
CENTRAL
FLORIDA
EXPRESSWAY
AUTHORITY

*SIGNAL DESIGN
DETAILS*

FOR DESIGN AND CONSTRUCTION ON THE CFX SYSTEM

MARCH 2025

CENTRAL FLORIDA EXPRESSWAY AUTHORITY
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SIGNALIZATION GENERAL NOTES

1.

THE SIGNALIZATION PLANS HAVE BEEN PREPARED IN ACCORDANCE WITH THE FLORIDA DEPARTMENT OF TRANSPORTATION'S STANDARD PLANS, LATEST EDITION. GOVERNING SPECIFICATIONS ARE THE STATE OF FLORIDA, LATEST EDITION OF STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, APPICABLE AGENCY SPECIFICATIONS, AND SUPPLEMENTS THERETO IF NOTED IN THE SPECIAL PROVISIONS FOR THIS PROJECT.
2.

THESE PLANS REFLECT CONDITIONS KNOWN DURING PLAN DEVELOPMENT. IN THE EVENT ACTUAL PHYSICAL CONDITIONS PREVENT THE APPLICATION OR THE PROGRESSION OF ANY WORK SPECIFIED, NOTIFY THE CEI ENGINEER IMMEDIATELY.
3.

JUST PRIOR TO THE FINAL WALKTHROUGH OF THE PROJECT, FURNISH THE MAINTAINING AGENCY AND CEI ENGINEER EACH ONE (1) COPY OF EQUIPMENT WARRANTY DOCUMENTS, ONE (1) HARD COPY AND ONE (1) ELECTRONIC (PDF) COPY OF MAINTENANCE MANUALS, AND THREE (3) COMPLETE SETS OF AS-BUILT PLANS. ONE SET MUST BE LEFT IN THE CABINET. IN ADDITION, FURNISH A COMPLETED TRACEABILITY MATRIX FOR ANY ATMS/ITS EQUIPMENT.
4.

HAVE AN IMSA LEVEL 2 CERTIFIED TECHNICIAN ON CALL WITH A MAXIMUM OF TWO (2) HOURS RESPONSE TIME. PROVIDE A 24-HOUR TELEPHONE NUMBER TO THE SIGNAL MAINTAINING AGENCY AND CEI ENGINEER PRIOR TO ANY SIGNAL CONSTRUCTION. ONCE NOTIFIED OF AN EMERGENCY SIGNAL TROUBLE CALL, AND THE TECHNICIAN HAS NOT RESPONDED WITHIN THE SPECIFIED TWO (2) HOURS, THE MAINTAINING AGENCY RESERVES THE RIGHT TO RESPOND TO THE CALL. IF THE MAINTAINING AGENCY RESPONDS TO AN EMERGENCY SIGNAL TROUBLE CALL DUE TO LACK OF RESPONSE BY THE CONTRACTOR WITHIN THE SPECIFIED TIME PERIOD, THE PRIME CONTRACTOR OF THE PROJECT COULD BE BACK CHARGED ACCORDING TO THE MAINTAINING AGENCY'S POLICY.
5.

NOTIFY THE CEI ENGINEER, THE MAINTAINING AGENCY, AND IF APPLICABLE FDOT, AT LEAST 72 HOURS BEFORE BEGINNING ANY RELATED TRAFFIC SIGNAL WORK. OBTAIN ALL CONSTRUCTION PERMITS REQUIRED FOR ALL APPLICABLE CITIES, COUNTIES, AGENCIES, AND FDOT. APPROVAL OF PLANS BY ANY MAINTAINING AGENCY DOES NOT CONSTITUTE A PERMIT.
6.

EQUIPMENT WARRANTY MUST BE ONE YEAR, MANUFACTURER'S PROVIDED OR PER FDOT STANDARD SPECIFICATIONS (LATEST EDITION), WHICHEVER IS GREATER.
7.

PROVIDE THE CEI ENGINEER AN UPDATED CONSTRUCTION SCHEDULE IN THE FORM OF A TWO WEEK LOOK AHEAD ON A WEEKLY BASIS.
8.

ALL EXISTING SIGNALIZATION EQUIPMENT THAT IS TO REMAIN THROUGHOUT CONSTRUCTION IS ASSUMED TO BE IN GOOD WORKING ORDER AT PROJECT KICKOFF UNLESS CFX AND THE MAINTAINING AGENCY ARE NOTIFIED IN WRITING PRIOR TO THE START OF CONSTRUCTION. ANY DAMAGE TO THE SIGNAL EQUIPMENT AFTER BEGINNING CONSTRUCTION MUST BE REPAIRED AT THE CONTRACTOR'S EXPENSE. USE EXISTING SIGNALIZATION FOR THE MAINTENANCE OF TRAFFIC AS REQUIRED. THE CONTRACTOR IS RESPONSIBLE FOR THE MAINTENANCE OF SIGNALS, INCLUDING LOCATING AND PROTECTING TRAFFIC COMMUNICATIONS INFRASTRUCTURE, FROM THE NOTICE TO PROCEED DATE UNTIL THE MAINTAINING AGENCY ISSUES CONDITIONAL ACCEPTANCE AT FINAL INSPECTION.
9.

UNLESS OTHERWISE NOTED, ALL REMOVED EQUIPMENT EXCEPT CONCRETE POLES MUST BE DELIVERED TO THE MAINTAINING AGENCY. COORDINATE WITH THE CEI ENGINEER FOR THE APPROPRIATE MAINTAINING AGENCY:
MR. ALLEN LASHIER (CONTROL SPECIALISTS) - CFX MAINTENANCE CONTRACTOR
707 NICOLET AVE, SUITE 100
WINTER PARK, FL 32789
321-431-7098
ALASHIER@CONTROLSPECIALISTS.COM

CITY OF ORLANDO TRANSPORTATION DEPARTMENT
TRANSPORTATION ENGINEERING DIVISION, TRAFFIC SIGNAL SECTION
1214 S. WESTMORELAND DR
ORLANDO, FL 32805
(407) 246-2617 (MAIN)
(407) 246-3699 (FAX)
ORLANDO_TRAFFIC_SIGNAL_CONSTRUCTION@CITYOFORLANDO.NET

LAKE COUNTY TRAFFIC OPERATIONS
28127 C.R. 561
TAVARES, FL
(352) 742-1766

ORANGE COUNTY TRAFFIC OPERATIONS
4200 SOUTH JOHN YOUNG PARKWAY
ORLANDO, FLORIDA 32839-9205
(407) 836-7890
OSCEOLA COUNTY TRANSPORTATION AND TRANSIT
KEVIN KRUG
(407) 738-9405
KEVIN.KRUG@OSCEOLA.ORG
10.

OTHER PROJECTS MAY BE UNDER CONSTRUCTION WITHIN OR ADJACENT TO THIS PROJECT'S LIMITS AND COORDINATION OF CONSTRUCTION ACTIVITIES AND TRAFFIC CONTROL PHASES WITH ANY CONTRACTOR WITHIN OR ADJACENT TO THE PROJECT LIMITS IS REQUIRED.
11.

NOTHING IN THE GENERAL NOTES OR SPECIAL PROVISIONS WILL RELIEVE THE CONTRACTOR FROM THEIR RESPONSIBILITIES TOWARD THE SAFETY OF THE GENERAL PUBLIC.
12.

THE LOCATION OF ALL PROPOSED EQUIPMENT TO BE INSTALLED MUST BE CONSIDERED APPROXIMATE. OFFSETS TO CABINETS, PULL BOXES, POLES, FOUNDATIONS AND OTHER TRAFFIC ELEMENTS ARE TO THE CLOSEST EDGE OF THOSE ITEMS, UNLESS OTHERWISE NOTED. PROPOSED LOCATIONS AND CLEARANCES MUST BE FIELD VERIFIED BY THE CONTRACTOR PRIOR TO BEGINNING CONSTRUCTION. FIELD ADJUSTMENT OF ALL PROPOSED EQUIPMENT MUST BE APPROVED BY THE CEI ENGINEER AND THE MAINTAINING AGENCY IN WRITING.

INSPECTIONS

1.

ALL INSPECTIONS AND REQUIRED TESTING ARE TO BE SCHEDULED IN ACCORDANCE WITH CONTRACT DOCUMENTS. THE CEI ENGINEER, CFX AND THE MAINTAINING AGENCY MUST BE CONTACTED FOURTEEN DAYS BEFORE INSPECTIONS ARE TO BE PREFORMED SO THEY MAY BE PRESENT. IF RE-INSPECTIONS ARE REQUIRED DUE TO CONTRACTOR'S LACK OF PREPAREDNESS, THE CONTRACTOR WILL BE BACK CHARGED FOR THE RE-INSPECTION FEES. A TURN-ON INSPECTION IS REQUIRED, AND THE CONTRACTOR MUST NOTIFY THE MAINTAINING AGENCY AT LEAST 72 HOURS IN ADVANCE. PROVIDE ALL NECESSARY EQUIPMENT INCLUDING A TWO-MAN BUCKET TRUCK OR PLATFORM LIFT TRUCK FOR USE BY THE CEI ENGINEER AND MAINTENANCE.

SUBMITTALS

1.

APPROVED SHOP DRAWINGS MUST BE AVAILABLE AT THE PROJECT SITE AT ALL TIMES AND STORED WITHIN THE TRAFFIC SIGNAL CABINET ONCE INSTALLED.

SURVEY

1.

THERE MAY BE ADDITIONAL EASEMENTS, RIGHT-OF-WAY, OR OTHER RESTRICTIONS THAT ARE NOT SHOWN ON THIS SURVEY THAT MAY BE FOUND IN THE PUBLIC RECORDS OF THE MAINTAINING AGENCY.
2.

SCHEDULE A MEETING WITH CFX, THE CEI ENGINEER, MAINTAINING AGENCY AND ANY OTHER STAKEHOLDERS AT LEAST TWO WEEKS PRIOR TO THE CONSTRUCTION OF FOUNDATIONS, PEDESTAL POLES, A.D.A. RAMPS, SIGNAL CABINETS AND ALL OTHER RELEVANT TRAFFIC SIGNAL INFRASTRUCTURE TO CONFIRM THEIR ASSOCIATED STAKEOUT LOCATIONS.

UTILITIES

1.

NOTIFY UTILITY OWNERS THROUGH SUNSHINE ONE CALL OF FLORIDA, INC., (800) 432-4770, AND UTILITY OWNERS LISTED BELOW TWO BUSINESS DAYS IN ADVANCE OF BEGINNING CONSTRUCTION ON THE JOB SITE. A CONTRACTOR'S REPRESENTATIVE MUST BE PRESENT WHEN THE UTILITY COMPANY LOCATES THEIR FACILITIES. THE LOCATION OF EXISTING UTILITIES MUST BE DETERMINED BY THE CONTRACTOR AND THE UTILITY REPRESENTATIVE WHEN NECESSARY DURING CONSTRUCTION.
UTILITY CONTACTS:

UTILITY AGENCY/OWNER

CONTACT PERSON (PHONE #)

UTILITY AGENCY/OWNER

CONTACT PERSON (PHONE #)

UTILITY AGENCY/OWNER

CONTACT PERSON (PHONE #)

ETC
2.

NOTIFY ALL UTILITIES AT LEAST 48 HOURS IN ADVANCE OF ANY OPERATION THAT MAY CONFLICT WITH OVERHEAD OR UNDERGROUND UTILITIES, INCLUDING POLE SETTING OPERATIONS WHERE A CONFLICT WITH OVERHEAD ELECTRICAL CONDUCTORS IS EXPECTED, AND IN ANY CIRCUMSTANCES WHERE JOINT USE POLES ARE IMPACTED.
3.

THE PRESENCE OF OVERHEAD AND UNDERGROUND ELECTRIC UTILITY LINES NEAR THE LOCATIONS OF THE PROPOSED SIGNAL EQUIPMENT MAY LIMIT THE TYPE OF EQUIPMENT THAT CAN BE USED IN CONSTRUCTION. COORDINATE WITH POWER COMPANY TO DEACTIVATE OR PROTECT LINES IF NECESSARY.
4.

USE EXTREME CAUTION WHEN EXCAVATING, INSTALLING, BACKFILLING AND COMPACTING AROUND EXISTING UTILITIES.
5.

USE SOFT DIGGING METHODS WHEN WORKING NEAR EXISTING UTILITIES, THE FIRST FOUR FEET OF FOUNDATIONS, OR WHERE SPECIFIED ON THE PLANS. THIS WORK IS INCIDENTAL TO THE ASSOCIATED PAY ITEM.

MAINTENANCE OF TRAFFIC SIGNAL EQUIPMENT

1.

WORK REQUIRING A LANE CLOSURE MUST HAVE AN OFF-DUTY LAW ENFORCEMENT OFFICER PRESENT. THE COST OF THE OFF-DUTY LAW ENFORCEMENT OFFICER MUST BE INCIDENTAL TO THE WORK AND WILL NOT BE PAID SEPARATELY.
2.

DURING THE TIME THE CONTRACTOR IS RESTORING ALL MALFUNCTIONING TRAFFIC SIGNAL EQUIPMENT, THE CONTRACTOR MUST PROVIDE, AT THEIR EXPENSE, TEMPORARY TRAFFIC CONTROL DEVICES, FLAGGER PERSONNEL, AND LAW ENFORCEMENT PERSONNEL, AS REQUIRED BY THE TEMPORARY TRAFFIC CONTROL PLANS AND FDOT STANDARD PLANS, TO MAINTAIN A SAFE AND EFFICIENT FLOW OF TRAFFIC.
3.

EXISTING COMMUNICATIONS, DETECTION AND OPERATIONS MUST BE MAINTAINED AT ALL LOCATIONS DURING CONSTRUCTION. THIS INCLUDES RAILROAD FLASHING BEACONS, RAILROAD PREEMPTION, FIRE PREEMPTION, SCHOOL ZONE FLASHERS, ILLUMINATED STREET NAME SIGNS. PROVIDE TEMPORARY LINES AND CONNECTIONS AS NECESSARY. THIS COST OF MAINTAINING THE SIGNAL AND ITS COMMUNICATION, INCLUDING TEMPORARY LINES AND CONNECTIONS, MUST BE INCIDENTAL TO THE MAINTENANCE OF TRAFFIC PAY ITEM NUMBER. ALL REPORTED MALFUNCTIONS OF THE COMMUNICATIONS SYSTEM MUST BE RESPONDED TO BY THE CONTRACTOR WITHIN TWO HOURS, MUST BE REPAIRED WITHIN 24 HOURS, AND MUST BE DOCUMENTED VIA EMAIL AND THE CEI MUST BE INCLUDED.
4.

NOTIFY CFX, THE CEI ENGINEER, MAINTAINING AGENCY, ANY OTHER IMPACTED AGENCIES AND THE D5 REGIONAL TRAFFIC MANAGEMENT CENTER (RTMC) AT LEAST 48 HOURS PRIOR TO ANY PLANNED COMMUNICATIONS DISRUPTION TO THE TRAFFIC SIGNAL(S). ALL COMMUNICATIONS CUTOVERS MUST BE PRE-APPROVED BY CFX, THE MAINTAINING AGENCY AND ANY OTHER IMPACTED AGENCIES, PERFORMED DURING OFF-PEAK HOURS, AND COMPLETED IN AN EXPEDIENT MANNER.

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MAINTENANCE OF TRAFFIC

1.

SUBMIT A TRAFFIC CONTROL PLAN TO THE CEI ENGINEER AND CFX FOR APPROVAL WHICH CONSISTS OF UNMODIFIED FDOT STANDARD PLANS (102-600 SERIES); OTHERWISE PROVIDE A TRAFFIC CONTROL PLAN WHICH IS SIGNED AND SEALED BY A PROFESSIONAL ENGINEER, REGISTERED IN THE STATE OF FLORIDA. ONCE APPROVED BY THE CEI ENGINEER AND CFX, THE TRAFFIC CONTROL PLAN MUST BE IN PLACE PRIOR TO THE COMMENCEMENT OF CONSTRUCTION ACTIVITIES. ALL COSTS ASSOCIATED WITH THE MAINTENANCE OF TRAFFIC MUST BE INCLUDED IN PAY ITEM 102-1 MAINTENANCE OF TRAFFIC (LUMP SUM).
2.

MAINTAIN TRAFFIC IN ACCORDANCE WITH FDOT STANDARD PLANS, INDEX 102-600 SERIES.
3.

LANE WIDTH MUST NOT BE LESS THAN 11 FEET. LANES MUST BE PROPERLY DELINEATED DURING ALL PHASES OF CONSTRUCTION.
4.

MAINTAIN THE FOLLOWING REGULATORY SPEED LIMITS DURING CONSTRUCTION:

- SR 408 (EAST-WEST EXPRESSWAY) 60 MPH TO 65 MPH

- SR 414 (MAITLAND BOULEVARD EXTENSION) 65 MPH

- SR 417 (CENTRAL FLORIDA GREENWAY) 70 MPH

- SR 429 (DANIEL WEBSTER WESTERN BELTWAY) 70 MPH

- SR 429 (WEKIVA PARKWAY) 70 MPH

- SR 451 (WESTERN EXPRESSWAY EXTENSION) 45 MPH TO 65 MPH

- SR 528 (MARTIN ANDERSON BEACHLINE EXPRESSWAY) 55 MPH TO 70 MPH

- CR 522 (OSCEOLA PARKWAY) 55 MPH

- SR 538 (POINCIANA PARKWAY) 45 MPH TO 65 MPH

- SR 551 (GOLDENROD ROAD) 45 MPH

- SR 453 (MOUNT DORA CONNECTOR) 35 MPH TO 65 MPH

FOR ADDITIONAL SIGN INFORMATION, INCLUDING SIZES, REFER TO FDOT STANDARD PLANS AND STANDARD HIGHWAY SIGNS MANUAL SPECIFIED IN THE MUTCD.
5.

REMOVE ALL UNUSED BARRICADES SIGNS, AND/OR WARNING DEVICES TO THE APPROPRIATE STORAGE FACILITY UPON COMPLETION OF THEIR USE FOR THE DESIGNED TRAFFIC CONTROL OPERATION DURING RESTRICTED HOURS OF OPERATION. UNUSED MOT SIGNS MAY REMAIN IN PLACE BUT MUST NOT FACE TRAFFIC AND MUST BE COMPLETELY COVERED SO AS NOT TO BE READABLE.
6.

EQUIPMENT, VEHICLES OR MATERIAL MUST NOT BE PARKED OR STORED WITHIN THE CLEAR ZONE.
7.

NO MORE THAN ONE (1) LANE AND/OR RAMP WILL BE CLOSED AT ONE TIME UNLESS WRITTEN APPROVAL IS PROVIDED BY CFX. COORDINATE LOCAL ROAD CLOSURES WITH APPROPRIATE LOCAL AGENCY AND CFX.
8.

FOR LANE CLOSURES THAT OCCUR OUTSIDE THE PERMITTED LANE CLOSURE HOURS, A LANE RENTAL FEE WILL BE ASSESSED TO THE CONTRACTOR IN THE AMOUNT OF \$1,000 PER LANE/RAMP FOR EACH MINUTE THAT ANY LANE/RAMP IS NOT OPEN TO TRAFFIC. LANE RENTAL FEES WILL CONTINUE TO ACCRUE UNTIL SUBJECT LANE/RAMP IS OPEN TO A TRAFFIC FLOW AS RECORDED BY CFX. CFX HAS THE RIGHT TO APPLY AS PAYMENT ON SUCH FEES ANY MONEY THAT IS DUE TO THE CONTRACTOR BY CFX. AT THE DISCRETION OF THE DIRECTOR OF CONSTRUCTION AND/OR CFX DESIGNEE, LANE RENTAL FEES WILL NOT BE CHARGED FOR FAILURE TO OPEN TRAFFIC LANES/RAMPS IF SUCH CAUSE IS BEYOND THE CONTROL OF THE CONTRACTOR, I.E. CATASTROPHIC EVENTS, AND ACCIDENTS NOT RELATED OR CAUSED BY THE CONTRACTOR'S OPERATIONS.
9.

COORDINATE WITH TOLL PLAZA MANAGERS 72 HOURS PRIOR TO PERFORMING ANY WORK WITHIN 1/2 MILES OF A MAINLINE OR RAMP TOLL PLAZA. RESTORE CFX PROPERTY AFFECTED BY THE CONSTRUCTION WORK TO A CONDITION EQUAL TO OR BETTER THAN EXISTING PRE- CONSTRUCTION CONDITION. ALL COSTS ARE INCIDENTAL TO EXISTING PAY ITEMS.
10.

LANE CLOSURES ARE PERMITTED AT THE FOLLOWING TIMES:

- SR 408 - FLORIDA TURNPIKE TO I-4: 9 PM TO 6 AM

- SR 408 - I-4 TO SR 417: 10 PM TO 6 AM

- SR 408 - SR 417 TO SR 50: 11 PM TO 6 AM

- SR 417 - I-DRIVE TO FLORIDA'S TURNPIKE: 11 PM TO 6 AM

- SR 417 - FLORIDA'S TURNPIKE TO ORANGE/SEMINOLE COUNTY LINE: 10 PM TO 6 AM

- SR 429 - SEIDEL RD SR 46: 10 PM TO 6 AM

- SR 414 - SR 429/ 414 SYSTEMS INTERCHANGE TO US 441: 9 PM TO 6 AM

- SR 451 - SR 429 TO US 441: 9 PM TO 6 AM

- SR 453 - SR 429 TO SR 46: 9 PM TO 6 AM

- SR 528 - BOGGY CREEK RD TO SR 417: 11 PM TO 6 AM

- SR 528 - SR 417 TO SR 520: 10 PM TO 6 AM

- SR 538 9 PM TO 5 AM

- SR 551 9 PM TO 5 AM
11.

LANE CLOSURES ARE NOT PERMITTED FROM 5:00 A.M. TO 11:00 P.M. ON ENTRY OR EXIT RAMPS. IF THE DIRECTOR OF CONSTRUCTION OR CEI ENGINEER DETERMINES ANY LANE CLOSURE IS CAUSING EXTENDED TRAFFIC CONGESTION, THE DIRECTOR OF CONSTRUCTION OR CEI ENGINEER MAY DIRECT THE CONTRACTOR TO OPEN THE LANE CLOSURE UNTIL TRAFFIC RETURNS TO AN ACCEPTABLE FLOW.

CONDUIT

1.

ALL COMMUNICATION CONDUIT MUST BE PVC SCHEDULE 40 OR HDPE SDR11, 2 INCH DIA. MINIMUM, AND ALL ABOVE GROUND CONDUIT MUST BE GALVANIZED STEEL UNLESS OTHERWISE SPECIFIED IN PLANS. PLACE AT A MINIMUM DEPTH OF THREE FEET BELOW FINISHED GRADE.

PULL BOXES

1.

PULL BOX COVERS MUST BE NON-METALLIC, ON THE APL, AND HAVE THEIR SHOP DRAWINGS SUBMITTED FOR REVIEW. COORDINATE WITH CFX, CEI ENGINEER AND THE MAINTAINING AGENCY FOR APPROPRIATE COVER MARKINGS BEFORE SUBMITTAL OF SHOP DRAWINGS.
2.

DO NOT PLACE PULL BOXES IN SIDEWALK UNLESS CONDITIONS WILL NOT PERMIT OTHERWISE. UNDER NO CIRCUMSTANCES ARE PULLBOXES PERMITTED TO BE INSTALLED WITHIN A.D.A RAMPS AND DETECTABLE WARNING SURFACES.

TRAFFIC SIGNAL CABINETS

1.

ALL TRAFFIC SIGNAL CABINETS MUST HAVE A TOP OF FOUNDATION AND CONCRETE ACCESS PAD ELEVATIONS GREATER THAN OR FLUSH WITH THE TOP OF THE NEAREST CURB IN ROADWAY SECTIONS WITH CURB AND GUTTER. FOR ROADWAY SECTIONS WITHOUT CURB AND GUTTER, THE TOP OF TRAFFIC SIGNAL CABINET FOUNDATION AND CONCRETE ACCESS PAD MUST HAVE AN ELEVATION GREATER THAN OR FLUSH WITH THE ADJACENT HIGH POINT OF PAVEMENT OF THE EXISTING/PROPOSED ROADWAY CROSS SECTION.

CABLE

1.

DO NOT PLACE ENERGIZED CABLE, INCLUDING LIGHTING CONDUCTORS, IN THE SAME CONDUIT OR PULL BOX AS DETECTION CABLES, LOW VOLTAGE CABLES, OR FIBER OPTIC CABLES.
2.

PULLING INSTRUCTIONS FOR POWER CONDUCTORS: CONNECT PULLING DEVICES TO COPPER WIRE AND NOT TO JACKET AND MEET MANUFACTURERS REQUIREMENTS. USE PULLING COMPOUND PER MANUFACTURER'S REQUIREMENTS. ALL BENDS SHALL NOT BE LESS THAN RECOMMENDED BY N.E.C. OR N.E.S.C. FOR CABLE USED.
3.

THE FIBER OPTIC CABLE INSTALLATION TECHNIQUES AND PROCEDURES MUST BE AS SPECIFIED BY THE CABLE MANUFACTURER & INDUSTRY STANDARDS AND MUST BE SUCH THAT THE OPTICAL AND MECHANICAL CHARACTERISTICS OF THE CABLES ARE NOT DEGRADED AT THE TIME OF INSTALLATION. THE CENTRAL STRENGTH MEMBER AND ARAMID YARN MUST BE ATTACHED DIRECTLY TO THE PULLING EYE DURING CABLE PULLING. "BASKET GRIP" OR "CHINESE FINGER" TYPE ATTACHMENTS TO THE CABLE MUST NOT EXCEED THE CABLES OUTSIDE TENSILE RATING ON ALL PULLS.
4.

VERIFY COLOR CODES FOR BOTH SIGNAL AND INTERCONNECT CABLE WITH MAINTAINING AGENCY AND CEI ENGINEER BEFORE ORDERING. WIRING DIAGRAMS MUST BE APPROVED BY THE MAINTAINING AGENCY.
5.

ALL FIELD WIRING MUST BE NEATLY BUNDLED AND CLEARLY IDENTIFIED WITH PERMANENT LEGIBLE, WEATHERPROOF TAGS SECURELY ATTACHED TO EACH CABLE. FIELD WIRING IDENTIFICATION MUST BE INCLUDED WITHIN ALL PULL BOXES, MAST ARM HAND HOLES, CABINETS, ETC.
6.

WHERE TERMINAL BLOCKS ARE USED, SIX FEET OF ADDITIONAL SIGNAL CABLE SLACK MUST BE PROVIDED WITHIN THE UPRIGHT SUCH THAT THE TERMINAL BLOCK CAN BE REMOVED FROM THE UPRIGHT TO ALLOW FOR TROUBLE SHOOTING.
7.

SPARE CONDUCTORS WITHIN TRAFFIC SIGNAL AND PEDESTRIAN SIGNAL HEADS MUST BE CAPPED. NO SPARE CONDUCTORS ARE PERMITTED TO BE TAPED.
8.

NEATLY WIND AND ZIPTIE ALL CABLE SLACK IN A MANNER THAT STILL ALLOWS THE SIGNAL HEAD TO BE OPENED AND MAINTAINED.

VEHICULAR SIGNAL HEADS

1.

DURING TRAFFIC SIGNAL FLASHING OPERATION, THE RED ARROW INDICATION OF ALL 3-SECTION LEFT TURN HEADS MUST FLASH.
2.

ALL DARK INSTALLED SIGNAL INDICATIONS NOT IN OPERATION MUST BE COVERED, TO INCLUDE REFLECTORIZED BACK-PLATES.

PEDESTRIAN SIGNAL HEADS

1.

ENSURE THAT THE INSTALLED PEDESTRIAN SIGNAL HEAD ASSEMBLY IS SEALED TO EXCLUDE DUST AND MOISTURE. DRILL TWO, 1/4 INCH DRAIN HOLES IN THE BOTTOM OF THE INSTALLED SIGNAL HEAD ASSEMBLY.

SPAN WIRES

1.

PROVIDE CIRCULAR DRIP LOOPS (MINIMUM ONE CIRCLE) AT ALL AERIAL DISCONNECT HANGER, INTERCONNECT JUNCTION BOX, ELECTRICAL SIGN AND POLE JUNCTIONS.

PREEMPTION

1.

SIGNAL PRE-EMPTION EQUIPMENT USED MUST BE LISTED IN THE APPLICABLE LOCAL JURISDICTION'S QUALIFIED/APPROVED PRODUCTS LIST, SPECIFICATIONS, AND/OR SPECIAL PROVISIONS. ALL INSTALLATIONS MUST BE COMPATIBLE WITH THE RESPONSIBLE AGENCIES' FIRE DEPARTMENT STANDARDS AND APPLICABLE LOCAL OPTICOM CENTRAL MANAGEMENT SYSTEMS THROUGH AN ETHERNET CONNECTION AND INTERFACE MODULE. THE COST MUST INCLUDE ALL COMPONENTS, ACTIVATION AND TESTING TO MAKE A FULLY OPERATIONAL SYSTEM.

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NOTES TO DESIGNER - TRAFFIC SIGNAL CABINETS
(NOT TO BE INCLUDED IN PLAN SHEET GENERAL NOTES SHEET)

PRIORITY #1. PLACING TRAFFIC SIGNAL CABINETS OUTSIDE OF AN ERRANT VEHICLE STRIKE ZONE. THESE ARE THE CORNERS WHERE THE MAJOR STREET LEFT TURNS TO THE MINOR STREET. THESE CORNERS ARE MORE SUBJECTED TO A VEHICLE'S HIGHER SPEED TRYING TO CATCH A YELLOW LIGHT AND LOSING CONTROL.

PRIORITY #2. PLACING TRAFFIC SIGNAL CABINETS IN A LOCATION WHERE A TECHNICIAN CAN SEE THE MOST AMOUNT OF PHASES FROM THE TRAFFIC SIGNAL CABINET LOCATION.

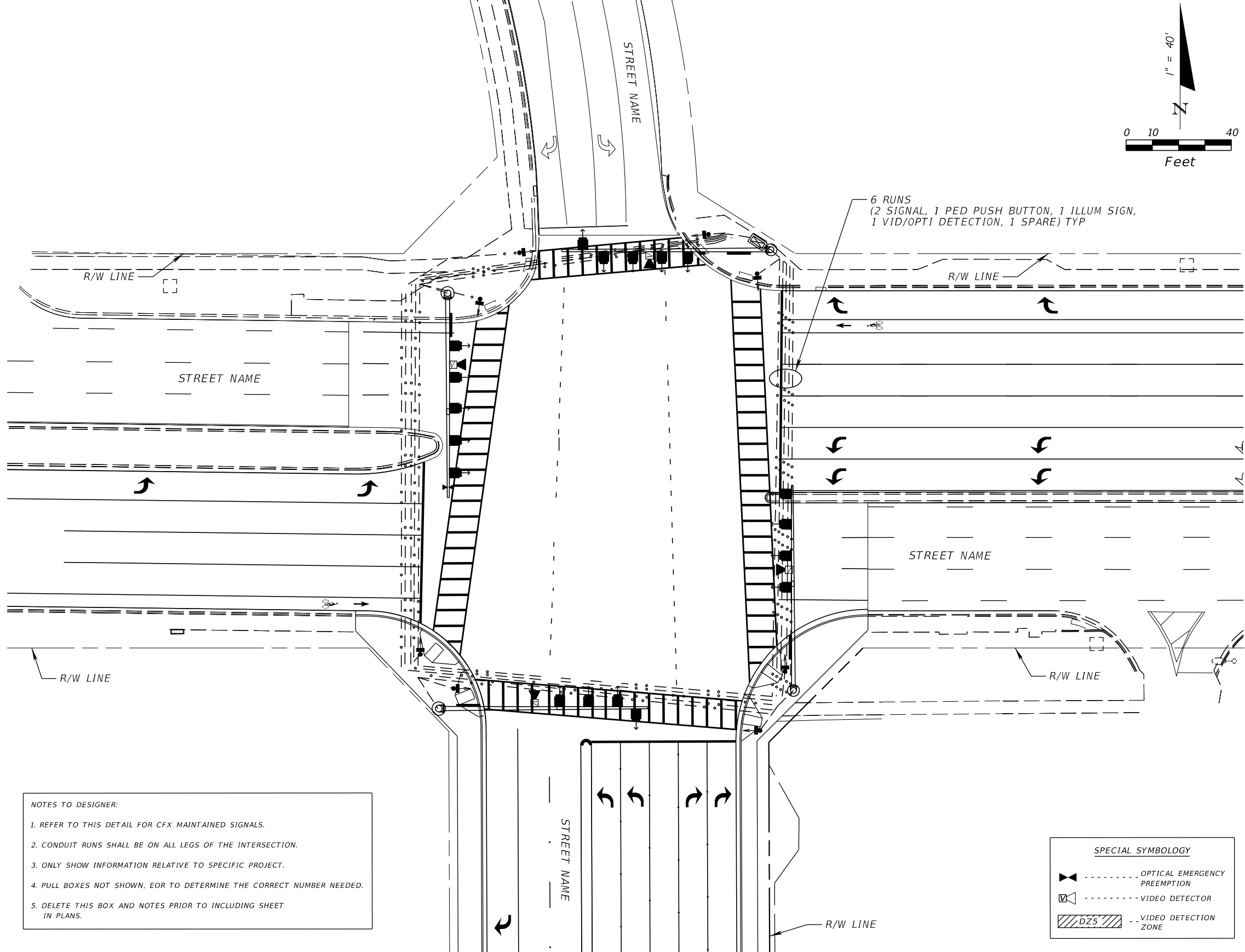
PRIORITY #3. PLACING TRAFFIC SIGNAL CABINETS IN A LOCATION WHERE THERE IS EXISTING SHADE AND EASILY ACCESSIBLE WITH A WORK TRUCK (NOT HAVING TO PARK ON A SIDE WALK, ETC.)

PRIORITY #4. PLACING SIGNAL CABINET IN A LOCATION WHERE THE TECHNICIAN HAS ENOUGH ROOM TO OPEN THE CABINET DOOR AND STILL BE IN THE RIGHT OF WAY AS THEY ACCESS THE CABINET.

NOTES TO DESIGNER

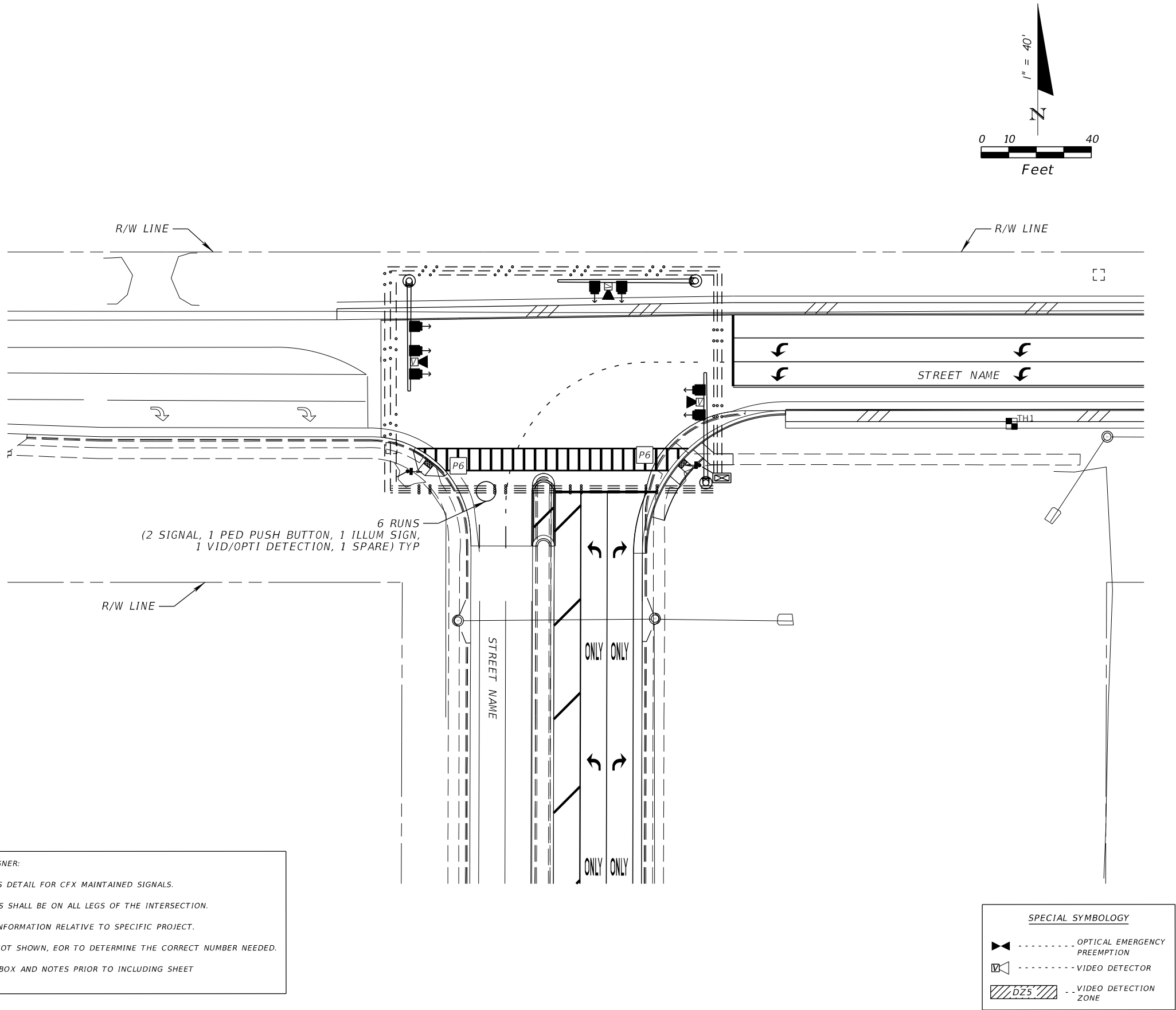
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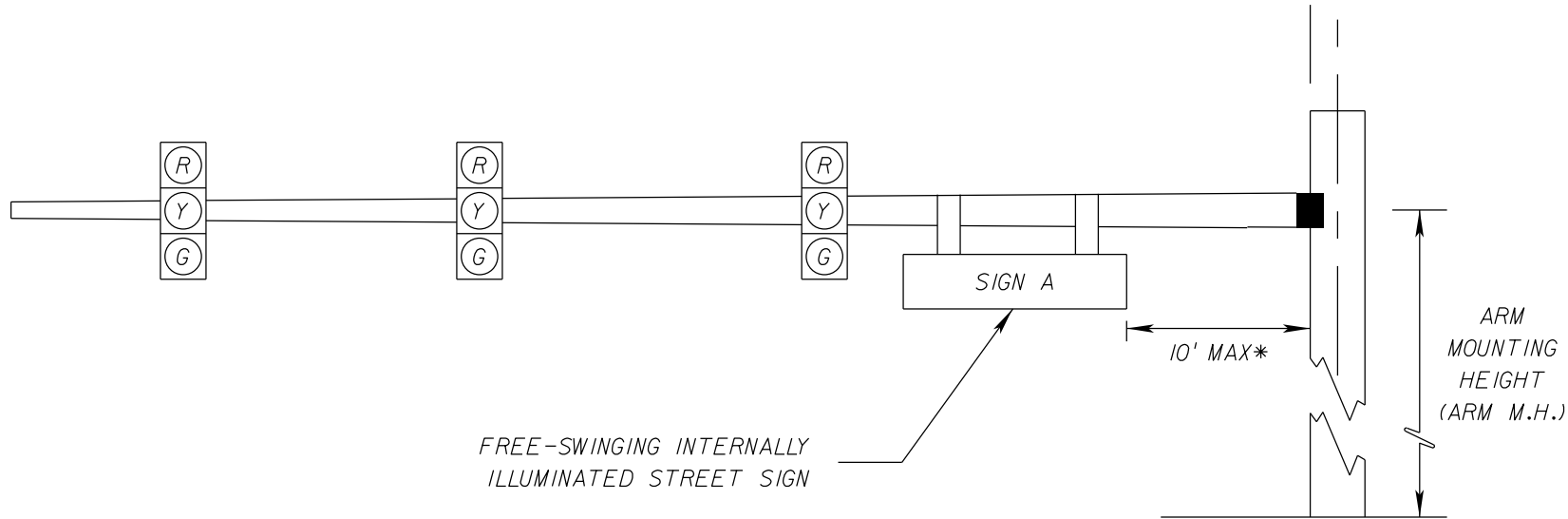
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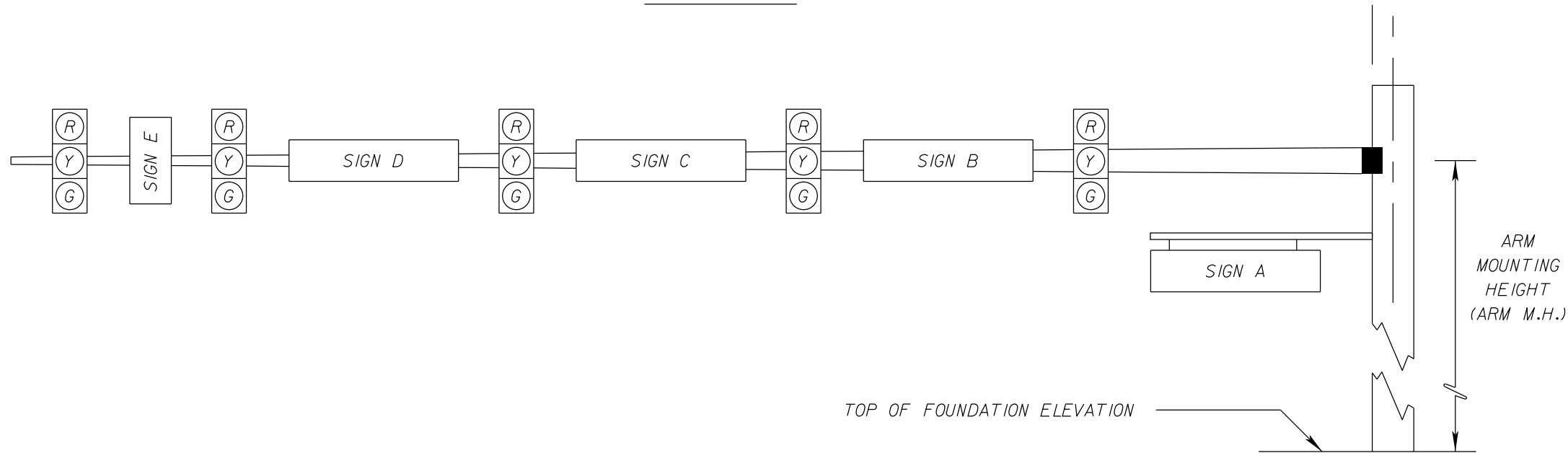
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OPTION 1



OPTION 2



* UNLESS APPROVED BY CFX

REVISIONS				ENGINEER OF RECORD FULL NAME, P.E. P.E. LICENSE NUMBER 99999 ENGINEER OF RECORD COMPANY NAME ENGINEER OF RECORD COMPANY STREET ENGINEER OF RECORD CITY, STATE AND ZIP CERTIFICATE OF AUTHORIZATION 00009999	SIGNAL DESIGN DETAILS		CENTRAL FLORIDA EXPRESSWAY AUTHORITY	<i>INTERNALLY ILLUMINATED SIGN PLACEMENT DETAIL</i>	SHEET NO.
DATE	DESCRIPTION	DATE	DESCRIPTION		ROAD NO.	PROJECT NO.			6