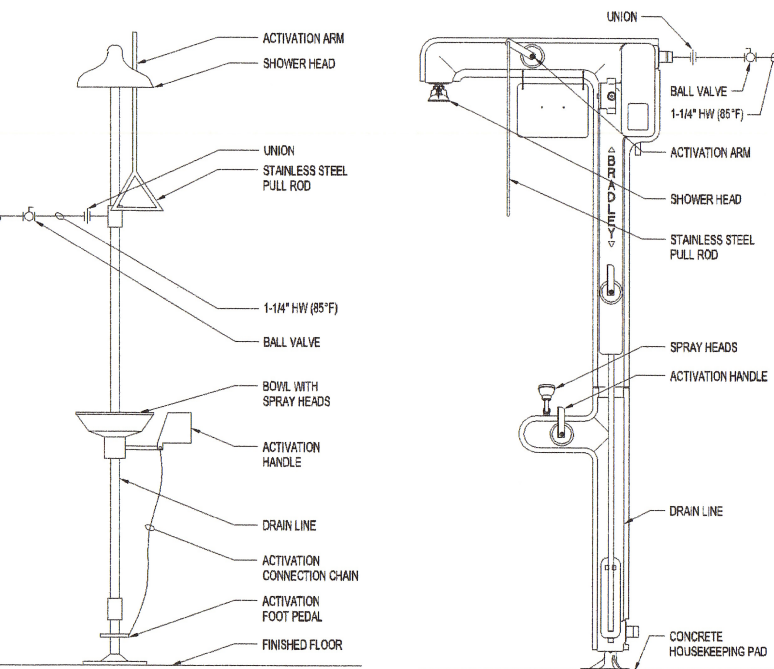
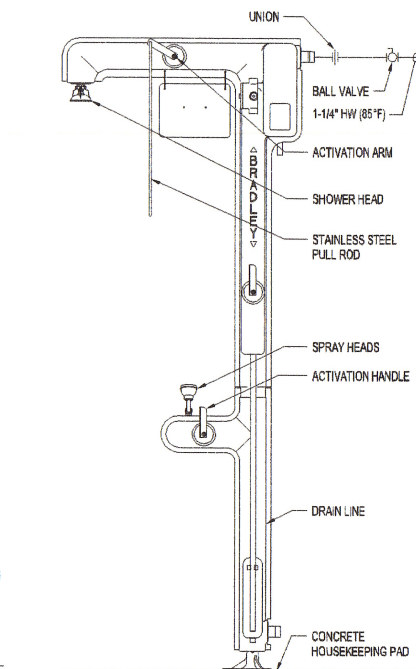


PLUMBING FIXTURE SCHEDULE									
TAG	ITEM	MANUFACTURER & MODEL	WASTE	VENT	CW	HW	FITTINGS/ACCESSORIES OR DESIGN DATA	ITEM DESCRIPTION	
WC	FLOOR MOUNTED FLOOR OUTLET WATER CLOSET	AMERICAN STANDARD MADERA #2234.001	3"	2"	1"	NA	SLOAN ROYAL LC-111-1.6 FLUSH VALVE OLSONITE #95C SEAT	VITREOUS CHINA, WATER SAVER, SIPHON JET ACTION, ELONGATED BOWL, MEETS ANSI A112.19.2M	
HWC	FLOOR MOUNTED FLOOR OUTLET HANDICAP WATER CLOSET	AMERICAN STANDARD MADERA #3462.001	3"	2"	1"	NA	AMERICAN STANDARD ELECTRONIC DC POWER #8065.121.002 FLUSH VALVE OLSONITE #95C SEAT	VITREOUS CHINA, WATER SAVER, SIPHON JET ACTION, ELONGATED BOWL, MEETS ANSI A112.19.2M, MEETS ADA REQUIREMENTS	
HUR	WALL-HUNG HANDICAP URINAL	AMERICAN STANDARD #8501.010	2"	1-1/2"	1"	NA	SLOAN ROYAL #186-1 FLUSH VALVE	VITREOUS CHINA, WATER SAVER, WASHOUT ACTION, MEETS ANSI A112.19.2 MOUNT TO ADA GUIDELINES	
LAV	COUNTERTOP MOUNT LAVATORY	AMERICAN STANDARD AFFINITY #3420.403	1-1/4"	1-1/4"	1/2"	1/2"	MOEN #8420 SINGLE HANDLE FAUCET AND GRID STRAINER ASSEMBLY	FAUCETS AND STRAINERS TO BE INSTALLED IN INTEGRAL LAV/ COUNTERTOP PROVIDED BY OTHERS	
HLAV	COUNTERTOP MOUNT LAVATORY	AMERICAN STANDARD AFFINITY #3420.403	1-1/4"	1-1/4"	1/2"	1/2"	MOEN #8420 SINGLE HANDLE FAUCET AND GRID STRAINER ASSEMBLY	FAUCETS AND STRAINERS TO BE INSTALLED IN INTEGRAL LAV/ COUNTERTOP PROVIDED BY OTHERS	
HSH	HANDICAP SHOWER	BRADLEY #HN200-TMV-SF	NA	NA	1/2"	1/2"	NA	BUILT IN ADA COMPLIANT SHOWER WITH CONCEALED SUPPLIES, THERMOSTATIC MIXING VALVE, ADA HOSE ATTACHMENT AND STANDARD SHOWER HEAD	
KS	SINGLE BOWL COUNTERTOP SINK	ELKAY SINGLE BOWL #LRAD-2222-80-3	1-1/4"	1-1/4"	1/2"	1/2"	ELKAY #LK-232-S HI-ARC FAUCET ELKAY #LK-99 DRAIN OUTLET	18 GAUGE TYPE 302 STAINLESS STEEL SELF RIMMING SINK FULLY UNDERCOATED	
LS	LABORATORY SINK	FISHER HAMILTON EPOXY RESIN SINK #52L468	3"	1-1/2"	1/2"	1/2"	AMERICAN STANDARD LABORATORY FAUCET #7272.820	WHITE EPOXY RESIN SINGLE COMPARTMENT SINK WITH CENTER DRAIN	
EWC	ELECTRIC WATER COOLER	ELKAY #EZSTLR8	1-1/2"	1-1/4"	1/2"	NA	NA	DUAL SELF CONTAINED WALL HUNG ELECTRIC WATER COOLER WITH SELF CLOSING TOUCH CONTROLS ON FRONT AND SIDES OF EACH UNIT	
SD	SHOWER DRAIN	ZURN #FD-2251	3"	SEE PLAN	NA	NA	NA	CAST IRON SHOWER DRAIN WITH STAINLESS STEEL STRAINER, VANDAL PROOF TOP AND NO HUB OUTLET	
MS	MOP SINK	FIAT #SB 2424	3"	1-1/4"	1/2"	1/2"	FIAT #830-AA FAUCET, #889-CC MOP HANGER, #1239-BB ALUMINUM BUMPER GUARD	MOLDED-STONE, 8" HIGH 2" WIDE WALLS, STAINLESS STEEL DRAIN BODY, COMBINATION STAINLESS STEEL DOME STRAINER WITH LINT BASKET, PROVIDE DEEP SEAL P-TRAP	
FD	FLOOR DRAIN	JOSAM 30000 SERIES	SEE PLAN	NA	NA	NA	NA	TWO-PIECE BODY WITH ADJUSTABLE STRAINER, WITH WEEPHOLES AND INVERTIBLE COLLAR	
EEW	EMERGENCY EYE-FACE WASH (INTERIOR)	BRADLEY #S18214YF	NA	NA	1/2"	1/2"	NA	BARRIER-FREE COMBINATION EYE & FACE WASH WITH STAINLESS STEEL BOWL, COMPLIES WITH ANSI Z358.1	
ESH	EMERGENCY SHOWER/EYEWASH (INTERIOR)	BRADLEY #S19314BFSS	NA	NA	1-1/4"	1-1/4"	NA	BARRIER-FREE COMBINATION SHOWER/EYEWASH WITH STAINLESS STEEL SHOWER HEAD, BOWL AND CONSTRUCTION; COMPLIES WITH ANSI Z358.1	
EESH	EXTERIOR EMERGENCY SHOWER/EYEWASH	BRADLEY MODEL #S19-300B2S	NA	NA	1-1/4"	1-1/4"	NA	HEAT TRACE COMBINATION SHOWER/EYEWASH WITH STAINLESS STEEL SHOWER HEAD AND BOWL; COMPLIES WITH ANSI Z358.1	
DPCO	DECK PLATE CLEANOUT	JAY R. SMITH 4020 SERIES	SEE PLAN	NA	NA	NA	NA	ADJUSTABLE FLOOR CLEANOUT WITH POLISHED BRONZE COVER	
WCO	WALL CLEANOUT	JOSAM 58890 SERIES	SEE PLAN	NA	NA	NA	NA	CAST BRONZE COUNTERSUNK PLUG AND POLISHED STAINLESS STEEL ROUND ACCESS COVER PLATE SECURED TO PLUG BY COUNTERSUNK SCREW	
SA	SHOCK ABSORBER	JOSAM 75000 SERIES	NA	NA	SEE PLAN	SEE PLAN	NA	STAINLESS STEEL SHELL, ELASTOMER BELLOW, STAINLESS STEEL ADAPTER AND MALE THREADED PLUG	
HB	HOSE BIBB	WATTS #SC8	NA	NA	3/4"	NA	NA	COMBINATION HOSE BIBB WITH SEPARATE TAMPER PROOF VACUUM BREAKER WITH CAST IRON HAND WHEEL AND ADJUSTABLE PACKING NUT	
NFHB	NON-FREEZE HOSE BIBB	JAY R. SMITH FIGURE 5509	NA	NA	3/4"	NA	NA	NON-FREEZE, INTEGRAL VACUUM BREAKER, RECESSED BOX, LOCKING COVER AND KEY	
RPZ	REDUCED PRESSURE ZONE ASSEMBLY (BACKFLOW PREVENTER)	WATTS SERIES 008	NA	NA	SEE PLAN	NA	NA	EPOXY COATED CAST IRON REDUCED PRESSURE ZONE ASSEMBLY WITH TWO INDEPENDENT SPRING CHECK MODULES, DIFFERENTIAL PRESSURE RELIEF VALVE,	
TMV-1	MIXING VALVE	LEONARD #TM-520-LF-RF-R34	NA	NA	3/4"	1"	COLOR-CODED DIAL THERMOMETER, INLET THERMOMETERS	BRONZE BODY CONSTRUCTION; REPLACEABLE POLYMER CHECK SEATS; REMOVABLE STAINLESS STEEL RELIEF VALVE SEAT; QUARTER TURN BALL VALVES	
TMV-2	MIXING VALVE	LEONARD #TM-5100-STSTL-EXP	NA	NA	1-1/4"	1-1/4"	COLOR-CODED DIAL THERMOMETER, INLET THERMOMETERS	BRONZE BODY CONSTRUCTION; REPLACEABLE POLYMER CHECK SEATS; REMOVABLE STAINLESS STEEL RELIEF VALVE SEAT; QUARTER TURN BALL VALVES	
TP	TRAP PRIMER	JOSAM #88300	NA	NA	1/2"	NA	JOSAM #88250 TRAP SEAL PRIMER VALVE	BRONZE TRAP PRIMER VALVE WITH 1/2" N.P.T. INLET, INTEGRAL BACKFLOW PREVENTER, VACUUM BREAKER PORTS AND 1/2" F.N.P.T. OUTLET	

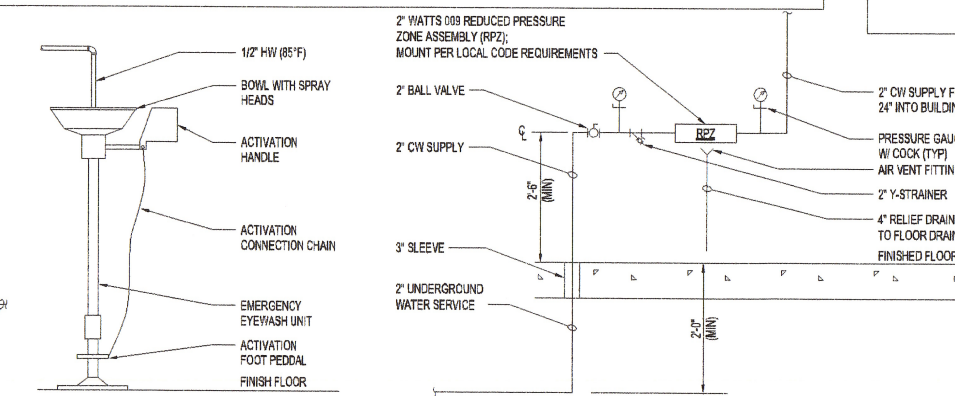
HOSE REEL SCHEDULE						
TAG	SERVICE	PRESSURE (PSI)	HOSE ID (IN)	LENGTH (FT)	CONNECTION SIZE INLET (IN) OUTLET (IN)	MANUFACTURER & MODEL#
HR	DOMESTIC WATER	250	3/4	50	3/4 3/4	REEL CRAFT #83050 OLP
			REMARKS			
			PROVIDE UNION, BALL VALVES AND SPRAY VALVE. PROVIDE MOUNTING BRACKET.			



EMERGENCY SHOWER/EYEWASH DETAIL
SCALE: NOT TO SCALE

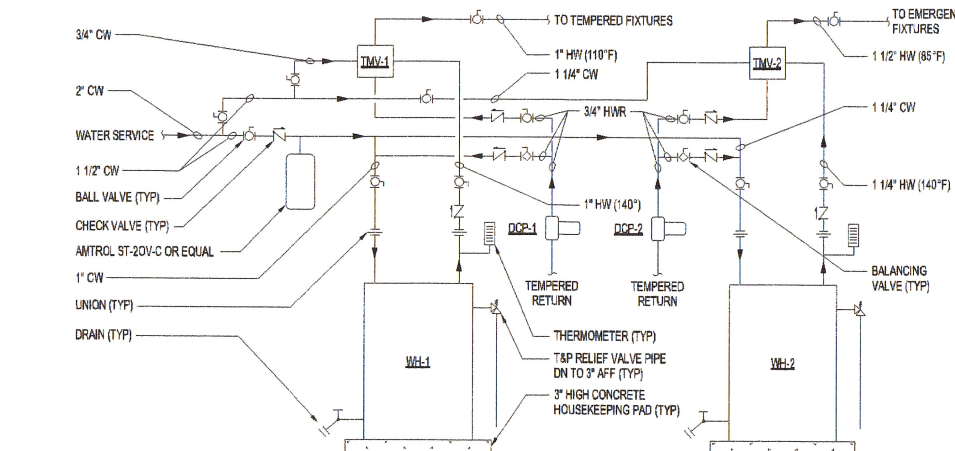


EXTERIOR EMERGENCY SHOWER/EYEWASH DETAIL
SCALE: NOT TO SCALE



WATER SERVICE ENTRANCE DETAIL
SCALE: NOT TO SCALE

EMERGENCY EYE-FACE WASH DETAIL
SCALE: NOT TO SCALE

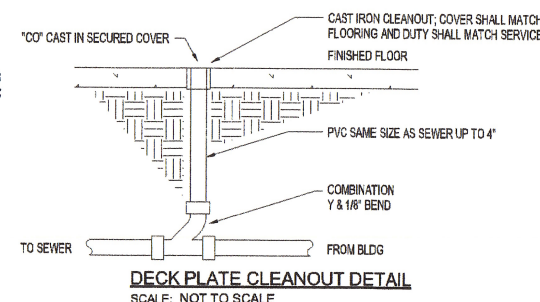


ELECTRIC WATER HEATER DETAIL
SCALE: NOT TO SCALE

SYMBOLS	
	BALL VALVE
	BALANCING VALVE
	PRESSURE RELIEF VALVE
	SWING CHECK VALVE
	PIPE TURNING IN
	PIPE BREAK
	UNION
	THERMOMETER
	PRESSURE GAUGE

ABBREVIATIONS	
ADA	AMERICANS WITH DISABILITY ACT
AFF	ABOVE FINISHED FLOOR
CL	CENTER LINE
CO	CLEANOUT
CW	COLD WATER
DCP	DOMESTIC CIRCULATING PUMP
DN	DOWN
DPCO	DECKPLATE CLEANOUT
EC	ELECTRICAL CONTRACTOR
EEW	EMERGENCY EYE-FACE WASH
ESH	EMERGENCY SHOWER/EYEWASH
EESH	EXTERIOR EMERGENCY SHOWER/EYEWASH
ET	EXPANSION TANK
EWC	ELECTRIC WATER COOLER
FD	FLOOR DRAIN
FLA	FULL LOAD AMPS
FT HD	FEET OF HEAD
GAL	GALLONS
HB	HOSE BIBB
HLAV	HANDICAP LAVATORY
HP	HORSEPOWER
HSH	HANDICAP SHOWER
HUR	HANDICAP URINAL
HW	HOT WATER
HWR	HOT WATER RETURN
HWC	HANDICAP WATER CLOSET
INV	INVERT

ABBREVIATIONS	
IN WG	INCH WATER GAGE
KS	KITCHEN SINK
KW	KILOWATT
LAV	LAVATORY
LS	LABORATORY SINK
MAX	MAXIMUM
MIN	MINIMUM
MS	MOP SINK
NFHB	NON-FREEZE HOSE BIBB
PC	PLUMBING CONTRACTOR
PH	PHASE
PSIG	POUNDS PER SQUARE INCH GAGE
RPM	REVOLUTIONS PER MINUTE
RPZ	REDUCED PRESSURE ZONE ASSEMBLY
SA	SHOCK ABSORBER
SAN	SANITARY
SD	SHOWER DRAIN
TMV	THERMOSTATIC MIXING VALVE
TP	TRAP PRIMER
TYP	TYPICAL
T&P	TEMPERATURE AND PRESSURE
USAN	UNDERSLAB SANITARY
V	VENT
VTR	VENT THRU ROOF
WCO	WALL CLEANOUT
WH	WATER HEATER
°F	DEGREES FAHRENHEIT



DECK PLATE CLEANOUT DETAIL
SCALE: NOT TO SCALE

CIRCULATING PUMP SCHEDULE									
TAG	LOCATION	SERVICE	FLUID	GPM	FT HD	ELECTRICAL			MANUFACTURER & MODEL#
DCP-1	PROCESS 19	110°F HWR	DOMESTIC WATER	3	38	1/3	120	1	1750
DCP-2	PROCESS 19	85°F HWR	DOMESTIC WATER	3	38	1/3	120	1	1750
			REMARKS						
			PROVIDE LEAD-FREE BRONZE CONSTRUCTION; FURNISH WITH 120 VOLT AQUASTAT (INSTALLED BY PC/WIRED BY EC)						

EXPANSION TANK (BLADDER TYPE) SCHEDULE									
TAG	LOCATION	SERVICE	TYPE	FLUID	ACCEPTANCE VOLUME (GAL)	SIZE VOLUME	FILL PRESS (PSIG)	RELIEF VALVE SETTING (PSIG)	MANUFACTURER & MODEL#
ET	PROCESS 19	DOMESTIC WATER	BLADDER	WATER	3.2	8.0	55	90	AMTROL #ST-20V-C
			REMARKS						
			PROVIDE ASME RATED TANK						

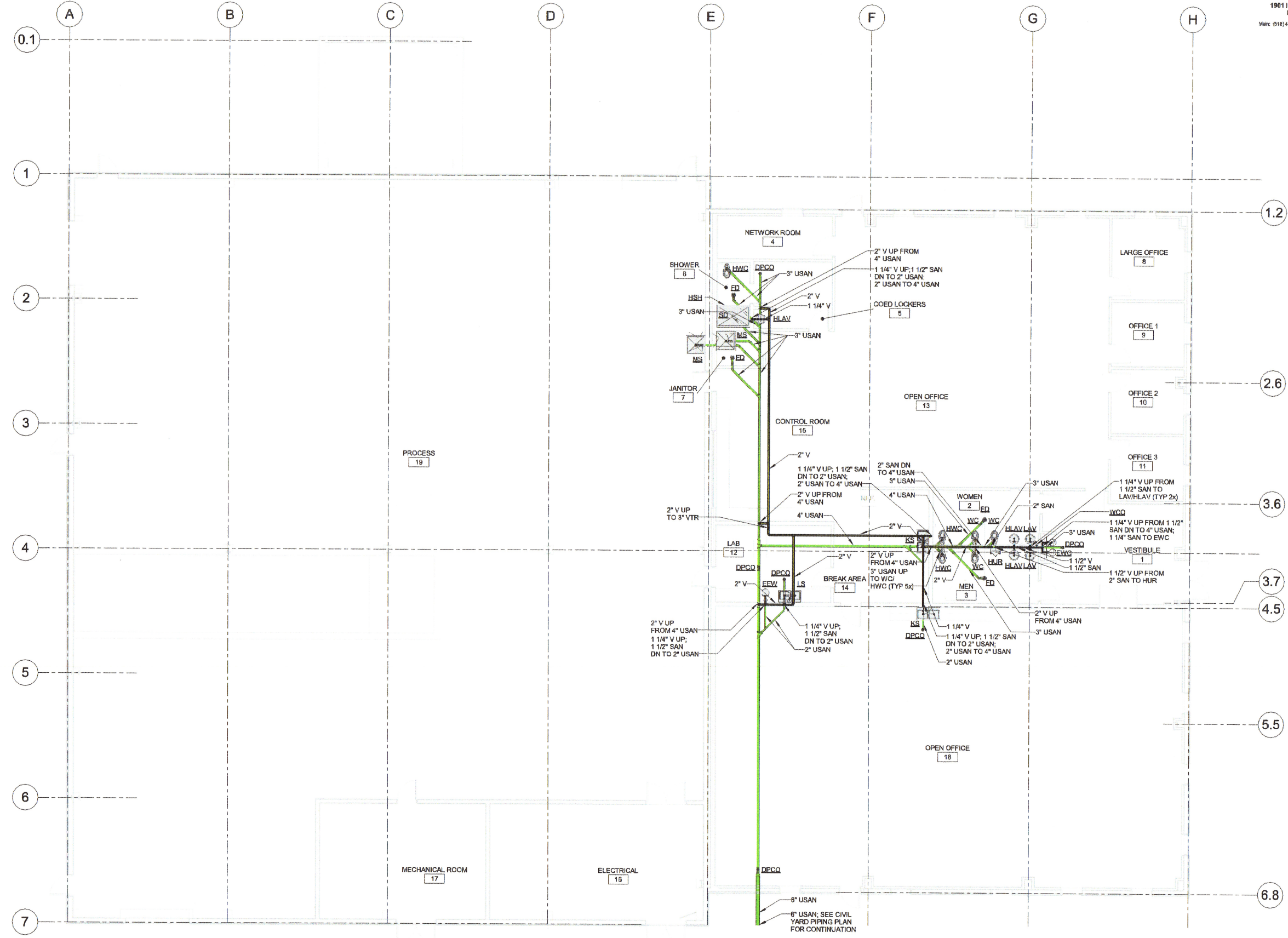
ELECTRIC WATER HEATER SCHEDULE									
TAG	TYPE	SERVICE	GALLONS	KW	GPH	RISE	ELECTRICAL DATA		MANUFACTURER & MODEL#
WH-1	ELECTRIC	DOMESTIC WATER	80	8	36	90°F	480	3	A.O. SMITH #DEN-80
WH-2	ELECTRIC	DOMESTIC WATER	119	12	54	90°F	480	3	A.O. SMITH #DEN-120
			REMARKS						
			ASME TANK CONSTRUCTION; TWO (2) SIMULTANEOUS ELEMENTS						

ISSUED FOR CONSTRUCTION

BLACK & VEATCH
Building a world of difference
Kansas City, Missouri

BEDFORD REGIONAL WATER AUTHORITY
SMITH MOUNTAIN LAKE WTP &
LAKES TO FOREST WATER LINE EXTENSION
LEGEND, DETAILS AND SCHEDULES

DESIGNED: NS
CHECKED: TW
APPROVED: Approved
DATE: 08-2014
CHA PROJECT NO. 27872
P-00-001
SHEET 1 OF 4



OPERATING FLOOR DRAINAGE & VENT PIPING PLAN
SCALE: 1/8" = 1'-0"

ISSUED FOR CONSTRUCTION

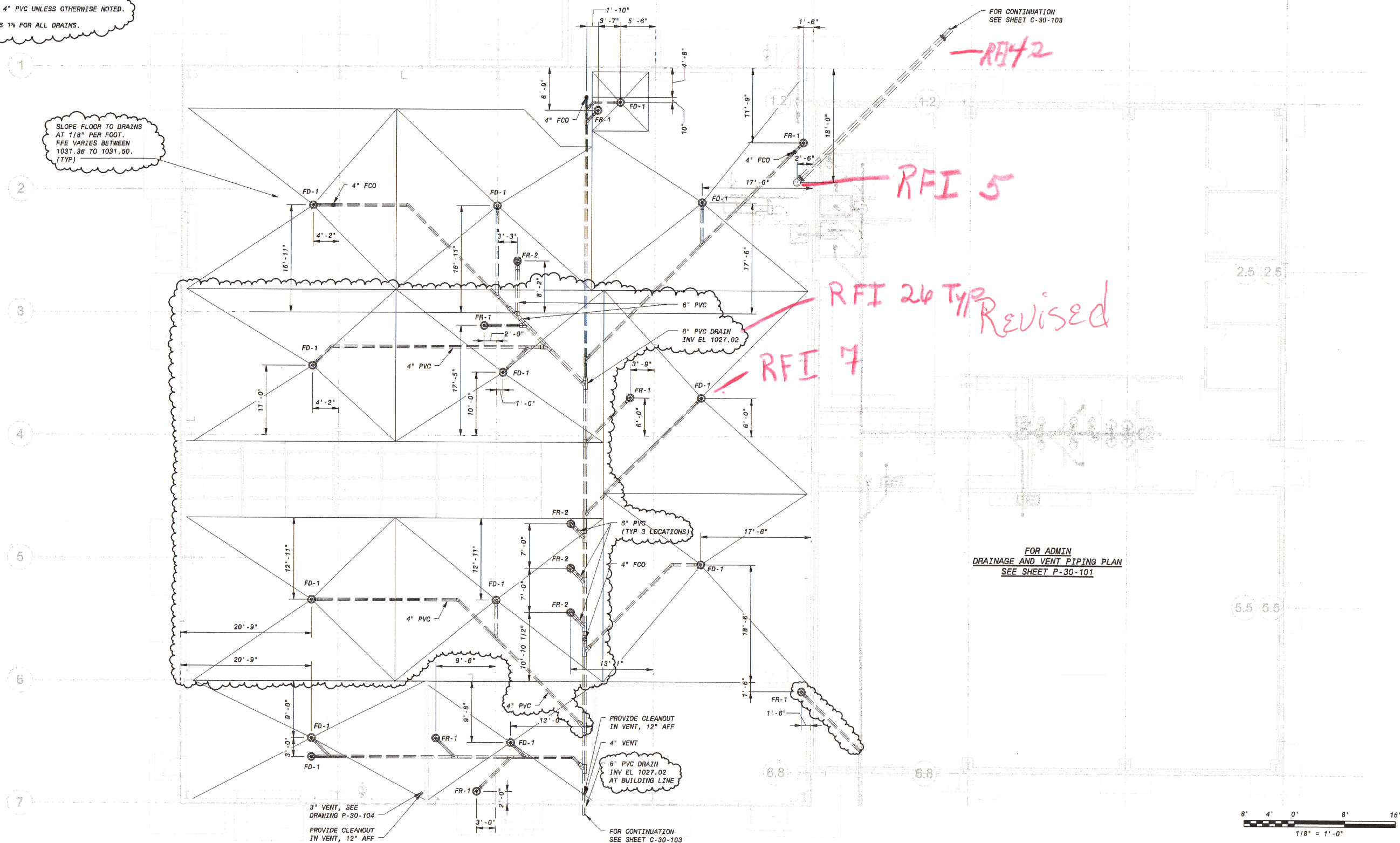
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DATE	USER:	
BLACK & VEATCH Building a world of difference Black & Veatch Corporation Kansas City, Missouri		
BEDFORD REGIONAL WATER AUTHORITY SMITH MOUNTAIN LAKE WTP & LAKES TO FOREST WATER LINE EXTENSION ADMIN BUILDING - OPERATING FLOOR DRAINAGE & VENT PIPING PLAN		
DESIGNED: NS		
DETAILED: EM		
CHECKED: TW		
APPROVED: Approver		
DATE: 06-2014		
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE		
CHA PROJECT NO. 27872		
P-30-101		
SHEET 2 OF 4		

FLOOR DRAIN SCHEDULE				
DESIGNATION	ITEM	OUTLET SIZE	TOP ELEVATION	MODEL
FD-1	FLOOR DRAIN	4"	1031.33 UNLESS OTHERWISE NOTED	ZURN FD-2330 OR EQUAL
FR-1	FUNNEL RECEPTOR	4"	1" AFF	ZURN Z-326 OR EQUAL
FR-2	FUNNEL RECEPTOR	6"	1" AFF	ZURN Z-326 OR EQUAL
FCO	FLOOR CLEANOUT	4"	MATCH FF ELEV	ZURN CO-2520 OR EQUAL

NOTES:

1. ALL PIPING IS A 4" PVC UNLESS OTHERWISE NOTED.
2. MINIMUM SLOPE IS 1% FOR ALL DRAINS.

SLOPE FLOOR TO DRAINS
AT 1/8" PER FOOT.
FFE VARIES BETWEEN
1031.38 TO 1031.50.
(TYP) _____



ECN 9

FOR CONTINUATION
SEE SHEET C-30-103

—RE42

RFI 5

RFI 24 Type Revised

RFI 7

FOR ADMIN
DRAINAGE AND VENT PIPING PLAN
SEE SHEET P-30-101

PROVIDE CLEANOUT
IN VENT. 12" AFF

6" PVC DRAIN
INV EL 1027.02
AT BUILDING LINE

FOR CONTINUATION
SEE SHEET C-30-10

3" VENT, SEE
DRAWING P-30-104

PROVIDE CLEANOUT
IN VENT, 12" AFF

ISSUED FOR CONSTRUCTION

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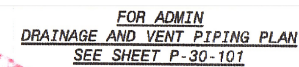
Black & Veatch Corporation
Virginia Beach, VA

**BEDFORD REGIONAL WATER AUTHORITY
SMITH MOUNTAIN LAKE WTP &
RAW WATER PUMPING STATION / INTAKE
PLUMBING
MEMBRANE BUILDING OPERATING FLOOR
DRAINAGE AND VENT PIPING PLAN**

DESIGNED: MBS
DETAILED: MAK
CHECKED: MBS
APPROVED: FJD
DATE: 12/09/15
 IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE
PROJECT NO. 182262
P-30-102
SHEET - OF -

NOTES:

1. ALL PIPING IS 4" PVC UNLESS OTHERWISE NOTED.
2. MINIMUM SLOPE IS 1% FOR ALL DRAINS.



ISSUED FOR CONSTRUCTION

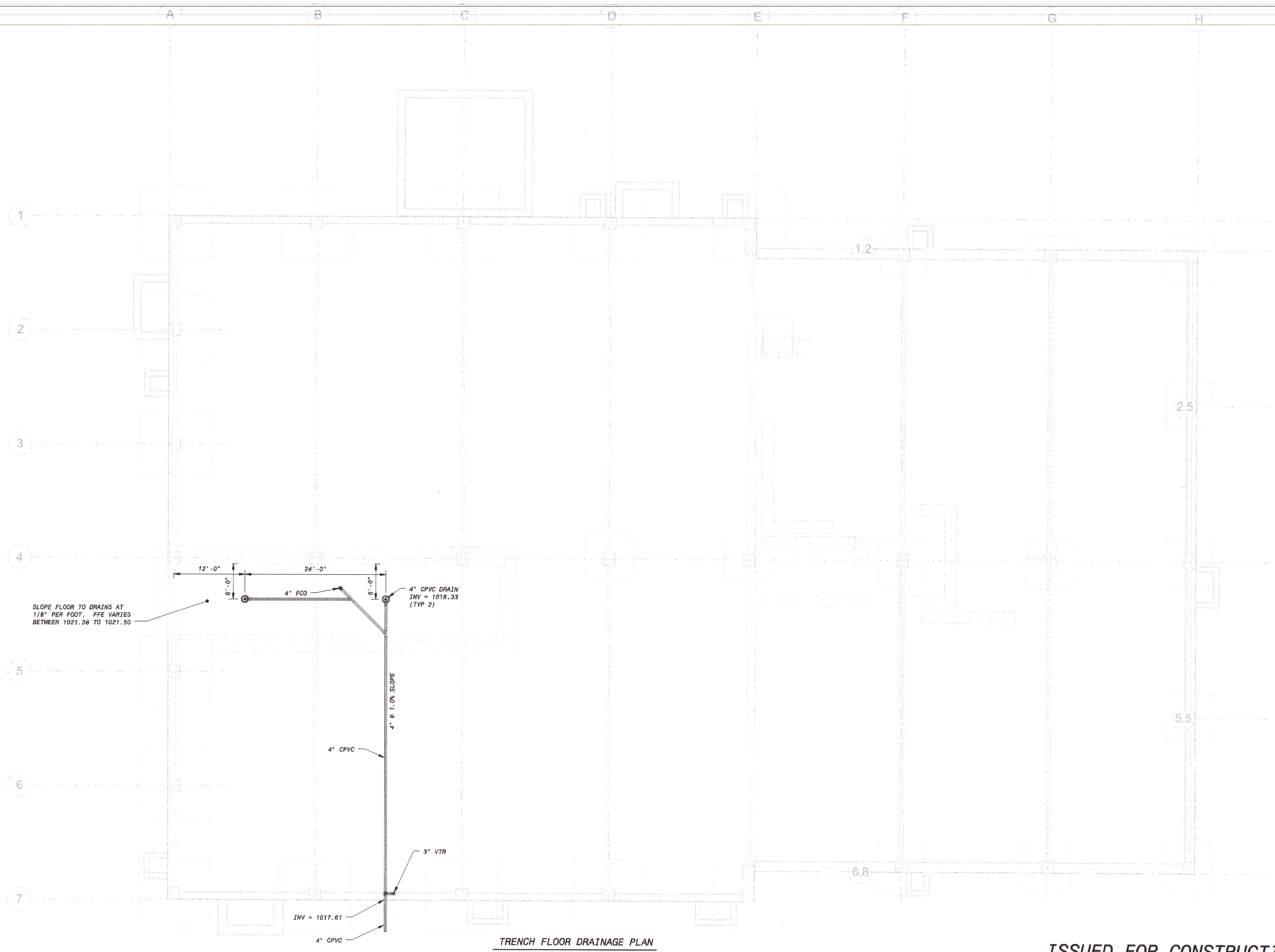
P-30-102
SHEET
- OF -



BEDFORD REGIONAL WATER AUTHORITY
SMITH MOUNTAIN LAKE WTP &
LAKES TO FOREST WATER LINE EXTENSION

MEMBRANE/ADMIN BUILDING - OPERATING
FLOOR POTABLE PIPING PLAN

ISSUED FOR CONSTRUCTION



SLOPE FLOOR TO DRAINS AT
1/8" PER FOOT. FFE VARIES
BETWEEN 1021.98 TO 1021.50

INV = 1017.61
4" CPVC

4" CPVC DRAIN
INV = 1018.33
(TYP 2)

4" @ 1.0% SLOPE

4" CPVC

3" VTR

TRENCH FLOOR DRAINAGE PLAN
1/8" = 1'-0"

11/2/15	DATE	ISSUE FOR CONSTRUCTION	0	NO. BY CHK APP
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		DWG VER:		

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Black & Veatch Corporation
Virginia Beach, VA

BEDFORD REGIONAL WATER AUTHORITY
SMITH MOUNTAIN LAKE WTP &
RAW WATER PUMPING STATION / INTAKE
PLUMBING
MEMBRANE BUILDING TRENCH
FLOOR DRAINAGE PLAN

DESIGNED:
DETAILED:
CHECKED:
APPROVED:
DATE:

0 1/2 1
IF THIS BAR DOES NOT
MEASURE 1" THEN DRAWING IS
NOT TO FULL SCALE

PROJECT NO.
182262

P-30-104
SHEET
OF -

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