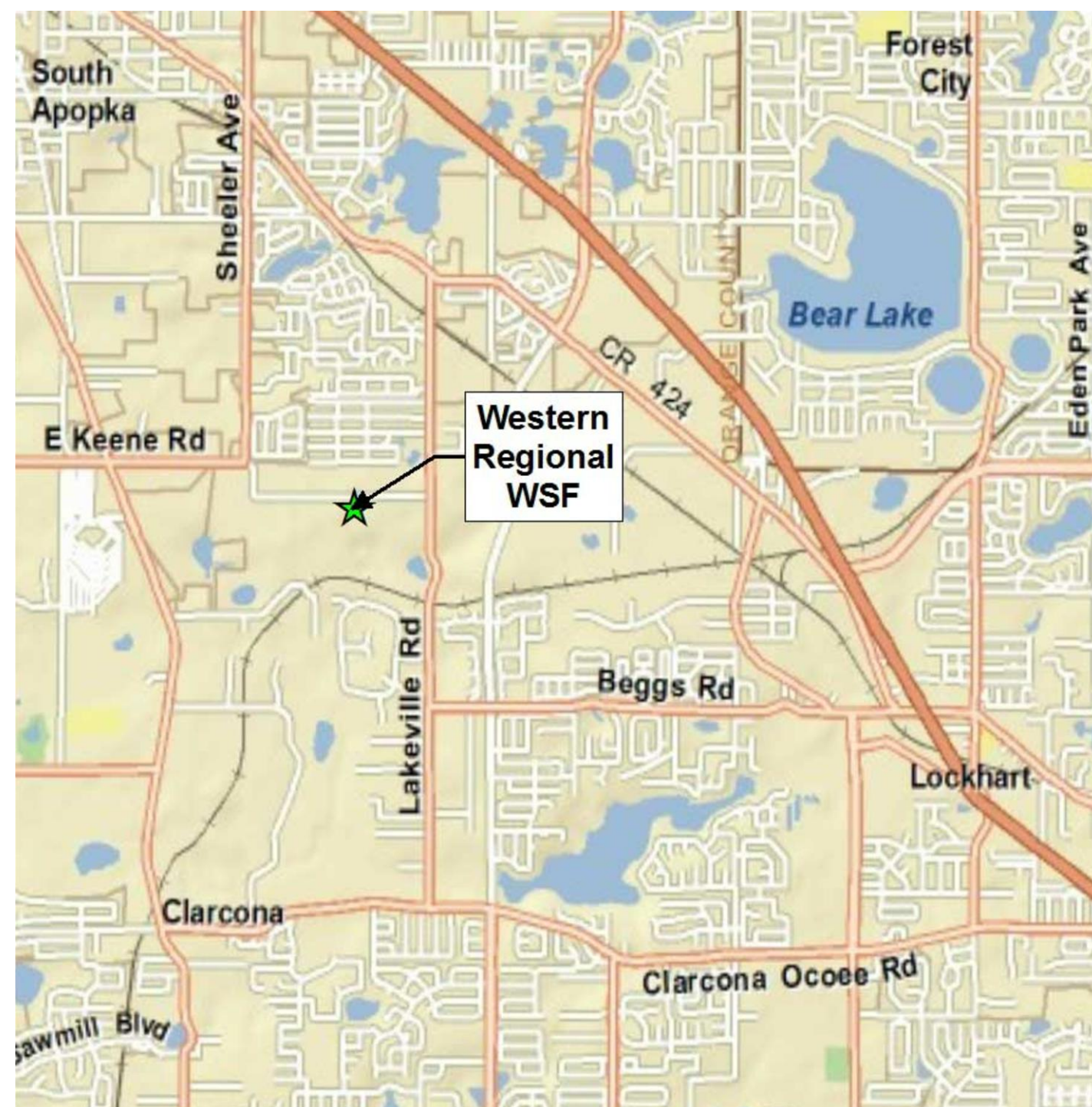
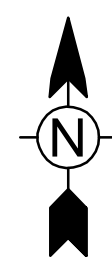


CONSTRUCTION DRAWINGS
 FOR THE
**WESTERN REGIONAL WATER SUPPLY FACILITY
 IMPROVEMENTS PHASE 3A - PART 2**



PROJECT LOCATION MAP

SCALE: NTS



PREPARED FOR THE
**ORANGE COUNTY, FLORIDA
 BOARD OF COUNTY COMMISSIONERS**

ORANGE COUNTY MAYOR	JERRY L. DEMINGS
COMMISSIONER DISTRICT 1	BETSY VANDERLEY
COMMISSIONER DISTRICT 2	CHRISTINE MOORE
COMMISSIONER DISTRICT 3	MAYRA URIBE
COMMISSIONER DISTRICT 4	MARIBEL GOMEZ CORDERO
COMMISSIONER DISTRICT 5	EMILY BONILLA
COMMISSIONER DISTRICT 6	VICTORIA P. SIPLIN

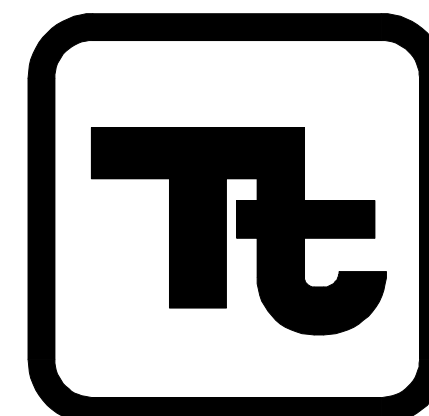
AJIT LALCHANDANI	COUNTY ADMINISTRATOR
RAYMOND E. HANSON P.E.	DIRECTOR OF UTILITIES

ORANGE COUNTY FILE No. 42525

ORANGE COUNTY PROJECT #1532-02

PREPARED FOR
**UTILITIES ENGINEERING
 ORANGE COUNTY, FLORIDA**

PREPARED BY



TETRA TECH
 Infrastructure Offices Throughout Florida
 Engineering Business No. 2429

201 EAST PINE STREET - SUITE 1000 - ORLANDO, FL 32801
 TELEPHONE (407) 839-3955 - FAX (407) 839-3790 - WWW.TETRATECH.COM

BID SET

TT NO. 200-10034-18002

JULY 2019

DRAWING INDEX

SHT. NO.	SHEET DESCRIPTION
GENERAL	
--	COVER
G001	DRAWING INDEX & GENERAL NOTES
G002	LEGEND AND ABBREVIATIONS
G003	EXISTING PROCESS FLOW DIAGRAM
G004	PROPOSED PROCESS FLOW DIAGRAM
G005	OVERALL SITE KEY PLAN
STRUCTURAL	
S001	STRUCTURAL GENERAL NOTES
S101	MAINTENANCE BUILDING DEMO PLAN
S102	MAINTENANCE BUILDING STRUCTURAL PLAN
S103	MAINTENANCE BUILDING PARTIAL ROOF & CEILING PLAN
S301	STRUCTURAL SECTIONS & DETAILS
S501	STRUCTURAL TYPICAL DETAILS
S502	STRUCTURAL TYPICAL DETAILS
ARCHITECTURAL	
A001	ARCHITECTURAL ABBREVIATIONS, GENERAL NOTES, AND SYMBOLS
A002	ARCHITECTURAL STANDARDS
A003	MAINTENANCE BUILDING LIFE SAFETY PLAN AND CODE REVIEW
A101	MAINTENANCE BUILDING FLOOR PLAN
A102	MAINTENANCE BUILDING REFLECTED CEILING PLAN & BUILDING SECTIONS
A103	MAINTENANCE BUILDING ENLARGED PLANS
A301	INTERIOR ELEVATIONS AND DETAILS
A501	ARCHITECTURAL DETAILS
A601	ARCHITECTURAL DOOR AND WINDOW SCHEDULES AND DETAILS
FIRE PROTECTION	
FP101	MAINTENANCE BUILDING FIRE PROTECTION DEMOLITION PLAN
PLUMBING	
P001	PLUMBING LEGEND, NOTES AND SCHEDULE
P101	MAINTENANCE BUILDING DEMOLITION PLAN
P102	MAINTENANCE BUILDING PLUMBING PLAN
P501	PLUMBING DETAILS
PROCESS	
D101	PROPOSED FINISHED WATER METER PLAN, SECTION & DETAILS
D501	MISCELLANEOUS DETAILS
MECHANICAL	
M001	HVAC LEGEND
M101	MAINTENANCE BUILDING HVAC DEMOLITION PLAN
M102	MAINTENANCE BUILDING HVAC FLOOR PLAN
M103	FLUORIDE BUILDING & STORAGE BUILDING HVAC FLOOR PLANS
M501	HVAC DETAILS
M502	HVAC DETAILS
M601	HVAC SCHEDULES & DETAILS
M602	HVAC CONTROLS
ELECTRICAL	
E001	ELECTRICAL LEGEND AND SYMBOLS
E002	ELECTRICAL GENERAL NOTES
E003	EXISTING MCC-301 DEMOLITION ONE LINE DIAGRAM
E004	MODIFIED MCC-301 ONE LINE DIAGRAM
E005	SCHEMATIC AND RISER DIAGRAMS
E006	RISER DIAGRAMS
E007	SCHEDULE - SHEET 1
E008	SCHEDULE - SHEET 2
E009	ELECTRICAL SITE PLAN
E101	EXISTING CHEMICAL BUILDING - GASEOUS CHLORINE DEMOLITION
E102	EXISTING CHEMICAL BUILDING - DEMOLITION PLAN
E103	MAINTENANCE BUILDING - LIGHTING PLAN
E104	MAINTENANCE BUILDING - POWER PLAN
E105	FLUORIDE AND STORAGE BUILDING - ELECTRICAL PLAN
E501	ELECTRICAL DETAILS - SHEET 1
E502	ELECTRICAL DETAILS - SHEET 2
ELECTRICAL FIRE ALARM	
F001	FIRE ALARM AND SECURITY SYMBOLS AND GENERAL NOTES
F002	FIRE ALARM SYSTEM RISER
F101	MAINTENANCE BUILDING - FIRE ALARM AND SECURITY PLAN
F501	FIRE ALARM SYSTEM DETAILS
INSTRUMENTATION	
I001	INSTRUMENTATION LEGEND AND ABBREVIATIONS
I002	EXISTING CHEMICAL PLC PANEL MODIFICATION
I003	NETWORK COMMUNICATION DIAGRAM

GENERAL NOTES

1. THE CONTRACTOR SHALL ENSURE ALL NECESSARY PERMITS ARE IN HAND BEFORE COMMENCEMENT OF CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SATISFYING ALL REQUIREMENTS OF REGULATORY AGENCY PERMITS IN REGARD TO CONSTRUCTION ACTIVITIES AND CONDITIONS STATED.
2. ALL LABOR, MATERIALS AND METHODS OF CONSTRUCTION SHALL BE IN STRICT ACCORDANCE WITH THE MINIMUM ENGINEERING AND CONSTRUCTION STANDARDS ADOPTED BY THE ORANGE COUNTY UTILITIES. WHERE CONFLICTS OR OMISSIONS EXIST, THE ORANGE COUNTY UTILITIES STANDARDS SHALL DICATE. SUBSTITUTIONS AND DEVIATION FROM PLANS AND SPECIFICATIONS SHALL BE PERMITTED ONLY WHEN WRITTEN APPROVAL HAS BEEN ISSUED BY THE ENGINEER.
3. TOPOGRAPHIC INFORMATION SHOWN ON THESE PLANS WERE TAKEN FROM SURVEY PROVIDED BY APEX ENGINEERING, INC. (P.O. BOX 568891, ORLANDO, FL 32856-8891, PHONE 407-306-0904) AND SUPPLEMENTAL INFORMATION IS PROVIDED BY TETRA TECH (201 E. PINE ST., SUITE 1000 ORLANDO, FL 32801.)
4. THE CONTRACTOR SHALL EXERCISE EXTREME CAUTION WHEN EXCAVATING IN PROXIMITY OF WATER MAINS, WASTEWATER FORCE MAINS, GRAVITY MAINS AND RECLAIMED WATER MAINS. MAIN LOCATIONS SHOWN ON PLANS ARE NOT EXACT OR GUARANTEED. CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFYING EXISTING UTILITY LOCATIONS.
5. COORDINATION AND COMMUNICATION WITH ORANGE COUNTY STAFF SHALL BE MADE THROUGH THE ORANGE COUNTY UTILITY INSPECTOR. THE COUNTY UTILITIES DISPATCH OPERATOR (407-836-2777) SHALL BE NOTIFIED BY THE CONTRACTOR FOR PIPE EMERGENCIES.
6. COUNTY UTILITIES ENGINEERING AND CONSTRUCTION DIVISION: 407-254-9900.
7. ALL EXISTING WATER, FORCE, GRAVITY AND RECLAIMED WATER MAINS AND OTHER FACILITIES WITHIN THE LIMITS OF THE PROJECT SHALL BE SUPPORTED AND PROTECTED AGAINST DAMAGE DURING CONSTRUCTION.
8. CONTRACTOR SHALL ADJUST VALVE BOXES, AIR RELEASE VALVES, FIRE HYDRANTS, MANHOLE COVERS, ETC IN CONFLICT WITH ROADWAY.
9. THE CONTRACTOR, AT THE CONTRACTOR'S EXPENSE, SHALL IMMEDIATELY REPAIR ALL DAMAGES TO COUNTY'S MAINS AND FACILITIES. IF THE REPAIR IS NOT MADE IN A TIMELY MANNER, AS DETERMINED BY COUNTY, COUNTY MAY PERFORM REQUIRED REPAIRS AND CLEANUP. THE CONTRACTOR WILL BE CHARGED FOR ALL EXPENSES ASSOCIATED WITH THE REPAIR.
10. COUNTY UTILITIES CONSTRUCTION DIVISION SHALL BE NOTIFIED AT LEAST SEVEN (7) DAYS PRIOR TO ANY CONSTRUCTION ACTIVITY WITHIN PROXIMITY OF ANY UTILITIES.
11. ONLY COUNTY SHALL OPERATE WATER, WASTEWATER, AND RECLAIMED WATER VALVES. COORDINATE VALVE OPERATION WITH APPROPRIATE COUNTY INSPECTOR.
12. ALL NEW VALVES BEING INSTALLED SHALL REMAIN CLOSED DURING CONSTRUCTION. KEEP VALVES ON ALL WET TAPS CLOSED UNTIL CLEARED BY FDEP. DO NOT CONNECT ANY PROPOSED WATER MAIN TO ANY EXISTING WATER MAIN UNLESS CLEARED BY FDEP AND THE COUNTY.
13. THE UTILITY IMPROVEMENTS AND ADJUSTMENTS SHOWN ON THESE PLANS ARE INTENDED TO MAINTAIN THE INTEGRITY OF THE ORANGE COUNTY WATER, WASTEWATER AND RECLAIMED WATER SYSTEMS. ALL MATERIALS AND CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE ORANGE COUNTY UTILITIES STANDARD AND CONSTRUCTION SPECIFICATION MANUAL. THE PLANS DO NOT INCLUDE WORK PERFORMED ON OR FOR UTILITY SYSTEMS OWNED BY OTHERS, UNLESS STATED OTHERWISE ON THE PLANS.
14. ALL EXISTING AND NEW ORANGE COUNTY UTILITIES VALVES, VALVE BOXES, AND MANHOLES SHALL BE PROTECTED AND ADJUSTED TO FINISHED GRADE AS SHOWN ON THE DRAWINGS. ALL EXISTING ABOVE GROUND VALVES TO BE RELOCATED, AS REQUIRED.
15. FLUSH OUT NEW WATER MAIN WITH POTABLE WATER (USE "JUMPER" ASSEMBLY WITH BACKFLOW PREVENTER TO MAKE TEMPORARY CONNECTIONS TO AN EXISTING WATER SOURCE.) CONTRACTOR SHALL COORDINATE WITH COUNTY TO DETERMINE THE LOCATION OF CONNECTION TO EXISTING WATER MAIN.
16. ALL PIPING SHALL HAVE 3 FEET MINIMUM COVER UNLESS SHOWN OTHERWISE. CONTRACTOR SHALL TAKE CARE TO PROVIDE PROPER GRADE ELEVATIONS AND ALIGNMENTS.
17. WATER MAINS SHALL BE LOCATED AT LEAST 6 FEET HORIZONTALLY FROM PIPES CARRYING RAW WASTEWATER AND LOCATED AT LEAST 3 FT HORIZONTALLY FROM PIPES CARRYING RECLAIMED WATER AND STORM WATER. THE DISTANCE SHALL BE MEASURED FROM EDGE OF PIPE TO EDGE OF PIPE.
18. WATER MAINS SHALL BE ABOVE THE SEWERS WHENEVER THEY CROSS ANY SANITARY SEWER, STORM SEWER, SEWAGE FORCE MAIN OR REUSE FORCE MAIN. A VERTICAL SEPARATION OF AT LEAST 18 INCHES SHALL BE MAINTAINED BETWEEN THE TOP OF THE SEWER AND THE BOTTOM OF THE WATER MAIN. SEWERS SHALL HAVE ONE FULL LENGTH OF DUCTILE IRON PIPE CENTERED AT THE POINT OF CROSSING SO THAT THE JOINTS WILL BE EQUIDISTANT AND AS FAR AS POSSIBLE FROM THE WATER MAIN.
19. ALL PAVING, STABILIZED EARTH, DRIVEWAYS, CURBS, SIDEWALKS, FENCES, SOD, LANDSCAPING, IRRIGATION SYSTEMS, CULVERTS, ETC. DISTURBED BY THE CONTRACTOR'S OPERATIONS SHALL BE RESTORED TO EQUAL OR BETTER CONDITION.
20. FITTINGS MAY BE USED FOR PIPE ALIGNMENT CHANGES RATHER THAN DEFLECTING AT THE CONTRACTOR'S OPTION AND WITH NO ADDITIONAL COMPENSATION.
21. PRIOR TO BID PREPARATION, THE CONTRACTOR SHALL FAMILIARIZE HIMSELF WITH THE OVERALL SITE CONDITIONS AND PERFORM ADDITIONAL INVESTIGATIONS AS DETERMINED NECESSARY TO UNDERSTAND THE LIMIT AND DEPTH OF UNSUITABLE MATERIALS. IF ANY ADEQUACY OF EXISTING MATERIALS AS FILL, DEWATERING REQUIREMENTS, CLEAN FILL REQUIRED FROM OFF SITE, AND MATERIALS TO BE DISPOSED OF OFF SITE, ALL OF WHICH WILL AFFECT HIS PRICING, ANY DELAY, INCONVENIENCE, OR EXPENSE CAUSED TO THE CONTRACTOR DUE TO INADEQUATE INVESTIGATION OF EXISTING CONDITIONS SHALL BE INCIDENTAL TO THE CONTRACT, AND NO EXTRA COMPENSATION WILL BE ALLOWED. THE MATERIALS ANTICIPATED TO BE ENCOUNTERED DURING CONSTRUCTION MAY REQUIRE DRYING PRIOR TO USE AS BACKFILL, AND THE CONTRACTOR MAY HAVE TO BRING IN MATERIALS AT NO ADDITIONAL COST TO THE OWNER, FROM OFF SITE TO MEET THE REQUIREMENTS FOR COMPACT AND PROPER FILL.
22. ALL DRAINAGE AREAS THAT ARE CROSSED BY PIPELINES SHALL BE LEFT OPEN AT ALL TIMES EXCEPT FOR SHORT PERIODS AS MAY BE NECESSARY DURING ACTUAL CONSTRUCTION HOURS.
23. THE CONTRACTOR SHALL OBTAIN THE SERVICES OF A REGISTERED PROFESSIONAL LAND SURVEYOR FOR LAYOUT OF ALL WORK AND FOR RESTORING ALL MONUMENTS AND PROPERTY CORNERS DISTURBED DURING CONSTRUCTION. PROOF OF REGISTRATION SHALL BE SUBMITTED TO ENGINEER.
24. ALL WATER DISTRIBUTION SYSTEMS SHALL BE FLUSHED CLEAN OF ALL DELETERIOUS MATERIAL PRIOR TO ANY TESTING. FULL DIAMETER FLUSHING IS REQUIRED. ALL POTABLE WATER AND RAW WATER MAINS EITHER INSTALLED OR DISTURBED DURING CONSTRUCTION SHALL BE DISINFECTED IN ACCORDANCE WITH AWWA C-651 (SUBSECTION 4.8 AND SECTION 9) AND RULE 62-555.345, F.A.C. SUCH WATER MAINS SHALL THEN BE BACTERIOLOGICALLY TESTED IN ACCORDANCE WITH STATE AND LOCAL REQUIREMENTS. A REPRESENTATIVE FROM THE COUNTY MUST BE PRESENT DURING THE TAKING OF ALL WATER SAMPLES.
25. EACH BACTERIOLOGICAL SAMPLE POINT SHALL BE INSTALLED PER THE PERMIT AND EQUIPPED WITH A CORPORATION STOP, DISCHARGE PIPE, AND ABOVE-GRADE VALVE. FOLLOWING PASSAGE OF BACTERIOLOGICAL TESTING, THE CONTRACTOR SHALL REMOVE THE CORPORATION STOP AND PLUG THE CONNECTION.
26. DUCTILE IRON PIPE AND FITTINGS SHALL BE ENCASED IN POLYETHYLENE TWENTY (20) FEET ON EACH SIDE OF ANY PERPENDICULAR CROSSING OF METALLIC GAS MAINS OR ANY OTHER CATHODICALLY PROTECTED PIPELINE AND FOR ALL LOCATIONS PARALLEL TO AND WITHIN TEN FEET OF ANY METALLIC GAS MAINS OR ANY OTHER CATHODICALLY PROTECTED PIPELINE AND THROUGH THE AREA OF INFLUENCE OF ANY CATHODICALLY PROTECTED ANODE BED AS OUTLINED IN AWWA C105/ANSI A21.5.
27. ALL EXISTING POTABLE WATER AND RAW WATER MAINS SHALL REMAIN OPERATIONAL AND SHALL NOT BE TAKEN OUT OF SERVICE DURING CONSTRUCTION WITHOUT APPROVAL FROM COUNTY. ANY APPROVED REMOVAL FROM SERVICES SHALL NOT EXCEED 3 HOURS.
28. ALL MATERIALS, COATINGS AND CHEMICALS THAT CONTACT RAW WATER AND/OR DRINKING WATER SHALL BE IN CONFORMANCE WITH ANSI/NSF STANDARD 61.
29. FLORIDA LAW (F.S. 553.851) REQUIRES THAT PERSONS MAKING EXCAVATIONS IN PUBLIC AND PRIVATE STREETS, ALLEYS, RIGHT-OF-WAYS OR UTILITY EASEMENTS MUST FIRST OBTAIN INFORMATION ON LOCATION OF UNDERGROUND GAS PIPELINES A MINIMUM OF TWO (2) WORKING DAYS PRIOR TO EXCAVATING. CALL SUNSHINE STATE ONE CALL CENTER 1-800-432-4770.
30. IT IS THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE THE EXACT LOCATION, DEPTH, AND CHARACTER OF ALL UTILITIES PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL NOTIFY RESPECTIVE UTILITY OWNERS AND FIELD VERIFY LOCATIONS AND ELEVATIONS OF UTILITIES AT LEAST 48 HOURS IN ADVANCE OF WORK. CONTRACTOR SHALL BE RESPONSIBLE FOR DAMAGE CAUSED BY HIS/HER OPERATIONS.
31. THE CONTRACTOR SHALL PRESERVE AND MAINTAIN ALL EXISTING UTILITIES WITHIN THE CONSTRUCTION AREA.
32. LOCATIONS AND ELEVATIONS OF EXISTING UTILITIES EXPOSED DURING CONSTRUCTION SHALL BE ACCURATELY RECORDED ON THE CONSTRUCTION DRAWINGS. THE OWNER SHALL BE IMMEDIATELY NOTIFIED OF ANY CONFLICTS WITH PROPOSED CONSTRUCTION.
33. THE CONTRACTOR SHALL PROVIDE SUPPORT FOR EXISTING POWER POLES, TELEPHONE POLES AND STRUCTURES DURING CONSTRUCTION.
34. EXISTING UTILITIES AS SHOWN ARE APPROXIMATE LOCATIONS. SANITARY SEWER MAINS STORM DRAINS, WATER VALVES, CABLES, MANHOLES, WATER AND SEWER SERVICE LATERALS AND LIFT STATION LOCATIONS WERE OBTAINED FROM SURVEY INFORMATION AND RECORD DRAWINGS. ACTUAL LOCATIONS OF EXISTING WATER MAINS, FORCE MAINS, CABLES, WATER AND SEWER SERVICE LATERALS HAVE NOT BEEN FIELD VERIFIED. THE EXISTING UTILITIES SHOWN SHALL NOT BE CONSTRUED AS BEING ALL INCLUSIVE OF UTILITIES IN THE AREA. ANY INTERRUPTION OF SERVICE SHALL BE COORDINATED WITH THE OWNER OF THE UTILITY.
35. THE CONTRACTOR SHALL LOCATE PROPOSED TIE IN LOCATIONS TO VERIFY ACTUAL LOCATION, SIZE, ELEVATION AND MATERIAL PRIOR TO ORDERING NEW MATERIAL. WHERE A CONNECTION IS MADE IN THE FIELD TO AN EXISTING PIPE, THE CONTRACTOR WILL EXCAVATE THE AREA TO VERIFY THE TYPE OF PIPE AND PIPE SIZE, AND OBTAIN THE OWNER'S APPROVAL OF THE PROPOSED METHOD OF CONNECTION. PRIOR TO ORDERING AND INSTALLING MATERIALS, WHERE CONNECTING TO EXISTING UTILITIES CONTRACTOR SHALL RESTRAIN EXISTING PIPELINE TO PREVENT MOVEMENT OF THE INSTALLATION WHEN TEST PRESSURE IS APPLIED.
36. THE CONTRACTOR SHALL TAKE ALL MEASURES NECESSARY TO CONTROL TURBIDITY INCLUDING, BUT NOT LIMITED TO, THE INSTALLATION OF TURBIDITY BARRIERS AT ALL LOCATIONS WHERE THE POSSIBILITY OF INFERRING SUSPENDED SOLIDS INTO THE RECEIVING WATER BODY, EXISTS DUE TO THE PROPOSED WORK. TURBIDITY BARRIERS MUST BE MAINTAINED AT ALL LOCATIONS UNTIL CONSTRUCTION IS COMPLETED AND DISTURBED SOIL AREAS ARE STABILIZED. THE CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR REMOVING THE BARRIERS. AT NO TIME SHALL THERE BE ANY OFF-SITE DISCHARGE WHICH VIOLATES THE WATER QUALITY STANDARDS IN CHAPTERS 62-302 AND 62-4. FLORIDA ADMINISTRATIVE CODE.
37. THE CONTRACTOR SHALL MAINTAIN NORMAL TRANSPORT VEHICLE ACCESS TO WSF FACILITIES AT ALL TIMES.
38. EQUIPMENT PAD DIMENSIONS AND EQUIPMENT ANCHOR BOLT REQUIREMENTS ARE DEPENDENT UPON EQUIPMENT SELECTED. DIMENSIONS INDICATED ON THE DRAWINGS SHALL BE VERIFIED WITH MANUFACTURER FOR ACTUAL SIZE OF EQUIPMENT SELECTED.
39. COORDINATE WITH OTHER TRADES THE LOCATION OF SLEEVES AND WALL PIPES THROUGH WALLS, SLABS AND CEILINGS. REFER TO MECHANICAL, ELECTRICAL, STRUCTURAL, AND PROCESS DRAWINGS FOR SPECIFIC REQUIREMENTS.
40. ALL EXPANSION JOINTS, COUPLINGS AND FLANGED ADAPTERS SHALL BE PROVIDED WITH THRUST TIES, BLOCKS, OR ANCHORS, UNLESS OTHERWISE NOTED. THRUST PROTECTION SHALL BE ADEQUATE FOR TEST PRESSURES SPECIFIED.
41. ALL PIPING TO BE RESTRAINED.
42. THE CONTRACTOR SHALL PROVIDE A SIGN ABOVE ALL HOSE BIBBS WHICH SHALL STATE EITHER "POTABLE" OR "NON-POTABLE, DO NOT DRINK". THE SIGN SHALL BE MADE OF LAMINATED PLASTIC WITH A BLACK FACE AND WHITE LETTERS APPROXIMATELY 3/4-INCH HIGH. ATTACH A SIGN TO STRUCTURE OR HANDRAIL WITH STAINLESS STEEL HARDWARE.
43. WHERE BURIED PIPE 4 INCHES AND LARGER CROSS, A MINIMUM VERTICAL CLEARANCE BETWEEN PIPES OF 12 INCHES SHALL BE MAINTAINED WHERE POSSIBLE. IF A CLEARANCE BETWEEN PIPES OF 12 INCHES CANNOT BE MAINTAINED, A CONCRETE SADDLE WILL BE INSTALLED BETWEEN THE PIPES.
44. ALL PIPING UNDER STRUCTURES SHALL BE CONCRETE ENCASED.
45. IN THE EVENT THAT THE POTABLE WATER SYSTEM IS CONTAMINATED (I.E. WATER DOES NOT MEET FEDERAL AND STATE REQUIREMENTS) DUE TO THE CONSTRUCTION ACTIVITIES, THE CONTRACTOR SHALL BE RESPONSIBLE, UNDER THE DIRECTION OF THE OWNER, OR THE STATE AND LOCAL REGULATORY AGENCY FOR CORRECTING ANY SUCH CONTAMINATION PROBLEM INCLUDING DISINFECTION, TESTING AND OTHER CORRECTIVE ACTION.
46. ALL PIPE TO BE COLOR-CODED AS SPECIFIED IN SECTION 09905.
47. CALL SCADA AT (407)-254-9509 FOR SHUT-DOWNS AND ACCESS TO THE FACILITY.

Friday, May 10, 2019 7:46:52 AM DRAWING: \\TTS181s1\projects\ERY10034\200-10034-18002\CAD\SheetFiles\G001 - DWG LAYOUT.G001 USER NAME: EVANS, JON



BID SET

BY	DATE	DESCRIPTION

DRAWING INDEX & GENERAL NOTES

Project No.:	200-10034-18002
Designed By:	JCB
Drawn By:	JTE
Checked By:	JPT

G001

Friday, May 10, 2019 7:46:58 AM DRAWING: \\TTC1811s1\projects\ERY10034200-10034-18002\CAD\SheetFiles\G002 - LEG & ABR .DWG LAYOUT: G002 USER NAME: EVANS, JON

LIST OF STANDARD ABBREVIATIONS

Table with columns A through W, listing abbreviations and their corresponding full names for various engineering and construction terms.

PIPING LEGEND

Table showing piping symbols for various fittings and joints, categorized by Flanged, Mechanical Joint, Groove Joint, and Solvent Weld, with sub-columns for Existing and Proposed.

CIVIL LEGEND

Table showing civil engineering symbols for property lines, easements, water features, and other site elements.

REFERENCE SYMBOLS

Table explaining symbols for section and detail references, including drawing numbers and section titles.

HATCHING LEGEND

Table showing hatching patterns for materials like asphalt, concrete, earth, and steel.

MECHANICAL/DRAFTING LEGEND

Table showing line styles for visible, hidden, center, and other mechanical/drafting lines.

TETRA TECH logo and contact information including address and phone number.

BID SET

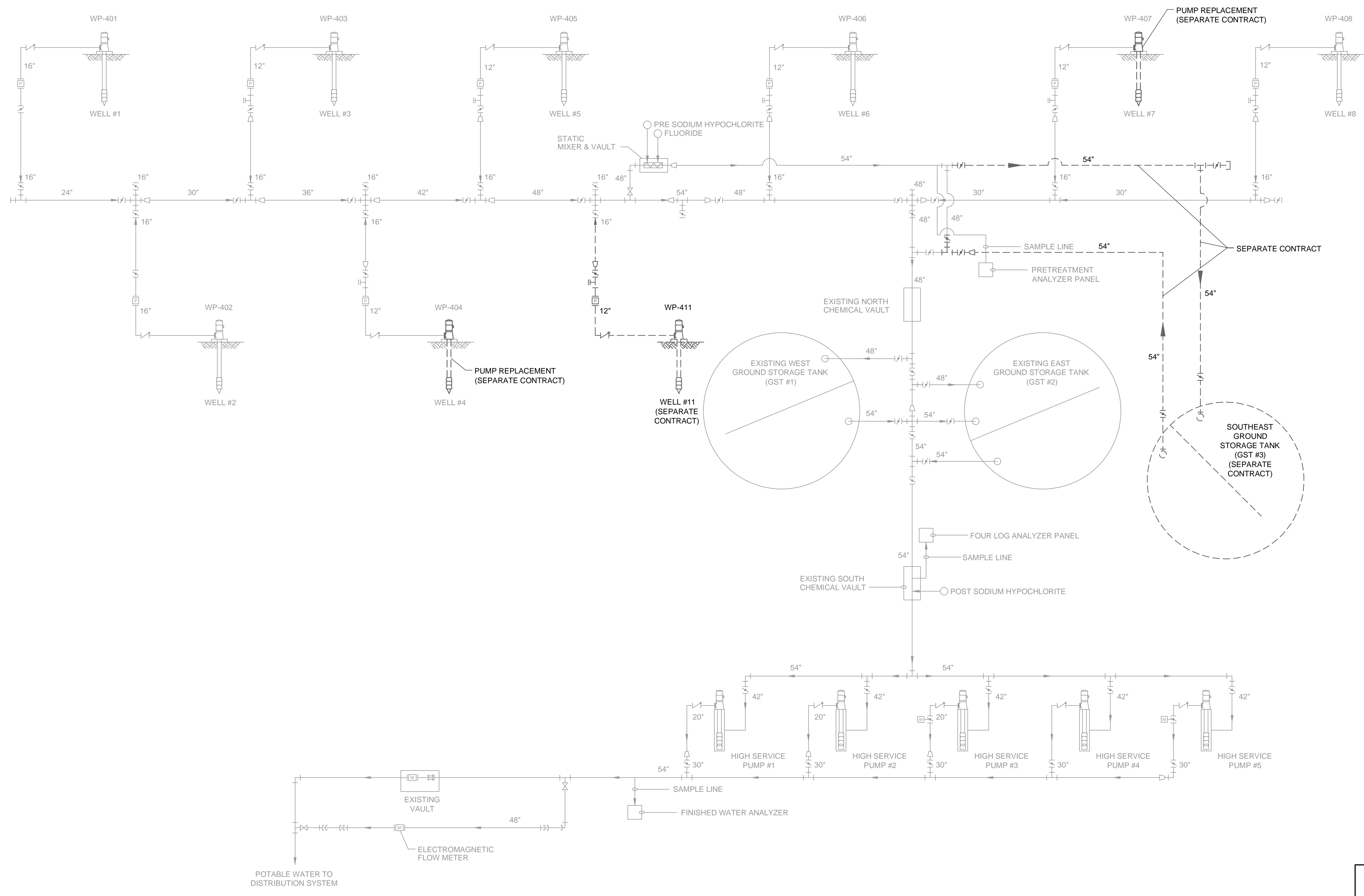
Table with columns for Mark, Date, and Description, used for tracking revisions.

Client: ORANGE COUNTY UTILITIES, Project Name: WESTERN REGIONAL WATER SUPPLY FACILITY IMPROVEMENTS PHASE 3A - PART 2

Project No.: 200-10034-18002, Designed By: JCB, Drawn By: JTE, Checked By: JPT

G002

Friday, May 10, 2019 7:47:04 AM. DRAWING: \\TTS18181\projects\ER10034\200-10034-18002\CAD\SheetFiles\G003_G004 - EX & PRO PROCESS FLOW DIA .DWG LAYOUT. G003 USER NAME: EVANS, JON



LEGEND

	EXISTING PIPING & EQUIPMENT
	PIPING & EQUIPMENT (FROM SEPARATE CONTRACT)
	CHEMICAL FEED POINT
	BUTTERFLY VALVE
	GATE VALVE
	CHECK VALVE
	MAGNETIC FLOW METER
	PROPELLER FLOW METER
	REDUCER

TETRA TECH
ENGINEERING BUSINESS NO. 2429

www.tetra-tech.com
201 EAST PINE STREET, SUITE 1000
ORLANDO, FLORIDA 32801
PHONE: (407) 839-3955 FAX: (407) 839-3790

BID SET

MARK	DATE	DESCRIPTION

Client: ORANGE COUNTY UTILITIES
Proj. Loc.: ORANGE COUNTY, FL

WESTERN REGIONAL WATER SUPPLY FACILITY
IMPROVEMENTS PHASE 3A - PART 2

**EXISTING
PROCESS FLOW
DIAGRAM**

Project No.: 200-10034-18002
Designed By: JCB
Drawn By: JTE
Checked By: JPT

G003

ABBREVIATIONS

A	A LABEL CLASS DOOR	CORR	CORRIDOR	GS	GRATING SUPPORT	NW	NORTHWEST	SCW	SOLID CORE WOOD
A/C	AIR CONDITIONING UNIT	CP	CONCRETE PIPE	GV	GRAVEL	O	OUT TO OUT	SCWD	SOLID CORE WOOD DOOR
AB	ANCHOR BOLT	CP	CENTER POINT	GWB	GYPSUM WALL BOARD	O TO O	OUT TO OUT	SD	SMOKE DETECTOR
ABDN	ABANDON	CPT	CARPET	GYBD	GYPSUM WALL BOARD	OA	OVERALL	SE	SOUTH EAST
ACC	ACCESSIBLE	CR	CONTROL ROOM	GYP	GYPSUM	OC	ON CENTER	SF	SQUARE FOOT
ACI	AMERICAN CONCRETE INSTITUTE	CS	CAST STONE	H	HORN	OD	OUTSIDE DIAMETER	SF	SQUARE FEET
ACOUST	ACOUSTICAL(AL)	CSWK	CASEWORK	H	HORN	OFCI	OWNER FURNISHED CONTRACTOR INSTALLED	SFTWD	SOFT WOOD CONTRACTOR INSTALLED
ACP	ACOUSTICAL CEILING PANEL	CT	CERAMIC TILE	HB	HOSE BIBB	OFD	OVERFLOW DRAIN	SGL	SINGLE
ACS	AUTOMATIC CONTROL SYSTEM	CTB	CERAMIC TILE - BASE	HC	HOLLOW CORE	OFF	OFFICE	SH	SOAP HOLDER
ACT	ACOUSTICAL CEILING TILE	CTF	CERAMIC TILE - FLOOR	HC	HANDICAP	OFI	OWNER FURNISHED OWNER INSTALLED	SHR	SHOWER
ACU	AIR CONDITIONING UNIT	CTR	CENTER	HDPE	HIGH DENSITY POLYETHYLENE	OFOI	OWNER FURNISHED OWNER INSTALLED	SHT MTL	SHEET METAL FLASHING
ADA	AMERICANS WITH DISABILITIES ACT	CTW	CERAMIC TILE - WALL	HDW	HARDWARE	OGL	OBSCURE GLASS	SHTHG	SHEATHING
		CU FT	CUBIC FEET	HDWD	HARDWOOD	OPH	OPPOSITE HAND	SHV	SHELVING
		CWT	CERAMIC WALL TILE	HEPA	HIGH EFFICIENCY PARTICULATE AIR FILTER	OPNG	OPENING	SIM	SIMILAR
		D	DEPTH			OPP	OPPOSITE	SJ	SCORED JOINT
ADD	ADDITIONAL	D LABEL	D LABEL CLASS DOOR	HGT	HEIGHT	OPQ	OPAQUE	SKLT	SKYLIGHT
ADMIN	ADMINISTRATION	DBL	DOUBLE	HK	HOOK	OPR	OPERABLE	SLNT	SEALANT
AFF	ABOVE FINISH FLOOR	DMO	DEMOLISH	HM	HOLLOW METAL	ORIG	ORIGINAL	SLR	SEALER
AFG	ABOVE FINISH GRADE	DEPT	DEPARTMENT	HMD	HOLLOW METAL DOOR	OSB	ORIENTED STRAND BOARD	SM	SQUARE METER
AHU	AIR HANDLING UNIT	DET	DETAIL	HORIZ	HORIZONTAL	OSB	ORIENTED STRAND BOARD	SMHD	SHELF METAL HEAVY DUTY
AIB	AIR INFILTRATION BARRIER	DF	DRINKING FOUNTAIN	HT	HEIGHT	OTS	OPEN TO STRUCTURE	SMK	SMOKE
AISC	AMERICAN INSTITUTE OF STEEL CONSTRUCTION	DIA	DIAMETER	HVAC	HEATING VENTILATION AND AIR CONDITIONING	OWSJ	OPEN WEB STEEL JOINT	SMLS	SEAMLESS
		DI	DIAMETER			OZ	OUNCE	SND	SANITARY NAPKIN AND TAMPON DISPENSER
ALT	ALTERNATE	DIAG	DIAGONAL	HW	HARDWARE	PA	PUBLIC ADDRESS	SP EL	SPOT ELEVATION
ALUM	ALUMINUM	DIM	DIMENSION	HDWR	HARDWARE	PAR	PARAPET	SPEC	SPECIFICATIONS
ANOD	ANODIZE	DIST	DISTANCE	HYD	HYDRAULIC	PAT	PATTERN	SQ	SQUARE
APPROX	APPROXIMATE(LY)	DN	DOWN			PB	PULL BOX	SQ IN	SQUARE INCH
APVD	APPROVED	DOC	DOCUMENT	IBC	INTERNATIONAL BUILDING CODE	PBD	PARTICLE BOARD	SQ YD	SQUARE YARD
AR	AS REQUIRED	DR	DOOR	ICF	INSULATED CONCRETE FORM	PCC	PRECAST CONCRETE	SOFT	SQUARE FOOT (FEET)
ARCH	ARCHITECT(URAL)	DS	DOWNSPOUT	IF	INSIDE FACE	PCF	POUND PER CUBIC FOOT	SOM	SQUARE METER
ASC	ABOVE SUSPENDED CEILING	DWG(S)	DRAWING(S)	IG	INSULATING GLASS	PCT	PERCENT	SS	STAINLESS STEEL
ASSY	ASSEMBLY	E	EAST	J	ISOLATION JOINT	PEMB	PRE-ENGINEERED METAL BUILDING	SSMR	STANDING SEAM METAL ROOF
AVG	AVERAGE	E LABEL	E LABEL CLASS DOOR	IN	INCH	PERF	PERFORATED	SST	STAINLESS STEEL
AW	ARCHITECTURAL WOODWORK	EA	EACH	INCAND	INCANDESCENT	PERM	PERMETER	ST	STAIRS
		EF	EACH FACE	INSUL	INSULATION	PERP	PERPENDICULAR	STC	SOUND TRANSMISSION CLASS
B LABEL	B LABEL CLASS DOOR	EJ	EXPANSION JOINT	IRP	INSULATED ROOF PANEL	PH	PHASE	STD	STANDARD
BALC	BALCONY	EL	ELEVATOR	ITG	INSULATED TEMPERED GLASS	PIL	PILASTER	STL	STEEL
BB	BASEBOARD	ELEC	ELECTRIC(AL)	IWP	INSULATED WALL PANEL	PL	PROPERTY LINE	STL JST	STEEL JOIST
BD	BOARD	ELEV	ELEVATION	J	JUNCTION BOX	PL GL	PLATE GLASS	STL RF	STEEL ROOF DECK
BET	BETWEEN	ENGR	ENGINEER	JAN	JANITOR	PLAM	PLASTIC LAMINATE	STOR	STORAGE
BFF	BELOW FINISH FLOOR	ENR	ENTRY	JST	JOIST	PLAS	PLASTIC	STR	STRINGER
BHMA	BUILDER'S HARDWARE MANUFACTURER'S ASSOCIATION	EOG	EDGE OF GUTTER	JT	JOINT	PLBG	PLUMBING	STRBHR	STROBE / HORN
		EP	EXPLOSION PROOF	K	KITCHEN	PLG	PILING	N	
BL	BASELINE	EPS	EXPANDED POLYSTYRENE BOARD	KIT	KITCHEN	PLYWD	PLYWOOD	STRUCT	STRUCTURE(AL)
BLDG	BUILDING	EQ	EQUAL	KPD	KEYPAD	PNL	PANEL	SUB FL	SUB FLOOR
BLKG	BLOCKING	EQIP	EQUIPMENT	KPL	KICKPLATE	POC	POINT OF CONTACT	SUSP	SUSPENDED
BLT IN	BUILT-IN	EW	EACH WAY	L	LAMINATE	POLY	POLYSTYRENE	SV	SHEET VINYL
BM	BEAM	EWC	ELECTRIC WATER COOLER	LAM	LAMINATE	PP PL	PAIR/PULL PLATE	SW	SOUTHWEST
BN	BULLNOSE	EXIST	EXISTING	LAV	LAVATORY	PR	PAIR	SYM	SYMMETRICAL
BOD	BASIS OF DESIGN	EXP	EXPOSED	LBR	LUMBER	PRCST	PRECAST	T	TREAD
BOF	BOTTOM OF FOOTING	EXT	EXTERIOR	LBS	POUNDS	PREFAB	PREFABRICATED	T&G	TONGUE AND GROOVE
BOS	BOTTOM OF STEEL	EXT AB	EXANSION ANCHOR BOLT	LDS	LANDING	PRKG	PARKING	T/S	TUB / SHOWER
BOT	BOTTOM	EXT GR	EXTERIOR GRADE	LF	LINEAR FOOT (FEET)	CONC	CONCRETE	TB	TOWEL BAR
BP	BUILDING PAPER	F	FIRE ALARM	LG	LONG	PSF	POUNDS PER SQUARE FOOT	TC	TERRA COTTA
BRG	BEARING	FA	FIRE ALARM	LIB	LIBRARY	PSI	POUNDS PER SQUARE INCH	TD	TRENCH DRAIN
BRKT	BRACKET	FAAP	FIRE ALARM ANNUNCIATOR PANEL	LIN	LINEAR	PT	PRESSURE TREATED	TEL	TELEPHONE
BMT	BASEMENT	FAS BD	FASCIA BOARD	LKR	LOCKER	PTD	PAPER TOWEL DISPENSER	TEMP	TEMPORARY
BTWN	BETWEEN	FACE BRK	FACE BRICK	LLH	LONG LEG HORIZONTAL	PTRD	PAPER TOWEL DISPENSER AND RECEPTACLE	TER	TERRAZZO
BUR	BUILT UP ROOF	FD	FLOOR DRAIN	LLV	LONG LEG VERTICAL	PTN	PARTITION	TFF	TOP OF FINISH FLOOR
		FDTN	FOUNDATION	LNT	LINTEL	PWR	POWER	THK	THICKNESS
C	CAST CONCRETE	LOC	LOCATION	LOC	LOCATION	LP	LIGHT POLE	TK BD	TACK BOARD
C CONC	C LABEL CLASS DOOR	LS	LABORATORY SINK	LT	LIGHT	QT	QUARRY TILE	TLT	TOILET
C LABLE	C LABEL CLASS DOOR	LT	LIGHT	LVD	LOUVER DOOR	QTY	QUANTITY	TMPO GL	TEMPERED GLASS
C-C	CENTER TO CENTER	LVR	LOUVER			R	RISER	TN	TRUE NORTH
CAB	CABINET	M	METERS			RB	RUBBER BASE	TOF	TOP OF FOOTING
CAB	CABLE	MAT	MATERIAL			RCP	REFLECTED CEILING PLAN	TOM	TOP OF MASONRY
CAV	CAVITY	MATL	MATERIAL			RD	ROOF DRAIN	TOP	TOP OF PARAPET
CB	CEMENTITIOUS (BACKER) BOARD	MAX	MAXIMUM			REC	RECESSED	TOPO	TOPOGRAPHY
CD	CONSTRUCTION DOCUMENT(S)	MB	MOISTURE BARRIER			REF	REFERENCE	TOS	TOP OF SLAB
CDW	CHILLED DRINKING WATER	MC	MOISTURE CONTENT			REFR	REFRIGERATOR	TRNS	TRANSOM
CEM	CEMENT PLASTER	MD	METAL DECK			REM	REMOVABLE	TRT	TREATED
PLAS		MECH	MECHANICAL (ROOM)			REP	REPAIR	TRTD	TREATED
CER	CERAMIC	MEMB	MEMBRANE			REQ	REQUIRE	TS	TUBE STEEL
CF	CONTRACTOR FURNISHED	RES	RESILIENT			REQD	REQUIRED	TV	TELEVISION
CF/CI	CONTRACTOR FURNISHED/ CONTRACTOR INSTALLED	RESIL	RESILIENT			RES	RESILIENT	UNF	UNFINISHED
CFE	CONTRACTOR FURNISHED EQUIPMENT	REV	REVISION			RF	RESILIENT FLOORING	UNO	UNLESS NOTED OTHERWISE
CFLG	COUNTER FLASHING	RH	RIGHT HAND			RH	RIGHT HAND	UR	URINAL
CFM	CUBIC FEET PER MINUTE	RHR	RIGHT HAND REVERSE			RL	ROOF LEADER	V	VAPOR BARRIER
CFMF	COLD FORM METAL FRAMING	RL	ROOF LEADER			RLG	RAILING	VCT	VINYL COMPOSITION TILE
CFS	CUBIC FEET PER SECOND	RM	ROOM			RO	ROUGH OPENING	VRT	VERTICAL
CFT	CERAMIC FLOOR TILE	RR	RESTROOM			RSD	ROLLING STEEL DOOR	VR	VAPOR RETARDER
CG	CORNER GUARD	RV	ROOF VENT			RV	ROOF VENT	VTC	VIDEO TELECONFERENCE
CJ	CONTROL JOINT	RVL	REVEAL			S	SOUTH	VTR	VENT THROUGH ROOF
CL	CENTER LINE	S	SOUTH			S2S	SURFACE TWO SIDES	W	WEST
CLG	CEILING	S4S	SURFACE FOUR SIDES			S4S	SURFACE FOUR SIDES	W/	WITH
CLC	CEILING DIFFUSER	SAPC	SUSPENDED ACOUSTICAL PANEL CEILING			SAPC	SUSPENDED ACOUSTICAL PANEL CEILING	WO	WITHOUT
DIFT		SATC	SUSPENDED ACOUSTICAL TILE CEILING			S	SOUTH	WC	WATER CLOSET
CLG HT	CEILING HEIGHT	SB	SPLASH BLOCK			S	SOUTH	WD	WOOD
CLL	COLUMN LINE	SC	SHOWER CURTAIN			S2S	SURFACE TWO SIDES	WG	WIRE GLASS
CLO	CLOSET	SCH	SCHEDULE			S4S	SURFACE FOUR SIDES	WOM	WALK OFF MAT
CLR	CLEAR	SCHED	SCHEDULE			SAPC	SUSPENDED ACOUSTICAL PANEL CEILING	WR	WASTE RECEPTACLE
CLR	COLOR	SCR	SHOWER CURTAIN ROD			SAPC	SUSPENDED ACOUSTICAL PANEL CEILING	WRB	WEATHER RESISTANT BARRIER
CLRM	CLASSROOM					SATC	SUSPENDED ACOUSTICAL TILE CEILING	WRGWB	WATER RESISTANT GYPSUM WALLBOARD
CMU	CONCRETE MASONRY UNIT					SB	SPLASH BLOCK	WS	WATER STOP
CNDS	CONDENSATE					SC	SHOWER CURTAIN	WTP	WATER TREATMENT PLANT
CO	COLUMN					SCH	SCHEDULE	WWTP	WASTE WATER TREATMENT PLANT
COL	COLUMN					SCHD	SCHEDULE		
COMM	COMMUNICATIONS					SCR	SHOWER CURTAIN ROD		
CONC	CONCRETE								
CONC	CONCRETE FLOOR								
FLR									
CONF	CONFERENCE								
CONST	CONSTRUCTION								
CONT	CONTINUOUS								
COORD	COORDINATE								

CONCRETE	ANGLE AND AT DEGREE DIAMETER EQUALS MINUS PERCENT PLUS PLUS OR MINUS
MASONRY	
CONCRETE MASONRY	
GROUT	
WOOD STUDS, BLOCKING	
EARTHWORK	
GRAVEL	
STEEL	
SAND	
RIGID INSULATION	
ACOUSTICAL TILE	
FINISH LUMBER	
PLYWOOD	
BATT INSULATION	

SYMBOLS

ANGLE AND AT DEGREE DIAMETER EQUALS MINUS PERCENT PLUS PLUS OR MINUS
--

DRAFTING MATERIALS

CONCRETE	ANGLE AND AT DEGREE DIAMETER EQUALS MINUS PERCENT PLUS PLUS OR MINUS
MASONRY	
CONCRETE MASONRY	
GROUT	
WOOD STUDS, BLOCKING	
EARTHWORK	
GRAVEL	
STEEL	
SAND	
RIGID INSULATION	
ACOUSTICAL TILE	
FINISH LUMBER	
PLYWOOD	
BATT INSULATION	

GENERAL NOTES

- THE DRAWINGS INDICATE THE GENERAL EXTENT OF WORK. ANY WORK REQUIRED TO PROVIDE THE SCOPE OF WORK GRAPHICALLY INDICATED BY THESE DRAWINGS IS PART OF THE SCOPE OF THE CONSTRUCTION CONTRACT. IN THE EVENT ANY WORK IS INDICATED GRAPHICALLY AND NOT NOTED, THE CONSTRUCTION CONTRACTOR SHALL BE EXPECTED TO CONSTRUCT THE DESIGN USING INFORMATION AND TYPICAL OR SIMILAR DETAILS PROVIDED IN THE CONSTRUCTION DOCUMENTS.
- THE CONTRACTOR SHALL PROMPTLY REPORT TO THE ARCHITECT ANY ERRORS, INCONSISTENCIES OR OMISSIONS IN THE CONTRACT DOCUMENTS DISCOVERED BY OR MADE KNOWN TO THE CONTRACTOR PRIOR TO ORDERING OF ANY MATERIALS OR PROCEEDING WITH THE WORK AS A REQUEST FOR INFORMATION IN SUCH FORM AS THE ARCHITECT MAY REQUIRE.
- CHAMFER EXTERNAL CORNERS OF EXPOSED CONCRETE WALLS 3/4" (20mm) TYPICAL, UNLESS OTHERWISE NOTED.
- MECHANICAL, ELECTRICAL, STRUCTURAL AND PLUMBING INFORMATION ON THE ARCHITECTURAL DRAWINGS IS PROVIDED FOR CLARITY AND / OR LOCATION PURPOSES ONLY. SEE RELEVANT DISCIPLINE DRAWINGS FOR SPECIFIC INFORMATION.
- FLASHING COLOR TO MATCH ADJACENT WALL COLOR UNLESS NOTED OTHERWISE.
- BUILDING HEIGHTS AND ELEVATIONS ARE BASED UPON PROJECT FINISH ELEVATION OF 0'-0" AT THE FIRST FLOOR.
- ALL WORK SHALL COMPLY WITH APPLICABLE BUILDING CODES, ORDINANCES AND REGULATORY AGENCIES. DISCREPANCIES SHALL BE BROUGHT TO THE ARCHITECT'S ATTENTION PRIOR TO PROCEEDING WITH THE WORK.
- ALL DOORS IN STUD WALLS NOT LOCATED BY DIMENSION ON PLANS OR DETAILS SHALL BE 4" (100mm) FROM FRAMING TO ADJACENT PERPENDICULAR WALL TO EDGE OF DOOR OPENING.
- ROOM AND DOOR NUMBERS SHOWN ON DRAWINGS ARE FOR CONSTRUCTION PURPOSES ONLY.
- ALL WOOD IN CONTACT WITH CONCRETE OR MASONRY SHALL BE PRESERVATIVE TREATED WOOD.
- WORK SHALL CONFORM TO APPLICABLE INDUSTRY AND MANUFACTURERS' PUBLISHED STANDARDS FOR QUALITY OF MATERIALS AND WORKMANSHIP, AS WELL AS REQUIREMENTS IN THESE DRAWINGS AND SPECIFICATIONS. ANY CONFLICTING REQUIREMENTS OF THE SOURCES LISTED ABOVE SHALL BE BROUGHT TO THE ARCHITECTS ATTENTION PRIOR TO PROCEEDING WITH THE WORK.
- THE CONTRACTOR SHALL PROTECT EXISTING, IN-PLACE AND NEW WORK.
- THE CONTRACTOR SHALL VERIFY DIMENSIONS AND SHALL VERIFY EXISTING CONDITIONS SHOWN ON THESE DRAWINGS AT THE SITE. THE CONTRACTOR SHALL NOTIFY THE ARCHITECT IN WRITING OF ANY DISCREPANCIES, OMISSIONS AND OR CONFLICTS BEFORE COMMENCEMENT OF WORK. COMMENCEMENT OF WORK SHALL CONSTITUTE ACCEPTANCE OF ALL NEW OR EXISTING CONDITIONS.
- UNLESS NOTED OTHERWISE ALL GYPSUM WALLBOARD IS TO RECEIVE ONE PRIMER COAT AND TWO COATS OF PAINT.
- NFPA 241, STANDARD FOR SAFEGUARDING CONSTRUCTION, AND ALTERATION OPERATIONS SHALL BE APPLIED TO THIS PROJECT.
- PROVIDE EXPANSION AND CONTROL JOINTS IN ALL WORK AS PER PRODUCT MANUFACTURER'S STANDARDS.
- ALL DISSIMILAR MATERIALS SHALL BE ISOLATED FROM EACH OTHER TO AVOID GALVANIC CORROSION.
- PROVIDE ACCESS PANELS AS REQUIRED BY APPLICABLE CODES AND AS REQUIRED FOR MECHANICAL EQUIPMENT AND PLUMBING WORK. ALL ACCESS PANEL LOCATIONS SHALL BE REVIEWED WITH THE ARCHITECT OR ARCHITECTS REPRESENTATIVE PRIOR TO PROCEEDING.
- PIPE DUCTS AND BUSS DUCTS THAT PENETRATE FLOOR SLABS OR WALL PARTITIONS SHALL BE INSTALLED IN A MANNER THAT WILL PRESERVE THE MOISTURE RESISTANCE, FIRE RATING, AIR AND/OR VAPOR BARRIER, AND STRUCTURAL INTEGRITY OF THE BUILDING.
- INTERIOR PARTITION MOVEMENT CONTROL: (A) VERTICAL CONTROL JOINTS FOR ANY WALL ARE TO OCCUR AT NOT MORE THAN 30'-0" O.C. IN THE HORIZONTAL DIRECTION. (B) THE TYPICAL MOVEMENT OF THE STRUCTURE DUE TO DEFLECTION AT THE HEAD OF THE WALL CONSTRUCTION RUNNING TO THE UNDERSIDE OF THE STRUCTURE SHALL BE +/- 1/2".
- PROVIDE FIRE RATING INFORMATION PAINTED ON RATED WALLS ABOVE CEILINGS.
- VERIFY ALL ROUGH OPENING REQUIREMENTS FOR PLUMBING FIXTURES PRIOR TO FRAMING WALLS.
- UNLESS NOTED OTHERWISE EXTEND ALL METAL STUD FRAMING TO BOTTOM CORD OF STEEL JOISTS ABOVE. CONTINUE SOUND ATTENUATING INSULATION AND GWB EA SIDE FOR SOUND CONTROL BETWEEN ADJACENT SPACES.
- PROVIDE FLASHING AND ENCLOSURES AS REQUIRED AT NEW MECHANICAL AND ELECTRICAL EXTERIOR WALL PENETRATIONS TO MAINTAIN WATER-TIGHT SEAL AT WALL NEW PENETRATIONS. MATCH ADJACENT WALL MATERIAL FINISH AND COLOR.
- PROVIDE FINISHED END PANELS, FILLERS, SUPPORTS, ETC. REQUIRED FOR A COMPLETE CABINERY INSTALLATION. PROVIDE CUTOUTS, ACCESS PANELS AND REMOVABLE COMPONENTS AS REQUIRED BY NEW OR EXISTING CONDITIONS SUCH AS ELECTRICAL OUTLETS, JUNCTION BOXES, CLEANOUTS, ETC.
- VERIFY MOUNTING HEIGHTS OF ACCESSORIES, EQUIPMENT, DOOR HARDWARE, CASEWORK, ETC., AND PROVIDE SOLID BLOCKING BEHIND ITEMS REQUIRING ANCHORAGE. WHERE MOUNTING HEIGHTS ARE NOT INDICATED, MOUNT ITEMS IN ACCORDANCE WITH RECOGNIZED INDUSTRY STANDARDS, COORDINATE LOCATIONS WITH MANUFACTURER OR SUPPLIER AND REFER MOUNTING HEIGHT QUESTIONS TO ARCHITECT FOR INTERPRETATION.
- PROVIDE SEALANT BETWEEN DOOR FRAME PERIMETERS AND SURROUNDING WALL CONSTRUCTION UNLESS OTHERWISE INDICATED.
- PROVIDE SEALANT BETWEEN INTERIOR AND EXTERIOR WINDOW AND STOREFRONT FRAME PERIMETERS AND SURROUNDING CONSTRUCTION UNLESS OTHERWISE INDICATED.
- PROVIDE SEALANT BETWEEN DISSIMILAR MATERIALS SUCH AS GYPSUM BOARD AND MASONRY, MASONRY AND CONCRETE, COUNTERTOPS AND WALLS, ETC.
- DO NOT BEGIN WORK THAT MAY REQUIRE COORDINATION, SUCH AS CEILING INSTALLATION, PRIOR TO FINAL SUBMITTAL OF MECHANICAL AND ELECTRICAL COORDINATION DRAWINGS TO ARCHITECT NOR PRIOR TO RESOLUTION AND APPROVAL OF COORDINATION ISSUES.
- REFER TO LIFE SAFETY DRAWINGS FOR FIRE-RATED FLOOR, WALL, CEILING AND ROOF LOCATIONS. INSTALL FIRESTOPPING AT PENETRATIONS IN RATED CONSTRUCTION AND AT TOPS OF RATED WALLS.
- CONFIRM QUANTITY, TYPE AND PLACEMENT OF ALL FIRE EXTINGUISHERS WITH THE FIRE MARSHAL. COORDINATE FINAL LOCATIONS WITH THE ARCHITECT PRIOR TO PLACEMENT. FIRE EXTINGUISHER BASIS OF DESIGN: LARSEN SURFACE MOUNTED OR APPROVED EQUAL.
- MANUFACTURERS ARE REFERENCED TO ESTABLISH STYLE, SIZE, COLOR AND MATERIAL CHARACTERISTICS.
- "ALIGN" AS USED IN THESE DOCUMENTS SHALL MEAN TO ACCURATELY LOCATE FINISHED FACES IN THE SAME PLANE AND/OR TO INSTALL NEW CONSTRUCTION ADJACENT TO EXISTING CONSTRUCTION WITHOUT ANY VISIBLE JOINTS OR SURFACE IRREGULARITIES.
- "CLEAR" AS USED IN THESE DOCUMENTS SHALL MEAN THAT THE CONDITION IS NOT ADJUSTABLE WITHOUT APPROVAL OF THE ARCHITECT. CLEAR DIMENSIONS ARE TYPICAL.
- "MAXIMUM" OR "MAX" AS USED IN THESE DOCUMENTS SHALL MEAN THAT THE CONDITION IS SLIGHTLY ADJUSTABLE BUT MAY NOT VARY TO A DIMENSION OR QUANTITY GREATER THAN THAT SHOWN WITHOUT APPROVAL OF THE ARCHITECT.
- "MINIMUM" OR "MIN" AS USED IN THESE DOCUMENTS SHALL MEAN THAT THE CONDITION IS SLIGHTLY ADJUSTABLE BUT MAY NOT VARY TO A DIMENSION OR QUANTITY LESS THAN THAT SHOWN WITHOUT APPROVAL OF THE ARCHITECT.
- "TYPICAL" AS USED IN THESE DOCUMENTS SHALL MEAN THAT THE CONDITION OR DIMENSION IS THE SAME OR REPRESENTATIVE FOR SIMILAR CONDITIONS THROUGHOUT.
- "+/-" AS USED IN THESE DOCUMENTS SHALL MEAN THAT THE DIMENSION OR QUALITY IS SLIGHTLY ADJUSTABLE TO ACCOMMODATE ACTUAL CONDITIONS. FIELD VERIFICATION AND COORDINATION WITH OTHER ELEMENTS AS MIGHT BE NECESSARY.

TETRA TECH
ENGINEERING BUSINESS NO. 2429
www.tetratech.com
201 EAST PINE STREET, SUITE 1000
ORLANDO, FL 32801
TEL: 407.636.3955 FAX: 407.636.3790

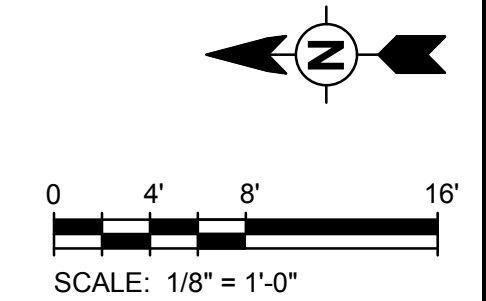
BY	
DATE	
DESCRIPTION	

BID SET

MARK	
DATE	
DESCRIPTION	

ORANGE COUNTY UTILITIES
WESTERN REGIONAL WATER SUPPLY FACILITY IMPROVEMENTS
ARCHITECTURAL ABBREVIATIONS, GENERAL NOTES, AND SYMBOLS

PROJ:	200-10034-18002
DESN:	DG
DRWN:	AAF
CHKD:	JOB



A001

Bar measures 1 inch, otherwise drawing is not to scale

BUILDING CODE AND LIFE SAFETY ANALYSIS

BUILDING DESCRIPTION:
 RENOVATION OF AN EXISTING ONE STORY, 4,002 GSF MAINTENANCE BUILDING WHICH WILL HOUSE ASSOCIATED SPACES REQUIRED FOR THE MAINTENANCE AND OPERATION OF THE WATER SUPPLY PUMPS. THE ASSOCIATED SPACES WITHIN THE FACILITY INCLUDE: EXISTING ELECTRICAL/MECHANICAL ROOMS, PARTS AREA, STORAGE AREAS, DRIVE-THRU BAY, NEW BUSINESS CLERK'S OFFICE AREA AND NEW ACCESSIBLE RESTROOM. THE EXISTING BUILDING IS SLAB ON GRADE WITH LOAD BEARING MASONRY WALLS WITH CFM TRUSSES AND A METAL ROOF DECK WITH A INSULATED MEMBRANE ROOF SYSTEM.

BUILDING LOCATION:
 OWNER: ORANGE COUNTY UTILITIES, WESTERN REGIONAL WATER SUPPLY

ASSUMPTIONS:
 THE BUILDING WILL BE SEPARATED FROM OTHER BUILDINGS TO PREVENT ANY EXPOSURE ISSUES. THE AMOUNT OF HAZARDOUS MATERIALS IN THE BUILDING WILL BE KEPT LESS THAN THE AMOUNTS LISTED IN THE FBC TABLE 307.1(1) AND 307.1(2).

SUMMARY:
 MIXED USE OCCUPANCY (GROUP F-1 MODERATE HAZARD OCCUPANCY AND GROUP B BUSINESS) (FBC 506.5) NON-SEPARATED
 GROUP B/F-1 NO SEPARATION REQUIRED (FBC TABLE 508.4)

TYPE "V-B" UNPROTECTED, NONSPRINKLER, NONCOMBUSTIBLE (FBC TABLE 601)
 1 STORY, PERMITTED (FBC TABLE 503)
 8,500 SF TOTAL AREA, PERMITTED (FBC TABLE 503)
 15 OCCUPANT LOAD, CALCULATED (FBC TABLE 1004.1.1)

APPLICABLE BUILDING CODES

- 2017 FLORIDA BUILDING CODE: BUILDING
- 2017 FLORIDA BUILDING CODE: MECHANICAL
- 2017 FLORIDA BUILDING CODE: PLUMBING
- 2017 FLORIDA FIRE PREVENTION CODE
- 2017 NFPA 101 LIFE SAFETY CODE
- 2017 FLORIDA BUILDING CODE: ACCESSIBILITY
- 2017 FLORIDA BUILDING CODE: ENERGY CONSERVATION
- NFPA 70 (2014) NATIONAL ELECTRICAL CODE
- NFPA 10 (2017) STANDARD FOR PORTABLE FIRE EXTINGUISHERS

BUILDING SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE 2017 FLORIDA BUILDING CODE (FBC) AND LOCAL CODE ORDINANCES.

AGENCIES HAVING JURISDICTION:

AGENCY ORANGE COUNTY DIVISION OF BUILDING AND SAFETY
 ORANGE COUNTY ADMINISTRATION CENTER
 201 S. ROSALIND AVENUE, 1ST FLOOR
 ORLANDO, FLORIDA 32802-2687
 CONTACT: (407) 836-5550, ROBERT C. OLIN, MANAGER

GENERAL INFORMATION

USE AND OCCUPANCY CLASSIFICATION (FBC CHAPTER 3)

USE GROUP:
 MIXED USE OCCUPANCY - NON-SEPARATED, NON-SPRINKLERED
 BUSINESS GROUP "B" (FBC 304.1)
 FACTORY INDUSTRIAL MODERATE-HAZARD GROUP "F-1" (FBC 306.3) NON-SPRINKLERED

GENERAL BUILDING HEIGHTS AND AREAS (FBC CHAPTER 5)

MAXIMUM HEIGHT PERMITTED (FBC TABLE 503): 1 STORY, 40 FEET
 ACTUAL HEIGHT PROPOSED: 1 STORY, 20 FEET 0 INCHES
 MAXIMUM AREA PERMITTED: 8,500 GSF
 ACTUAL AREA PROPOSED: 4,002 GSF

ALLOWABLE HEIGHT AND STORY INCREASE DUE TO AUTOMATIC SPRINKLER SYSTEM (FBC 504.2) - NOT REQUIRED

CONSTRUCTION TYPE (FBC CHAPTER 6)

(FBC TABLE 601)
 TYPE V-B - NONCOMBUSTIBLE /NON-PROTECTED / NON-SEPARATED

BUILDING ELEMENTS

FIRE RESISTANCE RATING FOR BUILDING ELEMENT	(HOURS)
PRIMARY STRUCTURAL FRAMES	0
BEARING WALLS	0
EXTERIOR	0
INTERIOR	0
NONBEARING WALLS AND PARTITIONS	0
INTERIOR	0
FLOOR CONSTRUCTION AND ASSOCIATED SECONDARY	0
ROOF CONSTRUCTION AND ASSOCIATED SECONDARY	0
FIRE SEPARATION DISTANCE X >=30'-0" PROVIDED: 16'-0"	0

BUILDING CODE AND LIFE SAFETY ANALYSIS (CONT.)

MEANS OF EGRESS (FBC CHAPTER 10)

OCCUPANCY LOAD:
 (FBC TABLE 1004.1.2)
 SEE ROOM AREAS (OCCUPANCY SCHEDULE) AND LIFE SAFETY PLAN THIS SHEET

MAXIMUM NUMBER OF DESIGN OCCUPANTS = 15 (ACTUAL NUMBER OF OCCUPANTS = 1 FULL-TIME OCCUPANT AT BUSINESS, 0 FULL-TIME OCCUPANTS AT F-1 OCCUPANCY, SERVICE PERSONNEL ONLY)

MEANS OF EGRESS SIZING
 (FBC 1005.1)

OTHER EGRESS COMPONENTS = OCCUPANCY X 0.2 INCHES = WIDTH = 40 X 0.2 = 8 INCHES

CONTINUITY (FBC 1005.4) COMPLIES
 DISTRIBUTION (FBC 1005.5) COMPLIES

MEANS OF EGRESS ILLUMINATION
 (FBC 1008)

ILLUMINATION REQUIRES (FBC 1008.1) COMPLIES
 ILLUMINATION LEVEL (FBC 1008.2) COMPLIES
 EMERGENCY POWER (FBC 1008.3) COMPLIES
 ILLUMINATION UNDER EMERGENCY POWER (FBC 1008.3.1) COMPLIES

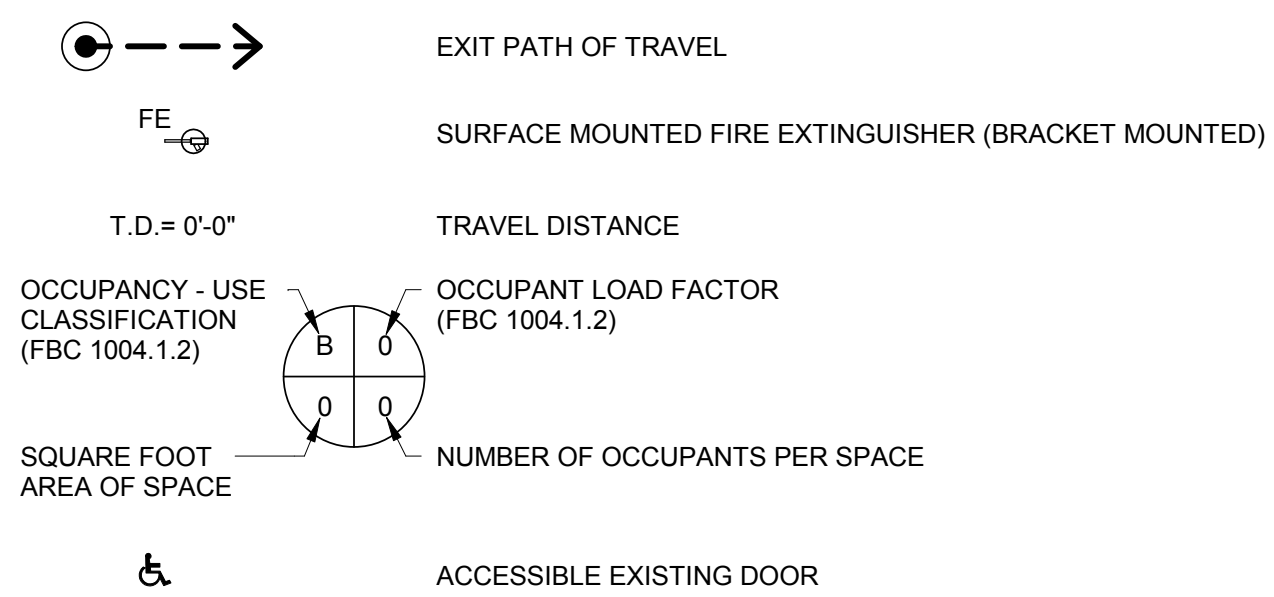
ACCESSIBLE MEANS OF EGRESS
 (FBC 1009)

ACCESSIBLE MEANS OF EGRESS REQUIRED (FBC 1009.1) COMPLIES

EXIT ACCESS
 (FBC 1016)

COMMON PATH OF EGRESS TRAVEL (FBC TABLE 1016.2) <30 OCC, 100 LF
 PERMITTED WITHOUT SPRINKLER SYSTEM (FEET) >30 OCC, 75 LF
 PERMITTED WITH SPRINKLER SYSTEM (FEET) =100 LF
 PROPOSED COMMON PATH OF EGRESS TRAVEL GREATEST LENGTH =50 LF

LIFE SAFETY PLAN LEGEND



BUILDING CODE AND LIFE SAFETY ANALYSIS (CONTINUED)

EXIT AND EXIT ACCESS DOORWAYS
 (FBC 1016)

SPACES WITH ONE EXIT OR EXIT ACCESS DOORWAY (FBC TABLE 1016.1):
 USE GROUP "B/F-1" MAXIMUM LOAD = 15
 NUMBER OF EXITS REQUIRED = 2
 NUMBER OF EXITS PROVIDED = 6

EXIT ACCESS TRAVEL DISTANCE
 (FBC 1017)

EXIT ACCESS TRAVEL DISTANCE (FBC TABLE 1017.1)
 PERMITTED PER USE GROUP "B" WITHOUT SPRINKLER = 200 FEET
 PERMITTED PER USE GROUP "F-1" WITHOUT SPRINKLER = 300 FEET
 ACTUAL PROPOSED TRAVEL EXIT ACCESS TRAVEL DISTANCE = 50 FEET

CORRIDORS
 (FBC 1020)

CORRIDOR FIRE RESISTANCE RATING 44 INCHES
 MINIMUM CORRIDOR WIDTH = 20 FEET WITHOUT SPRINKLER (FBC 1018.4)
 DEAD END CORRIDOR PERMITTED = 50 FEET (FBC 1020.4 EXCEPTION 2)

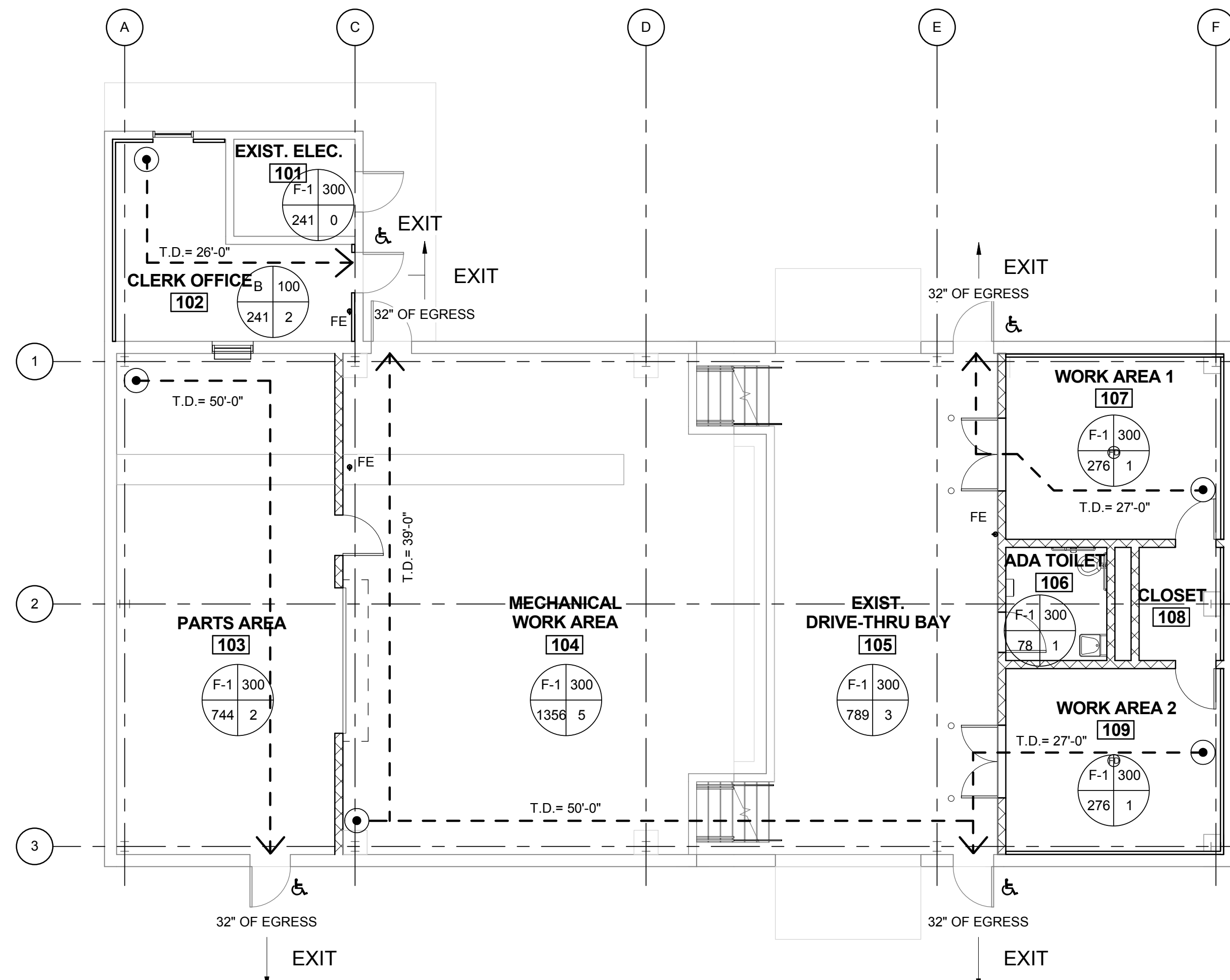
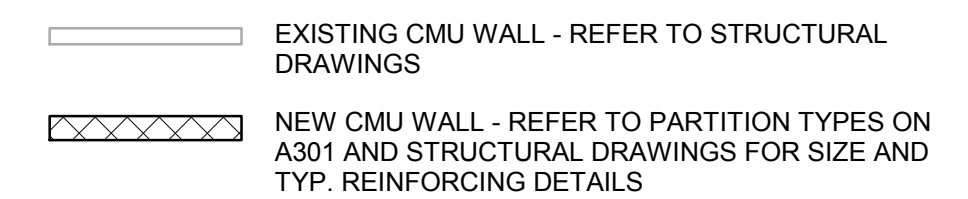
ACCESSIBILITY (FBC CHAPTER 11):
 (FBC 1101.2)

ACCESSIBLE ROUTE (FBC 1104) COMPLIES
 ACCESSIBLE ENTRANCE (FBC 1105) COMPLIES (REFER TO FLOOR PLAN)
 PARKING & PASSENGER LOADING FACILITIES (FBC 1106) COMPLIES
 OTHER FEATURES & FACILITIES (FBC 1109) COMPLIES (REFER TO ARCH DWGS)
 SIGNAGE (FBC 1111) COMPLIES

OCCUPANCY SCHEDULE

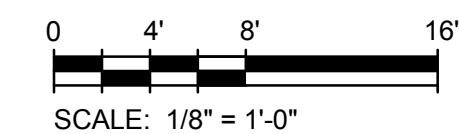
ROOM NO	ROOM NAME	AREA	OCC. CLASS	OCC. LOAD
101	EXIST. ELEC.	80 SF	B	0
102	CLERK OFFICE	241 SF	B	1
103	PARTS AREA	744 SF	F-1	2
104	MECHANICAL WORK AREA	1356 SF	F-1	5
105	EXIST. DRIVE-THRU BAY	789 SF	F-1	3
106	ADA TOILET	78 SF	F-1	1
107	WORK AREA 1	266 SF	F-1	1
108	CLOSET	69 SF	F-1	0
109	WORK AREA 2	267 SF	F-1	1

WALL TYPE LEGEND



LIFE SAFETY FLOOR PLAN

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



Bar measures 1 inch, otherwise drawing is not to scale



www.tetrattech.com
 201 EAST PINE STREET, SUITE 1000
 ORLANDO, FL 32801
 TEL: 407.836.3955 FAX: 407.836.3790

BID SET

BY

MARK DATE DESCRIPTION

ORANGE COUNTY UTILITIES

WESTERN REGIONAL WATER SUPPLY FACILITY IMPROVEMENTS
MAINTENANCE BUILDING LIFE SAFETY PLAN AND CODE REVIEW

PROJ: 200-10034-18002
 DESN: DG
 DRWN: DG
 CHKD: JOB

A003

Copyright: Tetra Tech

Thursday, May 09, 2019 2:15:08 PM DRAWING: O:\Projects\Orlando\IER\10034\200-10034-18002\CAD\sheetfiles\p001 - PLUMBING LEGEND.DWG LAYOUT: P001 USER NAME: DIAL_VICKASH

PLUMBING FIXTURE SCHEDULE

MARK	DESCRIPTION	MANUFACTURER	MODEL	CONNECTIONS				NOTES
				CW	HW	WASTE	VENT	
P1	WATER CLOSET, FLOOR MOUNTED, BACK OUTLET, FLUSH VALVE, 1.28 GPF, ADA	AMERICAN STANDARD	3695.001	1"	-	4"	2"	PROVIDE TOP SPUD 1.28 GPF FLUSH VALVE AMERICAN STANDARD 6047.161.002 OR EQUAL.
P2	LAVATORY, WALL HUNG, 0.5 GPM, ADA	AMERICAN STANDARD	0356.915	1/2"	1/2"	1-1/2"	1-1/2"	PROVIDE WALL HANGER SUPPORT AMERICAN STANDARD 0355.912 AND ELKAY FAUCET #LK422L4
FD1	3" FLOOR DRAIN	ZURN	ZB-415-3NL-5B	1/2"	-	3"	1-1/2"	PROVIDE 1/2" TRAP PRIMER CONNECTION.
TP-3	TRAP PRIMER	PRECISION PLUMBING PRODUCTS	PR-500-DU3	1/2"	-	-	-	USE REQUIRED DISTRIBUTION UNIT FOR MULTIPLE FLOOR DRAINS.

NOTES:
ADA DENOTES AMERICAN WITH DISABILITIES ACT.

WATER HEATER SCHEDULE

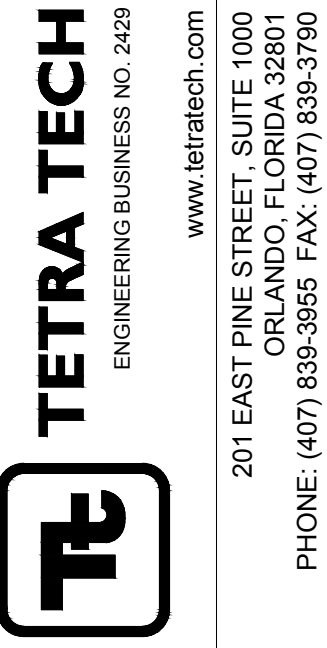
MARK	AREA SERVED AND APPROXIMATE LOCATION	MINIMUM STORAGE CAPACITY (GAL.)	MINIMUM RECOVERY (GPH)	DISCHARGE TEMP. °F	TEMP. RISE °F	ELECTRICAL			TURN ON GPM	MANUFACTURER / MODEL
						TOTAL KW	VOLTS/PHASE	NUMBER OF ELEMENTS		
IWH-1	MAINTENANCE BUILDING RESTROOM	-	-	110°	55°	4.1	208/1	1	0.3	EEMAX EX4208 SL

PLUMBING SYMBOLS

SYMBOL	DESCRIPTION
AFF	ABOVE FINISHED FLOOR
TYP	TYPICAL
VTR	VENT THROUGH ROOF
WHA	WATER HAMMER ARRESTOR
VENT	SANITARY VENT
○	ELBOW UP, DOWN
○	TEE UP, DOWN
⌘	SHUT OFF VALVE
AIR	COMPRESSED AIR LINE
- - -	COLD WATER
- - -	HOT WATER
SAN	SANITARY WASTE
→	CLEANOUT
FCO	FLOOR CLEANOUT
WCO	WALL CLEANOUT
YCO	YARD CLEANOUT
DYCO	DOUBLEYARD CLEANOUT
FD-1	FLOOR DRAIN WITH DESIGNATION, P-TRAP & TRAP PRIMER CONN.
IMVB	ICEMAKER VALVE BOX
P1	PLUMBING FIXTURE DESIGNATION
HB	HOSE BIBB
TP-1	TRAP PRIMER WITH DESIGNATION

GENERAL PLUMBING NOTES:

- ALL EQUIPMENT AND PIPING SHALL BE INSTALLED IN COMPLIANCE WITH THE LATEST VERSION OF THE FLORIDA BUILDING AND PLUMBING CODE.
- ALL INTERIOR FLOOR DRAINS AND OPEN RECEPTACLES WITH TRAPS SHALL BE PROTECTED BY A TRAP PRIMER (SEE SPECIFICATIONS AND PLANS FOR LOCATION AND TYPE.) PROVIDE 1/2" SLOPED LINE TO FLOOR DRAIN. SEE DETAILS ON SHEET P301.
- WATER LINES SHALL NOT BE ROUTED ABOVE ANY ELECTRICAL ROOM OR ELECTRICAL PANELS OR TELEPHONE ROOMS.
- THE CONTRACTOR IS RESPONSIBLE FOR COORDINATION WITH OTHER CRAFTS TO MINIMIZE SPATIAL CONFLICTS.
- ALL PIPING ENTERING AND LEAVING STRUCTURES BELOW GRADE, THROUGH FOUNDATION, BELOW FOOTINGS OR FIRE WALLS SHALL BE SLEEVED AND PACKED AS REQUIRED BY LOCAL AUTHORITIES AND PER A UL RATED ASSEMBLY. ALL SLEEVES ARE NOT INDICATED ON DRAWINGS.
- PROVIDE ACCESS PANELS WITH SQUARE HINGED, LOCKING DOORS FOR ALL VALVES, SHOCK ABSORBERS AND TRAP PRIMERS CONCEALED. TILED WALLS SHALL BE 18-8 STAINLESS STEEL WITH NO. 4 SATIN FINISH SMITH #4762/4767 OR APPROVED EQUAL. GYPSUM BOARD OR BLOCK WALLS SHALL BE PRIMED AND PAINTED TO MATCH SMITH # 4760/4765 OR APPROVED EQUAL. CONTRACTOR SHALL VERIFY ALL FIELD CONDITIONS AND DIMENSIONS BEFORE CONSTRUCTION BEGINS, INCLUDING SEWER INV. ELEV. CONTACT RPR SHOULD DISCREPANCIES OCCUR.
- CONTRACTOR TO PROVIDE P-TRAPS AND DRAINS FOR ALL LAVATORIES AND SINKS.



MARK	DATE	DESCRIPTION

Client: ORANGE COUNTY UTILITIES
Proj. Loc.: ORANGE COUNTY, FL
WESTERN REGIONAL WATER SUPPLY FACILITY
IMPROVEMENTS PHASE 3A - PART 2
**PLUMBING LEGEND,
NOTES AND SCHEDULE**

Project No.: 200-10034-18002
Designed By: VBD
Drawn By: VBD
Checked By: MGS

P001

Thursday, May 09, 2019 2:03:52 PM DRAWING: C:\Projects\Orlando\10034-18002\CAD\SheetFiles\M001 - HVAC LEGENDS.DWG LAYOUT: M001 USER NAME: DIAL, VICKASH

GRAPHIC SYMBOLS FOR PIPING AND EQUIPMENT ITEMS

	VENT TO ROOF
	PIPE ANCHOR
	EXPANSION JOINT
	EXPANSION COMPENSATOR
	FLEXIBLE CONNECTOR
	FLOW ELEMENT
	PIPE GUIDE
	YARD HYDRANT (SEE DETAIL)
	PRESSURE REDUCING STATION (SEE DETAIL)
	PUMP SEALING WATER CONNECTION (SEE DETAIL)
	SAMPLE FUNNEL (SEE DETAIL)
	AIR SET ASSEMBLY (SEE DETAIL)
	AIR TO VALVE OPERATOR (SEE DETAIL) (THROTTLING SERVICE)
	AIR TO VALVE OPERATOR (SEE DETAIL) (OPEN SHUT SERVICE)
	IN LINE STATIC MIXER
	PULSATION DAMPENER W/PRESSURE GAUGE (SINGLE DIAPHRAGM)
	CHEMICAL SEAL W/PRESS GAUGE
	EDUCTOR
	INJECTOR
	TRAP (STEAM OR AIR MOISTURE)
	QUICK DISCONNECT (AIR) (3/4")
	ELBOW UP
	ELBOW DOWN
	TEE UP
	TEE DOWN
	REDUCER-CONCENTRIC
	REDUCER-ECCENTRIC
	WYE STRAINER
	BASKET STRAINER
	UNION
	METER (TOTALIZING)
	ROTAMETER
	STEEL WALL SLEEVE
	EMERGENCY SHOWER AND EYEWASH
	PIPING (BELOW SLAB)
	FLOOR DRAIN
	FLOOR DRAIN W/SEDIMENT BUCKET
	FLOOR SINK
	PUMP BASE DRAIN
	EQUIPMENT DRAIN
	CLEANOUT-FLOOR
	CLEANOUT-HORIZONTAL
	ROOF DRAIN
	PIPE TO DRAIN
	CENTRIFUGAL PUMP
	IN-LINE PUMP
	INSTRUMENT AIR PNEUMATIC SIGNAL
	ELECTRIC
	INSTRUMENT CAPILLARY TUBING
	BACKFLOW PREVENTER
	CONNECTION TO EXISTING

GRAPHIC SYMBOLS FOR INSTRUMENTATION

	PANEL MOUNTED INSTRUMENT (INSIDE)
	PANEL MOUNTED INSTRUMENT (FACE)
	LOCALLY MOUNTED INSTRUMENT
	FLOW ELEMENT
	FLOW INDICATOR
	LEVEL ELEMENT
	LOW WATER CUT-OFF
	PRESSURE INDICATOR
	PRESSURE SWITCH
	TEMPERATURE INDICATOR
	TEMPERATURE INDICATOR CONTROLLER
	TEMPERATURE TRANSMITTER

GRAPHIC SYMBOLS FOR VALVES

	TRIPLE DUTY VALVE
	GATE VALVE
	GLOBE VALVE
	BALL VALVE
	BUTTERFLY VALVE
	PLUG VALVE / CORPORATION COCK
	BALANCING VALVE
	PET COCK
	CHECK VALVE
	PLUG VALVE - GAS
	STOP AND CHECK VALVE
	PINCH OR DIAPHRAGM VALVE
	AUTO-FLOW CONTROL VALVE
	ANGLE OR NEEDLE VALVE
	PRESSURE RELIEF VALVE
	THREE WAY VALVE
	TEMPERING VALVE
	SOLENOID OPERATED VALVE
	PRESSURE REGULATING VALVE (SELF CONTAINED)
	MOTORIZED CONTROL VALVE (OPEN-SHUT, THROTTLING)
	PNEUMATIC OPERATED CONTROL VALVE (OPEN-SHUT, THROTTLING)
	BACKPRESSURE VALVE
	HOSE BIBB (3/4")
	FLUSHING HOSE BIBB (1-1/2")
	SILL COCK (3/4")
	FLUSHING CONNECTION (ON PIPE) 1-1/2"
	ANTISIPHON VALVE

GRAPHIC SYMBOLS FOR HEATING, VENTILATION, & AIR CONDITIONING

	UNIT HEATER (DOWNBLAST)
	UNIT HEATER (HORIZONTAL)
	THERMOSTAT
	POWER OR GRAVITY ROOF VENTILATOR-EXHAUST (FLOOR PLAN BELOW ROOF)
	POWER OR GRAVITY ROOF VENTILATOR-INTAKE (FLOOR PLAN BELOW ROOF)
	POWER OR GRAVITY ROOF VENTILATOR-(ROOF PLAN)
	DUCT, (FIRST FIGURE, SIDE SHOWN SECOND FIGURE, SIDE NOT SHOWN)
	DUCT SECTION (EXHAUST OR RETURN)
	DUCT SECTION (SUPPLY)
	INCLINED DROP IN RESPECT TO AIR FLOW, TOP FLAT
	INCLINED RISE IN RESPECT TO AIR FLOW, BOTTOM FLAT
	SPLITTER DAMPER
	TURNING VANES
	AIR EXTRACTOR
	ACOUSTICAL LINING
	FLEXIBLE CONNECTION
	FLEXIBLE CONNECTION
	SUPPLY AIR DIFFUSER
	SUPPLY AIR REGISTER
	RETURN OR EXHAUST AIR REGISTER
	AUTOMATIC AIR DAMPER MOTOR OPERATED
	DAMPER AS SPECIFIED
	VOLUME DAMPER
	FIRE STOP (DAMPER) VERTICAL INSTALLATION IN PLAN
	HEAT STOP HORIZONTAL INSTALLATION IN PLAN
	FIRE STOP (DAMPER) HORIZONTAL INSTALLATION IN SECTION
	CENTRIFUGAL FAN
	IN LINE FAN
	WALL EXHAUST FAN W/DAMPER
	LOUVERS AND SCREEN
	LOUVERS & SCREEN WITH DAMPER

GRAPHIC SYMBOLS FOR TEMPERATURE CONTROL

	TEMPERATURE INDICATOR
	DAMPER OPERATOR
	TEMPERATURE TRANSMITTER
	FIRESTAT
	FREEZESTAT
	E.P. RELAY
	TEMPERATURE CONTROLLER
	RELAY
	CONTROLLER
	SMOKE DETECTOR
	PANEL MOUNTED DEVICES
	NIGHT THERMOSTAT

GRAPHIC SYMBOLS FOR GENERAL ITEMS

	DEMOLITION
	ABANDON IN PLACE

HVAC ABBREVIATIONS

ACC	AIR COOLED CONDENSING UNIT
AD	AUTOMATIC DAMPER
AHU	AIR HANDLING UNIT
B	BOILER
P	PUMP
CA	COMBUSTION AIR
CC	CABINET CONVECTOR
CU	CONDENSING UNIT
EA	EXHAUST AIR
EF	EXHAUST FAN
ER	EXHAUST AIR REGISTER
EUH	ELECTRIC UNIT HEATER
FF	FORCE FLOW CONVECTOR
FT	FIN TUBE
GUH	GAS UNIT HEATER
HR	HEAT RECOVERY UNIT
HRC	HEAT RECOVERY COIL
HV	HEATING AND VENTILATING UNIT
HVAC	HEATING VENTILATING AND AIR CONDITIONING
L	LOUVER
OA	OUTSIDE AIR
RA	RETURN AIR
RR	RETURN AIR REGISTER
SA	SUPPLY AIR
CD	SUPPLY AIR CEILING DIFFUSER
SF	SUPPLY FAN
TCC	TEMPERATURE CONTROL CONTRACTOR
TCF	TEMPERATURE CONTROL PANEL
UH	UNIT HEATER
VAV	VARIABLE AIR VOLUME UNIT
WCC	WATER COOLED CONDENSING UNIT

DUCTWORK NOTES:

- ALL DUCTWORK IS SHOWN AS FREE AREA INSIDE DIMENSIONS.
- USE 45 DEG. TAPS FOR ROUND TO ROUND TAKE OFF'S PROVIDE VOLUME DAMPER AT EACH TAKE OFF.
- DO NOT CONSTRUCT OR INSTALL TAPS OUT OF REDUCERS, TEES AND OR ELBOWS.
- ALLOW FOR FIELD MEASURED OFFSETS OR TRANSITIONS, ELBOWS ETC.
- SUPPORT ALL FLEXIBLE DUCTWORK AS SHOWN IN SMACNA FIGURE 3-9, 1985, BUT NOT LESS THAN 6.0' CENTERS.
- DO NOT USE FLEX DUCT IN EXPOSED AREAS. MAXIMUM FLEX DUCT LENGTH TO DIFFUSERS SHALL NOT EXCEED FIVE FEET. MAXIMUM FLEX DUCT LENGTH AT ANY OTHER CONNECTION SHALL NOT EXCEED TWO FEET. FLEX DUCT SHALL NOT BE USED FOR ELBOWS.
- GRILLES, REGISTERS AND DIFFUSERS CONNECTED BY FLEXIBLE DUCT SHALL BE SUPPORTED INDEPENDENTLY OF THE FLEXIBLE DUCT.
- ELBOWS SHALL BE 90 DEG. ELLS WITH DOUBLE THICKNESS TURNING VANES OR WHERE SPACE PERMITS RADIUS FITTING WITH CENTERLINE RADIUS EQUAL TO 1.5 TIMES THE DUCT WIDTH CENTERLINE. NO OTHERS WILL BE ALLOWED.
- COORDINATE FINAL LOCATION OF ALL REGISTERS, GRILLES, DIFFUSERS ETC. WITH ARCHITECTURAL DRAWINGS AND LIGHTING PLANS.

GENERAL NOTES:

- THESE DRAWINGS ARE SCHEMATIC IN NATURE AND ARE NOT INTENDED TO SHOW ALL POSSIBLE CONDITIONS. IT IS INTENDED THAT A COMPLETE SYSTEM BE PROVIDED WITH ALL NECESSARY EQUIPMENT, APPURTENANCES, AND CONTROLS, COMPLETELY COORDINATED WITH ALL DISCIPLINES. ALL PARAMETERS GIVEN IN THESE DOCUMENTS SHALL BE STRICTLY CONFORMED WITH. ANY ITEMS AND LABOR REQUIRED FOR A COMPLETE SYSTEM IN ACCORDANCE WITH ALL APPLICABLE CODES, STANDARDS, AND THESE CONTRACT DOCUMENTS SHALL BE FURNISHED WITHOUT OCCURRING ANY ADDITIONAL COST TO THE OWNER. CAREFULLY REVIEW ALL CONTRACT DOCUMENTS AND THE DESIGN OF OTHER TRADES BEFORE PREPARING SHOP DRAWINGS.
- ALL DUCTWORK SHALL BE MOUNTED WITHIN 12-24 INCHES OF CEILINGS EXCEPT TO AVOID INTERFERENCES WITH OTHER CONSTRUCTION.
- COORDINATE EQUIPMENT AND PIPING WITH ALL OTHER DISCIPLINES AND TRADES. MAKE ALL OFFSETS AND TRANSITIONS TO COORDINATE WITH OTHER TRADES WITHOUT ANY ADDITIONAL EXPENSE TO THE OWNER.
- COORDINATE THE EXACT LOCATION AND SIZE OF ALL ROOF, WALL, AND SLAB PENETRATIONS WITH THE ARCHITECTURAL DRAWINGS.
- MAINTAIN PIPING A MINIMUM OF 7'-0" A.F.F. IN ALL MECHANICAL ROOMS. ALL PIPING SHALL BE LOCATED AS HIGH AS POSSIBLE.
- ELECTRICAL CONTRACTOR TO VERIFY CONTROL VOLTAGES WITH EQUIPMENT AND PROVIDE ACCORDINGLY.
- MECHANICAL CONTRACTOR SHALL VERIFY NUMBER OF CIRCUITS REQUIRED WITH CONTROLS CONTRACTOR. MECHANICAL CONTRACTOR IS RESPONSIBLE FOR COMMUNICATING THIS REQUIREMENT WITH THE ELECTRICAL CONTRACTOR. ALL CIRCUITS FOR CONTROLS SHALL BE PROVIDED BY ELECTRICAL CONTRACTOR.
- A SUFFICIENT NUMBER OF UNIONS SHALL BE PROVIDED AND INSTALLED AT EACH PIECE OF EQUIPMENT TO FACILITATE REMOVAL OF EQUIPMENT WITHOUT HAVING TO CUT PIPE.
- PIPE SIZES SHOULD BE THE SAME SIZE OR LARGER THAN THE OPENING ON THE EQUIPMENT THEY ARE CONNECTED TO.
- PRESSURE TAPS SHALL BE LOCATED ON THE TOP OF PROCESS PIPE LINES.
- SAMPLE AND CHEMICAL TAPS SHALL BE LOCATED ON THE SIDE OF PROCESS PIPE LINES.
- DRAIN TAPS SHALL BE LOCATED ON THE BOTTOM OF PROCESS PIPE LINES.
- MINIMUM CLEARANCE BETWEEN PIPES INCLUDING INSULATION SHALL BE 3".
- SIGNAL AIR LINES SHALL BE ATTACHED TO AIR OPERATED DEVICES WITH FLEXIBLE PLASTIC TUBING.
- ALL INSTRUMENTATION SYMBOLS ARE I.S.A. STANDARDS.
- SHUT-OFF VALVES TO BE FURNISHED AT ALL EQUIPMENT LOCATIONS AND WHERE PIPING ENTERS OR LEAVES STRUCTURES.
- ALL PLUMBING IN FINISHED AREAS SHALL RUN BEHIND CABINET WORK OR IN MASONRY WALLS.
- ALL ROTAMETERS SHALL BE INSTALLED 5'-0" ABOVE FINISH FLOOR TO CENTER OF METER AND VALVES.
- LIGHTER WEIGHT LINES SHOW EXISTING OR NON-MECHANICAL WORK, DARKER LINES SHOW NEW MECHANICAL WORK.
- DENOTES EQUIPMENT, PIPE & DUCT AREAS OF DEMOLITION.
- UNIT HEATERS TO BE INSTALLED 8'-0" A.F.F. UNLESS NOTED OTHERWISE.
- ALL UNUSED PORTIONS OF LOUVERS FOR MECHANICAL EQUIPMENT OPENINGS SHALL BE BLOCKED-OFF USING INSULATED SHEET METAL PANELS UNLESS OTHERWISE INDICATED.
- ALL MECHANICAL AND PLUMBING WORK SHALL BE IN STRICT COMPLIANCE WITH THE LATEST APPLICABLE EDITION OF THE FLORIDA MECHANICAL CODE AND FLORIDA PLUMBING CODE.

TETRA TECH
ENGINEERING BUSINESS NO. 2429
www.tetra-tech.com
201 EAST PINE STREET, SUITE 1000
ORLANDO, FLORIDA 32801
PHONE: (407) 839-3955 FAX: (407) 839-3790

BID SET

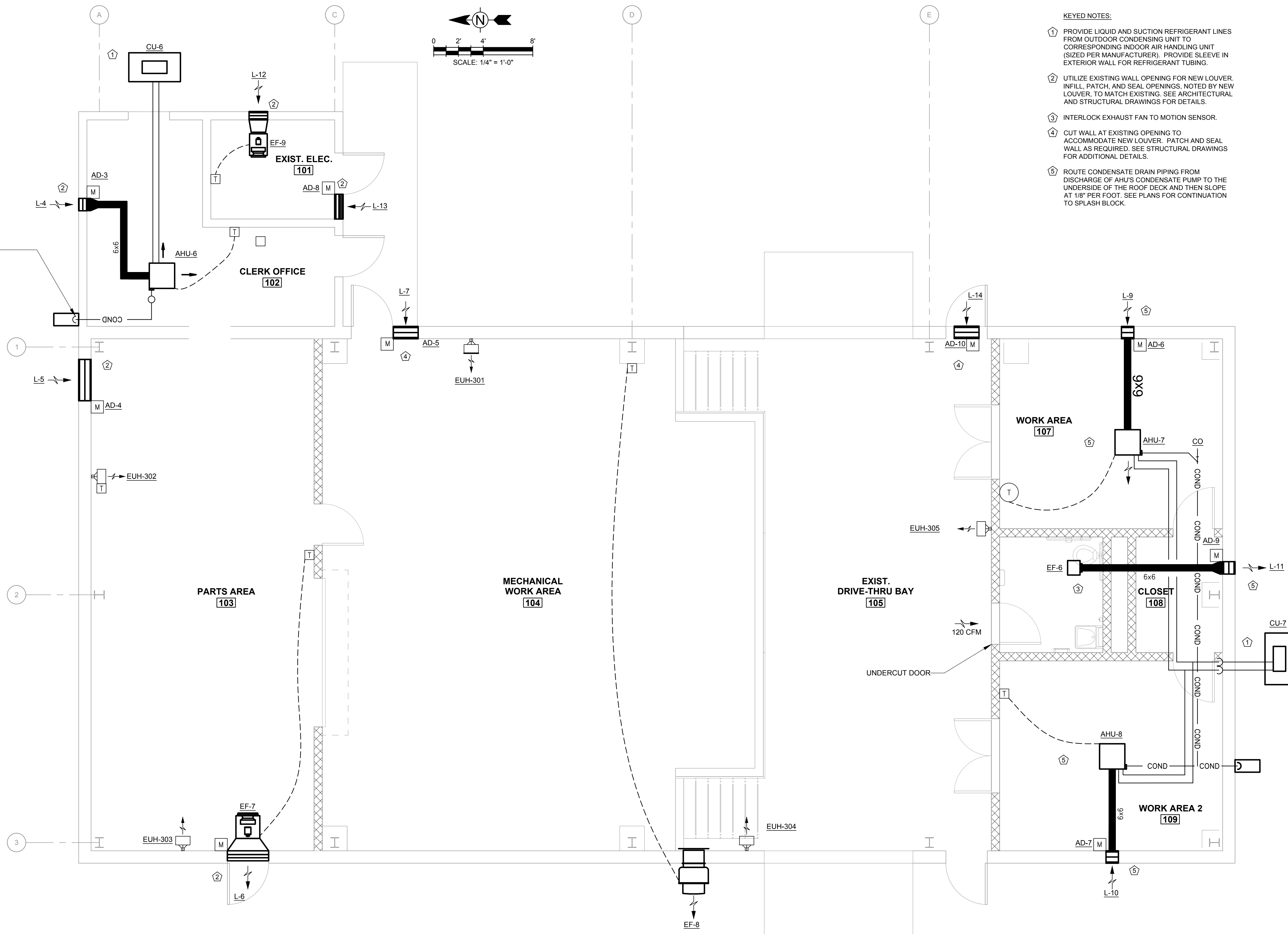
MARK	DATE	DESCRIPTION
GS		

Client: ORANGE COUNTY UTILITIES
Proj. Loc.: ORANGE COUNTY, FL
WESTERN REGIONAL WATER SUPPLY FACILITY
IMPROVEMENTS PHASE 3A - PART 2
HVAC LEGEND

Project No.: 200-10034-18002
Designed By: VBD
Drawn By: VBD
Checked By: MGS

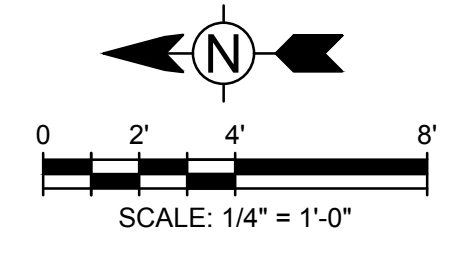
M001

Thursday, May 09, 2019 2:04:42 PM DRAWING: C:\Projects\Orlando\IER\10034\200-10034-18002\CAD\sheetfiles\M102 - MAINTENANCE BLDG HVAC FLOOR PLAN.DWG LAYOUT: M102 USER NAME: DIAL, VICKASH



- KEYED NOTES:**
- ① PROVIDE LIQUID AND SUCTION REFRIGERANT LINES FROM OUTDOOR CONDENSING UNIT TO CORRESPONDING INDOOR AIR HANDLING UNIT (SIZED PER MANUFACTURER). PROVIDE SLEEVE IN EXTERIOR WALL FOR REFRIGERANT TUBING.
 - ② UTILIZE EXISTING WALL OPENING FOR NEW LOUVER, INFILL, PATCH, AND SEAL OPENINGS, NOTED BY NEW LOUVER, TO MATCH EXISTING. SEE ARCHITECTURAL AND STRUCTURAL DRAWINGS FOR DETAILS.
 - ③ INTERLOCK EXHAUST FAN TO MOTION SENSOR.
 - ④ CUT WALL AT EXISTING OPENING TO ACCOMMODATE NEW LOUVER. PATCH AND SEAL WALL AS REQUIRED. SEE STRUCTURAL DRAWINGS FOR ADDITIONAL DETAILS.
 - ⑤ ROUTE CONDENSATE DRAIN PIPING FROM DISCHARGE OF AHU'S CONDENSATE PUMP TO THE UNDERSIDE OF THE ROOF DECK AND THEN SLOPE AT 1/8" PER FOOT. SEE PLANS FOR CONTINUATION TO SPLASH BLOCK.

ROUTE CONDENSATE LINE OUTSIDE AND DOWN TO GROUND LEVEL. TERMINATE MIN. 1'-0" FROM WALL. PROVIDE PIPE SLEEVE THROUGH WALL. TYPICAL OF 3.



MAINTENANCE BUILDING - HVAC FLOOR PLAN
SCALE: 1/4"=1'-0"

TETRA TECH
ENGINEERING BUSINESS NO. 2429
www.tetratech.com
201 EAST PINE STREET, SUITE 1000
ORLANDO, FLORIDA 32801
PHONE: (407) 839-3955 FAX: (407) 839-3790

BID SET

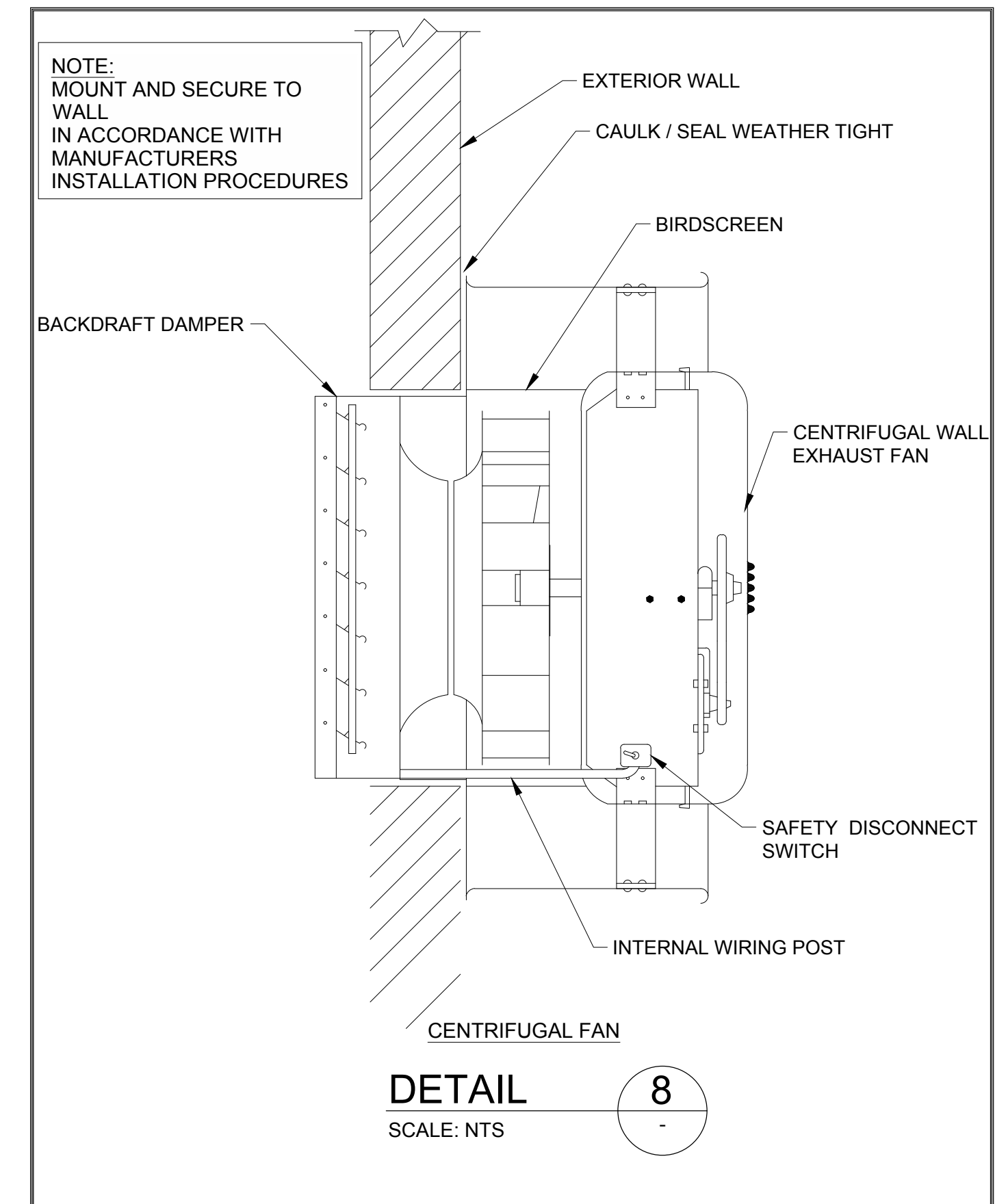
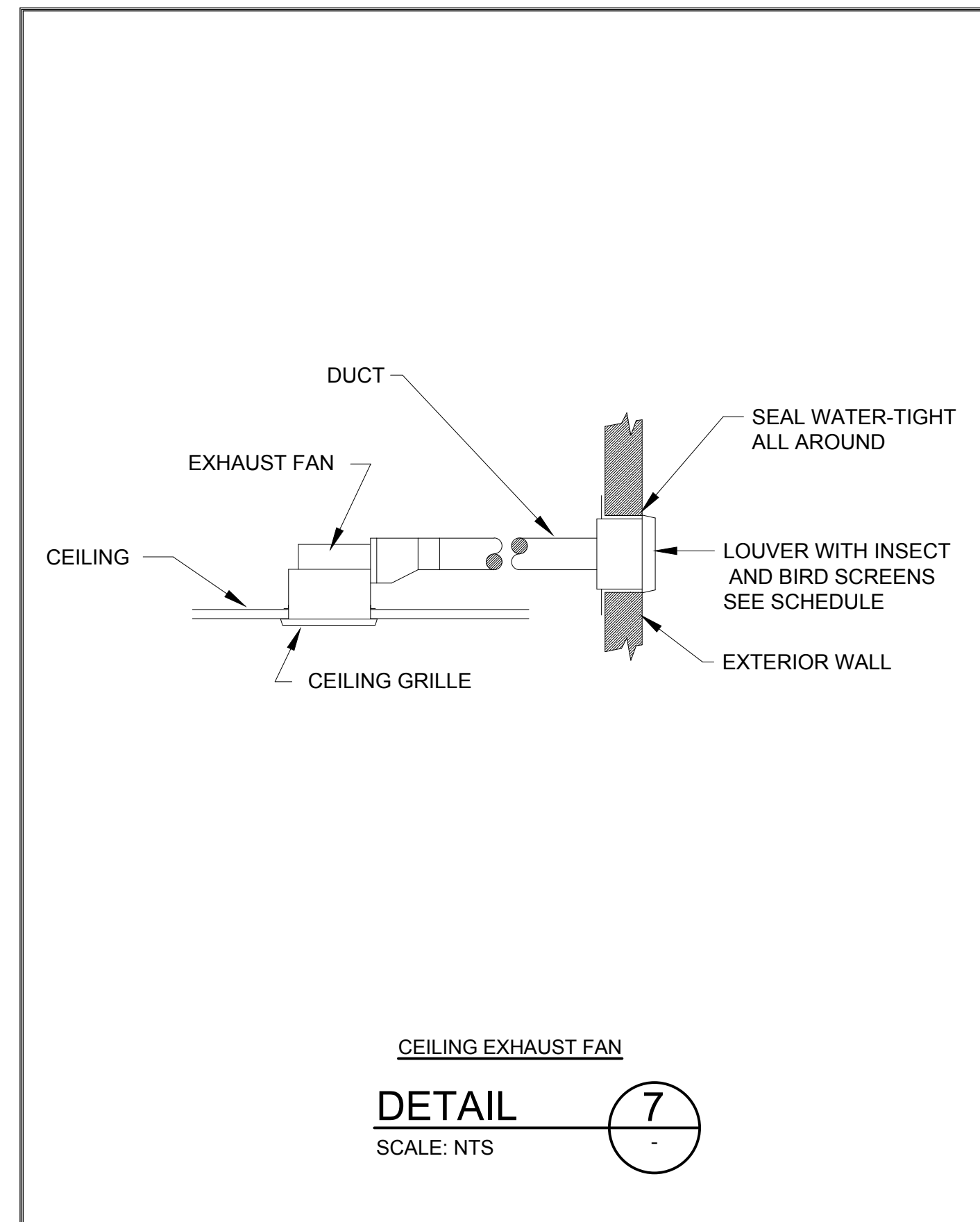
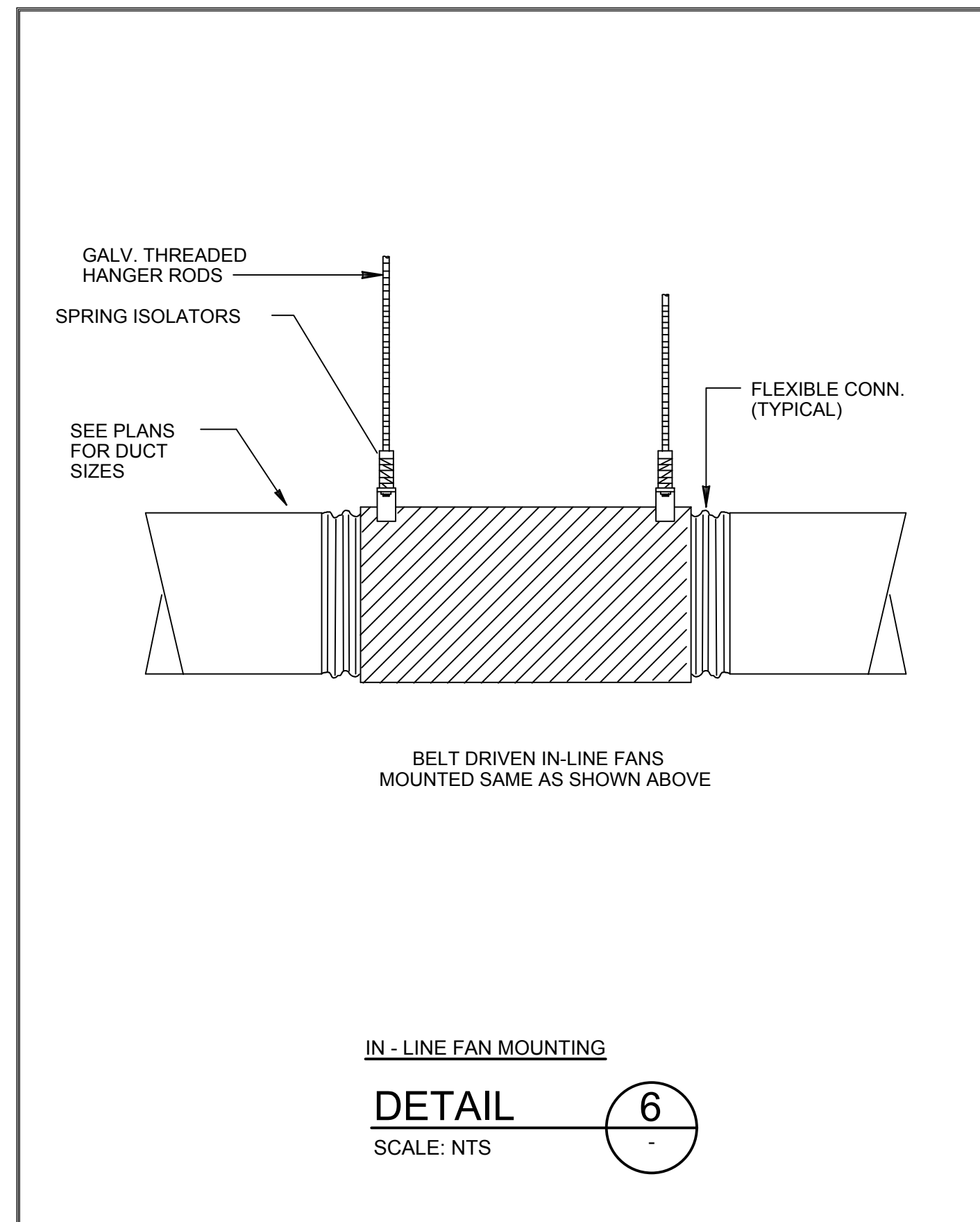
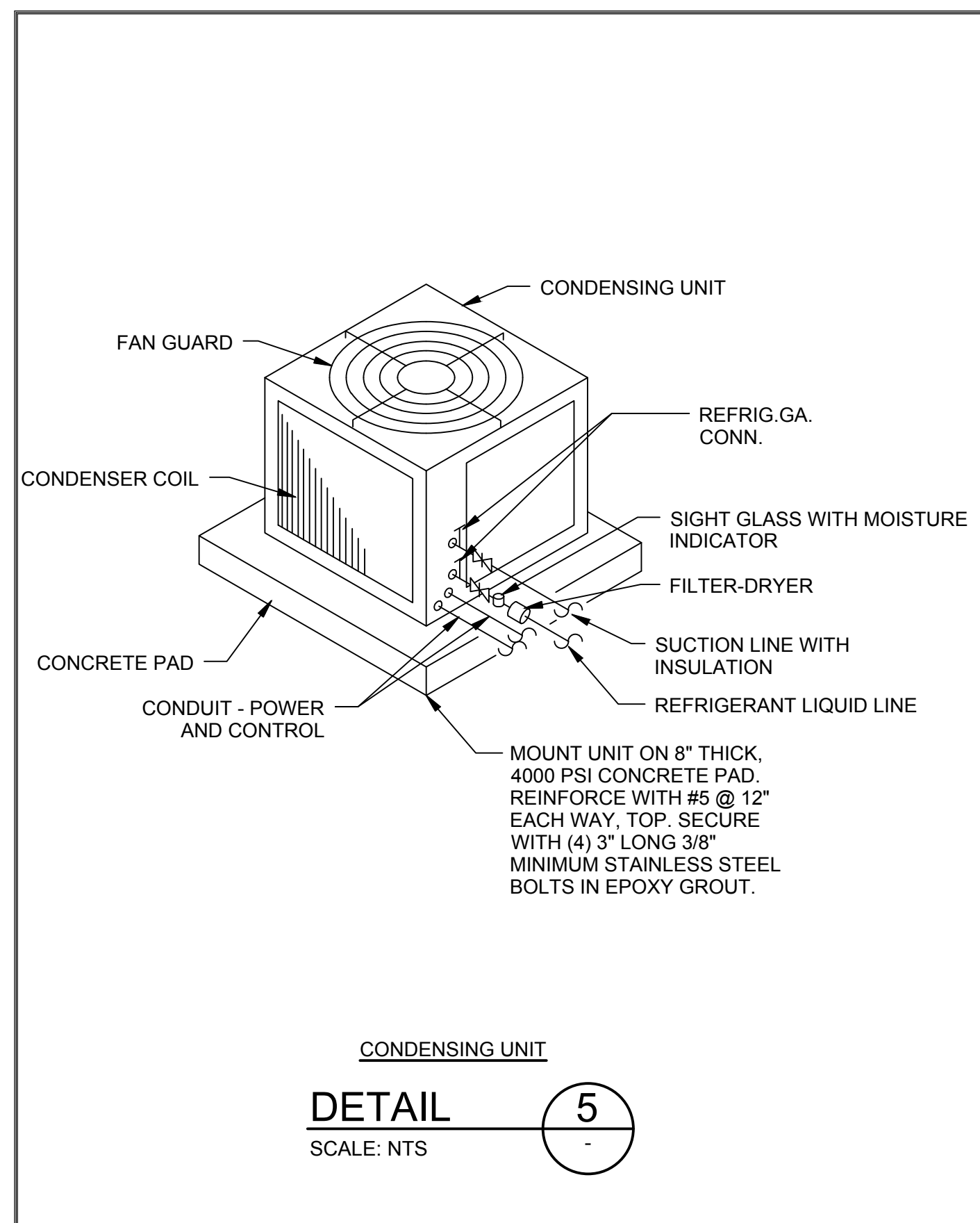
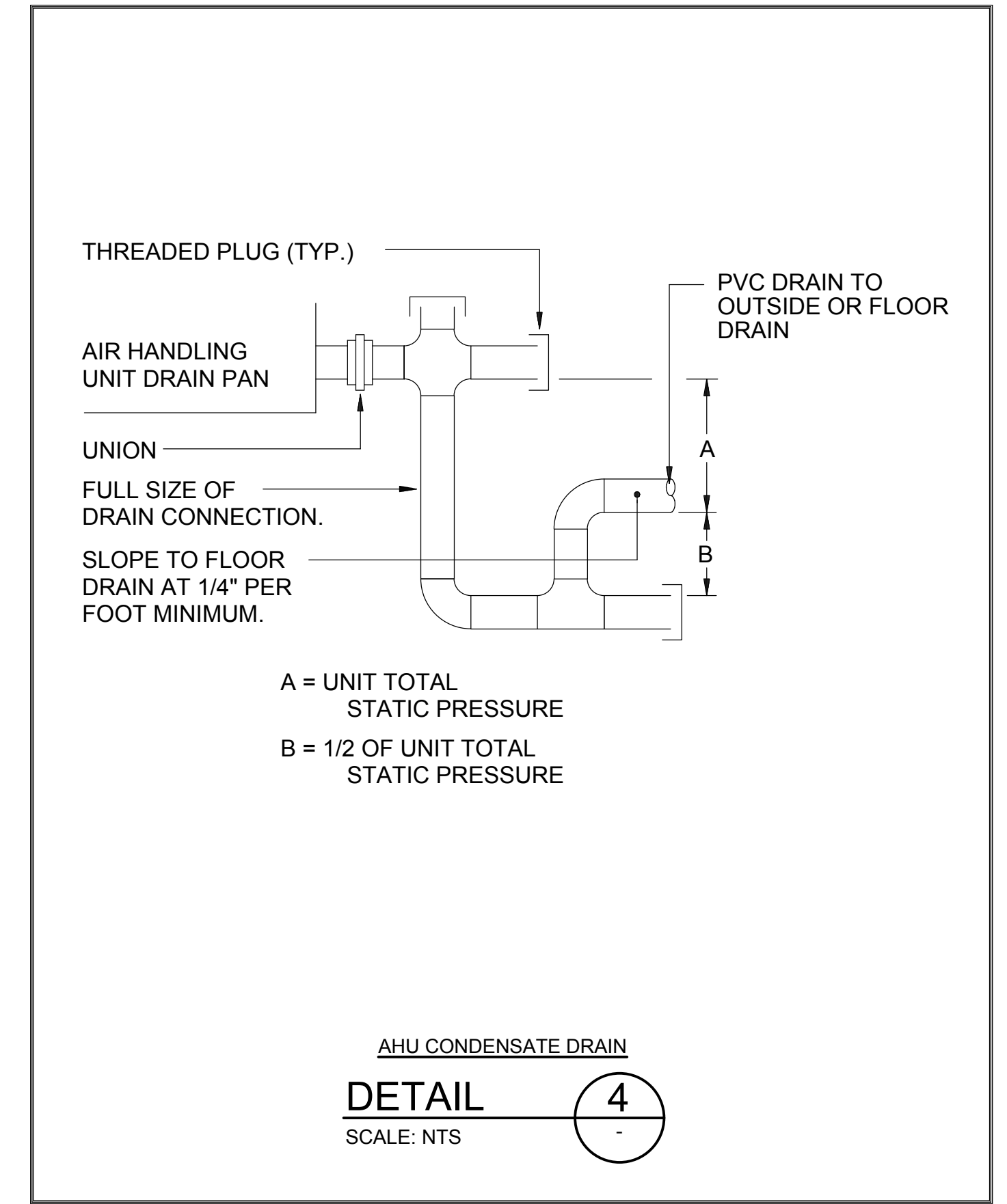
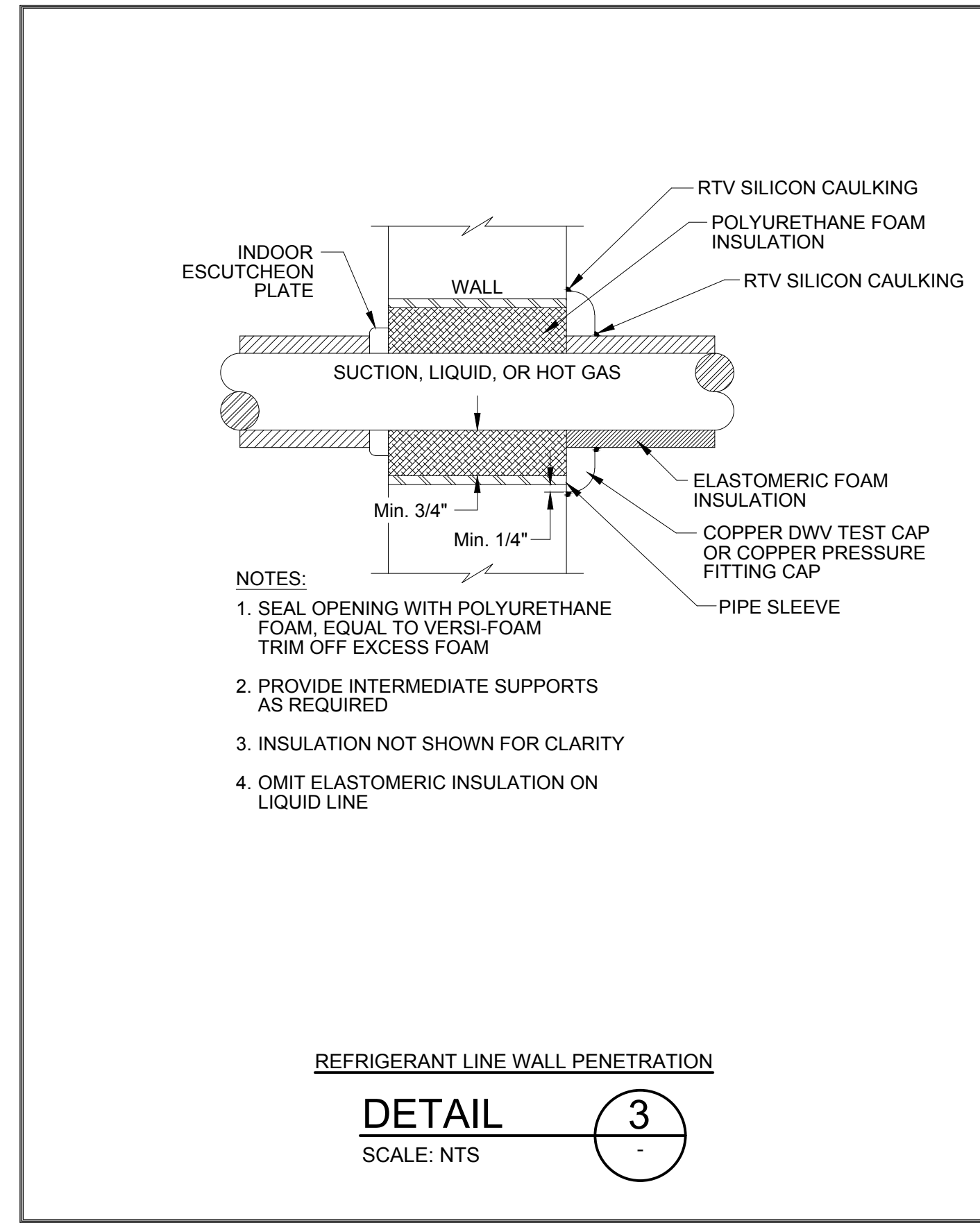
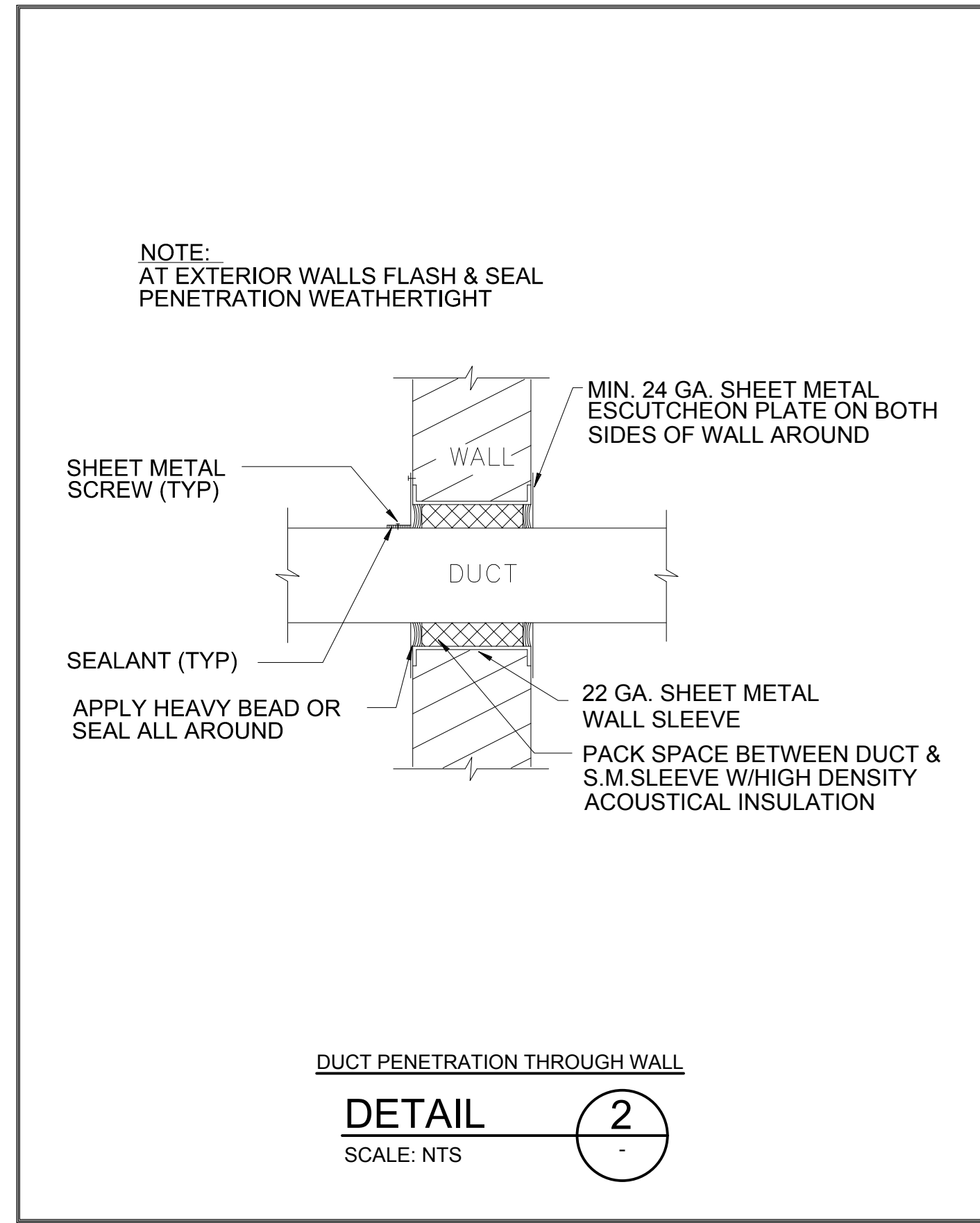
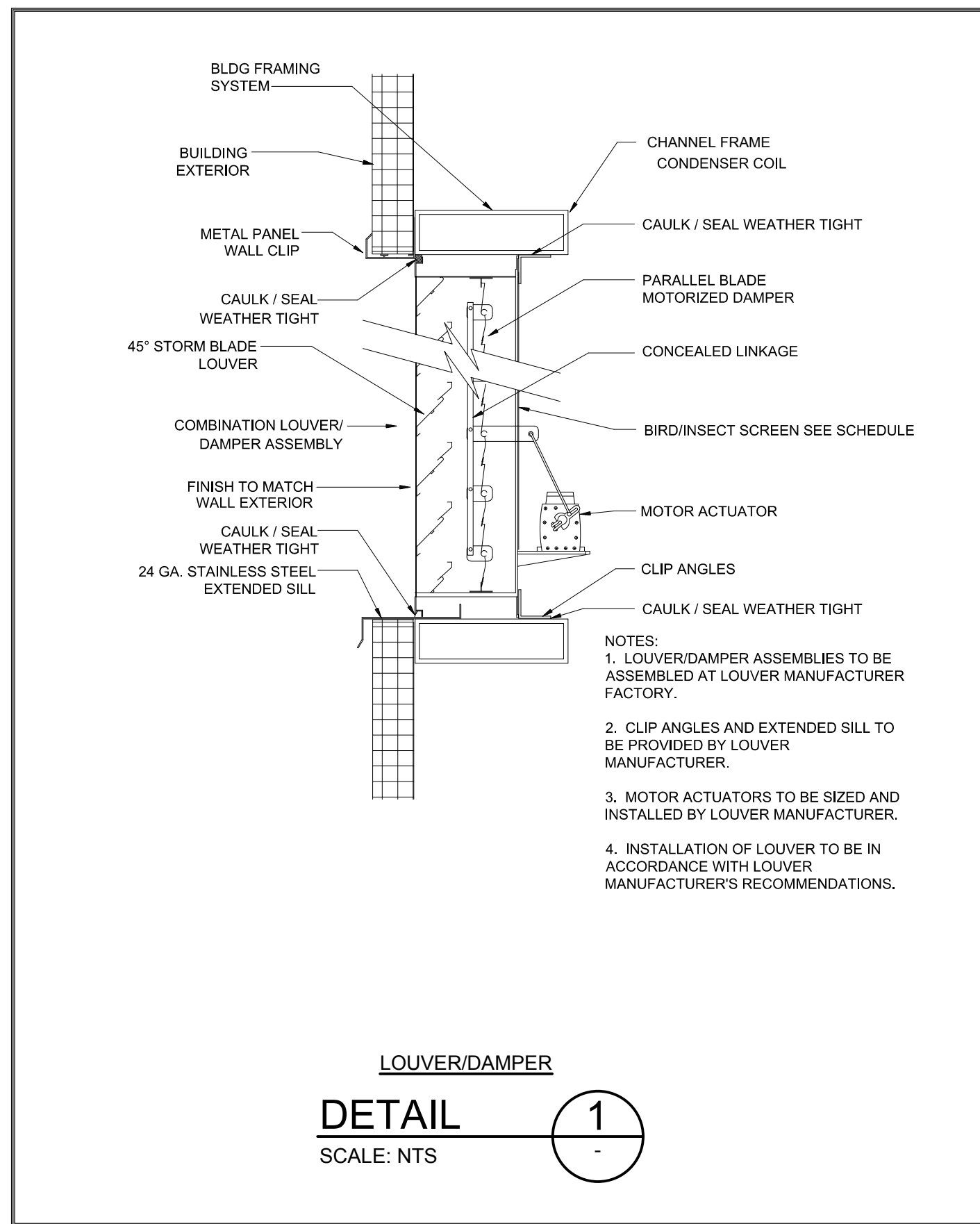
BY	DATE	DESCRIPTION

Client: ORANGE COUNTY UTILITIES
Project: WESTERN REGIONAL WATER SUPPLY FACILITY IMPROVEMENTS PHASE 3A - PART 2
MAINTENANCE BUILDING HVAC FLOOR PLAN

Project No.: 200-10034-18002
Designed By: VBD
Drawn By: VBD
Checked By: MGS

M102

Thursday, May 09, 2019 2:08:01 PM DRAWING: C:\Projects\Orlando\10034-18002\CAD\sheetfiles\M501 - HVAC DETAILS.DWG LAYOUT: M501 USER NAME: DIAL VICKASH



BY	
DATE	
DESCRIPTION	
MARK	

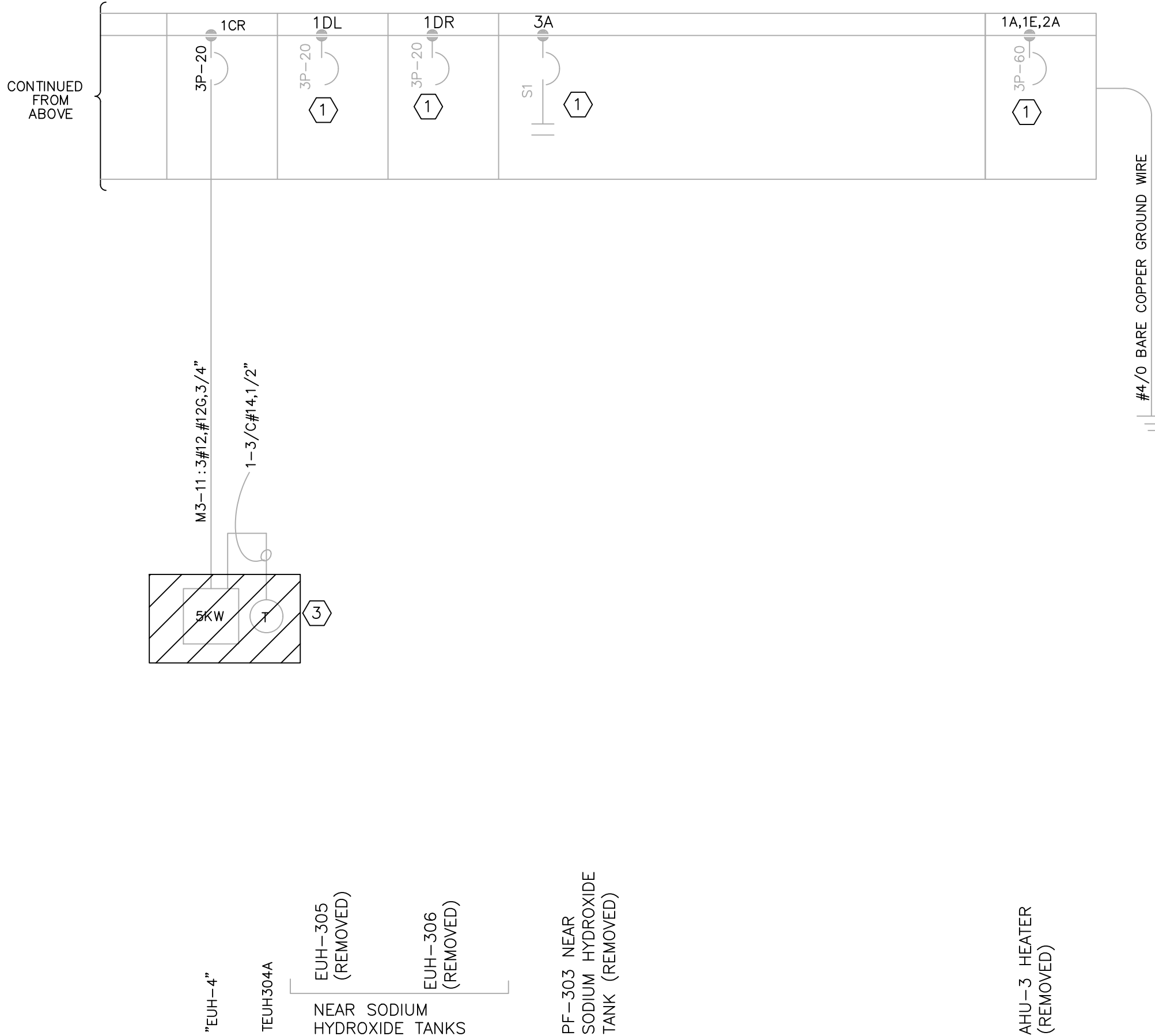
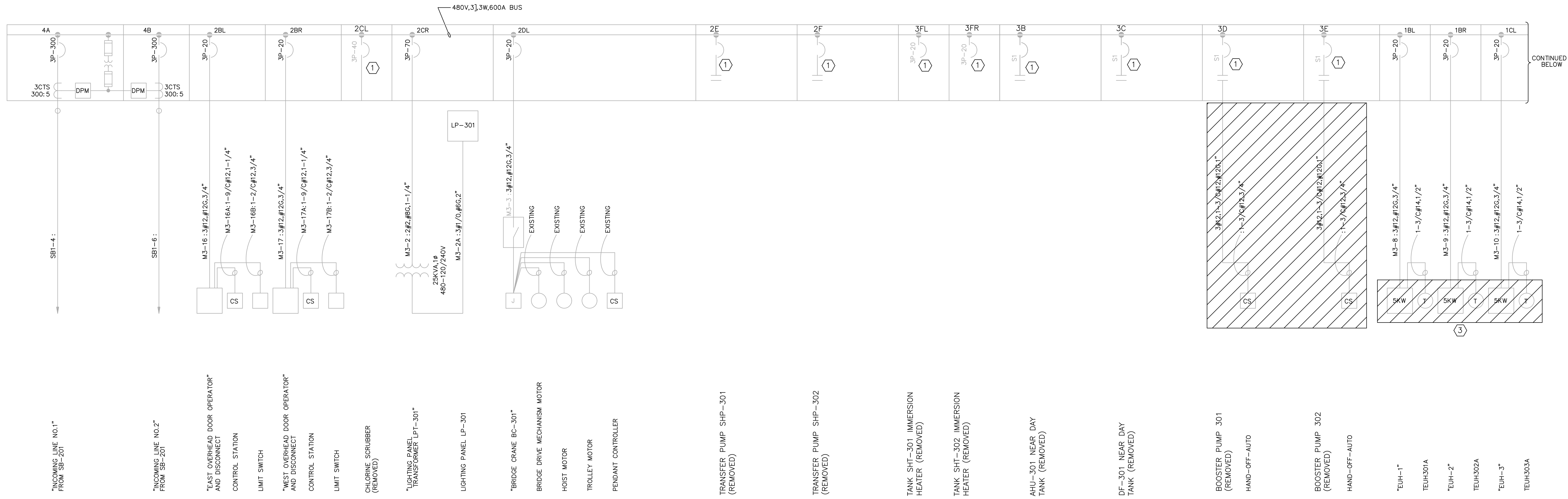
BID SET

BY	
DATE	
DESCRIPTION	
MARK	

Client: ORANGE COUNTY UTILITIES
 Proj. Loc.: ORANGE COUNTY, FL
**WESTERN REGIONAL WATER SUPPLY FACILITY
 IMPROVEMENTS PHASE 3A - PART 2**
HVAC DETAILS
 Project No.: 200-10034-18002
 Designed By: VBD
 Drawn By: VBD
 Checked By: MGS

M501

K
J
I
H
G
F
E
D
C
B
A



EXISTING MCC-301 ONE LINE DIAGRAM
NOT TO SCALE

MANUFACTURER: CUTLER-HAMMER (FREEDOM 2100 MCC)
CAT: PTA00631 IT.020-PVC
600A HORIZONTAL BUS
SECTION 1-3: 300A, SECTION 4: 600A
480V, 3Ø, 3W, 60-HZ
LOCATION: CHEMICAL BUILDING - ELECTRICAL ROOM

KEYED NOTE:

- ① OWNER REMOVED THE EXISTING CHLORINE SCRUBBER CCS-301, TRANSFER PUMPS SHP-301 AND SHP-302, SODIUM HYDROXIDE IMMERSION HEATERS SHT-301 AND SHT-302, "AHU-301 AND ASSOCIATED EQUIPMENT NEAR SODIUM HYDROXIDE DAY TANK", "BOOSTER PUMPS 301 AND 302", "HEATERS EHU-305 AND EHU-306", AND "CHLORINATORS". CONTRACTOR SHALL REMOVE ANY REMAINING CONDUITS, WIRES, DEVICE BOXES, PANELS, ETC. ASSOCIATED WITH ABOVE REMOVED EQUIPMENT. CUT UNDERGROUND CONDUITS FLUSH WITH FLOOR OR WALL AND CAP.
- ② CONTRACTOR SHALL PROVIDE NEW NAME TAG ON MCC-301 AS "SPARE XXX" OR "SPARE SIZE X STARTER" FOR MCC BUCKETS ASSOCIATED WITH THE ABOVE REMOVED EQUIPMENT THAT WILL NOT BE REUSED FOR NEW EQUIPMENT. SEE DRAWING E004 FOR ADDITIONAL INFORMATION.
- ③ EXISTING EHU-1 THRU EHU-4 SHALL BE REPLACED AT SIMILAR LOCATIONS. COORDINATE WITH MECHANICAL CONTRACTOR FOR ACTUAL LOCATION OF REPLACEMENT UNITS AND INSTALL ACCORDINGLY. REMOVE EXISTING WIRES BACK TO SOURCE AND INSTALL NEW WIRES. EXTEND EXISTING CONDUITS AS NEEDED TO NEW UNITS.

SPACE	SPACE	SODIUM HYDROX TANK SHP-301 IMMERSION HEATER	SODIUM HYDROX TANK SHP-302 IMMERSION HEATER	POWER METER	INCOMING LUG 1 (FROM SB-201)
EHU-1 ③	EHU-2 ③	EAST OVERHEAD DOOR	WEST OVERHEAD DOOR	PF-303	POWER METER
EHU-3 ③	EHU-4 ③	CHLORINE SCRUBBER CCS-301	LIGHTING XFMR LPT-301	AHU-301	
EHU-305	EHU-306	BRIDGE CRANE BC-301	AHU-301 HEAT	SF-301	INCOMING LUG 2 (FROM SB-201)
SPACE	SPACE	TRANSFER PUMP SHP-302	BOOSTER PUMP 301		
SPACE	SPACE	TRANSFER PUMP SHP-301	BOOSTER PUMP 302		

① ② **MCC-301 FRONT ELEVATION VIEW**
NOT TO SCALE

TETRA TECH

HILLERS ELECTRICAL ENGINEERING, INC.
28257 STATE ROAD 7, SUITE 100
BOCA RATON, FLORIDA 33428
(561) 451-4886 FAX
(561) 451-4886 FAX
LICENSE NO: EB 0006877

www.tetratech.com
201 EAST PINE STREET, SUITE 1000
ORLANDO, FL 32801
PHONE: (407) 839-3955 FAX: (407) 839-3970

BID SET

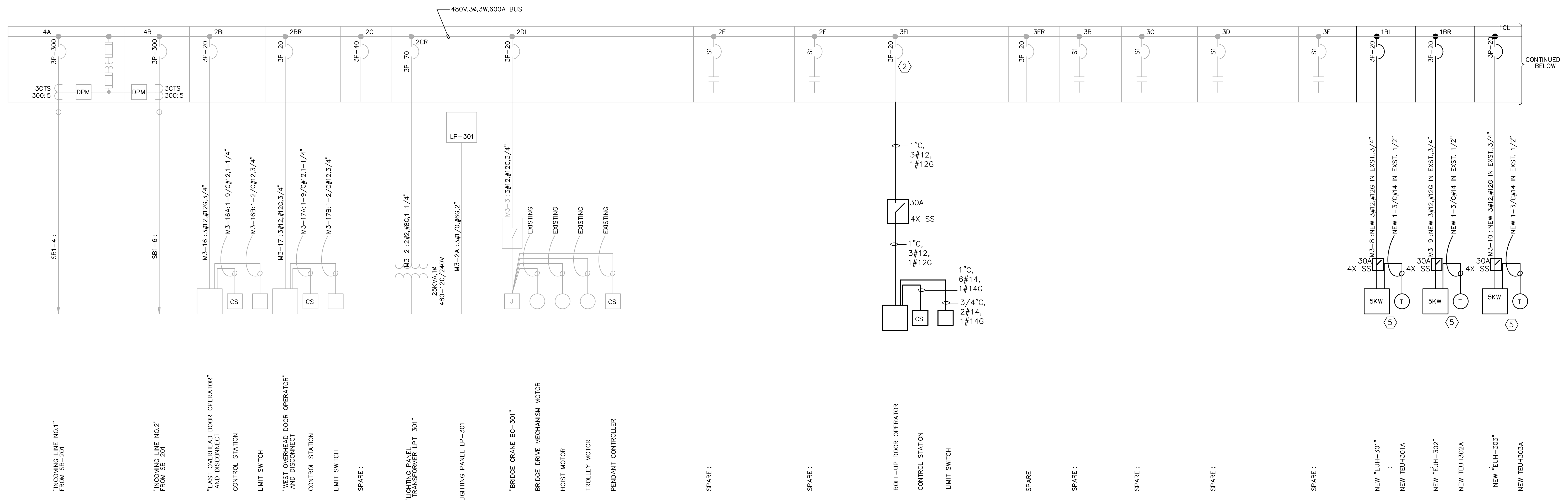
BY	DATE	DESCRIPTION

Client: ORANGE COUNTY UTILITIES
Proj. Loc.: ORANGE COUNTY, FL

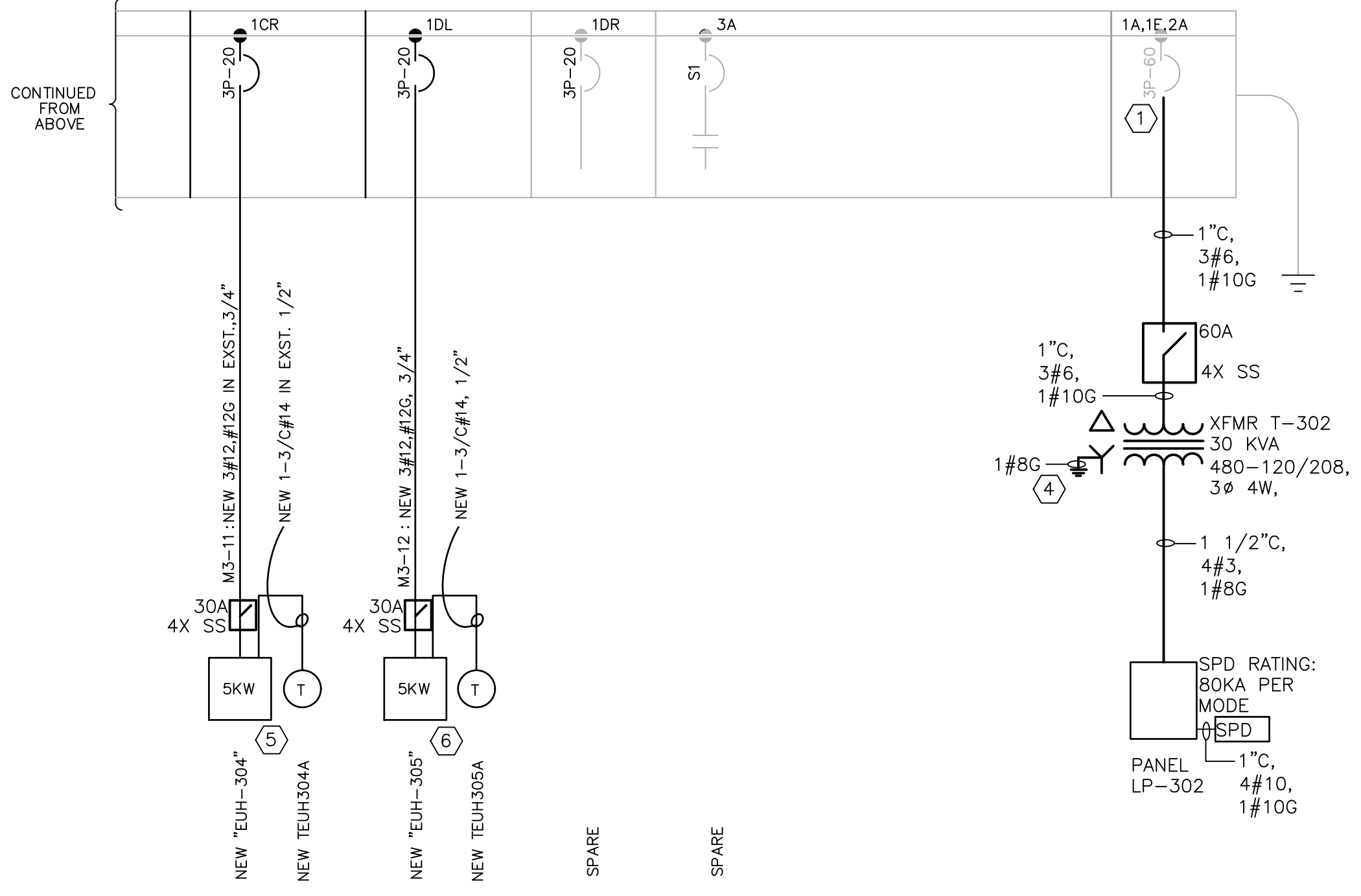
WESTERN REGIONAL WATER SUPPLY FACILITY
IMPROVEMENTS PHASE 3A - PART 2
EXISTING MCC-301 DEMOLITION
ONE LINE DIAGRAM

Project No.:	200-10034-18002
Designed By:	TE
Drawn By:	TN
Checked By:	PFH

E003



MODIFIED MCC-301 ONE LINE DIAGRAM
NOT TO SCALE



MCC-301 LOAD CALCULATION @480V, 3-PHASE

	CONNECTED LOAD	RUNNING LOAD
EXISTING LOADS	104.5 KVA	84.6 KVA
REMOVED LOADS	-59.5 KVA	-47.6 KVA
ROLL-UP DOOR	2.0 KVA	2.0 KVA
NEW T-302/LP-302	30.0 KVA	22.7 KVA
TOTAL LOADS	77.0 KVA	61.7 KVA
AMPS@480V, 3Φ:	92.6 A	74.2 A

MANUFACTURER: CUTLER-HAMMER (FREEDOM 2100 MCC)
CAT: PTA00631 IT.020-FVC
600A HORIZONTAL BUS
SECTION 1-3: 300A, SECTION 4: 600A
480V, 3Φ, 3W, 60-HZ
LOCATION: CHEMICAL BUILDING - ELECTRICAL ROOM

SPACE	ROLLUP DOOR TO PARTS AREA	SPARE 20A	POWER METER	
EUH-301	EUH-302	EAST OVERHEAD DOOR	WEST OVERHEAD DOOR	INCOMING LUG 1 (FROM SB-201)
SPARE SIZE 1 STARTER				
EUH-303	EUH-304	SPARE 40A	LIGHTING XFMR T-301 BREAKER	POWER METER
SPARE SIZE 1 STARTER				
EUH-305	SPARE 20A	BRIDGE CRANE BC-301	LIGHTING XFMR T-302 BREAKER	INCOMING LUG 2 (FROM SB-201)
SPARE SIZE 1 STARTER				
SPACE	SPACE	SPARE SIZE 1 STARTER	SPARE SIZE 1 STARTER	
SPACE		SPARE SIZE 1 STARTER	SPARE SIZE 1 STARTER	

MODIFIED MCC-301 FRONT ELEVATION VIEW
NOT TO SCALE

- KEYED NOTES:**
- CONTRACTOR SHALL USE EXISTING MCC BREAKER 60A-3P-480V BUCKET FOR NEW TRANSFORMER T-302. MAKE ALL NECESSARY CONNECTIONS, TERMINATIONS, MODIFICATION FOR A COMPLETE AND WORKING BREAKER IN PLACE.
 - CONTRACTOR SHALL USE EXISTING MCC BREAKER 20A-3P-480V BUCKET TO CONNECT NEW ROLL-UP DOOR. MAKE ALL NECESSARY CONNECTIONS, TERMINATIONS, MODIFICATION FOR A COMPLETE AND WORKING BREAKER IN PLACE.
 - PROVIDE NEW NAME TAG ON MCC-301 AS SHOWN FOR EQUIPMENT THAT ARE DISCONNECTED/REMOVED OR NEW LOADS ARE CONNECTED.
 - FIELD LOCATE EXISTING GROUNDING GRID AT EXISTING CHEMICAL BUILDING AND CONNECT NEW TRANSFORMER GROUNDING. IF EXISTING GROUNDING GRID CANNOT BE LOCATED, CONTRACTOR SHALL PROVIDE AND INSTALL NEW GROUND ROD OUTSIDE THE BUILDING AND CONNECT NEW TRANSFORMER GROUNDING TO NEW GROUND ROD.
 - EXISTING EUH-1 THRU EUH-4 SHALL BE REPLACED AT SIMILAR LOCATIONS AS SHOWN ON DRAWINGS. COORDINATE WITH MECHANICAL CONTRACTOR FOR ACTUAL LOCATION OF REPLACEMENT UNITS AND INSTALL ACCORDINGLY. REMOVE EXISTING WIRES BACK TO SOURCE AND INSTALL NEW WIRES. REPLACE DEVICE BOXES IF NEEDED. EXTEND CONDUITS AS NEEDED TO NEW UNITS.
 - FURNISH AND INSTALL NEW CONDUITS/WIRES FOR NEW EUH-305 UNIT FROM EXISTING MCC-301. EXISTING 20A BREAKER SHALL BE REUSED FOR NEW EUH-5 UNIT. PROVIDE DEVICE BOX SIMILAR TO OTHER EHU UNITS.



HILLERS ELECTRICAL ENGINEERING, INC.
28257 STATE ROAD 7, SUITE 100
BOCA RATON, FLORIDA 33428
(561) 451-4886 FAX
(561) 451-4886 FAX
LICENSE NO: EB 0006877

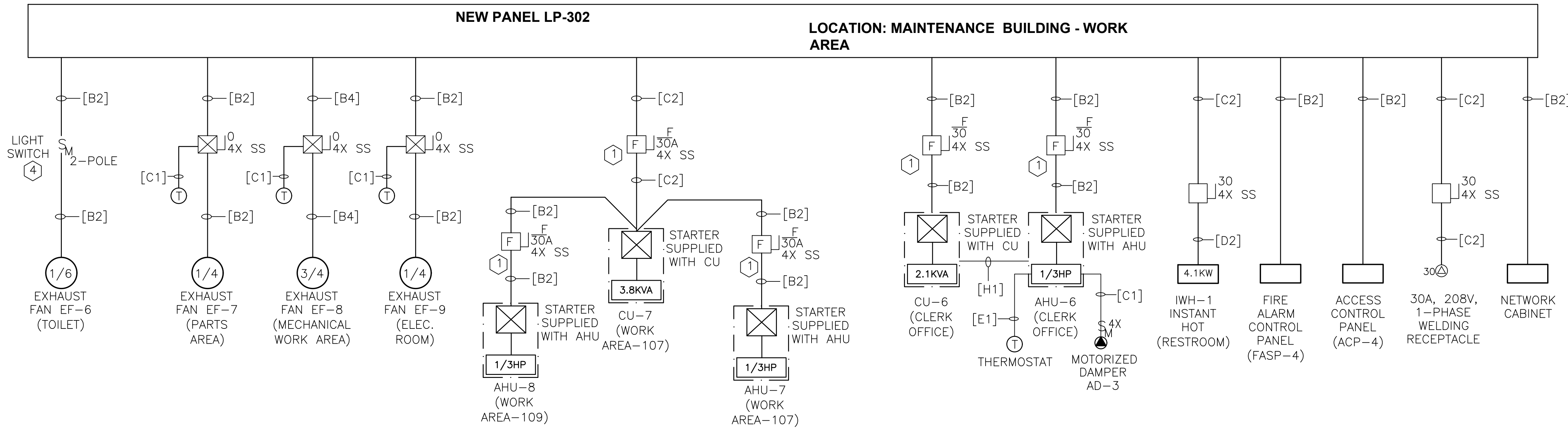
BID SET

BY	DATE	DESCRIPTION

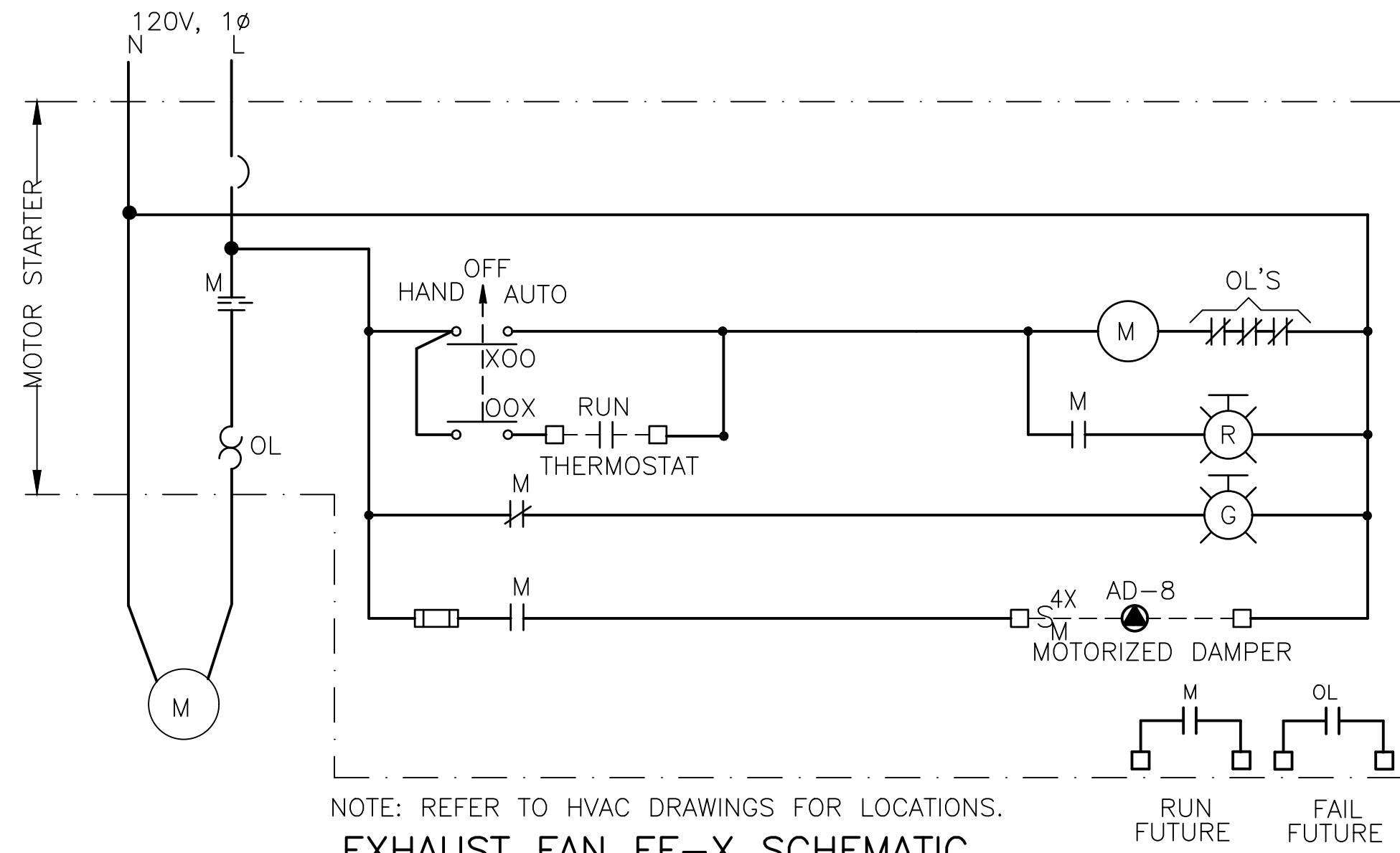
Client: ORANGE COUNTY UTILITIES
Proj. Loc.: ORANGE COUNTY, FL
WESTERN REGIONAL WATER SUPPLY FACILITY
IMPROVEMENTS PHASE 3A - PART 2
MODIFIED MCC-301 ONE LINE DIAGRAM

Project No.: 200-10034-18002
Designed By: TE
Drawn By: TN
Checked By: PFH

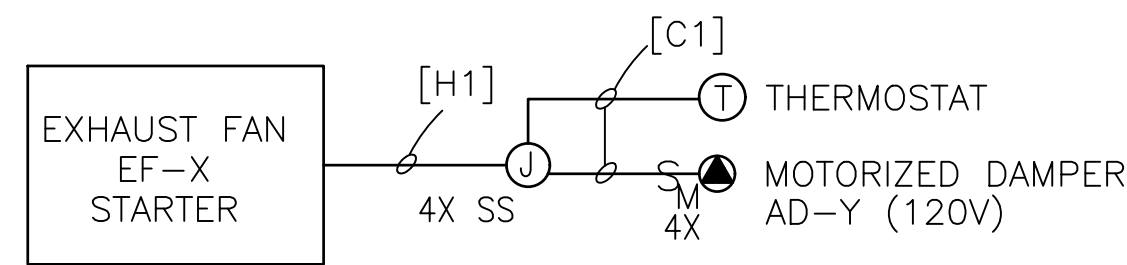
Saturday, May 4, 2019 10:50:03 AM DRAWING: E:\PROJECTS\117707\DWG\SheetFiles\ELECT\117707E005.DWG LAYOUT: LAYOUT(1) USER NAME: WIN, THEN



PANEL LP-302 RISER DIAGRAM
NOT TO SCALE

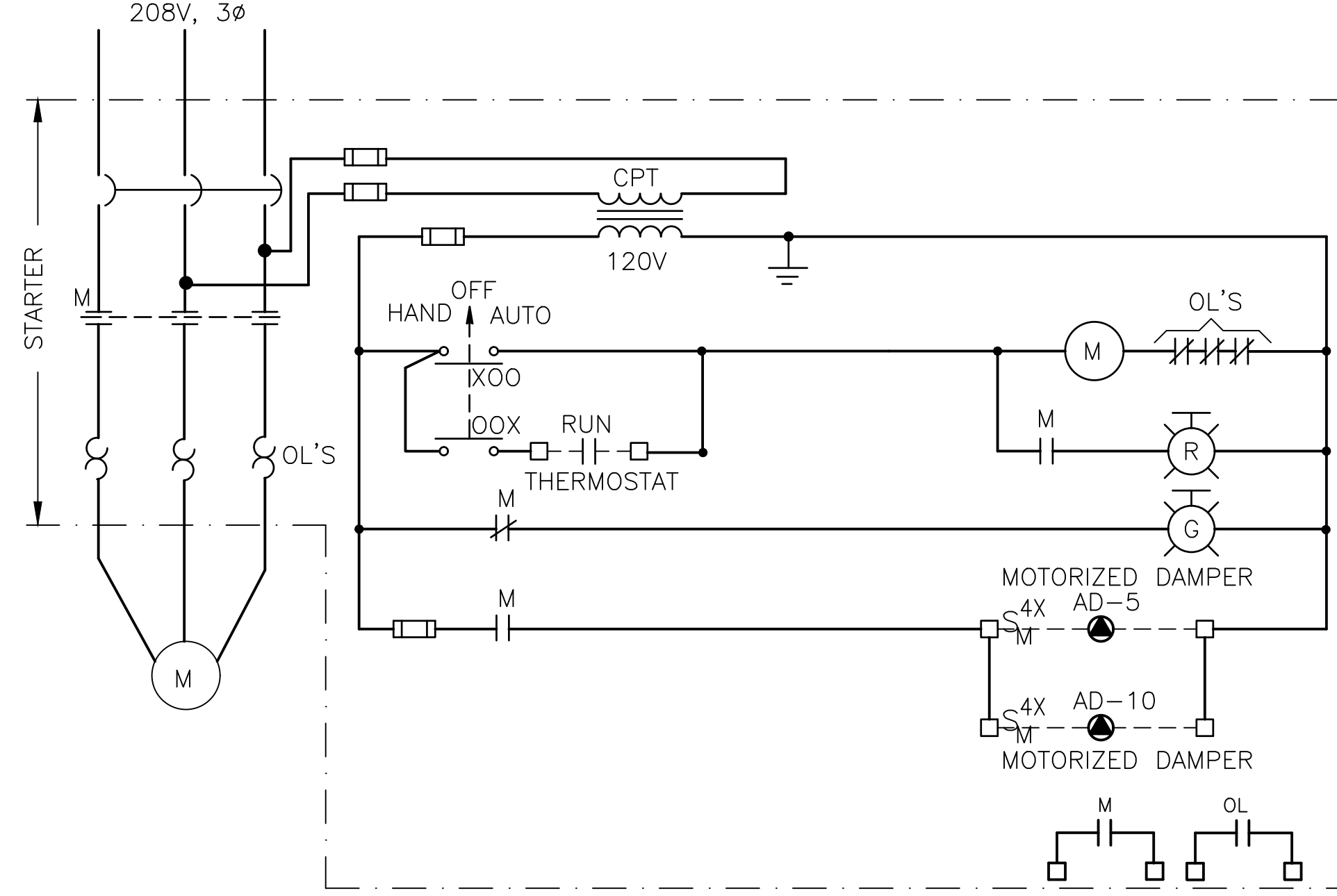


NOTE: REFER TO HVAC DRAWINGS FOR LOCATIONS.
EXHAUST FAN EF-X SCHEMATIC
NOT TO SCALE
X, Y = 7, 4
9, 8

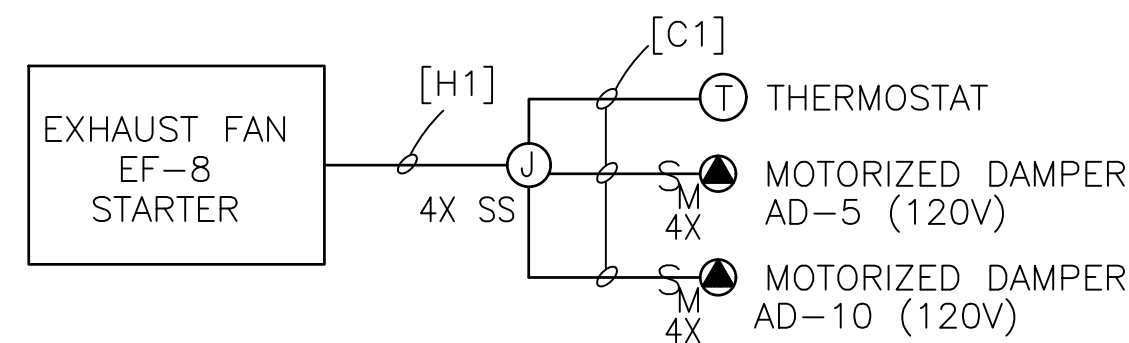


EXHAUST FAN EF-X RISER
NOT TO SCALE
X, Y = 7, 4
9, 8

PROVIDE MOTOR RATED SWITCH (NEMA 4X) AT EACH MOTORIZED DAMPER.

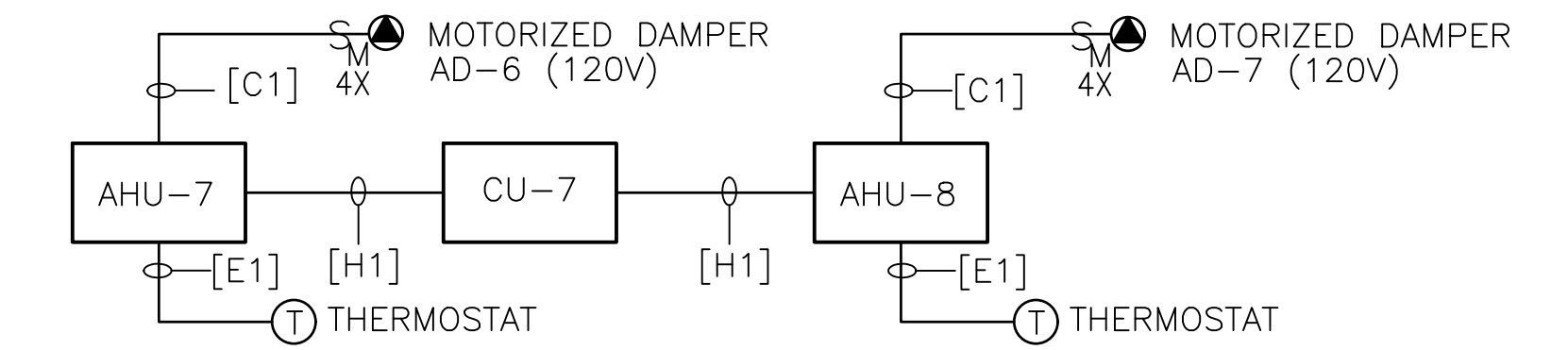


NOTE: REFER TO HVAC DRAWINGS FOR LOCATIONS.
EXHAUST FAN EF-8 SCHEMATIC
NOT TO SCALE



EXHAUST FAN EF-8 RISER
NOT TO SCALE

PROVIDE MOTOR RATED SWITCH (NEMA 4X) AT EACH MOTORIZED DAMPER.



PROVIDE MOTOR RATED SWITCH (NEMA 4X) AT EACH MOTORIZED DAMPER.

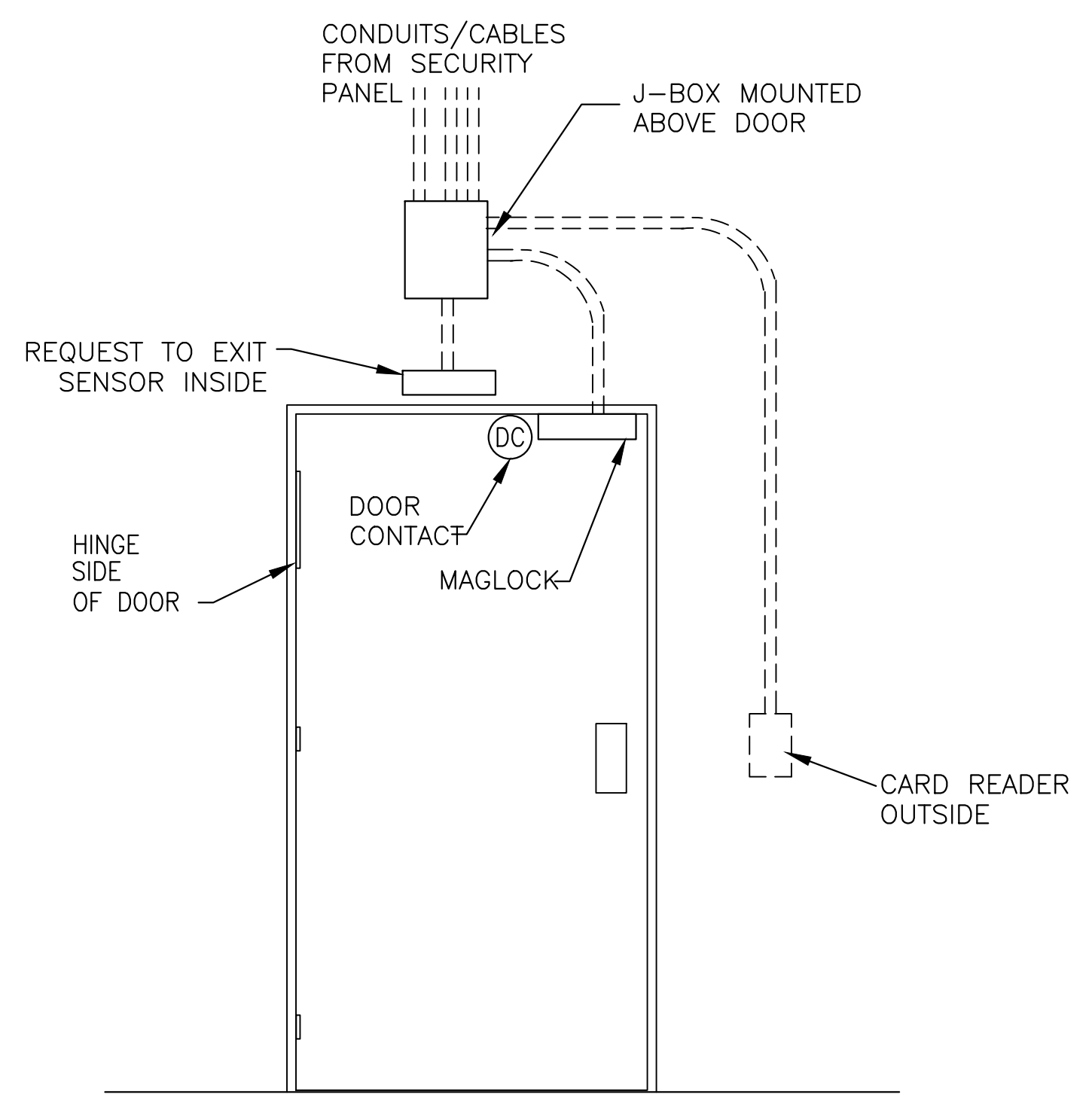
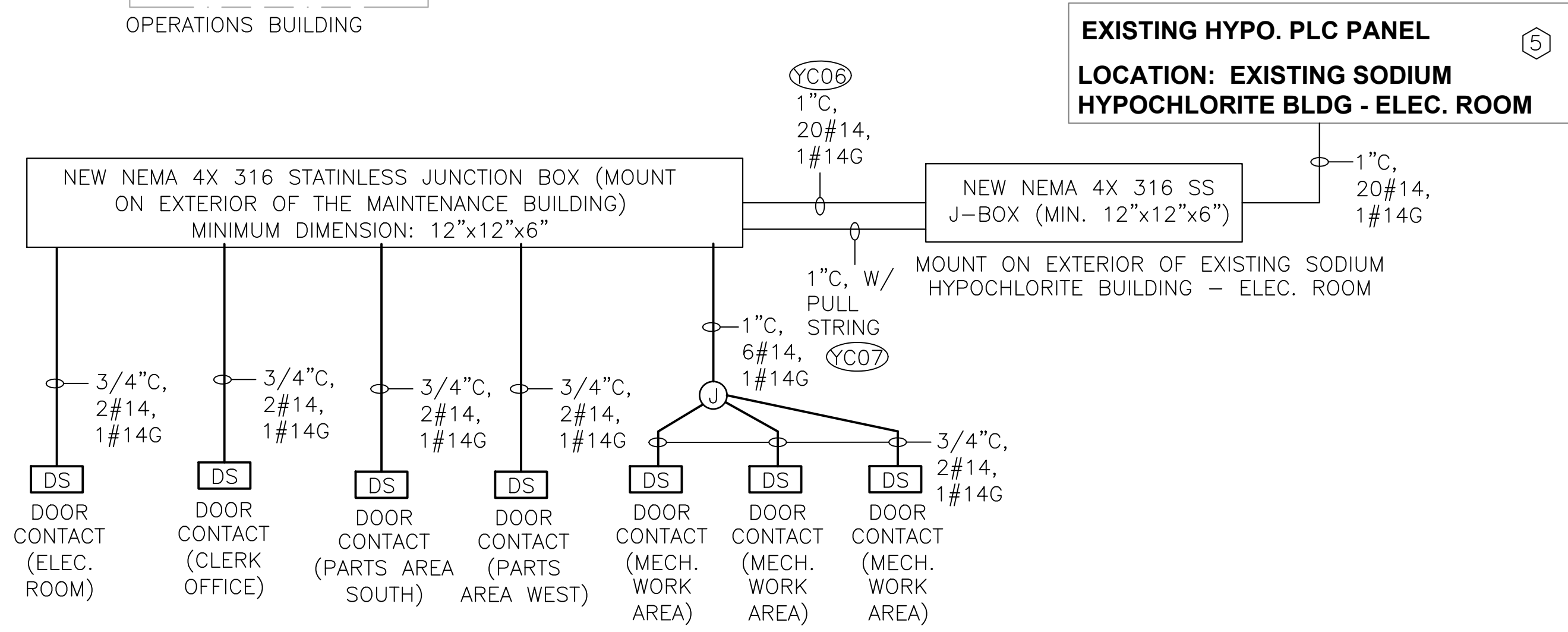
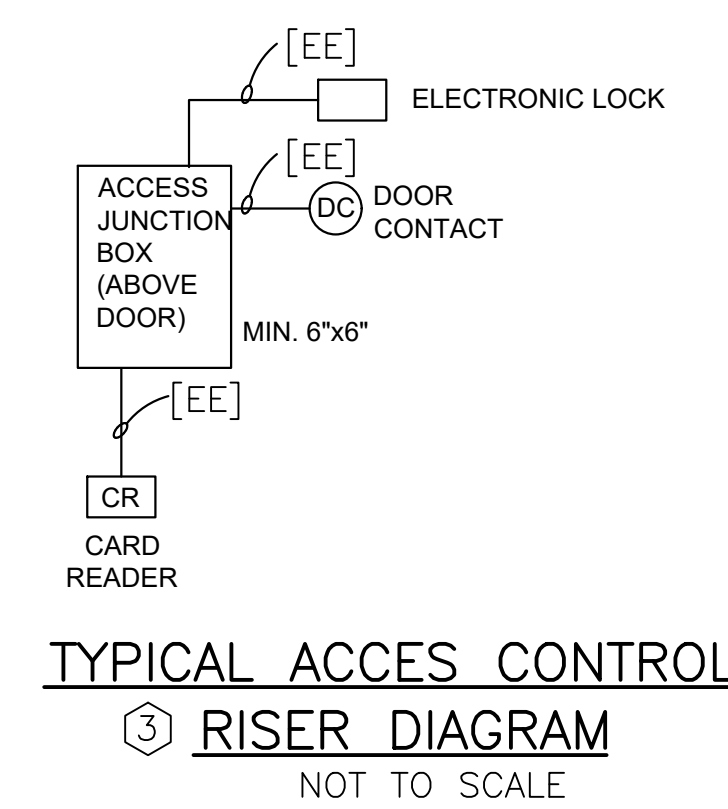
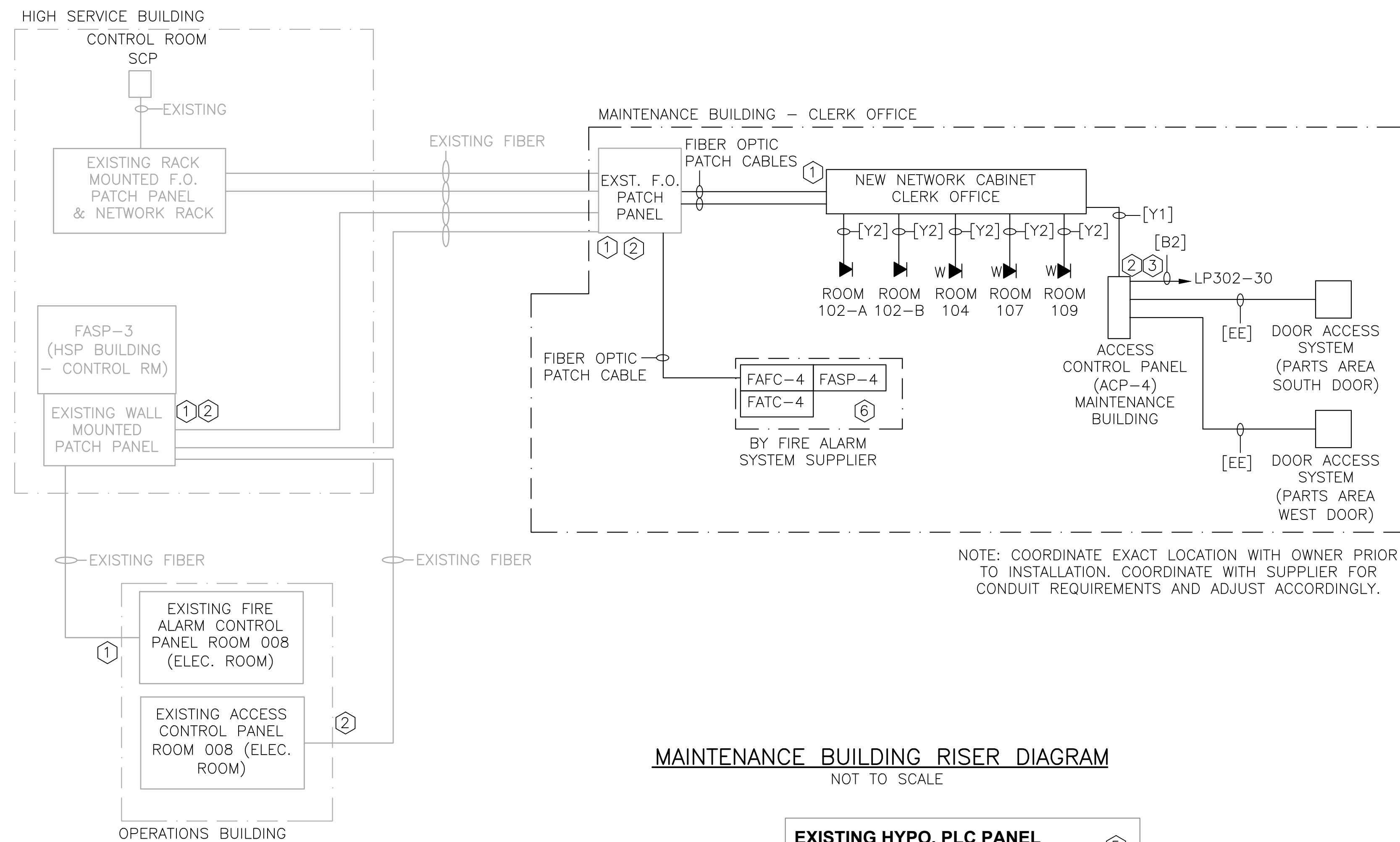
② **AHU-7, AHU-8 AND CU-7 RISER**
NOT TO SCALE

KEYED NOTE:

- ① COORDINATE WITH HVAC SUPPLIER FOR ACTUAL FUSE SIZE REQUIREMENTS AND PROVIDE ACCORDINGLY.
- ② WIRE CONNECTION BETWEEN HVAC UNITS ARE BASED ON THE MANUFACTURER AND MODEL LISTED ON M002 DRAWING. THE POWER FOR AHU-7 AND AHU-8 SHALL BE FROM CU-7 UNIT. CONTRACTOR SHALL VERIFY WITH THE ACTUAL HVAC MODEL TO BE SUPPLIED AND ADJUST THE INTERCONNECTION WIRING AND CONDUITS, BREAKERS, ETC. AS NEEDED WITHOUT ADDITIONAL COST TO THE OWNER.
- ③ MOTORIZED DAMPER FOR AHU-6 SHALL BE POWERED AND CONTROLLED BY AHU-6 AS NOTED IN HVAC DRAWING. IT IS HVAC CONTRACTOR'S RESPONSIBILITY TO PROVIDE MOTORIZED DAMPER RATING TO MATCH THE CONTROL CIRCUIT OF AHU-6 UNIT.
- ④ LIGHT SWITCH FOR ADA TOILET ROOM (ROOM#106) SHALL ALSO CONTROL THE EXHAUST FAN (EF-6). PROVIDE AND INSTALL APPROPRIATE LIGHT SWITCH FOR ADA TOILET.

BY	DATE	DESCRIPTION

Saturday, May 4, 2019 10:50:08 AM DRAWING: E:\PROJECTS\117707\DWG\Sheets\ELECTRICAL\ELEC\T07E006.DWG LAYOUT: LAYOUT(1) USER NAME: WIN_THEN



KEYED NOTES:

- ① CONTRACTOR SHALL FIELD IDENTIFY EXISTING SPARE FIBER OPTIC CABLE PAIRS BETWEEN EXISTING HIGH SERVICE PUMP BUILDING AND MAINTENANCE BUILDING EXISTING FIBER OPTIC PATCH PANEL. TEST TWO SPARE FIBER OPTIC CABLE PAIRS AND CONNECT TO NEW NETWORK CABINET IN CLERK OFFICE AND NEW FIRE ALARM CONTROL PANEL.
- ② CONTRACTOR SHALL FIELD IDENTIFY EXISTING SPARE FIBER OPTIC CABLE PAIR BETWEEN EXISTING OPERATIONS BUILDING (THRU EXISTING HIGH SERVICE NETWORK RACK) AND MAINTENANCE BUILDING EXISTING FIBER OPTIC PATCH PANEL TO CONNECT TO THE EXISTING ACCESS CONTROL PANEL LOCATED IN OPERATIONS BUILDING - ELECTRICAL ROOM. TEST SPARE FIBER OPTIC CABLE AND CONNECT TO NEW FIRE ALARM PANEL IN MAINTENANCE BUILDING. FURNISH AND INSTALL PATCH CABLES IN HIGH SERVICE NETWORK RACK IF NEEDED.
- ③ CONTRACTOR SHALL PROVIDE AND INSTALL ORANGE COUNTY'S STANDARD ACCESS CONTROL SYSTEM AS PER SPECIFICATION 16740. NEW DOOR ACCESS CONTROL SYSTEM AT MAINTENANCE BUILDING SHALL MATCH THE SAME TYPE AND BE COMPATIBLE WITH EXISTING ACCESS CONTROL SYSTEM AT OPERATIONS BUILDING.
- ④ CONTRACTOR SHALL INSTALL NEW NETWORK CABINET FOR MAINTENANCE BUILDING - CLERK OFFICE. I&C CONTRACTOR WILL PROVIDE NEW NETWORK CABINET AS PER SPECIFICATION 13300.
- ⑤ MODIFICATION OF EXISTING PLC PROGRAM OF HYPO. PLC CONTROL PANEL SHALL BE PERFORMED BY I&C CONTRACTOR. CONTRACTOR SHALL COORDINATE WITH I&C CONTRACTOR FOR WIRE TERMINATION LOCATIONS FOR DOOR CONTACT SIGNALS.
- ⑥ SEE FIRE ALARM DRAWINGS FOR CONDUIT/CABLE REQUIREMENTS OF FIRE ALARM SYSTEM. FURNISH AND INSTALL CONDUITS/WIRES, JUNCTION BOXES, ETC. ACCORDINGLY.

Client: ORANGE COUNTY UTILITIES
 Proj. Loc.: WESTERN REGIONAL WATER SUPPLY FACILITY
 IMPROVEMENTS PHASE 3A - PART 2

RISER DIAGRAMS

Project No.: 200-10034-18002
 Designed By: TW
 Drawn By: TN
 Checked By: PFH

Client: ORANGE COUNTY UTILITIES
 Proj. Loc.: WESTERN REGIONAL WATER SUPPLY FACILITY
 IMPROVEMENTS PHASE 3A - PART 2

E006

Project No.: 200-10034-18002
 Designed By: TW
 Drawn By: TN
 Checked By: PFH

Client: ORANGE COUNTY UTILITIES
 Proj. Loc.: WESTERN REGIONAL WATER SUPPLY FACILITY
 IMPROVEMENTS PHASE 3A - PART 2

E006

Project No.: 200-10034-18002
 Designed By: TW
 Drawn By: TN
 Checked By: PFH

Client: ORANGE COUNTY UTILITIES
 Proj. Loc.: WESTERN REGIONAL WATER SUPPLY FACILITY
 IMPROVEMENTS PHASE 3A - PART 2

E006

Project No.: 200-10034-18002
 Designed By: TW
 Drawn By: TN
 Checked By: PFH

HILLERS ELECTRICAL ENGINEERING, INC.
 28257 STATE ROAD 7, SUITE 100
 BOCA RATON, FLORIDA 33428
 (561) 451-4886 FAX
 LICENSE NO: EB 0006877

TETRA TECH
 www.tetrattech.com
 201 EAST PINE STREET, SUITE 1000
 ORLANDO, FL 32801
 PHONE: (407) 839-3955 FAX: (407) 839-3970

Saturday, May 4, 2019 10:50:19 AM DRAWING: E:\PROJECTS\TITTTT07\DWG\SheetFiles\ELECT\T07E008.DWG LAYOUT: LAYOUT(1) USER NAME: WIN_THEN

LUMINAIRE SCHEDULE (SEE NOTE 1, 2)							
TYPE	VOLTS	DESCRIPTION	MANUFACTURER	CATALOG NO	LAMPS	MOUNTING	REMARKS
1	120	2'x4' EDGE-LIT FLAT PANEL, HIGH EFFICACY	COLUMBIA LIGHTING	CFP24-4135-HE	40W LED	RECESSED	
2	120	4X ENCLOSURE EXIT SIGN FOR WET, DAMP, CORROSIVE AREA NICAD BATTERY, TEST SWITCH	DUALITE	LN4XRWE-I	1-3.81W LED	PENDANT/SURFACE	8' MOUNTING HEIGHT, SINGLE OR DOUBLE SEE PLANS.
3	120	LED HIGH BAY(JHBL-35K NARROW DISTRIBUTION)	LITHONIA LIGHTING	JHBL 12000LM ACL ND 35K 70CRI	100W/35K LED	PENDANT	MOUNT 15' ABOVE FINISHED FLOOR
4	120	EMERGENCY LIGHT WITH NICAD BATTERY FOR HARSH ENVIRONMENTS, GREY THERMOPLASTIC POLYCARBONATE CASE	DUALITE	N4X7-12V-50-I	2-9W LAMP	SURFACE	8' MOUNTING HEIGHT
5	120	EXTERIOR LIGHT WITH PHOTOCELL	HUBBELL OUTDOOR LIGHTING	LMC-18LU-5K-PC(120)	18LED, 44.5W	WALL	MOUNT 6" ABOVE DOOR. VERIFY COLOR WITH ARCHITECT
6	120	EMERGENCY LIGHT WITH NICAD BATTERY	DUALITE	LZ20N-03L	2-3W LED	SURFACE	TYPICAL MOUNT 8'. MOUNT 7' IN OFFICES.
7	120	LXEN NARROW ENCLOSED AND GASKETED 7" X 51" LED	COLUMBIA LIGHTING	LXEN4-40LW-RFA-EU	4-37W LED	SUSPENDED/WALL/CEILING	11' MOUNTING HEIGHT, USE UNISTRUT FOR MOUNTING.
8	120	LXEN NARROW ENCLOSED AND GASKETED 7" X 51" LED	COLUMBIA LIGHTING	LXEN4-40LW-RFA-EU	4-37W LED	SUSPENDED	9' MOUNTING HEIGHT. USE UNISTRUT FOR MOUNTING.
9	120	EXIT LIGHT WITH NICAD BATTERY	DUALITE	LXURWEI	LED LAMPS	SURFACE	8' MOUNTING HEIGHT, SINGLE & DOUBLE SEE PLANS. SIDE MOUNT KIT AS NEEDED.
10							

- NOTES:**
- SEE FIXTURE MANUFACTURER'S RECOMMENDATION FOR MOUNTING OF FIXTURES. PROVIDE ALL NECESSARY HARDWARE.
 - PROVIDE SPARE LIGHT FIXTURE (LUMINAIRE) AND LIGHTING SENSORS AS PER SPECIFICATION 16500 AND 16510.

CIRCUIT SCHEDULE CONTROL, INSTRUMENTATION	
CKT I.D.	CONDUIT AND CONDUCTOR SIZE
[A1]	[3/4 "C, 2#14, 1#14G]
[B1]	[3/4 "C, 3#14, 1#14G]
[C1]	[3/4 "C, 4#14, 1#14G]
[D1]	[3/4 "C, 5#14, 1#14G]
[E1]	[3/4 "C, 6#14, 1#14G]
[F1]	[3/4 "C, 7#14, 1#14G]
[G1]	[3/4 "C, 9#14, 1#14G]
[H1]	[1"C, 11#14, 1#14G]
[J1]	[1 1/4"C, 20#14, 1#14G]
[K1]	[1"C, 7/C TYPE A]
[L1]	[1 1/4"C, 12/C TYPE A]
[M1]	[1 1/2 "C, 19/C TYPE A]
[N1]	[1 1/2"C, 30#14, 1#14G]
[P1]	[2"C, 40#14, 1#14G]
[Q1]	[3/4 "C, 1-#16, TW PR]
[R1]	[3/4 "C, 1-TYPE B, TW SHLD PR]
[S1]	[3/4 "C, 2-TYPE B, TW SHLD PR]
[T1]	[1"C, 3-TYPE B, TW SHLD PR]
[U1]	[1 1/4 "C, 4-TYPE B, TW SHLD PR]
[V1]	[2 "C, 11-TYPE B, TW SHLD PR]
[W1]	[1"C, 1-BELDEN 3085A DEVICENET]
[X1]	[2 1/2 "C, 100#14, 1#12G]
[Y1]	[3/4"C, 1-CAT 6e CABLE]
[Z1]	[1"C, 1-RTD TYPE CABLE]

CIRCUIT SCHEDULE 1PH, 2W		
CKT I.D.	CONDUIT AND CONDUCTOR SIZE	CKT AMPS
[A2]	[3/4 "C, 2#14, 1#14G]	15
[B2]	[3/4 "C, 2#12, 1#12G]	20
[C2]	[3/4 "C, 2#10, 1#10G]	30
[D2]	[3/4 "C, 2#8, 1#10G]	40
[E2]	[3/4 "C, 2#6, 1#10G]	50
[F2]	[1"C, 2#4, 1#10G]	60
[G2]	[1"C, 2#4, 1#8G]	70
[H2]	[1 1/4 "C, 2#3, 1#8G]	80
[J2]	[1 1/4 "C, 2#2, 1#8G]	90
[K2]	[1 1/4 "C, 2#1, 1#8G]	100
[L2]	[1 1/2 "C, 2#1/0, 1#6G]	150
[M2]	[1 1/2 "C, 2#2/0, 1#6G]	175
[N2]	[2"C, 2#3/0, 1#6G]	200
[P2]	[2"C, 2#4/0, 1#4G]	225
[Q2]	[2 1/2 "C, 2-250KCMIL, 1#4G]	250
[R2]	[2 1/2 "C, 2-350KCMIL, 1#4G]	300
[S2]		

CIRCUIT SCHEDULE 3PH, 3W OR 1PH, 3W		
CKT I.D.	CONDUIT AND CONDUCTOR SIZE	CKT AMPS
[A3]	[3/4 "C, 3#12, 1#12G]	20
[B3]	[3/4 "C, 3#10, 1#10G]	30
[C3]	[1"C, 3#8, 1#10G]	40
[D3]	[1"C, 3#6, 1#10G]	50
[E3]	[1 1/4 "C, 3#4, 1#10G]	60
[F3]	[1 1/4 "C, 3#4, 1#8G]	70
[G3]	[1 1/4 "C, 3#3, 1#8G]	80
[H3]	[1 1/2 "C, 3#2, 1#8G]	90
[J3]	[1 1/2 "C, 3#2, 1#8G]	100
[K3]	[1 1/2 "C, 3#1/0, 1#6G]	150
[L3]	[2"C, 3#2/0, 1#6G]	175
[M3]	[2"C, 3#3/0, 1#6G]	200
[N3]	[2 1/2 "C, 3#4/0, 1#4G]	225
[P3]	[2 1/2 "C, 3-250KCMIL, 1#4G]	250
[Q3]	[3"C, 3-500KCMIL, 1#3G]	300
[R3]	2 EA.[2 "C, 3-3/0, 1#3G]	400
[S3]	2 EA.[2 1/2 "C, 3-250KCMIL, 1#2G]	500
[T3]	2 EA.[3"C, 3-350KCMIL, 1#1G]	600
[U3]	2 EA.[4"C, 3-500KCMIL, 1#1/0G]	700
[V3]	3 EA.[3"C, 3-350KCMIL, 1#1/0G]	800
[W3]	3 EA.[3 1/2"C, 3-500KCMIL, 1#2/0G]	1000
[X3]	4 EA.[3"C, 3-350KCMIL, 1#3/0G]	1200
[Y3]	5 EA.[4"C, 3-500KCMIL, 1#4/0G]	1600
[Z3]	6 EA.[4"C, 3-500KCMIL, 1-250KCMILG]	2000

CIRCUIT SCHEDULE 3PH, 4W		
CKT I.D.	CONDUIT AND CONDUCTOR SIZE	CKT AMPS
[A4]	[3/4 "C, 4#12, 1#12G]	20
[B4]	[3/4 "C, 4#10, 1#10G]	30
[C4]	[1"C, 4#8, 1#10G]	40
[D4]	[1"C, 4#6, 1#10G]	50
[E4]	[1 1/4 "C, 4#4, 1#10G]	60
[F4]	[1 1/4 "C, 4#4, 1#8G]	70
[G4]	[1 1/2 "C, 4#3, 1#8G]	80
[H4]	[1 1/2 "C, 4#2, 1#8G]	90
[J4]	[1 1/2 "C, 4#2, 1#8G]	100
[K4]	[2"C, 4#1/0, 1#6G]	150
[L4]	[2"C, 4#2/0, 1#6G]	175
[M4]	[2 1/2 "C, 4#3/0, 1#6G]	200
[N4]	[2 1/2 "C, 4#4/0, 1#4G]	225
[P4]	[3"C, 4-250KCMIL, 1#4G]	250
[Q4]	[3 1/2"C, 4-350KCMIL, 1#3G]	300
[R4]	2 EA.[2 1/2 "C, 4#3/0, 1#3G]	400
[S4]	2 EA.[3"C, 4-250KCMIL, 1#2G]	500
[T4]	2 EA.[4"C, 4-350KCMIL, 1#1G]	600
[U4]	2 EA.[4"C, 4-500KCMIL, 1#1/0 G]	700
[V4]	3 EA.[4"C, 4-350KCMIL, 1#1/0 G]	800
[W4]	3 EA.[4"C, 4-500KCMIL, 1#2/0 G]	1000
[X4]	4 EA.[4"C, 4-350KCMIL, 1#3/0 G]	1200
[Y4]	5 EA.[4"C, 4-500KCMIL, 1#4/0 G]	1600
[Z4]	6 EA.[4"C, 4-500KCMIL, 1-250KCMIL G]	2000

- [AA] - [3"C, 1-FIBER OPTIC CABLE SUPPLIED BY I&C]
 - [BB] - [4"C, 2-FIBER OPTIC CABLE SUPPLIED BY I&C]
 - [CC] - [2-1"C EMPTY W/ PULL STRING]
 - [TT] - [1"C, 2-WIRE BELDEN 8471 CABLE]
 - [Y1] - [3/4"C, 1-CAT 6 CABLE]
 - [Y2] - [1"C, 2-CAT 6 CABLE]
- 1 FIBER OPTIC = 6 PAIRS F.O. CABLE (SEE SPECIFICATION 13300)
- [DD] - [2"C EMPTY W/ PULL STRING]
 - [EE] - [1"C EMPTY W/ PULL STRING]

YARD CONDUIT SCHEDULE			
NO.	FROM	TO	REMARKS
YC01	FACP-4 (MAINTENANCE - CLERK)	FLUORIDE BUILDING (SLC CIRCUIT - IN)	SEE DRAWING F002, E009
YC02	FACP-4 (MAINTENANCE - CLERK)	FLUORIDE BUILDING (SLC CIRCUIT - OUT)	SEE DRAWING F002, E009
YC03	FACP-4 (MAINTENANCE - CLERK)	FLUORIDE BUILDING (NAC CIRCUIT - IN)	SEE DRAWING F002, E009
YC04	FACP-4 (MAINTENANCE - CLERK)	FLUORIDE BUILDING (NAC CIRCUIT - OUT)	SEE DRAWING F002, E009
YC05	STUB-UP IN MAINTENANCE - CLERK OFFICE	OUTSIDE FLUORIDE BUILDING	2-1"C SPARE W/ PULL STRING.
YC06	EXTERIOR J-BOX (MAINTENANCE BLDG)	EXTERIOR J-BOX (SODIUM HYPO. BUILDING)	SEE DRAWING E006
YC07	EXTERIOR J-BOX (MAINTENANCE BLDG)	EXTERIOR J-BOX (SODIUM HYPO. BUILDING)	SEE DRAWING E006

- NOTE:**
- SOME SPARE CONDUITS ARE NOT SHOWN ON RISER DIAGRAMS BUT PROVIDE AS PER REMARKS COLUMN.

TETRA TECH

HILLERS ELECTRICAL ENGINEERING, INC.

BID SET

Client: ORANGE COUNTY UTILITIES

Project No.: 200-10034-18002

Designed By: TW

Drawn By: TN

Checked By: PFH

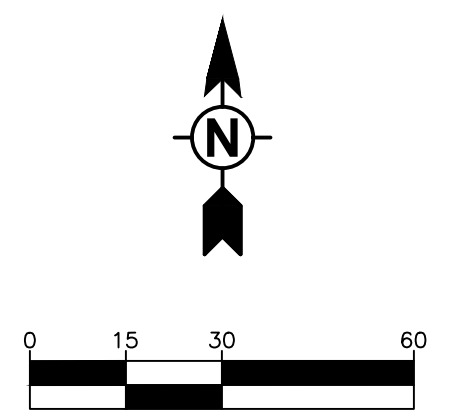
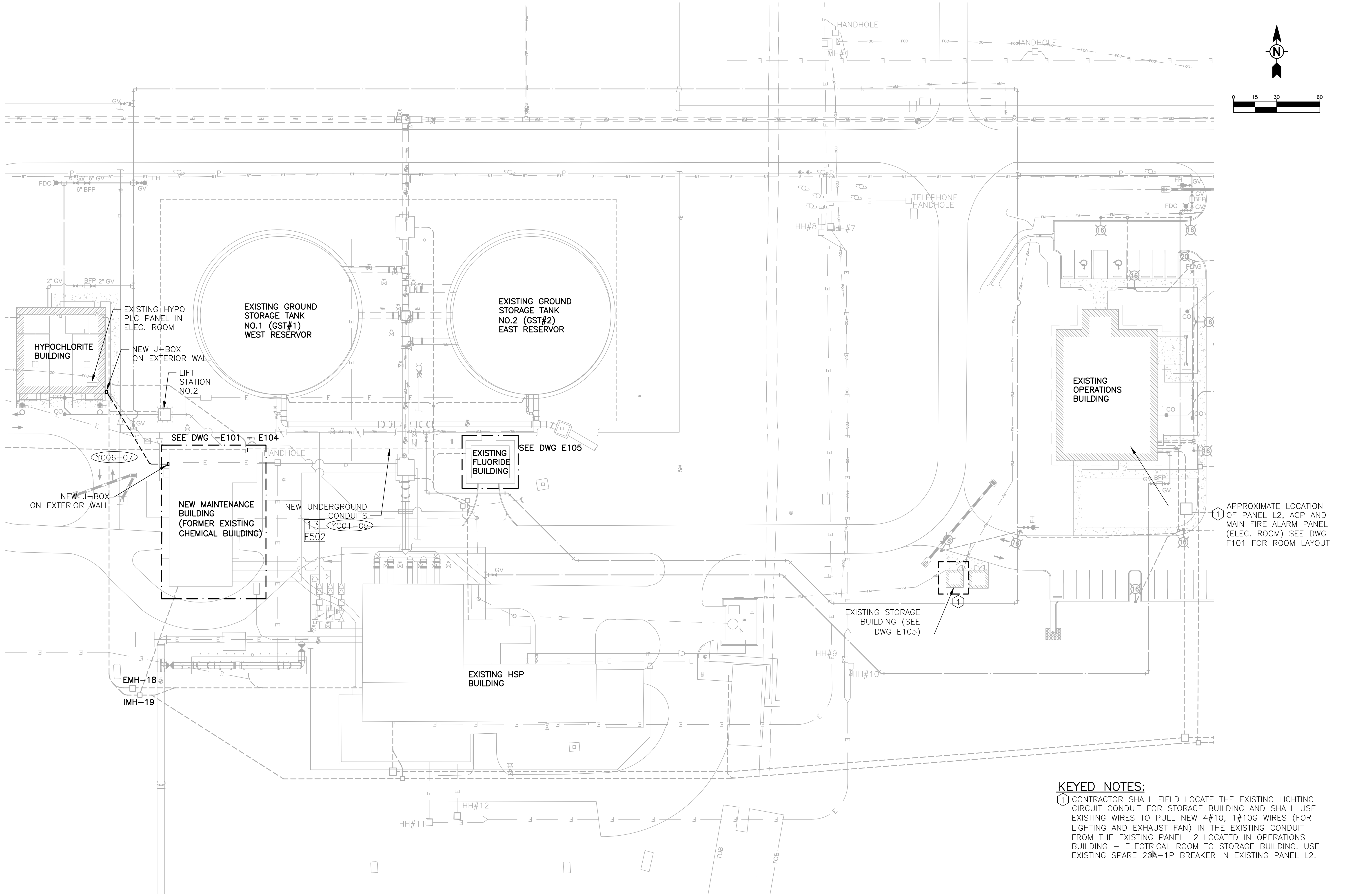
WESTERN REGIONAL WATER SUPPLY FACILITY

IMPROVEMENTS PHASE 3A - PART 2

SCHEDULE - SHEET 2

E008

Saturday, May 4, 2019 10:50:26 AM DRAWING: E:\PROJECTS\TTTTT7\DWG\SheetFiles\ELECT\T07E009.DWG LAYOUT: LAYOUT USER NAME: WIN, THEN



KEYED NOTES:

- 1 CONTRACTOR SHALL FIELD LOCATE THE EXISTING LIGHTING CIRCUIT CONDUIT FOR STORAGE BUILDING AND SHALL USE EXISTING WIRES TO PULL NEW 4#10, 1#10G WIRES (FOR LIGHTING AND EXHAUST FAN) IN THE EXISTING CONDUIT FROM THE EXISTING PANEL L2 LOCATED IN OPERATIONS BUILDING - ELECTRICAL ROOM TO STORAGE BUILDING. USE EXISTING SPARE 20A-1P BREAKER IN EXISTING PANEL L2.

1 APPROXIMATE LOCATION OF PANEL L2, ACP AND MAIN FIRE ALARM PANEL (ELEC. ROOM) SEE DWG F101 FOR ROOM LAYOUT

TETRA TECH
www.tetrattech.com
201 EAST PINE STREET, SUITE 1000
ORLANDO, FL 32801
PHONE: (407) 839-3955 FAX: (407) 839-3970

HILLERS ELECTRICAL ENGINEERING, INC.
28257 STATE ROAD 7, SUITE 100
BOCA RATON, FLORIDA 33428
(561) 451-4886 FAX
(561) 451-4886 FAX
LICENSE NO: EB 0006877

BID SET

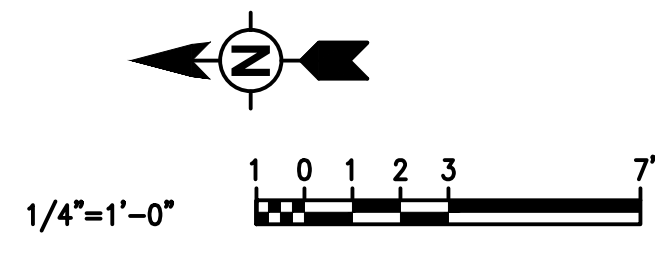
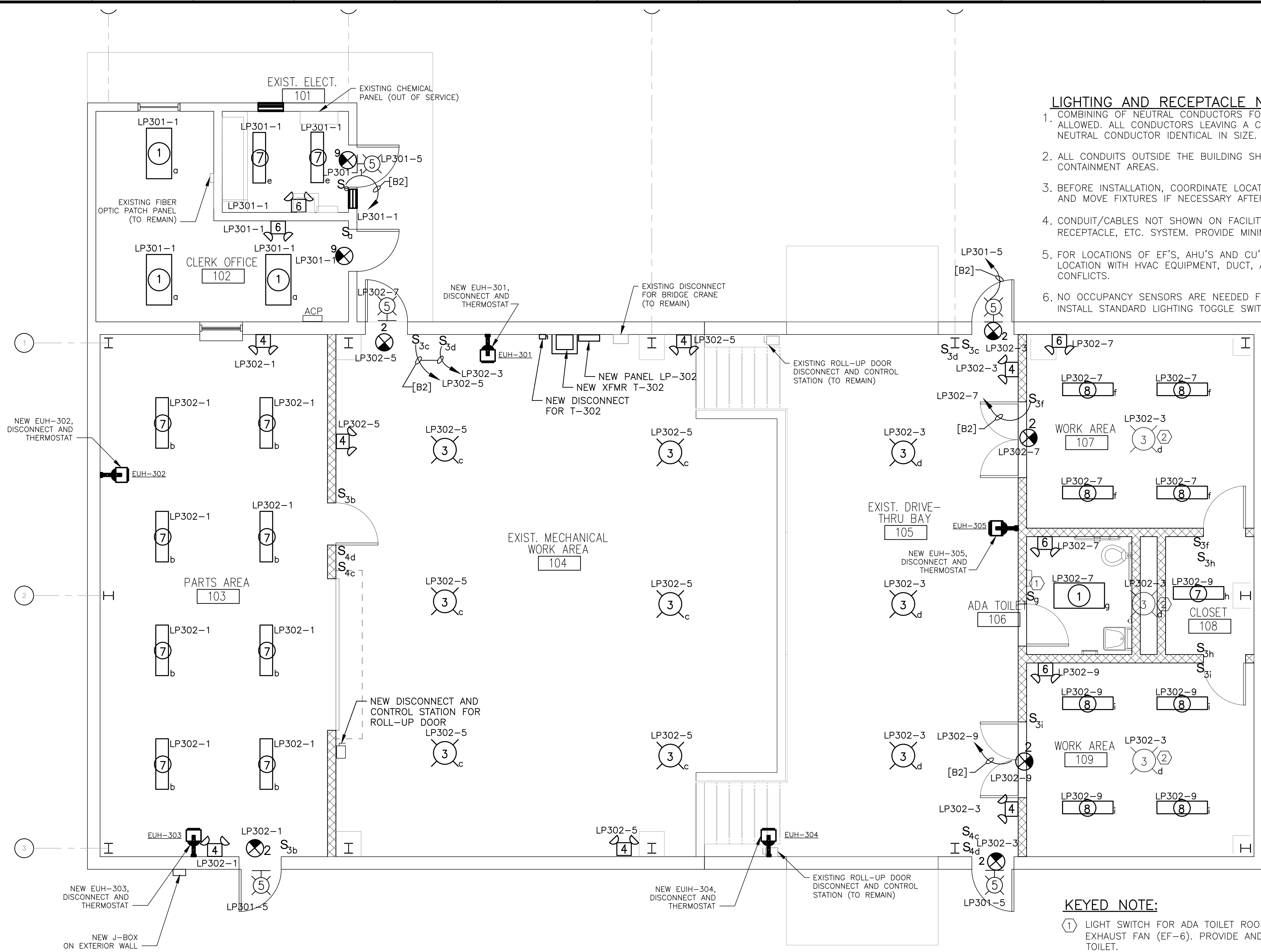
MARK	DATE	DESCRIPTION

Client: ORANGE COUNTY UTILITIES
Proj. Loc.: ORANGE COUNTY, FL
Project No.: 200-10034-18002
Western Regional Water Supply Facility Improvements Phase 3A - Part 2
ELECTRICAL SITE PLAN

Designed By:	TW
Drawn By:	TN
Checked By:	PFH

E009

Saturday, May 4, 2019 10:50:39 AM DRAWING: E:\PROJECTS\T1707\DWG\SheetFiles\ELECT\T1707E103.DWG LAYOUT: LAYOUT(1) USER NAME: WIN_THEN



LIGHTING AND RECEPTACLE NOTES

1. COMBINING OF NEUTRAL CONDUCTORS FOR LIGHTING AND RECEPTACLE CIRCUITS SHALL NOT BE ALLOWED. ALL CONDUCTORS LEAVING A CIRCUIT BREAKER IN A PANELBOARD SHALL CARRY A SEPARATE NEUTRAL CONDUCTOR IDENTICAL IN SIZE.
2. ALL CONDUITS OUTSIDE THE BUILDING SHALL BE RECESSED. CONDUITS SHALL NOT PENETRATE CONTAINMENT AREAS.
3. BEFORE INSTALLATION, COORDINATE LOCATION OF FIXTURES WITH ALL DISCIPLINES TO AVOID CONFLICTS AND MOVE FIXTURES IF NECESSARY AFTER APPROVAL FROM ENGINEER.
4. CONDUIT/CABLES NOT SHOWN ON FACILITY PLAN FOR CLARITY. PROVIDE COMPLETE WORKING LIGHTING, RECEPTACLE, ETC. SYSTEM. PROVIDE MINIMUM 3/4" C, 2#12, 1#12EG.
5. FOR LOCATIONS OF EF'S, AHU'S AND CU'S, SEE HVAC DRAWINGS. COORDINATE FINAL LIGHT FIXTURE LOCATION WITH HVAC EQUIPMENT, DUCT, AND CRANES. RELOCATE FIXTURES AS NECESSARY TO AVOID CONFLICTS.
6. NO OCCUPANCY SENSORS ARE NEEDED FOR LIGHTING SYSTEM IN MAINTENANCE BUILDING. PROVIDE AND INSTALL STANDARD LIGHTING TOGGLE SWITCH (2-WAY, 3-WAY, 4-WAY, AS SHOWN).

KEYED NOTE:

- ① LIGHT SWITCH FOR ADA TOILET ROOM (ROOM#106) SHALL ALSO CONTROL THE EXHAUST FAN (EF-6). PROVIDE AND INSTALL APPROPRIATE LIGHT SWITCH FOR ADA TOILET.
- ② TYPE 3 LIGHT FIXTURE SHALL BE INSTALLED 15' ABOVE FINISHED FLOOR ABOVE THE WORK AREAS, TOILET.

MAINTENANCE BUILDING - LIGHTING PLAN
SCALE: 1/4" = 1'-0"

TETRA TECH
www.tetratech.com
201 EAST FINE STREET, SUITE 1000
ORLANDO, FL 32801
PHONE: (407) 839-3955 FAX: (407) 839-3970

HILLERS ELECTRICAL ENGINEERING, INC.
28257 STATE ROAD 7, SUITE 100
BOCA RATON, FLORIDA 33428
(561) 451-4886 FAX
LICENSE NO: EB 0006877

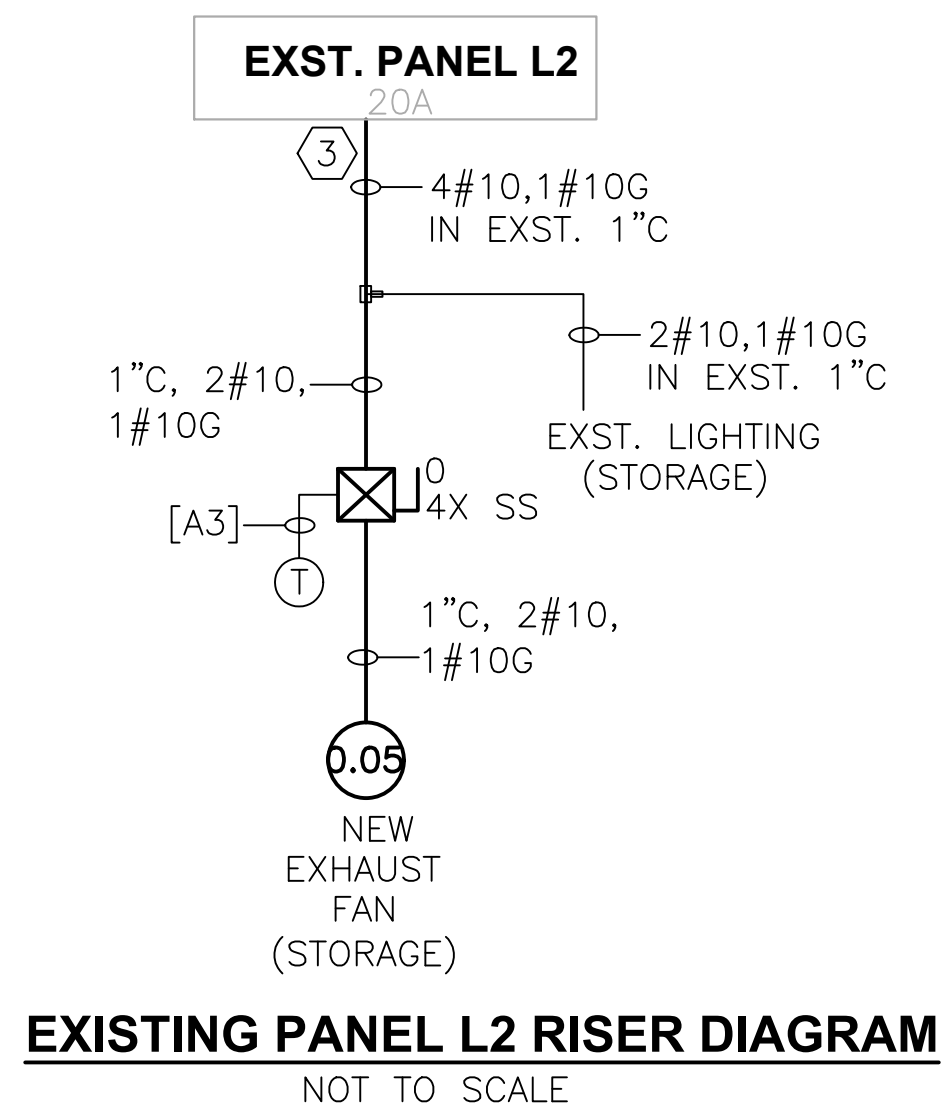
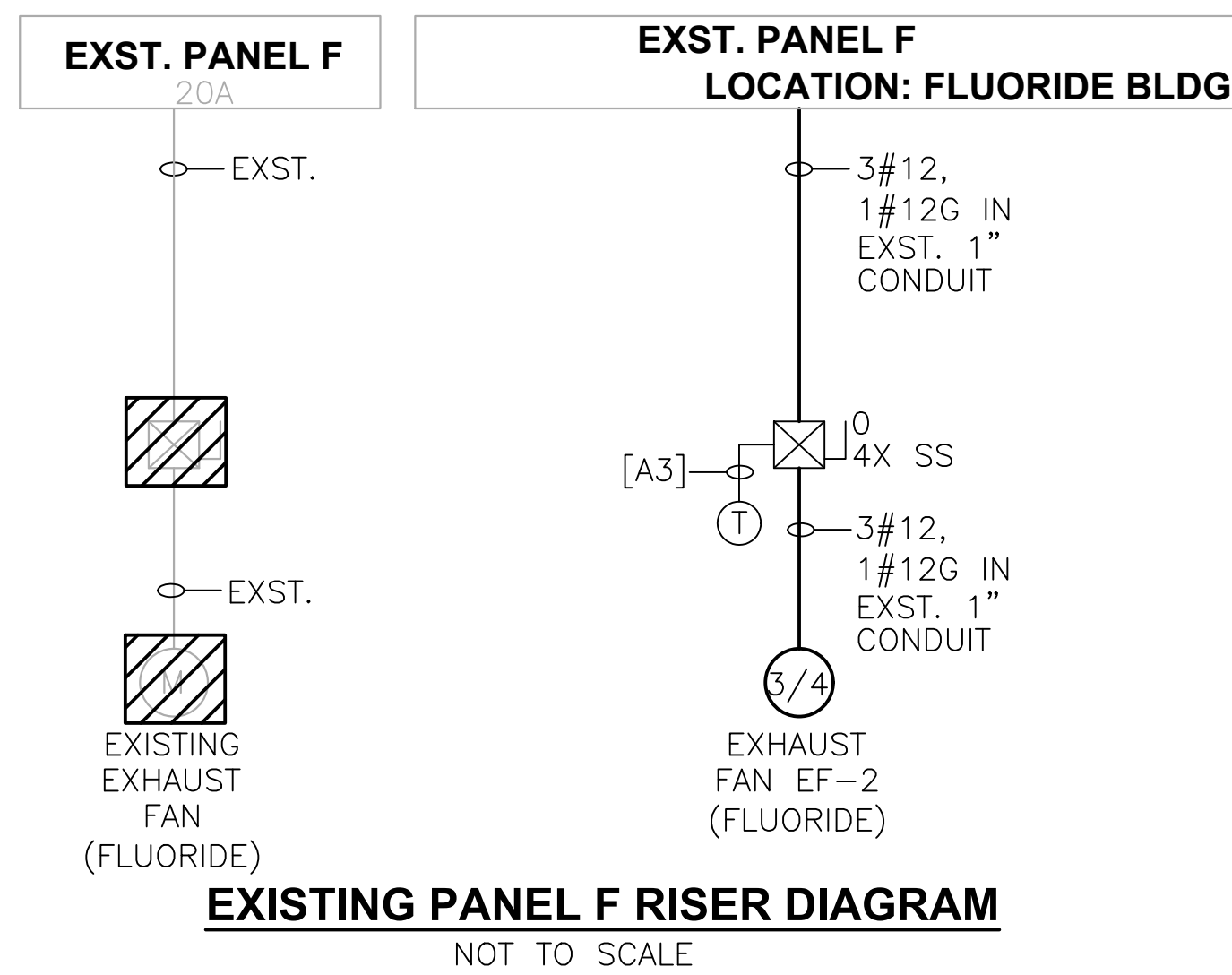
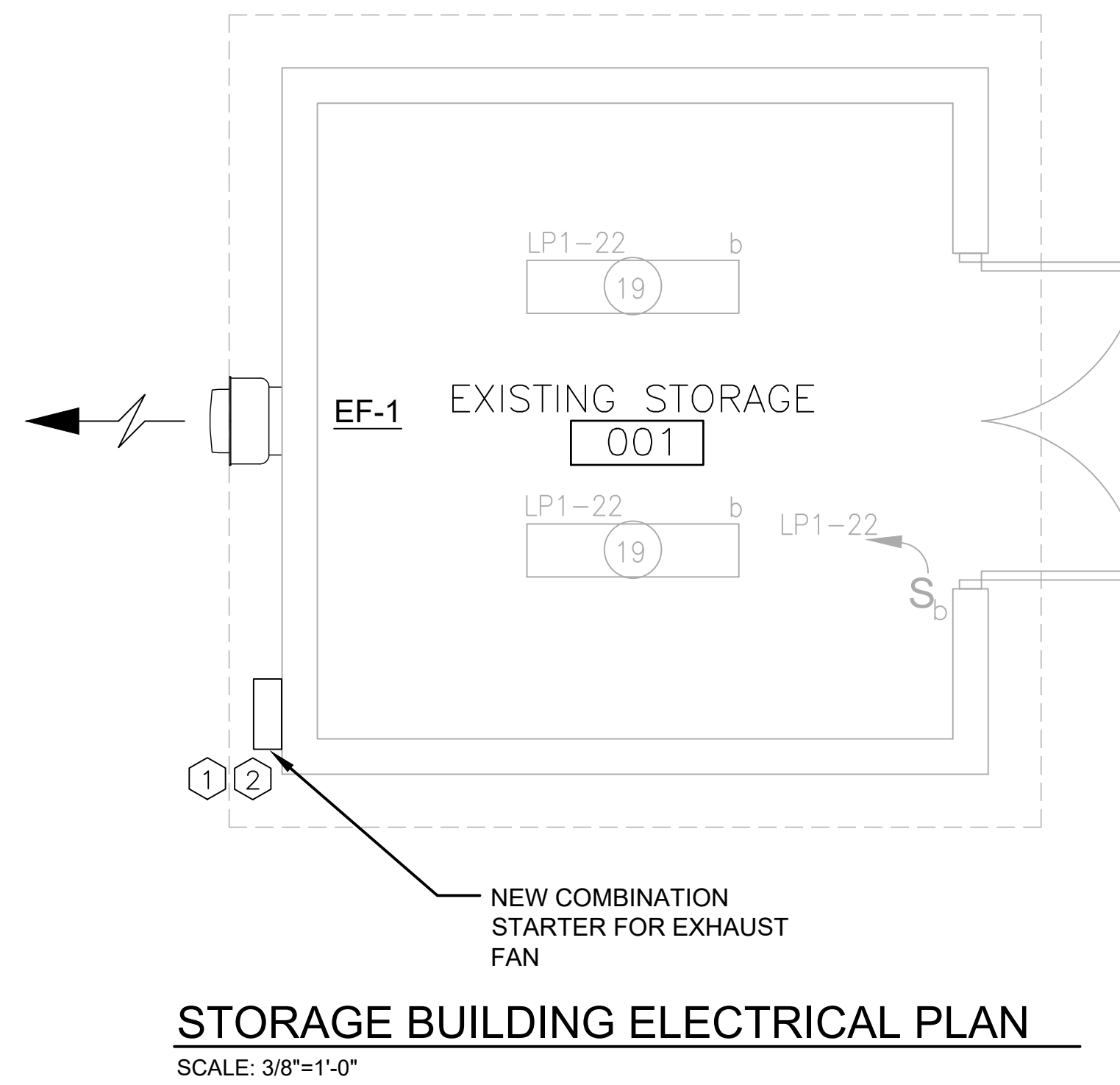
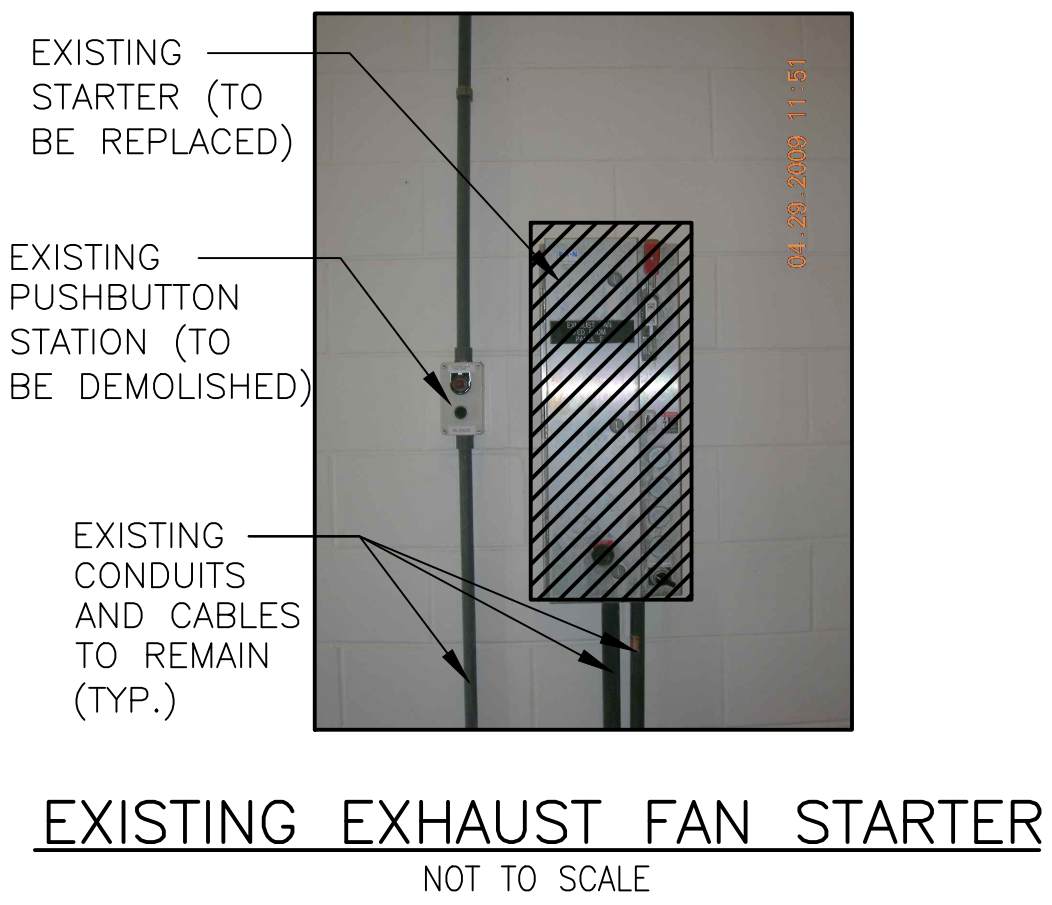
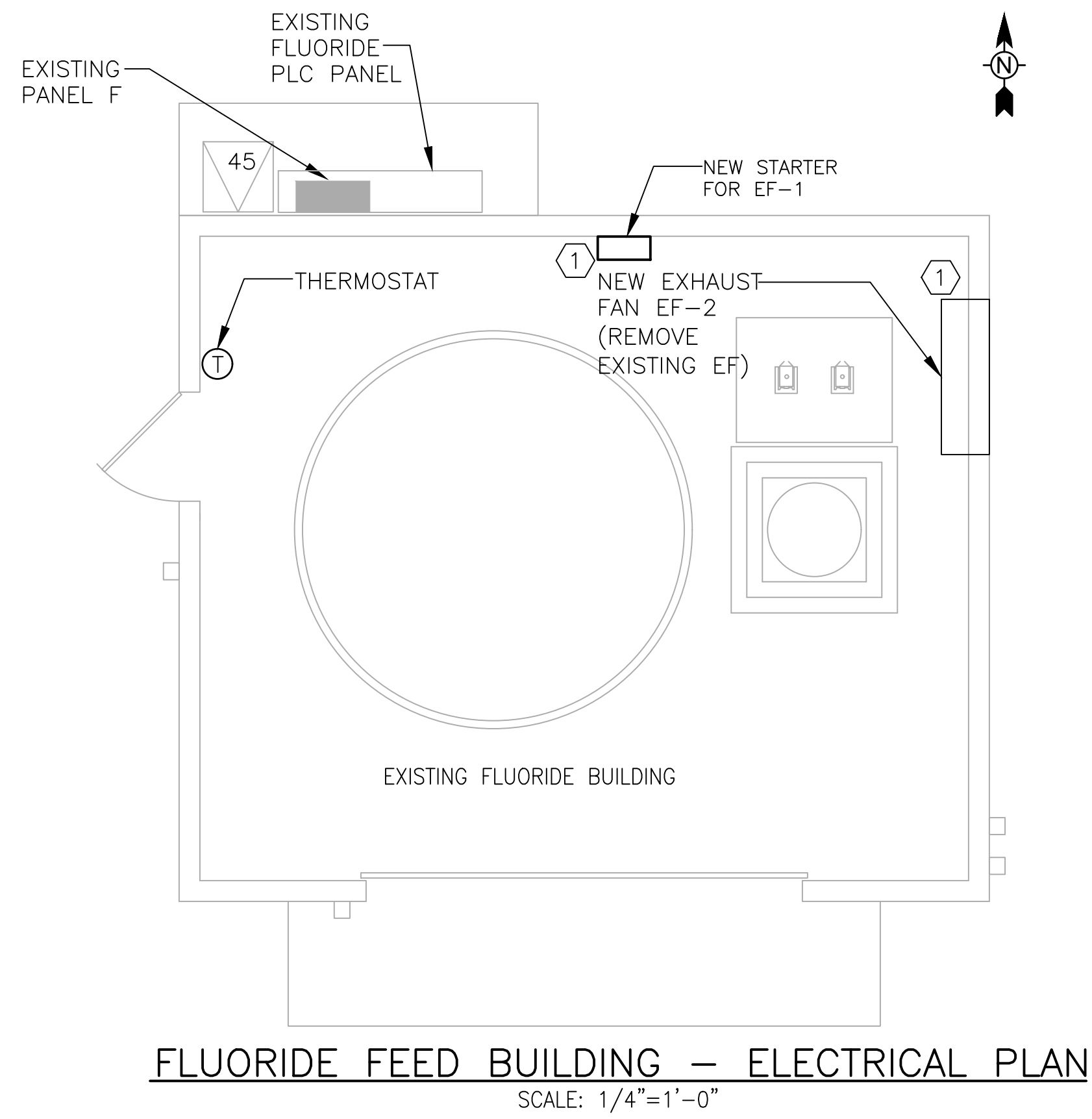
BID SET

BY	DATE	DESCRIPTION

Client: ORANGE COUNTY UTILITIES
Prg. Loc.: ORANGE COUNTY, FL
WESTERN REGIONAL WATER SUPPLY FACILITY
IMPROVEMENTS PHASE 3A - PART 2
MAINTENANCE BUILDING
- LIGHTING PLAN

Project No.: 200-10034-18002
Designed By: TW
Drawn By: TN
Checked By: PFH

Saturday, May 4, 2019 10:50:48 AM DRAWING: E:\PROJECTS\TTT\T07\DWG\SheetFiles\ELECT\T07E105.DWG LAYOUT: LAYOUT(1) USER NAME: WIN_THEN



KEYED NOTE:

- ① CONTRACTOR SHALL REMOVE THE EXISTING EXHAUST FAN AND ASSOCIATED STARTER, PUSHBUTTON, WIRING, ETC. IN THE FLUORIDE FEED BUILDING. EXISTING CONDUITS SHALL REMAIN. PROVIDE AND INSTALL NEW STARTER AT THE SAME LOCATION FOR NEW EXHAUST FAN. EXTEND CONDUITS AS NECESSARY. MAKE ALL NECESSARY CONNECTIONS, TERMINATIONS, ETC. FOR A COMPLETE WORKING SYSTEM IN PLACE.
- ② CONTRACTOR SHALL PROVIDE AND INSTALL NEW NEMA 4X STAINLESS STEEL STARTER FOR STORAGE BUILDING AND MOUNT THE STARTER EXTERIOR WALL OF THE BUILDING.
- ③ CONTRACTOR SHALL FIELD LOCATE THE EXISTING LIGHTING CIRCUIT CONDUIT FOR STORAGE BUILDING AND SHALL USE EXISTING WIRES TO PULL NEW 4#10, 1#10G WIRES (FOR LIGHTING AND EXHAUST FAN) IN THE EXISTING CONDUIT FROM THE EXISTING PANEL L2 LOCATED IN OPERATIONS BUILDING - ELECTRICAL ROOM TO STORAGE BUILDING. USE EXISTING SPARE 20A-1P BREAKER IN EXISTING PANEL L2.

TETRA TECH

www.tetrattech.com
201 EAST PINE STREET, SUITE 1000
ORLANDO, FL 32801
PHONE: (407) 839-3955 FAX: (407) 839-3970

HILLERS ELECTRICAL ENGINEERING, INC.
28287 STATE ROAD 7, SUITE 100
BOCA RATON, FLORIDA 33428
(561) 491-4886 FAX
LICENSE NO: EB 0008977

	BID SET	
BY	DATE	DESCRIPTION
MARK	DATE	DESCRIPTION

Client: ORANGE COUNTY UTILITIES
Proj. Loc.: ORANGE COUNTY, FL

WESTERN REGIONAL WATER SUPPLY FACILITY
IMPROVEMENTS PHASE 3A - PART 2
FLUORIDE AND STORAGE BUILDING - ELECTRICAL PLAN

Project No.:	200-10034-18002
Designed By:	TW
Drawn By:	TN
Checked By:	PFH

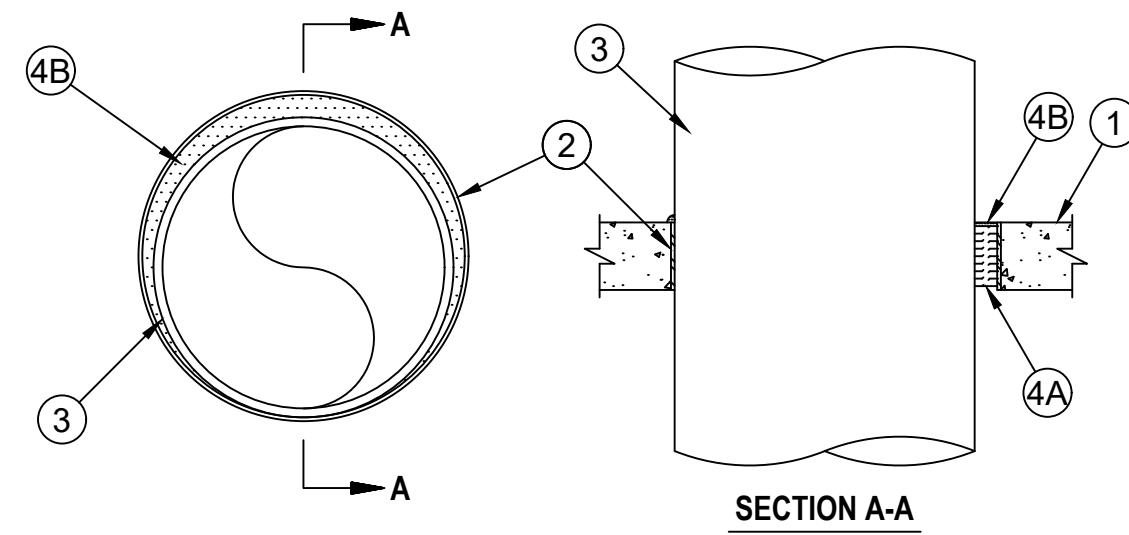
E105

System No. C-AJ-1226

F Rating — 3 Hr
 FT Rating — 0 Hr
 FTH Rating — 3 Hr
 FTH Rating — 0 Hr
 L Rating At Ambient — Less Than 1 CFM/Sq Ft
 L Rating At 400 F — 4 CFM/Sq Ft

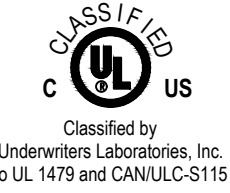


Reproduced by HILTI, Inc. Courtesy of Underwriters Laboratories, Inc.



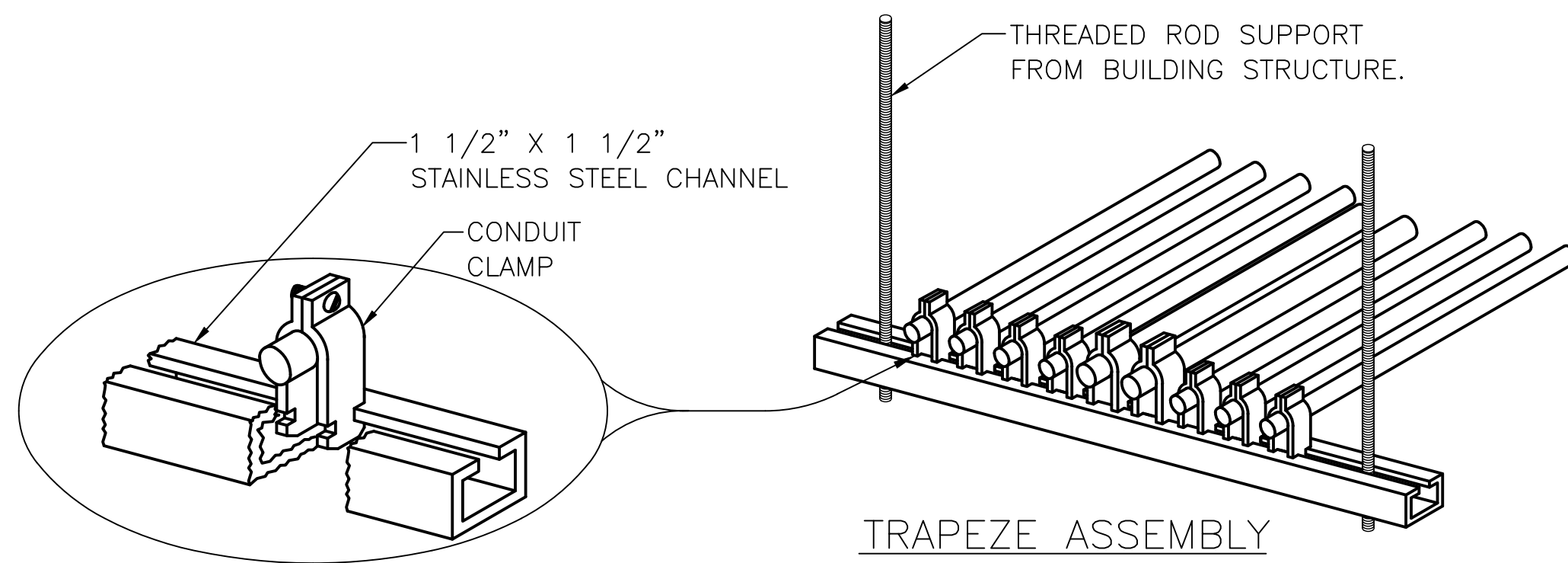
- Floor or Wall Assembly — Min 4-1/2 in. thick reinforced lightweight or normal weight (100-150 pcf) concrete. Wall may also be constructed of any UL Classified Concrete Blocks*. Max diam of opening is 32 in.
- Metallic Sleeve — (Optional) Nom 32 in. diam (or smaller) Schedule 40 (or heavier) steel sleeve cast or grouted into floor or wall assembly, flush with floor or wall surfaces or extending a max of 3 in. above floor or beyond both surfaces of wall.
- Sheet Metal Sleeve — (Optional) Max 6 in. diam, min 26 ga galv steel provided with a 26 ga galv steel square flange spot welded to the sleeve at approx mid-height, or flush with bottom of sleeve in floors, and sized to be a min of 2 in. larger than the sleeve diam. The sleeve is to be cast in place and may extend a max of 4 in. below the bottom of the deck and a max of 1 in. above the top surface of the concrete floor.
- Sheet Metal Sleeve — (Optional) - Max 12 in. diam, min 24 ga galv steel provided with a 24 ga galv steel square flange spot welded to the sleeve at approx mid-height, or flush with bottom of sleeve in floors, and sized to be a min of 2 in. larger than the sleeve diam. The sleeve is to be cast in place and may extend a max of 4 in. below the bottom of the deck and a max of 1 in. above the top surface of the concrete floor.
- Through-Penetrant — One metallic pipe, tube or conduit to be installed either concentrically or eccentrically within the firestop system. The annular space between penetrant and periphery of opening shall be min 0 in. (point contact) to max 1-7/8 in. Penetrant may be installed with continuous point contact. Penetrant to be rigidly supported on both sides of floor or wall assembly. The following types and sizes of metallic penetrants 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.
 - Copper Pipe — Nom 6 in. diam (or smaller) Regular (or heavier) copper pipe.
 - Copper Tubing — Nom 6 in. diam (or smaller) Type L (or heavier) copper tubing.
 - Conduit — Nom 6 in. diam (or smaller) steel conduit.
 - Conduit — Nom 4 in. diam (or smaller) steel electrical metallic tubing (EMT).
- Firestop System — The firestop system shall consist of the following:
 - Packing Material — Min 4 in. thickness of min 4 pcf mineral wool batt insulation firmly packed into opening as a permanent form. Packing material to be recessed from top surface of floor or sleeve or from both surfaces of wall or sleeve as required to accommodate the required thickness of fill material.
 - Fill, Void or Cavity Material* — Sealant — Min 1/4 in. thickness of fill material applied within the annulus, flush with top surface of floor or sleeve or with both surfaces of wall or sleeve. At the point or continuous contact locations between penetrant and concrete or sleeve, a min 1/4 in. diam bead of fill material shall be applied at the concrete or sleeve/ pipe penetrant interface on the top surface of floor and on both surfaces of wall.

1 CONDUIT PENETRATION AT WALL OR SLAB
 VAR NOT TO SCALE



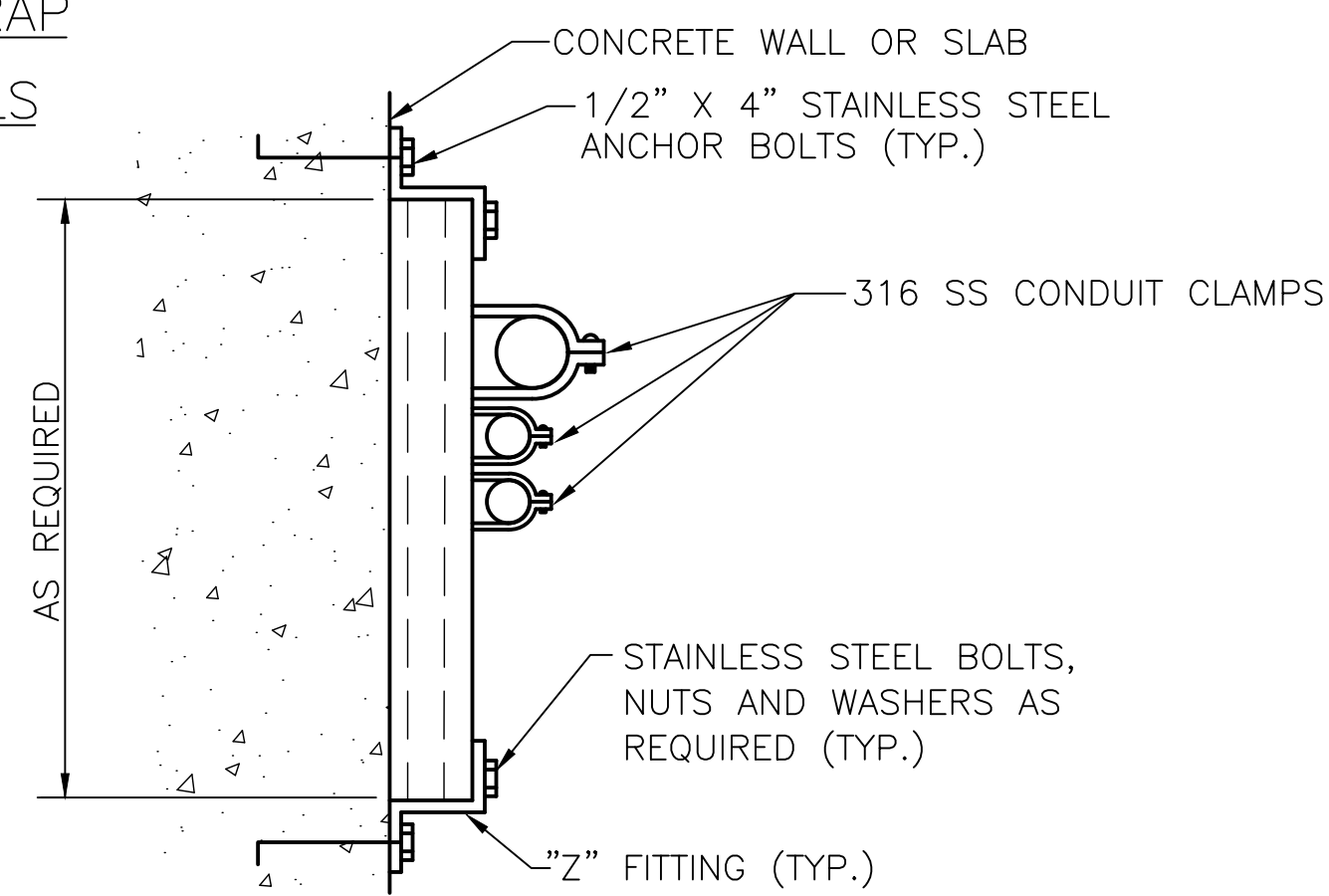
NOTES:

- THIS DETAIL TYPICAL FOR BOTH VERTICAL AND HORIZONTAL MOUNTING
- CHANNEL AND ALL SUPPORT DEVICES TO BE STAINLESS STEEL.
- CHANNELS TO BE SPACED 5' MAXIMUM.

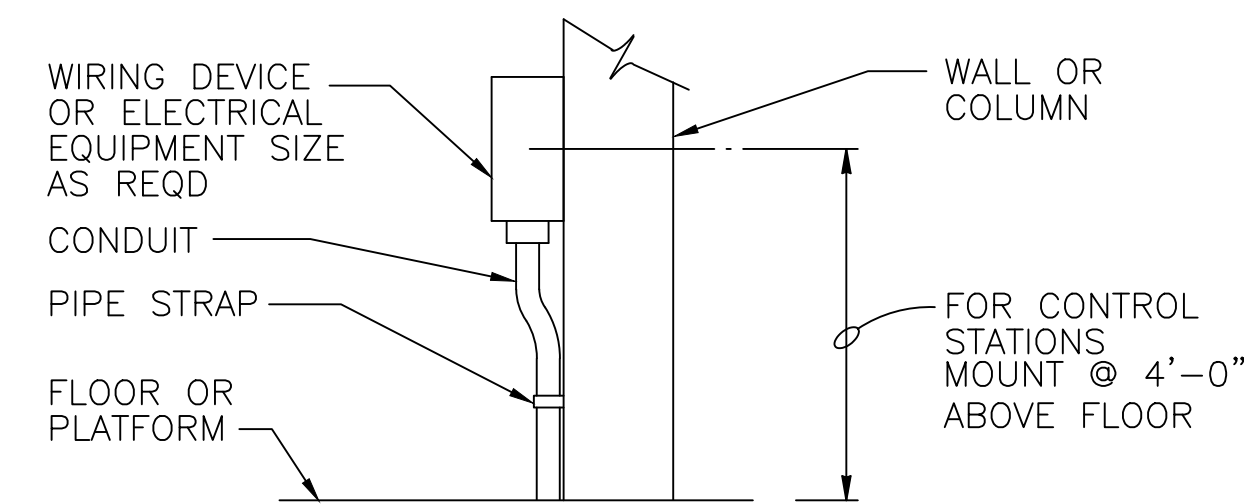


TRAPEZE ASSEMBLY

CONDUIT PIPE STRAP MOUNTING DETAILS

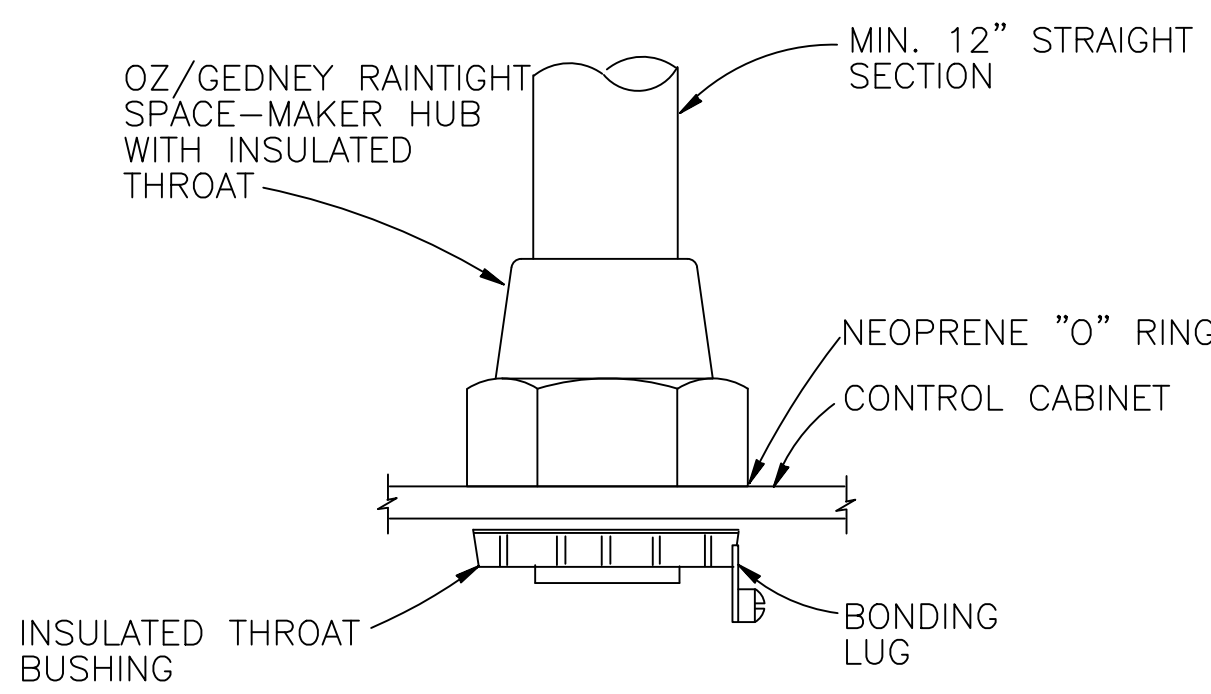


5 CONDUIT SUPPORT
 VAR NOT TO SCALE



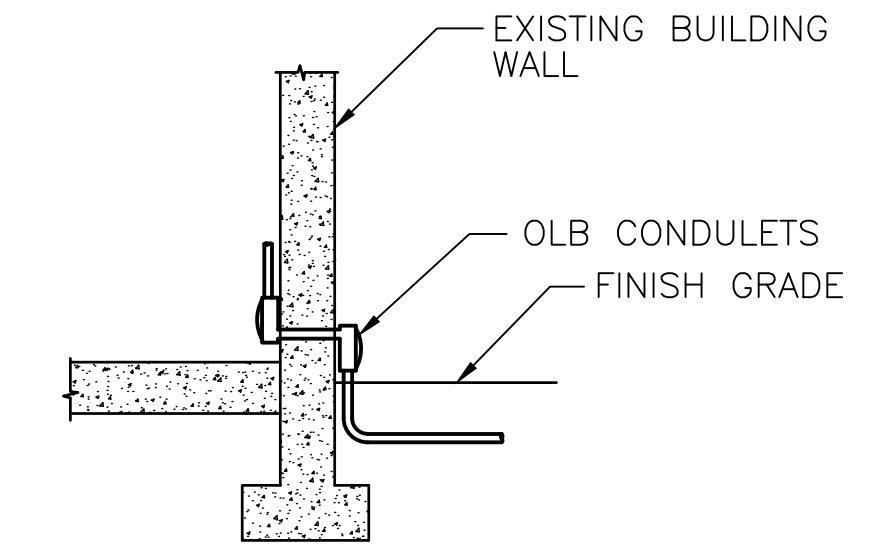
NOTE:
 ALL MOUNTING HARDWARE SHALL BE STAINLESS STEEL. ON CONCRETE WALLS, USE MALLEABLE IRON INSERTS. MOUNT ENCLOSURE ON 1/4" SPACERS OF 1/2" RIGID CONDUIT.

2 WALL OR COLUMN MOUNTED DEVICE
 VAR NOT TO SCALE

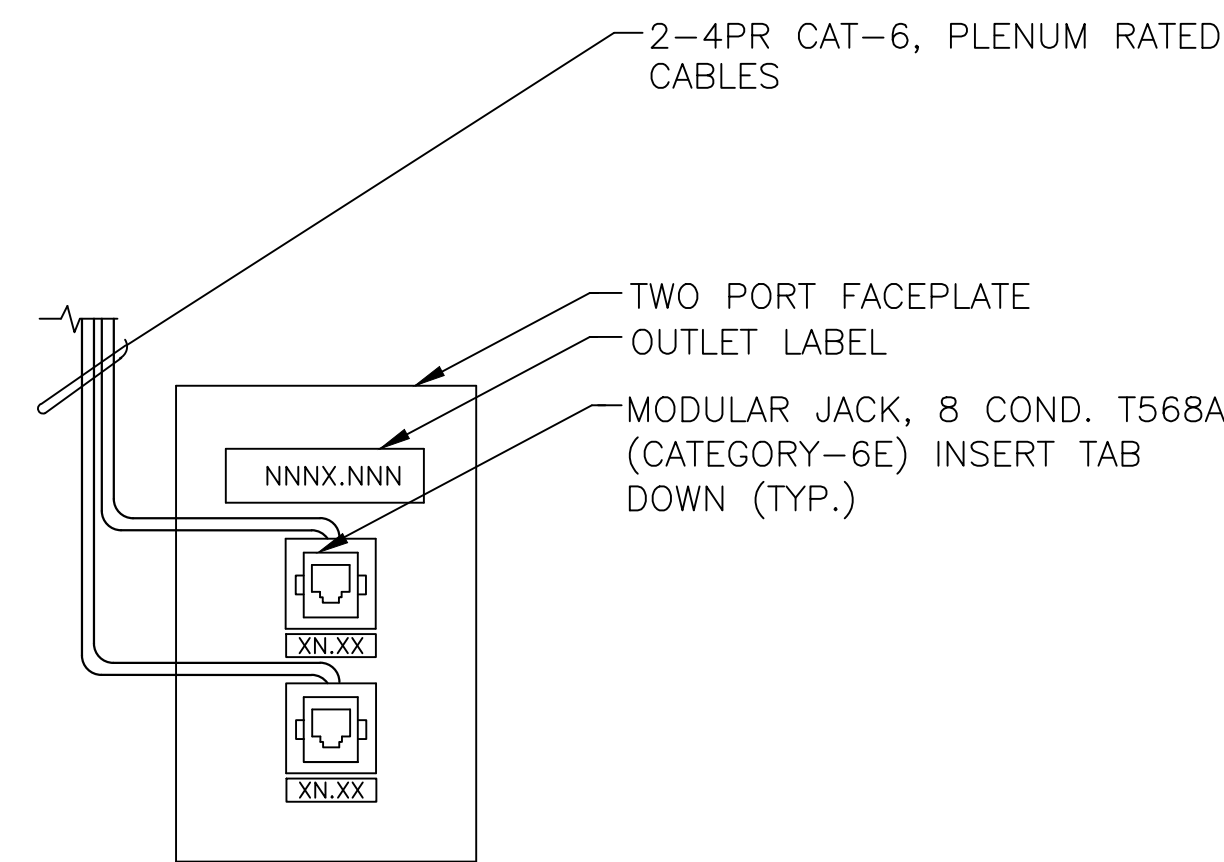


TYPICAL FOR ALL CONDUIT ENTRANCES INTO NEMA 3R, NEMA 4, OR NEMA 4X ENCLOSURES.

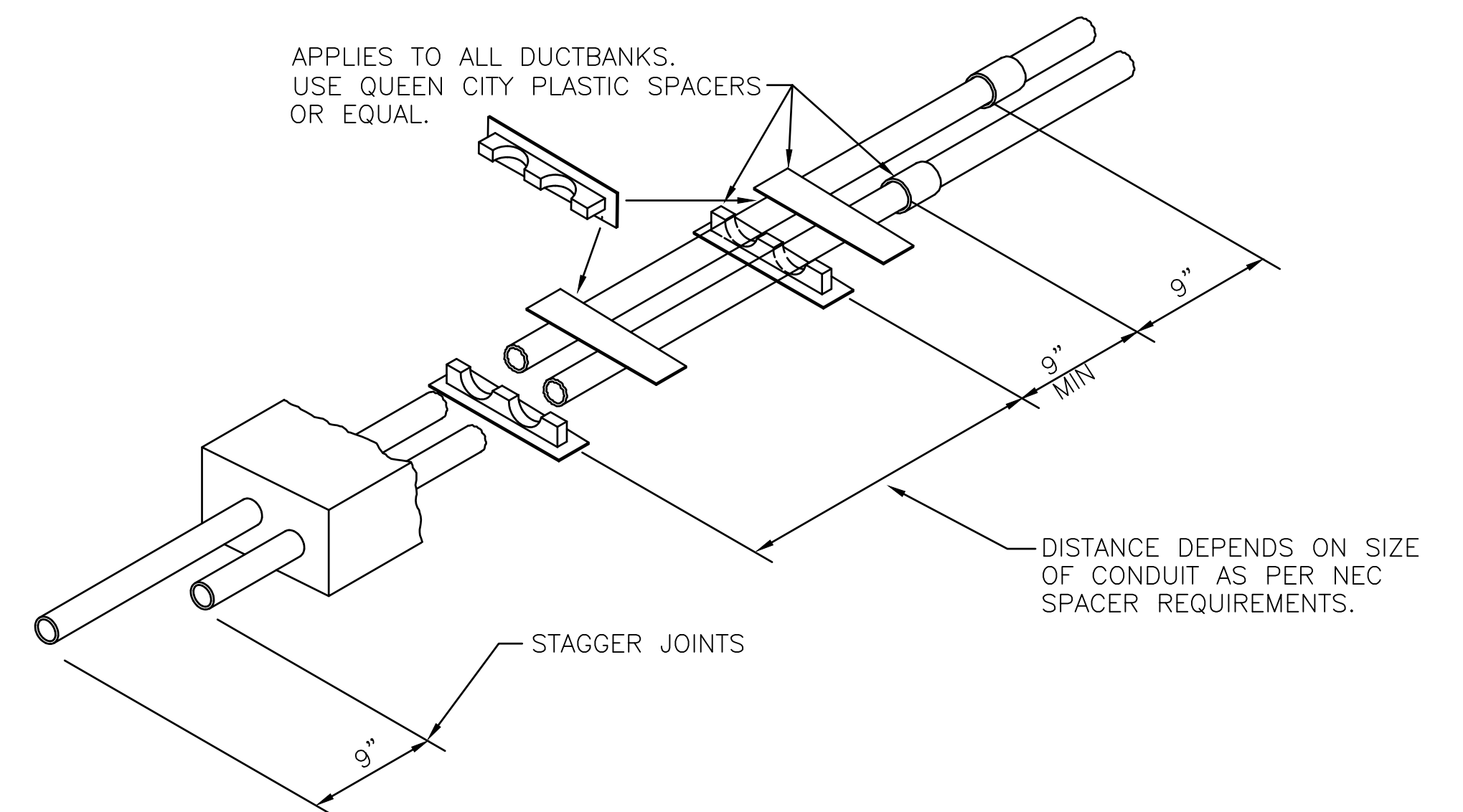
3 CONDUIT HUB
 VAR NOT TO SCALE



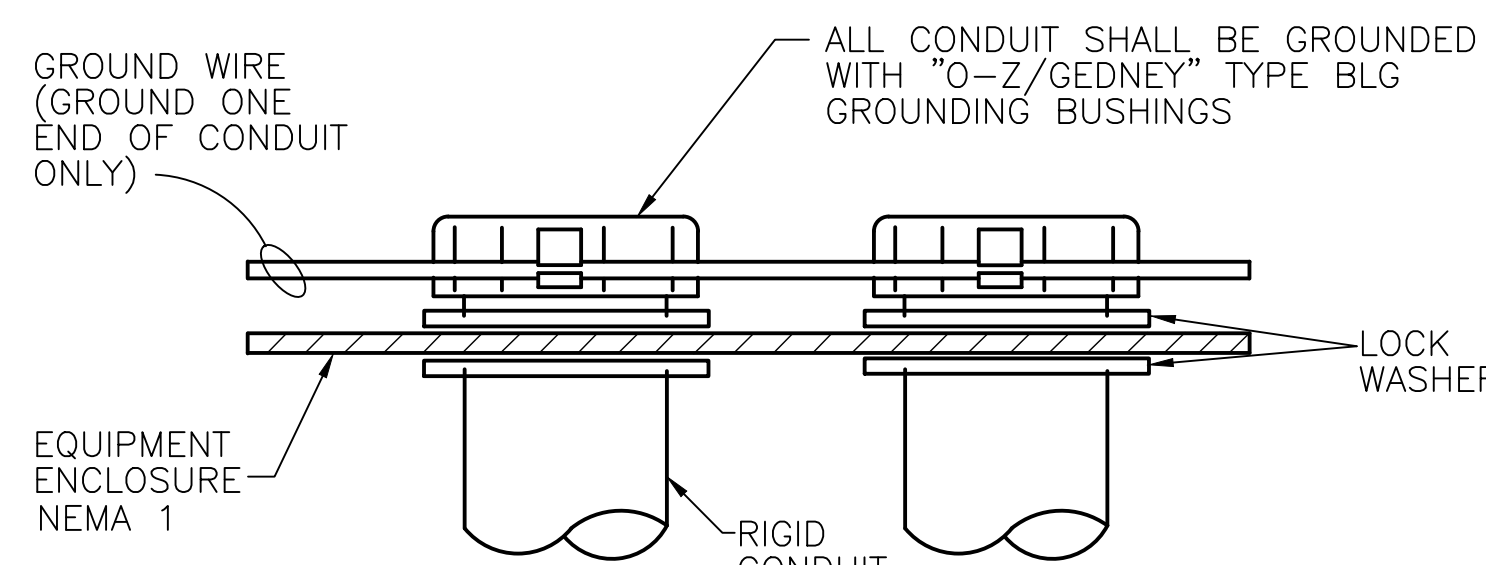
4 CONDUIT ENTRANCE
 VAR NOT TO SCALE



3 TYPICAL DATA OUTLET CONFIGURATION
 VAR NOT TO SCALE



7 HORIZONTAL STAGGERING OF SPACERS AND JOINTS
 VAR NOT TO SCALE



8 CONDUIT GROUNDING
 VAR NOT TO SCALE

9 NOT USED
 VAR NOT TO SCALE

Saturday, May 4, 2019 10:50:54 AM DRAWING: E:\PROJECTS\TTT07\DWG\SheetFiles\ELECT\TTT07E501.DWG LAYOUT: LAYOUT(1) USER NAME: WIN_THEN

TETRA TECH
 www.tetratech.com
 201 EAST PINE STREET, SUITE 1000
 ORLANDO, FL 32801
 PHONE: (407) 839-3955 FAX: (407) 839-3970

HILLERS ELECTRICAL ENGINEERING, INC.
 28257 STATE ROAD 7, SUITE 100
 BOCA RATON, FLORIDA 33428
 (561) 451-4886 FAX
 (561) 451-4886 FAX
 LICENSE NO: EB 0006977

BID SET

MARK	DATE	DESCRIPTION

Client: ORANGE COUNTY UTILITIES
 Proj. Loc.: ORANGE COUNTY, FL
 Project No.: 200-10034-18002
 Designed By: TW
 Drawn By: TN
 Checked By: PFH

E501

FIRE ALARM AND SECURITY LEGENDS

- FIRE ALARM PULL STATION
- FIRE ALARM HORN/STROBE LIGHT
- FIRE ALARM STROBE LIGHT
- FIRE ALARM SMOKE DETECTOR
- FIRE ALARM HEAT DETECTOR
- MONITOR MODULE
- RELAY MODULE
- FIRE ALARM CONTROL PANEL
- FIRE ALARM REMOTE ANNUNCIATOR PANEL
- FIRE ALARM SUB CONTROL PANEL
- BEAM DETECTOR, T=TRANSMITTER, R=RECEIVER
REF=REFERENCE
- DUCT SMOKE DETECTOR
- REMOTE TEST STATION
- FIRE/SMOKE DAMPER
- LINE ISOLATOR MODULE
- LOCK BOX
- MOTION DETECTOR
- DOOR SWITCH/CONTACT
- OVERHEAD DOOR SWITCH/CONTACT
- KEY PAD
- SECURITY CONTROL PANEL
- MONITOR MODULE

NOTES:

1. FIRE ALARM SHALL BE ADDRESSABLE.
2. ALL N.A.C. DEVICES SHALL TEMPORAL PER NFPA 72 & NFPA 101 AND SHALL BE SYNCHRONIZED @1 HZ PER ADA AND NFPA 72. AUDIBLE SIGNAL SHALL BE A MINIMUM OF 15dB ABOVE THE AVERAGE AMBIENT SOUND LEVEL OR 5 dBA ABOVE THE MAXIMUM SOUND LEVEL HAVING A DURATION OF AT LEAST 60 SECONDS (WHICHEVER IS GREATER) MEASURED AT 5 FEET ABOVE FINISHED FLOOR IN THE OCCUPIED AREA.
3. ALL SYSTEM DEVICES SHALL BE INSTALLED IN ACCORDANCE WITH U.L., FLORIDA ADMINISTRATIVE CODE (FAC) 61G15-32.008, FLORIDA BUILDING CODE, NFPA CODES, NATIONAL ELECTRICAL CODE, AND ALL APPLICABLE ORANGE COUNTY CODES WITH RESPECT TO FIRE ALARM SYSTEMS.
4. THE FIRE ALARM CONTRACTOR SHALL COMPLETELY INSTALL AND TEST THE COMPLETE FIRE ALARM SYSTEM PRIOR TO CONTACTING THE FIRE MARSHAL'S OFFICE FOR THE FINAL INSPECTION/CERTIFICATION PER NFPA 72, SECTION 1-6-1. BEFORE REQUESTING FINAL APPROVAL OF THE INSTALLATION, THE FIRE ALARM CONTRACTOR SHALL FURNISH A WRITTEN STATEMENT TO THE EFFECT THAT THE SYSTEM HAS BEEN INSTALLED IN ACCORDANCE WITH THE APPROVED PLANS AND TESTED IN ACCORDANCE WITH THE MANUFACTURERS SPECIFICATIONS AND REQUIREMENTS OF NFPA 72. THE FIRE ALARM CONTRACTOR MUST SUPPLY SUFFICIENT MANPOWER TO CONDUCT THE TEST.
5. ALL SIGNAL LINE CIRCUITS (SLC) SHALL BE CLASS A.
6. ALL NOTIFICATION APPLIANCE CIRCUITS (NAC) SHALL BE CLASS A.
7. PROVIDE CLASS A WIRING: ALL STYLES OF CLASS A CIRCUITS USING PHYSICAL CONDUCTORS SHALL BE INSTALLED SUCH THAT THE OUTGOING AND RETURN CONDUCTORS, EXITING AND RETURNING TO THE CONTROL UNIT, RESPECTIVELY, ARE ROUTED SEPARATELY. THE OUTGOING AND RETURN CIRCUIT CONDUCTORS SHALL NOT BE RUN IN THE SAME CABLE ASSEMBLY, ENCLOSURE, OR RACEWAY.

EXCEPTION:
1. FOR A DISTANCE NOT TO EXCEED 10 FT. WHERE THE OUTGOING AND RETURN CONDUCTORS ENTER OR EXIT THE INITIATING DEVICE, NOTIFICATION APPLIANCE, OR CONTROL UNIT ENCLOSURES.
2. SINGLE CONDUIT/ RACEWAY DROPS TO INDIVIDUAL DEVICES OR APPLIANCES.
8. ALL WIRING IS POWER LIMITED PER SPECIFICATION SECTION 16722.
9. INSTALLATION SHALL COMPLY WITH THE CURRENT FLORIDA BUILDING CODE WITH REVISIONS, LOCAL AHJ CODES, NFPA 72 (ALL APPLICABLE CHAPTERS), NFPA 101 (ALL APPLICABLE CHAPTERS) AND NFPA-70 (NEC), ALL APPLICABLE SECTIONS)
10. CONDUIT SHALL BE 3/4" MINIMUM RACEWAY SIZED FOR MAXIMUM OF 40% WIRE FILL AS PER SPECIFICATION 16722. PROCESS AREA CONDUIT SHALL BE 1" MINIMUM RIGID RACEWAY SIZED FOR MAXIMUM OF 40% WIRE FILL
11. SYSTEM SHALL BE GROUNDED PER MANUFACTURERS SPECIFICATIONS, SPECIFICATION 16722 AND THE CURRENT NEC ARTICLE 250.
12. ALL OFFICE & RESTROOM VISUAL DEVICES SHALL BE MOUNTED 80" A.F.F. TO BOTTOM OF VISUAL PER ADA. ALL PROCESS AND MECHANICAL AREA VISUAL DEVICES SHALL BE MINIMUM MOUNTED 80" AFF TO BOTTOM OF VISUAL TO A MAXIMUM OF 96" A.F.F. TO TOP OF VISUAL PER NFPA 72. MANUAL PULL STATIONS SHALL BE MOUNTED MINIMUM 48" A.F.F. PER ADA REQUIREMENTS.
13. SYSTEM COMPONENTS SHALL BE UL LISTED, COMPATIBLE AND SUITABLE FOR FIRE SERVICE USE.
14. FIRE ALARM SYSTEM CONTROL PANEL SHALL BE MOUNTED @ 60" A.F.F.
15. CONTRACTOR SHALL COORDINATE WITH OWNER TO INCLUDE MONITORING CONTRACT OF THIS SYSTEM INTO THE EXISTING FIRE ALARM SYSTEM. CONTRACTOR SHALL PAY THE ADDITIONAL FEE REQUIRED TO INCLUDE THIS SYSTEM INTO THE EXISTING MONITORING CONTRACT EXPIRATION DATE OR 1 YEAR, WHICHEVER COMES FIRST.
16. THE MAXIMUM NUMBER OF ADDRESSABLE DEVICES FOR EACH SLC CHANNEL IS 318.
17. THIS MAINTENANCE BUILDING IS NOT SPRINKLED.
18. ALL HVAC & FAN COIL UNITS GREATER THAN 2,000CFM AND SUPPLY & RETURN GREATER THAN 15,000CFM HAVE BEEN PROTECTED.
19. ALL DUCT SMOKE DETECTOR SHALL BE COMPATIBLE WITH THE PROPOSED FIRE ALARM SYSTEM AND INSTALLED BY THE HVAC/MECHANICAL CONTRACTOR.
20. ALL FIRE/SMOKE PARTITION PENETRATION(S) SHALL BE SEALED, WITH U.L. LISTED APPROVED FIRESTOP SYSTEMS TO MATCH FIRE RATING OF PENETRATED STRUCTURE(S).
21. TAMPOR RESISTANT SCREWS SHALL BE USED TO PREVENT ACCESS TO JUNCTION BOXES AND DEVICE COVERS INSTALLED OUTSIDE OF BUILDINGS.
22. IF THE SYSTEM IS IN EXCESS OF \$5,000, SHOP DRAWINGS MUST BE SIGNED AND SEALED BY A LICENSED FLORIDA PROFESSIONAL ENGINEER DURING SUBMITTAL.
23. THIS FIRE ALARM SYSTEM WILL BE CONNECTED TO THE EXISTING FIRE ALARM SYSTEM AT OPERATIONS BUILDING AND NO ADDITIONAL PHONE LINE CONNECTION IS NEEDED.
24. EXISTING FIRE ALARM SYSTEM WAS INSTALLED BY "INTEGRATED SYSTEM OF FLORIDA: 4455 PARKBREEZE COURT ORLANDO, FL 32808, PHONE (407) 295-5393, FAX: (407) 296-7180". NEW FIRE ALARM SYSTEM FOR MAINTENANCE BUILDING SHALL BE THE SAME TYPE AND MODELS TO BE COMPATIBLE WITH THE EXISTING FIRE ALARM SYSTEM. IT IS RECOMMENDED THE NEW FIRE ALARM SYSTEM TO BE INSTALLED BY THE ABOVE FIRE ALARM INTEGRATOR SO THAT THE EXISTING FIRE ALARM COMMUNICATION CAN BE INTEGRATED WITH A MINIMAL DOWNTIME. ANY OTHER FIRE ALARM SYSTEM INTEGRATOR MUST SUBMIT THE QUALIFICATION AND UNDERSTANDING OF THE EXISTING SYSTEM AND GET APPROVAL BEFORE BIDDING.

SEQUENCE OF OPERATION

	GENERAL ALARM	TROUBLE OPEN CIRCUIT	ANNUNCIATE @FACP	SUPERVISORY ALARM	AHU/FAN SHUTDOWN
MANUAL PULL STATION	•	•	•		
SMOKE DETECTOR	•	•	•		•
HEAT DETECTOR	•	•	•		•
DUCT SMOKE DETECTOR	•	•	•		•
FIRE SUPPRESSION TROUBLE			•	•	
FIRE SUPPRESSION ALARM		•	•	•	•
FIRE SUPPRESSION PRE-ALARM		•	•	•	•
AC POWER LOSS		•	•		
LOW BATTERY		•	•		
CIRCUIT/CABLE GROUND		•	•		
MISSING DETECTOR		•	•		
AUDIBLE NOTIFICATION APPLIANCES	•	•	•		
VISUAL NOTIFICATION APPLIANCES	•	•	•		

CIRCUIT SCHEDULE

- [B2] = [3/4"C, 2#12, 1#12G]
- [U] = [3/4"C, CABLE SUPPLIED BY FIRE ALARM SYSTEM SUPPLIER]
- [V] = [3/4"C, CABLE SUPPLIED BY FIRE ALARM SYSTEM SUPPLIER]
- [W] = [1"C, CABLE SUPPLIED BY FIRE ALARM SYSTEM SUPPLIER]
- [X] = [1#10 COPPER GROUND WIRE TO GROUND GRID]
- [Y] = [3/4"C, CABLE SUPPLIED BY FIRE ALARM SYSTEM SUPPLIER]
- [Z] = [1-4"C, 12-STRAND MULTIMODE FIBER OPTIC CABLE RATED FOR WET LOCATIONS]

NOTES FOR ALL FIRE ALARM DRAWINGS:

1. CONTRACTOR SHALL PROVIDE AND INSTALL EMPTY CONDUITS WITH PULL STRINGS AND NEMA 1 JUNCTION BOXES AT EACH FIRE ALARM AND CONTROL PANEL LOCATION. COORDINATE WITH OWNER AND FIRE ALARM SYSTEM SUPPLIER FOR EXACT LOCATION OF THE JUNCTION BOX PRIOR TO INSTALLATION, AND ADJUST ACCORDINGLY.
2. FIRE ALARM SYSTEM INCLUDING CONTROL PANELS, SENSORS, ASSOCIATED CABLES ETC. SHALL BE PROVIDED AND INSTALLED BY THE FIRE ALARM SYSTEM SUPPLIER FOR A COMPLETE AND WORKING SYSTEM IN PLACE.



HILLERS ELECTRICAL ENGINEERING, INC.
28257 STATE ROAD 7, SUITE 100
BOCA RATON, FLORIDA 33428
(561) 491-4886 FAX
LICENSE NO: EB 0006877

BID SET

MARK	DATE	DESCRIPTION

Client: ORANGE COUNTY UTILITIES
Prg. Loc.: ORANGE COUNTY, FL
WESTERN REGIONAL WATER SUPPLY FACILITY
IMPROVEMENTS PHASE 3A - PART 2
FIRE ALARM AND SECURITY SYMBOLS AND GENERAL NOTES

Project No.:	200-10034-18002
Designed By:	TW
Drawn By:	TN
Checked By:	PFH

F001

www.tetratech.com
201 EAST PINE STREET, SUITE 1000
ORLANDO, FL 32801
PHONE: (407) 839-3955 FAX: (407) 839-3970

