

CODE SUMMARY

CODE DATA					
Applicable Codes IBC 2018 IEBC 2018 IMC 2018 IPC 2018 PHILADELPHIA FIRE CODE 2018 IFGC 2018 IECC 2018 ADAAG 2010					
SUMMARY		REFERENCE			
Use Group	B, S-1, R	302.1			
Construction Type	IIB	Table 601			
Fire Protection System	Sprinklered (per NFPA 13)				
IEBC 2018		REFERENCE			
Classification of Work	Level 2 Alteration	Chapter 6			

PA One Call Number: 1.800.242.1776

Accessibility Notes:

- Scope of work does not include an area of primary function

CITY OF PHILADELPHIA DEPARTMENT OF PUBLIC PROPERTY

MAYOR – JAMES F. KENNEY MANAGING DIRECTOR - TUMAR AEXANDER COMMISSIONER - DEPARTMENT OF PUBLIC PROPERTY - BRIDGET COLLINS-GREENWALD FIRE COMMISSIONER - ADAM K. THIEL

DECONTAMINATION SUITE ENGINE 72 1127 W. LOUDON ST. | PHILA., PA 19141 PROJECT No. 13-21-4643-01

BID DOCUMENTS DATE SEPTEMBER 9, 2021

ARCHITECT



Blackney Hayes Architects 150 S. Independence Mall West, Suite 1200 Philadelphia, PA 19106 phone: 215.829.0922 x119 CONTACT PERSON: Traci Luckenbill

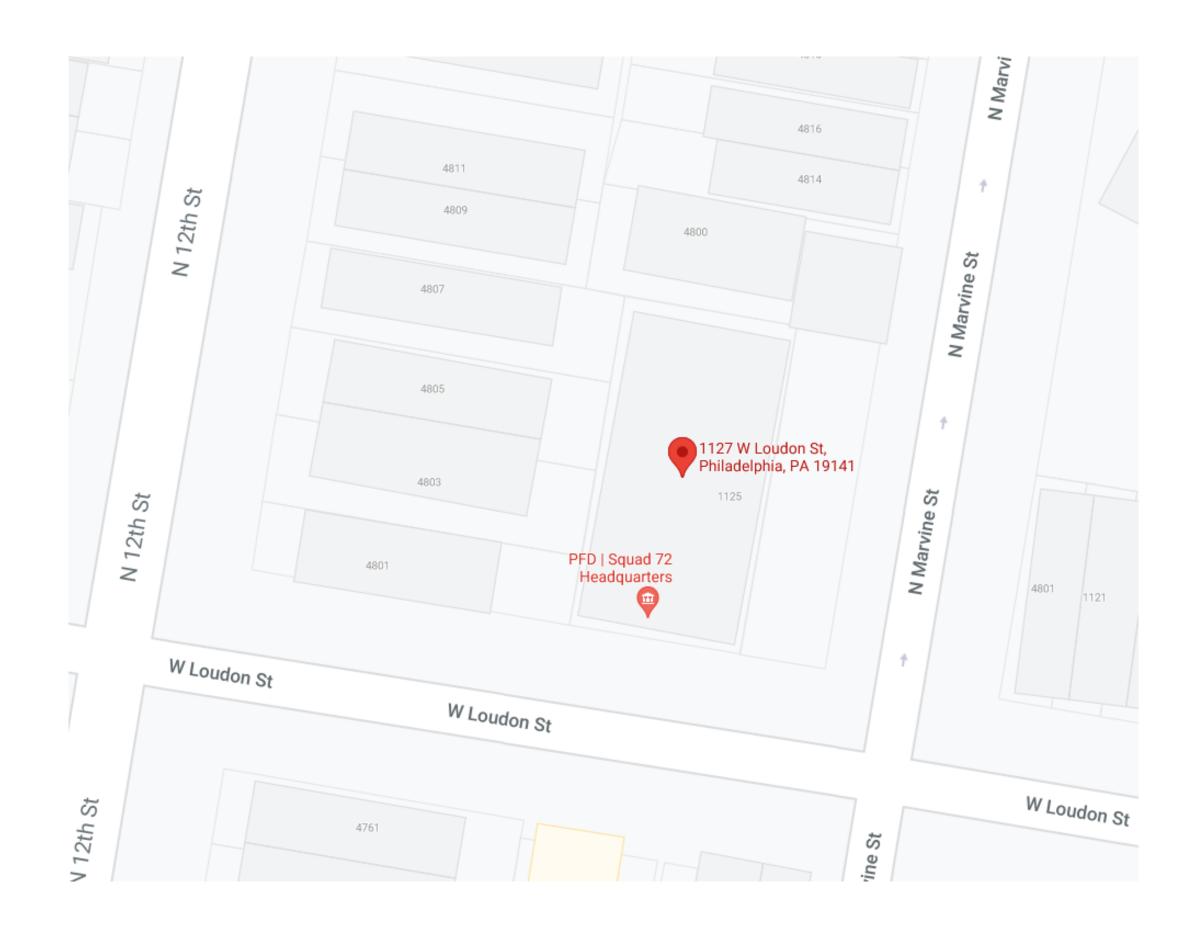
MEPFP ENGINEER

Wick Fisher White 100 N. Independence Mall West, Suite 5 SE, Philadelphia, PA, 19106-1521 phone: 215.627.0200 **CONTACT PERSON:** Charles Deal

DRAWING LIST

SHEET NO. SHEET NAME	09.09.21 ISSUE FOR BID
01-General	
CS PROJECT COVER SHEET	X
06-Demolition	I
D1.1 DEMOLITION PLANS	X
07-Architectural	
A1.1 FLOOR PLANS	X
A1.2 ENLARGED PLANS AND DOORS	X
A1.3 DETAILS	X
08-MPE	
MPE-1.1 MPE COVER SHEET	X
MPE-1.2 MECHANICAL SPECIFICATIONS	X
MPE-1.3 ELECTRICAL SPECIFICATIONS	X
09-Mechanical	
M1.2 ENLARGED PLANS, SCHEDULES & DETAILS	X
10-Plumbing	
P-1.1 FLOOR PLANS	X
P-1.2 ENLARGED PLANS	X
P-5.1 DETAILS, SCHEDULES AND DIAGRAMS	X
12-Electrical	i
E-1.1 FLOOR PLANS	X
E-1.2 ENLARGED PLANS	×
E-5.1 DETAILS AND DIAGRAMS	

LOCATION PLAN



PROJECT APPROVED

COMMISSIONER/DEPARTMENT OF PUBLIC PROPERTY

DEPUTY COMMISSIONER/DEPARTMENT OF PUBLIC PROPERTY

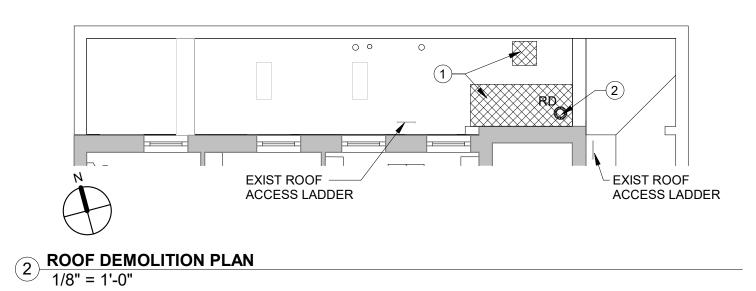
PROJECT DIRECTOR/DPP-CAPITAL PROJECTS DIVISION

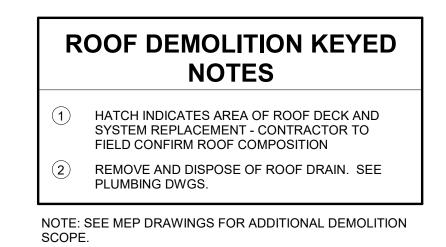
ART COMMISSION

HISTORICAL COMMISSION

CITY OF PHIL	ADELPHIA
DEPARTMENT OF PUB	LIC PROPERTY
1400 JFK BOL	JLEVARD
7TH FLOOR, C	CITY HALL
PHILADELPHIA	PENNSYLVANIA
PROJECT NO.	DRAWING NO.
13-21-4643-01	\frown
09/09/21	
SCALE	
DRAWN BY	
BH	

BHA No.: 20-105 ALL DIMENSIONS AND CONDITIONS SHALL B Verified by the contractor at the SII before proceeding with the work



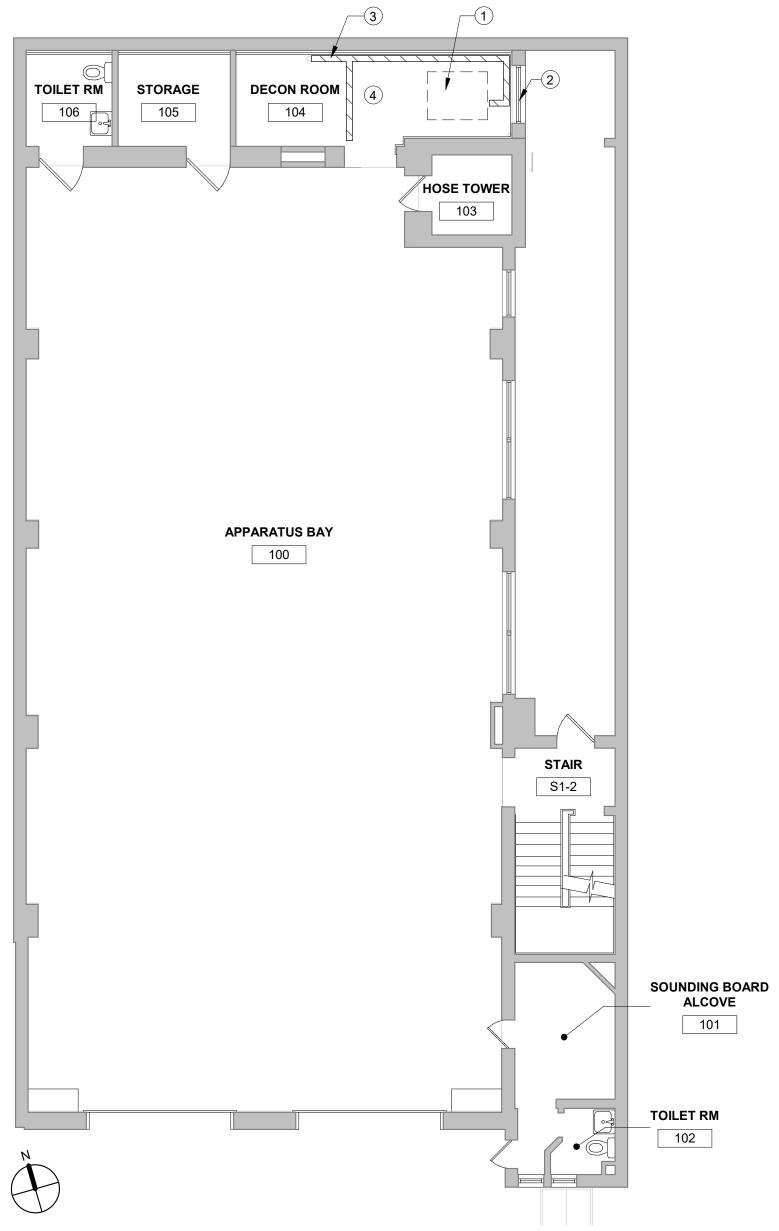


DEMO PLAN LEGEND

EXISTING WALL TO REMAIN

 \equiv \equiv \equiv EXISTING CONSTR. TO BE REMOVED

EXISTING DOOR TO REMAIN



DEMOLITION KEYED NOTES

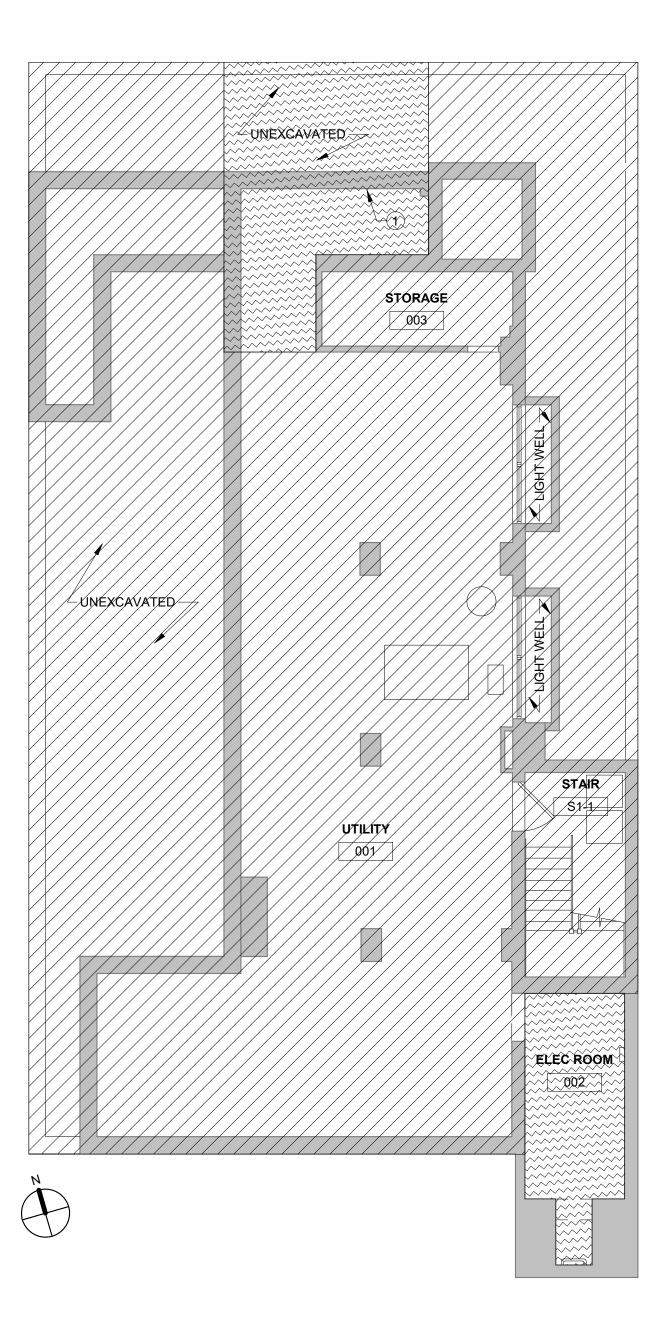
- REMOVE AND DISPOSE OF CAST-IN-PLACE EQUIPMENT PAD DOWN TO LEVEL OF SURROUNDING SLAB
- 2 REMOVE AND DISPOSE OF WINDOW
- 3 CUT CONCRETE SLAB FOR THE INSTALLATION OF UNDERSLAB PIPING - SEE PLUMBING DWGs
- 4 REMOVE PORTION OF DETERIORATED ROOF DECK AND ROOF ASSEMBLY ABOVE -COORDINATE EXTENT AND LOCATION WITH ENLARGED ROOF PLAN

NOTE: SEE MEP DRAWINGS FOR ADDITIONAL DEMOLITION SCOPE.

1 **IST FLOOR DEMOLITION PLAN** 1/8" = 1'-0"

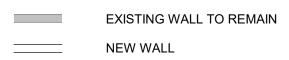
REVISIONS
09/09/21 ISSUE FOR BID
SEALS
SPACE FOR CONSULTANT RECOGNITION BLACKNEY REALTEETS Phone: 215.829.0922 x119 CONTACT PERSON: Traci Luckenbill CITY OF PHILADELPHIA DEPARTMENT OF PUBLIC PROPERTY 1400 JFK BOULEYARD TH FLOOR. CITY HALL PHILADELPHIA PROJECT TITLE ENGINE 72 DECONTAMINATION SUITE DEMOLITION PLANS
PROJECT NO. DRAWING NO.
13-21-4643-01 DATE 09/09/21 SCALE NOTED DRAWN BY BH
CHECKED BY CS BHA No.: 20-105 NOTE: ALL DIMENSIONS AND CONDITIONS SHALL BE VERIFIED BY THE CONTRACTOR AT THE SITE BEFORE PROCEEDING WITH THE WORK.

2 BASEMENT PLAN 1/8" = 1'-0"



1 **1ST FLOOR PLAN** 1/8" = 1'-0"

FLOOR PLAN LEGEND



 \square

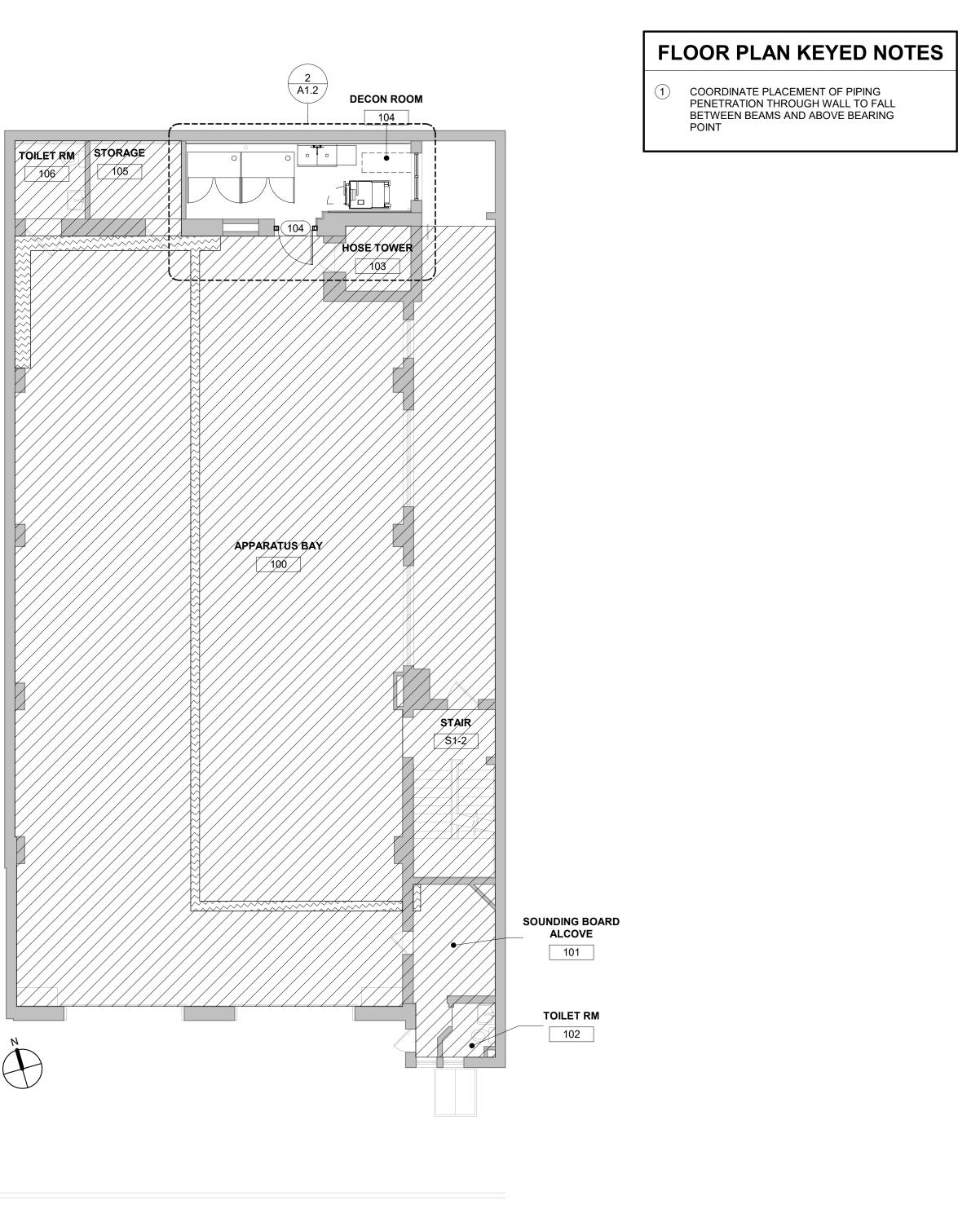
777

EXISTING DOOR TO REMAIN

NEW DOOR, SEE SCHED.

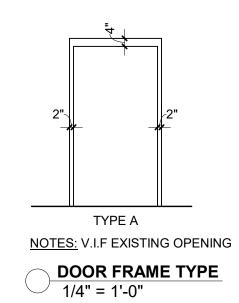
AREA NOT IN SCOPE

SEE MEP DWGS FOR ADDITIONAL SCOPE OF WORK IN THIS AREA



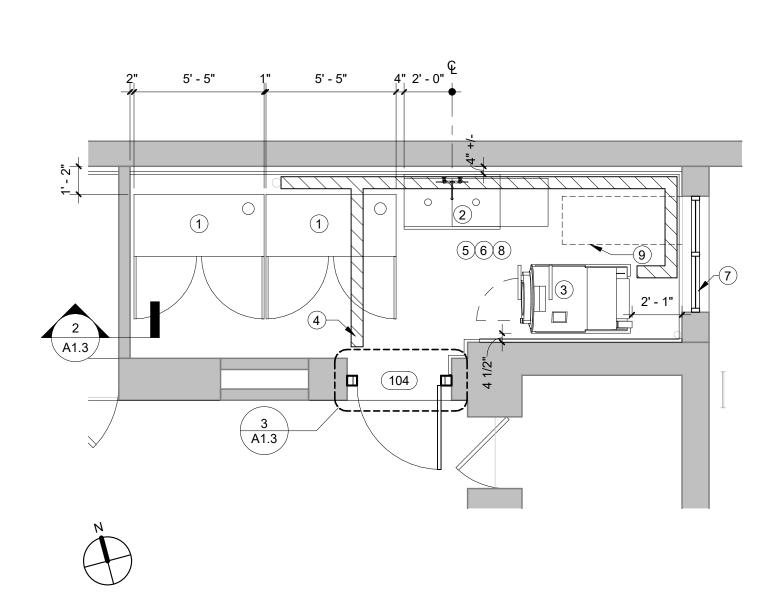
REVISIONS
09/09/21 ISSUE FOR BID
Α
PHILADELPHIA MANETO
MANETO
KYLE O'CONNOR, PROJECT MANAGER
SEALS
SPACE FOR CONSULTANT RECOGNITION
BLACKNEY
BLACKNEY HAYES ARCHITECTS
phone: 215.829.0922 x119 CONTACT PERSON: Traci Luckenbill
CITY OF PHILADELPHIA DEPARTMENT OF PUBLIC PROPERTY
7TH FLOOR, CITY HALL
PHILADELPHIA PENNSYLVANIA PROJECT TITLE
ENGINE 72 DECONTAMINATION SUITE
DRAWING TITLE FLOOR PLANS
PROJECT NO. DRAWING NO. 13-21-4643-01
DATE 09/09/21 A 1
DRAWN BY BH
CS BHA No.: 20-105

 $\overline{}$



DOOR SCHEDULE													
	ROOM LOCATION ROOM LOCATION DOOR FRAME												
DOOR NO.	DOOR TYPE	NUMBER	NAME	WIDTH	HEIGHT	MATERIAL	FINISH	FIRE RATING	TYPE	MATERIAL	FINISH	HARDWARE	COMMENTS
1ST FLOOR													
104	F	104	DECON ROOM	3' - 6"	6' - 8"	HM	PTD		A	HM	PTD	SET 1	

2 ENLARGED DECONTAMINATION ROOM PLAN 1/4" = 1'-0"

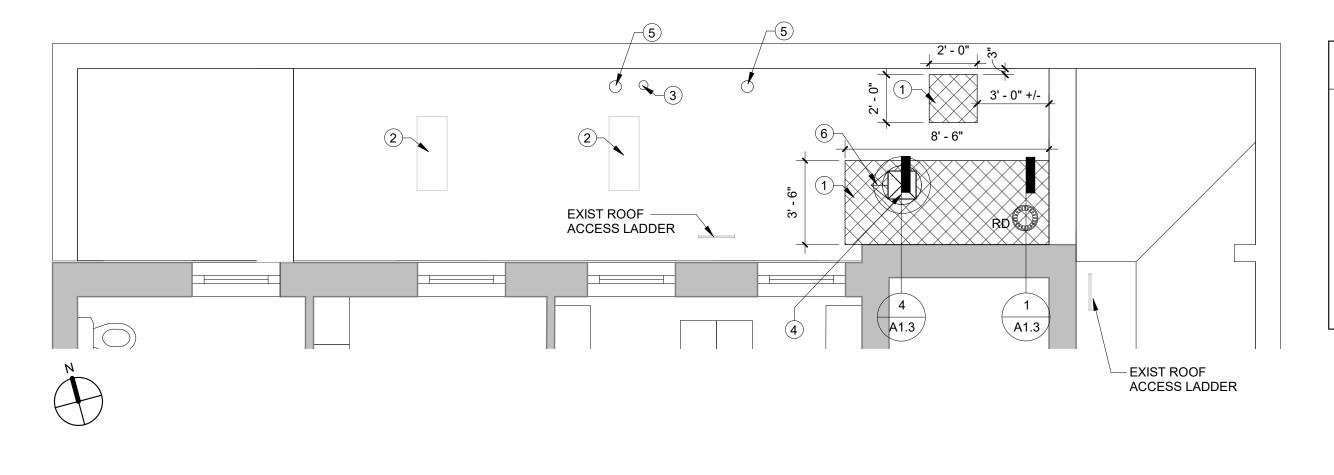




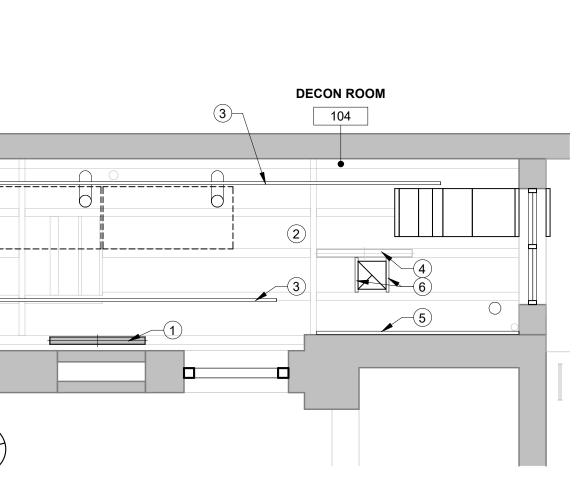


FLOOR PLAN KEYED NOTES

- 1) DRYING CABINET: ADC ECODRY ADFG-6 OF/CI
- (2) UTILITY SINK: REGENCY 600S22424B WITH REMOVABLE 24" DRAINBOARD CF/CI
- (3) WASHER EXTRACTOR: MILNOR 30022VRJ CF/CI -MOUNT TO EXISTING CONCRETE SLAB PER MANUFACTURER'S RECOMMENDATIONS
- (4) PATCH CONCRETE SLAB IN HATCHED AREA
- 5 APPLY FLOOR LEVELING COMPOUND OVER EXISTING SLAB TO ESTABLISH SLOPE TO DRAIN AND PREP FLOOR FOR EPOXY INSTALLATION
- 6 SCRAPE LOOSE PAINT FROM EXISTING MASONRY WALLS, PREP, PRIME, AND PAINT, COLOR: SHERWIN WILLIAMS CEILING BRIGHT WHITE
- 7) NEW LOUVER IN EXISTING OPENING FIELD VERIFY SIZE OF EXIST OPN'G SEE MECH DWGs
- 8 EPOXY FLOOR FINISH, COLOR: TO BE SELECTED FROM STANDARD RANGE
- (9) LINE OF DUCTWORK ABOVE



1 **ENLARGED LOW ROOF PLAN** 1/4" = 1'-0"



3 ENLARGED DECON ROOM RCP 1/4" = 1'-0"

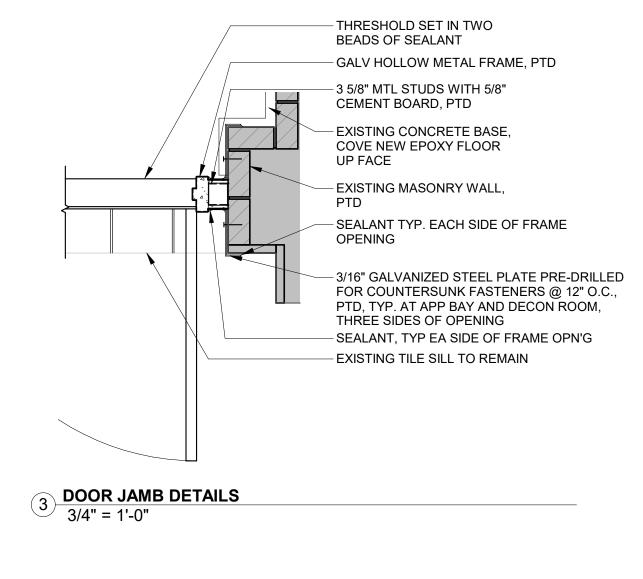
	RCP LEGEND
	SURFACE MOUNTED UTILITY LIGHT
TYPE	DESCRIPTION
E)	EXPOSED STRUCTURE - SCRAPE LOOSE PAINT, PREP SURFACES FOR REPAINTING, AND PAINT, COLOR: SHERWIN WILLIAMS CEILING BRIGHT WHITE
F	CP KEYED NOTES
(.)==	DCATE EXISTING FIXTURE TO NEW ATION AS SHOWN
(2) SCR	
2 SCR STR	ATION AS SHOWN APE, PREP, AND PAINT EXPOSED JCTURE AND ROOF DECK - PT-1 T EXPOSED SPRINKLER PIPE SAFETY
 LOC SCR STR PAIN YELL 	ATION AS SHOWN APE, PREP, AND PAINT EXPOSED JCTURE AND ROOF DECK - PT-1 T EXPOSED SPRINKLER PIPE SAFETY

NEW SUPPPLEMENTAL 2X8 WD FRAMING AT NEW ROOF OPENING

ROOF PLAN KEYED NOTES 1 HATCH INDICATES AREA OF ROOF DECK AND SYSTEM REPLACEMENT - CONTRACTOR TO FIELD CONFIRM ROOF COMPOSITION (2) EXISTING CONDENSING UNIT TO REMAIN (3) EXISTING VENT TO REMAIN (4) NEW EXHAUST FAN - SEE MECH DWGS 5 DRYER CABINET EXHAUST - NEW PENETRATION IN EXISTING ROOF SYSTEM

(6) CRICKET AT NEW ROOF PENETRATION

REVISIONS
ISSUE DATE REVISIONS 09/09/21 ISSUE FOR BID
A A A A A A A A A A A A A A A A A A A
PHILADET PHILA MANETO
KYLE O'CONNOR, PROJECT MANAGER
SEALS
SPACE FOR CONSULTANT RECOGNITION
BLACKNEY HAYES ARCHITECTS
phone: 215.829.0922 x119 CONTACT PERSON: Traci Luckenbill
CITY OF PHILADELPHIA
DEPARTMENT OF PUBLIC PROPERTY 1400 jfk boulevard
7TH FLOOR, CITY HALL Philadelphia Pennsylvania
ENGINE 72 DECONTAMINATION SUITE
ENLARGED PLANS
AND DOORS PROJECT NO. DRAWING NO.
13-21-4643-01
^{DATE} 09/09/21 Δ1 2
DRAWN BY
CHECKED BY CS BHA No.: 20-105
NOTE: All dimensions and conditions shall be Verified by the contractor at the site before proceeding with the work.



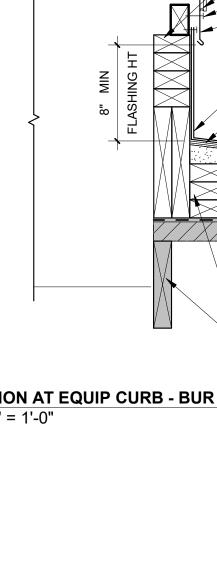
5 **DOOR HEAD DETAIL** 3/4" = 1'-0"

1

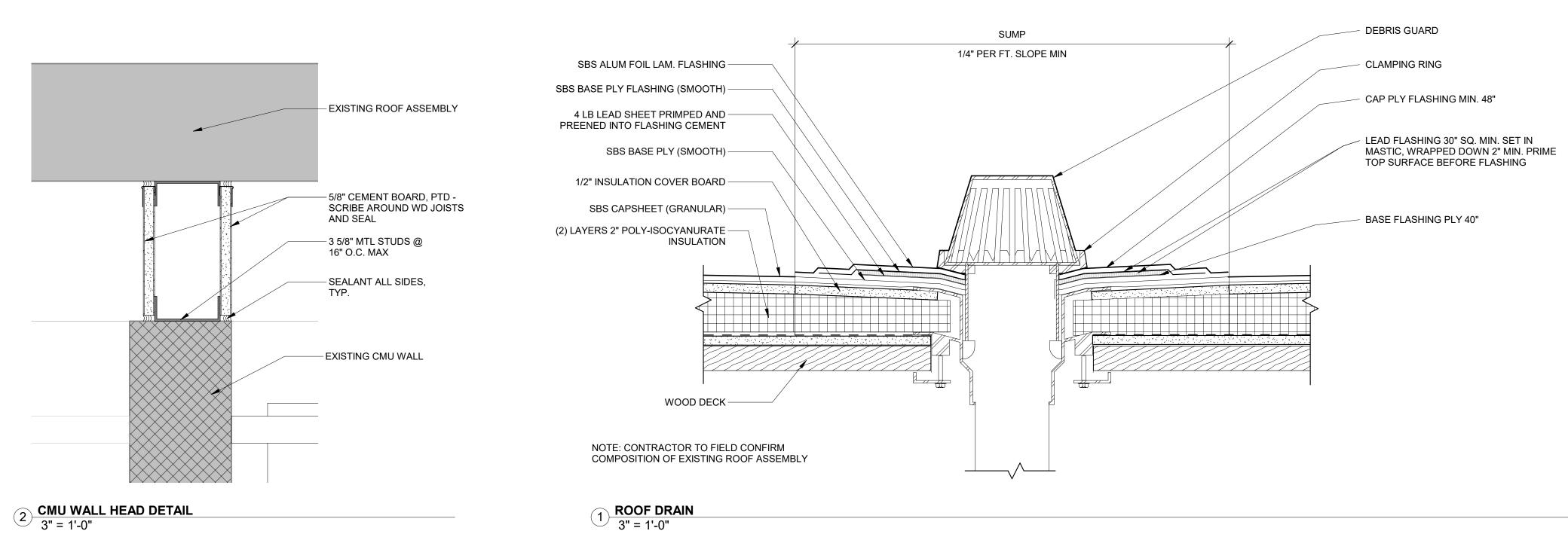
FRAME — 3/16" GALVANIZED STEEL

PLATE PRE-DRILLED FOR COUNTERSUNK FASTENERS @ 12" O.C., PTD, TYP

- EXISTING MASONRY — HOLLOW METAL FRAME SEALANT, BOTH SIDES OF



4 SECTION AT EQUIP CURB - BUR 1 1/2" = 1'-0"



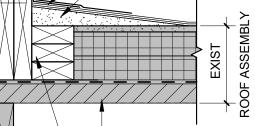
- EQUIPMENT

— BUILT-UP PT WD CURB

FASTENERS 8" O.C. MIN. TWO PER SIDE SHEET-METAL COUNTERFLASHING

ADHERED MEMBRANE FLASHING, 4" MIN ON FIELD

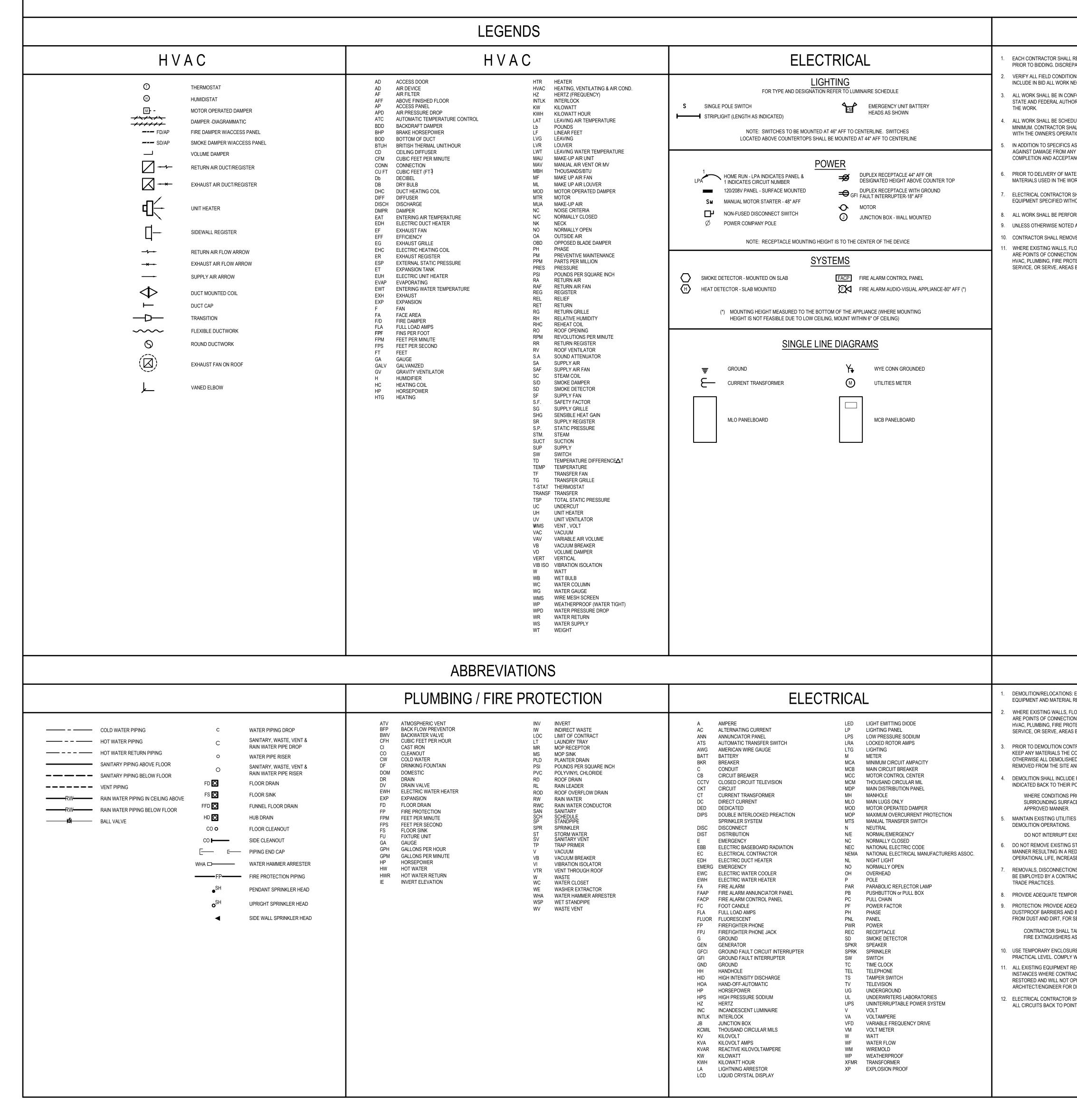
------ BACKER PLY



ROOF SUBSTRATE SUBSTRATE - OVERALL THICKNESS TO MATCH INSULATION — EXIST OR NEW ROOF FRAMING

 REVISIONS
ISSUE DATE REVISIONS 09/09/21 ISSUE FOR BID
Δ
PHILADELPHIA MANETO
Kyle o'connor, project manager
KILL O CONNOR, PROJECT MANAGER
SEALS
SPACE FOR CONSULTANT RECOGNITION
BLACKNEY HAYES ARCHITECTS
phone: 215.829.0922 x119 CONTACT PERSON: Traci Luckenbill
CITY OF PHILADELPHIA
DEPARTMENT OF PUBLIC PROPERTY 1400 jfk boulevard
PHILADELPHIA PENNSYLVANIA
PROJECT TITLE
ENGINE 72
DECONTAMINATION SUITE
DECONTAMINATION SUITE
DECONTAMINATION SUITE
DECONTAMINATION SUITE
DECONTAMINATION SUITE DRAWING TITLE DETAILS PROJECT NO. 13-21-4643-01
DECONTAMINATION SUITE DRAWING TITLE DETAILS PROJECT NO. 13-21-4643-01
DECONTAMINATION SUITE DRAWING TITLE DETAILS PROJECT NO. DRAWING NO. 13-21-4643-01 DATE 09/09/21

CITY OF PHILADELPHIA - DEPARTMENT OF PUBLIC PROPERTY **DECONTAMINATION SUITE ENGINE 72** LEGENDS **GENERAL NOTES** DRAWING LIST ELECTRICAL HVAC EACH CONTRACTOR SHALL REVIEW ALL PROJECT DOCUMENTS OF ALL TRADES REVIEWING ALL OF THE PROJECT REQUIREMENTS PRIOR TO BIDDING. DISCREPANCIES BETWEEN DOCUMENTS SHALL BE REPORTED AT THE TIME OF BID. REFER TO C.S. FOR COMPLETE DRAWING LIST VERIFY ALL FIELD CONDITIONS, ACCESS WAYS, DIMENSIONS, AND DETAILS IN THE FIELD PRIOR TO BID AND PRIOR TO FABRICATION. ACCESS DOOR HTR HEATER LIGHTING AD INCLUDE IN BID ALL WORK NECESSARY TO COVER COSTS RESULTING FROM FIELD CONDITIONS. HVAC HEATING, VENTILATING & AIR COND. AIR DEVICE AD FOR TYPE AND DESIGNATION REFER TO LUMINAIRE SCHEDULE AIR FILTER ALL WORK SHALL BE IN CONFORMANCE WITH ALL APPLICABLE LAWS, CODES AND REGULATIONS ADOPTED BY MUNICIPAL, COUNTY, HZ HERTZ (FREQUENCY) ABOVE FINISHED FLOOR INTLK INTERLÖCK STATE AND FEDERAL AUTHORITIES, UTILITY COMPANIES, INSURANCE AGENCIES AND OTHER AUTHORITIES HAVING JURISDICTION OVER **EM** EMERGENCY UNIT BATTERY AP ACCESS PANEL S SINGLE POLE SWITCH KW KILOWATT THE WORK. APD AIR PRESSURE DROP HEADS AS SHOWN KWH KILOWATT HOUR STRIPLIGHT (LENGTH AS INDICATED) ATC AUTOMATIC TEMPERATURE CONTROL LAT LEAVING AIR TEMPERATURE ALL WORK SHALL BE SCHEDULED AND COORDINATED WITH THE OWNER SO THAT DISPLIPTION TO THE AREAS INVOLVED IS KEPT TO A BDD BACKDRAFT DAMPER POUNDS MINIMUM. CONTRACTOR SHALL GIVE OWNER A MINIMUM OF 5 WORKING DAYS NOTICE OF ANY AND ALL WORK THAT WILL INTERFERE NOTE: SWITCHES TO BE MOUNTED AT 46" AFF TO CENTERLINE. SWITCHES BHP BRAKE HORSEPOWER LINEAR FEE WITH THE OWNER'S OPERATION SO A SCHEDULE SUITABLE TO THE OWNER CAN BE ARRANGED. LEAVING LOCATED ABOVE COUNTERTOPS SHALL BE MOUNTED AT 44" AFF TO CENTERLINE BOD BOTTOM OF DUCT LVG LVR LOUVER IN ADDITION TO SPECIFICS AS MAY BE DEFINED HEREINAFTER THE CONTRACTOR SHALL PROTECT THE WORK SITE AND ALL HIS WORK BTUH BRITISH THERMAL UNIT/HOUF CD CEILING DIFFUSER LWT LEAVING WATER TEMPERATURE AGAINST DAMAGE FROM ANY SOURCE (INCLUDING BUT NOT LIMITED TO WATER, DUST, HEAT, FREEZING ETC.) UNTIL FINAL CFM CUBIC FEET PER MINUTE MAU MAKE-UP AIR UNIT COMPLETION AND ACCEPTANCE BY THE OWNER. POWER MAV MANUAL AIR VENT OR M CONN CONNECTION CU FT CUBIC FEET (FT3 THOUSANDS/BTU MBH PRIOR TO DELIVERY OF MATERIALS TO THE SITE CONTRACTOR SHALL PROVIDE MATERIAL SAFETY DATA SHEETS FOR ALL ITEMS AND DUPLEX RECEPTACLE 44" AFF OR HOME RUN - LPA INDICATES PANEL & MF MAKE UP AIR FAN -₽Ø Db DECIBEL DESIGNATED HEIGHT ABOVE COUNTER TOP MATERIALS USED IN THE WORK. 1 INDICATES CIRCUIT NUMBER MAKE UP AIR LOUVER DRY BULB DB 120/208V PANEL - SURFACE MOUNTED DUPLEX RECEPTACLE WITH GROUND DHC DUCT HEATING COI MOD MOTOR OPERATED DAMPER ELECTRICAL CONTRACTOR SHALL PROVIDE MOTOR STARTERS, DRIVES AND DISCONNECT SWITCHES FOR ALL MECHANICAL DIFF DIFFUSER MTR MOTOR SM MANUAL MOTOR STARTER - 48" AFF EQUIPMENT SPECIFIED WITHOUT MOTOR STARTERS OR DISCONNECTS DISCH DISCHARGE MUA MAKE-UP AIR MOTOR NOISE CRITERIA DMPR DAMPER NON-FUSED DISCONNECT SWITCH ALL WORK SHALL BE PERFORMED IN COMPLIANCE WITH CURRENT ENVIRONMENTAL REGULATIONS EAT ENTERING AIR TEMPERATURE NORMALLY CLOSED JUNCTION BOX - WALL MOUNTED POWER COMPANY POLE EDH ELECTRIC DUCT HEATER NK NECK Ø UNLESS OTHERWISE NOTED ALL PARTS, EQUIPMENT AND MATERIALS SHALL BE NEW AND SHALL BE ASME OR UL APPROVED. NORMALLY OPEN EXHAUST FAN OUTSIDE AIR FFF EFFICIENCY OA CONTRACTOR SHALL REMOVE AND REPLACE ALL CEILINGS AS REQUIRED FOR THE INSTALLATION OF THE NEW WORI NOTE: RECEPTACLE MOUNTING HEIGHT IS TO THE CENTER OF THE DEVICE EXHAUST GRILLE OBD OPPOSED BLADE DAMPER EG WHERE EXISTING WALLS. FLOORS OR CEILINGS ARE REMOVED OR PENETRATED, AND WHERE EXISTING END WALLS OF THE BUILDING EHC ELECTRIC HEATING COIL PHASE PREVENTIVE MAINTENANCE ARE POINTS OF CONNECTION OF ADDITIONS, ALL SERVICES, PIPING, CONDUIT, CONTROL OR SWITCH DEVICES, LIGHTS, OR OTHER PM EXHAUST REGISTER SYSTEMS HVAC, PLUMBING, FIRE PROTECTION OR ELECTRICAL EQUIPMENT SHALL BE REMOVED (OR RELOCATED WHERE THEY MUST REMAIN IN PPM PARTS PER MILLION ESP EXTERNAL STATIC PRESSURE SERVICE, OR SERVE, AREAS BEYOND THE IMMEDIATE WORK) CONTRACTOR SHALL FIELD VERIFY CONDITIONS AT THE SITE. PRES PRESSURE EXPANSION TANK ET POUNDS PER SQUARE INCH PSI EUH ELECTRIC UNIT HEATER SMOKE DETECTOR - MOUNTED ON SLAB FACP FIRE ALARM CONTROL PANEL **RETURN AIR** EVAP EVAPORATING RAF RETURN AIR FAN HEAT DETECTOR - SLAB MOUNTED FIRE ALARM AUDIO-VISUAL APPLIANCE-80" AFF (*) EWT ENTERING WATER TEMPERATURE REG REGISTER EXH EXHAUST REL RELIEF EXP EXPANSION RET RETURN FAN RG RETURN GRILLE (*) MOUNTING HEIGHT MEASURED TO THE BOTTOM OF THE APPLIANCE (WHERE MOUNTING FACE AREA FΔ RH RELATIVE HUMIDITY HEIGHT IS NOT FEASIBLE DUE TO LOW CEILING, MOUNT WITHIN 6" OF CEILING) F/D FIRE DAMPER RHC REHEAT COIL FULL LOAD AMPS FLA RO ROOF OPENING FPF FINS PER FOOT RPM REVOLUTIONS PER MINUTE FPM FEET PER MINUTE SINGLE LINE DIAGRAMS RETURN REGISTER RR FPS FEET PER SECOND ROOF VENTILATOR FT FEET S.A SOUND ATTENUATOR GA GAUGE SUPPLY AIR GALV GALVANIZED SUPPLY AIR FAN GROUND WYE CONN GROUNDED SAF GRAVITY VENTILATOR GV STEAM COIL HUMIDIFIER CURRENT TRANSFORMER M SMOKE DAMPER UTILITIES METER HEATING COIL HC SMOKE DETECTOR HP HORSEPOWER HTG HEATING SUPPLY FAN S.F. SAFETY FACTOR SUPPLY GRILLE SHG SENSIBLE HEAT GAIN MLO PANELBOARD MCB PANELBOARD SR SUPPLY REGISTER S.P. STATIC PRESSURE STM. STEAM SUCT SUCTION SUP SUPPLY SW SWITCH **GENERAL GRAPHIC SYMBOLS** TEMPERATURE DIFFERENCE▲T TEMP TEMPERATURE TRANSFER FAN TRANSFER GRILLE T-STAT THERMOSTAT PLAN NUMBER TRANSF TRANSFER TSP TOTAL STATIC PRESSURE UC UNDERCUT UH UNIT HEATER UV UNIT VENTILATOR SECTION NUMBER WMS VENT, VOLT VAC VACUUM - DRAWING NUMBER VAV VARIABLE AIR VOLUME VACUUM BREAKER VOLUME DAMPER DRAWING NOTE DESIGNATION VERT VERTICAL VIB ISO VIBRATION ISOLATION $\langle 1 \rangle$ DEMOLITION NOTE DESIGNATION W WATT WB WET BULB WC WATER COLUMN POINT OF CONNECTION BETWEEN NEW WORK & WG WATER GAUGE EXISTING WORK WMS WIRE MESH SCREEN WP WEATHERPROOF (WATER TIGHT) POINT OF DEMOLITION WPD WATER PRESSURE DROP WR WATER RETURN WS WATER SUPPLY REVISION CLOUD AND NUMBER WT WEIGHT SQUARE FOOT CENTER LINE DEMOLITION NOTES ABBREVIATIONS ANGLE PLATE ----- 3HR. WALL ELECTRICAL DEMOLITION/RELOCATIONS: EACH TRADE CONTRACTOR SHALL BE RESPONSIBLE FOR DEMOLITION AND RELOCATIONS OF SERVICES, PLUMBING / FIRE PROTECTION EQUIPMENT AND MATERIAL RELATING TO THEIR RESPECTIVE TRADE. 2HR. WALL WHERE EXISTING WALLS, FLOORS OR CEILINGS ARE REMOVED OR PENETRATED, AND WHERE EXISTING END WALLS OF THE BUILDING ARE POINTS OF CONNECTION OF ADDITIONS, ALL SERVICES, PIPING, CONDUIT, CONTROL OR SWITCH DEVICES, LIGHTS, OR OTHER INV INVERT LIGHT EMITTING DIODE ATV ATMOSPHERIC VENT AMPERE LED HVAC, PLUMBING, FIRE PROTECTION OR ELECTRICAL EQUIPMENT SHALL BE REMOVED (OR RELOCATED WHERE THEY MUST REMAIN IN BACK FLOW PREVENTOR WATER PIPING DROP IW INDIRECT WASTE AC ALTERNATING CURRENT LIGHTING PANEL ———— SMOKE WALL SERVICE, OR SERVE, AREAS BEYOND THE IMMEDIATE WORK) CONTRACTOR SHALL FIELD VERIFY CONDITIONS AT THE SITE. BACKWATER VALVE LOC LIMIT OF CONTRACT LPS LOW PRESSURE SODIUM ANN ANNUNCIATOR PANEL SANITARY, WASTE, VENT & CUBIC FEET PER HOUR CFH LAUNDRY TRAY ATS AUTOMATIC TRANSFER SWITCH LOCKED ROTOR AMPS LRA RAIN WATER PIPE DROP PRIOR TO DEMOLITION CONTRACTOR SHALL REVIEW WITH OWNER ALL MATERIALS TO BE REMOVED, SHOULD THE OWNER OPT TO CAST IRON MOP RECEPTOR AWG AMERICAN WIRE GAUGE LTG LIGHTING CLEANOUT KEEP ANY MATERIALS THE CONTRACTOR SHALL REMOVE AND DELIVER THE PARTS TO THE OWNER ON THE SITE WHERE SO DIRECTED. MOP SINK WATER PIPE RISER BATT BATTERY METER М ----- EXISTING WORK OTHERWISE ALL DEMOLISHED OR REMOVED MATERIALS SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE COLD WATER PLD PLANTER DRAIN MCA MINIMUM CIRCUIT AMPACITY BKR BREAKER DRINKING FOUNTAIN PSI POUNDS PER SQUARE INCH REMOVED FROM THE SITE AND BE DISPOSED OF IN A LEGAL MANNER. SANITARY, WASTE, VENT & CONDUIT MCB MAIN CIRCUIT BREAKER NEW WORK PVC POLYVINYL CHLORIDE DOM DOMESTIC RAIN WATER PIPE RISER CIRCUIT BREAKER MOTOR CONTROL CENTER MCC DEMOLITION SHALL INCLUDE REMOVAL OF ALL PARTS AND PIECES IN THEIR ENTIRETY BACK TO POINTS INDICATED OR IF NOT DRAIN ROOF DRAIN DR RD CCTV CLOSED CIRCUIT TELEVISION MCM THOUSAND CIRCULAR MIL FD O FLOOR DRAIN INDICATED BACK TO THEIR POINT OF SOURCE. DRAIN VALVE RL RAIN LEADER CIRCUIT MDP MAIN DISTRIBUTION PANEL EWH ELECTRIC WATER HEATER ROD ROOF OVERFLOW DRAIN FLOOR SINK FS O CURRENT TRANSFORMER MH MANHOLE WHERE CONDITIONS PROHIBIT TOTAL REMOVAL OF THE WORK, THE REMAINING PORTION SHALL BE CUT FLUSH WITH THE ----- DEMOLITION WORK (ELECTRICAL) EXP EXPANSION RW RAIN WATER SURROUNDING SURFACE AND BE CAPPED, PLUGGED OR SEALED AND THE SURROUNDING SURFACE SHALL BE REFINISHED IN AN DIRECT CURRENT MLO MAIN LUGS ONLY FD FLOOR DRAIN RWC RAIN WATER CONDUCTOR FFD O FUNNEL FLOOR DRAIN MOD MOTOR OPERATED DAMPER DED DEDICATED APPROVED MANNER. FP FIRE PROTECTION SAN SANITARY DIPS DOUBLE INTERLOCKED PREACTION MOP MAXIMUM OVERCURRENT PROTECTION SCHEDULE STANDPIPE HD O HUB DRAIN SCH FPM FEET PER MINUTE MAINTAIN EXISTING UTILITIES INDICATED OR REQUIRED TO REMAIN. KEEP IN SERVICE, AND PROTECT AGAINST DAMAGE DURING **GENERAL ABBREVIATIONS** SPRINKLER SYSTEM MANUAL TRANSFER SWITCH MTS FPS FEET PER SECOND DEMOLITION OPERATIONS. SPR SPRINKLER DISC DISCONNECT NFUTRAI CO **O** FLOOR CLEANOUT FLOOR SINK STORM WATER SANITARY VEN DIST DISTRIBUTION N/E NORMAL/EMERGENCY DO NOT INTERRUPT EXISTING UTILITIES SERVING OCCUPIED OR USED FACILITIES, EXCEPT WHEN SCHEDULED WITH THE OWNER. FIXTURE UNIT SIDE CLEANOUT CO **—**—— EMERGENCY NORMALLY CLOSED NC GAUGE GA DO NOT REMOVE EXISTING STRUCTURAL WORK. DO NOT REMOVE OPERATIONAL ELEMENTS AND SAFETY-RELATED COMPONENTS IN A TRAP PRIMER EBB ELECTRIC BASEBOARD RADIATION NATIONAL ELECTRIC CODE ABV LENGTH NEC ABOVE GPH GALLONS PER HOUR VACUUM MANNER RESULTING IN A REDUCTION OF CAPACITIES TO PERFORM IN THE MANNER INTENDED OR RESULTING IN DECREASED PIPING END CAP ELECTRICAL CONTRACTOR NEMA NATIONAL ELECTRICAL MANUFACTURERS ASSOC. AFF ABOVE FINISHED FLOOR GPM GALLONS PER MINUTE POUND(S) Lb VACUUM BREAKER OPERATIONAL LIFE, INCREASED MAINTENANCE, OR DECREASED SAFETY. EDH ELECTRIC DUCT HEATER NIGHT LIGHT AVG AVERAGE NL WATER HAMMER ARRESTER HP HORSEPOWER VIBRATION ISOLATOR EMERG EMERGENCY NORMALLY OPEN NO HW HOT WATER REMOVALS. DISCONNECTIONS, AND RELOCATIONS SHALL BE PERFORMED BY WORKMEN SKILLED IN THE TRADE INVOLVED AND SHALL MAX. MAXIMUM VTR VENT THROUGH ROOF BLW BELOW EWC ELECTRIC WATER COOLER OVERHEAD HWR HOT WATER RETURN OH FP FIRE PROTECTION PIPING BE EMPLOYED BY A CONTRACTOR LICENSED IN THE TRADE INVOLVED. ALL WORK SHALL BE DONE IN ACCORDANCE WITH ACCEPTED MECHANICAL CONTRACTOR W WASTE WC WATER CLOSET M.C. BSMT BASEMENT EWH ELECTRIC WATER HEATER POLE IE INVERT ELEVATION TRADE PRACTICES. MECH. MECHANICAL FA FIRE ALARM PAR PARABOLIC REFLECTOR LAMP PENDANT SPRINKLER HEAD WE WASHER EXTRACTOR CLG CEILING MFR. MANUFACTURER FAAP FIRE ALARM ANNUNCIATOR PANEL PUSHBUTTON or PULL BOX PB PROVIDE ADEQUATE TEMPORARY SUPPORT FOR WORK TO REMAIN, TO PREVENT FAILURE. DO NOT ENDANGER OTHER WORK. WHA WATER HAMMER ARRESTER FACP FIRE ALARM CONTROL PANEL COL COLUMN MIN. MINIMUM PULL CHAIN WSP WET STANDPIPE UPRIGHT SPRINKLER HEAD FC FOOT CANDLE PROTECTION: PROVIDE ADEQUATE PROTECTION WHERE REQUIRED FOR THE PRESENT BUILDING AND ITS CONTENTS. TEMPORARY POWER FACTOR CONC. CONCRETE MTD. MOUNTED WV WASTE VENT FLA FULL LOAD AMPS PHASE DUSTPROOF BARRIERS AND BARRICADES SHALL BE ERECTED WHERE REQUIRED FOR PROTECTION OF PERSONNEL, PROTECTION PH CONTR. CONTRACTOR SIDE WALL SPRINKLER HEAD FROM DUST AND DIRT, FOR SECURITY, FIRE AND WEATHER PROTECTIVE REASONS. FLUOR FLUORESCENT PANEL PNL NEW (N) FP FIREFIGHTER PHONE PWR POWER DIA DIAMETER NOT APPLICABLE N/A CONTRACTOR SHALL TAKE EVERY PRECAUTION AGAINST FIRE BY EMPLOYING FIRE DEPARTMENT TYPE HOSES AND PORTABLE FPJ FIREFIGHTER PHONE JACK REC RECEPTACLE DN DOWN NIC NOT IN CONTRACT FIRE EXTINGUISHERS AS REQUIRED BY OSHA OR THE OWNER'S INSURANCE UNDERWRITER. GROUND SMOKE DETECTOR DP DEEP NOT TO SCALE NTS GEN GENERATOR SPEAKER SPKR DWG. DRAWING D. USE TEMPORARY ENCLOSURES, OR OTHER SUITABLE METHODS TO LIMIT DUST AND DIRT RISING AND SCATTERING TO LOWEST GFCI GROUND FAULT CIRCUIT INTERRUPTER SPRK SPRINKLER 0.C. ON CENTER PRACTICAL LEVEL. COMPLY WITH GOVERNING REGULATIONS PERTAINING TO ENVIRONMENTAL PROTECTION. GROUND FAULT INTERRUPTER SW SWITCH EXISTING OUTSIDE DIAMETER OD TIME CLOCK GND GROUND ALL EXISTING EQUIPMENT REQUIRED TO BE REUSED SHALL BE CLEANED. RECONDITIONED. CALIBRATED AND ADJUSTED. IN ALI EA EACH OPG. OPENING HANDHOLE TELEPHONE TEL INSTANCES WHERE CONTRACTOR FINDS THAT EXISTING EQUIPMENT IS DEFECTIVE TO THE POINT WHERE IT CANNOT BE PROPERLY HID HIGH INTENSITY DISCHARGE TAMPER SWITCH EC ELECTRICAL CONTRACTOR RESTORED AND WILL NOT OPERATE PROPERLY, HE SHALL REPORT THE SPECIFIC INSTRUMENTS OR EQUIPMENT TO THE PC PLUMBING CONTRACTOR HOA HAND-OFF-AUTOMATIC TELEVISION ELEC. ELECTRIC ARCHITECT/ENGINEER FOR DIRECTIONS. HP HORSEPOWER UNDERGROUND UG EQUIP. EQUIPMENT REMOVE EXISTING (R) HPS HIGH PRESSURE SODIUM UNDERWRITERS LABORATORIES 12. ELECTRICAL CONTRACTOR SHALL RING OUT AND IDENTIFY ALL CIRCUITS REMAINING IN CONTRACT AREA, AFTER DEMOLITION. REMOVE (ER) EXISTING TO BE RELOCATED RELOCATED EXISTING (RE) HZ HERTZ UPS UNINTERRUPTABLE POWER SYSTEM ALL CIRCUITS BACK TO POINT OF SOURCE. MARK PANEL CIRCUITS NO LONGER IN USE "SPARE". INC INCANDESCENT LUMINAIRE FL. VOLT FLOOR V SQ. FT. SQUARE FEET (FOOT) VOLTAMPERE INTLK INTERLOCK VA SPEC. SPECIFICATION GAL GALLON(S) JB JUNCTION BOX VFD VARIABLE FREQUENCY DRIVE STL. STEEL GENERAL CONTRACTOR G.C. KCMIL THOUSAND CIRCULAR MILS VM VOLT METER KV KILOVOLT WATT W TYP HOR TYPICAL HORIZONTAL WATER FLOW KVA KILOVOLT AMPS WF HR HOUR KVAR REACTIVE KILOVOLTAMPERE WM WIREMOLD VERT. VERTICAL HT HEIGHT KW KILOWATT WP WEATHERPROOF KWH KILOWATT HOUR XFMR TRANSFORMER WIDTH W INSIDE DIAMETER ID LA LIGHTNING ARRESTOR XP EXPLOSION PROOF WITH W/ IN. INCH LCD LIQUID CRYSTAL DISPLAY WT WEIGHT INCL. INCLUDING



KYLE O'CONNOR, PROJECT MANAGER
SPACE FOR CONSULTANT RECOGNITION B L A C K N E Y H A Y E S A R C H I T E C T S Federal Reserve Bank Building 100 North Independence Mall West Suite 5 SE - Philadelphia, PA 19106 215-627-0200 - wickfisherwhite.com Project No. 200151-000
CITY OF PHILADELPHIA DEPARTMENT OF PUBLIC PROPERTY 1400 JFK BOULEVARD 7TH FLOOR, CITY HALL PHILADELPHIA PENNSYLVANIA
ENGINE 72 DECONTAMINATION SUITE DRAWING TITLE MPE COVER
SHEET PROJECT NO. DATE 09/09/21 SCALE NOTED DRAWN BY WFW CHECKED BY WFW BHA No.: 20-150 NOTE: ALL DIMENSIONS AND CONDITIONS SHALL BE YERIFIED BY THE CONTRACTOR AT THE SITE BEFORE PROCEEDING WITH THE WORK.

DRAWING SPECIFICATIONS - MECHANICAL (DIVISION 15)

- SECTION 15001 SUMMARY OF THE WORK
- WORK UNDER DIVISION 15 SHALL INCLUDE, BUT NOT BE LIMITED TO, THE FOLLOWING: HEATING, VENTILATING, PIPING AND FURNISHING A NEW GEAR WASHING UNOCCUPIED LAUNDRY ROOM, M.C. AND P.C. WILL BE RESPONSIBLE FOR INSTALLING ALL OWNER SELECTED EQUIPMENT AS WELL AS PROVIDING HEAT DRAINAGE AND WATER FOR ALL EQUIPMENT, WORK ALSO INCLUDE MINOR MODIFICATIONS TO EXISTING FIRE PROTECTION SYSTEM OF THE WORKING AREA

ADDITIONALLY, THE WORK WILL INCLUDE CONTROL WIRING OF AN ABOVE AVERAGE

SECTION 15010 - BASIC MECHANICAL REQUIREMENTS

COMPLEXITY

- THE CONTRACTOR SHALL PROVIDE ALL LABOR, MATERIAL, EQUIPMENT AND SERVICES FOR THE PROPER INSTALLATION AND OPERATION OF THE MECHANICAL PLUMBING AND FIRE PROTECTION WORK AS INDICATED ON THE DRAWINGS
- THE CONTRACTOR SHALL PROVIDE ALL LABOR, EQUIPMENT AND SERVICES NECESSARY FOR REMOVAL OR RELOCATION OF EXISTING MECHANICAL EQUIPMENT AS REQUIRED BY THE PROJECT.
- TEST AND OPERATE ALL SYSTEMS TO DEMONSTRATE TO THE OWNER, OR HIS DESIGNATED REPRESENTATIVE, THAT THE INSTALLATION OF THESE SYSTEMS CONFORM TO DESIGN INTENT.
- . THE CONTRACTOR SHALL COMPLY WITH ALL RULES AND REGULATIONS OF THE OWNER, LOCAL, STATE AND FEDERAL LAWS, ORDINANCES, RULES AND REGULATIONS APPLICABLE TO THE WORK SHOWN OR SPECIFIED, AND WITH THE RULES OF THE NATIONAL FIRE PROTECTION ASSOCIATION, THE OWNER'S UNDERWRITER, AND ALL PUBLIC UTILITIES HAVING CONNECTION WITH ANY OF THE VARIOUS SYSTEMS HEREIN SPECIFIED. WHERE APPLICABLE, ALL EQUIPMENT SHALL CARRY THE LABEL OF THE UNDERWRITERS LABORATORIES, INC.
- THE CONTRACTOR SHALL GIVE ALL NECESSARY NOTICES. OBTAIN, PAY FOR AND DELIVER ALL PERMITS. CERTIFICATES OF INSPECTION. AND PAY ALL COSTS. REQUIRED BY THE AUTHORITIES HAVING JURISDICTION. DELIVER ALL PERMITS CERTIFICATES AND APPROVALS TO THE OWNERS AGENT PRIOR TO FINAL ACCEPTANCE OF THE WORK. THE CONTRACTOR MUST FILE NECESSARY DRAWINGS, PREPARE DOCUMENTS AND MAKE APPLICATION FOR EACH REQUIRED PERMIT AND INSPECTION, PRIOR TO COMMENCING WORK TO AVOID DELAYS DURING CONSTRUCTION.
- BEFORE SUBMITTING HIS BID. THE CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS IN THE FIELD. FAILURE TO DO SO WILL NOT RELIEVE THE CONTRACTOR OF HIS OBLIGATION TO PAY FOR ALL COSTS THAT MAY BE INCURRED DUE TO THE RELOCATION, REMOVAL OR MODIFICATION OF ANY PART OF THE EXISTING MECHANICAL, PLUMBING AND FIRE PROTECTION WORK THAT MAY BE REQUIRED, OR ANY CONDITION THAT MAY AFFECT THE COST OF INSTALLING THE NEW WORK.
- IT IS THE INTENTION OF THE DRAWINGS AND SPECIFICATIONS TO CALL FOR CLEAR FINISHED WORK, TESTED AND READY FOR OPERATION, ANY INCIDENTAL ACCESSORIES NECESSARY TO MAKE THE WORK COMPLETE AND PERFECT IN ALL RESPECTS AND READY FOR OPERATION, EVEN IF NOT PARTICULARLY SPECIFIED OR SHOWN. SHALL BE PROVIDED WITHOUT ADDITIONAL EXPENSE. MINOR DETAILS NOT USUALLY SHOWN OR SPECIFIED, BUT MANIFESTLY NECESSARY FOR THE PROPER INSTALLATION AND OPERATION OF THE VARIOUS SYSTEMS, SHALL BE INCLUDED IN THE WORK, THE SAME AS IF SPECIFIED OR SHOWN ON THE DRAWINGS.
- . SUBMIT ELECTRONIC COPIES OF SHOP DRAWINGS. SHOP DRAWINGS SHALL INCLUDE PLANS, ELEVATIONS, SECTIONS, MOUNTING DETAILS OF COMPONENT PARTS, PIPING AS-BUILTS, DIAGRAMS, CONTROL WIRING AND ANY OTHER DRAWINGS NECESSARY TO SHOW THE FABRICATION AND CONNECTION OF THE COMPLETE ITEM OR SYSTEM. SHOP DRAWINGS SHALL BE CLEARLY MARKED, INDICATING THE MODEL NUMBER OF THE ITEM SUBMITTED, AND ANY AND ALL OPTIONS THAT ARE INCLUDED. THE FOLLOWING SHOP DRAWINGS SHALL BE SUBMITTED FOR ENGINEERING REVIEW AND APPROVAL:
- A. FIRE PROTECTION SYSTEMS
- B. SHEET METAL WORK
- MECHANICAL EQUIPMENT ROOMS PAD AND EQUIPMENT LAYOUTS (SHOWING ELECTRICAL PANELS AND GEAR OR SIMILAR LARGE COMPONENTS IN THE AREA PROVIDED UNDER OTHER TRADES)
- D. AUTOMATIC TEMPERATURE CONTROLS
- E. INSULATION
- F. HVAC SYSTEMS AND COMPONENTS
- G. PLUMBING FIXTURES, PIPING, VALVES AND APPURTENANCES
- H. GRILLES, REGISTERS AND DIFFUSERS
- I. SPECIALTIES
- J. VALVES
- K. SUPPORTS AND ANCHORS
- L. FIRESTOPPING
- M. FILTERS N. CONTROL WIRING DIAGRAMS
- O. LINTEL DETAILS
- P. STEEL SUPPORTS AND PLATFORMS
- Q. CONCRETE FOUNDATIONS
- R. PLUMBING SUPPLY AND DRAINAGE PIPING AS-BUILT DRAWINGS.
- S. OTHER ITEMS AS MAY BE REQUESTED BY THE OWNER'S AGENT RECORD DRAWINGS SHALL BE KEPT IN THE CONTRACTOR'S JOB SITE OFFICE FROM THE BEGINNING OF THE WORK, SHALL BE MAINTAINED DAILY AND SHALL BE PRODUCED FOR INSPECTION BY THE OWNER OR HIS AGENTS UPON DEMAND. AT THE COMPLETION OF THE PROJECT, BIND THE PRINTS INTO A SET AND FORWARD THEM TO THE OWNER'S AGENT. THE RECORD DRAWINGS SHALL CONSIST OF A SEPARATE SET OF WHITE PRINTS OF THE CONTRACT DRAWINGS ON WHICH SHALL BE RECORDED IN INK OR COLORED PENCIL THE FOLLOWING:
- A. PIPING RUNS THAT VARY FROM DESIGN.
- B. VALVE LOCATIONS.
- C. DEVICE LOCATIONS
- D. ALL WORK ADDED TO THE CONTRACT BY LAYOUT DRAWINGS, FIELD SKETCHES, ADDENDUM OR CHANGE ORDER.
- E. CONTROL WIRING DIAGRAMS.
- 10. BEFORE COMPLETION OF THE INSTALLATION, THE CONTRACTOR SHALL FURNISH THREE COPIES OF MANUALS COVERING IN DETAIL ALL REQUIRED INSTRUCTIONS FOR THE OPERATION OF THE SYSTEMS PROVIDED.
- . FURNISH ALL LABOR REQUIRED BY THE OWNER'S AGENT, AND OR INSPECTION AGENCIES IN MAKING EXAMINATION OF WORK, DURING THE COURSE OF CONSTRUCTION.
- 2. THE CONTRACTOR SHALL FURNISH A WRITTEN WARRANTY FOR THIS INSTALLATION, SUBSTANTIALLY STATING THAT ALL MATERIALS, EQUIPMENT, FIXTURES AND APPURTENANCES AND THE SYSTEMS WHICH THEY COMPRISE ARE FREE FROM INHERENT DEFECTS OR FLAWS IN WORKMANSHIP OR OPERATION, AND ARE FUNCTIONING PROPERLY AND CAPABLE OF PROVIDING SATISFACTORY OPERATION IN ACCORDANCE WITH DESIGN CONDITIONS. ANY DEFECTS IN WORKMANSHIP DEFECTIVE MATERIALS. MALFUNCTION OF EQUIPMENT OR UNSATISFACTORY PERFORMANCE, AND ALL OTHER WORK DAMAGED THEREBY, SHALL BE REPAIRED REPLACED OR OTHERWISE REMEDIED WITHOUT EXPENSE TO THE OWNER. SUCH REPAIRS OR REPLACEMENTS SHALL BE MADE WITHIN REASONABLE TIME AND AT THE CONVENIENCE OF THE OWNER, SUCH WARRANTY SHALL BE IN EFFECT FOR A PERIOD OF ONE YEAR FROM DATE OF ACCEPTANCE OF THE SYSTEMS AS A WHOLE.
- MATERIAL OR EQUIPMENT SPECIFIED BY MANUFACTURER, BRAND NAME, TYPE OR CATALOG NUMBER, ARE DESIGNED TO ESTABLISH STANDARDS OF DESIRED. QUALITY, STYLE, PERFORMANCE, ELECTRICAL, MECHANICAL AND PHYSICAL CHARACTERISTICS, AND DIMENSIONS. SUBSTITUTION OF ANY ITEMS SO SPECIFIED WILL NOT BE PERMITTED WITHOUT THE WRITTEN APPROVAL OF THE OWNER'S AGENT. WHERE THE SUBSTITUTION REQUIRES ANY REDESIGN OR RELOCATION OF THE STRUCTURES, FOUNDATIONS, PARTITIONS, PIPING, RACEWAYS, WIRING OR ANY OTHER PART OF THE MECHANICAL, ELECTRICAL, STRUCTURAL OR ARCHITECTURAL WORK, ALL SUCH REDESIGN AND ALL THE NEW DRAWINGS AND DETAILS REQUIRED SHALL BE PREPARED BY THE CONTRACTOR AT HIS OWN EXPENSE AND SUBMITTED FOR THE APPROVAL OF THE OWNER'S AGENT. ALL SUCH ADDITIONAL WORK AND ANY ADDITIONAL EQUIPMENT FOR THESE SYSTEMS SHALL BE PROVIDED AT THE EXPENSE OF THE CONTRACTOR.
- 14. THE CONTRACTOR SHALL PROVIDE. UPON REQUEST. COPIES OF MATERIAL SAFETY DATA SHEETS FOR ANY MATERIAL OR PRODUCT USED IN THE WORK AND NOT SUPPLIED BY THE OWNER. MSDS SHEETS SHALL BE PROVIDED PRIOR TO DELIVERY OF MATERIALS TO THE JOB SITE.
- 15. WORKMANSHIP SHALL BE FIRST CLASS IN EVERY RESPECT AND SHALL BE PERFORMED BY TRADESMAN SKILLED IN THE PARTICULAR AREA OF THE WORK AND IN STRICT ACCORDANCE WITH ALL APPLICABLE LOCAL, STATE OR PUBLIC UTILITY LAWS, ORDINANCES OR REGULATIONS.
- 16. THE CONTRACTOR SHALL EFFECTIVELY PROTECT THE EXISTING BUILDING. ITS CONTENTS AND ALL HIS NEW WORK AGAINST DAMAGE FROM ANY SOURCE RELATED TO THIS CONTRACT UNTIL FINAL COMPLETION AND ACCEPTANCE BY THE OWNER. THE CONTRACTOR SHALL REPAIR OR REPLACE ANY DAMAGED WORK AT HIS EXPENSE AND TO THE SATISFACTION OF THE OWNER'S AGENT.
- 17. AT ALL TIMES, KEEP THE PREMISES FREE FROM ACCUMULATION OF WASTE MATERIAL AND RUBBISH CAUSED BY AGENTS AND EMPLOYEES OF THE CONTRACTOR
- 18. THE CONTRACTOR SHALL NOT PERFORM ANY FUNCTIONS WHICH WILL INTERRUPT MECHANICAL OR FLECTRICAL SERVICES WITHOUT PRIOR APPROVAL OF THE OWNER. NECESSARY INTERRUPTIONS SHALL BE REVIEWED, SCHEDULED AND APPROVED BY THE OWNER. DURING PARTIAL OR FULL OCCUPANCY OF THE FACILITY, ALL WORK SHALL BE SCHEDULED AND COORDINATED WITH THE OWNER SO THAT DISRUPTION TO THE AREAS INVOLVED IS KEPT TO A MINIMUM. THE CONTRACTOR SHALL GIVE THE OWNER A MINIMUM OF FIVE WORKING DAYS NOTICE OF ANY AND ALL WORK THAT WILL INTERFERE WITH THE OWNER'S OPERATION SO A SCHEDULE SUITABLE TO THE OWNER CAN BE ARRANGED. ANY ACCIDENTAL INTERRUPTIONS TO SERVICES SHALL BE REPAIRED IMMEDIATELY BY THE CONTRACTOR WITHOUT ADDITIONAL COST TO THE OWNER.

- 19. PROVIDE SCAFFOLDING, LADDERS, RIGGING, HOISTING AND ALL OTHER EQUIPMENT REQUIRED FOR THE INSTALLATION OF THE WORK.
- 20. ESTABLISH PASSAGE CLEARANCES REQUIRED TO DELIVER, INSTALL AND ERECT ALL REQUIRED EQUIPMENT. IF STRUCTURES, EQUIPMENT AND SYSTEMS MUST BE ALTERED TO PROVIDE PASSAGE OF EQUIPMENT. THE CONTRACTOR SHALL RESTORE STRUCTURES, EQUIPMENT AND SYSTEMS TO THEIR ORIGINAL CONDITION, AT THE CONTRACTOR'S EXPENSE.
- 21. AT THE COMPLETION OF THE PROJECT, THE CONTRACTOR SHALL MAKE A THOROUGH INSPECTION OF ALL THE MECHANICAL, PLUMBING AND FIRE PROTECTION WORK, AT THE FINAL INSPECTION, ALL SYSTEMS MUST BE 100 PERCENT COMPLETE AND TESTS SHALL BE PERFORMED IN STRICT COMPLIANCE WITH EACH EQUIPMENT MANUFACTURER'S STANDARD TEST PROCEDURES ALL INSTRUMENTS, METERS, WIRING, PERSONNEL, ETC., REQUIRED FOR TESTING SHALL BE INCLUDED UNDER THIS CONTRACT.
- 22. PROVIDE SERVICES OF MANUFACTURER'S FACTORY ENGINEERS TO SUPERVISE INSTALLATION. FINAL CONNECTIONS AND TESTING. PROVIDE SERVICES OF FACTORY ENGINEERS OR REPRESENTATIVES WHO WILL GIVE FULL INSTRUCTIONS AND DEMONSTRATIONS IN THE OPERATION AND MAINTENANCE OF ALL THE MECHANICAL SYSTEMS AND EQUIPMENT INSTALLED TO THE DESIGNATED REPRESENTATIVE OF THE OWNER.
- SECTION 15015 CUTTING AND PATCHING NEW OPENINGS THROUGH MASONRY WALLS SHALL BE SUPPORTED, FRONT AND BACK. BY ANGLE IRON LINTELS. PROVIDE NEW LINTELS IF EXISTING OPENINGS TO
- BE UTILIZED ARE NOT SUITABLY SUPPORTED. OPENINGS THROUGH FLOORS FOR PIPING SHALL BE CORE BORED.
- AT ALL PENETRATIONS OF WALLS, PARTITIONS, CEILING OR FLOOR CONSTRUCTION, COMPLETE SEAL VOIDS WITH ULL FIRE-RATED MATERIAL TO FULL THICKNESS OF THE PENETRATED ELEMENTS, RESTORING THE AREA TO MAINTAIN THE SPECIFIED LEVEL OF INTEGRITY OF THE AREA PENETRATED.
- WHERE NEW OPENINGS ARE CREATED BY THE DEMOLITION OF DUCTWORK. PIPING. ETC., COMPLETELY SEAL VOIDS WITH U.L. FIRE-RATED MATERIAL TO FULL FHICKNESS OF THE OPENING IN ELEMENTS. RESTORING THE AREA TO MAINTAIN THE SPECIFIED LEVEL OF INTEGRITY OF THE AREA PENETRATED.
- REFINISH CUT SURFACES TO MATCH ADJACENT FINISH.
- 6. PROVIDE DUST CONTAINMENT PARTITIONS AND TEMPORARY EXHAUST SYSTEMS TO MAINTAIN A NEGATIVE PRESSURE WITHIN THE WORK AREA. SECTION 15020 - EXCAVATION
- EACH CONTRACTOR SHALL PROVIDE ALL EXCAVATIONS, LABOR, MATERIAL, SHORING, SHEETS, BRACING, BACKFILL, DISPOSAL AND RESTORATION OF SERVICES RELATING TO THEIR RESPECTIVE TRADE.
- 2. INSTALL AND OPERATE TEMPORARY PUMPS TO KEEP THE EXCAVATION DRY.
- BACKFILL SHALL BE CLEAN EARTH, FREE OF ROCK, STONES AND DEBRIS. SURPLUS EARTH SHALL BE REMOVED FROM THE SITE.
- . EXCAVATE TO PROVIDE MINIMUM PRACTICAL, BUT ADEQUATE, WORKING CLEARANCES
- DO NOT EXCAVATE BEYOND REQUIRED DEPTHS, AND HAND-EXCAVATE BOTTOM CUT TO ACCURATE ELEVATIONS.
- 6. DO NOT BACKFILL UNTIL INSTALLED WORK HAS BEEN TESTED AND ACCEPTED.
- UNLESS NOTED OTHERWISE, THE CONTRACT SHALL BE BASED ON UNCLASSIFIED EXCAVATION.
- 8. SCHEDULE EXCAVATION TO AVOID DISRUPTION OF ACCESS TO THE SITE, PROVIDING SUITABLE COVERPLATES FOR VEHICULAR ACCESS AND/OR PEDESTRIAN ACCESS AS REQUIRED.
- . SHOULD EXCAVATION PROCESS UNCOVER CONTAMINATED SOIL, HAZARDOUS MATERIAL, OR UNSTABLE SOIL, THIS CONTRACTOR SHALL STOP WORK AND NOTIFY THE OWNER'S AGENT FOR DIRECTION.
- 10. ALL SURFACES, DRIVEWAYS, LAWNS, SIDEWALKS, AND SO ON, DAMAGED BY EXCAVATION WORK UNDER THIS CONTRACTOR'S WORK SHALL BE RESTORED IN A MANNER APPROVED BY THE OWNER AND/OR THEIR AGENT.
- SECTION 15040 MECHANICAL RELATED WORK MECHANICAL, PLUMBING, FIRE PROTECTION AND ELECTRICAL CONTRACTORS
- SHALL FURNISH ACCESS DOORS AND REMOVABLE COVERPLATES, FOR ACCESS TO THEIR WORK IN WALLS, CEILINGS AND FLOORS, FOR INSTALLATION BY THE GENERAL CONTRACTOR.
- OPENINGS THROUGH MASONRY WALLS FOR INSTALLATION OF EQUIPMENT PASSAGE OF RACKS, PIPING, DUCTWORK AND THE LIKE SHALL BE SUPPORTED BY ANGLE IRON LINTELS FRONT AND BACK. LINTEL DETAILS SHALL BE SUBMITTED FOR REVIEW PRIOR TO MAKING MASONRY OPENING.
- PROVIDE SLEEVES FOR ALL OPENINGS THROUGH FLOORS, WALLS, ROOFS AND SO ON. IRON PIPE SIZE STEEL SLEEVES SHALL BE TWO PIPE SIZES LARGER THAN THE PIPE AND SHALL FINISH FLUSH WITH THE FINISHED WALL AND CEILING AND PROJECT 1-INCH ABOVE FLOOR. SLEEVES THROUGH MECHANICAL ROOM FLOORS OR POTENTIALLY WET AREA SHALL EXTEND 2-INCHES ABOVE THE FINISHED FLOOR. ANY WORK DAMAGED IN THIS PROCESS SHALL BE IMMEDIATELY RESTORED. PROVIDE ESCUTCHEONS ON ALL PIPING IN UNFINISHED AREAS, OR WHERE PIPING
- 4. THE CONTRACTOR FURNISHING THE EQUIPMENT SHALL PROVIDE ALL NECESSARY STRUCTURAL STEEL SUPPORTS, SUPPLEMENTAL STEEL FOR HANGERS AND PLATFORMS AS REQUIRED BY EQUIPMENT FURNISHED UNDER HIS CONTRACT SUBMIT DETAILS FOR REVIEW AS A SHOP DRAWING.
- 5. CONCRETE FOUNDATIONS, CURBS AND OTHER CONCRETE WORK REQUIRED FOR MECHANICAL EQUIPMENT SHALL BE VALUED FOR BY THE RESPECTIVE CONTRACTORS AND INSTALLED BY WORKMEN EXPERIENCED IN THE CONCRETE TRADE PREPARE AND FURNISH DIMENSIONED LAYOUT DRAWINGS AND TEMPI ATES TO CONCRETE TRADE CONTRACTOR FOR ALL FOUNDATIONS REQUIRED FOR EQUIPMENT TO BE FURNISHED UNDER THESE CONTRACTS. UNLESS NOTED OTHERWISE, CONCRETE SHALL HAVE A MINIMUM 28-DAY COMPRESSION STRENGTH OF 2500 LBS. PER SQUARE INCH AND SHALL BE REINFORCED. SUBMIT SHOP RAWINGS ON FOUNDATIONS FOR REVIEW.
- . WHERE NOT PROVIDED AS OR WITH A FACTORY FABRICATED GUARD, PROVIDE AT ALL ROTATING OR RECIPROCATING EQUIPMENT EASILY REMOVABLE GUARD TO ENCLOSE ALL BELTS, PULLEYS, SHEAVES AND COUPLINGS. CONFORM TO OSHA REGULATIONS
- 7. ALL FLASHINGS WILL BE PROVIDED BY THE BUILDING CONTRACTOR. COUNTERFLASHINGS SHALL BE PROVIDED BY THE MECHANICAL CONTRACTOR HVAC CONTRACTOR SHALL PROVIDE 16-OUNCE LEAD COATED COPPER COUNTERFLASHING WHERE DUCTS, PIPES OR CONDUITS PASS THROUGH ROOF OR WALLS. COUNTERFLASHING OF SOIL AND VENT STACK SHALL BE FURNISHED AND NSTALLED BY THE PLUMBING CONTRACTOR.
- 8. FURNISH ALL ACCESS DOORS AND PANELS FOR CONCEALED PORTIONS OF MECHANICAL WORK, REQUIRING ACCESSIBILITY FOR OPERATION AND MAINTENANCE, ACCESS DOORS SHALL BE STEEL, MINIMUM SIZE SHALL BE 24" X 24". AND RATED EQUAL TO THE SURFACE IN WHICH THE PANEL IS INSTALLED.
- 9. ALL EQUIPMENT SHALL HAVE SECURELY ATTACHED A MANUFACTURER'S NAMEPLATE GIVING COMPLETE DATA AS TO DESIGN AND OPERATING CHARACTERISTICS. NAMEPLATES SHALL NOT BE COVERED OR OTHERWISE OBSCURED.
- 10. PROVIDE TAGS FOR VALVES, FIRE DAMPERS, AUTOMATIC DAMPERS AND SIMILAR EQUIPMENT, PROVIDE CHARTS FOR EACH INDICATING THE TYPE, SERVICE. FUNCTION AND LOCATION OF EACH DEVICE. THESE [THIS] CHART[S] SHALL BE NEATLY FRAMED IN A HARDWOOD FRAME WITH PLASTIC COVER AND HUNG IN A LOCATION SELECTED BY THE OWNER.
- 11. ALL NEW PIPING INSTALLED UNDER THIS SPECIFICATION SHALL BE IDENTIFIED BY STENCILED LEGENDS OR SELF-ADHERING BRIGHTLY COLORED LABELS SUCH AS "BRADY MARKERS" NOT LESS THAN 1-1/2-INCHES HIGH WHICH SHALL INCLUDE A DIRECTIONAL ARROW FOR WATER LINES. THESE SHALL BE PLACED ON LINES; AT INTERVALS AS DIRECTED NOT EXCEEDING TWENTY-FIVE FEET, AT THE BEGINNING AND TERMINATION OF EACH RUN AND AT EACH SIDE OF A WALL OR PARTITION THROUGH WHICH THE PIPE PASSES. COLORS OF LABELS AND LETTERING SHALL BE AS SELECTED BY THE OWNER.
- ALL STEEL PIPE SHALL BE WELDED CARBON STEEL, MANUFACTURED IN ACCORDANCE WITH ASTM SPECIFICATIONS. ALL PIPE SHALL CONFORM TO DIMENSIONAL STANDARDS OF ANSI STANDARD B36.10. STEEL PIPE SHALL BE USED FOR THE FOLLOWING SERVICES IN WEIGHTS AND TYPES LISTED: SERVICE WEIGHT TYPE

SECTION 15060 - PIPE AND PIPE FITTINGS

- FIRE PROTECTION WET SCHEDULE 40 BLACK THREADED FITTINGS FOR STEEL PIPE SHALL BE CLASS 150 MALLEABLE IRON
- FITTINGS. 3. WELDING FITTINGS FOR STEEL PIPING GENERALLY WILL BE FORGED STEEL.
- STANDARD WEIGHT BUTT-WEI DING FITTINGS FLANGES FOR STEEL LINES SHALL BE GENERALLY 150-POUND CLASS FORGED
- WELDING NECK TYPE. 5. UNIONS FOR STEEL LINES 1-1/2-INCHES IN SIZE AND SMALLER SHALL BE CLASS 150 MALLEABLE IRON BRASS TO IRON SEAT GROUND JOINT UNIONS, OR A PAIR OF FLANGES FOR STEEL LINES 2-INCHES IN SIZE AND LARGER.
- 6. AT THE CONTRACTOR'S OPTION. FIRE PROTECTION STEEL PIPING MAY BE ASSEMBLED BY VICTAULIC COUPLINGS AND FITTINGS. COUPLINGS SHALL BE VICTAULIC STYLE 77 WITH GRADE "E" MOLDED SYNTHETIC RUBBER GASKET COUPLING BOLTS SHALL BE OVAL NECK TRACK HEAD TYPE WITH HEXAGONAL HEAVY NUTS ALL PIPE FITTINGS USED WITH VICTAULIC PIPE COUPLINGS SHALL BE MALLEABLE IRON CASTINGS. PIPE GROOVING SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS.

- USED FOR THE FOLLOWING:
- <u>TYPE</u> NO-LEAD SOLDER TYPE L DOMESTIC HOT AND COLD WATER PIPING DRAINAGE, WASTE AND VENT PIPING TYPE DWV NO-LEAD SOLDER ABOVE-GRADE SOLDER JOINT FITTINGS SHALL BE SEAMLESS WROUGHT COPPER FITTINGS. FLANGES FOR COPPER TUBING LINES SHALL BE 150-POUND PATTERN CAST RED
- BRASS COMPANION FLANGES WITH TUNE SHOULDER FOR SOLDER JOINTING.
- JOINT UNIONS WITH ENDS FOR SOLDERED JOINTS
- INSULATED UNION OR FITTING FOR THE PREVENTION OF ELECTROLYSIS. 1. BELOW GRADE CAST IRON DRAINAGE PIPE SHALL BE SERVICE WEIGHT BELL AND INDICATED ON THE DRAWINGS, SHALL BE OF THE "Y" OR LONG RUN PATTERN. JOINTS SHALL BE FABRICATED USING NEOPRENE COMPRESSION GASKETS
- MANUFACTURER CHOICE IS AT CONTRACTOR'S DISCRETION. ABOVE GRADE SOIL AND WASTE PIPING AND FITTINGS SHALL BE CAST IRON SHALL COMPLY WITH CISPI 310 OR ASTM C 1540. NEOPRENE GASKETS SHALL
- INSTALLED PER MANUFACTURERS INSTRUCTIONS AND STANDARDS. UNDER NO CIRCUMSTANCES SHALL NO-HUB INSTALLATION BE PERMITTED BELOW GRADE OR BURIED IN SLABS.
- SECTION 15080 PIPING SPECIALTIES
- THERMOMETERS SHALL BE ADJUSTABLE ANGLE TYPE WHICH WILL ALLOW WITH 3/4-INCH NPT FOR MOUNTING IN PIPE. COORDINATED REQUIRED VOLTAGE, COUPLING AND CONTACT NUMBER W. DRAWINGS PRIOR TO ORDERING.
- PROVIDE A PORTABLE METER CAPABLE OF INDICATING PRESSURE DIFFERENTIAL ACROSS THE CIRCUIT SETTER. UNIT TO BE COMPLETE WITH ALL REQUIRED HOSES, SHUT-OFF AND VENT VALVES AND CARRYING CASE.
- BELLOWS WITH ENDS OF THE PROPER CONFIGURATION TO SUIT THE PIPING SYSTEM (WELDED, FLANGED, THREADED OR UNION). MAXIMUM OPERATING TEMPERATURE OF JOINTS SHALL BE 750 DEGREES F AND MAXIMUM WORKING PRESSURE SHALL BE 150 POUNDS. UNIT SHALL BE ALL STAINLESS STEEL AND SHALL HAVE 1-3/4-INCH COMPRESSION, EQUAL TO ADSCO "FCSS".
- THREADED OR FLANGED ENDS, STAINLESS STEEL BELLOWS, AND CARBON STEEL SERIES 8500, WITH 2-INCH TRAVEL FOR HOT WATER RADIATION, AND SHALL BE EQUAL TO HYSPAN SERIES 3500 DUAL JOINT WITH ANCHOR BASE, EXTERNALLY PRESSURIZED GUIDED JOINT FOR STEAM AND STEAM CONDENSATE, WITH 4-INCH TRAVEL. PROVIDE PIPE EXPANSION GUIDES AND ANCHORS.
- PIPE ALIGNMENT GUIDES FOR STEEL PIPE SHALL BE HEAVY DUTY, STEEL CONSTRUCTION WITH SPLIT GUIDING CYLINDER. ANCHOR BASE AND TWO PIECE SPIDER, SIZE GUIDE FOR INSULATION THICKNESS SPECIFIED, ANCHORS SHALL STRUCTURE AND WELDED TO THE PIPE. SUBMIT DETAILS OF CONSTRUCTION FOR APPROVAL.
- AT EACH CONNECTION OF FERROUS PIPING TO NON-FERROUS PIPING, PROVIDE A DIELECTRIC FITTING, EQUAL TO EPCO MANUFACTURE.

SECTION 15100 - VALVES

VALVES SHALL BE OF THE TYPES AND RATINGS SPECIFIED. FIGURE NUMBERS USED HEREIN ARE THOSE OF NIBCO AS STANDARD. VALVES SHALL BE CRANE,

MILWAUKEE, NIBCO	, JENKINS, OR STOCKHAM.
<u>PATTERN</u>	<u>3-INCH & SMALLER BRONZ</u>
GATE	S-113
GLOBE	S-235-S
CHECK	S-433-B
<u>PATTERN</u>	<u>2-INCH & SMALLER BRONZ</u>
GATE	T-124
GLOBE	T-256-A
CHECK	T-413-B
<u>PATTERN</u>	<u>2-1/2-INCH AND LARGER IR</u>
GATE	F-617-O
GLOBE	F-718-B
CHECK	F-918-B

- IRON BODY VALVES SHALL BE BRONZE MOUNTED. ALL GATE AND GLOBE VALVES SHALL BE CAPABLE OF BEING REPACKED WHILE UNDER FULL FLOW AND PRESSURE.
- PUMPS. SPRING LOADED CHECK VALVES SHALL HAVE IRON BODY, BRONZE TRIM, BODY, WAFER OR THREADED LUG ENDS, EQUAL TO NIBCO FIGURE W-920-W.

AND THREADED ENDS.

SWING CHECK

OR ITT BELL & GOSSETT

SECTION - 15140 SUPPORTS AND ANCHORS

6-INCHES AND LARGER

GRINNELL FIGURE 260.

ALLTHREAD ROD.

INSULATION THICKNESS USED.

2-1/2-INCHES TO 5-INCHES

COPPER TUBING SHALL BE HARD DRAWN TYPE "L" OR "K" AS NOTED. CONFORMING TO ASTM SPECIFICATIONS, AND JOINED BY METHOD NOTED. COPPER PIPE SHALL BE

- UNIONS FOR COPPER TUBING SHALL BE 250-POUND PATTERN ALL BRONZE GROUND
- 10. WHERE COPPER TUBING JOINS FERROUS PIPE OR EQUIPMENT PROVIDE AN
- SPIGOT SOIL PIPE IN ACCORDANCE WITH LOCAL REGULATIONS. FITTINGS SHALL BE OF THE SAME WEIGHT CLASSIFICATION AS THE PIPE, AND EXCEPT AS OTHERWISE ADHERING TO ASTM C564. NO LEAD & OAKUM JOINTS SHALL BE UTILIZED. CHARLOTTE PIPE WAS USED TO DEVELOP THIS STANDARD, HOWEVER
- SERVICE WEIGHT HUBLESS AND SHALL COMPLY WITH CISPI301. HUBLESS COUPLING COMPLY WITH ASTM C 564, CHARLOTTE PIPING WAS USED AS DESIGN STANDARD MANUFACTURER'S CHOICE IS AT CONTRACTOR'S DISCRETION. ALL PIPING IS TO BE
- ADJUSTMENT OF FINAL VIEWING ANGLE TO ANY POSITION THERMOMETER SHALL BE 9-INCHES LONG AND CONSIST OF DIE CAST ALUMINUM CASE. CLEAR ACRYLIC PLASTIC WINDOW RED MERCURY FILLED TUBE AND ALLIMINUM STEM WITH SCALE READING IN DEGREES FAHRENHEIT, PROVIDE AN INDUSTRIAL TEST WELL IN 304 STAINLESS STEEL
- EXPANSION JOINTS IN HOT WATER PIPING SHALL CONSIST OF STAINLESS STEEL
- EXPANSION COMPENSATORS SHALL CONSIST OF CARBON STEEL PIPES WITH HOUSING FOR BELLOWS. EXPANSION COMPENSATORS SHALL BE EQUAL TO HYSPAN
- CONSIST OF STEEL CHANNELS OR ANGLES SECURELY FASTENED TO THE BUILDING

 - ER BRONZE, SOLDER-END
 - R BRONZE, THREADED
 - ARGER IRON BODY, FLANGED, O.S. & Y
- SPRING LOADED CHECK VALVES SHALL BE USED AT THE DISCHARAGE OF ALL SPLIT PLATE, HINGED WITH STAINLESS STEEL SPRING, RESILIENT SEAL BONDED TO
- BALL VALVES EQUAL TO APOLLO BRONZE BALL VALVE SERIES 70-100 MAY BE USED IN ALL CHILLED WATER AND HEATING HOT WATER PIPING 2-INCHES AND SMALLER. ABOVE 2-INCHES, GATE VALVES SHALL BE USED, EXCEPT WHERE GLOBE VALVES ARE REQUIRED FOR THROTTLING, OR WHERE OTHERWISE INDICATED.
- PROVIDE BALL VALVE FOR USE AS MANUAL AIR VENT AT HEAT TRANSFER COILS. 6. DRAIN VALVES FOR ALL LINES SHALL BE 3/4-INCH SIZE 125 POUND BRONZE GLOBE
- VALVES, WITH THREADED ENDS AND BRONZE HOSE THREAD ADAPTER. WHERE PLUG VALVES OR BALANCING COCKS ARE INDICATED AS BALANCING VALVES, SUCH VALVES SHALL BE 100 PERCENT PIPE AREA STRAIGHTWAY PASSAGE,
- HOMESTEAD LUBRICATED PLUG VALVE FIGURE 601. IN [CHILLED WATER] [AND HEATING HOT WATER] SYSTEMS, PROVIDE CALIBRATED BALANCING VALVES EQUAL TO ITT BELL AND GOSSETT "CIRCUIT SETTER PLUS"
- BRONZE BODY, BRASS BALL, ADJUSTMENT DIAL, MEMORY STOP, READ-OUT PORTS BUTTERFLY VALVES SHALL BE EQUAL TO JENKINS OR KEYSTONE TIGHT CLOSING LUG TYPE VALVES WITH GRAY IRON BODY, BRONZE DISC, STEEL SHAFT WITH NYLON BEARINGS, BUNA N RESILIENT SEATS AND INDEXED POSITIVE POSITIONING HANDLE. VALVES SHALL BE SUITABLE FOR 200 POUND SERVICE AND SHALL CLOSE BUBBLE-TIGHT AGAINST THE PRESSURE OF THE INSTALLATION. [PROVIDE GEAR
- OPERATOR FOR ALL BUTTERFLY VALVES 5-INCHES IN SIZE AND LARGER.] 0. CHECK VALVES IN VERTICAL PUMP DISCHARGE LINES SHALL BE SEMI-STEEL BODY BRONZE-TO-BRONZE SEATING NOISELESS CHECK VALVES, EQUAL TO METRAFLEX. CHECK VALVES FOR HORIZONTAL APPLICATION SHALL BE IRON OR BRONZE BODY.
- 11. TRIPLE-DUTY VALVES IN PUMP DISCHARGE LINES SHALL BE IRON BODY WITH FLANGED ENDS, STAINLESS STEEL SPRING, AND SPRING-LOADED EXTERNALLY-GUIDED SOFT-SEATED IRON DISC. VALVE SHALL BE COMBINATION BALANCING, SHUT-OFF AND CHECK VALVE, EQUAL TO MUELLER MODEL 721, CPV,
- 2. RADIATOR VALVES SHALL BE SELF-CONTAINED TAMPER-RESISTANT STRAIGHT-THROUGH BRONZE BODY VALVE WITH STAINLESS STEEL STEM AND SPRING. COPPER OR BRONZE BELLOWS, ADJUSTABLE TEMPERATURE SELECTION RING, AND TAMPER-RESISTANT COLLAR WITH LOCKING OPERATOR/VALVE
- CONNECTION. VALVES SHALL BE EQUAL TO DANFOSS RA 2000 SERIES. PROVIDE BABBITT ADJUSTABLE SPROCKET RIM WHEEL OPERATOR WITH DUCTILE IRON RIM AND RUSTPROOF CHAIN FOR ALL VALVE 4-INCHES IN SIZE AND LARGER
- THAT ARE INSTALLED HIGHER THAN 8-FEET ABOVE THE FLOOR TO THE CENTERLINE.

PI PF	PING SYSTEMS SHALL BE SUPPORT PING" SO AS TO MAINTAIN REQUIRE ROVIDE FOR EXPANSION AND CONT HALL BE SUPPORTED IN ACCORDAN	ED PITCH OF LINES, PREVENT VIB	RATION AND TAL PIPING
	<u>PIPE SIZE</u>	MAXIMUM HANGER SPACING	ROD SIZE
	1-INCH AND SMALLER	6-FEET 0-INCHES	3/8-INCH
	1-1/4-INCH TO 2-INCHES	9-FEET 0-INCHES	3/8-INCH

1/2-INCH

5/8-INCH 12-FEET 0-INCHES ADJUSTABLE SWIVEL SPLIT RING HANGER SHALL BE FABRICATED OF BLACK MALLEABLE IRON AND BE APPROVED BY FACTORY MUTUAL AND BE ULLISTED HANGER SHALL BE EQUAL TO GRINNELL FIGURE 104.

10-FEET 0-INCHES

- 3. ADJUSTABLE CLEVIS TYPE HANGER SHALL BE BLACK CARBON STEEL AND BE APPROVED BY FACTORY MUTUAL AND BE UL LISTED. HANGER SHALL BE EQUAL TO LIGHT DUTY CLEVIS HANGER SHALL BE FABRICATED FROM COPPER PLATED CARBON STEEL, EQUAL TO GRINNELL FIGURE CT-65.
- 5. EXTENSION SPLIT TUBING CLAMP HANGER SHALL CONSIST OF COPPER PLATED MALLEABLE IRON CLAMP AND FLANGE, EQUAL TO GRINNELL FIGURE CT-130R. WHERE SEVERAL HORIZONTAL RUNS OF SIMILAR PIPING RUN TOGETHER,
- CONTRACTOR SHALL RUN THEM TOGETHER ON A UNISTRUT TRAPEZE STYLE PIPE SUPPORT WITH EACH INDIVIDUAL PIPE FASTENED TO THE UNISTRUT WITH A UNISTRUT CLAMP. SUPPORT UNISTRUT RACK AS A TRAPEZE HANGER WITH
- PROTECTION SADDLE FOR INSULATION SHALL BE FABRICATED FROM STEEL PLATE. SADDLES SHALL BE 12-INCHES LONG AND SHALL BE DESIGNED FOR THE

- HANGER RODS SHALL BE ASTM A575 OR A576 HOT ROLLED CARBON STEEL AND MEET MECHANICAL PROPERTY REQUIREMENTS OF ASTM A663.
- PREFABRICATED EQUIPMENT SUPPORTS, SHALL BE 18 GAUGE GALVANIZED STEEL CONTINUOUS MITERED AND WELDED CORNER SEAMS, INTEGRAL BASE PLATE, FACTORY INSTALLED WOOD NAILER AND 18 GAUGE GALVANIZED STEEL COUNTER FLASHING. UNITS SHALL BE EQUAL TO THYCURB EQUIPMENT SUPPORT FOR INSULATED DECKS WITH HEIGHTS AS REQUIRED FOR THE ITEM SUPPORTED. UNITS SHALL BE INSTALLED IN STRICT CONFORMANCE TO MANUFACTURERS RECOMMENDATIONS. UNITS SHALL SIT ON ROOF DECK, NOT ON ROOFING MATERIAL PROVIDE FLASHING, COUNTERFLASHING AND HOT MOPPING AS REQUIRED TO ASSURE A WATERTIGHT INSTALLATION. UNITS SHALL BE FURNISHED BY THE MECHANICAL CONTRACTOR BUT TURNED OVER TO THE GENERAL CONTRACTOR FOR INSTALLATION BY THE GENERAL CONTRACTOR.
- 10. PIPE PENETRATION CURBS SHALL BE EQUAL TO THYCURB TYPE TC-3 WITH TP-1 PIPE COVER. PROVIDE WITH THE CURB THE APPROPRIATE NUMBER OF PIPE COVERS. RUBBER AND STAINLESS STEEL CLAMPS. UNITS SHALL BE FURNISHED BY THE MECHANICAL CONTRACTOR BUT TURNED OVER TO THE GENERAL CONTRACTOR FOR INSTALLATION BY THE GENERAL CONTRACTOR.
- 11. UNLESS OTHERWISE INDICATED (OR INDICATED BY TRAPEZE NOTE 6 OF THIS SECTION), ALL HORIZONTAL RUNS OF PIPING SHALL BE SUPPORTED BY INDIVIDUAL HANGERS
- 12. ALL LINES OF COPPER TUBING SHALL BE INDIVIDUALLY (UNLESS INDICATED OTHERWISE BY TRAPEZE NOTE 6 OF THIS SECTION) SUPPORTED BY APPROVED TYPE HANGERS NOT MORE THAN 6-FEET APART OR AS SHOWN ON THE DRAWINGS HANGERS FOR UNCOVERED LINES SHALL BE ESPECIALLY DESIGNED FOR COPPER TUBING AND SHALL BE EXACT O.D. OF TUBING. HANGERS FOR COVERED TUBING SHALL HAVE BROAD STRAPS FITTING OUTSIDE OF COVERING.
- HANGERS FOR COLD PIPING SHALL SUPPORT THE PIPE WITHOUT PIERCING THE INSULATION. INSULATION SHIELDS SHALL BE USED TO PROTECT THE INSULATION ON COLD PIPES. INSULATION PROTECTION SADDLES SHALL BE WELDED TO INSULATED HOT PIPES AT ROLLER SUPPORTS. WHEREVER FIBERGLASS PIPE INSULATION IS INSTALLED, KAYLO OF EQUAL THICKNESS SHALL BE INSTALLED IN LIEU FIBERGLASS PIPE INSULATION WHEREVER HANGERS AND INSULATION SHIELDS ARE INSTALLED. THE INSULATION SHIELDS SHALL BEAR ONLY ON AN INSULATION MATERIAL THAT WILL NOT COMPRESS, CRUSH OR DEFORM.
- 14. HORIZONTAL PIPING SHALL BE LATERALLY SUPPORTED AS REQUIRED TO PROVIDE PROPER RIGIDITY OF THE INSTALLATION TO PREVENT HORIZONTAL OR VERTICAL SWAY. ALL PIPING WILL BE INSPECTED TO INSURE THIS. 15. HANGERS FOR ALL HORIZONTAL PIPING SHALL BE SUPPORTED FROM REDHEAD
- ANCHORS OR HILTI HDI ANCHORS, DRILLED INTO CONCRETE SLABS OR FROM BEAM CLAMPS WHERE APPROPRIATE SECTION - 15240 VIBRATION ISOLATION
- EXPECTED NOISE LEVELS IN VARIOUS PARTS OF THE BUILDING SHALL CONFORM TO NOISE CRITERIA RECOMMENDATIONS SET FORTH IN THE 2016 ASHRAE HANDBOOK OF HVAC APPLICATIONS. CHAPTER 48 - NOISE AND VIBRATION CONTROL. THE MID-POINT OF THE RANGE OF NC CRITERIA CURVES SHALL APPLY.
- 2. SUBMITTAL DATA SHALL INDICATE TYPE, SIZE AND DEFLECTION OF EACH ISOLATOR PROPOSED. BASES SHALL BE DETAILED. PROVIDE INSTALLATION AND ADJUSTMENT PROCEDURES
- 3. PROVIDE VIBRATION ISOLATORS FOR ALL ROTATING AND RECIPROCATING EQUIPMENT
- 4. PROVIDE SPRING HANGERS FOR PIPING WITHIN MECHANICAL ROOM, THAT IS CONNECTED TO ROTATING EQUIPMENT.
- 5. PROVIDE FLEXIBLE DUCT CONNECTIONS AT FANS. 6. EQUIPMENT DRIVEN BY MOTORS, 2 HORSEPOWER AND SMALLER, SHALL BE ISOLATED BY MEANS OF ELASTOMERIC MOUNTS OR ELASTOMERIC HANGERS, SIZED FOR 1/2-INCH DEFLECTION. LARGER EQUIPMENT SHALL BE ISOLATED BY MEANS OF OPEN SPRING MOUNTS OR OPEN SPRING HANGERS, SIZED FOR THE SPECIFIED DEFLECTION.
- ISOLATORS EXPOSED TO THE WEATHER SHALL HAVE STEEL PARTS PVC COATED OR HOT-DIP GALVANIZED. ALUMINUM COMPONENTS SHALL BE ETCHED AND PAINTED. NUTS, BOLTS AND WASHERS MAY BE ZINC ELECTROPLATED.
- 8. ELASTOMERIC COMPONENTS SHALL BE OF NEOPRENE OR SYNTHETIC RUBBER WITH ANTI-OZONE AND ANTI-OXIDANT ADDITIVES. ISOLATOR TYPES:
- A. ADJUSTABLE, FREE STANDING, OPEN SPRING MOUNTING WITH COMBINATION LEVELING BOLT AND EQUIPMENT FASTENING BOLT. THE SPRING SHALL BE RIGIDLY ATTACHED TO THE SPRING MOUNTING BASEPLATE AND COMPRESSION PLATE, A NEOPRENE PAD OF MINIMUM 1/4-INCH THICKNESS SHALL BE BONDED TO THE BASEPLATE. ISOLATOR SHALL BE DESIGNED FOR A MINIMUM KX/KY (HORIZONTAL-TO-VERTICAL SPRING RATE) OF 1.0.
- B. SPRING HANGER CONSISTING OF A RECTANGULAR STEEL BOX, COIL SPRING SPRING RETAINERS, NEOPRENE IMPREGNATED FABRIC WASHER AND STEEL WASHER. HANGER SHALL HAVE 15 DEGREE ROD MISALIGNMENT CAPABILITY 10. ELASTOMERIC MOUNTING HAVING STEEL BASEPLATE WITH MOUNTING HOLES AND
- THREADED INSERT FOR ATTACHING EQUIPMENT. ALL METAL PARTS SHALL BE COMPLETELY EMBEDDED IN THE ELASTOMERIC MATERIAL.
- 11. ELASTOMERIC HANGER CONSISTING OF A RECTANGULAR STEEL BOX AND AN ELASTOMERIC ISOLATION ELEMENT. ALL VIBRATION ELIMINATORS SHALL BE THOSE MANUFACTURED BY THE VIBRATION ELIMINATOR COMPANY, THE KORFUND COMPANY OR APPROVED EQUAL.
- 12. FLEXIBLE DUCT CONNECTIONS SHALL BE FIRE-RESISTANT FABRIC WITH METAL ENDS. CONNECTIONS SHALL HAVE A MINIMUM OF 3-INCHES BETWEEN METAL ENDS, WITH APPROXIMATELY 1-INCH OF SLACK
- 13. VIBRATION ISOLATORS SHALL BE INSTALLED AS FOLLOWS:

EQUIPMENT	ISOLATOR TYPE	MINIMUM DEFLECTION
IN-LINE CENTRIFUGAL		
FANS UP TO 2 HP	ELASTOMERIC HANGER	1/2-INCH
ABOVE 2 HP	SPRING HANGER	1-INCH
IN-LINE PUMP	ELASTOMERIC HANGER	1/2-INCH
REFRIGERANT COMPRESSORS	OPEN SPRING MOUNT	2-INCHES
AIR-COOLED CONDENSER	OPEN SPRING MOUNT	1-INCH
PIPING IN MECHANICAL ROOM	SPRING HANGER	1-INCH
AIR HANDLING UNIT	OPEN SPRING MOUNT	2-INCHES

SECTION 15250 - INSULATION INSULATION GENERALLY:

- A. NO COVERING SHALL BE APPLIED BEFORE THE PIPE OR EQUIPMENT TO BE INSULATED HAS BEEN TESTED AND PROVED TIGHT. ALL MATERIALS SHALL MEET THE REQUIREMENTS OF THE NATIONAL FIRE PROTECTION ASSOCIATION PAMPHLETS 90A AND 90B.
- B. ALL THERMAL AND ACOUSTICAL INSULATION JACKETS, FACINGS, MEMBRANE ADHESIVES, MASTICS, COATINGS AND ACCESSORY MATERIALS SHALL BE LISTED AND LABELED BY THE UNDERWRITERS LABORATORIES, INC. FOR A FIRE HAZARD CLASSIFICATION, AS TESTED UNDER ASTM E-84, NFPA 255 OR UL 723 PROCEDURES NOT TO EXCEED THE FOLLOWING: FLAME SPREAD 25; FUEL CONTRIBUTED 50; SMOKE DEVELOPED 50.
- C. ALL VALVES, STRAINERS, FLANGES AND FITTINGS, EXCEPTING THREADED UNIONS, SHALL BE INSULATED TO THE SAME THICKNESS AS THE PIPING IN WHICH THEY OCCUR.
- D. EXCEPT AS OTHERWISE SPECIFIED, ALL INSULATION FOR PIPING EXPOSED IN MECHANICAL AND/OR ELECTRICAL EQUIPMENT SPACES SHALL HAVE AN EXTRA FIELD-APPLIED JACKETING. JACKETING SHALL CONSIST OF A FLOOD COAT OF LAGGING ADHESIVE EQUAL TO CHILDERS CP-50, REINFORCED WITH FINE MESH GLASS CLOTH EQUAL TO CHIL-GLAS NO. 20. AT THE CONTRACTOR OPTION, COVER PIPING WITH 8 OZ. CANVAS FULLY COATED WITH BENJAMIN FOSTER 30-36 WHITE LAGGING ADHESIVE TO ASSURE COMPLIANCE WITH NFPA FLAME AND SMOKE SPREAD RATINGS.
- PIPE INSULATION: A. MOLDED FIBERGLASS PIPE INSULATION SHALL BE FINE FIBER RESILIENT FIBERGLASS BONDED AND MOLDED TO A NOMINAL DENSITY OF NOT LESS THAN 3-1/3 POUNDS PER CUBIC FOOT. CONFORMING TO FEDERAL SPECIFICATION NO. HH-I-562, AND FORMED TO DIMENSIONAL STANDARDS CONFORMING TO THE PIPE WHETHER IRON PIPE SIZE OR TUBING.
- B. THE MOLDED FIBERGLASS PIPE INSULATION SHALL HAVE A FACTORY APPLIED VAPOR BARRIER JACKET SECURED WITH AN APPROVED FIRE RESISTIVE VAPOR BARRIER TYPE ADHESIVE EQUAL TO BENJAMIN FOSTER NO. 81-99 JACKET SHALL CONSIST OF A LAMINATE OF KRAFT PAPER AND ALUMINUM FOIL NOT LESS THAN 0.0001-INCH THICK BETWEEN AND SHALL BE APPLIED WITH A LAP OF NOT LESS THAN 1-1/2-INCHES AT LONGITUDINAL JOINTS AND WITH A 4-INCH SEALING STRIP OF IDENTICAL MATERIAL AT END JOINTS. FLANGES, VALVES AND FITTING SHALL BE SIMILARLY JACKETED, USING ZESTON OR EQUAL PLASTIC FITTING JACKETS SECURED IN POSITION WITH THE SPECIFIED SEALER-ADHESIVE AND ALUMINUM BANDS. STRAINERS SHALL BE COVERED IN A MANNER THAT WILL ALLOW THE STRAINER BASKET TO BE REMOVED WITHOUT CUTTING OR DESTROYING INSULATION.
- ALL MOLDED FIBERGLASS PIPE INSULATION SHALL BE INSTALLED IN ALL RESPECTS SO AS TO PRESERVE THE VAPOR BARRIER INTACT. WHERE VALVE BONNETS, DRAIN PIPES OR OTHER METAL PARTS PROJECT THROUGH INSULATION THE JOINT SHALL BE SEALED TO PREVENT ENTRANCE OF WATER OR MOIST AIR. WHEN STAPLES ARE USED, ALL EXPOSED METAL SHALL BE SEALED ALSO.
- 3. AT EACH HANGER LOCATION IN FIBERGLASS INSULATED LINES, PROVIDE A CORROSION RESISTANT STEEL SHIELD COVERING THE LOWER ONE-HALF CIRCUMFERENCE OF INSULATION. LOWER HALF SECTION OF SHIELD SHALL INCLUDE A PIECE OF MOLDED LOAD-BEARING 14 POINT DENSITY FIBERGLASS INSULATION HAVING THE SAME THICKNESS AS THE PIPE INSULATION. THE VAPOR BARRIER JACKET SHALL BE CONTINUED OVER THIS RIGID INSULATION. LENGTH OF SHIELDS SHALL BE GRADUATED WITH PIPE SIZE FROM 6-INCHES TO 9-INCHES.
- 4. THE FOLLOWING SHALL BE INSULATED: NEW DOMESTIC HOT AND COLD WATER PIPING EXISTING PIPING WHERE INSULATION IS TO MATCH EXISTING DAMAGED BY NEW WORK NEW RAIN WATER CONDUCTORS SEE SCHEDULE
- 5. ALL PORTIONS OF INSULATED PIPING EXPOSED TO THE WEATHER SHALL BE ADDITIONALLY WRAPPED WITH .016 GAUGE CORRUGATED ALUMINUM JACKET. JACKETING SHALL HAVE FACTORY APPLIED MOISTURE BARRIER AND SHALL BE EQUAL TO CHILDERS OR INSUL-COUSTIC

- 6. DUCT AND CASING INSULATION:
- A. PROVIDE THERMAL INSULATION ON EQUIPMENT AND DUCTS AS FOLLOWS: OUTSIDE AIR AND MIXED AIR PLENUM AND DUCTS. ALL SUPPLY AIR AND RETURN AIR DUCTWORK. ALL SUPPLY AIR DUCTWORK ABOVE CEILINGS. ALL DUCTWORK ABOVE THE ROOF, ALL SUPPLY AIR DUCTWORK WITHIN FAN ROOMS AND ABOVE SUSPENDED CEILINGS. CASINGS ON NEW AIR CONDITIONING SYSTEMS. RELIEF AIR PLENUMS DOWNSTREAM OF RELIEF AIR DAMPER. ALL CASING AND DUCTWORK INSULATION DAMAGED DURING THIS CONTRACT.
- THE INSULATION FOR EQUIPMENT, CASINGS AND OUTSIDE AIR AND MIXED AIR PLENUMS AND DUCTS SHALL BE RIGID BOARD MATERIAL HAVING A DENSITY OF NOT LESS THAN 6 POUNDS PER CUBIC FOOT IT SHALL HAVE A KRAFT PAPER AND ALUMINUM FOIL VAPOR BARRIER APPLIED TO THE SURFACE TO BE INSULATED BY MEANS OF WELDED PINS AND SPEED WASHERS SPACED NO MORE THAN 18-INCHES APART OF EACH DIRECTION, PROVIDE A MINIMUM OF TWO ROWS OF FASTENERS ON EACH DUCT SIDE. ALL JOINTS IN INSULATION, AND THE PINS AND WASHERS, SHALL BE SEALED WITH A VAPORPROOF COMPOUND FOUAL TO FOSTER NO 60-25 REINFORCED WITH OPEN MESH GLASS FIBER OR OTHER APPROVED METHOD. AT ALL EDGES AND CORNERS PROVIDE A SUITABLE CONTINUOUS CORNER BEAD, SEALED AS SPECIFIED FOR OTHER JOINTS.
- THE INSULATION ON EQUIPMENT, CASINGS AND OUTSIDE AIR AND MIXED AIR PLENUMS AND DUCTS SHALL BE NOT LESS THAN ONE-INCH THICK. THE THICKNESS OF INSULATION SHALL BE INCREASED AS NECESSARY TO COMPLETELY COVER ALL EXTERIOR-REINFORCING ANGLES.
- INSULATION FOR ACCESS DOORS IN CASINGS SHALL BE INSTALLED BETWEEN TWO THE SHEETS OF METAL COMPRISING THE DOOR, AND MAYBE HAVE THE VAPOR BARRIER OMITTED. METAL CORNER REINFORCEMENT SHALL BE PROVIDED FOR ALL INSULATION.
- INSULATION STOPS AND METAL CORNER REINFORCEMENT SHALL BE PROVIDED FOR ALL OPENINGS IN INSULATION FOR ACCESS DOORS. PANELS. INSERTION ELEMENTS OF CONTROL INSTRUMENTS AND DAMPER OPERATORS. INSULATION ON EQUIPMENT, DUCTS AND CASINGS WITHIN THE MECHANICAL ROOMS SHALL BE FINISHED BY COVERING WITH "REWETTABLE GLASS CLOTH"
- STYLE 84205/60, FINISH 9485, TYPE 205 AS MANUFACTURED BY J. P. STEVENS COMPANY. THE CLOTH SHALL BE APPLIED WITH FOSTER NO. 81-42 FIRE RESISTANT LAGGING ADHESIVE AND FLOOD COATED AFTER APPLICATION WITH THE SAME PRODUCT, AS AN ALTERNATIVE THE DUCTWORK MAY BE COVERED WITH 8 OZ. CANVAS FULLY COATED WITH BENJAMIN FOSTER 30-36 WHITE LAGGING ADHESIVE.
- G. INSULATION ON ALL SUPPLY AIR DUCTWORK ABOVE SUSPENDED CEILINGS SHALL BE 1-1/2-INCH THICK FIBERGLASS DUCT WRAP EQUAL TO OWENS-CORNING FOIL FACED ALL SERVICE DUCT WRAP WITH VAPOR BARRIER. SEAL ALL JOINTS WITH APPROVED TAPE. INSTALL INSULATION IN A NEAT MANNER TO PRESENT A FINISHED APPEARANCE.
- INSULATION ON ALL DUCTWORK WHICH IS EXPOSED TO THE WEATHER SHALL HAVE A COATING OF PROTECTIVE MASTIC EQUAL TO FOSTER SAFETEE H. I., TROWELED ON TOP OF THE INSULATION. A WHITE MEMBRANE EQUAL TO MAST-A-FAB FABRIC CLOTH SHALL BE EMBED INTO THE FIRST COAT OF MASTIC. APPLY FINISH COAT OF MASTIC ON TOP OF THE FABRIC.
- INSULATION ON EXISTING PIPING, DUCTWORK, APPARATUS AND EQUIPMENT DISTURBED BY THE ALTERATIONS SHALL BE REPAIRED AND FINISHED TO MATCH THE ORIGINAL NEW CONDITION.
- SECTION 15300 AUTOMATIC SPRINKLER SYSTEMS THE WORK AREA IS CURRENTLY PROTECTED BY A WET SPRINKLER SYSTEM. THE CONTRACTOR SHALL ALTER THE EXISTING SYSTEM AS REQUIRED. INCLUDING PIPE. FITTINGS, SPRINKLER HEADS, HANGERS, VALVES, ALARM DEVICES AND THE LIKE. TO MAKE THE INSTALLATION COMPLETE WHETHER SPECIFICALLY MENTIONED OR NOT.
- PROVIDE ELECTRICAL WIRING FOR ALARM DEVICES, PUMPS AND CONTROLLERS INSTALLED IN THE SPRINKLER SYSTEM PIPING. ALL MATERIALS, SPRINKLER DEVICES, PIPE, FITTINGS, VALVES, HANGERS AND THE
- LIKE, USED IN THE SYSTEM, SHALL BE ON THE APPROVED OR ACCEPTABLE LIST OF THE CURRENT ISSUE OF INSPECTED FIRE PROTECTION EQUIPMENT AND MATERIALS AS PUBLISHED BY THE UNDERWRITERS' LABORATORIES INC., AND SHALL BE SUBJECT TO APPROVAL.
- 4. THE WORK AND MATERIALS SHALL CONFORM TO THE REQUIREMENTS OF PAMPHLET NO. 13 AND 14 OF THE NATIONAL FIRE PROTECTION ASSOCIATION AND TO ALL APPLICABLE REQUIREMENTS OF THE FOLLOWING: A. CITY OF PHILADELPHIA FIRE CODE OF 2018 YEAR B. ANY OTHER APPLICABLE CODES AND REGULATIONS
- THE CONTRACTOR SHALL SUBMIT HYDRAULIC CALCULATIONS AND SHOP DRAWINGS SHOWING THE SYSTEM AND ITS COMPLETE ARRANGEMENT. SUBMITTED DRAWINGS AND CALCULATIONS SHALL BEAR UNDERWRITER APPROVAL STAMP. SHOP DRAWINGS AND CALCULATIONS SHALL BE SUBMITTED TO THE OWNERS INSURANCE COMPANY
- PIPE AND FITTINGS WITHIN THE BUILDING SHALL BE STANDARD WEIGHT BLACK STEEL PIPE CONFORMING TO ASTM SPECIFICATION A-53 OR A-106. FITTINGS SHALI BE STANDARD BLACK CAST IRON, UNDERWRITER'S & FACTORY MUTUAL APPROVED THREADED SPRINKLER FITTINGS. THREADED JOINTS SHALL BE MADE UP WITH AN APPROVED TAPE OR COMPOUND APPLIED TO MALE THREAD ONLY. AT CONTRACTOR'S OPTION, GROOVED-END STANDARD WEIGHT BLACK STEEL PIPE AND BOLTED GROOVED COUPLINGS MAY BE USED. COUPLINGS SHALL BE GRINNELL, TAYLOR. OR VICTAULIC.
- PIPING FOR WET SPRINKLER SYSTEM SHALL BE BLACK STEEL, SCHEDULE 40. FITTINGS SHALL BE CAST IRON WITH SCREWED JOINTS.
- RE-USE OF RECOVERED SPRINKLERS IS STRICTLY FORBIDDEN. ANY SPRINKLERS PRESENT ON RELOCATED BRANCHES MUST BE REMOVED AND REPLACED WITH BRAND NEW SPRINKLERS. THIS REQUIREMENT IS NOT SUBJECT TO CHANGE
- DRAIN PIPING SHALL BE PROVIDED AS REQUIRED FOR THE SYSTEMS WITH DISCHARGE LINES TO FLOOR DRAINS OR OTHER APPROVED POINTS, AUXILIARY DRAINS SHALL DISCHARGE AT APPROVED LOCATIONS. SPRINKLER SYSTEM DRAIN PIPING SHALL BE GALVANIZED WITH GALVANIZED FITTINGS.
- 10. ALL GATE, GLOBE AN CHECK VALVES SHALL BE PROVIDED AS REQUIRED AND AS SHOWN. VALVES SHALL BE OF TYPES SUITABLE FOR THE INTENDED SERVICE AND UNDERWRITER'S APPROVED. AND SHALL BE SUITABLE FOR NOT LESS THAN 175 POUNDS PER SQUARE INCH WATER WORKING PRESSURE. GATE AND GLOBE VALVES SHALL BE OF A TYPE THAT MAY BE REPACKED UNDER PRESSURE WHEN WIDE OPEN. DRAINAGE AND TEST VALVES SHALL BE ALL BRONZE, O.S. & Y. PATTERN, WITH THREADED ENDS.
- 11. REGULAR, SPRAY TYPE SPRINKLERS AND SPECIAL SPRINKLERS (I.E., HIGH TEMPERATURE CORROSIONPROOF, SIDE WALL, PENDANT AND THE LIKE) SHALL BE PROVIDED WHERE REQUIRED. WHERE PIPE IS INSTALLED ABOVE DROPPED CEILINGS, PENDANT SPRINKLERS SHALL BE LOCATED IN THE CENTERS OF TILE UNLESS OTHERWISE INDICATED. SPRINKLER GUARDS AND BAFFLES SHALL BE INSTALLED WHERE REQUIRED.
- THE CONTRACTOR SHALL PROVIDE AN APPROVED CABINET CONTAINING NOT LESS THAN 12 EXTRA SPRINKLER HEADS AND 1 SPRINKLER WRENCH. HEADS SHALL BE PROPERLY PROPORTIONED AS TO TYPE AND TEMPERATURE RATINGS. 13. THE CONTRACTOR SHALL PROVIDE TEST CONNECTIONS AS REQUIRED.
- 14. ALL MATERIALS, SPRINKLER DEVICES, PIPE, FITTINGS, VALVES, HANGERS AND THE LIKE, USED IN THE SYSTEM, SHALL BE ON THE APPROVED OR ACCEPTABLE LIST OF THE CURRENT ISSUE OF INSPECTED FIRE PROTECTION EQUIPMENT AND MATERIALS AS PUBLISHED BY THE UNDERWRITERS' LABORATORIES INC., AND SHALL BE SUBJECT TO APPROVAL.
- 15. THE EQUIPMENT, PIPING AND OTHER ITEMS SHALL BE SUBJECT TO INSPECTION AND TESTS AT ANY TIME DURING INSTALLATION, AND UPON COMPLETION OF THE INSTALLATION. APPROVAL TESTS SHALL BE AS LISTED IN THE CURRENT ISSUE OF PAMPHLET NO. 13 OF THE NFPA AND SHALL MEET LOCAL CODE OFFICIALS REQUIREMENTS. TESTS SHALL BE PROPERLY PERFORMED IN THE PRESENCE OF THE PROJECT REPRESENTATIVE AND , IF NECESSARY, BE REPEATED UNTIL THE INSTALLATION IS APPROVED

SECTION 15414 - FIRESTOPPING

- PROVIDE MATERIALS AND WORKMANSHIP TO CONFORM TO APPLICABLE GOVERNMENTAL AND BUILDING CODE REQUIREMENTS FOR FIRE RESISTIVE WALL AND FLOOR ASSEMBLIES.
- TESTING REQUIREMENTS: FIRESTOP MATERIALS USED SHALL HAVE BEEN TESTED BY A RECOGNIZED, INDEPENDENT TESTING AGENCY IN ACCORDANCE WITH ASTM F814-83, AND SHALL HAVE AN "F" RATING FOUIVALENT TO THE HOURLY RATING OF THE WALL OR FLOOR ASSEMBLY BEING PENETRATED, AND A "T" RATING AS REQUIRED BY LOCAL CODE.
- FIRESTOPPING APPLICATION AND INSTALLATION SHALL BE PERFORMED BY PERSONNEL EXPERIENCED IN THE INSTALLATION OF SUCH SYSTEMS.
- FIRESTOP PRODUCTS SHALL BE FREE OF ASBESTOS, NOT CONTAIN ANY PCB'S AND NOT CONTAIN ANY SOLVENTS.
- 5. DO NOT USE FIRESTOP PRODUCTS THAT, AFTER CURING, DISSOLVE IN WATER, THAT CONTAIN CERAMIC FIBERS, ETHYLENE GLYCOL OR THAT REQUIRE HAZARDOUS WASTE DISPOSAL.
- SUBMIT MANUFACTURER'S PRODUCT LITERATURE FOR EACH MATERIAL PROPOSED TO BE INSTALLED. SUBMIT MATERIAL SAFETY DATA SHEET FOR EACH FIRESTOP PRODUCT AND MAINTAIN READILY AVAILABLE SET OF MATERIAL SAFETY DATA SHEETS AT JOB SITE.
- DELIVER MATERIALS IN THE MANUFACTURER'S ORIGINAL, UNOPENED CONTAINERS OR PACKAGES WITH THE MANUFACTURER'S NAME, PRODUCT IDENTIFICATION, LOT NUMBERS, UL OR WARNOCK HERSEY LABELS. STORE MATERIALS UNDER COVER AND PROTECT FROM WEATHER AND DAMAGE IN COMPLIANCE WITH MANUFACTURER'S REQUIREMENTS. ALL FIRESTOP MATERIALS SHALL BE INSTALLED PRIOR TO EXPIRATION OF SHELF LIFE.
- 8. COMPLY WITH RECOMMENDED PROCEDURES, PRECAUTIONS OR REMEDIES DESCRIBED IN MATERIAL SAFETY DATA SHEETS AS APPLICABLE. SUBJECT TO COMPLIANCE WITH REQUIREMENTS. PROVIDE PRODUCTS OF ONE OF THE FOLLOWING MANUFACTURERS: BIO FIRESHIELD, INC., HILTI CONSTRUCTION

10. FIRESTOP MORTARS SHALL BE NOVASIT K-10 FIRESTOP MORTAR BY BIO FIRESHIELD

SHALL BE BIOSTOP 500 INTUMESCENT FIRESTOP CAULK BY BIO FIRESHIELD,

25WB+ CAULK BY 3M OR CS240 FIRESTOP SEALANT BY HILTI.

OR K-2 FIRESTOP MORTAR BY BIO FIRESHIELD. FIRESTOP SEALANTS AND CAULKS

BIOTHERM 100 AND BIOTHERM 200 FIRESTOP SEALANTS BY BIO FIRESHIELD, CP

CHEMICALS, INC., 3M COMPANY,

11. FIRESTOP PUTTY SHALL BE MPS - 2 MOLDABLE PUTTY STIX BY 3M OR MPP - 4S MOLDABLE PUTTY PADS BY 3M.

2. FIRESTOP SLEEVES SHALL BE BIO FIRESTOP SLEEVES BY BIO FIRESHIELD OR PLASTIC PIPE DEVICE BY 3M. 13. INTUMESCENT WRAP STRIPS SHALL BE FS - 195 WRAP STRIP BY 3M.

14. CLASSIFICATION: PROVIDE MATERIALS CLASSIFIED BY EITHER UL OR WARNOCK HERSEY TO PROVIDE FIRESTOPPING EQUAL TO TIME RATING (HOURS) OF CONSTRUCTION BEING PENETRATED.

15. WHERE SUBJECT TO MOVEMENT, FIRESTOP PRODUCTS USED SHALL REMAIN FLEXIBLE TO ALLOW FOR SUCH NORMAL MOVEMENT OF BUILDING STRUCTURE AND PENETRATING ITEM(S) WITHOUT AFFECTING THE INTEGRITY OF THE FIRESTOP

16. CONTRACTOR INSTALLING FIRESTOP MATERIALS SHALL PATCH ALL CRACKS DEVELOPED IN ANY FIRESTOP PRODUCTS THAT SHRINK WHILE CURING. SECTION 15440 - PLUMBING FIXTURES

PLUMBING FIXTURES SHALL BE PROVIDED AS INDICATED ON THE DRAWINGS AND SHALL BE PROVIDED COMPLETE WITH ALL FITTINGS, TRIM, BOLTS, CAPS, PLATES AND HANGERS SUITABLE FOR INDIVIDUAL MOUNTING REQUIREMENTS. FIXTURES SHALL BE OF THE WATER-SAVER TYPE AND SHALL COMPLY WITH LOCAL PLUMBING

FIXTURE SUPPLIES SHALL BE EQUIPPED WITH STOP VALVES. FINISHED INSTALLATION OF PLUMBING FIXTURES SHALL PRESENT A NEAT, FINISHED AND UNIFORM APPEARANCE. ALL FIXTURES, TRIMMINGS, FITTINGS AND ACCESSORIES SHALL BE FINISHED WITH PARTS TRUE TO FORM, PROPERLY FITTED

AND OF MATERIALS FREE FROM DEFECTS. 4. HOT WATER SHALL BE SUPPLIED AND CONTROLLED AT THE LEFT AND COLD WATER AT THE RIGHT WHERE BOTH HOT AND COLD WATER ARE SUPPLIED TO FIXTURES THROUGH SEPARATE OR COMBINATION FITTINGS.

PROTECTION OF FIXTURES, MATERIALS AND EQUIPMENT SHALL BE EXERCISED AT ALL TIMES DURING DELIVERY, STORAGE AND HANDLING, FIXTURES AND EQUIPMENT SHALL BE TIGHTLY COVERED AND PROTECTED AGAINST DIRT, WATER AND CHEMICAL OR MECHANICAL INJURY.

6. EXCEPT AS OTHERWISE SPECIFIED HEREIN OR INDICATED ON THE DRAWINGS, PLUMBING FIXTURES INCLUDING SUPPLY PIPES STOP VALVES WASTE FITTINGS TRAPS, WASTE PIPES AND ESCUTCHEONS SHALL BE EQUAL TO THE MAKE WHOSE CATALOG NUMBERS ARE INDICATED ON THE DRAWINGS. ALL WATER AND WASTE PIPES SHALL RUN TO WALL AND SHALL HAVE CAST BRASS,

SET SCREW TYPE ESCUTCHEONS. ALL EXPOSED METAL PARTS, INCLUDING FAUCETS, FLUSH VALVES, SUPPLY PIPES, STOP VALVES, TRAPS, WASTE PIPES AND ESCUTCHEONS SHALL BE POLISHED CHROMIUM PLATED OVER NICKEL IN ACCORDANCE WITH THE REQUIREMENTS OF THE LATEST ISSUE OF FEDERAL SPECIFICATIONS NO. WW-P-541. PIPING FOR COUNTERTOP LAVATORIES, EVEN IF WITHIN A CABINET, SHALL BE CONSIDERED EXPOSED.

9. ALL FIXTURES SHALL BE ADEQUATELY AND RIGIDLY SUPPORTED. ALL EXPOSED FIXTURE SUPPORTING BOLTS SHALL HAVE CHINA BOLT CAPS. 10. PROVIDE WATERPROOF, NON-YELLOWING LATEX CAULKING AROUND ALL FIXTURES MOUNTED AGAINST A WALL TO SEAL THE JOINT BETWEEN THE WALL AND THE

FIXTURES. PROVIDE WATER HAMMER ARRESTORS WHERE INDICATED. UNITS SHALL BE EQUAL TO JOSAM 75.000 SERIES "ABSORB-TRON". SIZED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS. UNITS SHALL HAVE STAINLESS STEEL SHELL, STAINLESS STEEL ADAPTER, THREADED STAINLESS STEEL PLUG,

ELASTOMER BELLOWS AND HYDRO-PNEUMATIC CUSHION OF ARGON AND

GI YCFRINF 2. CAST IRON PIPE CLEANOUTS SHALL BE TAPPED EXTRA HEAVY CAST IRON FERRULE, CAULKED INTO CAST IRON FITTINGS AND EXTRA HEAVY LEAD SEAL PLUG WITH SOLID HEXAGONAL NUT OR COUNTERSUNK PLUG TO SUIT. 13. NON-HUB CAST IRON PIPE CLEANOUTS SHALL BE NO-HUB CLEANOUT PLUG OR

EXTRA HEAVY BRASS SCREW PLUG IN TAPPED CAST IRON FITTINGS. WITH SOLID HEXAGONAL NUT OR COUNTERSUNK PLUG TO SUIT. 14. CLEANOUT PLUGS SHALL COMPLY WITH THE PLUMBING CODE AND SHALL BE

AMERICAN STANDARD PIPE THREADS WITH "PERMACEL" OR APPROVED TEFLON TAPE APPLIED TO THE MALE THREADS.

15. EXTEND CLEANOUTS TO WALLS AND FLOOR WITH LONG SWEEP ELLS OR "Y" AND 1/8 BENDS WITH PLUGS AND FACE OR DOCK PLATES TO CONFORM TO THE ARCHITECTURAL FINISH IN THE ROOM. WHERE NO DEFINITE FINISH IS INDICATED ON THE ARCHITECTURAL AND/OR MECHANICAL DRAWINGS, USE STAINLESS STEEL WALL PLATES AND FLOOR PLATES OF NICKEL-BRONZE.

16. CLEANOUTS AT FLOOR LINE IN FINISHED AREAS SHALL BE EQUAL TO JOSAM SERIES 58370 WITH NICKEL-BRONZE TOPS, CAULK OUTLETS AND FLASHING CLAMPS AS REQUIRED. CLEANOUTS ALONG THE RUN OF EXPOSED DRAINAGE PIPE SHALL BE SERIES 58500 CAULKED INTO PIPE SPIGOT.

PROVIDE FLOOR CLEANOUTS WHERE INDICATED. UNITS SHALL BE EQUAL TO JOSAM 56000 SERIES "LEVELEZE KLEENATRON" WITH COATED CAST IRON BODY, ADJUSTABLE ABS HOUSING AND NIKALOY TOP.

18. IT SHALL BE THE RESPONSIBILITY OF THIS CONTRACTOR TO ROUGH-IN AND MAKE FINAL CONNECTIONS TO ALL ITEMS OF LAUNDRY EQUIPMENT FURNISHED BY OTHERS

SECTION 15700 - HEATING, VENTILATING AND COOLING EQUIPMENT MATERIAL, EQUIPMENT, INSTALLATION AND PROCEDURES, ENERGY RATINGS AND CONSERVATION, ANTI-POLLUTION AND SAFETY PROCEDURES SHALL MEET THE REQUIREMENTS OF CURRENT STANDARDS, CODES, AND SPECIFICATIONS. ALL UNFIRED PRESSURE VESSELS SHALL BE TESTED AND STAMPED ACCORDING TO ASME REQUIREMENTS. ALL HEATING AND COOLING COILS SHALL BE ARI CERTIFIED EQUIPMENT SHALL BEAR THE SEAL OF RATING SERVICES OR TESTING AGENCIES, SUCH AS, ADC, AMCA, ARI, NEMA, UL.

PROVIDE PLATFORMS, BASES, WALL MOUNTINGS, HANGERS, INSERTS AND ANY SPECIAL MOUNTING DEVICES FOR EQUIPMENT SPECIFIED IN THIS SECTION AS REQUIRED AND RECOMMENDED BY THE MANUFACTURER OF EACH SPECIFIC ITEM 5. CABINET WALL UNIT HEATERS

A. THE HEATING EQUIPMENT SHALL INCLUDE AN ELECTRIC AUTOMATIC FAN FORCED AIR HEATER SUITABLE FOR AREA HEATING. THE HEATER SHALL BE DESIGNED FOR WALL MOUNTING, RECESS OR SURFACE. HEATERS SHALL BE CETLUS LISTED.

B. BACK BOX: THE BACK BOX SHALL BE DESIGNED AS A RECESSED ROUGH-IN BOX IN EITHER MASONRY OR FRAME INSTALLATIONS AND IS ALSO USED WHEN SURFACE MOUNTING FRAMES ARE USED IN SURFACE MOUNTING INSTALLATIONS. THE BACK BOX SHALL BE HEAVY GAUGE GALVANIZED STEE AND SHALL CONTAIN KNOCKOUTS THROUGH WHICH POWER LEADS ENTER. INNER FRAME ASSEMBLY: THE HEATER ASSEMBLY, WHICH FITS INTO THE BACK BOX, SHALL CONSIST OF A HEAVY GAUGE STEEL FAN PANEL TO WHICH ALL OF THE OPERATIONAL PARTS OF THE HEATER ARE MOUNTED. THE INNER

D. HEATING ELEMENT: THE HEATING ELEMENT SHALL BE OF THE NON-GLOWING DESIGN CONSISTING OF AN 80/20 NICKEL-CHROMIUM RESISTANCE WIRE ENCLOSED IN A STEEL SHEATH TO WHICH PLATE FINS ARE COPPER BRAZED THE ELEMENT SHALL COVER THE ENTIRE AIR DISCHARGE AREA TO ENSURE UNIFORM HEATING OF ALL DISCHARGED AIR. IT SHALL BE WARRANTIED FOR 5

FRAME ASSEMBLY SHALL BE COMPLETELY PREWIRED.

E. ON/OFF SWITCH: A DOUBLE-POLE, SINGLE THROW ON/OFF SWITCH SHALL BE MOUNTED ON THE BACK BOX FOR POSITIVE DISCONNECT OF POWER SUPPLY. IT WILL BE COMPLETELY CONCEALED BEHIND THE FRONT COVER.

MOTOR AND CONTROLS: THE FAN MOTOR SHALL BE TOTALLY ENCLOSED, IMPEDANCE PROTECTED, PERMANENTLY LUBRICATED AND WITH A TOTALLY ENCLOSED ROTOR. FAN CONTROL SHALL BE OF THE BIMETALLIC, SNAP-ACTION TYPE AND SHALL ACTIVATE FAN AFTER HEATING ELEMENT REACHES OPERATING TEMPERATURE, AND CONTINUE TO OPERATE THE FAN AFTER THE THERMOSTAT IS SATISFIED AND UNTIL ALL HEATED AIR HAS BEEN DISCHARGED. THE THERMOSTAT SHALL BE EXTERNALLY MOUNTED AS INDICATED ON DRAWINGS AND CONTROL DIAGRAMS. THE FAN SHALL BE FIVE-BLADED ALUMINUM.

SURFACE MOUNTING FRAME: THE SURFACE MOUNTING FRAME SHALL BE OF HEAVY GAUGE STEEL DESIGNED TO MOUNT AROUND THE BACK BOX FOR A FINISHED SURFACE INSTALLATION. SLOT KNOCK OUTS SHALL BE PROVIDED FOR POWER SUPPLY CONDUIT.

H. FRONT COVER: THE LOUVERED FRONT COVER SHALL BE OF HEAVY GAUGE STEEL WITH A POWDER PAINT FINISH. A PLUG BUTTON WILL BE PROVIDED TO REPLACE THE THERMOSTAT KNOB AND RENDER THE UNIT TAMPER-RESISTANT.

I. FINISH: ALL SHEET METAL PARTS. EXCEPT THE GALVANIZED STEEL BACK BOX. SHALL BE PHOSPHATIZED. THEN COMPLETELY PAINTED BY A POWDER PAINT PROCESS. CONSULT ARCHITECTURAL TEAM FOR CHOICE OF COLOR OF THE PAINT.

6. ELECTRIC AIR DUCT HEATERS A. APPROVALS – HEATERS SHALL MEET THE REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE AND SHALL BE LISTED BY UNDERWRITERS LABORATORIES FOR ZERO SPACING BETWEEN THE DUCT AND COMBUSTIBLE SURFACES AND FOR USE WITH HEAT PUMPS AND AIR CONDITIONING EQUIPMENT.

B. HEATING ELEMENTS SHALL BE OPEN COIL, 80% NICKEL, 20% CHROMIUM, GRADE A RESISTANCE WIRE. TYPE C ALLOYS CONTAINING IRON OR OTHER ALLOYS ARE NOT ACCEPTABLE. COILS SHALL BE MACHINE CRIMPED INTO STAINI ESS STEEL TERMINALS EXTENDING AT LEAST 1" INTO THE AIRSTREAM AND ALL TERMINAL HARDWARE SHALL BE STAINLESS STEEL. COILS SHALL BE SUPPORTED BY CERAMIC BUSHINGS STAKED INTO SUPPORTING BRACKETS.

C. HEATER FRAMES AND TERMINAL BOXES SHALL BE CORROSION RESISTANT STEEL, UNLESS OTHERWISE INDICATED, THE TERMINAL BOX SHALL BE NEMA 1 TYPE CONSTRUCTION AND SHALL BE PROVIDED WITH A HINGED LATCHING COVER AND MULTIPLE CONCENTRIC KNOCKOUTS FOR FIELD WIRING.

- D. ALL HEATERS SHALL BE FURNISHED WITH A DISC TYPE. AUTOMATIC RESET THERMAL CUTOUT FOR PRIMARY OVER-TEMPERATURE PROTECTION. ALL HEATERS SHALL ALSO BE FURNISHED WITH DISC TYPE LOAD CARRYING MANUAL RESET THERMAL CUTOUTS, FACTORY WIRED IN SERIES WITH HEATER STAGES FOR SECONDARY PROTECTION. HEAT LIMITERS OR OTHER FUSIBLE OVERTEMPERATURE DEVICES ARE NOT ACCEPTABLE.
- E. HEATERS SHALL BE RATED FOR THE VOLTAGE, PHASE, AND NUMBER OF HEATING STAGES INDICATED IN THE SCHEDULE. ALL THREE-PHASE HEATERS SHALL HAVE EQUAL. BALANCED. THREE-PHASE STAGES. ALL INTERNAL WIRING SHALL BE STRANDED COPPER WITH 105°C INSULATION AND SHALL BE TERMINATED IN CRIMPED CONNECTORS OR BOX LUGS.
- F. TERMINAL BLOCKS SHALL BE PROVIDED FOR ALL FIELD WIRING AND SHALL BE SIZED FOR INSTALLATION OF 75°C COPPER WIRE RATED IN ACCORDANCE WITH NEC REQUIREMENTS.
- G. HEATERS SHALL BE FURNISHED, EITHER WITH THE CONTROL OPTION SPECIFIED IN THE SCHEDULE AND DESCRIBED BELOW. OR WITH THE SPECIFIC COMPONENTS LISTED IN THE SCHEDULE.
- H. THERMAL CUTOUTS, AIRFLOW SWITCH, PE SWITCHES, CONTACTORS (WHERE REQUIRED), FUSES (OVER 48 AMPS), CONTROL CIRCUIT TRANSFORMER (WHERE REQUIRED), AND BUILT-IN SNAP-ACTING DOOR INTERLOCKED DISCONNECT SWITCH.
- 7. POWER ROOF EXHAUST FANS A. GENERAL REQUIREMENTS: DOWNBLAST FAN SHALL BE FOR ROOF MOUNTED APPLICATIONS, MAXIMUM CONTINUOUS OPERATING TEMPERATURE IS 180 FAHRENHEIT (82.2 CELSIUS). EACH FAN SHALL BEAR A PERMANENTLY AFFIXED
- MANUFACTURE'S ENGRAVED METAL NAMEPLATE CONTAINING THE MODEL NUMBER AND INDIVIDUAL SERIAL NUMBER. B. WHEEL: CONSTRUCTED OF ALUMINUM, NON-OVERLOADING, BACKWARD INCLINED CENTRIFUGAL, STATICALLY AND DYNAMICALLY BALANCED IN ACCORDANCE TO AMCA STANDARD 204-05. THE WHEEL CONE AND FAN INLET
- WILL BE MATCHED AND SHALL HAVE PRECISE RUNNING TOLERANCES FOR MAXIMUM PERFORMANCE AND OPERATING EFFICIENCY. C. MOTORS: AC INDUCTION MOTOR, OPEN DRIPPROOF, WITH PERMANENTLY LUBRICATED, HEAVY DUTY BALL BEARING TYPE TO MATCH WITH THE FAN LOAD AND FURNISHED AT THE SPECIFIC VOLTAGE AND PHASE FOR FAN SIZES 90 AND LARGER. FAN SIZES 60-80 USE SLEEVE BEARING. MOTOR IS TO BE MOUNTED ON VIBRATION ISOLATORS, OUT OF THE AIRSTREAM, FOR MOTOR COOLING THERE SHALL BE FRESH AIR DRAWN INTO THE MOTOR
- COMPARTMENT THROUGH AN AREA FREE OF DISCHARGE CONTAMINANTS. MOTOR SHALL BE ACCESSIBLE FOR MAINTENANCE D. HOUSING: MOTOR COVER. SHROUD. CURB CAP. AND LOWER WINDBAND SHALL BE CONSTRUCTED OF HEAVY GAUGE ALUMINUM. SHROUD SHALL HAVE AN INTEGRAL ROLLED BEAD FOR EXTRA STRENGTH. SHALL BE DRAWN FROM A DISC AND DIRECT AIR DOWNWARD. LOWER WINDBAND SHALL HAVE A FORMED
- EDGE FOR ADDED STRENGTH. MOTOR COVER SHALL BE DRAWN FROM A DISC. ALL HOUSING COMPONENTS SHALL HAVE FINAL THICKNESSES EQUAL TO OR GREATER THEN PREFORMED THICKNESS. CURB CAP SHALL HAVE PRE-PUNCHED MOUNTING HOLES TO ENSURE CORRECT ATTACHMENT WITH RIGID INTERNAL SUPPORT STRUCTURE AND BE LEAK PROOF.
- E. HOUSING SUPPORTS AND DRIVE FRAME: DRIVE FRAME ASSEMBLIES SHALL BE CONSTRUCTED OF HEAVY GAUGE STEEL AND MOUNTED ON VIBRATION ISOLATORS.
- F. VIBRATION ISOLATION: SHALL BE RUBBER ISOLATORS, SIZED TO MATCH THE WEIGHT OF EACH FAN. G. DISCONNECT SWITCHES: SHALL BE NEMA 4X RATED, POSITIVE ELECTRICAL
- SHUT-OFF, WIRED AS DESCRIBED ON CONTROL DIAGRAM ON PLAN. H. OPTIONS AND ACCESSORIES: BIRD SCREEN CONSTRUCTED FROM
- GALVANIZED STEEL, PROTECTING FAN DISCHARGE. I. ROOF CURBS: GPNS TYPE, MOUNTED ONTO ROOF WITH FAN, ALUMINUM; 1.5"
- THICK INSULATION; UNCOATED. HI-PRO POLYESTER.
- J. CURB EXTENSION: ISB TYPE, ALUMINUM CONSTRUCTION. HI-PRO POLYESTER COATING.
- K. CURB SEAL: RUBBER SEAL BETWEEN THE FAN AND THE ROOF CURB.
- L. DAMPERS: GRAVITY, AS SCHEDULED ON DRAWING. M. HINGE KIT: ALUMINUM HINGES, ALLOWS THE FAN TO TILT AWAY FOR ACCESS TO WHEEL AND DUCTWORK FOR INSPECTION AND CLEANING. HINGE BASE: ALUMINUM HINGES, HINGES AND RESTRAINT CABLES ARE MOUNTED TO A BASE (SLEEVE), ALLOWS THE FAN TO TILT AWAY FOR ACCESS TO WHEEL AND DUCTWORK FOR INSPECTION AND CLEANING.
- N. PRESSURE PROBE: 1/4 INCH DIAMETER TUBE IN THE FAN VENTURI THAT ALLOWS HOOK UP TO MANOMETER.
- 0. TIE-DOWN POINTS: FOUR HEAVY GAUGE ALUMINUM BRACKETS TO SECURE THE FAN IN HEAVY WIND APPLICATIONS.
- TUBULAR IN-LINE CENTRIFUGAL FANS A. DUCT MOUNTED SUPPLY AIR FAN SHALL BE OF THE CENTRIFUGAL DIRECT DRIVE TYPE. THE FAN HOUSING SHALL BE CONSTRUCTED OF HEAVY-GAUGE GALVANIZED STEEL. THE HOUSING INTERIOR SHALL BE LINED WITH 0.5 INCH (13 MM) ACOUSTICAL INSULATION. THE ACCESS FOR WIRING SHALL BE EXTERNAL. THE MOTOR DISCONNECT SHALL BE INTERNAL AND OF THE PLUG-IN TYPE
- B. THE MOTOR SHALL BE MOUNTED ON VIBRATION ISOLATORS. THE FAN WHEEL SHALL BE OF THE FORWARD-CURVED CENTRIFUGAL TYPE AND DYNAMICALLY BALANCED. ALL FANS SHALL BEAR THE AMCA CERTIFIED RATINGS PROGRAM AMCA AIR PERFORMANCE SEAL AND SHALL BE UL/CUL LISTED.
- C. THE OUTLET DUCT COLLAR SHALL NOT INCLUDE AN ALUMINUM BACKDRAFT DAMPER. CONTACT THE MANUFACTURER TO ORDER THE FAN WITHOUT AN INTEGRAL BACK DRAFT DAMPER. OR OBTAIN MANUFACTURER'S INSTRUCTIONS TO REMOVE THE DAMPER IN FIELD.
- SECTION 15900 DUCTWORK, OUTLETS AND FILTERS 1. DUCT SYSTEMS SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF SMACNA HVAC DUCT CONSTRUCTION STANDARDS, METAL AND FLEXIBLE, NFPA AND
- MANUFACTURER'S RECOMMENDATIONS WHERE APPLICABLE. 2. LOW VELOCITY AIR CONDITIONING SUPPLY, RETURN, OUTSIDE AIR, EXHAUST AND GENERAL USE DUCTWORK SHALL BE GALVANIZED STEEL. FITTINGS FOR ALL DUCT
- SYSTEMS SHALL BE OF THE SAME MATERIAL AS THE DUCT. ALL SYSTEMS SHALL BE CLASSIFIED AS 2-INCH W.G., UNLESS NOTED OTHERWISE.
- 4. TURNING VANES FOR SQUARE OR SHORT RADIUS ELBOWS IN RECTANGULAR DUCTS SHALL BE SINGLE TURNING VANES.
- DUCTWORK SHALL BE OF GASKETED, FLANGED TYPE CONSTRUCTION, EQUAL TO DUCTMATE, TDC, OR TDS IN ALL SIZES WHERE AVAILABLE. SMALLER SIZES SHALL BE OF FLAT "S" CONSTRUCTION.
- 6. DUCT SEALANT SHALL BE APPLIED WITH CAULKING GUNS ON INTERIOR OF JOINTS. NO SEALANT SHALL BE BRUSHED ON THE EXTERIOR OF THE DUCTWORK.
- DUCTWORK LAYOUT SHALL BE THOROUGHLY EXAMINED AND ARRANGEMENTS MADE TO PROVIDE ALL NECESSARY OFFSETS, BENDS OR CHANGES, INCLUDING DUCT ENLARGEMENTS AND STREAMLINED TO ACCOMMODATE PIPE AND HANGER RODS, CASINGS, ETC., AS REQUIRED TO ELIMINATE CONFLICT WITH OTHER TRADES.
- WHERE AIR DUCTS PASS THROUGH WALLS, FLOORS OR PARTITIONS, THE SPACE BETWEEN THE DUCT AND THE OPENING WILL BE SEALED AS SPECIFIED UNDER
- PROVIDE FIRE DAMPERS WHERE INDICATED BY THE DRAWINGS. FIRE DAMPERS SHALL BE OF ANY DESIGN, WITH THE BLADES OUT OF THE AIR STREAM AND APPROVED BY THE FIRE UNDERWRITERS. ALL FIRE DAMPERS INSTALLED MUST BEAR THE LABEL OF THE UNDERWRITERS LABORATORIES.
- 10. PROVIDE ACCESS DOORS IN DUCTS FOR ACCESS TO EACH FIRE DAMPER. ACCESS DOORS SHALL NOT BE SMALLER THAN 12-INCHES BY 12-INCHES, DUCT SIZE PERMITTING.
- 11. PROVIDE ACOUSTIC DUCT LINER WHERE INDICATED ON THE DRAWINGS. SIZES OF DUCTS INDICATED ON DRAWINGS ARE FREE AREA INSIDE OF LINING. ACOUSTIC DUCT LINER SHALL BE EQUAL TO OWENS/CORNING AEROFLEX DUCT LINER, 1-INCH THICK FIBERGLASS CONFORMING TO NFPA 90A.
- 12. REGISTERS, GRILLES AND DIFFUSERS SHALL BE OF THE TYPE, SIZE AND DISCHARGE PATTERN SCHEDULED ON THE DRAWINGS. FURNISH DEVICES IN STANDARD FACTORY FINISH, IN COLOR INDICATED.
- 13. SHOP DRAWINGS SHALL BE SUBMITTED FOR ALL NEW SHEET METAL WORK. SHEET METAL SHOP DRAWINGS SHALL BE 3/8-INCH SCALE AND SHALL INDICATE ALL CEILING OBSTRUCTIONS, INCLUDING, BUT NOT LIMITED TO, FIRE ALARM HEADS, CEILING INSERTS, LIGHTING FIXTURES, ETC.
- 14. SHEET METAL CONTRACTOR SHALL COORDINATE DUCTWORK AND REGISTERS WITH ALL OBSTRUCTIONS. 15. PROVIDE ACCESS PANELS IN DUCTWORK AT EACH FIRE DAMPER, BOTH SIDES OF
- WATER COILS, SMOKE DAMPER, SMOKE DETECTOR, VALVE AND ALL SIMILAR DEVICES REQUIRING ACCESS AND SERVICE. ALL ACCESS PANELS SHALL BE MINIMUM 18" x 18" WHERE POSSIBLE, AND BE COMPLETE WITH SASH LOCKS. 16. ROUND ELBOWS SHALL BE SMOOTH, STAMPED TYPE OR FIVE PIECE TYPE, HAVING
- CENTERLINE RADIUS OF 1-1/2 TIMES THE DUCT DIAMETER. AFTER NEW DUCT OR PORTIONS OF SYSTEMS HAVE BEEN INSTALLED, THE NEW DUCT SYSTEM SHALL BE THOROUGHLY VACUUMED TO ASSURE NO DUST WILL BE DISPERSED INTO THE OCCUPIED SPACE. VACUUMING SHALL INCLUDE ALL SUPPLY AND RETURN AIR DUCTWORK.
- 18. PROVIDE OUTSIDE AIR INTAKE LOUVERS IN QUANTITIES AND SIZES AS INDICATED ON THE DRAWINGS. LOUVER DEPTH SHALL BE 4-INCH AND SHALL BE OF EXTRUDED ALUMINUM CONSTRUCTION. WITH 12 GAUGE BLADES AND JAMBS. LOUVER SHALL HAVE A MAXIMUM PRESSURE DROP OF 0.26-INCH, AND A MAXIMUM WATER PENETRATION OF 0.003 OUNCES AT 1100-FEET PER MINUTE, BASED ON TESTS MADE IN ACCORDANCE WITH AMCA STANDARD 500, AND COMPLY WITH THE REQUIREMENTS OF THE AMCA CERTIFIED RATINGS PROGRAM. PROVIDE IN FACTORY BAKED ENAMEL FINISH, IN A COLOR AS LATER SELECTED BY THE ARCHITECT.

SECTION 15970 - AUTOMATIC TEMPERATURE CONTROLS

- SEE CONTROL SEQUENCE NOTES AND CONTROL DIAGRAM LOCATED ON M1.2 DRAWINGS FOR DETAILED INSTRUCTIONS. SECTION 15990 - TESTING, ADJUSTING AND BALANCING
- 1. PRIOR TO MAKING FINAL CONNECTIONS TO EXISTING WASTE AND VENT LINES. TEST NEW WASTE AND VENT PIPING FOR LEAKS BY MEANS OF HYDROSTATIC HEAD EQUAL TO THE HEIGHT OF THE BUILDING. CORRECT ALL LEAKS THAT DEVELOP.
- 2. AT THE COMPLETION OF THE WORK ALL NEW EQUIPMENT AND ALL PIPING AND CONTROL SYSTEMS SHALL BE ADJUSTED AND BALANCED SO AS TO FUNCTION IN ACCORDANCE WITH THE REQUIREMENTS OF THE DRAWINGS. ALL SUCH ADJUSTING AND BALANCING SHALL BE DONE UNDER BOTH THE COOLING AND HEATING CYCLES OF OPERATION AND CONTROL SO THAT ALL SYSTEMS WILL OPERATE SATISFACTORILY UNDER BOTH CYCLES WITHOUT SEASONAL ADJUSTMENTS.
- BEFORE ANY SYSTEMS ARE BALANCED THE CONTRACTOR, UNDER THIS SPECIFICATION, SHALL SUBMIT TO THE ENGINEER. FOR APPROVAL. THE BALANCING METHODS AND INSTRUMENTS HE PROPOSES TO USE. THE CONTRACTOR SHALL NOT PROCEED WITH AIR BALANCING UNTIL BOTH HAVE BEEN NOTIFIED. ALL INSTRUMENTS SHALL BE CALIBRATED BEFORE BEING FIRST USED, AND ADDITIONALLY, DURING THE PROGRESS OF THE BALANCING IF, IN THE OPINION OF THE ENGINEER. SUCH RECALIBRATION IS NECESSARY.
- 4. PROVIDE ALL REQUIRED BELTS, SHEAVES, ETC. TO ASSURE DELIVERY OF THE REQUIRED AIR QUANTITIES. SUPPLY, RETURN AND EXHAUST AIR QUANTITIES SHALL BE MEASURED AND RECORDED.
- 5. PREPARE AIR BALANCE REPORT IN ACCORDANCE WITH NEBB "PROCEDURAL STANDARDS FOR TESTING, ADJUSTING AND BALANCING OF ENVIRONMENTAL SYSTEMS," FOR THE NEW SYSTEM, THE REPORT SHALL BE PREPARED AND SUBMITTED TO THE ENGINEER FOR APPROVAL. A CONTRACTOR APPROVED BY THE NEBB OR AABC SHALL PREPARE BALANCING REPORT. NEBB OR AABC FORMS SHALL BE USED FOR THE REPORT.
- 6. ALL SUPPLY AND RETURN AIR OUTLETS WITH AN AIR QUANTITY INDICATED SHALL BE TESTED AND BALANCED ALL MAIN TRUNK DUCTS SHALL HAVE PITOT TRAVERSES TAKEN UPSTREAM OF ANY DIFFUSERS. ALL DAMPER POSITIONS SHALL BE MARKED ON DUCTWORK TO INDICATE THE PROPER POSITION FOR MAINTAINING DESIGN AIR QUANTITIES. BALANCE THE SYSTEM WITH CLEAN AIR FILTERS IN THE NEW SYSTEM. AIR QUANTITIES MAY BE AS MUCH AS 10 PERCENT HIGH, BUT SHALL NOT BE BELOW DESIGN REQUIREMENTS.
- SECTION 15995 WATER TREATMENT
- 1. AFTER FINAL TESTING FOR LEAKS, ALL POTABLE WATER LINES SHALL BE THOROUGHLY FLUSHED TO REMOVE FOREIGN MATERIAL. BEFORE PLACING THE SYSTEMS IN SERVICE, ENGAGE A QUALIFIED SERVICE ORGANIZATION TO STERILIZE THE WATER LINES.
- A. SUBMIT CERTIFICATE TO ARCHITECT SHOWING SYSTEM HAS BEEN STERILIZED.

REVISIONS ISSUE DATE REVISIONS 09/09/21 ISSUED FOR BID
KYLE O'CONNOR, PROJECT MANAGER
SPACE FOR CONSULTANT RECOGNITION B L A C K N E Y H A Y E S A R C H I T E C T S Federal Reserve Bank Building 100 North Independence Mall West Suite 5 SE - Philadelphia, PA 19106 215-627-0200 - wickfisherwhite.com Project No. 200151-000
CITY OF PHILADELPHIA DEPARTMENT OF PUBLIC PROPERTY 1400 JFK BOULEVARD 7TH FLOOR, CITY HALL PHILADELPHIA PENNSYLVANIA PROJECT TITLE ENGINE 72 DECONTAMINATION SUITE DRAWING TITLE
Image: Note of the construction of

DRAWING SPECIFICATIONS - ELECTRICAL (DIVISION 16) SECTION 16001 - SUMMARY OF THE WORK

- 1. WORK UNDER DIVISION 16 SHALL INCLUDE, BUT NOT BE LIMITED TO, THE
- FOLLOWING: A. UPGRADE ELECTRIC UTILITY SERVICE, INCLUDING NEW MAIN SERVICE PANEL
- B. POWER TO NEW WASHER, DRYING CABINETS, AND HVAC EQUIPMENT
- C. RELOCATION OF EXISTING LIGHTS, INCLUDING NEW BRANCH CIRCUIT AND
- PROVISION OF NEW SWITCH D. NEW WIRING DEVICES
- SECTION 16010 BASIC ELECTRICAL REQUIREMENTS

CONFORM TO DESIGN INTENT.

- THE CONTRACTOR SHALL PROVIDE ALL LABOR, MATERIAL, EQUIPMENT AND SERVICES FOR THE PROPER INSTALLATION AND OPERATION OF THE ELECTRICAL WORK AS INDICATED ON THE DRAWINGS.
- 2. THE CONTRACTOR SHALL PROVIDE ALL LABOR. EQUIPMENT AND SERVICES NECESSARY FOR REMOVAL OR RELOCATION OF EXISTING ELECTRICAL EQUIPMENT AS REQUIRED BY THE PROJECT.
- 3. TEST AND OPERATE ALL SYSTEMS TO DEMONSTRATE TO THE OWNER, OR HIS DESIGNATED REPRESENTATIVE, THAT THE INSTALLATION OF THESE SYSTEMS
- 4. THE CONTRACTOR SHALL COMPLY WITH ALL RULES AND REGULATIONS OF THE OWNER, LOCAL, STATE AND FEDERAL LAWS, ORDINANCES, RULES AND REGULATIONS APPLICABLE TO THE WORK SHOWN OR SPECIFIED, AND WITH THE RULES OF THE NATIONAL FIRE PROTECTION ASSOCIATION. THE OWNER'S UNDERWRITER, AND ALL PUBLIC UTILITIES HAVING CONNECTION WITH ANY OF THE VARIOUS SYSTEMS HEREIN SPECIFIED. WHERE APPLICABLE, ALL EQUIPMENT SHALL CARRY THE LABEL OF THE UNDERWRITERS LABORATORIES. INC.
- 5. THE CONTRACTOR SHALL GIVE ALL NECESSARY NOTICES. OBTAIN, PAY FOR AND DELIVER ALL PERMITS, CERTIFICATES OF INSPECTION, AND PAY ALL COSTS. REQUIRED BY THE AUTHORITIES HAVING JURISDICTION. DELIVER ALL PERMITS CERTIFICATES AND APPROVALS TO THE OWNERS AGENT PRIOR TO FINAL ACCEPTANCE OF THE WORK. THE CONTRACTOR MUST FILE NECESSARY DRAWINGS. PREPARE DOCUMENTS AND MAKE APPLICATION FOR EACH REQUIRED PERMIT AND INSPECTION, PRIOR TO COMMENCING WORK TO AVOID DELAYS DURING CONSTRUCTION.
- 6. INDEPENDENT INSPECTION AGENCY CERTIFICATES SHALL BE FURNISHED FOR ALL ELECTRICAL WORK. ALL CERTIFICATES SHALL BE IN DUPLICATE AND SHALL BE DELIVERED TO THE OWNER'S AGENT AND SHALL BECOME THE PROPERTY OF THE
- 7. BEFORE SUBMITTING HIS BID, THE CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS IN THE FIELD. FAILURE TO DO SO WILL NOT RELIEVE THE CONTRACTOR OF HIS OBLIGATION TO PAY FOR ALL COSTS THAT MAY BE INCURRED. DUE TO THE RELOCATION. REMOVAL OR MODIFICATION OF ANY PART OF THE EXISTING ELECTRICAL WORK THAT MAY BE REQUIRED, OR ANY CONDITION THAT MAY AFFECT THE COST OF INSTALLING THE NEW WORK.
- 8. IT IS THE INTENTION OF THE DRAWINGS AND SPECIFICATIONS TO CALL FOR CLEAR FINISHED WORK, TESTED AND READY FOR OPERATION. ANY INCIDENTAL ACCESSORIES NECESSARY TO MAKE THE WORK COMPLETE AND PERFECT IN ALL RESPECTS AND READY FOR OPERATION, EVEN IF NOT PARTICULARLY SPECIFIED OR SHOWN SHALL BE PROVIDED WITHOUT ADDITIONAL EXPENSE MINOR DETAILS NOT USUALLY SHOWN OR SPECIFIED, BUT MANIFESTLY NECESSARY FOR THE PROPER INSTALLATION AND OPERATION OF THE VARIOUS SYSTEMS, SHALL BE INCLUDED IN THE WORK, THE SAME AS IF SPECIFIED OR SHOWN ON THE DRAWINGS.
- 9. SUBMIT DIGITAL FILES OF SHOP DRAWINGS IN PDF FORMAT. SHOP DRAWINGS SHALL INCLUDE PLANS, ELEVATIONS, SECTIONS, MOUNTING DETAILS OF COMPONENT PARTS, POINT TO POINT INTERCONNECTION DIAGRAMS, ELEMENTARY DIAGRAMS, SINGLE LINE DIAGRAMS AND ANY OTHER DRAWINGS NECESSARY TO SHOW THE FABRICATION AND CONNECTION OF THE COMPLETE ITEM OR SYSTEM.
- 10. RECORD DRAWINGS SHALL BE KEPT IN THE CONTRACTOR'S JOB SITE OFFICE FROM THE BEGINNING OF THE WORK, SHALL BE MAINTAINED DAILY AND SHALL BE PRODUCED FOR INSPECTION BY THE OWNER OR HIS AGENTS UPON DEMAND. AT THE COMPLETION OF THE PROJECT, BIND THE PRINTS INTO A SET AND FORWARD THEM TO THE OWNER'S AGENT WITHIN 30 DAYS OF SYSTEM ACCEPTANCE. THE RECORD DRAWINGS SHALL CONSIST OF A SEPARATE SET OF WHITE PRINTS OF THE CONTRACT DRAWINGS ON WHICH SHALL BE RECORDED IN INK OR COLORED PENCIL THE FOLLOWING:
- A. DIMENSIONED LOCATIONS OF CONDUITS BURIED BELOW, OR CAST INTO, CONCRETE FLOOR SLABS.
- B. DIMENSIONED LOCATIONS OF CONDUITS OUTSIDE THE BUILDING.
- C. LUMINAIRE ARRANGEMENTS, IF DIFFERENT FROM CONTRACT DRAWINGS. D. LOCATIONS OF ELECTRIC PANELS, MOTOR STARTERS, WALL MOUNTED
- EQUIPMENT AND THE LIKE, IF DIFFERENT FROM CONTRACT DRAWINGS.
- E. ALL WORK ADDED TO THE CONTRACT BY LAYOUT DRAWINGS, FIELD SKETCHES, ADDENDUM OR CHANGE ORDER.
- 11. BEFORE COMPLETION OF THE INSTALLATION, THE CONTRACTOR SHALL FURNISH THREE COPIES OF MANUALS COVERING IN DETAIL ALL REQUIRED INSTRUCTIONS FOR THE OPERATION OF THE SYSTEMS PROVIDED.
- 12. FURNISH ALL LABOR REQUIRED BY THE OWNER'S AGENT, AND OR INSPECTION AGENCIES IN MAKING EXAMINATION OF WORK, DURING THE COURSE OF CONSTRUCTION 13. THE CONTRACTOR SHALL FURNISH A WRITTEN WARRANTY FOR THIS INSTALLATION.
- SUBSTANTIALLY STATING THAT ALL MATERIALS, EQUIPMENT, FIXTURES AND APPURTENANCES AND THE SYSTEMS WHICH THEY COMPRISE ARE FREE FROM INHERENT DEFECTS OR FLAWS IN WORKMANSHIP OR OPERATION, AND ARE FUNCTIONING PROPERLY AND CAPABLE OF PROVIDING SATISFACTORY OPERATION IN ACCORDANCE WITH DESIGN CONDITIONS. ANY DEFECTS IN WORKMANSHIP, DEFECTIVE MATERIALS, MALFUNCTION OF EQUIPMENT OR UNSATISFACTORY PERFORMANCE, AND ALL OTHER WORK DAMAGED THEREBY, SHALL BE REPAIRED REPLACED OR OTHERWISE REMEDIED WITHOUT EXPENSE TO THE OWNER. SUCH REPAIRS OR REPLACEMENTS SHALL BE MADE WITHIN REASONABLE TIME AND AT THE CONVENIENCE OF THE OWNER. SUCH WARRANTY SHALL BE IN EFFECT FOR A PERIOD OF ONE YEAR FROM DATE OF ACCEPTANCE OF THE SYSTEMS AS A WHOLE.
- 14. MATERIAL OR EQUIPMENT SPECIFIED BY MANUFACTURER, BRAND NAME, TYPE OR CATALOG NUMBER. ARE DESIGNED TO ESTABLISH STANDARDS OF DESIRED QUALITY, STYLE, PERFORMANCE, ELECTRICAL, MECHANICAL AND PHYSICAL CHARACTERISTICS, AND DIMENSIONS, SUBSTITUTION OF ANY ITEMS SO SPECIFIED WILL NOT BE PERMITTED WITHOUT THE WRITTEN APPROVAL OF THE OWNER'S AGENT. WHERE THE SUBSTITUTION REQUIRES ANY REDESIGN OR RELOCATION OF THE STRUCTURES, FOUNDATIONS, PARTITIONS, PIPING, RACEWAYS, WIRING OR ANY OTHER PART OF THE MECHANICAL, ELECTRICAL, STRUCTURAL OR ARCHITECTURAL WORK, ALL SUCH REDESIGN AND ALL THE NEW DRAWINGS AND DETAILS REQUIRED SHALL BE PREPARED BY THE CONTRACTOR AT HIS OWN EXPENSE AND SUBMITTED FOR THE APPROVAL OF THE OWNER'S AGENT. ALL SUCH ADDITIONAL WORK AND ANY ADDITIONAL EQUIPMENT FOR THESE SYSTEMS SHALL BE PROVIDED AT THE EXPENSE OF THE CONTRACTOR.
- 15. THE CONTRACTOR SHALL PROVIDE, UPON REQUEST, COPIES OF MATERIAL SAFETY DATA SHEETS FOR ANY MATERIAL OR PRODUCT USED IN THE WORK AND NOT SUPPLIED BY THE OWNER. MSDS SHEETS SHALL BE PROVIDED PRIOR TO DELIVERY OF MATERIALS TO THE JOB SITE.
- 16. WORKMANSHIP SHALL BE FIRST CLASS IN EVERY RESPECT AND SHALL BE PERFORMED BY TRADESMAN SKILLED IN THE PARTICULAR AREA OF THE WORK AND IN STRICT ACCORDANCE WITH ALL APPLICABLE LOCAL, STATE OR PUBLIC UTILITY LAWS, ORDINANCES OR REGULATIONS.
- 17. THE CONTRACTOR SHALL EFFECTIVELY PROTECT THE EXISTING BUILDING, ITS CONTENTS AND ALL HIS NEW WORK AGAINST DAMAGE FROM ANY SOURCE RELATED TO THIS CONTRACT UNTIL FINAL COMPLETION AND ACCEPTANCE BY THE OWNER. THE CONTRACTOR SHALL REPAIR OR REPLACE ANY DAMAGED WORK AT HIS EXPENSE AND TO THE SATISFACTION OF THE OWNER'S AGENT.
- 18. AT ALL TIMES, KEEP THE PREMISES FREE FROM ACCUMULATION OF WASTE MATERIAL AND RUBBISH CAUSED BY AGENTS AND EMPLOYEES OF THE CONTRACTOR.
- 19. THE CONTRACTOR SHALL NOT PERFORM ANY FUNCTIONS WHICH WILL INTERRUPT MECHANICAL OR ELECTRICAL SERVICES WITHOUT PRIOR APPROVAL OF THE OWNER. NECESSARY INTERRUPTIONS SHALL BE REVIEWED. SCHEDULED AND APPROVED BY THE OWNER. DURING PARTIAL OR FULL OCCUPANCY OF THE FACILITY. ALL WORK SHALL BE SCHEDULED AND COORDINATED WITH THE OWNER SO THAT DISRUPTION TO THE AREAS INVOLVED IS KEPT TO A MINIMUM. THE CONTRACTOR SHALL GIVE THE OWNER A MINIMUM OF FIVE WORKING DAYS NOTICE OF ANY WORK THAT WILL INTERFERE WITH THE OWNER'S OPERATION SO A SCHEDULE SUITABLE TO THE OWNER CAN BE ARRANGED. ANY ACCIDENTAL INTERRUPTIONS TO SERVICES SHALL BE REPAIRED IMMEDIATELY BY THE CONTRACTOR WITHOUT ADDITIONAL COST TO THE OWNER.
- 20. PROVIDE SCAFFOLDING, LADDERS, RIGGING, HOISTING AND ALL OTHER EQUIPMENT REQUIRED FOR THE INSTALLATION OF THE WORK.
- 21. ESTABLISH PASSAGE CLEARANCES REQUIRED TO DELIVER, INSTALL AND ERECT ALL REQUIRED EQUIPMENT. IF STRUCTURES, EQUIPMENT AND SYSTEMS MUST BE ALTERED TO PROVIDE PASSAGE OF EQUIPMENT, THE CONTRACTOR SHALL RESTORE STRUCTURES, EQUIPMENT AND SYSTEMS TO THEIR ORIGINAL CONDITION, AT THE CONTRACTOR'S EXPENSE.
- 22. AT THE COMPLETION OF THE PROJECT, THE CONTRACTOR SHALL MAKE A THOROUGH INSPECTION OF ALL THE ELECTRICAL WORK, AT THE FINAL INSPECTION. ALL SYSTEMS MUST BE 100 PERCENT COMPLETE AND TESTS SHALL BE PERFORMED N STRICT COMPLIANCE WITH EACH EQUIPMENT MANUFACTURER'S STANDARI TEST PROCEDURES AND THE ACCEPTANCE TEST STANDARDS OF THE INTERNATIONAL ELECTRICAL TESTING ASSOCIATION. ALL INSTRUMENTS. METERS. WIRING, PERSONNEL, ETC., REQUIRED FOR TESTING SHALL BE INCLUDED UNDER THIS CONTRACT
- 23. AFTER ALL ADJUSTMENTS AND TESTS HAVE BEEN COMPLETED, CLEAN, DUST, WASH AND VACUUM, ETC., ALL PARTS OF INSTALLATION, INCLUDING INTERIORS OF BOXES, CABINETS AND EQUIPMENT ENCLOSURES, CLEAN LIGHTING FIXTURE LENS AND REFLECTORS WITH ANTI-STATIC DETERGENT TO ENSURE RATED OUTPUT.
- 24. PROVIDE SERVICES OF MANUFACTURER'S FACTORY ENGINEERS TO SUPERVISE INSTALLATION, FINAL CONNECTIONS AND TESTING, PROVIDE SERVICES OF FACTORY ENGINEERS OR REPRESENTATIVES WHO WILL GIVE FULL INSTRUCTIONS AND DEMONSTRATIONS IN THE OPERATION AND MAINTENANCE OF ALL THE ELECTRICAL SYSTEMS AND EQUIPMENT INSTALLED TO THE DESIGNATED REPRESENTATIVE OF THE OWNER.

SECTION 16110 - CONDUIT SYSTEMS

- 1. INSTALL ALL WIRE AND CABLES IN ELECTRICAL METALLIC TUBING UNLESS OTHERWISE SPECIFIED OR INDICATED BY THE DRAWINGS. ELECTRICAL METALLIC TUBING (EMT) SHALL BE GALVANIZED STEEL IN ACCORDANCE WITH ES WWC 563 ANSI C80.3 AND UL 797. FITTINGS 1-1/4-INCH AND SMALLER SHALL BE COMPRESSION TYPE AND 1-1/2-INCH AND LARGER SHALL BE SET SCREW TYPE. ALL FITTINGS SHALL BE OF WROUGHT STEEL CONSTRUCTION.
- RIGID ALUMINUM CONDUIT WITH THREADED FITTINGS SHALL BE USED FOR ALL CONDUIT INSTALLATIONS EXPOSED TO THE WEATHER. RIGID ALUMINUM CONDUIT SHALL BE 6063 ALLOY, T41 TEMPER, CONFORMING TO FS WWC 540, ANSI C80.5 AND UL 6. FITTINGS SHALL BE THREADED TYPE OF ALUMINUM CONSTRUCTION.
- 3. LIQUID-TIGHT FLEXIBLE METALLIC CONDUIT SHALL BE USED FOR CONNECTION TO MOTORS AND OTHER EQUIPMENT WHICH PRODUCES OR TRANSMITS VIBRATION OR NOISE. UNLESS THE MOTORS OR EQUIPMENT ARE MOUNTED ABOVE SUSPENDED CEILING, PROVIDE SUITABLE BONDING JUMPER FOR ALL CONNECTIONS. LIQUID-TIGHT FLEXIBLE METAL CONDUIT SHALL BE CONSTRUCTED OF SINGLE STRIP, FLEXIBLE, CONTINUOUS, INTERLOCKED AND DOUBLE-WRAPPED STEEL GALVANIZED INSIDE AND OUTSIDE AND COATED WITH LIQUID-TIGHT JACKET OF FLEXIBLE POLYVINYL CHLORIDE (PVC). FITTINGS SHALL BE LIQUID-TIGHT COMPRESSION TYPE.
- 4. FLEXIBLE METALLIC CONDUIT (MIN. 1/2-INCH TRADE SIZE) SHALL BE USED FOR CONNECTION FROM A JUNCTION BOX TO LIGHTING FIXTURES, MOTORS AND SIMILAR EQUIPMENT MOUNTED IN A SUSPENDED CEILING. AS WELL AS FOR CONNECTION TO TRANSFORMERS. FLEXIBLE METAL CONDUIT SHALL BE FORMED FROM CONTINUOUS LENGTH OF SPIRALLY WOUND, INTERLOCKED ZINC-COATED STRIP STEEL CONFORMING TO FS WWC 566 AND UL 1. FITTINGS SHALL BE OF THE THREADLESS, HINGED CLAMP TYPE.
- RIGID STEEL CONDUIT SHALL BE USED WHERE CONDUIT IS ENCASED IN THE BUILDING'S POURED CONCRETE CONSTRUCTION. RIGID STEEL CONDUIT SHALL BE HOT DIP GALVANIZED CONFORMING TO FS WWC 581, ANSI C80.1 AND UL 6. FITTINGS SHALL BE THREADED TYPE OF GALVANIZED MALLEABLE IRON CONSTRUCTION.
- HEAVY WALL PVC CONDUIT SHALL BE USED FOR ALL GROUNDING CONDUCTORS AND OTHER SPECIFIC USES AS INDICATED BY THE DRAWINGS. HEAVY WALL PVC CONDUIT SHALL BE SCHEDULE 40, 90 DEGREES C, UL RATED, CONSTRUCTED OF POLYVINYL CHLORIDE AND CONFORMING TO NEMA TC-2 FOR DIRECT BURIAL OR NORMAL ABOVE GROUND USE. FITTING SHALL BE OF THE SOLVENT WELD TYPE. CONDUITS SHALL BE SUPPORTED WITH NON-METALLIC DEVICES.
- MINIMUM SIZE CONDUIT UNLESS OTHERWISE INDICATED SHALL BE 3/4-INCH TRADE SIZE. ALL CONDUITS WHICH ARE TO REMAIN EMPTY SHALL BE PROVIDED WITH A NYLON PULL LINE CONDUITS SHALL BE INDEPENDENTLY SUPPORTED FROM THE BUILDING STRUCTURE AND SHALL NOT BE ATTACHED TO THE SUPPORT SYSTEMS PROVIDED BY OTHER TRADES UNLESS SPECIFICALLY INDICATED.
- 8. PROVIDE SLEEVES FOR ALL CONDUITS PASSING THROUGH FLOOR SLABS AND WALLS. THE ANNULAR SPACE BETWEEN THE WALL AND THE SLEEVE SHALL BE KEPT TO A MINIMUM AND FILLED WITH FIRE STOP MATERIALS SLEEVES SHALL BE NOMINALLY 1-INCH TRADE SIZE LARGER AND CONSTRUCTED OF THE SAME MATERIAL AS THE CONDUIT BEING INSTALLED. SECTION 16120 - WIRE AND CABLES (600 VOLT AND BELOW)
- WIRE AND CABLES FOR FEEDER AND BRANCH CIRCUITS SHALL BE SINGLE ANNEALED STRANDED COPPER CONDUCTORS WITH CONDUCTIVITY OF NOT LESS THAN 98 PERCENT AT 20 DEGREES C. WIRE AND CABLE SHALL BEAR THE UL LABEL AND SHALL MEET OR EXCEED THE REQUIREMENTS OF IPCEA-NEMA STANDARDS S-19-81 AND ASTM D-1352.
- WIRE SIZES SHALL GENERALLY BE AS FOLLOWS:
- A. CONTROL AND INTERLOCK WIRING NO. 14 AWG. B. BRANCH CIRCUIT AND FEEDER WIRING NO. 12 AWG AND LARGER.
- WIRE AND CABLE INSULATION SHALL BE AS FOLLOWS:
- A. CONDUCTORS SIZE NO. 14 AWG THROUGH NO. 4/0 AWG SHALL BE 600 VOLT TYPE THWN FOR DRY AND WET LOCATIONS WITH A MAXIMUM OPERATING TEMPERATURE OF 75 DEGREES C
- B. CONDUCTORS SIZE 250 KCMIL AND LARGER SHALL BE 600 VOLT TYPE THHN/THWN OR XHHW FOR DRY AND WET LOCATIONS WITH A MAXIMUM OPERATING TEMPERATURE OF 90 AND 75 DEGREES C., RESPECTIVELY.
- 4. FOR CONVENIENCE IN TESTING AND MAINTENANCE ALL SECONDARY CONDUCTORS SHALL BE COLOR-CODED IN ACCORDANCE WITH THE ESTABLISHED BUILDING STANDARD. CONTROL CIRCUIT WIRING SHALL HAVE SEPARATED IDENTIFYING COLORS OR NUMBERS
- METAL-CLAD CABLE (TYPE MC) SHALL BE PERMISSIBLE FOR INSTALLATION OF INDOOR BRANCH CIRCUITS NOT MORE THAN 30 AMPERES ABOVE ACCESSIBLE CEILING AND IN HOLLOW DRYWALL PARTITIONS, WITHOUT BEING INSTALLED IN RACEWAYS. IF PERMISSIBLE BY CODE. TYPE MC CABLES SHALL NOT BE INSTALLED EXPOSED, INCLUDING IN ELECTRICAL CLOSETS. TYPE MC CABLE SHALL BE SUPPORTED AND SECURED NOT EXCEEDING EVERY 6-FEET, AND SHALL BE SECURED WITHIN 12-INCHES OF EVERY BOX. CABINET, OR FITTING FOR CABLES. TYPE MC CABLE SHALL NOT BE USED IN HEALTH CARE FACILITIES. METAL-CLAD CABLE (TYPE MC) SHALL BE COPPER, MULTI CONDUCTOR TYPE, WITH NO MORE THAN EIGHT CONDUCTORS. THE INTERLOCKING SHEATH SHALL BE OF EITHER GALVANIZED STEEL OR ALUMINUM. CONDUCTORS SHALL BE SOFT-ANNEALED COPPER, MEETING ASTM B3, AND STRANDED AS PER ASTM B8, TYPE MC CABLE SHALL BE UL LABELED. THE GROUNDING CONDUCTOR SHALL BE INSULATED AND SHALL BE ROUTED WITH THE CIRCUIT CONDUCTORS.
- PROVIDE UL LABELED CONNECTORS OF AMPACITY RATINGS AND TYPES FOR APPLICATIONS INDICATED
- A. CONNECTIONS FOR WIRE SIZES NO. 14 AWG THROUGH NO. 10 AWG SHALL BE MADE WITH 3-M "SCOTCHLOK" SPRING CONNECTORS.
- B. CONDUCTORS NO. 8 AWG AND LARGER SHALL BE SPLICED AND TAPPED WITH COLOR-KEYED WROUGHT COPPER COMPRESSION CONNECTORS AS MANUFACTURED BY THOMAS & BETTS. THE MANUFACTURER'S RECOMMENDED TOOLING SHALL BE USED FOR INSTALLATION, LONG BARREL SLEEVES, TWO HOLE LUGS AND "C" TYPE CONNECTORS SHALL BE USED. SPLICE AND TAP CONNECTORS SHALL BE COMPATIBLE WITH CONDUCTOR MATERIAL.
- UNLESS SPECIFICALLY INDICATED OTHERWISE, EACH SINGLE PHASE BRANCH CIRCUIT SHALL CONSIST OF RESPECTIVE PHASE CONDUCTOR AND A DEDICATED NEUTRAL CONDUCTOR.
- 8. PROVIDE A SEPARATE "GREEN" INSULATED GROUND WIRE IN EACH FEEDER, BRANCH CIRCUIT AND OTHER CONDUITS CONTAINING CURRENT CARRYING CONDUCTORS.

SECTION 16135 - ELECTRICAL BOXES AND FITTINGS

- 1. OUTLET BOXES SHALL BE CONSTRUCTED OF GALVANIZED FLAT ROLLED SHEET-STEEL OF SHAPES AND SIZES SUITABLE FOR INSTALLATION OF WIRING DEVICES. PROVIDE BOXES WITH THREADED SCREW HOLES. WITH CORROSION-RESISTANT COVER AND GROUNDING SCREWS FOR FASTENING SURFACE AND DEVICE TYPE BOX COVERS AND FOR EQUIPMENT TYPE GROUNDING. OUTLET BOX ACCESSORIES SHALL BE PROVIDED AS REQUIRED FOR EACH INSTALLATION.
- JUNCTION AND PULL BOXES SHALL BE CONSTRUCTED OF GALVANIZED CODE-GAUGE SHEET STEEL WITH SCREW-ON COVERS OF TYPES, SHAPES AND SIZES TO SUIT EACH RESPECTIVE LOCATION AND INSTALLATION. BOXES SHALL BE OF RIVETED OR WELDED CONSTRUCTION AND SHALL HAVE PLAIN MACHINE SCREW ATTACHED COVERS. SECTION 16143 - WIRING DEVICES
- GROUND FAULT DUPLEX RECEPTACLES SHALL BE SPECIFICATION GRADE, BROWN IN COLOR, 2-POLE, 3-WIRE GROUNDING TYPE, RATED 20 AMPERES, 125 VOLTS, NEMA CONFIGURATION 5-20R, HUBBELL GF-5362, OR APPROVED EQUAL.
- 2. SINGLE-POLE TOGGLE SWITCHES SHALL BE SPECIFICATION GRADE, BROWN IN COLOR QUIET TYPE RATED 20 AMPERES, 120-277 VOLTS, 60 HERTZ, HUBBELL 1221, OR APPROVED EQUAL
- 3. WALLPLATES SHALL BE FOR SINGLE WIRING DEVICES OF TYPES, SIZES AND WITH GANGING AND CUTOUTS AS REQUIRED. WALLPLATES SHALL BE 0.035 GAUGE THICK, TYPE 302 SATIN FINISHED STAINLESS STEEL. 4. PROVIDE AN INSULATED EQUIPMENT GROUNDING CONDUCTOR CONNECTION FOR
- ALL WIRING DEVICES, UNLESS OTHERWISE INDICATED.
- PRIOR TO ENERGIZING CIRCUITRY, TEST WIRING FOR ELECTRICAL CONTINUITY AND FOR SHORT-CIRCUITS. ENSURE PROPER POLARITY OF CONNECTIONS IS MAINTAINED

SECTION 16170 - DISCONNECT SWITCHES

- PROVIDE SURFACE-MOUNTED, HEAVY-DUTY TYPE, SHEET-STEEL ENCLOSED SAFETY SWITCHES, OF TYPES, SIZES AND ELECTRICAL CHARACTERISTICS INDICATED. SWITCHES SHALL BE QUICK-MAKE, QUICK-BREAK TYPE CONSTRUCTED SO THAT SWITCH BLADES ARE VISIBLE IN OFF POSITION WITH DOOR OPEN. FOUIP WITH OPERATING HANDLE WHICH IS INTEGRAL PART OF ENCLOSURE BASE AND WHOSE OPERATING POSITION IS EASILY RECOGNIZABLE, AND IS PADLOCKABLE IN THE ON OR OFF POSITION. CONSTRUCT CURRENT CARRYING PARTS OF HIGH-CONDUCTIVITY COPPER, WITH SILVER-TUNGSTEN TYPE SWITCH CONTACTS AND POSITIVE PRESSURE TYPE REINFORCED FUSE CLIPS. SWITCH ENCLOSURES GENERALLY SHALL BE NEMA TYPE I AND 3R FOR RAIN-TIGHT CONSTRUCTION.
- PROVIDE FUSES FOR SAFETY SWITCHES, AS RECOMMENDED BY SWITCH MANUFACTURER, OF CLASSES, TYPES AND RATINGS NEEDED TO FULFILL ELECTRICAL REQUIREMENTS FOR SERVICE INDICATED

SECTION 16190 - SUPPORTING DEVICES

- STEEL RACKS.
- EQUIPMENT BEING SUPPORTED.
- MATCH WITH U-CHANNEL
- BELOW 8'-0" A.F.F. USE ONE-HOLE STRAPS INSTEAD.
- BE IDENTIFIED BY NAMEPLATES SHOWING THE EQUIPMENT IDENTIFICATION
- OR SELF-ADHERING VINYL LABELS.
- JUNCTION AND OUTLET BOX BY PANEL AND CIRCUIT NUMBER (E.G. PNL. LP-5 CIRC. SECTION 16470 - PANELBOARDS (600A OR BELOW)
- RATING CALLED FOR BY THE DRAWINGS.
- THE INSIDE OF THE DOOR.
- SHALL BE "BOLT-ON" INTERCHANGEABLE TYPE AND CAPABLE OF BEING OPERATED
- ARE TO BE KEPT IN LOCKED POSITION. CONSTRUCTION).
- SECTION 16480 MOTOR STARTERS 1. PROVIDE COMBINATION CIRCUIT BREAKER/MAGNETIC MOTOR STARTER FOR
- NEMA SIZE "0".

SECTION 16721 - FIRE ALARM SYSTEM

- CALIBRATED.

- PAINTED RED. CONDUITS SHALL HAVE A RED BAND NOMINALLY 6-INCH WIDE PAINTED ON EACH FULL LENGTH.
- 6

- FOR REVIEW BY THE AHJ IN ORDER TO OBTAIN A PERMIT.

1. PROVIDE SUPPORTING DEVICES OF TYPES, SIZES AND MATERIALS INDICATED, HAVING THE FOLLOWING CONSTRUCTION FEATURES:

A. CLEVIS HANGERS SHALL BE USED FOR SUPPORTING 2-INCH AND LARGER

CONDUIT AND SHALL BE CONSTRUCTED OF GALVANIZED STEEL WITH 1/2-INCH DIAMETER HOLE FOR ROUND STEEL ROD.

B. ONE-HOLE CONDUIT STRAPS SHALL BE USED FOR SUPPORTING 3/4-INCH TO

1-1/2-INCH CONDUIT AND SHALL BE CONSTRUCTED OF GALVANIZED STEEL. C. TWO-HOLE CONDUIT STRAPS SHALL BE USED FOR SUPPORTING CONDUIT ON

PROVIDE STEEL ANCHORS OF TYPES, SIZES AND MATERIALS REQUIRED FOR THE

3. PROVIDE U-CHANNEL STRUT SYSTEM FOR SUPPORTING ELECTRICAL EQUIPMENT, 12-GAUGE HOT-DIP GALVANIZED STEEL, OF TYPES AND SIZES INDICATED AND WITH

THE CONDUIT CLAMPS, CONDUIT HANGERS AND OTHER FITTINGS WHICH MATE AND 4. INSTALL HANGERS, SUPPORTS, CLAMPS AND ATTACHMENTS TO SUPPORT PIPING PROPERLY FROM BUILDING STRUCTURE. ARRANGE FOR GROUPING OF PARALLEL

RUNS OF HORIZONTAL CONDUITS TO BE SUPPORTED TOGETHER ON TRAPEZE TYPE HANGERS WHERE POSSIBLE. INSTALL SUPPORTS WITH SPACINGS INDICATED AND IN COMPLIANCE WITH NEC REQUIREMENTS.

5. NO MINERALLAC "JIFFY" TYPE CONDUIT SUPPORTS SHALL BE INSTALLED EXPOSED

SECTION 16195 - ELECTRICAL IDENTIFICATION

PANELBOARDS MOTOR STARTERS AND SIMILAR ELECTRICAL ENCLOSURES SHALL

NUMBER, VOLTAGE AND FEEDER OR BRANCH CIRCUIT NUMBERS (E.G. PANEL LP-1 208/120 VOLTS - FDR 1-5). NAMEPLATES GENERALLY SHALL BE CUSTOM TWO-TONE

LAMINATED PLASTIC WITH BEVELED EDGES. NAMEPLATES, UNLESS OTHERWISE INDICATED, SHALL BE WHITE LETTERS ON BLACK BACKGROUND. 2. CONDUITS SHALL BE IDENTIFIED IN EACH ROOM AND 50 FOOT ON CENTERS IN OPEN

AREAS BY VOLTAGE AND FEEDER NUMBER (E.G. FDR 1-5 - 208/120 VOLTS). CONDUIT MARKERS SHALL BE STANDARD PRE-PRINTED FLEXIBLE PLASTIC SHEET MATERIAL

FEEDER CONDUCTORS IN EACH PULL BOX AND IDENTIFIED WITH A PAPER TAG AS TO NUMBER. VOLTAGE AND CABLE SIZE (E.G. FDR 1-5 - 208/120 VOLTS - 4 NO. 250 MCM). BRANCH CIRCUITS SHALL BE IDENTIFIED WITH A PAPER TAG IN EACH

1. PANELBOARDS SHALL BE NEMA 1 FOR SURFACE OR RECESSED MOUNTING, CIRCUIT

BREAKER TYPE, IN A SINGLE WIDTH FACTORY ASSEMBLED ENCLOSURE INCLUDING BOX. INTERIOR. TRIM AND FRONT. PANELBOARDS AND ENCLOSING CABINETS SHALL CONFORM TO STANDARDS ESTABLISHED BY UNDERWRITERS' LABORATORIES, INC., AND REQUIREMENTS OF NEC AND SHALL BEAR THE UL LABEL. UNLESS OTHERWISE

INDICATED, PANELBOARDS SHALL BE MOUNTED 6 FEET TO THE TOP OF THE 2. EACH PANELBOARD SHALL BE PROVIDED WITH AN INSULATED NEUTRAL BUS AND A

GROUND BUS BONDED TO THE PANEL BACKBOX. NEUTRAL AND GROUND BUS SHALL BE READILY IDENTIFIED AND SHALL BE PROVIDED WITH SCREW TYPE TERMINALS. ALL BUS BARS SHALL BE ELECTRICAL GRADE COPPER. THE MAIN BUS BRACING SHALL BE EQUAL OR GREATER THAN THE INTERRUPTING CURRENT

3. EACH PANEL SHALL BE EQUIPPED WITH A TYPEWRITTEN DIRECTORY, INDICATING

PLAINLY WHAT EACH BRANCH CIRCUIT OF THE PANEL CONTROLS. THE DIRECTORY SHALL BE PLACED IN A CLEAR PLASTIC PROTECTIVE ENVELOPE AND FASTENED TO

4. BRANCH CIRCUIT PROTECTION DEVICES SHALL BE MOLDED CASE CIRCUIT BREAKERS WITH QUICK-MADE, QUICK-BREAK TOGGLE MECHANISM, INVERSE TIME DELAY OVERI OAD AND INSTANTANEOUS SHORT CIRCUIT PROTECTION BY MEANS OF THERMAL MAGNETIC ELEMENT, AUTOMATIC TRIPPING SHALL BE INDICATED BY A HANDLE POSITION BETWEEN THE MANUAL "OFF" AND "ON" POSITION. BREAKERS

IN ANY POSITION. CIRCUIT BREAKERS SHALL BE DESIGNED TO CARRY THEIR FULL RATING CONTINUOUSLY IN AMBIENT TEMPERATURE OF 40 DEGREES C. TWO AND THREE POLE BREAKERS SHALL HAVE COMMON TRIP HANDLE. ALL LIGHTING ICH CIRCUIT BREAKERS SHALL BE SWITCH RATED. PANELBOARDS SHALL HAV MAIN AND BRANCH CIRCUIT BREAKERS AS INDICATED ON THE DRAWINGS. WHERE

PANELS HAVE SPACES FOR FUTURE BREAKERS, THE SPACE SHALL INCLUDE COMPLETE BUSWORK, HARDWARE, APPURTENANCES, ETC., TO ACCOMMODATE FUTURE BREAKERS. PROVIDE LOCKING DEVICES FOR CIRCUIT BREAKERS WHICH

5. PANEL FRONTS SHALL BE PROVIDED WITH A CONTINUOUS HINGE ALONG THE LEFT SIDE FOR EASY ACCESS TO THE WIRE COMPARTMENT (DOOR WITHIN DOOR

EQUIPMENT REQUIRING MANUAL AND AUTOMATIC CONTROL. STARTERS GENERALLY SHALL BE FULL VOLTAGE NON-REVERSING UNITS CONSISTING OF A [FUSED DISCONNECT] [NON-FUSIBLE DISCONNECT] [MOTOR CIRCUIT PROTECTOR], HORSEPOWER RATED CONTACTOR AND THERMAL OVERLOAD RELAY MOUNTED IN A NEMA TYPE I COMMON ENCLOSURE. STARTER UNITS SHALL BE FURNISHED WITH EXTERNAL OPERATING HANDLE, CONTROL CIRCUIT TRANSFORMER (120V. SECONDARY), PILOT LIGHT, THERMAL OVERLOADS AND, UNLESS OTHERWISE INDICATED, A HAND-OFF-AUTOMATIC SELECTOR SWITCH. AUXILIARY CONTACTS SHALL BE PROVIDED AS REQUIRED. COMBINATION STARTERS SHALL BE MADE BY

ALLEN BRADLEY OR APPROVED EQUAL SUITABLE FOR THE VOLTAGE AND HORSEPOWER INDICATED ON THE DRAWINGS. STARTER UNITS SHALL BE MINIMUM MANUAL MOTOR STARTERS SHALL BE PROVIDED FOR EQUIPMENT REQUIRING

MANUAL CONTROL ONLY. MANUAL STARTING SWITCHES GENERALLY SHALL BE FULL VOLTAGE NON-REVERSING UNITS CONSISTING OF A MOTOR RATED TOGGIE SWITCH AND THERMAL OVERLOAD RELAY MOUNTED IN A COMMON ENCLOSURE. STARTER UNITS SHALL BE FURNISHED WITH A NEON PILOT LIGHT. UNITS IN MECHANICAL AREAS OR OTHERWISE UNFINISHED AREAS SHALL HAVE A NEMA TYPE I SURFACE MOUNTED ENCLOSURE. UNITS IN FINISHED AREAS SHALL BE MOUNTED IN A RECESSED BOX WITH FLUSH COVER PLATE. MANUAL MOTOR STARTERS SHALLBE ALLEN BRADLEY BULLETIN 600 OR APPROVED EQUAL SUITABLE FOR

FRACTIONAL HORSEPOWER MOTORS AT 120 VOLTS, 60 HERTZ. 3. THE CONTRACTOR SHALL COORDINATE WITH OTHER TRADES TO DETERMINE THE QUANTITY AND SIZE OF MOTOR STARTERS REQUIRED IN ACCORDANCE WITH APPROVED SHOP DRAWINGS. MOTOR THERMAL OVERLOAD UNITS SHALL BE

THE EXISTING SYSTEM SHALL BE TESTED FOR PROPER OPERATION PRIOR TO ANY WORK BEING PERFORMED. ANY MALFUNCTION SHALL BE BROUGHT TO THE ATTENTION OF THE OWNER PRIOR TO ANY WORK BEING PERFORMED.

2. EXISTING DETECTORS IN AREAS BEING RENOVATED SHALL BE CLEANED AND 3. NEW MODULES AND PERIPHERAL DEVICES SHALL BE BY THE SAME MANUFACTURER

AS THE EXISTING SYSTEM, AND SHALL BE SUPPLIED THROUGH ONE OF THEIR AUTHORIZED DISTRIBUTORS, PROVIDE ALL NECESSARY MODIFICATIONS TO THE HEAD-END EQUIPMENT, INCLUDING POWER EXTENDER PANELS FOR SUPPORTING ADDITIONAL AUDIBLE/VISUAL APPLIANCES.

4. DETECTION CIRCUITS SHALL BE MINIMUM NO. 16 AWG STRANDED COPPER CONDUCTORS INSTALLED IN 1/2-INCH EMT. AUDIO/VISUAL ALARM CIRCUITS AND CONTROL WIRING SHALL BE MINIMUM NO. 14 AWG STRANDED COPPER CONDUCTORS INSTALLED IN 1/2-INCH EMT. ALL SPLICES SHALL BE SOLDERED AND TAPED. WHERE INSTALLED IN HOLLOW DRY WALL PARTITION OR ABOVE SUSPENDED CEILING, MANUFACTURER RECOMMENDED POWER LIMITED FIRE ALARM CABLE MAY BE USED WITHOUT CONDUIT. ALL WIRING SHALL BE PLENUM

RATED, UNLESS ENTIRELY INSTALLED IN RACEWAY. 5. OUTLET BOXES WHICH ARE PART OF THE SYSTEM SHALL HAVE THE COVERS

THE SYSTEM SHALL BE CHECKED AND TESTED FOR PROPER OPERATION BY THE

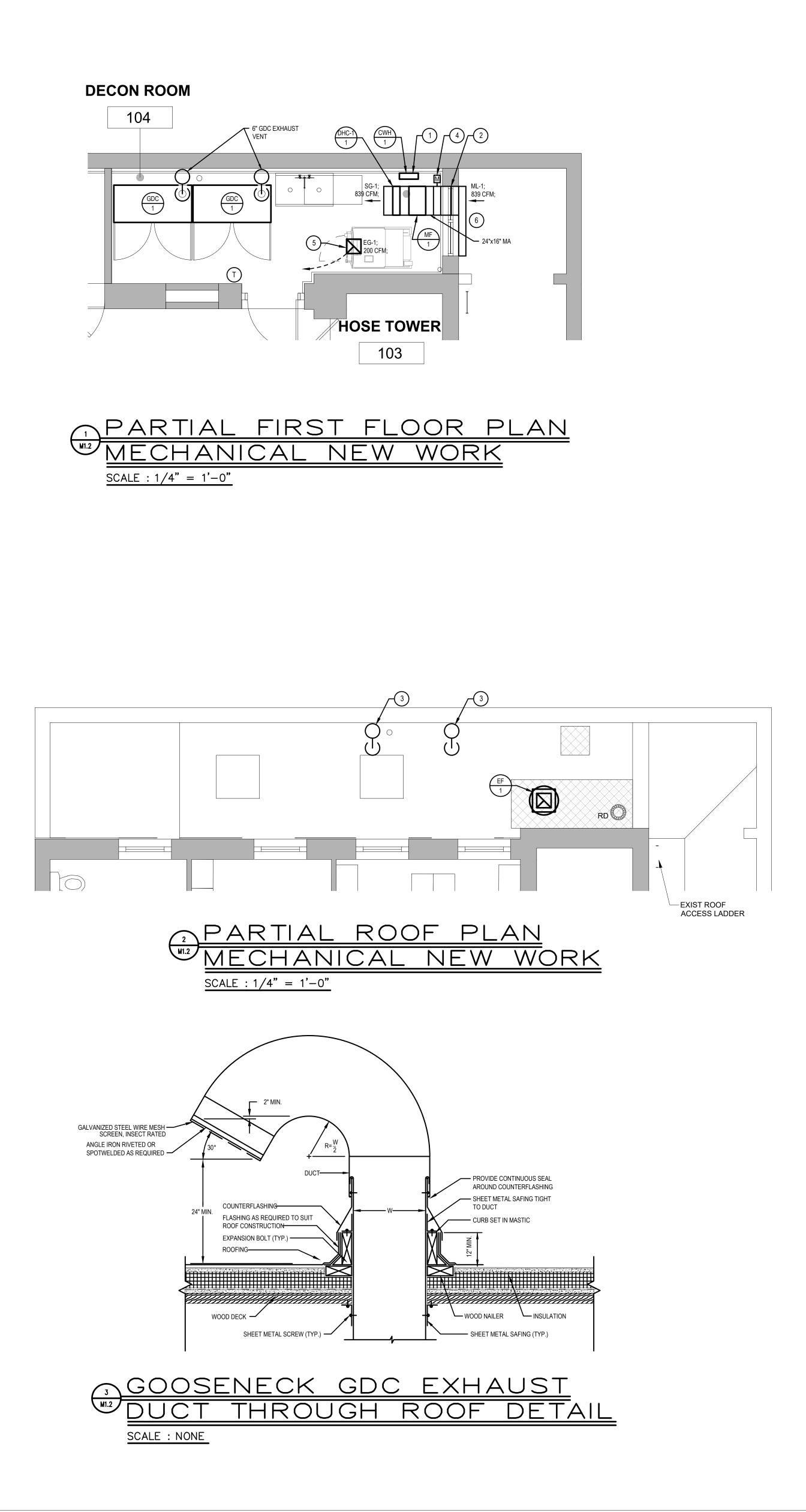
MANUFACTURER'S REPRESENTATIVE PRIOR TO FINAL ACCEPTANCE. EACH DEVICE SHALL BE OPERATED AND ADJUSTED FOR PROPER SENSITIVITY. AS PART OF THE FINAL ACCEPTANCE THE SYSTEM SHALL BE DEMONSTRATED FOR PROPER OPERATION IN THE PRESENCE OF THE OWNER'S REPRESENTATIVES.

7. THE FIRE ALARM SYSTEM VENDOR SHALL SUBMIT SHOP DRAWINGS FOR ALL SYSTEM COMPONENTS AND WIRING. SUBMITTALS SHALL INCLUDE ALL PLANS, DEVICES LAYOUTS, WIRING DIAGRAMS, SEQUENCE OF OPERATION, VOLTAGE DROP

CALCULATIONS AND BATTERY CALCULATIONS THE FIRE ALARM SYSTEM VENDOR SHALL SUBMIT ALL REQUIRED INFORMATION

PROVIDED IN ACCORDANCE WITH THE ACTUAL MOTOR NAMEPLATE.

ISSUE	DATE	REVISIONS ISSUED FOR BID
4		
PHI	ADELPHI	
2	PHI	A MANETO
KYLE O'CONNO	R, PROJECT MAN	AGER
SEALS		
SPACE FOR CC	DNSULTANT RECO	GNITION
RIAC	KNEY	WICK
H A A R C H	K N E Y Y E S ITECTS	Federal Reserve Bank Building 100 North Independence Mall West
		Suite 5 SE - Philadelphia, PA 19106 215-627-0200 - wickfisherwhite.com Project No. 200151-000
		PHILADELPHIA OF PUBLIC PROPERTY
7тн	1400 J Floc	IFK BOULEVARD DR, CITY HALL
PHILADELPH PROJECT TITLE		PENNSYLVANIA
	CONTA	IGINE 72 MINATION SUITE
	CTRIC/	
SPEC	CIFICA	TIONS
13-2 DATE 09/09	1-4643 . /21	
scale NOTE	D	MPE1.3
checked by WFW	1	BHA No.: 20-150 S AND CONDITIONS SHALL BE THE CONTRACTOR AT THE SITE CEEDING WITH THE WORK.
BE	. JNE PROC	WIR INE WORK.



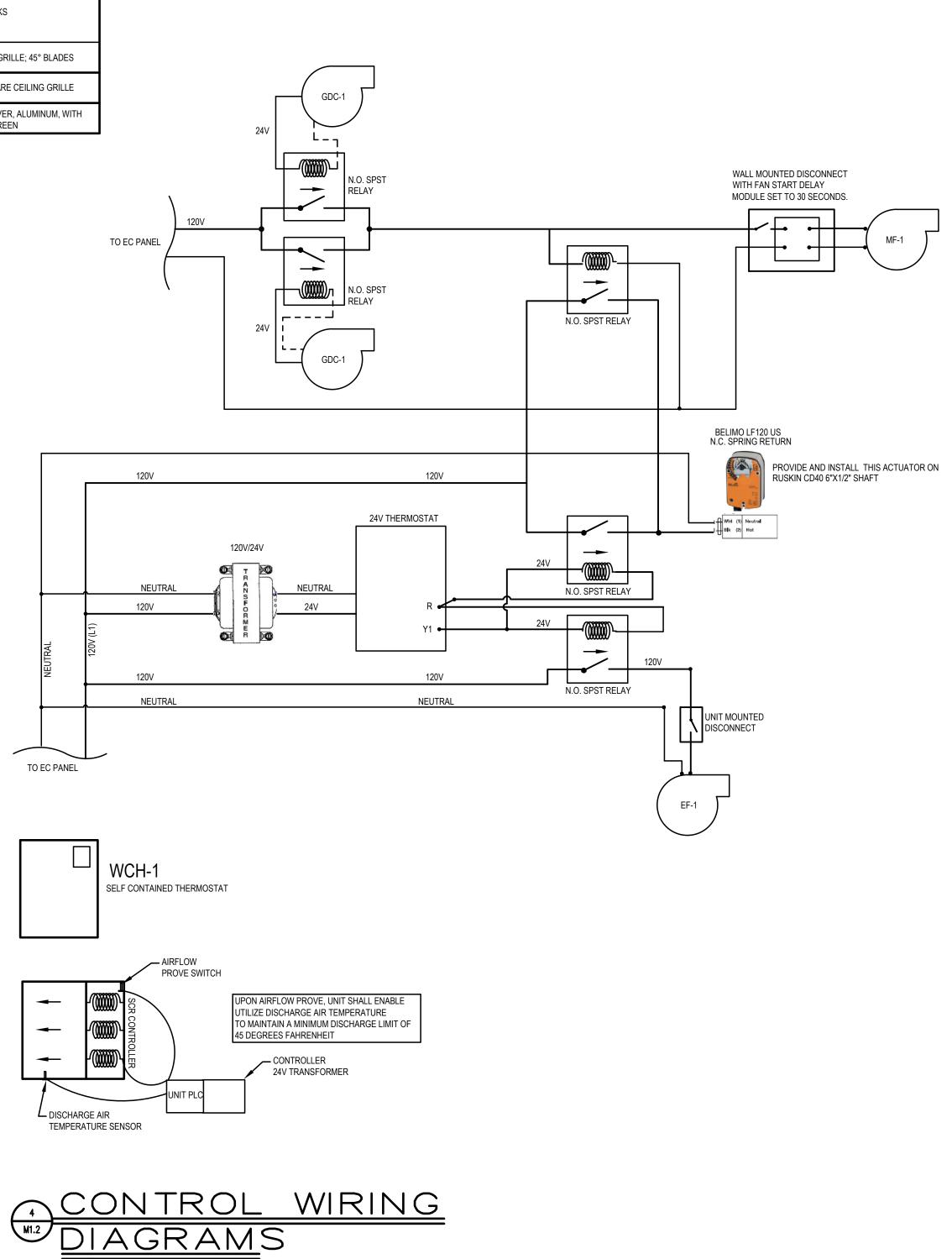
	FAN SCHEDULE															
No	LOCATION	TYPE	CEM	W	RPM	ESP (IN.W.C)	DRIVE	EI	ELECTRICAL DATA						BASIS OF DESIGN	NOTES
NO	NO LOCATION	ITE	CI M	vv	Kr Wi	ESF (IN.W.C)	DINIVE	V	Ø	Hz	BASIS OF DESIGN					
EF-1	ROOF TOP AREA OF DECON ROOM 104	ROOF MOUNTED DOWNBLAST DIRECT DRIVEN EXHAUST FAN	200	1/6 HP	1140	0.20	DIRECT	115	115 1 60		115 1 60		GREENHECK G-097-B-X	INSTALLED AND FURNISHED BY M.C. MOUNT ON ROOF CURB, W/ BACK DRAFT DAMPER (GREEN HECK BD-100, SPRING LOADED) AND TERMINATED WITH AN EXHAUST GRILLE; PROVIDE ROOF PENETRATION. SEE CONTROL NOTES DIAGRAM FOR DETAILS. COORDINATE CONTROL, MEANS OF DISCONNECT INSTALLATION WITH E.C.		
MF-1	DECON ROOM 104	INLINE MOUNTED, SUSPENDED FROM ROOF, MAKE UP AIR FAN	839	467 W	1070	0.66	DIRECT	115	1	60		INSTALLED AND FURNISHED BY M.C. MOUNT INLINE ON THE DUCT. SEE CONTROL NOTES DIAGRAM FOR DETAILS. COORDINATE CONTROL, MEANS OF DISCONNECT INSTALLATION WITH E.C.				

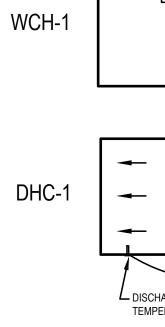
	ELECTRIC CABINET WALL HEATER											
No	LOCATION	TYPE	BASIS OF DESIGN	kW	ELECTRICAL DATA			FAN DATA	NOTES			
					V	Ø	Hz	CFM				
WCH-1	DECON ROOM 104	SEMI RECESSED CABINET WALL HEATER	BERKO FRASM4024F	4/2	240	1	60	100	INSTALLED AND FURNISHED BY M DIAGRAM AND NOTES FOR DETAIL SURFACE INSTEAD OF RECESSED MOUNTING EQUIPMENT REQUIRE			

	ELECTRIC DUCT HEATER COIL												
No LOCATION TYPE	TVDE		1.107	E				AIR FLOW DATA					
INO	LUCATION	TYPE	BASIS OF DESIGN	kW	V	Ø	Hz	CFM	PRESSURE DROP	DELTA T°F	NOTES		
DHC-1	DECON ROOM 104	DUCT HEATER COIL - OPEN COIL W/ PRESSURE PLATE DESIGN	INDEECO	16	240	1	60	839	0.034" W.C.	60°F	INSTALLED AND FURNISHED BY M.C. MOUNT INSIDE DUCT AFTER T ON FLOOR PLANS; SEE CONTROL NOTES DIAGRAM FOR DETAILS. MEANS OF DISCONNECT INSTALLATION WITH E.C. PROVIDE INTEG 70°F AND CUT OFF AT 80°F. MOUNT INSIDE DUCT, BEHIND COIL.		

			G	EAR	R DI	RY	INC	G CA	BINET
No	LOCATION TYPE BASIS OF DESIGN KW		ELECTRICAL DAT			EXHAUST DATA	NOTES		
					V	Ø	Hz	CFM	
GDC-1	DECON ROOM 104	FLOOR MOUNTED CABINET	ADC LAUNDRY MODEL ADFG-6	12	240	1	60	300	INSTALLED BY M.C., SELECT PLUMBING DRAWINGS FOR I THAN 2 90° ELBOWS IN EXHA WITH E.C.

	AIR DEVICE SCHEDULE										
DEVICE NO.	FUNCTION	NECK SIZE	MANUFACTURER & MODEL NO.	FINISH	NC LEVEL	REMARKS					
SG-1	MAKE UP	24"x18"	KRUEGER 80 STEEL	WHITE	<30	LOUVERED FACE SUPPLY GRILLE; 45° BLADES					
EG-1	EXHAUST	14"x14"	KRUEGER 6490	WHITE	<30	STEEL PERFORATED SQUARE CEILING GRILLE					
ML-1	MAKE UP	58"x40"	RUSKIN ELF211	GRAY	<30	THIN LINE STATIONARY LOUVER, ALUMINUM, WITH VERMIN SCREEN					







SCHEDULE

Y M.C. MOUNT AT 3' 6" A.F.F. PROVIDE THERMOSTAT AND SEE CONTROL TAILS. PROVIDE A SURFACE MOUNTING BOX KIT (PREFIX "SM") AND MOUNT ON ED. SEE ELECTRICAL PLANS FOR MEANS OF DISCONNECT. PROVIDE

COIL

LED AND FURNISHED BY M.C. MOUNT INSIDE DUCT AFTER THE MF-1 AS INDICATED OOR PLANS; SEE CONTROL NOTES DIAGRAM FOR DETAILS. COORDINATE CONTROL, S OF DISCONNECT INSTALLATION WITH E.C. PROVIDE INTEGRAL PLC TO START ON

CTED FURNISHED BY DPP/PFD, NO SUBSTITUTIONS WILL BE ACCEPTED. SEE R DRAIN LINES. FOLLOW MANUFACTURER INSTALLATION INSTRUCTIONS. NO MORE XHAUST DUCT. COORDINATE CONTROL, MEANS OF DISCONNECT INSTALLATION

NOTES :

- 1- REFER TO DRAWING MPE1.1 FOR HVAC, PLUMBING/FIRE PROTECTION & ELECTRICAL GENERAL NOTES, ABBREVIATIONS, LEGENDS & DRAWING LIST.
- 2- ALL EXPOSED DUCTWORK SHALL BE 1/2" ACOUSTICALLY LINED. EXPOSED DUCTWORK SHALL NOT BE EXTERNALLY LINED AND CONTRACTOR SHALL REMOVE ALL MARKINGS FROM EXPOSED DUCTWORK. UNEXPOSED DUCTWORK SHALL BE EXTERNALLY INSULATED
- PER SPECIFICATION. 3- WORK TO CONFORM TO PHILADELPHIA IMC 2018 AS ADOPTED BY BY COUNTY OF PHILADELPHIA
- 4- THIS DRAWING IS DIAGRAMMATIC IN NATURE, CONTRACTOR IS RESPONSIBLE FOR COORDINATING DUCT ROUTES WITH ALL OTHER TRADES. NO SUPPORT HANGER OR CLAMP TO BE MOUNTED ON DUCTWORK. CONSULT STRUCTURAL TEAM FOR ALL ROOF PENETRATIONS AND MOUNTING METHODS PRIOR TO IMPLEMENTING THEM.
- 5- PROVIDE AND INSTALL CLEAR LOCKABLE COVERS FOR ALL THERMOSTATS.
- 6- TEST ALL INTERLOCKED CONTROLS. BALANCE THE ROOM TO BE POSITIVELY PRESSURIZED, AS NO MAKE UP AIR IS ALLOWED TO BE DRAWN FROM GARAGE.

DRAWING NOTES :

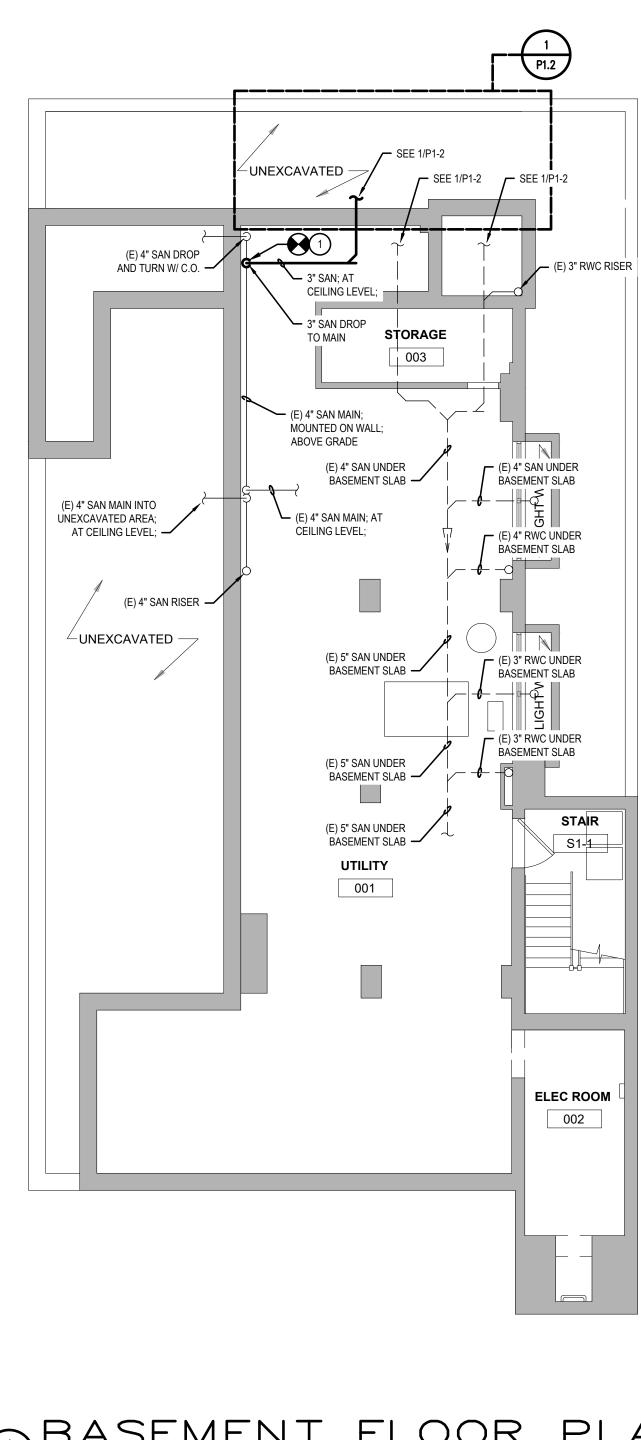
- (1) INSTALL NEW WCH-1 WITH REMOTE THERMOSTATIC CONTROLS. SEE CONTROL NOTES FOR WIRING INFORMATION.
- 2 PROVIDE NEW 24"x16" TYPE B FIRE DAMPER, MATCHING OUTSIDEWALL RATING. IF RATING CAN NOT BE DETERMINED, PROVIDE A 2H RATED TYPE B FIRE DAMPER.
- 3 6" Ø EXHAUST DUCT GOOSE NECK TERMINATION. SEE THE DETAIL 3 / M1-2 FOR ADDITIONAL INFORMATION. TERMINATE W/ 45° ELBOW. PROVIDE GALVANIZED STEEL
- WIRE MESH SCREEN ON THE END. 4 PROVIDE A MOTORIZED BACK DRAFT DAMPER RUSKIN CD40 OR EQUAL MATCHING THE DUCT 24"X16" IN SIZE. SEE CONTROL NOTES FOR WIRING INFORMATION
- 5 INSTALL AN EF-1 W/ BD-100 AND EG-1 W/ ENOUGH DUCT TO HOUSE THE BACKDRAFT DAMPER UNOBSTRUCTED. SEE CONTROL NOTES FOR WIRING INFORMATION.
- 6 PROVIDE INSULATED PANEL BEHIND LOUVER TO INFILL THE REMAINDER OF THE EXISTING WINDOW OPENING UNUSED BY NEW DUCT.

CONTROL NOTES :

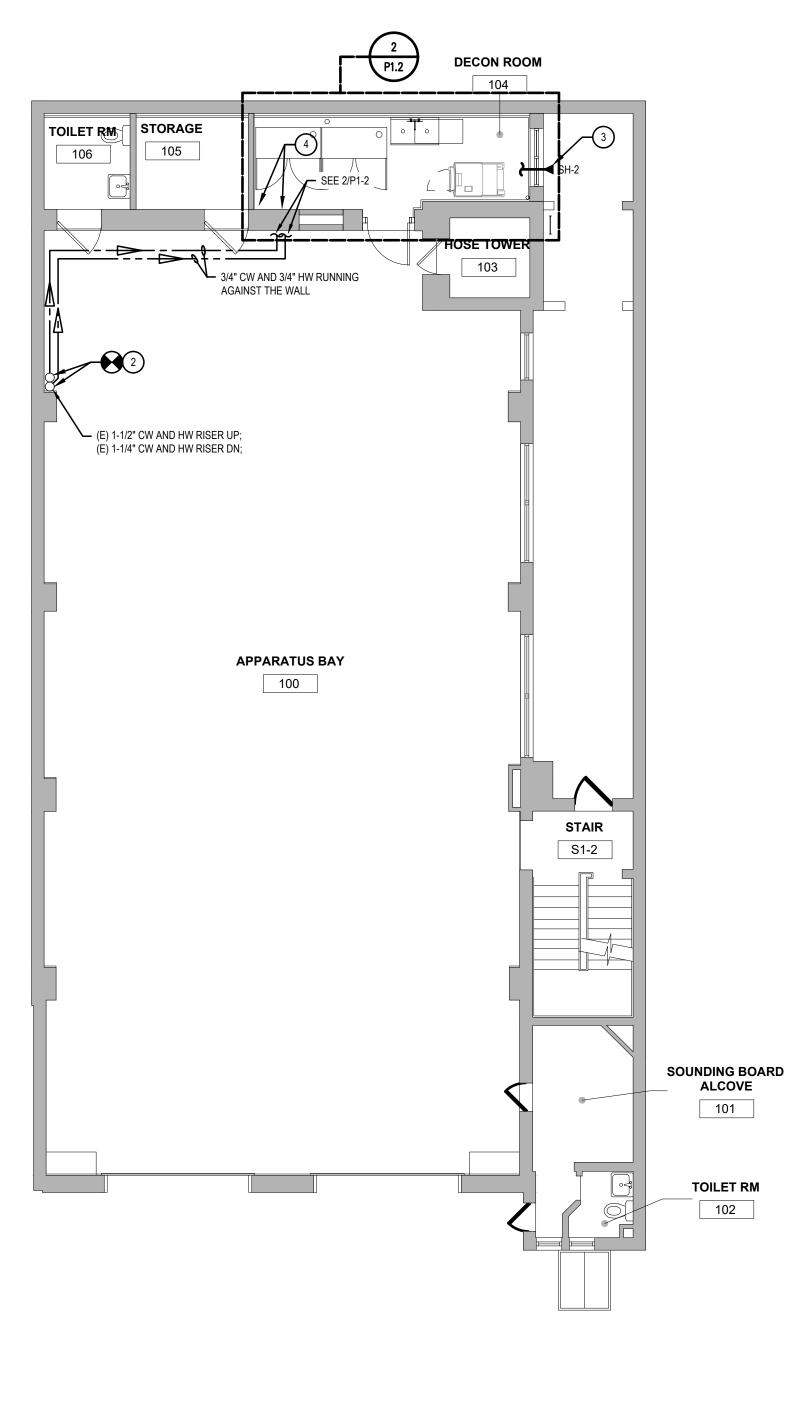
- 1- PROVIDE CONTROLS, RELAYS AND INTERLOCKS. AS NOTED IN DETAIL BELOW 2- ALL CONTROL AND LOW VOLTAGE WIRING SHALL BE ENCASED IN RIGID GALVANIZED STEEL CONDUIT WITH ALL RELAYS, TRANSFORMERS AND SENSORS MOUNTED IN LABELED JUNCTION BOXES AND PLCS SHALL BE INSTALLED IN A NEMA 3R ENCLOSURE.
- PROVIDE A CIRCUIT WIRED IN PARALLEL THAT ENERGIZES MAKE UP AIR FAN MF-1 WHEN 3-EITHER OF THE GEAR DRYING CABINETS GDC-1s ARE ENERGIZED AS NOTED IN CONTROL DIAGRAM.
- 4- 24V SOURCE FROM DRYING CABINETS SHALL BE TAPPED FROM CONTROL NODE FOR INTERNAL FAN CONTACT. REFER TO MANUFACTURER'S WIRING DIAGRAM.

SCALE : NONE

REVISIONS ISSUE DATE REVISIONS 09/09/21 ISSUED FOR BID
A CONTRACTOR OF
KYLE O'CONNOR, PROJECT MANAGER
SEALS SPACE FOR CONSULTANT RECOGNITION
BLACKNEY HAYES RCHITECTS WICK FISHER UNCK FISHER WHICK Federal Reserve Bank Building 100 North Independence Mall West Suite 5 SE - Philadelphia, PA 19106 215-627-0200 - wickfisherwhite.com Project No. 200151-000
CITY OF PHILADELPHIA DEPARTMENT OF PUBLIC PROPERTY
1400 JFK BOULEVARD 7TH FLOOR, CITY HALL PHILADELPHIA PENNSYLVANIA PROJECT TITLE ENGINE 72
DECONTAMINATION SUITE DRAWING TITLE ENLARGED PLANS,
PROJECT NO. 13-21-4643-01
13-21-4643-01 DATE 09/09/21 SCALE NOTED DRAWN BY WFW CHECKED BY WFW BHA No.: 20-150 NOTE: ALL DIMENSIONS AND CONDITIONS SHALL BE YERIFIED BY THE CONTRACTOR AT THE SITE BEFORE PROCEEDING WITH THE WORK.









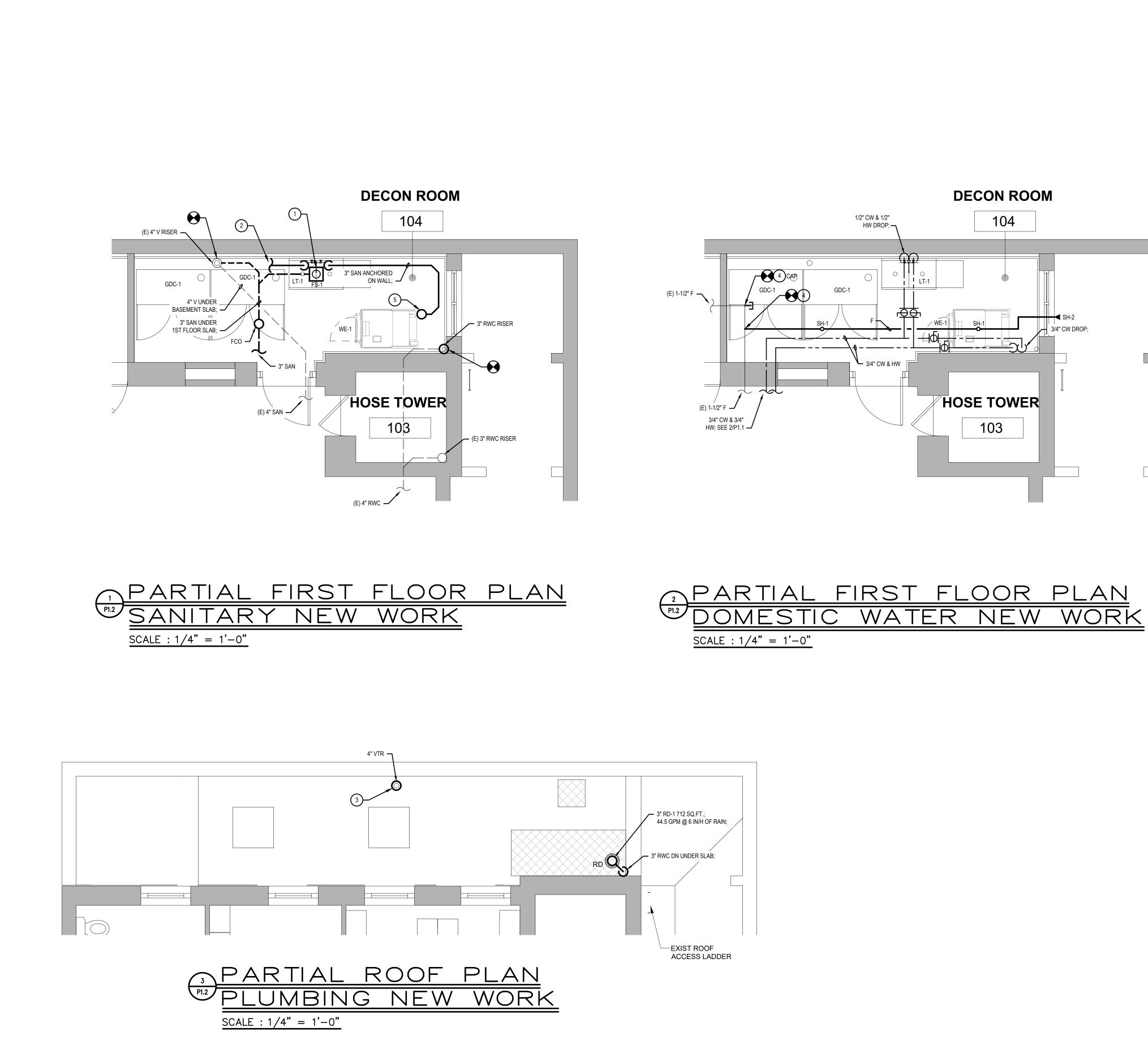


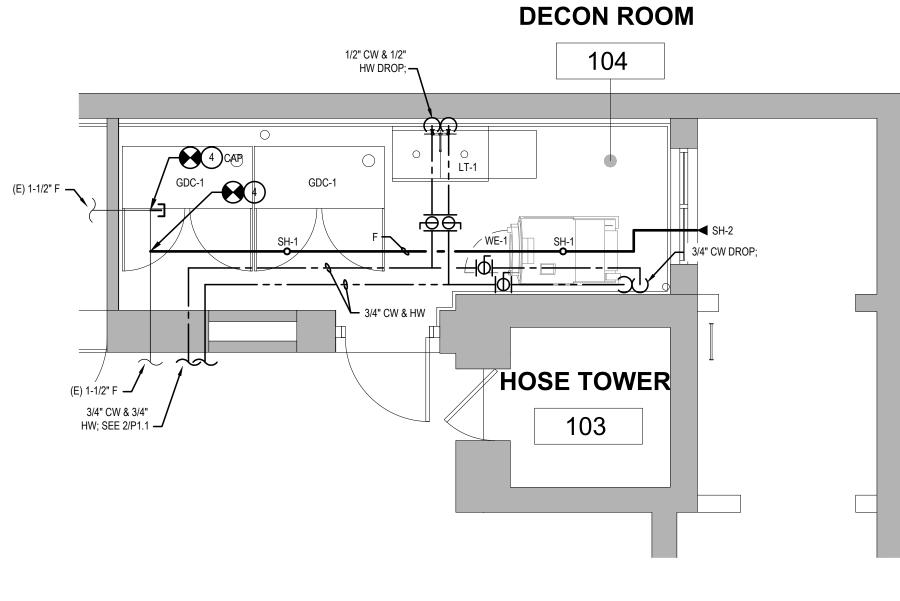
- 1- REFER TO DRAWING MPE1.1 FOR HVAC, PLUMBING/FIRE PROTECTION & ELECTRICAL GENERAL NOTES, ABBREVIATIONS, LEGENDS & DRAWING LIST.
- 2- THIS DRAWING IS DIAGRAMMATIC IN NATURE, CONTRACTOR IS RESPONSIBLE FOR COORDINATING PIPING ROUTES WITH ALL OTHER TRADES, NO SUPPORT HANGER OR CLAMP TO BE MOUNTED ON DUCTWORK. NO HORIZONTAL CLEAN OUT (CAPPED EIGHTH BEND) TO BE OBSTRUCTED BY WALL, DUCT WORK OR OTHER ELEMENTS. ALL FIRE PROTECTION PIPING IS TO TAKE LAST PRIORITIES DURING ROUTE COORDINATION.
- 3- WORK TO CONFORM TO 2018 PHILADELPHIA PLUMBING CODE. USE SECTION 919 FOR SINGLE STACK PHILADELPHIA STYLE SYSTEM AND ALL APPLICABLE TABLES AS MANDATED BY AHJ AND IECC 2018. ALL UNDERGROUND PIPING IS GRANDFATHERED AS PER IEBC 2018 SECTION 503 AND CHAPTER CHAPTER 7 "ALTERATIONS LEVEL - 1" AS ADOPTED BY PHILADELPHIA CODE AUTHORITY.
- 4- ALL SANITARY PIPING IS DEPICTED BELOW SLAB OR BURIED UNDER SLAB UNLESS INDICATED OTHERWISE. ALL COLD/HOT WATER SUPPLY / RETURN PIPING IS RUN TIGHT TO SLAB OF FLOOR ABOVE UNLESS INDICATED OTHERWISE. ALL VENT PIPING IS RUN TIGHT TO SLAB OF FLOOR ABOVE UNLESS INDICATED OTHERWISE.
- 5- ALL SANITARY PIPING 3" AND LARGER IS SLOPED 1/8" PER FOOT UNLESS INDICATED OTHERWISE. ALL SAN PIPING 2-1/2" AND SMALLER IS SLOPED AT 1/4" PER FOOT. ALL VENT, COLD WATER, HOT WATER, HOT WATER RETURN IS SLOPED TO DRAIN AS NEEDED PER CODE. PROVIDE DRAIN VALVES AT LOW POINTS FOR SYSTEMS MAINTENANCE IN CONVENIENT LOCATIONS. COORDINATE WITH ARCHITECTURAL DRAWINGS, THE LOCATIONS OF THOSE VALVES. ALL VENT PIPING MUST BE SLOPED TO DRAIN AS REQUIRED PER CODE AWAY FROM STACK TOWARDS A FIXTURE.

DRAWING NOTES :

- 1 TIE IN NEW 3" SAN PIPE IN BASEMENT CEILING INTO A (E) 4" SAN PIPE RUNNING AGAINST BASEMENT WALL AS INDICATED.
- 2 TIE IN NEW 3/4" CW AND 3/4" HW PIPING TO EXISTING 1-1/2" CW & 1-1/2" HW PIPES AND RUN NEW PIPES AGAINST GARAGES WALLS. ENTER THE NEW DECON ROOM
- TRHU A WALL AND SEE ENLARGE PLANS FOR DETAILS. 3 PROVIDE NEW SIDE WALL, NITROGEN LOADED, DRY TYPE HEAD (SH-2) TO PROVIDE FIRE PROTECTION UNDER THE TEMPORARY STRUCTURE LOCATED OUTSIDE THE DECON 104 ROOM; RELOCATE THE SPRINKLER PIPE INSIDE THE DECON 104 ROOM AS REQUIRED AND DESCRIBED IN 2/P1.2, PER NEW HVAC AND PLUMBING WORK. SEE P5.1 FOR DESIGN CRITERIA;
- A REMOVE ALL TEMPORARY SUPPLY PIPING ERECTED DURING PREVIOUS PHASES OF THIS PROJECT. MODIFY COPPER DRAIN FROM THE SINK TO MATCH THE DESIGN OF DRAINAGE DIAGRAM ON P5.1

REVISIONS ISSUE DATE REVISIONS 09/09/21 ISSUED FOR BID ISSUE ISSUED FOR BID
SEALS
SPACE FOR CONSULTANT RECOGNITION SPACE FOR CONSULTANT RECOGNITION WICK FISHER FISHER FISHER FISHER FOR CHITE FEDERAL RESERVE BANK BUILDING NO NOTH INDEPENDENT FEDERAL RESERVE BANK BUILDING NO NOTH INDEPENDENT FOR PHILADELPHIA DEPARTMENT OF PHILADELPHIA DEPARTMENT OF PUBLIC PROPERTY I 400 JFK BOULEVARD TH FLOOR, CITY HALL PHILADELPHIA PENNSYLVANIA PROJECT TITLE ENGINE 72 DECONTAMINATION SUITE DRAWING TITLE FLOOR PLANS
PROJECT NO. PROJECT NO. DRAWING NO. DATE 09/09/21 SCALE NOTED DRAWN BY WFW CHECKEP BY WFW CHECKEP BY WFW CHECKEP BY EXPRISIONS AND CONDITIONS SHALL BE SEFORE PROCEEDING WITH THE WORK.





1- REFER TO DRAWING MPE1.1 FOR HVAC, PLUMBING/FIRE PROTECTION & ELECTRICAL GENERAL NOTES, ABBREVIATIONS, LEGENDS & DRAWING LIST.

AS ADOPTED BY PHILADELPHIA CODE AUTHORITY.

- 2- THIS DRAWING IS DIAGRAMMATIC IN NATURE, CONTRACTOR IS RESPONSIBLE FOR COORDINATING PIPING ROUTES WITH ALL OTHER TRADES, NO SUPPORT HANGER OR CLAMP TO BE MOUNTED ON DUCTWORK. NO HORIZONTAL CLEAN OUT (CAPPED EIGHTH
- BEND) TO BE OBSTRUCTED BY WALL, DUCT WORK OR OTHER ELEMENTS. ALL FIRE PROTECTION PIPING IS TO TAKE LAST PRIORITIES DURING ROUTE COORDINATION. WORK TO CONFORM TO 2018 PHILADELPHIA PLUMBING CODE. USE SECTION 919 3-FOR SINGLE STACK PHILADELPHIA STYLE SYSTEM AND ALL APPLICABLE TABLES AS MANDATED BY AHJ AND IECC 2018. ALL UNDERGROUND PIPING IS GRANDFATHERED AS PER IEBC 2018 SECTION 503 AND CHAPTER CHAPTER 7 "ALTERATIONS LEVEL - 1"
- 4- ALL SANITARY PIPING IS DEPICTED BELOW SLAB OR BURIED UNDER SLAB UNLESS INDICATED OTHERWISE. ALL COLD/HOT WATER SUPPLY / RETURN PIPING IS RUN TIGHT TO SLAB OF FLOOR ABOVE UNLESS INDICATED OTHERWISE. ALL VENT PIPING IS RUN TIGHT TO SLAB OF FLOOR ABOVE UNLESS INDICATED OTHERWISE.
- 5- ALL SANITARY PIPING 3" AND LARGER IS SLOPED 1/8" PER FOOT UNLESS INDICATED OTHERWISE. ALL SAN PIPING 2-1/2" AND SMALLER IS SLOPED AT 1/4" PER FOOT. ALL VENT, COLD WATER, HOT WATER, HOT WATER RETURN IS SLOPED TO DRAIN AS NEEDED PER CODE. PROVIDE DRAIN VALVES AT LOW POINTS FOR SYSTEMS MAINTENANCE IN CONVENIENT LOCATIONS. COORDINATE WITH ARCHITECTURAL DRAWINGS, THE LOCATIONS OF THOSE VALVES. ALL VENT PIPING MUST BE SLOPED TO DRAIN AS REQUIRED PER CODE AWAY FROM STACK TOWARDS A FIXTURE.

DRAWING NOTES :

- 1 INSTALL NEW FLOOR SINK FS-1 AND DIRECT WASTE FROM GDC-1s, WE-1 AND LT-1 TO THE NEW FLOOR SINK. MAINTAIN 1" AIRGAP ABOVE THE FLOOR SINK.
- 2 PIPE AND ROUTE 2" DRAIN CONNECTION FROM EACH GDC-1 TO THE FS-1. ROUTE AGAINST THE WALL.
- 3 PROVIDE NEW VENT THRU ROOF ASSEMBLY ON EXISTING VENT STACK. REFLASH EXISTING 4" VENT THRU ROOF DURING ROOF RESTORATIONS.
- CONNECT NEW FIRE PROTECTION LINE AS INDICATED. CAP EXISTING TEE AS INDICATED. DO NOT RE-USE SPRINKLERS. PROVIDE NEW UPRIGHT SPRINKLERS SH-1 W/ PROTECTIVE GUARDS (TO PROTECT FROM MECHANICAL DAMAGE). SEE P5.1 FOR DESIGN CRITERIA;
- 5 PIPE AND ROUTE 3" DRAIN CONNECTION FROM WE-1 TO THE FS-1. ROUTE AGAINST WALL. EXACT HEIGHT OF OPEN CONNECTION FOR NEW DRAIN LINE TO BE COORDINATED WITH REQUIRED SLOPE TO FS-1 AND LENGTH OF DISCHARGE HOSE RECOMMENDED BY MANUFACTURER.

ISSUE		REVISIONS
	09/09/21	ISSUED FOR BID
		Å
	$ \ge $	
PHI		
	ADELPHI	A MANETO
KYLE 0'00	R PROJECT	AGER
MILE U CONNO	R, PROJECT MAN,	
SEALS		
SPACE FOR CC	NSULTANT RECOO	GNITION
RLAC	KNEY	WICK
H A A R C H I	KNEY YES ITECTS	Federal Reserve Bank Building
		100 North Independence Mall West Suite 5 SE - Philadelphia, PA 19106 215-627-0200 - wickfisherwhite.com Project No. 200151-000
		PHILADELPHIA
	1400 J	OF PUBLIC PROPERTY
PHILADELPHI	FLOC	DR, CITY HALL PENNSYLVANIA
		IGINE 72
DEC DRAWING TITLE		MINATION SUITE
PLAN PROJECT NO.	12	DRAWING NO.
13-2 DATE 09/09	1-4643 - /21	
scale NOTE DRAWN BY	D	P1.2
checked by WFW	1	BHA No.: 20-150
NOTE: AL Ve Be	L DIMENSION Rified by th Fore proc	S AND CONDITIONS SHALL BE HE CONTRACTOR AT THE SITE CEEDING WITH THE WORK.

	PLUMBING FIXTURE SCHEDULE													
No	FIXTURE	MANUFACTURER	MODEL #	ТҮРЕ	TRIM	DRAINAGE FIXTURE		CONNECT	IONS					
INO	FIATORE	MANUFACIURER	MODEL #	ITPE	I KIIVI	UNITS	CW	HW	WAS					
LT-1	TWO COMPARTMENT LAUNDRY TRAY	REGENCY TABLES AND SINKS	600S22424B	16 GA TYPE 430 STAINLESS STEEL, W/ BACKSPLASH AND ROLLED EDGES, 8" CENTERED FAUCET, 48"L x 24"W x 13"D;	FAUCET: CHICAGO FAUCET 540-LDE35-317WXFAB; DRAIN KOHLER K-8801; REGENCY 600DTD24213 24" DETACHABLE DRAIN BOARD; SHUT OFF BALL VALVES MOUNTED TIGHT TO CEILING	2	3/4"	3/4"	1-1					
FS-1	FLOOR SINK	ZURN INDUSTRIES	ZN1901-NL	CAST-IRON ENAMEL COATED 8" DEEP FLOOR SINK W/ A GRATE AND A STEEL FRAME AND NEOLOCK OUTLET. PROVIDE CHARLOTTE SERVICE WEIGHT DEEP SEAL TRAP.	PROVIDE ALL LISTED OPTIONS AND A CHARLOTTE SERVICE WEIGHT DEEP SEAL TRAP OR EQUAL.	2	$\left \right>$	\times	3					
RD-1	MAIN ROOF DRAIN	ZURN INDUSTRIES	ZC100-C	CAST IRON DOMED PRIMARY ROOF DRAIN W/ UNDERDECK CLAMP & CAST IRON DOME.	PROVIDE ALL LISTED OPTIONS.	\mathbf{X}	$\left \right>$	\times	3					
WE-1	RIGID MOUNTED WASHER EXTRACTOR	MILNOR INC.	30022 VRJ	RIGID MOUNTED WASHER EXTRACTOR, 60LB. CAPACITY, 208V / 3PH / 60HZ , 5 HP MOTOR.	PROVIDE ISOLATION BALL VALVES AND UNIONS FOR COLD AND HOT WATER SUPPLY. PROVIDE A 3" DWV COPPER DRAIN. PROVIDE WATER HAMMER ARRESTORS.		3/4"	3/4"	3					

PIPE INSULATION SCHEDULE						
SERVICE	MANUFACTURER	TYPE	VAPOR BARRIER	INSULATION THICKNESS	REMARKS	
DOMESTIC COLD WATER	OWENS CORNING OR AEROFLEX	FIBERGLASS OR CLOSED CELL ELASTOMERIC	YES, FACTORY APPLIED OR INTEGRAL	1" : FOR PIPES 2" AND BELOW 1-1/2" : FOR PIPES 2-1/2" AND ABOVE	RUNOUTS NOT TO EXCEED 12' IN LENGTH. ASTM C534 5 PCF DENSITY FOR ELASTOMETRIC ASTM C547 4 PCF DENSITY FOR MINERAL FIBER	
DOMESTIC HOT WATER / HOT WATER RETURN	OWENS CORNING OR AEROFLEX	FIBERGLASS OR CLOSED CELL ELASTOMERIC	YES, FACTORY APPLIED OR INTEGRAL	1" : FOR PIPES 2" AND BELOW 1-1/2" : FOR PIPES 2-1/2" AND ABOVE	RUNOUTS NOT TO EXCEED 12' IN LENGTH. ASTM C534 5 PCF DENSITY FOR ELASTOMETRIC ASTM C547 4 PCF DENSITY FOR MINERAL FIBER	
STORM WATER	OWENS CORNING OR AEROFLEX	FIBERGLASS OR CLOSED CELL ELASTOMERIC	YES, FACTORY APPLIED OR INTEGRAL	1" : FOR PIPES 2" AND BELOW 1-1/2" : FOR PIPES 2-1/2" AND ABOVE	RUNOUTS NOT TO EXCEED 12' IN LENGTH. ASTM C534 5 PCF DENSITY FOR ELASTOMETRIC ASTM C547 4 PCF DENSITY FOR MINERAL FIBER	

PLUMBING PIPE AND FITTING SCHEDULE								
SYSTEM	PIPE SIZE	LOCATION	MATERIAL	SCHEDULE AND/OR TYPE	FITTING	JOINT	REMARKS	
	2" & LARGER	ABOVE GRADE/GROUND	CAST IRON	SERVICE WEIGHT	CAST IRON	NO-HUB	STAINLESS STEEL CLAMPS & NEOPRENE GASKETS	
SANITARY, STORM	1-1/2" & SMALLER	ABOVE GRADE/GROUND	COPPER	TYPE 'DWV'	COPPER	SOLDERED	95% TIN & 5% ANTIMONY	
& WASTE	ALL	BELOW GRADE/GROUND	CAST IRON	SERVICE WEIGHT	CAST IRON	BELL AND SPIGOT	PUSH ON RUBBER GASKET JOINTS OR LEAD AND OAKUM	
	2" & LARGER	ABOVE GRADE/GROUND	CAST IRON	SERVICE WEIGHT	CAST IRON	NO-HUB	STAINLESS STEEL CLAMPS & NEOPRENE GASKETS	
	1-1/2" & SMALLER	ABOVE GRADE/GROUND	COPPER	TYPE 'DWV'	COPPER	SOLDERED	95% TIN & 5% ANTIMONY	
& WASTE VENT	ALL	BELOW GRADE/GROUND	CAST IRON	SERVICE WEIGHT	CAST IRON	BELL AND SPIGOT	PUSH ON RUBBER GASKET JOINTS OR LEAD AND OAKUM	
COLD WATER	ALL	ABOVE GRADE/GROUND	COPPER	TYPE 'L'	COPPER	SOLDERED	95% TIN & 5% ANTIMONY	
HOT WATER / HOT WATER RETURN	ALL	ABOVE GRADE/GROUND	COPPER	TYPE 'L'	COPPER	SOLDERED	95% TIN & 5% ANTIMONY	
	ALL	BELOW GRADE/GROUND	$>\!$	\geq	\ge	>	CONSULT PGW COMPANY FOR DETAILS	
NATURAL GAS PIPING	ALL	ABOVE GRADE/GROUND; CONCEALED/ AND OR >7" W.C.	BLACK STEEL	SCHEDULE 40	FORGED; CLASS 2000 SOCKET WELD	SOCKET WELDED	IN CONCEALED SPACES, NO UNIONS ARE PERMITTED;	
	ALL	ABOVE GRADE/GROUND AND BELOW <7" W.C.	BLACK STEEL	SCHEDULE 40	CAST IRON CLASS 125	THREADED	PROTECTIVE COATING PER IFGC 2009 403.8	
NOTE: ALL EXPOSE	D SANITARY PIPING B	ELOW PLUMBING FIXTURES SHA	LL BE CHROME PLAT	ED BRASS			-	

WATER HAMMER SCHEDULE WA-1								
PPP SIZE	P.D.I. SYMBOL	MAX FIXTURES RATINGS	'A' SIZE	'B' SIZE				
1/2"	A	1 - 11	5"	1/2"				
3/4"	В	12 - 32	5"	3/4"				

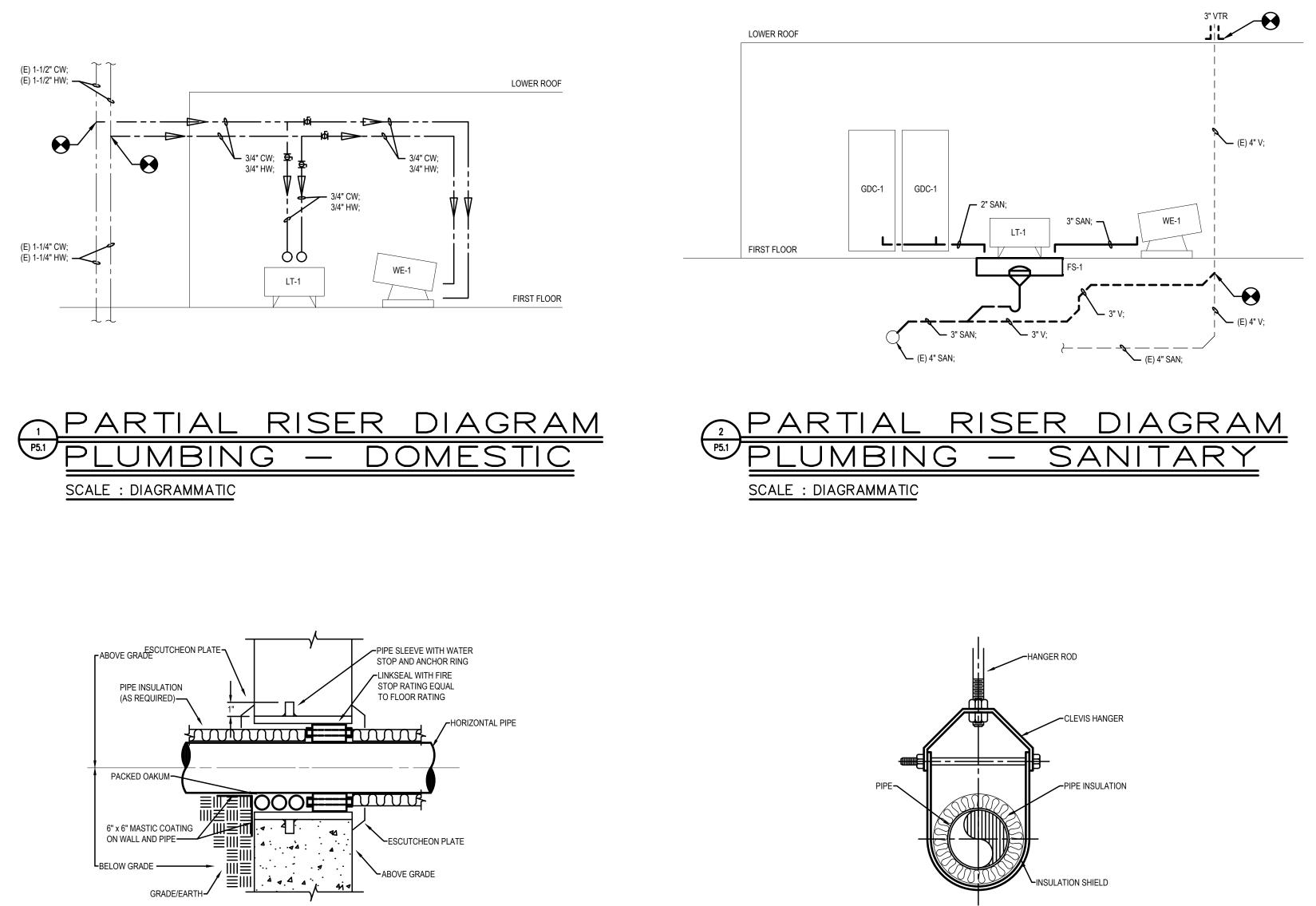
IS		REM.	ARKS
WASTE	TRAP		ARKS
1-1/2"	\square	DRAINAGE TO FS-1	STALLED BY P.C. INSTALL AGAINST THE WALL, DIRECT INSTALLED BELOW. MAINTAIN 1" AIRGAP. PROVIDE SHUT TO CEILING IN THE DECON 104 ROOM.
3"	3"		STALLED BY P.C. INSTALL UNDER LT-1 AND DIRECT LT-1, DC-1s DISCHARGES TO THIS FLOOR SINK.
3"	\mathbf{X}		STALLED BY P.C. PROVIDE ANY OTHER PRODUCT OPTION EQUIRED FOR COMPLETE INSTALLATION.
3"		MANUFACTURER. P MANUFACTURER. P	STALLED BY P.C. MOUNT AND CONNECT AS DIRECTED BY PROVIDE VIBRATIONAL ISOLATION MOUNTS AS REQUIRED BY PROVIDE A 3" DWV COPPER DRAIN PIPE AND ROUTE AGAINST RMINATE AT FS-1 W/ A 1" AIRGAP. PROVIDE WHA.
		ROOM 104	
HA	ZARD CLASS SPRINKLEF		: ORDINARY HAZARD GROUP II : SH-1
	OPERATING	3 AREA	: 1,500 SQ FT MINIMUM · 0.2 MINIMUM GPM/ SQ FT
	HOSE STRE	EAM ALLOWANCE	: 250 GPM
			: 130 SQ FT MAXIMUM
			: UPRIGHT, W/ GUARDS : QUICK RESPONSE HIGH TEMPERATURE
	TEMPERAT	URE RATING	: PER NFPA 13
			 5.6 SCHEDULE 40 BLACK STEEL, GROOVED, THREADED OR WELDED, CLASS 125 FITTINGS
<u> </u>	JTSIDE	E OVERHAN	NG
HAZ	ZARD CLASS SPRINKLEF		: ORDINARY HAZARD GROUP II : SH-2
			2 56-2 2 1,500 SQ FT MINIMUM
	DENSITY		: 0.2 MINIMUM GPM/ SQ FT
		EAM ALLOWANCE R COVERAGE	: 250 GPM : 130 SQ FT MAXIMUM
	SPRINKLER		: SIDEWALL, DRYTYPE, NITROGEN LOADED
	SPRINKLEF	R RESPONSE TYPE	: QUICK RESPONSE INTERMEDIATE TEMPERATURE
		URE RATING	: PER NFPA 13 : 5.6

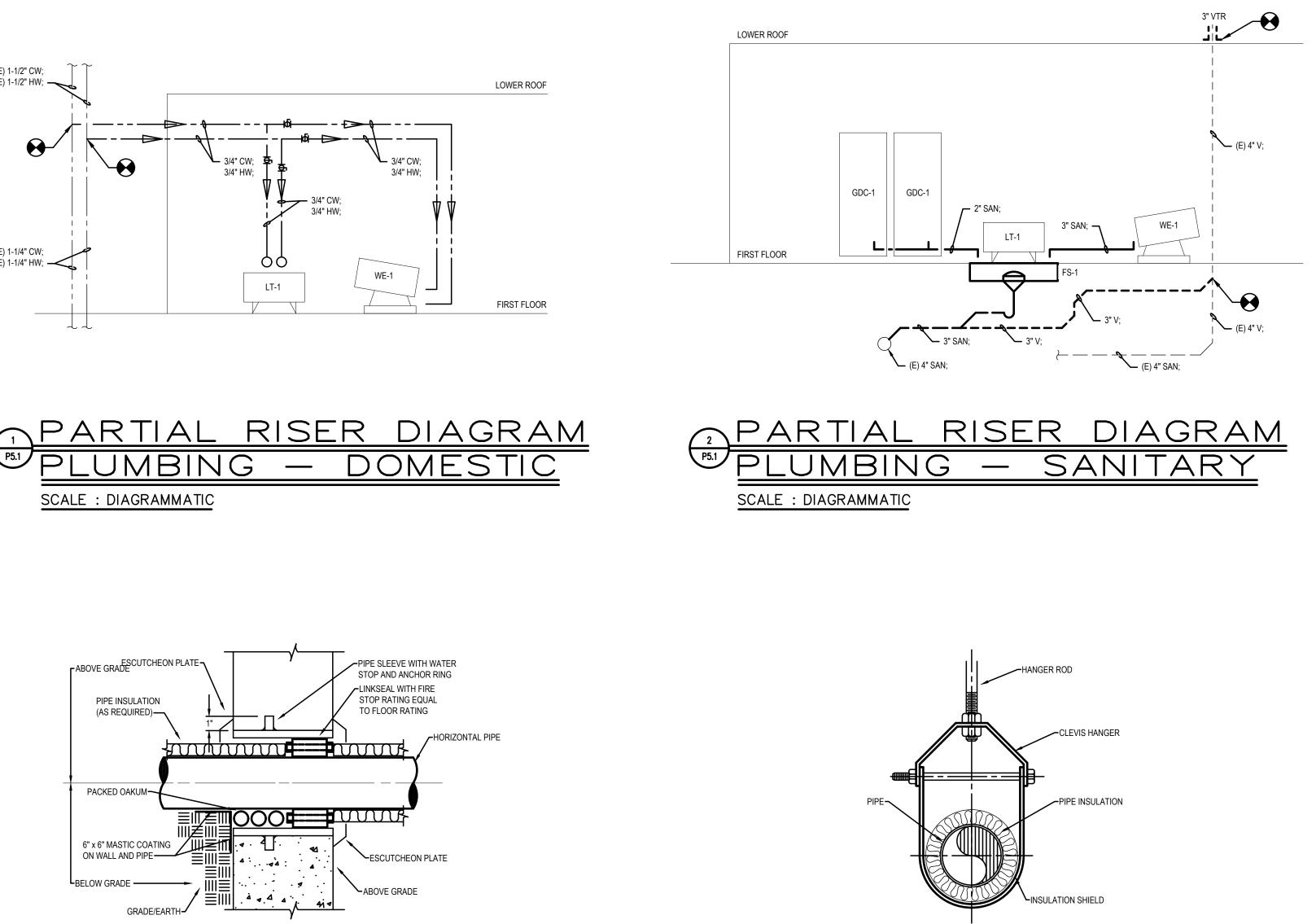
NOMINAL K-FACTOR

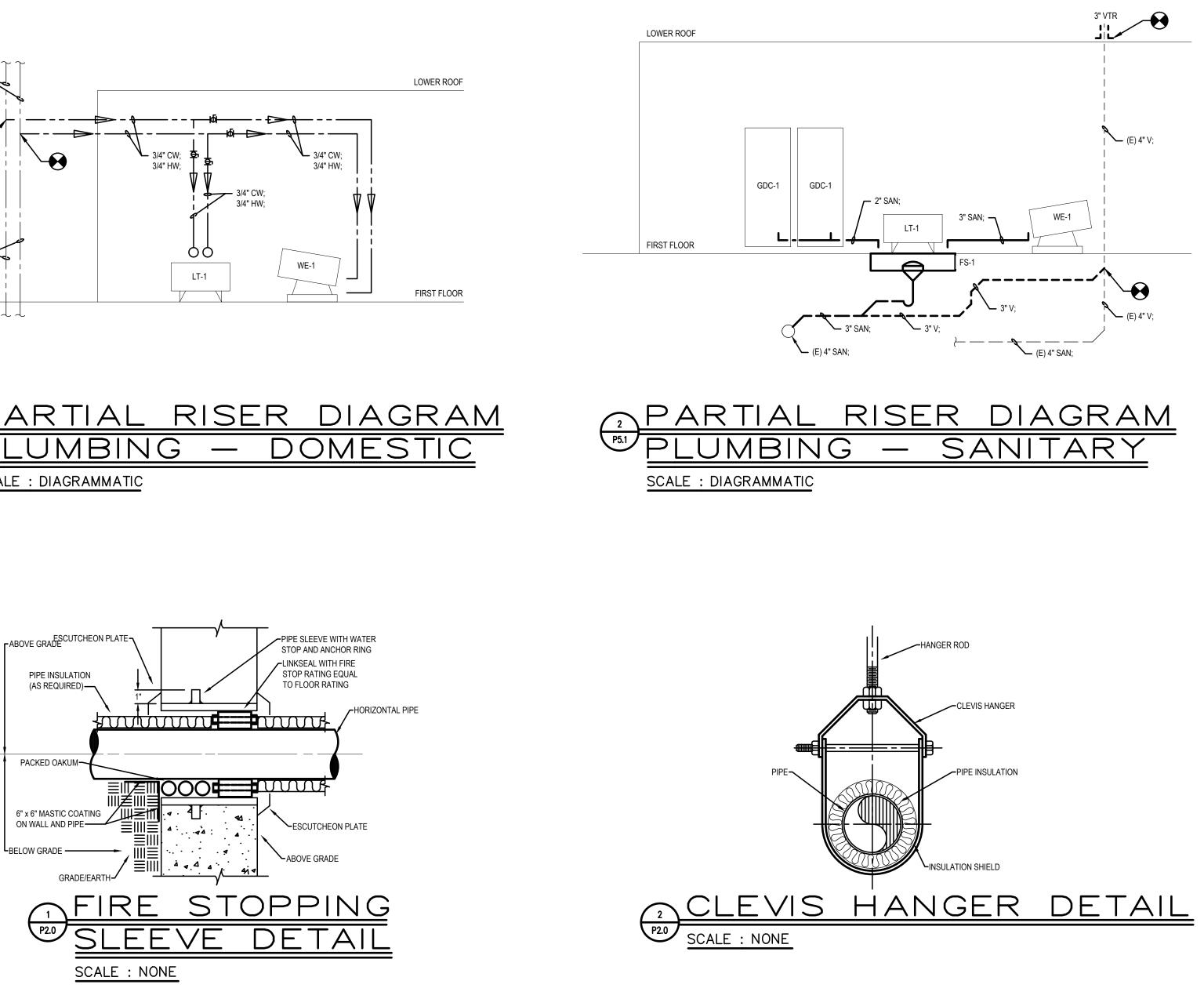
PIPING - WET SYSTEM

: 5.6

SCHEDULE 40 BLACK STEEL, GROOVED, THREADED OR WELDED, CLASS 125 FITTINGS



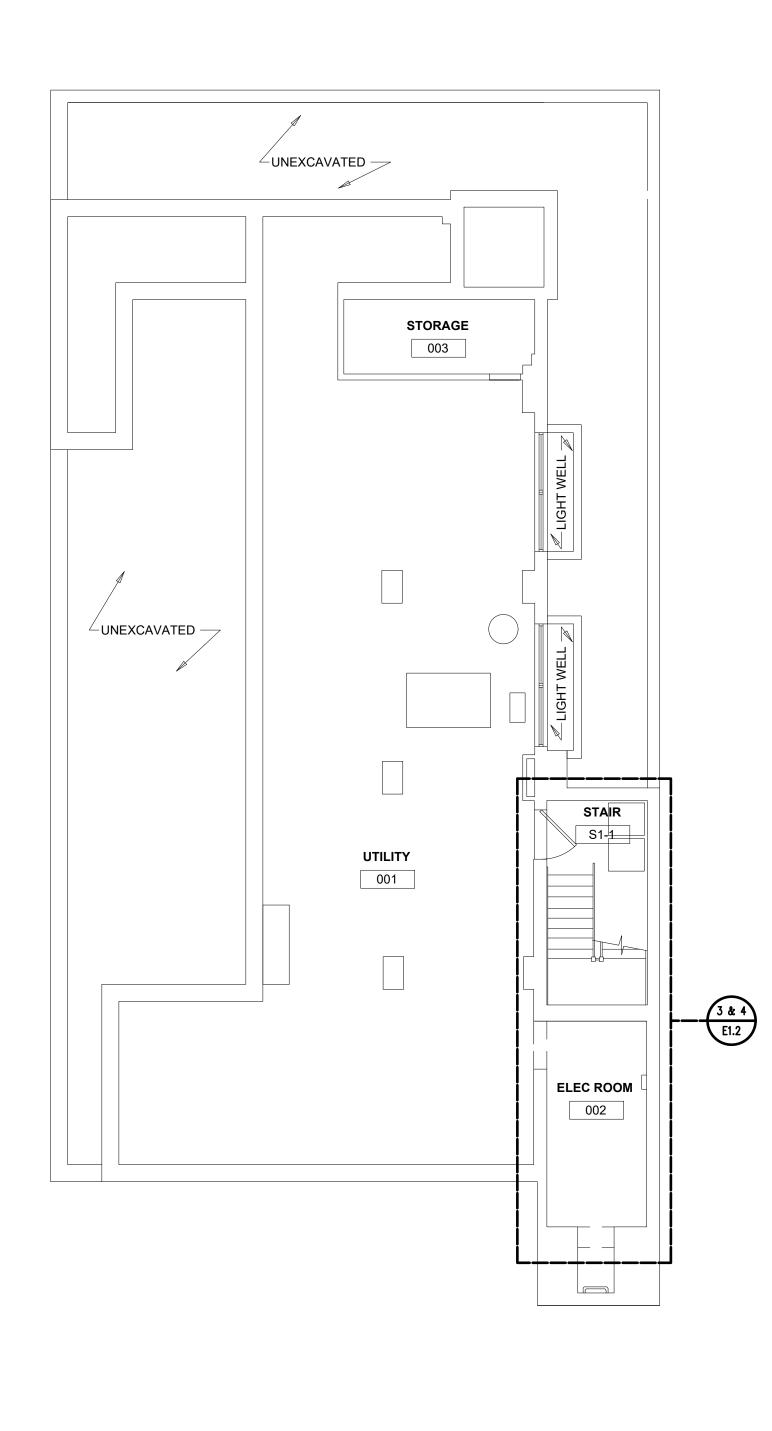




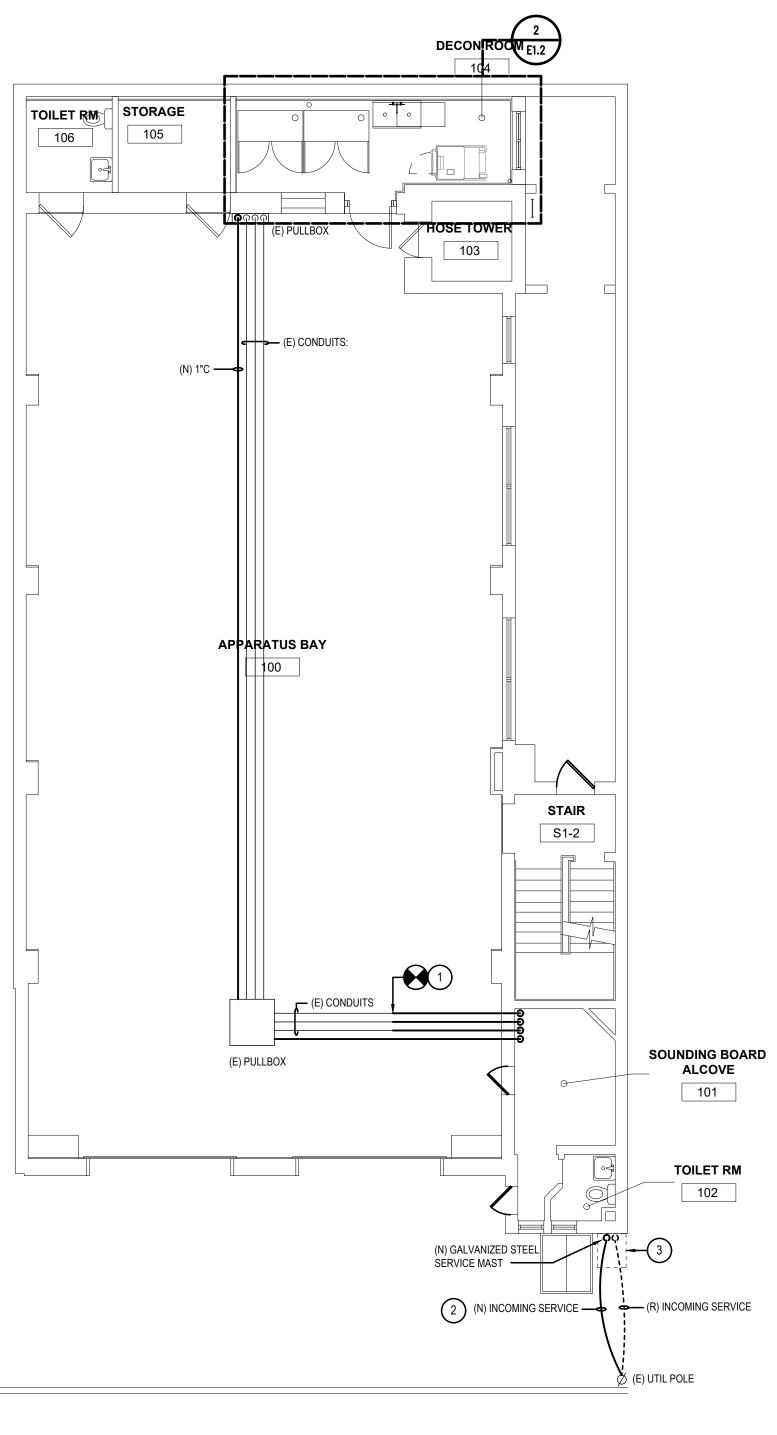
NOTES :

- 1- REFER TO DRAWING MPE1.1 FOR HVAC, PLUMBING/FIRE PROTECTION & ELECTRICAL GENERAL NOTES, ABBREVIATIONS, LEGENDS & DRAWING LIST.
- 2- WORK TO CONFORM TO PHILADELPHIA PLUMBING CODE 2018 EDITION, WITH ALL CURRENT AMENDMENTS AS WELL AS ALL EXCEPTIONS MANDATED BY OFFICE OF PHILADELPHIA PLUMBING INSPECTOR.

ISSUE	DATE	REVISIONS
	09/09/21	ISSUED FOR BID
KYLE O'CONNO	R, PROJECT MAN/	AGER
SEALS		
	NSULTANT RECOO K N E Y Y E S T E C T S	WICK FISHER FISHER WICK FISHER WICK FISHER UNITION Federal Reserve Bank Building 100 North Independence Mall West Suite 5 SE - Philadelphia, PA 19106 215-627-0200 - wickfisherwhite.com Project No. 200151-000
	RTMENT 1400 J FLOC	PHILADELPHIA OF PUBLIC PROPERTY FK BOULEVARD DR. CITY HALL PENNSYLVANIA
DRAWING TITLE	ONTAI	IGINE 72 MINATION SUITE SCHEDULES RAMS
DATE SCALE NOTE DRAWN BY WFW CHECKED BY	D	-01 P5.1 BHA No.: 20-150 S AND CONDITIONS SHALL BE SEEDING WITH THE WORK.









BUILDING.

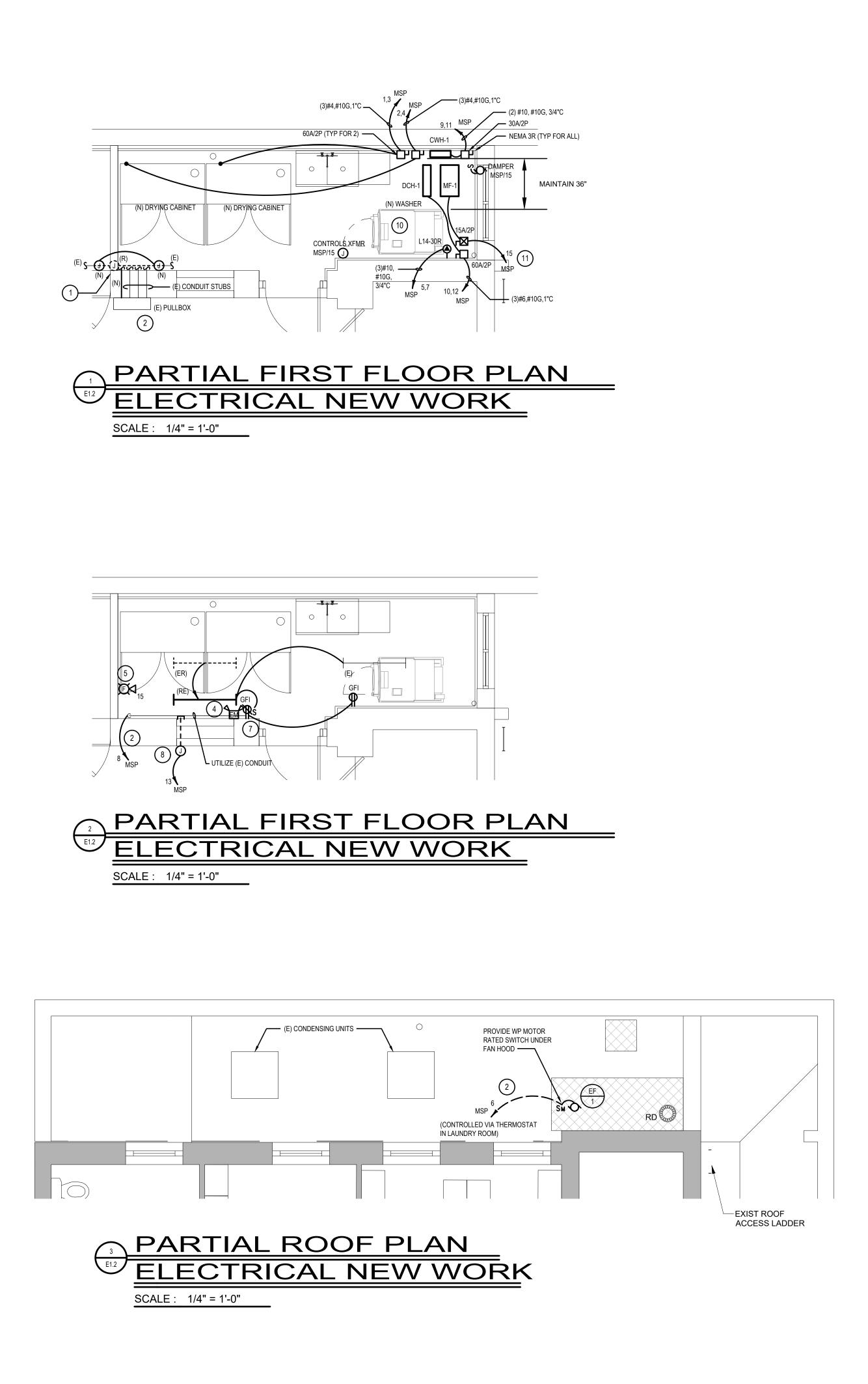
1- REFER TO DRAWING MPE-1 FOR HVAC, PLUMBING/FIRE PROTECTION & ELECTRICAL GENERAL NOTES, ABBREVIATIONS, LEGENDS & DRAWING LIST.

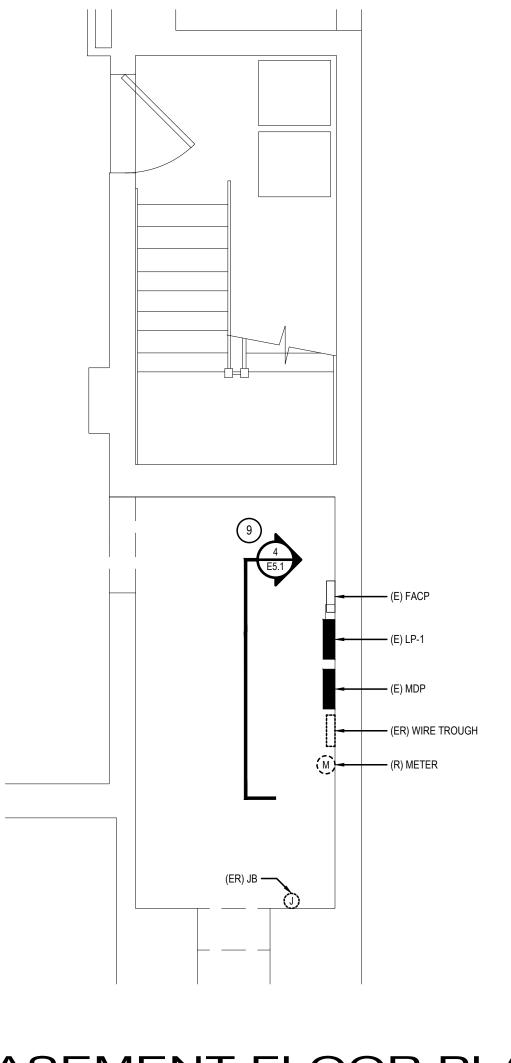
DRAWING NOTES :

- 1 EXTEND EXISTING CONDUIT PROVISIONS, AND CORE DOWN THROUGH FLOOR TO BASEMENT ELECTRICAL ROOM BELOW.
- 2 NEW INCOMING AERIAL SERVICE SHALL BE IN ACCORDANCE WITH PECO ILLUSTRATIONS 12.02 AND 12.03.

3 E.C. TO EXCAVATE FOR NEW SERVICE ENTRANCE AS REQUIRED. BACKFILL AND REPAIR SIDEWALK TO MATCH EXISTING. ENSURE GRADING SLOPES AWAY FROM

REVISIONS
09/09/21 ISSUED FOR BID
*
PHILADE PHIA MANETO
MANETO MANETO
kyle o'connor, project manager
SEALS
SPACE FOR CONSULTANT RECOGNITION
BLACKNEY HAYES ARCHITECTS Federal Reserve Bank Building
100 North Independence Mall West Suite 5 SE - Philadelphia, PA 19106 215-627-0200 - wickfisherwhite.com Project No. 200151-000
CITY OF PHILADELPHIA
DEPARTMENT OF PUBLIC PROPERTY
1400 JFK BOULEVARD 7th Floor, City Hall
PHILADELPHIA PENNSYLVANIA PROJECT TITLE
ENGINE 72
DECONTAMINATION SUITE
FLOOR PLANS
PROJECT NO. DRAWING NO. 13-21-4643-01
DATE 09/09/21
SCALE
NOTED ■ ■ ■
NOTED DRAWN BY WFW CHECKED BY WFW NOTE: ALL DIMENSIONS AND CONDITIONS SHALL BE VERIFIED BY THE CONTRACTOR AT THE SITE BEFORE PROCEEDING WITH THE WORK.







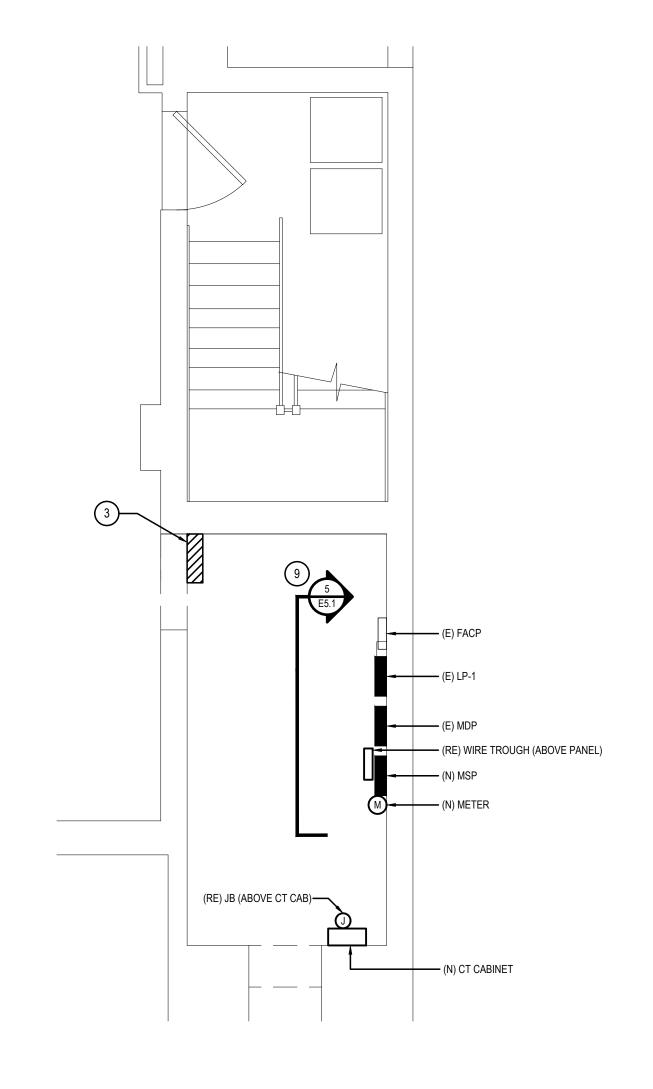
- 1- REFER TO DRAWING MPE-1 FOR HVAC, PLUMBING/FIRE PROTECTION & ELECTRICAL GENERAL NOTES, ABBREVIATIONS, LEGENDS & DRAWING LIST.
- 2- WIRING FOR NEW LAUNDRY EQUIPMENT ASSUMES A NEUTRAL IS REQUIRED. IF NOT USED, SAFE OFF AT BOTH ENDS, AND DO NOT CONNECT TO NEUTRAL BUS AT PANEL.

DRAWING NOTES :

- 1 REMOVE EXISTING JUNCTION BOX. INTERCEPT EXISTING MC CABLE ON EITHER SIDE OF PROPOSED NEW WALL AND PROVIDE NEW JUNCTION BOXES FOR EXTENDING MC
- 2 ROUTE POWER FEEDS TO EQUIPMENT THROUGH TO PULLBOX ON OPPOSITE SIDE OF LAUNDRY ROOM WALL. USE EXISTING CONDUIT STUBS WHERE POSSIBLE.

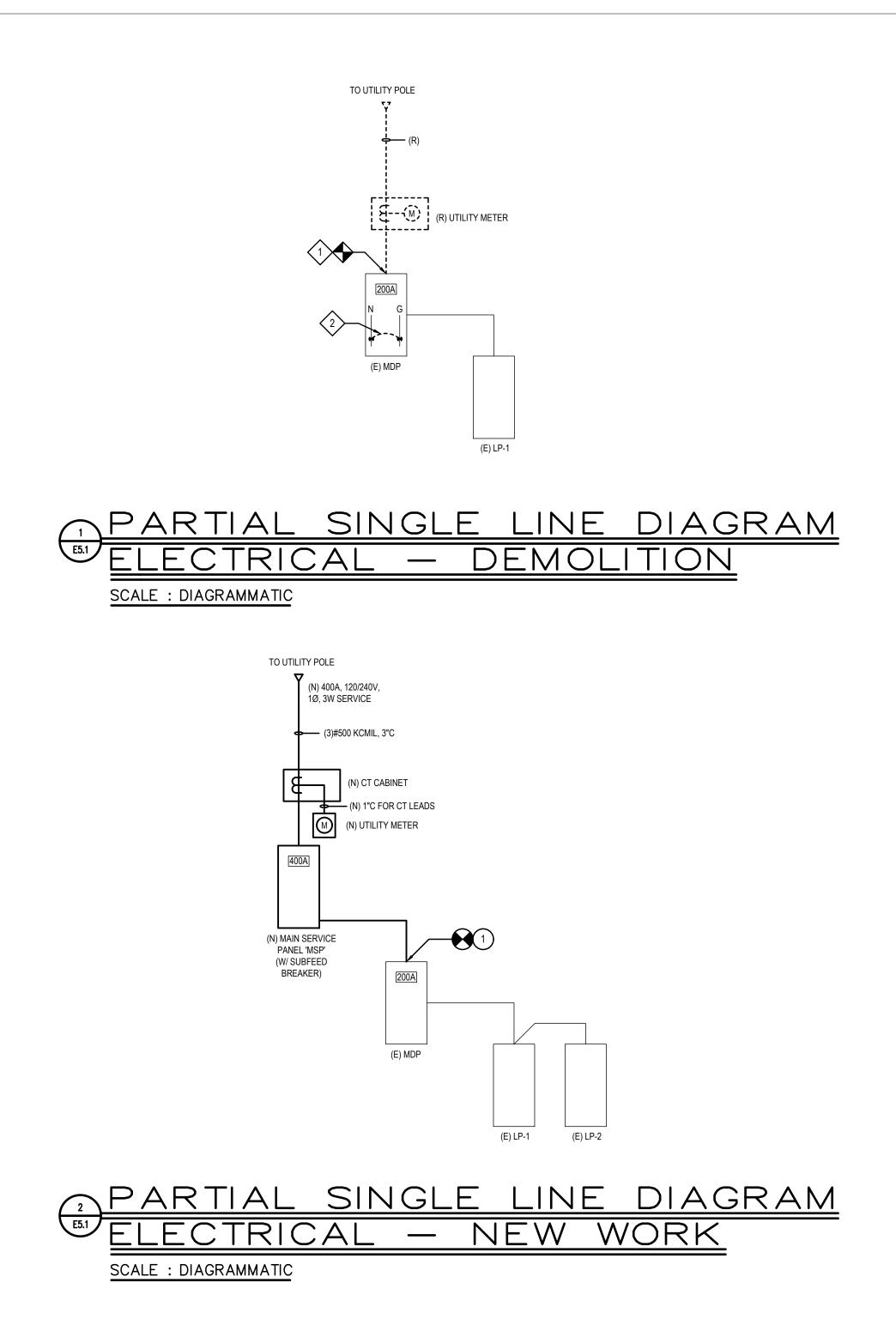
CABLE THROUGH NEW CORED AND SLEEVED OPENING WITH FIRESTOP.

- 3 PROVIDE FLOOR CORES IN THIS AREA FOR CONDUITS UP TO LAUNDRY ROOM. COORDINATE EXACT LOCATION WITH OWNER. FIELD VERIFY ROUTE PRIOR TO
- CORING. PROVIDE NEW EMERGENCY BATTERY PACK WITH DUAL ADJUSTABLE LAMPS AND WIRE GUARD, LITHONIA ELM2-LED-HO-ELA-WG1 OR APPROVED EQUAL. WIRE TO
- SAME CIRCUIT SERVING LIGHTS IN SAME SPACE AHEAD OF ANY SWITCHING. CONNECT NEW HORN/STROBE TO EXISTING NAC LOOP IN THIS AREA. PROVIDE UPDATED BATTERY AND VOLTAGE DROP CALCULATIONS FOR TOWNSHIP REVIEW.
- OPDATED BATTERY AND VOLTAGE DROP CALCULATIONS FOR TOWNSHIP REVIEW.
 O
 NOT USED
- (7) SWITCH AND RECEPTACLE MAY SHARE A 2-GANG BACKBOX AT 44" AFF.
- 8 PROVIDE 120V POWER TO NEW TEMPERATURE/HUMIDITY SENSOR AND LOCAL ALARM. REFER TO MECHANICAL FOR SPECIFICATION. COORDINATE WITH MECHANICAL CONTRACTOR FOR INSTALLATION OF CONDUIT SLEEVE INTO LAUNDRY ROOM FOR SENSING LEAD.
- 9 REFER TO ELEVATIONS ON E-5.1 FOR ADDITIONAL DETAILS ON WORK IN THIS AREA.
 10 PROVIDE FIELD INSTALLED CORD-AND-PLUG FOR NEW WASHER. CORD SHALL BE SJ TYPE, WITH NEMA L14-30 CORD CAP. COORDINATE PLUG AND OUTLET
- CONFIGURATION WITH FINAL SUPPLIED WASHER. (11) COORDINATE WITH MECHANICAL TO INTERLOCK STARTER OF FAN WITH DRYERS TO PROVIDE MAKEUP AIR DURING DRYER EXHAUST CYCLES. 120V CIRCUIT POWERING FAN SHALL BE USED TO POWER MOTORIZED DAMPER, AS WELL AS LINE VOLTAGE TO CONTROLS CIRCUIT. REFER TO MECHANICAL FOR CONTROLS DIAGRAM.





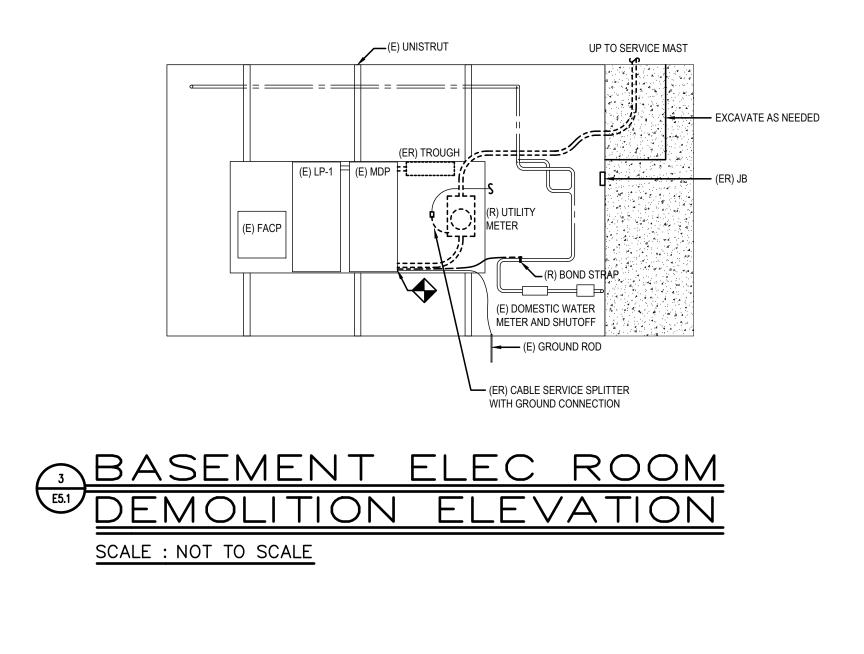
REV	ISIONS
ISSUE DATE 09/09/21	REVISIONS
PHILADELPHI	A MANETO
	MANEIO
KYLE O'CONNOR, PROJECT MAN	AGER
SEALS	
SPACE FOR CONSULTANT RECO	
BLACKNEY HAYES ARCHITECTS	FISHER WHITE
	Federal Reserve Bank Building 100 North Independence Mall West Suite 5 SE - Philadelphia, PA 19106
	215-627-0200 - wickfisherwhite.com Project No. 200151-000
	PHILADELPHIA OF PUBLIC PROPERTY
	IFK BOULEVARD
	PENNSYLVANIA
PHILADELPHIA PROJECT TITLE	
PROJECT TITLE	IGINE 72
PROJECT TITLE	IGINE 72 MINATION SUITE
PROJECT TITLE EN DECONTA DRAWING TITLE ENLARGEE	MINATION SUITE
PROJECT TITLE EN DECONTA	MINATION SUITE
PROJECT TITLE EN DECONTA DRAWING TITLE ENLARGED PLANS PROJECT NO. 13-21-4643	MINATION SUITE
PROJECT TITLE EN DECONTA DRAWING TITLE ENLARGEE PLANS PROJECT NO. 13-21-4643 DATE 09/09/21 SCALE NOTED	DRAWING NO.
PROJECT TITLE ENDECONTA DRAWING TITLE ENLARGEE PLANS PROJECT NO. 13-21-4643 DATE 09/09/21 SCALE	MINATION SUITE

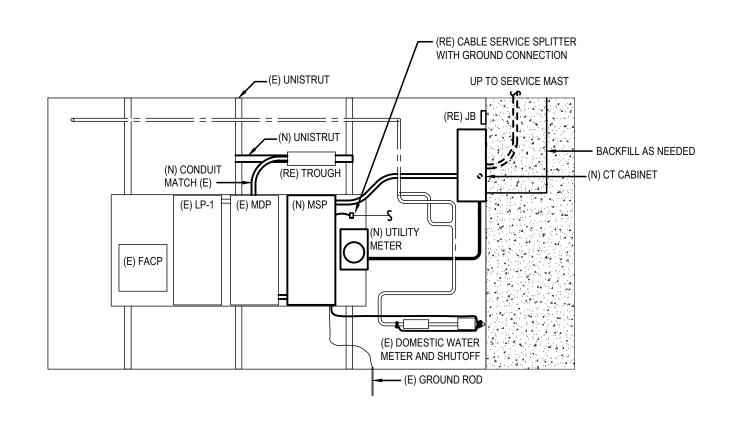


P/	ANEL	DESIGI				120/240	V 1Ø 3W MOUNTING : S	URFACE		
LC	CAT		MT ELEC EXISTIN	IG PANEL	-	200A M	СВ			
*	CIR NO.	LOAD V.A.	BRANCH CIRCUIT- DESCRIP. & LOCATION	C/B SIZE		C/B SIZE	BRANCH CIRCUIT- DESCRIP. & LOCATION	LOAD V.A.	CIR NO.	*
	1		PANEL 'LP1'	100/2		100/2	PANEL 'P1'		2	
	3								4	
_	5		CLOTHES DRIER	20/2		20/2	A/C UNIT LOCKER R		6	
	7								8	
	9		KITCHEN FREEZER	50/2		20/1	KITCHEN REC		10	
	11					20/1	KITCHEN RANGE HOOD		12	
	13		KITCHEN RANGE	50/2		100/2	A/C UNIT KITCHEN		14	
	15								16	
	17		GARAGE CEILING HEAT	20/1		20/1	GARAGE CEILING HEAT		18	
	19		(UNLABELED LOAD)	20/1		20/1	(UNLABELED LOAD)		20	
	21		GARAGE CEILING HEAT	20/1		20/1	GARAGE CEILING HEAT		22	
	23		FRONT BATHRM HEAT	20/1		20/1	(UNLABELED LOAD)		24	
	25		OUTSIDE LIGHTS	20/1		20/1	BOILER (BSMT)		26	
	27		A/C UNIT LOCKER ROOM	20/1		20/1	(UNLABELED LOAD)		28	
	29		FIRE ALARM PANEL	20/1		20/1	HOT WATER PUMP		30	
	31		SPARE (C.B. ON)	20/1		20/1	SPARE (C.B. ON)		32	
	33		EXHAUST FAN	20/2		20/1	GARAGE CORD REELS		34	
	35					20/1	GARAGE CORD REELS		36	
	37		(UNLABELED LOAD)	20/1		20/1	SPARE (C.B. ON)		38	Γ
	39		SPARE (C.B. ON)	20/1		20/1	SPARE (C.B. ON)		40	Γ
	41		SPARE (C.B. ON)	20/1		20/1	SPARE (C.B. ON)		42	Γ
	CON	NECTED	D LOAD 0 MIN. A.I.C. RATING		65	,000	DEMAND LOAD * PEAK DE OF 2020 U	* 18000 MAND REF TILITY BILL		VE

PA	NEL	DESIGN			120/240	IV 1Ø 3W MOUNTING :	SURFACE		
LOCATION: BSMT ELEC NEW PANEL						СВ			
*	CIR NO.	LOAD V.A.	BRANCH CIRCUIT- DESCRIP. & LOCATION	C/B SIZE	C/B SIZE	BRANCH CIRCUIT- DESCRIP. & LOCATION	LOAD V.A.	CIR NO.	
	1	11200	DRYING CABINET	60/2	60/2	DRYING CABINET	11200	2	
	3							4	
	5	5000	WASHING MACHINE	30/2	15/1	DECON RM EXHAUST	500	6	
	7				20/1	DECON RM REC & LTG	480	8	
	9	4000	DECON RM HEAT	25/2	90/2	DECON RM DUCT HEAT	16000	10	
	11							12	
	13	250	DECON RM HEAT/HUMID SENS	20/1	20/1	SPARE		14	
	15	800	DECON RM FAN MF-1 & CONTROLS	15/1	20/1	SPARE		16	
	17		SPARE	20/1	20/1	SPARE		18	
	19		SPARE	20/1	20/1	SPARE		20	
	21		SPARE	20/1	20/1	SPARE		22	
	23		SPARE	20/1	20/1	SPARE		24	
	25		SPARE	20/1	20/1	SPARE		26	
	27		SPARE	20/1	20/1	SPARE		28	
	29		SPARE	20/1	20/1	SPARE		30	
	31		SPARE	20/1	20/1	SPARE		32	
	33		SPARE	20/2	20/2	SPARE		34	
	35							36	
					200/2	SUB-FEED TO 'MDP'	18000	40	
	41							42	
(CON	NECTED	LOAD 67430		ac 000 (2	DEMAND LOAD	67430		

NOTE - SCHEDULE INCLUDED FOR REFERENCE ONLY. ALL LOADS INDICATED ARE EXISTING TO REMAIN.







SCALE	:	NOT	ТО	SCALE	

NOTES :

1- REFER TO DRAWING MPE-1 FOR HVAC, PLUMBING/FIRE PROTECTION & ELECTRICAL GENERAL NOTES, ABBREVIATIONS, LEGENDS & DRAWING LIST.

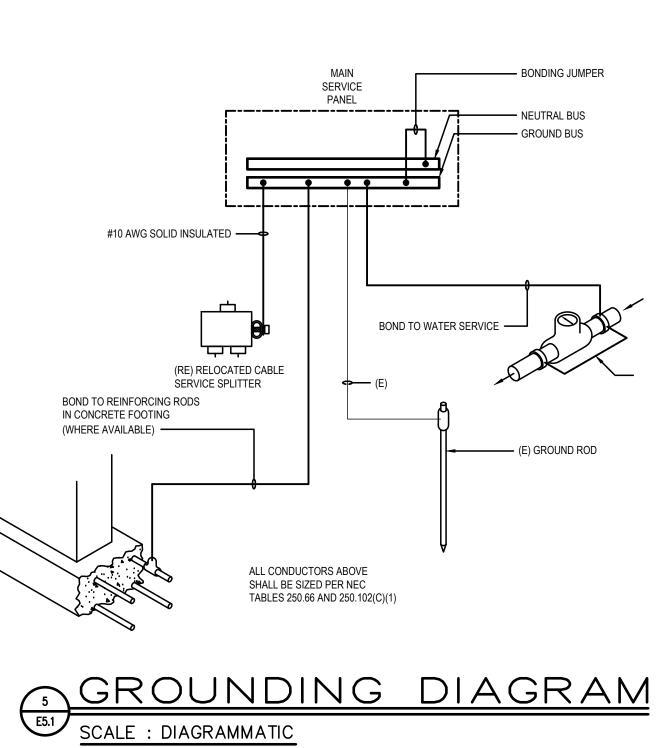
DEMOLITION NOTES:

- DISCONNECT AND REMOVE EXISTING CONDUCTORS FROM LOAD SIDE OF METER. SALVAGE FOR REUSE AND CONNECTION TO NEW MAIN SERVICE PANEL.
- REMOVE BONDING JUMPER BETWEEN NEUTRAL AND GROUND IN EXISTING MAIN PANEL, IN PREPARATION FOR NEW MAIN SERVICE PANEL TO PROVIDE

DRAWING NOTES :

NEUTRAL-GROUND BOND.

- PROVIDE CLOSE-NIPPLE CONNECTION, AND REINSTALL EXISTING #3/0 CONDUCTORS SALVAGED FROM DEMOLITION. PROVIDE NEW EQUIPMENT GROUND CONDUCTOR (SIZE #6 AWG)
- 2 CONTRACTOR SHALL VERIFY AVAILABLE FAULT CURRENT WITH UTILITY COMPANY. PROVIDE LABEL AT MAIN SERVICE DISCONNECT INDICATING AVAILABLE FAULT CURRENT, PER NEC 110.24.
- 3 PROVIDE MINIMUM 24" OF CONDUCTOR BEYOND THE SERVICE HEAD FOR CONNECTION TO SERVICE DROP BY UTILITY COMPANY.



KIE O'CONNOR, PROJECT MANAGER
SEALS SPACE FOR CONSULTANT RECOGNITION BLACKNEY RECHITECTS WICK FISHER WHICK FISHER WHICK FISHER WHICK Fisher Wick Federal Reserve Bank Building 100 North Independence Mail West Suite 5 SE - Philadelphia, PA 19106 215-627-0200 VICK Federal Reserve Bank Building 100 North Independence Mail West Suite 5 SE - Philadelphia, PA 19106 215-627-0200 CITY OF PHILADELPHIA DEPARTMENT OF PUBLIC PROPERTY 1400 JFK BOULEVARD ZTH FLOOR, CITY HALL PHILADELPHIA PROJECT TITLE
ENGINE 72 DECONTAMINATION SUITE DETAILS AND DETAILS AND DIAGRAMS PROJECT NO. DRAWING NO. 13-21-4643-01 DATE 09/09/21 SCALE NOTED DRAWN BY WFW CHECKED BY WFW CHECKED BY WFW ONDET CONDITIONS SHALL BE WERFIFIED BY THE CONTRACTOR AT THE SITE BEFORE PROCEEDING WITH THE WORK.