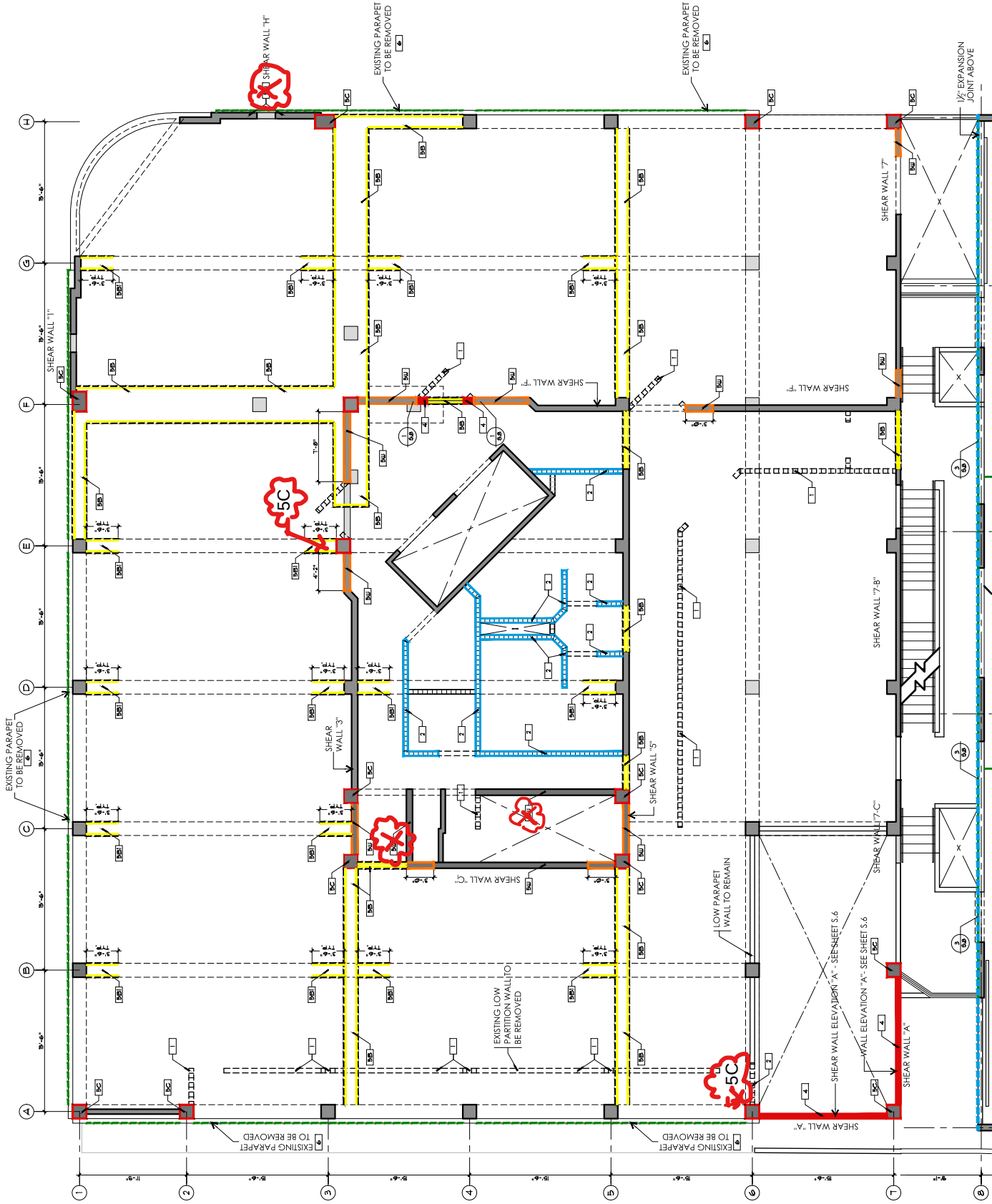


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LEGEND:	
1.	EXISTING PARTITION BLOCK WALL TO BE REMOVED
2.	EXISTING PARTITION BLOCK WALL TO BE REINFORCED
3.	EXISTING R/C WALL TO REMAIN
4.	NEW R/C WALL
5.	EXISTING R/C ELEMENTS TO BE REINFORCED
5C -	R/C COLUMN TO BE REINFORCED
5B -	R/C BEAM TO BE REINFORCED
5B1 -	42" R/C BEAM PORTION TO BE REINFORCED
5W -	R/C WALL TO BE REINFORCED
6.	EXISTING PARAPET TO BE REMOVED
7.	GREEN ROOF TO BE REMOVED
8.	PRECAST CONCRETE PLANTERS TO BE REMOVED
9.	EXISTING R/C BEAM BELOW
10.	1/2" EXPANSION JOINT

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DORIS J. QUINONES RIVERA

STRUCTURAL ENGINEERING CONSULTANTS
G.P.O. BOX 364129 SAN JUAN, P.R. 00936 -4129

787-644 6131

DESIGNED BY:
DJQ, MSCE, PE

DESIGN REVISED BY:

DRAWN BY:	_____	DATE:	_____
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SCALE: AS SH

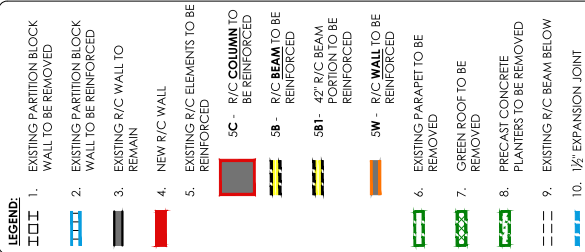
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EXISTING SECOND LEVEL FLOOR PLAN

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





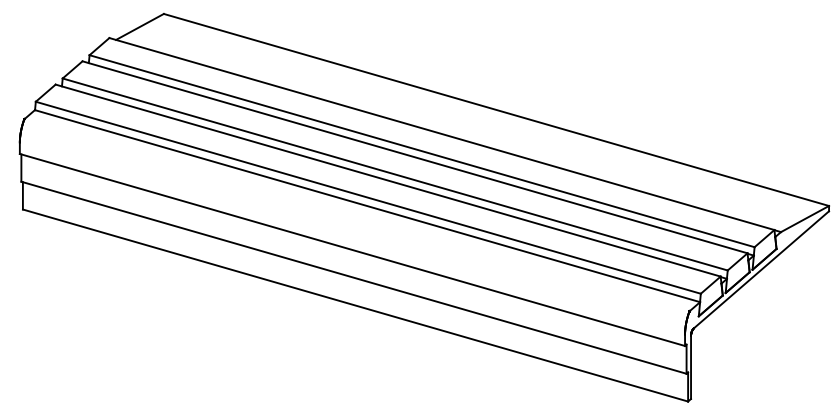
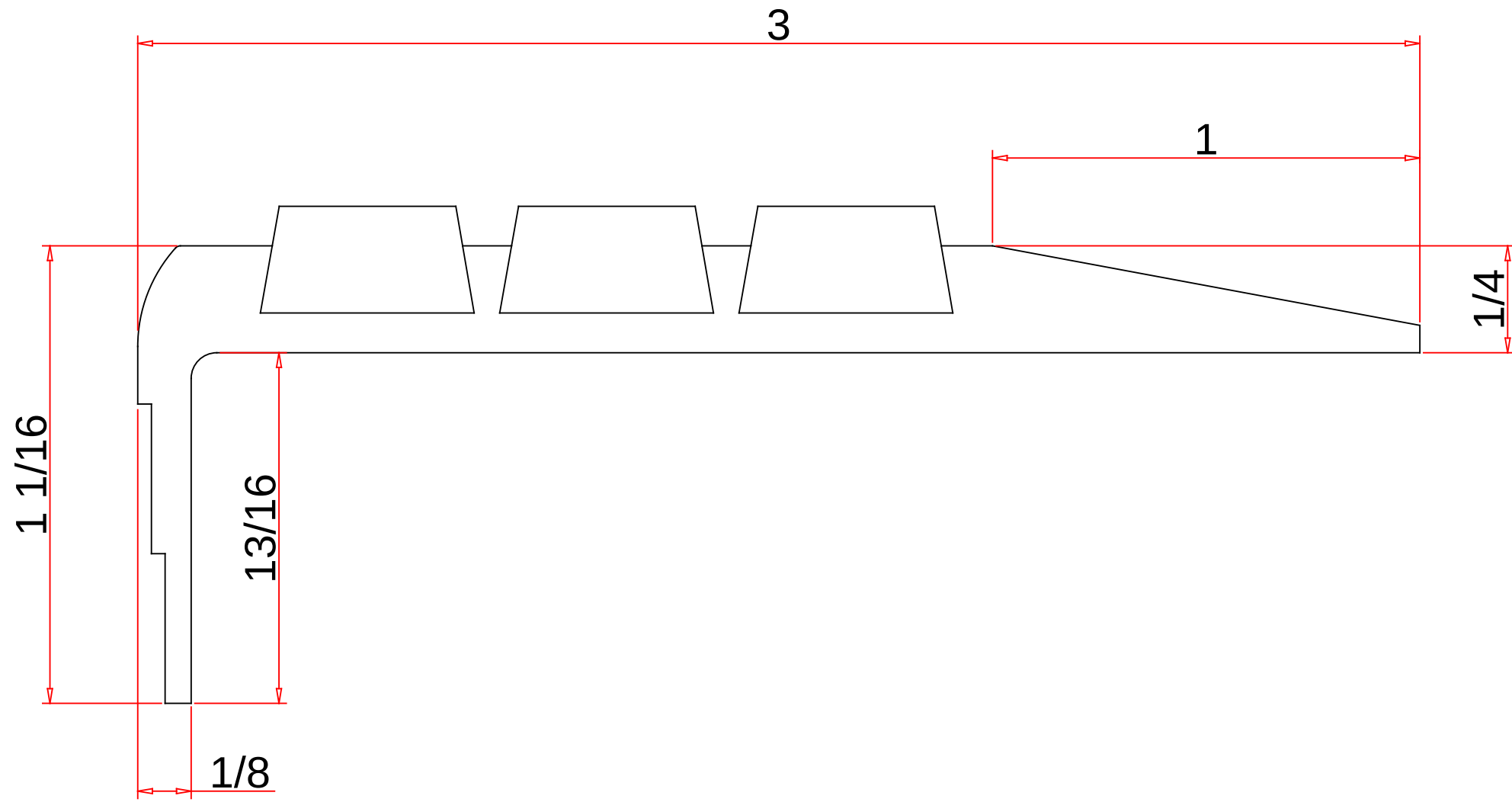
APPROVALS

Spa

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DESIGNED BY: DJQ, MSCE, PE	DRAWING NO. _____		DATE: AUGUST 2022
DESIGN REVISION BY:	DRAWN BY: _____	SCALE: AS SHOWN	

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



- SPECIFICATIONS:
- 1. BASE: HEAT TREATED EXTRUDED ALUMINUM ALLOY 6063-T6
 - 2. ABRASIVE: ALUMINUM OXIDE SILICON CARBIDE GRANULES IN A UV PROTECTED, 2 PART EPOXY, LOCKED INTO EXTRUDED CHANNELS
 - 3. BASE FINISH: MILL
 - 4. POURED CONCRETED STAIRS: NOSING SHALL TERMINATE NO MORE THEN 3" FROM END TO STEPS
 - 5. CONCRETE FILLED STEEL PAN STAIRS: NOSING SHALL BE FULL LENGTH OF STEPS, LESS 1/8" CLEARANCE
 - 6. COLOR: BLACK, YELLOW, GRAY, RED, BROWN, GREEN, BLUE, TAN
 - 7. LENGTH: 144 MAXIMUM (STANDARD)

LENGTH	QTY	COLOR

UNLESS OTHERWISE SPECIFIED:
DIMENSIONS ARE IN INCHES

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ING. CARLOS SIERRA, P.E.
SURVEYOR:
ING. DANIEL ROSARIO, P.E.

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CARIBE PLAZA OFFICE BUILDING

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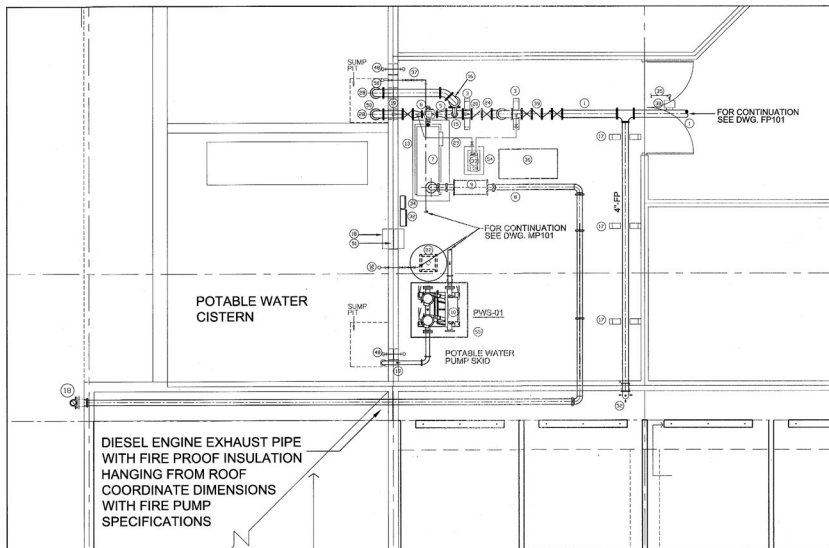
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0	1/10/2007	ISSUED FOR B.O.

PROJECT NO: 050601
DRAWN BY: Roberto Mateo
Lic. 18111
CHKD BY: Ing. Rafael Arsuaga
Lic. 18111

SHEET TITLE

CISTERN AND PUMP ROOM PIPING LAYOUT

FP106

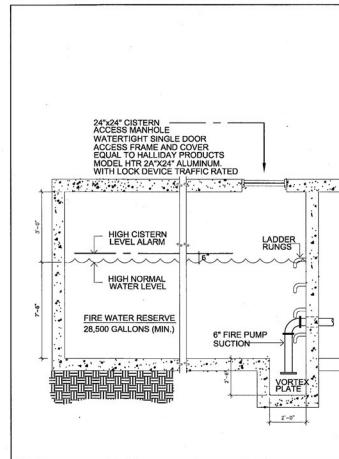


FIRE-POTABLE PUMPS MECHANICAL ROOM BLOW UP

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

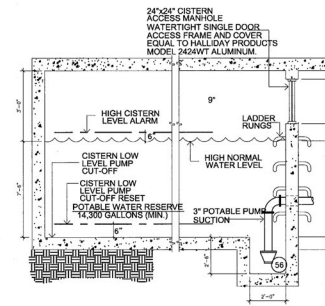
LEGEND:

- 1 6" STEEL PIPE
- 2 3" STEEL PIPE
- 3 PIPE SUPPORT. SEE DETAIL ON DWG. FP109
- 4 4" STEEL PIPE
- 5 CONCENTRIC REDUCER
- 6 VERTICAL TURBINE FIRE PUMP 750 GPM AT 130 PSI.
- 7 FIRE PUMP DIESEL ENGINE.
- 8 DIESEL ENGINE EXHAUST PIPE WITH FIRE PROOF INSULATION AND RAIN CAP AT END OF STACK.
- 9 DIESEL ENGINE EXHAUST MUFFLER WITH FIRE PROOF INSULATION.
- 10 POTABLE WATER PUMPING SYSTEM SKID SIMILAR OR EQUAL TO TIGERFLOW series ES-3000, model DBV-10PC-A1-S3 COORDINATE WITH FINAL EQUIPMENT SHOP DRAWINGS. CLOSE COUPLED PUMP. (2) 120 GPM @ 175 FT TDH; 10HP; 480/3/60
- 11 4" VENT PIPE
- 12 WATER LEVEL REGULATOR
- 13 CONCRETE BASE FOR FIRE PUMP DIESEL ENGINE-COORDINATE WITH FINAL EQUIPMENT SHOP DRAWINGS.
- 14 COMBINATION PRESSURE REGULATING NON-SLAM CHECK VALVE
- 15 6" x 6" x 4# DISCHARGED TEE.
- 16 AUTOMATIC RELIEF VALVE.
- 17 PIPE HANGER
- 18 LADDER RUNGS
- 19 PIPE SLEEVE.
- 20 6" SWING CHECK VALVE
- 21 DOUBLE POPPET FOOT VALVE
- 22 HYDRO-PNEUMATIC TANG. 185 GAL.
- 23 3" x 3" x 2" 90° TEE
- 24 4" GATE VALVE
- 25 3" WATER MAIN TO BUILDING
- 26 4" SWING CHECK VALVE.
- 27 INDIVIDUAL PUMP TEMPERATURE PROBE
- 28 6" 90 ELBOW
- 29 1 1/2" STEEL PIPE
- 30 NOT USED
- 31 NOT USED
- 32 JOCKEY PUMP CONTROL PANEL AT 5'-0" TOP LEVEL FROM FINISHED FLOOR.
- 33 JOCKEY PUMP-10 GPM AT 130 PSI. (480/3/60).
- 34 FIRE PUMP CONTROL PANEL AT 5'-0" TOP LEVEL FROM FINISHED FLOOR.
- 35 SIGNAL TO FIRE ALARM PANEL. COORD. ON FIELD.
- 36 DIESEL DOUBLE CONTAINMENT TANK (SIZED AS PER N.F.P.A. REQUIREMENTS). PROVIDE FUEL TRANSFER STATION FOR PUMP MOTOR AND REMOTE FILL STATION.
- 37 BACKFLOW PREVENTER
- 38 FLOW SWITCH
- 39 DOUBLE CHECK VALVE (BACKFLOW PROTECTION)
- 40 INDIVIDUAL PUMP PURGE VALVE
- 41 FLOW CONTROL
- 42 FLOW SENSOR
- 43 FLEXIBLE CONNECTION
- 44 180 GALS DIESEL TANK
- 45 EXTERIOR RED-AMBER WARNING LIGHT. FOR EXACT LOCATION SEE DWG. FP-11A.
- 46 1" COPPER TYPE "K" ASTM B-88 POTABLE WATER PIPE FROM AAA FOR CONT. SEE SITE PLAN.
- 47 1/2" COPPER TYPE "K" ASTM B-88 POTABLE WATER PIPE FROM AAA FOR CONT. SEE SITE PLAN.
- 48 3" OVERFLOW.
- 49 CHECK VALVE
- 50 FLOAT VALVE
- 51 ALUMINUM ACCESS DOOR WITH SLAM LOCK DEVICE.
- 52 6" DIA. TEST HEADER.
- 53 GATE VALVE
- 54 CONCRETE BASE FOR FIRE JOCKEY PUMP COORDINATE WITH FINAL EQUIPMENT SHOP DRAWINGS.
- 55



CISTERN SECTIONS

SCALE: NTS



CISTERN NOTES:

1. THESE DETAILS INDICATE GENERAL ARRANGEMENT AND ARE SCHEMATIC ONLY.
2. ABOVE SYSTEM COMPONENTS ARE TO BE FACTORY ASSEMBLED & MOUNTED ON SINGLE STRUCTURAL BASE.
3. WATER PRESSURE BOOSTER SYSTEM (EQUIPMENT & CONTROLS) SHALL BE INSTALLED AS PER MANUFACTURERS RECOMMENDATIONS, WITH OWNER'S AND/OR OWNER'S REPRESENTATIVE APPROVAL.
4. APPLY ON ALL INTERIOR FACES OF CISTERN SHAQUARD NO.2 BY SKA CHEMICAL CORP. APPLY AS PER MANUFACTURER'S RECOMMENDATIONS
5. ON EXTERIOR FACES OF ALL UNDERGROUND WALLS AND SLABS, INSTALL BITUMINOUS DAMPROOFING AS MFG. BY EMULSIFIED PRODUCT INC.
6. INSTALL AT BOTTOM SLAB AND FOOTING A VAPOR BARRIER.
7. ALL CONTROL WIRING IN THE PUMP ROOM AND CISTERN SHALL BE IN ACCORDANCE W/ THE NATIONAL ELECTRICAL CODE LATEST EDITION.
8. FOR EXACT LOCATION OF CISTERN SEE ARCHITECTURAL DRAWINGS.
9. PRESSURE BOOSTER SYSTEM SHALL BE SKID MOUNTED TRIPLEX PUMPING.
10. EQUIPMENT CONCRETE BASES SHOWN ARE TO ESTABLISH SCOPE OF WORK ONLY. CONTRACTOR SHALL COORDINATE WITH SHOP DRAWINGS.
11. ALL ELECTRICAL EQUIPMENT INSIDE PUMP ROOM SHALL BE INTERLOCKED WITH EMERGENCY ELECTRIC GENERATOR. SEE ELECTRICAL DRAWINGS FOR DETAILS.

CISTERN CALCULATIONS

I. POTABLE WATER:

1. RESIDENTIAL SPACE:
A. NUMBER OF OFFICES = 35
B. DAILY WATER REQUIREMENTS = 400 GAL./1000 FT²
C. DAILY AVERAGE WATER CONSUMPTION = 13,500 GAL./DAY.
2. CISTERN CAPACITY:
A. CISTERN DURATION 0.9 DAY.
B. 13500 x 0.90 = 14,300 GAL.
C. TOTAL WATER PROVIDED: 14,300 GAL.
D. 14,300 / 7.48 = 1911.0 FT³

II. FIRE WATER:

1. OCCUPANCY: ORDINARY HAZARD.
2. MAX. AREA COVERAGE: 52,000 FT²
3. STANDPIPE: CLASS II.
4. HOSE STREAM WATER FLOW: 500 GPM.
5. NUMBER OF STANDPIPES: 2
6. TOTAL FLOW = 750 GPM
7. STANDPIPE CALCULATION: (500+250) GPM (30 MIN.) = 22,500 GAL.
8. SPRINKLER CALCULATION: ((0.15) x (1,500)) + 250 x 60 = 28,500 GAL.
9. REQUIRED PRESSURE: 100 PSI AT THE HYDRAULICALLY MOST REMOTE 2 1/2" FIRE HOSE.
10. USE A DIESEL PUMP HANDLING 750 GPM @ 130 PSI.
11. CISTERN CAPACITY: REQUIRED 28,500 GAL.

ARPE
Ingeniero de Edificación y Construcción
ESTADO LIBRE ASOCIADO DE PUERTO RICO
ADMINISTRACIÓN DE AGUA POTABLE Y FERTILIZANTES
CENTRO DE SERVICIOS TÉCNICOS
APROBADO





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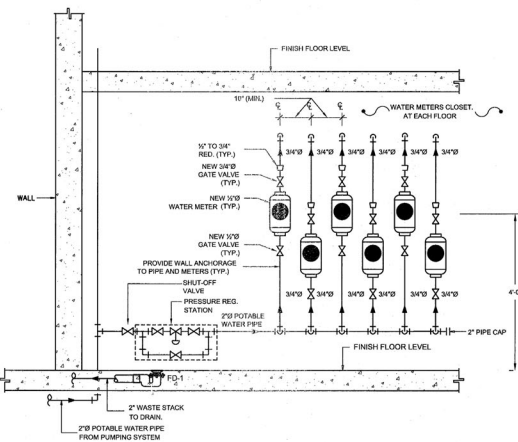
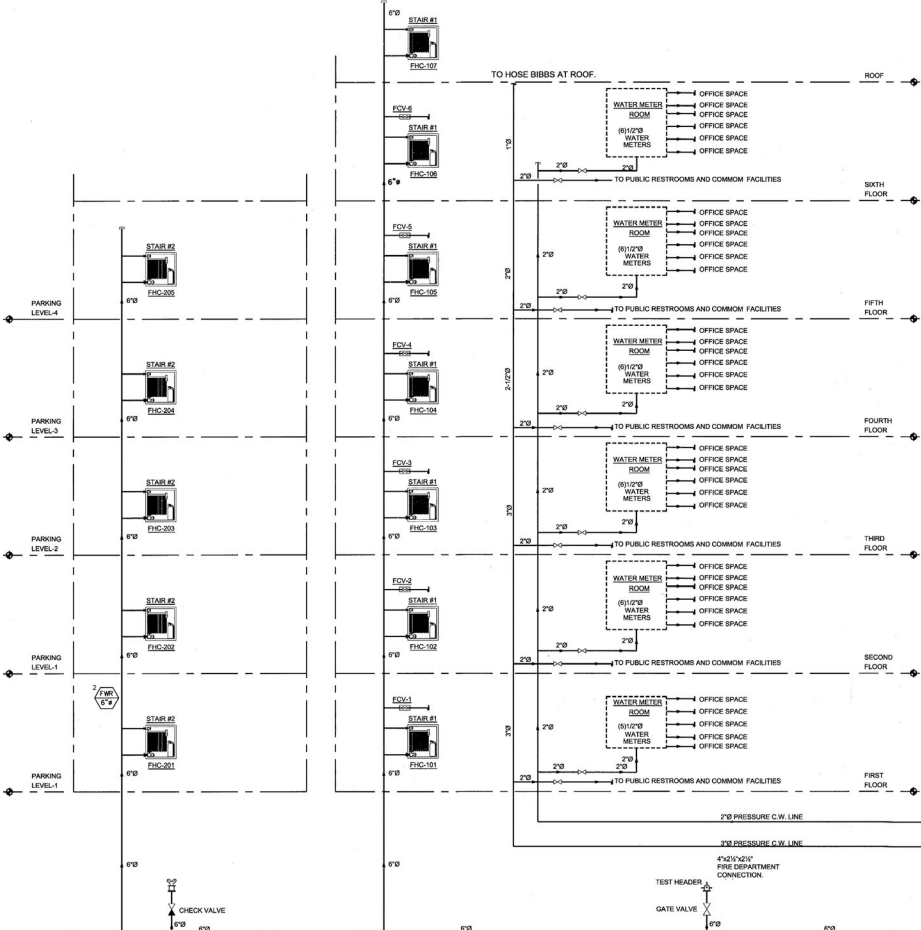
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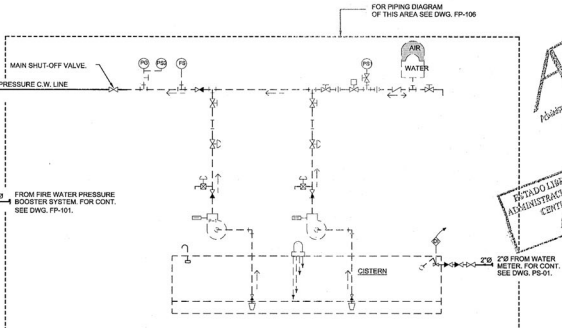
PROJECT NO: 0501
DRAWN BY: Roberto Mateo Mateo
Lic. No. 609
CHK'D BY: Ing. Rafael Arsuaga
Lic. 18111

SHEET TITLE
POTABLE WATER CISTERN
RISER DIAGRAM
AND METER SECTIONS

FP107

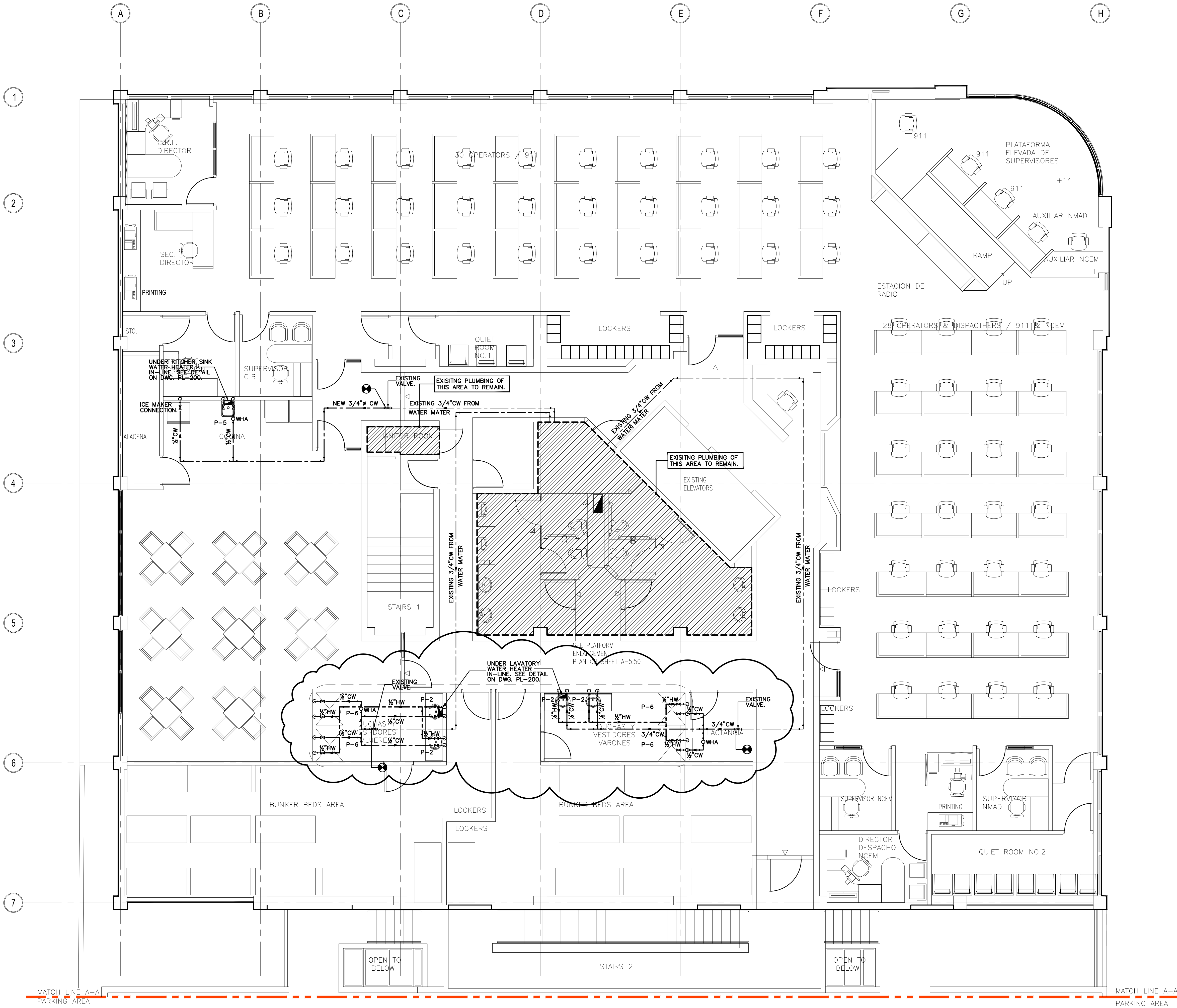


TYPICAL WATER METER BANK FLOOR DETAIL



PS1 OFF-TROL. PRESS. SWITCH
PS2 LOW SYSTEM/HIGH SYSTEM PRESS. SWITCH
PG PRESSURE GAUGE





NOTES:

- CONTRACTOR SHALL REPLACE IN KIND EXISTING POTABLE WATER PUMPING AND CONTROL SYSTEM MUST COMPLY WITH CURRENT APPLICABLE CODES. PUMP MUST HANDLE 120 GPM @ 172 FT TDH 10 HP: 480/3/60.
- CONTRACTOR MUST CLEAN, REPAIR AND PAINT EXISTING CISTERN.
- CONTRACTOR MUST REPLACE IN KIND ACCESS DOOR.
- CONTRACTOR SHALL VERIFY AT FIELD EXACT PLUMBING PIPING LOCATIONS BEFORE PERFORM TIE-INS. ANY DISCREPANCIES SHALL BE BROUGHT TO OUR ATTENTION FOR PROPER COORDINATION.
- CONTRACTOR SHALL BE RESPONSIBLE OF PROVIDE CEILING OF WALL ACCESS TO ALL PLUMBING FIXTURES THAT MUST BE SERVICED.
- CONTRACTOR MUST CLEAN, REPAIR AND PAINT EXISTING PLUMBING PIPES.

PLUMBING LEGEND:

- COLD POTABLE WATER LINE
 - HOT POTABLE WATER LINE (INSULATED)
 - SANITARY SEWER LINE
 - SANITARY VENTILATION LINE
 - STORM SEWER LINE
- CMR 1/2" Ø INDICATES COLD WATER RISER DESIGNATION AND SIZE
- HWR 1/2" Ø INDICATES HOT WATER RISER DESIGNATION AND SIZE
- SS 3" Ø INDICATES SANITARY STACK DESIGNATION AND SIZE
- WS 3" Ø INDICATES WASTE STACK DESIGNATION AND SIZE
- RL 3" Ø INDICATES RAIN LEADER STACK DESIGNATION AND SIZE
- VS 1 1/2" Ø INDICATES SANITARY VENTILATION STACK DESIGNATION AND SIZE
- P-1 INDICATES PLUMBING FIXTURE DESIGNATION SEE SCHEDULE

PLUMBING ABBREVIATIONS:

- C.W. COLD WATER
- H.W.S. HOT WATER
- (TYP.) TYPICAL
- VS VENT STACK
- WCO WALL CLEAN OUT
- FCO FLOOR CLEAN OUT
- GCO GROUND CLEAN OUT
- W.H. WATER HEATER
- FD FLOOR DRAIN
- V VENTILATION
- H.B. HOSE BIBB
- R.L. RAIN LEADER
- (E) EXISTING



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FIFTH FLOOR PLAN-
POTABLE WATER LAYOUT

PL-110

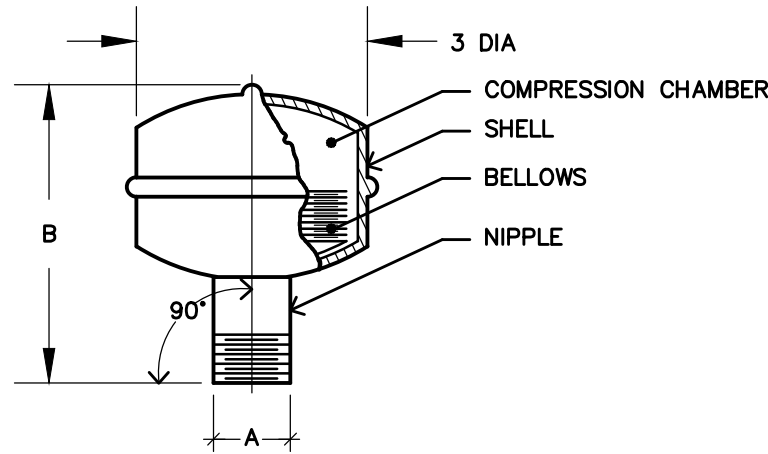
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PLUMBING GENERAL NOTES:

- ALL PLUMBING WORK SHALL BE IN STRICT ACCORDANCE WITH THE DEPARTMENT OF HEALTH OF P.R., THE LOCAL BUILDING CODE, THE INTERNATIONAL PLUMBING CODE AND THE SPECIFICATIONS ISSUED FOR THIS PROJECT.
- CLEANOUTS SHALL BE OF THE SAME NOMINAL SIZE AS THE PIPE DIAMETER UP TO 4".
- THE CONTRACTOR SHALL FURNISH AND SET IN PLACE BEFORE CONCRETE POURING ALL NECESSARY SLEEVES FOR WASTE OR SOIL, COLD WATER LINES. THESE SLEEVES SHALL BE AS PER THE SPECIFICATIONS.
- THE PLUMBING CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF THE PIPING TO AVOID ANY INTERFERENCE WITH PIPING AND/OR EQUIPMENT BEING INSTALLED BY OTHER CONTRACTORS.
- FOR FIXTURES AND/OR EQUIPMENT NOT LISTED IN THE SCHEDULE, SEE THE SPECIFICATIONS.
- CLEANOUTS SHALL BE PLACED AS SHOWN ON DRAWINGS.
- THE CONTRACTOR SHALL VERIFY IN FIELD ALL INVERT ELEVATIONS AND SHALL MAKE ANY NECESSARY ADJUSTMENT AS REQUIRED BY FIELD CONDITIONS AND AS REQUIRED, TO OBTAIN THE PROPER SLOPES.
- IT IS THE INTENTION OF THE DRAWINGS TO CALL FOR FINISHED WORK, COMPLETE, TESTED AND READY FOR OPERATION. MINOR DETAILS NOT SHOWN OR SPECIFIED, BUT NECESSARY FOR THE PROPER INSTALLATION AND FOR FUNCTIONING AND OPERATION OF THE SYSTEM SHALL FORM PART OF THE WORK TO BE DONE BY THE CONTRACTOR.
- BIDDERS SHALL VISIT THE SITE AND ACQUAINT THEMSELVES WITH THE CONDITIONS AS THEY ACTUALLY EXIST AND VERIFY DIMENSIONS, LOCATIONS AND DETAILS REQUIRED TO COMPLETE THE WORK, WHICH WILL BE THE ONLY OPPORTUNITY FOR POTENTIAL CONTRACTORS TO SEE THE SITE. FAILURE TO VISIT THE PROJECT AREA WILL IN NO WAY RELIEVE THE SUCCESSFUL BIDDER OF FURNISHING ALL MATERIAL AND PERFORMING ALL WORK REQUIRED FOR THE COMPLETION OF THE CONTRACT. VISITS TO THE PROJECT AREA SHALL BE ARRANGED THROUGH THE OWNER.
- PROVIDE ACCESS FOR OPERATION AND MAINTENANCE TO EVERY PLUMBING VALVE. ACCESS SHALL BE AS REQUIRED BY ARCHITECT.
- THE CONTRACTOR SHALL, WITHOUT EXTRA CHARGE, MAKE REASONABLE MODIFICATIONS IN THE LAYOUT, AS NEEDED, TO PREVENT CONFLICT WITH WORK OF OTHER TRADES OR FOR PROPER EXECUTION OF THE WORK.
- CONTRACTOR SHALL LOCATE IN FULLY ACCESSIBLE POSITIONS ALL EQUIPMENT WHICH MUST BE SERVICED, OPERATED, OR MAINTAINED.
- INSTALL WATER HAMMER ARRESTER AS SHOWN ON DRAWINGS.
- ALL UNDERGROUND COPPER PIPING SHALL BE TYPE "K", DIAMETER AS INDICATED.
- ALL COPPER PIPING ABOVE FINISH FLOOR ELEVATION SHALL BE TYPE "L", DIAMETER AS INDICATED.
- ALL WASTE, SANITARY AND STORM DRAINAGE LINES SHALL BE PVC SCH-40.
- ALL PIPING SHALL BE CONCEALED IN FLOOR TOPPINGS, WALL OR CHASES UNLESS OTHERWISE NOTED.
- LONG SWEEP BENDS OR LONG SWEEP FITTINGS SHALL BE PROVIDED AT THE BASE OF ALL STACKS.
- CLEANOUTS SHALL NOT BE MORE THAN 100 FEET APART
- THE PLUMBING CONTRACTOR SHALL COORDINATE HIS/HER PORTION OF THE WORK WITH THE GENERAL CONTRACTOR AND SHALL PROVIDE SLEEVES AT SLABS OR BEAMS FOR PIPING LAYOUT AND FIXTURES INSTALLATION.
- ALL FIXTURES SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER SPECIFICATIONS.
- SIZES SHOWN IN FIXTURES SCHEDULE ARE MINIMUM AND SHALL BE INCREASED AS NECESSARY TO COMPLY WITH CODE REQUIREMENTS OR AS SHOWN ON DRAWINGS.
- SINGLE AND DOUBLE TEES AND QUARTER BENDS SHALL BE USED IN LINES ONLY WHERE THE DIRECTION OF FLOW IS FROM THE HORIZONTAL TO THE VERTICAL.
- ALL HORIZONTAL PORTIONS OF SOIL STACKS AND BRANCHES SHALL HAVE MINIMUM SLOPE OF 1/4" PER FOOT FOR PIPES 3" DIAMETER OR LESS. 1/8" PER FOOT FOR PIPES 4" OR LARGER IN DIAMETER.
- THE PLUMBING CONTRACTOR SHALL COORDINATE HIS/HER WORK IN ORDER TO AVOID ANY INTERFERENCE WITH THE WORK OF OTHER CONTRACTORS AND THE INSTALLATION OF FIXTURES AND OR EQUIPMENT BY OTHERS.
- WATER HAMMER ARRESTER SHALL BE INSTALLED IN ALL WATER DISTRIBUTION BRANCHES WHENEVER INDICATED ON THE DRAWINGS AS PER MANUFACTURER RECOMMENDATIONS. SAME SHALL BE SERIES 5000, MODELS AS SHOWN ON LEGEND.
- WATER HAMMER ARRESTERS INSTALLED ON WALLS SHALL BE PROVIDED WITH 12" X 12" FRAME WITH HINGE LOCKED DOOR, MODEL JAY R. SMITH FIG.4762-SL WITH ITS BOTTOM AT 18" ABOVE FINISH FLOOR ELEVATION.
- GATE VALVES LOCATED UNDERGROUND OR BELOW FLOOR SLABS SHALL BE INSTALLED WITHIN A CAST IRON OR CONCRETE BOX WITH 9 X 9 J.R. SMITH ACCESS COVER FIG. 4915-U.
- PLUMBING CONTRACTOR SHALL PROVIDE ALL NECESSARY SERVICES AND/OR CONNECTIONS REQUIRED FOR THE PLUMBING FIXTURES AND/OR EQUIPMENT SHOWN ON THE FIXTURES PLANS.
- PLUMBING CONTRACTOR SHALL PROVIDE ALL NECESSARY ROUGHING-IN AND SHALL INSTALL THE PLUMBING FIXTURES INDICATED ON THESE DRAWINGS.
- WHENEVER REQUIRED OR NEEDED. THE PLUMBING CONTRACTOR SHALL PREPARE AND SUBMIT THE NECESSARY SHOP DRAWINGS FOR THE APPROVAL OF THE ARCHITECT.
- BEFORE STARTING CONSTRUCTION, THE PLUMBING CONTRACTOR SHALL VERIFY THE EXACT LOCATION AND ELEVATIONS OF EXISTING PIPE LINES TO REMAIN IN USE ANY SIGNIFICANT DISCREPANCY WITH THE INFORMATION SHOWN ON THESE DRAWINGS SHALL BE NOTIFIED TO THE ARCHITECT FOR REVISION AND/OR CLARIFICATION.
- ALL EXPOSED HOT WATER LINES SHALL BE INSULATED WITH 1-1/2" THICK MATERIAL WITH A THERMAL CONDUCTIVITY NOT TO EXCEED 0.22BTU PER SQ INCH PER HOUR AT MEAN TEMPERATURE OF 75°F
- FIXTURES, FITTINGS, ACCESSORIES, MATERIAL AND ALL PLUMBING PRODUCTS SHALL BE AS PER SPECIFICATIONS ON THESE DRAWINGS AND CONTRACT SPECIFICATIONS. EQUAL OR SIMILAR SHALL BE ONLY ACCEPTED IF PREVIOUSLY APPROVED BY THE ARCHITECT.

NEW PLUMBING FIXTURE SHEDULE

DESIG-NATION	DESCRIPTIONS	LOCATIONS	UNIT WASTE OR SOIL	VENT SIZE	WATER SUPPLY		FIXTURES		REMARKS
					COLD	HOT	COLD	HOT	
P-1	WATER CLOSET	BATHROOM	3"	2"	3/4	-	3/4	-	SEE ARCH. DWGS. FOR SPECS.
P-2	LAVATORY	BATHROOM	1 1/2"	1 1/2"	1/2"	1/2"	1/2"	1/2"	SEE ARCH. DWGS. FOR SPECS.
P-3	BATHTUB	BATHROOM	2"	1 1/2"	1/2"	1/2"	1/2"	1/2"	SEE ARCH. DWGS. FOR SPECS.
P-4	SERVICES SINK	OFFICES	2"	1 1/4"	1/2"	-	1/4"	-	SEE ARCH. DWGS. FOR SPECS.
P-5	KITCHEN SINK	KITCHEN	2"	1 1/2"	1/2"	1/2"	1/2"	1/2"	SEE ARCH. DWGS. FOR SPECS.
P-6	SHOWER	LOCKERS ROOM	2"	1 1/2"	1/2"	1/2"	1/2"	1/2"	SEE ARCH. DWGS. FOR SPECS.
FD-1	FLOOR DRAIN	SEE PLUMBING DWGS.	2"	-	-	-	-	-	SMITH FIG. 2010
FCO	FLOOR CLEANOUT	SEE PLUMBING DWGS.	AS SHOWN	-	-	-	-	-	SMITH FIG. 4040-U
WCO	WALL CLEANOUT	SEE PLUMBING DWGS.	AS SHOWN	-	-	-	-	-	SMITH FIG. 4472-U

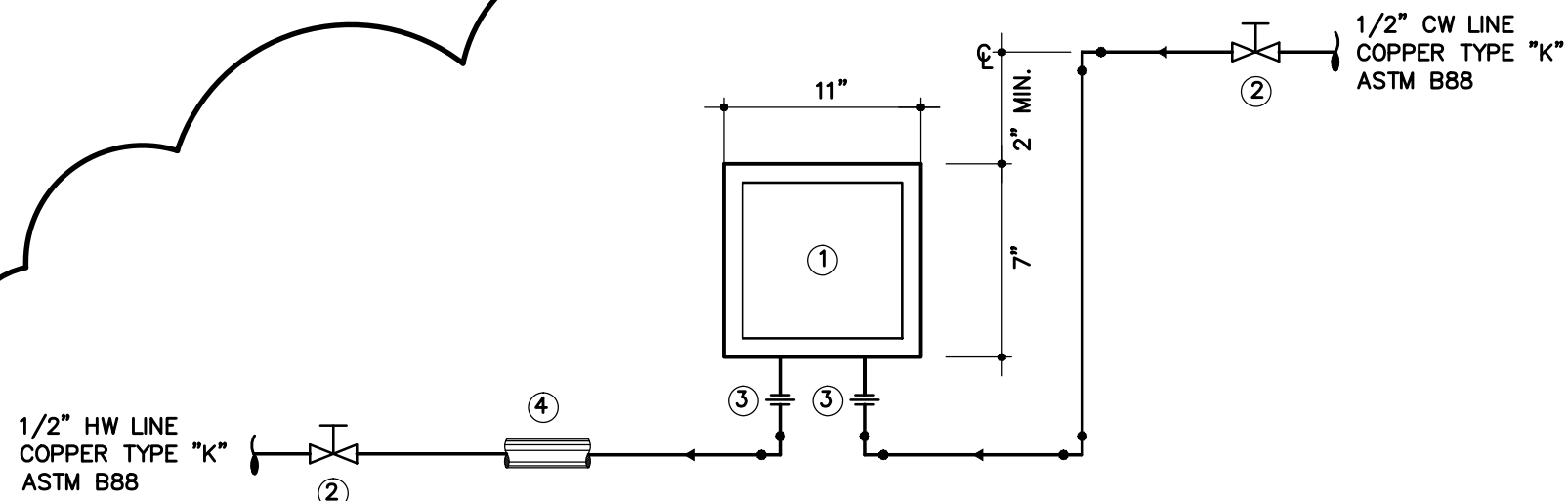


WATER HAMMER ARRESTER

SYMBOL	J.R. SMITH MODEL	MAX. FIXTURE UNITS	DIMENSIONS		ACCESS DOOR, J.R. SMITH	ACCESS DOOR SIZE
			A	B		
(A)	5005	1-11	3/4	4	FIG. 4735-NB-U	8" X 8"
(B)	5010	12-32	1	5	FIG. 4735-NB-U	10" X 10"
(C)	5020	33-60	1	6	FIG. 4735-NB-U	12" X 12"
(D)	5030	61-113	1	7	FIG. 4735-NB-U	15" X 15"

WATER HAMMER ARRESTER DETAIL

SCALE : N.T.S.



LEGEND:

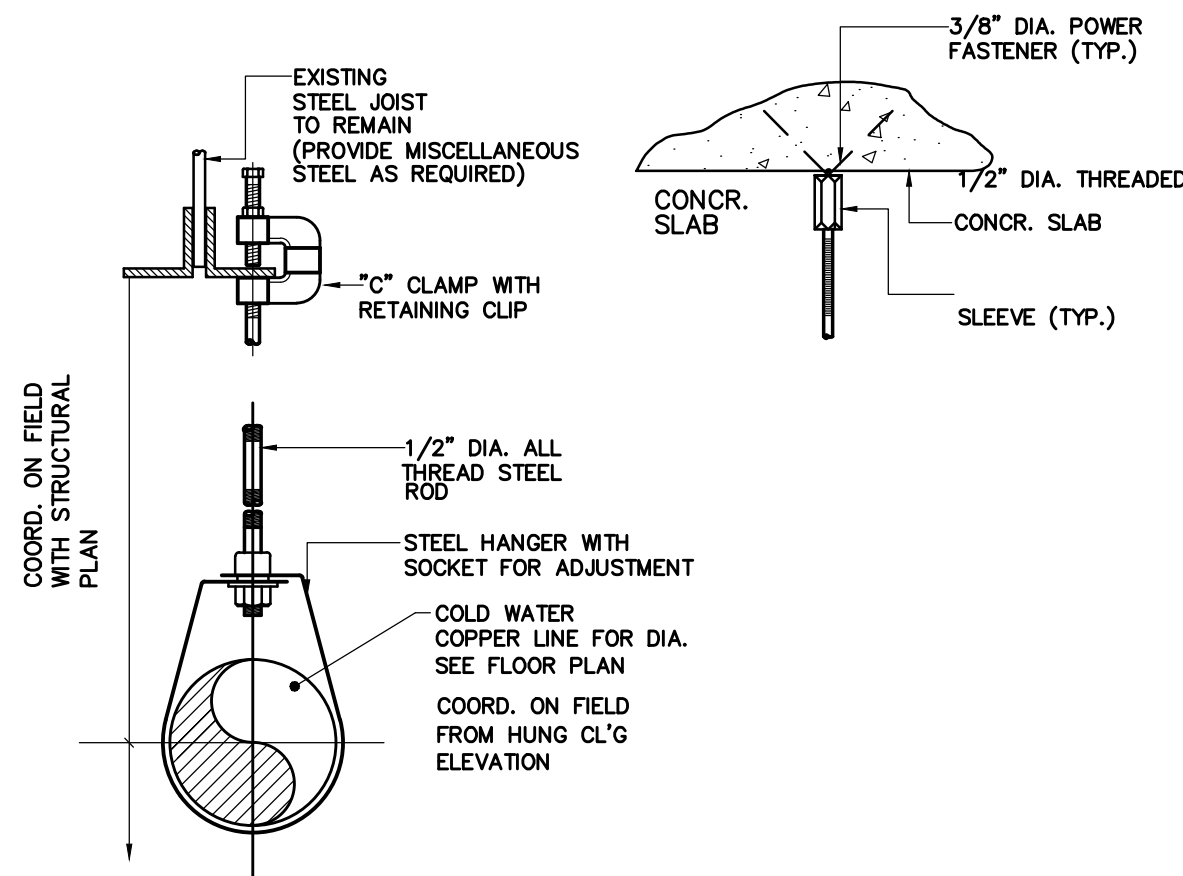
- IN-LINE WATER HEATER 5.5 KW, 220/1/60. 30 AMPS. SIMILAR TO ECOSMART POU-6 1.0 GPM @ 33°F (110°F-77°F) TEMPERATURE RISE. 110°F MAXIMUM WATER TEMPERATURE.
- 1/2" GATE VALVE
- 1/2" UNIVERSAL CONN.
- 1/2" THICK NEOPRENE INSULATION. (APPLIES FOR EXPOSED HOT WATER PIPING).

NOTES:

- ELECTRICAL CONNECTION TO BE EXECUTED AS PER APPLICABLE CODES.
- MAXIMUM WATER TEMPERATURE TO BE REGULATED AS PER IBC LATEST EDITION

IN-LINE WATER HEATER INSTALLATION DETAIL

SCALE : N.T.S.



* MAXIMUM HANGER SPACING 8'-0" FOR LINES 1 1/2" DIA. AND LARGE AND 4'-0" FOR LINES 1/2" - 1" DIA.

PIPE HANGER DETAIL

SCALE : N.T.S.

PLUMBING LEGEND:

- COLD POTABLE WATER LINE
- HOT POTABLE WATER LINE (INSULATED)
- SANITARY SEWER LINE
- SANITARY VENTILATION LINE
- STORM SEWER LINE
- INDICATES COLD WATER RISER DESIGNATION AND SIZE
- INDICATES COLD WATER RISER DESIGNATION AND SIZE
- INDICATES SANITARY STACK DESIGNATION AND SIZE
- INDICATES WASTE STACK DESIGNATION AND SIZE
- INDICATES RAIN LEADER STACK DESIGNATION AND SIZE
- INDICATES SANITARY VENTILATION STACK DESIGNATION AND SIZE
- INDICATES PLUMBING FIXTURE DESIGNATION SEE SCHEDULE

PLUMBING ABBREVIATIONS:

- C.W. COLD WATER
- H.W.S. HOT WATER
- (TYP.) TYPICAL
- VS VENT STACK
- WCO WALL CLEAN OUT
- FCO FLOOR CLEAN OUT
- GCO GROUND CLEAN OUT
- W.H. WATER HEATER
- FD FLOOR DRAIN
- V VENTILATION
- H.B. HOSE BIBB
- R.L. RAIN LEADER
- (E) EXISTING



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"Yo, José Luis Marrero Sicardo, licencia # 14670, certifico que soy el profesional que diseñó estos planos y las especificaciones complementarias. También certifico que entiendo que dichos planos y especificaciones cumplen con las disposiciones aplicables del Reglamento Conjunto y las disposiciones aplicables de los Reglamentos y Códigos de las Agencias, Juntas Reglamentadoras o Corporaciones Públicas con jurisdicción. Reconozco que cualquier declaración falsa o falsificación de los hechos que se haya producido sin conocimiento o por negligencia ya sea por mí, mis agentes o empleados, o por otras personas con mi conocimiento, me hacen responsable de cualquier acción judicial y disciplinaria por la OIGPe y otras autoridades competentes, incluyendo, pero sin limitarse, a la terminación de la participación en los procedimientos de certificación profesional en la OIGPe."



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ING. CARLOS SIERRA, P.E.
SURVEYOR:
ING. DANIEL ROSARIO, P.E.

DOCUMENTOS DE CONSTRUCCIÓN DE:

CARIBE PLAZA OFFICE BUILDING

#1547 Ave. Ponce de León
Río Piedras, Puerto Rico, 00926

OWNER:
TECH DEVELOPERS, INC.

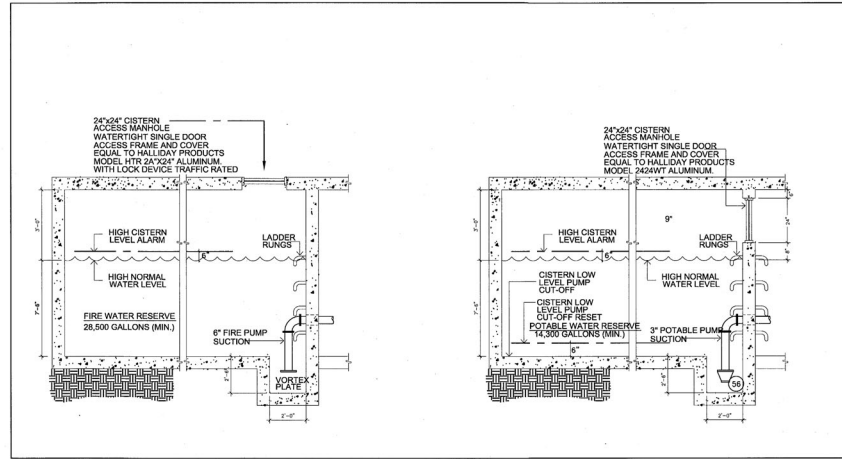
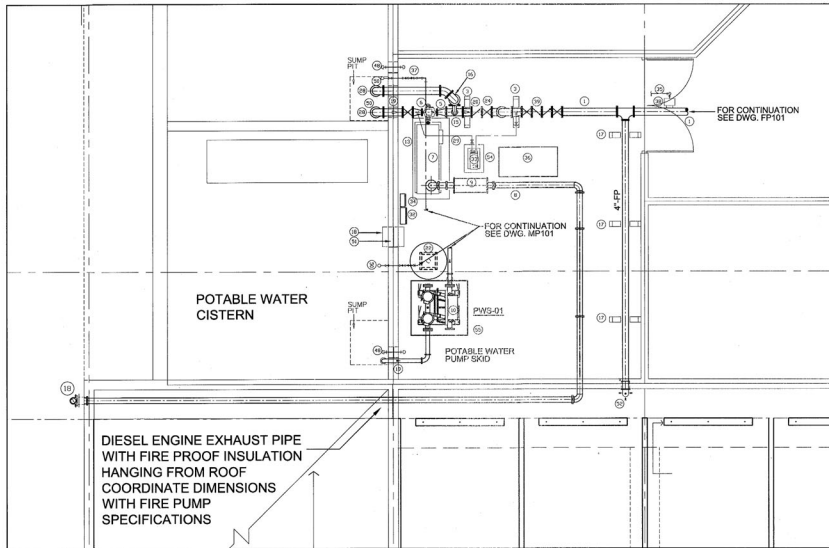
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0	1/10/2007	ISSUED FOR B.O.

PROJECT NO: 050601
DRAWN BY: Roberto Mateo Lique
CHKD BY: Ing. Rafael Arsuaga
Lic. 18111

SHEET TITLE

CISTERN AND PUMP ROOM PIPING LAYOUT

FP106



CISTERN SECTIONS
SCALE: NTS

FIRE-POTABLE PUMPS MECHANICAL ROOM BLOW UP

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

LEGEND:

- | | |
|---|---|
| 1 6" STEEL PIPE | 25 HYDRO-PNEUMATIC TANK 185 GAL. |
| 2 3" STEEL PIPE | 26 3" x 3" x 2" 90° TEE |
| 3 PIPE SUPPORT. SEE DETAIL ON DWG. FP109 | 27 4" GATE VALVE |
| 4 4" STEEL PIPE | 28 3" WATER MAIN TO BUILDING |
| 5 CONCENTRIC REDUCER | 29 4" SWING CHECK VALVE |
| 6 VERTICAL TURBINE FIRE PUMP 750 GPM AT 130 PSI. | 30 INDIVIDUAL PUMP TEMPERATURE PROBE |
| 7 FIRE PUMP DIESEL ENGINE | 31 6" 90 ELBOW |
| 8 DIESEL ENGINE EXHAUST PIPE WITH FIRE PROOF INSULATION AND RAIN CAP AT END OF STACK | 32 1 1/2" STEEL PIPE |
| 9 DIESEL ENGINE EXHAUST MUFFLER WITH FIRE PROOF INSULATION | 33 NOT USED |
| 10 POTABLE WATER PUMPING SYSTEM SKID SIMILAR OR EQUAL TO TIGERFLOW series ES-3000, model DBV-10PC-A1-S3 COORDINATE WITH FINAL EQUIPMENT SHOP DRAWINGS. CLOSE COUPLED PUMP. (2) 120 GPM @ 175 FT TDH; 10hp; 480/3/60 | 34 NOT USED |
| 11 4" VENT PIPE | 35 JOCKEY PUMP CONTROL PANEL AT 5'-0" TOP LEVEL FROM FINISHED FLOOR |
| 12 WATER LEVEL REGULATOR | 36 JOCKEY PUMP-10 GPM AT 130 PSI, (480/3/60) |
| 13 CONCRETE BASE FOR FIRE PUMP DIESEL ENGINE-COORDINATE WITH FINAL EQUIPMENT SHOP DRAWINGS | 37 FIRE PUMP CONTROL PANEL AT 5'-0" TOP LEVEL FROM FINISHED FLOOR |
| 14 COMBINATION PRESSURE REGULATING NON-SLAM CHECK VALVE | 38 SIGNAL TO FIRE ALARM PANEL. COORD. ON FIELD |
| 15 6" x 6" x 4# DISCHARGED TEE | 39 DIESEL DOUBLE CONTAINMENT TANK (SIZED AS PER N.F.P.A. REQUIREMENTS) PROVIDE FUEL TRANSFER STATION FOR PUMP MOTOR AND REMOTE FILL STATION |
| 16 AUTOMATIC RELIEF VALVE | 40 BACKFLOW PREVENTER |
| 17 PIPE HANGER | 41 FLOW SWITCH |
| 18 LADDER RUNGS | 42 DOUBLE CHECK VALVE (BACKFLOW PROTECTION) |
| 19 PIPE SLEEVE | 43 INDIVIDUAL PUMP PURGE VALVE |
| 20 6" SWING CHECK VALVE | 44 FLOW CONTROL |
| 21 DOUBLE POPPET FOOT VALVE | 45 FLOW SENSOR |
| | 46 FLEXIBLE CONNECTION |

- | |
|--|
| 47 180 GALS DIESEL TANK |
| 48 EXTERIOR RED-AMBER WARNING LIGHT. FOR EXACT LOCATION SEE DWG. FP-1A. |
| 49 1" COPPER TYPE "K" ASTM B-88 POTABLE WATER PIPE FROM AAA FOR CONT. SEE SITE PLAN. |
| 50 1/2" COPPER TYPE "K" ASTM B-88 POTABLE WATER PIPE FROM AAA FOR CONT. SEE SITE PLAN. |
| 51 3" OVERFLOW |
| 52 CHECK VALVE |
| 53 FLOAT VALVE |
| 54 ALUMINUM ACCESS DOOR WITH SLAM LOCK DEVICE |
| 55 6" DIA. TEST HEADER |
| 56 GATE VALVE |
| 57 CONCRETE BASE FOR FIRE JOCKEY PUMP COORDINATE WITH FINAL EQUIPMENT SHOP DRAWINGS |

CISTERN CALCULATIONS

I. POTABLE WATER:

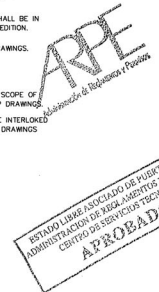
- RESIDENTIAL SPACE:
 - NUMBER OF OFFICES = 35
 - DAILY WATER REQUIREMENTS = 400 GAL./1000 FT²
 - DAILY AVERAGE WATER CONSUMPTION = 13,500 GAL./DAY
- CISTERN CAPACITY:
 - CISTERN DURATION 0.9 DAY
 - 13500 x 0.90 = 14,300 GAL
 - TOTAL WATER PROVIDED: 14,300 GAL
 - 14,300 / 7.48 = 1911.0 FT³

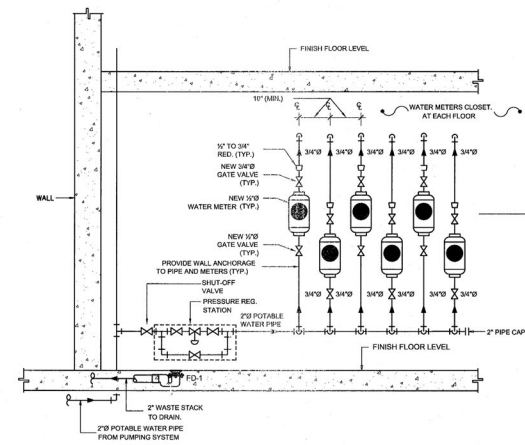
II. FIRE WATER:

- OCCUPANCY: ORDINARY HAZARD.
- MAX. AREA COVERAGE: 52,000 FT²
- STANDPIPE: CLASS II.
- HOSE STREAM WATER FLOW: 500 GPM.
- NUMBER OF STANDPIPES: 2
- TOTAL FLOW = 750 GPM
- STANDPIPE CALCULATION: (500+250) GPM (30 MIN.) = 22,500 GAL.
- SPRINKLER CALCULATION: ((0.15) x (1,500)) + 250 x 60 = 28,500 GAL.
- REQUIRED PRESSURE: 100 PSI AT THE HYDRAULICALLY MOST REMOTE 2 1/2" FIRE HOSE.
- USE A DIESEL PUMP HANDLING 750 GPM @ 130 PSI.
- CISTERN CAPACITY: REQUIRED 28,500 GAL.

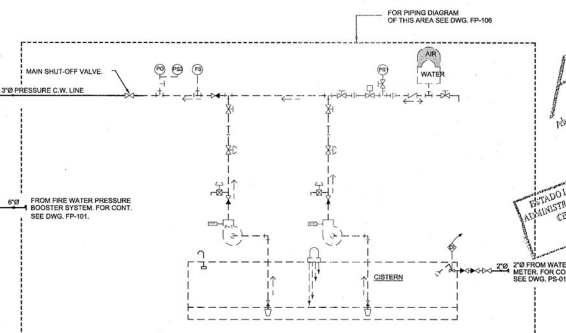
CISTERN NOTES:

- THESE DETAILS INDICATE GENERAL ARRANGEMENT AND ARE SCHEMATIC ONLY.
- ASIDE SYSTEM COMPONENTS ARE TO BE FACTORY ASSEMBLED & MOUNTED ON SINGLE STRUCTURAL BASE.
- WATER PRESSURE BOOSTER SYSTEM (EQUIPMENT & CONTROLS) SHALL BE INSTALLED AS PER MANUFACTURERS RECOMMENDATIONS, WITH OWNER'S AND/OR OWNER'S REPRESENTATIVE APPROVAL.
- APPLY ON ALL INTERIOR FACES OF CISTERN SHAQUARD NO.2 BY SKA CHEMICAL CORP. APPLY AS PER MANUFACTURER'S RECOMMENDATIONS
- ON EXTERIOR FACES OF ALL UNDERGROUND WALLS AND SLABS, INSTALL BITUMINOUS DAMPROOFING AS MFG. BY EMULSIFIED PRODUCT INC.
- INSTALL AT BOTTOM SLAB AND FOOTING A VAPOR BARRIER.
- ALL CONTROL WIRING IN THE PUMP ROOM AND CISTERN SHALL BE IN ACCORDANCE W/ THE NATIONAL ELECTRICAL CODE LATEST EDITION.
- FOR EXACT LOCATION OF CISTERN SEE ARCHITECTURAL DRAWINGS.
- PRESSURE BOOSTER SYSTEM SHALL BE SKID MOUNTED TRIPLEX PUMPING.
- EQUIPMENT CONCRETE BASES SHOWN ARE TO ESTABLISH SCOPE OF WORK ONLY. CONTRACTOR SHALL COORDINATE WITH SHOP DRAWINGS.
- ALL ELECTRICAL EQUIPMENT INSIDE PUMP ROOM SHALL BE INTERLOCKED WITH EMERGENCY ELECTRIC GENERATOR. SEE ELECTRICAL DRAWINGS FOR DETAILS.





TYPICAL WATER METER BANK FLOOR DETAIL



PS1 OFF-TROL PRESS. SWITCH
PS2 LOW SYSTEM/HIGH SYSTEM PRESS. SWITCH
PG PRESSURE GAUGE



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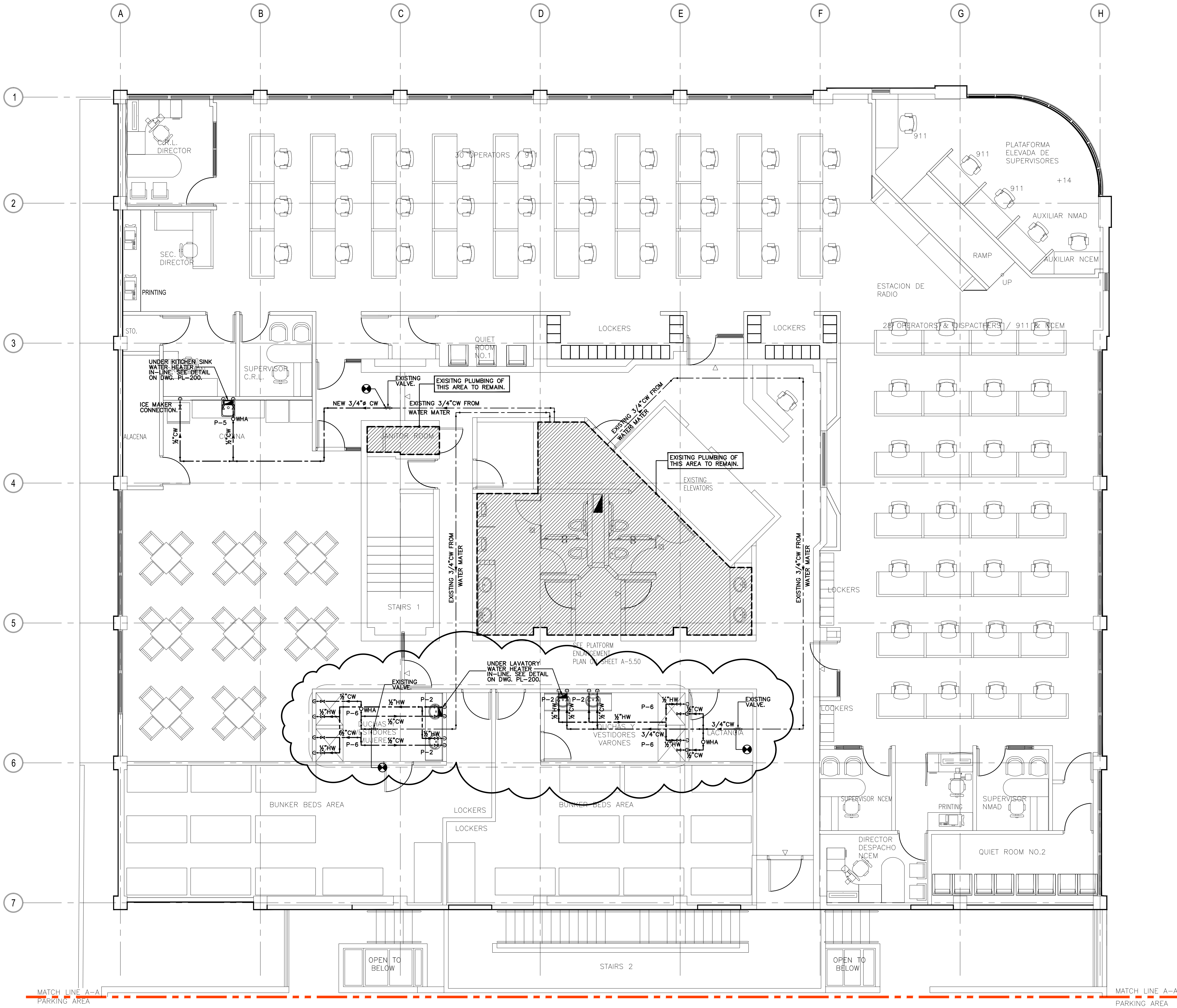
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PROJECT NO: 0507
DRAWN BY: Roberto Mateo Mateo
Lic. No.609

CHK'D BY: *Ing. Rafael Arsuaga*
Lic. 18111

POTABLE WATER CISTERN RISER DIAGRAM AND METER SECTIONS

FP107



NOTES:

- CONTRACTOR SHALL REPLACE IN KIND EXISTING POTABLE WATER PUMPING AND CONTROL SYSTEM MUST COMPLY WITH CURRENT APPLICABLE CODES. PUMP MUST HANDLE 120 GPM @ 172 FT TDH 10 HP: 480/3/60.
- CONTRACTOR MUST CLEAN, REPAIR AND PAINT EXISTING CISTERN.
- CONTRACTOR MUST REPLACE IN KIND ACCESS DOOR.
- CONTRACTOR SHALL VERIFY AT FIELD EXACT PLUMBING PIPING LOCATIONS BEFORE PERFORM TIE-INS. ANY DISCREPANCIES SHALL BE BROUGHT TO OUR ATTENTION FOR PROPER COORDINATION.
- CONTRACTOR SHALL BE RESPONSIBLE OF PROVIDE CEILING OF WALL ACCESS TO ALL PLUMBING FIXTURES THAT MUST BE SERVICED.
- CONTRACTOR MUST CLEAN, REPAIR AND PAINT EXISTING PLUMBING PIPES.

PLUMBING LEGEND:

- COLD POTABLE WATER LINE
 - HOT POTABLE WATER LINE (INSULATED)
 - SANITARY SEWER LINE
 - SANITARY VENTILATION LINE
 - STORM SEWER LINE
- CMR 1/2" Ø INDICATES COLD WATER RISER DESIGNATION AND SIZE
- HWR 1/2" Ø INDICATES HOT WATER RISER DESIGNATION AND SIZE
- SS 3" Ø INDICATES SANITARY STACK DESIGNATION AND SIZE
- WS 3" Ø INDICATES WASTE STACK DESIGNATION AND SIZE
- RL 3" Ø INDICATES RAIN LEADER STACK DESIGNATION AND SIZE
- VS 1 1/2" Ø INDICATES SANITARY VENTILATION STACK DESIGNATION AND SIZE
- P-1 INDICATES PLUMBING FIXTURE DESIGNATION SEE SCHEDULE

PLUMBING ABBREVIATIONS:

- C.W. COLD WATER
- H.W.S. HOT WATER
- (TYP.) TYPICAL
- VS VENT STACK
- WCO WALL CLEAN OUT
- FCO FLOOR CLEAN OUT
- GCO GROUND CLEAN OUT
- W.H. WATER HEATER
- FD FLOOR DRAIN
- V VENTILATION
- H.B. HOSE BIBB
- R.L. RAIN LEADER
- (E) EXISTING



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DEPARTAMENTO DE SEGURIDAD PUBLICA

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FIFTH FLOOR PLAN-
POTABLE WATER LAYOUT

PL-110

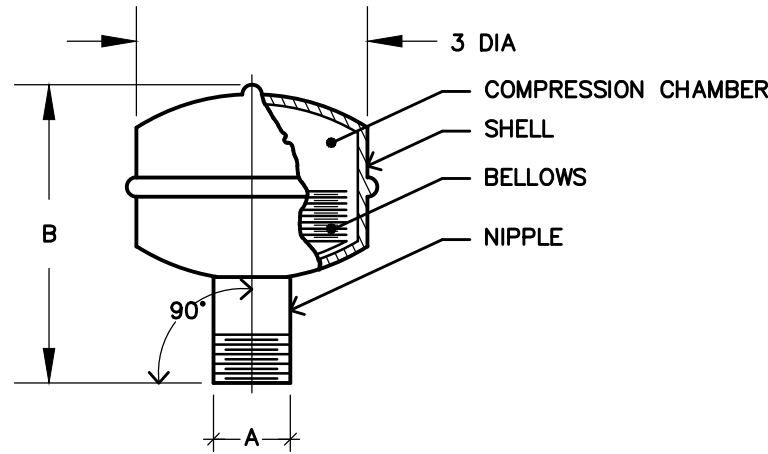
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PLUMBING GENERAL NOTES:

- ALL PLUMBING WORK SHALL BE IN STRICT ACCORDANCE WITH THE DEPARTMENT OF HEALTH OF P.R., THE LOCAL BUILDING CODE, THE INTERNATIONAL PLUMBING CODE AND THE SPECIFICATIONS ISSUED FOR THIS PROJECT.
- CLEANOUTS SHALL BE OF THE SAME NOMINAL SIZE AS THE PIPE DIAMETER UP TO 4".
- THE CONTRACTOR SHALL FURNISH AND SET IN PLACE BEFORE CONCRETE POURING ALL NECESSARY SLEEVES FOR WASTE OR SOIL, COLD WATER LINES. THESE SLEEVES SHALL BE AS PER THE SPECIFICATIONS.
- THE PLUMBING CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF THE PIPING TO AVOID ANY INTERFERENCE WITH PIPING AND/OR EQUIPMENT BEING INSTALLED BY OTHER CONTRACTORS.
- FOR FIXTURES AND/OR EQUIPMENT NOT LISTED IN THE SCHEDULE, SEE THE SPECIFICATIONS.
- CLEANOUTS SHALL BE PLACED AS SHOWN ON DRAWINGS.
- THE CONTRACTOR SHALL VERIFY IN FIELD ALL INVERT ELEVATIONS AND SHALL MAKE ANY NECESSARY ADJUSTMENT AS REQUIRED BY FIELD CONDITIONS AND AS REQUIRED, TO OBTAIN THE PROPER SLOPES.
- IT IS THE INTENTION OF THE DRAWINGS TO CALL FOR FINISHED WORK, COMPLETE, TESTED AND READY FOR OPERATION. MINOR DETAILS NOT SHOWN OR SPECIFIED, BUT NECESSARY FOR THE PROPER INSTALLATION AND FOR FUNCTIONING AND OPERATION OF THE SYSTEM SHALL FORM PART OF THE WORK TO BE DONE BY THE CONTRACTOR.
- BIDDERS SHALL VISIT THE SITE AND ACQUAINT THEMSELVES WITH THE CONDITIONS AS THEY ACTUALLY EXIST AND VERIFY DIMENSIONS, LOCATIONS AND DETAILS REQUIRED TO COMPLETE THE WORK, WHICH WILL BE THE ONLY OPPORTUNITY FOR POTENTIAL CONTRACTORS TO SEE THE SITE. FAILURE TO VISIT THE PROJECT AREA WILL IN NO WAY RELIEVE THE SUCCESSFUL BIDDER OF FURNISHING ALL MATERIAL AND PERFORMING ALL WORK REQUIRED FOR THE COMPLETION OF THE CONTRACT. VISITS TO THE PROJECT AREA SHALL BE ARRANGED THROUGH THE OWNER.
- PROVIDE ACCESS FOR OPERATION AND MAINTENANCE TO EVERY PLUMBING VALVE. ACCESS SHALL BE AS REQUIRED BY ARCHITECT.
- THE CONTRACTOR SHALL, WITHOUT EXTRA CHARGE, MAKE REASONABLE MODIFICATIONS IN THE LAYOUT, AS NEEDED, TO PREVENT CONFLICT WITH WORK OF OTHER TRADES OR FOR PROPER EXECUTION OF THE WORK.
- CONTRACTOR SHALL LOCATE IN FULLY ACCESSIBLE POSITIONS ALL EQUIPMENT WHICH MUST BE SERVICED, OPERATED, OR MAINTAINED.
- INSTALL WATER HAMMER ARRESTER AS SHOWN ON DRAWINGS.
- ALL UNDERGROUND COPPER PIPING SHALL BE TYPE "K", DIAMETER AS INDICATED.
- ALL COPPER PIPING ABOVE FINISH FLOOR ELEVATION SHALL BE TYPE "L", DIAMETER AS INDICATED.
- ALL WASTE, SANITARY AND STORM DRAINAGE LINES SHALL BE PVC SCH--40.
- ALL PIPING SHALL BE CONCEALED IN FLOOR TOPPINGS, WALL OR CHASES UNLESS OTHERWISE NOTED.
- LONG SWEEP BENDS OR LONG SWEEP FITTINGS SHALL BE PROVIDED AT THE BASE OF ALL STACKS.
- CLEANOUTS SHALL NOT BE MORE THAN 100 FEET APART
- THE PLUMBING CONTRACTOR SHALL COORDINATE HIS/HER PORTION OF THE WORK WITH THE GENERAL CONTRACTOR AND SHALL PROVIDE SLEEVES AT SLABS OR BEAMS FOR PIPING LAYOUT AND FIXTURES INSTALLATION.
- ALL FIXTURES SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER SPECIFICATIONS.
- SIZES SHOWN IN FIXTURES SCHEDULE ARE MINIMUM AND SHALL BE INCREASED AS NECESSARY TO COMPLY WITH CODE REQUIREMENTS OR AS SHOWN ON DRAWINGS.
- SINGLE AND DOUBLE TEES AND QUARTER BENDS SHALL BE USED IN LINES ONLY WHERE THE DIRECTION OF FLOW IS FROM THE HORIZONTAL TO THE VERTICAL.
- ALL HORIZONTAL PORTIONS OF SOIL STACKS AND BRANCHES SHALL HAVE MINIMUM SLOPE OF 1/4" PER FOOT FOR PIPES 3" DIAMETER OR LESS. 1/8" PER FOOT FOR PIPES 4" OR LARGER IN DIAMETER.
- THE PLUMBING CONTRACTOR SHALL COORDINATE HIS/HER WORK IN ORDER TO AVOID ANY INTERFERENCE WITH THE WORK OF OTHER CONTRACTORS AND THE INSTALLATION OF FIXTURES AND/OR EQUIPMENT BY OTHERS.
- WATER HAMMER ARRESTER SHALL BE INSTALLED IN ALL WATER DISTRIBUTION BRANCHES WHENEVER INDICATED ON THE DRAWINGS AS PER MANUFACTURER RECOMMENDATIONS. SAME SHALL BE SERIES 5000, MODELS AS SHOWN ON LEGEND.
- WATER HAMMER ARRESTERS INSTALLED ON WALLS SHALL BE PROVIDED WITH 12" X 12" FRAME WITH HINGE LOCKED DOOR, MODEL JAY R. SMITH FIG.4762-SL WITH ITS BOTTOM AT 18" ABOVE FINISH FLOOR ELEVATION.
- GATE VALVES LOCATED UNDERGROUND OR BELOW FLOOR SLABS SHALL BE INSTALLED WITHIN A CAST IRON OR CONCRETE BOX WITH 9 X 9 J.R. SMITH ACCESS COVER FIG. 4915-U.
- PLUMBING CONTRACTOR SHALL PROVIDE ALL NECESSARY SERVICES AND/OR CONNECTIONS REQUIRED FOR THE PLUMBING FIXTURES AND/OR EQUIPMENT SHOWN ON THE FIXTURES PLANS.
- PLUMBING CONTRACTOR SHALL PROVIDE ALL NECESSARY ROUGHING-IN AND SHALL INSTALL THE PLUMBING FIXTURES INDICATED ON THESE DRAWINGS.
- WHENEVER REQUIRED OR NEEDED. THE PLUMBING CONTRACTOR SHALL PREPARE AND SUBMIT THE NECESSARY SHOP DRAWINGS FOR THE APPROVAL OF THE ARCHITECT.
- BEFORE STARTING CONSTRUCTION, THE PLUMBING CONTRACTOR SHALL VERIFY THE EXACT LOCATION AND ELEVATIONS OF EXISTING PIPE LINES TO REMAIN IN USE ANY SIGNIFICANT DISCREPANCY WITH THE INFORMATION SHOWN ON THESE DRAWINGS SHALL BE NOTIFIED TO THE ARCHITECT FOR REVISION AND/OR CLARIFICATION.
- ALL EXPOSED HOT WATER LINES SHALL BE INSULATED WITH 1-1/2" THICK MATERIAL WITH A THERMAL CONDUCTIVITY NOT TO EXCEED 0.22BTU PER SQ INCH PER HOUR AT MEAN TEMPERATURE OF 75°F
- FIXTURES, FITTINGS, ACCESSORIES, MATERIAL AND ALL PLUMBING PRODUCTS SHALL BE AS PER SPECIFICATIONS ON THESE DRAWINGS AND CONTRACT SPECIFICATIONS. EQUAL OR SIMILAR SHALL BE ONLY ACCEPTED IF PREVIOUSLY APPROVED BY THE ARCHITECT.

NEW PLUMBING FIXTURE SHEDULE

DESIG-NATION	DESCRIPTIONS	LOCATIONS	UNIT WASTE OR SOIL	VENT SIZE	WATER SUPPLY		FIXTURES		REMARKS
					COLD	HOT	COLD	HOT	
P-1	WATER CLOSET	BATHROOM	3"	2"	3/4	-	3/4	-	SEE ARCH. DWGS. FOR SPECS.
P-2	LAVATORY	BATHROOM	1 1/2"	1 1/2"	1/2"	1/2"	1/2"	1/2"	SEE ARCH. DWGS. FOR SPECS.
P-3	BATHTUB	BATHROOM	2"	1 1/2"	1/2"	1/2"	1/2"	1/2"	SEE ARCH. DWGS. FOR SPECS.
P-4	SERVICES SINK	OFFICES	2"	1 1/4"	1/2"	-	1/4"	-	SEE ARCH. DWGS. FOR SPECS.
P-5	KITCHEN SINK	KITCHEN	2"	1 1/2"	1/2"	1/2"	1/2"	1/2"	SEE ARCH. DWGS. FOR SPECS.
P-6	SHOWER	LOCKERS ROOM	2"	1 1/2"	1/2"	1/2"	1/2"	1/2"	SEE ARCH. DWGS. FOR SPECS.
FD-1	FLOOR DRAIN	SEE PLUMBING DWGS.	2"	-	-	-	-	-	SMITH FIG. 2010
FCO	FLOOR CLEANOUT	SEE PLUMBING DWGS.	AS SHOWN	-	-	-	-	-	SMITH FIG. 4040-U
WCO	WALL CLEANOUT	SEE PLUMBING DWGS.	AS SHOWN	-	-	-	-	-	SMITH FIG. 4472-U

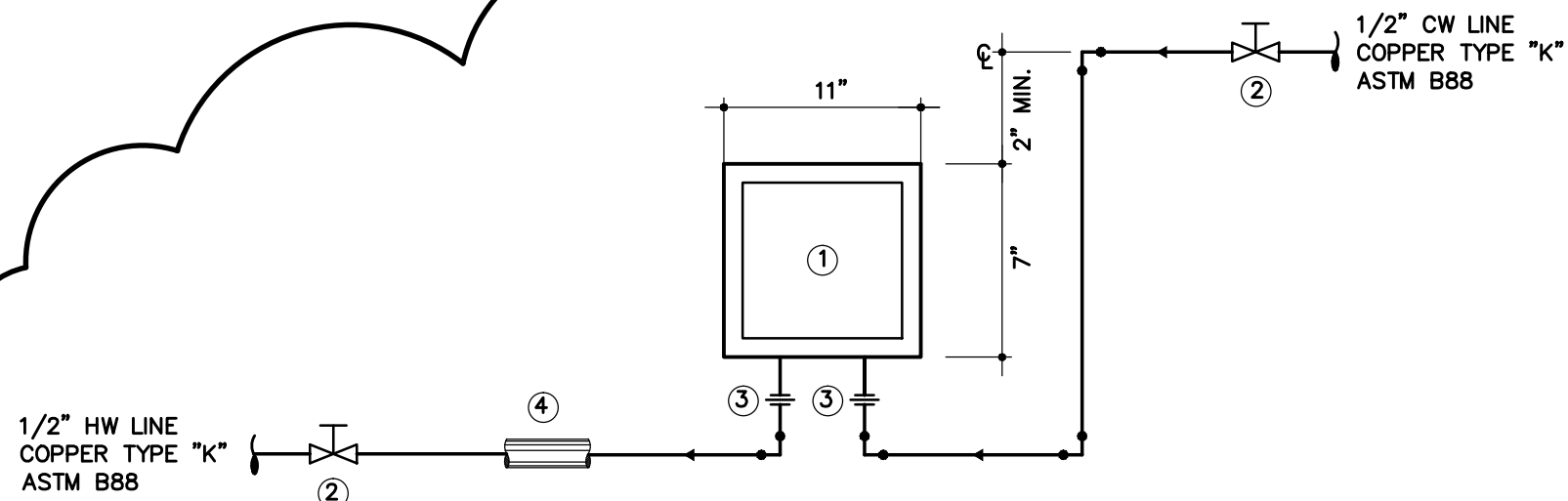


WATER HAMMER ARRESTER

SYMBOL	J.R. SMITH MODEL	MAX. FIXTURE UNITS	DIMENSIONS		ACCESS DOOR, J.R. SMITH	ACCESS DOOR SIZE
			A	B		
(A)	5005	1-11	3/4	4	FIG. 4735-NB-U	8" X 8"
(B)	5010	12-32	1	5	FIG. 4735-NB-U	10" X 10"
(C)	5020	33-60	1	6	FIG. 4735-NB-U	12" X 12"
(D)	5030	61-113	1	7	FIG. 4735-NB-U	15" X 15"

WATER HAMMER ARRESTER DETAIL

SCALE : N.T.S.



LEGEND:

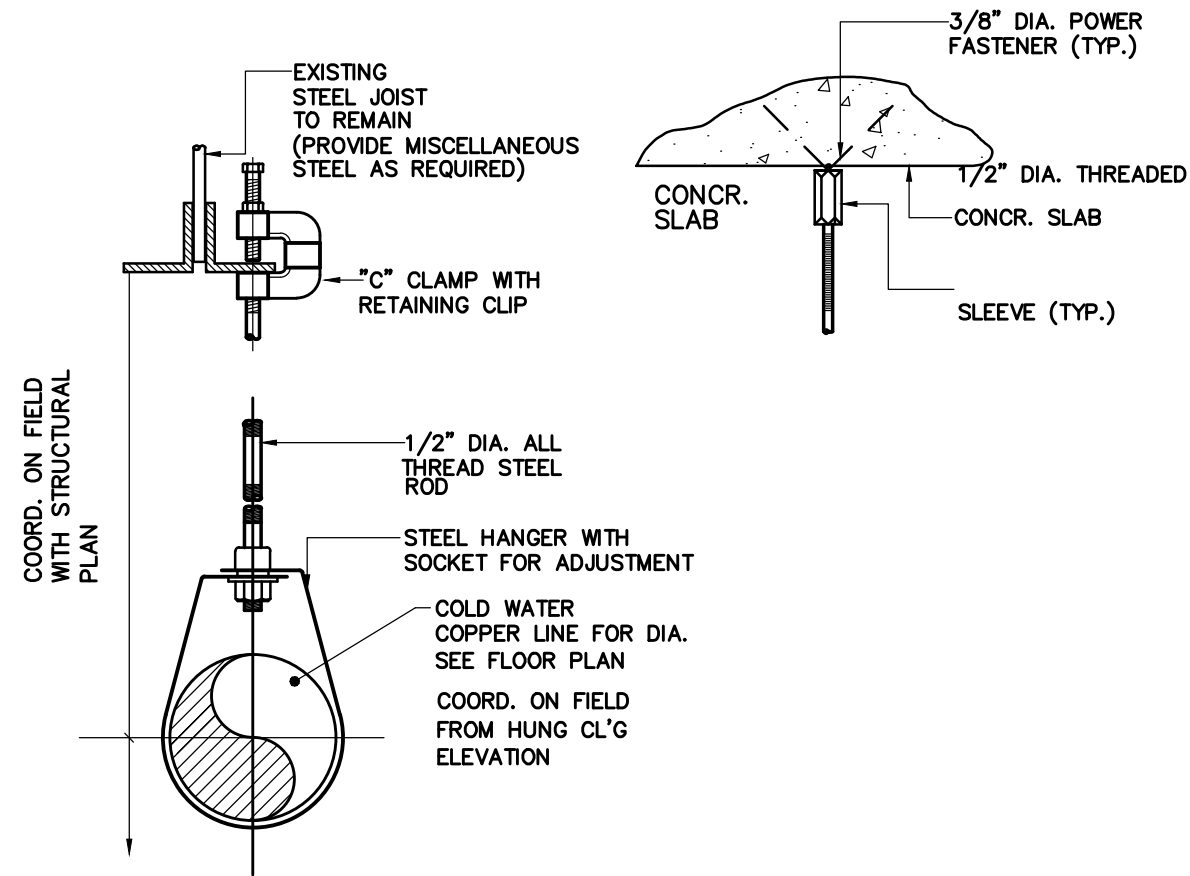
- IN-LINE WATER HEATER 5.5 KW, 220/1/60. 30 AMPS. SIMILAR TO ECOSMART POU-6 1.0 GPM @ 33°F (110°F-77°F) TEMPERATURE RISE. 110°F MAXIMUM WATER TEMPERATURE.
- 1/2" GATE VALVE
- 1/2" UNIVERSAL CONN.
- 1/2" THICK NEOPRENE INSULATION. (APPLIES FOR EXPOSED HOT WATER PIPING).

NOTES:

- ELECTRICAL CONNECTION TO BE EXECUTED AS PER APPLICABLE CODES.
- MAXIMUM WATER TEMPERATURE TO BE REGULATED AS PER IBC LATEST EDITION

IN-LINE WATER HEATER INSTALLATION DETAIL

SCALE : N.T.S.



* MAXIMUM HANGER SPACING 8'-0" FOR LINES 1 1/2" DIA. AND LARGE AND 4'-0" FOR LINES 1/2" - 1" DIA.

PIPE HANGER DETAIL

SCALE : N.T.S.

PLUMBING LEGEND:

- COLD POTABLE WATER LINE
- HOT POTABLE WATER LINE (INSULATED)
- SANITARY SEWER LINE
- SANITARY VENTILATION LINE
- STORM SEWER LINE
- INDICATES COLD WATER RISER DESIGNATION AND SIZE
- INDICATES COLD WATER RISER DESIGNATION AND SIZE
- INDICATES SANITARY STACK DESIGNATION AND SIZE
- INDICATES WASTE STACK DESIGNATION AND SIZE
- INDICATES RAIN LEADER STACK DESIGNATION AND SIZE
- INDICATES SANITARY VENTILATION STACK DESIGNATION AND SIZE
- INDICATES PLUMBING FIXTURE DESIGNATION SEE SCHEDULE

PLUMBING ABBREVIATIONS:

- C.W. COLD WATER
- H.W.S. HOT WATER
- (TYP.) TYPICAL
- VS VENT STACK
- WCO WALL CLEAN OUT
- FCO FLOOR CLEAN OUT
- GCO GROUND CLEAN OUT
- W.H. WATER HEATER
- FD FLOOR DRAIN
- V VENTILATION
- H.B. HOSE BIBB
- R.L. RAIN LEADER
- (E) EXISTING



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"Yo, José Luis Marrero Sicardo, licencia # 14670, certifico que soy el profesional que diseñó estos planos y las especificaciones complementarias. También certifico que entiendo que dichos planos y especificaciones cumplen con las disposiciones aplicables del Reglamento Conjunto y las disposiciones aplicables de los Reglamentos y Códigos de las Agencias, Juntas Reglamentadoras o Corporaciones Públicas con jurisdicción. Reconozco que cualquier declaración falsa o falsificación de los hechos que se haya producido sin conocimiento o por negligencia ya sea por mí, mis agentes o empleados, o por otras personas con mi conocimiento, me hacen responsable de cualquier acción judicial y disciplinaria por la OIGPe y otras autoridades competentes, incluyendo, pero sin limitarse, a la terminación de la participación en los procedimientos de certificación profesional en la OIGPe."

PROJECT NAME	DEPARTMENTO DE SEGURIDAD PUBLICA
PROJECT NO.	NUEVO EDIFICIO 911
DATE	11/27/2018
BY	REVISIONS
DESCRIPTION	
PLUMBING	
PL-200	



AMSTEP PRODUCTS SAFETY STAIR TREADS

INSTALLATION INSTRUCTIONS

PREPARATION OF STAIRS:

All stairs must be sound, clean and level prior to installation of Amstep Safety Stair Treads.

An application of leveling compound should be made over dished or worn stairs to provide a level-bearing surface for the safety stair treads. Smooth steps such as marble, terrazzo, tile, metal, etc. should be roughed up to insure good adhesion. Always vacuum clean steps to remove any loose particles. Other types of stair surfaces need only to be thoroughly cleaned. Troweling a leveling compound against a straight-edge board held to the front of each step will provide a square edge. Begin at top of stairs and work down. Leave until cured. (See manufacturer's instructions).

RECOMMENDED FASTENERS AND DRILL BITS:

For **CONCRETE** and **MASONRY** stairs, Amstep Products recommends using Tapcon® 1/4" x 1 3/4" 410 Stainless Steel Phillips Flat Head Concrete Anchors. Drill pilot holes with a hammer drill fitted with a 3/16" masonry bit, 1/2" deeper than anchor itself.

For **STEEL** stairs, Amstep Products recommends using a hardened steel 1/4" x 1" Phillips Flat Head Self-tapping Floor Screw. Pilot hole is 13/64". If you find the self-tapping screws are very hard to drive in, you may use a larger drill bit (7/32") for your pilot holes, but be careful not to strip treads.

For **WOOD** stairs, Amstep Products recommends a 1/4" x 1 1/4" Stainless Steel Wood Screws. Drill pilot holes with a 3/16" drill, at least the depth of the anchor.

TOOLS REQUIRED:

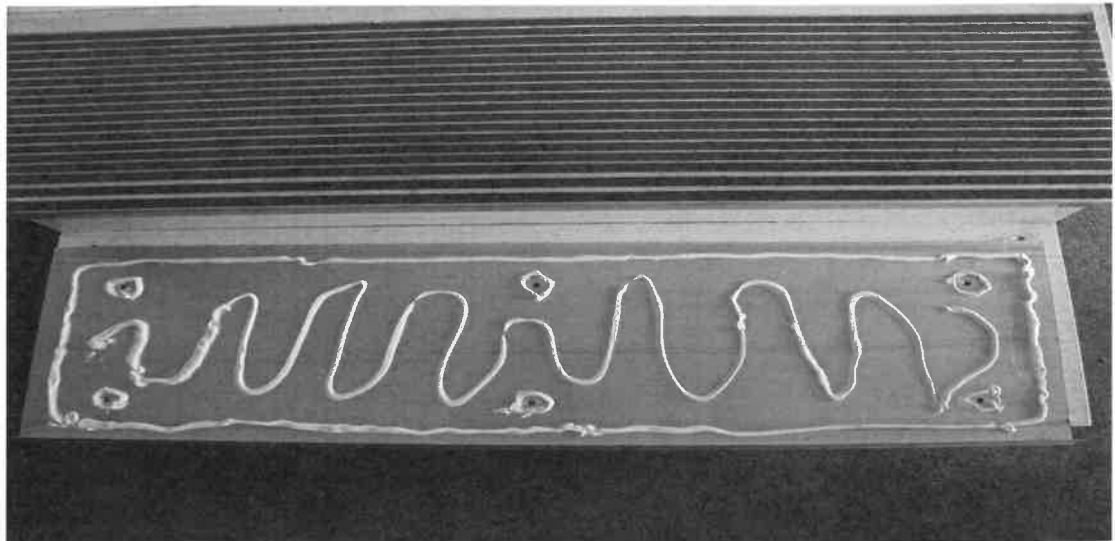
Shop vacuum, caulk gun, extension cord, drill, drill bits and screwdriver. For masonry installations: shop vacuum, caulk gun, extension cord, hammer drill, 3/16" masonry bits and screwdriver.

STAIR TREAD INSTALLATION INSTRUCTIONS:

- (1) Block off access to the stairway you will be working on to keep people out of the area. Put up signs and danger tape;

- (2) Begin at bottom stair. Carefully lay stair tread upside down on the stair;
- (3) Apply a $\frac{1}{4}$ " bead of glue all the way around the perimeter of the bottom side of the tread, keeping approximately $\frac{3}{4}$ " away from the outside edge of tread. Apply an additional $\frac{1}{4}$ " bead in a wavy pattern on the remainder of the bottom side of the tread inside the perimeter bead, as well as a $\frac{1}{4}$ " bead around each predrilled hole approximately $\frac{1}{2}$ " from the hole. (See Figure A).

Note: For exterior installations, substitute clear GE Silicone caulk instead of glue.



- (4) Carefully pick up, turn over and place tread on stair;
- (5) Push down on tread to distribute glue or caulk;
- (6) Be sure ends of tread are equally spaced on stair and that tread is pushed back as far as it will go against front edge;
- (7) Using a shop vacuum, hold end of vacuum hose as close as possible to the predrilled hole(s) in the tread in order to vacuum up dust and drillings from hole and tread;
- (8) Carefully drill the first hole toward the center of the tread;
- (9) Vacuum out all dust and debris from hole;
- (10) Screw in and tighten anchor. CAUTION: Using a power driver can strip the fastener. If you use a power driver, use the clutch to help prevent stripping;
- (11) Drill and anchor another hole on either end of the tread;

- (12) Drill all remaining holes and anchor them;
- (13) Repeat the process for remaining stair treads