.28	19+14.98	LT		41	9																										
R9	38	19+67.55	19+99.31	LT		46	7																										
R10	38	19+67.48	20+14.67	RT		44	30																										
R11	38	18+84.28	19+15.11	RT		61																											
R12	38	19+62.53		LT																									1				
R13	38	19+66.21		LT																									1				
R14	38	19+62.54		LT																									1				
R15	38	19+65.88		LT																									1				
R16	38	19+75.75		LT				1																									
R17	38	18+94.96		RT				1																									
R18	38	19+83.34		RT				1																									
R19	38	18+84.28	19+14.98	LT	506																												
R20	38	70+49.19	70+64.57	RT	106																												
R21	38	19+67.50	19+99.31	LT	372																												
R22	38	18+84.28	19+15.11	RT	689																												
R23	38	19+67.48	19+94.30	RT	558																												
R24	38	19+94.30	20+14.67	RT	130																												
R25	38	19+62.67		RT																									1				
R26	38	19+65.51		RT																									1				
D5	38	19+75.08		LT												1															4			
D6	38	18+96.10		RT										1																	4			
D7	38	19+94.38		RT														1																
D8	38	20+09.86		RT													1															8		
D9	38	20+09.86		RT											1																24			
D10	38	19+65.37	19+83.34	RT																													32
P8	38	18+84.28	19+99.31	LT					299		25	12																					
P9	38	18+84.28	20+05.10	RT					456		39	19																					
P10	38	18+84.28	19+16.98	LT						4																							
P11	38	19+65.55	19+99.31	LT						5																							
P12	38	18+84.28	19+17.11	RT						5																							
P13	38	19+65.55	20+14.67	RT						5																							
P14	38	20+05.10	20+14.67	RT						11																							
P15	38	19+15.09	19+65.79	LT						4																							
P16	38	19+22.54	19+65.52	LT						4																							
P17	38	19+17.14	19+59.91	RT						4																							
S2	38	19+00.64		LT															1														
S3	38	19+81.30		LT															1														
S4	38	18+94.91		RT															1														
SW6	38	18+84.28	19+14.98	LT																	138	44	2	16								324	
SW7	38	70+49.19	70+64.57	RT																	106												
SW8	38	19+67.50	19+99.31	LT																	52	44	2	16								307	
SW9	38	18+84.28	19+15.11	RT																	143	44	2	16								502	
SW10	38	19+67.48	19+94.30	RT																	72	44	2	16								442	
SW11	38	19+94.30	20+14.67	RT																	130												
W6	38	18+92.03		LT																										1			
W7	38	19+24.51		LT																										1			
W8	38	19+27.75		LT																										1			
W9	38	19+27.81		LT																										1			
W10	38	19+27.47		LT																										1			
W11	38	19+90.10		LT																										1			
W12	38	19+95.37		LT																										1			
W13	38	19+24.01		RT																										1			
W14	38	19+19.85		RT																										1			
W15	38	19+70.43		RT																											1			
M2	38	19+62.68		LT																							1						
TOTALS CARRIED TO GENERAL SUMMARY					2361	192	46	3	755	42	64	31	40	1	1	1	1	1	3	198	641	176	8	64	238	1	6	9	1	32	8	1575	32

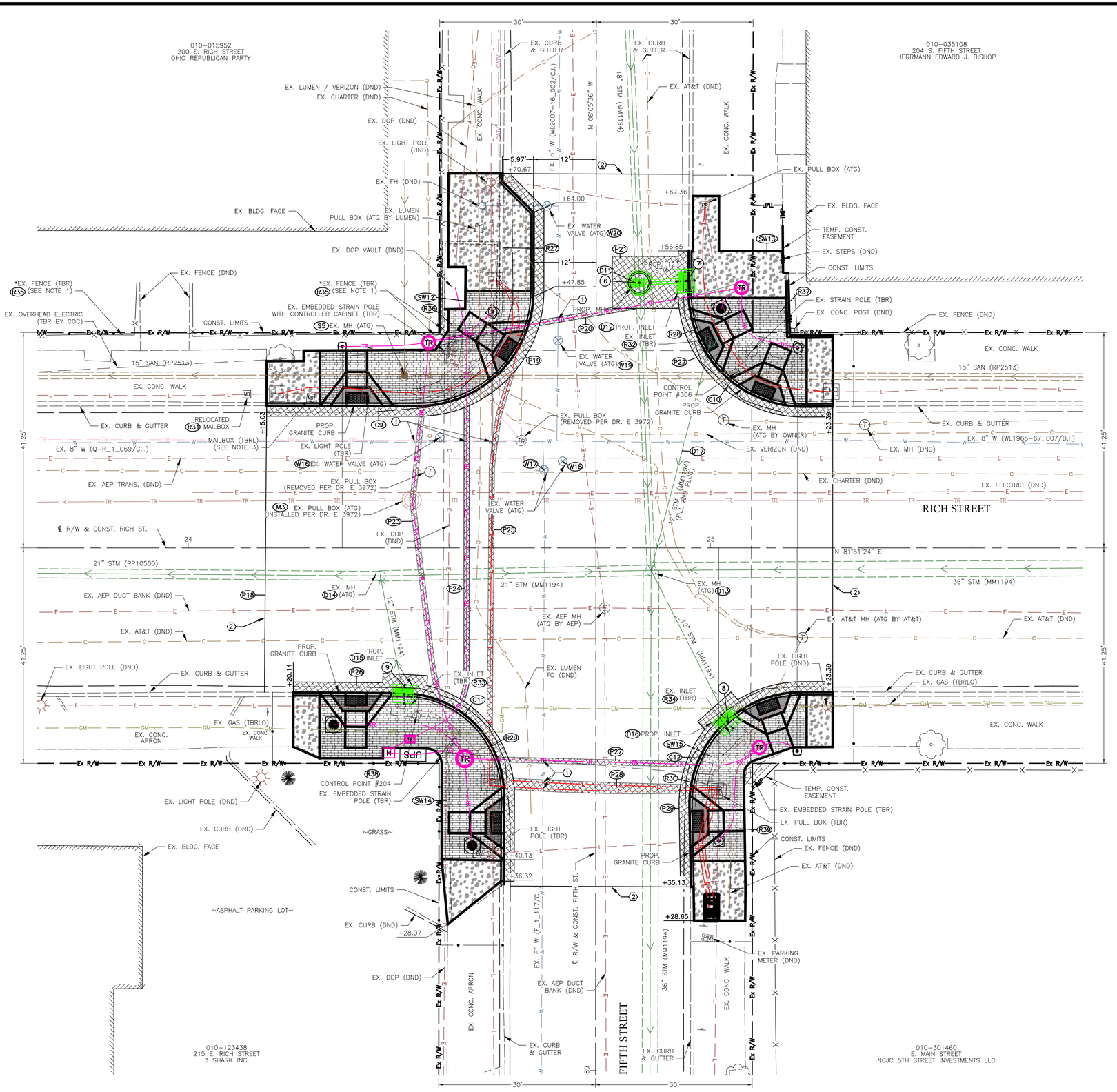
CALCULATED MSS
CHECKED LMO

SUBSUMMARY

IMPROVEMENTS OF
E RICH STREET FROM S 3RD ST TO S GRANT AVE
FRA E RICH ST SIGNALS

3921-E

39
95



NOTES:

1. CONTRACTOR SHALL REMOVE FENCE WITHIN EXISTING R/W TO NEAREST POST. FENCE SHALL NOT OTHERWISE BE DISTURBED.
2. ANY EXISTING STORM INLETS IMPACTED BY THE NEW CONSTRUCTION ACTIVITY WILL NEED THE APPROPRIATE INLET PROTECTION FOR SEDIMENT CONTROL.
3. CONTRACTOR SHALL REMOVE THE MAILBOX LOCATED AT STA. 24+23.45 AND REERECT IT AT STA. 24+11.00. CONTRACTOR SHALL TAKE GREAT CARE IN REMOVING THE MAILBOX AS IT IS THE INTENT OF THIS DESIGN TO REUSE THE MAILBOX IN THE NEW LOCATION.

① EXPOSE EX. WATER MAIN(S) AND PROVIDE A MINIMUM OF 12" VERTICAL CLEARANCE.

② PROPOSED LIMITS OF 1.5" MILL AND FILL (SEE SHEET 36 FOR PAVEMENT DETAILS)

LEGEND

- ITEM 259 – PERMANENT PAVEMENT, TYPE 1
- DETECTABLE WARNING, TYPE E, CAST IRON
- PROP. BRICK WALK
- PROP. 4" CONCRETE WALK, BUFF WASH FINISH
- PROP. 8" CONCRETE WALK, BUFF WASH FINISH

* DENOTES ENCROACHMENT

PLAN SHEET REFERENCES	
SHEET #	DESCRIPTION
41	PLAN SUBSUMMARY
46–47	CURB RAMP DETAILS
49	STORM SEWER PROFILE
53	TRAFFIC CONTROL PLAN
66	SIGNAL REMOVAL PLAN
67	TRAFFIC SIGNAL PLAN
89	LIGHTING PLAN

0 10 20
Horiz 1 inch = 10 feet

CALCULATED MSS
CHECKED LMO

PLAN
IMPROVEMENTS OF
E RICH STREET FROM S 3RD ST TO S GRANT AVE
FRA E RICH ST SIGNALS
RICH STREET AT FIFTH STREET

3921-E

40
95

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1 Xref: Dr E Border

REF. NO.	SHEET NO.	STATION FROM	STATION TO	SIDE	202 WALK REMOVED SF	202 CURB AND GUTTER REMOVED FT	202 INLET REMOVED EA	202 FENCE REMOVED FT	254 PAVEMENT PLANING, ASPHALT CONCRETE (1.5") SY	259 PERMANENT PAVEMENT, TYPE 1 CY	407 NON-TRACKING TACK COAT GAL	441 ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (448), PG70-22M CY	603 4" CONDUIT, TYPE F FOR UNDERDRAIN OUTLETS FT	604 STANDARD CURB AND GUTTER INLET (AA-S125A WITH AA-S128 GRATE FOR GRANITE CURB) EA	604 MANHOLE, TYPE C (AA-S102) EA	604 MANHOLE ADJUSTED TO GRADE EA	604 MANHOLE ADJUSTED TO GRADE (SANITARY) EA	605 4" PIPE UNDERDRAINS FT	608 CONCRETE WALK WITH BUFF WASH FINISH (4") SF	608 CONCRETE WALK WITH BUFF WASH FINISH (8") SF	608 CURB RAMP EA	608 DETECTABLE WARNING, TYPE E CAST IRON SF	609 GRANITE CURB FT	609 CURB WALL FT	625 PULL BOX ADJUSTED TO GRADE EA	807 VALVE BOXES ADJUSTED TO GRADE EA	901 12" STORM PIPE, WITH TYPE I BEDDING, WITH 912 COMPACTED GRANULAR MATERIAL LF	901 18" STORM PIPE, WITH TYPE I BEDDING, WITH 912 COMPACTED GRANULAR MATERIAL LF	SPECIAL BRICK PAVERS, INCLUDING 4" CONCRETE BASE (SCD 2301-NON-RESIDENTIAL), COMPLETE SF	SPECIAL FILL AND PLUG EXISTING CONDUIT (12") LF	SPECIAL REMOVE AND REERECT MAILBOX EA		
C9	40	24+15.03	24+68.12	LT														89					89										
C10	40	24+95.81	25+23.39	LT									10					38					48										
C11	40	24+20.14	24+60.40	RT									20					49					69										
C12	40	24+96.86	25+23.39	RT									20					36					56										
R27	40	24+15.03	24+60.17	LT		83																											
R28	40	24+95.81	25+23.39	LT		48																											
R29	40	24+20.14	24+60.40	RT		69																											
R30	40	24+96.86	25+23.39	RT		56																											
R31	40	24+11.00		LT																												1	
R32	40	25+00.00		LT			1																										
R33	40	24+41.58		RT			1																										
R34	40	25+04.21		RT			1																										
R35	40	23+25.00	24+48.77	LT				184																									
R36	40	24+15.03	24+68.12	LT	648																												
R37	40	24+96.62	25+23.39	LT	600																												
R38	40	24+20.14	24+60.40	RT	611																												
R39	40	24+96.85	25+23.39	RT	501																												
D11	40	24+86.40		LT											1															8			
D12	40	24+95.56		LT										1															9				
D13	40	24+88.62		RT												1																	
D14	40	24+36.77		RT												1																	
D15	40	24+41.37		RT										1															4				
D16	40	25+03.46		RT										1															4				
D17	40	24+88.62	25+00.00	LT																												45	
P18	40	24+15.03	25+23.39	LT/RT					999		85	42																					
P19	40	24+15.03	24+68.12	LT						7																							
P20	40	24+67.16	24+85.93	LT						1																							
P21	40	24+81.20	24+94.00	LT						5																							
P22	40	24+95.81	25+23.39	LT						4																							
P23	40	89+72.59	90+25.67	LT						4																							
P24	40	89+69.42	90+27.23	LT						4																							
P25	40	89+65.46	90+31.05	LT						5																							
P26	40	24+20.14	24+60.40	RT						6																							
P27	40	24+61.82	24+95.32	RT						3																							
P28	40	24+62.31	24+94.18	RT						5																							
P29	40	24+96.86	25+23.39	RT						5																							
S5	40	24+41.39		LT													1																
SW12	40	24+15.03	24+68.12	LT															402	44	2	16									441		
SW13	40	24+96.62	25+23.39	LT															277	44	2	16		21							278		
SW14	40	24+20.14	24+60.40	RT															146	44	2	16									498		
SW15	40	24+96.85	25+23.39	RT															164	44	2	16									315		
W16	40	24+48.18		LT																							1						
W17	40	24+68.10		LT																							1						
W18	40	24+71.68		LT																							1						
W19	40	24+70.79		LT																							1						
W20	40	24+68.69		LT																							1						
M3	40	24+42.89		LT																						1							
TOTALS CARRIED TO GENERAL SUMMARY					2360	256	3	184	999	49	85	42	50	3	1	2	1	212	989	176	8	64	262	21	1	5	17	8	1532	45	1		

CALCULATED MSS
CHECKED LMO

SUBSUMMARY

IMPROVEMENTS OF
E RICH STREET FROM S 3RD ST TO S GRANT AVE
FRA E RICH ST SIGNALS

3921-E

41
95

D:\2022\20222260\02 - Lanham CoC - DS Design Part 2\400-Engineering\Roadway\Sheets\10012960_GS001.dgn 5TH ST AND RICH ST 2/16/2024 11:14:01 AM maummerville

NOTES:

ANY EXISTING STORM INLETS IMPACTED BY THE NEW CONSTRUCTION ACTIVITY WILL NEED THE APPROPRIATE INLET PROTECTION FOR SEDIMENT CONTROL.

① EXPOSE EX. WATER MAIN(S) AND PROVIDE A MINIMUM OF 12" VERTICAL CLEARANCE.

② PROPOSED LIMIT OF 1.5" MILL AND FILL (SEE SHEET 36 FOR PAVEMENT DETAILS)

0 10 20
Horiz 1 inch = 10 feet

CALCULATED MSS | CHECKED LMO

PLAN
RICH STREET AT GRANT AVENUE

IMPROVEMENTS OF
E RICH STREET FROM S 3RD ST TO S GRANT AVE
FRA E RICH ST SIGNALS

3921-E

42
95

LEGEND

- ITEM 259 – PERMANENT PAVEMENT, TYPE 1
- DETECTABLE WARNING, TYPE E, CAST IRON
- PROP. BRICK WALK
- PROP. 4" CONCRETE WALK, BUFF WASH FINISH
- PROP. 8" CONCRETE WALK, BUFF WASH FINISH

* DENOTES ENCROACHMENT

PLAN SHEET REFERENCES	
SHEET #	DESCRIPTION
43	PLAN SUBSUMMARY
48	CURB RAMP DETAILS
54	TRAFFIC CONTROL PLAN
69	SIGNAL REMOVAL PLAN
70	TRAFFIC SIGNAL PLAN
91	LIGHTING PLAN

RICH STREET

GRANT AVENUE

010-145612
201 S. GRANT STREET
FRANKLIN UNIVERSITY

010-015290
S. GRANT AVENUE
FRANKLIN UNIVERSITY

010-066983
321-331 E. RICH STREET
FRANKLIN UNIVERSITY

010-037539
387 E. RICH STREET
FRANKLIN HEALTH CORP.

REF. NO.	SHEET NO.	STATION FROM	STATION TO	SIDE	202 WALK REMOVED SF	202 CURB REMOVED FT	202 CURB AND GUTTER REMOVED FT	202 INLET REMOVED EA	254 PAVEMENT PLANING, ASPHALT CONCRETE (1.5") SY	259 PERMANENT PAVEMENT, TYPE 1 CY	407 NON-TRACKING TACK COAT GAL	441 ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (448), PG70-22M CY	603 4" CONDUIT, TYPE F FOR UNDERDRAIN OUTLETS FT	604 STANDARD CURB AND GUTTER INLET (AA-S125A WITH AA-S128 GRATE FOR GRANITE CURB) EA	604 DOUBLE CURB AND GUTTER INLET (AA-S125B WITH AA-S128 GRATE FOR GRANITE CURB) EA	604 MANHOLE ADJUSTED TO GRADE EA	604 MANHOLE ADJUSTED TO GRADE (SANITARY) EA	605 4" PIPE UNDERDRAINS FT	608 CONCRETE WALK WITH BUFF WASH FINISH (4") SF	608 CONCRETE WALK WITH BUFF WASH FINISH (8") SF	608 CURB RAMP EA	608 DETECTABLE WARNING, TYPE E CAST IRON SF	609 GRANITE CURB FT	625 PULL BOX ADJUSTED TO GRADE EA	807 VALVE BOXES ADJUSTED TO GRADE EA	807 CURB BOXES ADJUSTED TO GRADE EA	901 12" STORM PIPE, WITH TYPE I BEDDING, WITH 912 COMPACTED GRANULAR MATERIAL LF	901 15" STORM PIPE, WITH TYPE I BEDDING, WITH 912 COMPACTED GRANULAR MATERIAL LF	901 18" STORM PIPE, WITH TYPE I BEDDING, WITH 912 COMPACTED GRANULAR MATERIAL LF	SPECIAL BRICK PAVERS, INCLUDING 4" CONCRETE BASE (SCD 2301-NON-RESIDENTIAL), COMPLETE SF	SPECIAL ELECTRIC PULL BOX ADJUSTED TO GRADE EA	SPECIAL ELECTRIC VAULT GRATE ADJUSTED TO GRADE EA	
C13	42	33+46.72	33+86.84	LT														60					60										
C14	42	34+30.66	34+61.89	LT									20					40					60										
C15	42	33+48.18	33+86.82	RT														63					63										
C16	42	34+30.19	34+53.39	RT									20					28					48										
R40	42	33+46.72	33+86.84	LT		38	22																											
R41	42	34+30.66	34+61.89	LT		60																												
R42	42	33+48.18	33+86.82	RT		48	15																											
R43	42	34+30.19	34+53.39	RT		48																												
R44	42	34+36.92		LT				1																										
R45	42	34+37.30		RT				1																										
R46	42	33+46.72	33+86.30	LT	600																													
R47	42	34+30.66	34+61.89	LT	816																													
R48	42	33+48.18	33+86.82	RT	777																													
R49	42	34+30.19	34+58.39	RT	636																													
D18	42	34+40.85		LT											1														4					
D19	42	34+25.71		LT												1																		
D20	42	34+40.34		LT												1																		
D21	42	34+36.71		RT										1															4	4				
E2	42	33.+79.04		LT																												2		
E3	42	33+76.35		RT																													1	
P30	42	33+46.72	34+61.89	LT/RT					1012		86	42																						
P31	42	33+46.72	33+86.84	LT						5																								
P32	42	33+58.10	34+61.89	LT						8																								
P33	42	34+30.66	34+61.89	LT						5																								
P34	42	33+48.18	33+86.82	RT						5																								
P35	42	109+71.84	110+12.56	LT						3																								
P36	42	34+03.06	34+60.05	LT/RT						5																								
P37	42	109+78.52	110+19.98	RT						3																								
P38	42	34+30.19	34+53.39	RT						4																								
S6	42	33+70.14		LT													1																	
S7	42	34+03.32		LT													1																	
S8	42	34+41.06		LT													1																	
S9	42	34+03.22		RT													1																	
SW16	42	33+46.72	33+86.84	LT														94	44	2	16											439		
SW17	42	34+30.66	34+61.89	LT														327	44	2	16											445		
SW18	42	33+48.18	33+86.82	RT														266	44	2	16											467		
SW19	42	34+30.19	34+58.39	RT														253	44	2	16											391		
W21	42	33+84.54		LT																					1									
W22	42	34+19.79		LT																					1									
W23	42	34+33.67		LT																						2								
W24	42	34+20.71		RT																					1									
W25	42	34+21.05		RT																					1									
W26	42	34+23.56		RT																					1									
M4	42	33+95.32		LT																				1										
TOTALS CARRIED TO GENERAL SUMMARY					2829	194	37	2	1012	38	86	42	40	1	1	2	4	191	940	176	8	64	231	1	5	2	4	4	4	1742	2	1	

CALCULATED MSS
CHECKED LMO

SUBSUMMARY

IMPROVEMENTS OF
E RICH STREET FROM S 3RD ST TO S GRANT AVE
FRA E RICH ST SIGNALS

3921-E

43
95

LEGEND

XXX.XX — PROPOSED ELEVATIONS

EP = EDGE OF PAVEMENT
EX = MATCH EXISTING
TC = TOP OF CURB
TG = TOP OF GRATE

* TRANSITION CROSS SLOPE FROM 1.56% (MAXIMUM) TO MATCH EXISTING.

(1) CURB RAMP NUMBER

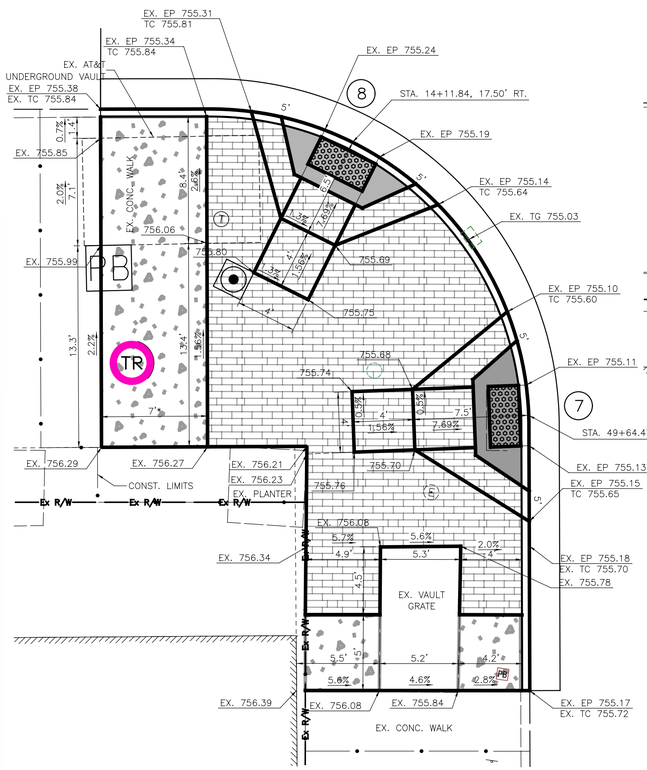
DETECTABLE WARNING, TYPE E, CAST IRON

PROP. BRICK WALK

PROP. 4" CONCRETE WALK, BUFF WASH FINISH

PROP. 8" CONCRETE WALK, BUFF WASH FINISH

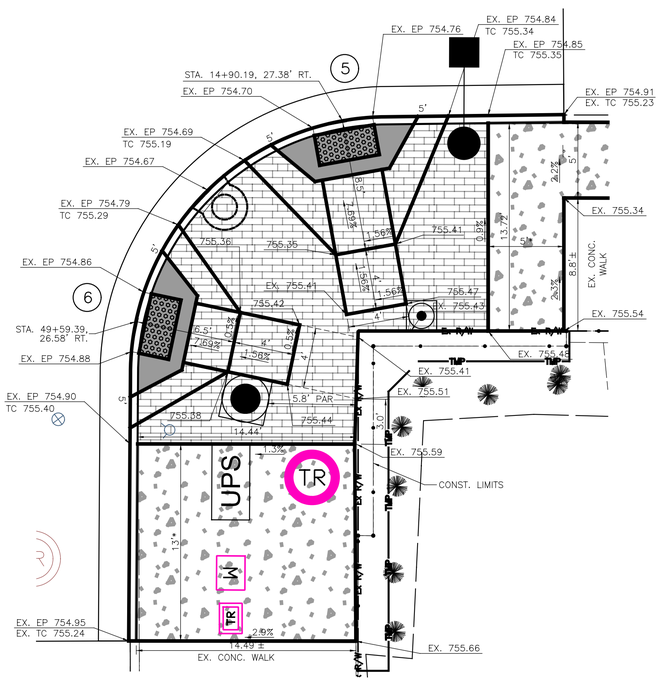
(1) (2) NE CORNER CURB RAMP DETAIL
SCALE: 1" = 5'



(5) (6) SW CORNER CURB RAMP DETAIL
SCALE: 1" = 5'

CURVE DATA									
	DELTA	RADIUS	TANGENT	LENGTH	EXTERNAL	MIDDLE	FILLET AREA	CHORD DISTANCE	RADIUS POINT
A	88°59'04"	20.00'	19.65'	31.06'	8.04'	5.73'	82	28.03'	14+96.31, 47.02' LT.
B	88°55'28"	17.00'	16.68'	26.38'	6.82'	4.87'	59	23.82'	14+93.87, 44.11' RT.
C	89°55'05"	21.00'	20.97'	32.96'	8.68'	6.14'	94	29.68	14+02.48, 36.30' RT.

INTERSECTION DETAIL AT RICH STREET & 3RD STREET
SCALE: 1" = 10'



(3) (4) SE CORNER CURB RAMP DETAIL
SCALE: 1" = 5'

INTERSECTION AND CURB RAMP DETAILS
RICH STREET AND 3RD STREET

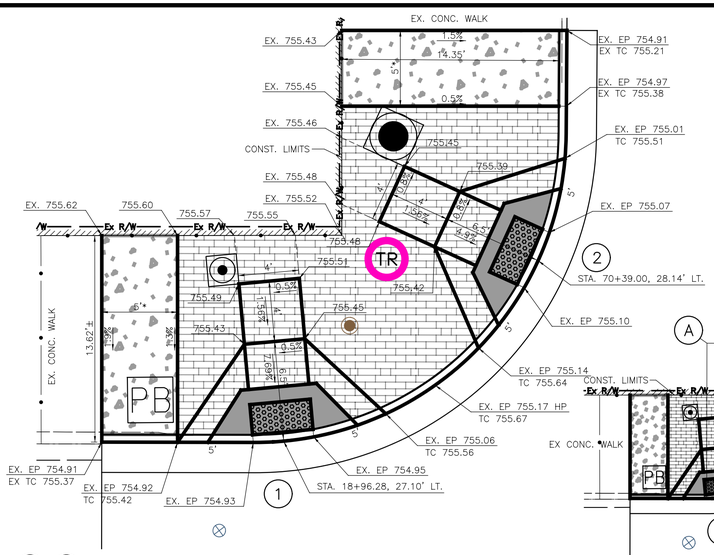
SCALE: AS NOTED

CALCULATED MSS
CHECKED LMO

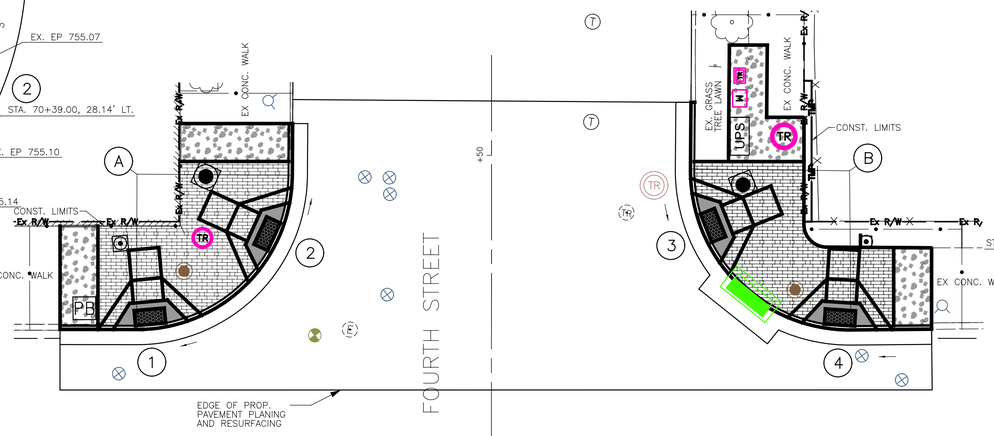
IMPROVEMENTS OF
E RICH STREET FROM S 3RD ST TO S GRANT AVE
FRA E RICH ST SIGNALS

3921-E

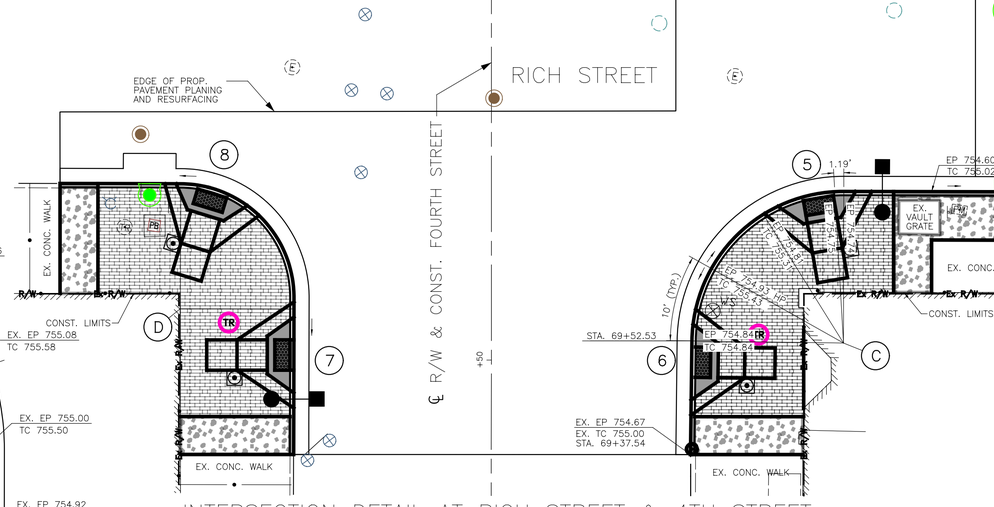
44
95



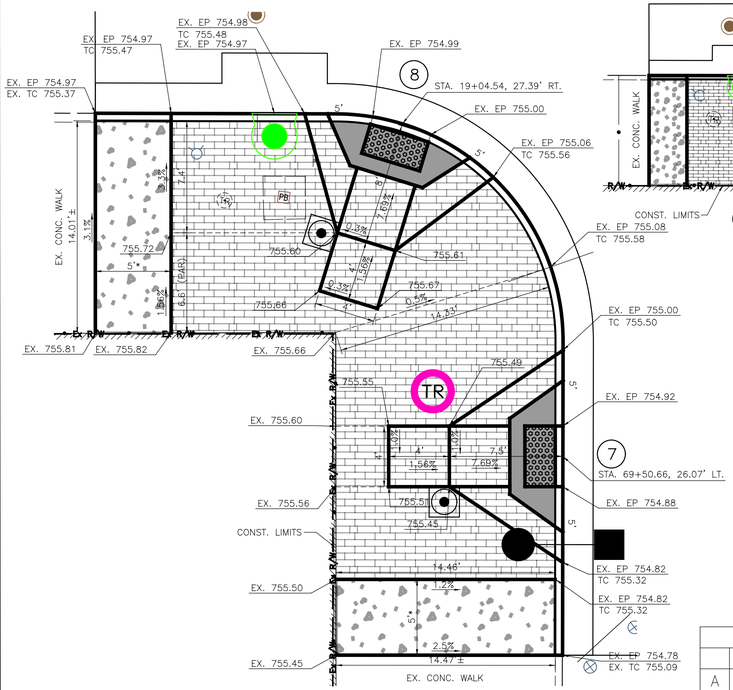
1 2 NW CORNER CURB RAMP DETAIL
SCALE: 1" = 5'



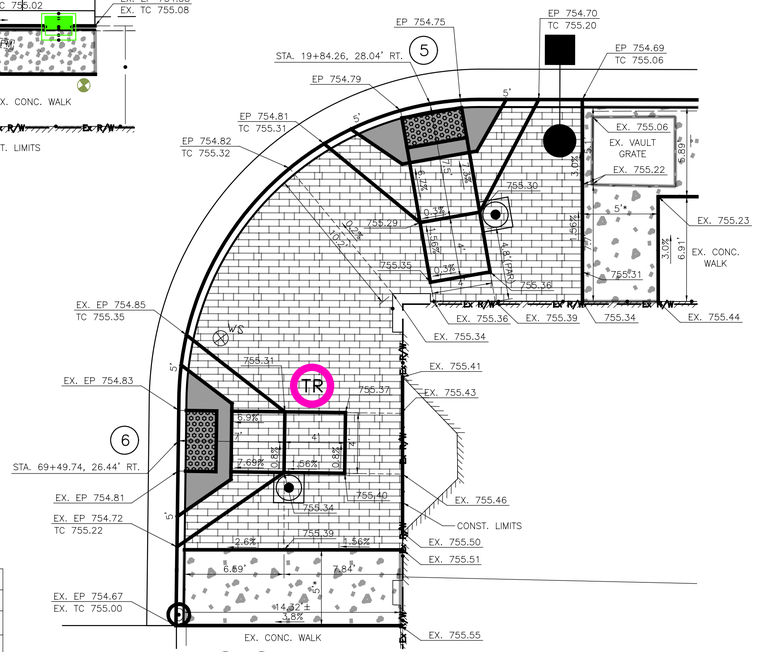
3 4 NE CORNER CURB RAMP DETAIL
SCALE: 1" = 5'



INTERSECTION DETAIL AT RICH STREET & 4TH STREET
SCALE: 1" = 10'



7 8 SW CORNER CURB RAMP DETAIL
SCALE: 1" = 5'



5 6 SE CORNER CURB RAMP DETAIL
SCALE: 1" = 5'

XXX.XX PROPOSED ELEVATIONS

EP = EDGE OF PAVEMENT
EX = MATCH EXISTING
TC = TOP OF CURB
TG = TOP OF GRATE

* TRANSITION CROSS SLOPE FROM 1.56% (MAXIMUM) TO MATCH EXISTING.

(1) CURB RAMP NUMBER

LEGEND

- DETECTABLE WARNING, TYPE E, CAST IRON
- PROP. BRICK WALK
- PROP. 4" CONCRETE WALK, BUFF WASH FINISH
- PROP. 8" CONCRETE WALK, BUFF WASH FINISH

CURVE DATA									
	DELTA	RADIUS	TANGENT	LENGTH	EXTERNAL	MIDDLE	FILLET AREA	CHORD DISTANCE	RADIUS POINT
A	89°42'10"	20.50'	20.39'	32.10'	8.42'	5.97'	89	28.92'	18+94.43, 47.52' LT.
B	90°53'28"	21.00'	21.33'	33.31'	8.93'	6.27	98	29.93'	19+88.55, 47.97' LT.
C	89°21'20"	20.00'	19.78'	31.19'	8.13'	5.78'	84	28.13'	19+87.68, 47.74', RT.
D	89°57'58"	15.00'	14.99'	23.55'	6.21'	4.39'	48	21.21'	19+00.15, 41.73' RT.

SCALE: AS NOTED
CALCULATED MSS
CHECKED LMO

IMPROVEMENTS OF INTERSECTION AND CURB RAMP DETAILS
E RICH STREET FROM S 3RD ST TO S GRANT AVE
FRA E RICH ST SIGNALS AND 4TH STREET

3921-E

45
95

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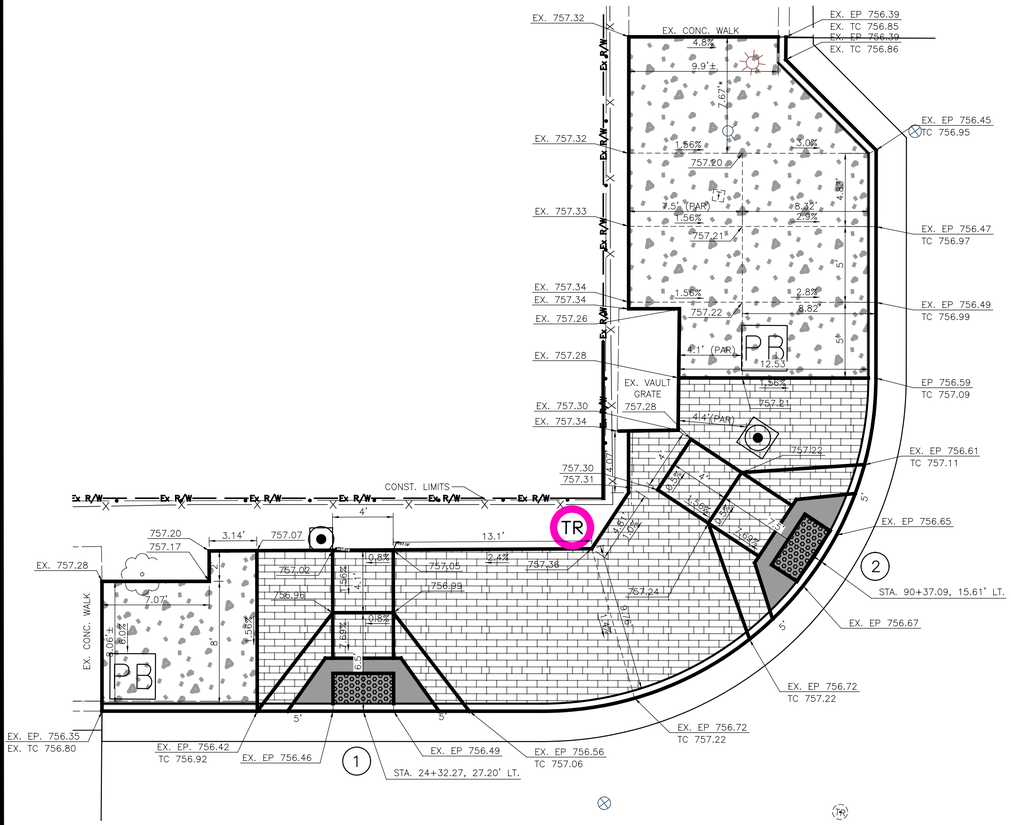
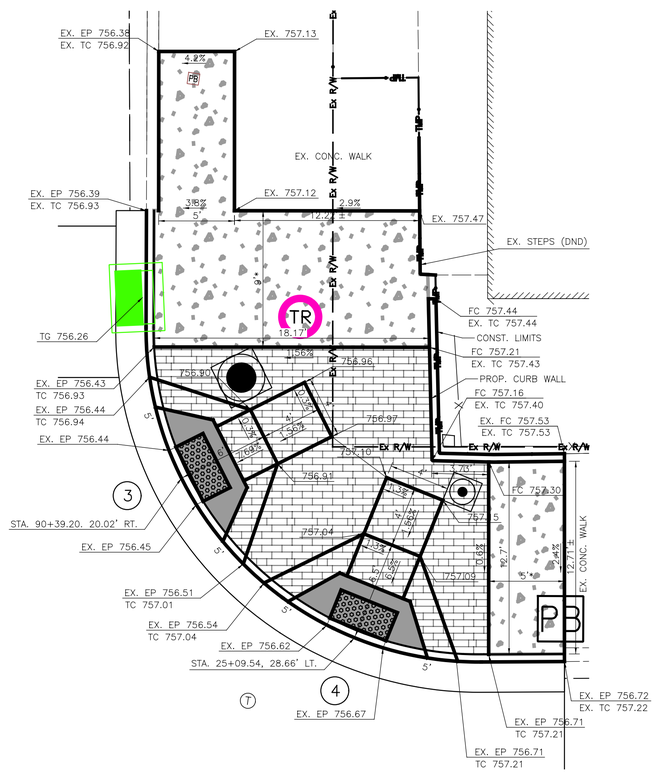


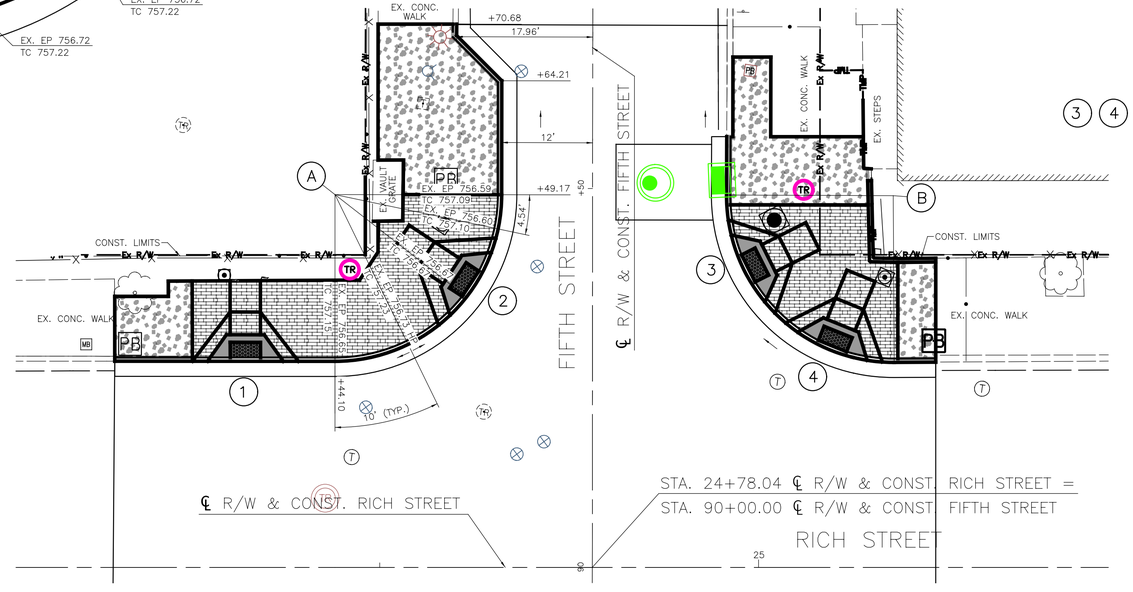
1 2 NW CORNER CURB RAMP DETAIL

SCALE: 1" = 5'



3 4 NE CORNER CURB RAMP DETAIL

SCALE: 1" = 5'



INTERSECTION DETAIL AT RICH STREET & 5TH STREET

SCALE: 1" = 10'

LEGEND

XXX.XX — PROPOSED ELEVATIONS
EP = EDGE OF PAVEMENT
EX = MATCH EXISTING
TC = TOP OF CURB
TG = TOP OF GRATE

* TRANSITION CROSS SLOPE FROM 1.56% (MAXIMUM) TO MATCH EXISTING.

(1) CURB RAMP NUMBER

DETECTABLE WARNING, TYPE E, CAST IRON

PROP. BRICK WALK

PROP. 4" CONCRETE WALK, BUFF WASH FINISH

PROP. 8" CONCRETE WALK, BUFF WASH FINISH

CURVE DATA									
	DELTA	RADIUS	TANGENT	LENGTH	EXTERNAL	MIDDLE	FILLET AREA	CHORD DISTANCE	RADIUS POINT
A	89°57'29"	22.00'	21.98'	34.54'	9.10'	6.44'	104	31.10'	24+44.11, 49.19' LT.
B	90°32'41"	22.00'	22.21'	34.77'	9.26'	6.52'	106	31.26'	25+17.78, 49.05' LT.

SCALE: AS NOTED

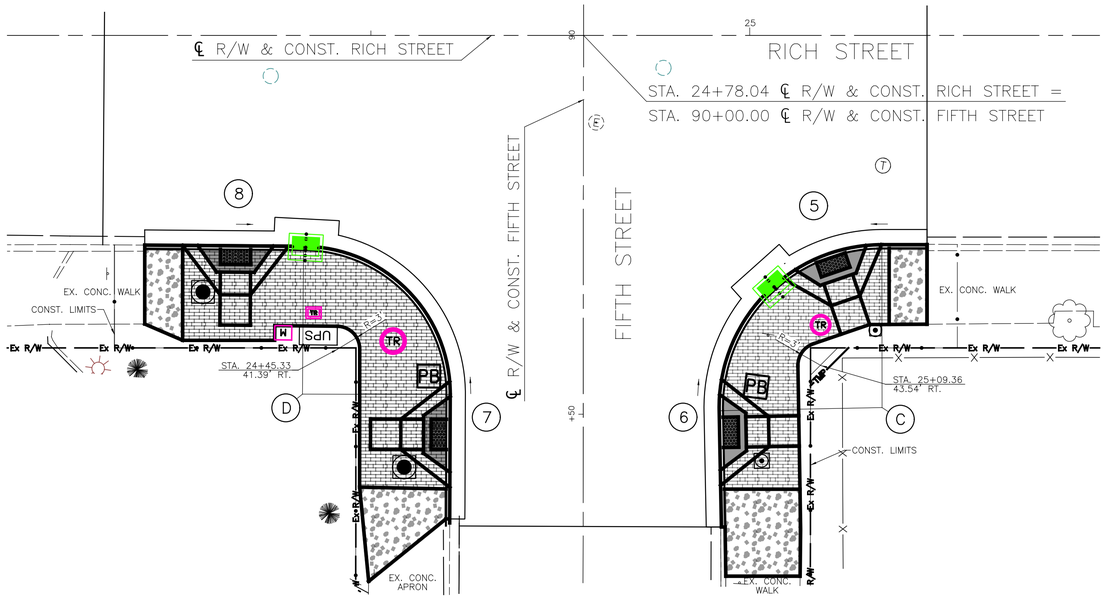
CALCULATED MSS
CHECKED LMO

INTERSECTION AND CURB RAMP DETAILS
RICH STREET AND 5TH STREET - NORTH LEG

IMPROVEMENTS OF
E RICH STREET FROM S 3RD ST TO S GRANT AVE
FRA E RICH ST SIGNALS

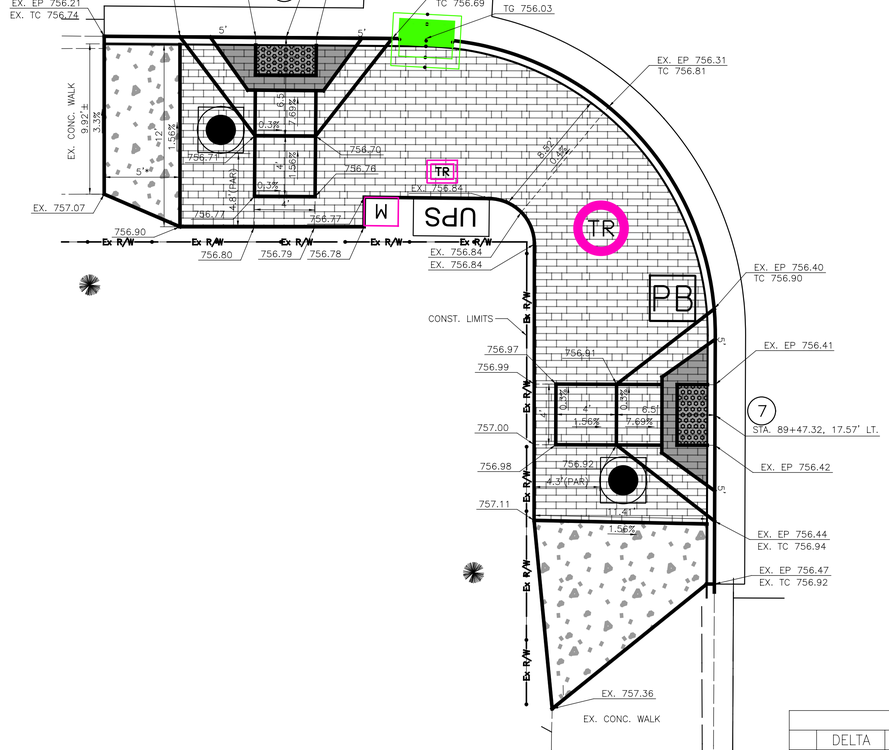
3921-E

46
95



INTERSECTION DETAIL AT RICH STREET & 5TH STREET

SCALE: 1" = 10'



7 8 SW CORNER CURB RAMP DETAIL

SCALE: 1" = 5'

LEGEND

XXX.XX — PROPOSED ELEVATIONS

EP = EDGE OF PAVEMENT
EX = MATCH EXISTING
TC = TOP OF CURB
TG = TOP OF GRATE
* TRANSITION CROSS SLOPE FROM 1.56% (MAXIMUM) TO MATCH EXISTING.

(1) CURB RAMP NUMBER

DETECTABLE WARNING, TYPE E, CAST IRON

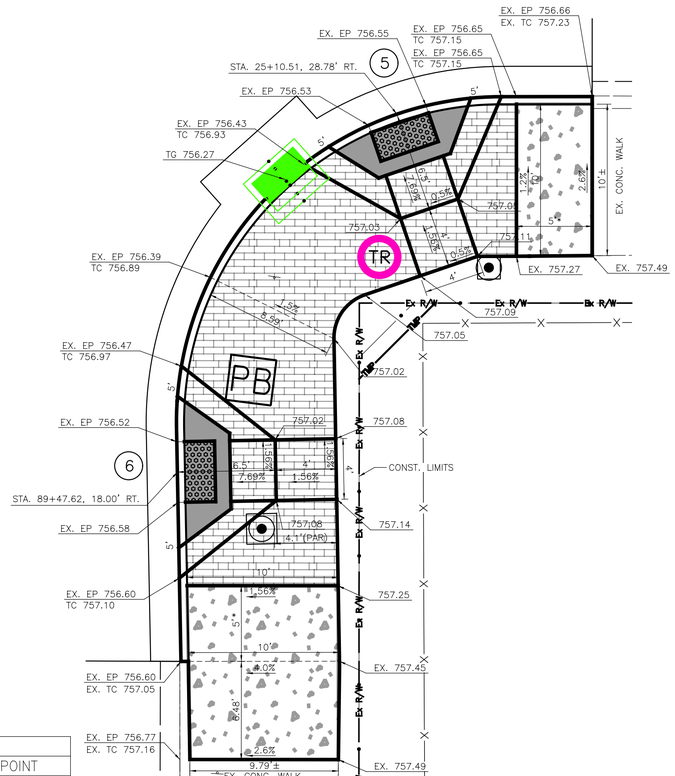
PROP. BRICK WALK

PROP. 4" CONCRETE WALK, BUFF WASH FINISH

PROP. 8" CONCRETE WALK, BUFF WASH FINISH

CURVE DATA

	DELTA	RADIUS	TANGENT	LENGTH	EXTERNAL	MIDDLE	FILLET AREA	CHORD DISTANCE	RADIUS POINT
C	91°01'55"	21.50'	21.89'	34.16'	9.18'	6.43'	103	30.68'	25+17.46, 49.13', RT.
D	89°46'42"	19.50'	19.42'	30.56'	8.02'	5.68'	81	27.52'	24+40.97, 47.34' RT.



5 6 SE CORNER CURB RAMP DETAIL

SCALE: 1" = 5'

INTERSECTION AND CURB RAMP DETAILS
RICH STREET AND 5TH STREET - SOUTH LEG

SCALE: AS NOTED

CALCULATED MSS
CHECKED LMO

IMPROVEMENTS OF
E RICH STREET FROM S 3RD ST TO S GRANT AVE
FRA E RICH ST SIGNALS

3921-E

47
95

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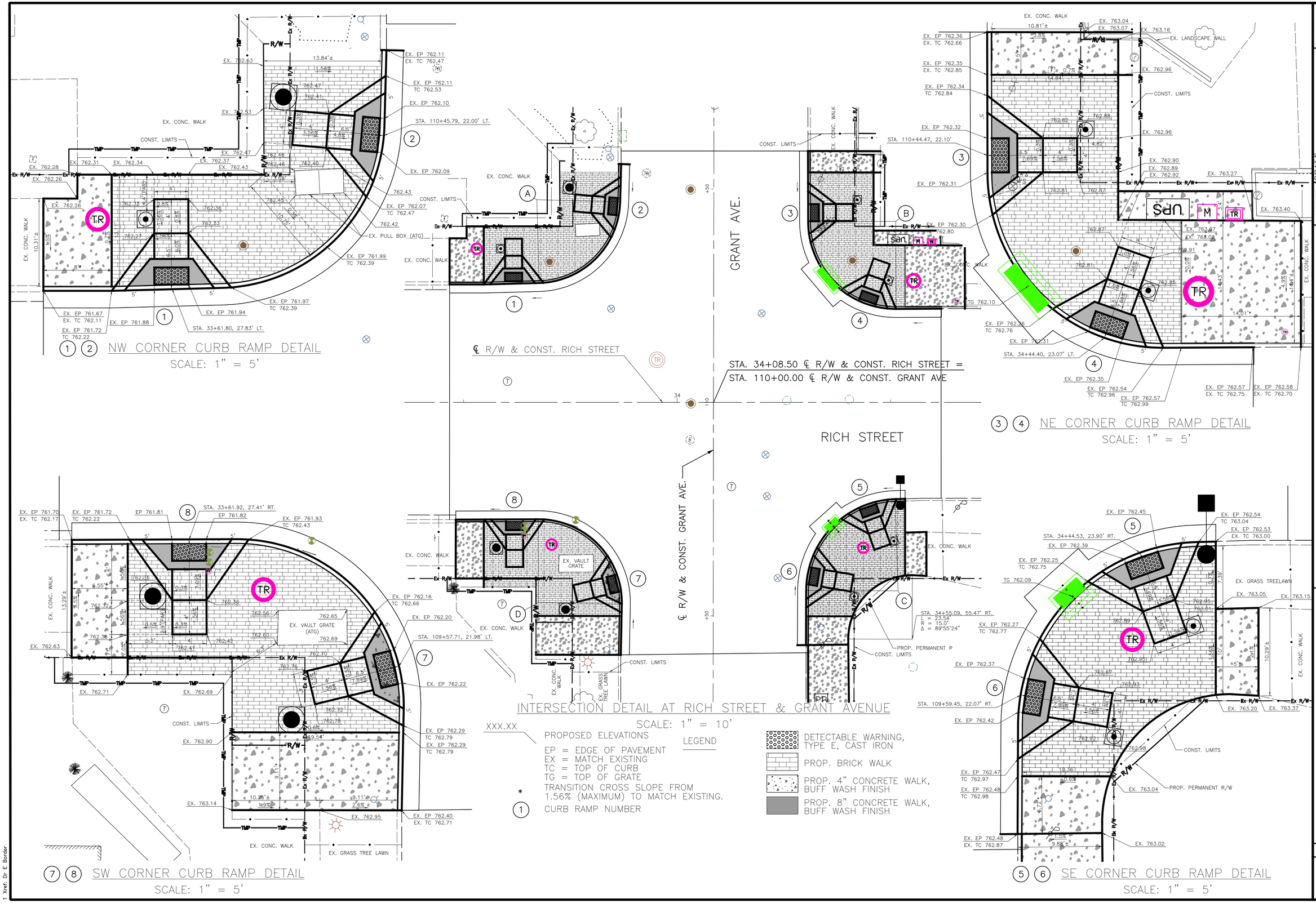
Xref: Dr E Border


NW CORNER CURB RAMP DETAIL
SCALE: 1" = 5'
NE CORNER CURB RAMP DETAIL
SCALE: 1" = 5'
INTERSECTION DETAIL AT RICH STREET & GRANT AVENUE
SCALE: 1" = 10'
SW CORNER CURB RAMP DETAIL
SCALE: 1" = 5'
SE CORNER CURB RAMP DETAIL
SCALE: 1" = 5'
GRANT AVE.
RICH STREET
℄ R/W & CONST. RICH STREET
℄ R/W & CONST. GRANT AVE.
STA. 34+08.50 ℄ R/W & CONST. RICH STREET =
STA. 110+00.00 ℄ R/W & CONST. GRANT AVE
XXX.XX PROPOSED ELEVATIONS
EP = EDGE OF PAVEMENT
EX = MATCH EXISTING
TC = TOP OF CURB
TG = TOP OF GRATE
TRANSITION CROSS SLOPE FROM 1.56% (MAXIMUM) TO MATCH EXISTING.
* 1 CURB RAMP NUMBER
LEGEND
DETECTABLE WARNING, TYPE E, CAST IRON
PROP. BRICK WALK
PROP. 4" CONCRETE WALK, BUFF WASH FINISH
PROP. 8" CONCRETE WALK, BUFF WASH FINISH
SCALE: AS NOTED
CALCULATED MSS
CHECKED LMO
INTERSECTION AND CURB RAMP DETAILS
RICH STREET & GRANT AVENUE
IMPROVEMENTS OF
E RICH STREET FROM S 3RD ST TO S GRANT AVE
FRA E RICH ST SIGNALS
3921-E
48
95
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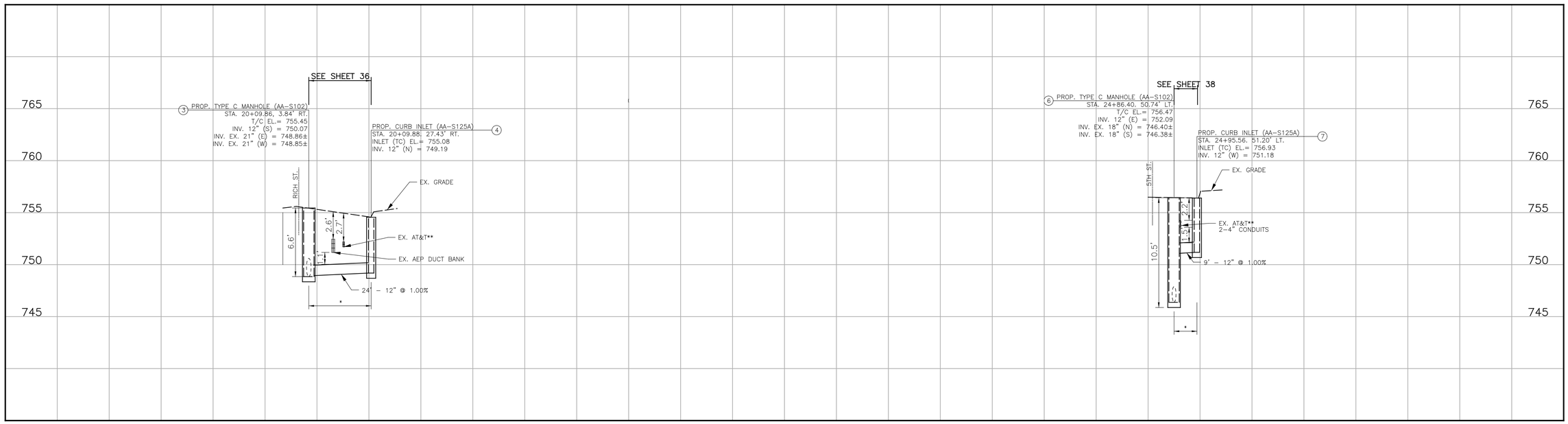
Xref: Dr E Border



TC = TOP OF CURB
T/C = TOP OF CASTING
* TYPE 1 BEDDING, WITH ITEM 912 COMPACTED GRANULAR MATERIAL
** ASSUMED ELEVATIONS.

STORM STRUCTURE TABLE									
SHEET	STRUCTURE NO.	PROPOSED				AS-BUILT			
		NORTHING	EASTING	ELEVATION		NORTHING	EASTING	ELEVATION	
				INVERT	T/C			INVERT	T/C
34	1	713524.761	1829268.033	752.13	755.28				
36	2	713593.837	1829755.270	752.28#	755.15				
36	3	713563.914	1829795.178	748.85	755.45				
36	4	713540.576	1829798.541	750.31	755.08				
36	5	713525.590	1829684.635	752.52	755.49				
38	6	713685.448	1830259.181	746.38	756.47				
38	7	713687.045	1830267.838	752.18	756.93				
38	8	713604.732	1830287.723	753.82	756.94				
38	9	713601.146	1830225.776	754.05	756.70				
40	10	713798.295	1831202.298	760.02	762.77				
40	11	713741.071	1831211.140	757.58	762.76				

BASED ON RECORD PLANS. CONTRACTOR TO FIELD VERIFY. EX. STRUCTURE FULL OF DEBRIS.

SEWER COORDINATE TABLE					
SHEET	STRUCTURE NO.		BEARING	DISTANCE	DIAMETER
	FROM	TO			
36	4	3	N08°12'00"W	24'	12"
38	7	6	S78°57'35"W	9'	12"

HORIZ= 0 10 20 40 (1 Inch = 20 Feet)
VERT= 0 2.5 5 10 (1 Inch = 5 Feet)

CALCULATED BHF
CHECKED LMO

STORM SEWER PROFILES AND COORDINATE TABLES

IMPROVEMENTS OF
E RICH STREET FROM S 3RD ST TO S GRANT AVE
FRA E RICH ST SIGNALS

3921-E

SHEET NO.	STATION		SIDE	630	630	630	630	630	630	630	630		641		644	644	644	644												
				GROUND MOUNTED SUPPORT, No. 3 POST	STREET NAME SIGN SUPPORT, No. 3 POST	SIGN SUPPORT ASSEMBLY, POLE MOUNTED, AS PER PLAN	SIGN, FLAT SHEET, AS PER PLAN	STREET NAME SIGN	REMOVAL OF GROUND MOUNTED SIGN AND DISPOSAL	REMOVAL OF POLE MOUNTED SIGN AND DISPOSAL	REMOVAL OF GROUND MOUNTED POST SUPPORT AND DISPOSAL		REMOVAL OF PAVEMENT MARKING		STOP LINE, 24"	CROSSWALK LINE, 12"	PARKING STALL MARKING, WHITE, 4"	DOTTED LINE, WHITE, 6"												
	FROM	TO		LF	LF	EA	SF	SF	EA	EA	EA		LF		LF	LF	LF	LF												
51	11+00	16+00	CL	58.5		4	60.0	4.5	3	5	3		516		107	425	119													
52	17+00	22+00	CL	23.0	39.0		25.8	9.0	3	4	2		693		107	459	85	141												
53	22+50	27+50	CL	9.5		1	4.0		3	2	3		491		87	377														
54	31+50	36+50	CL	9.5			10.5		2		1		520		98	391														
TOTALS CARRIED TO GENERAL SUMMARY				100.5	39.0	5	100.3	13.5	11	11	9		2219		399	1652	204	141												

CALCULATED ANC
CHECKED DKA

TRAFFIC CONTROL
SUBSUMMARY

IMPROVEMENTS OF
E RICH STREET FROM S 3RD ST TO S GRANT AVE
FRA E RICH ST SIGNALS

3921-E

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LINE SPECIFICATIONS			
SL	Stop Line, 24" White	WE	Edge Line, 6" White
DY	Center Line, 4" Solid Double Yellow	XW	Crosswalk Line, 12" White
		BSS	Symbol, Bike Sharrow
		A	Arrow, Single, White
CH	Channelizing Line, 12" White	AC	Arrow, Double Combination, White
YE	Edge Line, 6" Yellow	LL	Lane Line, 6" White
WPS	Parking Stall Marking, 4" White	CLD	Center Line, 4" Solid/Dashed Double Yellow
WD	Dotted Line, 6" White		

(XX) PROPOSED PAVEMENT MARKING (ITEM 647)

(XW) PROPOSED PAVEMENT MARKING (ITEM 644)

|XX| EXISTING PAVEMENT MARKING

REMOVE PAVEMENT MARKINGS ×

SIGNING LEGEND

- PROPOSED SIGN
- EXISTING SIGN TO REMAIN
- EXISTING SIGN TO BE REMOVED
- EXISTING SIGN TO BE REMOVED AND REERECTED

REMOVE EXIST. STOP LINE MARKINGS
REMOVE EXIST. XW MARKINGS
REMOVE EXIST. XW MARKINGS
REMOVE EXIST. XW MARKINGS
REMOVE EXIST. XW MARKINGS
REMOVE EXIST. STOP LINE MARKINGS
End WPS
Begin WPS
E RICH ST
E. RICH STREET
S. THIRD STREET
LAZELLE STREET
R6-21-30, 24" X 30", CP 813.03D STA. 15+08
R6-1L-36 STREET NAME SIGN 18" X VARIOUS STA. 50+52 POLE-MTD.
M1-1-30-2 M6-1-30 ON-336, 30" X 36" STA. 14+90 POLE-MTD.
R3-17-24 BIKE LANE STA. 49+40
M3-4-30 M1-1-30-2 M6-3-30
M3-3-30 M1-1-30-2 M6-3-30
STA. 48+82

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Horiz 1 inch = 20 Feet

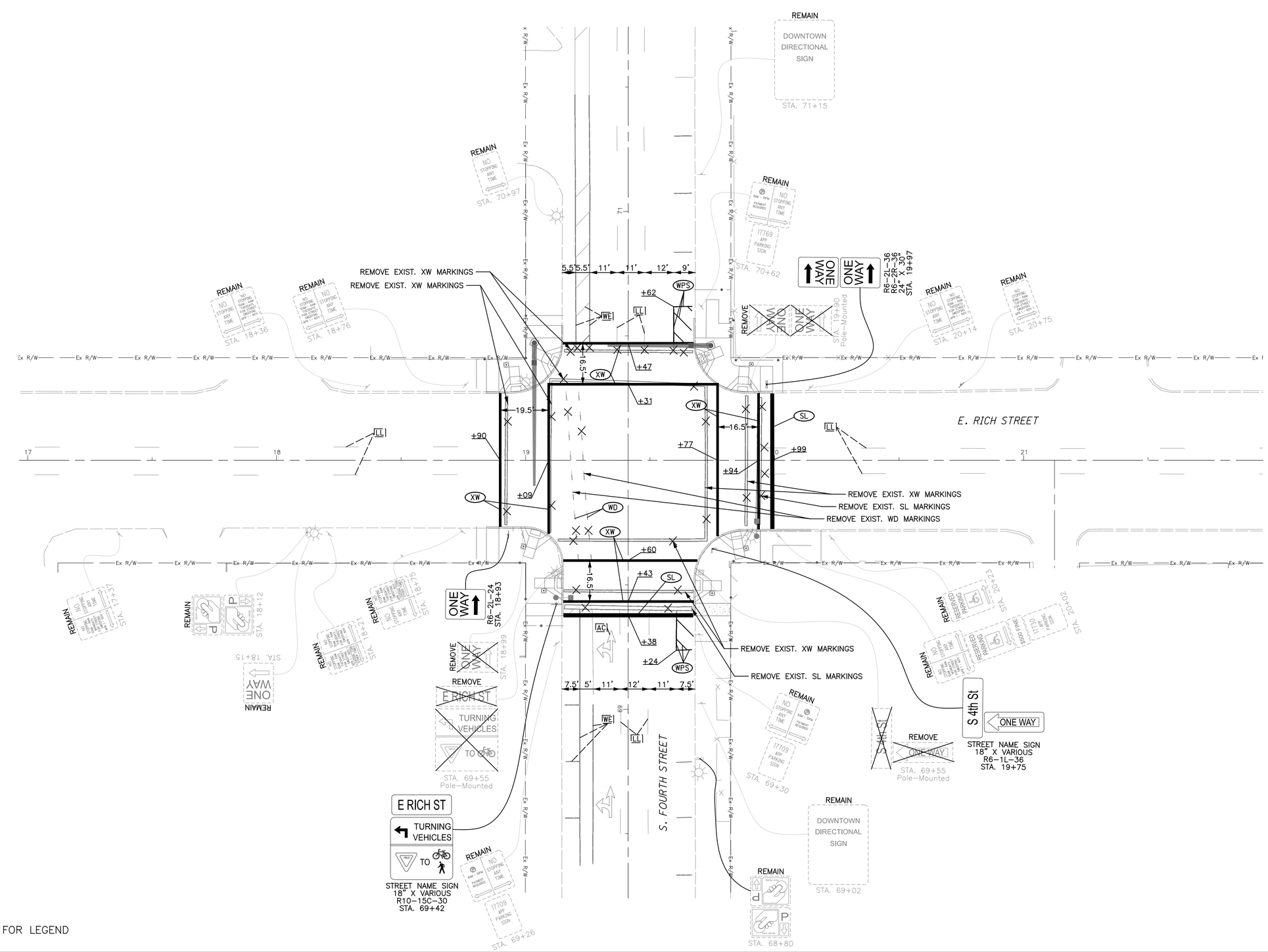
CALCULATED ANC
CHECKED DKA

TRAFFIC CONTROL PLAN
STA 11+00 TO STA 16+00

IMPROVEMENTS OF
E RICH STREET FROM S 3RD ST TO S GRANT AVE
FRA E RICH ST SIGNALS

3921-E

51
95



NOTES
1. SEE SHEET 51 FOR LEGEND

0 20 40
Horiz 1 Inch = 20 Feet

CALCULATED ANC
CHECKED DKA

TRAFFIC CONTROL PLAN
STA 17+00 TO STA 22+00

IMPROVEMENTS OF
E RICH STREET FROM S 3RD ST TO S GRANT AVE
FRA E RICH ST SIGNALS

3921-E

52
95

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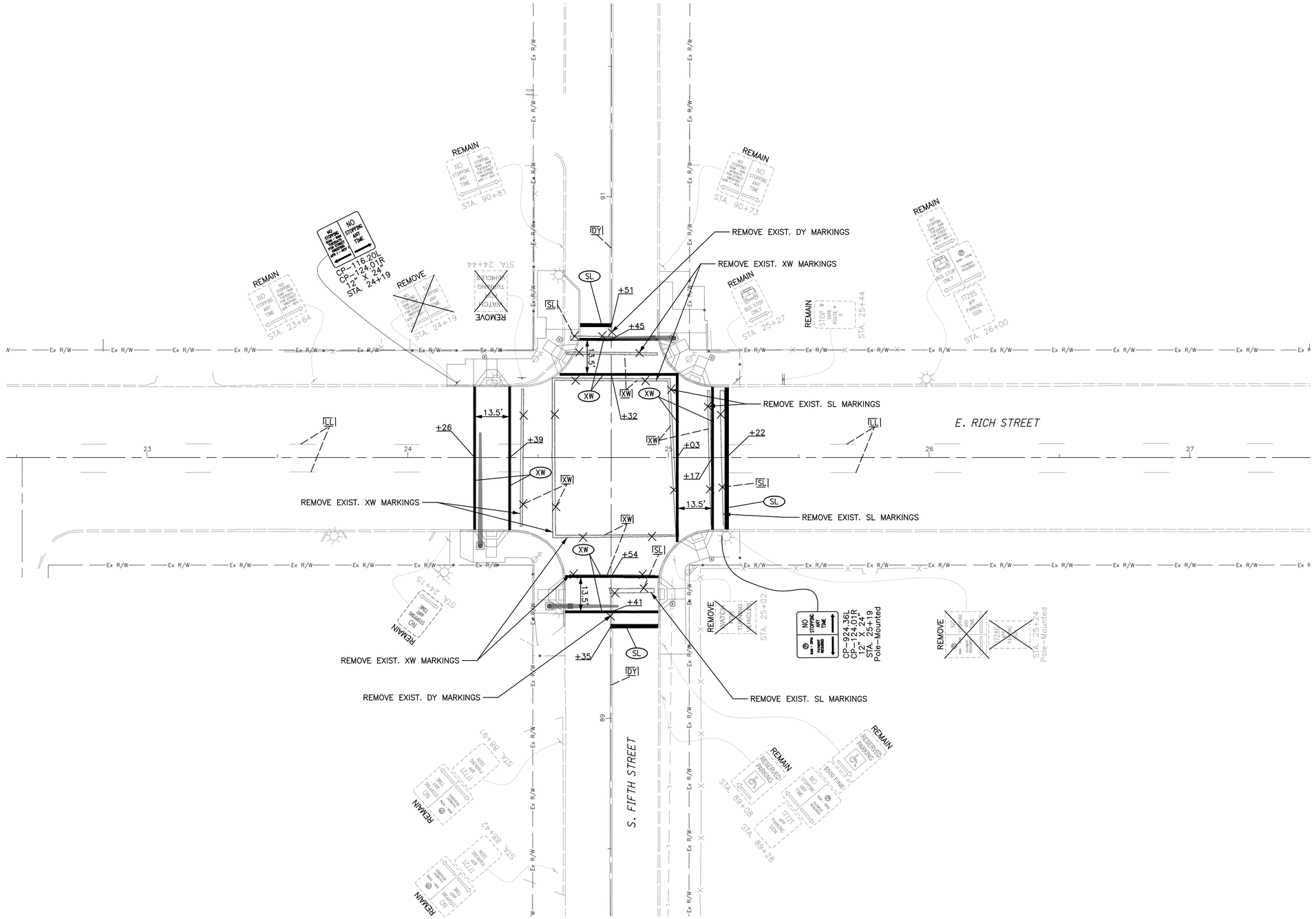

NOTES
1. SEE SHEET 51 FOR LEGEND

0 20 40
Horiz 1 inch = 20 feet

CALCULATED ANC
CHECKED DKA

TRAFFIC CONTROL PLAN
STA 22+50 TO STA 27+50

IMPROVEMENTS OF
E RICH STREET FROM S 3RD ST TO S GRANT AVE
FRA E RICH ST SIGNALS

3921-E

53
95

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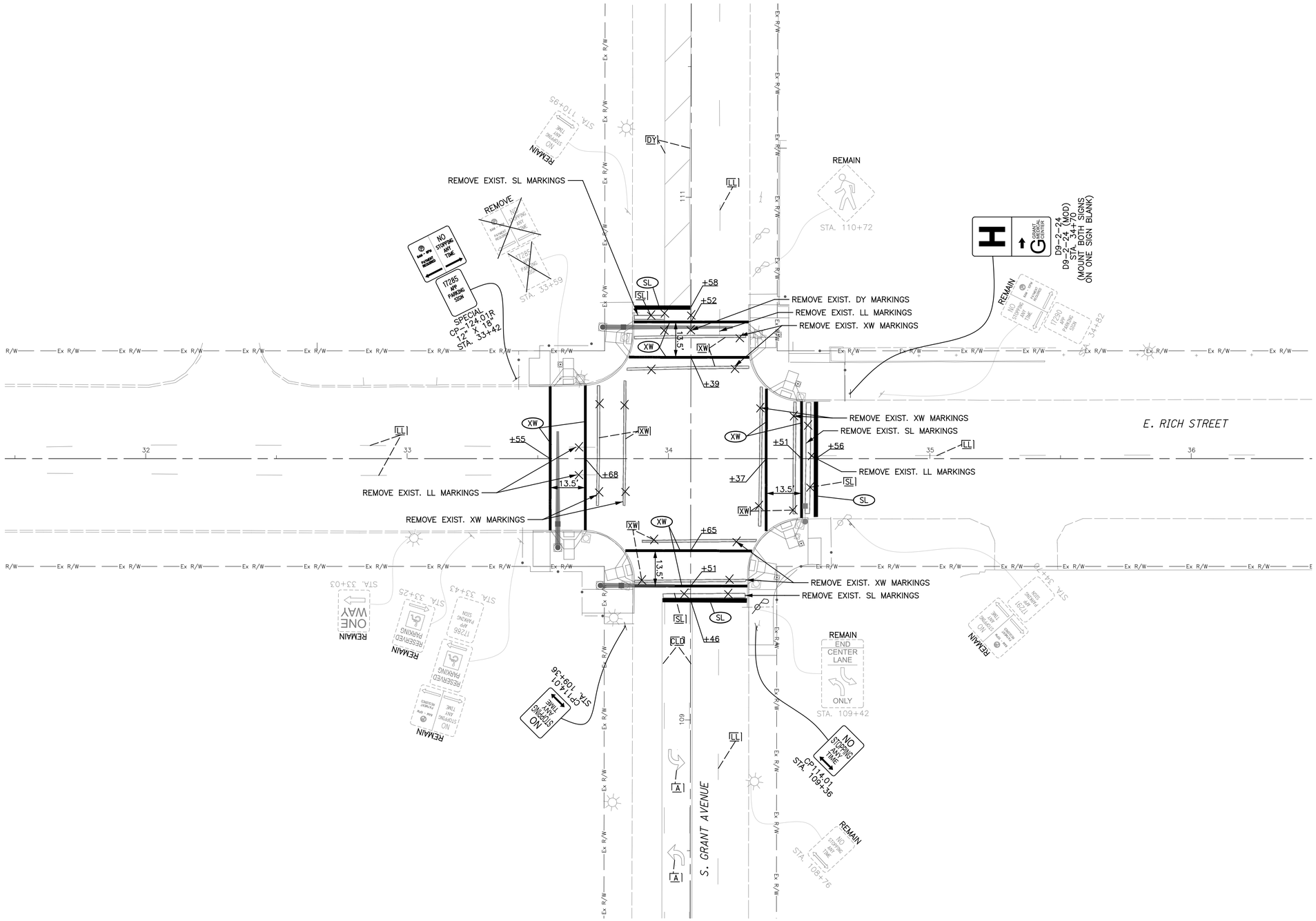

NOTES
1. SEE SHEET 51 FOR LEGEND

0 20 40
Horiz 1 Inch = 20 Feet

CALCULATED ANC
CHECKED DKA

TRAFFIC CONTROL PLAN
STA 31+50 TO STA 36+50

IMPROVEMENTS OF
E RICH STREET FROM S 3RD ST TO S GRANT AVE
FRA E RICH ST SIGNALS

3921-E

54
95

GENERAL

THE DIVISION OF DESIGN AND CONSTRUCTION IS A SUBUNIT OF THE CITY OF COLUMBUS DEPARTMENT OF PUBLIC SERVICE AND IS OWNER OF PART OR ALL OF THE FACILITIES COVERED BY THESE PLANS.

ALL INCIDENTAL WORK ITEMS CALLED FOR IN THESE PLANS FOR WHICH NO SPECIFIC METHOD OF PAYMENT IS PROVIDED SHALL BE PERFORMED BY THE CONTRACTOR AND THE TOTAL COST OF SAID ITEMS SHALL BE INCLUDED IN THE PRICE OF ITS ASSOCIATED BID ITEM.

– 3/6/18

PLAN AND SPECIFICATION COMPLIANCE

THE CONTRACTOR SHALL FURNISH AND INSTALL TRAFFIC SIGNAL DEVICES IN COMPLIANCE WITH THESE PLANS AND SPECIFICATIONS, THE 2018 CITY OF COLUMBUS CONSTRUCTION AND MATERIAL SPECIFICATIONS AND ITS SUPPLEMENTAL SPECIFICATIONS, OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS, AND THE STANDARD CONSTRUCTION DRAWINGS ISSUED BY THE CITY OF COLUMBUS. THE CITY OF COLUMBUS, SHALL DETERMINE WHETHER THE SUPPLIED ITEMS MEET OR EXCEED THESE SPECIFICATIONS.

TRAFFIC SIGNAL CONTROL EQUIPMENT SHALL MEET OR EXCEED THE STANDARDS SPECIFIED IN THE FOLLOWING DOCUMENTS:

(A) SPECIFICATIONS LISTED IN THIS PLAN;
(B) APPLICABLE SECTIONS OF NEMA STANDARDS PUBLICATION NO. TS2–1998 AND/OR TS1 1989;
(C) 2018 CITY OF COLUMBUS CONSTRUCTION AND MATERIAL SPECIFICATIONS 625, 632, 633, 725, 732 & 733;
(D) CITY OF COLUMBUS STANDARD CONSTRUCTION DRAWINGS

IN CASE OF A CONFLICTING SPECIFICATION STATEMENT, THE SPECIFICATION DOCUMENT HIERARCHY SHALL BE IN THE ORDER LISTED FROM (A) HIGHEST, TO (D) LOWEST.

– 3/6/18

MAINTENANCE OF TRAFFIC SIGNAL INSTALLATIONS

(A) PROPOSED TRAFFIC SIGNAL INSTALLATION

THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING ALL PROPOSED TRAFFIC SIGNAL DEVICES UNDER THE FOLLOWING CONDITIONS FROM THE TIME OF INSTALLATION UNTIL THE DEVICE HAS BEEN ACCEPTED BY THE CITY.

THE CONTRACTOR SHALL PROVIDE 2 OR MORE CONTACTS WHO CAN RECEIVE ALL DEVICE OUT–OF–SERVICE CALLS THAT FALL UNDER THE CONTRACTOR'S RESPONSIBILITY. THE CONTRACTOR SHALL DISPATCH MAINTENANCE PERSONNEL TO CORRECT THE PROBLEM. THE CONTRACTOR SHALL PROVIDE THE CITY AND THE PROJECT ENGINEER WITH ADDRESSES AND PHONE NUMBERS OF THESE CONTACTS. MAINTENANCE PERSONNEL MAY BE USED TO PERFORM OTHER DUTIES AS LONG AS PROMPT ATTENTION IS GIVEN TO THESE CALLS AND A PERSON IS CONTINUOUSLY AVAILABLE 24 HOURS A DAY AND 7 DAYS A WEEK. THE CONTRACTOR SHALL PROVIDE MAINTENANCE SERVICE ENTIRELY WITH HIS PERSONNEL.

THE CONTRACTOR SHALL CORRECT ALL BULB OUTAGES, DEVICE MALFUNCTIONS OF ANY TYPE, INTERNAL CABINET POWER LOSES, SPAN OR CABLE PROBLEMS AND MISALIGNED OR DAMAGED VEHICULAR OR PEDESTRIAN SIGNAL HEADS WITHIN 2 HOURS AFTER THE CONTRACTOR'S CONTACT PERSON HAS BEEN NOTIFIED OF ANY ONE OF THE ABOVE. IN THE EVENT A NEW SIGNAL DEVICE IS DAMAGED PRIOR TO ACCEPTANCE, THE DAMAGED DEVICE, EXCEPT POLES, SHALL BE REPLACED OR REPAIRED BY THE CONTRACTOR TO THE SATISFACTION OF THE CITY. ANY DAMAGED CABINET ASSEMBLY DEVICE IF REPAIRED SHALL BE TESTED ONCE AGAIN BY THE CITY BEFORE THE DEVICE CAN BE INSTALLED.

IN THE EVENT OF A LOSS OF POWER TO THE SIGNAL INDICATIONS OTHER THAN AN ELECTRIC COMPANY GENERAL POWER OUTAGE, THE CONTRACTOR, AT HIS EXPENSE, SHALL IMMEDIATELY TAKE ACTION (WITHIN 30 MINUTES) TO PROPERLY ERECT TEMPORARY STOP SIGN(S) AND PROVIDE POLICE OFFICER(S) TO DIRECT TRAFFIC UNTIL THE SIGNAL IS BACK ON "FLASH" OR OPERATING PROPERLY.

IF A TRAFFIC STRAIN, SUPPORT OR PEDESTAL POLE IS DAMAGED AND THAT DAMAGE CAUSES POLE INSTABILITY, THEN THE CONTRACTOR SHALL TAKE IMMEDIATE ACTION (WITHIN 2 HOURS) TO STABILIZE IT. THE CONTRACTOR SHALL STILL BE RESPONSIBLE FOR PROVIDING THE PROJECT WITH A NEW UNDAMAGED POLE.

WHERE OUT–OF–SERVICE CALLS ARE THE DIRECT RESULT OF A VEHICULAR ACCIDENT, THE RESPONSE OF THE CONTRACTOR SHALL BE AS OUTLINED ABOVE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE COLLECTION OF ANY COMPENSATION FROM THOSE PARTIES RESPONSIBLE FOR THE DAMAGE TO THE CONTRACTOR'S MATERIALS.

MAINTENANCE OF TRAFFIC SIGNAL INSTALLATIONS (CONT'D)

WHERE THE CONTRACTOR HAS FAILED TO RESPOND OR CANNOT RESPOND TO AN OUT–OF–SERVICE CALL WITHIN THE TIME PERIOD SPECIFIED ABOVE AT LOCATIONS UNDER HIS RESPONSIBILITY, THE CITY MAY TAKE ACTION AS IT DEEMS NECESSARY TO CORRECT THE SITUATION. THIS ACTION MAY INCLUDE CONTROLLING THE INTERSECTION USING COLUMBUS POLICE OFFICERS, COMPLETELY REMOVING OR REPLACING ANY MALFUNCTIONING TRAFFIC CONTROL DEVICE, AND/OR INSTALLING ANY DEVICE(S) REQUIRED TO RETURN THE INTERSECTION TO REGULAR SIGNAL OPERATION. ALL COSTS ASSOCIATED WITH THESE ACTIONS SHALL BE BILLED DIRECTLY TO THE CONTRACTOR AND NOT INCLUDED IN ITEM 614 MAINTAINING TRAFFIC, AS PER PLAN.

ANY NON–OPERATING VEHICULAR OR PEDESTRIAN SIGNAL HEAD OR PUSHBUTTON SHALL BE COVERED AS REFERENCED IN THESE PLANS. ALL SIGNAL HEADS, WHILE COVERED, SHALL BE DARK BY DISCONNECTING POWER TO THE SIGNAL INDICATIONS. NO COVERED HEAD SHALL BLOCK THE VIEW OF AN OPERATING HEAD. A MINIMUM OF 2 VEHICULAR SIGNAL HEADS PER TRAVELLED DIRECTION (SPACED 8 FT. APART MINIMUM AND 12 FT. MAXIMUM) SHALL BE OPERATING AT ALL TIMES.

(B) TEMPORARY CONTROLLER OR TRAFFIC SIGNALS

IN ADDITION TO 614.10, THE FOLLOWING SHALL APPLY:

IF THE CONTRACTOR IS REQUIRED TO ERECT AND/OR INSTALL ANY TEMPORARY TRAFFIC CONTROL DEVICE OR TEMPORARY SIGNAL/SUPPORT POLE THAT IS NOT SPECIFIED IN THESE PLANS, THEN THE CONTRACTOR SHALL SUBMIT THE DESIGN CHANGE TO THE CITY OF COLUMBUS, FOR APPROVAL PRIOR TO THE INSTALLATION. THE CITY ALSO RESERVES THE RIGHT TO MAKE, OR HAVE THE CONTRACTOR MAKE, CHANGES TO THE TRAFFIC SIGNAL OPERATION.

IF A TEMPORARY CONTROLLER AND/OR A TS1 CABINET ASSEMBLY IS REQUIRED AT ANY INTERSECTION, THEN THE EQUIPMENT SHALL MEET NEMA STANDARDS TS1–1989 OR TS2–1998 (TYPE 2) AND SHALL BE APPROVED BY THE CITY OF COLUMBUS.

(C) EXISTING TRAFFIC SIGNAL DEVICES

THE CITY OF COLUMBUS, (ELECTRONICS MAINTENANCE SHOP, 645–7933), SHALL PERFORM ROUTINE MAINTENANCE ON ALL EXISTING CABINET ASSEMBLY ITEMS ONLY. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR THE MAINTENANCE OF ALL OTHER EXISTING TRAFFIC SIGNAL DEVICES ONCE ANY PROJECT SIGNAL WORK HAS STARTED. IF, IN THE COURSE OF WORK, THE GENERAL CONTRACTOR OR ANY PROJECT SUB–CONTRACTOR CAUSES DAMAGE TO ANY EXISTING TRAFFIC SIGNAL DEVICE OTHER THAN THE CABINET ASSEMBLY, THEN THE CONTRACTOR, AT THE CONTRACTOR'S COST, SHALL REPAIR AND/OR REPLACE THE DAMAGED DEVICE TO THE SATISFACTION OF THE CITY. DAMAGE TO THE CABINET ASSEMBLY BY ANY PROJECT CONTRACTOR SHALL BE REPAIRED BY THE CITY AND BILLED TO THE GENERAL CONTRACTOR.

ALL COSTS RESULTING FROM THE ABOVE REQUIREMENTS, EXCEPT AS NOTED, SHALL BE CONSIDERED TO BE INCLUDED IN THE LUMP SUM BID PRICE FOR ITEM 614 MAINTAINING TRAFFIC, AS PER PLAN.

– 3/6/18

GROUNDING AND BONDING

REQUIREMENTS OF THE CURRENT EDITION OF THE CMSC AND THE CITY OF COLUMBUS STANDARD CONSTRUCTION DRAWINGS ARE MODIFIED AS FOLLOWS:

1. ALL NON–CURRENT CARRYING METALLIC PARTS CONTAINING ELECTRICAL CONDUCTORS SHALL BE PERMANENTLY JOINED TO FORM AN EFFECTIVE GROUND FAULT CURRENT PATH BACK TO THE GROUNDED CONDUCTOR AT THE TRAFFIC SIGNAL CONTROLLER CABINET OR POWER METER CABINET, AS NOTED BELOW.

   A. PROVIDE AN EQUIPMENT GROUNDING CONDUCTOR IN METALLIC CONDUITS (725.04)/POLYVINYL CHLORIDE CONDUITS (725.051) AND POLYETHYLENE CONDUITS (725.052) IN ADDITION TO THE CONDUCTORS SPECIFIED.

   B. METAL PULL BOX FRAMES SHALL BE BONDED BY ATTACHMENT OF THE EQUIPMENT GROUNDING CONDUCTOR TO THE FRAME AS ILLUSTRATED ON SCD 4021 THROUGH 4023.

   C. IF MULTIPLE CONDUIT RUNS BEGIN AND END AT THE SAME POINTS, EQUIPMENT GROUNDING CONDUCTORS SHALL BE PROVIDED AS SHOWN IN THE DETAILS.

   D. THE MESSENGER WIRE AT SIGNALIZED INTERSECTIONS SHALL BE USED AS THE CONDUCTIVE PATH FROM CORNER TO CORNER IF CONDUIT IS NOT PROVIDED UNDER THE ROADWAY. WHEN CONDUIT CONNECTS THE CORNERS OF AN INTERSECTION, AN EQUIPMENT GROUNDING CONDUCTOR SHALL BE USED IN THE CONDUIT UNLESS OTHERWISE DIRECTED BY THE CITY.

GROUNDING AND BONDING (CONT'D)

2. CONDUITS.

   A. THE 725.04 CONDUIT SHALL HAVE HEAVY DUTY GROUNDING BUSHINGS INSTALLED AT ALL TERMINATION POINTS. THE BUSHING MATERIAL SHALL BE COMPATIBLE WITH GALVANIZED STEEL CONDUIT AND THE GROUNDING LUG MATERIAL SHALL BE COMPATIBLE FOR USE WITH COPPER WIRE. THREADED OR COMPRESSION TYPE BUSHINGS MAY BE USED.

   B. THE 725.05 CONDUIT SHALL HAVE THE INSIDE AND OUTSIDE DIAMETERS OF THE CONDUIT DEBURRED AT ALL TERMINATION POINTS.

   C. BOTH ENDS OF METALLIC CONDUIT SHALL BE BONDED TO THE EQUIPMENT GROUNDING CONDUCTOR.

3. WIRE FOR GROUNDING AND BONDING

   A. USE INSULATED COPPER WIRE FOR THE EQUIPMENT GROUNDING CONDUCTOR. BONDING JUMPERS IN BOXES AND ENCLOSURES MAY BE BARE OR INSULATED COPPER WIRE. WIRE SHALL BE AS FOLLOWS:

      I. USE 4 AWG BETWEEN THE POWER SERVICE AND SUPPORTS, POLES, PEDESTALS, CONTROLLER OR FLASHER CABINETS.

      II. THE INSULATION SHALL BE GREEN WITH TWO (2) YELLOW STRIPES (TRACERS).

      III. SPLICES IN THE GROUNDING AND BONDING CABLE SHALL NOT BE PERMITTED IN PULL BOXES.

4. GROUND ROD

   A. THE TYPICAL GROUNDING CONDUCTOR (GROUND WIRE) SHALL BE 4 AWG INSULATED COPPER.

5. POWER SERVICE

   FOR LOCATIONS WITH A POWER METER CABINET:

   A. AT THE POWER METER CABINET, THE GROUNDING ELECTRODE CONDUCTOR (GROUND WIRE) FROM THE BREAKER BOX NEUTRAL (AC–) BAR TO THE GROUND ROD SHALL BE A CONTINUOUS UN–SPLICED CONDUCTOR.

   B. THE SERVICE NEUTRAL (AC–) SHALL ONLY BE CONNECTED TO GROUND AT THE MAIN POWER SERVICE IN THE POWER METER CABINET.

   C. POWER SERVICE DISCONNECT SWITCHES ARE NOT USED BETWEEN THE SECONDARY SIDE OF THE TRANSFORMER SUPPLYING POWER SERVICE AND THE CONTROLLER CABINET.

   D. A POWER SERVICE MAIN CIRCUIT BREAKER IS USED IN THE METER CABINET AND THE CONTROLLER CABINET BETWEEN THE SECONDARY SIDE OF THE TRANSFORMER SUPPLYING POWER SERVICE AND THE CONTROLLER CABINET.

GROUNDING AND BONDING SHALL BE CONSIDERED INCIDENTAL TO ITEM 625, NO. #4 AWG, 600 VOLT DISTRIBUTION CABLE, AS PER PLAN.

– 3/1/18

ITEM 625 BRACKET ARM – LUMINAIRE, 8 FT, AS PER PLAN

BRACKET ARMS SHALL BE AS DETAILED ON THE MAST ARM ORIENTATION AND POLE FABRICATION DETAILS SHEET AND SHALL MEET THE REQUIREMENTS SPECIFIED IN THE CITY OF COLUMBUS MIS–104 DRAWING EXCEPT AS MODIFIED WITHIN.

ALL PAINTED ITEMS SHALL BE COATED TO MATCH THE MAST ARM TRAFFIC SIGNAL SUPPORTS.

THE COATING COLOR ON BOTH STEEL AND ALUMINUM PRODUCTS SHALL MATCH EACH OTHER. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO ENSURE THAT BOTH THE PRODUCT MANUFACTURES MATCH COATING COLORS SO THAT AN EXCELLENT LOOKING END PRODUCT IS ACHIEVED.

PAYMENT SHALL BE AS PER ITEM 625.

– 7/23/18

ITEM 625 BRACKET ARM 25 FT, AS PER PLAN

BRACKET ARM SHALL BE INSTALLED PER SCD 4110 ON SIGNAL POLES AT LOCATIONS AS SHOWN IN THE PLANS TO FACILITATE THE INSTALLATION OF VEHICULAR DETECTION, CCTV, AND WIRELESS RADIO EQUIPMENT IN AREAS CLEAR OF OBSTRUCTIONS.

BRACKET ARM SHALL BE MADE OF ALUMINUM ALLOY TUBING. CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS OR VERIFY PLAN DETAILS TO DETERMINE THE SIZE AND CONFIGURATION OF REQUIRED CLAMPS PRIOR TO ORDERING – NO COMPENSATION WILL BE PROVIDED FOR MODIFICATIONS.

ALL STRUCTURAL STEEL PRODUCTS SHALL BE GALVANIZED ON THE INTERIOR AND THE EXTERIOR SURFACES AS PER ASTM A123. THE EXTERIOR SURFACE OF ALL STRUCTURAL STEEL AND ALUMINUM PRODUCTS SHALL BE PROPERLY PREPARED FOR THE APPLICATION OF AN EXTERIOR COATING. THE COATING COLOR ON BOTH STEEL AND ALUMINUM PRODUCTS SHALL MATCH EACH OTHER. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO ENSURE THAT BOTH PRODUCT MANUFACTURERS MATCH COATING COLORS SO THAT ACONSISTENT END PRODUCT IS ACHIEVED.

ALL EXTERIOR SURFACES, ALL ATTACHMENT HARDWARE, AND ALL CLEVIS HANGERS SHALL HAVE A COATING APPLIED TO THEM. EXTERIOR SURFACES OF ALL BOLT AND SCREW FASTENERS, WASHER NUTS, AND OTHER ATTACHMENT HARDWARE SHALL HAVE A COATING APPLIED TO THEM. FASTENER THREADS SHALL NOT BE CLOGGED WITH COATING MATERIAL.

THE EXTERIOR COATING FOR ALL ITEMS ABOVE SHALL:

1. MEET FEDERAL SPEC #595B, BE SEMI–GLOSS AND CONFORM TO COLORS AS SHOWN IN THE PLANS; AND
2. BE APPLIED OVER PROPERLY PREPARED GALVANIZING MATERIAL ON STEEL PRODUCTS AND OVER PROPERLY PREPARED ALUMINUM FOR ALUMINUM PRODUCTS; AND
3. HAVE A MINIMUM 5–YEAR REPAIR WARRANTY OF COATING DELAMINATION, BLISTERING, OR CORROSION.

ANY ALTERNATIVE PROCESSES FOR FINISH COATING OF BRACKET ARM PROPOSED BY THE CONTRACTOR MUST BE SUBMITTED TO THE ENGINEER FOR APPROVAL PRIOR TO STARTING WORK.

FOR ALUMINUM PARTS, EACH COATING LAYER SHALL BE PROPERLY CURED BEFORE THE APPLICATION OF THE NEXT COAT. THE APPLICATION PROCEDURE SHALL BE SUCH TO WARRANTY A FINISH WITHOUT DELAMINATION, BLISTERING, OR CORROSION AS PER THE MINIMUM (5) YEAR REPAIR WARRANTY.

THE COATING PROCESS SHALL INVOLVE SUCH STEPS AS THE FOLLOWING:

1. MECHANICAL PREPARATION ? BRACKET ARM ASSEMBLY (BRACKET ARM AND ALL CONNECTION COMPONENTS) SHALL BE ROTARY–SANDED TO A SATIN–GROUND FINISH. BRACKETS SHALL BE ETCHED TO A MATTE FINISH. THIS TREATMENT WILL PLACE A ROUGH SURFACE ON THESE ITEMS SO THE BASE COATING LAYER WILL HAVE EXCELLENT ADHESION.
2. CLEANING – THE BRACKET ARM ASSEMBLY SHALL BE IMMERSED IN AN ALCOHOLIC–PHOSPHORIC ACID SOLUTION THAT WILL CHEMICALLY CLEAN THESE ITEMS. THE CLEANING SOLUTIONS SHALL BE KEPT AT A NOMINAL 70 DEGREES FAHRENHEIT. THE BRACKET ARM ASSEMBLYSHALL BE IMMERSED IN THE SOLVENT SOLUTION FOR 5 MINUTES AND THEN COLD–WATER RINSED UNTIL CHEMICALS ARE WASHED OFF.
3. CONVERSION COATING – THE BRACKET ARM ASSEMBLY SHALL THEN BE IMMERSED IN AN AMORPHOUS CHROMATE CONVERSION COATING SOLUTION FOR 5 MINUTES. THE SOLUTION SHALL BE MAINTAINED AT 700 F. THIS TREATMENT WILL RESULT IN THE FORMATION OF A SURFACE FILM IN WHICH THE FILM CHEMICALLY BONDS ITSELF TO THE BASE METAL BY DIFFUSION AND BECOMES A PART OF THE BASE METAL. THE BRACKET AND PEDESTAL ASSEMBLY SHALL BE COLD–WATER RINSED. THIS SURFACE WILL PROVIDE OPTIMUM ADHESION AND GOOD STABILITY FOR THE COLOR FILM SO THAT IT DOES NOT CHIP, PEEL, OR FLAKE.
4. PRIMER COATING – AN ALUMINUM PRIMER SHALL BE APPLIED AS REQUIRED TO THE BRACKET ARM ASSEMBLY TO FURTHER IMPROVE COATING ADHESION.
5. FINAL COATING – EACH COAT SHALL BE PROPERLY DRIED BEFORE ADDITIONAL COATS ARE APPLIED. THE FINISH COAT OF PAINT SHALL MEET FEDERAL STANDARD #595B AND CONFORM TO COLOR: #27038 (SEMI–GLOSS BLACK). THE FINISH COAT SHALL HAVE A MINIMUM 5–YEAR REPAIR WARRANTY OF COATING DELAMINATION, BLISTERING, OR CORROSION.
6. DRYING – THE BRACKET ARM ASSEMBLY SHALL BE THOROUGHLY DRIED THEN PROTECTED FOR SHIPMENT AS OUTLINE BEFORE.

ALL COATED ITEMS SHALL BE SHIPPED IN A MANNER SELECTED BY THE MANUFACTURER, WHICH WILL PROTECT MATERIAL FROM DAMAGE DURING DELIVERY. MATERIALS DAMAGED IN TRANSIT SHALL BE REPAIRED OR REPLACED. ALL COSTS ASSOCIATED WITH CORRECTING DAMAGED MATERIAL SHALL BE BORNE BY THE CONTRACTOR.

THE WORK AS DESCRIBED WILL BE MEASURED AS THE NUMBER BRACKET ARMS FURNISHED AND INSTALLED, COMPLETE IN PLACE.

– 10/25/19

CALCULATED JAR
CHECKED DKA

TRAFFIC SIGNAL AND INTERCONNECT NOTES

IMPROVEMENTS OF
E RICH STREET FROM S 3RD ST TO S GRANT AVE
FRA E RICH ST SIGNALS

3921-E

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ITEM 625 LIGHTING, MISC.: PHOTO CELL

THE CONTRACTOR SHALL INSTALL PHOTO CELLS AS SHOWN IN THE PLANS AND PER CITY OF COLUMBUS ITEM 1001, MIS-600, MIS-601, AND MIS-602.

PAYMENT SHALL BE AT THE CONTRACT BID PRICE FOR EACH ITEM 625 LIGHTING, MISC.: PHOTO CELL AND SHALL INCLUDE ALL LABOR, EQUIPMENT, MATERIALS, CABLE, WIRING, CONNECTIONS, APPURTENANCES, TESTED AND ACCEPTED.

– 7/6/18

ITEM 625 LUMINAIRE, LED, 120 V, TEARDROP (BLACK), AS PER PLAN

LUMINAIRES INSTALLED ON COMBINATION TRAFFIC SIGNAL SUPPORTS SHALL BE PER CITY OF COLUMBUS MIS-801 EXCEPT THE VOLTAGE SOURCE SHALL BE 120 VAC. THE LUMINAIRE HOUSING SHALL BE COATED TO MATCH ITS RESPECTIVE COMBINATION SIGNAL SUPPORT.

PAYMENT SHALL BE AS PER ITEM 625.

– 7/23/18

ITEM 625 NO. 4 AWG 600 VOLT DISTRIBUTION CABLE, AS PER PLAN

INSULATED CABLE SHALL BE USED FOR THE GROUND WIRE (GND) WHERE INDICATED FOR SYSTEM GROUNDING AND BONDING. THE JACKET OF THE GND WIRE SHALL BE GREEN WITH TWO YELLOW STRIPES/TRACERS. THIS GND WIRE SHALL BE SEPARATE FROM THE GROUND ROD WIRE, BUT SHALL BE CONNECTED TO THE SAME GROUNDING BOLT USED FOR THE GROUND ROD WIRE ATTACHMENT AT THE POLE. THE GND WIRE SHALL BE TAGGED AS "GND SYS" AT ALL POLE LOCATIONS, PULL BOXES, AND & CONTROL CABINETS.

– 10/6/15

ITEM 625 TRENCH, AS PER PLAN

IN ADDITION TO THE REQUIREMENTS OF 625.13, THE INSTALLATION DEPTH OF THE PROPOSED CONDUIT SHALL CORRELATE TO THE DEPTH OF THE PULL BOX STRUCTURE SERVICING THE CONDUIT RUN. CONDUIT ENTERING 18 INCH PULL BOXES SHALL BE 24 INCHES DEEP. CONDUIT ENTERING 27 INCH PULL BOXES SHALL BE 30 INCHES DEEP. CONDUIT ENTERING 32 INCH PULL BOXES SHALL BE 30 to 36 INCHES DEEP. CONDUIT ENTERING 48 INCH PULL BOXES SHALL BE 39 INCHES DEEP. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO MODIFY THE DEPTH OF THE CONDUIT TO ACCOMMODATE THE VARIOUS TERMINATION DEPTHS AND UTILITY CONFLICTS. SHARP CHANGES IN CONDUIT ELEVATION WILL NOT BE PERMITTED. IF BOTH ENDS OF A CONDUIT RUN ENTER THE SAME SIZE STRUCTURE, THEN THE ENTIRE LENGTH OF CONDUIT SHALL BE PLACED AT THAT DEPTH. IF THE TWO ENDS ENTER DIFFERENT DEPTH STRUCTURES, THE CHANGE IN ELEVATION SHALL BE MADE OVER THE ENTIRE LENGTH OF THE CONDUIT RUN. TRENCH UNDER PROPOSED ROADWAYS SHALL HAVE A MINIMUM OVERALL DEPTH OF 36 INCHES AND OR A MINIMUM DEPTH OF 24 INCHES UNDER THE FINAL PAVEMENT SUBGRADE, WHICHEVER IS DEEPEST. INCIDENTAL TO THIS ITEM IS THE REPAIR OF SIDEWALK, ROADWAY, BRICK, CURB, CURB RAMPS, AND LANDSCAPING.

– 5/17/16

ITEM 630 SIGN SUPPORT ASSEMBLY, POLE MOUNTED, AS PER PLAN
ITEM 630 SIGN HANGER ASSEMBLY, MAST ARM, AS PER PLAN
ITEM 630 SIGN, FLAT SHEET, AS PER PLAN

ALL MOUNTING HARDWARE AND SUPPORT/HANGER ASSEMBLIES MOUNTED ON EITHER SIGNAL SUPPORTS, MAST ARMS, PEDESTAL SUPPORTS, LIGHT POLES, OR EXISTING POLES SHALL BE COATED TO MATCH ITS RESPECTIVE SUPPORT. FINISH REQUIREMENTS SHALL BE IN ACCORDANCE WITH THOSE LISTED FOR THE SUPPORT OR PEDESTAL USED FOR ATTACHMENT. NUTS AND BOLTS NEED NOT BE PAINTED.

ALL PAINTING SHALL BE PERFORMED UNDER CONTROLLED ENVIRONMENTAL CONDITIONS, AND IN ACCORDANCE WITH ALL MANUFACTURERS' RECOMMENDATIONS PERTAINING TO SURFACE PREPARATION, MATERIAL HANDLING, AND APPLICATION. PRIOR TO PAINTING, PAINT CHIPS SHALL BE SUBMITTED TO THE CITY FOR REVIEW.

ALL REGULATORY AND TRAFFIC CONTROL SIGNS SHALL COMPLY WITH THE LATEST VERSION OF THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS (OMUTCD) AND LOCAL REQUIREMENTS.

PAYMENT SHALL BE AS PER ITEM 630.

– 11/13/15

ITEM 632 (COMBINATION) SIGNAL SUPPORT, TYPE 4121, (BY DESIGN), AS PER PLAN

TRAFFIC SIGNAL POLES SHALL BE PER SCD 4121.

IN ADDITION TO THE REQUIREMENTS OF 732.11 AND 732.12, THE FOLLOWING SHALL ALSO APPLY:

THE TOP FINISH COAT OF PAINT SHALL HAVE A MINIMUM 5-YEAR REPAIR WARRANTY OF COATING DELAMINATION, BLISTERING, OR CORROSION.

UNION METAL STRUCTURES SHALL BE EITHER POWDER-COATED WITH THE THOMARIOS POWDER-COATING SYSTEM OR WET-COATED WITH THE SRT WET-COAT SYSTEM.

VALMONT STEEL STRUCTURES SHALL BE EITHER POWDER-COATED WITH FINISH SPECIFICATION F-573 DATED 4-11-07, WHICH INCLUDES EPOXY POWDER PRIME COAT AND PENTABOND POWDER FINISH COAT OR SHALL BE WET-COATED WITH MANUFACTURER RECOMMENDED EQUIVALENT WET-COAT PAINT SYSTEM.

MILLERBERND STRUCTURES SHALL BE WET-COATED WITH THE MILLERBOND PAINTING SYSTEM DESIGNED FOR USE ON CARBON, STAINLESS STEEL, ALUMINUM, AND GALVANIZED POLE PRODUCTS, WHICH INCLUDES A DUAL-CURE CHEMISTRY ORGANIC ZINC RICH URETHANE BASE PRIMER COAT AND DUAL-CURE CHEMISTRY I2 POLYASPARTIC ALIPHATIC POLYUREA FINISH COAT.

ALL COATING SYSTEMS SHALL MEET THE MINIMUM REQUIREMENTS OF ODOT SUPPLEMENTAL SPECIFICATION 916 – STANDARD PERFORMANCE BASED PAINT PROCESSES FOR LIGHT POLES, SIGN SUPPORTS AND TRAFFIC SUPPORTS FOR WET-COAT SYSTEMS.

THIS ITEM OF WORK SHALL BE MEASURED AS EACH COMPLETE SIGNAL SUPPORT OR STRAIN POLE IN PLACE IN ESSENTIALLY A VERTICAL POSITION UNDER FULL PLAN LOADING. ALL LABOR, EQUIPMENT, AND MATERIALS NECESSARY TO PURCHASE, TRANSPORT, STORE, ERECT, ADJUST, AND REPAIR THE SIGNAL SUPPORT OR STRAIN POLE SHALL BE INCLUDED FOR PAYMENT IN THE BID ITEM.

PAYMENT SHALL BE AS PER ITEM 632.

– 3/16/20

ITEM 632 POWER SERVICE, AS PER PLAN

IN ADDITION TO THE REQUIREMENTS OF 632.24, THE CONTRACTOR SHALL CONTACT THE SERVICE PROVIDER AND MAKE ARRANGEMENTS FOR THE CONNECTION OF POWER FOR THE TRAFFIC SIGNAL CONTROLLER CABINET. THE CONTRACTOR SHALL CONTACT THE POWER SERVICE PROVIDER A MINIMUM OF 120 CALENDAR DAYS IN ADVANCE OF THE NEED FOR POWER WITH THE ADDRESS(ES) OF THE TRAFFIC SIGNAL CONTROLLER CABINET(S) AS PROVIDED IN THE PLANS.

POWER SHALL BE SUPPLIED BY AMERICAN ELECTRIC POWER. POWER SHALL BE 120/240 VAC. POWER SERVICE SHALL BE FROM THE APPROXIMATE LOCATION(S) AS SHOWN ON THE PLANS. CONTACT AMERICAN ELECTRIC POWER CUSTOMER SOLUTION CENTER (1-800-672-2231).

– 6/1/20

INTERSECTION	INTERSECTION NUMBER	TRAFFIC SIGNAL CONTROLLER CABINET ADDRESS	POWER SERVICE PROVIDER
RICH ST AT THIRD ST	#0070	232 S THIRD ST	AEP
RICH ST AT FOURTH ST	#0071	218 S FOURTH ST	AEP
RICH ST AT FIFTH ST	#0094	227 E RICH ST	AEP
RICH ST AT GRANT AVE	#0072	364 E RICH ST	AEP

ITEM 632 SIGNAL SUPPORT FOUNDATION (BY DEPTH), AS PER PLAN

FOR SIGNAL POLES MOUNTED TO DEEP FOUNDATIONS CONSTRUCTED UNDER THIS ITEM, THE ALUMINUM POLE IDENTIFICATION TAG, AS REQUIRED AND IN ACCORDANCE WITH 732.11 AND 732.12, SHALL ALSO BE LABELED WITH "DEEP FOUNDATION" FOLLOWED BY THE DEPTH OF THE FOUNDATION (E.G. DEEP FOUNDATION, 18 FT) THE FOUNDATION SHALL BE CONSTRUCTED IN ACCORDANCE WITH 632.14, SCD 4160, AND SCD 4161.

– 5/15/18

ITEM 632 SIGNALIZATION, MISC.: APS PUSHBUTTON STATION

THE APS PUSHBUTTON STATION SHALL BE PER THE CITY'S QPL.

MOUNT THE CENTER OF THE PUSHBUTTON 42" ABOVE THE PEDESTRIAN PATHWAY SURFACE. A CLEAR BEAD OF SILICON SEALANT SHALL BE APPLIED BETWEEN THE POLE AND THE EDGE OF THE PUSHBUTTON HOUSING AGAINST THE POLE TO PREVENT WATER FROM ENTERING THE BACK OF THE PUSHBUTTON HOUSING.

ONE ALUMINUM SIGN, BLACK ON WHITE, SHALL BE INSTALLED WITH EACH PUSHBUTTON. THE BOTTOM OF THE SIGNS SHALL BE MOUNTED JUST ABOVE THE TOP OF THE PUSHBUTTON. THE SIGNS TO CROSS THE MAIN LINE SHALL BE PER SCD 4230. THE SIGNS TO CROSS THE SIDE STREET SHALL READ "PUSH BUTTON FOR AUDIBLE SIGNAL TO CROSS (STREET NAME)" (CMR-73C.03).

WHEN THE ACCESSIBLE PEDESTRIAN PUSHBUTTON SYSTEM IS CONFIGURED, DIVISION OF TRAFFIC MANAGEMENT PERSONNEL SHALL BE PRESENT TO DETERMINE THE SETTINGS TO BE USED. THE CONTRACTOR SHALL CONTACT THE DIVISION OF DESIGN AND CONSTRUCTION TRAFFIC SIGNAL CONSTRUCTION COORDINATOR 14 CALENDAR DAYS PRIOR TO INSTALLATION TO MAKE ARRANGEMENTS.

ALL CONNECTIONS, WIRING, MISCELLANEOUS MATERIALS, AND CONFIGURATION FOR FULL OPERATION OF EACH APS PUSHBUTTON SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THIS ITEM. PAYMENT SHALL BE PER ITEM 632 AND SHALL BE MADE AT THE UNIT PRICE BID PER EACH APS PUSHBUTTON, COMPLETE IN PLACE, TESTED, AND ACCEPTED.

– 3/13/20

ITEM 632 SIGNALIZATION, MISC.: FOUNDATION PRE-EXCAVATION

THE SIGNAL SUPPORT OR PEDESTAL FOUNDATIONS FOR ALL POLES AT THE FOLLOWING INTERSECTIONS SHALL BE EXCAVATED OR VACUUM EXCAVATED TO TEST FOR CONFLICTS PRIOR TO SHOP DRAWINGS APPROVAL:

- RICH STREET AT THIRD STREET
- RICH STREET AT FOURTH STREET
- RICH STREET AT FIFTH STREET
- RICH STREET AT GRANT AVENUE

PAYMENT FOR ITEM 632 SIGNALIZATION, MISC.: FOUNDATION PRE-EXCAVATION SHALL BE MADE AT THE CONTRACT UNIT PRICE FOR EACH FOUNDATION REQUIRING PRE-EXCAVATION.

– 3/16/18

ITEM 632 SIGNALIZATION, MISC.: POWER METER CABINET TYPE I OR II, BASE MOUNT, WITH FOUNDATION

THIS ITEM SHALL INCLUDE THE POWER METER CABINET, POWER METER SOCKET, LOAD CENTER PANEL, CONCRETE FOUNDATION, GROUNDING, AND INCIDENTALS AS DESCRIBED HEREIN.

THE CONDUIT AND FOUR (4) ANCHOR BOLTS AND REQUIRED CONDUIT ELLS AND THEIR INSTALLATION SHALL BE INCIDENTAL TO THE COST OF THIS ITEM.

FOR TYPE I POWER METER CABINETS:

THE POWER METER CABINET SUPPLIED SHALL BE A MILBANK SLIMLINE SERIES COMMERCIAL PEDESTAL (CATALOG NO. CP3A51C1VIAOSP3-CITY OF COLUMBUS).

FOR TYPE II POWER METER CABINETS:

THE POWER METER CABINET SUPPLIED SHALL BE APX TECHNOLOGIES, INC. BASE-MOUNTED ENCLOSURE (APX CATALOG NO. TC362015) WITH ALUMINUM PANEL KIT OPTION OR APPROVED EQUAL.

THE POWER METER SOCKET SUPPLIED SHALL BE A MILBANK CATALOG NO. U9551-RRL, TALON CATALOG NO. 40405-02QG, OR APPROVED EQUAL. THE LOAD CENTER SHALL BE A SCHNEIDER ELECTRIC Q024L60NRNM, EATON CH2L70RP, OR APPROVED EQUIVALENT.

THE WORK AS DESCRIBED WILL BE MEASURED AS THE NUMBER OF POWER METER CABINETS FURNISHED AND INSTALLED AND SHALL INCLUDE FURNISHING ALL MATERIALS, EQUIPMENT, LABOR AND INCIDENTALS, INCLUDING HUBS, CONDUITS ELLS AND FLEXIBLE CONDUIT, AND WIRING IN THE POWER METER CABINET, NECESSARY TO COMPLETE THE WORK SPECIFIED, COMPLETE IN PLACE.

– 10/1/20

ITEM 632 VEHICULAR SIGNAL HEAD, L.E.D., 3-SECTION, 12" LENS, 1-WAY, POLYCARBONATE, AS PER PLAN

SIGNAL HEADS AND LED LAMP MODULES SHALL BE PER THE CITY'S TRAFFIC QPL.

FOR MAST ARM STRUCTURES, THE SIGNAL HEADS SHALL BE RIGIDLY MOUNTED TO THE ARM. THE BRACKETS SHALL BE COATED THE SAME COLOR AS THE MAST ARM STRUCTURE. 5-SECTION SIGNAL HEADS SHALL BE MOUNTED USING PELCO PART NUMBER SP-5977, 3-SECTION SIGNAL HEADS SHALL BE MOUNTED USING PELCO PART NUMBER 5980, AND HAWK SIGNAL/PEDESTRIAN HYBRID BEACON SIGNAL HEADS SHALL BE MOUNTED USING PELCO PART NUMBER SP-5986.

– 3/20/20

CALCULATED JAR
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TRAFFIC SIGNAL AND INTERCONNECT NOTES

IMPROVEMENTS OF
E RICH STREET FROM S 3RD ST TO S GRANT AVE
FRA E RICH ST SIGNALS

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ITEM 633 CONTROLLER UNIT TS2/A2, W/ P-UPS CABINET, 16 CH, SIZE 6, GROUND MOUNTED, AS PER PLAN

IN ADDITION TO THE OTHER REQUIREMENTS OF 633 & 733, THE CONTROLLER (TS2, TYPE 2/TS1 COMPATIBLE) SHALL BE PER THE CITY'S QPL AND INCLUDE AN ETHERNET MODULE. THE CABINET ASSEMBLY SHALL MEET ALL CITY STANDARDS AS SET FORTH BETWEEN THE SUPPLIERS AND THE DIVISION OF TRAFFIC MANAGEMENT.

THE CONTROLLER AND BATTERY BACK-UP CABINET FOUNDATION SHALL BE PER SCD 4162 AND THE CABINET SHALL BE A SINGLE CABINET UNIT WITH TWO INTERNAL COMPARTMENTS ACCESSED BY SEPARATE DOORS (P-UPS, TYPE 1 OR TYPE 2).

IN ADDITION TO THE OTHER SPECIFICATION DOCUMENTS, THE CABINET ASSEMBLY SHALL MEET THE FOLLOWING SPECIFICATIONS.

A. ALL LABELS SHALL BE PERMANENTLY SECURED TO THE CABINET. PLASTIC LABEL MAKER TAPE IS NOT CONSIDERED TO BE PERMANENT. CROY TYPE LABELS ARE ACCEPTABLE.

B. THE 120 VAC, CONVENIENCE OUTLET ASSEMBLY (GFI TYPE) SHALL BE MOUNTED ON THE RIGHT SIDE PANEL OF THE CABINET NEAR THE DOOR HINGE AREA OR THE CENTER PORTION OF THE DOOR. THE OUTLET SHALL NOT INTERFERE WITH THE REMOVAL OR INSTALLATION OF ANY EQUIPMENT.

C. LOAD SWITCHES SHALL BE EDI MODEL 510 WITH LIGHTS PERMANENTLY LABELLED AS R, Y, G OR A, B, C. A LOAD SWITCH SHALL BE PROVIDED FOR EACH BACK PANEL LOAD SWITCH SOCKET POSITION WHETHER USED OR UNUSED. ALL LOAD SWITCHES SHALL REST IN A SUPPORT RACK. LOAD SWITCHES 9-12 SHALL BE USED FOR THE PEDESTRIAN SIGNAL HEADS AND LOAD SWITCHES 13-16 SHALL BE USED FOR OVERLAPS.

D. LIGHTNING PROTECTION DEVICES SUCH AS ITT, SURRESTOR, GENERAL ELECTRIC, OR APPROVED EQUAL (AS DETERMINED BY THE DIVISION OF TRAFFIC MANAGEMENT) SHALL BE PROVIDED.

E. THE NEMA TYPE 4 CABINET SHALL BE PER THE CITY'S QPL. ALL EXTERIOR CABINET SEAMS SHALL BE EITHER CONTINUOUSLY WELDED, TACK WELDED, SEALED WITH A 15 TO 20 YEAR SILICONE SEALER, AND/OR OVERLAPPED SUCH THAT WATER DOES NOT ENTER THE CABINET. ALL CABINET EDGES SHALL BE SMOOTH (FREE OF ANY SHARP EDGES). THE CABINET DOOR FRAME OPENINGS SHALL BE DOUBLE-FLANGED ON ALL FOUR SIDES. EACH CABINET DOOR SHALL BE HINGED USING A HEAVY GAUGE CONTINUOUS HINGE THAT HAS A STAINLESS STEEL HINGE PIN. THE HINGES SHALL BE BOLTED TO THE CABINET SO THE DOORS CAN BE REMOVED. THE BOLTS AND NUTS SHALL BE MADE OF STAINLESS STEEL, TAMPERPROOF AND SECURELY FASTENED TO PREVENT VIBRATIONS FROM LOOSENING THE NUTS. THE DOORS SHALL BE EQUIPPED WITH THREE (3) POINT LATCHING MECHANISMS AND HANDLES WHICH CAN BE PADLOCKED. IN ADDITION TO THE DOOR STOP POSITIONS LISTED IN NEMA TS-2, THE DOORS SHALL BE DESIGNED SUCH THAT EACH INCLUDES A DOOR STOP AT 135 DEGREES. THE POLICE DOOR, CONTROLLER ENCLOSURE DOOR, AND UPS ENCLOSURE DOOR SHALL HAVE A KEYHOLE COVER. BOLT PATTERN SHALL CONSIST OF AN ANCHOR BOLT POSITIONED IN EACH CABINET CORNER. (P-UPS CABINET SIZE – 55"H x 60"W x 26"D (TYPE 1), OR 57"H x 58"W x 29"D (TYPE 2))

F. A THYRECTOR SURGE PROTECTOR WITH A RMS INPUT OF 150 VOLTS AND INPUT PEAK OF 210 VOLTS SHALL BE PROVIDED IN ADDITION TO ANY LIGHTNING PROTECTION DEVICE. THE THYRECTOR SHALL BE PLACED ACROSS THE INPUT AC POWER LINE.

G. TWO (2) CIRCUIT SOLID STATE FLASHER, EDI MODEL 810, RATED AT 15 AMPS (MINIMUM) PER CIRCUIT SHALL BE PROVIDED (NEMA TYPE 3). CIRCUIT 1 SHALL CONTROL THE MAINLINE FLASHING SIGNAL INDICATIONS. CIRCUIT 2 SHALL CONTROL THE SIDE STREET FLASHING SIGNAL INDICATIONS.

H. THE MAIN CIRCUIT BREAKER AND AUXILIARY CIRCUIT BREAKER, AS REQUIRED BY NEMA TS-2, SHALL BE LABELED AS "MAIN" AND "AUX", RESPECTIVELY.

I. THE CABINET ASSEMBLY SHALL CONTAIN ALL PEDESTRIAN SIGNAL CIRCUITRY FOR EACH NEMA DEFINED THROUGH PHASE.

J. A POLICE DOOR MOUNTED SIGNAL SHUTDOWN SWITCH WITH SWITCH POSITIONS LABELED AS "SIG ON" AND "SIG OFF" SHALL BE INSTALLED.

K. A POLICE DOOR MOUNTED SIGNAL FLASH SWITCH WITH SWITCH POSITIONS LABELLED AS "ON SIG" AND "ON FLASH" SHALL NOT ONLY PLACE THE SIGNALS ON FLASH BUT ALSO STOP-TIME THE CONTROLLER UNIT. A RUN/STOP-TIME SWITCH WITH SWITCH POSITIONS LABELLED AS "CONT. RUN" AND "STOP-TIME" SHALL BE INSTALLED ON THE INSIDE OF THE CONTROLLER ENCLOSURE DOOR. THE RUN/STOP-TIME SWITCH SHALL ALLOW THE CONTROLLER UNIT TO TIME NORMALLY BUT KEEP THE SIGNALS ON FLASH. THE SIGNAL FLASH SWITCH SHALL NOT RETURN THE SIGNALS TO NORMAL OPERATION UNLESS THE RUN/STOP-TIME SWITCH IS RESET TO THE STOP-TIME POSITION SO THE SIGNAL FLASH SWITCH CAN AGAIN STOP-TIME THE CONTROLLER UNIT. THE SIGNAL FLASH SWITCH SHALL NOT REMOVE POWER TO THE CONTROLLER UNIT OR ITS AUXILIARY EQUIPMENT.

L. A POLICE DOOR MOUNTED AUTO MANUAL TRANSFER SWITCH WITH SWITCH POSITIONS LABELLED AS "AUTO" AND "MANUAL" SHALL BE INSTALLED. A MANUAL PUSH BUTTON CONTROL SHALL NOT BE INSTALLED UNLESS SPECIFIED, BUT WIRING FOR A PUSH BUTTON CONTROL SHALL BE PROVIDED UP TO THE POINT WHERE THE PUSH BUTTON WOULD HAVE BEEN CONNECTED.

ITEM 633 CONTROLLER UNIT TS2/A2, W/ P-UPS CABINET, 16 CH, GROUND MOUNTED, AS PER PLAN (CONT'D)

M. A CONTROLLER SHUTDOWN SWITCH WITH SWITCH POSITIONS LABELLED AS "CONT ON" AND "CONT OFF" AND A COORDINATED/FREE SWITCH WITH SWITCH POSITIONS LABELLED AS "COORD" AND "FREE" SHALL BE INSTALLED INSIDE THE CABINET NEXT TO THE RUN/STOP-TIME SWITCH. A COORDINATED/FREE SWITCH SHALL NOT BE REQUIRED IF THE CONTROLLER HAS A BUILT-IN COORD/FREE SWITCH.

N. THE WATCH DOG TIMER SHALL CAUSE THE CONTROLLER TO GO INTO A FLASH OPERATION IF A MICROPROCESSOR FAILURE IS DETECTED.

O. ALL BACK PANEL HARDWARE SHALL BE MOUNTED WITH SCREWS. ALL SCREWS SHALL BE COMPLETELY SCREWED DOWN. RIVETS OR OTHER NON REMOVABLE FASTENERS ARE NOT ACCEPTABLE.WIRE CONNECTIONS ON THE BACK PANEL SHALL BE MADE WITH CRIMP TERMINALS AND THREADED FASTENERS. TELEPHONE TYPE KNIFE CONNECTORS (SOLDERED OR OTHERWISE) ARE NOT ACCEPTABLE.

P. ALL WIRES FASTENED TO THE LOAD SWITCH AND FLASHER PLUGS SHALL BE SOLDERED IN PLACE.

Q. THE BACK PANEL AND POWER DISTRIBUTION PANEL SHALL HAVE SILK SCREENED TERMINAL/SOCKET FUNCTION IDENTIFICATION LABELS SUCH AS AC COM, PHASE 3 GREEN, 115 VAC, SIGNAL BUS, ETC. REFERENCE NUMBERS SHALL NOT BE ACCEPTABLE IN LIEU OF FUNCTION LABELS BUT THEY CAN SUPPLEMENT THEM. ADDITIONAL TERMINAL BLOCKS AND AUXILIARY PANELS SHALL USE SILK SCREENED REFERENCE NUMBERS TO IDENTIFY TERMINAL CONNECTIONS.

R. ALL TERMINAL STRIPS IN CLOSE PROXIMITY OF SHELF MOUNTED CONTROL DEVICE EQUIPMENT SHALL BE COVERED WITH NON-CONDUCTIVE MATERIAL TO PREVENT ACCIDENTAL CONTACT WITH THE DEVICES. ALL TERMINAL STRIPS SHALL BE READILY ACCESSIBLE WITHOUT REMOVAL OF ANY EQUIPMENT.

S. IN ADDITION TO THE ALUMINUM SHELF WITH INTERNAL STORAGE AS SPECIFIED BY 733 B.10, THE CONTROLLER ENCLOSURE SHALL HAVE ONE NON VENTED (SOLID) SHELF. THE SHELVES SHALL BE SPACED AT LEAST 9" APART. BOTH SHELVES SHALL HAVE A WIDTH OF 13" AND THE BACK EDGE OF THE SHELF SHALL BE LIPPED WITH THE LIP POINTING UP. THE FRONT EDGE OF THE SHELF SHALL BE LIPPED WITH THE LIP POINTING DOWN. ALL LIP EDGES SHALL BE ROUNDED. THE SHELVES SHALL BE ATTACHED TO THE CONTROLLER ENCLOSURE SIDE PANELS. THE SHELF ARRANGEMENT SHALL BE DESIGNED SO ALL SHELF DEVICES FIT ON THEM.

T. THERE SHALL BE A MINIMUM OF ONE (1) INCH EMPTY SPACE BETWEEN ALL ITEMS ATTACHED TO THE DOOR AND ALL SHELF-MOUNTED DEVICES INCLUDING ITS CONNECTING HARNESS(ES), ALL LOAD SWITCHES, FLASHER AND ALL SIDE-PANEL-MOUNTED ITEMS.

U. ALL CABINETS SHALL HAVE TWO VENTILATION FANS. THE THERMOSTAT CONTROLLING THE VENTILATING FAN CIRCUIT SHALL BE SET AT 95 DEGREES FAHRENHEIT.

V. ALL FLASH TRANSFER RELAYS SHALL BE WIRED FOR FAIL SAFE OPERATION (ENERGIZED DURING NORMAL OPERATION) AND WIRED WITH A MAXIMUM OF TWO PHASES PER RELAY.

W. THE POWER CABLE SHALL BE CONNECTED TO AN ACCESSIBLE TERMINAL STRIP THAT SHALL BE OF SUFFICIENT SIZE TO ACCEPT THE GAUGE OF THE SUPPLIED POWER CABLE. THE TERMINAL STRIP SHALL BE COVERED OR SHIELDED TO MINIMIZE ACCIDENTAL CONTACT DURING NORMAL SERVICING OPERATIONS. THE COVER SHALL BE SNAPPED ON/OFF OR SECURED BY STANDARD SCREWS. THE POWER CABLE LUG TERMINAL CONNECTION SHALL BE LOCATED IMMEDIATELY BELOW THE MAIN POWER DISTRIBUTION BREAKER. THERE SHALL BE A MINIMUM OF TWO (2) INCHES CLEARANCE BETWEEN THE POWER TERMINAL AND THE BOTTOM OF THE CONTROLLER ENCLOSURE.

X. A #4 WIRE LUG SHALL BE PROVIDED FOR ATTACHING A GROUNDING WIRE FROM A GROUND ROD. THE GROUNDING WIRE SHALL BE ATTACHED TO THE POWER DISTRIBUTION PANEL GROUND BUS, ILSCO MODEL NBCE-1336-2. THE NEUTRAL BUS SHALL ONLY BE CONNECTED TO THE GROUND BUS IN THE POWER METER CABINET, NOT THE TRAFFIC SIGNAL CABINET.

Y. A SOLID STATE RELAY, CRYDOM PART NO. CWA2450, SHALL BE INSTALLED WHICH WILL ALLOW POWER TO BE REMOVED FROM THE VEHICULAR POWER BUS. THE SOLID STATE RELAY SHALL BE RATED AT 50 AMPS AND 120 VOLTS AND SHALL BE EQUIPPED WITH A PLASTIC COVER.

Z. ALL EXTERNAL RELAY COILS SHALL HAVE NOISE SUPPRESSION DEVICES.

AA. THE DOOR FILTER (U.L. LISTED CLASS 2, STANDARD 900) SHALL CONSIST OF THREE DISTINCT LAYERS OF FILTERING MEDIA. THE FIRST AIR ENTERING LAYER SHALL BE COMPOSED OF A DUAL FIBER BLEND OF 100% NON-WOVEN POLYESTER TO TRAP LARGER SIZED PARTICLES. THE NEXT LAYER SHALL BE A DUAL PLY, DUAL DENIER, 100% NON-WOVEN POLYESTER OF SMALLER SIZE TO TRAP FINER PARTICLES PASSING THROUGH THE FIRST LAYER. A NON-TOXIC, NON-MIGRATORY, ODORLESS TACKIFIER SHALL BE APPLIED TO THESE LAYERS. ADHESIVES SPRAYED ON THE LAYERS ARE NOT ACCEPTABLE. THE TACKIFIER SHALL BE INCORPORATED INTO THE LAYER MEDIA DURING THE MANUFACTURING PROCESS OF THE RAW MATERIAL. A 10 GAUGE MESH SHALL BE INCORPORATED IN THE FILTER DESIGN FOR RIGIDITY. SUFFICIENT MEDIA OVERLAP SHALL BE PRESENT ABOUT THE WIRE PERIMETER TO INSURE POSITIVE SELF SEAL. THE DOOR FILTER HOLDER SHALL BE DESIGNED SO THE FILTER MAKES POSITIVE CONTACT WITH THE CABINET DOOR AT ALL TIMES AND UNDER ALL CONDITIONS AND SITUATIONS.

ITEM 633 CONTROLLER UNIT TS2/A2, W/ P-UPS CABINET, 16 CH, GROUND MOUNTED, AS PER PLAN (CONT'D)

BB. AN OUTLET RECEPTACLE AND BOX SHALL BE INSTALLED IN THE CONTROLLER ENCLOSURE TO PROTECT NETWORK EQUIPMENT FROM AN IMBALANCE FLOW OF CURRENT FROM THE HOT TO THE NEUTRAL. THE OUTLET SHALL BE A NEMA DUPLEX 5-15 RECEPTACLE, RATED AT 15 AMPS (MINIMUM) AT 120 VAC. THE OUTLET SHALL MEET OR EXCEED FEDERAL SPECIFICATIONS AND UL 498 STANDARDS AND SHALL BE RATED AS WEATHER-RESISTANT. THE RECEPTACLE SHALL BE INSTALLED WITHIN A METALLIC, SINGLE GANG ELECTRICAL BOX WITH A COVER PLATE. THE ELECTRICAL BOX SHALL BE STANDARD DEPTH (NOMINALLY 2 – 1/8 IN.) AND SHALL BE UL-LISTED. THE OUTLET SHALL BE INSTALLED INSIDE THE CONTROLLER ENCLOSURE ALONG ONE OF THE SIDE WALLS AND SHALL BE WIRED FROM THE SAME CIRCUIT BREAKER AS THE OTHER OUTLETS, UNLESS OTHERWISE DIRECTED BY THE ENGINEER.

CC. A SURGE SUPPRESSION DEVICE SHALL BE INSTALLED IN THE CONTROLLER ENCLOSURE TO PROVIDE PROTECTED POWER OUTLETS TO NETWORK EQUIPMENT. THE SURGE SUPPRESSION DEVICE SHALL BE SECURELY MOUNTED IN THE CABINET IN A METHOD APPROVED BY THE ENGINEER. THE SURGE SUPPRESSION DEVICE INSTALLED SHALL HAVE 6 NEMA 5-15 OUTLETS AND SHALL BE CAPABLE OF BEING PLUGGED INTO A STANDARD 5-15 OUTLET. THE OUTPUT CURRENT OF THE SURGE SUPPRESSION DEVICE SHALL BE 15 AMPS. THE SURGE SUPPRESSION DEVICE SHALL HAVE AN ENERGY HANDLING RATING OF 1280 JOULES, UL 1499 LET THROUGH RATING OF 330 VOLTS, AND SURGE CURRENT RATING OF 50,000 AMPS.

DD. THE UPS PORTION OF THE CABINET SHALL INCLUDE A GENERATOR POWER PANEL WITH A HEAVY DUTY POWER RELAY VERSUS THE LINE VOLTAGE GENERATOR SWITCH. THE GENERATOR INLET SHALL BE A RECESSED PANEL WITH A DOOR THAT IS FLUSH WITH THE EXTERNAL SIDE OF THE CABINET. IT SHALL INCLUDE A RECESSED PLUG, AUTOMATIC TRANSFER SWITCH AND A DOOR THAT SECURELY CLOSES OVER THE POWER CORD.

PROVIDE AN ARC FLASH HAZARD WARNING SIGN ON THE OUTSIDE OF THE FRONT DOOR OF THE CABINET IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE PARAGRAPH 110.16.

FOR LOCATIONS WITHOUT A POWER METER CABINET, PROVIDE AN AVAILABLE FAULT CURRENT SIGN ON THE OUTSIDE OF THE FRONT DOOR OF THE TRAFFIC SIGNAL CONTROLLER CABINET IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE PARAGRAPH 110.24.

– 7/11/22

ITEM 633 UNINTERRUPTIBLE POWER SUPPLY (UPS), 1000 WATT, AS PER PLAN

AS AN EXCEPTION TO THE REQUIREMENTS OF 633 AND 733, THIS ITEM SHALL NOT INCLUDE A SEPARATE ENCLOSURE. THE UPS EQUIPMENT SHALL BE HOUSED IN THE COMBINED SIGNAL CONTROLLER/UPS CABINET PAID FOR UNDER ITEM 633 CONTROLLER UNIT TS2/A2, W/ P-UPS CABINET, 16 CH, GROUND MOUNTED, AS PER PLAN.

ALL CONNECTIONS, WIRING, AND MISCELLANEOUS MATERIALS FOR FULL OPERATION OF THE UPS SYSTEM SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THIS ITEM. PAYMENT SHALL BE PER ITEM 633 AND SHALL BE MADE AT THE UNIT PRICE BID PER EACH, COMPLETE IN PLACE, TESTED, AND ACCEPTED.

– 2/1/19

CALCULATED JAR
CHECKED DKA

TRAFFIC SIGNAL AND INTERCONNECT NOTES

IMPROVEMENTS OF
E RICH STREEET FROM S 3RD ST TO S GRANT AVE
FRA E RICH ST SIGNALS

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INTERCONNECT

ITEM 632 INTERCONNECT, MISC.: RELOCATE EXISTING FIBER OPTIC CABLE, 24 STRAND

UNDER THIS ITEM, THE EXISTING UNDERGROUND FIBER OPTIC CABLE, 24 STRAND THAT WAS INSTALLED AND COILED BY PROJECT 3972-E SHALL BE RELOCATED FROM ITS' COILED POSITION IN A PULL BOX AT EACH INTERSECTION THE PROPOSED TRAFFIC SIGNAL CONTROLLER VIA PROPOSED CONDUITS AS DETAILED IN THE TRAFFIC SIGNAL INTERCONNECT PORTION OF THESE PLANS.

PRIOR TO RELOCATION, THE CONTRACTOR AND ENGINEER SHALL INSPECT THE CABLE AND SPLICE ENCLOSURE TO DOCUMENT ANY EXISTING DAMAGE. ANY DAMAGE IDENTIFIED AFTER THE RELOCATION PROCESS AND NOT PREVIOUSLY DOCUMENTED WILL BE PRESUMED TO HAVE BEEN CAUSED BY THE CONTRACTOR.

IF CABLES ARE DAMAGED, AS DETERMINED BY THE ENGINEER, THE CONTRACTOR SHALL REPLACE THE ENTIRE RUN OF CABLE BETWEEN EXISTING TERMINATION POINTS AT THE CONTRACTOR'S EXPENSE. NO SPLICES WILL BE PERMITTED UNLESS NOTED BY THE PLANS.

REESTABLISHING FULL COMMUNICATION CAPABILITIES FOR THE RELOCATED CABLE SHALL BE CONSIDERED INCIDENTAL TO THIS ITEM OF WORK. RELOCATED CABLE SHALL BE SUBJECT TO THE TESTING REQUIREMENTS LISTED IN SUPPLEMENTAL SPECIFICATION 1620.

PAYMENT SHALL BE PER EACH INTERSECTION FOR ALL CABLE RELOCATED, TESTED, AND ACCEPTED.

ITEM 632 SIGNALIZATION MISC.: CCTV IP-CAMERA SYSTEM

CLOSED CIRCUIT TELEVISION (CCTV) POLE CAMERA ASSEMBLY – THE CCTV POLE CAMERA ASSEMBLY SHALL INCLUDE THE CAMERA, UNPRESSURIZED DOME/HOUSING, PTZ UNIT, CAMERA CONTROLLER, LOCAL CAMERA CONTROL UNIT(RACK MOUNTED IN CCTV CABINETS AND SHELF MOUNTED IN SIGNAL CABINETS), AND ALL MATERIALS, LABOR, WORKMANSHIP, EQUIPMENT, TESTING, DOCUMENTATION, CABLES, CONNECTORS, AND OTHER ITEMS IDENTIFIED IN THIS BID ITEM, AND INCIDENTAL ITEMS REQUIRED TO DELIVER A FULLY OPERATIONAL CCTV POLE CAMERA ASSEMBLY IN ACCORDANCE WITH THESE SPECIAL PROVISIONS AND THE PLANS.

THIS ITEM SHALL BE FURNISHED PER ODOT SUPPLEMENTAL SPECIFICATION SECTION 809.05.

FURNISH ALL TOOLS, EQUIPMENT, MATERIALS, SUPPLIES, AND MANUFACTURED ARTICLES, AND PERFORM ALL OPERATIONS AND EQUIPMENT INTEGRATION NECESSARY TO PROVIDE A COMPLETE, FULLY OPERATIONAL IP-CAMERA SITE AS DEPICTED HEREIN, WITHIN THE PLAN SET, AND/OR IN THE CONTRACT.

PROVIDE THE CITY WITH A WRITTEN INVENTORY BY LOCATION INCLUDING SERIAL NUMBERS OF ITEMS RECEIVED AND THE CONDITION IN WHICH THEY WERE RECEIVED. ONCE RECEIVED, THE EQUIPMENT BECOMES THE CONTRACTOR'S RESPONSIBILITY. PROVIDE ALL LABOR AND EQUIPMENT NECESSARY TO MOVE INVENTORY OUT OF THE DESIGNATED STORAGE FACILITY AND TO TRANSPORT IT TO THE INSTALLATION LOCATION. ALL ITEMS WILL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS OR AS DIRECTED BY THE DEPARTMENT.

MESSENGER WIRE (IF REQUIRED) WILL BE USED FOR ALL OVERHEAD WIRING OF IP-CAMERA CABLE. CABLES WILL BE ATTACHED TO MESSENGER WIRE AS PER SCD 4331 AND AS DEPICTED IN THE PLANS.

IF IT IS DETERMINED THAT RADIO FREQUENCY INTERFERENCE (RFI) IS INDUCING NOISE AND DEGRADING THE QUALITY OF THE VIDEO IMAGES BEING TRANSMITTED BY THE IP-CAMERA ASSEMBLY OR ITS COMPONENTS, IF REQUIRED BY THE CITY, FURNISH AND INSTALL FERRITE COILS OR OTHER RADIO FREQUENCY (RF) SUPPRESSION DEVICES FOR RFI DAMPENING. THIS INSTALLATION AND THE PLACEMENT OF THESE RF SUPPRESSION DEVICES WILL BE AS RECOMMENDED BY THE MANUFACTURER. THE FURNISHING AND INSTALLATION OF THESE DEVICES WILL BE AN ANCILLARY COST TO THE IP-CAMERA ASSEMBLY PAY ITEM.

THE CONTRACTOR SHALL ENSURE THAT ALL FUNCTIONS OF THE NEWLY INSTALLED CCTV SITE ARE FULLY COMPATIBLE WITH THE HEAD END MILESTONE SYSTEM AT THE TMC. CONFIGURATION AND INTEGRATION LABOR COSTS FOR THE PROPOSED CCTV SITE ARE CONSIDERED INCIDENTAL TO THIS PAY ITEM.

ADDITIONALLY, THE CONTRACTOR SHALL PURCHASE THE FOLLOWING LICENSES IN ORDER TO FULLY INTEGRATE CCTV FUNCTIONALITY INTO THE HEAD END MILESTONE SYSTEM, AND BY COMPLETION OF THE PROJECT TRANSFER OWNERSHIP OF ALL LICENSES TO THE CITY.

1. ONE (1) – CCTV SITE LICENSE – TO INCORPORATE INTO HEAD END MILESTONE SYSTEM. THIS IS TO INCLUDE THE FIVE YEAR SOFTWARE/FIRMWARE UPGRADE SUPPORT.

2. ONE (1) – INTERCONNECT LICENSE TO ENABLE ODOT – CITY OF COLUMBUS TMC SHARED USE OF VIDEO FROM CCTV SITE

CONFIGURATION AND INTEGRATION LABOR COSTS FOR THE PROPOSED CCTV SITE, INCLUDING THE COST OF SOFTWARE LICENSES SPECIFIED ABOVE, ARE CONSIDERED INCIDENTAL TO THIS PAY ITEM.

THE VENDOR SHALL SUPPLY TO THE CITY COPIES OF THE COMPUTER SOFTWARE FOR SETUP, TESTING, AND CONTROL OF THE CCTV LOCALLY AND INTEGRATE INTO THE HEAD END MILESTONE SYSTEM WHEN NECESSARY.

EQUIPMENT FURNISHED UNDER THIS SPECIFICATION WILL BE GUARANTEED TO PERFORM ACCORDING TO THESE SPECIFICATIONS AND TO THE MANUFACTURER'S PUBLISHED SPECIFICATIONS. EQUIPMENT WILL BE WARRANTED FOR FIVE (5) YEARS EFFECTIVE ON THE DATE OF FINAL ACCEPTANCE OF THE PROJECT BY THE CITY. THE CCTV IP-CAMERA SYSTEM MANUFACTURER(S) WILL ASSIGN TO THE CITY ALL MANUFACTURER'S NORMAL WARRANTIES OR GUARANTEES, ON ALL SUCH ELECTRONIC, ELECTRICAL AND MECHANICAL EQUIPMENT, MATERIALS, TECHNICAL DATA, AND PRODUCTS FURNISHED FOR AND INSTALLED ON THE PROJECT. DEFECTIVE EQUIPMENT WILL BE REPAIRED OR REPLACED, AT THE MANUFACTURER'S OPTION, DURING THE WARRANTY PERIOD AT NO COST TO THE CITY. THE MANUFACTURER WILL PROVIDE REPLACEMENT PARTS AND/OR COMPLETE UNIT(S) WITHIN TEN (10) BUSINESS DAYS AFTER NOTIFICATION BY THE CITY.
CONSTRUCTION

1. INSTALL CCTV IP-CAMERA ASSEMBLY AND EQUIPMENT ON THE MOUNT/POLE, EXISTING AND NEW BRACKET ARMS, AND IN THE CABINET. THIS WORK INCLUDES ANY UPGRADES TO THE CONNECTIONS TO MOUNTS/POLES OR BRACKET ARMS THAT MAY BE REQUIRED TO MAKE THE CCTV IP-CAMERA SYSTEM FUNCTIONAL LOCALLY AND TO THE EXISTING CENTRAL CAMERA CONTROL SOFTWARE.

2. MAKE POWER AND COMMUNICATION CONNECTIONS.

THE WORK AS DESCRIBED WILL BE MEASURED AS ONE UNIT FOR EACH OF THE INSTALLATIONS SPECIFIED, AND SHALL INCLUDE ALL MATERIALS, EQUIPMENT AND INCIDENTALS, COMPLETE IN PLACE. TERMINATIONS, CONNECTIONS, AND OTHER MISCELLANEOUS ITEMS AND MATERIALS SHALL BE INCIDENTAL TO THIS WORK AND NO SEPARATE PAYMENT WILL BE MADE.

PAYMENT SHALL BE FOR COMPLETE CAMERA OPERATIONAL ASSEMBLY WITH CONNECTION TO THE TRAFFIC MANAGEMENT CENTER. SOFTWARE LICENSES FOR EACH CAMERA SHALL BE CONSIDERED INCIDENTAL TO THIS ITEM.

THE ENGINEER SHALL PROVIDE FINAL ACCEPTANCE OF THIS ITEM BEFORE PAYMENT TO CONTRACTOR IS PROCESSED.
– 9/16/15

ITEM 632 INTERCONNECT, MISC.: CAT 5E CABLE, OUTDOOR RATED

THE CONTRACTOR SHALL INSTALL OUTDOOR RATED CATEGORY 5E CABLE FOR ALL OUTDOOR APPLICATIONS SUSCEPTIBLE TO WATER OR MOISTURE PENETRATION. OUTDOOR RATED CATEGORY 5E CABLE SHALL BE USED TO PROVIDE INTERCONNECTION BETWEEN THE ETHERNET SWITCHES, ITS DEVICES, AND NETWORK INTERFACES AS SHOWN ON THE PLANS.

THE SPECIFICATIONS FOR THE OUTDOOR RATED CATEGORY 5E CABLES SHALL MEET THE FOLLOWING SPECIFICATIONS:

– DOUBLE SHIELD
– ALUMINUM ARMORED
– BARE (AKA PURE) COPPER CONDUCTORS
– CM PVC JACKET
– BLACK COLOR
– 24 AWG
– SOLID CONDUCTOR
– TIA/EIA-568A,ISO/IEC11801,YD/T1019-2001

ALL COMPLETE CABLES (INCLUDING CABLE AND CONNECTORS) SHALL BE CAT 5E CERTIFIED AND TESTED. THE CONTRACTOR SHALL TEST AND CERTIFY EACH CAT 5E CABLE (EXCLUDING PATCH CABLES 10 FEET OR LESS).

ALL CABLING SHALL BE CUT TO PROPER LENGTH BEFORE ASSEMBLY. CABLES SHALL BE NEATLY LASHED TO THE MESSENGER WIRE CABLE WHERE SHOWN IN THE PLANS.

OUTDOOR RATED CATEGORY 5E CABLE WILL BE MEASURED TO THE CABINET, OR DEVICE, PLUS AN ALLOWANCE OF FIVE (5) FEET ON EACH END.

OUTDOOR RATED CATEGORY 5E CABLE WILL BE PAID FOR PER LINEAR FOOT, AND WILL INCLUDE FURNISHING ALL MATERIALS, EQUIPMENT, LABOR AND INCIDENTALS NECESSARY TO COMPLETE THE WORK SPECIFIED.

– 3/4/16

ITEM 633 CONTROLLER ITEM, MISC.: FIBER OPTIC ETHERNET TRANSCEIVER, SHORT RANGE

THE CONTRACTOR SHALL FURNISH AND INSTALL SINGLE MODE FIBER (SMF), SMALL FORM FACTOR PLUGGABLE (SFP) GIGABIT INTERFACE CONVERTER (GBIC) MODULES AT LOCATIONS AS SHOWN ON THE PLANS.

THE GBIC TRANSCEIVER SHALL BE 1000BASE LX/LH SFP-LC TRANSCEIVER (CISCO PART #GLC-LX-SM-RGD).

THE CONTRACTOR SHALL INSTALL THE SFP MODULE IN THE ETHERNET SWITCH SLOT AND CONFIGURE AS NECESSARY.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING A COMPLETE, FUNCTIONAL SYSTEM INCLUDING ALL NECESSARY CABLES AND CONNECTORS IN ACCORDANCE TO THE SPECIFICATIONS AND AS SPECIFIED ON THE PLANS. ALL MISCELLANEOUS PATCH AND INTERCONNECT CABLES SHALL MEET THE PROPOSED EQUIPMENT SPECIFICATION REQUIREMENTS AND SHALL MEET EIA/TIA TELECOMMUNICATIONS STANDARDS.

THE WORK AS DESCRIBED WILL BE MEASURED AS ONE UNIT FOR EACH OF THE INSTALLATIONS SPECIFIED, AND SHALL INCLUDE ALL MATERIALS, EQUIPMENT AND INCIDENTALS, COMPLETE IN PLACE. PATCH CABLES, TERMINATIONS, CONNECTIONS, AND OTHER MISCELLANEOUS ITEMS AND MATERIALS SHALL BE CONSIDERED INCIDENTAL TO THIS WORK AND NO SEPARATE PAYMENT WILL BE MADE.

– 12/2/15

ITEM 633 CONTROLLER ITEM MISC.: LAYER 2 ETHERNET SWITCH

THE CONTRACTOR SHALL PURCHASE AND INSTALL ENVIRONMENTALLY HARDENED LAYER 2 ETHERNET SWITCHES AS SHOWN ON THE PLANS. LAYER 2 ETHERNET SWITCHES SHALL BE COMNET MODEL CNGE11FX3TX8MSPOEHO THIS WORK IS THE FURNISHING AND INSTALLATION OF A LAYER 2 SWITCH WITH THREE 100/1000BASE-FX SFP PORTS AND EIGHT SWITCHED 10/100/1000BASE-TX RJ45 PORTS.

ALL EQUIPMENT SHALL BE NEW AND IN STRICT ACCORDANCE WITH THE DETAILS SHOWN ON THE PLANS AND THE SPECIFICATIONS.

TRAFFIC MAINTENANCE SHALL BE CONTACTED AT 645-7393 14 CALENDAR DAYS PRIOR TO INSTALLATION TO PROGRAM THE SWITCH. THE CONTRACTOR SHALL INSTALL THE SWITCH IN THE CABINET BUT SHALL NOT MAKE ANY CONNECTIONS TO THE SWITCH.

THE TRAFFIC MAINTENANCE MANAGER SHALL INSPECT THE CONDITION OF ALL COMPONENTS UPON INSTALLATION. NO DAMAGED COMPONENT WILL BE ACCEPTED, AND NO COMPONENT SHALL BE CONSIDERED INSTALLED UNTIL THE TRAFFIC MAINTENANCE MANAGER APPROVES OF THE SWITCH INSTALLATION. LAYER 2 ETHERNET SWITCHES SHALL SUPPORT DIRECT CONNECTIVITY TO PROPOSED AND EXISTING NETWORKS CONFIGURED IN RING AND MESH FAULT TOLERANT TOPOLOGIES ENABLING APPLICATIONS TO OPERATE RELIABLY, AND WITH LOW LATENCY.

ALL EQUIPMENT SHALL INCLUDE LICENSES, WHERE REQUIRED, FOR ANY SOFTWARE OR HARDWARE IN THE SYSTEM.

LAYER 2 ETHERNET SWITCHES SHALL SUPPORT DIRECT CONNECTIVITY TO PROPOSED AND EXISTING NETWORKS CONFIGURED IN RING AND MESH FAULT TOLERANT TOPOLOGIES ENABLING APPLICATIONS TO OPERATE RELIABLY, AND WITH LOW LATENCY.

1. INSTALL POWER ADAPTER, POWER CABLES, CATEGORY 5E OR CATEGORY 6 PATCH CORDS, AND SINGLE MODE PATCH CABLES AS REQUIRED AND DEPICTED ON COMMUNICATIONS DIAGRAMS.

2. SECURELY MOUNT THE SWITCH AND POWER SUPPLY IN THE CABINET.

3. MAKE POWER CONNECTION TO AN AVAILABLE OUTLET ON THE INSTALLED SURGE SUPPRESSOR.

4. MAKE THE COMMUNICATION CONNECTIONS.

5. ESTABLISH AND VERIFY COMMUNICATIONS TO THE NETWORK PRIOR TO TRANSITIONING SIGNAL CONTROLLER TO NEW SYSTEM.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING A COMPLETE, FUNCTIONAL SYSTEM INCLUDING ALL NECESSARY CABLES AND CONNECTORS IN ACCORDANCE TO THE SPECIFICATIONS AND AS SPECIFIED ON THE PLANS. ALL MISCELLANEOUS PATCH AND INTERCONNECT CABLES SHALL MEET THE PROPOSED EQUIPMENT SPECIFICATION REQUIREMENTS AND SHALL MEET EIA/TIA TELECOMMUNICATIONS STANDARDS. ADDITIONALLY, FIBER OPTIC PATCH CABLES SHALL CONFORM TO THE PLAN REQUIREMENTS FOR PATCH CABLES.

– 5/12/20

ITEM 1620 MISC.: TERMINATION PANEL, 24 FIBER

THE TERMINATION PANEL SHALL BE FURNISHED AND INSTALLED IN THE TRAFFIC SIGNAL CONTROLLER CABINET AT THE LOCATION SHOWN ON THE PLANS. THE TERMINATION PANEL HOUSING SHALL BE CORNING MODEL SPH-01P AND SHALL INCLUDE ONE CLOSET CONNECTOR HOUSING, CORNING MODEL CCH-CP24-A9-P03RH.

– 4/22/19

CALCULATED JAR
CHECKED DKA

TRAFFIC SIGNAL AND INTERCONNECT NOTES

IMPROVEMENTS OF
E RICH STREET FROM S 3RD ST TO S GRANT AVE
FRA E RICH ST SIGNALS

3921-E

	ITEM NO.	DESCRIPTION	UNIT	TOTAL	RICH AT THIRD	RICH AT FOURTH	RICH AT FIFTH	RICH AT GRANT
SIGNALS	625	GROUND ROD	EA	**43**	10	11	11	11
	625	NO. 4 AWG 600 VOLT DISTRIBUTION CABLE, AS PER PLAN	FT	**3354**	854	788	789	923
	625	PULL BOX, 725.06, 12"X18" (TRAFFIC)	EA	**4**	1	1	1	1
	625	PULL BOX, 27"	EA	**11**	2	3	3	3
	625	PULL BOX, 32"	EA	**4**	1	1	1	1
	625	TRENCH, AS PER PLAN	FT	**1520**	275	335	443	467
	625	CONDUIT, 2", 725.051	FT	**805**	146	204	232	223
	625	CONDUIT, 3", 725.051	FT	**145**	10	12	72	51
	625	CONDUIT, CONCRETE ENCASED, 2", 725.051	FT	**1490**	291	295	502	402
	625	CONDUIT, CONCRETE ENCASED, 3", 725.051	FT	**279**	23	82		174
	625	BRACKET ARM 25 FT, AS PER PLAN	EA	**2**	1			1
	625	BRACKET ARM - LUMINAIRE, 8 FT, AS PER PLAN	EA	**8**	1	2	2	3
	625	NO. 6 AWG 600 VOLT DISTRIBUTION CABLE	FT	**1178**	44	201	350	583
	625	NO. 10 AWG POLE AND BRACKET CABLE	FT	**486**	80	116	116	174
	625	CONNECTION, FUSED PULL-APART	EA	**8**	1	2	2	3
	625	CONNECTION, UNFUSED PULL-APART	EA	**8**	1	2	2	3
	625	LUMINAIRE, LED, 120 V, TEARDROP (BLACK), AS PER PLAN	EA	**8**	1	2	2	3
	625	LIGHTING, MISC.: PHOTO CELL	EA	**8**	1	2	2	3
	630	SIGN HANGER ASSEMBLY, MAST ARM, AS PER PLAN	EA	**20**	4	4	6	6
	630	SIGN SUPPORT ASSEMBLY, POLE MOUNTED, AS PER PLAN	EA	**22**	6	5	6	5
	630	SIGN, FLAT SHEET, AS PER PLAN	SF	**164**	34	41	46	43
	630	STREET NAME SIGN	SF	**60**	16	8	16	20
	632	VEHICULAR SIGNAL HEAD, L.E.D., 3-SECTION, 12" LENS, 1-WAY, POLYCARBONATE, AS PER PLAN	EA	**21**	5	4	6	6
	632	PEDESTRIAN SIGNAL HEAD	EA	**32**	8	8	8	8
	632	SIGNALIZATION, MISC.: APS PUSHBUTTON STATION	EA	**8**				8
	632	SIGNAL SUPPORT FOUNDATION	EA	**6**	1	2	2	1
	632	SIGNAL SUPPORT FOUNDATION (22'), AS PER PLAN	EA	**4**	1		1	2
	632	PEDESTAL FOUNDATION	EA	**21**	5	6	5	5
	632	SIGNALIZATION, MISC.: FOUNDATION PRE-EXCAVATION	EA	**31**	7	8	8	8
	632	SIGNAL SUPPORT, TYPE 4121, DESIGN 12, AS PER PLAN	EA	**1**			1	
	632	COMBINATION SIGNAL SUPPORT, TYPE 4121, DESIGN 12, AS PER PLAN	EA	**4**			2	2
	632	COMBINATION SIGNAL SUPPORT, TYPE 4121, DESIGN 13, AS PER PLAN	EA	**5**	2	2		1
	632	PEDESTAL SUPPORT, 10.7'	EA	**21**	5	6	5	5
	632	SIGNAL CABLE, 4 CONDUCTOR, NO. 14 AWG	FT	**136**				136
	632	SIGNAL CABLE, 7 CONDUCTOR, NO. 14 AWG	FT	**4234**	1091	871	515	1757
	632	SIGNAL CABLE, 9 CONDUCTOR, NO. 14 AWG	FT	**1531**	290	296	772	173
	632	LOOP DETECTOR LEAD-IN CABLE, IMSA 50-2	FT	**1055**				1055
	632	POWER CABLE, 2 CONDUCTOR, NO. 6 AWG	FT	**160**	41	39	39	41
	632	POWER CABLE, 3 CONDUCTOR, NO. 6 AWG	FT	**449**	93	100	129	127
	632	POWER SERVICE, AS PER PLAN	EA	**4**	1	1	1	1
	632	SIGNALIZATION, MISC.: POWER METER CABINET TYPE 1 OR 2, BASE MOUNT, WITH FOUNDATION	EA	**4**	1	1	1	1
	632	COVERING OF VEHICULAR SIGNAL HEAD	EA	**21**	5	4	6	6
	632	COVERING OF PEDESTRIAN SIGNAL HEAD	EA	**32**	8	8	8	8
	632	COVERING OF PEDESTRIAN PUSHBUTTON	EA	**8**				8
	632	REMOVAL OF TRAFFIC SIGNAL INSTALLATION	EA	**4**	1	1	1	1
	632	SIGNALIZATION, MISC.: CCTV IP-CAMERA SYSTEM	EA	**2**	1			1
	633	CONTROLLER UNIT TS2/A2, W/ P-UPS CABINET, 16 CH, SIZE 6, GROUND MOUNTED, AS PER PLAN	EA	**4**	1	1	1	1
	633	CABINET FOUNDATION	EA	**4**	1	1	1	1
	633	UNINTERRUPTIBLE POWER SUPPLY (UPS), 1000 WATT, AS PER PLAN	EA	**4**	1	1	1	1
INT	632	INTERCONNECT, MISC.: RELOCATE EXISTING FIBER OPTIC CABLE, 24 STRAND	EA	**4**	1	1	1	1
	632	INTERCONNECT, MISC.: CAT 5E CABLE, OUTDOOR RATED	FT	**559**	315			244
	633	CONTROLLER ITEM, MISC.: FIBER OPTIC ETHERNET TRANSCEIVER, SHORT RANGE	EA	**7**	2	3	1	1
	633	CONTROLLER ITEM, MISC.: LAYER 2 ETHERNET SWITCH	EA	**4**	1	1	1	1
	1620	MISC.: TERMINATION PANEL, 24-FIBER	EA	**7**	2	2	1	2

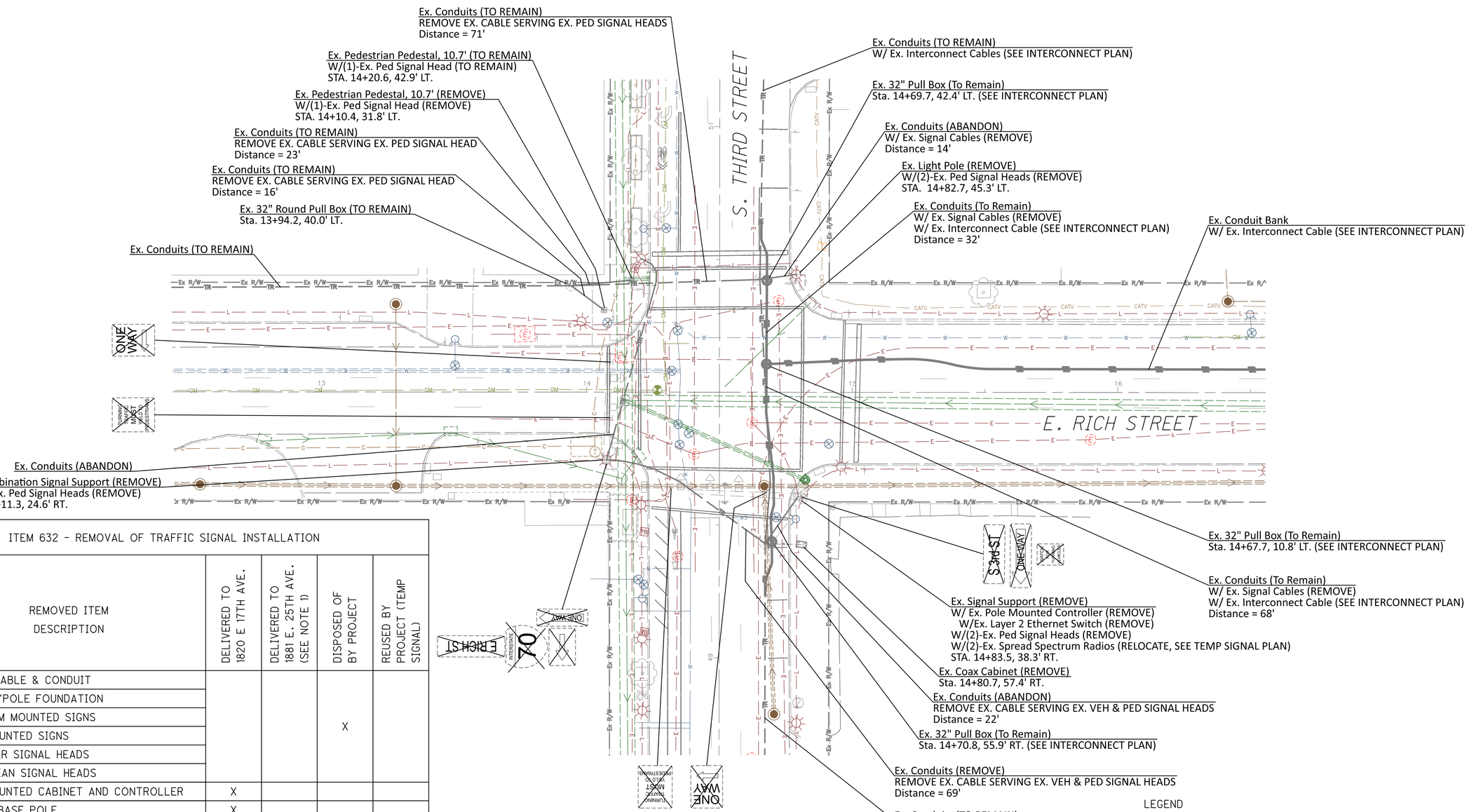
CALCULATED JAR
CHECKED DKA

TRAFFIC SIGNAL AND INTERCONNECT SUBSUMMARY

IMPROVEMENTS OF
E RICH STREET FROM S 3RD ST TO S GRANT AVE
FRA E RICH ST SIGNALS

3921-E

59
95



ITEM 632 - REMOVAL OF TRAFFIC SIGNAL INSTALLATION

QUANTITY	REMOVED ITEM DESCRIPTION	DELIVERED TO 1820 E 17TH AVE.	DELIVERED TO 1881 E. 25TH AVE. (SEE NOTE 1)	DISPOSED OF BY PROJECT	REUSED BY PROJECT (TEMP SIGNAL)
LUMP	SIGNAL CABLE & CONDUIT			X	
	CABINET/POLE FOUNDATION				
	MAST ARM MOUNTED SIGNS				
	POLE MOUNTED SIGNS				
	VEHICULAR SIGNAL HEADS				
	PEDESTRIAN SIGNAL HEADS				
1	POLE MOUNTED CABINET AND CONTROLLER	X			
2	ANCHOR BASE POLE	X			
1	PEDESTRIAN PEDESTAL	X			
LUMP	STREET NAME SIGNS	X			
1	FIBER OPTIC TERMINATION PANEL		X		X
2	WIRELESS RADIO		X		X
1	LAYER 2 ETHERNET SWITCH		X		X
3	ETHERNET TRANSCEIVERS (GBIC MODULES)		X		X
1	GRND. MOUNTED COAX CABINET & EQUIPMENT		X		

NOTES:
1. ITEMS LISTED AS REUSED BY PROJECT SHALL BE RELOCATED FROM THEIR EXISTING CONDITION TO A TEMPORARY CONDITION AS DETAILED BY THE MOT PLANS. ONCE THE NEW IS IN PLACE, TESTED, AND ACCEPTED, THE EXISTING ITEMS SHALL BE REMOVED AND DELIVERED TO THE ADDRESS INDICATED BY THIS CHART.

0 20 40
Horiz 1 Inch = 20 Feet

CALCULATED JAR
CHECKED DKA

TRAFFIC SIGNAL REMOVAL PLAN
RICH STREET AT THIRD STREET

IMPROVEMENTS OF
E RICH STREET FROM S 3RD ST TO S GRANT AVE
FRA E RICH ST SIGNALS

3921-E

60
95

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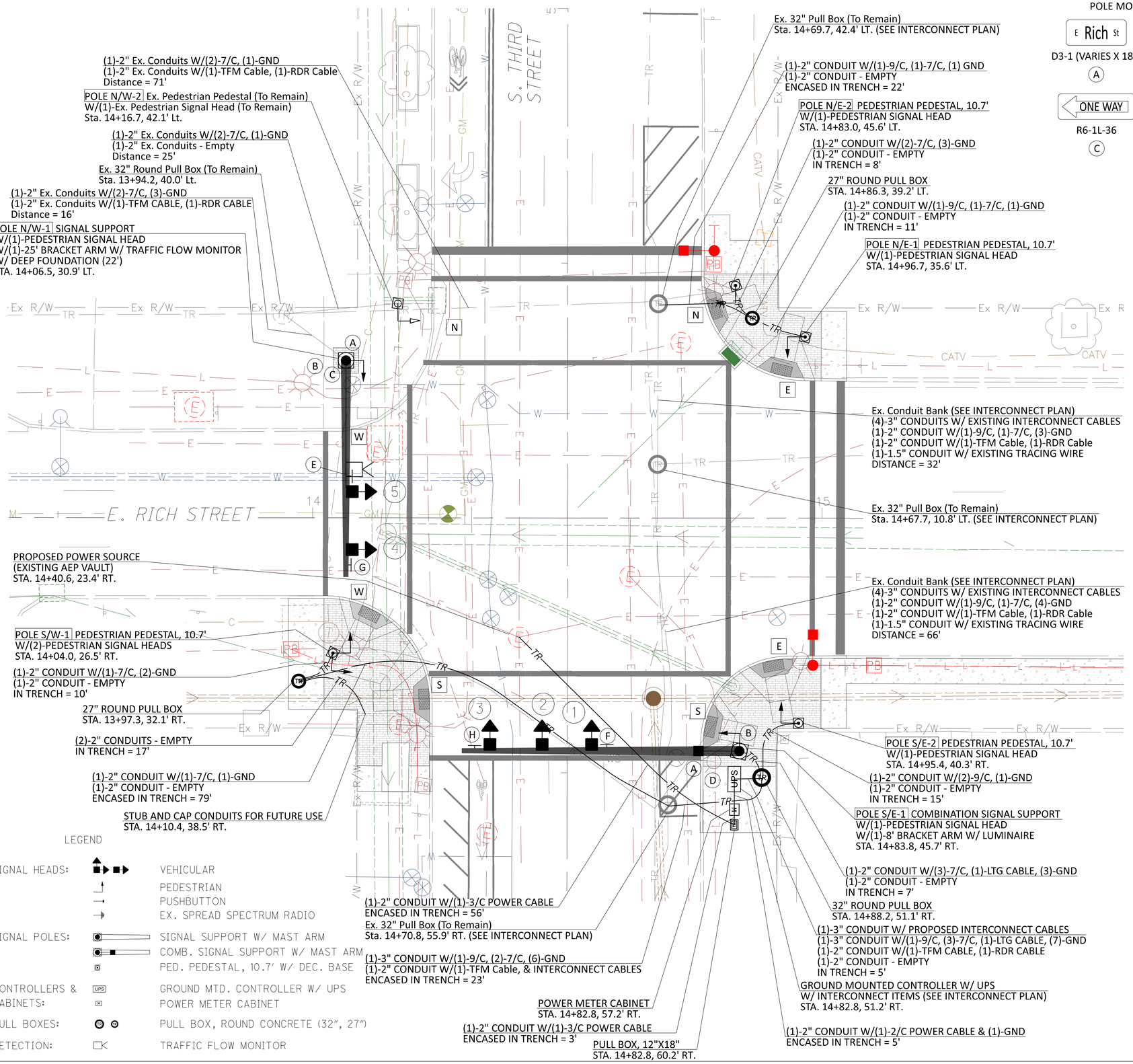
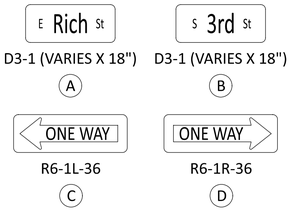
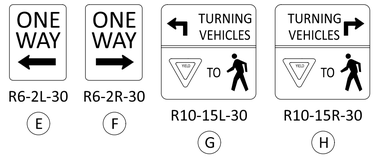


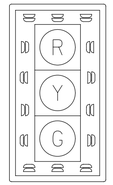
POLE MOUNTED SIGNS



MAST ARM MOUNTED SIGNS



VEHICULAR SIGNAL HEAD CONFIGURATIONS
12" HEADS W/ BACKPLATES



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PEDESTRIAN SIGNAL HEAD CONFIGURATION

1. THE CONTRACTOR SHALL ENSURE THAT ALL PROPOSED SIDEWALKS/ PATHWAYS MEET ADA GUIDELINES PER CITY SPECIFICATIONS.
2. THE CONTRACTOR SHALL ENSURE THAT ALL EXISTING SIDEWALKS/ PATHWAYS WITHIN THE PROJECT WORK LIMITS MEET ADA GUIDELINES PER CITY SPECIFICATIONS.
3. ALL CABLES, UNLESS SPECIFIED IN THE PLANS, ARE TO BE ROUTED INSIDE THE ANCHOR BASE SIGNAL SUPPORT POLE OR PEDESTAL. CABLES NOT SERVING A GIVEN POLE OR PEDESTAL SHALL NOT BE ROUTED THROUGH THE POLE.
4. POWER, SERVICE AND INTERCONNECT CABLE SHALL BE CONTINUOUS WITH NO SPLICES, EXCEPT AS NOTED.
5. FOR SIGNING AND PAVEMENT MARKINGS, SEE SHEET 51 .
6. N/A.
7. FOR POLE BASE FOUNDATIONS NOT WITHIN SIDEWALK AREA, THE TOP OF THE POLE BASE FOUNDATION SHALL BE EDGED USING A 1/2" SIDEWALK EDGER INSTEAD OF BEING CHAMFERED.
8. THE CITY OF COLUMBUS SHALL APPROVE BOLT ALIGNMENT, POLE/PEDESTAL FOUNDATION LOCATION, AND ELEVATION PRIOR TO THE CONTRACTOR INSTALLING THE FOUNDATION.
9. TAGGING OF CABLE IN THE PULL BOX IMMEDIATELY ADJACENT TO THE CONTROL CABINET IS NOT REQUIRED EXCEPT FOR TAGGING OF CERTAIN CABLE AS DIRECTED BY THE PROJECT ENGINEER, OR AS PER PLAN.
10. DO NOT ENCASE THE GROUND ROD, THE GROUNDING WIRE, OR THE EMT CONDUIT ENDS IN CONCRETE THAT FALL OUTSIDE OF THE FOUNDATION. FULL ACCESS TO THESE ITEMS MUST BE MAINTAINED AT ALL TIMES. PERMANENTLY MARK THE TOP OF FOUNDATION CONCRETE, WITH A MARKER OR SYMBOL SO THE ROD LOCATION CAN BE IDENTIFIED BY OTHERS.
11. ANY SIGNAL POLE BASE FOUNDATION ADJACENT TO A SIDEWALK AREA SHALL BE FLUSH WITH THE TOP OF THE SIDEWALK UNLESS OTHERWISE STATED. SIGNAL POLE FOUNDATIONS WITHIN SIDEWALK AREA SHALL BE PER STD DWG 4161.
12. THE CONTRACTOR SHALL NOT INSTALL POLE FOUNDATIONS UNTIL THE POLE LOCATION AREA IS AT FINISHED GRADE.
13. UNDERGROUND CONDUIT AND TRENCH THAT ARE UNDER PROPOSED SIDEWALK OR ROADWAY AREAS SHALL BE INSTALLED PRIOR TO THE PLACEMENT OF SIDEWALKS OR ANY ASPHALT OR CONCRETE ROADWAY COURSE.
14. THE CONTRACTOR SHALL PROVIDE AND INSTALL POWER CABLE/CONDUIT FROM THE TRAFFIC SIGNAL CONTROLLER CABINET, THROUGH THE POWER METER CABINET, AND TO THE AEP POWER/VAULT AT STA 14+40.6, 23.4' RT. COIL ENOUGH CABLE IN THE VAULT TO REACH THE POWER HOOK-UP POINT IN THE VAULT.
15. N/A.
16. FOR INTERCONNECT ITEMS, SEE INTERCONNECT SCHEMATIC SHEET 73.
17. N/A.
18. THE CONTROL CABINET DOOR SHALL BE LOCATED ON THE EAST SIDE OF THE CABINET.
19. THE CABINET FOUNDATION SHALL BE PLACED ADJACENT TO THE BACK OF THE SIDEWALK. THE TOP SURFACE OF A CABINET FOUNDATION LOCATED NEXT TO SIDEWALK AREAS SHALL BE 4" ABOVE THE SURROUNDING WALK. EXPANSION MATERIAL SHALL BE USED BETWEEN ALL FOUNDATIONS AND ADJACENT SIDEWALKS. WORK PAD SIZE SHALL BE 48" W X 36"D X 4"H.
20. USE A SEPARATE CONDUIT FOR EACH GROUPING OF CABLES UNLESS OTHERWISE INDICATED: ONE CONDUIT FOR 120VAC SIGNAL CABLE (3/C, 7/C, 9/C); ONE CONDUIT FOR POWER; ONE CONDUIT FOR 2 CONDUCTOR CABLE (LOOP & PUSHBUTTON); AND ONE CONDUIT FOR INTERCONNECT/COMMUNICATIONS CABLE (TWISTED PAIR, FIBER OPTICS OR COAX). ANY OTHER LOW VOLTAGE CABLE NOT SPECIFIED ABOVE CAN BE PLACED IN THE 2 CONDUCTOR CABLE CONDUIT. POWER CABLE MUST BE PLACED IN ITS OWN CONDUIT.
21. UNLESS OTHERWISE SPECIFIED THE FOLLOWING SHALL APPLY. A PREFORMED PVC CONDUIT ELBOW SHALL BE USED TO CHANGE THE PVC CONDUIT DIRECTION BEYOND WHAT ITS NATURAL BENDING FLEX WOULD YIELD. RIGID METAL CONDUIT CAN BE BENT TO FORM AN ELBOW OR ANY OTHER BENDING ANGLE REQUIRED ONLY IF A PROPER CONDUIT BENDING MACHINE IS USED. THE ELBOW RADIUS FOR ANY NON-INTERCONNECT CONDUIT SHALL BE 24" OR LARGER WHEN USED IN A HORIZONTAL OR VERTICAL MANNER. ANY TYPE OF ELBOW USED FOR INTERCONNECT CONDUIT SHALL HAVE A RADIUS OF 36" OR LARGER WHEN USED IN A HORIZONTAL DIRECTION OR IN A VERTICAL DIRECTION WHEN THE TRENCH IS 36" OR DEEPER. IF THE TRENCH IS LESS THAN 36" THEN THE VERTICAL ELBOW RADIUS SHALL BE 24".
22. ALL CLAMPS AND BANDING MATERIAL SHALL BE PAINTED TO MATCH THE SIGNAL SUPPORTS.
23. N/A.
24. N/A.

TRAFFIC SIGNAL INSTALLATION PLAN
RICH STREET AT THIRD STREET

IMPROVEMENTS OF
E RICH STREET FROM S 3RD ST TO S GRANT AVE
FRA E RICH ST SIGNALS

3921-E

61
95

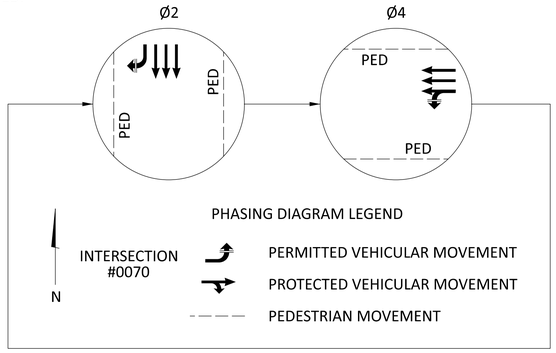
DETAIL SHEET NOTES

1. SET CONFLICT MONITOR FOR 10 SEC FLASH.
2. LOOP DETECTOR LEAD-IN CABLE SHALL BE USED FOR THE PEDESTRIAN PUSHBUTTONS. GROUND THE SHIELD ONLY AT THE CABINET.
3. N/A.
4. N/A.
5. BACK PANEL WIRING (FRONT SIDE JUMPERS ONLY).
   A. HARD WIRE 'PED RECYCLE' TO GROUND.
   B. N/A.
   C. N/A.
   D. USE DIODES TO PREVENT FEEDBACK ON MULTI-USE TERMINALS.
   E. N/A.
   F. N/A.
   G. N/A.
   H. N/A.
6. CONTROLLER SOFTWARE PROGRAMMING.
   A. INITIALIZE IN Ø2 GREEN.
   B. ENABLE ACTUATED REST-IN-WALK. ACTIVATE PHASE Ø2.
   C. ENABLE DUAL ENTRY. ACTIVATE Ø4.
   D. ENABLE SIMULTANEOUS GAP OUT. ACTIVATE Ø 2 & Ø4.
   E. N/A.
7. N/A.
8. N/A.
9. INTERCONNECT CABLE SHALL BE CONTINUOUSLY RUN BETWEEN CONTROLLER CABINETS. NO SPLICES ARE PERMITTED EXCEPT WHERE NOTED.
10. N/A.
11. N/A.
12. N/A.

FIELD WIRING HOOK-UP CHART

SIGNAL HEAD	INDICATION	FIELD TERMINAL	FLASH
1,2,3 SB	R	Ø2 R	R
	Y	Ø2 Y	
	G	Ø2 G	
4,5 WB	R	Ø4 R	R
	Y	Ø4 Y	
	G	Ø4 G	
PEDESTRIAN MOVEMENTS			
N-N	W	G Ø4-W	OFF
NORTH	DW	R Ø4-DW	
E-E	W	G Ø2-W	OFF
EAST	DW	R Ø2-DW	
S-S	W	G Ø4-W	OFF
SOUTH	DW	R Ø4-DW	
W-W	W	G Ø2-W	OFF
WEST	DW	R Ø2-DW	

PHASING DIAGRAM



TIMING CHART

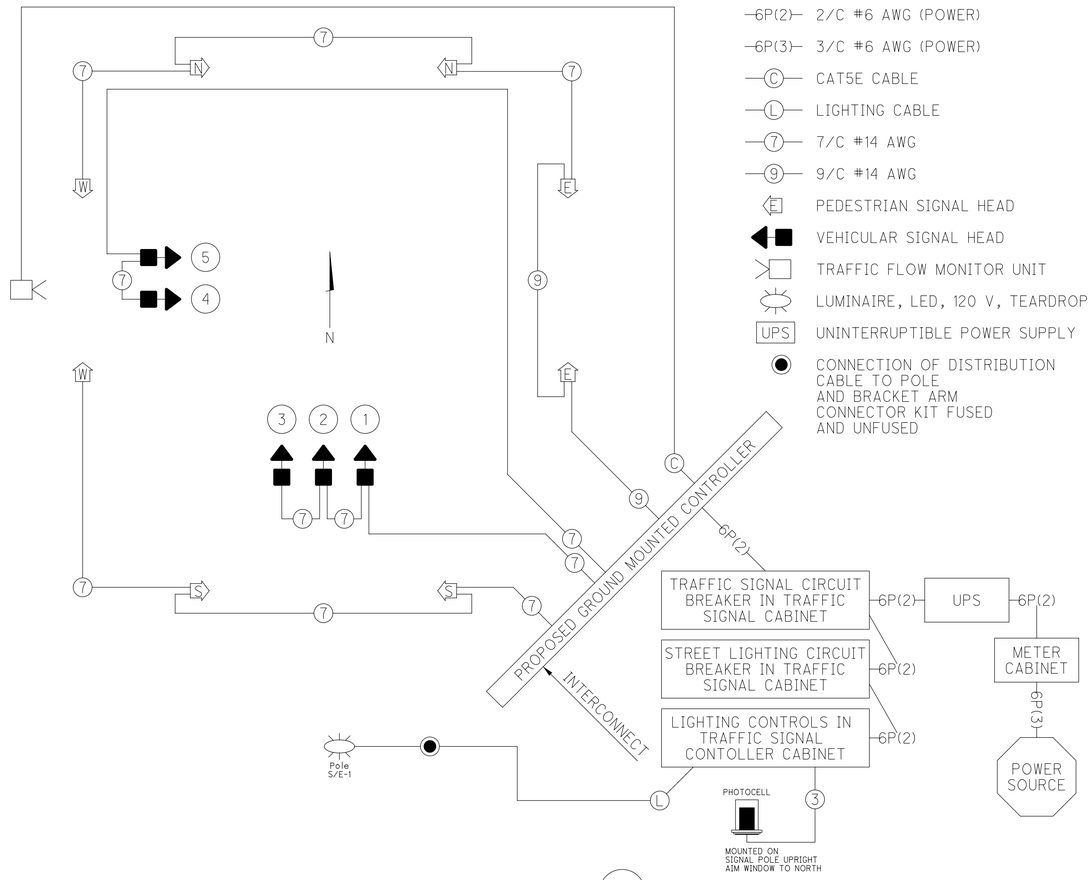
PHASE	1	2	3	4	5	6	7	8
MOVEMENT	-	SB	-	WB	-	-	-	-
MIN INITIAL	-	20	-	10	-	-	-	-
WALK	-	7	-	7	-	-	-	-
PED CHANGE	-	11	-	11	-	-	-	-
PASS/EXT	-	3.7	-	3.7	-	-	-	-
YELLOW	-	3.4	-	3.4	-	-	-	-
RED CLR	-	1.6	-	1.6	-	-	-	-
MAX GRN 1	-	55	-	55	-	-	-	-
MAX GRN 2	-	55	-	55	-	-	-	-
PED RECALL	-	ON	-	OFF	-	-	-	-
VEH RECALL	-	MIN	-	OFF	-	-	-	-
MEMORY	-	ON	-	OFF	-	-	-	-

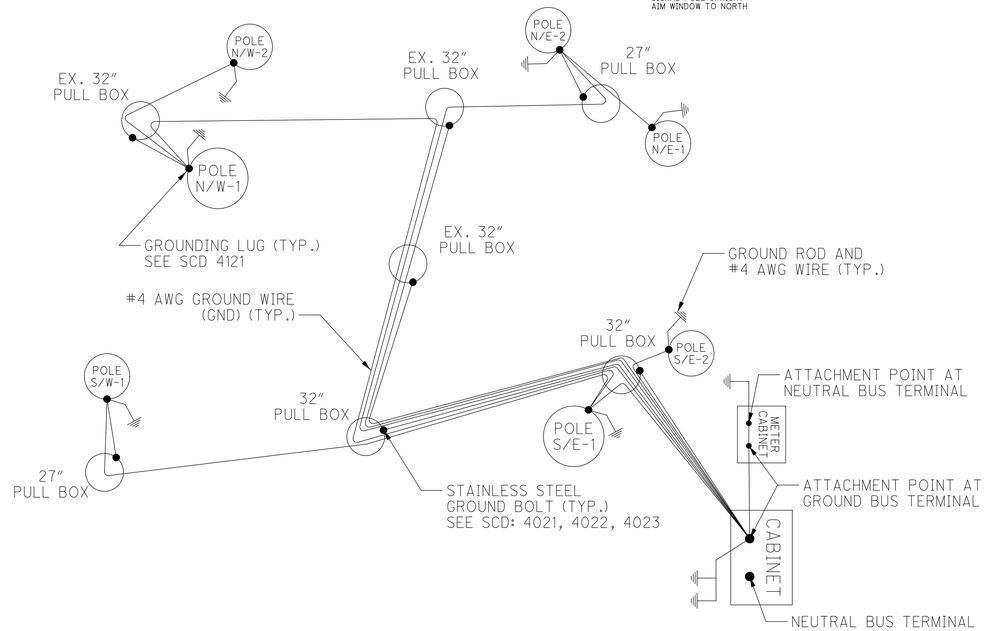
GROUNDING & BONDING DIAGRAM LEGEND

- PULL BOX
- POLE — STRAIN POLE / PEDESTAL
- GROUND ROD AND #4 AWG WIRE
- ATTACHMENT POINT
- CABINET — CONTROLLER CABINET
- CABINET GROUND TERMINAL

WIRING DIAGRAM LEGEND

- —6P(2)— 2/C #6 AWG (POWER)
- —6P(3)— 3/C #6 AWG (POWER)
- —C— CAT5E CABLE
- —L— LIGHTING CABLE
- —7— 7/C #14 AWG
- —9— 9/C #14 AWG
- E — PEDESTRIAN SIGNAL HEAD
- VEHICULAR SIGNAL HEAD
- TRAFFIC FLOW MONITOR UNIT
- LUMINAIRE, LED, 120 V, TEARDROP (BLACK)
- UPS — UNINTERRUPTIBLE POWER SUPPLY
- CONNECTION OF DISTRIBUTION CABLE TO POLE AND BRACKET ARM CONNECTOR KIT FUSED AND UNFUSED





CALCULATED JAR
CHECKED DKA

TRAFFIC SIGNAL DETAILS
RICH STREET AT THIRD STREET

IMPROVEMENTS OF
E RICH STREET FROM S 3RD ST TO S GRANT AVE
FRA E RICH ST SIGNALS

3921-E

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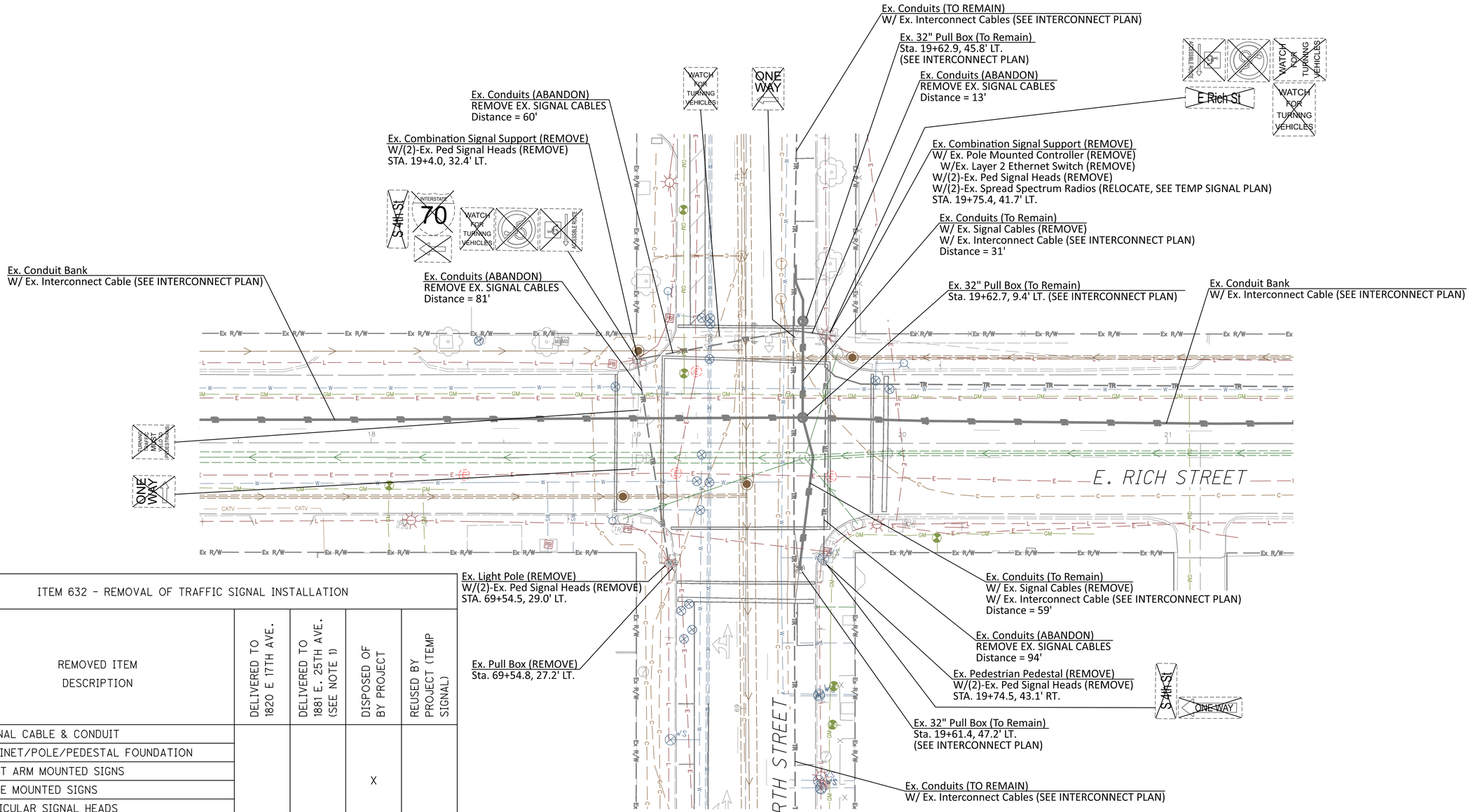

ITEM 632 - REMOVAL OF TRAFFIC SIGNAL INSTALLATION					
QUANTITY	REMOVED ITEM DESCRIPTION	DELIVERED TO 1820 E 17TH AVE.	DELIVERED TO 1881 E. 25TH AVE. (SEE NOTE 1)	DISPOSED OF BY PROJECT	REUSED BY PROJECT (TEMP SIGNAL)
LUMP	SIGNAL CABLE & CONDUIT				
	CABINET/POLE/PEDESTAL FOUNDATION				
	MAST ARM MOUNTED SIGNS				
	POLE MOUNTED SIGNS			X	
	VEHICULAR SIGNAL HEADS				
	PEDESTRIAN SIGNAL HEADS				
	PULL BOX CASTING				
1	POLE MOUNTED CABINET AND CONTROLLER	X			
2	ANCHOR BASE POLE	X			
1	PEDESTRIAN PEDESTAL	X			
LUMP	STREET NAME SIGNS	X			
1	METAL PULL BOX LIDS AND FRAMES	X			X
2	WIRELESS RADIO		X		X
1	LAYER 2 ETHERNET SWITCH		X		X
2	ETHERNET TRANSCEIVERS (GBIC MODULES)		X		X

NOTES:
1. ITEMS LISTED AS REUSED BY PROJECT SHALL BE RELOCATED FROM THEIR EXISTING CONDITION TO A TEMPORARY CONDITION AS DETAILED BY THE MOT PLANS. ONCE THE NEW IS IN PLACE, TESTED, AND ACCEPTED, THE EXISTING ITEMS SHALL BE REMOVED AND DELIVERED TO THE ADDRESS INDICATED BY THIS CHART.

LEGEND

SIGNAL HEADS:		EX. VEHICULAR
		EX. PEDESTRIAN
		EX. PUSHBUTTON
		EX. SPREAD SPECTRUM RADIO
SIGNAL POLES:		EX. SIGNAL SUPPORT W/ MAST ARM
		EX. COMB. SIGNAL SUPPORT W/ MAST ARM
		EX. EBMEDDED POLE
CONTROLLERS & CABINETS:	TC	EX. POLE MTD. CONTROLLER
PULL BOXES:	TR	EX. PULL BOX

0 20 40
Horiz 1 inch = 20 feet

CALCULATED JAR
CHECKED DKA

TRAFFIC SIGNAL REMOVAL PLAN
RICH STREET AT FOURTH STREET

IMPROVEMENTS OF
E RICH STREET FROM S 3RD ST TO S GRANT AVE
FRA E RICH ST SIGNALS

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(1)-3" CONDUIT W/(1)-9/C, (2)-7/C, (1)-LTG CABLE, (4)-GND
(1)-2" CONDUIT W/ INTERCONNECT CABLES
ENCASED IN TRENCH = 26'

PULL BOX, 12"X18"
STA. 19+74.0, 60.5' LT.

(1)-2" CONDUIT W/(1)-3/C POWER CABLE
ENCASED IN TRENCH = 3'

POWER METER CABINET
STA. 19+74.0, 57.5' LT.

(1)-2" CONDUIT W/(1)-2/C POWER CABLE & (1)-GND
ENCASED IN TRENCH = 5'
GROUND MOUNTED CONTROLLER W/ UPS
W/ INTERCONNECT ITEMS (SEE INTERCONNECT PLAN)
STA. 19+74.0, 52.5' LT.

Ex. 32" Pull Box (To Remain)
Sta. 19+62.9, 45.8' LT. (SEE INTERCONNECT PLAN)

(1)-2" CONDUIT W/(1)-3/C POWER CABLE
ENCASED IN TRENCH = 63'

PROPOSED POWER SOURCE
(EXISTING AEP VAULT)
STA. 19+22.5, 27.0' LT.

(1)-3" CONDUIT W/(2)-7/C, (1)-LTG CABLE, (2)-GND
(1)-2" CONDUIT - EMPTY
ENCASED IN TRENCH = 56'

POLE N/W-1 COMBINATION SIGNAL SUPPORT
W/(1)-PEDESTRIAN SIGNAL HEAD
W/(1)-8' BRACKET ARM W/ LUMINAIRE
STA. 19+03.5, 47.2' LT.

(1)-2" CONDUIT W/(3)-7/C, (1)-LTG CABLE, (4)-GND
(1)-2" CONDUIT - EMPTY
IN TRENCH = 8'

27" ROUND PULL BOX
STA. 19+03.1, 39.1' LT.

(1)-3" CONDUIT W/(2)-9/C, (3)-7/C, (2)-LTG CABLES, (4)-GND
(1)-2" CONDUIT W/(1)-RDR CABLE
(1)-3" CONDUIT W/ INTERCONNECT CABLES
(1)-2" CONDUIT - EMPTY
IN TRENCH = 6'

32" ROUND PULL BOX
STA. 19+79.8, 52.9' LT.

(1)-2" CONDUIT W/(3)-7/C, (1)-LTG CABLE, (4)-GND
(1)-2" CONDUIT W/(1)-RDR CABLE
IN TRENCH = 9'

POLE N/E-1 COMBINATION SIGNAL SUPPORT
W/(1)-PEDESTRIAN SIGNAL HEAD
W/(1)-8' BRACKET ARM W/ LUMINAIRE
STA. 19+74.4, 46.1' LT.

POLE N/E-2 PEDESTRIAN PEDESTAL, 10.7'
W/(1)-PEDESTRIAN SIGNAL HEAD
W/ 18" FORMED TOP FOUNDATION
STA. 19+90.7, 38.6' LT.

(1)-2" CONDUIT W/(1)-9/C, (1)-GND
(1)-2" CONDUIT - EMPTY
IN TRENCH = 22'

POLE N/W-2 PEDESTRIAN PEDESTAL, 10.7'
W/(1)-PEDESTRIAN SIGNAL HEAD
STA. 18+92.2, 38.4' LT.

(1)-2" CONDUIT W/(1)-7/C, (1)-GND
(1)-2" CONDUIT - EMPTY
IN TRENCH = 11'

Ex. Conduit Bank (SEE INTERCONNECT PLAN)
(4)-3" CONDUITS W/ PROPOSED INTERCONNECT CABLES
(1)-2" CONDUIT W/(1)-9/C, (3)-GND
(1)-2" CONDUIT - EMPTY
(1)-1.5" CONDUIT W/ TRACING WIRE
DISTANCE = 31'

Ex. 32" Pull Box (To Remain)
Sta. 19+62.7, 9.4' LT. (SEE INTERCONNECT PLAN)

Ex. Conduit Bank (SEE INTERCONNECT PLAN)
(4)-3" CONDUITS W/ PROPOSED INTERCONNECT CABLES
(1)-2" CONDUIT W/(1)-9/C, (2)-GND
(1)-2" CONDUIT - EMPTY
(1)-1.5" CONDUIT W/ TRACING WIRE
DISTANCE = 59'

POLE S/W-1 PEDESTRIAN PEDESTAL, 10.7'
W/(1)-PEDESTRIAN SIGNAL HEAD
STA. 18+99.2, 34.6' Rt.

(1)-2" CONDUIT W/(1)-7/C, (1)-GND
(1)-2" CONDUIT - EMPTY
IN TRENCH = 14'

27" ROUND PULL BOX
STA. 19+06.5, 45.0' Rt.

(1)-2" CONDUIT W/(2)-7/C, (3)-GND
(1)-2" CONDUIT - EMPTY
IN TRENCH = 7'

POLE S/W-2 PEDESTRIAN PEDESTAL, 10.7'
W/(1)-PEDESTRIAN SIGNAL HEAD
STA. 19+07.3, 52.3' RT.

POLE S/E-2 PEDESTRIAN PEDESTAL, 10.7'
W/(1)-PEDESTRIAN SIGNAL HEAD
STA. 19+88.6, 35.3' RT.

(1)-2" CONDUIT W/(1)-9/C, (1)-7/C, (1)-GND
(1)-2" CONDUIT - EMPTY
IN TRENCH = 18'

27" ROUND PULL BOX
STA. 19+76.5, 46.6' RT.

(1)-2" CONDUIT W/(2)-7/C, (4)-GND
(1)-2" CONDUIT - EMPTY
IN TRENCH = 7'

POLE S/E-1 PEDESTRIAN PEDESTAL, 10.7'
W/(1)-PEDESTRIAN SIGNAL HEAD
STA. 19+74.9, 53.4' RT.

(1)-2" CONDUIT W/(1)-9/C, (1)-7/C, (2)-GND
(1)-2" CONDUIT - EMPTY
ENCASED IN TRENCH = 15'

Ex. 32" Pull Box (To Remain)
Sta. 19+61.4, 47.2' LT. (SEE INTERCONNECT PLAN)

(1)-2" CONDUIT W/(1)-7/C, (1)-GND
(1)-2" CONDUIT - EMPTY
ENCASED IN TRENCH = 55'

E. RICH STREET

S. FOURTH STREET

LEGEND

SIGNAL HEADS:		VEHICULAR
		PEDESTRIAN
		PUSHBUTTON
		EX. SPREAD SPECTRUM RADIO
SIGNAL POLES:		SIGNAL SUPPORT W/ MAST ARM
		COMB. SIGNAL SUPPORT W/ MAST ARM
		PED. PEDESTAL, 10.7' W/ DEC. BASE
CONTROLLERS & CABINETS:	UPS	GROUND MTD. CONTROLLER W/ UPS
		POWER METER CABINET
PULL BOXES:	PB	PULL BOX, ROUND CONCRETE (32", 27")

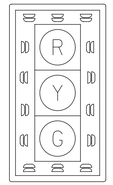
POLE MOUNTED SIGNS

D3-1 (VARIES X 18") — E Rich St — (A)
D3-1 (VARIES X 18") — S 4th St — (B)
M1-1-24 M6-1L-21 — INTERSTATE 70 — (I)
R6-1L-36 — ONE WAY — (C)
R6-1R-36 — ONE WAY — (D)

MAST ARM MOUNTED SIGNS

R6-2L-30 — ONE WAY — (E)
R6-2R-30 — ONE WAY — (F)
R10-15L-30 — TURNING VEHICLES TO — (G)
R10-15R-30 — TURNING VEHICLES TO — (H)

VEHICULAR SIGNAL HEAD CONFIGURATIONS
12" HEADS W/ BACKPLATES



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PEDESTRIAN SIGNAL HEAD CONFIGURATION

N E S W

1. THE CONTRACTOR SHALL ENSURE THAT ALL PROPOSED SIDEWALKS/ PATHWAYS MEET ADA GUIDELINES PER CITY SPECIFICATIONS.
2. THE CONTRACTOR SHALL ENSURE THAT ALL EXISTING SIDEWALKS/ PATHWAYS WITHIN THE PROJECT WORK LIMITS MEET ADA GUIDELINES PER CITY SPECIFICATIONS.
3. ALL CABLES, UNLESS SPECIFIED IN THE PLANS, ARE TO BE ROUTED INSIDE THE ANCHOR BASE SIGNAL SUPPORT POLE OR PEDESTAL. CABLES NOT SERVING A GIVEN POLE OR PEDESTAL SHALL NOT BE ROUTED THROUGH THE POLE.
4. POWER, SERVICE AND INTERCONNECT CABLE SHALL BE CONTINUOUS WITH NO SPLICES, EXCEPT AS NOTED.
5. FOR SIGNING AND PAVEMENT MARKINGS, SEE SHEET 52 .
6. N/A.
7. FOR POLE BASE FOUNDATIONS NOT WITHIN SIDEWALK AREA, THE TOP OF THE POLE BASE FOUNDATION SHALL BE EDGED USING A 1/2" SIDEWALK EDGER INSTEAD OF BEING CHAMFERED.
8. THE CITY OF COLUMBUS SHALL APPROVE BOLT ALIGNMENT, POLE/PEDESTAL FOUNDATION LOCATION, AND ELEVATION PRIOR TO THE CONTRACTOR INSTALLING THE FOUNDATION.
9. TAGGING OF CABLE IN THE PULL BOX IMMEDIATELY ADJACENT TO THE CONTROL CABINET IS NOT REQUIRED EXCEPT FOR TAGGING OF CERTAIN CABLE AS DIRECTED BY THE PROJECT ENGINEER, OR AS PER PLAN.
10. DO NOT ENCASE THE GROUND ROD, THE GROUNDING WIRE, OR THE EMT CONDUIT ENDS IN CONCRETE THAT FALL OUTSIDE OF THE FOUNDATION. FULL ACCESS TO THESE ITEMS MUST BE MAINTAINED AT ALL TIMES. PERMANENTLY MARK THE TOP OF FOUNDATION CONCRETE, WITH A MARKER OR SYMBOL SO THE ROD LOCATION CAN BE IDENTIFIED BY OTHERS.
11. ANY SIGNAL POLE BASE FOUNDATION ADJACENT TO A SIDEWALK AREA SHALL BE FLUSH WITH THE TOP OF THE SIDEWALK UNLESS OTHERWISE STATED. SIGNAL POLE FOUNDATIONS WITHIN SIDEWALK AREA SHALL BE PER STD DWG 4161.
12. THE CONTRACTOR SHALL NOT INSTALL POLE FOUNDATIONS UNTIL THE POLE LOCATION AREA IS AT FINISHED GRADE.
13. UNDERGROUND CONDUIT AND TRENCH THAT ARE UNDER PROPOSED SIDEWALK OR ROADWAY AREAS SHALL BE INSTALLED PRIOR TO THE PLACEMENT OF SIDEWALKS OR ANY ASPHALT OR CONCRETE ROADWAY COURSE.
14. THE CONTRACTOR SHALL PROVIDE AND INSTALL POWER CABLE/CONDUIT FROM THE TRAFFIC SIGNAL CONTROLLER CABINET, THROUGH THE POWER METER CABINET, AND TO THE AEP POWER/VAULT AT STA 19+22.5, 27.0' LT. COIL ENOUGH CABLE IN THE VAULT TO REACH THE POWER HOOK-UP POINT IN THE VAULT.
15. N/A.
16. FOR INTERCONNECT ITEMS, SEE INTERCONNECT SCHEMATIC SHEET 74.
17. N/A.
18. THE CONTROL CABINET DOOR SHALL BE LOCATED ON THE EAST SIDE OF THE CABINET.
19. THE CABINET FOUNDATION SHALL BE PLACED ADJACENT TO THE BACK OF THE SIDEWALK. THE TOP SURFACE OF A CABINET FOUNDATION LOCATED NEXT TO SIDEWALK AREAS SHALL BE 4" ABOVE THE SURROUNDING WALK. EXPANSION MATERIAL SHALL BE USED BETWEEN ALL FOUNDATIONS AND ADJACENT SIDEWALKS. WORK PAD SIZE SHALL BE 48" W X 36"D X 4"H.
20. USE A SEPARATE CONDUIT FOR EACH GROUPING OF CABLES UNLESS OTHERWISE INDICATED: ONE CONDUIT FOR 120VAC SIGNAL CABLE (3/C, 7/C, 9/C); ONE CONDUIT FOR POWER; ONE CONDUIT FOR 2 CONDUCTOR CABLE (LOOP & PUSHBUTTON); AND ONE CONDUIT FOR INTERCONNECT/COMMUNICATIONS CABLE (TWISTED PAIR, FIBER OPTICS OR COAX). ANY OTHER LOW VOLTAGE CABLE NOT SPECIFIED ABOVE CAN BE PLACED IN THE 2 CONDUCTOR CABLE CONDUIT. POWER CABLE MUST BE PLACED IN ITS OWN CONDUIT.
21. UNLESS OTHERWISE SPECIFIED THE FOLLOWING SHALL APPLY. A PREFORMED PVC CONDUIT ELBOW SHALL BE USED TO CHANGE THE PVC CONDUIT DIRECTION BEYOND WHAT ITS NATURAL BENDING FLEX WOULD YIELD. RIGID METAL CONDUIT CAN BE BENT TO FORM AN ELBOW OR ANY OTHER BENDING ANGLE REQUIRED ONLY IF A PROPER CONDUIT BENDING MACHINE IS USED. THE ELBOW RADIUS FOR ANY NON-INTERCONNECT CONDUIT SHALL BE 24" OR LARGER WHEN USED IN A HORIZONTAL OR VERTICAL MANNER. ANY TYPE OF ELBOW USED FOR INTERCONNECT CONDUIT SHALL HAVE A RADIUS OF 36" OR LARGER WHEN USED IN A HORIZONTAL DIRECTION OR IN A VERTICAL DIRECTION WHEN THE TRENCH IS 36" OR DEEPER. IF THE TRENCH IS LESS THAN 36" THEN THE VERTICAL ELBOW RADIUS SHALL BE 24".
22. ALL CLAMPS AND BANDING MATERIAL SHALL BE PAINTED TO MATCH THE SIGNAL SUPPORTS.
23. N/A.
24. N/A.

N

0 10 20
Horiz 1 inch = 10 feet

CALCULATED JAR
CHECKED DKA

TRAFFIC SIGNAL INSTALLATION PLAN
RICH STREET AT FOURTH STREET

IMPROVEMENTS OF
E RICH STREET FROM S 3RD ST TO S GRANT AVE
FRA E RICH ST SIGNALS

3921-E

64
95

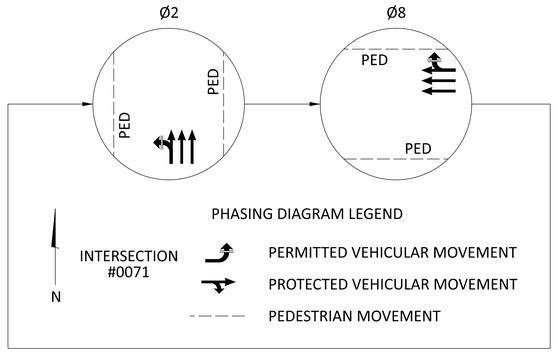
DETAIL SHEET NOTES

1. SET CONFLICT MONITOR FOR 10 SEC FLASH.
2. LOOP DETECTOR LEAD-IN CABLE SHALL BE USED FOR THE PEDESTRIAN PUSHBUTTONS. GROUND THE SHIELD ONLY AT THE CABINET.
3. N/A.
4. N/A.
5. BACK PANEL WIRING (FRONT SIDE JUMPERS ONLY).
   A. HARD WIRE 'PED RECYCLE' TO GROUND.
   B. N/A.
   C. N/A.
   D. USE DIODES TO PREVENT FEEDBACK ON MULTI-USE TERMINALS.
   E. N/A.
   F. N/A.
   G. N/A.
   H. N/A.
6. CONTROLLER SOFTWARE PROGRAMMING.
   A. INITIALIZE IN Ø2 GREEN.
   B. ENABLE ACTUATED REST-IN-WALK. ACTIVATE PHASE Ø2.
   C. ENABLE DUAL ENTRY. ACTIVATE Ø8.
   D. ENABLE SIMULTANEOUS GAP OUT. ACTIVATE Ø 2 & Ø8.
   E. N/A.
7. N/A.
8. N/A.
9. INTERCONNECT CABLE SHALL BE CONTINUOUSLY RUN BETWEEN CONTROLLER CABINETS. NO SPLICES ARE PERMITTED EXCEPT WHERE NOTED.
10. N/A.
11. N/A.
12. N/A.

FIELD WIRING HOOK-UP CHART

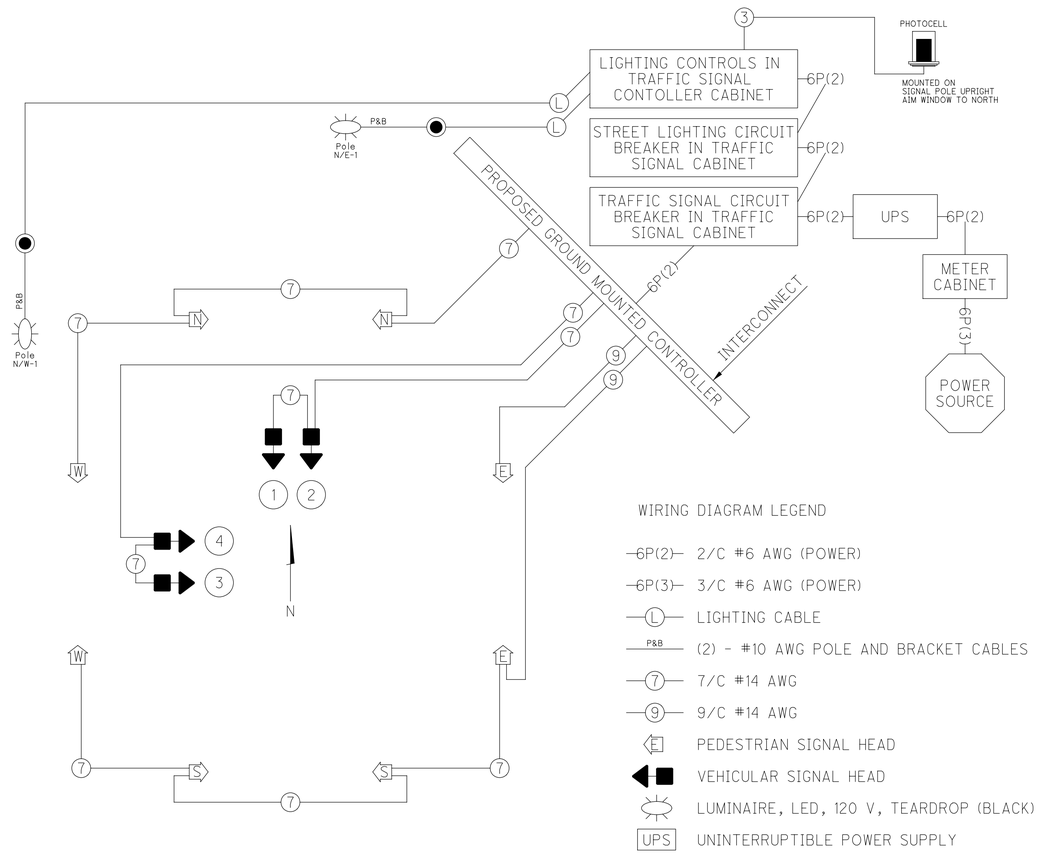
SIGNAL HEAD	INDICATION	FIELD TERMINAL	FLASH
1,2 NB	R	Ø2 R	R
	Y	Ø2 Y	
	G	Ø2 G	
3,4 WB	R	Ø8 R	R
	Y	Ø8 Y	
	G	Ø8 G	
PEDESTRIAN MOVEMENTS			
N-N	W	G Ø8-W	OFF
NORTH	DW	R Ø8-DW	
E-E	W	G Ø2-W	OFF
EAST	DW	R Ø2-DW	
S-S	W	G Ø8-W	OFF
SOUTH	DW	R Ø8-DW	
W-W	W	G Ø2-W	OFF
WEST	DW	R Ø2-DW	

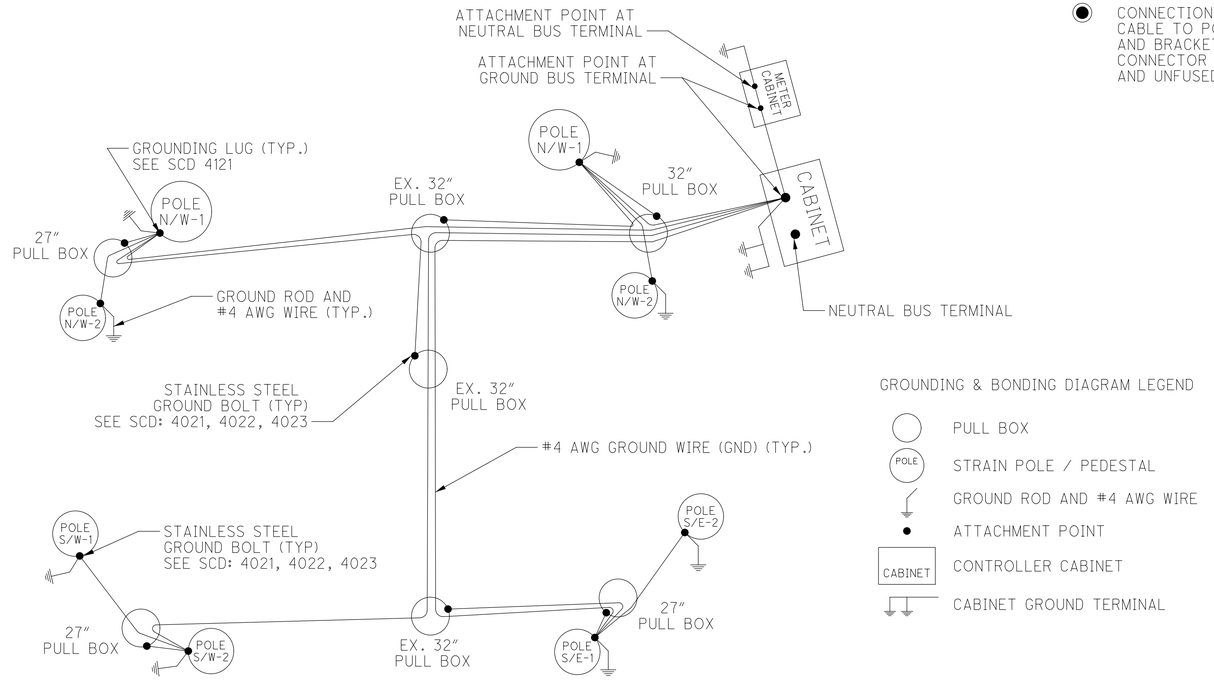
PHASING DIAGRAM



TIMING CHART

PHASE	1	2	3	4	5	6	7	8
MOVEMENT	-	NB	-	-	-	-	-	WB
MIN INITIAL	-	20	-	-	-	-	-	10
WALK	-	7	-	-	-	-	-	7
PED CHANGE	-	11	-	-	-	-	-	12
PASS/EXT	-	3.7	-	-	-	-	-	3.7
YELLOW	-	3.4	-	-	-	-	-	3.4
RED CLR	-	1.8	-	-	-	-	-	1.8
MAX GRN 1	-	55	-	-	-	-	-	55
MAX GRN 2	-	55	-	-	-	-	-	55
PED RECALL	-	ON	-	-	-	-	-	OFF
VEH RECALL	-	MIN	-	-	-	-	-	OFF
MEMORY	-	ON	-	-	-	-	-	OFF





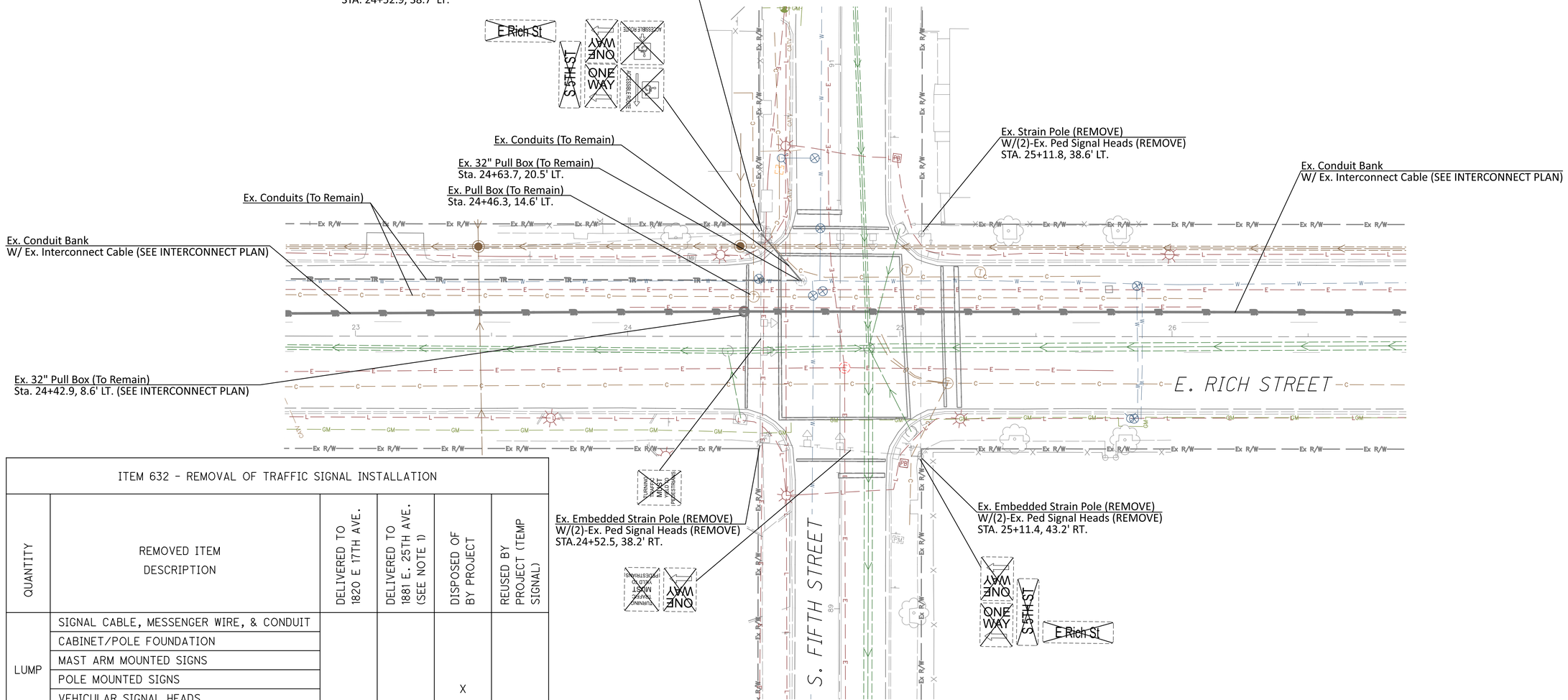
CALCULATED JAR
CHECKED DKA

TRAFFIC SIGNAL DETAILS
RICH STREET AT FOURTH STREET

IMPROVEMENTS OF
E RICH STREET FROM S 3RD ST TO S GRANT AVE
FRA E RICH ST SIGNALS

3921-E

65
95



ITEM 632 - REMOVAL OF TRAFFIC SIGNAL INSTALLATION					
QUANTITY	REMOVED ITEM DESCRIPTION	DELIVERED TO 1820 E 17TH AVE.	DELIVERED TO 1881 E. 25TH AVE. (SEE NOTE 1)	DISPOSED OF BY PROJECT	REUSED BY PROJECT (TEMP SIGNAL)
LUMP	SIGNAL CABLE, MESSENGER WIRE, & CONDUIT			X	
	CABINET/POLE FOUNDATION				
	MAST ARM MOUNTED SIGNS				
	POLE MOUNTED SIGNS				
	VEHICULAR SIGNAL HEADS				
	PEDESTRIAN SIGNAL HEADS				
	EMBEDDED POLES				
	SPAN MOUNTED SIGNS				
1	POLE MOUNTED CABINET AND CONTROLLER	X			
1	ANCHOR BASE POLE	X			
LUMP	STREET NAME SIGNS	X			
1	FIBER OPTIC TERMINATION PANEL		X		X
1	WIRELESS RADIO		X		X
1	LAYER 2 ETHERNET SWITCH		X		X
1	ETHERNET TRANSCEIVERS (GBIC MODULES)		X		X

NOTES:
1. ITEMS LISTED AS REUSED BY PROJECT SHALL BE RELOCATED FROM THEIR EXISTING CONDITION TO A TEMPORARY CONDITION AS DETAILED BY THE MOT PLANS. ONCE THE NEW IS IN PLACE, TESTED, AND ACCEPTED, THE EXISTING ITEMS SHALL BE REMOVED AND DELIVERED TO THE ADDRESS INDICATED BY THIS CHART.

LEGEND

SIGNAL HEADS:		EX. VEHICULAR
		EX. PEDESTRIAN
		EX. PUSHBUTTON
		EX. SPREAD SPECTRUM RADIO
SIGNAL POLES:		EX. SIGNAL SUPPORT W/ MAST ARM
		EX. COMB. SIGNAL SUPPORT W/ MAST ARM
		EX. EBMEDDED POLE
CONTROLLERS & CABINETS:	TC	EX. POLE MTD. CONTROLLER
PULL BOXES:	TR	EX. PULL BOX

0 20 40
Horiz 1 inch = 20 feet

CALCULATED JAR
CHECKED DKA

TRAFFIC SIGNAL REMOVAL PLAN
RICH STREET AT FIFTH STREET

IMPROVEMENTS OF
E RICH STREET FROM S 3RD ST TO S GRANT AVE
FRA E RICH ST SIGNALS

3921-E

66
95

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LEGEND

SIGNAL HEADS: VEHICULAR
PEDESTRIAN
PUSHBUTTON
EX. SPREAD SPECTRUM RADIO

SIGNAL POLES: SIGNAL SUPPORT W/ MAST ARM
COMB. SIGNAL SUPPORT W/ MAST ARM
PED. PEDESTAL, 10.7' W/ DEC. BASE

CONTROLLERS & CABINETS: GROUND MTD. CONTROLLER W/ UPS
POWER METER CABINET

PULL BOXES: PULL BOX, ROUND CONCRETE (32", 27")

PROPOSED POWER SOURCE
(EXISTING AEP VAULT)
STA. 24+51.2, 49.7' LT.

(1)-2" CONDUIT W/(2)-9/C, (1)-GND
(1)-2" CONDUIT - EMPTY
IN TRENCH = 14'

POLE N/W-2 PEDESTRIAN PEDESTAL, 10.7'
W/(1)-PEDESTRIAN SIGNAL HEAD
STA. 24+58.3, 45.2' LT.

(1)-2" CONDUIT W/(1)-9/C, (1)-7/C, (1)-LTG CABLE, (1)-GND
(1)-2" CONDUIT W/(1)-RDR CABLE
ENCASED IN TRENCH = 61'

POLE N/E-1 COMBINATION SIGNAL SUPPORT
W/(1)-PEDESTRIAN SIGNAL HEAD
W/(1)-STOP LINE RADAR DETECTION UNIT
STA. 25+02.1, 45.8' LT.

(1)-3" CONDUIT W/(2)-9/C, (1)-7/C, (1)-LTG CABLE, (3)-GND
(1)-2" CONDUIT W/(1)-RDR CABLE
IN TRENCH = 7'

27" ROUND PULL BOX
STA. 25+06.0, 49.8' LT.

(1)-2" CONDUIT W/(1)-9/C, (1)-GND
(1)-2" CONDUIT - EMPTY
IN TRENCH = 19'

POLE N/E-2 PEDESTRIAN PEDESTAL, 10.7'
W/(1)-PEDESTRIAN SIGNAL HEAD
STA. 25+16.7, 38.3' LT.

27" ROUND PULL BOX
STA. 24+46.1, 39.3' LT.

(1)-2" CONDUIT W/(2)-9/C, (3)-GND
(1)-2" CONDUIT - EMPTY
IN TRENCH = 17'

POLE N/W-1 PEDESTRIAN PEDESTAL, 10.7'
W/(1)-PEDESTRIAN SIGNAL HEAD
W/ 18" FORMED TOP FOUNDATION
STA. 24+29.5, 38.5' LT.

(1)-2" CONDUIT W/(1)-9/C, (1)-7/C, (1)-LTG CABLE, (2)-GND
(1)-2" CONDUIT W/(1)-RDR CABLE
ENCASED IN TRENCH = 31'

Ex. 32" Pull Box (To Remain)
Sta. 24+42.9, 8.6' LT. (SEE INTERCONNECT PLAN)

(1)-2" CONDUIT W/(1)-3/C POWER CABLE
ENCASED IN TRENCH = 92'

(1)-2" CONDUIT W/(1)-9/C, (1)-7/C, (1)-LTG CABLE, (3)-GND
(1)-2" CONDUIT W/ INTERCONNECT CABLES
ENCASED IN TRENCH = 50'

POLE S/W-1 SIGNAL SUPPORT
W/(1)-PEDESTRIAN SIGNAL HEAD
W/ DEEP FOUNDATION (22')
STA. 24+27.8, 33.9' RT.

(1)-3" CONDUIT W/(2)-9/C, (1)-7/C, (3)-GND
(1)-2" CONDUIT - EMPTY
IN TRENCH = 28'

PULL BOX, 12"X18"
STA. 24+42.4, 36.6' RT.

(1)-2" CONDUIT W/(1)-3/C POWER CABLE
ENCASED IN TRENCH = 5'

POWER METER CABINET
STA. 24+38.4, 39.2' RT.

(1)-2" CONDUIT W/(1)-2/C POWER CABLE & (1)-GND
ENCASED IN TRENCH = 5'

GROUND MOUNTED CONTROLLER W/ UPS
W/ INTERCONNECT ITEMS (SEE INTERCONNECT PLAN)
STA. 24+43.0, 39.6' RT.

(1)-3" CONDUIT W/(2)-9/C, (3)-7/C, (2)-LTG CABLES, (4)-GND
(1)-2" CONDUIT W/(2)-RDR CABLES
(1)-3" CONDUIT W/ INTERCONNECT CABLES
(1)-2" CONDUIT - EMPTY
IN TRENCH = 10'

32" ROUND PULL BOX
STA. 24+52.9, 40.3' RT.

(1)-3" CONDUIT W/(2)-9/C, (1)-7/C, (1)-LTG CABLE, (4)-GND
(1)-2" CONDUIT W/(1)-RDR CABLE
IN TRENCH = 17'

POLE S/W-2 COMBINATION SIGNAL SUPPORT
W/(1)-PEDESTRIAN SIGNAL HEAD
W/(1)-STOP LINE RADAR DETECTION UNIT
W/(1)-8' BRACKET ARM W/ LUMINAIRE
STA. 24+54.4, 57.0' RT.

POLE S/E-2 PEDESTRIAN PEDESTAL, 10.7'
W/(1)-PEDESTRIAN SIGNAL HEAD
W/ 18" FORMED TOP FOUNDATION
STA. 25+16.6, 38.9' RT.

(1)-2" CONDUIT W/(1)-9/C, (1)-GND
(1)-2" CONDUIT - EMPTY
IN TRENCH = 9'

27" ROUND PULL BOX
STA. 25+09.4, 38.2' RT.

(1)-2" CONDUIT W/(1)-9/C, (3)-GND
(1)-2" CONDUIT - EMPTY
ENCASED IN TRENCH = 55'

(1)-2" CONDUIT W/(2)-9/C, (1)-GND
(1)-2" CONDUIT - EMPTY
IN TRENCH = 21'

POLE S/E-1 PEDESTRIAN PEDESTAL, 10.7'
W/(1)-PEDESTRIAN SIGNAL HEAD
STA. 25+01.6, 56.1' RT.

E. FIFTH STREET

E. RICH STREET

POLE MOUNTED SIGNS

E Rich St
D3-1 (VARIES X 18")
A

S 5th St
D3-1 (VARIES X 18")
B

ONE WAY
R6-1L-36
C

ONE WAY
R6-1R-36
D

MAST ARM MOUNTED SIGNS

ONE WAY
R6-2L-30
E

ONE WAY
R6-2R-30
F

TURNING VEHICLES TO
R10-15L-30
G

TURNING VEHICLES TO
R10-15R-30
H

VEHICULAR SIGNAL HEAD CONFIGURATIONS
12" HEADS W/ BACKPLATES

R
Y
G

1 - 6

PEDESTRIAN SIGNAL HEAD CONFIGURATION

N E S W

1. THE CONTRACTOR SHALL ENSURE THAT ALL PROPOSED SIDEWALKS/ PATHWAYS MEET ADA GUIDELINES PER CITY SPECIFICATIONS.
2. THE CONTRACTOR SHALL ENSURE THAT ALL EXISTING SIDEWALKS/ PATHWAYS WITHIN THE PROJECT WORK LIMITS MEET ADA GUIDELINES PER CITY SPECIFICATIONS.
3. ALL CABLES, UNLESS SPECIFIED IN THE PLANS, ARE TO BE ROUTED INSIDE THE ANCHOR BASE SIGNAL SUPPORT POLE OR PEDESTAL. CABLES NOT SERVING A GIVEN POLE OR PEDESTAL SHALL NOT BE ROUTED THROUGH THE POLE.
4. POWER, SERVICE AND INTERCONNECT CABLE SHALL BE CONTINUOUS WITH NO SPLICES, EXCEPT AS NOTED.
5. FOR SIGNING AND PAVEMENT MARKINGS, SEE SHEET 53 .
6. N/A.
7. FOR POLE BASE FOUNDATIONS NOT WITHIN SIDEWALK AREA, THE TOP OF THE POLE BASE FOUNDATION SHALL BE EDGED USING A 1/2" SIDEWALK EDGER INSTEAD OF BEING CHAMFERED.
8. THE CITY OF COLUMBUS SHALL APPROVE BOLT ALIGNMENT, POLE/PEDESTAL FOUNDATION LOCATION, AND ELEVATION PRIOR TO THE CONTRACTOR INSTALLING THE FOUNDATION.
9. TAGGING OF CABLE IN THE PULL BOX IMMEDIATELY ADJACENT TO THE CONTROL CABINET IS NOT REQUIRED EXCEPT FOR TAGGING OF CERTAIN CABLE AS DIRECTED BY THE PROJECT ENGINEER, OR AS PER PLAN.
10. DO NOT ENCASE THE GROUND ROD, THE GROUNDING WIRE, OR THE EMT CONDUIT ENDS IN CONCRETE THAT FALL OUTSIDE OF THE FOUNDATION. FULL ACCESS TO THESE ITEMS MUST BE MAINTAINED AT ALL TIMES. PERMANENTLY MARK THE TOP OF FOUNDATION CONCRETE, WITH A MARKER OR SYMBOL SO THE ROD LOCATION CAN BE IDENTIFIED BY OTHERS.
11. ANY SIGNAL POLE BASE FOUNDATION ADJACENT TO A SIDEWALK AREA SHALL BE FLUSH WITH THE TOP OF THE SIDEWALK UNLESS OTHERWISE STATED. SIGNAL POLE FOUNDATIONS WITHIN SIDEWALK AREA SHALL BE PER STD DWG 4161.
12. THE CONTRACTOR SHALL NOT INSTALL POLE FOUNDATIONS UNTIL THE POLE LOCATION AREA IS AT FINISHED GRADE.
13. UNDERGROUND CONDUIT AND TRENCH THAT ARE UNDER PROPOSED SIDEWALK OR ROADWAY AREAS SHALL BE INSTALLED PRIOR TO THE PLACEMENT OF SIDEWALKS OR ANY ASPHALT OR CONCRETE ROADWAY COURSE.
14. THE CONTRACTOR SHALL PROVIDE AND INSTALL POWER CABLE/CONDUIT FROM THE TRAFFIC SIGNAL CONTROLLER CABINET, THROUGH THE POWER METER CABINET, AND TO THE AEP POWER/VAULT AT STA 24+63.7, 20.5' LT. COIL ENOUGH CABLE IN THE VAULT TO REACH THE POWER HOOK-UP POINT IN THE VAULT.
15. N/A.
16. FOR INTERCONNECT ITEMS, SEE INTERCONNECT SCHEMATIC SHEET 75.
17. N/A.
18. THE CONTROL CABINET DOOR SHALL BE LOCATED ON THE NORTH SIDE OF THE CABINET.
19. THE CABINET FOUNDATION SHALL BE PLACED ADJACENT TO THE BACK OF THE SIDEWALK. THE TOP SURFACE OF A CABINET FOUNDATION LOCATED NEXT TO SIDEWALK AREAS SHALL BE 4" ABOVE THE SURROUNDING WALK. EXPANSION MATERIAL SHALL BE USED BETWEEN ALL FOUNDATIONS AND ADJACENT SIDEWALKS. WORK PAD SIZE SHALL BE 48" W X 36"D X 4"H.
20. USE A SEPARATE CONDUIT FOR EACH GROUPING OF CABLES UNLESS OTHERWISE INDICATED: ONE CONDUIT FOR 120VAC SIGNAL CABLE (3/C, 7/C, 9/C); ONE CONDUIT FOR POWER; ONE CONDUIT FOR 2 CONDUCTOR CABLE (LOOP & PUSHBUTTON); AND ONE CONDUIT FOR INTERCONNECT/COMMUNICATIONS CABLE (TWISTED PAIR, FIBER OPTICS OR COAX). ANY OTHER LOW VOLTAGE CABLE NOT SPECIFIED ABOVE CAN BE PLACED IN THE 2 CONDUCTOR CABLE CONDUIT. POWER CABLE MUST BE PLACED IN ITS OWN CONDUIT.
21. UNLESS OTHERWISE SPECIFIED THE FOLLOWING SHALL APPLY. A PREFORMED PVC CONDUIT ELBOW SHALL BE USED TO CHANGE THE PVC CONDUIT DIRECTION BEYOND WHAT ITS NATURAL BENDING FLEX WOULD YIELD. RIGID METAL CONDUIT CAN BE BENT TO FORM AN ELBOW OR ANY OTHER BENDING ANGLE REQUIRED ONLY IF A PROPER CONDUIT BENDING MACHINE IS USED. THE ELBOW RADIUS FOR ANY NON-INTERCONNECT CONDUIT SHALL BE 24" OR LARGER WHEN USED IN A HORIZONTAL OR VERTICAL MANNER. ANY TYPE OF ELBOW USED FOR INTERCONNECT CONDUIT SHALL HAVE A RADIUS OF 36" OR LARGER WHEN USED IN A HORIZONTAL DIRECTION OR IN A VERTICAL DIRECTION WHEN THE TRENCH IS 36" OR DEEPER. IF THE TRENCH IS LESS THAN 36" THEN THE VERTICAL ELBOW RADIUS SHALL BE 24".
22. ALL CLAMPS AND BANDING MATERIAL SHALL BE PAINTED TO MATCH THE SIGNAL SUPPORTS.
23. N/A.
24. N/A.

0 10 20
Horiz 1 inch = 10 feet

CALCULATED JAR
CHECKED DKA

TRAFFIC SIGNAL INSTALLATION PLAN
RICH STREET AT FIFTH STREET

IMPROVEMENTS OF
E RICH STREET FROM S 3RD ST TO S GRANT AVE
FRA E RICH ST SIGNALS

3921-E

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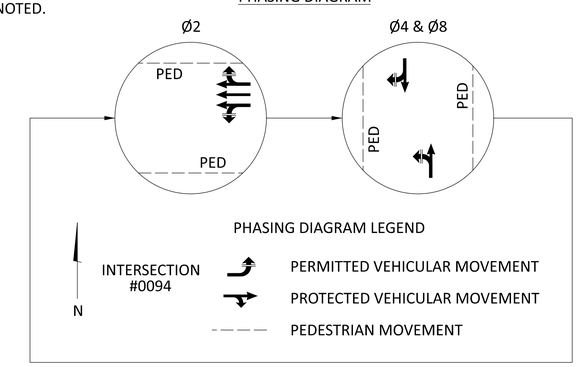
DETAIL SHEET NOTES

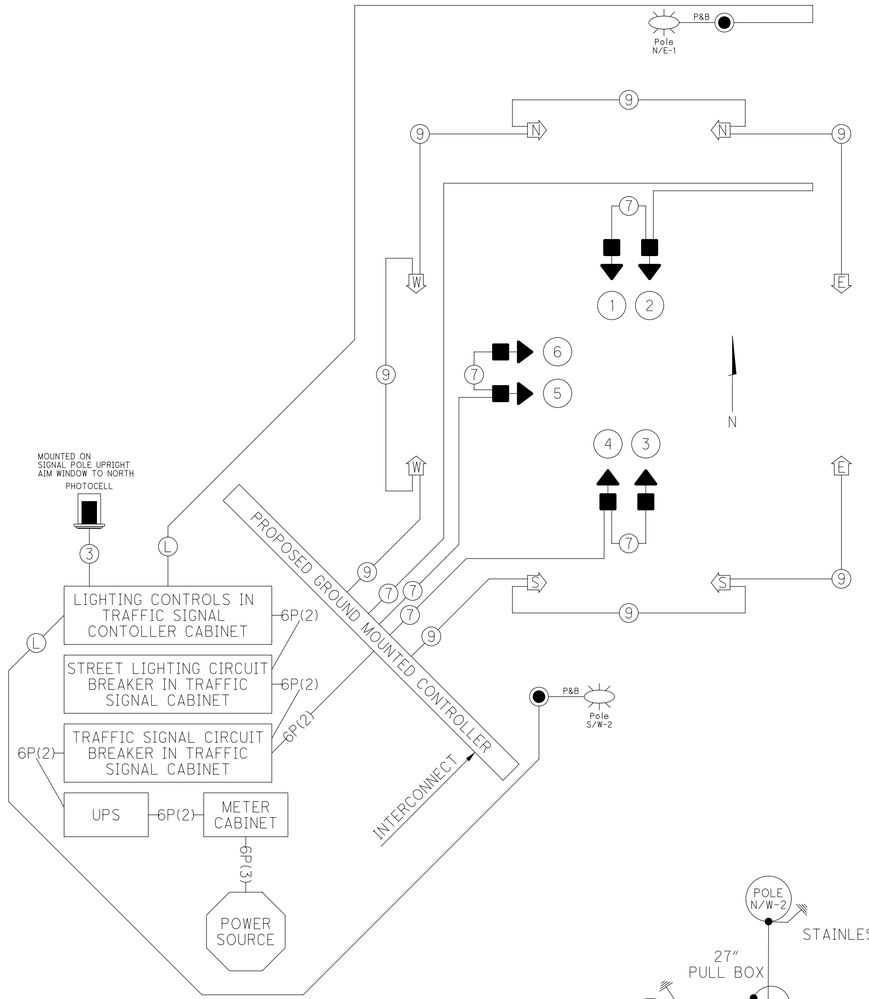
1. SET CONFLICT MONITOR FOR 10 SEC FLASH.
2. LOOP DETECTOR LEAD-IN CABLE SHALL BE USED FOR THE PEDESTRIAN PUSHBUTTONS. GROUND THE SHIELD ONLY AT THE CABINET.
3. N/A.
4. N/A.
5. BACK PANEL WIRING (FRONT SIDE JUMPERS ONLY).
   A. HARD WIRE 'PED RECYCLE' TO GROUND.
   B. N/A.
   C. N/A.
   D. USE DIODES TO PREVENT FEEDBACK ON MULTI-USE TERMINALS.
   E. N/A.
   F. N/A.
   G. N/A.
   H. N/A.
6. CONTROLLER SOFTWARE PROGRAMMING.
   A. INITIALIZE IN Ø2 GREEN.
   B. ENABLE ACTUATED REST-IN-WALK. ACTIVATE PHASE Ø2.
   C. ENABLE DUAL ENTRY. ACTIVATE Ø4 & Ø8.
   D. ENABLE SIMULTANEOUS GAP OUT. ACTIVATE Ø 2, Ø4, & Ø8.
   E. N/A.
7. N/A.
8. N/A.
9. INTERCONNECT CABLE SHALL BE CONTINUOUSLY RUN BETWEEN CONTROLLER CABINETS. NO SPLICES ARE PERMITTED EXCEPT WHERE NOTED.
10. N/A.
11. N/A.
12. N/A.

FIELD WIRING HOOK-UP CHART

SIGNAL HEAD	INDICATION	FIELD TERMINAL	FLASH
1,2 NB	R	Ø8 R	R
	Y	Ø8 Y	
	G	Ø8 G	
3,4 SB	R	Ø4 R	R
	Y	Ø4 Y	
	G	Ø4 G	
5,6 WB	R	Ø2 R	R
	Y	Ø2 Y	
	G	Ø2 G	
PEDESTRIAN MOVEMENTS			
N-N	W	G Ø2-W	OFF
NORTH	DW	R Ø2-DW	
E-E	W	G Ø8-W	OFF
EAST	DW	R Ø8-DW	
S-S	W	G Ø2-W	OFF
SOUTH	DW	R Ø2-DW	
W-W	W	G Ø4-W	OFF
WEST	DW	R Ø4-DW	

PHASING DIAGRAM





WIRING DIAGRAM LEGEND

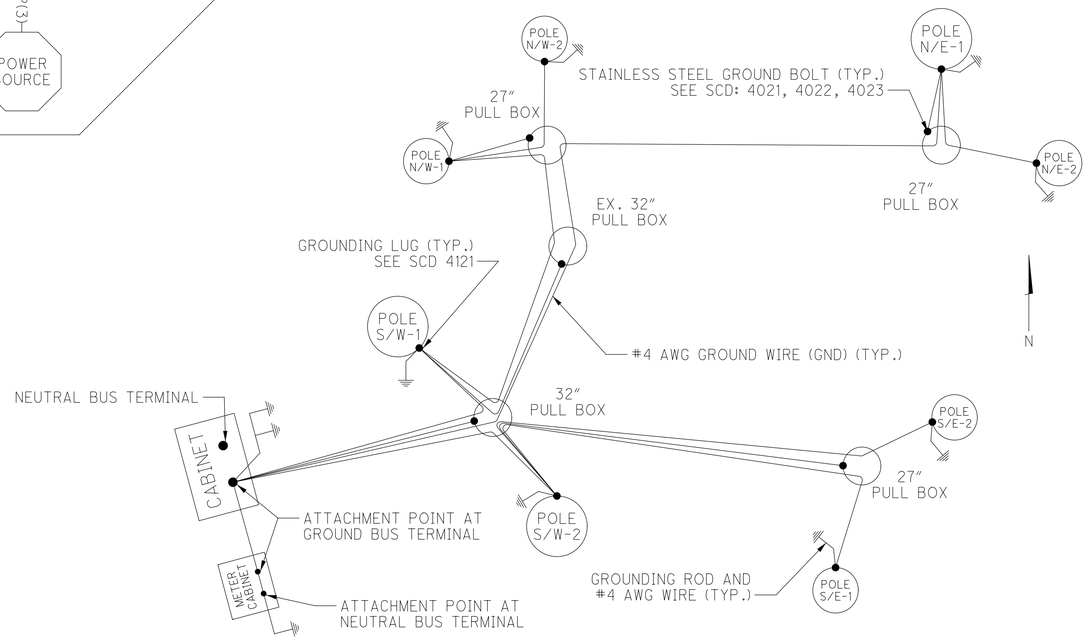
- 6P(2) — 2/C #6 AWG (POWER)
- 6P(3) — 3/C #6 AWG (POWER)
- L — LIGHTING CABLE
- P&B — (2) - #10 AWG POLE AND BRACKET CABLES
- 7 — 7/C #14 AWG
- 9 — 9/C #14 AWG
- E — PEDESTRIAN SIGNAL HEAD
- VEHICULAR SIGNAL HEAD
- LUMINAIRE, LED, 120 V, TEARDROP (BLACK)
- UPS — UNINTERRUPTIBLE POWER SUPPLY
- CONNECTION OF DISTRIBUTION CABLE TO POLE AND BRACKET ARM CONNECTOR KIT FUSED AND UNFUSED

TIMING CHART

PHASE	1	2	3	4	5	6	7	8
MOVEMENT	-	WB	-	SB	-	-	-	NB
MIN INITIAL	-	20	-	10	-	-	-	10
WALK	-	7	-	7	-	-	-	7
PED CHANGE	-	6	-	12	-	-	-	12
PASS/EXT	-	3.7	-	3.7	-	-	-	3.7
YELLOW	-	3.4	-	3.4	-	-	-	3.4
RED CLR	-	1.5	-	1.8	-	-	-	1.8
MAX GRN 1	-	55	-	55	-	-	-	55
MAX GRN 2	-	55	-	55	-	-	-	55
PED RECALL	-	ON	-	OFF	-	-	-	OFF
VEH RECALL	-	MIN	-	OFF	-	-	-	OFF
MEMORY	-	ON	-	OFF	-	-	-	OFF

GROUNDING & BONDING DIAGRAM LEGEND

- PULL BOX
- POLE — STRAIN POLE / PEDESTAL
- GROUND ROD AND #4 AWG WIRE
- ATTACHMENT POINT
- CABINET — CONTROLLER CABINET
- CABINET GROUND TERMINAL



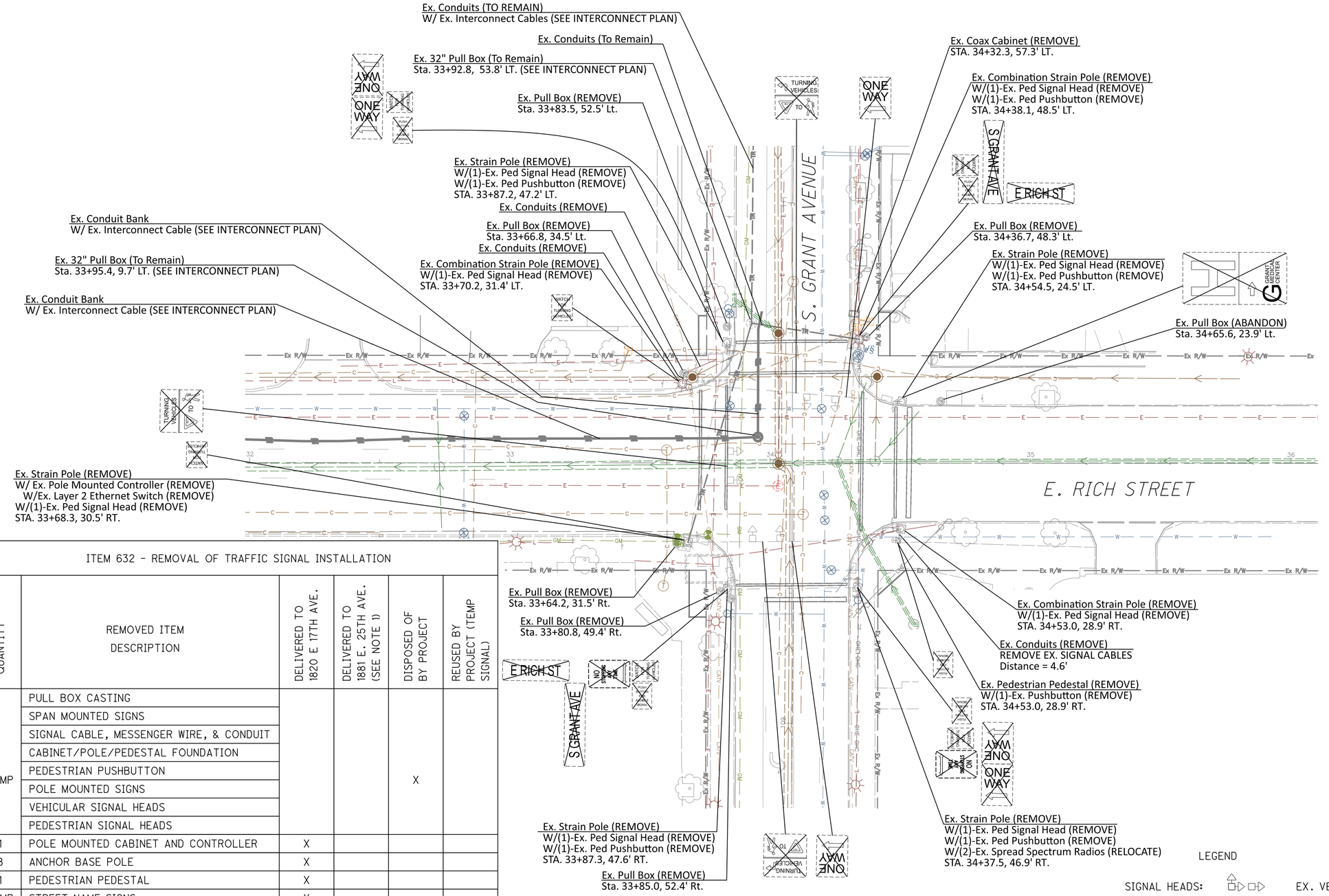
CALCULATED JAR
CHECKED DKA

TRAFFIC SIGNAL DETAILS
RICH STREET AT FIFTH STREET

IMPROVEMENTS OF
E RICH STREET FROM S 3RD ST TO S GRANT AVE
FRA E RICH ST SIGNALS

3921-E

68
95



ITEM 632 - REMOVAL OF TRAFFIC SIGNAL INSTALLATION

QUANTITY	REMOVED ITEM DESCRIPTION	DELIVERED TO 1820 E 17TH AVE.	DELIVERED TO 1881 E. 25TH AVE. (SEE NOTE 1)	DISPOSED OF BY PROJECT	REUSED BY PROJECT (TEMP SIGNAL)
LUMP	PULL BOX CASTING			X	
	SPAN MOUNTED SIGNS				
	SIGNAL CABLE, MESSENGER WIRE, & CONDUIT				
	CABINET/POLE/PEDESTAL FOUNDATION				
	PEDESTRIAN PUSHBUTTON				
	POLE MOUNTED SIGNS				
	VEHICULAR SIGNAL HEADS				
	PEDESTRIAN SIGNAL HEADS				
1	POLE MOUNTED CABINET AND CONTROLLER	X			
8	ANCHOR BASE POLE	X			
1	PEDESTRIAN PEDESTAL	X			
LUMP	STREET NAME SIGNS	X			
6	PULL BOX LIDS AND FRAMES	X			
2	WIRELESS RADIO		X		X
1	LAYER 2 ETHERNET SWITCH		X		X
2	ETHERNET TRANSCEIVERS (GBIC MODULES)		X		X
1	GRND. MOUNTED COAX CABINET & EQUIPMENT		X		

NOTES:
1. ITEMS LISTED AS REUSED BY PROJECT SHALL BE RELOCATED FROM THEIR EXISTING CONDITION TO A TEMPORARY CONDITION AS DETAILED BY THE MOT PLANS. ONCE THE NEW IS IN PLACE, TESTED, AND ACCEPTED, THE EXISTING ITEMS SHALL BE REMOVED AND DELIVERED TO THE ADDRESS INDICATED BY THIS CHART.

0 20 40
Horiz 1 inch = 20 feet

CALCULATED JAR
CHECKED DKA

TRAFFIC SIGNAL REMOVAL PLAN
IMPROVEMENTS OF E RICH STREET FROM S 3RD ST TO S GRANT AVE
FRA E RICH ST SIGNALS

3921-E

LEGEND

SIGNAL HEADS:		VEHICULAR
		PEDESTRIAN
		PUSHBUTTON
		EX. SPREAD SPECTRUM RADIO
SIGNAL POLES:		SIGNAL SUPPORT W/ MAST ARM
		COMB. SIGNAL SUPPORT W/ MAST ARM
		PED. PEDESTAL, 10.7' W/ DEC. BASE
CONTROLLERS & CABINETS:	UPS	GROUND MTD. CONTROLLER W/ UPS
		POWER METER CABINET
PULL BOXES:		PULL BOX, ROUND CONCRETE (32", 27")
DETECTION		TRAFFIC FLOW MONITOR

POLE N/W-1 COMBINATION SIGNAL SUPPORT
W/(1)-PEDESTRIAN SIGNAL HEAD
W/(1)-APS PEDESTRIAN PUSHBUTTON
W/(1)-8' BRACKET ARM W/ LUMINAIRE
W/ DEEP FOUNDATION (22')
STA. 33+74.8, 50.3' LT.

POLE N/E-1 PEDESTRIAN PEDESTAL, 10.7'
W/(1)-PEDESTRIAN SIGNAL HEAD
W/(1)-APS PEDESTRIAN PUSHBUTTON
STA. 34+42.2, 47.5' LT.

(1)-3" CONDUIT W/(2)-7/C, (1)-2/C, (1)-LTG CABLE, (4)-GND
(1)-2" CONDUIT - EMPTY
IN TRENCH = 31'

POLE N/W-2 PEDESTRIAN PEDESTAL, 10.7'
W/(1)-PEDESTRIAN SIGNAL HEAD
W/(1)-APS PEDESTRIAN PUSHBUTTON
STA. 33+58.7, 36.0' LT.

(1)-2" CONDUIT W/(1)-7/C, (1)-2/C, (1)-GND
(1)-2" CONDUIT - EMPTY
IN TRENCH = 6'

27" ROUND PULL BOX
STA. 33+53.1, 36.0' LT.

(1)-3" CONDUIT W/(3)-7/C, (2)-2/C, (1)-LTG CABLE, (2)-GND
(1)-2" CONDUIT - EMPTY
ENCASED IN TRENCH = 50'

Ex. 32" Pull Box (To Remain)
Sta. 33+95.4, 9.7' LT. (SEE INTERCONNECT PLAN)

PROPOSED POWER SOURCE
(EXISTING AEP MANHOLE)
STA. 34+03.1, 8.7' RT.

(1)-2" CONDUIT W/(4)-7/C, (2)-2/C, (2)-LTG CABLE, (3)-GND
(1)-2" CONDUIT W/(1)-TFM CABLE
ENCASED IN TRENCH = 55'

POLE S/W-1 COMBINATION SIGNAL SUPPORT
W/(1)-PEDESTRIAN SIGNAL HEAD
W/(1)-APS PEDESTRIAN PUSHBUTTON
W/(1)-25' BRACKET ARM W/ TRAFFIC FLOW MONITOR
W/ DEEP FOUNDATION (22')
STA. 33+57.7, 34.1' RT.

(1)-3" CONDUIT W/(2)-7/C, (1)-2/C, (1)-LTG CABLE, (3)-GND
(1)-2" CONDUIT W/(1)-TFM CABLE
IN TRENCH = 13'

27" ROUND PULL BOX
STA. 33+70.6, 33.3 RT.

(1)-2" CONDUIT W/(2)-7/C, (1)-2/C, (1)-LTG CABLE, (3)-GND
(1)-2" CONDUIT - EMPTY
IN TRENCH = 16'

POLE S/W-2 COMBINATION SIGNAL SUPPORT
W/(1)-PEDESTRIAN SIGNAL HEAD
W/(1)-APS PEDESTRIAN PUSHBUTTON
W/(1)-8' BRACKET ARM W/ LUMINAIRE
STA. 33+73.9, 48.5' RT.

(1)-2" CONDUIT W/(1)-7/C, (1)-2/C, (1)-GND
(1)-2" CONDUIT - EMPTY
IN TRENCH = 25'

GROUND MOUNTED CONTROLLER W/ UPS
W/ INTERCONNECT ITEMS (SEE INTERCONNECT PLAN)
STA. 34+57.1, 38.4' LT.

(1)-2" CONDUIT W/(1)-2/C POWER CABLE & (1)-GND
ENCASED IN TRENCH = 5'

POWER METER CABINET
STA. 34+52.1, 38.4' LT.

(1)-2" CONDUIT W/(1)-3/C POWER CABLE
ENCASED IN TRENCH = 3'

PULL BOX, 12"X18"
STA. 34+59.6, 37.6' LT.

(1)-2" CONDUIT W/(1)-3/C POWER CABLE
ENCASED IN TRENCH = 90'

(1)-3" CONDUIT W/(2)-9/C, (8)-2/C, (3)-LTG CABLES, (6)-GND
(1)-3" CONDUIT W/(9)-7/C, (1)-TFM CABLE
(1)-2" CONDUIT W/ INTERCONNECT CABLES
(1)-2" CONDUIT - EMPTY
IN TRENCH = 10'

32" ROUND PULL BOX
STA. 34+55.4, 28.5' LT.

(1)-2" CONDUIT W/(1)-9/C, (1)-2/C, (1)-GND
(1)-2" CONDUIT - EMPTY
IN TRENCH = 6'

POLE N/E-2 PEDESTRIAN PEDESTAL, 10.7'
W/(1)-PEDESTRIAN SIGNAL HEAD
W/(1)-APS PEDESTRIAN PUSHBUTTON
STA. 34+49.5, 28.6' LT.

(1)-2" CONDUIT W/(1)-9/C, (1)-7/C, (2)-2/C, (3)-GND
(1)-2" CONDUIT - EMPTY
ENCASED IN TRENCH = 64'

(1)-3" CONDUIT W/(7)-7/C, (4)-2/C, (3)-LTG, (2)-GND
(1)-2" CONDUIT W/(1)-TFM CABLE,
& INTERCONNECT CABLES
ENCASED IN TRENCH = 69'

POLE S/E-2 PEDESTRIAN PEDESTAL, 10.7'
W/(1)-PEDESTRIAN SIGNAL HEAD
W/(1)-APS PEDESTRIAN PUSHBUTTON
STA. 34+50.8, 32.5' RT.

(1)-2" CONDUIT W/(1)-9/C, (1)-2/C, (1)-GND
(1)-2" CONDUIT - EMPTY
IN TRENCH = 8'

27" ROUND PULL BOX
STA. 34+43.6, 34.1' RT.

(1)-2" CONDUIT W/(1)-7/C, (1)-2/C, (1)-GND
(1)-2" CONDUIT - EMPTY
IN TRENCH = 12'

POLE S/E-1 PEDESTRIAN PEDESTAL, 10.7'
W/(1)-PEDESTRIAN SIGNAL HEAD
W/(1)-APS PEDESTRIAN PUSHBUTTON
STA. 34+41.9, 45.5' RT.

PEDESTRIAN SIGNS

R10-3BL-9
4 EACH

R10-3BR-9
4 EACH

POLE MOUNTED SIGNS

D3-1 (VARIES X 18") (A)

D3-1 (VARIES X 18") (B)

R6-1L-36 (C)

R6-1R-36 (D)

MAST ARM MOUNTED SIGNS

R6-2L-30 (E)

R6-2R-30 (F)

R10-15L-30 (G)

R10-15R-30 (H)

VEHICULAR SIGNAL HEAD CONFIGURATIONS
12" HEADS W/ BACKPLATES

1 - 6

PEDESTRIAN SIGNAL HEAD CONFIGURATION

N E S W

1. THE CONTRACTOR SHALL ENSURE THAT ALL PROPOSED SIDEWALKS/ PATHWAYS MEET ADA GUIDELINES PER CITY SPECIFICATIONS.
2. THE CONTRACTOR SHALL ENSURE THAT ALL EXISTING SIDEWALKS/ PATHWAYS WITHIN THE PROJECT WORK LIMITS MEET ADA GUIDELINES PER CITY SPECIFICATIONS.
3. ALL CABLES, UNLESS SPECIFIED IN THE PLANS, ARE TO BE ROUTED INSIDE THE ANCHOR BASE SIGNAL SUPPORT POLE OR PEDESTAL. CABLES NOT SERVING A GIVEN POLE OR PEDESTAL SHALL NOT BE ROUTED THROUGH THE POLE.
4. POWER, SERVICE AND INTERCONNECT CABLE SHALL BE CONTINUOUS WITH NO SPLICES, EXCEPT AS NOTED.
5. FOR SIGNING AND PAVEMENT MARKINGS, SEE SHEET 54 .
6. N/A.
7. FOR POLE BASE FOUNDATIONS NOT WITHIN SIDEWALK AREA, THE TOP OF THE POLE BASE FOUNDATION SHALL BE EDGED USING A 1/2" SIDEWALK EDGER INSTEAD OF BEING CHAMFERED.
8. THE CITY OF COLUMBUS SHALL APPROVE BOLT ALIGNMENT, POLE/PEDESTAL FOUNDATION LOCATION, AND ELEVATION PRIOR TO THE CONTRACTOR INSTALLING THE FOUNDATION.
9. TAGGING OF CABLE IN THE PULL BOX IMMEDIATELY ADJACENT TO THE CONTROL CABINET IS NOT REQUIRED EXCEPT FOR TAGGING OF CERTAIN CABLE AS DIRECTED BY THE PROJECT ENGINEER, OR AS PER PLAN.
10. DO NOT ENCASE THE GROUND ROD, THE GROUNDING WIRE, OR THE EMT CONDUIT ENDS IN CONCRETE THAT FALL OUTSIDE OF THE FOUNDATION. FULL ACCESS TO THESE ITEMS MUST BE MAINTAINED AT ALL TIMES. PERMANENTLY MARK THE TOP OF FOUNDATION CONCRETE, WITH A MARKER OR SYMBOL SO THE ROD LOCATION CAN BE IDENTIFIED BY OTHERS.
11. ANY SIGNAL POLE BASE FOUNDATION ADJACENT TO A SIDEWALK AREA SHALL BE FLUSH WITH THE TOP OF THE SIDEWALK UNLESS OTHERWISE STATED. SIGNAL POLE FOUNDATIONS WITHIN SIDEWALK AREA SHALL BE PER STD DWG 4161.
12. THE CONTRACTOR SHALL NOT INSTALL POLE FOUNDATIONS UNTIL THE POLE LOCATION AREA IS AT FINISHED GRADE.
13. UNDERGROUND CONDUIT AND TRENCH THAT ARE UNDER PROPOSED SIDEWALK OR ROADWAY AREAS SHALL BE INSTALLED PRIOR TO THE PLACEMENT OF SIDEWALKS OR ANY ASPHALT OR CONCRETE ROADWAY COURSE.
14. THE CONTRACTOR SHALL PROVIDE AND INSTALL POWER CABLE/CONDUIT FROM THE TRAFFIC SIGNAL CONTROLLER CABINET, THROUGH THE POWER METER CABINET, AND TO THE AEP POWER/VAULT AT STA 34+03.1, 8.7' RT. COIL ENOUGH CABLE IN THE VAULT TO REACH THE POWER HOOK-UP POINT IN THE VAULT.
15. N/A.
16. FOR INTERCONNECT ITEMS, SEE INTERCONNECT SCHEMATIC SHEET 76.
17. N/A.
18. THE CONTROL CABINET DOOR SHALL BE LOCATED ON THE NORTH SIDE OF THE CABINET.
19. THE CABINET FOUNDATION SHALL BE PLACED ADJACENT TO THE BACK OF THE SIDEWALK. THE TOP SURFACE OF A CABINET FOUNDATION LOCATED NEXT TO SIDEWALK AREAS SHALL BE 4" ABOVE THE SURROUNDING WALK. EXPANSION MATERIAL SHALL BE USED BETWEEN ALL FOUNDATIONS AND ADJACENT SIDEWALKS. WORK PAD SIZE SHALL BE 48" W X 36"D X 4"H.
20. USE A SEPARATE CONDUIT FOR EACH GROUPING OF CABLES UNLESS OTHERWISE INDICATED: ONE CONDUIT FOR 120VAC SIGNAL CABLE (3/C, 7/C, 9/C); ONE CONDUIT FOR POWER; ONE CONDUIT FOR 2 CONDUCTOR CABLE (LOOP & PUSHBUTTON); AND ONE CONDUIT FOR INTERCONNECT/COMMUNICATIONS CABLE (TWISTED PAIR, FIBER OPTICS OR COAX). ANY OTHER LOW VOLTAGE CABLE NOT SPECIFIED ABOVE CAN BE PLACED IN THE 2 CONDUCTOR CABLE CONDUIT. POWER CABLE MUST BE PLACED IN ITS OWN CONDUIT.
21. UNLESS OTHERWISE SPECIFIED THE FOLLOWING SHALL APPLY. A PREFORMED PVC CONDUIT ELBOW SHALL BE USED TO CHANGE THE PVC CONDUIT DIRECTION BEYOND WHAT ITS NATURAL BENDING FLEX WOULD YIELD. RIGID METAL CONDUIT CAN BE BENT TO FORM AN ELBOW OR ANY OTHER BENDING ANGLE REQUIRED ONLY IF A PROPER CONDUIT BENDING MACHINE IS USED. THE ELBOW RADIUS FOR ANY NON-INTERCONNECT CONDUIT SHALL BE 24" OR LARGER WHEN USED IN A HORIZONTAL OR VERTICAL MANNER. ANY TYPE OF ELBOW USED FOR INTERCONNECT CONDUIT SHALL HAVE A RADIUS OF 36" OR LARGER WHEN USED IN A HORIZONTAL DIRECTION OR IN A VERTICAL DIRECTION WHEN THE TRENCH IS 36" OR DEEPER. IF THE TRENCH IS LESS THAN 36" THEN THE VERTICAL ELBOW RADIUS SHALL BE 24".
22. ALL CLAMPS AND BANDING MATERIAL SHALL BE PAINTED TO MATCH THE SIGNAL SUPPORTS.
23. N/A.
24. N/A.

Hori: 1 inch = 10 feet

CALCULATED JAR
CHECKED DKA

TRAFFIC SIGNAL INSTALLATION PLAN
RICH STREET AT GRANT AVENUE

IMPROVEMENTS OF
E RICH STREET FROM S 3RD ST TO S GRANT AVE
FRA E RICH ST SIGNALS

3921-E

70
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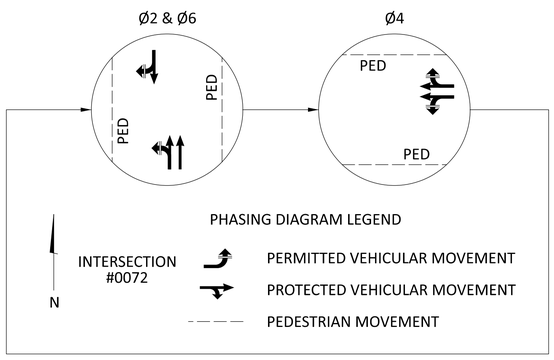
DETAIL SHEET NOTES

1. SET CONFLICT MONITOR FOR 10 SEC FLASH.
2. LOOP DETECTOR LEAD-IN CABLE SHALL BE USED FOR THE PEDESTRIAN PUSHBUTTONS. GROUND THE SHIELD ONLY AT THE CABINET.
3. N/A.
4. N/A.
5. BACK PANEL WIRING (FRONT SIDE JUMPERS ONLY).
   A. HARD WIRE 'PED RECYCLE' TO GROUND.
   B. N/A.
   C. N/A.
   D. USE DIODES TO PREVENT FEEDBACK ON MULTI-USE TERMINALS.
   E. N/A.
   F. N/A.
   G. N/A.
   H. N/A.
6. CONTROLLER SOFTWARE PROGRAMMING.
   A. INITIALIZE IN Ø2 GREEN.
   B. ENABLE ACTUATED REST-IN-WALK. ACTIVATE PHASE Ø2.
   C. ENABLE DUAL ENTRY. ACTIVATE Ø4 & Ø8.
   D. ENABLE SIMULTANEOUS GAP OUT. ACTIVATE Ø 2, Ø4, & Ø8.
   E. N/A.
7. N/A.
8. N/A.
9. INTERCONNECT CABLE SHALL BE CONTINUOUSLY RUN BETWEEN CONTROLLER CABINETS. NO SPLICES ARE PERMITTED EXCEPT WHERE NOTED.
10. N/A.
11. N/A.
12. N/A.

FIELD WIRING HOOK-UP CHART

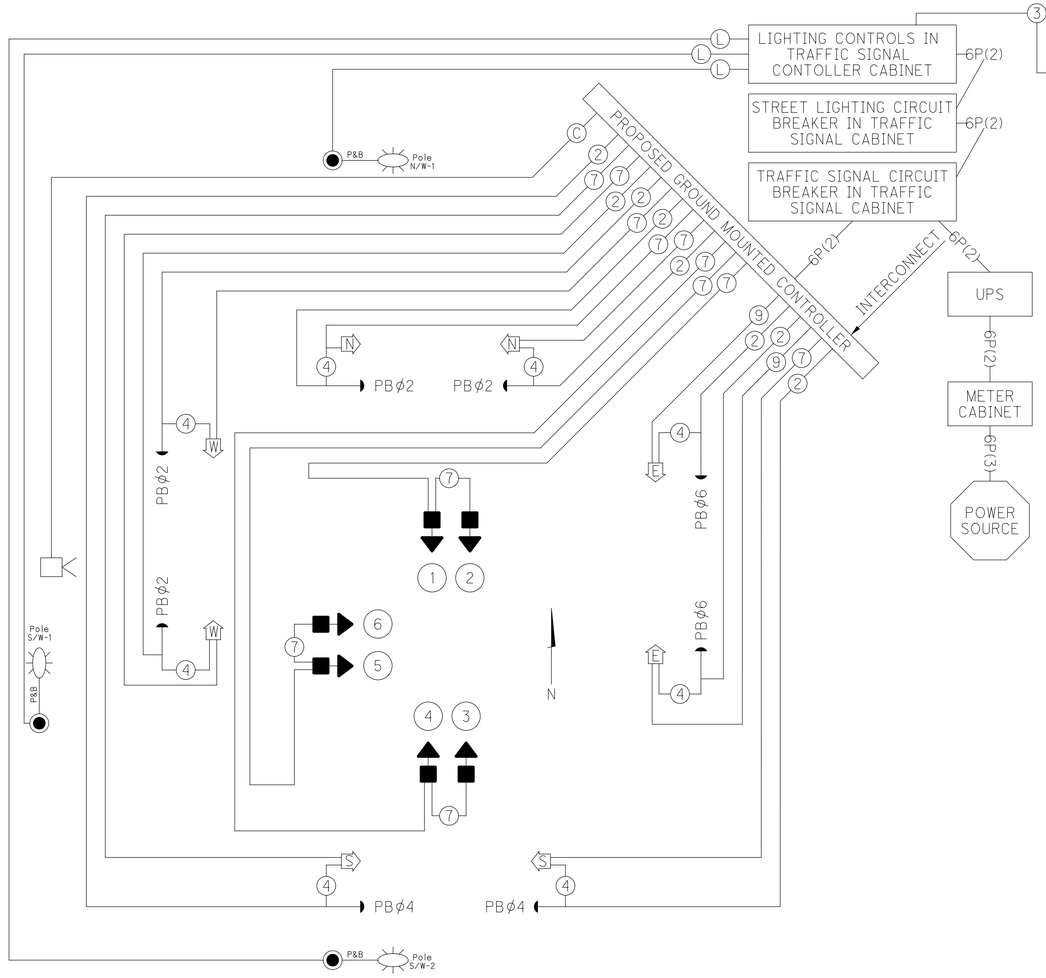
SIGNAL HEAD	INDICATION	FIELD TERMINAL	FLASH
1,2 NB	R	Ø6 R	R
	Y	Ø6 Y	
	G	Ø6 G	
3,4 SB	R	Ø2 R	R
	Y	Ø2 Y	
	G	Ø2 G	
5,6 WB	R	Ø4 R	R
	Y	Ø4 Y	
	G	Ø4 G	
PEDESTRIAN MOVEMENTS			
N-N	W	G Ø4-W	OFF
NORTH	DW	R Ø4-DW	
E-E	W	G Ø6-W	OFF
EAST	DW	R Ø6-DW	
S-S	W	G Ø4-W	OFF
SOUTH	DW	R Ø4-DW	
W-W	W	G Ø2-W	OFF
WEST	DW	R Ø2-DW	

PHASING DIAGRAM



TIMING CHART

PHASE	1	2	3	4	5	6	7	8
MOVEMENT	-	SB	-	WB	-	NB	-	-
MIN INITIAL	-	20	-	20	-	10	-	-
WALK	-	7	-	7	-	7	-	-
PED CHANGE	-	11	-	8	-	11	-	-
PASS/EXT	-	3.7	-	3.7	-	3.7	-	-
YELLOW	-	3.4	-	3.4	-	3.4	-	-
RED CLR	-	1.7	-	1.6	-	1.7	-	-
MAX GRN 1	-	55	-	55	-	55	-	-
MAX GRN 2	-	55	-	55	-	55	-	-
PED RECALL	-	ON	-	ON	-	OFF	-	-
VEH RECALL	-	MIN	-	MIN	-	OFF	-	-
MEMORY	-	ON	-	ON	-	OFF	-	-

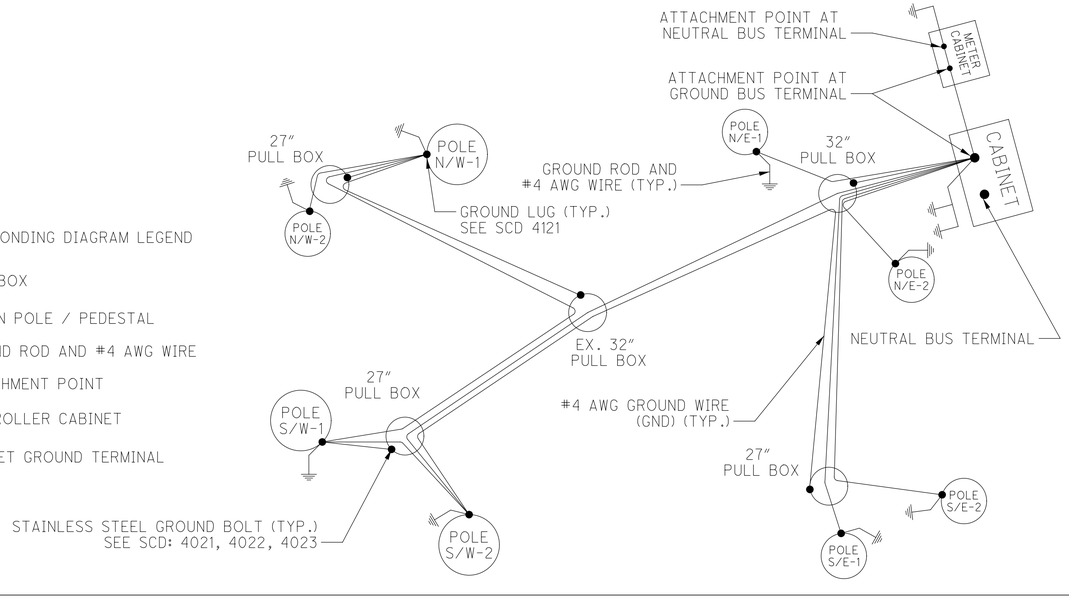


WIRING DIAGRAM LEGEND

- 6P(2) — 2/C #6 AWG (POWER)
- 6P(3) — 3/C #6 AWG (POWER)
- C — CAT5E CABLE
- L — LIGHTING CABLE
- P&B — (2) - #10 AWG POLE AND BRACKET CABLES
- 2 — 2/C #14 AWG (APS PUSHBUTTON)
- 4 — 4/C #14 AWG (APS PUSHBUTTON)
- 7 — 7/C #14 AWG
- 9 — 9/C #14 AWG
- E — PEDESTRIAN SIGNAL HEAD
- VEHICULAR SIGNAL HEAD
- APS PEDESTRIAN PUSHBUTTON
- TRAFFIC FLOW MONITOR UNIT
- LUMINAIRE, LED, 120 V, TEARDROP (BLACK)
- UPS — UNINTERRUPTIBLE POWER SUPPLY
- CONNECTION OF DISTRIBUTION CABLE TO POLE AND BRACKET ARM CONNECTOR KIT FUSED AND UNFUSED

GROUNDING & BONDING DIAGRAM LEGEND

- PULL BOX
- POLE — STRAIN POLE / PEDESTAL
- GROUND ROD AND #4 AWG WIRE
- ATTACHMENT POINT
- CABINET — CONTROLLER CABINET
- CABINET GROUND TERMINAL



CALCULATED JAR
CHECKED DKA

TRAFFIC SIGNAL DETAILS
RICH STREET AT GRANT AVENUE

IMPROVEMENTS OF
E RICH STREET FROM S 3RD ST TO S GRANT AVE
FRA E RICH ST SIGNALS

3921-E

71
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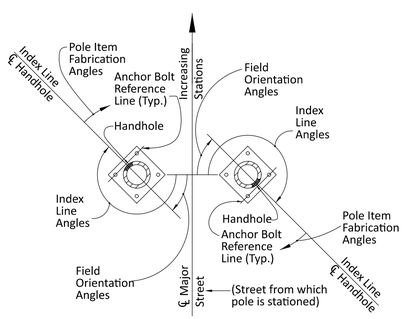
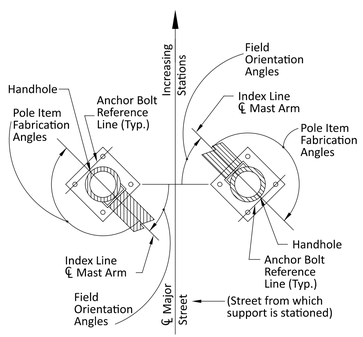
INTERSECTION	SHEET NO.	POLE NO.	POLE COLOR / FEDERAL STANDARD 595B	POLE DESIGN NO.	POLE HT. (FT.)	MAST ARM LENGTH (FT.)	TRAFFIC FLOW MONITOR BRACKET ARM LENGTH (FT.)	LUMINAIRE BRACKET ARM LENGTH (FT.)	OBJECT ATTACH. HEIGHT (FT.)			DISTANCE FROM BUTT PLATE (FT.)					POLE FABRICATION ANGLES CLOCKWISE FROM INDEX LINE (MAST ARM OR PEDESTAL HANDHOLE)						FIELD ORIENTATION		
									MAST ARM (FT.)	TRAFFIC FLOW MONITOR BRACKET ARM (FT.)	LUMINAIRE BRACKET ARM (FT.)	L1	L2	L3	S1	S2	ANCHOR BOLT REF. LINE (DEG)	PED. SIGNAL HEADS (DEG)	PED. PUSHBUTTON (DEG)	TRAFFIC FLOW MONITOR BRACKET ARM (DEG)	LUMINAIRE BRACKET ARM (DEG)	STREET NAME SIGN (DEG)	INDEX LINE ANGLE (HANDHOLE) (DEG)	ANCHOR BOLT REF. LINE (DEG)	FOUNDATION ELEVATION
RICH ST AT 3RD ST	61	N/W-1	SEMI-GLOSS BLACK #27038	13	27	42	8	25	20.5	25.0	-	26.0	37.0	-	23.0	40.0	90	270	-	0	-	0 / 270	0	90	SEE SHEET 44
		N/W-2		EXISTING																					
		N/E-1		PEDESTAL	10.7	-	-	-	-	-	-	-	-	-	-	-	90	203	-	-	-	-	193	103	SEE SHEET 44
		N/E-2		PEDESTAL	10.7	-	-	-	-	-	-	-	-	-	-	-	90	108	-	-	-	-	251	161	SEE SHEET 44
		S/E-1		13	29	54	-	-	20.5	-	29	29.0	39.0	49.0	26.0	52.0	90	90	-	-	0	0 / 90	270	180	SEE SHEET 44
		S/E-2		PEDESTAL	10.7	-	-	-	-	-	-	-	-	-	-	-	90	180	-	-	-	-	90	0	SEE SHEET 44
		S/W-1		PEDESTAL	10.7	-	-	-	-	-	-	-	-	-	-	-	90	234 / 339	-	-	-	-	207	117	SEE SHEET 44
RICH ST AT 4TH ST	64	N/W-1	SEMI-GLOSS BLACK #27038	13	29	57	-	25	20.5	-	29	42.0	52.0	-	39.0	55.0	90	2	-	-	0	0	0	90	SEE SHEET 45
		N/W-2		PEDESTAL	10.7	-	-	-	-	-	-	-	-	-	-	-	90	183	-	-	-	-	85	175	SEE SHEET 45
		N/E-1		13	29	41	-	25	20.5	-	29	25.0	36.0	-	22.0	39.0	90	272	-	-	0	0	90	0	SEE SHEET 45
		N/E-2		PEDESTAL	10.7	-	-	-	-	-	-	-	-	-	-	-	90	183	-	-	-	-	270	180	SEE SHEET 45
		S/E-1		PEDESTAL	10.7	-	-	-	-	-	-	-	-	-	-	-	90	270	-	-	-	-	90	0	SEE SHEET 45
		S/E-2		PEDESTAL	10.7	-	-	-	-	-	-	-	-	-	-	-	90	103	-	-	-	-	170	80	SEE SHEET 45
		S/W-1		PEDESTAL	10.7	-	-	-	-	-	-	-	-	-	-	-	90	250	-	-	-	-	197	107	SEE SHEET 45
		S/W-2		PEDESTAL	10.7	-	-	-	-	-	-	-	-	-	-	-	90	90	-	-	-	-	270	180	SEE SHEET 45
RICH ST AT 5TH ST	67	N/W-1	SEMI-GLOSS BLACK #27038	PEDESTAL	10.7	-	-	-	-	-	-	-	-	-	-	-	90	180	-	-	-	-	90	0	SEE SHEET 46
		N/W-2		PEDESTAL	10.7	-	-	-	-	-	-	-	-	-	-	-	90	237	-	-	-	-	123	33	SEE SHEET 46
		N/E-1		12	29	28	-	25	19.5	-	29	15.0	23.0	-	12.0	26.0	90	270	-	-	0	0 / 270	90	0	SEE SHEET 46
		N/E-2		PEDESTAL	10.7	-	-	-	-	-	-	-	-	-	-	-	90	247	-	-	-	-	202	112	SEE SHEET 46
		S/E-1		PEDESTAL	10.7	-	-	-	-	-	-	-	-	-	-	-	90	272	-	-	-	-	89	179	SEE SHEET 47
		S/E-2		PEDESTAL	10.7	-	-	-	-	-	-	-	-	-	-	-	90	179	-	-	-	-	90	0	SEE SHEET 47
		S/W-1		12	22	44	-	-	20.5	-	-	28.0	39.0	-	25.0	42.0	90	90	-	-	-	0	0	90	SEE SHEET 47
		S/W-2		12	29	27	-	25	19.5	-	29	14.5	22.5	-	11.5	25.5	90	270	-	-	0	0	90	0	SEE SHEET 47
RICH ST AT GRANT AVE	70	N/W-1	SEMI-GLOSS BLACK #27038	13	29	49	-	25	20.5	-	29	33.5	44.5	-	30.5	47.5	90	90	90	-	0	0 / 90	270	180	SEE SHEET 48
		N/W-2		PEDESTAL	10.7	-	-	-	-	-	-	-	-	-	-	-	90	90	90	-	-	-	180	90	SEE SHEET 48
		N/E-1		PEDESTAL	10.7	-	-	-	-	-	-	-	-	-	-	-	90	90	90	-	-	-	270	180	SEE SHEET 48
		N/E-2		PEDESTAL	10.7	-	-	-	-	-	-	-	-	-	-	-	90	250	250	-	-	-	200	110	SEE SHEET 48
		S/E-1		PEDESTAL	10.7	-	-	-	-	-	-	-	-	-	-	-	90	260	260	-	-	-	100	10	SEE SHEET 48
		S/E-2		PEDESTAL	10.7	-	-	-	-	-	-	-	-	-	-	-	90	110	110	-	-	-	160	70	SEE SHEET 48
		S/W-1		12	29	45	8	25	19.5	25.0	29	28.5	40.5	-	25.5	43.5	90	90	90	0	0	-	0	90	SEE SHEET 48
		S/W-2		12	29	28	-	25	19.5	-	29	13.5	23.5	-	10.5	26.5	90	270	270	-	0	0 / 270	90	0	SEE SHEET 48



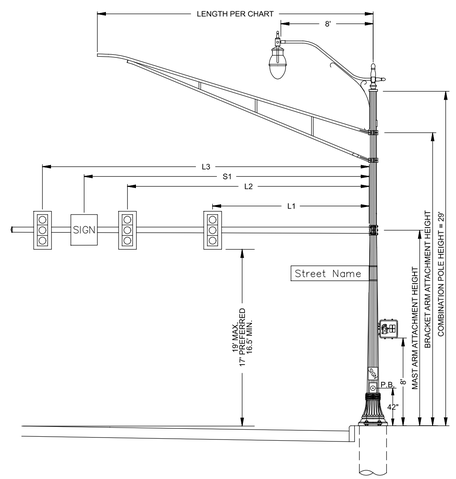
All angles measured clockwise.
Base plate is oriented square to Mast Arm.

TYPICAL PEDESTAL ORIENTATION DETAIL

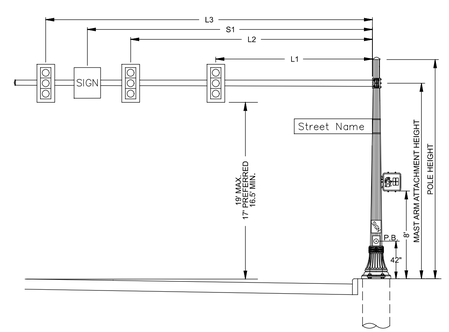


All angles measured clockwise.
Base plate is oriented square to Mast Arm.

TYPICAL SIGNAL SUPPORT ORIENTATION DETAIL



TYPICAL SIGNAL ELEVATION DETAIL (COMBO POLE)



TYPICAL SIGNAL ELEVATION DETAIL

CALCULATED JAR
CHECKED DKA

POLE ORIENTATION AND FABRICATION

IMPROVEMENTS OF
E RICH STREET FROM S 3RD ST TO S GRANT AVE
FRA E RICH ST SIGNALS

3921-E

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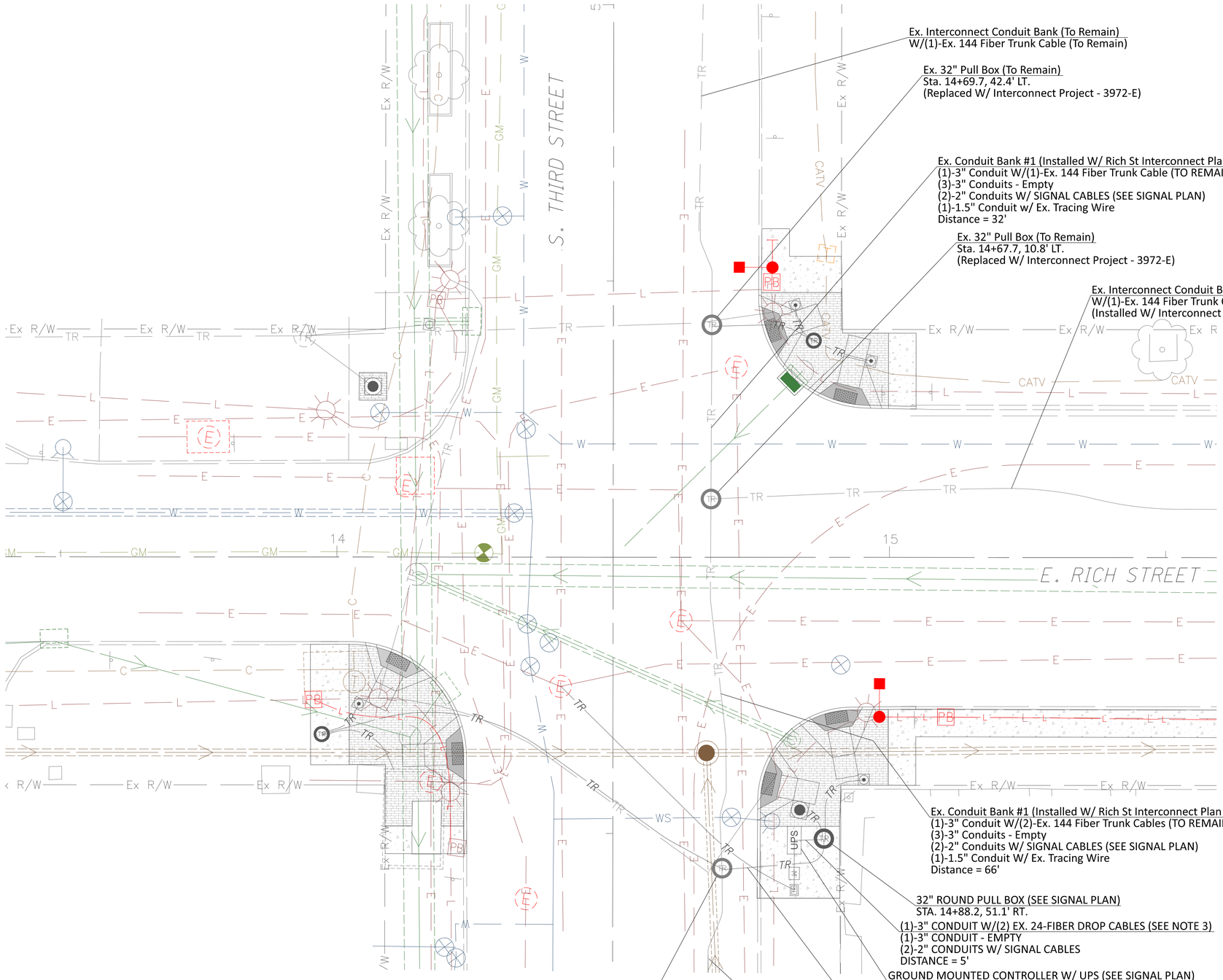


Ex. Interconnect Conduit Bank (To Remain)
W/(1)-Ex. 144 Fiber Trunk Cable (To Remain)

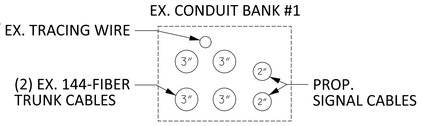
Ex. 32" Pull Box (To Remain)
Sta. 14+69.7, 42.4' LT.
(Replaced W/ Interconnect Project - 3972-E)

Ex. Conduit Bank #1 (Installed W/ Rich St Interconnect Plan - DRE 3972)
(1)-3" Conduit W/(1)-Ex. 144 Fiber Trunk Cable (TO REMAIN)
(3)-3" Conduits - Empty
(2)-2" Conduits W/ SIGNAL CABLES (SEE SIGNAL PLAN)
(1)-1.5" Conduit w/ Ex. Tracing Wire
Distance = 32'

Ex. 32" Pull Box (To Remain)
Sta. 14+67.7, 10.8' LT.
(Replaced W/ Interconnect Project - 3972-E)

Ex. Interconnect Conduit Bank (To Remain)
W/(1)-Ex. 144 Fiber Trunk Cable (To Remain)
(Installed W/ Interconnect Project - 3972-E)

CONDUIT BANK ARRANGEMENT DETAIL
(SEE CITY OF COLUMBUS STANDARD CONSTRUCTION DRAWING 4001)



NOTES
1. CONDUITS ARE EMPTY UNLESS OTHERWISE SPECIFIED.

Ex. Conduit Bank #1 (Installed W/ Rich St Interconnect Plan - DRE 3972)
(1)-3" Conduit W/(2)-Ex. 144 Fiber Trunk Cables (TO REMAIN)
(3)-3" Conduits - Empty
(2)-2" Conduits W/ SIGNAL CABLES (SEE SIGNAL PLAN)
(1)-1.5" Conduit W/ Ex. Tracing Wire
Distance = 66'

32" ROUND PULL BOX (SEE SIGNAL PLAN)
STA. 14+88.2, 51.1' RT.

(1)-3" CONDUIT W/(2) EX. 24-FIBER DROP CABLES (SEE NOTE 3)
(1)-3" CONDUIT - EMPTY
(2)-2" CONDUITS W/ SIGNAL CABLES
DISTANCE = 5'

GROUND MOUNTED CONTROLLER W/ UPS (SEE SIGNAL PLAN)
W/(1)-LAYER 2 ETHERNET SWITCH, (2)-ETHERNET TRANSCEIVERS, & (2)-TERMINATION PANELS
STA. 14+82.8, 51.2' RT.

(1)-2" CONDUIT W/ SIGNAL CABLES & (2) EX. 24-FIBER DROP CABLES (SEE NOTE 3)
(1)-2" CONDUIT W/ SIGNAL CABLES
DISTANCE = 23'

Ex. Interconnect Conduit Bank (To Remain)
W/(1)-Ex. 144 Fiber Trunk Cable (To Remain)

Ex. 32" Pull Box (To Remain)
W/ Ex. Splice Enclosure (To Remain)
W/ Coiled 24 Fiber Drop Cable
Sta. 14+70.8, 55.9' RT.
(Replaced W/ Interconnect Project - 3972-E)
(SEE NOTE 3)

LEGEND

SIGNAL POLES:		SIGNAL SUPPORT W/ MAST ARM
		COMB. SIGNAL SUPPORT W/ MAST ARM
CONTROLLERS & CABINETS:	UPS	GROUND MTD. CONTROLLER W/ UPS
PULL BOXES:		PULL BOX, ROUND CONCRETE (32", 27")

1. FOR SIGNAL ITEMS, SEE SIGNAL INSTALLATION SHEET 61 .
2. FOR SPLICING DETAILS, SEE THE RICH ST INTERCONNECT PROJECT - 3972-E.
3. RELOCATE THE (2)-EXISTING 24-FIBER DROP CABLES COILED BY INTERCONNECT PROJECT 3972-E TO THE PROPOSED CONTROLLER AS DETAILED BY THIS SHEET.

N

0 10 20
Horiz 1 inch = 10 feet

CALCULATED JAR
CHECKED DKA

TRAFFIC SIGNAL INTERCONNECT PLAN
RICH STREET AT THIRD STREET

IMPROVEMENTS OF
E RICH STREET FROM S 3RD ST TO S GRANT AVE
FRA E RICH ST SIGNALS

3921-E

73
95

Ex. 32" Pull Box (To Remain)
W/ Ex. Splice Enclosure (To Remain)
W/ Coiled 24-Fiber Drop Cable
Sta. 19+62.9, 45.8' LT.
(Replaced W/ Interconnect Project - 3972-E)
(SEE NOTE 3)

Ex. Interconnect Conduit Bank (To Remain)
W/(1)-Ex. 144 Fiber Trunk Cable (To Remain)

(1)-2" CONDUIT W/ SIGNAL CABLES & (2) EX. 24-FIBER DROP CABLES (SEE NOTE 3)
(1)-2" CONDUIT W/ SIGNAL CABLES
DISTANCE = 26'

GROUND MOUNTED CONTROLLER W/ UPS (SEE SIGNAL PLAN)
W/(1)-LAYER 2 ETHERNET SWITCH, (3)-ETHERNET TRANSCEIVERS, & (2)-TERMINATION PANELS
STA. 19+74.0, 52.5' LT.

(2)-2" CONDUITS W/ SIGNAL CABLES
(1)-3" CONDUIT W/(2) 24-FIBER DROP CABLES (SEE NOTE 3)
(1)-3" CONDUIT - EMPTY
DISTANCE = 6'

32" ROUND PULL BOX (SEE SIGNAL PLAN)
STA. 19+79.8, 52.9' LT.

Ex. Interconnect Conduit Bank (To Remain)
W/(1)-Ex. 144 Fiber Trunk Cable (To Remain)
(Installed W/ Interconnect Project - 3972-E)

Ex. Interconnect Conduit Bank (To Remain)
W/(1)-Ex. 144 Fiber Trunk Cable (To Remain)
(Installed W/ Interconnect Project - 3972-E)

Ex. Conduit Bank #2 (Installed W/ Rich St Interconnect Plan - 3972-E)
(1)-3" Conduit W/(3)-Ex. 144 Fiber Trunk Cables (TO REMAIN)
(3)-3" Conduits - Empty
(2)-2" Conduits W/ SIGNAL CABLES (SEE SIGNAL PLAN)
(1)-1.5" Conduit W/ Ex. Tracing Wire
Distance = 31'

Ex. 32" Pull Box (To Remain)
Sta. 19+62.7, 9.4' LT.
(Installed W/ Rich St Interconnect Plan - 3972-E)

Ex. Conduit Bank #1 (Installed W/ Rich St Interconnect Plan - 3972-E)
(1)-3" Conduit W/(1)-Ex. 144 Fiber Trunk Cable (TO REMAIN)
(3)-3" Conduits - Empty
(2)-2" Conduits W/ SIGNAL CABLES (SEE SIGNAL PLAN)
(1)-1.5" Conduit W/ Ex. Tracing Wire
Distance = 59'

Ex. 32" Pull Box (To Remain)
Sta. 19+61.4, 47.2' LT.
(Replaced W/ 4th St Pull Box Repair Plan - 3972-E)

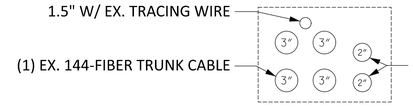
Ex. Interconnect Conduit Bank (To Remain)
W/(1)-Ex. 144 Fiber Trunk Cable (To Remain)

E. RICH STREET

S. FOURTH STREET

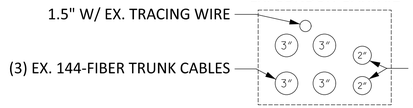
CONDUIT BANK ARRANGEMENT DETAIL
(SEE CITY OF COLUMBUS STANDARD CONSTRUCTION DRAWING 4001)

EX. CONDUIT BANK #1



VIEW LOOKING NORTH

EX. CONDUIT BANK #2



VIEW LOOKING NORTH

NOTES
1. CONDUITS ARE EMPTY UNLESS OTHERWISE SPECIFIED.

LEGEND

SIGNAL POLES:		SIGNAL SUPPORT W/ MAST ARM
		COMB. SIGNAL SUPPORT W/ MAST ARM
CONTROLLERS & CABINETS:	UPS	GROUND MTD. CONTROLLER W/ UPS
PULL BOXES:		PULL BOX, ROUND CONCRETE (32", 27")

1. FOR SIGNAL ITEMS, SEE SIGNAL INSTALLATION SHEET 64 .
2. FOR SPLICING DETAILS, SEE THE RICH ST INTERCONNECT PROJECT - 3972-E.
3. RELOCATE THE (2)-EXISTING 24-FIBER DROP CABLES COILED BY INTERCONNECT PROJECT 3972-E TO THE PROPOSED CONTROLLER AS DETAILED BY THIS SHEET.

0 10 20
Horiz 1 inch = 10 feet

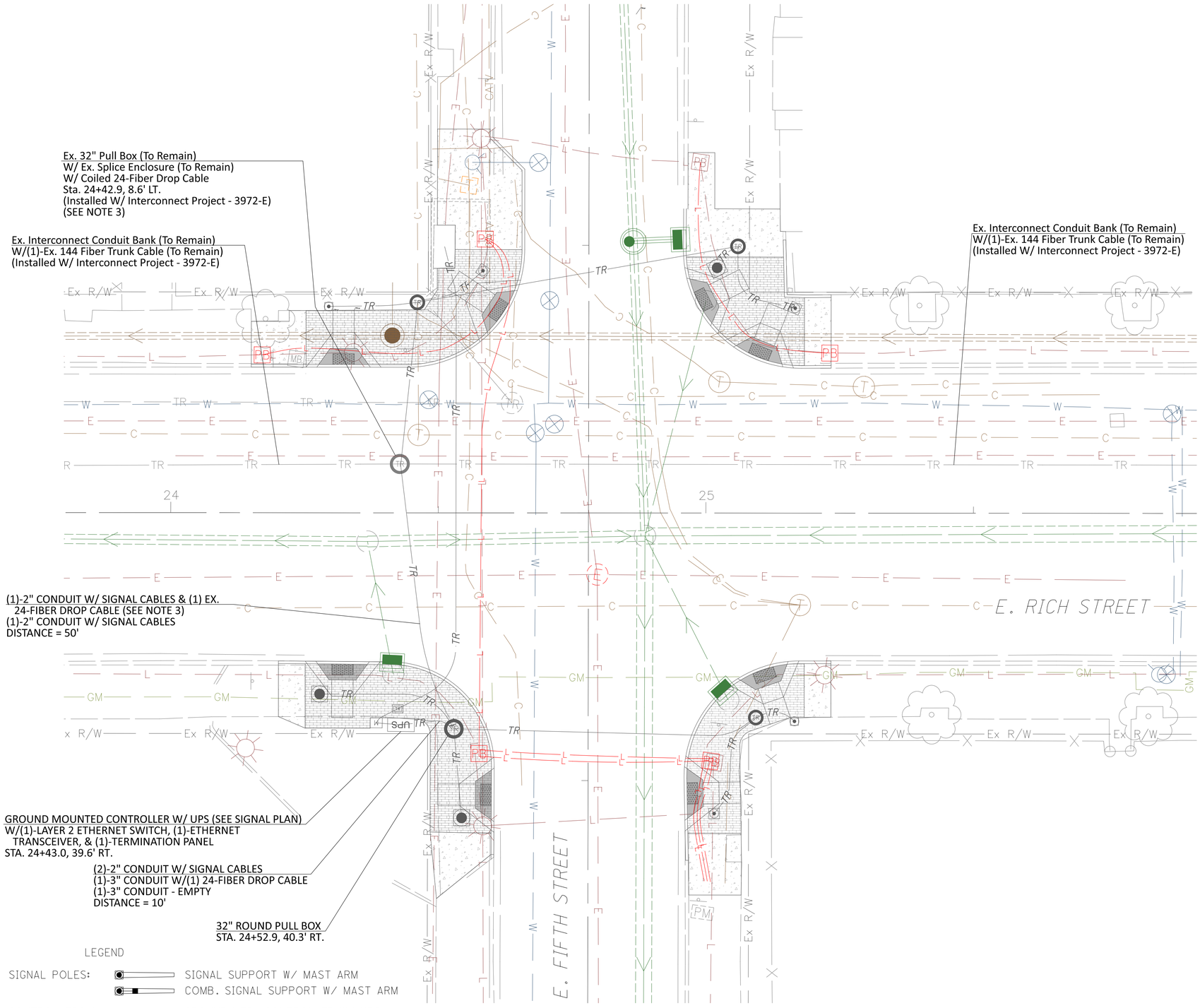
CALCULATED JAR
CHECKED DKA

TRAFFIC SIGNAL INTERCONNECT PLAN
RICH STREET AT FOURTH STREET

IMPROVEMENTS OF
E RICH STREET FROM S 3RD ST TO S GRANT AVE
FRA E RICH ST SIGNALS

3921-E

74
95



1. FOR SIGNAL ITEMS, SEE SIGNAL INSTALLATION SHEET 67 .
2. FOR SPLICING DETAILS, SEE THE RICH ST INTERCONNECT PROJECT - 3972-E.
3. RELOCATE THE (1)-EXISTING 24-FIBER DROP CABLE COILED BY INTERCONNECT PROJECT 3972-E TO THE PROPOSED CONTROLLER AS DETAILED BY THIS SHEET.

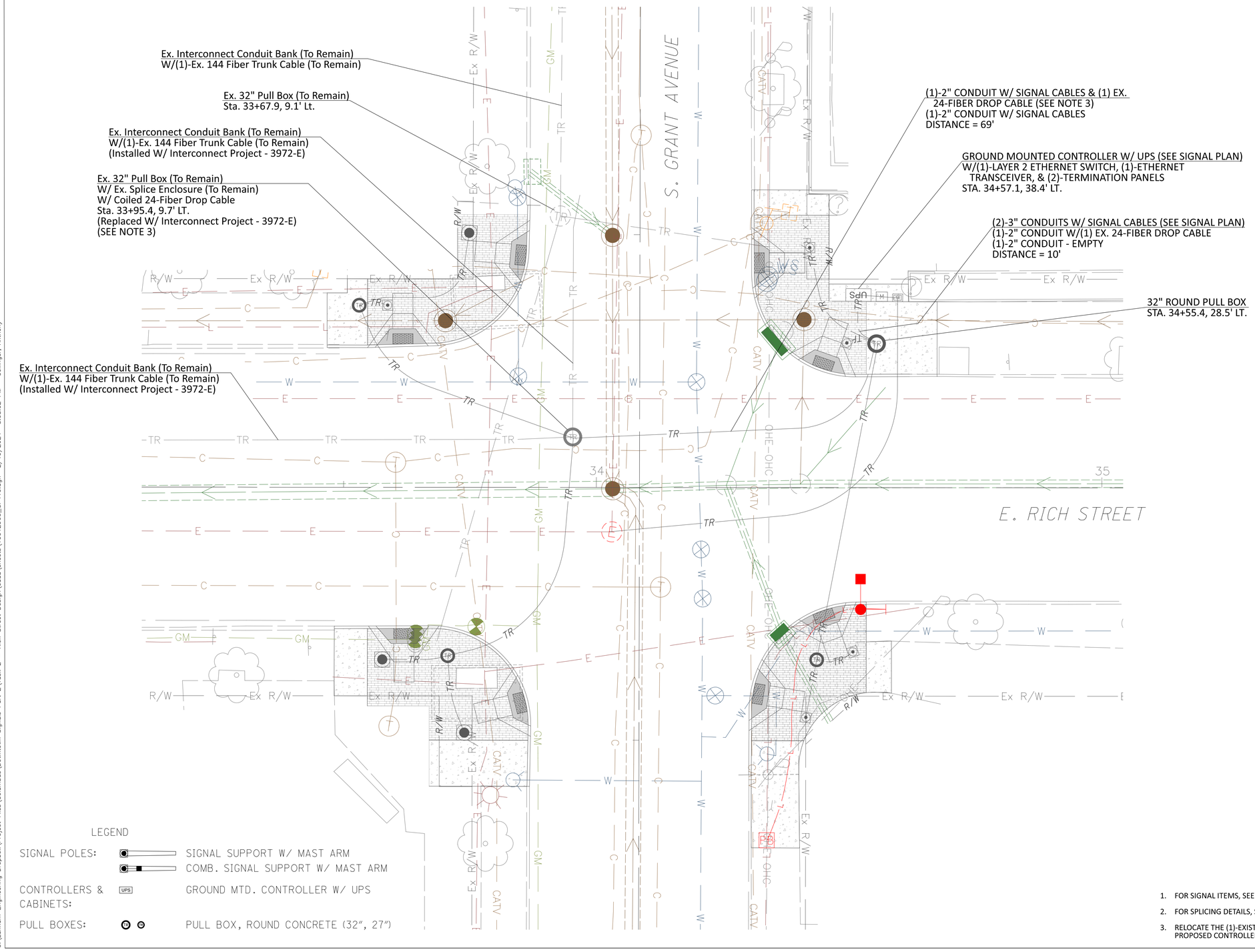
0 10 20
Hori: 1 inch = 10 feet

CALCULATED JAR
CHECKED DKA

TRAFFIC SIGNAL INTERCONNECT PLAN
RICH STREET AT FIFTH STREET

IMPROVEMENTS OF
E RICH STREET FROM S 3RD ST TO S GRANT AVE
FRA E RICH ST SIGNALS

3921-E



1. FOR SIGNAL ITEMS, SEE SIGNAL INSTALLATION SHEET 70 .
2. FOR SPLICING DETAILS, SEE THE RICH ST INTERCONNECT PROJECT - 3972-E.
3. RELOCATE THE (1)-EXISTING 24-FIBER DROP CABLE COILED BY INTERCONNECT PROJECT 3972-E TO THE PROPOSED CONTROLLER AS DETAILED BY THIS SHEET.

0 10 20
Horiz 1 inch = 10 feet

CALCULATED JAR
CHECKED DKA

TRAFFIC SIGNAL INTERCONNECT PLAN
RICH STREET

IMPROVEMENTS OF
E RICH STREET FROM S 3RD ST TO S GRANT AVE
FRA E RICH ST SIGNALS

3921-E

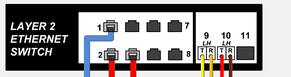
76
95

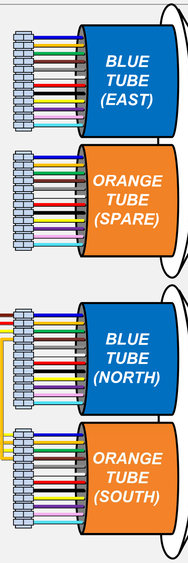
TRAFFIC SIGNAL CABINET ASSEMBLY

ETHERNET SWITCH PORT DESTINATION

PORT 9: INT# 0076: THIRD ST. AT MAIN ST.

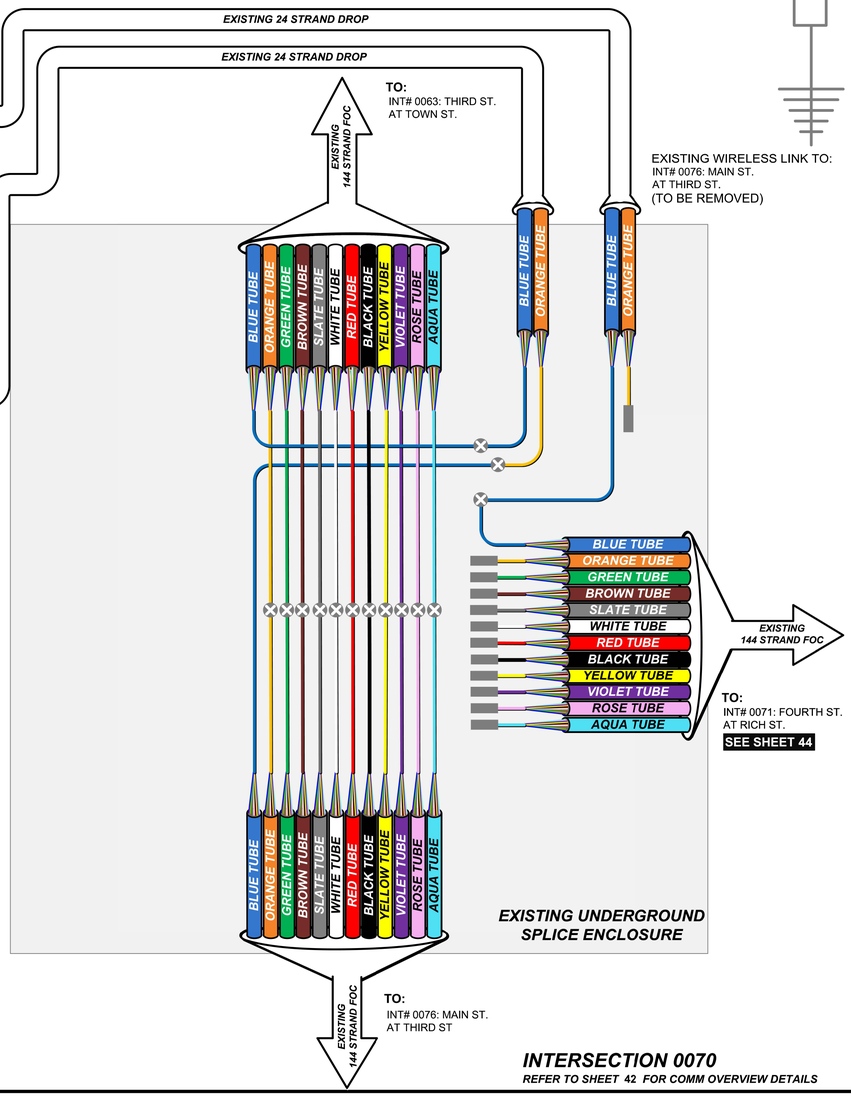
PORT 10: INT# 0063: THIRD ST. AT TOWN ST.





EXISTING WIRELESS LINK TO:
INT# 0065: THIRD ST.
AT TOWN ST.
(TO BE REMOVED)

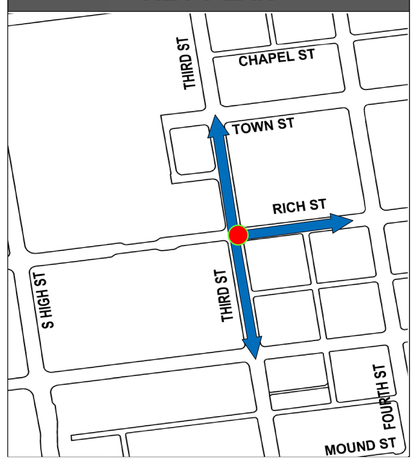
EXISTING WIRELESS LINK TO:
INT# 0076: MAIN ST.
AT THIRD ST.
(TO BE REMOVED)



LEGEND

- FIBER PATCH CABLES T/R STANDARD
- FIBER PATCH CABLES R/T CROSSOVER
- EXISTING FIBER PATCH CABLES
- CAT 5E CABLE
- CAT 5E CABLE TO BE REMOVED
- TERMINATION PANEL UPC (Blue)/APC (Green)
- EXISTING/PROPOSED FIBER OR BUFFER TUBE LEFT COILED IN SPLICE ENCLOSURE
- FUSION SPLICE – 6 FIBERS/ SINGLE FIBER
- FUSION SPLICE – 12 FIBER BUFFER TUBE
- EXISTING FUSION SPLICE – 12 FIBER BUFFER TUBE
- INTERSECTION LOCATION
- GBIC OPTICAL TRANSCEIVER LH - SHORT HAUL LED ZX – LONG HAUL LASER
- SFP/COPPER/CAT5/5E/6 CONNECTOR
- COPPER/CAT5/5E/6 CONNECTOR
- 144 STRAND SMF
- WIRELESS ETHERNET RADIO

KEY PLAN



NOTE:
THE NETWORK CONFIGURATION SHOWN ON THIS SHEET IS PROVIDED FOR INFORMATION ONLY.

E. RICH STREET SIGNALS PROJECT (3921-E) TO ROUTE CAPPED/COILED DROP CABLES FROM PULL BOX AT STA. 7+74.4, 58.4' RT TO NEW CONTROLLER CABINET. TERMINATE DROP CABLES AND PATCH AS SHOWN. REMOVE EXISTING WIRELESS RADIOS.

INTERSECTION 0070
REFER TO SHEET 42 FOR COMM OVERVIEW DETAILS

SPLICING DIAGRAM HAS BEEN PREPARED AS PART OF THE RICH STREET TRAFFIC SIGNAL INTERCONNECT PROJECT (PROJECT 3972-E). SPLICING DIAGRAM HAS BEEN INSERTED AT CITY OF COLUMBUS REQUEST TO THIS PROJECT FOR INFORMATIONAL AND CONTROLLER HOOK-UP PURPOSES.

NOT TO SCALE

CALCULATED JRB CHECKED MJG

INT# 0070: RICH ST. AT THIRD ST.
COMMUNICATIONS DIAGRAM (FUTURE CONFIGURATION)

TRAFFIC SIGNAL INTERCONNECT
E. RICH ST. FROM S. THIRD ST. TO S. GRANT AVE.

3972-E

43
46

CALCULATED JAR CHECKED DKA

COMMUNICATIONS DIAGRAM
INT# 0070: RICH STREET AT THIRD STREET

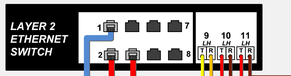
IMPROVEMENTS OF
E RICH STREET FROM S 3RD ST TO S GRANT AVE
FRA E RICH ST SIGNALS

3921-E

77
95

C:\Lanham Engineering Dropbox\Project Files\Columbus\Downtown Signals Part 2\Task 2 – Rich Street Design\cadd\sheets\100129GD_GD110.dgn 2/19/2024 4:20:14 PM Collinger, Anthony

TRAFFIC SIGNAL CABINET ASSEMBLY



ETHERNET SWITCH PORT DESTINATION

PORT 9: INT# 0077: FOURTH ST. AT MAIN ST.

PORT 10: INT# 0064: FOURTH ST. AT TOWN ST.

PORT 11: INT# 0094: FIFTH ST. AT RICH ST.
SEE SHEET 45

EXISTING WIRELESS LINK TO:
INT# 0064: FOURTH
ST. AT TOWN ST.
(TO BE REMOVED)

BLUE TUBE (EAST)

ORANGE TUBE (WEST)

BLUE TUBE (NORTH)

ORANGE TUBE (SOUTH)

EXISTING 24 STRAND DROP

EXISTING 24 STRAND DROP

EXISTING 144 STRAND FOC

TO:
INT# 0064: FOURTH
ST. AT TOWN ST.

EXISTING WIRELESS LINK TO:
INT# 0077: FOURTH
ST. AT MAIN ST.
(TO BE REMOVED)

BLUE TUBE
ORANGE TUBE
GREEN TUBE
BROWN TUBE
SLATE TUBE
WHITE TUBE
RED TUBE
BLACK TUBE
YELLOW TUBE
VIOLET TUBE
ROSE TUBE
AQUA TUBE

EXISTING 144 STRAND FOC

TO:
INT# 0070: RICH ST. AT
THIRD ST.
SEE SHEET 43

EXISTING 144 STRAND FOC

TO:
INT# 0094: FIFTH ST. AT
RICH ST.
SEE SHEET 45

EXISTING 144 STRAND FOC

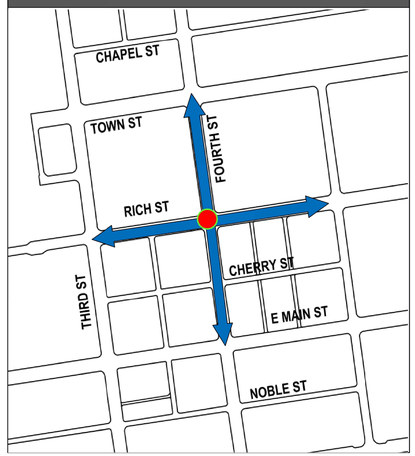
TO:
INT# 0077: FOURTH
ST. AT MAIN ST.

EXISTING UNDERGROUND SPLICE ENCLOSURE

LEGEND

- FIBER PATCH CABLES T/R STANDARD
- FIBER PATCH CABLES R/T CROSSOVER
- EXISTING FIBER PATCH CABLES
- CAT 5E CABLE
- CAT 5E CABLE TO BE REMOVED
- TERMINATION PANEL UPC (Blue)/APC (Green)
- EXISTING/PROPOSED FIBER OR BUFFER TUBE LEFT COILED IN SPLICE ENCLOSURE
- FUSION SPLICE – 6 FIBERS/ SINGLE FIBER
- FUSION SPLICE – 12 FIBER BUFFER TUBE
- EXISTING FUSION SPLICE – 12 FIBER BUFFER TUBE
- INTERSECTION LOCATION
- GBIC OPTICAL TRANSCEIVER LH - SHORT HAUL LED ZX – LONG HAUL LASER
- SFP/COPPER/CAT5/5E/6 CONNECTOR
- COPPER/CAT5/5E/6 CONNECTOR
- 144 STRAND SMF
- WIRELESS ETHERNET RADIO

KEY PLAN



NOTE:
THE NETWORK CONFIGURATION SHOWN ON THIS SHEET IS PROVIDED FOR INFORMATION ONLY.

E. RICH STREET SIGNALS PROJECT (3921-E) TO ROUTE CAPPED/COILED DROP CABLES FROM PULL BOX AT STA. 12+66.7, 46.0' LT TO NEW CONTROLLER CABINET. TERMINATE DROP CABLES AND PATCH AS SHOWN. REMOVE EXISTING WIRELESS RADIOS.

INTERSECTION 0071

REFER TO SHEET 42 FOR COMM OVERVIEW DETAILS

SPLICING DIAGRAM HAS BEEN PREPARED AS PART OF THE RICH STREET TRAFFIC SIGNAL INTERCONNECT PROJECT (PROJECT 3972-E). SPLICING DIAGRAM HAS BEEN INSERTED AT CITY OF COLUMBUS REQUEST TO THIS PROJECT FOR INFORMATIONAL AND CONTROLLER HOOK-UP PURPOSES.

CALCULATED JAR | CHECKED DKA

NOT TO SCALE

CALCULATED JRB | CHECKED MJG

INT# 0071: FOURTH ST. AT RICH ST.
COMMUNICATIONS DIAGRAM (FUTURE CONFIGURATION)

TRAFFIC SIGNAL INTERCONNECT
E. RICH ST. FROM S. THIRD ST. TO S. GRANT AVE.

3972-E

44
46

COMMUNICATIONS DIAGRAM
INT# 0071: RICH STREET AT FOURTH STREET

IMPROVEMENTS OF
E RICH STREET FROM S 3RD ST TO S GRANT AVE
FRA E RICH ST SIGNALS

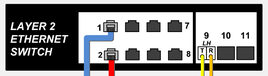
3921-E

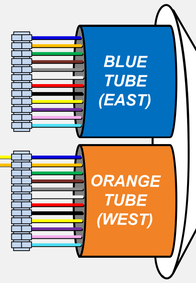
78
95

TRAFFIC SIGNAL CABINET ASSEMBLY

ETHERNET SWITCH PORT DESTINATION

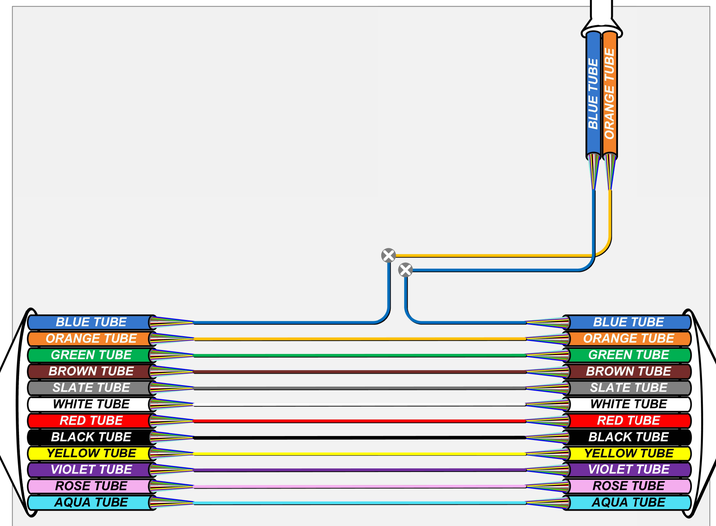
PORT 9: INT# 0071: FOURTH ST. AT RICH ST.
SEE SHEET 44





EXISTING WIRELESS LINK TO:
INT# 0078: FIFTH ST.
AT MAIN ST.
(TO BE REMOVED)

EXISTING 24 STRAND DROP



EXISTING UNDERGROUND SPLICE ENCLOSURE

EXISTING 144 STRAND FOC

TO:
INT# 0071: FOURTH ST.
AT RICH ST.
SEE SHEET 44

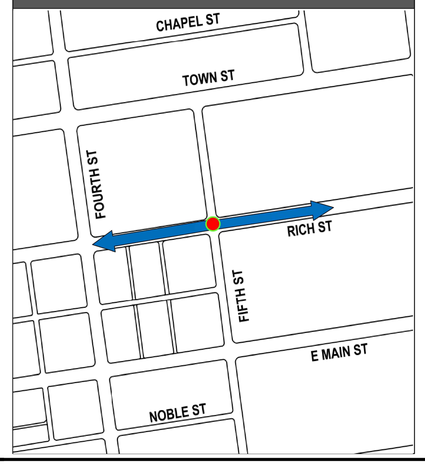
EXISTING 144 STRAND FOC

TO:
INT# 0072: GRANT AVE.
AT RICH ST.
SEE SHEET 46

LEGEND

- FIBER PATCH CABLES T/R STANDARD
- FIBER PATCH CABLES R/T CROSSOVER
- EXISTING FIBER PATCH CABLES
- CAT 5E CABLE
- CAT 5E CABLE TO BE REMOVED
- TERMINATION PANEL UPC (Blue)/APC (Green)
- EXISTING/PROPOSED FIBER OR BUFFER TUBE LEFT COILED IN SPLICE ENCLOSURE
- FUSION SPLICE – 6 FIBERS/ SINGLE FIBER
- FUSION SPLICE – 12 FIBER BUFFER TUBE
- EXISTING FUSION SPLICE – 12 FIBER BUFFER TUBE
- INTERSECTION LOCATION
- GBIC OPTICAL TRANSCEIVER LH - SHORT HAUL LED ZX – LONG HAUL LASER
- SFP/COPPER/CAT5/5E/6 CONNECTOR
- COPPER/CAT5/5E/6 CONNECTOR
- 144 STRAND SMF
- WIRELESS ETHERNET RADIO

KEY PLAN



NOTE:
THE NETWORK CONFIGURATION SHOWN ON THIS SHEET IS PROVIDED FOR INFORMATION ONLY.

E. RICH STREET SIGNALS PROJECT (3921-E) TO ROUTE CAPPED/COILED DROP CABLE FROM PULL BOX AT STA. 17+46.8, 8.9' LT TO NEW CONTROLLER CABINET. TERMINATE DROP CABLE AND PATCH AS SHOWN. REMOVE EXISTING WIRELESS RADIO.

INTERSECTION 0094
REFER TO SHEET 42 FOR COMM OVERVIEW DETAILS

NOT TO SCALE
CALCULATED JRB
CHECKED MJG

INT# 0094: FIFTH ST. AT RICH ST.
COMMUNICATIONS DIAGRAM (FUTURE CONFIGURATION)

TRAFFIC SIGNAL INTERCONNECT
E. RICH ST. FROM S. THIRD ST. TO S. GRANT AVE.

3972-E

45
46

SPLICING DIAGRAM HAS BEEN PREPARED AS PART OF THE RICH STREET TRAFFIC SIGNAL INTERCONNECT PROJECT (PROJECT 3972-E). SPLICING DIAGRAM HAS BEEN INSERTED AT CITY OF COLUMBUS REQUEST TO THIS PROJECT FOR INFORMATIONAL AND CONTROLLER HOOK-UP PURPOSES.

CALCULATED JAR
CHECKED DKA

COMMUNICATIONS DIAGRAM
INT# 0094: RICH STREET AT FIFTH STREET

IMPROVEMENTS OF
E RICH STREET FROM S 3RD ST TO S GRANT AVE
FRA E RICH ST SIGNALS

3921-E

79
95

TRAFFIC SIGNAL CABINET ASSEMBLY

ETHERNET SWITCH PORT DESTINATION

PORT 9: INT# 0065: GRANT AVE. AT TOWN ST.

LAYER 2 ETHERNET SWITCH

TRAFFIC SIGNAL CONTROLLER
Proposed
10/100 Mbs

EXISTING WIRELESS LINK TO:
INT# 0065: GRANT
AVE. AT TOWN ST.
(TO BE REMOVED)

EXISTING WIRELESS LINK TO:
INT# 0079: GRANT
AVE. AT MAIN ST.
(TO BE REMOVED)

BLUE TUBE (NORTH)
ORANGE TUBE (SPARE)
BLUE TUBE (SPARE)
ORANGE TUBE (WEST)

EXISTING 24 STRAND DROP
EXISTING 24 STRAND DROP

EXISTING 144 STRAND FOC

TO:
INT# 0065: GRANT
AVE. AT TOWN ST.

BLUE TUBE
ORANGE TUBE
GREEN TUBE
BROWN TUBE
SLATE TUBE
WHITE TUBE
RED TUBE
BLACK TUBE
YELLOW TUBE
VIOLET TUBE
ROSE TUBE
AQUA TUBE

EXISTING 144 STRAND FOC

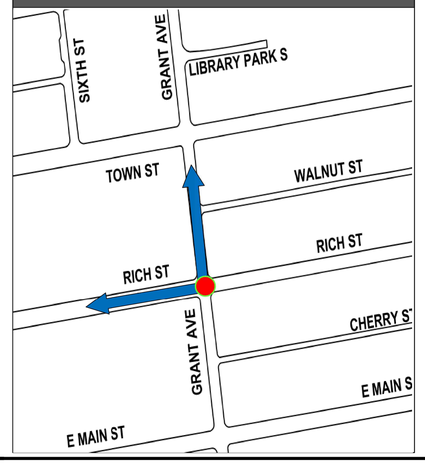
TO:
INT# 0094: FIFTH ST. AT
RICH ST.
SEE SHEET 45

EXISTING UNDERGROUND SPLICE ENCLOSURE

LEGEND

- FIBER PATCH CABLES T/R STANDARD
- FIBER PATCH CABLES R/T CROSSOVER
- EXISTING FIBER PATCH CABLES
- CAT 5E CABLE
- CAT 5E CABLE TO BE REMOVED
- TERMINATION PANEL UPC (Blue)/APC (Green)
- EXISTING/PROPOSED FIBER OR BUFFER TUBE LEFT COILED IN SPLICE ENCLOSURE
- FUSION SPLICE – 6 FIBERS/ SINGLE FIBER
- FUSION SPLICE – 12 FIBER BUFFER TUBE
- EXISTING FUSION SPLICE – 12 FIBER BUFFER TUBE
- INTERSECTION LOCATION
- GBIC OPTICAL TRANSCEIVER LH - SHORT HAUL LED ZX – LONG HAUL LASER
- SFP/COPPER/CAT5/5E/6 CONNECTOR
- COPPER/CAT5/5E/6 CONNECTOR
- 144 STRAND SMF
- WIRELESS ETHERNET RADIO

KEY PLAN



NOTE:
THE NETWORK CONFIGURATION SHOWN ON THIS SHEET IS PROVIDED FOR INFORMATION ONLY.

E. RICH STREET SIGNALS PROJECT (3921-E) TO ROUTE CAPPED/COILED DROP CABLES FROM PULL BOX AT STA. 26+98.3, 9.0' LT TO NEW CONTROLLER CABINET. TERMINATE DROP CABLES AND PATCH AS SHOWN. REMOVE EXISTING WIRELESS RADIOS.

INTERSECTION 0072
REFER TO SHEET 42 FOR COMM OVERVIEW DETAILS

NOT TO SCALE

CALCULATED JRB
CHECKED MJG

INT# 0072: GRANT AVE. AT RICH ST.
COMMUNICATIONS DIAGRAM (FUTURE CONFIGURATION)

TRAFFIC SIGNAL INTERCONNECT
E. RICH ST. FROM S. THIRD ST. TO S. GRANT AVE.

3972-E

46
46

CALCULATED JAR
CHECKED DKA

COMMUNICATIONS DIAGRAM
INT# 0072: RICH STREET AT GRANT AVENUE

IMPROVEMENTS OF
E RICH STREET FROM S 3RD ST TO S GRANT AVE
FRA E RICH ST SIGNALS

3921-E

80
95

SPLICING DIAGRAM HAS BEEN PREPARED AS PART OF THE RICH STREET TRAFFIC SIGNAL INTERCONNECT PROJECT (PROJECT 3972-E). SPLICING DIAGRAM HAS BEEN INSERTED AT CITY OF COLUMBUS REQUEST TO THIS PROJECT FOR INFORMATIONAL AND CONTROLLER HOOK-UP PURPOSES.

STREET LIGHTING NOTES

THE STREET LIGHTING SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE CURRENT CITY OF COLUMBUS, OHIO "CONSTRUCTION AND MATERIAL SPECIFICATIONS" (2018 EDITION, SECTION 1001, TITLED "STREET LIGHTING"), INCLUDING ALL SUPPLEMENTS THERETO, IN FORCE ON THE DATE OF THE CONTRACT, SHALL GOVERN ALL MATERIALS AND WORKMANSHIP INVOLVED IN THE IMPROVEMENTS SHOWN ON THESE PLANS, EXCEPT AS SUCH SPECIFICATIONS ARE MODIFIED BY THE FOLLOWING SPECIFICATIONS OR BY THE CONSTRUCTION DETAILS SET FORTH HEREIN.

CIRCUIT VOLTAGE FOR ALL LUMINAIRE SHALL BE 480 VOLT, UNLESS OTHERWISE NOTED.

CENTERLINE OF LIGHT POLE FOUNDATION AND CONDUIT TRENCH TO BE PLACED IN ACCORDANCE WITH THE PLAN DETAILS.

ALL PROPOSED LUMINAIRE SHALL BE 3000K LED.

NO SPLICES SHALL BE MADE TO CIRCUIT CABLES EXCEPT IN POLES OR PULL BOXES AT NOTED LOCATIONS.

TRENCH LOCATION SHALL BE DEFLECTED AROUND OBSTACLES AS NOTED IN THIS PLAN.

WHERE THE TRENCH IS OFFSET FROM THE CENTERLINE OF THE FOUNDATIONS, THE CONDUIT SHALL BE DIRECTED TOWARD THE ELL OF THE FOUNDATION AT APPROXIMATELY 45 DEGREE ANGLE. THE FOUNDATION ELLS MAY BE AIMED OUT OF FOUNDATION AT APPROXIMATELY 45 DEGREE ANGLES TO FACILITATE CONNECTION TO CONDUIT WITH THE LEAST AMOUNT OF BENDS.

THE PLAN DETAILS SHALL BE CONSIDERED SUPPLEMENTAL TO MIS SPECIFICATIONS.

LIGHT POLE FOUNDATIONS SHALL BE LOCATED APPROXIMATELY WHERE SHOWN ON PLANS WITH EXACT LOCATIONS TO BE DETERMINED IN THE FIELD AFTER CONSIDERATION IS GIVEN TO THE LOCATION OF UNDERGROUND AND OVERHEAD UTILITIES, PAVEMENTS AND GRADES.

IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE THE ANCHOR BOLTS AND ENSURE THAT THE BOLT SIZE, ANCHOR BOLT CIRCLE AND PATTERN MATCH THE LIGHT POLE.

ALL ITEMS OF WORK CALLED FOR ON THE PLANS, FOR WHICH NO SPECIFIC METHOD OF PAYMENT IS PROVIDED, SHALL BE PERFORMED BY THE CONTRACTOR AND THE COST OF THESE ITEMS SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THE VARIOUS RELATED ITEMS. THIS INCLUDES, BUT IS NOT LIMITED TO, SUCH INCIDENTAL ITEMS AS RELOCATION OF MAIL BOXES, SAW CUTTING AND REMOVAL AND/OR RELOCATION OF SIGNS, RAILROAD TIES, SPRINKLERS, RELOCATING ROOF OR SUMP DRAINS AROUND LIGHT POLE FOUNDATIONS, HAND DIGGING AROUND UNDERGROUND UTILITIES OR OTHER MISCELLANEOUS ITEMS.

PRIOR TO ANY PAINTING, THE CONTRACTOR SHALL SUBMIT PAINT SAMPLES AND SHOP DRAWINGS TO THE CITY OF COLUMBUS. PAINT SAMPLES SHALL BE REPRESENTATIVE OF THE COLOR, TYPE AND MANUFACTURE THAT WILL BE USED FOR LIGHT POLE.

ITEM 1001 SMART NODE, AS PER PLAN

PROPOSED SMART NODES SHALL BE INSTALLED AT ALL PROPOSED LUMINAIRES AND EXISTING LED LUMINAIRES WHERE NOTED. THE NODE SHALL BE DIMONOFF RME-XDP-H3 WITH AN EXTENDED 10-YEAR WARRANTY AND NO GPS MODULE. ALTERNATIVES SHALL NOT BE PERMITTED FOR USE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLING THE NODES PER THE NODE AND LUMINAIRE MANUFACTURER'S REQUIREMENTS. THE CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR ENSURING THAT EACH PROPOSED NODE IS PROPERLY COMMUNICATING WITH THE CITY NETWORK AND CENTRAL CONTROL SYSTEM.

PAYMENT SHALL BE MADE AT THE CONTRACT BID PRICE FOR EACH SMART NODE THAT IS TO BE FURNISHED AND INSTALLED BY THE CONTRACTOR. CABLES, TERMINATIONS, CONNECTIONS, AND OTHER MISCELLANEOUS ITEMS AND MATERIALS SHALL BE INCIDENTAL TO THIS WORK AND NO SEPARATE PAYMENT WILL BE MADE.

AS BUILD RECORD

THE CONTRACTOR SHALL MAINTAIN A SET OF PROJECT RECORD DOCUMENTS. THESE DOCUMENTS SHALL INCLUDED REVIEWED SHOP DRAWINGS, CHANGE ORDERS, EQUIPMENT OPERATING INSTRUCTIONS, FIELD TEST RECORDS, AND AS BUILT DRAWINGS. THE AS BUILT DRAWING SHALL BE MARKED LEGIBLY IN RED, THE ACTUAL LOCATION OF EQUIPMENT AND CONDUITS AS CONSTRUCTED. ALL EQUIPMENT AND UNDERGROUND CONDUITS INSTALLED SHALL HAVE LOCATIONS MARKED IN DISTANCES OFF A LANDMARK AT LEAST EVERY 25 FEET AND AS NECESSARY AT BENDS FOR LOCATION AT A LATER DATE. ADDITIONALLY, THE CONTRACTOR SHALL FILL-IN THE AS-BUILT COORDINATE TABLE AS SHOWN BELOW.

AS-BUILD COORDINATE TABLE

REFERENCE NO.	PROPOSED ITEM	AS-BUILT	
		NORTHING	EASTING
–	CONTROLLER		
A-137-1	STREET LIGHT POLE		
A-137-2	STREET LIGHT POLE		
A-137-3	STREET LIGHT POLE		
C-137-1	STREET LIGHT POLE		
B-50-1	STREET LIGHT POLE		
PB-SE 3RD	PULL BOX		
PB-NE 3RD	PULL BOX		
PB-NW 5TH	PULL BOX		
PB-NW 5TH	PULL BOX		
PB-SW 5TH	PULL BOX		
PB-SE 5TH	PULL BOX		
PB-SE GRANT	PULL BOX		
PB-SE GRANT	PULL BOX		

SUB-SUMMARY OF LIGHTING ITEMS

ITEM NO.	QTY.	UNIT	ITEM DESCRIPTION
1001	10	EA	13 INCH X 24 INCH PULL BOX (MIS-54)
1001	5	EA	6' STREET LIGHT FOUNDATION, DOWNTOWN (MIS-203)
1001	5	EA	DOWNTOWN POLE (MIS-308)
1001	755	CKT FT	2-WIRE UNDERGROUND CIRCUIT (MIS-403)
1001	5	EA	2-WIRE POLE TO BE WIRED (MIS-500)
1001	1	EA	2-WIRE 480V PEDESTAL MOUNT CONTROLLER (MIS-602)
1001	425	LF	2-INCH CONDUIT, CONCRETE ENCASED (MIS-700)
1001	1	EA	COBRA HEAD 480V LUMINAIRE (MIS-800)
1001	5	EA	TEARDROP 480V LED LUMINAIRE (MIS-801)
1001	7	EA	FOUNDATION REMOVAL (MIS-900)
1001	1	LUMP	EXISTING UNDERGROUND SYSTEM REMOVAL (MIS-902)
1001	6	EA	SMART NODE, AS PER PLAN
		TOTAL CARRIED TO GENERAL SUMMARY	

NON-PAYMENT MIS SPECIFICATIONS

MIS	ITEM DESCRIPTION
1	STREET LIGHT LOCKOUT/TAGOUT (LOTO)
2	GUIDELINES FOR INSPECTION & ACCEPTANCE OF STREET LIGHTING SYSTEMS
3	GUIDELINES FOR STREET LIGHTING "MATERIALS FOR APPROVAL" SUBMITTAL PACKAGES
4	INSPECTION CHECKLIST
58	MINIMUM TREE CLEARANCE FOR DOWNTOWN, URBAN, & RURAL AREAS

CITY OF COLUMBUS MIS

MIS-1	MIS-403
MIS-2	MIS-500
MIS-3	MIS-602
MIS-4	MIS-700
MIS-54	MIS-800
MIS-58	MIS-801
MIS-203	MIS-900
MIS-308	MIS-902

CALCULATED MJB | CHECKED DKA

LIGHTING GENERAL NOTES

IMPROVEMENTS OF
E RICH STREET FROM S 3RD ST TO S GRANT AVE
FRA E RICH ST SIGNALS

3921-E

81
95

CIRCUIT SCHEMATIC LEGEND

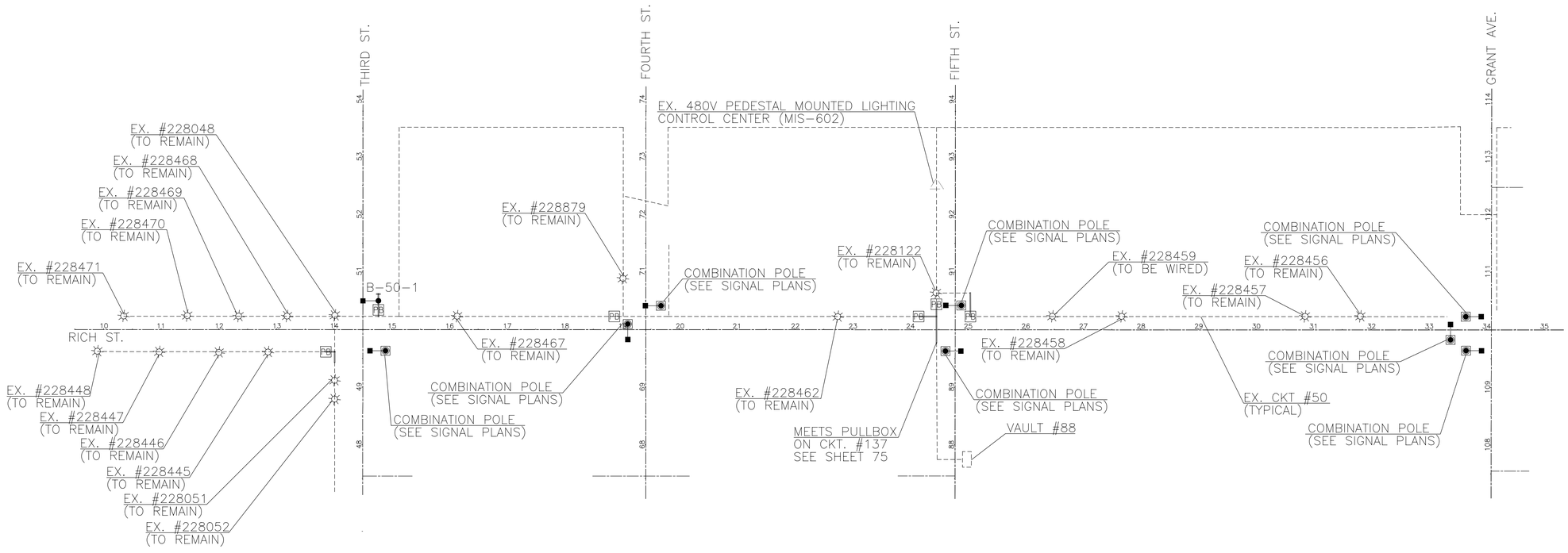
- PB — Proposed Pull Box
- Proposed 2–Wire Circuit
- Proposed Light Pole & Luminaire
- Proposed Combination Traffic/Light Pole
- Proposed Conduit Stub
- Existing Lighting Control Center
- Existing 2–Wire Circuit (To Remain)
- Existing Light Pole & Luminaire
- Existing Roadway Centerline

ELECTRICAL CIRCUIT LOAD CALCULATIONS	
1	PROPOSED 92 W LED TEARDROP LUMINAIRE = 0.19 AMPS
59	EX. 250 W HPS COBRA HEAD LUMINAIRE = 30.73 AMPS
12	EX. 70 W HPS POST TOP LUMINAIRE = 1.75 AMPS
1	EX. 250 W HPS TEARDROP LUMINAIRE = 0.52 AMPS
NEW TOTAL LOAD = 33.19 AMPS @ 480 VOLTS	

LIGHTING CONTROLLER SCHEDULE

CONTROL CENTER	LEG	LUMINAIRE QTY.	APPROX. LOAD		CIRCUIT FUSE	CIRCUIT CABLE SIZE (AWG)	MAINTAINING AGENCY
			WATTS	AMPS			
CONTROLLER # 50 480V PEDESTAL MOUNTED LIGHTING CONTROL CENTER (MIS–602)	B	1	92	0.19	EXIST.	EXIST.	CITY OF COLUMBUS
TOTAL		1	92	0.19			

CIRCUIT SCHEMATIC – #50



CALCULATED MJB
CHECKED DKA

LIGHTING SINGLE LINE DIAGRAM

IMPROVEMENTS OF
E RICH STREET FROM S 3RD ST TO S GRANT AVE
FRA E RICH ST SIGNALS

3921-E

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95

CIRCUIT SCHEMATIC LEGEND

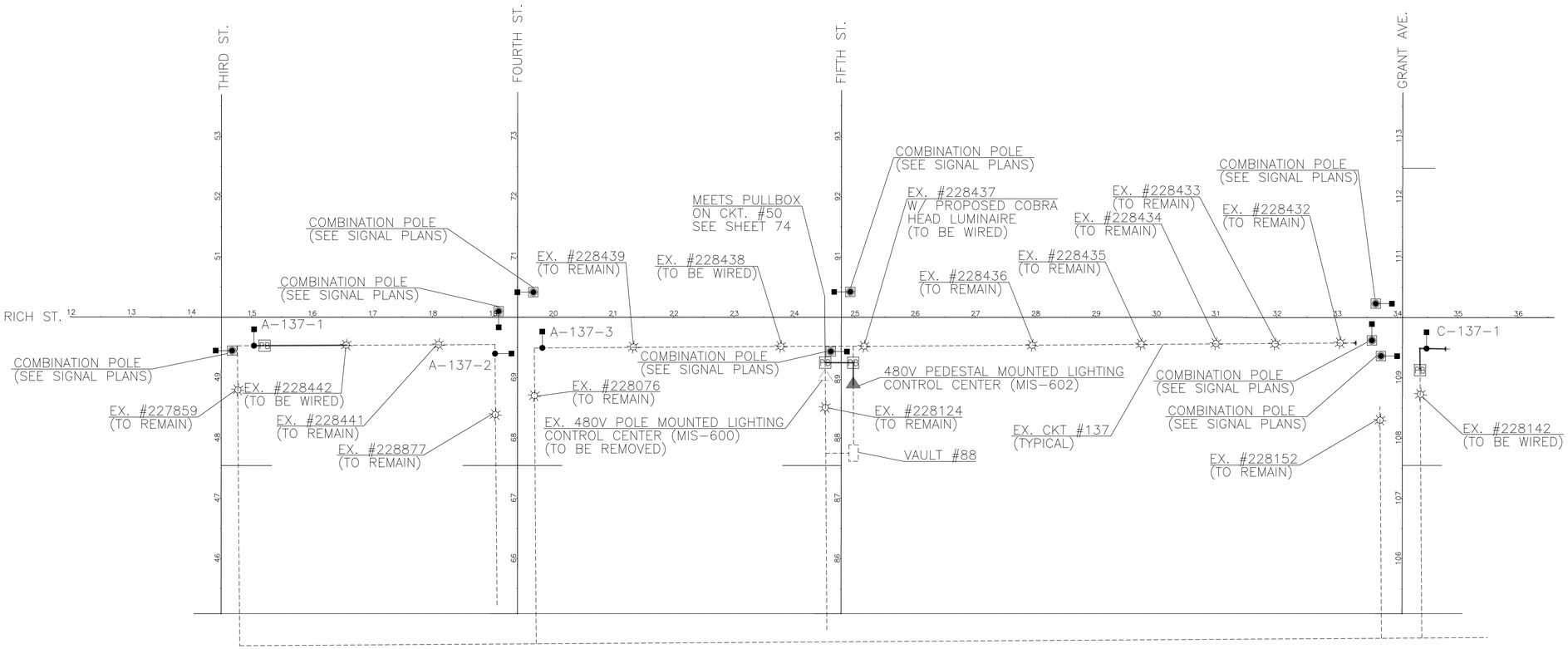
- PB — Proposed Pull Box
- Proposed 2–Wire Circuit
- Proposed Light Pole & Luminaire
- Proposed Combination Pole
- Proposed Lighting Control Center
- Existing Lighting Control Center
- Existing 2–Wire Circuit (To Remain)
- Existing Light Pole & Luminaire
- Existing Roadway Centerline

ELECTRICAL CIRCUIT LOAD CALCULATIONS	
4	PROPOSED 92 W LED TEARDROP LUMINAIRES = 0.77 AMPS
1	PROPOSED 250 W HPS COBRA HEAD LUMINAIRE = 0.52 AMPS
32	EX. 250 W HPS COBRA HEAD LUMINAIRE = 16.67 AMPS
3	EX. 115 W LED COBRA HEAD LUMINAIRE = 0.72 AMPS
8	EX. 250 W HPS SHOE BOX LUMINAIRE = 4.17 AMPS
	NEW TOTAL LOAD = 22.85 AMPS @ 480 VOLTS

LIGHTING CONTROLLER SCHEDULE

CONTROL CENTER	LEG	LUMINAIRE QTY.	APPROX. LOAD WATTS	APPROX. LOAD AMPS	CIRCUIT FUSE	CIRCUIT CABLE SIZE (AWG)	MAINTAINING AGENCY
CONTROLLER # 137 480V PEDESTAL MOUNTED LIGHTING CONTROL CENTER (MIS–602)	A	3	276	0.58	15 A	4	CITY OF COLUMBUS
	B	1	250	0.52	15 A	4	
	C	1	92	0.19	15 A	4	
TOTAL		5	618	1.29			

CIRCUIT SCHEMATIC – #137



CALCULATED MJB
CHECKED DKA

LIGHTING SINGLE LINE DIAGRAM

IMPROVEMENTS OF
E RICH STREET FROM S 3RD ST TO S GRANT AVE
FRA E RICH ST SIGNALS

3921-E

83
95

LEGEND

- Existing Street Light Pole (AS NOTED)
- Existing Lighting Conduit (AS NOTED) w/ Ex. 2-Wire Circuit Cable (AS NOTED)
- Existing Lighting Item (TO BE REMOVED)

Existing Street Light Pole #228048 (TO REMAIN)
STA. 14+24, 51' LT ℄ RICH ST

Existing Lighting Pull Box (TO REMAIN)
STA. 14+18.0, 46.6' LT.

Existing Underground Conduit (TO REMAIN)
w/ Ex. 2 Wire Ckt. #50 (TO REMAIN)

Existing Street Light Pole #228468, (TO REMAIN)
STA. 14+02, 27' LT ℄ RICH ST

Existing Underground Conduit (TO REMAIN)
w/ Ex. 2 Wire Ckt. #50 (TO REMAIN)

Existing Street Light Pole #227858 (TO BE REMOVED)
Existing Street Light Foundation (TO BE REMOVED)
STA. 14+83, 45' LT ℄ RICH ST

Existing Underground Conduit (TO REMAIN)
w/ Ex. 2 Wire Ckt. #50 (TO REMAIN)

Existing Street Light Pole #228467 (TO REMAIN)
STA. 14+72, 30' LT ℄ RICH ST

S. THIRD STREET

E. RICH STREET

Existing Street Light Pole #228445 (TO REMAIN)
STA. 12+85, 28' RT ℄ RICH ST

Existing Underground Conduit (TO REMAIN)
w/ Ex. 2 Wire Ckt. #50 (TO REMAIN)

Existing Combination Traffic/Light Pole #228444
(TO BE REMOVED, SEE SIGNAL PLANS)
STA. 14+11, 25' RT ℄ RICH ST

Existing Underground Conduit (TO BE REMOVED)
w/ Ex. 2 Wire Ckt. #50 (TO BE REMOVED)

Existing Street Light Pole #228050 (TO BE REMOVED)
Existing Street Light Foundation (TO BE REMOVED)
STA. 14+24, 42' RT ℄ RICH ST

Existing Underground Conduit (TO REMAIN)
w/ Ex. 2 Wire Ckt. #50 (TO REMAIN)

Existing Street Light Pole #228051 (TO REMAIN)
STA. 14+21, 93' RT ℄ RICH ST

Existing Underground Conduit (TO REMAIN)
w/ Ex. 2 Wire Ckt. #50 (TO REMAIN)

Existing Street Light Pole #228052 (TO REMAIN)
STA. 14+21, 120' RT ℄ RICH ST

S. THIRD STREET

E. RICH STREET

Existing Street Light Pole #228442, (TO BE WIRED)
STA. 16+56, 30' RT ℄ RICH ST

Existing Underground Conduit (TO REMAIN)
w/ Ex. 2 Wire Ckt. #137 (TO REMAIN)

Existing Underground Conduit (TO BE REMOVED)
w/ Ex. 2 Wire Ckt. #137 (TO BE REMOVED)

Existing Street Light Pole #228443 (TO BE REMOVED)
Existing Street Light Foundation (TO BE REMOVED)
STA. 14+96, 29' RT ℄ RICH ST

Existing Underground Conduit (TO REMAIN)
w/ Ex. 2 Wire Ckt. #137 (TO REMAIN)

Existing Street Light Pole #227859 (TO REMAIN)
STA. 14+79, 124' RT ℄ RICH ST

0 20 40
Horiz 1 inch = 20 feet

CALCULATED MJB
CHECKED DKA

LIGHTING DEMOLITION PLAN
RICH STREET AT THIRD STREET

IMPROVEMENTS OF
E RICH STREET FROM S 3RD ST TO S GRANT AVE
FRA E RICH ST SIGNALS

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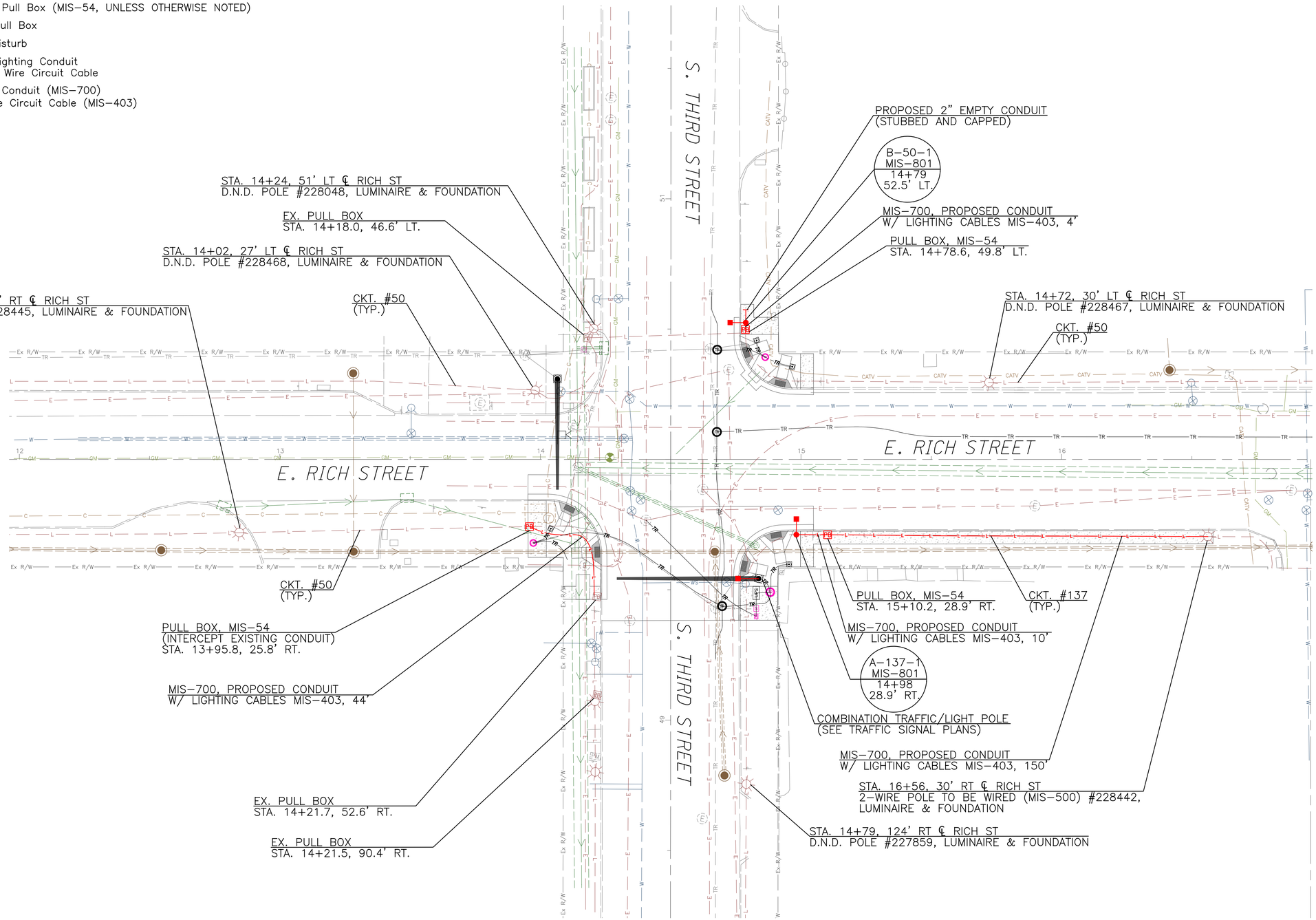
STREET LIGHTING LEGEND

- ☼ Existing Street Light Pole (TO REMAIN)
- Proposed Downtown Pole (MIS–308) w/ LED Teardrop Luminaire (MIS–801)
- Proposed Combination Traffic/Light Pole w/ LED Teardrop Luminaire (MIS–801)
- Proposed Conduit Stub
- PB Proposed Pull Box (MIS–54, UNLESS OTHERWISE NOTED)
- PB Existing Pull Box
- D.N.D Do Not Disturb
- — —L— — Existing Lighting Conduit w/ Ex. 2 Wire Circuit Cable
- ——L—— Proposed Conduit (MIS–700) w/ 2 Wire Circuit Cable (MIS–403)



0 20 40
Horiz 1 Inch = 20 Feet

CALCULATED MJB
CHECKED DKA

LIGHTING PLAN
RICH STREET AT THIRD STREET

IMPROVEMENTS OF
E RICH STREET FROM S 3RD ST TO S GRANT AVE
FRA E RICH ST SIGNALS

3921-E

85
95

LEGEND

- Existing Street Light Pole (AS NOTED)
- Existing Lighting Conduit (AS NOTED) w/ Ex. 2 Wire Circuit Cable (AS NOTED)
- Existing Lighting Item (TO BE REMOVED)

Existing Street Light Pole #227879 (TO REMAIN)
STA. 19+12, 98' LT ℄ RICH ST

Existing Underground Conduit (TO REMAIN)
w/ Ex. 2 Wire Ckt #50 (TO REMAIN)

Existing Lighting Pull Box (TO REMAIN)
STA. 19+12.4, 47.1' LT.

Existing Underground Conduit (TO REMAIN)
w/ Ex. 2 Wire Ckt #50 (TO REMAIN)

Existing Combination Traffic/Light Pole #228465
(TO BE REMOVED, SEE SIGNAL PLANS)
STA. 19+04, 32' LT ℄ RICH ST

Existing Lighting Pull Box (TO BE REMOVED)
STA. 18+90.9, 29.8' LT.

Existing Underground Conduit (TO REMAIN)
w/ Ex. 2 Wire Ckt #50 (TO REMAIN)

Existing Street Light Pole #228078 (TO REMAIN)
STA. 19+71, 147' LT ℄ RICH ST

Existing Underground Conduit (TO REMAIN)
w/ Ex. 2 Wire Ckt #50 (TO REMAIN)

Existing Combination Traffic/Light Pole #228077
(TO BE REMOVED, SEE SIGNAL PLANS)
STA. 19+75, 42' LT ℄ RICH ST

Existing Underground Conduit (TO REMAIN)
w/ Ex. 2 Wire Ckt #50 (TO REMAIN)

Existing Street Light Pole #228464 (TO REMAIN)
STA. 21+06, 32' LT ℄ RICH ST

S. FOURTH STREET

E. RICH STREET

E. RICH STREET

S. FOURTH STREET

Existing Street Light Pole #228441 (TO REMAIN)
STA. 18+15, 29' RT ℄ RICH ST

Existing Underground Conduit (TO REMAIN)
w/ Ex. 2 Wire Ckt #137 (TO REMAIN)

Existing Lighting Pull Box (TO REMAIN)
STA. 18+96.6, 32.2' RT.

Existing Underground Conduit (TO REMAIN)
w/ Ex. 2 Wire Ckt #137 (TO REMAIN)

Existing Street Light Pole #227878 (TO BE REMOVED)
Existing Street Light Foundation (TO BE REMOVED)
STA. 19+16, 45' RT ℄ RICH ST

Existing Underground Conduit (TO REMAIN)
w/ Ex. 2 Wire Ckt #137 (TO REMAIN)

Existing Street Light Pole #227877 (TO REMAIN)
STA. 19+12, 157' RT ℄ RICH ST

Existing Underground Conduit (TO REMAIN)
w/ Ex. 2 Wire Ckt #137 (TO REMAIN)

Existing Lighting Pull Box (TO REMAIN)
STA. 19+71.6, 40.9' RT.

Existing Underground Conduit (TO REMAIN)
w/ Ex. 2 Wire Ckt #137 (TO REMAIN)

Existing Street Light Pole #228076 (TO REMAIN)
STA. 19+70, 125' RT ℄ RICH ST

Existing Street Light Pole #228439 (TO REMAIN)
STA. 21+28, 30' RT ℄ RICH ST

Existing Underground Conduit (TO REMAIN)
w/ Ex. 2 Wire Ckt #137 (TO REMAIN)

Existing Street Light Pole #228440 (TO BE REMOVED)
Existing Street Light Foundation (TO BE REMOVED)
STA. 19+95, 30' RT ℄ RICH ST

N

0 20 40
Horiz 1 inch = 20 Feet

CALCULATED MJB
CHECKED DKA

LIGHTING DEMOLITION PLAN

IMPROVEMENTS OF RICH STREET AT FOURTH STREET

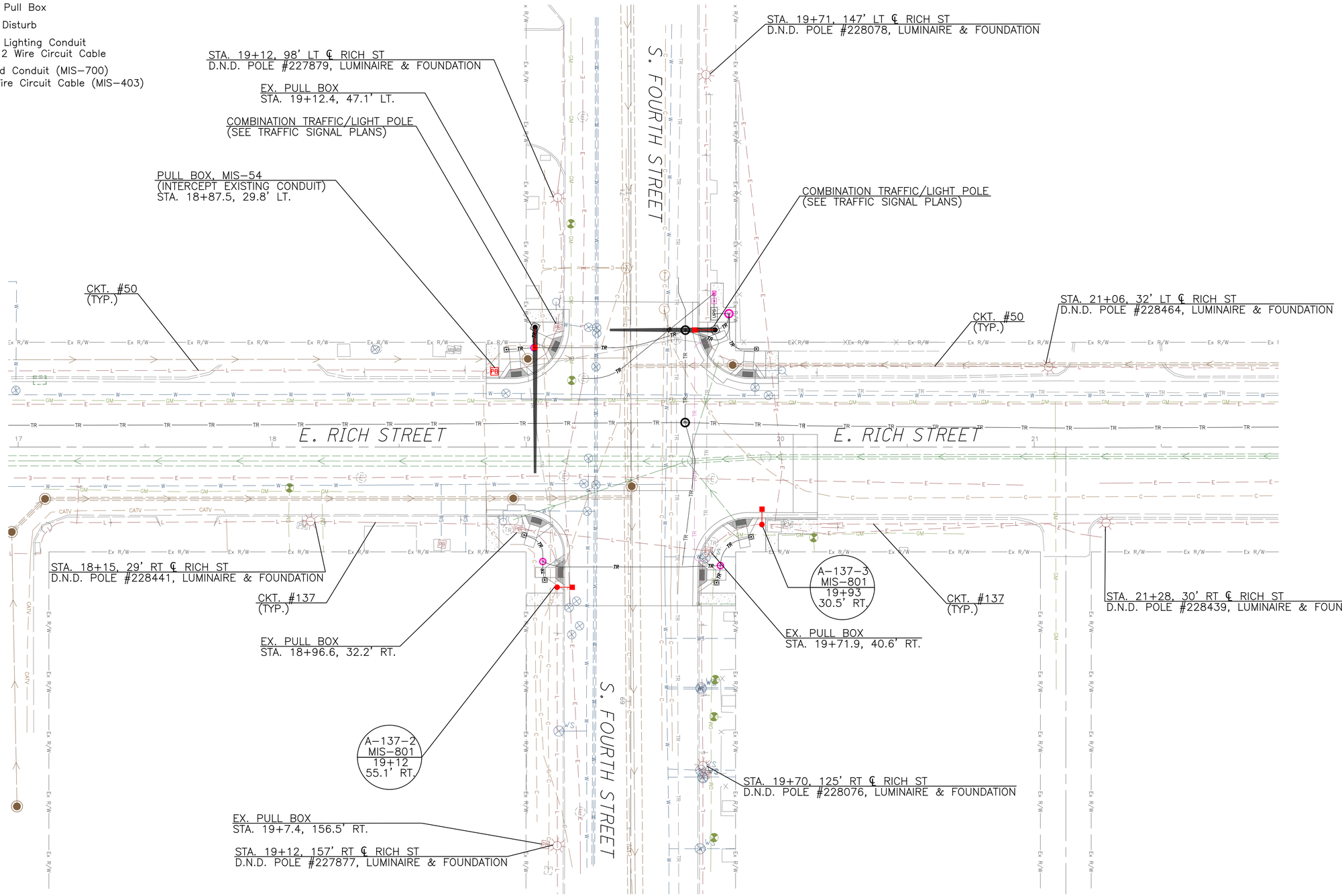
E RICH STREET FROM S 3RD ST TO S GRANT AVE
FRA E RICH ST SIGNALS

3921-E

86
95

STREET LIGHTING LEGEND

- Existing Street Light Pole (TO REMAIN)
- Proposed Downtown Pole (MIS–308) w/ LED Teardrop Luminaire (MIS–801)
- Proposed Combination Traffic/Light Pole w/ LED Teardrop Luminaire (MIS–801)
- PB — Proposed Pull Box (MIS–54, UNLESS OTHERWISE NOTED)
- PB — Existing Pull Box
- D.N.D — Do Not Disturb
- Existing Lighting Conduit w/ Ex. 2 Wire Circuit Cable
- Proposed Conduit (MIS–700) w/ 2 Wire Circuit Cable (MIS–403)



0 20 40
Horiz 1 Inch = 20 Feet

CALCULATED MJB
CHECKED DKA

LIGHTING PLAN
RICH STREET AT FOURTH STREET

IMPROVEMENTS OF
E RICH STREET FROM S 3RD ST TO S GRANT AVE
FRA E RICH ST SIGNALS

3921-E

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LEGEND

- Existing Street Light Pole (AS NOTED)
- Existing Lighting Conduit (AS NOTED) w/ Ex. 2 Wire Circuit Cable (AS NOTED)
- Existing Lighting Item (TO BE REMOVED)

Existing Street Light Pole #228122 (TO REMAIN)
STA. 24+58, 70' LT ℄ RICH ST

Existing Underground Conduit (TO REMAIN)
w/ Ex. 2 Wire Ckt. #50 (TO BE REMOVED)

Existing Street Light Pole #228460, (TO BE REMOVED)
Existing Street Light Foundation (TO BE REMOVED)
STA. 24+38, 31' LT ℄ RICH ST

Existing Underground Conduit (TO REMAIN)
w/ Ex. 2 Wire Ckt. #50 (TO BE REMOVED)

Existing Street Light Pole #228462, (TO REMAIN)
STA. 23+46, 29' LT ℄ RICH ST

Existing Underground Conduit (TO REMAIN)
w/ Ex. 2 Wire Ckt #50 (TO REMAIN)

Existing Lighting Pull Box (TO REMAIN)
STA. 24+98.8, 65.5' LT.

Existing Underground Conduit (TO BE REMOVED TO STA. 25+17)
w/ Ex. 2 Wire Ckt #50 (TO BE REMOVED)

Existing Street Light Pole #228459 (TO BE WIRED)
STA. 25+99, 30' LT ℄ RICH ST

Existing Underground Conduit (TO REMAIN)
w/ Ex. 2 Wire Ckt #137 (TO REMAIN)

Existing Street Light Pole #228437 (TO BE WIRED)
STA. 25+22, 30' RT ℄ RICH ST

Existing Underground Conduit (TO REMAIN)
w/ Ex. 2 Wire Ckt. #137 (TO BE REMOVED)

Existing Lighting Pull Box (TO BE REMOVED)
STA. 25+1.4, 46.6' RT.

Existing Underground Conduit (ABANDON IN PLACE)
w/ Ex. 2 Wire Ckt. #137 (TO BE REMOVED)

Existing Underground Conduit (TO REMAIN TO STA. 25+0.2)
w/ Ex. 2 Wire Ckt. #137 (TO REMAIN TO STA. 25+0.2)
Secondary Feed from Vault #88

Existing Street Light Pole #228436 (TO REMAIN)
STA. 27+94, 30' RT ℄ RICH ST

Existing Street Light Pole #228438 (TO BE WIRED)
STA. 23+72, 30' RT ℄ RICH ST

Existing Underground Conduit (TO BE REMOVED TO STA. 24+58.7)
w/ Ex. 2 Wire Ckt. #50 (TO BE REMOVED TO STA. 24+58.7)

Existing Underground Conduit (TO REMAIN)
w/ Ex. 2 Wire Ckt. #137 (TO BE REMOVED)

Existing Street Light Pole #228123 (TO BE REMOVED)
Existing Street Light Foundation (TO BE REMOVED)
Existing Pole Mounted Controller (TO BE RELOCATED)
STA. 24+62, 58' RT ℄ RICH ST

Existing Underground Conduits (TO REMAIN)
w/ Ex. 2 Wire Ckt. #50 & #137 (TO REMAIN)

Existing Street Light Pole #228124 (TO REMAIN)
STA. 24+59, 250' RT ℄ RICH ST

Existing Underground Conduit (TO REMAIN, PER PLAN)
w/ Ex. 2 Wire Ckt. #137 (TO REMAIN, PER PLAN)

Existing Underground Conduit (TO REMAIN, PER PLAN)
w/ Ex. 2 Wire Ckt. #137 (TO REMAIN, PER PLAN)

Existing Vault #88 (TO REMAIN)
w/ Secondary Lighting Feed – Ckt. #137

S. FIFTH STREET

E. RICH STREET

E. RICH STREET

S. FIFTH STREET

0 20 40
Horiz 1 inch = 20 feet

CALCULATED MJB
CHECKED DKA

LIGHTING DEMOLITION PLAN
RICH STREET AT FIFTH STREET

IMPROVEMENTS OF
E RICH STREET FROM S 3RD ST TO S GRANT AVE
FRA E RICH ST SIGNALS

3921-E

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STREET LIGHTING LEGEND

- Existing Street Light Pole (TO REMAIN)
- Proposed Downtown Pole (MIS-308) w/ LED Teardrop Luminaire (MIS-801)
- Proposed Combination Traffic/Light Pole w/ LED Teardrop Luminaire (MIS-801)
- PB — Proposed Pull Box (MIS-54, UNLESS OTHERWISE NOTED)
- SLC — Proposed Pedestal Mounted, 2-Wire Control Center (MIS-602)
- PB — Existing Pull Box
- D.N.D — Do Not Disturb
- Existing Lighting Conduit w/ Ex. 2 Wire Circuit Cable
- Proposed Conduit (MIS-700) w/ 2 Wire Circuit Cable (MIS-403)

STA. 24+58, 70' LT ℄ RICH ST
D.N.D. POLE #228122, LUMINAIRE & FOUNDATION

PULL BOX, MIS-54
(INTERCEPT EXISTING CONDUIT)
STA. 24+58.7, 48.0' LT.

MIS-700, PROPOSED CONDUIT
W/ LIGHTING CABLES MIS-403, 61'

EX. PULL BOX
SPLICE TO EX. CIRCUIT #50
STA. 24+98.8, 65.5' LT.

MIS-700, PROPOSED CONDUIT
W/ LIGHTING CABLES MIS-403, 51'
(BEGIN AT STA. 25+17)

COMBINATION TRAFFIC/LIGHT POLE
(SEE TRAFFIC SIGNAL PLANS)

PULL BOX, MIS-54
(INTERCEPT EXISTING CONDUIT)
STA. 25+23.1, 29.9' LT.

EXISTING LIGHTING CONDUIT
W/ NEW CIRCUIT CABLES MIS-403, 75'

STA. 23+46, 29' LT ℄ RICH ST
D.N.D. POLE #228462, LUMINAIRE & FOUNDATION

PULL BOX, MIS-54
(INTERCEPT EXISTING CONDUIT)
STA. 24+17.1, 29.5' LT.

CKT. #50
(TYP.)

STA. 25+99, 30' LT ℄ RICH ST
2-WIRE POLE TO BE WIRED (MIS-500) #228459,
LUMINAIRE & FOUNDATION

CKT. #50
(TYP.)

S. FIFTH STREET

E. RICH STREET

STA. 23+72, 30' RT ℄ RICH ST
2-WIRE POLE TO BE WIRED (MIS-500)
LEG A #228438, LUMINAIRE & FOUNDATION

CKT #137
(TYP.)

MIS-700, PROPOSED CONDUIT, CKT #50
W/ LIGHTING CABLES MIS-403, 98'

EXISTING LIGHTING CONDUIT
W/ NEW CIRCUIT CABLES MIS-403, 93'

PULL BOX, MIS-54
W/ (2) SPLICES TO CKT. #137 (LEGS A & C)
W/ (1) SPLICE TO CKT. #50
STA. 24+57.6, 44.9' RT.

COMBINATION TRAFFIC/LIGHT POLE
(SEE TRAFFIC SIGNAL PLANS)

MIS-702, 2-PROPOSED CONDUITS (LEGS A & C)
W/ 2-LIGHTING CABLES MIS-403, 45'

STA. 24+59, 250' RT ℄ RICH ST
D.N.D. POLE #228124, LUMINAIRE & FOUNDATION

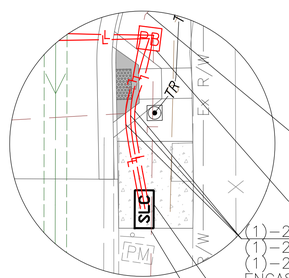
STA. 25+22, 30' RT ℄ RICH ST, POLE #228437
2-WIRE POLE TO BE WIRED, LEG B (MIS-500)
W/ PROPOSED COBRA HEAD LUMINAIRE (MIS-800)

CKT. #137
(TYP.)

STA. 27+94, 30' RT ℄ RICH ST
D.N.D. POLE #228436, LUMINAIRE & FOUNDATION

SEE DETAIL A

EXISTING VAULT #88 (TO REMAIN)
W/ (1) EX. 480V TRANSFORMER #8922 (TO REMAIN)
W/ (1)-2" CONDUIT RISER W/ POWER SERVICE CABLES
W/ SECONDARY LIGHTING FEED – CKT. #137



DETAIL A
Scale: 1" = 10'

EXISTING LIGHTING CONDUIT
W/ NEW CIRCUIT CABLES (LEG B) MIS-403, 40'

PULL BOX, MIS-54 MOD. (17"x30")
STA. 25+1.4, 46.6' RT.
(1)-2" PVC CONDUIT (MIS-700) W/ CIRCUIT 137 LEG A (MIS-403)
(1)-2" PVC CONDUIT (MIS-700) W/ CIRCUIT 137 LEG B (MIS-403)
(1)-2" PVC CONDUIT (MIS-700) W/ CIRCUIT 137 LEG C (MIS-403)
ENCASED IN TRENCH, 23'

PROPOSED LIGHTING CONTROLLER (MIS-602)
(INTERCEPT EXISTING CONDUIT)
STA. 25+0.2, 68.9' RT ℄ RICH ST

EXISTING LIGHTING CONDUIT
W/ NEW CIRCUIT CABLES (MIS-403)
IN TRENCH TO VAULT #88, 165'

N

0 20 40
Horiz 1 inch = 20 feet

CALCULATED MJB
CHECKED DKA

LIGHTING PLAN
RICH STREET AT FIFTH STREET

IMPROVEMENTS OF
E RICH STREET FROM S 3RD ST TO S GRANT AVE
FRA E RICH ST SIGNALS

3921-E

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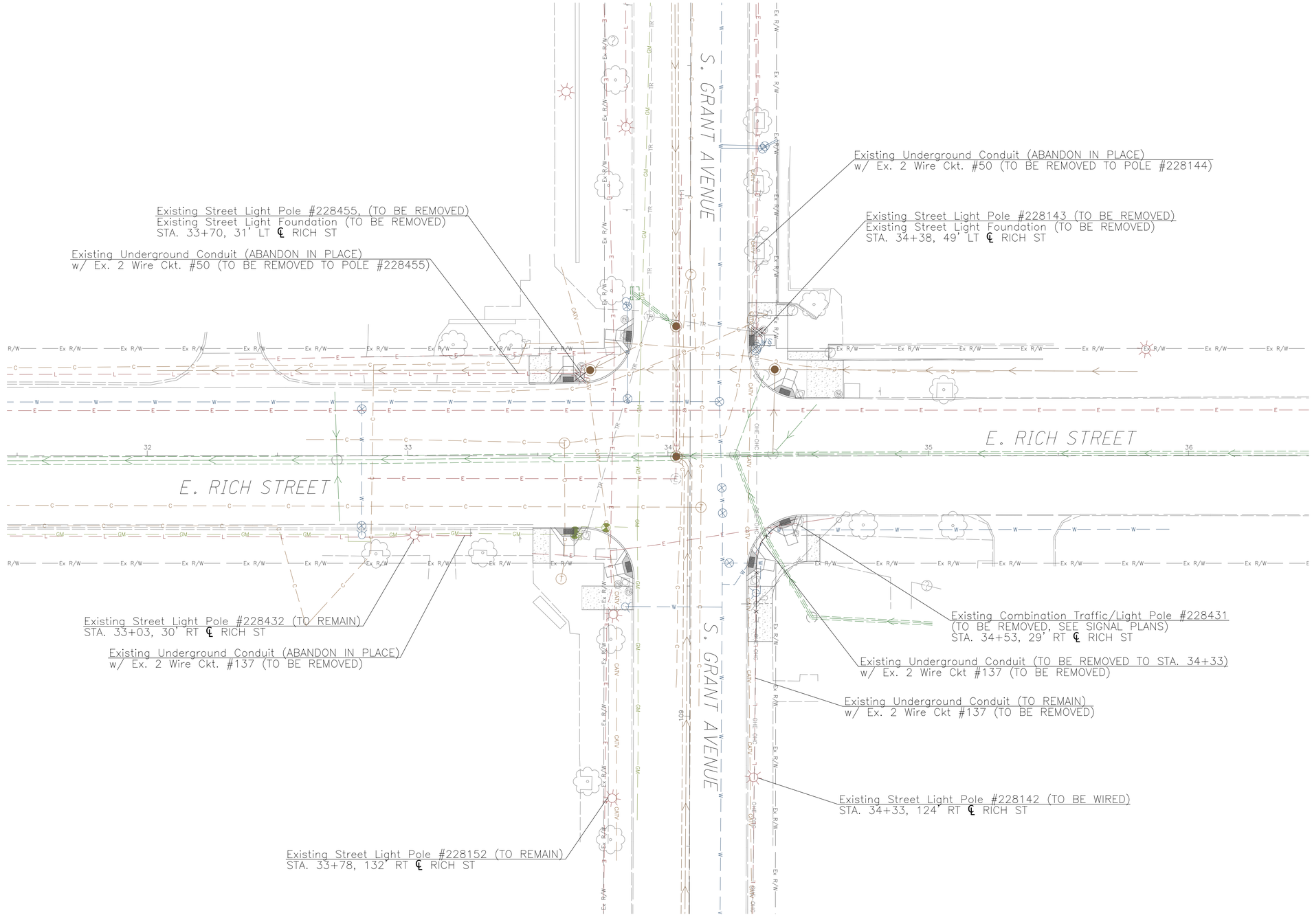
LEGEND

- Existing Street Light Pole (AS NOTED)
- Existing Lighting Conduit (AS NOTED) w/ Ex. 2 Wire Circuit Cable (AS NOTED)
- Existing Lighting Item (TO BE REMOVED)



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Horiz 1 inch = 20 feet

CALCULATED MJB
CHECKED DKA

LIGHTING DEMOLITION PLAN
RICH STREET AT GRANT AVENUE

IMPROVEMENTS OF
E RICH STREET FROM S 3RD ST TO S GRANT AVE
FRA E RICH ST SIGNALS

3921-E

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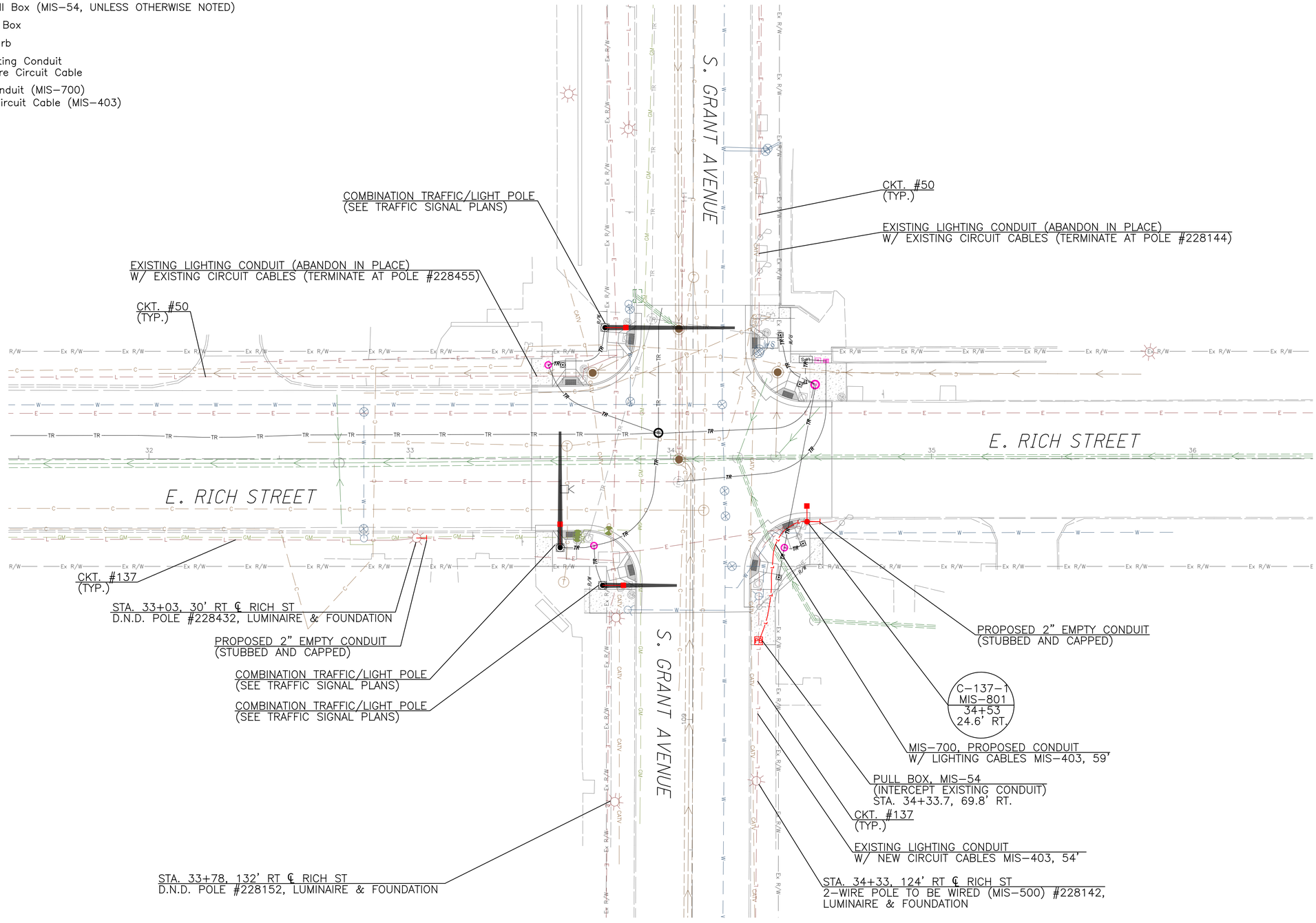
STREET LIGHTING LEGEND

- Existing Street Light Pole (TO REMAIN)
- Proposed Downtown Pole (MIS–308) w/ LED Teardrop Luminaire (MIS–801)
- Proposed Combination Traffic/Light Pole w/ LED Teardrop Luminaire (MIS–801)
- Proposed Conduit Stub
- PB Proposed Pull Box (MIS–54, UNLESS OTHERWISE NOTED)
- PB Existing Pull Box
- D.N.D Do Not Disturb
- Existing Lighting Conduit w/ Ex. 2 Wire Circuit Cable
- Proposed Conduit (MIS–700) w/ 2 Wire Circuit Cable (MIS–403)



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Horiz 1 inch = 20 feet

CALCULATED MJB
CHECKED DKA

LIGHTING PLAN

IMPROVEMENTS OF E RICH STREET FROM S 3RD ST TO S GRANT AVE FRA E RICH ST SIGNALS

3921-E

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LIGHTING STATISTICS							
Description	Roadway Classification	Pedestrian Classification	Average	Max	Min	Max/Min	Avg/Min
Target	Arterial, Downtown	–	2.6 fc	–	–	–	3.0:1
Rich St./Third St. Intersection	Arterial, Downtown	–	2.6 fc	3.6 fc	1.4 fc	2.6 fc	1.9:1
Third St.	Arterial, Downtown	Medium	1.3 fc	–	–	–	3.0:1
Rich St.	Arterial, Downtown	Medium	1.3 fc	–	–	–	3.0:1

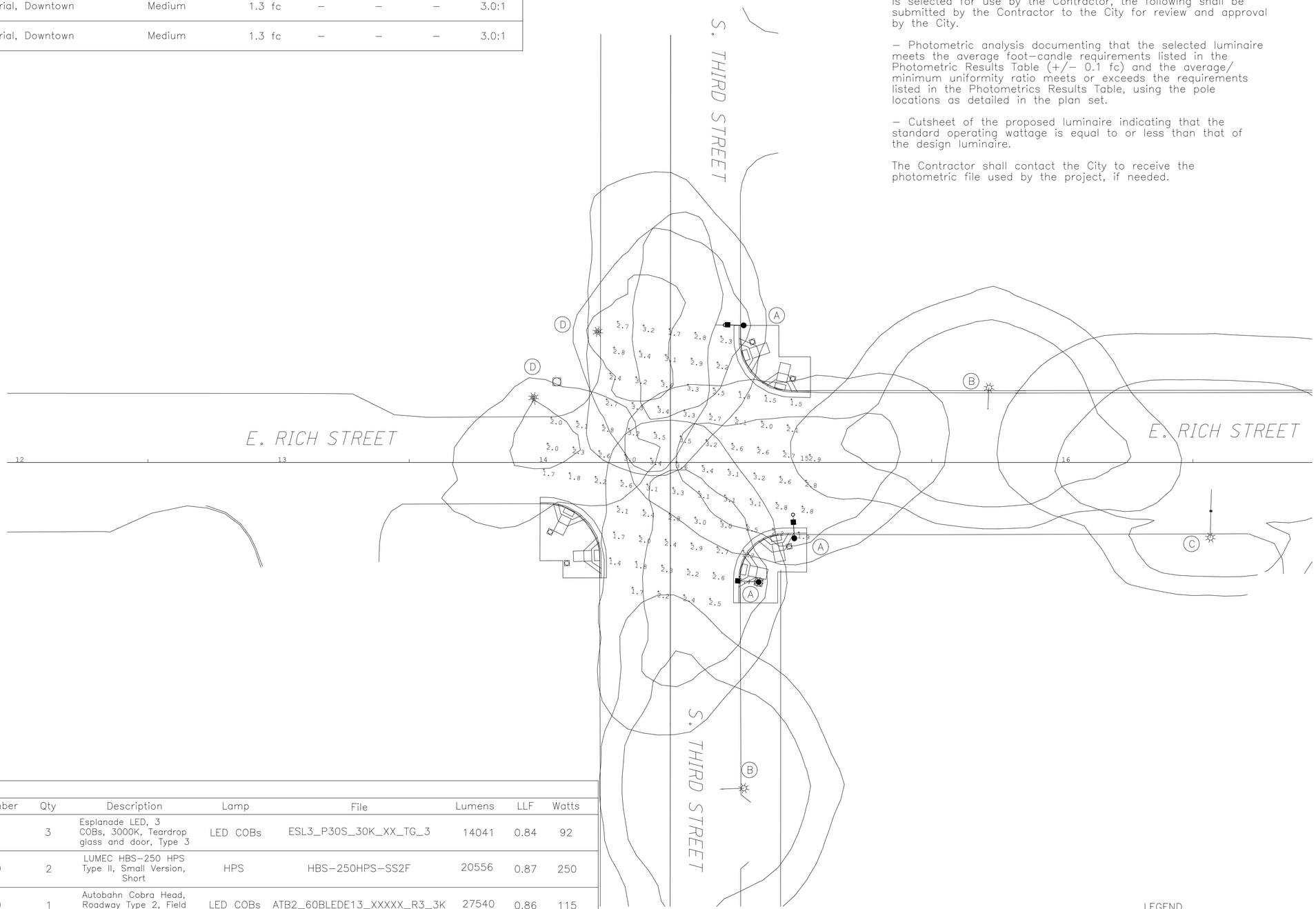
PHOTOMETRIC REQUIREMENTS

Street light pole placement for this project was based on a photometric analysis using Esplanade TG3. The results of this photometric analysis are detailed within on the included photometric plan sheets. If the specified design luminaires are used for the project, no additional documentation from the Contractor is needed. If one of the other manufacturers as permitted by the City of Columbus Standard MIS Specification is selected for use by the Contractor, the following shall be submitted by the Contractor to the City for review and approval by the City.

– Photometric analysis documenting that the selected luminaire meets the average foot–candle requirements listed in the Photometric Results Table (+/– 0.1 fc) and the average/ minimum uniformity ratio meets or exceeds the requirements listed in the Photometrics Results Table, using the pole locations as detailed in the plan set.

– Cutsheet of the proposed luminaire indicating that the standard operating wattage is equal to or less than that of the design luminaire.

The Contractor shall contact the City to receive the photometric file used by the project, if needed.



LUMINAIRE SCHEDULE							
Label	Catalog Number	Qty	Description	Lamp	File	Lumens	LLF	Watts
A	MIS–801	3	Esplanade LED, 3 COBs, 3000K, Teardrop glass and door, Type 3	LED COBs	ESL3_P30S_30K_XX_TG_3	14041	0.84	92
B	MIS–800	2	LUMEC HBS–250 HPS Type II, Small Version, Short	HPS	HBS–250HPS–SS2F	20556	0.87	250
C	MIS–800	1	Autobahn Cobra Head, Roadway Type 2, Field Adjustable	LED COBs	ATB2_60BLEDE13_XXXXX_R3_3K	27540	0.86	115
D	MIS–801	2	Esplanade LED, 2 COBs, 3000K, Teardrop glass and door, Type 3	LED COBs	ESL2_P10S_30K_XX_TG_3	7100	0.84	57

LEGEND

- Existing Light Pole
- Proposed Downtown Pole (MIS–308) w/ LED Teardrop Luminaire (MIS–801)
- Proposed Combination Traffic/Light Pole

0 20 40
Horiz 1 inch = 20 feet

CALCULATED MJB
CHECKED DKA

LIGHTING PLAN PHOTOMETRICS
RICH STREET AT THIRD STREET

IMPROVEMENTS OF
E RICH STREET FROM S 3RD ST TO S GRANT AVE
FRA E RICH ST SIGNALS

3921-E

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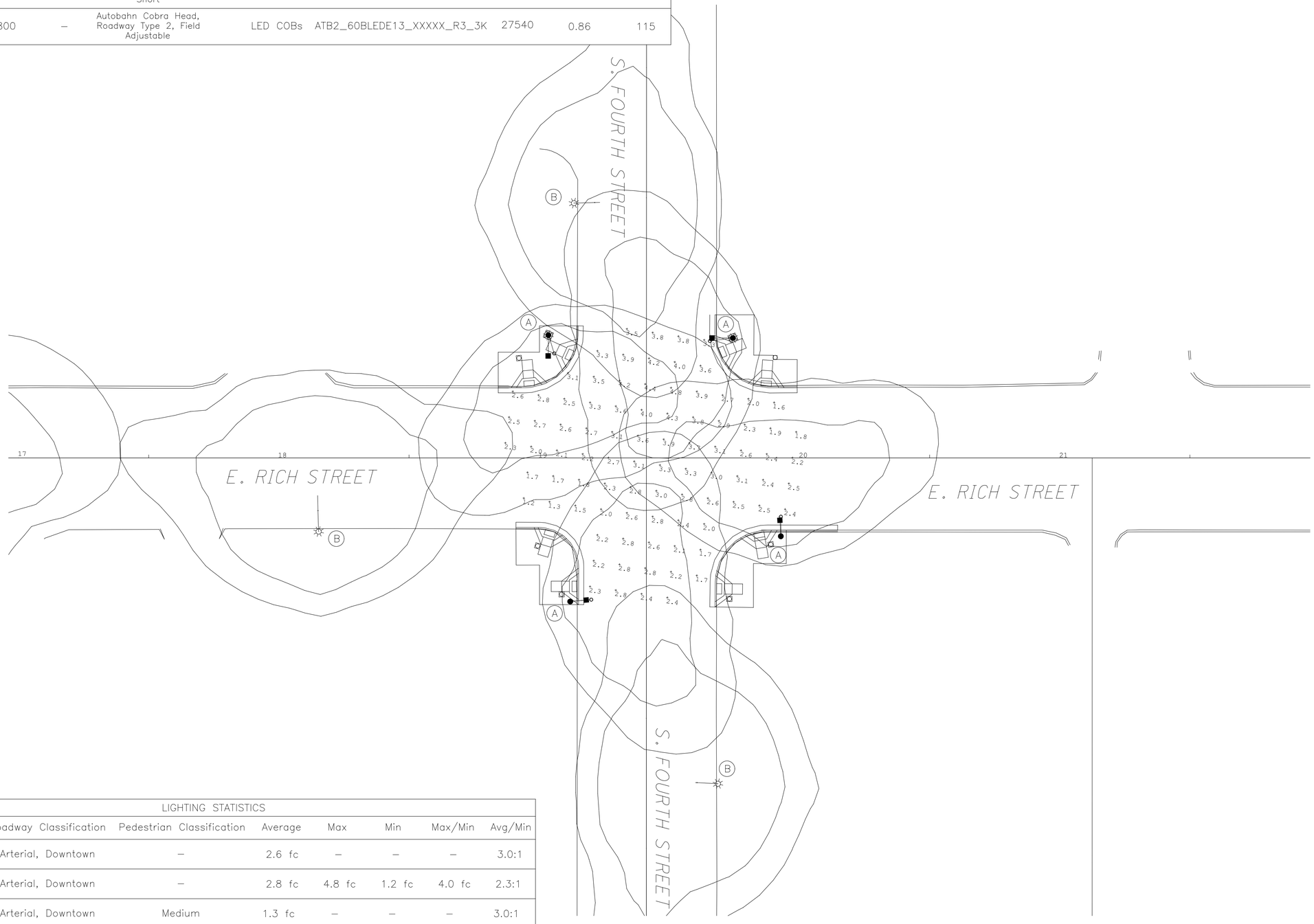
LUMINAIRE SCHEDULE							
Label	Catalog Number	Qty	Description	Lamp	File	Lumens	LLF	Watts
A	MIS–801	4	Esplanade LED, 3 COBs, 3000K, Teardrop glass and door, Type 3	LED COBs	ESL3_P30S_30K_XX_TG_3	14041	0.84	92
B	MIS–800	3	LUMEC HBS–250 HPS Type II, Small Version, Short	HPS	HBS–250HPS–SS2F	20556	0.87	250
C	MIS–800	–	Autobahn Cobra Head, Roadway Type 2, Field Adjustable	LED COBs	ATB2_60BLEDE13_XXXXX_R3_3K	27540	0.86	115

LEGEND

- Existing Light Pole
- Proposed Downtown Pole (MIS–308) w/ LED Teardrop Luminaire (MIS–801)
- Proposed Combination Traffic/Light Pole



LIGHTING STATISTICS							
Description	Roadway Classification	Pedestrian Classification	Average	Max	Min	Max/Min	Avg/Min
Target	Arterial, Downtown	–	2.6 fc	–	–	–	3.0:1
Rich St./Fourth St. Intersection	Arterial, Downtown	–	2.8 fc	4.8 fc	1.2 fc	4.0 fc	2.3:1
Fourth St.	Arterial, Downtown	Medium	1.3 fc	–	–	–	3.0:1
Rich St.	Arterial, Downtown	Medium	1.3 fc	–	–	–	3.0:1

0 20 40
Horiz 1 inch = 20 feet

CALCULATED MJB
CHECKED DKA

LIGHTING PLAN PHOTOMETRICS
RICH STREET AT FOURTH STREET

IMPROVEMENTS OF
E RICH STREET FROM S 3RD ST TO S GRANT AVE
FRA E RICH ST SIGNALS

3921-E

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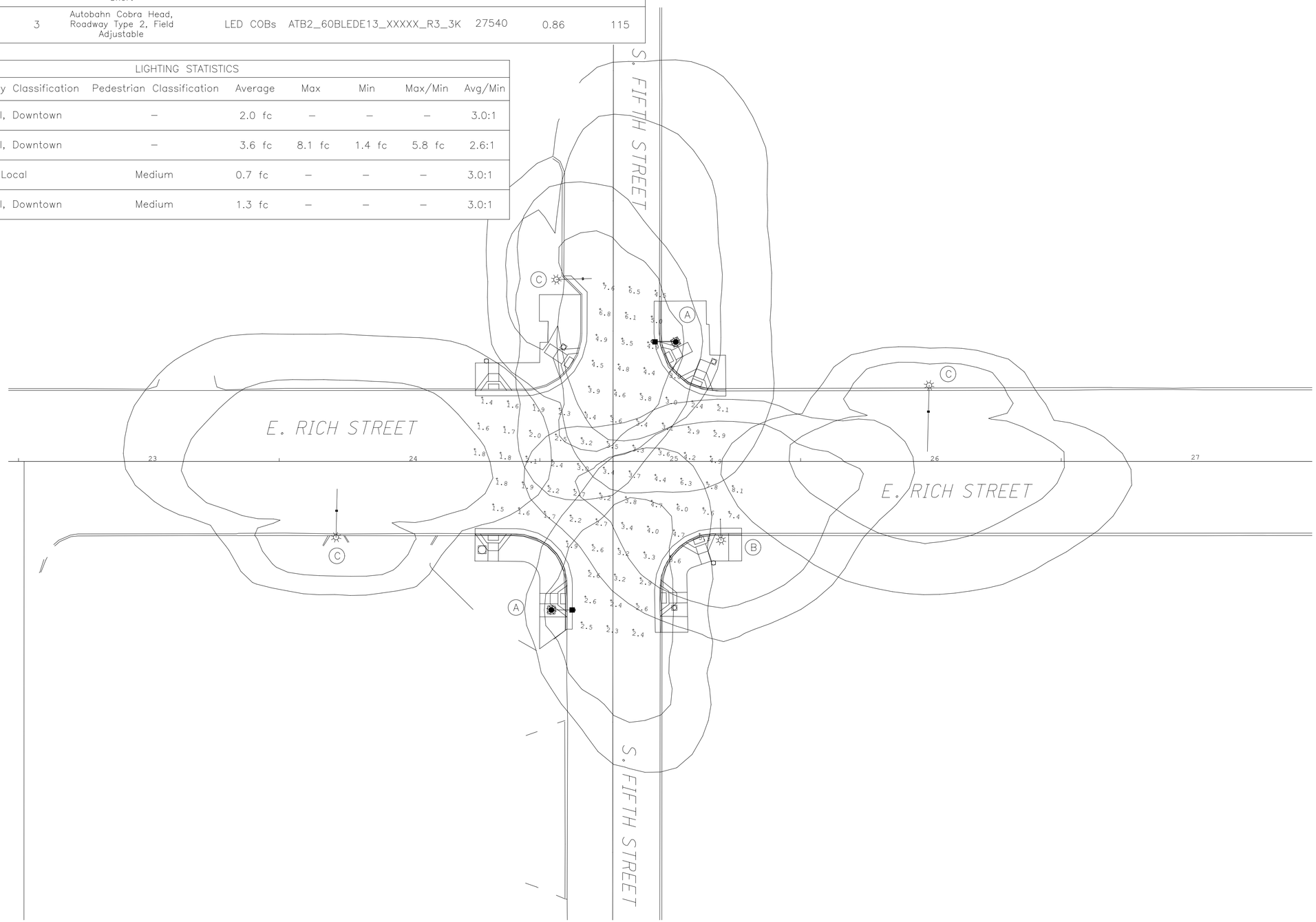
LUMINAIRE SCHEDULE							
Label	Catalog Number	Qty	Description	Lamp	File	Lumens	LLF	Watts
A	MIS–801	2	Esplanade LED, 3 COBs, 3000K, Teardrop glass and door, Type 3	LED COBs	ESL3_P30S_30K_XX_TG_3	14041	0.84	92
B	MIS–800	1	LUMEC HBS–250 HPS Type II, Small Version, Short	HPS	HBS–250HPS–SS2F	20556	0.87	250
C	MIS–800	3	Autobahn Cobra Head, Roadway Type 2, Field Adjustable	LED COBs	ATB2_60BLEDE13_XXXXX_R3_3K	27540	0.86	115

LIGHTING STATISTICS							
Description	Roadway Classification	Pedestrian Classification	Average	Max	Min	Max/Min	Avg/Min
Target	Arterial, Downtown	–	2.0 fc	–	–	–	3.0:1
Rich St./Fifth St. Intersection	Arterial, Downtown	–	3.6 fc	8.1 fc	1.4 fc	5.8 fc	2.6:1
Fifth St.	Local	Medium	0.7 fc	–	–	–	3.0:1
Rich St.	Arterial, Downtown	Medium	1.3 fc	–	–	–	3.0:1

LEGEND

- Existing Light Pole
- Proposed Downtown Pole (MIS–308) w/ LED Teardrop Luminaire (MIS–801)
- Proposed Combination Traffic/Light Pole



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Horiz 1 inch = 20 Feet

CALCULATED MJB
CHECKED DKA

LIGHTING PLAN PHOTOMETRICS
RICH STREET AT FIFTH STREET

IMPROVEMENTS OF
E RICH STREET FROM S 3RD ST TO S GRANT AVE
FRA E RICH ST SIGNALS

3921-E

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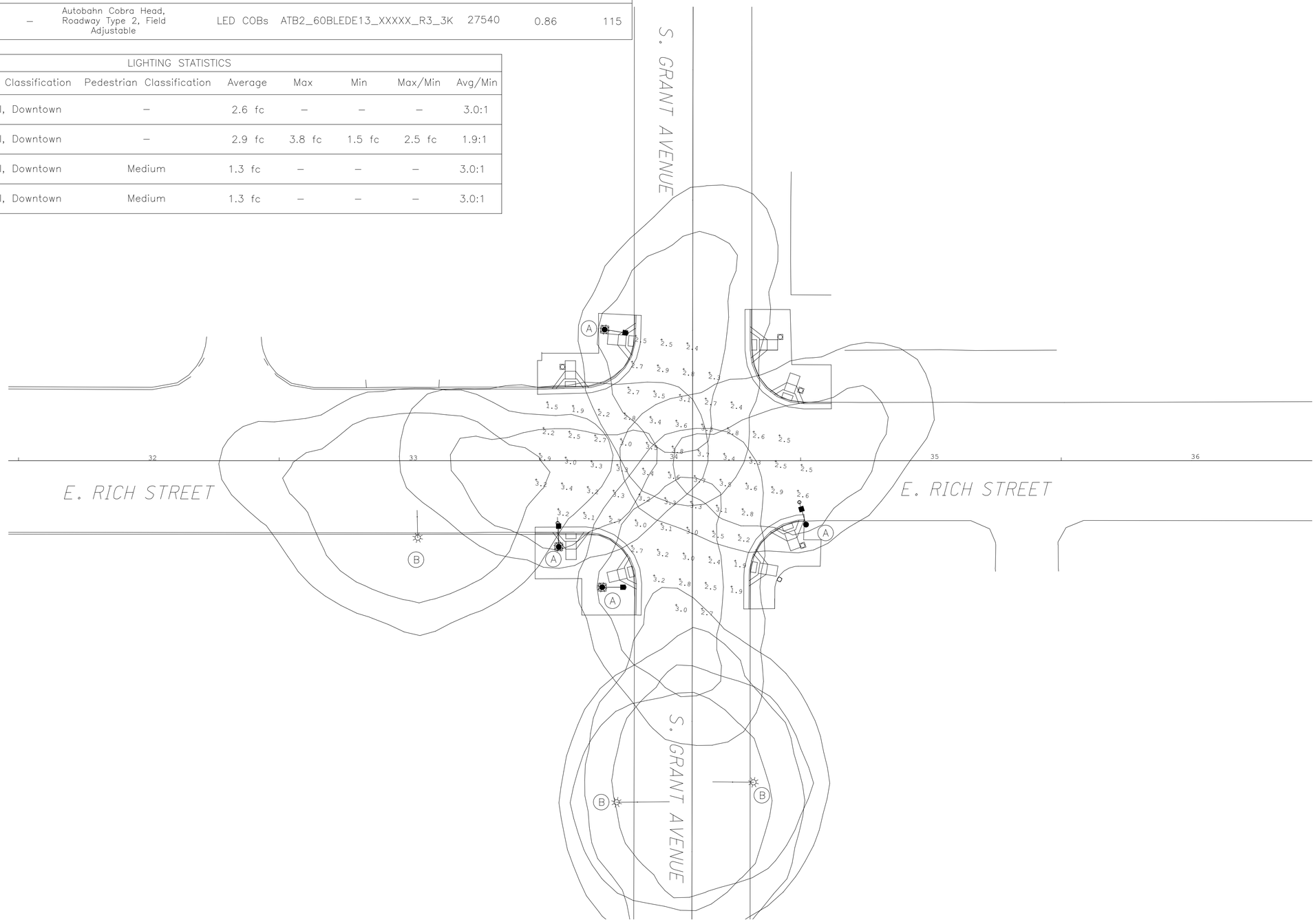
LUMINAIRE SCHEDULE								
Label	Catalog Number	Qty	Description	Lamp	File	Lumens	LLF	Watts
A	MIS–801	4	Esplanade LED, 3 COBs, 3000K, Teardrop glass and door, Type 3	LED COBs	ESL3_P30S_30K_XX_TG_3	14041	0.84	92
B	MIS–800	3	LUMEC HBS–250 HPS Type II, Small Version, Short	HPS	HBS–250HPS–SS2F	20556	0.87	250
C	MIS–800	–	Autobahn Cobra Head, Roadway Type 2, Field Adjustable	LED COBs	ATB2_60BLEDE13_XXXXX_R3_3K	27540	0.86	115

LIGHTING STATISTICS							
Description	Roadway Classification	Pedestrian Classification	Average	Max	Min	Max/Min	Avg/Min
Target	Arterial, Downtown	–	2.6 fc	–	–	–	3.0:1
Rich St./Grant Ave. Intersection	Arterial, Downtown	–	2.9 fc	3.8 fc	1.5 fc	2.5 fc	1.9:1
Grant Ave.	Arterial, Downtown	Medium	1.3 fc	–	–	–	3.0:1
Rich St.	Arterial, Downtown	Medium	1.3 fc	–	–	–	3.0:1

LEGEND

- Existing Light Pole
- Proposed Downtown Pole (MIS–308) w/ LED Teardrop Luminaire (MIS–801)
- Proposed Combination Traffic/Light Pole



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Horiz 1 inch = 20 Feet

CALCULATED MJB
CHECKED DKA

LIGHTING PLAN PHOTOMETRICS
RICH STREET AT GRANT AVENUE

IMPROVEMENTS OF
E RICH STREET FROM S 3RD ST TO S GRANT AVE
FRA E RICH ST SIGNALS

3921-E

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