MECHANICAL ABBREVIATIONS

ABBREV.	DESCRIPTION
ARR	ARRANGEMENT
AFF	ABOVE FINISHED FLOOR
APPROX	APPROXIMATELY
ARCH	ARCHITECTURAL
BTU	BRITISH THERMAL UNIT
BTUH	BRITISH THERMAL UNIT PER HOUR
BLDG	BUILDING
BOD	BASIS OF DESIGN
BOG	BOTTOM OF GRILLE
CAP	CAPACITY
CIP	CAST IRON PIPE
CLG	CEILING
CO	CLEANOUT
CONN	CONNECTION
CONT	CONTINUE, CONTINUED, CONTINUATION
DEG F,°F	DEGREE FAHRENHEIT
DIA, Ø	DIAMETER
DN	DOWN
EQUIP	EQUIPMENT
ELEC, EC	ELECTRICAL, ELECTRICAL CONTRACTOR
ELEV	ELEVATION
FL	FLOOR
FCO	FLOOR CLEANOUT
FOIC	FURNISHED BY OWNER/ INSTALLED BY CONTRACTOR
FOIO	FURNISHED BY OWNER/ INSTALLED BY OWNER
FT	FEET
GC	GENERAL CONTRACTOR
GA	GAUGE
GAL	GALLON
GPH	GALLON PER HOUR
GPM	GALLON PER MINUTE
GALV	GALVANIZED
HVAC	HEATING, VENTILATION, & AIR CONDITIONING
HT	HEIGHT
HP	HORSE POWER
IN	INCH
I.E.	INVERT ELEVATION
KW	KILOWATT
LB	POUND
MC	MECHANICAL HVAC CONTRACTOR
MFR	MANUFACTURER
MAX	MAXIMUM
MBH	THOUSAND BTUH
MECH	MECHANICAL
MIN	MINIMUM
NO	NORMALLY OPEN
NC	NORMALLY CLOSED
NA	NOT APPLICABLE
NIC	NOT IN CONTRACT
NTS	NOT TO SCALE
NO., #	NUMBER
OC	ON CENTER
OD	OUTSIDE DIAMETER
PC	PLUMBING CONTRACTOR
PH	PHASE
PLCS	PLACES
P.D.I.	PLUMBING AND DRAINAGE INSTITUTE
PSI	POUNDS PER SQUARE INCH
PD	PRESSURE DROP
PSIG	POUNDS PER SQUARE INCH GAGE
REF	REFERENCE
REQ'D	REQUIRED
RPM	REVOLUTIONS PER MINUTE
RM	ROOM
SQ	SQUARE
SCO	SURFACE CLEANOUT
TDH	TOTAL DEVELOPED HEAD
TEMP	TEMPERATURE
TYP	TYPICAL
VTR	VENT THROUGH ROOF
V	VOLTS, VOLTAGE
WCO	WALL CLEAN OUT
H20	WATER
W	WATT
W/	WITH

MECHANICAL LEGEND

SYMBOL	DESCRIPTION
G	GAS
– –	COLD WATER
NPW	NON–POTABLE WATER
– – –	HOT WATER (120°)
– – – –	HOT WATER CIRCULATING (120°)
3"	WASTE
----------	VENT
HT	HEAT TRACE PIPING
HT	HEAT TRACE CONTROLLER (120V/1PH)
	GAS COCK
	UNION
	CHECK VALVE
	BALL VALVE
	RELIEF OR SAFETY VALVE
	GATE VALVE
	BALANCE VALVE
RP	REDUCED PRESSURE BACKFLOW PREVENTER
	PRESSURE REGULATOR
	SOLENOID VALVE
PDI–'A'	WATER HAMMER ARRESTOR. LETTER INDICATES PLUMBING & DRAINAGE INSTITUTE SIZE.
10/4L	DUCT (WIDTH, HEIGHT), L INDICATES LINED DUCT (DIMENSIONS CLEAR INSIDE)
S PB #	SENSOR WITH OVERRIDE PUSHBUTTON
PB #	OVERRIDE PUSHBUTTON WITHOUT SENSOR
T #	THERMOSTAT, # INDICATES EQUIPMENT SERVED
IT #	INTERVAL TIMER, # INDICATES EQUIPMENT SERVED
8x24 SWS CFM	SIDEWALL SUPPLY REGISTER
16x10 SWR CFM	SIDEWALL RETURN REGISTER
20/12	DUCT (FIRST FIGURE, SIDE SHOWN)
20/12L	LINED DUCT (FIRST FIGURE, SIDE SHOWN)
	VOLUME DAMPER (MANUAL)
	FLEXIBLE CONNECTION
	FLEXIBLE DUCT
8"ø CD–# CFM	ROUND NECK CEILING SUPPLY DIFFUSER, SIZE AS NOTE ON DRAWINGS, # INDICATES TYPE OF DIFFUSER PER SCHEDULE
CRG CFM	CEILING RETURN, EXHAUST OR TRANSFER GRILLE OR REGISTER
	COMBINATION FIRE/SMOKE DAMPER
	FIRE DAMPER
RL	REFRIGERANT LIQUID
RS	REFRIGERANT SUCTION

2018 CODE COMPLIANCE

GENERAL MECHANICAL/PLUMBING NOTES

1. ALL MATERIALS AND WORK SHALL BE PROVIDED AND INSTALLED IN COMPLIANCE WITH THE FOLLOWING CODES AS AMENDED AND ADOPTED BY THE AUTHORITY HAVING JURISDICTION (AHJ) - CITY OF LACEY. NOTHING IN THE PLANS IS TO BE CONSTRUED TO PERMIT WORK NOT CONFORMING TO THESE CODES OR OTHER CODES OR STANDARDS APPLICABLE TO THIS PROJECT.
   A. WASHINGTON STATE BUILDING CODE
   B. 2018 IBC
   C. 2018 IMC
   D. 2018 UPC
   E. 2018 WASHINGTON STATE ENERGY CODE (WSEC)
   F. 2018 IFC
   G. OCCUPATIONAL SAFETY AND HEALTH ACT (OSHA)
2. DRAWINGS INDICATE DIAGRAMMATICALLY THE ARRANGEMENT OF PRINCIPAL APPARATUS, PIPING, DUCTWORK AND OTHER MATERIALS. FOLLOW DRAWINGS AS CLOSELY AS POSSIBLE IN ORDER TO ACHIEVE A NEAT ARRANGEMENT OF PIPING, DUCTWORK AND EQUIPMENT WHILE STILL OVERCOMING OBSTRUCTIONS. ALL PIPING SHALL BE ROUTED CONCEALED IN WALLS, ABOVE THE BOTTOM CHORD OF TRUSSES IN ROOMS WITHOUT CEILINGS AND ABOVE CEILINGS IN ROOMS WITH FINISHED CEILINGS.
3. DUCTWORK SHALL BE FABRICATED AND INSTALLED AND SEALED IN ACCORDANCE WITH THE 2018 IMC AND THE LATEST ADDITION OF THE SMACNA HVAC DUCT CONSTRUCTION STANDARDS, ALL DUCTWORK IS CLASSIFIED AS LOW PRESSURE (2 INCHES W.G. OR LESS) WITH SUPPLY DUCTWORK POSITIVE 2 INCHES PRESSURE CLASS, RETURN AND EXHAUST DUCTWORK 1 INCH NEGATIVE PRESSURE CLASS. WHERE INDICATED ON THE DRAWINGS, EXPOSED SUPPLY DUCTWORK SHALL BE SPIRAL DUCT. ALL DUCTWORK SHALL BE GALVANIZED SHEET METAL PER SMACNA STANDARD EXCEPT FLEXIBLE RUNOUTS TO DIFFUSERS SHALL BE THERMALLY INSULATED FLEXIBLE DUCT (R3.3 MIN. WITH BUILDING THERMAL ENVELOPE, R-6 MIN. OUTSIDE BUILDING THERMAL ENVELOPE) AND SHALL BE UL 181 CERTIFIED AND NFPA 90A AND 90B COMPLIANT. WHERE LINED DUCTWORK IS INDICATED, DUCT LINER SHALL COMPLY WITH ASTM C 1071, NFPA 90A AND 90B AND NAIMA AH124 "FIBROUS GLASS DUCT LINER STANDARD" WITH THE DUCT DIMENSION INDICATING THE CLEAR INSIDE SIZE WITH 1" THICK DUCT LINER
4. ALL BRANCH DUCTS SHALL HAVE BALANCING DAMPERS WITH ACCESSIBLE LOCKING TYPE QUADRANTS, WITH REMOTE OPERATORS WHERE DAMPERS ARE CONCEALED. IN THE RESIDENTIAL R-2 DWELLING UNITS, AIR DELIVERY SUPPLY AND EXHAUST AIR TERMINALS SHALL BE PROVIDED WITH ADJUSTABLE BALANCING FEATURES IN LIEU OF BALANCING DAMPERS WITH TOTAL AIR VOLUME CONTROL SET AT THE ERV FOR BOTH THE SUPPLY AND EXHAUST FOR A BALANCED VENTILATION SYSTEM.
5. ALL VISIBLE SURFACES BEHIND GRILLE FACES SHALL BE PAINTED FLAT BLACK.
6. PROVIDE FLEXIBLE DUCT CONNECTIONS AT DUCT CONNECTIONS TO IN-LINE FANS.
7. DUCTWORK SHALL BE INSULATED AS FOLLOWS:
   - OUTSIDE AIR DUCTWORK BETWEEN THE OUTSIDE AIR INTAKE AND THE INDOOR EQUIPMENT SHALL BE INSULATED WITH R-7 INSULATION.
   - SUPPLY AIR DUCTWORK WHICH DELIVERS AIR AT A TEMPERATURE GREATER THAN 55F AND LESS THAN 105F AND IS LOCATED WITHIN THE CONDITIONED SPACE DOES NOT REQUIRE INSULATION.
   - RETURN DUCTWORK WITHING THE CONDITIONED SPACE DOES NOT REQUIRE INSULATION.
   - EXHAUST DUCTWORK BETWEEN THE DWELLING UNIT ERV'S AND THE EXHAUST OUTLET SHALL BE INSULATED WITH R-8 INSULATION.
   - EXHAUST DUCTWORK BETWEEN THE HEAT RECOVERY UNITS AND THE EXHAUST SHUTOFF DAMPER DOES NOT REQUIRE INSULATION, EXHAUST DUCTWORK FROM THE SHUTOFF DAMPER AND THE EXHAUST OUTLET SHALL BE INSULATED WITH R-8 INSULATION.
8. REFRIGERANT PIPING SHALL BE INSULATED WITH 0.5-INCH INSULATION WITH EXTERIOR PIPE INSULATION EXPOSED TO WEATHER COVERED WITH AN ALUMINUM JACKET WITH JACKET SEAMS ON THE UNDERSIDE OF THE JACKET, SECURED IN PLACE WITH ALUMINUM BANDS AT EACH JOINT.
9. ALL INSULATION SHALL HAVE A MAXIMUM FUEL CONTRIBUTION OF 50, MAXIMUM SMOKE DEVELOPMENT OF 50, AND MAXIMUM FLAME SPREAD OF 25.
10. PROVIDE TESTING AND BALANCING OF ALL HVAC SYSTEMS IN CONFORMANCE WITH NEBB OR AABC STANDARDS INCLUDING ALL DWELLING UNIT BALANCED VENTILATION SYSTEMS.
11. PROVIDE COMMISSIONING OF ALL HVAC SYSTEMS INCLUDING ALL DWELLING UNIT BALANCED VENTILATION SYSTEMS IN COMPLIANCE WITH THE WSEC SECTION C408 - SYSTEM COMMISSIONING INCLUDING COMMISSIONING PLAN, FUNCTIONAL PERFORMANCE TESTING REQUIREMENTS, COMMISSIONING TEAM MEMBERS, PRELIMINARY COMMISSIONING REPORT, COMPLETION OF THE COMMISSIONING COMPLIANCE CHECKLIST AND TRANSMITTAL TO THE OWNER AND AUTHORITY HAVING JURISDICTION AS A REQUIREMENT TO PASS FINAL MECHANICAL INSPECTION FOR OBTAINING A CERTIFICATE OF OCCUPANCY. COMPLETION OF ALL DOCUMENTATION PER WSEC SECTION C408.1.3 - DOCUMENTATION REQUIREMENTS (INCLUDING RECORD DOCUMENTS, MANUALS, SYSTEMS BALANCING REPORT, FINAL COMMISSIONING REPORT AND SYSTEMS OPERATION TRAINING) SHALL BE PROVIDED TO THE OWNER WITHIN 90 DAYS OF THE CERTIFICATE OF OCCUPANCY.

HVAC SYSTEMS LOAD CALCULATIONS:
HEATING CALCULATIONS HAVE BEEN PROVIDED FOR ALL BUILDING AREAS BASED ON INSIDE AIR TEMPERATURE OF 72F AND OUTSIDE AIR DESIGN TEMPERATURE OF 29F (TACOMA). CALCULATIONS ARE PROVIDED AS A SEPARATE ATTACHMENT TO THE PERMIT APPLICATION AND ARE NOT INCLUDED IN THE PERMIT DRAWINGS.

ADDITIONAL EFFICIENCY CREDITS:
PER TABLE C406.1 ITEM 6 - DEDICATED OUTDOOR AIR SYSTEM IN ACCORDANCE WITH WSEC SECTION C406.6 IS BEING PROVIDE UNDER GROUP R-2 - 4.0 CREDITS WITH DOAS (ERV'S) PROVIDED FOR ALL DWELLING UNITS AND DOAS (HRU'S) FOR ALL COMMON AREAS. ALL FUTURE TENANT IMPROVEMENTS FOR THE BUIDLING SHALL PROVIDE SUFFICIENT ENERGY EFFICIENCY CREDITS FOR A COMBINED TOTAL OF 6.0 CREDITS. NOTE: AREA WEIGHTING OF CREDITS CAN BE USED.

COMBINATION FIRE/SMOKE DAMPER CONTROL:
FIRE/SMOKE DAMPER CONTROL FOR COMMON AREA VENTILATION: EACH FIRE/SMOKE DAMPER SHALL BE PROVIDED WITH 120VAC POWER WITH ACTIVATION BY INDIVIDUAL DAMPER HEAT ACTIVATION DEVICES AND THROUGH SHUTDOWN BY THE BUILDING FIRE ALARM SYSTEM. DAMPERS SHALL BE ENERGIZED OPEN (120V/1PH) WITH SPRING RETURN CLOSE ON LOSS OF POWER.

HVAC SYSTEM CONTROLS:

RESIDENTIAL UNITS:
EACH RESIDENT UNIT IS PROVIDED WITH A BALANCED VENTILATION AIR SYSTEM THROUGH AN ENERGY RECOVERY VENTILATOR THAT OPERATES CONTINUOUSLY TO PROVIDE VENTILATION AIR TO THE LIVING/KITCHEN AREA THE BEDROOM(S) AND EXHAUST FROM THE BATHROOM, KITCHEN AND UTILITY CLOSET. A ON/OFF SWITCH SHALL BE PROVIDED IN THE AREA OF EACH WATER HEATER WITH A LABEL IN 3/16[TH] LETTERING READING "ENERGY RECOVERY VENTILATOR SHALL OPERATE CONTINUOUSLY EXCEPT WHEN SHUT DOWN FOR MAINTENANCE/SERVICE OR DURING PERIODS OF POOR OUTSIDE AIR QUALITY".
SPACE HEAT SHALL BE CONTROLLED BY 7-DAY PROGRAMMABLE THERMOSTATS IN THE KITCHEN/LIVING AREA AND BEDROOM(S). BATHROOM HEAT SHALL BE CONTROLLED BY A MANUAL THERMOSTAT.

BUILDING COMMON AREAS:

ELEVATOR MACHINE ROOMS (DIU-1/DCU-1 & DIU-2/DCU-2) - SPACE THERMOSTATS SHALL MAINTAIN TEMPERATURE BETWEEN 68F HEATING AND 78F COOLING.
OFFICE/LOBBY AND EXERCISE AREA (DIU-3/DCU-3, DIU-4/DCU4 & DIU-5/DCU-5):
SPACE TEMPERATURE SHALL BE CONTROLLED BY 7-DAY PROGRAMMABLE THERMOSTATS WITH A MINIMUM 5 DEGREE F TEMPERATURE BETWEEN HEATING AND COOLING SETPOINTS CAPABLE OF PROVIDING OCCUPIED AND UNOCCUPIED THEMPERATURE CONTROL.
EXERCISE AREA VENTILATION IS PROVIDED BY HEAT RECOVERY UNIT HRU-3 THROUGH AN OCCUPANCY CENSOR TO OPEN THE EXAUST AND OUTSIDE AIR DAMPERS AND OPERATE HRU-3 WITH A 10-MINUTE TIME DELAY OFF TO SHUT DOWN HRU-3 AND CLOSE THE DAMPERS.

ROOF LEVEL LOBBY AND RESTROOM:
LOBBY SPACE TEMPERATURE IS PROVIDED BY ELECTRIC HEAT WITH A 7-DAY PROGRAMMABLE THERMOSTAT TO PROVIDE OCCUPIED AND UN-OCCUPIED HEATING TEMPERATURE CONTROL.
LOBBY RESTROOM IS PROVIDE WITH ELETRIC HEAT WITH A MANUAL THERMOSTAT TO MAINTAIN A SPACE TEMPERATURE SETPOINT OF 65F (ADJUSTABLE).
LOBBY VENTILATION IS PROVIDE THROUGH ENERGY RECOVERY VENTILATOR ERV-3 TO PROVIDE EXHAUST VENTILATION FROM THE ROOF LEVEL BATHROOM AND VENTILATION AIR INTO THE LOBBY CONTROLLED BY OCCUPANCY SENSOR IN THE LOBBY WITH A 10 MINUTE TIME DELAY OFF.
MOTORIZED INTAKE AND EXHAUST DAMPERSSHALL OPEN DURING OCCUPIED MODE AND CLOSE WHEN ERV-3 IS OFF.

COMMON AREA VENTILATION IN THE LOBBY/ENTRY AND CORRIDORS:
ROOF TOP HEAT RECOVERY UNITS WITH ELECTRIC DUCT HEATERS (HRU-1/DH-1 & HRU-2/DH-2) SHALL OPERATE CONTINUOUSLY TO PROVIDE VENTILATION. DURING OPERATION, THE HRU'S OPERATE AND THE INTAKE AND EXHAUST DAMPERS ARE OPEN, THE RESPECTIVE DUCT HEATERS ARE CONTROLLED BY DUCT THERMOSTATS TO MAINTAIN A DISCHARGE TEMPERATURE OF 60F (ADJUSTABLE AT THE UNITS). THE HRU UNITS AND DUCT HEATERS WILL SHUT DOWN THROUGH THE BUILDING FIRE ALARM SYSTEM CLOSING THE INTAKE AND EXHAUST DAMPERS AND CLOSING THE FIRE/SMOKE DAMPERS IN THE SYSTEM.

REFUSE/RECYCLE AREA:
THE AREA IS PROVIDED WITH CONTINUOUS EXHAUST VENTILATION THROUGH EF-4. THE REFUSE/RECYCLE AREA IS UN-HEATED.

BIKE STORAGE AREAS ON THE P1 & P2 PARKING LEVELS:
THE AREAS ARE PROVIDED WITH VENTILATION AIR THROUGH EXHAUST FANS EF-5, EF-6 & EF-7 WITH GRILLE MOUNTED MOTION SENSORS WITH 10-MINUTE TIME DELAY OFF. THE BIKE STORAGE ROOMS ARE UNOHEATED.

THE SPRINKLER ROOM:
PROVIDED WITH ELECTRIC HEAT WITH AN INTEGRAL THERMOSTAT SET TO MAINTAIN TEMPERATURE AT 50F FOR FREEZE PROTECTION.

PARKING GARAGE VENTILATION:
GARAGE VENTILATION FANS EF-1, EF-2 & EF-3 ARE PROVIDED FOR EACH LEVEL OF PARKING. EXHAUST FANS SHALL OPERATE CONTINUOUSLY WITH SPEED CONTROL BY INDIVIDUAL VARIABLE FREQUENCY DRIVES WITH MODULATION OF EACH ASSOCIATED EXHAUST FAN BY CO/NO2 CONTROLLERS ON EACH PARKING LEVEL. CONTINUOUS VENTILATION SHALL BE PROVIDED WITH THE EXHAUST FAN VFD'S OPERATING AT MINIMUM SPEED (MINIMUM SPEED SETPOINTS SHALL BE ESTABLISHED DURING TEST AND BALANCE OF EACH SYSTEM). WITH INCREASED LEVELS OF CO/NO2, THE RESPECTIVE EXHAUST FANS SHALL INCREASE SPEED IN RESPONSE TO THE CO/NO2 LEVELS AND MAINTAIN FULL EXHAUST UNTIL THE LEVELS ARE REDUCED. DURING THE BUILDING FIRE ALARM CONDITION, THE GARAGE LEVEL EXHAUST FANS SHALL OPERATE AT FULL SPEED UNTIL THE ALARM CONDITIONS ARE CLEARED.

STAIRWELL PRESSURIZATION: SEE DRAWING MP0.0a FOR DEFERRED SUBMITTAL REQUIREMENTS AND SPECIAL INSPECTION REQUIREMENTS.

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1 NOTE: SEPARATE MECHANICAL AND PLUMBING PERMITS MUST BE APPLIED FOR BY THE INSTALLING CONTRACTORS.

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REVISIONS THIS SHEET
PERMIT REVIEW COMMENTS 3–27–2023
1 2 3 4

St. Helens Mixed-Use
Tacoma, Washington
ABBREVIATIONS, LEGEND, CODE COMPLIANCE & SHEET INDEX
1 N. Tacoma Ave, Suite 201 Tacoma, Washington 98403 (253) 584-5207

PROJECT NO. : 22226.0
DRAWN BY : NBD
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STAIRWELL PRESSURIZATION RESPONSIBILITY MATRIX

SUPPLY FAN SF-1 SOUTH STAIR #1	FAN	FAN VFD	FAN CURRENT SENSOR	FAN AUTOMATIC CONTROL	FAN MANUAL CONTROL	DISCHARGE DAMPER W/ END SWITCH	FAN DISCHARGE DAMPER AUTOMATIC CONTROL	FAN DISCHARGE DAMPER MANUAL CONTROL	CONCURRENT FAN SMOKE DETECTORS	BAROMETRIC RELIEF DAMPER	BAROMETRIC RELIEF ISOLATION DAMPER W/ END SWITCH	BAROMETRIC RELIEF ISOLATION DAMPER AUTOMATIC CONTROL	BAROMETRIC RELIEF ISOLATION DAMPER MANUAL CONTROL	FIRE ALARM SMOKE DETECTOR PRESSURIZATION FAN SEQUENCE ACTIVATION	BUILDING SMOKE DAMPERS	FIRE SPRINKLER SYSTEM FLOW SIGNAL CONTACTS (WET SYSTEM AND DRY SYSTEM)	BUILDING HVAC SYSTEM INTERFACE CONTACT
RESPONSIBILITY	DIV. 23	DIV. 23	DIV. 23	SCP DIV. 28	SCP DIV. 28	DIV. 23	DIV. 28	DIV. 28	DIV. 28	DIV. 23	DIV. 23	SCP DIV. 28	SCP DIV. 28	FAP DIV. 28	DIV.23	DIV. 21	DIV. 28
SUPPLY FAN SF-2 NORTH STAIR #2	FAN	FAN VFD	FAN CURRENT SENSOR	FAN AUTOMATIC CONTROL	FAN MANUAL CONTROL	DISCHARGE DAMPER W/ END SWITCH	FAN DISCHARGE DAMPER AUTOMATIC CONTROL	FAN DISCHARGE DAMPER MANUAL CONTROL	CONCURRENT FAN SMOKE DETECTORS	BAROMETRIC RELIEF DAMPER	BAROMETRIC RELIEF ISOLATION DAMPER W/ END SWITCH	BAROMETRIC RELIEF ISOLATION DAMPER AUTOMATIC CONTROL	BAROMETRIC RELIEF ISOLATION DAMPER MANUAL CONTROL	FIRE ALARM SMOKE DETECTOR PRESSURIZATION FAN SEQUENCE ACTIVATION	BUILDING SMOKE DAMPERS	FIRE SPRINKLER SYSTEM FLOW SIGNAL CONTACTS (WET SYSTEM AND DRY SYSTEM)	BUILDING HVAC SYSTEM INTERFACE CONTACT
RESPONSIBILITY	DIV. 23	DIV. 23	DIV. 23	SCP DIV. 28	SCP DIV. 26	DIV. 23	DIV. 28	DIV. 28	DIV. 28	DIV. 23	DIV. 23	SCP DIV. 28	SCP DIV. 28	FAP DIV. 28	DIV. 23	DIV. 21	DIV. 28
SMOKE CONTROL PANEL (SCP)	PANEL	POWER & CONTROL WIRING	FAN CURRENT SENSOR	FAN CONTROL WIRING	FAN CONTROL WIRING	POWER AND END SWITCH WIRING	DAMPER CONTROL WIRING	DAMPER CONTROL WIRING	SMOKE DETECTOR CONTROL WIRING		POWER AND END SWITCH WIRING	DAMPER CONTROL WIRING	DAMPER CONTROL WIRING	FIRE ALARM SYSTEM AND CONTROL INTERFACE WITH SCP	FIRE ALARM SYSTEM AND CONTROL INTERFACE WITH SCP	FLOW ACTIVATION INTERFACE WIRING WITH SCP	CONTROL INTERFACE TO BUILDING HVAC SYSTEM - SHUTDOWN AND GARAGE EXHAUST ACTIVATION
RESPONSIBILITY	DIV.28	DIV. 26 & DIV. 28	DIV. 28	DIV. 28	DIV. 28	DIV. 28	DIV. 28	DIV. 28	DIV. 28		DIV. 26 & DIV. 28	DIV. 28	DIV. 28	DIV. 26 & DIV. 28	DIV. 26 & DIV. 28	DIV. 28	DIV. 23
BUILDING HVAC SYSTEM SMOKE DAMPERS	SMOKE DAMPERS			BULDING HVAC SYSTEM SHUTOWN													
RESPONSIBILITY	DIV.23 PROVIDE & INSTALL, DIV. 26 PROVIDE POWER AND DIV. 28 PROVIDE CONTROL			DIVISION 23 PROVIDE SHUTDOWN OF THE FOLLOWING SYSTEMS: HRU-1, HRU-2, ERV-3 AND ACIVATION OF THE GARAGE EXHAUST FANS EF-1, EF-2 & EF-3 FROM DRY CONTACT IN THE FAP												

KEY:	
SCP	SMOKE CONTROL PANEL
FAP	FIRE ALARM PANEL
DIV. 21	FIRE SPRINKLER DIVISION
DIV. 23	MECHANICAL DIVISION
DIV. 26	ELECTRICAL DIVISION
DIV. 28	FIRE ALARM DIVISION

STAIRWELL PRESSURIZATION FAN SCHEDULE

SYMBOL	SPECIFIED MANUFACTURER AND MODEL NO.	TYPE	AREA SERVED	CFM	ESP	RPM	WHEEL DIA	ELECTRICAL			DRIVE	CONTROL	WEIGHT	REMARKS
								BHP	HP	VOLTS/PH				
SF-1	COOK MODEL 165QMX	MIXED FLOW INLINE	SOUTH STAIRWELL #1	6,000	0.50	1,734	16.5"	1.51	3	208/3	BELT	FIRE ALARM	500	1-12
SF-2	COOK MODEL 165QMX	MIXED FLOW INLINE	NORTH STAIRWELL #2	6,500	0.50	1,864	16.5"	3.33	3	208/3	BELT	FIRE ALARM	500	1-12

REMARKS:

1. PROVIDE WITH PREMIUM EFFICIENCY MOTOR (MINIMUM 89.5%) WITH SHAFT GROUNDING RINGS.
2. PROVIDE MOTORS WITH ADJUSTABLE DRIVE BELTS, SHEAVES AND BELT TIGHTENER WITH A MINIMUM OF TWO DRIVE BELTS.
3. PROVIDE WITH VARIABLE FREQUENCY DRIVE.
4. PROVIDE WITH L10/40K CONCENTRIC LOCKING REGREASEABLE BEARINGS WITH EXTENDED LUBE LINES.
5. PROVIDE ENCLOSED BELT TUNNEL.
6. PROVIDE OSHA WEATHER COVER.
7. PROVIDE SPIRAL INLET GUARD.
8. PROVIDE WEATHERPROOF ACCESS DOORS AS REQUIRED FOR SERVICE AND ADJUSTMENT.
9. FAN SHALL BE SEISMICALLY CERTIFIED WITH AN Ip = 1.5.
10. PROVIDE THYCURB FAN SUPPORTS AND COORDINATE WITH GENERAL CONTRACTOR AND STRUCTURAL ENGINEER FOR SEISMIC SUPPORT MOUNTING AND ATTACHMENT TO STRUCTURE.
11. PROVIDE WITH MOTORIZED LOW LEAKAGE DAMPER, ENERGIZED CLOSED, SPRING OPEN ON LOSS OF POWER WITH END SWITCH FOR DAMPER OPEN POSITION.
12. INSTALL (2) SMOKE DETECTORS ON THE DISCHARGE SIDE OF FAN AHEAD OF MOTORIZED DAMPER, SMOKE DETECTORS AND WIRING SHALL BE PROVIDED BY ELECTRICAL CONTRACTOR.

STAIRWELL PRESSURIZATION:

STAIRWELL PRESUURIZATION BY SUPPLY FANS SF-1 (SOUTH STAIR #1) AND SF-2 (NORTH STAIR #2) SHALL BE PROVIDED PER REQUIREMENTS OF THE 2018 IBC AND CHAPTER 9 OF THE IFC.

THE STAIRWELL PRESSURIZATION SYSTEM SHALL BE INSPECTED AND TESTED BY A SPECIAL INSPECTOR IN ACCORDANANCE WITH IBC SECTION 1705.18. SPECIAL INSPECTOR QUALIFICATIONS SHALL BE SUBMITTED TO THE CITY OF TACOMA FIRE DEPARTMENT PRIOR TO INSTALLATION OF ANY PRESSURAIZATION SYSTEM CONTROLS.

- SPECIAL INSPECTOR SHALL REVIEW THE PRESSURIZATION SYSTEM EQUIPMENT AND CONTROLS SUBMITTAL (DEFERRED SUBMITTAL).
- SPECIAL INSPECTOR SHALL PROVIDE PRESSURE-DIFFERENCE TESTING, FLOW MEASUREMENTS, AND DETECTION AND CONTROL SYSTEM VERIFICATION PRIOR TO OCCUPANCY AFTER SUFFICIENT CONSTRUCTION HAS BEEN COMPLETED TO PROVIDE REPRESENTATIVE TESTING RESULTS.
- SPECIAL INSPECTOR SHALL PROVIDE OPERATIONAL DOOR TESTING TO CONFIRM PROPER DOOR OPENING DURING PRESSURIZATION INCLUDING MEASUREMENTS OF ALL DOOR OPENING FORCES AND TO DETERMINE THE MAXIMUM ALLOWABLE STAIRWELL PRESSURIZATION DIFFERENTIAL PRESSURE.

STAIRWELL PRESSURIZATION SMOKE CONTROL PANEL SHALL BE LOCATED IN THE FIRE COMMAND CENTER ON THE GROUND FLOOR IN THE DESIGNATED AREA IN SPRINKLER ROOM G-02 ADJACENT TO THE BUILDING FIRE ALARM PANEL AND FIRE ALARM BATTERY CABINETS.

STAIRWELL PRESSURIZATION SYSTEM SEQUENCE OF OPERATION:

STAIRWELL PRESSURIZATION SYSTEM SUPPLY FANS SF-1 (SOUTH STAIR #1) AND SF-2 (NORTH STAIR #2):

AUTOMATIC OPERATION:

FANS AND DAMPERS IN "AUTO" POSITION

SUPPLY FANS SHALL BE CONTROLLED BY THE FIRE FIGHTERS SMOKE CONTROL PANEL LOCATED IN THE FIRE COMMAND CENTER PROVIDED BY DIV. 26 & DIV. 28 PER REQUIREMENTS OF IFC CHAPTER 9, SECTIONS 9.16 AND 9.17.

SUPPLY FAN SEQUENCE SHALL BE INITIATED BY RECIEPT OF A FIRE ALARM SIGNAL FROM THE FIRE ALARM PANEL (CORRIDOR AND/OR GENERAL BUILDING SMOKE DETECTORS OR MANUAL PULL STATIONS) OR THE FIRE SPRINKLER SYSTEM FLOW ALARM SIGNAL (WET AND DRY SYSTEMS) WHICH WILL BE INTERLOCKED WITH THE SMOKE CONTROL PANEL.

ACTIVATION SHALL OPEN SUPPLY FAN MOTORIZED DAMPERS (SPRING OPEN WITH DAMPER MOTORS DE-ENERGIZED) WITH CONFIRMATION OF DAMPER OPENING THROUGH END SWITCES FOLLOWED BY ACTIVATION OF THE RESPECTIVE SUPPLY FANS. ACTIVATION SHALL OPEN THE BAROMETRIC RELIEF MOTORIZED DAMPERS (SPRING OPEN WITH DAMPER MOTORS DE-ENERGIZED) WITH CONFIRMATION OF DAMPER OPENING THROUGH END SWITCHES. SUPPLY FANS SHALL EACH BE INTERLOCKED WITH CONCURRENT SMOKE DETECTORS LOCATED BETWEEN THE SUPPLY FAN DISCHARGE AND THE RESPECTIVE MOTORIZED DAMPERS TO SHUT DOWN THE RESPECTIVE SUPPLY FANS ONLY WHEN SMOKE IS DETECTED BY BOTH SMOKE DAMPERS.

VERIFICATION OF SUPPLY FAN OPERATION SHALL BE PROVIDED BY CURRENT SENSORS ADJUSTED TO PROVIDE VERIFICATION OF FAN OPERATION FOR THE RESPECTIVE SUPPLY FAN.

POWER TO EACH MOTORIZED DAMPER SHALL BE PROVIDED BY CURRENT SENSORS ADJUSTED TO PROVIDE VEIFICATION OF POWER FOR EACH RESPECTIVE DAMPER (SUPPLY FAN DAMPERS AND RELIEF DAMPERS).

EACH STAIRWELL PRESSURIZATION SYSTEM SHALL BE BALANCED WITH ALL STAIRWELL DOORS CLOSED TO PRESSURIZE THE STAIRWELL TO A DIFFERENTIAL PRESSURE BETWEEN 0.15 INCHES WATER COLUMN AND 0.25 INCHES WATER COLUMN WITH VERIFICATION THAT DIFFERENTIAL PRESSURE DOES NOT EXCEED THE DOOR OPENING FORCE FOR ALL DOORWAYS IN THE STAIRWELL. BAROMETRIC RELIEF DAMPERS SHALL BE BALANCED TO PROVIDE FULL RELIEF AIRFLOW AT 0.1 INCHES DIFFERENTIAL PRESSURE BY ADJUSTEMENT OF THE RESPECTIVE RELIEF DAMPER COUNTERWEIGHT.

HVAC SYSTEM INTERFACE: ACTIVATION OF THE SMOKE CONTROL SYSTEM SHALL PROVIDE AN HVAC SYSTEM CONTACT TO SHUT DOWN THE CORRIDOR HEAT RECOVERY UNITS HRU-1 AND HRU-2 AND ENERGY RECOVERY VENTILATOR ERV-3. FIRE ALARM SYSTEM WILL CLOSE ALL COMBINATION FIRE/SMOKE DAMPERS ON EACH OF THESE SYSTEM. GARAGE EXHAUST FANS EF-1 (GARAGE LEVEL P2 PARKING), EF-2 (GARAGE LEVEL P1 PARKING) AND EF-3 (GROUND LEVEL PARKING) TO OPERATE EACH RESPECTIVE FAN AT 100% CAPACITY FOR THE DURATION OF THE ALARM CONDITION.

MANUAL OPERATION:

FANS IN "ON" OR "OFF" POSITION - MANUAL OPERATION OF EACH FAN SHALL BE PROVIDED AT THE SMOKE CONTROL PANEL

DAMPERS IN "OPEN" OR "CLOSED" POSITION - MANUAL OPERATION OF EACH DAMPER SHALL BE PROVIDED AT THE SMOKE CONTROL PANEL.

STAIRWELLL PRESSURIZATION SYSTEM SUBMITTAL REQUIREMENTS:

STAIRWELL PRESSURIZATION SYSTEM SHALL BE PROVIDED PER THE 2018 IFC CHAPTER 9 AS A DEFERRED SUBMITTAL TO THE TACOMA FIRE DEPARTMENT TO INCLUDE THE FOLLOWING:

- LOCATION AND RATING OF ALL FIRE BARRIERS AND WALLS
- LOCATION OF STANDBY POWER EQUIPMENT ROOM
- LOCATION OF ALL SMOKE CONTROL EQUIPMENT, CONTROL WIRING AND POWER WIRING.
- METHOD OF POSITIVE CONFIRMATION OF ACTUATION, TESTING, MANUAL OVERRIDE AND PRESENCE OF POWER DOWNSTREAM OF ALL DISCONNECTS FOR FANS AND DAMPERS.
- WEEKLY TEST SEQUENCE SHALL REPORT ALL ABNORMAL CONDITIONS AUDIBLY, VISUALLY AND BY PRINTED REPORT IN COMPLIANCE WITH IFC CHAPTER 9, SECTION 909.12. PRINTER SHALL BE PROVIDED WITH DIRECT INTERFACE TO THE SMOKE CONTROL PANEL FOR PRINTING OF TEST REPORT RESULTS.
- DETAILS OF THE SMOKE CONTROL PANEL TO INCLUDE ALL SWITCHES AND INDICATING LIGHTS FOR EACH PRESSURIZATION SYSTEM AND STATUS OF ALL INPUTS (FIRE ALARM SYSTEM AND SPRINKLER SYSTEM).
- SUBMITTAL INFORMATION SHALL INCLUDE THE INFORMATION ABOVE AND PRODUCT DATA FOR ALL SMOKE CONTROL EQUIPMENT AND DEVICES, IDENTIFIED BY UNIQUE LABEL OR TAG, BOUND INTO A SINGLE PDF DOCUMENT FOR REVIEW AND ACCEPTANCE BY THE CITY OF TACOMA FIRE DEPARTMENT WITH COPIES TO THE OWNER, ARCHITECT AND ENGINEER.

COMPLETION DOCUMENTATION:

- FOLLOWING COMPLETION AND TESTING OF THE STAIRWELL PRESSURIZATINO SYTEM AND PRIOR TO BUILDING OCCUPANCY A COMPLETE REPORT OF ALL TESTING SHALL BE PREPARED BY THE TESTING AGENCY TO INCLUDE ALL DEVICES BY MANUFACTURER, NAMEPLATE DATA, DESIGN VALUES, MEASURED VALUES WITH IDENTIFICATION BY EQUIPMENT TAG OR LABEL. DOCUMENTATION SHALL INCLUDE CHARTS, DRAWINGS AND OTHER DUCUMENTS TO IDENTIFY THE EQUIPMENT AND DEVICES, THEIR LOCATION, AND DESCRIPTION OF THE PROPER FUNCTION AND MAINTENANCE REQUIRMENTS. THE COMPLETED REPORT SHALL BE SUBMITTED TO THE CITY OF TACOMA FIRE DEPARTMENT WITH COPIES TO THE OWNER, ARCHITECT AND ENGINEER. PRIOR TO FINAL APPROVAL, THE OWNER SHALL SUBMIT A WRITTEN SCHEDULE FOR ROUTINE MAINTENANCE AND OPERATIONAL TESTING IN ACCORDANCE WITH THE IFC AND MANUFACTURER'S INSTRUCTIONS. A PDF COPY AND PRINTED COPY OF THE COMPLETED REPORT, ALONG WITH THE APPROVED SUBMITTAL AND SCHEDULE OF MAINTENANCE AND TESTING, SHALL BE MAINTAINED AT THE BUILDING IN THE FIRE COMMAND CENTER.

FINAL APPROVAL:

FOLLOWING SUBMITTAL OF THE COMPLETION DOCUMENTATION, THE TACOMA FIRE DEPARTMENT WILL CONDUCT A FINAL INSPECTION. THE INSPECTIONI WILL INCLUDE VERIFICATION OF THE COMPLETED DOCUMENTATION TO BE MAINTAINED ON SITE AS WELL AS OPERATION OF THE STAIRWELL PRESSURIZATION SYSTEMS IN BOTH MANUAL AND AUTOMATIC MODES OF OPERATION.

REVISIONS THIS SHEET

PERMIT REVIEW COMMENTS 3-27-2023

1 2 3 4

St. Helens Mixed-Use
Tacoma, Washington
STAIRWELL PRESSURIZATION RESPONSIBILITY MATRIX

1 N. Tacoma Ave, Suite 201 Tacoma, Washington 98403 (253) 584-5207

PROJECT NO. : 22226.0
DRAWN BY : NBD
ISSUE DATE : 11-9-2022
LATEST REV. THIS SET : 1 -

PERMIT SET
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PLOT DATE: May. 25, 2023 - 11:29am
FILE NAME: F:\CAD\2022\22226.0 - St. Helens Mixed Use\ 22226.0--MP00--THRU--MP08.dwg

ENERGY RECOVERY VENTILATOR SCHEDULE

SYMBOL	MAKE & MODEL	SUPPLY AIR		EXHAUST AIR		MOTOR					WEIGHT (LBS)	RECOVERY THERMAL EFFICIENCY	REMARKS
		CFM	ESP " W.G.	CFM	ESP " W.G.	MCA	V	PH	HZ	WATTS/ CFM			
ERV-1	PANASONIC FV-10VE2	50	0.40	50	0.40	0.7	120	1	60	0.55	66	75%	1, 2, 3, 4, 5
ERV-2	PANASONIC FV-10VE2	60	0.40	60	0.40	0.7	120	1	60	0.59	66	75%	1, 2, 3, 4
ERV-3	PANASONIC FV-10VE2	75	0.40	75	0.40	0.7	120	1	60	0.71	66	75%	1, 2, 3, 4, 6, 7

REMARKS:

1. FURNISH WITH MERV 8 FILTER FOR OUTSIDE AIR STREAM AND EXHAUST AIR STREAM.
2. PROVIDE WITH FILTER CHECK AND MAINTENANCE ALARM.
3. ENERGY RECOVERY VENTILATOR SHALL BE ENERGY STAR CERTIFIED.
4. ENERGY RECOVERY VENTILATOR SHALL HAVE BUILT-IN SPEED SELECTORS FOR SUPPLY AND RETURN AND STATIC PRESSURE CONTROL TO MAINTAIN SPEED SETTING.
5. PROVIDE PHENOLIC ENGRAVED LABEL ON WALL SWITCH CONTROLLING ERV OPERATION READING; ENERGY RECOVERY VENTILATOR SHALL OPERATE CONTINUOUSLY UNLESS OUTDOOR AIR QUALITY IS VERY POOR.
6. ERV-3 SHALL BE CONTROLLED BY OCCUPANCY SENSOR IN THE ELEVATOR LOBBY WITH A 15 MINUTE TIME DELAY OFF.
7. PROVIDE WITH MOTORIZED LOW LEAKAGE 5"ø INTAKE AND EXHAUST DAMPERS, 120V/1PH.

DUCTLESS HEAT PUMP INDOOR UNIT SCHEDULE BASIS OF DESIGN

TAG	MANUFACTURER & MODEL NO.	AREA SERVED	COOLING BTUH	HEATING BTUH (47F/17F)	ELECTRICAL DATA				MATCHING OUTDOOR UNIT	EQUIPMENT WEIGHT LBS.	REMARKS
					VOLTS	PHASE	MCA	FLA			
DIU-1	TRANE MITSUBISHI NTXWST12A112A	ELEVATOR MACHINE ROOM	12,000	14,400/ 9,200	208	1	1.0	0.76	DCU-1	22	1, 2, 3, 5
DIU-2	TRANE MITSUBISHI NTXWST12A112A	ELEVATOR MACHINE ROOM	12,000	14,400/ 9,200	208	1	1.0	0.76	DCU-2	22	1, 2, 3, 5
DIU-3	TRANE MITSUBISHI NTXWST12A112A	OFFICE	12,000	14,400/ 9,200	208	1	1.0	0.76	DCU-3	22	1, 2, 3, 4
DIU-4	TRANE MITSUBISHI NTXWST09A112A	LOBBY	9,000	10,900/ 6,700	208	1	1.0	0.76	DCU-4	22	1, 2, 3, 4
DIU-5	TRANE MITSUBISHI NTXWST30B112AA	EXERCISE	30,600	32,000/ 21,000	208	1	1.0	0.76	DCU-5	45	1, 2, 3, 4

REMARKS:

1. REFER TO MANUFACTURER'S INSTALLATION INSTRUCTIONS FOR POWER AND CONTROL WIRING BETWEEN INDOOR AND OUTDOOR UNIT. INDOOR UNIT POWERED THROUGH OUTDOOR UNIT.
2. PROVIDE REFRIGERATION LINE SET BETWEEN INDOOR UNIT AND OUTDOOR CONDENSING UNIT.
3. PROVIDE WITH CONDENSATE PUMP. ROUTE CONDENSATE DRAIN AS INDICATED ON DRAWINGS.
4. UNIT SHALL BE FURNISHED WITH TAR-40MAAU WIRED WALL MOUNT CONTROLLER WITH MAC-334IF-E SYSTEM CONTROL INTERFACE. CONTROLLER SHALL BE CAPABLE OF 7-DAY PROGRAM CONTROL AND MINIMUM 5'F DEADBAND BETWEEN HEATING AND COOLING SETPOINTS.
5. UNIT SHALL BE FURNISHED WITH TAC-YT53CRAU-J SIMPLE MA WIRED WALL MOUNT CONTROLLER WITH MAC-334IF-E SYSTEM CONTROL INTERFACE.

DUCTLESS HEAT PUMP CONDENSING UNIT SCHEDULE BASIS OF DESIGN

TAG	MANUFACTURER & MODEL NO.	COOLING BTUH	HEATING BTUH (47F/17F)	ELECTRICAL DATA				SEER	HSPF	MATCHING INDOOR UNIT	EQUIPMENT WEIGHT LBS.	REMARKS
				VOLTS	PHASE	MCA	MOCP					
DCU-1	TRANE MITSUBISHI NTXSST12A112A	12,000	14,400/ 9,200	208	1	9	15	23.1	12.5	DIU-1	81	1, 2, 3, 4
DCU-2	TRANE MITSUBISHI NTXSST12A112A	12,000	14,400/ 9,200	208	1	9	15	23.1	12.5	DIU-2	81	1, 2, 3, 4
DCU-3	TRANE MITSUBISHI NTXSST12A112A	12,000	14,400/ 9,200	208	1	9	15	23.1	12.5	DIU-3	81	1, 2, 3, 4
DCU-4	TRANE MITSUBISHI NTXSST09A112AA	9,000	10,900/ 6,700	208	1	9	15	24.6	12.8	DIU-4	81	1, 2, 3, 4
DCU-5	TRANE MITSUBISHI NTXSST30B112A	30,600	32,600/ 21,000	208	1	19	20	18.1	9.6	DIU-5	121	1, 2, 3, 4

REMARKS:

1. POWER INDOOR UNIT SUPPLIED THROUGH OUTDOOR UNIT.
2. OUTDOOR UNIT SHALL BE WALL MOUNTED ON QUICK-SLING DIVERSTECH QSWB1100 WALL BRACKETS.
3. SEE 2018 CODE COMPLIANCE ON SHEET MP0.0 FOR MECHANICAL TEMPERATURE CONTROLS - SEQUENCE OF OPERATION.
4. PROVIDE WITH (4) MASON INDUSTRIES MODEL ND-A-BLACK NEOPRENE ISOLATORS WITH STAINLESS STEEL FASTENERS.

ELECTRIC HEATER SCHEDULE BASIS OF DESIGN

SYMBOL	DESCRIPTION	MANUFACTURER & MODEL NUMBER	CAPACITY WATTS	ELECTRICAL		REMARKS
				VOLTS	PHASE	
EWH-1	WALL HEATER	KING ELECTRIC MODEL PAW2022	750	208	1	2
EWH-2	WALL HEATER	KING ELECTRIC MODEL PAW2022	1000	208	1	3
EWH-3	WALL HEATER	KING ELECTRIC MODEL PAW2022	1250	208	1	3
EWH-4	SURFACE MOUNT WALL HEATER	KING ELECTRIC MODEL SL2022	1250	208	1	3
ECV-1	COVE HEATER	KING ELECTRIC MODEL KCV1202	210	120	1	1
ECV-2	COVE HEATER	KING ELECTRIC MODEL KCV1204	420	120	1	1
ECV-3	COVE HEATER	KING ELECTRIC MODEL KCV1206	560	120	1	2
ECV-4	COVE HEATER	KING ELECTRIC MODEL KCV1207	700	120	1	2
ECV-5	COVE HEATER	KING ELECTRIC MODEL KCV1209	840	120	1	2
ECV-6	COVE HEATER	KING ELECTRIC MODEL KCV1210	935	120	1	2
ECV-7	COVE HEATER	KING ELECTRIC MODEL KCV2012	1125	208	1	2
ECV-8	COVE HEATER	KING ELECTRIC MODEL KCV2015	1400	208	1	2
ECV-9	COVE HEATER	KING ELECTRIC MODEL KCV2018	1800	208	1	2

REMARKS:

1. HEATER SHALL BE CONTROLLED BY LINE VOLTAGE REMOTE WALL MOUNT NON-PROGRAMMABLE THERMOSTAT, KING ELECTRIC MODEL K322E.
2. HEATER SHALL BE CONTROLLED BY LINE VOLTAGE REMOTE WALL MOUNT 7-DAY PROGRAMMABLE THERMOSTAT, KING ELECTRIC MODEL K302PE.
3. HEATER SHALL BE CONTROLLED BY INTEGRAL THERMOSTAT SET AT 50°F FOR FREEZE PROTECTION.

AIR TERMINAL SCHEDULE

SYMBOL	DESCRIPTION
SG-1	PRICE MODEL 620 DOUBLE DEFLECTION ADJUSTABLE BLADE, ALUMINUM.
SG-2	PRICE MODEL 610 SINGLE DEFLECTION ADJUSTABLE BLADE, ALUMINUM.
EG-1	PRICE MODEL 630 SINGLE 45° BLADES, ALUMINUM.
L-1	RUSKIN MODEL ELF 375DX DRAINABLE BLADE LOUVER W/ BIRDSCREEN, COLOR AS SELECTED BY ARCHITECT.
CD-1	BOFLEX DR SERIES SUPPLY DIFFUSER WITH INTEGRAL FLOW ADJUSTMENT.
ED-1	BOFLEX DR SERIES EXHAUST DIFFUSER WITH INTEGRAL FLOW ADJUSTMENT.
TG-1	PRICE MODEL 630 SINGLE 45° BLADES, ALUMINUM, EACH END OF TRANSFER OPENING W/ COMBINATION FIRE/SMOKE DAMPER IN SLEEVE.
TG-2	PRICE MODEL 96 HEAVY DUTY GRILLE, SINGLE 45° BLADES AT 3/4" BLADE SPACING.
TG-3	PRICE MODEL 630 SINGLE 45° BLADES, ALUMINUM.
RLG-1	PRICE MODEL 610Z SINGLE 0° BLADES, ALUMINUM RELIEF GRILLE.

ROOF AND WALL CAP SCHEDULE

SYMBOL	MANUFACTURER & MODEL NUMBER	REMARKS
WC-1	PRIMEX WC5, 5"ø INTAKE WALL CAP, NO DAMPER.	3, 4
WC-2	PRIMEX WC5, 5"ø EXHAUST WALL CAP, WITH DAMPER.	1, 3
WC-3	PRIMEX WC4NS, 4"ø DRYER EXHAUST WALL CAP, WITH DAMPER, NO SCREEN.	2, 3
WC-4	BROAN VTYIK1 COMBINATION INTAKE/EXHAUST HOOD.	5
WC-5	PRIMEX WCD-4, W/ DELONG H1 INSIDE WALL CAP	3, 4, 6
WC-6	PRIMEX WC8, 8"ø INTAKE WALL CAP, NO DAMPER.	
WC-7	PRIMEX WC8, 8"ø EXHAUST WALL CAP, WITH DAMPER.	

REMARKS:

1. WITH BACKDRAFT DAMPER AND BIRDSCREEN.
2. WITH BACKDRAFT DAMPER AND NO BIRDSCREEN.
3. COLOR AS SELECTED BY ARCHITECT.
4. WITH BIRDSCREEN AND NO BACKDRAFT DAMPER.
5. INSTALL PER MANUFACTURER'S INSTALLATION INSTRUCTIONS WITH EXHAUST OUTLET AT TOP OF UNIT AND INTAKE AT BOTTOM OF UNIT.
6. CONNECT REMOVABLE WALL CAP WITH PINGUINO WALL CONNECTOR TUBE AND FITTING.

LNS
LNS ENGINEERS, INC.
7713 PIONEER WAY
GIG HARBOR, WA 98335
PHONE: 253-851-5175

LARRY N. STORDAHL
STATE OF WASHINGTON
16454
REGISTERED PROFESSIONAL ENGINEER

REVISIONS THIS SHEET
PERMIT REVIEW COMMENTS 3-27-2023
1 2 3 4

St. Helens Mixed-Use
Tacoma, Washington
MECHANICAL SCHEDULES

PROJECT NO. : 22226.0
DRAWN BY : NBD
ISSUE DATE : 11-9-2022
LATEST REV. THIS SET : 1 -

1 N. Tacoma Ave, Suite 201 Tacoma, Washington 98403 (253) 584-5207

PERMIT SET
11-9-2022

PLOT DATE: May. 25, 2023 - 11:29am

FILE NAME: F:\CAD\2022\22226.0 - St Helens Mixed Use\ 22226.0-MP00-THRU-MP08.dwg

EXHAUST FAN SCHEDULE

SYMBOL	MANUFACTURER AND MODEL	AREA SERVED	CFM	CFM/W	S.P.	ELECT.		WEIGHT LBS	REMARKS
						WATTS HP	V/PH		
EF-1	COOK 210SQN-B	GARAGE LEVEL P2 PARKING	6,600	3.2	1.0	3.0	208/3	311	1, 6
EF-2	COOK 225SQN-B	GARAGE LEVEL P1 PARKING	7,700	3.2	1.0	3.0	208/3	394	2, 6
EF-3	COOK 150SQN-B	COMMERCIAL LEVEL PARKING	3,300	3.2	1.0	1.5	208/3	168	3, 6
EF-4	COOK 100SQN17DEC	REFUSE/ RECYCLING	700	2.8	0.50	1/4 HP	120/1	84	4
EF-5	PANASONIC FV-05-11VK2	P2 LEVEL BIKE STORAGE (SOUTHWEST)	50	8.3	0.25	6.2 W	120/1	20	5
EF-6	PANASONIC FV-05-11VK2	P1 LEVEL BIKE STORAGE (SOUTHWEST)	50	8.3	0.25	6.2 W	120/1	20	5
EF-7	PANASONIC FV-05-11VK2	P1 LEVEL BIKE STORAGE (EAST)	100	5.7	0.375	17.8 W	120/1	20	5
EF-8	COOK 100SQN17DEC	REFUSE/ RECYCLING	700	2.8	0.50	1/4 HP	120/1	84	4

REMARKS:

1. PROVIDE WITH MOTORIZED DISCHARGE DAMPER BDMCL-28-208V, OSHA GUARD/MOTOR COVER, SC2-260 SET OF (4) SPRING ISOLATOR, FAN INLET AND OUTLET FLEXIBLE DUCT CONNECTORS AND LORENIZED FAN FINISH.
2. PROVIDE WITH MOTORIZED DISCHARGE DAMPER BDMCL-30-208V, OSHA GUARD/MOTOR COVER, SC2-260 SET OF (4) SPRING ISOLATOR, FAN INLET AND OUTLET FLEXIBLE DUCT CONNECTORS AND LORENIZED FAN FINISH.
3. PROVIDE WITH MOTORIZED DISCHARGE DAMPER BDMCL-20-208V, OSHA GUARD/MOTOR COVER, SC2-120 SET OF (4) SPRING ISOLATOR, FAN INLET AND OUTLET FLEXIBLE DUCT CONNECTORS AND LORENIZED FAN FINISH.
4. PROVIDE WITH FAN INLET GUARD, SC-35 SET OF (4) SPRING ISOLATORS, FAN MOUNTED SPEED CONTROL, FAN OUTLET FLEXIBLE DUCT CONNECTOR LORENIZED FAN FINISH.
5. PROVIDE WITH FV-VS15VK1 MULTI-SPEED WITH TIME DELAY AND FV-MSVK1 MOTION SENSOR WITH 10 MINUTE TIME DELAY OFF.
6. PROVIDE WITH VFD FOR FAN SPEED CONTROL WITH 4-20mA INPUT.

HEAT RECOVERY UNIT SCHEDULE BASIS OF DESIGN

SYMBOL	MANUFACTURER AND MODEL	SUPPLY CFM	ESP	MOTOR	EXHAUST CFM	H.P.	ELECT.			INTERLOCK	RECOVERY EFFICIENCY	WEIGHT	REMARKS
							MCA	VOLT	PH				
HRU-1	RENEWAIRE HE1.5RTR-EC	875	1.0	1.0	665	0.5	7.7	208	1	DH-1	75%	550	1, 2, 3, 4, 5, 6
HRU-2	RENEWAIRE HE1RTR-EC	500	1.0	0.5	500	0.5	10.8	208	1	DH-2	75%	375	1, 2, 3, 4, 5, 6
HRU-3	RENEWAIRE EV-PREMIUM L	160	0.25	0.25	160	85W	10	120	1	-	78%	52	1, 3, 7

REMARKS:

1. PROVIDE WITH ECM FAN MOTORS WITH SPEED CONTROL.
2. PROVIDE SINGLE POINT ELECTRICAL CONNECTION WITH DISCONNECT.
3. PROVIDE WITH MOTORIZED LOW LEAKAGE INTAKE AND EXHAUST DAMPERS WITH A MAXIMUM LEAKAGE RATE OF4CFM/SF AT 1.0" W.G.
4. PROVIDE WITH 20" HIGH FACTORY CURB WITH WIND CLIP FOR HORIZONTAL SUPPLY AND RETURN DUCT CONNECTIONS.
5. PROVIDE WITH 2" MERV 13 FILTERS AND FACTORY MOUNTED FILTER ALARMS.
6. UNIT SHALL BE WEATHERPROOF CONSTRUCTION FOR ROOF TOP INSTALLATION.
7. PROVIDE WITH LINE CHORD POWER SUPPLY.
8. PROVIDE WITH WALL MOUNT (MC-W) MOTION SENSOR.

DUCT HEATER SCHEDULE

SYMBOL	MANUFACTURER & MODEL NUMBER	INTERLOCK	CAPACITY KW	ELECTRICAL		REMARKS
				VOLTS	PHASE	
DH-1	INDEECO QUA	HRU-1	5.0	208	1	1, 2, 3
DH-2	INDEECO QUA	HRU-2	3.0	208	1	1, 2, 3

REMARKS:

1. PROVIDE WITH DISCONNECT SWITCH, SCR CONTROL, MANUALLY RESETTABLE THERMAL OVER LOADS, AIRFLOW SWITCH, CONTROL TRANSFORMER AND TYPE K PROPORTIONAL SCR CONTROL WITH ENCLOSURE MOUNTED THERMOSTAT WITH DUCT MOUNTED REMOTE SENSOR.
2. PROVIDE STAND-OFF BRACKETS FOR INSTALLATION IN LINED DUCTWORK.
3. PROVIDE WITH NEMA 4X WEATHERPROOF ENCLOSURE.

2018 IMC VENTILATION AIR COMPLIANCE

ROOM DESIGNATION	AREA - SF	AREA VENTILATION RATE (CFM/SF)	TOTAL OCCUPANCY	PEOPLE VENTILATION RATE (CFM/OCC)	VENTILATION EFFECTIVENESS	MINIMUM VENTILATION CFM	PROVIDED VENTILATION CFM	REMARKS
P-2 PARKING GARAGE	8743	0.75	0	0	1	6557	6600	1
P-2 REFUSE/RECYCLING	687	1	0	0	1	687	700	2
P-2 BIKES SOUTHWEST	243	0.12	0	0	1	29	50	3
P-2 ELEVATOR LOBBY	72	1	0	0	1	72	100	4
P-1 PARKING GARAGE	10154	0.75	0	0	1	7616	7700	5
P-1 BIKES SOUTHWEST	243	0.12	0	0	1	29	50	6
P-1 BIKES EAST	580	0.12	0	0	1	70	100	7
P-1 ELEVATOR LOBBY	72	1	0	0	1	72	100	8
COMMERCIAL USE PARKING	4320	0.75	0	0	1	3240	3300	9
GROUND FLOOR OFFICE	150	0.06	1	5	1	14	15	10
GROUND FLOOR LOBBY	600	0.06	6	5	1	66	100	10
GROUND FLOOR PACKAGE	60	0.12	0	5	1	7	10	10
GROUND FLOOR VESTIBULE	60	0.06	0	5	1	4	NATURAL	
GROUND FLOOR EXIT PASSAGE	360	0.06	0	5	1	22	50	10
GROUND FLOOR EXERCISE	637	0.06	6	20	1	158	160	11
GROUND FLOOR RESTROOM	60	0	0	0	1	50	160	11
1ST FLOOR CORRIDOR	1276	0.12	0	0	1	153	200	12
2ND FLOOR CORRIDOR	1276	0.12	0	0	1	153	200	12
3RD FLOOR CORRIDOR	1276	0.12	0	0	1	153	200	12
4TH FLOOR CORRIDOR	1276	0.12	0	0	1	153	200	12
5TH FLOOR CORRIDOR	1276	0.12	0	0	1	153	200	12
ROOF LEVEL REFUSE CHUTE	36	1	0	0	1	36	40	13
ROOF LEVEL EQUIPMENT ROOM	35	0	0	0	NA	NA	NATURAL	
ROOF LEVEL ELEVATOR LOBBY	221	0.06	2	5	1	23	75	14
ROOF LEVEL RESTROOM	75	0	0	0	1	50	75	14
ONE BEDROOM UNITS	413-519	IMC TABLE 403.3.1.1 BALANCED VENTILATION & WSEC 403.3.6				50	50	15
TWO BEDROOM UNITS	719-755	IMC TABLE 403.3.1.1 BALANCED VENTILATION & WSEC 403.3.7				60	60	15

REMARKS:

1. P-2 PARKING GARAGE TOTAL REQUIRED VENTILATION IS 6,557 CFM PROVIDED BY EF-1 MODULATING VENTILATION AT 6,600 CFM BY CO/NO2 CONTROL AND CONTINUOUS VENTILATION WITH EF-1 OPERATING AT MINIMUM SPEED.
2. REFUSE/RECYCLING AREA PROVIDED WITH CONTINUOUS EXHAUST VENTILATION RATE OF 700 CFM BY EF-4.
3. P-2 BIKE STORAGE (SOUTHWEST CORNER) PROVIDE BY OUTSIDE AIR TRANSFER AND EXHAUST FAN EF-5 CONTROLLED BY OCCUPANCY SENSOR WITH 15 MINUTE TIME DELAY OFF.
4. P-2 PARKING GARAGE LEVEL ELEVATOR LOBBY VENTILATION PROVIDED BY HRU-1, CONTINUOUS VENTILATION.
5. P-1 PARKING GARAGE TOTAL REQUIRED VENTILATION IS 7,616 CFM PROVIDED BY EF-2 MODULATING VENTILATION AT 7,700 CFM BY CO/NO2 CONTROL AND CONTINUOUS VENTILATION WITH EF-2 OPERATING AT MINIMUM SPEED.
6. P-1 BIKE STORAGE (EAST SIDE) PROVIDE BY OUTSIDE AIR TRANSFER AND EXHAUST FAN EF-7 CONTROLLED BY OCCUPANCY SENSOR WITH 15 MINUTE TIME DELAY OFF.
7. P-1 BIKE STORAGE (SOUTHWEST CORNER) PROVIDE BY OUTSIDE AIR TRANSFER AND EXHAUST FAN EF-6 CONTROLLED BY OCCUPANCY SENSOR WITH 15 MINUTE TIME DELAY OFF.
8. P-1 PARKING GARAGE LEVEL ELEVATOR LOBBY VENTILATION PROVIDED BY HRU-1, CONTINUOUS VENTILATION.
9. COMMERCIAL PARKING GARAGE TOTAL REQUIRED VENTILATION IS 3,240 CFM PROVIDED BY EF-3 MODULATING VENTILATION AT 3,300 CFM BY CO/NO2 CONTROL AND CONTINUOUS VENTILATION WITH EF-3 OPERATING AT MINIMUM SPEED.
10. GROUND FLOOR LOBBY/PACKAGE/OFFICE/EXIT PASSAGEWAY VENTILATION PROVIDED BY HRU-2, CONTINUOUS VENTILATION.
11. GROUND FLOOR EXERCISE VENTILATION PROVIDED BY HRU-3 WITH SUPPLY TO EXERCISE AND EXHAUST FROM RESTROOM.
12. 1st, 2nd, 3rd, 4th & 5th FLOOR CORRIDORS AND LIMITED STORAGE VENTILATION PROVIDED BY HRU-1 & HRU-2 WITH PARTIAL EXHAUST FROM CORRIDOR AND FROM REFUSE CHUTE. STORAGE VENTILATION PROVIDED BY TRANSFER WITH OPEN DOORS.
13. ROOF LEVEL REFUSE CHUTE EXHAUSTS THROUGH HRU-1.
14. ROOF LEVEL ELEVATOR LOBBY PROVIDED WITH VENTILATION THROUGH ERV-3 WITH SUPPLY TO LOBBY AND EXHAUST THROUGH ADJACENT RESTROOM.
15. EACH RESIDENTIAL UNIT PROVIDED WITH BALANCED VENTILATION SYSTEMS THROUGH 60% MINIMUM EFFICIENCY ENERGY RECOVERY VENTILATORS WITH A MINIMUM OF 30 CFM CONTINUOUS EXHAUST FROM THE KITCHEN AREA AND 20 CFM CONTINUOUS EXHAUST FROM THE BATHROOMS, WHERE UTILITY ROOMS ARE NOT LOCATED ADJACENT TO THE KITCHEN AREAS, 10 CFM MINIMUM EXHAUST IS PROVIDED. VENTILATION AIR IS SUPPLY TO EACH LIVING AREA AND EACH BEDROOM.

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REVISIONS THIS SHEET
1 PERMIT REVIEW COMMENTS 3-27-2023
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St. Helens Mixed-Use
Tacoma, Washington
MECHANICAL SCHEDULES

PROJECT NO. : 22226.0
DRAWN BY : NBD
ISSUE DATE : 11-9-2022
LATEST REV. / THIS SET : 4 / -

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11-9-2022

PLOT DATE: May 25, 2023 - 11:29am
FILE NAME: F:\CAD\2022\22226.0 - St Helens Mixed Use\ 22226.0-MP00-THRU-MP08.dwg

RESIDENTIAL PLUMBING FIXTURE SCHEDULE

SYMBOL	DESCRIPTION	W (DFU)	V	CW (CWSFU)	HW (HWSFU)	# OF FIXTURES	TOTALS DFU	TOTALS CWSFU	TOTALS HWSFU	REMARKS
P-1	FLOOR MOUNT WATER CLOSET TANK TYPE	3" (3)	2"	1/2" (2.5)	–	76	228	190	–	1
P-1A	FLOOR MOUNT WATER CLOSET TANK TYPE ADA COMPLIANT	3" (3)	2"	1/2" (2.5)	–	4	12	10	–	2
P-3	COUNTERTOP LAVATORY	1-1/2" (1)	1-1/4"	1/2" (1.0)	1/2" (0.75)	114	114	114	85.5	5
P-3A	COUNTERTOP LAVATORY ADA COMPLIANT	1-1/2" (1)	1-1/4"	1/2" (1.0)	1/2" (0.75)	4	4	4	3	6
P-4	2-COMPARTMENT KITCHEN SINK W/ DISHWASHER & GARBAGE DISPOSAL	2" (2)	1-1/2"	1/2" (1.5)	1/2" (1.5)	18	36	27	27	9
P-4A	SINGLE COMPARTMENT KITCHEN SINK W/ DISHWASHER & GARBAGE DISPOSAL	2" (2)	1-1/2"	1/2" (1.5)	1/2" (1.5)	58	116	87	87	10
P-4B	2-COMPARTMENT KITCHEN SINK W/ DISHWASHER & GARBAGE DISPOSAL ADA COMPLIANT	2" (2)	1-1/2"	1/2" (1.5)	1/2" (1.5)	2	4	3	3	11
P-4C	SINGLE COMPARTMENT KITCHEN SINK W/ DISHWASHER & GARBAGE DISPOSAL ADA COMPLIANT	2" (2)	1-1/2"	1/2" (1.5)	1/2" (1.5)	2	4	3	3	12
P-5	COMBINATION BATH/SHOWER	2" (2)	1-1/2"	1/2" (4.0)	1/2" (3.0)	76	152	304	228	14
P-5A	COMBINATION BATH/SHOWER ADA COMPLIANT	2" (2)	1-1/2"	1/2" (4.0)	1/2" (3.0)	4	8	16	12	15
P-6	CLOTHES WASHER BOX	2" (3)	1-1/2"	1/2" (4.0)	1/2" (3.0)	80	240	320	240	16
WH-1	ELECTRIC WATER HEATER TANKLESS 18KW – 208V/1PH	–	–	3/4 (–)	3/4 (–)	80	–	–	–	19
HD-1	HUB DRAIN W/ 3"x2" RISER	2" (–)	1-1/2"	–	–	80	–	–	–	21
RESIDENTIAL TOTALS							DFU'S 918	CWSFU'S 1,078	HWSFU'S 688.5	
RESIDENTIAL TOTALS ADJUSTED PER UPC – APPENDIX C							640	640	504	

COMMON AREAS PLUMBING FIXTURE SCHEDULE

SYMBOL	DESCRIPTION	W (DFU)	V	CW (CWSFU)	HW (HWSFU)	# OF FIXTURES	TOTALS DFU	TOTALS CWSFU	TOTALS HWSFU	REMARKS
P-1B	FLOOR MOUNT WATER CLOSET TANK TYPE ADA COMPLIANT	3" (4)	2"	1/2" (2.5)	–	1	4	2.5	–	3
P-1C	FLUSH VALVE WATER CLOSET ADA COMPLIANT	3" (4)	2"	1" (35)	–	1	4	35	–	4
P-3B	WALL HUNG LAVATORY ADA COMPLIANT	1-1/2" (1)	1-1/4"	1/2" (1.0)	1/2" (0.75)	1	1	1	0.75	7
P-3C	WALL HUNG LAVATORY W/ WATER HEATER ADA COMPLIANT	1-1/2" (1)	1-1/4"	1/2" (1.0)	1/2" (0.75)	1	1	1	0.75	8
P-4D	24x24 MOP SINK	3" (3)	1-1/2"	1/2" (3)	1/2" (3)	2	6	6	6	13
P-7	BI-LEVEL DRINKING FOUNTAIN	1-1/2" (1)	1-1/2"	1/2" (1.0)	–	1	1	1	–	17
P-8	REFUSE CHUTE WATER SUPPLY	–	–	3/4" (2.5)	–	1	–	2.5	–	18
HB-1	FREEZE PROOF HOSE BIBB	–	–	3/4" (1.0/2.5)	–		–		–	23
WH-2	ELECTRIC WATER HEATER TANKLESS 18KW – 208V/1PH	–	–	3/4 (–)	3/4 (–)	2	–	–	–	20
FD-1	FLOOR DRAIN	2" (2)	1-1/2"	–	–	2	4	–	–	24
FD-2	FLOOR DRAIN	4" (4)	2"	–	–	1	4	–	–	25
FFD-1	FUNNEL FLOOR DRAIN	4" (6)	2"	–	–	1	6	–	–	26
HD-2	HUB DRAIN W/ 6"x36" RISER	4" (6)	2"	–	–	3	18	–	–	22
RPBP-1	REDUCED PRESSURE BACKFLOW PREVENTER	–	–	3"	–	2	–	–	–	27
RPBP-2	REDUCED PRESSURE BACKFLOW PREVENTER	–	–	3/4"	–	1	–	–	–	33
DCVA-1	DOUBLE CHECK VALVE BACKFLOW PREVENTER	–	–	3/4"	–	1	–	–	–	34
PR-1	PRESSURE REDUCER ASSEMBLY	–	–	3/ 1-1/4"	–	1	–	–	–	28
SP-1	ELEVATOR SUMP PUMP P2 TO GROUND FLOOR	*	–	–	–	1	–	–	–	29
SP-2	ELEVATOR SUMP PUMP P2 TO ROOF	*	–	–	–	1	–	–	–	30
OS-1	OIL WATER SEPARATOR	4" (8)	3"	–	–	1	8	–	–	31
COMMON AREA TOTALS							DFU'S 49	CWSFU'S 49	HWSFU'S 7.5	

* INCLUDED IN HD-2 HUB DRAIN

RESTAURANT PLUMBING FIXTURE SCHEDULE

SYMBOL	DESCRIPTION	W (DFU)	V	CW (CWSFU)	HW (HWSFU)	# OF FIXTURES	TOTALS DFU	TOTALS CWSFU	TOTALS HWSFU	REMARKS
THE ABOVE FIXTURES ALL DRAIN TO THE SANITARY SEWER. ESTIMATED FUTURE							20	50	–	FUTURE
THE FOLLOWING FIXTURES DRAIN THROUGH THE HYDROMECHANICAL GREASE INTERCEPTOR.										
TOTAL FOR FIXTURES DRAINING TO GREASE INTERCEPTOR (ESTIMATED)							DFU'S 22	CWSFU'S 20	HWSFU'S –	
GI-1	GREASE INTERCEPTOR	3" (22)	2"	–	–	1	INCLUDED ABOVE	–	–	32
RESTAURANT TOTALS (ESTIMATED FUTURE)							DFU'S 42	CWSFU'S 70	HWSFU'S –	
BUILDING TOTALS ADJUSTED PER UPC – APPENDIX C							DFU'S 731	CWSFU'S 759	HWSFU'S 511.5	

BUILDING TOTAL
SANITARY SEWER DRAINAGE – 1005 DFU
ADJUSTED SANITARY SEWER PER APPENDIX C – 731 DFU, MAX ALLOWABLE @ 2% = 840
BUILDING DOMESTIC WATER SERVICE – 1,197 CWSFU'S
ADJUSTED DOMESTIC WATER SERVICE PER UPC APPENDIX C – 759 CWSFU'S
DOMESTIC WATER SERVICE – 170 GPM
SERVICE SIZE 4" WITH 3" WATER METER, 3" WATER TO BUILDING SPRINKLER ROOM.

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PLUMBING FIXTURE SCHEDULE REMARKS:

1. P-1: PROFLO MODEL PF1401T, 1.28 GPF, ELONGATED TOILET W/ CLOSED FRONT SEAT AND LID, CLOSET FLANGE, WAX RING AND HOLD DOWN BOLTS.
2. P1-A: PROFLO MODEL PF1403T, 1.28 GPF, ADA COMPLIANT ELONGATED TOILET W/ CLOSED FRONT SEAT AND LID, CLOSET FLANGE, WAX RING AND HOLD DOWN BOLTS. PROVIDE WITH LEFT HAND OR RIGHT HAND TRIP LEVER ON ACCESSIBLE SIDE OF TOILET.
3. P-1B: PROFLO MODEL PF1403T, 1.28 GPF, ADA COMPLIANT ELONGATED TOILET W/ OPEN FRONT SEAT, NO COVER, CLOSET FLANGE, WAX RING AND HOLD DOWN BOLTS. PROVIDE WITH LEFT HAND OR RIGHT HAND TRIP LEVER ON ACCESSABLE SIDE OF TOILET.
4. P-1C: PROFLO MODEL PF1723, 1.28 GPF, ADA COMPLIANT ELONGATED FLUSH VALVE TOILET W/ OPEN FRONT SEAT, NO COVER, CLOSET FLANGE, WAX RING AND HOLD DOWN BOLTS. PROVIDE WITH SLOAN ROYAL MODEL 111-1.28 FLUSHOMETER.
5. P-3: PROFLO MODEL PF20174 COUNTERTOP LAVATORY W/ PROFLO MODEL PFWSC30165 SINGLE HANDLE FAUCET AND POP UP DRAIN ASSEMBLY, 0.5 GPM.
6. P-3A: PROFLO MODEL PF20174 COUNTERTOP LAVATORY W/ PROFLO MODEL PFWSC30165 SINGLE HANDLE FAUCET AND POP UP DRAIN ASSEMBLY, 0.5 GPM, ADA COMPLIANT. WITH INSULATED DRAIN AND HOT WATER SUPPLY.
7. P-3B: KOHLER MODEL K-2005 WALL HUNG LAVATORY W/ PROFLO MODEL PFWSC47445 SINGLE HANDLE FAUCET AND GRID DRAIN ASSEMBLY, 0.5 GPM, ADA COMPLIANT, WITH INSULATED DRAIN AND HOT WATER SUPPLY
8. P-3C: KOHLER MODEL K-2005 WALL HUNG LAVATORY W/ PROFLO MODEL PFWSC47445 SINGLE HANDLE FAUCET AND GRID DRAIN ASSEMBLY, 0.5 GPM, ADA COMPLIANT, WITH INSULATED DRAIN AND HOT WATER SUPPLY. PROVIDE WITH CHRONOMITE MODEL CM-20L/208 POINT OF USE WATER HEATER, 4,160 WATTS, 208V/1PH, WALL MOUNTING UNDER LAVATORY.
9. P-4: PROFLO MODEL PFSR332274A SELF RIMMING STAINLESS STEEL DOUBLE BOWL SINK, 4-HOLE DRILLING, W/ SYMMONS MODEL S-23 FAUCET AND PROFLO MODELPF1421SS BASKET STRAINER, DISHWASHER HOOKUP AND INSINKERATOR BADGER 5 FOOD WASTE DISPOSER, 1/2H HP, 120V/1PH.
10. P-4A: PROFLO MODEL PFSR252274A SELF RIMMING STAINLESS STEEL SINGLE BOWL SINK, 4-HOLE DRILLING, W/ SYMMONS MODEL S-23 FAUCET, DISHWASHER HOOKUP AND INSINKERATOR BADGER 5 FOOD WASTE DISPOSER, 1/2 HP, 120V/1PH..
11. P-4B: PROFLO MODEL PFSR332264A SELF RIMMING STAINLESS STEEL DOUBLE BOWL SINK, 4-HOLE DRILLING, ADA COMPLIANT W/ SYMMONS MODEL S-23 FAUCET, DISHWASHER HOOKUP AND INSINKERATOR BADGER 5 FOOD WASTE DISPOSER, 1/2H HP, 120V/1PH.
12. P-4C: PROFLO MODEL PFSR252264A SELF RIMMING STAINLESS STEEL SINGLE BOWL SINK, 4-HOLE DRILLING, ADA COMPLIANT W/ SYMMONS MODEL S-23 FAUCET, DISHWASHER HOOKUP AND INSINKERATOR BADGER 5 FOOD WASTE DISPOSER, 1/2H HP, 120V/1PH.
13. P-4D: PROFLO MODEL PFMB2424 MOP BASIN WITH PFBG24S STAINLESS STEEL BUMPER GUARDS EACH OPEN SIDE, PFWG24S STAINLESS STEEL WALL GUARD SET, PFMBDRN 3" STRAINER AND GASKET FOR PVC DRAIN, PF245 MOP HANGER, PFSSHE SERVICE HOSE AND PF296 SERVICE HOSE BRACKET AND PF1118 SERVICE FAUCET WITH VACUUM BREAKER AND PAIL SUPPORT.
14. P-5: AQUATIC MODEL 2603SGM ONE-PIECE COMBINATION TUB/SHOWER W/ SYMMONS MODEL S-9601-PLR PRESSURE BALANCED MIXING VALVE WITH DIVERTER TUB SPOUT AND 1.5 GPM SHOWERHEAD. PROVIDE WITH LEFT HAND AND RIGHT HAND DRAIN ARRANGEMENT AS REQUIRED.
15. P-5A: AQUATIC MODEL 2603SMTE ADA COMPLIANT COMBINATION TUB/SHOWER W/ SYMMONS MODEL S-9601-PLR PRESSURE BALANCED MIXING VALVE WITH DIVERTER TUB SPOUT, SLIDE BAR, SHOWER HOSE, PARMA MODEL D462034 HAND-HELD SHOWERHEAD, 1.5 GPM. SHOWER ENCLOSURE SHALL INCLUDE ADA COMPLIANT GRAB BARS, SLIP RESISTANT TEXTURED BOTTOM AND TRI-FOLD SEAT.
16. P-6: SIOUX CHIEF 696 OXBOX CLOTHES WASHER BOX WITH HOT AND COLD WATER HAMMER ARRESTOR BALL VALVES AND DRAIN CONNECTION.
17. P-7 BI-LEVEL DRINKING FOUNTAIN ELKAY MODEL LZSTLG8WSLK BOTTLE FILLING STATION AND BI-LEVEL ADA COMPLIANT COOLER.
18. P-8: NON-POTABLE WATER SUPPLY, ¾" SIZE WITH QUARTER TURN BALL VALVE, PROVIDE WITH 12" X 12" ELMDOOR DW ACCESS DOOR. PIPING FROM ISOLATION VALVE TO REFUSE CHUTE WASH DOWN SYSTEM SHALL BE PROVIDED BY REFUSE CHUTE VENDOR/INSTALLER.
19. WH-1: WATER HEATER SHALL BE STIEBEL ELTRON TEMPRA SERIES MODEL 24 PLUS, 18 KW, 208V/1PH WITH SIX (6) HEATING ELEMENTS, ADDVANCED FLOW CONTROL, INTERTEK CERTIFIED TO ANSI/UL STANDARD 499 ANDNSF/ANSI 372 LEAD FREE COMPLIANT. PROVIDE WITH ASME PRESSURE/TEMPERATURE RELIEF VALVE AND FLEXIBLE BRAIDED CONNECTORS. WATER HEATER SHALL BE SET FOR A MAXIMUM DELIVERY TEMPERATURE OF 118F.
20. WH-2: WATER HEATER SHALL BE STIEBEL ELTRON TEMPRA SERIES MODEL 24 PLUS, 18 KW, 208V/1PH WITH SIX (6) HEATING ELEMENTS, ADDVANCED FLOW CONTROL, INTERTEK CERTIFIED TO ANSI/UL STANDARD 499 ANDNSF/ANSI 372 LEAD FREE COMPLIANT. PROVIDE WITH ASME PRESSURE/TEMPERATURE RELIEF VALVE AND FLEXIBLE BRAIDED CONNECTORS. WATER HEATER SHALL BE SET FOR A MAXIMUM DELIVERY TEMPERATURE OF 118F.
21. 2" HD-1 HUB DRAIN: HUB DRAIN SHALL BE ABOVE FLOOR 3" X 2" HUB ASSEMBLY, 2" P-TRAP TO RECEIVE DRAINAGE FROM WATER HEATER RELIEF VALVE. PROVIDE WITH SURSEAL FLOOR DRAIN TRAP SEAL. HUB OPENING SHALL BE COVERED WITH ½" MESH STAINLESS STEEL SCREEN FOR VERMIN PROTECTION PER UPC 312.12 - RODENTPROOFING.
22. 4" HD-2 HUB DRAIN: HUB DRAIN SHALL BE ABOVE FLOOR WITH 36" HIGH 6" HUB RISER AND 6" X 4" REDUCER, 4" P-TRAP TO RECEIVE DRAINAGE FROM FIRE SPRINKLER SYSTEM. PROVIDE WITH PPP MODEL PR-500 TRAP PRIMER VALVE TO SUPPLY WATER INTO THE HUB RISER. HUB OPENING SHALL BE COVERED WITH ½" MESH STAINLESS STEEL SCREEN FOR VERMIN PROTECTION PER UPC 312.12 - RODENTPROOFING.
23. HB-1 HOSE BIBB: PRIER MODEL C-634 FREEZE-PROOF LOOSE KEY WALL HYDRANT WITH INTEGRAL VACUUM BREAKER, AUTOMATIC DRAIN WITH INSERTION LENGTH TO FIT WITHIN INSULATED WALL ASSEMBLY. WHERE INSTALLED IN BRICK WALLS PROVIDE WITH BX2 WALL BOX. WHERE INSTALLED IN CONCRETE WALL PROVIDE WITH RB-1 ROUND BOX IN A PVC WALL SLEEVE.
24. 2" FD-1 FLOOR DRAIN: SIOUX CHIEF MODEL 832 - 2" FLOOR DRAIN WITH ROUND NICKEL-BRONZE STRAINER WITH TRAP PRIMER CONNECTION AND PPP MODEL PR-500 TRAP PRIMER VALVE ASSEBMLY.
25. 4" FD-2 FLOOR DRAIN: SIOUX CHIEF MODEL 832 - 4" FLOOR DRAIN WITH ROUND NICKEL-BRONZE STRAINER WITH TRAP PRIMER CONNECTION AND PPP MODEL PR-500 TRAP PRIMER VALVE ASSEBMLY.
26. 4" FFD-1 FUNNEL FLOOR DRAIN: SIOUX CHIEF MODEL 832 - 4" FLOOR DRAIN, ROUND STRAINER WITH ROUND NICKEL-BRONZE FUNNEL ASSEMBLY, TRAP PRIMER CONNECCTION AND PPP MODEL PR-500 TRAP PRIMER VALVE ASSEBMLY.
27. RPBP-1: ZURN-WILKENS MODEL 375 - 3" SIZE REDUCED PRESSURE BACKFLOW PREVENTER WITH MODEL AG AIR-GAP DRAIN FITTING, MODEL FSC WYE STRAINER WITH BLOW DOWN BALL VALVE. BACKFLOW PREVENTER SHALL BE LEAD-FREE AND WASHINGTON STATE APPROVED.
28. PR-1 PRESSURE REDUCING STATION: TWO-STAGE PRESSURE REDUCING VALVES WITH FIRST STAGE WATTS 1-1/4" SERIES LF223S, WITH STRAINER, (SET AT 75 PSIG) AND SECOND STAGE WATTS 3" MODEL LFM115, WITH Y-STRAINER, (SET AT 65 PSIG) AND WITH THE FOLLOWING ACCESSORIES: MODEL LFCP15 PRESSURE REDUCING PILOT, MODEL LFFC FLOW CONTROL, INLET AND OUTLET PRESSURE REDUCER BALL VALVES/GATE VALVES, ACCESSORY ISOLATION BALL VALVES, INLET AND OUTLET PRESSURE GAUGES WITH GAUGE COCKS, FIXED ORIFICE CLOSING SPEED CONTROL AND MODEL AOS ADJUSTABLE OPENING SPEED CONTROL. PRESSURE REDUCING ASSEMBLY SHALL BE LEAD FREE COMPLIANT.
29. SP-1: SUMP PUMP FOR P2 LEVEL TO ROOF LEVEL ELEVATOR: BARNES SERIES SP50 SUBMERSIBLE SUMP PUMP WITH AUTOMATIC CONTROL, CAPABLE OF PROVIDING 50 GPM AT 13 FEET OF HEAD, WITH BARNES BOSS PLUS REMOTE CONTROLLER WHICH INCLUDES HIGH WATERALARM, HIGH WATER PROBE, START PROBE, STOP PROBE AND REFERENCE PROBE WITH AUTO/HAND START/STOP SWITCH, SPRING LOADED, TO AUTO START. PUMP OPERATION SHALL NOT SHUT OFF WITH HIGH WATER CONDITIONS. SEE DETAILS 1/MP0.6.
30. SP-2: SUMP PUMP FOR P2 LEVEL TO GROUND FLOOR ELEVATOR: BARNES SERIES SP50 SUBMERSIBLE SUMP PUMP WITH AUTOMATIC CONTROL, CAPABLE OF PROVIDING 50 GPM AT 13 FEET OF HEAD, WITH BARNES BOSS PLUS REMOTE CONTROLLER WHICH INCLUDES HIGH WATER ALARM, HIGH WATER OIL ALARM, HIGH WATER PROBE, HIGH OIL FLOAT, START PROBE, STOP PROBE AND REFERENCE PROBE WITH AUTO/HAND START/STOP SWITCH, SPRING LOADED, TO AUTO START. PUMP OPERATION SHALL NOT SHUT OFF WITH HIGH WATER OR HIGH OIL CONDITIONS. SEE DETAILS 2/MP0.6.
31. OS-1: OIL/SAND SEPARATOR SHALL BE STRIEM MODEL OS-100, RATED AT 100 GPM, WITH TWO (2) C24-HP H20 RATED PICKABLE CAST IRON COVERS AND SR24 TELEGLIDE RISERS.
32. GI-1: GREASE INTERCEPTOR OLD CASTLE PRECAST STRATA 1500 GALLON LIQUID CAPACITY WITH THREE (3) 30" RINGS AND COVERS WITH GRADE RINGS AS REQUIRED. ASSEMBLY SHALL BE DESIGNED FOR HS-20 TRUCK WHEEL LOAD WITH IMPACT PER ACI-318 BUILDING CODE AND ATEM C-390. BOOT SEAL SHALL BE ASTM C-890.
33. RPBP-2: ZURN MODEL 975XL2 REDUCED PRESSURE BACKFLOW PREVENTER, 3/4" SIZE, WITH MODEL AG AIR GAP ASSEMBLY, LEAD-FREE AND WASHINGTON STATE APPROVED. ROUTE 3/4" NON-POTABLE WATER (NPW) FROM RPBP-2 TO P-8 REFUSE CHUTE WATER SUPPLY IN ROOM R05.
34. DCVA-1: ZURN-WILKENS MODEL 950XL3 - 3/4" DOUBLE CHECK VALVE BACKFLOW PREVENTER SHALL BE LEAD-FREE AND WASHINGTON STATE APPROVED. PRODUCTS BY OTHER MANUFACTURERS SHALL BE CONSIDERED SUBJECT TO APPROVAL BY THE OWNER, ARCHITECT AND ENGINEER.

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1 PERMIT REVIEW COMMENTS 3-27-2023
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St. Helens Mixed-Use
Tacoma, Washington
PLUMBING FIXTURE SCHEDULES
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PROJECT NO. : 22226.0
DRAWN BY : NBD
ISSUE DATE : 11-9-2022
LATEST REV. THIS SET : 1

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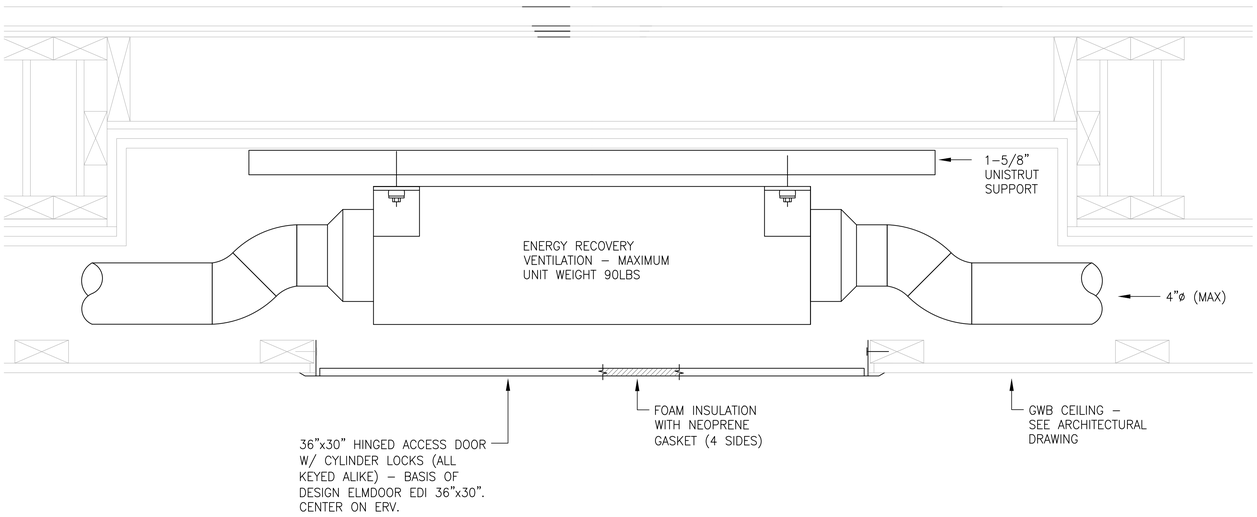
GENERAL NOTES

1. SEE ERV INSTALLATION DETAILS ON DRAWINGS A5.2.
2. SEE ERV POCKET NOTES ON DRAWING A5.2 FOR SUPPORT ATTACHMENT TO POCKET FRAMING AND ROOF TRUSSES.
3. ARRANGEMENTS SHOWN ARE TYPICAL, FRAMING CONFIGURATION VARIES BY LOCATION.

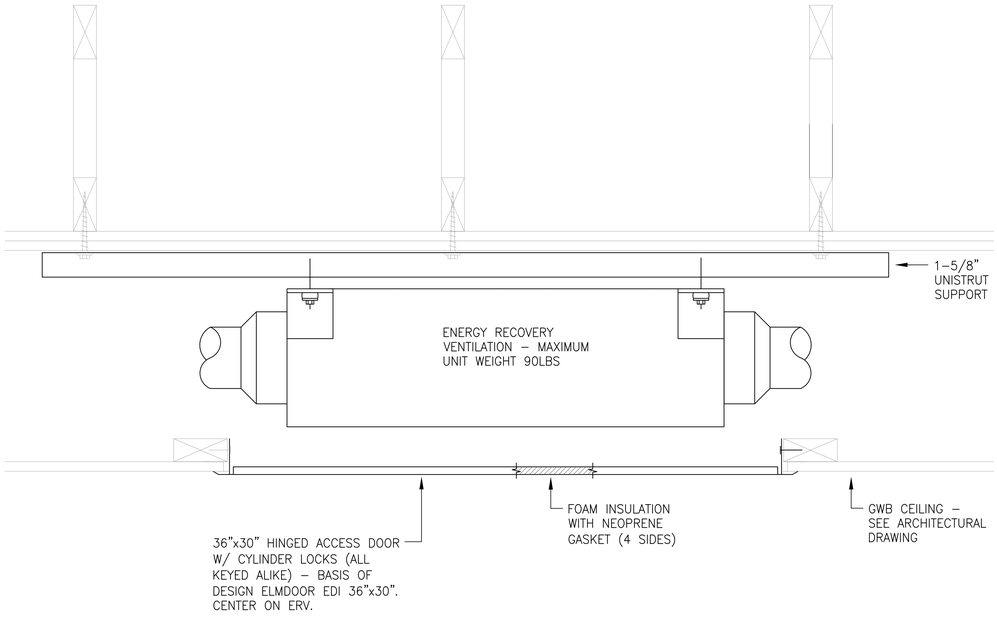


ERV SUPPORT DETAIL - TYPICAL (VENTING PERPENDICULAR TO JOISTS) — 2 / MP0.4

SCALE: 3"=1'-0"

1 2/3 1/3 0 1/3 2/3 1

SCALE OF FEET



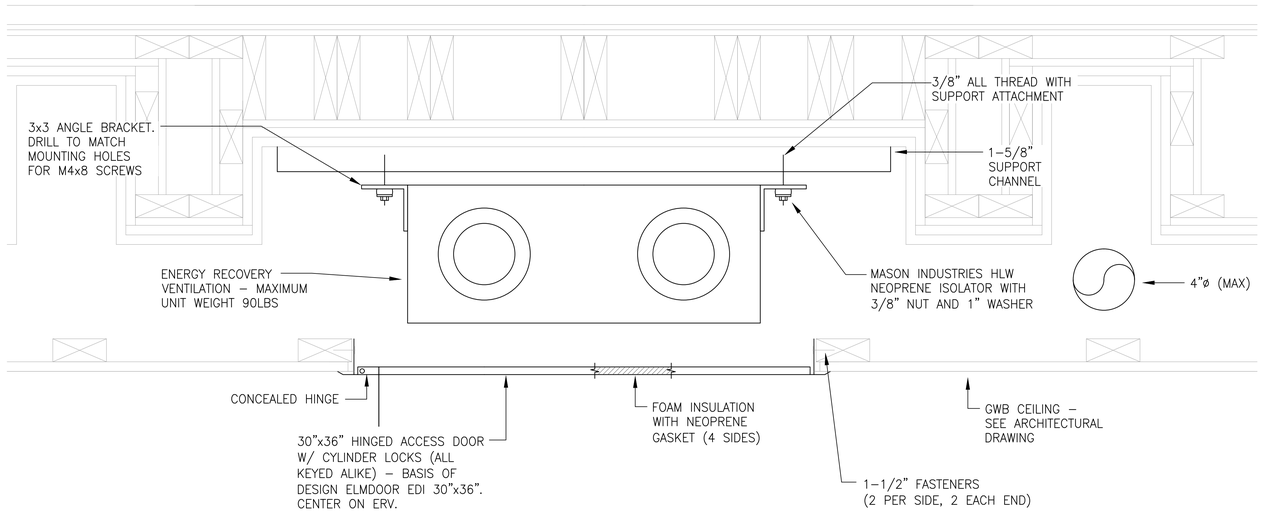
ERV SUPPORT DETAIL TO ROOF TRUSSES - TYPICAL — 3 / MP0.4

SCALE: 3"=1'-0"

1 2/3 1/3 0 1/3 2/3 1

SCALE OF FEET

ARRANGEMENT SHOWN WITH VENTING PERPENDICULAR TO TRUSSES. FOR ARRANGEMENT WITH VENTING PARALLEL TO TRUSSES SEE DETAIL 20/A5.2.



ERV SUPPORT DETAIL - TYPICAL (VENTING PARALLEL TO JOISTS) — 1 / MP0.4

SCALE: 3"=1'-0"

1 2/3 1/3 0 1/3 2/3 1

SCALE OF FEET

St. Helens Mixed-Use
Tacoma, Washington
ERV SUPPOT DETAIL

1 N. Tacoma Ave, Suite 201 Tacoma, Washington 98403 (253) 584-5207

PROJECT NO. : 22226.0
DRAWN BY : NBD
ISSUE DATE : 11-9-2022
LATEST REV. / THIS SET : 1 / -

PERMIT SET
11-9-2022

Casey + DeChant Architects, LLC Architecture And Planning

MP0.4

PLOT DATE: May. 25, 2023 - 11:30am

FILE NAME: I:\CAD\2022\22226.0 - St. Helens Mixed Use\ 22226.0-MP00-THRU-MP08.dwg

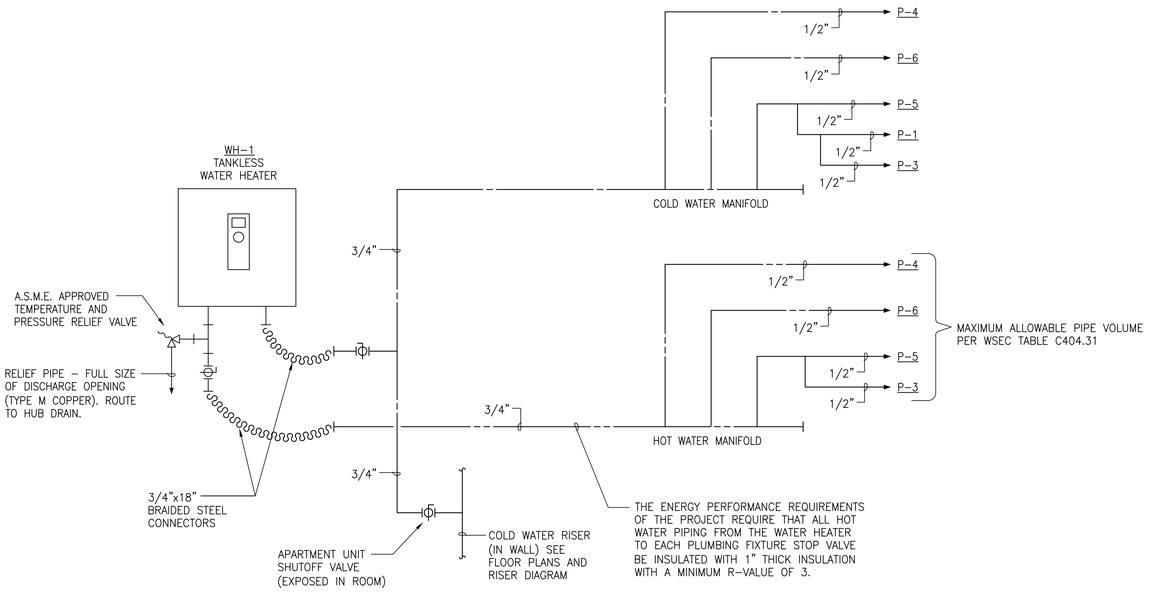
LNS

LNS ENGINEERS, INC.
7713 PIONEER WAY
GIG HARBOR, WA 98335
PHONE: 253-851-5175

REVISIONS THIS SHEET

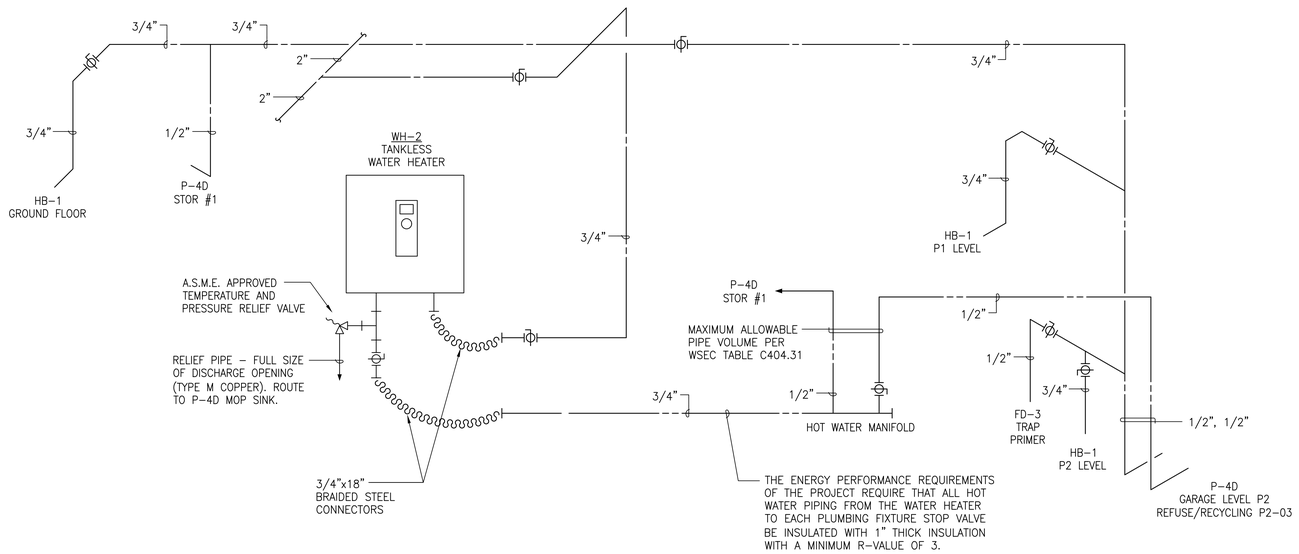
PERMIT REVIEW COMMENTS
3-27-2023

1 2 3 4



TYPICAL DOMESTIC WATER DISTRIBUTION DETAIL AT WATER HEATERS
NOT TO SCALE

1 MP0.5



TYPICAL DOMESTIC WATER DISTRIBUTION DETAIL AT STORAGE #1a
NOT TO SCALE

2 MP0.5

St. Helens Mixed-Use
Tacoma, Washington
WATER HEATER DETAILS

PROJECT NO. : 22226.0
DRAWN BY : NBD
ISSUE DATE : 11-9-2022
LATEST REV. THIS SET : 1

1 N. Tacoma Ave, Suite 201 Tacoma, Washington 98403 (253) 584-5207

PERMIT SET
11-9-2022

PLOT DATE: May 25, 2023 - 11:31am

FILE NAME: F:\CAD\2022\22226.0 - St Helens Mixed Use\ 22226.0-MP00-THRU-MP08.dwg

LNS

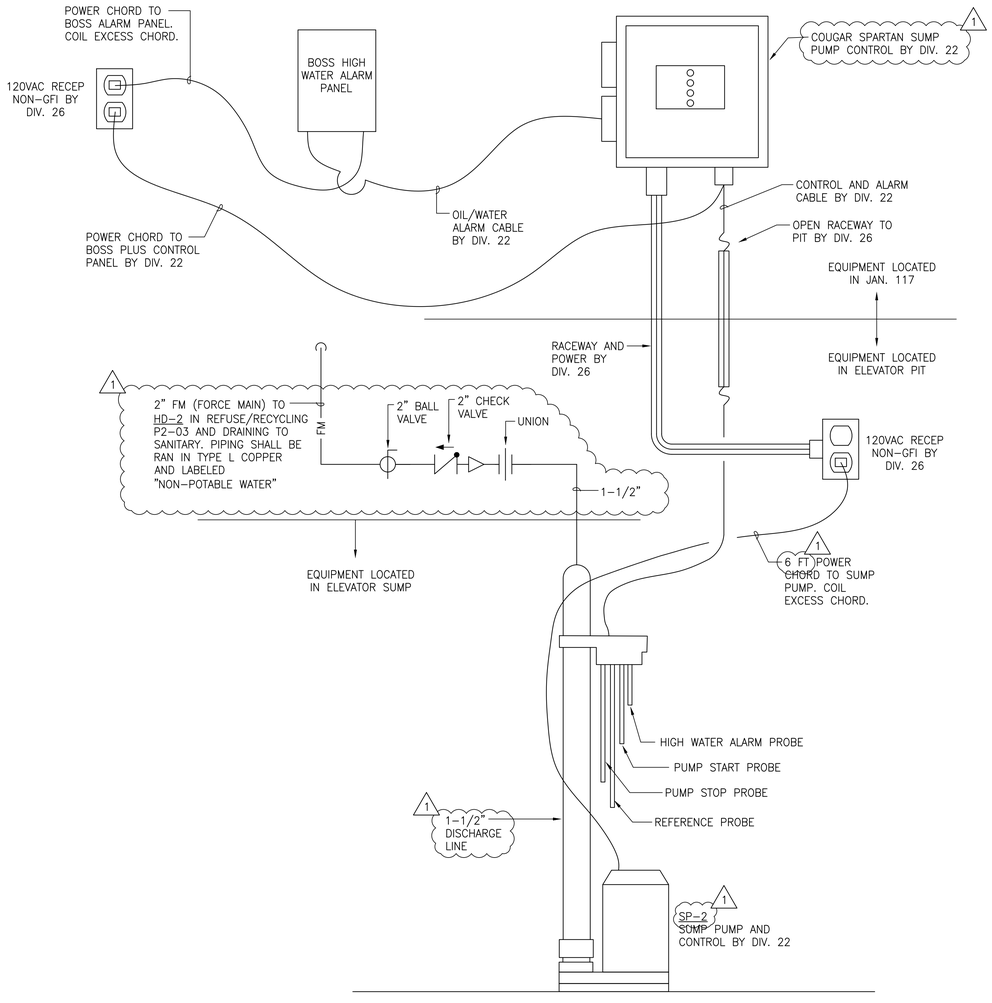
LNS ENGINEERS, INC.
7713 PIONEER WAY
GIG HARBOR, WA 98335
PHONE: 253-851-5175

LARRY N. STORMS
STATE OF WASHINGTON
16454
REGISTERED PROFESSIONAL ENGINEER

REVISIONS THIS SHEET

PERMIT REVIEW COMMENTS
3-27-2023

1 2 3 4

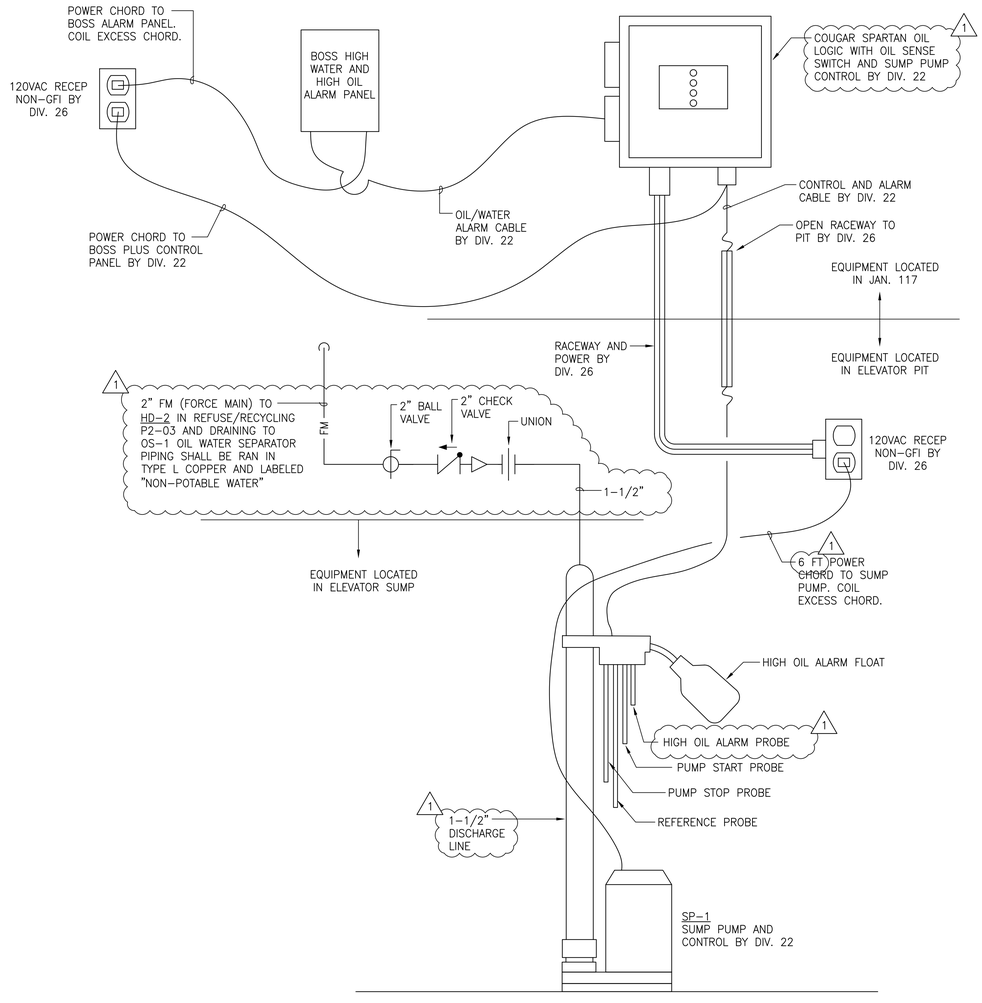


P2 LEVEL TO ROOF ELEVATOR
ELEVATOR SUMP PUMP CONTROL DIAGRAM

NO SCALE

1 MP0.6

SUMP PUMP AND PUMP CONTROL SHALL BE INSTALLED PER MANUFACTURER'S INSTALLATION INSTRUCTIONS AND REQUIREMENTS OF WA STATE LABOR & INDUSTRIES AND SHALL BE ASME A17.1 COMPLIANT. PROVIDE CONDUITS BETWEEN ELEVATOR SUMP AND SUMP PUMP CONTROL PANEL. PUMP OPERATION SHALL NOT SHUT OFF WITH HIGH LEVEL ALARMS. ALARM SHALL CONTINUE UNTIL ALARM CONDITION CLEARS OR IS MANUALLY SILENCED.



P2 LEVEL TO GROUND FLOOR ELEVATOR
ELEVATOR SUMP PUMP CONTROL DIAGRAM

NO SCALE

2 MP0.6

SUMP PUMP AND PUMP CONTROL SHALL BE INSTALLED PER MANUFACTURER'S INSTALLATION INSTRUCTIONS AND REQUIREMENTS OF WA STATE LABOR & INDUSTRIES AND SHALL BE ASME A17.1 COMPLIANT. PROVIDE CONDUITS BETWEEN ELEVATOR SUMP AND SUMP PUMP CONTROL PANEL. PUMP OPERATION SHALL NOT SHUT OFF WITH HIGH LEVEL OR HIGH OIL ALARMS. ALARMS SHALL CONTINUE UNTIL ALARM CONDITION CLEARS OR IS MANUALLY SILENCED.

St. Helens Mixed-Use
Tacoma, Washington
DETAILS

PROJECT NO. : 22226.0
DRAWN BY : NBD
ISSUE DATE : 11-9-2022
LATEST REV. THIS SET : 1 -

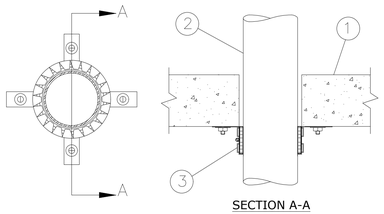
PERMIT SET
11-9-2022

1 N. Tacoma Ave, Suite 201 Tacoma, Washington 98403 (253) 584-5207

PLOT DATE: May 25, 2023 - 11:31am

FILE NAME: I:\CAD\2022\22226.0 - St Helens Mixed Use\ 22226.0-MP00-THRU-MP08.dwg

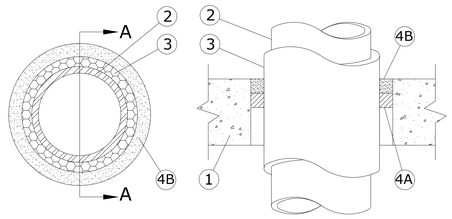
System No. C-AJ-2226
November 20, 2009
F Rating - 3 Hr
T Rating - 3 Hr



SECTION A-A

1. **FLOOR OR WALL ASSEMBLY —** MIN 4-1/2 IN. (114 MM) THICK REINFORCED LIGHTWEIGHT OR NORMAL WEIGHT (100-150 PCF OR 1600 - 2400 KG/M3) CONCRETE. WALL MAY ALSO BE CONSTRUCTED OF ANY UL CLASSIFIED **CONCRETE BLOCKS***. FLOOR MAY ALSO BE CONSTRUCTED OF ANY MIN 6 IN.(152 MM) THICK UL CLASSIFIED HOLLOW-CORE **PRECAST CONCRETE UNITS***. MAX DIAM OF OPENING IS 5 IN. (127 MM).
SEE **CONCRETE BLOCK** (CAZT) AND PRECAST CONCRETE UNITS (CFTV) CATEGORIES IN THE FIRE RESISTANCE DIRECTORY FOR NAMES OF MANUFACTURERS.
1A. **STEEL SLEEVE —** (OPTIONAL, NOT SHOWN) — NOM 5 IN. (127 MM) DIAM (OR SMALLER) SCHEDULE 10 (OR HEAVIER) STEEL SLEEVE CAST OR GROUTED INTO FLOOR OR WALL ASSEMBLY.
2. **THROUGH PENETRANTS —** ONE NONMETALLIC PIPE OR CONDUIT TO BE CENTERED WITHIN OPENING WITH A NOM 1/4 IN. (6 MM) ANNULAR SPACE BETWEEN PIPE OR CONDUIT AND PERIPHERY OF OPENING. PIPE OR CONDUIT TO BE RIGIDLY SUPPORTED ON BOTH SIDES OF THE FLOOR OR WALL ASSEMBLY. THE FOLLOWING TYPES AND SIZES OF NONMETALLIC PIPES OR CONDUITS MAY BE USED:
A. **POLYVINYL CHLORIDE (PVC) PIPE —** NOM 4 IN. (102 MM) DIAM (OR SMALLER) SCHEDULE 40 SOLID CORE OR CELLULAR CORE PVC PIPE FOR USE IN CLOSED (PROCESS OR SUPPLY) OR VENTED (DRAIN, WASTE OR VENT) PIPING SYSTEMS.
B. **RIGID NONMETALLIC CONDUIT++ —** NOM 4 IN. (102 MM) DIAM (OR SMALLER) SCHEDULE 40 PVC CONDUIT INSTALLED IN ACCORDANCE WITH ARTICLE 347 OF THE NATIONAL ELECTRICAL CODE (NFPA NO. 70).
C. **CHLORINATED POLYVINYL CHLORIDE (CPVC) PIPE —** NOM 4 IN. (102 MM) DIAM (OR SMALLER) SDR13.5 CPVC PIPE FOR USE IN CLOSED (PROCESS OR SUPPLY) PIPING SYSTEMS.
D. **ACRYLONITRILE BUTADIENE STYRENE (ABS) PIPE —** NOM 4 IN. (102 MM) DIAM (OR SMALLER) SCHEDULE 40 SOLID CORE OR CELLULAR CORE ABS PIPE FOR USE IN CLOSED (PROCESS OR SUPPLY) OR VENTED (DRAIN, WASTE OR VENT) PIPING SYSTEMS.
E. **FIRE RETARDANT POLYPROPYLENE (FRPP) PIPE —** NOM 4 IN. (102 MM) DIAM (OR SMALLER) SCHEDULE 40 FRPP PIPE FOR USE IN CLOSED (PROCESS OR SUPPLY) OR VENTED (DRAIN, WASTE OR VENT) PIPING SYSTEMS.
F. **POLYVINYLIDENE FLUORIDE (PVDF) PIPE —** NOM 2 IN. (51 MM) DIAM (OR SMALLER) SDR 11, OR NOM 4 IN. (102 MM) DIAM (OR SMALLER) SDR 32.5 PVDF PIPE FOR USE IN CLOSED (PROCESS OR SUPPLY) OR VENTED (DRAIN, WASTE OR VENT) PIPING SYSTEMS.
3. **FIRESTOP DEVICE — COLLAR —** COLLAR TO BE INSTALLED IN ACCORDANCE WITH THE ACCOMPANYING INSTALLATION INSTRUCTIONS. COLLAR TO BE INSTALLED AND LATCHED AROUND PIPE AND SECURED TO UNDERSIDE OF FLOOR OR ON BOTH SIDES OF WALL WITH 3M ULTRA FAST ANCHOR STRAPS OR WITH 1/4 IN. (6 MM) DIAM BY MIN 1-1/2 IN. (38 MM) LONG STEEL EXPANSION BOLTS IN CONJUNCTION WITH STEEL NUTS AND MIN 1-1/4 IN. (32 MM) DIAM STEEL FENDER WASHERS. MIN OF TWO, THREE OR FOUR ANCHOR STRAPS OR ANCHOR BOLTS, SYMMETRICALLY LOCATED, FOR NOM 2 IN. (51 MM) DIAM (AND SMALLER), NOM 3 IN. (76 MM) DIAM AND NOM 4 IN. (102 MM) DIAM PIPES, RESPECTIVELY.
3M COMPANY — ULTRA PPD 1.5, 2.0, 3.0 AND 4.0
4. **FILL, VOID OR CAVITY MATERIALS* — CAULK, SEALANT OR PUTTY —** (OPTIONAL, NOT SHOWN) — MIN 1/4 IN. THICKNESS OF CAULK OR PUTTY APPLIED WITHIN ANNULAR SPACE, FLUSH WITH TOP OR BOTTOM OF FLOOR ON ONE OR BOTH SIDES OF WALL.
3M COMPANY — CP 25WB+ CAULK, FB-3000 WT SEALANT, MP+ STIX PUTTY, IC 15WB+ CAULK OR FIREDAM 150+ CAULK.
(NOTE: CP 25WB+ AND FIREDAM 150+ NOT SUITABLE FOR USE WITH CPVC PIPES.)
5. **FILL, VOID OR CAVITY MATERIALS*—SEALANT —** (OPTIONAL, NOT SHOWN)—FOR FLOOR ASSEMBLIES, A MIN 1/2 IN. (13 MM) THICKNESS OF SEALANT MAY BE APPLIED WITHIN THE ANNULAR SPACE FLUSH WITH TOP SURFACE OF FLOOR.
3M COMPANY — FB-1000 NS OR FB-3000 WT
*BEARING THE UL CLASSIFICATION MARKING
++BEARING THE UL LISTING MARK

System No. C-AJ-5001
June 15, 2005
F Ratings - 1-1/2, 2 and 3 Hr (See Item 4)
T Ratings - 0, 1/2, 3/4 and 1 Hr (See Items 1A and 4)
L Rating At Ambient - 2 CFM per sq ft
L Rating At 400 F - less than 1 CFM per sq ft



SECTION A-A

1. FLOOR OR WALL ASSEMBLY - MIN 2-1/2 IN. (64 MM) THICK REINFORCED LIGHTWEIGHT OR NORMAL WEIGHT (100-150 PCF OR 1600-2400 KG/M3) CONCRETE. WALL MAY ALSO BE CONSTRUCTED OF ANY UL CLASSIFIED **CONCRETE BLOCKS***. MAX DIAM OF OPENING IS 18 IN. (457 MM).

SEE **CONCRETE BLOCKS** (CAZT) CATEGORY IN THE FIRE RESISTANCE DIRECTORY FOR NAMES OF MANUFACTURERS.

1A. STEEL SLEEVE (OPTIONAL, NOT SHOWN) - NOM 10 IN. (254 MM) (OR SMALLER) SCHEDULE 10 (OR HEAVIER) STEEL SLEEVE CAST OR GROUTED INTO FLOOR OR WALL ASSEMBLY. SLEEVE MAY EXTEND A MAX OF 2 IN. (51 MM) ABOVE TOP OF FLOOR OR BEYOND EITHER SURFACE OF WALL.

T RATING IS 0 HR WHEN SLEEVE IS USED.

2. THROUGH PENETRANT - NOM 4 IN. (102 MM) DIAM (OR SMALLER) TYPE L (OR HEAVIER) COPPER PIPE. NOM 12 IN. (305 MM) DIAM (OR SMALLER) SERVICE WEIGHT (OR HEAVIER) CAST IRON SOIL PIPE. NOM 12 IN. (305 MM) DIAM (OR SMALLER) CLASS 50 (OR HEAVIER) DUCTILE IRON PRESSURE PIPE OR NOM 12 IN. (305 MM) DIAM (OR SMALLER) SCHEDULE 10 (OR HEAVIER) STEEL PIPE CENTERED IN THE OPENING AND RIGIDLY SUPPORTED ON BOTH SIDES OF THE FLOOR OR WALL ASSEMBLY.

3. PIPE COVERING* - NOM 1/2 IN. TO 2 IN. (13 MM TO 51 MM) THICK HOLLOW CYLINDRICAL HEAVY DENSITY (MIN 3.5 PCF OR 56 KG/M3) GLASS FIBER UNITS JACKETED ON THE OUTSIDE WITH AN ALL SERVICE JACKET. LONGITUDINAL JOINTS SEALED WITH METAL FASTENERS OR FACTORY-APPLIED SELFSEALING LAP TAPE. TRANSVERSE JOINTS SECURED WITH METAL FASTENERS OR WITH BUTT STRIP TAPE SUPPLIED WITH THE PRODUCT.

SEE **PIPE AND EQUIPMENT COVERING - MATERIALS*** (BRGU) CATEGORY IN BUILDING MATERIALS DIRECTORY FOR NAMES OF MANUFACTURERS. ANY PIPE COVERING MATERIAL MEETING THE ABOVE SPECIFICATIONS AND BEARING THE UL CLASSIFICATION MARKING WITH A FLAME SPREAD INDEX OF 25 OR LESS AND A SMOKE DEVELOPED INDEX OF 50 OR LESS MAY BE USED.

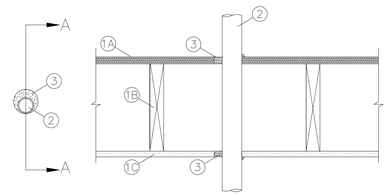
4. FIRESTOP SYSTEM - THE DETAILS OF THE FIRESTOP SYSTEM SHALL BE AS FOLLOWS:

A. PACKING MATERIAL - MIN 1 IN. (25 MM) THICKNESS OF FIRMLY PACKED MINERAL WOOL BATT INSULATION USED AS A PERMANENT FORM. PACKING MATERIAL TO BE RECESSED FROM TOP SURFACE OF FLOOR OR SLEEVE OR FROM BOTH SURFACES OF WALL AS REQUIRED TO ACCOMMODATE THE REQUIRED THICKNESS OF CAULK FILL MATERIAL (ITEM B).
B. FILL,VOID OR CAVITY MATERIAL* - CAULK OR SEALANT - APPLIED TO FILL THE ANNULAR SPACE FLUSH WITH THE TOP SURFACE OF THE FLOOR OR SLEEVE OR FLUSH WITH BOTH SURFACES OF WALL. WHEN NOM PIPE COVERING THICKNESS IS 2 IN. (51 MM), MIN THICKNESS OF CAULK FILL MATERIAL IS 2 IN. (51 MM). WHEN NOM PIPE COVERING THICKNESS IS 1-1/2 IN (38 MM) OR LESS, MIN THICKNESS OF CAULK FILL MATERIAL IS 1 IN. (25 MM)

THE HOURLY F AND T RATINGS OF THE FIRESTOP SYSTEM ARE DEPENDENT UPON THE THICKNESS OF THE FLOOR OR WALL, THE SIZE OF PIPE, THE THICKNESS OF PIPE COVERING MATERIAL AND THE SIZE OF THE ANNULAR SPACE (BETWEEN THE PIPE COVERING MATERIAL AND THE EDGE OF THE CIRCULAR THROUGH OPENING), AS SHOWN IN THE FOLLOWING TABLE:

Min Floor or Wall Thkns in. (mm)	Max Pipe Diam in. (mm)	Nom Pipe Covering Thkns in. (mm)	Annular Space in. (mm)	F Rating Hr	T Rating Hr
2-1/2 (64)	4 (102)	1 or 1-1/2 (25 or 38)	1/2 to 2-3/8 (13 to 60)	2	1
4-1/2 (114)	4 (102)	2 (51)	1/4 to 3-5/8 (6 to 92)	2	1-1/2
2-1/2 (64)	12 (305)	1 (25)	1/2 to 1-1/2 (13 to 38)	2	1/2
4-1/2 (114)	12 (305)	1 (25)	1/2 to 2-3/8 (13 to 60)	3	1
2-1/2 (64)	12 (305)	1/2 (13)	1/2 to 2-3/8 (13 to 60)	2	0

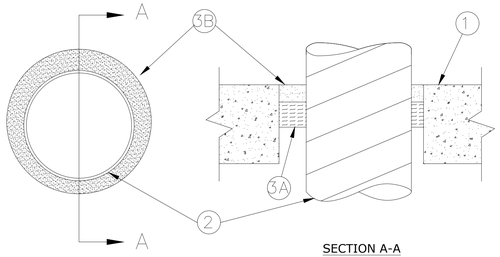
System No. F-C-2391
August 04, 2009
F Rating — 1 Hr
T Rating — 1 Hr



SECTION A-A

1. **FLOOR-CEILING ASSEMBLY —** THE 1 HR FIRE-RATED SOLID OR TRUSSED LUMBER JOIST FLOOR-CEILING ASSEMBLY SHALL BE CONSTRUCTED OF THE MATERIALS AND IN THE MANNER SPECIFIED IN THE INDIVIDUAL L500 SERIES FLOOR-CEILING DESIGNS IN THE UL FIRE RESISTANCE DIRECTORY. THE GENERAL CONSTRUCTION DETAILS OF THE FLOOR-CEILING ASSEMBLY ARE SUMMARIZED BELOW:
A. **FLOORING SYSTEM —** LUMBER OR PLYWOOD SUBFLOOR WITH FINISH FLOOR OF LUMBER, PLYWOOD OR **FLOOR TOPPING MIXTURE*** AS SPECIFIED IN THE INDIVIDUAL FLOOR-CEILING DESIGN. DIAMETER OF OPENING SHALL BE 1-1/2 IN. (38 MM) LARGER THAN THE OUTSIDE DIAM OF TUBING (ITEMS 2).
B. **WOOD JOISTS —** NOM 10 IN. (254 MM) DEEP (OR DEEPER) LUMBER, STEEL OR COMBINATION LUMBER AND STEEL JOISTS, TRUSSES OR **STRUCTURAL WOOD MEMBERS*** WITH BRIDGING AS REQUIRED AND WITH ENDS FIRESTOPPED.
C. **GYPSUM BOARD* —** NOM 4 FT (1219 MM) WIDE BY 5/8 IN. (16 MM) THICK AS SPECIFIED IN THE INDIVIDUAL FLOOR-CEILING DESIGN. . DIAMETER OF OPENING SHALL BE 1-1/2 IN. (38 MM) LARGER THAN THE OUTSIDE DIAM OF TUBING (ITEMS 2).
1.1 **CHASE WALL —** (OPTIONAL, NOT SHOWN) - THE TUBING (ITEM NO. 2) MAY BE ROUTED THROUGH A FIRE-RATED SINGLE, DOUBLE OR STAGGERED WOOD STUD/GYPSUM BOARD CHASE WALL HAVING A FIRE RATING CONSISTENT WITH THAT OF THE FLOOR-CEILING ASSEMBLY. THE CHASE WALL SHALL BE CONSTRUCTED OF THE MATERIALS AND IN THE MANNER SPECIFIED IN THE INDIVIDUAL U300 SERIES WALL AND PARTITION DESIGNS IN THE UL FIRE RESISTANCE DIRECTORY AND SHALL INCLUDE THE FOLLOWING CONSTRUCTION FEATURES:
A. **STUDS —** NOM 2 BY 6 IN. (51 BY 152 MM) OR DOUBLE NOM 2 BY 4 IN. (51 BY 102 MM) LUMBER STUDS.
B. **SOLE PLATE —** NOM 2 BY 6 IN. (51 BY 152 MM) OR PARALLEL 2 BY 4 IN. (51 BY 102 MM) LUMBER PLATES, TIGHTLY BUTTED. . DIAMETER OF OPENING SHALL BE 1-1/2 IN. (38 MM) LARGER THAN THE OUTSIDE DIAM OF TUBING (ITEMS 2)
C. **TOP PLATE —** THE DOUBLE TOP PLATE SHALL CONSIST OF TWO NOM 2 BY 6 IN. (51 BY 152 MM) OR TWO SETS OF PARALLEL 2 BY 4 IN. (51 BY 102 MM) LUMBER PLATES, TIGHTLY BUTTED. . DIAMETER OF OPENING SHALL BE 1-1/2 IN. (38 MM) LARGER THAN THE OUTSIDE DIAM OF TUBING (ITEMS 2).
D. **GYPSUM BOARD* —** THICKNESS, TYPE, NUMBER OF LAYERS AND FASTENERS SHALL BE AS SPECIFIED IN INDIVIDUAL WALL AND PARTITION DESIGN.
2. **CROSSLINK POLYETHYLENE (PEX) TUBING —** NOM 2 IN. (51 MM) DIAM (OR SMALLER) SDR 9 PEX TUBING FOR USE IN CLOSED (PROCESS OR SUPPLY) PIPING SYSTEM. TUBING INSTALLED CONCENTRICALLY OR ECCENTRICALLY WITHIN OPENING. ANNULAR SPACE BETWEEN TUBING AND EDGE OF OPENING TO BE MIN 0 IN. TO MAX 1-1/2 IN. (38 MM). TUBING TO BE RIGIDLY SUPPORTED ON BOTH SIDES OF FLOOR-CEILING ASSEMBLY.
3. **FILL, VOID OR CAVITY MATERIALS* — CAULK OR SEALANT —** MIN 3/4 IN. (19 MM) THICKNESS OF FILL MATERIAL APPLIED WITHIN THE ANNULUS, FLUSH WITH TOP SURFACE OF FLOOR. MIN 5/8 IN. (16 MM) THICKNESS OF FILL MATERIAL APPLIED WITHIN THE ANNULUS, FLUSH WITH BOTTOM SURFACE OF CEILING. AN ADDITIONAL MIN 1/2 IN. (13 MM) BEAD OF FILL MATERIAL APPLIED AT THE TUBING/FLOOR INTERFACE AT POINT CONTACT LOCATION ON TOP SURFACE OF FLOOR AND AT THE TUBING/CEILING INTERFACE AT POINT CONTACT LOCATION ON LOWER SURFACE OF FLOOR.
3M COMPANY
3M FIRE PROTECTION PRODUCTS — CP 25WB+, IC 15WB+ OR FB-3000 WT
*BEARING THE UL CLASSIFICATION MARK

System No. C-AJ-7003
October 05, 2006
F Rating - 3 Hr
T Rating - 0 Hr
L Rating At Ambient - 1 CFM/sq ft (See Item 3)
L Rating At 400 F - less than 1 CFM/sq ft (See Item 3)
W Rating - Class I (See Item 3B)



SECTION A-A

1. FLOOR OR WALL ASSEMBLY - MIN 4-1/2 IN. (114 MM) THICK LIGHTWEIGHT OR NORMAL WEIGHT (100-150 PCF OR 1600-2400 KG/M3) CONCRETE. WALL MAY ALSO BE CONSTRUCTED OF ANY UL CLASSIFIED **CONCRETE BLOCKS***. MAX DIAM OF OPENING IS 18 IN. (457 MM).

SEE **CONCRETE BLOCKS** (CAZT) CATEGORY IN THE FIRE RESISTANCE DIRECTORY FOR NAMES OF MANUFACTURERS.

1A. STEEL SLEEVE - NOM 6 IN. (152 MM) DIAM (OR SMALLER) SCHEDULE 40 (OR HEAVIER) STEEL PIPE SLEEVE, CAST INTO FLOOR OR WALL FLUSH WITH FLOOR OR WALL SURFACES.

2. THROUGH PENETRANT - ONE STEEL DUCT TO BE INSTALLED EITHER CONCENTRICALLY OR ECCENTRICALLY WITHIN THE FIRESTOP SYSTEM. AN ANNULAR SPACE OF MIN 1/2 IN. (13 MM) TO MAX 1-1/2 IN. (38 MM) IS REQUIRED WITHIN THE FIRESTOP SYSTEM. STEEL DUCT TO BE RIGIDLY SUPPORTED ON BOTH SIDES OF FLOOR OR WALL ASSEMBLY. THE FOLLOWING SIZES OF STEEL DUCTS MAY BE USED:

A. STEEL DUCT - NOM 16 IN. (406 MM) DIAM (OR SMALLER) NO. 24 GAUGE (OR HEAVIER) SPIRAL WOUND GALV STEEL DUCT.
B. STEEL VENT DUCT - NOM 10 IN. (254 MM) DIAM (OR SMALLER) NO. 28 GAUGE (OR HEAVIER) GALV STEEL VENT DUCT.

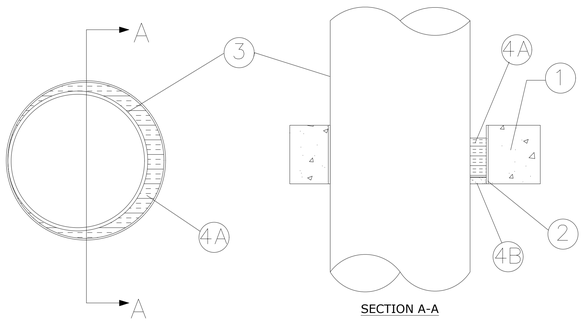
3. FIRESTOP SYSTEM - THE FIRESTOP SYSTEM SHALL CONSIST OF THE FOLLOWING:

A. PACKING MATERIAL - NOM 1 IN. (25 MM) THICKNESS OF TIGHTLY-PACKED MINERAL WOOL BATT INSULATION FIRMLY PACKED INTO OPENING AS A PERMANENT FORM. POLYETHYLENE BACKER ROD OR NOM 1 IN. (25 MM) THICK GLASS FIBER INSULATION MAY BE USED WITH STEEL VENT DUCTS (ITEM 2B) IN LIEU OF MINERAL BATT INSULATION. PACKING MATERIAL TO BE RECESSED FROM TOP SURFACE OF FLOOR OR FROM BOTH SURFACES OF WALL AS REQUIRED TO ACCOMMODATE THE REQUIRED THICKNESS OF CAULK FILL MATERIAL.
B. FILL,VOID OR CAVITY MATERIALS* - CAULK OR SEALANT - MIN 1 IN. (25 MM) THICKNESS OF FILL MATERIAL APPLIED WITHIN THE ANNULUS, FLUSH WITH TOP SURFACE OF FLOOR OR BOTH SURFACES OF WALL ASSEMBLY. W RATING APPLIES ONLY WHEN FB-3000 WT SEALANT IS USED. WATER RESISTANCE OF THROUGH PENETRANT (ITEM 2) MUST BE CONSIDERED IN ADDITION TO WATER RESISTANCE OF FIRESTOP SYSTEM.

3M COMPANY - CP 25WB+ OR FB-3000 WT.
(NOTE: W RATING APPLIES ONLY WHEN FB-3000 WT SEALANT IS USED.)

*BEARING THE UL CLASSIFICATION MARKING

System No. C-AJ-1496
May 18, 2005
F Rating - 3 Hr
T Rating - 0 Hr



SECTION A-A

1. FLOOR OR WALL ASSEMBLY - MIN 4-1/2 IN. (114 MM) THICK REINFORCED LIGHTWEIGHT OR NORMAL WEIGHT (100-150 PCF OR 1600-2400 KG/M3) CONCRETE. WALL MAY ALSO BE CONSTRUCTED OF ANY UL CLASSIFIED **CONCRETE BLOCKS***. MAX DIAM OF OPENING 13-3/4 IN. (349 MM).

SEE **CONCRETE BLOCKS** (CAZT) CATEGORY IN FIRE RESISTANCE DIRECTORY FOR NAMES OF MANUFACTURERS.

2. STEEL SLEEVE - (OPTIONAL) - SCHEDULE 10 (OR HEAVIER) STEEL SLEEVE CAST OR GROUTED INTO SLAB, FLUSH WITH BOTTOM OF FLOOR. SLEEVE MAY EXTEND A MAX OF 2 IN. (51 MM) ABOVE TOP SURFACE OF FLOOR OR BOTH SURFACES OF WALL.

3. THROUGH PENETRANT - ONE METALLIC PIPE OR TUBING INSTALLED CONCENTRICALLY OR ECCENTRICALLY WITHIN OPENING. ANNULAR SPACE BETWEEN PENETRANT AND SLEEVE OR PERIPHERY OF OPENING SHALL BE MIN OF 0 IN. (0 MM) (POINT CONTACT) TO MAX 3 IN. (76 MM). PENETRANT TO BE RIGIDLY SUPPORTED ON BOTH SIDES OF FLOOR OR WALL ASSEMBLY. THE FOLLOWING TYPES AND SIZES OF PENETRANTS MAY BE USED:

A. STEEL PIPE - NOM 10 IN. (254 MM) DIAM (OR SMALLER) SCHEDULE 10 (OR HEAVIER) STEEL PIPE.
B. IRON PIPE - NOM 10 IN. (254 MM) DIAM (OR SMALLER) CAST OR DUCTILE IRON PIPE.
C. CONDUIT - NOM 6 IN. DIAM (OR SMALLER) STEEL CONDUIT OR NOM 4 IN. DIAM (OR SMALLER) STEEL ELECTRICAL METALLIC TUBING.
D. COPPER TUBING - NOM 4 IN. (102 MM) DIAM (OR SMALLER) TYPE L (OR HEAVIER) COPPER TUBING.
E. COPPER PIPE - NOM 4 IN. (102 MM) DIAM (OR SMALLER) REGULAR (OR HEAVIER) COPPER PIPE.

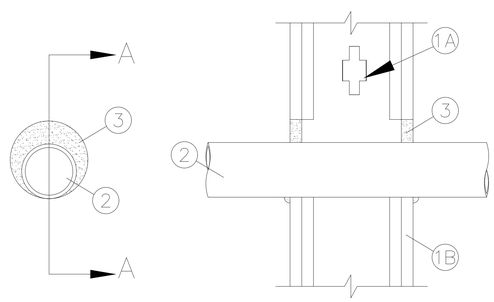
4. FIRESTOP SYSTEM - THE FIRESTOP SYSTEM SHALL CONSIST OF THE FOLLOWING:

A. PACKING MATERIAL - MIN 3 IN. (76 MM) THICKNESS OF MIN 4 PCF (64 KG/M3) MINERAL WOOL BATT INSULATION FIRMLY PACKED INTO OPENING AS A PERMANENT FORM. PACKING MATERIAL TO BE RECESSED FROM BOTTOM SURFACE OF FLOOR OR FROM BOTH SURFACES OF WALL TO ACCOMMODATE THE REQUIRED THICKNESS OF FILL MATERIAL.
B. FILL,VOID OR CAVITY MATERIALS* - CAULK OR SEALANT - MIN 1/2 IN. (13 MM) THICKNESS OF CAULK APPLIED WITHIN THE ANNULUS, FLUSH WITH BOTTOM SURFACE OF FLOOR OR WITH BOTH SURFACES OF WALL.

3M COMPANY - CP 25WB+, IC 15WB+ CAULK OR FB-3000 WT SEALANT.

*-BEARING THE UL CLASSIFICATION MARK

System No. W-L-2547
August 04, 2009
F Ratings — 1 and 2 Hr (See Item 1)
T Ratings — 0 and 1-3/4 Hr (See Item 1)



SECTION A-A

1. **WALL ASSEMBLY —** THE 1 AND 2 HR FIRE RATED GYPSUM BOARD/STUD WALL ASSEMBLIES SHALL BE CONSTRUCTED OF THE MATERIALS AND IN THE MANNER SPECIFIED IN THE INDIVIDUAL U300, U400 OR V400 SERIES WALL AND PARTITION DESIGNS IN THE UL FIRE RESISTANCE DIRECTORY AND SHALL INCLUDE THE FOLLOWING CONSTRUCTION FEATURES:
A. **STUDS —** WALL FRAMING MAY CONSIST OF EITHER WOOD STUDS OR STEEL CHANNEL STUDS. WOOD STUDS TO CONSIST OF NOM 2 BY 4 IN. (51 BY 102 MM) LUMBER SPACED 16 IN. (406 MM) OC. STEEL STUDS TO BE MIN 3-1/2 IN. (89 MM) WIDE AND SPACED MAX 24 IN. (610 MM) OC.
B. **GYPSUM BOARD* —** THICKNESS, TYPE, NUMBER OF LAYERS AND FASTENERS AS REQUIRED IN THE INDIVIDUAL WALL AND PARTITION DESIGN. DIAMETER OF OPENING SHALL BE 1-1/2 IN. (38 MM) LARGER THAN THE OUTSIDE DIAM OF TUBING (ITEMS 2).
THE HOURLY F RATING OF THE FIRESTOP SYSTEM IS EQUAL TO THE HOURLY FIRE RATING OF THE WALL ASSEMBLY IN WHICH IT IS INSTALLED. THE HOURLY T RATING IS 0 AND 1-3/4 HR FOR 1 AND 2 HR RATED ASSEMBLIES, RESPECTIVELY.
2. **CROSSLINK POLYETHYLENE (PEX) TUBING —** NOM 2 IN. (51 MM) DIAM (OR SMALLER) SDR 9 PEX TUBING FOR USE IN CLOSED (PROCESS OR SUPPLY) PIPING SYSTEM. TUBING INSTALLED CONCENTRICALLY OR ECCENTRICALLY WITHIN OPENING. ANNULAR SPACE BETWEEN TUBING AND EDGE OF OPENING TO BE MIN 0 IN. TO MAX 1-1/2 IN. (38 MM). TUBING TO BE RIGIDLY SUPPORTED ON BOTH SIDES OF WALL ASSEMBLY.
3. **FILL, VOID OR CAVITY MATERIALS* — CAULK OR SEALANT —** MIN 5/8 IN. (16 MM) THICKNESS OF FILL MATERIAL APPLIED WITHIN THE ANNULUS, FLUSH WITH BOTH SURFACES OF WALL ASSEMBLY. AN ADDITIONAL MIN 1/2 IN. (13 MM) BEAD OF FILL MATERIAL APPLIED AT THE TUBING/GYPSUM BOARD INTERFACE AT POINT CONTACT LOCATION ON BOTH SURFACES OF WALL ASSEMBLY.
3M COMPANY
3M FIRE PROTECTION PRODUCTS — CP 25WB+, IC 15WB+ OR FB-3000 WT
*BEARING THE UL CLASSIFICATION MARK

REVISIONS THIS SHEET
PERMIT REVIEW COMMENTS
3-27-2023
1 2 3 4

LNS
LNS ENGINEERS, INC.
7713 PIONEER WAY
GIG HARBOR, WA 98335
PHONE: 253-851-5175

LARRY N. STORMO
STATE OF WASHINGTON
16454
REGISTERED
PROFESSIONAL ENGINEER

St. Helens Mixed-Use
Tacoma, Washington
FIRE STOP DETAILS

PROJECT NO. : 22226.0
DRAWN BY : NBD
ISSUE DATE : 11-9-2022
LATEST REV. THIS SET : 1 -

PERMIT SET
11-9-2022

1 N. Tacoma Ave, Suite 201 Tacoma, Washington 98403 (253) 584-5207

PLOT DATE: May. 25, 2023 - 11:31am
FILE NAME: P:\CAD\2022\22226.0 - St. Helens Mixed Use\ 22226.0--MP00--THRU--MP08.dwg

LNS

LNS ENGINEERS, INC.
7713 PIONEER WAY
GIG HARBOR, WA 98335
PHONE: 253-851-5175

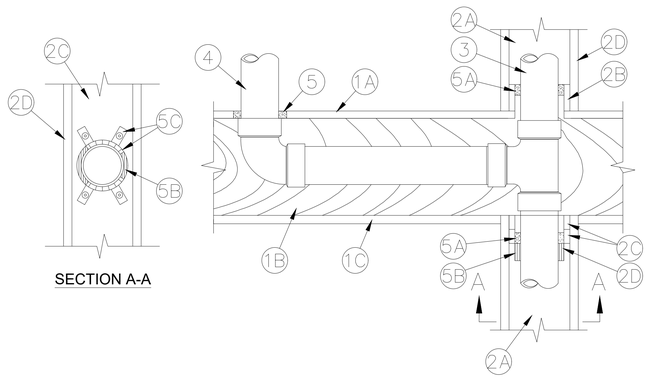
LARRY N. STOREN
STATE OF WASHINGTON
16454
REGISTERED PROFESSIONAL ENGINEER

REVISIONS THIS SHEET

PERMIT REVIEW COMMENTS 3-27-2023

1 2 3 4

System No. F-C-2369
June 23, 2015
T Rating - 1 Hr
F Rating - 1 Hr

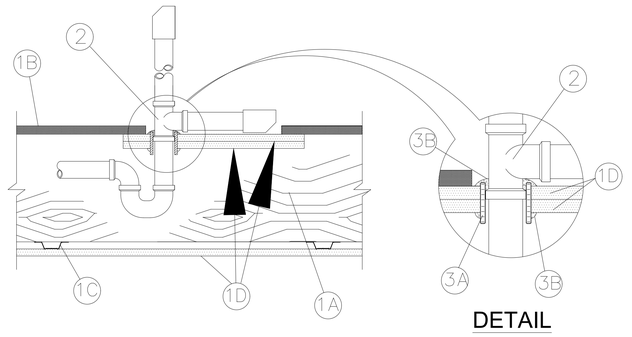


1. **FLOOR ASSEMBLY —** THE 1 HR FIRE RATED WOOD TRUSS OR COMBINATION WOOD AND STEEL TRUSS FLOOR-CEILING ASSEMBLY SHALL BE CONSTRUCTED OF THE MATERIALS AND IN
THE MANNER DESCRIBED IN THE INDIVIDUAL L500 SERIES DESIGN IN THE UL FIRE RESISTANCE DIRECTORY, AS SUMMARIZED BELOW:
   A. **FLOORING SYSTEM —** LUMBER OR PLYWOOD SUBFLOOR WITH FINISH FLOOR OF LUMBER, PLYWOOD OR **FLOOR TOPPING MIXTURE*** AS SPECIFIED IN THE INDIVIDUAL
   FLOOR-CEILING DESIGN. DIAM OF OPENING SHALL BE 1/2 IN. TO 1 IN. (13 TO 25 MM) LARGER THAN THE OUTSIDE DIAM OF NONMETALLIC PIPE (ITEMS 3 AND 4).
   B. **JOISTS —** NOM 10 IN. (254 MM) DEEP (OR DEEPER) LUMBER, STEEL OR COMBINATION LUMBER AND STEEL JOISTS, TRUSSES OR **STRUCTURAL WOOD MEMBERS*** WITH BRIDGING AS REQUIRED AND ENDS FIRESTOPPED.
   C. **GYPSUM BOARD* —** NOM 4 FT (1.2 M) WIDE BY 5/8 IN. (16 MM) THICK, ATTACHED AS DESCRIBED IN THE INDIVIDUAL FLOOR-CEILING DESIGN.
2. **CHASE WALL —** THE THROUGH PENETRANT (ITEM NO. 3) SHALL BE ROUTED THROUGH A 1 HR FIRE-RATED SINGLE, DOUBLE OR STAGGERED WOOD STUDS/GYPSUM BOARD CHASE
WALL CONSTRUCTED OF THE MATERIALS AND IN THE MANNER SPECIFIED IN THE INDIVIDUAL U300 SERIES WALL AND PARTITION DESIGNS IN THE UL FIRE RESISTANCE DIRECTORY AND
SHALL INCLUDE THE FOLLOWING CONSTRUCTION FEATURES:
   A. **STUDS —** NOM 2 BY 6 IN. (51 BY 152 MM) LUMBER STUDS.
   B. **SOLE PLATE —** NOM 2 BY 6 IN. (51 BY 152 MM) LUMBER PLATES. DIAM OF OPENING OR LENGTH OF NOTCH-OUT IN SOLE PLATE TO BE 1/2 IN. (13 MM) LARGER THAN
   OUTSIDE DIAM OF PIPE.
   C. **TOP PLATE —** THE DOUBLE TOP PLATE SHALL CONSIST OF TWO NOM 2 BY 6 IN. (51 BY 152 MM) LUMBER PLATES. DIAM OF OPENING OR LENGTH OF NOTCH-OUT IN TOP
   PLATE TO BE 1/2 IN. (13 MM) LARGER THAN OUTSIDE DIAM OF PIPE.
   D. **GYPSUM BOARD* —** THICKNESS, TYPE, NUMBER OF LAYERS AND FASTENERS SHALL BE AS SPECIFIED IN INDIVIDUAL WALL AND PARTITION DESIGN.
3. **THROUGH PENETRANT —** ONE NONMETALLIC PIPE TO BE INSTALLED WITHIN THE FIRESTOP SYSTEM. PIPE TO BE RIGIDLY SUPPORTED ON BOTH SIDES OF FLOOR-CEILING ASSEMBLY.
THE ANNULAR SPACE BETWEEN PIPE AND PERIPHERY OF OPENING SHALL BE MIN 0 IN. (POINT CONTACT) TO MAX 1/2 IN. (0 TO 13 MM). THE FOLLOWING TYPES AND SIZES OF
NONMETALLIC PIPES MAY BE USED:
   A. **POLYVINYL CHLORIDE (PVC) PIPE —** NOM 4 IN. (102 MM) DIAM (OR SMALLER) SCHEDULE 40 SOLID CORE PVC PIPE FOR USE IN CLOSED (PROCESS OR SUPPLY)
   OR VENTED (DRAIN, WASTE OR VENT) PIPING SYSTEM.
   B. **CELLULAR CORE POLYVINYL CHLORIDE (CCPVC) PIPE —** NOM 4 IN. (102 MM) DIAM (OR SMALLER) SCHEDULE 40 CELLULAR CORE PVC PIPE FOR USE IN CLOSED
   (PROCESS OR SUPPLY) OR VENTED (DRAIN, WASTE OR VENT) PIPING SYSTEM.
   C. **ACRYLONITRILE BUTADIENE STYRENE (ABS) PIPE —** NOM 4 IN. (102 MM) DIAM (OR SMALLER) SCHEDULE 40 SOLID CORE ABS PIPE FOR USE IN CLOSED
   (PROCESS OR SUPPLY) OR VENTED (DRAIN, WASTE OR VENT) PIPING SYSTEM.
   D. **CELLULAR CORE ACRYLONITRILE BUTADIENE STYRENE (CCABS) PIPE —** NOM 4 IN. (102 MM) DIAM (OR SMALLER) SCHEDULE 40 CELLULAR CORE ABS PIPE FOR
   USE IN CLOSED (PROCESS OR SUPPLY) OR VENTED (DRAIN, WASTE OR VENT) PIPING SYSTEM.
   E. **CHLORINATED POLYVINYL CHLORIDE (CPVC) PIPE —** NOM 4 IN. (102 MM) DIAM (OR SMALLER) SDR13.5 CPVC PIPE FOR USE IN CLOSED (PROCESS OR SUPPLY) PIPING SYSTEMS.
4. **BRANCH PIPING —** (OPTIONAL) - ONE NONMETALLIC PIPE TO BE CONNECTED TO THROUGH PENETRANT (ITEM 3) AND INSTALLED WITHIN OPENING IN SUBFLOOR. THE ANNULAR
SPACE BETWEEN PIPE AND PERIPHERY OF OPENING SHALL BE MIN 0 IN. (POINT CONTACT) TO MAX 1/2 IN. (13 MM). THE FOLLOWING TYPES AND SIZES OF NONMETALLIC PIPES MAY
BE USED:
   A. **POLYVINYL CHLORIDE (PVC) PIPE —** NOM 3 IN. (76 MM) DIAM (OR SMALLER) SCHEDULE 40 SOLID CORE PVC PIPE FOR USE IN CLOSED (PROCESS OR SUPPLY) OR
   VENTED (DRAIN, WASTE OR VENT) PIPING SYSTEM.
   B. **CELLULAR CORE POLYVINYL CHLORIDE (CCPVC) PIPE —** NOM 3 IN. (76 MM) DIAM (OR SMALLER) SCHEDULE 40 CELLULAR CORE PVC PIPE FOR USE IN CLOSED
   (PROCESS OR SUPPLY) OR VENTED (DRAIN, WASTE OR VENT) PIPING SYSTEM.
   C. **ACRYLONITRILE BUTADIENE STYRENE (ABS) PIPE —** NOM 3 IN. (76 MM) DIAM (OR SMALLER) SCHEDULE 40 SOLID CORE ABS PIPE FOR USE IN CLOSED (PROCESS
   OR SUPPLY) OR VENTED (DRAIN, WASTE OR VENT) PIPING SYSTEMS.
   D. **CELLULAR CORE ACRYLONITRILE BUTADIENE STYRENE (CCABS) PIPE —** NOM 3 IN. (76 MM) DIAM (OR SMALLER) SCHEDULE 40 CELLULAR CORE ABS PIPE FOR
   USE IN CLOSED (PROCESS OR SUPPLY) OR VENTED (DRAIN, WASTE OR VENT) PIPING SYSTEM.
5. **FIRESTOP SYSTEM —** THE DETAILS OF THE FIRESTOP SYSTEM SHALL BE AS FOLLOWS:
   A. **FILL, VOID OR CAVITY MATERIALS* -- CAULK OR SEALANT —** MIN 3/4 IN. (19 MM) THICKNESS OF CAULK APPLIED WITHIN ANNULAR SPACE AROUND PERIMETER OF
   THROUGH PENETRANT (ITEM 3), FLUSH WITH TOP SURFACE OF FLOOR OR SOLE PLATE AND FLUSH WITH BOTTOM SURFACE OF TOP PLATE. MIN 3/4 IN. (19 MM) THICKNESS OF
   CAULK APPLIED WITHIN ANNULAR SPACE AROUND PERIMETER OF BRANCH PIPING (ITEM 4), FLUSH WITH TOP SURFACE OF FLOOR. MIN 1/2 IN. (13 MM) DIAM BEAD APPLIED
   AT THE PIPE/FLOOR INTERFACE AND THE PIPE/PLATE INTERFACE.
   3M COMPANY 3M FIRE PROTECTION PRODUCTS — CP 25WB+ CAULK, IC 15WB+ CAULK OR FB-3000 WT SEALANT. CP 25WB+ NOT SUITABLE FOR USE WITH CPVC PIPES.
   B. **FILL, VOID OR CAVITY MATERIALS* — WRAP STRIP —** NOM 1/8 IN. (3.2 MM) THICK INTUMESCENT MATERIAL SUPPLIED IN 2 IN. (51 MM) WIDE STRIPS. WRAP STRIP
   TIGHTLY WRAPPED AROUND NONMETALLIC PIPE AND BUTTED TIGHTLY AGAINST THE BOTTOM SURFACE OF THE TOP PLATE. TWO CONTINUOUS LAYERS AND TWO PARTIAL LAYERS
   OF WRAP STRIP ARE REQUIRED. THE TWO PARTIAL LAYERS OF WRAP STRIP SHALL EACH BE INSTALLED ON OPPOSING SIDES OF THE PIPE, IN LINE WITH THE DIRECTION OF THE TOP
   PLATE. THE ENDS OF THE PARTIAL LAYERS SHALL BE ON A LINE TANGENT TO THE PERIPHERY OF THE CONTINUOUS LAYERS AND PARALLEL WITH THE EDGE OF THE TOP PLATE.
   LAYERS OF WRAP STRIP TEMPORARILY HELD IN PLACE WITH TAPE.
   3M COMPANY 3M FIRE PROTECTION PRODUCTS — ULTRA GS
   C. **STEEL COLLAR —** NOM 2 IN. (51 MM) DEEP COLLAR WITH 1-1/4 IN. (32 MM) WIDE BY 2 IN. (51 MM) LONG ANCHOR TABS AND MIN 3/4 IN. (19 MM) LONG TABS TO
   RETAIN WRAP STRIP LAYERS. COILS OF PRECUT 0.016 IN. (0.41 MM) THICK GALV SHEET STEEL AVAILABLE FROM WRAP STRIP MANUFACTURER. AS AN ALTERNATE, COLLAR MAY
   BE FIELD-FABRICATED FROM MIN 0.016 IN. (0.41 MM) THICK GALV SHEET STEEL IN ACCORDANCE WITH INSTRUCTION SHEET SUPPLIED BY WRAP STRIP MANUFACTURER. STEEL
   COLLAR, WITH ANCHOR TABS BENT OUTWARD 90 DEG, WRAPPED TIGHTLY AROUND WRAP STRIP LAYERS WITH MIN 1 IN. (25 MM) OVERLAP AT THE SEAM. WITH STEEL ANCHOR
   TABS PRESSED TIGHTLY AGAINST THE TOP PLATE, COMPRESS COLLAR AROUND WRAP STRIP LAYERS USING A MIN 1/2 IN. (13 MM) WIDE BY 0.028 IN. (.71 MM) THICK
   STAINLESS STEEL BAND CLAMP WITH WORM DRIVE TIGHTENING MECHANISM AT THE COLLAR MIDHEIGHT. SECURE COLLAR TO TOP PLATE WITH FOUR ANCHOR TABS, TWO ON
   EACH SIDE OF PIPE, USING MIN 1-1/4 IN. (32 MM) LONG STEEL SCREWS IN CONJUNCTION WITH 1 1/4 IN. (32 MM) DIAM STEEL FENDER WASHERS. AS A FINAL STEP,
   BEND WRAP STRIP RETAINER TABS 90 DEG TOWARD PIPE TO LOCK WRAP STRIP LAYERS IN POSITION.

*** INDICATES SUCH PRODUCTS SHALL BEAR THE UL OR CUL CERTIFICATION MARK FOR JURISDICTIONS EMPLOYING THE UL OR CUL CERTIFICATION (SUCH AS CANADA).**

RESPECTIVELY.

System No. F-C-2026
May 18, 2005
F Rating - 1 Hr
T Rating - 1 Hr



1. FLOOR-CEILING ASSEMBLY - THE FIRE-RATED SOLID OR TRUSSED LUMBER JOIST FLOOR-CEILING ASSEMBLY SHALL BE CONSTRUCTED OF THE MATERIALS AND IN THE MANNER SPECIFIED IN THE INDIVIDUAL L500 SERIES FLOOR-CEILING DESIGNS IN THE UL FIRE RESISTANCE DIRECTORY AND SHALL INCLUDE THE FOLLOWING CONSTRUCTION FEATURES:

A. JOISTS - NOM 10 IN. (254 MM) DEEP (OR DEEPER) LUMBER, STEEL OR COMBINATION LUMBER AND STEEL JOISTS, TRUSSES OR **STRUCTURAL WOOD MEMBERS*** WITH BRIDGING AS REQUIRED AND WITH ENDS FIRESTOPPED.
B. FLOORING SYSTEM - LUMBER OR PLYWOOD SUBFLOOR WITH FINISH FLOOR OF LUMBER, PLYWOOD OR **FLOOR TOPPING MIXTURE*** AS SPECIFIED IN THE INDIVIDUAL FLOOR-CEILING DESIGN. RECTANGULAR CUTOUT IN FLOORING TO ACCOMMODATE THE BATHTUB DRAIN PIPING (ITEM 2) TO BE MAX 8 BY 12 IN. (203 MM BY 305 MM).
C. FURRING CHANNELS - RIGID OR RESILIENT GALV STEEL FURRING CHANNELS INSTALLED PERPENDICULAR TO JOISTS.
D. GYPSUM BOARD* - NOM 4 FT (122 CM) WIDE BY 5/8 IN. (16 MM) THICK. WALLBOARD SCREW-ATTACHED TO FURRING CHANNELS AS SPECIFIED IN THE INDIVIDUAL FLOOR-CEILING DESIGN. TWO PIECES OF GYPSUM WALLBOARD, EACH MIN 4 IN. (102 MM) LONGER AND WIDER THAN THE CUTOUT IN THE FLOORING, SCREW-ATTACHED TO BOTTOM OF FLOORING CONCENTRIC WITH CUTOUT. DIAM OF OPENING HOLE-SAWED THROUGH BOTH LAYERS OF THE GYPSUM WALLBOARD PATCH TO BE 1/2 IN. TO 5/8 IN. (13 MM TO 16 MM) LARGER THAN OUTSIDE DIAM OF BATHTUB DRAIN PIPING (ITEM 2).

2. DRAIN PIPING - NOM 1-1/2 IN. (38 MM) DIAM SCHEDULE 40 PVC PIPE AND DRAIN FITTINGS CEMENTED TOGETHER AND PROVIDED WITH PVC BATHTUB WASTE/OVERFLOW FITTING.

3. FIRESTOP SYSTEM - THE DETAILS OF THE FIRESTOP SYSTEM SHALL BE AS FOLLOWS:

A. FILL,VOID OR CAVITY MATERIALS* - WRAP STRIP - NOM 1/4 IN. (6 MM) THICK INTUMESCENT ELASTOMERIC MATERIAL FACED ON ONE SIDE WITH ALUMINUM FOIL, SUPPLIED IN 2 IN. (51 MM) WIDE STRIPS. NOM 2 IN. (51 MM) WIDE STRIP TIGHTLY-WRAPPED AROUND PVC DRAIN PIPING (FOIL SIDE EXPOSED), SECURED WITH TWO STEEL WIRE TIES, AND SLID INTO HOLE-SAWED OPENING IN GYPSUM WALLBOARD PATCH (ITEM 1D). BOTTOM EDGE OF WRAP STRIP TO PROJECT APPROX 1/2 IN. (13 MM) BELOW BOTTOM SURFACE OF GYPSUM WALLBOARD PATCH.

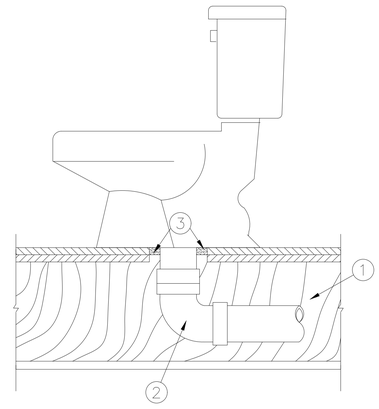
3M COMPANY - FS-195+

B. FILL,VOID OR CAVITY MATERIALS* - CAULK OR SEALANT - NOM 1/4 IN. (6 MM) DIAM BEAD OF CAULK TO BE APPLIED TO PERIMETER OF WRAP STRIP AT ITS EGRESS FROM THE UNDERSIDE OF THE GYPSUM WALLBOARD PATCH. NOM 1/4 IN. (6 MM) THICKNESS OF CAULK TO BE APPLIED TO THE EXPOSED EDGE OF THE WRAP STRIP LAYER AND TO FILL ALL GAPS BETWEEN THE WRAP STRIP LAYER AND THE TEE OF THE DRAIN FITTING ON THE TOP SURFACE OF THE GYPSUM WALLBOARD PATCH.

3M COMPANY - CP 25WB+, IC 15 WB, FIREDAM 150+ CAULK OR FB-3000 WT SEALANT

*BEARING THE UL CLASSIFICATION MARKING

System No. F-C-2349
July 30, 2009
F Rating — 1 Hr
T Rating — 1 Hr



1. **FLOOR-CEILING ASSEMBLY —** THE 1 HR FIRE-RATED SOLID OR TRUSSED LUMBER JOIST FLOOR-CEILING ASSEMBLY SHALL BE CONSTRUCTED OF THE MATERIALS AND IN THE MANNER SPECIFIED IN THE INDIVIDUAL L500 SERIES FLOOR-CEILING DESIGNS IN THE UL FIRE RESISTANCE DIRECTORY. THE GENERAL CONSTRUCTION DETAILS OF THE FLOOR-CEILING ASSEMBLY ARE SUMMARIZED BELOW:
   A. **FLOORING SYSTEM —** LUMBER OR PLYWOOD SUBFLOOR WITH FINISH FLOOR OF LUMBER, PLYWOOD OR **FLOOR TOPPING MIXTURE*** AS SPECIFIED IN THE INDIVIDUAL FLOOR-CEILING DESIGN. DIAM OF OPENING SHALL BE 1 IN. (25 MM) LARGER THAN DIAM OF PIPE. MAX DIAM OF OPENING IS 5-1/2 IN. (140 MM).
   B. **WOOD JOISTS —** NOM 10 IN. (254 MM) DEEP (OR DEEPER) LUMBER, STEEL OR COMBINATION LUMBER AND STEEL JOISTS, TRUSSES OR **STRUCTURAL WOOD MEMBERS*** WITH BRIDGING AS REQUIRED AND WITH ENDS FIRESTOPPED.
   C. **GYPSUM BOARD* —** NOM 4 FT (1.2 M) WIDE BY 5/8 IN. (16 MM) THICK AS SPECIFIED IN THE INDIVIDUAL FLOOR-CEILING DESIGN.
2. **NONMETALLIC PIPE —** ONE NONMETALLIC DRAIN PIPE WITH MAX 4 IN. (102 MM) DIAM TOILET FLANGE INSTALLED WITHIN THE FIRESTOP SYSTEM. THE ANNULAR SPACE BETWEEN DRAIN PIPE AND PERIPHERY OF OPENING SHALL BE MIN 0 IN. (POINT CONTACT) TO MAX 1 IN. (25 MM). PIPE TO BE RIGIDLY SUPPORTED ON LOWER SIDE OF FLOOR ASSEMBLY. PIPE TO BE RIGIDLY SUPPORTED ON LOWER SIDE OF FLOOR ASSEMBLY. THE FOLLOWING TYPES AND SIZES OF NONMETALLIC PIPES, FITTINGS AND FLANGES MAY BE USED:
   A. **POLYVINYL CHLORIDE (PVC) PIPE —** NOM 4 IN. (102 MM) DIAM (OR SMALLER) SCHEDULE 40 SOLID CORE OR CELLULAR CORE PVC PIPE FOR USE IN VENTED (DRAIN, WASTE OR VENT) PIPING SYSTEM.
   B. **ACRYLONITRILE BUTADIENE STYRENE (ABS) PIPE —** NOM 4 IN. (102 MM) DIAM (OR SMALLER) SCHEDULE 40 CELLULAR CORE OR SOLID CORE ABS PIPE FOR USE IN VENTED (DRAIN, WASTE OR VENT) PIPING SYSTEMS.
3. **FILL, VOID OR CAVITY MATERIALS* -- CAULK OR SEALANT —** MIN 1/2 IN. (13 MM) THICKNESS OF CAULK APPLIED WITHIN ANNULAR SPACE AROUND PERIMETER OF PIPE (ITEM 2), FLUSH WITH TOP SURFACE OF FLOOR.
3M COMPANY — IC 15WB+, CP 25WB+, FB-3000WT
4. **WATER CLOSET —** FLOOR MOUNTED VITREOUS CHINA WATER CLOSET.

*BEARING THE UL CLASSIFICATION MARK

St. Helens Mixed-Use
Tacoma, Washington
FIRE STOP DETAILS

1 N. Tacoma Ave, Suite 201 Tacoma, Washington 98403 (253) 584-5207

PROJECT NO. : 22226.0
DRAWN BY : NBD
ISSUE DATE : 11-9-2022
LATEST REV. : 1
THIS SET : -

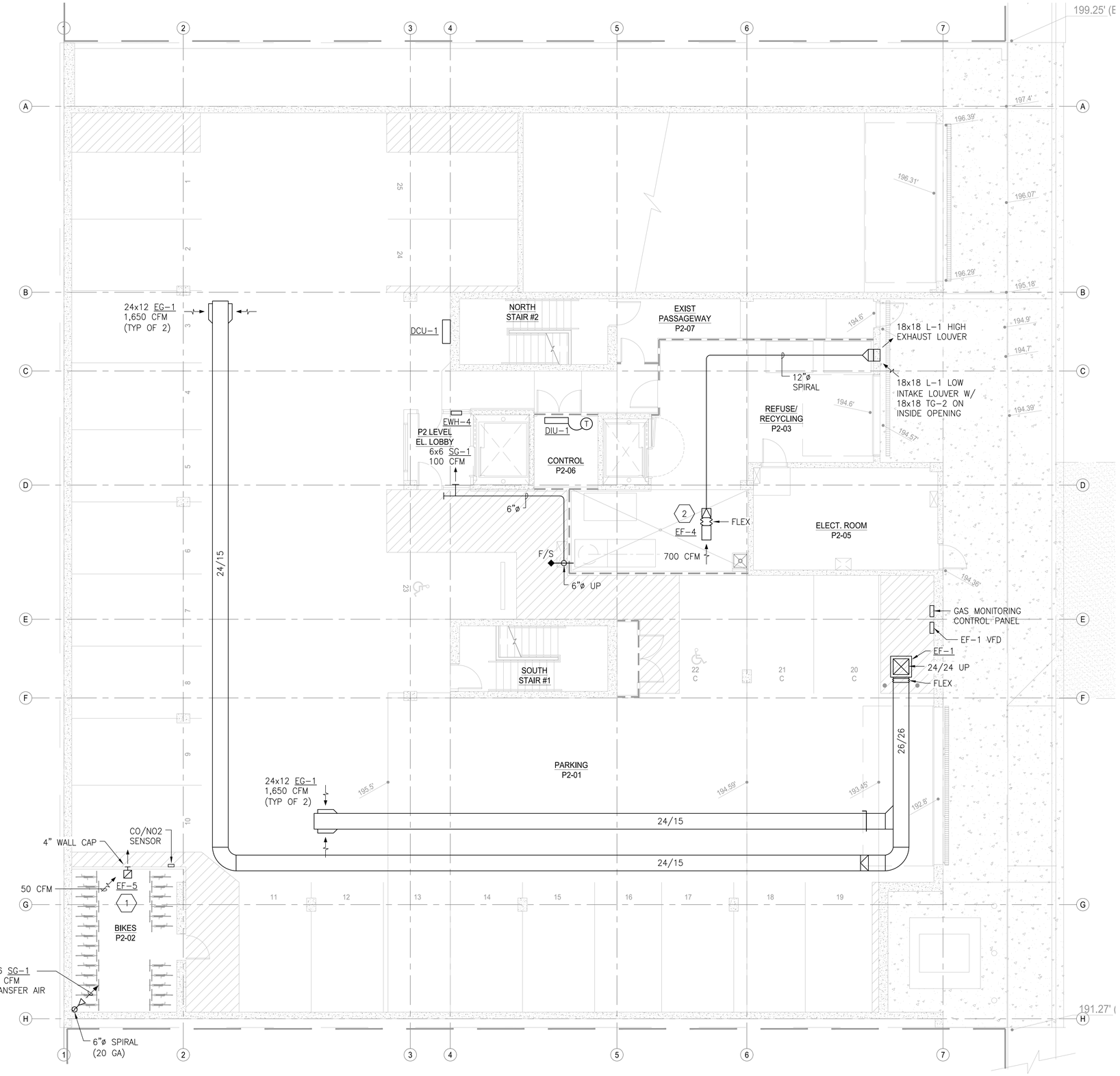
PERMIT SET
11-9-2022

PLOT DATE: May 25, 2023 - 11:32am

FILE NAME: F:\CAD\2022\22226.0 - St Helens Mixed Use\ 22226.0--MP00--THRU--MP08.dwg

CONSTRUCTION NOTES

1. FAN SHALL BE CONTROLLED BY GRILLE MOUNTED MOTION SENSOR W/ 20 MINUTE TIME DELAY OFF.
2. CONTINUOUS FAN OPERATION.



N

Garage Level P2 - Mechanical Plan

SCALE: 3/16" = 1'-0"

4 0 4 8 12

SCALE OF FEET

LNS

LNS ENGINEERS, INC.
7713 PIONEER WAY
GIG HARBOR, WA 98335
PHONE: 253-851-5175

LARRY N. STORDAHL — STATE OF WASHINGTON — 16454 — REGISTERED PROFESSIONAL ENGINEER

REVISIONS THIS SHEET

PERMIT REVIEW COMMENTS 3-27-2023

1 2 3 4

St. Helens Mixed-Use
Tacoma, Washington
Garage Level P2 - Mechanical Plan

1 N. Tacoma Ave, Suite 201 Tacoma, Washington 98403 (253) 584-5207

PROJECT NO. : 22226.0
DRAWN BY : NBD
ISSUE DATE : 11-9-2022
LATEST REV. THIS SET : 1 -

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11-9-2022

Casey + DeChant Architects, LLC Architecture And Planning

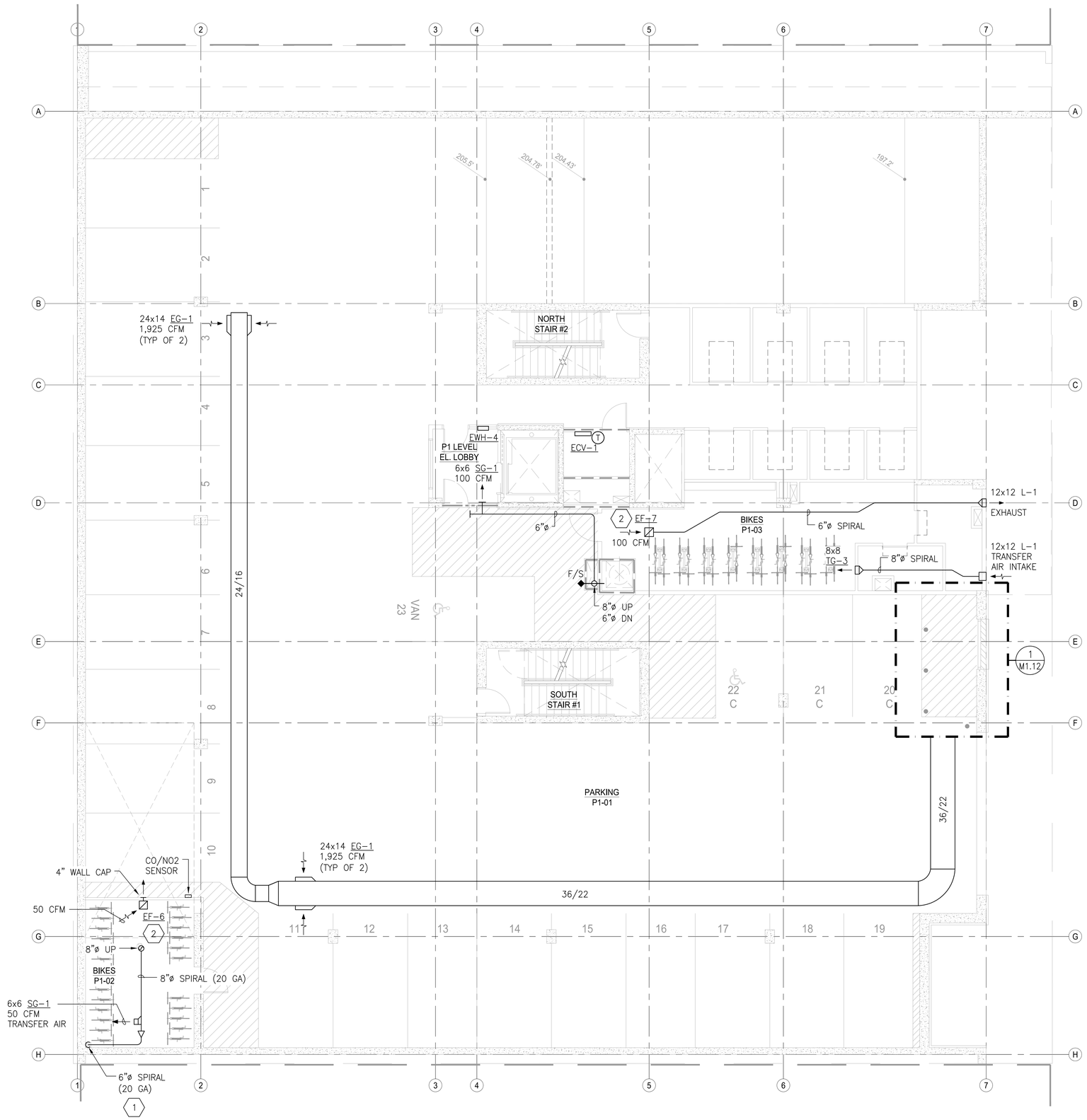
M1.1

PLOT DATE: May 25, 2023 - 11:34am

FILE NAME: F:\CAD\2022\22226.0 - St. Helens Mixed Use\ 22226.0-M11-THRU-M111.dwg

CONSTRUCTION NOTES

1. TRANSFER AIR SUPPLY, 6"ø SPIRAL DUCT (20 GA) DOWN TO P2 LEVEL BIKE STORAGE.
2. FAN SHALL BE CONTROLLED BY GRILLE MOUNTED MOTION SENSOR W/ 20 MINUTE TIME DELAY OFF.



N

Garage Level P1 - Mechanical Plan

SCALE: 3/16" = 1'-0"

4 0 4 8 12

SCALE OF FEET

LNS

LNS ENGINEERS, INC.
7713 PIONEER WAY
GIG HARBOR, WA 98335
PHONE: 253-851-5175

LARRY N. STORDAHL
STATE OF WASHINGTON
16454
REGISTERED PROFESSIONAL ENGINEER

REVISIONS THIS SHEET

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1 2 3 4

St. Helens Mixed-Use
Tacoma, Washington
Garage Level P1 - Mechanical Plan

1 N. Tacoma Ave, Suite 201 Tacoma, Washington 98403 (253) 584-5207

PROJECT NO. : 22226.0
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11-9-2022

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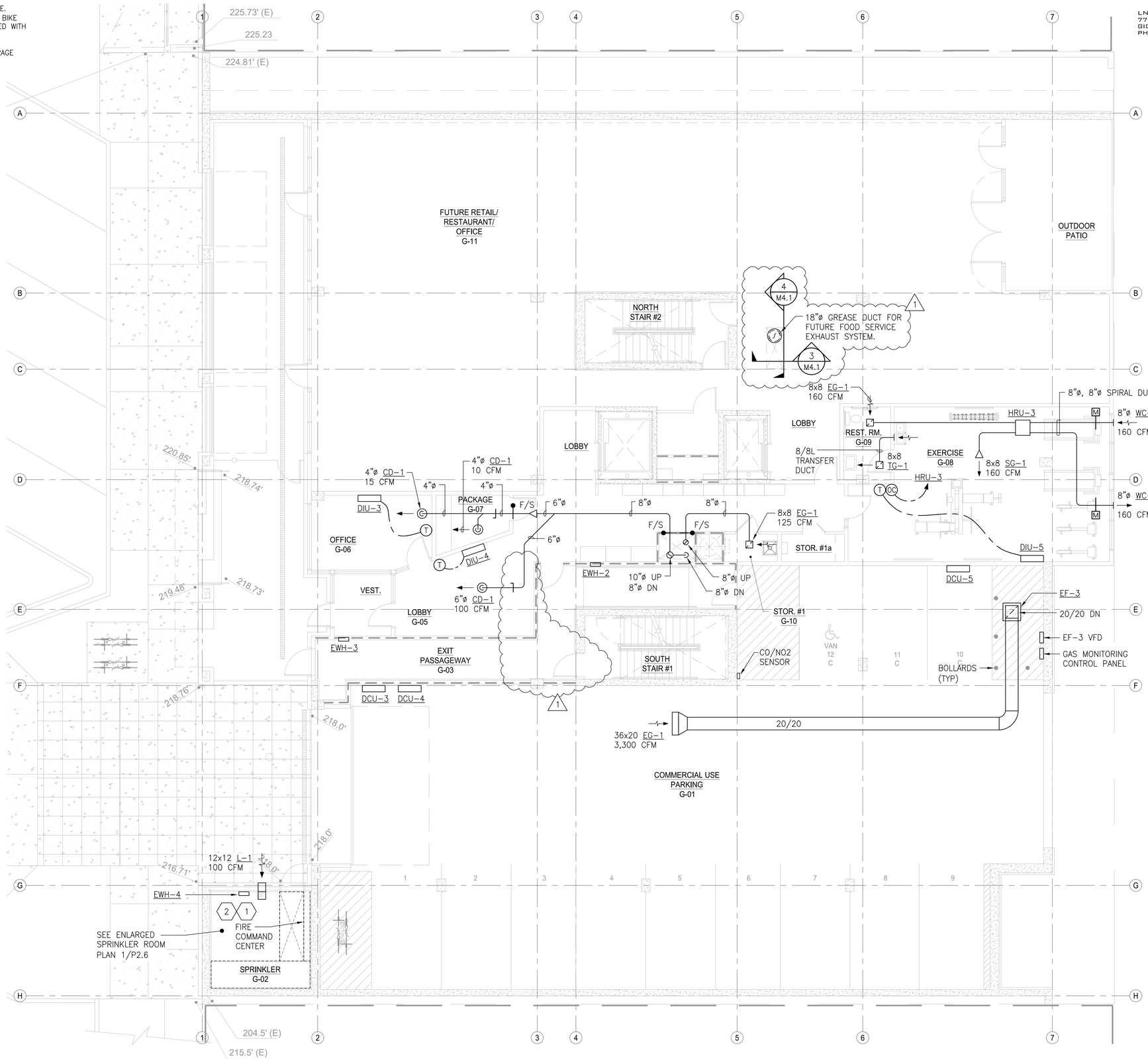
M1.2

PLOT DATE: May. 25, 2023 - 11:34am

FILE NAME: J:\CAD\2022\22226.0 - St Helens Mixed Use\ 22226.0-M11-THRU-M111.dwg

CONSTRUCTION NOTES

1. TRANSFER AIR SUPPLY TO P1 LEVEL AND P2 LEVEL BIKE STORAGE. PROVIDE 2" LINED INTAKE PLENUM WITH 8"ø DOWN TO P1 LEVEL BIKE STORAGE. INSULATE DUCT WITH MINIMUM R-7 DUCT WRAP COVERED WITH PVC JACKET.
2. PROVIDE 8"ø FIRE DAMPER AT FLOOR PENETRATION DOWN TO GARAGE LEVEL P1.



N

Ground Floor - Mechanical Plan

SCALE: 3/16" = 1'-0"

4 0 4 8 12

SCALE OF FEET

LNS

LNS ENGINEERS, INC.
7713 PIONEER WAY
GIG HARBOR, WA 98335
PHONE: 253-851-5175

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2

3

4

St. Helens Mixed-Use
Tacoma, Washington
Ground Floor - Mechanical Plan

PROJECT NO. : 22226.0
DRAWN BY : NBD
ISSUE DATE : 11-9-2022
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11-9-2022

1 N. Tacoma Ave, Suite 201 Tacoma, Washington 98403 (253) 584-5207

PLOT DATE: May. 25, 2023 - 11:34am

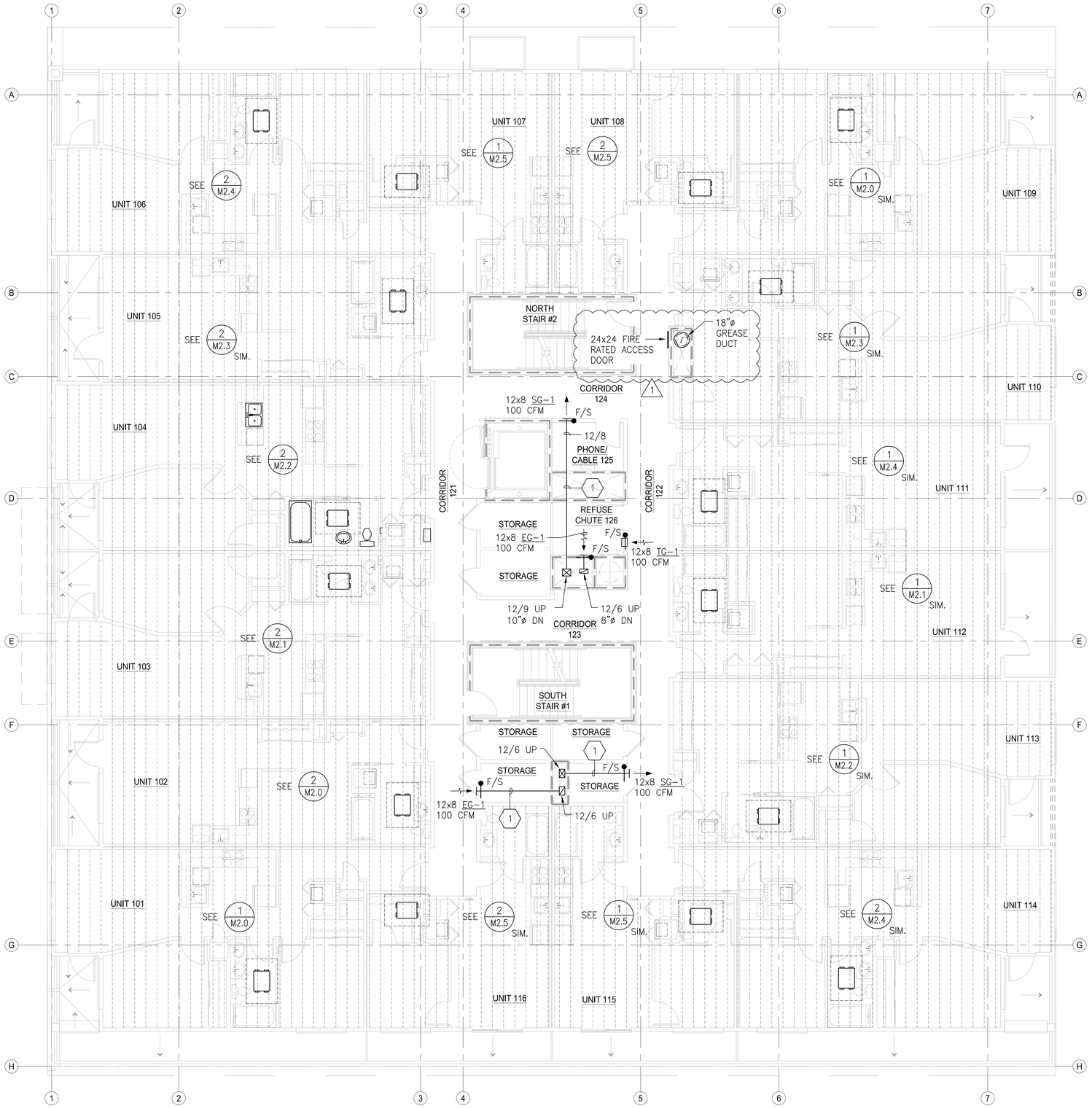
FILE NAME: F:\CAD\2022\22226.0 - St Helens Mixed Use_22226.0-M11-THRU-M111.dwg

CONSTRUCTION NOTES

1. WRAP DUCT FROM SHAFT PENETRATION TO CORRIDOR FIRE/SMOKE DAMPER WITH (2-HOUR) UL FIRE WRAP. (1)

GENERAL NOTES

1. TJI FRAMING SHOWN FOR INFORMATION AT 16" O.C. ACTUAL POSITIONING OF TJI'S TO BE FIELD VERIFIED.
2. FRAMING OF RECESSED CAVITIES AROUND ERV'S TO BE FIELD VERIFIED. SEE ARCHITECTURAL AND STRUCTURAL DRAWINGS.
3. SEE ENLARGED UNIT MECHANICAL PLANS FOR DUCT LAYOUT AND ERV SUPPORTS.



N

1st Floor - Mechanical Plan

SCALE: 3/16" = 1'-0"

4 0 4 8 12

SCALE OF FEET

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GIG HARBOR, WA 98335
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St. Helens Mixed-Use
Tacoma, Washington
1st Floor - Mechanical Plan

PROJECT NO. : 22226.0
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11-9-2022

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PLOT DATE: May 25, 2023 - 11:35am

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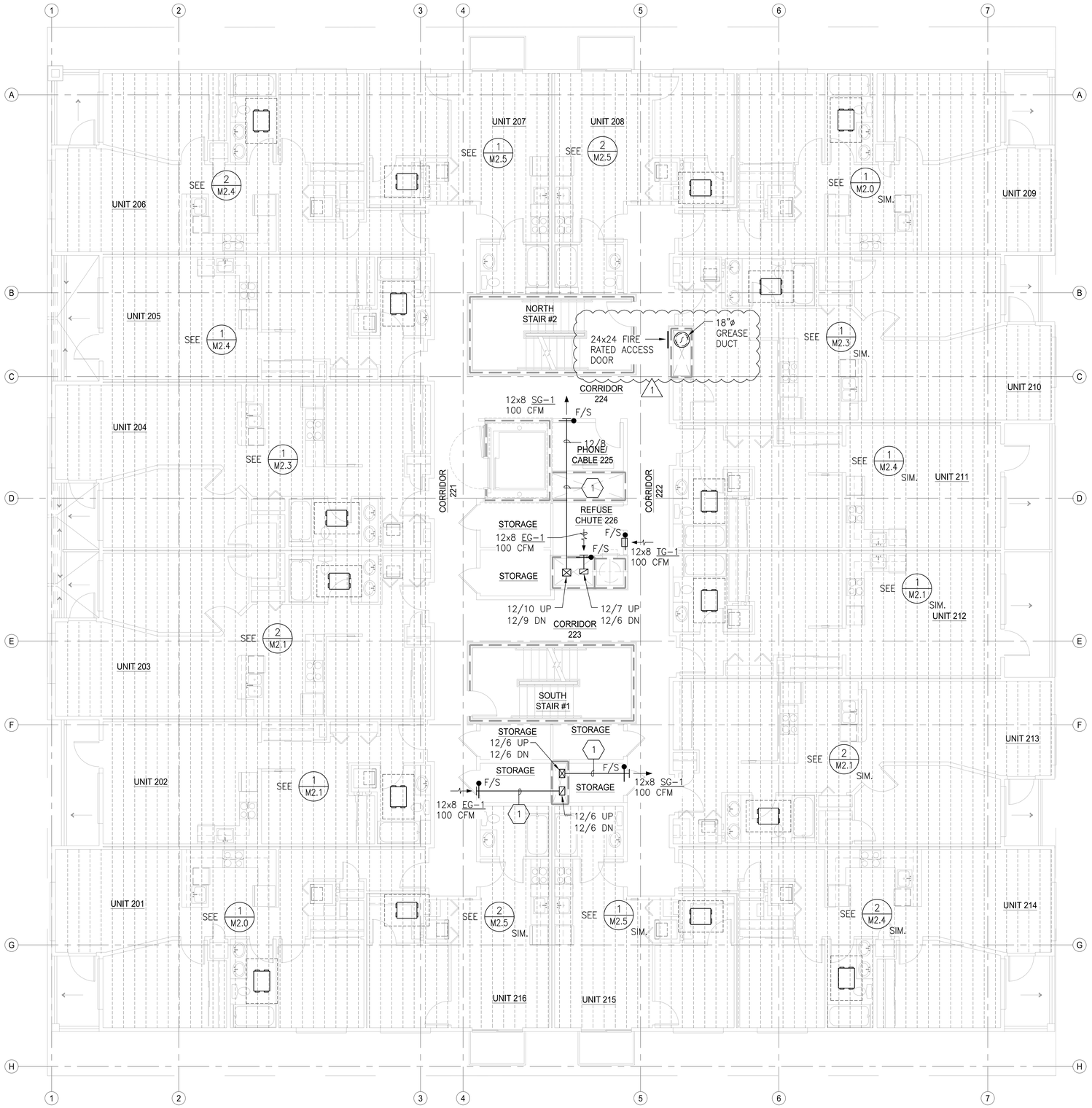
CONSTRUCTION NOTES

1. WRAP DUCT FROM SHAFT PENETRATION TO CORRIDOR FIRE/SMOKE DAMPER WITH (2-HOUR) UL FIRE WRAP. (1)

GENERAL NOTES

1. TJI FRAMING SHOWN FOR INFORMATION AT 16" O.C. ACTUAL POSITIONING OF TJI'S TO BE FIELD VERIFIED.
2. FRAMING OF RECESSED CAVITIES AROUND ERV'S TO BE FIELD VERIFIED. SEE ARCHITECTURAL AND STRUCTURAL DRAWINGS.
3. SEE ENLARGED UNIT MECHANICAL PLANS FOR DUCT LAYOUT AND ERV SUPPORTS.



N

2nd Floor - Mechanical Plan

SCALE: 3/16" = 1'-0"

4 0 4 8 12

SCALE OF FEET

LNS

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GIG HARBOR, WA 98335
PHONE: 253-851-5175

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2 3 4

St. Helens Mixed-Use
Tacoma, Washington
2nd Floor - Mechanical Plan

1 N. Tacoma Ave, Suite 201 Tacoma, Washington 98403 (253) 584-5207

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M1.5

PLOT DATE: May 25, 2023 - 11:35am

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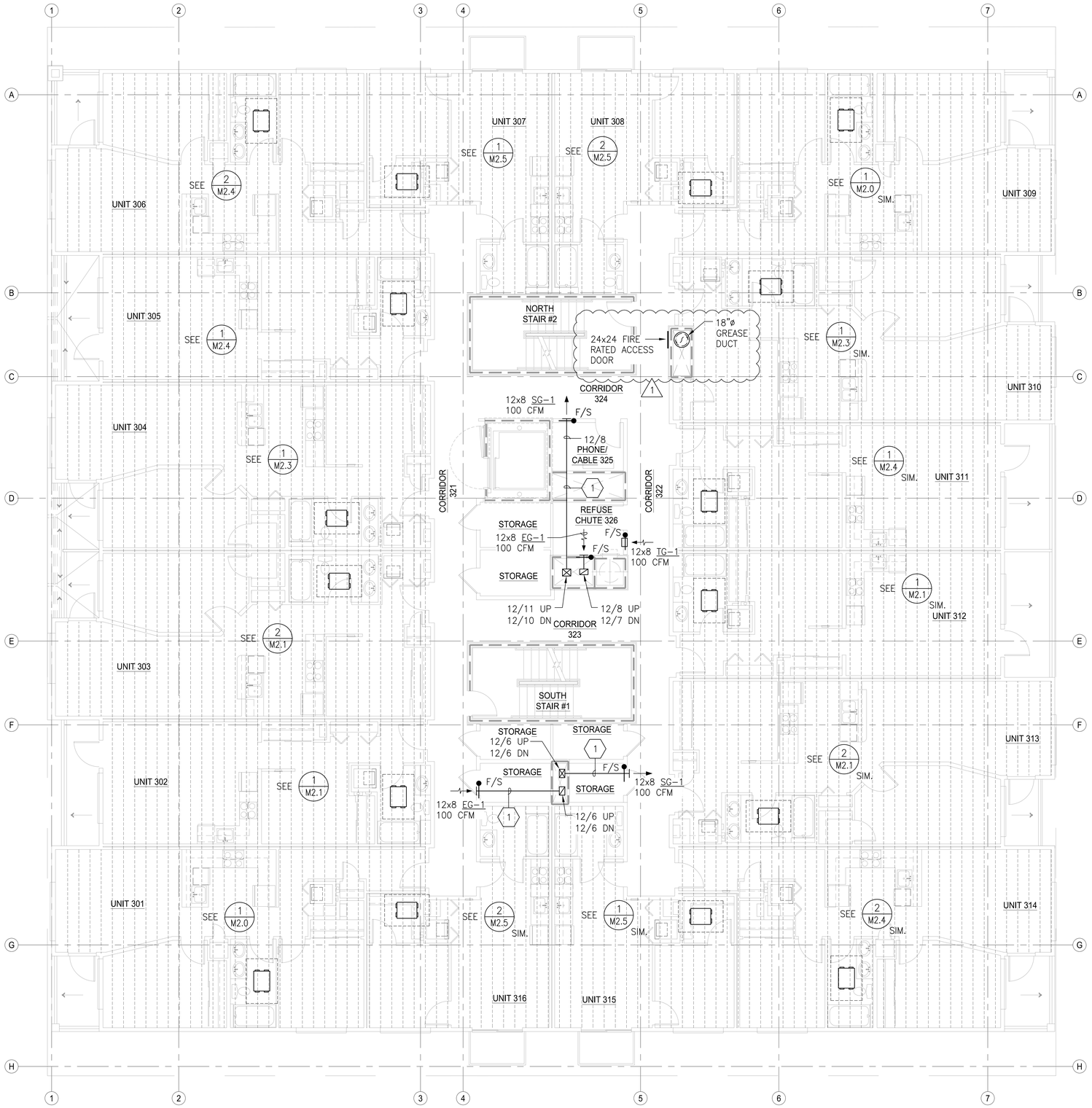
CONSTRUCTION NOTES

1. WRAP DUCT FROM SHAFT PENETRATION TO CORRIDOR FIRE/SMOKE DAMPER WITH (2-HOUR) UL FIRE WRAP. (1)

GENERAL NOTES

1. TJI FRAMING SHOWN FOR INFORMATION AT 16" O.C. ACTUAL POSITIONING OF TJI'S TO BE FIELD VERIFIED.
2. FRAMING OF RECESSED CAVITIES AROUND ERV'S TO BE FIELD VERIFIED. SEE ARCHITECTURAL AND STRUCTURAL DRAWINGS.
3. SEE ENLARGED UNIT MECHANICAL PLANS FOR DUCT LAYOUT AND ERV SUPPORTS.



N

3rd Floor - Mechanical Plan

SCALE: 3/16" = 1'-0"

4 0 4 8 12

SCALE OF FEET

LNS

LNS ENGINEERS, INC.
7713 PIONEER WAY
GIG HARBOR, WA 98335
PHONE: 253-851-5175

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1 PERMIT REVIEW COMMENTS 3-27-2023

2

3

4

St. Helens Mixed-Use
Tacoma, Washington
3rd Floor - Mechanical Plan

1 N. Tacoma Ave, Suite 201 Tacoma, Washington 98403 (253) 584-5207

PROJECT NO. : 22226.0
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ISSUE DATE : 11-9-2022
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11-9-2022

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Casey + DeChant Architects, LLC Architecture And Planning

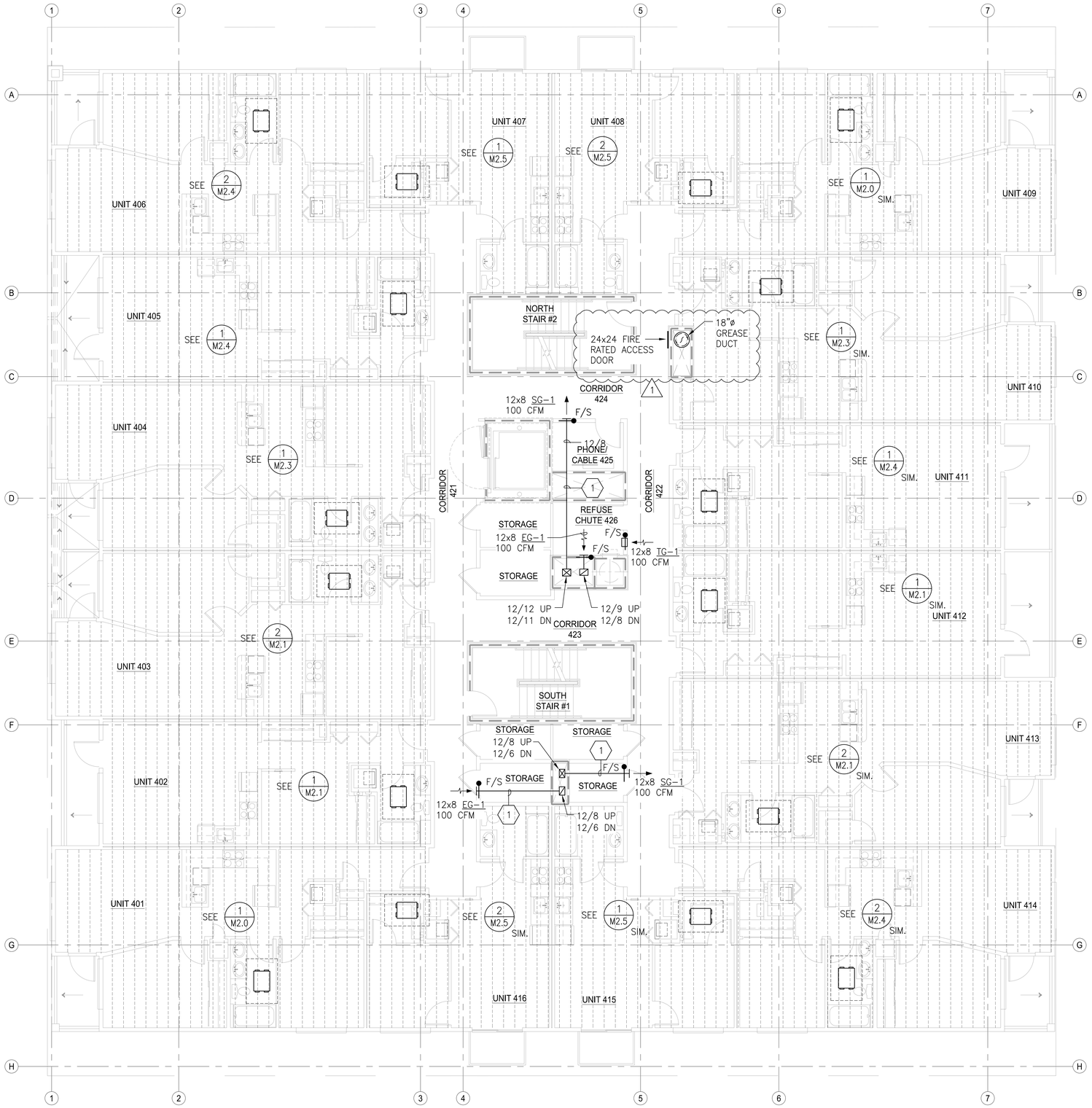
M1.6

CONSTRUCTION NOTES

1. WRAP DUCT FROM SHAFT PENETRATION TO CORRIDOR FIRE/SMOKE DAMPER WITH (2-HOUR) UL FIRE WRAP. (1)

GENERAL NOTES

1. TJI FRAMING SHOWN FOR INFORMATION AT 16" O.C. ACTUAL POSITIONING OF TJI'S TO BE FIELD VERIFIED.
2. FRAMING OF RECESSED CAVITIES AROUND ERV'S TO BE FIELD VERIFIED. SEE ARCHITECTURAL AND STRUCTURAL DRAWINGS.
3. SEE ENLARGED UNIT MECHANICAL PLANS FOR DUCT LAYOUT AND ERV SUPPORTS.



4th Floor - Mechanical Plan

SCALE: 3/16" = 1'-0"

SCALE OF FEET

LNS

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7713 PIONEER WAY
GIG HARBOR, WA 98335
PHONE: 253-851-5175

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REVISIONS THIS SHEET

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2

3

4

St. Helens Mixed-Use
Tacoma, Washington
4th Floor - Mechanical Plan

PROJECT NO. : 22226.0
DRAWN BY : NBD
ISSUE DATE : 11-9-2022
LATEST REV. THIS SET : 1 -

PERMIT SET
11-9-2022

1 N. Tacoma Ave, Suite 201 Tacoma, Washington 98403 (253) 584-5207

PLOT DATE: May 25, 2023 - 11:36am

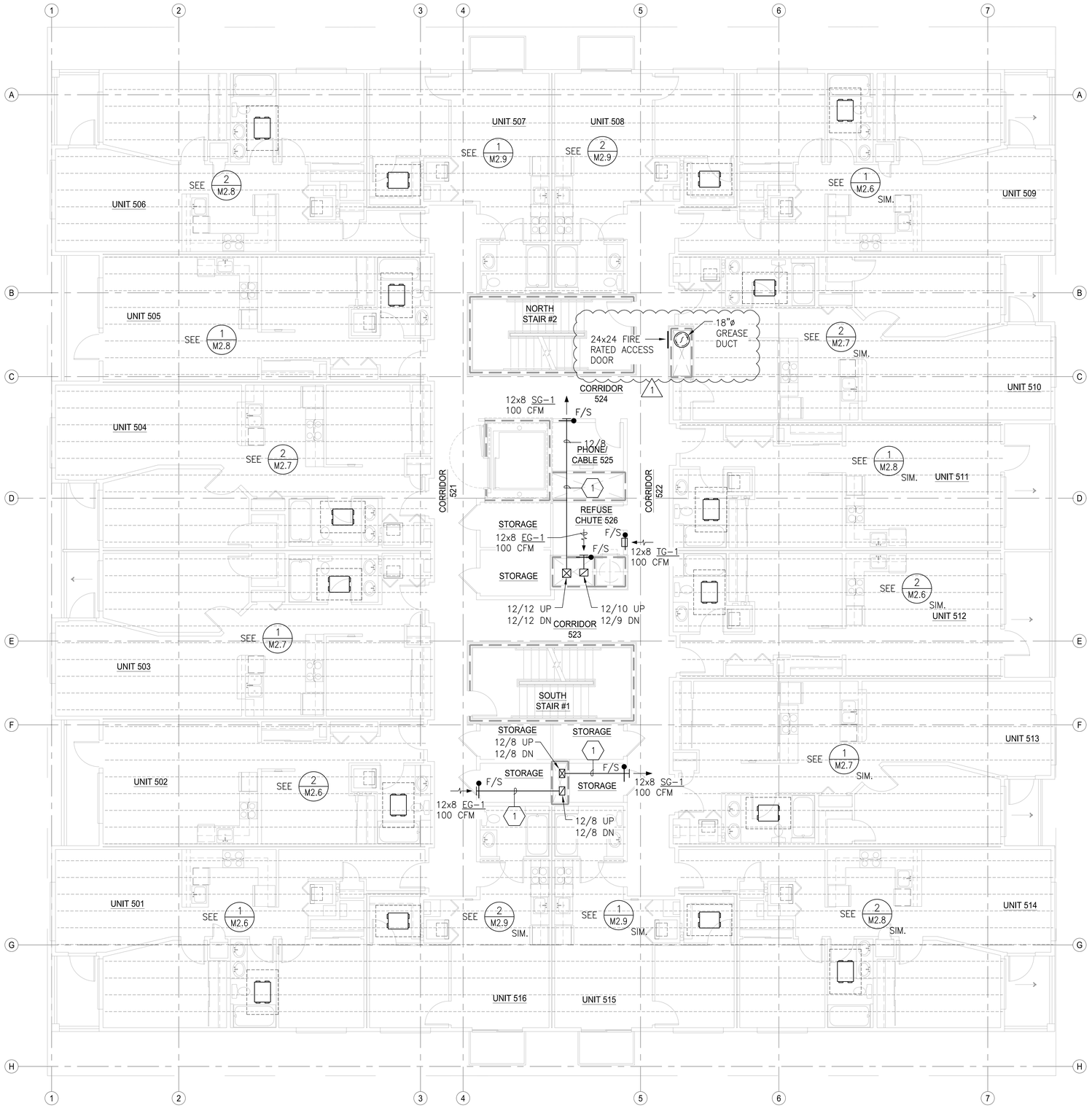
FILE NAME: F:\CAD\2022\22226.0 - St Helens Mixed Use\ 22226.0-M11-THRU-M111.dwg

CONSTRUCTION NOTES

1 WRAP DUCT FROM SHAFT PENETRATION TO CORRIDOR FIRE/SMOKE DAMPER WITH (2-HOUR) UL FIRE WRAP. 1

GENERAL NOTES

1. ATTIC TRUSSES ARE SHOWN AT 24" O.C. ACTUAL POSITIONING OF TRUSSES TO BE FIELD VERIFIED.
2. SEE ENLARGED UNIT MECHANICAL PLANS FOR DUCT LAYOUT AND ERV SUPPORTS.
3. ALL PENETRATIONS THROUGH CEILINGS INTO TRUSS SPACE SHALL BE FIRE CAULKED.



N

5th Floor - Mechanical Plan

SCALE: 3/16" = 1'-0"

4 0 4 8 12

SCALE OF FEET

LNS

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7713 PIONEER WAY
GIG HARBOR, WA 98335
PHONE: 253-851-5175

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2

3

4

St. Helens Mixed-Use
Tacoma, Washington
5th Floor - Mechanical Plan

PROJECT NO. : 22226.0
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M1.8

PLOT DATE: May 25, 2023 - 11:36am

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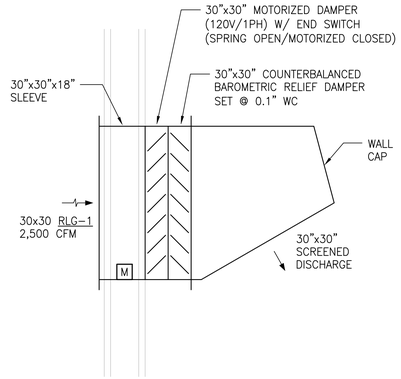
GENERAL NOTES

1. BUILDING ROOF MEMBRANE IS A TRO ROOFING PRODUCT.
2. ALL MECHANICAL ROOF SUPPORTS SHALL BE COMPATIBLE WITH THE TPO ROOFING PRODUCT.
3. ALL ROOF SUPPORTS SHALL BE INSTALLED IN COMPLIANCE WITH THE ROOF MANUFACTURER'S INSTALLATION REQUIREMENTS.

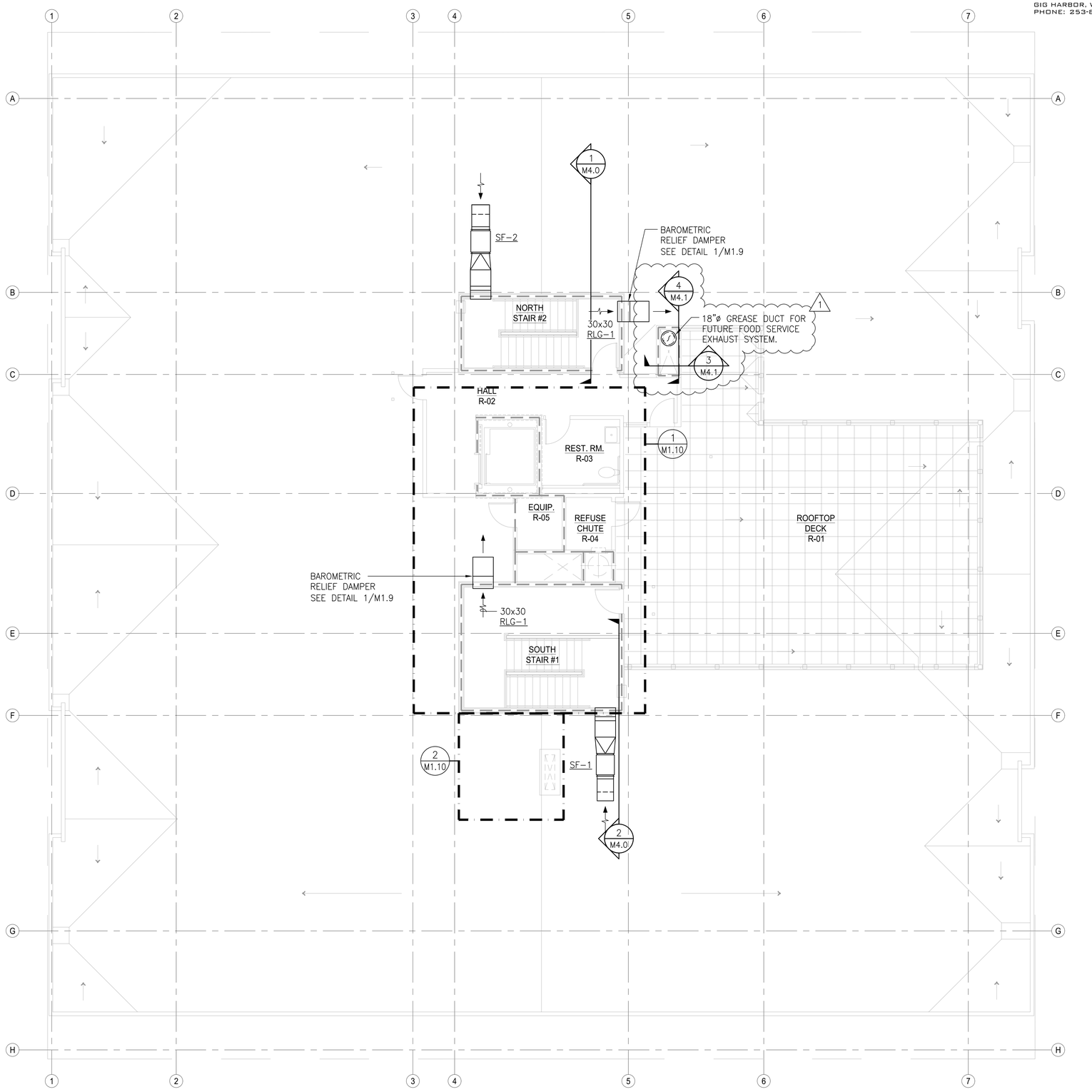


BAROMETRIC RELIEF DAMPER — 1 / M1.9

SCALE: 1" = 1'-0"

1 0 1 2

SCALE OF FEET



N

Roof - Mechanical Plan

SCALE: 3/16" = 1'-0"

4 0 4 8 12

SCALE OF FEET

LNS

LNS ENGINEERS, INC.
7713 PIONEER WAY
GIG HARBOR, WA 98335
PHONE: 253-851-5175

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1 2 3 4

St. Helens Mixed-Use
Tacoma, Washington
Roof - Mechanical Plan

PROJECT NO. : 22226.0
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M1.9

PLOT DATE: May 25, 2023 - 11:37am

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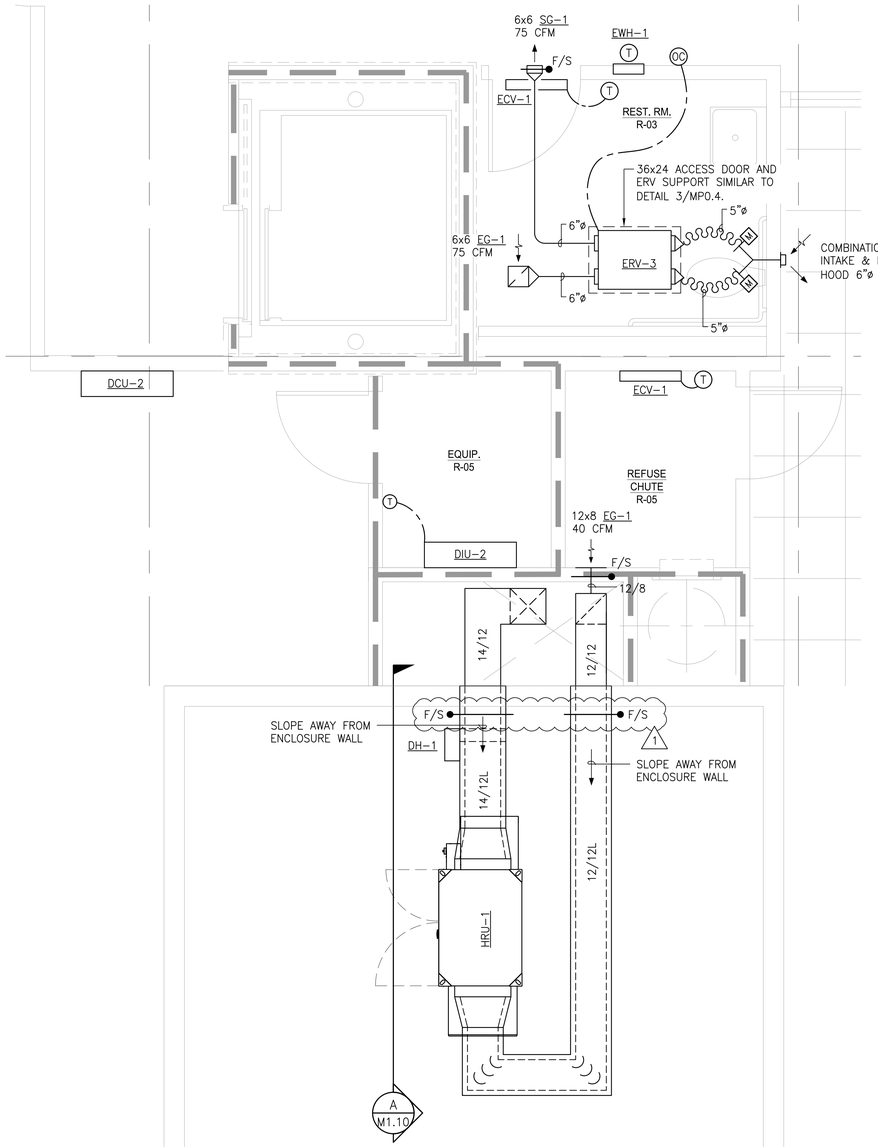


ENLARGED MECHANICAL PLAN

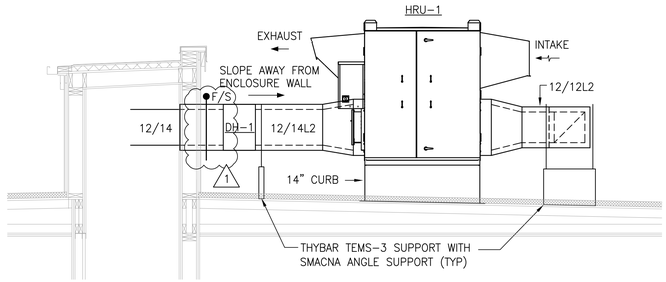
SCALE: 1/2" = 1'-0"

2 0 2 4

SCALE OF FEET

1 / M1.10

NOTE: PROVIDE DUCT SUPPORTS PER IMC 603.10 (SMACNA HVAC DUCT CONSTRUCTION STANDARDS – METAL AND FLEXIBLE).



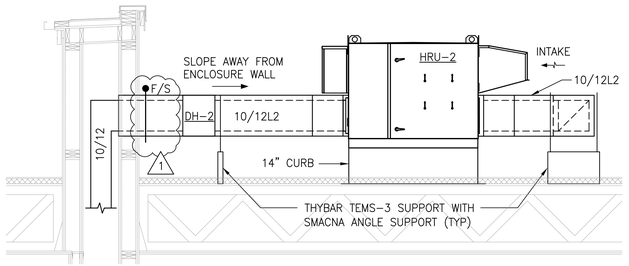
HRU-1 SECTION

SCALE: 1/2" = 1'-0"

2 0 2 4

SCALE OF FEET

A / M1.10



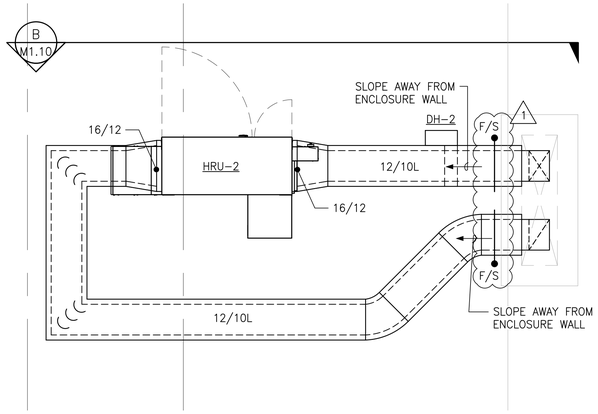
HRU-2 SECTION

SCALE: 1/2" = 1'-0"

2 0 2 4

SCALE OF FEET

B / M1.10



ENLARGED HRU-1 PLAN

SCALE: 1/2" = 1'-0"

2 0 2 4

SCALE OF FEET

2 / M1.10

NOTE: PROVIDE DUCT SUPPORTS PER IMC 603.10 (SMACNA HVAC DUCT CONSTRUCTION STANDARDS – METAL AND FLEXIBLE).

LNS

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7713 PIONEER WAY
GIG HARBOR, WA 98335
PHONE: 253-851-5175

LARRY N. STORDAHL
STATE OF WASHINGTON
16454
REGISTERED
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REVISIONS THIS SHEET

1 PERMIT REVIEW COMMENTS 3-27-2023

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St. Helens Mixed-Use
Tacoma, Washington
Enlarged Mechanical Plans

PROJECT NO. : 22226.0
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11-9-2022

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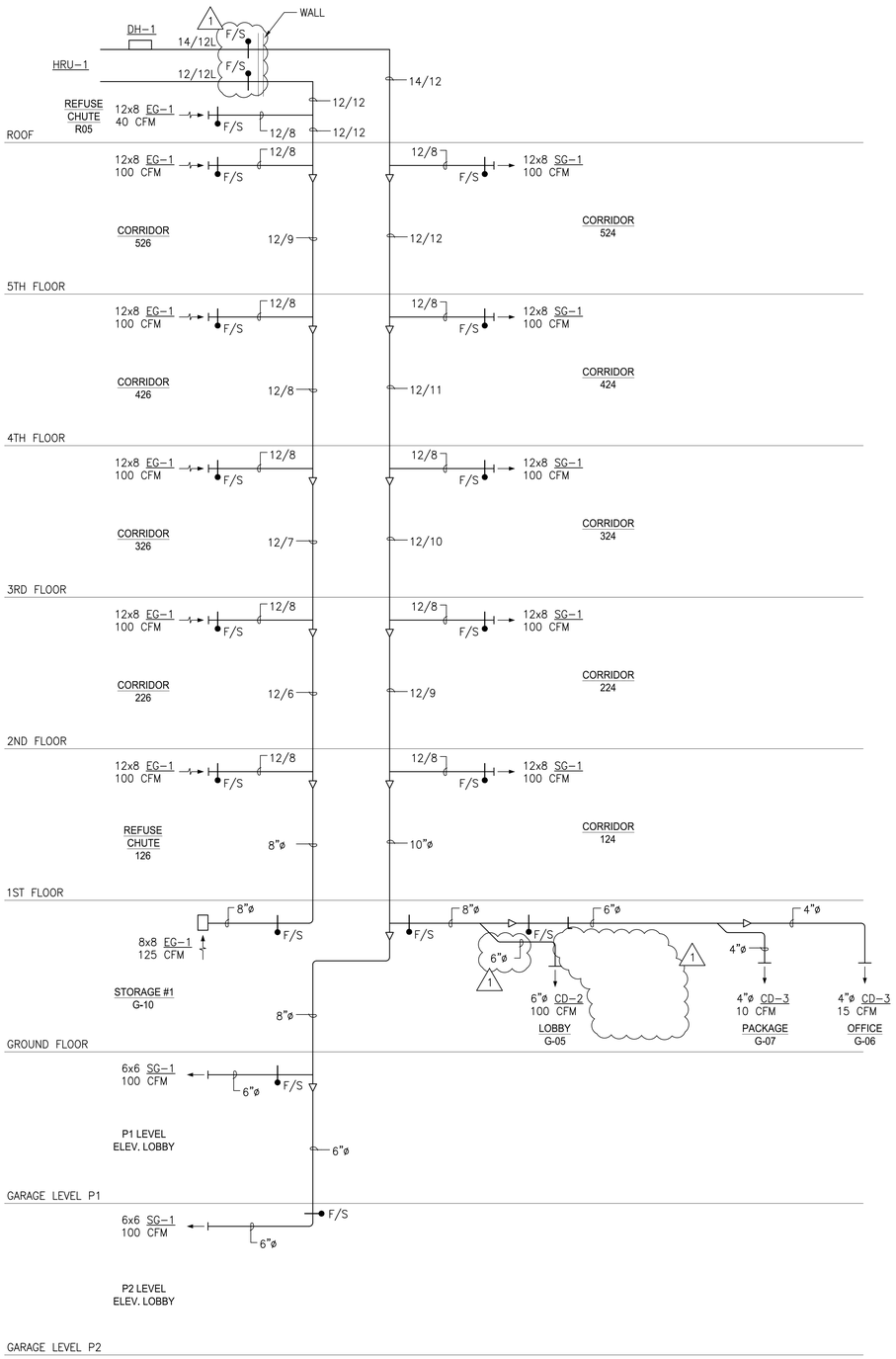
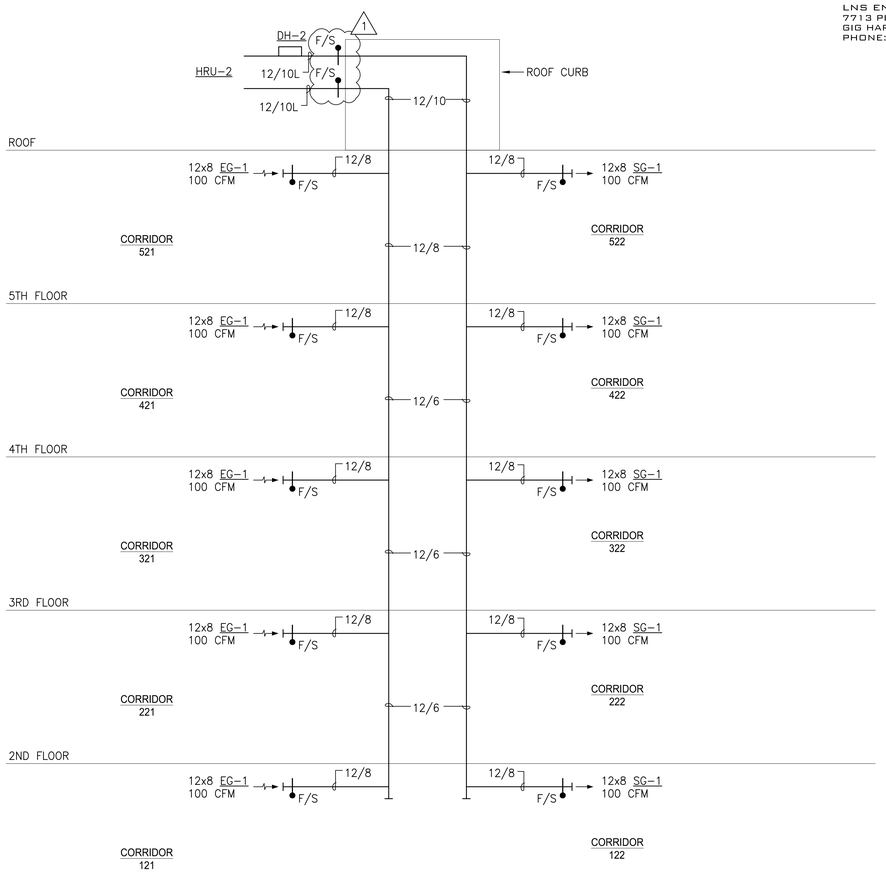


NORTH CORRIDOR/ENTRY LOBBY/EXIT PASSAGE VENTILATION

NO SCALE

A M1.11



SOUTH CORRIDOR VENTILATION

NO SCALE

B M1.11

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REVISIONS THIS SHEET

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1 2 3 4

St. Helens Mixed-Use
Tacoma, Washington
Common Areas Ventilation

PROJECT NO. : 22226.0
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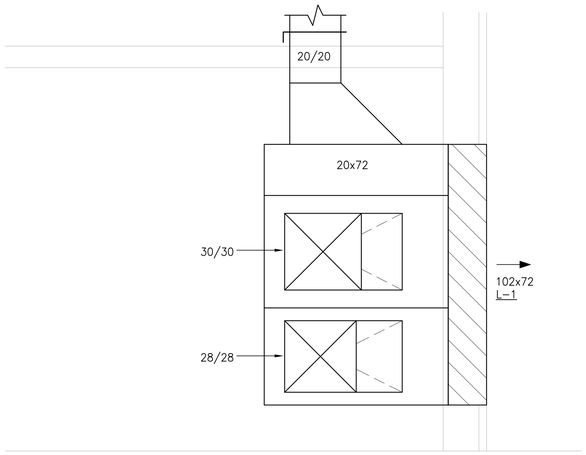


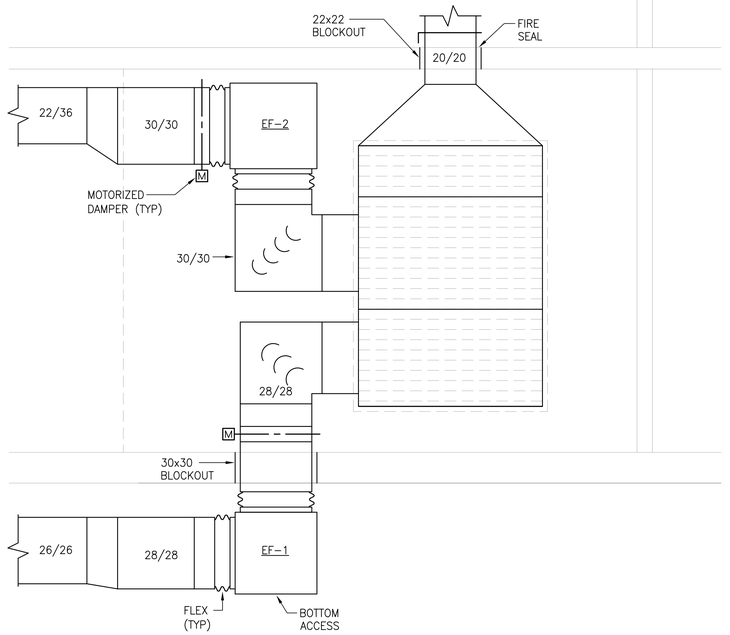
EXHAUST FAN SECTION

SCALE: 1/2"=1'-0"

2 0 2 4

SCALE OF FEET

4 M1.11



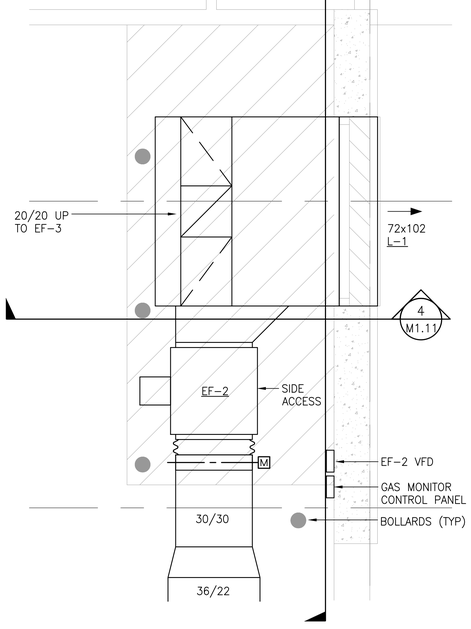
EXHAUST FAN SECTION

SCALE: 1/2"=1'-0"

2 0 2 4

SCALE OF FEET

3 M1.11



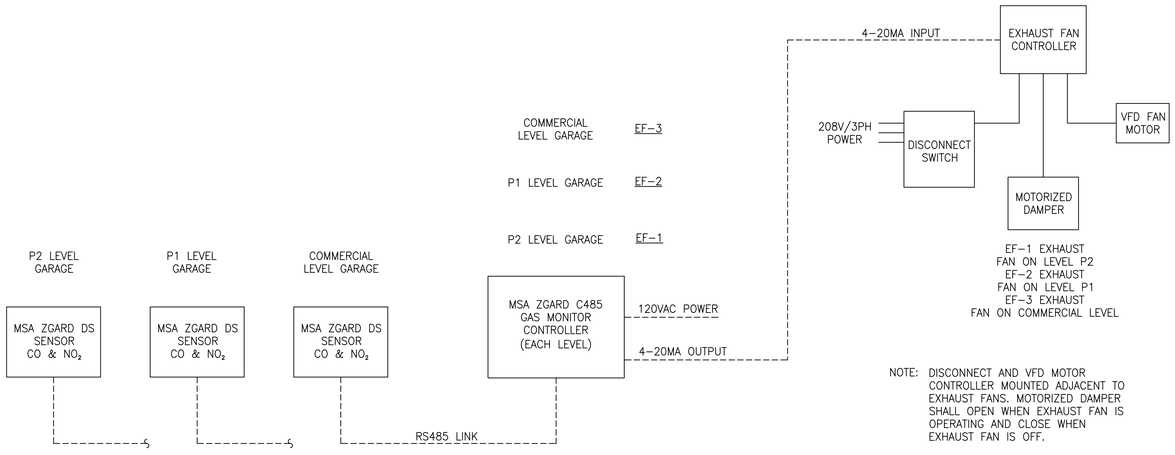
GARAGE LEVEL EXHAUST

SCALE: 1/2"=1'-0"

2 0 2 4

SCALE OF FEET

1 M1.2



EF-1 EXHAUST
FAN ON LEVEL P2
EF-2 EXHAUST
FAN ON LEVEL P1
EF-3 EXHAUST
FAN ON COMMERCIAL LEVEL

NOTE: DISCONNECT AND VFD MOTOR CONTROLLER MOUNTED ADJACENT TO EXHAUST FANS. MOTORIZED DAMPER SHALL OPEN WHEN EXHAUST FAN IS OPERATING AND CLOSE WHEN EXHAUST FAN IS OFF.

GARAGE LEVEL EXHAUST FAN DIAGRAM (TYP OF 3)

NO SCALE

2 M1.12

CO & NO_2 SENSOR/CONTROLLER SHALL BE INSTALLED PER MANUFACTURER'S INSTALLATION INSTRUCTIONS AND REQUIREMENTS. INTERFACE WITH RESPECTIVE EXHAUST FAN SPEED CONTROLLER PER FAN MANUFACTURER'S INSTALLATION INSTRUCTIONS AND REQUIREMENTS. PROVIDE CONDUIT FOR ROUTING OF ALL CONTROL WIRING.

REVISIONS THIS SHEET

1 PERMIT REVIEW COMMENTS 3-27-2023

1 2 3 4

St. Helens Mixed-Use
Tacoma, Washington
Ground Floor - Mechanical Plan

1 N. Tacoma Ave, Suite 201 Tacoma, Washington 98403 (253) 584-5207

PROJECT NO. : 22226.0
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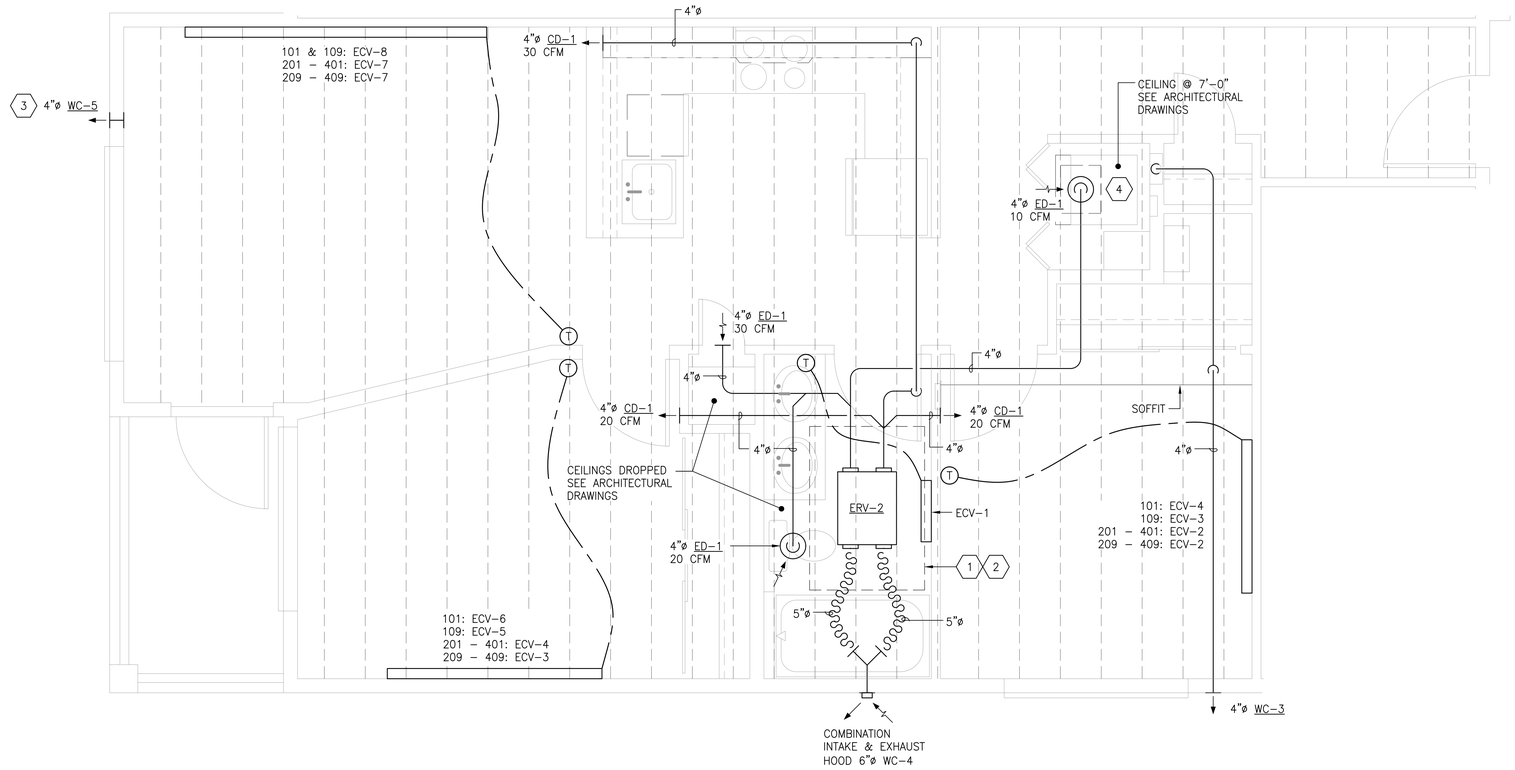
PLOT DATE: May 25, 2023 - 11:38am

FILE NAME: F:\CAD\2022\22226.0 - St. Helens Mixed Use\ 22226.0-M11-THRU-M111.dwg



2 BED/1 BA – (UNIT 101 SHOWN)

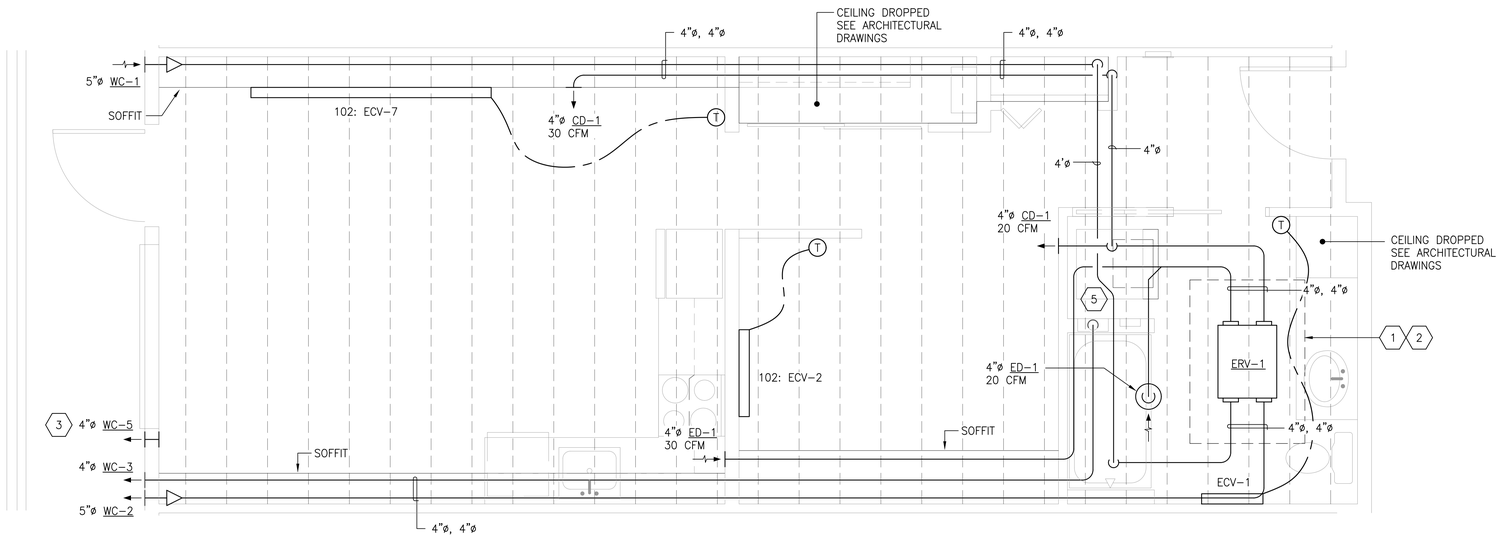
1 / M2.0

SCALE: 1/2" = 1'-0"

2 0 2 4

SCALE OF FEET

SIMILAR UNITS:
201, 301, 401,
109, 209, 309, 409



1 BED/1 BA – TYPE A (UNIT 102 SHOWN)

2 / M2.0

SCALE: 1/2" = 1'-0"

2 0 2 4

SCALE OF FEET

GENERAL NOTES

1. SEE ARCHITECTURAL DRAWINGS FOR LOCATIONS OF FURRED CEILINGS AND SOFFITS.
2. SEE ARCHITECTURAL AND STRUCTURAL DRAWINGS FOR FRAMING DETAILS AROUND RECESSED CEILING SPACE AROUND ERV INSTALLATION.
3. SEE DETAILS ON MP0.4 FOR SUPPORT OF ERV AND ERV ACCESS DOOR INSTALLATION.
4. TJI FRAMING SHOWN FOR INFORMATION AT 16" O.C. ACTUAL POSITIONG OF TJI'S TO BE FIELD VERIFIED.

CONSTRUCTION NOTES

1. FRAMED POCKET TO RECESS ERV INTO CEILING, MIN. 45x64 CLEAR SPACE. SEE ARCHITECTURAL AND STRUCTURAL DRAWINGS.
2. SEE DETAIL 1/MP0.4 & 2/MP0.4 FOR ERV SUPPORT AND ACCESS DOOR INSTALLATION.
3. INSTALL WC-5 WITH 4"ø WALL TUBE TO INSIDE REMOVABLE WALL CAP FOR CONNECTING PORTABLE AIR CONDITIONER. POSITION WALL CAP 12" AFF.
4. PROVIDE LABEL, W/ 1/4" TEXT SIZE, ON WALL ADJACENT TO DRYER VENT CONNECTION READING "EQUIVALENT DRYER DUCT LENGTH = 50 FEET"
5. PROVIDE LABEL, W/ 1/4" TEXT SIZE, ON WALL ADJACENT TO DRYER VENT CONNECTION READING "EQUIVALENT DRYER DUCT LENGTH = 55 FEET"

LNS ENGINEERS, INC.
7713 PIONEER WAY
GIG HARBOR, WA 98335
PHONE: 253-851-5175

LARRY N. STORDAHL
STATE OF WASHINGTON
16454
REGISTERED PROFESSIONAL ENGINEER

REVISIONS THIS SHEET

1 PERMIT REVIEW COMMENTS 3-27-2023

St. Helens Mixed-Use
Tacoma, Washington
Unit Mechanical Plans

PROJECT NO. : 22226.0
DRAWN BY : NBD
ISSUE DATE : 11-9-2022
LATEST REV. / THIS SET : 1 / -

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11-9-2022

1 N. Tacoma Ave, Suite 201 Tacoma, Washington 98403 (253) 584-5207

PLOT DATE: May 25, 2023 - 11:39am
FILE NAME: F:\CAD\2022\22226.0 - St Helens Mixed Use\ 22226.0-M20-THRU-M29.dwg

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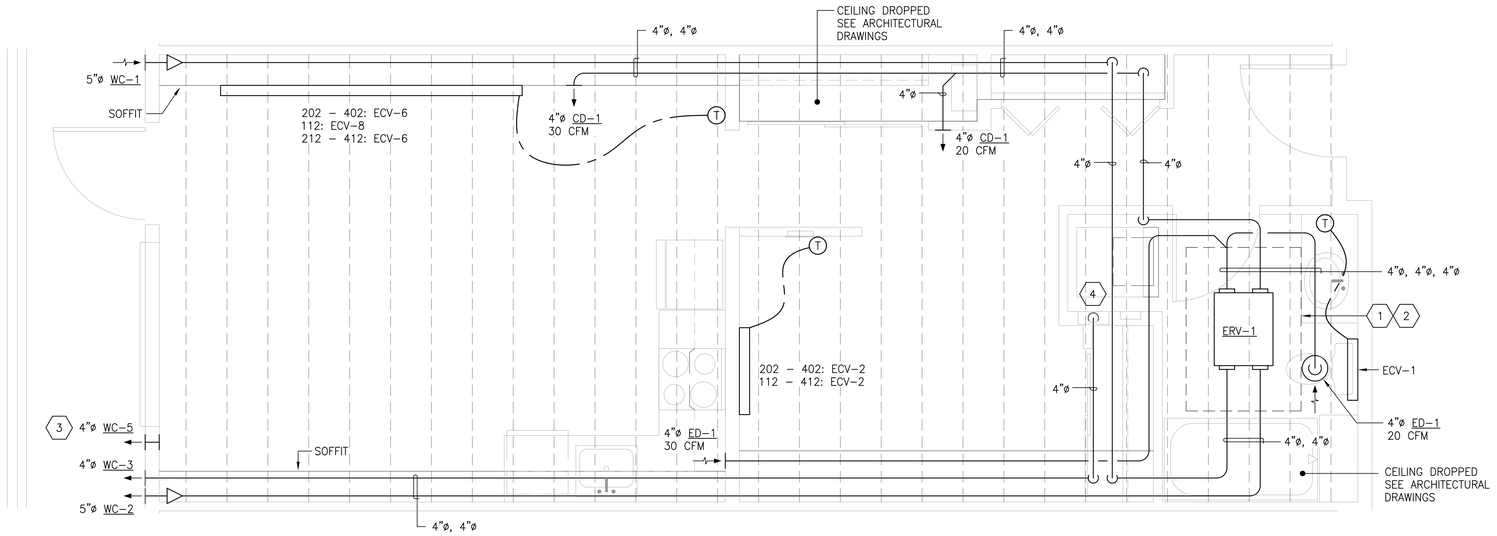
GIG HARBOR, WA 98335
PHONE: 253-851-5175



1 BED/1 BA - (UNIT 202 SHOWN)

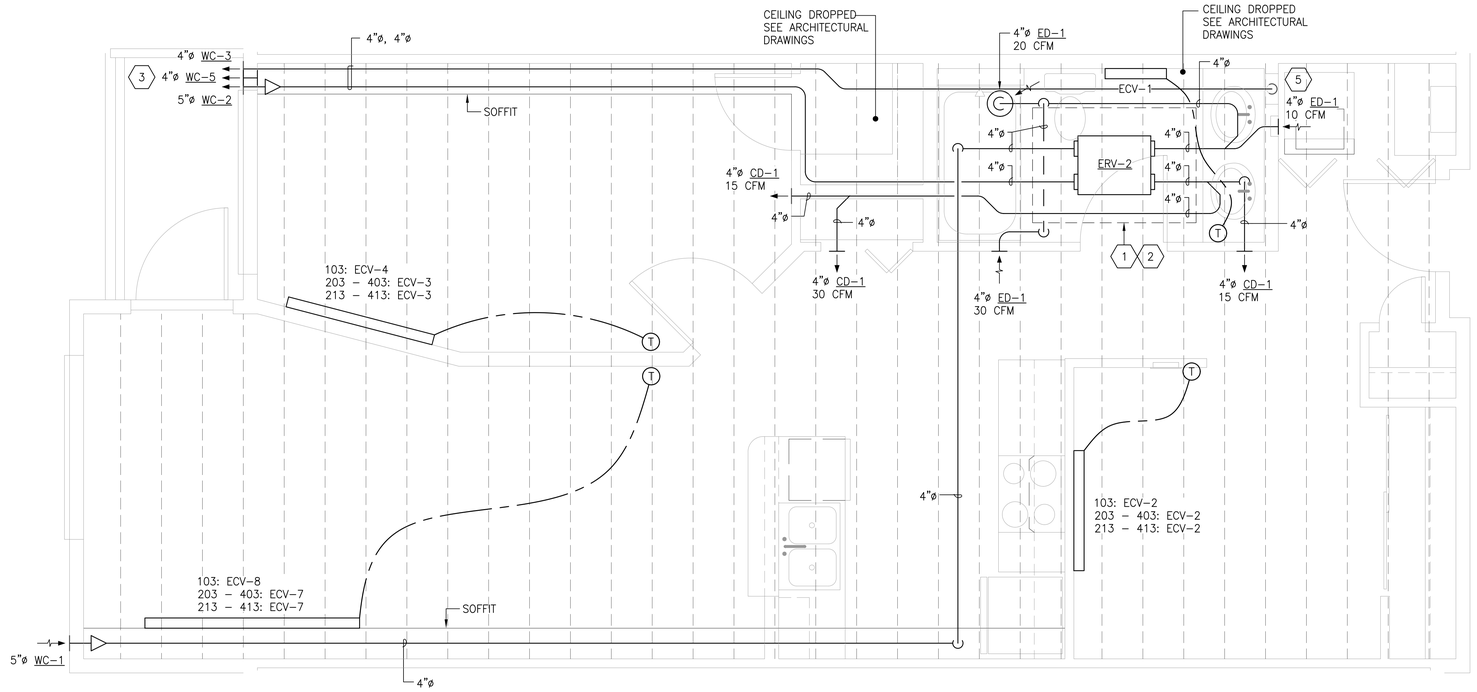
1 / M2.1

SCALE: 1/2" = 1'-0"

2 0 2 4

SCALE OF FEET

SIMILAR UNITS:
302, 402
112, 212, 312, 412



2 BED/1 BA - (UNIT 103 SHOWN)

2 / M2.1

SCALE: 1/2" = 1'-0"

2 0 2 4

SCALE OF FEET

SIMILAR UNITS:
203, 303, 403,
213, 313, 413

GENERAL NOTES

1. SEE ARCHITECTURAL DRAWINGS FOR LOCATIONS OF FURRED CEILINGS AND SOFFITS.
2. SEE ARCHITECTURAL AND STRUCTURAL DRAWINGS FOR FRAMING DETAILS AROUND RECESSED CEILING SPACE AROUND ERV INSTALLATION.
3. SEE DETAILS ON MP0.4 FOR SUPPORT OF ERV AND ERV ACCESS DOOR INSTALLATION.
4. TJI FRAMING SHOWN FOR INFORMATION AT 16" O.C. ACTUAL POSITIONG OF TJI'S TO BE FIELD VERIFIED.

CONSTRUCTION NOTES

1. FRAMED POCKET TO RECESS ERV INTO CEILING, MIN. 45x64 CLEAR SPACE. SEE ARCHITECTURAL AND STRUCTURAL DRAWINGS.
2. SEE DETAIL 1/MP0.4 & 2/MP0.4 FOR ERV SUPPORT AND ACCESS DOOR INSTALLATION.
3. INSTALL WC-5 WITH 4"ø WALL TUBE TO INSIDE REMOVABLE WALL CAP FOR CONNECTING PORTABLE AIR CONDITIONER. POSITION WALL CAP 12" AFF.

1

4. PROVIDE LABEL, W/ 1/4" TEXT SIZE, ON WALL ADJACENT TO DRYER VENT CONNECTION READING "EQUIVALENT DRYER DUCT LENGTH = 55 FEET"
5. PROVIDE LABEL, W/ 1/4" TEXT SIZE, ON WALL ADJACENT TO DRYER VENT CONNECTION READING "EQUIVALENT DRYER DUCT LENGTH = 65 FEET"

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1 N. Tacoma Ave, Suite 201 Tacoma, Washington 98403 (253) 584-5207

St. Helens Mixed-Use
Tacoma, Washington
Unit Mechanical Plans

PROJECT NO. : 22226.0
DRAWN BY : NBD
ISSUE DATE : 11-9-2022
LATEST REV. / THIS SET : 1 / -

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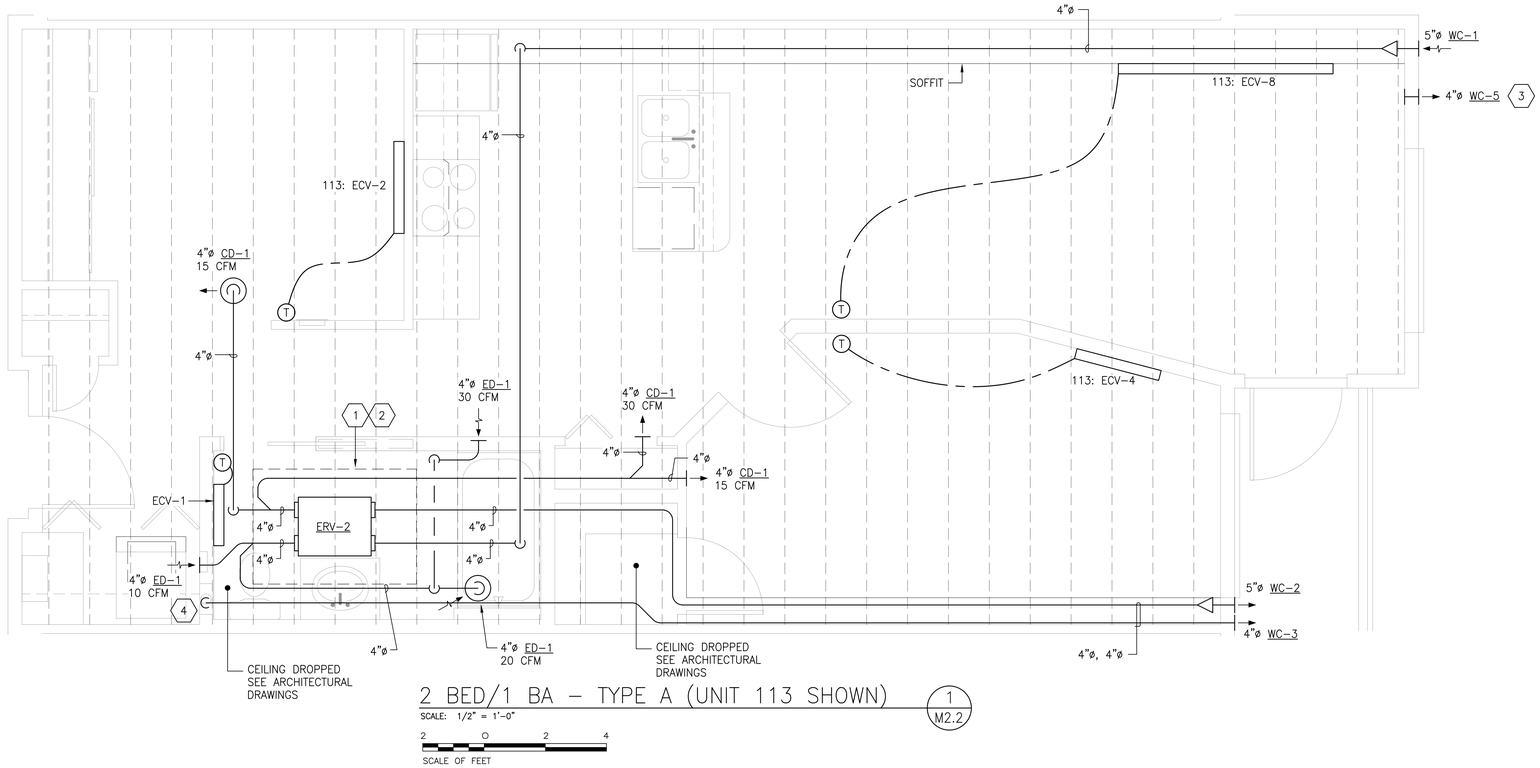
11-9-2022

PLOT DATE: May. 25, 2023 - 11:40am

FILE NAME: F:\CAD\2022\22226.0 - St Helens Mixed Use\ 22226.0-MP0-THRU-MP3.dwg



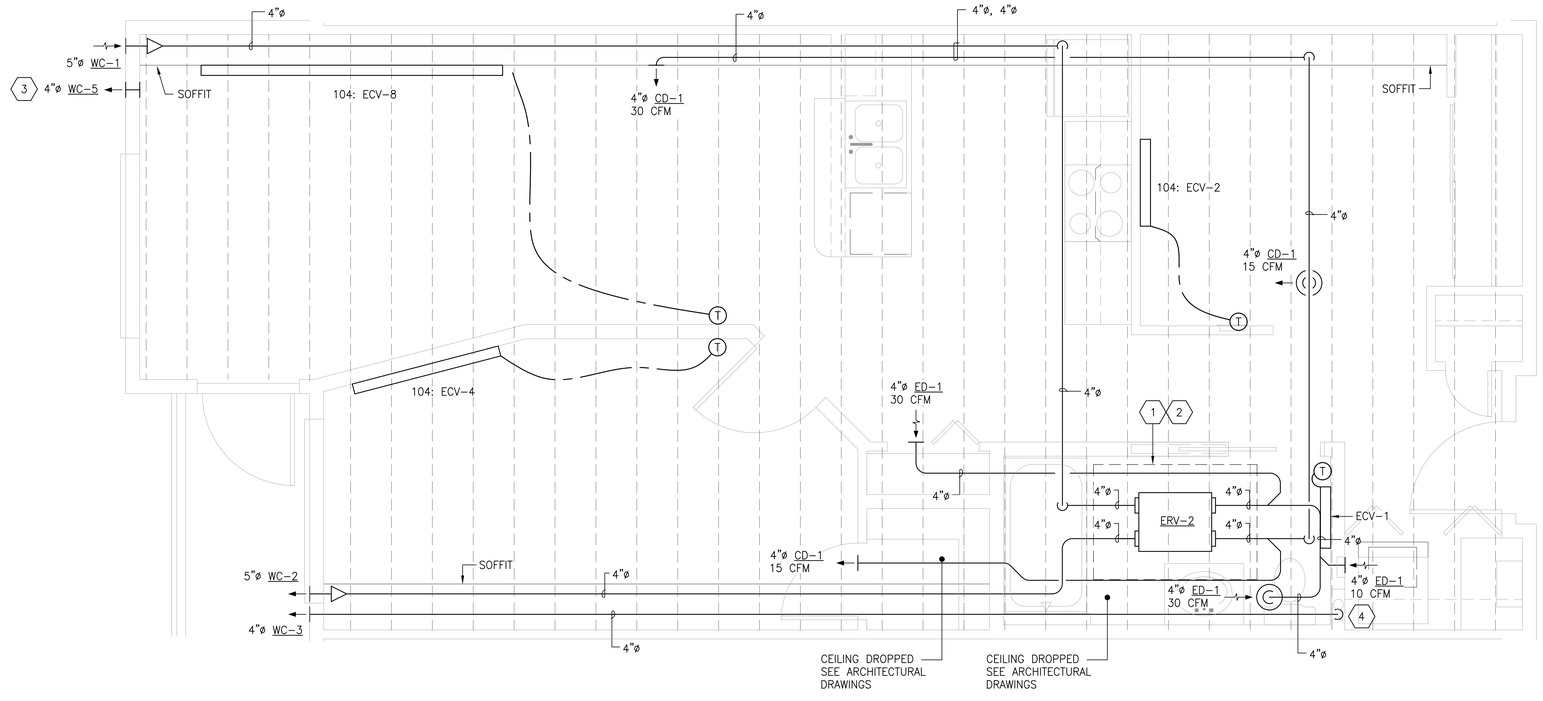
2 BED/1 BA – TYPE A (UNIT 113 SHOWN)

SCALE: 1/2" = 1'-0"

1 M2.2

2 O 2 4

SCALE OF FEET



2 BED/1 BA – TYPE A (UNIT 104 SHOWN)

SCALE: 1/2" = 1'-0"

2 M2.2

2 O 2 4

SCALE OF FEET

GENERAL NOTES

1. SEE ARCHITECTURAL DRAWINGS FOR LOCATIONS OF FURRED CEILINGS AND SOFFITS.
2. SEE ARCHITECTURAL AND STRUCTURAL DRAWINGS FOR FRAMING DETAILS AROUND RECESSED CEILING SPACE AROUND ERV INSTALLATION.
3. SEE DETAILS ON MP0.4 FOR SUPPORT OF ERV AND ERV ACCESS DOOR INSTALLATION.
4. TJI FRAMING SHOWN FOR INFORMATION AT 16" O.C. ACTUAL POSITIONG OF TJI'S TO BE FIELD VERIFIED.

CONSTRUCTION NOTES

1. FRAMED POCKET TO RECESS ERV INTO CEILING, MIN. 45x64 CLEAR SPACE. SEE ARCHITECTURAL AND STRUCTURAL DRAWINGS.
2. SEE DETAIL 1/MP0.4 & 2/MP0.4 FOR ERV SUPPORT AND ACCESS DOOR INSTALLATION.
3. INSTALL WC-5 WITH 4"ø WALL TUBE TO INSIDE REMOVABLE WALL CAP FOR CONNECTING PORTABLE AIR CONDITIONER. POSITION WALL CAP 12" AFF.
4. PROVIDE LABEL, W/ 1/4" TEXT SIZE, ON WALL ADJACENT TO DRYER VENT CONNECTION READING "EQUIVALENT DRYER DUCT LENGTH = 55 FEET"

LNS ENGINEERS, INC.
7713 PIONEER WAY
GIG HARBOR, WA 98335
PHONE: 253-851-5175

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1 2 3 4

St. Helens Mixed-Use
Tacoma, Washington
Unit Mechanical Plans

PROJECT NO. : 22226.0
DRAWN BY : NBD
ISSUE DATE : 11-9-2022
LATEST REV. THIS SET : 1 -

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11-9-2022

1 N. Tacoma Ave, Suite 201 Tacoma, Washington 98403 (253) 584-5207

PLOT DATE: May. 25, 2023 - 11:40am
FILE NAME: I:\(All)\2022\22226.0 - St. Helens Mixed Use\ 22226.0-M20-THRU-M29.dwg

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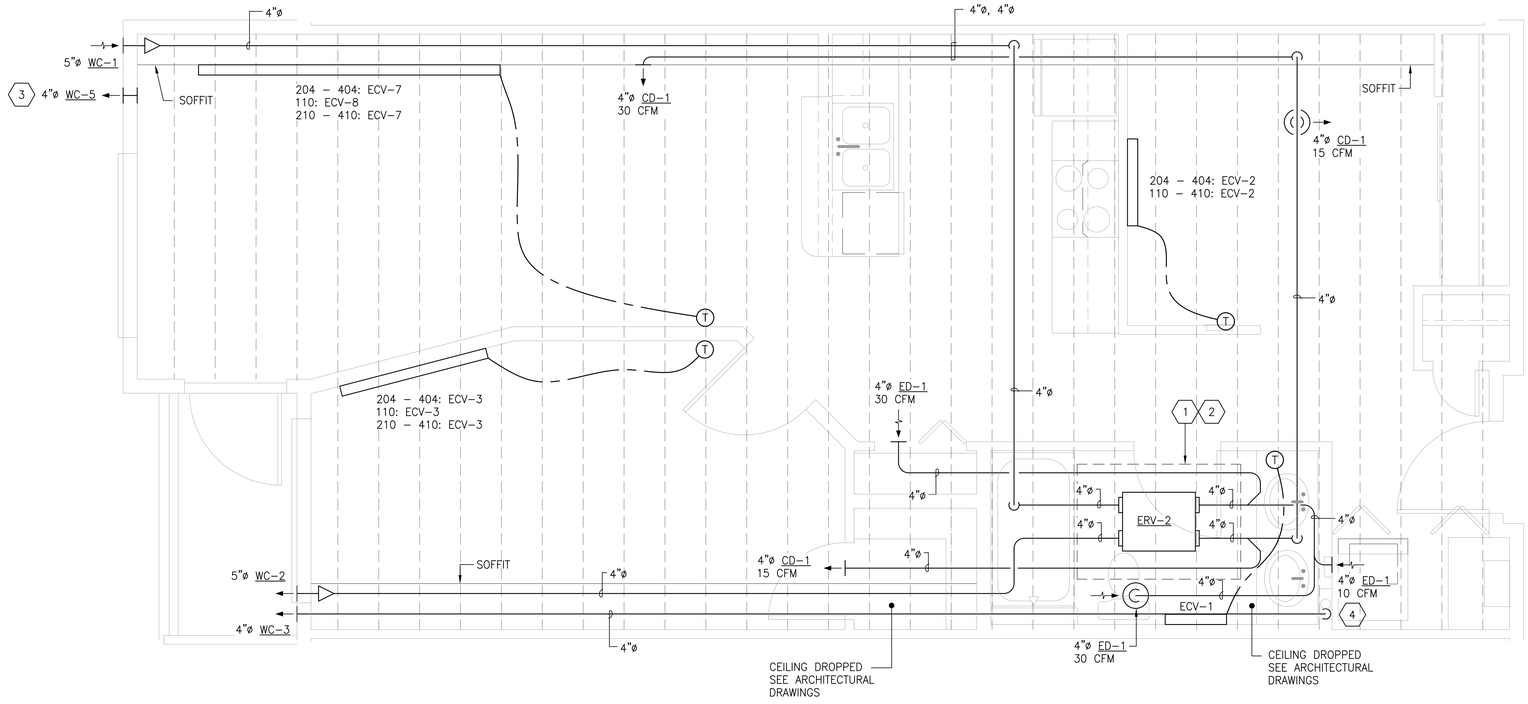
GIG HARBOR, WA 98335
PHONE: 253-851-5175

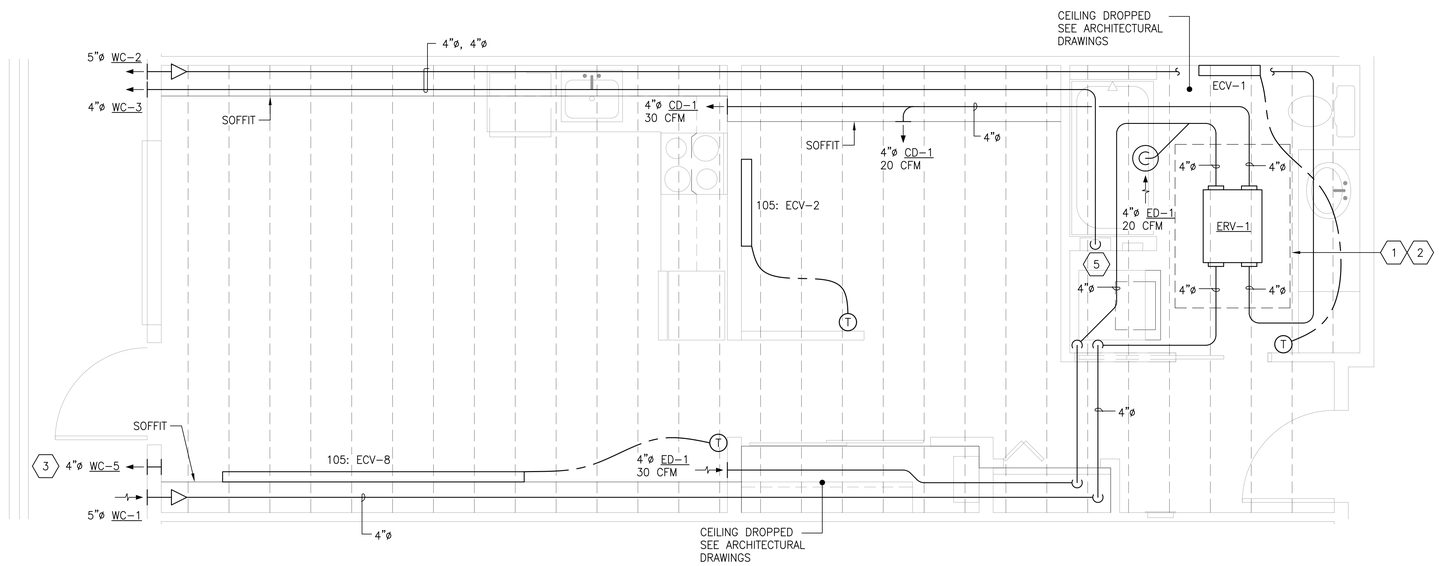


2 BED/1 BA – (UNIT 204 SHOWN) (1 / M2.3)

SCALE: 1/2" = 1'-0"

2 O 2 4
SCALE OF FEET

SIMILAR UNITS:
304, 404,
110, 210, 310, 410



1 BED/1 BA – TYPE A (UNIT 105 SHOWN) (2 / M2.3)

SCALE: 1/2" = 1'-0"

2 O 2 4
SCALE OF FEET

GENERAL NOTES

1. SEE ARCHITECTURAL DRAWINGS FOR LOCATIONS OF FURRED CEILINGS AND SOFFITS.
2. SEE ARCHITECTURAL AND STRUCTURAL DRAWINGS FOR FRAMING DETAILS AROUND RECESSED CEILING SPACE AROUND ERV INSTALLATION.
3. SEE DETAILS ON MP0.4 FOR SUPPORT OF ERV AND ERV ACCESS DOOR INSTALLATION.
4. TJI FRAMING SHOWN FOR INFORMATION AT 16" O.C. ACTUAL POSITIONG OF TJI'S TO BE FIELD VERIFIED.

CONSTRUCTION NOTES

1. FRAMED POCKET TO RECESS ERV INTO CEILING, MIN. 45x64 CLEAR SPACE. SEE ARCHITECTURAL AND STRUCTURAL DRAWINGS.
2. SEE DETAIL 1/MP0.4 & 2/MP0.4 FOR ERV SUPPORT AND ACCESS DOOR INSTALLATION.
3. INSTALL WC-5 WITH 4"ø WALL TUBE TO INSIDE REMOVABLE WALL CAP FOR CONNECTING PORTABLE AIR CONDITIONER. POSITION WALL CAP 12" AFF.

1

4. PROVIDE LABEL, W/ 1/4" TEXT SIZE, ON WALL ADJACENT TO DRYER VENT CONNECTION READING "EQUIVALENT DRYER DUCT LENGTH = 55 FEET"
5. PROVIDE LABEL, W/ 1/4" TEXT SIZE, ON WALL ADJACENT TO DRYER VENT CONNECTION READING "EQUIVALENT DRYER DUCT LENGTH = 60 FEET"

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3-27-2023

1 2 3 4

St. Helens Mixed-Use
Tacoma, Washington
Unit Mechanical Plans

1 N. Tacoma Ave, Suite 201 Tacoma, Washington 98403 (253) 584-5207

PROJECT NO. : 22226.0
DRAWN BY : NBD
ISSUE DATE : 11-9-2022
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11-9-2022

Casey + DeChant Architects, LLC Architecture And Planning

M2.3

PLOT DATE: May. 25, 2023 - 11:41am

FILE NAME: F:\CAD\2022\22226.0 - St Helens Mixed Use\ 22226.0-M20-THRU-M29.dwg

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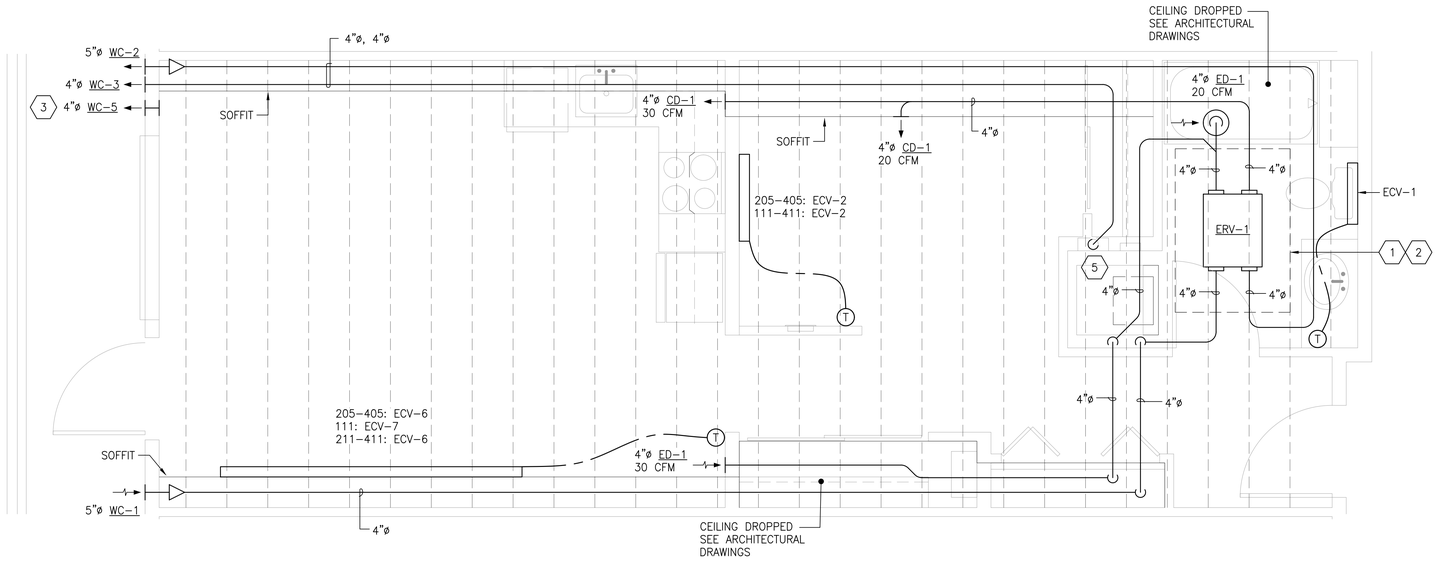
PHONE: 253-851-5175



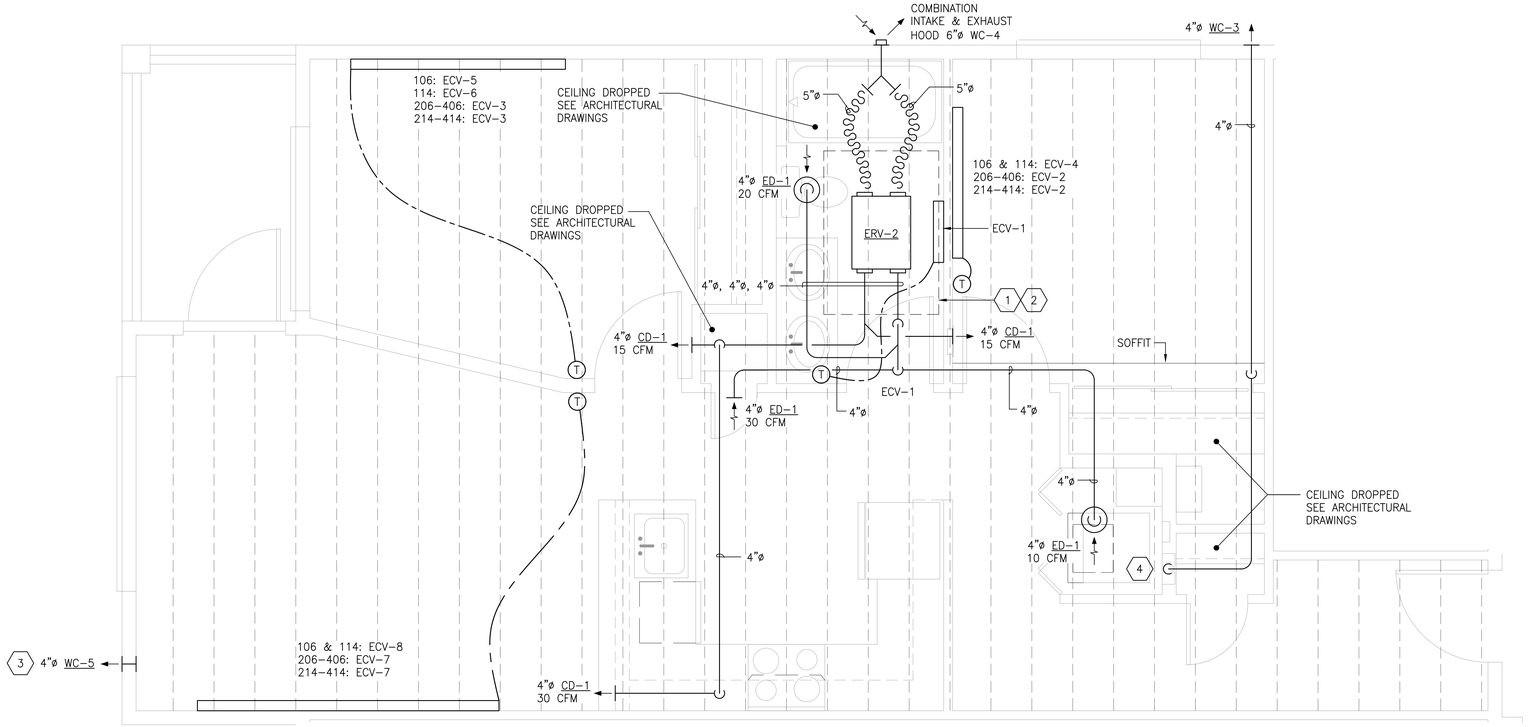
1 BED/1 BA – (UNIT 205 SHOWN)

1 / M2.4

SCALE: 1/2" = 1'-0"

2 0 2 4
SCALE OF FEET

SIMILAR UNITS:
305, 405
111, 211, 311, 411



2 BED/1 BA – (UNIT 106 SHOWN)

2 / M2.4

SCALE: 1/2" = 1'-0"

2 0 2 4
SCALE OF FEET

SIMILAR UNITS:
206, 306, 406
114, 214, 314, 414

GENERAL NOTES

1. SEE ARCHITECTURAL DRAWINGS FOR LOCATIONS OF FURRED CEILINGS AND SOFFITS.
2. SEE ARCHITECTURAL AND STRUCTURAL DRAWINGS FOR FRAMING DETAILS AROUND RECESSED CEILING SPACE AROUND ERV INSTALLATION.
3. SEE DETAILS ON MP0.4 FOR SUPPORT OF ERV AND ERV ACCESS DOOR INSTALLATION.
4. TJI FRAMING SHOWN FOR INFORMATION AT 16" O.C. ACTUAL POSITIONG OF TJI'S TO BE FIELD VERIFIED.

CONSTRUCTION NOTES

1. FRAMED POCKET TO RECESS ERV INTO CEILING, MIN. 45x64 CLEAR SPACE. SEE ARCHITECTURAL AND STRUCTURAL DRAWINGS.
2. SEE DETAIL 1/MP0.4 & 2/MP0.4 FOR ERV SUPPORT AND ACCESS DOOR INSTALLATION.
3. INSTALL WC-5 WITH 4"ø WALL TUBE TO INSIDE REMOVABLE WALL CAP FOR CONNECTING PORTABLE AIR CONDITIONER. POSITION WALL CAP 12" AFF.

1
4. PROVIDE LABEL, W/ 1/4" TEXT SIZE, ON WALL ADJACENT TO DRYER VENT CONNECTION READING "EQUIVALENT DRYER DUCT LENGTH = 40 FEET"
5. PROVIDE LABEL, W/ 1/4" TEXT SIZE, ON WALL ADJACENT TO DRYER VENT CONNECTION READING "EQUIVALENT DRYER DUCT LENGTH = 60 FEET"

REVISIONS THIS SHEET
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1 N. Tacoma Ave, Suite 201 Tacoma, Washington 98403 (253) 584-5207

St. Helens Mixed-Use
Tacoma, Washington
Unit Mechanical Plans

PROJECT NO. : 22226.0
DRAWN BY : NBD
ISSUE DATE : 11-9-2022
LATEST REV. THIS SET : 1 -

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11-9-2022

Casey + DeChant Architects, LLC Architecture And Planning

M2.4

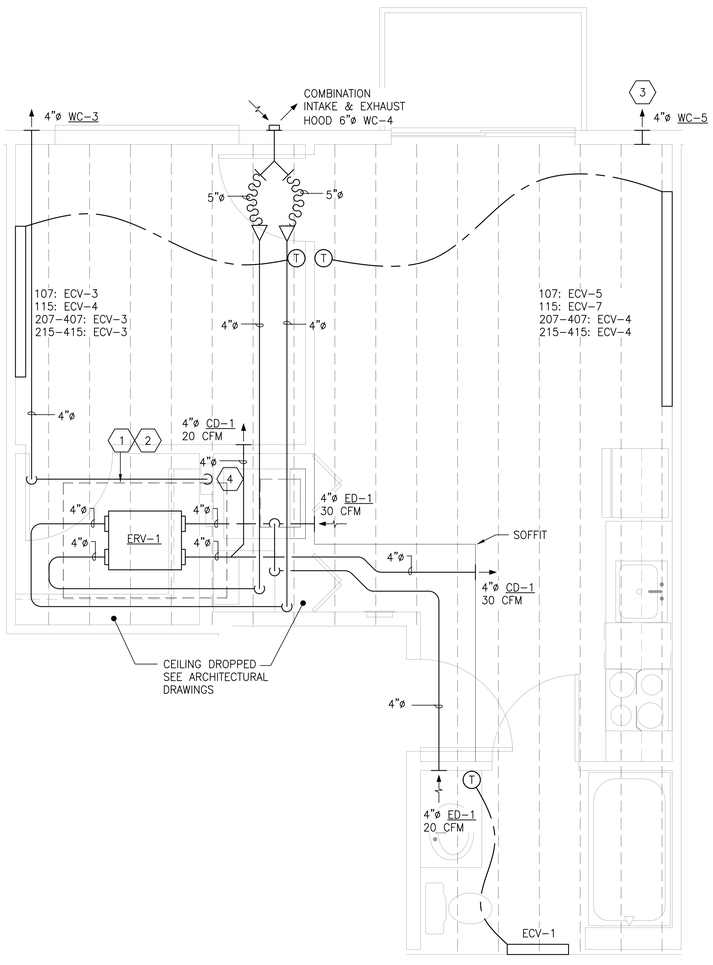
PLOT DATE: May. 25, 2023 - 11:41am
FILE NAME: F:\CAD\2022\22226.0 - St Helens Mixed Use\ 22226.0-M20-THRU-M29.dwg

GENERAL NOTES

1. SEE ARCHITECTURAL DRAWINGS FOR LOCATIONS OF FURRED CEILINGS AND SOFFITS.
2. SEE ARCHITECTURAL AND STRUCTURAL DRAWINGS FOR FRAMING DETAILS AROUND RECESSED CEILING SPACE AROUND ERV INSTALLATION.
3. SEE DETAILS ON MP0.4 FOR SUPPORT OF ERV AND ERV ACCESS DOOR INSTALLATION.
4. TJI FRAMING SHOWN FOR INFORMATION AT 16" O.C. ACTUAL POSITIONG OF TJI'S TO BE FIELD VERIFIED.

CONSTRUCTION NOTES

1. FRAMED POCKET TO RECESS ERV INTO CEILING, MIN. 45x64 CLEAR SPACE. SEE ARCHITECTURAL AND STRUCTURAL DRAWINGS.
2. SEE DETAIL 1/MP0.4 & 2/MP0.4 FOR ERV SUPPORT AND ACCESS DOOR INSTALLATION.
3. INSTALL WC-5 WITH 4"ø WALL TUBE TO INSIDE REMOVABLE WALL CAP FOR CONNECTING PORTABLE AIR CONDITIONER. POSITION WALL CAP 12" AFF.
4. PROVIDE LABEL, W/ 1/4" TEXT SIZE, ON WALL ADJACENT TO DRYER VENT CONNECTION READING "EQUIVALENT DRYER DUCT LENGTH = 45 FEET"

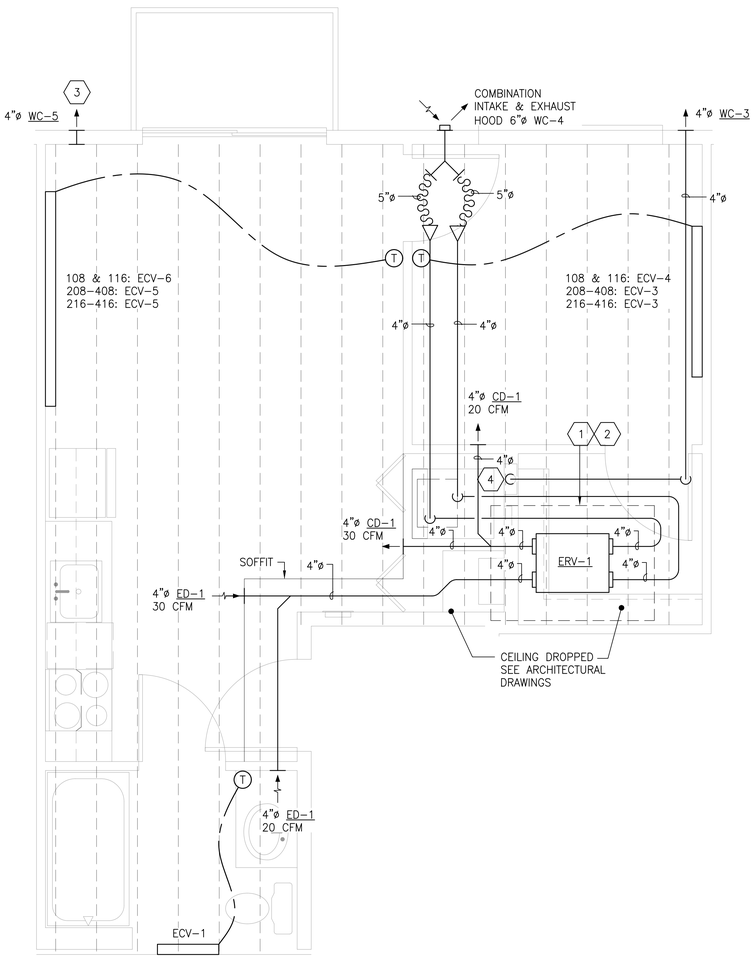


1 BED/1 BA – (UNIT 107 SHOWN) — 1 / M2.5

SCALE: 1/2" = 1'-0"

2 0 2 4
SCALE OF FEET

SIMILAR UNITS:
207, 307, 407
115, 215, 315, 415



1 BED/1 BA – (UNIT 108 SHOWN) — 2 / M2.5

SCALE: 1/2" = 1'-0"

2 0 2 4
SCALE OF FEET

SIMILAR UNITS:
208, 308, 408
116, 216, 316, 416

LNS
LNS ENGINEERS, INC.
7713 PIONEER WAY
GIG HARBOR, WA 98335
PHONE: 253-851-5175

LARRY N. STORDAHL — STATE OF WASHINGTON — 16454 — REGISTERED PROFESSIONAL ENGINEER

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3-27-2023

1 2 3 4

St. Helens Mixed-Use
Tacoma, Washington
Unit Mechanical Plans

1 N. Tacoma Ave, Suite 201 Tacoma, Washington 98403 (253) 584-5207

PROJECT NO. : 22226.0
DRAWN BY : NBD
ISSUE DATE : 11-9-2022
LATEST REV. THIS SET : A -

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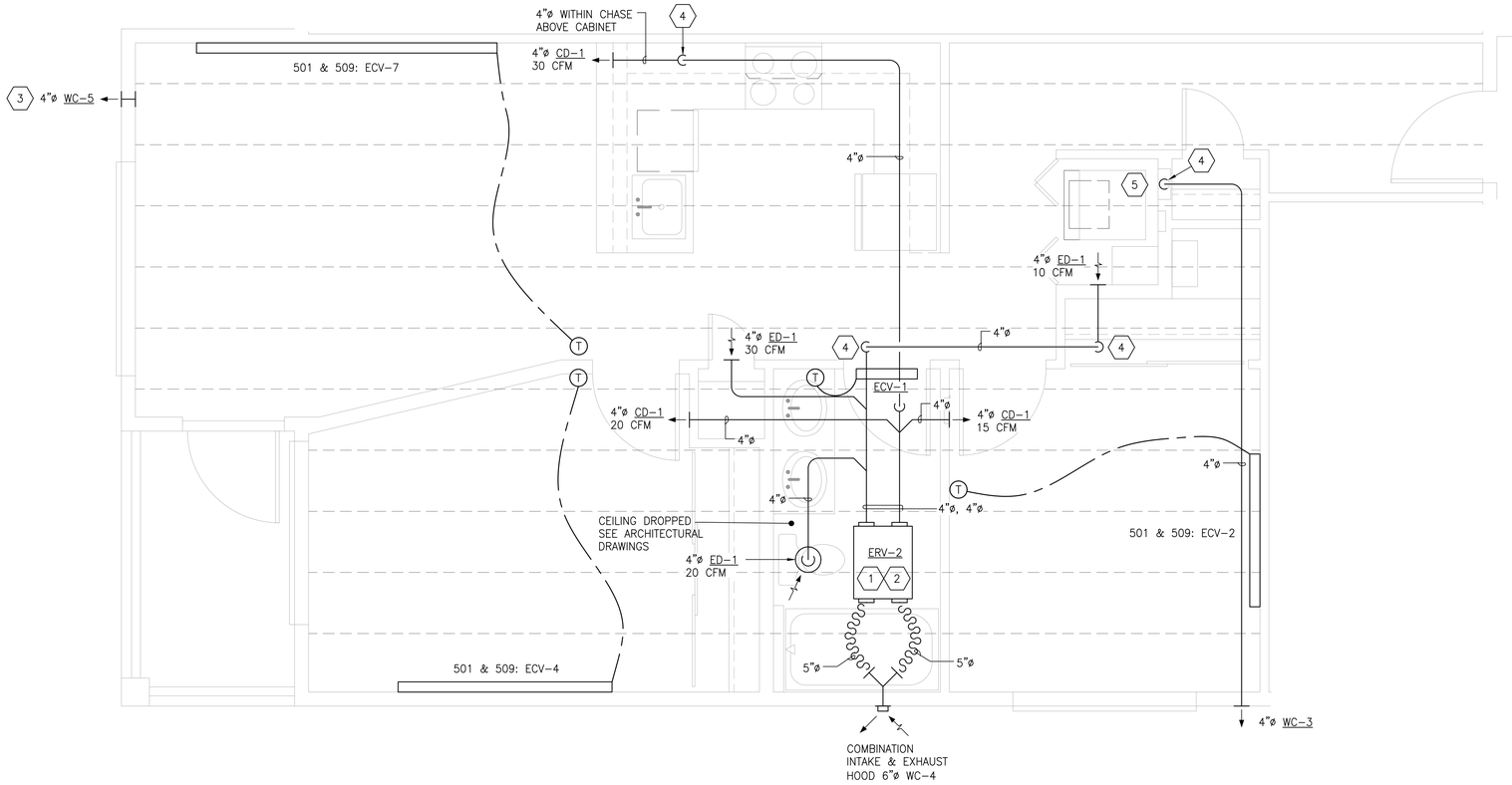
11-9-2022

Casey + DeChant Architects, LLC Architecture And Planning

M2.5

PLOT DATE: May 25, 2023 - 11:41am

FILE NAME: F:\CAD\2022\22226.0 - St. Helens Mixed Use\ 22226.0-M09-THRU-M29.dwg



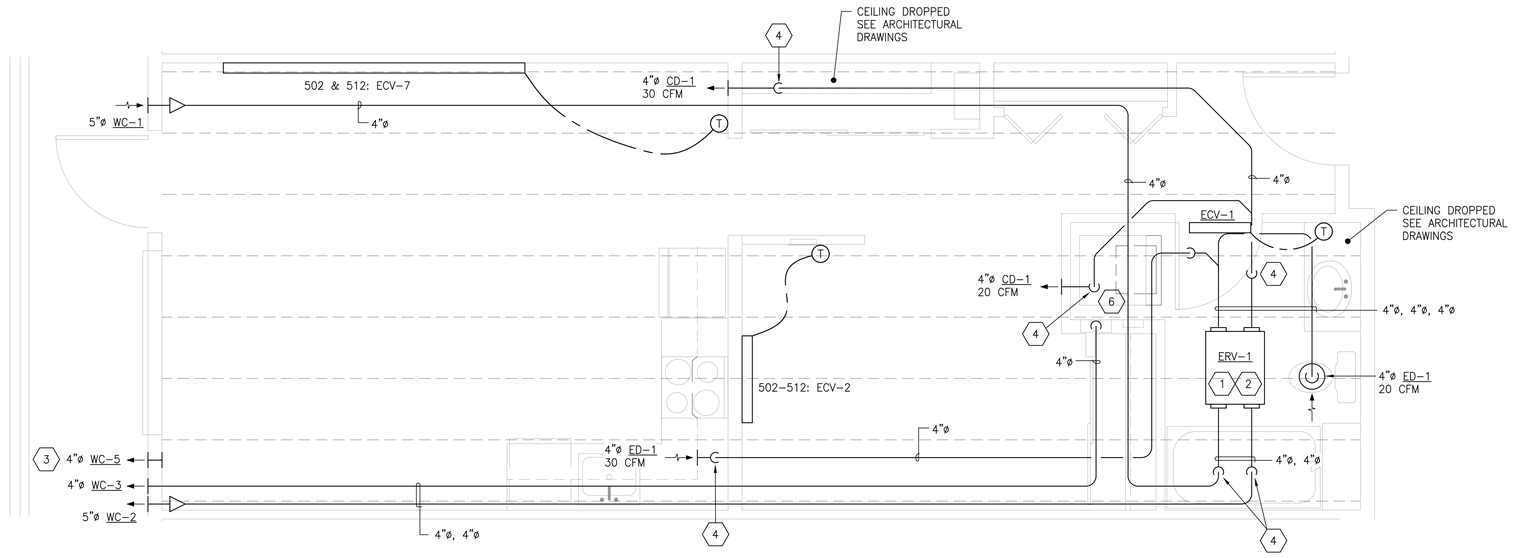
2 BED/1 BA – (UNIT 501 SHOWN)

1 / M2.6

SCALE: 1/2" = 1'-0"

SCALE OF FEET

SIMILAR UNIT: 509



1 BED/1 BA – (UNIT 502 SHOWN)

2 / M2.6

SCALE: 1/2" = 1'-0"

SCALE OF FEET

SIMILAR UNIT: 512

CONSTRUCTION NOTES

1. ERV INSTALLED ABOVE DROPPED CEILING. SEE ARCHITECTURAL DRAWINGS.
2. SEE DETAIL 3/MP0.4 FOR ERV SUPPORT AND ACCESS DOOR INSTALLATION.
3. INSTALL WC-5 WITH 4"ø WALL TUBE TO INSIDE REMOVABLE WALL CAP FOR CONNECTING PORTABLE AIR CONDITIONER. POSITION WALL CAP 12" AFF.
4. FIRE SEAL DUCT PENETRATIONS THROUGH RATED CEILING ASSEMBLY.
5. PROVIDE LABEL, W/ 1/4" TEXT SIZE, ON WALL ADJACENT TO DRYER VENT CONNECTION READING "EQUIVALENT DRYER DUCT LENGTH = 40 FEET"
6. PROVIDE LABEL, W/ 1/4" TEXT SIZE, ON WALL ADJACENT TO DRYER VENT CONNECTION READING "EQUIVALENT DRYER DUCT LENGTH = 55 FEET"

GENERAL NOTES

1. DUCTWORK FROM ERV TO BE ROUTED INTO TRUSS SPACE.
2. ATTIC TRUSSES ARE SHOWN FOR INFORMATION AT 24"O.C. ACTUAL POSITIONING OF TRUSSED TO BE FIELD VERIFIED.

LNS

LNS ENGINEERS, INC.
7713 PIONEER WAY
GIG HARBOR, WA 98335
PHONE: 253-851-5175

LARRY N. STORDAHL
STATE OF WASHINGTON
16454
REGISTERED PROFESSIONAL ENGINEER

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1 PERMIT REVIEW COMMENTS 3-27-2023

1 N. Tacoma Ave, Suite 201 Tacoma, Washington 98403 (253) 584-5207

St. Helens Mixed-Use
Tacoma, Washington
Unit Mechanical Plans

PROJECT NO. : 22226.0
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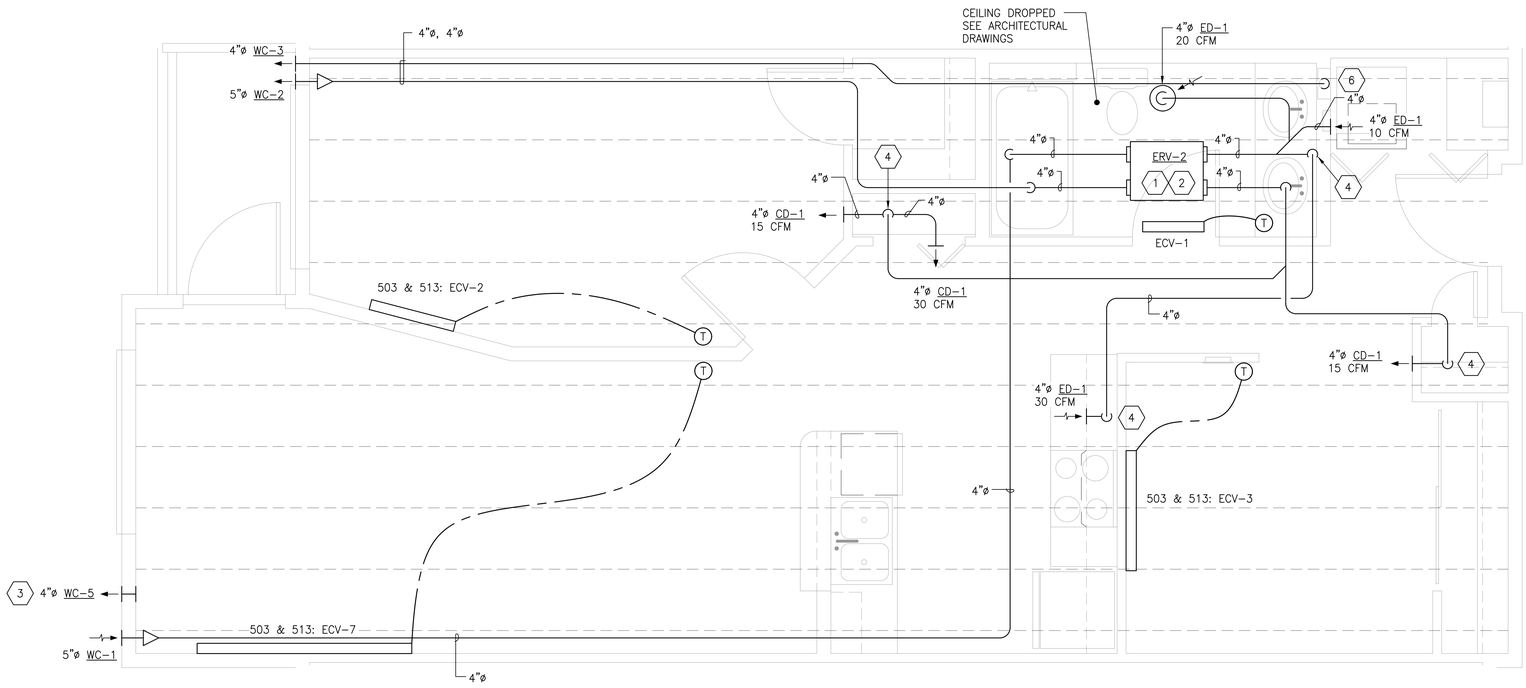
11-9-2022

Casey + DeChant Architects, LLC Architecture And Planning

M2.6

PLOT DATE: May 25, 2023 - 11:42am

FILE NAME: F:\CAD\2022\22226.0 - St Helens Mixed Use\ 22226.0-M20-THRU-M29.dwg



2 BED/1 BA – (UNIT 503 SHOWN)

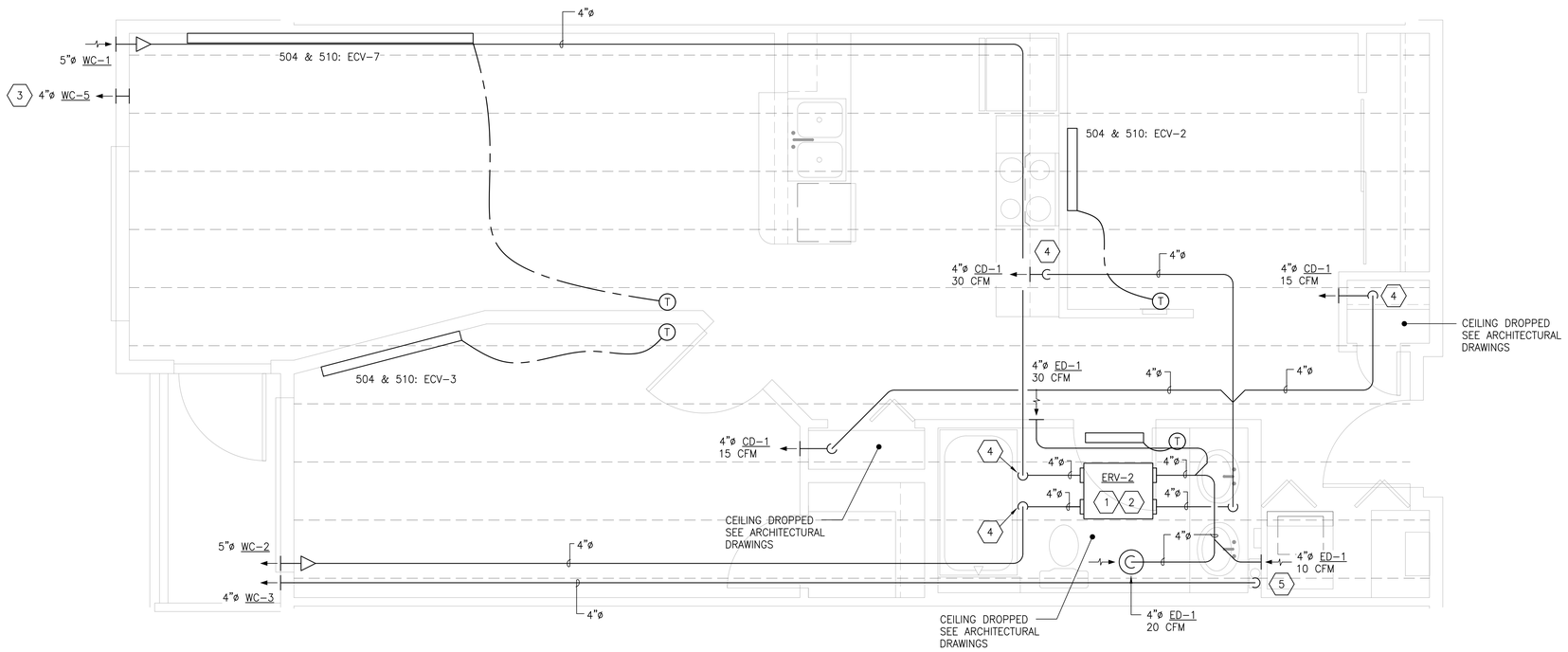
1 / M2.7

SCALE: 1/2" = 1'-0"

SIMILAR UNIT: 513

2 0 2 4

SCALE OF FEET



2 BED/1 BA – (UNIT 504 SHOWN)

2 / M2.7

SCALE: 1/2" = 1'-0"

SIMILAR UNIT: 510

2 0 2 4

SCALE OF FEET

CONSTRUCTION NOTES

1. ERV INSTALLED ABOVE DROPPED CEILING. SEE ARCHITECTURAL DRAWINGS.
2. SEE DETAIL 3/MP0.4 FOR ERV SUPPORT AND ACCESS DOOR INSTALLATION.
3. INSTALL WC-5 WITH 4"ø WALL TUBE TO INSIDE REMOVABLE WALL CAP FOR CONNECTING PORTABLE AIR CONDITIONER. POSITION WALL CAP 12" AFF.
4. FIRE SEAL DUCT PENETRATIONS THROUGH RATED CEILING ASSEMBLY.
5. PROVIDE LABEL, W/ 1/4" TEXT SIZE, ON WALL ADJACENT TO DRYER VENT CONNECTION READING "EQUIVALENT DRYER DUCT LENGTH = 50 FEET"
6. PROVIDE LABEL, W/ 1/4" TEXT SIZE, ON WALL ADJACENT TO DRYER VENT CONNECTION READING "EQUIVALENT DRYER DUCT LENGTH = 55 FEET"

GENERAL NOTES

1. DUCTWORK FROM ERV TO BE ROUTED INTO TRUSS SPACE.
2. ATTIC TRUSSES ARE SHOWN FOR INFORMATION AT 24"O.C. ACTUAL POSITIONING OF TRUSSED TO BE FIELD VERIFIED.

LNS

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GIG HARBOR, WA 98335
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LARRY N. STORDAHL
STATE OF WASHINGTON
16454
REGISTERED PROFESSIONAL ENGINEER

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Casey + DeChant Architects, LLC Architecture And Planning

1 N. Tacoma Ave, Suite 201 Tacoma, Washington 98403 (253) 584-5207

St. Helens Mixed-Use
Tacoma, Washington
Unit Mechanical Plans

PROJECT NO. : 22226.0
DRAWN BY : NBD
ISSUE DATE : 11-9-2022
LATEST REV. THIS SET : 1 -

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11-9-2022

M2.7

PLOT DATE: May. 25, 2023 - 11:42am
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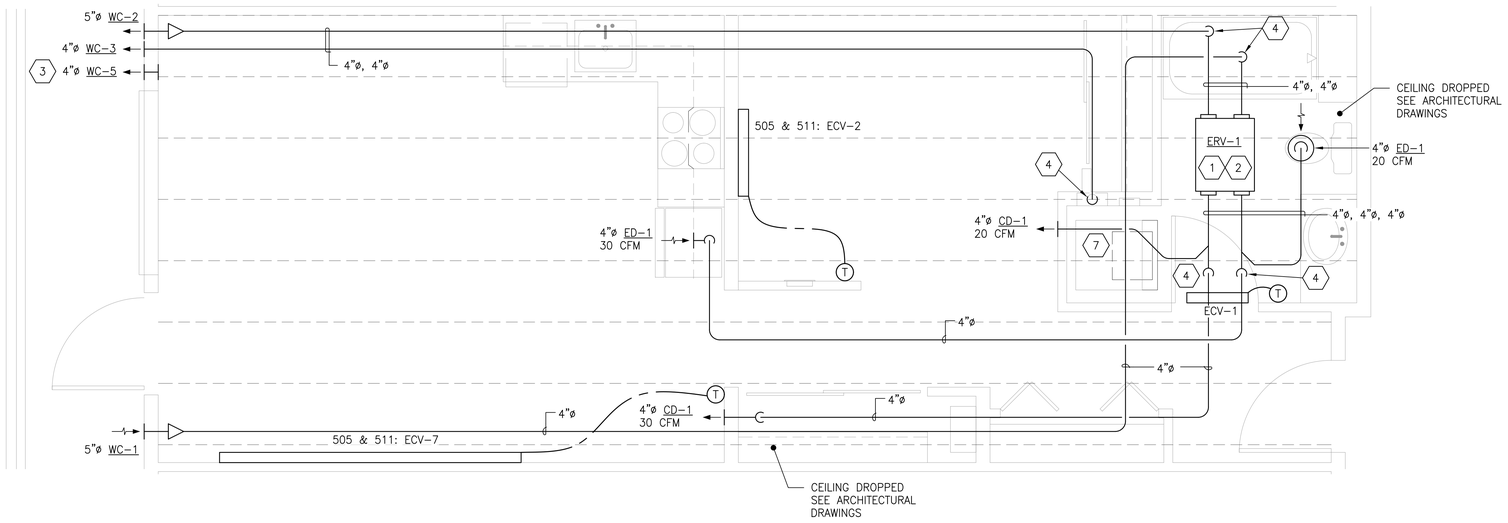
PHONE: 253-851-5175



1 BED/1 BA – (UNIT 505 SHOWN)

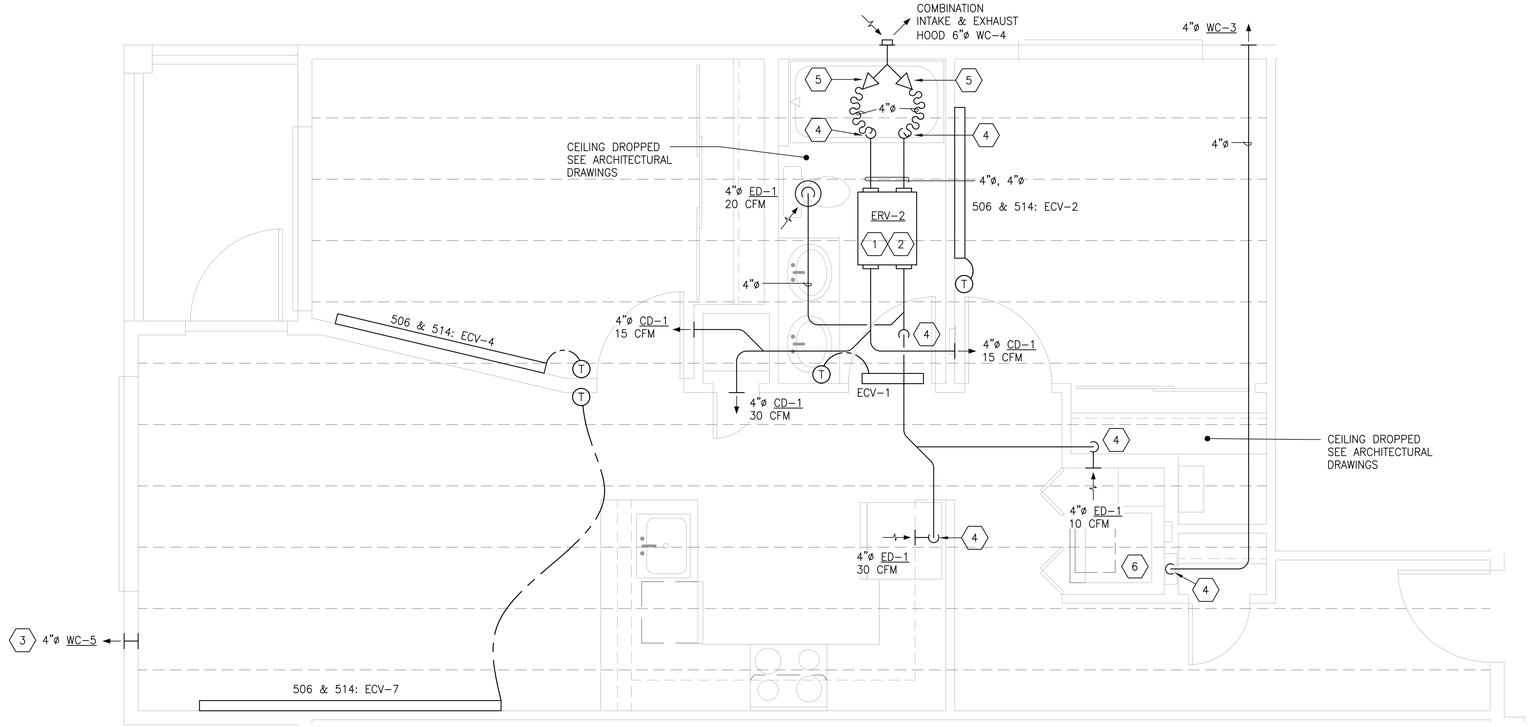
1 / M2.8

SCALE: 1/2" = 1'-0"

2 0 2 4

SCALE OF FEET

SIMILAR UNIT: 511



2 BED/1 BA – (UNIT 506 SHOWN)

2 / M2.8

SCALE: 1/2" = 1'-0"

2 0 2 4

SCALE OF FEET

SIMILAR UNIT: 514

CONSTRUCTION NOTES

1. ERV INSTALLED ABOVE DROPPED CEILING. SEE ARCHITECTURAL DRAWINGS.
2. SEE DETAIL 3/MP0.4 FOR ERV SUPPORT AND ACCESS DOOR INSTALLATION.
3. INSTALL WC-5 WITH 4"ø WALL TUBE TO INSIDE REMOVABLE WALL CAP FOR CONNECTING PORTABLE AIR CONDITIONER. POSITION WALL CAP 12" AFF.
4. FIRE SEAL DUCT PENETRATIONS THROUGH RATED CEILING ASSEMBLY.
5. PROVIDE 4"ø TO 5"ø TRANSITION WITH METAL DUCT, NO FLEXIBLE DUCT ALLOWED.
6. PROVIDE LABEL, W/ 1/4" TEXT SIZE, ON WALL ADJACENT TO DRYER VENT CONNECTION READING "EQUIVALENT DRYER DUCT LENGTH = 40 FEET"
7. PROVIDE LABEL, W/ 1/4" TEXT SIZE, ON WALL ADJACENT TO DRYER VENT CONNECTION READING "EQUIVALENT DRYER DUCT LENGTH = 55 FEET"

GENERAL NOTES

1. DUCTWORK FROM ERV TO BE ROUTED INTO TRUSS SPACE.
2. ATTIC TRUSSES ARE SHOWN FOR INFORMATION AT 24"O.C. ACTUAL POSITIONING OF TRUSSED TO BE FIELD VERIFIED.

REVISIONS THIS SHEET

1 PERMIT REVIEW COMMENTS 3-27-2023

1 N. Tacoma Ave, Suite 201 Tacoma, Washington 98403 (253) 584-5207

St. Helens Mixed-Use
Tacoma, Washington
Unit Mechanical Plans

PROJECT NO. : 22226.0
DRAWN BY : NBD
ISSUE DATE : 11-9-2022
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11-9-2022

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M2.8

PLOT DATE: May 25, 2023 - 11:43am
FILE NAME: F:\CAD\2022\22226.0 - St Helens Mixed Use\ 22226.0-M20-THRU-M29.dwg

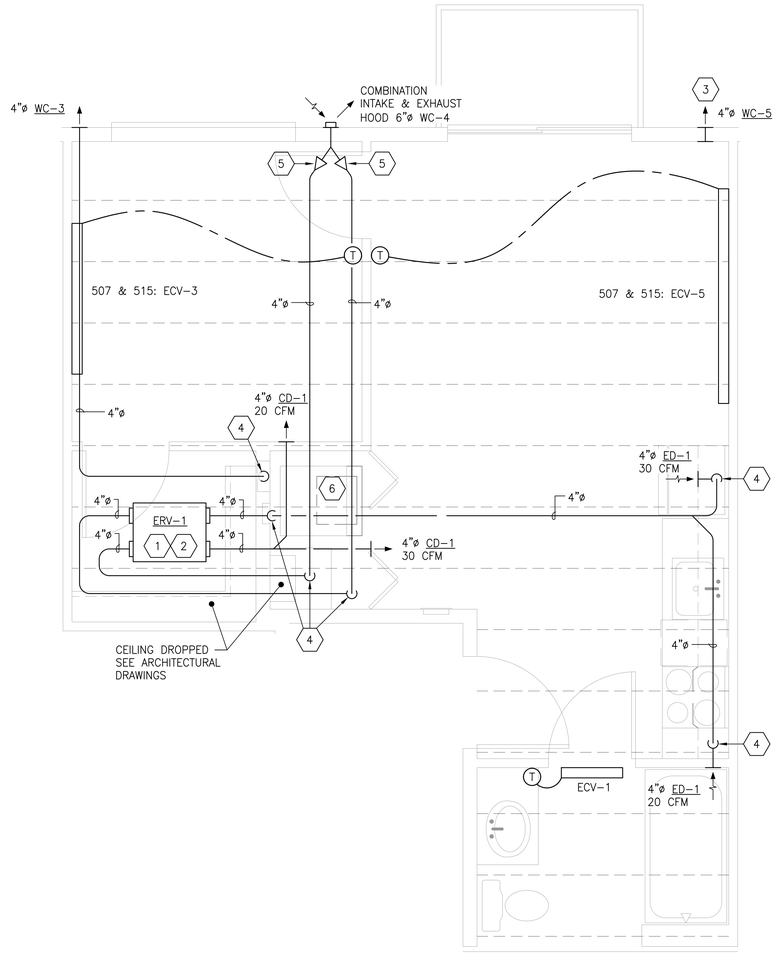
CONSTRUCTION NOTES

1. ERV INSTALLED ABOVE DROPPED CEILING. SEE ARCHITECTURAL DRAWINGS.
2. SEE DETAIL 3/MP0.4 FOR ERV SUPPORT AND ACCESS DOOR INSTALLATION.
3. INSTALL WC-5 WITH 4"ø WALL TUBE TO INSIDE REMOVABLE WALL CAP FOR CONNECTING PORTABLE AIR CONDITIONER. POSITION WALL CAP 12" AFF.
4. FIRE SEAL DUCT PENETRATIONS THROUGH RATED CEILING ASSEMBLY.
5. PROVIDE 4"ø TO 5"ø TRANSITION WITH METAL DUCT, NO FLEXIBLE DUCT ALLOWED.
6. PROVIDE LABEL, W/ 1/4" TEXT SIZE, ON WALL ADJACENT TO DRYER VENT CONNECTION READING "EQUIVALENT DRYER DUCT LENGTH = 40 FEET"

1

GENERAL NOTES

1. DUCTWORK FROM ERV TO BE ROUTED INTO TRUSS SPACE.
2. ATTIC TRUSSES ARE SHOWN FOR INFORMATION AT 24"O.C. ACTUAL POSITIONING OF TRUSSED TO BE FIELD VERIFIED.

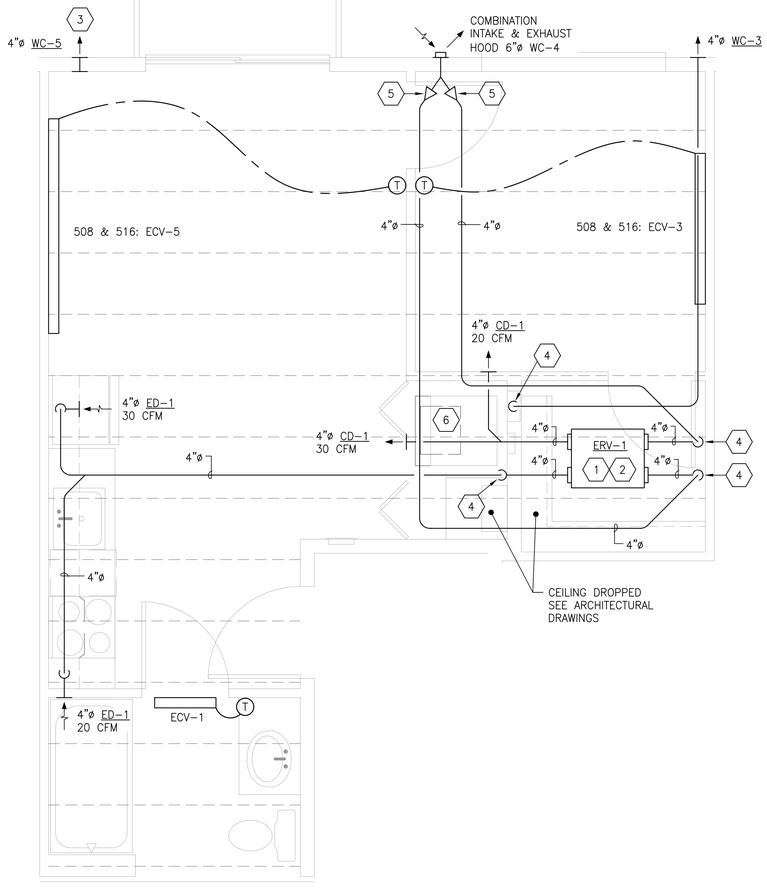


1 BED/1 BA – (UNIT 507 SHOWN) — 1 / M2.9

SCALE: 1/2" = 1'-0"

SCALE OF FEET: 2 0 2 4

SIMILAR UNIT: 515



1 BED/1 BA – (UNIT 508 SHOWN) — 2 / M2.9

SCALE: 1/2" = 1'-0"

SCALE OF FEET: 2 0 2 4

SIMILAR UNIT: 516

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St. Helens Mixed-Use
Tacoma, Washington
Unit Mechanical Plans

PROJECT NO. : 22226.0
DRAWN BY : NBD
ISSUE DATE : 11-9-2022
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PLOT DATE: May 25, 2023 - 11:43am

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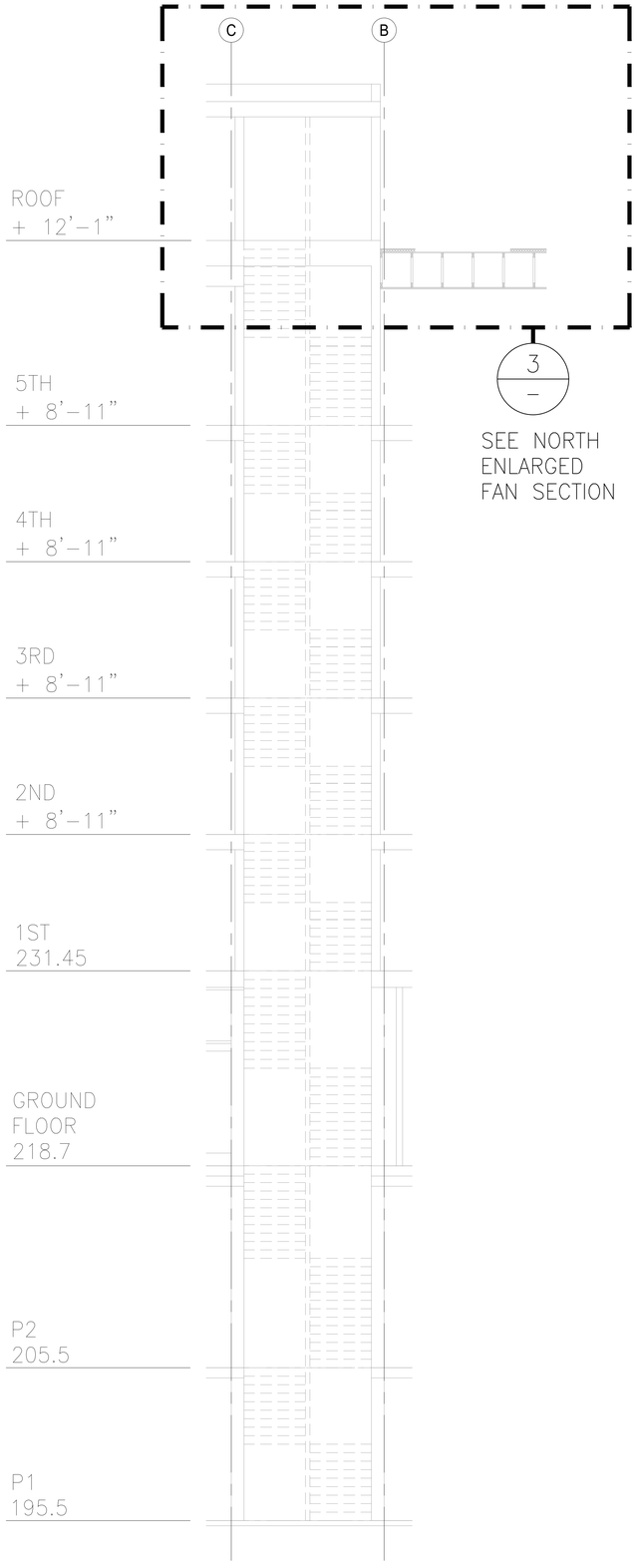
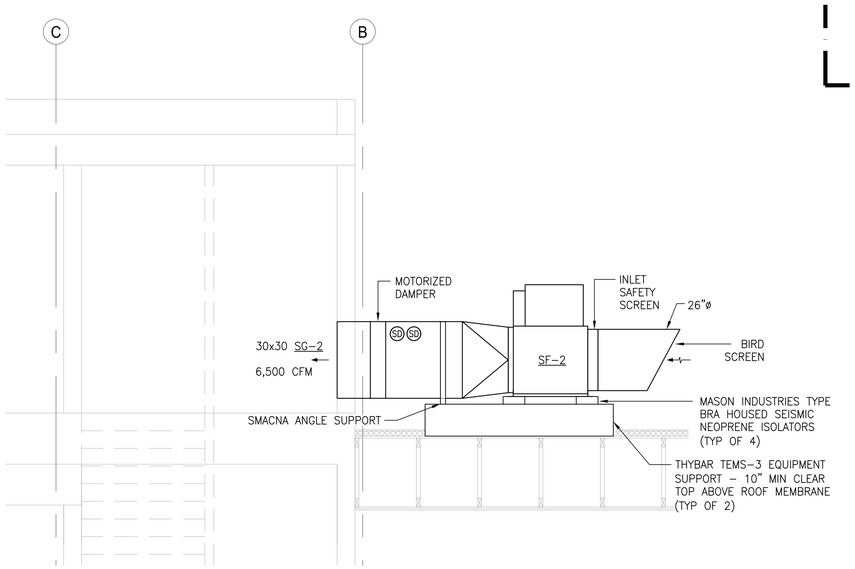
1 2 3 4



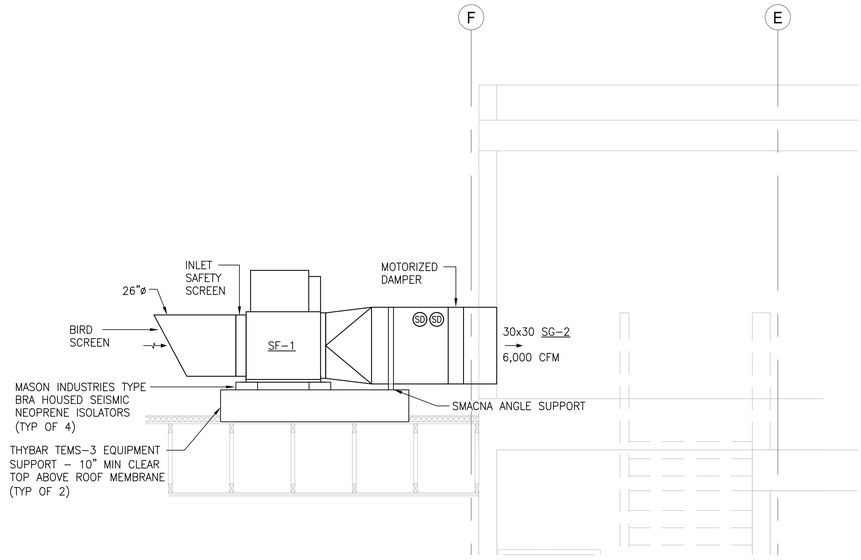


North Enlarged Fan Section 3

SCALE: 1/2" = 1'-0"

2 0 2 4

SCALE OF FEET

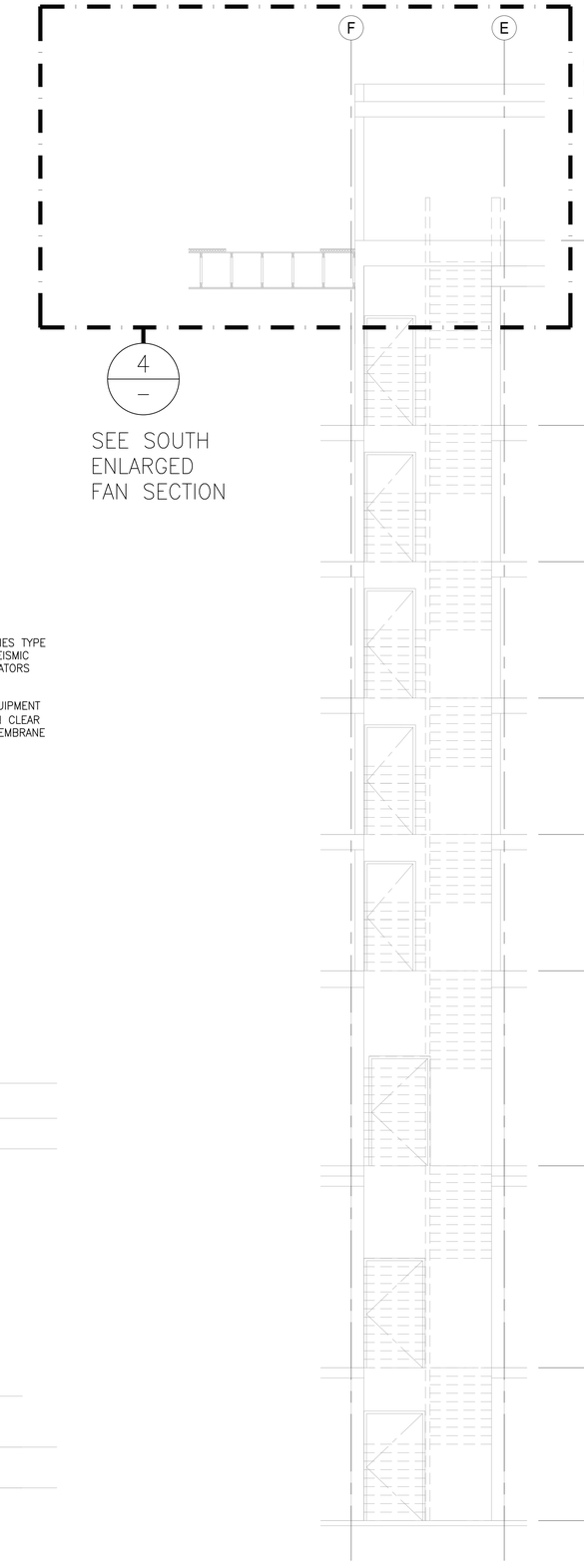


South Enlarged Fan Section 4

SCALE: 1/2" = 1'-0"

2 0 2 4

SCALE OF FEET



North Stair #2 Section 1 / M1.9

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

4 0 4 8 12

SCALE OF FEET

South Stair #1 Section 2 / M1.9

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

4 0 4 8 12

SCALE OF FEET

St. Helens Mixed-Use
Tacoma, Washington
Mechanical Stair Sections

PROJECT NO. : 22226.0
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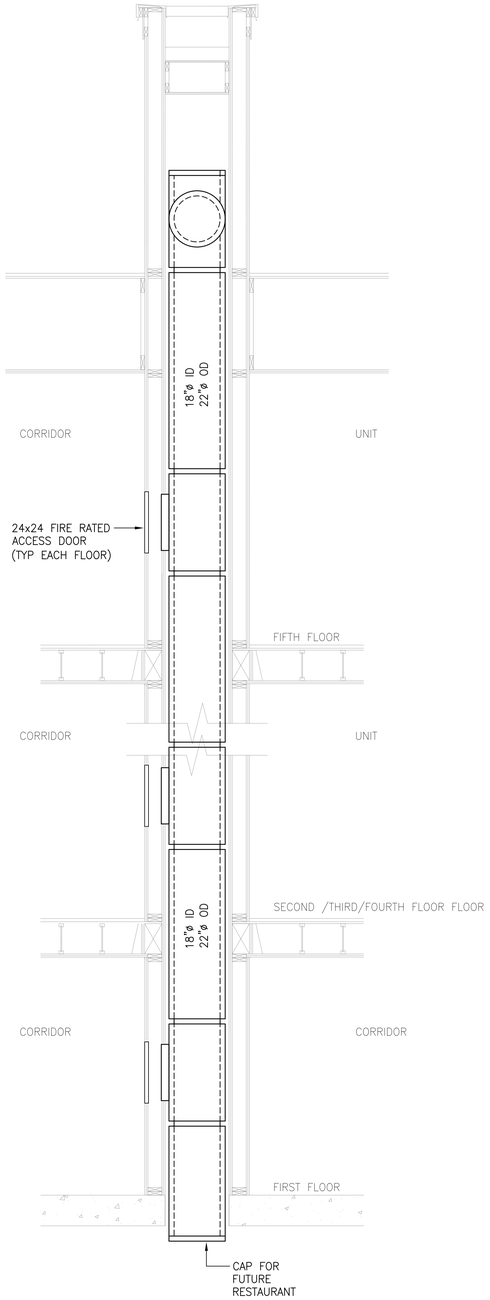


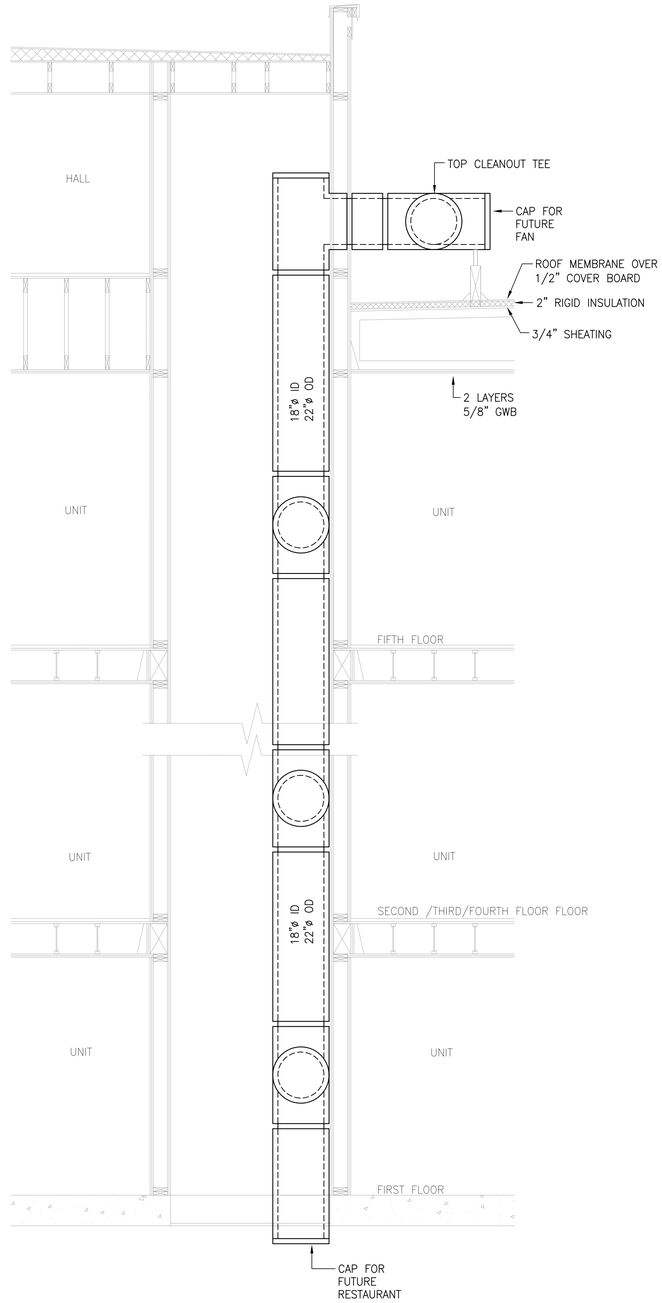
Grease Duct Section

3 / M1.9

SCALE: 1/2" = 1'-0"

2 0 2 4

SCALE OF FEET



Grease Duct Section

4 / M1.9

SCALE: 1/2" = 1'-0"

2 0 2 4

SCALE OF FEET

GENERAL NOTES

1. GREASE DUCT SHOWN IS BASED ON CAPTIVEAIRE MODEL DW-2R FACTORY-BUILT DOUBLE WALL GREASE DUCT.
2. INSTALLATION SHALL COMPLY WITH MANUFACTURER'S INSTALLATION INSTRUCTIONS AND UL 1978, UL2221 AND CAN/ULCS144 STANDARDS AND TESTING.
3. MANUFACTURER'S SHOP DRAWINGS SHALL BE PROVIDED PRIOR TO INSTALLATION SHOWING ALL DUCT SECTIONS, FITTINGS AND SUPPORTS.

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PHONE: 253-851-5175

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1 2 3 4

St. Helens Mixed-Use
Tacoma, Washington
Mechanical Sections

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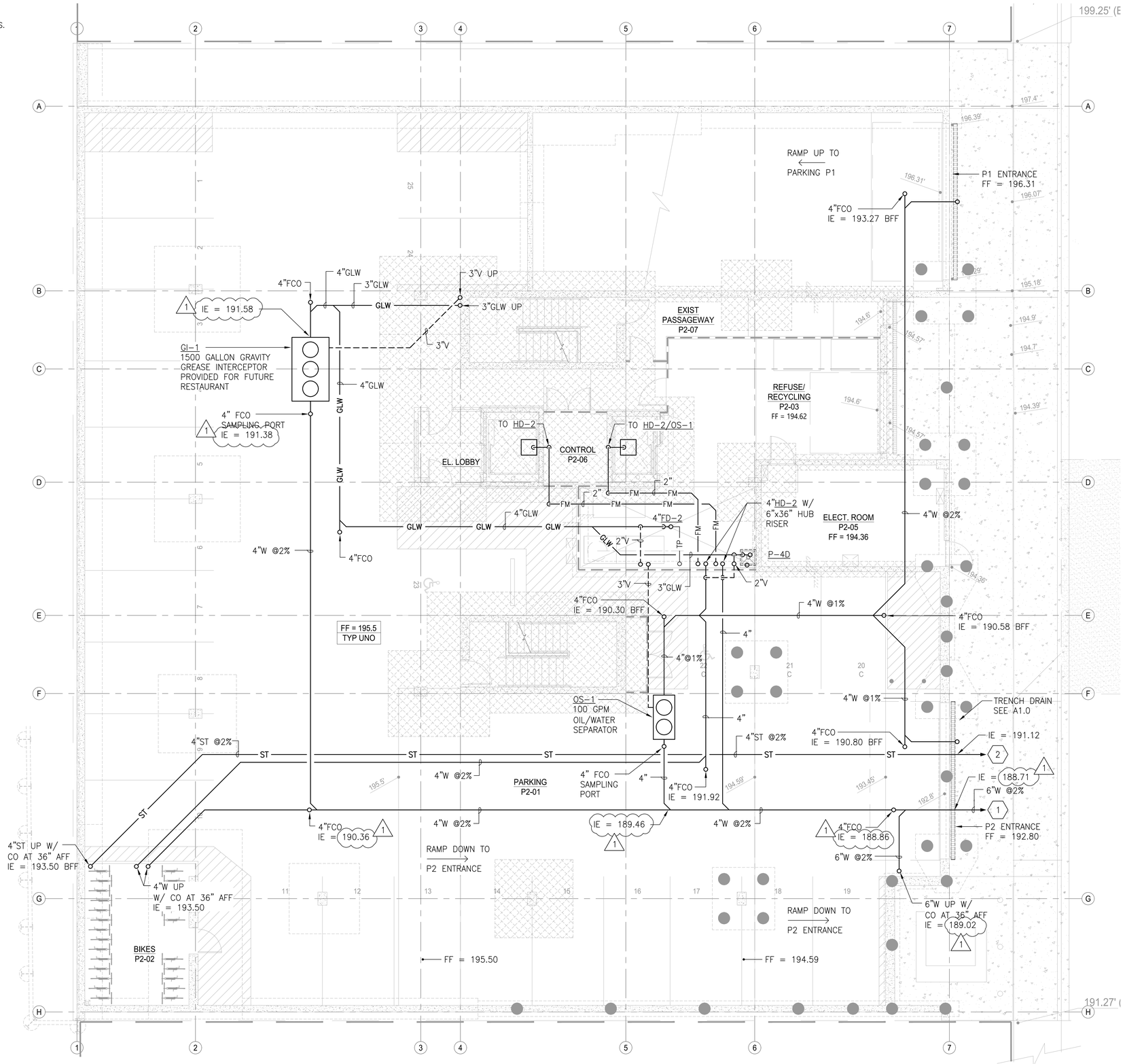
CONSTRUCTION NOTES

1. CONNECT TO SANITARY SIDE SEWER 5'± OUTSIDE BUILDING, SEE CIVIL DRAWINGS.
2. CONNECT TO STORM DRAIN 5'± OUTSIDE BUILDING, SEE CIVIL DRAWINGS.



N

Garage Level P2 - Foundation Plumbing Plan

SCALE: 3/16" = 1'-0"

4 0 4 8 12

SCALE OF FEET

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St. Helens Mixed-Use
Tacoma, Washington
Garage Level P2 - Foundation Plumbing Plan

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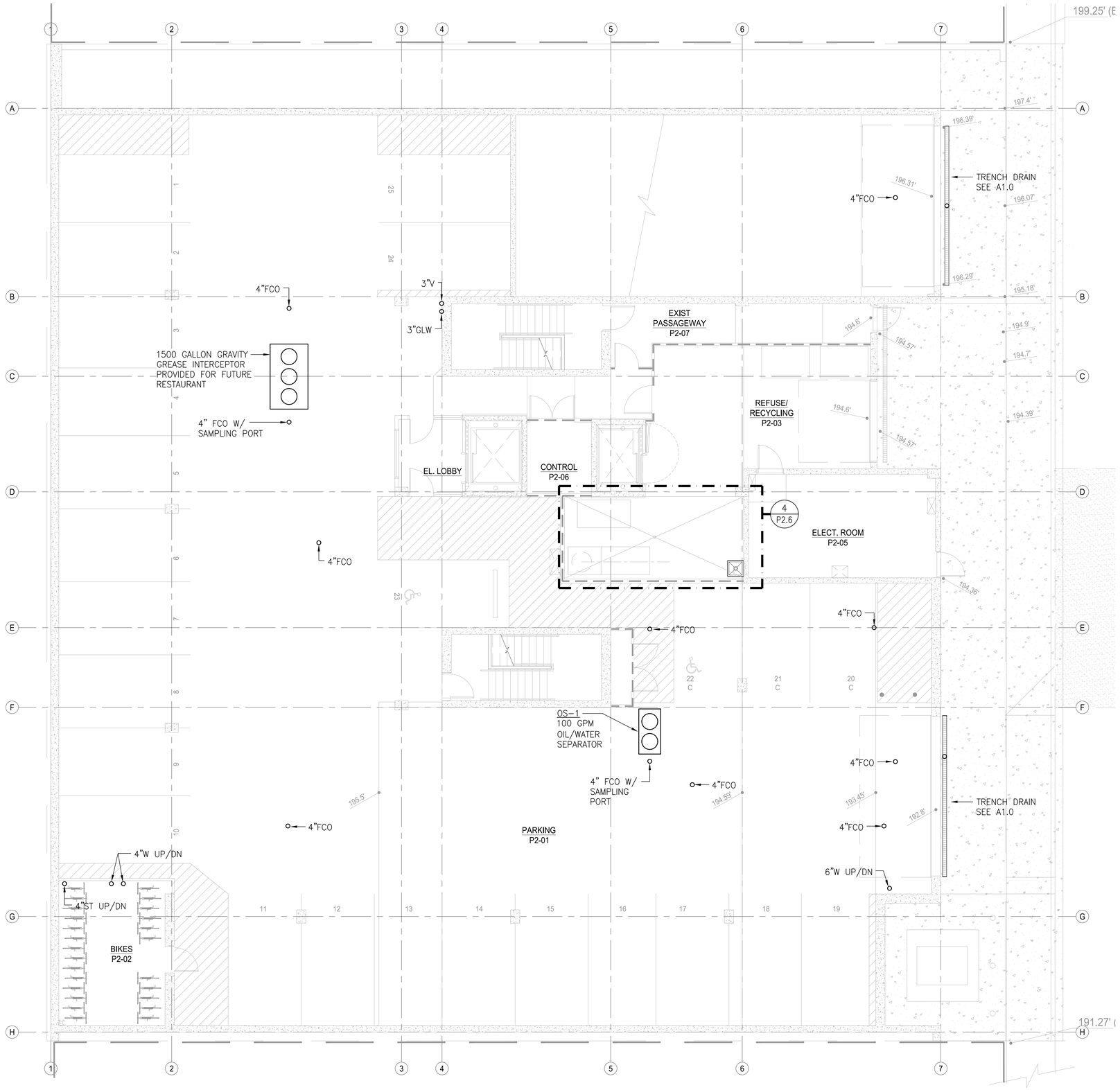
P1.0

PLOT DATE: May 25, 2023 - 11:47am

FILE NAME: F:\CAD\2022\22226.0 - St. Helens Mixed Use\ 22226.0-P10-THRU-P19.dwg

CONSTRUCTION NOTES

1



N

Garage Level P2 - Plumbing Plan

SCALE: 3/16" = 1'-0"

4 0 4 8 12

SCALE OF FEET

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3-27-2023

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St. Helens Mixed-Use
Tacoma, Washington
Garage Level P2 - Plumbing Plan

PROJECT NO. : 22226.0
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11-9-2022

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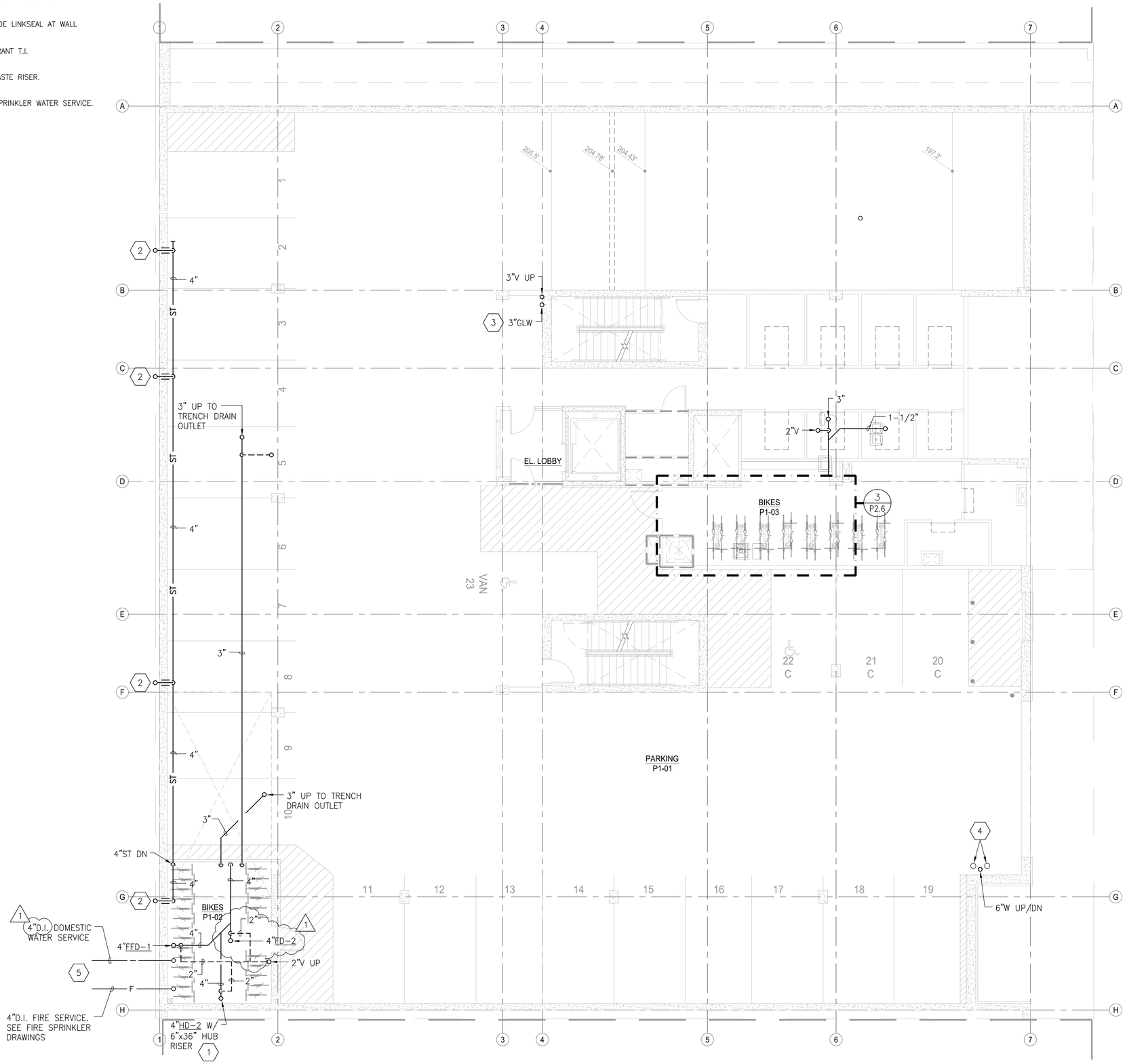
P1.1

PLOT DATE: May 25, 2023 - 11:48am

FILE NAME: F:\CAD\2022\22226.0 - St. Helens Mixed Use\ 22226.0-P10-THRU-P19.dwg

CONSTRUCTION NOTES

1. LOCATE HD-2 HUB DRAIN AS DIRECTED BY FIRE SPRINKLER CONTRACTOR.
2. 4" STORM UP TO DOWN SPOUT ADAPTER. PROVIDE LINKSEAL AT WALL PENETRATION.
3. CAP 3"GLW FOR FUTURE EXTENSION TO RESTAURANT T.I.
4. PROVIDE PROTECTIVE BOLLARD EACH SIDE OF WASTE RISER.
5. SEE CIVIL DRAWINGS FOR DOMESTIC AND FIRE SPRINKLER WATER SERVICE.



N

Garage Level P1 - Plumbing Plan

SCALE: 3/16" = 1'-0"

4 0 4 8 12

SCALE OF FEET

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1 2 3 4

St. Helens Mixed-Use
Tacoma, Washington
Garage Level P1 - Plumbing Plan

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PROJECT NO. : 22226.0
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P1.2

PLOT DATE: May 25, 2023 - 11:48am

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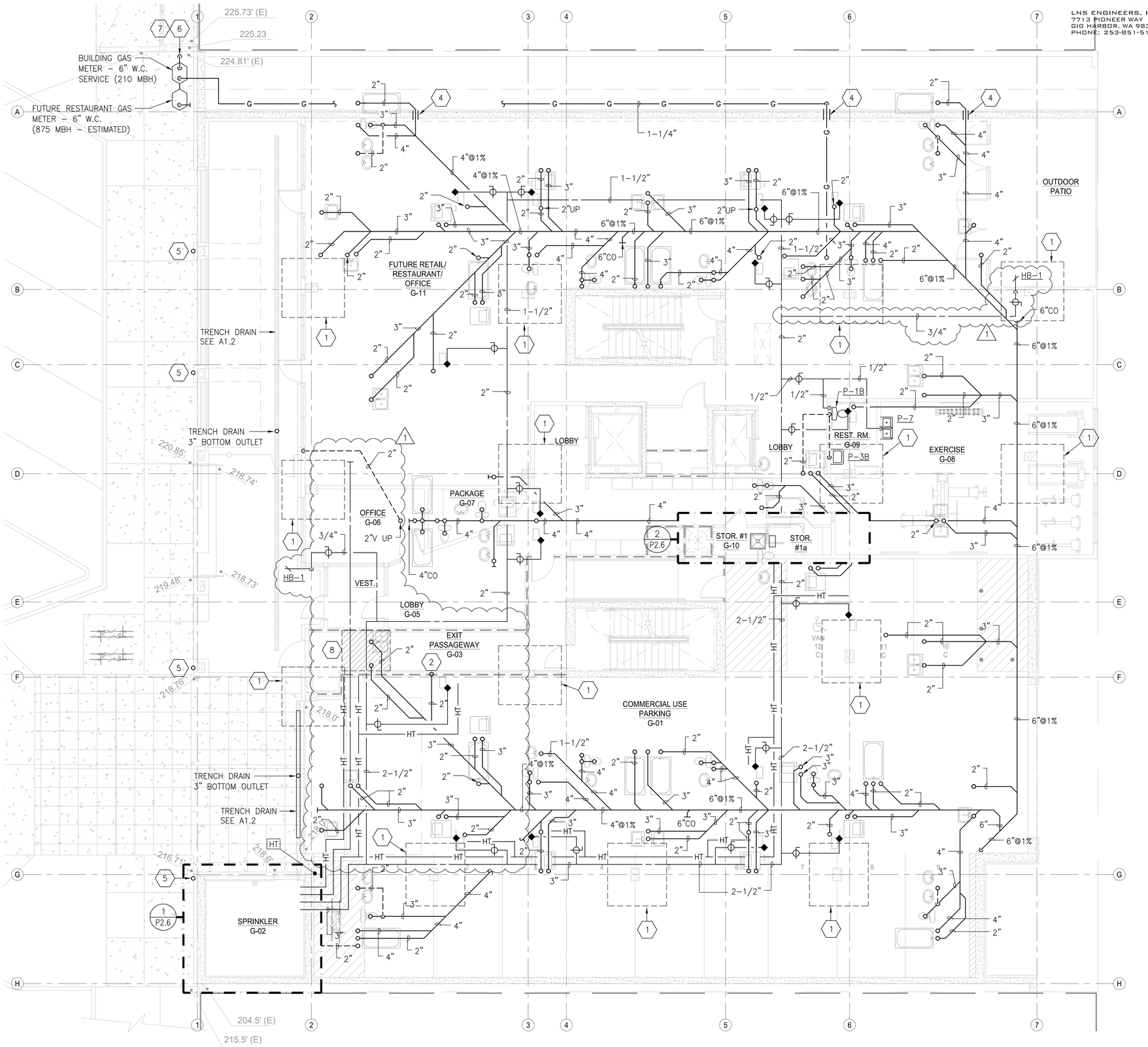
CONSTRUCTION NOTES

1. NO PENETRATIONS ALLOWED THROUGH PT SLAB WITHIN 3'–4" OF COLUMNS. EXCEPT WHERE NOTED AT GRIDS B3 & B6.
2. PROVIDE BLOCKOUTS AT TOP OF WALL FOR ROUTING DRAIN LINES.
3. PROVIDE BLOCKOUTS AT TOP OF WALL FOR DRAIN LINE AND WATER LINE.
4. PROVIDE SLEEVE AT CONCRETE WALL PENETRATION.
5. CONNECT TO 3"x3" DOWNSPOUT WITH DOWNSPOUT ADAPTER AT FINISH GRADE. SEE ARCHITECTURAL DRAWINGS FOR LOCATION.
6. PROVIDE 4"ø PVC GAS SLEEVE WITH LONG SWEEP FITTINGS TO EXISTING GAS SERVICE IN ST. HELENS FOR INSTALLATION OF GAS SERVICE BY PSE.
7. SEE CIVIL DRAWINGS C5 & C6 FOR GAS LINE LOCATION IN ST. HELENS. CONFIRM LOCATION WITH PSE.
8. PIPING ROUTED THROUGH EXIT PASSAGE G–03 SHALL BE ENCLOSED IN 2–HOUR SOFFIT – SEE ARCHITECTURAL DRAWINGS.

KEY

- ◆ DOMESTIC WATER RISER, SEE DRAWING P3.5.
- —HT— HEAT TRACE
- [HT] HEAT TRACE CONTROLLER 120V/1PH



Ground Floor - Plumbing Plan

SCALE: 3/16" = 1'–0"

SCALE OF FEET

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St. Helens Mixed-Use
Tacoma, Washington
Ground Floor - Plumbing Plan

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PROJECT NO. : 22226.0
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PLOT DATE: May 25, 2023 – 11:48am
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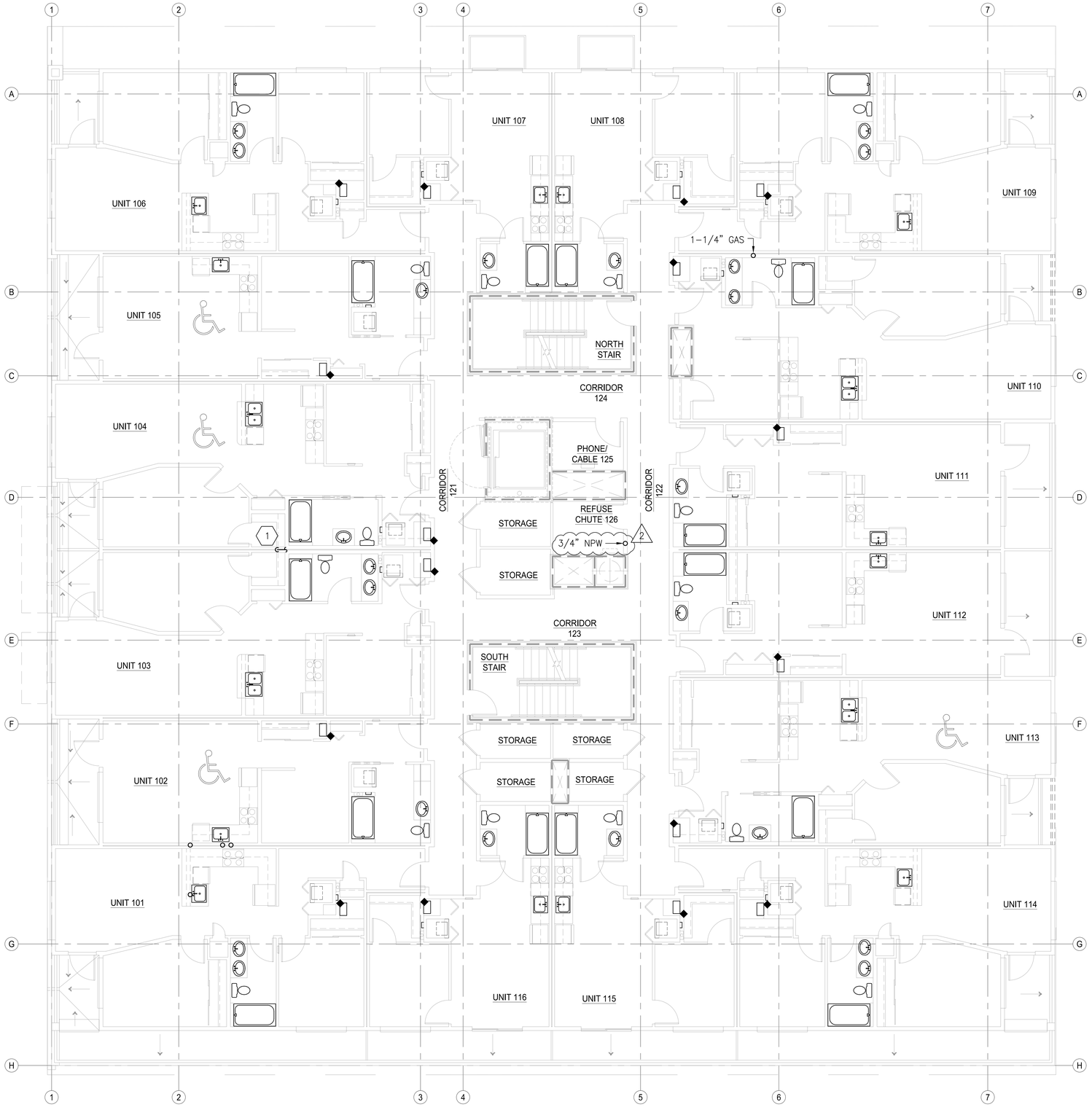
CONSTRUCTION NOTES

1. CONNECT 2"V FROM TRENCH DRAIN TO UNIT 103/104 VENT SYSTEM.

KEY

◆ DOMESTIC WATER RISER, SEE DRAWING P3.5.



N

1st Floor - Plumbing Plan

SCALE: 3/16" = 1' -0"

4 0 4 8 12

SCALE OF FEET

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St. Helens Mixed-Use
Tacoma, Washington
1st Floor - Plumbing Plan

PROJECT NO. : 22226.0
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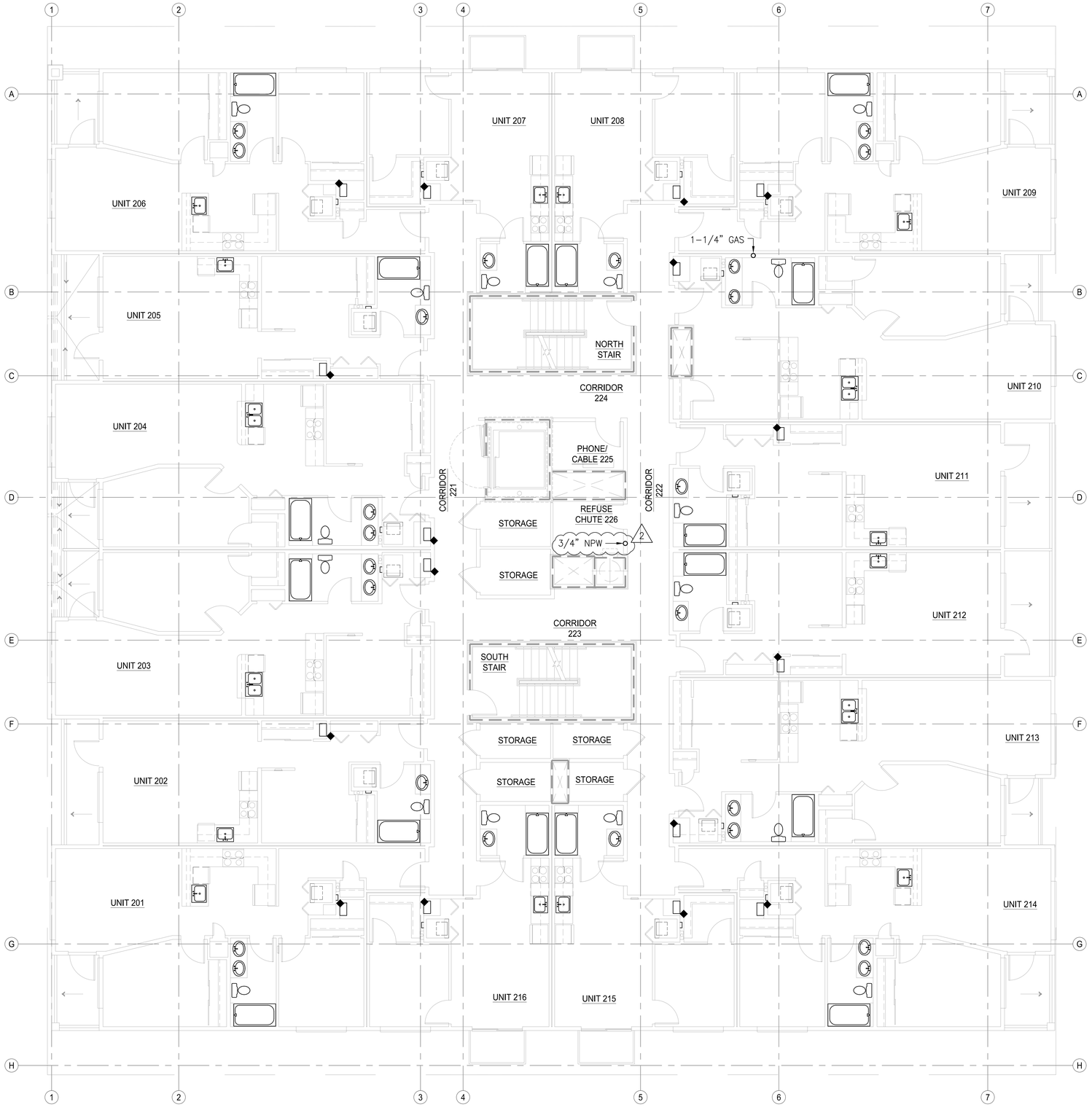
CONSTRUCTION NOTES

1

KEY

◆ DOMESTIC WATER RISER, SEE DRAWING P3.5.



N

2nd Floor - Plumbing Plan

SCALE: 3/16" = 1'-0"

4 0 4 8 12

SCALE OF FEET

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STATE OF WASHINGTON
16454
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St. Helens Mixed-Use
Tacoma, Washington
2nd Floor - Plumbing Plan

PROJECT NO. : 22226.0
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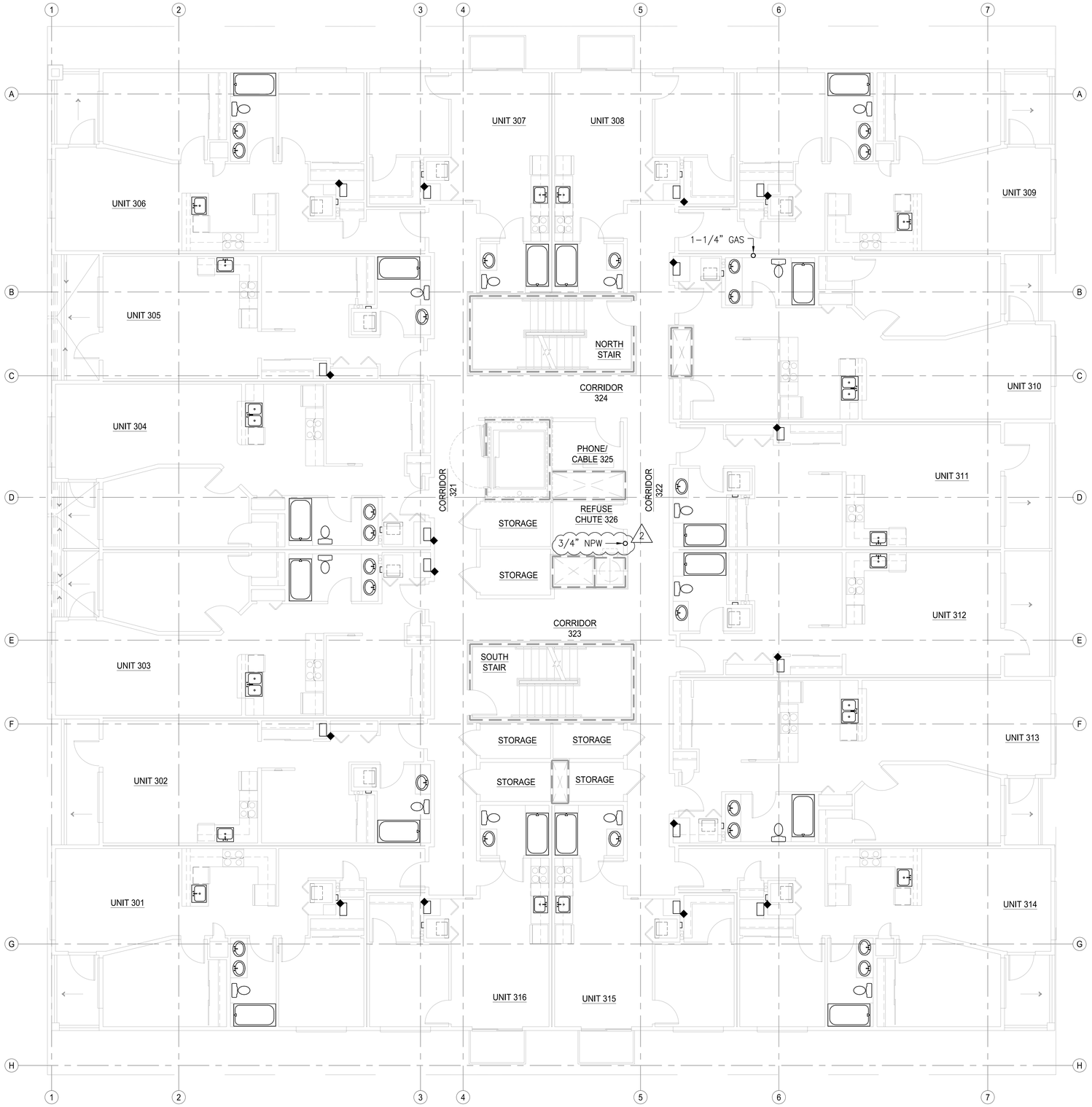
CONSTRUCTION NOTES

1

KEY

◆ DOMESTIC WATER RISER, SEE DRAWING P3.5.



N

3rd Floor - Plumbing Plan

SCALE: 3/16" = 1' -0"

4 0 4 8 12

SCALE OF FEET

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St. Helens Mixed-Use
Tacoma, Washington
3rd Floor - Plumbing Plan

PROJECT NO. : 22226.0
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P1.6

PLOT DATE: May 25, 2023 - 11:49am

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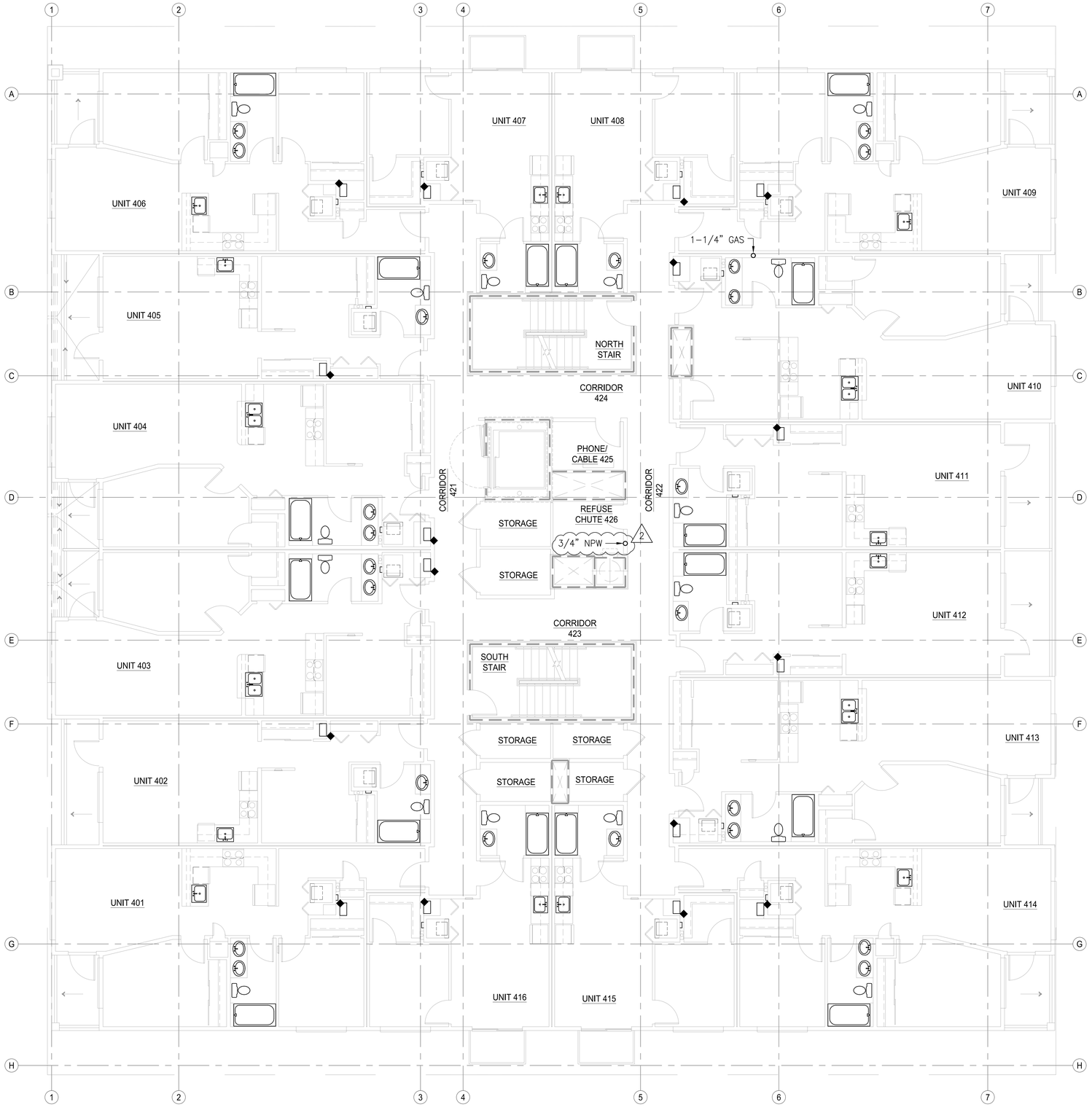
CONSTRUCTION NOTES

1

KEY

◆ DOMESTIC WATER RISER, SEE DRAWING P3.5.



4th Floor - Plumbing Plan

SCALE: 3/16" = 1' -0"

4 0 4 8 12

SCALE OF FEET

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GIG HARBOR, WA 98335
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St. Helens Mixed-Use
Tacoma, Washington
4th Floor - Plumbing Plan

PROJECT NO. : 22226.0
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P1.7

PLOT DATE: May. 25, 2023 - 11:49am

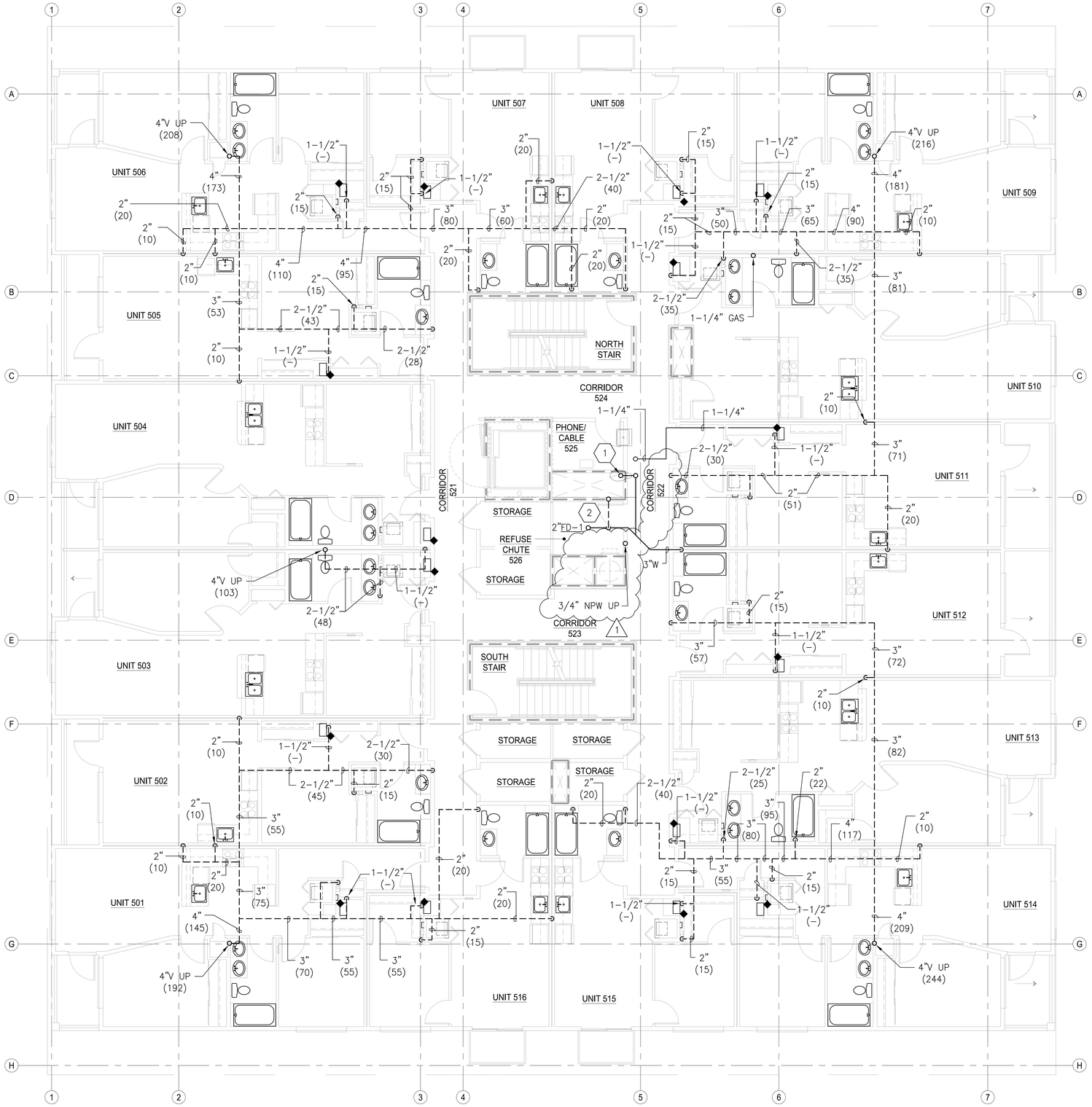
FILE NAME: F:\CAD\2022\22226.0 - St. Helens Mixed Use\ 22226.0-P10-THRU-P19.dwg

CONSTRUCTION NOTES

1. 3" TRAP ARM TO P-1C IN REST ROOM R-03 WITH 2" VENT IN FLOOR/CEILING FRAMING ABOVE CHASE.
2. 2" UP TO FD-1 IN REFUSE CHUTE R-05 WITH 1-1/2" VENT IN FLOOR/CEILING FRAMING.

KEY

◆ DOMESTIC WATER RISER, SEE DRAWING P3.5.



N

5th Floor - Plumbing Plan

SCALE: 3/16" = 1'-0"

4 0 4 8 12

SCALE OF FEET

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LNS ENGINEERS, INC.
7713 PIONEER WAY
GIG HARBOR, WA 98335
PHONE: 253-851-5175

LARRY N. STORDAHL — STATE OF WASHINGTON — 16454 — REGISTERED PROFESSIONAL ENGINEER

REVISIONS THIS SHEET

1 PERMIT REVIEW COMMENTS 3-27-2023

St. Helens Mixed-Use
Tacoma, Washington
5th Floor - Plumbing Plan

PROJECT NO. : 22226.0
DRAWN BY : NBD
ISSUE DATE : 11-9-2022
LATEST REV. THIS SET : 1

1 N. Tacoma Ave, Suite 201 Tacoma, Washington 98403 (253) 584-5207

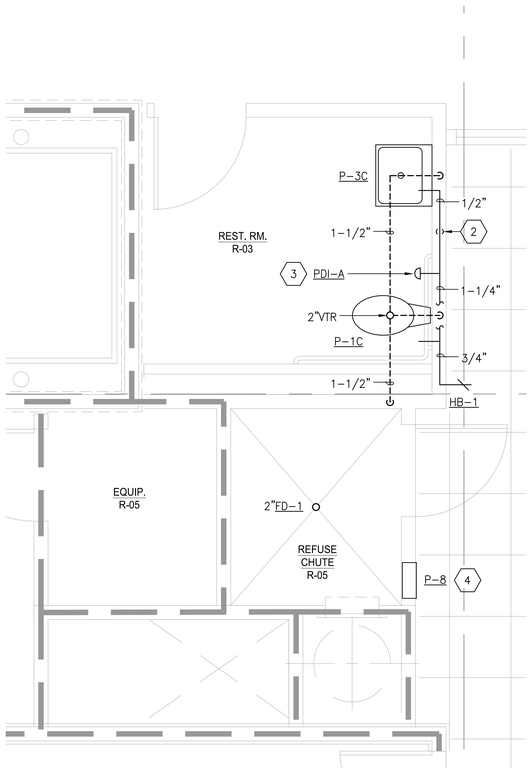
PERMIT SET
11-9-2022

PLOT DATE: May 25, 2023 - 11:50am

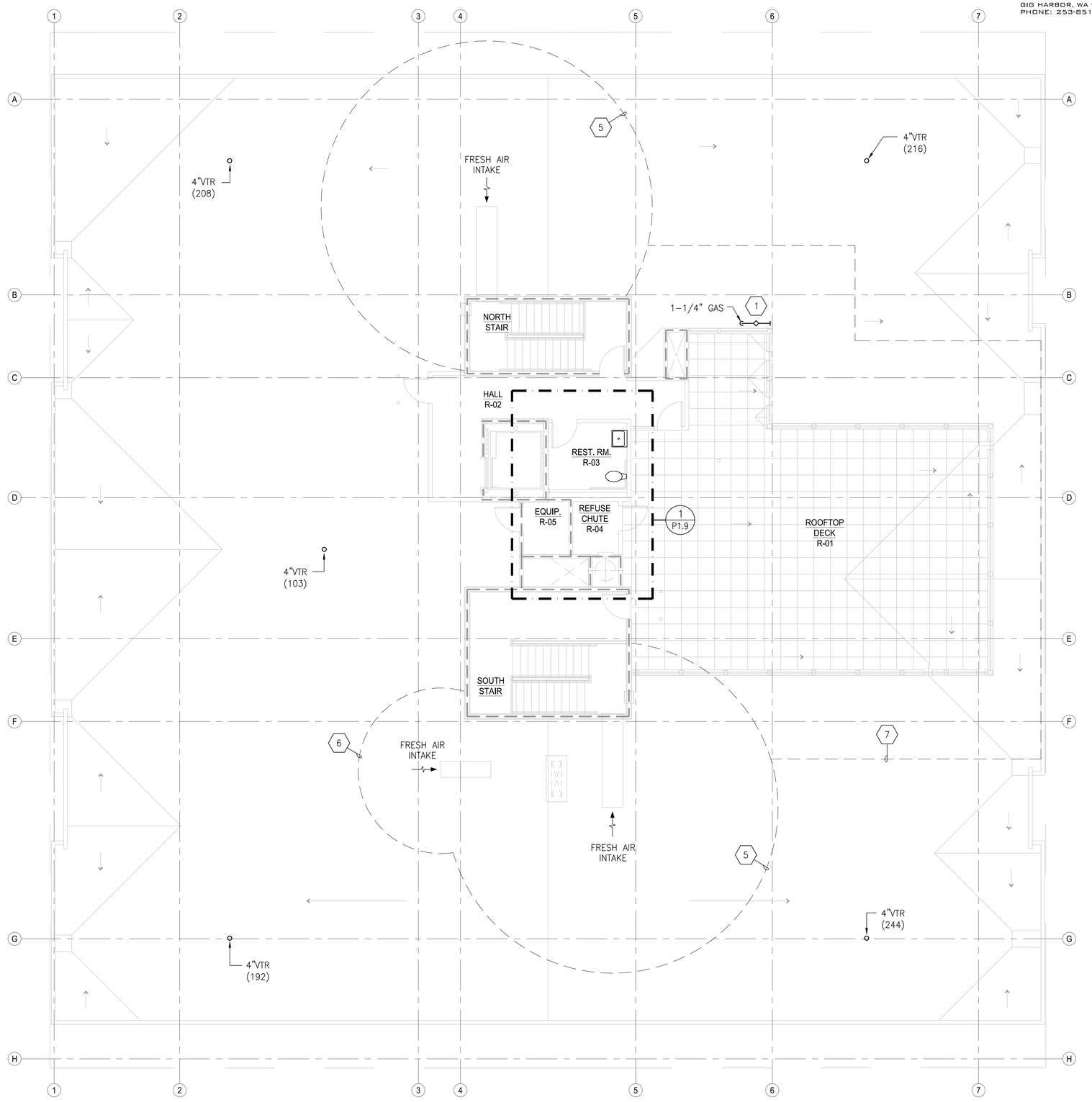
FILE NAME: F:\CAD\2022\22226.0 - St. Helens Mixed Use\ 22226.0-P10-THRU-P19.dwg

CONSTRUCTION NOTES

1. STUB 1-1/4" GAS ON ROOF LEVEL FOR FUTURE DISTRIBUTION TO PATIO FIRE PIT AND/OR BBQ'S. PROVIDE GAS SHUTOFF VALVE AND CAP END OF LINE.
2. 1-1/4"CW RISER W/ ISOLATION BALL VALVE AND TRAP PRIMER VALVE. PROVIDE 12"x12" ACCESS DOOR.
3. PROVIDE 10"x10" ACCESS DOOR TO WATER HAMMER ARRESTOR.
4. 3/4" NON-POTABLE WATER RISER TO P-8 REFUSE CHUTE WATER SUPPLY W/ ISOLATION BALL VALVE. PROVIDE 12"X12" ACCESS DOOR. PIPING TO REFUSE CHUTE WASHDOWN SYSTEM SHALL BE PROVIDED BY REFUSE CHUTE VENDOR/INSTALLER. (1)
5. MAINTAIN 20' CLEAR TO PRESSURIZATION FAN INTAKE FROM ALL PLUMBING VENTS.
6. MAINTAIN 10' CLEAR TO HEAT RECOVERY UNIT INTAKE FROM ALL PLUMBING VENTS.
7. MAINTAIN 10' CLEAR FROM OUTDOOR PUBLIC OCCUPIED SPACES FROM ALL PLUMBING VENTS.



ENLARGED PLUMBING PLAN — SCALE: 1/2" = 1'-0" — 1 / P1.9



Roof - Plumbing Plan
SCALE: 3/16" = 1'-0"
4 0 4 8 12
SCALE OF FEET

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1 2 3 4

St. Helens Mixed-Use
Tacoma, Washington
Roof - Plumbing Plan

PROJECT NO. : 22226.0
DRAWN BY : NBD
ISSUE DATE : 11-9-2022
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P1.9

PLOT DATE: May 25, 2023 - 11:50am
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STATE OF WASHINGTON
16454
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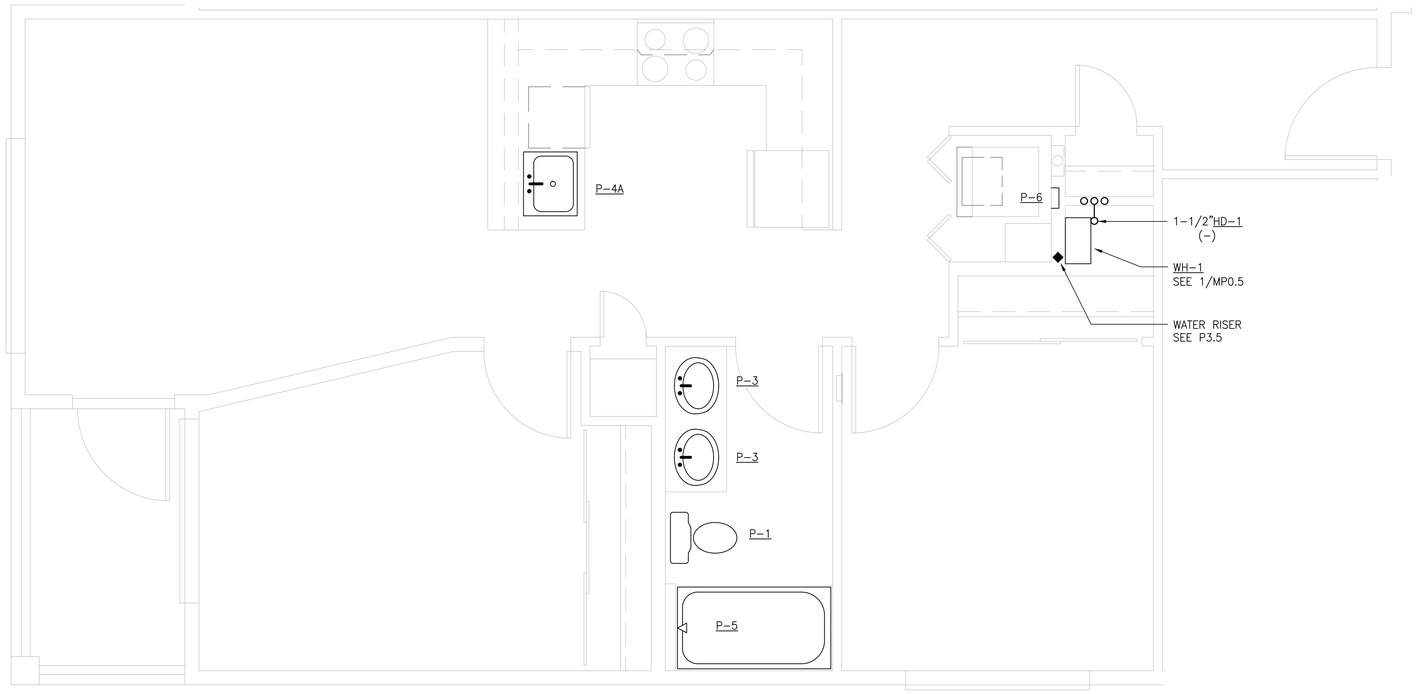
3-27-2023

1 2 3 4

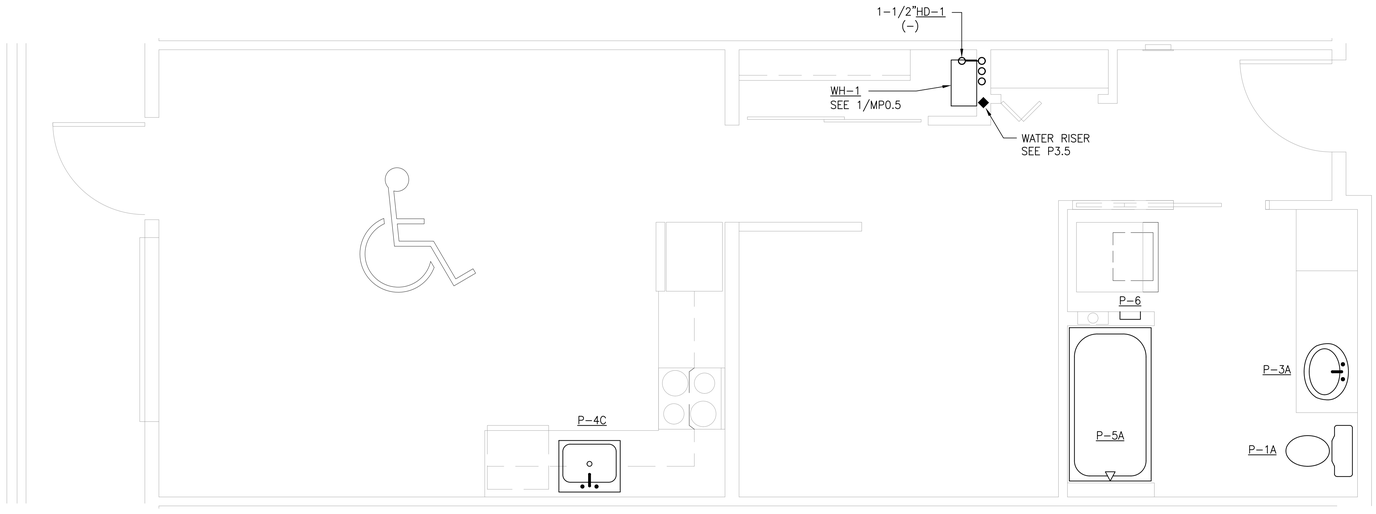


2 BED/1 BA – (UNIT 101 SHOWN)

SCALE: 1/2" = 1'-0"

2 0 2 4
SCALE OF FEET

SIMILAR UNITS:
201, 301, 401, 501,
109, 209, 309, 409, 509



1 BED/1 BA – TYPE A (UNIT 102 SHOWN)

SCALE: 1/2" = 1'-0"

2 0 2 4
SCALE OF FEET

St. Helens Mixed-Use
Tacoma, Washington
Unit Plumbing Plans

PROJECT NO. : 22226.0
DRAWN BY : NBD
ISSUE DATE : 11-9-2022
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1 N. Tacoma Ave, Suite 201 Tacoma, Washington 98403 (253) 584-5207

PLOT DATE: May 25, 2023 - 11:51am
FILE NAME: F:\CAD\2022\22226.0 - St Helens Mixed Use\ 22226.0-P20-THRU-P26.dwg

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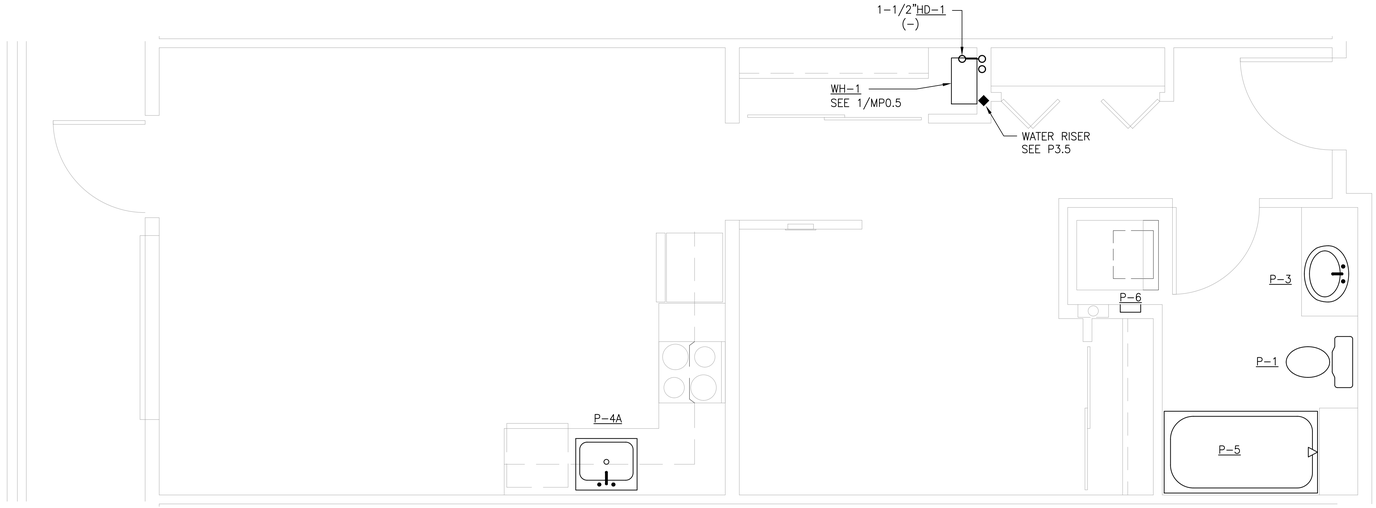
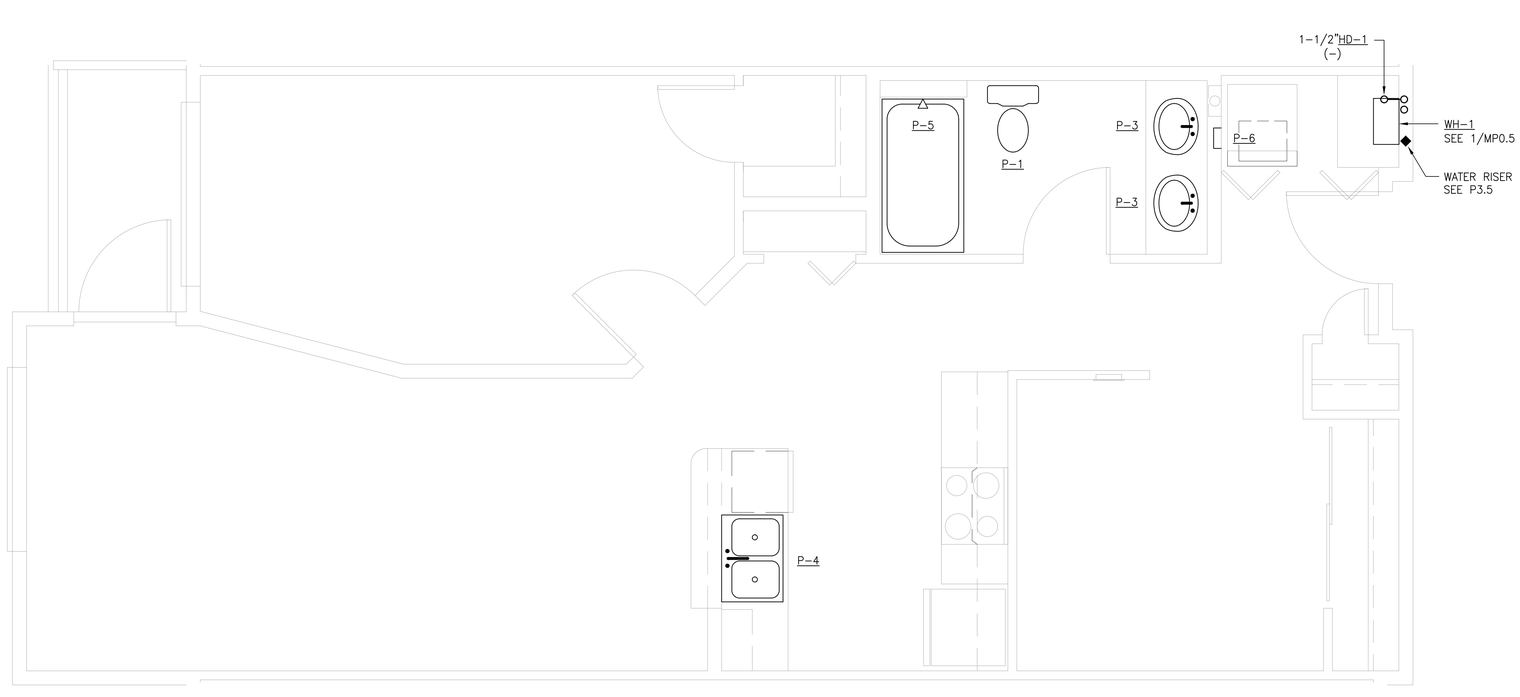


1 BED/1 BA – (UNIT 202 SHOWN)

SCALE: 1/2" = 1'-0"

2 0 2 4
SCALE OF FEET

SIMILAR UNITS:
302, 402, 502,
112, 212, 312, 412, 512



2 BED/1 BA – (UNIT 203 SHOWN)

SCALE: 1/2" = 1'-0"

2 0 2 4
SCALE OF FEET

SIMILAR UNITS:
203, 303, 403, 503,
213, 313, 413, 513

REVISIONS THIS SHEET
1 PERMIT REVIEW COMMENTS 3-27-2023
2
3
4

St. Helens Mixed-Use
Tacoma, Washington
Unit Plumbing Plans

PROJECT NO. : 22226.0
DRAWN BY : NBD
ISSUE DATE : 11-9-2022
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PERMIT SET
11-9-2022

PLOT DATE: May. 25, 2023 - 11:51am
FILE NAME: F:\QA0\2022\22226.0 - St Helens Mixed Use\ 22226.0-P20-THRU-P26.dwg

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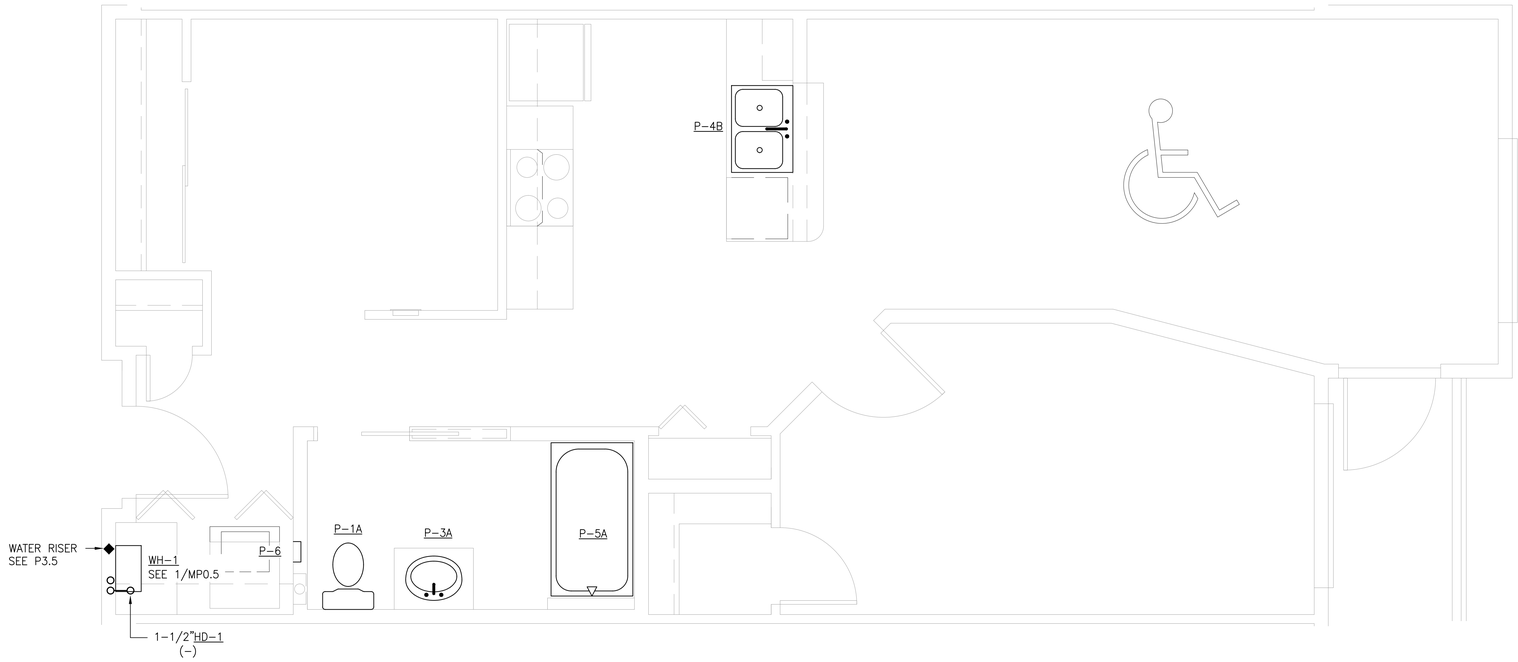
PERMIT REVIEW COMMENTS
3-27-2023

1 2 3 4

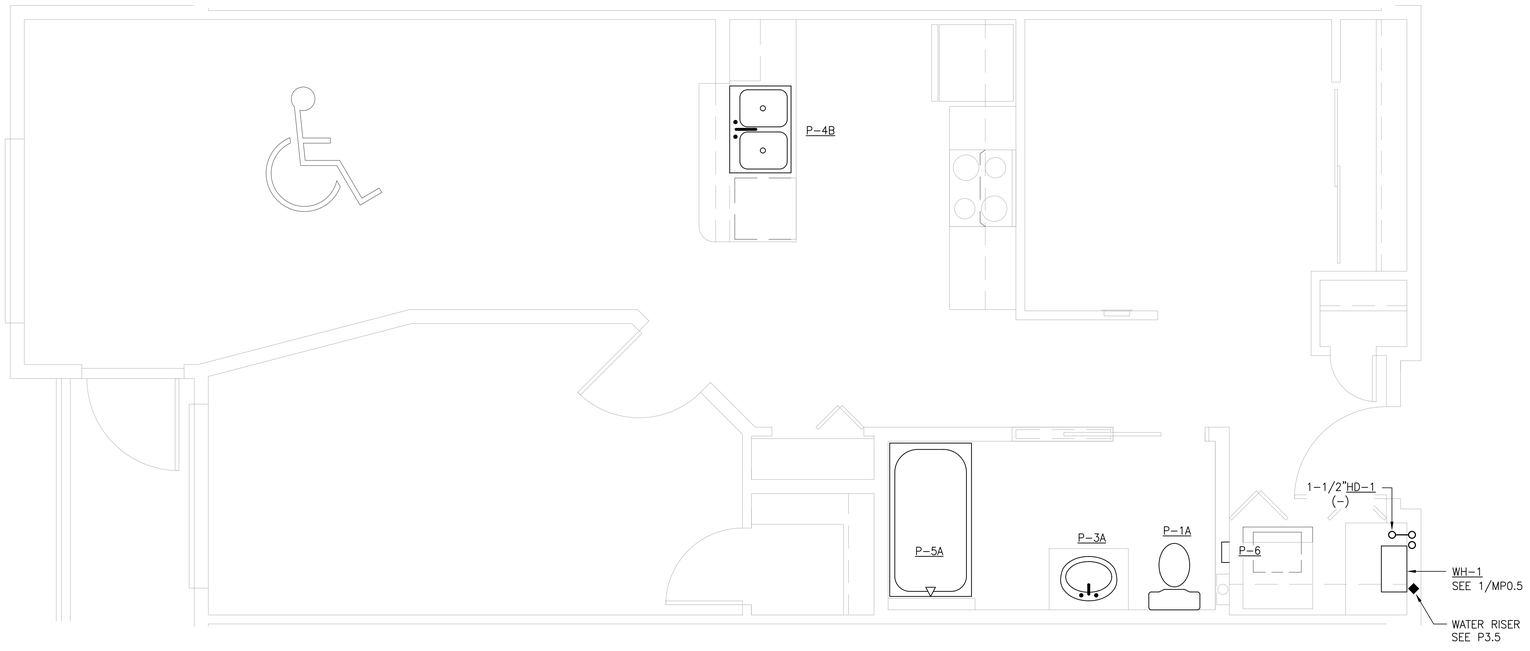


2 BED/1 BA – TYPE A (UNIT 113 SHOWN)

SCALE: 1/2" = 1'-0"

2 0 2 4

SCALE OF FEET



2 BED/1 BA – TYPE A (UNIT 104 SHOWN)

SCALE: 1/2" = 1'-0"

2 0 2 4

SCALE OF FEET

St. Helens Mixed-Use
Tacoma, Washington
Unit Plumbing Plans

PROJECT NO. : 22226.0
DRAWN BY : NBD
ISSUE DATE : 11-9-2022
LATEST REV. THIS SET : 1 -

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11-9-2022

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P2.2

PLOT DATE: May 25, 2023 - 11:52am

FILE NAME: I:\CAD\2022\22226.0 - St Helens Mixed Use\ 22226.0-P20-THRU-P26.dwg

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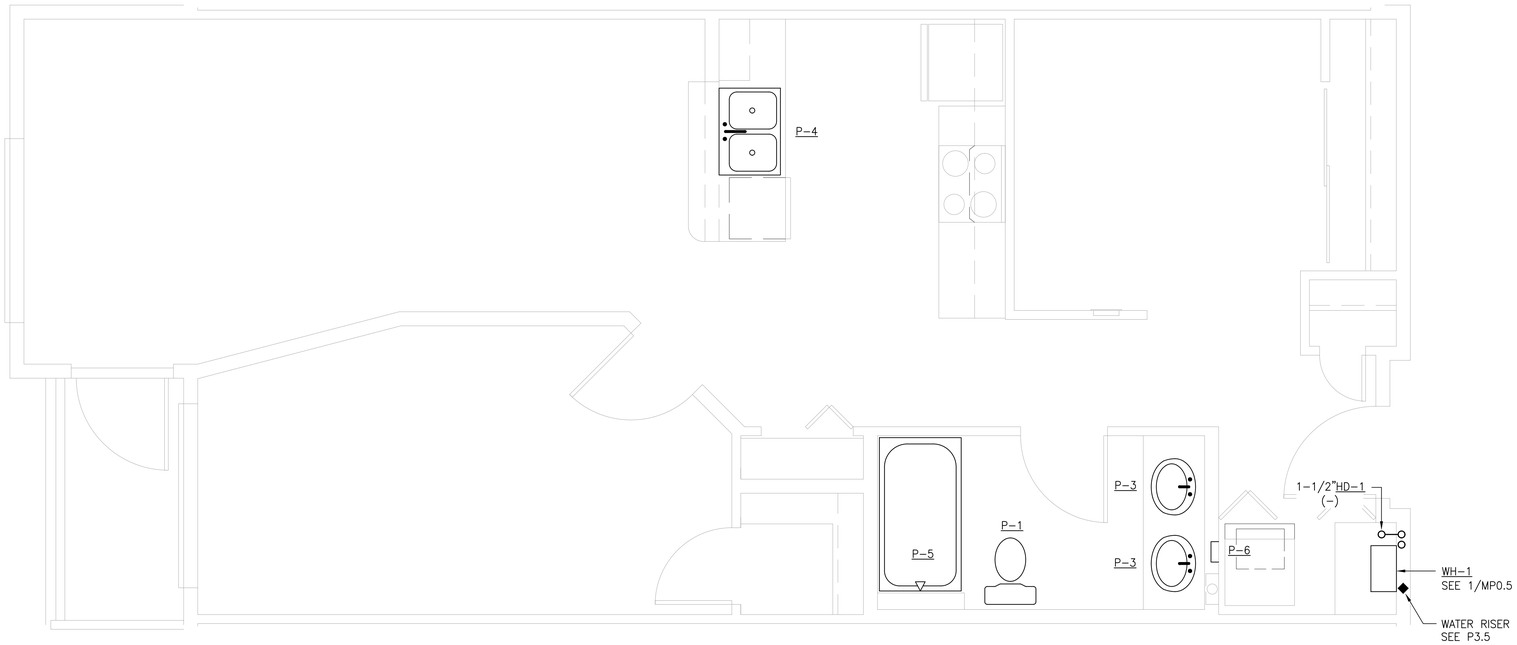
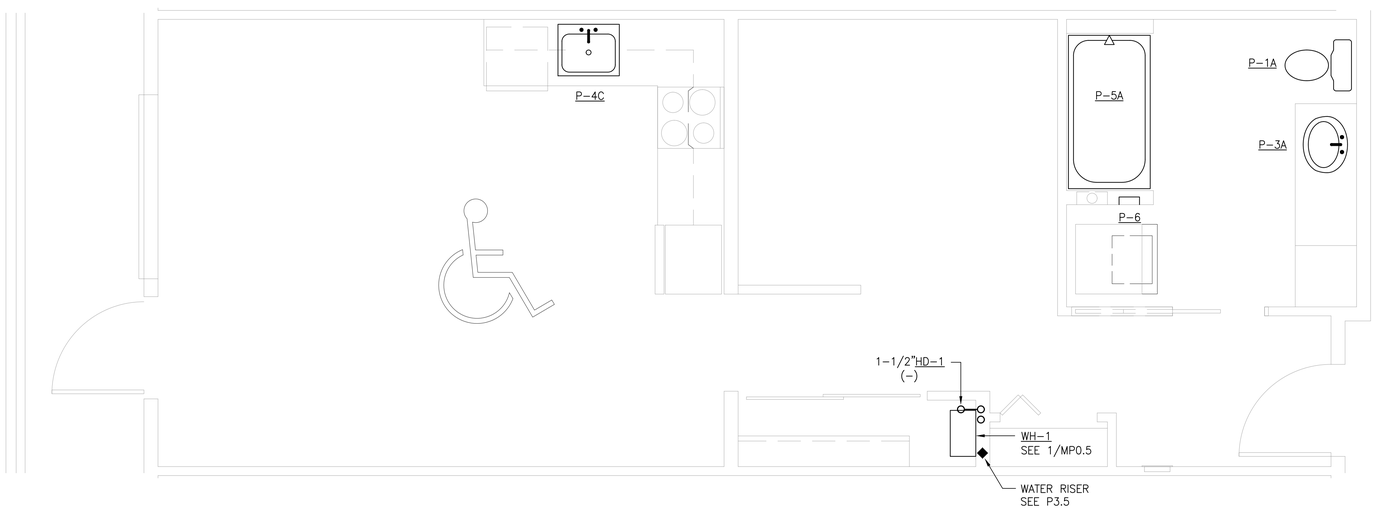


2 BED/1 BA – (UNIT 204 SHOWN)

SCALE: 1/2" = 1'-0"

2 0 2 4
SCALE OF FEET

SIMILAR UNITS:
304, 404, 504,
110, 210, 310, 410, 510



1 BED/1 BA – TYPE A (UNIT 105 SHOWN)

SCALE: 1/2" = 1'-0"

2 0 2 4
SCALE OF FEET

REVISIONS THIS SHEET

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3-27-2023

1 2 3 4

St. Helens Mixed-Use
Tacoma, Washington
Unit Plumbing Plans

PROJECT NO. : 22226.0
DRAWN BY : NBD
ISSUE DATE : 11-9-2022
LATEST REV. THIS SET : 1 -

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PERMIT SET
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PLOT DATE: May 25, 2023 - 11:52am

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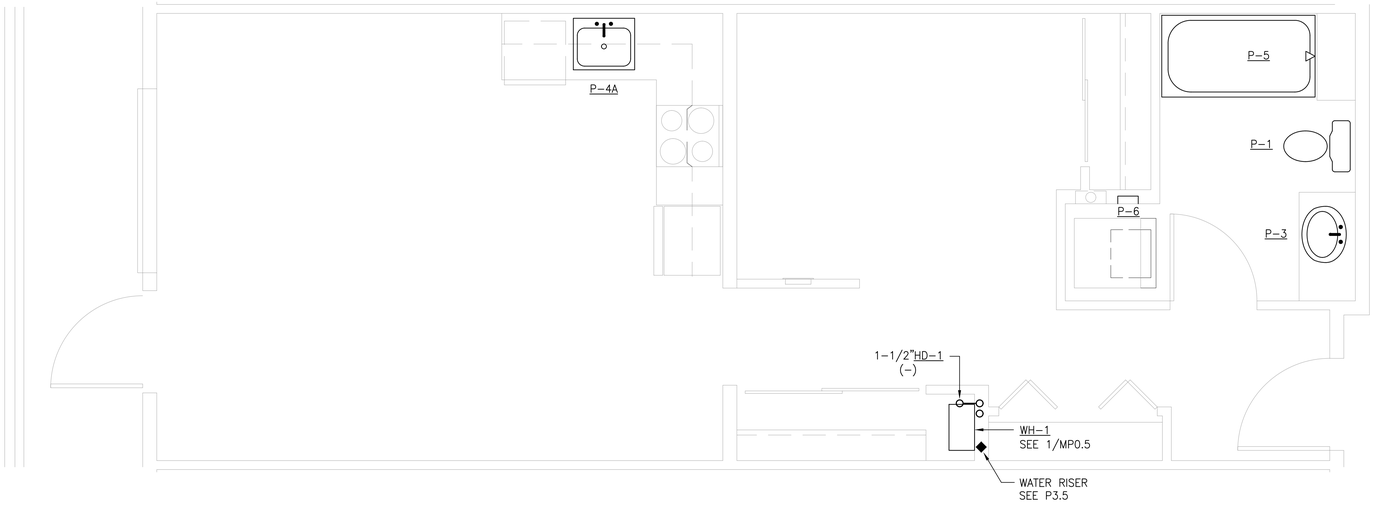
3-27-2023

1 2 3 4

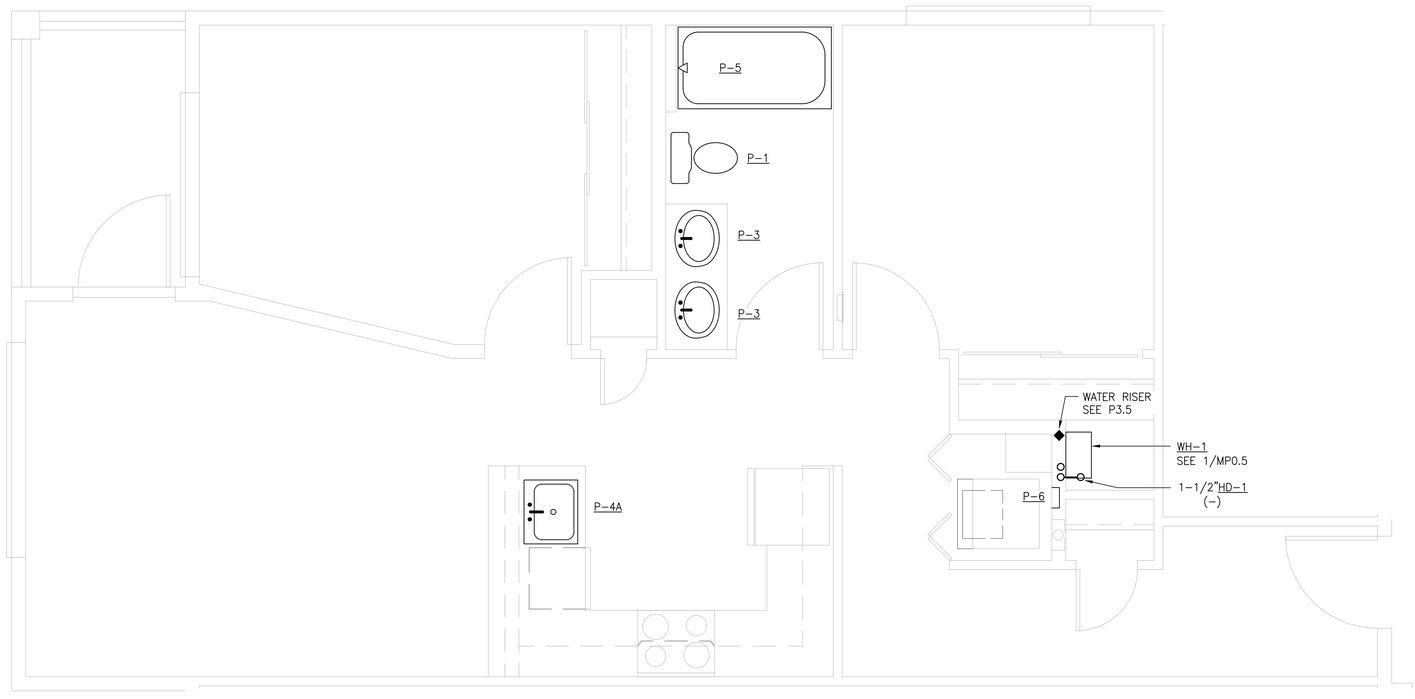


1 BED/1 BA – (UNIT 205 SHOWN)

SCALE: 1/2" = 1'-0"

2 0 2 4
SCALE OF FEET

SIMILAR UNITS:
305, 405, 505,
111, 211, 311, 411, 511



2 BED/1 BA – (UNIT 106 SHOWN)

SCALE: 1/2" = 1'-0"

2 0 2 4
SCALE OF FEET

SIMILAR UNITS:
206, 306, 406, 506,
114, 214, 314, 414, 514

St. Helens Mixed-Use
Tacoma, Washington
Unit Plumbing Plans

PROJECT NO. : 22226.0
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PLOT DATE: May. 25, 2023 - 11:52am

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STATE OF WASHINGTON
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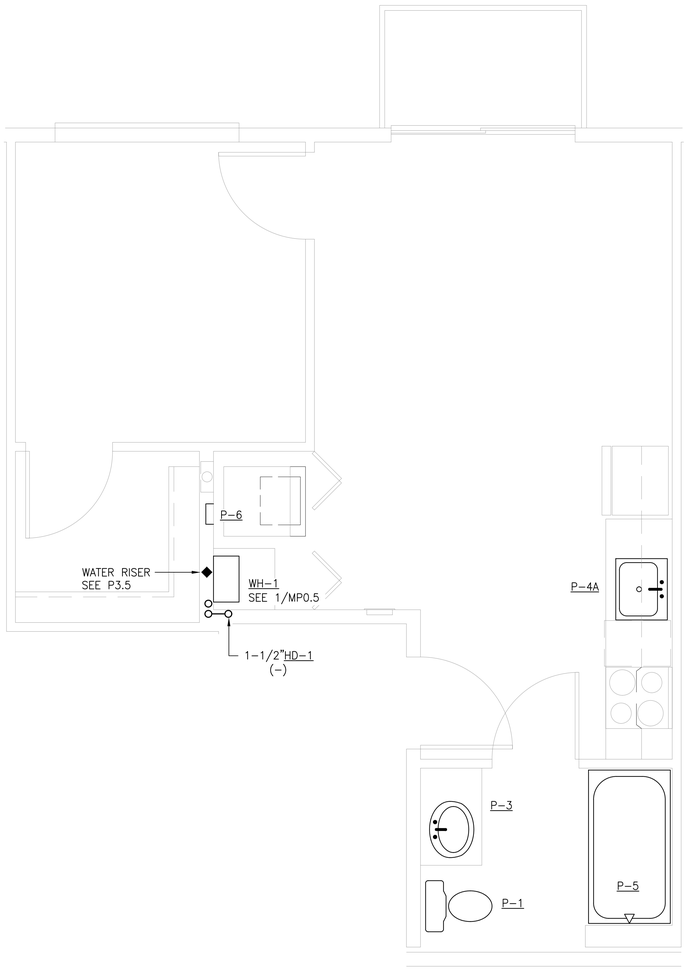
PERMIT REVIEW COMMENTS
3-27-2023

1 2 3 4

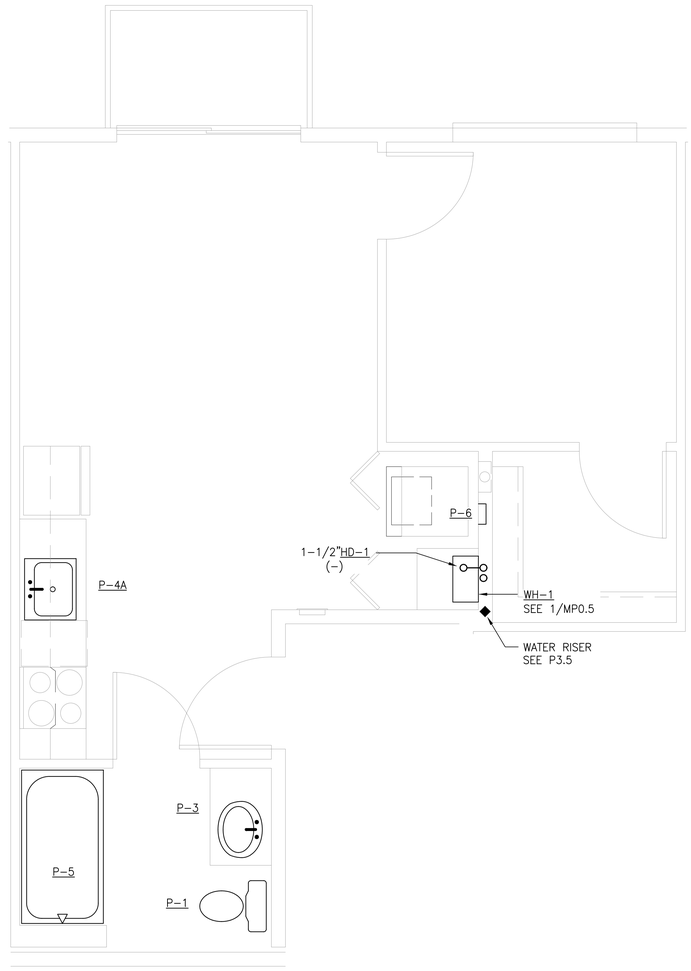


1 BED/1 BA – (UNIT 107 SHOWN)

SCALE: 1/2" = 1'-0"

2 0 2 4
SCALE OF FEET

SIMILAR UNITS:
207, 307, 407, 507,
115, 315, 415, 515



1 BED/1 BA – (UNIT 108 SHOWN)

SCALE: 1/2" = 1'-0"

2 0 2 4
SCALE OF FEET

SIMILAR UNITS:
208, 308, 408, 508,
115, 315, 415, 515

St. Helens Mixed-Use
Tacoma, Washington
Unit Plumbing Plans

1 N. Tacoma Ave, Suite 201 Tacoma, Washington 98403 (253) 584-5207

PROJECT NO. : 22226.0
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ISSUE DATE : 11-9-2022
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11-9-2022

Casey + DeChant Architects, LLC Architecture And Planning

PLOT DATE: May 25, 2023 - 11:53am

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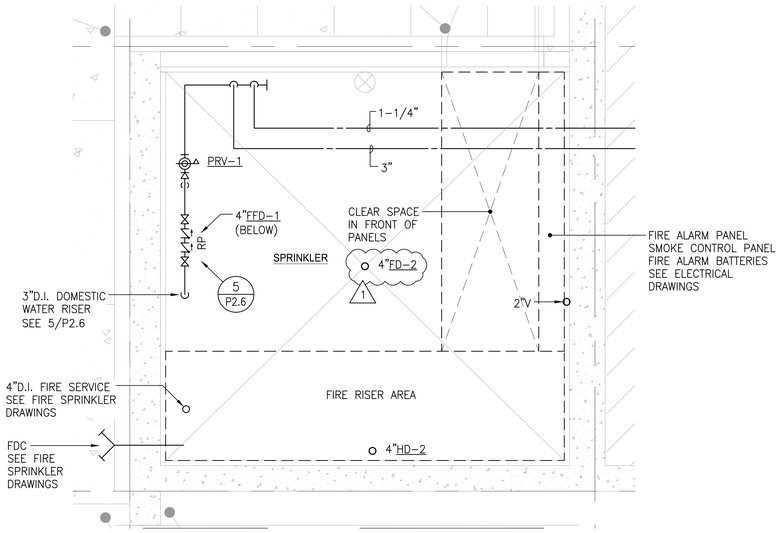
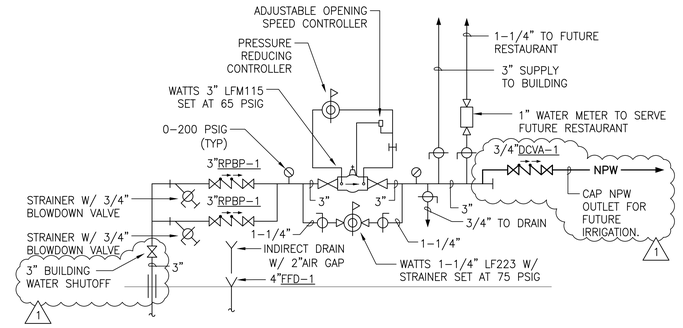


ENLARGED – SPRINKLER ROOM PLUMBING PLAN

SCALE: 1/2" = 1'-0"

1 P2.6

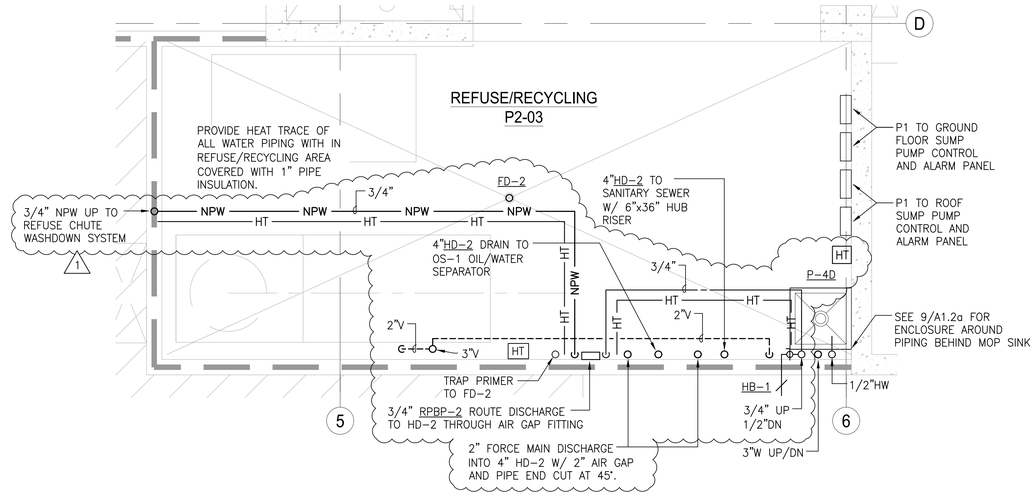
2 0 2 4
SCALE OF FEET



DOMESTIC WATER SERVICE RISER

NO SCALE

5 P2.6

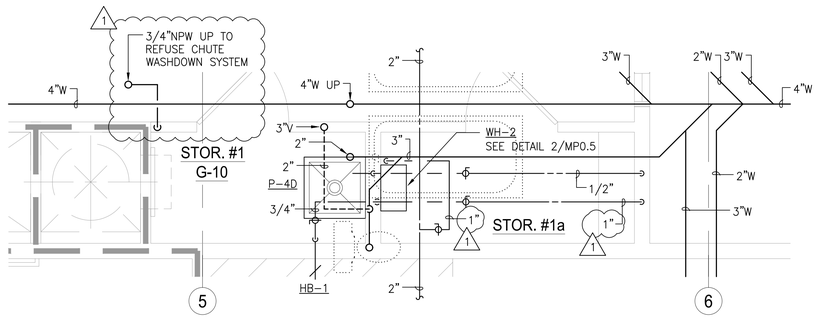


ENLARGED – RECYCLE AREA PLUMBING PLAN

SCALE: 1/2" = 1'-0"

4 P2.6

2 0 2 4
SCALE OF FEET

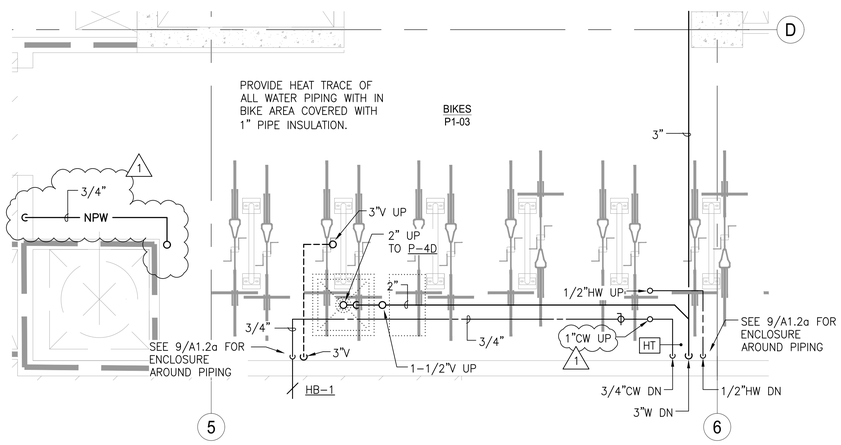


ENLARGED – UTILITY CLOSET PLUMBING PLAN

SCALE: 1/2" = 1'-0"

2 P2.6

2 0 2 4
SCALE OF FEET



ENLARGED – BIKES AREA PLUMBING PLAN

SCALE: 1/2" = 1'-0"

3 P2.6

2 0 2 4
SCALE OF FEET

REVISIONS THIS SHEET

1 PERMIT REVIEW COMMENTS 3-27-2023
2
3
4

St. Helens Mixed-Use
Tacoma, Washington
Enlarged Plumbing Plans and Domestic Water Service Riser

1 N. Tacoma Ave, Suite 201 Tacoma, Washington 98403 (253) 584-5207

PROJECT NO. : 22226.0
DRAWN BY : NBD
ISSUE DATE : 11-9-2022
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11-9-2022

Casey + DeChant Architects, LLC Architecture And Planning

P2.6

PLOT DATE: May 25, 2023 - 11:53am
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GIG HARBOR, WA 98335
PHONE: 253-851-5175

LARRY N. STORDAHL
STATE OF WASHINGTON
16454
REGISTERED PROFESSIONAL ENGINEER

REVISIONS THIS SHEET

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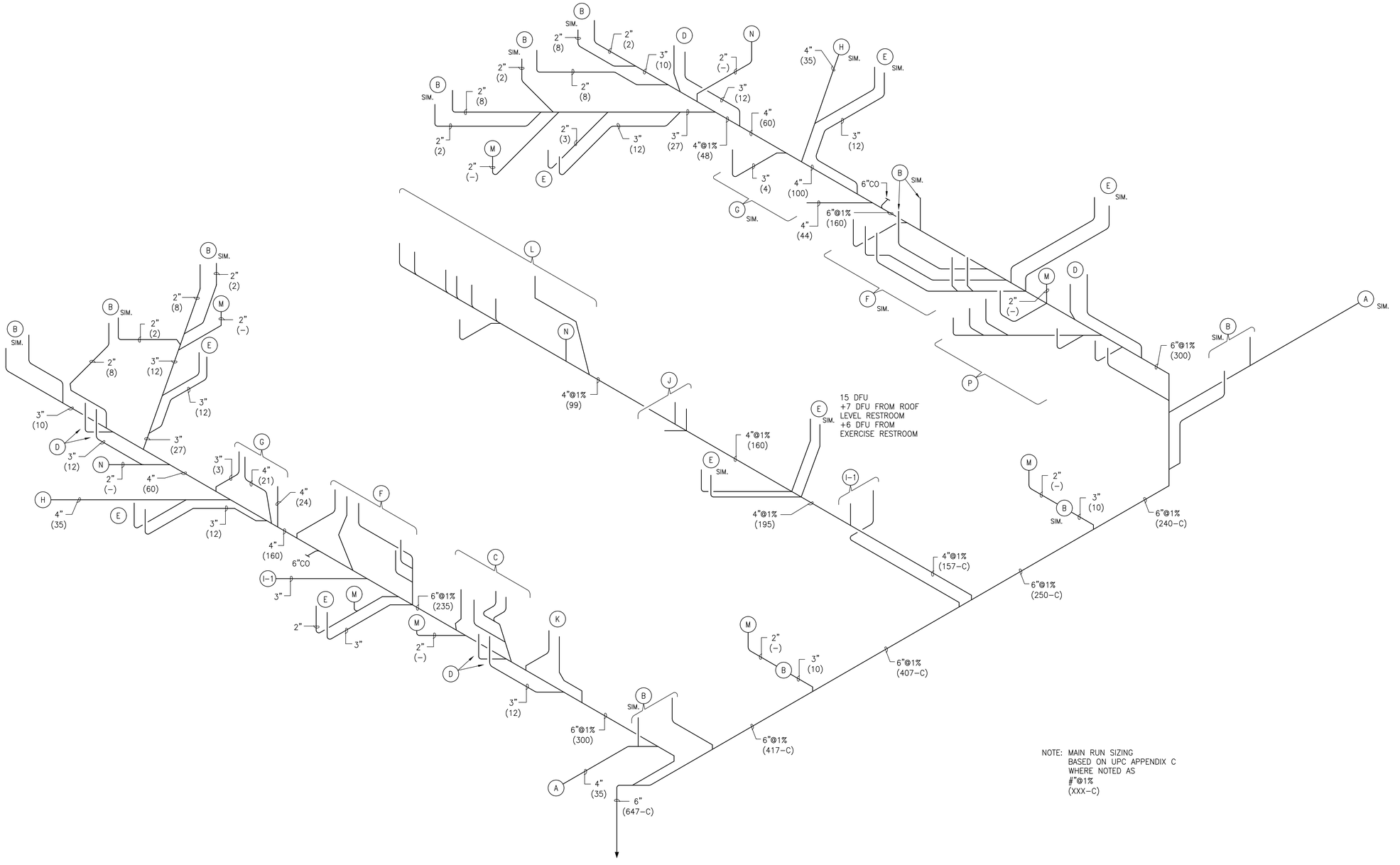
2
3
4



NOTE: MAIN RUN SIZING BASED ON UPC APPENDIX C WHERE NOTED AS #"@1% (XXX-C)

WASTE AND VENT RISER DIAGRAM

NO SCALE

St. Helens Mixed-Use
Tacoma, Washington
WASTE AND VENT RISER DIAGRAM

1 N. Tacoma Ave, Suite 201 Tacoma, Washington 98403 (253) 584-5207

PROJECT NO. : 22226.0
DRAWN BY : NBD
ISSUE DATE : 11-9-2022
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11-9-2022

PLOT DATE: May 25, 2023 - 11:54am

FILE NAME: F:\CAD\2022\22226.0 - St Helens Mixed Use\ 22226.0-P30-P31-P32-P33-P34-P35-P36.dwg

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PHONE: 253-851-5175

LARRY N. STORDAHL
STATE OF WASHINGTON
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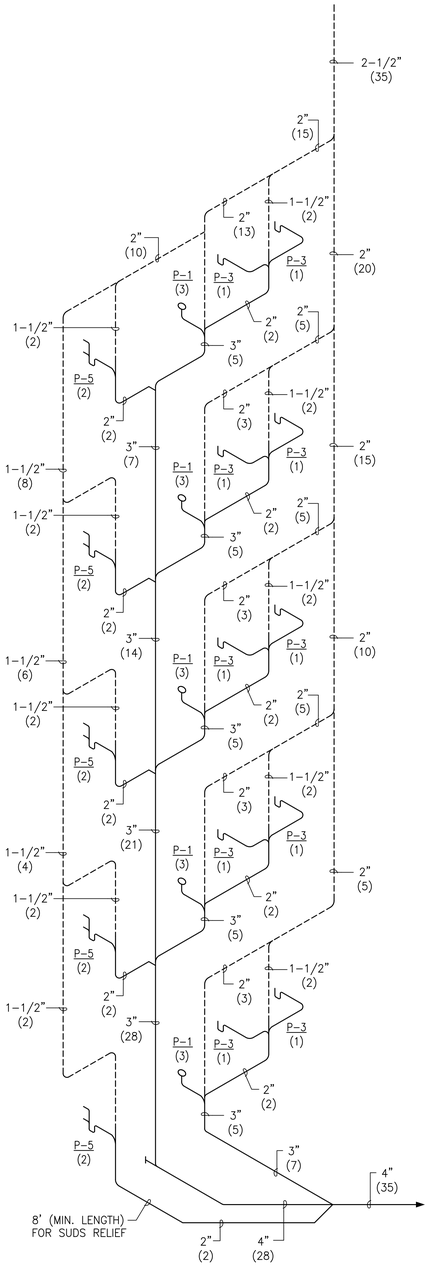
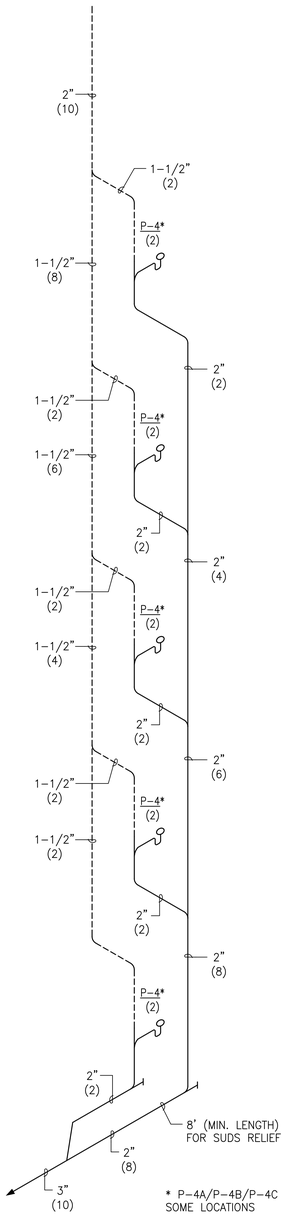
REGISTERED PROFESSIONAL ENGINEER

REVISIONS THIS SHEET

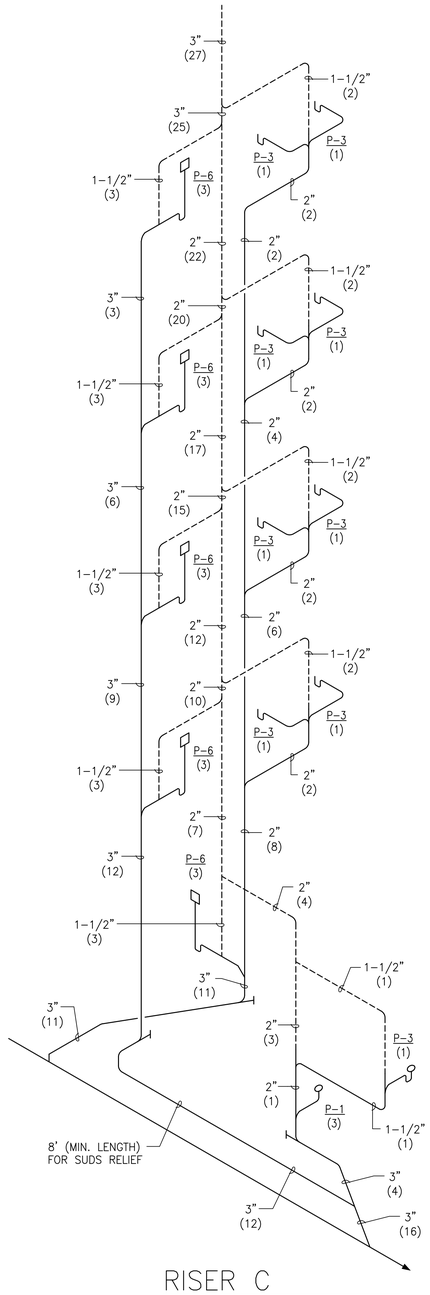
1 PERMIT REVIEW COMMENTS 3-27-2023



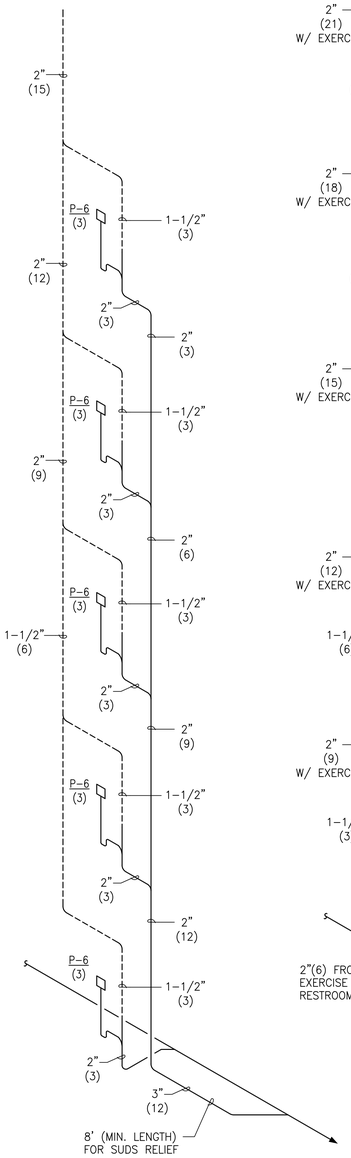
RISER A
NO SCALE



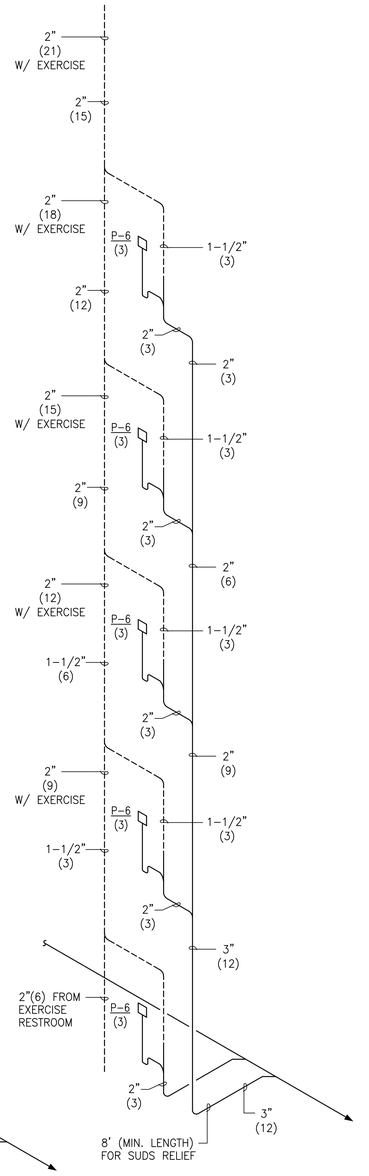
RISER B
NO SCALE



RISER C
NO SCALE



RISER D
NO SCALE



RISER E
NO SCALE

PROJECT NO. : 22226.0
DRAWN BY : NBD
ISSUE DATE : 11-9-2022
LATEST REV. THIS SET : 1

St. Helens Mixed-Use
Tacoma, Washington
WASTE AND VENT RISER DIAGRAMS

1 N. Tacoma Ave, Suite 201 Tacoma, Washington 98403 (253) 584-5207

PERMIT SET
11-9-2022

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FILE NAME: F:\CAD\2022\22226.0 - St. Helens Mixed Use\ 22226.0-P30-P31-P32-P33-P34-P35-P36.dwg

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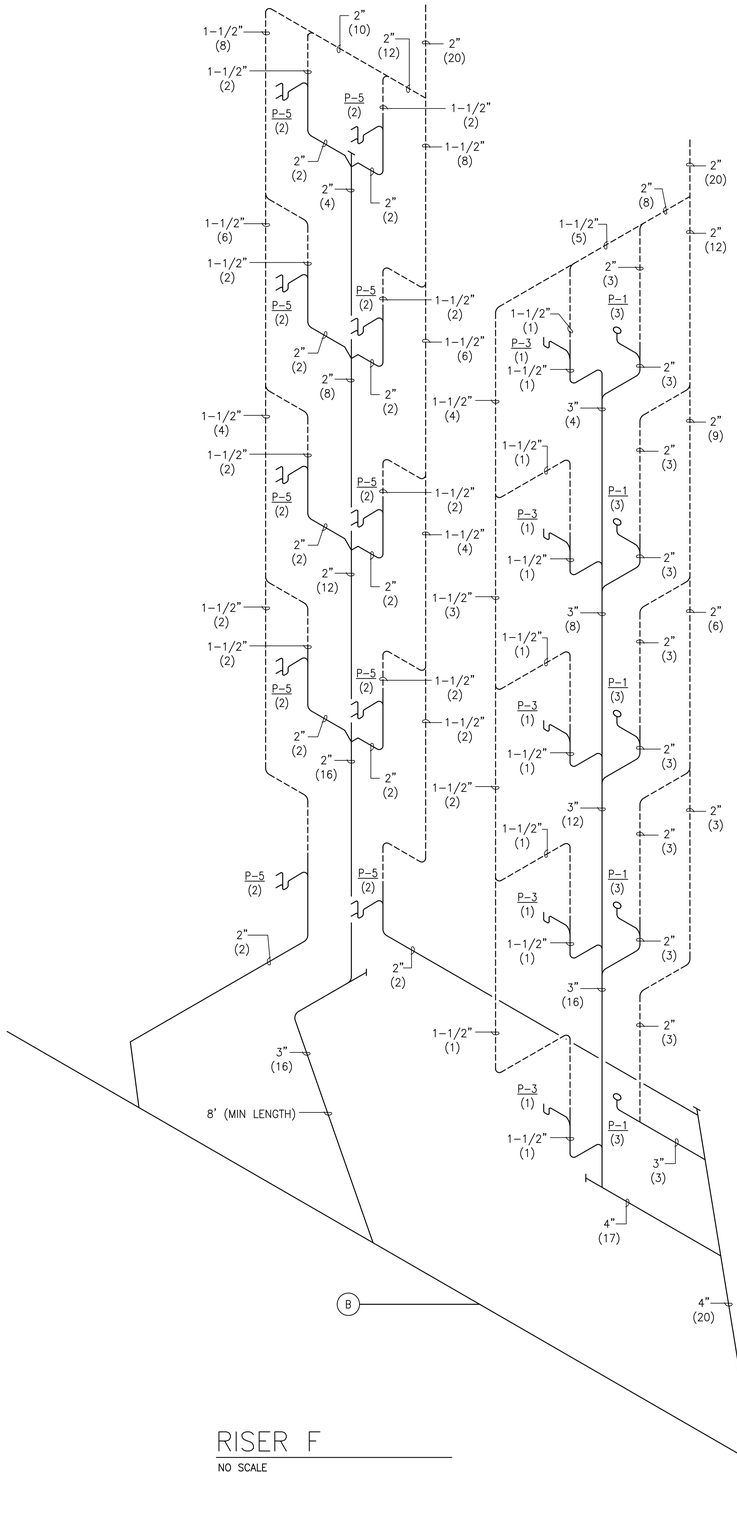
7713 PIONEER WAY
GIG HARBOR, WA 98335
PHONE: 253-851-5175

LARRY N. STORMO
STATE OF WASHINGTON
16454
REGISTERED PROFESSIONAL ENGINEER

REVISIONS THIS SHEET

1 PERMIT REVIEW COMMENTS 3-27-2023



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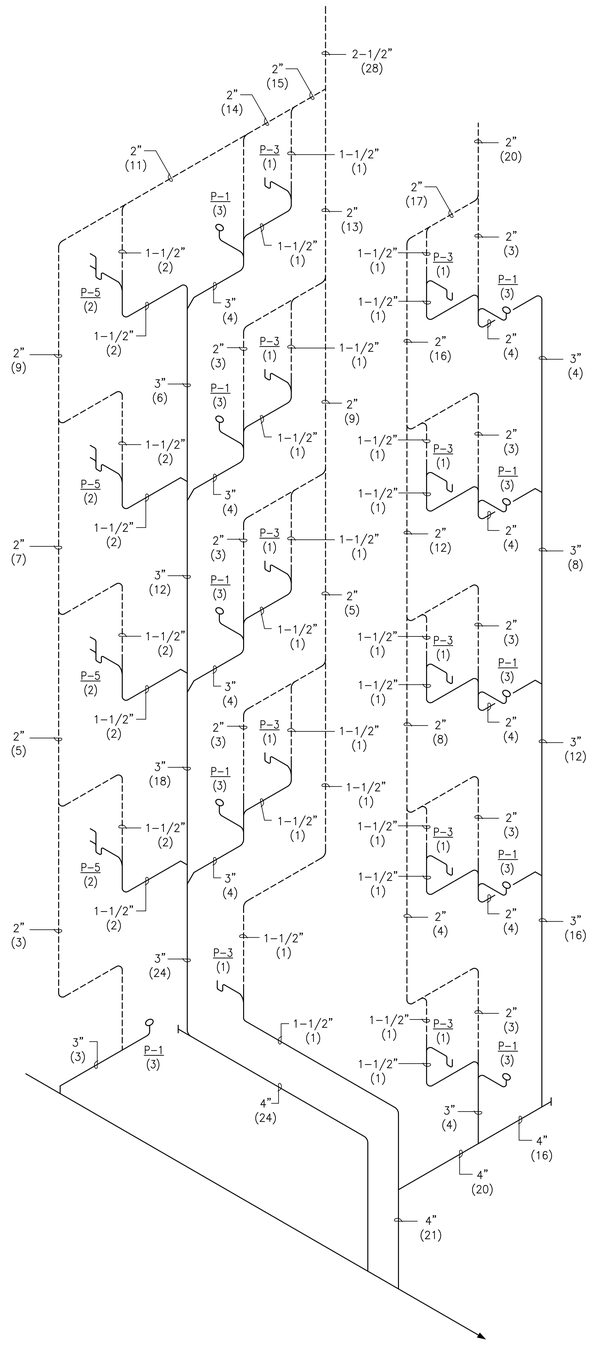
NO SCALE



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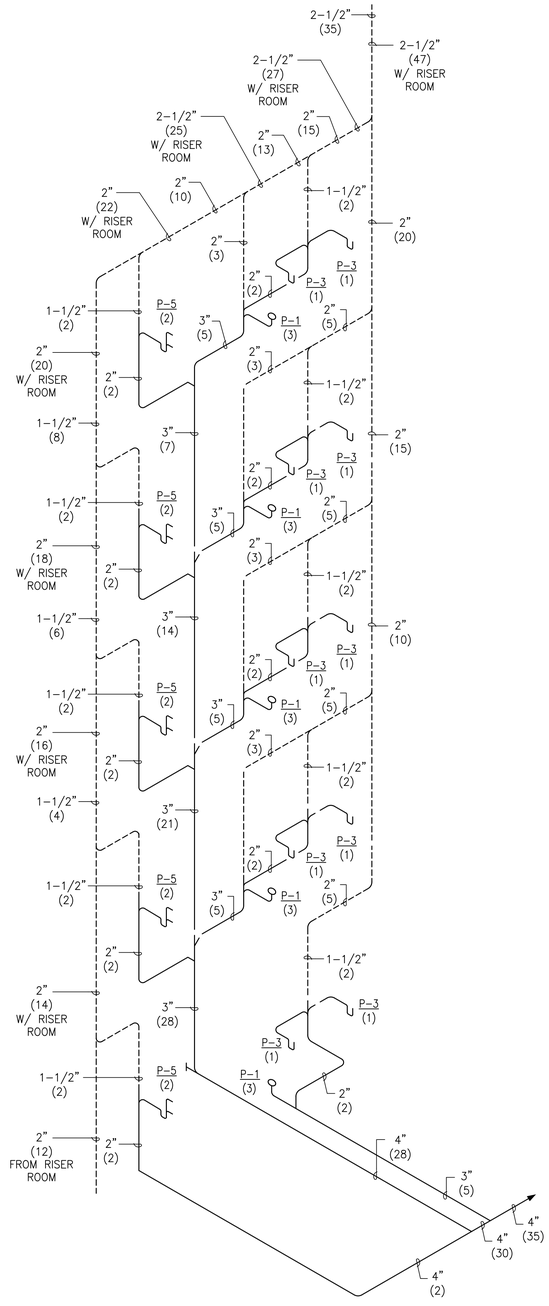

RISER H
NO SCALE

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St. Helens Mixed-Use
Tacoma, Washington

WASTE AND VENT RISER DIAGRAMS

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Casey + DeChant Architects, LLC Architecture And Planning

P3.2

PLOT DATE: May. 25, 2023 - 11:55am

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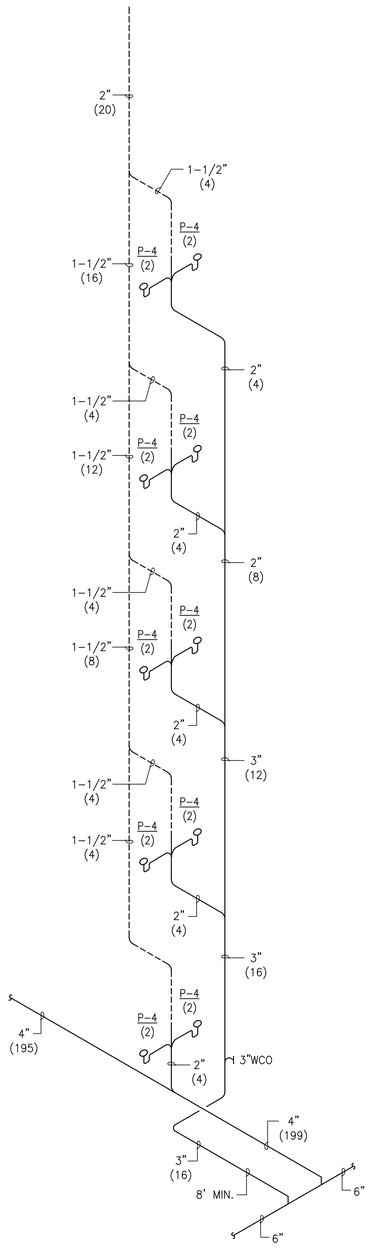

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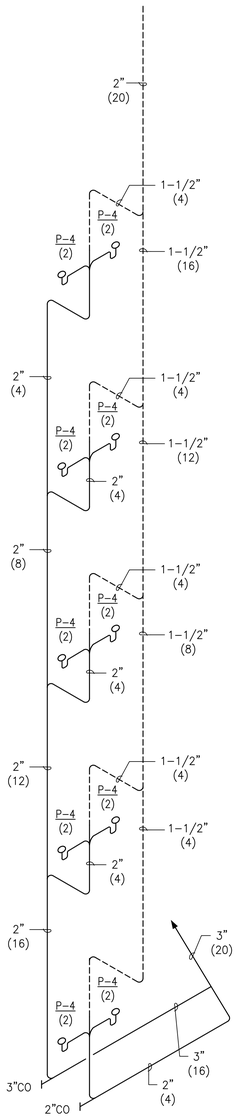

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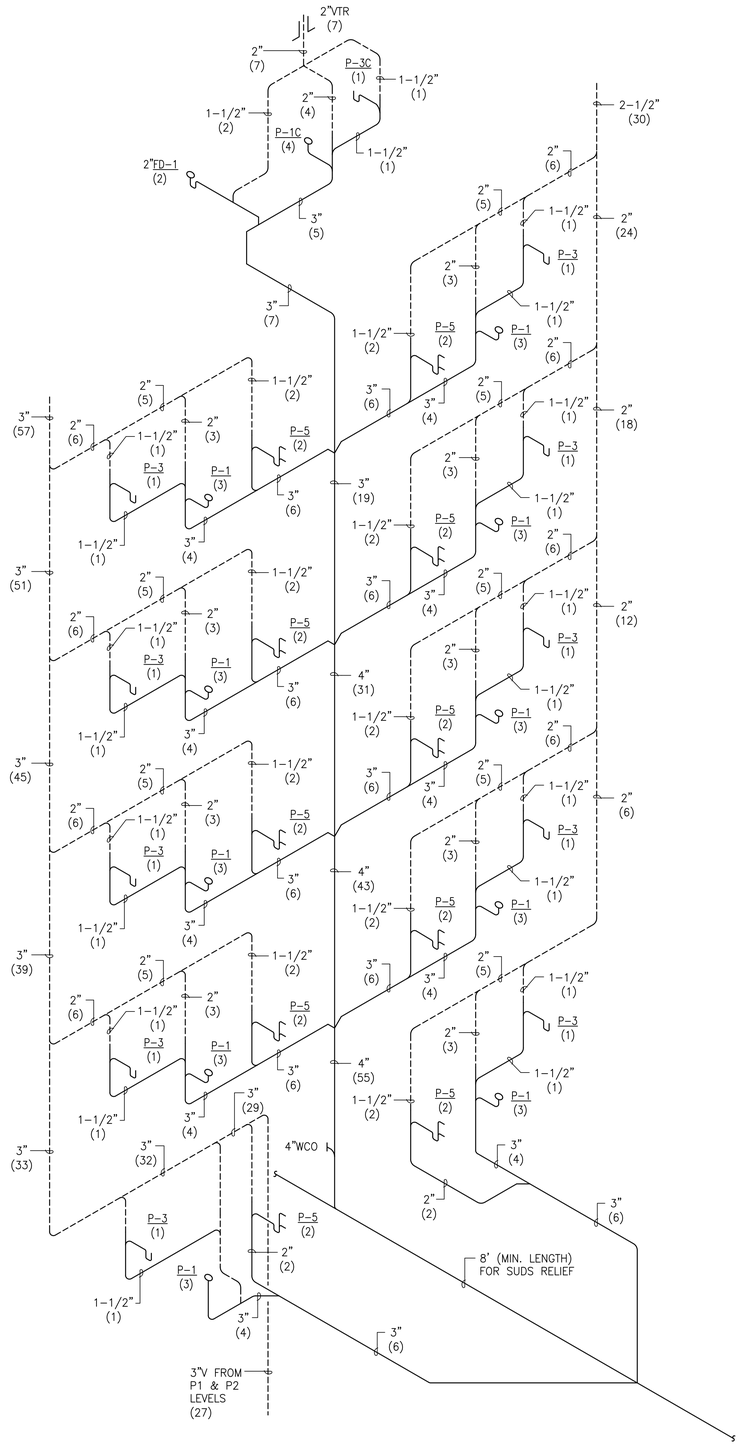

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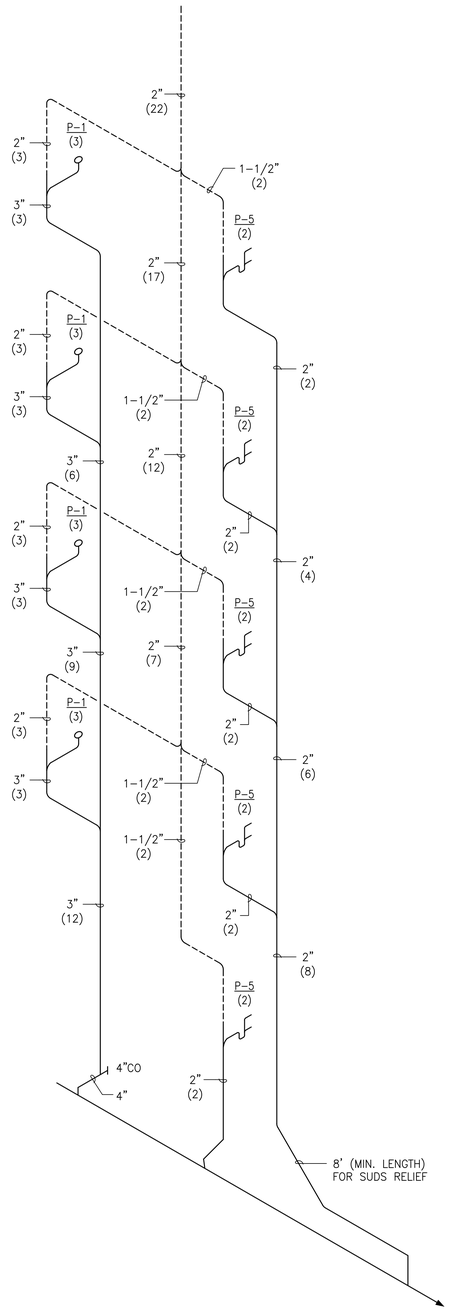

RISER K
NO SCALE

St. Helens Mixed-Use
Tacoma, Washington

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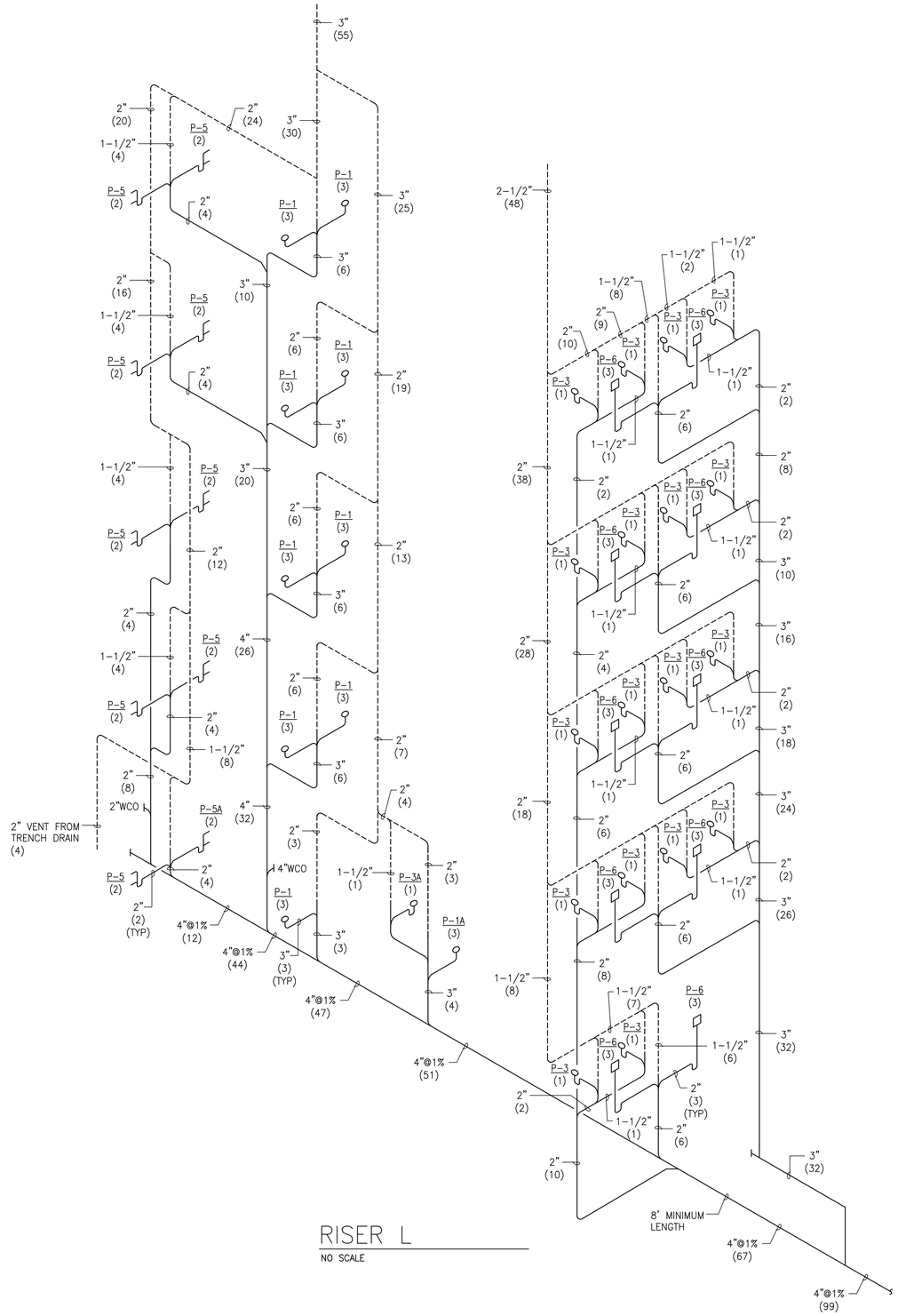
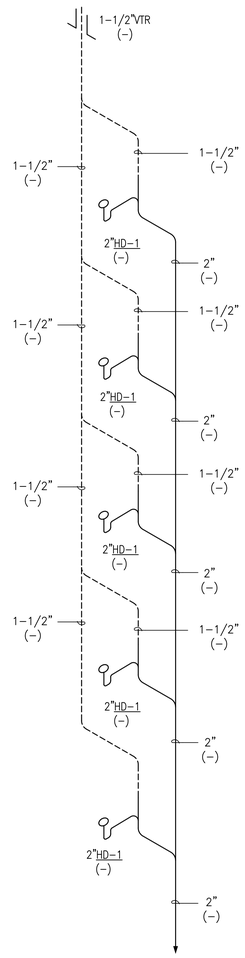


RISER L

NO SCALE



WATER HEATER HUB DRAIN
WASTE & VENT RISER
(EMERGENCY DRAINS)

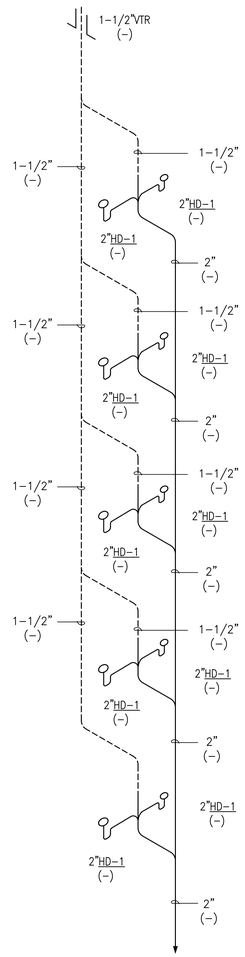
RISER M

NO SCALE

5 STORY

ARRANGEMENT SHOWN (SOME UNITS)
OPPOSITE HAND (SOME UNITS)

NOTE: 2" HUB DRAINS SHALL INCLUDE 3"Øx6" HIGH REMOVABLE HUB WITH A 2" TRAPSEAL.



WATER HEATER HUB DRAIN
WASTE & VENT RISER
(EMERGENCY DRAINS)

RISER N

NO SCALE

5 STORY

ARRANGEMENT SHOWN (SOME UNITS)
OPPOSITE HAND (SOME UNITS)

NOTE: 2" HUB DRAINS SHALL INCLUDE 3"Øx6" HIGH REMOVABLE HUB WITH A 2" TRAPSEAL.

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Tacoma, Washington
WASTE AND VENT RISER DIAGRAMS

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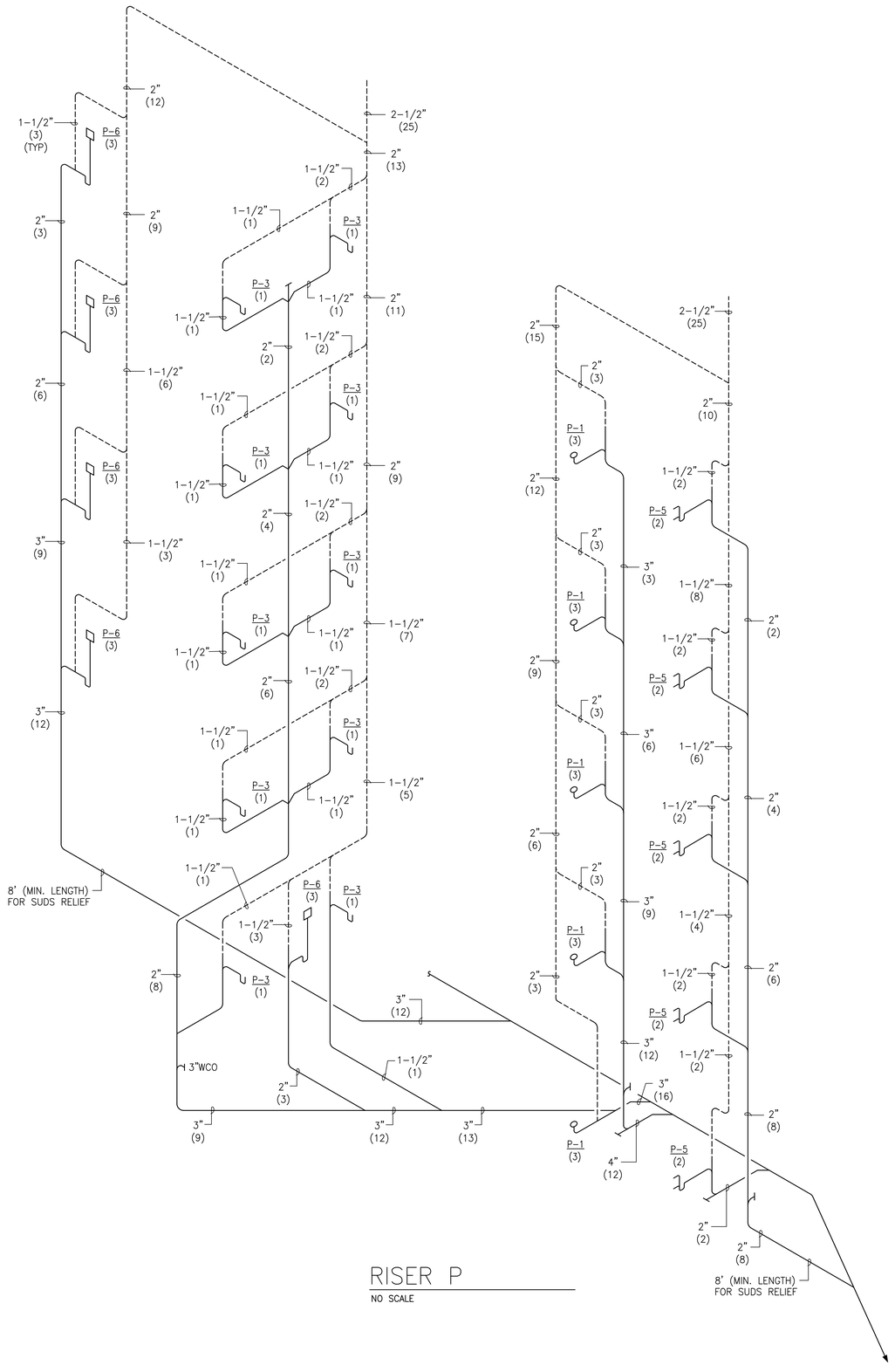

RISER P
NO SCALE

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WASTE AND VENT RISER DIAGRAMS

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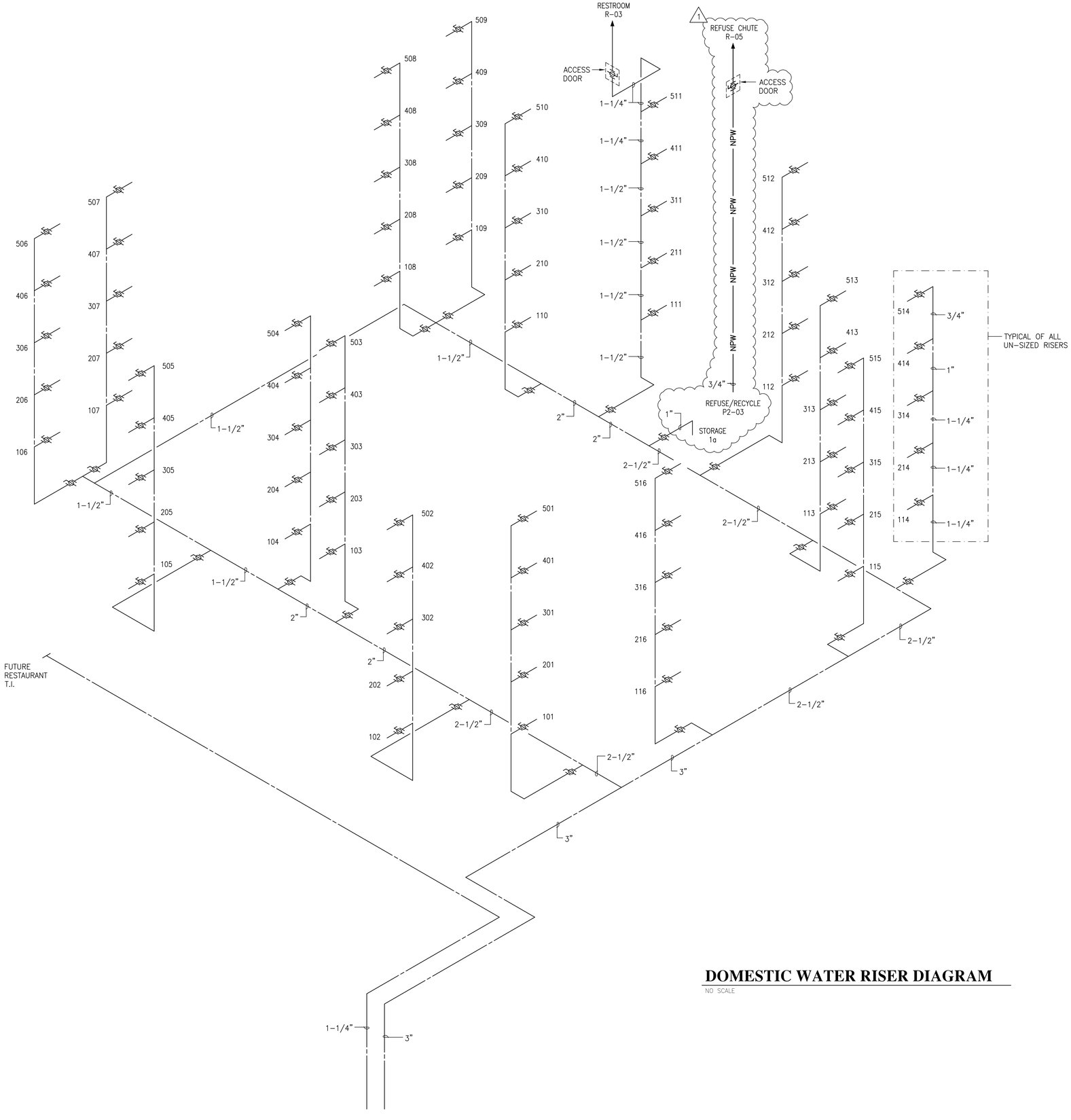

DOMESTIC WATER RISER DIAGRAM

NO SCALE

St. Helens Mixed-Use
Tacoma, Washington
DOMESTIC WATER RISER DIAGRAM

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