GENERAL SPECIFICATIONS

1. DRAWINGS AND SPECIFICATIONS FORM COMPLIMENTARY REQUIREMENTS: PROVIDE WORK SPECIFIED AND NOT SHOWN, AND WORK SHOWN BUT NOT SPECIFIED AS THOUGH EXPLICITLY REQUIRED BY BOTH. ALTHOUGH WORK IS NOT SPECIFICALLY SHOWN OR SPECIFIED, PROVIDE SUPPLEMENTARY OR MISCELLANEOUS ITEMS, APPURTENANCES, DEVICES AND MATERIALS OBVIOUSLY NECESSARY FOR A SOUND, SECURE AND COMPLETE INSTALLATION.
2. THE DRAWINGS AND SPECIFICATIONS INDICATE A PERFORMANCE SPECIFICATION FOR THE FIRE PROTECTION AND FIRE ALARM SYSTEMS. AWARDED CONTRACTORS ARE RESPONSIBLE FOR DETAILED DESIGN AND PREPARATION OF SIGNED AND SEALED ENGINEERING DOCUMENTS FOR REVIEW/APPROVAL FROM OWNERS INSURANCE CARRIER AND LOCAL AUTHORITY HAVING JURISDICTION.
3. DRAWINGS ARE DIAGRAMMATIC: THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL COMPONENTS NECESSARY FOR A COMPLETE INSTALLATION. DETERMINE LOCATIONS OF SYSTEMS AND COMPONENTS IN FIELD. COORDINATE WITH ARCHITECTURAL DRAWINGS AND OTHER TRADES.
4. ADDRESS QUESTIONS REGARDING DRAWINGS TO ARCHITECT IN WRITING BEFORE AWARD OF CONTRACT. OTHERWISE, ARCHITECTS INTERPRETATION OF MEANING AND INTENT OF DRAWINGS SHALL BE FINAL.
5. THE INTENTION IS FOR INSTALLATION OF COMPLETE AND OPERATING SYSTEMS INSTALLED IN ACCORDANCE WITH THE ASSOCIATED MANUFACTURE'S INSTRUCTIONS. NOT EVERY COMPONENT REQUIRED IS SHOWN. THE CONTRACTOR SHALL INCLUDE ALL COMPONENTS NORMALLY ASSOCIATED WITH THE PARTICULAR SYSTEM AND/OR REQUIRED BY THE MANUFACTURER'S INSTALLATION INSTRUCTIONS. THE SYSTEM SHALL BE FULLY COMMISSIONED AND SIGNED OFF BY AN OFFICER OF THE RESPECTIVE CONTRACTOR PRIOR TO FINAL OWNER ACCEPTANCE TESTING. PROVIDE PERSONNEL TO ASSIST IN 24 HOURS OF ACCEPTANCE TESTING.
6. PRIOR TO COMMENCING OF WORK, COORDINATION DRAWINGS MUST BE PREPARED AND SUBMITTED FOR REVIEW AND APPROVAL TO THE ARCHITECT/ENGINEER. EACH TRADE (HVAC, PLUMBING, ELECTRICAL AND FIRE PROTECTION) IS RESPONSIBLE FOR DOCUMENTING THEIR WORK ON THE PLAN ORIGINALLY SUBMITTED AS THE SPRINKLER PIPE FABRICATION DRAWING. LOCATION AND ELEVATION OF THE RESPECTIVE DISCIPLINES WORK MUST BE SHOWN ON THE COORDINATION DRAWINGS. SHEET METAL SHOP DRAWINGS SHALL INCLUDE ALL ELEMENTS OF THE EQUIPMENT,DUCTWORK, AIR DEVICES AND REFLECTED CEILING PLAN FOR COORDINATION OF CRITICAL DIMENSIONS OF ARCHITECTURAL/ STRUCTURAL COMPONENTS.
7. GIVE NOTICES, FILE PLANS, OBTAIN PERMITS AND LICENSES, PAY FEES AND BACK CHARGES, AND OBTAIN NECESSARY APPROVALS FROM AUTHORITIES THAT HAVE JURISDICTION AS REQUIRED TO PERFORM WORK IN ACCORDANCE WITH ALL LEGAL REQUIREMENTS AND WITH THE DESIGN DOCUMENTS.
8. MATERIALS AND EQUIPMENT SHALL BE LISTED BY UNDERWRITERS LABORATORIES (UL) AND APPROVED BY ASME AND AGA, AS APPLICABLE, FOR INTENDED SERVICE.
9. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES REQUIRED FOR SAFE EXECUTION AND COMPLETION OF THE WORK AND FOR INITIATING, MAINTAINING AND SUPERVISING ALL SAFETY PRECAUTIONS AND PROGRAMS IN CONNECTION WITH THE WORK.
10. ALL MATERIALS, EQUIPMENT AND METHOD OF INSTALLATION SHALL BE ACCORDANCE WITH THE STANDARDS, REGULATIONS, CODES, ORDINANCES AND LAW OF LOCAL, STATE AND FEDERAL GOVERNMENTS AND OTHER AUTHORITIES THAT HAVE LAWFUL JURISDICTION.
11. IT SHALL BE THE RESPONSIBILITY OF THIS CONTRACTOR TO COORDINATE THE WORK UNDER THIS CONTRACT WITH THAT OF ALL OTHER TRADES, INCLUDING, BUT NOT LIMITED TO, ELECTRICAL, HVAC, SPRINKLER, PLUMBING, STRUCTURAL AND GENERAL CONSTRUCTION. OFFSETS IN DUCTWORK, PIPINGAND CONDUITS AROUND OBSTRUCTIONS SHALL BE PROVIDED AT NO ADDITIONAL COST TO THE OWNER.
12. EACH CONTRACTOR IS RESPONSIBLE FOR CUTTING AND PATCHING REQUIRED FOR THE INSTALLATION OF NEW WORK UNDER THIS CONTRACT. CUTTING AND PATCHING SHALL BE COMPLETED IN A NEAT AND WORKMANLIKE MANNER. PATCHING MATERIALS SHALL MATCH EXISTING MATERIALS TO THE GREATEST EXTENT POSSIBLE. PROVIDE TOUCH-UP TO MATCH EXISTING SURROUNDING AREAS OF CUTTING AND PATCHING WORK.
13. CONTRACTOR SHALL COORDINATE ITS RESPECTIVE CEILING MOUNTED EQUIPMENT AND DEVICES WITH OTHER TRADE CONTRACTORS PRIOR TO INSTALLATION TO AVOID CONFLICTS.
14. ALL DEBRIS SHALL BE CLEANED AND REMOVED FROM THE SITE BY END OF EACH WORK DAY. PRIOR TO DISPOSAL OF EQUIPMENT AND MATERIALS, TURN OVER TO THE OWNER ANY REMOVED EQUIPMENT AND MATERIALS REQUESTED BY THE OWNER.
15. WORK SHALL BE EXECUTED IN A WORKMANLIKE MANNER AND SHALL PRESENT A NEAT, RECTILINEAR APPEARANCE WHEN COMPLETED.
16. MAINTAIN MAXIMUM HEAD ROOM AT ALL TIMES. DO NOT RUN PIPES, DUCTS AND CONDUIT EXPOSED UNLESS SHOWN AND NOTED TO BE EXPOSED ON DRAWINGS.
17. MATERIALS AND EQUIPMENT SHALL BE NEW, UNLESS NOTED OTHERWISE, AND INSTALLED ACCORDING TO MANUFACTURER'S INSTRUCTIONS AND RECOMMENDATIONS SO THAT COMPLETED INSTALLATION SHALL OPERATE SAFELY AND EFFICIENTLY.
18. EACH RESPECTIVE CONTRACTOR SHALL FIRE STOP ALL NEW AND EXISTING OPENINGS THROUGH FIRE RATED FLOORS, WALLS AND CEILINGS WITH UL ASSEMBLIES OF EQUAL RATING. FIELD VERIFY EXISTING CONDITIONS BEFORE SUBMITTING BID PROPOSAL.
19. COORDINATE ALL ROOF PENETRATIONS WITH WORK OF OTHER TRADES. ALL PENETRATIONS SHALL BE SEALED WATERTIGHT. COORDINATE FLASHING REQUIREMENTS TO MAINTAIN ROOF WARRANTY.
20. MANUFACTURERS' MODEL NUMBERS ARE SPECIFIED SOLELY TO ESTABLISH STANDARDS OF QUALITY FOR PERFORMANCE AND MATERIALS.
21. SUBSTITUTED PRODUCTS SUBMITTED AND APPROVED FOR USE THAT NECESSITATE CHANGES TO THE WORK OF OTHER TRADES OF CONTRACT SHALL BE COORDINATED AND ARRANGED BY THE CONTRACTOR WHO SUBMITTED THE SUBSTITUTION WITHOUT ADDITIONAL COST TO THE OWNER.
22. PRODUCT INSTALLATION SHALL ADHERE TO MANUFACTURER'S RECOMMENDATIONS AND INSTRUCTION.
23. EACH RESPECTIVE CONTRACTOR SHALL PROVIDE PROPER ACCESS TO EQUIPMENT AND COMPONENTS THAT REQUIRE INSPECTION, MAINTENANCE AND POSSIBLE REPAIR. ACCESS PANELS SHALL BE MINIMUM 12"X12" OR AS NEEDED FOR PROPER ACCESS. ACCESS PANELS SHALL BE FURNISHED BY THIS CONTRACTOR AND TURNED OVER TO GENERAL CONTRACTOR FOR INSTALLATION.
24. CONTRACTOR SHALL COORDINATE ELECTRICAL CHARACTERISTICS AND REQUIREMENTS OF ALL APPLICABLE EQUIPMENT WITH THE ELECTRICAL CONTRACTOR.
25. AS WORK PROGRESSES AND FOR DURATION OF CONSTRUCTION, MAINTAIN A COMPLETE SET OF CONTRACT DRAWINGS AT THE JOBSITE. RECORD WORK COMPLETED AND ALL CHANGES FROM ORIGINAL CONTRACT DRAWINGS CLEARLY AND ACCURATELY INCLUDING WORK INSTALLED AS A MODIFICATION OR ADDITION TO THE ORIGINAL DESIGN TURN OVER ALL OPERATING MANUALS, MAINTENANCE MANUALS, AND "AS BUILT" DRAWINGS TO OWNER AT CONCLUSION OF CONSTRUCTION.
26. DO NOT SUPPORT EQUIPMENT, DUCTWORK, PIPING, CONDUIT OR DEVICES FROM SUSPENDED CEILINGS. SUPPORT ALL EQUIPMENT, DUCTWORK, PIPING, CONDUIT AND DEVICES FROM BUILDING STRUCTURE TO PROVIDE A VIBRATION FREE INSTALLATION. NOTIFY ARCHITECT AND STRUCTURAL ENGINEER OF ALL WEIGHTS AND METHODS OF SUPPORT.
27. ANY REFERENCE TO MECHANICAL, PLUMBING, FIRE PROTECTION OR ELECTRICAL CONTRACTORS NOTED ON THE DRAWINGS SHALL NOT BE INTERPRETED AS AN INTENTION TO DEFINE SEPARATE CONTRACTORS FOR THE RESPECTIVE WORK. THE GENERAL CONTRACTOR SHALL COORDINATE AND PROVIDE A COMPLETE INSTALLATION WITH COMPLETE MECHANICAL, PLUMBING, FIRE PROTECTION AND ELECTRICAL SYSTEMS, REGARDLESS OF ANY REFERENCES TO OTHER TRADE CONTRACTORS.
28. GUARANTEE WORK OF THIS CONTRACTOR IN WRITING FOR A PERIOD OF ONE YEAR FROM THE DATE OF OWNER'S ACCEPTANCE OR CERTIFICATE OF SUBSTANTIAL COMPLETION. PROMPTLY REPAIR OR REPLACE DEFECTIVE MATERIALS, EQUIPMENT, WORKMANSHIP AND INSTALLATIONS THAT DEVELOP DEFECTS WITHIN THIS PERIOD. PROMPTLY AND TO OWNERS SATISFACTION, CORRECT DAMAGE CAUSED IN MAKING NECESSARY REPAIRS AND REPLACEMENTS UNDER THIS GUARANTEE AT NO ADDITIONAL COST TO OWNER. SUBMIT GUARANTEE TO ARCHITECT BEFORE FINAL PAYMENT IS MADE. STATEMENT OF GUARANTEE REQUIREMENTS SHALL NOT BE INTERRUPTED TO LIMIT OWNER'S RIGHTS UNDER LAW AND THIS CONTRACT.

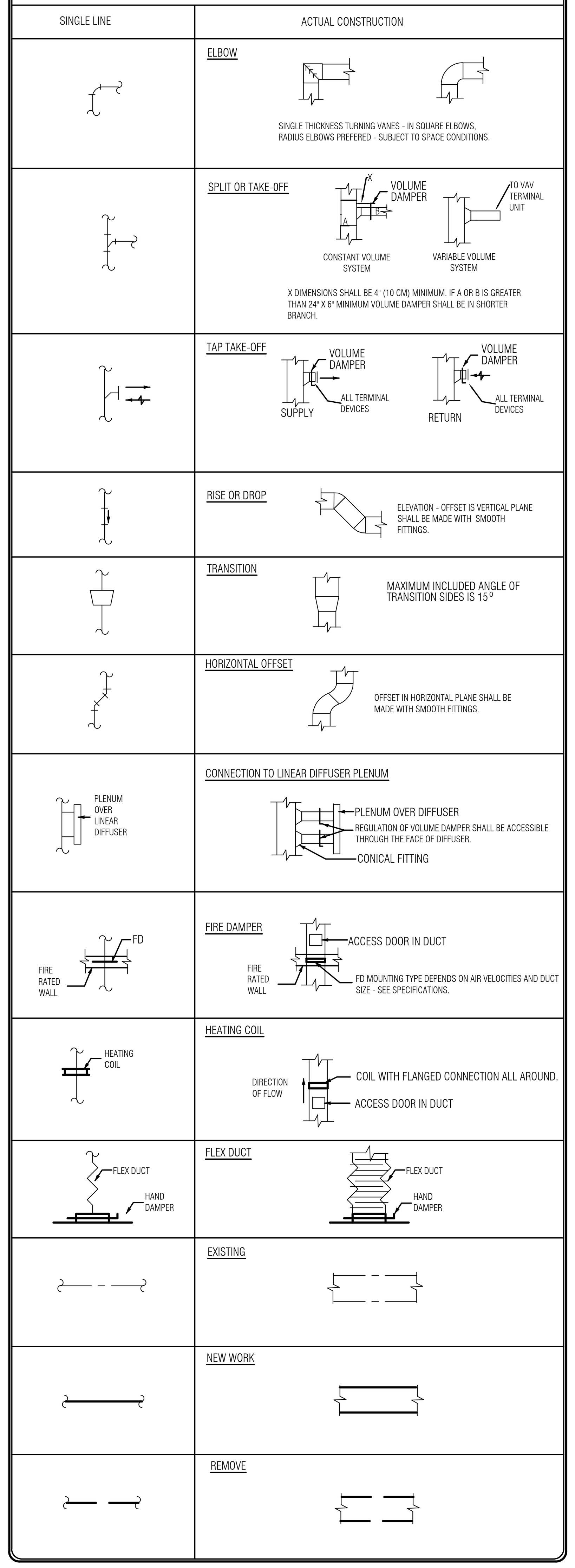
MECHANICAL DUCTWORK/EQUIPMENT NOTES

1. ALL DUCTWORK SHALL BE IN ACCORDANCE WITH SMACNA (SHEET METAL AND AIR CONDITIONING CONTRACTORS NATIONAL ASSOCIATION) STANDARDS.
2. PRIOR TO COMMENCING THE WORK, SHEET METAL SHOP DRAWINGS MUST BE PREPARED AND SUBMITTED FOR REVIEW AND APPROVAL TO THE ARCHITECT/ENGINEER. SHEET METAL SHOP DRAWINGS SHALL INCLUDE ALL ELEMENTS OF THE EQUIPMENT, DUCTWORK, AIR DEVICES AND REFLECTED CEILING PLAN FOR COORDINATION OF CRITICAL DIMENSIONS OF ARCHITECTURAL/ STRUCTURAL COMPONENTS.
3. SHEET-METAL FITTINGS SHOWN ARE TO BE PROVIDED. NO SUBSTITUTIONS ALLOWED WITHOUT PRIOR CONSENT FROM ENGINEER AND WILL BE REQUIRED TO BE REPLACED IF INSTALLED.
4. RUN DUCTS AND PIPING CONCEALED, UNLESS SPECIFIED OTHERWISE AND CLEAR OF CEILING INSERTS. ALL DUCTWORK SHALL BE INSTALLED AS CLOSE AS POSSIBLE TO WALL AND UNDERSIDE OF BEAMS AND JOISTS.
5. ALL WORK SHALL BE COORDINATED WITH ALL TRADES INVOLVED. OFFSETS IN PIPING AND DUCTS (INCLUDING DIVIDED DUCTS) AND TRANSITIONS AROUND OBSTRUCTIONS SHALL BE PROVIDED AT NO ADDITIONAL COST TO THE OWNER.
6. VERIFY ALL EQUIPMENT CONNECTIONS WITH MANUFACTURER'S CERTIFIED DRAWINGS. VERIFY AND PROVIDE DUCT TRANSITIONS TO EQUIPMENT. FIELD VERIFY AND COORDINATE ALL DIMENSIONS BEFORE FABRICATING.
7. ACCESS PANELS SHOULD BE PROVIDED TO CLEAN COILS AND SERVICE DAMPERS, HEATERS, VALVES AND ALL CONCEALED MECHANICAL EQUIPMENT.
8. SUPPORT ALL EQUIPMENT, PIPING AND DUCTWORK FROM BUILDING STRUCTURE TO PROVIDE A VIBRATION FREE INSTALLATION. NOTIFY STRUCTURAL ENGINEER OF ALL WEIGHTS AND METHODS OF SUPPORT.
9. REFER TO ARCHITECTURAL REFLECTED CEILING PLANS FOR EXACT LOCATIONS OF AIR TERMINAL DEVICES.
10. INTERNAL AIR FLOW DIMENSIONS ARE SHOWN FOR DUCTS. CONTRACTOR SHALL INCREASE SIZE FOR LINER IF APPLICABLE.
11. PROVIDE FIRE DAMPERS AND FIRE SMOKE DAMPERS WHERE SHOWN ON DRAWINGS AND/OR WHERE REQUIRED BY NFPA (NATIONAL FIRE PROTECTION ASSOCIATION) 90A. FOR DUCTS THAT PENETRATE FIRE WALLS, FLOORS AND PARTITIONS, PROVIDE SLEEVES WHERE PENETRATIONS ARE NOT PERPENDICULAR TO SURFACE PENETRATION. ENCLOSE DAMPERS IN 10 GAUGE STEEL SLEEVE.
12. PROVIDE ACCESS TO ALL EQUIPMENT, FIRE DAMPERS, SMOKE DAMPERS, COMBINATION FIRE/SMOKE DAMPERS, VOLUME DAMPERS AND MOTOR OPERATED DAMPERS. ACCESS PANELS IN RATED ASSEMBLIES SHALL BE ACUDOR FW-5050. ACCESS PANELS IN NON-RATED DRYWALL CEILINGS SHALL BE WIND-LOCK "STEALTH". ACCESS PANELS IN NON-RATED WALLS SHALL BE ADUDOR UF-5000.
13. ANY DUCTWORK PASSING THROUGH A RATED WALL NEEDS TO HAVE A FIRE DAMPER OR FIRE AND SMOKE DAMPER. SEE ARCHITECTURAL PLAN FOR FINAL LOCATIONS OF ALL FIRE WALLS OR SMOKE PARTITIONS. ALL DUCT PENETRATIONS OF RATED ASSEMBLIES MUST MEET THE REQUIREMENTS OF IBC (INTERNATIONAL BUILDING CODE) SECTION 705 AND IMC (INTERNATIONAL MECHANICAL CODE) 610.
14. PROVIDE FLEXIBLE CONNECTIONS ON ALL DUCTS CONNECTING TO FANS AND AIR HANDLING UNITS.
15. THE INSIDE OF ALL UNLINED DUCTWORK VISIBLE THROUGH A GRILLE SHALL BE PAINTED FLAT BLACK.
16. INSULATE OUTSIDE AIR, SUPPLY, RETURN AIR DUCTS AND PLENUMS WITH MINIMUM OF R-6 INSULATION. SUPPLY,RETURN, OUTSIDE AIR AND EXHAUST DUCTWORK LOCATED IN UNCONDITIONED SPACES AND OUTSIDE THE BUILDING SHALL BE INSULATED WITH A MINIMUM OF R-8 INSULATION.DUCT WRAP SHALL BE FIBROUS GLASS DUCT-WRAP WITH FOIL-DRAFT FLAME RESISTANT VAPOR BARRIER. INSULATION SHALL BE FIRE RATED IN ACCORDANCE WITH ASHRAE (AMERICAN SOCIETY OF HEATING, REFRIGERATING AND AIR CONDITIONING ENGINEERS) 90A, 50/25 SMOKE DEVELOPMENT AND FLAME SPREAD REQUIREMENTS. EXCEPTIONS FOR DUCT INSULATION SHALL BE IF THE DUCTWORK IS LOCATED WITHIN EQUIPMENT AND WHERE THE DESIGN TEMPERATURE DIFFERENCE BETWEEN THE INTERIOR AND EXTERIOR OF THE DUCT OR PLENUM IS NOT GREATER THAN 15°F.DUCTWORK SHALL BE WRAPPED INSULATION UNLESS OTHERWISE NOTED.
17. FLEXIBLE DUCT IS ALLOWABLE ON SUPPLY AIR SYSTEMS ABOVE ACCESSIBLE CEILINGS ONLY. MAXIMUM LENGTH OF FLEXIBLE DUCT SHALL NOT EXCEED 10 FEET. FLEXIBLE DUCT SHALL BE FABRIC COVERED GALVANIZED STEEL HELIX MECHANICALLY LOCKED TO THE FABRIC. THE FABRIC SHALL BE A LAMINATE OF ALUMINUM FOIL FIBERGLASS & ALUMINIZED POLYESTER RATED AT 5500 RPM WITH FLEX-MASTER USA TYPE 3 OR EQUAL. 1" EXTERNAL FIBERGLASS INSULATION AND VAPOR BARRIER JACKET. SUPPLY AIR SYSTEMS ABOVE NON-ACCESSIBLE CEILINGS AND ALL RETURN, EXHAUST, AND OUTSIDE AIR DUCTWORK SHALL BE HARD DUCTED.
18. THOROUGHLY CLEAN ALL NEW DUCTWORK AFTER INSTALLATION.
19. NO DUCTWORK SHALL BE LOCATED ABOVE ELECTRICAL PANELS/GEAR.
20. VOLUME DAMPERS SHALL BE PROVIDED AT THE BRANCH TAKE-OFF OF THE MAIN.
21. ROOFTOP DUCT SUPPORTS SHALL BE EQUAL TO PATE ROOFTOP DUCT SUPPORT SYSTEM. INSTALLATION SHALL INCLUDE EQUIPMENT SUPPORT RAILS, UNISTRUT BOTTOM AND SIDE SUPPORTS, DUCT SADDLE AND SLIDES. EQUIPMENT SUPPORT RAILS SHALL BE FLASHED INTO PLACE BY GENERAL CONTRACTOR. INSTALLATION SHALL BE IN STRICT ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
22. DUCT PENETRATIONS THRU ROOF SHALL BE PROVIDED WITH AN INSULATED ROOF CURB EQUAL TO PATE PC-5. CURB SHALL BE PROVIDED WITH AN INSULATED PLYWOOD COVER. CURB SHALL BE FLASHED INTO PLACE BY GENERAL CONTRACTOR. ENTIRE INSTALLATION SHALL BE WEATHER PROOF AND SHALL BE IN STRICT ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
23. REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION.
24. DUCTWORK SCHEDULE
    - 24.1. LOW PRESSURE - ALL OTHER SUPPLY, RETURN EXHAUST AND OUTSIDE AIR DUCTWORK TO BE 2" CONSTRUCTION, 2" STATIC, LEAKAGE CLASS B, SEAL CLASS 12. MATERIAL TO BE GALVANIZED STEEL UNLESS NOTED OTHERWISE.
    - 24.2. FURNACE / WATER HEATING VENTING - CPVC OR MANUFACTURER'S APPROVED MATERIAL.
24. REFER TO SPECIFICATION SECTION 23100, 2.3 FOR DUCT INSTALLATION REQUIREMENTS.
25. DUCT LEAKAGE TESTING SHALL BE PROVIDED FOR COMMON AREA HVAC EQUIPMENT. TESTING SHALL BE IN ACCORDANCE WITH SMACNA STANDARDS.
26. ALL DUCTWORK AND VENTS CONNECTED TO EXTERIOR LOUVERS SHALL BE SLOPED TOWARD THE LOUVER.+
26. ALL DUCT ROUTING IS DIAGRAMMATIC. CONTRACTOR IS RESPONSIBLE FOR COORDINATION OF ALL SUPPLY, RETURN, AND EXHAUST DUCTWORK WITH OTHER TRADES INCLUDING, BUT NOT LIMITED TO, FIRE PROTECTION, ELECTRICAL, FIRE PROTECTION, AND STRUCTURE. ADJUST DUCT ROUTING (LOCATION, OFFSETS, FITTINGS, ETC.) AND ASPECT RATIO AS NEEDED.

MECHANICAL PIPING NOTES

1. PIPE MATERIALS
A. CONDENSATE PIPING:
3/4" DIAMETER CONDENSATE PIPING HVAC EQUIPMENT 5 TONS AND BELOW
1" DIAMETER CONDENSATE PIPING UP TO 20 TONS OF CONNECTED COOLING CAPACITY.
PIPE MATERIAL: TYPE DWV COPPER TUBING
FITTING MATERIAL: WROUGHT COPPER AND BRONZE SOLDER JOINTS.
PIPE JOINT: 95-5 LEAD FREE SOLDER.
B. REFRIGERANT PIPING:
PIPE MATERIAL: HARD-DRAWN (TEMPERED) COPPER TUBE, TYPE L ACR.
PIPE JOINT: BRAZED BRAZING MATERIAL SHALL BE SILFOS 15.
2. INSULATION:
A. CONDENSATE DRAINAGE PIPING: 1-INCH THICK FIBERGLASS PIPE INSULATION AND WITH ALL SERVICE JACKET.
B. SUCTION AND LIQUID PIPING SHALL BE INSULATED. INSULATION SHALL BE 1-INCH THICK CLOSED CELL ELASTOMERIC BY ARMACELL INSULATION. WHERE LOCATED OUTDOORS, THE INSULATION SHALL BE FURNISHED WITH A UV RESISTANT COVER.
C. INSULATION SHALL BE BY OWENS CORNING. CERTAIN-TEED OR MANVILLE.
D. INSULATION JACKETS AND ADHESIVES SHALL BE FLAME RETARDANT AND SHALL HAVE ASTM E-84 FIRE HAZARD RATING OF 25 FLAME SPREAD, 50 SMOKE DEVELOPED AND 50 FUEL CONTRIBUTED.
3. HANGERS, ANCHORS, CLAMPS AND INSERT
A. PROVIDE CAST BRASS SPLIT RING HINGE HANGERS. SUPPORT PIPING FROM BUILDING STRUCTURE TO MAINTAIN REQUIRED GRADE AND PITCH OF PIPE LINES, PREVENT VIBRATION, SECURE PIPING IN PLACE. SECURE HANGERS TO INSERTS WHERE PRACTICAL. HANGER RODS SHALL HAVE MACHINES THREADS.
B. HANGER RODS SHALL BE CONNECTED TO BEAM CLAMP. UL APPROVED CONCRETE INSERTS SHALL BE PHILLIPS OR APPROVED EQUAL EXPANSION SHIELD. RAMSET OR POWER DRIVEN INSETS WILL NOT BE ALLOWED.
C. HANGER SPACING SHALL MEET REQUIREMENTS OF STATE AND LOCAL CODES.
4. SLEEVE AND PENETRATIONS
A. PIPE SLEEVES THROUGH FIRE RATED CONSTRUCTION SHALL BE SCHEDULED 40 STEEL. SLEEVES THROUGH PARTITIONS AND NON FIRE RATED CONSTRUCTION SHALL BE 26 GAUGE GALVANIZED STEEL WITH LOCAL LONGITUDINAL SEAMS.
B. PACKING FOR SLEEVES THAT DO NOT REQUIRE MAINTENANCE OF FIRE RATING SHALL BE OAKUM, SILICATE FOAM, CERAMIC FIBER WITH APPROVED SEALANT. PACK OR FORM TO WITHIN ONE INCH OF BOTH WALL SURFACES. SEAL PENETRATION PACKING WITH APPROVED CAULKING AND PRINTABLE WATERPROOF MASTIC SURFACE FINISH OR SILICONE CAULKING.
5. METHODS
A. PITCH PIPING 1 INCH IN 20 FEET, TO ALLOW FOR DRAINING. (UNLESS OTHERWISE NOTED)
B. REFRIGERANT PIPING: ALL PIPING SHALL BE SUPPORTED WITH CUSH A CLAMPS AND STRUT AS MANUFACTURED BY B-LINE, INC. OR APPROVED EQUAL. ALL REFRIGERANT PIPING SHALL BE IN STALLED IN STRICT ACCORDANCE WITH RECOMMENDATIONS OF THE REFRIGERATION EQUIPMENT MANUFACTURED AND SHALL INCLUDE. BUT SHALL NOT BE LIMITED TO, FLEXIBLE CONNECTIONS , VALVES, RELIEF VALVES, EXPANSION VALVES, SOLENOID VALVES, FILTER DRIERS, PIPE INSULATION, FLASHING AND SLEEVES THOUGH WALLS, PROPER SUPPORT OF REFRIGERANT PIPING, AND FULL REFRIGERANT CHARGE. ALL PIPING JOINTS SHALL BE BRAZED WITH SILFOS 15 FILLER METAL AND THE PIPING CHARGED WITH DRY NITROGEN WHILE CONSTRUCTING THE JOINTS PITCH REFRIGERATION PIPING IN DIRECTION OF OIL RETURN TO COMPRESSOR. PROVIDE TRAPS IN SUCTION LINE RISERS WHERE REQUIRED. TRAPS SHALL BE FABRICATED FROM SHORT RADIUS STREET ELLS, ALL OTHER ELLS SHALL BE LONG RADIUS TYPE. SOLENOID VALVES SHALL BE INSTALLED WITH STEMS POINTING UP. AFTER THE REFRIGERANT PIPING HAS BEEN COMPLETED, THE SYSTEM SHALL BE PRESSURE TESTED AT 300 PSI (HIGH SIDE) AND 150 150 PSI (LOW SIDE).. THIS PRESSURE SHALL BE MAINTAINED ON THE SYSTEM FOR 12 CONSECUTIVE HOURS WITH NO APPRECIABLE PRESSURE CHANGE. WHILE THE PRESSURE IS APPLIED. THE SYSTEM SHALL BE CHECKED FOR LEAKS. THE SYSTEM SHALL THEN BE EVACUATED TO A MINIMUM VACUUM EQUIVALENT OF 500 MICRONS AND MAINTAINED FOR 12 HOURS. RELEASE VACUUM WITH NITROGEN AND EVACUATE AGAIN. AFTER EVACUATION, THE SYSTEM SHALL BE CHARGED WITH REFRIGERANT IN STRICT ACCORDANCE WITH THE RECOMMENDATIONS OF THE EQUIPMENT MANUFACTURER.

DUCTWORK SYMBOLOGY



GENERAL ABBREVIATIONS

AC	AIR CONDITIONING	HPS	HEAT PUMP LOOP SUPPLY
ACV	AUTOMATIC CONTROL VALVE	HPR	HEAT PUMP LOOP RETURN
AD	ACCESS DOOR	HR	HOUR
ADD'L	ADDITIONAL	HWR	HOT WATER RETURN
AFF	ABOVE FINISHED FLOOR	HWS	HOT WATER SUPPLY
AHU	AIR HANDLING UNIT	HZ	HERTZ
AP	ACCESS PANEL	IN	INCHES
ARCH	ARCHITECT	KW	KILOWATT
BHP	BRAKE HORSEPOWER	LAT	LEAVING AIR TEMPERATURE
BOD	BOTTOM OF DUCT	LPR	LOW PRESSURE COND. RETURN
BOP	BOTTOM OF PIPE	LPS	LOW PRESSURE STEAM
CD	CEILING DIFFUSER	LWT	LEAVING WATER TEMPERATURE
CFM	CUBIC FEET PER MINUTE	MAX	MAXIMUM
CL	CENTERLINE	MECH	MECHANICAL
CLG	CEILING	MF'R	MANUFACTURER
CO	CLEAN-OUT	MOD	MOTOR OPERATED DAMPER
COL	COLUMN	MIN	MINIMUM
CONN	CONNECTION	MTD	MOUNTED
CONTR	CONTRACTOR	MAV	MANUAL AIR VENT
CW	COLD WATER	N/A	NOT APPLICABLE
CHWS	CHILLED WATER SUPPLY	NC	NORMALLY CLOSED
CHWR	CHILLED WATER RETURN	NIC	NOT IN CONTRACT
CWS	CONDENSER WATER SUPPLY	NO	NUMBER
CWR	CONDENSER WATER RETURN	NTS	NOT TO SCALE
DB	DRY BULB TEMPERATURE	OA	OUTSIDE AIR
DDC	DIRECT DIGITAL CONTROL	OD	OUTSIDE DIAMETER
DIA	DIAMETER	PD	PRESSURE DROP
DIFF	DIFFUSER	PLBG	PLUMBING
DIM	DIMENSION	PSIA	POUNDS PER SQ INCH ABSOLUTE
DN	DOWN	PSIG	POUNDS PER SQ INCH GAUGE
DX	DIRECT EXPANSION	(R)	REMOVE
DL	DOOR LOUVER	REG	REGISTER
(E)	EXISTING	RET	RETURN
EA	EACH	REQ'D	REQUIRED
EAT	ENTERING AIR TEMPERATURE	RG	RETURN GRILLE
EFF	EFFICIENCY	RH	RELATIVE HUMIDITY
EG	EXHAUST GRILLE	(RL)	RELOCATE
ELEC	ELECTRICAL	RM	ROOM
ER	EXHAUST REGISTER	RPM	REVOLUTIONS PER MINUTE
ESP	EXTERNAL STATIC PRESSURE	SA	SOUND ATTENUATOR
EWT	ENTERING WATER TEMPERATURE	SCH	SCHEDULE
EXH	EXHAUST	SCR	SCREEN
EXP	EXPANSION	SD	SMOKE DAMPER
(F)	FUTURE	SF	SQUARE FOOT
FA	FREE AREA	SPECS	SPECIFICATIONS
FD	FIRE DAMPER (W/ ACCESS DOOR)	SR	SUPPLY REGISTER
FLEX	FLEXIBLE	ST	STEAM TRAP
FLRDR	FLOOR DRAIN	STL	STEEL
FPM	FEET PER MINUTE	STM	STEAM
FSD	COMBINATION FIRE/SMOKE DAMPER	SUP	SUPPLY
FT	FEET	TEMP	TEMPERATURE
FURN	FURNISHED	TG	TRANSFER GRILLE
GA	GAUGE	TR	TRANSFER
GAL	GALLONS	TYP	TYPICAL
GALV	GALVANIZED	UC	UNDERCUT DOOR
GC	GENERAL CONTRACTOR	V	VENT
GPM	GALLONS PER MINUTE	VD	VOLUME DAMPER
GR	GRILLE	VFD	VARIABLE FREQUENCY DRIVE
GR	RETURN GRILLE	W	WIDTH
HB	HOSE BIBB CONN W/ CHAINED CAP	W/	WITH
HD	HAND DAMPER	WB	WET BULB TEMPERATURE
HGT	HEIGHT	WG	WATER GAUGE
HP	HORSEPOWER	WWMS	WELD-WIRE MESH SCREEN (1/4")
		W/O	WITHOUT
		Ø	DIAMETER

CALL OUT SYMBOLS

- 1 (triangle) — REVISION NUMBER/INDICATES A REVISED FEATURE
- T — TEMPERATURE SENSOR OR THERMOSTAT
- T AVG — AVERAGING TEMPERATURE SENSOR OR THERMOSTAT
- S — VARIABLE SPEED FAN SWITCH
- P — PUMP
- AHU — AIR HANDLING UNIT
- CU — CONDENSING UNIT
- HP — HEAT PUMP
- EH — ELECTRIC HEATER
- FC — FAN COIL UNIT
- UH — UNIT HEATER
- EF — EXHAUST FAN
- SF — SUPPLY FAN
- AC — AIR CONDITIONING UNIT
- CH — CHILLER UNIT
- B — BOILER
- SF — SUPPLY FAN

HVAC LEGEND

- MOD/ZD — MOTOR OPERATED DAMPER/ ZONE DAMPER
- HD — HAND DAMPER
- FSD — COMBINATION FIRE SMOKE DAMPER
- FD — SELF-CLOSING FIRE DAMPER W/ ACCESS DOOR
- SD — SMOKE DAMPER WITH ACCESS DOOR
- BLANKED FOR 3-WAY BLOW SUPPLY DIFFUSER
- OR — BLANKED FOR 2-WAY BLOW SUPPLY DIFFUSER
- 1-WAY BLOW SUPPLY DIFFUSER
- UC 1" — UNDERCUT DOOR
- LVDR — LOUVERED DOOR
- RETURN OR EXHAUST AIR FLOW
- SUPPLY AIR FLOW
- EXHAUST FAN
- NEW CONNECTION TO EXISTING
- TEMINATION OF DEMOLITION
- CO2 — CARBON DIOXIDE SENSOR
- CO — CARBON MONOXIDE SENSOR
- DP — DIFFERENTIAL PRESSURE SENSOR
- SD — SMOKE DETECTOR ON AC UNITS
- MS — MOTION SENSOR
- BUTTERFLY VALVE
- BALL VALVE
- THERMOMETER
- P — PRESSURE GAUGE
- FM — FLOW METER

HVAC GENERAL NOTES

1. PROVIDE EQUIPMENT AND PIPE SUPPORTS TO SUPPORT ROOF MOUNTED EQUIPMENT DUCTWORK AND PIPING ABOVE ROOF. PIPE AND DUCT SUPPORTS ON 8'-0" OR LESS ACCORDING TO HANGER SPACING.
2. NEW THERMOSTATS SHALL BE HONEYWELL OR EQUAL AND SHALL INCLUDE THE FOLLOWING FUNCTIONS
    - 2.1. AUTOMATIC START CONTROLS SHALL BE PROVIDED FOR EACH HVAC CAPABLE OF ADJUSTING DAILY START TIME TO BRING EACH SPACE TO THE DESIRED OCCUPIED TEMPERATURE PRIOR TO THE SCHEDULED OCCUPANCY (C403.2.4.3)
    - 2.2. THERMOSTATIC CONTROLS HAVE A 5 DEG F DEADBAND OR MANUAL CHANGEOVER CONTROLS, EXCEPT PRECISION INDOOR TEMPERATURE CONTROLS. (C403.2.4.1.2)
    - 2.3. ALL THERMOSTATS/TEMPERATURE SENSORS SHALL HAVE SETBACK CONTROLS VIA TIME CLOCK OR PROGRAMMABLE CONTROL SYSTEM (C403.2.4.2)
    - 2.4. WHERE THERMOSTATS ARE LOCATED IN PUBLIC AREAS, PROVIDE PASSWORD PROTECTED MODELS OR LOCKING COVERS.
    - 2.5. ALL THERMOSTATS/TEMPERATURE SENSORS SHALL HAVE SETBACK CONTROLS SET TO 55 DEGREES (ADJ., HEAT) AND 85 DEGREES (ADJ. COOL) WITH 7-DAY CLOCK, 2 HOUR OCCUPANT OVERRIDE, AND 10 HOUR BACKUP. (C403.2.4.2.1, C403.2.4.2.2)
3. INSTALL THERMOSTATS 48" ABOVE FINISHED FLOOR OR AS DIRECTED OTHERWISE BY ARCHITECT.
4. LABEL EACH THERMOSTAT FOR HP UNIT OR AC UNIT SERVED.
5. IF AN AIR HANDLER MOVES MORE THAN 2000 CFM, IT SHALL HAVE A SMOKE DETECTOR IN THE AIR STREAM.
6. SMOKE DETECTORS SHALL BE FURNISHED AND WIRED TO THE FIRE ALARM SYSTEM UNDER THE ELECTRICAL SECTION. UNDER THE MECHANICAL SECTION. THIS CONTRACTOR SHALL MOUNT THE DETECTORS IN DUCTWORK, WHERE REQUIRED BY CODE, AND SHALL WIDE THE DETECTORS TO THE ATC SYSTEM AND RAN STARTERS FOR SHUTDOWN.
7. ALL CONTROL WIRE AND CONDUIT SHALL COMPLY WITH NEC.
8. PROVIDE HANGERS, CLAMPS, OFFSETS, EXPANSION JOINTS, ANCHORS AND GUIDES AS NECESSARY TO PREVENT STRESS ON PIPING.
9. ALL CONDENSATE DRAIN LINES SHALL BE PIPED FULL SIZE OF THE UNIT DRAIN OUTLET, WITH "P" TRAP, CONNECTED TO PLUMBING IWR AS INDICATED ON DRAWINGS OR OTHERWISE DISCHARGED TO THE NEAREST DRAIN.
10. CONTROL WIRING FOR HVAC EQUIPMENT, WHETHER IT BE LINE OR LOW VOLTAGE, SHALL BE THE RESPONSIBILITY OF THE MECHANICAL CONTRACTOR.
11. ALL CONTROL WIRE AND CONDUIT SHALL COMPLY WITH NEC.
12. EACH NEW SYSTEM, EACH NEW PIECE OF EQUIPMENT AND EACH NEW AIR DEVICE SHALL BE FULLY TESTED AND BALANCED UPON COMPLETION OF THE WORK.
13. TESTING AND BALANCING SHALL BE PROVIDED BY A COMPANY SPECIALIZING IN THE TESTING AND BALANCING OF HVAC SYSTEMS. THE TEST AND BALANCE COMPANY SHALL BE A MEMBER OF AABC OR NEBB. BALANCE AIRFLOWS WITHIN 10% OF SCHEDULED AIR FLOWS TO ALL AIR DEVICES. IF AIR FLOW CANNOT BE BALANCED TO WITHIN 10%, PERFORM UP TO TWO PITOT TUBE TRAVERSES, AS DIRECTED BY OWNERS' REPRESENTATIVE, TO DETERMINE THE CAUSE OF THE DEFICIENCY. SUBMIT SIX COPIES OF THE BALANCING REPORT FOR REVIEW PRIOR TO FINAL INSPECTIONS.
14. PROVIDE 1/4" WELDED WIRE MESH SCREEN AT ALL OUTSIDE AIR INTAKE AND EXHAUST LOUVERS AND WHERE SHOWN ON DRAWINGS.
15. ALL EQUIPMENT PIPING, WIRING AND INSULATION ETC. INSTALLED IN HVAC AIR PLENUM SPACES SHALL MEET CODE REQUIREMENT FOR SMOKE AND COMBUSTIBILITY.
16. DESIGN CONDITIONS ARE AS FOLLOWS:
OUTDOOR SUMMER: 91 DEG DB, 75 DEG WB (ASHRAE 1%)
INDOOR SUMMER: 74 DEG DB, 55% RH
OUTDOOR WINTER: 11.6 DEG DB (ASHRAE 99.6%)
INDOOR WINTER: 70 DEB DB
17. PIPE ANCHOR AND EXPANSION LOOP DRAWINGS SIGNED AND SEALED BY A PROFESSIONAL ENGINEER SHALL BE SUBMITTED TO THE DESIGN TEAM FOR REVIEW/ APPROVAL. COORDINATE ANCHOR LOCATIONS WITH THE STRUCTURAL ENGINEER PRIOR TO ROUGH-IN

FOLCROFT BOROUGH MEP - DRAWING INDEX

DRAWING NO.	DRAWING TITLE	REVIEW ISSUE 01/31/2020	ISSUED FOR BID 02/28/2020
M-1	MECHANICAL NOTES, LEGENDS,SYMBOLS AND DRAWING INDEX	●	●
M-1.1	MECHANICAL DETAILS	●	●
M-2	MECHANICAL COMMUNITY CENTER FLOOR AND ROOF PLANS	●	●
M-3	MECHANICAL MUNICIPAL BUILDING FLOOR PLAN	●	●
M-4	MECHANICAL MUNICIPAL BUILDING ROOF PLAN	●	●
M-5	MECHANICAL SCHEDULES	●	●
P-1	PLUMBING LEGEND, GENERAL NOTES, AND SCHEDULES	●	●
P-1.1	PLUMBING DETAILS	●	●
P-2	PLUMBING SANITARY - COMMUNITY CENTER	●	●
P-3	PLUMBING DOMESTIC WATER & GAS - COMMUNITY CENTER	●	●
P-4	PLUMBING RISER DIAGRAMS - COMMUNITY CENTER	●	●
P-5	PLUMBING SANITARY - BOROUGH BUILDING	●	●
P-6	PLUMBING DOMESTIC WATER & GAS - BOROUGH BUILDING	●	●
P-7	PLUMBING RISER DIAGRAMS - BOROUGH BUILDING	●	●
FP-1	FIRE PROTECTION GENERAL NOTES & SYMBOLS	●	●
FP-2	FIRE PROTECTION FLOOR PLAN - COMMUNITY CENTER	●	●
FP-3	FIRE PROTECTION FLOOR PLAN - BOROUGH BUILDING	●	●
E-1	ELECTRICAL NOTES, LEGEND & FIXTURE SCHEDULE	●	●
E-1.1	ELECTRICAL - DETAILS	●	●
E-2	ELECTRICAL COMMUNITY CENTER FLOOR PLANS- LIGHTING AND POWER	●	●
E-4	ELECTRICAL MUNICIPAL BUILDING FLOOR PLANS - LIGHTING AND POWER	●	●
E-5	ELECTRICAL MUNICIPAL BUILDING ATTIC PLAN	●	●
E-6	ELECTRICAL PANEL SCHEDULES	●	●
E-S.1	ELECTRICAL - LIGHTING AND POWER SITE PLAN		●

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MECHANICAL LEGEND, GEN NOTES, SYMBOLS, INDEX

NEW MUNICIPAL BUILDINGS – COMMUNITY CENTER
BOROUGH OF FOLCROFT
ASHLAND AVE.
FOLCROFT, PA 19032

REVISIONS

NO.	DESCRIPTION	DATE
.	ISSUE FOR BID	02.28.20
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DATE : 01/31/2020
SCALE : AS NOTED
DRAWN BY: AC
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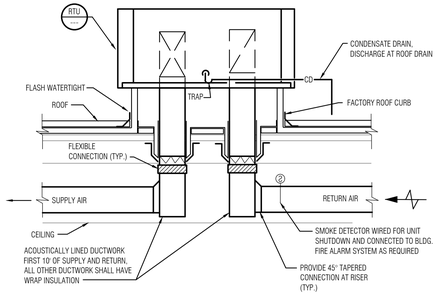
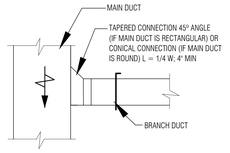
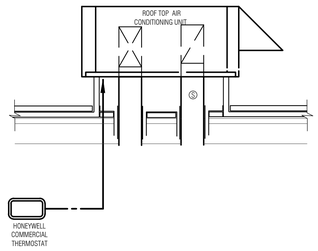
SHEET NO.
M-1
SHEET 1 OF 6



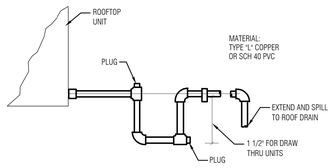
1 ROOFTOP UNIT DETAIL
M1.1 SCALE: NONE



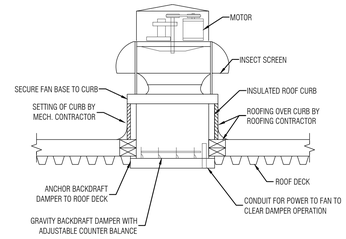
5 BRANCH TAKE-OFFS
M1.1 SCALE: NONE



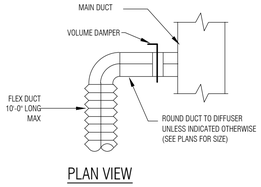
9 RTU PACKAGED ROOFTOP HEATING / COOLING W/ ECONOMIZER
M1.1 SCALE: NONE



2 CONDENSATE TRAP DETAIL
M1.1 SCALE: NONE

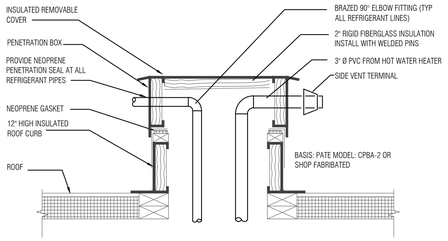


6 ROOF MOUNTED EXHAUST FAN DETAIL
M1.1 SCALE: NONE

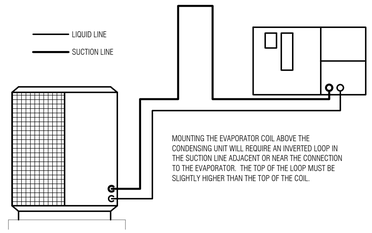


PLAN VIEW

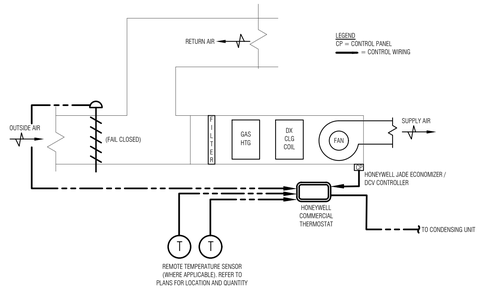
3 FLEXIBLE DUCT DETAIL
M1.1 SCALE: NONE



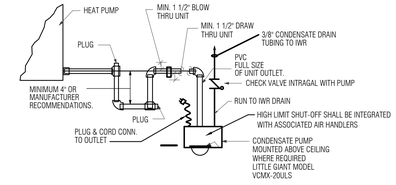
7 ROOF - PENETRATION BOX DETAIL
M1.1 SCALE: NONE



10 REFRIGERANT TRAP DETAIL
M1.1 SCALE: NONE

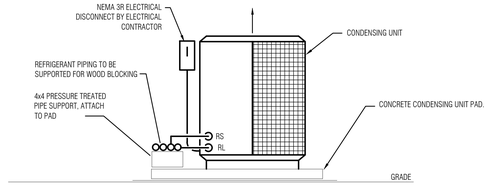


11 AHU/CU SPLIT SYSTEM HEATING / COOLING
M1.1 SCALE: NONE



4 DETAIL OF CONDENSATE PUMP
M1.1 SCALE: NONE

NOTE:
PER ADDENDUM # 1 1/A-311, SHOWS THERE IS NO INSULATION BETWEEN THE HEATED SPACE AND THE MECHANICAL SPACE, THEREFORE THE UNITS ARE LOCATED WITHIN THE BUILDING ENVELOP. THE AHU'S ARE IN A TEMPERED SPACE TO PREVENT OPERATIONAL ISSUES ASSOCIATED WITH THE FREEZING OF CONDENSATE.



8 CONDENSING UNIT ON GRADE DETAIL
M1.1 SCALE: NONE

RTU SEQUENCE OF OPERATIONS :

GENERAL
1. UNIT SHALL HAVE A 7-DAY PROGRAMMABLE THERMOSTAT WITH THE FOLLOWING SCHEDULING MODES.
   a. OCCUPIED
   b. UNOCCUPIED
2. IF ROOFTOP UNIT AIRFLOW IS 2000 CFM OR GREATER, A SMOKE DETECTOR SHALL BE PROVIDED IN THE AIRSTREAM AND INTEGRATED WITH THE FIRE ALARM SYSTEM TO DE-ENERGIZE THE FAN IN THE EVENT OF A FIRE ALARM EVENT.

OCCUPIED MODE
1. WHEN SYSTEM IS INDEXED TO THE OCCUPIED MODE THE FOLLOWING SHALL OCCUR.
   a. FAN TO BE INDEXED TO "ON"
   b. OUTSIDE AIR DAMPER TO BE OPENED TO THE MINIMUM POSITION.
   c. RETURN AIR DAMPER TO BE INDEXED TO THE APPROPRIATE POSITION RELATIVE TO THE OA DAMPER. (I.E. OA = 10%, RA = 90%)
   d. MODES OF OPERATION
      COOLING: WHEN SPACE TEMPERATURE RISES ABOVE THE THERMOSTATS COOLING SETPOINT AND THE OUTSIDE AIR ENTHALPY IS ABOVE THE ECONOMIZER SETPOINT, THE FAN & 1ST STAGE OF REFRIGERATION CIRCUIT SHALL BE ENERGIZED TO PROVIDE COOLING TO THE SPACE. ON A CONTINUED RISE IN SPACE TEMPERATURE, THE SECOND STAGE OF COOLING SHALL BE ENERGIZED (WHERE APPLICABLE). ON A DROP IN SPACE TEMPERATURE THE REVERSE SHALL OCCUR.

      HEATING: WHEN SPACE TEMPERATURE DROPS BELOW THE THERMOSTATS HEATING SETPOINT THE FAN & 1ST STAGE OF HEATING CIRCUIT SHALL BE ENERGIZED TO PROVIDE HEATING TO THE SPACE. ON A CONTINUED FALL IN SPACE TEMPERATURE THE SECOND STAGE OF HEATING SHALL BE ENERGIZED (WHERE APPLICABLE). ON A RISE IN SPACE TEMPERATURE THE REVERSE SHALL OCCUR.

      ECONOMIZING: WHEN SPACE TEMPERATURE RISES ABOVE THE THERMOSTAT'S COOLING SETPOINT AND THE OUTSIDE AIR ENTHALPY IS AT OR BELOW THE ECONOMIZER SETPOINT, THE FAN SHALL ENERGIZE AND THE OUTSIDE AIR DAMPER AND RELIEF DAMPER SHALL MODULATE OPEN AND THE RETURN AIR DAMPER SHALL MODULATE CLOSED TO MAINTAIN A 53°F MIXED AIR TEMPERATURE. THE POWERED EXHAUST FAN SHALL ENERGIZE TO MAINTAIN BUILDING PRESSURIZATION (WHERE APPLICABLE). IF MIXED AIR EXCEEDS SETPOINT AND THE SPACE TEMPERATURE CONTINUES TO RISE, THE REFRIGERATION CIRCUIT SHALL BE ENERGIZED. ON A FALL IN SPACE TEMPERATURE THE REVERSE SHALL OCCUR.

UNOCCUPIED MODE
1. WHEN THE SYSTEM IS INDEXED TO THE UNOCCUPIED MODE THE FOLLOWING SHALL OCCUR.
   a. FAN SHALL BE INDEXED TO "AUTO"
   b. OUTSIDE AIR DAMPER SHALL REMAIN CLOSED
   c. RETURN AIR DAMPER SHALL BE INDEXED TO THE OPEN POSITION (100%)
   d. THE HEATING & COOLING CIRCUITS SHALL CYCLE TO MAINTAIN SET BACK TEMPERATURES.

AHU/CU SPLIT SYSTEM SEQUENCE OF OPERATIONS :

GENERAL
1. UNIT SHALL HAVE A 7-DAY PROGRAMMABLE THERMOSTAT WITH THE FOLLOWING SCHEDULING MODES.
   a. OCCUPIED
   b. UNOCCUPIED

OCCUPIED MODE
1. WHEN SYSTEM IS INDEXED TO THE OCCUPIED MODE THE FOLLOWING SHALL OCCUR.
   a. FAN TO BE INDEXED TO "AUTO"
   b. OUTSIDE AIR DAMPER TO BE OPENED TO THE MINIMUM POSITION.
   c. MODES OF OPERATION
      COOLING: WHEN SPACE TEMPERATURE (OR THE AVERAGE OF ALL SENSORS, WHERE APPLICABLE) RISES ABOVE THE THERMOSTATS COOLING SETPOINT, THE FAN & 1ST STAGE OF REFRIGERATION CIRCUIT SHALL BE ENERGIZED TO PROVIDE COOLING TO THE SPACE. ON A CONTINUED RISE IN SPACE TEMPERATURE, THE SECOND STAGE OF COOLING SHALL BE ENERGIZED (WHERE APPLICABLE). ON A DROP IN SPACE TEMPERATURE THE REVERSE SHALL OCCUR.

      HEATING: WHEN SPACE TEMPERATURE (OR THE AVERAGE OF ALL SENSORS, WHERE APPLICABLE) DROPS BELOW THE THERMOSTATS HEATING SETPOINT THE FAN & 1ST STAGE OF GAS HEATING SHALL BE ENERGIZED TO PROVIDE HEATING TO THE SPACE. ON A CONTINUED FALL IN SPACE TEMPERATURE THE SECOND STAGE OF GAS HEATING SHALL BE ENERGIZED. ON A RISE IN SPACE TEMPERATURE THE REVERSE SHALL OCCUR.

UNOCCUPIED MODE
1. WHEN THE SYSTEM IS INDEXED TO THE UNOCCUPIED MODE THE FOLLOWING SHALL OCCUR.
   a. FAN SHALL BE INDEXED TO "AUTO"
   b. OUTSIDE AIR DAMPER SHALL REMAIN CLOSED
   c. THE HEATING & COOLING CIRCUITS SHALL CYCLE TO MAINTAIN SET BACK TEMPERATURES.

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MECHANICAL DETAILS

NEW MUNICIPAL BUILDINGS – COMMUNITY CENTER
BOROUGH OF FOLCROFT

ASHLAND AVE.
FOLCROFT, PA 19032

REVISIONS NO.	DESCRIPTION	DATE
.	ISSUE FOR BID	02.28.20
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DATE: 01/31/2020
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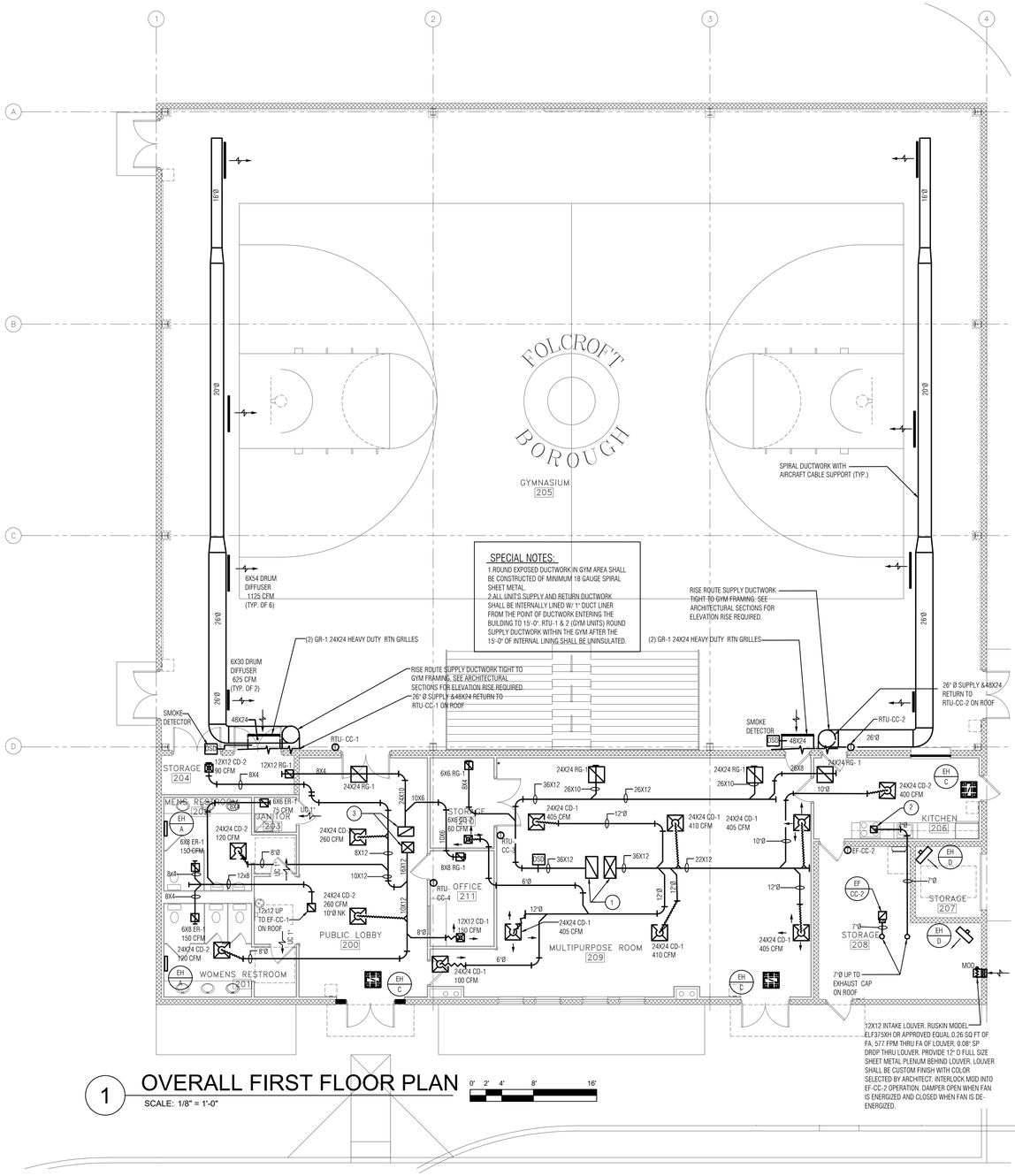
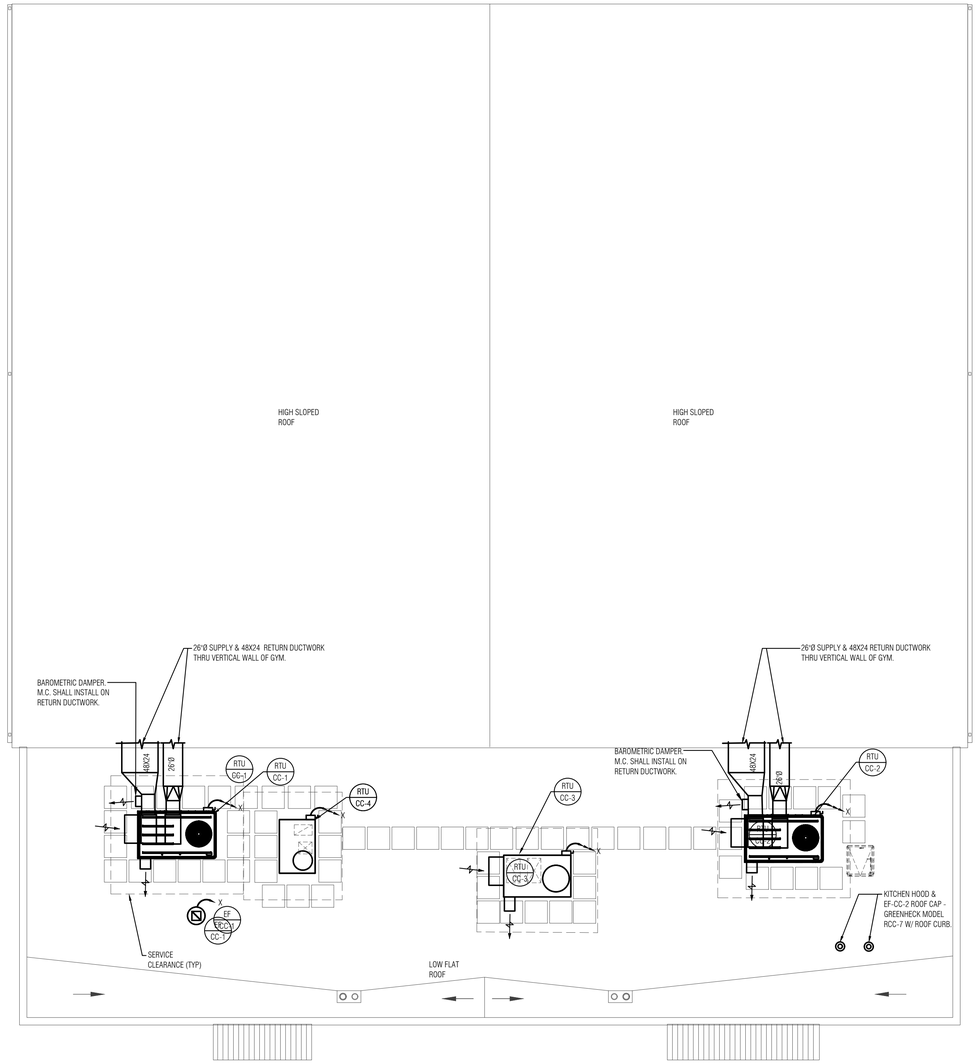
SHEET NO.
M-1.1
SHEET 2 OF 6



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



2 OVERALL ROOF PLAN
SCALE: 1/8" = 1'-0"

MECHANICAL NOTES:

1. 36X12 SUPPLY AND RETURN DUCTS FROM RTU-CC-3 ON ROOF.
2. 7"Ø EXHAUST DUCT DN TO RANGE HOOD EXHAUST CONNECTION. TRANSITION AS REQUIRED TO HOOD CONNECTION.
3. 16X12 SUPPLY & 24X10 RETURN DUCTS FROM RTU-CC-4 ON ROOF.

KEY
RTU-CC-1 — EQUIPMENT TYPE; COMMUNITY CENTER BLDG. FOLLOWED BY EQUIPMENT #

GENERAL MECHANICAL CONSTRUCTION NOTES

1. IN INACCESSIBLE CEILINGS PROVIDE INTEGRAL OPPOSED BLADE DAMPERS AT ALL AIR DEVICES. FINAL SUPPLY AIR DEVICE BALANCING SHALL BE PERFORMED VIA INTEGRAL AIR DEVICE. IN ACCESSIBLE CEILINGS PROVIDE HAND DAMPERS AT BRANCH DUCTS OFF OF MAINS FOR BALANCING.
2. FLEX DUCT WORK LENGTHS SHALL BE LIMITED TO WHAT IS ALL INDICATED ON COVER SHEET DRAWING.
3. ALL DIFFUSERS AND REGISTERS LOCATED IN TOILET ROOMS SHALL BE ALUMINUM CONSTRUCTION.
4. ALL RETURN/EXHAUST REGISTERS SHALL HAVE 45° FIXED BLADES.
5. ALL DUCT SIZES ARE INSIDE DUCT DIMENSIONS.
6. REFER TO ARCHITECTURAL ELEVATIONS FOR EXTERIOR TERMINATION LOCATIONS.
7. REFER TO ARCHITECTURAL PLANS FOR FINAL AIR DEVICE LOCATIONS

BRANCH/ FLEX DUCT SIZING SCHEDULE

DUCT SIZE	CFM RANGE	REMARK
6'Ø	0-100	MAX 10' LENGTH. FLEX DUCTWORK APPROVED ON SUPPLY SYSTEMS ONLY.RETURN AND EXHAUST TO BE HARD DUCTED.
8'Ø	101-260	
10'Ø	261-400	
12'Ø	401-600	

N

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MECHANICAL COMMUNITY CENTER FLOOR & ROOF PLANS

NEW MUNICIPAL BUILDINGS – COMMUNITY CENTER

BOROUGH OF FOLCROFT

ASHLAND AVE.
FOLCROFT, PA 19032

REVISIONS NO.	DESCRIPTION	DATE
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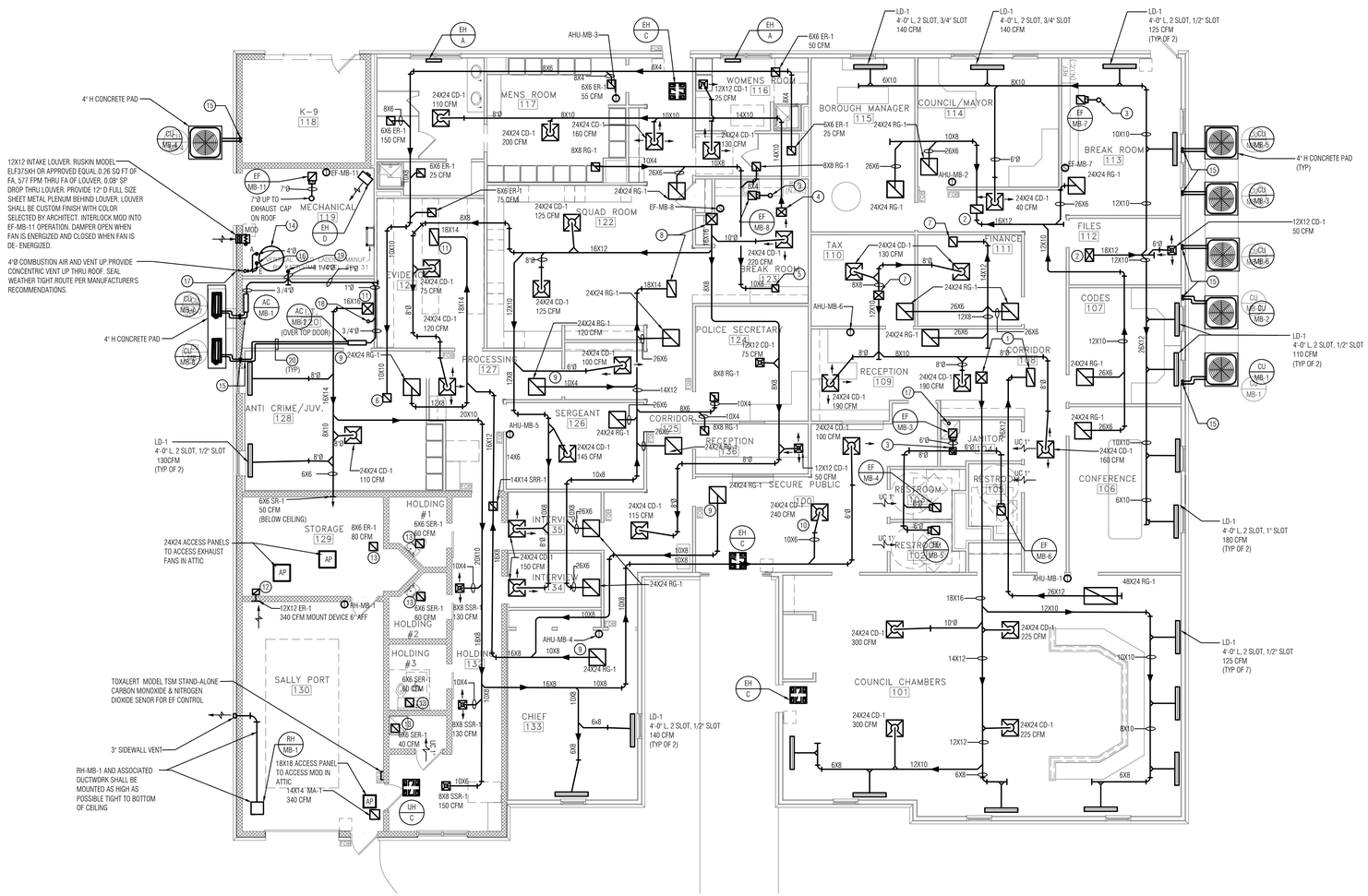
SHEET NO. M-2

SHEET 3 OF 6



1 OVERALL FLOOR PLAN

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

0' 2' 4' 8' 16'

MECHANICAL NOTES (FLOOR PLAN):

1. 18X16 SUPPLY & 26X12 RETURN DUCTS FROM AHU-MB-1 IN ATTIC.
2. 18X12 SUPPLY & RETURN DUCTS FROM AHU-MB-2 IN ATTIC.
3. 6"Ø EXHAUST DUCTS COMBINE TO 10X10 UP TO PITCHED ROOF CAP MODEL RJ-10X10. SEE ROOF PLAN.
4. 14X10 SUPPLY DUCT FROM AHU-MB-3 IN ATTIC.
5. 10X8 RETURN DUCT FROM AHU-MB-3 IN ATTIC. (320 CFM RETURN, 305 CFM FROM ERU-MB-1 TOTAL 625 CFM).
6. 10X10 EXHAUST DUCT UP TO ERU-MB-1 IN ATTIC.
7. 14X12 SUPPLY AND RETURN DUCTS FROM AHU-MB-6 IN ATTIC.
8. 16X16 SUPPLY AND 18X14 RETURN DUCTS FROM AHU-MB-5 IN ATTIC.
9. TRANSITION AS REQUIRED TO RG SIZE
10. TRANSITION AS REQUIRED TO FLEX DUCT SIZE.
11. 16X16 SUPPLY AND 18X14 RETURN DUCTS FROM AHU-MB-4 IN ATTIC.
12. 14X6 EXHAUST DUCT FROM ATTIC TO EXHAUST REGISTER.
13. 8X8 EXHAUST DUCT FROM ATTIC TO EXHAUST REGISTERS.
14. DHWH- SEE PLUMBING DWGS.
15. REFRIGERANT PIPING FROM ATTIC (DWG M-4) DN IN EXTERIOR WALL TO CONDENSING UNITS.
16. PROVIDE CONCENTRIC VENT KIT. MAINTAIN CODE REQUIRED CLEARANCES FROM BUILDING OPENINGS.
17. 1 1 /4" CONDENSATE DRAIN FROM ATTIC UNITS DN TO JAN. CLOS. SINK
18. 3 /4" CONDENSATE DRAIN FROM AHU-MB-4 IN ATTIC .
19. 1 1 /4" CONDENSATE DRAIN DN TO FLOOR DRAIN. SEE PLUMBING DWGS FOR FLOOR DRAIN LOCATION. COORDINATE WITH PC CONTRACTOR ON DRAIN VERTICAL DROP LOCATION.
20. ROUTE AND SIZE REFRIGERANT PIPING PER MANUFACTURER'S RECOMMENDATIONS.

GENERAL MECHANICAL CONSTRUCTION NOTES

1. IN INACCESSIBLE CEILINGS PROVIDE INTEGRAL OPPOSED BLADE DAMPERS AT ALL AIR DEVICES. FINAL SUPPLY AIR DEVICE BALANCING SHALL BE PERFORMED VIA INTEGRAL AIR DEVICE. IN ACCESSIBLE CEILINGS PROVIDE HAND DAMPERS AT BRANCH DUCTS OFF OF MAINS FOR BALANCING.
2. FLEX DUCT WORK LENGTHS SHALL BE LIMITED TO WHAT IS ALL INDICATED ON COVER SHEET DRAWING.
3. ALL DIFFUSERS AND REGISTERS LOCATED IN TOILET ROOMS SHALL BE ALUMINUM CONSTRUCTION.
4. ALL RETURN/EXHAUST REGISTERS SHALL HAVE 45 ° FIXED BLADES.
5. ALL DUCT SIZES ARE INSIDE DUCT DIMENSIONS.
6. REFER TO ARCHITECTURAL ELEVATIONS FOR EXTERIOR TERMINATION LOCATIONS.
7. REFER TO ARCHITECTURAL PLANS FOR FINAL AIR DEVICE LOCATIONS

SPECIAL NOTE:

DUCTWORK SHOWN ON FLOOR PLAN SHALL BE INSTALLED ABOVE DROPPED CEILINGS BELOW ATTIC HORIZONTAL JOISTS UNLESS OTHERWISE NOTED.

BRANCH/ FLEX DUCT SIZING SCHEDULE

DUCT SIZE	CFM RANGE	REMARK
6"Ø	0-100	MAX 10' LENGTH. FLEX DUCTWORK APPROVED ON SUPPLY SYSTEMS ONLY. RETURN AND EXHAUST TO BE HARD DUCTED.
8"Ø	101-260	
10"Ø	261-400	
12"Ø	401-600	

KEY

RTU — EQUIPMENT TYPE
MB-1 — MUNICIPAL BLDG. FOLLOWED BY EQUIPMENT #

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MECHANICAL MUNICIPAL BLDG FLOOR PLAN

NEW MUNICIPAL BUILDINGS – COMMUNITY CENTER

BOROUGH OF FOLCROFT

ASHLAND AVE.

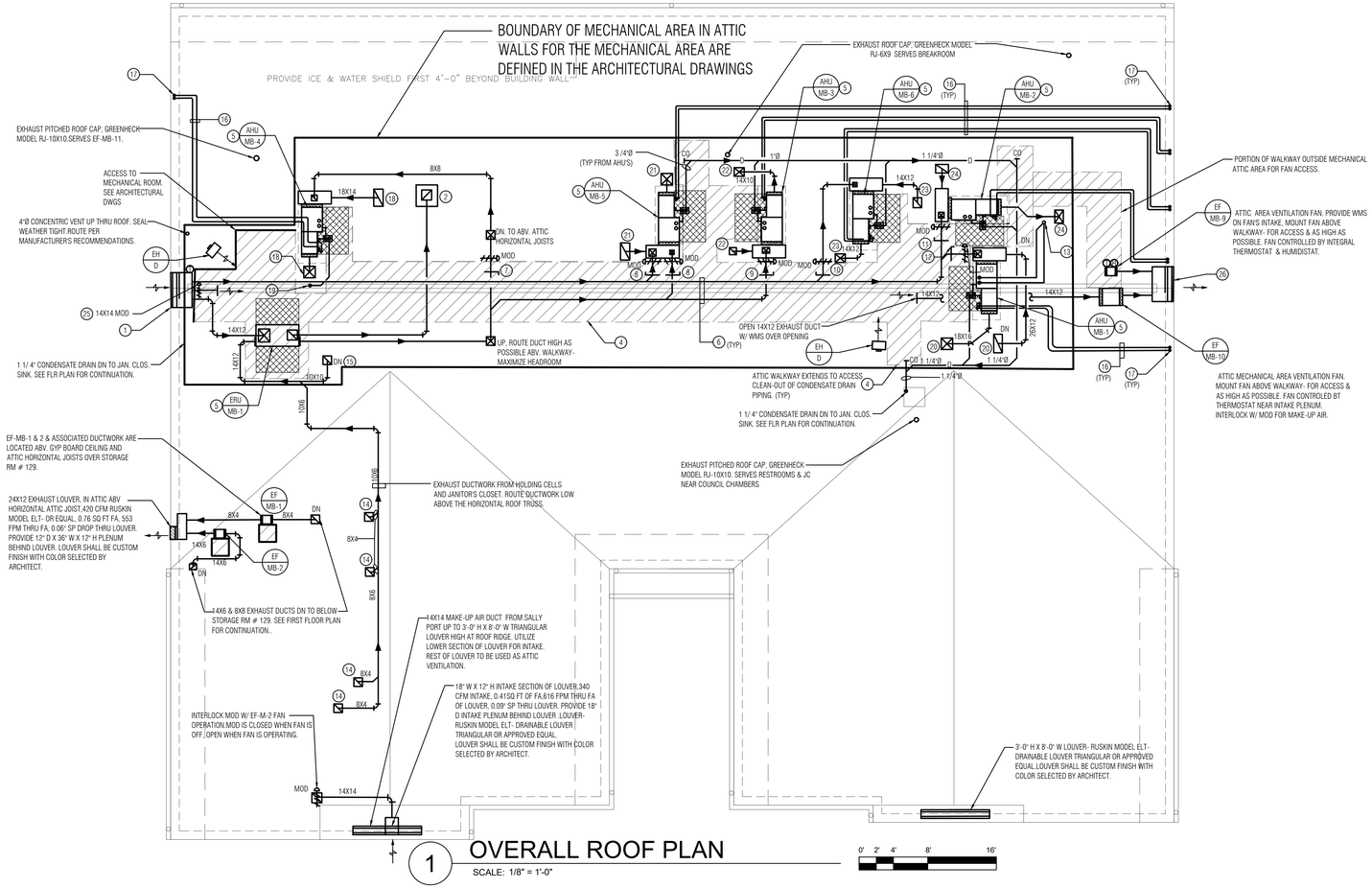
FOLCROFT, PA 19032

REVISIONS NO.	DESCRIPTION	DATE
.	ISSUE FOR BID	02.28.20

DATE: 01/31/2020
SCALE: AS NOTED
DRAWN BY: AC
CHECKED BY: DM
PROJ. NO.:

SHEET NO. M-3

SHEET 4 OF 6



1 OVERALL ROOF PLAN

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

0' 2' 4' 8' 16'

MECHANICAL NOTES (ATTIC & ROOF):

1. 4'-0" H X 8'-0" W TRIANGULAR LOUVER AT ROOF PEAK. USE LOWER SECTION OF LOUVER FOR INTAKE LOUVER. BLANK OFF UNUSED SECTION WITH SHEET METAL AND 2" RIGID INSULATION. 48" W X24" H INTAKE SECTION OF LOUVER, 2610 CFM INTAKE, 4.11 SQ FT OF FA, 636 FPM THRU FA OF LOUVER, 0.08" OF SP THU LOUVER. PROVIDE FULL SIZE, 18" D INSULATED PLENUM BEHIND LOUVER. LOUVER- RUSKIN MODEL ELT- DRAINABLE LOUVER TRIANGULAR OR APPROVED EQUAL. LOUVER SHALL BE CUSTOM FINISH WITH COLOR SELECTED BY ARCHITECT.
2. EXHAUST ROOF CAP WITH PITCHED CURB MODEL GPIP, 600 CFM GREENHECK MODEL GRSP-15, SIZE 15 OR EQUAL. 0.33" SP DROP THRU CAP, 1.12 SQ FT THROAT AREA,536 FPM, 29" SQ OVERALL DIMENSION, WITH BIRD SCREEN, 15 LBS WT.
3. SIZE & ROUTE REFRIGERANT PIPING PER MANUFACTURER'S RECOMMENDATIONS.
4. ACCESS WALKWAY TO SERVE ATTIC UNITS. SEE ARCHITECTURAL DRAWINGS FOR FURTHER INFORMATION.
5. UNIT LOCATED IN ATTIC AREA.
6. ROUTE DUCTWORK,PIPING ETC. OVER UNIT ACCESS AS HIGH POSSIBLE. MAXIMIZE HEAD ROOM.
7. 220 CFM OA FOM ERU-1
8. 260 CFM OA FROM LOUVER, 75 CFM OA FROM ERU-1
9. 305 CFM OA FROM ERU-1
10. 80 CFM OA FROM LOUVER.
11. 220 CFM OA FROM LOUVER.
12. 425 CFM OA FROM LOUVER.
13. 4"Ø CONCENTRIC VENT UP THRU ROOF.
14. 8X8 EXHAUST DUCT DN THRU ATTIC AND GYP BOARD ON BOTTOM OF ROOF TRUSS TO HOLDING CELL OR JANITOR'S CLOSET EXHAUST. SEE FLOOR PLAN FOR CONTINUATION.
15. 10X10 EXHAUST DUCT DN TO BELOW ATTIC SPACE, ABOVE CEILING OF FIRST FLOOR.
16. ROUTE AND SIZE REFRIGERANT PIPING PER MANUFACTURER'S RECOMMENDATIONS.
17. REFRIGERANT PIPING DN IN EXTERIOR WALL TO OUTDOOR CONDENSING UNITS. SEE FIRST FLOOR PLAN (DWG M-3) FOR CONTINUATION.
18. 16X16 SUPPLY AND 18X14 RETURN DUCTS FROM AHU-MB-4 DN TO ABOVE FIRST FLOOR CEILING.
19. 3 /4" CONDENSATE DRAIN DN. SEE FIRST FLOOR FOR CONTINUATION.
20. 18X16 SUPPLY AND 26X12 RETURN DUCTS FROM AHU-MB-1 DN TO ABOVE FIRST FLOOR CEILING.
21. 16X16 SUPPLY AND 18X14 RETURN DUCTS FROM AHU-MB-5 DN. TO ABOVE FIRST FLOOR CEILING.
22. 14X10 SUPPLY AND 10X8 RETURN DUCTS FROM AHU-MB-3 DN. TO ABOVE FIRST FLOOR CEILING.
23. 14X12 SUPPLY AND RETURN DUCTS FROM AHU-MB-6 DN. TO ABOVE FIRST FLOOR CEILING.
24. 18X12 SUPPLY AND RETURN DUCTS FROM AHU-MB-2 DN. TO ABOVE FIRST FLOOR CEILING.
25. INTERLOCK MOD OPERATION WITH EF-MB-10 OPERATION. MOD SHALL BE OPEN WHEN EF IS ENERGIZED AND CLOSED WHEN EF IS DE- ENERGIZED.
26. 4'-0" H X 8'-0"W TRIANGULAR LOUVER AT ROOF PEAK. USE LOWER SECTION OF LOUVER FOR ATTIC AND MECHANICAL AREA OF ATTIC VENTILATION. BLANK OFF UNUSED SECTION OF LOUVER WITH SHEET METAL AND 2" OF RIGID INSULATION.30" W X 24" H EXHAUST SECTION, 1000 CFM EXHAUST,0.07" OF SP THRU LOUVER, 1.72 SQ FT OF FA, 583 FPM THRU FA OF LOUVER. PROVIDE 18" D FULL SIZE PLENUM BEHIND LOUVER. LOUVER- RUSKIN MODEL ELT-DRAINABLE LOUVER, TRIANGULAR OR APPROVED EQUAL. LOUVER SHALL BE CUSTOM FINISH WITH COLOR SELECTED BY ARCHITECT.

GENERAL MECHANICAL CONSTRUCTION NOTES

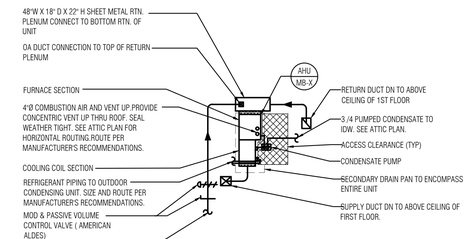
1. IN INACCESSIBLE CEILINGS PROVIDE INTEGRAL OPPOSED BLADE DAMPERS AT ALL AIR DEVICES. FINAL SUPPLY AIR DEVICE BALANCING SHALL BE PERFORMED VIA INTEGRAL AIR DEVICE. IN ACCESSIBLE CEILINGS PROVIDE HAND DAMPERS AT BRANCH DUCTS OFF OF MAINS FOR BALANCING.
2. FLEX DUCT WORK LENGTHS SHALL BE LIMITED TO WHAT IS ALL INDICATED ON COVER SHEET DRAWING.
3. ALL DIFFUSERS AND REGISTERS LOCATED IN TOILET ROOMS SHALL BE ALUMINUM CONSTRUCTION.
4. ALL RETURN/EXHAUST REGISTERS SHALL HAVE 45˚ FIXED BLADES.
5. ALL DUCT SIZES ARE INSIDE DUCT DIMENSIONS.
6. REFER TO ARCHITECTURAL ELEVATIONS FOR EXTERIOR TERMINATION LOCATIONS.
7. REFER TO ARCHITECTURAL PLANS FOR FINAL AIR DEVICE LOCATIONS

SPECIAL NOTES:

1.THE INTENT IS TO ROUTE DUCTWORK ABOVE THE WALKWAY AS HIGH AS POSSIBLE FOR ACCESS HEADROOM AND FUTURE EQUIPMENT REPLACEMENT.THE DUCTWORK CONNECTED TO THE LOUVERS AND ROUTED IN THE ATTIC MECHANICAL ENCLOSURE HAS TO ADJUST IN ELEVATION FROM THE LOUVERS INTO THE MECHANICAL ENCLOSURE.

2.DUCTWORK SHOWN ON ATTIC AREA SHALL BE INSTALLED ABOVE ATTIC HORIZONTAL JOISTS (ATTIC AREA)UNLESS OTHERWISE NOTED.

3. SUPPLY & RETURN DUCTWORK INSTALLED IN ATTIC MECHANICAL AREA SHALL BE INSULATED WITH MINIMUM OF R-6 INSULATION. SUPPLY, RETURN AND EXHAUST DUCTWORK INSTALLED OUTSIDE ATTIC MECHANICAL AREA (OPEN ATTIC SPACE) SHALL BE INSULATED WITH A MINIMUM OF R-8 INSULATION.

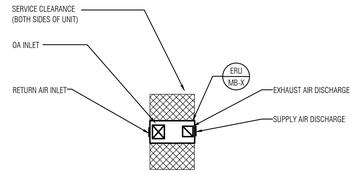


TYPICAL INDOOR UNIT DETAIL (PLAN VIEW) NOT TO SCALE

NOTES:
1.MOUNT UNIT FROM TOP OF HORIZONTAL ROOF JOISTS. PROVIDE NECESSARY STRUCTURE ELEMENTS - ANGLES, BLOCKING ETC FOR A COMPLETE INSTALLATION.
2.FINAL DUCTWORK AND PIPING CONNECTIONS SHALL BE FIELD VERIFIED (IN CASE OF SUBSTITUTIONS IN EQUIPMENT).

KEY

RTU MB-1 — EQUIPMENT TYPE; MUNICIPAL BLDG. FOLLOWED BY EQUIPMENT #



ERU UNIT DETAIL (PLAN VIEW) NOT TO SCALE

NOTES:
1.MOUNT UNIT FROM TOP OF HORIZONTAL ROOF JOISTS. PROVIDE NECESSARY STRUCTURE ELEMENTS - ANGLES, BLOCKING ETC FOR A COMPLETE INSTALLATION.
2.FINAL DUCTWORK AND PIPING CONNECTIONS SHALL BE FIELD VERIFIED (IN CASE OF SUBSTITUTIONS IN EQUIPMENT).

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MECHANICAL MUNICAPLE ROOF PLAN

NEW MUNICIPAL BUILDINGS – COMMUNITY CENTER

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SHEET 5 OF 6

SPLIT SYSTEM HVAC UNITS

UNIT NO.	TYPE	SERVICE	NOM. TONS	SEER/ EER	INDOOR UNIT CFM	MIN. OA CFM	ESP	COOLING (EAT 80 /67, OAT 95) TMBH	COOLING (EAT 80 /67, OAT 95) SMBH	SUP. FAN FLA	COM. FAN FLA	HEATING (GAS) 1ST STAGE INPUT MBH	HEATING (GAS) 1ST STAGE OUTPUT MBH	HEATING (GAS) 2ND STAGE INPUT MBH	HEATING (GAS) 2ND STAGE OUTPUT MBH	2ND STAGE LAT	FUR. EFF	ELECTRICAL CHARACTERISTICS VOLT/ PHASE AHU / CU	ELECTRICAL CHARACTERISTICS MCA AHU / CU	ELECTRICAL CHARACTERISTICS MOCP AHU / CU	MFGR FURN. COIL / CU	MODEL NO. AHU	MODEL NO. CU	WEIGHT LBS FUR/ COIL / CU	REMARKS
AHU MB-1 / CU MB-1	HORIZ. SPLIT SYSTEM W/ GRADE MOUNTED COND UNIT	COUNCIL CHAMBERS # 101	5.0	16/13	1925	425 LOUVER	0.5	60.0	42.0	10.5	0.66	65	63.1	100	97	104.3	÷95 AFUE	120V/1Ø / 208/230V/1Ø	13.9 / 37	15 / 60	TRANE / TRANE	S9V2C100USPSBB FURNACE 4TXC DX COIL	4TTR7060A	145/84 / 275	(1)
AHU MB-2 / CU MB-2	HORIZ. SPLIT SYSTEM W/ GRADE MOUNTED COND UNIT	MANAGER # 115, BREAK # 113,CODE # 107,CONF. # 106,MAYOR # 114, FILES # 109	3.0	16.5/12.5	1200	220 LOUVER	0.5	36.1	25.2	5.7	0.66	39	37.8	60	58.2	99.1	÷95 AFUE	120V/1Ø / 208/230V/1Ø	7.9 / 24	15 / 35	TRANE / TRANE	S9V2B060U3PSBB FURNACE 4TXC DX COIL	4TTR7036A	119/84 / 245	(1)
AHU MB-3 / CU MB-3	HORIZ. SPLIT SYSTEM W/ GRADE MOUNTED COND UNIT	CORR. N OF SQUAD RM.,LOCKER RM # 117	2.0	17/13	625	305 ERU-1	0.5	13.5 (LOW STAGE)	19.5	5.7	0.66	26	25.2	40	38.8	118.0	÷95 AFUE	120V/1Ø / 208/230V/1Ø	7.9 / 18	15 / 20	TRANE / TRANE	S9V2B040U3PSBB FURNACE 4TXC DX COIL	4TTR7024A	114/84 / 240	(1)
AHU MB-4 / CU MB-4	HORIZ. SPLIT SYSTEM W/ GRADE MOUNTED COND UNIT	ANTI CRIME/JUV. # 128, CHIEF # 138, HOLD. # 132,SECURE LOB. # 100, STORAGE # 129	4.0	16.5/12.50	1450	220 ERU-1	0.5	48.6	34.0	8.0	0.66	52	50.4	80	77.6	116.0	÷95 AFUE	120V/1Ø / 208/230V/1Ø	10.8 / 28	15 / 45	TRANE / TRANE	S9V2B060U3PSBB FURNACE 4TXC DX COIL	4TTR7048B1	127/84 / 259	(1)
AHU MB-5 / CU MB-5	HORIZ. SPLIT SYSTEM W/ GRADE MOUNTED COND UNIT	BREAK # 123,CORR. # 125,&VIDEN. # 121,INTERVIEW # 134 & 135, POLICE SEC. # 124,PROCESS. # 127,SERGEANT #126, SQUAD RM. # 122	4.0	16.5/12.50	1450	260 LOUVER 75 ERU-1	0.5	48.6	34.0	8.0	0.66	52	50.4	80	77.6	105.4	÷95 AFUE	120V/1Ø / 208/230V/1Ø	10.8 / 28	15 / 45	TRANE / TRANE	S9V2B060U3PSBB FURNACE 4TXC DX COIL	4TTR7048B1	127/84 / 259	(1)
AHU MB-6 / CU MB-6	HORIZ. SPLIT SYSTEM W/ GRADE MOUNTED COND UNIT	CORR. # 108,FINANCE #111,RECEPTION # 109, TAX # 110	2.0	17/13	800	80 LOUVER	0.5	24.6	17.2	5.7	0.66	26	25.2	40	38.8	108.0	÷95 AFUE	120V/1Ø / 208/230V/1Ø	7.9 / 18	15 / 20	TRANE / TRANE	S9V2B040U3PSBB FURNACE 4TXC DX COIL	4TTR7024A	114/84 / 240	(1)

(1) PROVIDE: DISCONNECT SWITCH, R410A HEAT PUMP EXPANSION VALVE, PROGRAMMABLE THERMOSTAT (2 STAGE HEAT AND COOL), MERV 13 FILTER, CONCENTRIC VENT KIT, NEOPRENE MOUNTING PADS (INDOOR UNIT UNDER SECONDARY DRAIN PAN), RUBBER ISOLATORS (OUTDOOR UNIT), UNIT MOUNTED CONDENSATE OVERFLOW SWITCH, CONDENSATE PUMP- LITTLE GIANT MODEL VCMA-20UL OR APPROVED EQUAL. PUMP DATA-115-1-60 VOLTAGE, 1 /30 HP 1.5 FLA 115-1-60 VOLTAGE,20' OF HD MAX, 6'-0" CORD. CM SHALL PROVIDE 4" HIGH CONCRETE PAD FOR GRADE MOUNTING OF CONDENSING UNIT.

PACKAGED ROOFTOP AIR CONDITIONING UNIT SCHEDULE

UNIT NO.	TYPE	NOMINAL TONS	AIRFLOW APPLICATION	AIRFLOW	INDOOR SUPPLY FAN: SUPPLY AIR CFM	OUTSIDE AIR CFM	ESP (IN. W.G.)	HP	RPM	MOTOR TYPE	COOLING-DX: EVAP. FACE VEL. FT/MIN	EAT DB/WB	UNIT LAT DB/WB	TMBH	SMBH	INDIRECT FIRED GAS HEAT: STAGES	EAT F	LAT F	INPUT MBH	OUTPUT MBH	STAGES	FILTER	ELECTRICAL CHARACTERISTICS: MCA	MOCP	VOLT/PHASE/HZ	EER/ IEER (SEER)	WEIGHT LBS	STANDARD OF DESIGN: MFGR.	MODEL	REMARKS
RTU-CC-1 & 2	DX COOLING WITH GAS HEAT	10	HORIZONTAL	SINGLE ZONE VAV	4000	1000	1.0	2.75	1,447	ECM	240	82/68	61.3/59.2	110.4	90.6	3	52.5	89.8	200	160	2	MERV 8	48	60	208V / 3Ø / 60HZ	12.4/15.2	1700	TRANE	YHC120F3	(1) (2)
RTU-CC-3	DX COOLING WITH GAS HEAT	7.5	DOWNFLOW	CONSTANT VOLUME	3000	660	1.0	2.0	901	ECM	243	80/67	57.24/56.03	105.8	78.6	2	54.6	104.2	200	160	2	MERV 8	44	50	208V / 3Ø / 60HZ	11.2/12.7	1400	TRANE	YSC102H3	(1) (2)
RTU-CC-4	DX COOLING WITH GAS HEAT	3.0	DOWNFLOW	CONSTANT VOLUME	1000	250	1.0	0.75	1,124	ECM	143	80/67	58.07/56.49	35.92	26.78	2	52.5	112.7	80	64.8	2	MERV 8	20	30	208V / 3Ø / 60HZ	12.0/14.0	900	TRANE	YSC036G3	(1) (3)

(1) 95 DEG OAT

(2) PROVIDE ROOF CURB, FACTORY INSTALLED NON-FUSED DISCONNECT SWITCH, ECON-REF ENTHALPY 0-100% W/ BAROMETRIC DAMPER, MICROPROCESSOR CONTROLS 3PH,DEMAND CONTROL VENTILATION (CO2) 3PH- (CO2) DUCT MOUNTED SENSOR ONLY,HOT GAS REHEAT, HUMIDITY DUCT MOUNTED SENSOR, DIRTY FILTER SWITCH, POWERED WEATHERPROOF GFI OUTLET, 7 DAY PROGRAMMABLE THERMOSTAT, FACTORY INSTALLED RETURN DUCT SMOKE DETECTOR.

(3) PROVIDE ROOF CURB, FACTORY INSTALLED NON-FUSED DISCONNECT SWITCH,ECON-REF ENTHALPY 0-100% W/ BAROMETRIC DAMPER, MICROPROCESSOR CONTROLS 3PH,DEMAND CONTROL VENTILATION (CO2) 3PH- (CO2) DUCT MOUNTED SENSOR ONLY,HOT GAS REHEAT,HUMIDITY DUCT MOUNTED SENSOR, DIRTY FILTER SWITCH, POWERED WEATHERPROOF GFI OUTLET, 7 DAY PROGRAMMABLE THERMOSTAT.

PACKAGED ENERGY RECOVERY UNIT (CORE HX TYPE)

TAG NO.	UNIT CONFIG.	0A SUPPLY: CFM	ESP IN.WC	FAN HP	SUMMER ENT. DB/WB	SUMMER LVG. DB/WB	WINTER ENT. DB/WB	WINTER LVG. DB/WB	EXHAUST: CFM	ESP IN.WC	FAN HP	SUMMER ENT. DB/WB	SUMMER LVG. DB/WB	WINTER ENT. DB/WB	WINTER LVG. DB/WB	ELECTRICAL MCA	ELECTRICAL MOCP	ELECTRICAL VOLT/PH	FILTERS SUPPLY	FILTERS RETURN	WEIGHT	MFGR	MODEL NO.	REMARKS
ERU-MB-1	PACKAGED ENERGY RECOVERY UNIT	600	0.5	1 /2	93.2/78.3	80.7/70.5	12.6/10.0	51.6/41.5	600	0.5	1 /2	75/62.5	87.3/71.7	72.0/55.8	31.3/29.9	14.4	20	115/60/1	MERV 8	MERV 8	461	GREENHECK	ECV-10L-VG-FM	(1)

(1) INDOOR UNIT INSTALLATION,FIBER MEMBRANE ENERGY RECOVERY CORE, DOUBLE WALL CONSTRUCTION, SINGLE POINT POWER CONNECTION,VARI-GREEN ECM MOTORS- DIRECT DRIVE FORWARD CURVED BLOWERS,GALVANIZED FINISH, NON FUSEDE DISCONNECT SWITCH, CORROSION RESISTANT FASTENERS, 7 DAY TIME CLOCK, REMOTE PANEL 7 DAY TIME CLOCK, SPARE FILTERS,SMOKE DETECTORS SUPPLY & RETURN SHIPPED LOOSE,FROST CONTROL,SPEED CFCONTROL-MOTOR POTENTIOMETER

AIR DEVICE SCHEDULE

SYMBOL	TYPE	SIZE	SERVICE	MOUNTING	MATERIAL	FINISH	ACCESSORIES	MAX. NC	STANDARD OF DESIGN MFGR.	STANDARD OF DESIGN MODEL	REMARKS
CD-1	PLAQUE	REFER TO PLAN	SUPPLY	REFER TO PLAN	STEEL	WHITE	OBD	25	PRICE	SPD	SQUARE TO ROUND ADAPTER AS REQUIRED.
CD-2	LOUVER	REFER TO PLAN	SUPPLY	REFER TO PLAN	STEEL	WHITE	OBD	25	PRICE	SCD	SQUARE TO ROUND ADAPTER AS REQUIRED.
RG-1	RETURN GRILLE	REFER TO PLAN	RETURN	REFER TO PLAN	ALUMINUM	WHITE	-	25	PRICE	635	3 /4" SPACING 45 ° DEFLECTION
ER-1/MA-1	EXHAUST/ MAKE-UP AIR REGISTER	REFER TO PLAN	EXHAUST	REFER TO PLAN	ALUMINUM	WHITE	OBD	30	PRICE	635	3 /4" SPACING 45 ° DEFLECTION
DD-1	DRUM LOUVER	REFER TO PLAN	SUPPLY	REFER TO PLAN	STEEL	CUSTOM SELECTED BY ARCHITECT	OBD (HEAVY DUTY)	35	PRICE	HCD	
GR-1	HEAVY DUTY GRILLE	REFER TO PLAN	RETURN	REFER TO PLAN	STEEL	CUSTOM SELECTED BY ARCHITECT	OBD	35	PRICE	96-96FH	3 /4" SPACING 45 ° DEFLECTION
LD-1	LINEAR SLOT DIFFUSER	REFER TO PLAN	SUPPLY	REFER TO PLAN	ALUMINUM	WHITE	OBD	25	PRICE	SDS	BORDER TYPE 15 FOR T-BAR CEILING INSTALLATION, BORDER TYPE 15 FOR T-BAR CEILING INSTALLATION,
SSR-1-SUPPLY SER-1-EXHAUST SRR-1-RETURN	SECURITY REGISTER	REFER TO PLAN	REFER TO PLAN	REFER TO PLAN	STEEL	WHITE	OBD	30	PRICE	MSL	WIRE MESH SCREEN
OA LOUVER	LOUVER	REFER TO PLAN	INTAKE	SURFACE	ALUMINUM	CUSTOM SELECTED BY ARCHITECT	BIRDSCREEN	--	GREENHECK	ESD-435	-
SR-1	SUPPLY REGISTER	REFER TO PLAN	SUPPLY	REFER TO PLAN	STEEL	WHITE	DOUBLE DEFLECTION	30	PRICE	530	3 /4" SPACING 45 ° DEFLECTION

ELECTRIC UNIT AND WALL HEATER SCHEDULE

UNIT NO.	MBH	KW	CFM	TYPE	ELECTRICAL CHARACTERISTICS	MFGR	MODEL NO.	REMARKS
EH-A	5.1	1.5	100	WALL MOUNTED	120/1/60	Q-MARK	CWH3150F	(1)
EH-B	10.2	3.0	100	WALL MOUNTED	208/1/60	Q-MARK	AWH4404	(1)
EH-C	10.2	3.0	300	CEILING RECESSED	208/1/60	Q-MARK	CDF-548	(2)
EH-D	10.2	3.0	350	PROPELLER	208/1/60	Q-MARK	MUH03-81	(3)

(1) PROVIDE DISCONNECT SWITCH, INTEGRAL THERMOSTAT, RECESSED OR SURFACE MOUNTING FRAME- SEE PLANS.

(2) PROVIDE DISCONNECT SWITCH, RECESSED MOUNTING ENCLOSURE, INTEGRAL THERMOSTAT.

(3) PROVIDE DISCONNECT SWITCH, INTEGRAL THERMOSTAT, HANGER KIT.

FAN SCHEDULE

UNIT NO.	SERVICE	TYPE	CFM	ESP	HP/ WATTS	RPM	DRIVE	FLA	ELECTRICAL CHARACTERISTICS	WEIGHT	CONTROL	STANDARD OF DESIGN MFGR.	STANDARD OF DESIGN MODEL	REMARKS
EF-CC-1	WOMEN'S BATH RM # 201, JAN CLOS # 203, MEN'S BATH RM. # 202	ROOF MOUNTED CENTRIFIGAL	375	0.5	1 /4 HP	1222	DIRECT	2.85	120V / 1Ø / 60 HZ	35	TIME CLOCK	GREENHECK	G-098-VG	(1)
EF-CC-2	STORAGE # 208	CEILING CABINET	150	0.25	34 W	1237	DIRECT	1.33	120V / 1Ø / 60 HZ	17	THERMOSTAT	GREENHECK	SP-A190	(2) (5)
EF-MB-1	SALLEYPORT # 130	CEILING CABINET	340	0.5	142 W	1350	DIRECT	1.33	120V / 1Ø / 60 HZ	23	TOXALERT MODEL TSM MONITOR	GREENHECK	CSP-A390	(2) (3)
EF-MB-2	STORAGE # 129	CEILING CABINET	80	0.25	12.2 W	825	DIRECT	0.62	120V / 1Ø / 60 HZ	16	CONTINUOUS	GREENHECK	CSP-A110	(2)
EF-MB-3	JAN. CLOS. # 104	CEILING CABINET	100	0.25	19 W	1053	DIRECT	0.62	120V / 1Ø / 60 HZ	17	CONTINUOUS	GREENHECK	SP-A125	(2)
EF-MB-4	RESTROOM # 103	CEILING CABINET	100	0.25	19 W	1053	DIRECT	0.62	120V / 1Ø / 60 HZ	17	SWITCH	GREENHECK	SP-A110	(2)
EF-MB-5	RESTROOM # 102	CEILING CABINET	100	0.25	19 W	1053	DIRECT	0.62	120V / 1Ø / 60 HZ	17	SWITCH	GREENHECK	SP-A110	(2)
EF-MB-6	RESTROOM # 105	CEILING CABINET	100	0.25	19 W	1053	DIRECT	0.62	120V / 1Ø / 60 HZ	17	SWITCH	GREENHECK	SP-A110	(2)
EF-MB-7	BREAK RM # 113	CEILING CABINET	100	0.25	19 W	1053	DIRECT	0.62	120V / 1Ø / 60 HZ	17	SWITCH	GREENHECK	SP-A110	(2)
EF-MB-8	BREAK RM # 113	CEILING CABINET	100	0.25	19 W	1053	DIRECT	0.62	120V / 1Ø / 60 HZ	17	SWITCH	GREENHECK	SP-A110	(2)
EF-MB-9	OPEN ATTIC VENTILATION	INLINE	200	0.30	1 /10 HP	1277	DIRECT	1.38	120V / 1Ø / 60 HZ	49	SEE NOTE 4	GREENHECK	SQ-80-VG	(2) (4)
EF-MB-10	ATTIC MECHANICAL AREA	INLINE	800	0.30	1 /4 HP	1194	DIRECT	3.7	120V / 1Ø / 60 HZ	50	THERMOSTAT	GREENHECK	SQ-100-VG	(2)
EF-MB-11	STORAGE # 208	CEILING CABINET	150	0.25	34 W	1237	DIRECT	1.33	120V / 1Ø / 60 HZ	17	THERMOSTAT	GREENHECK	SP-A190	(2) (5)

(1) PROVIDE DISCONNECT SWITCH, INTEGRAL BACKDRAFT DAMPER,ALUMINUM CURB CAP W/ PREPUNCHED MOUNTING HOLES,MOTOR ISOLATED ON SHOCK MOUNTS, CORROSION RESISTANT FASTENERS, BIRDSCREEN, 12" HIGH INSULATED ROOF CURB. MOTOR- VARI-GREEN EC MOTOR WITH DIAL OR 0-10VDC INPUT, CONTROL- DIAL FOR BALANCING, UL/cUL 705 LISTED - "POWER VENTILATORS", JUNCTION BOX MOUNTED & WIRED.

(2) PROVIDE DISCONNECT SWITCH, BACKDRAFT DAMPER, SOLID STATE SPEED CONTROL- FACTORY MOUNTED,VIBRATION HANGERS.

(3) PROVIDE TOXALERT MODEL TSM- CARBON MONOXIDE & NITROGEN DIOXIDE STAND-ALONE SENSOR- DUAL GAS MONITOR TO CONTROL EF ON-OFF ALSO PROVIDE OPTIONS-LCD DISPLAY OF GAS CONCENTRATION IN PPM AND AUDIBLE ALARM AND SILENCE.

(4) PROVIDE THERMOSTAT AND DEHUMIDSTAT

(5) PROVIDE THERMOSTAT

DUCTLESS SPLIT-SYSTEM HEAT PUMP UNIT SCHEDULE

UNIT NO.	AREA SERVED	TYPE	NOMINAL TONS	SUPPLY AIR	COOLING (1): TOTAL BTUH	COOLING (1): SENS. BTUH	COOLING (1): SEER	HEATING (2): BTUH	HEATING (2): COP	ELECTRICAL CHARACTERISTICS: MCA	MOCP	VOLTS/PHASE/HZ	WEIGHT (LBS.): AC	WEIGHT (LBS.): CU	STANDARD OF DESIGN: MFGR.	MODEL: AC	MODEL: HP	REMARKS
AC-MB-1/CU-MB-7 AC-MB-2/CU-MB-8	IT RM. #120 IT RM. #120 (100% REDUNDANCY)	WALL MOUNTED	2.0	630	24.000	18,480	21.4	15,700	2.62	19	26	208V / 1Ø / 60HZ	46	153	MITSUBISHI	PKA-A24KA7.TH	PUZ-A24NHA7	(3) (4) (5) (6)

(1) BASED ON 80 DEG. F DB/67 DEG. F WB RETURN AIR CONDITIONS, 95 DEG. F OUTDOOR.

(2) BASED ON 70 DEG. F INDOOR, 17 DEG. F OUTDOOR.

(3) PROVIDE DISCONNECT SWITCH, LOW AMBIENT CONTROL, INTERNAL CONDENSATE PUMP, REMOTE WIRED WALL-MOUNTED CONTROLLER, CM SHALL PROVIDE 4" CONCRETE PAD FOR GRADE MOUNTING OF CONDENSING UNIT.

(4) REFRIGERANT PIPING SHALL BE SIZED & ROUTED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

(5) THE INDOOR UNIT IS POWERED THRU THE OUTDOOR UNIT.

(6) EQUAL BY DAIKIN, LG..

GAS FIRED RADIANT HEATER SCHEDULE

UNIT NO.	AREA SERVED	GAS INPUT MBH	TYPE	ELECTRICAL CHARACTERISTICS	IGNITION AMPS	RUN AMPS	MFGR	MODEL NO.	REMARKS
RH-MB-1	SALLEYPORT # 130	25	LOW INTENSITY GAS FIRED INFRARED TUBE HEATER	120/1/60	4.8	1	RE-VERBER-RAY	LS3-15-25N	(1)

(1) PROVIDE4" SIDEWALL VENT KIT, ANGLE MOUNTING BRACKETS & ALL ASSOCIATED ACCESSORIES FOR A COMPLETE OPERATING SYSTEM.

ADVANCED ENGINEERING INC. www.AdvEngInc.com
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LINN ARCHITECTS
ARCHITECTURE ENGINEERING SITE PLANNING INTERIOR DESIGN
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MECHANICAL SCHEDULES

NEW MUNICIPAL BUILDINGS – COMMUNITY CENTER

BOROUGH OF FOLCROFT

ASHLAND AVE.

FOLCROFT, PA 19032

REVISIONS NO.	DESCRIPTION	DATE
.	ISSUE FOR BID	02.28.20
.	.	.
.	.	.

DATE: 01/31/2020
SCALE: AS NOTED
DRAWN BY: AC
CHECKED BY: DM
PROJ. NO.:

SHEET NO. M-5

SHEET 6 OF 6

PLUMBING FIXTURE SCHEDULE

SYMBOL	DESCRIPTION	FIXTURE							TRAP	COLOR	CARRIER	REMARKS
		MFGR	MODEL	TYPE	SIZE	MFGR	TYPE	SUPPLY				
WC-1	ADA WATER CLOSET FLUSH VALVE	MANSFIELD	1319	ELONGATED BOWL, VITREOUS CHINA	1.6 GPF	SLOAN #8111	BATTERY POWERED SENSOR OPERATED FLUSHOMETER	1" SUPPLY	INTEGRAL	WHITE	---	SOLID PLASTIC, OPEN FRONT SEAT W/O COVER, COMFORT SEATS #C104C
UR-1	URINAL	ZURN	Z5750-U	WALL HUNG	0.125 GPF	ZURN #ZTR6203-ULF-LL	BATTERY POWERED SENSOR OPERATED FLUSHOMETER	3/4" SUPPLY	INTEGRAL	WHITE	---	---
LAV-1	SELF-RIMMING LAVATORY	ZURN	Z5110	SELF-RIMMING, VITREOUS CHINA	20" X 17"	MOEN #WS84503	SINGLE LEVER CONTROL	1/2" SUPPLIES, ANGLE STOP, C.B. ESCUTCHEON	1 1/2" C.B. CAST BRASS W/ CLEANOUT PLUG	WHITE	---	PROVIDE TRUEBRO #102W & 105W SUPPLY & WASTE PIPING INSULATION
LAV-2	WALL HUNG LAVATORY	ZURN	Z5350	WALL HUNG, VITREOUS CHINA	19" X 17"	MOEN #WS84503	SINGLE LEVER CONTROL	1/2" SUPPLIES, ANGLE STOP, C.B. ESCUTCHEON	1 1/2" C.B. CAST BRASS W/ CLEANOUT PLUG	WHITE	---	W/ MCGUIRE OFFSET LAVATORY GRID DRAIN, #PRODRAINWCSAN. PROVIDE TRUEBRO #102W & 105W SUPPLY & WASTE PIPING INSULATION
SHO-1	SHOWER MODULE	COMFORT DESIGNS	SST 3838BF	ADA SHOWERR	38.5" x 37.125" x 78.875"	---	---	1/2" SUPPLIES	2" C.B. CAST BRASS	WHITE	---	W/ GRAB BARS, FOLDING SEAT, PRESSURE BALANCE MIXING VALVE W/ LEVER HANDLE. SOAP DISH, CURTAIN ROD, THRESHOLD, HAND HELD SHOWER W/ FLEX HOSE AND SLIDE BAR.
SK-1	SINGLE BOWL SINK	STERLING	11600-NA	18 GAUGE STAINLESS STEEL	29 1/2" X 15 3/4" X 9 5/16"	MOEN #7565	SINGLE LEVER CONTROL W/PULL DOWN KITCHEN FAUCET	1/2" SUPPLIES, ANGLE STOP, C.B. ESCUTCHEON	1 1/2" C.B. CAST BRASS W/ CLEANOUT PLUG	STAINLESS STEEL	---	---
MSB-1	MOP SERVICE BASIN	MUSTEE	63M	MOLDED FIBERGLASS	24" X 24" X 10"	MUSTEE #63.600A	WALL MOUNTED SERVICE FAUCET	1/2" SUPPLIES	3" C.B. CAST BRASS	WHITE	---	W/ WALL GUARDS, HOSE AND HOSE HOLDER, MOP HANGER
DF-1	DRINKING FOUNTAIN	HALSEY TAYLOR	OVL-III-SEBP	STAINLESS STEEL	---	---	PRESS BAR	1/2" SUPPLIES	1 1/2" C.B. CAST BRASS W/ CLEANOUT PLUG	STAINLESS STEEL	---	---
PF-1	PENAL FIXTURE	ACORN	1420FA	STAINLESS STEEL	---	---	---	---	---	---	---	---
PF-2	ADA PENAL FIXTURE	ACORN	LR1449	STAINLESS STEEL	---	---	---	---	---	---	---	---

PUMP SCHEDULE

UNIT NO.	SERVICE	LOCATION	GPM	HEAD (FT)	ELECTRIC CHARACTERISTICS	MOTOR HP	MODEL NUMBER	REMARKS
HWRP-1	HOT WATER RECIRC.	ELEC/MECH 216	2.5	1.5'	115 V/ 1Ø	1/33	GRUNDFOS #UP10-16	W/ AQUASTAT, TIME CLOCK & THERMOMETER

HOT WATER HEATER SCHEDULE

UNIT NO.	LOCATION	MFGR	MODEL NO.	STORAGE CAPACITY	HEATING MEDIUM	ELECTRICAL CHARACTERISTICS	INPUT	RECOVERY @ 90° F	REMARKS
HWH-1	PUBLIC RESTROOMS & JANITOR'S CLOSET	BRADFORD WHITE	M-1-WH20L6SS	20 GALLON	ELECTRIC	120V, 1Ø	1.5 KW	7 GPH	W/ FACTORY INSTALLED HEAVY DUTY WALL MOUNTING BRACKET & WATTS #PLT-S-MI 2 GALLON EXPANSION TANK
HWH-2	VARIOUS	BRADFORD WHITE	ES-3000-1-S-10	INSTANTANEOUS	ELECTRIC	120V, 1Ø,3.0 KW	---	---	---
HWH-3	MECH. RM.	BRADFORD WHITE	EF-60T-12S-3N(A)	60 GALLON	GAS	120V, 1Ø	125 MBH	145 GPH @ 100°F	W/ WATTS #PLT-S-MI 2-GALLON EXPANSION TANK & IPS CORPORATION WATER HEATER PAN

PLUMBING SPECIALTIES

UNIT NO.	DESCRIPTION	MFGR	MODEL NO.	REMARKS
CO	FLOOR CLEANOUT	JR SMITH	4031	ROUND TOP
CO	WALL CLEANOUT	JR SMITH	4436	FACE OF WALL COVER
OWH-1	OUTSIDE WALL HYDRANT	WATTS	HY42	NON-FREEZE HYDRANT W/ LOOSE KEY
FD-1	FLOOR DRAIN	JR SMITH	2005	PROVIDE TRAP GUARD INSERT
FD-2	PENAL FLOOR DRAIN	JR SMITH	2016	PROVIDE TRAP GUARD INSERT
TD-1	TRENCH DRAIN	WATTS	DEAD LEVEL P	PRE-SLOPED POLYPROPYLENE POLYMER TRENCH DRAIN
ROB-1	REFRIGERATOR OUTLET BOX	OATEY	ICE MAKER OUTLET BOX	W/ 1/4 TURN VALVE. PROVIDE FIRE RATED MODEL WHEN LOCATED IN A RATED WALL.
HB-1	INTERIOR HOSE BIB	SIOUX CHIEF	117-22	---
BFP-1	BACKFLOW PREVENTER	WATTS	LF909	---
DSB-1	EXTERIOR DOWNSPOUT BOOT	BARRY CRAFT	B26A	---
GOB-1	GAS OUTLET BOX	OATEY	MODA GAS SUPPLY BOX	W/ 1/4 TURN VALVE. PROVIDE FIRE RATED MODEL WHEN LOCATED IN A RATED WALL.
RD-1	COMBINATION ROOF & OVERFLOW DRAIN	ZURN	Z165	OUTLET SIZE AS INDICATED ON PLAN
AD-1	K9 AREA DRAIN	JR SMITH	1450	W/ HEEL PROOF GRATE
DSN-1	DOWNSPOUT NOZZLE	ZURN	Z199	W/ BIRD SCREEN

PIPE INSULATION MATRIX

FLUID OPERATING TEMPERATURE RANGE (°F)	INSULATION CONDUCTIVITY		NOMINAL PIPE OR TUBE SIZE (INCHES)				
	CONDUCTIVITY Btu x in./(h x ft² x °F)	MEAN RATING TEMPERATURE, °F	LESS THAN 1"	1" TO LESS THAN 1-1/2"	1-1/2" TO LESS THAN 4"	4" TO LESS THAN 8"	8" AND GREATER
141-200	0.25-0.29	125	1.5	1.5	2.0	2.0	2.0
105-140	0.21-0.28	100	1.0	1.0	1.5	1.5	1.5
40-60	0.21-0.27	75	0.5	0.5	1.0	1.0	1.0
LESS THAN 40	0.20-0.26	75	1.0	1.0	1.0	1.0	1.5

LEGEND

AFF	ABOVE FINISHED FLOOR
AP	ACCESS PANEL
ARCH	ARCHITECT
	BALL VALVE
BLDG	BUILDING
	CHECK VALVE
CO	WALL CLEANOUT
CO	FLOOR CLEANOUT
CW	COLD WATER
COND	CONDENSATE
CTE	CONNECT TO EXISTING
	DIRECTION OF SLOPE
DN	DOWN
DWG	DRAWING
ED	EMERGENCY DRAIN
DP, DN	ELBOW DOWN OR DROP
UP	ELBOW UP OR RISE
FLR	FLOOR
FD	FLOOR DRAIN
	FLOW IN DIRECTION OF ARROW
G	GAS
HB	HOSE BIBB W/ VACUUM BREAKER
HW	HOT WATER
HWR	HOT WATER RETURN
140	140 HW
IWR	INDIRECT WASTE RECEPTOR
LAV	LAVATORY
MFR	MANUFACTURER
MSB	MOP SERVICE BASIN
NTS	NOT TO SCALE
	P-TRAP
RAC	RUN ABOVE CEILING
RAF	RUN ABOVE FLOOR
RBF	RUN BELOW FLOOR
RCP	REINFORCED CONCRETE PIPE
RWC	RAIN WATER CONDUCTOR
SAN	SANITARY
DP, DN	TEE LOOKING DOWN
UP	TEE LOOKING UP
TYP	TYPICAL
UR	URINAL
V	VENT
VTR	VENT THRU ROOF
WH	WALL HYDRANT
WC	WATER CLOSET
WDP	WASHING MACHINE DRAIN PAN
2#	2# HIGH PRESSURE 2 PSI GAS

GENERAL SPECIFICATIONS

1. DRAWINGS ARE DIAGRAMMATIC. COORDINATE AND DETERMINE FINAL LOCATIONS OF SYSTEMS AND COMPONENTS IN FIELD. COORDINATE WITH ARCHITECTURAL DRAWINGS AND OTHER TRADES.
2. THE INTENTION IS FOR INSTALLATION OF COMPLETE AND OPERATING SYSTEMS. NOT EVERY COMPONENT REQUIRED IS SHOWN. THE CONTRACTOR SHALL INCLUDE ALL COMPONENTS NORMALLY ASSOCIATED WITH THE PARTICULAR SYSTEM. THE SYSTEM SHALL BE FULLY COMMISSIONED AND SIGNED OFF BY AN OFFICER OF THE RESPECTIVE CONTRACTOR PRIOR TO FINAL OWNER ACCEPTANCE TESTING. PROVIDE PERSONNEL TO ASSIST WITH OWNER ACCEPTANCE TESTING.
3. GIVE NOTICES, FILE PLANS, OBTAIN PERMITS AND LICENSES, PAY FEES AND BACK CHARGES, AND OBTAIN NECESSARY APPROVALS FROM AUTHORITIES THAT HAVE JURISDICTION AS REQUIRED TO PERFORM WORK IN ACCORDANCE WITH ALL LEGAL REQUIREMENTS AND WITH THE DESIGN DOCUMENTS.
4. MATERIALS AND EQUIPMENT SHALL BE LISTED BY UNDERWRITERS LABORATORIES (UL) AND APPROVED BY ASME AND AGA, AS APPLICABLE, FOR INTENDED SERVICE.
5. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES REQUIRED FOR SAFE EXECUTION AND COMPLETION OF THE WORK AND FOR INITIATING, MAINTAINING AND SUPERVISING ALL SAFETY PRECAUTIONS AND PROGRAMS IN CONNECTION WITH THE WORK.
6. ALL MATERIALS, EQUIPMENT AND METHOD OF INSTALLATION SHALL BE ACCORDANCE WITH THE STANDARDS, REGULATIONS, CODES, ORDINANCES AND LAW OF LOCAL, STATE AND FEDERAL GOVERNMENTS AND OTHER AUTHORITIES THAT HAVE LAWFUL JURISDICTION.
7. IT SHALL BE THE RESPONSIBILITY OF THIS CONTRACTOR TO COORDINATE THE WORK UNDER THIS CONTRACT WITH THAT OF ALL OTHER TRADES, INCLUDING, BUT NOT LIMITED TO, ELECTRICAL, HVAC, SPRINKLER, PLUMBING, STRUCTURAL AND GENERAL CONSTRUCTION. OFFSETS IN DUCTWORK, PIPINGAND CONDUITS AROUND OBSTRUCTIONS SHALL BE PROVIDED AT NO ADDITIONAL COST TO THE OWNER.
8. EACH CONTRACTOR IS RESPONSIBLE FOR CUTTING AND PATCHING REQUIRED FOR THE INSTALLATION OF NEW WORK UNDER THIS CONTRACT. CUTTING AND PATCHING SHALL BE COMPLETED IN A NEAT AND WORKMANLIKE MANNER. PATCHING MATERIALS SHALL MATCH EXISTING MATERIALS TO THE GREATEST EXTENT POSSIBLE. PROVIDE TOUCH-UP TO MATCH EXISTING SURROUNDING AREAS OF CUTTING AND PATCHING WORK.
9. INTERRUPTIONS TO EXISTING SERVICES AND SYSTEMS SHALL BE AS SHORT AS POSSIBLE AND AT A TIME AND DURATION APPROVED BY THE OWNER. INCLUDE ALL PREMIUM TIME ASSOCIATED WITH INTERRUPTIONS IN BID PROPOSAL. INTERRUPTIONS SHALL BE SCHEDULED WITH OWNER AT LEAST 48 HOURS IN ADVANCE.
10. CONTRACTOR SHALL COORDINATE ITS RESPECTIVE CEILING MOUNTED EQUIPMENT AND DEVICES WITH OTHER TRADE CONTRACTORS PRIOR TO INSTALLATION TO AVOID CONFLICTS.
11. ALL DEBRIS SHALL BE CLEANED AND REMOVED FROM THE SITE BY END OF EACH WORK DAY. PRIOR TO DISPOSAL OF EQUIPMENT AND MATERIALS, TURN OVER TO THE OWNER ANY REMOVED EQUIPMENT AND MATERIALS REQUESTED BY THE OWNER.
12. WORK SHALL BE EXECUTED IN A WORKMANLIKE MANNER AND SHALL PRESENT A NEAT, RECTILINEAR APPEARANCE WHEN COMPLETED.
13. MAINTAIN MAXIMUM HEAD ROOM AT ALL TIMES. DO NOT RUN PIPES, DUCTS AND CONDUIT EXPOSED UNLESS SHOWN AND NOTED TO BE EXPOSED ON DRAWINGS.
14. MATERIALS AND EQUIPMENT SHALL BE NEW, UNLESS NOTED OTHERWISE, AND INSTALLED ACCORDING TO MANUFACTURER'S INSTRUCTIONS AND RECOMMENDATIONS SO THAT COMPLETED INSTALLATION SHALL OPERATE SAFELY AND EFFICIENTLY.
15. EACH RESPECTIVE CONTRACTOR SHALL FIRE STOP ALL NEW AND EXISTING OPENINGS THROUGH FIRE RATED FLOORS, WALLS AND CEILINGS WITH UL ASSEMBLIES OF EQUAL RATING. FIELD VERIFY EXISTING CONDITIONS BEFORE SUBMITTING BID PROPOSAL.
16. COORDINATE ALL ROOF PENETRATIONS WITH WORK OF OTHER TRADES. ALL PENETRATIONS SHALL BE SEALED WATERTIGHT. COORDINATE FLASHING REQUIREMENTS TO MAINTAIN ROOF WARRANTY.
17. MANUFACTURERS' MODEL NUMBERS ARE SPECIFIED SOLELY TO ESTABLISH STANDARDS OF QUALITY FOR PERFORMANCE AND MATERIALS.
18. SUBSTITUTED PRODUCTS SUBMITTED AND APPROVED FOR USE THAT NECESSITATE CHANGES TO THE WORK OF OTHER TRADES OF CONTRACT SHALL BE COORDINATED AND ARRANGED BY THE CONTRACTOR WHO SUBMITTED THE SUBSTITUTION WITHOUT ADDITIONAL COST TO THE OWNER.
19. PRODUCT INSTALLATION SHALL ADHERE TO MANUFACTURER'S RECOMMENDATIONS AND INSTRUCTION.
20. EACH RESPECTIVE CONTRACTOR SHALL PROVIDE PROPER ACCESS TO EQUIPMENT AND COMPONENTS THAT REQUIRE INSPECTION, MAINTENANCE AND POSSIBLE REPAIR. ACCESS PANELS SHALL BE MINIMUM 12"X12" OR AS NEEDED FOR PROPER ACCESS. ACCESS PANELS SHALL BE FURNISHED BY THIS CONTRACTOR AND TURNED OVER TO GENERAL CONTRACTOR FOR INSTALLATION.
21. CONTRACTOR SHALL COORDINATE ELECTRICAL CHARACTERISTICS AND REQUIREMENTS OF ALL APPLICABLE EQUIPMENT WITH THE ELECTRICAL CONTRACTOR.
22. AS WORK PROGRESSES AND FOR DURATION OF CONSTRUCTION, MAINTAIN A COMPLETE SET OF CONTRACT DRAWINGS AT THE JOBSITE. RECORD WORK COMPLETED AND ALL CHANGES FROM ORIGINAL CONTRACT DRAWINGS CLEARLY AND ACCURATELY INCLUDING WORK INSTALLED AS A MODIFICATION OR ADDITION TO THE ORIGINAL DESIGN TURN OVER ALL OPERATING MANUALS, MAINTENANCE MANUALS, AND "AS BUILT" DRAWINGS TO OWNER AT CONCLUSION OF CONSTRUCTION.
23. DO NOT SUPPORT EQUIPMENT, DUCTWORK, PIPING, CONDUIT OR DEVICES FROM SUSPENDED CEILINGS. SUPPORT ALL EQUIPMENT, DUCTWORK, PIPING, CONDUIT AND DEVICES FROM BUILDING STRUCTURE TO PROVIDE A VIBRATION FREE INSTALLATION. NOTIFY ARCHITECT AND STRUCTURAL ENGINEER OF ALL WEIGHTS AND METHODS OF SUPPORT.
24. ANY REFERENCE TO MECHANICAL, PLUMBING, FIRE PROTECTION OR ELECTRICAL CONTRACTORS NOTED ON THE DRAWINGS SHALL NOT BE INTERPRETED AS AN INTENTION TO DEFINE SEPARATE CONTRACTORS FOR THE RESPECTIVE WORK. THE GENERAL CONTRACTOR SHALL COORDINATE AND PROVIDE A COMPLETE INSTALLATION WITH COMPLETE MECHANICAL, PLUMBING, FIRE PROTECTION AND ELECTRICAL SYSTEMS, REGARDLESS OF ANY REFERENCES TO OTHER TRADE CONTRACTORS.
25. GUARANTEE WORK OF THIS CONTRACTOR IN WRITING FOR A PERIOD OF ONE YEAR FROM THE DATE OF OWNER'S ACCEPTANCE OR CERTIFICATE OF SUBSTANTIAL COMPLETION. PROMPTLY REPAIR OR REPLACE DEFECTIVE MATERIALS, EQUIPMENT, WORKMANSHIP AND INSTALLATIONS THAT DEVELOP DEFECTS WITHIN THIS PERIOD. PROMPTLY AND TO OWNERS SATISFACTION, CORRECT DAMAGE CAUSED IN MAKING NECESSARY REPAIRS AND REPLACEMENTS UNDER THIS GUARANTEE AT NO ADDITIONAL COST TO OWNER. SUBMIT GUARANTEE TO ARCHITECT BEFORE FINAL PAYMENT IS MADE. STATEMENT OF GUARANTEE REQUIREMENTS SHALL NOT BE INTERRUPTED TO LIMIT OWNER'S RIGHTS UNDER LAW AND THIS CONTRACT.

GAS PIPING NOTES

1. ALL ABOVE GRADE INTERIOR GAS PIPING SHALL BE BLACK STEEL INTERIOR.
2. ALL BELOW GRADE GAS PIPING SHALL BE BLACK STEEL EXTERIOR (BASIS OF DESIGN) OR TRACPIPE PS-II FLEXIBLE GAS PIPING (ACCEPTABLE ALTERNATE).
3. ALL JOINTS FOR 2# SHALL BE WELDED COUPLING. (NO JOINTS PERMITTED BELOW GRADE)
4. HIGH PRESSURE GAS (2#) PIPE SIZE BASED ON GAS PRESSURE OF 2 PSI W/ A PRESSURE DROP OF 1.0 PSI AND 0.60 SPECIFIC GRAVITY (2009 IFGC TABLE 402. 4(3)). ALL EQUIPMENT WILL REQUIRE LOCAL PRESSURE REGULATORS VENTED TO THE OUTDOORS OR PRESSURE LIMITING DEVICE WHERE APPROVED BY LOCAL AUTHORITY. IF ALTERNATE PIPING MATERIAL IS TO BE USED, CONTRACTOR IS RESPONSIBLE FOR ADJUSTING PIPE SIZE TO MEET THE DESIGN PRESSURE DROP.
5. LOW PRESSURE GAS PIPE SIZE BASED ON SCHEDULE 40 STEEL PIPING WITH GAS PRESSURE LESS THAN 2 PSI W/ A PRESSURE DROP OF 0.3" AND 0.60 SPECIFIC GRAVITY (2009 IFGC TABLE 402. 4(1)). IF ALTERNATE PIPING MATERIAL IS TO BE USED, CONTRACTOR IS RESPONSIBLE FOR ADJUSTING PIPE SIZE TO MEET THE DESIGN PRESSURE DROP.
6. PROVIDE SHUT OFF VALVE, UNION REDUCER(S), DIRT LEG AND ALL FITTINGS REQUIRED AT EACH UNIT. ALL CONNECTIONS SHALL BE FULL SIZE OF EQUIPMENT.
7. GAS PIPING MATERIALS & INSTALLATION TO BE PER INTERNATIONAL FUEL & GAS CODE AND UTILITY REQUIREMENTS.
8. ALL FUEL FIRED EQUIPMENT SHALL HAVE AN EMERGENCY SHUT-OFF.
9. GAS PIPING SERVING RESIDENTIAL APPLIANCES SHALL TERMINATE IN A METAL BOX WITH SHUT-OFF VALVE. TRACPIPE MODEL #FGP-WBTM OR APPROVED EQUAL.
10. PRESSURE REGULATORS SHALL BE MANUFACTURED BY MAXITROL. PROVIDE VENT LIMITER MANUFACTURED BY MAXITROL. REGULATOR SHALL BE INSTALLED IN A HORIZONTAL UPRIGHT POSITION.

PLUMBING GENERAL NOTES

1. ALL PLUMBING WORK SHALL BE IN ACCORDANCE WITH THE CURRENT PLUMBING CODE AND ALL APPLICABLE LOCAL CODES AND DRAWINGS.
2. ALL MATERIALS AND EQUIPMENT SHALL BE NEW.
3. MANUFACTURERS' MODEL NUMBERS ARE SPECIFIED SOLELY TO ESTABLISH STANDARDS OF QUALITY FOR PERFORMANCE AND MATERIALS.
4. PRODUCT INSTALLATION SHALL ADHERE TO MANUFACTURERS RECOMMENDATIONS.
5. PROVIDE ACCESS PANELS FOR EQUIPMENT THAT REQUIRES PERIODIC SERVICE & TO ACCESS VALVES AND ALL CONCEALED MECHANICAL EQUIPMENT.
6. CONTRACTOR SHALL COORDINATE ELECTRICAL CHARACTERISTICS AND REQUIREMENTS OF ALL PLUMBING EQUIPMENT WITH THE ELECTRICAL DRAWINGS.
7. ALL PLUMBING EQUIPMENT, PIPING, INSULATION, ETC., INSTALLED IN HVAC PLENUM SPACES SHALL MEET CODE REQUIREMENTS FOR SMOKE AND COMBUSTIBILITY.
8. PROVIDE SHUTOFF VALVES ON ALL BRANCH PIPING AND ON ALL SUPPLIES TO INDIVIDUAL FIXTURES AND EQUIPMENT. PROVIDE BALL VALVES ON ALL WATER MAIN BRANCHES IN CORRIDORS AND WHERE INDICATED ON DRAWINGS. ALL VALVES SHALL BE ACCESSIBLE.
9. SUPPORT ALL EQUIPMENT PIPING FROM BLDG STRUCTURE TO PROVIDE A VIBRATION FREE INSTALLATION. NOTIFY STRUCTURAL ENGINEER OF ALL WEIGHTS AND METHODS OF SUPPORT.
10. RUN PIPING CONCEALED, UNLESS SPECIFIED OTHERWISE, AND CLEAR OF CEILING INSERTS.
11. PROVIDE CLAMPS, OFFSETS, EXPANSION JOINTS, ANCHORS AND GUIDES AS NECESSARY TO PREVENT STRESS ON PIPING.
12. PROVIDE VENTS AT HIGH POINTS IN PIPING SYSTEMS AND DRAIN VALVES AT LOW POINTS.
13. PROVIDE AT LEAST THREE-ELBOW SWING FOR PIPE TAKE-OFFS TO RISERS.
14. HORIZONTAL SANITARY PIPING 2 1/2" AND SMALLER TO BE PITCHED A MINIMUM OF 1/4" PER FOOT IN THE DIRECTION OF THE FLOW.
15. HORIZONTAL SANITARY PIPING 3" AND UP TO AND INCLUDING 6" TO BE PITCHED AT A MINIMUM OF 1/8" PER FOOT IN THE DIRECTION OF FLOW.
16. HORIZONTAL SANITARY PIPING GREATER THAN 6" TO BE PITCHED A MINIMUM OF 1/16" PER FOOT IN THE DIRECTION OF FLOW.
17. CLEANOUTS SHALL BE PROVIDED AT THE BASE OF ALL SANITARY AND RAIN WATER VERTICAL STACKS.
18. FLOOR CLEANOUT SHALL BE JR SMITH 4031 SERIES.
19. WALL CLEANOUTS SHALL BE JR SMITH 4436 SERIES.
20. ANY REFERENCE TO ELECTRICAL, PLUMBING AND HVAC CONTRACTORS, NOTED ON THESE DRAWINGS OR STATED IN THE SPECIFICATIONS SHALL NOT BE MISCONSTRUED AS AN INTENTION TO DEFINE SEPARATE CONTRACTORS FOR THE RESPECTIVE WORK. THE GENERAL CONTRACTOR SHALL CO-ORDINATE AND PROVIDE A COMPLETE BUILDING WITH COMPLETE MECHANICAL AND ELECTRICAL SYSTEMS, REGARDLESS OF ANY SPECIFICATION REFERENCES TO OTHER CONTRACTORS.
21. CONTRACTOR TO VERIFY GAS PRESSURE PRIOR TO BID.

PLUMBING NOTES AND SPECIFICATIONS

1. PIPE MATERIALS
   - A. SERVICE: ABOVE GROUND WATER PIPING
     PIPE MATERIAL: TYPE L COPPER TUBING ASTMB882 FACTORY.
     FITTING MATERIAL: WROUGHT COPPER AND BRONZE SOLDER JOINTS.
     PIPE JOINT: 95-5 LEAD FREE SOLDER
   - B. SERVICE: UNDER GROUND WATER PIPING
     PIPE MATERIAL: CROSS-LINKED POLYETHYLENE (PEX) CONFORMING TO ASTM F876
     FITTING MATERIAL: FITTINGS FOR PEX PLASTIC TUBING CONFORMING TO ASTM F 877
     PIPE JOINT: COMPRESSION
   - C. SERVICE: SANITARY WASTE & VENT
     PIPE MATERIAL: DWV RATED PVC PIPING
     FITTING MATERIAL: PVC DRAINAGE PATTERN
     PIPE JOINT: SOLVENT JOINT OR COUPLING W/ NEOPRENE GASKET BELOW GRADE
2. VALVES
   - A. BALL VALVES 2" AND SMALLER ON WATER SERVICES SHALL BE 2 PIECE ALL BRONZE WITH FULL PORT STAINLESS STEEL BALL, TEFLON SEATS, SOLDER ENDS AND 600 PSI COLD WORKING PRESSURE: JENKINS 902, APOLLO OR WATTS APPROVED EQUAL, UNLESS OTHERWISE NOTED.
3. INSULATION
   - A. INSULATION SHALL BE BY OWENS CORNING, CERTAIN-TEED OR MANVILLE.
   - B. INSULATION, JACKETS AND ADHESIVES SHALL BE FLAME RETARDANT AND SHALL HAVE ASTM E-84 FIRE HAZARD RATINGS OF 25 FLAME SPREAD, 50 SMOKE DEVELOPED AND 50 FUEL CONTRIBUTED.
   - C. DOMESTIC HOT WATER: NEW DOMESTIC HOT WATER PIPING SUPPLY AND RECIRCULATION PIPING SHALL BE INSULATED WITH HEAVY DENSITY FIBERGLASS WITH SELF-SEALING LAP AND ALL SERVICE JACKET. FITTINGS AND VALVES SHALL BE INSULATED WITH TWO LAYERS BLANKET INSULATION WITH PVC COVERS. INSULATION SHALL BE RATED FOR MAXIMUM OPERATING TEMPERATURE OF 450 DEGREES F. REFER TO PIPE INSULATION MATRIX ON THIS SHEET FOR REQUIRED INSULATION THICKNESS.
   - D. DOMESTIC COLD WATER: NEW COLD WATER SUPPLY PIPING, VALVES AND FITTINGS SHALL BE INSULATED AS SPECIFIED FOR HOT WATER SUPPLY PIPING. IN ADDITION, CONTINUOUS VAPOR BARRIER SHALL BE MAINTAINED. REFER TO PIPE INSULATION MATRIX ON THIS SHEET FOR REQUIRED INSULATION THICKNESS.
   - E. RAIN WATER CONDUCTOR: HORIZONTAL RAIN WATER CONDUCTORS SHALL BE INSULATED WITH MINIMUM 1" THICK INSULATION.
4. HANGERS, ANCHORS, CLAMPS AND INSERTS
   - A. PROVIDE CAST BRASS SPLIT RING HINGE HANGERS, SUPPORT PIPING FROM BUILDING STRUCTURE TO MAINTAIN REQUIRED GRADE AND PITCH OF PIPE LINES. PREVENT VIBRATION. SECURE PIPING IN PLACE. SECURE HANGERS TO INSERTS WHERE PRACTICAL. HANGER RODS SHALL HAVE MACHINE THREADS.
   - B. HANGER RODS SHALL BE CONNECTED TO BEAM CLAMP, UL APPROVED CONCRETE INSERTS OR PHILLIPS SHALL BE APPROVED EQUAL EXPANSION SHIELD. RAMSET OR POWER DRIVEN INSERTS WILL NOT BE ALLOWED.
   - C. HANGER SPACING SHALL MEET REQUIREMENTS OF STATE AND LOCAL CODES.
5. SLEEVES AND PENETRATIONS
   - A. PIPE SLEEVES THROUGH FIRE RATED CONSTRUCTION SHALL BE SCHEDULE 40 STEEL. SLEEVES THROUGH PARTITIONS AND NON FIRE RATED CONSTRUCTION SHALL BE 26 GAUGE GALVANIZED STEEL WITH LOCAL LONGITUDINAL SEAMS.
   - B. PACKING FOR SLEEVES THAT DO NOT REQUIRE MAINTENANCE OF FIRE RATINGSHALL BE OAKUM, SILICATE FOAM, CERAMIC FIBER WITH APPROVED SEALANT PACK. OR FOAM TO WITHIN ONE INCH OF BOTH WALL SURFACES. SEAL PENETRATION PACKING WITH APPROVED CAULKING AND PAINTABLE WATERPROOF MASTIC SURFACE FINISH OR SILICONE CAULKING.
6. TESTING
   - A. TEST AND ADJUST PLUMBING SYSTEMS AS REQUIRED BY ARCHITECT AND AUTHORITIES THAT HAVE JURISDICTION. PERFORM TEST RECOMMENDED BY MANUFACTURERS OF MATERIAL AND EQUIPMENT; THIS REQUIREMENT MAY BE WAIVED BY ARCHITECT. TEST PLUMBING SYSTEMS UNDER PRESSURE AND HEADS SPECIFIED IN PLUMBING CODES. CLEAN SYSTEMS THOROUGHLY BEFORE TESTING. FIXTURES, EQUIPMENT, PIPE, VALVES AND FITTINGS SHALL BE FREE OF GREASE, METAL CUTTINGS, DIRT AND OTHER FOREIGN MATERIAL. REPAIR STOPPAGE, DISCOLORATION AND DAMAGE TO PARTS OF BUILDING, FINISHES AND FURNISHINGS DUE TO FAILURE TO PROPERLY CLEAN PIPING SYSTEM.
7. DISINFECTION OF WATER SYSTEMS
   - A. WATER PIPING SYSTEMS SHALL BE THOROUGHLY DISINFECTED WITH A SOLUTION CONTAINING NO LESS THAN 50 PARTS PER MILLION OF AVAILABLE CHLORINE. CHLORINATING MATERIALS SHALL BE EITHER LIQUID CHLORINE OR SODIUM HYPOCHLORITE SOLUTION; SHALL BE INTRODUCED INTO THE SYSTEM AND DRAWN TO ALL POINTS IN THE SYSTEM. DISINFECTION SOLUTION SHALL BE ALLOWED TO REMAIN IN SYSTEM FOR 24 HOURS, DURING THIS TIME, VALVES AND FAUCETS SHALL BE OPENED AND CLOSED SEVERAL TIMES. AFTER DISINFECTION, SOLUTION SHALL BE FLUSHED FROM THE SYSTEM WITH CLEAR WATER UNTIL RESIDUAL CHLORINE CONTENT IS NO GREATER THAN 2 PARTS PER MILLION.
8. IDENTIFICATION OF PLUMBING SYSTEMS:
   - A. PROVIDE PIPING IDENTIFICATION LABELS AND DIRECTIONAL ARROWS ON ALL PLUMBING SYSTEMS. INSTALL LABELS AT 10' INTERVALS & AT EACH SIDE OF FLOOR & WALL SEPARATIONS.
   - B. PROVIDE VALVE TAGS AT EACH DOMESTIC WATER SHUTOFF VALVE. PROVIDE VALVE TAG INDEX IDENTIFYING VALVE NUMBER, LOCATION AND SERVICE.
9. MISCELLANEOUS
   - A. ALL PLUMBING WORK SHALL BE IN ACCORDANCE WITH THE CURRENT PLUMBING CODE AND ALL APPLICABLE CODES AND STANDARDS
   - B. PROVIDE SHUTOFF VALVES ON ALL BRANCH PIPING AND ON ALL SUPPLIES TO INDIVIDUAL FIXTURES AND EQUIPMENT. PROVIDE BALL VALVES ON ALL WATER MAIN BRANCHES IN CORRIDORS AND WHERE INDICATED ON DRAWINGS. ALL VALVES SHALL BE ACCESSIBLE.
   - C. PROVIDE VENTS AT HIGH POINTS IN PIPING SYSTEMS AND DRAIN VALVES AT LOW POINTS.
   - D. PROVIDE AT LEAST THREE-ELBOW SWING FOR PIPE TAKE-OFFS TO RISERS.
   - E. PITCH PIPING MINIMUM 1/8" PER 1'-0" TOWARDS DIRECTION OF FLOW TO ALLOW FOR DRAINING.
   - F. FLOOR CLEANOUTS SHALL BE JR SMITH 4031 SERIES.
   - G. WALL CLEANOUTS SHALL BE JR SMITH 4436 SERIES.
   - H. PROVIDE TRAP GUARDS ON ALL FLOOR DRAINS.
   - I. WHERE PIPING (DOMESTIC WATER, SANITARY, VENT, GAS, ETC.) IS LOCATED WITHIN WALLS, PROVIDE NAILER PLATES WHERE PIPING IS LOCATED WITHIN 1 1/2" OF THE FRAMING MEMBER.

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PLUMBING LEGEND, GENERAL NOTES AND SCHEDULES

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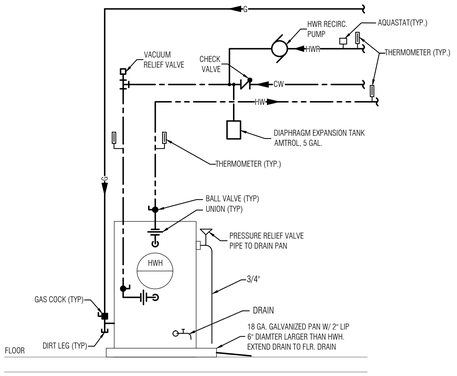
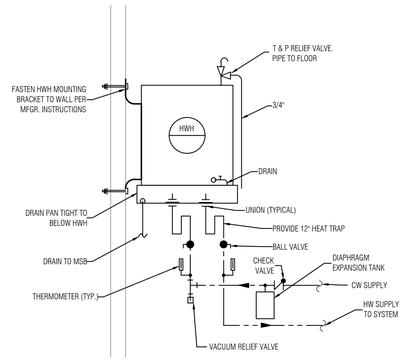
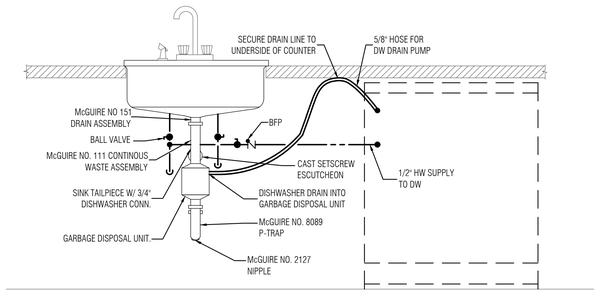


HOT WATER RECIRCULATION PUMP TO BE TIME CLOCK AND AQUASTAT CONTROLLED. WHEN THE TIME CLOCK IS INDEXED TO "OCCUPIED", RECIRCULATION PUMP TO CYCLE TO MAINTAIN AQUASTAT SET POINT (110 DEG. ADJ). WHEN THE TIME CLOCK IS NDEXED TO UNOCCUPIED, RECIRCULATION PUMP TO BE DE-ENERGIZED.

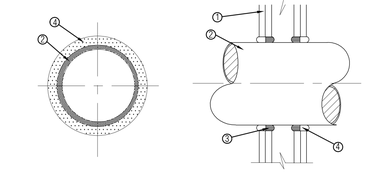
GAS HOT WATER HEATER DETAIL
NO SCALE



WALL MOUNTED HOT WATER HEATER DETAIL
NO SCALE



SINK PIPING W/ DISHWASHER CONNECTION
NO SCALE

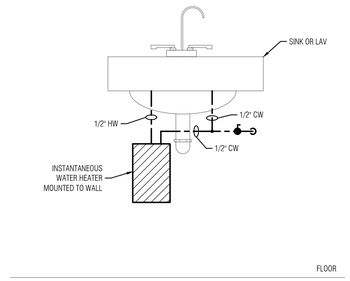


1. FIRE-RATED GYPSUM WALLBOARD.
2. METALLIC PIPE (NOT FOR USE WITH ALUMINUM OR LEAD).
3. FORMING MATERIAL. CERAMIC FIBER OR MINERAL WOOL. PACK AS NECESSARY TO RETAIN FILL MATERIAL.
4. FILL VOID OR CAVITY MATERIAL. FLAME-SAFE TYPE FS OR FST900 SERIES COMPOUND CAULKED OR TROWELLED TO REQUIRED DEPTH.

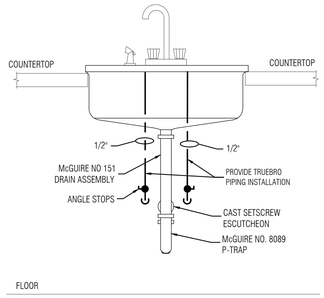
NOTES:
1. SYSTEM DESIGN EVALUATED TO THE TIME TEMPERATURE REQUIREMENTS OF ASTM E110.
2. DESIGN BASED UPON UL CLASSIFIED SYSTEM NO. 230 EVALUATED UL STANDARD 1470 (ASTM EB-14).
3. INSTALL FIRESTOP COMPOUND TO A NET DEPTH THICKNESS OF 1 1/4" MINIMUM (BOTH SIDES).
4. MINIMUM ANGULAR SPACE (BETWEEN PIPE AND SIDE OF OPENING) 3/16 MAX. FT.

1 & 2 HOUR RATED FIRESTOP FOR METALLIC PIPE PENETRATIONS THROUGH GYPSUM WALLBOARD ASSEMBLIES USING FLAME-SAFE FS, FST900 SEROES

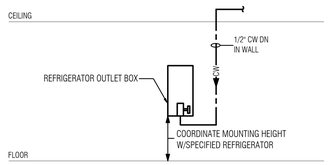
PIPE PENETRATION DETAIL
NO SCALE



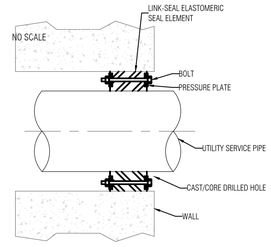
WALL MOUNTED HOT WATER HEATER DETAIL
NO SCALE



LAVATORY/ SINK PIPING DETAIL



REFRIGERATOR WATER FEED DETAIL
NO SCALE



LINK SEAL DETAIL
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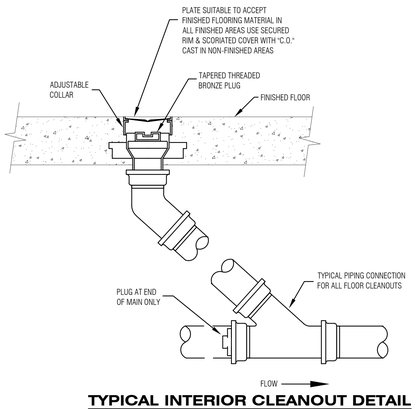

TYPICAL INTERIOR CLEANOUT DETAIL
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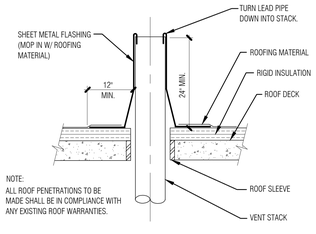
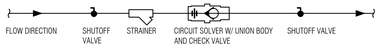


VENT THRU ROOF DETAIL
NO SCALE



CIRCUIT SOLVER DETAIL
NO SCALE

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PLUMBING DETAILS

NEW MUNICIPAL BUILDINGS – COMMUNITY CENTER
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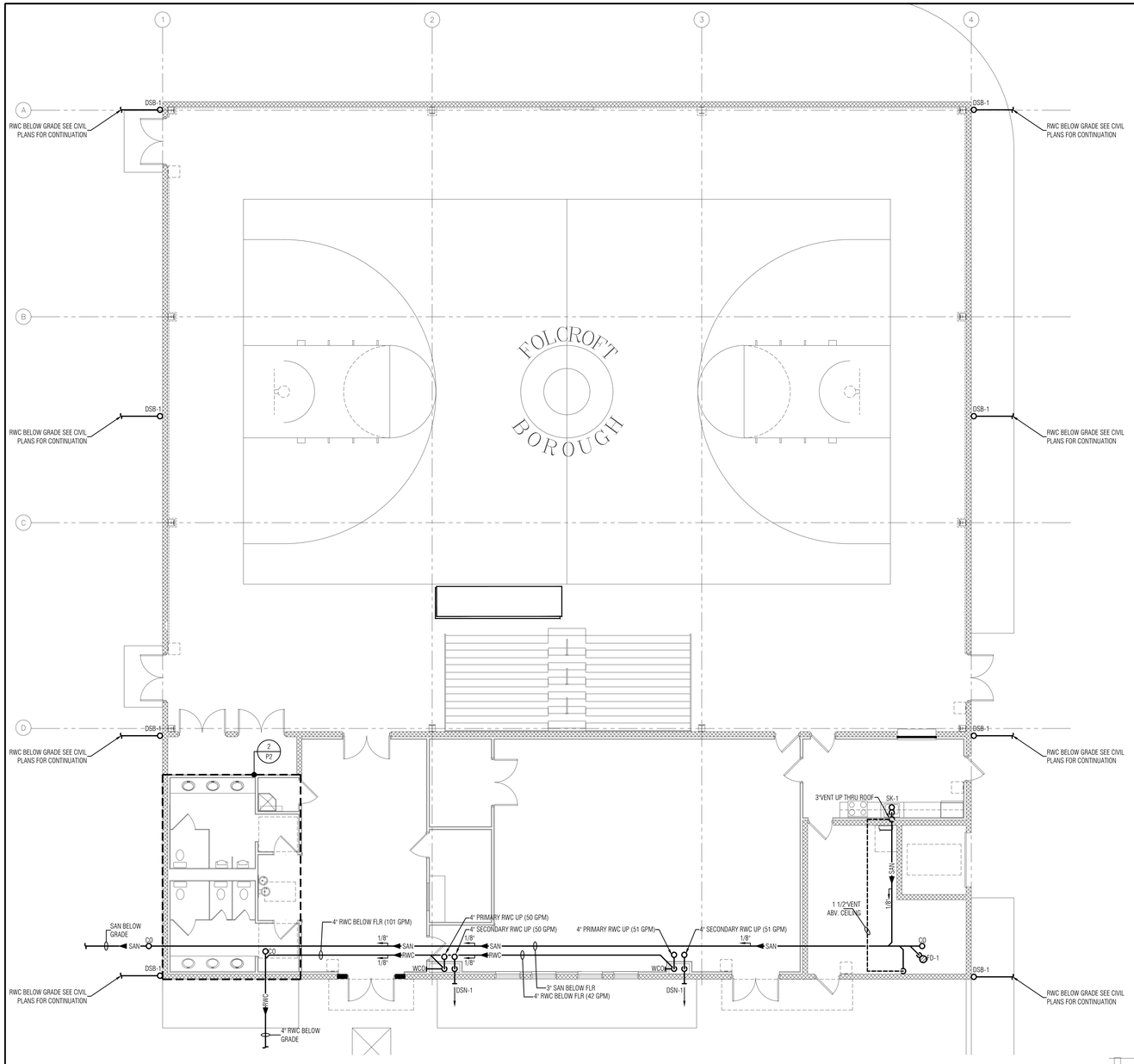
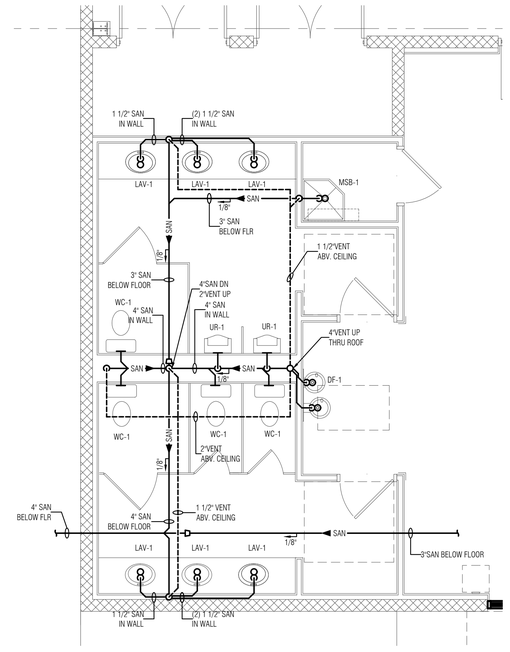


1 OVERALL FIRST FLOOR SANITARY

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

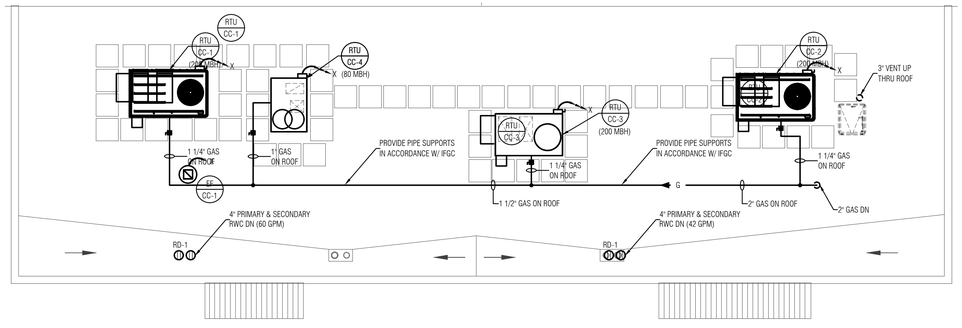
0' 2' 4' 8' 16'



2 ENLARGED PLAN RESTROOMS

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

0' 2' 4' 8'



3 PARTIAL ROOF PLAN

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

0' 2' 4' 8'

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PLUMBING SANITARY - COMMUNITY CENTER

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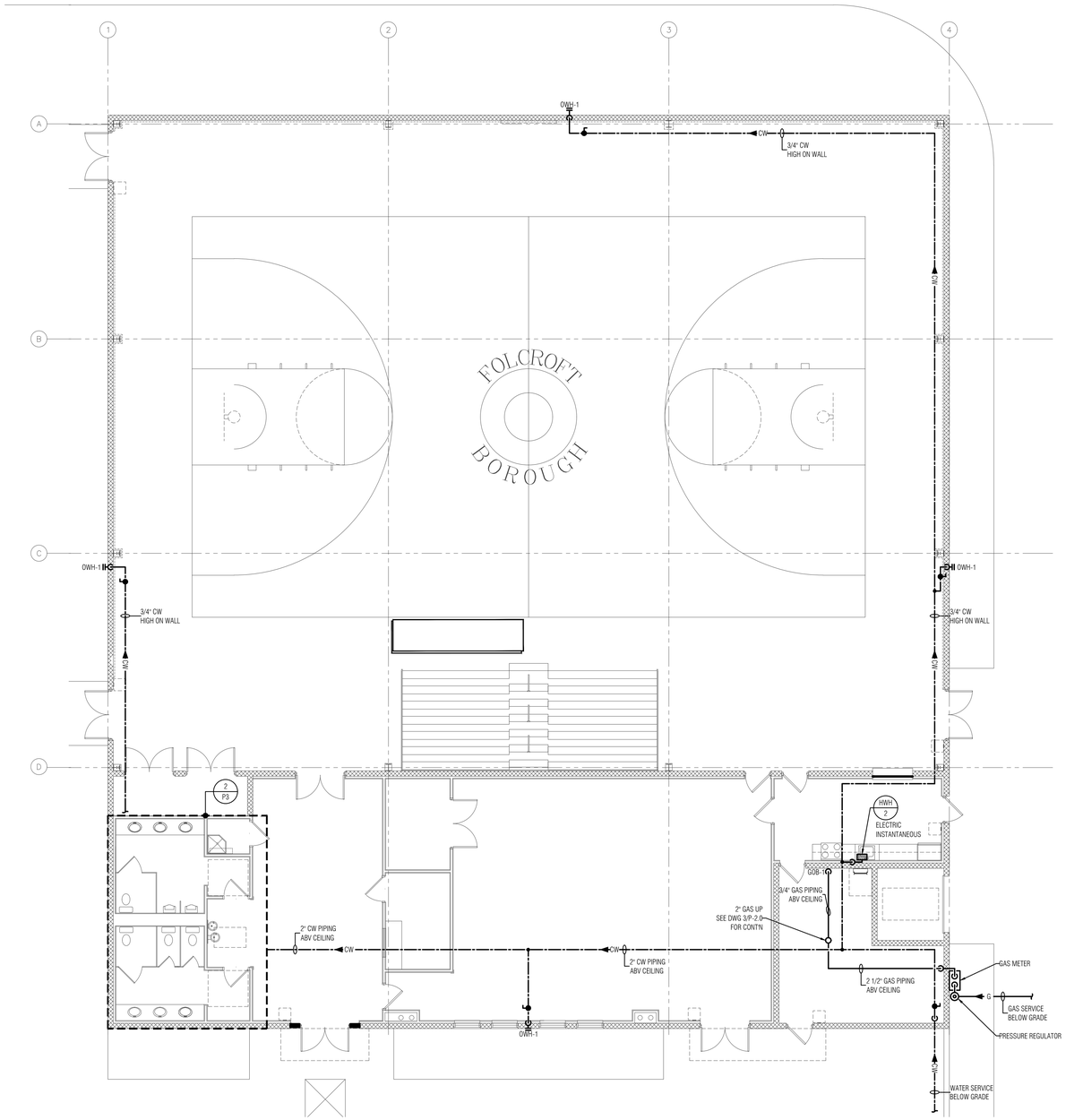
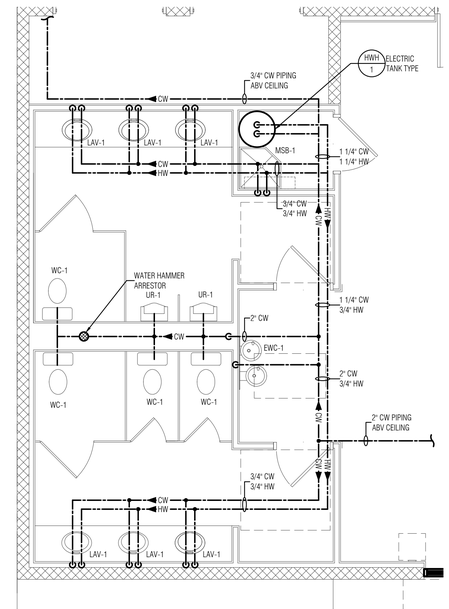


1 OVERALL FIRST FLOOR DOMESTIC WATER

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

0' 2' 4' 8' 16'



2 ENLARGED RESTROOMS

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

0' 2' 4' 8'

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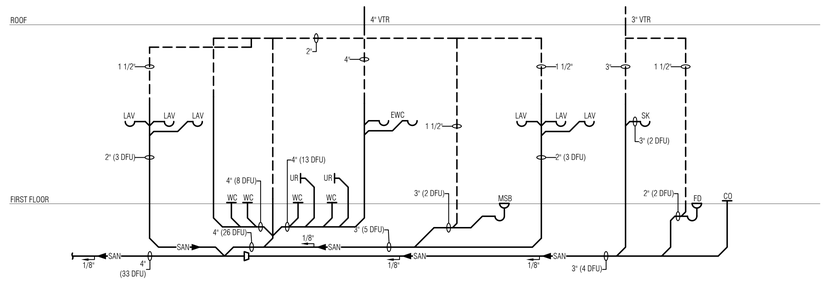
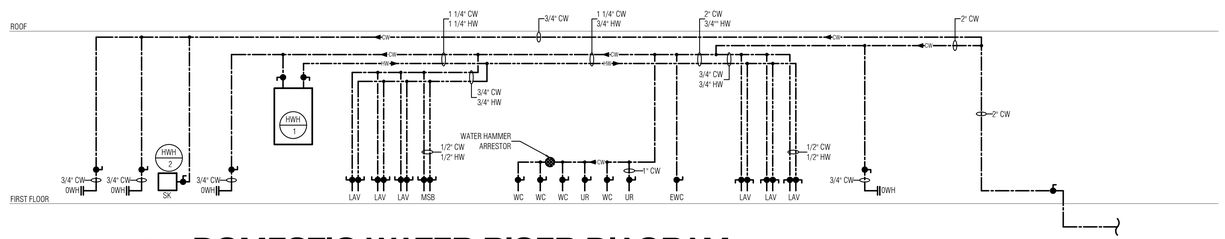


1 SANITARY RISER DIAGRAM

NO SCALE



2 DOMESTIC WATER RISER DIAGRAM

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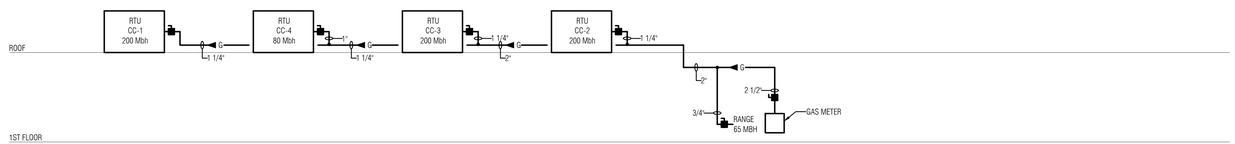

GAS PIPING CALCULATION (COMMUNITY CENTER)						
GAS TYPE	INLET PRESSURE	PRESSURE DROP	SPECIFIC GRAVITY	LENGTH	TOTAL CONNECTED LOAD	PIPE SIZE*
NATURAL	LESS THAN 2 PSI	0.3" W.C.	0.60	150'	745 Mbh	2"

*GAS PIPING SIZED PER 2018 INTERNATIONAL FUEL GAS CODE TABLE 402.4(1)

3 GAS RISER DIAGRAM

NO SCALE

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PLUMBING RISER DIAGRAMS - COMMUNITY CENTER

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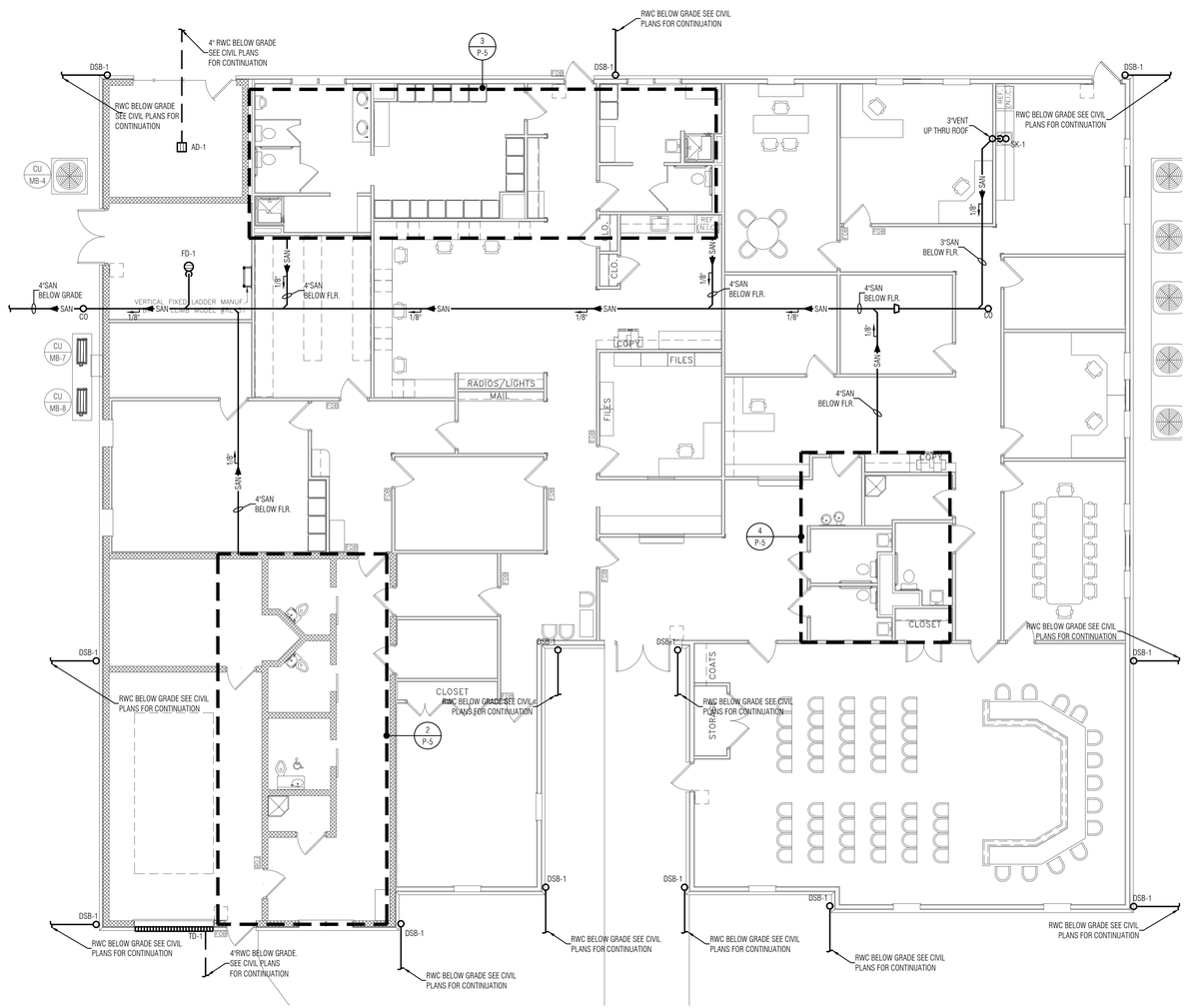
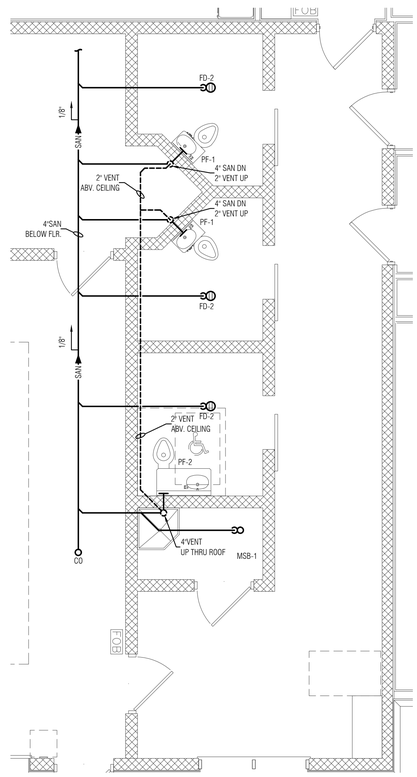


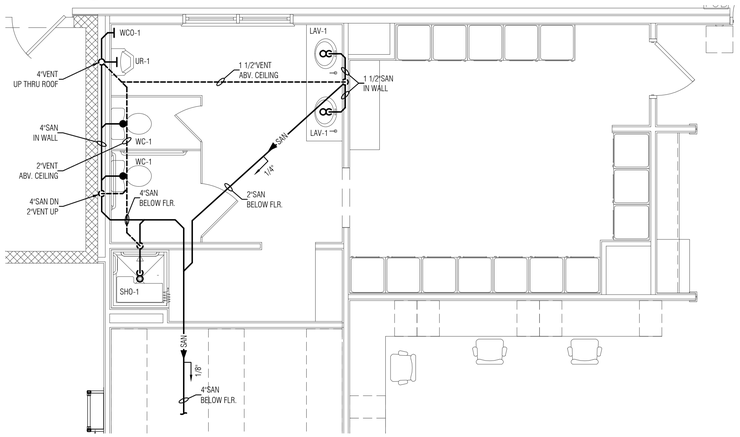
1 OVERALL FLOOR PLAN - SANITARY

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



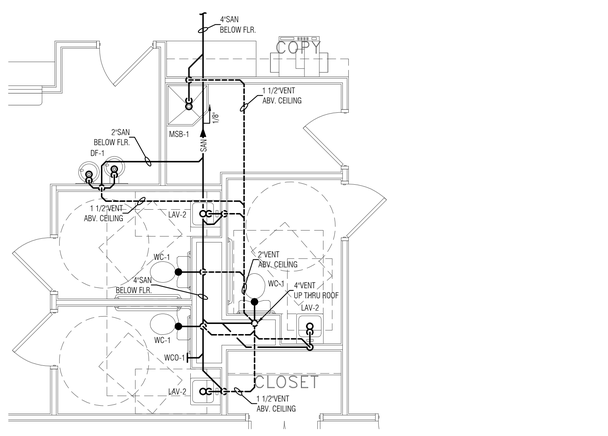
2 ENLARGED HOLDING 132 - SANITARY

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



3 LOCKER ROOMS - SANITARY

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



4 PUBLIC BATHROOMS - SANITARY

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

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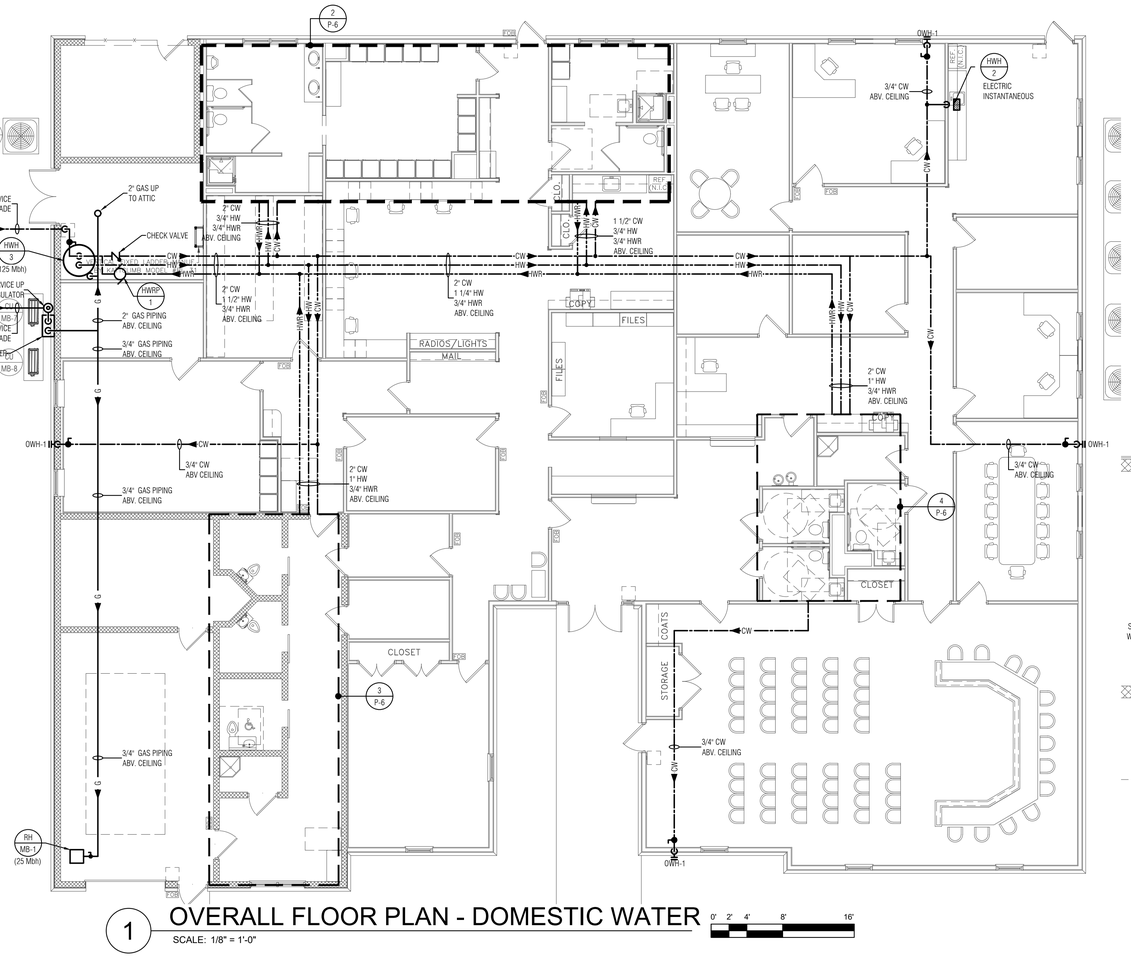
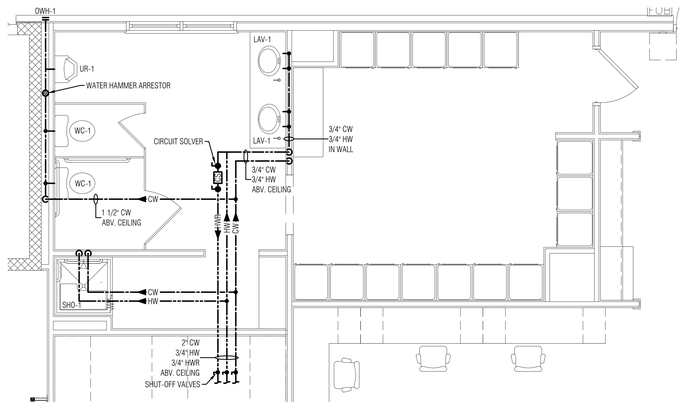


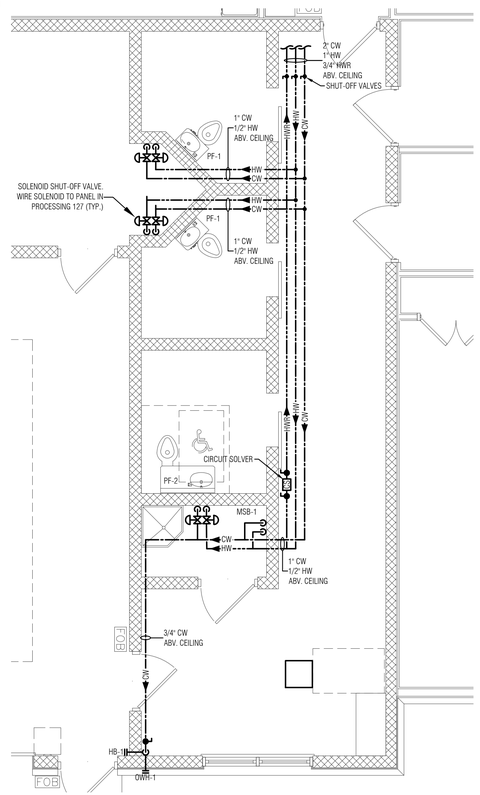
1 OVERALL FLOOR PLAN - DOMESTIC WATER

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



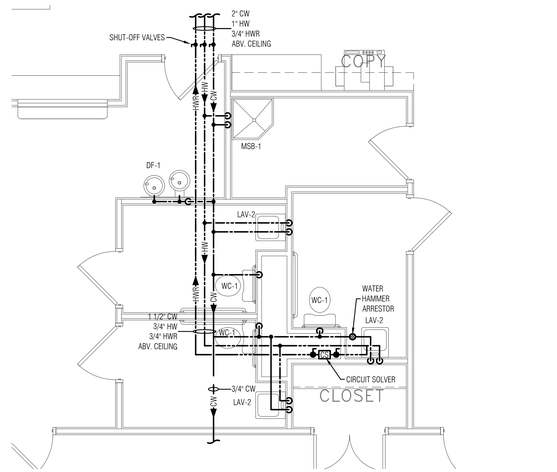
2 ENLARGED MEN'S ROOM & WOMEN'S ROOM

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



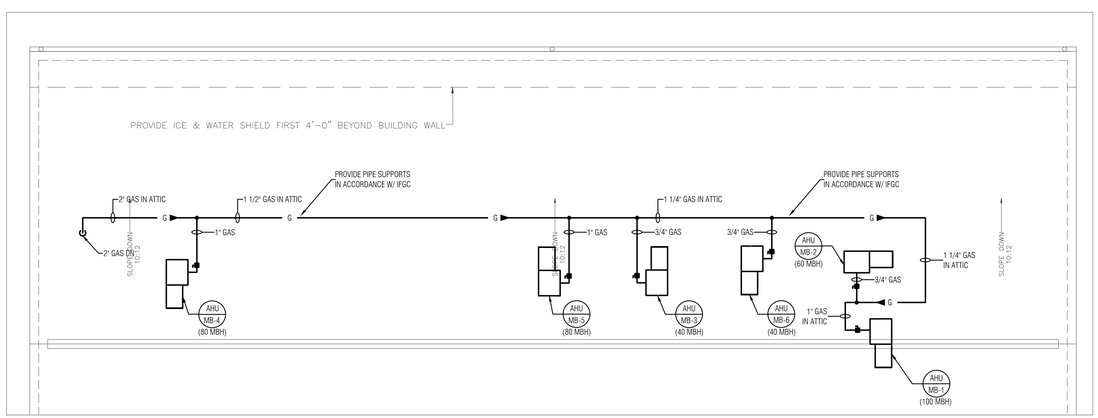
3 ENLARGED HOLDING 132

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



4 ENLARGED RESTROOM 102, 103, 105 & JANITOR 104

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



5 OVERALL ATTIC PLAN - GAS

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

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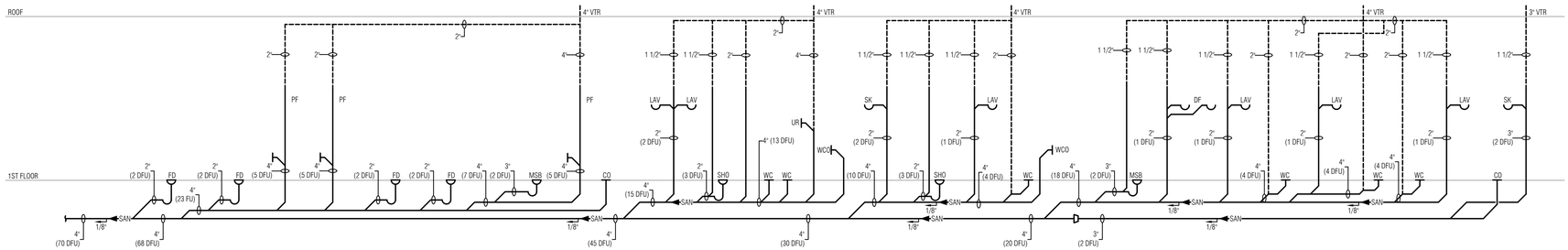
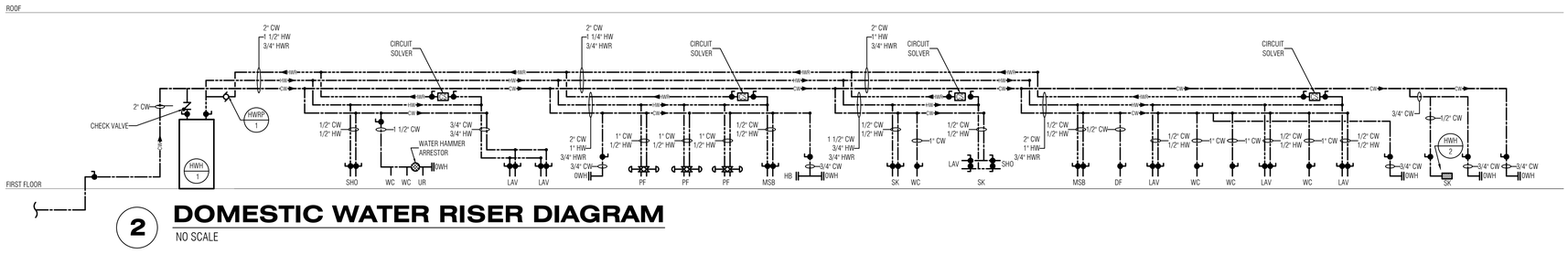


1 SANITARY RISER DIAGRAM

NO SCALE



2 DOMESTIC WATER RISER DIAGRAM

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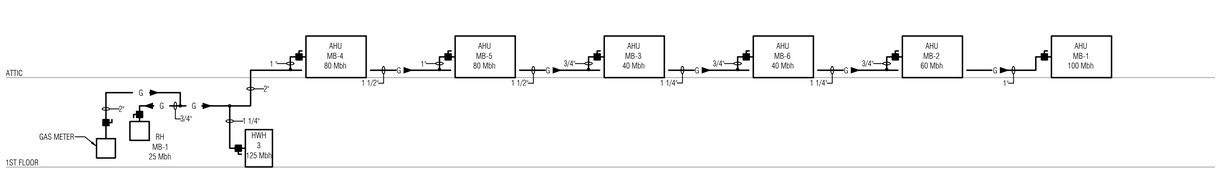

GAS PIPING CALCULATION (COMMUNITY CENTER)						
GAS TYPE	INLET PRESSURE	PRESSURE DROP	SPECIFIC GRAVITY	LENGTH	TOTAL CONNECTED LOAD	PIPE SIZE*
NATURAL	LESS THAN 2 PSI	0.3" W.C.	0.60	150'	550 Mbh	2"

*GAS PIPING SIZED PER 2018 INTERNATIONAL FUEL GAS CODE TABLE 402.4(1)

3 GAS RISER DIAGRAM

NO SCALE

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FAX: 610-566-3258

PLUMBING RISER DIAGRAMS - BOROUGH BUILDING

NEW MUNICIPAL BUILDINGS – COMMUNITY CENTER

BOROUGH OF FOLCROFT

ASHLAND AVE.

FOLCROFT, PA 19032

REVISIONS		
NO.	DESCRIPTION	DATE
.	ISSUE FOR BID	02.28.20
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DATE: 1/16/2020
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GENERAL SPECIFICATIONS

1. DRAWINGS AND SPECIFICATIONS FORM COMPLIMENTARY REQUIREMENTS; PROVIDE WORK SPECIFIED AND NOT SHOWN, AND WORK SHOWN BUT NOT SPECIFIED AS THOUGH EXPLICITLY REQUIRED BY BOTH. ALTHOUGH WORK IS NOT SPECIFICALLY SHOWN OR SPECIFIED, PROVIDE SUPPLEMENTARY OR MISCELLANEOUS ITEMS, APPURTENANCES, DEVICES AND MATERIALS OBVIOUSLY NECESSARY FOR A SOUND, SECURE AND COMPLETE INSTALLATION.
2. THE DRAWINGS AND SPECIFICATIONS INDICATE A PERFORMANCE SPECIFICATION FOR BIDDING PURPOSES FOR FIRE PROTECTION AND FIRE ALARM SYSTEMS. AWARDED CONTRACTORS ARE RESPONSIBLE FOR DETAILED DESIGN AND PREPARATION OF SIGNED AND SEALED ENGINEERING DOCUMENTS FOR REVIEW/APPROVAL FROM OWNERS INSURANCE CARRIER AND LOCAL AUTHORITY HAVING JURISDICTION.
3. DRAWINGS ARE DIAGRAMMATIC. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL COMPONENTS NECESSARY FOR A COMPLETE AND OPERATIONAL SYSTEM. DETERMINE LOCATIONS OF SYSTEMS AND COMPONENTS IN FIELD. COORDINATE WITH ARCHITECTURAL DRAWINGS AND OTHER TRADES.
4. ADDRESS QUESTIONS REGARDING DRAWINGS TO ARCHITECT IN WRITING BEFORE AWARD OF CONTRACT. OTHERWISE, ARCHITECT'S INTERPRETATION OF MEANING AND INTENT OF DRAWINGS SHALL BE FINAL.
5. THE INTENTION IS FOR INSTALLATION OF COMPLETE AND OPERATING SYSTEMS. NOT EVERY COMPONENT REQUIRED IS SHOWN. THE CONTRACTOR SHALL INCLUDE ALL COMPONENTS NORMALLY ASSOCIATED WITH THE PARTICULAR SYSTEM. THE SYSTEM SHALL BE FULLY COMMISSIONED AND SIGNED OFF BY AN OFFICER OF THE RESPECTIVE CONTRACTOR. PRIOR TO FINAL OWNER ACCEPTANCE TESTING, PROVIDE PERSONNEL TO ASSIST IN 24 HOURS OF ACCEPTANCE TESTING.
6. PRIOR TO COMMENCING WORK, SHEET METAL SHOP DRAWINGS OF ALL *COMMON AREA/AMENITY SPACES* MUST BE PREPARED AND SUBMITTED FOR REVIEW AND APPROVAL TO THE ARCHITECT/ENGINEER. SHEETMETAL SHOP DRAWINGS SHALL INCLUDE ALL ELEMENTS OF THE EQUIPMENT, DUCTWORK, AIR DEVICES, AND REFLECTED CEILING PLAN FOR COORDINATION OF CRITICAL DIMENSIONS OF ARCHITECTURAL/ STRUCTURAL COMPONENTS.
7. GIVE NOTICES, FILE PLANS, OBTAIN PERMITS AND LICENSES, PAY FEES AND BACK CHARGES, AND OBTAIN NECESSARY APPROVALS FROM AUTHORITIES THAT HAVE JURISDICTION AS REQUIRED TO PERFORM WORK IN ACCORDANCE WITH ALL LEGAL REQUIREMENTS AND WITH THE DESIGN DOCUMENTS
8. PRIOR TO COMMENCING WORK, CONTRACTOR SHALL SUBMIT SHOP DRAWINGS AND EQUIPMENT DATA FOR MATERIALS AND EQUIPMENT TO THE ARCHITECT FOR REVIEW AND APPROVAL. MATERIALS AND EQUIPMENT SHALL NOT BE INSTALLED BEFORE SHOP DRAWINGS ARE REVIEWED AND APPROVED. SCHEDULE AT LEAST TEN WORKING DAYS, EXCLUSIVE OF TRANSMITTAL TIME, FOR SUBMITTAL REVIEW SHALL BE ALLOWED.
9. MATERIALS AND EQUIPMENT SHALL BE LISTED BY UNDERWRITERS LABORATORIES (UL) AND APPROVED BY ASME AND AGA FOR INTENDED SERVICE.
10. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES REQUIRED FOR SAFE EXECUTION AND COMPLETION OF WORK, AND FOR INITIATING, MAINTAINING AND SUPERVISING ALL SAFETY PRECAUTIONS AND PROGRAMS IN CONNECTION WITH THE WORK.
11. COORDINATE WORK OF THIS SECTION WITH THAT OF OTHER SECTIONS.
12. ALL MATERIALS, EQUIPMENT AND METHOD OF INSTALLATION SHALL BE ACCORDANCE WITH THE STANDARDS, REGULATIONS, CODES, ORDINANCES, AND LAW OF LOCAL, STATE, AND FEDERAL GOVERNMENTS, AND OTHER AUTHORITIES THAT HAVE LAWFUL JURISDICTION.
13. IT SHALL BE THE RESPONSIBILITY OF THIS CONTRACTOR TO COORDINATE HIS WORK WITH THAT OF ALL OTHER TRADES, INCLUDING (BUT NOT LIMITED TO), ELECTRICAL, HVAC, SPRINKLER, PLUMBING, STRUCTURAL AND GENERAL ARCHITECTURE. OFFSETS IN PIPING AND OFFSETS AROUND OBSTRUCTIONS SHALL BE PROVIDED AT NO ADDITIONAL COST TO THE OWNER.
14. DEVIATION FROM CONTRACT DOCUMENTS, OR PROPOSED SUBSTITUTION OF MATERIALS OR EQUIPMENT FOR THOSE SPECIFIED, SHALL BE REQUESTED IN SEPARATE LETTER, WHETHER DEVIATIONS ARE DUE TO FIELD CONDITIONS, STANDARD SHOP PRACTICE OR OTHER CAUSE. THE CONTRACTOR IS RESPONSIBLE FOR ANY COSTS INCURRED AS A RESULT OF THE CHANGES NEEDED TO ACCOMMODATE THE SUBSTITUTED EQUIPMENT INCLUDING THE WORK OF OTHER TRADES.
15. EACH CONTRACTOR IS RESPONSIBLE FOR ITS CUTTING AND PATCHING REQUIRED FOR THE INSTALLATION OF ITS NEW WORK. CUTTING AND PATCHING SHALL BE COMPLETED IN A NEAT AND WORKMANLIKE MANNER. PATCHING MATERIALS SHALL MATCH EXISTING MATERIALS TO THE GREATEST EXTENT POSSIBLE. PROVIDE TOUCH-UP TO MATCH EXISTING SURROUNDING AREAS OF CUTTING AND PATCHING WORK.
16. CONTRACTOR SHALL COORDINATE ITS RESPECTIVE CEILING MOUNTED EQUIPMENT WITH OTHER TRADE CONTRACTORS PRIOR TO INSTALLATION TO AVOID CONFLICTS.
17. WORK SHALL BE EXECUTED IN A WORKMANLIKE MANNER AND SHALL PRESENT NEAT, RECTILINEAR APPEARANCE WHEN COMPLETED. MAINTAIN MAXIMUM HEAD ROOM AT ALL TIMES. DO NOT RUN PIPES, DUCTS, AND CONDUIT EXPOSED UNLESS SHOWN AND NOTED TO BE EXPOSED ON DRAWINGS. MATERIALS AND EQUIPMENT SHALL BE NEW AND INSTALLED ACCORDING TO MANUFACTURER'S INSTRUCTIONS AND RECOMMENDATIONS, SO THAT COMPLETED INSTALLATION SHALL OPERATE SAFELY AND EFFICIENTLY.
18. EACH RESPECTIVE CONTRACTOR SHALL FIRE STOP ALL NEW SLEEVES THROUGH CONCRETE FLOORS AND FIRE RATED WALLS OR PARTITIONS WITH UL RATED ASSEMBLIES WITH EQUAL FIRE RATING. COORDINATE ROOF PENETRATIONS WITH WORK OF OTHER SECTIONS AND WITH FLASHING REQUIREMENTS.
19. ANY INTERFERENCE SHALL BE BROUGHT TO THE ATTENTION OF THE OWNER'S REPRESENTATIVE, AND SHALL BE RESOLVED PRIOR TO THE INSTALLATION OF THE WORK INVOLVED.
20. ALL MATERIALS AND EQUIPMENT SHALL BE NEW UNLESS NOTED OTHERWISE.
21. MANUFACTURERS' MODEL NUMBERS ARE SPECIFIED SOLELY TO ESTABLISH STANDARDS OF QUALITY FOR PERFORMANCE AND MATERIALS.
22. SUBSTITUTED PRODUCTS SUBMITTED AND APPROVED FOR USE THAT NECESSITATE CHANGES TO THE WORK OF OTHER TRADES OF CONTRACT SHALL BE COORDINATED AND ARRANGED BY THE CONTRACTOR WHO SUBMITTED THE SUBSTITUTION WITHOUT ADDITIONAL COST TO THE OWNER.
23. SHOP DRAWINGS MUST BE SUBMITTED, REVIEWED AND APPROVED PRIOR TO INSTALLATION OF EQUIPMENT/MATERIALS.
24. PRODUCT INSTALLATION SHALL ADHERE TO MANUFACTURERS RECOMMENDATIONS.
25. EACH RESPECTIVE CONTRACTOR SHALL PROVIDE PROPER ACCESS TO EQUIPMENT THAT REQUIRES INSPECTION, REPLACEMENT OR REPAIR. ACCESS PANELS SHALL BE A MINIMUM OF 12" X 12" OR AS NEEDED FOR APPROPRIATE ACCESS. TO BE SUPPLIED TO GENERAL CONTRACTOR FOR INSTALLATION. ACCESS PANELS IN RATED ASSEMBLIES SHALL BE ACUDOR FW-5050. ACCESS PANELS IN NON-RATED DRYWALL CEILINGS SHALL BE WIND-LOCK 'STEALTH'. ACCESS PANELS IN NON-RATED WALLS SHALL BE ADUDOR UF-5000.
26. CONTRACTOR SHALL COORDINATE ELECTRICAL CHARACTERISTICS AND REQUIREMENTS OF ALL APPLICABLE EQUIPMENT WITH THE ELECTRICAL CONTRACTOR.
27. ALL EQUIPMENT, PIPING, INSULATION, ETC., INSTALLED IN HVAC PLENUM SPACES SHALL MEET CODE REQUIREMENTS FOR SMOKE AND COMBUSTIBILITY.
28. AS WORK PROGRESSES AND FOR DURATION OF CONTRACT, MAINTAIN COMPLETE SET OF PRINTS OF CONTRACT DRAWINGS AT JOB SITE AT ALL TIMES. RECORD WORK COMPLETED AND ALL CHANGES FROM ORIGINAL CONTRACT DRAWINGS CLEARLY AND ACCURATELY INCLUDING WORK INSTALLED AS A MODIFICATION OR ADDITION TO THE ORIGINAL DESIGN TURN OVER ALL OPERATING MANUALS, MAINTENANCE MANUALS, AND "AS BUILT" DRAWINGS TO OWNER AT CONCLUSION OF CONSTRUCTION.
29. DO NOT SUPPORT EQUIPMENT FROM SUSPENDED CEILINGS. SUPPORT ALL EQUIPMENT AND PIPING FROM BUILDING STRUCTURE TO PROVIDE A VIBRATION FREE INSTALLATION. NOTIFY ARCHITECT AND STRUCTURAL ENGINEER OF ALL WEIGHTS AND METHODS OF SUPPORT.
30. RUN PIPING/WIRING CONCEALED, UNLESS SPECIFIED OTHERWISE, AND CLEAR OF CEILING INSERTS.
31. PROVIDE CLAMPS, OFFSETS, EXPANSION JOINTS, ANCHORS AND GUIDES AS NECESSARY TO PREVENT STRESS ON PIPING/WIRING.
32. ANY REFERENCE TO ELECTRICAL, PLUMBING AND HVAC CONTRACTORS, NOTED ON THESE DRAWINGS OR STATED IN THE SPECIFICATIONS SHALL NOT BE MISCONSTRUED AS AN INTENTION TO DEFINE SEPARATE CONTRACTORS FOR THE RESPECTIVE WORK. THE GENERAL CONTRACTOR SHALL COORDINATE AND PROVIDE A COMPLETE BUILDING WITH COMPLETE MECHANICAL AND ELECTRICAL SYSTEMS, REGARDLESS OF ANY SPECIFICATION REFERENCES TO OTHER CONTRACTORS.
33. GUARANTEE WORK OF THIS CONTRACTOR IN WRITING FOR ONE YEAR FROM THE DATE OF OWNER'S ACCEPTANCE OF CERTIFICATE OF SUBSTANTIAL COMPLETION. PROMPTLY, REPAIR OR REPLACE DEFECTIVE MATERIALS, EQUIPMENT, WORKMANSHIP AND INSTALLATIONS THAT DEVELOP DEFECTS WITHIN THIS PERIOD. PROMPTLY AND TO OWNERS SATISFACTION, CORRECT DAMAGE CAUSED IN MAKING NECESSARY REPAIRS AND REPLACEMENTS UNDER GUARANTEED AT NO ADDITIONAL COST TO OWNER. SUBMIT GUARANTEE TO ARCHITECT BEFORE FINAL PAYMENT. STATEMENT OF GUARANTEE REQUIREMENTS SHALL NOT BE INTERRUPTED TO LIMIT OWNER'S RIGHTS UNDER LAW AND THIS CONTRACT.

GENERAL NOTES - FIRE PROTECTION

1. THE DRAWINGS AND SPECIFICATIONS INDICATE A PERFORMANCE SPECIFICATION FOR THE FIRE PROTECTION SYSTEM. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING A COMPLETE AND OPERATING SYSTEM IN COMPLIANCE WITH THE APPLICABLE NFPA CODES. AWARDED CONTRACTOR IS RESPONSIBLE FOR DETAILED DESIGN AND PREPARATION OF SIGNED AND SEALED ENGINEERING DOCUMENTS FOR REVIEW/APPROVAL FROM THE OWNER'S INSURANCE CARRIER AND LOCAL AUTHORITY HAVING JURISDICTION.
2. PRIOR TO COMMENCING WORK, CONTRACTOR SHALL SUBMIT SPRINKLER SHOP DRAWINGS, HYDRAULIC CALCULATIONS AND EQUIPMENT DATA FOR MATERIALS AND EQUIPMENT TO THE ENGINEER FOR REVIEW AND APPROVAL. MATERIALS AND EQUIPMENT SHALL NOT BE INSTALLED BEFORE SHOP DRAWINGS ARE REVIEWED AND APPROVED. SCHEDULE AT LEAST TEN WORKING DAYS, EXCLUSIVE OF TRANSMITTAL TIME, FOR SUBMITTAL REVIEW.
3. GENERAL NOTES, SYMBOLS LIST AND DETAILS ARE APPLICABLE TO ALL DRAWINGS OF THIS SECTION.
4. SPRINKLER PIPE SIZES ARE TO BE CALCULATED HYDRAULICALLY BY THE FIRE PROTECTION CONTRACTOR.
5. THE CONTRACTOR SHALL COORDINATE SPRINKLER HEADS AND ASSOCIATED PIPING LOCATIONS WITH THE ARCHITECT PRIOR TO COMMENCING WORK IN FINISHED AREAS.
6. THE CONTRACTOR SHALL COORDINATE SPRINKLER HEAD LOCATIONS WITH LIGHTING LAYOUT, DUCTWORK AND PIPING AND OTHER TRADES PRIOR TO ROUGH-IN.
7. SEISMIC: WHERE REQUIRED SUBMIT WORKING PLANS, REVIEWED, SIGNED AND STAMPED BY A PROFESSIONAL STRUCTURAL ENGINEER REGISTERED IN THE STATE IN WHICH THE PROJECT IS LOCATED, CERTIFYING THAT THE PLANS MEETS ALL SEISMIC REQUIREMENTS ESTABLISHED BY AUTHORITIES.
8. BEFORE STARTING WORK IN A PARTICULAR AREA OF THE PROJECT, VISIT SITE AND EXAMINE CONDITIONS UNDER WHICH WORK MUST BE PERFORMED INCLUDING PREPARATORY WORK DONE UNDER OTHER SECTIONS OR CONTRACTS BY OWNER. REPORT CONDITIONS THAT MIGHT AFFECT WORK ADVERSELY IN WRITING THROUGH THE CONTRACTOR TO THE ARCHITECT/ENGINEER. DO NOT PROCEED WITH WORK UNTIL DEFECTS HAVE BEEN CORRECTED AND THE CONDITIONS ARE SATISFACTORY. COMMENCEMENT OF WORK SHALL INDICATE ACCEPTANCE OF EXISTING CONDITIONS.
9. ALL SPRINKLER HEADS IN ACOUSTICAL DROP CEILINGS SHALL BE CENTERED IN TILE.

FIRE PROTECTION NOTES

1. PIPE AND FITTINGS
   - A. PIPE SHALL MEET APPLICABLE ANSI OR ASTM STANDARDS AND SHALL HAVE MANUFACTURER'S NAME AND STANDARD MARKED ON EACH LENGTH. JOINTS SHALL MEET APPLICABLE ANSI OR ASTM STANDARDS. WHERE ANSI OR ASTM STANDARD DOES NOT EXIST, JOINTS AND FITTINGS SHALL BEAR UL LISTED SYMBOL.
   - B. SERVICE: LIGHT HAZARD ABOVE GROUND WET-PIPE SPRINKLER (2 1/2" AND BELOW).
     PIPE MATERIAL: CPVC (CHLORINATED POLYVINYL CHLORIDE), ASTM D1784
     FITTING MATERIAL: CPVC, ASTM F437 & ASTM F438.
     PIPE JOINT: SOLVENT CEMENT, ASTM F656 & ASTM F493
   - C. SERVICE: ORDINARY HAZARD ABOVE GROUND WET-PIPE SPRINKLER (2 1/2" AND BELOW).
     PIPE MATERIAL: WELDED AND SEAMLESS STEEL PIPE, SCHEDULE 40, ASTM A53.
     FITTING MATERIAL: MALLEABLE IRON, CLASS 150, ANSI B 16.3
     PIPE JOINT: THREADED OR VICTAULIC
   - D. SERVICE: ABOVE GROUND WET-PIPE SPRINKLER (3" AND LARGER".
     PIPE MATERIAL: WELDED AND SEAMLESS STEEL PIPE, SCHEDULE 40, ASTM A53
     FITTING MATERIAL: MALLEABLE IRON, CLASS 150, ANSI B16.3.
     PIPE JOINT: THREADED OR VICTAULIC
2. HANGERS, ANCHORS, CLAMPS, AND INSERTS
   - A. HANGERS SHALL MEET NFPA STANDARDS. PROVIDE ADJUSTABLE SWIVEL RIGHTS FOR PIPING 3" AND SMALLER. SUPPORT PIPING FROM BUILDING STRUCTURE TO MAINTAIN REQUIRED GRADE AND PITCH OF PIPE LINES, PREVENT VIBRATIONS, SECURE PIPING IN PLACE. SECURE HANGERS TO INSERTS WHERE PRACTICAL. HANGER TODS SHALL HAVE MACHINE THREADS.
   - B. HANGER RODS SHALL BE CONNECTED TO BEAM CLAMP. UL -APPROVED CONCRETE INSERTS OR PHILIPS OR APPROVED EQUAL EXPANSION SHIELDS. RAMSET OR POWER DRIVEN INSETS WILL NOT BE ALLOWED.
   - C. HANGER SPACING SHALL MEET REQUIREMENT OF STATE AND LOCAL CODES. PIPE SUPPORTS, VERTICAL AND HORIZONTAL, SHALL NOT BEAR ON SLEEVES.
3. SPRINKLER HEADS
   - A. PROVIDE UL-LISTED AND FM APPROVED FUSIBLE LINK SPRAY SPRINKLER HEADS
   - B. HEADS SHALL HAVE ORDINARY DEGREE TEMPERATURE RATINGS.
   - C. SPRINKLER HEADS SHALL BE RELOCATED OR ADDED TO PROVIDE ADEQUATE COVERAGE THROUGHOUT ALL AREAS IN ACCORDANCE WITH THE REQUIREMENTS OF NFPA 13.
   - D. WHERE SPRINKLER HEADS ARE SUBJECT TO PHYSICAL DAMAGE PROVIDE PROTECTIVE WIRE GUARD.
4. SPRINKLER SYSTEM INSTALLATION
   - A. WORK SHALL BE NEAT AND RECTILINEAR. PIPING SHALL RUN CONCEALED. WORK SHALL BE PROPERLY AND EFFECTIVELY PROTECTED AND PIPE OPENING SHALL BE TEMPORARILY CLOSED TO PREVENT CONSTRUCTION AND DAMAGE BEFORE COMPLETION.
5. CONTINUITY OF SERVICES
   - A. NOTIFY THE 'AUTHORITY HAVING JURISDICTION' WHEN SHUTDOWNS OF EXISTING SYSTEMS ARE NECESSARY.
6. TESTS
   - A. TEST SPRINKLER SYSTEM AS REQUIRED IN NFPA CODE, OWNERS INSURANCE CARRIER, AND AGENCIES THAT HAVE JURISDICTION.
   - B. NOTIFY ARCHITECT AND AGENCIES THAT HAVE JURISDICTION TESTS ARE TO BE MADE. TEST SPRINKLER PIPING AND MAKE WATERTIGHT BEFORE CONCEALMENT. TEST SHALL BE WITNESSED BY THE INSURANCE UNDERWATERS REPRESENTATIVE, THE MUNICIPAL INSPECTOR AND A REPRESENTATIVE OF THE ARCHITECT.
   - C. SPRINKLER SYSTEM SHALL BE TESTED TO HYDROSTATIC TEST OF 200 PSI IN ACCORDANCE WITH NFPA REQUIREMENTS
   - D. IF INSPECTION OR TEST SHOWS DEFECTS, SUCH DEFECTIVE WORK OR MATERIAL, SHALL BE REPLACED AND INSPECTED AND TESTS SHALL BE REPEATED UNTIL WORK IS ACCEPTED. REPAIRS TO PIPING SHALL BE MADE WITH NEW MATERIAL
7. CLEANING
   - A. CLEAN INSTALLATION THOROUGHLY UPON COMPLETION TO REMOVE GREASE, CUTTINGS, DIRT AND OTHER FOREIGN MATERIALS. REPAIR STOPPAGES, DISCOLORATION AND DAMAGE THAT RESULT FROM FAILURE TO CLEAN PIPING PROPERLY WITHIN CONTRACT PRICE.

SPRINKLER SCHEDULE

SYMBOL	TYPE	TEMPERATURE RATING	ORIFICE DIAMETER	FINISH	BASIS OF DESIGN MANUFACTURER & MODEL #	REMARKS	ACCEPTABLE MFGR.
⊠	CONCEALED PENDANT	155° F	1/2"	WHITE	TYCO SERIES RFII	QUICK RESPONSE, THERMO-SENSITIVE GLASS BULB SPRAY SPRINKLER, CONCEALED SPRINKLER COVER. FOR USE IN AREAS WITH CEILINGS.	VICTAULIC, VIKING, RELIABLE
✹	INSTITUTIONAL PENDANT	165° F	1/2"	CHROME PLATED	TYCO TGP-PH2	STANDARD RESPONSE. THERMO-SENSITIVE SPRAY SPRINKLER. FOR USE IN HOLDING AREA	VICTAULIC, VIKING, RELIABLE
⊙	UPRIGHT	155° F	1/2"	WHITE	TYCO TY-FRB	QUICK RESPONSE, THERMO-SENSITIVE GLASS BULB SPRAY SPRINKLER. FOR USE IN AREAS WITHOUT CEILINGS. IN GYMNASIUM, PROVIDE SPRINKLER GUARDS.	VICTAULIC, VIKING, RELIABLE

SPRINKLER SYSTEM DESIGN DATA

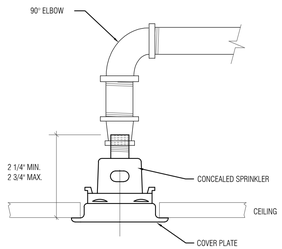
OCCUPANCY	NFPA HAZARD CLASSIFICATION	SPRINKLER CRITERIA GPM / SQ.FT.	SPRINKLER TEMPERATURE
OFFICES, GYMNASIUM	LIGHT HAZARD	0.10 / 1500	155° F
MECHANICAL / ELECTRICAL ROOM	ORDINARY HAZARD	0.15 / 1500	155° F

FIRE PROTECTION ABBREVIATIONS
(NOT ALL ABBREVIATIONS ARE NECESSARILY USED ON THIS PROJECT)

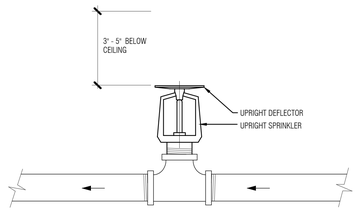
COMP	COMPRESSOR
CV	CHECK VALVE
DIPS	DOUBLE INTERLOCKED PREACTION SPRINKLER SYSTEM
DN	DOWN
DR	DRAIN RISER
DSS	DRY PIPE SPRINKLER SYSTEM
DWG	DRAWING
(E)	EXISTING
FD	FLOOR DRAIN
FS	FLOW SWITCH
GPM	GALLONS PER MINUTE
GV	GATE VALVE
MIN	MINIMUM
(N)	NEW
NTS	NOT TO SCALE
O/G-1	ORDINARY HAZARD - GROUP 1
PSI	POUNDS PER SQUARE INCH
PSIG	POUNDS PER SQUARE INCH (GAUGE)
SQ.FT.	SQUARE FOOT
SPKR	SPRINKLER
TS	TAMPER SWITCH
WF	WATER FLOW DETECTOR
SP	WET PIPE SPRINKLER SYSTEM

FIRE PROTECTION SYMBOLS
(NOT ALL SYMBOLS ARE NECESSARILY USED ON THIS PROJECT)

SYMBOL	DESCRIPTION
	WATERFLOW DETECTOR
	BACKFLOW PREVENTER
	DRY PIPE VALVE
	PREACTION DELUGE VALVE
	PREACTION CONTROL PANEL
	PREACTION ALARM HORN WITH FLASHING LIGHT
	SYSTEM CONTROL VALVE
	CHECK VALVE
	SOLENOID RELEASE VALVE
	PRESSURE GUAGE
	3-WAY ALARM TEST SHUT OFF VALVE
	POINT OF CONNECTION BETWEEN NEW AND EXISTING WORK
	POINT OF CONNECTION BETWEEN EXISTING AND TO BE REMOVED WORK
DSP	DRYPIPE SPRINKLER SYSTEM
DE	DELUGE SPRINKLER SYSTEM
SP	WET SPRINKLER SYSTEM
	DIRECTION OF FLOW



CONCEALED SPRINKLER HEAD INSTALLATION DETAIL
NO SCALE



UPRIGHT SPRINKLER HEAD INSTALLATION DETAIL
NO SCALE

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FIRE PROTECTION GENERAL NOTES & SYMBOLS

NEW MUNICIPAL BUILDINGS – COMMUNITY CENTER

BOROUGH OF FOLCROFT

ASHLAND AVE.
FOLCROFT, PA 19032

REVISIONS

NO.	DESCRIPTION	DATE
.	ISSUE FOR BID	02.28.20

DATE: 10/17/2019
SCALE: AS NOTED
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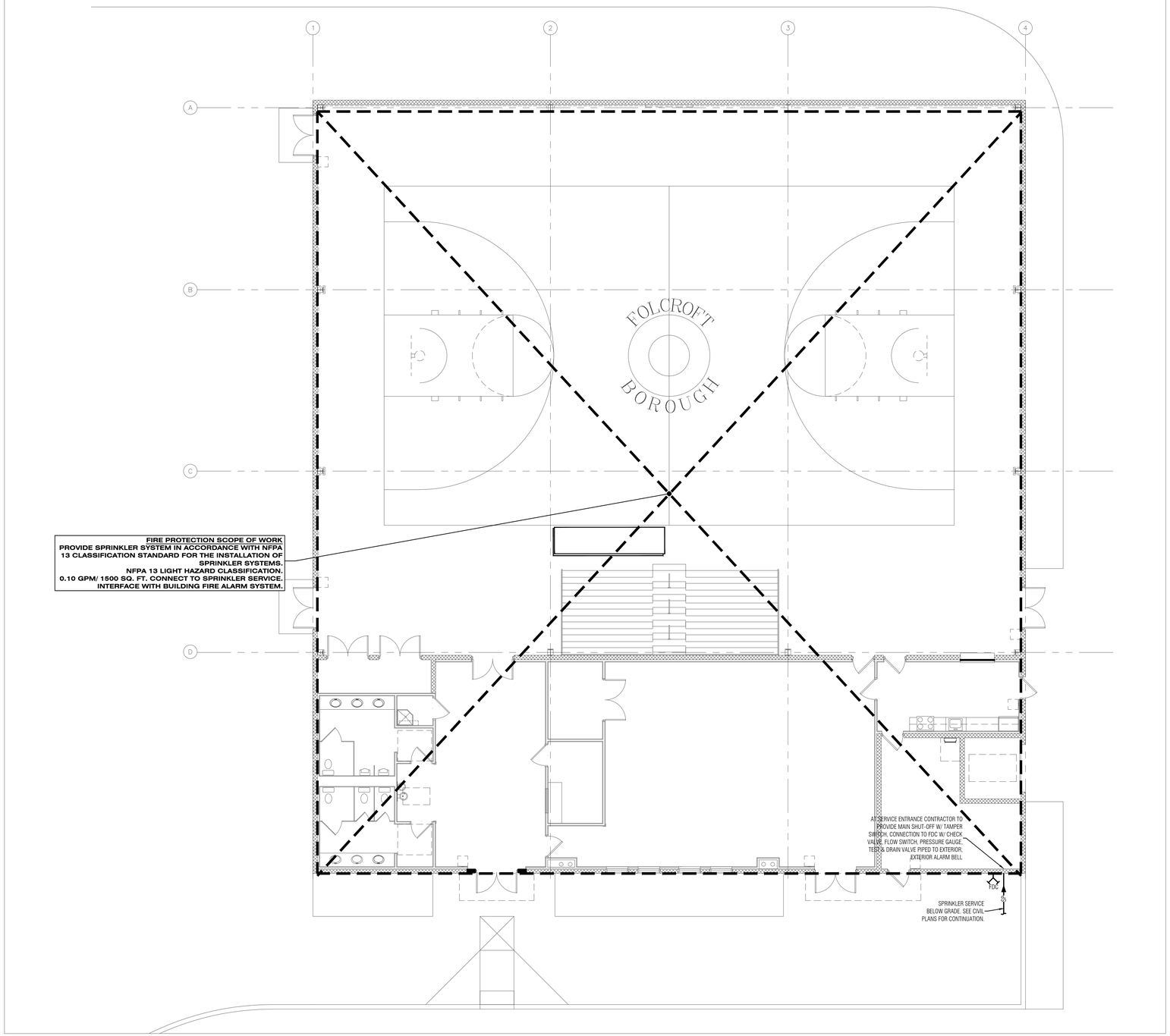

1 FIRE PROTECTION FLOOR PLAN - COMMUNITY CENTER

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

0' 2' 4' 8' 16'

556I Pennell Road | Media PA 19063

LINN ARCHITECTS

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FIRE PROTECTION FLOOR PLAN - COMMUNITY CENTER

NEW MUNICIPAL BUILDINGS – COMMUNITY CENTER

BOROUGH OF FOLCROFT

ASHLAND AVE.
FOLCROFT, PA 19032

REVISIONS		
NO.	DESCRIPTION	DATE
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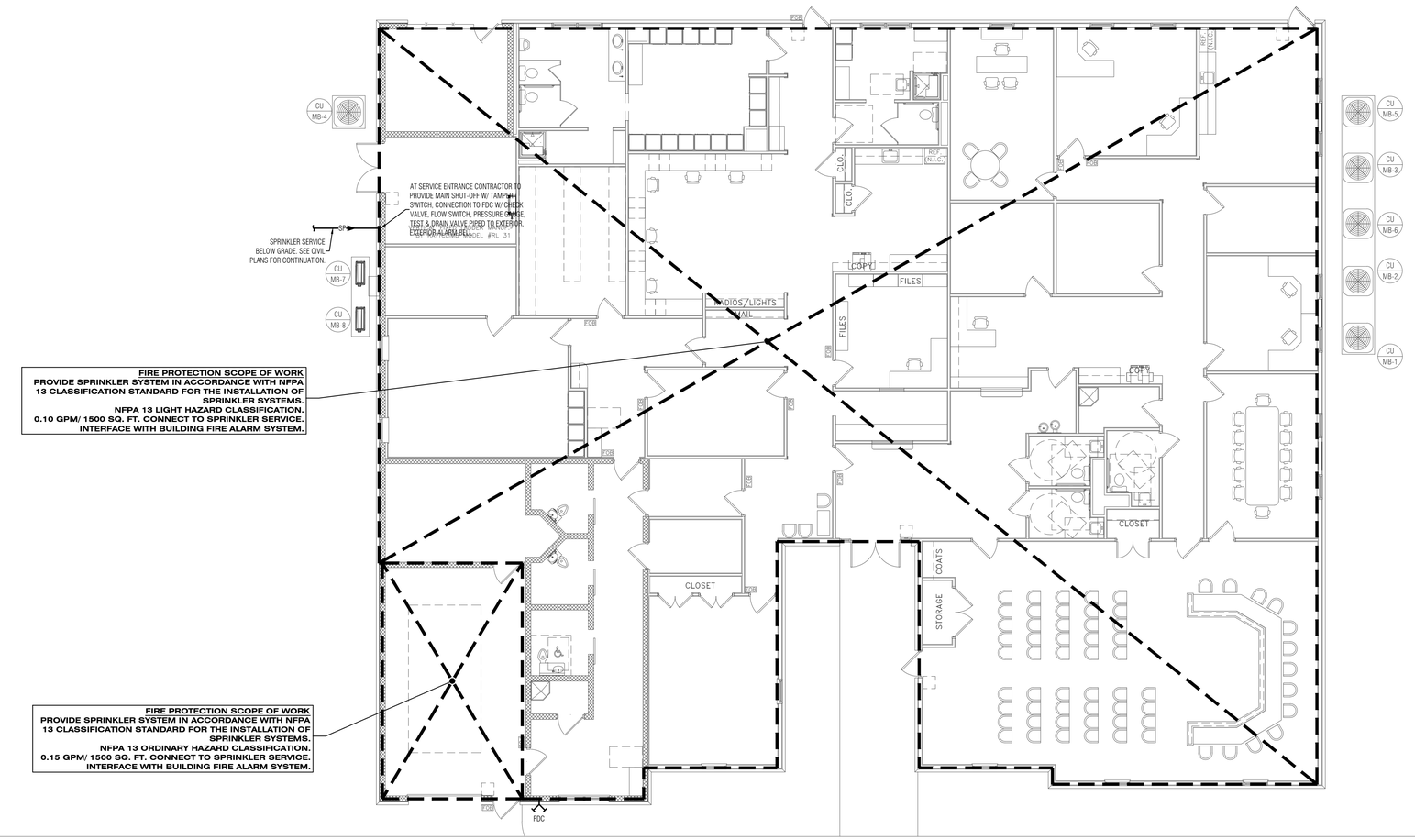
SHEET NO. FP-2

SHEET OF



1 FIRE PROTECTION FLOOR PLAN - BOROUGH BUILDING

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

0' 2' 4' 8' 16'

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FIRE PROTECTION FLOOR PLAN - BOROUGH BUILDING

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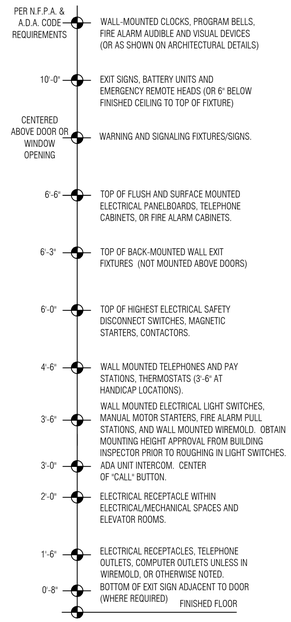
SHEET OF

GENERAL SPECIFICATIONS

1. DRAWINGS ARE DIAGRAMMATIC: THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL COMPONENTS NECESSARY FOR A COMPLETE AND OPERATIONAL SYSTEM. COORDINATE AND DETERMINE FINAL LOCATIONS OF SYSTEMS AND COMPONENTS IN FIELD. COORDINATE WITH ARCHITECTURAL DRAWINGS AND OTHER TRADES.
2. ADDRESS ALL QUESTIONS REGARDING DRAWINGS TO ARCHITECT IN WRITING BEFORE SUBMITTING BID PROPOSAL. OTHERWISE, ARCHITECT'S INTERPRETATION OF MEANING AND INTENT OF DRAWINGS SHALL BE FINAL.
3. THE INTENTION IS FOR INSTALLATION OF COMPLETE AND OPERATING SYSTEMS. NOT EVERY COMPONENT REQUIRED IS SHOWN. THE CONTRACTOR SHALL INCLUDE ALL COMPONENTS NORMALLY ASSOCIATED WITH THE PARTICULAR SYSTEM. THE SYSTEM SHALL BE FULLY COMMISSIONED AND SIGNED OFF BY AN OFFICER OF THE RESPECTIVE CONTRACTOR PRIOR TO FINAL OWNER ACCEPTANCE TESTING. PROVIDE PERSONNEL TO ASSIST WITH OWNER ACCEPTANCE TESTING.
4. GIVE NOTICES, FILE PLANS, OBTAIN PERMITS AND LICENSES, PAY FEES AND BACK CHARGES, AND OBTAIN NECESSARY APPROVALS FROM AUTHORITIES THAT HAVE JURISDICTION AS REQUIRED TO PERFORM WORK IN ACCORDANCE WITH ALL LEGAL REQUIREMENTS AND WITH THE DESIGN DOCUMENTS.
5. PRIOR TO COMMENCING WORK, CONTRACTOR SHALL SUBMIT SHOP DRAWINGS AND EQUIPMENT DATA FOR MATERIALS AND EQUIPMENT TO THE ARCHITECT FOR REVIEW AND APPROVAL. MATERIALS AND EQUIPMENT SHALL NOT BE INSTALLED BEFORE SHOP DRAWINGS ARE REVIEWED AND APPROVED. AT LEAST TEN (10) WORKING DAYS, EXCLUSIVE OF TRANSMITTAL TIME, SHALL BE ALLOWED FOR SUBMITTAL REVIEW.
6. MATERIALS AND EQUIPMENT SHALL BE LISTED BY UNDERWRITERS LABORATORIES (UL) AND APPROVED BY ASME AND AGA, AS APPLICABLE, FOR INTENDED SERVICE.
7. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES REQUIRED FOR SAFE EXECUTION AND COMPLETION OF THE WORK AND FOR INITIATING, MAINTAINING AND SUPERVISING ALL SAFETY PRECAUTIONS AND PROGRAMS IN CONNECTION WITH THE WORK.
8. ALL MATERIALS, EQUIPMENT AND METHOD OF INSTALLATION SHALL BE ACCORDANCE WITH THE STANDARDS, REGULATIONS, CODES, ORDINANCES AND LAW OF LOCAL, STATE AND FEDERAL GOVERNMENTS AND OTHER AUTHORITIES THAT HAVE LAWFUL JURISDICTION.
9. IT SHALL BE THE RESPONSIBILITY OF THIS CONTRACTOR TO COORDINATE THE WORK UNDER THIS CONTRACT WITH THAT OF ALL OTHER TRADES, INCLUDING, BUT NOT LIMITED TO, ELECTRICAL, HVAC, SPRINKLER, PLUMBING, STRUCTURAL AND GENERAL CONSTRUCTION. OFFSETS IN DUCTWORK, PIPINGAND CONDUITS AROUND OBSTRUCTIONS SHALL BE PROVIDED AT NO ADDITIONAL COST TO THE OWNER.
10. DEVIATION FROM CONTRACT DOCUMENTS, OR PROPOSED SUBSTITUTION OF MATERIALS OR EQUIPMENT FOR THOSE SPECIFIED, SHALL BE REQUESTED IN SEPARATE LETTER, WHETHER DEVIATIONS ARE DUE TO FIELD CONDITIONS, STANDARD SHOP PRACTICE OR OTHER CAUSE. THE CONTRACTOR IS RESPONSIBLE FOR ANY COSTS INCURRED AS A RESULT OF THE CHANGES NEEDED TO ACCOMMODATE THE SUBSTITUTED EQUIPMENT, INCLUDING THE WORK OF OTHER TRADES.
11. EACH CONTRACTOR IS RESPONSIBLE FOR CUTTING AND PATCHING REQUIRED FOR THE INSTALLATION OF NEW WORK UNDER THIS CONTRACT. CUTTING AND PATCHING SHALL BE COMPLETED IN A NEAT AND WORKMANLIKE MANNER. PATCHING MATERIALS SHALL MATCH EXISTING MATERIALS TO THE GREATEST EXTENT POSSIBLE. PROVIDE TOUCH-UP TO MATCH EXISTING SURROUNDING AREAS OF CUTTING AND PATCHING WORK.
12. INTERRUPTIONS TO EXISTING SERVICES AND SYSTEMS SHALL BE AS SHORT AS POSSIBLE AND AT A TIME AND DURATION APPROVED BY THE OWNER. INCLUDE ALL PREMIUM TIME ASSOCIATED WITH INTERRUPTIONS IN BID PROPOSAL. INTERRUPTIONS SHALL BE SCHEDULED WITH OWNER AT LEAST 48 HOURS IN ADVANCE.
13. CONTRACTOR SHALL COORDINATE ITS RESPECTIVE CEILING MOUNTED EQUIPMENT AND DEVICES WITH OTHER TRADE CONTRACTORS PRIOR TO INSTALLATION TO AVOID CONFLICTS.
14. ALL DEMOLITION WORK SHALL BE COORDINATED WITH OWNER'S REPRESENTATIVE, ARCHITECT, ENGINEER AND GENERAL CONTRACTOR. ALL DEBRIS SHALL BE CLEANED AND REMOVED FROM THE SITE BY END OF EACH WORK DAY. PRIOR TO DISPOSAL OF EQUIPMENT AND MATERIALS, TURN OVER TO THE OWNER ANY REMOVED EQUIPMENT AND MATERIALS REQUESTED BY THE OWNER.
15. WORK SHALL BE EXECUTED IN A WORKMANLIKE MANNER AND SHALL PRESENT A NEAT, RECTILINEAR APPEARANCE WHEN COMPLETED.
16. MAINTAIN MAXIMUM HEAD ROOM AT ALL TIMES. DO NOT RUN PIPES, DUCTS AND CONDUIT EXPOSED UNLESS SHOWN AND NOTED TO BE EXPOSED ON DRAWINGS.
17. MATERIALS AND EQUIPMENT SHALL BE NEW, UNLESS NOTED OTHERWISE, AND INSTALLED ACCORDING TO MANUFACTURER'S INSTRUCTIONS AND RECOMMENDATIONS SO THAT COMPLETED INSTALLATION SHALL OPERATE SAFELY AND EFFICIENTLY.
18. EACH RESPECTIVE CONTRACTOR SHALL FIRE STOP ALL NEW AND EXISTING OPENINGS THROUGH FIRE RATED FLOORS, WALLS AND CEILINGS WITH UL ASSEMBLIES OF EQUAL RATING. FIELD VERIFY EXISTING CONDITIONS BEFORE SUBMITTING BID PROPOSAL.
19. COORDINATE ALL ROOF PENETRATIONS WITH WORK OF OTHER TRADES. ALL PENETRATIONS SHALL BE SEALED WATERTIGHT. COORDINATE FLASHING REQUIREMENTS TO MAINTAIN ROOF WARRANTY.
20. ANY INTERFERENCE SHALL BE BROUGHT TO THE ATTENTION OF THE OWNER'S REPRESENTATIVE OR ARCHITECT AND SHALL BE RESOLVED PRIOR TO THE INSTALLATION OF THE WORK INVOLVED.
21. MANUFACTURERS' MODEL NUMBERS ARE SPECIFIED SOLELY TO ESTABLISH STANDARDS OF QUALITY FOR PERFORMANCE AND MATERIALS.
22. SUBSTITUTED PRODUCTS SUBMITTED AND APPROVED FOR USE THAT NECESSITATE CHANGES TO THE WORK OF OTHER TRADES OF CONTRACT SHALL BE COORDINATED AND ARRANGED BY THE CONTRACTOR WHO SUBMITTED THE SUBSTITUTION WITHOUT ADDITIONAL COST TO THE OWNER.
23. PRODUCT INSTALLATION SHALL ADHERE TO MANUFACTURER'S RECOMMENDATIONS AND INSTRUCTION.
24. EACH RESPECTIVE CONTRACTOR SHALL PROVIDE PROPER ACCESS TO EQUIPMENT AND COMPONENTS THAT REQUIRE INSPECTION, MAINTENANCE AND POSSIBLE REPAIR. ACCESS PANELS SHALL BE MINIMUM 12"X12" OR AS NEEDED FOR PROPER ACCESS. ACCESS PANELS SHALL BE FURNISHED BY THIS CONTRACTOR AND TURNED OVER TO GENERAL CONTRACTOR FOR INSTALLATION.
25. CONTRACTOR SHALL COORDINATE ELECTRICAL CHARACTERISTICS AND REQUIREMENTS OF ALL APPLICABLE EQUIPMENT WITH THE ELECTRICAL CONTRACTOR.
26. AS WORK PROGRESSES AND FOR DURATION OF CONSTRUCTION, MAINTAIN A COMPLETE SET OF CONTRACT DRAWINGS AT THE JOBSITE. RECORD WORK COMPLETED AND ALL CHANGES FROM ORIGINAL CONTRACT DRAWINGS CLEARLY AND ACCURATELY INCLUDING WORK INSTALLED AS A MODIFICATION OR ADDITION TO THE ORIGINAL DESIGN TURN OVER ALL OPERATING MANUALS, MAINTENANCE MANUALS, AND "AS BUILT" DRAWINGS TO OWNER AT CONCLUSION OF CONSTRUCTION.
27. DO NOT SUPPORT EQUIPMENT, DUCTWORK, PIPING, CONDUIT OR DEVICES FROM SUSPENDED CEILINGS. SUPPORT ALL EQUIPMENT, DUCTWORK, PIPING, CONDUIT AND DEVICES FROM BUILDING STRUCTURE TO PROVIDE A VIBRATION FREE INSTALLATION. NOTIFY ARCHITECT AND STRUCTURAL ENGINEER OF ALL WEIGHTS AND METHODS OF SUPPORT.
28. ANY REFERENCE TO MECHANICAL, PLUMBING, FIRE PROTECTION OR ELECTRICAL CONTRACTORS NOTED ON THE DRAWINGS SHALL NOT BE INTERPRETED AS AN INTENTION TO DEFINE SEPARATE CONTRACTORS FOR THE RESPECTIVE WORK. THE GENERAL CONTRACTOR SHALL COORDINATE AND PROVIDE A COMPLETE INSTALLATION WITH COMPLETE MECHANICAL, PLUMBING, FIRE PROTECTION AND ELECTRICAL SYSTEMS, REGARDLESS OF ANY REFERENCES TO OTHER TRADE CONTRACTORS.
29. GUARANTEE WORK OF THIS CONTRACTOR IN WRITING FOR A PERIOD OF ONE YEAR FROM THE DATE OF OWNER'S ACCEPTANCE OR CERTIFICATE OF SUBSTANTIAL COMPLETION. PROMPTLY REPAIR OR REPLACE DEFECTIVE MATERIALS, EQUIPMENT, WORKMANSHIP AND INSTALLATIONS THAT DEVELOP DEFECTS WITHIN THIS PERIOD. PROMPTLY AND TO OWNERS SATISFACTION, CORRECT DAMAGE CAUSED IN MAKING NECESSARY REPAIRS AND REPLACEMENTS UNDER THIS GUARANTEE AT NO ADDITIONAL COST TO OWNER. SUBMIT GUARANTEE TO ARCHITECT BEFORE FINAL PAYMENT IS MADE. STATEMENT OF GUARANTEE REQUIREMENTS SHALL NOT BE INTERRUPTED TO LIMIT OWNER'S RIGHTS UNDER LAW AND THIS CONTRACT.



TYPICAL STANDARD MOUNTING HEIGHTS DETAIL

NO SCALE

NOTES:
1. MOUNTING HEIGHTS TO CENTER OF OUTLETS UNLESS OTHERWISE NOTED. IN MASONRY WALL CONSTRUCTION THE ABOVE MOUNTING HEIGHTS SHALL BE USED FOR REFERENCE TO NEAREST BLOCK OR BRICK COURSING.
2. THE ABOVE MOUNTING HEIGHTS SHALL BE ADHERED TO UNLESS SPECIFICALLY NOTED OR DETAILED OTHERWISE ON THE DRAWINGS OR SPECIFICATIONS.

ABBREVIATIONS

A	AMPS	IG	ISOLATED GROUND
ABV.	ABOVE	J.B.	JUNCTION BOX
A.F.F.	ABOVE FINISHED FLOOR	KVA	KILOVOLT-AMPERE
A.F.G.	ABOVE FINISHED GRADE	KW	KILOWATT
A.H.U.	AIR HANDLER UNIT	M.C.	MECHANICAL CONTRACTOR
C/B	CIRCUIT BREAKER	MCB	MAIN CIRCUIT BREAKER
C.H.	CABINET HEATER	MECH.	MECHANICAL
CLG.	CEILING	MLO	MAIN LUGS ONLY
D.E.	DUAL ELEMENT (TIME DELAY)	MOD	MOTOR OPERATED DOOR
DWG	DRAWING	MTD.	MOUNTED
E.B.H.	ELECTRIC BASEBOARD HEATER	N.L.	NIGHT LIGHTING
E.C.	ELECTRICAL CONTRACTOR	P.C.	PLUMBING CONTRACTOR
E.F.	EXHAUST FAN	PLG	PLUMBING
EM	INDICATES LIGHT FIXTURE WIRED TO EMERGENCY CIRCUIT	P.S.	PAY STATION
E.P.O.	EMERGENCY POWER-OFF PUSHBUTTON SWITCH	R.T.U.	ROOF TOP UNIT
EUH	ELECTRIC UNIT HEATER	SLD	SINGLE LINE DIAGRAM
EWC	ELECTRIC WATER COOLER	SP/ST	SINGLE POLE/SINGLE THROW
EWH	ELECTRIC WALL HEATER	S/S	SAFETY SWITCH (DISCONNECT SWITCH)
EXIST.	EXISTING	SW.	SWITCH
FACP	FIRE ALARM CONTROL PANEL	T/C	TIME CLOCK
FATB	FIRE ALARM TERMINAL BOX	UH	UNIT HEATER
FSD	FIRE SMOKE DAMPER	U.O.N.	UNLESS OTHERWISE NOTED
FU.	FUSE (OR FUSED)	V	VOLTS
G.C.	GENERAL CONTRACTOR	VAV	VARIABLE AIR VOLUME
G.F.I.	GROUND FAULT INTERRUPT	WP	WEATHERPROOF
GND.	GROUND	XFMR.	TRANSFORMER
HP	HORSE POWER	(E)	EXISTING TO REMAIN
HTR.	HEATER	(R)	REMOVE EXISTING
HVAC	HEATING, VENTILATING, & AIR CONDITIONING	(RL)	RELOCATED EXISTING
HWH	HOT WATER HEATER		

ELECTRICAL SYMBOLS

- 2'X4' RECESSED LED FIXTURE, "A" INDICATES TYPE, "2" INDICATES CIRCUIT BREAKER POSITION, "a" INDICATES SWITCHING
- 2'X4' RECESSED LED FIXTURE CONNECTED TO EMERGENCY (EM) AND/OR NIGHT LIGHT (NL) CIRCUIT, "A" INDICATES TYPE, "2" INDICATES CIRCUIT BREAKER POSITION, "a" INDICATES SWITCHING
- 2'X2' RECESSED LED FIXTURE, "A" INDICATES TYPE, "2" INDICATES CIRCUIT BREAKER POSITION, "a" INDICATES SWITCHING
- 2'X2' RECESSED LED FIXTURE CONNECTED TO EMERGENCY (EM) AND/OR NIGHT LIGHT (NL) CIRCUIT, "A" INDICATES TYPE, "2" INDICATES CIRCUIT BREAKER POSITION, "a" INDICATES SWITCHING
- PENDANT MOUNTED LIGHT FIXTURE, "A" INDICATES TYPE, "2" INDICATES CIRCUIT BREAKER POSITION, "a" INDICATES SWITCHING
- RECESSED DOWNLIGHT, "A" INDICATES TYPE, "2" INDICATES CIRCUIT BREAKER POSITION, "a" INDICATES SWITCHING
- RECESSED WALLWASHER DOWNLIGHT, "A" INDICATES TYPE, "2" INDICATES CIRCUIT BREAKER POSITION, "a" INDICATES SWITCHING
- WALL MOUNTED LIGHT FIXTURE, "A" INDICATES TYPE, "2" INDICATES CIRCUIT BREAKER POSITION, "a" INDICATES SWITCH CONTROL
- CEILING OR WALL MOUNTED LINEAR LED LIGHT FIXTURE, "A" INDICATES TYPE, "2" INDICATES CIRCUIT BREAKER POSITION, "a" INDICATES SWITCH CONTROL
- CEILING OR WALL MOUNTED INDUSTRIAL LED STRIP LIGHT FIXTURE, "A" INDICATES TYPE, "2" INDICATES CIRCUIT BREAKER POSITION, "a" INDICATES SWITCH CONTROL
- CEILING OR WALL MOUNTED SINGLE FACE EXIT SIGN, "X" INDICATES TYPE, ARROWS AS INDICATED ON PLANS. CONNECT TO LOCAL LIGHTING BRANCH CIRCUIT AHEAD OF ALL SWITCHING UNLESS OTHERWISE NOTED
- CEILING OR WALL MOUNTED DOUBLE FACE EXIT SIGN, "X" INDICATES TYPE, ARROWS AS INDICATED ON PLANS. CONNECT TO LOCAL LIGHTING BRANCH CIRCUIT AHEAD OF ALL SWITCHING UNLESS OTHERWISE NOTED
- CEILING OR WALL MOUNTED EXIT SIGN WITH INTEGRAL EMERGENCY LIGHT HEADS, "X" INDICATES TYPE, ARROWS AS INDICATED ON PLANS. CONNECT TO LOCAL LIGHTING BRANCH CIRCUIT AHEAD OF ALL SWITCHING UNLESS OTHERWISE NOTED
- WALL MOUNTED EMERGENCY BATTERY PACK WITH (2)-LIGHT HEADS, "EM" INDICATES TYPE. CONNECT TO LOCAL LIGHTING BRANCH CIRCUIT AHEAD OF ALL SWITCHING UNLESS OTHERWISE NOTED
- WALL OR CEILING MOUNTED TWIN REMOTE EMERGENCY LIGHT "EM" INDICATES TYPE, "WP" INDICATES WEATHERPROOF.
- FIRE ALARM SMOKE DETECTOR
- FIRE ALARM DUCT SMOKE DETECTOR
- FIRE ALARM HEAT DETECTOR
- CEILING MOUNTED 125V., COMBINATION SMOKE DETECTOR/HORN-STROBE
- CARBON MONOXIDE DETECTOR,CEILING MOUNTED 125V
- FIRE ALARM SPEAKER
- FIRE ALARM PULL STATION
- FIRE ALARM STROBE
- FIRE ALARM HORN/STROBE
- FIRE ALARM DOOR HOLD OPEN DEVICE
- FIRE ALARM WATER FLOW SWITCH
- FIRE ALARM TAMPER SWITCH
- FIRE ALARM ADDRESSABLE INPUT MODULE
- FIRE ALARM ADDRESSABLE CONTROL MODULE

- 125V., 20A TOGGLE SWITCH MOUNTED AT 42" AFF UNLESS OTHERWISE NOTED.
- 125V., 20A DOOR JAMB SWITCH MOUNTED AT 42" AFF UNLESS OTHERWISE NOTED.
- 125V., 20A CEILING FAN SPEED SWITCH MOUNTED AT 42" AFF UNLESS OTHERWISE NOTED.
- 125V., 20A 3-WAY TOGGLE SWITCH MOUNTED AT 42" AFF UNLESS OTHERWISE NOTED.
- 125V., 20A BATHROOM EXHAUST FAN TIMER SWITCH MOUNTED AT 42" AFF UNLESS OTHERWISE NOTED.
- WALL MOUNTED DUAL TECHNOLOGY OCCUPANCY SENSOR
- CEILING MOUNTED DUAL TECHNOLOGY OCCUPANCY SENSOR
- 125V., 20A SIMPLEX RECEPTACLE MOUNTED AT 18" AFF UNLESS OTHERWISE NOTED
- 125V., 20A DUPLEX RECEPTACLE MOUNTED AT 18" AFF UNLESS OTHERWISE NOTED. ALL DWELLING UNIT RECEPTACLES SHALL BE TAMPER RESISTANT IN ACCORDANCE WITH NEC ART.406.11." +" INDICATES MOUNTED AT 42" AFF OR 6" ABOVE COUNTER OR BACKSPLASH
- 125V., 20A DUPLEX GFCI RECEPTACLE MOUNTED AT 18" AFF UNLESS OTHERWISE NOTED. " +" INDICATES MOUNTED AT 42" AFF OR 6" ABOVE COUNTER OR BACKSPLASH. "WP" INDICATES WEATHERPROOF ENCLOSURE
- CEILING MOUNTED 125V., 20A DUPLEX RECEPTACLE
- CEILING MOUNTED 125V., 20A DOUBLE DUPLEX RECEPTACLE.
- 125V., 20A DOUBLE DUPLEX RECEPTACLE MOUNTED AT 18" AFF UNLESS OTHERWISE NOTED.
- 125V., 20A DUPLEX RECEPTACLE WITH BOTTOM RECEPTACLE CONNECTED TO WALL SWITCH, MOUNTED AT 18" AFF UNLESS OTHERWISE NOTED. "+" INDICATES MOUNTED AT 42" AFF OR 6" ABOVE COUNTER OR BACKSPLASH
- LOCKING OR NONLOCKING NEMA RECEPTACLE AS NOTED
- COMBINATION POWER/DATA FLOOR FLUSH MOUNTED BOX OR POKE-THRU DEVICE, REFER TO PLANS FOR TYPE AND DEVICE CONFIGURATION
- FURNITURE WHIP AND FEED (COORDINATE REQUIREMENTS) P = POWER D = DATA
- CEILING MOUNTED JUNCTION BOX
- WALL MOUNTED JUNCTION BOX
- 125V., 20A MOTOR RATED SWITCH MOUNTED AT 42" AFF UNLESS OTHERWISE NOTED.
- DISCONNECT SWITCH, SIZE AS INDICATED ON PLAN
- FUSED DISCONNECT SWITCH, SIZE AS INDICATED ON PLAN
- MOTOR STARTER, SIZE AS INDICATED ON PLAN
- COMBINATION MOTOR STARTER AND DISCONNECT SWITCH, SIZE AS INDICATED ON PLAN
- ELEVATOR CONTROLLER. REFER TO "ELEVATOR CONTROL SWITCH" NOTE ON THIS PLAN FOR ADDITIONAL INFORMATION
- CABLE TV OUTLET
- VOICE COMMUNICATION OUTLET
- DATA COMMUNICATION OUTLET
- VOICE & DATA COMMUNICATION OUTLET
- INTERCOM STATION
- DOOR BELL/INTERCOM STATION
- POWER OPERATED DOOR SYSTEM

SWITCHES, COVERPLATES AND RECEPTACLES BASIS OF DESIGN:
COMMERCIAL - DEVICES SHALL BE WHITE WITH A METAL STAINLESS STEEL COVERPLATE
RESIDENTIAL-DEVICE COLOR BY ARCHITECT WITH A MATCHING COVERPLATE

- 2#12 & 1#12GND. IN 3/4" CONDUIT CONCEALED IN WALL OR CEILING UNLESS OTHERWISE NOTED
- 2#12 & 1#12GND. IN 3/4" CONDUIT RUN IN OR UNDER CONCRETE SLAB UNLESS OTHERWISE NOTED
- 2#12 & 1#12GND. IN 3/4" CONDUIT RUN EXPOSED UNLESS OTHERWISE NOTED
- 2#12 & 1#12GND. IN 3/4" CONDUIT, UNLESS OTHERWISE NOTED, HOME RUN TO PANEL, "P1" INDICATES PANEL NAME, "3" INDICATES CIRCUIT BREAKER POSITION
- PANELBOARD, SURFACE MOUNTED
- PANELBOARD, FLUSH MOUNTED
- TRANSFORMER, SIZE, TYPE AND RATING AS INDICATED ON PLAN
- COPPER GROUND BAR, SIZE AS INDICATED ON PLAN
- COPPER GROUND CONDUCTOR, SIZE AS INDICATED ON PLAN
- PLAN NOTE CALLOUT
- CEILING MOUNTED PADDLE FAN, "A" INDICATES TYPE, "2" INDICATES CIRCUIT BREAKER POSITION
- NEW CONNECTION TO EXISTING
- TERMINATION OF DEMOLITION
- MOLDED CASE CIRCUIT BREAKER
- DRAWOUT CIRCUIT BREAKER
- DRAWOUT CIRCUIT BREAKER MEDIUM VOLTAGE
- FUSED SWITCH
- FUSE
- GROUND CONNECTION
- ELECTRIC INTERLOCK SWITCH
- JUNCTION OR PULL BOX. SIZE AS INDICATED ON PLAN
- PANELBOARD, SIZE, TYPE AND RATING AS INDICATED ON PLAN
- METER AND SOCKET
- MOTOR OR MOTORIZED EQUIPMENT. NUMBER INDICATES HORSEPOWER (HP)
- CABLE TV OUTLET
- VOICE COMMUNICATION OUTLET
- DATA COMMUNICATION OUTLET
- VOICE & DATA COMMUNICATION OUTLET
- DOOR INTERCOM STATION
- DOOR CONTROLLER
- FURNITURE FEED
- CARD READER
- WIRELESS RADIO LINK
- WIRELESS RADIO LINK

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ELECTRICAL NOTES & LEGENDS

NEW MUNICIPAL BUILDINGS – COMMUNITY CENTER

BOROUGH OF FOLCROFT

ASHLAND AVE.

FOLCROFT, PA 19032

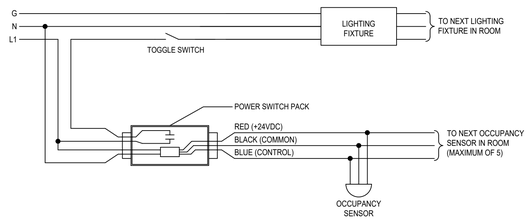
REVISIONS NO.	DESCRIPTION	DATE
-	ISSUE FOR BID	02.28.20
-	-	
-	-	
-	-	

DATE: 07/30/2020
SCALE: AS NOTED
DRAWN BY: DG
CHECKED BY: TL
PROJ. NO.: -

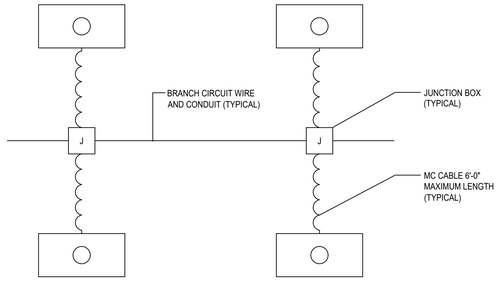
SHEET NO. E-1

SHEET OF

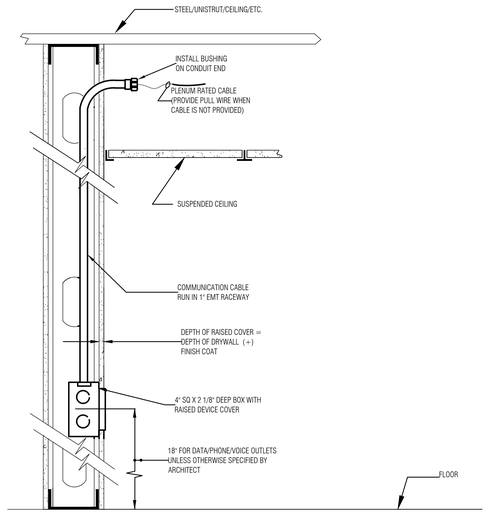
1 DETAIL - NAMPLATE
E300 SCALE - NONE



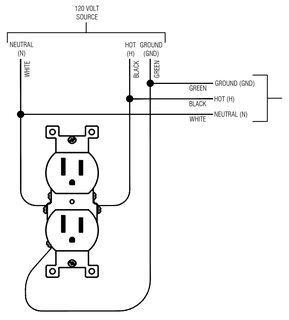
2 WIRING DIAGRAM - CEILING MOUNTED OCCUPANCY SENSOR
E300 SCALE - NONE



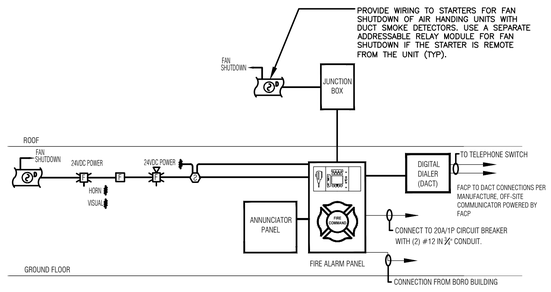
3 DETAIL - LIGHTING FIXTURE WIRING
E300 SCALE - NONE



4 DETAIL - DEVICE INSTALLATION
E300 SCALE - NONE



5 DETAIL - DUPLEX RECEPTACLE WIRING
E300 SCALE - NONE



6 DETAIL - FIRE ALARM RISER
E300 SCALE - NONE

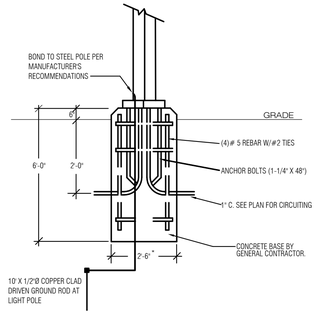
FREE-AIR NFPA 72 CABLE DESIGNATIONS*

FPLP – POWER LIMITED, PLENUM SPACE	SUITABLE FOR USE IN DUCTS, PLENUMS, AND OTHER SPACE USED FOR ENVIRONMENTAL AIR.
FPLR – POWER LIMITED, RISER	SUITABLE FOR USE IN VERTICAL SHAFT RUNS OR WIRE RUNS BETWEEN FLOORS.
FPL – POWER LIMITED, GENERAL	SUITABLE FOR GENERAL-PURPOSE USE, WITH THE EXCEPTIONS OF THE ABOVE APPLICATIONS.

* LISTED IN DESCENDING ORDER OF FIRE-RESISTANT RATING

RISER DIAGRAM IS SCHEMATIC ONLY AND DOES NOT REPRESENT ACTUAL DEVICE QUANTITIES UNLESS OTHERWISE NOTED. EVERY DEVICE INDICATED MAY NOT BE UTILIZED FOR THIS PROJECT. REFER TO DRAWINGS, AND ALLOWANCES FOR EQUIPMENT QUANTITIES. REFER TO SPEC. FOR FURTHER PERFORMANCE INFORMATION.

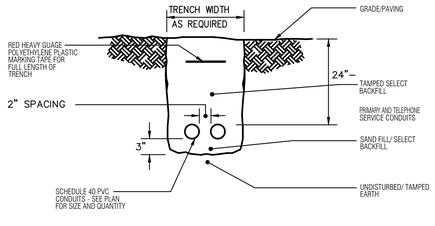
NOTE: QUANTITY OF NAC'S AND SIZE OF CONDUCTORS TO BE DETERMINED BY SIEMENS. ACTIVE ALARM CAPACITY MUST NOT EXCEED 80%. ALL STROBES SHALL HAVE ADA COMPLIANT SYNCHRONIZED FLASHING. VOICE SPEAKER CIRCUITS SIZED PER THE BUILDING'S FIRE ZONES.



7 LIGHT POLE BASE DETAIL
SCALE: N.T.S.

NOTES:

*VERIFY ALL DIMENSIONS WITH CIVIL DRAWINGS PRIOR TO CONSTRUCTION.



8 TYPICAL SECTION DIRECT BURIED CONDUITS
SCALE: N.T.S.

LIGHTING FIXTURE SCHEDULE

TYPE	DESCRIPTION	MANUFACTURER & MODEL NUMBER	SPECIFIED BY	VOLTAGE	LAMP TYPE	LAMP WATTAGE	LAMP DIMMABLE	LAMP COLOR TEMP	MOUNTING	COMMENTS
A	2'X4' LOW PROFILE RECESSED CENTER-BASKET TROFFER	LITHONIA LIGHTING 2BLT4-33LHE-ADP-120V-EZ1-LP835	AEI	120	LED	28	YES	3500K	RECESSED	
B	2'X'2 LOW PROFILE RECESSED CENTER-BASKET TROFFER	LITHONIA LIGHTING 2BLT2-20L-ADP-120V-EZ1-LP835	AEI	120	LED	20	YES	3500K	RECESSED	
A1	2'X4 RECESSED TROFFER WITH PRISMATIC LENS	LITHONIA LIGHTING 2TL4 3IL RW A19 EZ1 LP835	AEI	120	LED	28	YES	3500K	RECESSED	
B1	2X4 RECESSED TROFFER WITH PRISMATIC LENS	LITHONIA LIGHTING 2TL2 40L RW A19 EZ1 LP835	AEI	120	LED	32	YES	3500K	RECESSED	
C	EXTERIOR DOOR - TWO ENGINE LED EMERGENCY FIXTURE	LITHONIA LIGHTING WSQ LED 2 700 MA 3000K SR2 120	AEI	120	LED	13	NO	3000K	WALL	
C1	OFFICE - DOWNLIGHT SUITABLE FOR WET CONDITIONS	LITHONIA LIGHTING 6IRR RD 40K90CRI MW M6	AEI	120	LED	10.9	NO	3000K	RECESSED	
C3	SPRK RM - 4' LONG LED STRIP LIGHT LIGHTING FIXTURE	LITHONIA LIGHTING ZL1N 48 SMR 4000LM FST 120 35 80CRI WH	LINN	120	LED	30	NO	3500K	PEND	
D	GYM - I BEAM CONFIGURATION LED HIGH BAY	LITHONIA LIGHTING IBG 300000LM SEF ACL WD	AEI	120	LED	193	NO	3500	PENDANT	
D1	EXTERIOR - DOWN LIGHT OUTDOOR LED WALL CYLINDER LIGHTING FIXTURE	LITHONIA LIGHTING OLLWD LED P1 40K 120 DARK BRONZE	LINN	120	LED	9.1	NO	3500K	SURFACE	SEE ARCH DRAWING FOR EXACT LOCATION
F1	EXTERIOR - UP/DOWN OUTDOOR LED WALL CYLINDER LIGHTING FIXTURE	LITHONIA LIGHTING OLLWU LED P1 40K 120 DARK BRONZE	LINN	120	LED	14	NO	3500K	SURFACE	SEE ARCH DRAWING FOR EXACT LOCATION
F2	CANOPY - OUTDOOR GENERAL PURPOSE LIGHTING FIXTURE	LITHONIA LIGHTING OLCFM 15	AEI	120	LED	145	YES	3500K	SURFACE	
H1	HOLDING - 1X4 SURFACE CEILING MOUNTED LED LIGHTING FIXTURE	KENALL 5X4 4 0 4SL35K DCC 120 G 1	AEI	120	LED	16.6	YES	3500K	SURFACE	
X1	EDGE-LIT LED EXIT SIGN. PROVIDE SINGLE OR DOUBLE FACE AS INDICATED ON PLANS. PROVIDE CHEVRONS AS INDICATED ON PLANS. GREEN	LITHONIA EDG-W-1-G-EL (SINGLE FACE) EDG-W-2-G-EL (DUAL FACE)	AEI	120	LED	3.8	NO	3000K	SURFACE	

LIGHTING FIXTURE SCHEDULE NOTES
1. REFER TO THE ARCHITECTURAL REFLECTED CEILING PLAN(S) FOR THE CEILING TYPE AND EXACT LOCATION OF ALL LIGHT FIXTURES.
2. PROVIDE PLASTER/GWB CEILING FRAMING KITS WHERE APPLICABLE.
3. ALL LAMPS SHALL HAVE A COLOR RENDERING OF 3500 DEGREES KELVIN, UNLESS OTHERWIS NOTED.
4. PROVIDE ELECTRONIC BALLAST IN APPLICABLE FIXTURES, UNLESS OTHERWISE NOTED
5. ALL FIXTURES RECESSED WITHIN A FIRE RATED CEILING SHALL BE INSTALLED IN A FIRE RATED ENCLOSURE TO MAINTAIN THE CEILING FIRE RATING. THIS CAN BE DONE BY EITHER A FIRE RATED FIXTURE, A TENMAT ENCLOSURE OR A SAFELITE ENCLOSURE.

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ELECTRICAL 19041 E-1.1 - 19041 E-1.1 & SCHEDULES

NEW MUNICIPAL BUILDINGS – COMMUNITY CENTER

BOROUGH OF FOLCROFT

ASHLAND AVE.

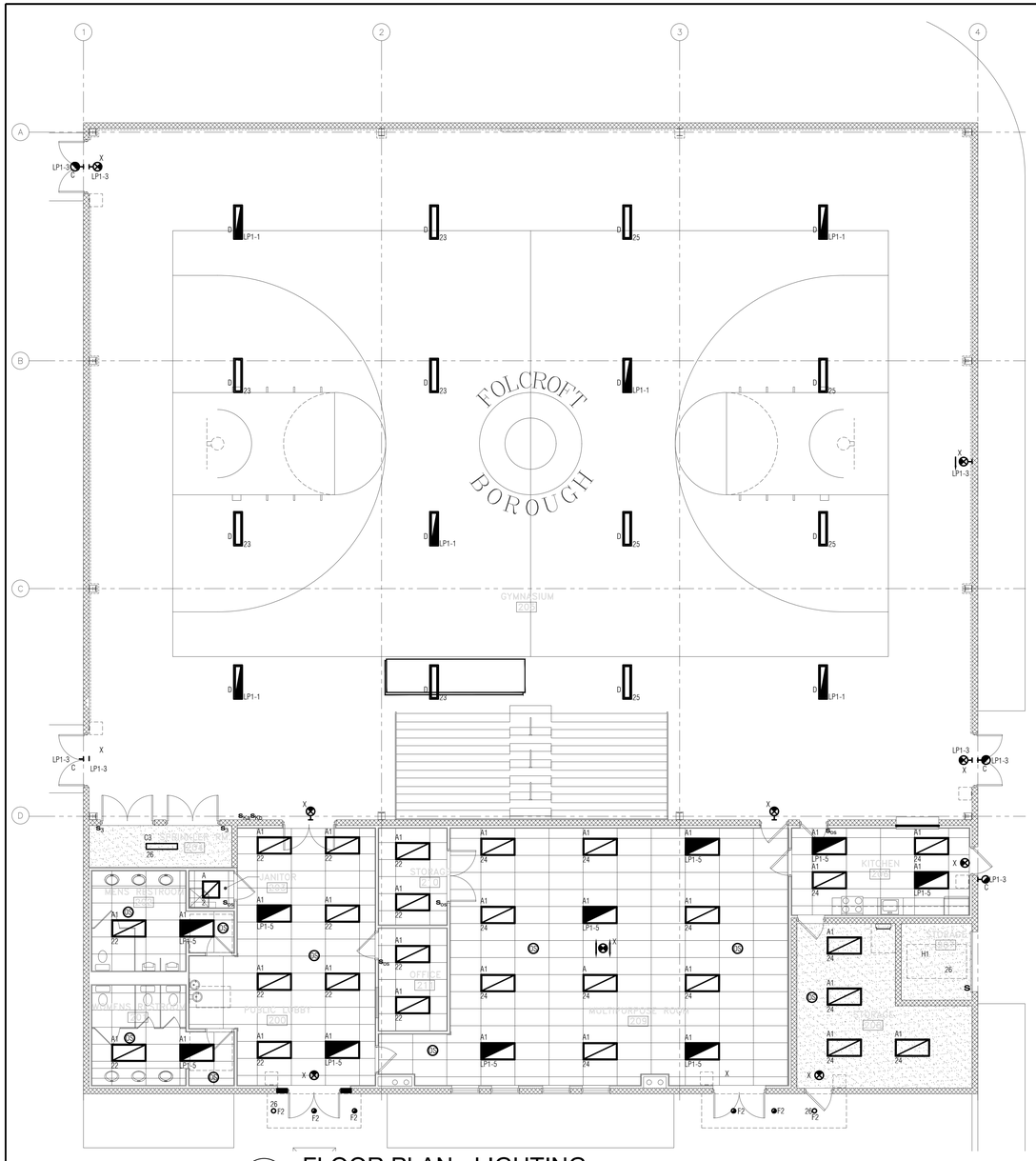
FOLCROFT, PA 19032

REVISIONS NO.	DESCRIPTION	DATE
.	ISSUE FOR BID	02.28.20
.	.	.
.	.	.

DATE: 01-30-2020
SCALE: AS NOTED
DRAWN BY: DG
CHECKED BY: TL
PROJ. NO.:

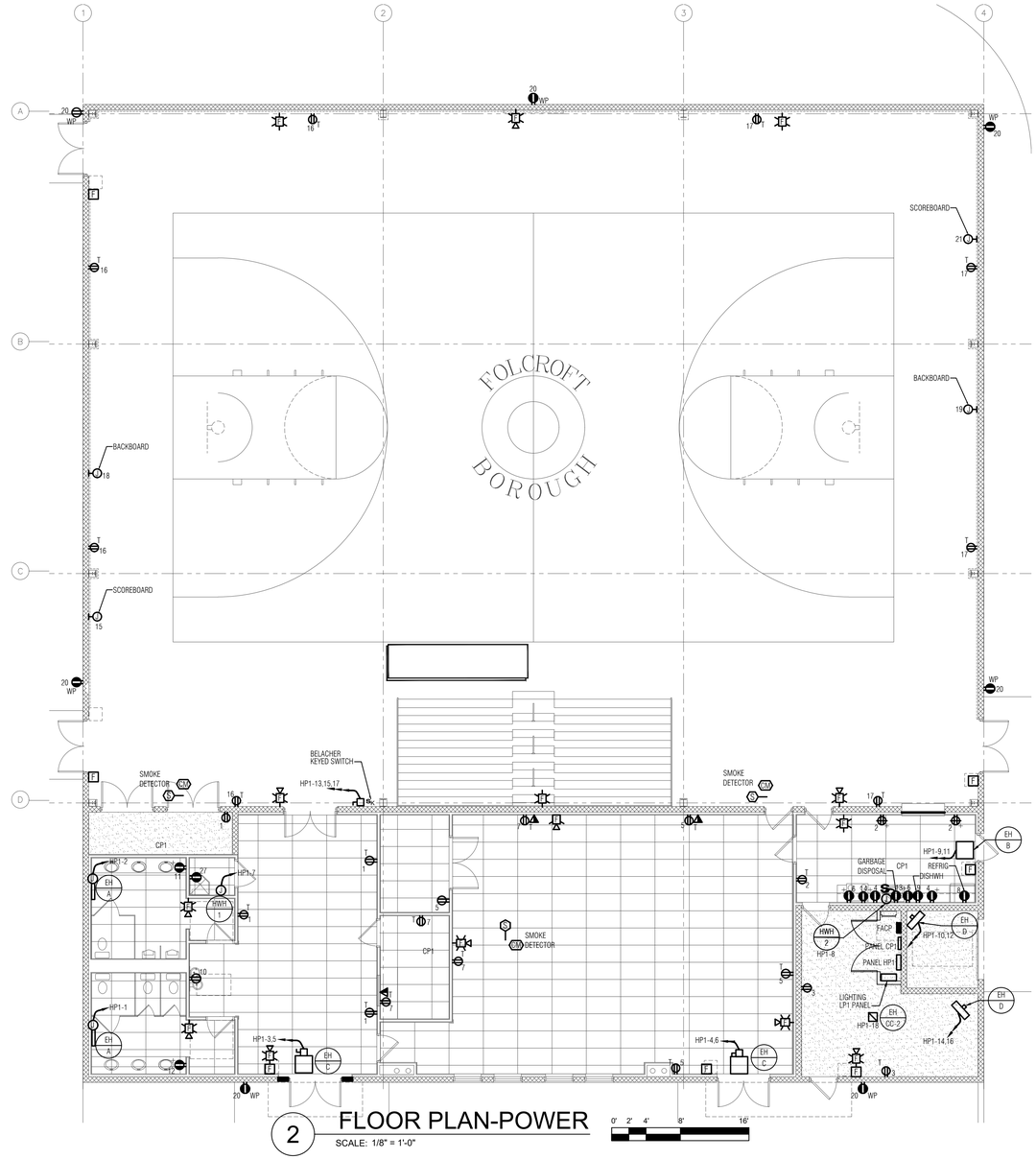
SHEET NO. E1.1

SHEET OF



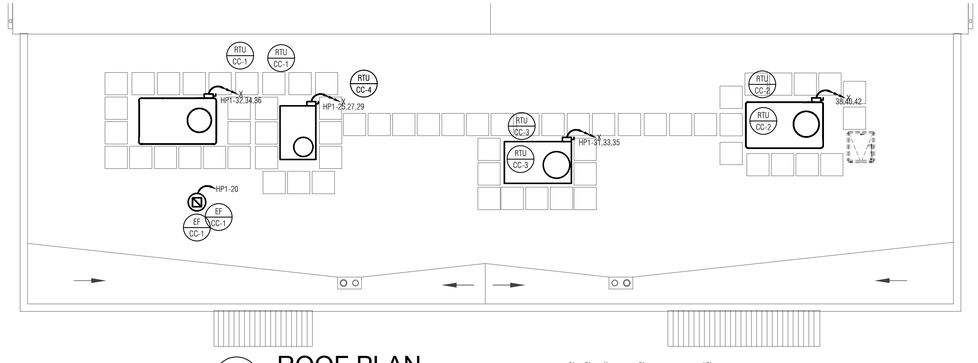
1 FLOOR PLAN - LIGHTING

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



2 FLOOR PLAN-POWER

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



3 ROOF PLAN

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

ELECTRICAL SHEET NOTES:

1. ALL SINGLE PHASE BRANCH CIRCUITING SHALL BE 2#12 & 1#12GND - 3/4"C UON. ALL THREE PHASE BRANCH CIRCUITING SHALL BE 3#12 & 1#12GND 3/4"C UON. ROUTE ALL BRANCH CIRCUITS TO PANEL INDICATED IN ROOM UON. REFER TO SINGLE LINE DIAGRAM FOR ADDITIONAL WIRE SIZES.
2. PROVIDE GFI RECEPTACLES FOR ALL RECEPTACLES LOCATED WITHIN 6 FEET OF SINKS.
3. REFER TO APPROPRIATE TRADE DRAWINGS FOR EXACT LOCATION OF HVAC, PLUMBING, AND ARCHITECTURAL EQUIPMENT.
4. CONNECT ALL BRANCH CIRCUITS IN COMMUNITY BUILDING TO PANEL CP1 UNLESS NOTED OTHERWISE. REFER TO PLAN FOR CIRCUIT NUMBERS.

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ELECTRICAL COM. CTR. LIGHTING & POWER PLAN

NEW MUNICIPAL BUILDINGS – COMMUNITY CENTER

BOROUGH OF FOLCROFT

ASHLAND AVE.
FOLCROFT, PA 19032

REVISIONS NO.	DESCRIPTION	DATE
.	ISSUE FOR BID	02.28.20
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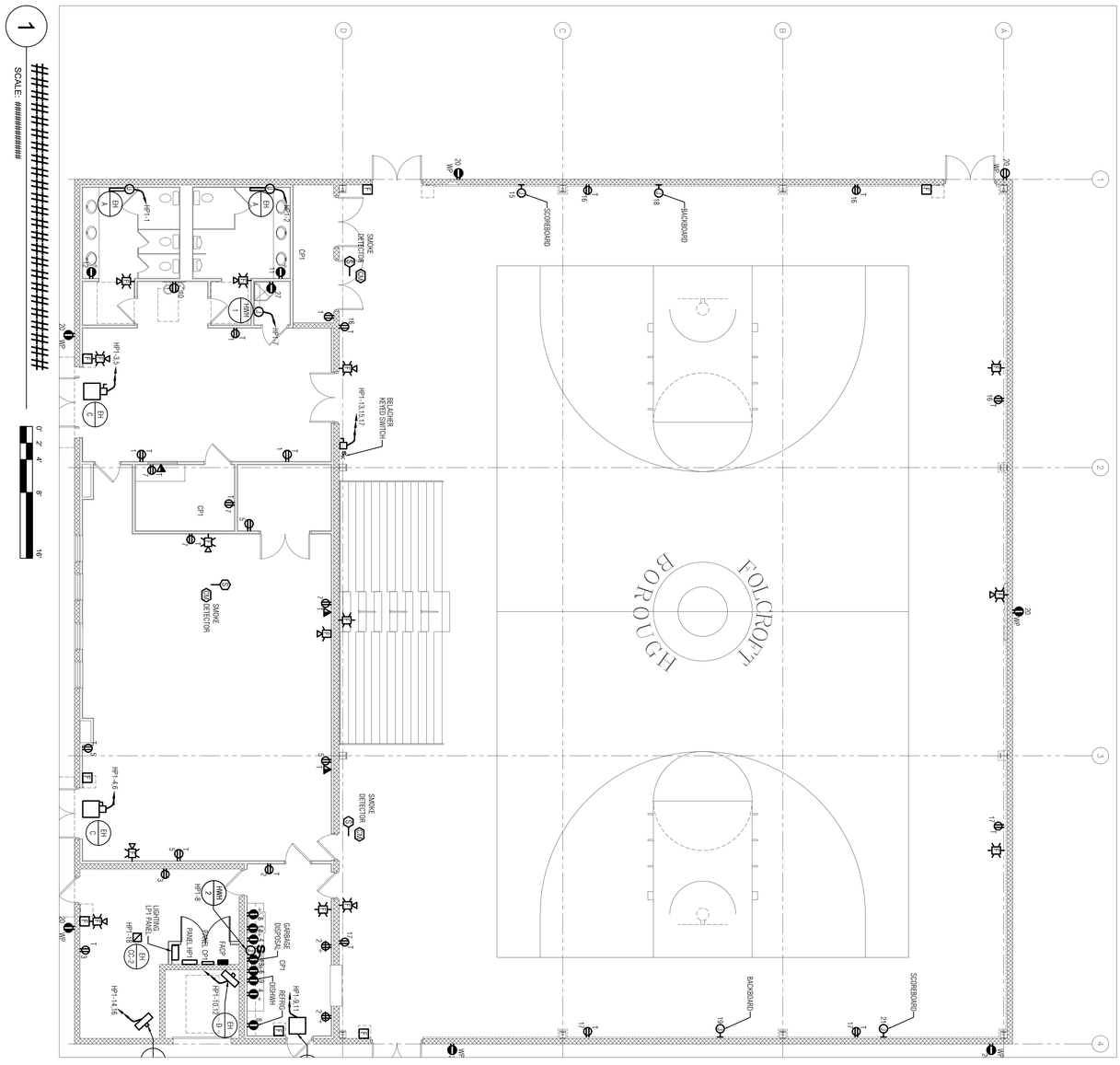
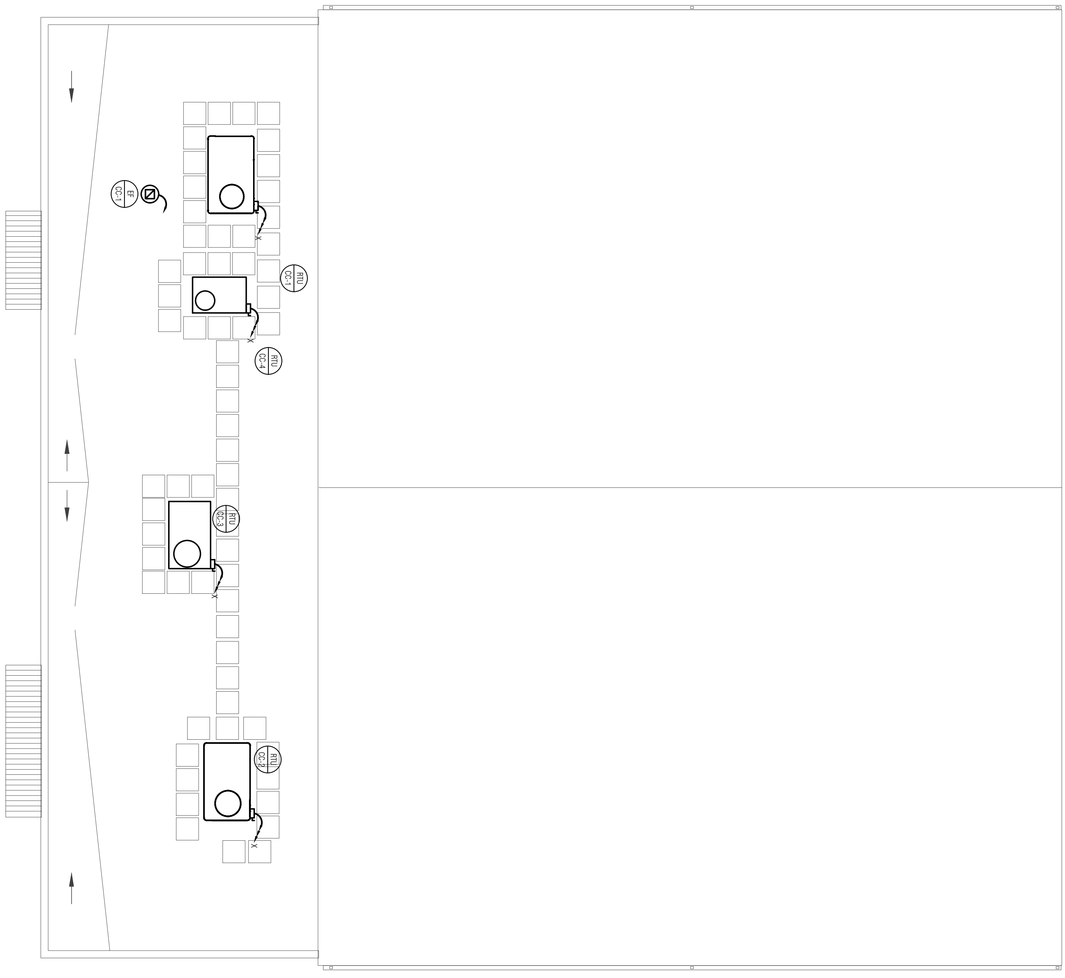
DATE: 01/30/2020
SCALE: AS NOTED
DRAWN BY: DG
CHECKED BY: TL
PROJ. NO.:

SHEET NO.
E-2
SHEET OF





SHEET NO. E-3	DATE: 01/30/2020	REVISIONS NO.	DESCRIPTION	DATE
	SCALE: AS NOTED	.	ISSUE FOR BID	02.28.20
	DRAWN BY: DG	.	.	
	CHECKED BY: TL	.	.	
SHEET OF	PROJ. NO.:			

ELECTRICAL FLOOR PLANS -LIGHTING & POWER

NEW MUNICIPAL BUILDINGS – COMMUNITY CENTER

BOROUGH OF FOLCROFT

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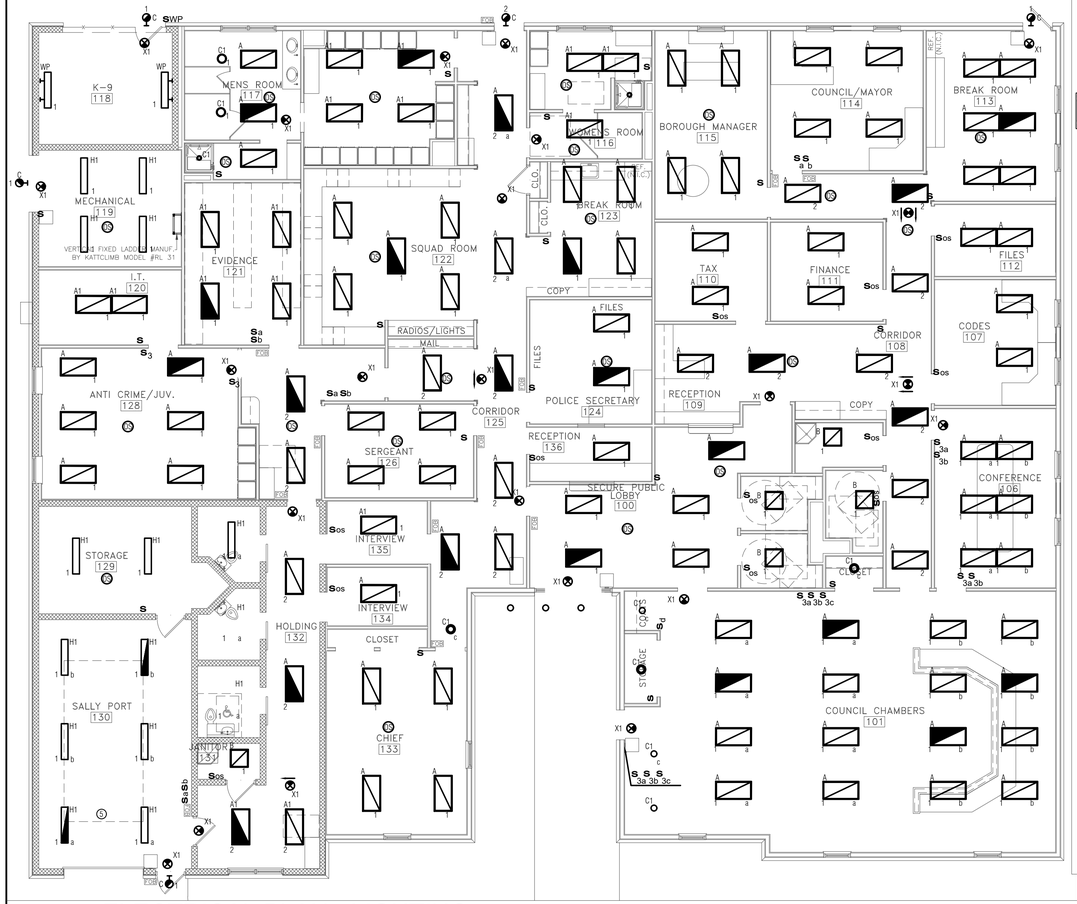
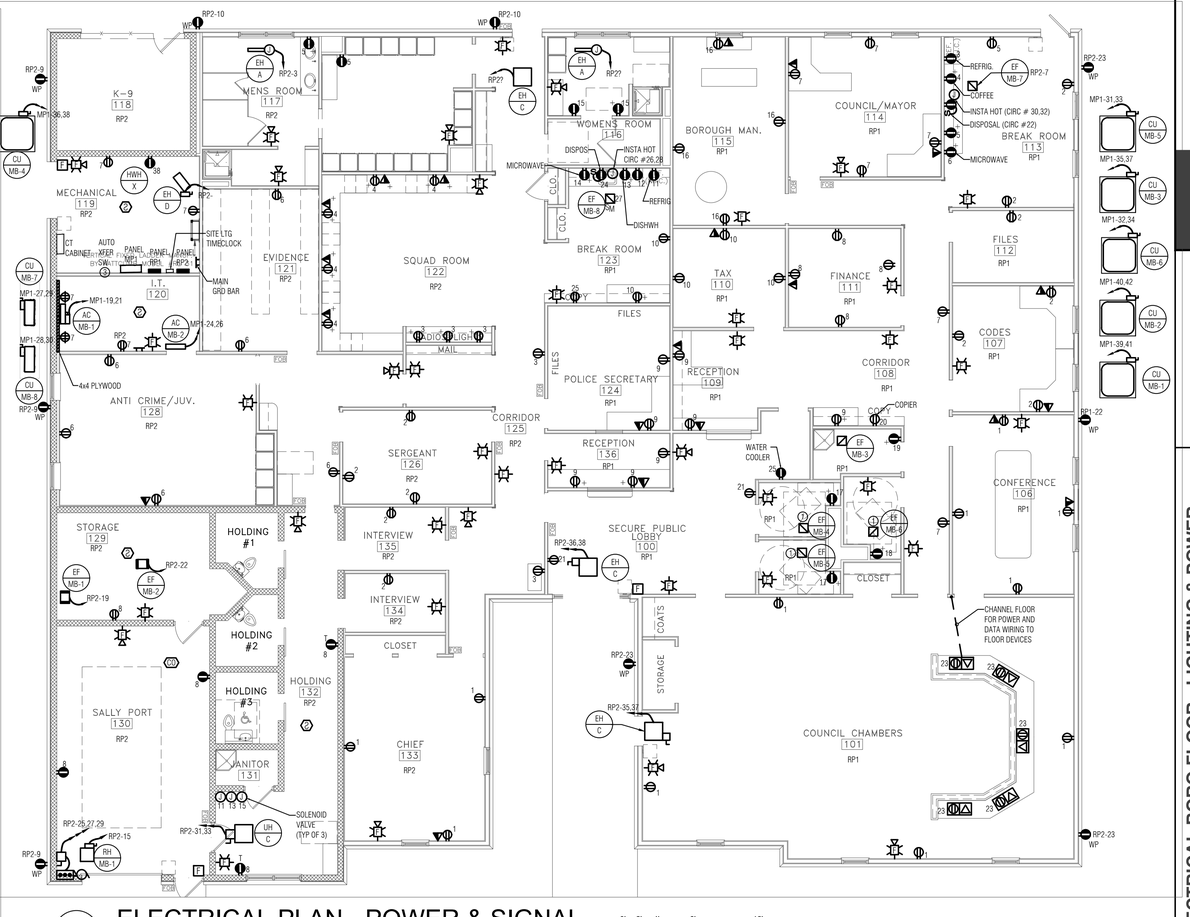
5564 Penmar Road | Media PA 19063



1 ELECTRICAL PLAN - LIGHTING

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

0' 2' 4' 8'



2 ELECTRICAL PLAN - POWER & SIGNAL

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

0' 2' 4' 8' 16'

SHEET NOTES:

1. ALL SINGLE PHASE BRANCH CIRCUITING SHALL BE 2#12 & 1#12GND - 3/4"C UON. ALL THREE PHASE BRANCH CIRCUITING SHALL BE 3#12 & 1#12GND 3/4"C UON. ROUTE ALL BRANCH CIRCUITS TO PANEL INDICATED IN ROOM UON. REFER TO SINGLE LINE DIAGRAM FOR ADDITIONAL WIRE SIZES.
2. PROVIDE GFI RECEPTACLES FOR ALL RECEPTACLES LOCATED WITHIN 6 FEET OF SINKS.
3. REFER TO APPROPRIATE TRADE DRAWINGS FOR EXACT LOCATION OF HVAC, PLUMBING, AND ARCHITECTURAL EQUIPMENT.
4. COORDINATE THE EXACT LOCATION OF RECEPTACLES AND TELECOMMUNICATION DEVICES WITH FURNITURE, MILLWORK AND EQUIPMENT.

PLAN NOTES:

1. CONNECT TOILET ROOM EXHAUST FAN TO LIGHTING BRANCH CIRCUIT AND LIGHTING CONTROL SWITCH IN ROOM.
2. AC-1 SHALL BE POWERED FROM THE ROOFTOP CONDENSER UNIT. PROVIDE CONTROL CONDUIT WITH PULL STRING. ROUTING OF POWER AND CONTROL CONDUIT SHALL BE COORDINATED WITH MECHANICAL CONTRACTOR.
3. SERVICE RATED AUTOMATIC TRANSFER SWITCH WITH BYPASS ISOLATION, 208V 3-PHASE, 4-POLE. NORMAL SOURCE SHALL BE DIRECT FROM PECO SERVICE AND ALTERNATE FROM EMERGENCY GENERATOR. PROVIDE 400W4 CONNECTIONS TO EACH. PROVIDE CONTROL WIRES AS REQUIRED TO EMERGENCY GENERATOR.
4. 75KW/93KVA DIESEL EMERGENCY GENERATOR, 208Y/3-PHASE, 4-POLE IN SOUND ATTENUATED WEATHERPROOF ENCLOSURE. GENERATOR SHALL INCLUDE BASE TANK WITH CAPACITY FOR 3 DAYS OF SERVICE AT FULL LOAD. PROVIDE CONCRETE BASE PAD AS REQUIRED.
5. COORDINATE LIGHTING LOCATIONS WITH OVERHEAD AND ASSOCIATED DOOR HARDWARE.

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ELECTRICAL BORO FLOOR - LIGHTING & POWER

NEW MUNICIPAL BUILDINGS – COMMUNITY CENTER

BOROUGH OF FOLCROFT

ASHLAND AVE.

FOLCROFT, PA 19032

REVISIONS		
NO.	DESCRIPTION	DATE
.	ISSUE FOR BID	02.28.20
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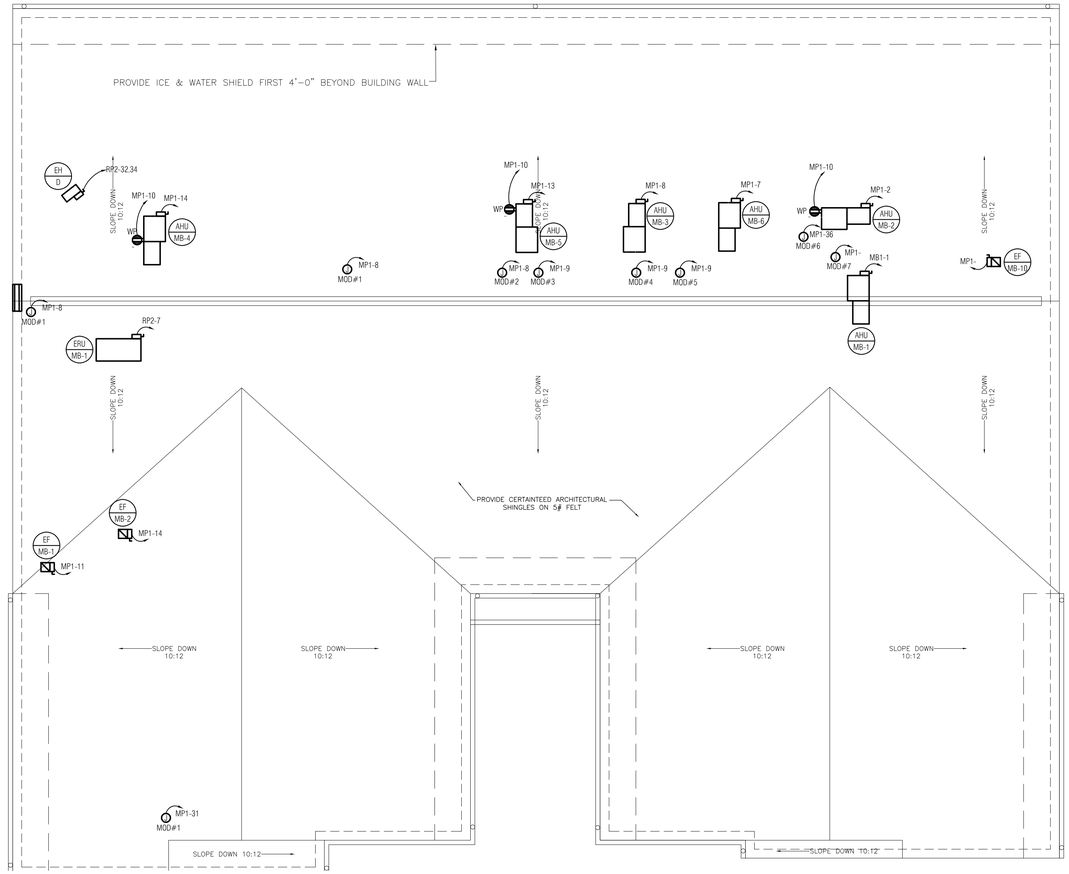
DATE : 3/26/2020
SCALE : AS NOTED
DRAWN BY: VALUE
CHECKED BY: VALUE
PROJ. NO.:

SHEET NO.
E-4

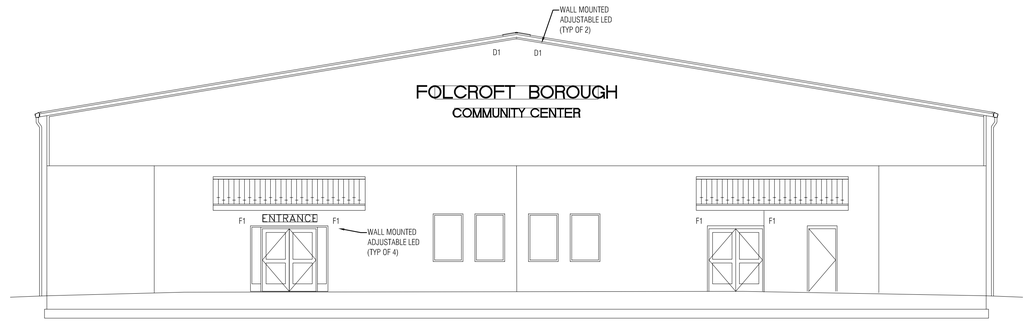
SHEET OF



1 OVERALL ROOF PLAN-ADMIN.

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

0' 2' 4' 8' 16'



2 FRONT ELEVATION COMMUNITY CENTER

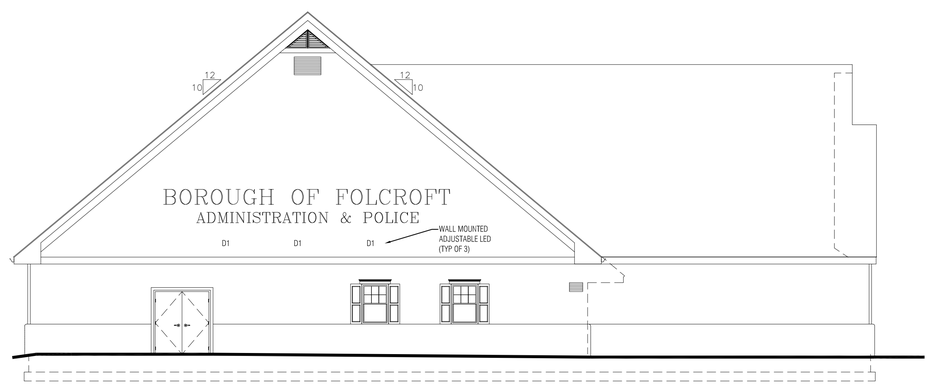
SCALE: ##########

0' 2' 4' 8' 16'

3 FRONT ELEVATION-ADMIN.

SCALE: ##########

0' 2' 4' 8' 16'



4 LEFT SIDE ELEVATION-ADMIN.

SCALE: ##########

0' 2' 4' 8' 16'

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ELECTRICAL 19041 E-5 - 19041 E-5

NEW MUNICIPAL BUILDINGS – COMMUNITY CENTER

BOROUGH OF FOLCROFT

ASHLAND AVE.

FOLCROFT, PA 19032

REVISIONS NO.	DESCRIPTION	DATE
.	ISSUE FOR BID	02.28.20
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.	.	.

DATE 01/30/2020
SCALE AS NOTED
DRAWN BY DG
CHECKED BY VALUE
PROJ. NO.

SHEET NO. E-5

SHEET OF

PANEL MP1 (BOROUGH BUILDING)

VOLTAGE: 120/208 V, 3ϕ , 4W
MAIN : 300A MCB
NEUTRAL: 100%
AIC RATING:

LOCATION: MAIN ELECTRICAL MECHANICAL ROOM 216
MOUNTING: SURFACE

CKT NO.	WIRE ID	CB AMP/POLE	DESCRIPTION	LOAD (VA) A	B	C	A	B	C	DESCRIPTION	CB AMP/POLE	WIRE ID	CKT NO.
1				11000			1240						2
3	150W4	150/3	PANEL RP1		11000			1240		RTU MB-1 ERU (LOCATED ON ROOF)	30/3	30W3	4
5						11000			1240				6
7				3666			4000						8
9	40W3	40/3	RTU MB-2 (LOCATED ON ROOF)		3666			4000		RTU MB-3 (LOCATED ON ROOF)	50/3	50W3	10
11						3666			4000				12
13	30W2	30/2	CU MB-1	2000			3666						14
15					2000			3666		RTU MB-4 (LOCATED ON ROOF)	40/3	40W3	16
17	30W2	30/2	CU MB-2			2000			3666				18
19				2000			1500			UH-C	30/2	20W2	20
21	30/2	30/2	EH-B		1500			1500					22
23						1500			1500	UH-C	30/2	20W2	24
25	30/2	30/2	EH-B	1500			1500						26
27					1500			1500		GENERATOR HEATER	30/2	30W2	28
29	30/2	30/2	EH-B			1500			1500				30
31				1500			1500			SITE SUMP PUMP 1	30/2	30W2	32
33	30/2	30/2	EH-B		1500			1500					34
35						1500			1500	SITE SUMP PUMP 2	30/2	30W2	36
37	30W2	30/2	INSTANT HOT	2000			500			HWH-3	30/1	30W2	38
39										SPACE			40
41			SPACE							SPACE			42
			SUB TOTAL KVA	20.2	18.2	18.2	13.9	11.9	13.4	SUB TOTAL KVA			

TOTAL CONNECTED VA LOAD 95.7 KVA
TOTAL CONNECTED AMPERE LOAD 265.9 A

PANEL RP1

VOLTAGE: 120/208 V, 3ϕ , 4W
MAIN : 225AMP MCB
NEUTRAL: 100%
AIC RATING:

LOCATION: MECH/ELEC ROOM 119
MOUNTING:

CKT NO.	WIRE ID	CB AMP/POLE	DESCRIPTION	LOAD (KW) A	B	C	A	B	C	DESCRIPTION	CB AMP/POLE	WIRE ID	CKT NO.
1	20W2	20/1	ROOM 101,106 RECEPTACLES	1080			1080			ROOM 107,112,113 RECEPTACLES	20/1	20W2	2
3	20W2	20/1	ROOM 113 REFRIG. RECEPTACLE		900			1200		ROOM 113 COFFEE RECEPTACLE	20/1	20W2	4
5	20W2	20/1	ROOM 113 CONV RECEPTACLE			1080			1000	ROOM 113 MICRWAVE RECEPTACLE	20/1	20W2	6
7	20W2	20/1	COOR.108, ROOM 114 RECEPTACLES	1080			720			ROOM 111 RECEPTACLES	20/1	20W2	8
9	20W2	20/1	ROOM 109,124,136 RECEPTACLES		720			900		ROOM 110,123 RECEPTACLES	20/1	20W2	10
11	20W2	20/1	ROOM 123 REFRIG RECEPTACLE			800			1100	ROOM 123 CONV. RECEPTACLE	20/1	20W2	12
13	20W2	20/1	ROOM 123 DISHWASH RECEPTACLE	920			1000			ROOM 123 MICROWAVE RECEPTACLE	20/1	20W2	14
15	20W2	20/1	ROOM 116 RECEPTACLES		540			720		ROOM 115 RECEPTACLES	20/1	20W2	16
17	20W2	20/1	ROOM 102,103 RECEPTACLES			720			1080	ROOM 105 RECEPTACLE	20/1	20W2	18
19	20W2	20/1	ROOM 104 RECEPTACLE	900			900			CORRIDOR 108 COFIER RECEPTACLE	20/1	20W2	20
21	20W2	20/1	ROOM 100 RECEPTACLE		360			540		WP OUT DOOR RECEPTACLES	20/1	20W2	22
23	20W2	20/1	ROOM 101 FLOOR RECEPTACLES			900				SPARE	20/1	20W2	24
25		20/1	SPARE							SPARE	20/1	20W2	26
27		20/1	SPARE							SPARE	20/1	20W2	28
29			SPACE										30
31			SPACE										32
33			SPACE										34
35			SPACE										36
37				10000									38
39	100W4	100A/3P	PANEL RP2		10000								40
41						10000							42
			SUB TOTAL KW	13.98	12.52	13.5	3.7	3.36	3.18	SUB TOTAL KW			

TOTAL CONNECTED KW LOAD 50.2 KVA
TOTAL CONNECTED AMPERE LOAD 139.6 A

PANEL RP2

VOLTAGE: 120/208 V, 3ϕ , 4W
MAIN : 100AMP MCB
NEUTRAL: 100%
AIC RATING:

LOCATION: ELECTRICAL/MECH ROOM 119
MOUNTING: SURFACE

CKT NO.	WIRE ID	CB AMP/POLE	DESCRIPTION	LOAD (KW) A	B	C	A	B	C	DESCRIPTION	CB AMP/POLE	WIRE ID	CKT NO.
1	20W2	20/1	ROOM 133 RECEPTACLES	720			1080			ROOM 134,135,126 RECEPTACLES	20/1	20W2	2
3	20W2	20/1	COOR 125 RECEPTACLES		900			900		ROOM 122 RECEPTACLES	20/1	20W2	4
5	20W2	20/1	ROOM 117 RECEPTACLES			360			1080	ROOM 121,127,128 RECEPTACLES	20/1	20W2	6
7	20W2	20/1	ROOM 119,120 RECEPTACLES	900			540			ROOM 129,130,132 RECEPTACLES	20/1	20W2	8
9	20W2	20/1	WP OUT DOOR RECEPTACLES		360			360		WP OUT DOOR RECEPTACLES	20/1	20W2	10
11	20W2	20/1	EF-TOILET ROOM 102			100			100	EF-TOILET ROOM 103	20/1	20W2	12
13	20W2	20/1	EF-TOILET ROOM 105	100			100			EF-JANITOR 104	20/1	20W2	14
15	20W2	20/1	RH / MB-1 SALLY PORT		260			100		EF - BREAK ROOM 113	20/1	20W2	16
17	20W2	20/1	EF-BREAK ROOM 123			100			100	EF-ROOM 129	20/1	20W2	18
19	20W2	20/1	EF ROOM 129	100			150			EH / A ROOM 116	20/1	20W2	20
21	20W2	20/1	EH / A ROOM 117		150					SITE LIGHTING VIA TIMECLOCK	30/2	30W2	22
23	20W2	20/1	SPARE										24
25	20W3	20/3	OVERHEAD DOOR - SALLYPORT	1000						SITE LIGHTING VIA TIMECLOCK	30/2	30W2	26
27					1000								28
29										SPARE	20/1		30
31	20W2	20/2	UH-C ROOM 132	1500			1500			EH-D - ATTIC	20/2	20W2	32
33					1500			1500					34
35	20W2	20/2	EH-C ROOM 101			1500			1500	EH-C - ROOM 100	20/2	20W2	36
37				1500									38
39	20W2	20/2	EH-C ROOM 119		1500			1500		EH-C - ROOM 122	20/2	20W2	40
41						1500			1500				42
43	20W2	20/2	EH-D	1500									44
45					1500								46
47													48
49													50
51													52
53													54
			SUB TOTAL KW	7.32	7.17	3.56	3.37	4.36	4.28	SUB TOTAL KW			

TOTAL CONNECTED KW LOAD 30.1 KVA
TOTAL CONNECTED AMPERE LOAD 83.5 A

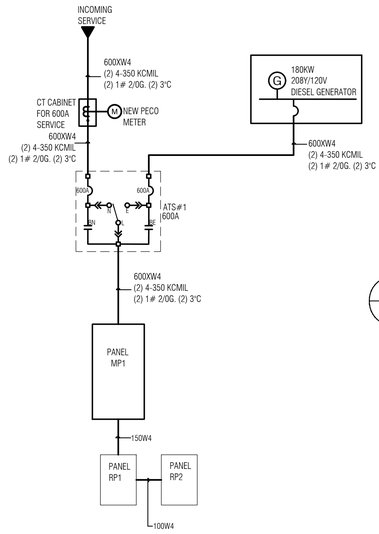
PANEL LP1 (COMMUNITY CENTER)

VOLTAGE: 120/208 V, 3ϕ , 4W
MAIN : 20AMP MCB
NEUTRAL: 100%
AIC RATING:

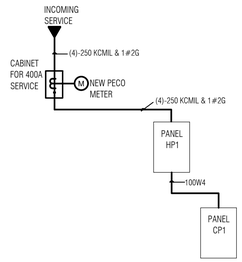
LOCATION: ELECTRIC ROOM
MOUNTING: SURFACE

CKT NO.	WIRE ID	CB AMP/POLE	DESCRIPTION	LOAD (W) A	B	C	A	B	C	DESCRIPTION	CB AMP/POLE	WIRE ID	CKT NO.
1	20W2	20/1	GYMNASIUM - 110	1158						SPARE	20/1	-	2
3	20W2	20/1	RM 103,101,100,107,109		523					SPARE	20/1	-	4
5	-	20/1	SPARE							SPARE	20/1	-	6
7	-	-	SPACE							SPACE	-	-	8
			SUB TOTAL KVA	1.158	0.523	0	0	0	0	SUB TOTAL KVA			

TOTAL CONNECTED VA LOAD 1.7 KVA
TOTAL CONNECTED AMPERE LOAD 4.7 A



1 E-6 — BUILDING - SINGLE LINE DIAGRAM ADMIN. BUILDING
SCALE - NONE



2 E300 — SINGLE LINE- COMMUNITY CENTER
SCALE - NONE

PANEL CP1

VOLTAGE: 120/208 V, 3ϕ , 4 W.
MAIN : 100 AMP MLO
NEUTRAL: 100%
AIC RATING: 10K AIC

LOCATION: STORAGE ROOM 208
MOUNTING: SURFACE

CKT NO.	WIRE ID	CB AMP/POLE	DESCRIPTION	LOAD (KW) A	B	C	A	B	C	DESCRIPTION	CB AMP/POLE	WIRE ID	CKT NO.
1	20W2	20A/1P	LOBBY,SPRINKLER RM REC	720			900			KITCHEN REC	20A/1P	20W2	2
3	20W2	20A/1P	STORAGE 207 & 208 REC		720			360		KITCHEN GFCI REC	20A/1P	20W2	4
5	20W2	20A/1P	MULTI PURPOSE ROOM REC			540			360	KITCHEN GFCI REC	20A/1P	20W2	6
7	20W2	20A/1P	OFFICE 211 & MULTI PURPOSE RM	720			800			KITCHEN REFRIG.REC	20A/1P	20W2	8
9	20W2	20A/1P	KITCHEN DISH WASHER REC		200			200		WATER FOUNTAIN	20A/1P	20W2	10
11	20W2	20A/1P	MENS TOILET RM REC			180			180	WOMENS TOILET RM REC	20A/1P	20W2	12
13	20W2	20A/1P	KITCHEN DISPOSAL	180			180			KITCHEN GFCI REC	20A/1P	20W2	14
15	20W2	20A/1P	GYM SCORE BOARD (LEFT SIDE)					720		GYM 205 REC	20A/1P	20W2	16
17	20W2	20A/1P	GYM 205 REC			720				GYM BACK BOARD (LEFT SIDE)	20A/1P	20W2	18
19	20W2	20A/1P	GYM BACK BOARD (RIGHT SIDE)							EXTERIOR WP REC	20A/1P	20W2	20
21	20W2	20A/1P	GYM SCORE BOARD (RIGHT SIDE)					600		PUBLIC LOBBY LIGHTS	20A/1P	20W2	22
23	20W2	20A/1P	GYM LIGHTS			1000			800	MULTIPURPOSE LIGHTS	20A/1P	20W2	24
25	20W2	20A/1P	GYM LIGHTS	1000			340			EXTERIOR LIGHTS	20A/1P	20W2	26
27	30W2	20A/2P	INVERTER PANEL LP1		800					SPARE	20A/1P		28
29						800				SPARE	20A/1P		30
			SUB TOTAL KW	2.6	1.7	3.2	2.2	1.9	1.3	SUB TOTAL KW			

TOTAL CONNECTED KW LOAD 13.0 KVA
TOTAL CONNECTED AMPERE LOAD 36.2 A

PANEL HP1

VOLTAGE: 120/208 V, 3ϕ , 4 W.
MAIN : 225 AMP MLO
NEUTRAL: 100%
AIC RATING: 10K AIC

LOCATION: STORAGE ROOM 208 (ELECTRIC COSET)
MOUNTING: SURFACE

CKT NO.	WIRE ID	CB AMP/POLE	DESCRIPTION	LOAD (KW) A	B	C	A	B	C	DESCRIPTION	CB AMP/POLE	WIRE ID	CKT NO.
1	20W2	20A/1P	EH/A WOMENS TOILET ROOM	1500			1500			EH-A MENS TOILET ROOM	20A/1P	20W2	2
3	30W2	30A/2P	UH/C		1500			1500					4
5						1500			1500	UH/C	30A/2P	30W2	6
7	20W2	20A/1P	HWH/1 JANITOR RM	300			300			HWH-2 KITCHEN	20A/1P	20W2	8
9	30W2	30A/2P	EH/B		1500			1500		EH-D	30/2P	30W2	10
11						1500			1500				12
13	30W3	30A/3P	BLEACHER KEYED SWITCH	1500			1500			EH-D	30/2P	30W2	14
15					1500			1500					16
17						1500			100	EH-CC-2	20A/1P	20W2	18
19	20W2	20A/1P	SIGNAGE LIGHTING FIXTURE VIA TC	400						EH-CC-1	20A/1P	20W2	20
21	20W2	20A/1P						100			20A/1P	20W2	22
23	20W2	20A/1P									20A/1P	20W2	24
25				2400							20A/1P	20W2	26
27	20W3	30A/3P	RTU-CC-2		2400						20A/1P	20W2	28
29						2400					20A/1P	20W2	30
31	50W3	50A/3P	RTU-CC-3	53333			5766			RTU-CC-1	60A/3P	60W3	32
33					5333			5766					34
35						5333			5766				36
37							5766						38
39	100W4	100A/3P	PANEL CP1					5766		RTU-CC-2	60A/3P	60W3	40
41									5766				42
			SUB TOTAL KW	6.1	6.9	6.9	3.3	4.6	3.1	SUB TOTAL KW			

TOTAL CONNECTED KW LOAD 30.9 KVA
TOTAL CONNECTED AMPERE LOAD 85.8 A

BRANCH & FEEDER CIRCUIT SCHEDULE

COPPER (CU) WIRE ID	NO. OF WIRES		CONDUIT	ALUMINUM (AL) NO. OF WIRES		CONDUIT
20W2	2#12 & 1#12 G.	1	3/4"C	2#10 & 1#12 G.	1	3/4"C
30W2	2#10 & 1#10 G.	1	3/4"C	2#8 & 1#10 G.	1	3/4"C
40W2	2#8 & 1#10 G.	1	3/4"C	2#8 & 1#10 G.	1	3/4"C
50W2	2#6 & 1#10 G.	1	1"C	2#6 & 1#10 G.	1	1"C
60W2	2#6 & 1#8 G.	1	1"C	2#4 & 1#8 G.	1	1"C
70W2	2#4 & 1#8 G.	1	1 1/2 "C	2#3 & 1#8 G.	1	1 1/2 "C
80W2	2#2 & 1#8 G.	1	1 1/2 "C	2#2 & 1#8 G.	1	1 1/2 "C
90W2	2#2 & 1#8 G.	1	1 1/2 "C	2#2 & 1#8 G.	1	1 1/2 "C
100W2	2#2 & 1#8 G.	1	1 1/2 "C	2#1 & 1#8 G.	1	1 1/2 "C
20W3	3#12 & 1#12 G.	1	3/4"C	3#10 & 1#12 G.	1	3/4"C
25W3	3#12 & 1#12 G.	1	3/4"C	3#10 & 1#10 G.	1	3/4"C
30W3	3#10 & 1#10 G.	1	3/4"C	3#8 & 1#10 G.	1	3/4"C
35W3	3#8 & 1#10 G.	1	3/4"C	3#8 & 1#10 G.	1	3/4"C
40W3	3#8 & 1#10 G.	1	3/4"C	3#8 & 1#10 G.	1	3/4"C
45W3	3#6 & 1#10 G.	1	1"C	3#6 & 1#10 G.	1	1"C
50W3	3#6 & 1#10 G.	1	1"C	3#6 & 1#10 G.	1	1"C
60W3	3#6 & 1#8 G.	1	1"C	3#4 & 1#8 G.	1	1"C
70W3	3#4 & 1#8 G.	1	1 1/2 "C	3#3 & 1#8 G.	1	1 1/2 "C
80W3	3#2 & 1#8 G.	1	1 1/2 "C	3#2 & 1#8 G.	1	1 1/2 "C
90W3	3#2 & 1#8 G.	1	1 1/2 "C	3#2 & 1#8 G.	1	1 1/2 "C
100W3	3#2 & 1#8 G.	1	1 1/2 "C	3#1 & 1#8 G.	1	1 1/2 "C
110W3	3#2 & 1#8 G.	1	1 1/2 "C	3#1/0 & 1#6 G.	1	2"C
120W3	3#1/0 & 1#6 G.	1	2"C	3#1/0 & 1#6 G.	1	2"C
125W3	3#1/0 & 1#6 G.	1	2"C	3#2/0 & 1#6 G.	1	2"C
130W3	3#1/0 & 1#6 G.	1	2"C	3#2/0 & 1#6 G.	1	2"C
150W3	3#1/0 & 1#6 G.	1	2"C	3#3/0 & 1#6 G.	1	2"C
175W3	3#2/0 & 1#6 G.	1	2"C	3#4/0 & 1#6 G.	1	2"C
200W3	3#3/0 & 1#6 G.	1	2"C	3-250 KCMIL & 1#4 G.		2 1/2"C

REMARKS

NOTE: (#) DENOTES NUMBER OF SETS OF WIRES & CONDUITS

W

DENOTES NUMBER OF PHASE/LINE & NEUTRAL CONDUCTORS
WIRE, T DENOTES TRANSFORMER SECONDARY CONDUCTORS
AMPERE VALUE

1 METAL CLAD (MC) CABLE IS ACCEPTABLE IN LIEU OF CONDUIT AND WIRE

ADVANCED ENGINEERING SYSTEMS INC
www.ADVENGINC.com
556I Pennell Road | Media PA 19063

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ELECTRICAL 19041-E-6 - 19041-E-6

NEW MUNICIPAL BUILDINGS – COMMUNITY CENTER
BOROUGH OF FOLCROFT
ASHLAND AVE.
FOLCROFT, PA 19032

REVISIONS

NO.	DESCRIPTION	DATE
.	ISSUE FOR BID	02.28.20
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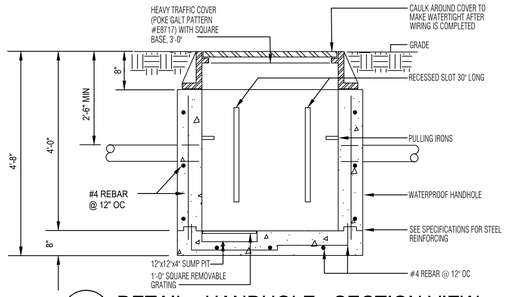
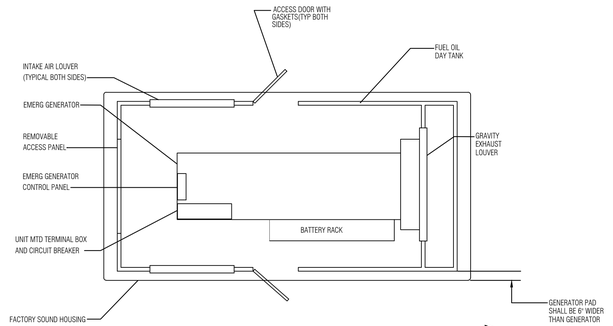
DATE : 01/30/2020
SCALE : AS NOTED
DRAWN BY: DG
CHECKED BY: TL
PROJ. NO.:

SHEET NO. E-6
SHEET OF



2 ES1.1 **DETAIL - HANDHOLE - SECTION VIEW**

NOT TO SCALE

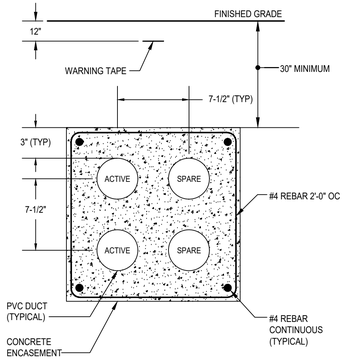


6 ES1.1 **OUTDOOR GENERATOR ENCLOSURE - PLAN VIEW**

NO SCALE

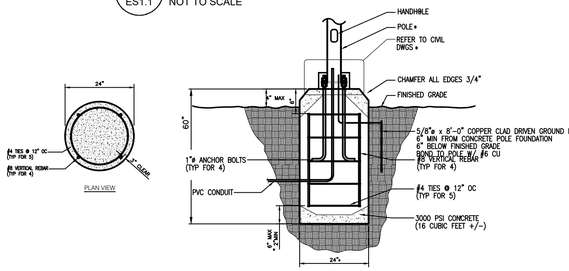
NOTES:

1. PROVIDE RECESSED SLOT CHANNELS AND CABLE SUPPORTS AS REQUIRED.



3 ES1.1 **DETAIL - DUCTBANK 2x2 - SECTION VIEW**

NOT TO SCALE

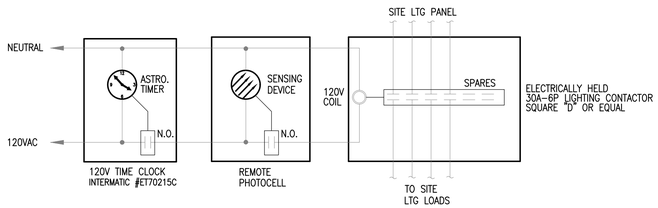


4 ES1.1 **DETAIL - POLE FOUNDATION**

NOT TO SCALE

NOTE:

* ALL DIMENSIONS ARE TO BE VERIFIED WITH MANUFACTURERS SPECIFICATION REFER TO CIVIL DRAWINGS FOR LIXTURE ADN POLE MAKE AND MODEL.



5 ES1.1 **DETAIL - TIMECLOCK/PHOTOCELL**

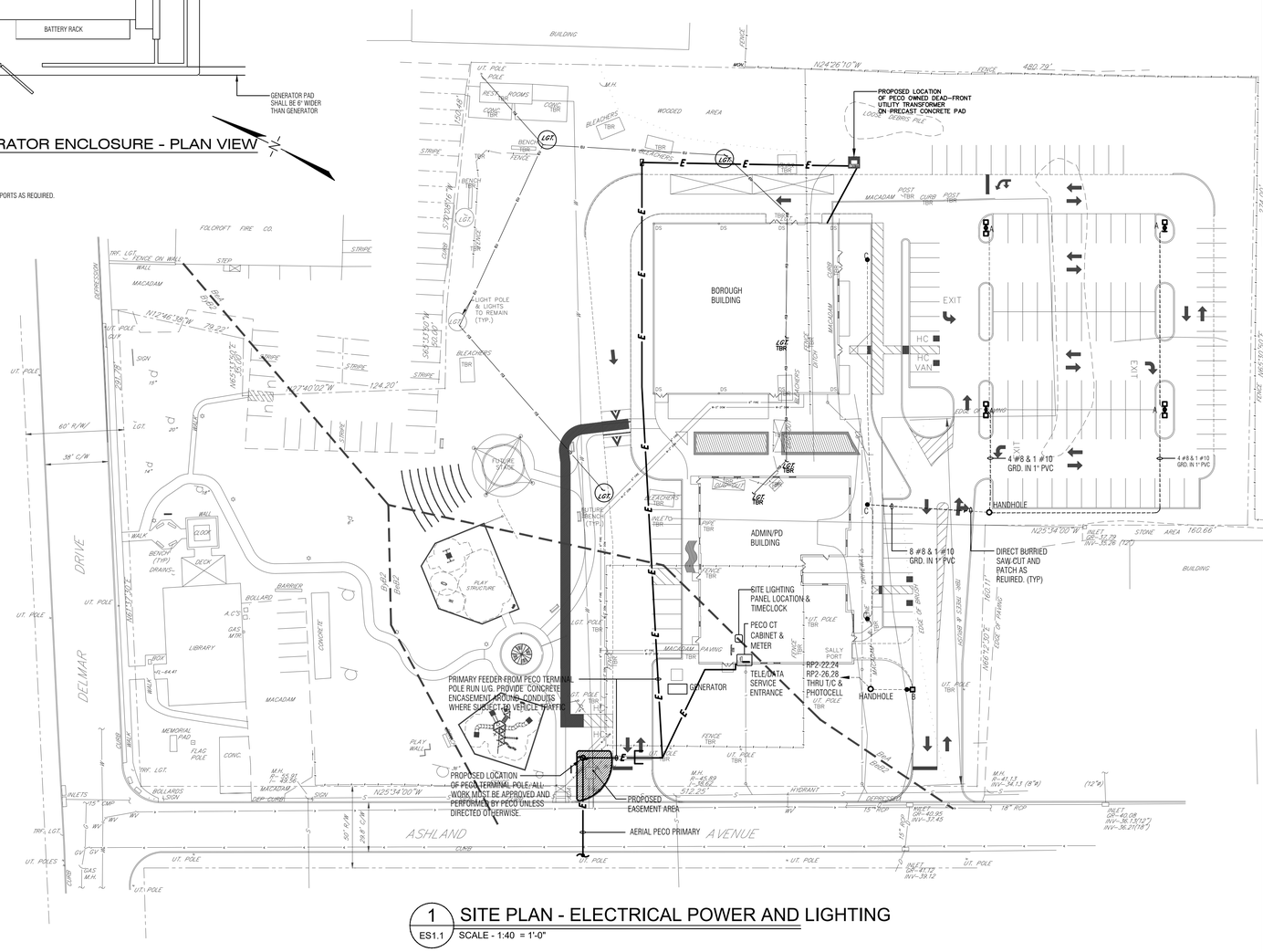
NOT TO SCALE

NOTES:

1. E.C. SHALL COORDINATE TIMECLOCK SETTINGS W/ OWNER AS PART OF A COMPLETE INSTALLATION.

OPERATION

1. TIME CLOCK IS SET TO TURN LIGHTS OFF AT A TIME TO BE DETERMINED BY THE END USER. PHOTOCELL MAY STILL BE CLOSED BUT AN OPEN CONTACT IN THE TIMECLOCK KEEPS THE LOAD OFF.
2. TIME CLOCK IS SET TO GO "ON" AT A TIME TO BE DETERMINED BY THE END USER. THE CONTACT IN THE TIMECLOCK WILL CLOSE BUT THE PHOTOCELL CONTACT WILL BE OPEN, KEEPING THE LIGHTS OFF.
3. PHOTOCELL CONTACT WILL CLOSE AT DUSK COMPLETING THE CIRCUIT AND TURNING THE LOAD ON.
4. SEQUENCE BEGINS AGAIN.



1 ES1.1 **SITE PLAN - ELECTRICAL POWER AND LIGHTING**

	A		4 Lithonia Lighting	KAD LED 60C 700 40K R4 MVOLT	KAD LED, 60 LED, 700mA MVOLT DRIVER, 4000K, TYPE 4 OPTICS.	1 KAD_LED_60C_700_40K_R4_MVOLT.ies	15981	1	0.95	274
	B		1 Lithonia Lighting	KAD LED 60C 700 40K R2 MVOLT	KAD LED, 60 LED, 700mA MVOLT DRIVER, 4000K, TYPE 2 OPTICS.	1 KAD_LED_60C_700_40K_R2_MVOLT.ies	16029	1	0.95	137
	C		Sroing City Lighting	APSCTR-18-10.00-S3-TN3.50/3.00-GFWW1-CU		1 LED	-	1	0.95	40

SHEET NOTES:

1. ALL SINGLE PHASE BRANCH CIRCUITING SHALL BE 2#10 & 1#10GND - 3/4"C UON. ALL THREE PHASE BRANCH CIRCUITING SHALL BE 3#10 & 1#10GND
2. ALL SITE LIGHTING SHALL BE 208V. SITE LIGHTING WIRING SHALL BE #10 MINIMUM. ALL CIRCUITED TO BOROUGH BUILDING PANEL RP1, VIA ASTRONOMICAL TIME CLOCK LOCATED IN ELECTRICAL ROOM..
3. ALL WIRING UNDER DRIVEABLE SURFACES SHALL BE ENCASED IN CONCRETE DUCTBANK. DIRECT BURIED CABLE IS ACCEPTABLE FOR LIGHTING CIRCUITS.
4. ALL SITE PUMPS CONTROLLER SHALL BE WIRED TO PANEL MP1 IN BOROUGH BUILDING. COORDINATE EXACT LOCATIONS AND POWER REQUIREMENTS WITH SITE CIVIL AND PLUMBING CONTRACTOR.
5. PROVIDE HAND HOLES FOR DIRECT BURIAL FEEDS TO LIGHTING FIXTURES AND PUMP FEEDERS BACK TO ELECTRICAL ROOM.
6. ALL SITE AND BUILDING FACADE LIGHTING SHALL BE CONTROLLED BY ASTRONOMICAL TIME CLOCK.
7. PROVIDE TYPE D1 FIXTURE FOR FLAG POLE. COORDINATE LOCATION WITH CIVIL PLANS.

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ELECTRICAL ES1.1 SITE PLAN - ES1.1

NEW MUNICIPAL BUILDINGS – COMMUNITY CENTER

BOROUGH OF FOLCROFT

ASHLAND AVE.

FOLCROFT, PA 19032

REVISIONS NO.	DESCRIPTION	DATE
.	ISSUE FOR BID	02.28.20
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DATE: 2/4/2020
SCALE: AS NOTED
DRAWN BY: VALUE
CHECKED BY: ----
PROJ. NO.:

SHEET NO. ES1.1 SHEET OF