

CITY OF URBANDALE

CONSTRUCTION PLANS FOR

156TH STREET SIGNALS

CITY PROJECT NO.: 2023-007

NOTE: EXISTING UTILITY INFORMATION SHOWN ON THIS PLAN HAS BEEN PROVIDED BY THE UTILITY OWNER. THE CONTRACTOR SHALL FIELD VERIFY EXACT LOCATIONS PRIOR TO COMMENCING CONSTRUCTION AS REQUIRED BY STATE LAW. NOTIFY IOWA ONE CALL 1-800-292-8989 OR 811

LOCATES MUST ALSO BE COMPLETED BY WRA. CONTRACTOR TO COORDINATE WITH MELISSA SCHLICKBERND, FACILITIES ENGINEER (515) 323-8038 OR (515) 822-1506

THE SUBSURFACE UTILITY INFORMATION IN THIS PLAN IS UTILITY QUALITY LEVEL D UNLESS OTHERWISE NOTED. THIS UTILITY LEVEL WAS DETERMINED ACCORDING TO THE GUIDELINES OF CI/ASCE 38-02, ENTITLED "STANDARD GUIDELINES FOR THE COLLECTION AND DEPICTION OF EXISTING SUBSURFACE UTILITY DATA."

GOVERNING SPECIFICATIONS

THE 2023 EDITION OF THE "IOWA STATEWIDE URBAN SPECIFICATIONS FOR PUBLIC IMPROVEMENTS" AND CITY OF URBANDALE SUPPLEMENTAL SPECIFICATIONS AND URBANDALE WATER UTILITY SPECIFICATIONS.

ALL APPLICABLE FEDERAL, STATE, AND LOCAL LAWS AND ORDINANCES WILL BE COMPLIED WITHIN THE CONSTRUCTION OF THIS PROJECT.



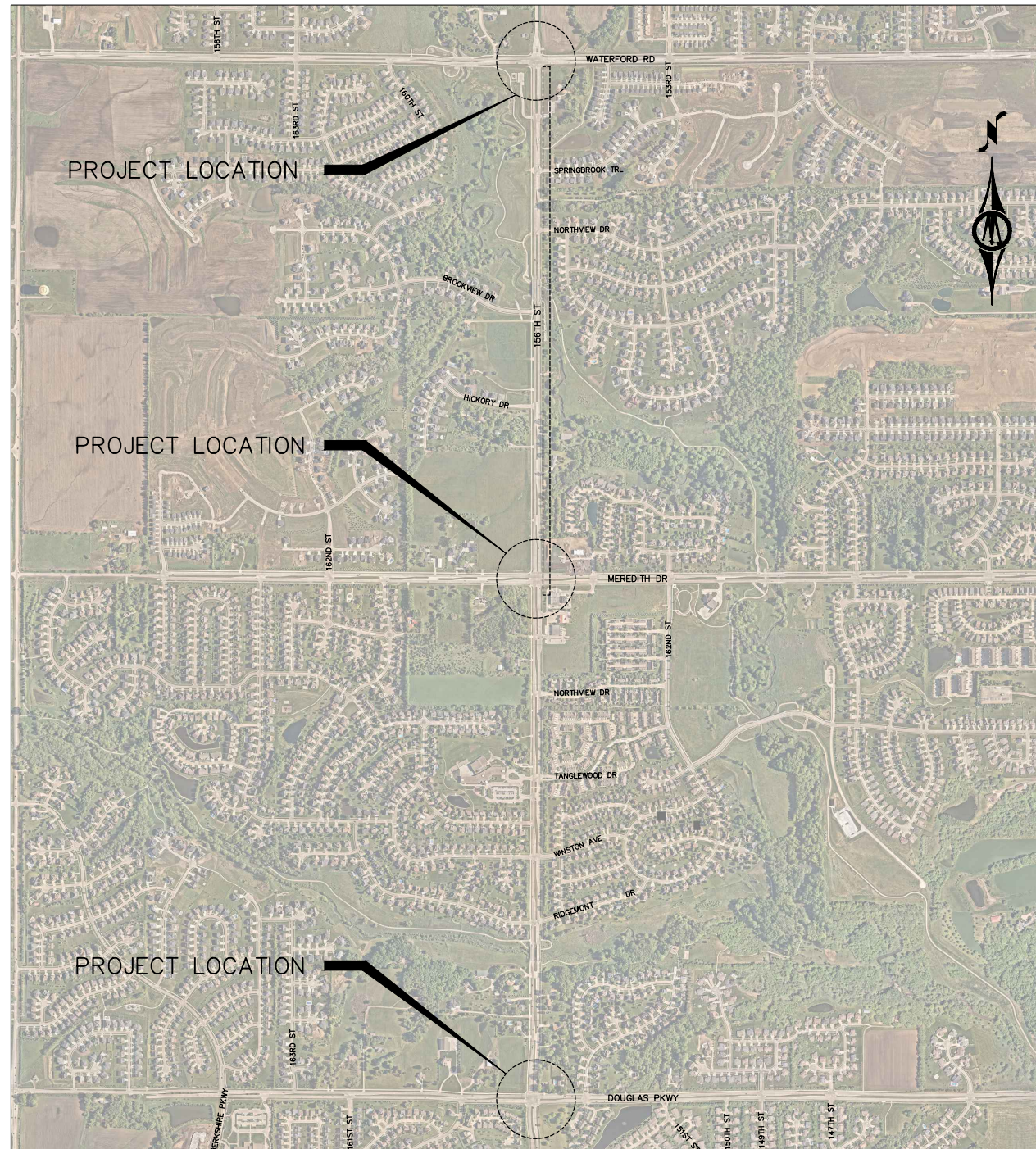
CONTROLLER ADDRESSES:

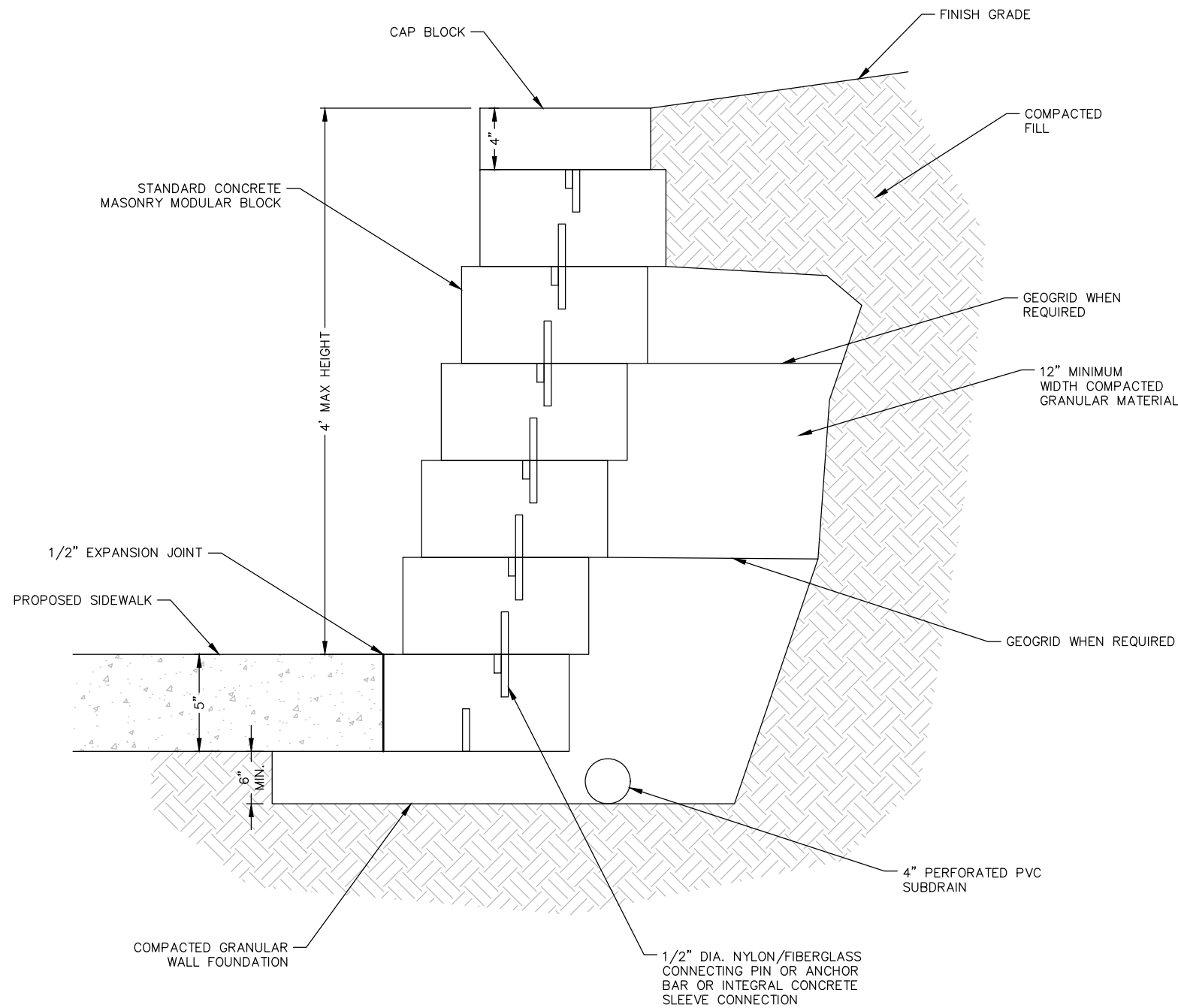
DOUGLAS PARKWAY:
3790 156TH STREET

MEREDITH DRIVE:
15599 MEREDITH DRIVE

WATERFORD ROAD:
15598 WATERFORD ROAD

PREPARED FOR:





- NOTES:
1. CONTRACTOR RESPONSIBLE FOR DESIGN OF WALL PER MANUFACTURER'S SPECIFICATIONS.
 2. WALL SHALL BE CONSTRUCTED WITHIN RIGHT OF WAY.
 3. CONTRACTOR TO SUBMIT SHOP DRAWING SHOWING GEOGRID PLACEMENT, EMBEDMENT DEPTH, ETC., IF REQUIRED.
 4. CONTRACTOR TO PROVIDE COLOR SAMPLES FOR CITY SELECTION.
 5. 4" SUBDRAIN REQUIRED FOR WALLS GREATER THAN 4" IN HEIGHT. SUBDRAIN TO OUTLET TO NEAREST STORM SEWER STRUCTURE.

A MODULAR BLOCK MASONRY WALL
NOT TO SCALE

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ESTIMATED PROJECT QUANTITIES					
ITEM NO.	ITEM CODE	ITEM	UNIT	QUANT	AS BUILT QUANT.
1	6010-E-1	MANHOLE ADJUSTMENT	EA	2	
2	7030-A-1	REMOVAL OF SIDEWALK	SY	510	
3	7030-E	SIDEWALK, PCC, 6"	SY	510	
4	7030-G	DETECTABLE WARNING	SF	225	
5	7040-A	FULL DEPTH PATCHES	SY	110	
6	8010-A	TRAFFIC SIGNAL (DOUGLAS PARKWAY)	LS	1	
7	8010-A	TRAFFIC SIGNAL (MEREDITH DRIVE)	LS	1	
8	8010-A	TRAFFIC SIGNAL (WATERFORD ROAD)	LS	1	
9	8020-B	PAINTED PAVEMENT MARKINGS, SOLVENT/WATERBORNE, W/ GROOVING	STA	50	
10	8030-A	TEMPORARY TRAFFIC CONTROL	LS	1	
11	9010-A	CONVENTIONAL SEEDING, SEEDING, FERTILIZING, AND MULCHING	SF	4000	
12	9070-A	MODULAR BLOCK RETAINING WALL	SF	225	
13	8010-999-A	1 1/2" PVC CONDUIT	LF	5125	
14	8010-999-B	1 1/2" RIGID CONDUIT	LF	120	
15	8010-999-C	1C #10 TRACER WIRE	LF	6070	
16	8010-999-D	PULL ROPE	LF	6070	
17	8010-999-E	12 SINGLE-MODE FIBER OPTIC CABLE	LF	70	
18	8010-999-F	24 SINGLE-MODE FIBER OPTIC CABLE	LF	540	
19	8010-999-G	36 SINGLE-MODE FIBER OPTIC CABLE	LF	5825	
20	8010-999-H	FIBER OPTIC TERMINATION	EA	174	
21	8010-999-I	FIBER SPLICE ENCLOSURES	EA	4	
22	8010-999-J	FIBER OPTIC SPLICE	EA	90	
23	8010-999-K	FIBER HUB	EA	1	
24	8010-999-L	HANDHOLE, PRE-CAST CONCRETE COMPOSITE, TYPE III	EA	7	
25	8010-999-M	JUNCTION BOX	EA	2	

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CITY OF URBANDALE, IOWA
 156TH ST SIGNALS
 ESTIMATED PROJECT QUANTITIES

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ESTIMATE REFERENCE INFORMATION

ITEM NO.	ITEM CODE	DESCRIPTION
1	6010-E-1	<u>MANHOLE ADJUSTMENT</u> ITEM SHALL INCLUDE, BUT IS NOT LIMITED TO, REMOVING THE EXISTING CASTING AND ADJUSTMENT RINGS, FURNISHING AND INSTALLING ADJUSTMENT RINGS, AND FURNISHING AND INSTALLING NEW CASTING. UNIT PRICE ALSO INCLUDES INSTALLING NEW INFILTRATION BARRIER FOR SANITARY SEWER MANHOLES. PAYMENT SHALL BE FOR EACH REGARDLESS OF TYPE OF MANHOLE.
2	7030-A-1	<u>REMOVAL OF SIDEWALK</u> ALL REMOVALS TO BE MARKED AND MEASURED BY THE ENGINEER. FULL DEPTH SAW CUTS ALONG THE REMOVAL LIMITS ARE INCIDENTAL TO THIS ITEM. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ADDITIONAL REMOVAL, EARTHWORK, SUBGRADE PREPARATION, AND PAVING EXPENSES DUE TO DAMAGED EDGES. ADDITIONAL REMOVAL TO BE DETERMINED BY THE ENGINEER. PAYMENT SHALL BE MADE FOR THE AREA OF PAVEMENT REMOVED, REGARDLESS OF PAVEMENT THICKNESS. THE CONTRACTOR SHALL LEAVE EXISTING SIDEWALK IN PLACE UNTIL SIDEWALK CONSTRUCTION IS READY TO COMMENCE.
3	7030-E	<u>SIDEWALK, PCC, 6"</u> CONCRETE WILL BE A C-4 MIX WITH A MINIMUM COMPRESSIVE STRENGTH OF 4,000 PSI AT 28 DAYS. SLAG IS NOT ALLOWED. JOINTING, EXPANSION MATERIAL, EXCAVATION, BACKFILLING, ETC. SHALL BE CONSIDERED INCIDENTAL TO THIS ITEM. SUBBASE INSTALLATION AND COMPACTION, CURB STOP AND VALVE BOX ADJUSTMENTS TO FINISHED GRADE THAT FALL WITHIN THE SIDEWALK, AND CONCRETE WASHOUT SHALL ALSO BE CONSIDERED INCIDENTAL TO THIS ITEM.
4	7030-G	<u>DETECTABLE WARNING</u> INCLUDES MANUFACTURED DETECTABLE WARNING PANELS. CONTRACTOR TO SUBMIT MATERIAL AND COLOR FOR APPROVAL PRIOR TO PURCHASE. CUTTING/ TRIMMING/ MODIFYING OF ANY DETECTABLE WARNING PANELS TO FIT PAVEMENT GEOMETRICS SHALL BE CONSIDERED INCIDENTAL TO THIS ITEM. DETECTABLE WARNINGS SHALL BE ARMOR TILE, ADA SOLUTIONS, OR APPROVED EQUAL, BRICK RED IN COLOR, CAST-IN-PLACE.
5	7040-A	<u>FULL DEPTH PATCHES</u> SAWING, REMOVING, AND DISPOSING OF EXISTING PAVEMENT AND REINFORCING; RESTORING THE SUBGRADE; FURNISHING AND INSTALLING TIE BARS AND DOWEL BARS; FURNISHING AND PLACING THE PATCH MATERIAL, WHILE MATCHING EXISTING PAVEMENT DEPTHS, INCLUDING THE ASPHALT BINDER AND TACK COAT; FORMING AND CONSTRUCTING INTEGRAL CURB; SURFACE CURING AND PAVEMENT PROTECTION; JOINT SAWING AND FILLING; AND PLACING BACKFILL AND RESTORING DISTURBED SURFACES.
6	8010-A	<u>TRAFFIC SIGNAL (DOUGLAS PARKWAY)</u> SEE N SHEETS. INCLUDES FURNISHING AND INSTALLING PTZ CAMERA ON INPLACE SIGNAL POLE. PTZ CAMERA TO BE CONNECTED TO THE CABINET AND OPERATIONAL. ROCKETLINX ES8108 SM SWITCH TO BE PROVIDED IN TRAFFIC CABINET.
7	8010-A	<u>TRAFFIC SIGNAL (MEREDITH DRIVE)</u> SEE N SHEETS FOR ADDITIONAL DETAILS AND NOTES. INCLUDES PURCHASE OF MAXVIEW/KINETIC SYSTEM LICENSES FOR NEW CONTROLLER AND INTERSECTION SETUP IN SOFTWARE. ROCKETLINX ES8108 SM SWITCH TO BE PROVIDED IN TRAFFIC HUB.
8	8010-A	<u>TRAFFIC SIGNAL (WATERFORD ROAD)</u> SEE N SHEETS FOR ADDITIONAL DETAILS AND NOTES. INCLUDES PURCHASE OF MAXVIEW/KINETIC SYSTEM LICENSES FOR NEW CONTROLLER AND INTERSECTION SETUP IN SOFTWARE. ROCKETLINX ES8108 SM SWITCH TO BE PROVIDED IN TRAFFIC CABINET.
9	8020-B	<u>PAINTED PAVEMENT MARKINGS, SOLVENT/WATERBORNE, W/ GROOVING</u> REFLECTORIZING SPHERES, LAYOUT, SURFACE PREPARATION, GROOVING, AND APPLICATION OF MARKING PAINT. QUANTITIES FOR STRIPING ARE PAID OUT AS 4" EQUIVALENT.
10	8030-A	<u>TEMPORARY TRAFFIC CONTROL</u> ITEM SHALL INCLUDE INSTALLATION, MAINTENANCE, AND REMOVAL OF TEMPORARY TRAFFIC CONTROL; ONE LANE OF THRU TRAFFIC IN EACH DIRECTION SHALL BE MAINTAINED AT ALL TIMES. LANE CLOSURES SHALL USE ARROW BOARDS AND FOLLOW TRAFFIC CONTROL GUIDANCE PER MUTCD AND SUDAS. REMOVAL AND REINSTALLATION OR COVERING OF PERMANENT TRAFFIC CONTROL DEVICES THAT CONFLICT WITH THE TEMPORARY TRAFFIC CONTROL PLAN; MONITORING AND DOCUMENTING TRAFFIC CONTROL CONDITIONS; AND FLAGGERS.

ESTIMATE REFERENCE INFORMATION

ITEM NO.	ITEM CODE	DESCRIPTION
11	9010-A	<u>CONVENTIONAL SEEDING, SEEDING, FERTILIZING, AND MULCHING</u> THIS ITEM IS FOR ALL LABOR, MATERIAL, AND EQUIPMENT NECESSARY FOR SEEDING, FERTILIZING AND MULCHING AREAS DISTURBED BY CONSTRUCTION. SEED MIX SHALL BE SUDAS TYPE 1 (PERMANENT LAWN). FERTILIZER SHALL BE 6-24-24 AND APPLIED AT A RATE OF 300 LB/ACRE. SEED, FERTILIZER, AND MULCH SHALL BE DELIVERED ONSITE UNOPENED AND LABELED FOR INSPECTION. ENGINEER WILL COLLECT MATERIAL TICKETS TO VERIFY QUANTITIES. PAYMENT SHALL BE QUANTITY MEASURED IN THE FIELD. THE COST FOR WATERING, ROCK PICKING, FINISH GRADING, SEED BED PREP AND RESEEDING ARE CONSIDERED INCIDENTAL TO THIS ITEM. NO ADDITIONAL PAYMENTS WILL BE MADE FOR RESEEDED AREAS. THE CONTRACTOR IS RESPONSIBLE FOR MOWING AND MAINTAINING SEEDED AREAS UNTIL THE PROJECT IS ACCEPTED BY THE OWNER. SEEDING OF AREAS DISTURBED OUTSIDE OF THE CONSTRUCTION LIMITS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AT NO ADDITIONAL COST TO OWNER.
12	9070-A	<u>MODULAR BLOCK RETAINING WALL</u> BID ITEM TO BE USED ONLY IF NEW MODULAR BLOCK IS NEEDED WHERE WALL IS IMPACTED BY SIDEWALK CONSTRUCTION. MATCH STYLE AND COLOR OF EXISTING WALL. NEW BLOCKS TO BE USED ON BOTTOM OF WALL. EXISTING BLOCKS MAY BE REUSED WITH APPROVAL OF ENGINEER. ITEM TO BE MEASURED BY AREA OF WALL REBUILT.
13	8010-999-A	<u>1 1/2" PVC CONDUIT</u> ENCLOSURE OF OPEN BORE PITS/EXCAVATION SITES WITH ORANGE CONSTRUCTION FENCING IS INCIDENTAL TO THE CONDUIT INSTALLATION. ITEM TO BE MEASURED BY THE AMOUNT OF LINEAR FEET OF CONDUIT INSTALLED.
14	8010-999-B	<u>1 1/2" RIGID CONDUIT</u> ENCLOSURE OF OPEN BORE PITS/EXCAVATION SITES WITH ORANGE CONSTRUCTION FENCING IS INCIDENTAL TO THE CONDUIT INSTALLATION. ITEM TO BE MEASURED BY THE AMOUNT OF LINEAR FEET OF CONDUIT INSTALLED.
15	8010-999-C	<u>1C #10 TRACER WIRE</u> TRACER WIRE SHALL BE WITHIN ALL NEW CONDUIT. ITEM TO BE MEASURED BY THE AMOUNT OF LINEAR FEET OF TRACER WIRE INSTALLED.
16	8010-999-D	<u>PULL ROPE</u> PULL ROPE SHALL BE WITHIN ALL NEW CONDUIT. ITEM TO BE MEASURED BY THE AMOUNT OF LINEAR FEET OF PULL ROPE INSTALLED.
17	8010-999-E	<u>12 SINGLE-MODE FIBER OPTIC CABLE</u> PRICE PER LINEAR FOOT SHALL BE FULL COMPENSATION FOR FURNISHING EQUIPMENT, MATERIALS, AND ALL OTHER WORK NECESSARY, INCLUDING TESTING, TO PROVIDE A COMPLETE AND FULLY FUNCTIONAL FIBER SYSTEM.
18	8010-999-F	<u>24 SINGLE-MODE FIBER OPTIC CABLE</u> PRICE PER LINEAR FOOT SHALL BE FULL COMPENSATION FOR FURNISHING EQUIPMENT, MATERIALS, AND ALL OTHER WORK NECESSARY, INCLUDING TESTING, TO PROVIDE A COMPLETE AND FULLY FUNCTIONAL FIBER SYSTEM.
19	8010-999-G	<u>36 SINGLE-MODE FIBER OPTIC CABLE</u> PRICE PER LINEAR FOOT SHALL BE FULL COMPENSATION FOR FURNISHING EQUIPMENT, MATERIALS, AND ALL OTHER WORK NECESSARY, INCLUDING TESTING, TO PROVIDE A COMPLETE AND FULLY FUNCTIONAL FIBER SYSTEM.
20	8010-999-H	<u>FIBER OPTIC TERMINATION</u> PAYMENT WILL BE FOR EACH FIBER OPTIC TERMINATION PERFORMED. ALL JUMPERS REQUIRED SHALL BE SC. JUMPERS ARE INCIDENTAL TO FIBER OPTIC TERMINATION. QUANTITIES FOR INCIDENTAL JUMPERS INCLUDE 2 AT DOUGLAS PARKWAY, 4 AT MEREDITH DRIVE, AND 6 AT WATERFORD ROAD.
21	8010-999-I	<u>FIBER SPLICE ENCLOSURES</u>
22	8010-999-J	<u>FIBER OPTIC SPLICE</u>
23	8010-999-K	<u>FIBER HUB</u> FIBER SHALL BE PAD MOUNTED AND ACCESSIBLE FROM BOTH SIDES. PAYMENT WILL BE MADE FOR EACH FIBER HUB INSTALLED.
24	8010-999-L	<u>HANDHOLE, PRE-CAST CONCRETE COMPOSITE, TYPE III</u>
25	8010-999-M	<u>JUNCTION BOX</u>

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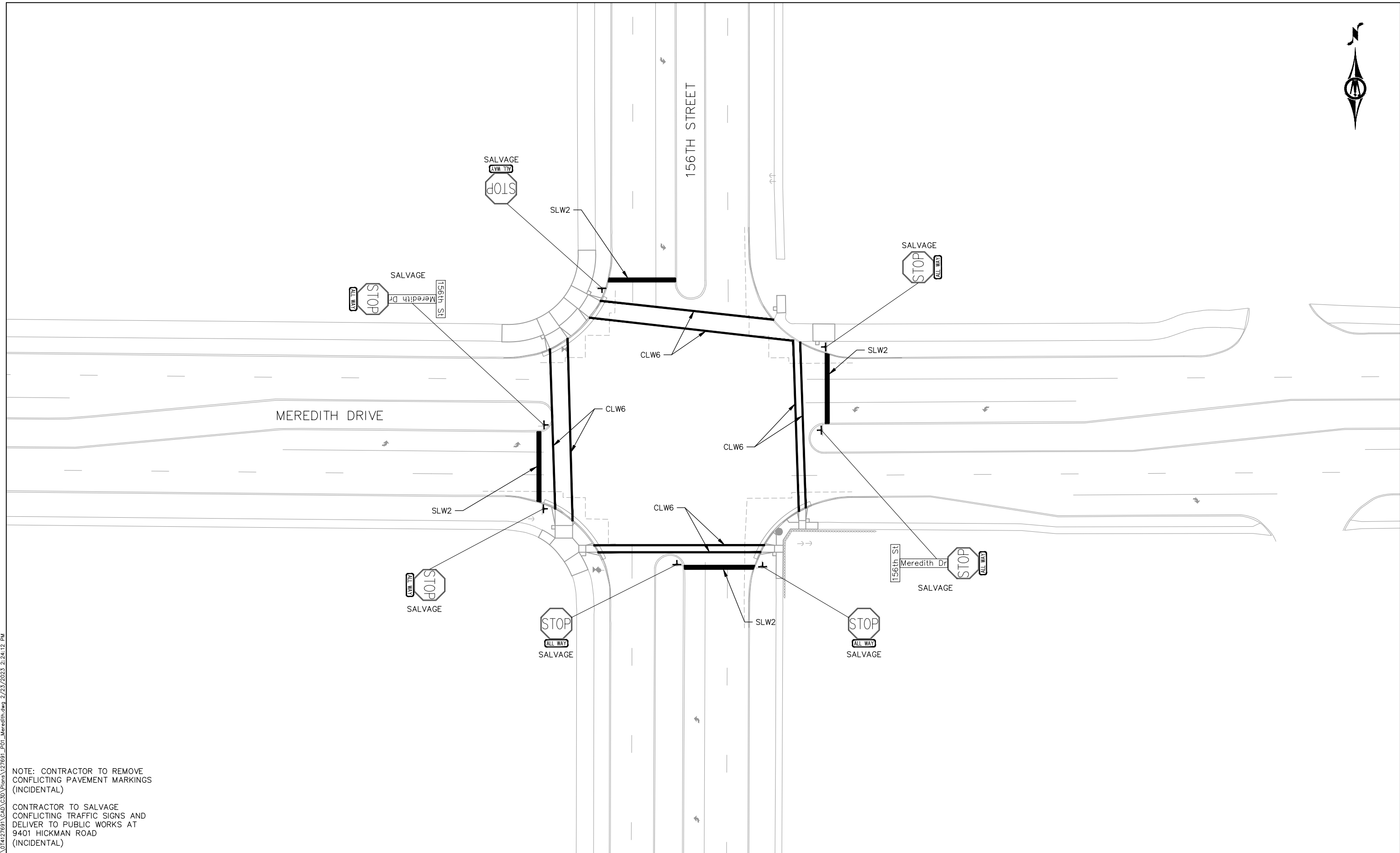


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CITY OF URBANDALE, IOWA
156TH ST SIGNALS
ESTIMATED PROJECT QUANTITIES

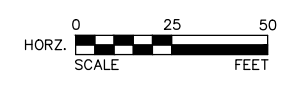
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NOTE: CONTRACTOR TO REMOVE
CONFLICTING PAVEMENT MARKINGS
(INCIDENTAL)

CONTRACTOR TO SALVAGE
CONFLICTING TRAFFIC SIGNS AND
DELIVER TO PUBLIC WORKS AT
9401 HICKMAN ROAD
(INCIDENTAL)

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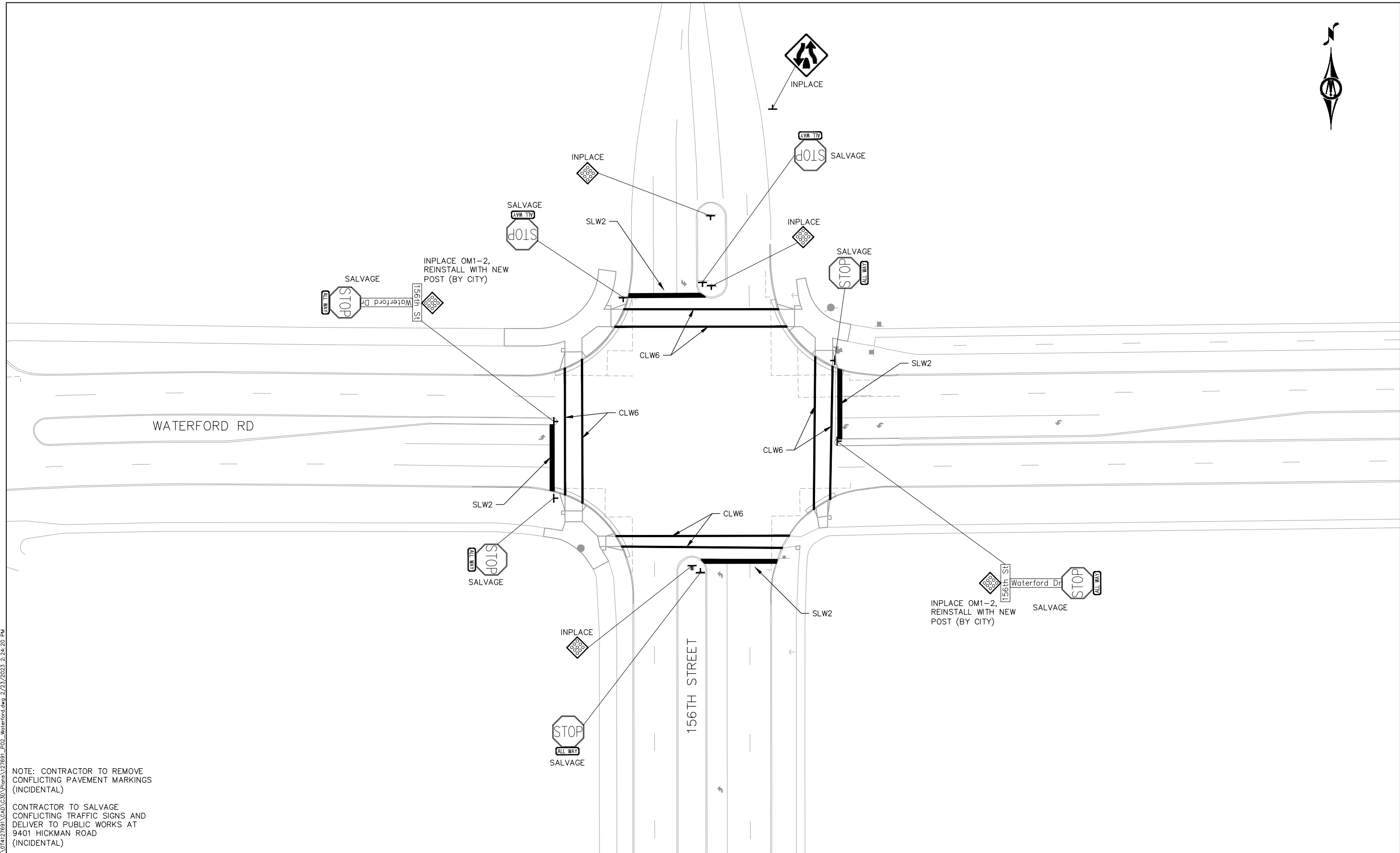


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CITY OF URBANDALE, IOWA
156TH ST SIGNALS
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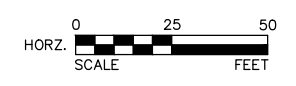
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NOTE: CONTRACTOR TO REMOVE
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(INCIDENTAL)

CONTRACTOR TO SALVAGE
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CITY OF URBANDALE, IOWA
156TH ST SIGNALS
SIGNING & STRIPING
WATERFORD RD

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TRAFFIC SIGNAL GENERAL NOTES

- THE TRAFFIC SIGNAL INSTALLATION SHALL BE IN CONFORMANCE TO THE 2023 STATEWIDE URBAN DESIGN AND SPECIFICATIONS (SUDAS) TRAFFIC SIGNAL DETAILS AND STANDARD SPECIFICATIONS, IN ADDITION TO THE PLAN DETAILS AND APPLICABLE PROJECT SPECIAL PROVISIONS.
- PROVIDE TRAFFIC CONTROL DEVICES IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR THE STREETS AND HIGHWAY, AS ADOPTED BY THE IOWA DEPARTMENT OF TRANSPORTATION.
- ALL QUANTITIES SHOWN IN THE TRAFFIC SIGNAL PLANS AND SPECIFICATIONS ARE FOR INFORMATIONAL AND ESTIMATING PURPOSES ONLY. THE CONTRACTOR'S LUMP SUM BID SHALL INCLUDE ALL LABOR, EQUIPMENT, AND MATERIAL NECESSARY TO PROVIDE A COMPLETE AND FUNCTIONAL TRAFFIC SIGNAL INSTALLATION IN CONFORMANCE WITH THE PLANS AND SPECIFICATIONS.
- THE PLAN LOCATIONS OF UNDERGROUND UTILITIES ARE APPROXIMATE ONLY. THE EXACT LOCATION AND ELEVATION OF ALL UTILITIES SHALL BE DETERMINED BY THE CONTRACTOR AT THE EXPENSE OF THE CONTRACTOR AND AT THE TIME OF PROJECT CONSTRUCTION. IT SHALL BE THE DUTY AND RESPONSIBILITY OF THE CONTRACTOR TO ASCERTAIN WHETHER ANY ADDITIONAL FACILITIES OTHER THAN THOSE SHOWN ON THE PLANS MAY BE PRESENT.
- THE CONTRACTOR SHALL NOTIFY ALL UTILITY COMPANIES PRIOR TO STARTING ANY EXCAVATION ON THE PROJECT TO ESTABLISH LOCATIONS. PRIOR TO CONSTRUCTION, CONTRACTOR SHALL UNCOVER EXISTING UTILITIES AT CRITICAL LOCATIONS TO VERIFY EXACT HORIZONTAL AND VERTICAL LOCATION.
- THE LOCATIONS OF ALL DETECTOR LOOPS AND HANDHOLES ARE APPROXIMATE ONLY AND ARE SUBJECT TO ADJUSTMENT IN THE FIELD BY THE ENGINEER.
- CITY TO PROVIDE STRUCTURAL CONCRETE TESTING (2 CYLINDERS, 7-DAY AND 28-DAY, FOR EACH BATCH) IN ACCORDANCE WITH ASTM C39 AS POURED FOR POLE FOOTINGS. CONCRETE FOOTING SHALL HAVE 4,500 PSI STRENGTH.
- INSTALL ONE SIGNAL CABLE FROM EACH SIGNAL HEAD TO THE BASE OF THE POLE. A 7-CONDUCTOR CABLE SHALL BE USED IN THE POLE FOR EACH 4-SECTION SIGNAL HEAD, AND A 5-CONDUCTOR CABLE SHALL BE USED IN THE POLE FOR EACH 3-SECTION AND PEDESTRIAN SIGNAL HEAD. ALL SIGNAL CABLE SHALL BE #14 AWG UNLESS OTHERWISE NOTED ON THE PLANS.
- EVP CABLES SHALL BE AS PER SUPPLIER SPECIFICATIONS. NO SPLICES ALLOWED IN EVP CABLES
- TRAFFIC SIGNAL MOUNTING BRACKETS SHALL UTILIZE STAINLESS STEEL BANDING FOR SIDE OF POLE MOUNTING AND GALVANIZED STEEL CABLE FOR MAST ARM MOUNTING.
- ALL SIGNAL INDICATIONS SHALL BE LED IN ACCORDANCE WITH MOST RECENT ITE SPECIFICATIONS. SIGNAL HEADS SHALL HAVE BLACK FACES, VISORS, BODIES, AND BACKPLATES (WHERE INDICATED). VISORS SHALL BE CAP STYLE.
- UNLESS OTHERWISE DIRECTED, TRAFFIC SIGNAL HEADS ON MAST ARMS ARE TO BE ALIGNED OVER THE CENTER OF INTERSECTION APPROACH LANES. APPROXIMATE LOCATIONS ARE SHOWN IN THE TRAFFIC SIGNAL POLE DATA TABLE. CONTRACTOR SHALL FIELD VERIFY SIGNAL HEAD LOCATIONS.
- CONTROLLER AND CABINET HARDWARE SHALL BE EXPANDABLE TO PROVIDE NUMBER OF PHASES INCLUDING PREEMPTION AS INDICATED ON THE TRAFFIC SIGNAL PHASING. TWO LED LIGHT PANELS SHALL BE INSTALLED IN CABINET WITH ONE ON THE TOP OF THE CABINET AND ONE ON TOP OF THE LOAD BAYS. INTERIOR LIGHTS SHALL BE CONTROLLED BY DOOR SWITCH.
- LUMINAIRES SHALL BE LED, 18,000 LUMENS (+/- 5%), 100 LUMENS/WATT EFFICACY, 4000 K COLOR TEMPERATURE, TYPE II DISTRIBUTION, MEDIUM, B3-U0-G3, L70>70,000 HOURS WITH AT LEAST 5-YEAR WARRANTY, GRAY FINISH AND PHOTOCCELL CONTROL.
- INSTALL TWO (2) 1-CONDUCTOR #10 CABLES FROM THE LUMINAIRE HEAD TO THE BASE OF THE POLE. FURNISH AND INSTALL FUSED CONNECTORS AT THE POLE BASE. FURNISH AND INSTALL UNFUSED Y CONNECTORS IN THE ADJACENT HANDHOLE WHERE APPLICABLE.
- ELECTRICAL SERVICE SHALL BE 120 V SINGLE-PHASE. SIGNALS AND LIGHTING SHALL BE METERED. LIGHTING SHALL BE ON SEPARATE 20 AMPERE BREAKER. CONTRACTOR SHALL FURNISH AND INSTALL ALL MATERIALS AND EQUIPMENT REQUIRED FOR ELECTRICAL SERVICE. CONTRACTOR TO APPLY FOR ELECTRICAL PERMIT, FEE TO BE WAIVED.

- COORDINATE WITH CITY OF URBANDALE TRAFFIC ENGINEERING DIVISION AND ENGINEER ONE WEEK PRIOR TO SIGNAL TURN-ON FOR NOTIFICATION OF SIGNAL TURN-ON.
- PEDESTAL POLE AND BASE SHALL HAVE A NATURAL FINISH PER SUPPLIERS SPECIFICATION.
- STREET NAME SIGNS SHALL BE WHITE TEXT ON GREEN BACKGROUND. TEXT SHALL BE HIGHWAY SERIES B FONT 12" HEIGHT.
- THE CONTROLLER ADDRESSES ARE:
DOUGLAS PARKWAY: 3790 156TH STREET
MEREDITH DRIVE; 15599 MEREDITH DRIVE, IP ADDRESS: 172.22.60.1
WATERFORD ROAD: 15598 WATERFORD ROAD, IP ADDRESS: 172.22.60.2
- THE STATIONS AND OFFSETS LISTED ON THE SIGNAL PLANS ARE TO THE CENTER OF THE ITEM UNLESS OTHERWISE NOTED.
- FIBER OPTIC CABLE AND EQUIPMENT SHALL BE INSTALLED AS OUTLINED IN THE SIGNAL PLANS AND SPECIFICATIONS.
- SPECIAL EQUIPMENT TO BE PROVIDED/INSTALLED BY THE CONTRACTOR FOR MEREDITH DRIVE AND WATERFORD ROAD SIGNAL:
-CONTROLLER: INTELIGHT XN-2 WITH ABCD CONNECTORS
-CABINET: TS1, P44 SIZE
-CONFLICT MONITOR: EDI MMU-2-16LEIP SMART MONITOR WITH SDLC AND ETHERNET
-EV PREEMPTION: GTT GPS OPTICOM 768
-BATTERY BACKUP: REFER TO SPECIAL PROVISIONS. ALL TRAFFIC SIGNAL BACKUP UNITS SHALL BE SUPPLIED BY THE SAME MANUFACTURER AND INTERCHANGEABLE WITH THE LATEST BATTERY BACKUP UNITS (TESCO CONTROL, INC.) UTILIZED BY THE CITY OF URBANDALE. CONTRACTOR SHALL MOUNT BATTERY BACKUP UNITS TO SIGNAL CABINETS.
-PTZ CAMERA: POE CAMERA, AXIS Q6075-E
- THE CONTRACTOR HAS THE OPTION TO FIELD ADJUST LOCATION OF PROPOSED HANDHOLES DUE TO FIELD CONDITIONS IN COORDINATION WITH THE ENGINEER.
- RETROFIT THE EXISTING CABINETS NECESSARY FIBER TERMINATION ENCLOSURES/PANELS, NECESSARY FIBER CONNECTORS, NECESSARY JUMPERS AND ANY OTHER ACCESSORIES REQUIRED TO PROVIDE COMPLETE FIBER COMMUNICATIONS TO THE TRAFFIC SIGNAL CONTROLLER CABINET COMPONENTS.
- FIBER SPLICING SHALL BE DONE DURING THE DAY AND SCHEDULED AT LEAST 48 HOURS IN ADVANCE.
- HANDHOLES AT WATERFORD ROAD ALSO CONTAIN ICN CABLE. ICN CABLE SHALL BE PROTECTED BY THE CONTRACTOR. ICN AND THE CITY SHALL ALSO BE NOTIFIED IMMEDIATELY IF ANY ISSUES ARISE.
- ALL SPLICING AND TERMINATIONS SHALL BE COMPLETED AT 156TH STREET AND MEREDITH DRIVE PRIOR TO 156TH STREET AND WATERFORD ROAD.
- DUPLEX SC SINGLE MODE JUMPER WILL NEED INSTALLED IN THE FIBER HUB AT 156TH AND MEREDITH FOR BLUE TUBE NORTH BLUE AND ORANGE FIBER NORTH TO ORANGE TUBE BLUE AND ORANGE FIBER TO MAINTAIN FEED TO CITY SATELLITE FACILITY. (LOCATED AT 170TH AND WATERFORD) PROVIDE JUMPERS AT DOUGLAS PARKWAY AND WATERFORD ROAD.
- ALL SPLICING AT THE 156TH STREET AND WATERFORD ROAD SPLICE POINT SHALL BE COMPLETED IN ONE SPLICING WINDOW, AS THE DATA TO THE CITY SATELLITE FACILITY WILL BE IMPACTED. CONTRACTOR SHALL BE COORDINATE WITH CITY INSPECTOR WITH A SCHEDULED TIME OF SPLICING AND RESTORATION OF SERVICE TO CITY SATELLITE FACILITY.
- ALL CHANGES SHALL BE APPROVED BY CITY ENGINEER AS AS-BUILT FIBER DOCUMENTATION SHALL BE PROVIDED ONCE WORK COMPLETED.
- CONTRACTOR TO COORDINATE WORK WITH THE CITY'S LOOPED FIBER PROJECT CONTRACTOR. LOOPED FIBER CONTRACTOR TO INSTALL NEW FIBER AT MEREDITH DRIVE AND DOUGLAS PARKWAY PRIOR TO SIGNAL WORK.
- FOR MEREDITH DRIVE AND WATERFORD ROAD SIGNALS, TRAFFIC COUNT REPORTS MUST BE FUNCTIONAL FOR ALL DIRECTIONS AND LANES OF TRAVEL. TRAFFIC LOOPS SHALL BE WIRED IN CABINET AND CONTROLLER SHALL BE PROGRAMMED SO THAT REPORTS CAN BE GENERATED DETAILING TRAFFIC MOVEMENTS AND VOLUME. ALL NECESSARY WIRING, PROGRAMMING, AND SET UP OF REPORTS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
- CABINET, CONTROLLER, AND BACKUP BATTERY SHALL BE WIRED FOR KINETICS ALERTS/NOTIFICATIONS IN FLASH (CABINET, MMU, T&F), LOSS OF POWER/ ON BATTERY BACKUP, LOW BATTERIES, COMMUNICATION FAILURE (LOSS OF CONNECTIVITY TO CONTROLLER). IN KINETICS, INTERSECTION SHALL BE PROGRAMMED TO EMAIL AND TEXT ALERTS/NOTIFICATIONS TO CONTACT LIST TO BE PROVIDED BY THE CITY. ANY AND ALL COST ASSOCIATED WITH WIRING AND PROGRAMMING OF ALERTS/NOTIFICATIONS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.

SIGNAL LEGEND

PROPOSED	
	POWER SOURCE
	332A CABINET AND 2070 ATC CONTROLLER
	TRAFFIC SIGNAL POLE, FOOTING SYMBOL, AND IDENTIFYING NUMBER
	PEDESTAL POLE, FOOTING SYMBOL, AND IDENTIFYING NUMBER
	TRAFFIC SIGNAL HEAD WITH BACKPLATE SYMBOL AND IDENTIFYING NUMBER
	TRAFFIC SIGNAL HEAD SYMBOL AND IDENTIFYING NUMBER
	PEDESTRIAN HEAD SYMBOL AND IDENTIFYING NUMBER
	PEDESTRIAN PUSHBUTTON IDENTIFYING NUMBER
	MAST ARM MOUNTED SIGN SYMBOL AND IDENTIFYING NUMBER
	LUMINAIRE
	MODIFIED DIAMOND DETECTOR LOOP SYMBOL AND IDENTIFYING NUMBER
	24" HANDHOLE SYMBOL AND IDENTIFYING NUMBER - TYPE I
	"TUB" HANDHOLE SYMBOL AND IDENTIFYING NUMBER - TYPE III OR IV
	TRENCHED SIGNAL CONDUIT
	PUSHED SIGNAL CONDUIT
	PTZ CAMERA
EXISTING	
	EXISTING SIGNAL CONDUIT
	WOODEN SIGNAL POLE AND IDENTIFYING NUMBER
	LABELS WITH AN IDENTIFYING NUMBER FOLLOWED BY THE LETTER "E" REPRESENT EXISTING EQUIPMENT.

ABBREVIATIONS

SIG	SIGNAL HEAD CABLE	Y2	NON-FUSED WYE CONNECTOR FOR STREET LIGHTING
PED HD	PEDESTRIAN HEAD CABLE	Y3	NON-FUSED WYE CONNECTOR FOR STREET LIGHTING
PED PB	PEDESTRIAN PUSHBUTTON CABLE	L1	FUSED IN-LINE CONNECTOR FOR STREET LIGHTING
CNTRL	CONTROLLER	L2	NON-FUSED IN-LINE CONNECTOR FOR STREET LIGHTING
LUM	LUMINAIRE	DET	SHIELDED LOOP DETECTOR LEAD-IN
N	NEUTRAL	LOOP	DETECTOR LOOP WIRE IN TUBING
LN1	POWER - LINE 1	HH	HANDHOLE
LN2	POWER - LINE 2	FY	FLASHING YELLOW
GR	GROUND WIRE 1c #6	SY	STEADY YELLOW
TR	TRACER WIRE 1c #10	FO	FIBER OPTIC CABLE
PR	PULL ROPE	SM	SINGLE MODE
Y1	FUSED WYE CONNECTOR FOR STREET LIGHTING	UAC	USE AS CONSTRUCTED

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CITY OF URBANDALE, IOWA
156TH ST SIGNALS
SIGNAL PLAN

SHEET
N.01



NOTE: ALL SIGNAL COMPONENTS ARE INPLACE UNLESS NOTED OTHERWISE.

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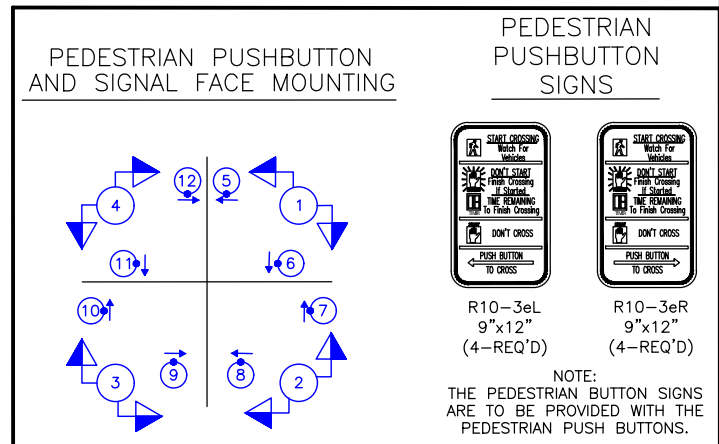
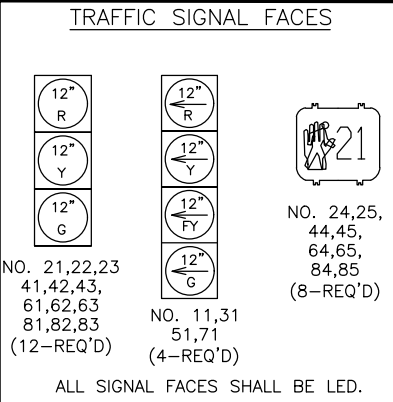
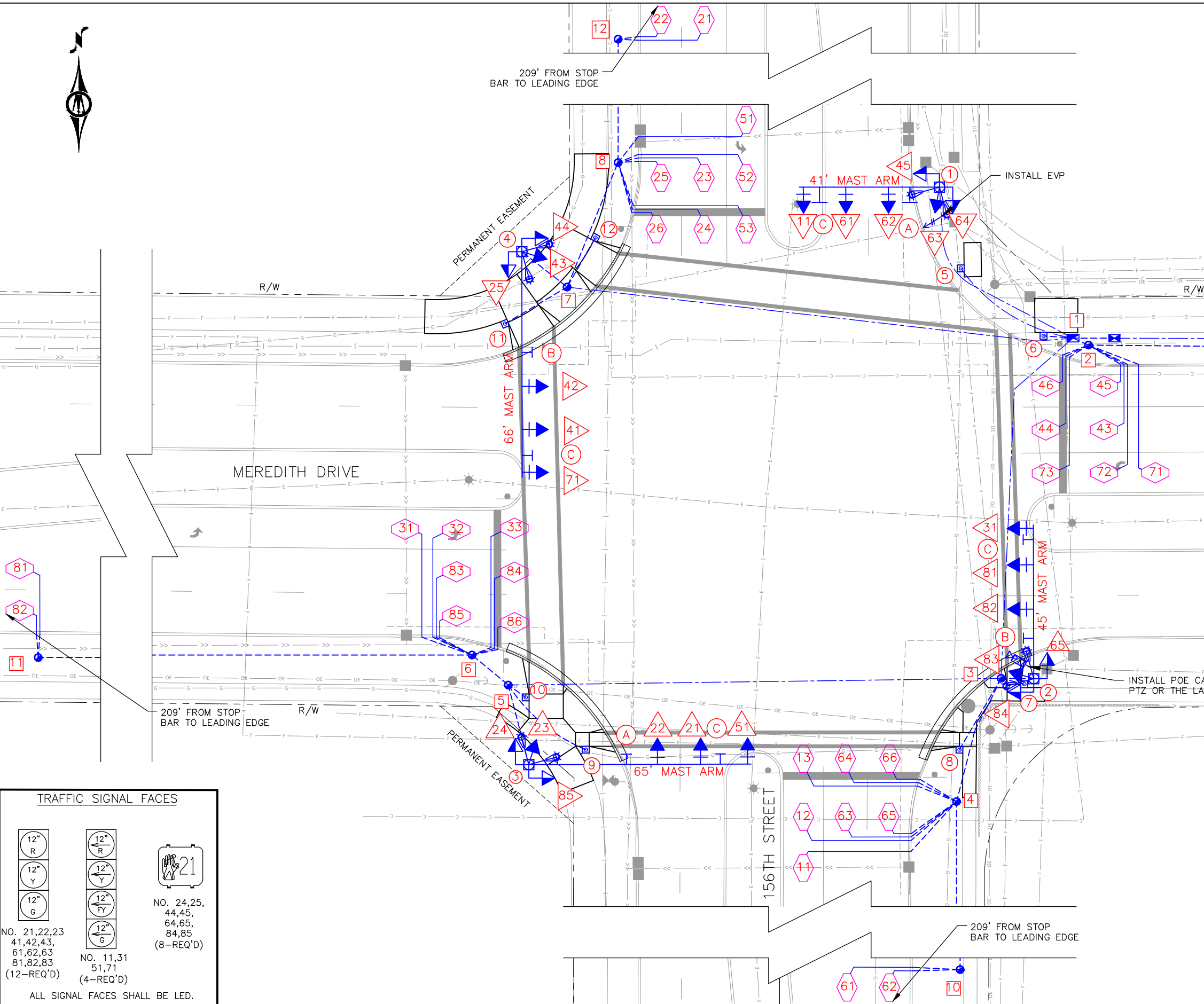
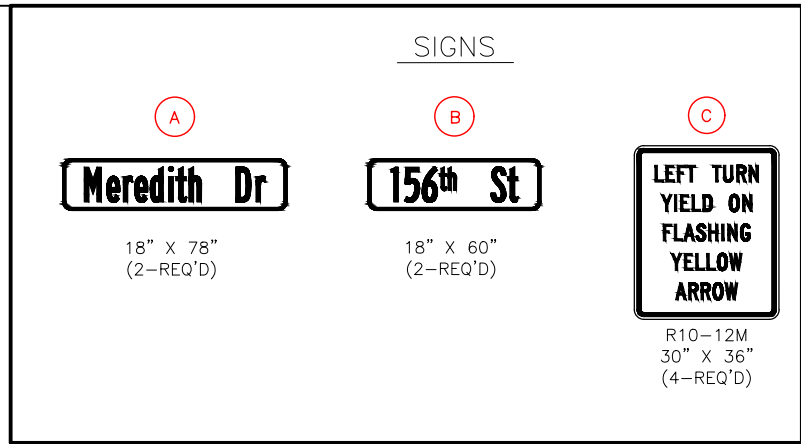


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CITY OF URBANDALE, IOWA
156TH ST SIGNALS
TRAFFIC SIGNAL LAYOUT
DOUGLAS PKWY

SHEET
N.02

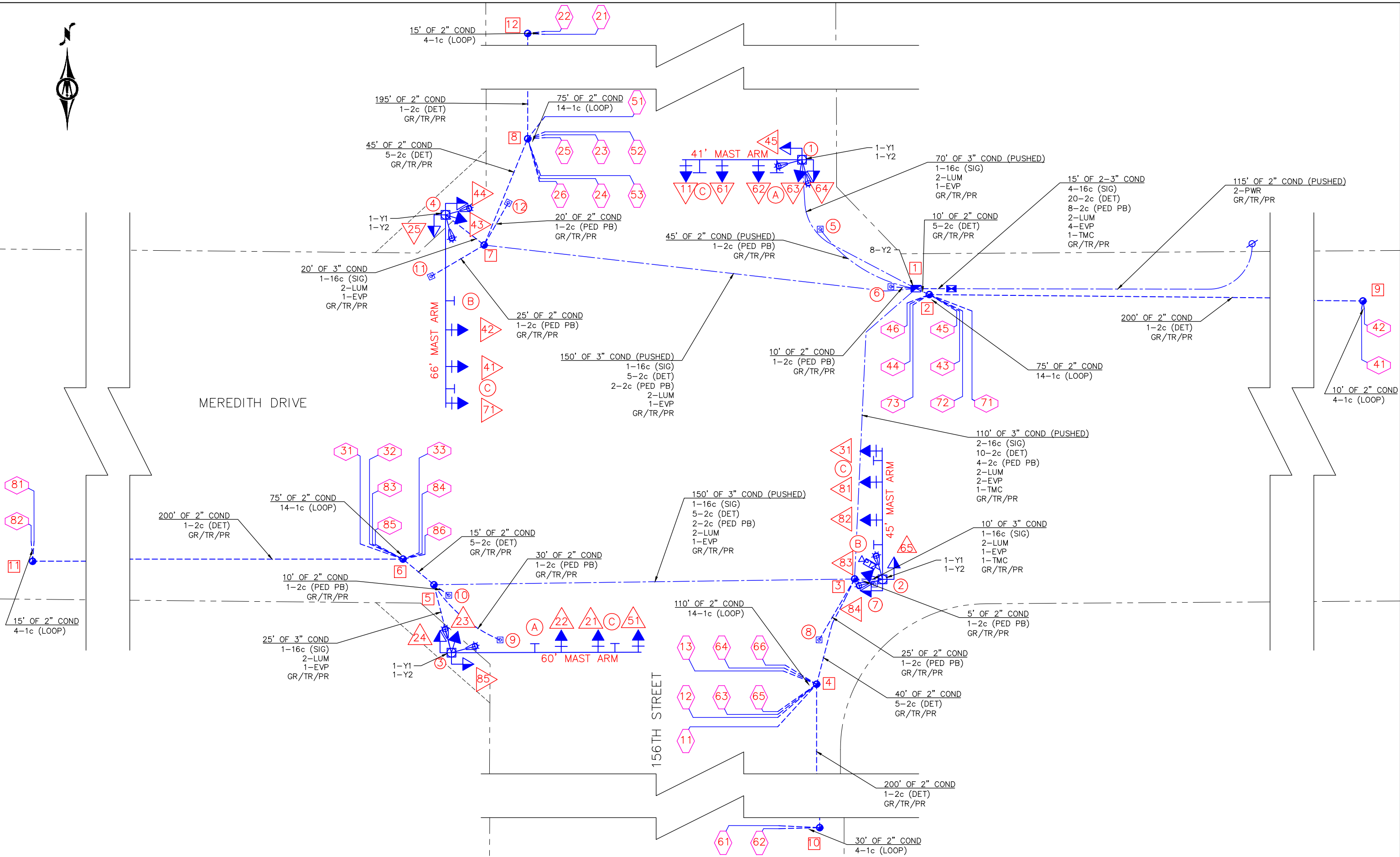


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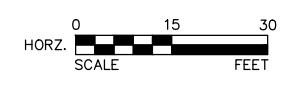


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CITY OF URBANDALE, IOWA
 156TH ST SIGNALS
 TRAFFIC SIGNAL LAYOUT
 MEREDITH DRIVE

SHEET
 N.04

ESTIMATE OF TRAFFIC SIGNAL QUANTITIES

ITEM	DESCRIPTION	UNITS	TOTAL
CABINET	8-PHASE CONTROLLER CABINET, TS1, P44 SIZE, 18" RISER, AND ACCESSORIES	LS	1
	CONTROLLER : INTELIGHT XN-2 WITH ABCD CONNECTORS	LS	1
	CONFLICT MONITOR: EDI MMU-2-16LEIP SMART MONITOR WITH SDLC AND ETHERNET	LS	1
	GPS EVP SYSTEM: GTT GPS OPTICOM 768	LS	1
	ETHERNET SWITCH: ROCKETLINX ES8108 SM SWITCH	LS	1
	UNINTERUPTABLE POWER SUPPLY (BATTERY BACK-UP), TESCO CONTROL	LS	1
	PTZ CAMERA: POE CAMERA, AXIS Q6075-E	LS	1
DETECTION	6X8 DETECTION LOOPS	EACH	36
	PEDESTRIAN PUSH BUTTON STATION (APS) WITH SIGN	EACH	8
TRAFFIC SIGNAL HEADS	12" LED <R,<Y,<FY,<G MAST ARM MOUNT	EACH	4
	12" LED R,Y,G MAST ARM MOUNT	EACH	8
	12" LED R,Y,G POLE MOUNT	EACH	4
	LED PEDESTRIAN SIGNAL HEAD SIDE OF POLE MOUNT	EACH	8
POWER SUPPLY	POWER SUPPLY	EACH	1
HANDHOLES	TYPE I - PRE-CAST CONCRETE HANDHOLE	EACH	11
	TYPE III - 24" X 36" PRE-CAST POLYMER-CONCRETE HANDHOLE	EACH	1
WIRE AND CABLE	SIGNAL CABLE - 2C #14 AWG	LIN FT	1715
	SIGNAL CABLE - 5C #14 AWG	LIN FT	914
	SIGNAL CABLE - 7C #14 AWG	LIN FT	640
	SIGNAL CABLE - 16C #14 AWG	LIN FT	1020
	LOOP DETECTION CABLES	LIN FT	4778
	EMERGENCY VEHICLE PREEMPTION CABLE	LIN FT	140
	TMC CABLE	LIN FT	156
	DETECTOR - 2C #14 AWG	LIN FT	4300
	LUMINAIRE CABLE - 1C #8 AWG	LIN FT	1900
	LUMINAIRE CABLE - 1C #10 AWG	LIN FT	160
	POWER - 1C #6	LIN FT	290
	GROUND - 1C #6 BARE	LIN FT	1625
	TRACER - 1C #10	LIN FT	1625
	PULL TAPE	LIN FT	1625
CONDUIT	2" PVC, TRENCHED	LIN FT	790
	2" PVC, PUSHED	LIN FT	115
	3" PVC, TRENCHED	LIN FT	85
	3" PVC, PUSHED	LIN FT	480
CONCRETE FOOTINGS	CONTROLLER CABINET FOOTING	EACH	1
	SIGNAL POLE FOOTING 3'-0" DIA. X 14'-0"	EACH	2
	SIGNAL POLE FOOTING 3'-0" DIA. X 18'-0"	EACH	1
	SIGNAL POLE FOOTING 3'-6" DIA. X 18'-0"	EACH	1
TRAFFIC SIGNAL POLES	COMBINATION SIGNAL/LIGHTING - 41' MAST ARM	EACH	1
	COMBINATION SIGNAL/LIGHTING - 45' MAST ARM	EACH	1
	COMBINATION SIGNAL/LIGHTING - 65' MAST ARM	EACH	1
	COMBINATION SIGNAL/LIGHTING - 66' MAST ARM	EACH	1
LUMINAIRE	LUMINAIRE, LED, TYPE II	EACH	8
	CONNECTOR, Y-1	EACH	8
	CONNECTOR, Y-2	EACH	12
MISC.	STREETNAME SIGNS	EACH	4
	WIND DAMPENING DEVICE	EACH	4
	TRAFFIC SIGN	EACH	4

CONDUIT QUANTITIES (FT)

FROM	TO	TRENCHED		PUSHED	
		2" DIA NMC	3" DIA NMC	2" DIA NMC	3" DIA NMC
SOP	CAB			115	
CAB	HH1		30		
HH1	POLE 1				70
HH1	PED STN 5	45			
HH1	PED STN 6	10			
HH1	HH2	10			
HH2	HH9	200			
HH1	HH3				110
HH3	POLE 2		10		
HH3	PED STN 7	5			
HH3	PED STN 8	25			
HH3	HH4	40			
HH4	HH10	200			
HH3	HH5				150
HH5	POLE 3		25		
HH5	PED STN 9	30			
HH5	PED STN 10	10			
HH5	HH6	15			
HH6	HH11	200			
HH1	HH7				150
HH7	POLE 4		20		
HH7	PED STN 11	25			
HH7	PED STN 12	20			
HH7	HH8	45			
HH8	HH12	195			
	AT HH2	75			
	AT HH9	10			
	AT HH4	110			
	AT HH10	30			
	AT HH6	75			
	AT HH11	15			
	AT HH8	75			
	AT HH12	15			
SUB-TOTALS		790	85	115	480

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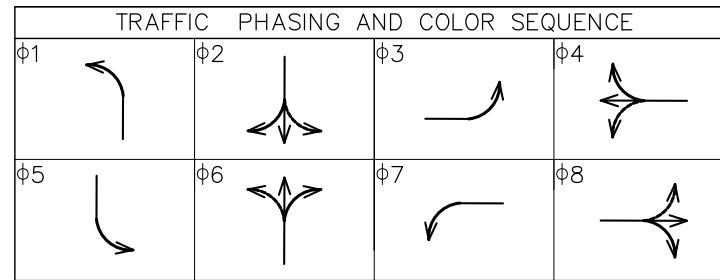
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CITY OF URBANDALE, IOWA
156TH ST SIGNALS
TRAFFIC SIGNAL DETAILS
MEREDITH DRIVE

SHEET
N.05

DETECTOR SUMMARY					
DETECTION ZONE	ZONE LIMITS (DISTANCE FROM STOP LINE)	PHASE CALLED	PHASE EXTENDED	LOOP SIZE	COMMENTS
11	25	1	1	1-6'x8'	
12, 13	-5, 10	1	1	2-6'x8'	
21, 22	209	2	2	2-6'x8'	
23, 24	-5, 10	2	2	2-6'x8'	
25, 26	-5, 10	2	2	2-6'x8'	
31	25	3	3	1-6'x8'	
32, 33	-5, 10	3	3	2-6'x8'	
41, 42	209	4	4	2-6'x8'	
43, 44	-5, 10	4	4	2-6'x8'	
45, 46	-5, 10	4	4	2-6'x8'	
51	25	5	5	1-6'x8'	
52, 53	-5, 10	5	5	2-6'x8'	
61, 62	209	6	6	2-6'x8'	
63, 64	-5, 10	6	6	2-6'x8'	
65, 66	-5, 10	6	6	2-6'x8'	
71	25	7	7	1-6'x8'	
72, 73	-5, 10	7	7	2-6'x8'	
81, 82	209	8	8	2-6'x8'	
83, 84	-5, 10	8	8	2-6'x8'	
85, 86	-5, 10	8	8	2-6'x8'	
PB201, PB202					PED PUSH BUTTON
PB401, PB402					PED PUSH BUTTON
PB601, PB602					PED PUSH BUTTON
PB801, PB802					PED PUSH BUTTON

NOTE: ZONE LIMITS ARE FOR DETECTION LIMITS ONLY. ACTUAL DETECTION AREAS FOR EACH ZONE WILL BE DETERMINED IN THE FIELD



AM PEAK INITIAL RECOMMENDED TIMING (SECONDS)								
PHASE	1	2	3	4	5	6	7	8
MINIMUM GREEN	5	10	5	10	5	10	5	10
PASSAGE	3	3	3	3	3	3	3	3
MAXIMUM I	8	36	8	32	8	36	8	32
YELLOW CHANGE	3.2	4	4	4.3	3.2	4	4	4.3
RED CLEARANCE	3.8	1.5	4	1.2	3.8	1.5	4	1.2
WALK		7		7		7		7
PEDESTRIAN CLEARANCE		26		29		26		26

PM PEAK INITIAL RECOMMENDED TIMING (SECONDS)								
PHASE	1	2	3	4	5	6	7	8
MINIMUM GREEN	5	10	5	10	5	10	5	10
PASSAGE	3	3	3	3	3	3	3	3
MAX SPILT	13	28		39	13	28	13	26
MAXIMUM I	8	21	8	32	8	21	8	32
YELLOW CHANGE	3.2	4	4	4.3	3.2	4	4	4.3
RED CLEARANCE	3.8	1.5	4	1.2	3.8	1.5	4	1.2
WALK		7		7		7		7
PEDESTRIAN CLEARANCE		26		29		26		26

FREE INITIAL RECOMMENDED TIMING (SECONDS)								
PHASE	1	2	3	4	5	6	7	8
MINIMUM GREEN	5	10	5	10	5	10	5	10
PASSAGE	3	3	3	3	3	3	3	3
MAXIMUM I	7	27	7	23	9	24	7	24
YELLOW CHANGE	3.2	4	4	4.3	3.2	4	4	4.3
RED CLEARANCE	3.8	1.5	4	1.2	3.8	1.5	4	1.2
WALK		7		7		7		7
PEDESTRIAN CLEARANCE		26		29		26		26

TRAFFIC SIGNAL HEAD QUANTITIES								
POLE NO.	SIGNAL HEAD NUMBERS	3-SECT 12" R,Y,G	4-SECT 12" R,YA,FYA,GA	1-SECT 16" HAND/WP W/ CNTDOWN	BACK PLATE	MOUNTING		NOTES
						OH	SIDE	
1	11		1		1	1		
	45			1			1	
	61	1			1	1		
	62	1			1	1		
	63	1					1	
	64			1			1	
2	31		1		1	1		
	65			1			1	
	81	1			1	1		
	82	1			1	1		
	83	1					1	
	84			1			1	
3	21	1			1	1		
	22	1			1	1		
	23	1					1	
	24			1			1	
	51		1		1	1		
	85			1			1	
4	25			1			1	
	41	1			1	1		
	42	1			1	1		
	43	1					1	
	44			1			1	
	71		1		1	1		
SUB-TOTALS		12	4	8	12	12	12	

TRAFFIC SIGNAL POLE DATA FOR MEREDITH DR & 156TH ST														
POLE NO.	POLE TYPE	MAST ARM LENGTH (FT)	TRAFFIC SIGNAL HEADS (1)		TRAFFIC SIGNS (1)		ROAD NAME SIGN (1)		LUMINAIRE ARM			FOOTING DIMENSIONS		REMARKS
			QTY.	LOCATION ON MAST ARM (FT)	QTY.	LOCATION ON MAST ARM (FT)	QTY.	LOCATION ON MAST ARM (FT)	SPREAD (FT)	MOUNTING HEIGHT (FT)	ORIENTATION (DEGREES)	DIA. (FT)	DEPTH (FT)	
1	COMBINATION SIGNAL/LIGHTING	41	3	15, 27, 40	1	35	1	9	15	40	0, 90	3	14	
2	COMBINATION SIGNAL/LIGHTING	45	3	20, 33, 44	1	41	1	12	15	40	0, 90	3	14	INSTALL POE CAMERA, AXIS Q6075-E PTZ OR THE LATEST MODEL. INSTALL EVP.
3	COMBINATION SIGNAL/LIGHTING	65	4	38, 50, 63	1	56	1	29	15	40	0, 90	3.5	18	
4	COMBINATION SIGNAL/LIGHTING	66	4	39, 52, 65	1	60	1	29	15	40	0, 90	3.5	18	

(1) LOCATION IS DISTANCE FROM CENTER OF POLE MEASURED OUT TO THE CENTER OF THE SIGNAL HEAD OR SIGN

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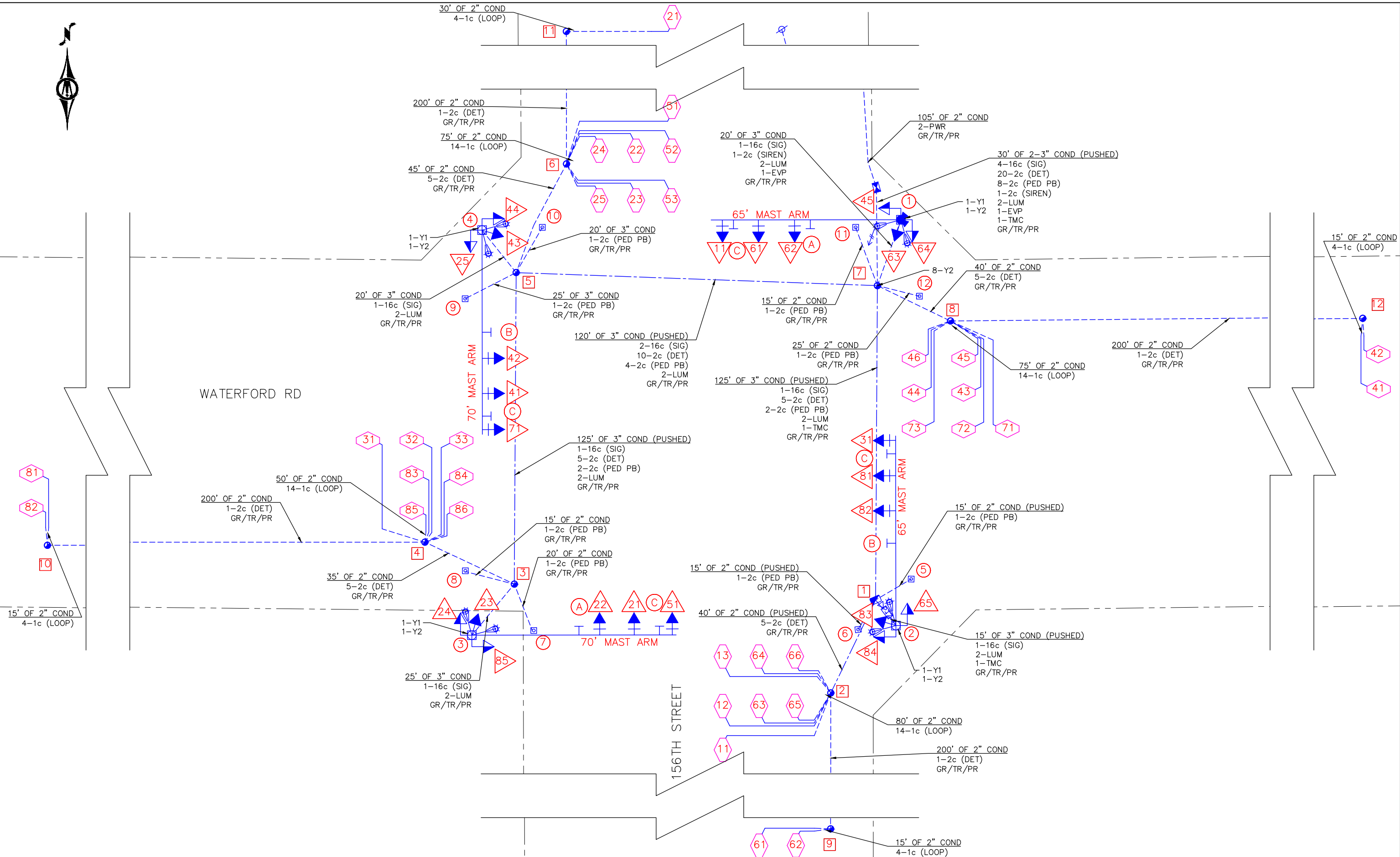


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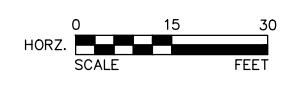
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CITY OF URBANDALE, IOWA
156TH ST SIGNALS
TRAFFIC SIGNAL DETAILS
MEREDITH DRIVE

SHEET
N.07



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CITY OF URBANDALE, IOWA
 156TH ST SIGNALS
 TRAFFIC SIGNAL LAYOUT
 WATERFORD RD

SHEET
 N.09

ESTIMATE OF TRAFFIC SIGNAL QUANTITIES

ITEM	DESCRIPTION	UNITS	TOTAL	
CABINET	8-PHASE CONTROLLER CABINET, TS1, P44 SIZE, 18" RISER, AND ACCESSORIES	LS	1	
	CONTROLLER : INTELIGHT XN-2 WITH ABCD CONNECTORS	LS	1	
	CONFLICT MONITOR: EDI MMU-2-16LEIP SMART MONITOR WITH SDLC AND ETHERNET	LS	1	
	GPS EVP SYSTEM: GTT GPS OPTICOM 768	LS	1	
	ETHERNET SWITCH: ROCKETLINX ES8108 SM SWITCH	LS	1	
	UNINTERRUPTABLE POWER SUPPLY (BATTERY BACK-UP), TESCO CONTROL	LS	1	
	PTZ CAMERA: POE CAMERA, AXIS Q6075-E	LS	1	
DETECTION	6X8 DETECTION LOOPS	EACH	35	
	PEDESTRIAN PUSH BUTTON STATION (APS) WITH SIGN	EACH	8	
TRAFFIC SIGNAL HEADS	12" LED <R,<Y,<FY,<G MAST ARM MOUNT	EACH	4	
	12" LED R,Y,G MAST ARM MOUNT	EACH	8	
	12" LED R,Y,G POLE MOUNT	EACH	4	
	LED PEDESTRIAN SIGNAL HEAD SIDE OF POLE MOUNT	EACH	8	
POWER SUPPLY	POWER SUPPLY	EACH	1	
HANDHOLES	TYPE I - PRE-CAST CONCRETE HANDHOLE	EACH	11	
	TYPE III - 24" X 36" PRE-CAST POLYMER-CONCRETE HANDHOLE	EACH	1	
WIRE AND CABLE	SIGNAL CABLE - 2C #14 AWG	LIN FT	1490	
	SIGNAL CABLE - 5C #14 AWG	LIN FT	695	
	SIGNAL CABLE - 7C #14 AWG	LIN FT	342	
	SIGNAL CABLE - 16C #14 AWG	LIN FT	675	
	LOOP DETECTION CABLES	LIN FT	4549	
	EMERGENCY VEHICLE PREEMPTION CABLE	LIN FT	130	
	TMC CABLE	LIN FT	450	
	DETECTOR - 2C #14 AWG	LIN FT	4480	
	LUMINAIRE CABLE - 1C #8 AWG	LIN FT	1780	
	LUMINAIRE CABLE - 1C #10 AWG	LIN FT	160	
	SIREN - 2C #14 AWG	LIN FT	90	
	POWER - 1C #6	LIN FT	270	
	GROUND - 1C #6 BARE	LIN FT	1620	
	TRACER - 1C #10	LIN FT	1620	
	PULL TAPE	LIN FT	1620	
	CONDUIT	2" PVC, TRENCHED	LIN FT	1500
		2" PVC, PUSHED	LIN FT	70
3" PVC, TRENCHED		LIN FT	65	
3" PVC, PUSHED		LIN FT	445	
CONCRETE FOOTINGS	CONTROLLER CABINET FOOTING	EACH	1	
	SIGNAL POLE FOOTING 3'-6" DIA. X 18'-0"	EACH	4	
TRAFFIC SIGNAL POLES	STEEL COMBINATION SIGNAL/LIGHTING - 65' MAST ARM	EACH	2	
	STEEL COMBINATION SIGNAL/LIGHTING - 70' MAST ARM	EACH	2	
LUMINAIRE	LUMINAIRE, LED, TYPE II	EACH	8	
	CONNECTOR, Y-1	EACH	8	
	CONNECTOR, Y-2	EACH	12	
MISC.	STREETNAME SIGNS	EACH	4	
	WIND DAMPENING DEVICE	EACH	4	
	TRAFFIC SIGN	EACH	4	

CONDUIT QUANTITIES (FT)

FROM	TO	TRENCHED		PUSHED	
		2" DIA NMC	3" DIA NMC	2" DIA NMC	3" DIA NMC
SOP	CAB	105			
CAB	HH7				60
HH7	POLE 1		20		
HH7	PED STN 11	15			
HH7	PED STN 12	25			
HH7	HH8	40			
HH8	HH12	200			
HH7	HH5				120
HH5	POLE 4		20		
HH5	PED STN 9	25			
HH5	PED STN 10	20			
HH5	HH6	45			
HH6	HH11	200			
HH5	HH3				125
HH3	POLE 3		25		
HH3	PED STN 7	20			
HH3	PED STN 8	15			
HH3	HH4	35			
HH4	HH10	200			
HH7	HH1				125
HH1	POLE 2				15
HH1	PED STN 5			15	
HH7	PED STN 6			15	
HH1	HH2			40	
HH2	HH9	200			
	AT HH2	80			
	AT HH9	15			
	AT HH4	50			
	AT HH10	15			
	AT HH6	75			
	AT HH11	30			
	AT HH8	75			
	AT HH12	15			
SUB-TOTALS		1500	65	70	445

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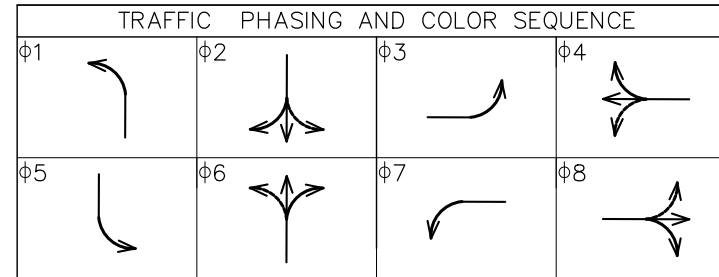
CITY OF URBANDALE, IOWA
156TH ST SIGNALS
TRAFFIC SIGNAL DETAILS
WATERFORD RD

SHEET
N.10

DETECTOR SUMMARY

DETECTION ZONE	ZONE LIMITS (DISTANCE FROM STOP LINE)	PHASE CALLED	PHASE EXTENDED	LOOP SIZE	COMMENTS
11	25	1	1	1-6'x8'	
12, 13	-5, 10	1	1	2-6'x8'	
21	209	2	2	2-6'x8'	
22, 23	-5, 10	2	2	2-6'x8'	
24, 25	-5, 10	2	2	2-6'x8'	
31	25	3	3	1-6'x8'	
32, 33	-5, 10	3	3	2-6'x8'	
41, 42	209	4	4	2-6'x8'	
43, 44	-5, 10	4	4	2-6'x8'	
45, 46	-5, 10	4	4	2-6'x8'	
51	25	5	5	1-6'x8'	
52, 53	-5, 10	5	5	2-6'x8'	
61, 62	209	6	6	2-6'x8'	
63, 64	-5, 10	6	6	2-6'x8'	
65, 66	-5, 10	6	6	2-6'x8'	
71	25	7	7	1-6'x8'	
72, 73	-5, 10	7	7	2-6'x8'	
81, 82	209	8	8	2-6'x8'	
83, 84	-5, 10	8	8	2-6'x8'	
85, 86	-5, 10	8	8	2-6'x8'	
PB201, PB202					PED PUSH BUTTON
PB401, PB402					PED PUSH BUTTON
PB601, PB602					PED PUSH BUTTON
PB801, PB802					PED PUSH BUTTON

NOTE: ZONE LIMITS ARE FOR DETECTION LIMITS ONLY. ACTUAL DETECTION AREAS FOR EACH ZONE WILL BE DETERMINED IN THE FIELD



PHASE	1	2	3	4	5	6	7	8
MINIMUM GREEN	5	10	5	10	5	10	5	10
PASSAGE	3	3	3	3	3	3	3	3
MAXIMUM I	8	26	8	33	11	23	8	33
YELLOW CHANGE	3.2	4.2	4.2	4.3	3.2	4.2	4.2	4.3
RED CLEARANCE	3.3	1.3	3.3	1.2	3.3	1.3	3.3	1.2
WALK		7		7		7		7
PEDESTRIAN CLEARANCE		22		26		22		26

PHASE	1	2	3	4	5	6	7	8
MINIMUM GREEN	5	10	5	10	5	10	5	10
PASSAGE	3	3	3	3	3	3	3	3
MAXIMUM I	8	25	8	24	8	25	8	24
YELLOW CHANGE	3.2	4.2	4.2	4.3	3.2	4.2	4.2	4.3
RED CLEARANCE	3.3	1.3	3.3	1.2	3.3	1.3	3.3	1.2
WALK		7		7		7		7
PEDESTRIAN CLEARANCE		22		26		22		26

PHASE	1	2	3	4	5	6	7	8
MINIMUM GREEN	5	10	5	10	5	10	5	10
PASSAGE	3	3	3	3	3	3	3	3
MAXIMUM I	8	25	8	14	17	16	8	14
YELLOW CHANGE	3.2	4.2	4.2	4.3	3.2	4.2	4.2	4.3
RED CLEARANCE	3.3	1.3	3.3	1.2	3.3	1.3	3.3	1.2
WALK		7		7		7		7
PEDESTRIAN CLEARANCE		22		26		22		26

TRAFFIC SIGNAL HEAD QUANTITIES

POLE NO.	SIGNAL HEAD NUMBERS	3-SECT 12" R,Y,G	4-SECT 12" R,YA,FYA,GA	1-SECT 16" HAND/WP W/ CNTDWN	BACK PLATE	MOUNTING		NOTES
						OH	SIDE	
1	31		1		1	1		
	65			1			1	
	81	1			1	1		
	82	1			1	1		
	83	1					1	
	84			1			1	
2	21	1			1	1		
	22	1			1	1		
	23	1					1	
	24			1			1	
	51		1		1	1		
	85			1			1	
3	25			1			1	
	41	1			1	1		
	42	1			1	1		
	43	1					1	
	44			1			1	
	71		1		1	1		
4	11		1		1	1		
	45			1			1	
	61	1			1	1		
	62	1			1	1		
	63	1					1	
	64			1			1	
SUB-TOTALS		12	4	8	12	12	12	

TRAFFIC SIGNAL POLE DATA FOR WATERFORD RD & 156TH ST

POLE NO.	POLE TYPE	MAST ARM LENGTH (FT)	TRAFFIC SIGNAL HEADS (1)		TRAFFIC SIGNS (1)		ROAD NAME SIGN (1)		LUMINAIRE ARM			FOOTING DIMENSIONS		REMARKS
			QTY.	LOCATION ON MAST ARM (FT)	QTY.	LOCATION ON MAST ARM (FT)	QTY.	LOCATION ON MAST ARM (FT)	SPREAD (FT)	MOUNTING HEIGHT (FT)	ORIENTATION (DEGREES)	DIA. (FT)	DEPTH (FT)	
1	COMBINATION SIGNAL/LIGHTING	65	4	37,48,61	1	57	1	31	15	40	0, 90	3.5	18	TORNADO SIREN MOUNTED ON TOP OF POLE. INSTALL EVP.
2	COMBINATION SIGNAL/LIGHTING	65	4	39,51,63	1	59	1	28	15	40	0, 90	3.5	18	
3	COMBINATION SIGNAL/LIGHTING	70	4	44,56,69	1	64	1	64	15	40	0, 90	3.5	18	
4	COMBINATION SIGNAL/LIGHTING	70	4	44,56,69	1	64	1	64	15	40	0, 90	3.5	18	INSTALL POE CAMERA, AXIS Q6075-E PTZ OR LATEST MODEL.

(1) LOCATION IS DISTANCE FROM CENTER OF POLE MEASURED OUT TO THE CENTER OF THE SIGNAL HEAD OR SIGN



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CITY OF URBANDALE, IOWA
156TH ST SIGNALS
TRAFFIC SIGNAL DETAILS
WATERFORD RD



INPLACE TRAFFIC CABINET
24 FIBER OPTIC TERMINATIONS

1 AT 215', INPLACE COND
(CABO TO HH97)
1-24 SM
INPLACE TR/PR

INPLACE HANDHOLE
HH97

1 AT 135', INPLACE COND
(HH97 TO HH98)
1-24 SM
INPLACE TR/PR

DOUGLAS PKWY

INPLACE COND
INPLACE 1-36 SM
INPLACE TR/PR

156TH ST

INPLACE COND
INPLACE 1-36 SM
INPLACE TR/PR

INPLACE HANDHOLE
HH99

INPLACE HANDHOLE
HH98
COIL 50' OF FIBER
1 NEW SPLICE ENCLOSURE

INPLACE COND
INPLACE 1-36 SM
INPLACE TR/PR



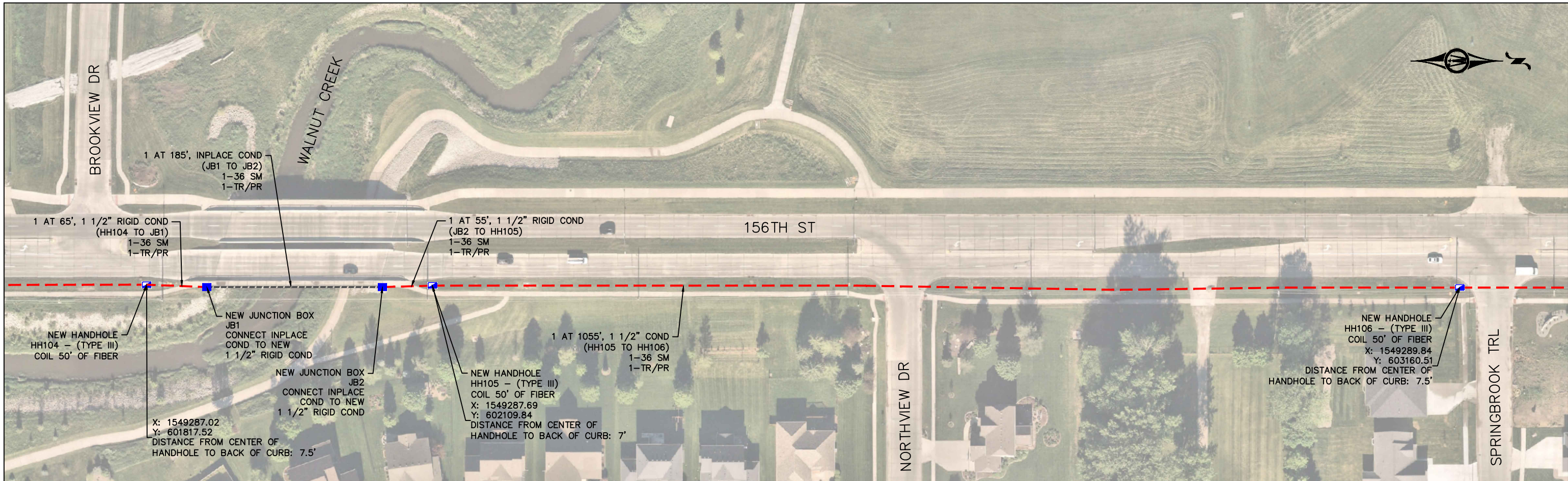
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CITY OF URBANDALE, IOWA
156TH ST SIGNALS
FIBER PLANS

SHEET
N.13

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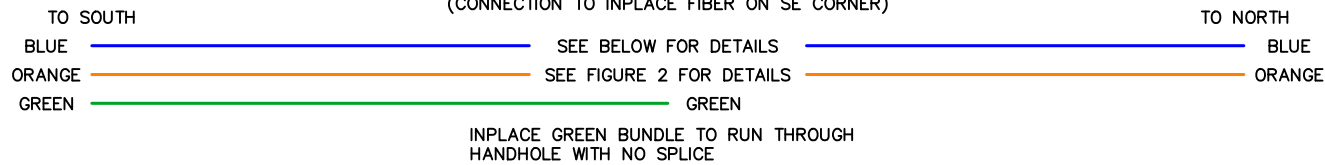
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CITY OF URBANDALE, IOWA
156TH ST SIGNALS
FIBER PLANS

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N.15

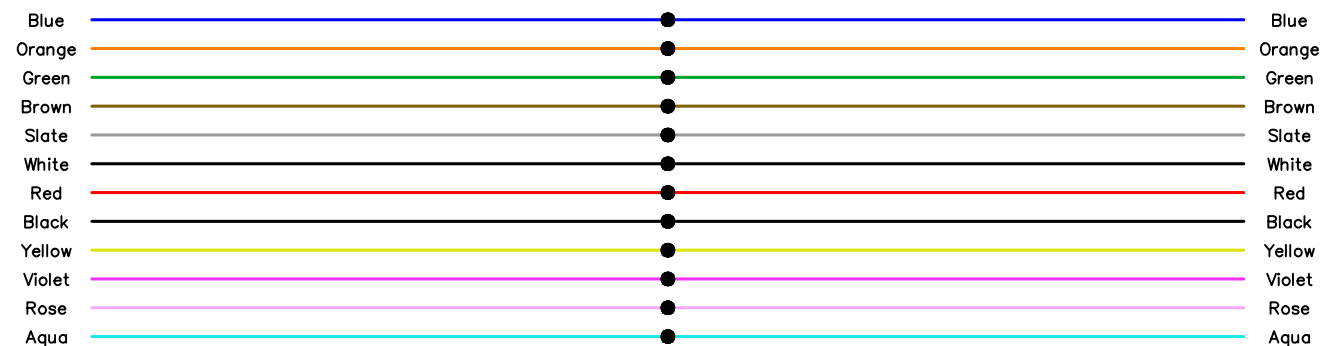
156TH STREET & MEREDITH DRIVE
HANDHOLE 100 (FIGURE 1)
(CONNECTION TO INPLACE FIBER ON SE CORNER)



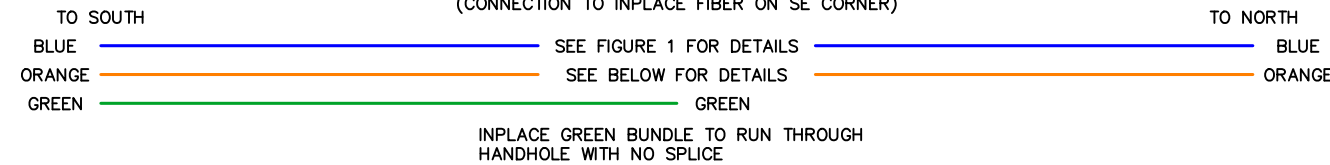
BLUE BUNDLE

TERMINATIONS: 0
SPLICE ENCLOSURES: 1
SPLICES: 12

CONNECT SOUTH RUN OF INPLACE 12 SM FIBER (BLUE BUNDLE) EXTENDING FROM DOUGLAS ROAD TO NORTH RUN OF NEW 12 SM FIBER (BLUE BUNDLE) EXTENDING TO NEW FIBER HUB



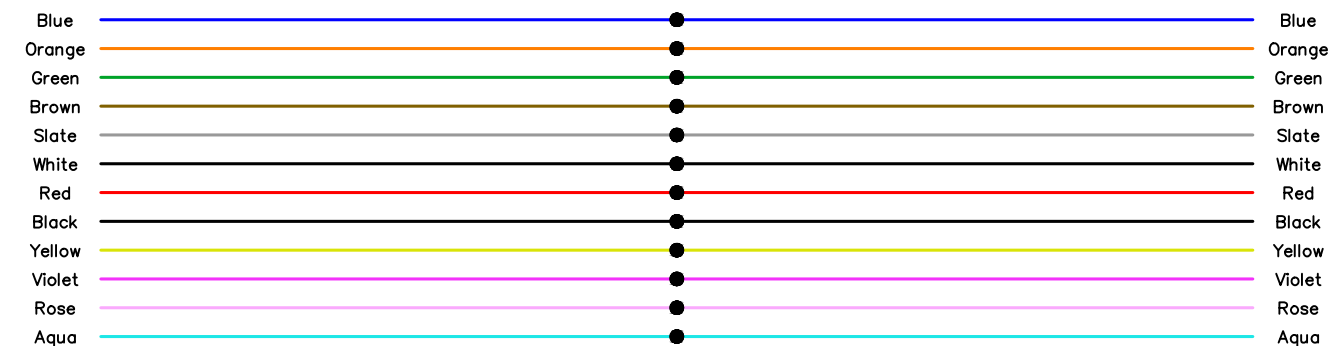
156TH STREET & MEREDITH DRIVE
HANDHOLE 100 (FIGURE 2)
(CONNECTION TO INPLACE FIBER ON SE CORNER)



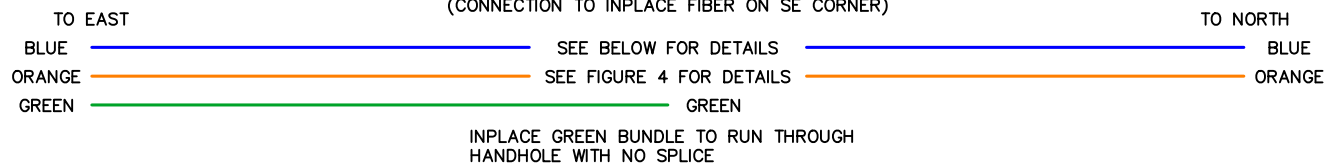
ORANGE BUNDLE

TERMINATIONS: 0
SPLICE ENCLOSURES: 0
SPLICES: 12

CONNECT SOUTH RUN OF INPLACE 12 SM FIBER (ORANGE BUNDLE) EXTENDING FROM DOUGLAS ROAD TO NORTH RUN OF NEW 12 SM FIBER (ORANGE BUNDLE) EXTENDING TO NEW FIBER HUB



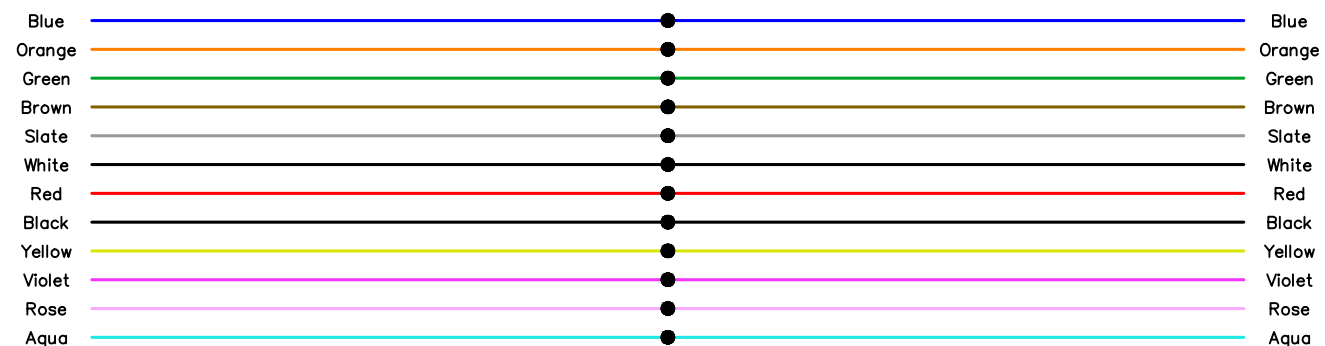
156TH STREET & MEREDITH DRIVE
HANDHOLE 100 (FIGURE 3)
(CONNECTION TO INPLACE FIBER ON SE CORNER)



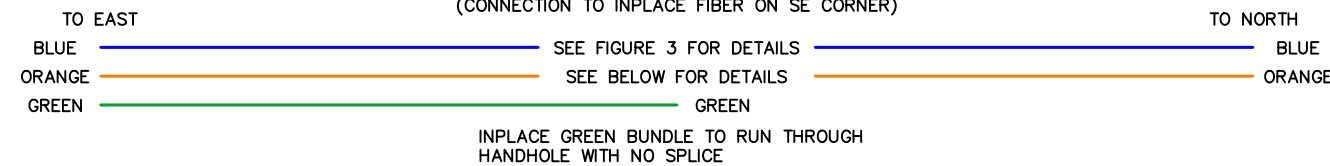
BLUE BUNDLE

TERMINATIONS: 0
SPLICE ENCLOSURES: 1
SPLICES: 12

CONNECT SOUTH RUN OF INPLACE 12 SM FIBER (BLUE BUNDLE) EXTENDING FROM DOUGLAS ROAD TO NORTH RUN OF NEW 12 SM FIBER (BLUE BUNDLE) EXTENDING TO NEW FIBER HUB



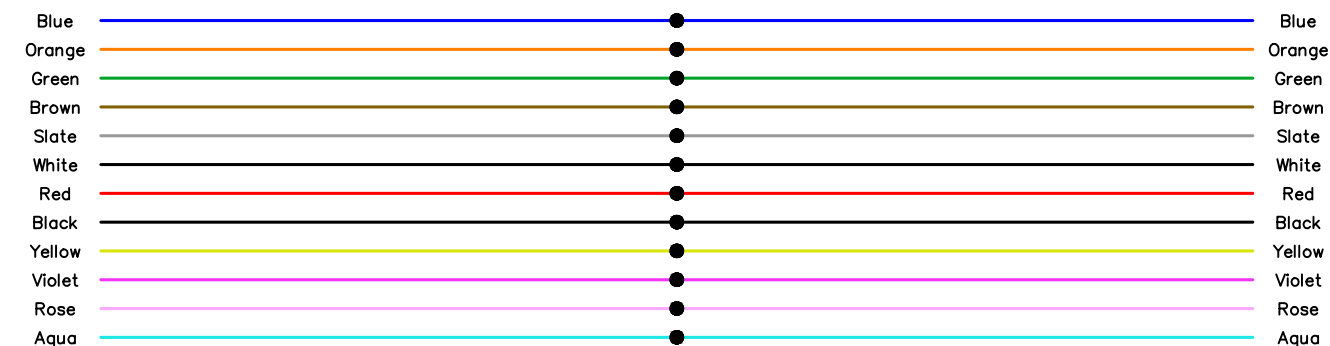
156TH STREET & MEREDITH DRIVE
HANDHOLE 100 (FIGURE 4)
(CONNECTION TO INPLACE FIBER ON SE CORNER)



ORANGE BUNDLE

TERMINATIONS: 0
SPLICE ENCLOSURES: 0
SPLICES: 12

CONNECT SOUTH RUN OF INPLACE 12 SM FIBER (ORANGE BUNDLE) EXTENDING FROM DOUGLAS ROAD TO NORTH RUN OF NEW 12 SM FIBER (ORANGE BUNDLE) EXTENDING TO NEW FIBER HUB



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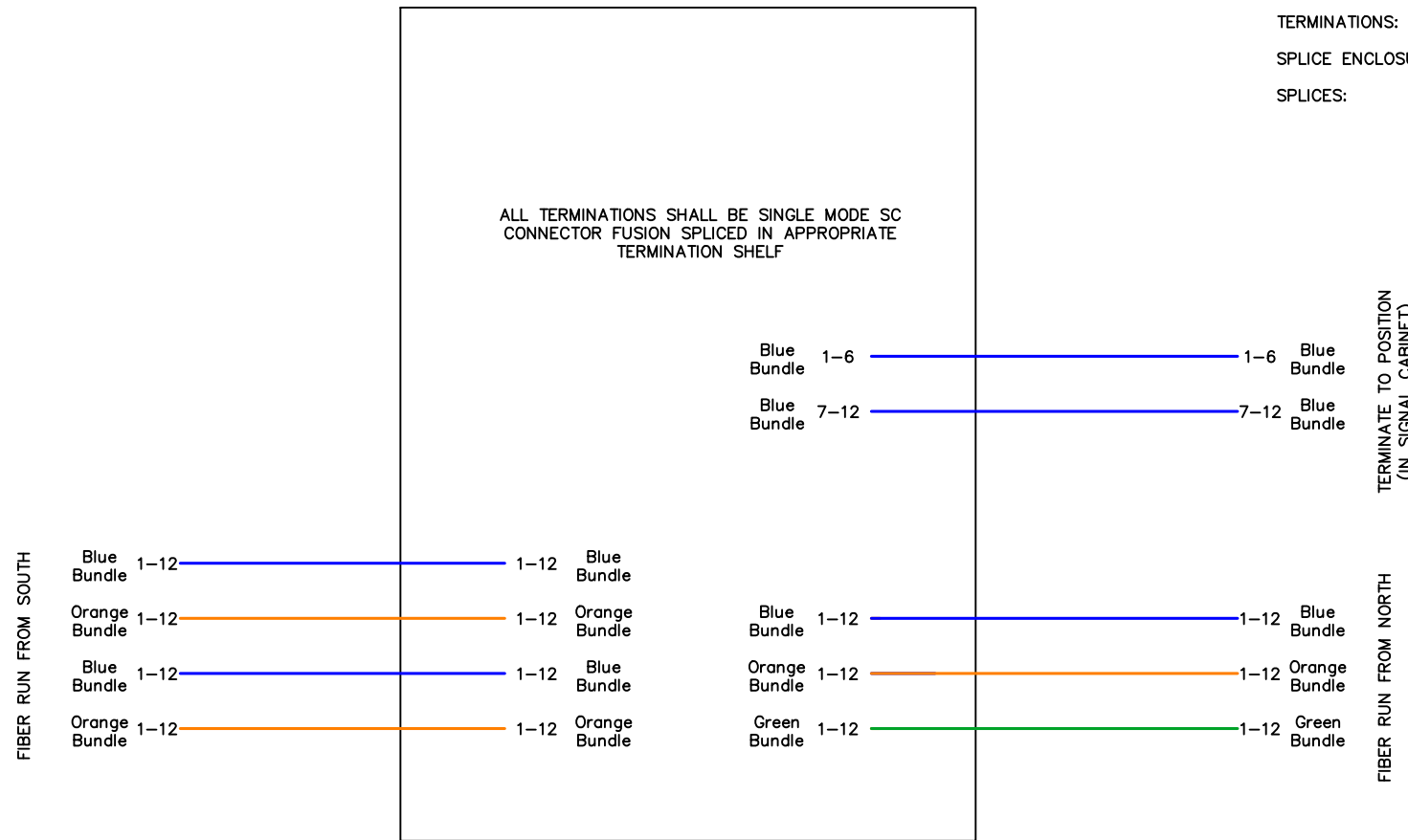
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156TH ST SIGNALS
FIBER PLANS

156TH STREET & MEREDITH DRIVE
 FIBER HUB (FIGURE 5)
 (CONNECTION TO FIBER HUB ON NE CORNER)

NEW FIBER HUB
 TERMINATE TO POSITION (IN FIBER HUB)

ALL TERMINATIONS SHALL BE SINGLE MODE SC
 CONNECTOR FUSION SPLICED IN APPROPRIATE
 TERMINATION SHELF



TERMINATIONS: 96
 SPLICE ENCLOSURES: 0
 SPLICES: 0

TERMINATE TO POSITION
 (IN SIGNAL CABINET)

CONNECT TRAFFIC CABINET TO FIBER
 HUB VIA ETHERNET
 PROVIDE A SINGLE MODE SWITCH IN
 THE FIBER HUB. SWITCH SHALL BE
 ROCKETLINX ES8108 AND MUST BE
 COMPATIBLE WITH EXISTING SWITCHES
 IN THE URBANDALE SYSTEM.

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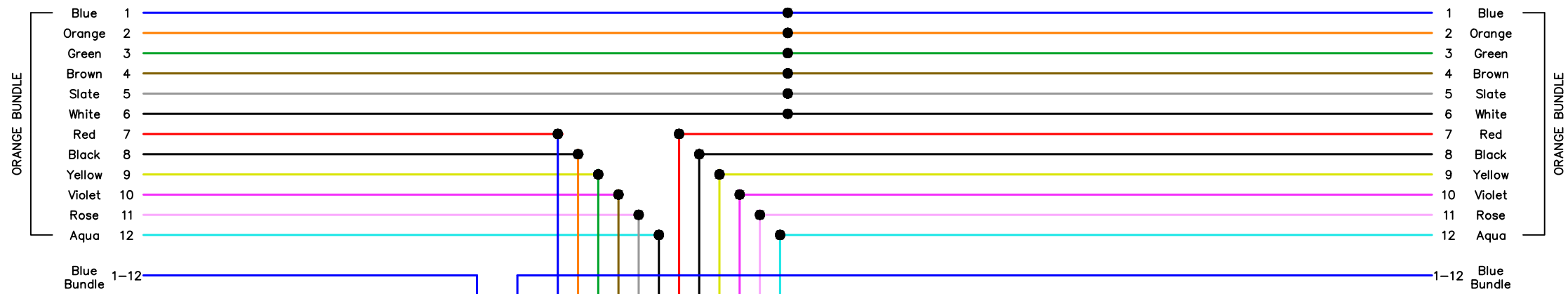
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CITY OF URBANDALE, IOWA
 156TH ST SIGNALS
 FIBER PLANS

SHEET
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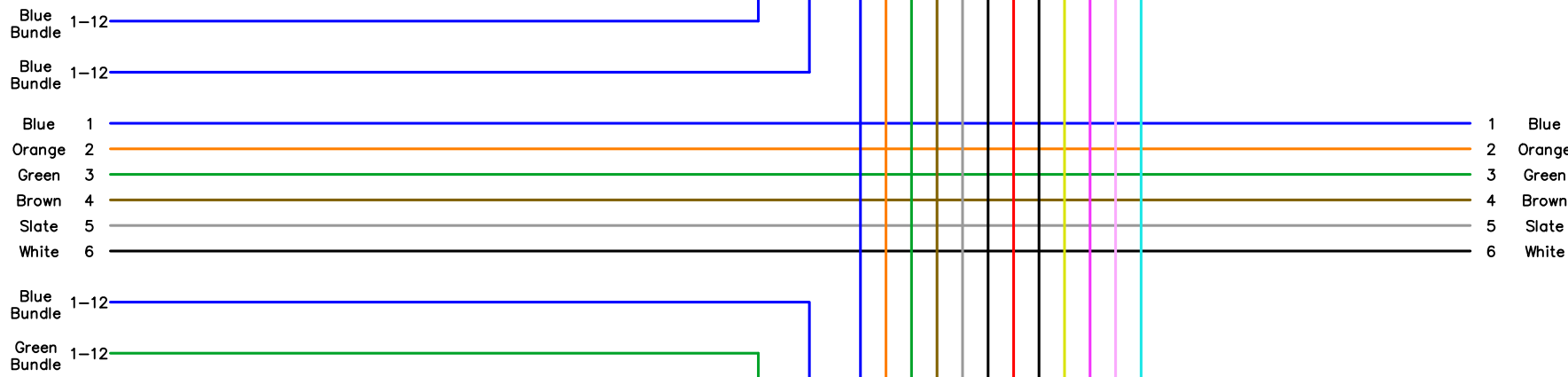
156TH STREET & WATERFORD ROAD
 HANDHOLE 107 (FIGURE 6)
 (CONNECTION TO INPLACE FIBER ON SE CORNER)



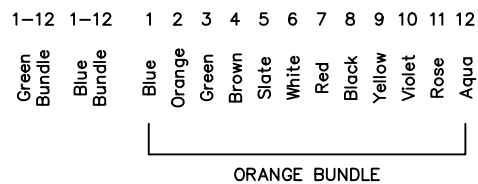
TERMINATIONS: 48
 SPLICE ENCLOSURES: 1
 SPLICES: 18

(TERMINATIONS IN CABINET TO BE COMPLETED BY
 OTHERS FOR BARRETT BOESEN PARK WIFI FIBER PLANS)

TERMINATE TO POSITION (IN SIGNAL CABINET)



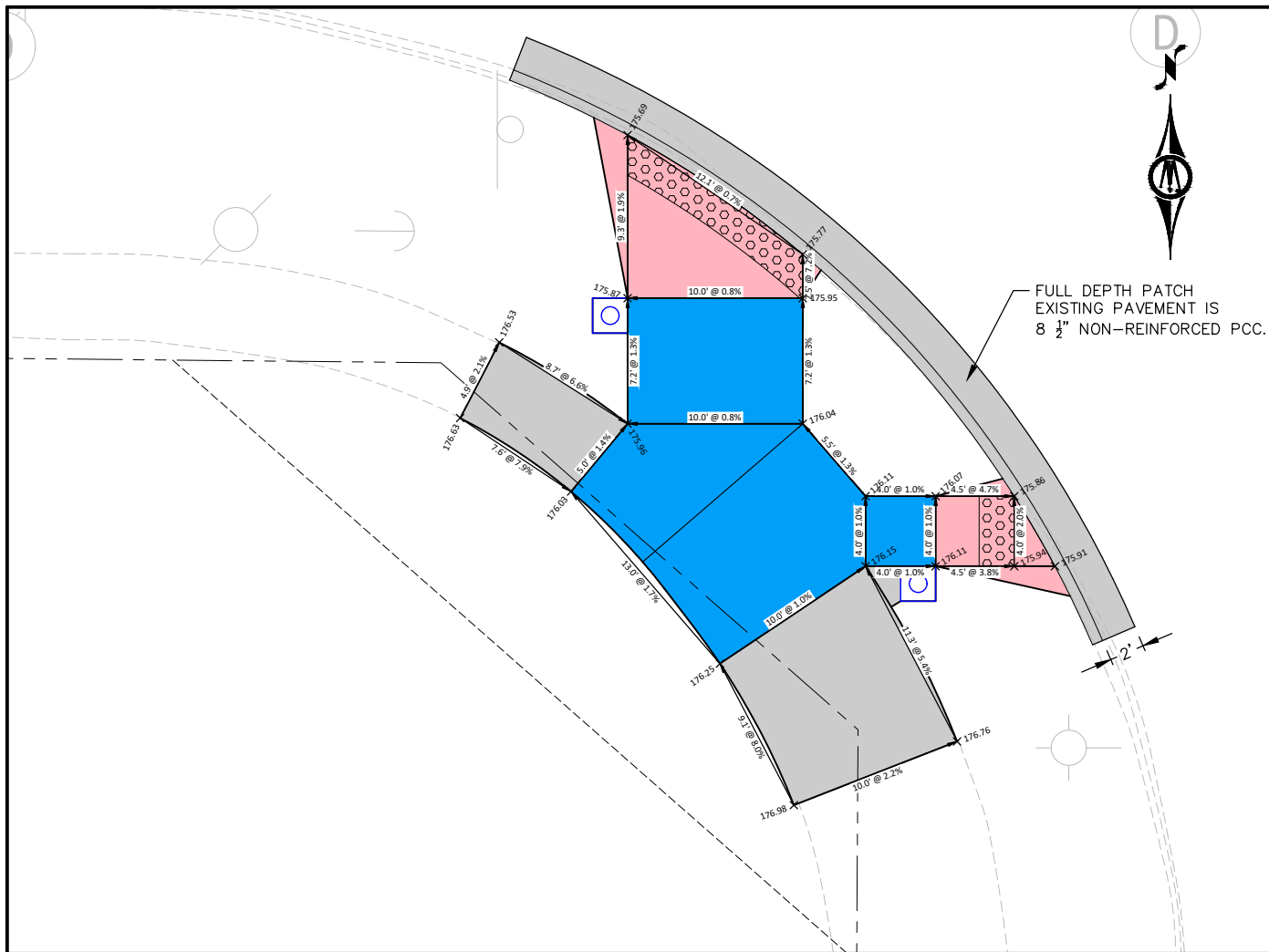
BB PARK TERM SHELF
 (REFERENCE BARRETT BOESEN PARK
 WIFI FIBER PLANS)



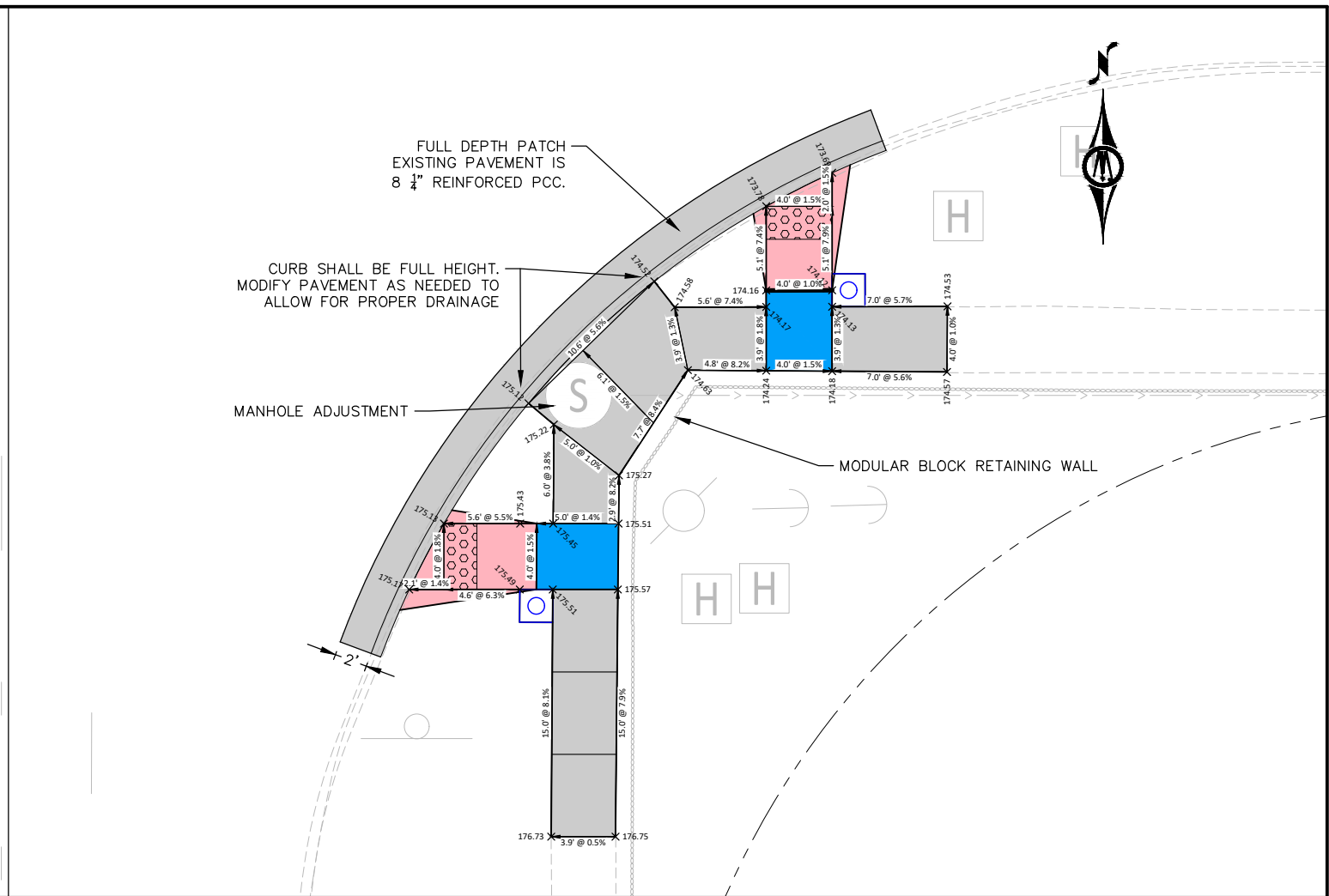
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CITY OF URBANDALE, IOWA
 156TH ST SIGNALS
 FIBER PLANS



156TH STREET & MEREDITH DRIVE
SW QUADRANT



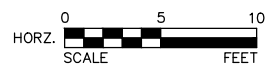
156TH STREET & MEREDITH DRIVE
SE QUADRANT

LEGEND

	RAMP SPACE
	TURNING SPACE
	SIDEWALK
	TRUNCATED DOMES
	PUSHBUTTON

NOTE: CONTRACTOR TO REMOVE INPLACE SIDEWALK TO CONSTRUCT PROPOSED RAMPS. SEE ESTIMATE REFERENCE INFORMATION FOR ADDITIONAL DETAILS.

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CITY OF URBANDALE, IOWA
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SIDEWALK LAYOUT
MEREDITH DR SOUTH RAMPS

SHEET
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