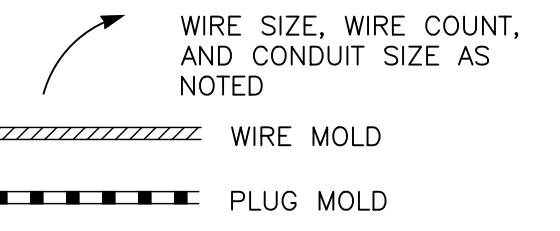


POWER

Table with 2 columns: SYMBOL, DESCRIPTION. Includes symbols for Duplex Receptacle, Ground Fault Interrupter, Floor Receptacle, Weatherproof, Surge Suppression, Floor Box, Special Purpose Outlet, Electric Hand Dryer, Pushbutton, Bell or Buzzer, Fused Disconnect, Nonfused Disconnect, Magnetic Motor Starter, Manual Motor Starter, Combination Magnetic Motor Starter, Motor Connection, Variable Frequency Drive, Manual Motor Starter, Electric Meter, Junction Box, Busplug, Pullbox, Enclosed Circuit Breaker, Single Face Pedestal Box, Double Face Pedestal Box, Emergency Power Receptacle, 120V Power Connection, Drop Cord, Cord Reel, Thermostat, Power Pole.



HEALTH CARE

Table with 2 columns: SYMBOL, DESCRIPTION. Includes symbols for Nurse Call Patient Station, Nurse Call Staff Station, Nurse Call Duty Station, Nurse Call Master Station, Nurse Call Code Blue Station, Nurse Call Code Emergency Station, Nurse Call Dome Light, Nurse Call Control Panel.

LIGHTING

Table with 2 columns: SYMBOL, DESCRIPTION. Includes symbols for Single Pole Light Switch, Three Way Light Switch, Four Way Light Switch, Dimmer Switch, Time Clock / Switch, Photo Control, Recessed Fixtures (2'x4', 2'x2', 1'x4'), Emergency Circuit, Downlights (6"-8", 12", 12" square), Wall Mounted Fixtures (2', 3', 4'), Strip Fixtures (4 FT., 3 FT., 2 FT.), Track Light (4 FT.), Wall Mounted Exit Sign, Wall Mounted Exit Sign Double Face, Wall Mounted Combination Exit Sign/Emergency Egress Lighting, Ceiling Mounted Exit Sign, Emergency Lighting Fixture with Integral Battery, Emergency Lighting Fixture with Remote Battery, Emergency Lighting Fixture with Remote Battery (Single Head), Lighting Contactor, Wall Mounted Occupancy Sensor, Ceiling Mounted Occupancy Sensor.

MISCELLANEOUS

Table with 2 columns: SYMBOL, DESCRIPTION. Includes symbols for Reference to Drawing Note, Reference to Feeder Schedule, Room Number, Arrowhead Line Terminator, Wall Section Symbol, Multiple Elevation Symbol, Detail Reference Symbol, Drawing Reference Symbol.

ONE LINE SYMBOLS

Table with 2 columns: SYMBOL, DESCRIPTION. Includes symbols for Transformer, Current Transformer, Potential Transformer, Thermal Magnetic Molded Case Circuit Breaker, Thermal Magnetic Molded Case Circuit Breaker Draw-Out Type, Solid State Breaker, Shunt Trip Type Circuit Breaker, Fused Disconnect Switch, Fuse, Branch Circuit Distribution Panel, Ground Connection, Lightning Arrestor, Schematic Motor, Emergency Generator, Automatic Transfer Switch, Manual Transfer Switch, Meter Designation, Ammeter Selector Switch, Voltmeter Selector Switch, Ground Fault, Draw Out Device.

PUBLIC ADDRESS

Table with 2 columns: SYMBOL, DESCRIPTION. Includes symbols for Ceiling Mounted Speaker, Wall Mounted Speaker, Professional Quality Speaker, Speaker Cluster, Public Address Equipment Rack, Public Address Control Center, Public Address Speaker Volume Control, Wall Mounted Microphone Outlet, Floor Mounted Microphone Outlet, Public Address Intercom Station, Wall Mounted Clock Letter, Wall Mounted Digital Clock Letter, Wall Mounted Clock and Speaker Letter.

SCHEMATIC SYMBOLS

Table with 2 columns: SYMBOL, DESCRIPTION. Includes symbols for Hand-Off-Auto Selector Switch, Solenoid Valve Coil, N.O. Pushbutton, N.C. Pushbutton, N.O. Relay Contact, N.C. Relay Contact, N.O. Flow Switch, N.C. Flow Switch, N.O. Level Switch, N.C. Level Switch, N.O. Pressure Switch, N.C. Pressure Switch, N.O. Temperature Switch, N.C. Temperature Switch, N.O. Switch, N.C. Switch, N.O. Low Limit Switch, N.C. Low Limit Switch, N.O. High Limit Switch, N.C. High Limit Switch, Emergency Stop Pushbutton, Relay Coil, Indicator Light.

SECURITY

Table with 2 columns: SYMBOL, DESCRIPTION. Includes symbols for Card Reader, Magnetic Door Contact, Keypad, Special Intrusion Detection Sensor, Motion Detector, Connect to Security System, Exit Request, Electro Magnetic Lock, Intercom, Electric Latch Retraction Bar, Electric Lock, Power Supply, Intrusion Detection Control Center, Closed Circuit Television Camera (Fixed), Closed Circuit Television Camera (Pan-Tilt-Zoom), Keypad Power Supply, Electric Latch Retraction Bar Power Supply.

FIRE ALARM SYSTEM

Table with 2 columns: SYMBOL, DESCRIPTION. Includes symbols for Manual Pull Station, Ceiling Mounted Smoke Detector, Duct Mounted Smoke Detector, Visual Fire Alarm Strobe, Audio-Visual Fire Alarm Letter, Ceiling Mounted Thermo Detector, Ceiling Mounted Carbon Dioxide Detector, Auxiliaries, Wall Mounted Magnetic Door Holder, Floor Mounted Magnetic Door Holder, Connection to Magnetic Door Holder, Connection to Sprinkler Flow Switch, Connection to Elevator Capture Control, Connection to Sprinkler System Tamper Switch, Fire Alarm System Emergency Phone, Fire Alarm Control Panel, Fire Alarm Remote Annunciator Panel, Voice Control Center Panel, Notification Appliance Extender Panel, Zone Address Module, Individual Address Module, Collective Zone Interface, Auxiliary Power Supply, Fan Shutdown, Addressable Monitor Module, Smoke Damper.

ABBREVIATIONS:

Table with 2 columns: SYMBOL, DESCRIPTION. Lists abbreviations for various electrical components like ACA, ACV, ALM, AVR, AVS, BACV, BFM, C, CCT, CS, CT, DCA, DCV, DMD, E, ECS, ESPB, F, FT, GAL, GEN, IACV, IFM, LTS, MFL, N, O, PT, S1, S2, SCS, SHTC, SIL, SS, STB, SYNC, TSC, VAR, WRE, WTD.

NOTE: 1. NOT ALL SYMBOLS, ABBREVIATIONS AND LINE DESIGNATIONS ARE NECESSARILY USED ON THIS PROJECT.

POWER DISTRIBUTION

Table with 2 columns: SYMBOL, DESCRIPTION. Includes symbols for Branch Circuit, Distribution Panelboard, Motor Control Center, Transformer, Switchboard Section, Fire Alarm System Emergency Phone, Fire Alarm Control Panel, Fire Alarm Remote Annunciator Panel, Voice Control Center Panel, Notification Appliance Extender Panel, Zone Address Module, Individual Address Module, Collective Zone Interface, Auxiliary Power Supply, Fan Shutdown, Addressable Monitor Module, Smoke Damper.

LINE TYPES

Table with 2 columns: SYMBOL, DESCRIPTION. Includes symbols for Existing Work, Removal Work, New Work.

COMMUNICATIONS

Table with 2 columns: SYMBOL, DESCRIPTION. Includes symbols for Telephone Outlet, Telephone Outlet in Flush Floor Box, Computer/Data Communication Outlet, Wall Mounted Cable Television System Outlet, Ceiling Mounted Cable Television System Outlet, Telephone Switch, Remote Telephone Ringer/Buzzer, Cable TV Tap, Cable TV Splitter, Video Outlet, Area of Refuge.

FM-200 SYSTEM

Table with 2 columns: SYMBOL, DESCRIPTION. Includes symbols for Manual Pull Station, Abort Switch, Horn/Strobe Unit, Strobe Unit, Electric Motor Bell, Ionization Smoke Detector, Photoelectric Smoke Detector.

ANSI STANDARD DEVICE FUNCTION NUMBERS

Table with 2 columns: NUMBER, DESCRIPTION. Lists ANSI standard device function numbers from 2 to 89.

Table with 2 columns: DATE, REVISION. Includes fields for NO. and REVISION.

ECAB engineering p.c. logo and contact information: 15 Schoen Place, Suite 300, Pittsford, NY 14534. Phone: (585) 641-7121, Fax: (585) 362-4175, www.ecab.com

ROYAL CAR WASH 3400 TRANSIT ROAD WEST SENECA, NY 14224. Anthony J. Daniele, Mardanth Enterprises Inc.

LEGENDS AND ABBREVIATIONS. ISSUED FOR CONSTRUCTION. SCALE: AS NOTED. DRAWN BY: EAH, REVIEWED BY: EJS, PROJECT MANAGER: BAW. DATE: 1-11-2019.

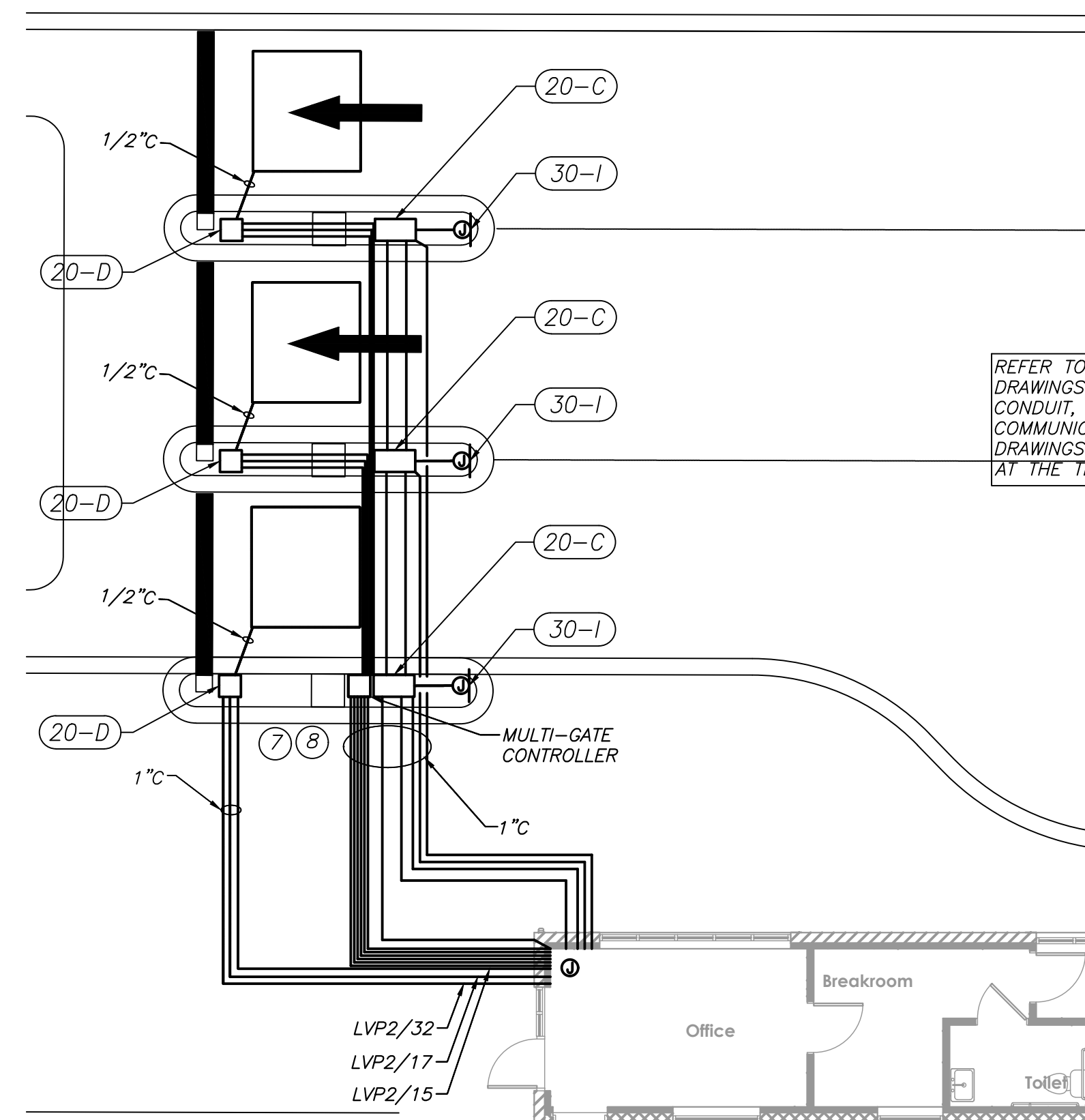
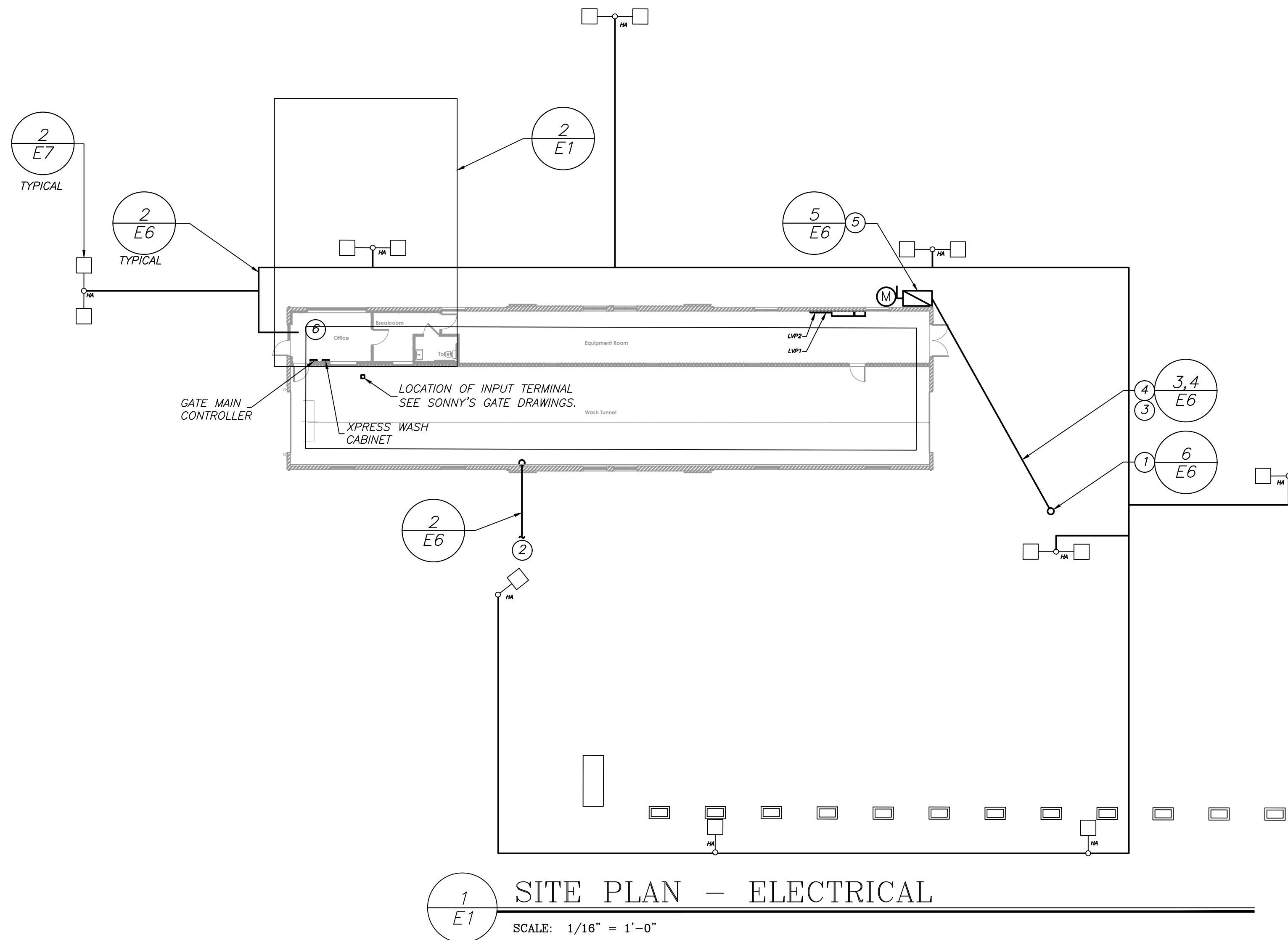
PROJECT NUMBER 19701. DRAWING NUMBER E0.

GENERAL NOTES:

- A. COORDINATE NEW ELECTRICAL SERVICE ENTRANCE WITH ROCHESTER GAS AND ELECTRIC AND NEW TELEPHONE SERVICE WITH FRONTIER TELEPHONE OF ROCHESTER. OBTAIN ALL SPECIFICATIONS AND PAY ALL ASSOCIATED FEES.
- B. OBTAIN ALL PERMITS AND INSPECTIONS REQUIRED BY THE TOWN OF BRIGHTON.
- C. A MINIMUM OF TWO DAYS PRIOR TO EXCAVATION. CONTACT DIG SAFELY NEW YORK, INC (1-800-962-7962) AND OBTAIN A STAKEOUT OF ALL PUBLIC AND PRIVATE UTILITIES LOCATED IN THE AREA OF EXCAVATION. COORDINATE PRIVATE UTILITIES WITH THE OWNER PRIOR TO EXCAVATION.
- D. HAND EXCAVATION ADJACENT EXISTING UTILITIES INCLUDING STORM AND SANITARY SYSTEMS TO AVOID DAMAGE. REPORT ANY DAMAGED UTILITIES TO THE OWNERS REPRESENTATIVE IMMEDIATELY.
- E. PROVIDE BRACING, SHORING, SHEATHING, AND OTHER WORK FOR PROTECTION OF PERSONNEL, THE CONTRACT WORK, EXCAVATIONS, TREES, SHRUBS, EXISTING STRUCTURES, AND SURROUNDING PROPERTIES.
- F. PROVIDE AND MAINTAIN BARRICADES, WARNING SIGNS, FLAGS, AND LIGHTS TO PROVIDE PROTECTION FOR WORK, WORKMEN, PUBLIC, AND PROPERTY. COORDINATE PARKING LOT DISRUPTIONS WITH THE OWNER IN ADVANCE.
- G. PROVIDE PUMPS HOSES, PIPE, LABOR AND FUEL NECESSARY TO KEEP EXCAVATIONS FREE OF WATER ACCUMULATION. OPERATE AND MAINTAIN EQUIPMENT. DISCHARGE WATER IN MANNER NOT TO UNDERMINE OR DISTURB EXISTING OR ADJACENT STRUCTURES OR LAND. DO NOT DISCHARGE DIRT, BACKFILL, DEBRIS, INTO SANITARY OR STORM DRAINAGE SYSTEMS.
- H. COMPLETELY RESTORE THE AREA TO THE CONDITION PRIOR TO THE START OF EXCAVATION AND TRENCHING WORK.
- I. THE ELECTRICAL CONTRACTOR SHALL ENGAGE THE SERVICES OF A QUALIFIED SUBCONTRACTOR FOR EXCAVATION, BACKFILL AND CONCRETE WORK.
- J. MAINTAIN ROAD ACCESS TO SITE AT ALL TIMES. PROVIDE STEEL PLATES OVER TRENCH AS REQUIRED.
- K. PROTECT UTILITIES, SIDEWALKS, STRUCTURES, PAVEMENTS AND OTHER FACILITIES FROM DAMAGE CAUSED BY SETTLING, LATERAL MOVEMENTS, UNDERMINING, WASHOUTS AND OTHER HAZARDS CREATED BY EXCAVATION WORK.
- L. TRANSITION ALL CONDUITS TO GRS PRIOR TO RISING ABOVE GRADE.
- M. ALL BELOW GRADE MEDIUM VOLTAGE CONDUITS SHALL BE CONCRETE ENCASED GRS CONDUIT.
- N. ALL BELOW GRADE LOW VOLTAGE CONDUITS SHALL BE DIRECT BURIED PVC SCH. 80 WITH GRS ELBOWS UNLESS NOTED OTHERWISE.
- O. PROVIDE 1" PVC, SCHEDULE 80 CONDUIT, DIRECT BURIED FOR ALL SITE LIGHTING CIRCUITS.
- P. INSTALL TELEPHONE, CABLE AND ELECTRICAL CONDUITS AS STRAIGHT AS POSSIBLE. INSTALL CONDUITS BELOW SITE LIGHTING CONDUITS AND GAS LINES AND ABOVE WATER, STORM, AND SANITARY PIPING.
- Q. REFER TO SONNY'S CAR WASH DRAWINGS FOR MORE INFORMATION.

DRAWING NOTES:

- 1 PROVIDE POLE MOUNTED TRANSFORMER. TRANSFORMER BY ROCHESTER GAS AND ELECTRIC. COORDINATE FINAL LOCATION WITH ROCHESTER GAS AND ELECTRIC. INSTALLATION SHALL BE IN ACCORDANCE RG&E SKETCH.
- 2 PROVIDE (1) 4" SCHED - 80 PVC, DIRECT BURIED CONDUIT FROM POINT DESIGNATED BY FRONTIER TELEPHONE AND STUB UP INSIDE STORAGE ROOM AT BACKBOARD FOR TELEPHONE SERVICE. COORDINATE WITH FRONTIER TELEPHONE PRIOR TO DIGGING.
- 3 PROVIDE (2) 4" SCHED - 80 PVC, DIRECT BURIED CONDUITS FROM UTILITY MANHOLE TO UTILITY TRANSFORMER. INSTALLATION SHALL BE IN ACCORDANCE WITH RG&E SKETCH.
- 4 PROVIDE (2) SETS OF 4-350KCM, 1-#1EG IN (2) 4" PVC-80 DIRECT BURIED FROM TRANSFORMER AND STUB UP INTO THE SERVICE ENTRANCE DISCONNECT SWITCH.
- 5 PROVIDE 480 VOLT, 600A SERVICE ENTRANCE RATED FUSED DISCONNECT SWITCH, NEMA 3R.
- 6 CONNECT TO LVP1/10 VIA LIGHTING CONTROL PANEL AND PHOTOCELL. REFER TO DETAIL 8/E6 FOR MORE INFORMATION.
- 7 PROVIDE (3) 1" CONDUITS FOR HTK #1 AND #2 LIGHTING AND CAMERAS. (1) CONDUIT FOR POWER, (1) CONDUIT FOR VIDEO AND (1) 1 SPARE CONDUIT.
- 8 PROVIDE (1) 1" CONDUIT FROM LVP2 TO HTK UNIT FOR POWER TO SIGN AND (1) 1" SPARE CONDUIT.
- 9 PROVIDE MANHOLE PER RG&E REQUIREMENTS. 6' X 12' X 7', LAKELAND MODEL U-142 WITH #5 FRAME AND 24" COVER. COORDINATE ENTIRE INSTALLATION WITH RG&E.
- 10 PROVIDE (6) BOLLARDS PER RG&E STANDARDS.



NO.	REVISION	DATE
1	REVISION	7/1/2019

If it is a violation of New York State Education Law Article 145, Sec. 7202, no person, unless acting under the direction and supervision of a duly licensed professional engineer, shall prepare, seal, or issue any drawings or specifications for a project of a specific description of the alteration.

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PROJECT/CLIENT

ROYAL CAR WASH
3400 TRANSIT ROAD
WEST SENECA, NY 14224

Anthony J. Daniele
Mardanth Enterprises Inc.

DRAWING TITLE

**SITE PLAN
ELECTRICAL**

ISSUED FOR
CONSTRUCTION

SCALE: AS NOTED

DRAWN BY: EAH
REVIEWED BY: EIS
DATE: 1-11-2019
PROJECT MANAGER: BAW

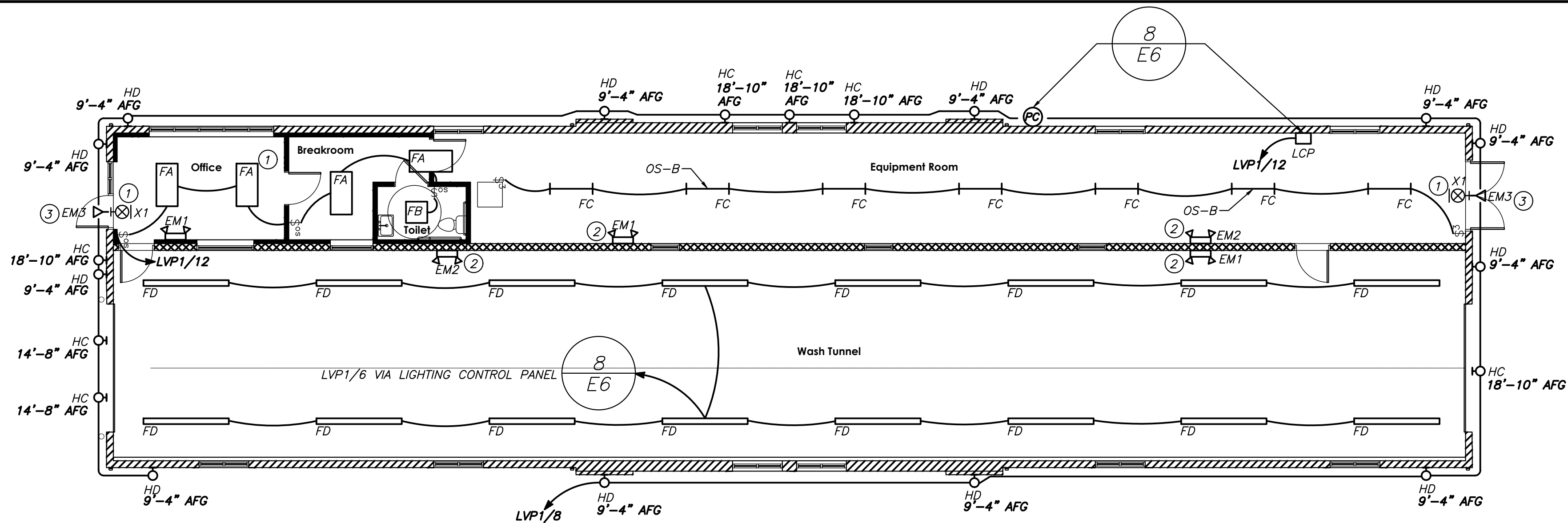
PROJECT NUMBER

19701

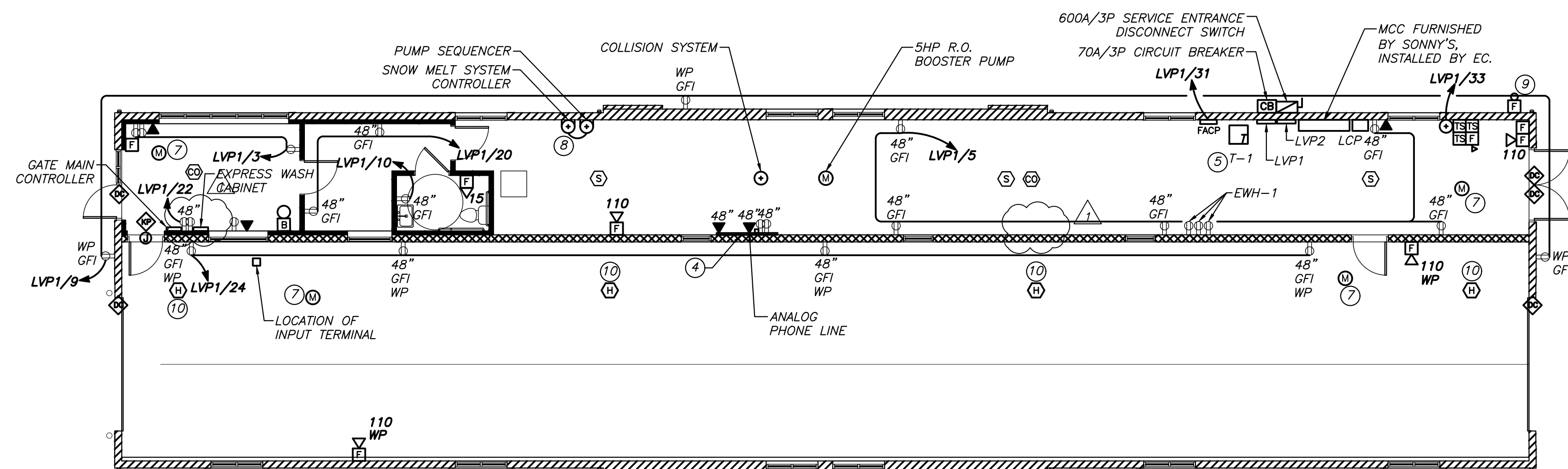
DRAWING NUMBER

E1

DATE/TIME: Friday, January 11, 2019 10:02:27 AM
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DRAWING: 19701_E1.dwg



1 FLOOR PLAN - LIGHTING
SCALE: 1/8" = 1'-0"



2 FLOOR PLAN - ELECTRICAL
SCALE: 1/8" = 1'-0"

GENERAL NOTES:

- A. PROVIDE UPDATED TYPE WRITTEN PANELBOARD SCHEDULES FOR ALL PANELS USED IN THIS PROJECT.
- B. INSTALL ALL DEVICES FLUSH IN WALL CONSTRUCTION.
- C. PROVIDE BLANK COVERPLATES ON ALL EXISTING AND NEW UNUSED OUTLET BOXES.
- D. COORDINATE ALL CONDUIT RUNS WITH OTHER TRADES PRIOR TO ROUGH-IN. RELOCATE ANY CONDUITS AS NECESSARY TO PERMIT INSTALLATION OF DUCTWORK, PIPING OR ANY SUPPORTS.
- E. PROVIDE CUTTING, PATCHING TO MATCH, AND FIRE SEAL AS REQUIRED WHERE EXISTING COMMUNICATION OR ELECTRICAL WORK HAS BEEN REMOVED AND WHERE NEW WORK IS INSTALLED. COORDINATE WITH GENERAL CONTRACTOR.
- F. REMOVE AND REINSTALL EXISTING CEILING TILES AS REQUIRED FOR INSTALLATION OF BRANCH CIRCUIT WIRING AND CONDUIT. REPLACE ALL DAMAGED TILES WITH MATCHING TILES.
- G. RUN ALL WIRING CONCEALED IN WALL. CUT AND PATCH TO MATCH DRYWALL AS REQUIRED. MINIMIZE USE OF SURFACE METAL RACEWAY.
- H. COORDINATE MOUNTING HEIGHTS OF DEVICES WITH ARCHITECTURAL ELEVATIONS AND OWNER PRIOR TO ROUGH-IN.

DRAWING NOTES:

- 1 PROVIDE EXIT SIGN AND CONNECT TO A 20 A/IP CIRCUIT BREAKER IN PANEL LVP1, CIRCUIT 2 USING 2-*12, 1-*12EG IN 1/2" C. LOCK CIRCUIT BREAKER IN THE "ON" POSITION.
- 2 PROVIDE EMERGENCY BATTERY PACK. CONNECT TO AREA LIGHTING BRANCH CIRCUIT WIRING AHEAD OF ALL LOCAL SWITCHING.
- 3 PROVIDE REMOTE EMERGENCY BATTERY HEAD. CONNECT TO AREA LIGHTING BRANCH CIRCUIT WIRING AHEAD OF ALL LOCAL SWITCHING.
- 4 PROVIDE 4' X 8' X 3/4" FIREPROOF PLYWOOD BACKBOARD. PAINT WITH TWO COATS FIREPROOF GRAY PAINT.
- 5 PROVIDE 4" CONCRETE HOUSEKEEPING PAD.
- 6 PROVIDE 120V/1P CONNECTION FOR VACUUMS.
- 7 PROVIDE 120V POWER CONNECTION TO UNIT HEATER BY M.C. PRE CIRCUIT TO PANEL LVP1. PROVIDE MANUAL MOTOR STARTER SWITCH. FEED USING 2-*12 & 1-*12EG. IN 1/2" C. COORDINATE INSTALLATION WITH M.C.
- 8 PROVIDE POWER CONNECTION TO SNOWMELT SYSTEM CONTROLLER AND PUMP SEQUENCER. VERIFY ALL ELECTRICAL REQUIREMENTS. REFER TO MANUFACTURER RECOMMENDATIONS. COORDINATE INSTALLATION WITH M.C.
- 9 FIRE BELL PROVIDED BY FIRE PROTECTION CONTRACTOR. E.C. TO PROVIDE CONNECTION TO BELL WITH 24V TO FIRE ALARM PANEL.
- 10 HEAT DETECTOR TO BE LOCATED IN ATTIC SPACE.

NO.	REVISION	DATE

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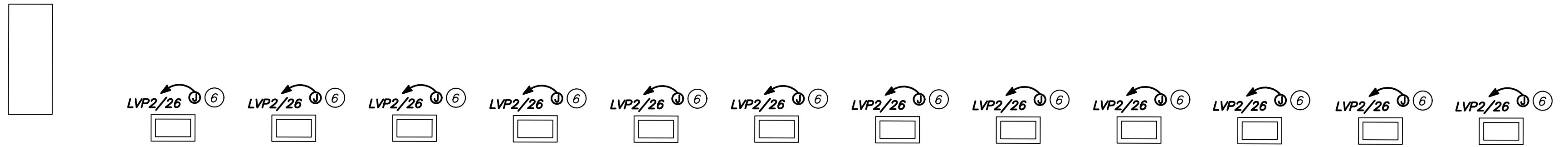
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ROYAL CAR WASH
 3400 TRANSIT ROAD
 WEST SENECA, NY 14224
Anthony J. Daniele
Mardanth Enterprises Inc.

FLOOR PLAN ELECTRICAL
 CONSTRUCTION
 DATE: 1-11-2019
 PROJECT MANAGER: BAW

PROJECT NUMBER
19701
 DRAWING NUMBER
E2

DATE/TIME: Friday, January 11, 2019 10:08 AM
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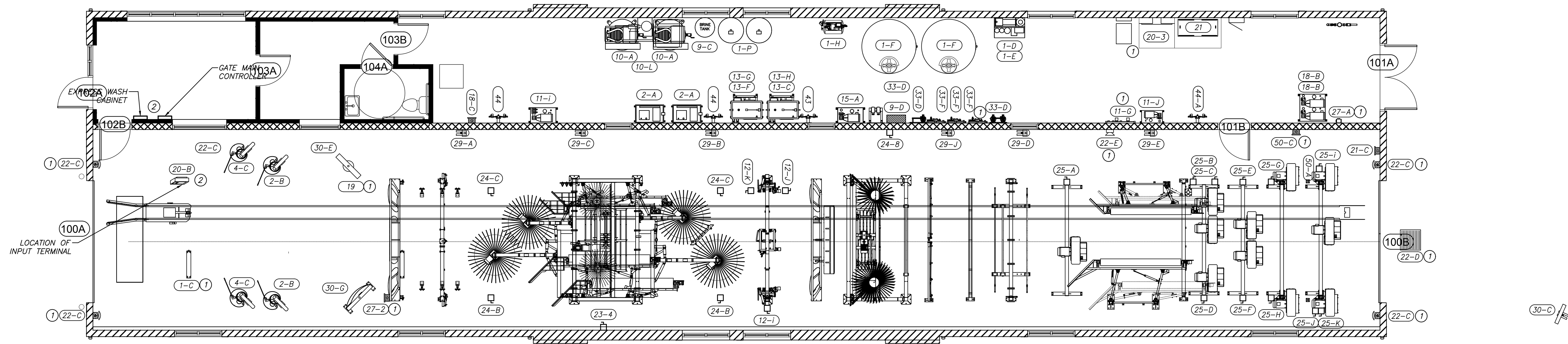


GENERAL NOTES:

- A. REFER TO SONNY'S CAR WASH DRAWING FOR MORE INFORMATION.
- B. REFER TO E4 FOR CAR WASH EQUIPMENT SCHEDULE.

DRAWING NOTES:

- 1 PROVIDE 2-*16 AWG IN PVC CONDUIT FROM ALL 24V CONTROL POWER CONNECTION POINTS TO THE MCC FOR CONTROL WIRING. REFER TO DRAWING E4, CAR WASH EQUIPMENT SCHEDULE.
- 2 LOCATION OF MAIN GATE CONTROLLER. PROVIDE ALL REQUIRED CONDUIT, POWER CONTROL, AND COMMUNICATIONS WIRING TO THE GATES AND CONTROLLER. REFER TO SONNY'S CAR WASH DRAWING G.1, G.2, G.3, G.4, G.5 AND G.6 FOR MORE INFORMATION.



FLOOR PLAN - ELECTRICAL EQUIPMENT
 SCALE: 3/16" = 1'-0"

DATE PLOTTED: 1/11/2019 11:20:04 AM
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NO.	REVISION	DATE
1	REVISION	1/1/2019

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PROJECT/CLIENT
ROYAL CAR WASH
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DRAWING TITLE
FLOOR PLAN
ELECTRICAL EQUIPMENT
 ISSUED FOR
CONSTRUCTION
 SCALE: AS NOTED
 DRAWN BY: EAH
 REVIEWED BY: EIS
 DATE: 1-11-2019
 PROJECT MANAGER: BAW

PROJECT NUMBER
19701
 DRAWING NUMBER
E3

LUMINAIRE SCHEDULE						
TYPE	DESCRIPTION	BALLAST	LAMP	VOLTAGE	CATALOG NO.	MANUFACTURER
FA	SB232 MVOLT-GEB 10IS	ELECTRONIC T8 LOW HARMONIC	(2) F032/T8	120	SB232 MVOLT-GEB 10IS	LITHONIA
FB	SB232 MVOLT-GEB 10IS	ELECTRONIC T8 LOW HARMONIC	(2) F032/T8	120	SB232 MVOLT-GEB 10IS	LITHONIA
FC	LA 2 32 MVOLT GEB10IS SQ48J4	ELECTRONIC T8 LOW HARMONIC	(2) F032/T8	120	LA 2 32 MVOLT GEB10IS SQ48J4	LITHONIA
FD	TDWV 232 MVOLT 1/4 GEB10IS	ELECTRONIC T8 LOW HARMONIC	(2) F032/T8	120	TDWV 232 MVOLT 1/4 GEB10IS	LITHONIA
HC	GN2 LED 26NACW WHITE		LED	120	GN2 LED 26NACW WHITE	LITHONIA
HD	5" UP/DOWN CYLINDER, UL LISTED FOR WET LOCATIONS		(2) 75 WATT HALOGEN	120	P5675-31 / P8799-31	PROGRESS
EM1	WALL MOUNTED, WEATHERPROOF, EMERGENCY BATTERY PACK.		(2) 5.4 WATT DC T5 WEDGE	120/277	EU2 SD M6	LITHONIA
EM2	WALL MOUNTED, WEATHERPROOF, EMERGENCY BATTERY PACK.		(2) 9 WATT KRYPTON	120/277	INDX618 ULT	LITHONIA
EM3	WALL MOUNTED, DECORATIVE, WEATHERPROOF, BATTERY PACK		(2) 6 WATT XENON	120/277	AFN DB EXT	LITHONIA
X1	SINGLE FACED LED		LED	120/277	EXR EL SD M6	LITHONIA

ELECTRICAL SPECIFICATIONS:

- PROVIDE ALL LABOR, MATERIALS, EQUIPMENT AND SERVICES TO PERFORM ALL OPERATIONS REQUIRED FOR THE COMPLETE INSTALLATION AND RELATED WORK AS SHOWN ON DRAWINGS AND SPECIFIED HEREIN. ELECTRIC EQUIPMENT SHALL BE INSTALLED IN A NEAT AND WORKMANLIKE MANNER. PROVIDE ALL ELECTRICAL EQUIPMENT CONNECTIONS. PROVIDE ALL REQUIRED SUPPORTS AND ACCESSORIES. INSTALL ALL WORK IN COMPLIANCE WITH LATEST EDITION OF: NATIONAL ELECTRICAL CODE, NFPA-70, NEW YORK STATE UNIFORM FIRE PREVENTION AND BUILDING CODE, NEW YORK STATE ENERGY CONSERVATION CONSTRUCTION CODE, OSHA REQUIREMENTS, LOCAL ORDINANCES.
- INSTALL ALL WIRING AND EQUIPMENT IN ACCORDANCE WITH THE 2008 NATIONAL ELECTRICAL CODE.
- OBTAIN AN UNDERWRITERS CERTIFICATE UPON SUBSTANTIAL COMPLETION.
- COORDINATE ALL WORK WITH OTHER TRADES.
- WIRE SHALL BE STRANDED COPPER WITH THHN/THWN INSULATION, MINIMUM #12 AWG.
- INTERIOR CONDUIT SHALL BE EMT WITH SET-SCREW FITTINGS.
- EXTERIOR, ABOVE GRADE CONDUIT SHALL BE RIGID STEEL WITH THREADED FITTINGS.
- EXTERIOR BELOW GRADE CONDUIT SHALL BE PVC SCHEDULE 80, DIRECT BURIED.
- TYPE MC CABLE WITH A SEPARATE INSULATED GROUND IS PERMITTED. IN INTERIOR, CONCEALED LOCATIONS, SUPPORT CABLE ON MINIMUM 4.5' CENTERS.
- ALL HOMERUNS TO PANELBOARDS SHALL BE INSTALLED IN EMT CONDUIT. TYPE MC CABLE MAY BE USED FROM OUTLET BOXES IN THE CEILING TO DEVICES AND LUMINAIRES, AND MAY BE RUN HORIZONTAL IN THE METAL STUD PARTITIONS.
- PROVIDE UPDATED TYPE-WRITTEN DIRECTIONS FOR ALL PANELBOARDS AFFECTED BY THIS PROJECT.
- ALL EXPOSED WIRING SHALL BE INSTALLED IN CONDUIT OR SURFACE METAL RACEWAY.
- WHEREVER POSSIBLE, INSTALL ALL RACEWAYS CONCEALED AND DEVICES FLUSH MOUNTED. WHERE REQUIRED DUE TO FIELD CONDITIONS, PROVIDE SURFACE METAL RACEWAY. PAINT TO MATCH EXISTING SURFACES.
- OUTLET BOXES AND COVERS SHALL BE GALVANIZED STEEL, NOT LESS THAN 1-1/2" DEEP, 4" SQUARE OR OCTAGONAL, WITH KNOCKOUTS. OUTLET BOXES EXPOSED TO MOISTURE, EXTERIOR, WET OR DAMP LOCATIONS SHALL BE CADMIUM CAST ALLOY COMPLETE WITH THREADED HUBS AND GASKETED SKREW FASTENED COVERS. MINIMUM BOX SIZE SHALL BE AS INDICATED IN ARTICLE 370 OF THE NATIONAL ELECTRIC CODE FOR THE CONDUCTORS AND DEVICES INSTALLED. MAKE SHALL BE STEEL CITY OR EQUAL.
- WIRING DEVICES SHALL BE CONSTRUCTION GRADE. LIGHT ALMOND IN COLOR WITH THERMOPLASTIC COVERPLATES. MAKE SHALL BE HUBELL OR EQUAL.
- WEATHER RESISTANT DEVICE COVERS SHALL BE UL LISTED WITH THE DEVICE PLUGGED IN. MAKE SHALL BE HUBELL OR EQUAL.
- WALL MOUNTED VACANCY SENSORS SHALL BE INFRARED, MANUAL ON, AND INSTALL IN A SINGLE GANG OUTLET BOX. DEVICE SHALL BE EQUIPPED WITH A SET OF AUXILIARY CONTACTS TO CONTROL ADDITIONAL EQUIPMENT, WHERE CALLED FOR ON THE PLANS, PROVIDE DUAL INTEGRAL SWITCHES TO PROVIDE THREE-LEVEL LIGHTING. MAKE SHALL BE SENSOR SWITCH WSD SERIES OR APPROVED EQUAL.
- OCCUPANCY SENSOR OS-A SHALL BE CEILING MOUNTED ULTRASONIC, SUITABLE FOR SPACES UP TO 1000 SQUARE FEET. MAKE SHALL BE SENSOR SWITCH CMR SERIES OR EQUAL.
- OCCUPANCY SENSOR OS-B SHALL BE CEILING MOUNTED ULTRASONIC, SUITABLE FOR USE IN CORRIDORS. MAKE SHALL BE SENSOR SWITCH SERIES CMR OR EQUAL.
- PANELBOARDS SHALL HAVE ALUMINUM BUS WITH PLUG-ON CIRCUIT BREAKERS AND HINGED TRIM. COORDINATE TRIM TYPE IN THE FIELD. MAKE SHALL BE SQUARE D OR EQUAL.
- TRANSFORMERS SHALL BE GENERAL PURPOSE, DRY-TYPE WITH ALUMINUM WINDINGS, 150 DEGREE C RISE, WITH TWO TAPS AT 2.5 AND 5% ABOVE AND BELOW NORMAL.
- DISCONNECT SWITCHES SHALL BE HEAVY DUTY WITH COPPER BUS. KNIVES SHALL BE VISIBLE IN THE OPEN POSITION. MAKE SHALL BE SQUARE D OR EQUAL.
- MANUAL MOTOR STARTERS AND MOTOR RATED SWITCHES SHALL BE 277 VOLT, 30 AMPERE RATED, IN A NEMA 1 ENCLOSURE WITH A H-O-A SELECTOR SWITCH AND A RELAY FOR REMOTE CONTROL OF THE EQUIPMENT IN THE AUTO MODE. PROVIDE OVERLOADS AS REQUIRED. MAKE SHALL BE SQUARE D CLASS 2510 OR EQUAL.
- ALL LUMINAIRES SHALL BE CONNECTED WITH THREE #12 CONDUCTORS IN A FLEXIBLE CABLE WHIP, 6"-0" MAXIMUM IN LENGTH. CABLE SHALL BE INSTALLED SUCH THAT FIXTURES IN LAY-IN CEILING SYSTEM MAY BE RELOCATED ONE-TILE IN ANY DIRECTION WITHOUT REWIRING. ALL LUMINAIRE WHIPS SHALL BE CONNECTED TO A JUNCTION BOX. LUMINAIRES SHALL NOT BE CONNECTED TOGETHER IN A DAISY CHAIN MANNER. SECURELY SUPPORT ALL CONDUITS AND OUTLET BOXES FROM STRUCTURAL MEMBERS. OUTLET BOXES SHALL NOT BE SUPPORTED BY CONDUIT, AND INDEPENDENTLY SUPPORT LUMINAIRES FROM BUILDING STRUCTURE.
- BALLASTS SHALL BE LOW HARMONIC T8 ELECTRONIC BALLASTS, THD OF LESS THAN 20% AND POWER FACTOR OF 0.98.
- FLOURESCENT LAMPS SHALL BE INSTANT START, T8 AS CALLED FOR IN LUMINAIRE SCHEDULE AND MEET THE REQUIREMENTS OF THE NEW YORK STATE ENERGY CONSERVATION CONSTRUCTION CODE. ALL LAMPS SHALL HAVE A MINIMUM CRI OF 75 AND A MINIMUM OF 89 LUMENS PER WATT AND 20,000 HOURS RATED LIFE. COLOR TO BE 3500K LAMPS.
- COMPACT FLOURESCENT LAMPS SHALL BE RAPID START ELECTRONIC AND ELECTRONIC BALLASTS. COLOR TEMPERATURES SHALL MATCH STANDARD FLOURESCENT LAMPS.
- PHOTOCELLS SHALL BE DIGITAL, SINGLE-ZONE OR MULTI-ZONE, 2 WIRE. MAKE SHALL BE LCD GR2400 SERIES OR EQUAL.
- THE LIGHT CONTROL SYSTEM SHALL BE DIGITAL, 4 TO 8 RELAYS, 365-DAY ASTRO CLOCK. MAKE SHALL BE LCD "THE BLUE BOX LT", MODEL NO. GR1400 OR EQUAL.
- PROVIDE FIRE STOPPING FOR ALL PENETRATIONS THROUGH FLOORS, WALLS AND ALL OTHER RELATED ASSEMBLIES. PROVIDE FIRE STOPPING SYSTEMS IN ACCORDANCE WITH ASTM E814.

PANELBOARD SCHEDULE																
NAME	LOCATION	SOURCE	RATING (AMPS)		PHASE/WIRE	VOLTAGE	MOUNTING	UL LISTING INT. RATING (RMS SYM. AMPS)	DESIGN MAKE SQ-D	NEMA TYPE	NOTES:					
			MCB	MLO							SE RATED	COMPUTER GRADE	SUB FEED BRK.	COLUMN WIDTH		
LVP1	STORAGE	T-1	175A		3Ø, 4W	208 Y/120	SURFACE			NOOD	1					
CKT NO.	DESCRIPTION	BREAKER	KVA LOAD		KVA LOAD		BREAKER	DESCRIPTION		CKT NO.						
			LTG	RCPT	MOTOR	HTG	HTG	MOTOR	RCPT	LTG						
1	HEATER NORTHEAST	20A/1P								20A/1P	WASH BAY LIGHTS	2				
3	HEATER NORTHEAST	20A/1P								20A/1P	GOOSENECKS	4				
5	HEATER NORTHEAST	20A/1P								20A/1P	CYLINDER FIXTURES	6				
7	HEATER NORTHEAST	20A/1P								20A/1P	OFFICE RECEPTS	8				
9	RECEPTACLES TUN/EXT	20A/1P								20A/1P	BATHROOM RECEPTS	10				
11	SPARE	20A/1P								20A/1P	OFF./BATH/STOR LIGHT	12				
13	WATER HEATER REC	20A/1P								20A/1P	OFFICE RECEPTS	14				
15	WATER HEATER REC	20A/1P								20A/1P	OFFICE RECEPTS	16				
17	SPARE	20A/1P								20A/1P	OFFICE EXIT/EM LIGHTS	18				
19	TUNNEL SIGNS	20A/1P								20A/1P	OFFICE RECEPTS	20				
21	DRB POWER	20A/1P								20A/1P	OFFICE RECEPTS	22				
23	WATER SOFTENER REC	20A/1P								20A/1P	PHONE RCPT	24				
25	WATER SOFTENER REC	20A/1P								20A/1P	SPARE	26				
27	SPAR MECH RM NORTH	20A/1P								20A/1P	ROUTER	28				
29	MECH ROOM GFCI	20A/1P								30A/1P	HOT WAX SYSTEM	30				
31	FACP	20A/1P								30A/1P	SPACE	32				
33	AIR COMPRESSOR	20A/1P								20A/1P	SOAP SYSTEM	34				
35	SPACE										SPACE	36				
37	SPACE										SPACE	38				
39	SPACE										SPACE	40				
41	SPACE										SPACE	42				
LEFT SIDE SUB-TOTAL			0.00	0.00	0.00	0.00	0.00	0.00	0.00	RIGHT SIDE SUB-TOTAL						
TOTAL CONNECTED LOAD			0.00	0.00	0.00	0.00	A PHASE	B PHASE	C PHASE	TOTAL CONNECTED LOAD PER PHASE						
DEMAND FACTOR			0.7	10+5	0.9	0.9	0.00	0.00	0.00							
ESTIMATED DEMAND			0.00	5.00	0.00	0.00	NOTES:									
TOTAL ESTIMATED DEMAND (KVA)			5.00				*									
TOTAL AMPS			13.88													

PANELBOARD SCHEDULE																
NAME	LOCATION	SOURCE	RATING (AMPS)		PHASE/WIRE	VOLTAGE	MOUNTING	UL LISTING INT. RATING (RMS SYM. AMPS)	DESIGN MAKE SQ-D	NEMA TYPE	NOTES:					
			MCB	MLO							SE RATED	COMPUTER GRADE	SUB FEED BRK.	COLUMN WIDTH		
LVP2	STORAGE	LVP1	225A		3Ø, 4W	208 Y/120	SURFACE			NOOD	1					
CKT NO.	DESCRIPTION	BREAKER	KVA LOAD		KVA LOAD		BREAKER	DESCRIPTION		CKT NO.						
			LTG	RCPT	MOTOR	HTG	HTG	MOTOR	RCPT	LTG						
1	PRIMARY AIR COMPRESSOR	80A/3P								20A/3P	R.O. PUMP	2				
3												4				
5												6				
7	BACKUP AIR COMPRESSOR	30A/3P								15A/2P	R.O. PUMP	8				
9												10				
11											SPACE	12				
13	FACP	20A/1P								20A/1P	XPT EAST	14				
15	GFCI BY BRANCH	20A/1P								20A/1P	GATE EAST	16				
17	INFLOOR BOILER	20A/1P								20A/1P	SPARE EAST ISLAND	18				
19	TIME CLOCK	20A/1P								20A/1P	XPT WEST	20				
21	LIGHT POLES	20A/1P								20A/1P	GATE WEST	22				
23	LIGHT POLES	20A/1P								20A/1P	SPARE WEST ISLAND	24				
25	LIGHT POLE GFCI	20A/1P								30A/1P	VACUUM	26				
27	LIGHT POLE GFCI	20A/1P								30A/1P	VACUUM	28				
29	FRONT SIGN	20A/1P								30A/1P	VACUUM	30				
31	SPACE									30A/1P	VACUUM	32				
33	SPACE									30A/1P	VACUUM	34				
35	SPACE									30A/1P	FUTURE VACUUM	36				
37	SPACE										SPACE	38				
39	SPACE										SPACE	40				
41	SPACE										SPACE	42				
LEFT SIDE SUB-TOTAL			0.00	0.00	0.00	0.00	0.00	0.00	0.00	RIGHT SIDE SUB-TOTAL						
TOTAL CONNECTED LOAD			0.00	0.00	0.00	0.00	A PHASE	B PHASE	C PHASE	TOTAL CONNECTED LOAD PER PHASE						
DEMAND FACTOR			0.7	10+5	0.9	0.9	0.00	0.00	0.00							
ESTIMATED DEMAND			0.00	5.00	0.00	0.00	NOTES:									
TOTAL ESTIMATED DEMAND (KVA)			5.00				*									
TOTAL AMPS			13.88													

NO.	REVISION	DATE
1	REVISION	-/-

ECAB engineering p.c.

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PROJECT/TITLE
ROYAL CAR WASH
3400 TRANSIT ROAD
WEST SENECA, NY 14224

Anthony J. Daniele
Mardanth Enterprises Inc.

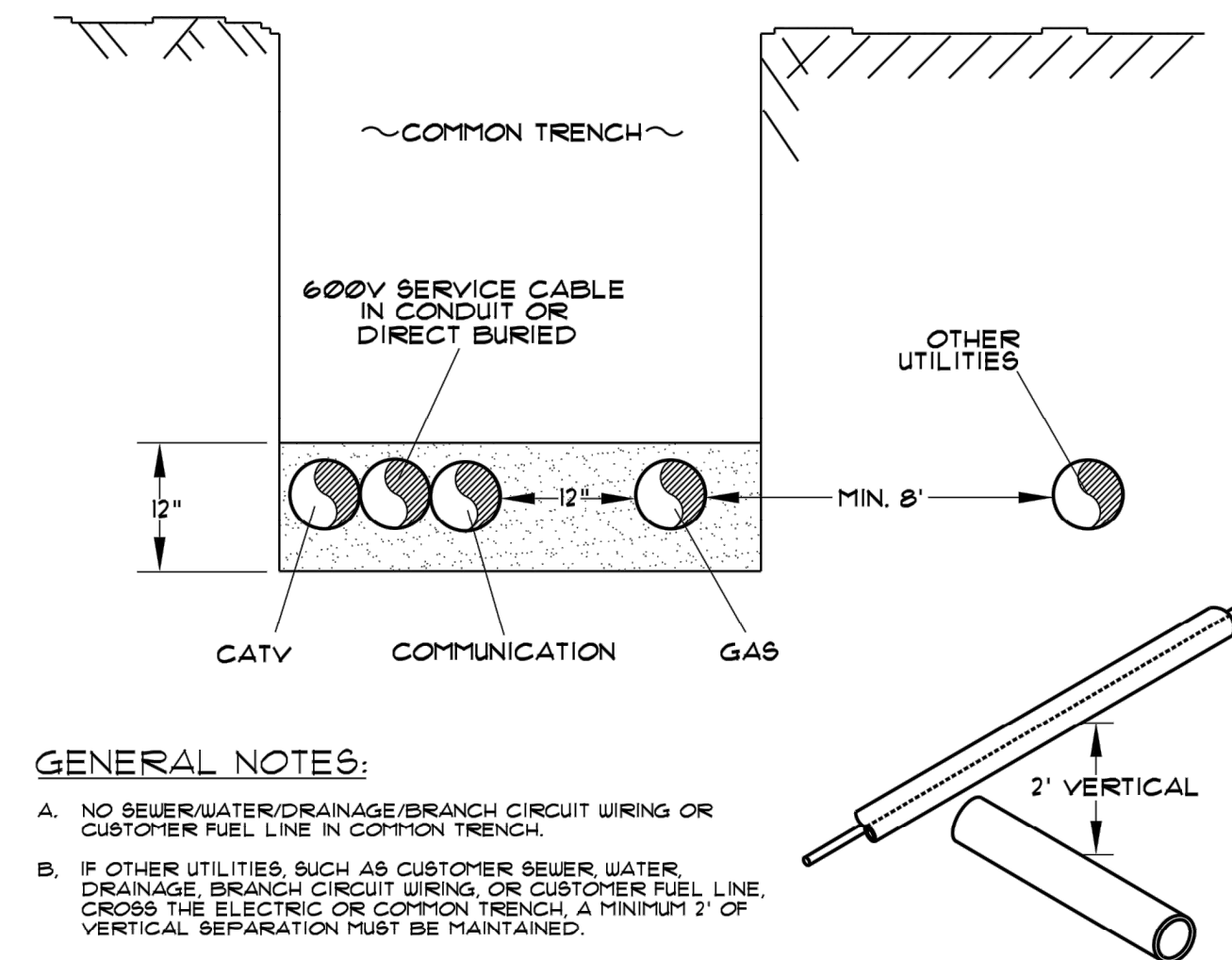
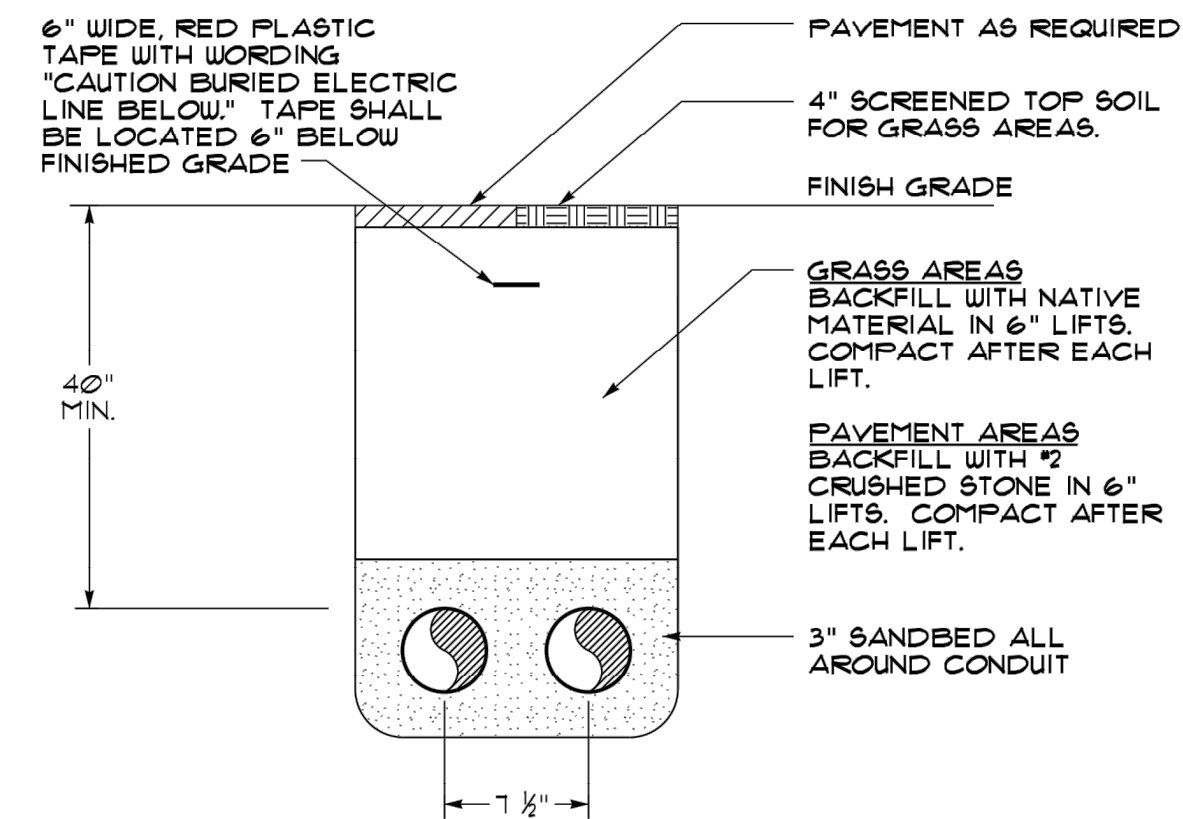
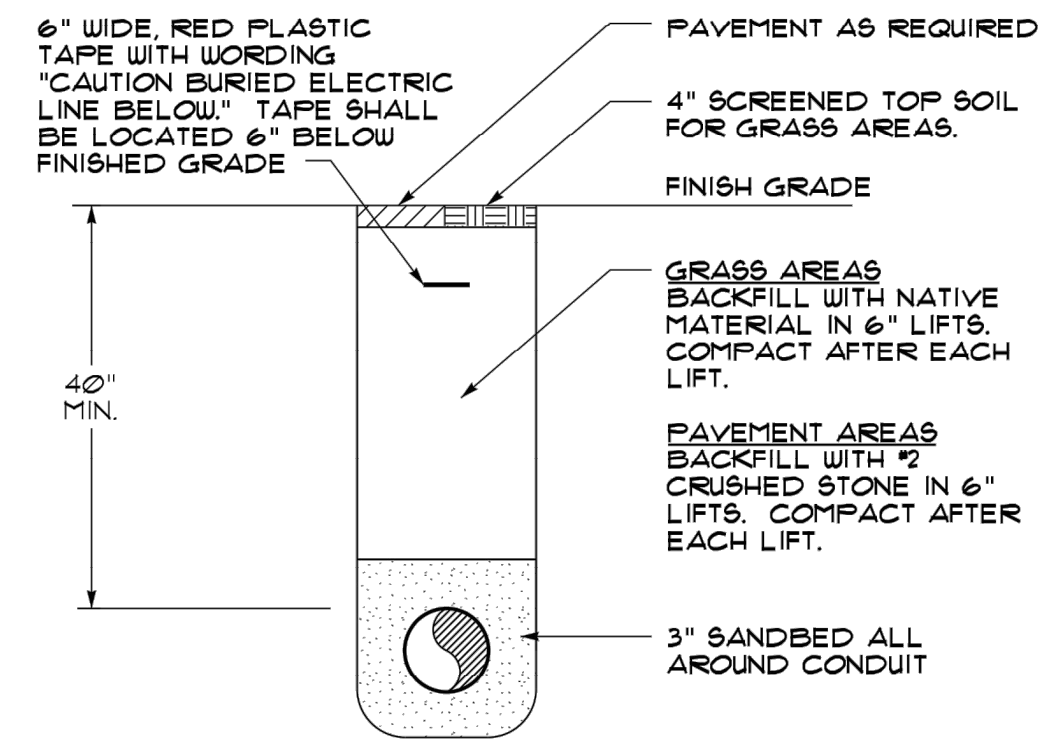
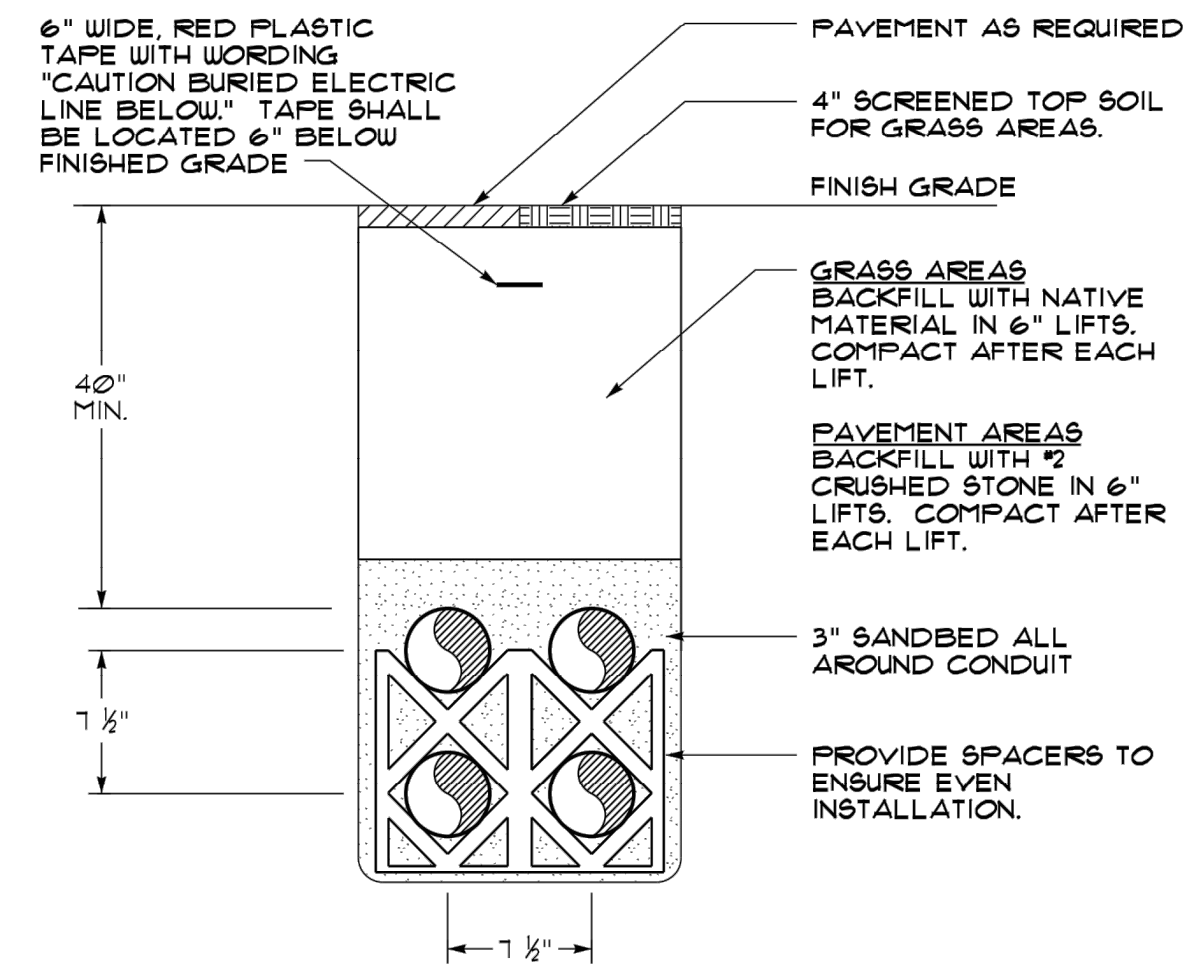
DRAWING TITLE
ELECTRICAL SCHEDULES

ISSUED FOR: CONSTRUCTION
SCALE: AS NOTED
DATE: 1-11-2019

DRAWN BY: EAH
REVIEWED BY: EIS
PROJECT MANAGER: BAW

PROJECT NUMBER
19701

DRAWING NUMBER
E5

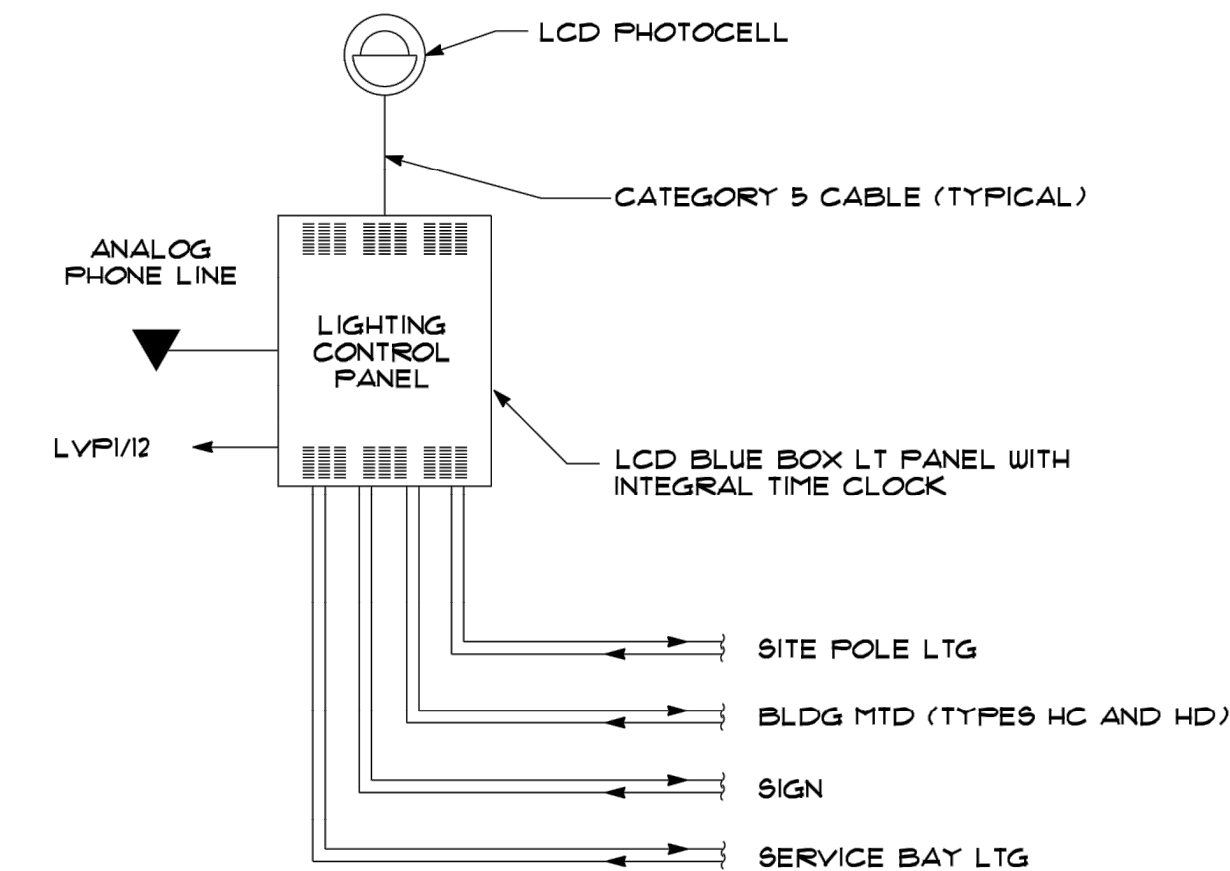
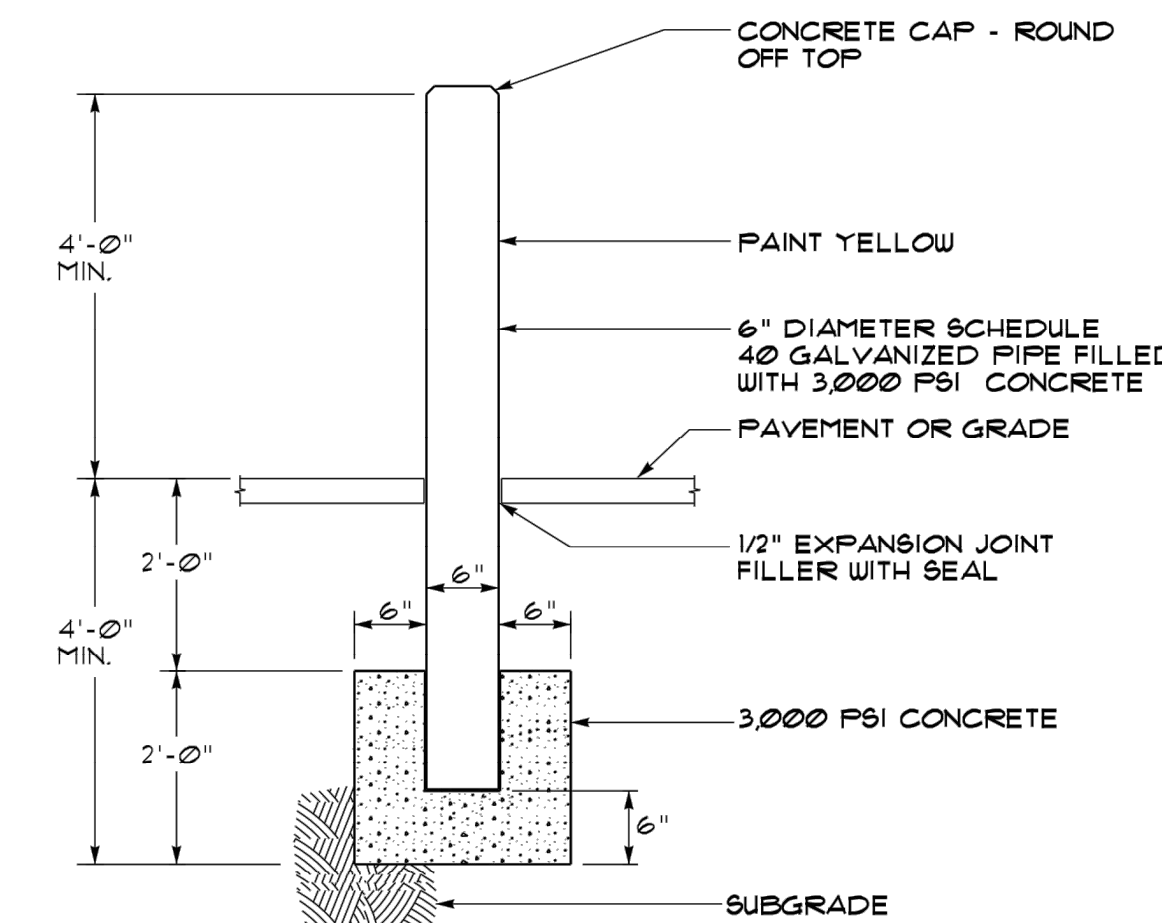
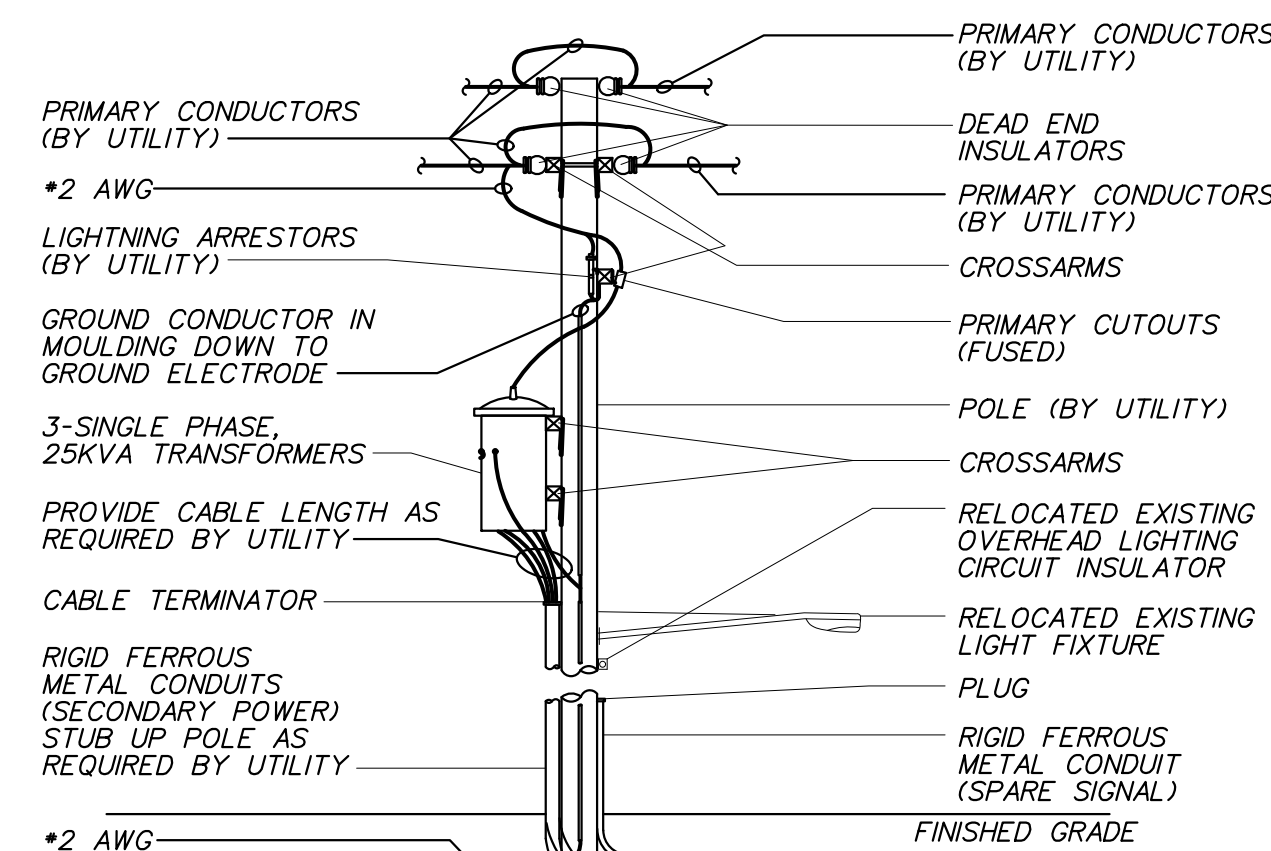
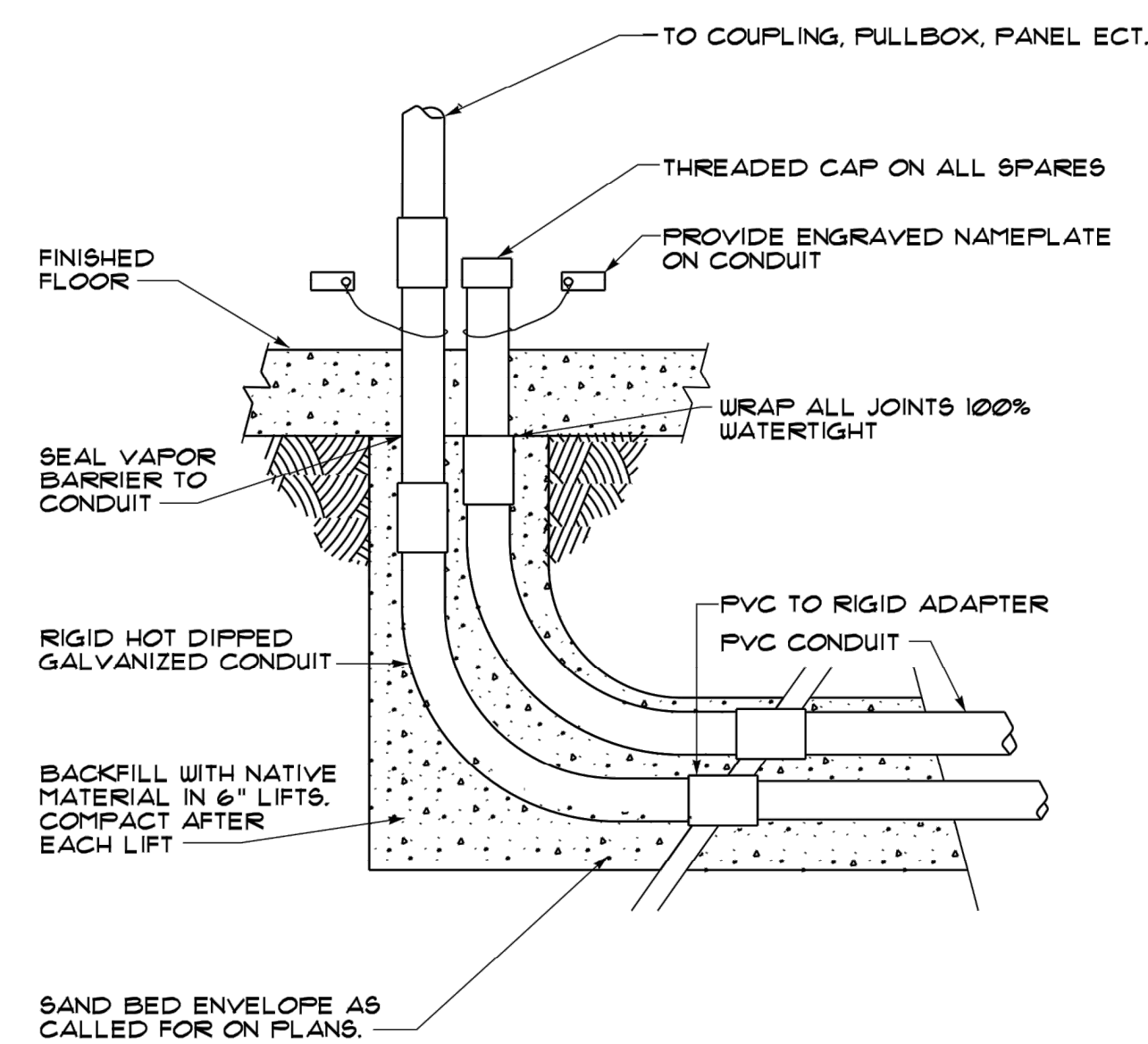


DIRECT BURIED CONDUIT DETAIL
NO SCALE FOUR DUCTS

DIRECT BURIED CONDUIT DETAIL
NO SCALE ONE DUCT

DIRECT BURIED CONDUIT DETAIL
NO SCALE TWO DUCTS

RG4E COMMON TRENCH SEPERATION DETAIL
NO SCALE

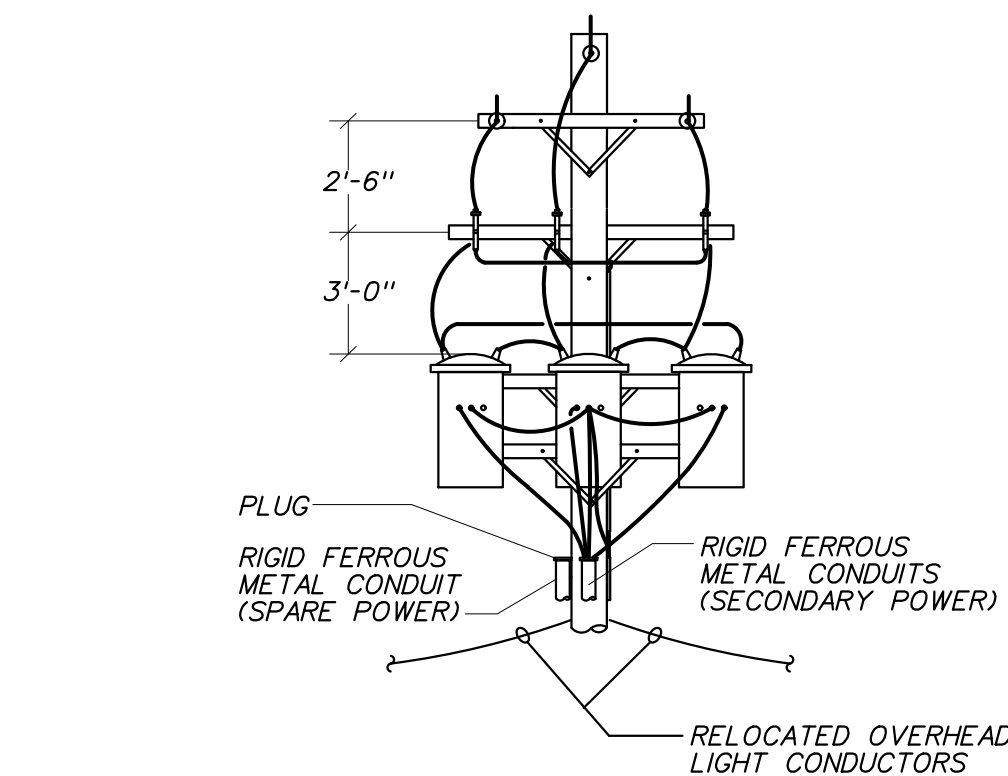


PROTECTIVE BOLLARD DETAIL
NO SCALE

LIGHTING CONTROL PANEL DIAGRAM
NO SCALE

CONDUIT STUB-UP INSIDE BUILDING DETAIL
NO SCALE

POLE MOUNTED TRANSFORMER DETAIL
NO SCALE



DATE/TIME: Friday, January 11, 2019 10:08:08 AM
FILENAME: C:\2019\1001\101111_1001\101111_1001\101111_1001.dwg

DATE	7/1/19
REVISION	REVISION
NO.	1

IT IS A VIOLATION OF NEW YORK EDUCATION LAW ARTICLE 145, SECTION 209(1) FOR ANY PERSON UNLESS EXEMPT UNDER THE PROVISIONS OF SECTION 209(1)(b) TO PROVIDE ENGINEERING SERVICES WITHOUT BEING A LICENSED PROFESSIONAL ENGINEER OR ARCHITECT. THE ENGINEER ARCHITECT OR LAND SURVEYOR CANNOT BE HELD RESPONSIBLE FOR ANY DAMAGE OR INJURY TO PERSONS OR PROPERTY CAUSED BY THE NEGLIGENCE OR MALPRACTICE OF ANY OTHER PROFESSIONAL PERSON OR BY THE NEGLIGENCE OR MALPRACTICE OF ANY OTHER PROFESSIONAL PERSON OR BY THE NEGLIGENCE OR MALPRACTICE OF ANY OTHER PROFESSIONAL PERSON.

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Anthony J. Daniele
Mardanth Enterprises Inc.

DRAWING TITLE
ELECTRICAL DETAILS

ISSUED FOR
CONSTRUCTION

SCALE: AS NOTED

DRAWN BY: EJM

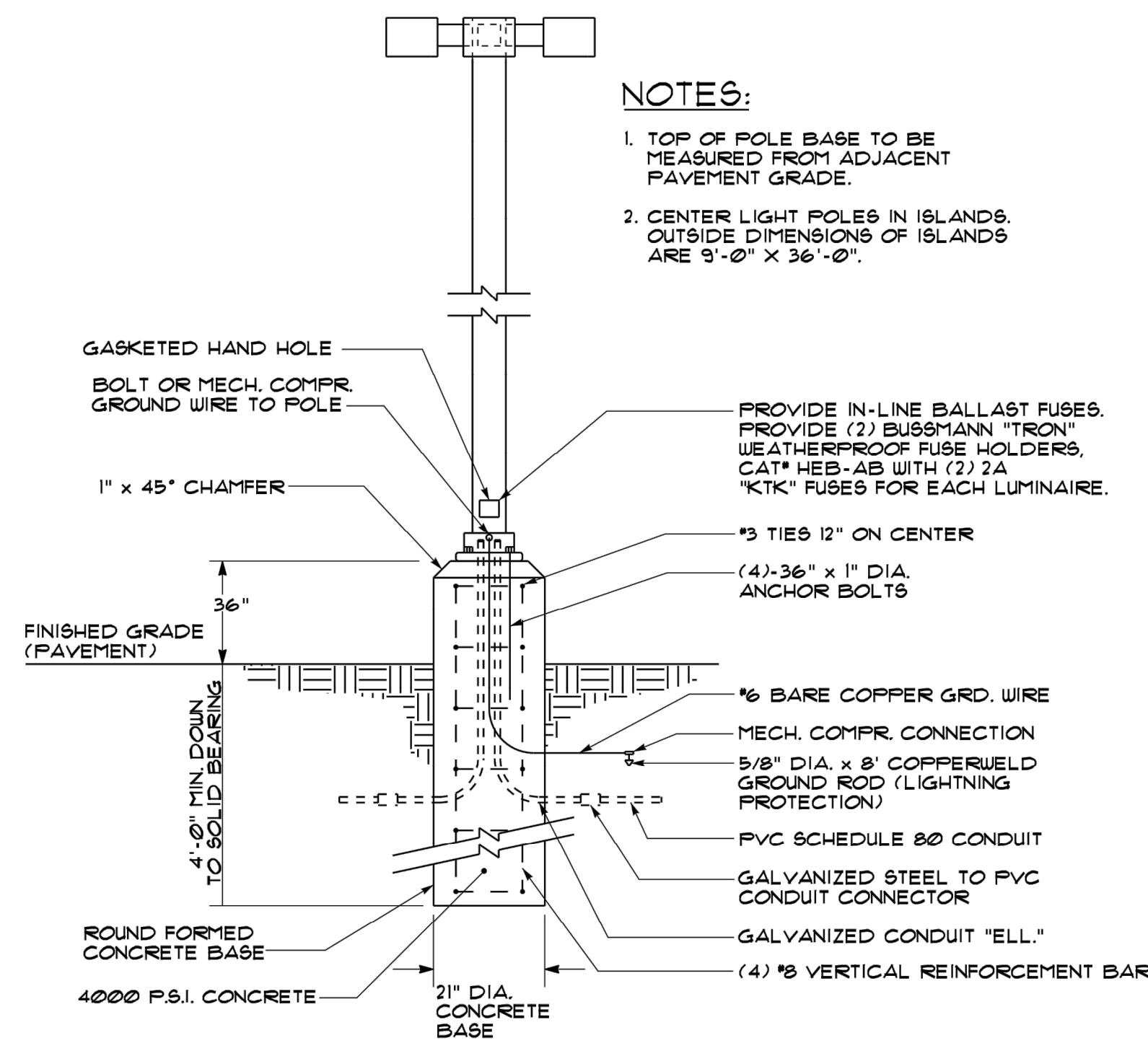
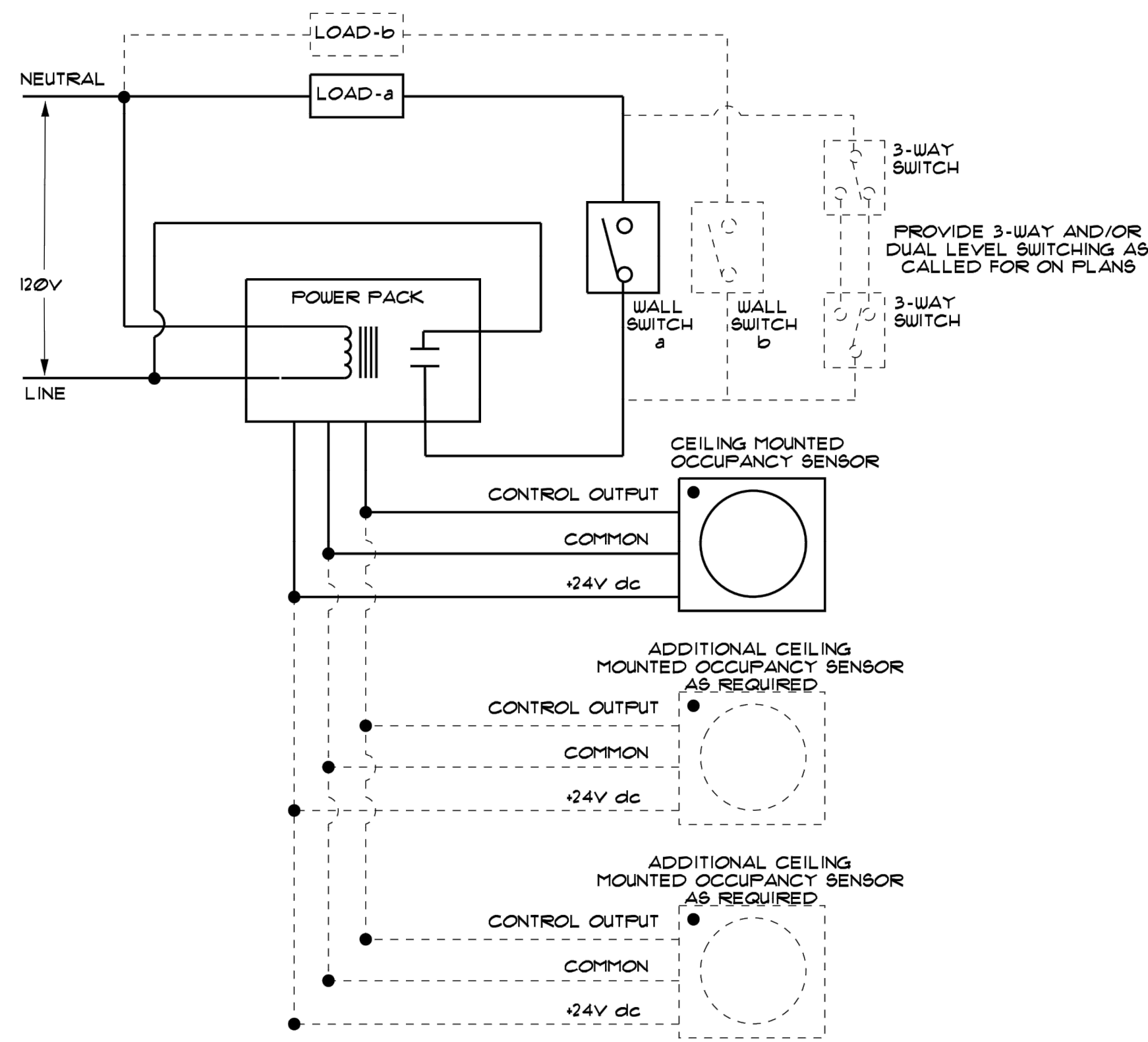
REVIEWED BY: EJM

DATE: 1-11-2019

PROJECT MANAGER: BAW

PROJECT NUMBER
19701

DRAWING NUMBER
E6



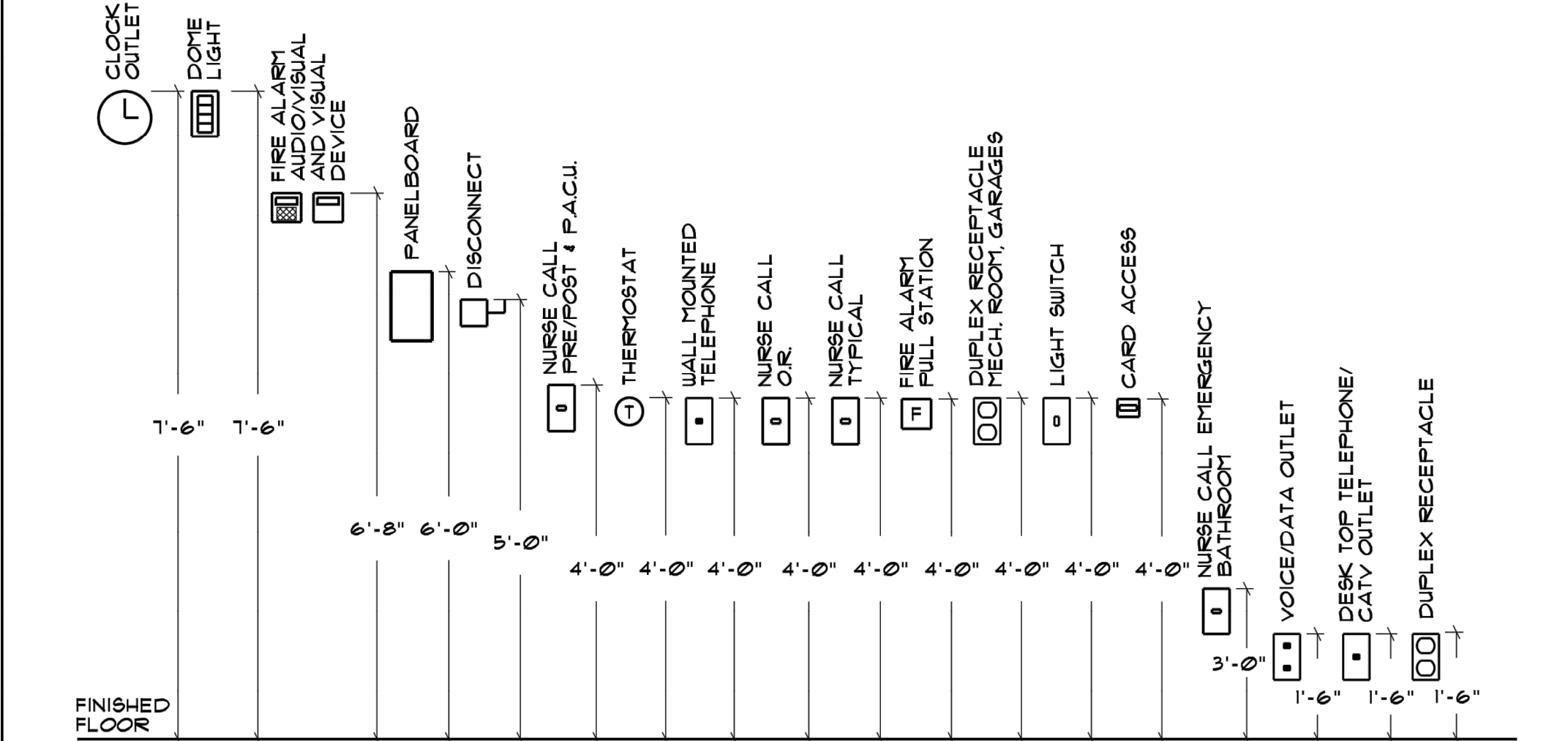
NOTES:

- TOP OF POLE BASE TO BE MEASURED FROM ADJACENT PAVEMENT GRADE.
- CENTER LIGHT POLES IN ISLANDS, OUTSIDE DIMENSIONS OF ISLANDS ARE 9'-0" X 36'-0".

POLE HEIGHT	BASE DIAMETER
35' AND UP	30" DIAMETER
30' - 35'	24" DIAMETER
20' - 29'	18" DIAMETER
15' AND BELOW	15" DIAMETER

POWER DISTRIBUTION		LINE STYLES	
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
—	SURFACE MOUNTED BRANCH CIRCUIT PANELBOARD, 208Y/120V OR 240/120V. REFER TO PANEL BOARD SCHEDULE.	—	INDICATES NEW DEVICE OR EQUIPMENT
—	SURFACE MOUNTED BRANCH CIRCUIT PANELBOARD, 480Y/277V. REFER TO PANELBOARD SCHEDULE.	- - - -	UNDERGROUND ELECTRIC
T-1	DRY TYPE TRANSFORMER. REFER TO TRANSFORMER SCHEDULE.	- - - -	UNDERGROUND TELEPHONE
⊕	ELECTRIC METER	- - - -	UNDERGROUND LOW VOLTAGE
⊕	MOTOR CONNECTION. DESIGNATION REFERS TO ELECTRIC EQUIPMENT AND CONTROL SCHEDULE.	LIGHTING	
⊕M	MANUAL MOTOR STARTER OR MOTOR RATED SWITCH. DESIGNATION REFERS TO ELECTRIC EQUIPMENT AND CONTROL SCHEDULE.	⊕	SINGLE POLE SWITCH
⊕	NON-FUSED DISCONNECT SWITCH. DESIGNATION REFERS TO ELECTRIC EQUIPMENT AND CONTROL SCHEDULE.	⊕OS	WALL MOUNTED OCCUPANCY SENSOR SWITCH
		⊕3	THREE WAY SWITCH
		⊕OS-A	CEILING MOUNTED OCCUPANCY SENSOR. SUBSCRIPT INDICATES TYPE
		FA	2'x4' LUMINAIRE. DESIGNATION REFERS TO LUMINAIRE SCHEDULE
		FA	2'x2' LUMINAIRE. DESIGNATION REFERS TO LUMINAIRE SCHEDULE
		FA	1'x4' LUMINAIRE. DESIGNATION REFERS TO LUMINAIRE SCHEDULE
		FA	STRIP LUMINAIRE. DESIGNATION REFERS TO LUMINAIRE SCHEDULE
		QFA	WALL SCORCE. (DESIGNATION REFERS TO LUMINAIRE SCHEDULE)
		YEH	EMERGENCY BATTERY PACK. DESIGNATION REFERS TO LUMINAIRE SCHEDULE
		XI XI	WALL MOUNTED EXIT SIGN. DESIGNATION REFERS TO LUMINAIRE SCHEDULE
		PC	PHOTOCELL. NUMBER INDICATES TYPE
		LC	LIGHTING CONTACTOR. NUMBER INDICATES TYPE
			SITE UTILITIES
			SYMBOL DESCRIPTION
		⊕	SITE LUMINAIRE. ONE LUMINAIRE PER POLE
			COMMUNICATIONS
			SYMBOL DESCRIPTION
		▼	VOICE/DATA OUTLET. PROVIDE CABLES AS INDICATED.

OCCUPANCY SENSOR DETAIL



NOTES:

- IN LOCATIONS WHERE SIMILAR DEVICES ARE MOUNTED AT THE SAME HEIGHT, DEVICES SHALL BE PROPERLY "GANGED" AND SHALL HAVE A SINGLE COVER PLATE.
- IN LOCATIONS WHERE DIFFERENT DEVICES ARE MOUNTED AT DIFFERENT HEIGHTS WITHIN FOUR FEET OF ONE ANOTHER DEVICES SHALL BE MOUNTED SUCH THAT THEY HAVE A COMMON CENTERLINE. IF THERE ARE THREE OR MORE DEVICES, THE CONTRACTOR SHALL REQUEST A DETAIL FROM THE ARCHITECT.

TYPICAL DEVICE MOUNTING ELEVATIONS

LIGHT POLE BASE DETAIL



NOTES:

- IN LOCATIONS WHERE SIMILAR DEVICES ARE MOUNTED AT THE SAME HEIGHT, DEVICES SHALL BE PROPERLY "GANGED" AND SHALL HAVE A SINGLE COVER PLATE.
- IN LOCATIONS WHERE DIFFERENT DEVICES ARE MOUNTED AT DIFFERENT HEIGHTS WITHIN FOUR FEET OF ONE ANOTHER DEVICES SHALL BE MOUNTED SUCH THAT THEY HAVE A COMMON CENTERLINE. IF THERE ARE THREE OR MORE DEVICES, THE CONTRACTOR SHALL REQUEST A DETAIL FROM THE ARCHITECT.

TYPICAL DEVICE MOUNTING ELEVATIONS

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ELECTRICAL DETAILS

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SCALE: AS NOTED

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