

GENERAL NOTES ELECTRICAL

GENERAL NOTES APPLY TO ALL ELECTRICAL DRAWINGS.

- DO NOT SCALE FROM THESE DRAWINGS.
- ALL WORK SHALL BE DONE IN STRICT ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE.
- ELECTRICAL CONTRACTOR SHALL COORDINATE WORK WITH ALL OTHER TRADES TO ASSURE PROPER CLEARANCES FOR EQUIPMENT AND TO KEEP THE JOB PROGRESSING.
- ALL EMERGENCY SYSTEMS SHALL BE RUN IN SEPARATE RACEWAY/CONDUIT SYSTEM(S).
- PROVIDE CEILING MOUNTED RED L.E.D. ALARM INDICATOR FOR EACH SMOKE DETECTOR MOUNTED IN PLENUM SPACE(S) OR CONCEALED AREAS.
- REFER TO MECHANICAL DRAWINGS FOR INTERLOCKING REQUIREMENTS OF MECHANICAL EQUIPMENT (MOTORS, FANS, PUMPS, ETC.). INSTALL ANY ELECTRICAL EQUIPMENT (STARTERS, RELAYS, VFD'S, ETC.) FURNISHED BY DIVISION 23.
- ALL CEILING MOUNTED ITEMS SHALL BE INSTALLED IN ACCORDANCE WITH THE ARCHITECTURAL REFLECTIVE CEILING PLANS. IF LOCATION FOR AN ITEM IS NOT SHOWN ON THE ARCHITECTURAL REFLECTIVE CEILING PLANS, VERIFY THE EXACT LOCATION OF THE ITEM WITH THE ARCHITECT PRIOR TO INSTALLATION. THESE REQUIREMENTS APPLY TO ALL CEILING TYPES IN ALL AREAS.
- REFERENCE MECHANICAL DRAWINGS FOR ALL MECHANICAL EQUIPMENT NEEDING ELECTRICAL CONNECTIONS. MAKE ALL CONNECTIONS AND PROVIDE APPROPRIATE WIRE CONDUIT AND OVERCURRENT PROTECTION FOR ALL EQUIPMENT. COORDINATE EXACT REQUIREMENTS WITH MECHANICAL CONTRACTOR.
- ALL CIRCUIT BREAKERS SERVING AIR-CONDITIONING AND REFRIGERATION EQUIPMENT SHALL BE "LISTED "HACR" TYPE. PROVIDE EXIT SIGNAGE AT ALL EXITS AND AS REQUIRED.
- RECEPTACLES IN MECHANICAL ROOM, ELECTRICAL ROOMS, STORAGE ROOMS AND JANITOR CLOSETS TO BE MOUNTED 48" A.F.F. AND SHALL BE G.F.I. TYPE.
- ALL EXTERIOR WIRING DEVICES TO BE WEATHERPROOF AND SHALL BE G.F.I. TYPE.
- CONDUIT RUNS SHOWN ARE DIAGRAMMATIC IN NATURE. ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR SIZING AND LOCATING PULL BOXES PER NEC AND FOR COORDINATION WITH OTHER DISCIPLINES.
- ALL H.I.D. AND FLUORESCENT LIGHT FIXTURES SHALL BE FURNISHED WITH INTEGRAL FUSING.
- RECEPTACLES IN ALL FOOD SERVICE/KITCHEN AREAS SHALL BE G.F.I. TYPE UNLESS OTHERWISE NOTED.
- COORDINATE ALL LOCATIONS OF RECEPTACLES AND SYSTEMS OUTLETS WITHIN ALL CASEWORKS.
- FOR 120 VOLT BRANCH CIRCUITS, PROVIDE #12AWG CONDUCTORS + #12AWG EQUIPMENT GROUNDS IN 3/4" CONDUIT UNLESS OTHERWISE NOTED. PROVIDE #10 AWG COPPER CONDUCTORS FOR 20 AMPERE, 120 VOLT BRANCH CIRCUITS LONGER THAN 75 FEET.
- ALL FREE-WIRED CABLING SHALL BE PLENUM-RATED UNLESS OTHERWISE NOTED.
- STAGGER ALL WIRING DEVICES (AND COMMUNICATION BOXES) IN WALLS. NO DEVICES WILL BE PERMITTED TO BE INSTALLED BACK-TO-BACK.
- ALL DEVICES SHALL BE CONCEALED IN WALLS (INCLUDING BLOCK WALLS), ABOVE CEILINGS, ETC.

NOTE: NOT ALL SYMBOLS SHOWN ON LEGEND ARE USED ON FLOOR PLANS.

COMMUNICATIONS

- NOTES: ALL DEVICES TO BE WHITE IN COLOR. THE FOLLOWING ABBREVIATIONS APPLY TO COMMUNICATIONS OUTLETS WHERE INDICATED:
- 'H' INDICATES HORIZONTALLY MOUNTED OUTLET.
 - 'WP' INDICATES WEATHERPROOF BACKBOX, IMC RACEWAY WITH THREADED FITTINGS AND UL WET LABEL "IN-USE" COVER. PROVIDE INTERMATIC DIE-CAST WP1010MC SERIES WEATHERPROOF COVER.
 - TV TELEVISION OUTLET, RECESS MOUNT 18" AFF TO CENTER OF BACKBOX U.N.O.. PROVIDE 2-GANG BACKBOX WITH SINGLE GANG OPENING AND (1) 3/4" CONDUIT WITH BUSHINGS INTO AN ACCESSIBLE CEILING SPACE. PROVIDE RG-6 CABLE TO CATV DEMARC. COVERPLATES AND TERMINATIONS BY OWNER.
 - V COMMUNICATIONS OUTLET WITH TELEPHONE AND DATA SERVICES. RECESS MOUNT 18" AFF. PROVIDE 2-GANG BACKBOX WITH 2-GANG OPENING AND (2) 3/4" CONDUITS WITH BUSHINGS INTO AN ACCESSIBLE CEILING SPACE. WIRING, COVERPLATES AND TERMINATIONS BY OWNER.
 - V COMMUNICATIONS OUTLET WITH TELEPHONE AND DATA SERVICES. RECESS MOUNT ABOVE COUNTER, CASEWORK, ETC. COORDINATE MOUNTING HEIGHT WITH ARCHITECTURAL ELEVATIONS AND/OR EXISTING CONDITIONS PRIOR TO ROUGH-IN. PROVIDE 2-GANG BACKBOX WITH 2-GANG OPENING AND (2) 3/4" CONDUITS WITH BUSHINGS INTO AN ACCESSIBLE CEILING SPACE. WIRING, COVERPLATES AND TERMINATIONS BY OWNER.

COMMUNICATIONS EQUIPMENT BACKBOARD

COMMUNICATIONS EQUIPMENT BACKBOARD. PROVIDE 4"x8", 3/4" THICK PLYWOOD BACKBOARD(S) SEALED WITH THREE COATS OF FIRE RETARDANT PAINT U.N.O. PROVIDE GROUND BUS AT EACH BACKBOARD LOCATION.

POWER DISTRIBUTION - REFER TO THE RISER DIAGRAM AND SPECIFICATIONS

- PNL PANELBOARD, REFER TO THE "PANELBOARD SCHEDULE"
- FEEDER, BRANCH CIRCUIT OR SWITCH LEG CONCEALED IN WALL, CEILING OR FLOOR
- BRANCH CIRCUIT SERVING BOTH LIGHTING FIXTURES AND/OR WIRING DEVICES, ETC. FIXTURES ARE SWITCHED, DIMMED, ETC AS INDICATED. RECEPTACLES ARE SERVED BY UN-SWITCHED PHASE CONDUCTOR OF BRANCH CIRCUIT INDICATED (I.E. FIXTURES AND RECEPTACLES ARE ON SAME CIRCUIT, BUT FIXTURES ARE SWITCHED AND RECEPTACLES ARE UN-SWITCHED).
- BRANCH CIRCUITRY (UNSWITCHED) IN BETWEEN SWITCHED LIGHTING FIXTURES, WIRING DEVICES, ETC.
- HOMERUN TO PANELBOARD WITH CIRCUIT(S) INDICATED. PROVIDE 2#12 CU, #12 CU GROUND IN 3/4" CONDUIT U.N.O. ON DRAWINGS AND/OR IN SPECIFICATIONS
- HOMERUN TO PANELBOARD WITH DIRECT ELECTRICAL CONNECTION TO EQUIPMENT.
- SERVICE GROUND. PROVIDE, IN A TRIANGULAR PATTERN, A MINIMUM OF (3) 5/8" DIA, 10 FOOT LONG COPPER-CLAD STEEL GROUND RODS LOCATED AT LEAST 10 FEET APART. ALL CONNECTIONS SHALL BE EXOTHERMICALLY WELDED. PROVIDE NON-METALLIC TEST WELL AND COVER OVER EACH ROD WHEN ASSEMBLY IS LOCATED IN LANDSCAPE AREA (PREFERRED AREA). PROVIDE CONCRETE WELL WITH METAL TRAFFIC COVER OVER EACH ROD WHEN ASSEMBLY IS LOCATED IN HARD SURFACE AREAS, SUCH AS CONCRETE, ASPHALT, ETC. GROUND TO FOUNDATION STEEL AND METAL FRAME OF BUILDING.

- EQUIPMENT CONNECTION. DESIGNATION INDICATES EQUIPMENT NAME. REFER TO THE "EQUIPMENT CONNECTION SCHEDULE" FOR REQUIRED ELECTRICAL SERVICE
- SERVICE DISCONNECT SWITCH. PROVIDE HEAVY DUTY, NON-FUSED, NEMA-1 SWITCH U.N.O.. REFER TO PLANS AND SCHEDULES FOR ADDITIONAL REQUIREMENTS. PROVIDE NEMA-3R WEATHERPROOF ENCLOSURE, IMC RACEWAY WITH THREADED FITTINGS, ETC FOR DAMP AND WET LOCATIONS.
- PUSH BUTTON SWITCH, RECESS MOUNT 48" AFF TO CENTER OF BACKBOX U.N.O.. IN DAMP OR WET LOCATIONS PROVIDE WEATHERPROOF CAST ALUMINUM BACKBOX, IMC RACEWAY WITH THREADED FITTINGS, DEVICE MANUFACTURED FROM METAL (NOT PLASTIC, ETC) AND FULLY GASKETED "STI" BRAND CLEAR POLYCARBONATE COVER.
- INDICATES FEEDER SIZE ON ELECTRICAL RISER DIAGRAM. REFER TO THE "FEEDER SCHEDULE"
- VARIABLE FREQUENCY DRIVE WITH INTEGRAL SERVICE DISCONNECT SWITCH. REFER TO SPECIFICATIONS, "EQUIPMENT CONNECTION SCHEDULE" AND FLOOR PLANS FOR ADDITIONAL ELECTRICAL REQUIREMENTS
- EQUIPMENT CONNECTION SCHEDULE" AND FLOOR PLANS FOR ADDITIONAL ELECTRICAL REQUIREMENTS

WIRING DEVICES - REFER TO THE SPECIFICATIONS

- NOTE: ALL DEVICES SHALL BE WHITE IN COLOR. RECEPTACLES SHALL BE VERTICALLY MOUNTED WITH THE GROUND PIN HOLE LOCATED AT THE "TWELVE O'CLOCK" (TOP OF DEVICE) POSITION U.N.O.
- NOTE: THE FOLLOWING ABBREVIATIONS APPLY TO WIRING DEVICES WHERE INDICATED:
- 'EW' INDICATES DEVICE MOUNTED BEHIND ELECTRIC WATER COOLER ENCLOSURE. COORDINATE DEVICE LOCATION WITH PLUMBING CONTRACTOR AND APPROVED PLUMBING SHOP DRAWINGS PRIOR TO ROUGH-IN.
 - 'H' INDICATES HORIZONTALLY MOUNTED WIRING DEVICE.
 - 'IG' INDICATES ISOLATED GROUND TYPE WIRING DEVICE.
 - 'SP' INDICATES SURGE PROTECTION TYPE WIRING DEVICE. PROVIDE DEDICATED NEUTRAL CONDUCTOR FOR EACH BRANCH CIRCUIT. PROVIDE SPECIFICATION GRADE 20A EAGLE No. 101210-BLUE WTH REPLACEABLE MODULE No. 1209.
 - 'WP' INDICATES WEATHERPROOF FULLY GASKETED CAST ALUMINUM BACKBOX, IMC RACEWAY WITH THREADED FITTINGS AND UL WET LABELED "IN-USE" COVER. PROVIDE INTERMATIC DIE-CAST WP1010MC SERIES WEATHERPROOF COVER.
 - SIMPLEX RECEPTACLE, 20 AMP, HEAVY DUTY, RECESS MOUNT 18" AFF TO CENTER OF BACKBOX U.N.O.
 - DUPLEX RECEPTACLE, 20 AMP, HEAVY DUTY, RECESS MOUNT 18" AFF TO CENTER OF BACKBOX U.N.O. NUMBER (I.E. 1) INDICATES BRANCH CIRCUIT NUMBER
 - DUPLEX RECEPTACLE, 20 AMP, HEAVY DUTY, RECESS MOUNT ABOVE COUNTER, CASEWORK, ETC. COORDINATE MOUNTING HEIGHT WITH ARCHITECTURAL ELEVATIONS AND/OR EXISTING CONDITIONS PRIOR TO ROUGH-IN
 - DOUBLE DUPLEX RECEPTACLE WITH COMMON COVER PLATE, 20 AMP, HEAVY DUTY, RECESS MOUNT 18" AFF TO CENTER OF BACKBOX U.N.O.
 - DOUBLE DUPLEX RECEPTACLE WITH COMMON COVER PLATE, 20 AMP, HEAVY DUTY, RECESS MOUNT ABOVE COUNTER, CASEWORK, ETC. COORDINATE MOUNTING HEIGHT WITH ARCHITECTURAL ELEVATIONS AND/OR EXISTING CONDITIONS PRIOR TO ROUGH-IN
 - GFO TYPE DUPLEX RECEPTACLE, 20 AMP, HEAVY DUTY, RECESS MOUNT 18" AFF TO CENTER OF BACKBOX U.N.O.
 - GFO TYPE DUPLEX RECEPTACLE, 20 AMP, HEAVY DUTY, RECESS MOUNT ABOVE SINK, COUNTER, CASEWORK, ETC. COORDINATE MOUNTING HEIGHT WITH ARCHITECTURAL ELEVATIONS AND/OR EXISTING CONDITIONS PRIOR TO ROUGH-IN
 - NEMA RECEPTACLE, HEAVY DUTY, RECESS MOUNT 18" AFF TO CENTER OF BACKBOX U.N.O.. DESIGNATION INDICATES EQUIPMENT NAME. REFER TO THE "NEMA RECEPTACLE SCHEDULE" FOR REQUIRED ELECTRICAL SERVICE
 - DUPLEX RECEPTACLE, 20 AMP, HEAVY DUTY, RECESS MOUNT IN CEILING. SUPPORT BACKBOX FROM BUILDING STRUCTURE AND NOT JUST FROM CEILING GRID

SECURITY SYSTEM

- ROUGH-IN FOR SECURITY SYSTEM DOOR/WINDOW CONTACT. COORDINATE EXACT LOCATION WITH ARCHITECT AND ARCHITECTURAL DOOR/WINDOW SCHEDULES AND SPECIFICATIONS PRIOR TO BID. PROVIDE (1) 3/4" CONDUIT WITH BUSHINGS AND PULL STRING STUBBED INTO ACCESSIBLE CEILING SPACE U.N.O. CONTACT AND WIRING PROVIDED BY OTHERS.
- ROUGH-IN FOR SECURITY SYSTEM ELECTRIC LOCK. COORDINATE EXACT LOCATION WITH ARCHITECT AND ARCHITECTURAL DOOR/HARDWARE SCHEDULES AND SPECIFICATIONS PRIOR TO BID. PROVIDE (2) 3/4" CONDUIT WITH BUSHINGS AND PULL STRING STUBBED INTO ACCESSIBLE CEILING SPACE U.N.O. ELECTRIC LOCK AND WIRING PROVIDED BY OTHERS.
- ROUGH-IN FOR SECURITY SYSTEM CARD READER MOUNTED 48" AFF TO CENTER OF BACKBOX. PROVIDE RECESS MOUNTED, SINGLE GANG BACKBOX AND (1) 3/4" CONDUIT WITH BUSHINGS AND PULL STRING STUBBED INTO ACCESSIBLE CEILING SPACE U.N.O.. PROVIDE BUILDING STANDARD BLANK COVERPLATE OVER BACKBOX. IN DAMP OR WET LOCATIONS PROVIDE WEATHERPROOF FULLY GASKETED CAST ALUMINUM BACKBOX AND IMC RACEWAY WITH THREADED FITTINGS. CARD READER AND WIRING PROVIDED BY OTHERS.
- ROUGH-IN FOR SECURITY SYSTEM KEY PAD MOUNTED 60" AFF TO CENTER OF BACKBOX. PROVIDE RECESS MOUNTED, SINGLE GANG BACKBOX AND (1) 3/4" CONDUIT WITH BUSHINGS AND PULL STRING STUBBED INTO ACCESSIBLE CEILING SPACE U.N.O.. PROVIDE BUILDING STANDARD BLANK COVERPLATE OVER BACKBOX. KEY PAD AND WIRING PROVIDED BY OTHERS.

ELECTRICAL LEGEND

LIGHTING FIXTURES - REFER TO THE LIGHTING FIXTURE SCHEDULE

- NOTE: THE FOLLOWING ABBREVIATIONS APPLY TO LIGHTING FIXTURES WHERE INDICATED:
- 'NL' INDICATES NIGHT LIGHT
 - UPPER CASE LETTER (I.E. 'A') INDICATES FIXTURE TYPE. NUMBER (I.E. 1) INDICATES BRANCH CIRCUIT NUMBER. LOWER CASE LETTER (I.E. 'c') INDICATES SWITCH CONTROLLING FIXTURE.
 - FLUORESCENT LIGHTING FIXTURE, 2'x4', CEILING MOUNTED
 - FLUORESCENT LIGHTING FIXTURE, DIRECT/INDIRECT, 2'x4', CEILING MOUNTED
 - LENSED DOWNLIGHTING FIXTURE, CEILING MOUNTED
 - LIGHTING FIXTURE, WALL MOUNT AT HEIGHT INDICATED
 - VAPORTIGHT STYLE FLUORESCENT LIGHTING FIXTURE, 1'x4', CEILING MOUNTED
 - INDUSTRIAL STYLE FLUORESCENT LIGHTING FIXTURE, 1'x4', CEILING MOUNTED
 - LIGHTING FIXTURE(S) AND POLE ASSEMBLY. PROVIDE FIXTURE(S), POLE, ALL REQUIRED MOUNTING BRACKETS, SHIELDS, COMPONENTS, HARDWARE, ETC. AND CONCRETE BASE (IF REQUIRED). REFER TO THE PARKING LOT LIGHTING POLE BASE DETAIL.
 - SINGLE FACE EXIT SIGN WITH BATTERY PACK, CEILING MOUNT 7"-6" AFF OR 6" BELOW CEILING TO TOP OF BACKBOX, WHICHEVER IS LOWER U.N.O.. CONNECT TO UNSWITCHED PHASE CONDUCTOR OF GENERAL LIGHTING CIRCUIT USED IN SPACE WHERE FIXTURE IS SHOWN OR TO CIRCUIT INDICATED
 - DOUBLE FACE EXIT SIGN WITH BATTERY PACK, CEILING MOUNT 7"-6" AFF OR 6" BELOW CEILING TO TOP OF BACKBOX, WHICHEVER IS LOWER U.N.O.. CONNECT TO UNSWITCHED PHASE CONDUCTOR OF GENERAL LIGHTING CIRCUIT USED IN SPACE WHERE FIXTURE IS SHOWN OR TO CIRCUIT INDICATED
 - DUAL HEAD EMERGENCY LIGHTING FIXTURE WITH BATTERY PACK, WALL MOUNT 7"-6" AFF OR 6" BELOW CEILING TO TOP OF BACKBOX, WHICHEVER IS LOWER U.N.O.. CONNECT TO UNSWITCHED PHASE CONDUCTOR OF GENERAL LIGHTING CIRCUIT USED IN SPACE WHERE FIXTURE IS SHOWN OR TO CIRCUIT INDICATED
 - PHOTOCELL. PROVIDE LIGHTING CONTROL PANEL'S PREFERRED CONTROL. PROVIDE ALL REQUIRED MOUNTING BRACKETS, COMPONENTS, HARDWARE, ETC. FACE PHOTOCELL NORTH. PROVIDE #12AWG WIRING (OR WIRING AS REQUIRED BY MANUFACTURER) TO LIGHTING CONTROL PANEL.
- SWITCHES - REFER TO THE SPECIFICATIONS (FINAL COLOR SELECTION BY ARCHITECT)
- SINGLE POLE TOGGLE SWITCH, 20 AMP, 277V, HEAVY DUTY, RECESS MOUNT 48" AFF TO CENTER OF BACKBOX.
 - LOWER CASE LETTER (I.E. 'a') INDICATES THE FIXTURE(S) CONTROLLED BY THE SWITCH.
 - '3' INDICATES THREE-WAY SWITCH
 - '4' INDICATES FOUR-WAY SWITCH
 - 'K' INDICATES KEY SWITCH. PROVIDE OWNER WITH (2) KEYS PER SWITCH
 - '1T' INDICATES LIGHTED TOGGLE SWITCH ILLUMINATED IN "OFF" POSITION. PROVIDE SINGLE POLE 20A, 120/277V EAGLE No. 2221LV
 - 'MMS' INDICATES MANUAL MOTOR STARTER WITH SINGLE POLE, GUARD/LOCK - OFF, RED PILOT LIGHT AND THERMAL OVERLOAD IN NEMA-1 ENCLOSURE
 - 'MRS' INDICATES MOTOR RATED SWITCH WITH SINGLE POLE AND GUARD/LOCK - OFF IN NEMA-1 ENCLOSURE
 - 'WP' INDICATES WEATHERPROOF BACKBOX, IMC RACEWAY WITH THREADED FITTINGS AND FULLY GASKETED UL WET LABEL COVER.
 - PROVIDE COMMERCIAL GRADE OCCUPANCY SENSOR FOR LIGHTING CONTROL. SEE LIGHTING CONTROL SCHEDULE FOR DEVICE DETAILS. BASIS OF DESIGN IS WATSTOPPER. PROVIDE SENSORS THAT ARE WHITE IN COLOR.

- MISCELLANEOUS
- DETAIL INDICATOR. REFER TO REFERENCED DETAIL
 - NOTE INDICATOR. REFER TO THE "KEY NOTES" WHERE INDICATED
 - EXHAUST FAN
 - SMOKE DAMPER

ABBREVIATIONS			
NOTE: ALL ABBREVIATIONS MAY NOT BE USED.			
1P	SINGLE POLE	MCA	MINIMUM CIRCUIT AMPS
1PH	SINGLE-PHASE	MCB	MAIN CIRCUIT BREAKER
3PH	THREE-PHASE	MDP	MAIN DISTRIBUTION PANEL
A OR AMP	AMPERE	MIN	MINIMUM
AFF	ABOVE FINISHED FLOOR	MLO	MAIN LUGS ONLY
AFG	ABOVE FINISHED GRADE	MOC	MAXIMUM OVER CURRENT PROTECTION
AIC	AMPERE INTERRUPTING CAPACITY	NEC	NATIONAL ELECTRICAL CODE
AMP	AMPERE	[N]	NEW
AWG	AMERICAN WIRE GAUGE	[NL]	NEW LOCATION OF EXISTING
CB	CIRCUIT BREAKER	PH	PANEL
CKT	CIRCUIT	PNL	PANEL
CLG	CEILING (TYPICALLY CEILING MOUNTED)	[R]	EXISTING TO BE REMOVED
CM	CONSTRUCTION MANAGER	[RL]	EXISTING TO BE RELOCATED
CU	COPPER	[RP]	EXISTING TO BE REPLACED
EQPT	EQUIPMENT	RMC	RIGID METAL CONDUIT
EMT	ELECTRICAL METALLIC TUBING	SPD	SURGE PROTECTION DEVICE TO BE DETERMINED
[E]	EXISTING TO REMAIN	TBD	TYPICAL
FA	FIRE ALARM	UN	UNLESS OTHERWISE NOTED
FACP	FIRE ALARM CONTROL PANEL	UPS	UNINTERRUPTIBLE POWER SUPPLY
FLA	FULL LOAD AMPS	V	VOLTS
G OR GRD	GROUND	VA	VOLT AMPERE
GFCI	GROUND FAULT CIRCUIT INTERRUPTER	VFD	VARIABLE FREQUENCY DRIVE
HP	HORSE POWER	WP	WEATHERPROOF, FULLY GASKETED ALUMINUM BACKBOX WITH IMC RACEWAY AND THREADED FITTINGS. PROVIDE COMPONENTS WITH U.L. WET LABEL
J-BOX	JUNCTION BOX	XFMR	TRANSFORMER
KVA	KILOVOLT AMPERE		
KW	KILOWATT		
KWH	KILOWATT HOUR		
LC	LOAD CENTER		
LED	LIGHT EMITTING DIODE		
LFCM	LIQUID TIGHT FLEXIBLE METAL CONDUIT		

ADDITIONAL SUBMITTALS/SHOP DRAWING LIST	
REQUIRED	SUBMITTALS REQUIRED OTHER THAN WHAT HAS BEEN SPECIFIED:
YES	GENERATOR RECEPTACLE MOUNTING DETAILS (PARKING SPACE OUTDOOR MOUNTED)
YES	LIGHTNING PREVENTION GROUNDING TEST RESULTS
YES	PROVIDE OCCUPANCY SENSOR WIRING DIAGRAMS IN .DWG FILE FORMAT AT THE TIME OF SHOP DRAWING REVIEW
YES	PEDESTALS FOR GATE COMMUNICATIONS
YES	GATE OPERATOR AND MOTOR INFORMATION
YES	480V CIRCUIT AND TRANSFORMER INFORMATION

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TO THE BEST OF MY KNOWLEDGE, SAID PLANS AND SPECIFICATIONS COMPLY WITH ALL APPLICABLE BUILDING CODES.

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Bradenton, FL 34210

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Bradenton, FL 34208

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checked: JR
date: 09-30-10
comm. no.: 0920826

ELECTRICAL LEGEND

E001

ALL IDEAS, DESIGNS, ARRANGEMENTS AND PLANS INDICATED OR REPRESENTED BY THIS DRAWING ARE OWNED BY AND THE PROPERTY OF SCHENKELSHULTZ AND WILL BE CREATED, EXERCISED AND DEVELOPED FOR USE AND IN CONNECTION WITH THE SPECIFIED PROJECT. NONE OF THE IDEAS, DESIGNS, ARRANGEMENTS OR PLANS SHALL BE USED BY OR FOR ANY OTHER PROJECT WITHOUT THE WRITTEN PERMISSION OF SCHENKELSHULTZ. WRITTEN PERMISSION ON THESE DRAWINGS SHALL HAVE PRECEDENCE OVER SCALE DIMENSIONS. CONTRACTORS SHALL VERIFY AND BE RESPONSIBLE FOR ALL DIMENSIONS AND CONDITIONS ON THE JOB AND THE OFFICE MUST BE ADVISED OF ANY VARIATION FROM THE DIMENSIONS AND CONDITIONS SHOWN BY THESE DRAWINGS. REVIEW OF SHOP DRAWINGS DOES NOT RELIEVE THE CONTRACTOR FROM THE REQUIREMENT OF MEETING OR EXCEEDING THE PLANS AND SPECIFICATIONS. CONCEPTUAL CONSTRUCTION SCHEDULES OF WORKING REPRODUCTION HEREOF IS A CRIMINAL OFFENSE UNDER FLA. STAT. SEC. 816. UNAUTHORIZED DISCLOSURE MAY CONSTITUTE A VIOLATION OF APPLICABLE STATE AND FEDERAL LAW. THE IDEAS, ARRANGEMENTS AND DESIGNS DISCLOSED HEREIN MAY BE PATENTED OR BE THE SUBJECT OF PENDING PATENT APPLICATION.

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TO THE BEST OF MY KNOWLEDGE, SAID PLANS AND SPECIFICATIONS COMPLY WITH ALL APPLICABLE BUILDING CODES.

BRYAN P. ZAPF, P.E.
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Utilities
Maintenance &
Administration
Building

Bradenton, FL 34210

Client:

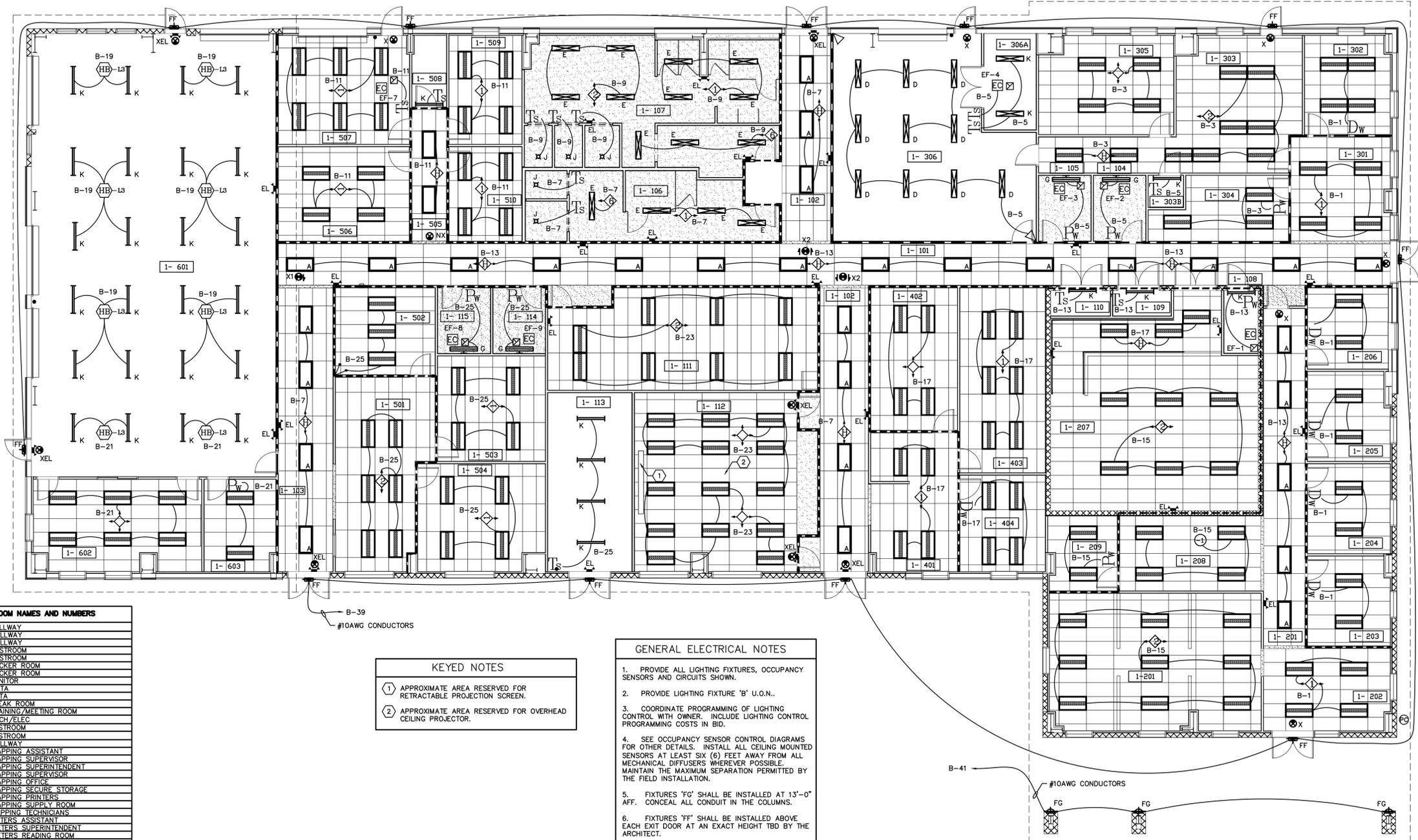
Manatee County Government
1112 Manatee Avenue West
Bradenton, FL 34208

drawn: JR
checked: JR
date: 09-30-10
comm. no.: 0920826

LIGHTING
FLOOR PLAN

E101

100% Construction Documents



ROOM NAMES AND NUMBERS	
101	HALLWAY
102	HALLWAY
103	HALLWAY
104	RESTROOM
105	RESTROOM
106	LOCKER ROOM
107	LOCKER ROOM
108	JANITOR
109	DATA
110	DATA
111	BREAK ROOM
112	TRAINING/MEETING ROOM
113	MECH/ELEC
114	RESTROOM
115	RESTROOM
201	HALLWAY
202	MAPPING ASSISTANT
203	MAPPING SUPERVISOR
204	MAPPING SUPERINTENDENT
205	MAPPING SUPERVISOR
206	MAPPING OFFICE
207	MAPPING SECURE STORAGE
208	MAPPING PRINTERS
209	MAPPING SUPPLY ROOM
210	MAPPING TECHNICIANS
301	METERS ASSISTANT
302	METERS SUPERINTENDENT
303	METERS READING ROOM
303B	UTILITY CLOSET
304	METERS STORAGE
305	METERS SUPERVISORS
306	METERS REPAIR SHOP
306A	BLASTER
401	SEWER/COLLECTIONS ASSISTANT
402	SEWER/COLLECTIONS SUPERINTENDENT
403	SEWER/COLLECTIONS MAPPING ROOM
404	SEWER/COLLECTIONS SUPERINTENDENT
501	MAINTENANCE ASSISTANTS
502	SECURE STORAGE
503	OFFICE
504	MAINTENANCE MANAGER'S OFFICE
505	HALLWAY
506	OFFICE
507	TOOL STORAGE
508	STORAGE
509	OFFICE
510	OFFICE
601	WAREHOUSE
602	WAREHOUSE SUPERVISOR
603	AIR CONDITIONED STORAGE

KEYED NOTES

① APPROXIMATE AREA RESERVED FOR RETRACTABLE PROJECTION SCREEN.

② APPROXIMATE AREA RESERVED FOR OVERHEAD CEILING PROJECTOR.

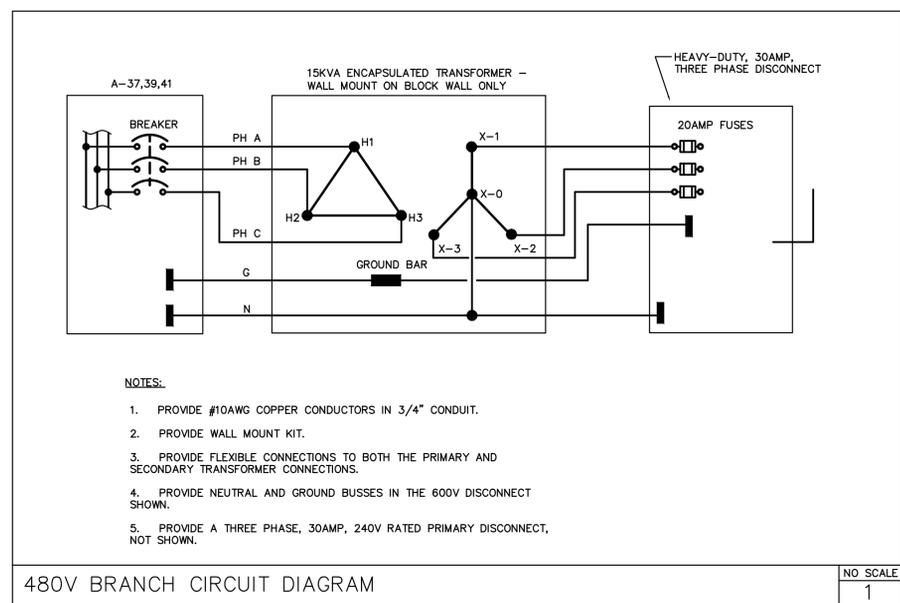
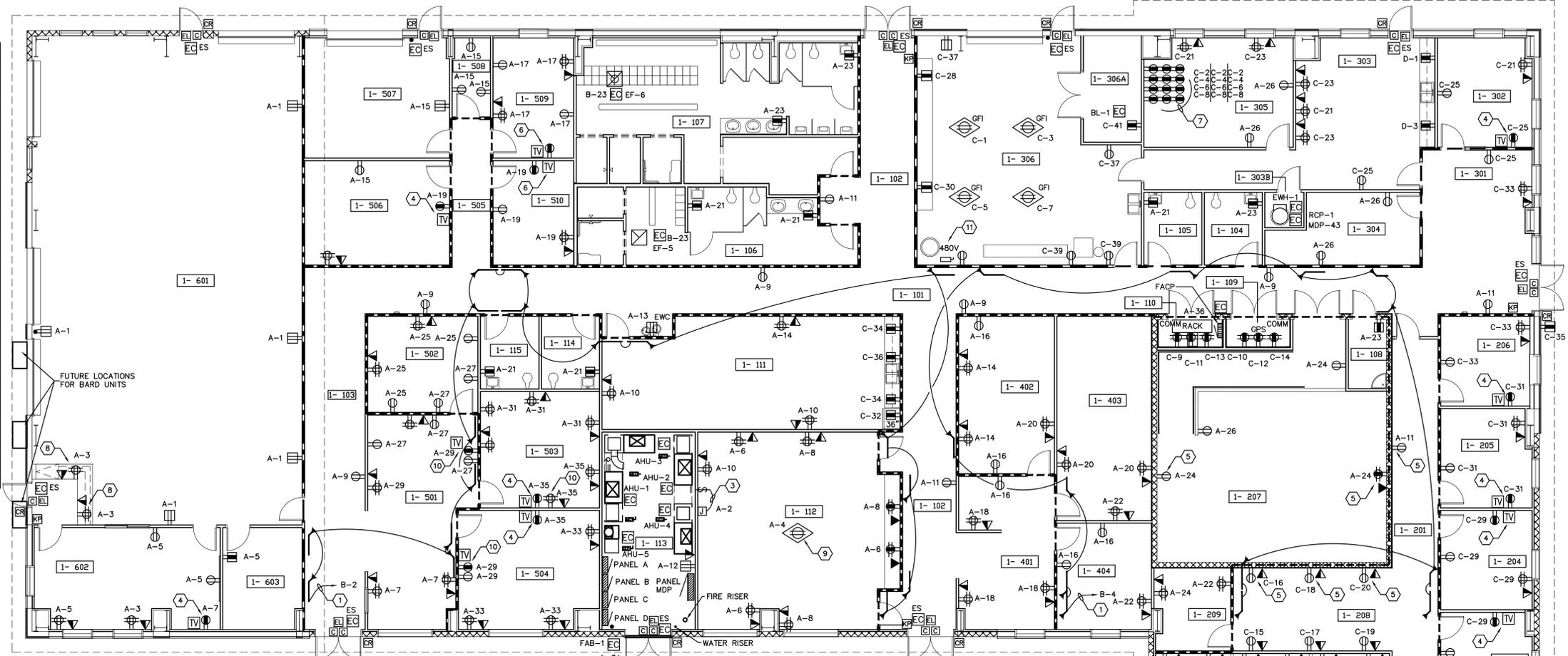
GENERAL ELECTRICAL NOTES

1. PROVIDE ALL LIGHTING FIXTURES, OCCUPANCY SENSORS AND CIRCUITS SHOWN.
2. PROVIDE LIGHTING FIXTURE 'B' U.O.N.
3. COORDINATE PROGRAMMING OF LIGHTING CONTROL WITH OWNER. INCLUDE LIGHTING CONTROL PROGRAMMING COSTS IN BID.
4. SEE OCCUPANCY SENSOR CONTROL DIAGRAMS FOR OTHER DETAILS. INSTALL ALL CEILING MOUNTED SENSORS AT LEAST SIX (6) FEET AWAY FROM ALL MECHANICAL DIFFUSERS WHEREVER POSSIBLE. MAINTAIN THE MAXIMUM SEPARATION PERMITTED BY THE FIELD INSTALLATION.
5. FIXTURES 'FG' SHALL BE INSTALLED AT 13'-0" AFF. CONCEAL ALL CONDUIT IN THE COLUMNS.
6. FIXTURES 'FF' SHALL BE INSTALLED ABOVE EACH EXIT DOOR AT AN EXACT HEIGHT TBD BY THE ARCHITECT.
7. INSTALL ALL FIXTURES TIGHT TO STRUCTURE IN ALL CEILINGS OPEN TO STRUCTURE. PROVIDE STRUT AS REQUIRED.
8. INSTALL 'X' FIXTURE ON WALL JUST ABOVE THE DOOR IN ROOMS 1-303B, 1-110, 1-109, 1-108 AND 1-508.
9. SEE OTHER DRAWINGS FOR SITE LIGHTING.
10. PROVIDE AT LEAST FOUR (4) 1" SPARE CONDUITS WITH PULL STRINGS EXITING PANELBOARD B FOR FUTURE REQUIREMENTS. TERMINATE SPARE CONDUITS WITH GLUE CAPS IN A LANDSCAPE AREA. PROVIDE RECORD DRAWING INFORMATION TO THE OWNER UPON SUBSTANTIAL COMPLETION.

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

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ROOM NAMES AND NUMBERS	
101	HALLWAY
102	HALLWAY
103	HALLWAY
104	RESTROOM
105	RESTROOM
106	LOCKER ROOM
107	LOCKER ROOM
108	JANITOR
109	DATA
110	DATA
111	BREAK ROOM
112	TRAINING/MEETING ROOM
113	MECH/ELEC
114	RESTROOM
115	RESTROOM
201	HALLWAY
202	MAPPING ASSISTANT
203	MAPPING SUPERVISOR
204	MAPPING SUPERINTENDENT
205	MAPPING SUPERVISOR
206	MAPPING OFFICE
207	MAPPING SECURE STORAGE
208	MAPPING PRINTERS
209	MAPPING SUPPLY ROOM
210	MAPPING TECHNICIANS
301	METERS ASSISTANT
302	METERS SUPERINTENDENT
303	METERS READING ROOM
303B	UTILITY CLOSET
304	METERS STORAGE
305	METERS SUPERVISORS
306	METERS REPAIR SHOP
306A	BLASTER
401	SEWER/COLLECTIONS ASSISTANT
402	SEWER/COLLECTIONS SUPERINTENDENT
403	SEWER/COLLECTIONS MAPPING ROOM
404	SEWER/COLLECTIONS SUPERINTENDENT
501	MAINTENANCE ASSISTANTS
502	SECURE STORAGE
503	OFFICE
504	MAINTENANCE MANAGER'S OFFICE
505	HALLWAY
506	OFFICE
507	TOOL STORAGE
508	STORAGE
509	OFFICE
510	OFFICE
601	WAREHOUSE
602	WAREHOUSE SUPERVISOR
603	AIR CONDITIONED STORAGE



- NOTES:
1. PROVIDE #10AWG COPPER CONDUCTORS IN 3/4" CONDUIT.
 2. PROVIDE WALL MOUNT KIT.
 3. PROVIDE FLEXIBLE CONNECTIONS TO BOTH THE PRIMARY AND SECONDARY TRANSFORMER CONNECTIONS.
 4. PROVIDE NEUTRAL AND GROUND BUSES IN THE 600V DISCONNECT SHOWN.
 5. PROVIDE A THREE PHASE, 30AMP, 240V RATED PRIMARY DISCONNECT, NOT SHOWN.

- KEYED NOTES
1. PROVIDE A 120V CIRCUIT AND CONTROL POWER RELAY TO POWER THE SMOKE DAMPERS (SD) SHOWN. SEE DETAIL. PROVIDE CIRCUIT FROM PANEL B.
 2. PROVIDE PANEL MDP IN AS NARROW A WIDTH AS CAN BE PROCURED.
 3. PROVIDE A DEDICATED CIRCUIT AND LINE VOLTAGE SWITCH FOR A POWERED PROJECTOR SCREEN. SCREEN PROVIDED BY OWNER. THE ELECTRICAL CONTRACTOR SHALL COORDINATE ALL DETAILS WITH ARCHITECT PRIOR TO ROUGH IN. SEE ARCHITECTURAL RCP AND LIGHTING PLAN FOR CEILING INFORMATION.
 4. CENTER DEVICES SHOWN ON WALL, WALL SEGMENT OR AREA BETWEEN OPEN DOOR AND WALL. CENTER LINE OF DEVICES TO BE 60 INCHES AFF. ADJUST BOTTOM OF DEVICES SHOWN SO HEIGHT ALIGNS WITH BOTTOM OF BLOCK DIMENSION. PROVIDE 8 INCHES BETWEEN DEVICES AT THIS LOCATION. SAW CUT BLOCK AND RECESS CONDUIT AS REQUIRED.
 5. ADJUST DEVICE HEIGHT TO ALIGN BOTTOM OF DEVICE SHOWN SO HEIGHT ALIGNS WITH BOTTOM OF BLOCK DIMENSION (NO LESS THAN 18 INCHES AFF TO MEET ADA MINIMUMS). SAW CUT BLOCK AND RECESS CONDUIT AS REQUIRED.
 6. CENTER DEVICES SHOWN ON WALL, WALL SEGMENT OR AREA BETWEEN OPEN DOOR AND WALL. CENTER LINE OF DEVICES TO BE 60 INCHES AFF. ADJUST BOTTOM OF DEVICES SHOWN SO HEIGHT ALIGNS WITH BOTTOM OF BLOCK DIMENSION. PROVIDE 8 INCHES BETWEEN DEVICES AT THIS LOCATION. FOR THIS PORTION OF THE BRANCH CIRCUIT SHOWN SERVING THE CONVENIENCE RECEPTACLES, PROVIDE A JUNCTION BOX ON THE NORTH WALL AND MC CABLE TO EACH CONVENIENCE RECEPTACLE SHOWN. THIS WILL ENABLE THE OWNER TO EASILY REMOVE THIS WALL IN THE FUTURE IF REQUIRED.
 7. EXACT HEIGHT OF THESE RECEPTACLES FOR CHARGING STATION TO BE DETERMINED BY OWNER PRIOR TO ROUGH IN. SEE CIRCUIT MATRIX ADJACENT TO RECEPTACLES FOR SPECIFIC CIRCUITING INFORMATION.
 8. PROVIDE LIQUIDTIGHT FLEXIBLE METALLIC CONDUIT AND FITTINGS FROM WALL INTO AND THROUGHOUT CASEWORK FOR THE POWER AND DATA DEVICES SHOWN.
 9. THE ELECTRICAL CONTRACTOR SHALL COORDINATE THE EXACT LOCATION OF THE CEILING MOUNTED RECEPTACLE (FOR FUTURE CEILING MOUNTED PROJECTOR) WITH THE LIGHTING AND MECHANICAL DIFFUSERS PRIOR TO ROUGH IN. SEE ARCHITECTURAL RCP FOR OTHER INFORMATION.
 10. INSTALL THE RECEPTACLE AND TV OUTLET BOX ABOVE THE DUPLEX RECEPTACLE SHOWN AT THIS LOCATION.
 11. PROVIDE 480V THREE PHASE BRANCH CIRCUIT AND 600V THREE PHASE FUSED DISCONNECT FOR OWNER'S USE. SEE DETAIL.

- GENERAL ELECTRICAL NOTES
1. PROVIDE ALL DEVICES AND CIRCUITS SHOWN. SOME OF THE BRANCH CIRCUIT NUMBERS ARE LISTED ON THE ELECTRICAL CONNECTION SCHEDULE (FOR DRAWING CLARITY).
 2. SEE MECHANICAL AND ARCHITECTURAL DRAWINGS FOR COORDINATING DEVICE LOCATIONS AND ELEVATIONS.
 3. OVERHEAD COILING DOORS AND FOLDING PARTITIONS SHOWN ARE MANUALLY TYPE, NOT POWERED TYPE.
 4. THE ELECTRICAL CONTRACTOR SHALL SURVEY THE EXISTING OWNER'S SITE AND DOCUMENT, CATALOG AND PROVIDE THE SERVICES REQUIRED TO REMOVE, STORE AND REINSTALL THE OWNER'S GPS SYSTEM. ONCE THIS BUILDING IS UNDER CONSTRUCTION, THE ELECTRICAL CONTRACTOR SHALL REINSTALL THE EXISTING GPS ANTENNA, ANTENNA CABLING, GPS CONTROL, GPS APPURTENANCES, ETC. SO THE SYSTEM CAN BE USED AT THIS LOCATION. THE ELECTRICAL CONTRACTOR SHALL COORDINATE ALL REQUIREMENTS WITH THE OWNER AND GENERAL CONTRACTOR PRIOR TO CONSTRUCTION. INCLUDE ALL ASSOCIATED COSTS IN BID.
 5. PROVIDE THREE (3) 1-1/4" CONDUITS WITH PULL STRINGS FROM PANEL MDP TO JUST INSIDE THE FIRE WALL OF SPACE 1-601. THE OWNER WILL PROVIDE THE BRANCH CIRCUIT CONDUCTORS FOR THE FUTURE BARD UNITS THESE CONDUITS WILL SERVE. THESE UNITS ARE NOT CONSIDERED IN THE GENERATOR CAPACITY CALCULATION.

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TO THE BEST OF MY KNOWLEDGE, SAID PLANS AND SPECIFICATIONS COMPLY WITH ALL APPLICABLE BUILDING CODES.

BRYAN P. ZAPF, P.E.
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Client:
Manatee County Government
1112 Manatee Avenue West
Bradenton, FL 34208

drawn: JR
checked: JR
date: 09-30-10
comm. no.: 0920826

ELECTRICAL
FLOOR PLAN

E102

2.03 MAST
 Mast shall have threaded connection for the ESE air terminal and bonding plate for cable connection. Wind and safety factors shall be documented for the geographic area of installation, to determine the size and structure of mast.
 Base support, depending upon application, flat mounting base, side mounting base and/or structural support, and/or flag pole may be utilized.
 ESE Certified by Lightning Preventor of America

2.04 GROUNDING SYSTEM
 Ground rods shall be copper clad 3/4"x10' minimum. One set of tripod grounds shall be installed for each down conductor (two (2) minimum per system - refer to para. 2.2 sub para. C for structural steel used as down conductors, grounding requirements). Ground plates of high conductivity copper sheet, 20 gauge minimum, 18" sq. (three (3) required per down conductor), may be used in lieu of or in combination with ground rods to achieve the (10) Ohm resistance grounding system requirement. The cable attachments to the ground rods must be accomplished via exothermic welds or mechanical clamp. Cable attachments to the ground plates shall be via cast bronze bond plates of eight (8) square inches of contact area.
 A ground loop may be substituted for the ground rods or ground plates. The ground loop must be of a main size conductor and shall comply with the ten (10) Ohm resistance requirement of grounding system.
 Ground Rods, ground plates, and ground loop conductors shall be installed a minimum of one foot below grade and a minimum of two feet away from the foundation. All grounding locations shall be evenly spaced around the building perimeter as possible. A minimum of one inspection well, rated for the traffic of the installation area, shall be installed for each down conductor or two minimum per ground loop.
 Bonding of grounded systems shall be via main size conductors. The bonding shall be accomplished to achieve equal potential of all grounds. All underground connections shall be via exothermic welds, where possible.

2.05 CONNECTORS, FITTINGS, FASTENERS, AND HARDWARE
 Provide all connectors, fittings, fasteners, hardware, clamps, guards, lugs, exothermic welds, etc...as required to connect, and install all parts of the system. All material to be ESE System Certified and listed where applicable.
 All equipment shall be fabricated from copper and/or bronze material and be ESE System Certified for the use intended.
 All connections between dissimilar metal shall have connectors that are ESE System Certified by manufacture for the type of installation.

2.06 SURGE SUPPRESSION
 Provide surge protection on the electrical, telephone, and antenna and TV lead wires.

KEY NOTES:

1. PROVIDE NEW DOWN CONDUCTORS FROM ROOF TO EXTERIOR WALLS. BOND TO GROUNDING CONDUCTORS AS SHOWN.
2. AFTER THE NEW ROOFING SYSTEM HAS BEEN INSTALLED, THE E.D.S. CONTRACTOR SHALL INSTALL ROOFING SYSTEM PADS THAT WILL SUPPORT THE NEW COPPER CONDUCTORS INSTALLED ON THE ROOF.
3. TEST EVERY DOWN CONDUCTOR AND REPORT RESULTS (OHM LEVEL) TO ENGINEER. REPORT SHALL LIST EACH LOCATION IN THE FORM OF A TABULAR SUMMARY.

GENERAL NOTES:

- A. ALL LIGHTNING PREVENTION COMPONENTS SHOWN ARE NEW UNLESS NOTED OTHERWISE (U.N.O.).
- B. PROVIDE (DEFINED AS "FURNISH AND INSTALL") ALL LABOR, MATERIALS AND EQUIPMENT REQUIRED TO CREATE A COMPLETE AND PROPERLY OPERATING LEVEL II HBP-21 E.S.E. LIGHTNING PREVENTOR SYSTEM.
- C. ALL CONDUCTORS SHOWN SHALL BE 28 STRANDS OF 14-GAUGE WIRE ROPE LAY U.N.O..
- D. COORDINATE EXACT ROOFING TYPE AND CONDITIONS WITH CONSTRUCTION MANAGER PRIOR TO BID. THE ROOFING CONTRACTOR WILL BE RESPONSIBLE FOR FLASHING THE NEW E.D.S. SUPPORT MAST.
- E. THE NEW GROUND CONDUCTORS SHALL BE INSTALLED ON THE ROOF IN THE MOST DIRECT ROUTE AND FIELD ADJUSTED AS REQUIRED.

1.07 SERVICE AND TESTING

Installation of equipment shall be done under the direct supervision of a manufacturer's certified installer.
 The complete lightning protection system shall be fully tested in the presence of the Architect/Engineer. A certified ground report shall be completed and forwarded to the ESE manufacturer and architect/engineer for evaluation, certification, archiving, and documentation.
 The ground resistance of the completed system shall be measured using IEEE "FALL OF POTENTIAL METHOD" in the presence of the ARCHITECT/ENGINEER and shall be so noted on the certified ground test report. Ground resistance shall be ten(10) ohms or less.

PART II: PRODUCTS

2.01 ESE AIR TERMINAL
 The complete assembly shall consist of a nickel plated air terminal, 5/8" diameter minimum, stainless steel housing, with the ESE initiator, sensing mechanism, triggering mechanism, and be completely sealed.
 Threaded base for connection to mast.
 Name Plate.
 Stainless Steel air terminal of the same diameter, shall replace the nickel plated air terminal where corrosive atmospheres are present.
 ESE System Certified by Lightning Preventor of America

2.02 CONDUCTORS
 Copper conductors shall be 28 strands of 14 gauge wire rope lay, with a net weight of 375 pounds per 1000 feet, minimum, or copper strip of equivalent capacity.
 The structural steel may be utilized as main conductor if the steel is electrically continuous or is made so via other means. Every other column or an average of 60 feet intervals shall be bonded and connected to the ground system.
 All conductors shall be secured every 30" maximum. Fasteners and clips utilized shall be of equal corrosion resistance as the material being secured.
 Bonding of all conductive material within six (6) feet of the conductors shall be accomplished via secondary conductor no smaller than #8 copper.
 Bare copper material shall not be installed on dissimilar metals. Corrosion resistant copper or bronze equipment shall be utilized where these conditions exist. Corrosion resistant copper conductors and fittings shall be utilized where corrosive atmospheres are present.
 Conductors shall be installed so that a conductor shall always have a horizontal or downward path, free of "U" and "V" pockets, with the exception that an eight(8) inch maximum rise or a rise of three inches maximum from every 12 inches of conductor length shall be permitted in a main conductor run.
 Each ESE terminal shall have two (2) paths to ground from the base plate of the mast, with the exception of an elevated mast that may have a single conductor run for a maximum of sixteen (16) feet before two (2) down conductors shall be initiated.
 The electrical contractor shall furnish and install all necessary PVC conduit for concealed down conductors.
 No bend of a conductor shall be less than ninety (90) degrees and shall not have a radius of bend of less than eight (8) inches. Exceptions are through roof and wall assemblies and "T" connections.
 ESE System Certified by Lightning Preventor of America

1.05 CODES, REGULATIONS, PERMITS
 The completed systems shall comply to the proposed NFPA 781 standard and manufacture certification requirements for installations of ESE lightning protection systems. The installed system shall be submitted to manufacture for certification to this specification. Any corrections required by the inspection shall be accomplished by the installer at his expense. Noncompliance shall be reported to the equipment supplier for consideration. The installer shall not receive any other certifications of systems until all corrections are completed.

1.06 STANDARDS OF QUALITY
 The ESE system manufacturer, contractor, and installers shall be listed with Underwriters Laboratories.
 All ESE Certified Equipment shall be UL listed where applicable, and the certified installers shall be listed with the manufacturer of the ESE equipment, and listed with Underwriters Laboratories.
 The ESE system certification and manufacturer's warranties and warranties shall be submitted to the owner upon completion of the ESE system installation.

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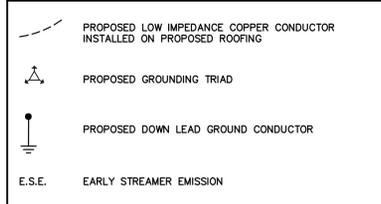
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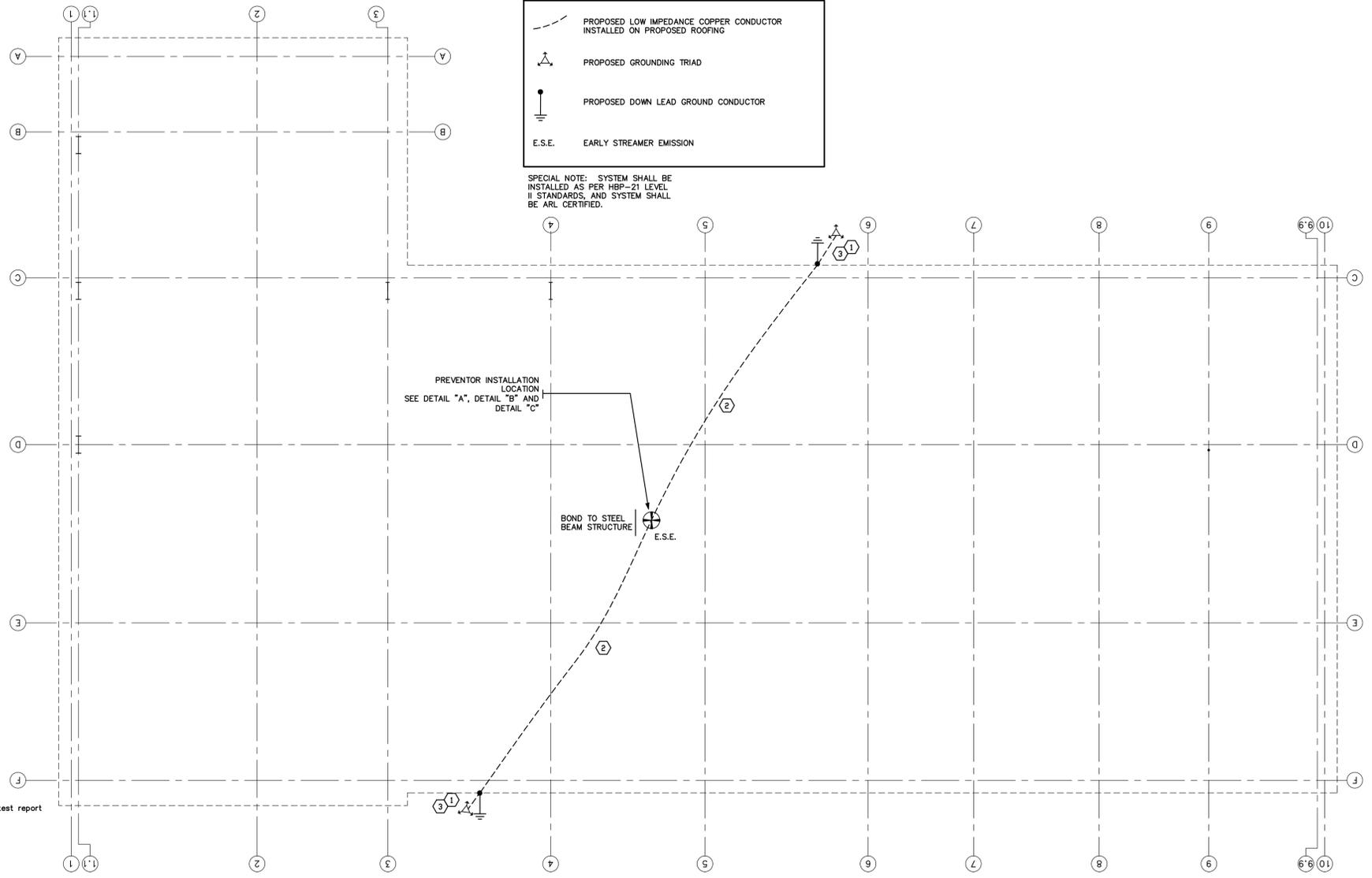
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LEGEND



SPECIAL NOTE: SYSTEM SHALL BE INSTALLED AS PER HBP-21 LEVEL II STANDARDS, AND SYSTEM SHALL BE ARL CERTIFIED.



METAL BODIES WITHIN 6' - 0" OF THE LIGHTNING PROTECTION SYSTEM SHALL BE BONDED TO THE SYSTEM IN ACCORDANCE WITH UL96A - 1995 REQUIREMENTS. PROVIDE CONNECTION TO MAIN ELECTRICAL POWER GROUNDING SYSTEM.

LIGHTNING PROTECTION PLAN

SCALE: 3/32" = 1'-0"

SCHENKELSHULTZ
 ARCHITECTURE

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 1112 Manatee Avenue West
 Bradenton, FL 34208

drawn: JR
 checked: JR
 date: 09-30-10
 comm. no.: 0920826

**LIGHTNING
 PROTECTION PLAN**

E401

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**Utilities
Maintenance &
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Bradenton, FL 34210

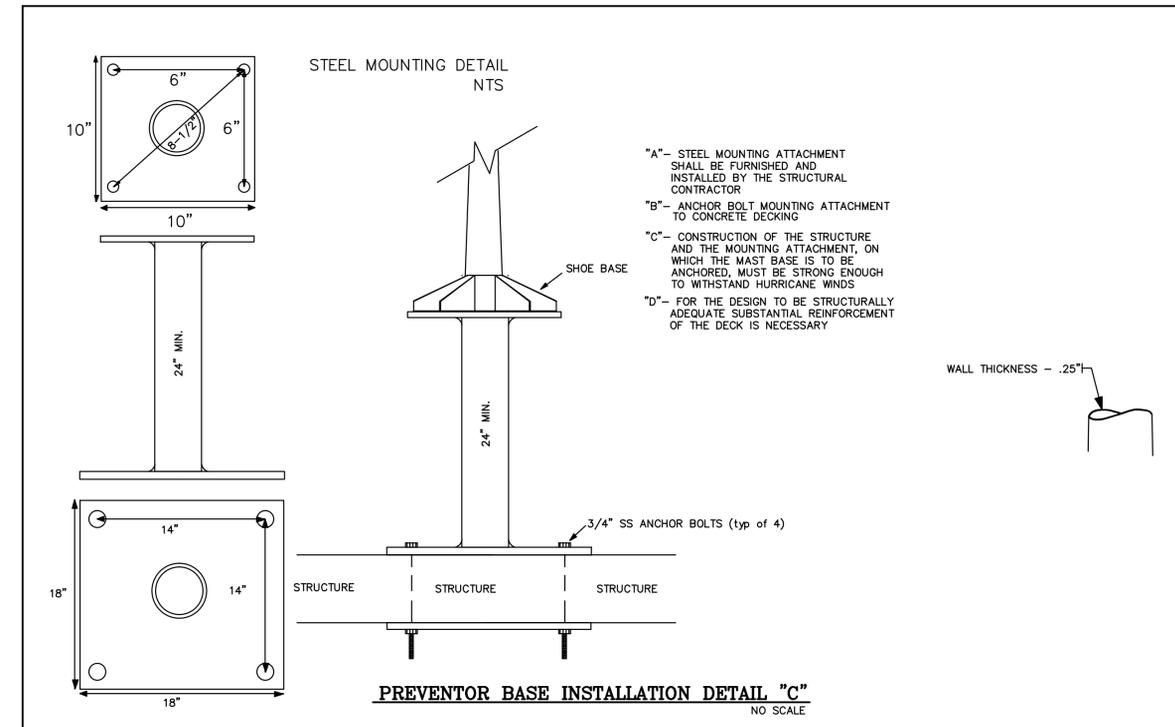
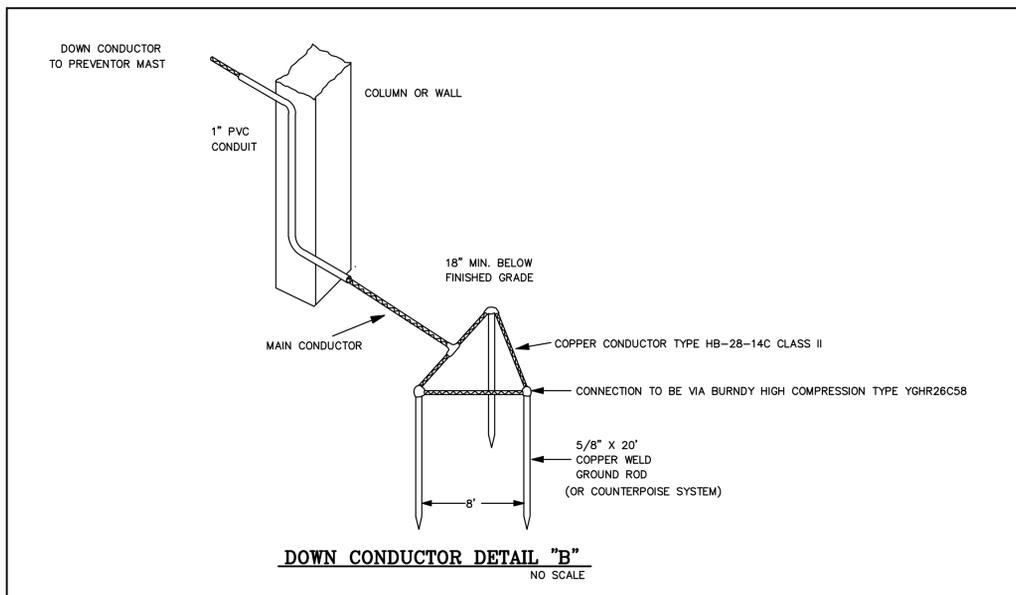
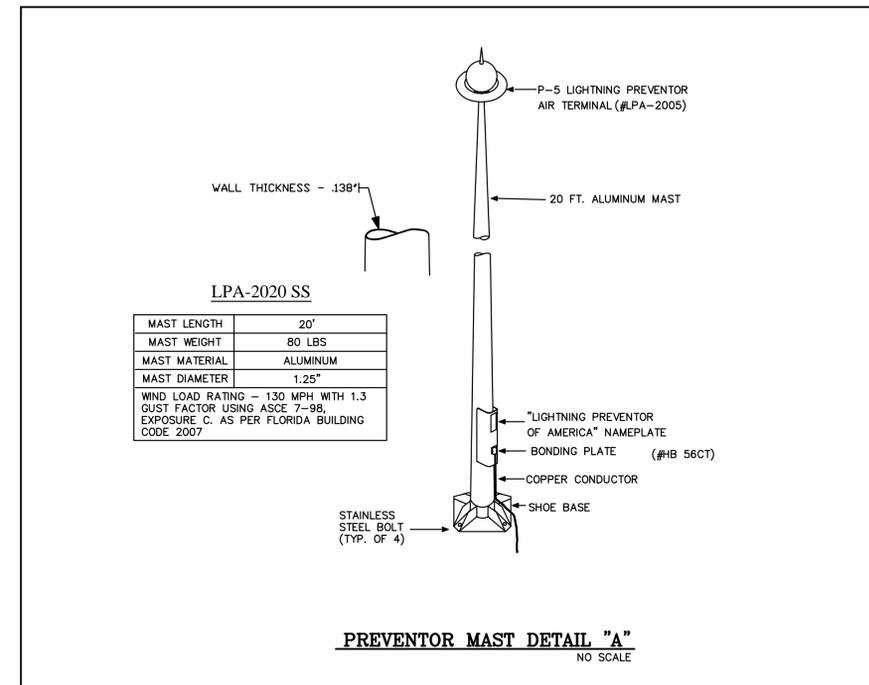
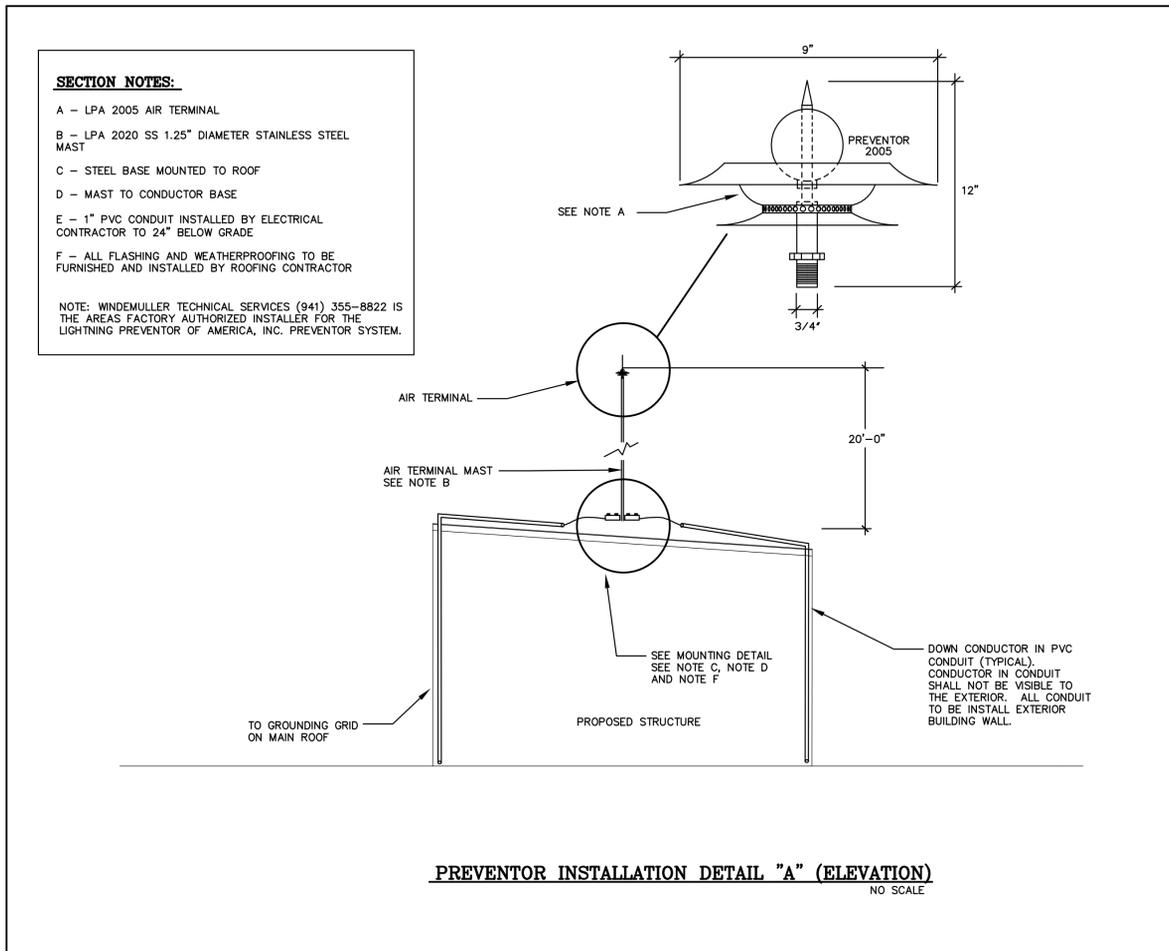
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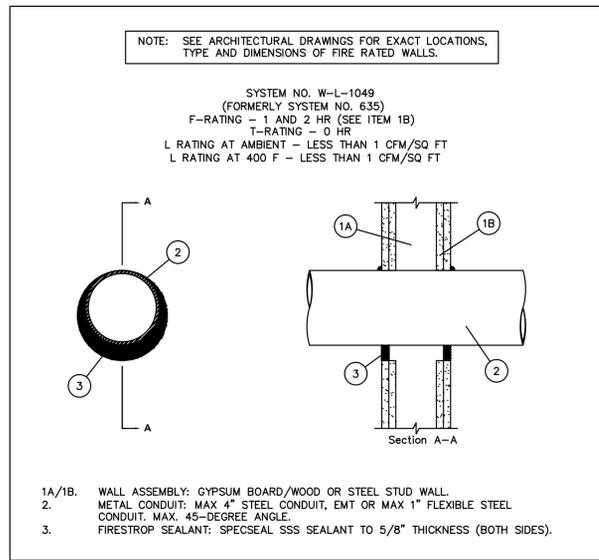
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**LIGHTNING
PROTECTION DETAILS**

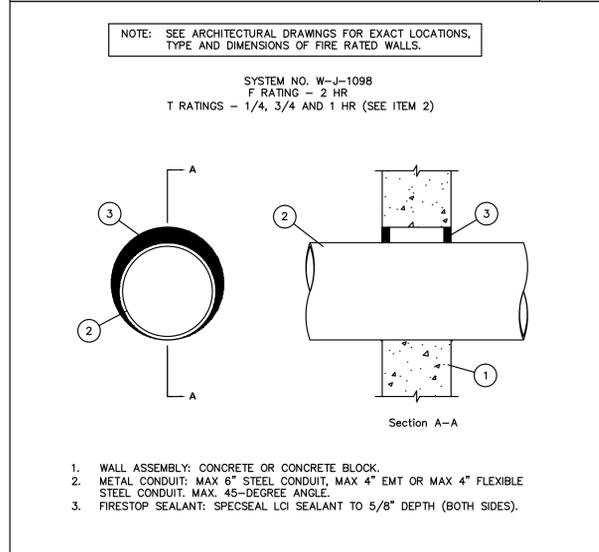
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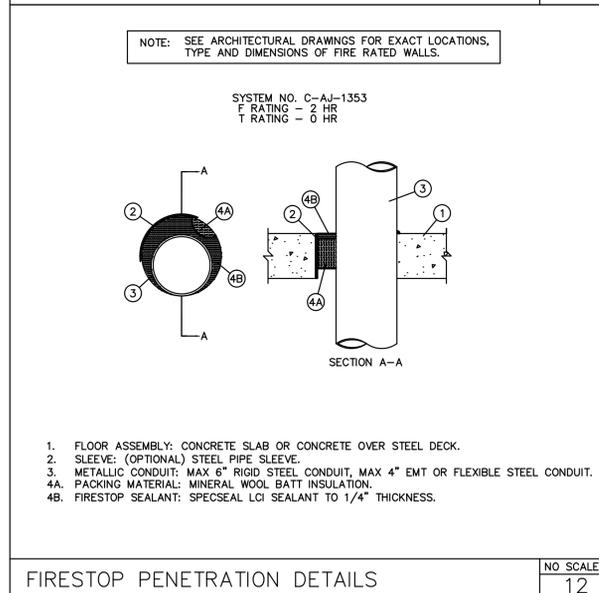
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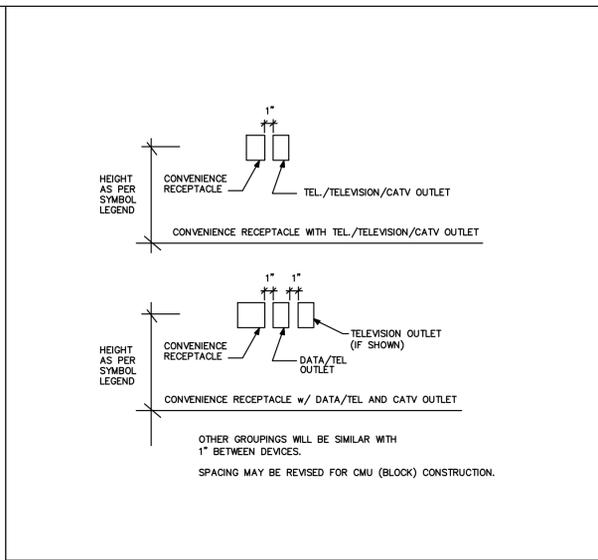
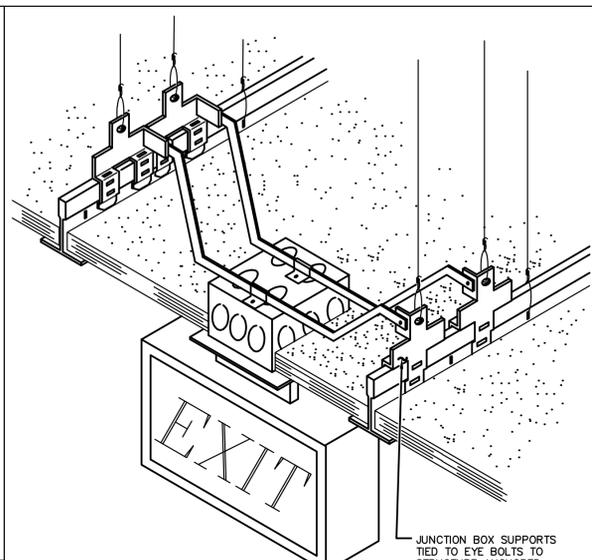
FIRESTOP PENETRATION DETAILS NO SCALE 9



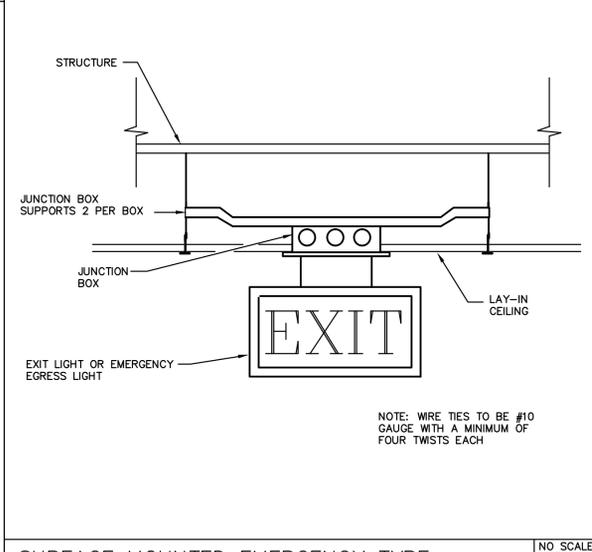
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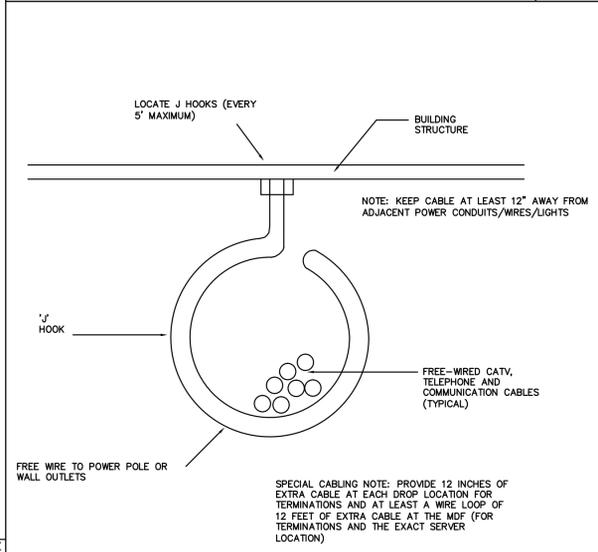
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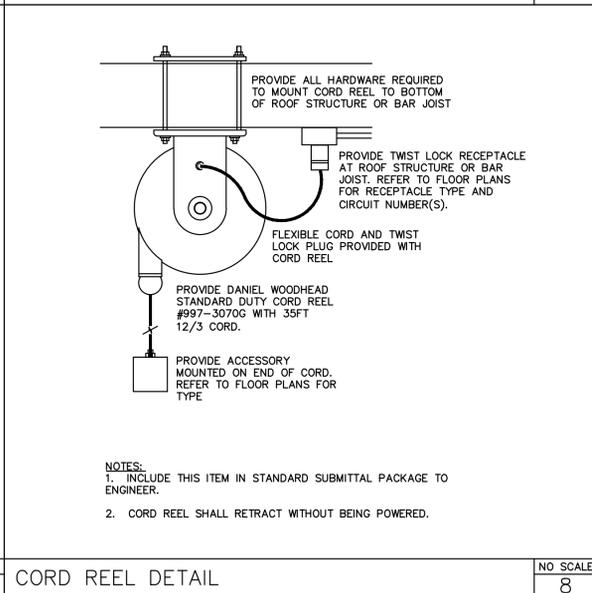
TYPICAL DEVICE GROUPINGS NO SCALE 4



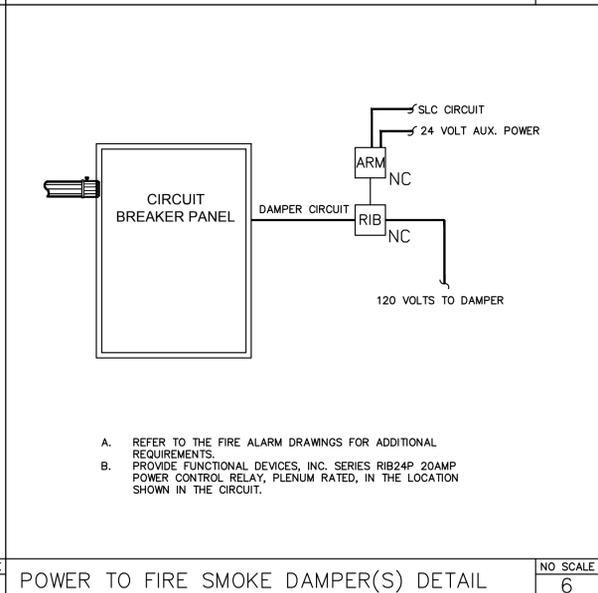
SURFACE MOUNTED EMERGENCY TYPE FIXTURE ON LAY-IN CEILING NO SCALE 7



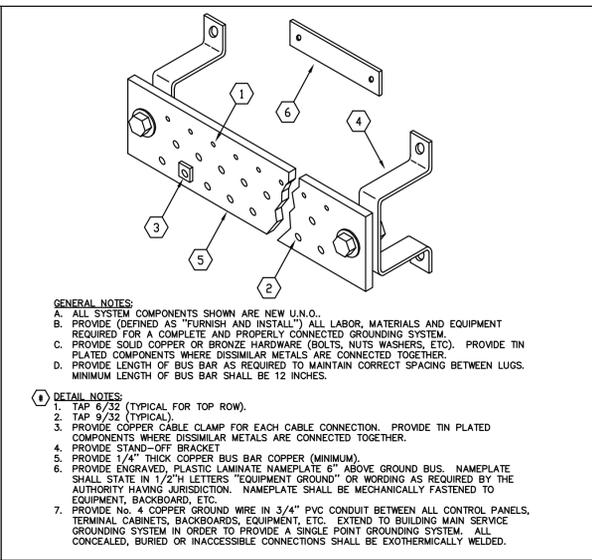
J HOOK DETAIL (CADDY CAT 32) NO SCALE 5



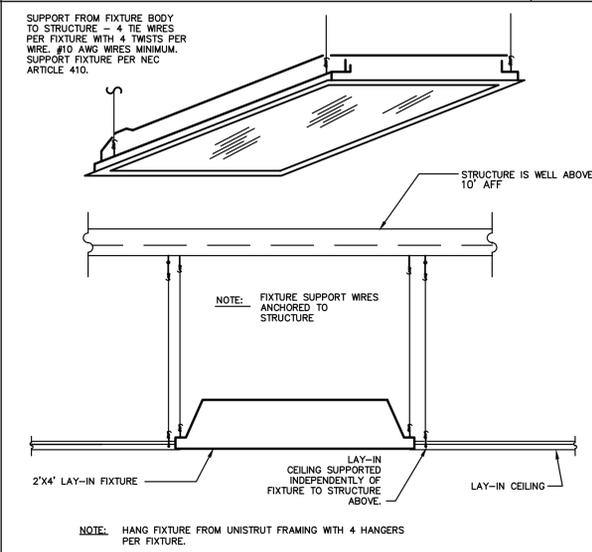
CORD REEL DETAIL NO SCALE 8



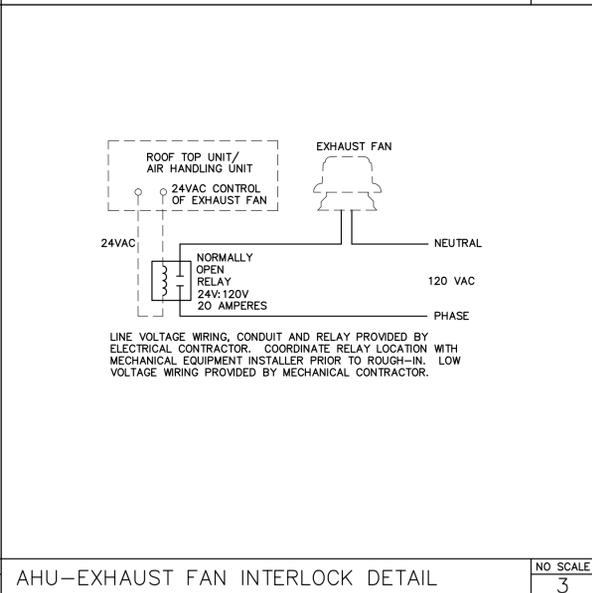
POWER TO FIRE SMOKE DAMPER(S) DETAIL NO SCALE 6



TYPICAL GROUND BUS BAR DETAIL NO SCALE 1



2' BY 4' RECESSED FIXTURE SUPPORT DETAIL NO SCALE 2



AHU-EXHAUST FAN INTERLOCK DETAIL NO SCALE 3

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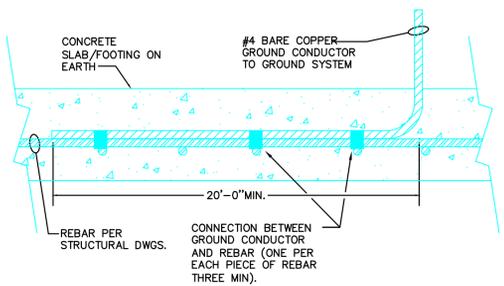
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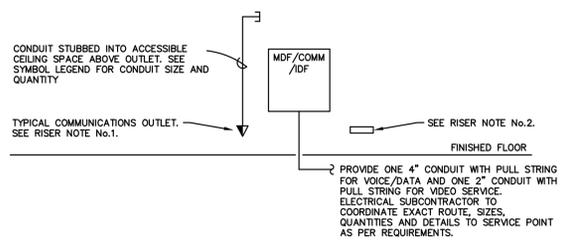
ELECTRICAL
DETAILS

E501



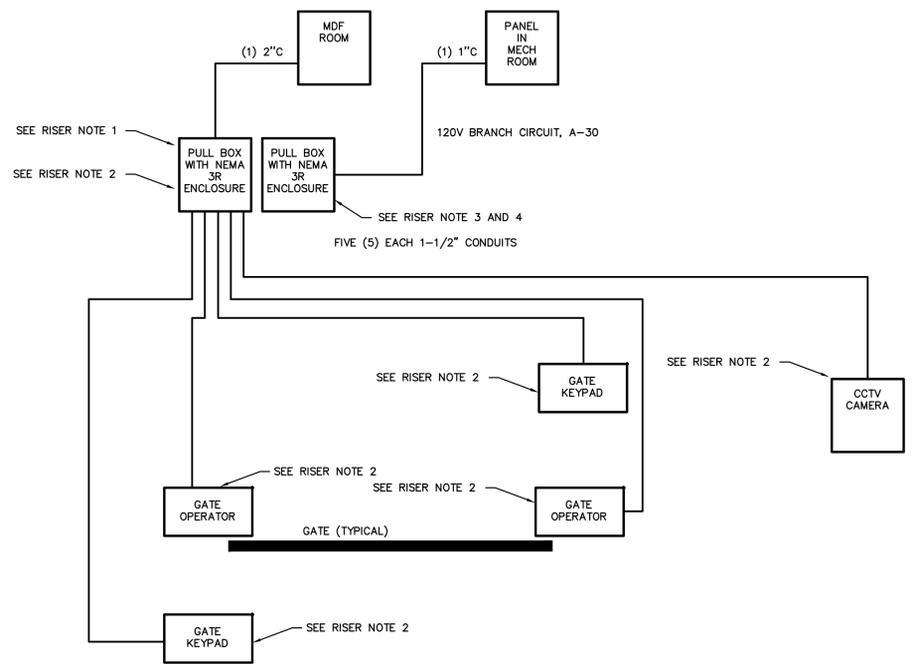
TYPICAL CONCRETE ENCASED ELECTRODE DETAIL

NO SCALE
2



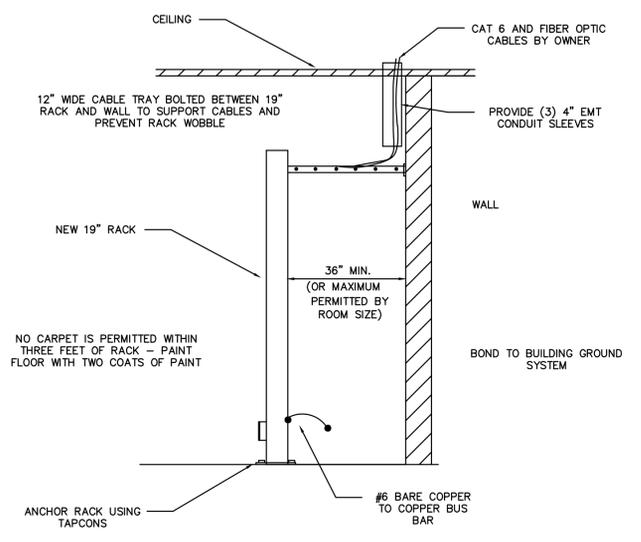
COMMUNICATIONS RACEWAY RISER DIAGRAM

NO SCALE
6



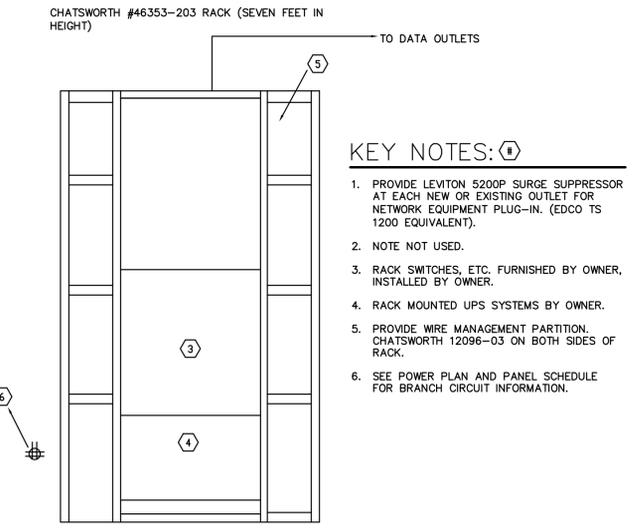
MOTOR OPERATED GATE COMMUNICATIONS RACEWAY ONE-LINE DIAGRAM

NO SCALE
7



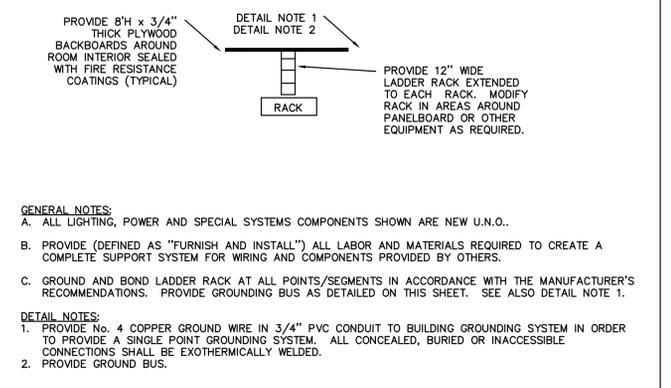
DATA RACK SIDE ELEVATION DETAIL - MDF

NO SCALE
5



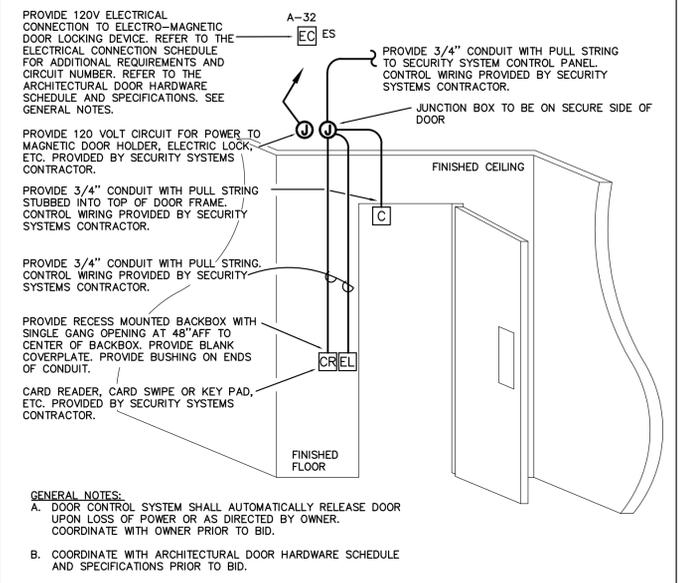
DATA RACK FRONT ELEVATION DETAIL - MDF

NO SCALE
4



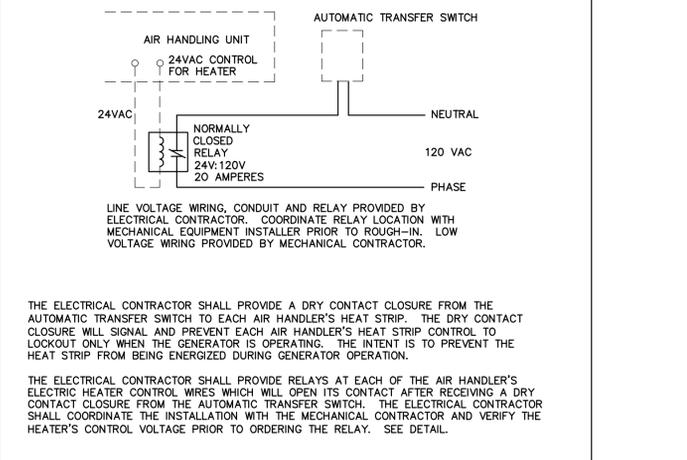
MDF ROOM

NO SCALE
1



ACCESS CONTROL SYSTEM DETAILS

NO SCALE
3



AHU ELECTRIC HEAT LOCKOUT DURING GENERATOR OPERATION

NO SCALE
8

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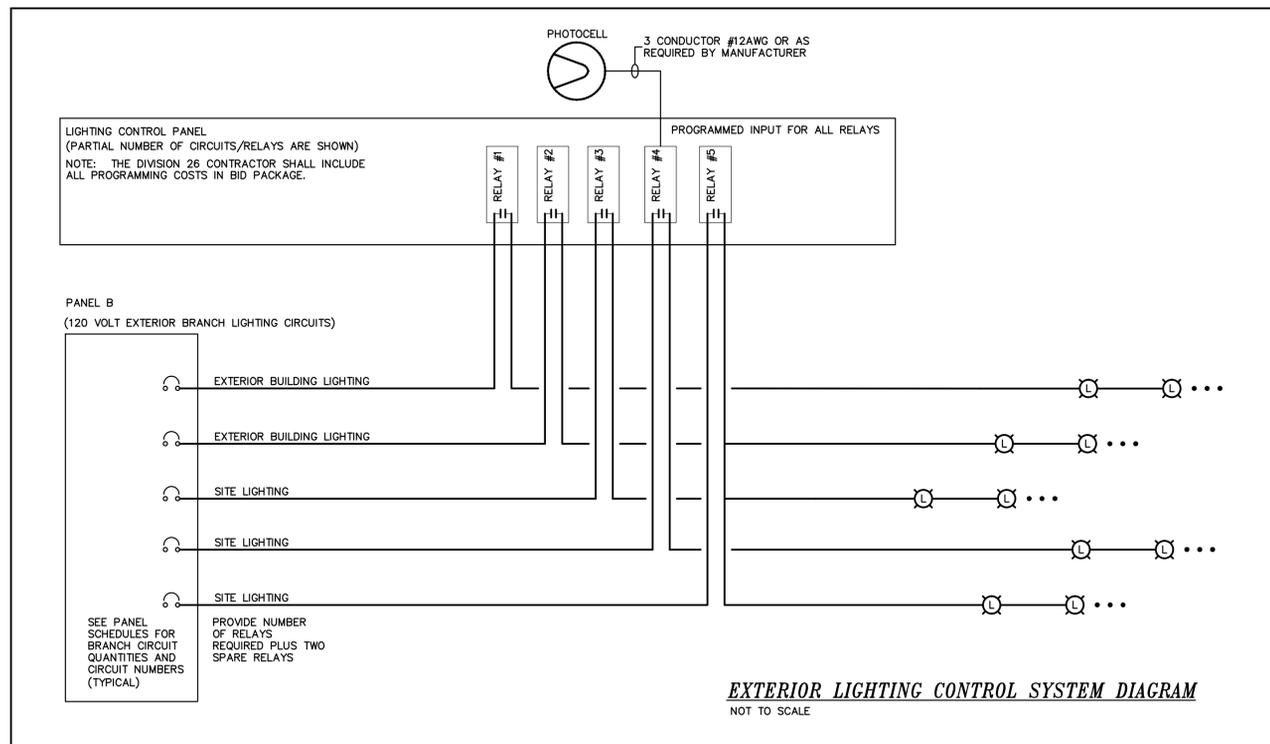
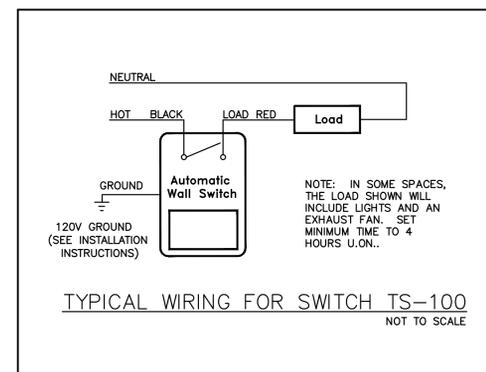
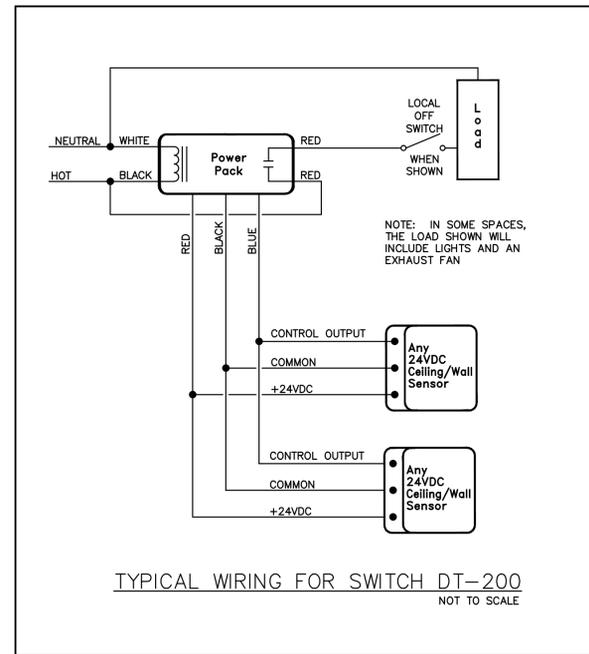
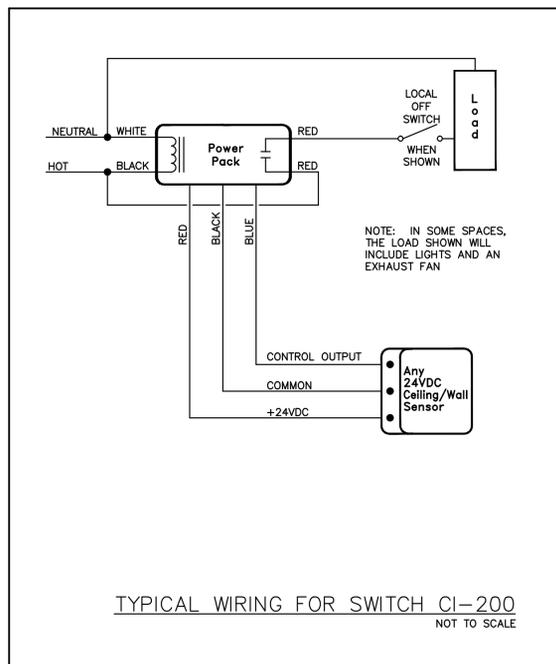
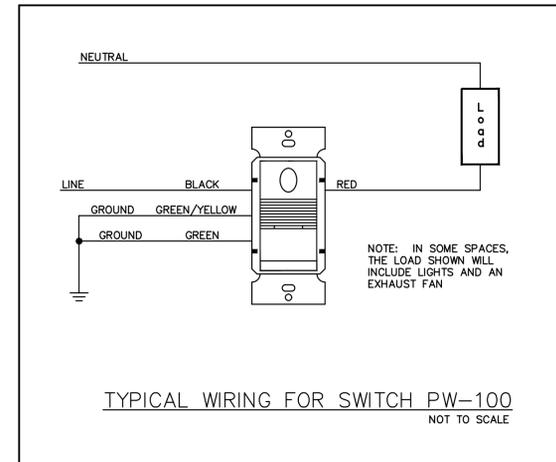
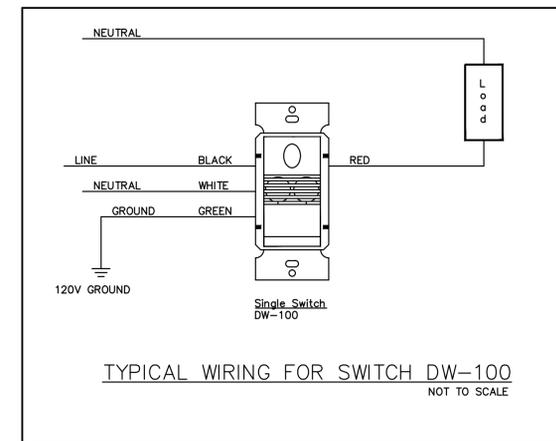
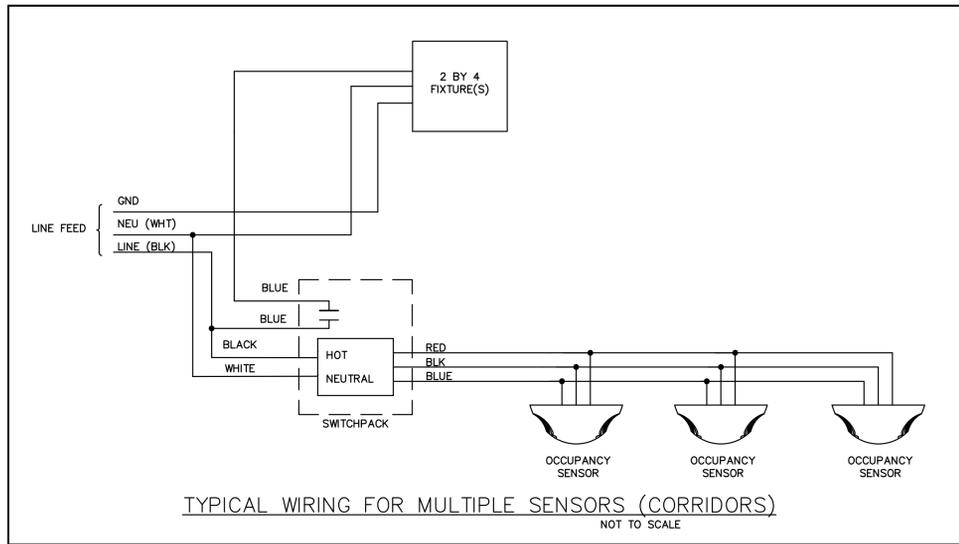
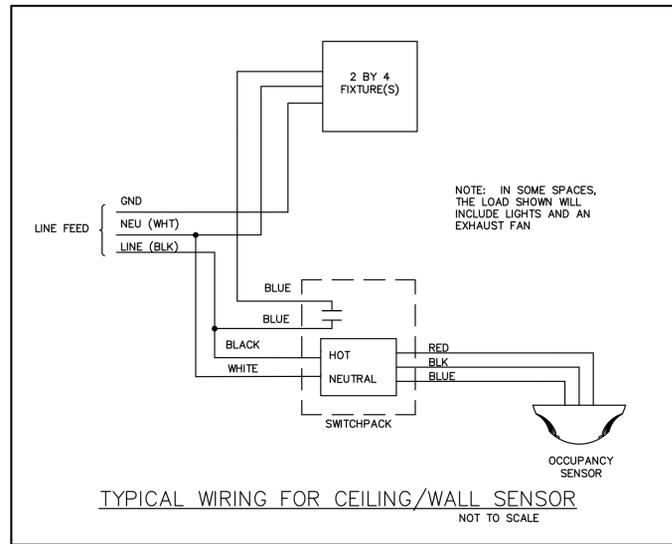
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ELECTRICAL
DETAILS

E502



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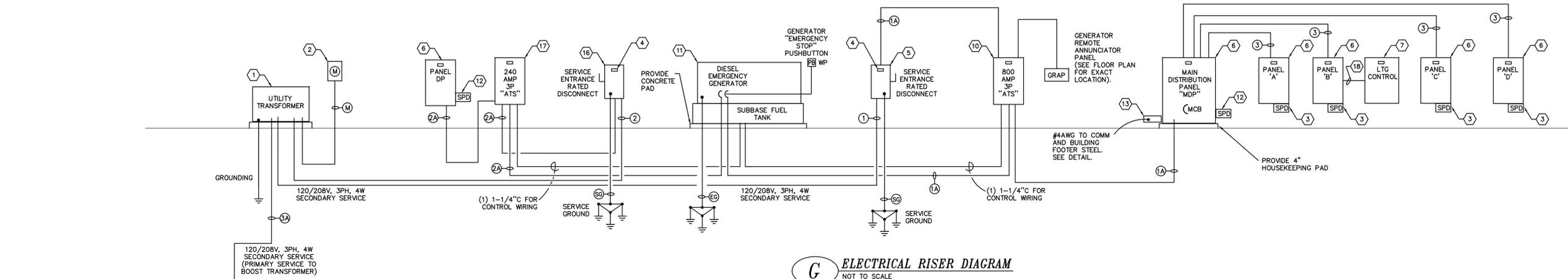
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LIGHTING CONTROL
DETAILS

E503

100% Construction Documents



KEY NOTES:

- UTILITY COMPANY TRANSFORMER. SEE SITE PLAN FOR PROPOSED LOCATION. CONTRACTOR SHALL PROVIDE UNDERGROUND SECONDARY SERVICE LATERAL FROM TRANSFORMER TO SERVICE ENTRANCE IN ACCORDANCE WITH THE N.E.C. AND ALL UTILITY COMPANY REQUIREMENTS. COORDINATE TRANSFORMER LOCATION AND ALL CONTRACTOR PROVIDED REQUIREMENTS WITH UTILITY COMPANY PRIOR TO BID.
- UTILITY COMPANY SELF-CONTAINED METER OR CURRENT TRANSFORMERS, ETC. SEE SITE PLAN FOR PROPOSED LOCATION. PROVIDE CONCRETE PEDESTAL, NEMA-3R ENCLOSURE(S), METER SOCKET AND ALL ASSOCIATED WIRING, CONDUIT, MOUNTING HARDWARE, ETC. COORDINATE METER LOCATION AND ALL CONTRACTOR PROVIDED REQUIREMENTS WITH UTILITY COMPANY PRIOR TO BID. MODIFY LOCATION AS REQUIRED TO COMPLY WITH UTILITY COMPANY REQUIREMENTS.
- PROVIDE 100KA PER PHASE (MINIMUM) SURGE PROTECTION DEVICE (SPD) CLOSE NIPPLED TO EQUIPMENT. PROVIDE LEA SP100 SERIES No. SP100-208/3PH DEVICE. PROVIDE No.6 SOLID INSULATED COPPER CONDUCTORS IN 1-1/4" CONDUIT BETWEEN "SPD" AND EQUIPMENT. DO NOT EXTEND MANUFACTURERS WIRE LEADS. KEEP LEAD LENGTHS AS SHORT AS POSSIBLE. BRAID ALL LEADS TOGETHER AND BIND WITH THE WRAPS ON 3" CENTERS (MAX.). COORDINATE QUANTITY OF REQUIRED CONDUCTORS WITH MANUFACTURER'S INSTALLATION INSTRUCTIONS AND WIRING DIAGRAMS.
- PROVIDE ENGRAVED, PLASTIC LAMINATE NAMEPLATE ON ALL PANELBOARDS, CONTROL PANELS, TERMINAL CABINETS, DISCONNECT SWITCHES, EQUIPMENT, ETC. NAMEPLATE SHALL STATE EQUIPMENT NAME AS INDICATED ON THIS DRAWING, AS REQUIRED TO COMPLY WITH OWNERS STANDARD NAMING CONVENTION OR AS REQUIRED BY THE AUTHORITY HAVING JURISDICTION.
- PROVIDE 800A/3P/800A FUSED, NEMA-3R DISCONNECT SWITCH.
- PROVIDE PANELBOARD.
- PROVIDE LIGHTING CONTROL FOR EXTERIOR LIGHTING CIRCUITS. SEE EXTERIOR LIGHTING CONTROL DETAIL.
- PROVIDE 45KVA, OUTDOOR RATED, 208V TO 240V THREE PHASE BOOST TRANSFORMER WITH WEATHERPROOF FLEXIBLE CONNECTIONS ON CONCRETE PAD. PROVIDE ADDITIONAL NEUTRAL CONDUCTOR AS REQUIRED.
- PROVIDE SERVICE TO LIFT STATION. PROVIDE SEAL-OFF FITTINGS, THREADED METALLIC CONDUIT, ETC.. REMOVE EXISTING SERVICE (TEMPORARY - COORDINATE REQUIREMENTS WITH OWNER) AND PROVIDE FEEDER AS SHOWN.
- PROVIDE 800AMP, 3-POLE, NEMA 3R TRANSFER SWITCH.
- PROVIDE A 230KW @ 0.8 PF (288KVA) STANDBY GENERATOR WITH SUBBASE FUEL TANK. KOHLER POWER SYSTEMS IS THE BASIS OF DESIGN. PROVIDE A KOHLER 230RE02JE GENERATOR WITH A 4UJ13 ALTERNATOR. GENERAC POWER SYSTEMS IS THE PREFERRED OPTION TO THE BASIS OF DESIGN. GENERATOR TO RUN ON DIESEL FUEL PER COUNTY REQUIREMENTS. BOND GENERATOR FRAME TO FUEL TANK AND CASE GROUND AS SPECIFIED BY MANUFACTURER. PROVIDE GENERATOR WITH THE FOLLOWING COMPONENTS:
 - FULL WEATHERPROOF ENCLOSURE
 - 600 AMPERE OUTPUT CIRCUIT BREAKER
 - 225 AMPERE OUTPUT CIRCUIT BREAKER
 - CRITICAL SILENCER AND MAXIMUM SOUND ATTENUATION PACKAGE AS OFFERED BY SUPPLIER
 - 750-775 GALLON SUBBASE FUEL TANK (GENERATOR TO CONSUME 16 GALLONS/HOUR AT 100% LOAD FOR 48 HOURS)
 - A FOOTPRINT NOT LARGER THAN DIMENSIONED ON ELECTRICAL PLAN (HOWEVER, THE ENGINEER RESERVES THE RIGHT TO ADJUST THE SIZE OF THE FOOTPRINT TO THE DEGREE NECESSARY IN ORDER TO PROVIDE THE OWNER THE SPECIFIED TANK CAPACITY AND CLEARANCES REQUIRED. FINAL TANK SIZE AND CONFIGURATION WILL BE MADE AT THE TIME OF FINAL SUBMITTAL REVIEW)
 - FULL LOAD TEST FOR FOUR HOURS MINIMUM
 - ELECTRONIC CONTROLLER
- PROVIDE 200KA PER PHASE (MINIMUM) SURGE PROTECTION DEVICE (SPD) CLOSE NIPPLED TO EQUIPMENT. PROVIDE LEA SP SERIES No. LS200PLUS-208/3PH DEVICE. PROVIDE No.6 SOLID INSULATED COPPER CONDUCTORS IN 1-1/4" CONDUIT BETWEEN "SPD" AND EQUIPMENT. DO NOT EXTEND MANUFACTURERS WIRE LEADS. KEEP LEAD LENGTHS AS SHORT AS POSSIBLE. BRAID ALL LEADS TOGETHER AND BIND WITH THE WRAPS ON 3" CENTERS (MAX.). COORDINATE QUANTITY OF REQUIRED CONDUCTORS WITH MANUFACTURER'S INSTALLATION INSTRUCTIONS AND WIRING DIAGRAMS.
- PROVIDE GROUND BUS IMMEDIATELY ADJACENT TO THE MDP. EXTEND AND TERMINATE THE SERVICE GROUND TO THIS POINT. PROVIDE #4AWG TO COMM GROUND BUS.
- PROVIDE SAFETY SWITCH.
- EXISTING LIFT STATION CONTROLLER TO REMAIN.
- PROVIDE 400A/3P/225A FUSED, NEMA-3R DISCONNECT SWITCH.
- PROVIDE 240AMP, 3-POLE, NEMA 3R TRANSFER SWITCH. SET TIME DELAY FOR THIS TRANSFER SWITCH TO 30 SECONDS AFTER THE 800AMP TRANSFER SWITCH HAS CLOSED. THIS WILL ASSIST IN STEP LOADING THE GENERATOR AND VOLTAGE DIP UPON STARTING.
- ROUTE ALL EXTERIOR LIGHTING CIRCUITS THROUGH LIGHTING CONTROL PANEL.

GENERATOR LOAD SUMMARY	
MAXIMUM CONNECTED GENERATOR LOAD:	325KW
LESS 5-TON BARD UNITS (SHED BY OWNER):	-52KW
LESS ELECTRIC HEAT LOCKED OUT:	-56.5KW
BLASTER (USED ONLY SELDOMLY):	-10.8KW
MAXIMUM CONNECTED LOAD @ 208V, 3-PHASE:	205.7KW
THEREFORE, LOADS REMAIN SATISFACTORY.	

GENERAL NOTES:

- ALL POWER DISTRIBUTION COMPONENTS SHOWN ARE NEW UNLESS NOTED OTHERWISE (U.N.O.).
- PROVIDE (DEFINED AS "FURNISH AND INSTALL") ALL LABOR, MATERIALS AND EQUIPMENT REQUIRED TO CREATE A COMPLETE AND PROPERLY OPERATING ELECTRICAL DISTRIBUTION SYSTEM.
- FLOOR PLANS, RISER DIAGRAM AND SPECIFICATIONS REQUIRE A NEW CODE COMPLIANT POWER DISTRIBUTION SYSTEM.
- PROVIDE AN EQUIPMENT GROUNDING CONDUCTOR IN EACH CONDUIT TO FORM A CONTINUOUS GROUNDING PATH. CONDUIT SHALL NOT BE USED IN PLACE OF A GROUND CONDUCTOR.
- PROVIDE INSULATED PLASTIC BUSHINGS ON ENDS OF ALL CONDUIT
- REFER TO PANELBOARD SCHEDULE(S) FOR ADDITIONAL ELECTRICAL REQUIREMENTS.
- REFER TO THE LIGHTING CONTROL DIAGRAM FOR ADDITIONAL ELECTRICAL REQUIREMENTS.
- PROVIDE LUGGING AT ALL ELECTRICAL GEAR TO MATCH CONDUCTOR SIZING, ETC. SHOWN ON RISER.
- EMERGENCY GENERATOR DESIGN IS BASED ON ARTICLE 702 OF THE NEC FOR OPTIONAL STANDBY LOADS.
- TIE EACH SERVICE GROUND TOGETHER WITH A #3/0AWG COPPER CONDUCTOR, EXOTHERMICALLY WELDED.

FEEDER SCHEDULE							SOME FEEDERS MAY NOT BE USED
FEEDER NUMBER	FEEDER AMPACITY	NUMBER OF SETS	NUMBER AND SIZE OF PHASE CONDUCTORS PER SET	NUMBER AND SIZE OF NEUTRAL CONDUCTORS PER SET	NUMBER AND SIZE OF GROUND CONDUCTORS PER SET	CONDUIT SIZE PER SET	SEE SCHEDULE NOTES
EG	-	1	EQUIPMENT GROUND	-	1#3/0	3/4"	-
M	-	-	PROVIDE NEW WIRING PER UTILITY CO. REQUIREMENTS	-	-	-	2
SG	-	1	SERVICE GROUND	-	1#3/0	3/4"	1
1	855 COPPER	3 SETS OF:	3#300	1#300	...	3"	2
1A	855 COPPER	3 SETS OF:	3#300	1#300	1#1/0	3"	2
2	230 COPPER	1	3#4/0	1#4/0	...	3"	2
2A	230 COPPER	1	3#4/0	1#4/0	1#4	3"	2
3	150 COPPER	1	3#1/0	1#1/0	1#6	2"	2
3A	150 COPPER	1	3#1/0	3#1/0	...	2"	2
4	130 COPPER	1	3#1	1#1	...	2"	2
5	100 COPPER	1	3#3	1#3	1#8	2"	2

- GENERAL NOTES:**
- FEEDER AMPACITY AND CONDUIT FILL BASED ON 167 DEGREE FAHRENHEIT TYPE THHW, THW, THWN, OR XHHW INSULATED CONDUCTORS RATED AT 600V UNLESS NOTED OTHERWISE.
 - FEEDERS HAVE BEEN SIZED FOR VOLTAGE DROP AND SPECIFIC DISTANCES. PROVIDE NEW FEEDERS AT THEIR INDICATED LOCATIONS ONLY.
 - ALL FLOOR, WALL AND ROOF PENETRATIONS MADE FOR NEW ELECTRICAL WORK SHALL MAINTAIN THE INTEGRITY AND FIRESTOP RATING OF THE SURFACE PENETRATED. ALL PENETRATIONS SHALL USE A U.L. APPROVED METHOD OR SYSTEM.
 - PROVIDE UNDERGROUND FEEDERS WITH A WARNING RIBBON PLACED IN TRENCH AT 12 INCHES ABOVE THE UNDERGROUND INSTALLATION. BURY UNDERGROUND FEEDERS, CIRCUITS, ETC. 30 INCHES BELOW FINISHED GRADE TO TOP OF CONDUIT.
- SCHEDULE NOTES: (APPLICABLE WHERE REFERENCED)**
- GROUND TO BUILDING FOUNDATION STEEL AND METAL FRAME OF BUILDING. SEE DETAILS FOR FOUNDATION REBAR CONNECTION. ALL CONCEALED, BURIED OR INACCESSIBLE CONNECTIONS SHALL BE EXOTHERMICALLY WELDED. SEE ELECTRICAL SYMBOL LEGEND FOR ADDITIONAL REQUIREMENTS.
 - PROVIDE WEATHERPROOF ELECTRICAL SERVICE TO EQUIPMENT, INCLUDING, BUT NOT LIMITED TO CONDUIT, FITTINGS, DISCONNECT, ETC.

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TO THE BEST OF MY KNOWLEDGE, SAID PLANS AND SPECIFICATIONS COMPLY WITH ALL APPLICABLE BUILDING CODES.

BRYAN P. ZAPP, P.E.
FL# 46141

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Administration
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Bradenton, FL 34210

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1112 Manatee Avenue West
Bradenton, FL 34208

drawn: JR
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ELECTRICAL
RISERS

E504

**OCCUPANCY SENSOR LEGEND AND SCHEDULE –
MANATEE COUNTY UTILITIES**

TYPE	DESCRIPTION	MANUFACTURER/ CATALOG NUMBER	SEE SCHEDULE NOTES
Ⓟ	FULL-FEATURED SWITCH PACK, UL 2043 PLENUM-RATED, 20AMP RATED AT 277V, ZERO CROSSING CIRCUITRY, LED STATUS LIGHT,	WATTSTOPPER BZ-150 SERIES	1
Ⓢ CI-200-1	CEILING MOUNTED, PASSIVE INFRARED OCCUPANCY SENSOR, 24V, UP TO 360 DEGREES AND 1200 SQUARE FEET OF DETECTION AND ADJUSTABLE "LIGHTS OFF" TIME SELECTION	WATTSTOPPER CI-200 SERIES	1,2
◁ CX-100	CEILING/WALL MOUNTED, PASSIVE INFRARED OCCUPANCY SENSOR, 24V, UP TO 2000 SQUARE FEET OF DETECTION AND ADJUSTABLE "LIGHTS OFF" TIME SELECTION	WATTSTOPPER CX-100 SERIES	1,2
↔ DT-300	CEILING MOUNTED, DUAL TECHNOLOGY OCCUPANCY SENSOR, 24V, UP TO 360 DEGREES AND 1000 SQUARE FEET OF DETECTION AND ADJUSTABLE "LIGHTS OFF" TIME SELECTION	WATTSTOPPER DT-300 SERIES	1,2
D _w DW-100	WALL MOUNTED, DUAL TECHNOLOGY OCCUPANCY SENSOR, 24V, MAJOR AND MINOR MOTION DETECTION AND ADJUSTABLE "LIGHTS OFF" TIME SELECTION	WATTSTOPPER CX-100 SERIES	1,2
Ⓢ HB-300-L3	CEILING MOUNTED, HIGH BAY TYPE APPLICATION, PASSIVE INFRARED OCCUPANCY SENSOR, 24V, UP TO 360 DEGREES AND ADJUSTABLE "LIGHTS OFF" TIME SELECTION. PROVIDE HBL3 LENS.	WATTSTOPPER HB-300-L3 SERIES	1,2
P _w PW-100	WALL MOUNTED, PASSIVE INFRARED OCCUPANCY SENSOR, 24V, MAJOR AND MINOR MOTION DETECTION AND ADJUSTABLE "LIGHTS OFF" TIME SELECTION	WATTSTOPPER PW-100 SERIES	1,2
T _s TS-400	WALL MOUNTED, DIGITAL TIME SWITCH, 120V AND ADJUSTABLE "LIGHTS OFF" TIME SELECTION. SET TO 2 HOURS U.O.N.	WATTSTOPPER TS-400 SERIES	1,2
◁ WPIR	CEILING MOUNTED, PASSIVE INFRARED OCCUPANCY SENSOR, 24V, UP TO 300 SQUARE FEET OF DETECTION AND ADJUSTABLE "LIGHTS OFF" TIME SELECTION	WATTSTOPPER WPIR SERIES	1,2
↔ WT-1100	CEILING MOUNTED, ULTRASONIC OCCUPANCY SENSOR, 24V, TWO-SIDED, UP TO 360 DEGREES AND 1100 SQUARE FEET OF DETECTION AND ADJUSTABLE "LIGHTS OFF" TIME SELECTION	WATTSTOPPER WT-1100 SERIES	1,2
↔ WT-2200	CEILING MOUNTED, ULTRASONIC OCCUPANCY SENSOR, 24V, TWO-SIDED, UP TO 360 DEGREES AND 2200 SQUARE FEET OF DETECTION AND ADJUSTABLE "LIGHTS OFF" TIME SELECTION	WATTSTOPPER WT-2200 SERIES	1,2
↔ WT-2250	CEILING MOUNTED, ULTRASONIC OCCUPANCY SENSOR, 24V, TWO-SIDED, UP TO 360 DEGREES AND 90 LINEAR FEET OF DETECTION AND ADJUSTABLE "LIGHTS OFF" TIME SELECTION	WATTSTOPPER WT-2250 SERIES	1,2
↔ WT-600	CEILING MOUNTED, ULTRASONIC OCCUPANCY SENSOR, 24V, TWO-SIDED, UP TO 360 DEGREES AND 600 SQUARE FEET OF DETECTION AND ADJUSTABLE "LIGHTS OFF" TIME SELECTION	WATTSTOPPER WT-600 SERIES	1,2

GENERAL NOTES:

- ALL SENSOR LOCATIONS ARE APPROXIMATE. REFER TO MANUFACTURER'S INSTALLATION INSTRUCTIONS PRIOR TO INSTALLATION.
- ULTRASONIC CEILING MOUNTED SENSORS REQUIRE THEY BE LOCATED NO CLOSER THAN SIX FEET TO HVAC SUPPLY/RETURN REGISTERS.
- THE DIVISION 26 CONTRACTOR IS RESPONSIBLE FOR THE FINAL PROPER SENSITIVITY AND TIME DELAY SETTINGS, VERIFICATION OF MANUFACTURER'S RECOMMENDED PLACEMENT, AND FIELD VERIFICATION OF CIRCUITS WITH RESPECT TO POWER PACK PLACEMENT. IF NO DIRECTION IS GIVEN AND UNLESS OTHERWISE DIRECTED BY THE OWNER/TENANT, SET THE SENSITIVITY TO MAXIMUM AND THE TIME DELAY TO 30 MINUTES FOR EACH SENSOR.
- PROVIDE A COMPLETE SUBMITTAL PACKAGE TO THE ENGINEER INCLUDING .DWG FILES FOR WRING DIAGRAMS.
- PROVIDE ACCESS DOOR OR PANELS TO POWER PACKS ABOVE GYPBOARD CEILINGS.
- PROVIDE A CIRCULAR ORANGE (DOT) STICKER ON THE GRID OR ACCESS DOOR TO MARK THE LOCATION(S) OF THE POWER PACK(S) FOR FUTURE OWNER/TENANT MAINTENANCE.
- FOR ALL CEILING MOUNTED DEVICES: CENTER DEVICES IN THE CEILINGS TO THE GREATEST EXTENT POSSIBLE.

SCHEDULE NOTES (APPLICABLE WHERE REFERENCED):

- THE DIVISION 26 CONTRACTOR IS RESPONSIBLE FOR THE FINAL FIELD VERIFICATION OF THE REQUIRED NUMBER OF POWER PACKS. THE DIVISION 26 CONTRACTOR SHOULD PROVIDE:
 - PROVIDE ONE POWER PACK PER SENSOR FOR EACH SPACE/AREA THAT IS TO BE CONTROLLED. PROVIDE AN ADDITIONAL POWER PACK FOR EACH EXHAUST FAN IN THE SAME SPACE AS THE SENSOR. WIRE THESE IN PARALLEL.
 - IF REQUIRED, PROVIDE ADDITIONAL POWER PACKS WHERE THE MAXIMUM NUMBER OF SENSORS THAT CAN BE WIRED IN PARALLEL TO A SINGLE POWER PACK IS DEPENDENT ON SENSOR MODEL (SEE INDIVIDUAL DATA SHEETS FOR mA CONSUMPTION).
 - DEVICE SHOULD BE WHITE IN COLOR – FINAL COLOR SELECTION BY ARCHITECT.

**LIGHTING FIXTURE SCHEDULE –
MANATEE COUNTY UTILITIES**

FIXTURE TYPE	FIXTURE DESCRIPTION	MANUFACTURER/ CATALOG NUMBER	VOLTS	LAMP INFORMATION		TOTAL INPUT WATTS	SEE SCHEDULE NOTE
				QTY	TYPE		
A	2X4 FLUORESCENT RECESSED FIXTURE WITH ELECTRONIC BALLAST	COOPER 2GRB-332-UNV-ER81-U	120	2	32W T8-4100K	58W	-
B	2X4 FLUORESCENT RECESSED FIXTURE WITH ELECTRONIC BALLAST	CORELITE R3-WC-2T8-UNV-24-ER8	120	2	32W T8-4100K	58W	-
C	2X2 FLUORESCENT RECESSED FIXTURE WITH ELECTRONIC BALLAST	CORELITE R3-WC-2T8-UNV-22-ER8	120	2	17W T8-4100K	30W	-
D	1X4 INDUSTRIAL FLUORESCENT FIXTURE WITH SILVER REFLECTORS AND HIGH BALLAST FACTOR ELECTRONIC BALLAST	COOPER DIS5-232-UNV-ER8H-GL	120	2	32W T8-4100K	77W	5,8
E	1X4 FLUORESCENT RECESSED FIXTURE WITH ELECTRONIC BALLAST	DAYBRITE 1TG232-01-UNV	120	2	32W T8-4100K	58W	1
F	1X4 VAPORTITE FLUORESCENT FIXTURE WITH ELECTRONIC BALLAST	METALUX VT2-232LEX-UNV-GL-ER8	120	2	32W T8-4100K	58W	8
G	4 FT. FLUORESCENT WALL BRACKET FIXTURE WITH ELECTRONIC BALLAST	DAYBRITE WB232-WO-UNV-1/2EB	120	2	32W T8 4100K	58W	-
J	DROP OPAL FLUORESCENT SHOWER DOWNLIGHT WITH ELECTRONIC BALLAST, WET LOCATION LISTED	HALO H802E	120	2	18W DTT-4100K	39W	-
K	4' LONG INDUSTRIAL FLUORESCENT FIXTURE WITH ELECTRONIC BALLAST	METALUX IA-SS-232-120V-ER81-GL	120	2	32W T8-4100K	65W	-
FF	ARCHITECTURAL WALL LUMINAIRE, LED, COLD WEATHER BATTERY PACK WITH BACK BOX, WET LOCATION LISTED	INVUE ENT-A01-LEDE1-BL4-DP-CWB	120	NA	LED BAR	26W	3,7
FG	ARCHITECTURAL WALL LUMINAIRE, 150W METAL HALIDE, TYPE III UPLIGHT DISTRIBUTION, WET LOCATION LISTED	INVUE ENT-150MH-MT-3SG-DP-F	120	1	150W MH	173W	3,7
SL1	ARCHITECTURAL AREA LUMINAIRE, SQUARE IN SHAPE, MEDIUM IN SIZE, PULSE START METAL HALIDE, WET LOCATION LISTED	MCGRAW-EDISON MC-GSM-400-MP-3S-862	120	1	400 MH	460	3,6,7
SL2	ARCHITECTURAL AREA LUMINAIRE, SQUARE IN SHAPE, MEDIUM IN SIZE, PULSE START METAL HALIDE, WET LOCATION LISTED	MCGRAW-EDISON MC-GSM-400-MP-5S-864	120	1	400 MH	460	3,6,7
SL3	ARCHITECTURAL AREA LUMINAIRE, SQUARE IN SHAPE, MEDIUM IN SIZE, PULSE START METAL HALIDE, WET LOCATION LISTED	MCGRAW-EDISON MC-GSM-400-MP-5S-822	120	1	400MH	460	3,6,7
XEL	COMBINATION EXIT SIGN WITH GREEN LETTERS AND DUAL HEAD EMERGENCY LIGHTING FIXTURE WITH BATTERY PACK	MCPHILBEN VCGW SERIES	120	-	FACTORY INSTALLED LAMPS	22W	2,3,4
EL	DUAL HEAD EMERGENCY LIGHTING FIXTURE WITH BATTERY PACK	COOPER CC4-WH [29-84]	120	-	FACTORY INSTALLED LAMPS	20W	-
NX	PHOTOLUMINESCENT SINGLE FACE "NOT AN EXIT" SIGN, UNIVERSAL MOUNT, RED LETTERS ON WHITE BACKGROUND, 7" BY 10"	EMEDCO SKU NUMBER 16421GGHEDSGH	NONE	-	NA	0	2,3,4
X,X1,X2	SINGLE FACE EXIT SIGN WITH DEEP PREMIUM GREEN LETTERS AND BATTERY PACK	SURE-LITES LPX700GWH	120	-	FACTORY INSTALLED LAMPS	4.0W	2,3,4

GENERAL NOTES:

- FIXTURES PROPOSED AS EQUIVALENT TO SPECIFIED FIXTURES SHALL BE JUDGED ON EFFICIENCY, PERFORMANCE AND CONSTRUCTION, NOT FIXTURE CONSTRUCTION ALONE.
- FIXTURES SPECIFIED WITH GLASS LENSES OR DIFFUSERS (TYPICALLY FIXTURES WITH H.I.D. LAMPS) SHALL BE PROVIDED WITH GLASS LENSES OR DIFFUSERS. POLYCARBONATE, ACRYLIC, LEXAN, ETC. ARE NOT ACCEPTABLE.
- LIGHTING FIXTURE SUBMITTAL CUT SHEETS SHALL INCLUDE INFORMATION ON HOW THE FIXTURE CATALOG NUMBER IS COMPILED AND SHALL INCLUDE CUT SHEETS OF ALL OPTIONAL COMPONENTS, SUCH AS DRY WALL FRAME-IN-KITS, REMOTE BATTERY PACKS WITH TEST KITS, INPUT WATTS, BALLAST FACTOR, SHIELD INFORMATION, ETC.
- LIGHTING FIXTURES SHALL BE SUPPORTED PER NEC ARTICLE 410. FIXTURES MOUNTED IN SUSPENDED CEILINGS SHALL BE ATTACHED OR CLIPPED TO THE SUSPENDED CEILING PER N.E.C. SECTION 410.16(C).
- PROVIDE PROGRAMMED START ELECTRONIC BALLAST(S) FOR ALL FLUORESCENT LIGHTING FIXTURES CONTROLLED BY OCCUPANCY SENSORS.
- PROVIDE FLUORESCENT AND H.I.D. FIXTURES MOUNTED OUTSIDE BUILDING WITH A COLD WEATHER BALLAST REGARDLESS OF FIXTURE CATALOG NUMBER NOMENCLATURE.
- PROVIDE FLUORESCENT AND H.I.D. FIXTURES WITH INLINE FUSE(S) LOCATED ON LINE SIDE OF FIXTURE BALLAST REGARDLESS OF FIXTURE CATALOG NUMBER. FUSES FOR POLE MOUNTED LIGHTING FIXTURES SHALL BE LOCATED IN HAND HOLE AT BASE OF POLE.
- ALL FLUORESCENT LAMPS SHALL BE OF THE LOW MERCURY TYPE, SUCH THAT THE AVERAGE MERCURY CONTENT IS LESS THAN 70 PICOGRAMS OF MERCURY PER LUMEN-HOUR OF LIFE.
- THE ONLY LIGHTING FIXTURE MANUFACTURERS (AND THEIR ASSOCIATED DOWNSTREAM PRODUCT LINES) APPROVED FOR THIS PROJECT INCLUDE DAY-BRITE, COOPER AND HUBBELL LIGHTING. IT WILL BE ACCEPTABLE TO PROVIDE THE FIXTURE EQUIVALENTS FROM THE OTHER TWO LISTED MANUFACTURERS WHERE NOT LISTED ABOVE. HOWEVER, THE ENGINEER RESERVES THE RIGHT TO DETERMINE FIXTURE EQUIVALENTS BASED ON THE CATALOG SERIES AND THE ENGINEER'S JUDGMENT AND MAY REJECT FIXTURES ON THESE GROUNDS.
- AREA LIGHTING LUMINAIRES SHALL BE EQUIPPED WITH FIELD ADJUSTABLE SHIELDS IN ORDER TO ASSIST WITH BEING IN COMPLIANCE WITH THE MANATEE COUNTY LIGHTING ORDINANCE. THE ENGINEER RESERVES THE RIGHT TO JUDGE THE FIXTURES SUBMITTED AND WILL BE THE FINAL ARBITER AS TO WHICH FIXTURES MAY BE ACCEPTABLE TO THE OWNER. THE LAST THREE DIGITS OF THE CATALOG NUMBER SHOWN ARE THE REAR, SIDE AND FRONT SHIELD DIMENSIONS. FOR EXAMPLE, -862 IS A REAR SHIELD OF 8 INCHES, SIDE SHIELDS OF 6 INCHES AND FRONT SHIELD OF 2 INCHES.
- IT IS ANTICIPATED THAT ALL EXTERIOR LIGHTING FIXTURES ARE TO SELECTED WITH A DARK PLATINUM COLOR AND FINISH. THIS WILL BE CONFIRMED AT THE SUBMITTAL PHASE BY THE ARCHITECT AND ENGINEER. NO CUSTOM COLORS ARE ANTICIPATED.
- THE EXTERIOR, POLE MOUNTED FIXTURES HAVE EXTENSIVE SHIELD CONFIGURATIONS. THESE SHIELDS MAY NEED MULTIPLE ADJUSTMENTS AS REQUESTED BY THE AUTHORITY HAVING JURISDICTION. INCLUDE MULTIPLE FIELD ADJUSTMENTS IN BID (UP TO FOUR EACH).
- ALL EXTERIOR LIGHTING FIXTURES SHALL CONFORM (TO THE GREATEST EXTENT POSSIBLE) TO THE MANATEE COUNTY LIGHTING ORDINANCE 05-37.

SCHEDULE NOTES: (APPLICABLE WHERE REFERENCED)

- PROVIDE GYPBOARD FRAMING KIT.
- CONTRACTOR SHALL COORDINATE DIRECTION OF ARROW(S) ON FACE OF EXIT SIGN(S) PRIOR TO ORDERING SIGNS. SEE LIGHTING FLOOR PLANS FOR QUANTITY AND DIRECTION OF ARROW(S).
- VERIFY FIXTURE COLOR AND OPTIONS WITH ARCHITECT/GENERAL CONTRACTOR PRIOR TO PLACING FINAL ORDER.
- COORDINATE QUANTITY AND DIRECTION OF ARROW(S) PRIOR TO PLACING ORDER.
- PROVIDE A BALLAST WITH A BALLAST FACTOR OF AT LEAST 1.13.
- PROVIDE 20 FOOT LONG TAPERED CONCRETE POLE FOR A FIXTURE MOUNTING HEIGHT OF 16 FEET ABOVE GRADE. BURY POLE BASE 4'-0" BELOW FINISHED GRADE. PROVIDE POLE TOP PIPE TENON. FIXTURE AND ARM ASSEMBLY SHALL BE RATED TO WITHSTAND 130 MPH WIND SPEED AT IMPORTANCE FACTOR OF 1.15, CATEGORY "C" PER ASCE 7-93. PROVIDE SLIP FITTER WITH MOUNTING ARM. REFER TO DETAILS FOR ADDITIONAL POLE REQUIREMENTS.
- FINAL COLOR SELECTION BY ARCHITECT (FIXTURE AND POLE).
- PROVIDE STRUT AS REQUIRED TO INSTALL FIXTURES AND SENSORS, ETC.

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**LIGHTING
SCHEDULES**

E601

BRANCH CIRCUIT CONDUCTORS IN CONDUIT SCHEDULE

CB	POLE	WIRE SIZE (BASED UPON TYPE THW)	CONDUIT	PHASE
15/20A	1	2-#12, 1-#12 EQUIPMENT GROUND	3/4"	1Ø 2W
15/20A	2	2-#12, 1-#12 EQUIPMENT GROUND	3/4"	1Ø 2W
15/20A	3	3-#12, 1-#12 EQUIPMENT GROUND	3/4"	3Ø 3W
25A	1	2-#10, 1-#10 EQUIPMENT GROUND	3/4"	1Ø 2W
25A	2	2-#10, 1-#10 EQUIPMENT GROUND	3/4"	1Ø 2W
25A	3	3-#10, 1-#10 EQUIPMENT GROUND	3/4"	3Ø 3W
30A	1	2-#10, 1-#10 EQUIPMENT GROUND	3/4"	1Ø 2W
30A	2	2-#10, 1-#10 EQUIPMENT GROUND	3/4"	1Ø 2W
30A	3	3-#10, 1-#10 EQUIPMENT GROUND	3/4"	3Ø 3W
30A	3	3-#10, 1-#10 N., 1-#10 EQUIPMENT GROUND	3/4"	3Ø 4W
35A	3	3-#8, 1-#10 EQUIPMENT GROUND	1"	3Ø 3W
35A	3	3-#8, 1-#8 N., 1-#10 EQUIPMENT GROUND	1"	3Ø 4W
40A	2	2-#8, 1-#10 EQUIPMENT GROUND	1"	1Ø 2W
40A	3	3-#8, 1-#10 EQUIPMENT GROUND	1"	3Ø 3W
40A	3	3-#8, 1-#8 N., 1-#10 EQUIPMENT GROUND	1"	3Ø 4W
45A	2	2-#8, 1-#10 EQUIPMENT GROUND	1"	1Ø 2W
45A	3	3-#8, 1-#10 EQUIPMENT GROUND	1"	3Ø 3W
45A	3	3-#8, 1-#8 N., 1-#10 EQUIPMENT GROUND	1"	3Ø 4W
50A	2	2-#8, 1-#10 EQUIPMENT GROUND	1"	1Ø 2W
50A	3	3-#8, 1-#10 EQUIPMENT GROUND	1"	3Ø 3W
50A	3	3-#8, 1-#8 N., 1-#10 EQUIPMENT GROUND	1"	3Ø 4W
60A	2	2-#6, 1-#10 EQUIPMENT GROUND	1"	1Ø 2W
60A	3	3-#6, 1-#10 EQUIPMENT GROUND	1"	3Ø 3W
60A	3	3-#6, 1-#6 N., 1-#10 EQUIPMENT GROUND	1-1/4"	3Ø 4W
70A	2	2-#4, 1-#8 EQUIPMENT GROUND	1"	1Ø 2W
70A	3	3-#4, 1-#8 EQUIPMENT GROUND	1-1/4"	3Ø 3W
70A	3	3-#4, 1-#4 N., 1-#8 EQUIPMENT GROUND	1-1/4"	3Ø 4W
80A	2	2-#4, 1-#8 EQUIPMENT GROUND	1"	1Ø 2W
80A	3	3-#4, 1-#8 EQUIPMENT GROUND	1-1/4"	3Ø 3W
80A	3	3-#4, 1-#4 N., 1-#8 EQUIPMENT GROUND	1-1/4"	3Ø 4W
90A	2	2-#3, 1-#8 EQUIPMENT GROUND	1"	1Ø 2W
90A	3	3-#3, 1-#8 EQUIPMENT GROUND	1-1/4"	3Ø 3W
90A	3	3-#3, 1-#4 N., 1-#8 EQUIPMENT GROUND	1-1/4"	3Ø 4W
100A	2	2-#3, 1-#8 EQUIPMENT GROUND	1-1/4"	1Ø 2W
100A	3	3-#3, 1-#8 EQUIPMENT GROUND	1-1/4"	3Ø 3W
100A	3	3-#3, 1-#3 N., 1-#8 EQUIPMENT GROUND	1-1/4"	3Ø 4W
150A	2	2-#1/0, 1-#6 EQUIPMENT GROUND	1-1/2"	1Ø 2W

GENERAL NOTES:

- INCREASE WIRE ONE SIZE FOR SINGLE PHASE BRANCH CIRCUITS GREATER THAN 75 FEET IN CIRCUIT LENGTH.
- INCREASE WIRE ONE SIZE FOR THREE PHASE BRANCH CIRCUITS GREATER THAN 165 FEET IN CIRCUIT LENGTH.
- PROVIDE 600V INSULATED COPPER CONDUCTORS FOR ALL WIRE SHOWN IN THIS SCHEDULE.
- PROVIDE ADDITIONAL NEUTRAL CONDUCTOR FOR BRANCH CIRCUIT WHEN A BUCK OR BOOST TRANSFORMER IS REQUIRED OR HAS BEEN SPECIFIED.

ELECTRICAL CONNECTION GENERAL NOTES:

- PROVIDE INTERCONNECTION OF ALL EQUIPMENT OPERATING COMPONENTS REQUIRING ELECTRICAL CONNECTION, SUCH AS MOTOR STARTERS, VARIABLE SPEED DRIVES, DISCONNECT SWITCHES, EQUIPMENT CONTROLLERS, ETC. AS REQUIRED BY ALL TRADES.
 - DISCONNECT SWITCHES FOR 208/240V EQUIPMENT SHALL BE RATED 240V.
 - DISCONNECT SWITCHES SHALL BE HEAVY DUTY, NON-FUSED, NEMA-1 UNLESS NOTED OTHERWISE. FUSED SWITCHES SHALL BE PROVIDED WITH DUAL-ELEMENT FUSES SIZED PER THE EQUIPMENT MANUFACTURERS RECOMMENDATION.
 - PROVIDE ELECTRICAL SERVICE TO SCHEDULED EQUIPMENT. RECOORDINATE EXACT SERVICE SIZE (I.E. CIRCUIT BREAKER, FEEDER, DISCONNECT SWITCH, ETC) WITH APPROVED EQUIPMENT SHOP DRAWINGS PRIOR TO ROUGH-IN. MODIFY ELECTRICAL SERVICE AS REQUIRED TO SERVE APPROVED EQUIPMENT.
 - PROVIDE ENGRAVED, PLASTIC LAMINATE NAMEPLATE ON ALL PANELBOARDS, CONTROL PANELS, TERMINAL CABINETS, DISCONNECT SWITCHES, EQUIPMENT, ETC. NAMEPLATE SHALL STATE EQUIPMENT NAME AS INDICATED ON THIS DRAWING, AS REQUIRED TO COMPLY WITH OWNERS STANDARD NAMING CONVENTION OR AS REQUIRED BY THE AUTHORITY HAVING JURISDICTION. NAMEPLATES SHALL BE FASTENED TO EQUIPMENT WITH RIVETS.
 - PROVIDE AN EQUIPMENT GROUNDING CONDUCTOR IN EACH CONDUIT TO FORM A CONTINUOUS GROUNDING PATH. CONDUIT SHALL NOT BE USED IN PLACE OF A GROUND CONDUCTOR.
 - THE 3% LIMITATION ON VOLTAGE DROP HAS BEEN INCLUDED IN THE BRANCH CIRCUIT WIRING SIZES ABOVE.
 - NEUTRAL CONDUCTORS MAY BE REMOVED IF NOT REQUIRED ON THREE PHASE MECHANICAL EQUIPMENT IF CONFIRMED IN WRITING BY THE DIVISION 23 CONTRACTOR.
- SCHEDULE NOTES: (APPLICABLE WHERE REFERENCED)
- PROVIDE ELECTRICAL SERVICE AND ALL ELECTRICAL CONNECTIONS TO LINE SIDE OF DISCONNECT SWITCH (E.G. SINGLE POINT ELECTRICAL CONNECTION).
 - PROVIDE WEATHERPROOF ELECTRICAL SERVICE TO EQUIPMENT, INCLUDING, BUT NOT LIMITED TO CONDUIT, BACKBOX, FITTINGS, ETC.
 - CIRCUIT BREAKERS THAT PROVIDE POWER TO FIRE ALARM EQUIPMENT (E.G. CONTROL PANELS, POWER SUPPLIES, ETC.) SHALL COMPLY WITH NFPA 1-5.2.5.2. PROVIDE DEDICATED CIRCUIT AND HANDLE LOCK ON CIRCUIT BREAKER.
 - INTERLOCK (SEE DETAIL) THE FOLLOWING MECHANICAL UNITS:
EF-5 AND EF-6 INTERLOCKED WITH AHU-1.
 - WIRE AND CONNECT THE MECHANICAL CONTRACTOR'S TIME DELAYS, SPEED CONTROLS, ETC. FOR EXHAUST FAN.
 - PROVIDE 8 INCH SQUARE CONCRETE POST AND COOPER B-LINE GALVANIZED STEEL STRUT RACK AND ALL ASSOCIATED HARDWARE REQUIRED TO LOCATE SERVICE DISCONNECT SWITCH ON OR ADJACENT TO UNIT.
 - PROVIDE COMBINATION MOTOR STARTER-DISCONNECT WITH HAND-OFF-AUTO CONTROL, AUXILIARY CONTACT, PILOT LIGHTS, 120V CONTROL VOLTAGE (SELF POWERED), MOUNTING STRUCTURE, ETC. PROVIDE NEMA 3R ENCLOSURE WHEN MOUNTED IN DAMP OR OUTDOOR LOCATIONS.
 - PROVIDE SERVICE TO 120V RECIRC PUMP. WIRE AND CONNECT THE PLUMBING CONTRACTOR'S TIME CLOCK, ETC.
 - THE ELECTRICAL CONTRACTOR TO WIRE IN TIME DELAY FURNISHED BY MECHANICAL CONTRACTOR FOR EXHAUST FAN.
 - WIRE AND CONNECT THE PLUMBING CONTRACTOR'S TIMECLOCK, ETC.
 - THE MOTORIZED GATES ARE ASSUMED TO BE ELITE SL3000UL GATES WITH TWO 0.5HP MOTORS. THE POWER CONNECTION POINT HAS A PLUG AND CORD AND THEREFORE DOES NOT REQUIRE AN OUTDOOR RATED SEPARATE SAFETY SWITCH.
 - PROVIDE COOPER B-LINE GALVANIZED STEEL STRUT RACK AND ALL ASSOCIATED HARDWARE REQUIRED TO LOCATE SERVICE DISCONNECT SWITCH ON OR ADJACENT TO UNIT.

EQUIPMENT CONNECTION SCHEDULE

EQUIP. NAME	EQUIPMENT DESCRIPTION	EQUIP. LOAD	VOLT/ PHASE	EQUIPMENT LOCATION	DISCONNECT SWITCH SIZE AND TYPE	PANEL & CIRCUIT #	WIRE AND CONDUIT INFORMATION	SEE SCHEDULE NOTES
AHU-2	AIR HANDLING UNIT	71.7 MCA	208/3	MECHANICAL ELECTRICAL ROOM	100A 3-POLE	SEE PANEL SCHED. 'MDP'	4#4, 1#8 GND IN 1"C.	1,12
AHU-3 AHU-4	AIR HANDLING UNIT	45.6 MCA	208/3	MECHANICAL ELECTRICAL ROOM	60A 3-POLE	SEE PANEL SCHED. 'MDP'	4#8, 1#10 GND IN 3/4"C.	1,12
AHU-5	AIR HANDLING UNIT	26.0 MCA	208/3	MECHANICAL ELECTRICAL ROOM	30A 3-POLE	SEE PANEL SCHED. 'MDP'	4#10, 1#10 GND IN 3/4"C.	1,12
CU-2	CONDENSING UNIT	40.6 MCA	208/3	VERIFY	60A 3-POLE NEMA 3R	SEE PANEL SCHED. 'DP'	4#8, 1#10 GND IN 3/4"C.	2,12
CU-1 CU-3 CU-4	CONDENSING UNIT	34.2 MCA	208/3	VERIFY	60A 3-POLE NEMA 3R	SEE PANEL SCHED. 'DP'	4#8, 1#8 GND IN 3/4"C.	2,12
CU-5	CONDENSING UNIT	17.6 MCA	208/3	VERIFY	30A 3-POLE NEMA 3R	SEE PANEL SCHED. 'DP'	4#12, 1#12 GND IN 3/4"C.	2,12
EF-1	EXHAUST FAN	54W	120/1	JANITOR'S CEILING	MOTOR RATED SWITCH	B-13	2#12, 1#12 GND IN 3/4"C.	5,9,12
EF-2 EF-3 EF-8 EF-9	EXHAUST FAN	54W	120/1	TOILET ROOM CEILINGS	MOTOR RATED SWITCH	B-5 B-25	2#12, 1#12 GND IN 3/4"C.	5,9,12
EF-5	EXHAUST FAN	83	120/1	TOILET ROOM CEILING	MOTOR RATED SWITCH	B-23	2#12, 1#12 GND IN 3/4"C.	4
EF-6	EXHAUST FAN	350	120/1	TOILET ROOM CEILING	MOTOR RATED SWITCH	B-23	2#12, 1#12 GND IN 3/4"C.	4
EF-7	EXHAUST FAN	83	120/1	CEILING	MOTOR RATED SWITCH	B-11	2#12, 1#12 GND IN 3/4"C.	5,9,12
EW-1	ELECTRIC WATER HEATER	18kW	208/3	CLOSET	100A 3-POLE FUSED	MDP-26, 28,30	3#4, 1#8 GND IN 1"C.	10,12
AC-1	AIR COMPRESSOR	10 HP	208/3	OUTDOORS	100A 3-POLE NEMA 3R FUSED	DP-7,9, 11	3#4, 1#8 GND IN 1"C.	2,6,12
RCP-1	RECIRC PUMP	1/12 HP	120/1	NEAR ELECTRIC WATER HEATER	MRS		2#12, 1#12 GND IN 3/4"C.	8,10,12
RWP	RAINWATER HARVESTING PUMP	3/4 HP	120/1	RAIN CISTERN	COMBINATION MOTOR STARTER/ DISCONNECT	DP-1	2#10, 1#10 GND IN 3/4"C.	2,6,7,12
RWC	RAINWATER CONTROLLER	200W	120/1	NEAR RAIN CISTERN	NA	DP-3	2#12, 1#12 GND IN 3/4"C.	2,12
FACP	FIRE ALARM CONTROL PANEL	200W	120/1	DATA ROOM	NA	A-36	2#12, 1#12 GND IN 3/4"C.	3
FAB-1	FIRE ALARM BELL	300W	120/1	FIELD VERIFY	NA	A-34	2#12, 1#12 GND IN 3/4"C.	3
ES	ELECTRIC DOOR STRIKES	10W	120/1	AT EXTERIOR DOORS	NA	A-32	2#10, 1#10 GND IN 3/4"C.	-
BL-1	BLASTER	10HP	208/3	BLASTER	100A 3-POLE FUSED, FUSE AT 60AMPS	MDP-38, 40,42	4#4, 1#8 GND IN 1"C.	1,12
GA-1	GATE WITH MOTOR OPERATOR	1HP	208/1	FIELD VERIFY	NA	MDP-52	3#4, 1#10 GND IN 1"C	11
GA-2	GATE WITH MOTOR OPERATOR	1HP	208/1	FIELD VERIFY	NA	MDP-54	3#4, 1#10 GND IN 1"C	11
IRR	IRRIGATION SYSTEM	500W	120/1	FIELD VERIFY	NA	DP-5	2#12, 1#12 GND IN 3/4"C.	2
BH	GENERATOR BLOCK HEATER	1500W	120/1	GENERATOR	NA	MDP-44	2#8, 1#10 GND IN 3/4"C.	-
BC	GENERATOR BATTERY CHARGER	100W	120/1	GENERATOR	NA	MDP-46	2#8, 1#8 GND IN 3/4"C.	-
GSH	GENERATOR STRIP HEATER	200W	120/1	GENERATOR	NA	MDP-48	2#8, 1#8 GND IN 3/4"C.	-
LTG	GENERATOR ENCLOSURE LIGHTING	400W	120/1	GENERATOR	NA	MDP-50	2#8, 1#8 GND IN 3/4"C.	-

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BRYAN P. ZAPP, P.E.
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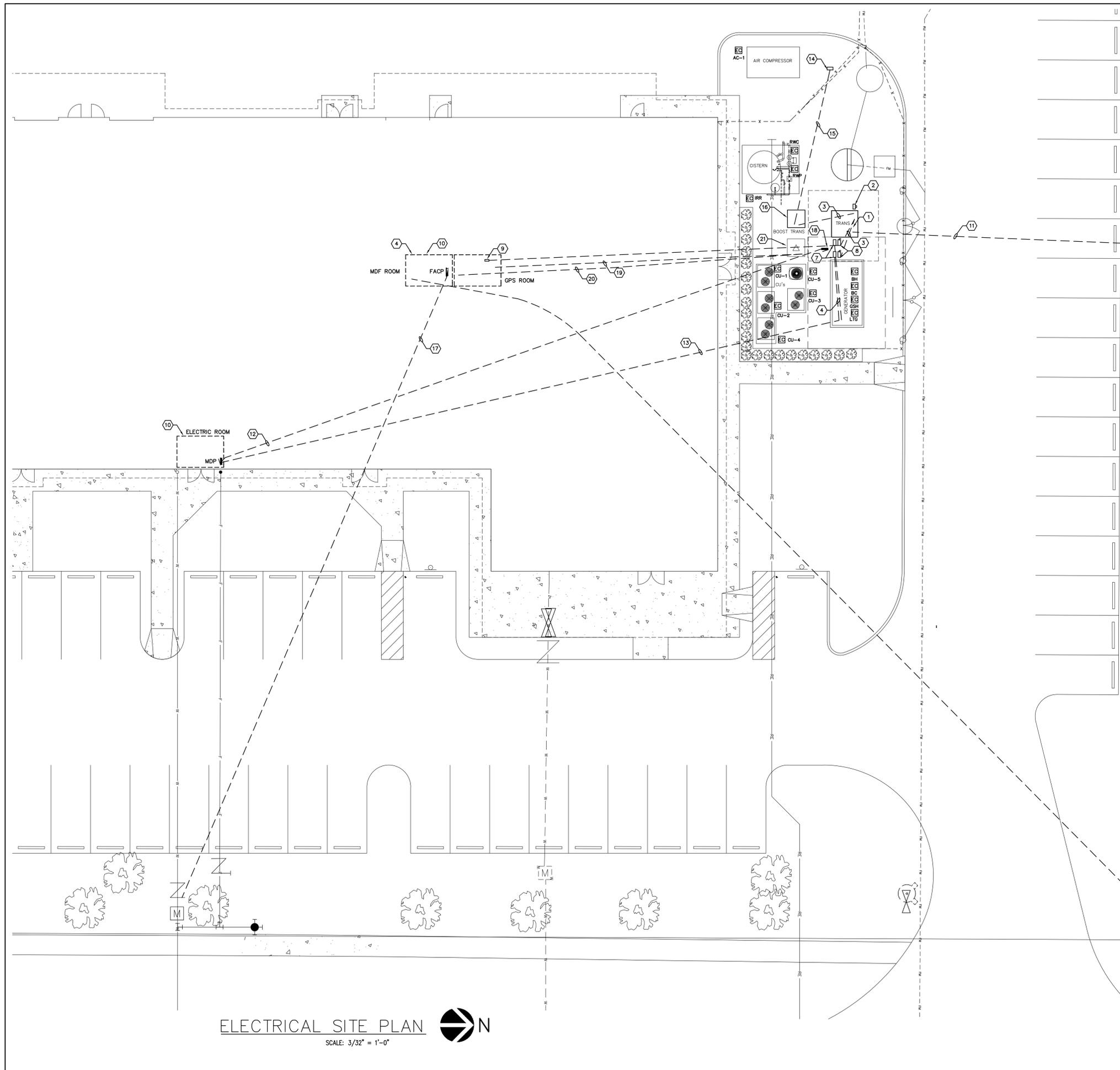
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ELECTRICAL SCHEDULES

E602



SITE PLAN GENERAL NOTES:

- A. PROVIDE (DEFINED AS "FURNISH AND INSTALL") ALL LABOR, MATERIALS AND EQUIPMENT REQUIRED FOR COMPLETE AND PROPERLY OPERATING LIGHTING, POWER AND SPECIAL SYSTEMS.
- B. ALL LIGHTING, POWER AND SPECIAL SYSTEMS COMPONENTS SHOWN ARE NEW UNLESS NOTED OTHERWISE (U.N.O.).
- C. PENETRATIONS THROUGH FIRE RATED SURFACES SHALL BE MADE WITH U.L. APPROVED METHODS. REFER TO THE "FIRESTOP PENETRATION DETAILS".
- D. THE ELECTRICAL CONTRACTOR MAY REARRANGE THE SERVICE ENTRANCE RATED DISCONNECTS AND AUTOMATIC TRANSFER SWITCHES AS LONG AS ALL NEC CLEARANCES ARE MAINTAINED.

SITE PLAN KEY NOTES: (6)

KEY NOTES APPLY TO THIS DRAWING ONLY.

1. PROPOSED LOCATION OF NEW UTILITY COMPANY TRANSFORMER(S). COORDINATE EXACT LOCATION WITH OWNER AND UTILITY COMPANY PRIOR TO BID. MODIFY LOCATION AS REQUIRED TO COMPLY WITH UTILITY COMPANY REQUIREMENTS. REFER TO THE "ELECTRICAL RISER DIAGRAM" FOR ADDITIONAL REQUIREMENTS.
2. PROPOSED LOCATION OF NEW UTILITY COMPANY METER, CURRENT TRANSFORMERS, ETC. COORDINATE EXACT LOCATION WITH OWNER AND UTILITY COMPANY PRIOR TO BID. MODIFY LOCATION AS REQUIRED TO COMPLY WITH UTILITY COMPANY REQUIREMENTS. REFER TO THE "ELECTRICAL RISER DIAGRAM" FOR ADDITIONAL REQUIREMENTS.
3. PROPOSED ROUTING OF NEW UNDERGROUND SECONDARY SERVICE LATERAL FROM NEW UTILITY COMPANY TRANSFORMER(S). COORDINATE EXACT ROUTING WITH GENERAL CONTRACTOR, OTHER TRADES AND EXISTING CONDITIONS PRIOR TO ROUGH-IN. REFER TO THE "ELECTRICAL RISER DIAGRAM" FOR ADDITIONAL REQUIREMENTS.
4. PROPOSED ROUTING OF GENERATOR SERVICE CONDUCTORS. COORDINATE EXACT ROUTING WITH GENERAL CONTRACTOR, OTHER TRADES AND EXISTING CONDITIONS PRIOR TO ROUGH-IN. REFER TO THE "ELECTRICAL RISER DIAGRAM" FOR ADDITIONAL REQUIREMENTS.
5. PROVIDE NEW UNDERGROUND CONDUIT FOR COMMUNICATIONS (VOICE/DATA AND CABLE TELEVISION) WIRING PROVIDED BY OTHERS. COORDINATE EXACT ROUTING WITH OTHER TRADES PRIOR TO ROUGH-IN. REFER TO THE COMMUNICATIONS RACEWAY RISER DIAGRAM FOR CONDUIT SIZE AND QUANTITY.
6. ROUTE CONDUIT TO LOCATION AS DIRECTED BY VOICE/DATA AND VIDEO SERVICE PROVIDERS. CAP AND STAKE END OF CONDUIT AT TERMINATION POINTS. COORDINATE EXACT LOCATION OF TERMINATION POINT(S) WITH VOICE/DATA AND VIDEO TELEVISION SERVICE PROVIDERS PRIOR TO BID.
7. PROVIDE MAIN SERVICE DISCONNECT SWITCH.
8. PROVIDE TRANSFER SWITCH.
9. PROVIDE GENERATOR REMOTE ANNUNCIATOR PANEL. EXACT LOCATION IS TO BE DETERMINED. THIS LOCATION IS SHOWN FOR ILLUSTRATIVE PURPOSES ONLY.
10. REFER TO ROOM LAYOUT ON POWER AND SYSTEMS PLANS FOR EQUIPMENT LOCATED IN THIS ROOM.
11. PROVIDE NEW UNDERGROUND CONDUIT AS PER UTILITY'S REQUIREMENTS FOR ELECTRIC UTILITY HIGH VOLTAGE CABLING. TYPICALLY, THE UTILITY WILL FURNISH THE CONDUIT FOR THE ELECTRICAL CONTRACTOR TO INSTALL. ALL CHARGES FROM THE SERVING UTILITY SHALL BE INCLUDED IN THE ELECTRICAL CONTRACTOR'S BID. ROUTE SHOWN IS FOR ILLUSTRATIVE PURPOSES ONLY. AN EASEMENT WILL BE REQUIRED PRIOR TO ENERGIZATION OF THE ELECTRIC SERVICE.
12. PROPOSED ELECTRIC MAIN SERVICE CONDUCTORS TO PANELBOARD MDP.
13. PROPOSED BRANCH CIRCUIT CIRCUITS TO GENERATOR HEATER, LIGHTING, ETC.
14. EXISTING LIFT STATION CONTROL PANEL SHALL REMAIN IN SERVICE. REFER TO THE ELECTRICAL RISER DIAGRAM FOR ADDITIONAL ELECTRICAL REQUIREMENTS.
15. PROVIDE LIFT STATION SERVICE CONDUCTORS IN CONDUIT.
16. PROVIDE BOOST TRANSFORMER (OUTDOOR RATED) ON CONCRETE PAD.
17. PROVIDE FIRE ALARM SYSTEM CONNECTION TO ALL FLOW AND TAMPER SWITCHES LOCATED ON FIRE SPRINKLER PIPING, BACK FLOW PREVENTOR, ETC. QUANTITY AND LOCATION OF SWITCHES SHOWN IS APPROXIMATE. COORDINATE EXACT QUANTITY AND LOCATION OF ALL FLOW AND TAMPER SWITCHES WITH FIRE SPRINKLER CONTRACTOR PRIOR TO BID. FLOW AND TAMPER SWITCHES PROVIDED BY OTHERS. REFER TO THE FIRE ALARM DRAWINGS.
18. PROVIDE PANEL DP. THIS PANEL SERVES (IN GENERAL) THE CONDENSING UNITS, RAINWATERING HARVESTING SYSTEM, WASH BAY LOADS, ETC. SEE RISER AND PANEL SCHEDULES FOR OTHER DETAILS.
19. PROVIDE TWO 3" CONDUITS WITH PULL STRINGS FROM GPS ROOM TO EXTERIOR ANTENNA PAD. PROVIDE 36" RADIUS ELLS. STUB UP CONDUITS AT LEAST 6" AFF AND PROVIDE GLUE CAPS ON BOTH ENDS.
20. PROVIDE TWO 5" CONDUITS WITH PULL STRINGS FROM GPS ROOM TO EXTERIOR ANTENNA PAD. PROVIDE 36" RADIUS ELLS. STUB UP CONDUITS AT LEAST 6" AFF AND PROVIDE GLUE CAPS ON BOTH ENDS.
21. PROPOSED ANTENNAE LOCATION.

ELECTRICAL SITE PLAN



SCALE: 3/32" = 1'-0"

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**ELECTRICAL
SITE PLAN**

ES101

SITE PLAN
KEY NOTES: Ⓢ

KEY NOTES APPLY TO THIS DRAWING ONLY.

1. PROPOSED LOCATION OF NEW DISCONNECT FOR GATE MOTOR.
2. PROPOSED POWER CONDUCTORS IN CONDUIT FOR GATE MOTOR.
3. PROPOSED 2" CONDUIT WITH PULL STRING FOR GATE CONTROLS AND SECURITY EQUIPMENT. SEE COMMUNICATIONS RACEWAY DETAILS FOR ADDITIONAL WORK.
4. PROPOSED POWER CONDUCTORS IN CONDUIT FOR 120V CIRCUIT TO SECURITY EQUIPMENT.

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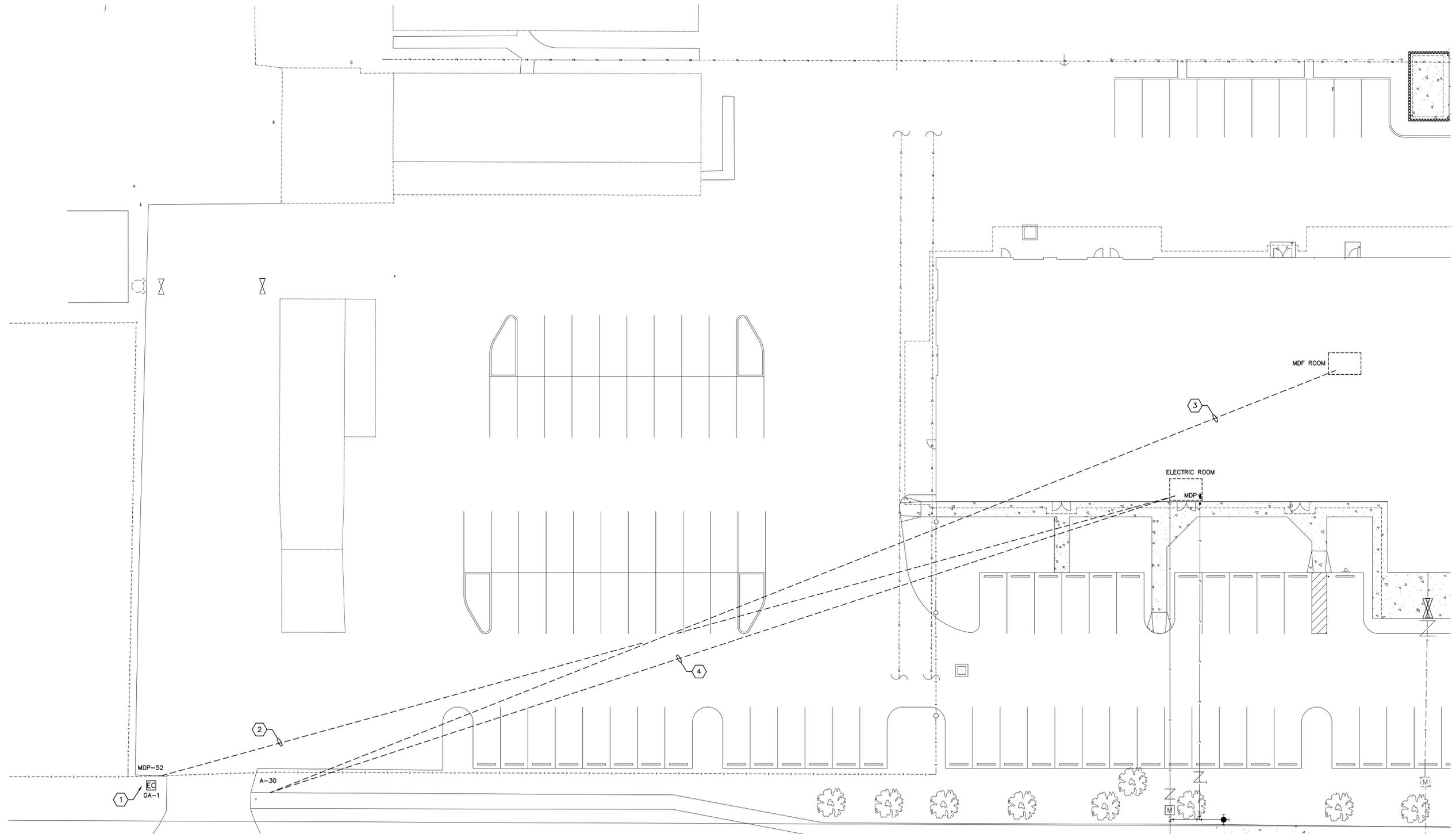
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ELECTRICAL
SITE PLAN

ES102

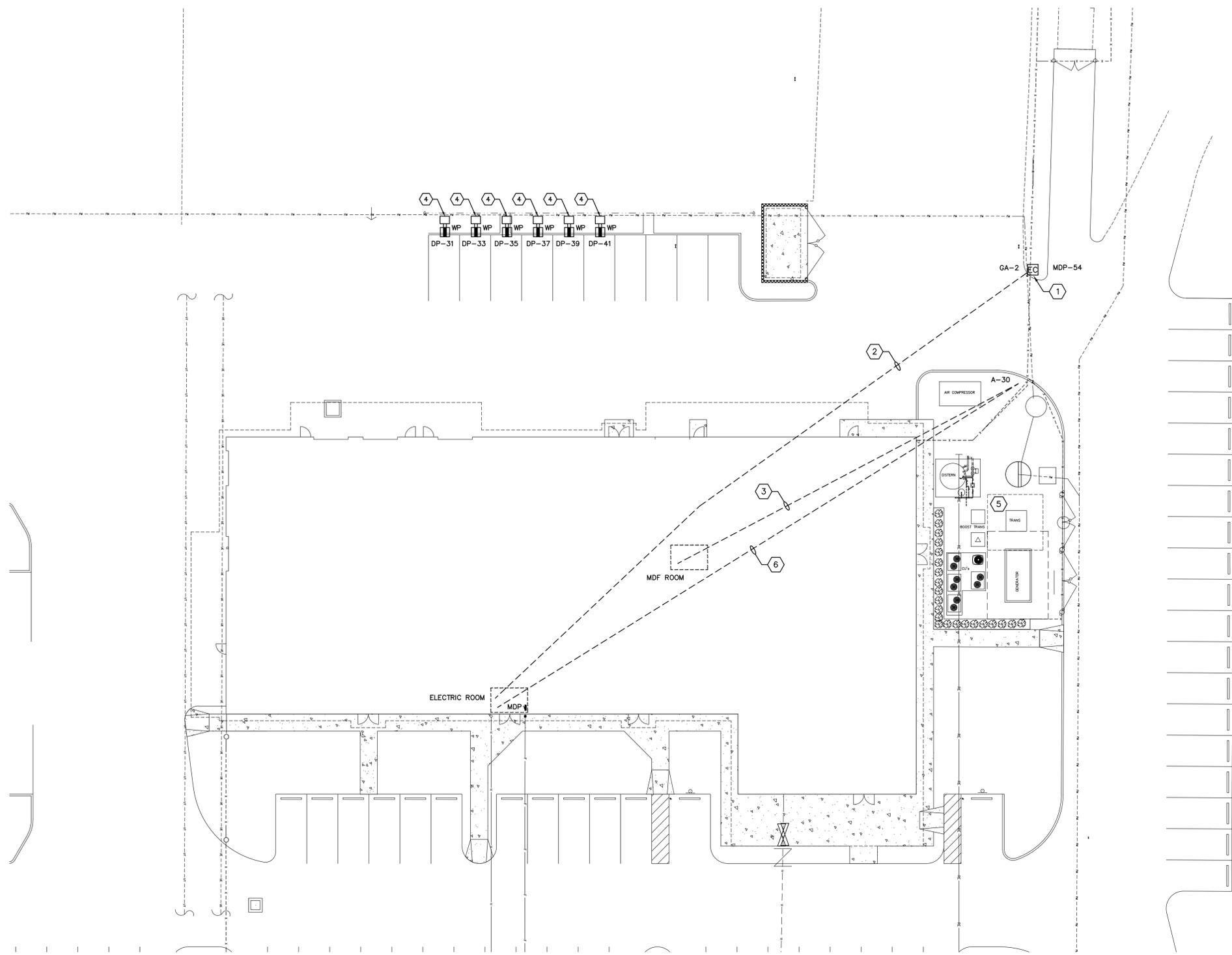
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ELECTRICAL SITE PLAN



SCALE: 1/16" = 1'-0"



**SITE PLAN
KEY NOTES: (#)**

KEY NOTES APPLY TO THIS DRAWING ONLY.

1. PROPOSED LOCATION OF NEW DISCONNECT FOR GATE MOTOR.
2. PROPOSED POWER CONDUCTORS IN CONDUIT FOR GATE MOTOR.
3. PROPOSED 2" CONDUIT WITH PULL STRING FOR GATE CONTROLS AND SECURITY EQUIPMENT. SEE COMMUNICATIONS RACEWAY DETAILS FOR ADDITIONAL WORK.
4. PROPOSED LOCATION OF NEW RECEPTACLE FOR PORTABLE GENERATOR. PROVIDE 20AMP, 120V BRANCH CIRCUIT WITH #10AWG CONDUCTORS IN 1" CONDUIT. PROVIDE 8" BY 8" CONCRETE POST AND STRUT TO MOUNT RECEPTACLE. CENTER ON PARKING SPACE AND LOCATE POST APPROXIMATELY THREE FEET FROM THE BUMPER BLOCK. THE ELECTRICAL CONTRACTOR SHALL COORDINATE THE EXACT LOCATION OF THE PANEL WITH THE OWNER, ARCHITECT AND GENERAL CONTRACTOR PRIOR TO ROUGH IN. SUBMIT SKETCH OF PROPOSED MOUNTING STRUCTURE TO ENGINEER.
5. APPROXIMATE LOCATION OF PANEL DP.
6. PROPOSED POWER CONDUCTORS IN CONDUIT FOR 120V CIRCUIT TO SECURITY EQUIPMENT.

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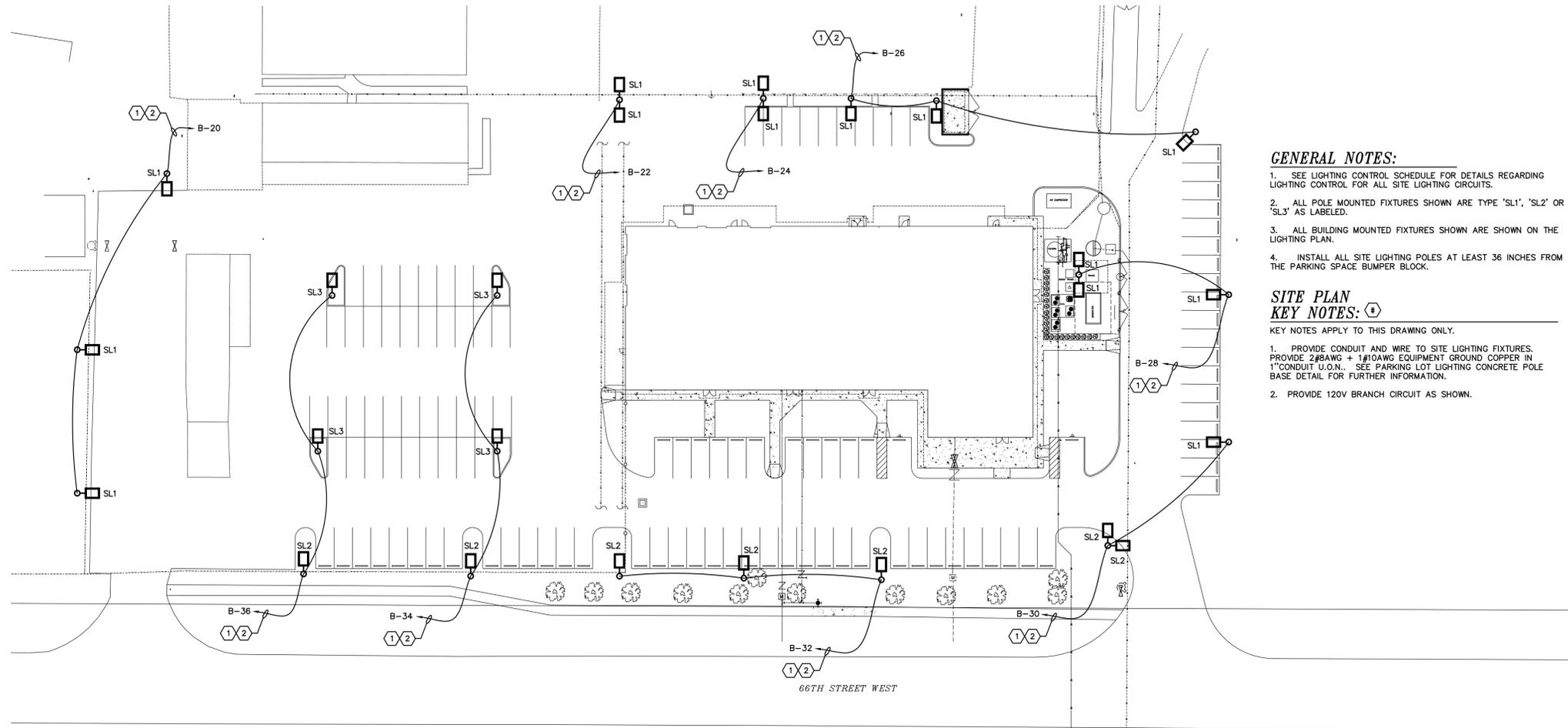
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**ELECTRICAL
SITE PLAN**

ES103





GENERAL NOTES:

1. SEE LIGHTING CONTROL SCHEDULE FOR DETAILS REGARDING LIGHTING CONTROL FOR ALL SITE LIGHTING CIRCUITS.
2. ALL POLE MOUNTED FIXTURES SHOWN ARE TYPE 'SL1', 'SL2' OR 'SL3' AS LABELED.
3. ALL BUILDING MOUNTED FIXTURES SHOWN ARE SHOWN ON THE LIGHTING PLAN.
4. INSTALL ALL SITE LIGHTING POLES AT LEAST 36 INCHES FROM THE PARKING SPACE BUMPER BLOCK.

SITE PLAN

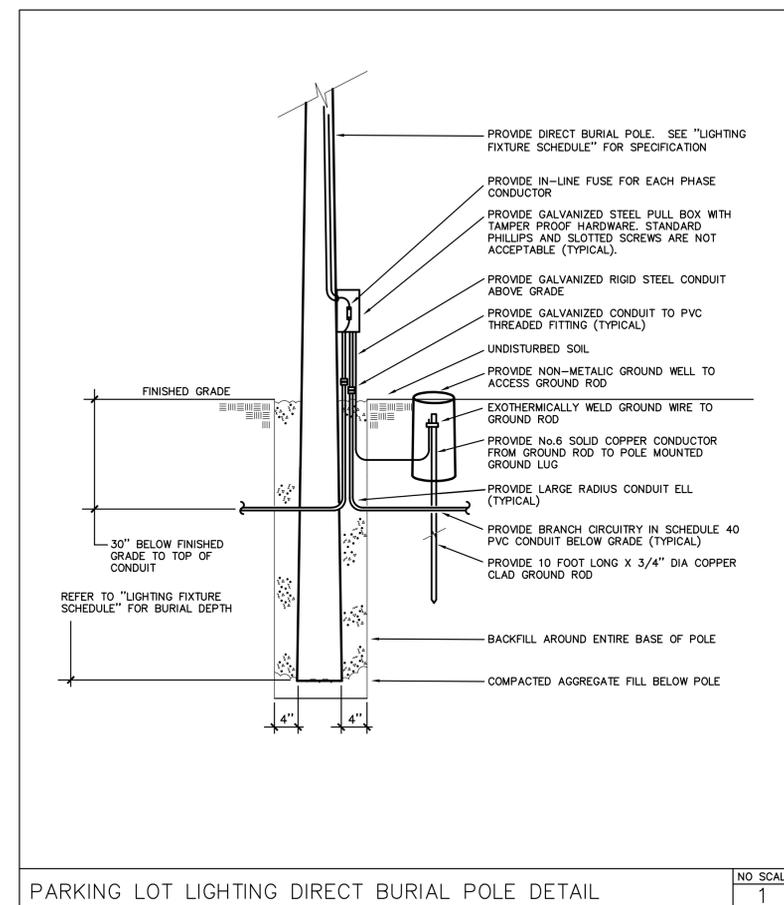
KEY NOTES: Ⓢ

KEY NOTES APPLY TO THIS DRAWING ONLY.

1. PROVIDE CONDUIT AND WIRE TO SITE LIGHTING FIXTURES. PROVIDE 2#8AWG + 1#10AWG EQUIPMENT GROUND COPPER IN 1" CONDUIT U.O.N.. SEE PARKING LOT LIGHTING CONCRETE POLE BASE DETAIL FOR FURTHER INFORMATION.
2. PROVIDE 120V BRANCH CIRCUIT AS SHOWN.

ELECTRICAL SITE LIGHTING PLAN

SCALE: 1/32" = 1'-0"



PARKING LOT LIGHTING DIRECT BURIAL POLE DETAIL

NO SCALE
1

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ELECTRICAL
SITE LIGHTING PLAN

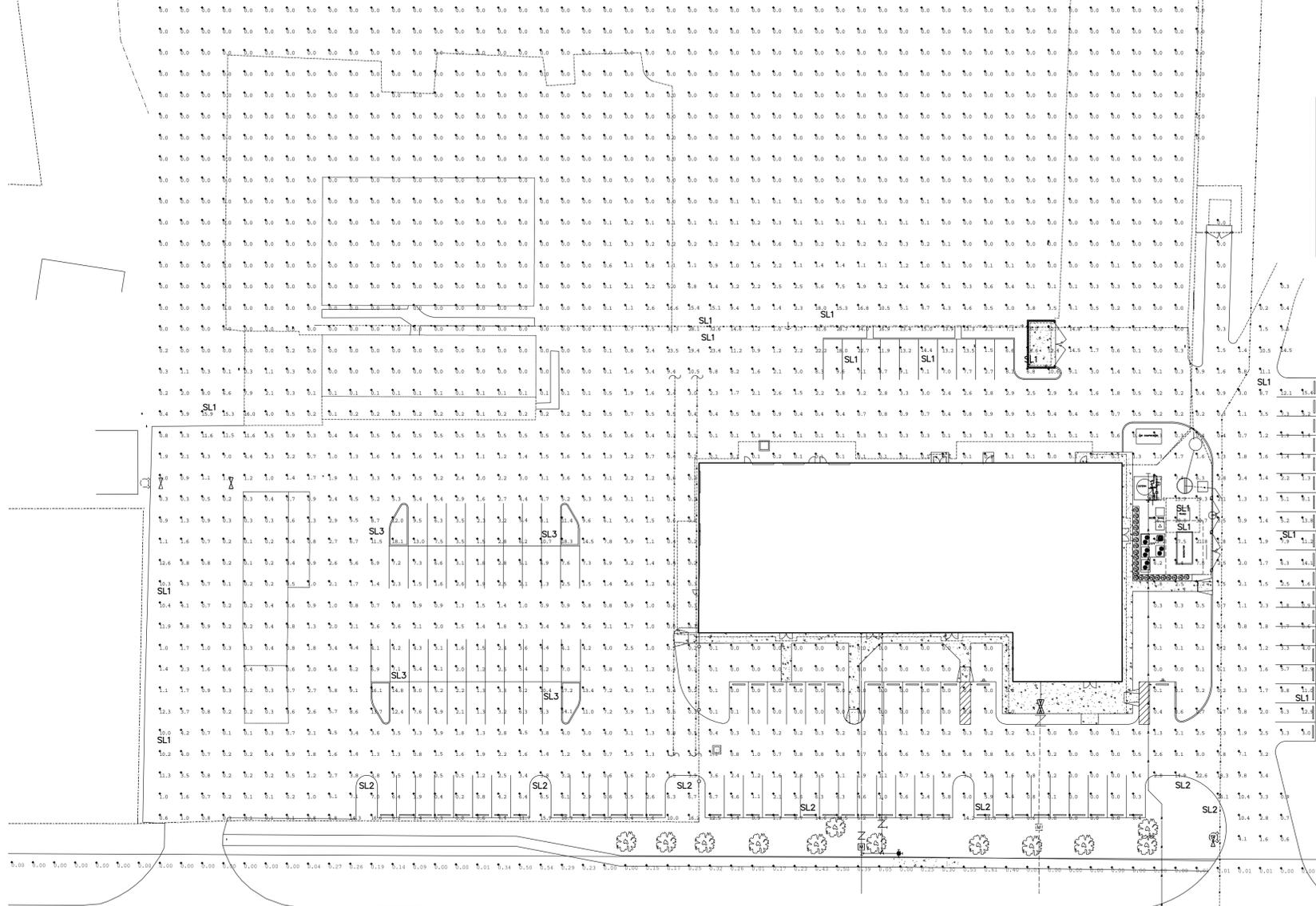
ES104

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Calculation Summary								
Label	CalcType	Units	Avg	Max	Min	Avg/Min	Max/Min	Description
PARKING AREA AND DRIVES	illumance	Fc	1.98	36.1	0.0	N.A.	N.A.	HORIZONTAL PLANE OF CALCULATION AT ZERO FT AFG
PROPERTY LINE	illumance	Fc	0.05	0.61	0.00	N.A.	N.A.	HORIZONTAL LINE OF CALCULATION AT 5FT AFG

21.81 ACRES, MORE OR LESS



Luminaire Schedule						
Symbol	Qty	Label	Arrangement	Total Lamp Lumens	LLF	Description
SL1	14	MC-GSM-400-MP-3S-862	SINGLE	40000	1.000	MC-GSM-400-MP-3S-862
SL2	7	MC-GSM-400-MP-5S-864	SINGLE	40000	1.000	MC-GSM-400-MP-5S-864
SL3	4	MC-GSM-400-MP-5S-822	SINGLE	40000	1.000	MC-GSM-400-MP-5S-822

SITE LIGHTING PHOTOMETRIC PLAN GENERAL NOTES:

- A. FOOTCANDLES VALUES SHOWN ARE CALCULATED USING SPECIFIED SITE LIGHTING FIXTURE(S) AND MAY NOT REPRESENT ACTUAL LIGHTING LEVEL AFTER INSTALLATION DUE TO VARIATIONS IN LAMP/FIXTURE PERFORMANCE, NEW OBSTRUCTIONS, ETC. INITIAL FOOTCANDLE LEVELS SHOULD BE HIGHER THAN VALUES SHOWN. FOOTCANDLE VALUES SHOWN ARE CALCULATED USING "MAINTAINED" LUMENS (AT APPROXIMATELY 70% OF LAMP LIFE) AND NOT "INITIAL" LAMP LUMENS (100% LAMP OUTPUT).
- B. FIXTURE TYPE(S), QUANTITY AND LOCATIONS SHOWN ON THIS PLAN ARE FOR REFERENCE ONLY. REFER TO THE "ELECTRICAL SITE PLAN" AND/OR "LIGHTING PLANS" FOR FIXTURE TYPE(S), QUANTITY AND LOCATIONS.
- C. THE LIGHTING LEVELS SHOWN ARE IN FOOTCANDLES AND SITE REFLECTANCES (DIRECT AND INDIRECT) ARE NOT CONSIDERED IN THESE VALUES.
- D. THE BUILDING CONSTRUCTION DRAWINGS SHOULD BE USED IN CONJUNCTION WITH THESE PLANS.

ME3
CONSULTING ENGINEERS, LLC
11065 Gatewood Drive, Suite 104
Bradenton, FL 34211
Tel: 941-748-1319 Fax: 941-748-1349
www.me3-engr.com m3engr@me3-engr.com
Designed: B.P.Z. ME3 Job No: 10-0184
Checked: S.T.P. Date: 09/30/2010
Drawn: B.P.Z. C.O.A. 27552
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TO THE BEST OF MY KNOWLEDGE, SAID PLANS AND SPECIFICATIONS COMPLY WITH ALL APPLICABLE BUILDING CODES.
BRYAN P. ZAPP, P.E.
FL# 46141

**Utilities
Maintenance &
Administration
Building**

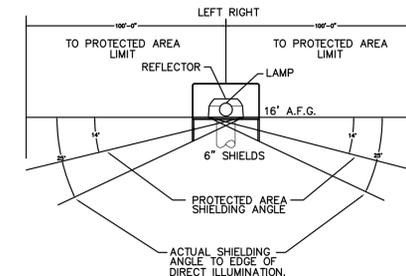
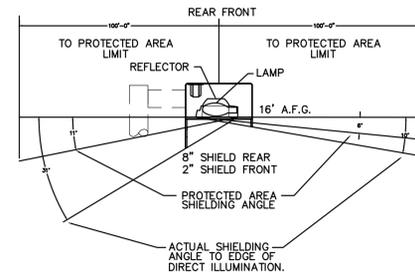
Bradenton, FL 34210
Client:
Manatee County Government
1112 Manatee Avenue West
Bradenton, FL 34208

drawn: JR
checked: JR
date: 09-30-10
comm. no.: 0920826

**ELECTRICAL
SITE PHOTOMETRICS
PLAN**

ES105

CALCULATIONS BASED ON MCGRAW-EDISON GALLERIA FIXTURE



CALCULATION OF THE DISTANCE TO THE EDGE OF DIRECT ILLUMINATION: REFER TO DETAIL

α - ACTUAL SHIELDING ANGLE OF FIXTURE
 D - HORIZONTAL DISTANCE FROM LIGHT SOURCE TO EDGE OF DIRECT ILLUMINATION
 H - HEIGHT OF LIGHT SOURCE.
 E - ELEVATION DROP FROM LIGHT SOURCE POLE TO EDGE OF DIRECT ILLUMINATION

FRONT
 $D = (H+E)/\tan \alpha$ H=16.0'
 $D = (16.0'+0.0')/\tan 10'$ E=0.0'
 $D = 90.7'$ $\alpha=10'$

COMPLIANCE: $D < 100'$

REAR/RIGHT/LEFT
 $D = (H+E)/\tan \alpha$ H=16.0'
 $D = (16'+0.0')/\tan 25'$ E=0.0'
 $D = 34.3'$ $\alpha=25'$

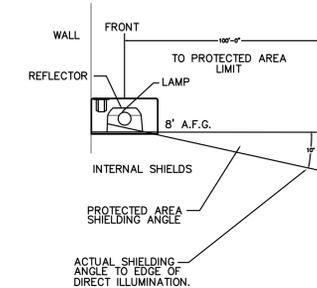
COMPLIANCE: $D < 100'$

B FIXTURE ILLUMINATION DETAILS - SHIELD ANGLES (FIXTURE SL1)
 NOT TO SCALE

GENERAL NOTES:

- A. ALL SYSTEM COMPONENTS SHOWN ARE NEW U.N.O..
- B. DIVISION 26 CONTRACTOR TO FIELD VERIFY SHIELD ADJUSTMENT AFTER INSTALLATION.

CALCULATIONS BASED ON MCGRAW-EDISON GALLERIA FIXTURE



CALCULATION OF THE DISTANCE TO THE EDGE OF DIRECT ILLUMINATION: REFER TO DETAIL

α - ACTUAL SHIELDING ANGLE OF FIXTURE
 D - HORIZONTAL DISTANCE FROM LIGHT SOURCE TO EDGE OF DIRECT ILLUMINATION
 H - HEIGHT OF LIGHT SOURCE.
 E - ELEVATION DROP FROM LIGHT SOURCE WALL TO EDGE OF DIRECT ILLUMINATION

FRONT
 $D = (H+E)/\tan \alpha$ H=8.0'
 $D = (8.0'+0.0')/\tan 10'$ E=0.0'
 $D = 46.85'$ $\alpha=10'$

COMPLIANCE: $D < 100'$

C FIXTURE ILLUMINATION DETAILS - SHIELD ANGLES (FIXTURE FF)
 NOT TO SCALE

GENERAL NOTES:

- A. ALL SYSTEM COMPONENTS SHOWN ARE NEW U.N.O..
- B. DIVISION 26 CONTRACTOR TO FIELD VERIFY LAMP IMAGE AFTER INSTALLATION.

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TO THE BEST OF MY KNOWLEDGE, SAID PLANS AND SPECIFICATIONS COMPLY WITH ALL APPLICABLE BUILDING CODES.

BRYAN P. ZAPP, P.E.
 FL# 46141

Utilities
 Maintenance &
 Administration
 Building

Bradenton, FL 34210

Client:

Manatee County Government
 1112 Manatee Avenue West
 Bradenton, FL 34208

drawn: JR
 checked: JR
 date: 09-30-10
 comm. no.: 0920826

SITE PHOTOMETRIC
 DETAILS

ES106

FIRE ALARM SPECIFICATIONS & GENERAL NOTES

I. GENERAL SCOPE:

A. THIS PROJECT WILL REQUIRE THE INSTALLATION OF A NEW ADDRESSABLE FIRE ALARM SYSTEM FOR A OPERATIONS BUILDING FOR MANATEE COUNTY UTILITIES. AS INDICATED ON THESE PLANS, ONLY A NON-PROPRIETARY SYSTEM SHALL BE INSTALLED (i.e. FIRE-LITE, SILENT KNIGHT).

II. REQUIREMENTS

A. THE INSTALLATION SHALL CONFORM TO THE INTENT OF THE FLORIDA FIRE PREVENTION CODE (2007), NFPA 72 (2002), THESE PLANS, AND APPLICABLE REFERENCED DOCUMENTS.

B. SECONDARY POWER SHALL CONSIST OF RECHARGEABLE BATTERIES HAVING A CAPACITY TO POWER THE ALARM SYSTEM FOR A PERIOD OF 24 HOURS IN A STANDBY MODE AND OPERATE ALL NOTIFICATION APPLIANCES FOR 5 MINUTES AT THE END OF THE 24 HOUR PERIOD.

C. ALL CIRCUITS SHALL BE "POWER LIMITED". THE CIRCUIT TYPES SHALL BE INSTALLED AS INDICATED BELOW:
 SIGNALING LINE LOOP: CLASS "B"
 INITIATION DEVICE CIRCUITS (IDC'S): CLASS "B"
 NOTIFICATION ALARM CIRCUITS (NAC'S): CLASS "B"

D. WALL-MOUNTED NOTIFICATION HORN/STROBES ARE TO BE MOUNTED SO THAT THE ENTIRE LENS OF THE DEVICE IS NO LESS THAN 80" AFF AND NO GREATER THAN 96" AFF. CEILING-MOUNTED NOTIFICATION DEVICES ARE TO BE MOUNTED AT A MAXIMUM HEIGHT OF 30 FT. (AS INDICATED ON THE PLANS)

E. ALL NEW ADDRESSABLE PULL STATIONS SHALL BE INSTALLED AT 48 INCHES ABOVE THE FINISH FLOOR.

F. ALL WIRING CONNECTIONS ARE TO BE IN SINGLE, DOUBLE, TRIPLE OR 4 INCH ELECTRICAL BOXES, AS NEEDED. WIRING CONNECTIONS OUTSIDE OF ELECTRICAL BOXES WILL NOT BE ALLOWED.

G. ALL WIRING ON THE INITIATION AND NOTIFICATION CIRCUITS ARE SUPERVISED POWER LIMITED.

H. SURGE SUPPRESSION DEVICES SHALL BE INSTALLED ON ALL CIRCUITS THAT ENTER OR EXIT THE BUILDING. TYPICAL DEVICES ARE LISTED BELOW:

PANEL POWER: DITEK MODEL DTK-120HW, EDCO (OR EQUAL)
 INITIATING CKTS: DITEK MODEL DTK-2LVLP-F, EDCO (OR EQUAL)
 PHONE LINES: DITEK MODEL DTK-MRJ31SXCWPW, EDCO (OR EQUAL)

I. STROBE CIRCUITS SHALL BE SYNCHRONIZED EITHER THROUGH THE MAIN FACP OR SEPARATE SYNCHRONIZATION MODULES (AS NECESSARY).

III. CONDUIT AND WIRE

A. CONDUIT:

1. CONDUIT INSTALLATION SHALL BE IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE (NEC), LOCAL AND STATE REQUIREMENTS.

2. CONDUIT FILL WILL NOT EXCEED 40 PERCENT OF INTERIOR CROSS SECTIONAL AREA WHERE THREE OR MORE CABLES ARE CONTAINED WITHIN A SINGLE CONDUIT.

3. CABLE MUST BE SEPARATED FROM ANY OPEN CONDUCTORS OF POWER, OR CLASS 1 CIRCUITS, AND SHALL NOT BE PLACED IN ANY CONDUIT, JUNCTION BOX OR RACEWAY CONTAINING THESE CONDUCTORS.

B. WIRE:

1. ALL FIRE ALARM WIRING SHALL BE FPL TYPE CABLE.

2. WIRING WILL BE IN ACCORDANCE WITH LOCAL, STATE AND NATIONAL CODES (E.G., NEC ARTICLE 760). THE NUMBER AND SIZE OF CONDUCTORS SHALL BE AS INDICATED ON THESE PLANS, BUT SHALL NOT BE LESS THAN #16 AWG FOR INITIATING DEVICE CIRCUITS (INCLUDING SIGNALING LINE CIRCUITS) AND #14 AWG FOR NOTIFICATION DEVICE CIRCUITS.

3. ALL FIELD WIRING OF INITIATION AND NOTIFICATION CIRCUITS ARE TO BE COMPLETELY SUPERVISED BY END OF LINE DEVICES, PER THE MANUFACTURER'S LITERATURE.

4. HORIZONTAL WIRE RUNS ABOVE CEILINGS: HORIZONTAL WIRE RUNS IN AREAS CONTAINING DROP CEILINGS MAY BE 'FREE-WIRED' IF SUPPORTED BY TO THE BUILDING STRUCTURE. LAYING WIRE ON THE CEILING OR INADEQUATE SUPPORT OF WIRING FROM THE STRUCTURE WILL NOT BE ALLOWED.

5. VERTICAL AND HORIZONTAL WIRE RUNS IN OPEN STRUCTURE AREAS: ALL WIRING IN "OPEN STRUCTURE AREAS" ON THIS PROJECT SHALL BE INSTALLED IN CONDUIT.

6. VERTICAL WIRE RUNS: VERTICAL WIRE RUNS TO DEVICES, PANELS, ANNUNCIATORS, ETC. SHALL BE INSTALLED IN CONDUIT PER THE NATIONAL ELECTRICAL CODE.

C. TERMINAL BOXES, JUNCTION BOXES AND CABINETS: ALL BOXES AND CABINETS SHALL BE UL LISTED FOR THEIR USE AND PURPOSE.

D. THE FIRE ALARM CONTROL PANEL IS TO BE CONNECTED TO A SEPARATE DEDICATED BRANCH CIRCUIT, MAXIMUM 20 AMPERES. THIS CIRCUIT SHALL BE LABELED AT THE MAIN POWER DISTRIBUTION PANEL AS FIRE ALARM. FIRE ALARM CONTROL PANEL PRIMARY POWER WIRING SHALL BE 12 AWG. THE CONTROL PANEL CABINET SHALL BE GROUNDED SECURELY TO EITHER A COLD WATER PIPE OR GROUNDING ROD. A 120 VOLT SURGE SUPPRESSER SHALL BE INSTALLED ON THE AC POWER AND GROUNDED PRIOR TO ENTERING THE FIRE ALARM CONTROL PANEL. THE BREAKER FOR THE ALARM CIRCUIT SHALL BE RED IN COLOR, OR PAINTED RED, SHALL BE ACCESSIBLE ONLY TO AUTHORIZED PERSONNEL, AND SHALL BE IDENTIFIED WITH A PERMANENT LABEL AS "FIRE ALARM CIRCUIT". THE LOCATION OF THE DISCONNECTING MEANS SHALL BE PERMANENTLY IDENTIFIED AT THE FIRE ALARM CONTROL UNIT VIA A LABEL INSIDE THE FACP COVER.

V. EXECUTION

A. INSTALLATION:

1. INSTALLATION SHALL BE IN ACCORDANCE WITH THE NEC, NFPA 72, LOCAL AND STATE CODES, AS SHOWN ON THE DRAWINGS, AND AS RECOMMENDED BY THE MAJOR EQUIPMENT MANUFACTURER.

2. DURING CONSTRUCTION MEASURES SHALL BE TAKEN TO PROTECT SMOKE DETECTORS FROM CONTAMINATION AND PHYSICAL DAMAGE UNTIL CONSTRUCTION ACTIVITIES ARE COMPLETE.

V. PROGRAMMING

1. A BASELINE PROGRAMMING MATRIX HAS BEEN INCLUDED ON THESE PLANS.

2. ALL SMOKE DETECTORS SHALL BE PROGRAMMED FOR ALARM VERIFICATION.

VII. FINAL INSPECTION

1. AT THE FINAL INSPECTION A FACTORY TRAINED REPRESENTATIVE OF THE INSTALLER SHALL DEMONSTRATE THAT THE SYSTEMS FUNCTION PROPERLY IN EVERY RESPECT. ALL TESTING REQUIRED BY THE AHJ SHALL BE COMPLETED IN THE PRESENCE OF THE LOCAL FIRE AUTHORITY, AS REQUIRED.

VIII. SYSTEM MONITORING

1. ALARM, SUPERVISORY, AND TROUBLE SHALL BE MONITORED VIA A REMOTE SUPERVISING STATION, AS INDICATED ON THESE PLANS.

IX. GENERAL

1. THE ENGINEER OF RECORD HAS SIGNED AND SEALED DRAWINGS FOR THIS INSTALLATION. THE ENGINEER WILL PROVIDE THE SUCCESSFUL BIDDING CONTRACTOR WITH COPIES OF THE PLANS IN ORDER TO PULL A FIRE PERMIT.

2. THE VOLTAGE DROP CALCULATIONS SHOWN ON THE PLANS ARE BASED ON THE CIRCUIT ROUTING SHOWN. MAJOR CHANGES TO THE CIRCUIT ROUTING SHOWN MAY NEED TO BE JUSTIFIED BY THE FIRE ALARM CONTRACTOR WITH ADDITIONAL CALCULATIONS.

3. THE ALARM CONTRACTOR WILL BE REQUIRED TO SUBMIT A "RECORD OF COMPLETION", PER NFPA 72, TO THE OWNER PRIOR TO FINAL PAYMENT.

4. THE FIRE ALARM CONTRACTOR IS REQUIRED TO MAINTAIN A COMPLETE AND ACCURATE AS-BUILT DRAWING SET. UPON FINAL COMPLETION OF THE PROJECT, THE FIRE ALARM CONTRACTOR SHALL SUPPLY THE OWNER & HATCHER ENGINEERING WITH AN AS-BUILT SET PRIOR TO FINAL PAYMENT. AS-BUILTS SHALL INDICATE ALL CHANGES TO THE ORIGINAL LAYOUT INCLUDING, BUT NOT NECESSARILY LIMITED TO, AS-BUILT DEVICE LOCATIONS, PANEL LOCATIONS, CIRCUIT ROUTING, CONDUIT ROUTING, JUNCTION BOX LOCATIONS, PANEL CIRCUIT BREAKER LOCATIONS, ETC.

5. ALL CONDUIT AND WIRING PENETRATIONS THROUGH FIRE RATED BARRIERS (INCLUDING WALLS AND FLOORS), AND SMOKE BARRIERS THAT EXTEND FROM FLOOR TO CEILING, SHALL BE SEALED WITH A UL LISTED FIRESTOPPING PENETRATION SYSTEM. THE MINIMUM PENETRATION RATING FOR FIRE RATED BARRIERS SHALL MATCH THE RATING OF THE WALL \ FLOOR \ BARRIER. SMOKE BARRIERS SIMPLY NEED TO BE SEALED TO PREVENT THE PASSAGE OF SMOKE THROUGH THE ASSEMBLY.

6. PRIOR TO FINAL PROJECT COMPLETION, ALL DEVICES SHALL BE LABELED ON THEIR EXTERIOR HOUSING SO THAT THE DEVICE NUMBER CAN BE DETERMINED BY VISUAL INSPECTION. ALL FIRE ALARM DEVICES, INCLUDING BUT NOT LIMITED TO DETECTORS, MODULES, HORNS, SPEAKERS, AND STROBES, SHALL HAVE A LABEL AFFIXED TO THEIR FRONT SURFACE. THESE LABELS SHALL CONFORM TO THE FOLLOWING:

- I. THE LABELS SHALL HAVE LETTERS AT LEAST 1/4" HIGH.
- II. THE LABELS SHALL MATCH THE DEVICE NUMBER SHOWN ON THE AS-BUILT DRAWINGS.
- III. THE LABELS SHALL BE IDENTICAL TO THE DEVICE NUMBER PROGRAMMED INTO AND DISPLAYED ON THE FACP AND ALL REMOTE ANNUNCIATORS.

FIRE ALARM DEVICE LEGEND				
SYMBOL	QTY	DEVICE TYPE	DEVICE MODEL	ADDITIONAL NOTES
	1	FIRE ALARM CONTROL PANEL	SILENT KNIGHT 5808	
	1	REMOTE ANNUNCIATOR PANEL	SILENT KNIGHT 5860	INSTALL AT 60" AFF
		SURGE SUPPRESSION MODULE		
	20	HORN / STROBE (CEILING MOUNTED)	SYSTEM SENSOR CEILING MOUNTED	DEVICE TO BE 'WHITE'
	8	STROBE (CEILING MOUNTED)	SYSTEM SENSOR CEILING MOUNTED	DEVICE TO BE 'WHITE'
	1	HORN / STROBE (WALL MOUNTED)	SYSTEM SENSOR WALL MOUNTED	DEVICE TO BE 'WHITE'
	2	WEATHERPROOF HORN / STROBE (WALL MOUNTED)	SYSTEM SENSOR WALL MOUNTED	DEVICE TO BE 'WHITE'
	11	MANUAL PULL STATION	SD500-PS	INSTALL AT 48" AFF
	3 (M) 4 (R)	ADDRESSABLE MODULE	SD500-MIM, SD500-ARM, SD500-ANM M-MONITOR, DM-DUAL MONITOR, R-RELAY ANM-ADDRESSABLE NOTIFICATION MODULE	MOUNT WITH-IN 3 FEET OF AHU INTERFACE POINT
	4	DUCT SMOKE DETECTOR	SD505-DUCT	COORDINATE WITH HVAC CONTRACTOR. INSTALL DETECTOR IN SUPPLY SIDE DUCT (DOWNSTREAM OF HVAC FAN UNIT)
	1	PHOTOELECTRIC SMOKE DETECTOR	SD505-APS	CEILING MOUNTED DEVICES TO BE 'WHITE'
		FLOW SWITCH		
		TAMPER SWITCH		
	SEE PLAN	END-OF-LINE RESISTOR (EOL)		SUPPLIED BY PRODUCT VENDOR INSTALLED AT END OF CIRCUIT LINE

PROPOSED FIRE ALARM CONTROL MATRIX

	CONTROL UNIT ANNUNCIATION															NOTIFICATION										SUPPLEMENTARY				
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
SMOKE DETECTOR																														
FIRE SPRINKLER WATER FLOW SWITCH																														
FIRE SPRINKLER VALVE TAMPER SWITCH																														
MANUAL PULL STATION																														
DUCT SMOKE DETECTOR																														

PROJECT SPECIFIC NOTES:

1. ALL SMOKE DETECTORS ARE TO BE PROGRAMMED WITH ALARM VERIFICATION.
2. THIS CHART IS TO BE USED AS A BASIC PROGRAMMING GUIDE ONLY. ALL OTHER PANEL PROGRAMMING FEATURES SHALL COMPLY WITH NFPA 72 AND THE MANUFACTURERS INSTRUCTIONS.

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HATCHER ENGINEERING INC.

FIRE PROTECTION ENGINEERING • LIFE SAFETY
 Florida Cert. of Authorization #: 28929

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 Tel: (813) 752-6900
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Fire Protection
 Nathaniel J. Hatcher, P.E.
 FL ENG #59350

Utilities Maintenance & Administration Building

Bradenton, FL 34210

Client:

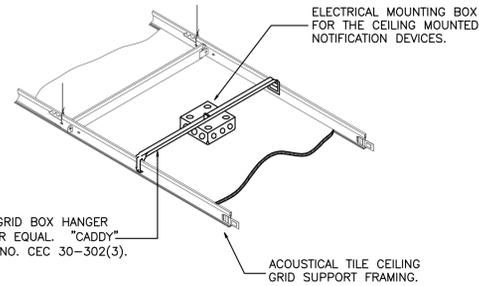
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 1112 Manatee Avenue West
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FIRE ALARM SPECIFICATIONS

FA1

100%
 CONSTRUCTION DOCUMENTS



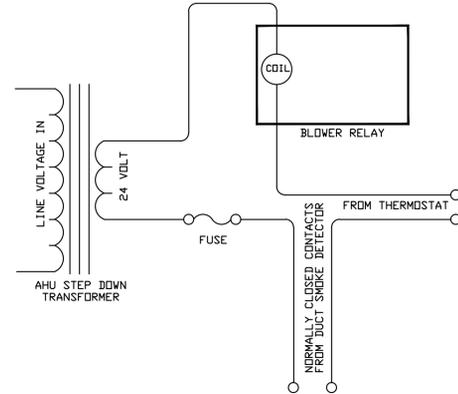
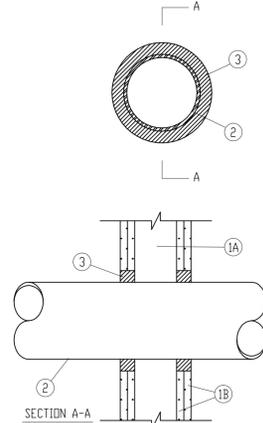
D
FA2
CEILING GRID ELECTRICAL BACK-BOX ATTACHMENT
NOT TO SCALE

HILTI System No. W-L-1054 F Ratings - 1 and 2 Hr (See Items 1 and 3) T Rating - 0 Hr L Rating At Ambient - Less Than 1 CFM/Sq Ft L Rating At 400 F - 4 CFM/Sq Ft

- Wall Assembly -- The 1 or 2 hr fire-rated gypsum wallboard/stud wall assembly shall be constructed of the materials and in the manner specified in the individual U300 or U400 Series Wall and Partition Designs in the UL Fire Resistance Directory and shall include the following construction features:
 - Studs -- Wall framing may consist of either wood studs or steel channel studs. Wood studs to consist of nom 2 by 4 in. lumber spaced 16 in. OC. Steel studs to be min 2-1/2 in. wide and spaced max 24 in. OC. When steel studs are used and the diam of opening exceeds the width of stud cavity, the opening shall be framed on all sides using lengths of steel installed between the vertical studs and screw-attached to the steel studs at each end. The framed opening in the wall shall be 4 to 6 in. wider and 4 to 6 in. higher than the diam of the penetrating item such that, when the penetrating item is installed in the opening, a 2 to 3 in. clearance is present between the penetrating item and the framing on all four sides.
 - Gypsum Board* -- 5/8 in. thick, 4 ft wide with square or tapered edges. The gypsum board type, thickness, number of layers, fastener type and sheet orientation shall be as specified in the individual U300 or U400 Series Design in the UL Fire Resistance Directory. Max diam of opening is 32-1/4 in. for steel stud walls. Max diam of opening is 14-1/2 in. for wood stud walls.
- Through-Penetrants -- One metallic pipe, conduit or tubing to be installed either concentrically or eccentrically within the firestop system. The annular space shall be min 0 in. to max 2-1/4 in. Pipe may be installed with continuous point contact. Pipe, conduit or tubing may be installed at an angle not greater than 45 degrees from perpendicular. Pipe, conduit or tubing to be rigidly supported on both sides of wall assembly. The following types and sizes of metallic pipes, conduits or tubing may be used:
 - Steel Pipe -- Nom 30 in. diam (or smaller) Schedule 10 (or heavier) steel pipe.
 - Iron Pipe -- Nom 30 in. diam (or smaller) cast or ductile iron pipe.
 - Conduit -- Nom 4 in. diam (or smaller) steel electrical metallic tubing or 6 in. diam steel conduit.
 - Copper tubing -- Nom 6 in. diam (or smaller) Type L (or heavier) copper tubing.
 - Copper Pipe -- Nom 6 in. diam (or smaller) regular (or heavier) copper pipe.
- Fill, Void or Cavity Material* -- Sealant -- Min 5/8 in. thickness of fill material applied within the annulus, flush with both surfaces of wall. At the point or continuous contact locations between pipe and wall, a min 1/2 in. diam bead of fill material shall be applied at the pipe wall interface on both surfaces of wall.

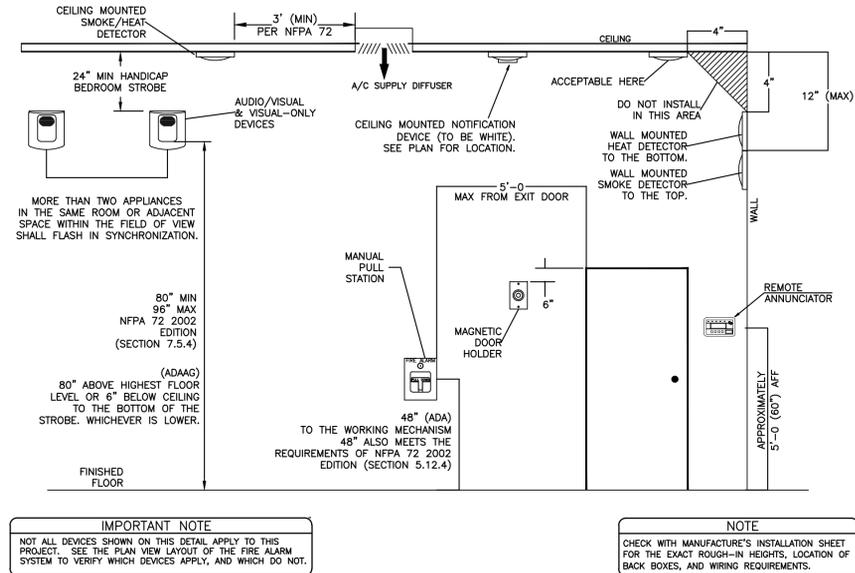
HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC -- FS-One Sealant

*Bearing the UL Classification Mark



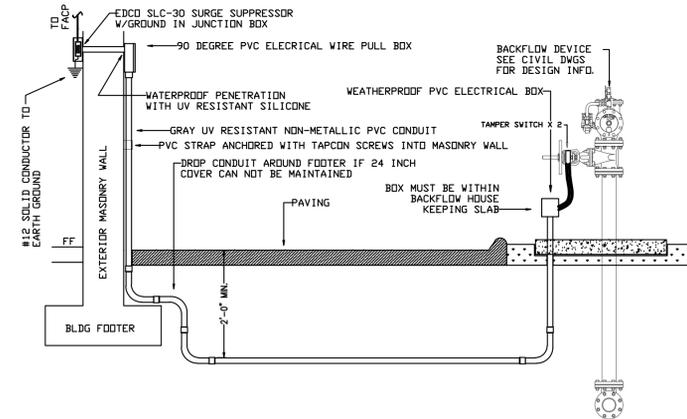
- HVAC WIRING GENERAL NOTES**
- DUCT DETECTOR RELAY WIRING SHALL BREAK 24VOLT SECONDARY CONTROL SYSTEM POWER AT THE AIR HANDLER UNIT.
 - IF ADDRESSABLE DUCT DETECTORS ARE USED, THE RELAY WILL BE NORMALLY CLOSED DURING NON-ALARM CONDITIONS AND OPEN UPON ALARM TO CAUSE A POWER LOSS IN THE HVAC CONTROL CIRCUIT, RESULTING IN FAN AND COMPRESSOR SHUTDOWN.
 - IF CONVENTIONAL RELAYS (NON-ADDRESSABLE) ARE USED, THE RELAY SHALL BE NORMALLY OPEN (UNPOWERED) AND SHALL BE HELD CLOSED BY THE FIRE ALARM PANEL UNTIL THE DUCT SMOKE DETECTOR IS IN AN ALARM CONDITION.
 - IN SYSTEMS PROVIDED WITH A FAN SHUTDOWN DELAY CIRCUIT, A PROGRAMMABLE RELAY SHALL BE PROVIDED IN SERIES WITH THIS EQUIPMENT TO BREAK THE CIRCUIT ON ADDRESSABLE SYSTEMS OR PROVIDED WITH A NORMALLY OPEN RELAY THAT IS HELD CLOSED DURING NORMALLY SYSTEM OPERATION ON CONVENTION SYSTEMS.

A
FA2
FIRE ALARM DUCT DETECTOR SHUTDOWN WIRING
NOT TO SCALE



B
FA2
FIRE ALARM DEVICE MOUNTING GUIDE
NOT TO SCALE

UNDERGROUND FIRE ALARM WIRING ENTRANCE DETAIL OUT TO BACKFLOW DEVICE



- GENERAL NOTES**
- THE FIRE ALARM CABLE MUST BE INSTALLED PER NFPA 70 TABLE 300.5.
 - ALL WIRING USED UNDERGROUND SHALL BE WEST PENN AQUASEAL TYPE MOISTURE RESISTANT FFL UL RATED DIRECT BURY OR THWN TYPE INSULATED WIRE.
 - DIRECT BURIAL TYPE CABLE SHALL NOT BE INSTALLED WITHOUT RIGID NON METALLIC CONDUIT. VALUE ENGINEERING WILL NOT BE PERMITTED TO OMIT THIS FEATURE.
 - ALL CONDUIT IS TO RIGID NON-METALLIC CONDUIT (RNC) CONSTRUCTED OF PVC WITH SOLVENT FITTING CONNECTIONS. ONLY SOLVENT GLUE LISTED FOR USE WITH THE RMC SHALL BE USED. ALL PIPE SHALL BE CLEANED PRIOR TO MAKING THE SOLVENT JOINTS.
 - INSTALL PULL STRING IN CONDUIT TO FACILITATE WIRE REPLACEMENT.

C
FA2
UNDERGROUND FIRE ALARM WIRING ENTRANCE DETAIL (BACKFLOW PREVENTER)
NOT TO SCALE

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Utilities
Maintenance &
Administration
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Bradenton, FL 34210

Client:

Manatee County Government
1112 Manatee Avenue West
Bradenton, FL 34208

drawn: TVB
checked: NJH
date: 09-30-10
comm. no.: 0920826

FIRE ALARM DETAILS

FA2

100%
CONSTRUCTION DOCUMENTS

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Client:

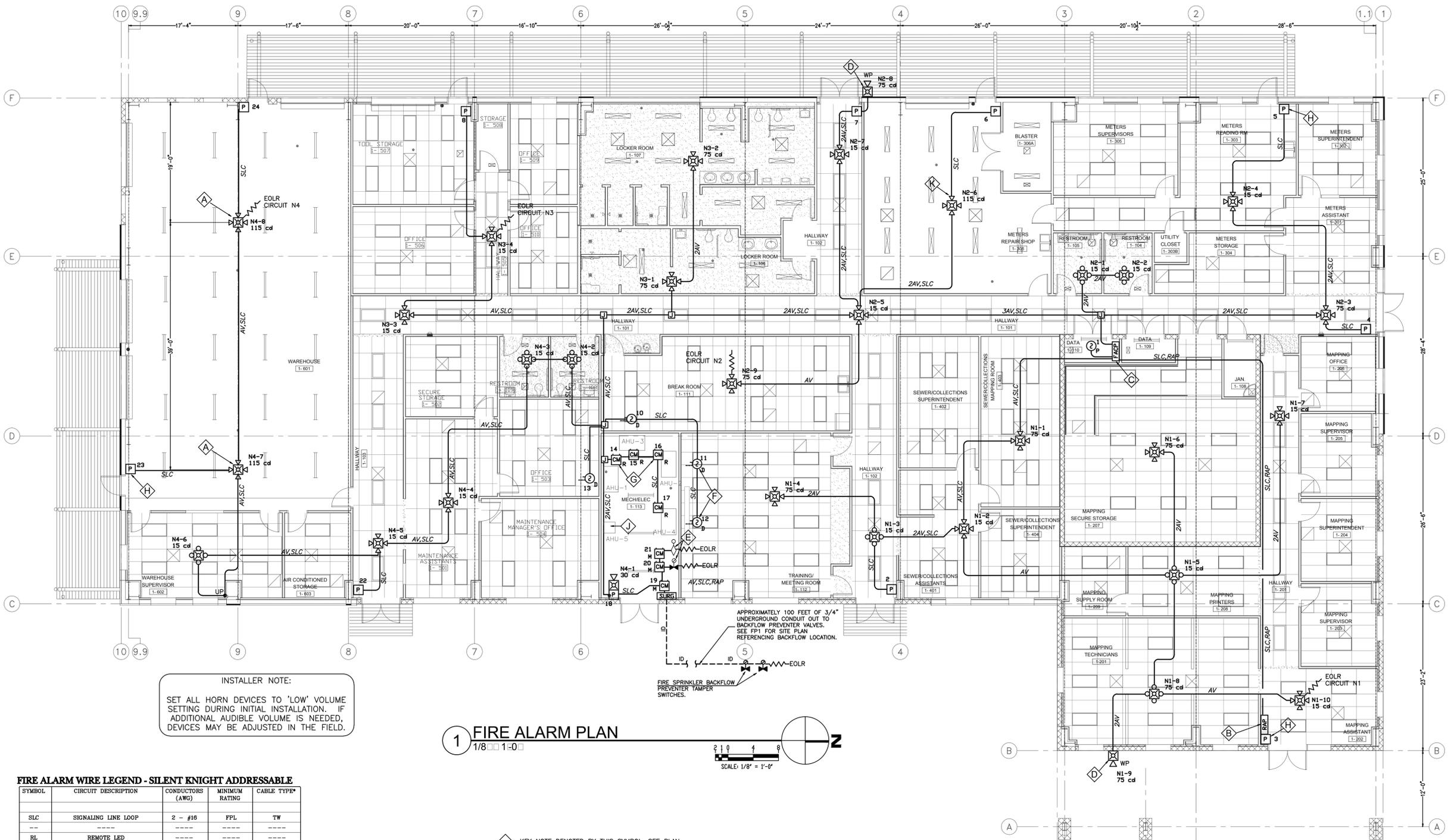
Manatee County Government
 1112 Manatee Avenue West
 Bradenton, FL 34208

drawn: TVB
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FIRE ALARM PLAN

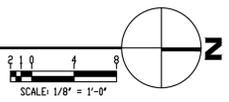
FA3

100%
 CONSTRUCTION DOCUMENTS



INSTALLER NOTE:
 SET ALL HORN DEVICES TO 'LOW' VOLUME SETTING INITIAL INSTALLATION. IF ADDITIONAL AUDIBLE VOLUME IS NEEDED, DEVICES MAY BE ADJUSTED IN THE FIELD.

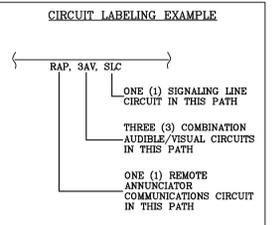
1 FIRE ALARM PLAN
 1/8" = 1'-0"



FIRE ALARM WIRE LEGEND - SILENT KNIGHT ADDRESSABLE

SYMBOL	CIRCUIT DESCRIPTION	CONDUCTORS (AWG)	MINIMUM RATING	CABLE TYPE*
SLC	SIGNALING LINE LOOP	2 - #16	FPL	TW
RL	REMOTE LED	---	---	---
RT	REMOTE TEST SWITCH	---	---	---
RAP	COMMUNICATIONS CIRCUIT (RAP)	4 - #16	FPL	TW / SH
MIC	COMMUNICATIONS CIRCUIT (MIC)	4 - #16	FPL	TW / SH
ID	INITIATING DEVICE CIRCUIT	2 - #16	FPL	TW
ST	VISUAL CIRCUIT (STROBE)	2 - #14	FPL	TW
AV	COMBO AUDIBLE/VISUAL CIRCUIT	2 - #14	FPL	TW
SP	VOICE CIRCUIT (SPEAKER)	2 - #16	FPL	TW / SH
AC	120 VAC POWER CIRCUIT	3 - #12	---	TW
DC	24 VDC POWER CIRCUIT	2 - #14	FPL	TW
X	SPARE WIRE PAIR	2 - #16	FPL	TW / SH
Y	SPARE WIRE PAIR	2 - #14	FPL	TW / SH
Z	SPARE WIRE PAIR	2 - #12	FPL	TW / SH

CABLE TYPE DESIGNATIONS: TW = TWISTED, SH = SHIELDED



KEY NOTE DENOTED BY THIS SYMBOL. SEE PLAN.

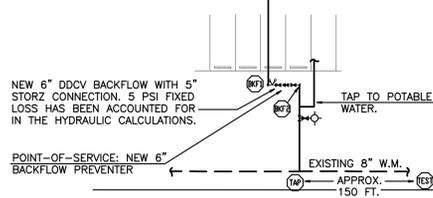
KEY NOTE LEGEND (THIS SHEET):

- A. CEILING HORN/STROBE MOUNTED AT BOTTOM OF MAIN FRAME BEAM. MAXIMUM HEIGHT OF HORN/STROBE IN THIS AREA IS 23 FT. CANDELA RATING SHOWN IS BASED ON A HEIGHT OF 30 FT., PER NFPA 72.
- B. PROPOSED REMOTE ANNUNCIATOR LOCATION.
- C. PROPOSED FIRE ALARM CONTROL PANEL LOCATION.
- D. 'WEATHERPROOF' HORN/STROBE DEVICE LOCATION.
- E. FIRE SPRINKLER FLOW & TAMPER SWITCH TO BE MONITORED VIA THE FIRE ALARM SYSTEM.
- F. DUCT SMOKE DETECTOR INSTALLED ON THE SUPPLY SIDE HVAC DUCT SYSTEM, TYPICAL FOR AIR HANDLER UNITS EXCEEDING 2,000 CFM, AS INDICATED.
- G. PROVIDE RELAY CONTROL MODULE FOR HVAC AIR HANDLER UNIT (AHU) SHUT DOWN, AS INDICATED, LOCATE WITHIN 3 FEET OF CONTROL INTERFACE WITH AHU.
- H. FIRE ALARM MANUAL PULL STATION LOCATED AT EXTERIOR EXIT DOORS (TYPICAL).
- J. AHU-5 IS LESS THAN 2,000 CFM. NO FIRE ALARM INTERFACE REQUIRED FOR THIS AIR HANDLER UNIT.
- K. CEILING HORN/STROBE MOUNTED AT BOTTOM OF STRUCTURE.

FIRE PROTECTION SITE PLAN
(TO BE USED FOR HYDRAULIC REFERENCE ONLY)
SCALE: 1" = 30'-0"



6" DUCTILE IRON STUB-UP AND 6" FIRE SPRINKLER RISER LOCATION. SEE FP3 FOR RISER LOCATION DIMENSIONED OFF BUILDING STRUCTURAL ELEMENTS.



NEW 6" DDCV BACKFLOW WITH 5" STORZ CONNECTION. 5 PSI FIXED LOSS HAS BEEN ACCOUNTED FOR IN THE HYDRAULIC CALCULATIONS.

POINT-OF-SERVICE: NEW 6" BACKFLOW PREVENTER

66TH STREET WEST

THE SITE PLAN SHOWN IS FOR HYDRAULIC REFERENCE ONLY. SEE THE SITE UTILITY PLANS FOR CONSTRUCTION REQUIREMENTS CONCERNING THE NEW FIRE LINE.

FIRE PROTECTION WATER SUPPLY			
<input checked="" type="checkbox"/> PUBLIC	<input type="checkbox"/> PUBLIC + PUMP	<input type="checkbox"/> FIRE PUMP	<input type="checkbox"/> OTHER
PUBLIC FLOW TEST: STATIC = 60 PSI RESIDUAL = 52 PSI FLOW = 1186 GPM			
SOURCE OF TEST: CEDAR HAMMOCK FIRE DEPARTMENT			
DATE OF TEST: 3/22/10			
TEST LOCATION: HYDRANT #2008-12, (Address of Hydrant is 4410 66th St W)			
FIRE PUMP DATA: N/A		RATED GPM = N/A	RATED PSI = N/A
STORAGE TANK SIZE: N/A		MISC. NOTES:	

FIRE SPRINKLER GENERAL NOTES AND SPECIFICATIONS

I. GENERAL PROJECT SCOPE

THE PROJECT INVOLVES THE CONSTRUCTION OF A WET PIPE FIRE SPRINKLER SYSTEM TO PROTECT A NEW OPERATIONS BUILDING FOR MANATEE COUNTY UTILITIES. THE BUILDING IS BUILT OF NON-COMBUSTIBLE CONSTRUCTION. ONE FIRE SPRINKLER RISER WILL BE INSTALLED. THE AREAS PROTECTED PER RISER ARE:

SYSTEM #1 TOTAL COVERAGE AREA (INCLUDING PROTECTED CANOPIES): APPROXIMATELY 19,400 SQ. FT.

II. DESIGN PARAMETERS

- A. ALL WORK IS TO BE IN ACCORDANCE WITH NFPA 13, 2002 EDITION; NFPA 24, 2002 EDITION; NFPA 101, 2006 EDITION; FLORIDA FIRE PREVENTION CODE, 2007 EDITION; AND THE LOCAL AUTHORITIES HAVING JURISDICTION. THE FIRE SPRINKLER CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE REQUIREMENTS OF THE REFERENCED CODES. DEVIATIONS OR ABNORMAL CONDITIONS THAT WOULD RESULT IN NON-CODE OR STANDARD COMPLIANCE SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER IN WRITING FOR ASSISTANCE IN THE RESOLUTION OF THE PROBLEM.
- B. OFFICE AREAS, CORRIDORS, MEETING ROOMS, BATHROOMS: LIGHT HAZARD OCCUPANCY WITH A DESIGN DENSITY OF 0.10 GPM/SF OVER THE HYDRAULICALLY MOST REMOTE 1500 SQ.FT. AREA, WITH AN OUTSIDE HOSE ALLOWANCE OF 100 GPM. A REDUCTION IN THE HYDRAULIC DESIGN AREA, FOR THE USE OF QUICK RESPONSE HEADS, PER NFPA 13, SHALL BE ALLOWED.
- C. MECHANICAL ROOMS, ELECTRICAL ROOMS, JANITOR CLOSETS: ORDINARY HAZARD (GROUP 1) OCCUPANCY WITH A DESIGN DENSITY OF 0.15 GPM/SF OVER THE HYDRAULICALLY MOST REMOTE AREA 1500 SQ.FT. AREA, WITH AN OUTSIDE HOSE ALLOWANCE OF 250 GPM. A REDUCTION IN THE HYDRAULIC DESIGN AREA, FOR THE USE OF QUICK RESPONSE HEADS, PER NFPA 13, SHALL BE ALLOWED.
- D. "SHOP" AREAS & LOADING DOCK CANOPIES: ORDINARY HAZARD (GROUP 2) OCCUPANCY WITH A DESIGN DENSITY OF 0.20 GPM/SF OVER THE HYDRAULICALLY MOST REMOTE AREA 1500 SQ.FT. AREA, WITH AN OUTSIDE HOSE ALLOWANCE OF 250 GPM. A REDUCTION IN THE HYDRAULIC DESIGN AREA, FOR THE USE OF QUICK RESPONSE HEADS, PER NFPA 13, SHALL BE ALLOWED.
- E. WAREHOUSE AREA: RACK \ SHELF STORAGE OF CLASS IV COMMODITIES UP TO A MAXIMUM OF 12 FT. PER TABLE 12.1.10.1.1, CURVE 4 FROM FIGURE 12.1.10 APPLIES. DESIGN DENSITY OF 0.30 GPM/SF OVER THE HYDRAULICALLY MOST REMOTE AREA 2500 SQ.FT. AREA, WITH AN OUTSIDE HOSE ALLOWANCE OF 500 GPM.
- F. ALL HANGERS TO BE ACCORDANCE WITH NFPA-13. TRAPEZE HANGER SHALL BE UTILIZED WHERE NECESSARY TO COMPLY WITH THE HANGER SPACING OF NFPA 13. 6" MAINS THAT RUN PARALLEL TO THE ROOF PURLIN FRAMING SYSTEM SHALL BE INSTALLED USING TRAPEZE HANGERS. THIS SHALL BE PROVIDED TO ENSURE THE WEIGHT OF THE 6" MAIN IS DISTRIBUTED BETWEEN TWO ADJACENT Z-PURLIN MEMBERS.
- G. THIS AREA IS NOT KNOWN TO HAVE PROBLEMS WITH MICROBIAL INDUCED CORROSION. NO PREVENTATIVE MEASURES HAVE BEEN DESIGNED INTO THIS SYSTEM.
- H. THE ENGINEER HAS OBSERVED THE ROOF FRAMING DESIGN AND IS SATISFIED THAT THE SPRINKLER PIPING CAN BE SAFELY SUPPORTED FROM THE STRUCTURE.

- I. CONTRACTOR'S SUBMITTALS &/OR INSTALLATION WHICH SIGNIFICANTLY DEVIATES FROM THE DESIGN SHOWN IN THIS PLAN SET SHALL BE CONSIDERED A MATERIAL DEVIATION. ALL MATERIAL DEVIATIONS REQUIRE THE APPROVAL OF THE ENGINEER OF RECORD AND THE LOCAL AUTHORITY HAVING JURISDICTION.

III. MATERIALS

- A. ALL FIRE PROTECTION EQUIPMENT AND MATERIALS SHALL BE U.L. LISTED (WHEN APPLICABLE).
- B. ALL THREADED FITTINGS ARE TO BE CLASS 125 CAST IRON, CLASS 125 DUCTILE IRON, OR CLASS 150 MALLEABLE IRON.
- C. GROOVED FITTINGS ARE TO BE UL LISTED FOR FIRE PROTECTION SERVICE AND RATED FOR 175 PSI SERVICE.
- D. ALL THREADED PIPE IS TO BE SCHEDULE 40, BLACK, OR SCHEDULE 30. USE OF THREADABLE LIGHTWALL PIPE WITH SCREWED FITTINGS SHALL NOT BE PERMITTED UNLESS THE PIPE HAS A U.L. CORROSION RESISTANCE RATIO OF 1.0 OR GREATER.
- E. GROOVED PIPE SHALL BE SCHEDULE 10 OR SCHEDULE 40, IN ACCORDANCE WITH NFPA-13 AND ASTM A 795 UNLESS NOTED OTHERWISE.
- F. NORMALLY EMPTY PIPE (DRAINS, ETC.), SHALL BE SCHEDULE 40 GALVANIZED PIPE WITH GROOVED OR SCREWED GALVANIZED FITTINGS.
- G. SPRINKLER HEADS SHOWN ON THIS SHEET OR IN THIS PLAN SET SHALL BE THE BASIS OF THE DESIGN. EQUAL HEADS BY OTHER MANUFACTURERS WILL BE EVALUATED AND APPROVED IF FUNCTIONALLY EQUIVALENT.

IV. PROJECT REQUIREMENTS

- 1. THE FIRE SPRINKLER CONTRACTOR SHALL PREPARE A "MATERIAL SUBMITTAL PACKAGE", AND SUBMIT TO THE ENGINEER AND AUTHORITY HAVING JURISDICTION, FOR APPROVAL. THE FIRE SPRINKLER CONTRACTOR MAY ELECT TO RESUBMIT THE ENGINEERING DRAWINGS WITH HIS COMPANY INFORMATION SUBSTITUTED FOR THE ENGINEER OF RECORD. THE USE OF THE ENGINEERS DRAWINGS FOR SHOP DRAWINGS DOES NOT RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY FOR FIELD COORDINATION AS WOULD BE REQUIRED IF HE HAD PRODUCED SHOP DRAWINGS FROM SCRATCH. THE CONTRACTOR SHALL VERIFY ALL QUANTITIES DURING THE BIDDING PHASE AND IMMEDIATELY NOTIFY THE ENGINEER IN WRITING SO THAT A RESOLUTION CAN BE FORMULATED. THE ENGINEER OF RECORD SHALL FURNISH THE FIRE SPRINKLER CONTRACTOR WITH AUTOCAD VERSION 2009 DRAWINGS PREPARED WITH HYDRACAD SPRINKLER DESIGN SOFTWARE FOR USE IN MAKING WORKING DRAWINGS AND AS-BUILTS.
- 2. THE FIRE PROTECTION ENGINEER OF RECORD SHALL FURNISH THE FIRE SPRINKLER CONTRACTOR, UP TO FOUR (4) SETS OF ENGINEERING DRAWING BLUEPRINTS BEARING THE SEAL OF THE ENGINEER, FOR PERMITTING SHOP DRAWINGS. THE SHOP DRAWINGS SHALL BE REVIEWED BY THE ENGINEER AND STAMPED "APPROVED", "APPROVED AS NOTED", OR "REJECTED". THE ENGINEER SHALL NOT SIGN AND SEAL ANY SHOP DRAWINGS (IN VIOLATION OF STATE LAW). THE CONTRACTOR MAY ELECT TO RESUBMIT THE ENGINEERING DRAWINGS WITH HIS(HER) TITLE BLOCK (SUBSTITUTED FOR THE ENGINEER AND ARCHITECT'S TITLE BLOCK), ALONG WITH ADDED FABRICATION AND COORDINATION NOTES.
- 3. SPRINKLER CONTRACTOR IS RESPONSIBLE FOR MAINTAINING AS-BUILTS. THE CONTRACTOR SHALL SUPPLY THE OWNER WITH AS-BUILT DRAWINGS PRIOR TO FINAL PAYMENT.
- 4. A NOMINAL QUANTITY OF ADDITIONAL SPRINKLERS MAY BE REQUIRED TO CORRECT FIELD OBSTRUCTIONS OR PARTITION CHANGES. THE FIRE SPRINKLER SHALL INSTALL THE THE REQUIRED ADDITIONAL HEADS FOR A FLAT RATE OF 150 DOLLARS PER HEAD (INCLUDES MATERIAL, LABOR, AND MARKUP).
- 5. THE SYSTEM SHOWN ON THESE PLANS REQUIRE A CONNECTION TO THE UNDERGROUND FIRE PROTECTION MAIN. THE CONTRACTOR WHO INSTALLS THE UNDERGROUND PIPING FROM THE POINT OF SERVICE IS RESPONSIBLE FOR COMPLETING THE INSTALLATION TO THE ABOVE GROUND FIRE SPRINKLER SYSTEM CONNECTION FLANGE OR GROOVED CONNECTION, WHICH BY DEFINITION PER 633.539FS IS NO MORE THAN 1 FOOT ABOVE THE FINISHED FLOOR (OR FINISHED GRADE FOR OUTSIDE RISERS). ALL FIRE PROTECTION UNDERGROUND DOWNSTREAM OF THE POINT OF SERVICE IDENTIFIED ON THE PLANS SHALL BE INSTALLED BY A LICENSED CLASS I, CLASS II, OR CLASS V FIRE PROTECTION CONTRACTOR AS REQUIRED BY THE STATE FIRE MARSHAL. THE UNDERGROUND CONTRACTOR IS RESPONSIBLE FOR COMPLETING THE CONTRACTOR'S MATERIAL AND TEST CERTIFICATE FOR UNDERGROUND PIPING DOCUMENT. ABOVE GROUND CONTRACTORS MAY NOT COMPLETE THE CONTRACTOR' MATERIAL AN TEST CERTIFICATE FOR THE UNDERGROUND PIPING OR PORTION THEREOF WHICH HAVE BEEN INSTALLED BY OTHERS. THE UNDERGROUND CONTRACTOR MUST USE EXTREME CARE IN INSTALLING THE RISER STUB-UP EXACTLY WHERE SHOWN AND DIMENSIONED ON THIS PLAN.
- 6. ALL PENETRATIONS THROUGH RATED WALLS/FLOORS SHALL BE FIRE STOPPED/WATERPROOFED TO MATCH THE RATING OF THE WALL/FLOOR.
- 7. ALL UNDERGROUND WORK (MATERIAL, INSTALLATION, FLUSHING, AND TESTING) IS TO BE IN ACCORDANCE WITH NFPA-24.

V. COMPLETION AND TESTING REQUIREMENTS

- 1. THE FIRE SPRINKLER SYSTEM SHALL BE PRESSURE TESTED AT 200 PSI FOR 2 HOURS IN ACCORDANCE WITH NFPA 13. THE SYSTEM SHALL MAINTAIN THE TEST PRESSURE FOR THE REQUIRED PERIOD WITHOUT LOSS. ALL REQUIREMENTS OF CHAPTER 16 OF NFPA 13 "SYSTEM ACCEPTANCE" SHALL BE COMPLETED BY THE INSTALLING FIRE SPRINKLER CONTRACTOR.
- 2. CONTRACTOR'S MATERIAL AND TEST CERTIFICATION DOCUMENTS SHALL BE COMPLETED FOR THIS PROJECT AND DELIVERED TO THE AUTHORITY MAKING THE FINAL INSPECTION.
- 3. THE CONTRACTOR SHALL PROVIDE A COPY OF NFPA 25 AND MANUFACTURERS EQUIPMENT AND MAINTENANCE CUTSHEETS TO THE OWNER, UPON COMPLETION OF THE WORK AND AS PART OF THE APPLICATION FOR PAYMENT.
- 4. A HYDRAULIC PLACARD SHALL BE INSTALLED ON THE FIRE SPRINKLER RISER FOR EACH DESIGN AREA. THE HYDRAULIC PLACARD SHALL BE METAL CONSTRUCTION WITH STAMPED LETTERING. PLASTIC PLACARDS WILL NOT BE ACCEPTED.

VI. MISCELLANEOUS REQUIREMENTS

- 1. IN AREAS WHERE PIPING IS PAINTED, HEADS SHALL NOT BE PAINTED AND SHALL BE TEMPORARILY PROTECTED FROM OVERSPRAY WITH PAPER BAGS OR ALUMINUM FOIL. CARE SHALL BE TAKEN AT ALL TIMES NOT TO DAMAGE THE SPRINKLER HEAD'S FRANGIBLE BULB.
- 2. A SITE PLAN HAS BEEN SHOWN ON THESE PLANS IN ORDER TO SHOW THE UNDERGROUND HYDRAULIC NODES USED IN THE CALCULATIONS. THE SITE PLAN SHOWN ON THESE PLANS IS TO BE USED FOR HYDRAULIC REFERENCE ONLY. SEE THE SITE UTILITY DRAWINGS FOR CONSTRUCTION REQUIREMENTS.
- 3. THE NEW 5" STORZ FIRE DEPARTMENT CONNECTION IS LOCATED AT THE BACKFLOW PREVENTER ON THE SYSTEM SIDE.
- 4. QUICK RESPONSE SPRINKLER HEADS SHALL BE INSTALLED THROUGHOUT LIGHT AND ORDINARY HAZARD DESIGNATED AREAS (UNLESS OTHERWISE NOTED).
- 5. THIS IS A CENTER-OF-TILE INSTALLATION. IN ALL COMMON ACCESS AREAS, SPRINKLER HEADS SHALL BE INSTALLED WITHIN 1" OF THE CENTER-OF-TILE (OR CENTER OF 2x2 HALF OF A 4x2 TILE) AS INDICATED ON THESE PLANS. IN ALL SOFFITED AREAS, HEADS SHALL BE ALIGNED WITH ADJACENT LIGHTING WHERE INDICATED ON THESE PLANS. IN STORAGE AND MECHANICAL ROOMS IT WILL NOT BE NECESSARY TO CENTER HEADS IN THE CEILING GRID.

TABLE 1 - MINIMUM DESIGN AREA (PER NFPA 13, 2002 EDITION)

CALCULATION ID #	MAX. CEILING HEIGHT	% RED. IN DESIGN AREA = $-3x/2 + 55$ (x=CEILING HEIGHT) (PER FIGURE 11.2.3.2.3.1)	INCREASE FOR SLOPES OVER 2:12 (SECTION 11.2.3.2.4)	MIN. ALLOWABLE DESIGN AREA (COMBINED PER 11.2.3.2.7, STARTING AT 1500 SQ.FT.)
3315-10-A	10'-0"	-40%	+0% (FLAT CEILING ON THIS CALC)	900 SQ. FT.
3315-10-B	20'-0"	-25%	+0% (FLAT CEILING ON THIS CALC)	1125 SQ. FT.

HYDRAULIC DESIGN DATA

SYSTEM OR CALC. ID.	SPECIFIC AREA PROTECTED	DENSITY (GPM/SQ. FT.)	DESIGN AREA (SQ. FT.)	HOSE ALLOW. (GPM) INSIDE/OUTSIDE	NUMBER OF HEADS CALCULATED	OCCUPANCY CLASSIFICATION	COMMODITY CLASSIFICATION	MAXIMUM STORAGE HEIGHT	WATER DEMAND AT NODE "TEST" INCLUDING HOSE DEMAND (GPM @ PSI)	WATER DEMAND AT THE BASE OF THE RISER (GPM @ PSI)
3315-10-A	OFFICE AREA	0.10	900	0 / 100	9	LIGHT HAZARD	N/A	N/A	303.7 GPM @ 38.8 PSI	203.7 GPM @ 35.4 PSI
3315-10-B	SHOP AREA	0.20	1,125	0 / 250	13	ORDINARY HAZARD GROUP 2	N/A	N/A	624.3 GPM @ 43.1 PSI	374.3 GPM @ 38.7 PSI
3315-10-C	WAREHOUSE AREA	0.30	2,500	0 / 500	29	RACK \ SHELF STORAGE	CLASS IV	12 FT.	1323.8 GPM @ 42.1 PSI	823.8 GPM @ 32.8 PSI

SPRINKLER HEADS AND LEGEND - BASIS OF DESIGN

MANUF.	MODEL	TYPE	RESPONSE	"K"	NPT	TEMP.	FINISH-HD / ESC	SPRK ID #	SYMBOL	QTY.	COMMENTS	SPARE HEAD COUNT BY TYPE	
TYCO	TY-FRB	RECESSED PENDENT	QUICK	5.6	1/2"	155°F	WHITE / WHITE	TY3231	⊙	125	HEADS TO BE POSITIONED WITHIN 1" OF CENTER-OF-TILE.	3	
TYCO	TY-FRB	RECESSED PENDENT	QUICK	5.6	1/2"	286°F	WHITE / WHITE	TY3231	⊙	5	PROVIDE LISTED CORROSION RESISTANT COATING FOR THIS SYMBOL	2	
TYCO	TY-FRB	UPRIGHT	QUICK	8.0	3/4"	200°F	BRASS	TY4131	○	7		3	
TYCO	TY-FRB	UPRIGHT	QUICK	8.0	3/4"	200°F	BRASS	TY4131	○	10	UPRIGHT IS ON A SPRIG		
TYCO	TY-B	UPRIGHT	STANDARD	8.0	3/4"	286°F	BRASS	TY4151	⊙	32		3	
TYCO	TY-B	HORIZONTAL SIDEWALL	STANDARD	5.6	1/2"	286°F	BRASS	TY3351	◀	29		3	
										TOTAL HEADS	208	TOTAL DOES NOT INCLUDE SPARE HEAD COUNT	LOCATE SPARE HEAD CABINET NEXT TO THE RISER

THE SPRINKLER HEAD COUNT SHOWN ON THIS PLAN SHALL BE CONSIDERED APPROXIMATE UNTIL VERIFIED BY THE CONTRACTOR. ANY DISCREPANCY SHALL BE IMMEDIATELY BROUGHT TO THE ENGINEER'S ATTENTION

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HATCHER ENGINEERING INC.

FIRE PROTECTION ENGINEERING • LIFE SAFETY
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 hatcherengineering.com
 info@hatcherengineering.com

Fire Protection
 Nathaniel J. Hatcher, P.E.
 FL ENG #59350

**Utilities
 Maintenance &
 Administration
 Building**

Bradenton, FL 34210

Client:

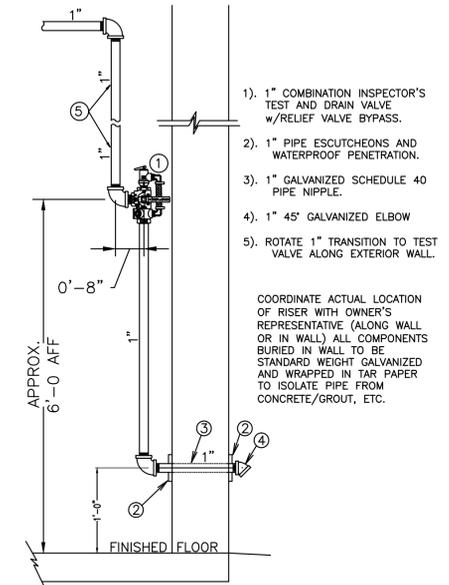
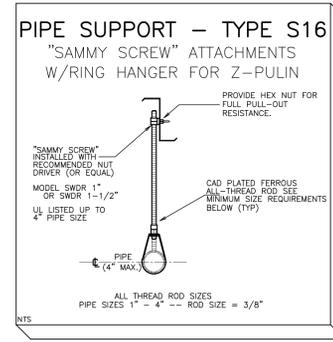
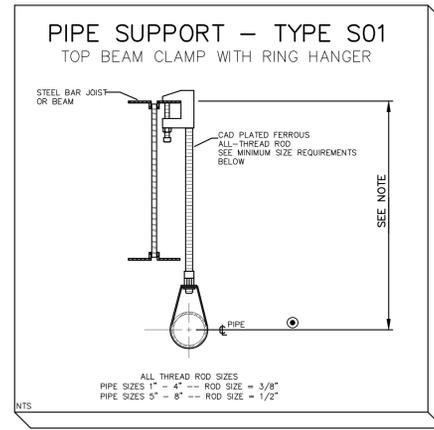
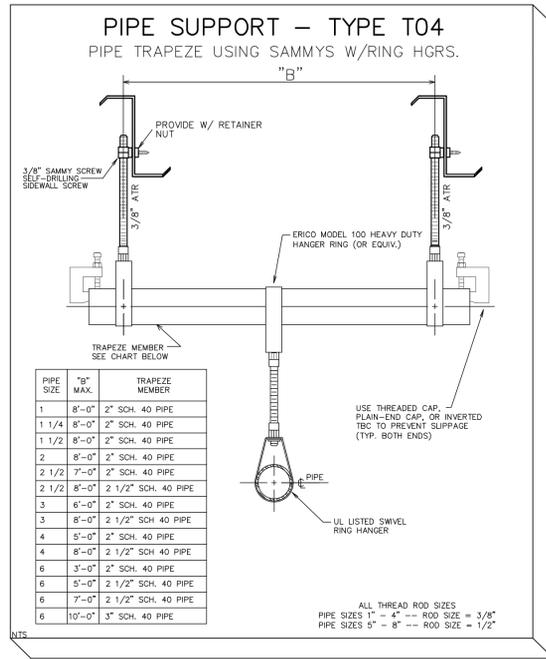
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 1112 Manatee Avenue West
 Bradenton, FL 34208

drawn: TVB
 checked: NUH
 date: 09-30-10
 comm. no.: 0920826

**FIRE SPRINKLER
 SPECIFICATIONS &
 DETAILS**

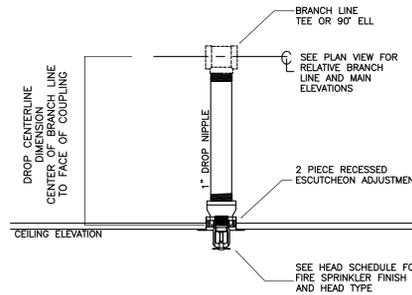
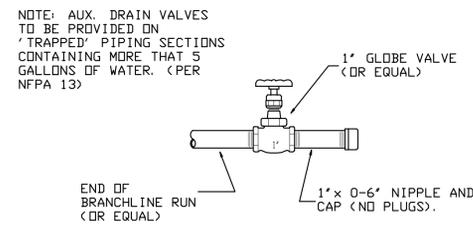
FP1

100%
 CONSTRUCTION DOCUMENTS



C
FP2
HANGER DETAILS
NOT TO SCALE

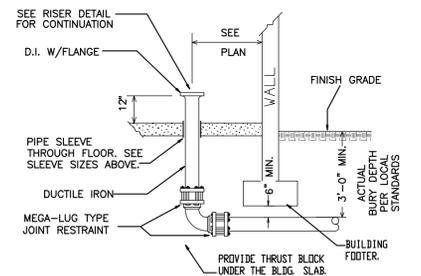
A
FP2
INSPECTOR'S TEST DETAIL (WET-PIPE SYSTEM)
NOT TO SCALE



D
FP2
AUXILIARY DRAIN VALVE
NOT TO SCALE

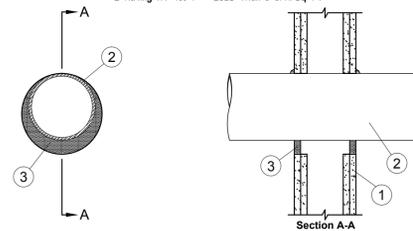
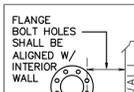
E
FP2
TYP. RECESSED PENDENT HEAD
NOT TO SCALE

F
FP2
N/A
NOT TO SCALE



- NOTES:
1. MEGA-LUGS MAY BE SUBSTITUTED W/ LISTED JOINT RESTRAINTS CONFORMING W/ NFPA 24
 2. UNDERGROUND ENTRANCE ASSEMBLY MAY BE SUBSTITUTED W/ AMES "IN-BUILDING RISER" OR UL LISTED EQUIVALENT

LEAD-IN SIZE	SLEEVE SIZE
4"	6"
6"	8"
8"	12"
10"	14"



- NOTES:
1. GYPSUM BOARD WALL ASSEMBLY.
 2. THROUGH PENETRATE - ONE METALLIC PIPE INSTALLED EITHER CONCENTRICALLY OR ECCENTRICALLY WITHIN FIRESTOP SYSTEM.
 3. FILL VOID OR CAVITY MATERIAL - SEALANT - MIN. 5/8 IN. THICKNESS OF FILL MATERIAL APPLIED WITHIN ANNULUS. FLUSH WITH BOTH SURFACES OF WALL. AT THE POINT OF CONTACT LOCATION BETWEEN THE THROUGH PENETRATE AND GYPSUM WALLBOARD, A MIN. 3/8" DIA. BEAD OF FILL MATERIAL SHALL BE APPLIED AT THE GYPSUM WALLBOARD/THROUGH PENETRATE INTERFACE ON BOTH SURFACES OF WALL. SPECIFIED TECHNOLOGIES - SPECSEAL 100, 101, 102 OR 105 SEALANT.

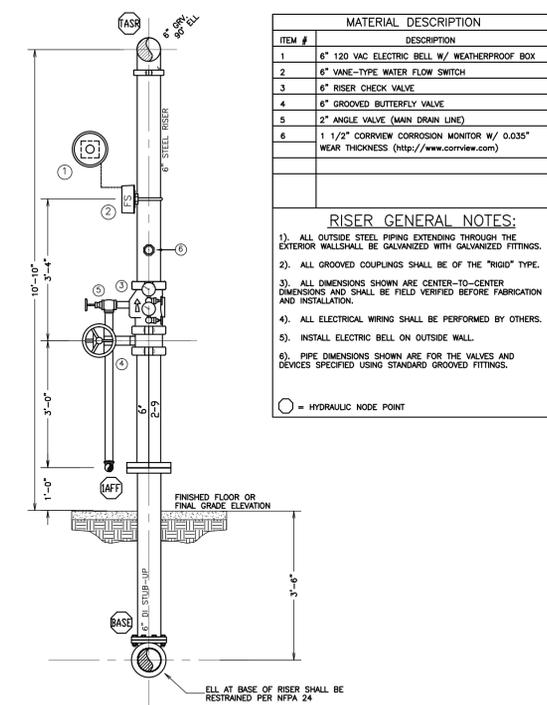
G
FP2
UNDERGROUND LEAD-IN DETAIL
NOT TO SCALE

H
FP2
1 & 2 HOUR FIRE BARRIER WALL PENETRATION SEAL
NOT TO SCALE

B
FP2
FIRE SPRINKLER RISER DETAIL
SCALE: 1/2" = 1'-0"

FIRE SPRINKLER RISER DETAIL

6" DI STUB-UP X 6" STEEL RISER



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FL ENG #59350

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Administration
Building

Bradenton, FL 34210

Client:

Manatee County Government
1112 Manatee Avenue West
Bradenton, FL 34208

drawn: TVB
checked: NJH
date: 09-30-10
comm. no.: 0920826

**FIRE SPRINKLER
DETAILS**

FP2

100%
CONSTRUCTION DOCUMENTS

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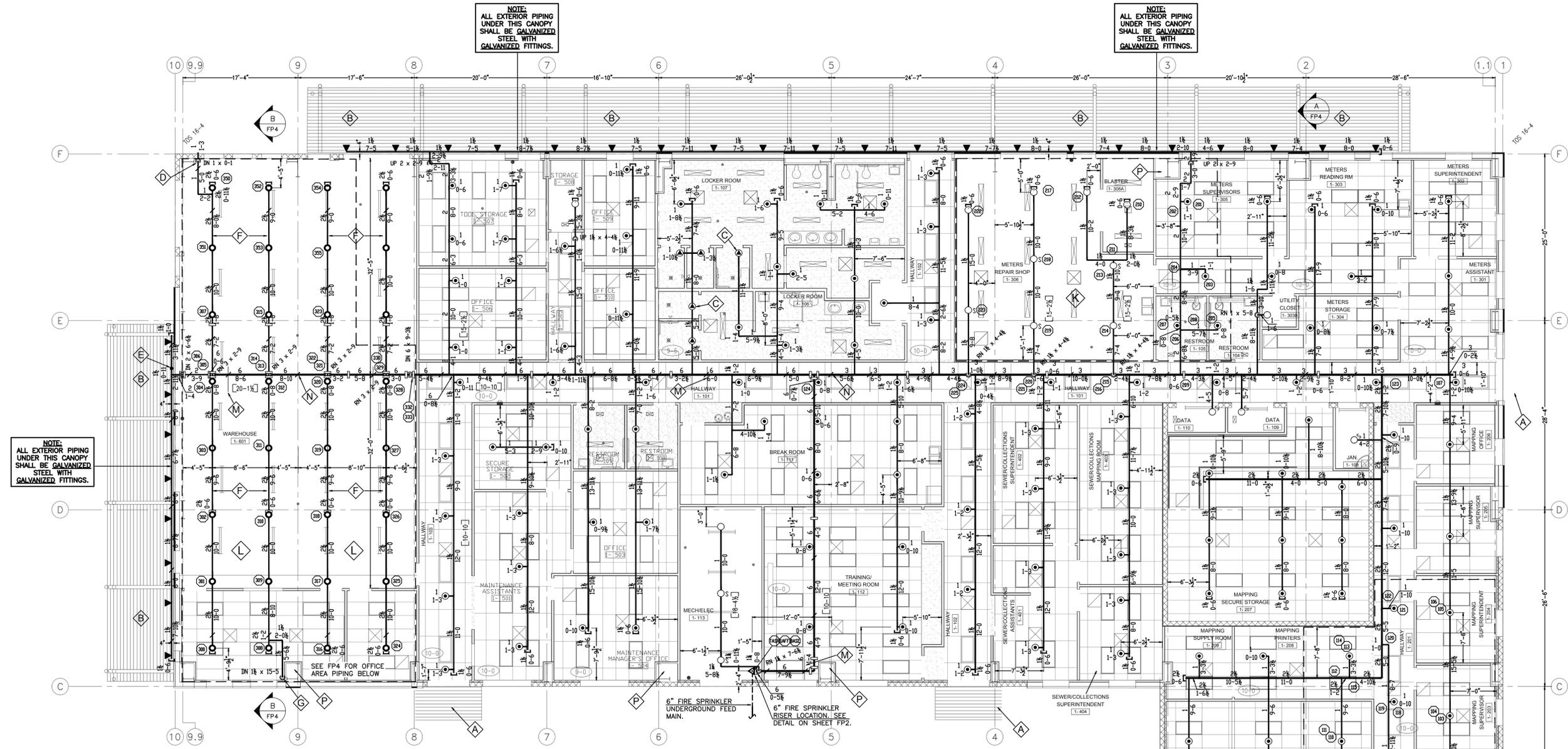
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**FIRE SPRINKLER
 PLAN**

FP3

100%
 CONSTRUCTION DOCUMENTS



NOTE:
 ALL EXTERIOR PIPING
 UNDER THIS CANOPY
 SHALL BE GALVANIZED
 STEEL WITH
 GALVANIZED FITTINGS.

NOTE:
 ALL EXTERIOR PIPING
 UNDER THIS CANOPY
 SHALL BE GALVANIZED
 STEEL WITH
 GALVANIZED FITTINGS.

NOTE:
 ALL EXTERIOR PIPING
 UNDER THIS CANOPY
 SHALL BE GALVANIZED
 STEEL WITH
 GALVANIZED FITTINGS.

FIRE SPRINKLER DRAWING LEGEND	
Symbol	Description
3"	Pipe Size
10'-6"	Pipe Length in Feet-Inches
○	Hydraulic Reference Points
[16 mm]	Elev. Below Top of Steel
[+4']	Elev. Above Finished Floor
+ (105 20'-0")	Elev. of Top of Steel
⊕	Ceiling Height
—	Denotes Hanger Location
○	Denotes Rise Up or Down (Center-to-Center Unless Fabricated)
—	Standard Grooved Coupling
—	"Firelock" Grooved Coupling
—	Piping Cap
—	Piping Plug
—	Fire Sprinkler Riser Location
△	Line Tag (Only if Stocklisted)
—	Main Tag (Only if Stocklisted)

IMPORTANT FITTING TAKE-OUT NOTES:

1). WHEN GROOVED ELLS AND TEES ARE SHOWN CUT-IN ON THE MAINS AND/OR BRANCH LINES, THE GROOVED FITTING TAKE-OUT HAS BEEN REMOVED FROM THE ADJACENT PIPING DIMENSION TAG.

2). ALL ELEVATION CHANGES INDICATED BY A RISER NIPPLE, OR RISE UP/DN, ARE CENTER-TO-CENTER DIMENSIONS UNLESS CUT-LENGTH DIMENSIONS ARE SPECIFICALLY SHOWN. IN OTHER WORDS, NO TAKE-OUTS HAVE BEEN REMOVED FROM THE RISER NIPPLES OR RISERS (UP OR DOWN). THIS INCLUDES BOTH SCREWED AND GROOVED PIPING ELEVATION CHANGES.

KEY NOTE DENOTED BY THIS SYMBOL. SEE PLAN.

KEY NOTE LEGEND (THIS SHEET):

- A. NON-COMBUSTIBLE EXTERIOR ENTRANCE CANOPY. NOT USED FOR STORAGE. NO FIRE SPRINKLER PROTECTION REQUIRED AT THIS CANOPY.
- B. NON-COMBUSTIBLE EXTERIOR CANOPY AT LOADING / UNLOADING AREA. PROVIDE FIRE SPRINKLER PROTECTION, AS INDICATED ON THESE PLANS.
- C. PROVIDE 286°F WHITE (POLYESTER COATED CORROSION RESISTANT) PENDENT SPRINKLER HEADS IN THE SHOWER AREAS.
- D. PROPOSED 1" INSPECTORS TEST & DRAIN LOCATION. SEE DETAIL ON SHEET FP2. INSTALL DRAIN RISER TIGHT TO COLUMN IN THIS CORNER.
- E. 1" AUXILIARY DRAIN LOCATION. INSTALL 1" DRAIN VALVE ON 1" x 0.4" NIPPLE OFF BOTTOM OF PIPE.
- F. PITCH BRANCHLINES IN THE WAREHOUSE AREA WITH THE ROOF SLOPE.
- G. PIPING RISER UP/DOWN FROM WAREHOUSE OVERHEAD PIPING SYSTEM TO PIPING BELOW PARTS STORAGE MEZZANINE. SEE DETAIL #1 ON SHEET FP4 FOR OFFICE AREA PIPING PLAN.
- H. 1" AUXILIARY DRAIN LOCATION.
- J. HYDRAULIC AREA 3315-10-A. LIGHT HAZARD. SEE FP1 FOR DESIGN CRITERIA SUMMARY.
- K. HYDRAULIC AREA 3315-10-B. ORDINARY HAZARD, GROUP 2. SEE FP1 FOR DESIGN CRITERIA SUMMARY.
- L. HYDRAULIC AREA 3315-10-C. CLASS IV STORAGE TO 12 FT. SEE FP1 FOR DESIGN CRITERIA SUMMARY.
- M. PROVIDE TRAPEZE HANGERS FOR THE 6" MAINS ON THIS PROJECT WHEN RUNNING PARALLEL TO ROOF Z-PURLIN MEMBERS. DO NOT INSTALL THE 6" MAIN OFF A SINGLE ROOF PURLIN.
- N. PROVIDE A HANGER ON THE CROSS MAINS AT EACH BUILDING STRUCTURAL STEEL FRAME CROSSING. (TYP)
- P. NON-ACCESSIBLE, NON-COMBUSTIBLE, VOID SPACE AT BUILDING COLUMNS. NO SPRINKLERS REQUIRED IN THIS VOID SPACE. (TYPICAL)

NOTE (THIS SHEET):
 PIPE LENGTHS AND HANGER
 LENGTHS SHOWN ARE
 "CENTER-TO-CENTER"

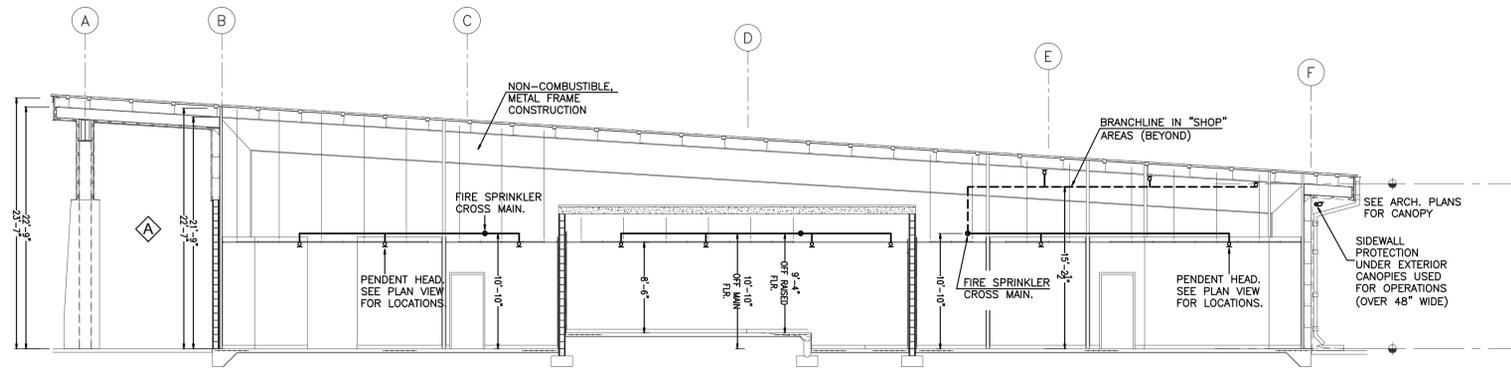


STRUCTURAL FRAMING NOTE:

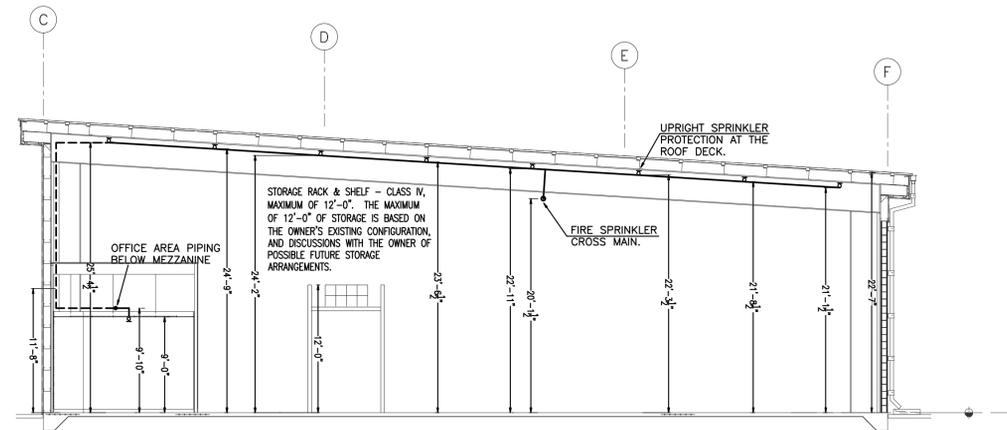
THE BUILDING MANUFACTURER'S ROOF FRAMING PLANS WERE NOT AVAILABLE AT THE TIME THE DESIGN DOCUMENTS WERE DEVELOPED. THE FIRE SPRINKLER CONTRACTOR SHALL COORDINATE THE FINAL SHOP DRAWING LAYOUT WITH THE ROOF FRAMING PLAN PRIOR TO FABRICATION.

THE MAJORITY OF THE PIPING SHOWN IS RAN PERPENDICULAR TO THE Z-PURLIN ROOF FRAMING (STANDARD INDUSTRY INSTALLATION PRACTICE)

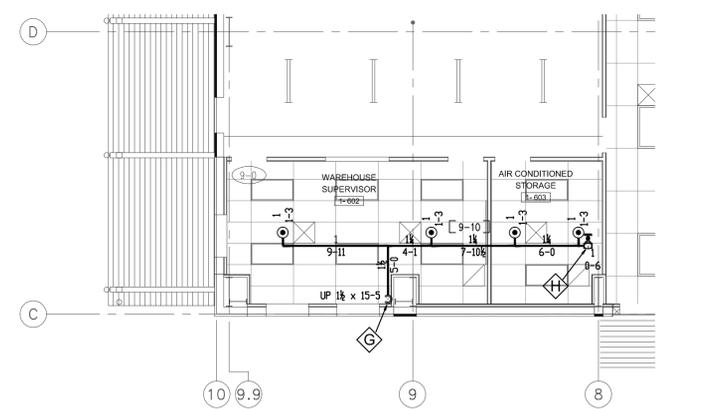
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A FIRE SPRINKLER SIMPLE SECTION - OFFICE AREA
 FP4 SCALE: 1/8" = 1'-0"



B FIRE SPRINKLER SIMPLE SECTION - WAREHOUSE
 FP4 SCALE: 1/8" = 1'-0"



1 WHSE OFFICE AREA PLAN
 1/8" = 1'-0"

KEY NOTE DENOTED BY THIS SYMBOL. SEE PLAN.

KEY NOTE LEGEND (THIS SHEET):		
A. NON-COMBUSTIBLE EXTERIOR ENTRANCE CANOPY. NOT USED FOR STORAGE. NO FIRE SPRINKLER PROTECTION REQUIRED AT THIS CANOPY.	G. PIPING RISER UP/DOWN FROM WAREHOUSE OVERHEAD PIPING SYSTEM TO PIPING BELOW PARTS STORAGE MEZZANINE. SEE DETAIL #1 ON SHEET FP4 FOR OFFICE AREA PIPING PLAN.	N. PROVIDE A HANGER ON THE CROSS MAINS AT EACH BUILDING STRUCTURAL STEEL FRAME CROSSING. (TYP)
B. NON-COMBUSTIBLE EXTERIOR CANOPY AT LOADING / UNLOADING AREA. PROVIDE FIRE SPRINKLER PROTECTION, AS INDICATED ON THESE PLANS.	H. 1" AUXILIARY DRAIN LOCATION.	P. NON-ACCESSIBLE, NON-COMBUSTIBLE VOID SPACE AT BUILDING COLUMNS. NO SPRINKLERS REQUIRED IN THIS VOID SPACE. (TYPICAL)
C. PROVIDE 286°F WHITE (POLYESTER COATED CORROSION RESISTANT) PENDENT SPRINKLER HEADS IN THE SHOWER AREAS.	J. HYDRAULIC AREA 3315-10-A. LIGHT HAZARD. SEE FP1 FOR DESIGN CRITERIA SUMMARY.	
D. PROPOSED 1" INSPECTORS TEST & DRAIN LOCATION. SEE DETAIL ON SHEET FP2. INSTALL DRAIN RISER TIGHT TO COLUMN IN THIS CORNER.	K. HYDRAULIC AREA 3315-10-B. ORDINARY HAZARD, GROUP 2. SEE FP1 FOR DESIGN CRITERIA SUMMARY.	
E. 1" AUXILIARY DRAIN LOCATION. INSTALL 1" DRAIN VALVE ON 1" x 0.4" NIPPLE OFF BOTTOM OF PIPE.	L. HYDRAULIC AREA 3315-10-C. CLASS IV STORAGE TO 12 FT. SEE FP1 FOR DESIGN CRITERIA SUMMARY.	
F. PITCH BRANCHLINES IN THE WAREHOUSE AREA WITH THE ROOF SLOPE.	M. PROVIDE TRAPEZE HANGERS FOR THE 6" MAINS ON THIS PROJECT WHEN RUNNING PARALLEL TO ROOF Z-PURLIN MEMBERS. DO NOT INSTALL THE 6" MAIN OFF A SINGLE ROOF PURLIN.	

Fire Protection
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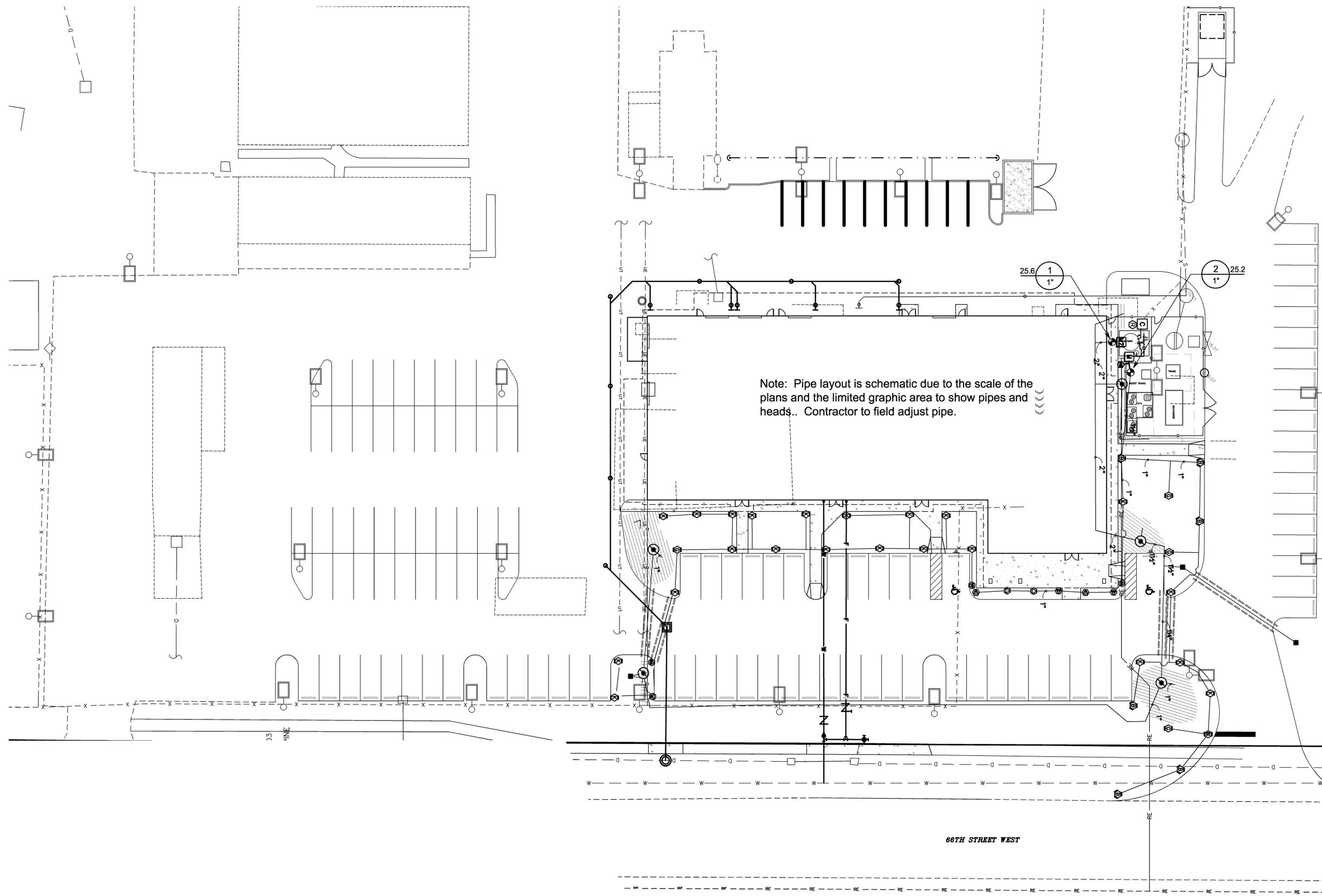
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FIRE SPRINKLER
 SECTIONS

FP4



CONTRACTOR SHALL CONTACT "CALL SUNSHINE"
 PH.1-800-432-4770 48 HR. PRIOR TO EXCAVATION

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 ARCHITECTURE
 677 North Washington Blvd.
 Sarasota, FL 34236
 voice 941-952-5875
 fax 941-957-3630
 schenkelshultz.com
 SS Lic No - AA-C000937

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 email zns@znseng.com

ROBERT C. GAUSE
 LANDSCAPE ARCHITECT #000942

SIGNATURE

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4700 66th Street West
 Bradenton, FL 34210

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 Manatee County Government
 1112 Manatee Avenue West
 Bradenton, FL 34208

drawn: B. GAUSE
 checked: B. GAUSE
 date: 09.30.2010
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IRRIGATION PLAN

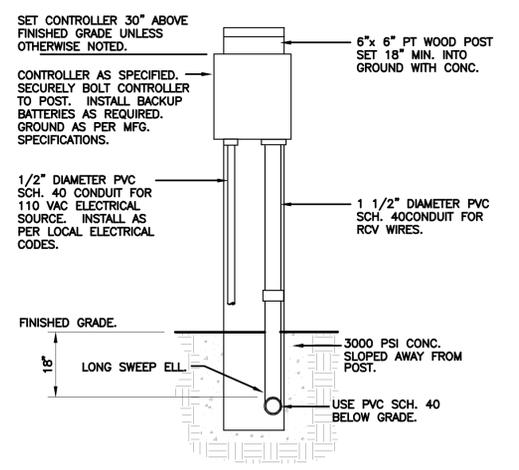
IRR1

IRRIGATION SCHEDULE

SYMBOL	MANUFACTURER/MODEL/DESCRIPTION	QTY	PSI
	Hunter MP2000 w/ MPR40-06-CV-R Turf Rotator, 6" pop-up with check valve, reclaimed body cap, MP Rotator nozzle. K=Black adj arc 90-210, G=Green adj arc 210-270, R=Red 360 arc, on MPR40 G' pop-up body.	27	40
	Hunter MP3000 w/ MPR40-06-CV-R Turf Rotator, 6" pop-up with factory installed check valve, reclaimed body cap, MP Rotator nozzle. B=Blue adj arc 90-210, Y=Yellow adj arc 210-270, A=Gray 360 arc, on MPR40 G' pop-up body.	6	40
	Hunter MP 5trnp w/ MPR40-06-CV-R Turf Rotator, 6" pop-up with factory installed check valve, reclaimed body cap, MP Rotator nozzle. LST=Ivory left, stnp, SST=Brown side stnp, RST=Copper right stnp, on MPR40 G' pop-up body.	10	40
	Toro 5705-FB-200-ADJ-PC200 Flood Bubbler on shrub rser	3	20

SYMBOL	MANUFACTURER/MODEL/DESCRIPTION	QTY
	Pipe Transition Point Pipe transition point from PVC lateral to dnp tubing with rser in dnp box.	5
	Area to Receive Dripline Toro RGP-41 2-E (18) Landscape Dripline 5/8" with Rootguard Protection and 1.02gph emitters at 1.2" o.c., with Purple Tubing for Non-potable water. Dripline lateral rows spaced at 18" apart, with emitters offset for triangular pattern.	90 s.f.

SYMBOL	MANUFACTURER/MODEL/DESCRIPTION	QTY
	Imtrol 100P with OMR-100 Electric Remote Control Valve, global/angle configuration, with 5-100psi pressure regulator	2
	Toro TMC-212-OD Remote Valve Controller, 4-Station, Outdoor	1
	Toro TR5 Wired Rain Sensor. Mount as noted or approved, use controller power or optional transformer. Adjust rain shutoff index.	1
	Water Meter 1" Connect to reclaimed water line	1
	Water Meter 1" Connect to 1" reclaimed water service	1
	Irrigation Lateral Line: PVC Class 200 Non-Potable Only lateral transition pipe sizes 1" and above are indicated on the plan, with all others being 3/4" in size.	1,525 l.f.
	Irrigation Mainline: PVC Schedule 40	14 l.f.
	Pipe Sleeve: PVC Schedule 40 Typical pipe sleeve for irrigation pipe. Pipe sleeve size shall allow for irrigation piping and their related couplings to easily slide through sleeving material. Extend sleeves 18 inches beyond edges of paving or construction.	153 l.f.
	Valve Callout Valve Number Valve Flow Valve Size	



1 POST MOUNT CONTROLLER
1" = 12" 328409.13-01

IRRIGATION NOTES:

GENERAL:
Use of the colon following a subject heading implies the words "shall be" and has a mandatory connotation. Materials or equipment of equal quality may be substituted for those shown if approved by the Landscape Architect.

MATERIAL:
Contractor agrees to furnish all materials and labor necessary to provide an operational irrigation system providing 100% coverage of all landscape areas.

VALVE BOXES: 10" w/ cover
WIRE: 14 ga. suitable for direct burial (larger as needed)
WIRE SPLICES: 3M DBRSK Water proof splice kit
PAINT: All exposed PVC black
SLEEVES: Schedule 40 PVC
PUMP: As specified
FITTINGS: Schedule 40 PVC

CONSTRUCTION:
Comply with all State and Local codes. Use good irrigation practices.

WIRE:
Place wire under water main. Where more than one wire is placed in trench, tape wires together at 10' intervals and bottom of main at 10' intervals. Use an expansion cut within 3' of each wire connection and 100' of wire length by wrapping 5 turns of wire around a 12" pipe then withdrawing pipe. All connections must be waterproof.

EXCAVATION:
Dig trenches straight and remove all debris. Depth suitable for top of pipe as follows:
Laterals - 7"
Mains - 12"
Sleeves - 18"
Pipe trench work shall be coordinated with landscape and other contractors to avoid interference with tree, shrub and other site improvements.

JOINTS:
Remove all burrs from cut pipe, wipe clean, use cleaner on both pipe and fittings then apply glue to both, twist and ram tight. Hold until glue has set.

VALVE BOXES:
Install top of box level with finish grade.

ELECTRICAL:
Contractor shall provide concrete banjos and meter boxes along with all other necessary electrical controls for proper operation of wells and controllers. All electrical controls shall be "hard wired" in galv. electrical conduit. The owner/general contractor shall be responsible for providing power to the meter boxes.

SURGE PROTECTORS:
Surge protectors shall be installed on 2-wire systems approximately every 500 lf. of wire in accordance with manufacturers recommendations.

RE-USE EFFLUENT MARKINGS:
All pipe and components shall be properly colored for re-use if applicable.

HEADS:
Contractor to locate heads to suit field and landscape conditions. Place top of heads 1" above final grade. Install all heads plumb and rotate to most effectively cover turf and landscape. Flush before installing nozzles. Heads located along vehicular traffic ways shall be attached with 12" of flexible pipe.

CONTROLLER:
Location to be determined by owner.

DECODERS:
Contractor to install decoders at valves in accordance with manufacturers recommendations on two wire systems.

DRIPLINE
To be covered by mulch layer following inspection by Landscape Architect. "Spaghetti Pipe" shall be utilized as necessary to provide irrigation to root zones of individual plants.

BACKFILLING:
Do not backfill until leak test by contractor and general inspection by owner's representative has been performed. Backfill may be excavated material, but must be free of rocks or stones over 1" in diameter, debris or any sharp objects.

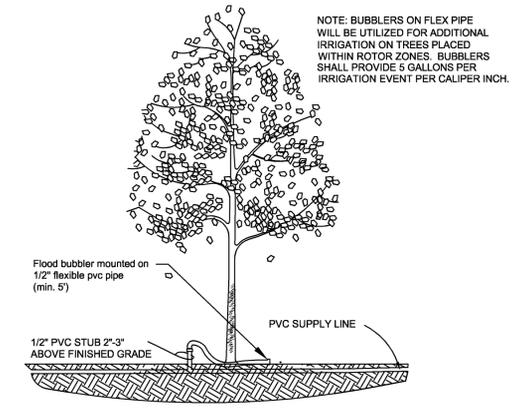
OPERATION TESTING:
Contractor shall instruct the owner on the system operation and shall run the system in the owner's presence to assure that it is functioning properly and that all heads are in correct adjustment.

GUARANTEE:
Unconditionally for a year after date of acceptance, except for reason of accidental damage/abuse. Necessary corrections to be made by contractor without delay at no expense to owner. Guarantee shall be extended to cover extended warranties on individual irrigation components (i.e., valves, controllers and heads) where applicable.

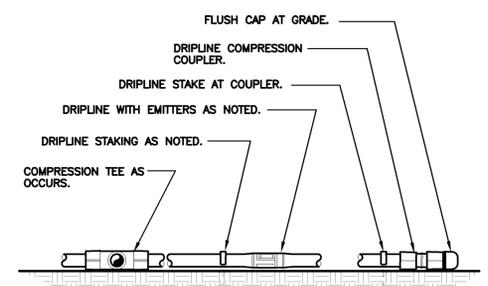
PERMITS:
Obtained by contractor at his expense.

CLEAN UP:
Maintain site clean from pipe clippings, debris and unwanted material at the end of the day.

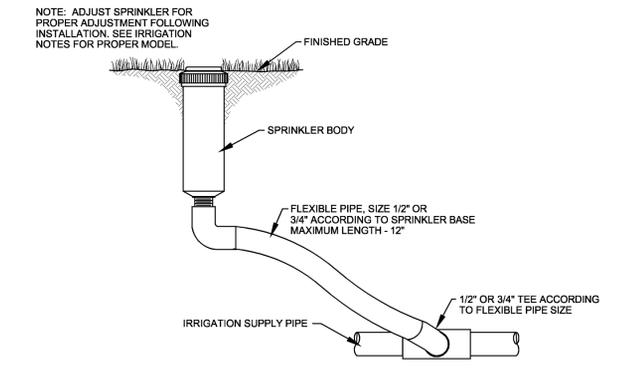
SOURCE:
Irrigation source as noted on irrigation schedule.



BUBBLER DETAIL
NOT TO SCALE



2 DRIPLINE FLUSH VALVE AT GRADE
3" = 12" 328413.49-26



SPRAY HEAD SPRINKLERS, POP-UP DETAIL
NOT TO SCALE

CONTRACTOR SHALL CONTACT "CALL SUNSHINE"
PH.1-800-432-4770 48 HR. PRIOR TO EXCAVATION

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PERMIT TO DESIGN IS OF THE CONTRACT ACT. IT IS A LEGAL DOCUMENT. DESIGN, CONSTRUCTION, INSTALLATION, MAINTENANCE AND REPAIR OF IRRIGATION SYSTEMS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. THE ARCHITECT'S RESPONSIBILITY IS LIMITED TO THE DESIGN AND CONSTRUCTION OF THE IRRIGATION SYSTEM AS SHOWN ON THE DRAWINGS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE LOCAL GOVERNMENT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE LOCAL GOVERNMENT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE LOCAL GOVERNMENT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE LOCAL GOVERNMENT.

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LANDSCAPE ARCHITECT #000942

SIGNATURE

Utilities Maintenance and Administration Building

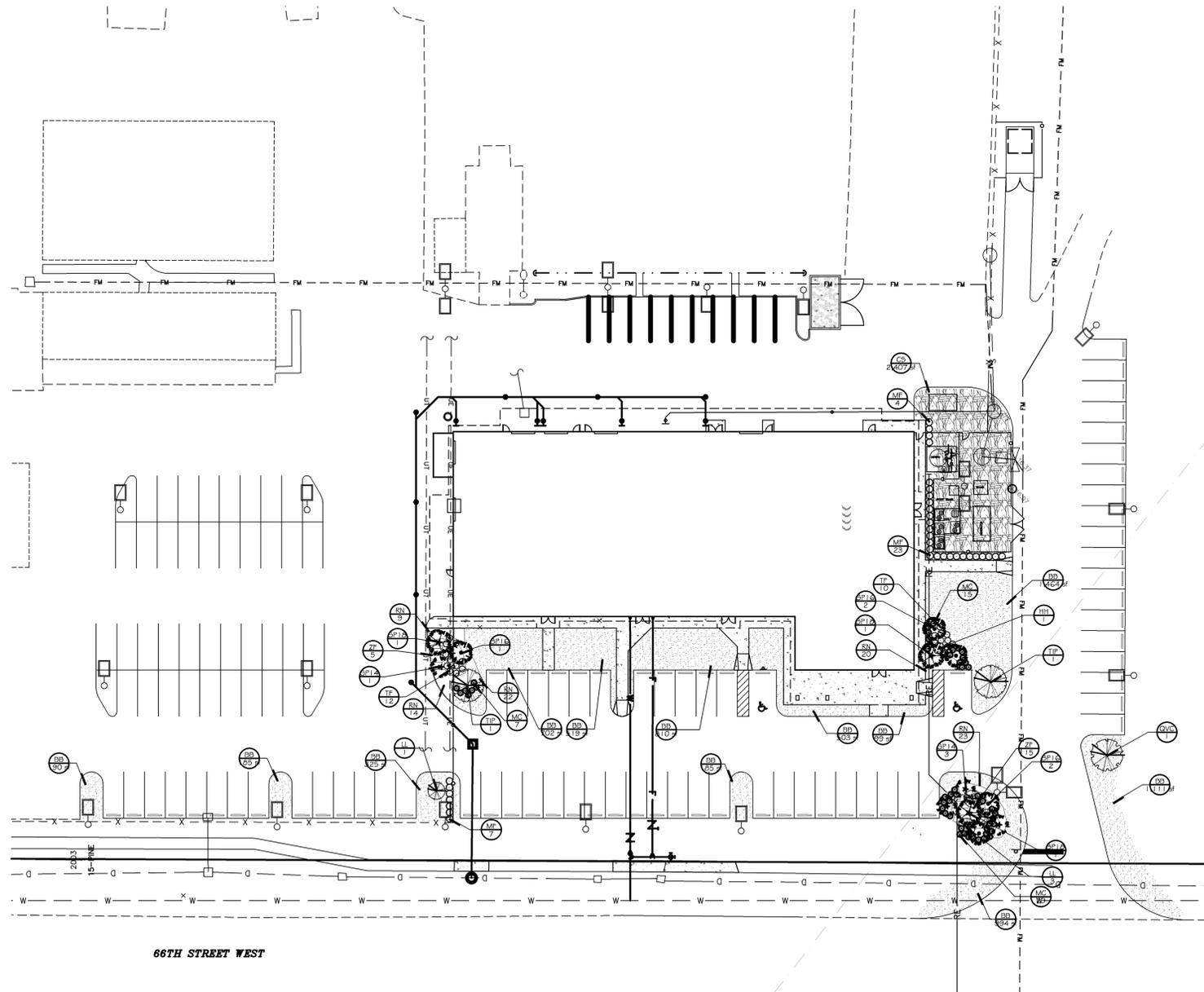
4700 66th Street West
Bradenton, FL 34210

Client:
Manatee County Government
1112 Manatee Avenue West
Bradenton, FL 34208

drawn: B. GAUSE
checked: B. GAUSE
date: 09.30.2010
comm. no.: 0920828

IRRIGATION DETAILS

IRR2



66TH STREET WEST

LANDSCAPE PLAN VIEW



1" = 30'

PLANT SCHEDULE

TREES	CODE	QTY	BOTANICAL NAME / COMMON NAME	CONT	CAL	SIZE	SPD.
	LL	4	Lagerstroemia indica 'Lavender' / Crape Myrtle Multi-Trunk Tree form, 3' ct.	15 Gal.	1.25' Cal	6' ht.	5'
	QVC	1	Quercus virginiana 'Cathedral' / Cathedral Live Oak 4' ct.	45 gal	3' Cal	12' Ht.	6'
	TIP	2	Tabebuia impetiginosa / LPI 4' ct.	25 Gal.	2.5' Cal	9'	5'
PALM TREES	CODE	QTY	BOTANICAL NAME / COMMON NAME	CONT	CAL	SIZE	SPD.
	SP14	4	Sabal palmetto / Cabbage Palmetto Hurricane cut	B # B	N/A	14' Ht. OA.	N/A
	SP16	5	Sabal palmetto / Cabbage Palmetto Hurricane cut	B # B	N/A	16' ht. oa	N/A
	SP18	3	Sabal palmetto / Cabbage Palmetto Hurricane cut	B # B	N/A	18' Ht., OA.	N/A
SHRUBS	CODE	QTY	BOTANICAL NAME / COMMON NAME	CONT			
	HH	1	Hibiscus rosa-sinensis 'LaFrance' / Chinese Hibiscus Standard, Twisted trunk, 5' ht.	15 gal			
	MC	51	Muhlenbergia capillaris / Pink Muthy Full	3 gal			
	MF	34	Myrcianthes fragrans / Twimberry 24" ht., 1 1/2' spd.	3 gal			
	TF	22	Tripsacum dactyloides / Fakahatchee Grass Full	3 gal			
SHRUB AREAS	CODE	QTY	BOTANICAL NAME / COMMON NAME	CONT			
	RN	88	Rhapholepis indica nana / Dwarf Indian Hawthorn	3 gal @ 30' oc			
	ZF	20	Zamia floridana / Coontie Palm 3' ht., Full	10 gal @ 42' oc			
SHELL	CODE	QTY	BOTANICAL NAME / COMMON NAME	CONT			
	CS	2,406 sf	CRUSHED SHELL MEDIUM SIZED / CRUSHED MEDIUM SHELL 3" DEPTH OVER WEED CLOTH	9.F.			
SOD/SEED	CODE	QTY	BOTANICAL NAME / COMMON NAME	CONT			
	BB	7,089 sf	Bahia argentea / Bahia	sod			

LANDSCAPE NOTES:

- In the event of variation between quantities shown of the plant list and the plans, the plans shall control. Improvisations made by the Landscape Contractor shall be no cause for additional costs to the owner. Sod, mulch, and topsoil quantity takeoffs shall be the responsibility of the contractor.
- No substitutions shall be made without the written consent of the Owner or Landscape Architect.
- Fertilizers shall be organic and naturally-based 6-6-6 fertilizers including all minor trace elements, beneficial fungi, beneficial bacteria, as found in the Plant Health Care landscape products (or equal) sold in the local area.
- All shrub bed backfill soil mixtures shall contain 2/3 best of on-site topsoil and 1/3 peat, with 8 oz. of super-absorbent mixed in with each cubic yard. Ph levels within planting beds shall be between 6.5 and 7.5 following plant installation. It shall be the Landscape Contractor's responsibility to achieve the proper ph level.
- Topsoil material, when called for on the plans, shall be free of sticks, stones larger than 1" dia., plants, or any other debris which would be toxic or otherwise harmful to plant growth. Topsoil should be fertile, friable, and of a naturally loamy character.
- The Landscape Contractor shall take all necessary precautions to protect all existing structures on the site and shall be held responsible for any damage caused by his operations.
- It shall be the Landscape Contractor's financial responsibility to prevent plants and trees from falling or being blown over, and to replace all plants which are damaged at no additional cost to the owner for sustained winds of less than 65 MPH.
- Maintenance shall begin after each plant has been installed and shall continue until final acceptance by the Landscape Architect. Maintenance shall include pruning, mulching, weeding, replacement of sick or dead plants, watering (including cost of equipment such as a water-truck) and any other care which is needed for the proper growth of the plant material.
- Excess waste material shall be removed daily from the site.
- All plant materials used shall conform to the standards for Florida No. 1 or better as described in "Grades and Standards for Nursery Plants", State of Florida, Department of Agriculture and Consumer Services, Division of Plant Industry, 2nd edition, Feb 1998 or equal thereto as approved by the Landscape Architect.
- All shrub beds and hedges shall be top-dressed with 3" of Grade 'B' Pine Bark Nugget mulch unless otherwise stated on the plans or plant schedule. Mulch shall be pulled back 4" from tree trunks and reduced to one inch depth next to woody shrubs.
- It shall be the responsibility of the Landscape Contractor to coordinate activities with other contractors on the job site.
- All plant materials shall be fully guaranteed for a period of one (1) year following final acceptance by the owner.
- Planting beds for hedges shall be 3' wide unless otherwise specified.
- Unit prices for all plant material shall be provided to the Landscape Architect or Owner upon request.
- All landscape materials installed within the public right of way shall be installed to meet all State and Local codes and regulations.
- The Landscape contractor shall not include sod for retention areas into bid (i.e. Lake banks and dry retention ponds). This work shall be the responsibility of the general contractor. Sodding of swales shall be the landscape contractor's responsibility.
- Contractor shall install an automatic irrigation system which provides 100% coverage of all landscaped areas, including the tree/shrub buffer as shown on plan.
- All B & B or Field Growth material (except palms) shall be obtained from "Roots Plus" certified nurseries.
- All trimming of existing trees shall be conducted or overseen by a certified arborist.
- Contractor shall contact sunshine state one call of florida system at 1-800-432-4770 for the location of underground utilities/facilities. Contractor shall verify the exact locations of said facilities prior to excavation and shall assume any and all liability for damages which may occur due to the contractor's failure to locate and preserve said facilities.

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 A PROFESSIONAL ARCHITECT HAS REVIEWED THIS PLAN AND HAS FOUND IT TO BE IN ACCORDANCE WITH THE STANDARDS AND SPECIFICATIONS OF THE PROFESSIONAL BOARD OF ARCHITECTS OF THE STATE OF FLORIDA.
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 LANDSCAPE ARCHITECT #000942

SIGNATURE

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 Maintenance and
 Administration
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Manatee County Government
 1112 Manatee Avenue West
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drawn: B. GAUSE
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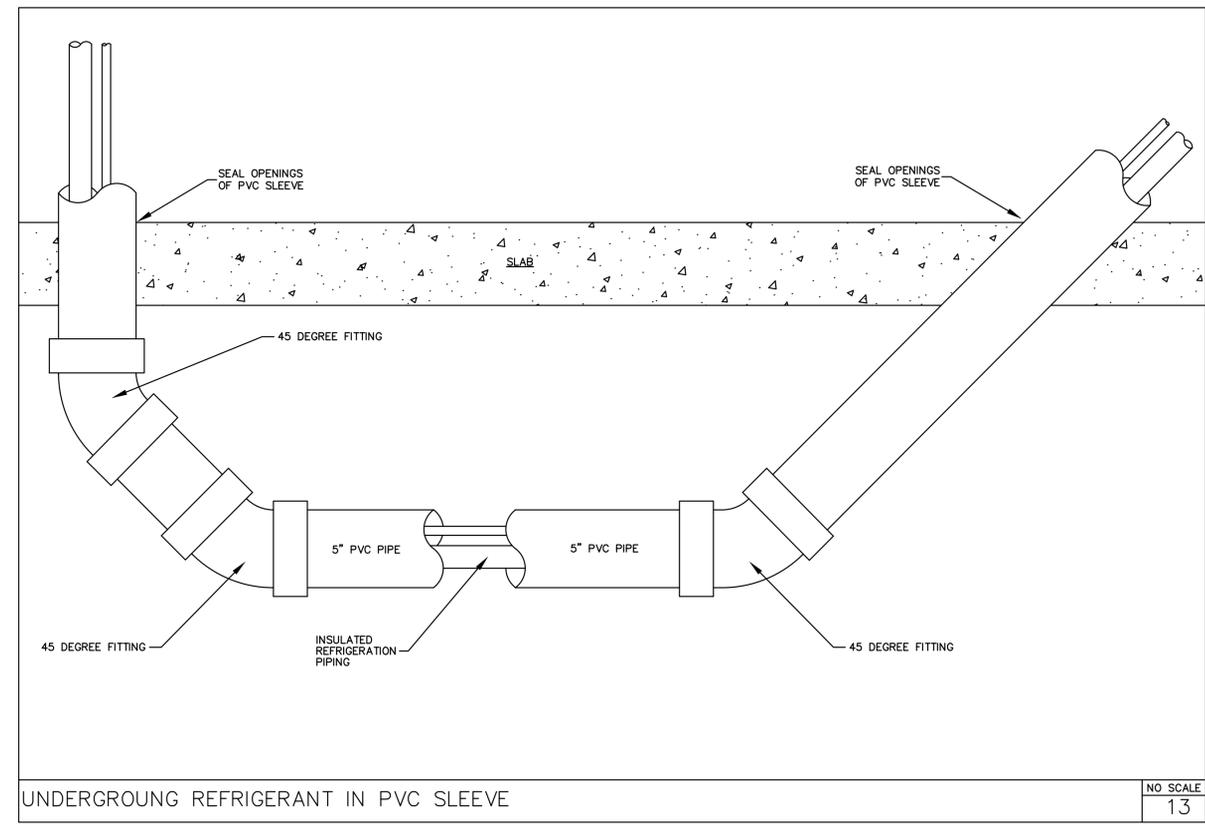
FINAL LANDSCAPE
 PLAN

LS1

MECHANICAL LEGEND	
ABBREVIATIONS	DRAWING SYMBOLS
AC	AIR CONDITIONING
AFF	ABOVE FINISHED FLOOR
AHU	AIR HANDLING UNIT
BD	BACKDRAFT DAMPER
BFF	BELOW FINISHED FLOOR
BHP	BRAKE HORSE POWER
BTU	BRITISH THERMAL UNIT
CFM	CUBIC FEET PER MINUTE
CHWR	CHILLED WATER RETURN
CHWS	CHILLED WATER SUPPLY
CLG	CEILING
CU	CONDENSING UNIT
CW	COLD WATER
DEG	DEGREE
DG	DOOR GRILLE
DWG	DRAWING
DX	DIRECT EXPANSION
(E)	DENOTES EXISTING EQUIPMENT
EA	EXHAUST AIR
EF	EXHAUST FAN
EL	ELEVATION
FCU	FAN COIL UNIT
GAL	GALLONS
GPM	GALLONS PER MINUTE
HP	HORSE POWER
HTR	HEATER
HW	HOT WATER
LAT	LEAVING AIR TEMPERATURE
LWT	LEAVING WATER TEMPERATURE
MD	MOTORIZED DAMPER
MAX	MAXIMUM
MIN	MINIMUM
OA	OUTSIDE AIR
REF	REFRIGERANT
SP	STATIC PRESSURE
TYP	TYPICAL
UC	UNDERCUT
UG	UNDERGROUND
VAV	VARIABLE AIR VOLUME
VD	VOLUME DAMPER
VFD	VARIABLE FREQUENCY DRIVE
<p>NOTE: THESE ARE STANDARD SYMBOLS AND MAY NOT ALL APPEAR ON THE PROJECT DRAWINGS; HOWEVER WHEREVER THE SYMBOL APPEARS ON THE PROJECT DRAWINGS, THE ITEM SHALL BE PROVIDED AND INSTALLED.</p>	

CONTROLS SCHEDULE	
①	THERMOSTAT T7350 (WHITE) WITH OVERRIDE BUTTON IN COVER.
<p>NOTES:</p> <ol style="list-style-type: none"> LOCATE THERMOSTATS AND DEHUMIDISTATS WITH SUBBASES AS SHOWN ON PLAN. MOUNT IN CLEAR LOCKABLE BOXES. CONTROLS BASED ON HONEYWELL. THE ELECTRICAL CONTRACTOR SHALL PROVIDE A DRY CONTACT CLOSURE FROM THE AUTOMATIC TRANSFER SWITCH TO EACH AIR HANDLER'S HEAT STRIP. THE DRY CONTACT CLOSURE WILL SIGNAL AND PREVENT EACH AIR HANDLER'S HEAT STRIP CONTROL TO LOCKOUT ONLY WHEN THE GENERATOR IS OPERATING. THE INTENT IS TO PREVENT THE HEAT STRIP FROM BEING ENERGIZED DURING GENERATOR OPERATION. THE ELECTRICAL CONTRACTOR SHALL PROVIDE RELAYS AT EACH OF THE AIR HANDLER'S ELECTRIC HEATER CONTROL WIRES WHICH WILL OPEN ITS CONTACT AFTER RECEIVING A DRY CONTACT CLOSURE FROM THE AUTOMATIC TRANSFER SWITCH. THE ELECTRICAL CONTRACTOR SHALL COORDINATE THE INSTALLATION WITH THE MECHANICAL CONTRACTOR AND VERIFY THE HEATER'S CONTROL VOLTAGE PRIOR TO ORDERING THE RELAY. 	
<p>SEQUENCE OF OPERATIONS</p> <p>PROGRAM THERMOSTAT TEMPERATURE AND HUMIDITY SETTINGS FOR OCCUPIED/UNOCCUPIED PERIODS</p> <p>OCCUPIED MODE (COOLING SEASON)</p> <ol style="list-style-type: none"> AHU FAN SHALL BE ON. OUTDOOR AIR DAMPER SHALL BE OPEN. DEHUMIDISTAT SHALL CYCLE CONDENSING UNIT STAGES TO REDUCE HUMIDITY TO SET POINT. THERMOSTAT SHALL CYCLE CONDENSING UNIT STAGES TO MAINTAIN TEMPERATURE SET POINT. THERMOSTAT SHALL CYCLE STRIP HEAT TO MAINTAIN TEMPERATURE SET POINT. <p>OCCUPIED MODE (HEATING SEASON)</p> <ol style="list-style-type: none"> AHU FAN SHALL BE ON. OUTDOOR AIR DAMPER SHALL BE OPEN. DEHUMIDISTAT SHALL CYCLE CONDENSING UNIT STAGES TO REDUCE HUMIDITY (IF REQUIRED) TO SET POINT. THERMOSTAT SHALL CYCLE STRIP HEAT TO MAINTAIN TEMPERATURE SET POINT. <p>UNOCCUPIED MODE (COOLING SEASON)</p> <ol style="list-style-type: none"> AHU FAN SHALL BE IN AUTO MODE. OUTDOOR AIR DAMPER SHALL BE CLOSED. DEHUMIDISTAT SHALL CYCLE CONDENSING UNIT STAGES TO REDUCE HUMIDITY TO SET POINT. THERMOSTAT SHALL CYCLE CONDENSING UNIT STAGES TO MAINTAIN TEMPERATURE SET POINT. <p>UNOCCUPIED MODE (HEATING SEASON)</p> <ol style="list-style-type: none"> AHU FAN SHALL BE IN AUTO MODE. OUTDOOR AIR DAMPER SHALL BE CLOSED. DEHUMIDISTAT SHALL CYCLE CONDENSING UNIT STAGES TO REDUCE HUMIDITY TO SET POINT. THERMOSTAT SHALL CYCLE STRIP HEAT TO MAINTAIN TEMPERATURE SET POINT. <p>EMERGENCY GENERATOR OCCUPIED MODE (HEATING SEASON)</p> <ol style="list-style-type: none"> ALL ELECTRIC HEAT WILL BE LOCKED OUT WHILE GENERATOR IS OPERATING. THERE WILL BE NO HEAT PROVIDED TO THE BUILDING DURING THESE PERIODS. 	

GENERAL NOTES	
1.	HVAC WORK CONSISTS OF PROVIDING AND INSTALLING AIR CONDITIONING SYSTEMS FOR A COMPLETE OPERATING SYSTEM AND AS INDICATED ON THE DRAWINGS. ALL WORK SHALL COMPLY WITH APPLICABLE CODES IN SPECIFICATIONS. IT IS THE INTENTION OF THE CONTRACT DRAWINGS AND SPECIFICATIONS TO CALL FOR COMPLETE, FINISHED WORK, TESTED, AND READY FOR OPERATION.
2.	TEST AND BALANCE SHALL BE PROVIDED BY A COMPANY SPECIALIZING IN THE TESTING AND BALANCING OF HVAC SYSTEMS AS SUBCONTRACTOR TO THE HVAC CONTRACTOR. THE TEST AND BALANCE CONTRACTOR SHALL BE A MEMBER OF EITHER AABC OR NEBB.
3.	DUCT DIMENSIONS SHOWN ON THE DRAWINGS ARE CLEAR INSIDE "FREE AREA" DIMENSIONS.
4.	PROVIDE SPIN-IN FITTINGS AT ALL FLEXIBLE DUCT RUNOUTS TO DIFFUSERS.
5.	MAXIMUM LENGTH OF FLEXIBLE DUCT SHALL BE 7'-0".
6.	ALL PIPING SUBJECT TO THERMAL EXPANSION AND/OR CONTRACTION THAT PENETRATES A SMOKE, FIRE, OR FIRE/SMOKE WALL, PARTITION, OR FLOOR SLAB SHALL BE SUITABLY SLEEVED AND FIRE SAFED.
7.	PROVIDE IDENTIFICATION OF THE LOCATION OF ALL FIRE AND BALANCING DAMPERS. IDENTIFICATION TAGS SHALL BE AFFIXED TO THE WALLS OR CEILINGS AND SHALL BE VISIBLE FROM THE OCCUPIED SPACE.
8.	ALL PIPING SHALL BE SUPPORTED WITH COMMERCIAL MANUFACTURED CLAMPS. PROVIDE ISOLATION SLEEVES TO PREVENT CONTACT OF DISSIMILAR METALS.
9.	INSTALL ALL EQUIPMENT IN STRICT ACCORDANCE WITH THE MANUFACTURERS' INSTRUCTIONS AND RECOMMENDATIONS.
10.	CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING AND INSTALLING ALL NECESSARY, MISCELLANEOUS ANGLES, CHANNELS, RODS, UNISTRUT, ETC., AS MAY BE NECESSARY TO ADEQUATELY SUPPORT THE MECHANICAL PIPING, DUCTWORK, AND EQUIPMENT IN A MANNER APPROVED BY THE ARCHITECT THAT WILL NOT OVERLOAD THE BUILDING STRUCTURE SYSTEM.
11.	PENETRATIONS THROUGH FIRE RATED ASSEMBLIES, PENETRATIONS FOR PIPES, CONDUITS, OR OTHER PURPOSES THROUGH ASSEMBLIES (FLOORS, ROOF, WALLS, PARTITIONS, ETC.) WITH A REQUIRED FIRE RESISTANCE RATING FIRE STOP MATERIAL, FIRE STOP SEALANTS SHALL BE UL LISTED. APPLY FIRE STOP AS RECOMMENDED BY THE MANUFACTURER AND IN ACCORDANCE WITH ITS LISTING TO MEET OR EXCEED THE FIRE RATING OF THE ASSEMBLY IN WHICH IT IS INSTALLED.
12.	ALL INSULATION SHALL BE FIRE RATED IN ACCORDANCE WITH ASHRAE 90A 50/25 SMOKE DEVELOPMENT AND FLAME SPREAD REQUIREMENTS. INSULATION "R" VALUES SHALL COMPLY WITH THE FLORIDA ENERGY CODE.
13.	MOUNT THERMOSTATS AND TEMPERATURE SENSORS WHERE INDICATED ON PLANS, AT 48" CL. A.F.F. UNLESS NOTED OTHERWISE. SEE INTERIOR DRAWINGS AND MECHANICAL DRAWINGS FOR LOCATION WHERE THERE IS A CONFLICT OF LOCATIONS BETWEEN THE DRAWINGS. NOTIFY THE ARCHITECT IMMEDIATELY.
14.	INSTALL DUCT MOUNTED SMOKE DETECTORS IN SUPPLY AIR DUCTWORK CONNECTED TO REQUIRED A/C UNIT. WIRE DUCT MOUNTED SMOKE DETECTORS SUCH THAT ACTIVATION WILL DE-ENERGIZE AIR HANDLING UNIT FAN. LOCATE DUCT MOUNTED SMOKE DETECTORS THE REQUIRED DISTANCE DOWNSTREAM FROM BENDS OR INLETS AS RECOMMENDED BY THE MANUFACTURER.
15.	AIR HANDLING UNITS SHALL BE SHUT DOWN BY THE FIRE ALARM SYSTEM. WIRE THROUGH FIRE ALARM RELAY CONTACT TO SHUT DOWN AIR HANDLING UNITS UPON FIRE ALARM ACTIVATION. COORDINATE WITH FIRE ALARM CONTRACTOR ACCORDINGLY. WHEN AIR HANDLING UNITS SHUT DOWN FOR FIRE ALARM OR MAINTENANCE, INTERLOCKED EXHAUST FANS SHALL ALSO SHUT DOWN.
16.	PORTIONS OF DUCTWORK VISIBLE THROUGH GRILLS, REGISTERS, AND DIFFUSERS IN FINISHED AREAS SHALL BE PAINTED FLAT BLACK.
17.	COORDINATE THE TYPE AND LOCATION OF ALL DIFFUSERS, GRILLS, REGISTERS, ACCESS DOORS, ETC., WITH THE ARCHITECTURAL REFLECTED CEILING PLAN(S).
18.	ALL CEILING MOUNTED AIR DISTRIBUTION DEVICES LOCATED IN INACCESSIBLE CEILINGS SHALL HAVE FACE OPERATED BALANCING DAMPERS.
19.	SEE ELECTRICAL DRAWINGS FOR ELECTRICAL CHARACTERISTICS OF MECHANICAL EQUIPMENT.
20.	UNLESS OTHERWISE NOTED, INSTALL ALL DUCTWORK AS HIGH AS POSSIBLE, TIGHT TO THE BOTTOM OF THE STRUCTURE. COORDINATE ELEVATION AND LOCATION WITH RAIN LEADERS, WATER PIPING, PLUMBING VENTS, AND MAJOR ELECTRICAL CONDUITS OR CABLE TRAY.
21.	PROVIDE DRAIN P--TRAPS IN THE CONDENSATE LINES AT ALL AHU'S.
22.	ALL ROOF ATTACHED EQUIPMENT AND APPURTENANCES INCLUDED IN THE SCOPE OF THIS PROJECT ARE REQUIRED TO BE SECURED TO THE UNDERLYING BUILDING STRUCTURE. THE FASTENING SYSTEMS SHALL BE DESIGNED TO WITHSTAND A 130 MPH WIND LOAD. ALL ROOF MOUNTED EQUIPMENT SHALL BE MOUNTED ON FACTORY FABRICATED ROOF CURBS AND SHALL BE PROVIDED WITH VIBRATION ISOLATION AS RECOMMENDED BY THE MANUFACTURER. WATERTIGHT SEAL SHALL BE PROVIDED BY AN APPROVED ROOFING CONTRACTOR.
23.	THESE DRAWINGS ARE SCHEMATIC IN NATURE AND ARE NOT INTENDED TO SHOW ALL POSSIBLE CONDITIONS. IT IS INTENDED THAT A COMPLETE MECHANICAL SYSTEMS BE PROVIDED WITH ALL NECESSARY EQUIPMENT, APPURTENANCES, AND CONTROLS, COORDINATE WITH ALL OTHER DISCIPLINES. ALL PARAMETERS INDICATED IN THESE DOCUMENTS SHALL BE STRICTLY CONFORMED WITH. ANY ITEMS AND LABOR REQUIRED FOR COMPLETE MECHANICAL SYSTEMS IN ACCORDANCE WITH ALL APPLICABLE CODES STANDARDS, AND THESE CONTRACT DOCUMENTS SHALL BE PROVIDED WITHOUT ANY ADDITIONAL COST TO THE CONTRACT. THE CONTRACTOR SHALL REVIEW ALL CONTRACT DOCUMENTS AND SHALL COORDINATE WITH OTHER TRADES WHILE PREPARING THE MECHANICAL SHOP DRAWINGS.
24.	UPON COMPLETION OF THE WORK UNDER THIS CONTRACT, THE CONTRACTOR SHALL REMOVE ALL TOOLS, APPLIANCES, SURPLUS MATERIALS, AND SCRAP. ALL IDENTIFIED EXISTING EQUIPMENT TO BE REMOVED SHALL BE TURNED OVER TO THE OWNER.
25.	WHEN CONFLICTS OCCUR IN SPECIFICATIONS OR IN THE DRAWINGS, OR BETWEEN EITHER, THE ITEMS OF GREATER QUANTITY OR HIGHER COST SHALL BE PROVIDED.
26.	CONTRACTOR SHALL COORDINATE ALL DUCTWORK, PIPING AND PLUMBING WITH STRUCTURAL AND ELECTRICAL SYSTEMS INCLUDING ROOF/FLOOR PENETRATIONS AND SHALL PROVIDE AND INSTALL ALL NECESSARY OFFSETS OR FITTINGS REQUIRED TO AVOID CONFLICTS AND MAINTAIN EQUIPMENT ACCESS AND SERVICEABILITY.
27.	PROVIDE BALANCING DAMPER IN EACH SUPPLY AND RETURN BRANCH CONNECTION.



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Designed: S.T.P. ME3 Job No: 10-0184
Checked: K.C.C. Date: 09/30/2010
Drawn: S.T.P. C.O.A. 27552
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TO THE BEST OF MY KNOWLEDGE, SAID PLANS AND SPECIFICATIONS COMPLY WITH ALL APPLICABLE BUILDING CODES.

KAY C. CLEM, P.E.
FL# 53270

Utilities Maintenance & Administration Building

Bradenton, FL 34210

Client:

Manatee County Government
1112 Manatee Avenue West
Bradenton, FL 34208

revisions:

drawn: STP
checked: KCC
date: 09-30-10
comm. no.: 0920826

MECHANICAL LEGEND

M001

100% Construction Documents

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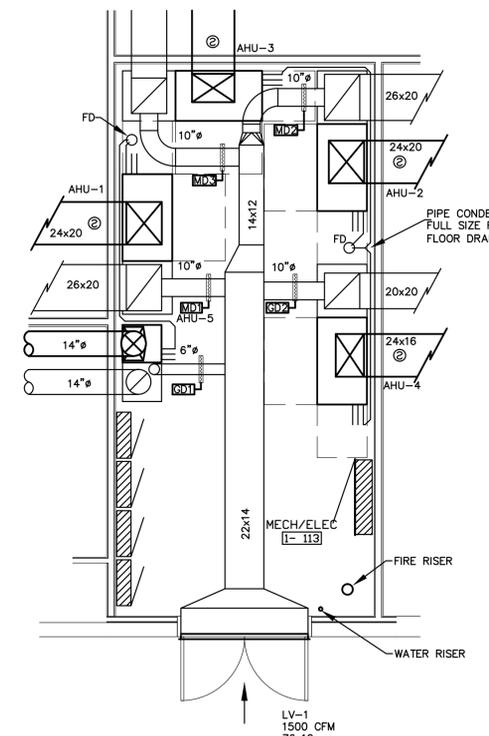
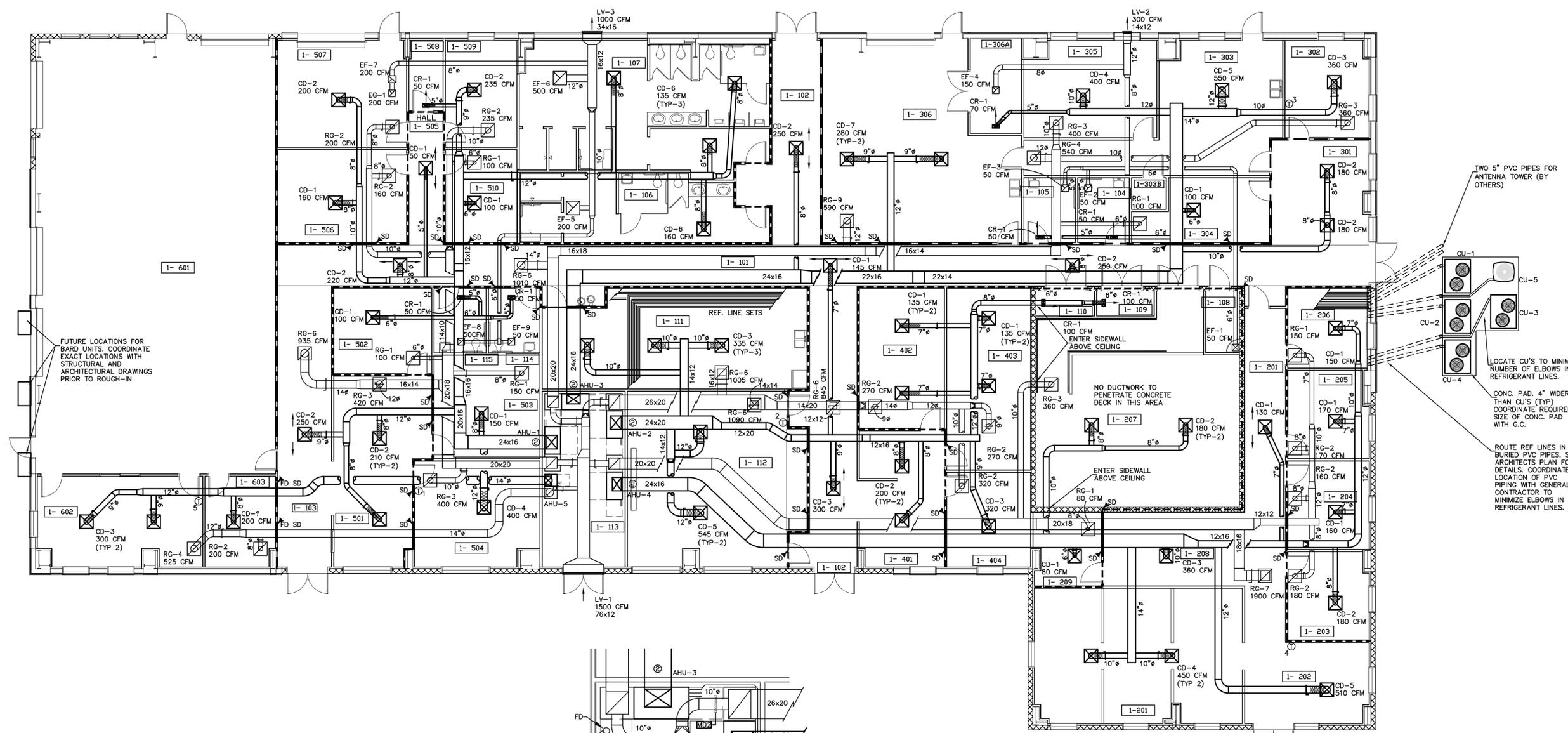
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MECHANICAL
FLOOR PLAN

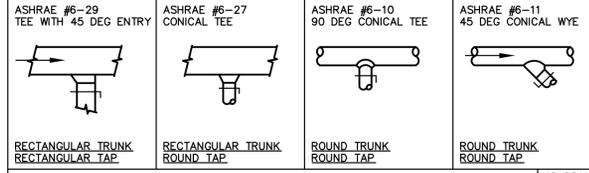
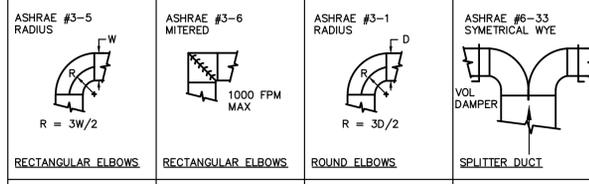
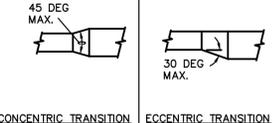
M101

100% Construction Documents



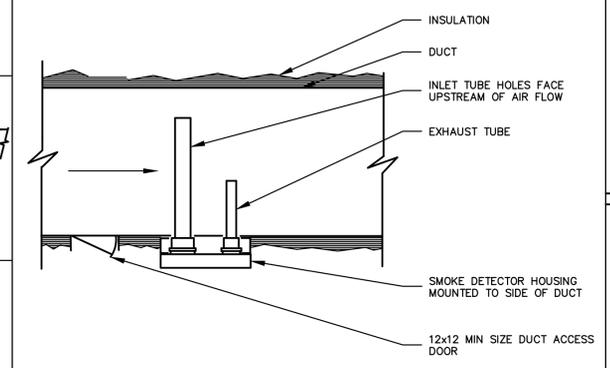
ROOM NAMES AND NUMBERS	
101	HALLWAY
102	HALLWAY
103	HALLWAY
104	RESTROOM
105	RESTROOM
106	LOCKER ROOM
107	LOCKER ROOM
108	JANITOR
109	DATA
110	DATA
111	BREAK ROOM
112	TRAINING/MEETING ROOM
113	MECH/ELEC
114	RESTROOM
115	RESTROOM
201	HALLWAY
202	MAPPING ASSISTANT
203	MAPPING SUPERVISOR
204	MAPPING SUPERINTENDENT
205	MAPPING SUPERVISOR
206	MAPPING OFFICE
207	MAPPING SECURE STORAGE
208	MAPPING PRINTERS
209	MAPPING SUPPLY ROOM
210	MAPPING TECHNICIANS
301	METERS ASSISTANT
302	METERS SUPERINTENDENT
303	METERS READING ROOM
303B	UTILITY CLOSET
304	METERS STORAGE
305	METERS SUPERVISORS
306	METERS REPAIR SHOP
306A	BLASTER
401	SEWER/COLLECTIONS ASSISTANT
402	SEWER/COLLECTIONS SUPERINTENDENT
403	SEWER/COLLECTIONS MAPPING ROOM
404	SEWER/COLLECTIONS SUPERINTENDENT
501	MAINTENANCE ASSISTANTS
502	SECURE STORAGE
503	OFFICE
504	MAINTENANCE MANAGER'S OFFICE
505	HALLWAY
506	OFFICE
507	TOOL STORAGE
508	STORAGE
509	OFFICE
510	OFFICE
601	WAREHOUSE
602	WAREHOUSE SUPERVISOR
603	AIR CONDITIONED STORAGE

NOTES:
1. THESE DUCT FITTINGS SHALL BE USED UNLESS OTHERWISE NOTED.



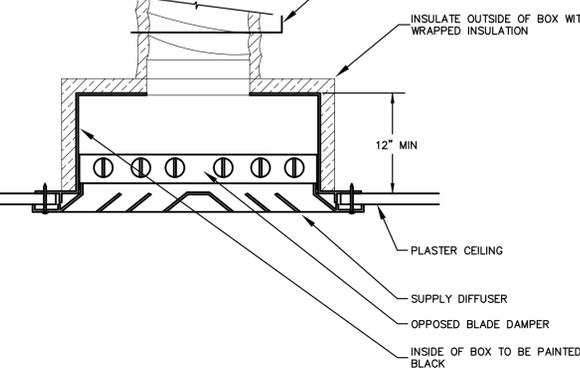
ACCEPTABLE DUCT FITTINGS

NOTES:
1. DETAIL SHOWS GENERAL INSTALLATION METHODS. REFER TO MANUFACTURERS REQUIREMENTS.
2. CUT INLET AND EXHAUST TUBES TO MANUFACTURERS REQUIREMENTS.
3. DUCT DETECTOR FURNISHED BY FIRE ALARM CONTRACTOR, INSTALLED BY MECHANICAL CONTRACTOR, AND WIRED BY FIRE ALARM CONTRACTOR.



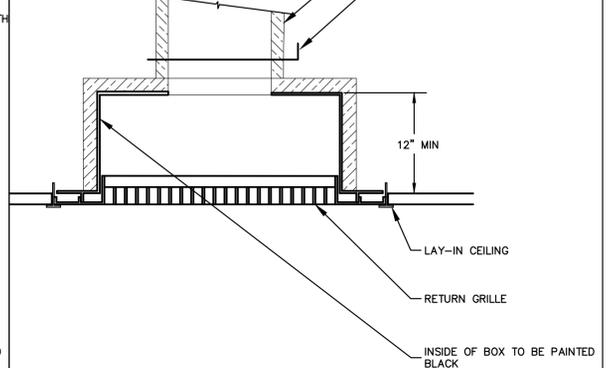
DUCT MOUNTED SMOKE DETECTOR

NOTES:
1. THERE SHALL BE NO INSULATION EXPOSED TO THE AIRSTREAM.
2. DUFFUSER ASSEMBLY TO BE SUPPORTED FROM STRUCTURE ABOVE.

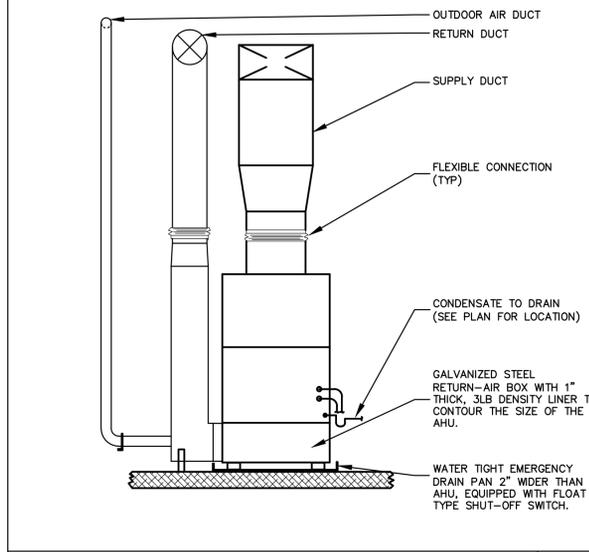


SURFACE MOUNT SUPPLY DIFFUSER (TOP)

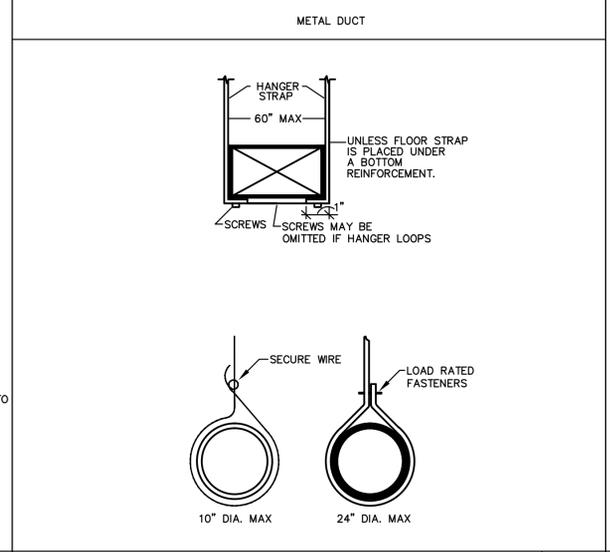
NOTES:
1. THERE SHALL BE NO INSULATION EXPOSED TO THE AIRSTREAM.
2. DUFFUSER ASSEMBLY TO BE SUPPORTED FROM STRUCTURE ABOVE.



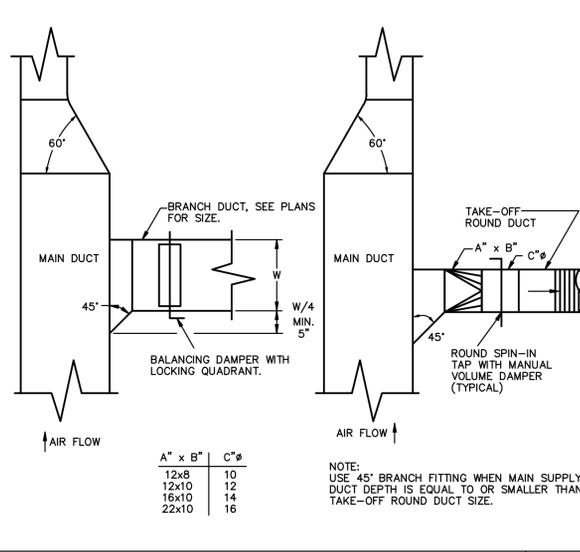
LAY-IN RETURN GRILLE



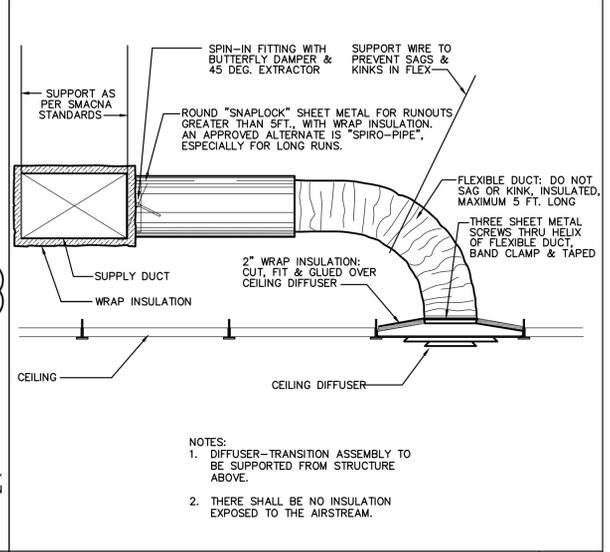
AHU DETAIL



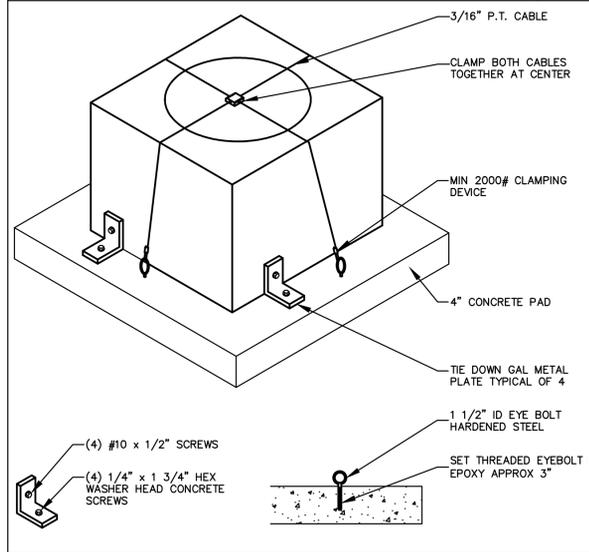
DUCT HANGARS



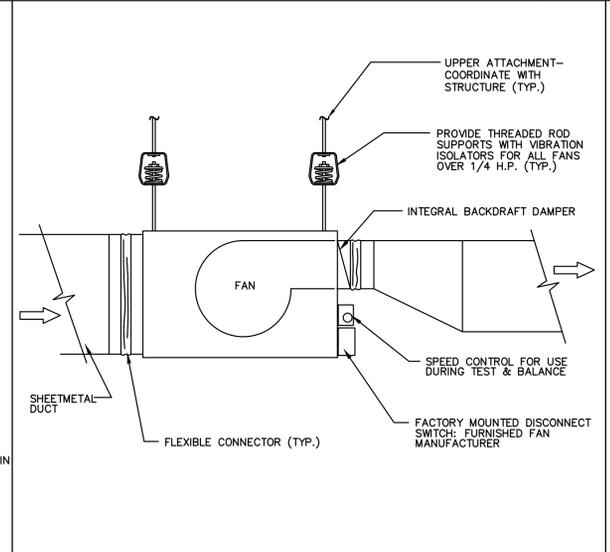
DUCT TAKEOFF DETAIL



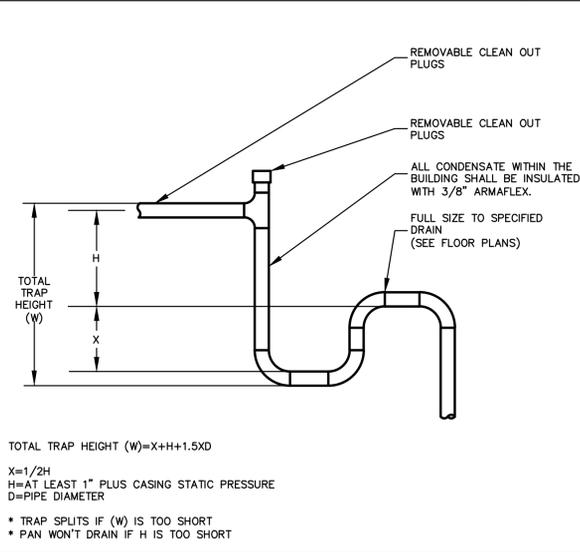
CEILING DIFFUSER RUNOUT DETAIL



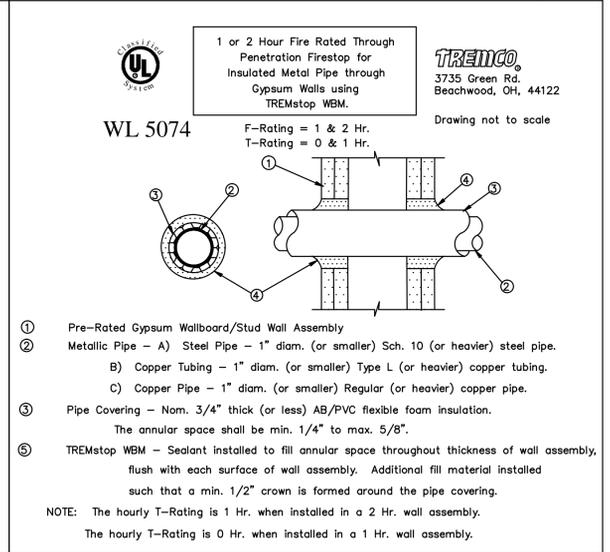
CONDENSING UNIT TIE DOWN DETAIL



INLINE FAN MOUNTING DETAIL



CONDENSATE DRAIN PIPING DETAIL



FIRE STOP DETAIL

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MECHANICAL
DETAILS

M501

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SPLIT SYSTEM AIR HANDLING UNIT SCHEDULE													
MARK	AREA SERVED	MANUF.	MODEL	CFM	O/A	E.S.P	TOTAL COOLING	SENS. COOLING	ELECTRIC HEAT	MCA	MOP	POWER	NOTES
						(in w.c.)	(MBH)	(MBH)	STAGE 1/ 2	AMPS	AMPS	V/PH/HZ	
AHU-1	LIFT STATION	CARRIER	40RUA008	3000	300	0.5	92.0	77.2	11.3 / 0	45.6	50	208/3/60	1,2,3,4,5,6,7,8
AHU-2	SEWER	CARRIER	40RUA012	4000	475	0.5	125.6	92.6	11.3 / 7.5	71.7	80	208/3/60	1,2,3,4,5,6,7,8,9
AHU-3	METER READ	CARRIER	40RUA008	3000	350	0.75	93.7	73.2	11.3 / 0	45.6	50	208/3/60	1,2,3,4,5,6,7,8
AHU-4	MAPPING	CARRIER	40RUA008	3000	300	0.75	92.9	76.2	11.3 / 0	45.6	50	208/3/60	1,2,3,4,5,6,7,8
AHU-5	SUPERVISOR	CARRIER	FX4CNF024T00	800	75	0.25	22.17	18.44	3.8 / 0	26.0	30	208/1/60	1,2,3,4,5,6,8

SPLIT SYSTEM AHU NOTES:

- SINGLE POWER POINT CONNECTION.
- PROVIDE 1" THROW AWAY FILTERS IN AHU.
- PROVIDE THERMAL EXPANSION VALVE.
- PROVIDE ELECTRIC HEATER.
- PROVIDE EMERGENCY DRAIN PAN AND FLOAT TYPE SHUT OFF SWITCH.
- R-410A REFRIGERANT
- INSTALL DUCT SMOKE DETECTOR, (FURNISHED BY FIRE ALARM CONTRACTOR, INSTALLED BY MECHANICAL CONTRACTOR AND WIRED BY FIRE ALARM CONTRACTOR.
- LIQUID AND SUCTION LINES TO BE SIZED IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS FOR LONG LENGTHS.
- CU-2 PROVIDE AND INSTALL TWO SETS 1/2" LIQUID LINES AND TWO SETS 1-1/8" SUCTION LINES. REFER TO MANUFACTURER PRIOR TO ORDERING AND ROUGH IN.

SPLIT SYSTEM CONDENSING UNIT SCHEDULE									
MARK	MANUFACTURER	MODEL	NOM. COOLING	AMBIENT TEMP	SEER / EER	MCA	MOCAP	POWER	
			MBH	DEG F		AMPS	AMPS	V/PH/HZ	
CU-1	CARRIER	38AUD008	90	95	-/11.2	34.2	50	208/3/60	
CU-2	CARRIER	38AUD012	120	95	-/11.2	40.6	60	208/3/60	
CU-3	CARRIER	38AUZ008	90	95	-/11.2	34.2	50	208/3/60	
CU-4	CARRIER	38AUZ008	90	95	-/11.2	34.2	50	208/3/60	
CU-5	CARRIER	24ABB324A003	24	95	14/-	17.6	25	208/1/60	

SPLIT SYSTEM CU NOTES:

- PROVIDE 130 MPH HURRICANE TIE DOWNS FOR CONDENSING UNIT.

AIR FIXTURE SCHEDULE												
MARK	SERVICE	MANUFACTURER	MODEL	NECK SIZE	MODULE SIZE	CFM	THROW FT	T. VEL	NC	MATERIAL		
CD-1	SUPPLY	PRICE	SPD AS-6"-24"x24"-3P-VCR7-B12	6"	24x24	50-175	7	900	19	ALUMINUM		
CD-2	SUPPLY	PRICE	SPD AS-8"-24"x24"-3P-VCR7-B12	8"	24x24	176-275	9	800	19	ALUMINUM		
CD-3	SUPPLY	PRICE	SPD AS-10"-24"x24"-3P-VCR7-B12	10"	24x24	276-385	10	700	18	ALUMINUM		
CD-4	SUPPLY	PRICE	SPD AS-12"-24"x24"-3P-VCR7-B12	12"	24x24	386-500	12	700	20	ALUMINUM		
CD-5	SUPPLY	PRICE	SPD AS-14"-24"x24"-3P-VCR7-B12	14"	24x24	501-650	13	600	18	ALUMINUM		
CD-6	SUPPLY	PRICE	SPD AS-6"-24"x24"-31-VCR7-B12	6"	24x24	75-175	7	900	19	ALUMINUM		
CD-7	SUPPLY	PRICE	SPD AS-10"-24"x24"-31-VCR7-B12	10"	24x24	276-385	10	700	18	ALUMINUM		
CR-1	SUPPLY	PRICE	620DAL-7x4-F-L-A-B12	--	7x4	50-100	8	500	15	ALUMINUM		
RG-1	RETURN	PRICE	80-6x6-3P-TB-B12	6x6	24x24	50-150	--	800	20	ALUMINUM		
RG-2	RETURN	PRICE	80-8x8-3P-TB-B12	8x8	24x24	151-325	--	800	20	ALUMINUM		
RG-3	RETURN	PRICE	80-10x10-3P-TB-B12	10x10	24x24	326-480	--	800	20	ALUMINUM		
RG-4	RETURN	PRICE	80-12x12-3P-TB-B12	12x12	24x24	481-630	--	700	20	ALUMINUM		
RG-5	RETURN	PRICE	80-14x14-3P-TB-B12	14x14	24x24	631-825	--	700	20	ALUMINUM		
RG-6	RETURN	PRICE	80-16x16-3P-TB-B12	16x16	24x24	826-1120	--	700	20	ALUMINUM		
RG-7	RETURN	PRICE	80-20x20-3P-TB-B12	20x20	24x24	1451-1800	--	700	20	ALUMINUM		
RG-8	RETURN	PRICE	80-10x10-F-B12	10x10	24x24	326-480	--	800	20	ALUMINUM		
RG-9	RETURN	PRICE	80-12x12-F-B12	12x12	24x24	481-630	--	700	20	ALUMINUM		
RG-10	RETURN	PRICE	80-14x14-F-B12	14x14	24x24	631-825	--	700	20	ALUMINUM		
EG-1	EXHAUST	PRICE	80-8x8-3P-TB-B12	8x8	24x24	200	--	800	20	ALUMINUM		

NOTES:

- BORDER TYPES SHALL BE COMPATIBLE WITH ARCHITECTURAL CEILING TYPE FOR THE ROOM IN WHICH THE AIR DEVICE IS LOCATED.
- SEE THE FLOOR PLANS FOR LOCATION OF EACH DEVICE.
- ALL AIR DEVICES SHALL BE TESTED IN ACCORDANCE WITH ASHRAE 70-91.
- ALL THROW VALUES ARE ISOTHERMAL AND MEASURED IN FEET.
- ALL PRESSURES ARE IN INCHES, W.G.
- FLOWRATE FOR CONTINUOUS LINEAR DEVICES IS IN CFM/FT.
- PROVIDE TRANSITION BOOTS AS REQUIRED.
- ALL SUPPLY AIR DEVICES SHALL BE PROVIDED WITH OPPOSED BLADE DAMPERS.
- ALL SUPPLY DIFFUSERS ARE 4 WAY UNLESS OTHERWISE NOTED BY ARROWS ON THE FLOOR PLANS.

INDOOR AIR QUALITY SCHEDULE -- ASHRAE 62.1-2007										
AHU	SERVICE	(A) # OF PEOPLE	OUTDOOR AIR PER PERSON	(B) OCC. CFM	(C) AREA SQFT	OUTDOOR AIR PER SQFT	(D) AREA CFM	(E) REQ CFM (B+D)	(F) DESIGN CFM	
AHU-1 LIFT STATION	CORRIDOORS	0	0	0	896	0.06	53.76	53.76	75	
	LIFT STAT. OFFICES	7	5	35	1452	0.06	87.12	122.12	160	
	STORAGE	0	0	0	533	0.12	63.96	63.96	65	
								O/A-AHU-1	300	
AHU-2 SEWER	CORRIDOORS	0	0	0	552	0.06	33.12	33.12	40	
	SEWER AREAS	55	5	275	2257	0.06	135.42	410.42	435	
								O/A-AHU-2	475	
AHU-3 METER READING	CORRIDOOR	0	0	0	479	0.06	28.74	28.74	30	
	METERS AREAS	19	5	95	1989	0.06	119.34	214.34	270	
	STORAGE & DATA	0	0	0	364	0.12	43.68	43.68	50	
								O/A-AHU-3	350	
AHU-4 MAPPING	CORRIDOOR	0	0	0	296	0.06	17.76	17.76	20	
	MAPPING AREAS	11	5	55	1660	0.06	99.6	154.6	160	
	STORAGE	0	0	0	945	0.12	113.4	113.4	120	
								O/A-AHU-4	300	
AHU-5 SUPERVISOR	SUPERVISOR OFF	2	5	10	327	0.06	19.62	29.62	55	
	STORAGE	0	0	0	136	0.12	16.32	16.32	20	
								O/A-AHU-5	75	

IAQ DESIGN DOCUMENTATION NOTES:

- THE VENTILATION RATE PROCEDURE DESCRIBED IN ASHRAE STANDARD 62.1-2007-6.2 HAS BEEN USED TO DETERMINE THE AMOUNT OF OUTSIDE AIR FOR THIS PROJECT.
- BUILDING ALTERATIONS OR CHANGE-OF-USE: VENTILATION SYSTEM DESIGN, OPERATION, AND MAINTENANCE SHALL BE REEVALUATED WHEN CHANGES IN BUILDING USE OR OCCUPANCY CATEGORY, SIGNIFICANT BUILDING ALTERATIONS, SIGNIFICANT CHANGES IN OCCUPANT DENSITY, OR OTHER CHANGES INCONSISTENT WITH SYSTEM DESIGN ASSUMPTIONS ARE MADE.
- THIS DESIGN IS BASED ON THE OUTDOOR AIR QUALITY BEING ACCEPTABLE FOR VENTILATION.
- THIS DESIGN IS BASED ON NO SMOKING BEING ALLOWED IN ANY PORTIONS OF THE BUILDING.
- RESTROOM VENTILATION REQUIREMENTS ARE MET VIA TRANSFER AIR AND MECHANICAL EXHAUST WITH NO RECIRCULATION OF RESTROOM SUPPLY AIR PER ASHRAE 62.1-2007-6.2.8.

PEOPLE OUTDOOR AIR RATE IS PER ASHRAE 62.1-2007, TABLE 6-1. AREA OUTDOOR AIR RATE IS PER ASHRAE 62.1-2004, TABLE 6-1

** - REQ. CFM = (OCC. CFM + AREA CFM)

EXHAUST FAN SCHEDULE													
MARK	SERVICE	MANUFACTURER	MODEL	CFM	S.P. (IN. W.C.)	RPM	MAX SONES	WATTS	ELECTRICAL MOTOR VOLTZ/PH./HZ.	LOCATION	TYPE	DAMPER	NOTES
EF-1	JAN	GREENHECK	SP-B80	50	0.5	900	2.5	54	120/1/60	CEILING	CENTRIFUGAL	INCLUDED	1, 3
EF-2	RR	GREENHECK	SP-B80	50	0.5	900	2.5	54	120/1/60	CEILING	CENTRIFUGAL	INCLUDED	1, 3
EF-3	RR	GREENHECK	SP-B80	50	0.5	900	2.5	54	120/1/60	CEILING	CENTRIFUGAL	INCLUDED	1, 3
EF-4	BLASTER	GREENHECK	CSP-A190	150	0.25	1400	1.1	100	120/1/60	NO CEILING	CENTRIFUGAL	INCLUDED	1, 4
EF-5	RR	GREENHECK	SP-A250	200	0.25	1000	2.0	83	120/1/60	CEILING	CENTRIFUGAL	INCLUDED	1,2
EF-6	RR	GREENHECK	SP-A700	500	0.25	1100	5.5	350	120/1/60	CEILING	CENTRIFUGAL	INCLUDED	1,2
EF-7	TOOL STORE	GREENHECK	CSP-A250	200	0.25	1000	1.5	83	120/1/60	ABOVE CEIL.	CENTRIFUGAL	INCLUDED	1, 4
EF-8	RR	GREENHECK	SP-B80	50	0.5	900	2.5	54	120/1/60	CEILING	CENTRIFUGAL	INCLUDED	1, 3
EF-9	RR	GREENHECK	SP-B80	50	0.5	900	2.5	54	120/1/60	CEILING	CENTRIFUGAL	INCLUDED	1, 3

EXHAUST FAN NOTES:

- PROVIDE SPEED CONTROL.
- EF-5 AND EF-6 SHALL BE INTERLOCKED WITH AHU-1.
- PROVIDE 10 MINUTE TIME DELAY SWITCH.
- PROVIDE 100 MINUTE TIME DELAY SWITCH. (AVAILABLE FROM GREENHECK)

AIR BALANCE SCHEDULE						
ZONE	ZONE NAME	SUPPLY AIR	OUTSIDE AIR	RETURN AIR	EXHAUST	PRESSURE
AHU-1	LIFT STATION	3000	300	2700	700	-400
AHU-2	SEWER	4000	475	3525	0	+475
AHU-3	METER READING	3000	350	2650	0	+350
AHU-4	MAPPING	3000	300	2700	0	+300
AHU-5	SUPERVISOR	800	75	725	0	+75
TOTAL		13800	1500		-700	+800

AIR BALANCE NOTES:

- EF'S 1, 2, 3, 4, 7, 8 AND 9 ARE CONSIDERED INTERMITTENT. TIMERS WILL AUTOMATICALLY SHUT THESE FANS DOWN.

LOUVER SCHEDULE						
MARK	MANUFACTURER	MODEL	SIZE (WxH)	CFM	FREE AREA	FACE VELOCITY
LV-1	RUSKIN	EME520MD	76x12	1500	2.62 SQFT	603
LV-2	RUSKIN	EME520MD	14x12	300	0.41 SQFT	726
LV-3	RUSKIN	EME520MD	34x16	1000	1.89 SQFT	753

LOUVER NOTES:

- LOUVERS TO BE PAINTED AS DIRECTED BY ARCHITECT.
- LOUVER TO BE IMPACT RESISTANT FOR USE IN HURRICANE ZONES.
- COORDINATE SIZE AND ELEVATION OF LOUVERS WITH G.C. AND ARCHITECT PRIOR TO ORDERING AND ROUGH-IN.

GRAVITY DAMPER SCHEDULE			
MARK	MANUFACTURER	MODEL	DUCT SIZE
GD1	GREENHECK	WDR-53	6"ø
GD2	GREENHECK	WDR-53	10"ø

GRAVITY DAMPER NOTES:

- GRAVITY DAMPER SIZES TO BE COORDINATED WITH DUCT SHOP DRAWINGS PRIOR TO ORDERING.

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KAY C. CLEM, P.E.
FL# 53270

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Bradenton, FL 34210

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1112 Manatee Avenue West
Bradenton, FL 34208

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MECHANICAL
SCHEDULES

M601

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PLUMBING
LEGEND

P001

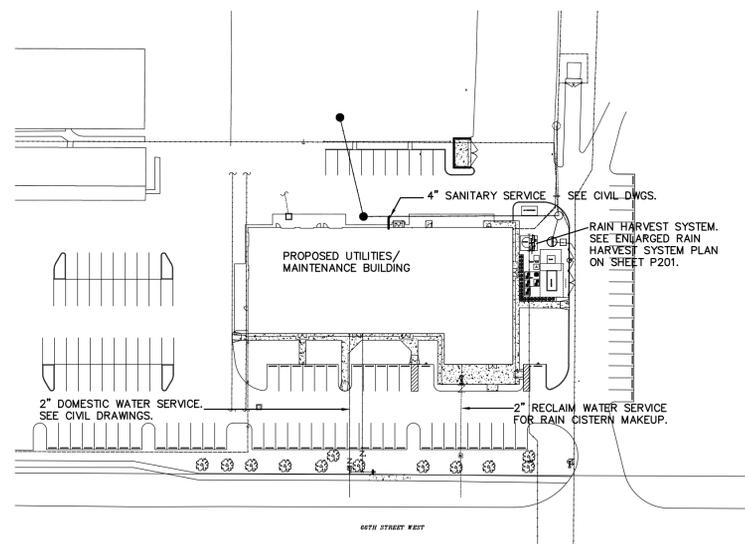
GENERAL PLUMBING NOTES

- THE GENERAL CONDITIONS OF THE CONTRACT FOR CONSTRUCTION AND THESE SPECIFICATIONS AND DRAWINGS ARE PART OF THIS CONTRACT.
- ALL APPLICABLE CODES, LAWS, AND REGULATIONS GOVERNING OR RELATING TO ANY PORTION OF THIS WORK ARE HEREBY INCORPORATED INTO AND MADE A PART OF THESE SPECIFICATIONS, AND THEIR PROVISIONS SHALL BE CARRIED OUT BY THE CONTRACTOR WHO SHALL INFORM THE OWNER PRIOR TO SUBMITTING A PROPOSAL OF ANY WORK OR MATERIAL WHICH VIOLATES ANY OF THE ABOVE LAWS AND REGULATIONS. ANY WORK DONE BY THE CONTRACTOR CAUSING SUCH A VIOLATION SHALL BE CORRECTED BY THE CONTRACTOR.

APPLICABLE CODES INCLUDE:
FLORIDA BUILDING CODE - 2007
FLORIDA PLUMBING CODE - 2007
- DRAWINGS ARE DIAGRAMMATIC AND INDICATE GENERAL ARRANGEMENT OF SYSTEMS AND WORK. PIPE ROUTING IS SHOWN DIAGRAMMATICALLY AND DOES NOT SHOW ALL OFFSETS, DROPS AND RISES OF RUNS. THE CONTRACTOR SHALL ALLOW IN HIS PRICE FOR ROUTING OF PIPE TO AVOID OBSTRUCTIONS. COORDINATION WITH UTILITY SERVICES, INCLUDING THOSE OF OTHER TRADES IS REQUIRED. MAINTAIN HEADROOM AND SPACE CONDITIONS.
- INSTALL WORK SO AS TO BE READILY ACCESSIBLE FOR OPERATION, MAINTENANCE AND REPAIR. MINOR DEVIATIONS FROM DRAWINGS MAY BE MADE TO ACCOMPLISH THIS, BUT CHANGES WHICH INVOLVE EXTRA COST SHALL NOT BE MADE WITHOUT APPROVAL.
- THE CONTRACTOR SHALL KEEP ALL EQUIPMENT AND MATERIALS, AND ALL PARTS OF THE BUILDING, EXTERIOR SPACES, AND ADJACENT STREETS, SIDEWALKS AND PAVEMENTS, FREE FROM MATERIAL AND DEBRIS RESULTING FROM THE EXECUTION OF THIS WORK. EXCESS MATERIALS WILL NOT BE PERMITTED TO ACCUMULATE EITHER ON THE INTERIOR OR THE EXTERIOR.
- THE LOCATIONS OF THE UTILITY SERVICES ARE BELIEVED TO BE AS INDICATED ON THE DRAWINGS. THE CONTRACTOR SHALL VERIFY THE ACTUAL LOCATIONS OF THESE SERVICES AND NOTIFY THE ENGINEER OF ANY DISCREPANCIES PRIOR TO COMMENCING ANY WORK.
- SEAL OPENINGS THROUGH PARTITIONS, WALLS, AND FLOORS WITH A U.L. LISTED FIRESTOPPING ASSEMBLY MATCHED TO THE RATING OF THE PENETRATED ELEMENT.
- PROVIDE ALL NECESSARY FLASHING AND COUNTERFLASHING TO MAINTAIN THE WATERPROOFING INTEGRITY OF THIS BUILDING AS REQUIRED BY THE INSTALLATION OR REMOVAL OF PIPING AND EQUIPMENT. PROVIDE EQUIPMENT CURBS AS REQUIRED.
- MATERIALS AND WORKMANSHIP, UNLESS OTHERWISE NOTED, SHALL BE IN ACCORDANCE WITH BUILDING STANDARDS.
- THE WORK IN THE BUILDING SHALL BE DONE WHEN AND AS DIRECTED, AND IN A MANNER SATISFACTORY TO THE OWNER. THE WORK SHALL BE PERFORMED SO AS TO CAUSE THE LEAST POSSIBLE INCONVENIENCE AND DISTURBANCE TO THE OWNER.
- ALL MATERIAL AND EQUIPMENT TO BE NEW UNLESS OTHERWISE NOTED AND SHALL BE IN ACCORDANCE WITH BUILDING STANDARDS. ALL MATERIAL AND EQUIPMENT ON SITE SHALL BE PROPERLY STORED SUCH THAT IT IS PROTECTED FROM DAMAGE AND EXPOSURE TO THE OUTSIDE ELEMENTS.
- INSURANCE: PROVIDE IN ACCORDANCE WITH BUILDING REQUIREMENTS AND POLICY SHALL INCLUDE A HOLD HARMLESS CLAUSE FOR THE OWNER AND ENGINEER.
- THE FINAL ACCEPTANCE WILL BE MADE AFTER THE CONTRACTOR HAS ADJUSTED HIS EQUIPMENT, TESTED THE VARIOUS SYSTEMS, DEMONSTRATED THAT IT FULFILLS THE REQUIREMENTS OF THE DRAWINGS AND SPECIFICATIONS, HAS FURNISHED ALL THE REQUIRED CERTIFICATES OF INSPECTION AND APPROVAL, AND SUBMITTED ALL THE NECESSARY CLOSE-OUT DOCUMENTS.

PLUMBING DRAWING LIST

DRAWING NO.	DRAWING TITLE
P001	PLUMBING LEGEND
P101	PLUMBING - SANITARY WASTE & VENT PLAN
P102	PLUMBING - DOMESTIC WATER PLAN
P201	PLUMBING - ENLARGED PLANS
P501	PLUMBING DETAILS
P502	PLUMBING DETAILS
P601	PLUMBING SCHEDULES



PLUMBING SITE PLAN N
SCALE: 1/64" = 1'-0"

PLUMBING LEGEND

DESCRIPTION	LINETYPE
COLD WATER	—————
HOT WATER	-----
HOT WATER RETURN	-----
RAIN WATER SUPPLY	-----
SANITARY BELOW GRADE	----- SAN
EXISTING BELOW GRADE SANITARY	----- SAN (E)
SANITARY VENT	-----
COMPRESSED AIR	----- A
COMPRESSED AIR OUTLET	----- CA
BALANCING VALVE	-----
BALL VALVE	-----
CHECK VALVE	-----
SOLENOID VALVE	-----
VALVE IN VALVE BOX	-----
PRESSURE REDUCING VALVE	-----
UNION	-----
STRAINER	-----
PIPE UP	-----
PIPE DOWN	-----
TEE UP	-----
TEE DOWN	-----
AREA DRAIN AND TYPE	----- 4" AD-1
FLOOR DRAIN AND TYPE	----- 4" FD-A
FLOOR CLEANOUT	-----
CLEANOUT PLUG	-----
EXTERIOR CLEANOUT AND TYPE	----- 3" ECO
CAP	-----
SHOCK ARRESTOR AND PDI SIZE	----- PDI-A
P-TRAP	-----
HOSE BIBB	----- HB
YARD HYDRANT	----- WH
REDUCED PRESSURE PRINCIPLE BACKFLOW PREVENTOR	-----
CONNECTION POINT OF NEW TO EXISTING	-----

ABBREVIATIONS

AAV	AIR ADMITTANCE VALVE	IE	INVERT ELEVATION
ADA	AMERICANS WITH DISABILITIES ACT	IMB	ICE MAKER BOX
AD	AREA DRAIN		
AFG	ABOVE FINISHED GRADE	MAX	MAXIMUM
		MIN	MINIMUM
BTUH	BRITISH THERMAL UNITS PER HOUR		
BWV	BACK WATER VALVE	NEC	NATIONAL ELECTRICAL CODE
		NIC	NOT IN CONTRACT
CA	COMPRESSED AIR	NTS	NOT TO SCALE
CD	CONDENSATE DRAIN		
CO	CLEAN OUT	PDI	PLUMBING & DRAINAGE INSTITUTE
CONN	CONNECTION	PSIG	POUNDS PER SQUARE INCH GAUGE
CW	COLD WATER	POC	POINT OF CONNECTION
DIA	DIAMETER	SPECS	SPECIFICATIONS
DN	DOWN	SAN	SANITARY SEWER
DWG	DRAWING	S.F.	SQUARE FEET
ECO	EXTERIOR CLEANOUT	T & P	TEMPERATURE & PRESSURE
		TBD	TO BE DETERMINED
F	DEGREES FAHRENHEIT	TEMP	TEMPERATURE
FCO	FLOOR CLEANOUT	TYP	TYPICAL
FD	FLOOR DRAIN		
FT	FEET	UL	UNDERWRITER'S LABORATORIES
FBC	FLORIDA BUILDING CODE	UNO	UNLESS NOTED OTHERWISE
FPC	FLORIDA PLUMBING CODE		
GAL	GALLONS	VTR	VENT THRU ROOF
GPM	GALLONS PER MINUTE	V	VENT
HB	HOSE BIBB	W/	WITH
HP	HORSE POWER	WCO	WALL CLEAN OUT
HW	HOT WATER	WH	WALL HYDRANT
HWR	HOT WATER RETURN		

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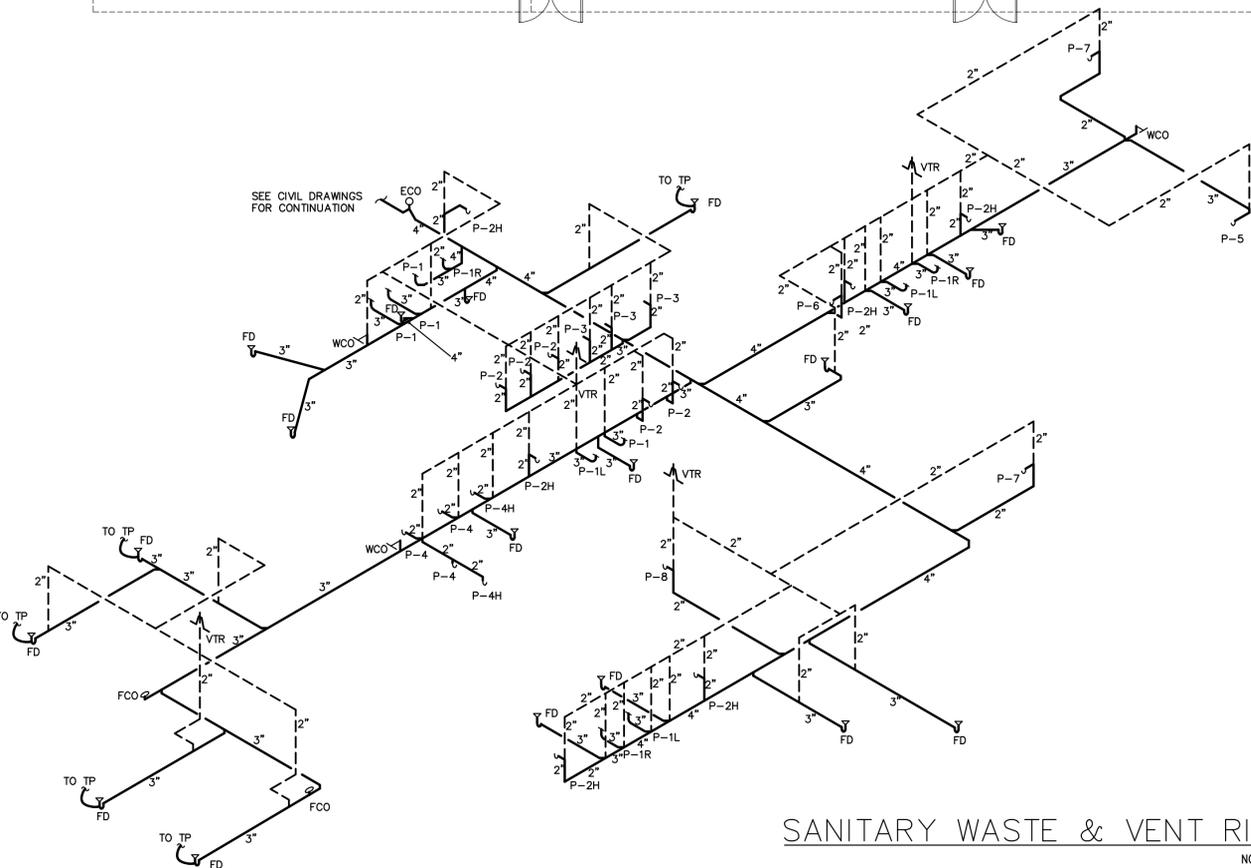
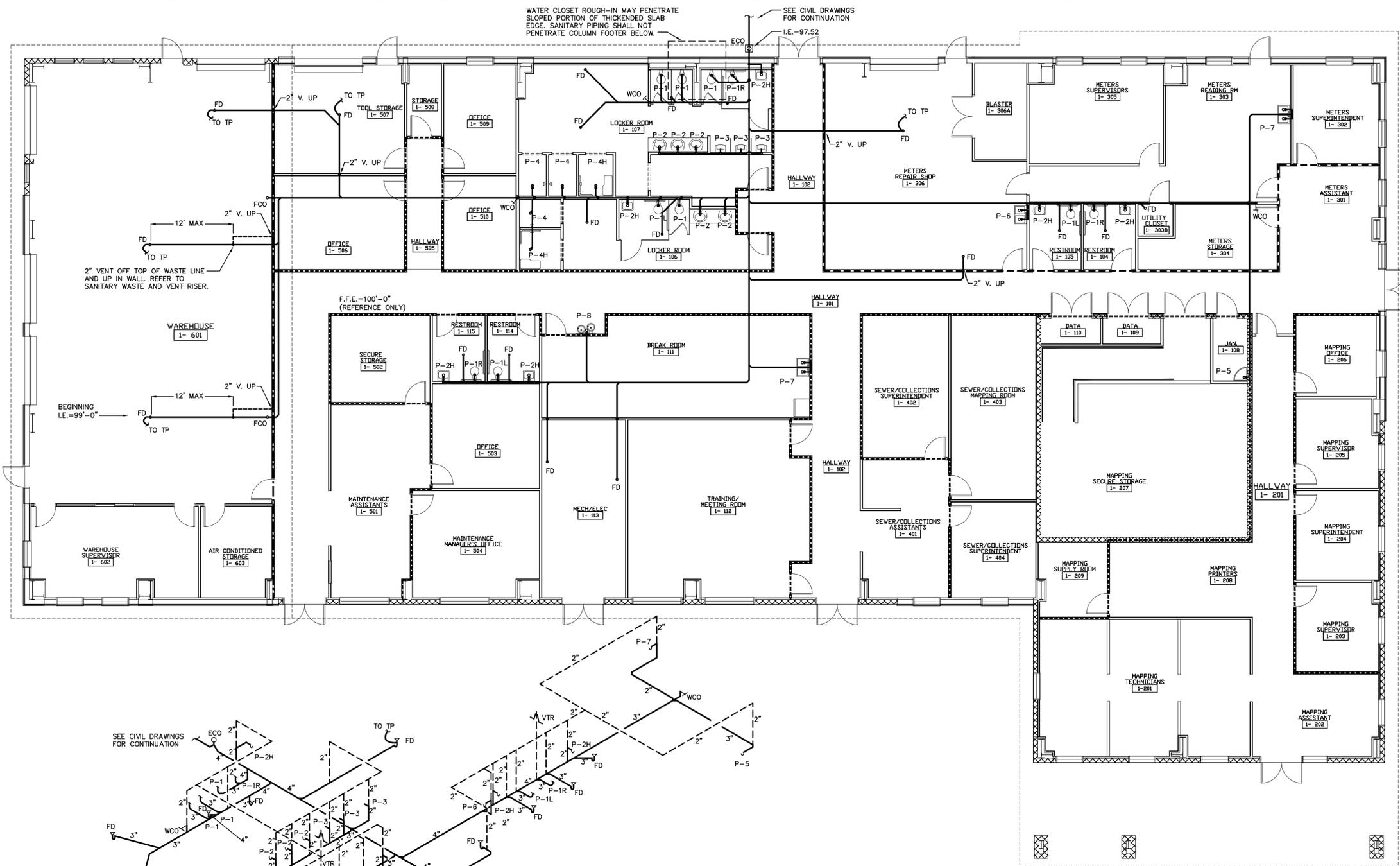
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SANITARY WASTE &
VENT FLOOR PLAN

P101

100% Construction Documents



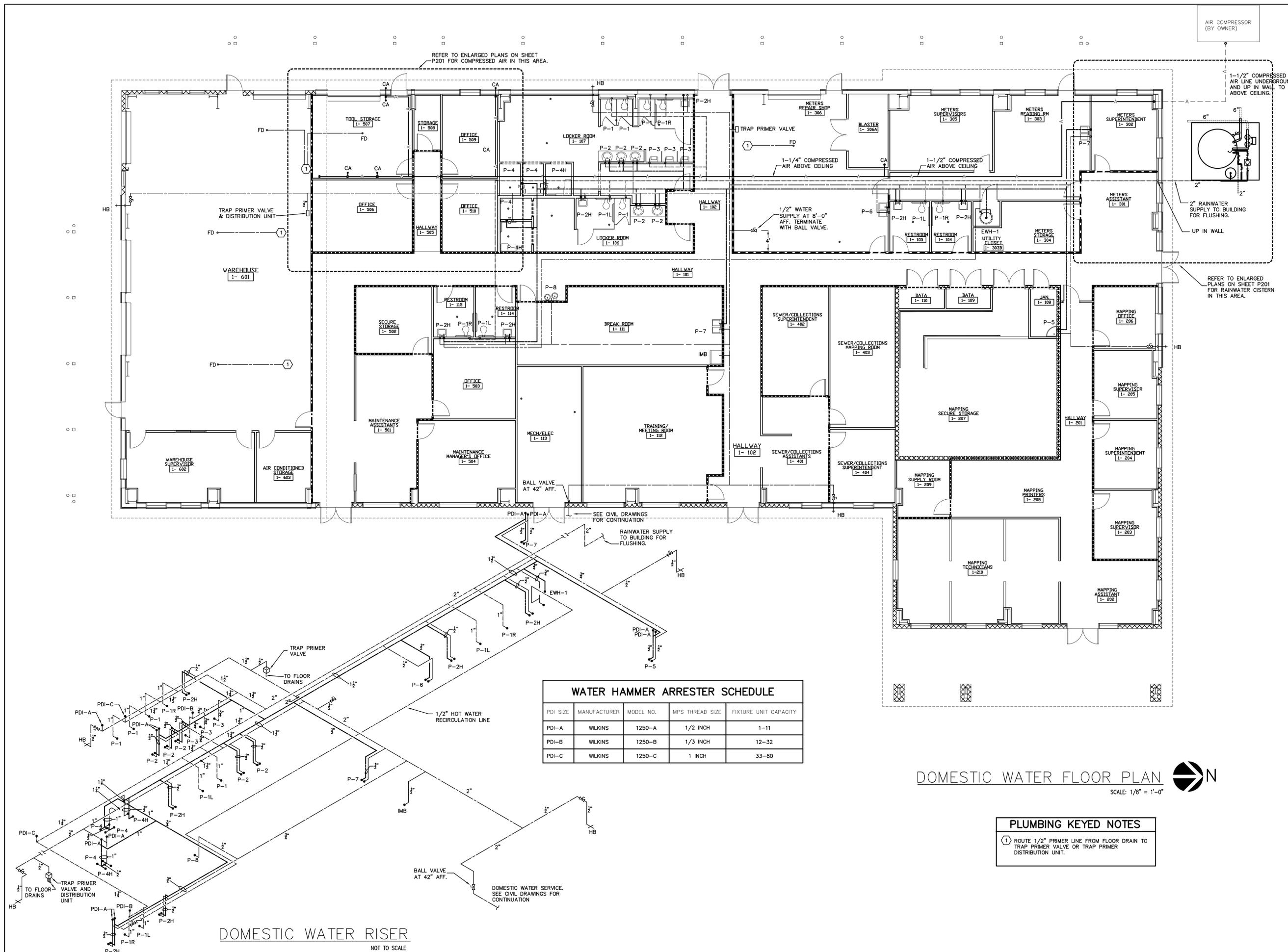
SANITARY WASTE & VENT RISER

NOT TO SCALE

SANITARY WASTE & VENT FLOOR PLAN

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





REFER TO ENLARGED PLANS ON SHEET P-201 FOR COMPRESSED AIR IN THIS AREA.

AIR COMPRESSOR (BY OWNER)

1-1/2" COMPRESSED AIR LINE UNDERGROUND AND UP IN WALL ABOVE CEILING.

2" RAINWATER SUPPLY TO BUILDING FOR FLUSHING.

REFER TO ENLARGED PLANS ON SHEET P-201 FOR RAINWATER CISTERN IN THIS AREA.

WATER HAMMER ARRESTER SCHEDULE

PDI SIZE	MANUFACTURER	MODEL NO.	MPS THREAD SIZE	FIXTURE UNIT CAPACITY
PDI-A	WILKINS	1250-A	1/2 INCH	1-11
PDI-B	WILKINS	1250-B	1/3 INCH	12-32
PDI-C	WILKINS	1250-C	1 INCH	33-80

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

PLUMBING KEYED NOTES

① ROUTE 1/2" PRIMER LINE FROM FLOOR DRAIN TO TRAP PRIMER VALVE OR TRAP PRIMER DISTRIBUTION UNIT.

DOMESTIC WATER RISER
NOT TO SCALE

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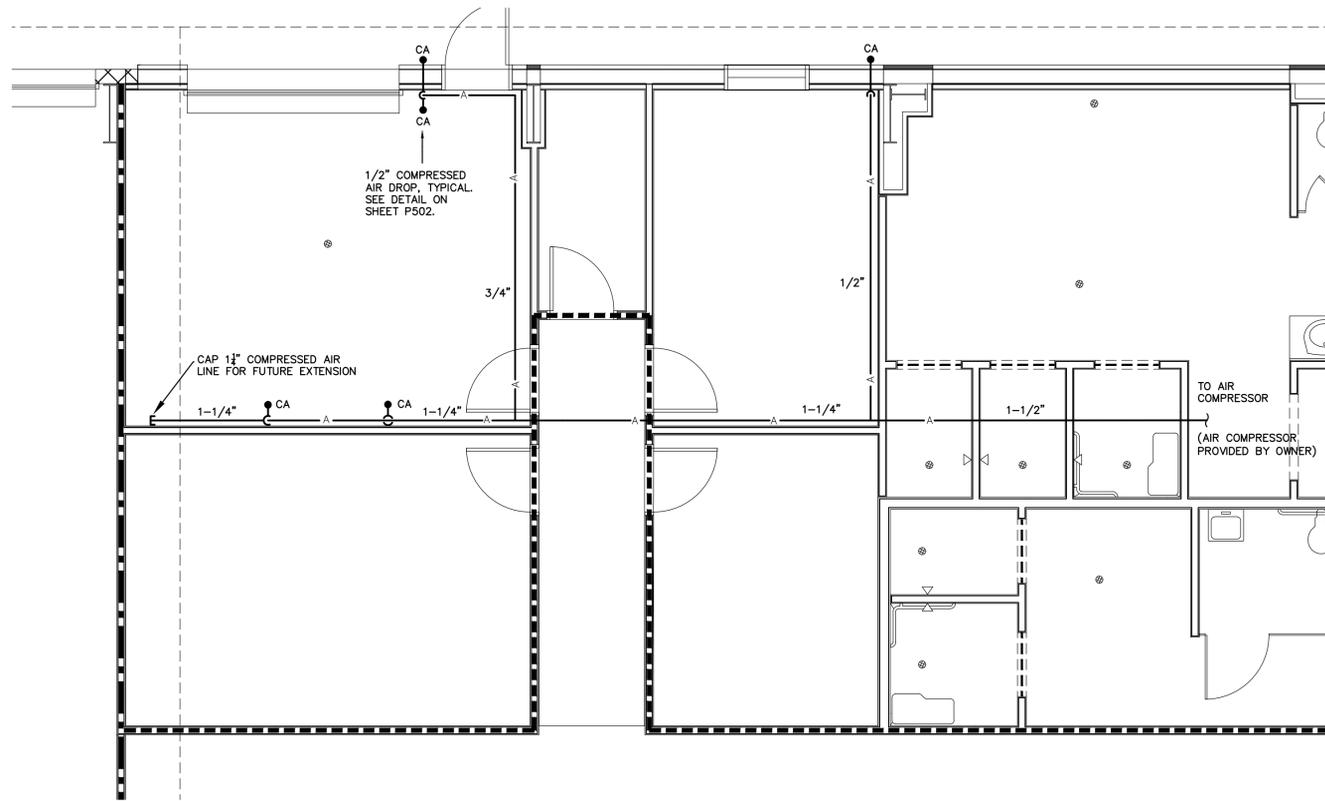
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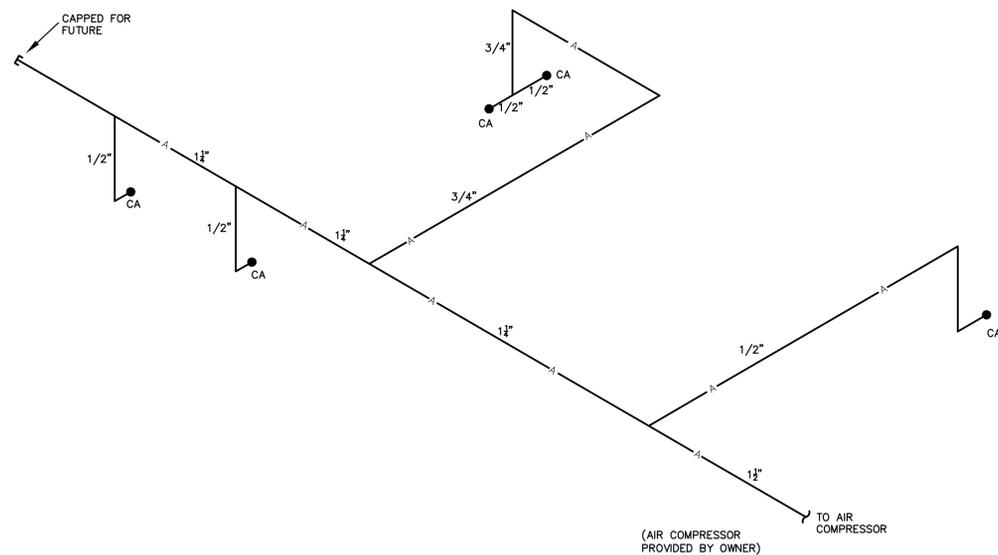
DOMESTIC WATER
FLOOR PLAN

P102

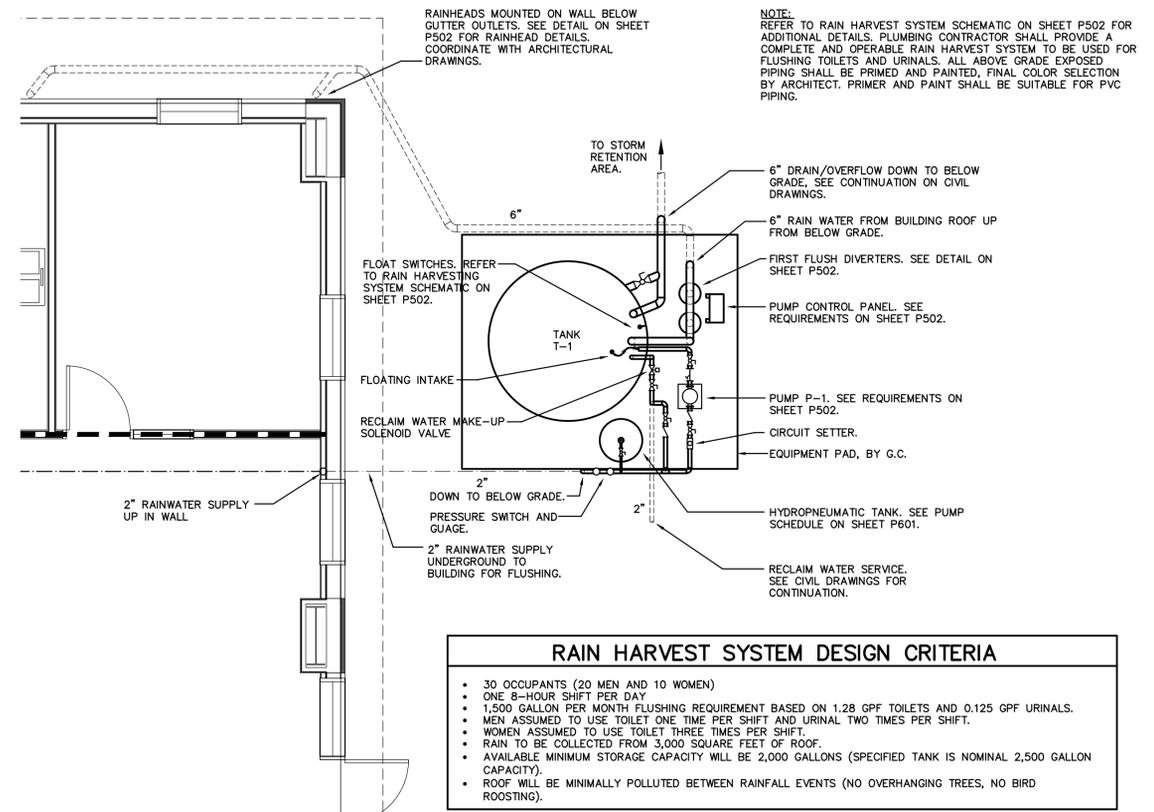
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ENLARGED COMPRESSED AIR PLAN  N
SCALE: 1/4" = 1'-0"



PARTIAL COMPRESSED AIR RISER
SCALE: NOT TO SCALE



RAIN HARVEST SYSTEM DESIGN CRITERIA	
•	30 OCCUPANTS (20 MEN AND 10 WOMEN)
•	ONE 8-HOUR SHIFT PER DAY
•	1,500 GALLON PER MONTH FLUSHING REQUIREMENT BASED ON 1.28 GPF TOILETS AND 0.125 GPF URINALS.
•	MEN ASSUMED TO USE TOILET ONE TIME PER SHIFT AND URINAL TWO TIMES PER SHIFT.
•	WOMEN ASSUMED TO USE TOILET THREE TIMES PER SHIFT.
•	RAIN TO BE COLLECTED FROM 3,000 SQUARE FEET OF ROOF.
•	AVAILABLE MINIMUM STORAGE CAPACITY WILL BE 2,000 GALLONS (SPECIFIED TANK IS NOMINAL 2,500 GALLON CAPACITY).
•	ROOF WILL BE MINIMALLY POLLUTED BETWEEN RAINFALL EVENTS (NO OVERHANGING TREES, NO BIRD ROOSTING).

ENLARGED RAIN HARVEST SYSTEM PLAN  N
SCALE: 1/4" = 1'-0"

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PLUMBING
ENLARGED PLANS

P201

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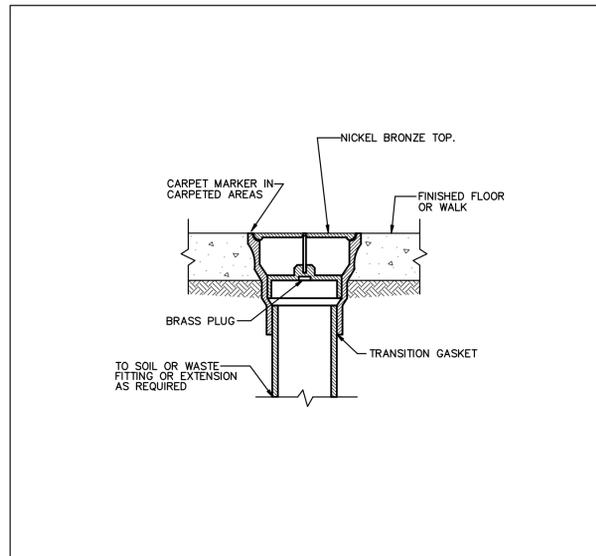
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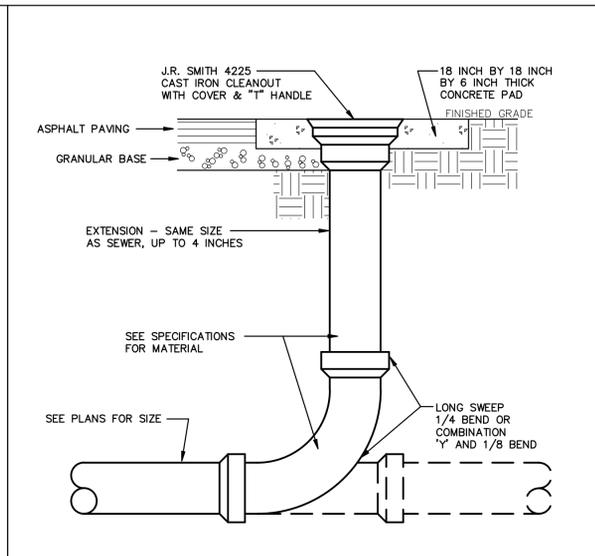
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**PLUMBING
DETAILS**

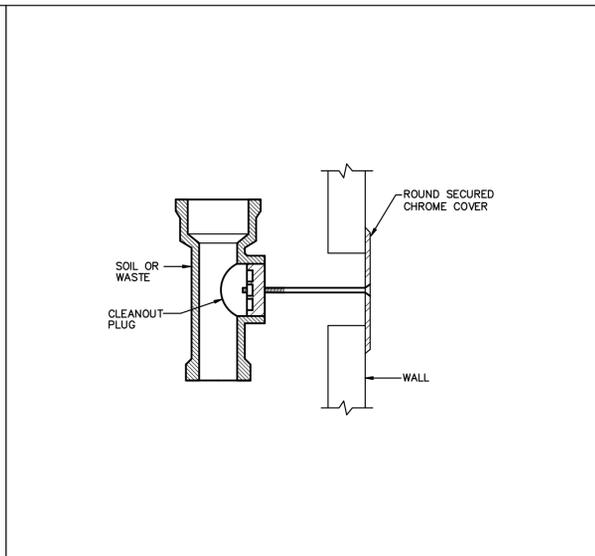
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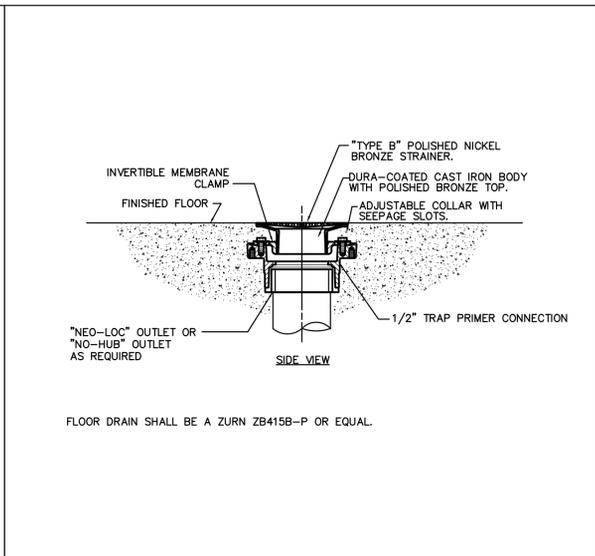
FLOOR CLEANOUT DETAIL NO SCALE 1



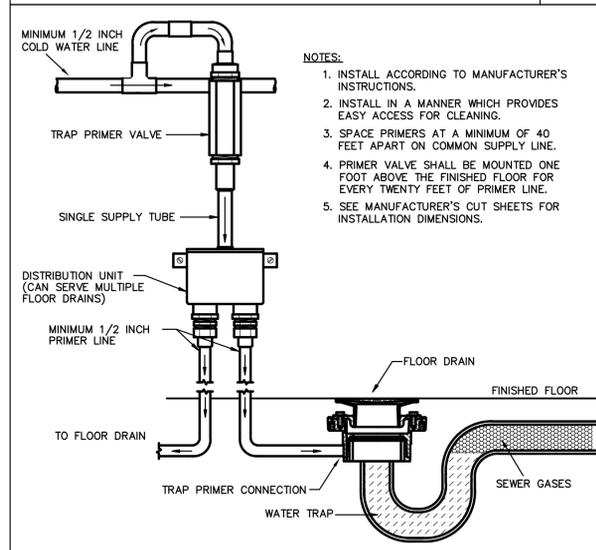
EXTERIOR CLEANOUT DETAIL NO SCALE 2



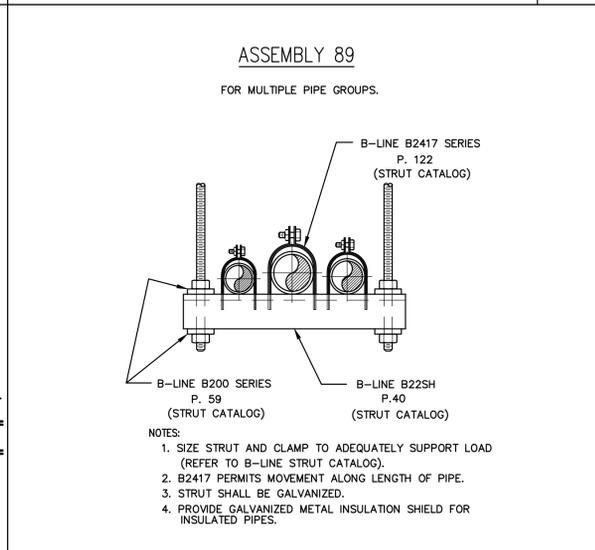
WALL CLEANOUT DETAIL NO SCALE 3



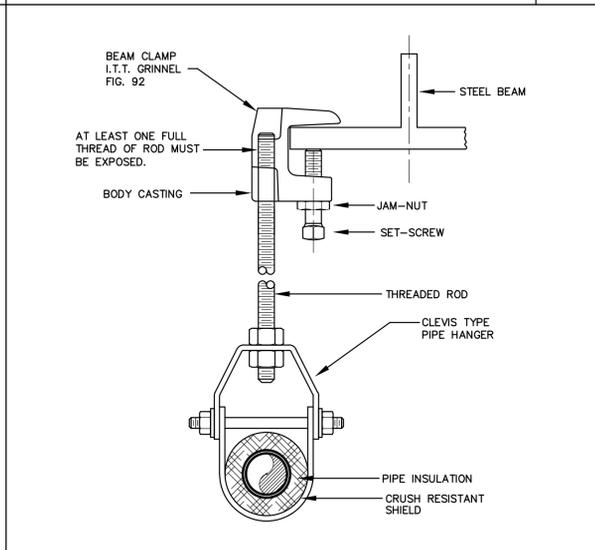
FLOOR DRAIN DETAIL - FD'A' NO SCALE 4



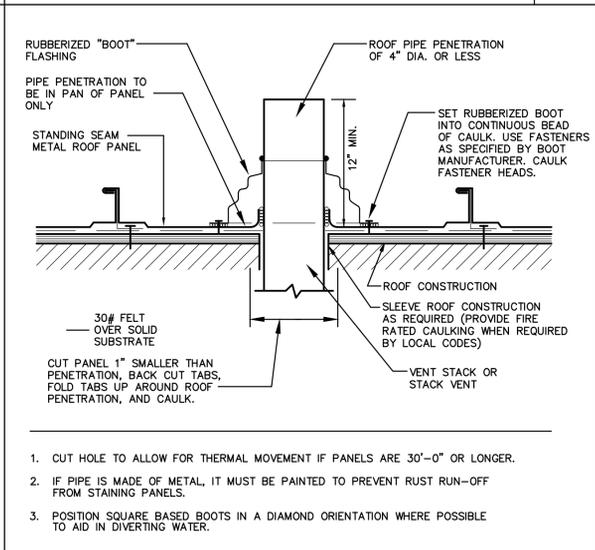
TRAP PRIMER DETAIL - MULTIPLE DRAIN NO SCALE 5



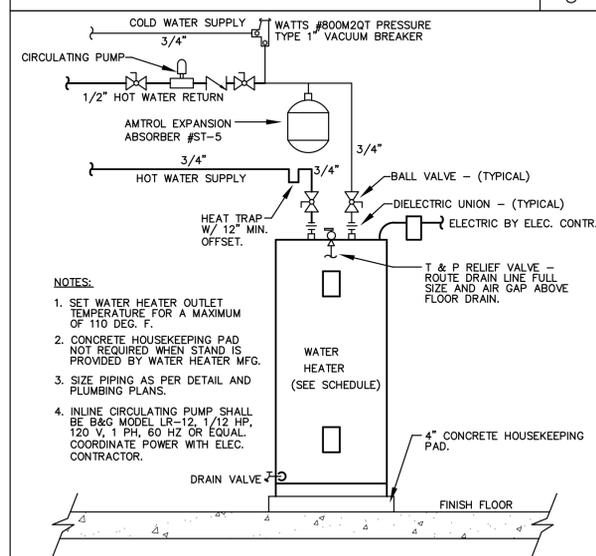
PIPE SUPPORT DETAIL NO SCALE 6



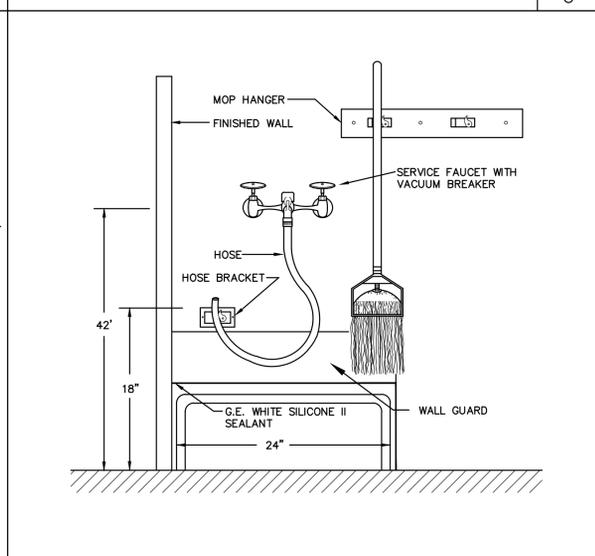
PIPE HANGER DETAIL NO SCALE 7



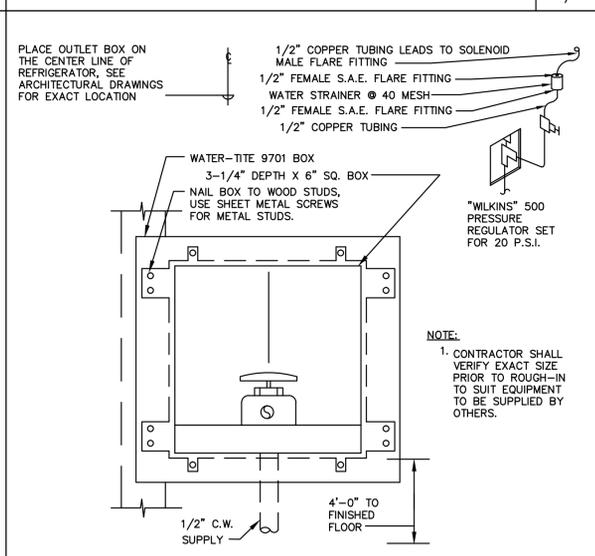
VENT THROUGH ROOF DETAIL NO SCALE 8



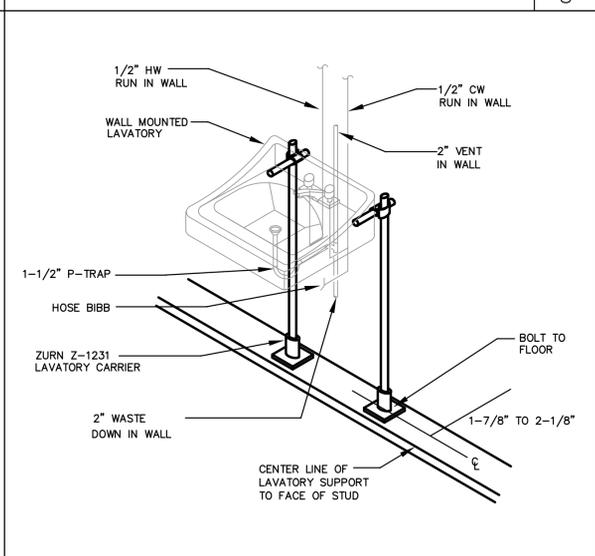
ELECTRIC WATER HEATER DETAIL NO SCALE 9



MOP SINK DETAIL NO SCALE 10



ICE MAKER CONNECTION DETAIL NO SCALE 11



LAVATORY DETAIL NO SCALE 12

ALL IDEAS, DESIGNS, ARRANGEMENTS AND PLANS INDICATED OR REPRESENTED BY THIS DRAWING ARE OWNED BY AND THE PROPERTY OF SCHENKELSHULTZ AND HEREBY CREATED, EXCLUDED AND DEVELOPED FOR USE IN CONNECTION WITH THE SPECIFIED PROJECT. NONE OF THE IDEAS, DESIGNS, ARRANGEMENTS OR PLANS SHALL BE USED BY OR FOR ANY OTHER PROJECT WITHOUT THE WRITTEN PERMISSION OF SCHENKELSHULTZ ARCHITECTURE. CONTRACTORS SHALL VERIFY AND BE RESPONSIBLE FOR ALL DIMENSIONS AND CONDITIONS ON THE JOB AND THE OFFICE SHALL BE NOTIFIED OF ANY VARIATION FROM THE DIMENSIONS AND CONDITIONS SPECIFIED BY THESE DRAWINGS. REVIEW OF SHOP DRAWINGS DOES NOT RELIEVE THE CONTRACTOR FROM THE REQUIREMENT OF MEETING OR EXCEEDING THE PLANS AND SPECIFICATIONS. CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND LICENSES. HEREOF IS A CRIMINAL OFFENSE UNDER FLA. STAT. SEC. 380.04. UNAUTHORIZED DISCLOSURE MAY CONSTITUTE A VIOLATION OF APPLICABLE STATE AND FEDERAL LAW. THE IDEAS, ARRANGEMENTS AND DESIGNS DISCLOSED HEREIN MAY BE PATENTED OR BE THE SUBJECT OF PENDING PATENT APPLICATION.

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TO THE BEST OF MY KNOWLEDGE, SAID PLANS AND SPECIFICATIONS COMPLY WITH ALL APPLICABLE BUILDING CODES.

KAY C. CLEM, P.E.
FL# 53270

**Utilities
Maintenance &
Administration
Building**

Bradenton, FL 34210

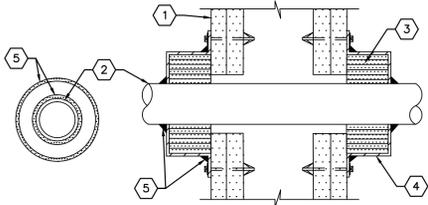
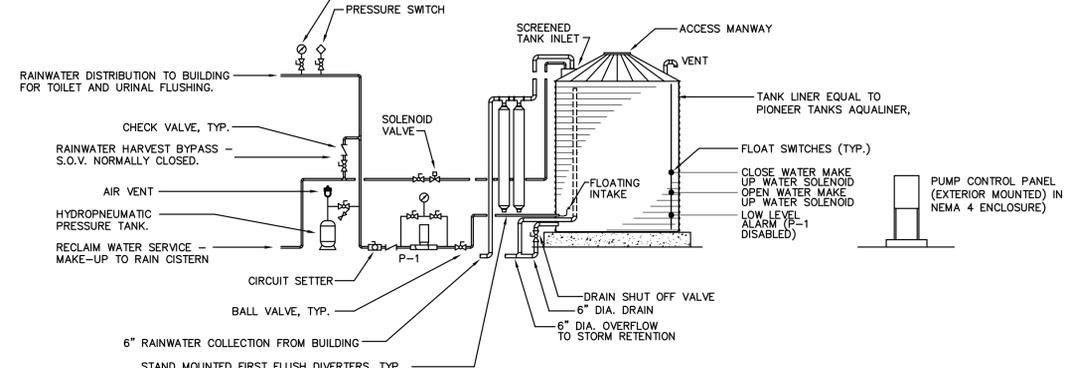
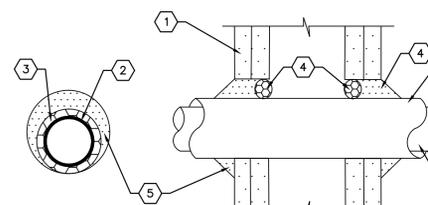
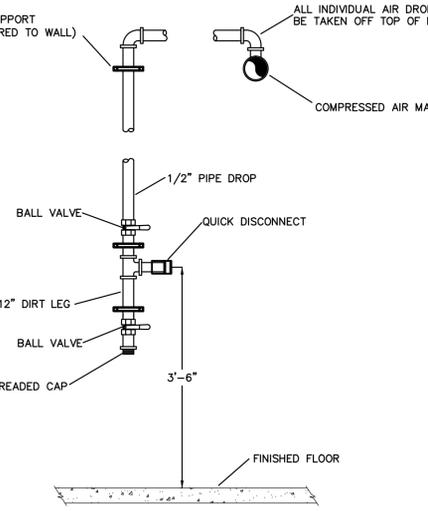
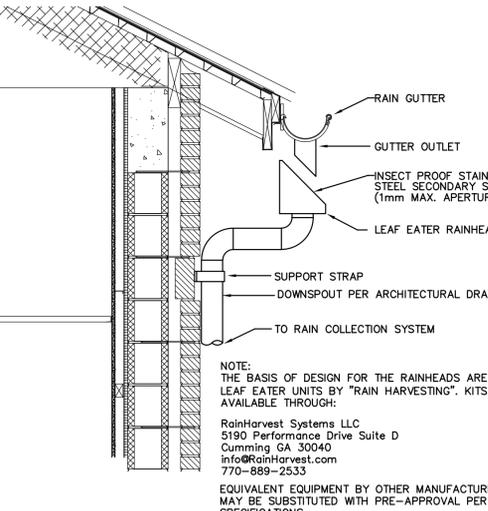
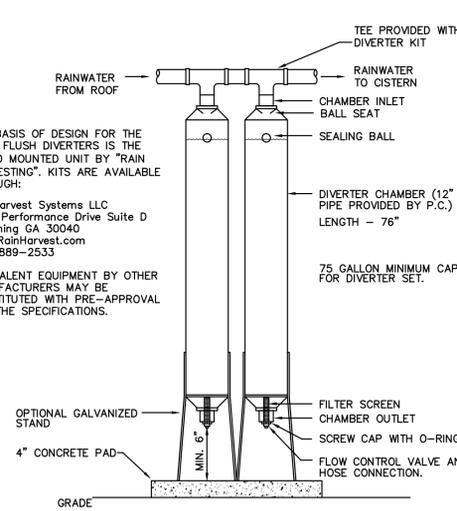
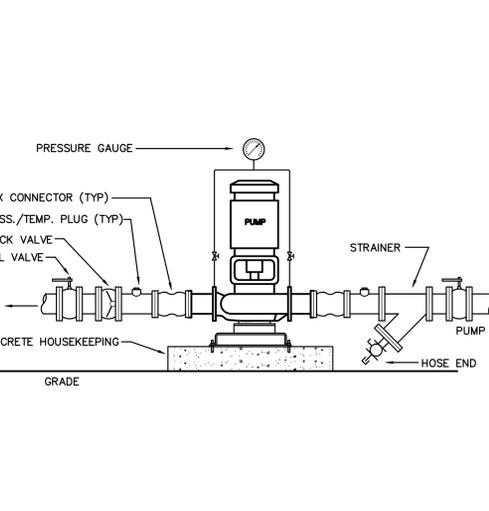
Client:

Manatee County Government
1112 Manatee Avenue West
Bradenton, FL 34208

drawn: KCC
checked: STP
date: 09-30-10
comm. no.: 0920826

**PLUMBING
DETAILS**

P502

<p>WL 2063</p> <p>2 Hour Fire Rated Through Penetration Firestop for Single Plastic Pipe through Gypsum Walls using TREMstop WS and TREMstop MCR. F-Rating = 2 Hr. T-Rating = 1 Hr.</p>  <p>TREMCO</p> <p>THE TREMCO PRODUCTS USED ABOVE HAVE BEEN TESTED IN ACCORDANCE WITH THE FOLLOWING:</p> <ul style="list-style-type: none"> ASTM E814 (UL1479) STANDARD TEST METHOD FOR THROUGH PENETRATION FIRESTOPPING. <ol style="list-style-type: none"> PRE-RATED GYPSUM WALLBOARD/STUD WALL ASSEMBLY. PLASTIC PIPE - NOM. 4" DIAM. (OR SMALLER) SCH. 40 PVC PIPE FOR USE IN OPEN OR CLOSED PIPING SYSTEMS. A MAX. ANNULAR SPACE OF 1/8" IS REQUIRED WITHIN THE SYSTEM. TREMstop WS - INTUMESCENT WRAP STRIPS, CONTINUOUSLY WRAPPED AROUND THE OUTER CIRCUMFERENCE OF THE PIPE SIX TIMES ON BOTH SIDES OF WALL ASSEMBLY. TREMstop MCR - PREFABRICATED STEEL COLLAR WRAPPED OVER THE WRAP STRIPS (ITEM 3) AND MECHANICALLY FASTENED TO BOTH SIDES OF THE WALL ASSEMBLY. FYRE-SIL - MIN. 1/4" THICKNESS OF SEALANT APPLIED AT THE INTERFACE OF THE WALL AND COLLAR, AND THE INTERFACE OF THE COLLAR AND PIPE. SEALANT APPLIED ON BOTH SIDES OF WALL. <p>THE ABOVE DESCRIBED ASSEMBLY HAS BEEN TESTED AND IS BASED ON BOTH PAST AND ANTICIPATED PERFORMANCE CRITERIA. TREM CO SHALL NOT BE LIABLE FOR ANY DAMAGES, DIRECT OR CONSEQUENTIAL, RESULTING FROM USE OF THIS MATERIAL OR DESIGN. TREM CO SHALL ONLY BE RESPONSIBLE FOR REPLACING MATERIAL FOUND TO BE DEFECTIVE.</p>	<p>NO SCALE 1</p>	<p>RAIN HARVESTING SYSTEM SCHEMATIC</p>  <p>RAINWATER DISTRIBUTION TO BUILDING FOR TOILET AND URINAL FLUSHING.</p> <p>CHECK VALVE, TYP.</p> <p>RAINWATER HARVEST BYPASS - S.O.V. NORMALLY CLOSED.</p> <p>AIR VENT</p> <p>HYDRO-PNEUMATIC PRESSURE TANK.</p> <p>RECLAIM WATER SERVICE - MAKE-UP TO RAIN CISTERN</p> <p>CIRCUIT SETTER</p> <p>BALL VALVE, TYP.</p> <p>6" RAINWATER COLLECTION FROM BUILDING</p> <p>STAND MOUNTED FIRST FLUSH DIVERTERS, TYP. EACH DIVERTER IS 12" IN DIAMETER AND 62" LONG. SET OF DIVERTERS SHALL HAVE A MINIMUM 60 GALLON CAPACITY.</p> <p>SCREENED TANK INLET</p> <p>ACCESS MANWAY</p> <p>TANK LINER EQUAL TO PIONEER TANKS AQUALINER.</p> <p>FLOATING INTAKE</p> <p>FLOAT SWITCHES (TYP.)</p> <p>CLOSE WATER MAKE UP WATER SOLENOID</p> <p>OPEN WATER MAKE UP WATER SOLENOID</p> <p>LOW LEVEL ALARM (P-1 DISABLED)</p> <p>PUMP CONTROL PANEL (EXTERIOR MOUNTED) IN NEMA 4 ENCLOSURE</p> <p>6" DIA. DRAIN</p> <p>6" DIA. OVERFLOW TO STORM RETENTION</p> <p>DRAIN SHUT OFF VALVE</p> <p>MAKE-UP SOLENOID VALVE - J.D. GOULD CO. INC. TYPE M (2") OR EQUAL.</p> <p>PRESSURE SWITCH - MERCOD DA SERIES WITH WEATHERPROOF ENCLOSURE OR EQUAL.</p> <p>FLOAT SWITCHES - ITT CENTRIPRO OR EQUAL.</p>	
<p>WL 5081</p> <p>2 Hour Fire Rated Through Penetration Firestop for Insulated Metal Pipe through Gypsum Walls using TREMstop IA.</p> <p>F-Rating = 2 Hr. T-Rating = 1/2 Hr.</p>  <p>TREMCO</p> <p>THE TREMCO PRODUCTS USED ABOVE HAVE BEEN TESTED IN ACCORDANCE WITH THE FOLLOWING:</p> <ul style="list-style-type: none"> ASTM E814 (UL1479) STANDARD TEST METHOD FOR THROUGH PENETRATION FIRESTOPPING. <ol style="list-style-type: none"> PRE-RATED GYPSUM WALLBOARD/STUD WALL ASSEMBLY. METALLIC PIPE- A. STEEL PIPE - NOM. 4" DIAM. (OR SMALLER) SCH. 10 (OR HEAVIER) STEEL PIPE. B. IRON PIPE - NOM. 4" DIAM. (OR SMALLER) CAST OR DUCTILE IRON PIPE. C. COPPER TUBING - NOM. 4" DIAM. (OR SMALLER) TYPE L (OR HEAVIER) COPPER TUBING. D. COPPER PIPE - NOM. 4" DIAM (OR SMALLER) REGULAR (OR HEAVIER) COPPER PIPE. E. CONDUIT - NOM. 4" DIAM. (OR SMALLER) EMT OR STEEL CONDUIT. PIPE COVERING - NOM. 3/4" THICK AB/PVC FLEXIBLE FOAM INSULATION. THE ANNULAR SPACE SHALL BE MIN 0" TO MAX. 3/8". PACKING MATERIAL (OPTIONAL) - FOAM BACKER ROD FIRMLY PLACED INTO OPENING AS A PERMANENT FORM. TREMstop IA - MIN. 1" THICKNESS OF SEALANT APPLIED WITHIN ANNULUS FLUSH WITH BOTH SIDES OF WALL ASSEMBLY. AT POINT CONTACT A MIN. 5/8" BEAD OF SEALANT SHALL BE INSTALLED AT THE WALLBOARD/INSULATION INTERFACE. A 5/8" CROWN OF SEALANT SHALL BE FORMED AROUND THE PENETRATING ITEM. <p>THE ABOVE DESCRIBED ASSEMBLY HAS BEEN TESTED AND IS BASED ON BOTH PAST AND ANTICIPATED PERFORMANCE CRITERIA. TREM CO SHALL NOT BE LIABLE FOR ANY DAMAGES, DIRECT OR CONSEQUENTIAL, RESULTING FROM USE OF THIS MATERIAL OR DESIGN. TREM CO SHALL ONLY BE RESPONSIBLE FOR REPLACING MATERIAL FOUND TO BE DEFECTIVE.</p>	<p>NO SCALE 3</p>	<p>RAIN HARVEST SYSTEM SEQUENCE OF OPERATIONS:</p> <ol style="list-style-type: none"> PUMP P-1 SHALL CYCLE AS REQUIRED TO MAINTAIN SYSTEM PRESSURE BASED ON INPUT FROM PRESSURE SWITCH (ADJUSTABLE, SET AT 65 PSI). PUMP P-1 SHALL BE DISABLED UPON LOW LEVEL ALARM BASED ON INPUT FROM LOW LEVEL FLOAT IN RAIN WATER CISTERN. RECLAIM MAKE-UP WATER SERVICE SOLENOID VALVE SHALL OPEN BASED ON INPUT FROM FLOAT SWITCH IN RAIN WATER CISTERN. RECLAIM MAKE-UP WATER SERVICE SOLENOID VALVE SHALL CLOSE BASED ON INPUT FROM FLOAT SWITCH IN RAIN WATER CISTERN. BYPASS VALVE SHALL BE PLACED TO ALLOW BYPASS OF RAIN HARVESTING SYSTEM IN THE EVENT OF A PUMP FAILURE. THE BYPASS VALVE (NORMALLY CLOSED) SH ALL BE MANUALLY OPENED IN THE EVENT OF A PUMP FAILURE TO ALLOW THE USE OF RECLAIM WATER TO FLUSH TOILETS AND URINALS. <p>PLUMBING CONTRACTOR SHALL SUBMIT A COMPLETE CONTROL SYSTEM WITH WIRING DIAGRAM AND PANEL LAYOUT FOR APPROVAL. SUBMITTAL SHALL INCLUDE THE FLOAT SWITCHES, PRESSURE SWITCH, SOLENOID VALVE, AND CONTROL PANEL.</p> <p>PUMP CONTROL PANEL: PLUMBING CONTRACTOR SHALL FURNISH THE PUMP CONTROL PANEL AND ALL FLOAT SWITCHES, WATER MAKE-UP SOLENOID VALVE, PRESSURE SWITCH AND ALL OTHER REQUIRED MATERIALS AND EQUIPMENT FOR A COMPLETE AND OPERATING RAIN HARVEST SYSTEM. CONTROL PANEL TO OPERATE THE RAIN HARVEST SYSTEM SHALL CONTAIN THE FOLLOWING:</p> <ol style="list-style-type: none"> DISCONNECT SWITCH - 30 AMP WITH INTEGRAL CLASS CC FUSE HOLDER UL508 STYLE TYPE 3 POWER POLES PLUS 1 NON FUSED POWER POLE WITH THROUGH THE DOOR LOCKABLE HANDLE ASSEMBLY. THROUGH THE DOOR LOCKABLE HANDLE ASSEMBLY WITH DOOR INTERLOCK. HANDLE CAN BE PADLOCKED IN THE OFF POSITION WITH UP TO THREE PADLOCKS. PUMP MOTOR STARTER, NON REVERSING FULL VOLTAGE ACROSS THE LINE IEC STYLE, UL508 LISTED WITH UL CLASS 10 ADJUSTABLE AMBIENT COMPENSATED MOTOR OVERLOAD. RESET BUTTON FOR PUMP MOTOR OVERLOAD - 22 MM NON-METALLIC DOOR MOUNTED. MINIMUM RUN TIMER, WITH SOCKET 0-10 MINUTE ADJUSTABLE. H-O-A SELECTOR SWITCH, 3-POSITION MAINTAINED - 22 MM NON-METALLIC DOOR MOUNTED. TWO TERMINALS FOR THE AUTO POSITION OF H-O-A. 100VA CONTROL TRANSFORMER, 208/230/460-120VAC WITH FUSED SECONDARY, FUSE FURNISHED. ALARM CIRCUIT COMPLETE WITH : A. ALARM PILOT LIGHT RED 120 VOLT INCANDESCENT NO FLASHING - 22 MM NON-METALLIC DOOR MOUNTED. B. ALARM STATUS MAINTAINING RELAY. C. ALARM "RESET" PUSH BUTTON - 22 MM NON-METALLIC DOOR MOUNTED. D. ALARM HORN, 120 VOLT, 90 DBA AT 1 METER, DOOR MOUNTED. 12 TERMINAL POINTS FOR CONNECTION OF EXTERNAL DEVICES (3 FLOAT SWITCHES, 1 SOLENOID, 1 PRESSURE SWITCH). ENCLOSURE - NEMA 4 METAL ENVIRO JUNCTION APPROXIMATELY 16"x14"x8" WITH HINGED DOOR. ALL COMPONENTS MOUNTED AND WIRED. 	
<p>COMPRESSED AIR DROP DETAIL</p>  <p>PIPE SUPPORT (ANCHORED TO WALL)</p> <p>ALL INDIVIDUAL AIR DROPS TO BE TAKEN OFF TOP OF MAIN</p> <p>COMPRESSED AIR MAIN</p> <p>1/2" PIPE DROP</p> <p>BALL VALVE</p> <p>QUICK DISCONNECT</p> <p>3" X 12" DIRT LEG</p> <p>BALL VALVE</p> <p>THREADED CAP</p> <p>3'-6"</p> <p>FINISHED FLOOR</p>	<p>RAIN HEAD DETAIL</p>  <p>RAIN GUTTER</p> <p>GUTTER OUTLET</p> <p>INSECT PROOF STAINLESS STEEL SECONDARY SCREEN (1mm MAX. APERTURE)</p> <p>LEAF EATER RAINHEAD</p> <p>SUPPORT STRAP</p> <p>DOWNSPOUT PER ARCHITECTURAL DRAWINGS</p> <p>TO RAIN COLLECTION SYSTEM</p> <p>NOTE: THE BASIS OF DESIGN FOR THE RAINHEADS ARE THE LEAF EATER UNITS BY "RAIN HARVESTING". KITS ARE AVAILABLE THROUGH: RainHarvest Systems LLC 5190 Performance Drive Suite D Cumming GA 30040 info@rainharvest.com 770-889-2533</p> <p>EQUIVALENT EQUIPMENT BY OTHER MANUFACTURERS MAY BE SUBSTITUTED WITH PRE-APPROVAL PER THE SPECIFICATIONS.</p>	<p>FIRST FLUSH DIVERTER DETAIL</p>  <p>RAINWATER FROM ROOF</p> <p>RAINWATER TO CISTERN</p> <p>TEE PROVIDED WITH DIVERTER KIT</p> <p>CHAMBER INLET BALL SEAT</p> <p>SEALING BALL</p> <p>DIVERTER CHAMBER (12" PVC PIPE PROVIDED BY P.C.) LENGTH - 76"</p> <p>75 GALLON MINIMUM CAPACITY FOR DIVERTER SET.</p> <p>MIN. 6"</p> <p>OPTIONAL GALVANIZED STAND</p> <p>4" CONCRETE PAD</p> <p>GRADE</p> <p>NOTE: THE BASIS OF DESIGN FOR THE FIRST FLUSH DIVERTERS IS THE STAND MOUNTED UNIT BY "RAIN HARVESTING". KITS ARE AVAILABLE THROUGH: RainHarvest Systems LLC 5190 Performance Drive Suite D Cumming GA 30040 info@rainharvest.com 770-889-2533</p> <p>EQUIVALENT EQUIPMENT BY OTHER MANUFACTURERS MAY BE SUBSTITUTED WITH PRE-APPROVAL PER THE SPECIFICATIONS.</p> <p>GRADE</p> <p>GRADE</p>	<p>PUMP P-1 DETAIL</p>  <p>PRESSURE GAUGE</p> <p>FLEX CONNECTOR (TYP)</p> <p>PRESS./TEMP. PLUG (TYP)</p> <p>CHECK VALVE</p> <p>BALL VALVE</p> <p>CONCRETE HOUSEKEEPING</p> <p>GRADE</p> <p>GRADE</p> <p>PUMP</p> <p>STRAINER</p> <p>PUMP SUCTION PAD</p> <p>HOSE END</p>

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TO THE BEST OF MY KNOWLEDGE, SAID PLANS AND SPECIFICATIONS COMPLY WITH ALL APPLICABLE BUILDING CODES.

KAY C. OLEM, P.E.
FL # 53270

**Utilities
Maintenance &
Administration
Building**

Bradenton, FL 34210

Client:

Manatee County Government
1112 Manatee Avenue West
Bradenton, FL 34208

drawn: KCC
checked: STP
date: 09-30-10
comm. no.: 0920826

**PLUMBING
SCHEDULES**

P601

FLORIDA BUILDING CODE 2007 – PLUMBING FIXTURE UNIT SCHEDULE

QUANTITY	DESCRIPTION	WATER DEMAND EACH FIXTURE UNIT (F.U.) COLD	WATER DEMAND EACH FIXTURE UNIT (F.U.) HOT	WATER DEMAND EACH FIXTURE UNIT (F.U.) COMBINED	WATER DEMAND TOTAL FIXTURE UNITS COLD	WATER DEMAND TOTAL FIXTURE UNITS HOT	WATER DEMAND TOTAL FIXTURE UNITS COMBINED	TOTAL GPM	SANITARY FIXTURE UNIT (F.U.) EACH	SANITARY FIXTURE UNIT (F.U.) TOTAL
1	DRINKING FOUNTAIN	0.25	—	0.25	0.25	—	0.25	—	0.50	0.50
19	FLOOR DRAINS	—	—	—	—	—	—	—	2.00	38.00
0	KITCHEN SINK, DOMESTIC	1.00	1.00	1.40	0.00	0.00	0.00	—	2.00	0.00
0	KITCHEN SINK, COMMERCIAL	3.00	3.00	4.00	0.00	0.00	0.00	—	2.00	0.00
0	KITCHEN SINK, DOMESTIC WITH FOOD WASTE GRINDER AND/OR DISHWASHER	1.00	1.00	1.40	0.00	0.00	0.00	—	2.00	0.00
0	LAUNDRY TRAY (1 OR 2 COMPARTMENTS)	1.00	1.00	1.40	0.00	0.00	0.00	—	2.00	0.00
0	LAVATORY, PRIVATE	0.50	0.50	0.70	0.00	0.00	0.00	—	1.00	0.00
11	LAVATORY, PUBLIC	1.50	1.50	2.00	16.50	16.50	22.00	—	1.00	11.00
1	SERVICE SINK	2.25	2.25	3.00	2.25	2.25	3.00	—	2.00	2.00
0	SHOWER, DOMESTIC	1.00	1.00	1.40	0.00	0.00	0.00	—	2.00	0.00
5	SHOWER, PUBLIC	3.00	3.00	4.00	15.00	15.00	20.00	—	2.00	10.00
3	SINK	1.00	1.00	1.40	3.00	3.00	4.20	—	2.00	6.00
3	URINAL, PUBLIC 3/4" FLUSH VALVE	5.00	—	5.00	15.00	—	15.00	—	2.00	6.00
0	URINAL, NONWATER SUPPLIED	—	—	—	—	—	—	—	0.50	0.00
0	WASH SINK (CIRCULAR OR MULTIPLE) EACH SET OF FAUCETS	1.00	1.00	1.40	0.00	0.00	0.00	—	2.00	0.00
0	WATER CLOSET, PRIVATE FLUSH VALVE	6.00	—	6.00	0.00	0.00	0.00	—	4.00	0.00
0	WATER CLOSET, PRIVATE FLUSH TANK	2.20	—	2.20	0.00	0.00	0.00	—	3.00	0.00
10	WATER CLOSET, PUBLIC FLUSH VALVE (1.6 gpf or less)	10.00	—	10.00	100.00	—	100.00	—	4.00	40.00
0	WATER CLOSET, PUBLIC FLUSH TANK	5.00	—	5.00	0.00	0.00	0.00	—	4.00	0.00
0	WATER CLOSET, PUBLIC OR PRIVATE FLUSHOMETER TANK	2.00	—	2.00	0.00	0.00	0.00	—	4.00	0.00
	TOTAL:				152.00	36.75	164.45	82.00	—	113.50

NOTES:

- TOTAL OF 82.00 GPM DEMAND BASED ON SYSTEM PREDOMINANTLY FOR FLUSH VALVES.
- SYSTEM WILL REQUIRE 2" WATER MAIN.
- RECOMMENDED 1.5" METER SIZE PER FBC TABLE 603.1.
- SYSTEM WILL REQUIRE 4" BUILDING DRAIN.

RAIN CISTERN SCHEDULE

EQUIPMENT NO.	MANUFACTURER	MATERIAL	FLUID CAPACITY GALLONS	DRY/WET WEIGHT LBS	DIMENSIONS		REMARKS
					HEIGHT (IN)	DIAMETER (IN)	
T-1	BH TANK INCORPORATED	CORRUGATED STEEL	2500	650/21,525	90	90	1,2,3,4,5

REMARKS:
 1. OTHER ACCEPTABLE MANUFACTURERS ARE AMERICAN TANK, ACCU-TANK, AND PIONEER WATER TANKS.
 2. TANKS AND TANK TIE DOWNS SHALL BE DESIGNED FOR 150 MPH WIND LOADING, MANUFACTURER TO PROVIDE SHOP DRAWINGS SIGNED AND SEALED BY A FLORIDA REGISTERED ENGINEER.
 3. PROVIDE LIQUID LEVEL INDICATOR.
 4. REFER TO DRAWINGS FOR PIPING CONNECTION REQUIREMENTS, VENTS, AND MANWAYS.
 5. TANK SHALL INCLUDE A LINER EQUAL TO PIONEER TANKS AQUALINER.

PUMP SCHEDULE

EQUIPMENT NO.	MANUFACTURER AND MODEL NO.	SERVICE	PUMP TYPE	FLOW (GPM)	HEAD (FT)	RPM	EFF (%)	VIBRATION ISOLATION			ELECTRICAL			REMARKS	
								TYPE	DEFLECTION (IN)	BASE	DISCONNECT	MOTOR STARTER	MOTOR		
P-1	GOULD/1SV1D4C0	RAINWATER DISTRIBUTION	MULTI-STAGE	11.1	11.6	3450	41.9	—	—	—	DIV. 26	—	0.75	115/1/60	1,2,3

REMARKS:
 1. 316 SS IMPELLER, TEFC MOTOR, 184JM MOTOR FRAME.
 2. HIGH DUTY CARBON/GRAPHATIZED SHAFT SEAL.
 3. PROVIDE BELL & GOSSETT WTA-404 ASME HYDRO-PNEUMATIC PRESSURE TANK.

ELECTRIC WATER HEATER SCHEDULE

EQUIPMENT NO.	MANUFACTURER	MODEL NO.	SERVICE	EFF (%)	ENTERING WATER TEMP (F)	LEAVING WATER TEMP (F)	RECOVERY RATE (GPH)	STORAGE CAPACITY (GAL)	TANK DIMENSIONS HEIGHT (INCHES)	TANK DIMENSIONS DIAMETER (INCHES)	ELECTRICAL HEATING ELEMENTS WATTAGE	ELECTRICAL HEATING ELEMENTS QUANTITY	ELECTRICAL VOLTS/PH/HZ	REMARKS
EW-1	A.O. SMITH	DRE-80-18	DOMESTIC HOT WATER	.92	60	120	123	80	60.25	25.5	6000	3	208/3/60	1,2,3,4,5,6

REMARKS:
 1. FLOOR MOUNTED WATER HEATER, MOUNT ON 4" CONCRETE HOUSEKEEPING PAD.
 2. PROVIDE EXPANSION TANK - AMTOL ST-5 OR EQUAL.
 3. PIPE PRESSURE/TEMPERATURE VALVE TO MOP SINK.
 4. PROVIDE SEVEN DAY PROGRAMMABLE TIME CLOCK FOR UP TO 14 ON/OFF OPERATIONS PER WEEK.
 5. PROVIDE SAFETY DOOR INTERLOCK.
 6. PROVIDE RECIRCULATION PUMP, BELL & GOSSETT MODEL LR-12 OR EQUAL, 120 VOLT, 1/12 HP.

PLUMBING FIXTURE SCHEDULE

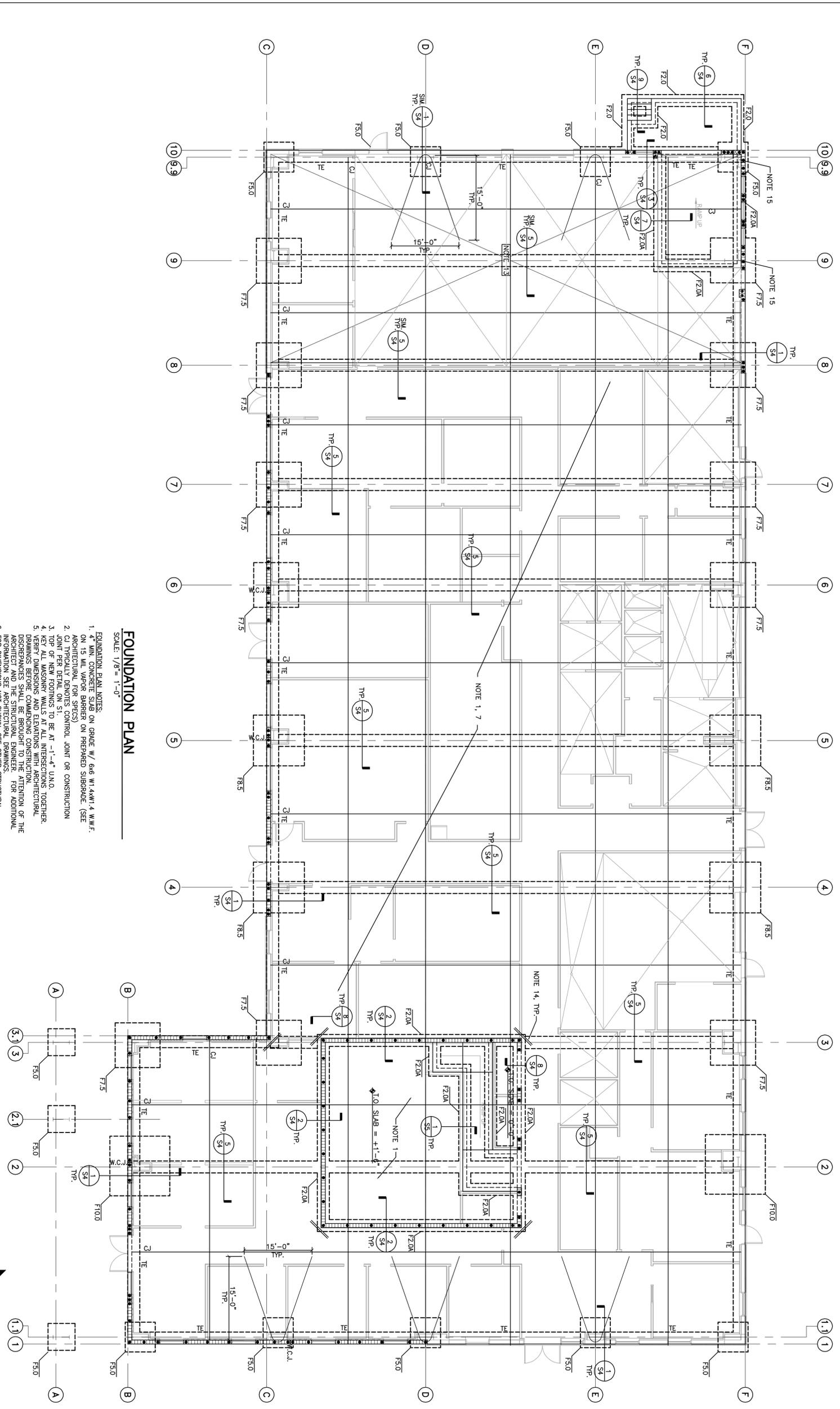
MARK	DESCRIPTION	FIXTURE MANUFACTURER	CATALOG NO.	TRIM MANUFACTURER	CATALOG NO.	REMARKS	NOTE
P-1	WATER CLOSET-STANDARD HEIGHT-FLUSH VALVE - 1.28 GPF	AMER. STANDARD	3451.128	SLOAN	111-1.28-YO	12" ROUGH-IN, OLSONITE #95 SS OPEN FRONT ELONGATED SEAT WITH SELF SUSTAINING CHECK HINGE.	2
P-1R	WATER CLOSET-ADA-FLUSH VALVE- RIGHT SIDE FLUSH HANDLE - 1.28 GPF	AMER. STANDARD	3461.128	SLOAN	111-1.28-YO	12" ROUGH-IN, OLSONITE #95 SS OPEN FRONT ELONGATED SEAT WITH SELF SUSTAINING CHECK HINGE.	2,4
P-1L	WATER CLOSET-ADA-FLUSH VALVE- LEFT SIDE FLUSH HANDLE - 1.28 GPF	AMER. STANDARD	3461.128	SLOAN	111-1.28-YO	12" ROUGH-IN, OLSONITE #95 SS OPEN FRONT ELONGATED SEAT WITH SELF SUSTAINING CHECK HINGE.	2,4
P-2	LAVATORY-COUNTERTOP	AMER. STANDARD	0476.028	SYMONS	S-20-2-G	SINGLE HANDLE FAUCET WITH GRID STRAINER - 0.5 GPM AERATOR.	1,2
P-2H	LAVATORY-WALL HUNG-ADA	AMER. STANDARD	0355.012	SYMONS	S-20-2-G	PROVIDE CARRIER, SINGLE HANDLE ADA FAUCET WITH GRID STRAINER - 0.5 GPM AERATOR.	1,2,3,4
P-3	URINAL - 1 PINT PER FLUSH SYSTEM	AMER. STANDARD	6590.525	—	—	WALL MOUNT URINAL, PROVIDE CARRIER.	—
P-4	SHOWER - CERAMIC TILE BUILT-IN	—	—	AMERICAN STD.	T372.248	R115SS PRESS. BAL. VALVE WITH STOPS, METAL LEVER HANDLE, WATER SAVER SHOWER HEAD.	—
P-4H	SHOWER-ADA - CERAMIC TILE BUILT-IN	—	—	AMERICAN STD.	1662-601	SINGLE LEVER CONTROL, PRESS. BAL. VALVE WITH STOPS, SLIDE BAR, HAND SHOWER UNIT, HOSE, WALL SUPPLY, AND IN-LINE VACUUM BRKR.	—
P-5	MOP SINK	MUSTEE	62M	ZURN	Z841M1-RC	1 PC. MOLDED DURASTONE WITH INTEGRAL CENTER DRAIN, (1) WALL GUARD, ROUGH CHROME FAUCET WITH 1/4 TURN FAUCETS.	—
P-6	2 COMP. SINK, FREE STANDING, SS	ADVANCE TABCO	6-2-36	ADV. TABCO	K-112	304 STAINLESS FREE STANDING SINK WITH BACKSPASH MTD. 12" SWING FAUCET.	—
P-7	2 COMP. COUNTERTOP SINK	ELKAY	CR3321	SYMONS	S-23-2-1.5	304 SS 20 GA. COUNTERTOP SINK WITH SINGLE LEVER FAUCET/SPRAYER, 1.5 GPM AERATOR.	2,4
P-8	HI/LO DRINKING FOUNTAIN-ADA	ELKAY	EZSTL8C	—	—	BI-LEVEL ELECTRIC WATER COOLER.	2,4
FD	FLOOR DRAIN	ZURN	Z-415B	—	—	W/ "B" TYPE STRAINER AND TRAP PRIMER AS PER DETAIL.	—
IMB	ICE MAKER CONNECTION BOX	WATER-TITE	9701	—	—	—	—
HB	HOSE BIBB	WOODFORD	B-26	—	—	—	—

PLUMBING NOTES:

- MCGUIRE CAST BRASS P-TRAP WITH TUBULAR WALL BEND (SIZE AS REQUIRED). P-TRAPS IN CONCEALED SPACES MAY BE PVC.
- MCGUIRE HEAVY DUTY PREMIER LINE SUPPLY STOP VALVES.
- TRUEBRO LAV GUARD: MODEL NO. 102W FOR P-TRAP AND ANGLE STOPS WITH SUPPLY ASSEMBLIES, MODEL NO. 102W WITH 105 ACCESSORY FOR OFFSET DRAIN.
- SET AT HANICAP HEIGHT.

GENERAL NOTES:

- PROVIDE ITEMS BY LISTED MANUFACTURER OR APPROVED EQUAL ONLY.
- SEE SEPARATE SPECIFICATIONS.
- AMERICAN WITH DISABILITIES ACT (ADA):
 - ALL HANDICAP FIXTURES AND TRIM SHALL COMPLY WITH FEDERAL AND STATE ACCESSIBILITY CODES.
 - WATER CLOSET TANK FLUSH VALVE HANDLE SHALL BE MOUNTED ON THE WIDE SIDE OF TOILET AREA.



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

- FOUNDATION PLAN NOTES:**
- 4" MIN. CONCRETE SLAB ON GRADE W/ #6 @ 12" O.C. W.W.F. ON 15 MIL VAPOR BARRIER ON PREPARED SUBGRADE. (SEE ARCHITECTURAL FOR SPECS)
 - CONCRETE SHALL BE PLACED IN 4" LIFTS.
 - TOP OF NEW FOOTINGS TO BE AT -1'-4" UNO.
 - KEY ALL MASONRY WALLS AT ALL INTERSECTIONS TOGETHER. VERIFY DIMENSIONS AND ELEVATIONS WITH ARCHITECTURAL DRAWINGS BEFORE COMMENCING CONSTRUCTION.
 - DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT AND THE STRUCTURAL ENGINEER FOR ADDITIONAL INFORMATION AND REVISIONS.
 - FOR DIMENSIONS NOT SHOWN, SEE OTHER STRUCTURAL DRAWINGS AND VERIFY WITH ARCHITECTURAL DRAWINGS. DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT AND THE STRUCTURAL ENGINEER.
 - FOR FOUNDATION CENTERLINES, WALLS, SLOPES, BEAMS AND COLUMN LOCATIONS FOR DEPRESSED SLABS, SEE SHEET S1.
 - CENTERLINES OF COLUMNS, WALLS, AND BEAMS SHALL COINCIDE WITH FOUNDATION CENTERLINES, UNO.
 - ELEVATIONS SHOWN REFERENCE SLAB-ON-GRADE EL. 0'-0".
 - FOR ADDITIONAL STRUCTURAL NOTES AND STANDARD DETAILS, SEE SHEET S1.
 - 1" TYPICAL S4 DENOTES 24" WIDE x 16" THK THICKENED SLAB EDGE W/ (4) #6 TOP AND BOT. CONT. W/ #3 STIRRUPS @ 12" O.C. MAX.
 - TE12 TYPICALLY DENOTES 12" WIDE THICKENED SLAB EDGE PER DETAIL ON S1.
 - 8" CONC. SLAB ON GRADE W/ #4 @ 12" O.C. EA. WAY AT MID DEPTH OF SLAB.
 - TYPICALLY DENOTES (2) #4 SLAB RE-EMBRANT BARS x 4'-0" LG. @ O.C. MAX AT 3/8 SLAB DEPTH.
 - 8" CONC. SLAB ON GRADE W/ #4 @ 12" O.C. EA. WAY AT 15' ELEV. 0'-0" WITH RAMP SLAB POURED AROUND THE COLUMNS WITH "X" ISOLATION JOINT MATERIAL. TYP. ALL SIDES.
 - W.C.C. DENOTES WALL CONTROL JOINT PER DETAIL ON S5.

- 8" CWU W/ (1) #6 IN EACH OF 1ST CELL ((1) #6 TOTAL) BROUGHT SOUND AT ENDS OF WALLS. ENDERS BEARS, FEED-CELL SHALL BE FULL HEIGHT OF WALL. IN ADDITION ADD #6 IN GROUDED CELLS @ 48" O.C. MAX BETWEEN. TYP. UNO.
- 8" CWU W/ (1) #6 IN EACH OF 1ST CELL ((1) #6 TOTAL) BROUGHT SOUND AT ENDS OF WALLS. CORNERS, TEES, E.T. OF WALL CONTROL JOINTS & E.S. OF OPENINGS. FEED-CELL SHALL BE FULL HEIGHT OF WALL. IN ADDITION ADD #6 IN GROUDED CELLS @ 24" O.C. MAX BETWEEN. TYP. UNO.



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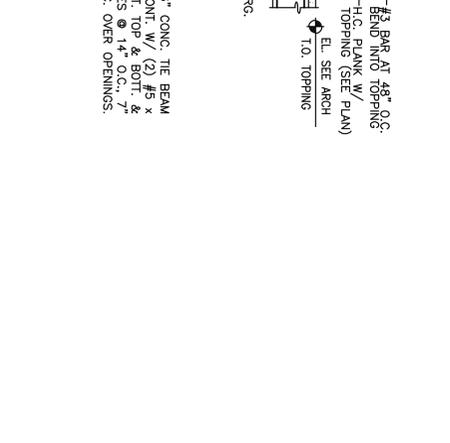
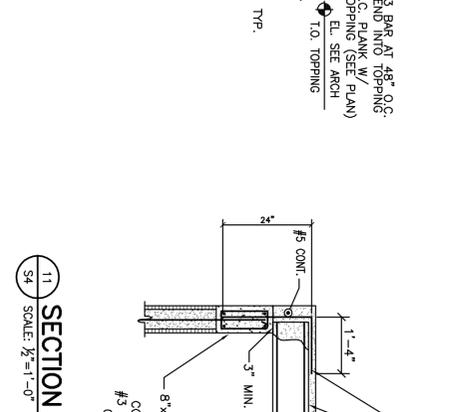
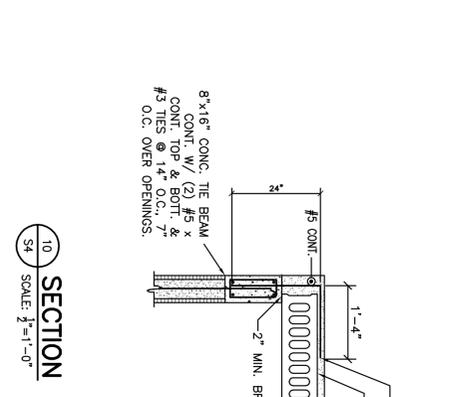
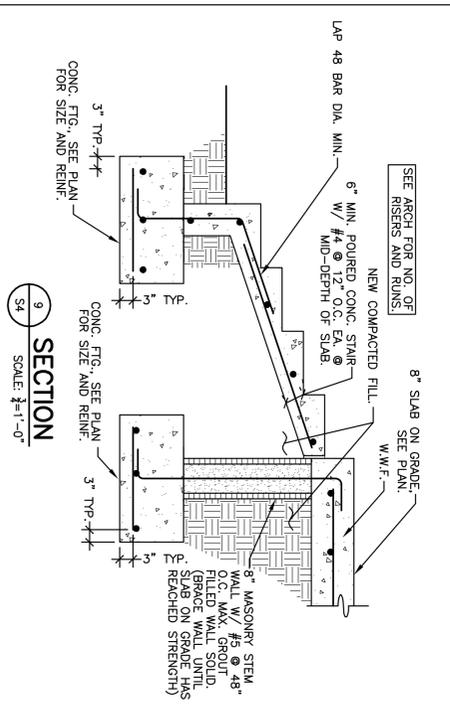
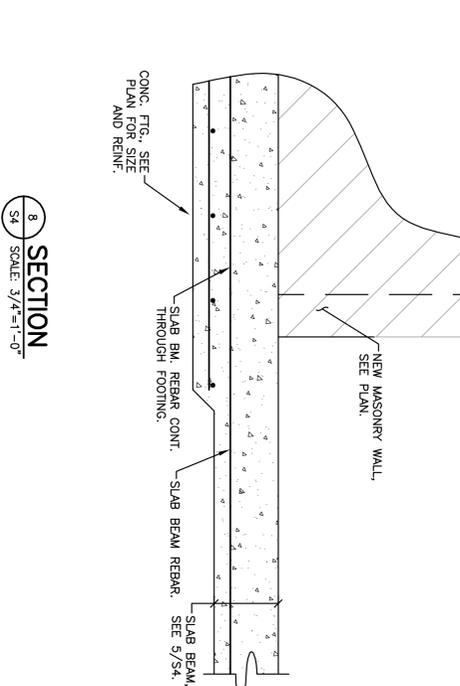
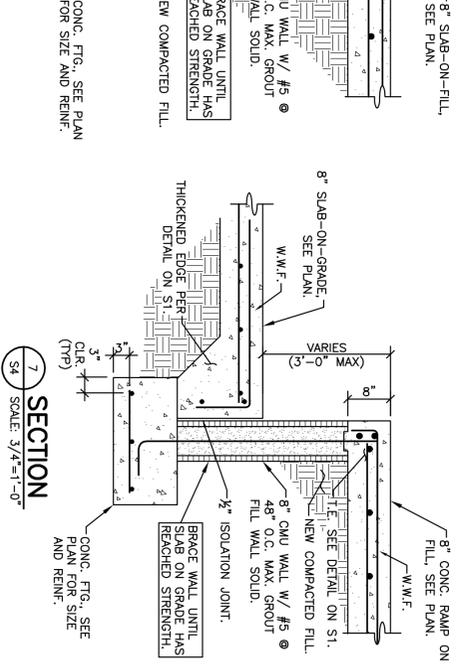
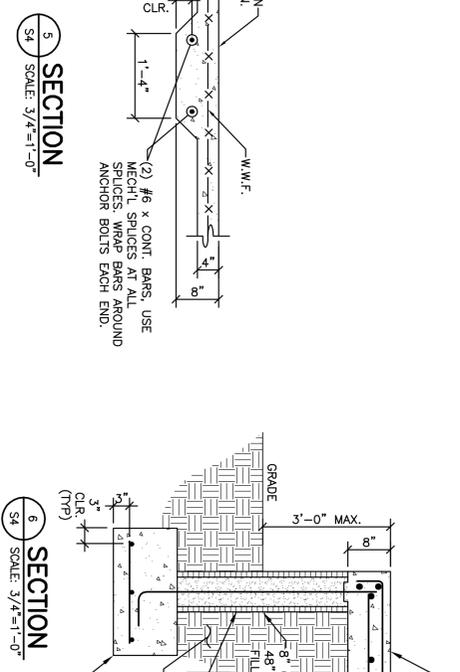
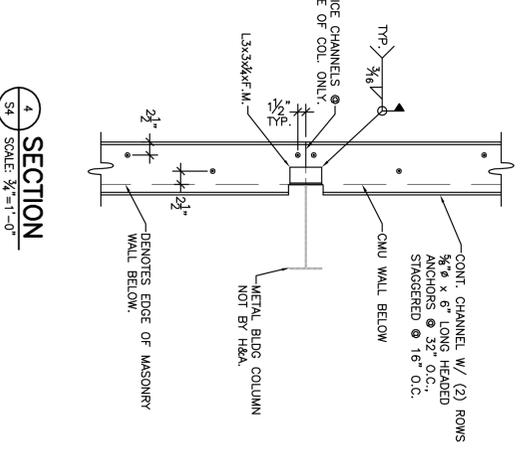
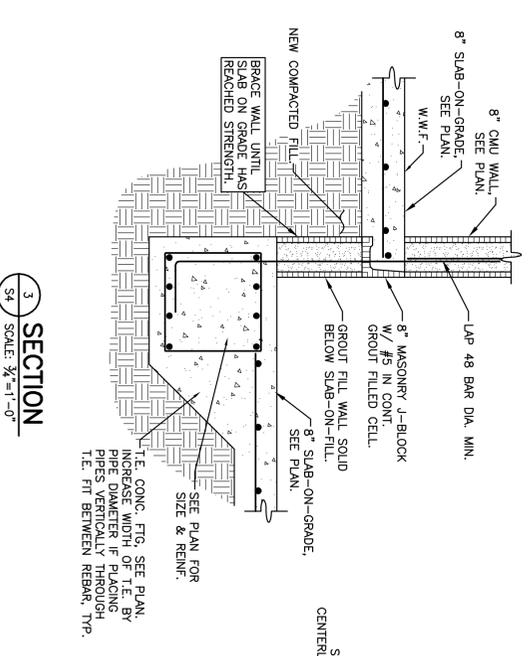
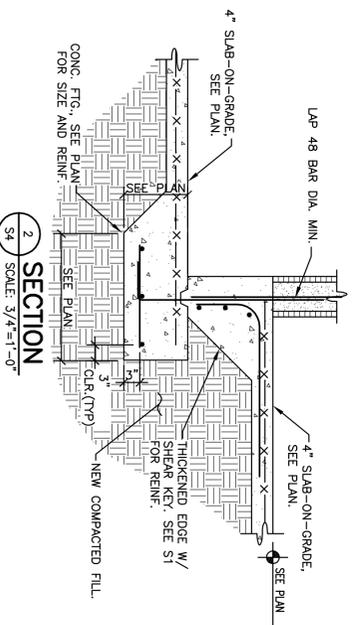
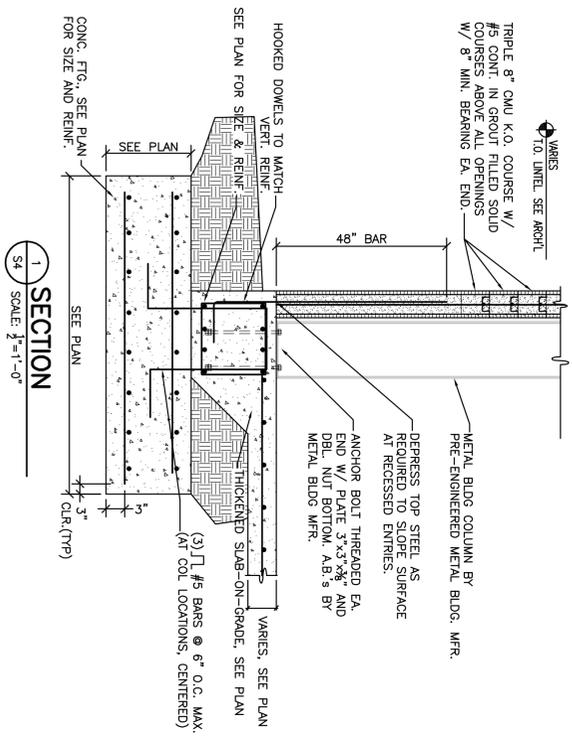
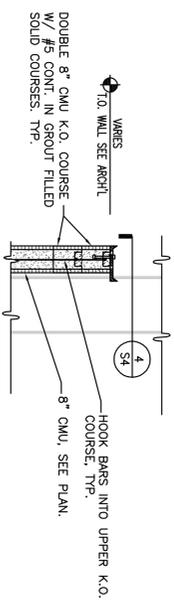
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**Utilities
 Maintenance &
 Administration
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 4700 68th Street West
 Bradenton, FL 34210

Manatee County Government
 1112 Manatee Avenue West
 Bradenton, FL 34208

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 date: 08-30-10
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FOUNDATION PLAN



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