

EXISTING DOMESTIC HOT WATER EXPANSION TANK TO BE REMOVED.

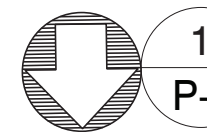
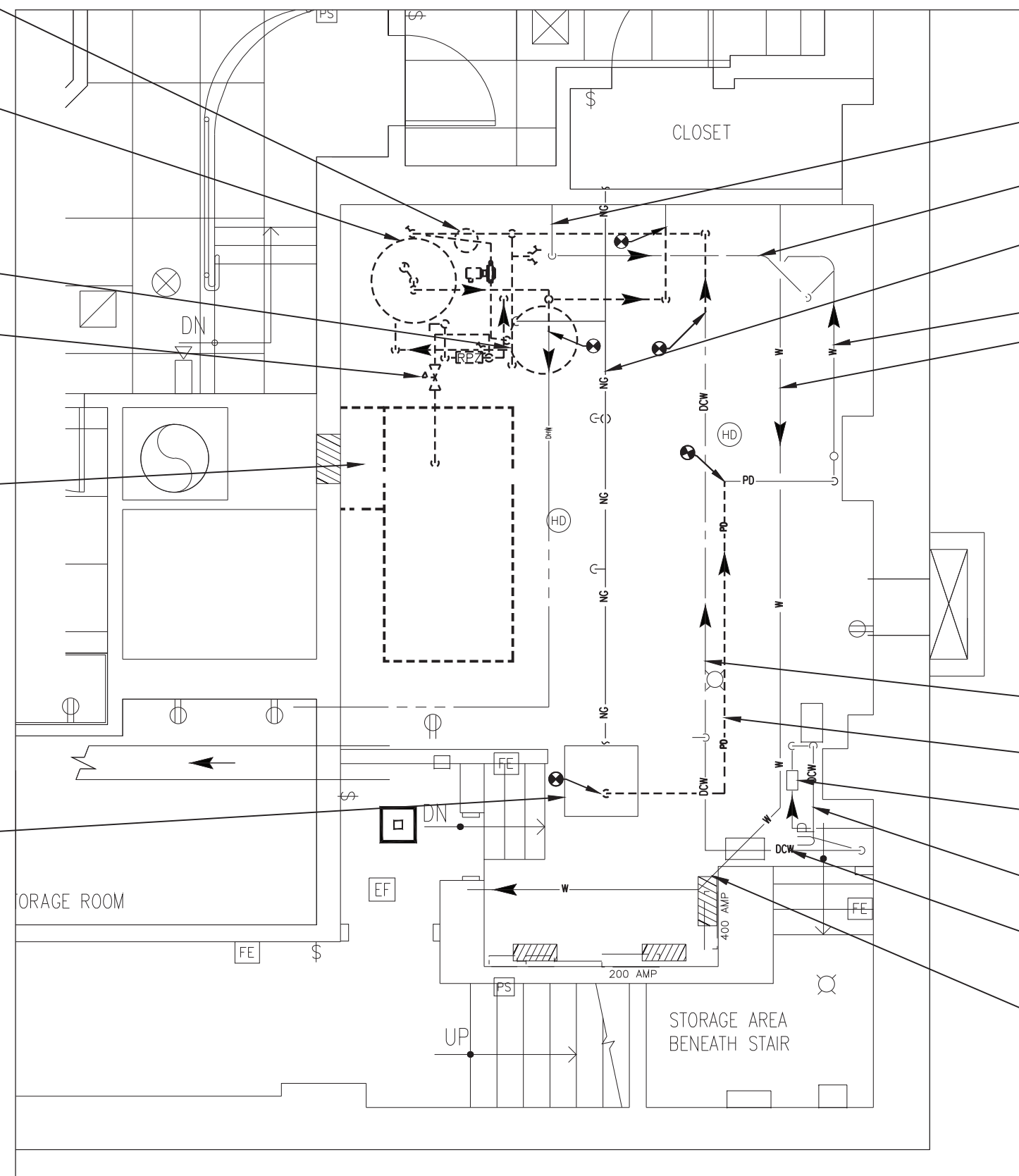
DEMOLISH AND REMOVE EXISTING DOMESTIC HOT WATER STORAGE TANK ON MOUNTING FRAME IN ITS ENTIRETY.

RELOCATE EXISTING DOMESTIC WATER HEATER.

DEMOLISH AND REMOVE EXISTING 1/2" BOILER FEED VALVE.

DISCONNECT 1/2" DOMESTIC WATER PIPING UP TO EXISTING BOILER FEED UNIT TO BE REMOVED IN ITS ENTIRETY.

EXISTING SUMP PUMP SYSTEM TO REMAIN. PIT BOTTOM ELEV 12" (TYPICAL)



1 PLUMBING ROOM DEMOLITION PLAN  
P-2 SCALE: 1/4" = 1'-0"

EXISTING 3" COPPER WASTE PIPE 110" AFF TO REMAIN.  
EXISTING 3" COPPER WASTE PIPE 95" AFF TO REMAIN.  
EXISTING GAS 109" AFF TO REMAIN.

EXISTING WASTE PIPE 27" AFF  
EXISTING WASTE PIPE 24" AFF

EXISTING 1-1/2" WATER PIPE TO REMAIN.  
EXISTING 1-1/2" COPPER SUMP DISCHARGE TO BE RE-ROUTED.  
EXISTING WATER METER TO REMAIN.

EXISTING 2" DOMESTIC WATER LINE TO REMAIN.  
EXISTING 1-1/2" WATER PIPE TO REMAIN.

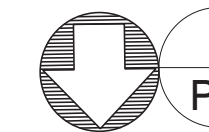
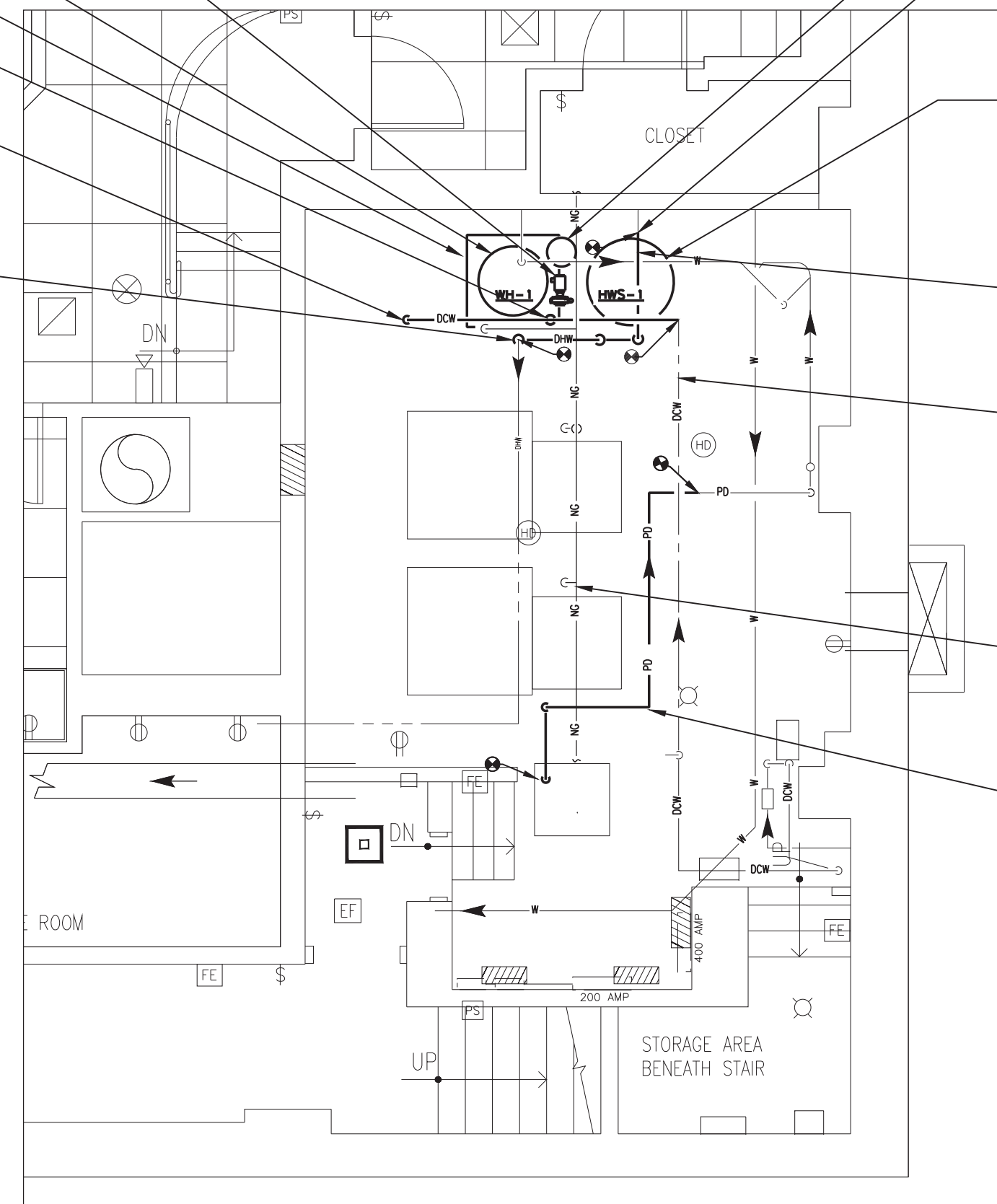
EXISTING WASTE PIPE 21" AFF TO REMAIN.

CONTRACTOR SHALL PROVIDE NEW HOT WATER CIRCULATOR PUMP. REFER TO DETAILS FOR PIPE SIZES AND SPECIALTIES.

EXISTING WATER HEATER TO BE RELOCATED AGAINST WALL.  
PROVIDE NEW CONCRETE PAD SEE ARCHITECTURAL SHEET.  
CONTRACTOR SHALL PROVIDE DOMESTIC WATER CONNECTION TO NEW WATER HEATER.

CONTRACTOR SHALL PROVIDE DOMESTIC WATER CONNECTION TO NEW BOILER FEED UNIT AND INSULATE.

CONTRACTOR SHALL RECONNECT DOMESTIC HOT WATER CONNECTION TO EXISTING BUILDING DISTRIBUTION.



1 PLUMBING ROOM NEW WORK PART PLAN  
P-2 SCALE: 1/4" = 1'-0"

PROVIDE NEW HOT WATER EXPANSION TANK.

CONTRACTOR SHALL RECONNECT DOMESTIC HOT WATER CONNECTION TO EXISTING BUILDING DISTRIBUTION.

PROVIDE NEW 30"Øx72" 200 GALLON AO SMITH T200A UNINSULATED STANDARD BARE COMMERCIAL HOT WATER STORAGE TANK VERTICALLY ON NEW PIPE STAND. STRAP TO WALL AND INSULATE.

EXISTING 1-1/2" STEEL WATER PIPE.

EXISTING 1-1/2" STEEL WATER PIPE.

PROVIDE GAS CONNECTION TO NEW MODULATING BURNER SEE SCHEDULE/SCHEMATIC. PROVIDE SHUTOFF VALVE AND DRIP LEG (TYPICAL FOR 2)

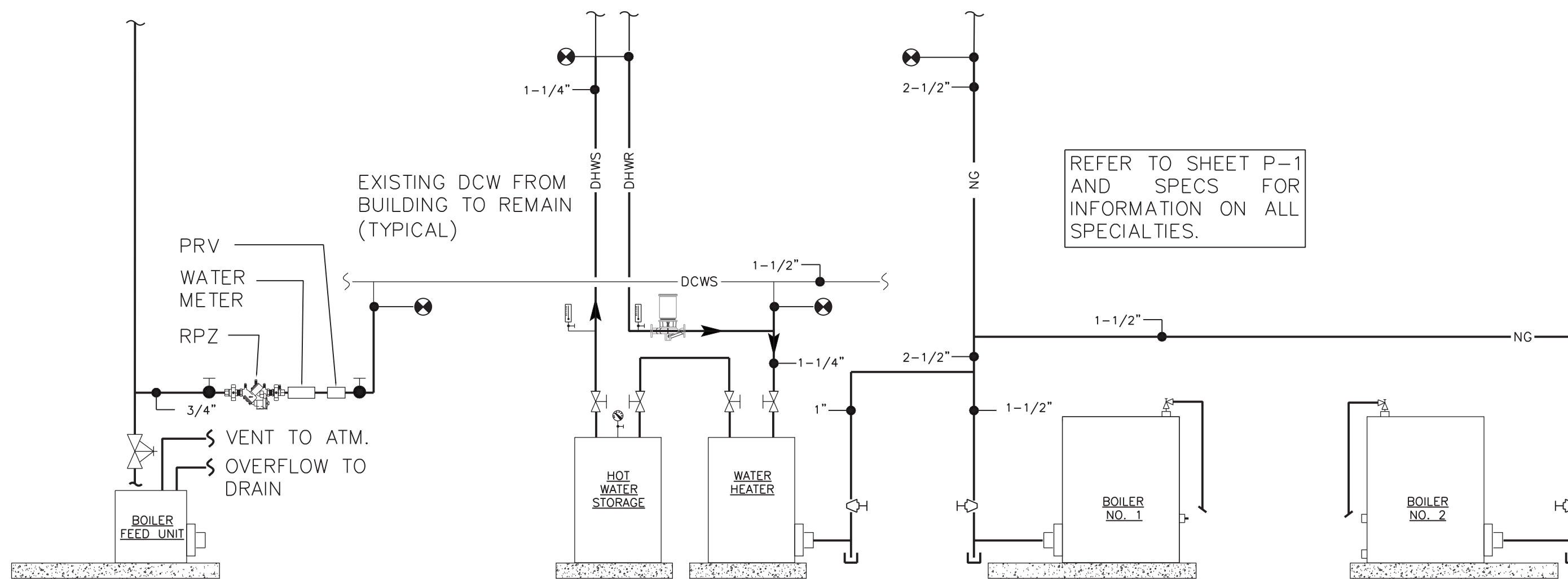
EXISTING 1-1/2" COPPER SUMP DISCHARGE TO BE RE-ROUTED AS REQUIRED TO ACCOMMODATE NEW FIELD CONDITIONS.

ALL PIPING SHALL BE ROUTED TIGHT AGAINST WALL AND CEILING TO FACILITATE EASE OF PASSAGE.

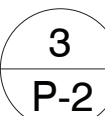
EXISTING CONDENSATE RETURN FROM BUILDING TO REMAIN (TYPICAL)

EXISTING BUILDING DISTRIBUTION TO REMAIN (TYPICAL)

EXISTING GAS SUPPLY TO REMAIN (TYPICAL)



REFER TO SHEET P-1 AND SPECS FOR INFORMATION ON ALL SPECIALTIES.



3 BOILER ROOM PLUMBING SCHEMATIC  
P-2 SCALE: NONE

IN CHARGE OF JAI PUNNOOSE, P.E.  
CHECKED BY  
MADE BY VINCENT LEONE, P.E.

REVISION NUMBER	DATE	MADE BY	APP'D BY	REVISION
1	6-22-2021	VIL	VIL	ADDENDUM #1: REPLACED SHEET

RECORD DRAWING CERTIFICATION			
<input type="checkbox"/> AS BUILT - CHANGES AS NOTED <input type="checkbox"/> AS BUILT - NO CHANGES			
CONTRACTOR		PROJECT COORDINATOR	
NAME		NAME	
SIGNATURE		SIGNATURE	
TITLE		TITLE	

WESTCHESTER COUNTY, NEW YORK DEPARTMENT OF PUBLIC WORKS DIVISION OF ENGINEERING	
BOILER REPLACEMENT AND ASSOCIATED WORK VERNON PLAZA FAMILY CENTER 17 SOUTH SECOND AVENUE, MOUNT VERNON, NEW YORK DEMOLITION AND NEW WORK PLAN, CELLAR LEVEL	

CONTRACT NUMBER	SHEET NUMBER
21-514	P-2
SHEET NO. 4 OF 9	
SCALE: AS SHOWN DATE: 06/04/21	
DPW FILE NO.	REV. NO.
54-29-P-50	0



EXISTING FLUE CONNECTOR TO BE DEMOLISHED (TYPICAL FOR 5)  
EXISTING 2" LPC 16" AFF TO REMAIN

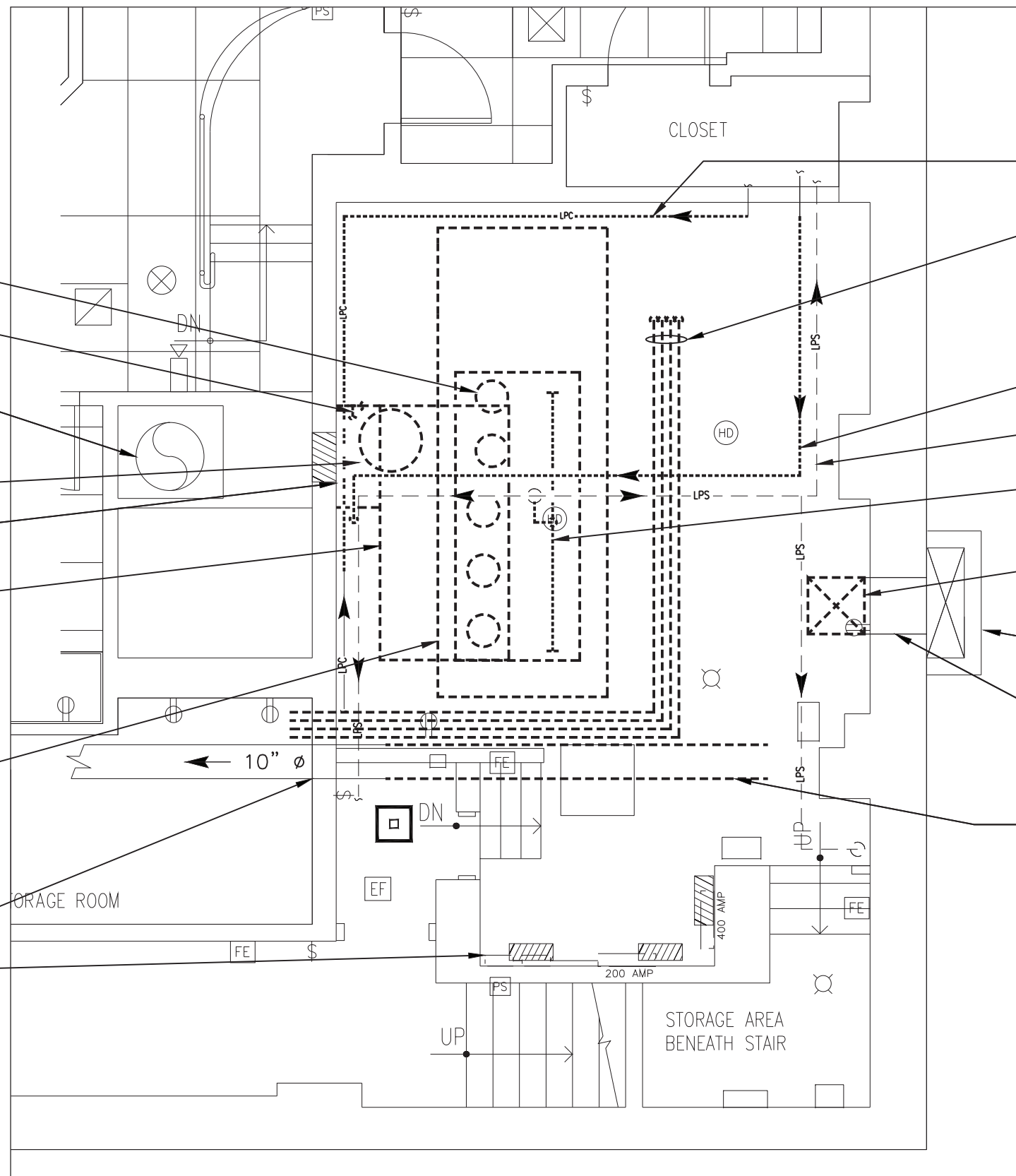
EXISTING CHIMNEY. TERMINATES APPROX. 10'-0" ABOVE BUILDING ROOF.

EXISTING BOILER FEED UNIT TO BE REMOVED IN ITS ENTIRETY.  
EXISTING CHIMNEY ACCESS DOOR&CLEANOUT BELOW TO REMAIN.

DEMOLISH AND REMOVE EXISTING 36x17 BREECHING IN ITS ENTIRETY UP TO BRICK(84" AFF T.B.O.D.). VERIFY EXISTING DIMENSIONS OF CHIMNEY BEYOND BRICK IN FIELD. REPORT TO ENGINEER.

EXISTING 4" CONCRETE BOILER PAD TO BE REMOVED. SEE ARCHITECTURAL SHEETS.

EXISTING FRESH AIR DUCTWORK TO REMAIN.  
DEMOLISH AND REMOVE QTY(2) BOILER CONTROL PANELS IN THEIR ENTIRETY [ONE ABOVE THE OTHER]. NOTE: ONLY ONE IS CURRENTLY IN OPERATION. PANELS CONNECT TO HEAT COMPUTER IN CORRIDOR APPROX. 50' AWAY.



EXISTING 2" LPC RETURN AT FLOOR DEMO TO LIMITS SHOWN.  
EXISTING HEATING HOT WATER PIPING TO BE REMOVED TO THE EXTENTS OF THE ROOM AND CAP (TYPICAL FOR 4 RUNS OF 3/4" PIPE). COORDINATE EXACT LOCATION IN FIELD.  
EXISTING 2" LPC RETURN 106" AFF. DEMO TO LIMITS SHOWN.  
EXISTING 7" LPS SUPPLY 104" AFF  
REMOVE EXISTING STEAM HEADER AND CONNECTION TO BUILDING LPS SUPPLY TO LIMIT SHOWN.  
FAI DUCT FROM 5" AFF WITH FLOOR MOUNT SUPPLY FAN DEMO AND REMOVE IN ITS ENTIRETY.  
EXISTING AREAWAY (APPROX 38X13)  
EXISTING FRESH AIR DUCT TO BE REPLACED (20X20)  
EXISTING 10" FRESH AIR DUCT TO BE REMOVED TO LIMIT SHOWN.

CONTRACTOR SHALL PROVIDE NEW CONCRETE EQUIPMNT PAD FOR B.F. & BOILERS (SEE ARCHITECTURAL SHEET)  
CONTRACTOR SHALL PROVIDE NEW BOILER FEED UNIT AND INSULATE.  
PROVIDE F&T TRAP.

CONTRACTOR SHALL CONNECT EXISTING BUILDING LPC PIPING TO BOILER FEED UNIT (BF-1)  
PROVIDE 8" DOUBLE WALL TYPE B VENT.

CONTRACTOR SHALL PROVIDE PUMPED DISCHARGE PIPING BETWEEN BOILER FEED UNIT AND BOILERS (SEE SCHEMATIC ON HV-4)

B-1 / B-2: CONTRACTOR SHALL PROVIDE NEW GAS FIRED STEAM BOILER. COORDINATE EXACT LOCATION IN FIELD (TYPICAL FOR 2)

PROVIDE 20"ø DOUBLE WALL B-VENT CHIMNEY AS REQUIRED. FIELD VERIFY EXISTING CONDITIONS (SEE SCHEDULE SHEET).

CONTRACTOR SHALL PROVIDE NEW BOILER RETURN ZONE CONTROL VALVE (TYPICAL FOR 2)

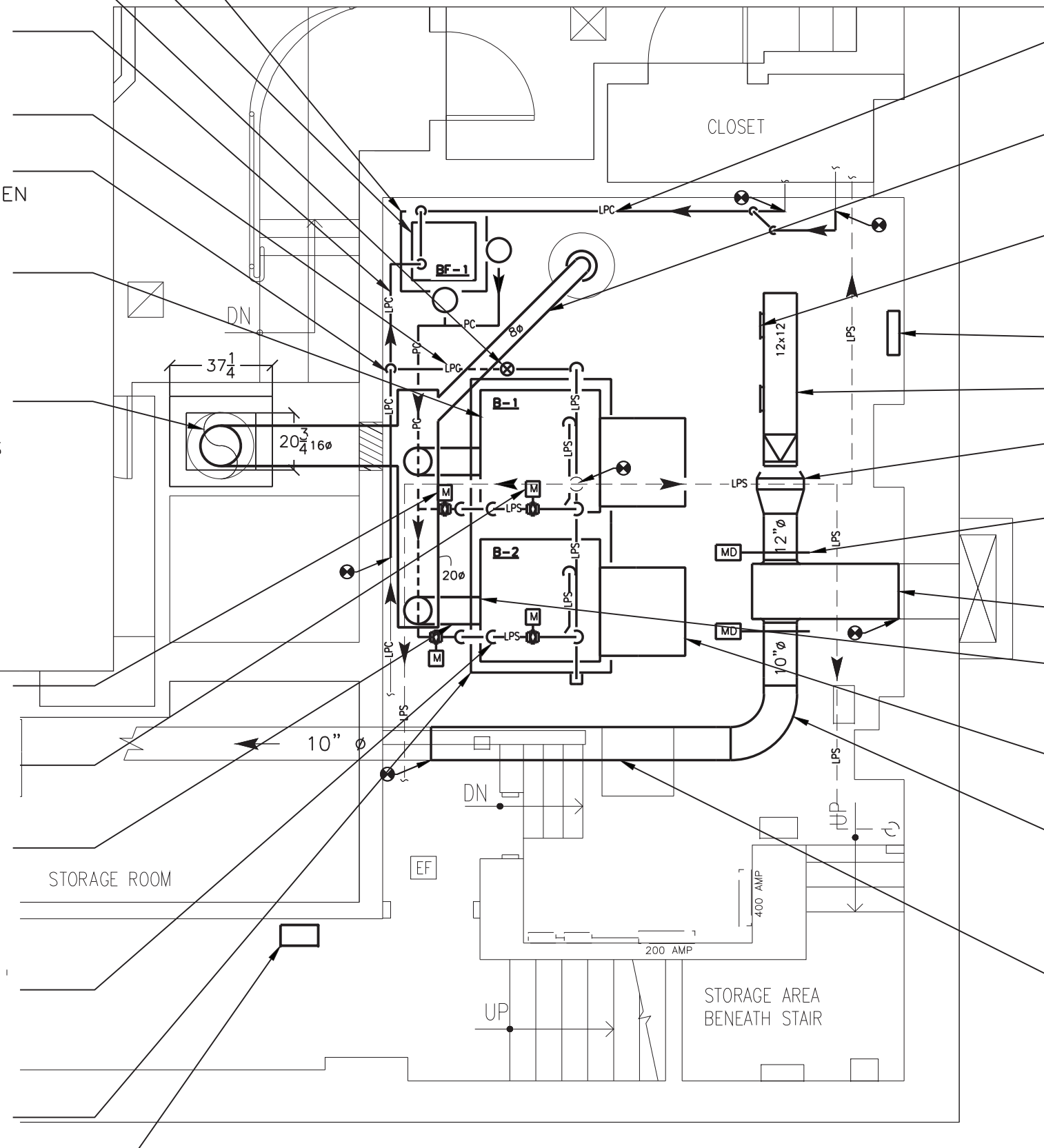
CONTRACTOR SHALL PROVIDE NEW STEAM SUPPLY ZONE CONTROL VALVES (TYPICAL FOR 2)

PROVIDE TRANSITION FROM 10" FLUE COLLAR TO 12" DOUBLE WALL B-VENT CONNECTOR. (SEE SCHEDULE SHEET FOR RATINGS) [TYPICAL FOR 2 BOILERS]

CONTRACTOR SHALL PROVIDE NEW STEAM SUPPLY PIPING AND TIE INTO NEW STEAM SUPPLY HEADER. CONNECT NEW HEADER INTO EXISTING BUILDING SUPPLY.

PROVIDE NEW CONCRETE EQUIPMENT PAD (SEE ARCHITECTURAL SHEET)

PROVIDE NEW BOILER CONTROL PANEL.



PROVIDE NEW GRAVITY LPC PIPING TO CONNECT NEW BOILER FEED UNIT TO EXISTING BUILDING LPC RETURN.

PROVIDE NEW FLUE CONNECTION TO EXISTING DOMESTIC HOT WATER HEATER.

NEW ALUMINUM SUPPLY REGISTER WITH VD, 600 CFM (TYPICAL)

PROVIDE NEW COMBUSTION AIR SUPPLY SYSTEM CONTROLLER.

PROVIDE NEW ALUMINUM MAKEUP AIR SUPPLY SYSTEM DUCTWORK.

CAF-1: PROVIDE NEW VARIABLE SPEED COMBUSTION AIR SUPPLY SYSTEM FAN SEE SPEC.

PROVIDE (QTY 2.) NEW N.C. DAMPER AND INTERLOCK 1 WITH NEW COMBUSTION AIR SUPPLY FAN. 1 WITH EXISTING AHU IN STORAGE ROOM.

PROVIDE NEW ALUMINUM OUTSIDE AIR INTAKE PLENUM (20X20).

FURNISH AND INSTALL NEW DRAFT CONTROL DAMPER ACTUATORS. INTERLOCK AND PROGRAM TO WORK WITH BURNER CONTROL PANEL. (TYP FOR 2)

PROVIDE NEW MODULATING BURNER. SEE SCHEDULE (TYPICAL FOR 2)

PROVIDE NEW ALUMINUM FRESH AIR INTAKE DUCTWORK TO SERVE FAN UNIT IN STORAGE ROOM.

CONNECT NEW ALUMINUM FRESH AIR DUCTWORK FROM EXISTING STORAGE ROOM AIR HANDLER TO NEW ALUMINUM INTAKE PLENUM IN BOILER ROOM. PROVIDE DP SWITCH FOR FLOW SENSING. INTERLOCK MODULATING DAMPER W. AHU START SEQUENCE. SET DAMPER FULL OPEN WHEN BOILER COMBUSTION AIR SYSTEM FAN IS AT MAXIMUM FLOW RATE AND BALANCE OUTDOOR AIRFLOW FOR AIR HANDLER TO 20% OF TOTAL SUPPLY AIRFLOW. MODULATING DAMPER MAINTAINS CONSTANT DIFFERENTIAL PRESSURE WHEN AIR HANDLING UNIT FAN IS ENERGIZED. TEST, ADJUST AND BALANCE BOTH CAF-1 AND AHU IN STORAGE ROOM. PROVIDE TAB REPORTS FOR BOTH FOR FULL OPERATING RANGES.

## 1 DEMOLITION PLAN, BOILER ROOM

HV-3 SCALE: 1/4" = 1'-0"

FURNISH AND INSTALL NEW FACTORY STAINLESS TERMINATION/RAIN CAP.

FURNISH AND INSTALL NEW FACTORY STAINLESS STEEL STORM COLLAR.

FURNISH AND INSTALL NEW FACTORY STAINLESS STEEL PREFABRICATED FLAT FLASHING, TO ENCLOSE THE EXISTING BRICK CHIMNEY OPENING ON THE ROOF. CONTRACTOR IS RESPONSIBLE FOR FIELD MEASUREMENTS.

FURNISH AND INSTALL NEW FACTORY ROOF SUPPORT.

FURNISH AND INSTALL NEW FIRE STOP TO CLOSE EXISTING MASONRY CHIMNEY INLET OPENING. CONTRACTOR IS RESPONSIBLE FOR FIELD MEASUREMENTS.

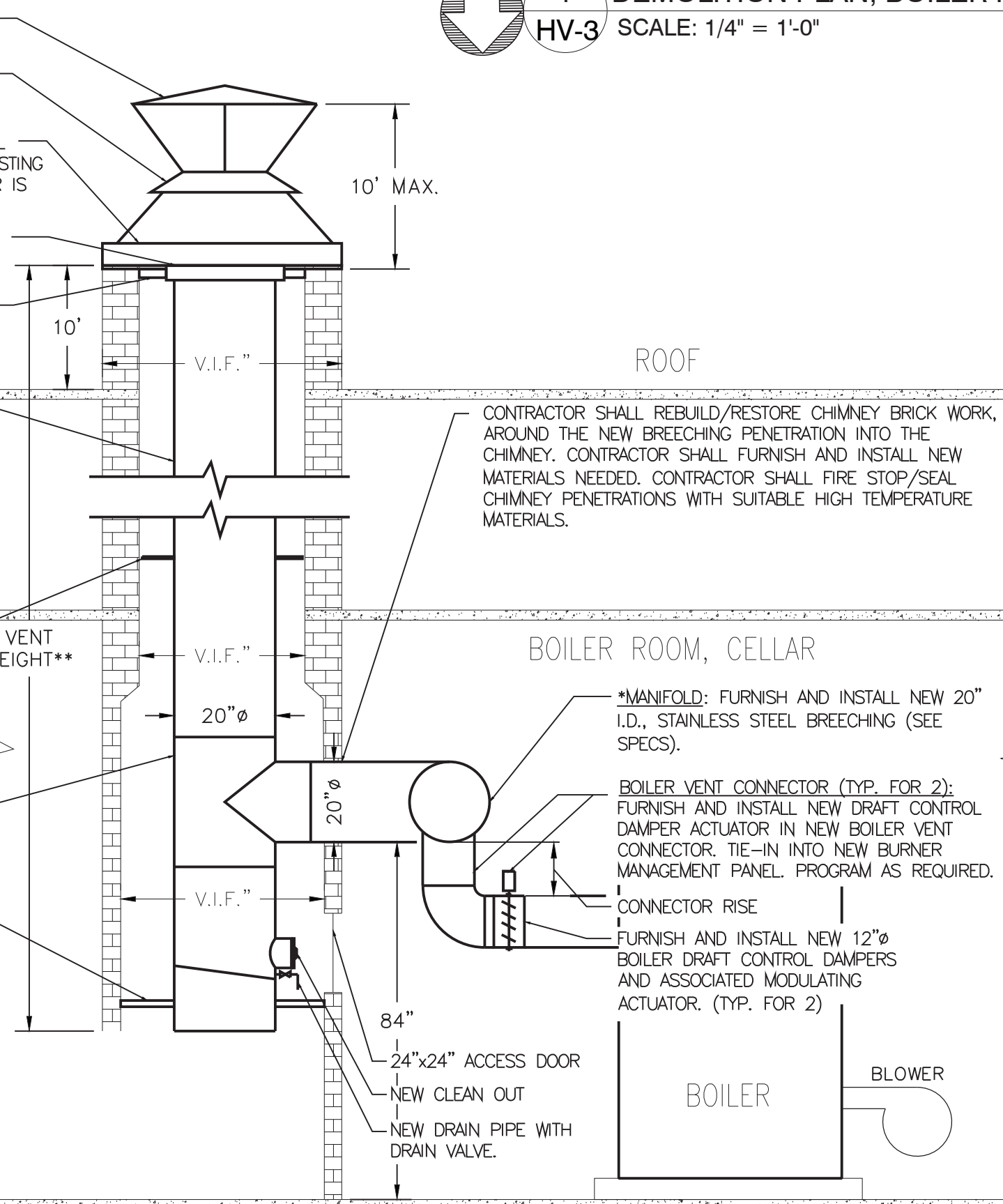
COMMON VENT: FURNISH AND INSTALL NEW 20" I.D., STAINLESS STEEL VENT (SEE SPECIFICATIONS).

CHIMNEY LINER NOTE: CONTRACTOR IS RESPONSIBLE FOR FIELD MEASUREMENTS. CONTRACTOR IS RESPONSIBLE FOR DETERMINATION OF ORDERING LENGTHS FOR SECTIONS OF CHIMNEY LINER NEEDED, BASED ON FIELD MEASUREMENTS

FURNISH AND INSTALL NEW STAINLESS STEEL GUIDING SPACERS AS NEEDED. NOT ALL GUIDING SPACERS ARE SHOWN.

FURNISH AND INSTALL NEW STAINLESS STEEL TRANSITION FITTING AS NEEDED. NOT ALL TRANSITION FITTINGS ARE SHOWN.

FURNISH AND INSTALL NEW STAINLESS STEEL FULL RING PLATE SUPPORT FOR ADDITIONAL CHIMNEY LINER SUPPORT.



BOILER ROOM, CELLAR

\*MANIFOLD: FURNISH AND INSTALL NEW 20" I.D., STAINLESS STEEL BREECHING (SEE SPECS).

BOILER VENT CONNECTOR (TYP. FOR 2); FURNISH AND INSTALL NEW DRAFT CONTROL DAMPER ACTUATOR IN NEW BOILER VENT CONNECTOR. TIE-IN INTO NEW BURNER MANAGEMENT PANEL. PROGRAM AS REQUIRED.

CONNECTOR RISE  
FURNISH AND INSTALL NEW 12"ø BOILER DRAFT CONTROL DAMPERS AND ASSOCIATED MODULATING ACTUATOR. (TYP. FOR 2)

24"x24" ACCESS DOOR  
NEW DRAIN PIPE WITH DRAIN VALVE.

## 2 BOILER ROOM/ROOF MECHANICAL NEW WORK VENTING SKETCH

HV-3 SCALE: N.T.S.

REFER. TABLE 504.3 2018 IFGC

\*MANIFOLD LENGTH FROM THE BASE OF THE VERTICAL VENT TO THE NEAREST APPLIANCE SHOULD NOT EXCEED 10 FEET OR 50% OF THE TOTAL VENT HEIGHT, WHICHEVER IS GREATEST.

\*\*APPROX 50' (VERIFY IN FIELD)

NOTE: EXISTING WATER HEATER IS IN THE BACKGROUND AND NOT SHOWN HERE FOR CLARITY. CONNECT NATURAL DRAFT HOOD TO END OF MANIFOLD WITH 8" VENT DOUBLE WALL VENT CONNECTOR (SEE PLAN VIEW).

WATER HEATER	
VENT CONNECTOR PARAMETER	VALUE
VENT HEIGHT	50
CONNECTOR RISE (FT)	3
TYPE B DOUBLE WALL VENT ø(INCHES)	8
APPLIANCE INPUT RATING LIMIT (MBH) FAN <sub>min</sub> / FAN <sub>Max</sub> / NAT <sub>Max</sub>	103 / 661 / 343
BOILER	
VENT CONNECTOR PARAMETER	VALUE
VENT HEIGHT	50
CONNECTOR RISE (FT)	2
TYPE B DOUBLE WALL VENT ø(INCHES)	12
APPLIANCE INPUT RATING LIMIT (MBH) FAN <sub>min</sub> / FAN <sub>Max</sub> / NAT <sub>Max</sub>	206 / 1479 / 689
COMMON VENT PARAMETER	
VENT CONNECTOR PARAMETER	VALUE
VENT HEIGHT	50
TYPE B DOUBLE WALL VENT ø(INCHES)	16
COMBINED APPLIANCE INPUT RATING (MBH) FAN + NAT	3,183

CHIMNEY NOTES:  
CONTRACTOR TO VERIFY THE FOLLOWING AND REPORT BACK TO ENGINEER:  
1. ACTUAL VENT HEIGHT OF EXISTING CHIMNEY.  
2. ACTUAL VENT DIAMETER OF EXISTING CHIMNEY/LINER AND CONDITION.

BOILER 1:	FAN MBH (MIN/MAX) (450/1,356)
BOILER 2(NOT SHOWN):	FAN MBH (MIN/MAX) (450/1,356)
WATER HEATER(NOT SHOWN):	NATURAL DRAFT (300MBH)

### EXISTING BRICK CHIMNEY NOTES:

- CONTRACTOR SHALL CHECK FOR CRACKS, MISSING BRICKS/MORTAR OR ANY OTHER LOOSE MATERIALS THAT COULD INHIBIT NEW LINER INSTALLATION AND CORRECTING PROBLEMS, PRIOR TO INSTALLATION.
- CONTRACTOR SHALL PERFORM VIDEO INSPECTION, THE ENTIRE LENGTH OF EXISTING CHIMNEY. SUBMIT REPORT TO COUNTY.
- CONTRACTOR IS RESPONSIBLE FOR INTERIOR CLEANING AND NEUTRALIZATION OF EXISTING MASONRY CHIMNEY.
- CONTRACTOR SHALL CLEAN WITH A WATER JET ALL INTERIOR SURFACES OF EXISTING MASONRY CHIMNEY TO REMOVE ANY COMBUSTION RESIDUE.
- CONTRACTOR SHALL WASH WITH CLEAN WATER ON AIR PRESSURE WITH A MIXTURE OF 10% POTASSIUM CARBONATE TO NEUTRALIZE ACCUMULATED ASH INSIDE THE CHIMNEY, AND LET IT ACT FOR A MINIMUM OF 12 HOURS PRIOR TO RINSING WITH CLEAN WATER ON AIR PRESSURE.
- CONTRACTOR SHALL OPEN UP THE EXISTING BRICK CHIMNEY, AT THE BASE, AS NEEDED, INSIDE THE BOILER ROOM TO PERFORM CHIMNEY LINER COMPONENTS ASSEMBLY WORK OR STRUCTURAL SUPPORT WORK ETC. CONTRACTOR SHALL PROVIDE TEMPORARY STRUCTURAL SUPPORTS TO EXISTING BRICK CHIMNEY DURING LINER INSTALLATION WORK. CONTRACTOR SHALL REBUILD/ RESTORE BRICK WORK AFTER LINER WORK IS COMPLETED. CONTRACTOR IS RESPONSIBLE FOR MATERIALS AND LABOR NEEDED FOR REBUILDING CHIMNEY. CONTRACTOR SHALL FIRE STOP, FIRE/WATER SEAL CHIMNEY.

### BREECHING DEMOLITION NOTES:

- AS PART OF DEMOLITION WORK, CONTRACTOR SHALL DISCONNECT EXISTING BREECHING FROM THE BOILERS AND CHIMNEY, PRIOR TO CUTTING INTO SMALLER SECTIONS AND REMOVAL FROM THE BOILER ROOM.
- CONTRACTOR SHALL CLEAN EXISTING BREECHING INSIDE FOR SOOT REMOVAL, PRIOR TO CUTTING INTO SMALLER PIECES FOR DISPOSAL OFFSITE.
- CONTRACTOR IS RESPONSIBLE FOR LEGAL OFFSITE DISPOSAL OF EXISTING BOILER BREECHING.
- CONTRACTOR IS RESPONSIBLE FOR CUTTING AND PATCHING.
- CONTRACTOR IS RESPONSIBLE FOR ANY REPAIR WORK NEEDED TO EXISTING BRICK CHIMNEY.
- ANY CUTTING, GRINDING, TORCH WORK SHALL FOLLOW HOT WORK SAFETY PROCEDURES.
- ALL WORK AREAS SHALL BE EXHAUST VENTILATED TO THE OUTDOORS OR CHIMNEY TO PREVENT ODORS/FUMES WITH-IN THE BUILDING.

### NEW CHIMNEY LINER INSTALLATION NOTES:

- CONTRACTOR SHALL FURNISH AND INSTALL NEW STAINLESS STEEL CHIMNEY LINER PER SPECIFICATIONS.
- CONTRACTOR SHALL FURNISH AND INSTALL NEW STAINLESS STEEL PREFABRICATED FLAT FLASHING, TO ENCLOSE THE EXISTING BRICK CHIMNEY OPENING ON THE ROOF. CONTRACTOR IS RESPONSIBLE FOR FIELD MEASUREMENTS.
- CONTRACTOR IS RESPONSIBLE FOR FIELD MEASUREMENTS PRIOR TO FINALIZING LINER LENGTHS NEEDED AND ORDERING NEW LINER MATERIALS.
- CONTRACTOR IS RESPONSIBLE FOR ALL LABOR REQUIRED FOR TRANSPORTING/ DELIVERING SECTIONS OF THE NEW LINER MATERIAL TO 8TH FLOOR ROOF OF THE BUILDING.
- CONTRACTOR IS RESPONSIBLE FOR ALL HOISTING, LIFTING, GUIDING, RIGGING PERMITS AND SAFE OPERATION REQUIREMENTS ETC. NEEDED AND ALL COSTS, LICENSES ASSOCIATED.
- CONTRACTOR IS RESPONSIBLE FOR STRUCTURAL SUPPORTS, FIRE/WATER STOPPING OF EXISTING BRICK CHIMNEY/NEW CHIMNEY LINER.
- CONTRACTOR IS RESPONSIBLE FOR CUTTING AND PATCHING.
- CONTRACTOR IS RESPONSIBLE FOR ALL REPAIRS NEEDED ON EXISTING BRICK CHIMNEY TO ACCOMMODATE INSTALLATION OF NEW CHIMNEY LINER.
- CONTRACTOR IS RESPONSIBLE FOR COMPLETE ASSEMBLY NEW CHIMNEY LINER SECTIONS FOR SUCCESSFUL INSTALLATION.
- CONTRACTOR IS RESPONSIBLE FOR TESTING FOR LEAKS, FIXING LEAKS AND PUTTING NEW CHIMNEY IN OPERATION.

### DEMOLITION NOTES:

- CONTRACTOR IS RESPONSIBLE FOR ALL PIPING/WIRING DISCONNECTIONS NEEDED, PRIOR TO DEMOLITION OF EXISTING BOILER AND ASSOCIATED FLOOR MOUNTED CONTROL PANELS.
- CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFICATION OF EXISTING PIPING CONNECTIONS/ROUTING AND WIRING CONNECTIONS THROUGHOUT BOILER/CONTROL PANELS.
- CONTRACTOR IS RESPONSIBLE TO DEMOLISH AND REMOVE EXISTING NATURAL GAS PIPING, NG PIPING SHOWN ON THE DRAWING IS FOR BID PURPOSES ONLY. CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFICATION OF PIPING LENGTHS, ROUTING, ETC.
- CONTRACTOR IS RESPONSIBLE FOR TRANSPORTATION AND LEGAL OFFSITE DISPOSAL OF ALL MATERIAL CALLED OUT TO BE DEMOLISHED AND REMOVED.
- CONTRACTOR IS RESPONSIBLE FOR CUTTING AND PATCHING. CONTRACTOR IS RESPONSIBLE FOR RESTORING ANY BUILDING SURFACES DAMAGED DURING DEMOLITION WORK.
- CONTRACTOR IS RESPONSIBLE FOR ALL REPAIRS NEEDED TO EXISTING CONCRETE FLOORS, BRICK WALLS AND BUILDING STRUCTURE DAMAGED DURING DEMOLITION PROCESS.
- DEMOLISH EXISTING BOILER COMPLETE. CUT 6"LPS PIPING TO LPS HEADER, 2"LPC PIPING TO LPC HEADER, AND BREECHING AS INDICATED ON DEMOLITION FLOOR PLAN.
- DEMOLISH EXISTING STEEL FLOOR SUPPORTS, BURNER, BURNER CONTROLS, CONTROL CABINET, CONDUITS, WIRING, PIPE VALVES, & SPECIALTIES COMPLETE.

### NEW WORK NOTES:

- CONTRACTOR IS RESPONSIBLE FOR COMPLETE INSTALLATION OF NEW MODULATING GAS BURNERS AND ALL ASSOCIATED EQUIPMENT.
- CONTRACTOR IS RESPONSIBLE FOR INSTALLATION OF CONTROLS PANEL AND ASSOCIATED EQUIPMENT.
- CONTRACTOR IS RESPONSIBLE FOR INSTALLATION OF DRAFT CONTROL ACTUATORS AND ASSOCIATED CONTROLS DISPLAY PANELS.
- CONTRACTOR IS RESPONSIBLE FOR COMPLETE INSTALLATIONS OF ALL EQUIPMENT.
- CONTRACTOR IS RESPONSIBLE FOR NEW ELECTRICAL/CONTROLS WIRING AND CONDUIT NEEDED. CONTRACTOR IS RESPONSIBLE FOR WIRING TERMINATIONS.
- NEW GAS BURNERS ASSOCIATED FIELD DEVICES OR ELECTRICAL/CONTROLS WIRING DETAILS NOT SHOWN ON THE DRAWINGS.
- CONTRACTOR IS RESPONSIBLE TO COORDINATE WITH VENDORS TO OBTAIN ADDITIONAL INFO OR DRAWINGS.
- CONTRACTOR SHALL PROVIDE NEW MOUNTING HARDWARE NEEDED FOR MOUNTING THE NEW CONTROL PANELS AND ASSOCIATED FIELD DEVICES.
- CONTRACTOR IS RESPONSIBLE FOR CUTTING/PATCHING.
- CONTRACTOR IS RESPONSIBLE FOR ALL MODIFICATIONS, REPAIRS, RESTORATION, ETC NEEDED ON EXISTING CONCRETE FLOORS, BRICK WALLS, ETC INSIDE THE BOILER ROOM AS NEEDED FOR NEW INSTALLATION WORK.
- CONTRACTOR IS RESPONSIBLE FOR ALL WORK RELATED TO SWITCHING OVER THE BUILDING FROM RENTAL BOILERS TO NEW MODULATING GAS FIRED BURNERS. SEE BID ITEM B ON HV-2.
- CONTRACTOR IS RESPONSIBLE FOR TESTING AND PUTTING NEW MODULATING GAS FIRED BOILERS IN SERVICE.
- CONTRACTOR IS RESPONSIBLE FOR TROUBLE SHOOTING NEW GAS BOILERS AND ASSOCIATED EQUIPMENT FOR PROPER OPERATION. ANY BOILER PROBLEMS SHALL BE BOUGHT TO THE ATTENTION OF THE ENGINEERS.
- CONTRACTOR IS RESPONSIBLE FOR PROVIDING FACTORY AUTHORIZED TRAINING PERSONNEL FOR A MINIMUM OF 20 HRS, TO TRAIN BUILDING OPERATIONS PERSONNEL, ON NEW SYSTEMS.

IN CHARGE OF JAI PUNNOOSE, P.E.

CHECKED BY

MADE BY VINCENT LEONE, P.E.

### RECORD DRAWING CERTIFICATION

☐ AS BUILT - CHANGES AS NOTED  
☐ AS BUILT - NO CHANGES

CONTRACTOR

PROJECT COORDINATOR

NAME

NAME

SIGNATURE

SIGNATURE

TITLE

TITLE

WESTCHESTER COUNTY, NEW YORK  
DEPARTMENT OF PUBLIC WORKS  
DIVISION OF ENGINEERING

BOILER REPLACEMENT AND ASSOCIATED WORK  
VERNON PLAZA FAMILY CENTER  
17 SOUTH SECOND AVENUE, MOUNT VERNON, NEW YORK  
DEMOLITION AND NEW WORK PLAN, CELLAR LEVEL

CONTRACT NUMBER  
21-514

SHEET NUMBER  
HV-3

SHEET NO. 7 OF 9

SCALE: AS SHOWN  
DATE: 06/04/21

DPW FILE NO.

54-29-HV-53

REV. NO. 0



## BOILER SCHEDULE

<div>1.</div>	<div>BOILER(B-1 &amp; B-2) SHALL BE WEIL MCLAIN BG-588-S CAST IRON SECTIONAL OR APPROVED EQUAL. BOILER SHALL BE GAS FIRED, 33.6 BHP, .1356INPUT / 1.126OUTPUT MBH WITH THERMAL EFFICIENCY OF 83.1%, FORCED DRAFT TYPE, WITH 10" FLUE OUTLET; 44-1/4"W x 65"H x 42-3/4" L; DRY WEIGHT OF 3210 LBS. BOILER CONNECTIONS:</div>
<div>2.</div>	<div>BURNER SHALL BE POWER FLAME CR1-G-12 ATI OR EQUAL. BURNER INPUT SHALL BE 1356 MBH (845 MBH I=B=R RATING), 1/3HP BLOWER, 1-1/4" GAS TRAIN SIZE, 4" WC MIN, 14" WC MAX GAS INLET PRESSURE; 10-1 MODULATING; 115V/1/60.</div>
<div>3.</div>	<div>PROVIDE INTERLOCKS FOR THE BREAK GLASS STATIONS, BREAK AIR DAMPERS, GAS DETECTION.</div>
<div>4.</div>	<div>INCLUDE BURNER MOUNTED BURNER PANELS, AND FSG CONTROL.</div>
<div>5.</div>	<div>INCLUDE GAS TRAIN - FIELD PIPED AND WIRED.</div>
<div>6.</div>	<div>THE CONTRACTOR SHALL FURNISH AND INSTALL UL APPROVED POWER FLAME MODEL SYNC-MATIC HMI PROGRAMMABLE CONTROLLER BASED LEAD-LAG SYSTEM. SEE BOILER CONTROLS SYSTEM DETAILS ON THIS SHEET.</div>
<div>7.</div>	<div>CONTRACTOR SHALL BE RESPONSIBLE FOR FIELD ASSEMBLY OF BOILERS IN PLACE WITHIN THE BOILER ROOM.</div>

## BOILER FEED UNIT SCHEDULE

1. BOILER FEED UNIT SHALL BE BELL & GOSSETT DOMESTIC PUMP MODEL 61.5CM DUPLEX OR APPROVED EQUAL. UNIT SHALL INCORPORATE 2 PUMPS OPERATING AT  $\frac{1}{2}$  HP 115/1/60HZ & 7.9 FLA EACH @ 1750 RPM; 6 GPM @ 15PSI WITH 2" INLET,  $\frac{3}{4}$ " OUTLET, 6-3/16" IMPELLER; 632 LBS., 21" W x 13" H x 23" L AND 2" OVERFLOW AND VENT CONNECTIONS.
2. NEMA 2 TYPE CONTROL PANEL, UNIT MOUNTED & WIRED; LIQUID TIGHT CONDUIT; MAGNETIC STARTERS WITH FUSED DISCONNECT W/ FUSES; SELECTOR SWITCHES – BOILER/PUMP; POWER CONTROL SWITCHING RELAY; SINGLE POWER POINT CONNECTION; UL LISTING.
3. 3-VALVE BYPASS AROUND MAKEUP VALVE; AIR GAP FITTING ON MAKEUP ASSEMBLY; LOW LEVEL FLOAT AND LOW WATER CUTOFF – WIRED TO TERMINAL FOR REMOTE ANNUNCIATION; GAUGE GLASS; DIAL THERMOMETER; DISCHARGE PRESSURE GAUGE; LIFTING EYES; BUTTERFLY SUCTION VALVE; 1-CONTROL RELAY

**BOILER FEED UNIT CONTROL NOTES:**

1. BOILER FEED UNIT CONTROL SHALL CONSIST OF THE FOLLOWING:
  - 2 COMBINATION MAGNETIC STARTERS (3 OVERLOAD RELAYS) WITH FUSED DISCONNECTS AND COVER INTERLOCKS.
  - 2 "OFF-HAND-LEAD-LAG" PUMP SELECTOR SWITCHES
  - 2 PUMP RUNNING PILOT LIGHTS.
  - 1 NUMBERED TERMINAL BLOCK
  - 1 FUSED CONTROL CIRCUIT TRANSFORMER WHEN THE MOTOR EXCEEDS 130 V
  - 1 CONTROL CIRCUIT RELAY
  - 1 CONTROL POWER RELAY.
2. CONTROL CABINET SHALL CONTAIN U.L. LISTED OR RECOGNIZED COMPONENTS.
3. CONTROL COMPONENTS SHALL BE PROVIDED BY THE UNIT MANUFACTURER, FOR OPERATION AS FOLLOWS:
  - 3.1. AS THE LEVEL IN THE BOILER RECESSES, THE PUMP CONTROL SWITCH WILL CLOSE OPENING THE FEED VALVE AND STARTING ONE PUMP (THROUGH THE END SWITCH). AS THE LEVEL IS RESTORED, THE SWITCH WILL OPEN, CLOSE THE VALVE, AND STOP THE PUMP. SHOULD THE LEVEL CONTINUE TO RISE, THE LOWER CONTACTS WILL CLOSE AND START THE REMAINING PUMP. EACH PUMP SELECTOR SWITCH SHALL PROVIDE "OFF-HAND-LEAD-LAG" POSITIONS.
  4. MANUAL SEQUENCE CONTROL SHALL PROVIDE FOR MANUAL SELECTION OF THE ACTIVE OR LEAD PUMP, SIMULTANEOUS OPERATION OF BOTH PUMPS UNDER ABNORMAL LOAD CONDITIONS AND AUTOMATIC OPERATION OF THE LAG PUMP IF THE LEAD PUMP OR ITS CONTROL FAILS.
  5. THE UNIT MANUFACTURER SHALL FURNISH (1) McDONALD MILLER PUMP CONTROL: NO.1505 RATED TO 150 PSI FOR BOILERS WITH SEPARATE WATER COLUMNS
  6. THE INSTALLING CONTRACTOR, IN ADDITION TO THE ABOVE NOTED PUMP CONTROL, SHALL PROVIDE AND INSTALL A LOW WATER CUTOFF SWITCH, A LOW WATER BOILER ALARM SWITCH AND ASSOCIATED CIRCUITS IN ACCORDANCE WITH LOCAL CODES.
  7. THE UNIT SHALL BE FACTORY TESTED AS A COMPLETE UNIT WITH A CERTIFIED TEST REPORT OF PUMP CHARACTERISTICS SHALL BE SUBMITTED PRIOR TO SHIPMENT. THE UNIT MANUFACTURER SHALL FURNISH COMPLETE ELEMENTARY AND CONNECTION WIRING DIAGRAMS (2dw408), PIPING DIAGRAMS (1 DPD08-A), INSTALLATION AND OPERATION INSTRUCTIONS.
  8. MANUFACTURER SHALL BE BELL & GOSSETT DOMESTIC PUMP, MORTON GROVE, IL OR EQUAL.



## BOILER CONTROL SYSTEM DETAILS

THE CONTRACTOR SHALL FURNISH AND INSTALL A UL APPROVED POWER FLAME MODEL SYNC-MATIC HMI PROGRAMMABLE CONTROLLER BASED LEAD-LAG SYSTEM. THE LEAD-LAG FUNCTION SHALL BE BY THE PROGRAMMABLE CONTROLLER AND SHALL SERVICE 2 BOILER/BURNER UNITS. A 5.7" MINIMUM HMI OPERATOR TOUCH SCREEN SHALL BE STANDARD EQUIPMENT. THE HMI SHALL ALLOW THE OPERATOR TO INPUT SYSTEM OPERATING PARAMETERS AS WELL AS PROVIDE VISUAL INDICATION OF EACH BURNER'S OPERATION STATUS, FIRING RATE, OPERATING SET POINT, AS WELL AS THE PRESSURE OF THE COMMON HEADER. MODBUS COMMUNICATIONS SHALL BE STANDARD.

1. THE LEAD-LAG CONTROL PANEL SHALL INCLUDE THE FOLLOWING FEATURES:

- DIRECT ENTRY OF SYSTEM SET POINT THROUGH THE HMI.
- PID CONTROLLED AUTOMATIC MODULATION WITH BASELOAD OR PARALLEL MODULATION RESPONSE 4-20 mA SIGNAL).
- MANUAL MODULATION INPUT FOR SYSTEM TESTING AND ADJUSTMENTS.
- INDICATING LAMPS TO INDICATE BURNER ONLINE OR BURNER FAILED.
- LEAD LAG/ BACKUP SELECTOR SWITCH TO ALLOW CONTROL FUNCTION TO BE SWITCHED TO
  - THE PROGRAMMABLE CONTROLLER;
  - THE INDIVIDUAL BOILER-MOUNTED OPERATING AND MODULATION CONTROLLERS.
- ADJUSTABLE LEAD AND LAG BURNER ON AND OFF DELAY TIMERS, ACCESSIBLE THROUGH THE HMI.
- BOILER CYCLE AND BOILER HOUR COUNTERS.
- MULTIPLE LEAD SELECTION MODES: MANUAL, TIME ALTERNATE, TIME EQUALIZE, CYCLE ALTERNATE, CYCLE EQUALIZE, AND DAY OF WEEK.
- NIGHT AND/OR WEEKEND SETBACK SETTINGS ALLOW FOR REDUCED SET POINTS AT NON- PEAK TIMES TO REDUCE

FUEL USAGE.

2. THE SEQUENCE OF OPERATION SHALL BE AS FOLLOWS:

- FAILURE TRANSFER AUTOMATICALLY TRANSFERS FAILED BURNER'S SETTINGS TO THE NEXT AVAILABLE BURNER.
- UPON START UP, BURNERS SHALL ALWAYS START IN THE LOW FIRE POSITION. UPON RELEASE OF THE COMBUSTION CONTROL SYSTEM, THE BURNERS SHALL MODULATE VIA THE PROGRAMMABLE CONTROLLER.
- AS THE PRESSURE/TEMPERATURE INCREASES, THE HEADER MOUNTED TRANSDUCER WILL SIGNAL THE PROGRAMMABLE CONTROLLER. IN TURN, THE CONTROLLER SHALL SEQUENCE THE PID FIRING RATE CIRCUITS OF EACH ACTIVE MODULATING BURNER IN AN APPROPRIATE LEAD-LAG SEQUENCE.
- UPON STILL FURTHER INCREASE IN PRESSURE/TEMPERATURE, THE PROGRAMMABLE CONTROLLER WILL DE-ENERGIZE THE LAG BURNER(S) THEN THE LEAD BURNER IN THE APPROPRIATE SEQUENCE. THIS FUNCTION WILL EITHER TAKE PLACE IMMEDIATELY OR AFTER A TIME DELAY BASED ON THE VARIANCE FROM SETPOINT. THE BURNERS WILL BE IN THE LOW FIRE POSITION BEFORE DE-ENERGIZING.
- WITH A DROP IN PRESSURE/TEMPERATURE, THE PROGRAMMABLE CONTROLLER WILL REVERSE THE SEQUENCE TO CALL THE BURNERS TO FIRE AND TO MODULATE THE BURNERS IN AN APPROPRIATE LEAD-LAG SEQUENCE.
- IN THE EVENT THAT ANY BURNER FAILS TO OPERATE, THE PROGRAMMABLE CONTROLLER SHALL AUTOMATICALLY TRANSFER CONTROL TO THE NEXT AVAILABLE BURNER.
- AN APPROPRIATE PRESSURE/TEMPERATURE TRANSDUCER SHALL BE SUPPLIED WITH EACH SYSTEM. THE TRANSDUCER SHALL BE INSTALLED IN THE MAIN STEAM/WATER HEADER.

3. OPTIONS:

- OUTDOOR RESET: RAISES THE STEAM PRESSURE SET POINT AS OUTSIDE TEMPERATURE INCREASES.






	6/22/21	MD	MD	PROVIDE POWER FOR ADDITIONAL MOTORIZED DAMPERS AND PUMP.			
REVISION NUMBER	DATE	MADE BY	APP'D BY	REVISION			
RECORD DRAWING CERTIFICATION							
<input type="checkbox"/> AS BUILT - CHANGES AS NOTED <input type="checkbox"/> AS BUILT - NO CHANGES							
CONTRACTOR NAME _____ SIGNATURE _____ TITLE _____ DATE _____				PROJECT COORDINATOR NAME _____ SIGNATURE _____ TITLE _____ DATE _____			
<b>WESTCHESTER COUNTY, NEW YORK</b> <b>DEPARTMENT OF PUBLIC WORKS AND TRANSPORTATION</b> DIVISION OF ENGINEERING						CONTRACT NUMBER <b>21-514</b>	SHEET NUMBER <b>E-1</b>
BOILER REPLACEMENT AND ASSOCIATED WORK VERNON PLAZA FAMILY CENTER 17 SOUTH SECOND AVENUE, MOUNT VERNON, NEW YORK <b>BOILER ROOM POWER AND LIGHTING PLAN</b>						SHEET NO. <b>9</b> OF <b>9</b>	
						SCALE: <b>AS SHOWN</b> DATE: <b>6/11/21</b>	
						DPW FILE NO. <b>54-29-E-55</b>	
						REV. NO.	0