


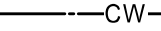


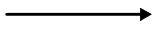
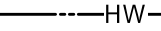

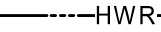

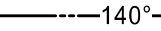
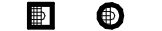

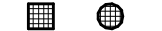



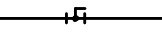


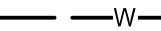
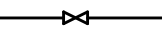


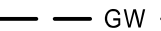
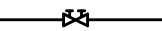
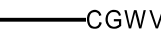

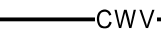
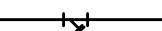

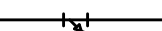











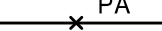

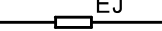



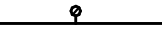
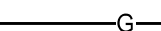


































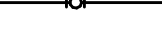

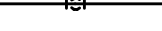



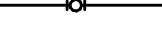
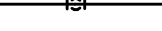
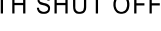





GENERAL NOTES:

1. PROVIDE A CONSTRUCTION RECORD SET OF "AS-BUILT" DOCUMENTS TO THE ARCHITECT REFLECTING ANY VARIANCES OF INSTALLED PIPING LOCATIONS OR EQUIPMENT CONTRARY TO THE CONSTRUCTION DOCUMENTS, REFER TO SPECIFICATIONS.
2. DRAWINGS ARE DIAGRAMMATIC ONLY AND REPRESENT THE GENERAL SCOPE OF THE WORK. REVIEW THE GENERAL NOTES, SPECIFICATIONS AND PLANS FOR ADDITIONAL REQUIREMENTS THAT MAY NOT BE SPECIFICALLY CALLED OUT IN THIS PORTION OF THE CONSTRUCTION DOCUMENTS. NOTIFY THE ARCHITECT OF ANY CONFLICTS OR DISCREPANCIES PRIOR TO SUBMISSION OF BID.
3. PROVIDE TO THE ARCHITECT A COPY OF INSPECTION REPORTS AND APPROVAL CERTIFICATES FROM LOCAL AND STATE INSPECTIONS, REFER TO SPECIFICATIONS.
4. INSTALLATION SHALL COMPLY WITH LEGALLY CONSTITUTED CODES AND THE REQUIREMENTS OF AUTHORITIES HAVING JURISDICTION AND ALSO MEET ALL REQUIREMENTS OF THE LANDLORD. OBTAIN A COPY OF THE LANDLORD'S REQUIREMENTS AND REVIEW PRIOR TO SUBMITTING BID.
5. PLANS AND SPECIFICATIONS GOVERN WHERE THEY EXCEED CODE REQUIREMENTS.
6. VERIFY LOCATION AND DEPTH OF UTILITIES AT POINTS OF CONNECTION BEFORE START OF PIPING INSTALLATION.
7. REFER TO ARCHITECTURAL PLANS FOR EXACT LOCATION AND MOUNTING HEIGHTS OF PLUMBING FIXTURES.
8. DO NOT SCALE FLOOR PLANS FOR EXACT HORIZONTAL LOCATION OF PIPE ROUTING.
9. INSTALL CONCEALED PIPING TIGHT TO THE STRUCTURE AND AS HIGH AS POSSIBLE.
10. VALVES SHALL BE LINE SIZE UNLESS OTHERWISE NOTED.
11. INSTALL EXPOSED PIPING, WHERE NECESSARY, IN FINISHED AREAS TIGHT TO THE STRUCTURE, WALL OR CEILING AND AS HIGH AS POSSIBLE. INSTALL PIPING PARALLEL AND / OR PERPENDICULAR TO WALLS.
12. INSTALL VALVES AND APPURTENANCES A MAXIMUM OF 24" ABOVE CEILING IN ACCESSIBLE LOCATION WITHIN 24" OF ACCESS DOORS OR ACCESSIBLE CEILING TILES. PROVIDE PIPE AND FITTINGS TO INSTALL VALVES AND APPURTENANCES AT REQUIRED HEIGHT AND WITHIN 24" OF ACCESS DOORS OR ACCESSIBLE CEILING TILES.
13. INSTALL NO PLASTIC PIPE OF ANY KIND ABOVE SLAB INSIDE THE BUILDING. INSTALL NO PLASTIC PIPE IN THE CEILING RETURN AIR PLENUM.
14. COORDINATE ALL WORK WITH OTHER TRADES AND CONTRACTORS.
15. COORDINATE PIPING INSTALLATION WITH STRUCTURAL GRADE BEAMS, FOOTINGS, COLUMN PIERS, ETC. SLEEVE PIPING THROUGH GRADE BEAMS, FOOTING, ETC. WHERE REQUIRED AND AS NOTED ON PLANS. COORDINATE SLEEVE INSTALLATIONS WITH THE ARCHITECT, STRUCTURAL ENGINEER, STRUCTURAL CONTRACTOR AND GENERAL CONTRACTOR BEFORE CONCRETE IS INSTALLED.
16. CLEAN FAUCET AERATORS AND PIPE STRAINERS PRIOR TO TURNING BUILDING OVER TO THE OWNER.
17. COORDINATE PIPE ROUTING AWAY FROM ELECTRICAL PANELS. DO NOT INSTALL PIPING OVER ELECTRICAL PANELS.
18. PAINT ALL EXPOSED GAS AND WATER PIPING USING RUST INHIBITOR PAINT. PAINT AND COLOR SHALL BE COORDINATED WITH THE ARCHITECT AND / OR OWNER.
19. COORDINATE ALL ROOF PENETRATIONS WITH OTHER TRADES. MAINTAIN 10" MINIMUM CLEARANCE FROM ALL AIR INTAKES. MAINTAIN 2" CLEARANCE FROM ALL OTHER EQUIPMENT.
20. INSULATE PIPING ROUTED IN EXTERIOR BUILDING WALLS WITH MINIMUM 2" BATT INSULATION TO PREVENT FREEZING.
21. PROVIDE "HEAVY-DUTY" NO-HUB COUPLINGS ON SANITARY PIPING 4" AND LARGER. SEE DIVISION 22 SPECIFICATION SECTION "SANITARY DRAINAGE AND VENT AND PIPING SPECIALTIES" FOR MORE INFORMATION.
22. PROVIDE "HEAVY-DUTY" NO-HUB COUPLINGS ON STORM PIPING, INCLUDING CONNECTIONS TO ROOF DRAINS. SEE DIVISION 22 SPECIFICATION SECTION "STORM DRAINAGE PIPING AND SPECIALTIES" FOR MORE INFORMATION.
23. PROVIDE TRANSITION ADAPTER COUPLINGS FOR CONNECTION OF PVC DWV TO CAST IRON AT SLAB ON GRADE. SEE DIVISION 22 SPECIFICATION FOR MORE INFORMATION.
24. PROVIDE TRANSITION ADAPTER COUPLINGS FOR CONNECTION OF PVC DWV TO CAST IRON SANITARY, WASTE AND VENT PIPE AT SLAB ON GRADE. SEE DIVISION 22 SPECIFICATION SECTION "SANITARY DRAINAGE AND VENT PIPING AND SPECIALTIES" FOR MORE INFORMATION.
25. PROVIDE TRANSITION ADAPTER COUPLINGS FOR CONNECTION OF PVC DWV TO CAST IRON STORM PIPE AT SLAB ON GRADE. SEE DIVISION 22 SPECIFICATION SECTION "STORM DRAINAGE PIPING AND SPECIALTIES" FOR MORE INFORMATION.
26. FLOW CONTROL VALVES SHALL BE SIZE 1/2" AND SET AT 0.5 GPM UNLESS NOTED OTHERWISE.
27. WATER HAMMER ARRESTORS SHALL BE SIZE "A" UNLESS NOTED OTHERWISE.
28. PROVIDE VERTICAL LIFT SPRING LOADED CHECK VALVES IN HOT AND COLD WATER SUPPLIES FOR MOP SINK FAUCETS DOWNSTREAM OF SHUTOFF VALVES.
29. PROVIDE WALL PIPES AT PIPING PENETRATIONS OF ELEVATED WATERPROOF FLOOR SLABS, REFER TO SPECIFICATIONS.
30. PROVIDE SIZE AND LENGTH OF HOT WATER FIXTURE SUPPLY PIPE FROM CIRCULATED HOT WATER BRANCH OR MAIN TO TERMINATION OF HOT WATER FIXTURE SUPPLY PIPE AT EACH FIXTURE PER 2015 INTERNATIONAL ENERGY CONSERVATION CODE, TABLE C404.3.1. FOR 1/2" HOT WATER FIXTURE SUPPLY PIPE SIZE TO INDIVIDUAL LAVATORIES, PROVIDE MAXIMUM LENGTH OF TWO FEET. FOR 3/4" HOT WATER FIXTURE SUPPLY PIPE SIZE TO INDIVIDUAL SINKS, PROVIDE MAXIMUM LENGTH OF 43 FEET. FOR 3/4" HOT WATER FIXTURE SUPPLY PIPE SIZE TO INDIVIDUAL SINKS, PROVIDE MAXIMUM LENGTH OF 21 FEET.

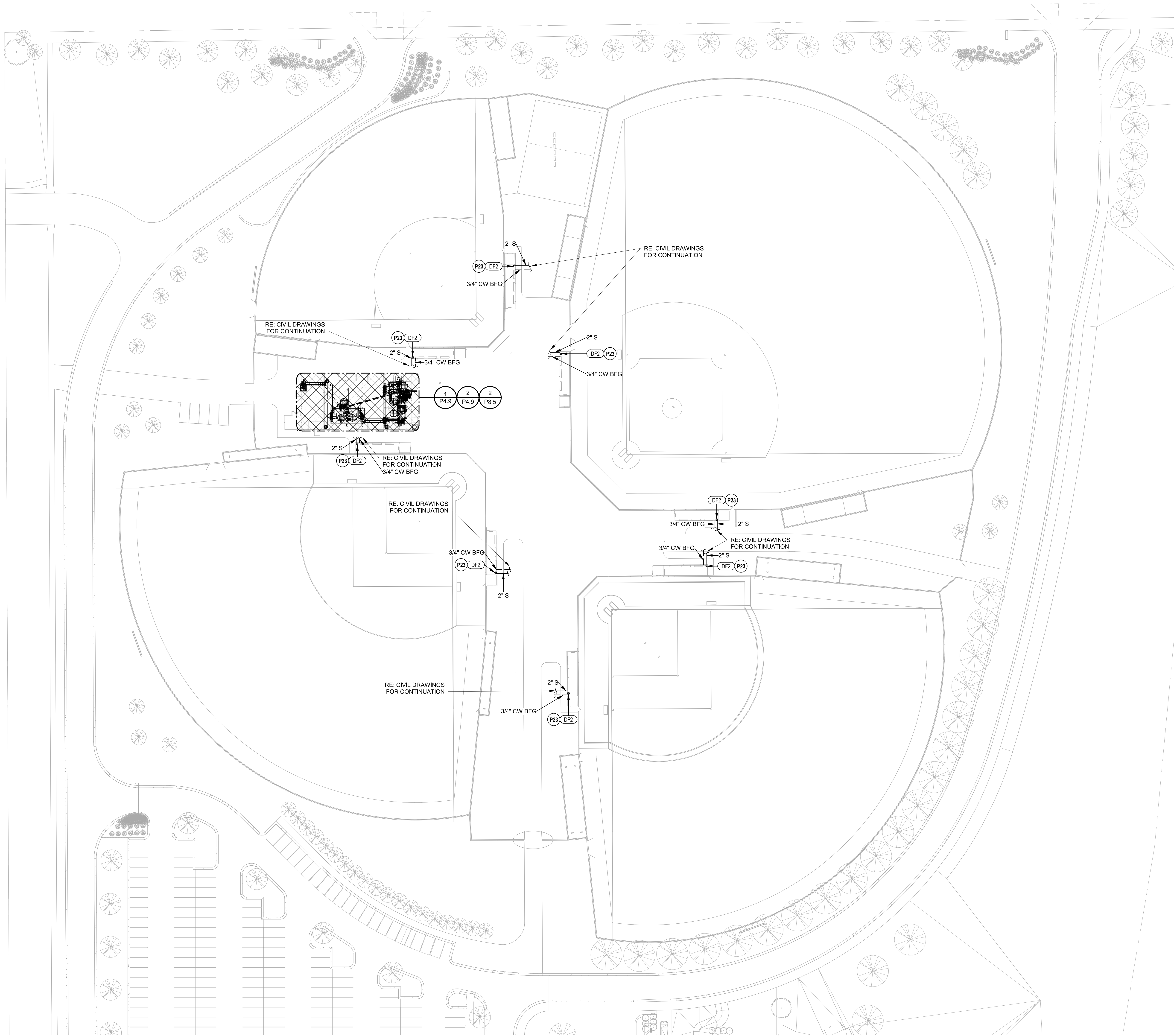
PLUMBING SYMBOLS

THIS IS A MASTER LEGEND AND NOT ALL SYMBOLS OR ABBREVIATIONS ARE USED.

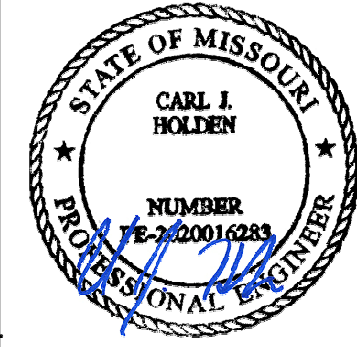
V2.01

STANDARD MOUNTING HEIGHTS		PIPING SYMBOLS	PIPING LINETYPES	
REFER TO THE ARCHITECTURAL DRAWINGS FOR PLUMBING FIXTURE MOUNTING HEIGHTS. UNO, INSTALL PLUMBING FIXTURES WITH THE MOUNTING HEIGHTS AS LISTED BELOW WITH FINAL APPROVAL BY THE ARCHITECT.				DOMESTIC COLD WATER (CW)
LAVATORY OR SINK				SOFTENED COLD WATER (SCW)
STANDARD HEIGHT	31" FLOOR TO RIM			DOMESTIC HOT WATER (HW)
ADA ACCESSIBLE	34" FLOOR TO RIM			DOMESTIC HOT WATER RECIRC. (HWR)
CHILD HEIGHT	24" FLOOR TO RIM			DOMESTIC HOT WATER (140°)
URINAL				TRAP PRIMER LINE (T)
STANDARD HEIGHT	24" FLOOR TO RIM			SOIL PIPING - ABOVE FLOOR (S)
ADA ACCESSIBLE	17" FLOOR TO RIM			SOIL PIPING - BELOW FLOOR (S)
CHILD HEIGHT	14" FLOOR TO RIM			WASTE PIPING - ABOVE FLOOR (W)
WATER CLOSET				WASTE PIPING - BELOW FLOOR (W)
STANDARD HEIGHT	15" FLOOR TO RIM			GREASE WASTE - ABOVE FLOOR (GW)
ADA ACCESSIBLE	17" TO 19" FLOOR TO TOP OF SEAT			GREASE WASTE - BELOW FLOOR (GW)
CHILD HEIGHT	10" FLOOR TO RIM			COMBINATION GREASE WASTE AND VENT (CGWV)
WATER COOLER OR DRINKING FOUNTAIN				COMBINATION WASTE AND VENT (CWV)
STANDARD HEIGHT	41" FLOOR TO SPOUT			STORM DRAIN - ABOVE FLOOR (ST)
ADA ACCESSIBLE	36" FLOOR TO SPOUT			STORM DRAIN - BELOW FLOOR (ST)
CHILD HEIGHT	30" FLOOR TO SPOUT			OVERFLOW STORM DRAIN - ABOVE FLOOR (OST)
SHOWER VALVES				VENT BELOW GRADE (VBG)
STANDARD HEIGHT - MEN	48" FLOOR TO CENTERLINE			VENT BELOW FLOOR (VBF)
42" FLOOR TO CENTERLINE	42" FLOOR TO CENTERLINE			INDIRECT DRAIN (ID)
ADA ACCESSIBLE	38" MIN TO 48" MAX FLOOR TO CENTERLINE			CONDENSATE DRAIN - HIGH EFFICIENCY RTU (CDH)
SHOWER HEADS				CONDENSATE DRAIN (CD)
MEN	6'-6" FLOOR TO CENTERLINE			AUXILIARY CONDENSATE DRAIN (ACD)
WOMEN	6'-0" FLOOR TO CENTERLINE			SUMP OR SEWAGE PUMP DISCHARGE (SPD)
TUB VALVES				NATURAL GAS (G)
STANDARD HEIGHT	32" FLOOR TO CENTERLINE			GAS VENT (GV)
ADA ACCESSIBLE	CENTER BETWEEN GRAB BAR AND TUB RIM			MEDIUM PRESSURE NATURAL GAS (MPG)
CLINIC SERVICE SINKS	30" FLOOR TO RIM			MEDIUM PRESSURE NATURAL GAS ON ROOF (MPG)
SURGEON'S SCRUB-UP SINKS	35" FLOOR TO FRONT RIM			NON-POTABLE WATER (NPW)
ICE MAKER OUTLET BOXES	24" FLOOR TO CENTER OF BOX			LIQUEFIED PETROLEUM GAS (LPG)
WASHING MACHINE OUTLET BOXES	42" FLOOR TO RIM			WATER SERVICE (WS)
JANITOR'S SINK FAUCET FITTING	42" FLOOR TO CENTERLINE			FIRE PROTECTION (FP)
HOSE BIBBS	36" AFF TO CENTERLINE			CONDENSATE PUMP DISCHARGE (PD)
NON-FREEZE WALL HYDRANTS	18" AFF TO CENTERLINE			VENT PIPING (V)
USE THE DEFAULT MOUNTING HEIGHTS SHOWN ABOVE UNLESS NOTED OTHERWISE IN THE SPECIFICATIONS OR ELSEWHERE. MOUNTING HEIGHTS LISTED ARE ABOVE FINISHED FLOOR (AFF) OR ABOVE FINISHED GRADE (AFG). ALL DEVICES SHALL BE INSTALLED IN COMPLIANCE WITH CURRENT ADA AND LOCAL REQUIREMENTS.				ACID WASTE - ABOVE FLOOR (AW)
ANNOTATION				ACID WASTE - BELOW FLOOR (AW)
	PLUMBING PLAN NOTE CALLOUT			ACID VENT (AV)
	PLUMBING EQUIPMENT DESIGNATION, (CONTRACTOR FURNISHED AND INSTALLED), REFER TO PLUMBING FIXTURE OR EQUIPMENT SCHEDULES			GRAY WATER (GWS)
	EQUIPMENT DESIGNATION (OWNER FURNISHED, CONTRACTOR INSTALLED)			COMPRESSED AIR (CA)
	MECHANICAL EQUIPMENT DESIGNATION (CONTRACTOR FURNISHED AND INSTALLED UNLESS NOTED OTHERWISE)			
	CONNECTION POINT OF NEW WORK TO EXISTING			
	DETAIL REFERENCE UPPER NUMBER INDICATES DETAIL NUMBER LOWER NUMBER INDICATES SHEET NUMBER			
	SECTION CUT DESIGNATION			
ABBREVIATIONS				
ADA	AMERICANS WITH DISABILITIES ACT			
AFF	ABOVE FINISHED FLOOR			WATER HAMMER ARRESTOR (WHA) WITH PDI SIZES, (A, B, C, D, & E)
AFG	ABOVE FINISHED GRADE			
AHU	AIR HANDLING UNIT			
AP	ACCESS PANEL			
AS	BUILDING AUTOMATION SYSTEM			
BAS	BASE			
BFF	BELOW FINISHED FLOOR			
BFG	BELOW FINISHED GRADE			
BOP	BOTTOM OF PIPE			
BOS	BOTTOM OF STRUCTURE			
BTU	BRITISH THERMAL UNIT			
CP	CONDENSATE PUMP			
CPVC	CHLORINATED POLYVINYL CHLORIDE			
CU	COPPER			
DI	DUCTILE IRON			
DN	DOWN			
DFU	DRAINAGE FIXTURE UNIT			
DS	DOWNSPOUT			
(E)	EXISTING			
EMS	ENERGY MANAGEMENT SYSTEM			
ETR	EXISTING TO REMAIN			
EWC	ELECTRIC WATER COOLER			
FFA	FLOOR DRAIN			
FFB	FROM FLOOR ABOVE			
FFC	FROM FLOOR BELOW			
FF	FINISHED FLOOR			
FL	FLOW LINE			
FLA	FULL LOAD AMPS			
FLR	FLOOR			
GPM	GALLONS PER MINUTE			
HD	HEAD, HUB DRAIN			
HZ	HERTZ			
IE	INVERT ELEVATION			
IN WC	INCHES OF WATER COLUMN			
JB	JUNCTION BOX			
J-BOX	JUNCTION BOX			
KW	KILOWATT			
MAU	MAKE-UP AIR UNIT			
MAX	MAXIMUM			
MBH	1000 BTU PER HOUR			
MH	MANHOLE			
MIN	MINIMUM			
N/C	NORMALLY CLOSED			
N/O	NORMALLY OPEN			
NIC	NOT IN CONTRACT			
ORD	OVERFLOW ROOF DRAIN			
PDI	PLUMBING DRAINAGE INSTITUTE			
PH/Ø	PHASE			
PRV	PRESSURE REDUCING VALVE			
PVC	POLYVINYL CHLORIDE			
RCP	REINFORCED CONCRETE			
RD	ROOF DRAIN			
RPM	REVOLUTIONS PER MINUTE			
RTU	ROOFTOP UNIT			
SF	SQUARE FEET			
SP	SUMP			
SS	STAINLESS STEEL			
STACK	SANITARY SEWER, SOIL STACK			
TDH	TOTAL DYNAMIC HEAD			
TFA	TO FLOOR ABOVE			
TFB	TO FLOOR BELOW			
TYP	TYPICAL			
UL	UNDERWRITERS LABORATORIES, INC.			
UNO	UNLESS NOTED OTHERWISE			
UPS	UNINTERRUPTIBLE POWER SUPPLY			
VCP	VITRIFIED CLAY PIPE			
VFD	VARIABLE FREQUENCY DRIVE			
VS	VENT STACK			
VTR	VENT THROUGH ROOF			
W/O	WITH			
W	WITHOUT			
WC	WATER COLUMN			
WS	WASTE STACK			
WSFU	WATER SUPPLY FIXTURE UNIT			
WVS	WASTE VENT STACK			
LINETYPE LEGEND		EXISTING	NEW	
		DEMOLISH	FUTURE	
		THROUGHOUT THE DRAWINGS DIFFERENT LINETYPES ARE USED IN COMBINATION WITH THE SYMBOLS TO INDICATE THE STATUS OF ITEMS AS EXISTING, TO BE DEMOLISHED, TO BE INCLUDED AS PART OF NEW WORK AND/OR ITEMS WHICH ARE ANTICIPATED TO BE PROVIDED IN THE FUTURE. THE STATUS OF ITEMS USING THESE LINETYPES ARE RELATIVE TO THE VIEW IN WHICH THEY APPEAR. PHASING SHOWN IN DRAWINGS IS NOT INTENDED TO FULLY DESCRIBE ALL NECESSARY CONSTRUCTION PHASING, WHICH IS DETERMINED BY THE CONTRACTOR AS PART OF THEIR RESPONSIBILITIES. ANY SUCH PHASES DESCRIBED IN THE CONSTRUCTION DOCUMENTS ARE GENERAL AND ONLY INTENDED TO INDICATE A BROAD ORDER FOR THE SAKE OF DESCRIBING THE PROJECT. THE FOLLOWING LINETYPES MAY BE USED ON ANY DEVICE, EQUIPMENT, NOTE, LINE, SHAPE, ETC.		

○ PLUMBING PLAN NOTES:  
P23 CONNECT TO DRINKING FOUNTAIN DRAIN AND ROUTE TO REMOTE FRENCH DRAIN BY CIVIL. REFER TO CIVIL FOR FRENCH DRAIN LOCATION AND REQUIREMENTS.



① PLUMBING SITE PLAN - NORTH  
1" = 40'-0"



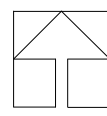
CARL J. HOLDEN  
LICENSE # PE-2020016283

**HENDERSON**  
ENGINEERS  
8345 LINDA DRIVE, SUITE 300  
LEES SUMMIT, MO 64081  
TEL: 913.717.1000  
WWW.HENDERSONENGINEERS.COM  
MO CORPORATE NO. E-5680  
EXPIRES 12/31/2020

**LEE'S SUMMIT MIDDLE SCHOOL #4**  
LEE'S SUMMIT R-7 SCHOOL DISTRICT  
1001 SE BAILEY ROAD  
LEE'S SUMMIT, MO 64081

PACKAGE 3 - BUILDING & SITE  
10/08/20  
REVISIONS  
ADDENDUM 002

13-20102-00  
PLUMBING SITE PLAN - NORTH  
**P1.01**



PLUMBING PLAN NOTES:  
P1: DO NOT INSTALL PLUMBING PIPING OVER ELECTRICAL PANELS OR EQUIPMENT.



Oct 8 2020  
LICENSE # PE-2020016283

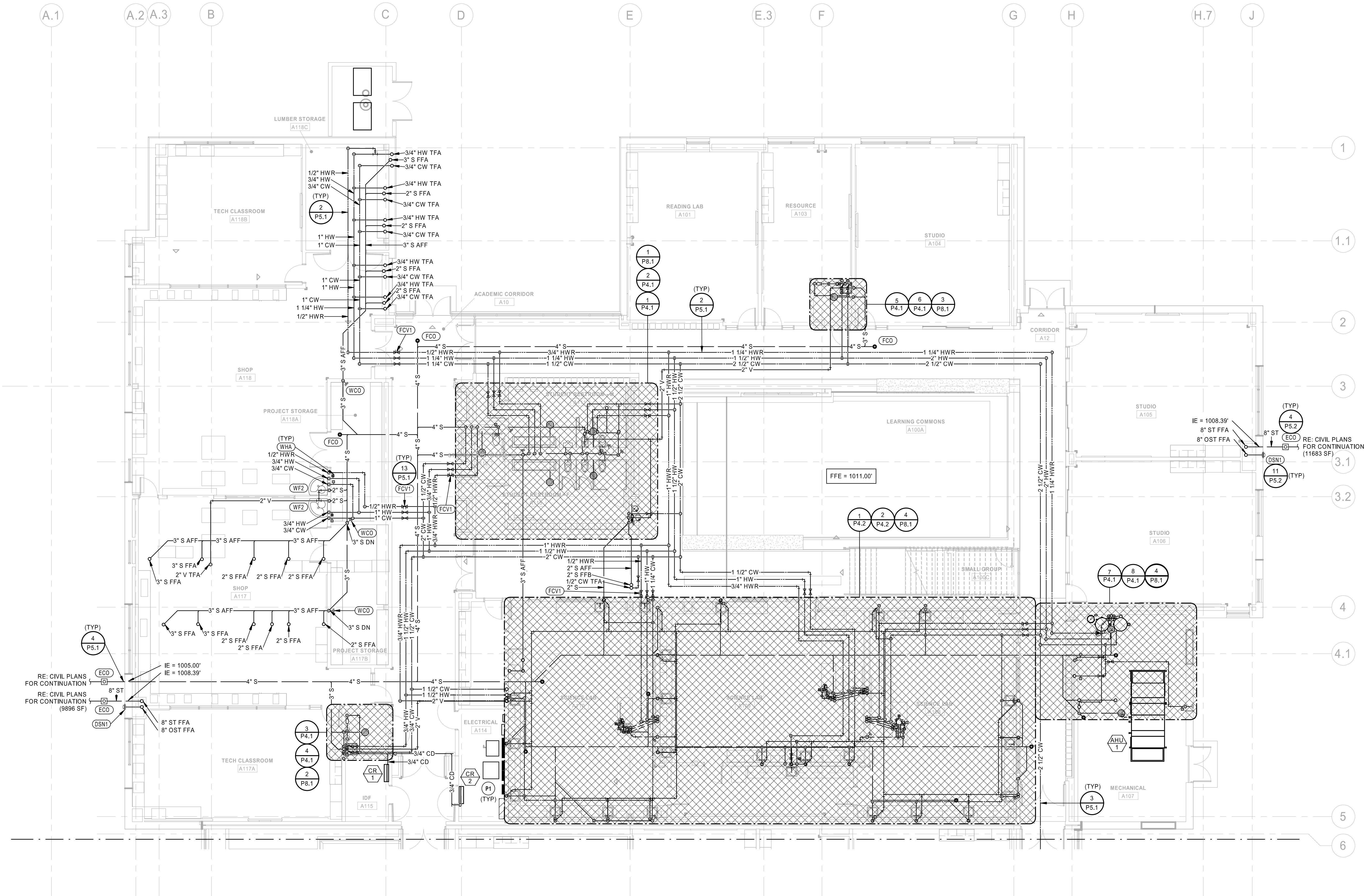
**HENDERSON**  
ENGINEERS  
1845 LINDEN DRIVE SUITE 300  
ST. LOUIS, MO 63114-1400  
TEL: 314.433.8001  
WWW.HENDERSONENGINEERS.COM  
MO. CORPORATE NO. E-5680  
EXPIRES 12/31/2020

**LEE'S SUMMIT MIDDLE SCHOOL #4**  
LEE'S SUMMIT R-7 SCHOOL DISTRICT  
1001 SE BAILEY ROAD  
LEE'S SUMMIT, MO 64081

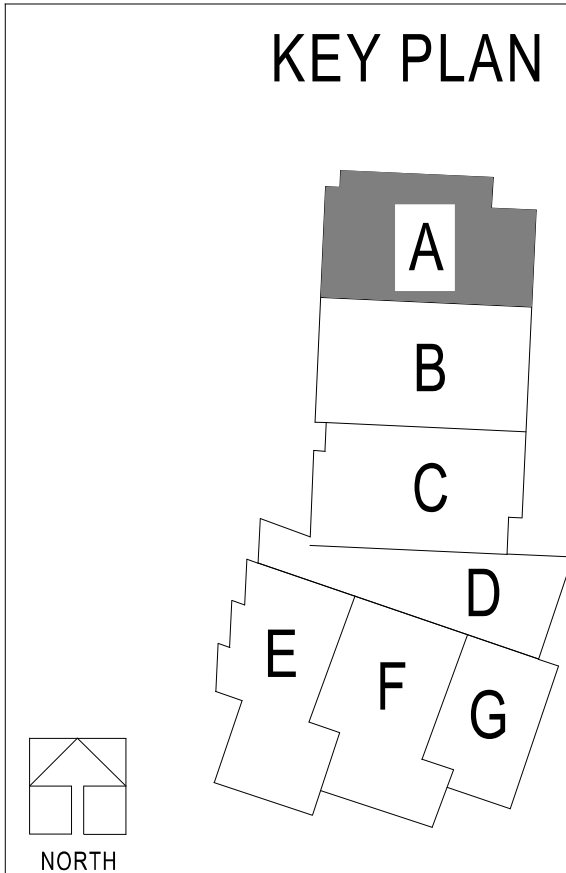
PACKAGE 3 - BUILDING & SITE  
10/08/20  
REVISIONS

13-20102-00  
PLUMBING FIRST LEVEL PLAN - AREA A

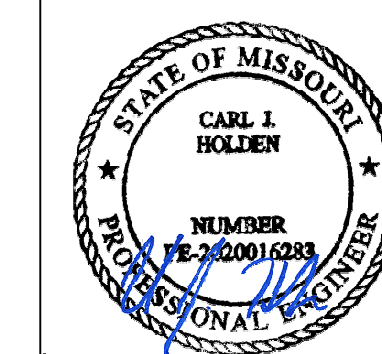
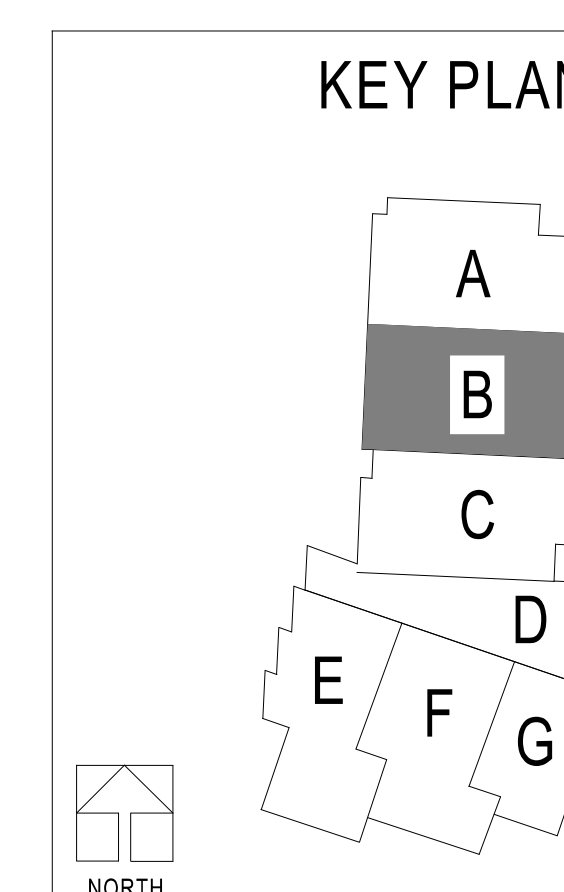
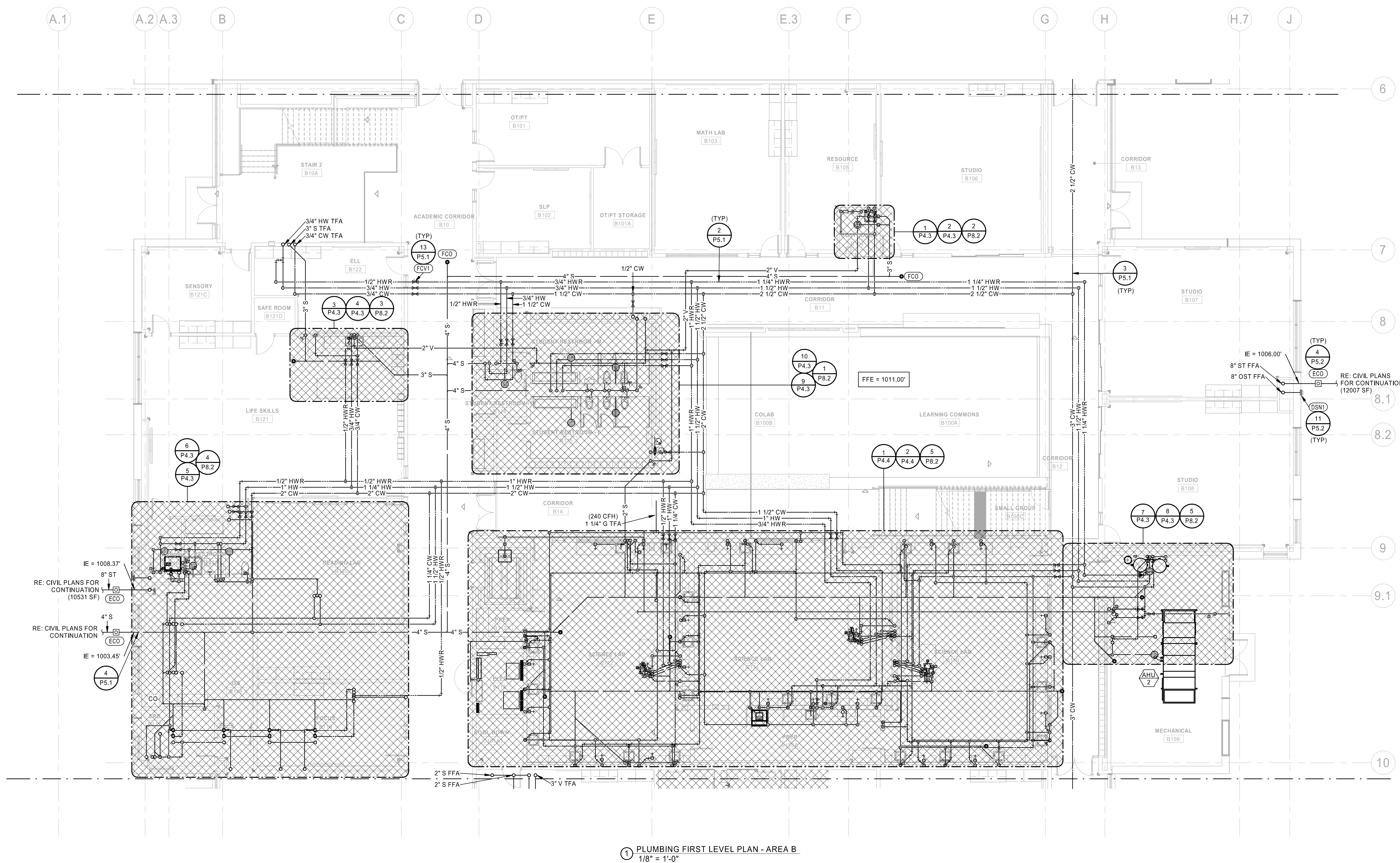
P1.1A



1 PLUMBING FIRST LEVEL PLAN - AREA A  
1/8" = 1'-0"



NORTH



Oct 8 2020  
CARL J. HOLDEN  
LICENSE # PE-2020016283

**HENDERSON**  
ENGINEERS

8345 LENEXA DRIVE, SUITE 300  
LENEXA, KS 68214  
TEL 913.742.5000 FAX 913.742.5001  
[WWW.HENDERSONENGINEERS.COM](http://WWW.HENDERSONENGINEERS.COM)

1950005064  
MO. CORPORATE NO.: E-5560  
EXPIRES 12/31/2020

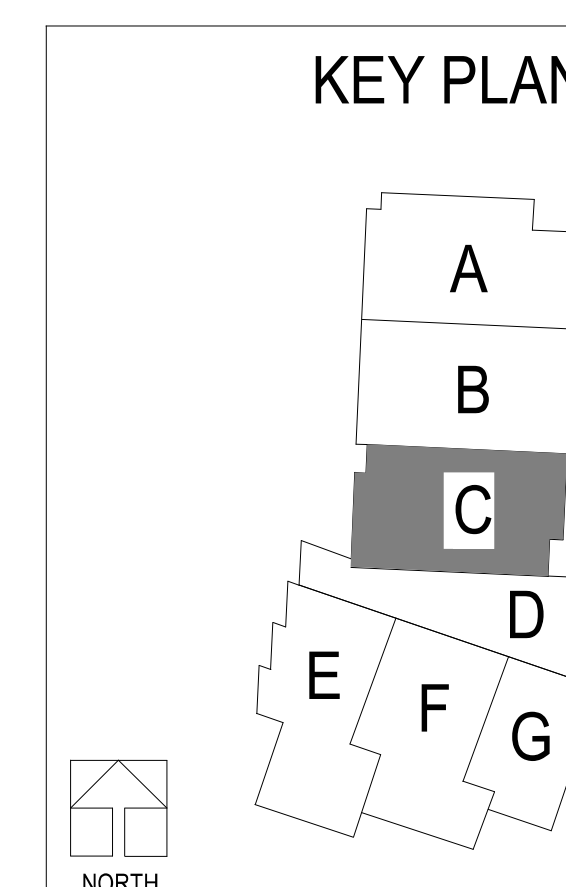
LEE'S SUMMIT MIDDLE SCHOOL #4  
LEE'S SUMMIT R-7 SCHOOL DISTRICT

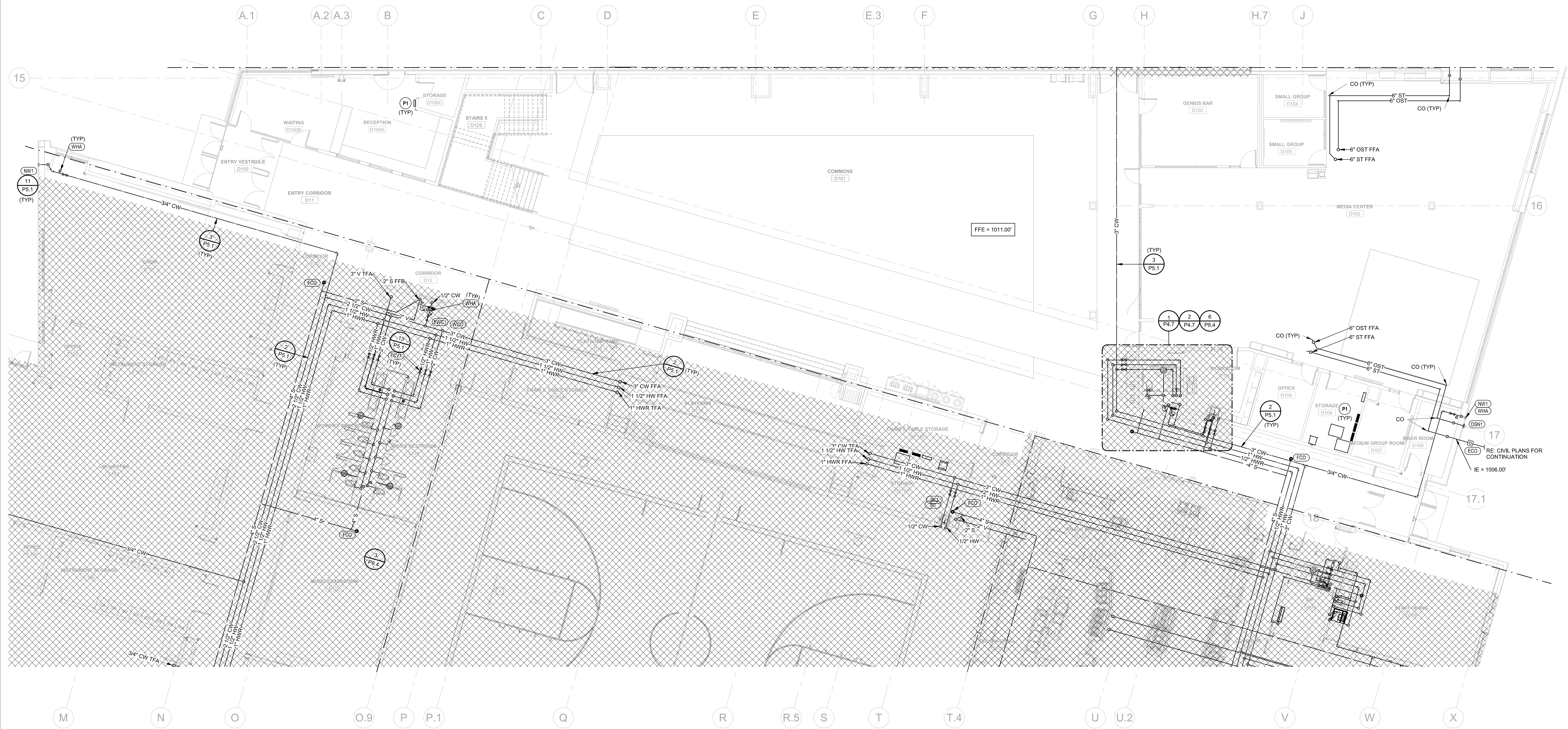
PACKAGE 3 - BUILDING  
SITE  
10/08/20  
REVISIONS

13-20102-00

PLUMBING FIRST  
LEVEL PLAN -  
AREA B

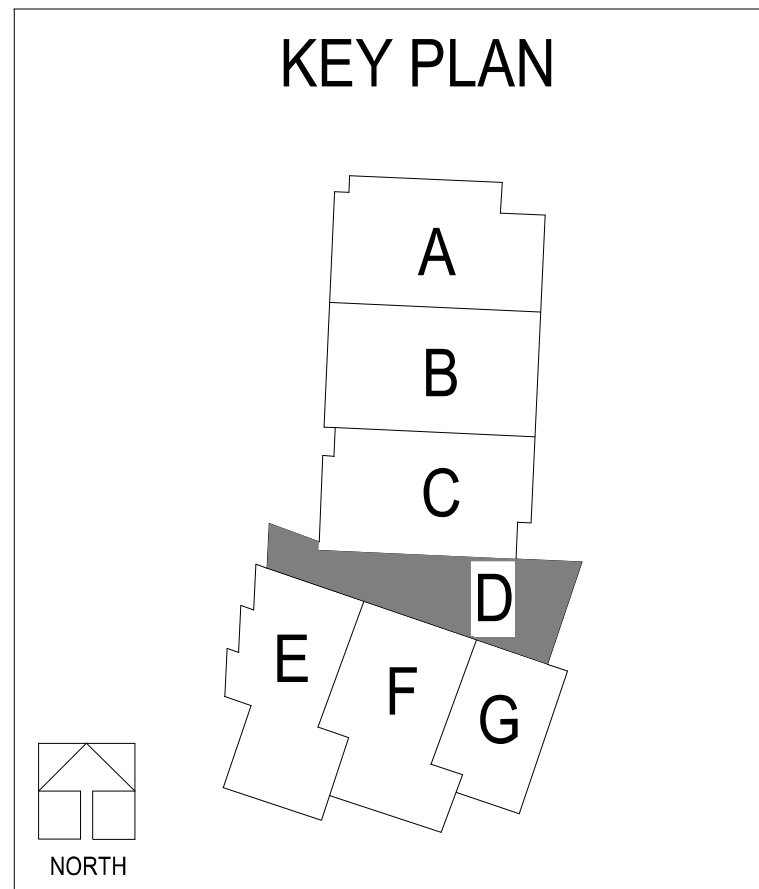
P1.1B





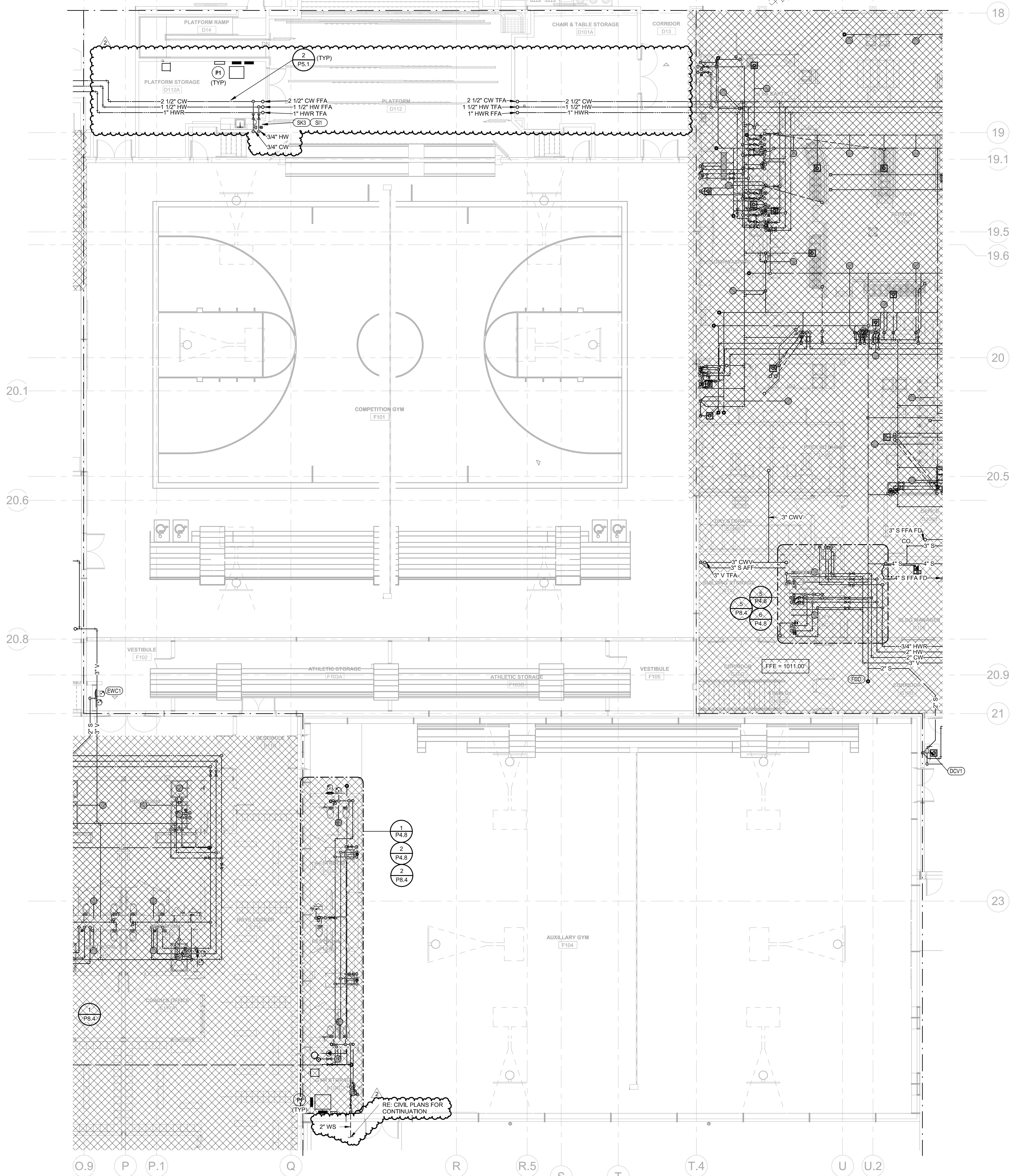
○ PLUMBING PLAN NOTES:  
P1 DO NOT INSTALL PLUMBING PIPING OVER ELECTRICAL PANELS OR EQUIPMENT.

① PLUMBING FIRST LEVEL PLAN - AREA D  
1/8" = 1'-0"



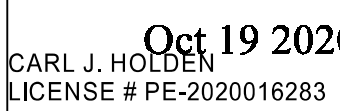


PLUMBING PLAN NOTES:  
P1 DO NOT INSTALL PLUMBING PIPING OVER ELECTRICAL PANELS OR EQUIPMENT.



1 PLUMBING FIRST LEVEL PLAN - AREA F  
1/8" = 1'-0"

 **DLR Group**  
© 2020, DLR Group, Inc., a Missouri corporation,  
ALL RIGHTS RESERVED  
Missouri State Certificate of Authority #00039

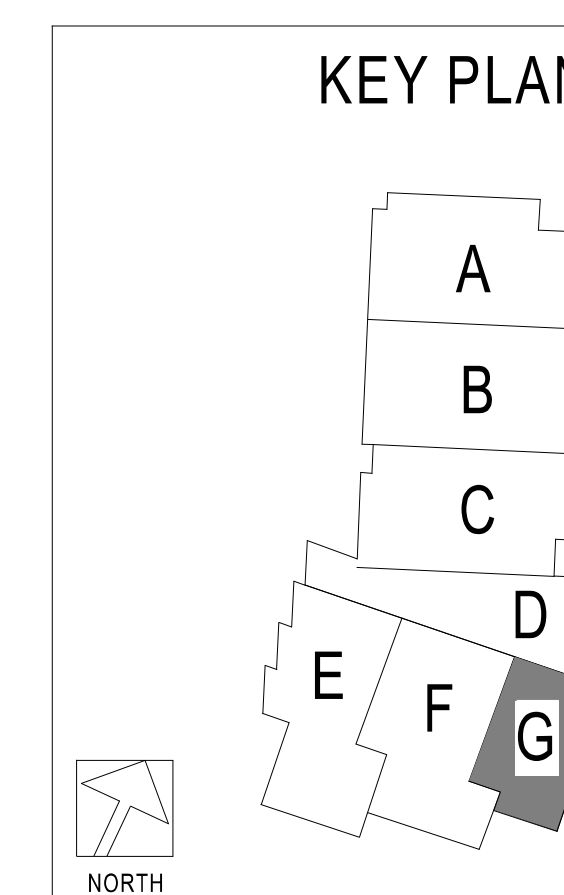


LEE'S SUMMIT MIDDLE SCHOOL #4  
LEE'S SUMMIT R-7 SCHOOL DISTRICT  
1001 SE BAILEY ROAD  
LEE'S SUMMIT, MO 64881

13-20102-00

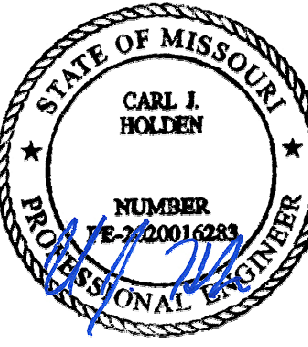
PLUMBING FIRST  
LEVEL PLAN -  
AREA G

P1.1G



NOR

PLUMBING PLAN NOTES:  
P1 DO NOT INSTALL PLUMBING PIPING OVER ELECTRICAL PANELS OR EQUIPMENT.



Oct 19 2020  
CARL J. HOLDEN  
LICENSE # PE-2020016283

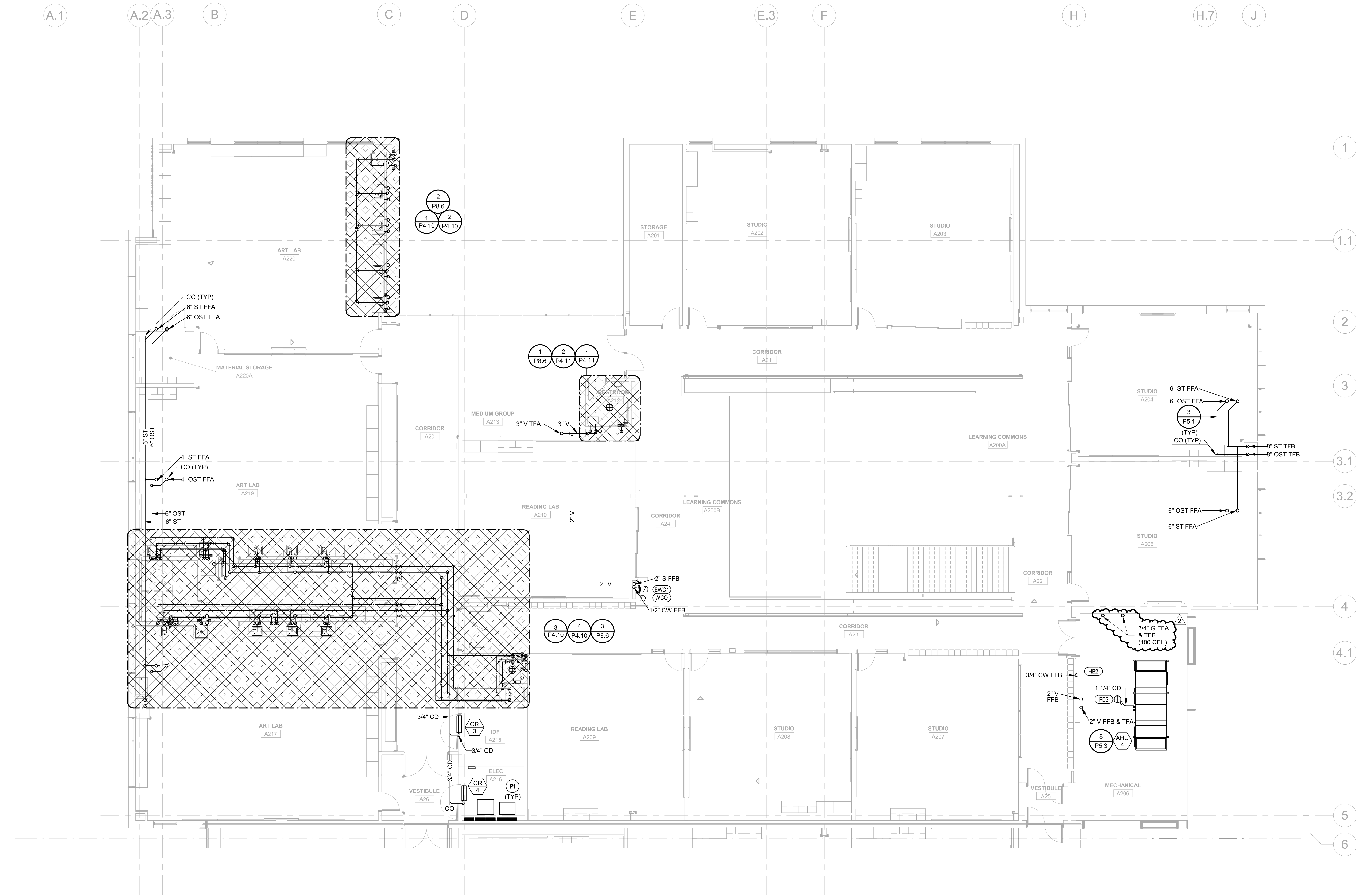
HENDERSON  
ENGINEERS  
8345 LENEXA DRIVE SUITE 300  
LENEXA, MO 64074-4300  
TEL 913.751.4300  
WWW.HENDERSONENGINEERS.COM  
MO CORPORATE NO. E-5690  
EXP. 12/31/2020

LEE'S SUMMIT MIDDLE SCHOOL #4  
LEE'S SUMMIT R-7 SCHOOL DISTRICT  
1001 SE BAILEY ROAD  
LEE'S SUMMIT, MO 64081

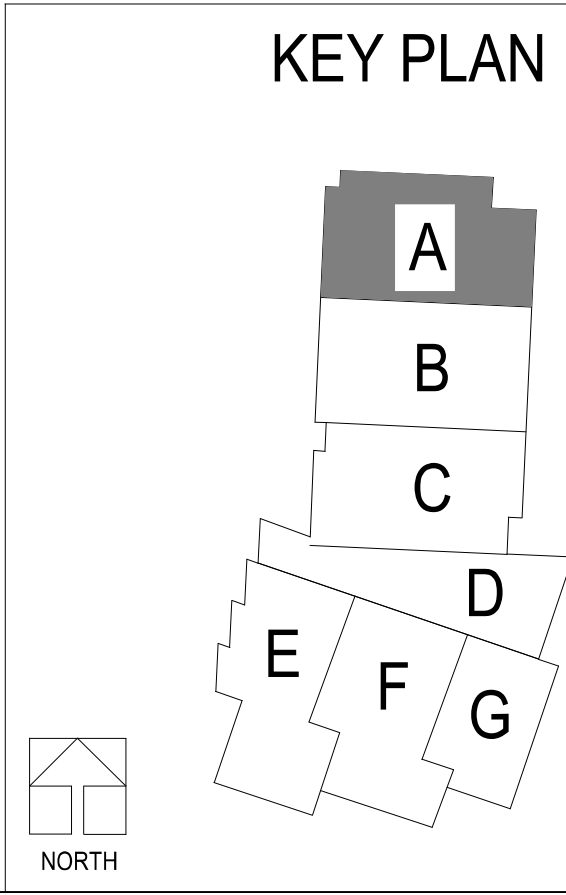
PACKAGE 3 - BUILDING & SITE  
10/08/20  
REVISIONS  
ADDENDUM 002

13-20102-00  
PLUMBING  
SECOND LEVEL  
PLAN - AREA A

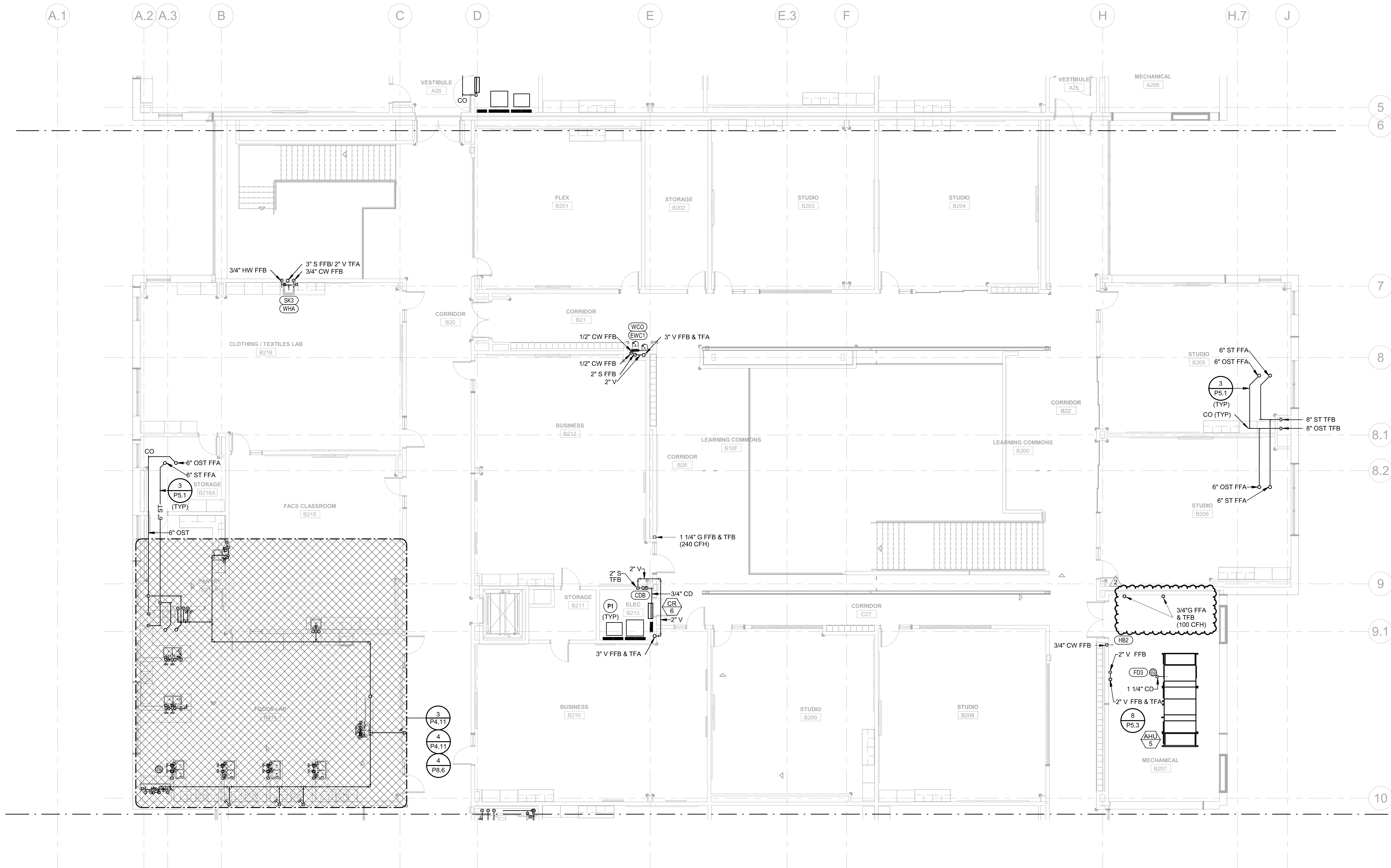
P1.2A



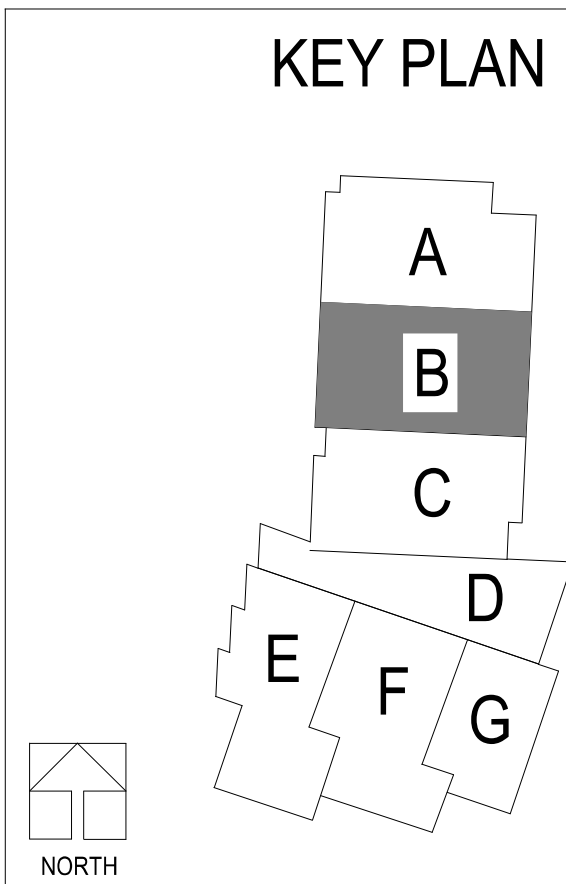
1 PLUMBING SECOND LEVEL PLAN - AREA A  
1/8" = 1'-0"



PLUMBING PLAN NOTES:  
P1 DO NOT INSTALL PLUMBING PIPING OVER ELECTRICAL PANELS OR EQUIPMENT.



1 PLUMBING SECOND LEVEL PLAN - AREA B  
1/8" = 1'-0"



Oct 19 2020  
CARL J. HOLDEN  
LICENSE # PE-2020016283

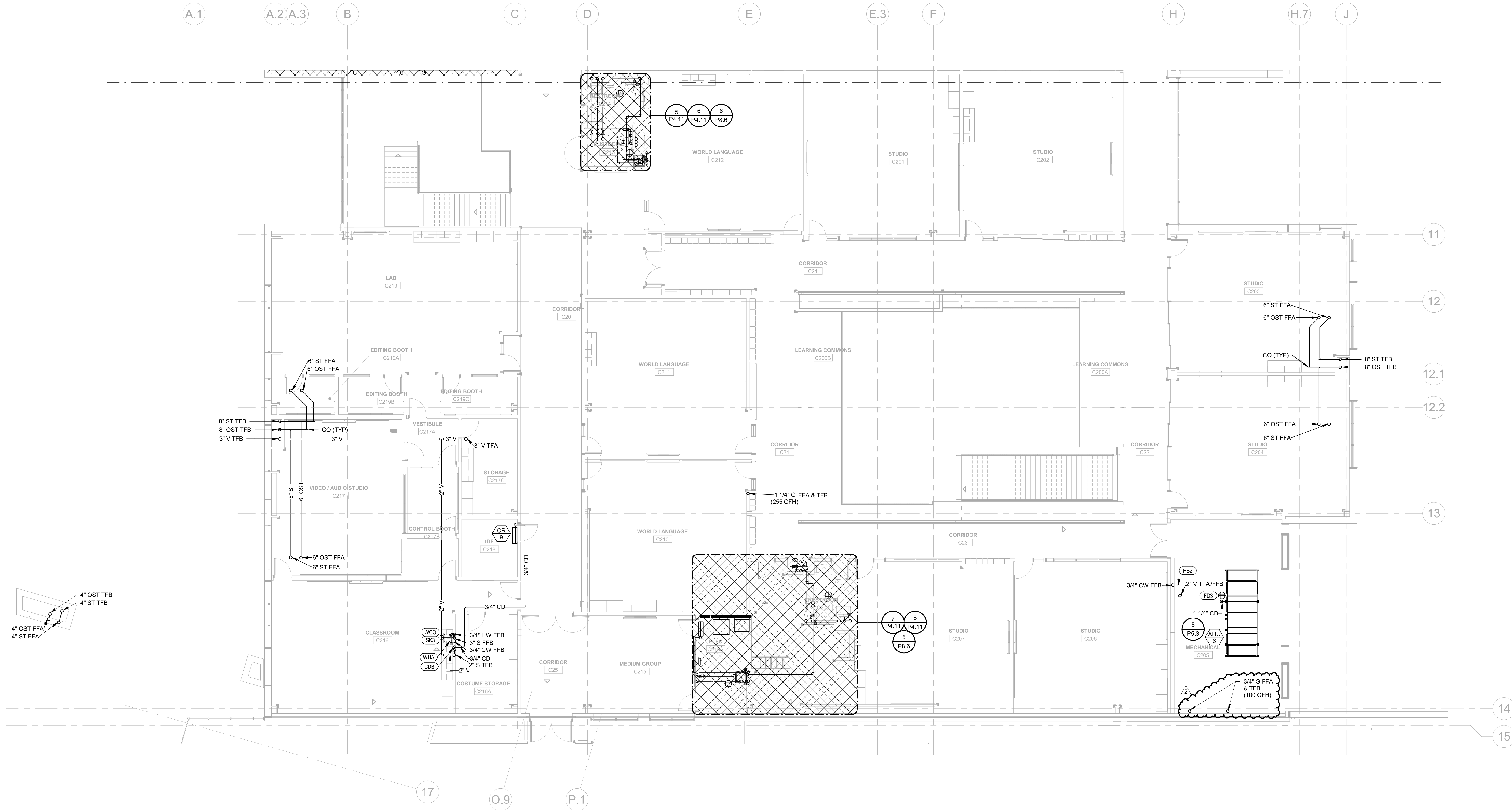
HENDERSON  
ENGINEERS  
8345 LENEXA DRIVE, SUITE 300  
LENEXA, MO 64074-4001  
TEL: 913.741.1000  
WWW.HENDERSONENGINEERS.COM  
MISSOURI REGISTRATION NO. 000000554  
MO CORP ORGATE NO. E-5690  
EXPIRES 12/31/2020

LEE'S SUMMIT MIDDLE SCHOOL #4  
LEE'S SUMMIT R-7 SCHOOL DISTRICT  
1001 SE BAILEY ROAD  
LEE'S SUMMIT, MO 64081

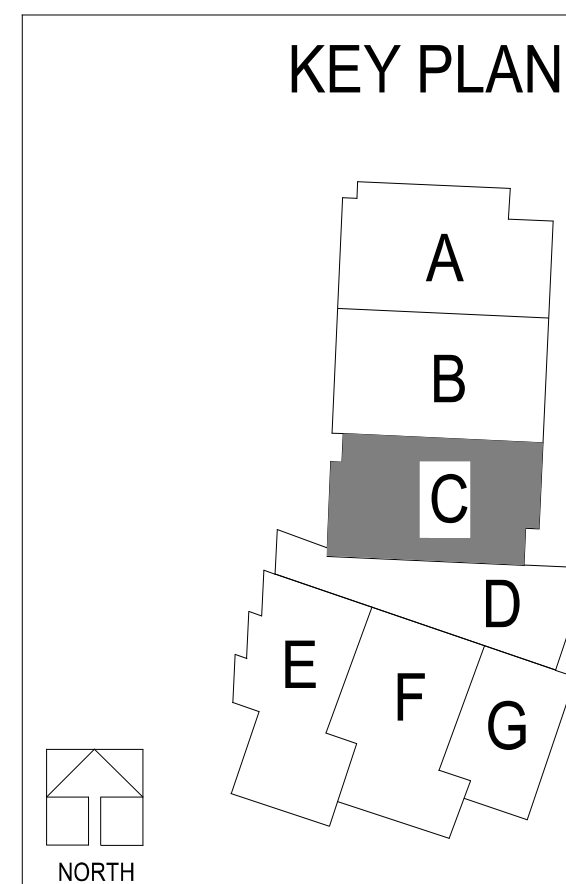
PACKAGE 3 - BUILDING & SITE  
10/08/20  
REVISIONS  
ADDENDUM 002 10/19/20

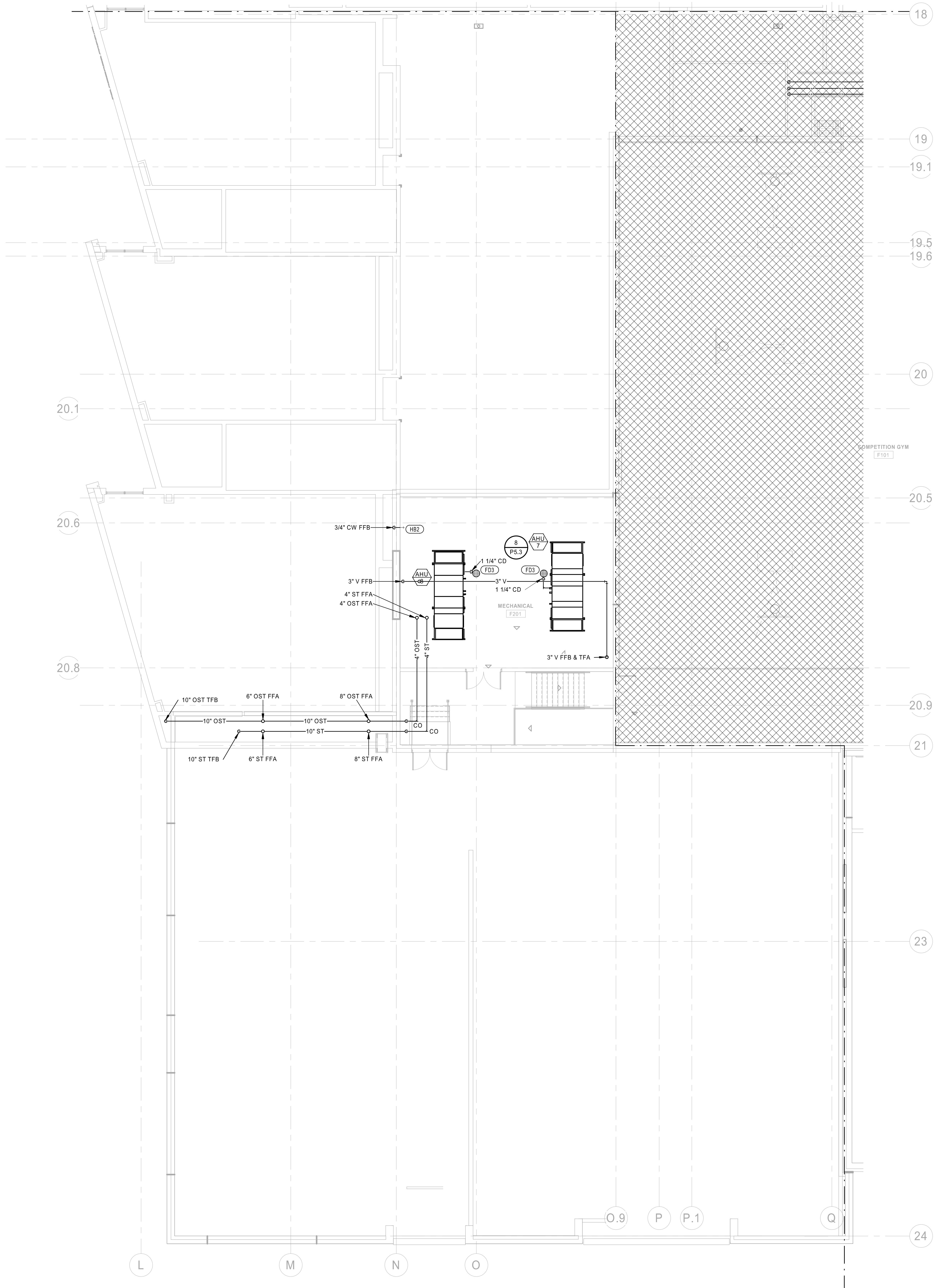
13-20102-00  
PLUMBING  
SECOND LEVEL  
PLAN - AREA B

P1.2B

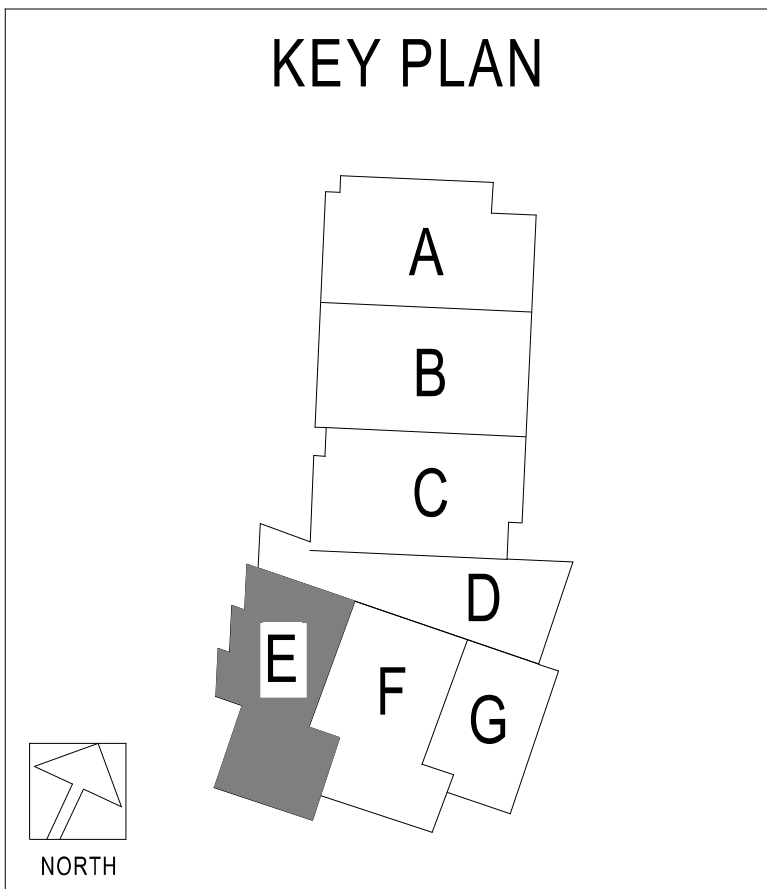


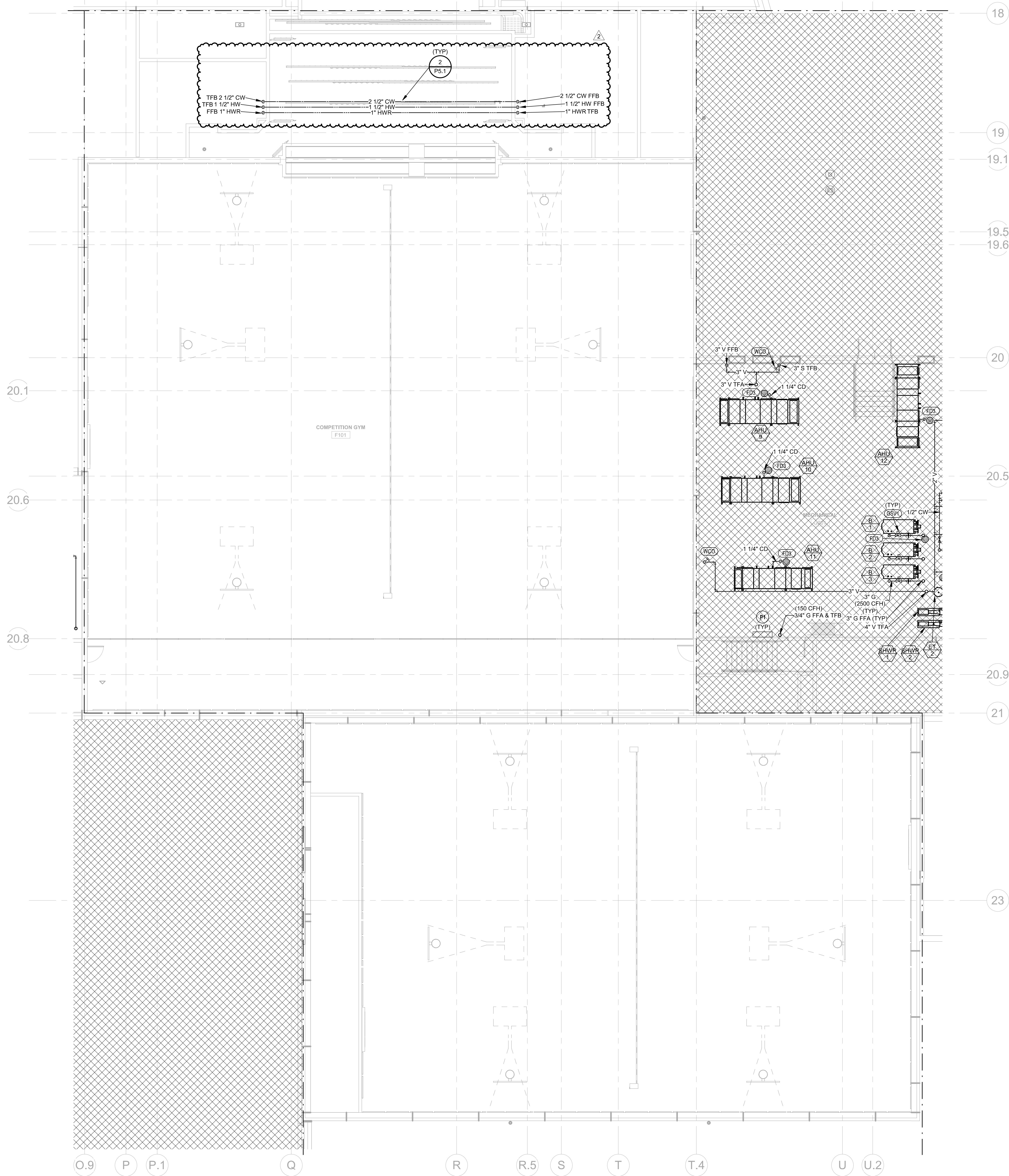
1 PLUMBING SECOND LEVEL PLAN - AREA C  
1/8" = 1'-0"



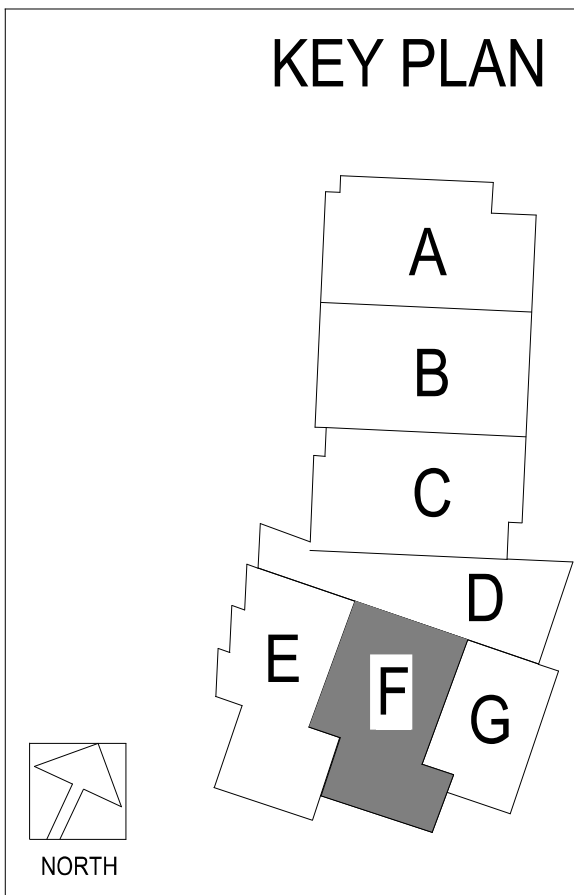


1 PLUMBING SECOND LEVEL PLAN - AREA E  
1/8" = 1'-0"

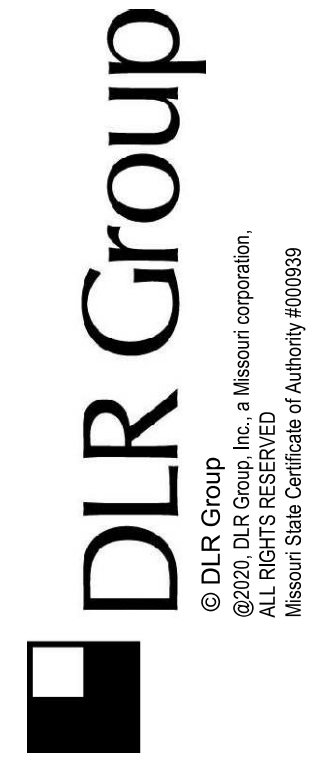
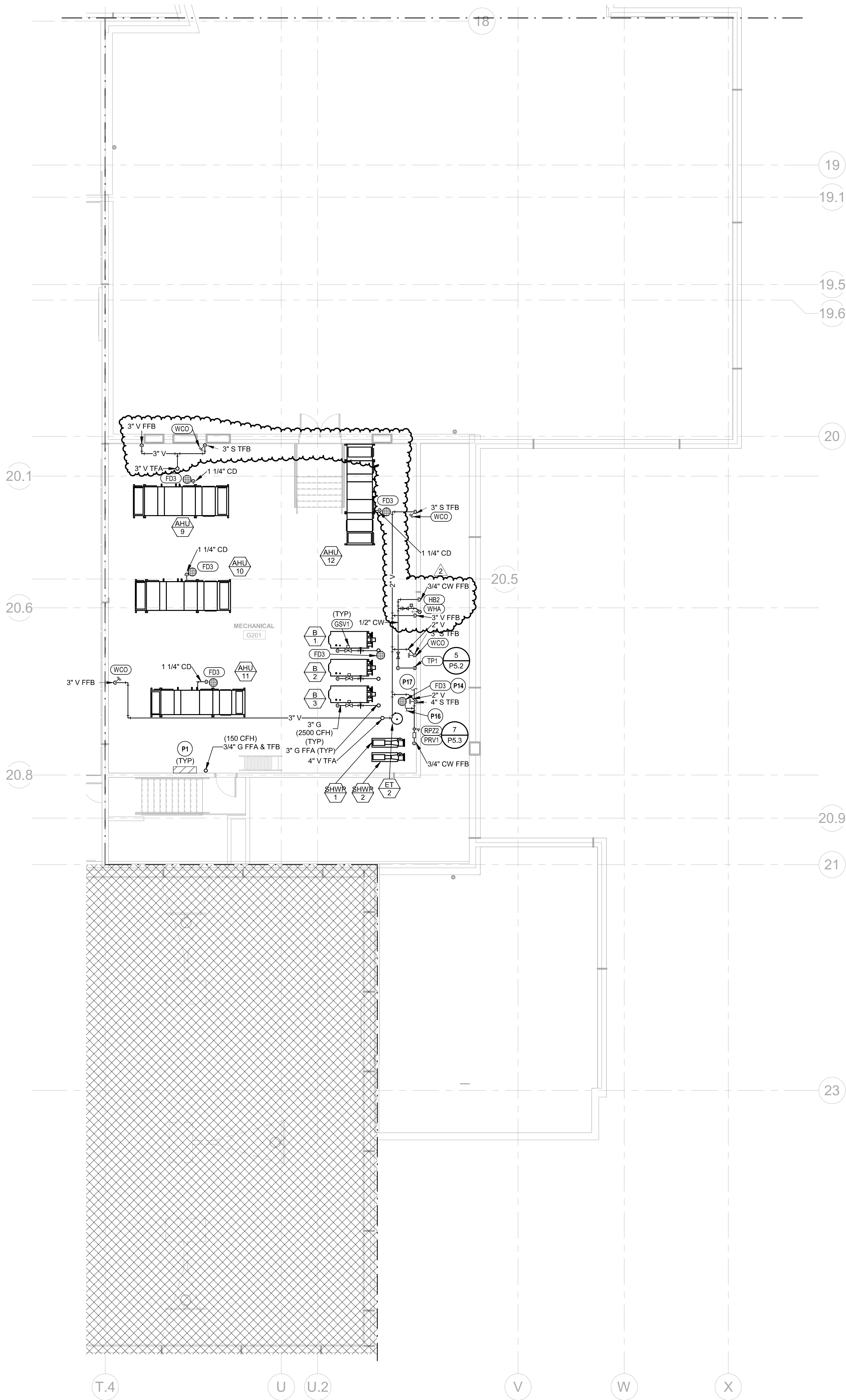




1 PLUMBING SECOND LEVEL PLAN - AREA F  
1/8" = 1'-0"



- **PLUMBING PLAN NOTES:**
- P1 DO NOT INSTALL PLUMBING PIPING OVER ELECTRICAL PANELS OR EQUIPMENT.
- P14 PROVIDE DRAIN WITH TRAP PRIMER CONNECTION. REFER TO WATER PLANS FOR TRAP PRIMER LOCATION.
- P16 3/4" NON-POTABLE WATER. REFER TO MECHANICAL DRAWINGS FOR CONTINUATION.
- P17 1/2" NON-POTABLE WATER FOR BOILER NEUTRALIZATION KIT. REFER TO MECHANICAL DRAWINGS FOR CONTINUATION.



Oct 19 2020  
CARL J. HOLDEN  
LICENSE # PE-2020016283

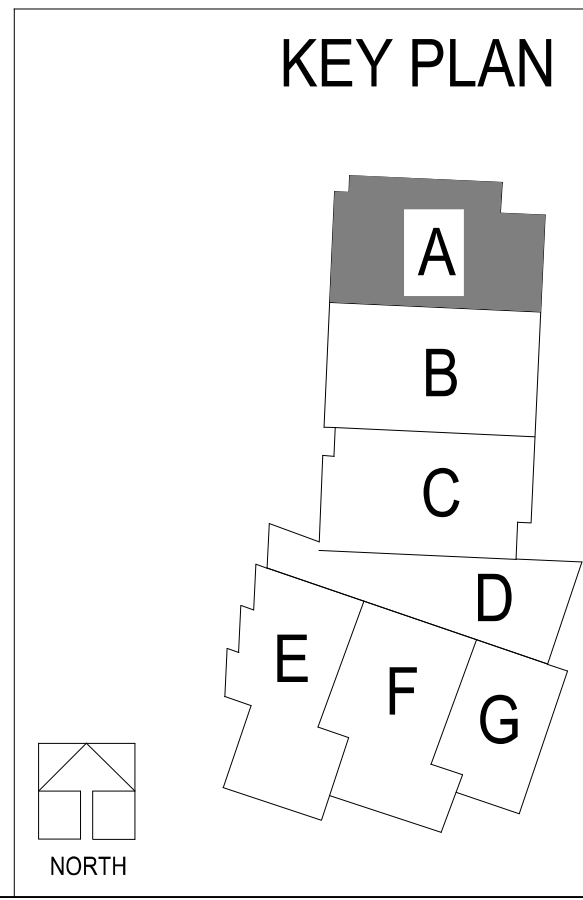
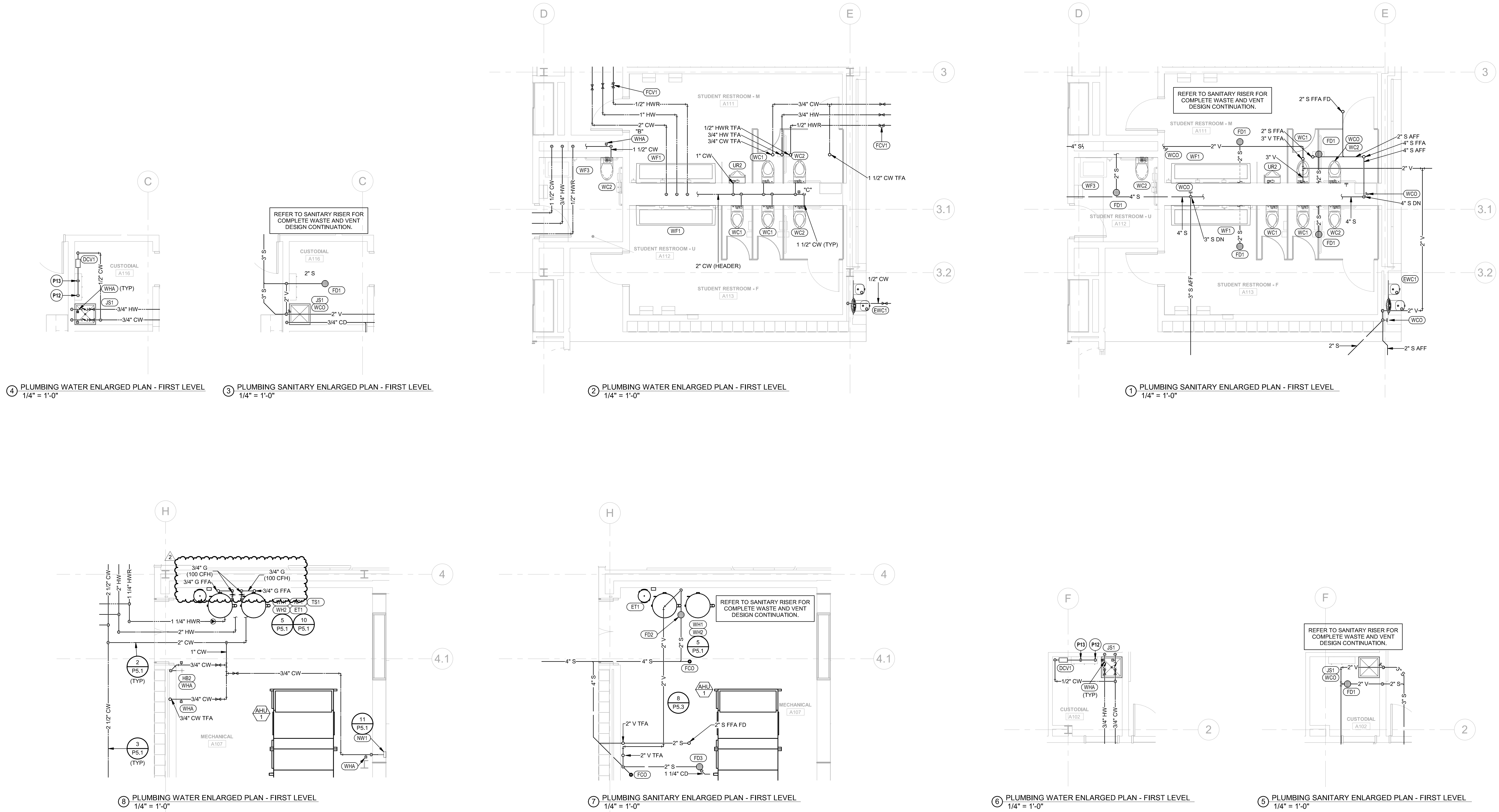
**HENDERSON**  
ENGINEERS  
1845 LINDA DRIVE, SUITE 300  
ST. LOUIS, MO 63103  
TEL: 314.771.1000  
WWW.HENDERSONENGINEERS.COM  
MO. CORP. REG. NO. E-5680  
EXPIRES 12/31/2020

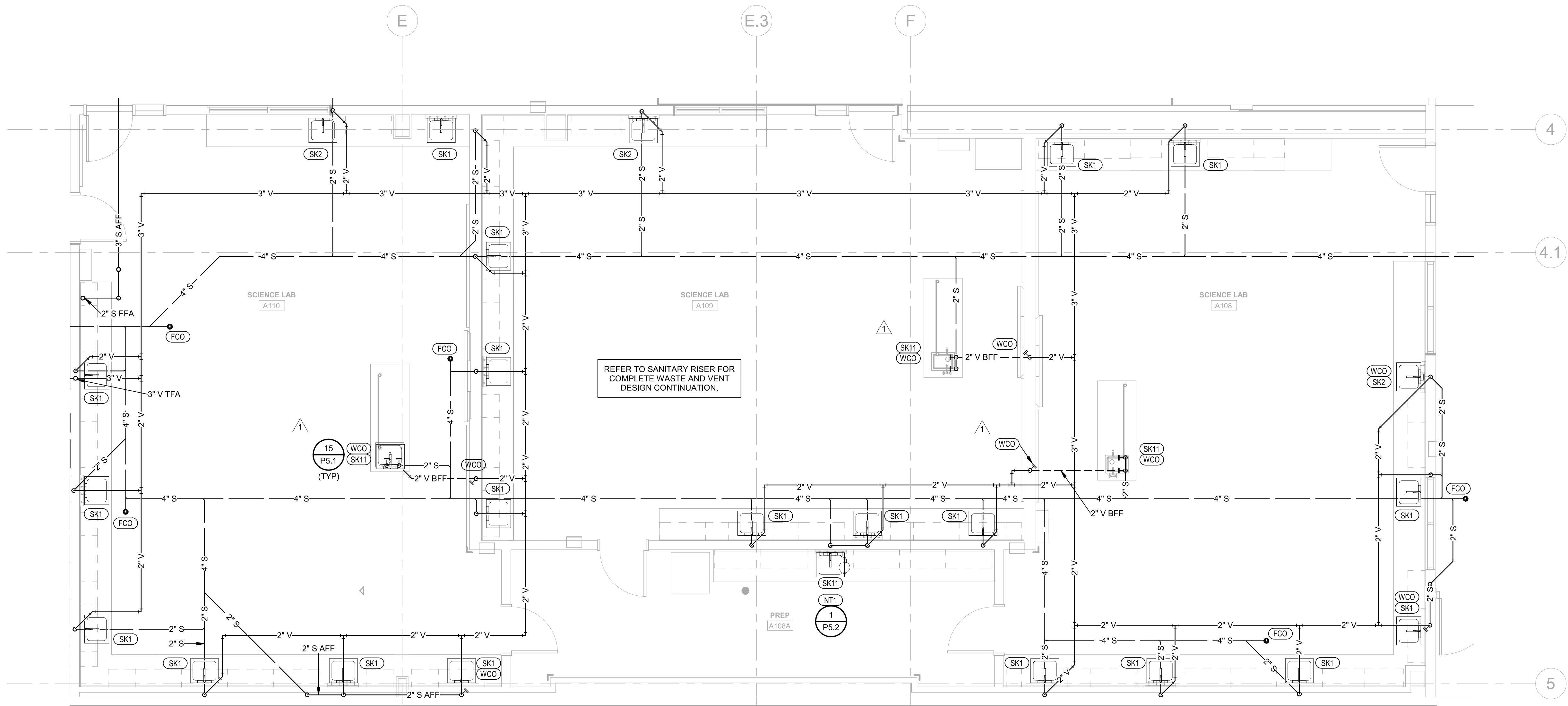
**LEE'S SUMMIT MIDDLE SCHOOL #4**  
LEE'S SUMMIT R-7 SCHOOL DISTRICT  
1001 SE BAILEY ROAD  
LEE'S SUMMIT, MO 64081

PACKAGE 3 - BUILDING & SITE  
10/08/20  
REVISIONS  
ADDENDUM 002 10/19/20

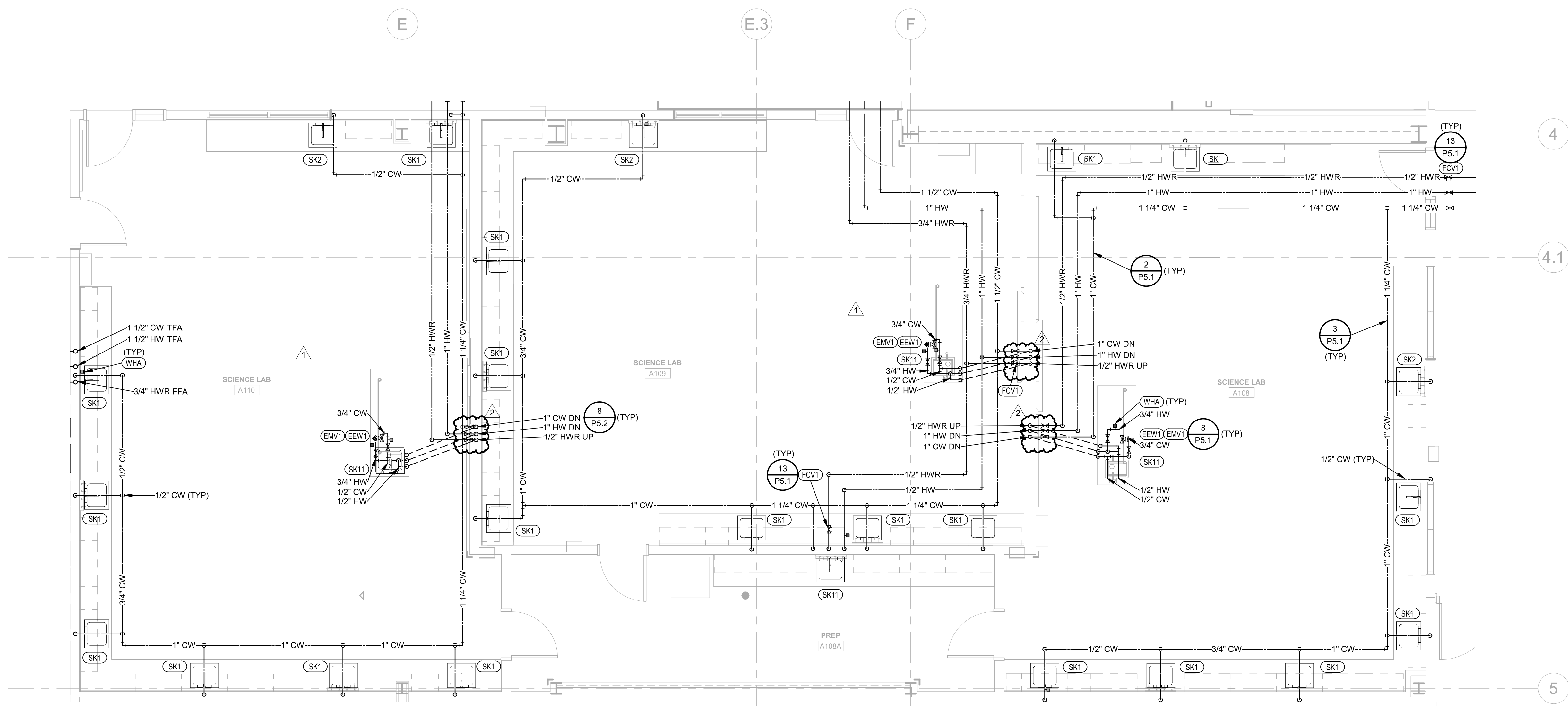
13-20102-00  
PLUMBING  
SECOND LEVEL  
PLAN - AREA G

P1.2G

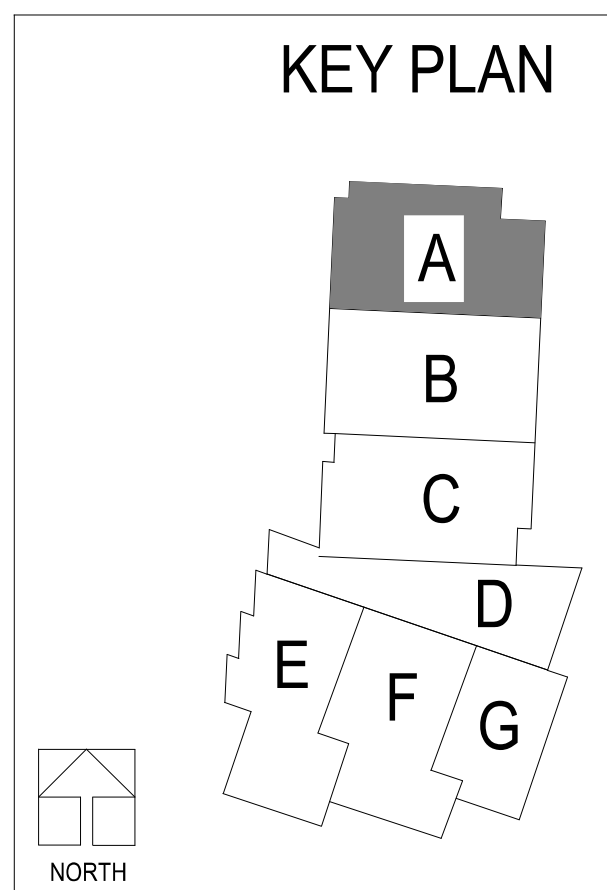


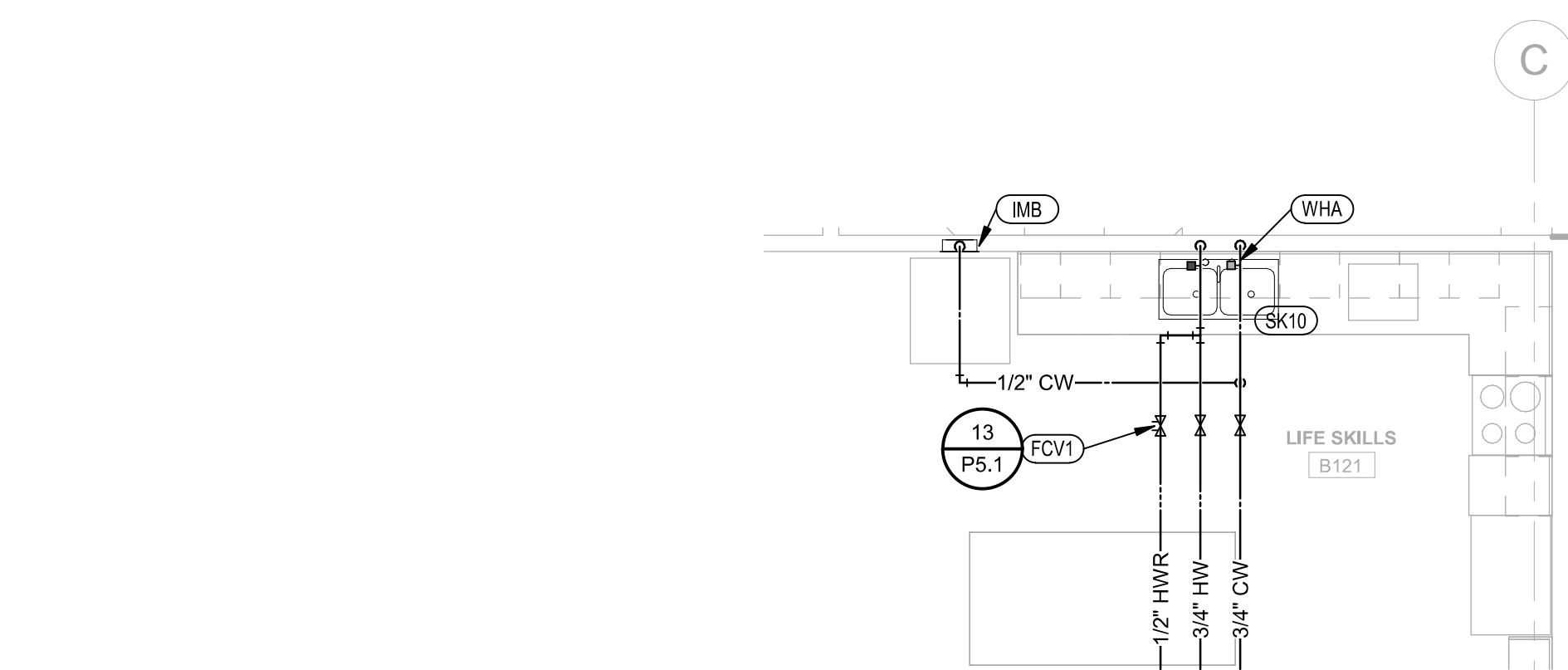


1 PLUMBING SANITARY ENLARGED PLAN - FIRST LEVEL  
1/4" = 1'-0"

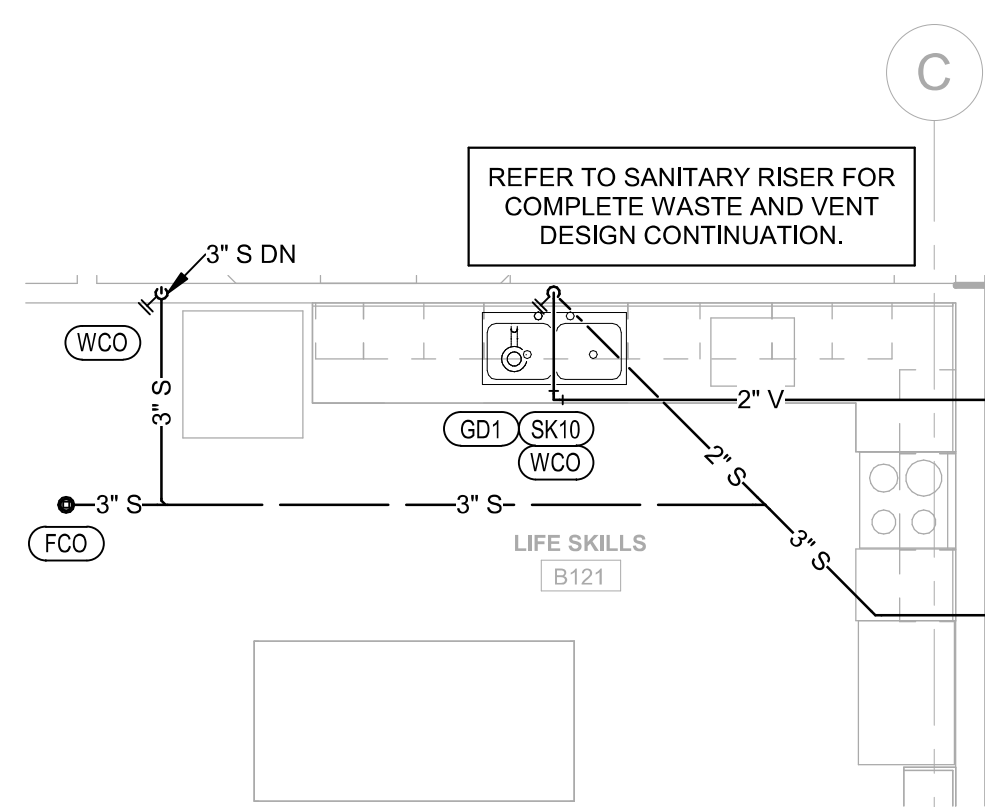


2 PLUMBING WATER ENLARGED PLAN - FIRST LEVEL  
1/4" = 1'-0"

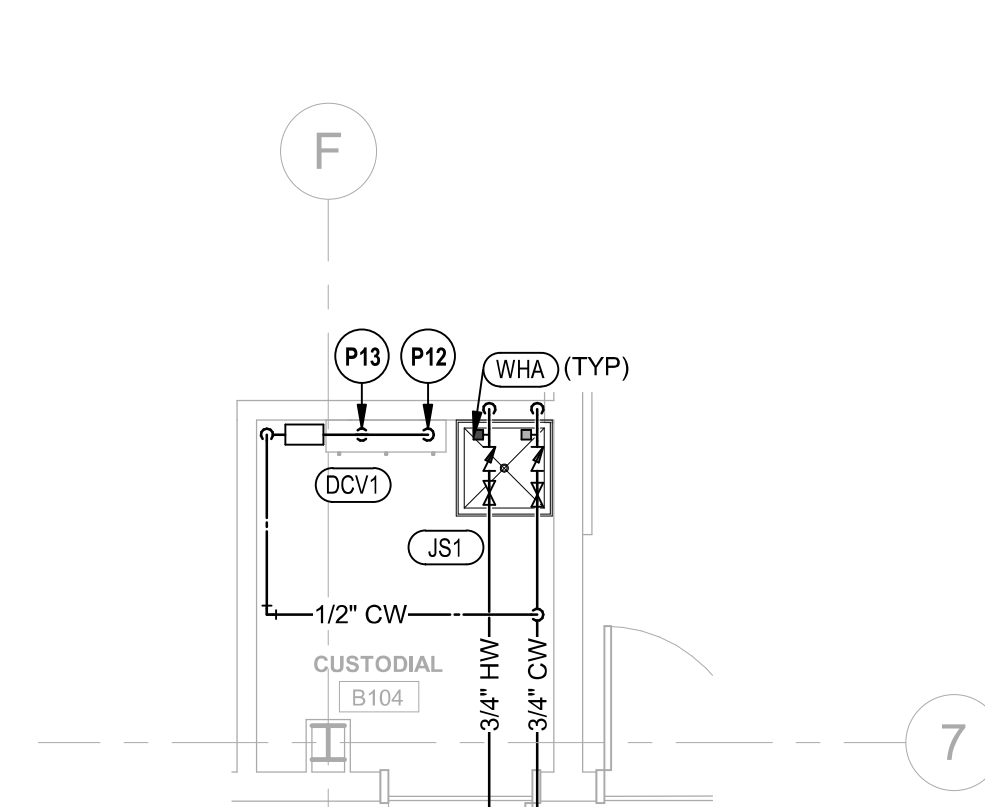




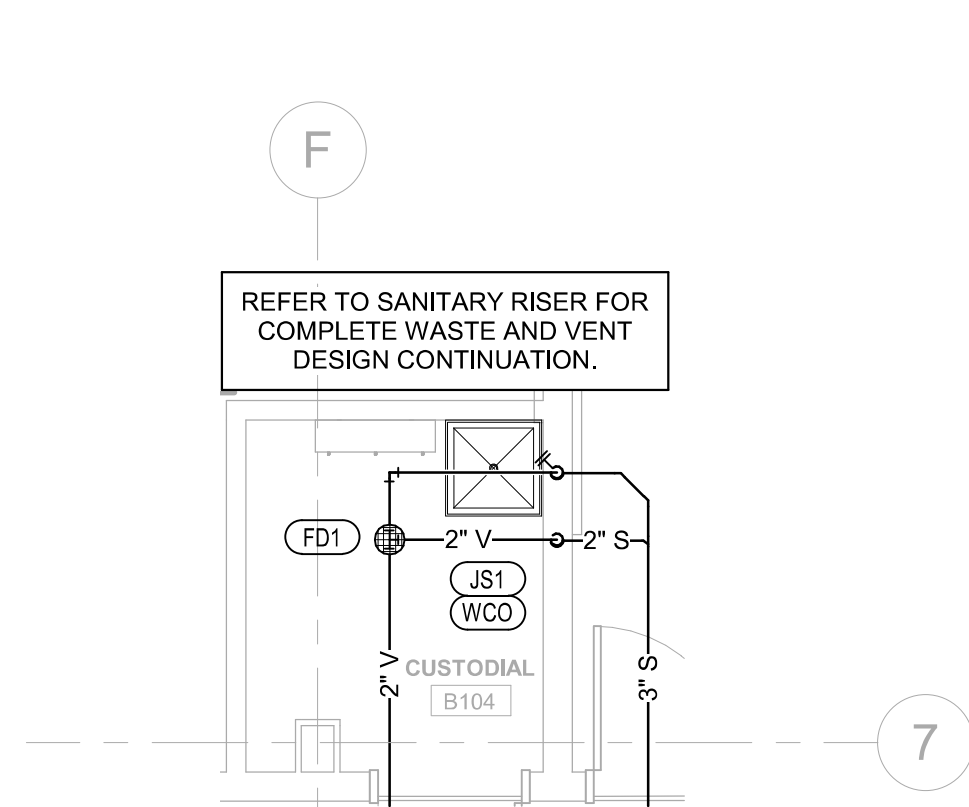
④ PLUMBING WATER ENLARGED PLAN - FIRST LEVEL  
1/4" = 1'-0"



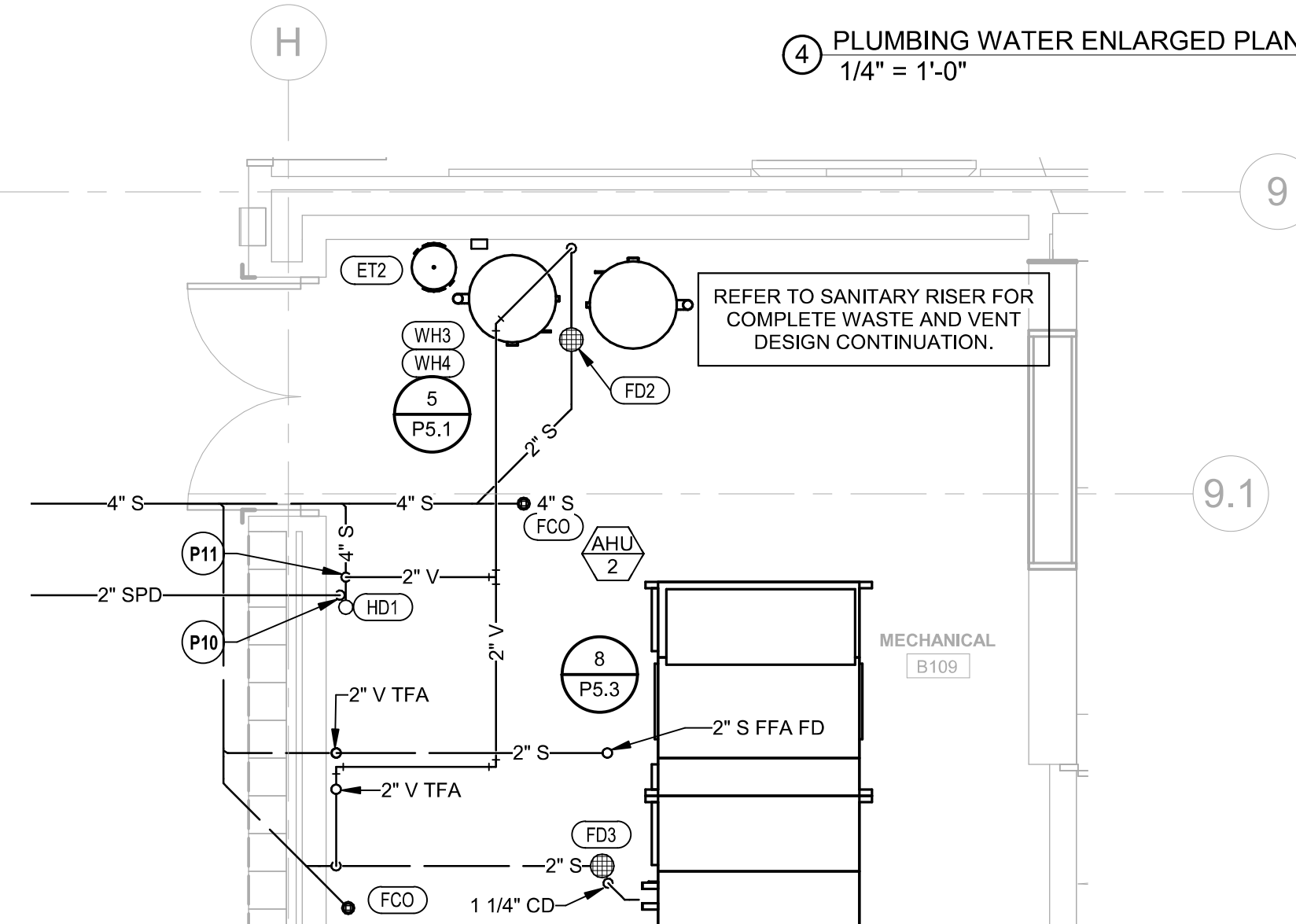
③ PLUMBING SANITARY ENLARGED PLAN - FIRST LEVEL  
1/4" = 1'-0"



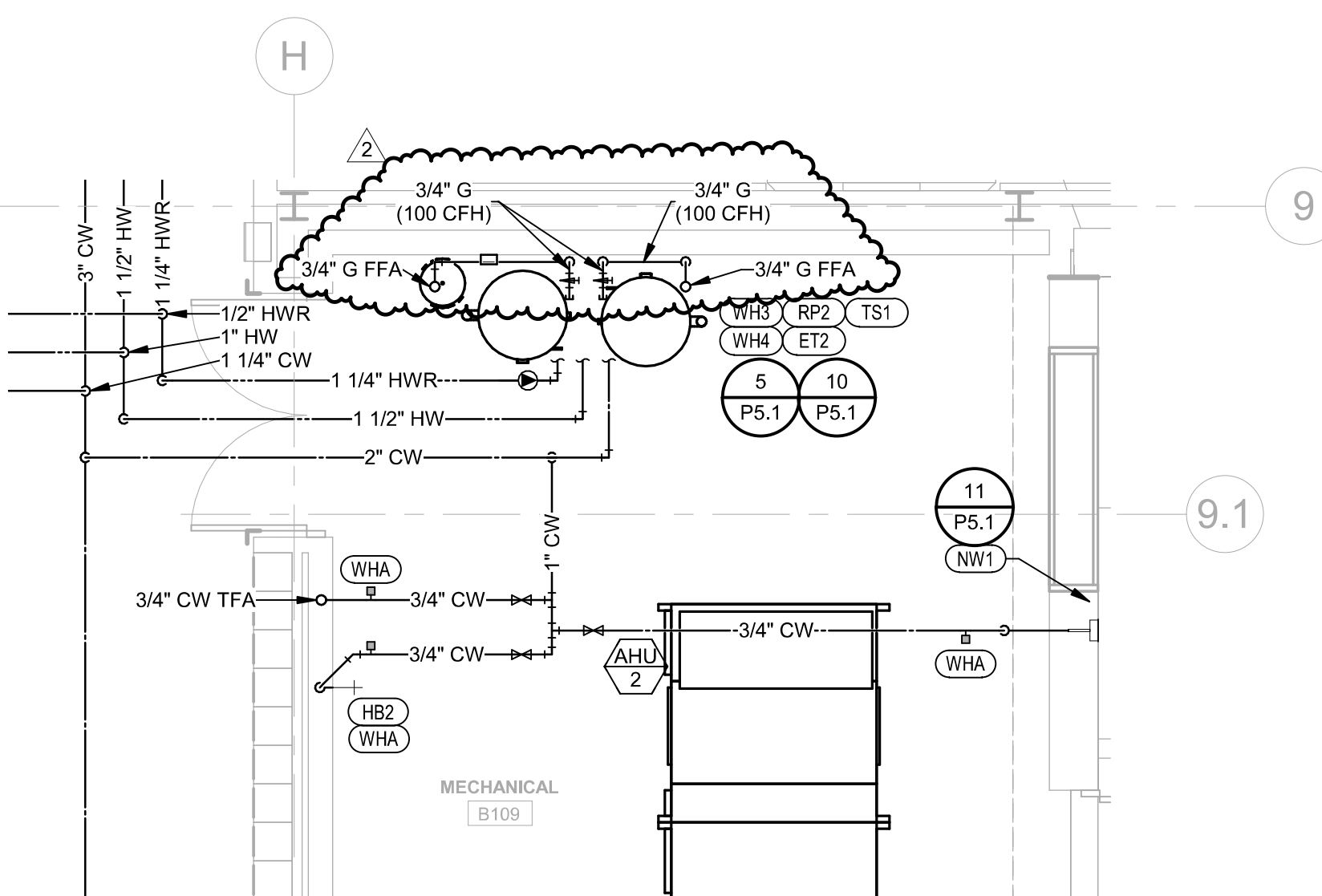
② PLUMBING WATER ENLARGED PLAN - FIRST LEVEL  
1/4" = 1'-0"



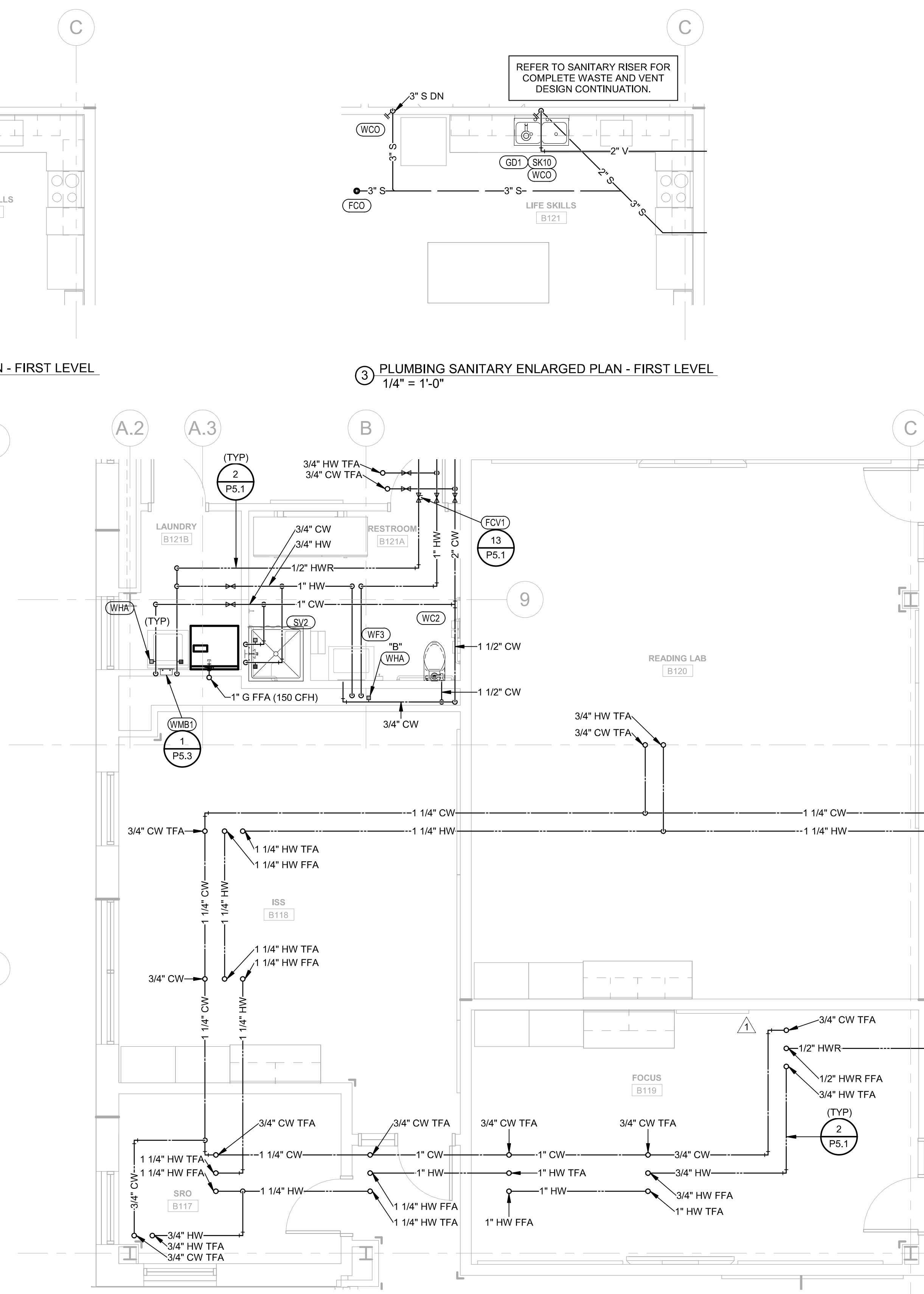
① PLUMBING SANITARY ENLARGED PLAN - FIRST LEVEL  
1/4" = 1'-0"



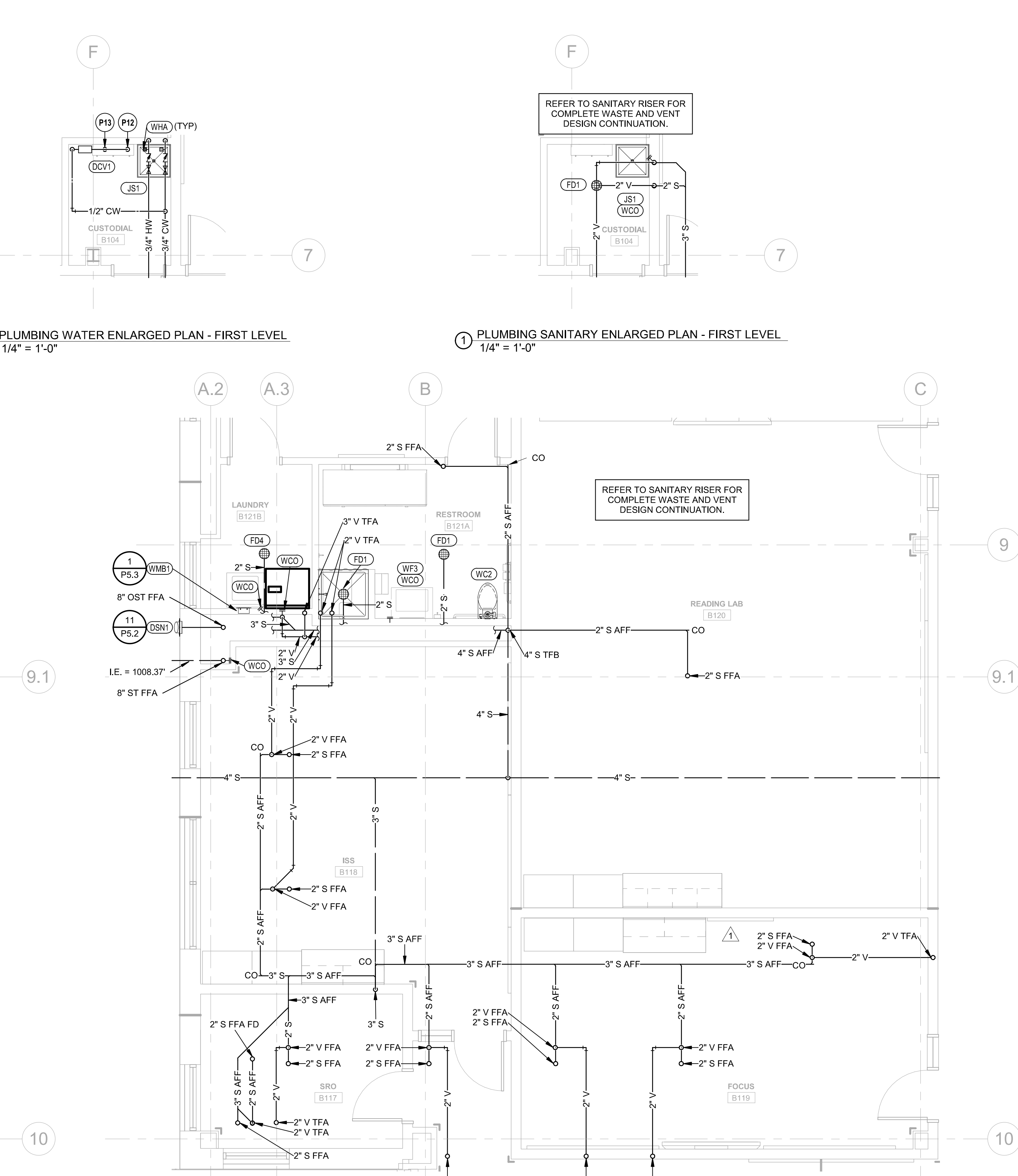
⑦ PLUMBING SANITARY ENLARGED PLAN - FIRST LEVEL  
1/4" = 1'-0"



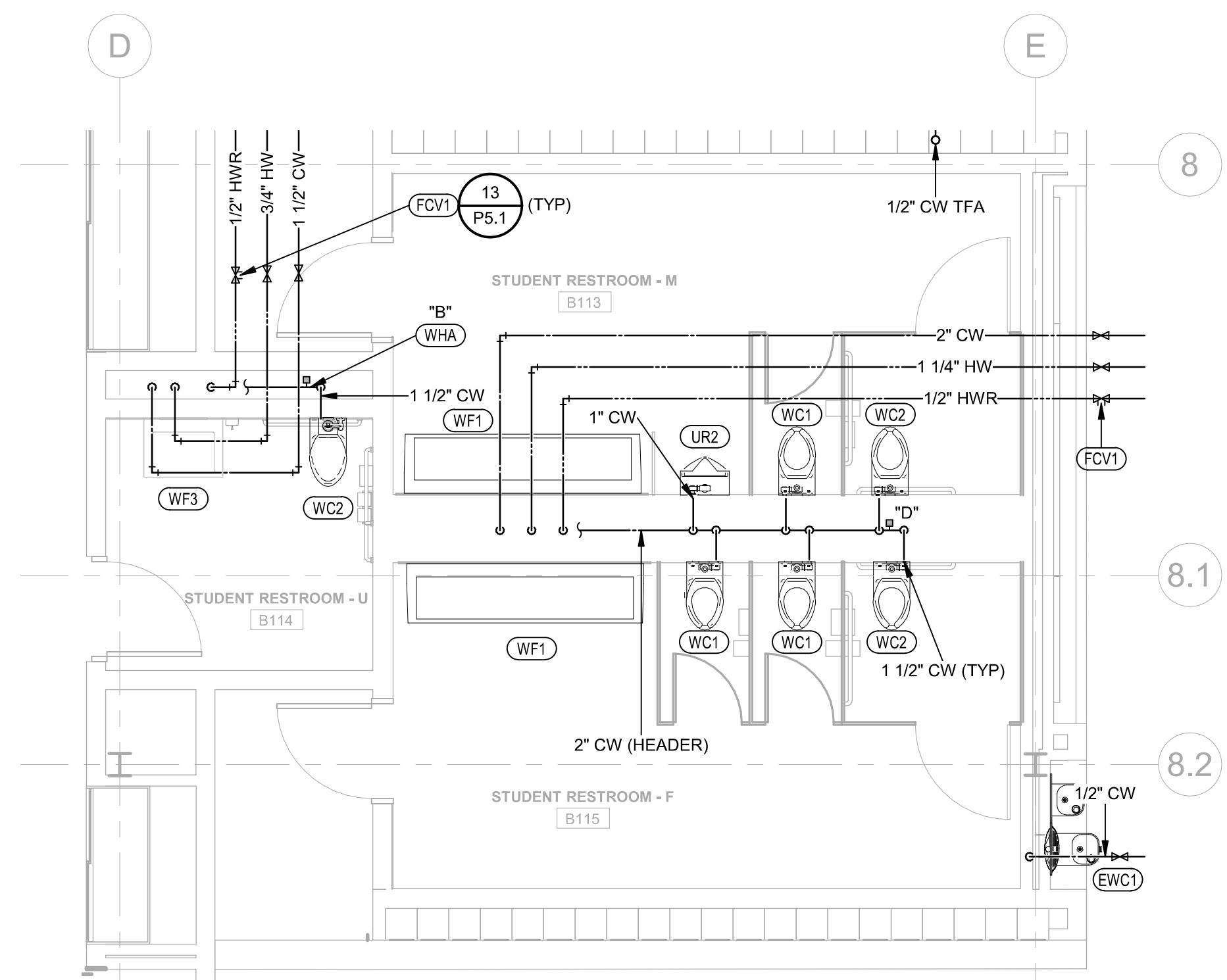
⑥ PLUMBING WATER ENLARGED PLAN - FIRST LEVEL  
1/4" = 1'-0"



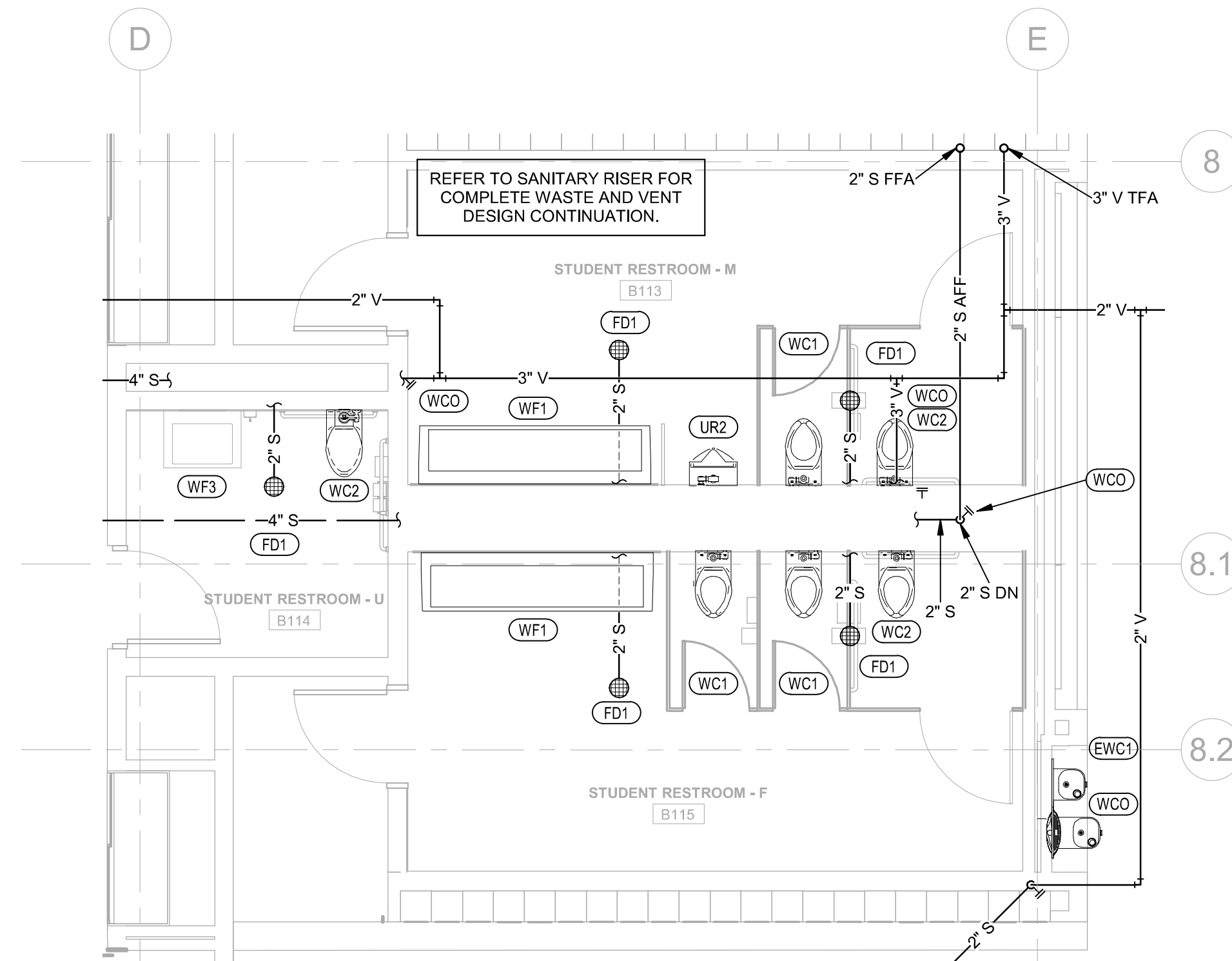
⑥ PLUMBING WATER ENLARGED PLAN - FIRST LEVEL  
1/4" = 1'-0"



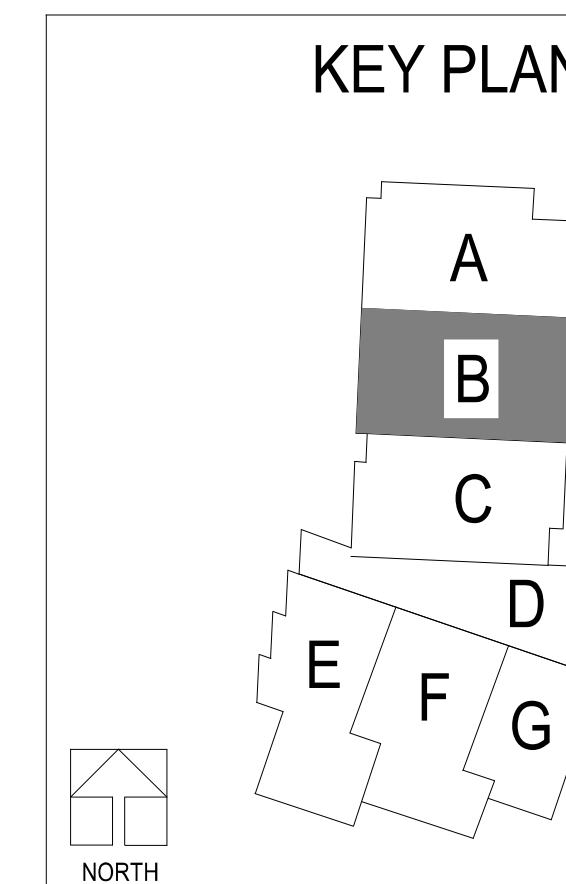
⑤ PLUMBING SANITARY ENLARGED PLAN - FIRST LEVEL  
1/4" = 1'-0"

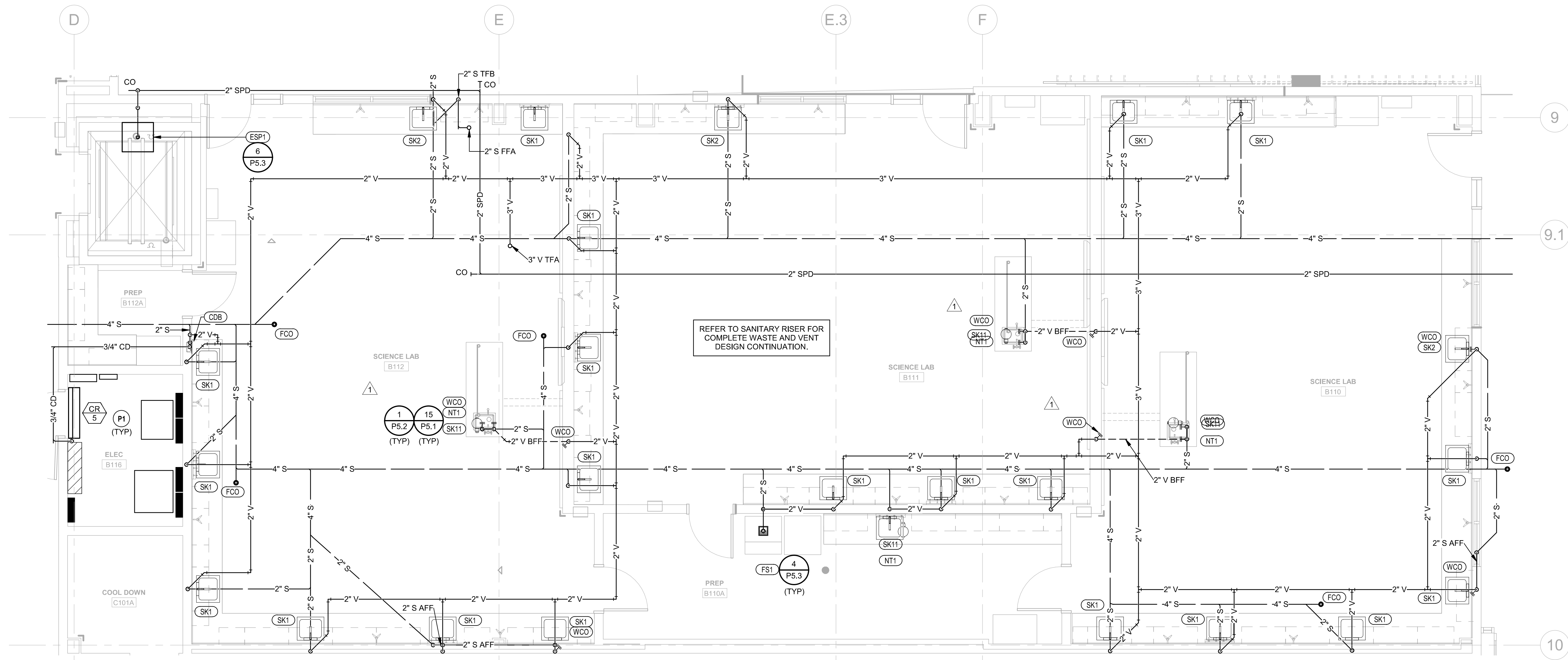


⑩ PLUMBING WATER ENLARGED PLAN - FIRST LEVEL  
1/4" = 1'-0"

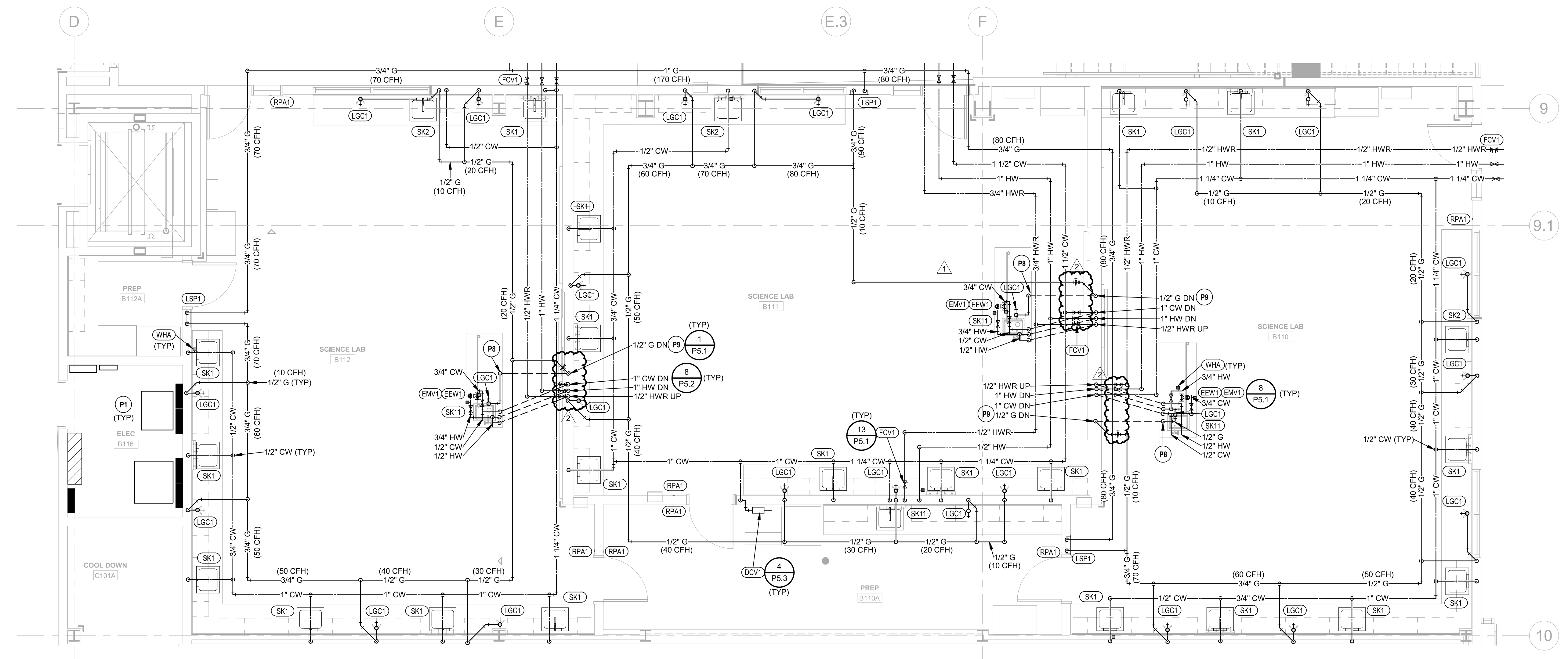


⑨ PLUMBING SANITARY ENLARGED PLAN - FIRST LEVEL  
1/4" = 1'-0"





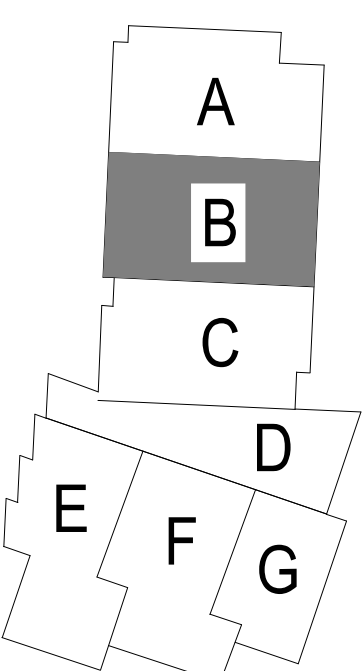
1 PLUMBING SANITARY ENLARGED PLAN - FIRST LEVEL  
1/4" = 1'-0"



2 PLUMBING WATER ENLARGED PLAN - FIRST LEVEL  
1/4" = 1'-0"

- PLUMBING PLAN NOTES:**
- P1 DO NOT INSTALL PLUMBING PIPING OVER ELECTRICAL PANELS OR EQUIPMENT.
  - P8 INSTALL 1/2" GAS COCK IN VERTICAL RISE 12" ABOVE THE FINISH FLOOR.
  - P9 REFER TO DETAIL AND PROVIDE GAS VENT FROM CONDUIT SLEEVE UP TO ROOF AND VENT THRU ROOF.

# KEY PLAN



④ PLUMBING WATER ENLARGED PLAN - FIRST LEVEL  
 1/4" = 1'-0"

③ PLUMBING SANITARY ENLARGED PLAN - FIRST LEVEL  
 1/4" = 1'-0"

② PLUMBING WATER ENLARGED PLAN - FIRST LEVEL  
 1/4" = 1'-0"

① PLUMBING SANITARY ENLARGED PLAN - FIRST LEVEL  
 1/4" = 1'-0"

⑥ PLUMBING WATER ENLARGED PLAN - FIRST LEVEL  
 1/4" = 1'-0"

⑤ PLUMBING SANITARY ENLARGED PLAN - FIRST LEVEL  
 1/4" = 1'-0"

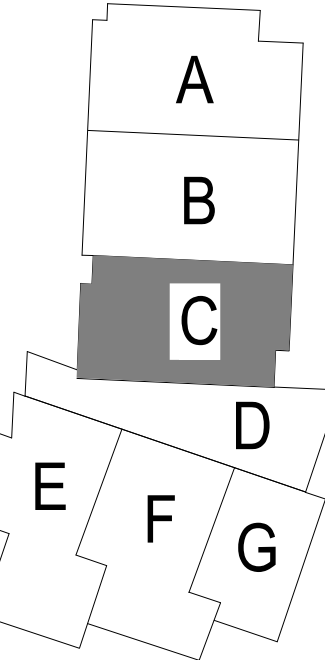
⑩ PLUMBING WATER ENLARGED PLAN - FIRST LEVEL  
 1/4" = 1'-0"

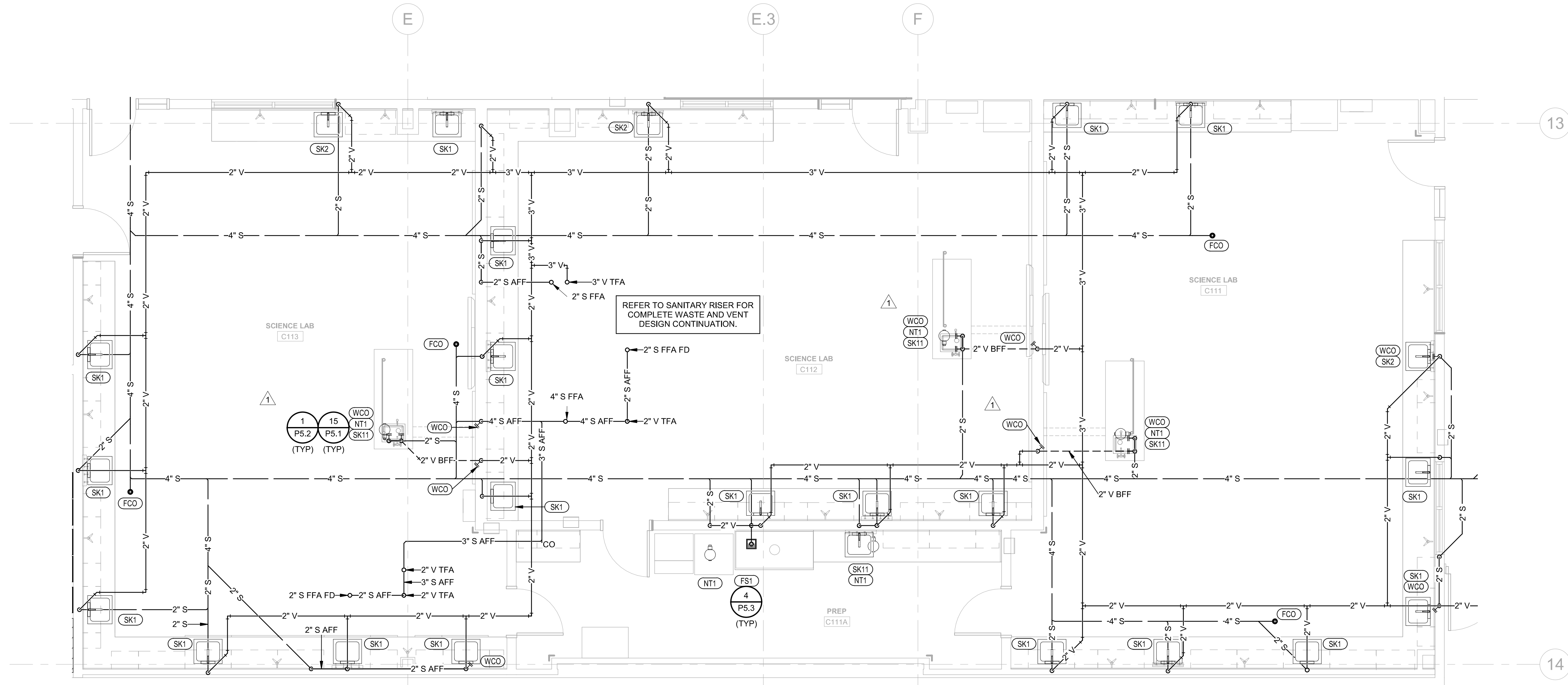
⑨ PLUMBING SANITARY ENLARGED PLAN - FIRST LEVEL  
 1/4" = 1'-0"

⑧ PLUMBING WATER ENLARGED PLAN - FIRST LEVEL  
 1/4" = 1'-0"

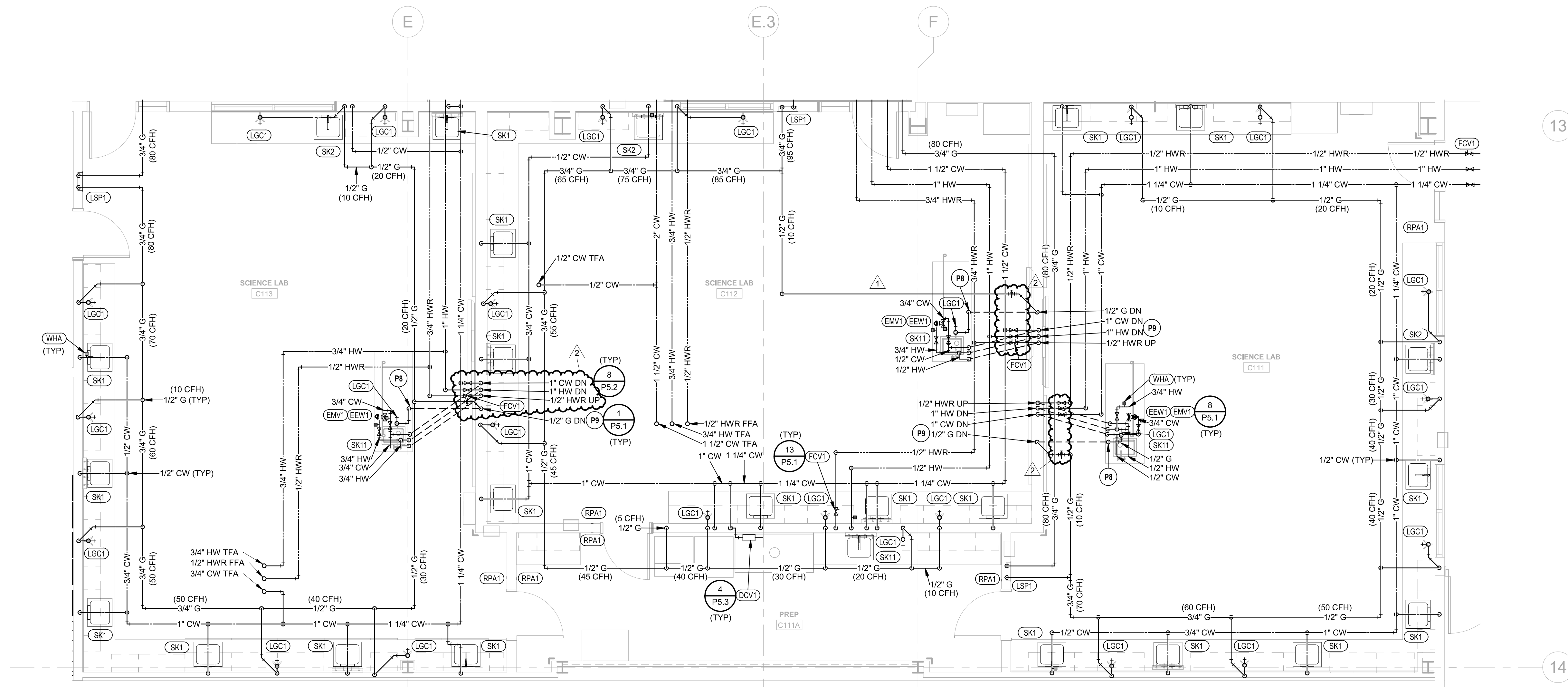
⑦ PLUMBING SANITARY ENLARGED PLAN - FIRST LEVEL  
 1/4" = 1'-0"

**KEY PLAN**





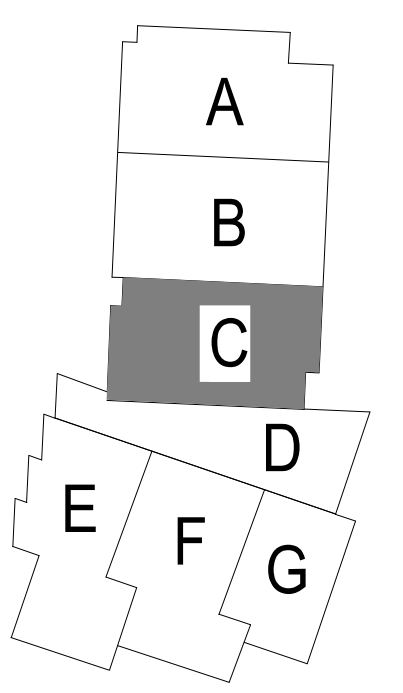
1 PLUMBING SANITARY ENLARGED PLAN - FIRST LEVEL  
1/4" = 1'-0"

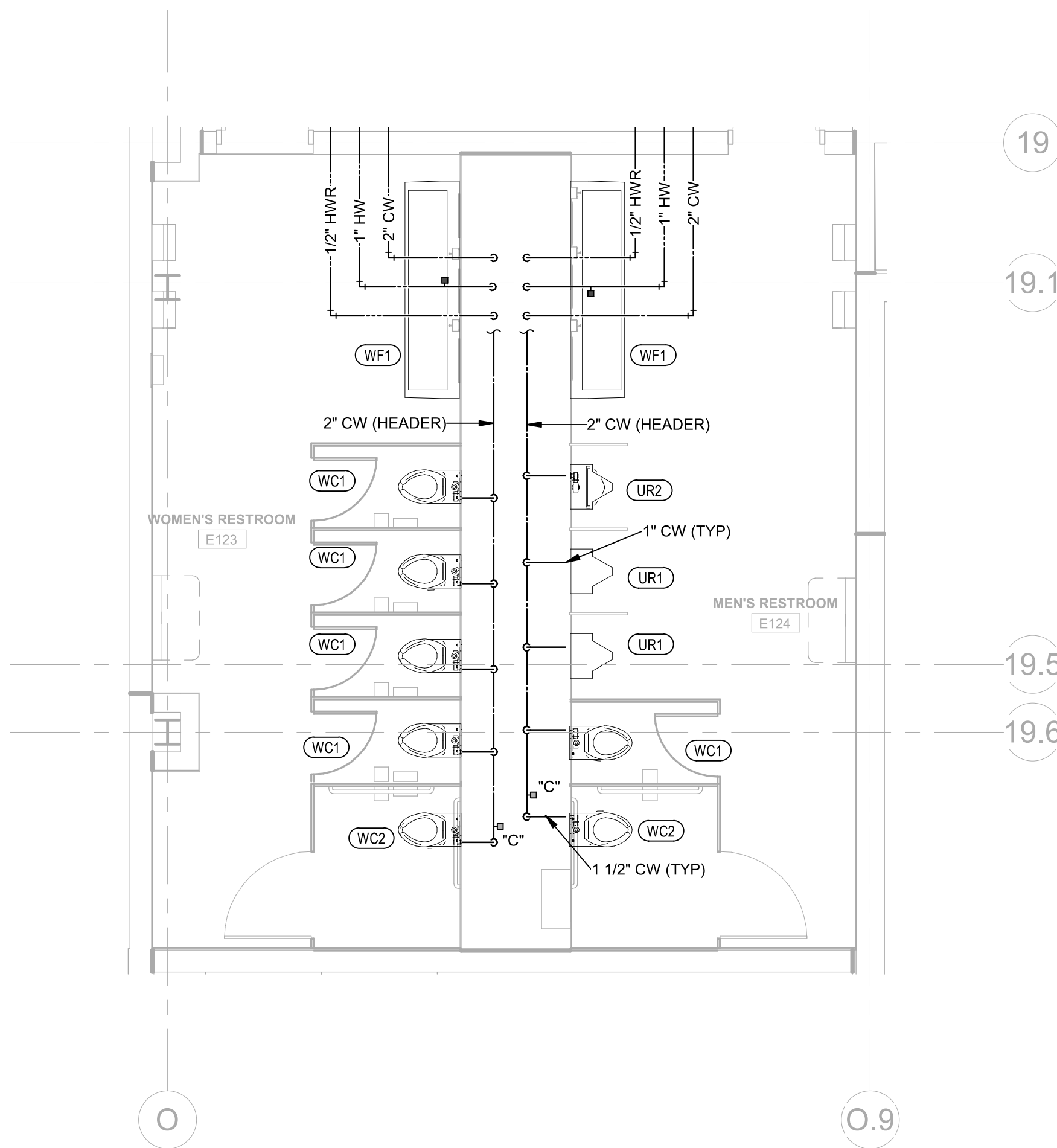


2 PLUMBING WATER ENLARGED PLAN - FIRST LEVEL  
1/4" = 1'-0"

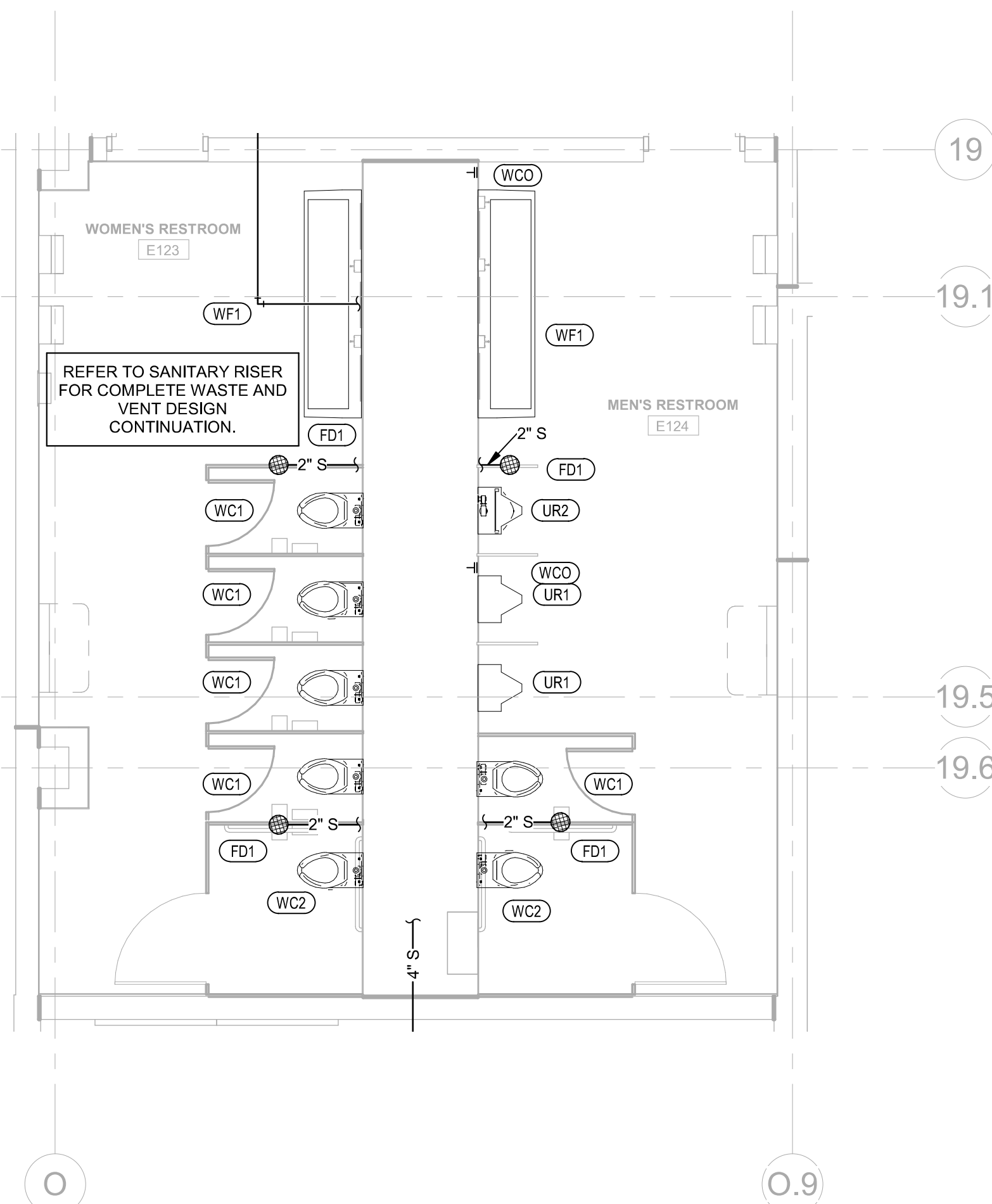
- PLUMBING PLAN NOTES:**
- P8 INSTALL 1/2" GAS COCK IN VERTICAL RISE 12" ABOVE THE FINISH FLOOR.
- P9 REFER TO DETAIL AND PROVIDE GAS VENT FROM CONDUIT SLEEVE UP TO ROOF AND VENT THRU ROOF.

# KEY PLAN

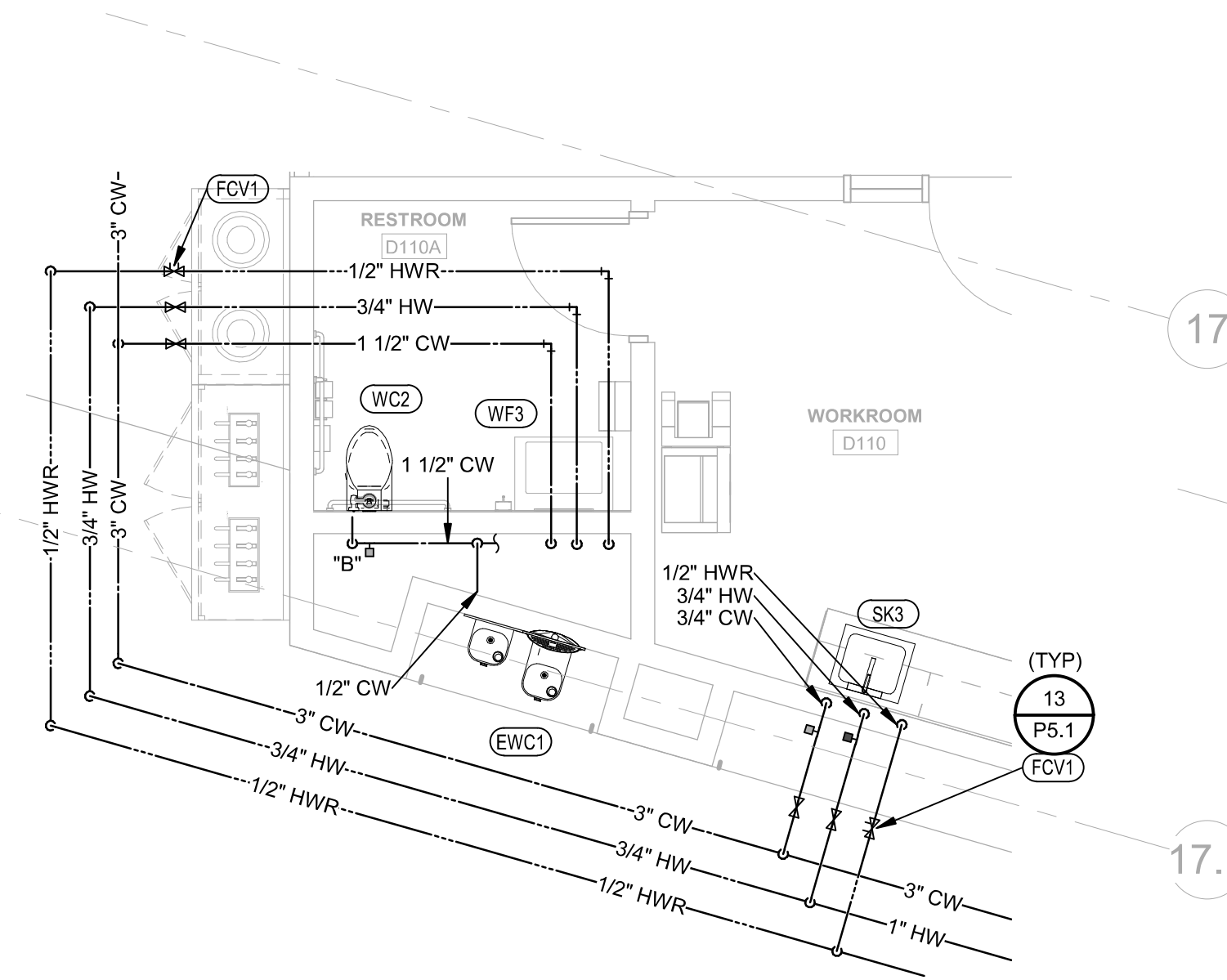




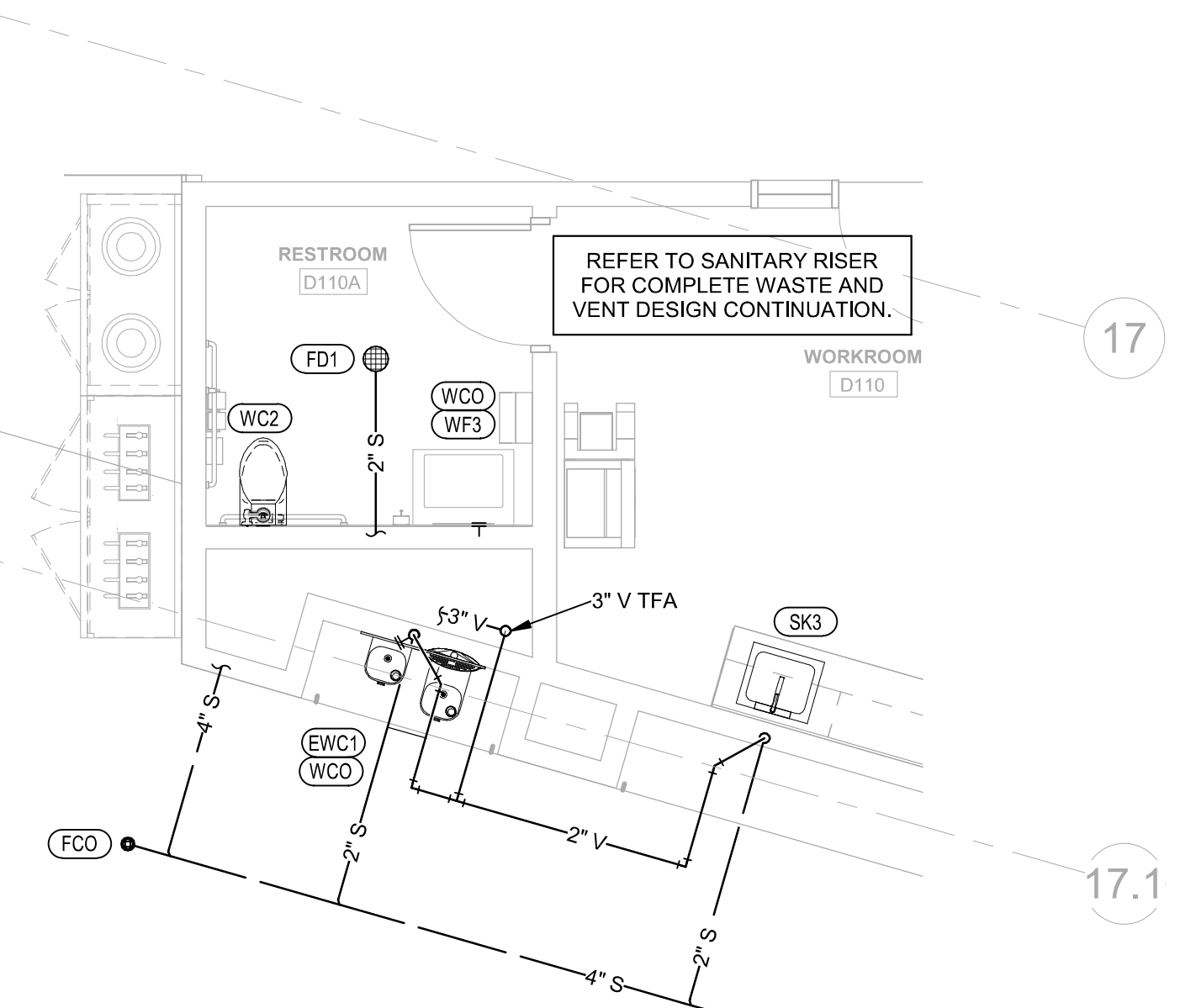
4 PLUMBING WATER ENLARGED PLAN - FIRST LEVEL  
1/4" = 1'-0"



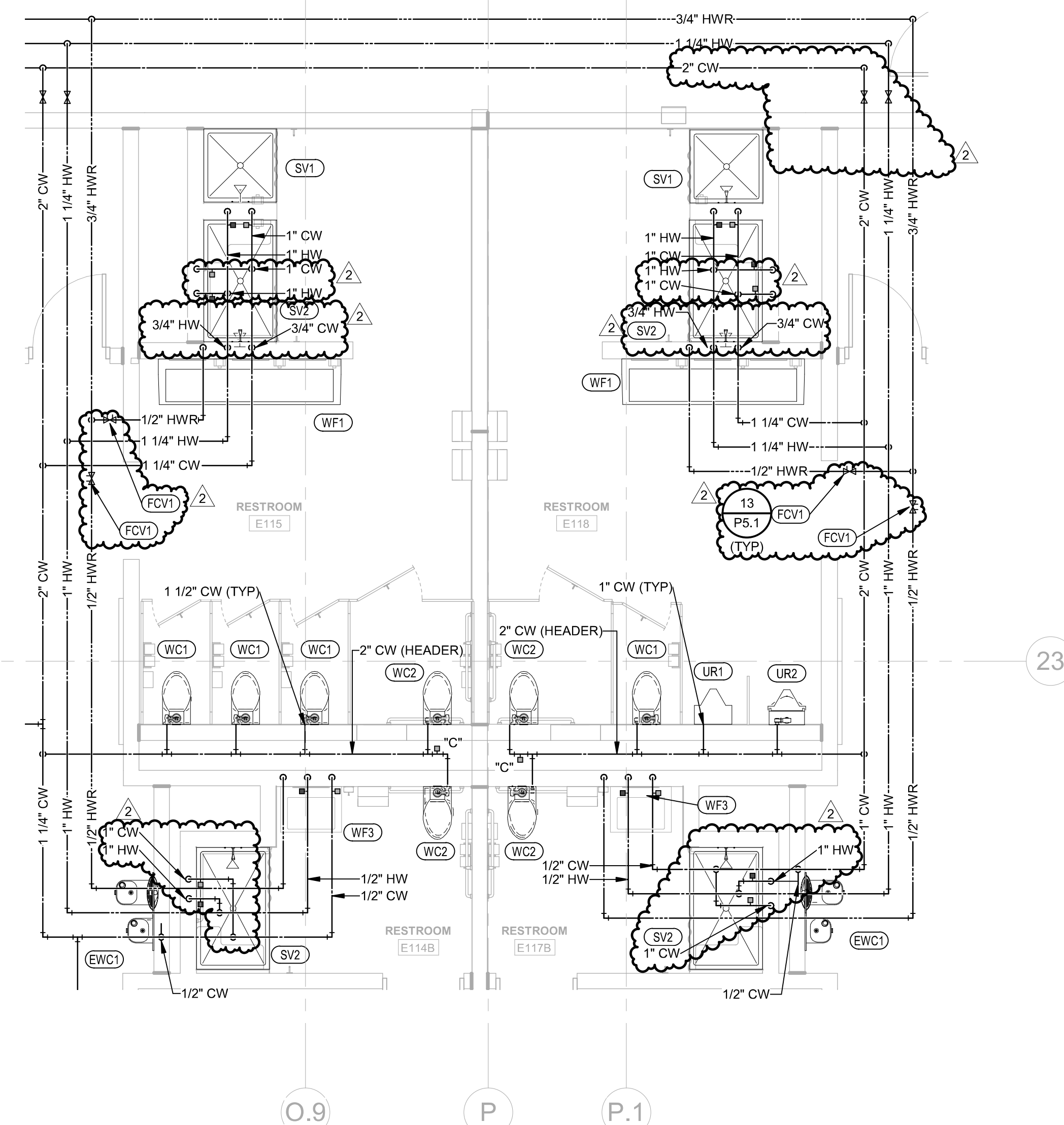
3 PLUMBING SANITARY ENLARGED PLAN - FIRST LEVEL  
1/4" = 1'-0"



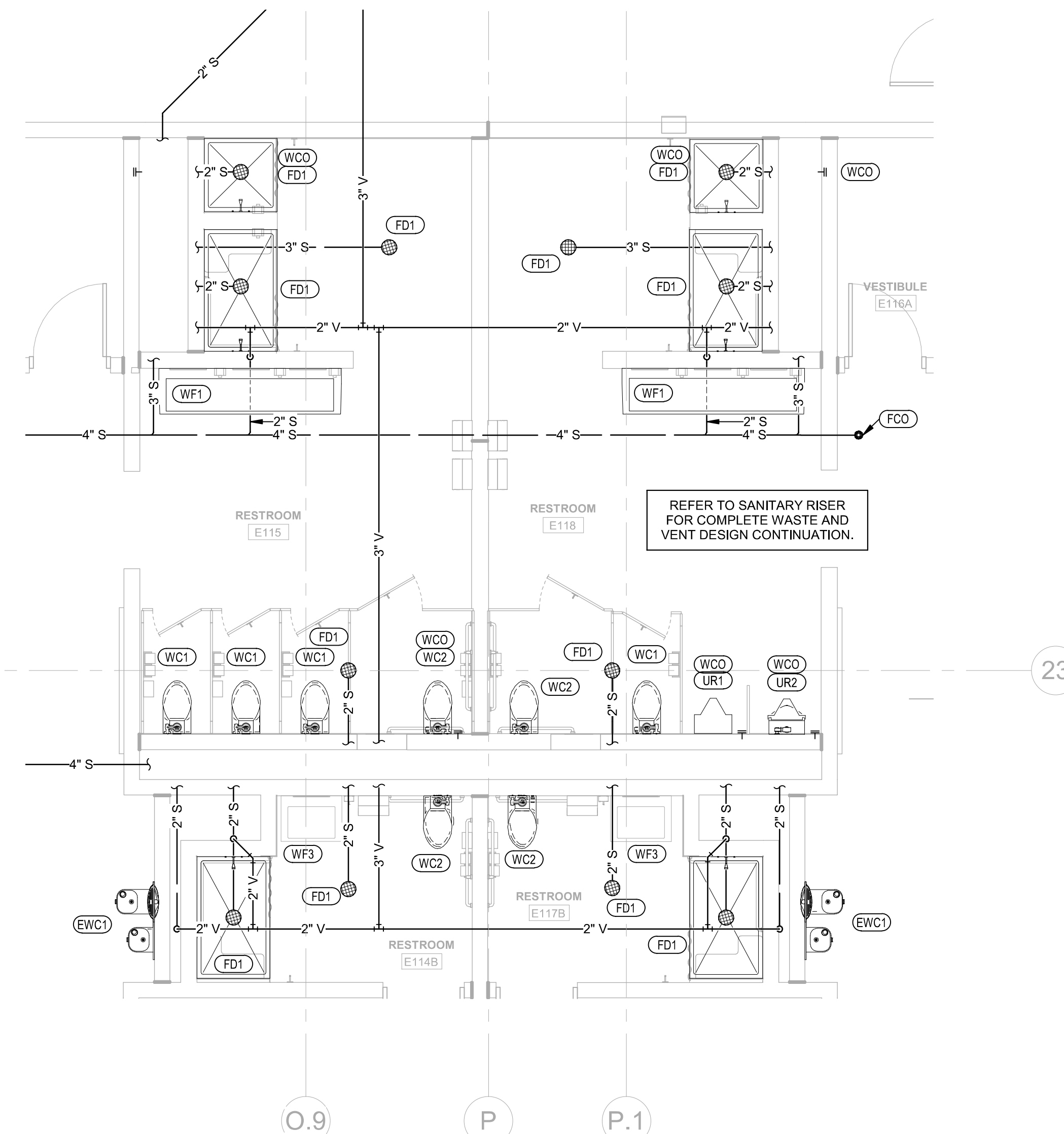
2 PLUMBING WATER ENLARGED PLAN - FIRST LEVEL  
1/4" = 1'-0"



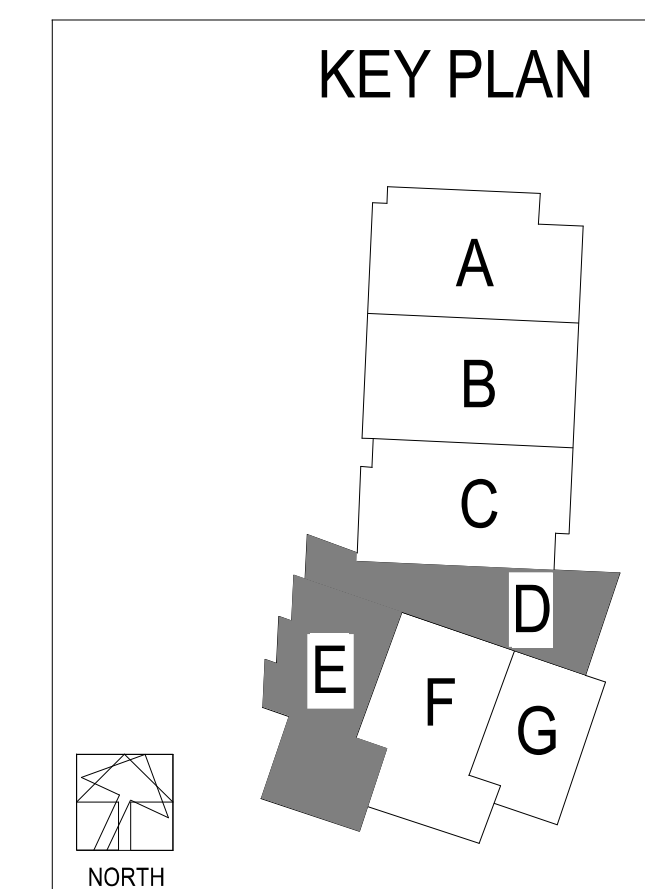
1 PLUMBING SANITARY ENLARGED PLAN - FIRST LEVEL  
1/4" = 1'-0"

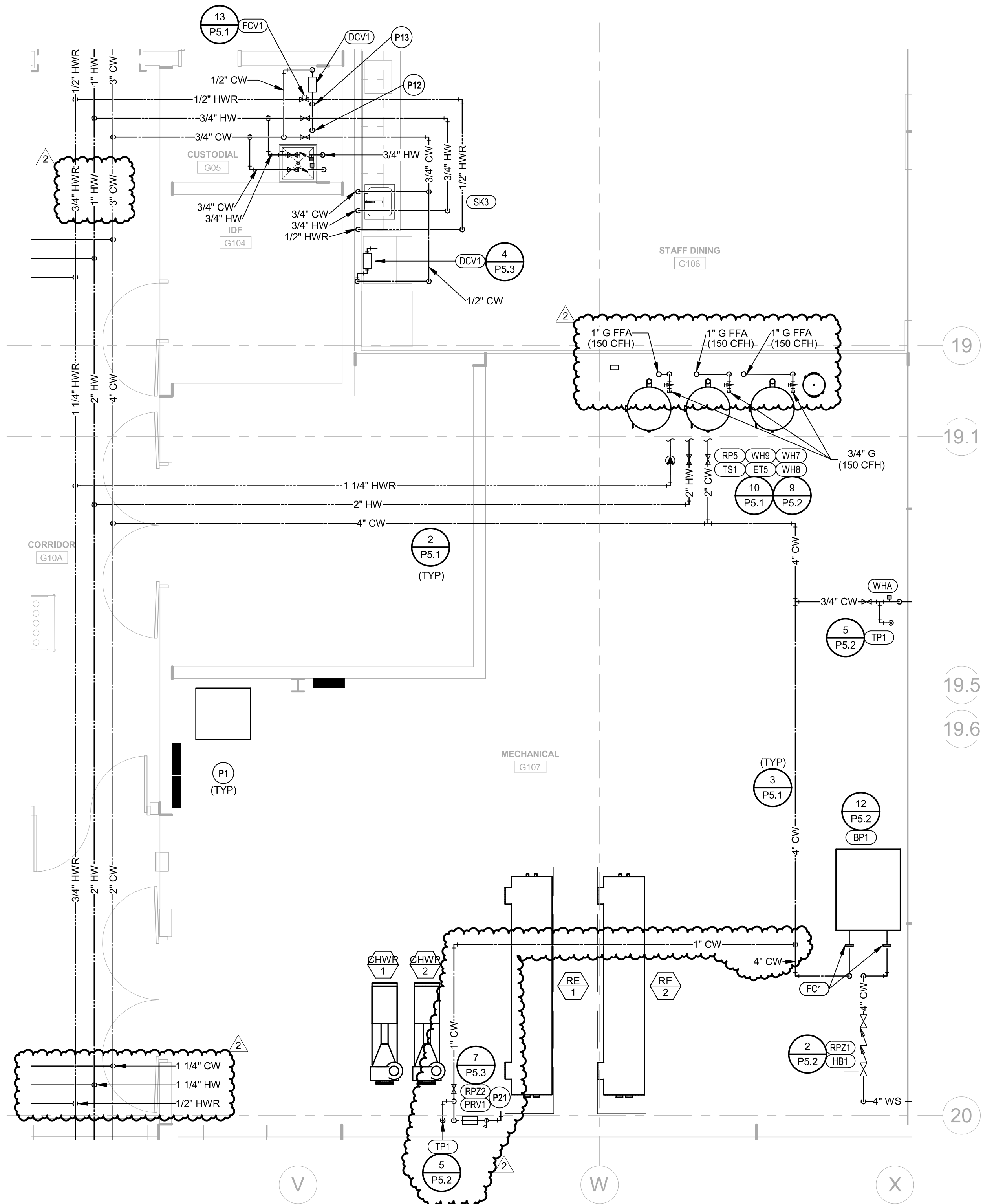


6 PLUMBING WATER ENLARGED PLAN - FIRST LEVEL  
1/4" = 1'-0"

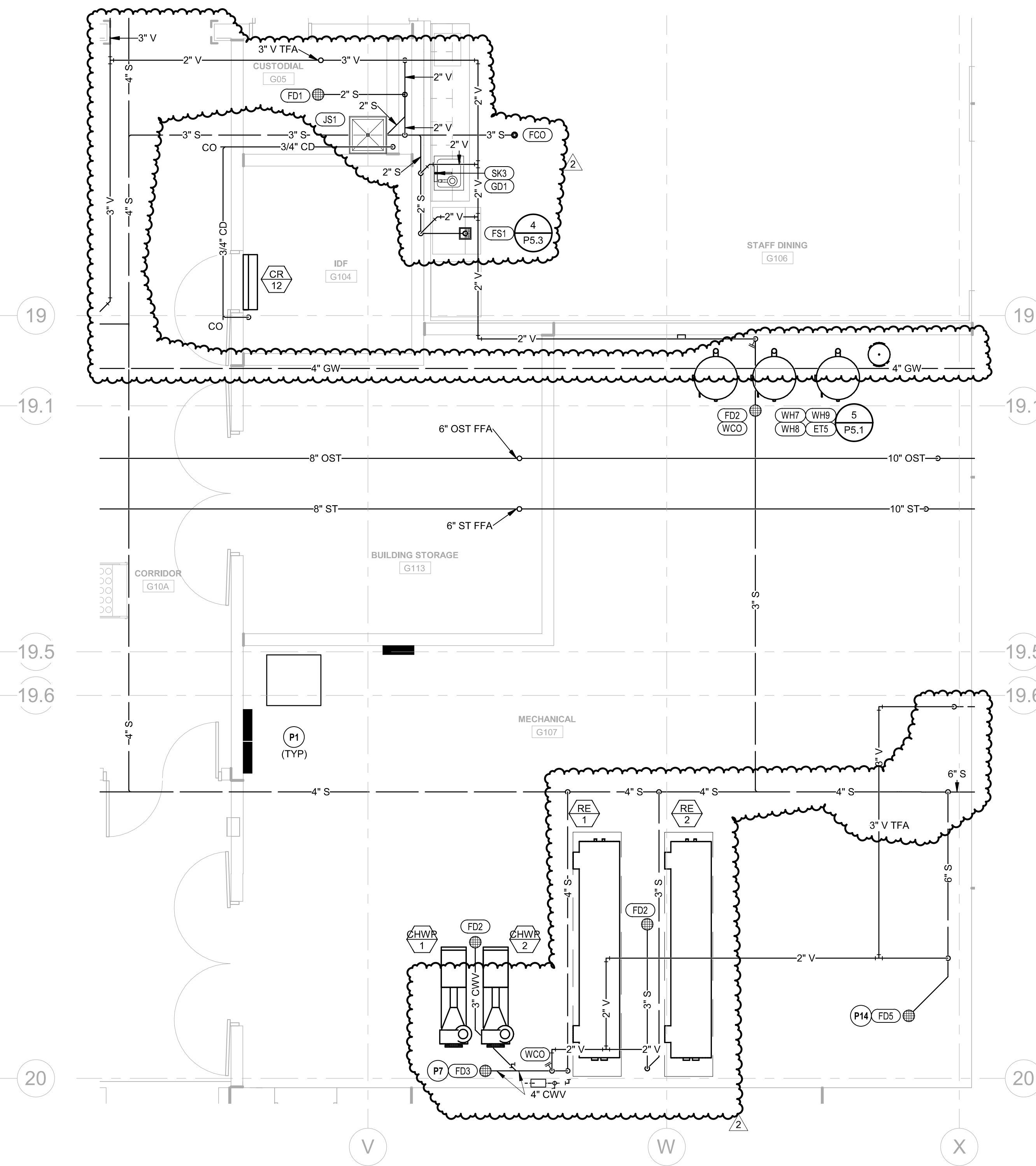


5 PLUMBING SANITARY ENLARGED PLAN - FIRST LEVEL  
1/4" = 1'-0"

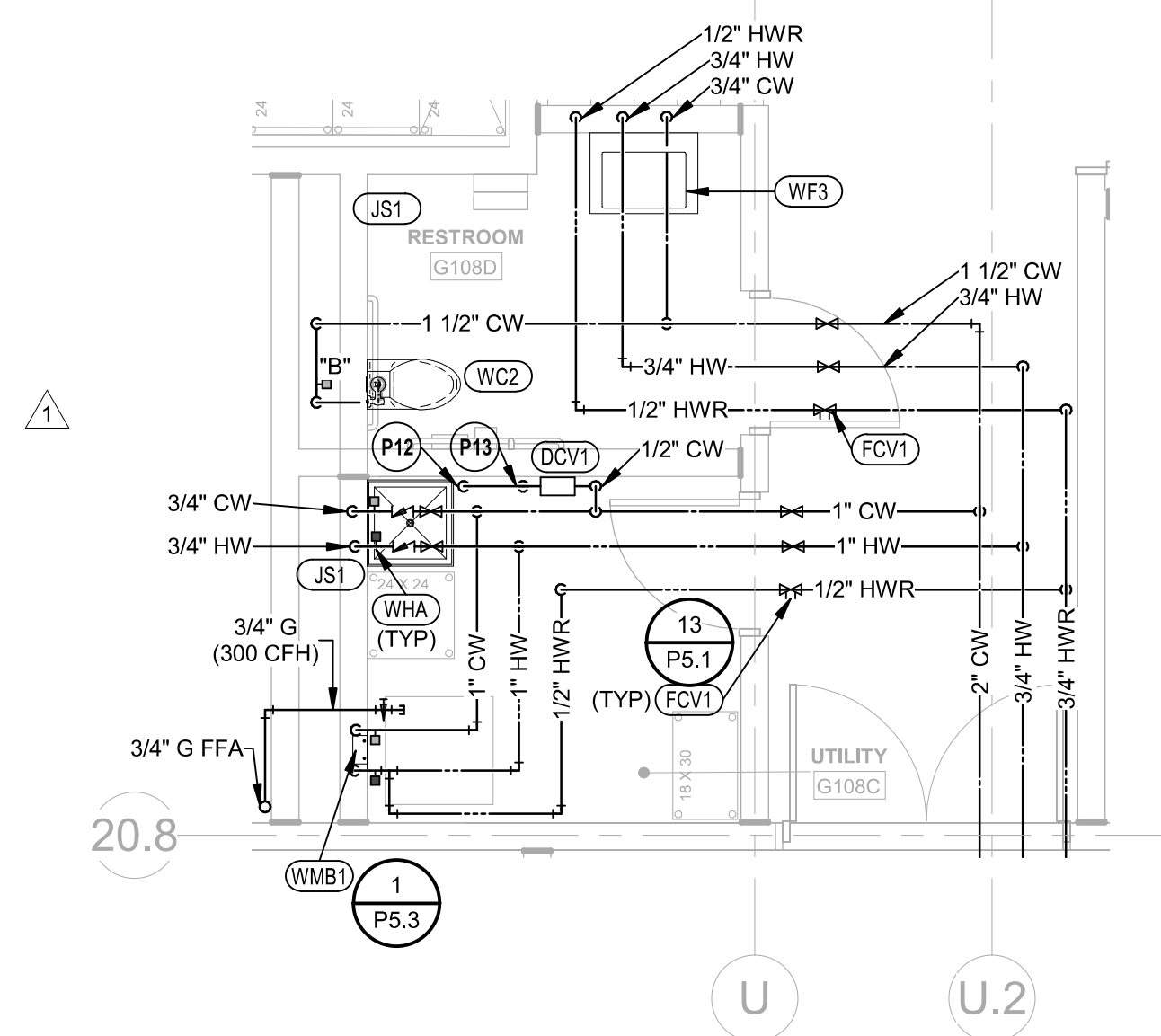




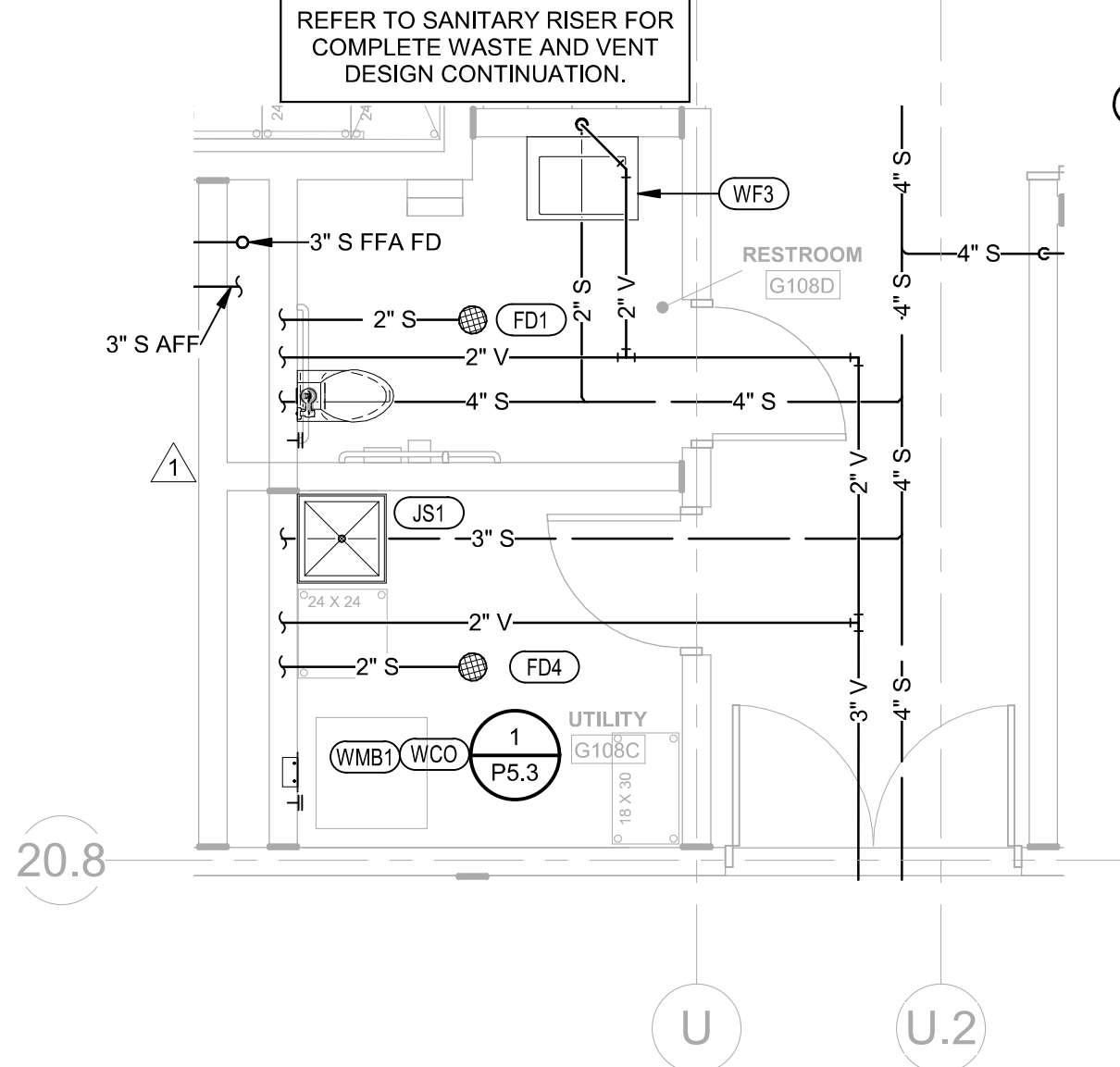
4 PLUMBING WATER ENLARGED PLAN - FIRST LEVEL  
1/4" = 1'-0"



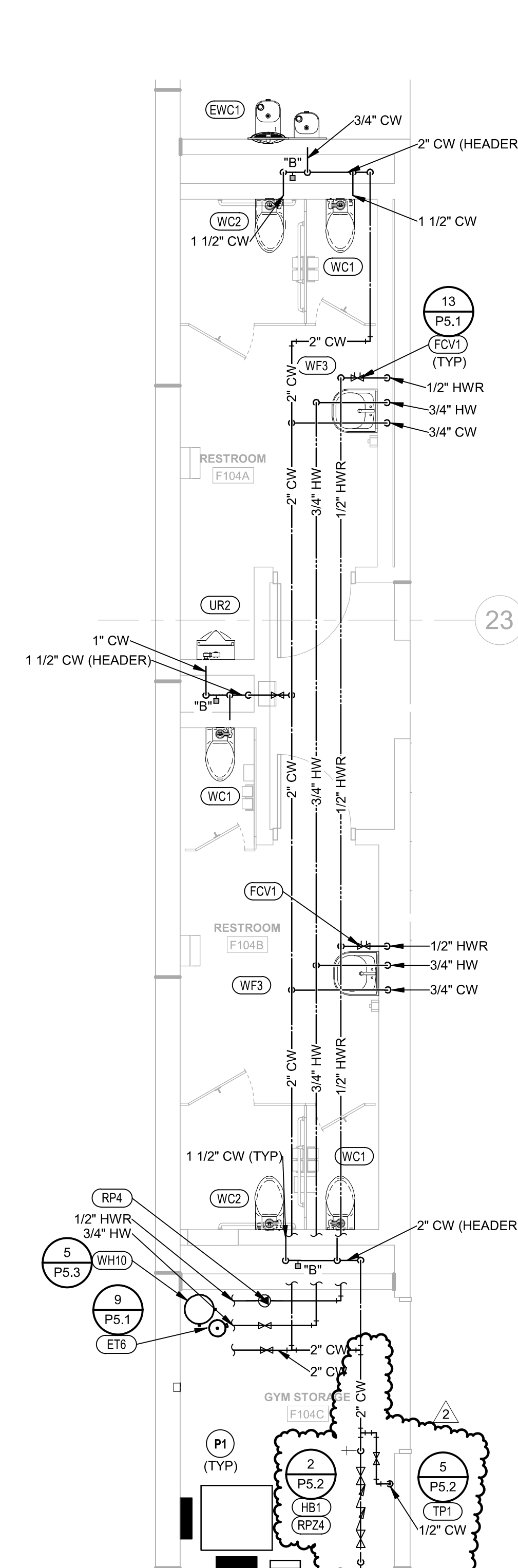
3 PLUMBING SANITARY ENLARGED PLAN - FIRST LEVEL  
1/4" = 1'-0"



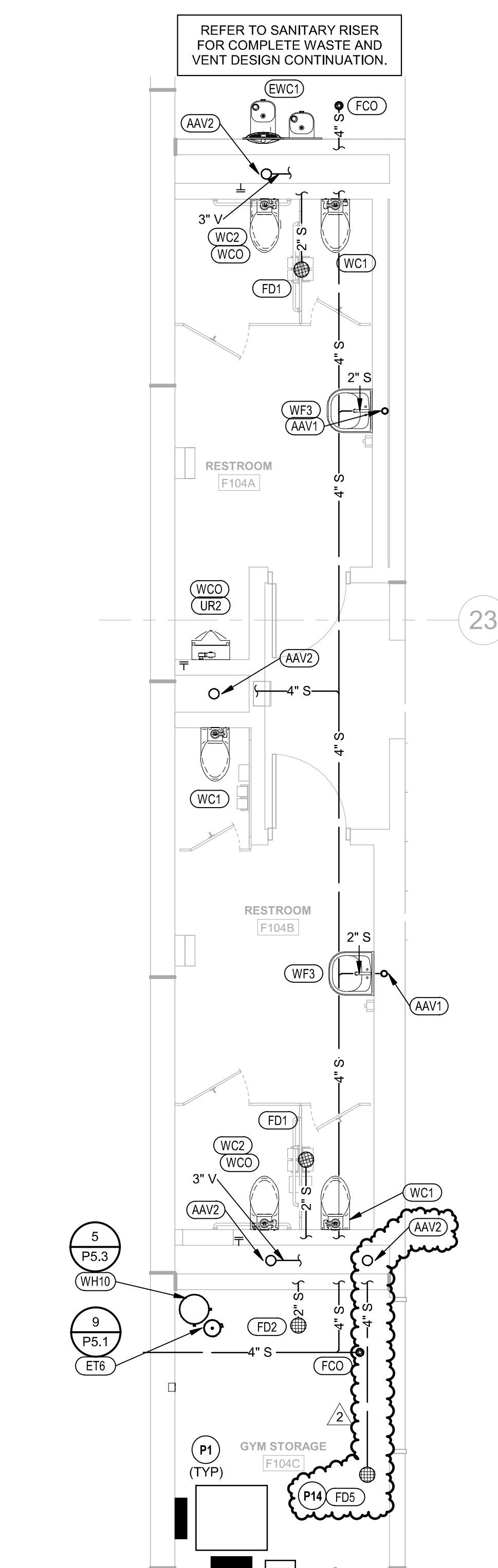
6 PLUMBING WATER ENLARGED PLAN - FIRST LEVEL  
1/4" = 1'-0"



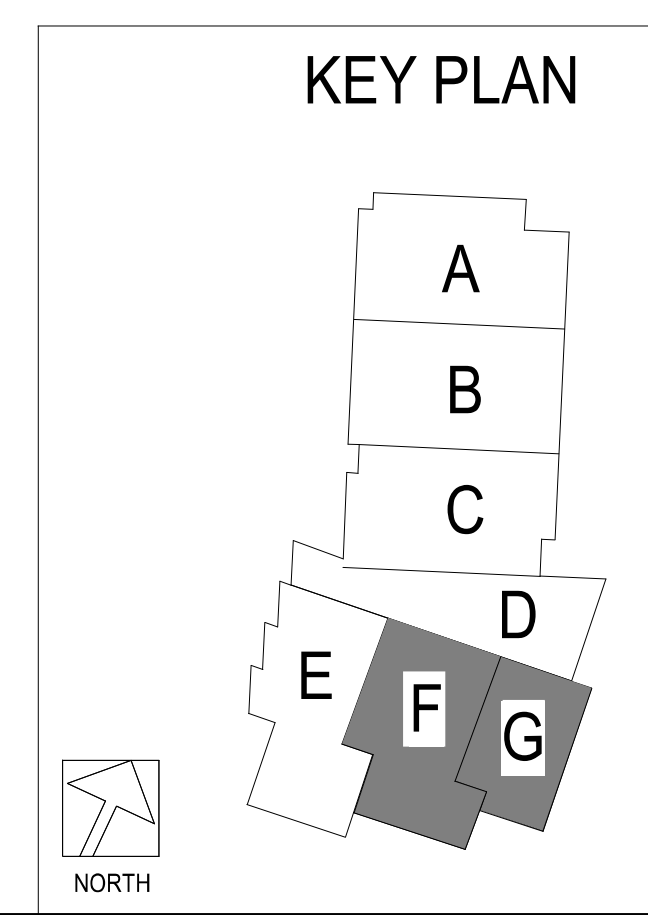
5 PLUMBING SANITARY ENLARGED PLAN - FIRST LEVEL  
1/4" = 1'-0"



2 PLUMBING WATER ENLARGED PLAN - FIRST LEVEL  
1/4" = 1'-0"



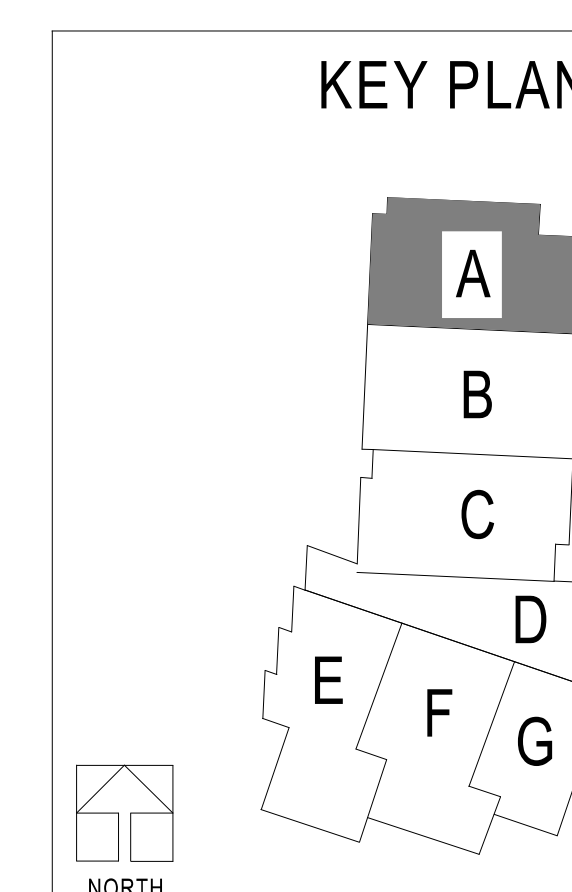
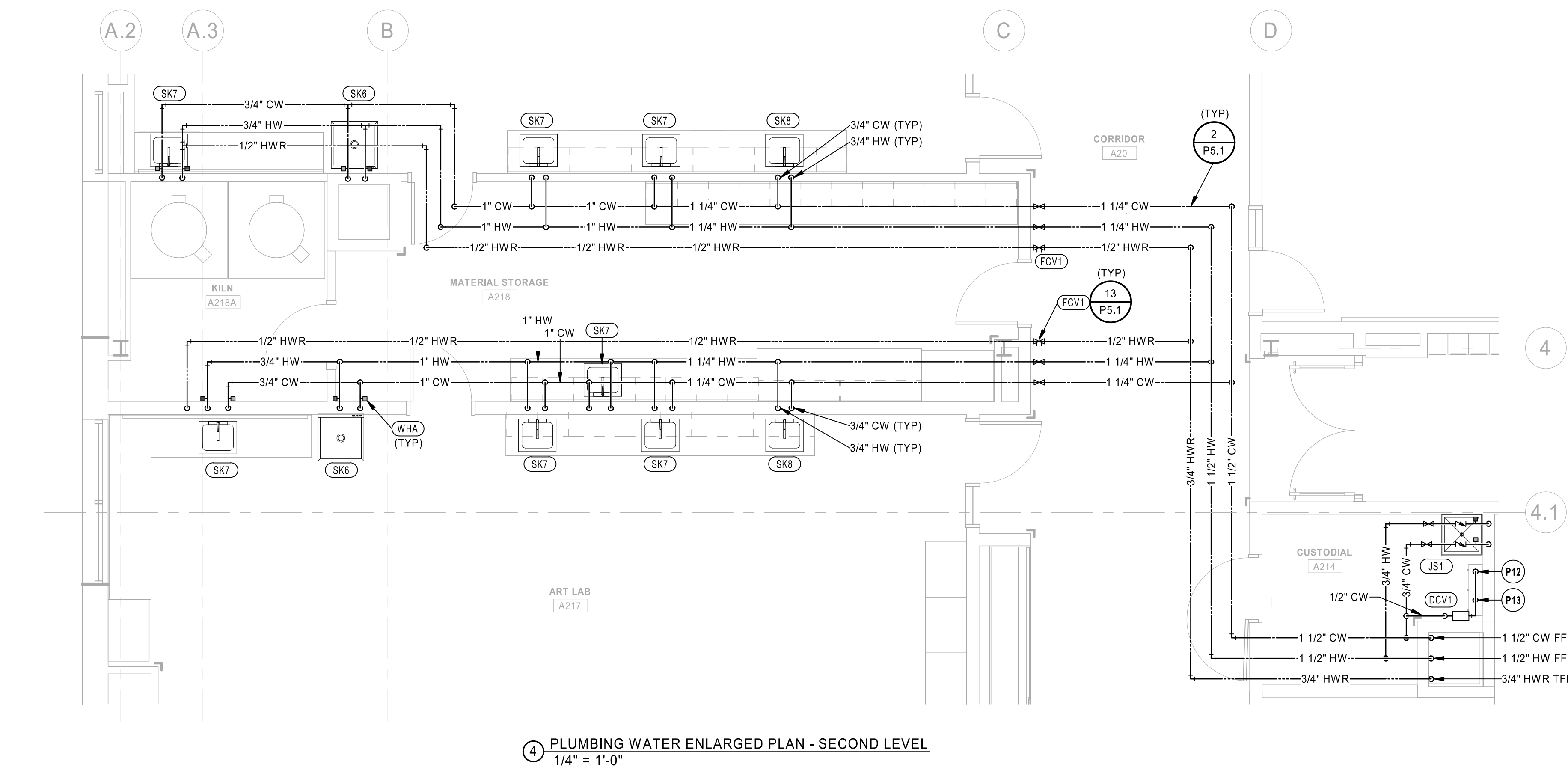
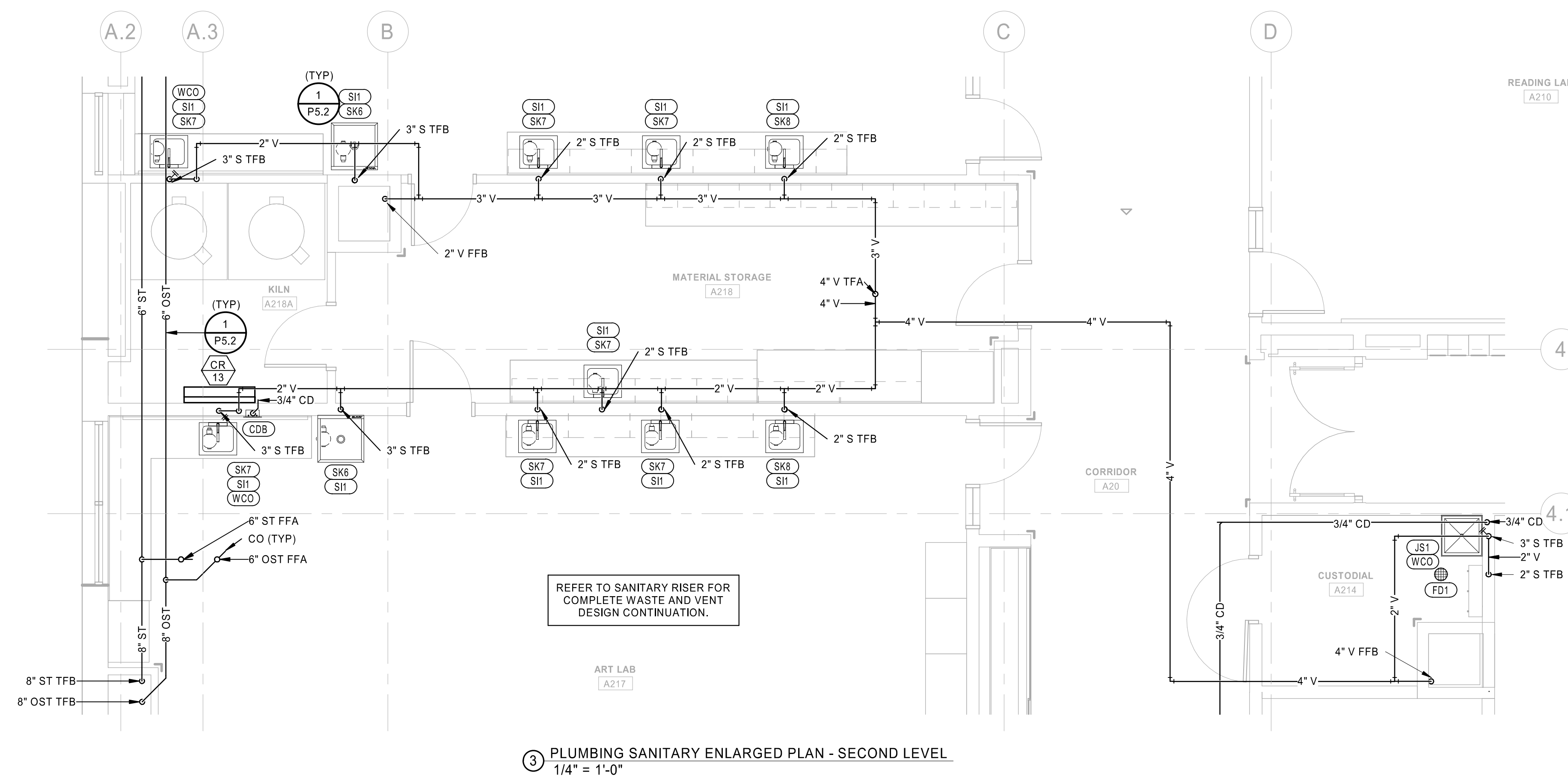
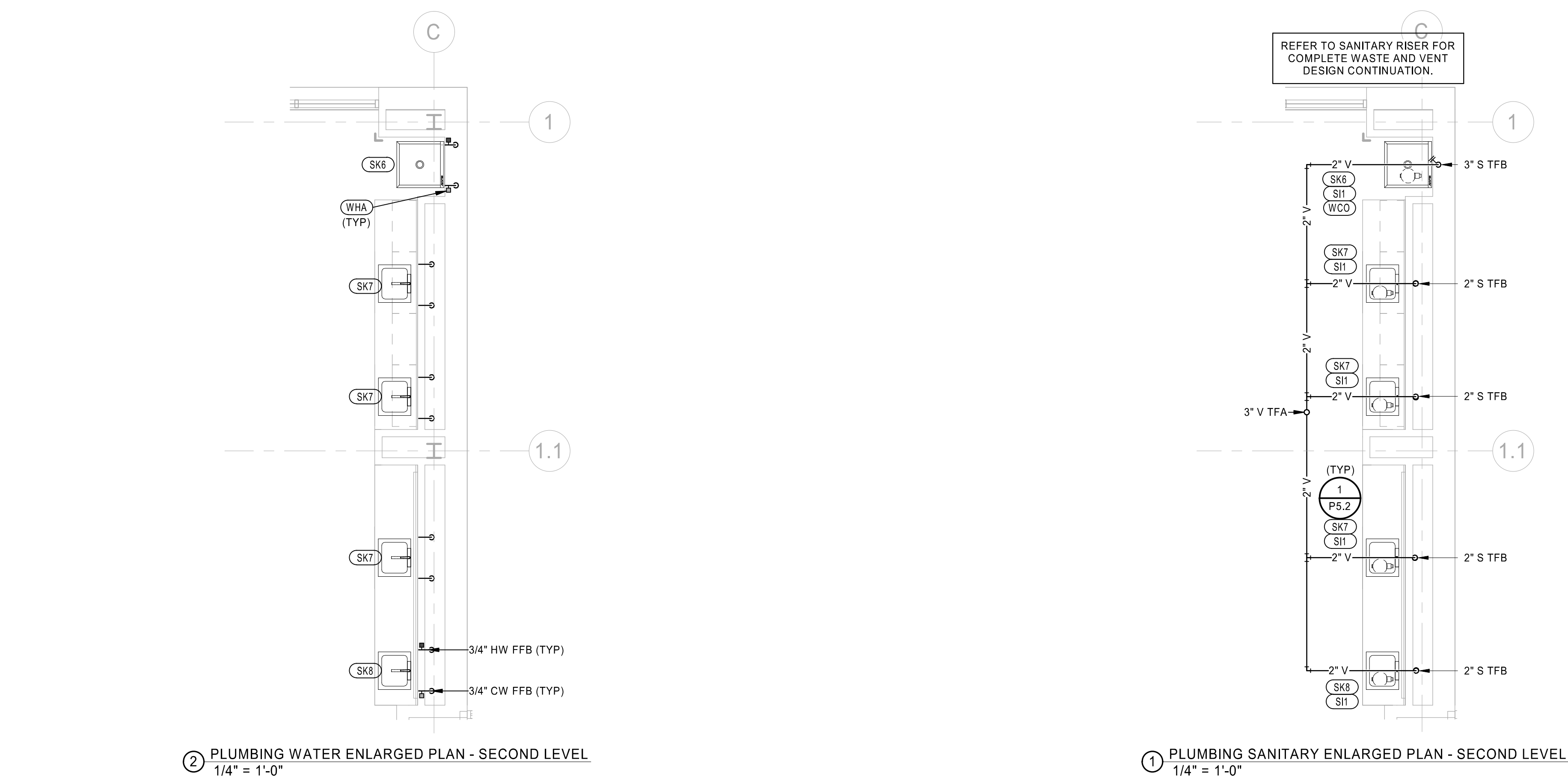
1 PLUMBING SANITARY ENLARGED PLAN - FIRST LEVEL  
1/4" = 1'-0"

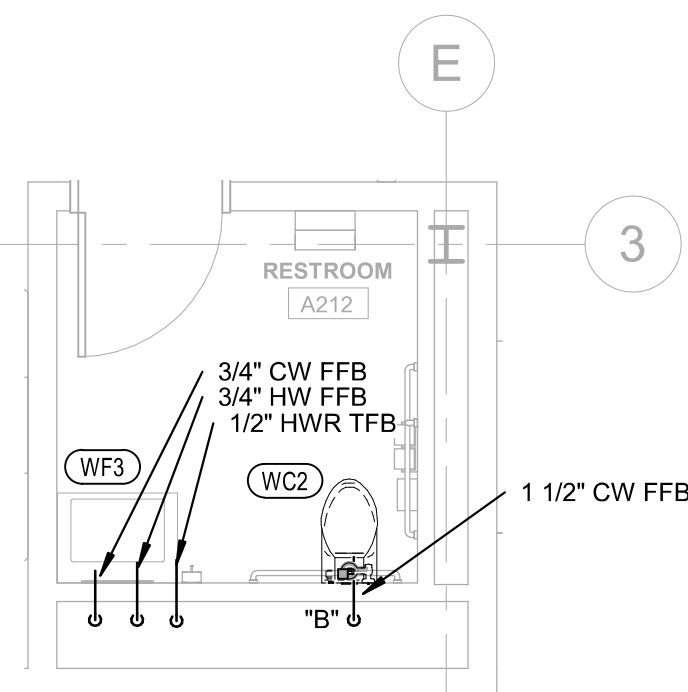


PLUMBING PLAN NOTES:

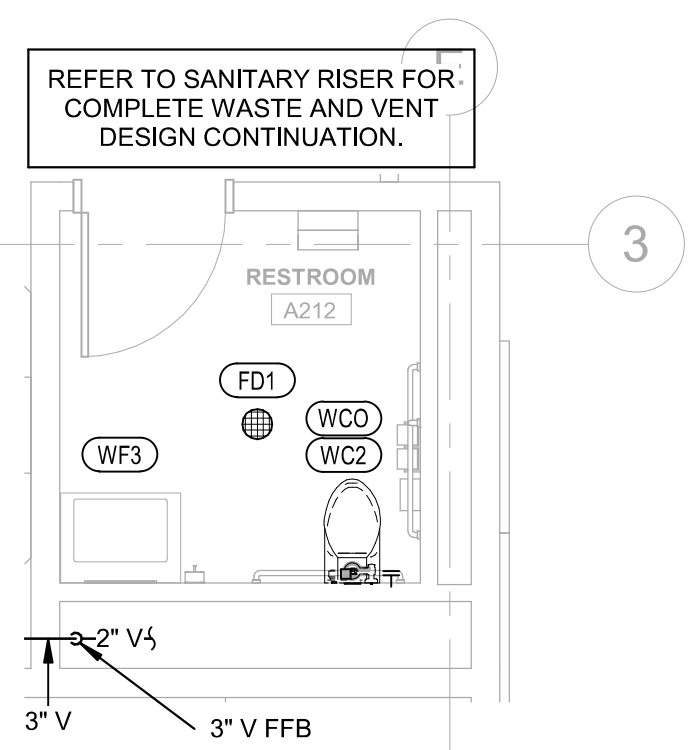
- P1 DO NOT INSTALL PLUMBING PIPING OVER ELECTRICAL PANELS OR EQUIPMENT.
- P7 PROVIDE DRAIN WITH TRAP PRIMER CONNECTION. REFER TO WATER PLANS FOR TRAP PRIMER LOCATION.
- P12 PROVIDE 1/2" COLD WATER TO OWNER PROVIDED 3M CLEANING EQUIPMENT, COORDINATE LOCATION WITH ARCHITECT.
- P13 1/2" COLD WATER DOWN TO OWNER PROVIDED TERSANO CLEANING EQUIPMENT, COORDINATE LOCATION WITH ARCHITECT.
- P14 PROVIDE DRAIN WITH TRAP PRIMER CONNECTION. REFER TO WATER PLANS FOR TRAP PRIMER LOCATION.
- P21 1" NON-ROTATABLE WATER, REFER TO MECHANICAL DRAWINGS FOR CONTINUATION.



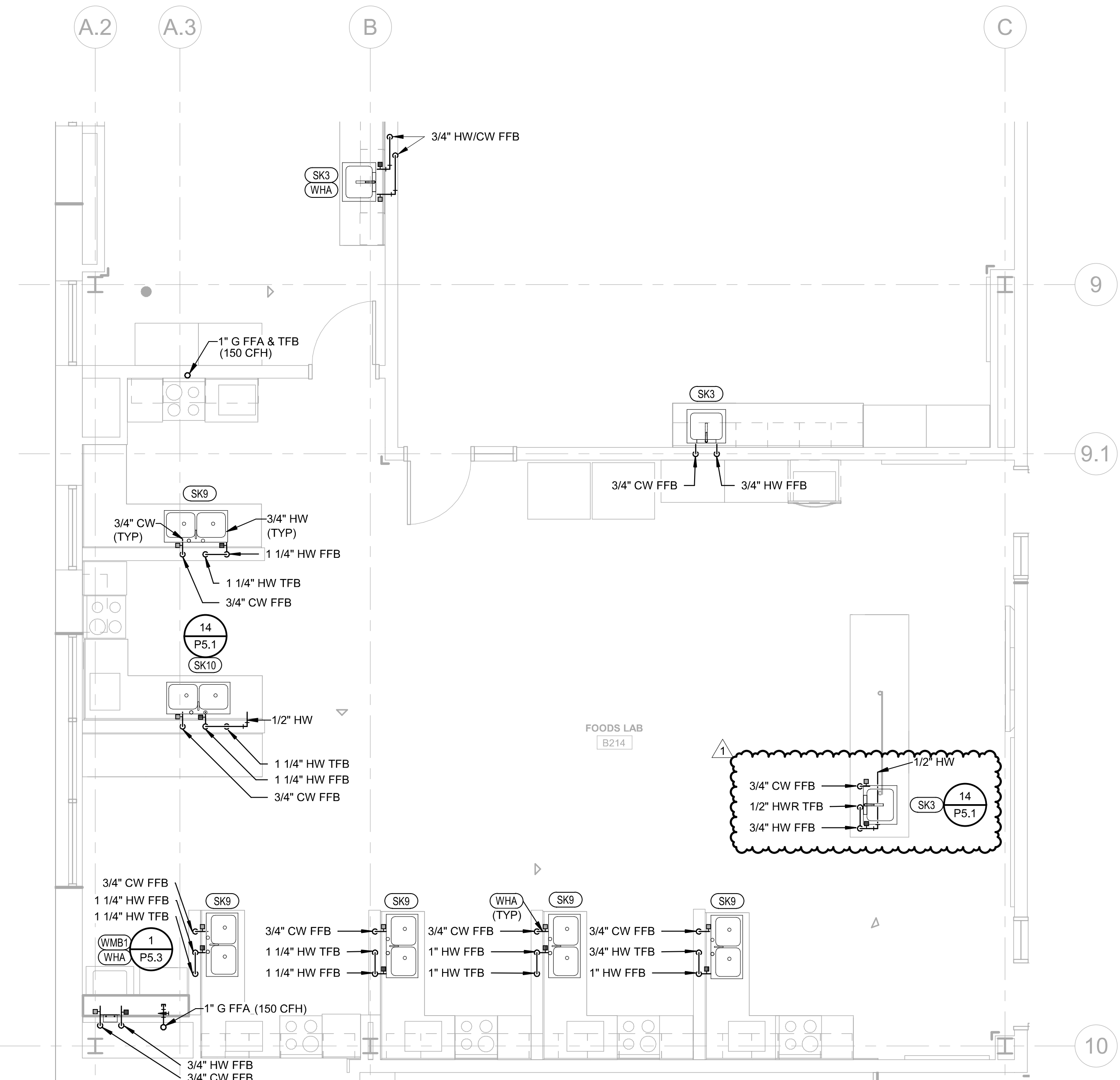




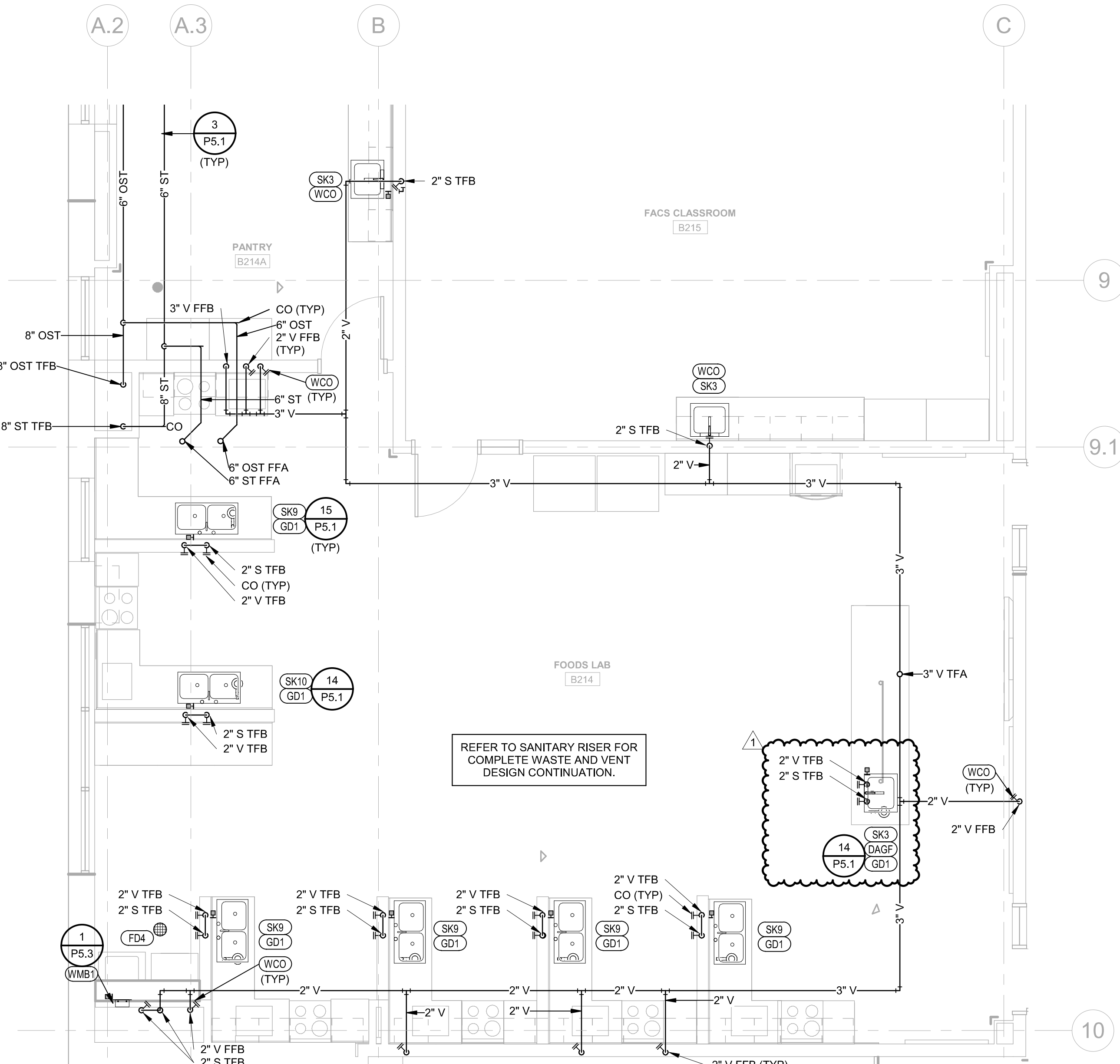
② PLUMBING WATER ENLARGED PLAN - SECOND LEVEL  
1/4" = 1'-0"



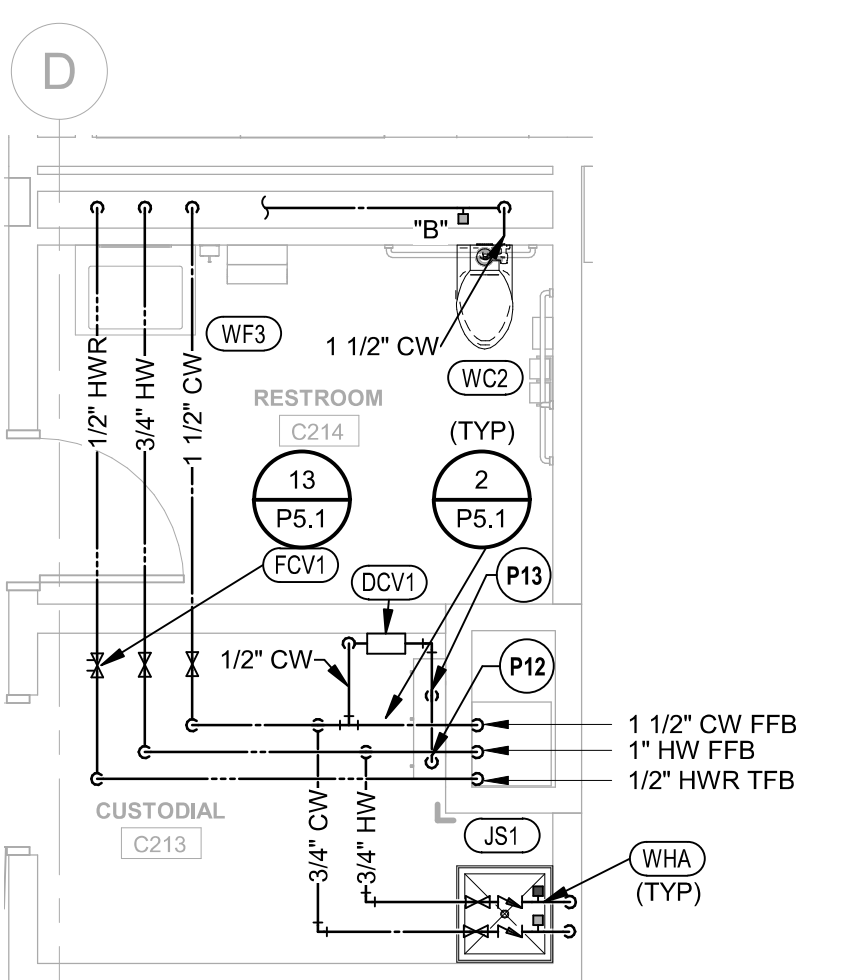
① PLUMBING SANITARY ENLARGED PLAN - SECOND LEVEL  
1/4" = 1'-0"



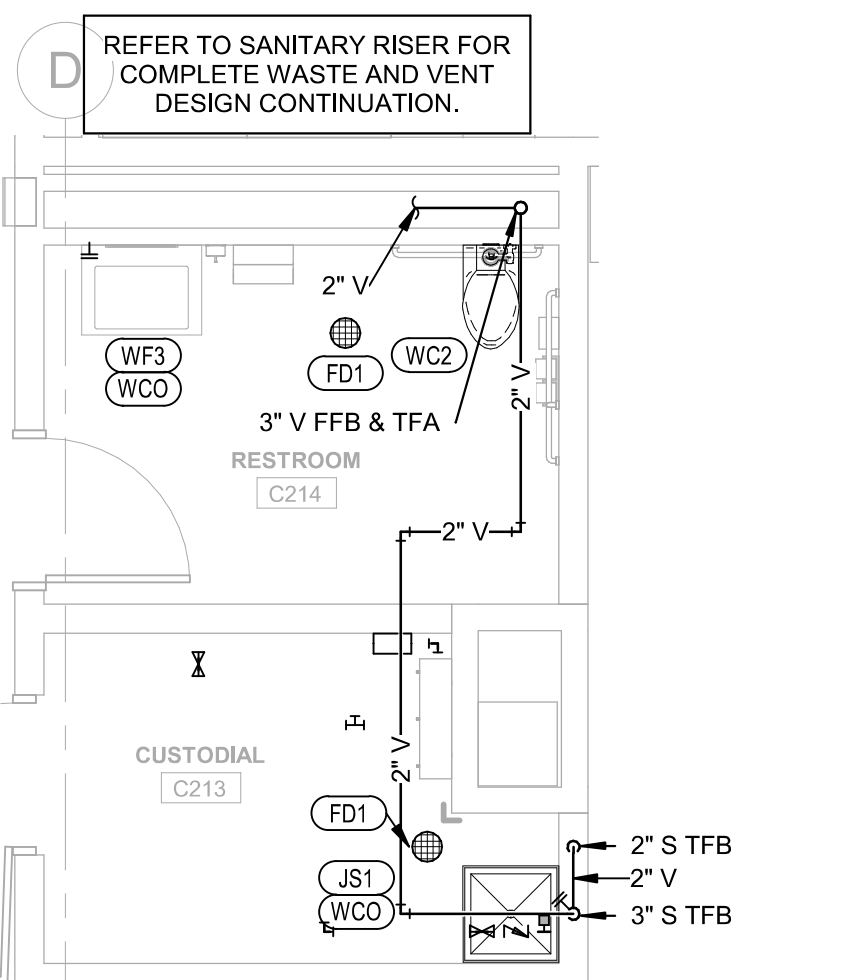
④ PLUMBING WATER ENLARGED PLAN - SECOND LEVEL  
1/4" = 1'-0"



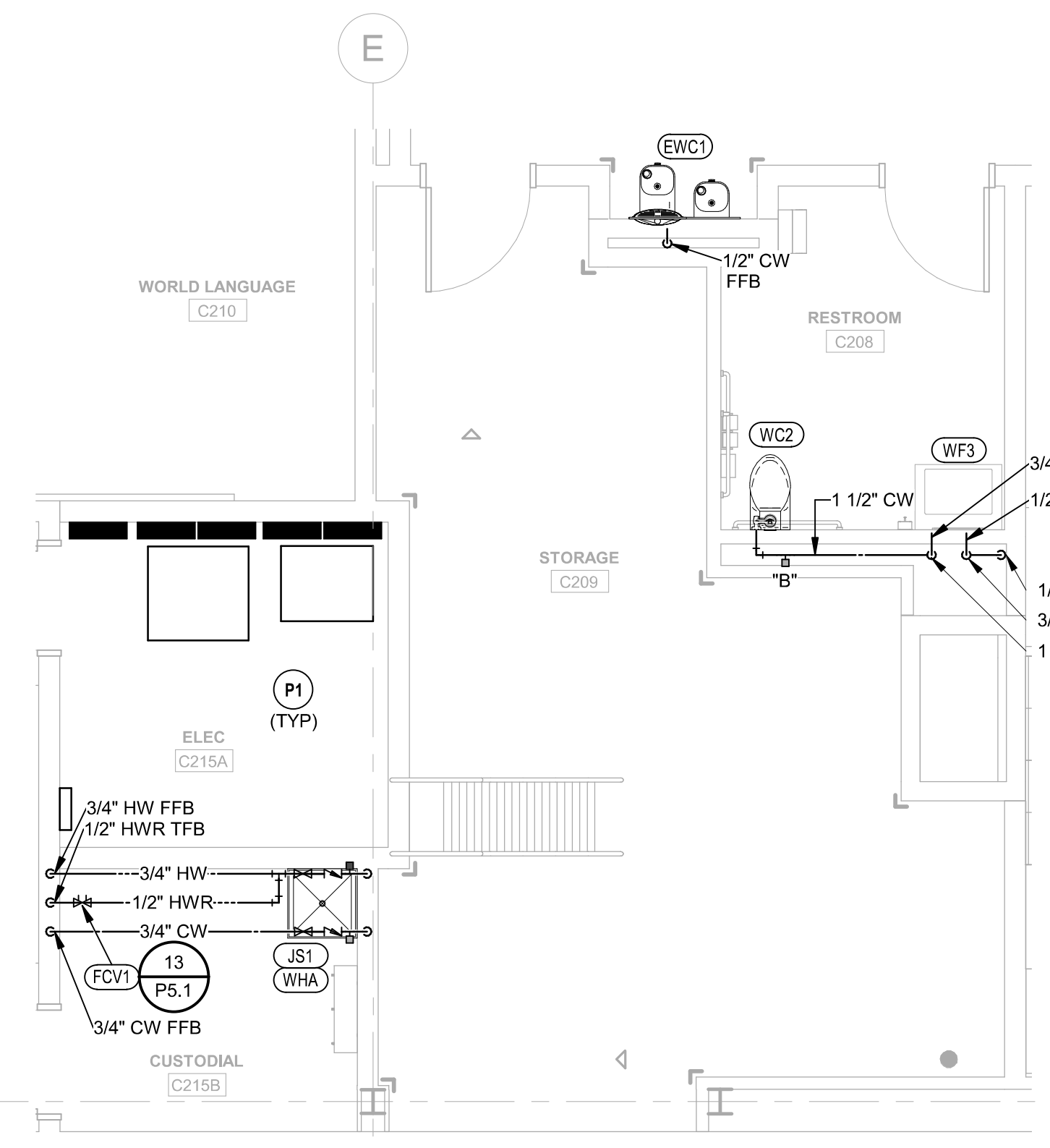
③ PLUMBING SANITARY ENLARGED PLAN - SECOND LEVEL  
1/4" = 1'-0"



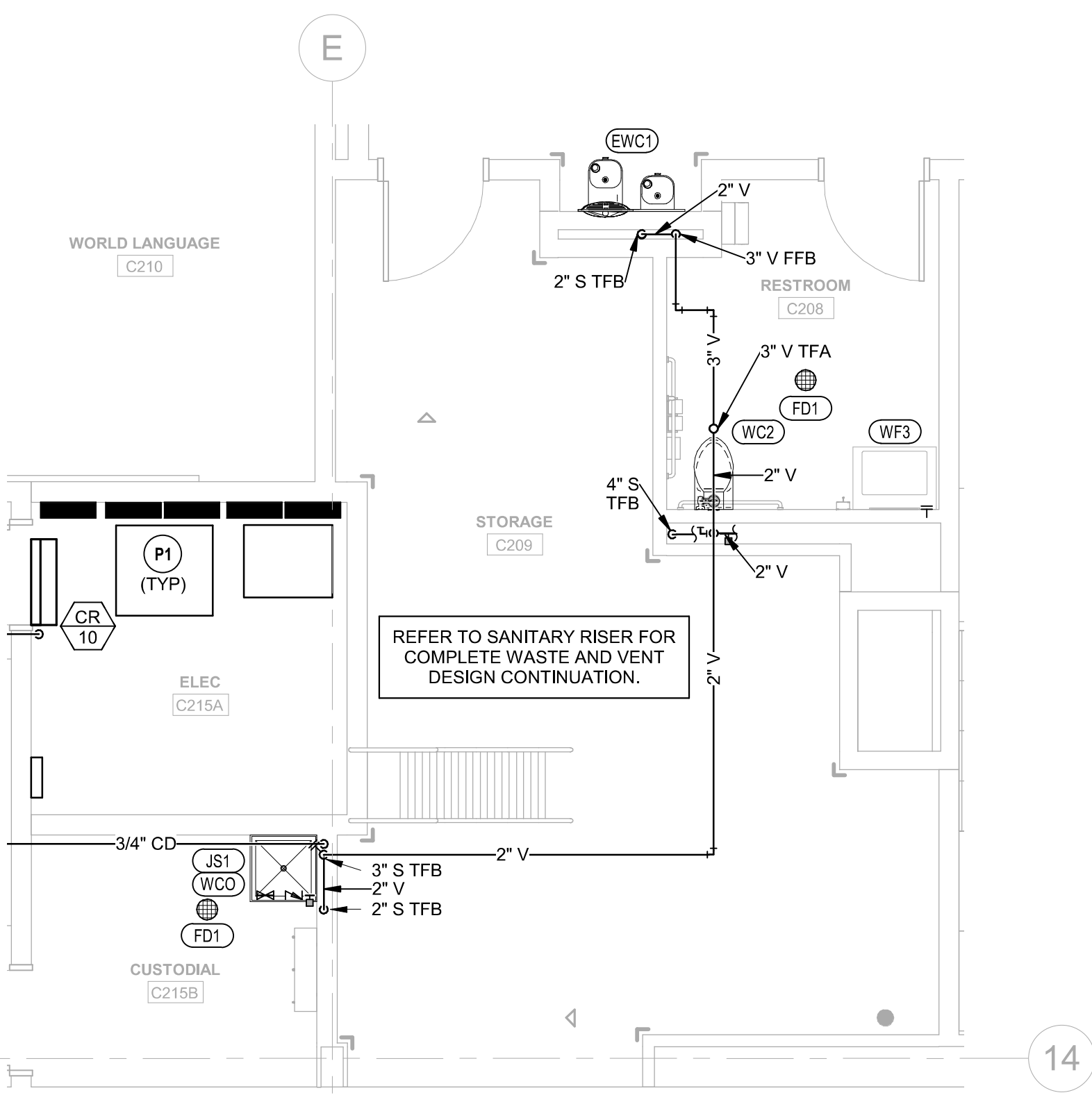
⑥ PLUMBING WATER ENLARGED PLAN - SECOND LEVEL  
1/4" = 1'-0"



⑤ PLUMBING SANITARY ENLARGED PLAN - SECOND LEVEL  
1/4" = 1'-0"



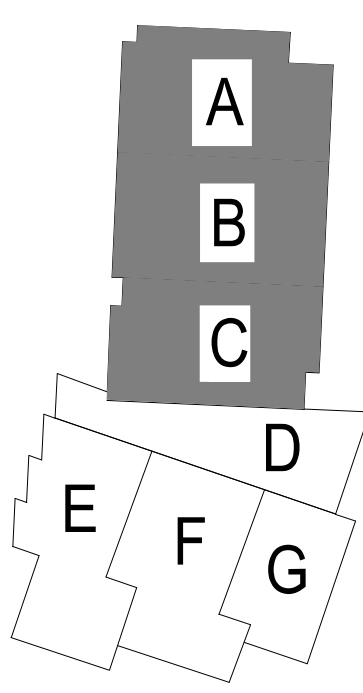
⑧ PLUMBING WATER ENLARGED PLAN - SECOND LEVEL  
1/4" = 1'-0"



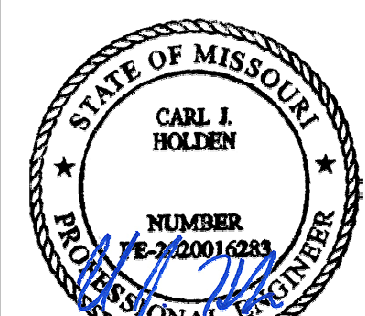
⑦ PLUMBING SANITARY ENLARGED PLAN - SECOND LEVEL  
1/4" = 1'-0"

- **PLUMBING PLAN NOTES:**
- P1 DO NOT INSTALL PLUMBING PIPING OVER ELECTRICAL PANELS OR EQUIPMENT.
  - P12 PROVIDE 1/2" COLD WATER TO OWNER PROVIDED 3M CLEANING EQUIPMENT. COORDINATE LOCATION WITH ARCHITECT.
  - P13 1/2" COLD WATER DOWN TO OWNER PROVIDED TERSANO CLEANING EQUIPMENT. COORDINATE LOCATION WITH ARCHITECT.

KEY PLAN



PLUMBING PLAN NOTES:  
P20 ROUTE CD PIPING DOWN WALL AND DISCHARGE OVER FLOOR RECEPTOR WITH AIR GAP.



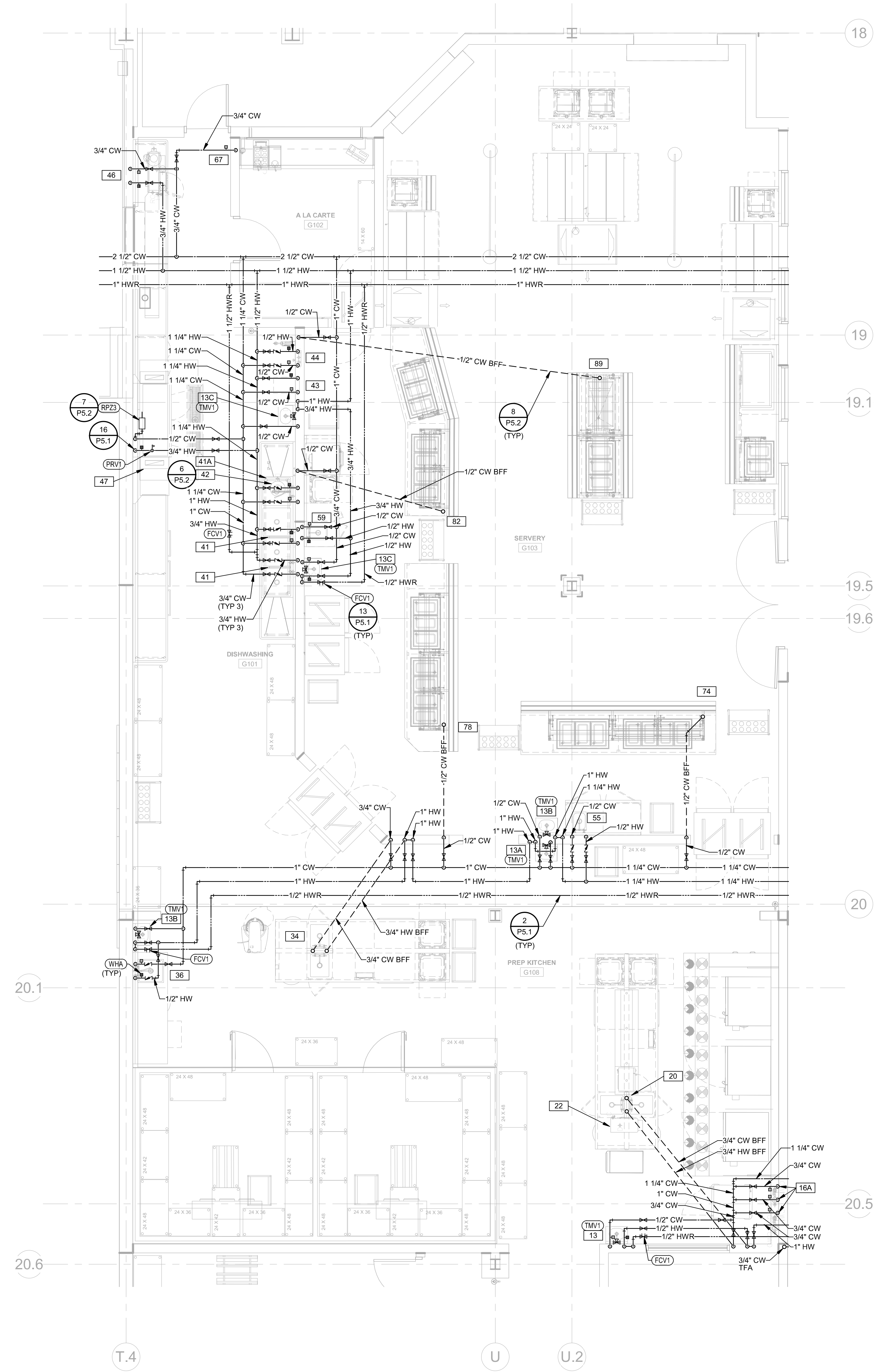
Oct 19 2020  
CARL J. HOLDEN  
LICENSE # PE-2020016283

**HENDERSON ENGINEERS**  
8345 LINDA DRIVE, SUITE 300  
FARMINGTON, MO 64439  
TEL: 913.250.0123  
WWW.HENDERSONENGINEERS.COM  
P.E. # 0000000000  
MO. CORPORATE NO. E-5680  
EXPIRES 12/31/2020

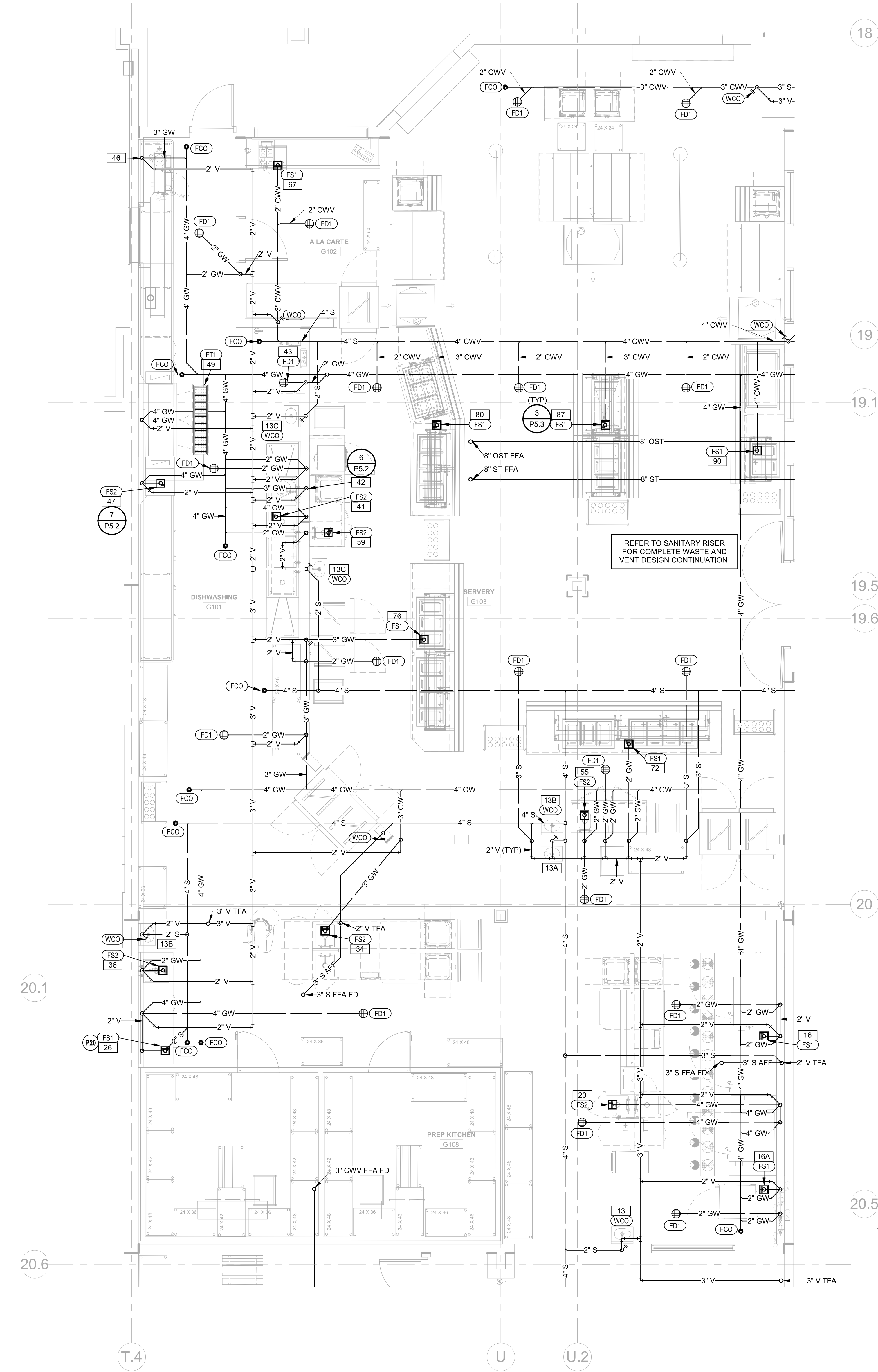
**LEE'S SUMMIT MIDDLE SCHOOL #4**  
LEE'S SUMMIT R-7 SCHOOL DISTRICT  
1001 SE BAILEY ROAD  
LEE'S SUMMIT, MO 64081

PACKAGE 3 - BUILDING & SITE  
10/08/20  
REVISIONS  
ADDENDUM 002

13-20102-00  
PLUMBING ENLARGED PLANS  
P4.12

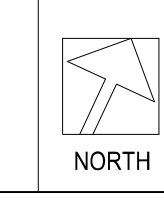
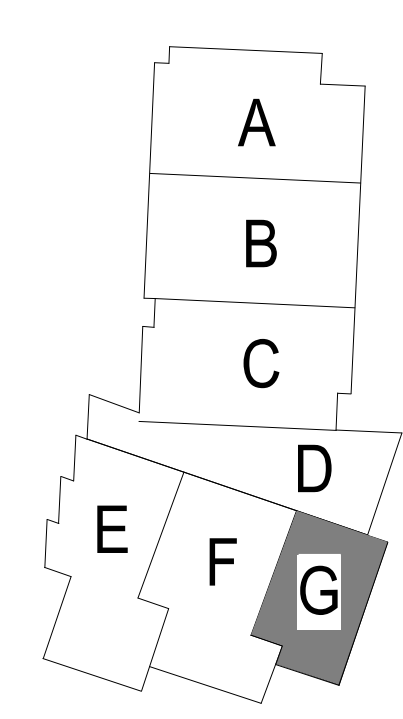


2 PLUMBING WATER ENLARGED PLAN - FIRST LEVEL  
1/4" = 1'-0"



1 PLUMBING SANITARY ENLARGED PLAN - FIRST LEVEL  
1/4" = 1'-0"

KEY PLAN





#### ④ PIPE AND TRENCH LOCATION



③ PIPE HANGER DETAIL  
NTS



② TRAPEZE PIPE HANGERS



① UNDERGROUND CSST WITH INTEGRAL CONDUIT INSTALLATION DETAIL  
NTS



8 DECK MOUNTED EMERGENCY EYEWASH  
NTS



⑦ GAS METER SETTING  
NTS



## ⑥ CONNECTIONS TO ROOF-TOP UNITS



⑤ DUAL REVERSE RETURN GAS FIRED WATER HEATER AND PUMPS



⑫ GAS PIPE ROOF PENETRATION  
NTS



## 11 WALL HYDRANT INSTALLATION



⑩ LARGE EXPANSION TANK  
NTS



⑨ SMALL EXPANSION TANK  
NTS



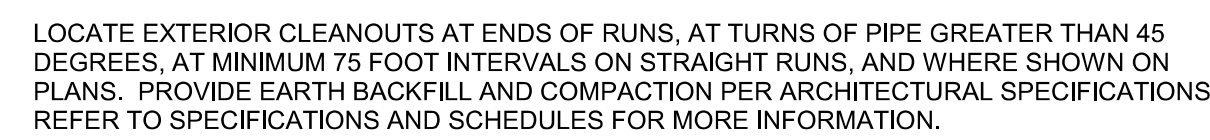
## 16 DISHWASHER CONNECTIONS



⑮ ISLAND FIXTURE VENT  
NTS

(14) RESIDENTIAL DISHWASHER CONNECTION  
NTS

⑬ AUTOMATIC FLOW CONTROL VALVE TRAIN  
NTS



PROVIDE COLD WATER, HOT WATER, AND HOT WATER RECIRCULATION TUBES THROUGH CONDUIT, SIZE AS SHOWN ON FLOOR PLANS. USE TYPE "L" HARD COPPER TUBE ABOVE FLOOR SLAB. USE TYPE "K" SOFT COPPER TUBE INSIDE CONDUIT. PROVIDE COPPER TUBE COUPLING AT TRANSITION FROM SOFT TO HARD COPPER TUBE ABOVE THE FLOOR. PROVIDE SHUT OFF VALVES AT UPSTREAM END OF CONDUIT WHERE INDICATED ON FLOOR PLAN. INSULATE PIPES INSIDE AND OUTSIDE CONDUIT PER SPECIFICATIONS.

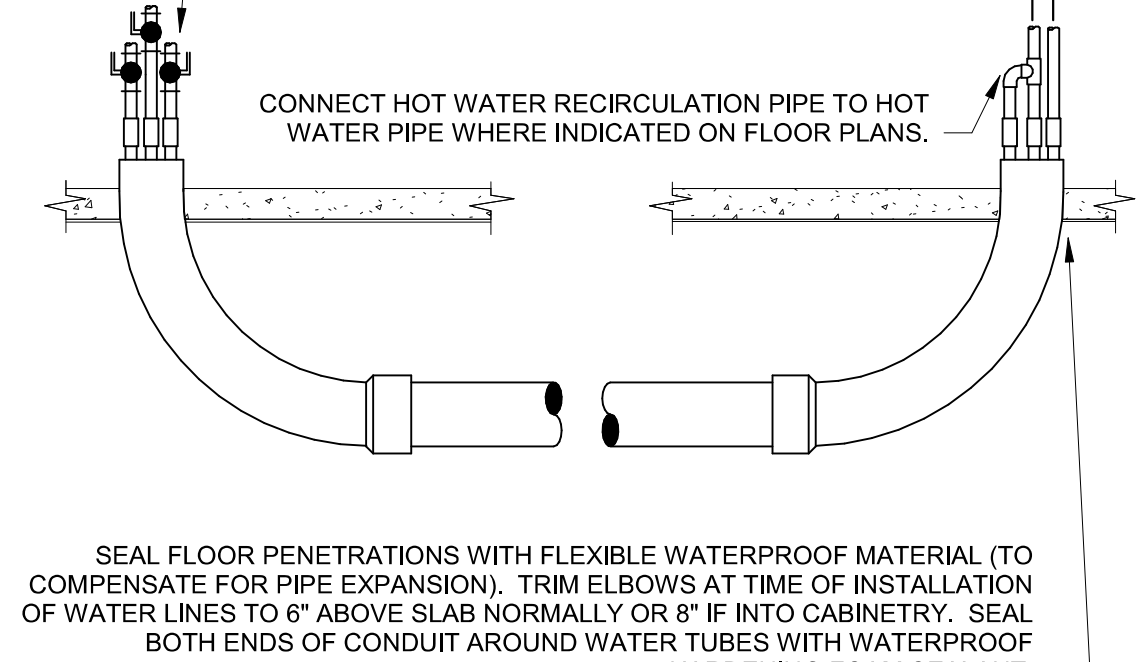


Diagram illustrating the components and assembly steps for a vertical downspout installation:

- VERTICAL DOWNSPOUT AGAINST EXTERIOR WALL WHERE SHOWN ON PLAN
- SECURELY BRACE DOWNSPOUT TO WALL WITH RISER CLAMP WITHIN 12" OF BASE
- SHORT SWEEP ELBOW
- UBLESS PIPE CONNECTOR
- PIPE STAND
- FINISHED FLOOR
- PROVIDE SLEEVE AND SEAL EXTERIOR WALL PENETRATION PER SPECIFICATIONS
- THREADED ADAPTER
- INSTALL DOWNSPOUT NOZZLE MINIMUM 18" ABOVE GRADE
- SPLASH BLOCK. REFER TO ARCHITECTURAL DRAWINGS.
- FINISHED GRADE OR PAVEMENT

Diagram illustrating the components and dimensions of a manhole assembly, including the following labels and specifications:

- SLOPE PAVEMENT OR GRADE AWAY FROM MANHOLES
- 24" DIAMETER CAST IRON MANHOLE RING WITH HEAVY DUTY GASKET JOINTS. DO NOT RENDER MANHOLES INACCESSIBLE
- PROVIDE FACTORY MANHOLE EXTENSIONS AS REQUIRED
- WITH TOP SIMILAR TO EXTENDING CLEANOUT "ECO"
- 24" MIN.
- 6" MIN.
- 2" VENT. SEE PLAN FOR CONTINUATION
- 4" X 4" STRAIGHT TE
- INLET REFER TO DRAWINGS FOR PIPE SIZES
- INLET DIFFUSER AND FLOW CONTROL PROVIDED WITH INTERCEPTOR
- OUTLET DIFFUSER PROVIDED WITH INTERCEPTOR
- OUTLET REFER TO DRAWINGS FOR PIPE SIZES
- SEAL, WATER TIGHT (TYPICAL)
- GRADE INTERCEPTOR RE. SPECIFICATIONS AND SCHEDULES

NOT USED

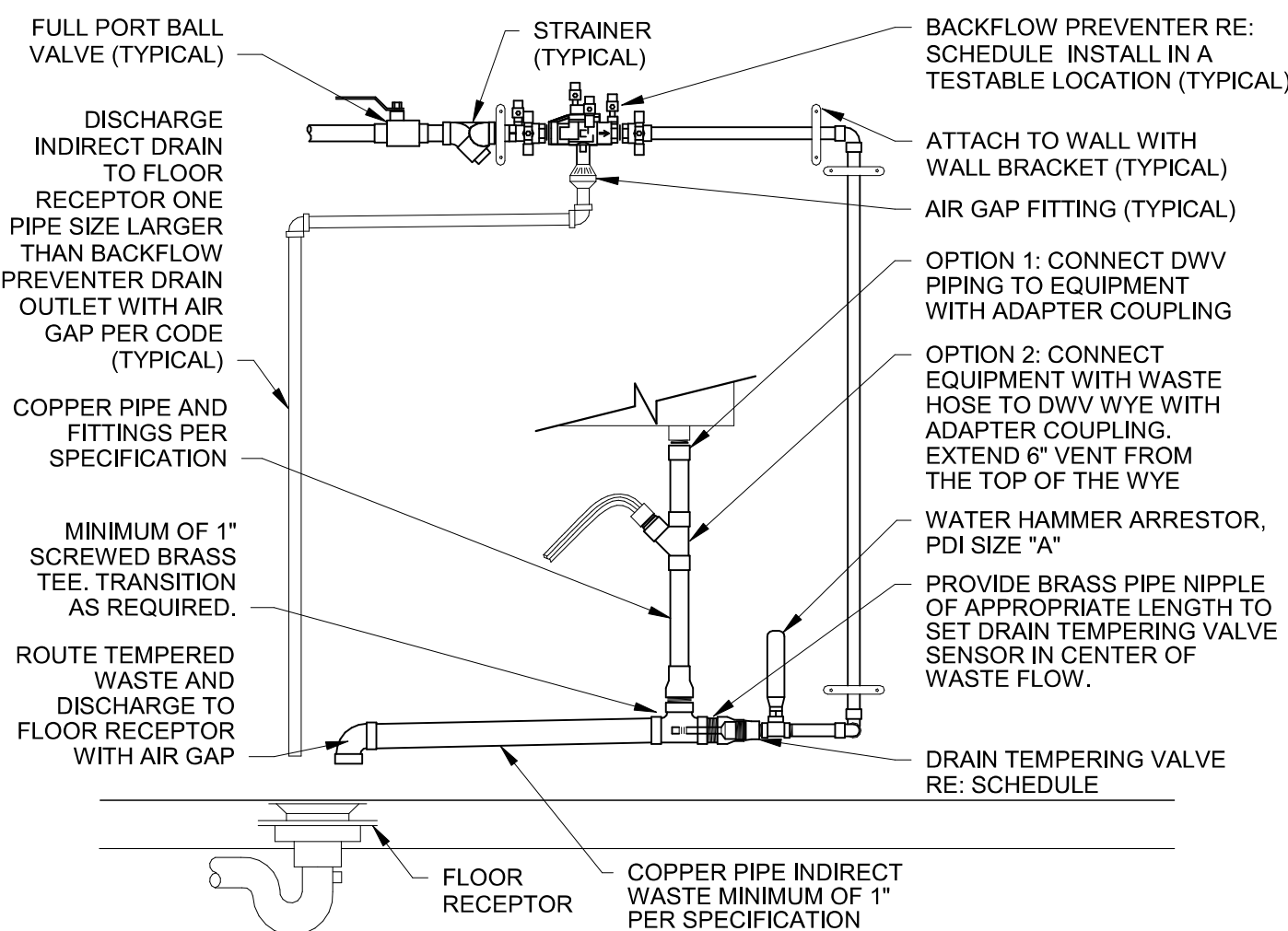


Diagram illustrating the installation of a water heater, showing various components and their connections:

- PROVIDE THERMISTAT THERMISTAT IN TEE FITTING**
- HOT WATER TO FIXTURES**
- PIPE UNIONS (TYPICAL) ABOVE TOP OF TANK (TO FACILITATE REMOVAL OF WATER HEATER)**
- PROVIDE DIELECTRIC PIPE UNION AT TANK CONNECTION FOR CONNECTION OF DISSIMILAR METALS (WATER HEATER)**
- PROVIDE 12" WIDE X 12" DEEP HEAT TRAP AT INLET AND OUTLET (TYPICAL)**
- LINE SIZE GAS SUPPLY TO WATER HEATER**
- GAS-FIRED WATER HEATER PER SPECIFICATIONS AND SCHEDULE**
- PROVIDE REDUCER AT EQUIPMENT CONNECTION IF REQUIRED**
- GAS COCK**
- UNION WITH GROUND JOINT**
- 3" LONG DIRT LEG**
- SET WATER HEATER ON CONCRETE EQUIPMENT PAD PER SPECIFICATIONS**
- PROVIDE ANTI-VACUUM RELIEF VALVE ABOVE TOP OF TANK**
- COLD WATER SUPPLY TO WATER HEATER**
- COLD WATER BRANCH TO EXPANSION TANK**
- RECIRCULATION PUMP WITH UNION CONNECTIONS. PROVIDE SHUTOFF VALVE, AQUASTAT AND STRAINER UPSTREAM. CHECK VALVE AND SHUTOFF VALVE DOWNSTREAM**
- CHECK VALVE**
- TYPICAL SHUT-OFF VALVE**
- INSTALL ASME TEMPERATURE AND PRESSURE RELIEF VALVE FURNISHED WITH WATER HEATER. CONNECT TO TOP OR SIDE OF TANK AS REQUIRED FOR MODEL FURNISHED (TYPICAL)**
- PROVIDE HARD COPPER RELIEF VALVE DISCHARGE PIPE FULL SIZE OF VALVE OUTLET. TERMINATE OVER APPROVED RECEPTOR WITH AIR GAP PER CODE. REFER TO FLAVOR PLAN FOR LOCATION**
- INSTALL DRAIN VALVE FURNISHED WITH WATER HEATER**

Diagram illustrating the components and connections for a roof drain assembly:

- GRAVEL STOP AND MEMBRANE CLAMP TO SECURE FLASHING
- EXTENSION SLEEVE WITH HEIGHT AS REQUIRED TO ACCOMMODATE ROOF INSULATION THICKNESS
- SUMP RECEIVER
- UNDERDECK CLAMP
- PROVIDE LONG SWEEP ELBOW AT START OF RUN.
- PROVIDE WYE COMBO FITTING WHERE MORE THAN ONE ROOF DRAIN IS CONNECTED TO A SINGLE
- ROOF DRAIN OR OVERFLOW ROOF DRAIN. REFER TO PLANS FOR OUTLET SIZE
- INSULATED ROOF STRUCTURE
- REFER TO SPECIFICATIONS FOR TYPE OF PIPE, FITTING AND CONNECTORS.
- PROVIDE PIPE HANGER AS CLOSE TO JOINT AS POSSIBLE TO TAKE WEIGHT OFF ROOF DRAIN.
- SLOPE PIPE AS INDICATED ON FLOOR PLAN AND IN SPECIFICATIONS. REFER TO PLANS FOR PIPE

**BUILDING EXTERIOR WALL:**  
REFER TO STRUCTURAL AND ARCHITECTURAL DRAWINGS FOR ACTUAL CONDITIONS

**STRAINER WITH BLOW DOWN PIPE TO DISCHARGE ONTO FLOOR DRAIN**

**GATE TYPE SHUTOFF VALVE**

**FLANGE AND SPIGOT TO STUD MINIMUM 6" ABOVE FLOOR**

**PROVIDE PVC PIPE SLEEVE CAST INTO FLOOR SLAB AT WATER PIPE PENETRATION; CALK WATER TIGHT**

**STEEL RODS AND 3/4" MECHANICAL JOINT, ALL COATED WITH ASPHALTUM (TYPICAL)**

**GRADE**

**IRON PIPE FROM MUNICIPAL WATER MAIN PER SITE PLAN, DEPTH AS REQUIRED BY LOCAL CONDITIONS, BELOW FROST LINE. REFER TO "PIPE AND TRENCH LOCATION" SHEET REGARDING CONDITIONS AT FOUNDATION**

**WHEN THIS PIECE EXCEEDS 12' RODS MAY BE RUN TO THE FLOOR**

**TRANSITION TO COPPER PIPE SIZE AS SHOWN ON FLOOR PLANS**

**BALL VALVE (TYPICAL)**

**HOSE BIBB (FOR SYSTEM DRAIN DOWN), WITH SHUTOFF VALVE AND PRESSURE GAUGE**

**PROVIDE PRESSURE REDUCING VALVE ONLY IF INCOMING PRESSURE EXCEEDS 90 PSI**

**PROVIDE FLANGED TEE FOR IRRIGATION CONTRACTOR, FULL SIZE OF SERVICE PIPE**

**REDUCED PRESSURE ASSEMBLY BACKFLOW PREVENTER.**

**AIR GAP FITTING**

**FLOOR SLAB**

**FLOOR DRAIN**

**INDIRECT DRAIN PIPE TO DISCHARGE ONTO FLOOR DRAIN, ONE NOMINAL PIPE SIZE LARGER THAN RELIEF VALVE OUTLET**

**PIPING ARRANGEMENT SHOWN IS SCHEMATIC: ADJUST AS REQUIRED TO SUIT ACTUAL INSTALLATION CONDITIONS. PROVIDE REDUCED PRESSURE ASSEMBLY OF MANUFACTURE APPROVED BY LOCAL AUTHORITIES. INSTALL WITH CLEARANCES, IN HORIZONTAL UPRIGHT POSITION, PER MANUFACTURER'S RECOMMENDATIONS. PROVIDE ANY REQUIRED CERTIFICATION OF TEST OF BACKFLOW PREVENTER TO LOCAL AUTHORITIES. ALL ITEMS SHALL BE APPROVED FOR DOMESTIC WATER SERVICE. INSTALL ENTIRE VALVE TRIN SUPPORTED FROM WALL BRACKET OR FLOOR STAND. INSTALL SO THAT IT CAN BE EASILY SERVICED AND TESTED.**

Diagram illustrating the installation of a garbage disposal unit, showing the unit, sink, and various plumbing components. The diagram includes the following labels and instructions:

- INSTALL ATMOSPHERIC VACUUM BREAKER FURNISHED WITH GARBAGE DISPOSER ABOVE FIXTURE BACKPLASH MINIMUM 1/2" ABOVE FLOOR RM OF FIXTURE. DRILL BACKPLASH FOR PIPE PENETRATIONS, AND SEAL PENETRATIONS WATERTIGHT WITH CLEAR SILICONE SEALANT. PROVIDE CHROME-PLATED BRASS IPS PIPE AND FITTINGS EXPOSED ABOVE BACKPLASH.
- PROVIDE PIPE UNION
- INSTALL SOLENOID VALVE FURNISHED WITH DISPOSER
- INSTALL FLOW CONTROL VALVE FURNISHED WITH DISPOSER
- INSTALL STRAINER FURNISHED WITH DISPOSER
- PROVIDE SHUT-OFF VALVE ON 1/2" COLD WATER SERVICE
- PROVIDE WATER HAMMER ARRESTER
- 1-1/2" VENT IN WALL
- FIXTURE (SINK OR CONE OR TROUGH)
- SINK CONNECTION ASSEMBLY
- COMMERCIAL GARBAGE DISPOSER IS PROVIDED BY OTHERS
- 3" WALL CLEANOUT
- WASTE ARM TO WALL WITHOUT ESCUTCHEON
- P-TRAP AND WASTE ARM SAME SIZE AS DISPOSER DISCHARGE
- 3" WASTE. DO NOT CONNECT

The diagram illustrates the installation of two gas-fired water heaters side-by-side. Key components and labels include:

- PROVIDE AUTOMATIC VACUUM RELIEF VALVE ABOVE TOP OF TANK**: Points to a valve at the top of the tank.
- COLD WATER BRANCH TO EXPANSION TANK**: Points to a pipe branch from the cold water supply.
- HOT WATER TO FIXTURES**: Points to the hot water outlet pipe.
- PIPE UNIONS (TYPICAL) ABOVE TOP OF TANK (TO FACILITATE REMOVAL OF WATER HEATER)**: Points to unions above the tanks.
- PROVIDE THERMOMETER IN TEE FITTING (TYPICAL)**: Points to a thermometer installed in a tee fitting.
- PROVIDE DIELECTRIC PIPE UNION AT TANK CONNECTION FOR CONNECTION OF DISSIMILAR METALS (TYPICAL)**: Points to a dielectric union at the tank connection.
- SHUTOFF VALVE (TYPICAL)**: Points to a shutoff valve on the cold water line.
- TRAP AT INLET AND OUTLET (TYPICAL)**: Points to traps on both the inlet and outlet pipes.
- LINE SIZE GAS SUPPLY TO WATER HEATER (TYPICAL)**: Points to the main gas supply line.
- GAS-FIRED WATER HEATER PER SPECIFICATIONS AND SCHEDULE (TYPICAL)**: Points to the water heater unit.
- GAS COCK (TYPICAL)**: Points to a gas cock on the gas line.
- UNION WITH GROUND JOINT (TYPICAL)**: Points to a union with a ground joint on the gas line.
- 3" LONG DIRT LEG (TYPICAL)**: Points to a dirt leg on the gas line.
- ROUTE DRAIN LINES TO NEAREST FLOOR DRAIN AND DISCHARGE WITH 6" AIR GAP (TYPICAL)**: Points to the drain lines connected to a floor drain.
- EQUIPMENT CONNECTION IF REQUIRED (TYPICAL)**: Points to an equipment connection on the gas line.

Diagram illustrating the components of a water meter assembly:

- COLD WATER AND HIGH PRESSURE COLD WATER. REFER TO FLOOR PLAN.
- SECURE GATE VALVES (TYPICAL OF TWO) TO FLOOR WITH ANGLE IRON SUPPORTS
- DIELECTRIC FLANGE AND COPPER ELBOW
- SUCTION HEADER
- WATER CHECK VALVE WITH RESILIENT SEAT
- INSTALL ACCUMULATOR TANK FURNISHED WITH BOOSTER PUMP
- TYPICAL BALL VALVE
- DISCHARGE HEADER
- CONCRETE HOUSEKEEPING PAD
- FLEXIBLE CONNECTORS ON SUCTION AND

Diagram illustrating the components and materials for a sink and trap assembly:

- CASEWORK OR COUNTER TOP CABINETY
- CONNECT ACID RESISTANT WASTE PIPE TO TALP PEECE FURNISHED WITH SINK
- ACID NEUTRALIZATION TANK FILLED WITH LIMESTONE CHIPS. PER SPECIFICATIONS AND PLUMBING SCHEDULE
- DIP TUBE FURNISHED WITH TANK TO FORM A TRAP
- SINK INSTALLED IN CASEWORK OR COUNTER TOP
- SINK INSTALLED IN FUME HOOD
- PLUG OR CAP VENT OPENING ON TANK
- PROVIDE TYPE OF WASTE AND VENT PIPE PER SPECIFICATIONS
- COUPLING AT CONNECTION TO UNDERFLOOR WASTE PIPE PER SPECIFICATIONS

COLD WATER MAIN

BRANCH PIPE WITH SHUT-OFF VALVE FEEDING PLUMBING FIXTURE(S)

AUTOMATIC TRAP PRIMER VALVE WITH INTEGRAL AIR GAP. INSTALL TRAP PRIMER MINIMUM 12" ABOVE FLOOR FOR EVERY 20' OF PRIMER DISCHARGE PIPE.

PROVIDE DISTRIBUTION UNIT(S) WHERE MORE THAN ONE TRAP IS SERVED BY ONE TRAP PRIMER VALVE.

IF TRAP PRIMER IS INSTALLED ABOVE FINISHED CEILING, PROVIDE ACCESS DOOR PER SPECIFICATIONS.

PROVIDE FLOOR DRAIN BODY OR P-TRAP WITH THREADED TRAP PRIMER CONNECTION. PROVIDE SWEAT TO THREADED CAPTER, BRIZE JOINT BELOW FLOOR SLAB ON GRADE.

PROVIDE TRAP PRIMERS WHERE SHOWN ON FLOOR PLANS, AND WHERE REQUIRED FOR ADDITIONAL WORK. PIPING ARRANGEMENT SHOWN IS SUBJECT TO SITE FIELD CONDITIONS. REFER TO SPECIFICATIONS AND PLUMBING FIXTURE SCHEDULE FOR MORE INFORMATION. INSTALL TRAP PRIMER VALVE AND DISTRIBUTION UNIT PER MANUFACTURER'S RECOMMENDATIONS.

CONNECT 1/2" PIPE (WITHOUT SHUT-OFF VALVE IN BRANCH) TO TRAP PRIMER VALVE OFF TOP OF BRANCH PIPE. INSULATE PIPE UPSTREAM OF TRAP PRIMER, BUT NOT DOWNSTREAM.


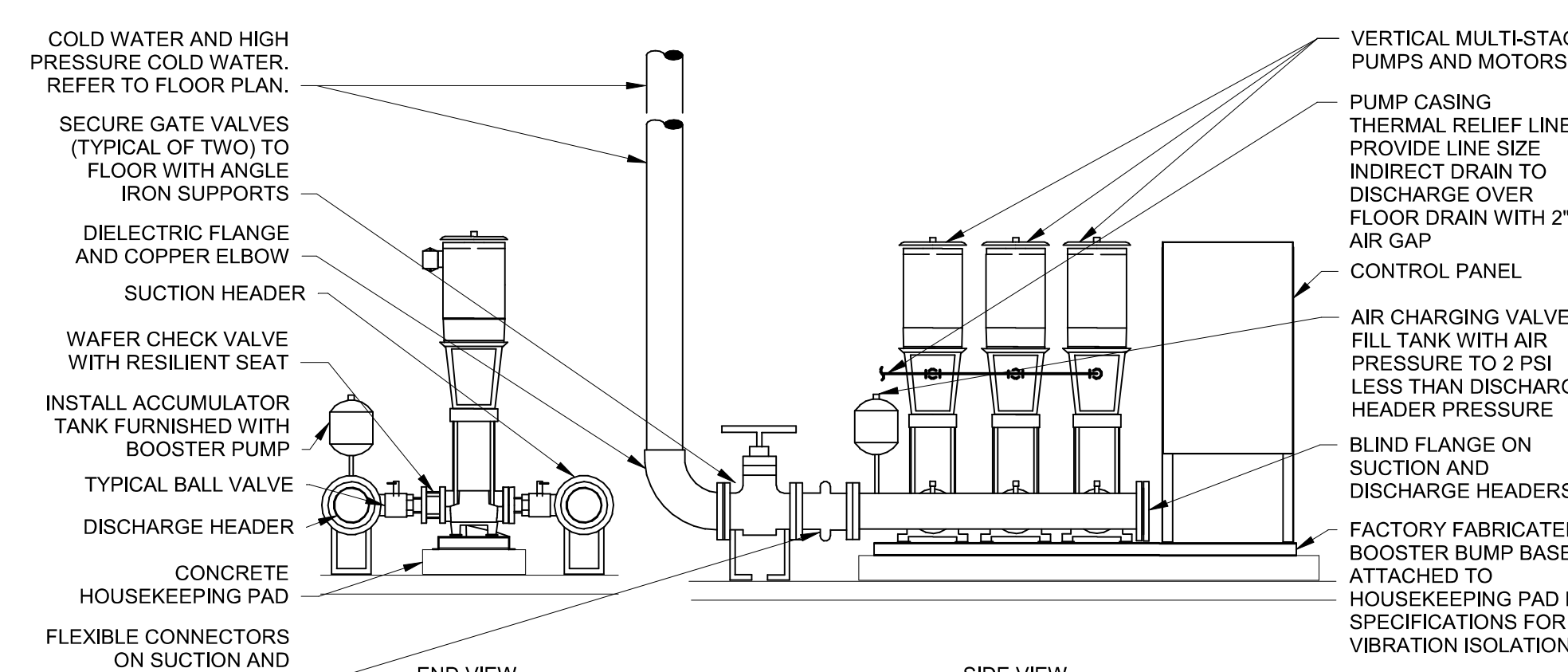
INSTALL TRAP PRIMER LINE(S) DOWNSTREAM OF TRAP PRIMER OR DISTRIBUTION UNIT USING 1/2" SOFT COPPER TUBING. INSTALL WITHOUT KINKS, AND SLOPE CONTINUOUSLY TOWARDS FLOOR DRAIN.

CONCEAL PIPE(S) IN PARTITION OR CHASE IN FINISHED AREAS. TRAP PRIMER AND PIPES MAY BE INSTALLED EXPOSED IN UNFINISHED, NON-PUBLIC AREAS.

IF PIPE IS BELOW FLOOR SLAB ON GRADE, PROVIDE 1/2" ELASTOMERIC INSULATION FROM PRIMER CONNECTION TO 1" ABOVE FLOOR SLAB.

Diagram illustrating the components and specifications for a recirculation pump system:

- COLD WATER SUPPLY TO WATER HEATER
- RECIRCULATION PUMP WITH UNION CONNECTIONS. PROVIDE SHUTOFF VALVE, AQUASTAT AND STRAINER UPSTREAM, CHECK VALVE AND SHUTOFF VALVE DOWNSTREAM
- AQUASTAT
- STRAINER
- CHECK VALVE
- TYPICAL SHUT-OFF VALVE
- CONNECTION TO TOP OR SIDE OF TANK AS REQUIRED FOR MODEL FURNISHED (TYPICAL)
- INSTALL ASME TEMPERATURE AND PRESSURE RELIEF VALVE FURNISHED WITH WATER HEATER (TYPICAL)
- PROVIDE HARD COPPER RELIEF VALVE DISCHARGE PIPE FULL SIZE OF VALVE OUTLET. TERMINATE OVER APPROVED RECEPTOR WITH AIR GAP PER CODE. REFER TO FLOOR PLANS FOR LOCATION. (TYPICAL)
- INSTALL DRAIN VALVE FURNISHED WITH WATER HEATER (TYPICAL)
- SET WATER HEATER ON CONCRETE EQUIPMENT PAD PER SPECIFICATIONS (TYPICAL)
- REFER TO SPECIFICATIONS, SCHEDULES, AND NOTES FOR MORE INFORMATION. PIPING ARRANGEMENT SHOWN IS SCHEMATIC. ADJUST TO SUIT FIELD CONDITIONS. VERIFY CONNECTION SIZES AND LOCATIONS WITH WATER HEATER FURNISHED.
- REFER TO FLOOR PLANS OR RAGS FOR DETAILS AND CONTINUATIONS.
- PROVIDE SEISMIC STRAP OR BRACING WHEN REQUIRED BY LOCAL AUTHORITIES. POWER WIRING AND DISCONNECT SWITCH ARE SPECIFIED BY ELECTRICAL. INTERLOCK OF AQUASTAT WITH RECIRCULATION PUMP IS SPECIFIED BY ELECTRICAL.



DLR Group



Oct 19 2021  
CARL J. HOLDEN  
LICENSE # PE-2020016283

**HENDERSON**  
ENGINEERS  
8345 LENEXA DRIVE, SUITE 300  
LENEXA, KS 66214  
913.742.5000 FAX 913.742.5001  
WWW.HENDERSONENGINEERS.COM  
1950005054  
MO. CORPORATE NO.: E-5560  
EXPIRES 12/31/2020

LEE'S SUMMIT MIDDLE SCHOOL #4

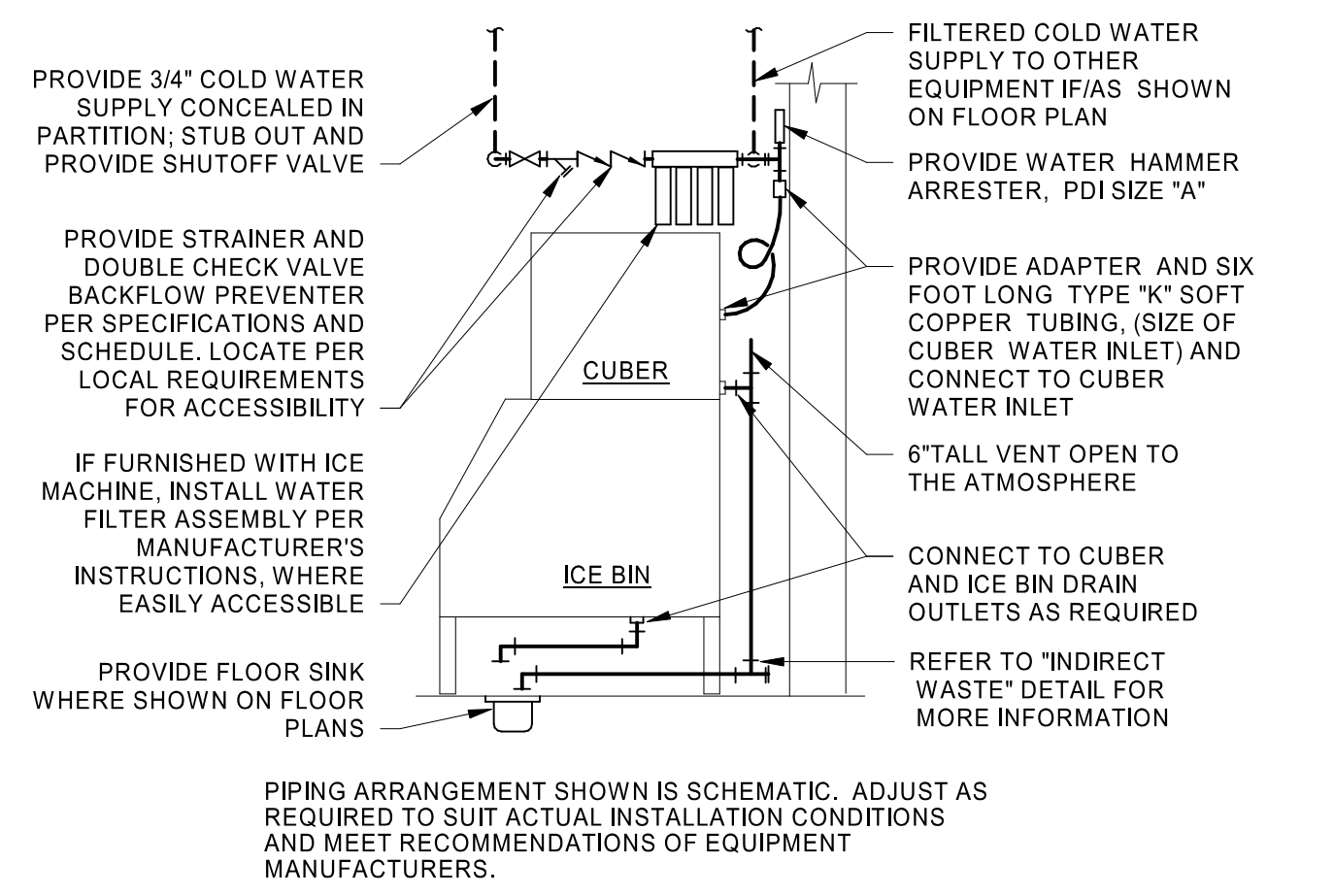
001 SE BAILEY ROAD

PACKAGE 3 - BUILDING  
SITE  
10/08/20  
REVISIONS  
ADDENDUM 002 10/19

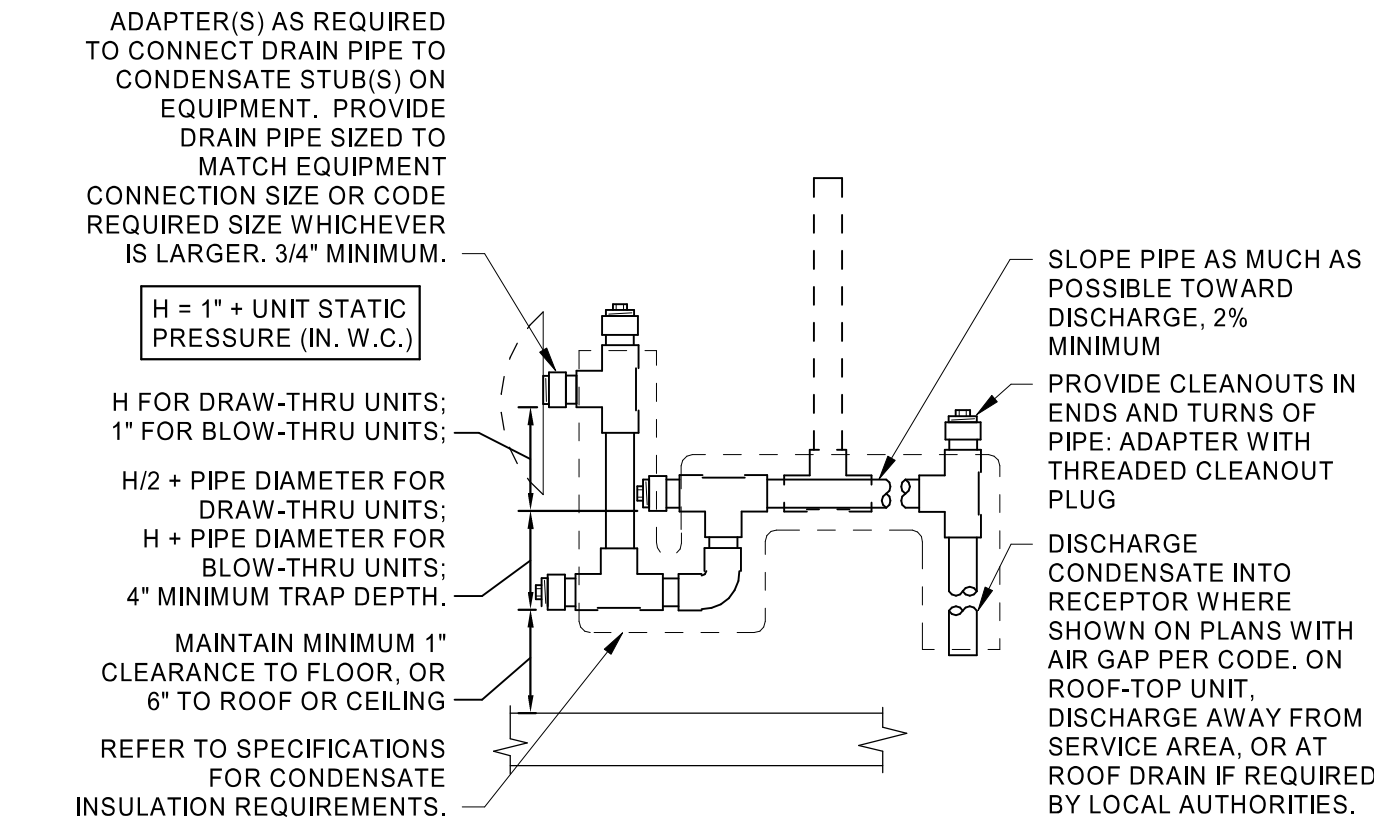
13-20102-0

## PLUMBING DETAILS

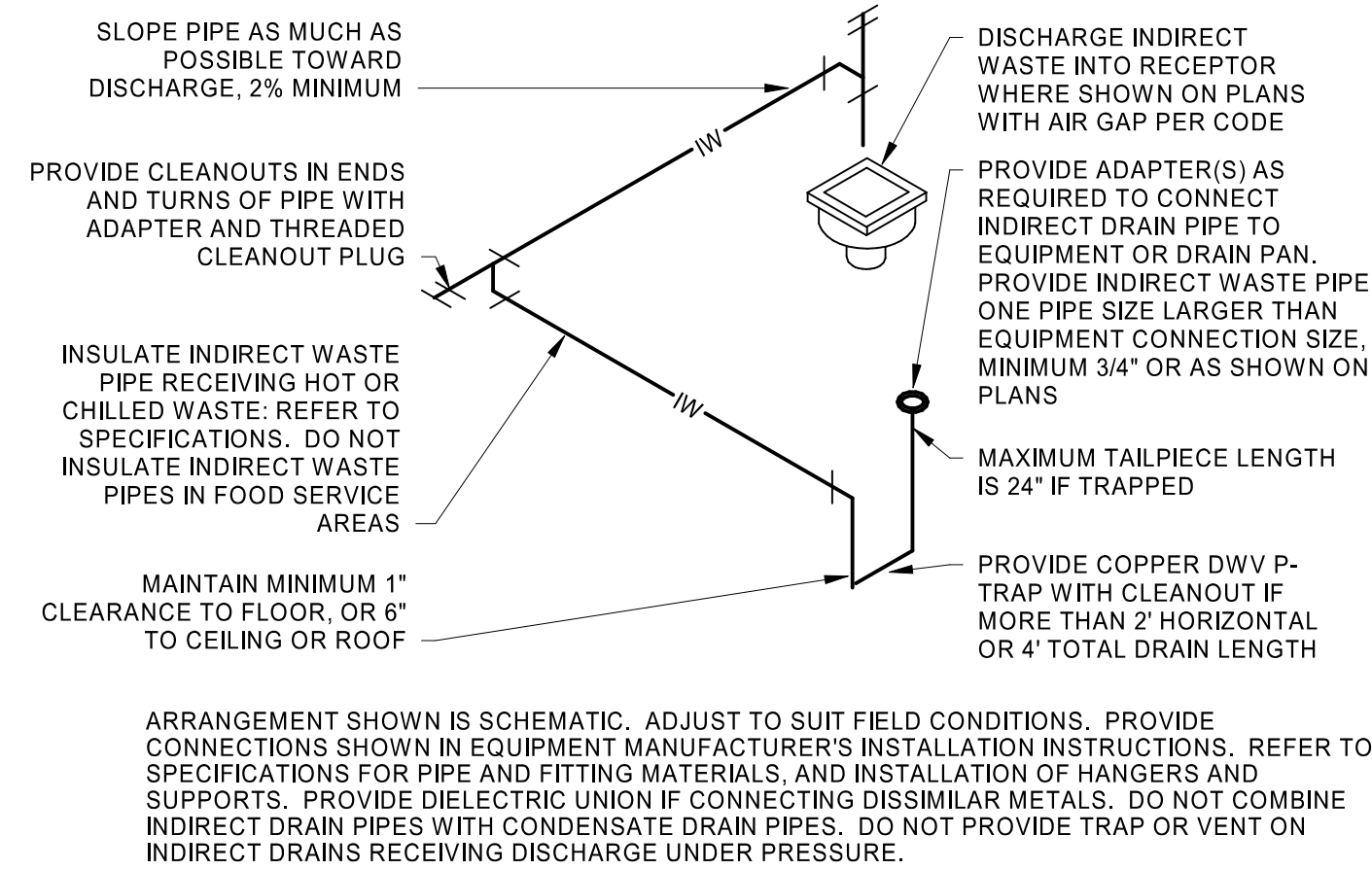
P5.2



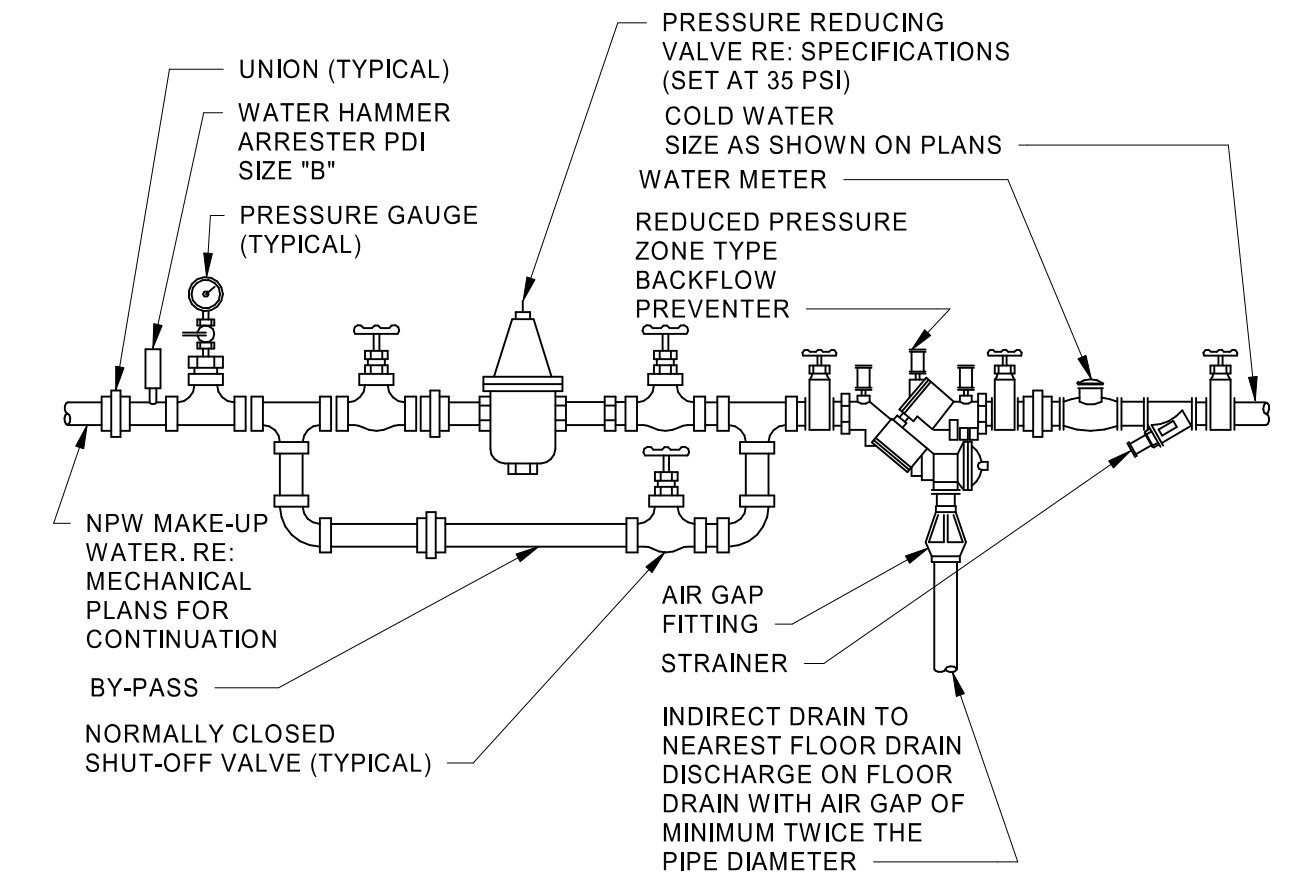
4 ICE MACHINE CONNECTIONS  
NTS



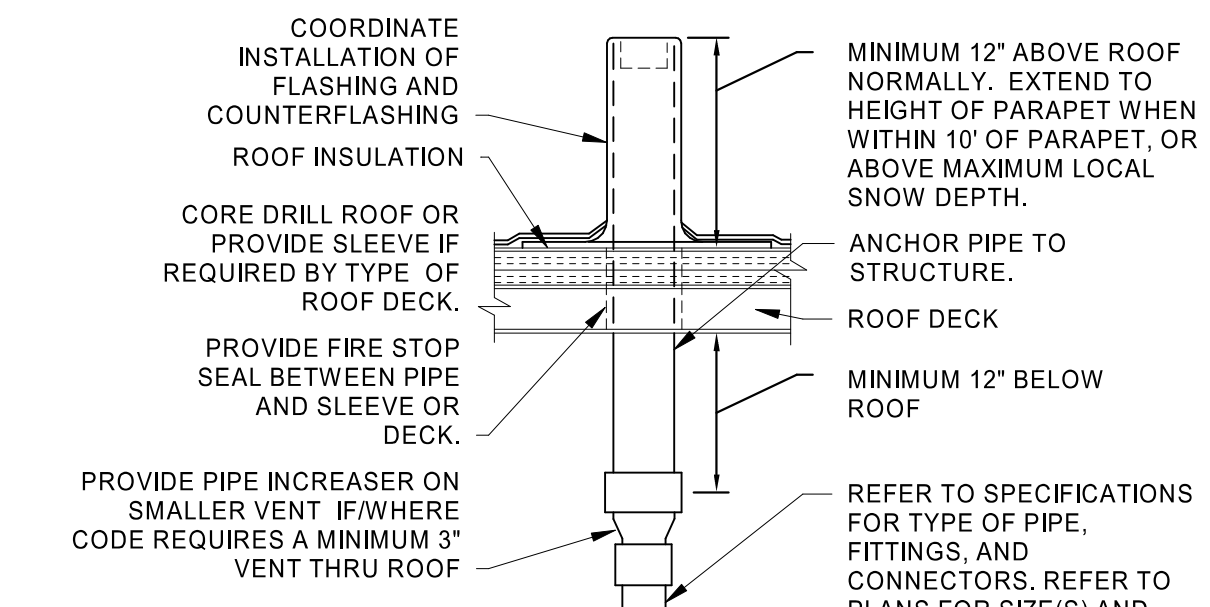
6 CONDENSATE DRAIN INSTALLATION  
NTS



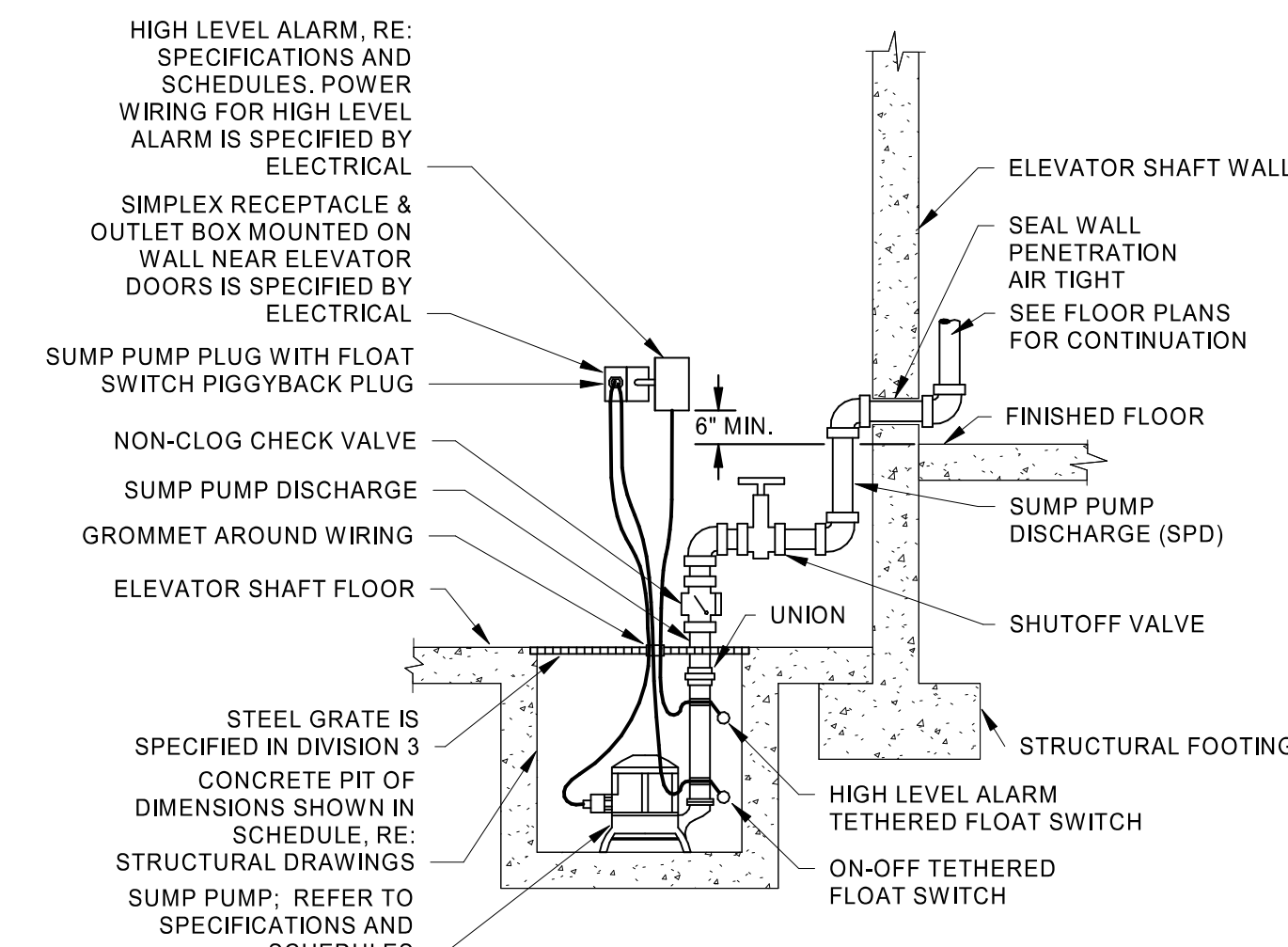
3 INDIRECT WASTE INSTALLATION - IPC  
NTS



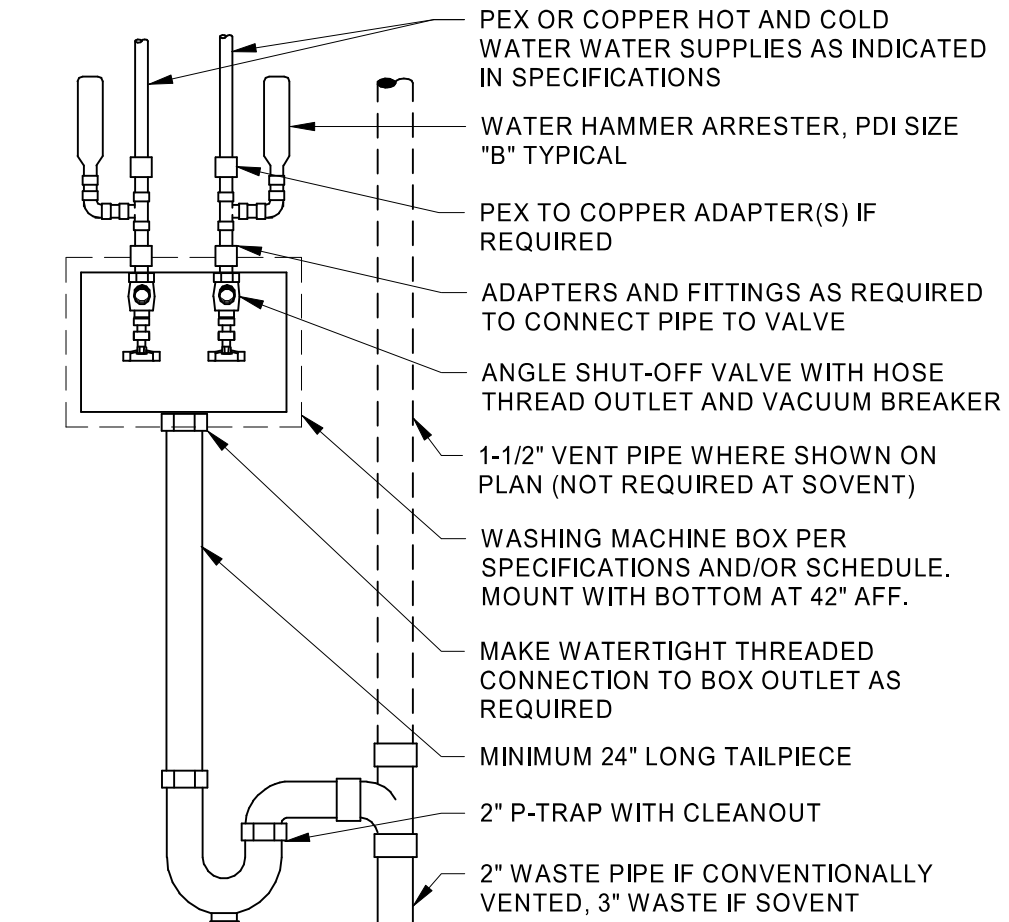
7 MECHANICAL SYSTEM MAKE-UP WATER  
NTS



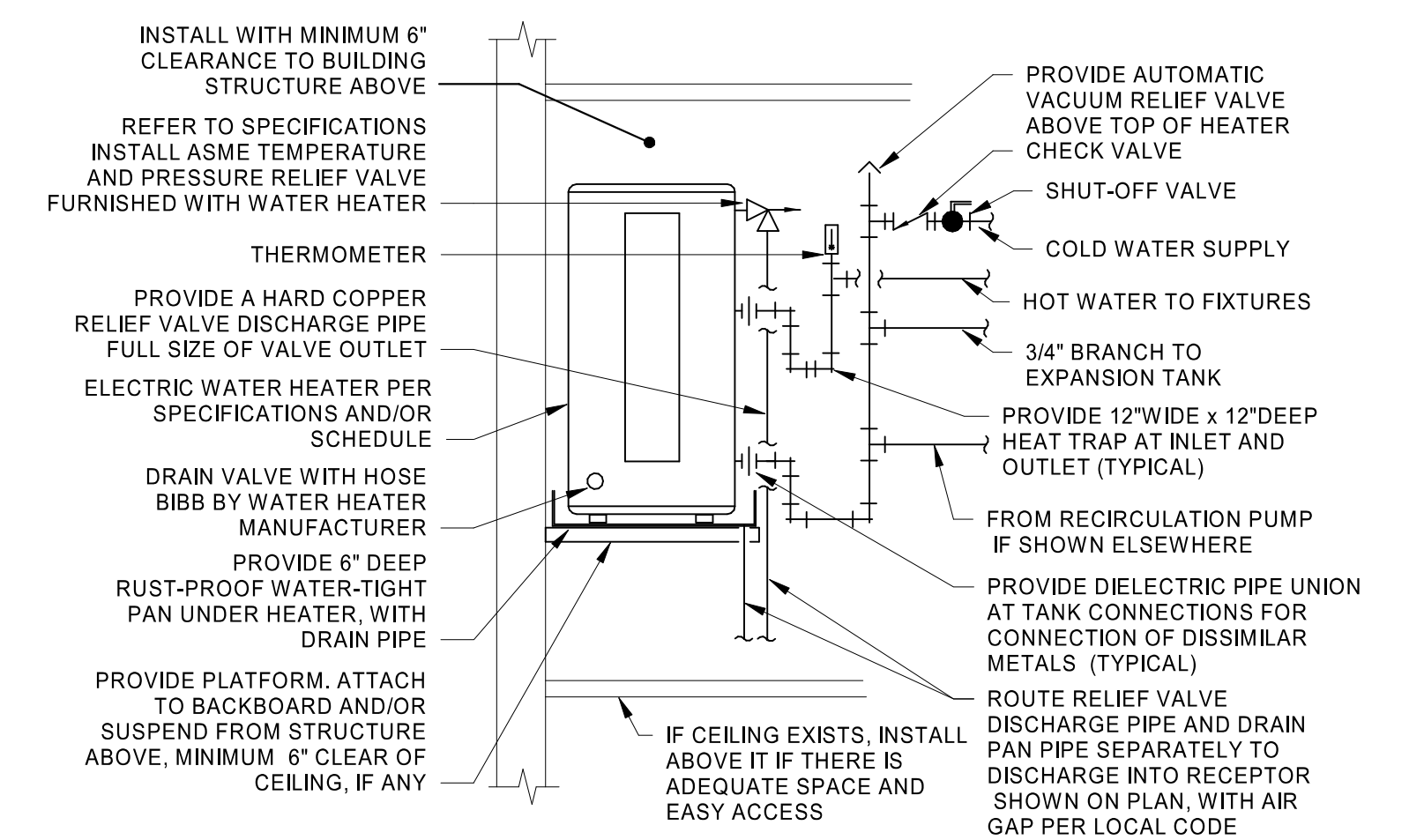
2 VENT THRU ROOF  
NTS



6 ELEVATOR SUMP PUMP  
NTS



1 WASHING MACHINE BOX  
NTS



5 ELECTRIC WATER HEATER OVERHEAD  
NTS

FIXTURES IN THIS SCHEDULE OR THEIR APPROVED EQUIVALENT ARE PROVIDED BY THE PLUMBING CONTRACTOR. SUBMIT SHOP DRAWINGS ON EACH OF THESE ITEMS. REFER TO SPECIFICATIONS FOR FURTHER INFORMATION AND INSTALLATION REQUIREMENTS. VERIFY ROUGH-REQUIREMENTS WITH MANUFACTURER'S INSTALLATION INSTRUCTIONS AND THE MANUFACTURER'S RECOMMENDATIONS. REFER TO THE ARCHITECTURAL DRAWINGS FOR THE PLUMBING FIXTURE MOUNTING HEIGHTS.

PLUMBING PLAN MARK	DESCRIPTION
AAV1	AIR ADMITTANCE VALVE; STUDOR 'MINI-VENT' # 20301, MEETING ASSE 1051 TYPE 'A', POLYSTYRENE PROTECTIVE COVER, ABS VALVE WITH ELASTOMERIC MEMBRANE AND PVC CONNECTOR, 2" INLET, AND



PLAN MARK	DESCRIPTION
H1	HOSE BIBB; PRIER PRODUCTS CO #C-158N75, ROUGH CHROME PLATED BRASS, FEMALE FINF INLET AND 1/2" O.D. HOSE CONNECTION BREAKER.
H2	HOSE BIBB; PRIER PRODUCTS CO #C-158N75, ROUGH CHROME PLATED BRASS 3/4" MALE INLET, JAY R. SMITH'S HOSE CONNECTION, LOOSE KEY HANDLE, AND 1/2" O.D. HOSE CONNECTION BREAKER.
D1	HUD DRAIN FLOOR SINK; JAY R. SMITH'S #321T-D(BS), 7" DEEP X 4" DIAMETER CAST IRON BODY WITH ANGLE RESISTING ENAMELED FINISH, FRONT AND EXTENDED SIDE WALLS, 1/2" O.D. HOSE CONNECTION WITH THREADED CONNECTION AND ALUMINUM DOGS BOTTOM STRAINER, TRAP SEAL - PROVIDE TRAP SEAL PER SPECIFICATIONS FOR ACTUAL HUB DRAIN MODEL.
I	ICE MAKER BOX; GRAY GULMORY B#M875, 20 GAUGE GALVANIZED STEEL BOX, 18 GAUGE STEEL FACEPLATE, BOTTOM INLET WATER SUPPLY WITH FLAT FREE 1/2" X 1/4" COMPRESSION ANGLE STOP VALVE, 1/2" LOOP 4 FEET LONG, 1/2" O.D. HOSE CONNECTION TUBING AND PROVIDE EQUIPMENT CONNECTION.
JF1	JUG FILLING HYDRANT; MPFAB #RMY-303, LEAD FREE, CHROME PLATED BRASS WITH INTERIOR POLYETHYLENE LINED, 3/4" O.D. 3/4" MALE INLET, 3/4" THREADED HOSE CONNECTION, WITH LOOSE KEY HANDLE, HYDRANT LENGTH AS REQUIRED FOR INSTALLED WALL PROVIDE WITH ONE EXTRA LOOSE KEY HANDLE, MOUNTED AT 3' AFF FOR JUG FILLING.
J31	JANITORS SINK; FLORESTONE # MSR-2424, 24" X 24" X 10" MOLDED PIECE BASIN WITH 1/2" O.D. HOSE CONNECTION, 1/2" O.D. HOSE FAUCET, CHICAGO FAUCET # 897-CF CHROME PLATED WALL BRACE, INTEGRAL VACUUM BREAKER, PAL HOOK, AND 3/4" MALE HOSE THREADED OUTLET, SECURELY FASTEN TO WALL WITH WOODROCK ROD; BP TYPE 30A, 20 GAUGE, STAINLESS STEEL WALL SURROUND # 1-36, THREE FOOT LONG REINFORCED HOSE WITH 3/4" CHROME COIL SPRING AND END CONNECTING EXTERIOR BUMPER GUARD AND IT-240 24" STAINLESS STEEL MOP HANGER.
LGC1	LABORATORY GAS COCK; (DOUBLE TURPED DECK MOUNTED) CHICAGO FAUCET # 985-BP89D-897-3KAGV - VANDAL RESISTANT CHROMIUM PLATED BRASS BODY, 1/2" O.D. HOSE CONNECTION, 1/2" O.D. HOSE CHICAGO # 857-K38 3/8" NPT THREADED BRASS INLET SHANK WITH LOCKNUT AND WASHER, TWO LOW PRESSURE GAS COCKS WITH CHROME PLATED BODY, 1/2" O.D. HOSE CONNECTION, 1/2" O.D. HOSE LEVER HANDLE WITH COLOR CODED INLET BUTTON READING GAS, SECURELY FASTEN TO WALL WITH WOODROCK ROD AND 2" X 4" STUDS.
LSP1	LABORATORY SERVICE PANEL; ISMET-LSP-211-3-F4J, 3/4" LINE SIZE SOLENOID VALVE PROVIDED INSIDE LABORATORY 24" X 24" X 6"D SERVICE PANEL, FURNISH LABORATORY SERVICE PANEL TO DIVISION OF THE UNIVERSITY OF CALIFORNIA FOR INSTALLATION. FOR ADDITIONAL INFORMATION, REFER TO SPECIFICATION SECTION 228000 FOR MORE INFORMATION, PROVIDE CONNECTION TO SOLENOID VALVE.
LV1	WALL-MOUNTED LAVATORY (ADA ACCESSIBLE); AMERICAN STANDARD #1050-012 "LUCERNE" 12" HIGH X 16" WIDE WALL MOUNTED UNFINISHED WHITE VITREOUS CHINA FIXTURE WITH FAUCET LEGUE AND FRONT OVERFLOW FAUCET; SLOAN # EFX-250-CP SINGLE HOLE, BATTERY, SENSOR OPERATED FAUCET WITH 1/2" STRAINER FILTERED SOLENOID VALVE AND 0.5 GPM FLOW RATE; TRIP; MCQUIRE # 155A GRID DRAIN WITH TALPIECE, MCQUIRE # TP1265CUCL LEAD FREE BRASS LOOSE KEY COMPRESSION LEVER 1/2" O.D. VALVES WITH 1/2" O.D. HOSE CONNECTION, 1/2" O.D. HOSE 1/4"-1/2" LEAD GAUGE CAST CHROME PLATED BRASS ADJUSTABLE P-TRAP AND WASTE ARM WITH CLEANOUT PLUG AND ESCUTCHEON, CHROME-PLATED ARROW INDICATOR, 1/2" O.D. HOSE PLUMBING "PRO-EXTREME" # C-4222Z INSULATION KIT FOR WATER AND WASTE PIPES.
N1	THERMOSTATIC MIXING VALVE; POWERS # LF4840, SOLID LEAD FREE BRASS OR BRONZE BODY, THERMOSTATIC WAX ELEMENT, CORROSIVE RESISTANT INTERNAL PARTS, AND INTEGRAL CHECKS, ASSE 100°F SETPOINT, CAPABILITY TO ADJUST TEMPERATURE RANGE FROM MINIMUM FLOW RATE OF 0.25 GPM, SET TEMPERATURE TO 100°F FOR LOW TEMPERATURE LAVATOIRES, 2 GALLON ABOVE, PLUMBING FIXTURE.
N11	NEUTRALIZATING TANK; ORION STYLE 10", 2 GALLON, OPAQUE, 10" HIGH X 9" DIAMETER, TANK WITH 1-1/2" INLET AND 2" OUTLET, AND A 2" CLEANOUT, PROVIDE WITH LIMESTONE CHIPS WITH A MINIMUM OF 95% CALCIUM CARBONATE.
NW1	NON-FREEZE WALL HYDRANT; PRIER PRODUCTS CO #C-634N(B), SATIN NICKEL PLATED BRASS 1" MALE INLET BY 3/4" FEMALE INLET, 3/4" THREADED MOUSE TRAP, 1/2" O.D. HOSE CONNECTION, 1/2" O.D. HOSE

PLAN MARK	DESCRIPTION
SK3	<p>UNDERMOUNT SINK (ADA ACCESSIBLE) ELKAY ® ELUHAD11665DP, 18-1/2" x 16-1/2" DEEP, SINGLE COMPARTMENT, SELF-RIMMING, 18 GAUGE TYPE 304 STAINLESS STEEL, FIXTURE WITH FAUCET LEGS. PROVIDE A BEAD OF SILICONE CAULK BETWEEN THE SINK AND COUNTERTOP PER THE MANUFACTURER'S INSTALLATION INSTRUCTIONS. FAUCET: CHICAGO FAUCET® 201-4317ABVPAXPC® 8" SPREAD LEAD FREE FAUCET WITH HANDAL RESISTANT 317 WRIST BALL HANDLE. QUARTER TURN CERAMIC CARTRIDGES AND E32V/PX/HCL 2.2 GPM ERATOR.</p> <p>TRIM: MCGUIRE ® LPT265C LEAD FREE BRASS WHEEL HANDLE ANGLE VALVE WITH RISERS AND ESCUTCHONS. (2) MCGUIRE ® B8912P 1-1/2" TRIP STRAINERS WITH 1-1/2" 17 GAUGE TAILPIECE. MCGUIRE ® B8912P 1-1/2" 17 GAUGE CAST CHROME PLATED BRASS ADJUSTABLE P-TAP WITH BRASS CLEANOUT AT SCOTCHDON. PLUMBERX® PRO-EXTREME™ X-4222Z INSULATION KIT FOR WATER AND WASTE PIPES.</p> <p>THERMOSTATIC MIXING VALVE: POWERS ® LF648D, SOLID LEAD FREE BRASS OR BRONZE BODY. THERMOSTATIC WAS ELEMENT, CORROSION RESISTANT INTERNAL PARTS, AND INTEGRAL CHECKS, ASSE 1070 COMPLIANT. CAPABLE OF 1.6 GPM WITH A 2 PSI DIFFERENTIAL AND MINIMUM FLOW RATE OF 0.25 GPM. SET TEMPERATURE TO 110°F FOR DUAL TEMPERATURE LAVATORIES AND HAND SINKS, 120°F FOR SINKS. MOUNT BELOW THE PLUMBING FIXTURE WHERE INDICATED ON PLANS).</p>
SK4	<p>UNDERMOUNT SINK (ADA ACCESSIBLE) ELKAY ® ELUHAD361855, 36-18-1/2" x 53-3/8" DEEP, DOUBLE COMPARTMENT, SELF-RIMMING, 18 GAUGE TYPE 304 STAINLESS STEEL. PROVIDE A BEAD OF SILICONE CAULK BETWEEN THE SINK AND COUNTERTOP PER THE MANUFACTURER'S INSTALLATION INSTRUCTIONS. FAUCET: CHICAGO FAUCET® 201-4317ABVPAXPC® 8" SPREAD LEAD FREE FAUCET WITH HANDAL RESISTANT 317 WRIST BALL HANDLE. QUARTER TURN CERAMIC CARTRIDGES AND E32V/PX/HCL 2.2 GPM ERATOR.</p> <p>TRIM: MCGUIRE ® LPT265C LEAD FREE BRASS WHEEL HANDLE ANGLE VALVE WITH RISERS AND ESCUTCHONS. (2) MCGUIRE ® B8912P 1-1/2" TRIP STRAINERS WITH 1-1/2" 17 GAUGE TAILPIECE. MCGUIRE ® B8912P 1-1/2" 17 GAUGE CAST CHROME PLATED BRASS ADJUSTABLE P-TAP WITH BRASS CLEANOUT AND ESCUTCHON. AND PLUMBERX® PRO-EXTREME™ X-4222Z INSULATION KIT FOR WATER AND WASTE PIPES.</p> <p>THERMOSTATIC MIXING VALVE: POWERS ® LF648D, SOLID LEAD FREE BRASS OR BRONZE BODY. THERMOSTATIC WAS ELEMENT, CORROSION RESISTANT INTERNAL PARTS, AND INTEGRAL CHECKS, ASSE 1070 COMPLIANT. CAPABLE OF 1.6 GPM WITH A 2 PSI DIFFERENTIAL AND MINIMUM FLOW RATE OF 0.25 GPM. SET TEMPERATURE TO 110°F FOR DUAL TEMPERATURE LAVATORIES AND HAND SINKS, 120°F FOR SINKS. MOUNT BELOW THE PLUMBING FIXTURE WHERE INDICATED ON PLANS).</p>
SK5	<p>HAND SINK (ADA ACCESSIBLE) ELKAY ® KSH1716L, 18-3/4" x 15-1/2" RECTANGULAR, WALL MOUNTED, 18 GAUGE TYPE 304 STAINLESS STEEL, BACKSPASH ARM, BRACKET. PROVIDE A BEAD OF SILICONE CAULK BETWEEN THE SINK AND COUNTERTOP PER THE MANUFACTURER'S INSTALLATION INSTRUCTIONS. FAUCET: CHICAGO FAUCET® 631-2180TBA 8" BACK MOUNT FAUCET WITH 7 1/2" - 8" ADJUSTABLE "G" SUPPLY ARMS, VANDAL RESISTANT 317 WRISTBALL HANDLE. GNDA GOOSENECK SHOWER, R® E61V 5 1/2" HANDBALL RESISTANT LAMINAR FLOW AERATOR, QUARTER TURN CERAMIC CARTRIDGES.</p> <p>TRIM: MCGUIRE ® PROGRAN® GRID DRAIN WITH 1-1/2" 17 GAUGE TAILPIECE. MCGUIRE ® B8912P 1-1/2" TRIP STRAINERS WITH 1-1/2" 17 GAUGE COMPRESSION ANGLE STOP VALVES WITH RISERS AND ESCUTCHONS. MCGUIRE ® B8912CP 1-1/2" 17 GAUGE CAST CHROME PLATED BRASS ADJUSTABLE P-TAP WITH BRASS CLEANOUT AT SCOTCHDON. PLUMBERX® PRO-EXTREME™ X-4222Z INSULATION KIT FOR WATER AND WASTE PIPES.</p> <p>THERMOSTATIC MIXING VALVE: POWERS ® LF648D, SOLID LEAD FREE BRASS OR BRONZE BODY. THERMOSTATIC WAS ELEMENT, CORROSION RESISTANT INTERNAL PARTS, AND INTEGRAL CHECKS, ASSE 1070 COMPLIANT. CAPABLE OF 1.6 GPM WITH A 2 PSI DIFFERENTIAL AND MINIMUM FLOW RATE OF 0.25 GPM. SET TEMPERATURE TO 110°F FOR DUAL TEMPERATURE LAVATORIES AND HAND SINKS, 120°F FOR SINKS. MOUNT BELOW THE PLUMBING FIXTURE WHERE INDICATED ON PLANS).</p>
SK6	<p>UTILITY SINK: ELKAY ® WNFS-8124, ONE 24" x 24" x 14" DEEP COMPARTMENT, 8" HIGH BACKPLATE, 18 GAUGE TYPE 304 STAINLESS STEEL, AND 18 GAUGE STAINLESS STEEL ADJUSTABLE LEGS. PROVIDE A BEAD OF SILICONE CAULK BETWEEN THE SINK AND COUNTERTOP PER THE MANUFACTURER'S INSTALLATION INSTRUCTIONS. FAUCET: CHICAGO FAUCET® 201-4317ABVPAXPC® 8" SPREAD LEAD FREE FAUCET WITH HANDAL RESISTANT 317 WRIST BALL HANDLE. QUARTER TURN CERAMIC CARTRIDGES AND E32V/PX/HCL 2.2 GPM ERATOR.</p> <p>TRIM: MCGUIRE ® LK2RT GRIP STRAINER WITH LEVER HANDLE AND 1-1/2" TAILPIECE, AND 1-1/2" 17 GAUGE TAILPIECE. MCGUIRE ® B8912P 1-1/2" TRIP STRAINERS WITH 1-1/2" 17 GAUGE TAILPIECE. MCGUIRE ® B8912P 1-1/2" 17 GAUGE CAST CHROME PLATED BRASS ADJUSTABLE P-TAP WITH BRASS CLEANOUT AT SCOTCHDON. PLUMBERX® PRO-EXTREME™ X-4222Z INSULATION KIT FOR WATER AND WASTE PIPES.</p> <p>THERMOSTATIC MIXING VALVE: POWERS ® LF648D, SOLID LEAD FREE BRASS OR BRONZE BODY. THERMOSTATIC WAS ELEMENT, CORROSION RESISTANT INTERNAL PARTS, AND INTEGRAL CHECKS, ASSE 1070 COMPLIANT. CAPABLE OF 1.6 GPM WITH A 2 PSI DIFFERENTIAL AND MINIMUM FLOW RATE OF 0.25 GPM. SET TEMPERATURE TO 110°F FOR DUAL TEMPERATURE LAVATORIES AND HAND SINKS, 120°F FOR SINKS. MOUNT BELOW THE PLUMBING FIXTURE WHERE INDICATED ON PLANS).</p>
SK7	<p>UNDERMOUNT SINK: ELKAY ® DCUFH16B, 18-1/2" x 18-1/4" x 8" DEEP, SINGLE COMPARTMENT, SELF-RIMMING, 18 GAUGE TYPE 304 STAINLESS STEEL. PROVIDE A BEAD OF SILICONE CAULK BETWEEN THE SINK AND COUNTERTOP PER THE MANUFACTURER'S INSTALLATION INSTRUCTIONS. FAUCET: CHICAGO FAUCET® 201-4317ABVPAXPC® 8" SPREAD LEAD FREE FAUCET WITH HANDAL RESISTANT 317 WRIST BALL HANDLE. QUARTER TURN CERAMIC CARTRIDGES AND E32V/PX/HCL 2.2 GPM ERATOR.</p> <p>TRIM: MCGUIRE ® LPT265C LEAD FREE BRASS WHEEL HANDLE ANGLE VALVE WITH RISERS AND ESCUTCHONS. (2) MCGUIRE ® B8912P 1-1/2" TRIP STRAINERS WITH 1-1/2" 17 GAUGE TAILPIECE. MCGUIRE ® B8912P 1-1/2" 17 GAUGE CAST CHROME PLATED BRASS ADJUSTABLE P-TAP WITH BRASS CLEANOUT AT SCOTCHDON. PLUMBERX® PRO-EXTREME™ X-4222Z INSULATION KIT FOR WATER AND WASTE PIPES.</p> <p>THERMOSTATIC MIXING VALVE: POWERS ® LF648D, SOLID LEAD FREE BRASS OR BRONZE BODY. THERMOSTATIC WAS ELEMENT, CORROSION RESISTANT INTERNAL PARTS, AND INTEGRAL CHECKS, ASSE 1070 COMPLIANT. CAPABLE OF 1.6 GPM WITH A 2 PSI DIFFERENTIAL AND MINIMUM FLOW RATE OF 0.25 GPM. SET TEMPERATURE TO 110°F FOR DUAL TEMPERATURE LAVATORIES AND HAND SINKS, 120°F FOR SINKS. MOUNT BELOW THE PLUMBING FIXTURE WHERE INDICATED ON PLANS).</p>

PLAN MARK	DESCRIPTION
S10	UNDERMOUNT SINK (ADA ACCESSIBLE) ELKAY® ELUH4D3118S, 36-1/2" X 22" DEEP, DOUBLE BOWL, SELF-DRAINING, SELF-CLEANING GAUGE TYPE 304 STAINLESS STEEL. PROVIDE A BEAD OF SILICONE CAULK BETWEEN THE SINK AND COUNTERTOP PER THE MANUFACTURERS INSTALLATION INSTRUCTIONS. TURN CERAMIC FAUCET CHICKAGO FAUCETS # 201-A317ABVPAXPKC #3 SPREAD LEAD FREE FAUCET WITH VANDAL RESISTANT #317 WREST BLADE HANDLE QUARTER TURN CERAMIC CARTRIDGES AND # E32VPC/KIT 2 GPM AERATOR.
SK11	TRIM MAGUIRE #12 HVSC62 LEAD FREE BRASS WHOLE HANDLE ANGLE VALVE WITH REGULAR POLYPROPYLENE PLASTIC BODY AND CORROSION RESISTANT INTERNAL PARTS, AND INTEGRAL CHECKS, ASSE 1070 COMPLIANT. CAPABLE OF 1.6 GPM WITH A 20 PSI DIFFERENTIAL AND MINIMUM FLOW RATE OF 0.29 GPM. SET TEMPERATURE TO 110°F. DUAL TEMPERATURE LAVATORIES AND HAND SINKS, 100° FOR SINK TEMPERATURE LAVATORIES AND HAND SINKS AND 120°F FOR SINKS MOUNT BELOW THE PLUMBING FIXTURE WHERE INDICATED ON PLAN(S).
SK12	SINK ELKAY WELDBITL R OF 029-FR-8345, THRESH 15" x 24" x 14" DEEP COMPLEMENTS, RIGHT DRAINAGE, 8" HIGH BACKSPASH, LEAD FREE FAUCET WITH VANDAL RESISTANT #317 WREST BLADE HANDLE QUARTER TURN CERAMIC CARTRIDGES AND # E32VPC/KIT 2 GPM AERATOR. TRIM CHICKAGO # 102S-ABCP LEAD FREE BRASS LOOSE KEY COMPRESSION ACTION STOP VALVES WITH ESCUTCHEONS. CHROMIUM PLATED SENSOR OPERATED PISTON TYPE FLUSH VALVE RISERS, LENGTH AS REQUIRED, ORIGIN #UTP-1/12" POLYPROPYLENE FULL DROP UNION P-TAP; PIPE TO WALL WITH ESCUTCHEON, ORIGINAL 1/2" NPT IPS TO MECHANISM. WATER TIGHT CONNECTION AT WA-1 POLYPROPYLENE DRAIN WITH 1/12" IPS TAIPiece.
SV1	THERMOSTATIC MIXING VALVE - POWERS® LF4G80, SOLID LEAD FREE BRASS OR BRONZE BODY, 10.5 GPM @ 120 PSI, AND CORROSION RESISTANT INTERNAL PARTS, AND INTEGRAL CHECKS, ASSE 1070 COMPLIANT. CAPABLE OF 1.6 GPM WITH A 20 PSI DIFFERENTIAL AND MINIMUM FLOW RATE OF 0.29 GPM. SET TEMPERATURE TO 110°F. DUAL TEMPERATURE LAVATORIES AND HAND SINKS, 100° FOR SINK TEMPERATURE LAVATORIES AND HAND SINKS AND 120°F FOR SINKS MOUNT BELOW THE PLUMBING FIXTURE WHERE INDICATED ON PLAN(S).
SV2	SHOWER VALVE - WATTS' HYDROGUARD® #PB410, PISTON TYPE PRESSURE BALANCED THERMOSTATIC MIXING VALVE WITH BRASS BODY, MEETING ASSE 1070 COMPLIANCE. CAPABLE OF 1.6 GPM @ 110°F. SINGLE BLADE LEVER HANDLE, SEAT ADJUSTABLE LIMIT STOP SCREW TO 110°F. INTEGRAL SERVICE STOPS, 1.5 GPM HYDROGUARD SHOWER HEAD WITH 10' MAXIMUM REACH, 1.5 GPM HOSE, IN-LINE VACUUM BREAKER, WALL CONNECTION AND FLANGE, AND 30" SLIDE BAR.
TMV	THERMOSTATIC MIXING VALVE - POWERS® LF4G80, SOLID LEAD FREE BRASS OR BRONZE BODY, 10.5 GPM @ 120 PSI, AND CORROSION RESISTANT INTERNAL PARTS, AND INTEGRAL CHECKS, ASSE 1070 COMPLIANT. CAPABLE OF 1.6 GPM WITH A 20 PSI DIFFERENTIAL AND MINIMUM FLOW RATE OF 0.29 GPM. SET TEMPERATURE TO 110°F. DUAL TEMPERATURE LAVATORIES AND HAND SINKS, 100° FOR SINK TEMPERATURE LAVATORIES AND HAND SINKS AND 120°F FOR SINKS MOUNT BELOW THE PLUMBING FIXTURE WHERE INDICATED ON PLAN(S).
F1	TRAP PRIMER - PRECISION PLUMBING PRODUCTS #PR500 "PRIME RITE," COPOLYMER CAST ALLOY, 1/2" NPT, 1/2" NPT, 1/2" NPT, 1/2" NPT, INLET AND OUTLET, AND INTEGRAL VACUUM BREAKER. INSTALL THE VALVE AT A MINIMUM OF 12" ABOVE FINISHED FLOOR.
FS1	INTERIOR SWITCH - INTERIOR LIGHTING CONTROL SYSTEM. CIRCUIT-SINGLE POLE SINGLE THROW, ELECTRONIC TIME SWITCH EQUAL BY TORQ. TIME SWITCH SHALL BE MOTOR RATED (1 HP @ 120 VOLT), SINGLE PHASE, 15 AMP, 120 VOLT, 60 HZ, 1-PHASE, 15 CYCLES AND BATTERY BACK UP. COORDINATE WITH DIVISION 16 IF INSTALLATION AND INTERLOCK OF TIME SWITCH IN SERIES WITH THE AUTOMAT AND REQUIRED POWER SOURCE.
UR1	URINAL - AMERICAN STANDARD® # 6661.071 "TIMBRWOOD" WHITE VITREOUS CHINA FIXTURE WITH FLUSHING RM, 3/4" TOP SPD, AND SIPHON FLUSH ACTION. VALVE - TOTO TELEGNC-22, "ECO-POWER" WATER TURBINE AND BATTERY POWERED, 1.6 GALLON PER FLUSH, EXPOSED, CHROME-PLATED, SENSOR OPERATED PISTON TYPE FLUSH VALVE WITH MECHANICAL OVERRIDE PUSH BUTTON, WITH BRASS PISTON WITH CHLORAMINE RESISTANT SEAT AND SEALS AND SELF-CLEANING MECHANISM, ESCUTCHEON, INTEGRAL SCREWDRIWER STOP, VACUUM BREAKER, 1-1/4" FLUSH TUBE AND SWEAT ADAPTER KIT, TRIM SUITABLE CARRIER WITH STANCHIONS TO FLOOR.
UR2	URINAL (ADA ACCESSIBLE) - AMERICAN STANDARD® # 6661.071 "TIMBRWOOD" WHITE VITREOUS CHINA FIXTURE WITH FLUSHING RM, 3/4" TOP SPD, AND SIPHON FLUSH ACTION. VALVE - TOTO TELEGNC-22, "ECO-POWER" WATER TURBINE AND BATTERY POWERED, 1.6 GALLON PER FLUSH, EXPOSED, CHROME-PLATED, SENSOR OPERATED PISTON TYPE FLUSH VALVE WITH MECHANICAL OVERRIDE PUSH BUTTON, WITH BRASS PISTON WITH CHLORAMINE RESISTANT SEAT AND SEALS AND SELF-CLEANING MECHANISM, ESCUTCHEON, INTEGRAL SCREWDRIWER STOP, VACUUM BREAKER, 1-1/4" FLUSH TUBE AND SWEAT ADAPTER KIT, TRIM SUITABLE CARRIER WITH STANCHIONS TO FLOOR.
WC1	WALL-MOUNTED WATER CLOSET - AMERICAN STANDARD® # 2257.001 "ARVAL" WHITE VITREOUS CHINA FIXTURE WITH ELONGATED UNIVERSAL BOWL AND DIRECT-FEED SIPHON JET ACTION. VALVE - TOTO TELEGNC-22, "ECO-POWER" WATER TURBINE AND BATTERY POWERED, 1.6 GALLON PER FLUSH, EXPOSED, CHROME-PLATED, SENSOR OPERATED PISTON TYPE FLUSH VALVE WITH MECHANICAL OVERRIDE PUSH BUTTON, WITH BRASS PISTON WITH CHLORAMINE RESISTANT SEAT AND SEALS AND SELF-CLEANING MECHANISM, ESCUTCHEON, INTEGRAL SCREWDRIWER STOP, VACUUM BREAKER, AND SWEAT ADAPTER KIT, TRIM SUITABLE CARRIER WITH OPEN-FRONT CONTURED, SOLID PLASTIC, HEAVY DUTY, SEAT LESS COVER WITH SELF-SUSTAINING CHECK HINGES AND STAINLESS STEEL BOLTS. PROVIDED SUITABLE FIXTURE.
WC2	WALL-MOUNTED WATER CLOSET (ADA ACCESSIBLE) - AMERICAN STANDARD® # 2257.001 "ARVAL" WHITE VITREOUS CHINA FIXTURE WITH ELONGATED UNIVERSAL BOWL AND DIRECT-FEED SIPHON JET ACTION. VALVE - TOTO TELEGNC-22, "ECO-POWER" WATER TURBINE AND BATTERY POWERED, 1.6 GALLON PER FLUSH, EXPOSED, CHROME-PLATED, SENSOR OPERATED PISTON TYPE FLUSH VALVE WITH MECHANICAL OVERRIDE PUSH BUTTON, WITH BRASS PISTON WITH CHLORAMINE RESISTANT SEAT AND SEALS AND SELF-CLEANING MECHANISM, ESCUTCHEON, INTEGRAL SCREWDRIWER STOP, VACUUM BREAKER, AND SWEAT ADAPTER KIT, TRIM SUITABLE CARRIER WITH OPEN-FRONT CONTURED, SOLID PLASTIC, HEAVY DUTY, SEAT LESS COVER WITH SELF-SUSTAINING CHECK HINGES AND STAINLESS STEEL BOLTS. PROVIDED SUITABLE FIXTURE.
WCO	WALL CLEANOUT: JAY R. SMITH #4530S, CAST IRON CLEANOUT TILE COUNTER SUNK PLUG, STAINLESS STEEL ROUND COVER AND SCREW AND RING PLUG WITH GASKET SEAL. REFER TO SPECIFICATIONS FOR INSTALLATION.

PLAN MARK	DESCRIPTION
WF1	<p>THREE STATION LAVATORY: BRADLEY "VERGE" # LVSD3-SHANK-GLACIER-STAN 90" RECTANGULAR WALL HUNG MULTILAY STAINLESS STEEL FRONT ACCESS PANEL, AND WASTE, LIQUID SOAP DISPENSER, ANCHOR BACKSPASH AND HOUSING FRAMEWORK SECURELY TO WALL. INSTALLATION SHALL CONFORM TO ADD REQUIREMENTS. INSTALL "WOO" UNDERNEATH WASTE CONNECTION.</p> <p>3 FAUCETS: SLOAN # EFX-250-CP SINGLE HOLE, BATTERY, SENSOR OPERATED FAUCET LESS WITH "Y" STRAINER FILTERED SOLENOID VALVE AND 0.5 GPM AERATOR</p> <p>THERMOSTATIC MIXING VALVE: POWERS # LFG480, SOLID LEAD FREE BRASS OR BRONZE BODY, THERMOSTATIC WAX ELEMENT, CORROS RESISTANT INTERNAL PARTS, AND INTEGRAL CHECKS, ASSE 1070 COMPLIANT, CAPABLE OF 1.6 GPM WITH A 20 PSI DIFFERENTIAL AND MINIMUM FLOW RATE OF 0.25 GPM. SET TEMPERATURE TO 110°F FOR DUAL TEMPERATURE LAVATORIES AND HAND SINKS, 100°F FOR SINKS. TEMPERATURE LAVATORIES AND HAND SINKS AND 120°F FOR SINKS MOUNT BELOW THE PLUMBING FIXTURE WHERE INDICATED ON PLANS).</p>
WF2	<p>THREE STATION LAVATORY: BRADLEY # SN2003-AA-AST4-STD-TM4-NSD-S3 36" ELLIPTICAL FLOOR MOUNTED MULTILAY OF 16 GAL STAINLESS STEEL CONSTRUCTION WITH BACKPLASH, INDIVIDUAL PNEUMATIC SECTIONAL CONTROLS, 0.5 GPM WANDL RESISTANT SPRAY NOZZLES, INDIVIDUAL CHECKSTOPS, INTEGRAL THERMOSTATIC MIXING VALVE AND WASTE, LESS LIQUID SOAP DISPENSER, ANCHOR BACKSPASH AND HOUSING FRAMEWORK SECURELY TO WALL AND BACKPLASH. INSTALLATION SHALL CONFORM TO ADD REQUIREMENTS. INSTALL "WOO" UNDERNEATH WASTE CONNECTION.</p> <p>TRIM: AGQUIRE #1F7260S LEAD FREE WHEEL HANDLE ANGLE STOP VALVES WITH RISERS AND ESCUTCHEONS, AGQUIRE # 8912-C-F 1-1/17 GAUGE TUBULAR CHROME PLATED BRASS ADJUSTABLE P-TRAP WITH BRASS CLEANOUT AND ESCUTCHEON</p> <p>THERMOSTATIC MIXING VALVE: POWERS # LFG480, SOLID LEAD FREE BRASS OR BRONZE BODY, THERMOSTATIC WAX ELEMENT, CORROS RESISTANT INTERNAL PARTS, AND INTEGRAL CHECKS, ASSE 1070 COMPLIANT, CAPABLE OF 1.6 GPM WITH A 20 PSI DIFFERENTIAL AND MINIMUM FLOW RATE OF 0.25 GPM. SET TEMPERATURE TO 110°F FOR DUAL TEMPERATURE LAVATORIES AND HAND SINKS, 100°F FOR SINKS. TEMPERATURE LAVATORIES AND HAND SINKS AND 120°F FOR SINKS MOUNT BELOW THE PLUMBING FIXTURE WHERE INDICATED ON PLANS).</p>
WF3	<p>SINGLE STATION LAVATORY: BRADLEY "VERGE" # LVSD1-SHANK-GLACIER-STAN 90" RECTANGULAR WALL HUNG MULTILAY STAINLESS STEEL FRONT ACCESS PANEL, AND WASTE, LIQUID SOAP DISPENSER, ANCHOR BACKSPASH AND HOUSING FRAMEWORK SECURELY TO WALL. INSTALLATION SHALL CONFORM TO ADD REQUIREMENTS. INSTALL "WOO" UNDERNEATH WASTE CONNECTION.</p> <p>FAUCET: SLOAN # EFX-250-CP SINGLE HOLE, BATTERY, SENSOR OPERATED FAUCET LESS WITH "Y" STRAINER FILTERED SOLENOID VALVE AND 0.5 GPM AERATOR</p> <p>THERMOSTATIC MIXING VALVE: POWERS # LFG480, SOLID LEAD FREE BRASS OR BRONZE BODY, THERMOSTATIC WAX ELEMENT, CORROS RESISTANT INTERNAL PARTS, AND INTEGRAL CHECKS, ASSE 1070 COMPLIANT, CAPABLE OF 1.6 GPM WITH A 20 PSI DIFFERENTIAL AND MINIMUM FLOW RATE OF 0.25 GPM. SET TEMPERATURE TO 110°F FOR DUAL TEMPERATURE LAVATORIES AND HAND SINKS, 100°F FOR SINKS. TEMPERATURE LAVATORIES AND HAND SINKS AND 120°F FOR SINKS MOUNT BELOW THE PLUMBING FIXTURE WHERE INDICATED ON PLANS).</p>
WHA	<p>WATER HAMMER ARRESTER: PRECISION PLUMBING PRODUCTS, HA DRAWN COPPER BODY WITH WROUGHT COPPER FITTINGS, PISTON TYPE WITH LUBRICATED EPDM "O" RING SEALS, MEETING ASSE 1010 OR PDI WH-201. PROVIDE PDI SIZES "A" THROUGH "F" AS SHOWN ON PLANS. PROVIDE SIZE "A" UNLESS SHOWN OTHERWISE ON THE PLAN.</p>
WMB1	<p>WASHING MACHINE BOX: GUT GRAY MODEL # B20T5, 20 GAUGE GALVANIZED STEEL BOX, 18 GAUGE STEEL FACELATE, TOP INLET WATER SUPPLIES WITH ANGLED WHEEL HANDLE 3/4" HOSE BIBBS, 2" BOTTOM OUTLET DRAIN.</p> <p>TRIM: PROVIDE 24" LONG TAIL PEECE AND 2" DIAMETER P-TRAP.</p>

DOMESTIC BOOSTER PUMP SCHEDULE																
MARK	SERVICE	MANUFACTURER	MODEL	TYPE (NOTE A)	DISCHARGE HEADER PRESSURE (PSI)	SUCTION HEADER PRESSURE (PSI)	NUMBER OF PUMPS	SYSTEM FLOW RATE (GPM)	INDIVIDUAL PUMP CAPACITY (%)	SUCTION HEADER SIZE (IN.)	DISCHARGE HEADER SIZE (IN.)	ELECTRICAL (NOTE B)			ACCUMULATOR TANK SIZE (GAL.)	NOTES
BP1	DOMESTIC BOOSTER	GRUNDFOS	CRE 15-3	T-VFD	75.99	36.38	3	213	33	4"	4"	480	3	5	60.0	A, B, C, D, E

- NOTES:
- A. BOOSTER PUMP CONFIGURATION TYPES: T-VFD = TRIPLEX W/ VARIABLE FREQUENCY DRIVE FOR EACH VERTICAL MULTI-STAGE PUMP (GRUNDFOS #CRE 15-3); REFER TO SPECIFICATIONS FOR MORE INFORMATION.
- B. MOTOR HORSEPOWER SHOWN IF FOR ONE PUMP.
- C. PROVIDE WITH CONTROL PANEL. REFER TO SPECIFICATIONS FOR MORE INFORMATION.
- D. MINIMUM DISCHARGE HEADER PRESSURE IS 77.99 PSI.
- E. PROVIDE PUMPS WITH SCHEDULED DESIGN FLOW RATE WITH TOTAL DYNAMIC HEAD = DISCHARGE PRESSURE - SUCTION PRESSURE + 2PSI FOR SYSTEM LOSSES

GAS PRESSURE REGULATOR SCHEDULE FOR 2 PSI SYSTEMS							
MARK	MANUFACTURER / MODEL	VALVE TYPE	VALVE BODY SIZE (INCHES)	MAX. FLOW RATE GPH	INLET PRESSURE PSI	OUTLET PRESSURE INCHES WATER COLUMN	NOTES
GPR1	PIETRO-FIORENTINI 31051	C	1/2"	552	1	7"	A, B, C, D, E, F, G & H
GPR2	PIETRO-FIORENTINI 31153	C	1-1/4"	3,735	1	7"	A, B, C, D, E, F, G & H

- NOTES:
- A. C = SELF CONTAINED "DIRECT ACTING" DIAPHRAGM TYPE WITH INTERNAL VENT LIMITER
- B. DROOP = 1" WATER COLUMN MAXIMUM
- C. 65# ALUMINUM BODY, SCREWED CONNECTIONS AND OVERPRESSURE PROTECTION TO 25#
- D. MAXIMUM FLOW RATE SCHEDULED, MATCH BODY SIZE AND MAXIMUM FLOW RATE TO EQUIPMENT FLOW RATE. REFER TO EQUIPMENT SHOP DRAWINGS FOR EXACT FLOWS
- E. LISTED TO MEET AND EXCEED CSA LISTING STAMP ON REGULATOR BODY
- F. GAS PRESSURE REGULATOR INLET PRESSURE = OPERATING PRESSURE + DESIGN FRICTION LOSS
- G. 2PSI MAXIMUM INLET PRESSURE & 1 PSI MINIMUM INLET PRESSURE
- H. PROVIDE EXTERNAL VENT LIMITER (WHERE APPROVED BY LOCAL AUTHORITIES) FOR INDOOR INSTALLATION AND INSTAL PER SPECIFICATIONS. INSTALL OUTDOORS PER SPECIFICATIONS.

FIXTURE BRANCH CONNECTION SCHEDULE

FIXTURE	COLD WATER	HOT WATER	WASTE	VENT
6" FLOOR DRAIN			6"	3"
DRINKING FOUNTAIN	1/2"		2"	1 1/2"
FLOOR DRAIN			2"	2"
JANITOR'S SINK	1/2"	1/2"	3"	2"
LAVATORY/HAND SINK	1/2"	1/2"	2"	1 1/2"
SINK	1/2"	1/2"	2"	2"
URNAL	1"	1"	2"	2"
WASHFOUNTAIN	1"	1"	2"	1 1/2"
WATER CLOSET (FLUSH VALVE)	1 1/4"		4"	2"

NOTE: PIPE SIZES SHOWN ARE MINIMUM.

ELECTRIC STORAGE WATER HEATER SCHEDULE

MARK	MANUFACTURER	MODEL#	AREA SERVED	TANK SIZE (GALLONS)	ELECTRICAL DATA		KW	RECOVERY (GPH)	NOTES
WH1	A.O. SMITH	#BTXL 100	AREA A	75	120	1	100	115	A, B, C, D
WH2	A.O. SMITH	#BTXL 100	AREA A	75	120	1	100	115	A, B, C, D
WH3	A.O. SMITH	#BTXL 100	AREA B	75	120	1	100	115	A, B, C, D
WH4	A.O. SMITH	#BTXL 100	AREA B	75	120	1	100	115	A, B, C, D
WH5	A.O. SMITH	#BTXL 100	AREA C	75	120	1	100	115	A, B, C, D
WH6	A.O. SMITH	#BTXL 100	AREA C	75	120	1	100	115	A, B, C, D
WH7	A.O. SMITH	#BTH 150	AREA G	100	120	1	150	178	A, B, C, D
WH8	A.O. SMITH	#BTH 150	AREA G	100	120	1	150	178	A, B, C, D
WH9	A.O. SMITH	#BTH 150	AREA G	100	120	1	150	178	A, B, C, D

- NOTES:
- A. 100°F TEMPERATURE RISE WITH 140°F OPERATING TEMPERATURE.
- B. SINGLE ELEMENT
- C. THREE ELEMENTS WIRED FOR SIMULTANEOUS OPERATION
- D. FURNISH WITH IMMERSION THERMOSTAT
- E. "LOW BOY" DESIGN

GAS STORAGE WATER HEATER SCHEDULE

MARK	MANUFACTURER	MODEL	AREA SERVED	TANK SIZE (GALLONS)	ELECTRICAL DATA		INPUT (MBH)	RECOVERY (GPH)	NOTES
WH1	A.O. SMITH	#BTXL 100	AREA A	75	120	1	100	115	A, B, C, D
WH2	A.O. SMITH	#BTXL 100	AREA A	75	120	1	100	115	A, B, C, D
WH3	A.O. SMITH	#BTXL 100	AREA B	75	120	1	100	115	A, B, C, D
WH4	A.O. SMITH	#BTXL 100	AREA B	75	120	1	100	115	A, B, C, D
WH5	A.O. SMITH	#BTXL 100	AREA C	75	120	1	100	115	A, B, C, D
WH6	A.O. SMITH	#BTXL 100	AREA C	75	120	1	100	115	A, B, C, D
WH7	A.O. SMITH	#BTH 150	AREA G	100	120	1	150	178	A, B, C, D
WH8	A.O. SMITH	#BTH 150	AREA G	100	120	1	150	178	A, B, C, D
WH9	A.O. SMITH	#BTH 150	AREA G	100	120	1	150	178	A, B, C, D

- NOTES:
- A. 100° TEMPERATURE RISE WITH 140°F OPERATING TEMPERATURE.
- B. AUTOMATIC FLUE DAMPER INTERLOCKED WITH WATER HEATER FIRE CONTROL.
- C. FURNISH WITH A. O. SMITH # 6003910105 FACTORY COMBUSTION AIR INTAKE AND EXHAUST KIT.
- D. FURNISH WITH CONDENSATE NEUTRALIZATION KIT TO MATCH HEATER INPUT, AO SMITH # CNS SERIES

PLUMBING EXPANSION TANK SCHEDULE

MARK	MANUFACTURER	MODEL	TANK SIZE (GALLONS)	MIN. ACCEPTANCE VOLUME (GALLONS)	AIR PRESSURE SETTING (PSI)	SERVICE	NOTES
ET1	AMTROL	ST-25V	10.3	4.6	125	WH1 WH2	A
ET2	AMTROL	ST-25V	10.3	4.6	125	WH3 WH4	A
ET3	AMTROL	ST-25V	10.3	4.6	125	WH5 WH6	A
ET5	AMTROL	ST-60V	34	15.3	125	WH7 WH8 WH9	A
ET6	AMTROL	ST-5	2	0.9	125	WH10	A
ET7	AMTROL	ST-8	3.2	1.4	125	WH11	A

- NOTES:
- A. CHARGE TANK WITH AIR TO IDENTICAL PRESSURE AS STATIC DOMESTIC WATER PRESSURE.

RECIRCULATION PUMP SCHEDULE

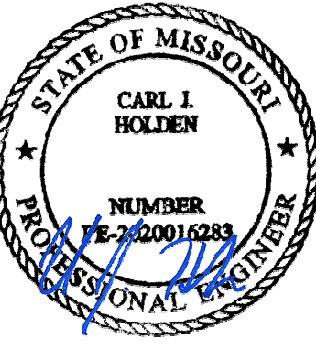
MARK	MANUFACTURER	MODEL	LOCATION	GPM	HEAD (FT.)	CONNECTION SIZE	ELECTRICAL DATA		NOTES
RP1	BELL & GOSSETT	NBF-45	LVL1 - AREA A	5.5	17	1 1/4"	120	1 1/18	A, B, C, D
RP2	BELL & GOSSETT	NBF-45	LVL1 - AREA B	5.5	17	1 1/4"	120	1 1/18	A, B, C, D
RP3	BELL & GOSSETT	NBF-45	LVL1 - AREA C	5.5	17	1 1/4"	120	1 1/18	A, B, C, D
RP4	BELL & GOSSETT	NBF-12U	LVL1 - AREA F	1	11	3/4"	120	1 1/18	A, B, C, D
RP5	BELL & GOSSETT	NBF-36	LVL1 - AREA G	9	17	1 1/4"	120	1 1/8	A, B, C, D
RP6	BELL & GOSSETT	NBF-12U	LVL1 - AREA S	1.5	11	1"	120	1 1/6	A, B, C, D

- NOTES:
- A. ALL LEAD FREE CAST BRONZE BOOSTER.
- B. PROVIDE WITH STRAINER UPSTREAM OF PUMP.
- C. PROVIDE ADJUSTABLE, SURFACE MOUNTED AQUASTAT - HONEYWELL L6006C.
- D. SET AQUASTAT TO SHUT OFF RECIRCULATION PUMP AT WATER HEATER SET POINT AND ON AT 10°F BELOW SET POINT.

ELEVATOR SUMP PUMP SCHEDULE (3/4 HP AND SMALLER)

MARK	MANUFACTURER	MODEL	GPM	HEAD (FT.)	DISCHARGE SIZE (IN.)	VOLTS	ELECTRICAL PH	HP	NOTES
ESP1	WEIL	1411-538	50	21	2"	120	3	0.5	A, B, C, D, E

- NOTES:
- A. PROVIDE WEIL #8245 FLOAT SWITCH WITH POWER CORD AND PIGGYBACK PLUG.
- B. PROVIDE WITH WEIL #8341K1015 HIGH LEVEL ALARM WITH AUXILIARY CONTACT. REFER TO SPECIFICATIONS.
- C. PROVIDE 2" DISCHARGE PIPING, SHUTOFF VALVE AND ZOEHLER #36-0030 FLAPPER NON-CLOS CHECK VALVE.
- D. REFER TO DETAIL FOR MORE INSTALLATION INFORMATION.
- E. INSTALL IN 24" SQUARE x 24" DEEP SUMP PIT LOCATED IN ELEVATOR PIT. SEE ARCHITECTURAL DRAWINGS.



CARL J. HOLDEN  
LICENSE # PE-2020016283

HENDERSON  
ENGINEERS  
1845 LENEXA DRIVE, SUITE 300  
LENEXA, KS 66042-4001  
TEL: 913.754.8001  
WWW.HENDERSONENGINEERS.COM  
MO. CORPORATE NO. E-5680  
EXPIRES 12/31/2020

LEE'S SUMMIT MIDDLE SCHOOL #4  
LEE'S SUMMIT R-7 SCHOOL DISTRICT

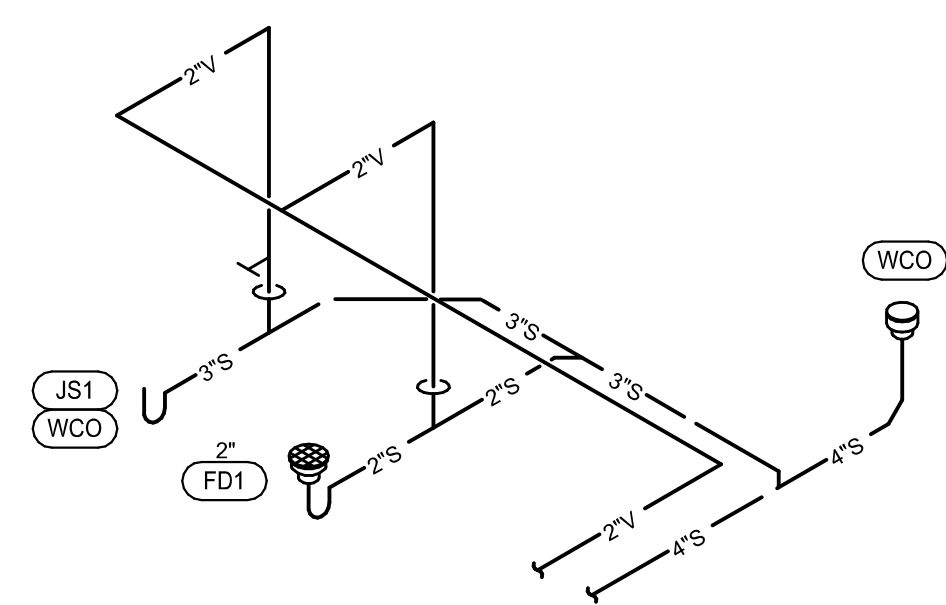
1001 SE BAILEY ROAD  
LEE'S SUMMIT, MO 64081

PACKAGE 3 - BUILDING & SITE  
10/08/20  
REVISIONS  
ADDENDUM 002  
PR-001

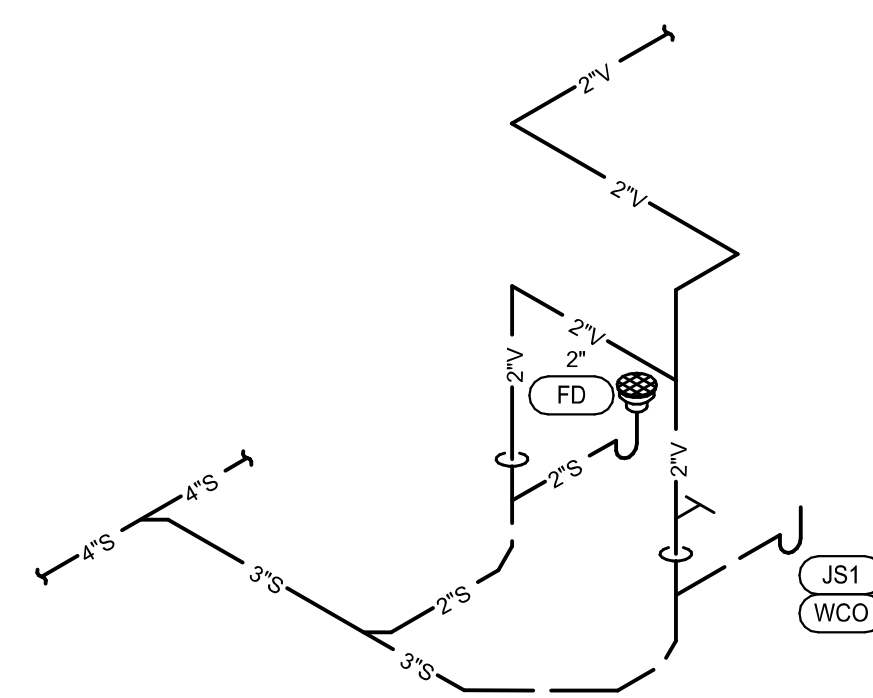
10/19/20  
11/11/20

13-20102-00

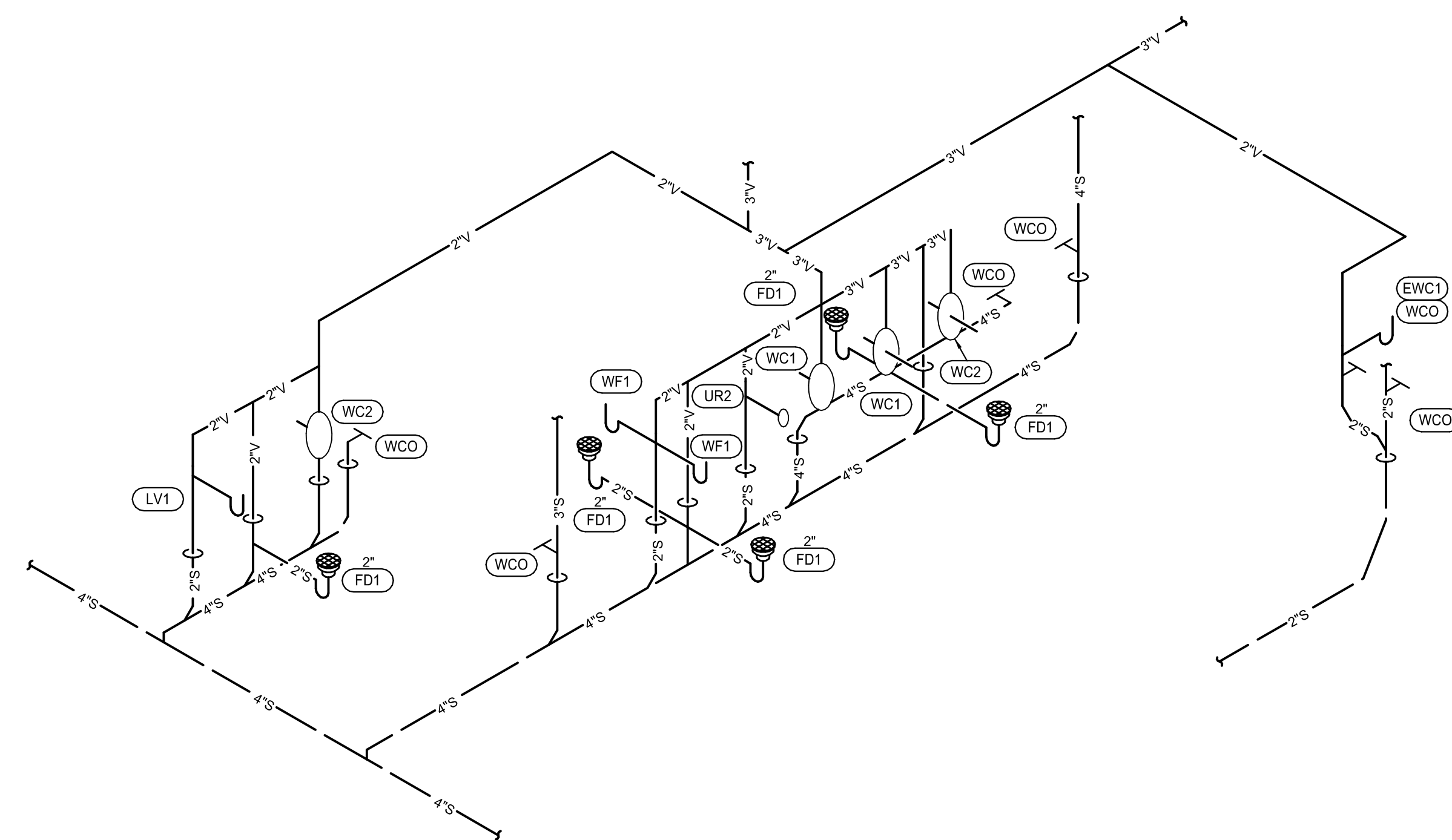
PLUMBING  
SCHEDULES



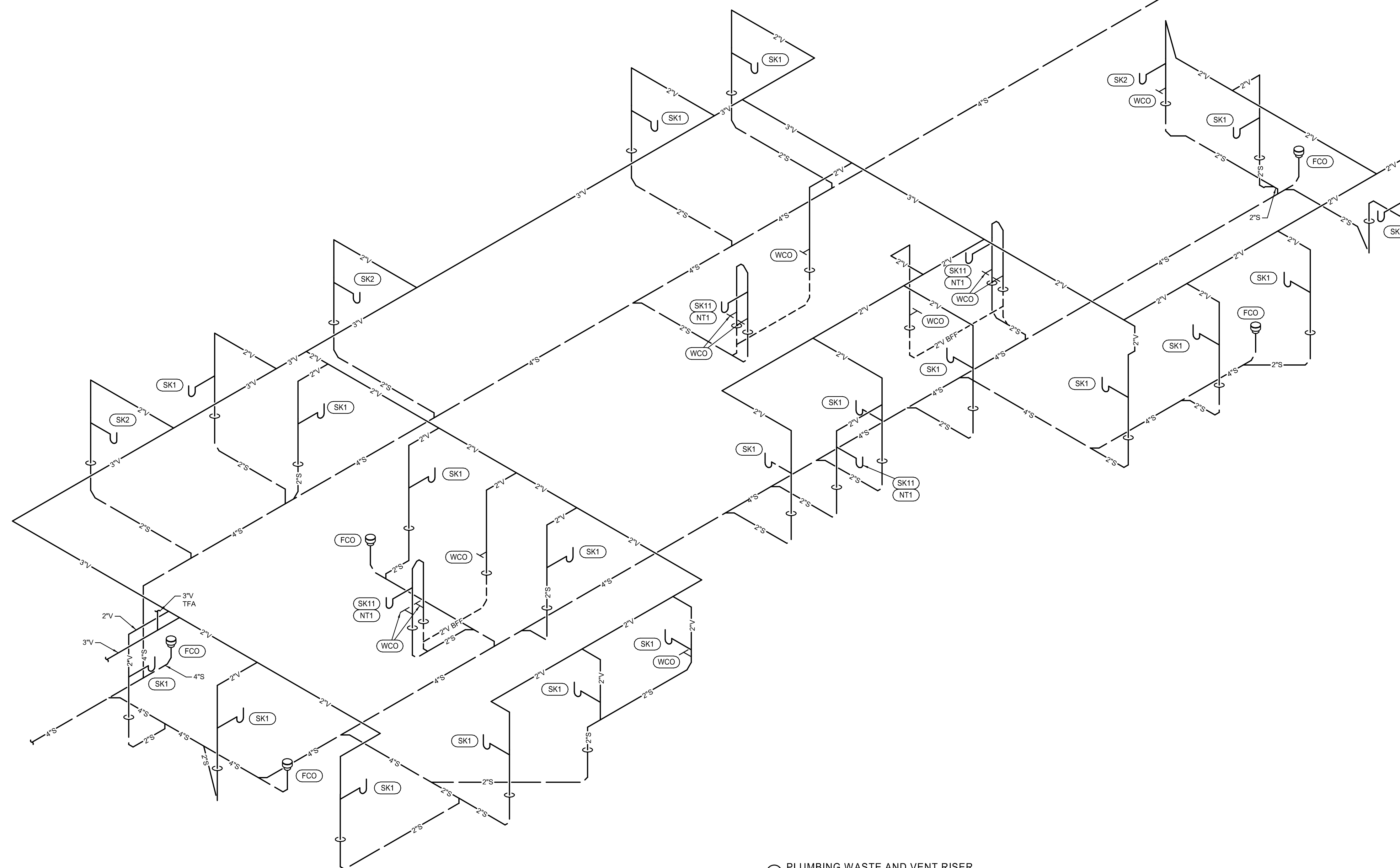
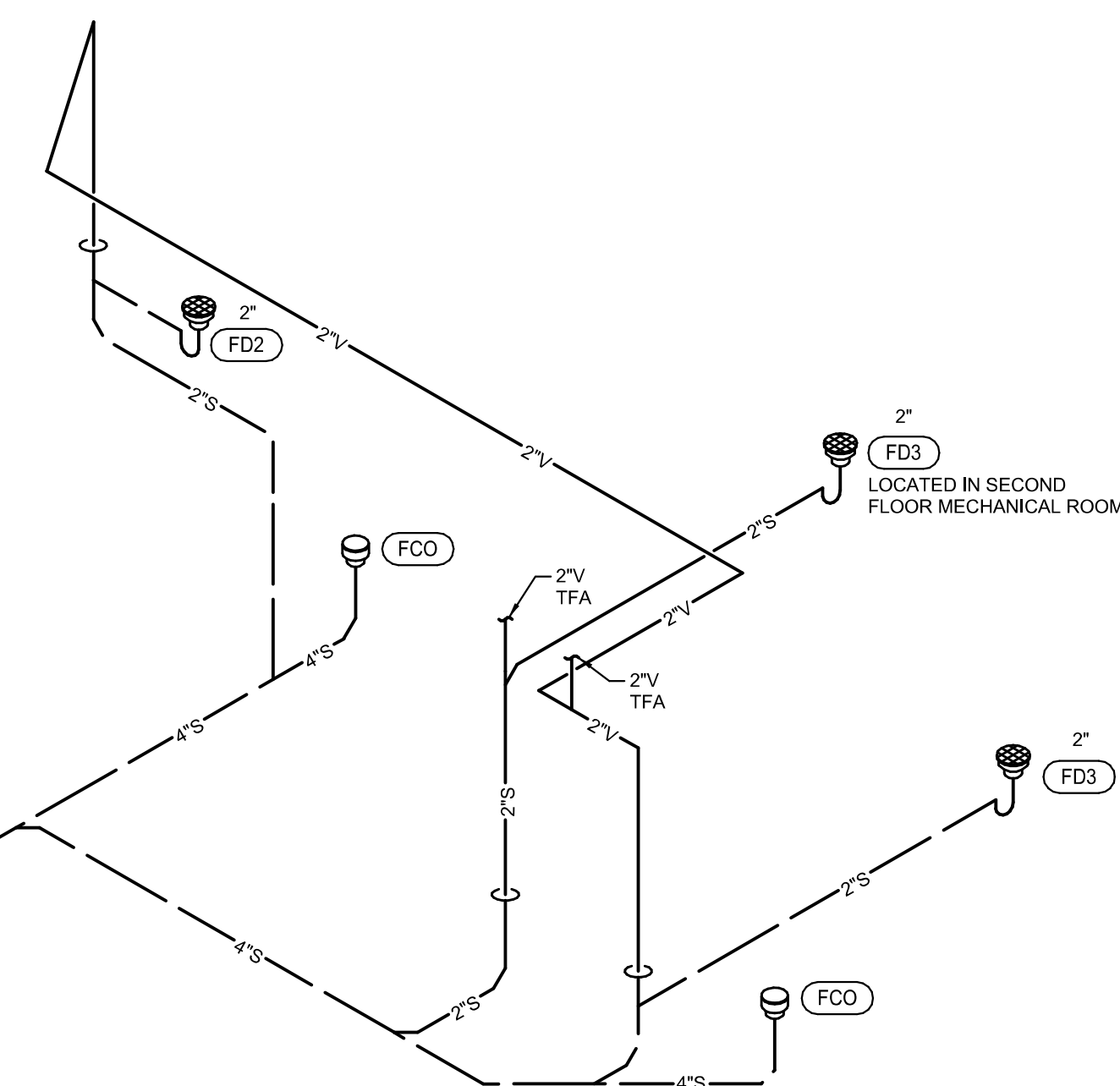
③ PLUMBING WASTE AND VENT RISERS



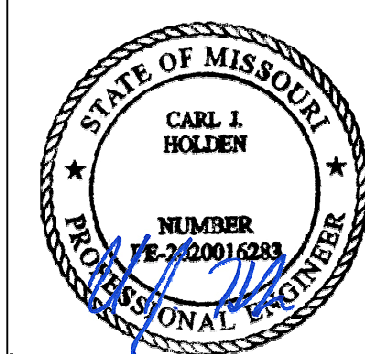
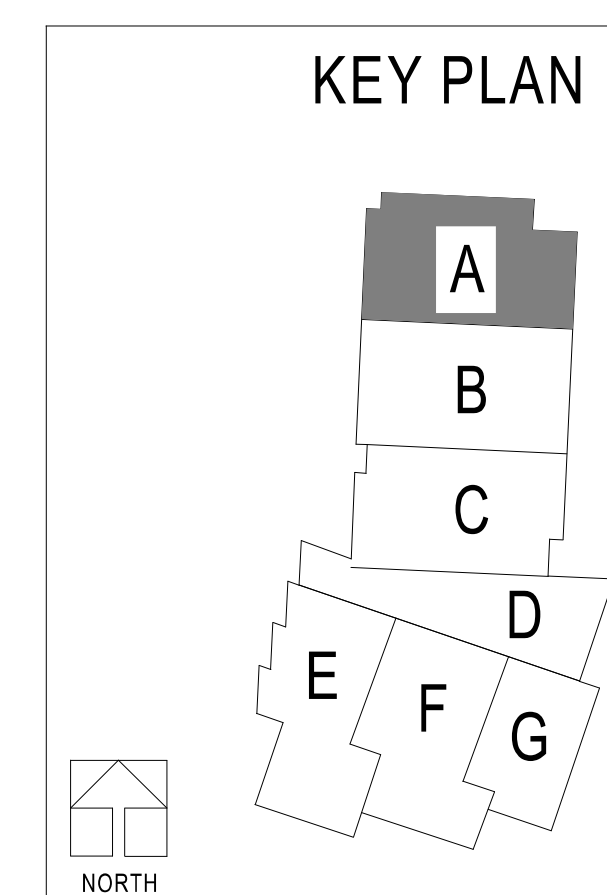
② PLUMBING WASTE AND VENT RISER  
NTS



① PLUMBING WASTE AND VENT RISER  
NTS



④ PLUMBING WASTE AND VENT RISER  
NTS



Oct 8 2020  
CARL J. HOLDEN  
LICENSE # RE-2020016283

**HENDERSON**  
ENGINEERS

8345 LENEXA DRIVE, SUITE 300  
LENEXA, KS 66214  
TEL 913.742.5000 FAX 913.742.5001

[WWW.HENDERSONENGINEERS.COM](http://WWW.HENDERSONENGINEERS.COM)

1950005054

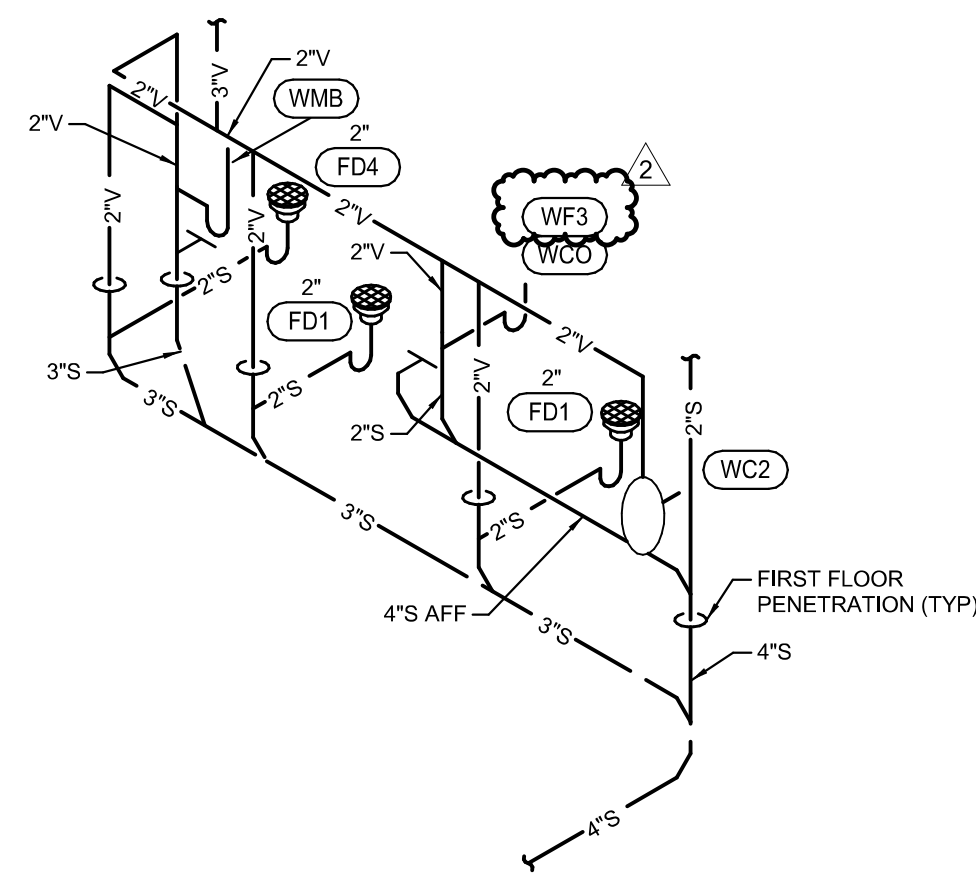
M.O. CORPORATE NO: E-556D  
EXPIRES 12/31/2020

LEE'S SUMMIT MIDDLE SCHOOL #4  
LEE'S SUMMIT R-7 SCHOOL DISTRICT  
1001 SE BULEY ROAD  
LEE'S SUMMIT, MO 64081

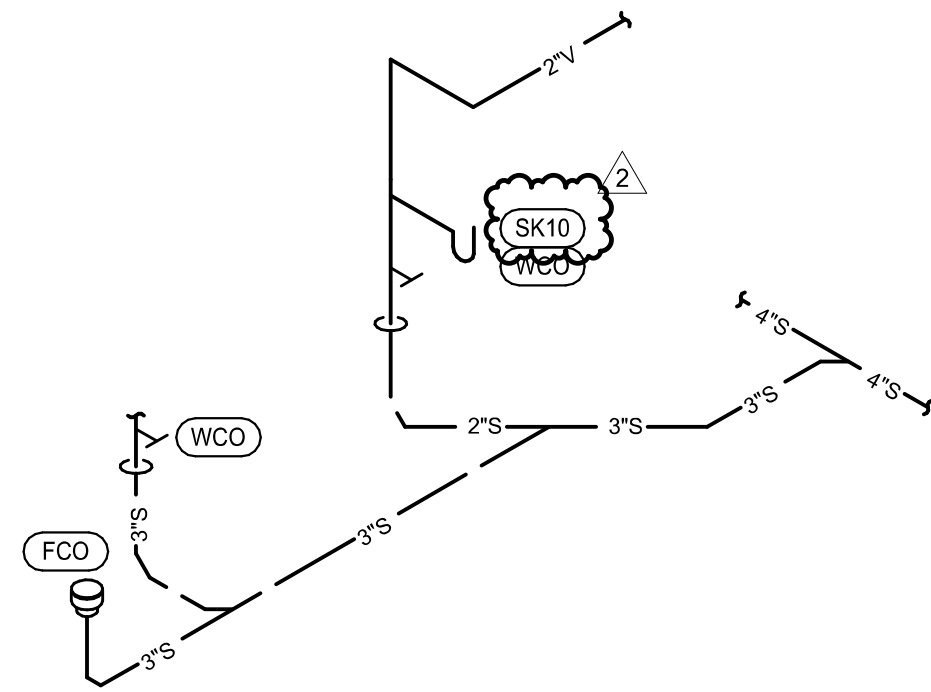
PACKAGE 3 - BUILDING &  
SITE  
10/08/20  
REVISIONS

13-20102-00  
PLUMBING RISER  
DIAGRAMS

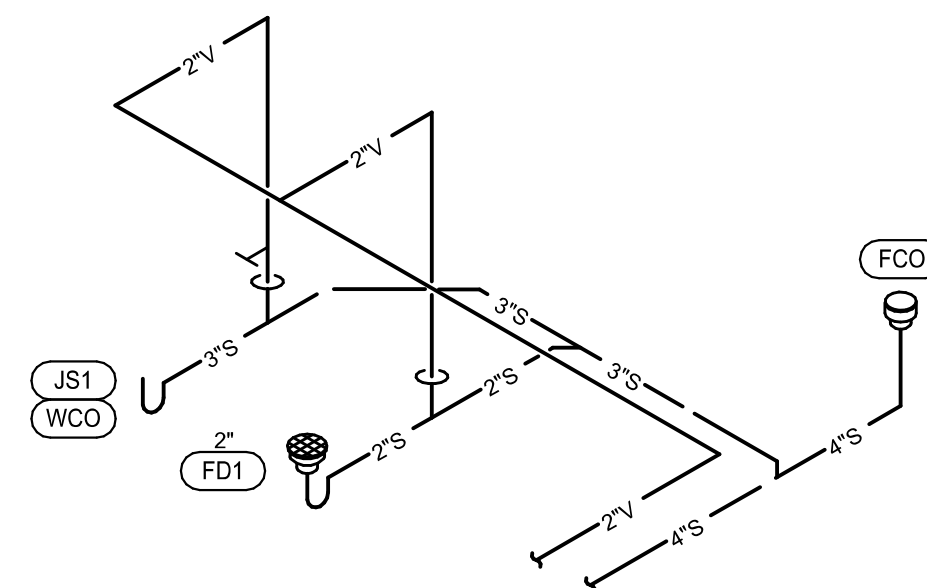
P8.1



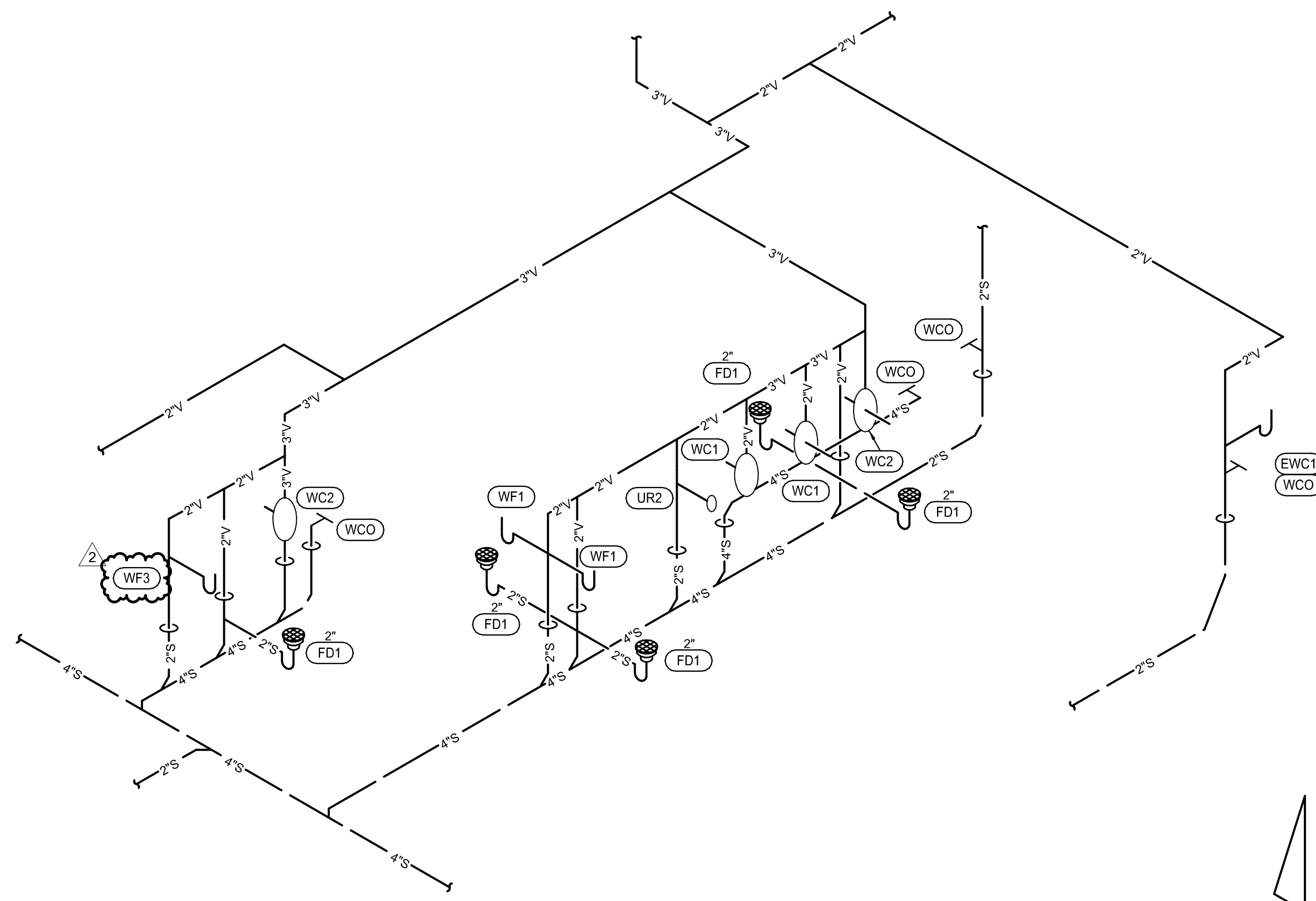
4 PLUMBING WASTE AND VENT RISER  
NTS



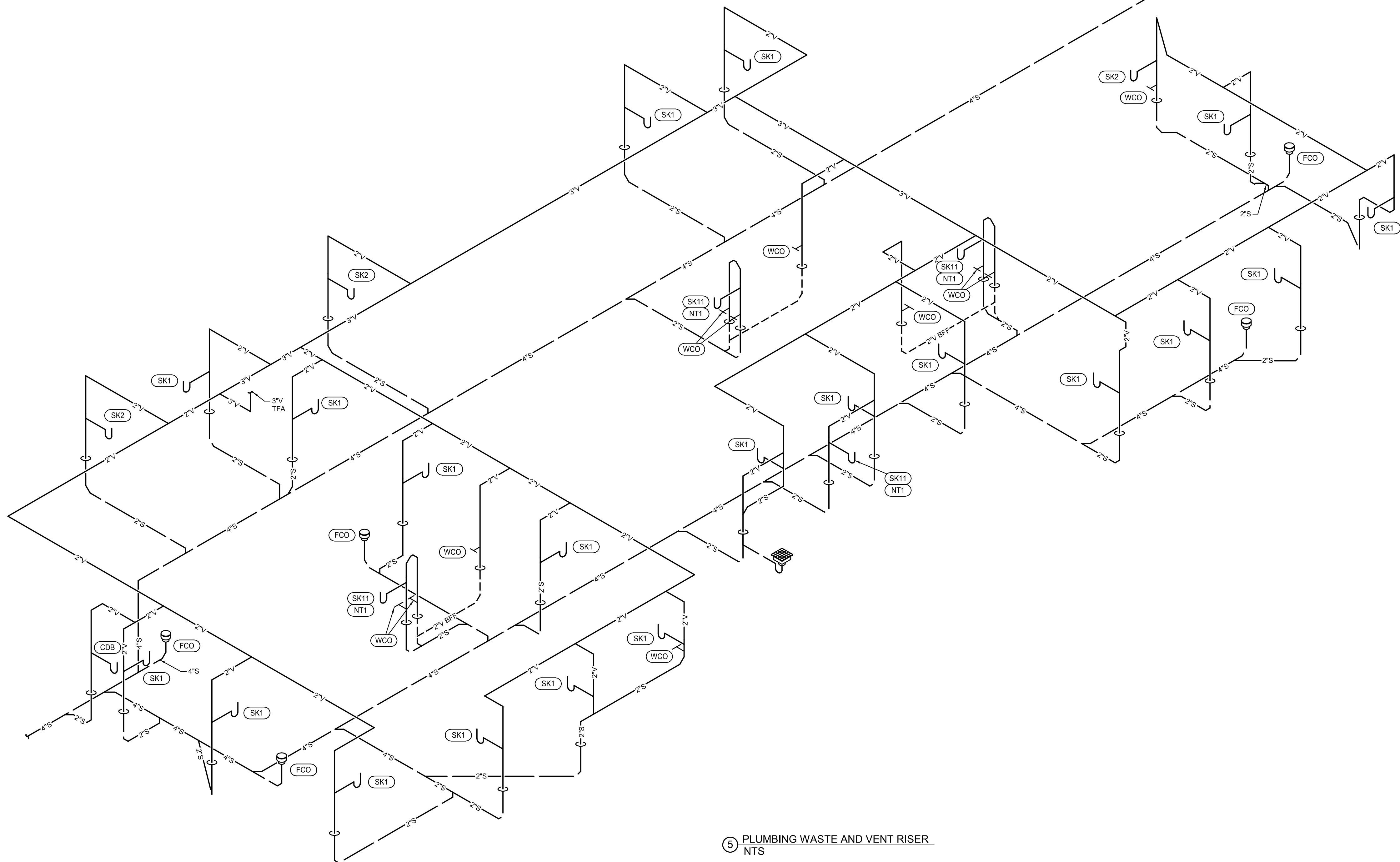
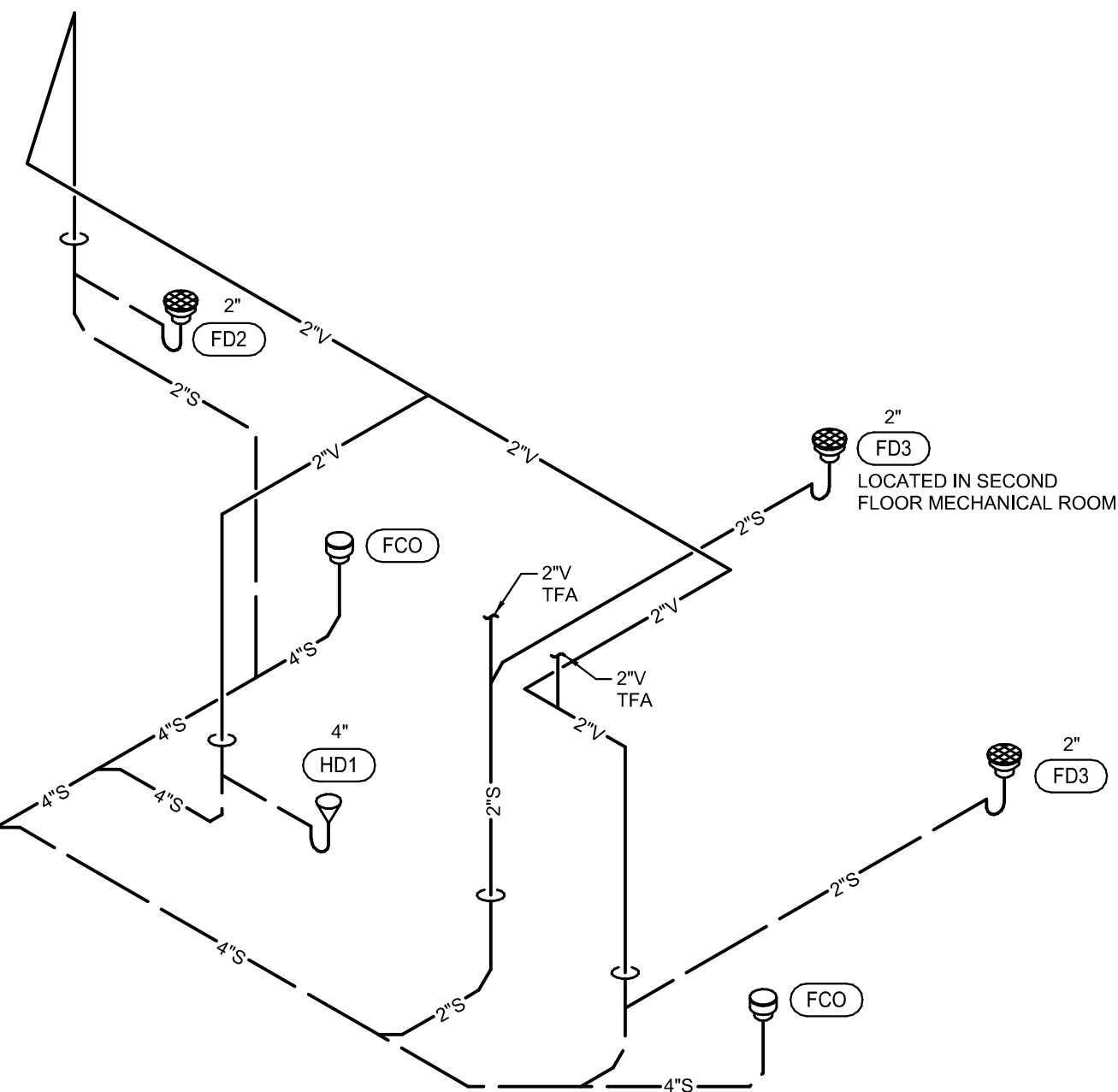
3 PLUMBING WASTE AND VENT RISER  
NTS



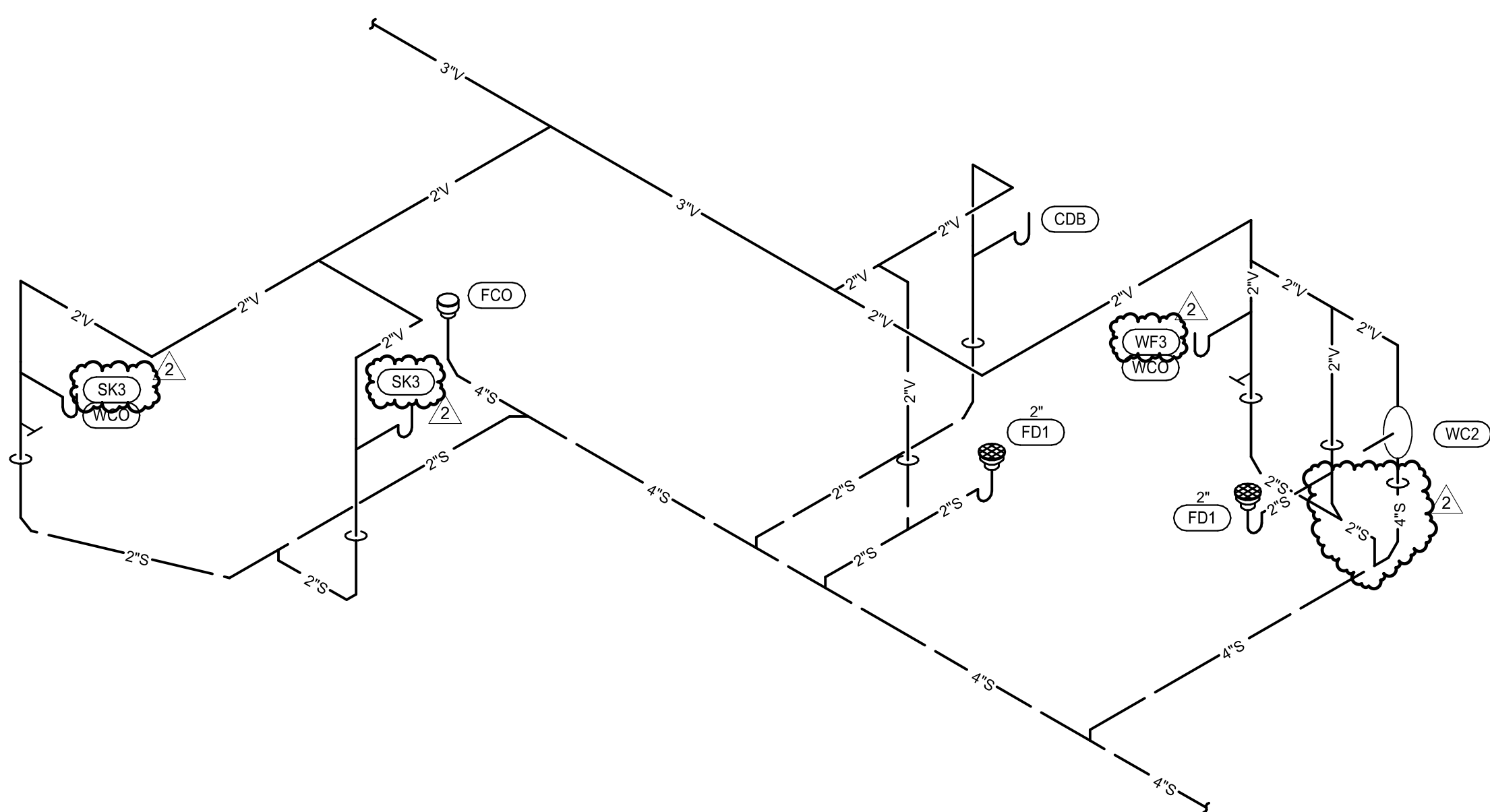
2 PLUMBING WASTE AND VENT RISER  
NTS



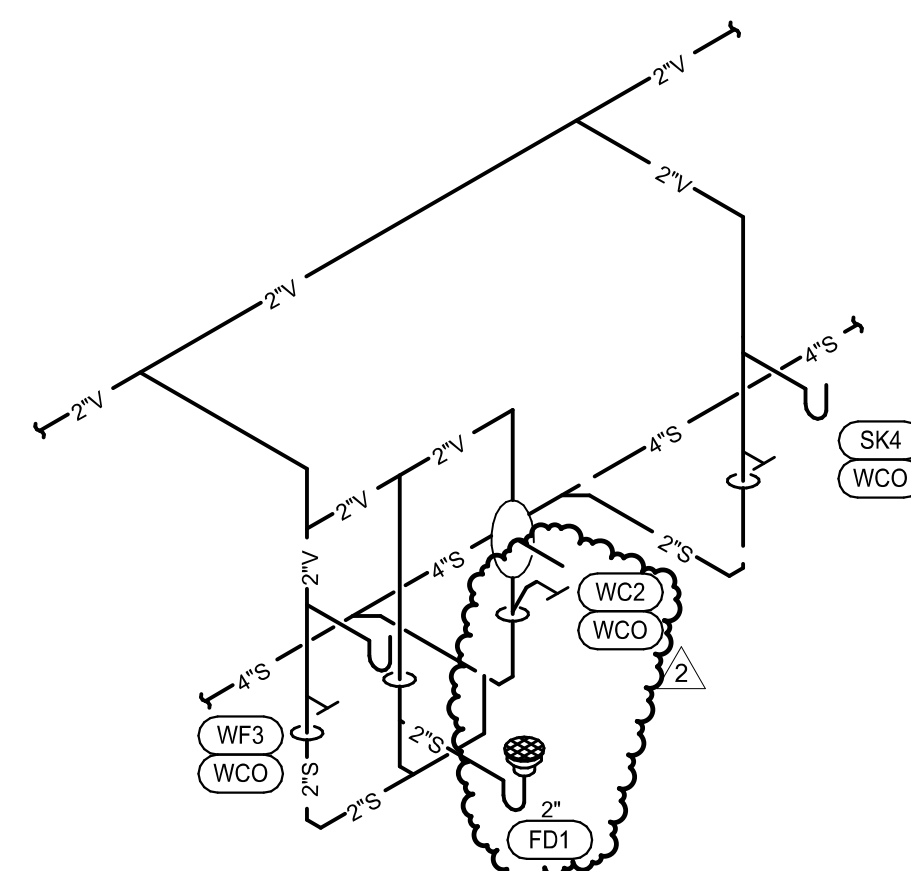
1 PLUMBING WASTE AND VENT RISER  
NTS



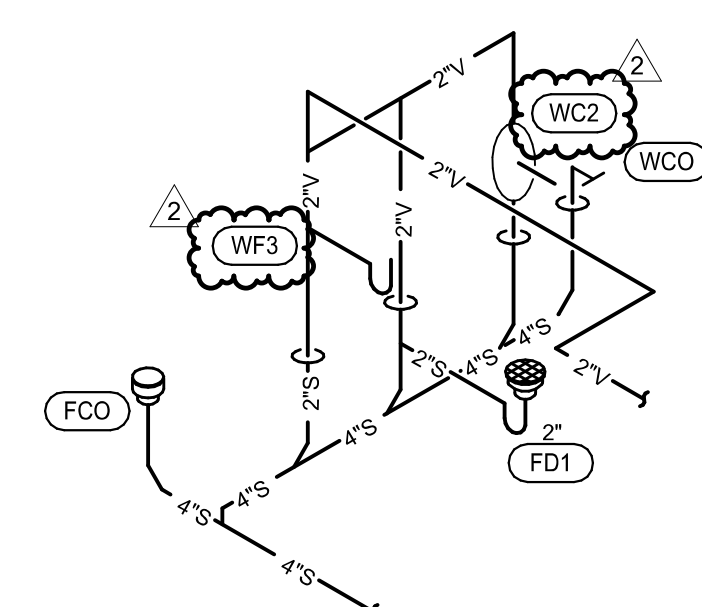
5 PLUMBING WASTE AND VENT RISER  
NTS



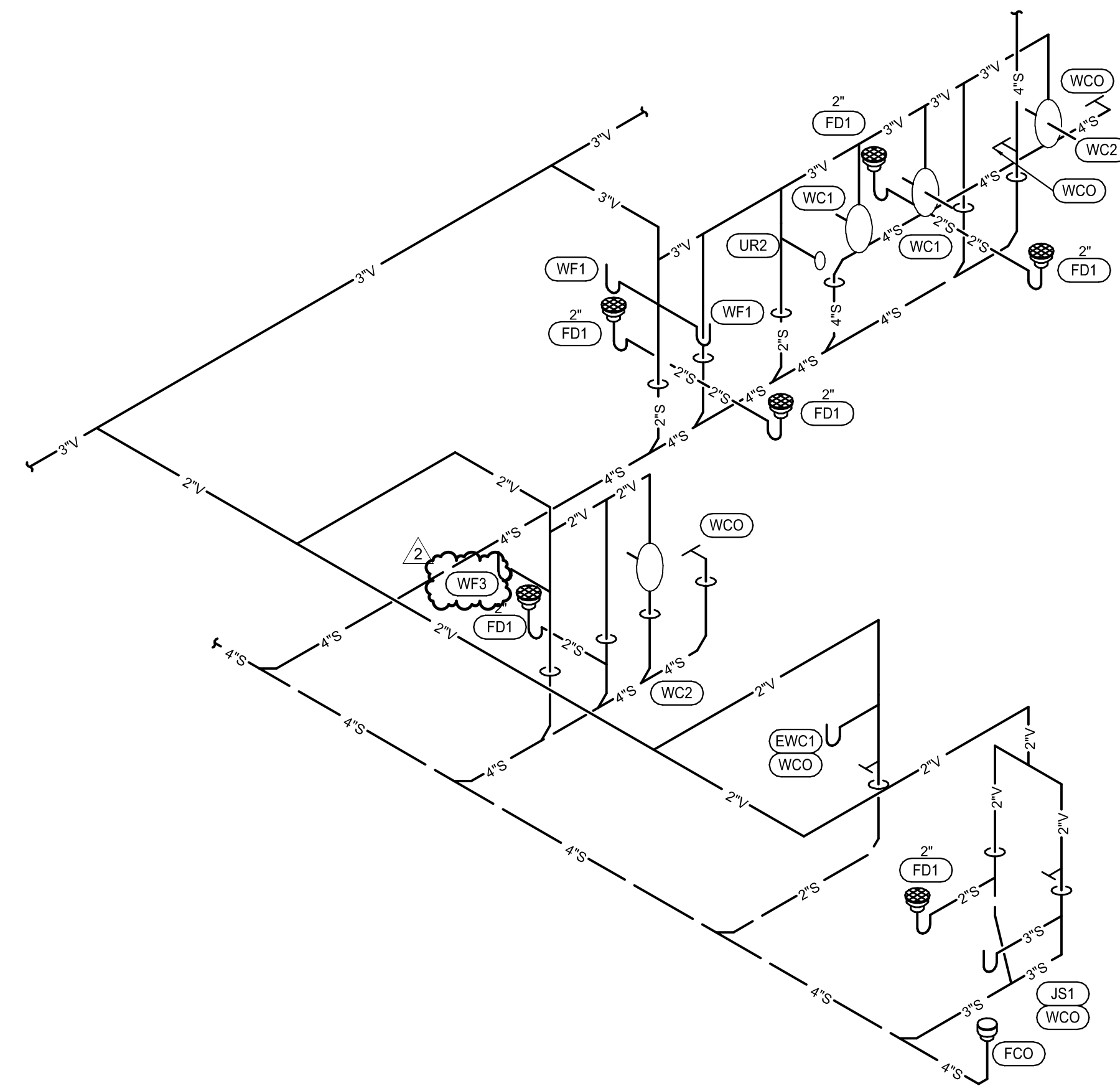
4 PLUMBING WASTE AND VENT RISER  
NTS



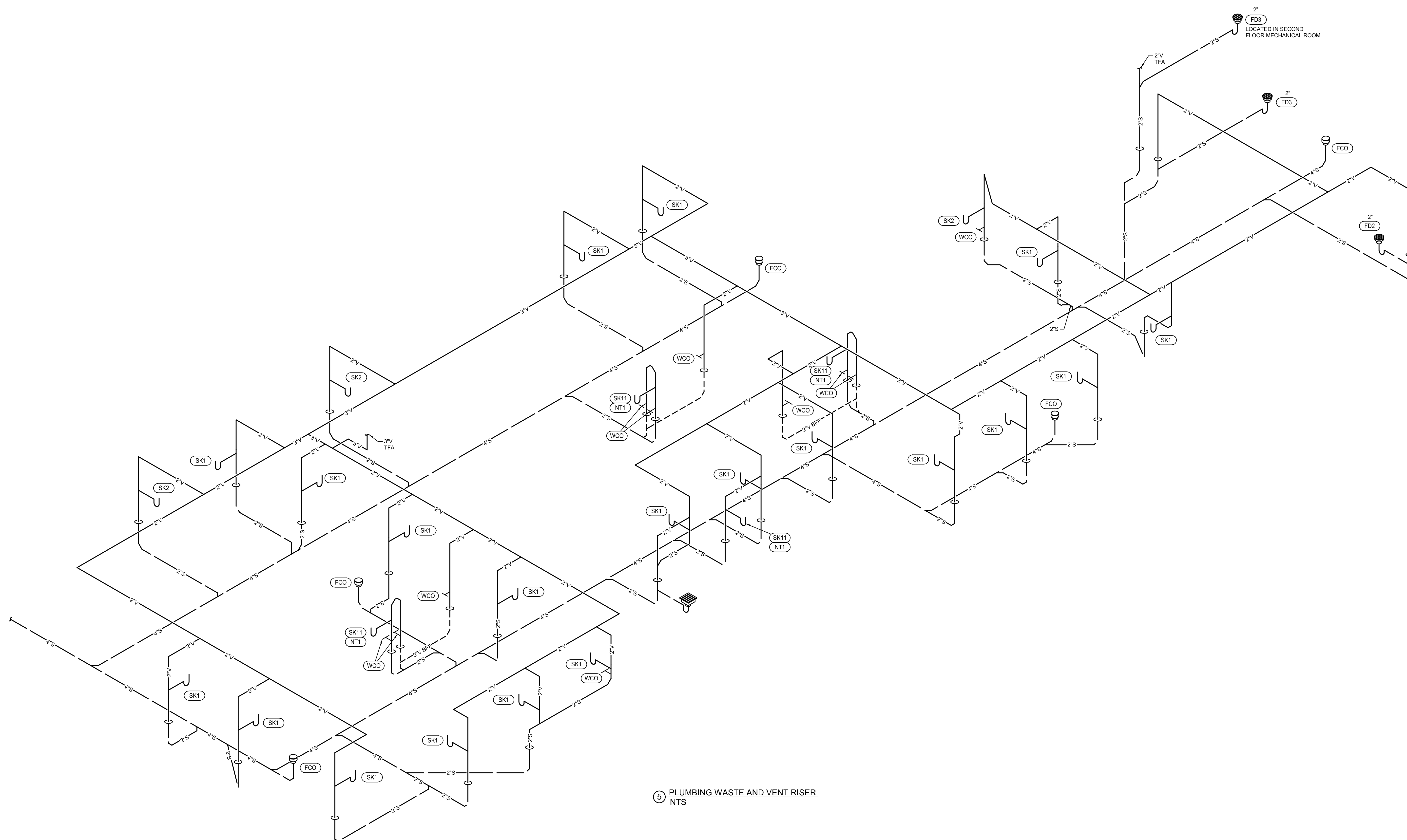
3 PLUMBING WASTE AND VENT RISER  
NTS



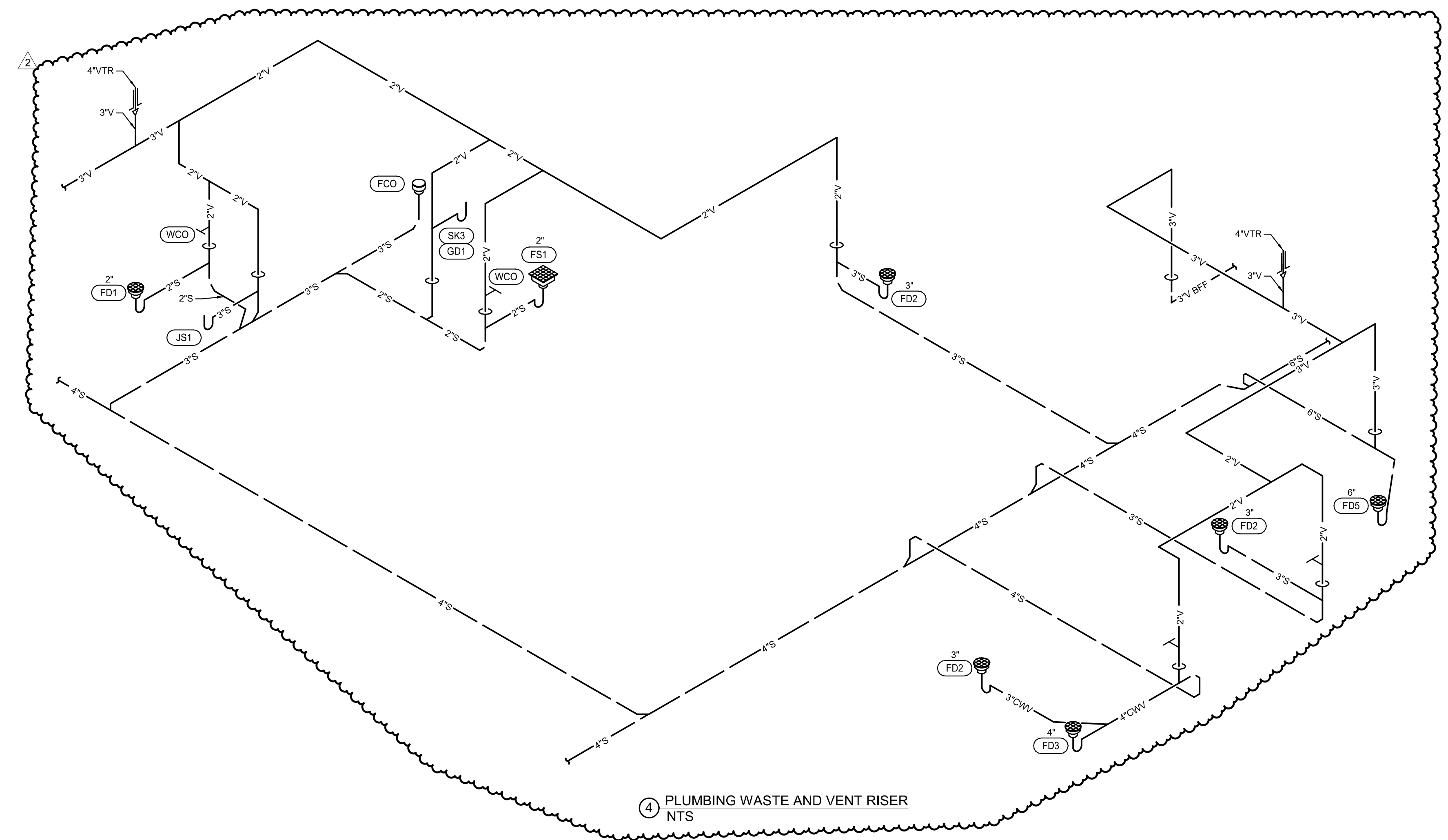
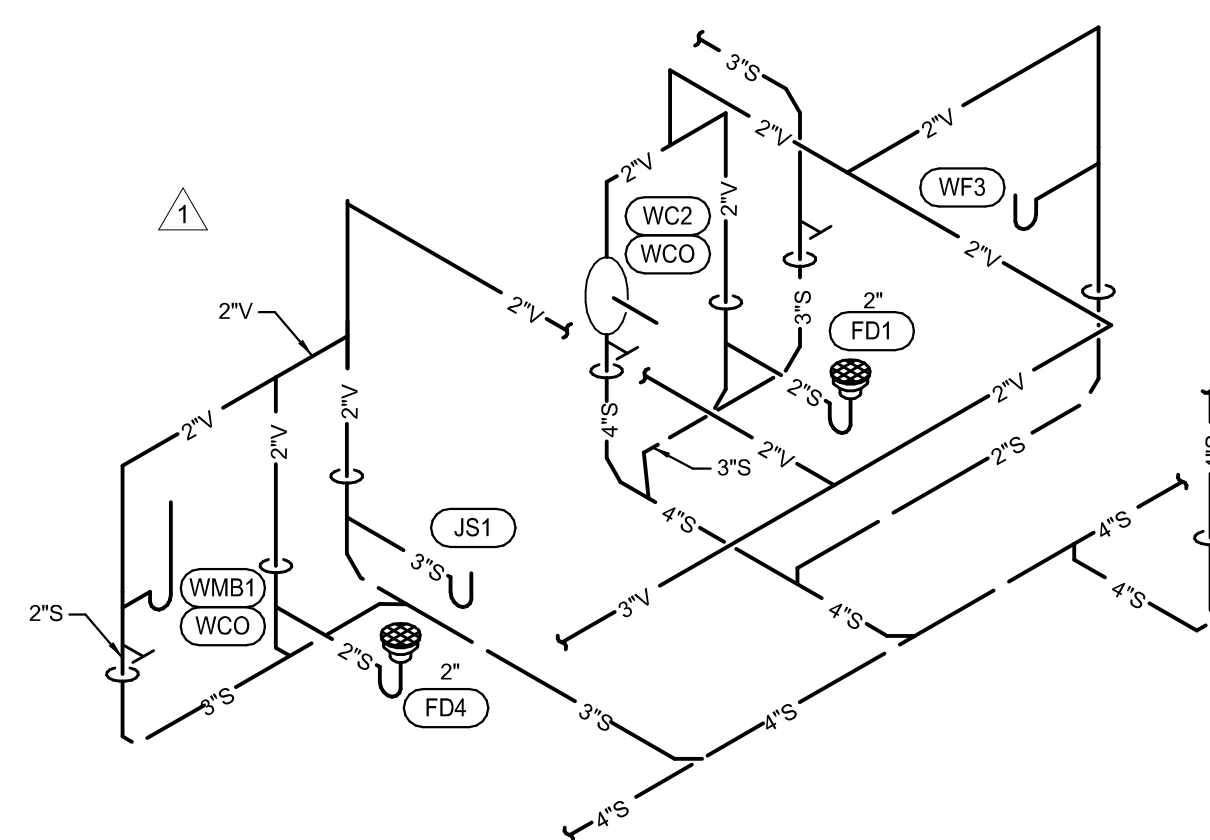
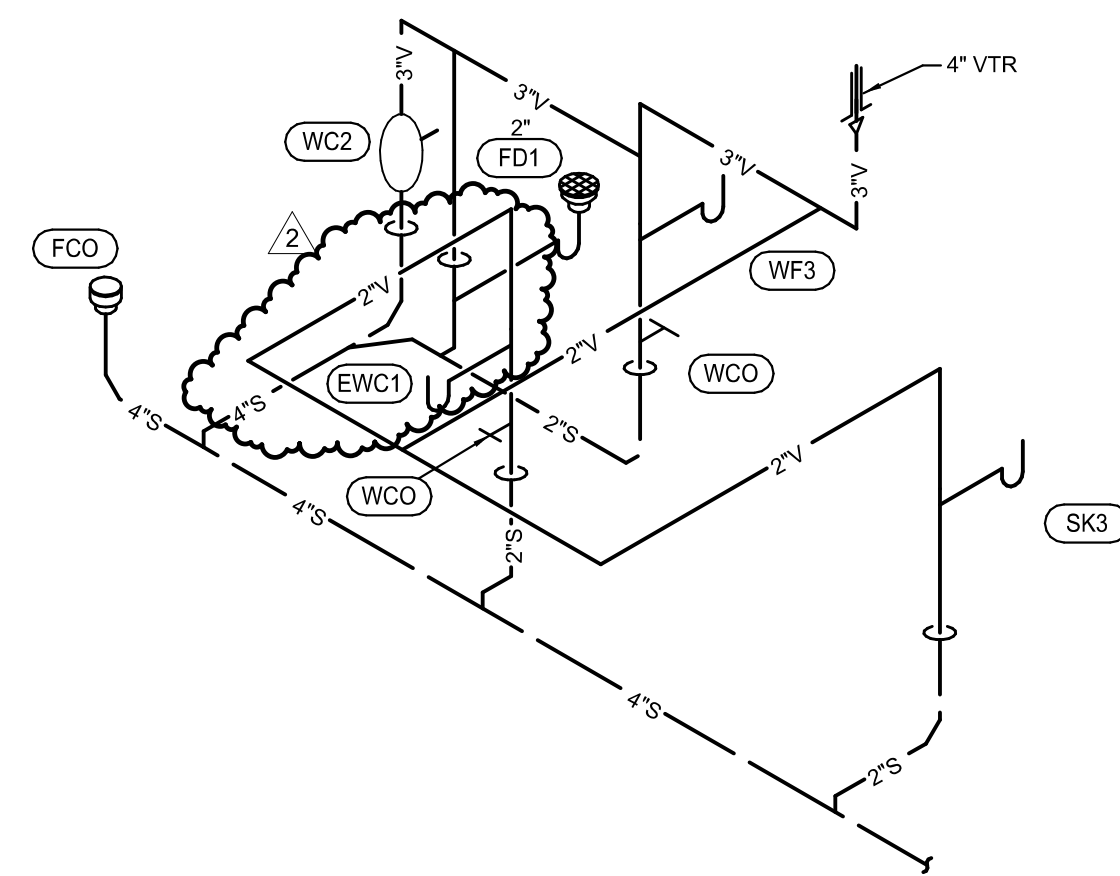
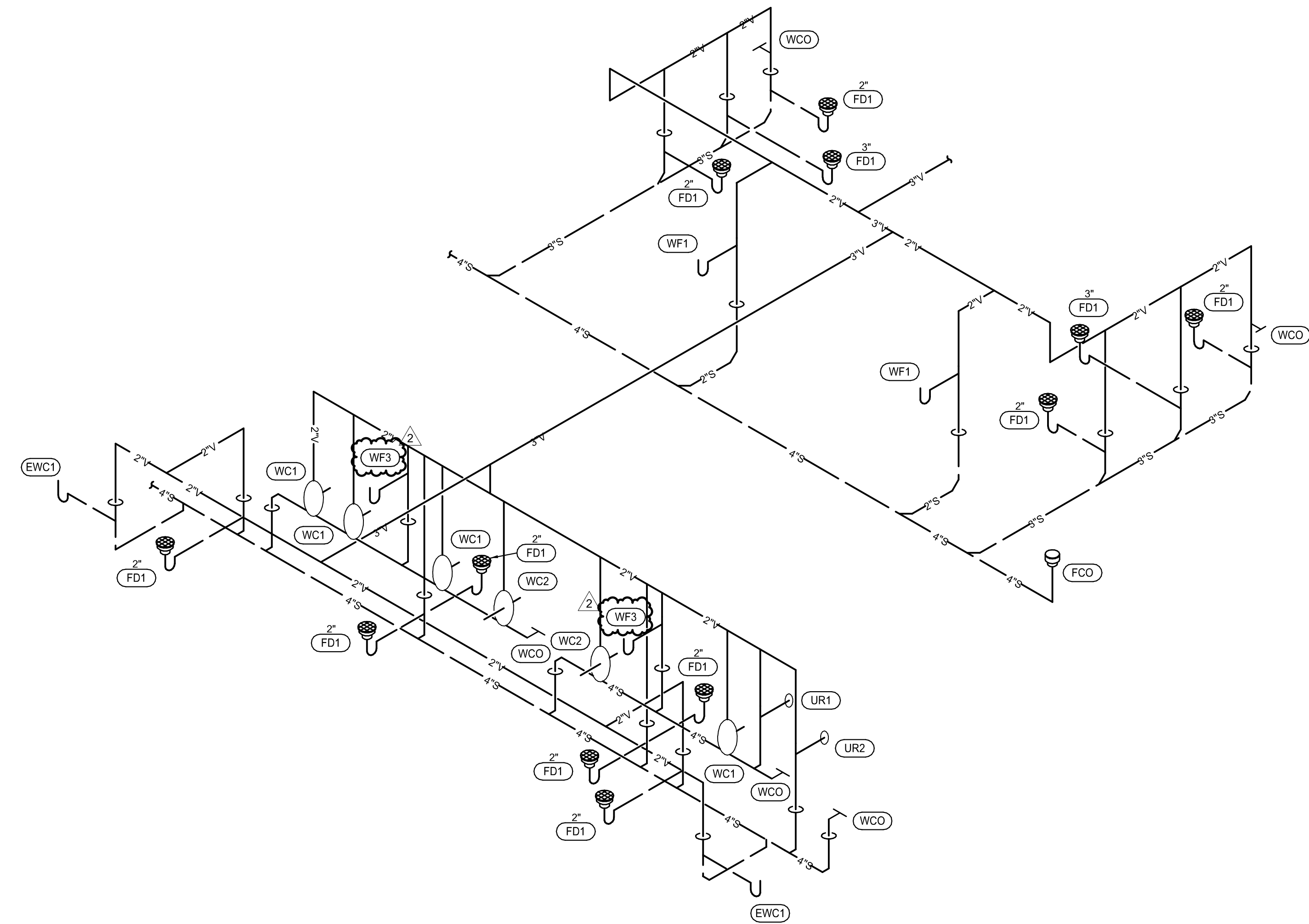
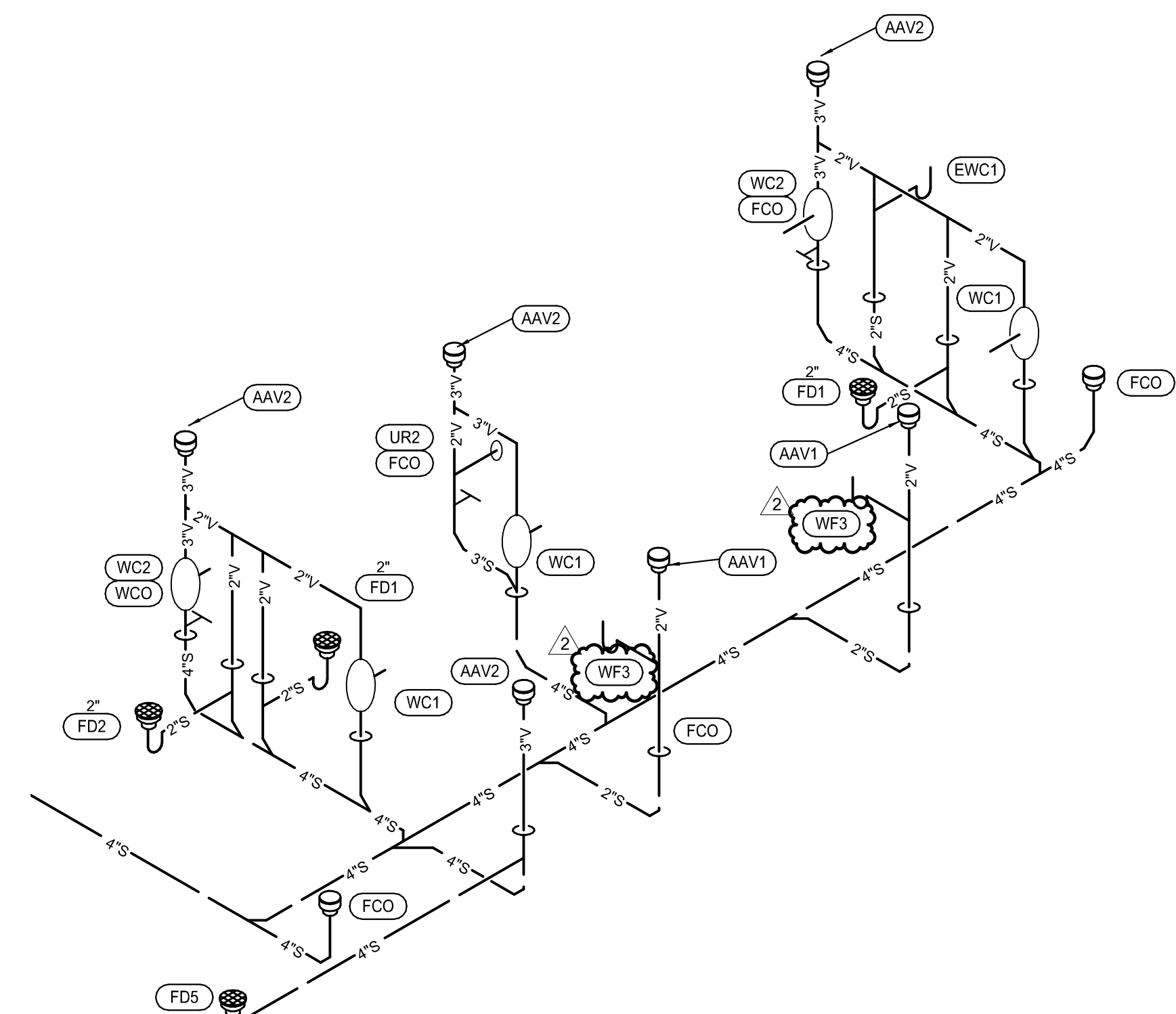
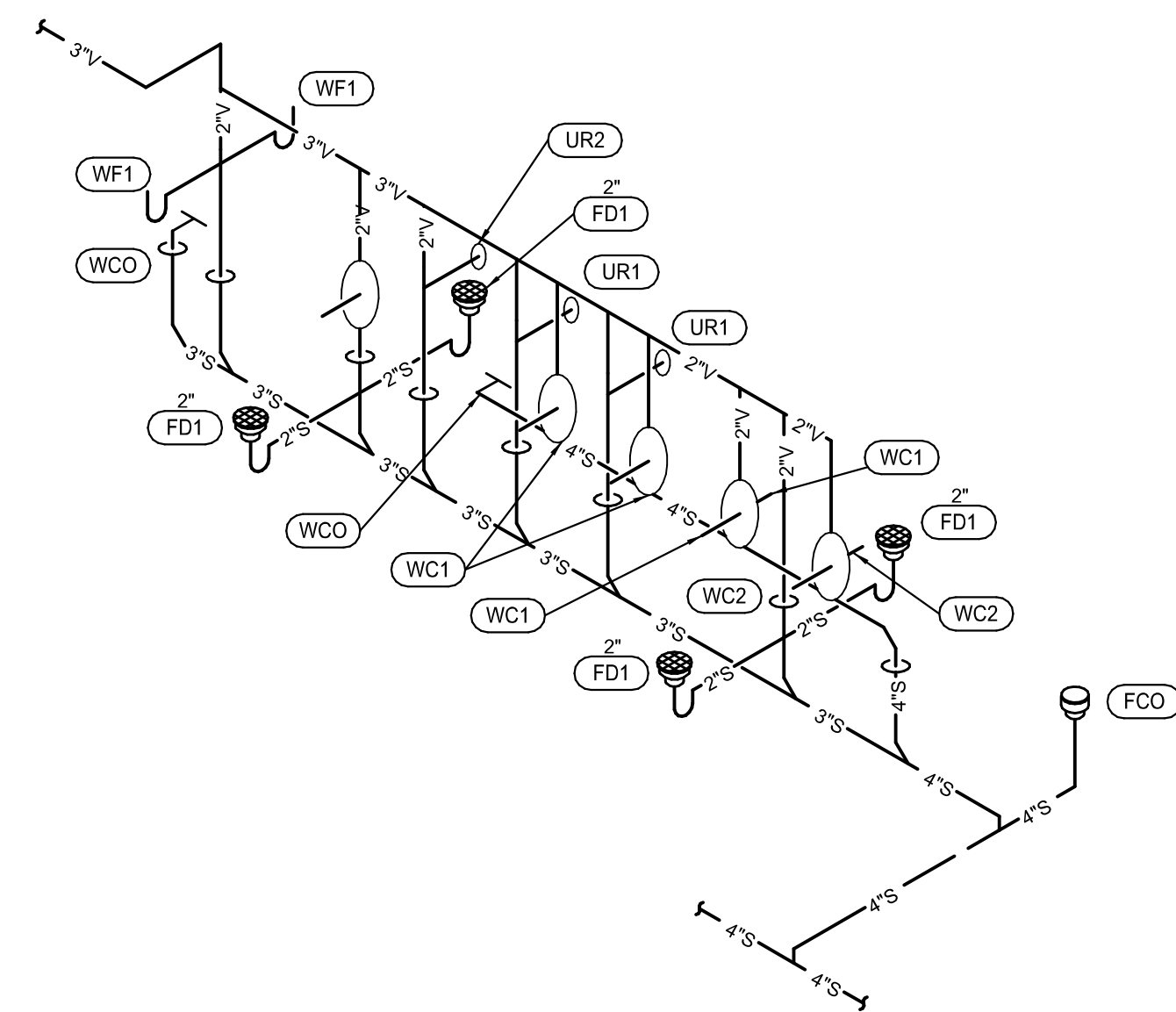
2 PLUMBING WASTE AND VENT RISER  
NTS



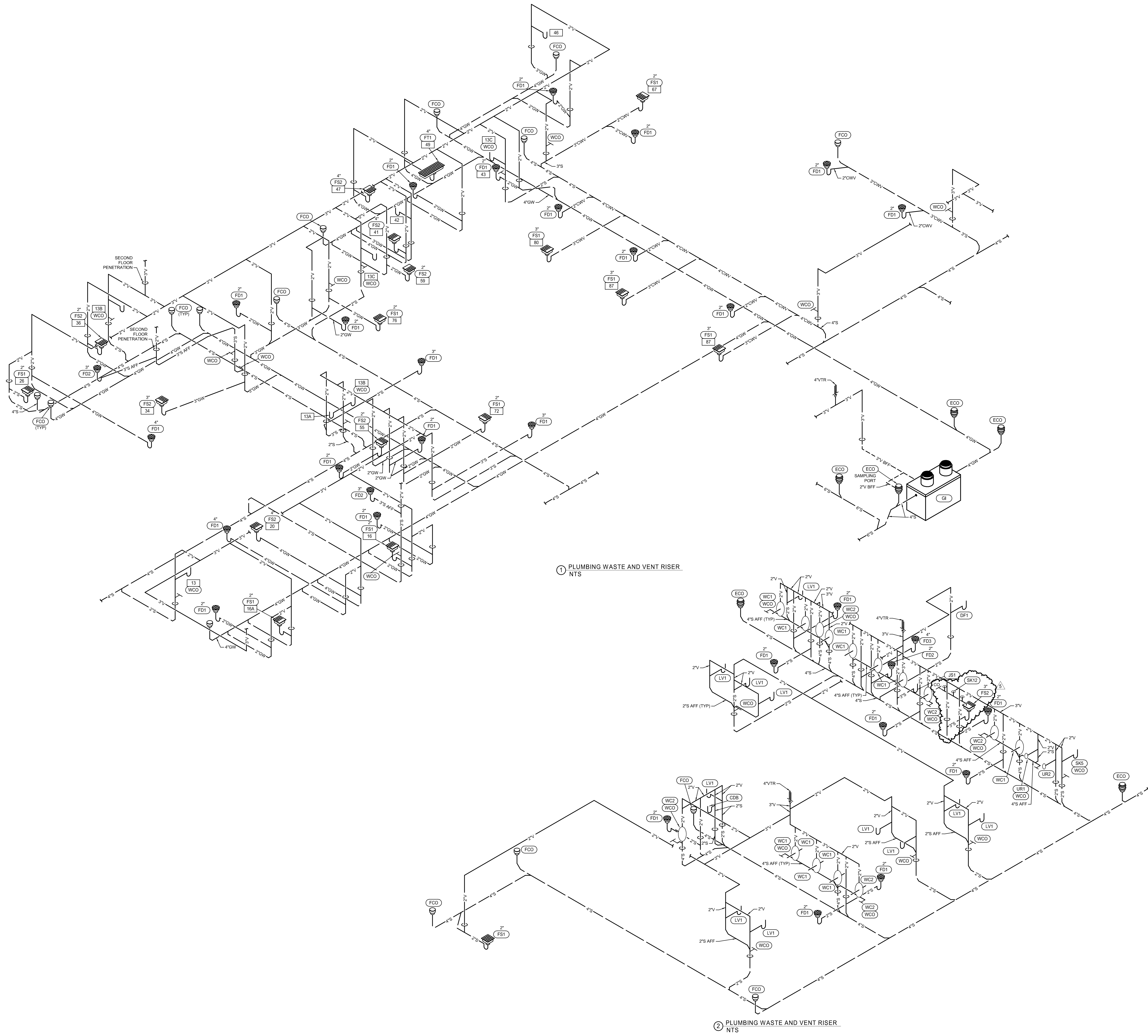
1 PLUMBING WASTE AND VENT RISER  
NTS



5 PLUMBING WASTE AND VENT RISER  
NTS



CARL J. HOLDEN



Westlake  
Reed  
Leskosky

DLR Group  
© DLR Group  
© 2020 DLR Group, Inc. a Missouri corporation  
ALL RIGHTS RESERVED  
Missouri State Certificate of Authority #000033

CARL J. HOLDEN  
11/2020  
LICENSE # PE-2020016283

HENDERSON  
ENGINEERS  
1845 LINCOLN DRIVE, SUITE 300  
LEES SUMMIT, MO 64081  
TEL: 816.221.4300  
WWW.HENDERSONENGINEERS.COM  
MISSOURI  
MO. CORPORATE NO. E-5680  
EXPIRES 12/31/2020

LEE'S SUMMIT MIDDLE SCHOOL DISTRICT  
LEE'S SUMMIT R-7 SCHOOL DISTRICT  
1001 SE BAILEY ROAD  
LEES SUMMIT, MO 64081

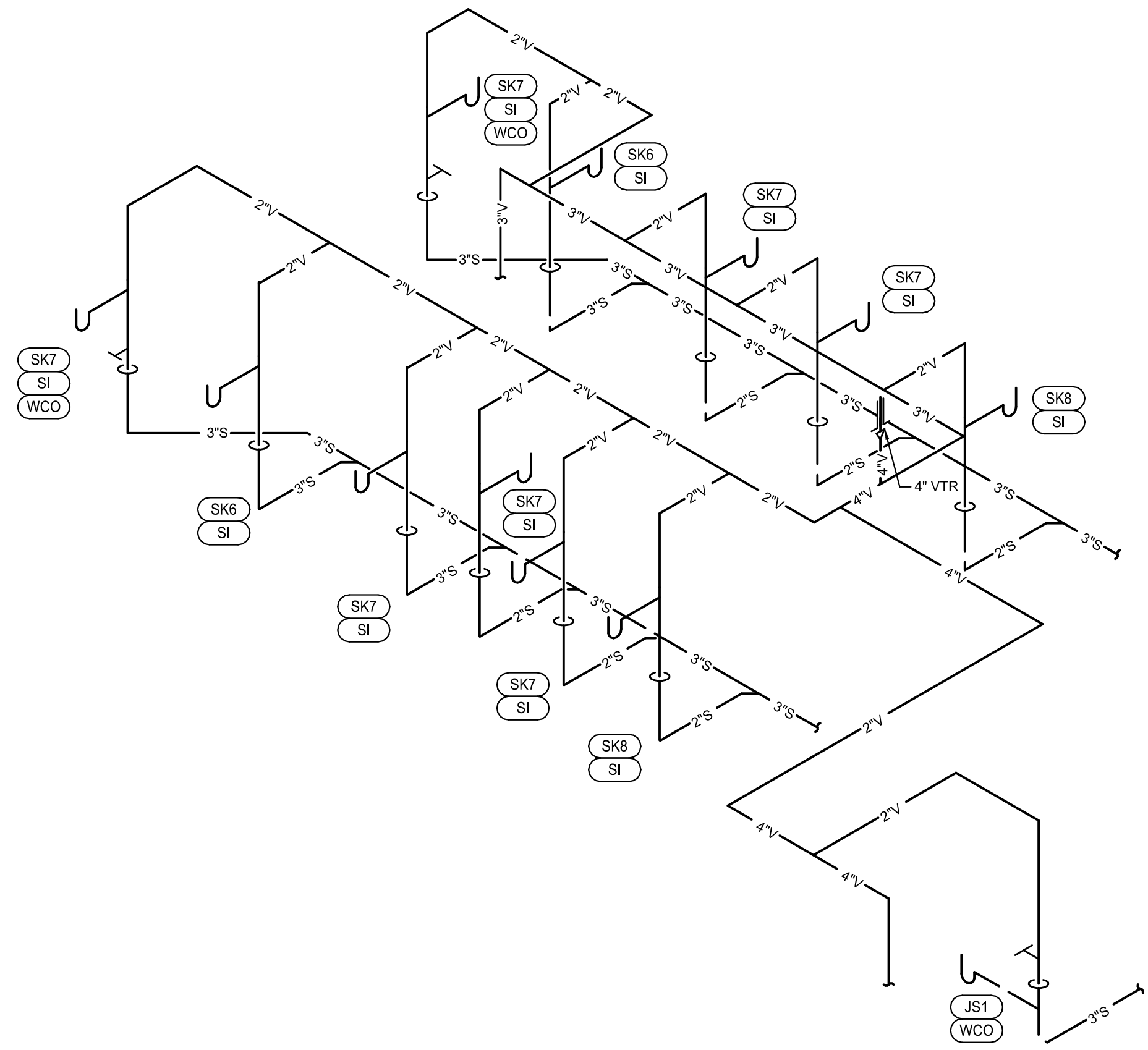
PACKAGE 3 - BUILDING & SITE  
10/08/20  
REVISIONS  
ADDENDUM 002  
placeholder

10/19/20  
Date 3

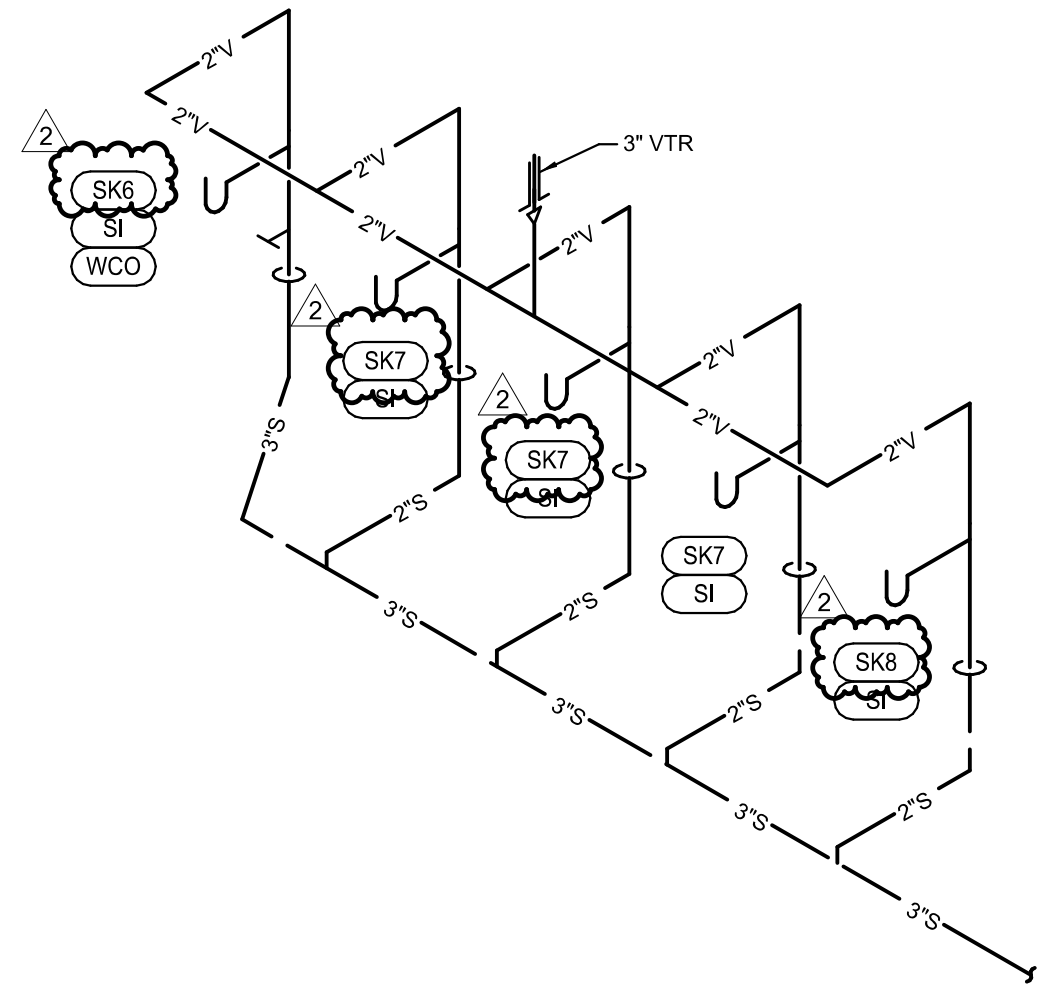
13-20102-00

PLUMBING RISER  
DIAGRAMS

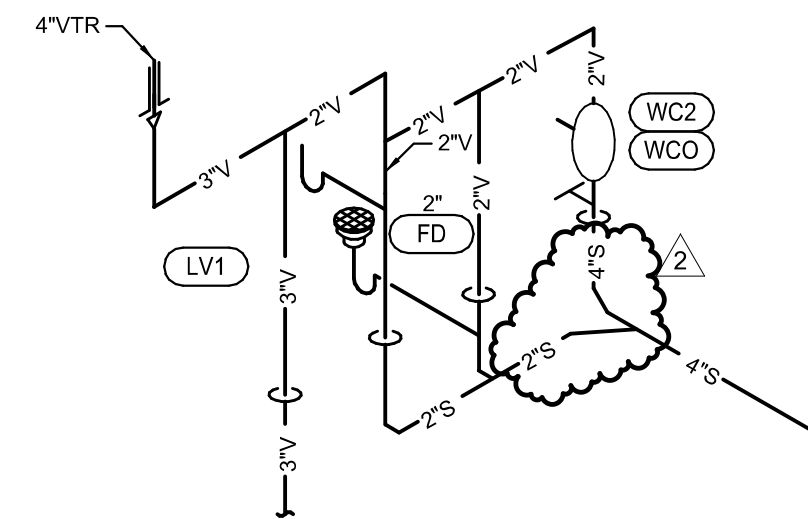
P8.5



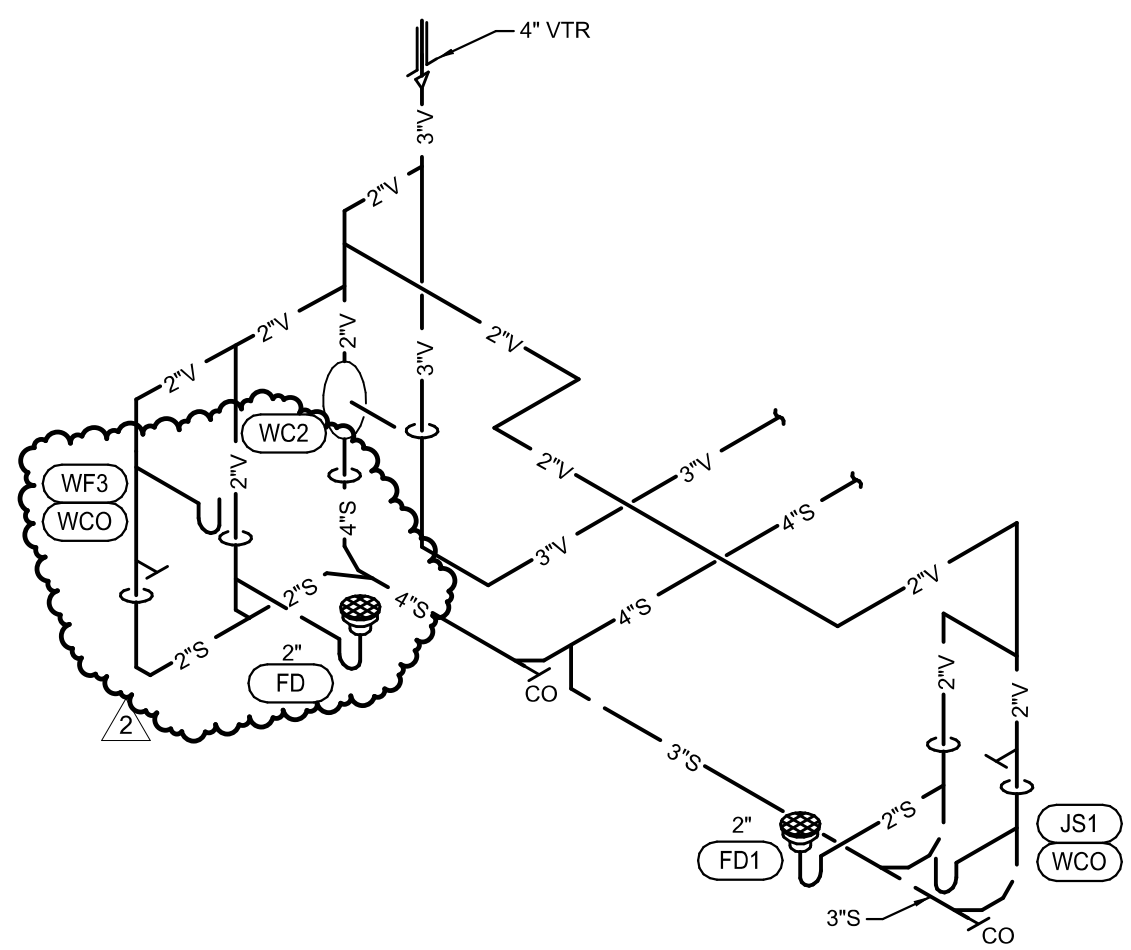
③ PLUMBING WASTE AND VENT RISER  
NTS



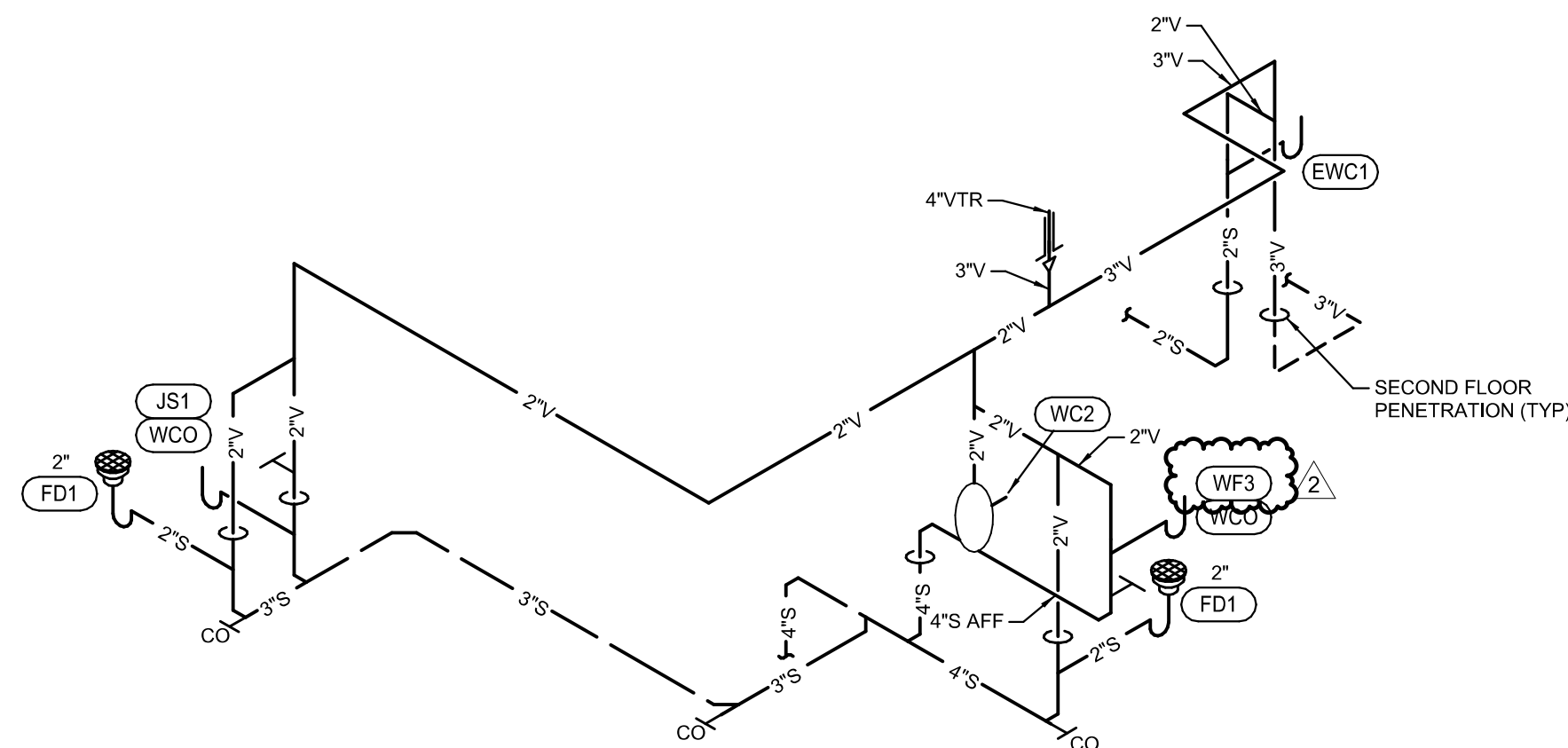
② PLUMBING WASTE AND VENT RISER  
NTS



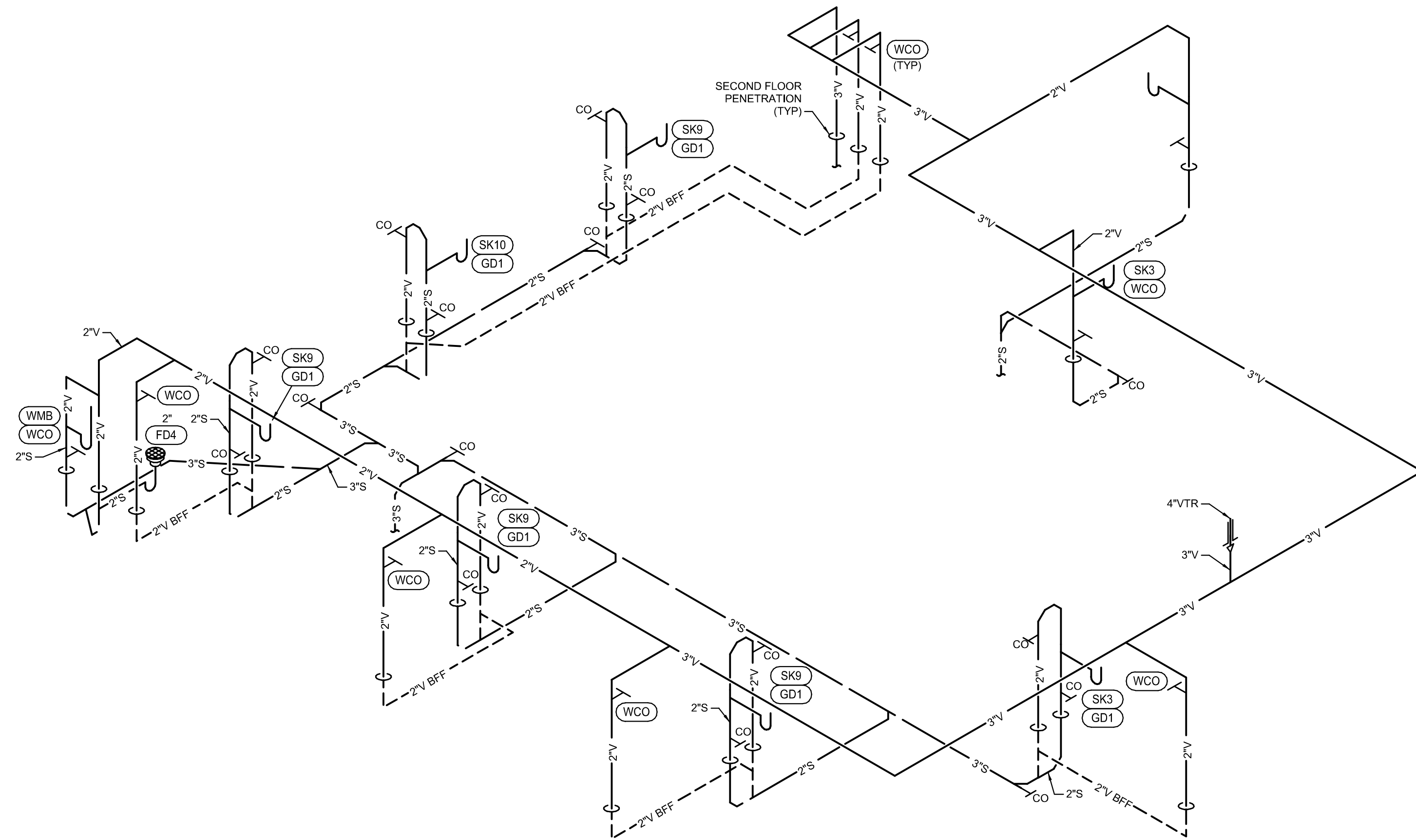
① PLUMBING WASTE AND VENT RISER  
NTS



⑥ PLUMBING WASTE AND VENT RISER  
NTS



⑤ PLUMBING WASTE AND VENT RISER  
NTS



④ PLUMBING WASTE AND VENT RISER  
NTS