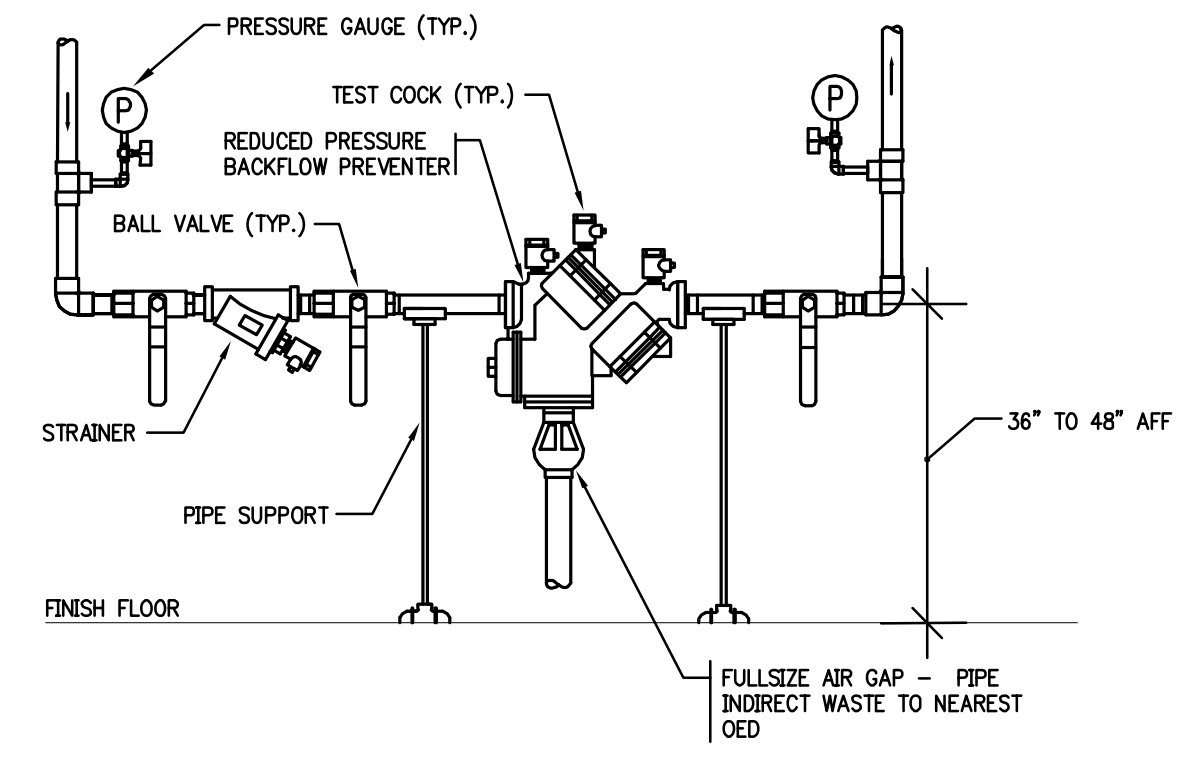
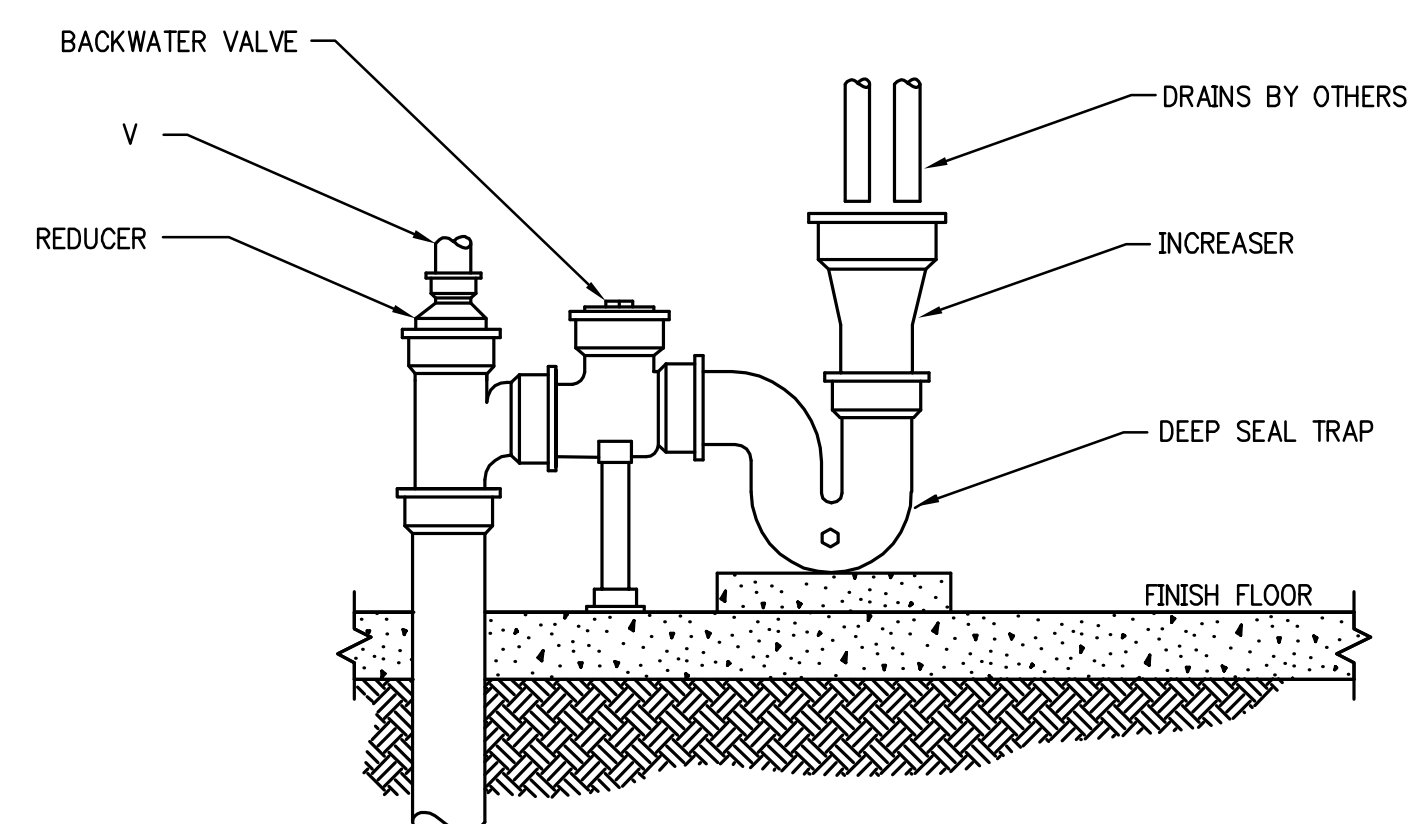


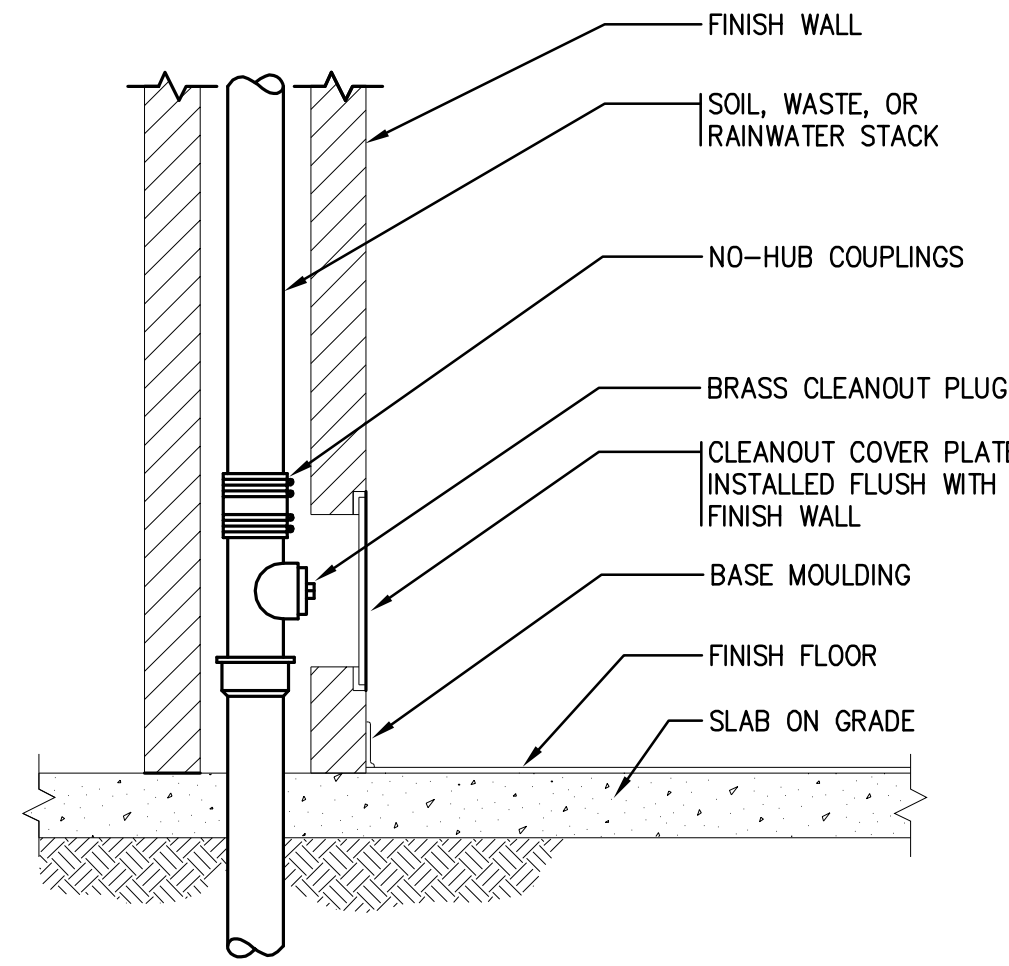
1 EXISTING INCOMING WATER SERVICE DIAGRAM



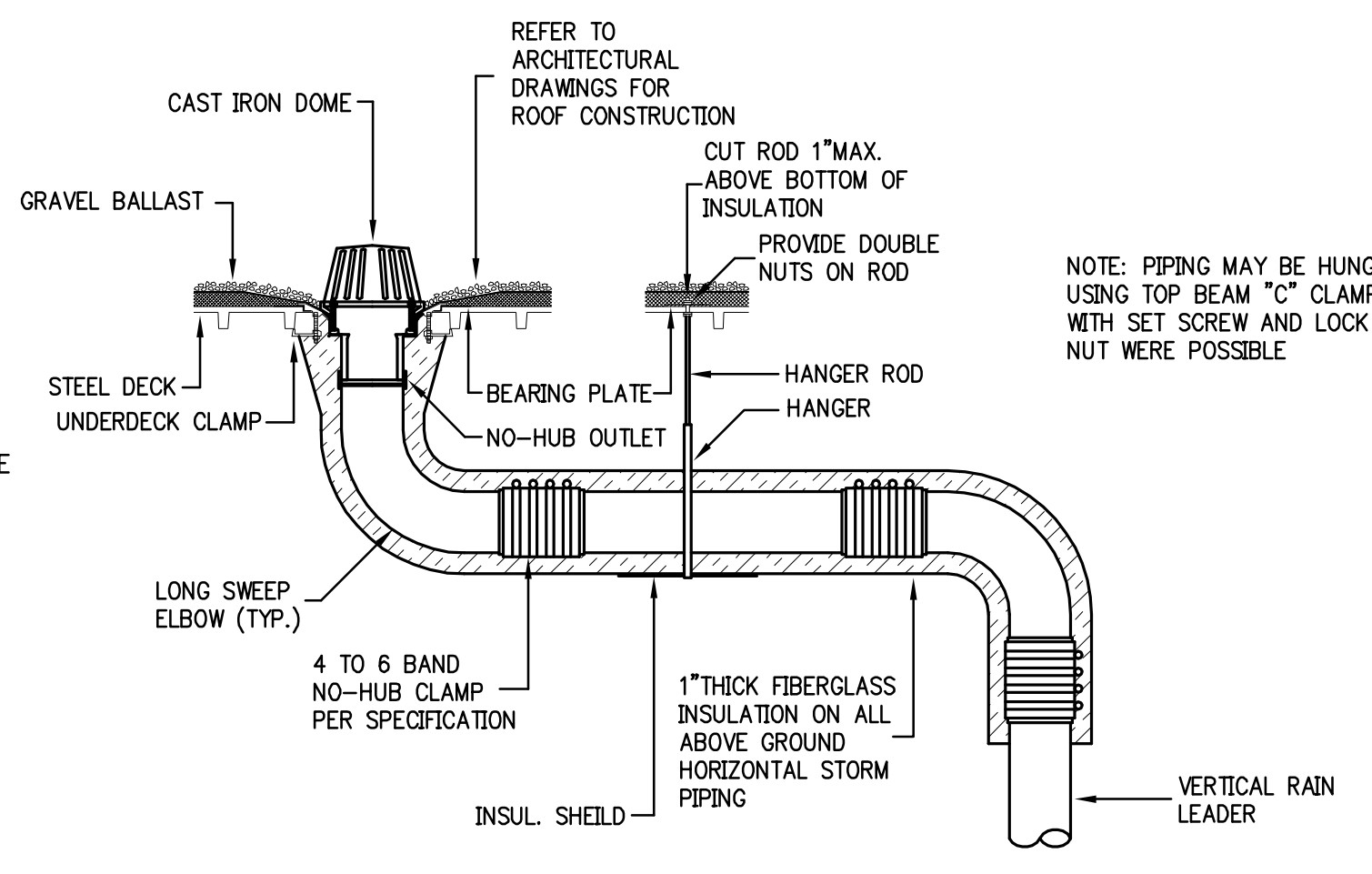
2 REDUCED PRESSURE BACKFLOW PREVENTER



3 OPEN END DRAIN DETAIL (OED)



4 FLUSH WALL CLEANOUT (DCO)



5 ROOF DRAIN DETAIL

LEGEND, SYMBOLS AND ABBREVIATIONS

— RW —	RW	RECYCLED WATER PIPING
— CW —	CW	COLD WATER PIPING
— 85° —	85°	105° TEMPERED WATER PIPING (EMERGENCY SHOWER & EYEWASH)
— 105° —	105°	105° TEMPERED WATER PIPING (LAVATORIES)
— 120° —	120°	120° TEMPERED WATER PIPING (SINKS)
— NCW —	NCW	NON POTABLE COLD WATER PIPING
— IR —	IR	IRRIGATION WATER PIPING
— S/W —	S/W	SOIL OR WASTE PIPING
— S/W —	S/W	SOIL OR WASTE PIPING BELOW FLOOR
— V —	V	VENT PIPING
— V —	V	VENT PIPING BELOW FLOOR
— ST —	ST	STORM WATER LEADER
— ST —	ST	STORM WATER LEADER BELOW FLOOR
— —		HOT WATER PIPING W/TEMPERATURE MAINTENANCE CABLE
	PRV	PRESSURE REDUCING VALVE
	PSV	PRESSURE SUSTAINING VALVE
	SOV	SHUT-OFF VALVE
	BV	BALANCING VALVE
	VV	VALVE IN VERTICAL
	CV	CHECK VALVE
	DV	HOSE END DRAIN VALVE
	RBPB	REDUCED PRESSURE BACKFLOW PREVENTOR
	WCO	WALL CLEANOUT
	AD-A	AREA DRAIN AND TYPE
	FD-A	FLOOR DRAIN AND TYPE
	RD-A	ROOF DRAIN AND TYPE
	FCO	FLOOR CLEANOUT
	GCO	GRADE CLEANOUT
	W&T	WASTE AND TRAP
	WH OR HB	NON-FREEZE WALL HYDRANT OR HOSE BIBB
	OED	OPEN END DRAIN W/TRAP
	CO	CLEANOUT PLUG
		ARROW INDICATES DIRECTION OF FLOW
		ARROW INDICATES DIRECTION OF SLOPE DOWN
		UNION
		CAPPED PIPE
		WATERTIGHT SLEEVE
	SA-A	WATER HAMMER ARRESTOR (SHOCK ABSORBER) AND TYPE
	PG	PRESSURE GAUGE ASSEMBLY
		REDUCER
	DN	PIPE DOWN/RISE
	UP	PIPE UP
	DROP	PIPE DROP
	TEE	PIPE TEE
	CONT.	CONTINUATION OF PIPING
	DCO	DANDY CLEANOUT
	VB	VACUUM BREAKER
		DETAIL DESIGNATION & SHEET NUMBER
		RISER DESIGNATION & SHEET NUMBER
	EW	EMERGENCY EYEWASH
		PUMP SYMBOL
	T	THERMOMETER
	AFG	ABOVE FINISHED GRADE
	AFF	ABOVE FINISHED FLOOR
	AP	ACCESS PANEL
	C/E	CONNECT TO EXISTING
	DN	DOWN
	DWG	DRAWING
	EA	EACH
	EC	ELECTRICAL CONTRACTOR (SECTION 16000)
	ELEC	ELECTRICAL
	ELEV	ELEVATION
	EWH	ELECTRIC WATER HEATER
	ES	EMERGENCY SHOWER
	FF	FINISHED FLOOR
	FPC	FIRE PROTECTION CONTRACTOR (SECTION 15300)
	GC	GENERAL CONTRACTOR
	INV.	INVERT ELEVATION
	JB	JUNCTION BOX
	L-#	LAVATORY AND TYPE
	L.P.C.	LIMIT OF PLUMBING CONTRACT
	MIN	MINIMUM
	NC	NORMALLY CLOSED
	N.I.C.	NOT IN CONTRACT
	NO	NORMALLY OPEN
	NTS	NOT TO SCALE
	OS&Y	OUTSIDE SCREW AND YOKE SPECIFICATIONS
	SF	SQUARE FOOT
	SS	SOIL STACK
	TYP	TYPICAL
	V.I.V.	VALVE IN VERTICAL
	VS	VENT STACK
	VTR	VENT THRU ROOF
	W/	WITH
	WC-#	WATER CLOSET AND TYPE
	WS	WASTE STACK
	UR-#	URINAL AND TYPE
	MSB	MOP SERVICE BASIN
	DF	DRINKING FOUNTAIN
	FD	FLOOR DRAIN
	TOF	TOP OF FOOTING

DOMESTIC PLUMBING FIXTURE CONNECTION SCHEDULE (POTABLE WATER)

ITEM	DESIGNATION	S/W	V	CW	RW	HW (120°)	TW (85°/110°)	REMARKS
WC	WATER CLOSET	4"	2"	-	1"	-	-	WALL MOUNTED INFRARED OPERATED HANDS-FREE FLUSH VALVE W/OVER-RIDE BUTTON
WC-2	WATER CLOSET	4"	2"	-	1"	-	-	WALL MOUNTED INFRARED OPERATED HANDS FREE FLUSH VALVE W/OVER-RIDE BUTTON- ADA COMPLIANT
UR	URINAL	2"	2"	-	-	-	-	WALL MOUNTED WATER FREE
UR-2	URINAL	2"	2"	-	-	-	-	WATER FREE ADA COMPLIANT WALL MOUNTED
L	LAVATORY	1 1/2"	1 1/2"	-	-	-	1/2" (110°)	PROVIDE ADA SAFETY COVER FOR DRAIN AND WATER SUPPLY LINES ON ALL LAVATORIES - ADA COMPLIANT INFRARED OPERATED HANDS FREE FAUCET
SK	SINK	2"	2"	1/2"	-	1/2"	-	STAINLESS STEEL COUNTER SINK
MSB	MOP SERVICE BASIN	3"	2"	1/2"	-	1/2"	-	JANITOR'S FLOOR-MOUNTED SINK - FAUCET W/INLINE CHECKS
DF	DRINKING FOUNTAIN	(2) 1 1/2"	(2) 1 1/2"	(2) 1/2"	-	-	-	BILEVEL UNIT - ADA COMPLIANT
HB	HOSE BIBB	-	-	3/4"	-	-	-	W/INTEGRAL VACUUM BREAKER
WH	WALL HYDRANT	-	-	3/4"	-	-	-	W/INTEGRAL VACUUM BREAKER - REFER TO ARCHITECTS ELEVATIONS FOR EXACT LOCATIONS
ES	EMERGENCY SHOWER EYEWASH	1 1/4"	-	-	-	-	1/2" (85°)	PEDISTAL MOUNTED WITH INDIRECT DRAIN OFFSET TO FD

PLUMBING PUMP SCHEDULE

PUMP	SERVICE	MANUFACTURER/MODEL	GPM/EA	ELECTRICAL / PUMP				REMARKS
				VOLTS	PHASE	HP	RPM	
P-1	BURIED RECLAIM TANK PUMP	GOULDS 3885	20	460	3	1 1/2	3500	DUPLEX
P-2	RECLAIM SYSTEM BOOSTER PUMP	SYNCFLO 40E60P	20	460	3	1 1/2	3450	SKID MOUNTED DUPLEX
P-3	U.V. CIRCULATOR	TACO 0038	5	115	1	1/40	3250	CONTINUOUS OPERATION
P-4A P-4B	CHEMICAL INJECTIONS PUMPS	X	METERED	120	1	-	-	REFER TO FILTRATION SPECS
P-5	DOMESTIC HOT WATER BOOSTER PUMP	TACO 007B	10	115	1	1/25	3250	AQUASTAT CONTROL

WATER FLOW TEST

DATE: 8/23/02
 BY: PORTLAND WATER DISTRICT
 WATER MAIN: BEDFORD STREET
 STATIC: 85 PSIG
 RESIDUAL: 80 PSIG
 FLOW: 1510 GPM

GMP DOCUMENTS
 no. revisions/submissions

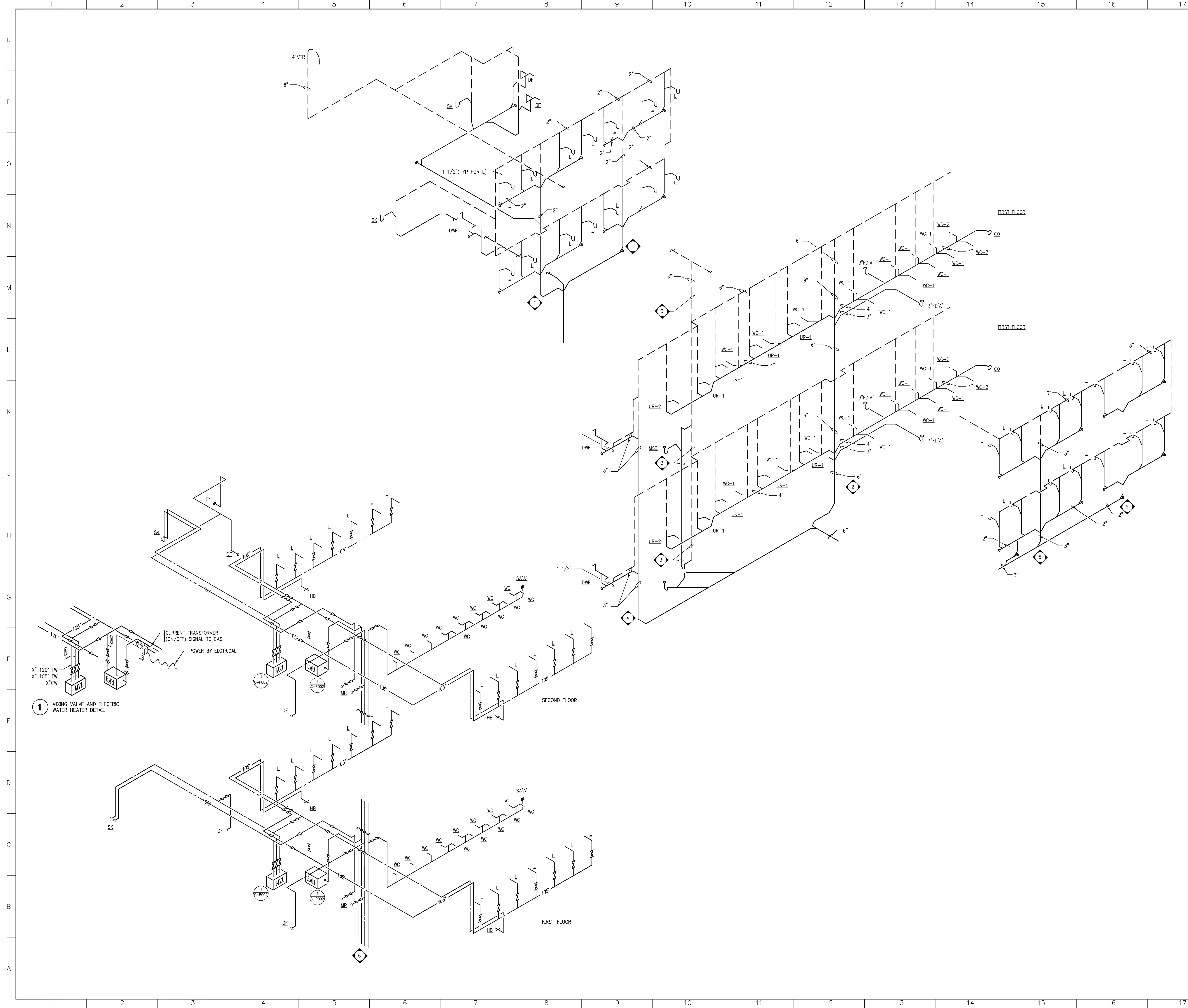
1/19/04
 date

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 COMMUNITY EDUCATION CENTER - PHASE 2
 PORTLAND, MAINE

drawing title
PLUMBING LEGEND & DETAILS
 seal
 designed by project no. 5001024.00
 drawn by DWP CAD file no.
 checked by DFR drawing no.
 date 1/19/2004
 scale 1/8"=1'-0"
C-P001



GMP DOCUMENTS	1/19/04
no. revisions/submissions	date

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drawing title	
PLUMBING RISERS & DIAGRAMS	
seal	designed by project no. 5001024.00
	PT
drawn by IGL	CAD file no.
checked by DFR	drawing no.
date 1/19/2004	C-P002
scale NTS	

WATER RECLAIM SYSTEM SEQUENCE OF OPERATION

Water Reclaim Tank System

Water from the 10-inch rainwater leader shall fill the concrete storage tanks simultaneously and automatically by gravity. Water supply to the tanks is provided from the CEC roof storm water system and the geothermal system bleed water. An ultrasonic level sensor (LS-1) will monitor the exterior storage tank water level. Signals from (LS-1) will be sent to the main programmable logic controller (PLC). The tank system has an automatic gravity overflow drain to the site storm drainage system.

Interior Gravity Storage Tank

Water from the buried reclaim tanks is pumped into this tank via duplex pump system (P-1). A set of bag filters will provide preliminary water filtration. (LS-2) will monitor the gravity tank level and send signals to the (PLC). A slow close solenoid valve (SV-1) will provide fill control. The tank has an automatic gravity overflow drain back to the exterior reclaim tank system. When this tank adequately filled, (P-3) will circulate/side stream the 200 gallons of water through an ultraviolet lamp for additional water treatment.

Booster Pump System

Water from the gravity tank will be boosted via the duplex booster pump system (P-2). The boosted water will supply water closets, future irrigation system and HVAC make-up water. The bladder tank downstream will maintain constant pressure from the water reclaim system. A set of metering injection pumps (P-4A & P-4B) will supply the final polishing of the flow to the water closets only. Pressure sustaining valves will throttle the pressure to each of the reclaim systems. If the water reclaim system pressure drops below the non-potable city water supply pressure, then city water supply will automatically supply each of these systems via a pilot operated pressure reducing valve.

Electrical Monitoring System

The (PLC) will monitor the entire system, send trouble signals, alarm signals and monitoring signals to the (BAS). The (BAS) is located on the second level of the CEC. This system will be designed to receive all of these signals for a custom made program/display. All of the monitoring and control signals from level sensors, flow meters, solenoid valves and pumps will be connected to the (PLC).

Water Flow Through System

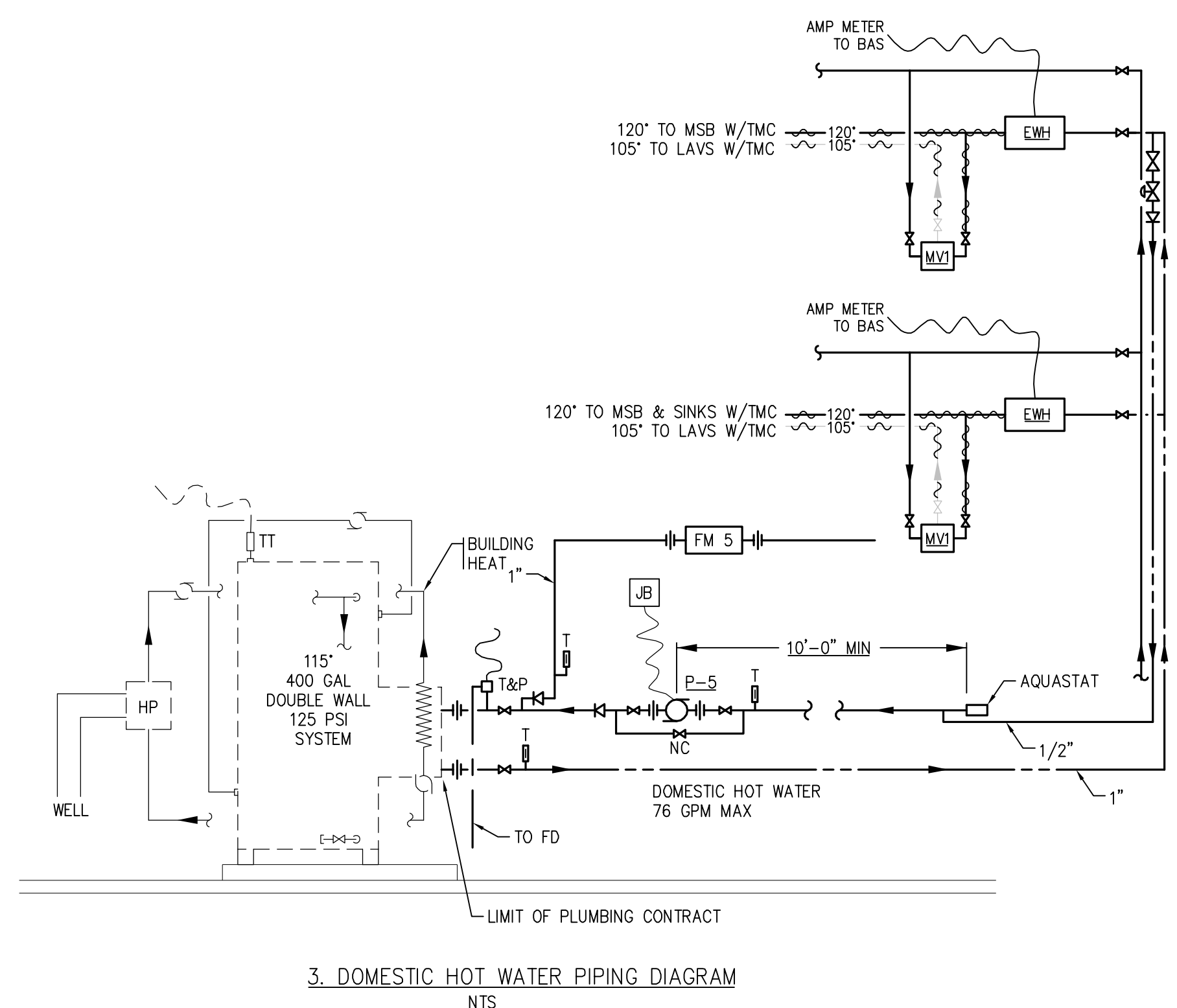
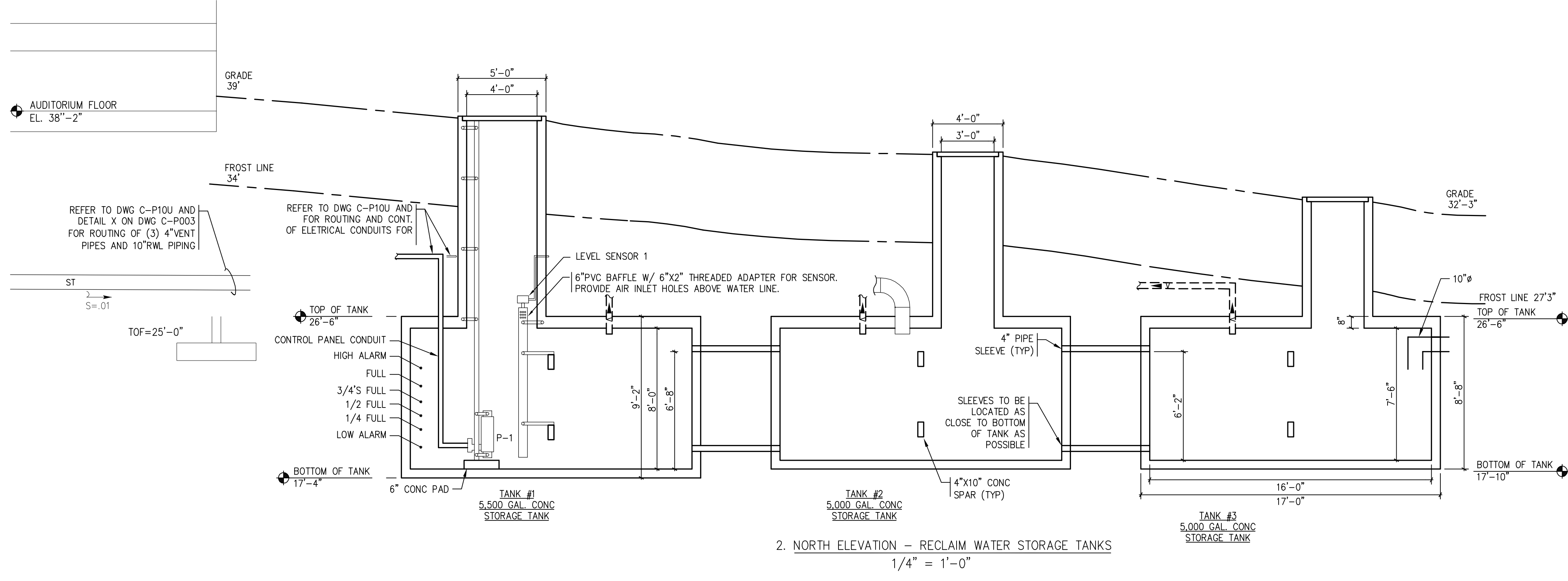
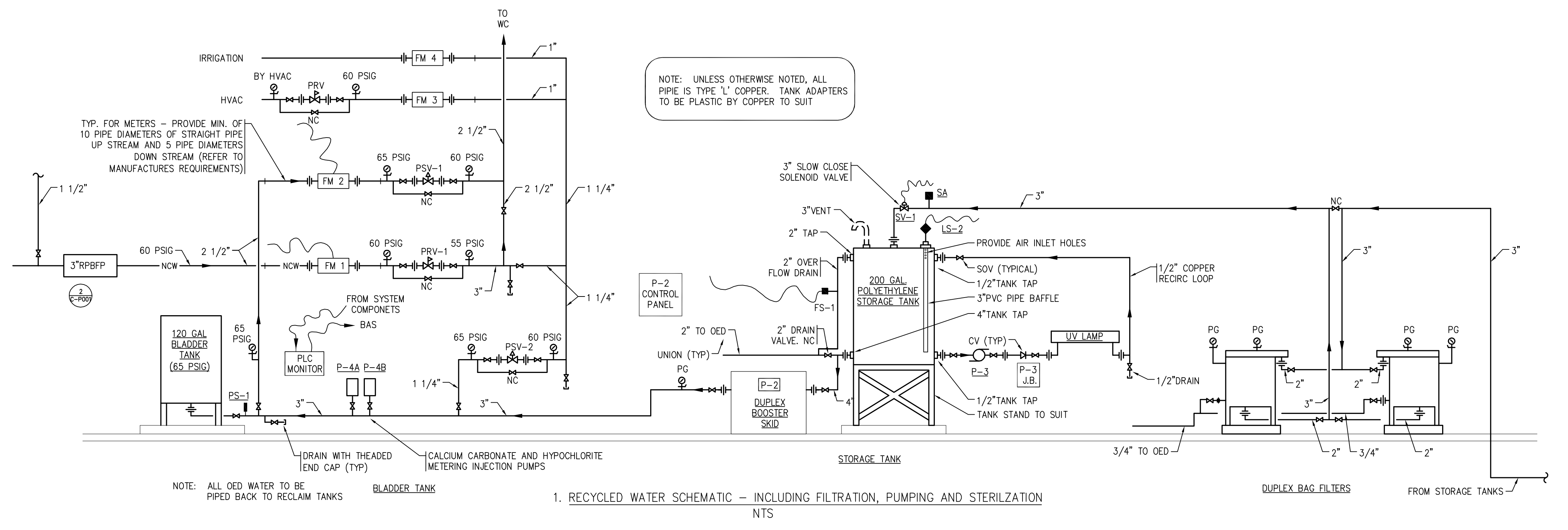
The reclaim water system begins at the buried exterior storage tanks. The primary reclaim source of reclaim is rainwater from the CEC roof drainage system. The secondary source of reclaim is the geothermal bleed water from the ground source wells. The primary reclaim water use is the toilet room water closets. The secondary reclaim water use is HVAC system water make-up and future site irrigation system.

If a water closet is operated, then a pressure drop will occur in the bladder tank. (FM-2) will register flow to the PLC. (FM-2) will send a signal to P-4A and P-4B. (PSV-1) will maintain adequate pressure to keep (PRV-1) closed. For the bladder tank to continue maintaining 65 psig, P-2 must operate. P-2 operates as long as (LS-2) indicates that there is adequate storage within the tank to provide wet suction to P-2. P-3 also operates continuously as long as (LS-2) indicates that there is adequate storage within the tank. An alarm will sound if this tank overflows and trips (FS-1). P-2 will shut down if (LS-2) indicates low tank trouble.

If the gravity tank is drawn down via P-2, then a signal will open (SV-1) and turn on P-1 within the buried storage tank. P-1 will operate to fill the gravity tank if (LS-1) is satisfied with adequate water level. P-1 will turn on/off via signal from (SV-1). A high water trouble alarm from (LS-1) will indicate that the tank is full and that additional water will overflow into the storm system automatically by gravity.

As long as there is adequate water storage within the buried reclaim tanks, then the water closets will continue to receive recycled water. If water storage is inadequate, then the gravity tank will not re-fill. P-1 and P-2 will not operate and pressure within the bladder tank will drop to below 55 psig. At that point, non-potable water from the municipal system will begin to flow through (FM-1) and (PRV-1) to automatically supply the water closets.

The same sequence of operation will occur either individually or simultaneously to the HVAC and irrigation systems via (FM-3), (FM-4) and (PSV-2).



6	ADDENDUM #6	2/13/04
4	GMP ADDENDUM #4	1/30/04
	GMP DOCUMENTS	1/19/04
no.	revisions/submissions	date

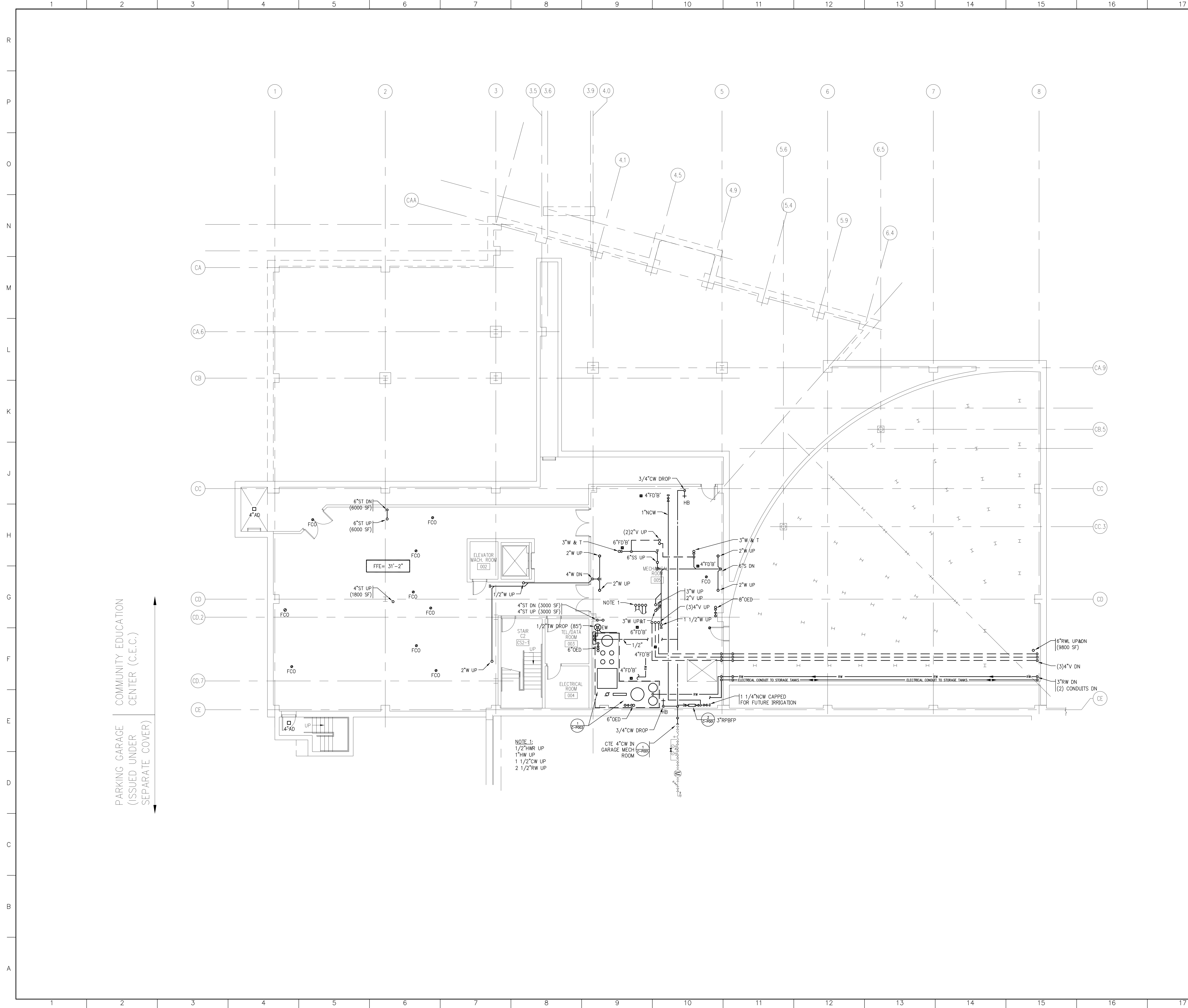
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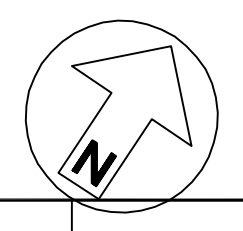
drawing title	PLUMBING DETAILS AND PART PLANS	
seal	designed by	project no. 5001024.02
	drawn by	CAD file no.
	checked by	drawing no.
	date	
	scale	

C-P003



COMMUNITY EDUCATION CENTER (C.E.C.)
 PARKING GARAGE (ISSUED UNDER SEPARATE COVER)

NOTE 1:
 1/2" HW UP
 1" HW UP
 1 1/2" CW UP
 2 1/2" RW UP



6	ADDENDUM #6	2/13/04
4	GMP ADDENDUM #4	1/30/04
	GMP DOCUMENTS	1/19/04
no.	revisions/submissions	date

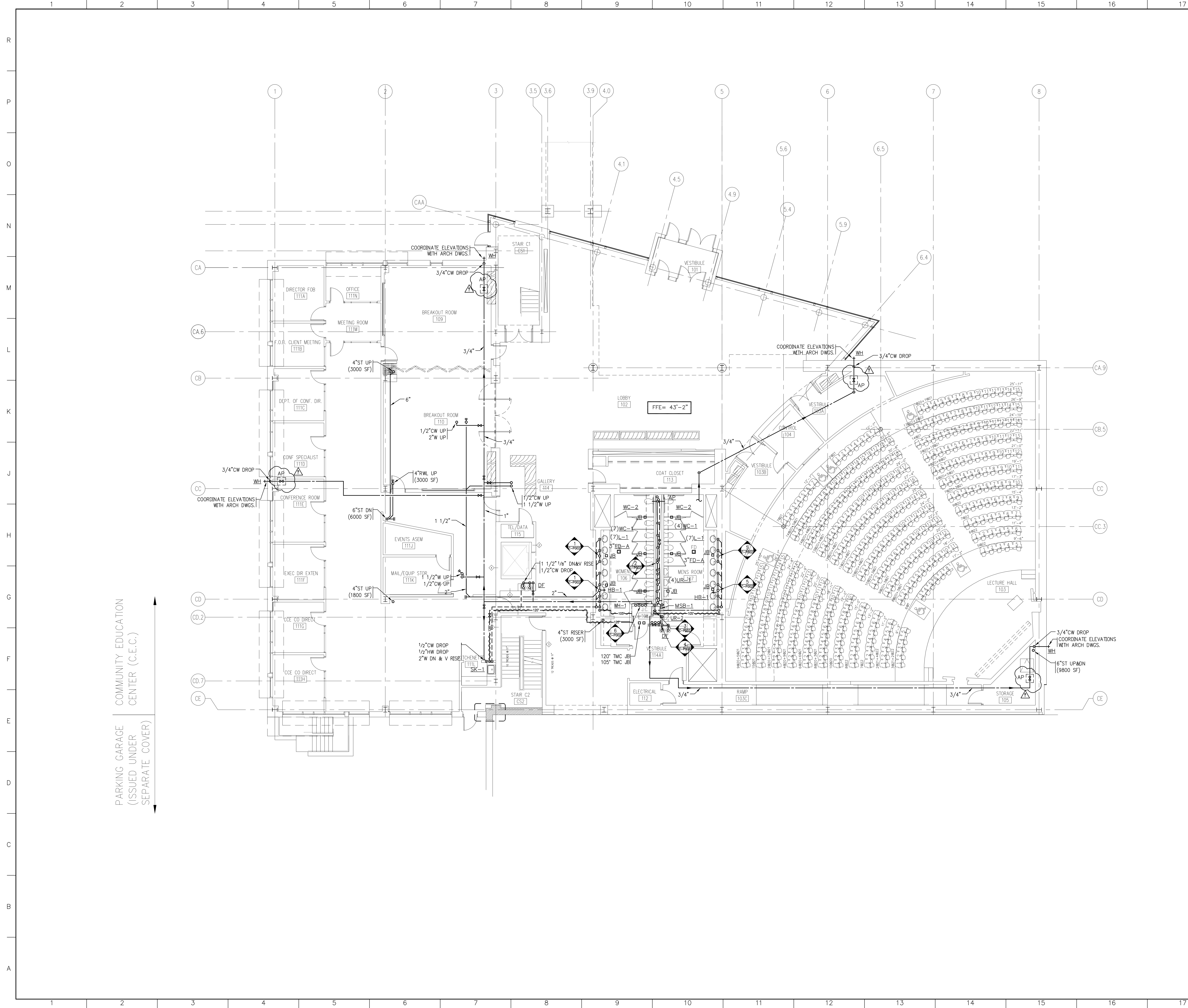
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drawing title **PLUMBING**
BASEMENT FLOOR PLAN

seal	designed by PRT	project no. 5001024.02
	drawn by DWP	CAD file no.
	checked by DFR	drawing no.
	date 2/13/2004	C-P101
	scale 1/8"=1'-0"	



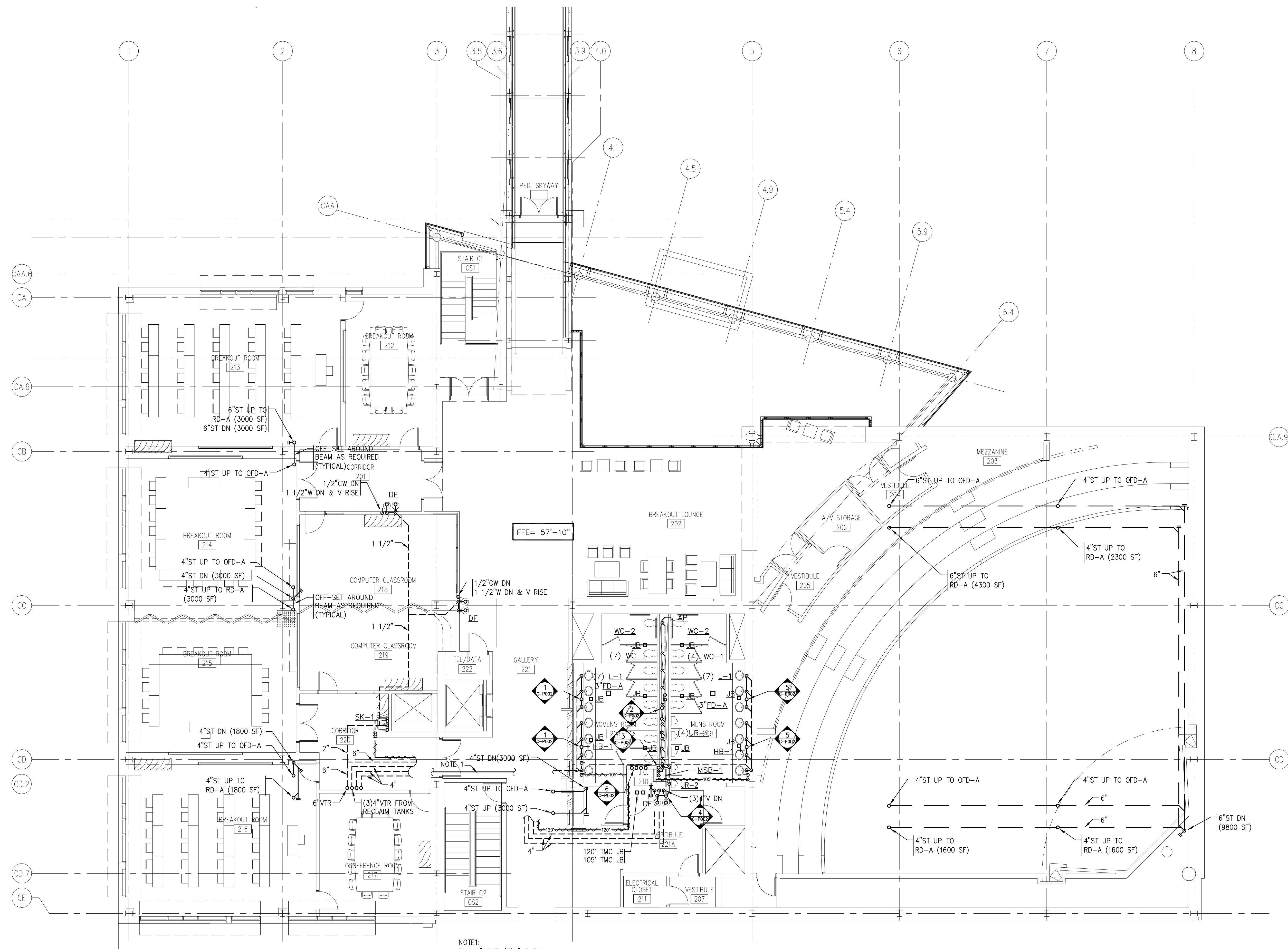
COMMUNITY EDUCATION CENTER (C.E.C.)
 PARKING GARAGE (ISSUED UNDER SEPARATE COVER)

6	ADDENDUM #6	2/13/04
4	GMP ADDENDUM #4	1/30/04
	GMP DOCUMENTS	1/19/04
	no. revisions/submissions	date

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drawing title		
PLUMBING FIRST FLOOR PLAN		
seal	designed by PRT	project no. 5001024.02
	drawn by DWP	CAD file no.
	checked by DFR	drawing no.
	date 2/13/2004	C-P102
	scale 1/8"=1'-0"	



NOTE:
 RUN 6" VENT, (3/4)" VENTS
 AND 1/2" 120" VENT VERTICALLY
 ALONGSIDE HVAC DUCT WORK

6	ADDENDUM #6	2/13/04
4	GMP ADDENDUM #4	1/30/04
	GMP DOCUMENTS	1/19/04
no.	revisions/submissions	date

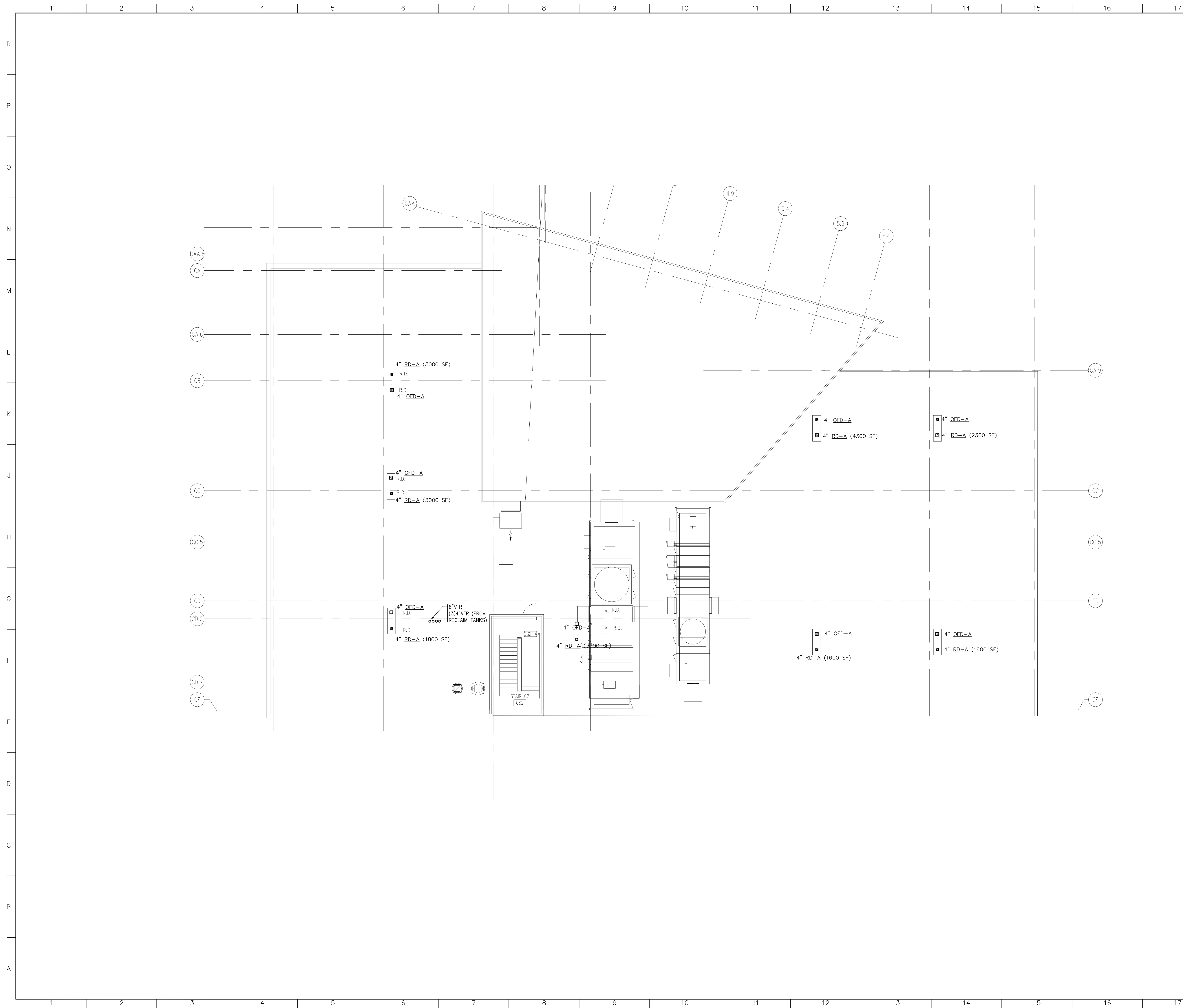
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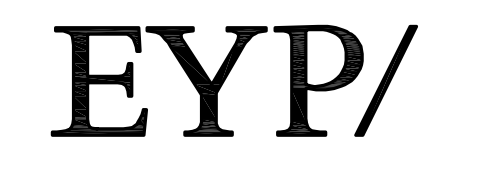
drawing title **PLUMBING
 SECOND FLOOR PLAN**

seal	designed by PRT	project no. 5001024.02
	drawn by DWP	CAD file no.
	checked by DFR	drawing no.
	date 2/13/2004	C-P103
	scale 1/8"=1'-0"	



6	ADDENDUM #6	2/13/04
4	GMP ADDENDUM #4	1/30/04
	GMP DOCUMENTS	1/19/04
	no. revisions/submissions	date

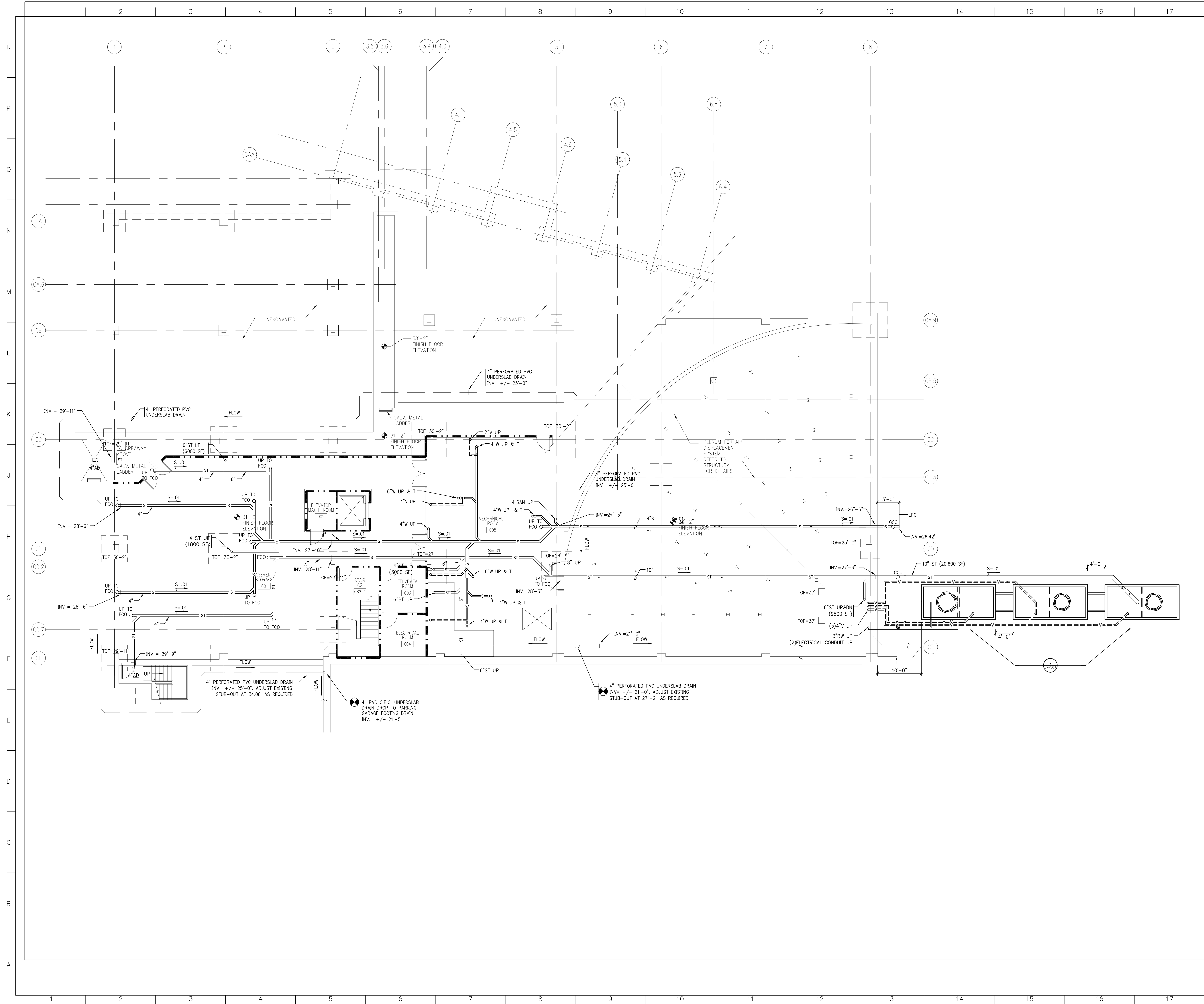
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drawing title **PLUMBING
 ROOF PLAN**

seal	designed by	project no.
	PRT	5001024.02
	drawn by	CAD file no.
	DWP	
	checked by	drawing no.
	DFR	
	date	
	2/13/2004	
	scale	
	1/8"=1'-0"	C-P104



6	ADDENDUM #6	2/13/04
4	GMP ADDENDUM #4	1/30/04
	GMP DOCUMENTS	1/19/04
	no. revisions/submissions	date

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drawing title **PLUMBING
 UNDERSLAB PLAN**

seal	designed by	project no.
	PRT	5001024.02
	drawn by	CAD file no.
	DWP	
	checked by	drawing no.
	DFR	
	date	
	2/13/2004	
	scale	
	1/8"=1'-0"	C-P10U