ELECTRICAL SYMBOL LEGEND

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	FLUORESCENT LIGHT FIXTURE – CEILING MOUNTED.		WALL OUTLET BOX & 20 AMP DUPLEX RECEPTACLE.
	EMERGENCY FLUORESCENT LIGHT FIXTURE – CEILING MOUNTED.		WALL OUTLET BOX & 20 AMP DUPLEX RECEPTACLE MTD ABOVE COUNTER. COORDINATE W/MILLWORK PRIOR TO ROUGH-IN.
	FLUORESCENT LIGHT FIXTURE – WALL MOUNTED.	G	WALL OUTLET BOX & 20 AMP GFI RECEPTACLE.
	CHANNEL FLUORESCENT (STRIP) LIGHT FIXTURE.	WP	WALL OUTLET BOX & 20 AMP DUPLEX RECEPTACLE WITH WEATHER PROOF WHILE IN USE COVER.
	INCANDESCENT, H.I.D. OR FLUORESCENT DOWNLIGHT – CEILING MOUNTED.	WPG	WALL OUTLET BOX & 20 AMP GFI RECEPTACLE WITH WEATHER PROOF WHILE IN USE COVER.
	EMERGENCY INCANDESCENT, H.I.D. OR FLUORESCENT DOWNLIGHT – CEILING MOUNTED.	S	WALL OUTLET BOX & 20 AMP SURGE RECEPTACLE.
	INCANDESCENT OR H.I.D. LIGHT FIXTURE – WALL MOUNTED.	IG	WALL OUTLET BOX & 20 AMP ISOLATED GROUND DUPLEX RECEPTACLE.
	EMERGENCY LIGHT FIXTURE.		TWO GANG WALL OUTLET BOX & TWO (2) 20 AMP DUPLEX RECEPTACLES.
	CEILING OUTLET BOX AND EXIT LIGHT. ARROW INDICATES DIRECTION OF TRAVEL AND SINGLE OR DOUBLE FACE.		TWO GANG WALL OUTLET BOX & TWO (2) 20 AMP DUPLEX RECEPTACLES MOUNTED ABOVE COUNTER.
	WALL OUTLET BOX AND EXIT LIGHT. ARROW INDICATES DIRECTION OF TRAVEL AND SINGLE OR DOUBLE FACE.		WALL OUTLET BOX & 20 AMP SINGLE RECEPTACLE.
	BOLLARD LIGHT FIXTURE.		FLOOR OUTLET BOX & 20 AMP DUPLEX RECEPTACLE W/CARPET FLANGE. COORDINATE EXACT DIMENSIONS W/ARCHITECT.
	AREA POST LIGHT AND POLE. SQUARES INDICATE NUMBER OF HEADS.		SPECIAL PURPOSE OUTLET/CONNECTION.
	CEILING OUTLET BOX, TRACK AND LIGHT FIXTURES AS NOTED.	XX/XX/X	DISCONNECT SWITCH – XX/XX/X = FRAME SIZE / FUSE SIZE / POLES
	WALL OUTLET BOX AND SINGLE POLE 20 AMP DIMMER.		MOTOR STARTER AND/OR CONTACTOR – SIZE AS NOTED.
$a	WALL OUTLET BOX AND SINGLE POLE 20 AMP SWITCH. "a" INDICATES LIGHT FIXTURE/LIGHT SWITCH ASSOCIATION.	ST	PUSHBUTTON AS NOTED, "ST" INDICATES SHUNT TRIP.
$2	WALL OUTLET BOX AND DOUBLE POLE 20 AMP SWITCH.		TIME CLOCK – AS NOTED.
$3	WALL OUTLET BOX AND (3) THREE WAY 20 AMP SWITCH.		MOTOR CONNECTION.
$4	WALL OUTLET BOX AND (4) FOUR WAY 20 AMP SWITCH.		FLUSH WALL OR ABOVE CEILING JUNCTION BOX.
$WP	WALL OUTLET BOX AND SWITCH AS INDICATED WITH WEATHER PROOF COVER.		SURFACE JUNCTION BOX OR UNDERGROUND PULLBOX.
$K	WALL OUTLET BOX AND SINGLE POLE 20 AMP KEY SWITCH.		FLUSH MOUNTED PANEL.
$M	MANUAL MOTOR STARTER SWITCH WITH OVERLOADS AS REQUIRED UNLESS OTHERWISE NOTED..		SURFACE MOUNTED PANEL.
			FLUSH MOUNTED SYSTEMS PANEL.
	FLUSH WALL OUTLET BOX & 3/4" CONDUIT TO TELEPHONE TERMINAL BOARD UNLESS OTHERWISE NOTED. MOUNT 18" AFF.		SURFACE MOUNTED SYSTEMS PANEL. (ICTC=INTERCOM TERMINATION CABINET FATC= FIRE ALARM TERMINATION CABINET)
W	FLUSH WALL OUTLET BOX & 3/4" CONDUIT TO TELEPHONE TERMINAL BOARD UNLESS OTHERWISE NOTED. MOUNT 42" AFF.	T	TRANSFORMER – SIZE AS NOTED.
	FLUSH WALL OUTLET BOX & 3/4" CONDUIT TO VOICE/DATA TERMINAL BOARD UNLESS OTHERWISE NOTED. MOUNT 18" AFF.	P	PHOTOCELL – AS NOTED.
	FLUSH WALL OUTLET BOX & 3/4" CONDUIT TO TELEVISION HEAD END EQUIPMENT UNLESS OTHERWISE NOTED.		
	FLUSH WALL OUTLET BOX & 3/4" CONDUIT TO MASTER CLOCK SYSTEM UNLESS OTHERWISE NOTED.		
	FLUSH WALL OUTLET BOX AND STROBE.		
	FLUSH WALL OUTLET BOX AND TELEPHONE CALL POINT.		
	CEILING OUTLET BOX AND SPEAKER UNLESS OTHERWISE NOTED.		CONDUIT – SOLID LINE INDICATES EQUIPMENT ON COMMON CIRCUIT AND/OR CONTROLLED BY COMMON SWITCH. EACH CIRCUIT SHALL CONSIST OF A PHASE CONDUCTOR, NEUTRAL AND GROUND. ELECTRICAL CONTRACTOR SHALL PROVIDE NECESSARY SWITCH LEGS IN CONDUIT TO ACHIEVE SWITCHING INDICATED ON PLANS. ELECTRICAL CONTRACTOR MAY COMBINE CIRCUITS INTO A COMMON HOMERUN CONSISTING OF A COMMON NEUTRAL AND GROUND CONDUCTOR AND (3) THREE PHASE CONDUCTORS (A, B AND C PHASE).
	CEILING OUTLET BOX AND THERMAL HEAT DETECTOR.		
	CEILING OUTLET BOX AND SMOKE DETECTOR.		
	IN LINE DUCT SMOKE DETECTOR. FURNISHED AND CONNECTED BY DIVISION 16. INSTALLED BY DIVISION 15.		CONDUIT – DOTTED LINE INDICATES EQUIPMENT ON A COMMON CIRCUIT BUT NOT CONTROLLED ON SAME SWITCH DEVICE.
FS	FLOW SWITCH.		CIRCUIT HOMERUN.
TS	TAMPER SWITCH.		CONDUIT STUB OUT. CAP AS NOTED.
	FIRE ALARM SHUT DOWN RELAY.		
	FLUSH WALL OUTLET BOX AND MANUAL PULL STATION.		
	FLUSH WALL OUTLET BOX AND SPEAKER/HORN.		
	FLUSH WALL OUTLET BOX AND HORN WITH FLASHING LIGHT.		
	DOOR HOLD OPEN DEVICE.		

NOTE: THESE ARE STANDARD SYMBOLS AND MAY NOT ALL APPEAR ON THE PROJECT DRAWINGS.

DEMOLITION NOTES:

1. ALL DEBRIS SHALL BE REMOVED FROM THE SITE DAILY TO AN APPROVED DUMPING FACILITY WHICH MEETS FEDERAL AND LOCAL REQUIREMENTS. NO BURNING ON SITE WILL BE ALLOWED. OWNER'S DUMPSTERS SHALL NOT BE
2. WHERE CUTTING CORING OR REMOVAL OF CONDUITS, BOXES OR ANY ELECTRICAL ITEM IS REQUIRED, THE EXPOSED FINISHED SURFACE SHALL BE PATCHED AND PAINTED SO THAT NO EVIDENCE OF THE FORMER INSTALLATION
3. THE OWNER HAS FIRST RIGHT OF REFUSAL FOR ALL ELECTRICAL EQUIPMENT, FIXTURES AND DEVICES REMOVED INDICATED ON THE CONTRACT DOCUMENTS TO BE REMOVED. ALL ITEMS NOT CLAIMED BY THE OWNER SHALL BE REMOVED FROM THE JOB SITE BY THIS CONTRACTOR AND PROPERLY DISPOSED OF.

RENOVATION NOTES:

1. VISIT AND CAREFULLY EXAMINE THOSE PORTIONS OF THE BUILDINGS AND SITE AFFECTED BY THIS WORK BEFORE SUBMITTING PROPOSALS SO AS TO BECOME FAMILIAR WITH EXISTING CONDITIONS AND DIFFICULTIES THAT WILL EFFECT EXECUTION OF THE WORK. SUBMISSION OF A PROPOSAL WILL BE CONSTRUED, AS EVIDENCE THAT SUCH EXAMINATION HAS BEEN MADE AND LATER CLAIMS FOR LABOR, EQUIPMENT OR MATERIALS REQUIRED BECAUSE OF DIFFICULTIES ENCOUNTED WILL NOT BE RECOGNIZED.
2. AT THE CONTRACTOR'S OPTION – PORTIONS OF THE EXISTING CONDUIT SYSTEM MAY BE RETAINED FOR WORK SHOWN ON THESE DRAWINGS. WHERE EXISTING CONDUIT IS REUSED, IT'S MATERIALS AND METHODS OF INSTALLATION WHEN THE PROJECT IS COMPLETE, SHALL CONFORM TO THE SPECIFICATIONS AS IF IT WERE NEW. ALL COUPLINGS AND CONDUCTORS SHALL BE TIGHTENED.

ENGINEER'S CERTIFICATION:

TO THE BEST OF MY KNOWLEDGE, THESE PLANS COMPLY WITH THE APPLICABLE MINIMUM BUILDING CODES AND FIRE SAFETY STANDARDS.

GENERAL NOTES:

1. ALL WORK SHALL COMPLY WITH CODES AND STANDARDS LISTED IN THE SPECIFICATIONS.
2. THE DRAWINGS ARE DIAGRAMATIC AND THE OMISSION OF AN ITEM NECESSARY FOR THE PROPER FUNCTIONING OF THE SYSTEM DOES NOT RELIEVE THE CONTRACTOR FROM FURNISHING AND INSTALLING THAT ITEM.
3. NOTIFY ARCHITECT/ ENGINEER OF ANY CONFLICTS PRIOR TO PURCHASING EQUIPMENT AND PRIOR TO CUTTING OPENING.
4. PRIOR TO BID, COORDINATE ALL ELECTRICAL WORK WITH OTHER TRADES. SEE SPECIFICATIONS FOR REQUIREMENTS.
5. CONTRACTOR SHALL NOT CONCEAL ANY WORK UNTIL INSPECTED BY ELECTRICAL INSPECTOR AND/OR ARCHITECT/ENGINEER. CONTRACTOR SHALL NOTIFY A/E OF A SCHEDULED INSPECTION TIME WITHIN 72 HOURS. CONTRACTORS SHALL NOT CONCEAL WORK UNTIL APPROVED.
6. ELECTRICAL CONTRACTOR SHALL COORDINATE WITH ARCHITECT AND GENERAL CONTRACTOR ON REQUIREMENTS FOR STRUCTURAL SUPPORT AND FRAMING FOR ALL ELECTRICAL EQUIPMENT AND SYSTEMS. GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING AND VERIFYING STRUCTURAL SUPPORT AND FRAMING.
7. THE SIZE, LOCATION, WEIGHT, AND NEC ARTICLE 110/384 REQUIRED SERVICE CLEARANCES OF EQUIPMENT INSTALLED UNDER DIVISION 16 ELECTRICAL SHALL BE COORDINATED WITH ALL OTHER TRADES.
8. WHERE CROWDED LOCATIONS EXIST OR WHERE THERE IS A POSSIBILITY OF CONFLICT BETWEEN TRADES, CONTRACTOR SHALL MAKE COMPOSITE DRAWINGS SHOWING THE EXACT LOCATION OF DUCTS, CONDUIT AND EQUIPMENT. DRAWINGS SHALL BE BASED ON FIELD MEASUREMENTS AND, AFTER CONSULTATION AND AGREEMENT BETWEEN THE TRADES, SHALL BE APPROVED BY THE ARCHITECT BEFORE INSTALLATION OF THE WORK.
9. ELECTRICAL CONTRACTOR IS TO PROVIDE PULL STRINGS IN ALL EMPTY CONDUIT AND RACEWAYS WITH LABELING TAGS AT EACH END.
10. ALL RACEWAY TERMINATION'S SHALL HAVE BUSHINGS AND BE GROUNDED WHERE RACEWAY IS METAL.
11. ALL BARE METAL SURFACES SHALL BE PRIMED AND PAINTED TO PREVENT ANY RUST, INCLUDING BUT NOT LIMITED TO ANGLE FRAMING, EQUIPMENT SUPPORTS, MOUNTING HARDWARE, ETC.
12. ALL RACEWAYS SHALL HAVE A GREEN GROUNDING CONDUCTOR.
13. ALL NEW BREAKERS IN EXISTING PANELS SHALL HAVE AN AIC RATING EQUAL TO OR GREATER THAN THE HIGHEST RATED BREAKER IN THAT PANEL.
14. CONTRACTOR SHALL FIRESTOP ALL NEW AND EXISTING ELECTRICAL PENETRATIONS IN FIRE RATED PARTITIONS (WALLS, FLOORS OR CEILINGS) WITH AN APPROVED FIRESTOP SYSTEM RATED FOR THE APPLICATION. FIRESTOP SYSTEM SHALL BE UL LISTED AND INSTALLED IN STRICT COMPLIANCE WITH THE MANUFACTURER'S INSTRUCTIONS.
15. EC SHALL FURNISH AND INSTALL EXPANSION JOINTS AT ALL LOCATIONS WHERE BUILDING EXPANSION JOINTS ARE USED.
16. EC MAY INSTALL MULTIPLE CIRCUITS INDICATED ON PANEL SCHEDULE IN A SINGLE CONDUIT. EC SHALL BE RESPONSIBLE FOR VERIFYING CONDUIT FILL AND CONDUCTOR DERATING.
17. SURGE PROTECTION SHALL BE PROVIDED ON ALL CABLES ENTERING/ EXITING BUILDINGS THAT CONNECT TO ELECTRICAL EQUIPMENT.
18. ALL SITE EXCAVATION OR TRENCHING SHALL BE DONE BY HAND. ALL CONDUITS SHALL HAVE A MINIMUM BURIAL DEPTH OF 24".
19. NO SPLICES SHALL BE PERMITED IN UNDERGROUND/ FLUSH IN-GRADE PULL BOXES WITHOUT PRIOR WRITTEN APPROVAL BY OWNER.

GENERAL FUEL SYSTEM NOTES:

1. PETRONET WITING MUST BE TWISTED PAIR WIRING. CONDUIT IS SUGGESTED (AND SHOWN ON THE DRAWINGS), BUT NOT REQUIRED FOR PETRONET. IF CONDUIT IS NOT USED, BUSHINGS MUST BE INSTALLED IN THE CABINET KNOCKOUTS TO PROTECT WIRING AND SEAL THE ENCLOSURES. POLARITY MUST BE OBSERVED FOR PETRO-NET WIRING. OWNER MUST APPROVE OF FREE WIRING PETRONET.
2. ANY FUEL DISPENSER IS A HAZARDOUS AREA AS DEFINED IN THE NATIONAL ELECTRICAL CODE. INSTALLATION MUST BE IN ACCORDANCE WITH THE NATIONAL ELECTRIC CODE NO. 70 2005 EDITION AND THE AUTOMOTIVE AND MARINE SERVICE STATION CODE (NFPA NO. 30A). THE INSTALLER IS RESPONSIBLE FOR INVESTIGATING AND FOLLOWING ANY LOCAL CODES.
3. CONDUIT ENTERING THE HAZARDOUS AREA (AS DESCRIBED IN THE EQUIPMENT INSTALLATION MANUAL) MUST HAVE A SEAL-OFF INSTALLED 18 INCHES ABOVE GRADE TO PREVENT LIQUID OR FUMES FROM ENTERING THE AREA.
4. ALL GROUNDING REQUIREMENTS PER THE INSTALLATION MANUALS MUST BE FOLLOWED EXACTLY. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO REVIEW THE INSTALLATION MANUALS AND INSTALL PER THE MANUFACTURERS INSTRUCTIONS. DRAWINGS DO NOT SHOW EVERY CABLE CONNECTION OR EVERY REQUIREMENT NECESSARY PER THE INSTALLATION MANUALS.
5. TANK ALERT MUST BE INSTALLED SO IT IS VISIBLE TO THE PERSON FILLING THE TANKS. LOCATE APPROPRIATELY PER FIELD CONDITIONS.
6. TO MAINTAIN INTRINSIC SAFETY FOR THE ISITE MONITORING SYSTEM, A SEPARATE AND COMPLETELY INDEPENDENT GROUND CONNECTION MUST BE RUN FROM THE I.S. GND TERMINAL ON EACH VSMART DIRECTLY BACK TO THE MAIN PANEL. REFER TO INSTALLATION MANUAL.
7. DO NOT RUN PETRONET WIRING IN ANY WIRING TROUGH. PETRONET NEEDS TO BE RUN IN CONDUIT IN LIEU OF WIRING TROUGH.
8. ONLY POWER WIRING MAY SHARE CONDUIT WITH PETRONET CABLE.
9. CONTRACTOR MUST REVIEW INSTALLATION MANUALS BEFORE BIDDING AND INSTALLATION OF SYSTEMS. CONTRACTOR MUST FOLLOW ALL INSTRUCTIONS FOR INSTALLATION PRECISELY PER MANUFACTURERS INSTRUCTIONS.
10. THE INSTALLATION MANUALS CONTAIN MANY IMPORTANT WARNINGS. DO NOT IGNORE THESE WARNINGS. FAILURE TO COMPLY WITH THE WARNINGS MAY CREATE CONDITIONS DANGEROUS TO PERSONNEL AND/OR EQUIPMENT.
11. DO NOT MOUNT SYSTEM SITE CONTROLLER, OR ANY OTHER ELECTRICAL PART PART OF THE FUEL CONTROL SYSTEM, INCLUDING PRINTERS AND MODEMS, WITHIN OR ABOVE THE DEFINED "HAZARDOUS" AREAS.
12. INSTALLERS MUST BE EXPERIENCED WITH THE REQUIREMENTS OF INTRINSICALLY SAFE DEVICES, AND MUST STRICTLY OBEY THE INSTRUCTIONS IN THE INSTALLATION MANUALS TO PERFORM A SAFE INSTALLATION.
13. A FUEL TANK IS A HAZARDOUS AREA AS DEFINED IN THE NEC. ONLY NON-INTRINSICALY SAFE DEVICES CAN BE INSTALLED IN OR ABOVE THE CLASS 1 DIVISION 1 HAZARDOUS AREA.
14. A PRECISION LEAK TEST SHOULD BE PERFORMED ON EACH TANK- ESPECIALLY OLDER ONES-BEFORE INSTALLING THE SITESENTINEL ISITE. THIS TEST MAKES SURE THAT LEAK DATA GENERATED BY THE SYSTEM IS ACCURATE AND RELIABLE. REFER TO INSTALLATION MANUAL FOR SPECIFIC TESTING INSTRUCTIONS.
15. SHIELDED CABLE IS NOT VAPOR-TIGHT. WHEN RUNNING SHIELDED CABLE THROUGH A SEAL OFF, STRIP THE CABLE JACKET BACK SO ABOUT THREE INCHES OF JACKETED CABLE PROTRUDES PAST EACH SEAL OFF. DO NOT DAMAGE THE SHIELD WIRE. STRIPPED SECTION MUST BE IN THE SEALED OFF AREA.
16. PETRO VEND FUEL CONTROL SYSTEMS INCORPORATE INTERNAL NOISE SUPPRESSION CIRCUITRY. THIS CIRCUITRY REQUIRES A DEDICATED GROUND WIRE CONNECTED DIRECTLY TO THE CIRCUIT BREAKER PANEL TO DISSIPATE THE ELECTRICAL ENERGY. DO NOT RELY ON THE CONDUIT TO PROVIDE THIS GROUND CONNECTION.
17. PETRONET WIRING IS A TWISTED PAIR OF 18 AWG WIRES THAT MUST BE TWISTED TOGETHER TO PROVIDE IMMUNITY TO ELECTRICAL NOISE. PETRO-NET CABLE MUST BE ORDERED (PART NUMBER 12-1029) FROM THE EQUIPMENT MANUFACTURER.
18. PETRONET WIRING CAN RUN A MAXIMUM OF 5,000 FEET.

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Revisions

For Construction - 08/10/2009

Project
School District of Osceola County
Fuel Management System
Osceola County, Florida

Owner
School District of Osceola County

Engineer of Record
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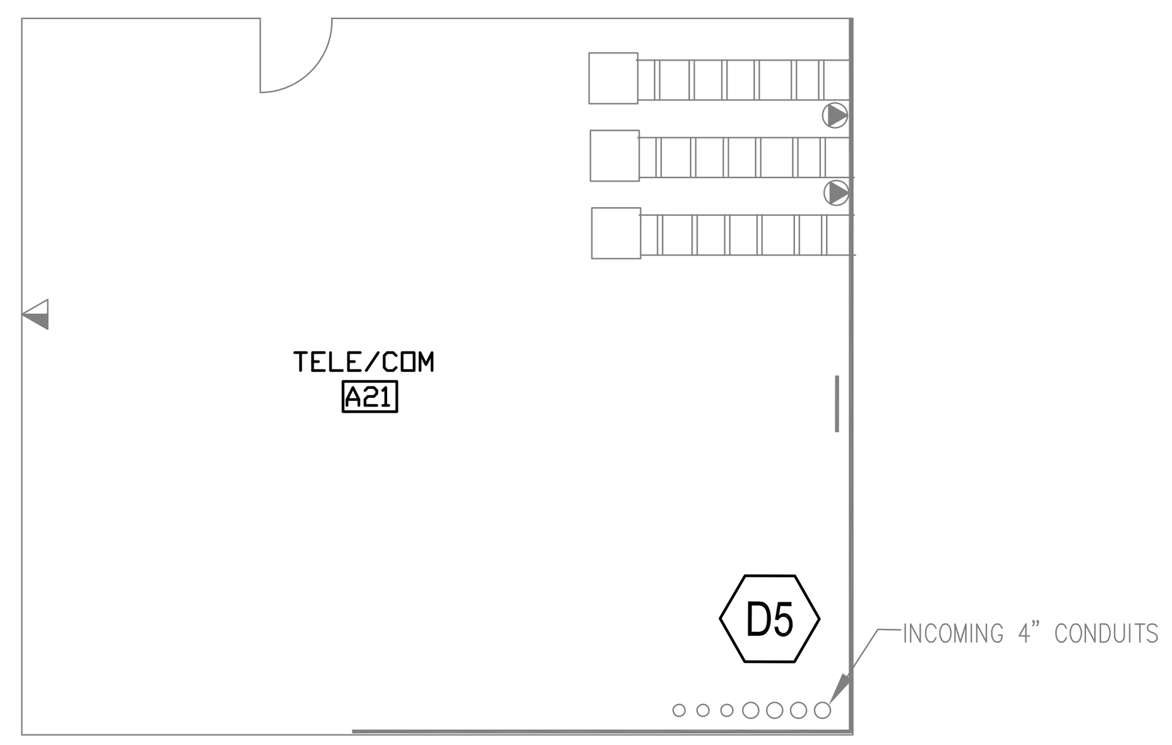
State of Florida Certificate No. 9811

SEG Project No. 09004

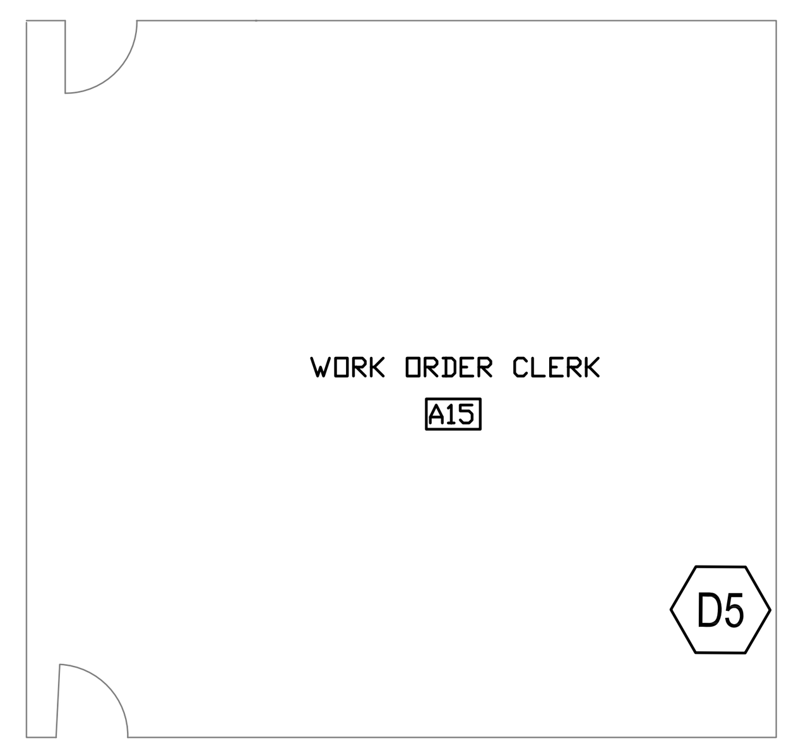
Sheet Title
FUEL MANAGEMENT SYSTEM LEGEND & NOTES

Number
E0.1



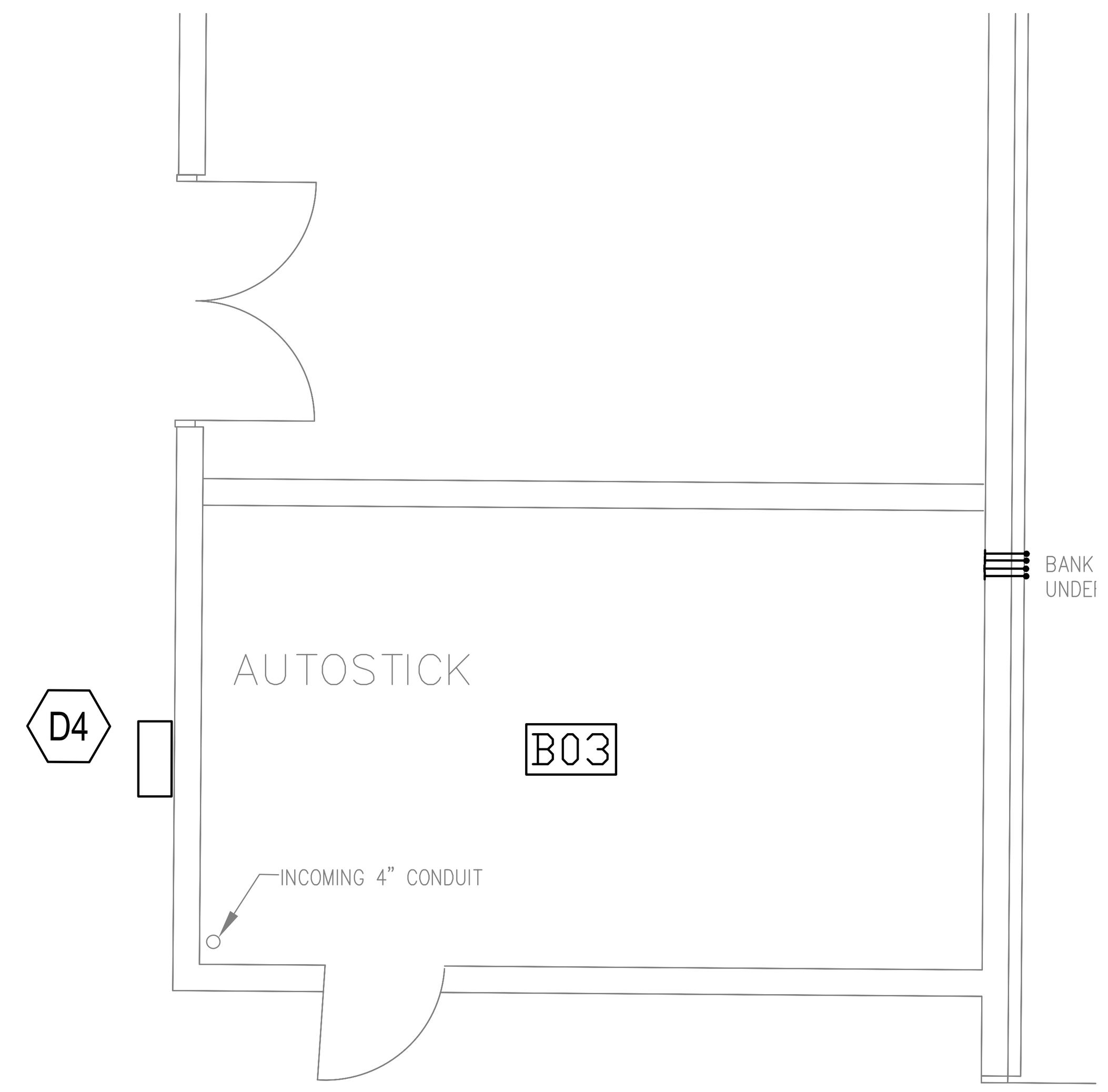
EXISTING ENLARGED TEL/COM RM. A21 DEMOLITION

SCALE: 1/4" = 1' - 0"



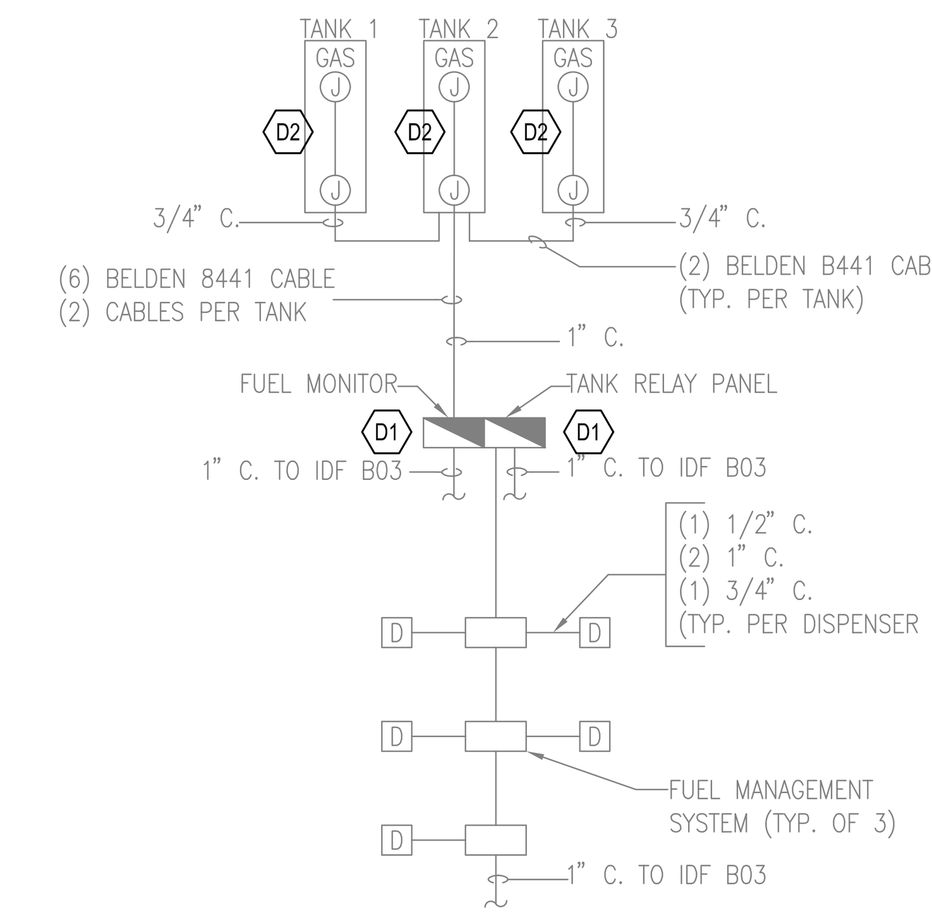
EXISTING ENLARGED OFFICE A15 DEMOLITION

SCALE: 1/4" = 1' - 0"



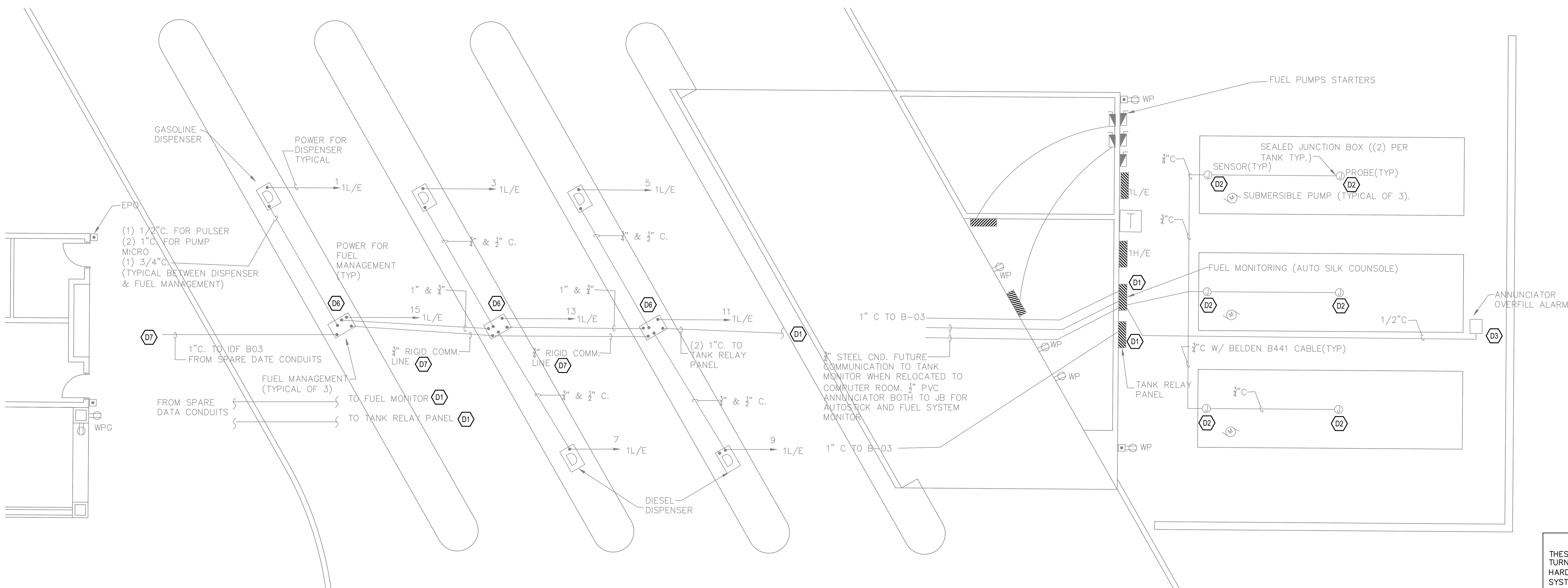
EXISTING ENLARGED IDF ROOM B03 DEMOLITION

SCALE: 1/4" = 1' - 0"



EXISTING FUEL SYSTEMS WIRING DIAGRAM DEMOLITION

SCALE: N.T.S.



EXISTING FUEL PUMP STATION DEMOLITION

SCALE: 1/8" = 1' - 0"

GENERAL DEMOLITION NOTES:

1. CONTRACTOR SHALL VERIFY ALL EXISTING CONDIUITS AND WIRING ASSOCIATED WITH EQUIPMENT TO BE REMOVED BEFORE ANY DEMOLITION WORK IS STARTED.

DEMOLITION KEY NOTES: ⬡

- D1. DISCONNECT AND REMOVE ALL EQUIPMENT ASSOCIATED WITH TANK RELAY PANEL AND FUEL MONITORING PANEL. ALL WIRING SHALL BE PULLED BACK AND REMOVED. CONDUIT SHALL BE LABELED AS SPARE. EXISTING SUPPORT FOR PANELS SHALL REMAIN FOR REUSE.
- D2. DISCONNECT AND REMOVE EXISTING SENSORS AND PROBES ON EXISTING TANKS. REMOVE ALL ASSOCIATED EQUIPMENT AND WIRING. DO NOT REMOVE CONDUITS. LABEL CONDUITS AS SPARE.
- D3. DISCONNECT AND REMOVE EXISTING ANNUNCIATOR OVERFILL ALARM. LEAVE ANY SUPPORT AND CONDUIT FOR REUSE WITH NEW TANK ALERT. ANY POWER WIRING SHALL REMAIN FOR REUSE.
- D4. DISCONNECT AND REMOVE AUTOSTICK. REMOVE WIRING BACK TO SOURCE AND LABEL CONDUIT AS SPARE.
- D5. DISCONNECT AND REMOVE ALL EQUIPMENT ASSOCIATED WITH EXISTING FUEL MANAGEMENT SYSTEM. ALL WIRING SHALL BE REMOVED. CONDUIT TO BE LABELED AS SPARE.
- D6. DISCONNECT AND REMOVE EXISTING FUEL MANAGEMENT SYSTEM PEDESTAL. ALL EXISTING WIRING TO PUMPS WILL BE REUSED. DISCONNECT BUT DO NOT REMOVE. POWER WILL ALSO BE REUSED WITH NEW PEDESTAL SYSTEM. DISCONNECT BUT DO NOT REMOVE.
- D7. DISCONNECT AND REMOVE EXISTING COMMUNICATIONS CABLE THAT IS ROUTED FROM THE HEADEND EQUIPMENT TO THE EXISTING FUEL MANAGEMENT PEDESTALS. CONDUIT WILL BE REUSED WITH NEW PEDESTALS.

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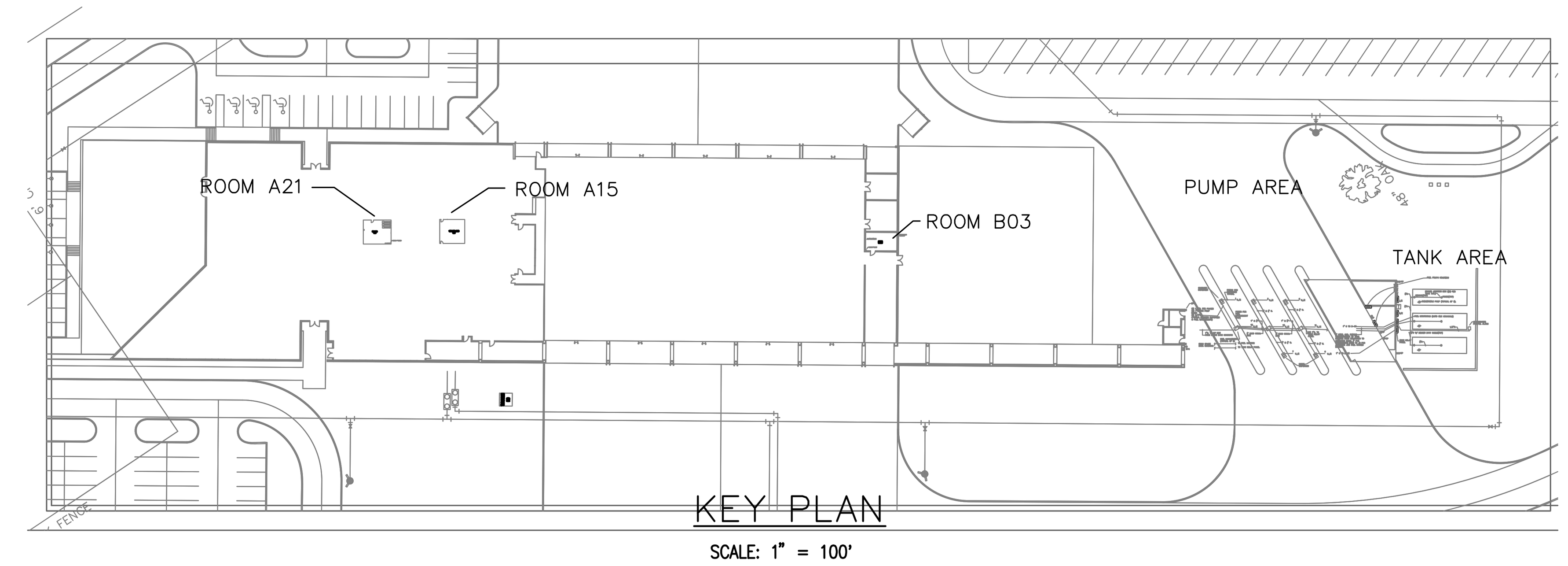

KEY PLAN

SCALE: 1" = 100'

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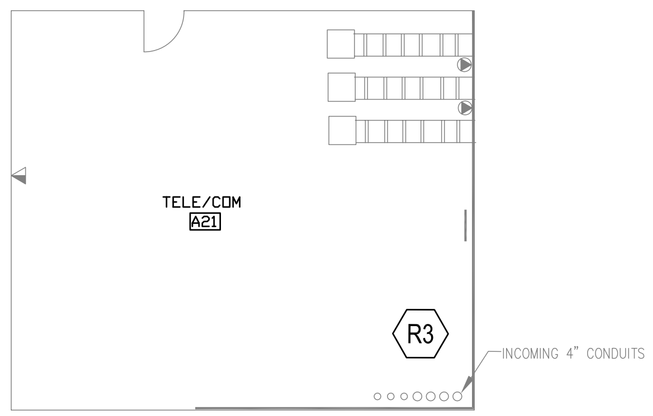
Project
School District of Osceola County
Fuel Management System
Osceola County, Florida

Owner
School District of Osceola County

△ Revisions

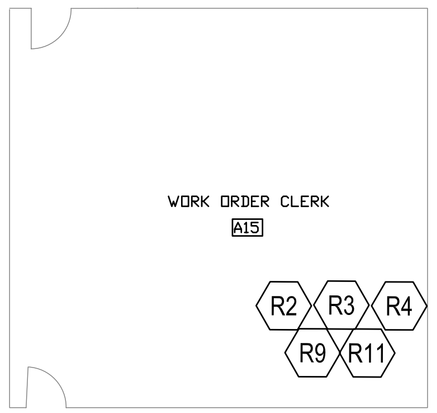
Sheet Title
TRANSPORTATION SIMPSON RD. BUILDING DEMOLITION

Number
E1.0



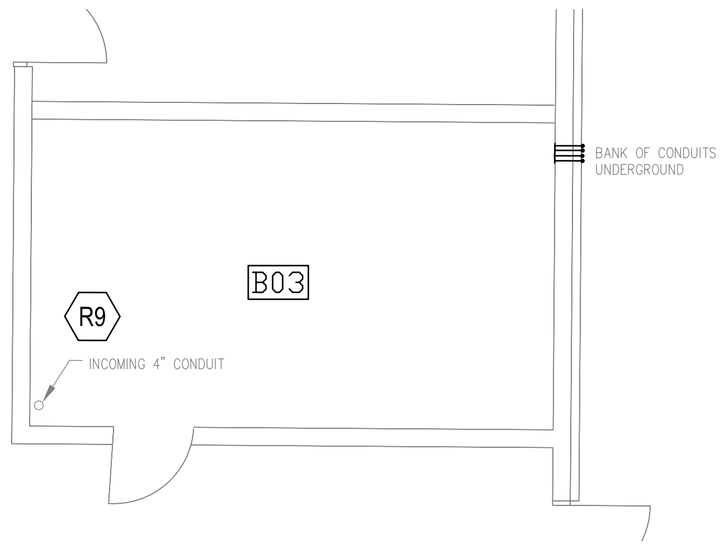
EXISTING ENLARGED TEL/COM RM. A21 RENOVATION

SCALE: 1/4" = 1' - 0"



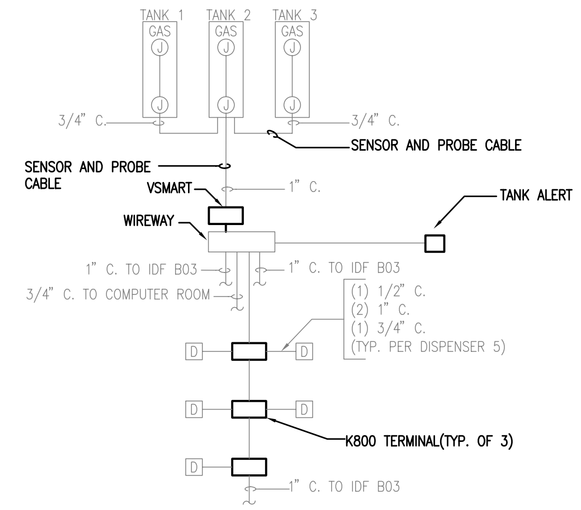
EXISTING ENLARGED OFFICE ROOM A15 RENOVATION

SCALE: 1/4" = 1' - 0"



EXISTING ENLARGED IDF ROOM B03 RENOVATION

SCALE: 1/4" = 1' - 0"



EXISTING FUEL SYSTEMS WIRING DIAGRAM RENOVATION

SCALE: N.T.S.

GENERAL RENOVATION NOTES:

1. CONTRACTOR SHALL VERIFY ALL EXISTING CONDUITS TO BE REUSED ARE IN GOOD CONDITION.
2. CONTRACTOR SHALL COORDINATE ALL WIRING AND ROUGH IN REQUIREMENTS WITH FUELING STATION MANUFACTURER FINAL CONTRACT DOCUMENTS (INSTALLATION MANUALS) PRIOR TO ANY ROUGH-IN INDICATED ON THESE PLANS. WIRING IS DIAGRAMATIC ONLY.
3. REFER TO GENERAL NOTES FOR FUEL SYSTEM LOCATED ON E0.1.

RENOVATION KEY NOTES:⬡

R1. FURNISH AND INSTALL NEW K800 PEDESTAL. RECONNECT EXISTING HOT, NEUTRAL AND GROUND WIRES PREVIOUSLY REMOVED FROM ORIGINAL PEDESTAL. RECONNECT ALL WIRING THAT GOES TO THE EXISTING PUMPS TO CORRECT TERMINATION POINTS IN THE K800.

R2. FURNISH AND INSTALL NEW SYSTEM II CONTROLLER AND ALL ASSOCIATED FUEL MANAGEMENT EQUIPMENT INCLUDING MODEM AND PRINTER IN OFFICE AREA. CONSULT OWNER FOR EXACT LOCATION. CONSULT INSTALLATION MANUALS FOR ALL INTERCONNECTING CABLES.

R3. ROUTE NEW PETRONET COMMUNICATIONS CABLE (MUST BE PRUCHASED FROM VENDOR) FROM THE SYSTEM II CONTROLLER TO LANE 1 K800 THEN DAISY CHAIN TO LANE 2 K800 THEN LANE 3 K800. ROUTE WIRE FROM THE OFFICE OUT TO THE PUMPS VIA EXISTING CONDUIT SYSTEM. IT IS PREFERRED TO ROUTE PETRONET CABLE IN CONDUIT. BASED ON THIS, A 3/4" CONDUIT WILL NEED TO BE ROUTED FROM THE OFFICE ROOM A15 TO ROOM A21 TO GET TO THE EXISTING 4" CONDUIT IN ROOM A21.
INSTALL 1" CONDUIT FROM THE 4" CONDUIT IN ROOM B03 TO THE EXISTING 1" CONDUIT ON NORTH WALL THAT GOES TO LANE 1 PEDESTAL SO THAT THERE IS A CONTINUOUS PATH FOR THE PETRONET CABLE FROM THE OFFICE TO THE PEDESTAL. USE EXISTING 3/4" CONDUIT TO ROUTE FROM PEDESTAL TO PEDESTAL.

R4. FURNISH AND INSTALL ISITE CONSOLE IN OFFICE AREA. CONSULT WITH OWNER FOR EXACT LOCATION. USE EXISTING POWER OUTLETS FOR FOR POWER TO THE CONSOLE.

R5. INSTALL VSMART ON EXISTING SUPPORTS FROM REMOVED FUEL MONITOR AND TANK RELAY PANEL. MODIFY AS NEEDED SO THAT THE VSMART CAN BE LOCATED WHERE THE FUEL MONITOR PANEL WAS LOCATED (ABOVE THE WIREWAY).

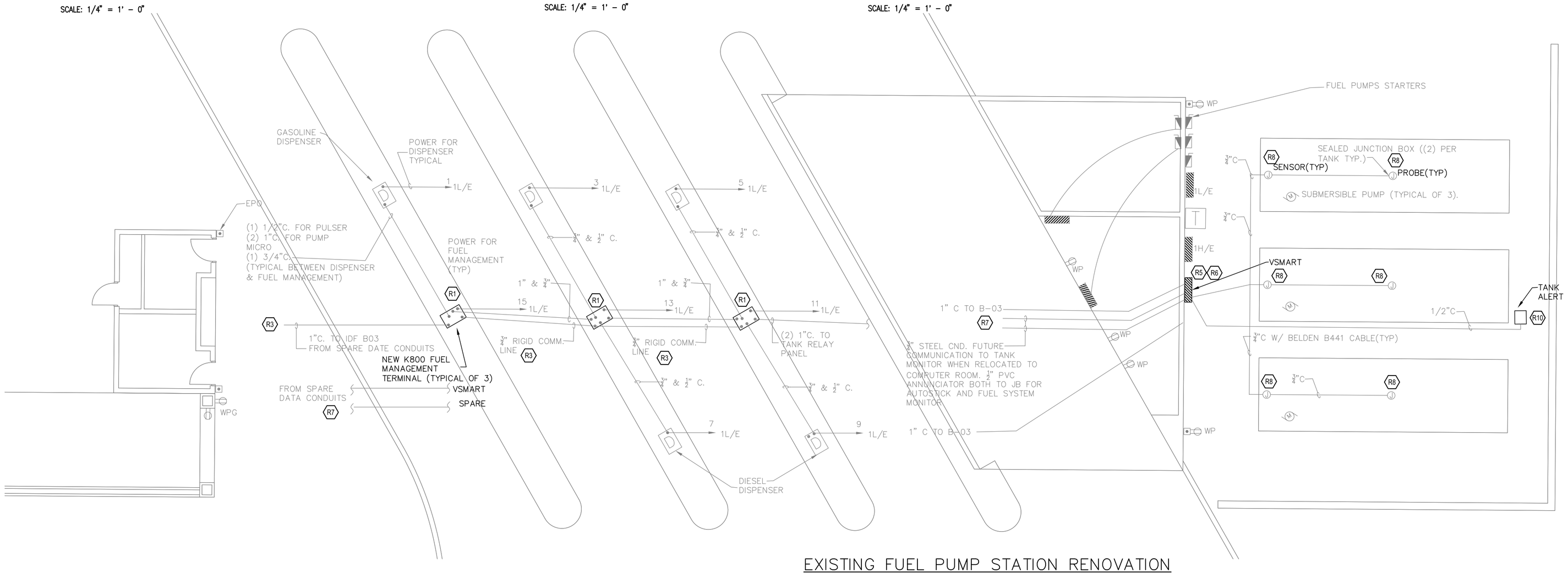
R6. VSMART REQUIRES 120V POWER. ROUTE 3/4" CONDUIT WITH 2-#12 AND GROUND FROM SPARE 20A BREAKER IN PANEL 1LE TO A NEW WATERPROOF GFI RECEPTACLE MOUNTED NEAR THE VSMART CONSOLE.

R7. ROUTE PETRONET CABLE FROM THE ISITE CONSOLE IN OFFICE TO THE VSMART. INSTALL 3/4" CONDUIT TO GET FROM THE OFFICE A15 TO THE 4" CONDUIT IN ROOM A21 THEN VIA EXISTING CONDUIT TO VSMART NEAR TANKS.

R8. FURNISH AND INSTALL PROBES AND SENSORS AT TANKS. USE EXSITING CONDUITS TO ROUTE CABLES FROM VSMART TO THE SENSORS AND PROBES. CONTRACTOR SHALL EXTEND CONDUITS AND INSTALL JUNCTION BOXES AS REQUIRED.

R9. REUSE EXISTING CONDUITS TO GO BETWEEN ROM A15, A21, B03 AND FUEL PUMP AREA.

R10. INSTALL NEW TANK ALERT. PROVIDE CABLE FROM TANK ALERT TO TANKS AND AND BACK TO ISITE IN ROOM A15 VIA EXISTING CONDUITS. REUSE SUPPORT.



EXISTING FUEL PUMP STATION RENOVATION

SCALE: 1/8" = 1' - 0"

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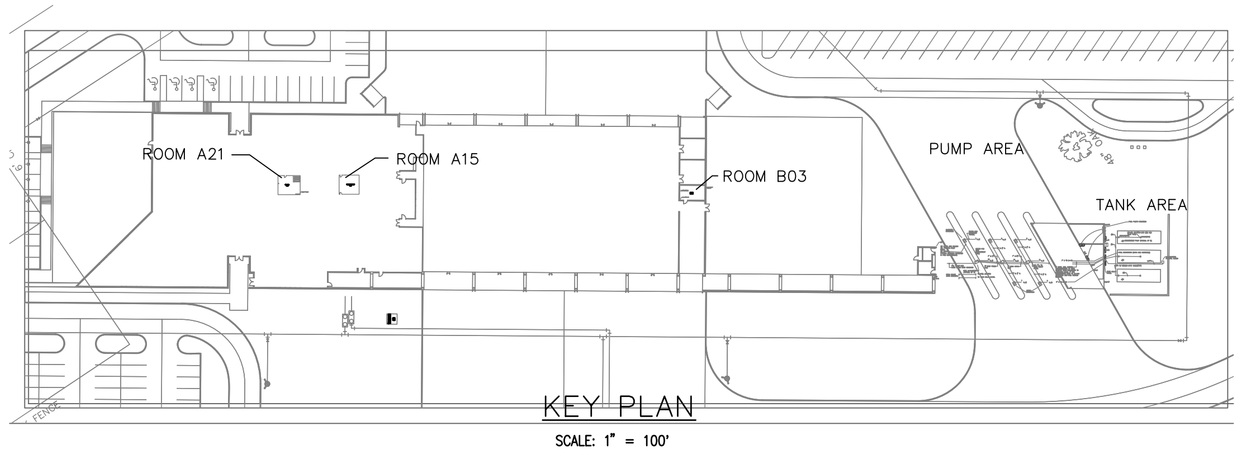

KEY PLAN

SCALE: 1" = 100'

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Revisions

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Fuel Management System
Osceola County, Florida

Owner
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Engineer of Record
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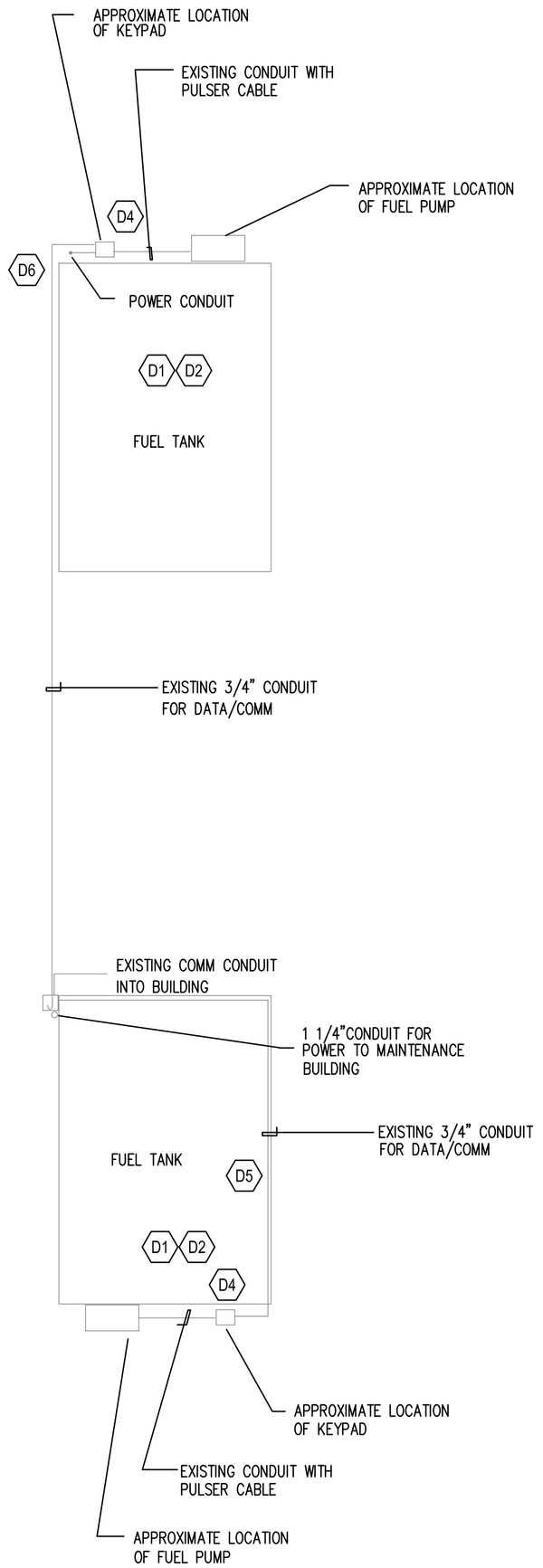
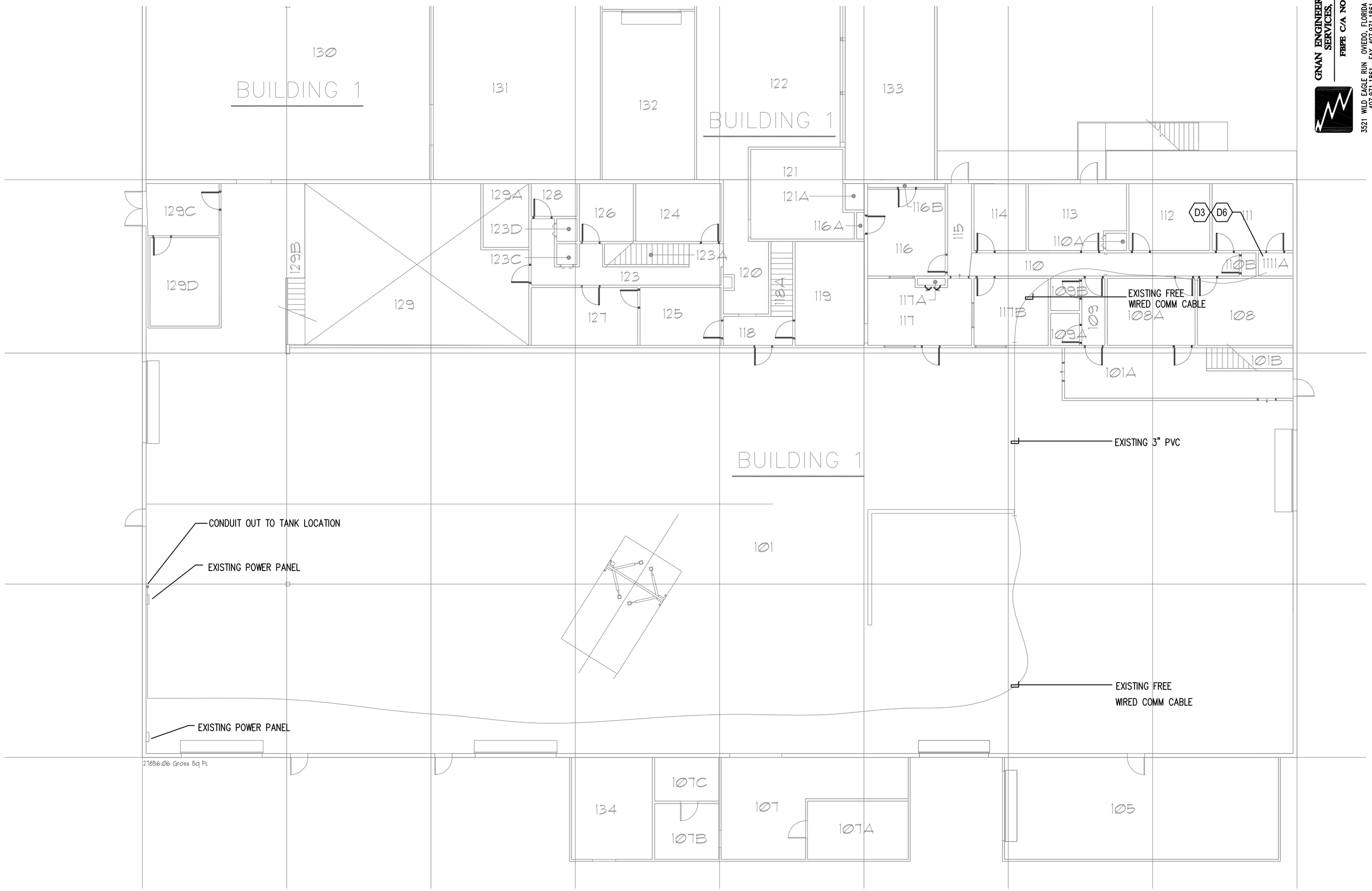
SEG Project No. 09004

Sheet Title
TRANSPORTATION SIMPSON RD. BUILDING RENOVATION

Number
E1.1





DEMOLITION PLAN

SCALE: 1" = 10' - 0"

GENERAL DEMOLITION NOTES:

1. CONTRACTOR SHALL VERIFY ALL EXISTING CONDUITS AND WIRING ASSOCIATED WITH EQUIPMENT TO BE REMOVED BEFORE ANY DEMOLITION WORK IS STARTED.

DEMOLITION KEY NOTES: (x)

D1. DISCONNECT AND REMOVE ANY EXISITNG SENSORS AND PROBES ON EXISTING TANKS. REMOVE ALL ASSOCIATED EQUIPMENT AND WIRING. DO NOT REMOVE CONDUITS. LABEL ANY UNUSED CONDUITS AS SPARE.

D2. DISCONNECT AND REMOVE ANY EXISTING ANNUNCIATOR OVERFILL ALARM LEAVE ANY SUPORT AND CONDUIT FOR REUSE WITH NEW TANK ALERT.

D3. DISCONNECT AND REMOVE ALL EQUIPMENT ASSOCIATED WITH EXISTING FUEL MANAGEMENT SYSTEM. ALL WIRING SHALL BE REMOVED. CONDUIT SHALL BE LABELED AS SPARE.

D4. DISCONNECT AND REMOVE EXISTING FUEL MANAGEMENT SYSTEM PEDESTAL. ALL EXISTING WIRING TO PUMP WILL BE REUSED. DISCONNECT BUT DO NOT REMOVE. POWER WILL ALSO BE REUSED WITH NEW PEDESTAL SYSTEM. DISCONNECT BUT DO NOT REMOVE.

D5. DISCONNECT AND REMOVE EXISTING COMMUNICATIONS CABLE THAT IS ROUTED FROM THE HEADEND EQUIPMENT TO THE EXISTING FUEL MANAGEMENT PEDESTALS. CONDUIT WILL BE REUSED WITH NEW PEDESTAL.

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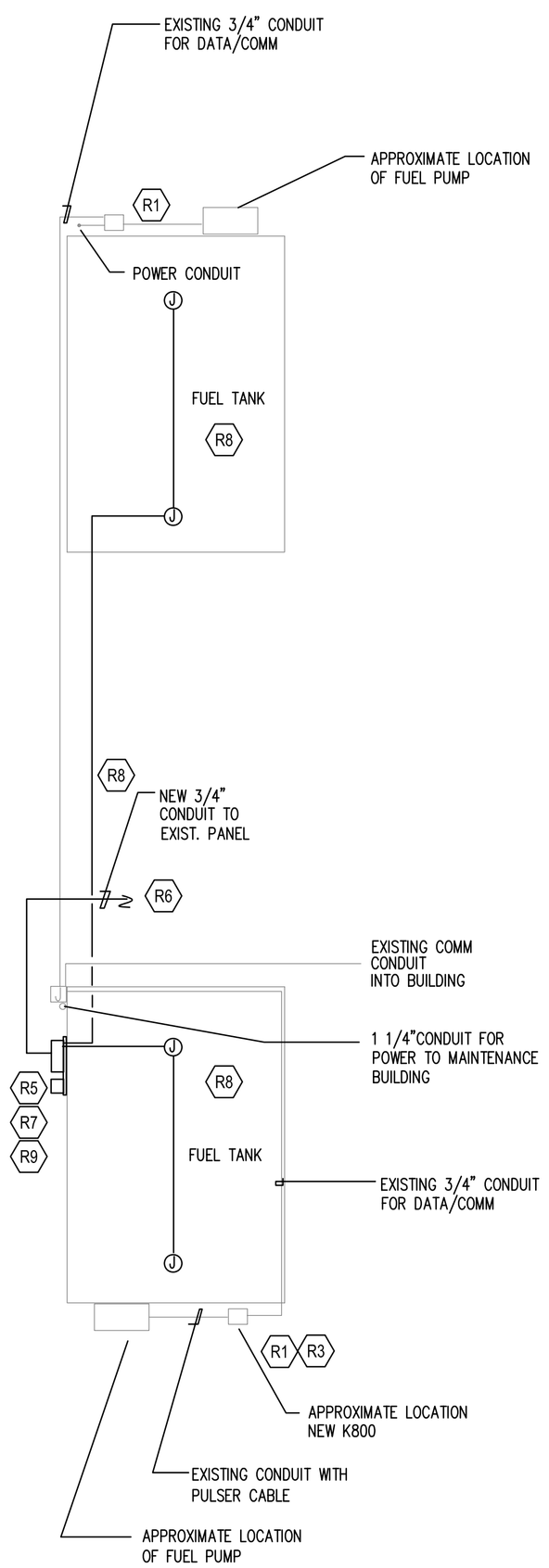
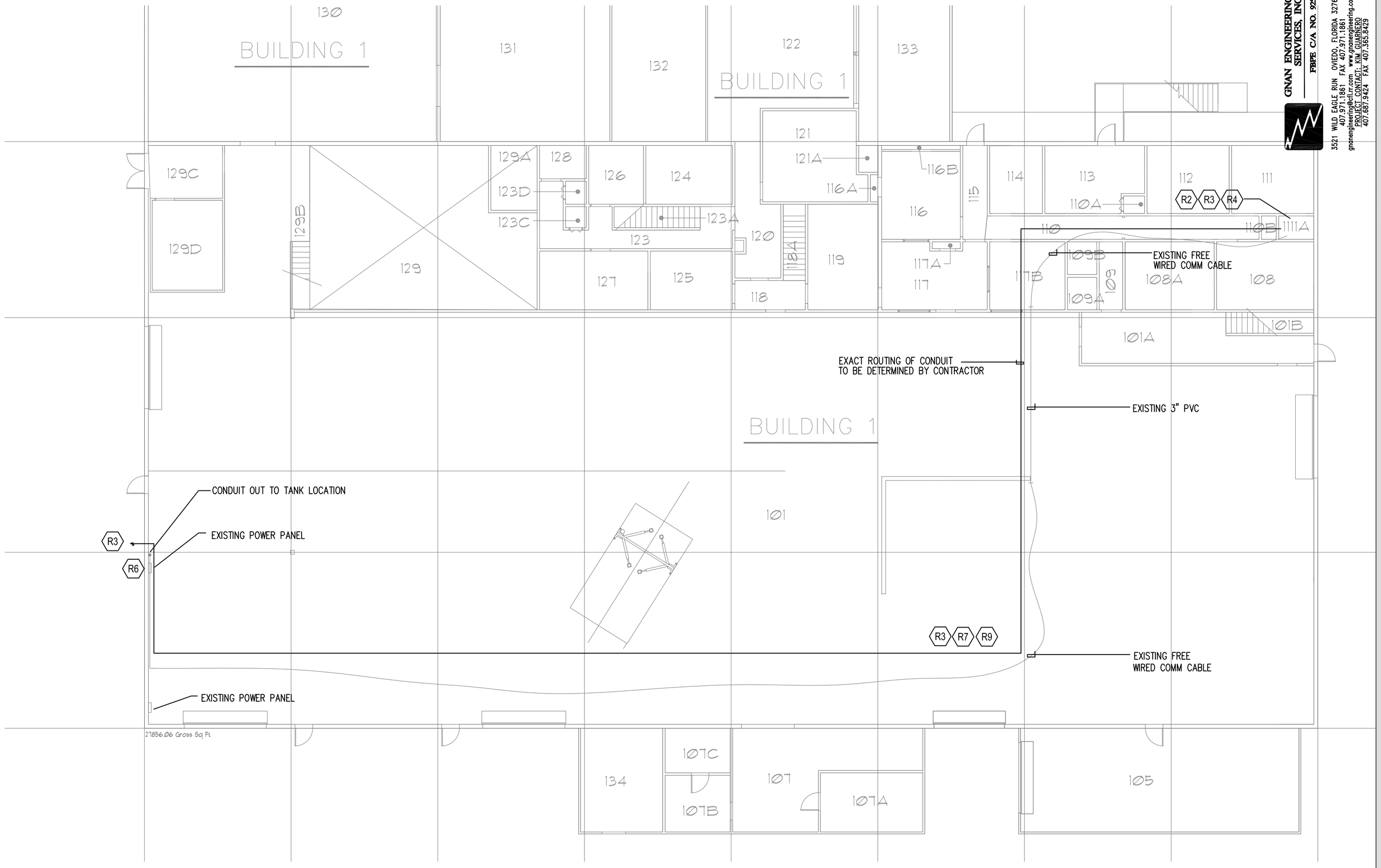
Sheet Title
MAINTENANCE DEMOLITION PLAN

Number
E2.0





RENOVATION PLAN

SCALE: 1" = 10' - 0"

GENERAL RENOVATION NOTES:

1. CONTRACTOR SHALL VERIFY ALL EXISTING CONDUITS TO BE REUSED ARE IN GOOD CONDITION.
2. CONTRACTOR SHALL COORDINATE ALL WIRING AND ROUGH IN REQUIREMENTS WITH FUELING STATION MANUFACTURER FINAL CONTRACT DOCUMENTS (INSTALLATION MANUALS) PRIOR TO ANY ROUGH-IN INDICATED ON THESE PLANS. WIRING IS DIAGRAMATIC ONLY.
3. CONTRACTOR MUST VERIFY ALL MEASUREMENTS IN FIELD.
4. SEE GENERAL FUEL MANAGEMENT NOTES ON DRAWING E0.1.

RENOVATION KEY NOTES: (KL)

R1. FURNISH AND INSTALL NEW K800 PEDESTAL. RECONNECT EXISTING HOT, NEUTRAL AND GROUND WIRES PREVIOUSLY REMOVED FROM ORIGINAL PEDESTAL. RECONNECT ALL WIRING THAT GOES TO THE EXISTING PUMP TO THE CORRECT TERMINATION POINTS IN THE K800.

R2. FURNISH AND INSTALL NEW SYSTEM II CONTROLLER AND ALL ASSOCIATED FUEL MANAGEMENT EQUIPMENT INCLUDING MODEM AND PRINTER IN OFFICE AREA. CONSULT OWNER FOR EXACT LOCATION. CONSULT INSTALLATION MANUALS FOR ALL INTERCONNECTING CABLES.

R3. ROUTE NEW PETRONET COMMUNICATIONS CABLE FROM THE SYSTEM II CONTROLLER TO THE NEW K800. ROUTE WIRE FROM THE OFFICE OUT TO THE K800 VIA NEW 1" CONDUIT INSIDE BUILDING AND OUT TO KEYPAD AREA. REUSE ANY EXISTING CONDUIT OUT TO KEYPAD AREA THAT IS AVAILABLE. DAISY CHAIN PETRONET FROM THE SOUTH K800 TO THE NORTH K800. REUSE CONDUIT AT TANK LOCATION TO GO BETWEEN K800'S. CONTRACTOR SHALL VERIFY AVAILABLE CONDUITS. CONSULT OWNER IF FREEWIRE OPTION IS CONSIDERED WITHIN BUILDING. OWNER MUST APPROVE.

R4. FURNISH AND INSTALL ISITE CONSOLE IN OFFICE AREA. CONSULT WITH OWNER FOR EXACT LOCATION. USE EXISTING POWER OUTLETS FOR POWER TO THE CONSOLE.

R5. FABRICATE A SUPPORT FOR NEW VSMART AND TANK ALERT. INSTALL NEW TANK ALERT AND VSMART. TANK ALERT MUST BE VISIBLE TO THOSE FILLING TANKS. INSTALL PER FIELD CONDITIONS. LOCATION SHOWN IS A SUGGESTION.

R6. VSMART REQUIRES 120V POWER. ROUTE 3/4" CONDUIT WITH 2-#12 AND GROUND FROM SPARE 20A BREAKER LOCATED IN INDOOR POWER PANEL TO A NEW WATERPROOF GFI RECEPTACLE MOUNTED NEAR THE VSMART CONSOLE.

R7. ROUTE PETRONET CABLE FROM THE ISITE CONSOLE IN OFFICE TO THE VSMART VIA NEW 1" CONDUIT INSTALLED IN R3. USE EXISTING COMM CONDUIT TO GET TO TANK AREA. EXTEND 3/4" CONDUIT TO VSMART.

R8. FURNISH AND INSTALL PROBES AND SENSORS AT TANKS. ROUTE 3/4" CONDUITS AND CABLE FROM SENSORS AND PROBES TO VSMART. REUSE EXISTING CONDUIT IF AVAILABLE. INSTALL JUNCTION BOXES AND FITTINGS AS REQUIRED.

R9. INSTALL 3/4" CONDUIT AND PROVIDE CABLE FROM TANK ALERT INSTALLED IN R5 TO TANK AND BACK TO ISITE IN OFFICE AREA VIA 3/4" CONDUIT. REUSE EXISITNG CONDUIT IF POSSIBLE BACK TO OFFICE. PROVIDE JUNCTION BOXES AND FITTINGS AS REQUIRED.

THESE DOCUMENTS ARE INTENDED TO BE A PERFORMANCE SPECIFICATION FOR A TURNKEY FUEL MANAGEMENT SYSTEM. THE SUCCESFUL VENDOR SHALL PROVIDE ALL HARDWARE, SOFTWARE, ENGINEERING, LABOR AND MATERIALS TO DEMOLISH EXISITNG SYSTEMS AND PROVIDE A COMPLETE SYSTEM THAT MEETS OR EXCEEDS THE REQUIREMENTS OF THESE DOCUMENTS AND ALL APPLICABLE CODES.

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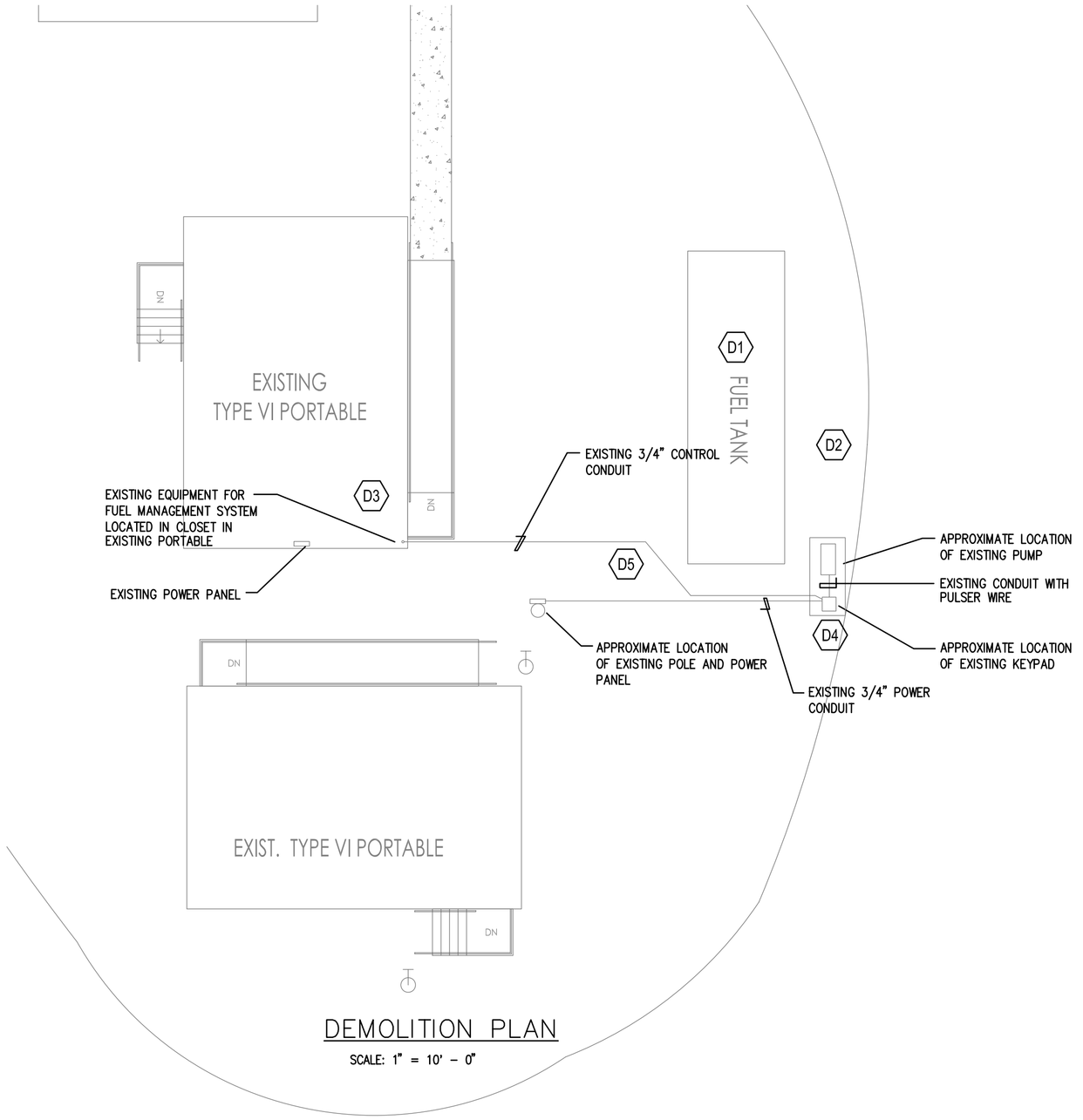
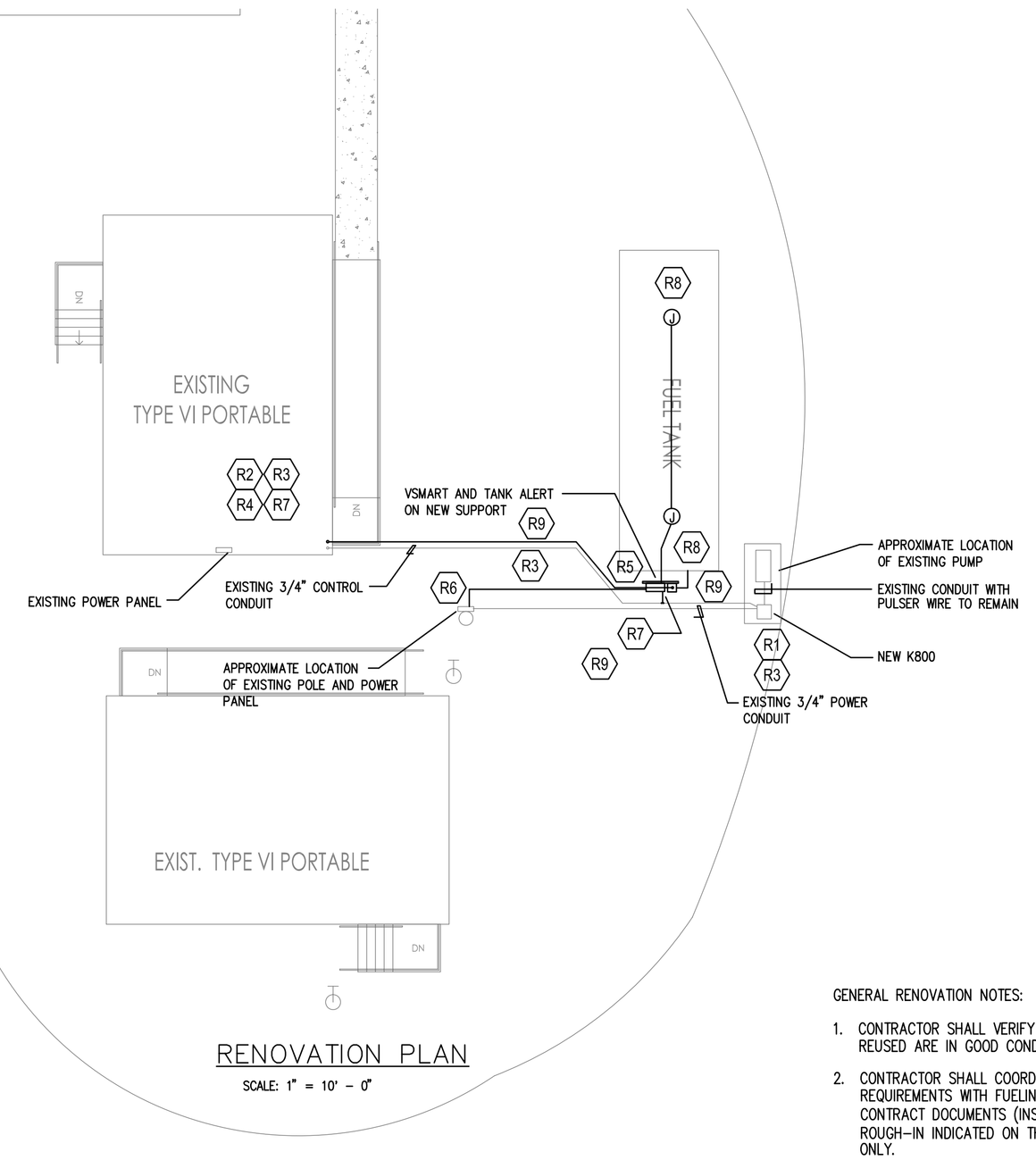
Sheet Title
MAINTENANCE RENOVATION PLAN

Number
E2.1



DEMOLITION PLAN

SCALE: 1" = 10' - 0"



RENOVATION PLAN

SCALE: 1" = 10' - 0"

GENERAL DEMOLITION NOTES:

1. CONTRACTOR SHALL VERIFY ALL EXISTING CONDUITS AND WIRING ASSOCIATED WITH EQUIPMENT TO BE REMOVED BEFORE ANY DEMOLITION WORK IS STARTED.

DEMOLITION KEY NOTES: (X)

D1. DISCONNECT AND REMOVE EXISITNG SENSORS AND PROBES ON EXISTING TANK. REMOVE ALL ASSOCIATED EQUIPMENT AND WIRING. DO NOT REMOVE CONDUITS. LABEL ANY UNUSED CONDUITS AS SPARE.

D2. DISCONNECT AND REMOVE ANY EXISTING ANNUNCIATOR OVERFILL ALARM LEAVE ANY SUPORT AND CONDUIT FOR REUSE WITH NEW TANK ALERT.

D3. DISCONNECT AND REMOVE ALL EQUIPMENT ASSOCIATED WITH EXISTING FUEL MANAGEMENT SYSTEM. ALL WIRING SHALL BE REMOVED. CONDUIT SHALL BE LABELED AS SPARE.

D4. DISCONNECT AND REMOVE EXISTING FUEL MANAGEMENT SYSTEM PEDESTAL ALL EXISTING WIRING TO PUMP WILL BE REUSED. DISCONNECT BUT DO NOT REMOVE. POWER WILL ALSO BE REUSED WITH NEW PEDESTAL SYSTEM. DISCONNECT BUT DO NOT REMOVE.

D5. DISCONNECT AND REMOVE EXISTING COMMUNICATIONS CABLE THAT IS ROUTED FROM THE HEADEND EQUIPMENT TO THE EXISTING FUEL MANAGEMENT PEDESTAL. CONDUIT WILL BE REUSED WITH WITH NEW PEDESTAL.

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GENERAL RENOVATION NOTES:

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3. CONTRACTOR MUST VERIFY ALL MEASUREMENTS IN FIELD.
4. SEE GENERAL FUEL MANAGEMENT NOTES ON DRAWING E0.1.

RENOVATION KEY NOTES: (X)

R1. FURNISH AND INSTALL NEW K800 PEDESTAL. RECONNECT EXISTING HOT, NEUTRAL AND GROUND WIRES PREVIOUSLY REMOVED FROM ORIGINAL PEDESTAL. RECONNECT ALL WIRING THAT GOES TO THE EXISTING PUMP TO THE CORRECT TERMINATION POINTS IN THE K800.

R2. FURNISH AND INSTALL NEW SYSTEM II CONTROLLER AND ALL ASSOCIATED FUEL MANAGEMENT EQUIPMENT INCLUDING MODEM AND PRINTER IN OFFICE AREA. CONSULT OWNER FOR EXACT LOCATION. CONSULT INSTALLATION MANUALS FOR ALL INTERCONNECTING CABLES.

R3. ROUTE NEW PETRONET COMMUNICATIONS CABLE (MUST BE PURCHASED FROM VENDOR)FROM THE SYSTEM II CONTROLLER TO THE NEW K800. ROUTE WIRE FROM THE OFFICE OUT TO THE PUMP VIA EXISTING CONDUIT.

R4. FURNISH AND INSTALL ISITE CONSOLE IN OFFICE AREA. CONSULT WITH OWNER FOR EXACT LOCATION. USE EXISTING POWER OUTLETS FOR POWER TO THE CONSOLE.

R5. CONTRACTOR SHALL FABRICATE AND INSTALL A UNISTRUT RACK AT THE TANK AREA AND INSTALL THE NEW VSMART AND TANK ALERT BUTTON.

R6. VSMART REQUIRES 120V POWER. ROUTE 3/4" CONDUIT WITH 2-#12 AND GROUND FROM SPARE 20A BREAKER IN OUTDOOR POWER PANEL AT POLE TO A NEW WATERPROOF GFI RECEPTACLE MOUNTED NEAR THE VSMART CONSOLE.

R7. ROUTE PETRONET CABLE FROM THE ISITE CONSOLE IN OFFICE TO THE VSMART. USE AS MUCH OF THE EXISTING CONDUIT SYSTEM AS POSSIBLE. EXTEND OR ADD CONDUIT AS REQUIRED. ROUTE NEW CONDUIT IF WIRE WILL NOT FIT IN EXISITNG CONDUIT.

R8. FURNISH AND INSTALL PROBES AND SENSORS AT TANK. ROUTE 3/4" CONDUITS TO ROUTE CABLES FROM VSSMAR TO THE SENSOR AND PROBE. INSTALL JUNCTION BOXES AND FITTINGS AS REQUIRED.

R9. INSTALL 3/4" CONDUIT AND PROVIDE CABLE FROM TANK ALERT INSTALLED IN R5 TO TANK AND BACK TO ISITE IN OFFICE AREA. REUSE EXISITNG CONDUIT IF POSSIBLE BACK TO OFFICE. PROVIDE JUNCTION BOXES AND FITTINGS AS REQUIRED.

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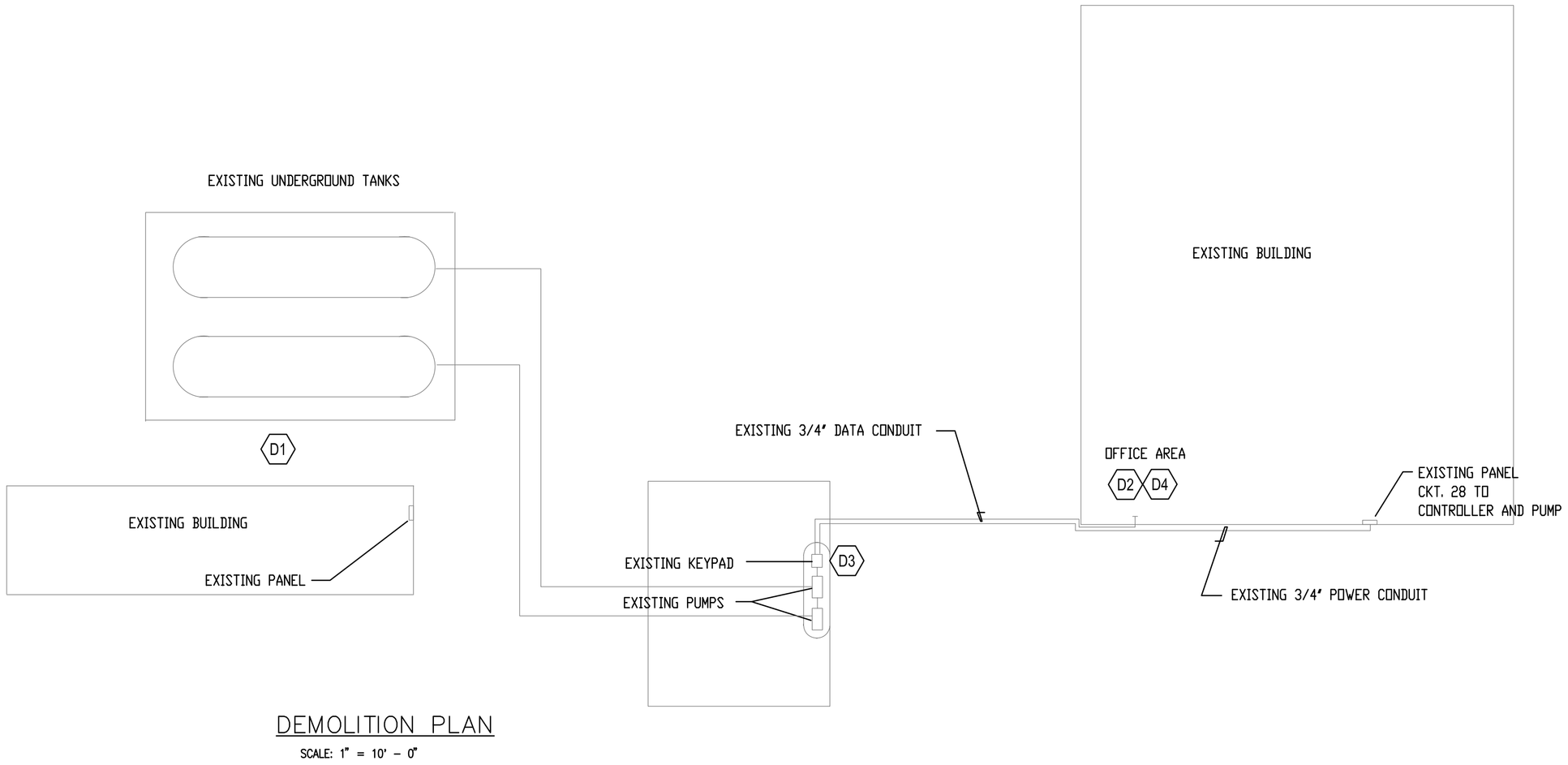
Sheet Title
HORIZON
DEMOLITION
AND
RENOVATION

Number
E3.0



DEMOLITION PLAN

SCALE: 1" = 10' - 0"

GENERAL DEMOLITION NOTES:

1. CONTRACTOR SHALL VERIFY ALL EXISTING CONDUITS AND WIRING ASSOCIATED WITH EQUIPMENT TO BE REMOVED BEFORE ANY DEMOLITION WORK IS STARTED.

DEMOLITION KEY NOTES: (D)

D1. DISCONNECT AND REMOVE ANY EXISTING ANNUNCIATOR OVERFILL ALARM LEAVE ANY SUPPORT AND CONDUIT FOR REUSE WITH NEW TANK ALERT.

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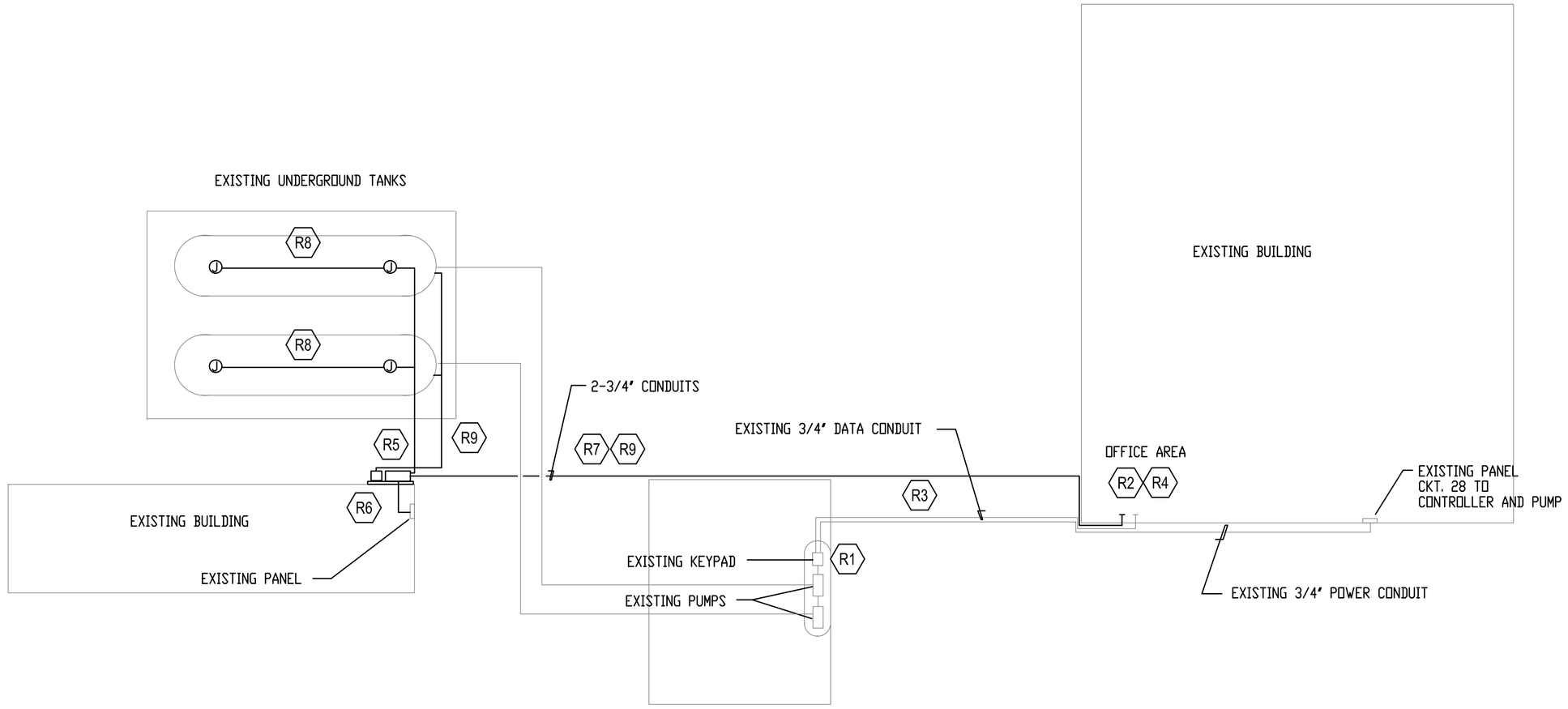

RENOVATION PLAN

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4. SEE GENERAL FUEL MANAGEMENT NOTES ON DRAWING E0.1.

RENOVATION KEY NOTES (R)

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R3. ROUTE NEW PETRONET COMMUNICATIONS CABLE (MUST BE PURCHASED FROM VENDOR) FROM THE SYSTEM II CONTROLLER TO THE NEW K800. ROUTE WIRE FROM THE OFFICE OUT TO THE K800 VIA EXISTING CONDUIT SYSTEM.

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R5. FABRICATE A SUPPORT FOR NEW VSMART AND TANK ALERT. INSTALL NEW TANK ALERT AND VSMART. TANK ALERT MUST BE VISIBLE TO THOSE FILLING TANKS. INSTALL PER FIELD CONDITIONS. LOCATION SHOWN IS A SUGGESTION.

R6. VSMART REQUIRES 120V POWER. ROUTE 3/4" CONDUIT WITH 2-#12 AND GROUND FROM SPARE 20A BREAKER LOCATED IN INDOOR POWER PANEL TO A NEW WATERPROOF GFI RECEPTACLE MOUNTED NEAR THE VSMART CONSOLE.

R7. ROUTE PETRONET CABLE FROM THE ISITE CONSOLE IN OFFICE TO THE VSMART VIA NEW 3/4" CONDUIT INSTALLED FROM THE OFFICE TO THE VSMART.

R8. FURNISH AND INSTALL PROBES AND SENSORS AT TANKS. ROUTE 3/4" CONDUITS AND CABLE FROM SENSORS AND PROBES TO VSMART. INSTALL JUNCTION BOXES AND FITTINGS AS REQUIRED.

R9. INSTALL 1" AND 3/4" CONDUIT AND PROVIDE CABLE FROM TANK ALERT INSTALLED IN R5 TO TANKS AND 3/4" CONDUIT BACK TO ISITE IN OFFICE AREA. PROVIDE JUNCTION BOXES AND FITTINGS AS REQUIRED.

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Sheet Title
ST. CLOUD DEMOLITION AND RENOVATION

Number
E4.0

ELECTRICAL SPECIFICATIONS

1.01 RELATED DOCUMENTS:

THE OTHER CONTRACT DOCUMENTS COMPLEMENT THE REQUIREMENTS OF THIS SECION THE GENERAL ELECTRICAL REQUIREMENTS APPLY TO THE WORK OF THIS SECTION.

1.02 WORK INCLUDED:

PROVIDE ALL MATERIAL AND LABOR FOR A COMPLETE ELECTRICAL INSTALLATION. INCLUDE THE FURNISHING OF SYSTEMS, EQUIPMENT, MATERIAL, SUPERVISION, OPERATIONS, METHODS, AND LABOR FOR THE FABRICATION, INSTALLATION, START–UP, AND TESTS REQUIRED.

1.03 CODES AND STANDARDS:

INSTALL ALL WORK IN ACCORDANCE WITH THE APPLICABLE REQUIREMENTS OF THE FOLLOWING:

1. NATIONAL ELECTRIC CODE (NEC), 2005.
2. FLORIDA BUILDING CODE 2007, AND ANY SUPPLEMENTS
3. NFPA, ALL APPLICABLE CHAPTERS.
4. AMERICANS WITH DISABILITIES ACT, 1992.

1.04 PERMITS AND INSPECTIONS:

OBTAIN AND MAKE ALL PAYMENTS FOR PERMITS AND INSPECTIONS REQUIRED. AT THE COMPLETION OF THE PROJECT AND BEFORE FINAL ACCEPTANCE OF THE ELECTRICAL WORK, PROVIDE EVIDENCE OF FINAL INSPECTION AND APPROVAL BY THE AUTHORITIES HAVING JURISDICTION.

1.05 TEMPORARY POWER:

PROVIDE TEMPORARY POWER DISTRIBUTION REQUIRED BY ALL TRADES FOR CONSTRUCTION AND TESTING OF THIS PROJECT.

IT IS THE CONTRACTOR'S RESPONSIBILITY TO CONTACT THE REQUIRED UTILITY COMPANY TO DETERMINE IF ANY FEES, CHARGES OR COSTS WILL BE DUE THE UTILITY COMPANY FOR TEMPORARY POWER HOOK–UP AND INSTALLATION. THIS FEE, CHARGE OR COST SHALL BE INCLUDED IN THE CONTRACTOR'S BID PRICE.

INCLUDE COSTS FOR PROVIDING TEMPORARY GENERATOR POWER FOR THE LENGTH OF TIME REQUIRED TO OBTAIN UTILITY POWER.

IF TEMPORARY POWER IS NOT READILY AVAILABLE FROM THE POWER CO. ELECTRICAL CONTRACTOR SHALL

1.06 UTILITY COMPANY FEES, CHARGES OR COSTS:

IT IS THE CONTRACTOR'S RESPONSIBILITY TO CONTACT THE REQUIRED UTILITY COMPANY TO DETERMINE IF ANY FEES, CHARGES OR COSTS WILL BE DUE THE UTILITY COMPANY FOR PERMANENT POWER HOOK–UP. INSPECTION AND INSTALLATION. THIS FEE, CHARGE OR COST SHALL BE INCLUDED IN THE CONTRACTOR'S BID PRICE.

1.07 CONTRACT DRAWINGS

1. IT IS THE INTENT OF THE DRAWINGS TO ESTABLISH THE TYPES OF SYSTEMS AND FUNCTIONS. THE DRAWINGS ARE GENERALLY DIAGRAMMATIC AND INDICATE APPROXIMATE LOCATIONS AND EXTENT OF WORK. IN CASE OF DOUBT AS TO WORK INTENDED, NOTIFY THE ARCHITECT TO OBTAIN CLARIFICATION.
2. COORDINATE ACTUAL LOCATIONS OF OUTLETS AND EQUIPMENT WITH BUILDING FEATURES AND EQUIPMENT AS INDICATED ON THE ARCHITECTURAL, STRUCTURAL, MECHANICAL, AND ELECTRICAL DRAWINGS. WHERE DISCREPANCIES OCCUR BETWEEN DRAWINGS, SPECIFICATIONS, AND FIELD CONDITIONS, NOTIFY THE ARCHITECT TO OBTAIN AN INTERPRETATION.

1.08 SHOP DRAWINGS AND PRODUCT DATA:

SUBMIT SHOP DRAWINGS FOR THE FOLLOWING:
1. MANUAL TRANSFER SWITCHES
2. DISCONNECT SWITCHES

SHOP DRAWINGS MUST SHOW PUBLISHED RATINGS OR CAPACITY DATA, DETAILED EQUIPMENT DRAWINGS, PANEL DIAGRAMS, WIRING DIAGRAMS, INSTALLATION INSTRUCTIONS, AND OTHER PERTINENT DATA. SUBMIT DATA FOR REVIEW BEFORE PLACING PURCHASE ORDERS OR RELEASING EQUIPMENT FOR DELIVERY.

1.09 OPERATION AND MAINTENANCE INSTRUCTIONS:

PROVIDE MAINTENANCE MANUALS CONTAINING PRODUCT DATA, SHOP DRAWINGS, WIRING DIAGRAMS INSTRUCTIONS, AND PARTS FOR MAINTAINING AND OPERATING ELECTRICAL SYSTEMS AND EQUIPMENT. INCLUDE A DESCRIPTION OF NORMAL ADJUSTMENTS AND A LIST OF ITEMS REQUIRING PERIODIC MAINTENANCE AND THE FREQUENCY REQUIRED. PROVIDE THE OWNER WITH ANY SPECIAL TOOLS REQUIRED.

1.10 ACCEPTABLE PRODUCTS:

USE ONLY NEW PRODUCTS MADE BY COMPANIES REGULARLY ENGAGED IN THE MANUFACTURE OF TYPE EQUIPMENT SPECIFIED. LIKE EQUIPMENT, I.E., ALL PANELBOARDS, SHALL BE THE PRODUCT OF A SINGLE MANUFACTURER.

USE ONLY PRODUCTS THAT ARE IN STRICT CONFORMANCE WITH THE SPECIFICATIONS. WHERE MANUFACTURERS HAVE BEEN NAMED, USE ONE OF THOSE NAMED. DO NOT PURCHASE OR INSTALL ANY EQUIPMENT THAT MUST BE SUBMITTED FOR REVIEW UNTIL THE SUBMITTAL HAS BEEN REVIEWED BY THE ARCHITECT.

1.11 ELECTRICAL CONNECTIONS TO EQUIPMENT

PROVIDE POWER CIRCUIT AND CONTROL WIRING FOR ALL ELECTRICAL EQUIPMENT AND CONNECT COMPLETE UNLESS OTHERWISE INDICATED IN THE CONTRACT DOCUMENTS.

MOTOR HORSEPOWER AND EQUIPMENT SIZES SHOWN AND/OR SPECIFIED ARE ESTIMATED, AND SIZE OF WIRE, CONDUIT, AND CIRCUIT PROTECTION DEVICES ARE BASED ON SAID ESTIMATE. ASCERTAIN THE ACTUAL HORSEPOWER AND CURRENT REQUIREMENTS OF THE MOTORS AND EQUIPMENT TO BE INSTALLED PRIOR TO BEGINNING INSTALLATIONS OF FEEDERS FOR SAME. IF THE ACTUAL REQUIREMENTS ARE DIFFERENT, NOTIFY THE ARCHITECT TO OBTAIN CLARIFICATION.

1.12 IDENTIFICATION

CABLE/CONDUCTOR IDENTIFICATION BANDS: VINYL–CLOTH SELF–ADHESIVE CABLE/CONDUCTOR MARKERS OF WRAP–AROUND TYPE; EITHER PRE–NUMBERED PLASTIC COATED TYPE, OR WRITE–ON TYPE WITH CLEAR PLASTIC SELF–ADHESIVE COVER FLAP; NUMBERED TO SHOW CIRCUIT IDENTIFICATION.

ENGRAVED PLASTIC LAMINATE SIGNS: PROVIDE ENGRAVED PLASTIC LAMINATE WITH WHITE CORE PLIES (LETTER COLOR). PUNCH FOR MECHANICAL FASTENING.

COORDINATE NAMES, ABBREVIATIONS AND OTHER DESIGNATIONS USED IN ELECTRICAL IDENTIFICATION WORK, WITH CORRESPONDING DESIGNATIONS SHOWN, SPECIFIED OR SCHEDULED.

INDELIBLE MARKERS: USE PERMANENT MARKERS FOR BRANCH WIRING IN CONCEALED JUNCTION BOXES AS DESCRIBED BELOW.

INSTALLATION:

INSTALL ELECTRICAL IDENTIFICATION PRODUCTS AS INDICATED, IN ACCORDANCE WITH MANUFACTURER'S WRITTEN INSTRUCTIONS, AND REQUIREMENTS OF NEC.

COORDINATION: INSTALL IDENTIFICATION AFTER COMPLETION OF PAINTING.

REGULATIONS: COMPLY WITH GOVERNING REGULATIONS AND REQUESTS OF GOVERNING AUTHORITIES FOR IDENTIFICATION OF ELECTRICAL WORK.

CABLE/CONDUCTOR IDENTIFICATION:

APPLY CABLE/CONDUCTOR IDENTIFICATION, AT ORIGIN AND TERMINUS. MATCH IDENTIFICATION WITH MARKING SYSTEM USED IN PANELBOARDS, SHOP DRAWINGS, AND CONTRACT DOCUMENTS.

AT EACH JUNCTION BOX, THE COVERS ON JUNCTION BOXES AND PULL BOXES IN AREAS THAT ARE NOT TO BE PAINTED SHALL BE MARKED WITH "MAGIC MARKERS" TO INDICATE THE CIRCUIT NUMBER(S) OF CONDUCTORS IN THE BOX.

OPERATIONAL IDENTIFICATION AND WARNINGS: WHENEVER REASONABLY REQUIRED TO ENSURE SAFE AND EFFICIENT OPERATION AND MAINTENANCE OF ELECTRICAL SYSTEMS, INCLUDING PREVENTION OF MISUSE OF ELECTRICAL FACILITIES BY UNAUTHORIZED PERSONNEL, INSTALL PLASTIC SIGNS ON SWITCHES, OUTLETS AND OTHER CONTROLS, DEVICES AND COVERS ON ELECTRICAL ENCLOSURES.

DANGER SIGNS: IN ADDITION TO INSTALLATION OF DANGER SIGNS REQUIRED BY GOVERNING REGULATIONS AND AUTHORITIES, INSTALL APPROPRIATE DANGER SIGNS AT LOCATIONS INDICATED AND AT LOCATIONS SUBSEQUENTLY IDENTIFIED BY INSTALLER OF ELECTRICAL WORK AS CONSTITUTING SIMILAR DANGERS FOR PERSONS IN OR ABOUT PROJECT.

PROVIDE SIGNS FOR EACH UNIT OF THE FOLLOWING CATEGORIES OF ELECTRICAL WORK:
PANELBOARDS, ELECTRICAL POWER AND SIGNAL SYSTEM CABINETS AND ENCLOSURES.
MAJOR ELECTRICAL SWITCHGEAR.
DISCONNECT SWITCHES.

EACH DISCONNECT SWITCH SHALL BE IDENTIFIED TO INDICATE THE PANEL AND CIRCUIT WHICH FEEDS THE ASSOCIATED EQUIPMENT.

PANEL DIRECTORIES:

PROVIDE PANEL DIRECTORIES FOR EACH PANEL. INCLUDE ROOM NUMBERS AND EQUIPMENT SERVED. PREPARE DIRECTORIES BASED ON FIELD CONDITIONS. PANEL SCHEDULES ON THE PLANS ARE NOT
GENERAL USE BOXES: GALVANIZED, PRESSED STEEL UNITS OF PROPER DEPTH AND GAUGE REQUIRED BY THE OUTLET LOCATION. EQUIP WITH PLASTER RING OR COVER AS NECESSARY. ACCEPTABLE MANUFACTURERS: RACO, STEEL CITY, OR ARCHITECT APPROVED EQUAL.

PART 2 – PRODUCTS

2.01 OUTLET BOXES

SPECIAL BOXES: GALVANIZED SHEET METAL CONSTRUCTION AND SIZED IN ACCORDANCE WITH THE NEC BASED ON THE NUMBER OF CONDUCTORS AND SPLICES TO BE HOUSED. FOR SPECIAL SYSTEMS, USE BOXES AS RECOMMENDED BY THE EQUIPMENT MANUFACTURER.

2.02 CONDUIT

ELECTRICAL METALLIC TUBING (EMT/THINWALL): GALVANIZED STEEL CONFORMING TO ASA C80.3, FS WW–C563 AND UL 797.

RIGID METALLIC CONDUIT (RMC): HOT–DIPPED GALVANIZED STEEL CONFORMING TO ASA C80.1, FS WW–C581E AND UL 6.

INTERMEDIATE METAL CONDUIT (IMC): HOT–DIPPED GALVANIZED STEEL CONFORMING TO FS WW–C581E AND UL 1242.

RIGID NON–METALLIC CONDUIT: TYPE 40 OR 80 HEAVY WALL POLYVINYLCHLORIDE (PVC) CONFORMING TO NEMA TC–2, FS WC–1094 AND UL 651.

UL 63, 1479, 1569 AND 1581.

FLEXIBLE METAL CONDUIT (GREENFIELD): SPIRAL WOUND, SQUARE–LOCKED, HOT–DIPPED GALVANIZED STEEL CONFORMING TO UL 1.

LIQUID–TIGHT FLEXIBLE METAL CONDUIT (SEALTITE): SPIRAL WOUND, SQUARE–LOCKED, HOT–DIPPED GALVANIZED STEEL WITH A BONDED OUTER JACKET OF PVC CONFORMING TO UL 360.

METAL CLAD CABLE (MC): SPIRAL WOUND, SQUARE–LOCKED, HOT–DIPPED GALVANIZED STEEL WITH SOLID CONDUCTOR SIZES TO #10 ONLY CONFORMING TO

2.03 CONDUIT FITTINGS

EMT: COMPRESSION TYPE, MADE OF CADMIUM PLATED OR HOT–DIPPED GALVANIZED MALLEABLE IRON.

RMC AND IMC: THREADED, MALLEABLE IRON, HOT–DIPPED GALVANIZED OR CADMIUM PLATED.

NON–METALLIC: SCHEDULE 40, PVC, SOLVENT WELD SOCKET TYPE.

FLEXIBLE METAL: TWO–SCREW, DOUBLE CLAMP MALLEABLE IRON, HOT–DIPPED GALVANIZED OR CADMIUM PLATED.

LIQUID–TITE, FLEXIBLE METAL: COMPRESSION TYPE WITH INSULATED THROAT, MALLEABLE IRON, HOT–DIPPED GALVANIZED OR CADMIUM PLATED.

2.04 WIRE AND CABLE – 600 VOLT

CONDUCTORS: 98% CONDUCTIVITY, SOFT DRAWN COPPER.

INSULATION: HEAT AND MOISTURE RESISTANT WITH AT LEAST AN OPERATING TEMPERATURE OF 75 C (RHW, THW, THWN) AND A 600 VOLT RATING UNLESS OTHERWISE INDICATED.
USE STRANDED CONDUCTOR ON ALL WIRING #6 AWG AND LARGER. ALL OTHER WIRING MAY BE SOLID.

2.05 RECEPTACLES

DUPLEX: 20 AMPERE, 120 VOLTS, HEAVY DUTY, COMMERCIAL SPECIFICATION GRADE, GROUNDING TYPE MEETING THE REQUIREMENTS OF FS WC–596D, NEMA WD–1, AND UL 498.

STANDARDS: PASS AND SEYMOUR
ELECTRIC, ARROW–HART, OR SLATER. #26361, OR EQUAL BY LEVITON, BRYANT, HUBBELL , GENERAL

SPECIAL POWER: AS INDICATED ON THE DRAWINGS. COLOR: MATCH THAT SPECIFIED FOR DUPLEX RECEPTACLES WHEREVER POSSIBLE.

2.06 LIGHT SWITCHES

PROVIDE SINGLE POLE, TWO–POLE, THREE–WAY, FOUR–WAY, MOMENTARY, LIGHTED, OR PILOT–LIGHTED AS REQUIRED TO CONTROL LIGHTS OR DEVICE.

TOGGLE: 20 AMPERE, 120/277 VOLT, HEAVY DUTY, COMMERCIL SPECIFICATION GRADE, QUIET TYPE, MEETING THE REQUIREMENTS OF FS WS–896D AND NEMA WD–1.
STANDARDS: PASS AND SEYMOUR #2621 OR EQUAL BY LEVITON, BRYANT, HUBBELL, GENERAL ELECTRIC, ARROW–HART, OR SLATER.

PLATES: PROVIDE PLATES ON ALL SWITCHES, RECEPTACLES SPECIAL DEVICES, AND OUTLET BOXES. PLATES SHALL MATCH DEVICE COLOR.

2.07 SWITCHGEAR:

PANELBOARDS: PROVIDE PANELS OF THE DEAD FRONT, CIRCUIT BREAKER TYPE, IN ACCORDANCE WITH THE PANELBOARD SCHEDULE. PANEL SHALL BE PROVIDED WITH SOLID NEUTRAL AND GROUND BUS CONNECTIONS. AIC RATING SHALL BE AS INDICATED ON THE SCHEDULE.

DISTRIBUTION BOARDS: PROVIDE PANELS OF THE DEAD FRONT, PANEL MOUNT, CIRCUIT BREAKER TYPE, IN ACCORDANCE WITH THE DISTRIBUTION BOARD SCHEDULE. BOARDS SHALL BE PROVIDED WITH SOLID NEUTRAL AND GROUND BUS CONNECTIONS. AIC RATING SHALL BE AS INDICATED ON THE SCHEDULE. BOARDS SHALL BE SERVICE ENTRANCE RATED.

SAFETY SWITCHES (DISCONNECTS):SAFETY SWITCHES: HEAVY DUTY, FUSED OR UNFUSED, WITH NUMBER OF POLES, ELECTRICAL CHARACTERISTICS, RATINGS AND MODIFICATIONS AS REQUIRED.

SWITCHING MECHANISM: QUICK–MAKE, QUICK–BREAK, WITH HANDLE THAT IS PADLOCKABLE IN THE "OFF" POSITION. ENCLOSURE TO BE SUITABLE FOR THE AREA IN WHICH IT IS TO BE INSTALLED, HAVING A DEFEATABLE DOOR INTERLOCK WHICH PREVENTS THE DOOR FROM OPENING WHEN THE SWITCH IS "ON". EQUIP FUSIBLE UNITS WHICH USE CURRENT LIMITING FUSES WITH FUSEHOLDERS HAVING REJECTION CLIPS TO PREVENT OTHER TYPE FUSES FROM BEING INSTALLED.

2.08 GROUNDING:

MATERIALS

EQUIPMENT GROUNDING METHODS

PROVIDE AN EQUIPMENT GROUNDING CONDUCTOR IN ALL CONDUITS AND RACEWAYS. SIZED IN ACCORDANCE WITH NEC, UNLESS SHOWN OTHERWISE ON THE PLANS. ALL EQUIPMENT GROUNDING SHALL BE ACCOMPLISHED USING THIS CONDUCTOR UNLESS OTHERWISE INDICATED.

SPECIAL SYSTEM GROUNDING: FOR TELEPHONE, ALARM, AND COMMUNICATION SYSTEM, PROVIDE A #6 AWG COPPER CONDUCTOR FROM THE GROUNDING ELECTRODE SYSTEM TO EACH TERMINAL CABINET OR EQUIPMENT LOCATION UNLESS INDICATED OTHERWISE.

2.12ANCHORS AND FASTENERS:

USE ANCHORS AND FASTENERS OF A TYPE DESIGNED AND INTENDED FOR USE IN THE BASE MATERIAL TO WHICH THE MATERIAL OR SUPPORT IS TO BE ATTACHED, AND CAPABLE OF SUPPORTING THE INTENDED LOAD AND WITHSTANDING ANY ASSOCIATED STRESSES AND VIBRATIONS. IN GENERAL, USE SCREWS IN WOOD, MASONRY ANCHORS ON CONCRETE OR BRICK, TOGGLE BOLTS ON HOLLOW WALLS AND MACHINE SCREWS, BOLTS OR WELDED STUDS ON STEEL. DO NOT USE NAILS EXCEPT FOR TEMPORARY SUPPORT OR FOR LIGHT LOADS IN WOOD FRAME CONSTRUCTION. DO NOT USE WOODEN PLUGS OR PLASTIC ANCHORS FOR FASTENING. IN OUTDOOR LOCATIONS OR OTHER CORROSIVE ATMOSPHERES, USE NON–CORROSIVE ANCHORS AND FASTENERS OR TYPES HAVING SUITABLE CORROSIVE RESISTING COATINGS.

FIRMLY AND SECURELY FASTEN CONDUITS TO THE BUILDING, SUPPORT FROM STRUCTURAL MEMBERS OR EMBED IN CONCRETE OR MASONRY. USE HANGERS AND SUPPORTS THAT ARE STANDARD CATALOG ITEMS OF A TYPE COMPATIBLE WITH AND SUITABLE FOR THE INTENDED USE. TWISTED WIRE HANGERS AND SUPPORTS ARE NOT ACCEPTABLE. PROVIDE HANGERS, SUPPORTS OR FASTENINGS ON 10' CENTERS, MAXIMUM, AND AT EACH ELBOW AND END OF EVERY STRAIGHT RUN TERMINATING AT A BOX OR CABINET. IN NO CASE SHALL THE WEIGHT OF CONDUIT RUNS BE SUPPORTED BY JUNCTION BOXES, CONDUIT FITTINGS, SWITCH BOXES OR PANELBOARDS. PLUG CONDUIT TO PREVENT THE ENTRANCE OF FOREIGN MATTER, CLEAN IF NECESSARY, BEFORE PULLING IN CONDUCTORS. PROTECT STUB–UPS FROM DAMAGE AND CAREFULLY REBEND WHEN NECESSARY. MAKE BENDS AND OFFSETS SO THAT THE INSIDE DIAMETER IS NOT EFFECTIVELY REDUCED.

PART 3 – EXECUTION

3.01 GENERAL REQUIREMENTS:

USE GOOD WORKMANSHIP IN THE INSTALLATION OF ALL ELECTRICAL MATERIALS AND EQUIPMENT INSTALL EQUIPMENT LEVEL, PLUMB, AND TRUE WITH THE STRUCTURE AND OTHER EQUIPMENT FIRMLY SECURE ALL MATERIALS IN PLACE, ADEQUATELY SUPPORTED, AND PERMANENT. MATERIALS EMBEDDED IN CONCRETE OR MASONRY OR OTHERWISE PART OF THE STRUCTURE ARE CONSIDERED SUFFICIENTLY SUPPORTED. USE HARDWARE AND ACCESSORY FITTINGS OF A TYPE DESIGNED, INTENDED, AND APPROPRIATE FOR THE USE AND TO COMPLEMENT THE ITEMS WITH WHICH THEY ARE USED.

3.02 MINIMUM SIZES:

20 AMP CIRCUITS SHALL BE SIZED AS FOLLOWS:

75 FT. TO 100 FT:#10 HOMERUN, 3/4"C.
101 FT. TO 200 FT: #10 THRU–OUT CIRCUIT, 3/4"C.
201 FT. TO 300 FT: #8 HOMERUN, #10 THRU–OUT REMAINDER OF CIRCUIT 1"C.
301 FT. TO 500 FT: #6 HOMERUN, #8 THRU–OUT REMAINDER OF CIRCUIT 1"C.

3.03 LOCATIONS AND DIMENSIONS

LOCATE ALL DEVICES AND EQUIPMENT. ALL DIMENSIONS SHOWN ON THE DRAWINGS ARE FROM FINISHED FLOOR TO THE CENTER OF THE DEVICE UNLESS OTHERWISE INDICATED. STANDARD MOUNTING HEIGHTS ARE AS FOLLOWS:

LIGHT SWITCHES:	48"
RECEPTACLES:	18"
DISCONNECT SWITCHES:	60" TO THE TOP
MOTOR STARTERS:	60" TO THE TOP
PANELBOARDS:	72" TO THE TOP

CHECK LIGHT SWITCH LOCATIONS BEFORE ROUGH–IN TO AVOID INSTALLING A SWITCH ON THE WRONG SIDE OF A DOOR. THE CONTRACTOR IS RESPONSIBLE FOR RELOCATING ANY SWITCH INSTALLED ON THE WRONG SIDE OF ANY DOOR.
THE ARCHITECT AND OWNER RESERVE THE RIGHT TO CHANGE ANY SWITCH OR RECEPTACLE LOCATION, WITHIN THE SAME ROOM, WITHOUT ADDED COST, IF CHANGE IS MADE BEFORE ROUGH–IN.
LOCATE OUTLETS INTENDED FOR THE SUPPLY OF SPECIFIC ITEMS SUCH AS WATER COOLERS, COPYING MACHINES, FANS, ETC., AS RECOMMENDED BY MANUFACTURER.

3.04 WIRING METHODS:

INSTALL ALL WIRING IN CONDUIT OR APPROVED RACEWAYS UNLESS OTHERWISE INDICATED. CONCEAL THE CONDUIT AND OUTLET INSTALLATION IN WALLS, ABOVE FINISHED CEILINGS, UNDERGROUND, OR UNDER FLOOR AS INDICATED IN CONTRACT DOCUMENTS.

SET OUTLET BOXES SQUARE, LEVEL, AND FLUSH WITH FINISHED SURFACES. SECURE AND BRACE WORK IN SUCH A MANNER AS TO INSURE THAT OUTLET BOXES AND CONDUIT DO NOT BECOME DISLOCATED DURING THE CONCRETE PLACING OPERATIONS OR WHILE OTHER CONSTRUCTION WORK IS BEING DONE.
UNLESS OTHERWISE INDICATED, PROVIDE CONDUIT IN ACCORDANCE WITH THE FOLLOWING:

RIGID METAL CONDUIT (RMC):	ANYWHERE
INTERMEDIATE METAL CONDUIT (IMC):	ANYWHERE
THINWALL METAL (EMT):	ANYWHERE EXCEPT: a) UNDERGROUND b) IN SLABS ON GRADE
RIGID NON–METALLIC (PVC):	UNDERGROUND ONLY.

USE FLEXIBLE STEEL CONDUIT WITH GROUND WIRE FOR FINAL CONNECTION TO MOTORS AND LIGHT FIXTURES. USE SEALTITE IN DAMP OR CORROSIVE ATMOSPHERES.

METAL CLAD CABLE MAY BE USE FOR SWITCHLEGS AND BRANCH CIRCUITS WHERE ACCEPTABLE TO OWNER. HOMERUNS SHALL BE CONDUIT AND WIRE (NOT CABLE).

FIRMLY AND SECURELY FASTEN CONDUITS TO OR SUPPORT FROM THE BUILDING OR STRUCTURAL MEMBER OR EMBEDDED IN CONCRETE OR MASONRY. USE HANGERS AND SUPPORTS THAT ARE STANDARD CATALOGUE ITEMS OF A TYPE COMPATIBLE WITH AND SUITABLE FOR THE INTENDED USE. TWISTED WIRE HANGERS AND SUPPORTS ARE NOT ACCEPTABLE.

DO NOT PULL CONDUCTORS INTO CONDUITS UNTIL ALL WORK WHICH MAY CAUSE DAMAGE TO THE WIRES IS COMPLETED. INSTALL WIRE AND CABLES SO AS NOT TO DAMAGE THE INSULATION OR CABLE SHEATH. PULL ALL CONDUCTORS TO BE INSTALLED IN A RACEWAY TOGETHER.

KEEP CONDUCTOR SPLICES TO A MINIMUM. PROVIDE SPLICES AND TAPS WITH AT LEAST THE EQUIVALENT MECHANICAL STRENGTH AND INSULATION AS THE CONDUCTORS. PROVIDE SPLICE AND TAP DEVICES OF THE PROPER SIZE AND TYPE FOR THE USE AND COMPATIBLE WITH THE CONDUCTOR MATERIAL.

PROVIDE SUFFICIENT LENGTH OF CONDUCTORS WITHIN CABINETS AND CUTOUT BOXES TO NEATLY TRAIN THE CONDUCTOR TO THE TERMINAL POINT WITH NO EXCESS. FASTEN THE CABLES TOGETHER IN NEAT BUNDLES WHEN THERE ARE MANY CONDUCTORS.

3.05 EQUIPMENT MOUNTING

INSTALL EQUIPMENT MOUNTING ON CEILING, WALL, OR FLOOR AS INDICATED OR AS APPROPRIATE. PROVIDE FASTENERS OR SUPPORTS SUFFICIENT IN SIZE AND QUANTITY TO SUBSTANTIALLY SECURE THE EQUIPMENT IN PLACE TO THE BUILDING STRUCTURE OR STRUCTURAL ELEMENT.

INSTALL THE EQUIPMENT PLUMB AND TRUE AS INTENDED AND SECURE. WHEN SEVERAL ITEMS OF EQUIPMENT ARE WALL MOUNTED IN THE SAME AREA, LINE THEM UP VERTICALLY AND HORIZONTALLY ALONG WITH ANY ASSOCIATED RACEWAYS.

3.06 SLEEVES

WHERE ELECTRICAL CONDUITS PASS THROUGH WALLS, ROOFS, CEILINGS, OR FLOORS, SET SLEEVES FOR THEM WHEN THE FLOORS, WALLS, CEILINGS, OR ROOFS ARE CONSTRUCTED. IF ANY HOLES ARE CUT IN FINISHED WORK WHERE SLEEVES HAVE BEEN OMITTED, USE A CONCRETE CORING MACHINE OR OTHER APPROVED METHOD AND ONLY WITH THE WRITTEN CONSENT OF THE ARCHITECT. CUT ALL SUCH HOLES CAREFULLY, NO LARGER THAN NECESSARY. COVER THESE HOLES ENTIRELY BY ESCUTCHEON PLATES WHEN WORK IS COMPLETED. PROVIDE SLEEVES MADE OF STEEL NO LIGHTER THAN 18 GAUGE.

WHERE CONDUITS PASS THROUGH SLEEVES IN EXTERIOR WALLS, CAULK THE ANNULAR SPACE WITH OAKUM AND FILL INSIDE AND OUT WITH A NON–HARDENING, WATERPROOF SEALANT FINISHED OFF FLUSH WITH BOTH FACES OF THE WALL.

WHERE CONDUITS PASS THROUGH SLEEVES IN THE ROOF, FLASH THE PENETRATION IN ACCORDANCE WITH PLATE 59, FIGURE C OF THE "ARCHITECTURAL SHEET METAL MANUAL" OF THE SHEET METAL AND AIR CONDITIONING CONTRACTORS NATIONAL ASSOCIATION, INC., AND THE ROOFING MANUFACTURER'S RECOMMENDED PROCEDURES AND MATERIALS.

SEAL CONDUITS OR CABLES PASSING THROUGH SLEEVES IN FLOORS OR WALLS INSIDE THE BUILDING TO PREVENT PASSAGE OF SMOKE OR SPREAD OF FIRE. USE A FIRE RESISTANT SILICONE FOAM SEALANT, CLASSIFIED BY UL, SIMILAR TO DOW–CORNING, CTC PR–855 FIRE STOP. MAINTAIN FIRE RATING OF ALL WALLS AND FLOORS.

3.07 CUTTING AND PATCHING:

CUT WALLS, FLOORS, ETC. AS REQUIRED FOR THE ELECTRICAL INSTALLATIONS.
UNLESS OTHERWISE INDICATED, PATCH AND REFINISH TO MATCH ADJACENT SURFACES.

3.08 PROTECTION OF EQUIPMENT

DURING CONSTRUCTION, PROTECT ALL EQUIPMENT FROM INSULATION MOISTURE ABSORPTION AND METALLIC COMPONENT CORROSION BY APPROPRIATE USE OF STRIP HEATERS, LAMPS, COVERINGS, OR OTHER SUITABLE MEANS. APPLY PROTECTION IMMEDIATELY UPON RECEIVING THE PRODUCTS AND MAINTAIN CONTINUALLY. KEEP PRODUCTS CLEAN BY ELEVATING ABOVE GROUND OR FLOOR AND BY USING SUITABLE COVERINGS. TAKE SUCH PRECAUTIONS AS ARE NECESSARY TO PROTECT APPARATUS AND MATERIALS FROM DAMAGE. FAILURE TO PROTECT MATERIALS IS SUFFICIENT CAUSE FOR REJECTION OF THE APPARATUS OR MATERIAL IN QUESTION.

PROTECT FACTORY FINISH FROM DAMAGE DURING CONSTRUCTION OPERATIONS AND UNTIL ACCEPTANCE OF THE PROJECT. SATISFACTORILY RESTORE ANY FINISHES THAT BECOME STAINED OR DAMAGED.

3.09 ELECTRICAL WORK CLOSEOUT

RECORD DRAWINGS: DURING PROGRESS OF THE WORK, MAINTAIN AN ACCURATE RECORD OF ALL CHANGES MADE IN THE ELECTRICAL POWER, LIGHTING AND SYSTEMS FROM THE LAYOUT OF MATERIALS SHOWN ON THE APPROVED SUBMITTALS AND SHOP DRAWINGS. UPON COMPLETION OF THE WORK, THE CONTRACTOR SHALL DELIVER TO ENGINEER AN UP–TO–DATE SET OF REPRODUCIBLE RECORD DRAWINGS.

1. SEE DIVISION 1 FOR SPECIFIC REQUIREMENTS FOR RECORD DRAWINGS.
2. FOR ELECTRICAL WORK, GIVE SPECIAL ATTENTION TO THE COMPLETE AND ACCURATE RECORDING OF:
   a) RACEWAY SYSTEMS, SIZE AND LOCATION; LOCATIONS OF CONTROL DEVICES; DISTRIBUTION AND BRANCH ELECTRICAL CIRCUITRY; AND FUSE AND CIRCUIT BREAKER SIZE AND ARRANGEMENTS.
   b) EQUIPMENT LOCATIONS (EXPOSED AND CONCEALED), DIMENSIONED FROM PROMINENT BUILDING LINES.
   c) APPROVED SUBSTITUTIONS, CONTRACT MODIFICATIONS, AND ACTUAL EQUIPMENT AND MATERIALS INSTALLED.
   d) WORK OF CHANGE ORDERS WHERE NOT SHOWN ACCURATELY BY CONTRACT DOCUMENTS.
   e) WORK OF ADDENDA NOT ATTACHED TO THE DRAWINGS.

TESTS:

1. TEST ALL SYSTEMS AND PLACE IN PROPER WORKING ORDER PRIOR TO DEMONSTRATING SYSTEMS TO THE OWNER.
2. TEST SYSTEM GROUND TO DEMONSTRATE THAT THE GROUND RESISTANCE DOES NOT EXCEED THE REQUIREMENTS OF NEC.
3. PERFORM SUCH TESTS AS REQUIRED BY AUTHORITIES HAVING JURISDICTION OVER THE SITE.

THESE DOCUMENTS ARE INTENDED TO BE A PERFORMANCE SPECIFICATION FOR A TURNKEY FUEL MANAGEMENT SYSTEM. THE SUCCESFUL VENDOR SHALL PROVIDE ALL HARDWARE, SOFTWARE, ENGINEERING, LABOR AND MATERIALS TO DEMOLISH EXISITNG SYSTEMS AND PROVIDE A COMPLETE SYSTEM THAT MEETS OR EXCEEDS THE REQUIREMENTS OF THESE DOCUMENTS AND ALL APPLICABLE CODES.

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Revisions

For Construction - 08/10/2009

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Fuel Management System
Osceola County, Florida

Owner
School District of Osceola County

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SEG Project No. 09004

Sheet Title
SPECIFICATIONS

Number
E5.0