HARPER PERKINS ARCHITECTS, INC.

4724 Old Jacksboro Highway Wichita Falls, Texas 76302-3599
Telephone 940.767.1421 Facsimile Number 940.397.0273

ADDENDUM NO. 4

To the Drawings and Project Manual dated 1 April 2019

for

MIDWESTERN STATE UNIVERSITY
RENOVATIONS TO
J.S. BRIDWELL HALL

3410 Taft Boulevard
Wichita Falls, Texas

SIGNED: 5 June 2019

Addendum Date: 5 June 2019

NOTICE TO PROPOSERS:

This Addendum will be considered a part of the Contract Documents for the above referenced project as though it had been issued at the same time and incorporated integrally therewith. Where provisions of the following supplementary data differ from those in the original Contract Documents, this Addendum shall govern and take precedence.

Proposers are hereby notified that they shall make any necessary adjustments in their estimates on account of this Addendum. It will be construed that such Proposer's Competitive Sealed Proposal is submitted with full knowledge of all modifications and supplementary data specified herein.

ITEM 1 - AD#4: To the Project Manual, Sections **00100**, **NOTICE TO CONTRACTORS**; **00200**, **INSTRUCTIONS FOR PROPOSERS**; and **Addendum #3**, **Item #1**.
DELETE: The Bid Date of Tuesday, June 11 at 2:00 p.m.
ADD: The Bid Date shall be **Thursday**, **June 13** at **2:00 p.m.**

ITEM 2 - AD#4: To the Project Manual, Sections **00400**, **PROPOSAL FORM**; and **Addendum #2**, **Item #1**.
DELETE: The Proposal Form issued with **Addendum #2**.
ADD: As clarification, submit the "**Proposal Sheet/Pricing Schedule**" (Part **6.2**) contained in Section **6** ("**Specifications/Scope of Work**") of the Documents issued by MSU for this project. This document can be obtained from the MSU Purchasing Web Site (*RFP 735-19-8217 JS Bridwell Renovation*) at www.msutexas.edu/purchasing.
ADD: As clarification, the receiving of Addendums shall be acknowledged on the "**Addenda Checklist**" contained as "**Appendix D**" of the Documents issued by MSU for this project. This document can also be obtained from the MSU Purchasing Web Site (*RFP 735-19-8217 JS Bridwell Renovation*) at www.msutexas.edu/purchasing.

ITEM 3 - AD#4: To the Project Manual, Section **00100**, **NOTICE TO CONTRACTORS**.
DELETE: The indication of a "Bid Bond".
ADD: As clarification, a "Bid Deposit" shall be required as specified in the "**Proposal Submission Procedures**" contained in Section **4**, Part **4.10** of the Documents issued by MSU for this project. This document can also be

obtained from the MSU Purchasing Web Site (*RFP 735-19-8217 JS Bridwell Renovation*) at www.msutexas.edu/purchasing.

ITEM 4 - AD#4: To the Drawings and the Project Manual, Section **099000**, **PAINTING**.
ADD: As clarification, in addition to new door frames in new openings being painted as a part of this Contract, existing door frames that are in areas & spaces receiving new work & finishes shall also be painted.

ITEM 5 - AD#4: To the Drawings and **Addendum #3**, **Item #6**.
DELETE: **Plumbing** ("**P**") Sheets "**P202**" and "**P203**".
ADD: Replacement **Plumbing** ("**P**") Sheets "**P202**" and "**P203**" included as a part of this Addendum. Items on these Drawings include the addition of a Floor Drain with a funnel adjacent to the DCW & CHW RPZ's and 5-gallon Neutralization Tanks at each Student Table Sink and the Fume Hood in the Science Lab. Data Sheets for the specified Neutralization Tanks is attached to this Addendum.

ITEM 6 - AD#4: To the Plumbing Drawings.
DELETE: **Plumbing** ("**P**") Sheet "**P001**".
ADD: Replacement **Plumbing** ("**P**") Sheet "**P001**" as a part of this Addendum. The "**Plumbing Fixture Schedule**" has been revised on this Drawing.
ADD: As clarification, the RPZ serving the domestic hot water system at the Lab shall be rated for temperatures up to 180 degrees F and shall be equal to *Watts* #LF909HW.

END OF ADDENDUM NO. 4

PLUMBING SYMBOLS AND ABBREVIATIONS

NOTE: ALL SYMBOLS AND ABBREVIATIONS SHOWN ARE NOT NECESSARILY USED ON THE DRAWINGS

GENERAL NOTES

1. PERFORM ALL WORK IN ACCORDANCE WITH ALL APPLICABLE CODES AND AUTHORITIES HAVING JURISDICTION. PROVIDE ALL PERMITS, INSPECTIONS, LICENSES AND FEES. FURNISH ALL LABOR, EQUIPMENT, SUPPLIES AND MATERIALS NECESSARY TO PROVIDE COMPLETE AND OPERATIONAL SYSTEMS.

2. THE DRAWINGS AND SPECIFICATIONS INDICATE THE GENERAL DESIGN AND ARRANGEMENT OF PIPES, FIXTURES, EQUIPMENT, SYSTEMS, ETC. INFORMATION SHOWN IS DIAGRAMMATIC IN CHARACTER AND DOES NOT NECESSARILY INDICATE EVERY REQUIRED OFFSET, FITTING, ETC. DO NOT SCALE THE DRAWINGS FOR DIMENSIONS. TAKE ALL DIMENSIONS, MEASUREMENTS, EQUIPMENT LOCATIONS, LEVELS, ETC FROM THE ARCHITECTURAL DRAWINGS AND FROM THE EQUIPMENT TO BE FURNISHED. PIPING MAY BE RELOCATED OR OFFSET FOR PROPER CLEARANCES OR TO AVOID CONFLICTS WITH OTHER TRADES. THE DESIGN INTENT (I.E. PITCHES, VELOCITIES, PRESSURE DROPS, VOLTAGE DROPS, ETC) CANNOT BE GREATLY ALTERED WITHOUT THE APPROVAL OF THE ARCHITECT. THE COST OF THESE DEVIATIONS TO AVOID INTERFERENCE'S SHALL BE PART OF THE ORIGINAL CONTRACT BID.

3. EACH SUBCONTRACTOR SHALL CONFER AND COOPERATE WITH ALL OTHER TRADES TO COORDINATE THEIR WORK. COORDINATION SHALL INCLUDE, BUT SHALL NOT BE LIMITED TO MATERIALS AND EQUIPMENT ROUTED IN CEILING AND WALL CAVITIES, EQUIPMENT ARRANGEMENT IN MECHANICAL SPACES, INCLUDING EQUIPMENT CLEARANCE REQUIREMENTS, ELEVATIONS AND DIMENSIONS OF STRUCTURAL MEMBERS AND OPENINGS, ETC. THE CONTRACTOR SHALL NOTIFY THE ARCHITECT OF ANY CONFLICTS.

4. BASE FINAL INSTALLATION OF MATERIALS AND EQUIPMENT ON ACTUAL DIMENSIONS AND CONDITIONS AT THE PROJECT SITE. FIELD MEASURE FOR MATERIALS AND EQUIPMENT REQUIRING EXACT FIT. NO EXTRAS WILL BE GIVEN FOR THE CONTRACTORS FAILURE TO FIELD COORDINATE.

5. THE OWNER OR ENGINEER ARE NOT RESPONSIBLE FOR THE CONTRACTOR'S SAFETY PRECAUTIONS OR FOR MEANS, METHODS, TECHNIQUES, CONSTRUCTION SEQUENCES, OR PROCEDURES REQUIRED TO PERFORM THE WORK.

6. THE CONTRACTOR SHALL LOCATE ALL EQUIPMENT THAT MUST BE SERVICED, OPERATED, OR MAINTAINED IN FULLY ACCESSIBLE POSITIONS. EQUIPMENT SHALL INCLUDE (BUT NOT LIMITED TO) VALVES, SHOCK ABSORBERS, TRAPS, CLEANOUTS, MOTORS, CONTROLLERS, SWITCHGEAR, AND DRAIN POINTS IF REQUIRED FOR BETTER ACCESSIBILITY. FURNISH ACCESS DOORS FOR THIS PURPOSE. MINOR DEVIATIONS FROM THE DRAWINGS MAY BE ALLOWED TO PROVIDE FOR BETTER ACCESSIBILITY. ANY CHANGES SHALL BE APPROVED BY THE ARCHITECT AND CONSTRUCTION MANAGER/GENERAL CONTRACTOR PRIOR TO MAKING THE CHANGE.

7. THE CONTRACTOR SHALL PROVIDE ACCESS DOORS, WALL OPENINGS, ROOF OPENINGS OR ANY OTHER CONSTRUCTION REQUIREMENT NEEDED TO ACCOMMODATE THE PLUMBING EQUIPMENT. LOCATIONS OF THESE OPENINGS SHALL BE SUBMITTED IN SUFFICIENT TIME TO BE INSTALLED IN THE NORMAL COURSE OF WORK.

8. THE CONTRACTOR SHALL COORDINATE ELECTRICAL REQUIREMENTS OF PLUMBING EQUIPMENT WITH THE ELECTRICAL CONTRACTOR PRIOR TO THE PURCHASE AND INSTALLATION OF ANY ELECTRICAL GEAR OR CONDUIT.

9. PROVIDE VIBRATION ISOLATORS FOR MOTOR DRIVEN PLUMBING EQUIPMENT UNLESS NOTED OTHERWISE. PROVIDE ISOLATION AS RECOMMENDED BY THE EQUIPMENT MANUFACTURER.

10. THE CONTRACTOR SHALL COORDINATE THE LOCATION OF ALL WALL CLEANOUTS, ACCESS DOORS, ETC WITH THE ARCHITECT AND ALL OTHER TRADES PRIOR TO INSTALLATION. IF A CONFLICT WITH MILLWORK, LIGHT SWITCHES, WINDOWS, ETC EXISTS, THE CONTRACTOR SHALL NOTIFY THE ARCHITECT OF THE POTENTIAL INTERFERENCE PRIOR TO INSTALLATION.

11. PLUMBING VENTS THROUGH THE ROOF SHALL BE A MINIMUM OF 10 FEET FROM ALL OUTSIDE AIR INTAKES AND A MINIMUM OF 5 FEET FROM EXTERIOR PERIMETER WALLS.

12. SOME PIPES SHOWN ON EACH FLOOR PLAN MAY BE SHOWN WITH AN OFFSET FOR CLARITY.

13. PLUMBING FIXTURES AND TRIM OF LIKE KIND SHALL BE OF THE SAME MANUFACTURER THROUGHOUT THE PROJECT. TYPICAL CATEGORIES INCLUDE THE FOLLOWING:

    A. FAUCETS, MIXING VALVES
    B. TAIL PIECE, FIXTURE TRAPS, ESCUTCHEONS, ARM EXTENSIONS, STRAINERS
    C. COUNTER TOP SINKS

14. PROVIDE WATER HAMMER ARRESTERS BETWEEN THE NEXT TO LAST AND LAST FIXTURE AT EACH BATTERY OF PLUMBING FIXTURES IN ACCORDANCE WITH THE WATER HAMMER ARRESTER SCHEDULE AND THE PLUMBING AND DRAINAGE INSTITUTE STANDARD PDI-WH-201.

15. ALL SANITARY WASTE PIPING WITHIN THE BUILDING ENVELOPE SHALL HAVE MINIMUM SLOPES AS REQUIRED BY THE LOCAL CODE AUTHORITY. CONTRACTOR SHALL VERIFY INVERT ELEVATIONS INDICATED ON FLOOR PLANS PRIOR TO INSTALLATION OF ANY SITE UTILITIES AND CONNECTION INTO EXISTING SERVICES.

16. COMPLY WITH THE PROVISIONS OF THE AMERICANS WITH DISABILITIES ACT (ADA) AND THE TEXAS ACCESSIBILITY'S STANDARD (TAS). PLUMBING CONTRACTOR SHALL PROVIDE PLUMBING FIXTURES WITH FLUSH VALVE HANDLES LOCATED ON THE WIDE SIDE OF EACH STALL.

17. SEAL ALL PIPE PENETRATIONS THROUGH FIRE RATED BUILDING ELEMENTS WITH AN APPROVED FIRE PROOFING MATERIAL.

WATER HAMMER ARRESTER SCHEDULE

P.D.I. SIZE	A	B	C	D	E	F
FIXTURE UNITS	1-11	12-32	33-60	61-113	114-154	155-330

NOTES:
1. ALL WHA'S SHALL BE PISTON TYPE WITH EPDM O-RINGS, SIOUX CHIEF'S SERIES 650 OR EQUAL.
2. ALL WHA'S SHALL BE ANSI/ASSE 1010 2004 CERTIFIED AND APPROVED FOR INSTALLATION WITH NO ACCESS PANEL REQUIRED.
3. SIZE AND LOCATE WATER HAMMER ARRESTERS IN ACCORDANCE WITH PDI PAMPHLET PDI-WH-201.

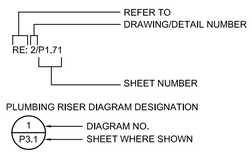
ABBREVIATIONS

A/E	ARCHITECT/ENGINEER	L	LENGTH
AFF	ABOVE FINISHED FLOOR	LB	POUNDS
AHU	AIR HANDLING UNIT	LRA	LOCKED ROTOR AMPS
APPROX	APPROXIMATE	MAX	MAXIMUM
BD	BUILDING DRAIN (BELOW FLOOR)	MCA	MINIMUM CIRCUIT AMPACITY
		MIN	MINIMUM
B.F.G.	BELOW FINISHED GRADE	MSB	MOP SINK BASIN
BS	BUILDING SEWER (OUTSIDE OF BLDG)	N/A	NOT APPLICABLE
		NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
CU	COPPER, CONDENSING UNIT		
CW	DOMESTIC COLD WATER	NFWH	NON-FREEZE WALL HYDRANT
D	EQUIPMENT DRAIN	N/O,N/C	NORMALLY OPEN, NORMALLY CLOSED
DCO	TWO-WAY GRADE CLEANOUT	O/C	ON CENTER
DEG	DEGREES	OFD	ROOF OVERFLOW DRAIN
DSN	DOWNSPOUT NOZZLE	PCO	PLUG CLEANOUT
(E)	EXISTING	PH	PHASE
EQUIP	EQUIPMENT	PROVIDE	FURNISH AND INSTALL
EWC	ELECTRIC WATER COOLER	PSI	POUNDS PER SQUARE INCH
°F	DEGREES FAHRENHEIT	RD	ROOF DRAIN
FCO	FLOOR CLEANOUT	RE:	REFERENCE, REFER
FCU	FAN COIL UNIT	RLA	RUNNING LOAD AMPS
FD	FLOOR DRAIN	RM	ROOM
FS	FLOOR SINK	RPBFP	REDUCED PRESSURE PRINCIPLE BACKFLOW PREVENTER
FT.	FOOT, FEET		
FVC	FIRE VALVE CABINET	RPZ	REDUCED PRESSURE ZONE
G	NATURAL GAS	S	SINK
GCO	GRADE CLEANOUT	SD	STORM DRAIN (BELOW FLOOR)
GWH	NATURAL GAS WATER HEATER	ST	STORM WATER (ABOVE CEILING)
H	HEIGHT	SSD	SUBSURFACE DRAIN
HB	HOSE BIBB	THRU	THROUGH
HP	HORSEPOWER	TP	TRAP PRIMER
HW	DOMESTIC HOT WATER	TYP	TYPICAL
HWC	DOMESTIC HOT WATER CIRCULATION LOOP	U	URINAL
		UL	UNDERWRITERS LABORATORIES, INC.
HWTM	HOT WATER TEMPERATURE MAINTENANCE CABLE	V	SANITARY VENT
		VTR	SANITARY VENT THRU ROOF
HZ	HERTZ	W	SANITARY WASTE (ABOVE FLOOR)
IE	INVERT ELEVATION	WC	WATER CLOSET
IN.	INCH, INCHES	WCO	WALL CLEANOUT
J-BOX	JUNCTION BOX	W/	WITH
kW	KILOWATT	W/O	WITHOUT

LINE TYPES

SYMBOL	DESCRIPTION
—W—	SANITARY SEWER (ABOVE CEILING)
—BD—	SANITARY SEWER (BELOW FLOOR, BUILDING DRAIN)
—BS—	SANITARY SEWER (OUTSIDE OF BUILDING, BUILDING SEWER)
—D—	EQUIPMENT DRAIN (ABOVE CEILING)
	SANITARY VENT
	DOMESTIC COLD WATER
	DOMESTIC HOT WATER
	DOMESTIC HOT WATER CIRCULATION
—G—	NATURAL GAS
—F—	FIRE PROTECTION MAIN WATER SUPPLY
	DIRECTION OF FLOW
	DIRECTION OF PIPE SLOPE DOWN
	PIPE DEMOLITION

DRAWING/DETAIL REFERENCE



MISCELLANEOUS

1	DRAWING NOTE REFERENCE (I.E., NOTES BY SYMBOL)
	CONNECTION INTO EXISTING

VALVES AND FITTINGS

SYMBOL	DESCRIPTION
	SHUT-OFF / ISOLATION VALVE
	BALL VALVE
	BUTTERFLY VALVE
	GLOBE VALVE
	PLUG VALVE / GAS COCK
	CHECK VALVE
	STRAINER
	CALIBRATED BALANCING VALVE
R	GAS PRESSURE REGULATOR
	FLOW SWITCH
	UNION (DIELECTRIC)
	VALVE IN RISER
	END RISE (90° ELL)
	END DROP (90° ELL)
	RISE OR DROP
	TEE OUT OF TOP OF PIPE
	TEE OUT OF BOTTOM OF PIPE
	CAP ON END OF PIPE
WCO	WALL CLEANOUT
PCO	PLUG CLEANOUT
DCO	TWO WAY CLEANOUT
GCO	GRADE CLEANOUT
	NON-FREEZE WALL HYDRANT OR HOSE BIBB
FD	FLOOR DRAIN
FCO	FLOOR CLEANOUT
	SHUT-OFF / ISOLATION VALVE
	OS&Y GATE VALVE
FDC	FIRE DEPARTMENT SIAMESE CONNECTION (WALL)

PLUMBING FIXTURE SCHEDULE

MARK	DESCRIPTION	ROUGH IN (MINIMUM) W	V	CW	HW	E	MANUFACTURER AND MODEL NUMBER	ADA /TAS
S1	SINK, SINGLE COMPARTMENT, 19"x21"x6", SELF RIMMING, SEAMLESS #18 GAUGE TYPE 304 STAINLESS STEEL, FAUCET LEDGE, MINIMUM 1 3/4" VERTICAL AND HORIZONTAL RADIUS BASIN CORNERS, FULLY UNDERCOATED, ANSI A112.19.3M. DRAIN CENTERED IN REAR OF BASIN.	2"	1 1/2"	-	-	-	JUST, SL-ADA-1921-A-GR; ELKAY, LRAD-2219	♿
	FAUCET, DECK MOUNT, CHROME PLATED BRASS, RIGID SWING GOOSENECK SPOUT, TWO-HANDLE, 1/4 TURN 4" WRIST BLADE HANDLES, 4" CENTERS, NSF 61 COMPLIANT, ANSI A112.18.1M, 2.2 GPM MAX. FLOW RATE	-	-	1/2"	1/2"	-	CHICAGO, 895-317; MOEN COMMERCIAL, 8278; DELTA 2171WBHHDF; T&S BRASS, B-0892	
	SUPPLY AND STOP, LOOSE KEY, CHROME PLATED BRASS VALVES AND CHROME PLATED COPPER RISERS	-	-	1/2"	1/2	-	MCGUIRE, H2167CCLK; OR EQUAL IN T&S BRASS OR BRASSCRAFT	
	P-TRAP, CHROME PLATED CAST BRASS BODY WITH CLEANOUT, SEAMLESS WALL BEND, 17 GA.	-	-	-	-	-	MCGUIRE, 8912; OR EQUAL IN T&S BRASS OR BRASSCRAFT	
	TAILPIECE AND FORGED STAINLESS STEEL BASKET STRAINER	-	-	-	-	-	JUST J-ADA-35; OR EQUAL IN MCGUIRE, T&S BRASS OR BRASSCRAFT	
EWS1	EMERGENCY EYEWASH/SHOWER COMBINATION, FREE STANDING, SCHEDULE 40 GALVANIZED STEEL PIPING AND FITTINGS, 10" DIA. STAINLESS STEEL DELUGE SHOWER HEAD, STAINLESS STEEL EYEWASH BOWL, PULL ROD OPERATED, ANTI SQUIRT EYEWASH HEADS, PUSH FLAG, STAY OPEN BALL VALVES	-	-	-	-	-	GUARDIAN EQUIPMENT MODEL GBF1909SSH OR EQUAL	♿
FD1	FLOOR DRAIN, CAST IRON BODY, ANCHOR FLANGE, WEEPHOLES FOR DOUBLE DRAINAGE, 6" SQUARE STAINLESS STEEL FLAT STRAINER, ADJUSTABLE DRAIN HEAD W/ MACHINED INTEGRAL BODY THREADS, ASME A112.21.1	-	-	-	-	-	JOSAM SERIES 30000-S-SS; MIFAB F1000-C-S6-3; ZURN Z-415-S6	
	PROVIDE TRAP SEAL SYSTEM COMPRISED OF AN DRAIN INSERT CONSTRUCTED OF SMOOTH, SOFT, FLEXIBLE, ELASTOMERIC PVC MATERIAL MOLDED INTO SHAPE OF DUCK'S BILL, OPEN ON TOP WITH CURL CLOSURE AT BOTTOM.	-	-	-	-	-	PROSET SYSTEMS, INC., TRAP GUARD	
LS1	LAB SINK. REFER TO LABORATORY SUBMITTALS. INSTALLED BY PLUMBER.	2"	1 1/2"	-	-	-	REFER TO LABORATORY SUBMITTALS	
4	SUPPLY AND STOP, LOOSE KEY, CHROME PLATED BRASS VALVES AND CHROME PLATED COPPER RISERS	-	-	1/2"	1/2	-	MCGUIRE, H2167CCLK; OR EQUAL IN T&S BRASS OR BRASSCRAFT	
	ACID NEUTRALIZATION TANK AT DISCHARGE FROM LAB SINK, DOUBLE WALL, PE RESIN (LLDPE), 5-GALLON, 11"DIA.x15" BOLTED AND GASKETED LID, PROVIDED WITH 40LB BAGS OF LIMESTONE CHIPS						WATTS PHPRO, TANK T5	
FD2	FLOOR DRAIN, CAST IRON BODY, ANCHOR FLANGE, WEEPHOLES FOR DOUBLE DRAINAGE, 6" STAINLESS STEEL FLAT STRAINER, ADJUSTABLE DRAIN HEAD W/ MACHINED INTEGRAL BODY THREADS,PROVIDE WITH 4" ROUND FUNNEL. ASME A112.21.1	-	-	-	-	-	JOSAM SERIES 30000-S-SS-E2; MIFAB F1000-F4; ZURN Z-415-S6 TYPE E	
	PROVIDE TRAP SEAL SYSTEM COMPRISED OF AN DRAIN INSERT CONSTRUCTED OF SMOOTH, SOFT, FLEXIBLE, ELASTOMERIC PVC MATERIAL MOLDED INTO SHAPE OF DUCK'S BILL, OPEN ON TOP WITH CURL CLOSURE AT BOTTOM.	-	-	-	-	-	PROSET SYSTEMS, INC., TRAP GUARD	

REGISTERED ARCHITECT GLENDA G. RAMSEY 15203 STATE OF TEXAS

GLENDA G. RAMSEY #15203
EXPIRES: 25 AUGUST 2019
DATE SIGNED: 28 MAY 2019

HPA ARCHITECTS · PROGRAMMERS · PLANNERS
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RENOVATION OF J.S. BRIDWELL HALL FOR
MIDWESTERN STATE UNIVERSITY
WICHITA FALLS, TEXAS
3410 TAFT BOULEVARD

MSU TEXAS

DRAWN BY:

DATE: 1 APRIL 2019

REVISIONS

NO.	DESCRIPTION	DATE
1.	ADDENDUM #1	05/17/19
3.	ADDENDUM #3	05/28/19
4.	ADDENDUM #4	06/04/19

STATE OF TEXAS 6/4/2019 DAVID G. MEIER 90657 LICENSED PROFESSIONAL ENGINEER

1780.6.4.2019.18163

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4144 N. Central Expwy
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Office 214.420.9111

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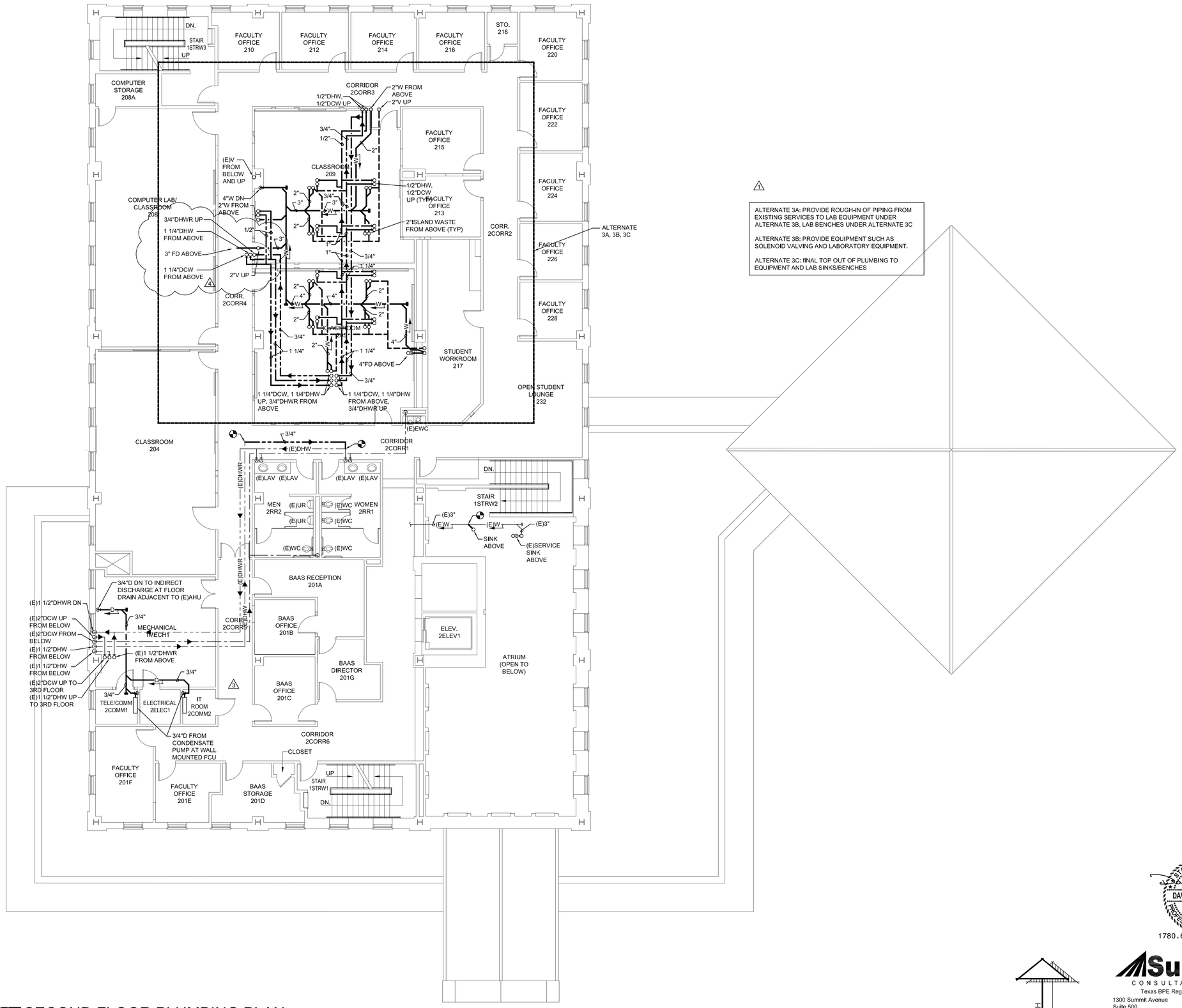
P001



1 ALTERNATE 3A: PROVIDE ROUGH-IN OF PIPING FROM EXISTING SERVICES TO LAB EQUIPMENT UNDER ALTERNATE 3B, LAB BENCHES UNDER ALTERNATE 3C

ALTERNATE 3B: PROVIDE EQUIPMENT SUCH AS SOLENOID VALVING AND LABORATORY EQUIPMENT.

ALTERNATE 3C: FINAL TOP OUT OF PLUMBING TO EQUIPMENT AND LAB SINKS/BENCHES

SECOND FLOOR PLUMBING PLAN

SCALE: 1/8" = 1'-0"

NORTH

REGISTERED ARCHITECT GLENDA G. RAMSEY 15203 STATE OF TEXAS

GLENDA G. RAMSEY #15203
EXPIRES: 25 AUGUST 2019
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18833.00

P202

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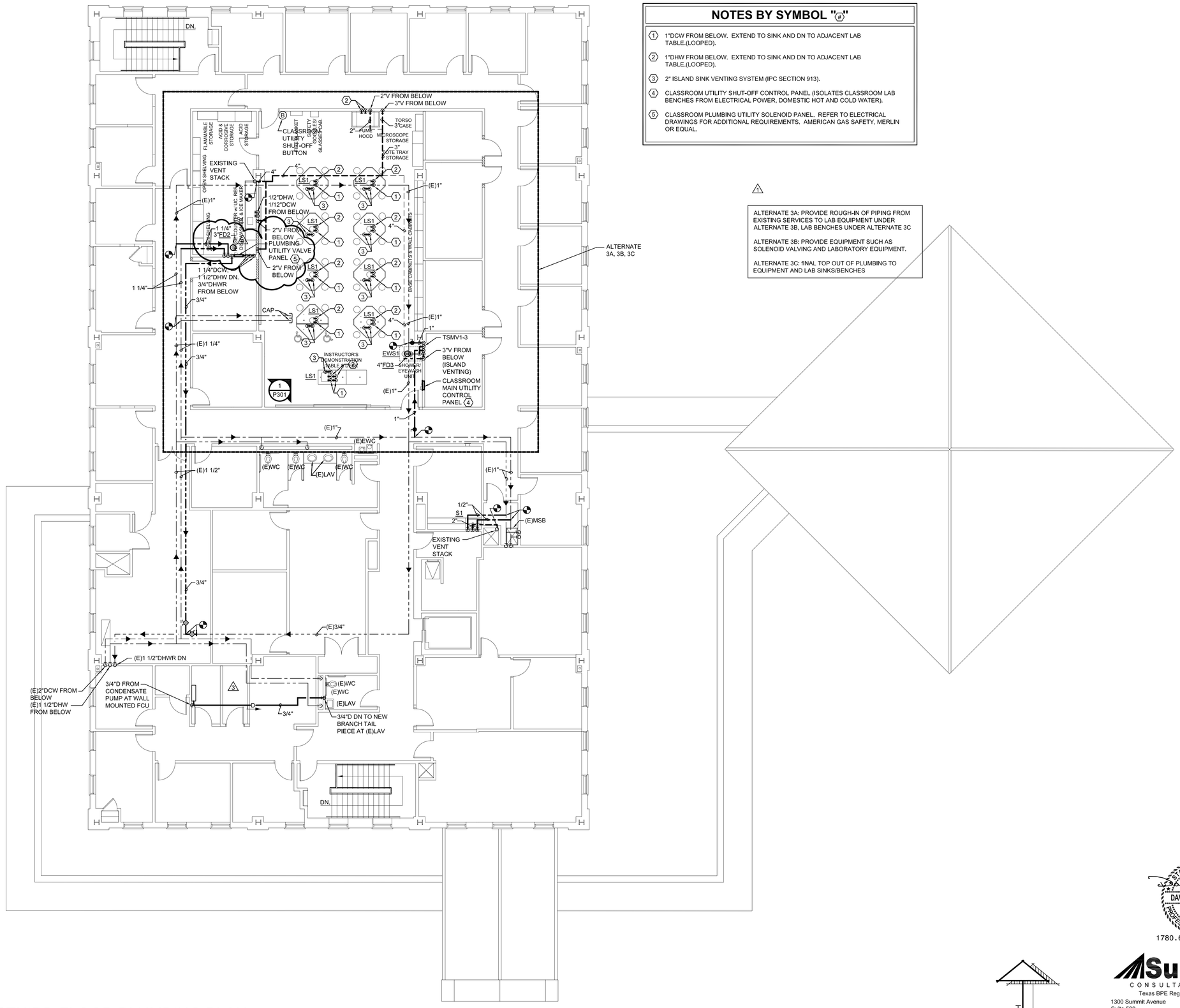

NOTES BY SYMBOL "#"

1. 1"DCW FROM BELOW. EXTEND TO SINK AND DN TO ADJACENT LAB TABLE.(LOOPED).
2. 1"DHW FROM BELOW. EXTEND TO SINK AND DN TO ADJACENT LAB TABLE.(LOOPED).
3. 2" ISLAND SINK VENTING SYSTEM (IPC SECTION 913).
4. CLASSROOM UTILITY SHUT-OFF CONTROL PANEL (ISOLATES CLASSROOM LAB BENCHES FROM ELECTRICAL POWER, DOMESTIC HOT AND COLD WATER).
5. CLASSROOM PLUMBING UTILITY SOLENOID PANEL. REFER TO ELECTRICAL DRAWINGS FOR ADDITIONAL REQUIREMENTS. AMERICAN GAS SAFETY, MERLIN OR EQUAL.

⚠1

ALTERNATE 3A: PROVIDE ROUGH-IN OF PIPING FROM EXISTING SERVICES TO LAB EQUIPMENT UNDER ALTERNATE 3B, LAB BENCHES UNDER ALTERNATE 3C

ALTERNATE 3B: PROVIDE EQUIPMENT SUCH AS SOLENOID VALVING AND LABORATORY EQUIPMENT.

ALTERNATE 3C: FINAL TOP OUT OF PLUMBING TO EQUIPMENT AND LAB SINKS/BENCHES

THIRD FLOOR PLUMBING PLAN

SCALE: 1/8" = 1'-0"

NORTH

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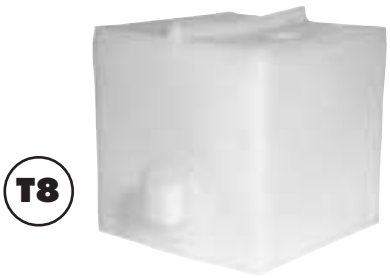
18833.00

P203

Neutralizing Tanks



Features:

- **Lightweight PE Resin; Natural Off-White Colour**
- **Broad Size Range, Customized Connections** *(both size and location)*
- **Inlet/Outlet/Vent**
- **Chemically Resistant; Low Maintenance**
- **In-Ground & Above-Ground Gasketted & Bolted Covers**
- **Wide Range of Monitoring Accessories**

Neutralization Tanks are designed to receive, dilute and neutralize corrosive and harmful chemical wastes, before allowing such materials to be discharged in accordance with local environmental requirements.

Standard Tanks are produced from top quality natural (off-white) Linear Low Density Polyethylene (LLDPE) resins. They are seamless, have uniform wall thickness and are free of stresses. All connections are welded into the tank wall or cover, both size and location are customized to the customer requirement. Details of standard tanks and common options are shown in our Price List. **A completed tank drawing should be included with every order.**

pHpro™ Tank System Features

Monitoring tank systems feature custom combinations of the following:

- Cylindrical T5- (bolted and gasketted moulded lid), or T6- (bolted and gasketted 1" thick flat plastic sheet lid with 1/8" thick scoriated aluminum cover) style tanks.
- Standard roto-moulded sizes range from 5 – 1000 Imperial gallons /6 – 1200 US gallons.
- Inlets, outlets, vents, waterfeeds, inspection ports, etc., in locations and numbers required as specified by the engineer.
- Sediment interceptors, buffer tanks, neutralization tanks (using chips or acid/alkali injectors), sampling tanks.
- pH monitors, audible/visual alarms, chart recorders, injector pumps, mixers.

Technical assistance is available from **pHpro** to help design the acid/alkali neutralization system for your application!

Sizing a Neutralization Tank

Correct sizing of a neutralizing tank must take into account the following:

- Will the flow rate be continuous or intermittent; i.e., dump loads?
- If continuous, what will the average hourly flow rate be (gph)?
- If intermittent, what will the maximum flow rate be (gph)?

Neutralization of pH does not occur instantly – the corrosive waste must remain in the tank long enough for the neutralization process to take place. One hour retention time is the established industry standard; the tank must therefore have an effective capacity equal to or greater than the gallon per hour flow rate. Effective capacity is the tank's capacity to accept liquid after it has been filled with limestone chip neutralizing agent. The rule of thumb for **pHpro** tanks is Effective Capacity = 1/3 Empty Capacity.

Example #1

Flow rate calculated to be 14 gallons per hour.
14 gallon effective size X 3 = 42 gallon empty size.
Round up to closest **pHpro** model = 45 gallon tank.

If the flow rate cannot be determined, an arbitrary minimum rate of one gallon per hour per fixture is often used, especially in school labs. For industrial labs this flow rate should be doubled. Photo lab tanks must be sized using actual flow rates, as they are typically much greater than for other applications.

Example #2

Industrial lab with 23 sinks, in continuous use.
23 sinks X 2 gallons per hour = 46 gallons per hour flow rate.
46 gallon effective size X 3 = 138 gallon empty size.
Round up to closest **pHpro** model = 150 gallon tank.

While dilution tanks have for the most part been supplanted by neutralizers, there are still some non-pH applications where dilution is the preferred method to render certain chemicals harmless. To correctly size a dilution tank, the manufacturer of the chemicals or products in question should be consulted to determine the safe concentration threshold. Correct sizing will depend on:

- Safe concentration threshold
- Maximum hourly flow
- Concentration of chemical being used

If a mixture of chemicals is being used, the "lowest common denominator" rule applies: the chemical requiring most dilution in the mix will determine the size of the tank.

Example #3

Chemical "X" is being used in 6% solution.
Maximum flow rate is 1.3 gph.
Safe concentration level is recommended at 0.4%.

.06 solution x 1.3 gph = 0.078 gph pure chemical
0.078 gph = 0.004 safe concentration level
0.078 gph / 0.004 = 19.5 total gph required

To dilute to the safe concentration level, the tank will need to have a 19.5 gallon minimum capacity; closest **pHpro** tank is 20 gallon.

Tank Size and Chip Chart

Tank Size (IMP. GAL.) Empty	Tank Size (U.S. GAL.) Empty	Tank Inside Dimensions DIA. x HT. in inches	Tank Size (IMP. GAL.) Effective	Tank Size (U.S. GAL.) Effective	Req'd # of 40 Lb Bags Limestone Chips For Acid Neutralization	Chip Wt (LBS)	Chip Wt (KG)
Cylindrical Tanks							
5	6	11 x 15	2	2	2	79	36
12	15	13 x 27	4	5	3	119	54
15A	19	16 x 24	5	6	4	159	72
15B	19	17 x 18	5	6	4	159	72
20	25	17 x 24	6	8	5	198	90
25A	30	16 x 34	8	10	6	238	108
25B	30	17 x 30	8	10	6	238	108
30A	38	18 x 33	10	13	7	277	126
30B	38	22 x 22	10	13	7	277	126
45	55	22 x 33	15	18	10	396	180
50	60	22 x 37	16	20	12	475	216
60	75	22 x 45	20	25	14	555	252
75	90	26 x 42	25	30	17	673	306
100	125	30 x 40	33	42	23	911	414
125A	155	30 x 50	42	52	28	1109	504
125B	155	36 x 35	42	52	28	1109	504
150	185	36 x 42	50	62	34	1347	612
175	215	36 x 48	58	72	39	1545	702
200	250	36 x 56	65	83	45	1782	810
250	310	42 x 52	80	103	56	2218	1008
300	375	48 x 49	100	125	67	2653	1206
400	500	48 x 64	130	167	89	3525	1602
500A	625	48 x 84	165	208	111	4396	1998
500B	625	60 x 51	165	208	111	4396	1998
600	750	60 x 60	200	250	133	5267	2394
750	935	72 x 54	250	312	167	6613	3006
1000	1250	72 x 72	350	417	222	8791	3996
Rectangular Tanks							
6	8	12 x 12 x 12	2	3	2	79	36
14	18	18 x 12 x 18	5	6	4	159	72
28	35	18 x 18 x 24	9	12	7	277	126
62	78	30 x 24 x 25	20	26	14	555	252
78	98	30 x 30 x 24	26	33	18	713	323
97	121	30 x 30 x 30	32	40	22	871	395
140	175	36 x 30 x 36	47	58	27	1069	485

Note: Due to the large number of variables involved with dilution and neutralizing system waste streams, such as chemical makeup, concentration, temperature and flow rate fluctuations, **pHpro** cannot guarantee, implicitly or explicitly, the performance of its neutralization systems.

Sediment Interceptor Size Chart

Interceptor Tank Dimensions			Interceptor Basket Dimensions		
Empty Tank Size		DIA. x HT. in inches	Basket Size		DIA. x HT. in inches
(IMP. GAL)	(U.S. GAL)		(IMP. GAL)	(U.S. GAL)	
5	6	11 x 15	2	2.5	8 x 14
12	15	13 x 27	7	9	10 x 25
15B	19	17 x 18	9	11	13 x 16
25B	30	17 x 30	14	18	13 x 28
45	55	22 x 33	28	35	18 x 31
60	75	22 x 45	39	49	18 x 43
100	125	30 x 40	67	84	26 x 38

Tank Installation and Maintenance

Basic installation rules include the following:

- Give solid support to the tank bottom, either a concrete pad, flat platform or compacted stone-free sand.
- Do not support the tank by its fittings or associated piping.
- Do not attempt to install T5 tanks flush with floor: T5 lids are not suitable for load-bearing. T5 tanks may only be installed on the floor or in a covered pit.
- When connecting piping (especially if metal) to FIPT threaded tank fittings, do not overtighten – this may damage either fittings or welds and result in leaks.
- Once installed, fill the tank with neutralization chips, then water.
- If the tank system includes a pH monitor and probe, do not install the probe until the tank has been filled with water – the probe tip needs to be kept wet.

Proper tank functioning requires the following maintenance:

- Tanks and sediment interceptors should be inspected once a month for the first six months. Once the rate of consumption of stone chips in neutralizers, and the basket fill rate for interceptors is established, the schedule may be varied to suit the particular application.
- As the acidic waste is neutralized by the stone chips, the chips will be consumed and shrink in size. This will result in compaction and a lowering of the chip level in the tank. This level should be maintained to the outlet invert, with chips ranging in size from one to three inches in diameter.
- Depending on the rate of chip consumption, the tank should be emptied periodically, and refilled with a fresh charge of chips. Failure to do this will eventually result in a buildup of sand on the tank bottom, which will obstruct the inlet dip tube.
- When checking the tank, look for and remove sludge, scum and any other debris; if the chips are coated, or the connecting pipe is becoming plugged, the efficiency of the tank will be impaired. Continuous depositing of debris in the tank may be an indication that a sediment interceptor should be installed upstream of the neutralizer.

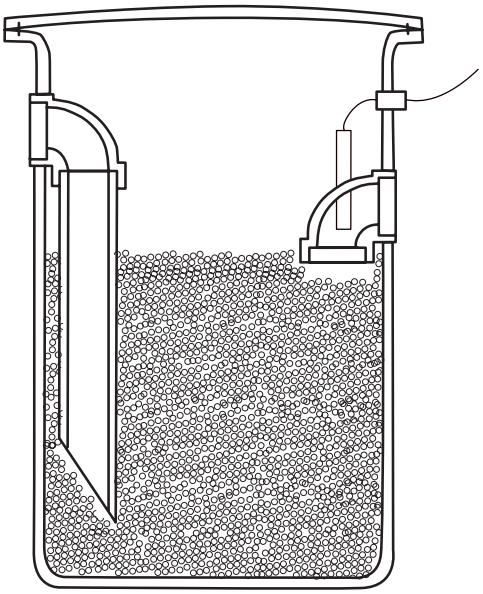
Tank Installation and Maintenance *(cont.)*

- When inspecting neutralizers and interceptors, ensure that the gasket material is in good shape. Should it be torn, abraded, or otherwise damaged, noxious fumes may escape the tank. Depending on the tank contents, these fumes may range from merely irritating to posing a health concern.
- Ensure that the lid is securely fastened to the tank, but do not overtighten the wingnuts on floor mounted tanks. Overtightening can deform the tank lid, leading to gaps from which fumes may escape.
- When replacing sediment interceptor baskets, ensure that the tank inlet pipe extends into the basket and is secured. If the basket mesh is severely clogged, the basket should be hosed down before replacement.
- If the tank is large enough to require maintenance personnel to climb inside the unit for servicing, a two-man buddy system is recommended, along with the appropriate safety gear. Special attention must be paid to ensure that personnel are not overcome by fumes when working inside a tank.
- Flushing the system with water an hour prior to tank servicing is recommended to reduce possible fume and effluent contact hazard.

NOTE: When working with a neutralizing tank or sediment interceptor, appropriate safety equipment should be worn. Always wear eye protection. Acid-resistant gloves, coveralls, headgear and footwear, as well as respiratory protection, should be used as required by statute and common sense. Type and extent of safety equipment requirements will be dependent on the individual situation. **Watts Industries (Canada) Inc.** accepts no liability for injury or damages associated with the materials contained within our equipment. Always consult the appropriate Material Safety Data Sheets before working with chemicals.

pH Monitoring/Alarm & Acid Neutralization Systems

Description:
The **pHpro™** system of acid neutralization with pH monitor is a very effective means of ensuring that acid wastes are not discharged into the sanitary waste system. The system is comprised of an acid neutralization tank, and a monitor to measure the pH of the effluent at the discharge end of the tank. A submersible probe is connected to the control panel with a coaxial cable. Standard cable length is 15 feet.



Style 5 Tank

Digital Meter / Control Panel
(Model 540 with Liquid Crystal Display)

Standard tanks are Style T5, T6 or T7 (bolted and gasketted lid), customized for inlet/outlet/option, sizes and locations. Neutralizing chips are shown for clarity, but are not included in the price unless specifically stated otherwise. Tank volumes are often specified as effective volume, as a considerable amount of the total volume is taken by the chips and the free space.

If there is a likelihood that solids can enter the system, it is strongly recommended that a Sediment Interceptor (SI) be added upstream of the pH neutralization tank. Proper inspection and maintenance will help prevent potentially costly blockages and waste backup.

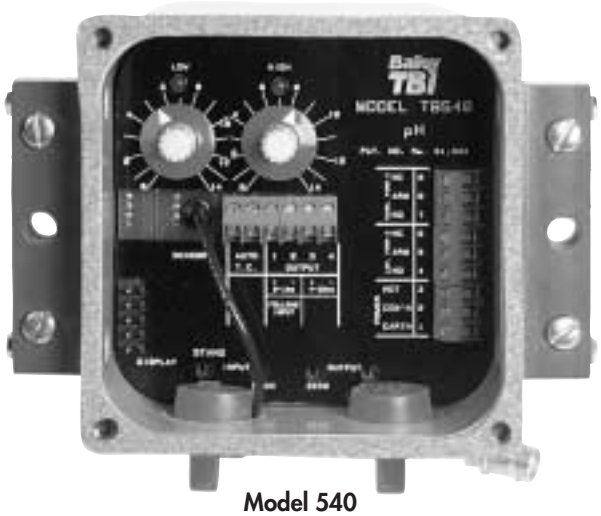
pH Monitoring/Alarm & Acid Neutralization Systems

General Description:

The system is comprised of the following elements: a pH neutralization tank, a submersible probe placed in the outlet flange of the tank, and a monitor/control panel connected by coaxial cable to the tank assembly. The monitoring unit is encased in a NEMA 4X PVC enclosure, approx. 4" X 4", and the front faceplate is of clear lexan. A liquid crystal display will give a continuous read out of pH levels from the probe, with 0.01pH resolution. The unit is standard with contacts for an adjustable high/low alarm, and 4 – 20 mA output for recording, control or safety interlock purposes.

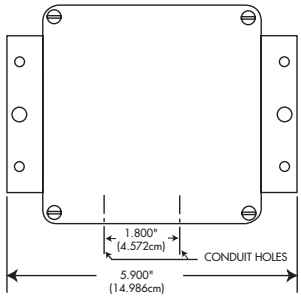
Model 540 Specifications:

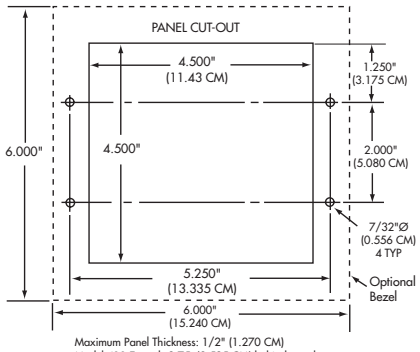
Model	540 - pH
Range	0-14 pH
Resolution	0.01 pH
Set Point Accuracy	±2%
Resolution	1% of span
Hysteresis	1% of span
Contact Rating	SPDT (1 High, 1 Low) 115 VAC, 2.5A Inductive Load
Digital Display	0-14.00 pH
Recorder Output	4-20 mA 500 ohm max. load 0-5 VDC 1 mA available
Minimum Span	4 pH
Accuracy	±0.5% fs
Power	115/220 VAC, 50-60Hz

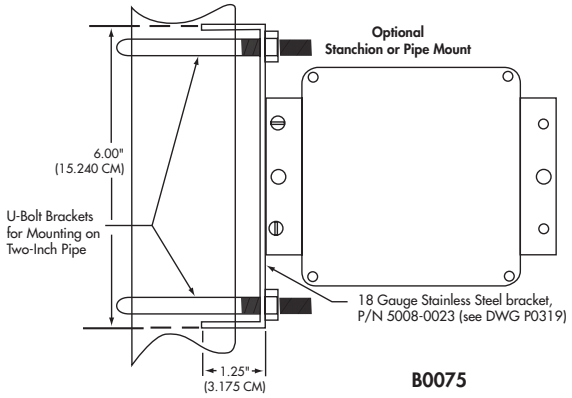


Model 540
(with Cover Removed)

Dimensions & Panel Mounting Detail:







The system can be supplied with or without an initial supply of neutralization chips. **Note:** The chips are consumed by the neutralization process and must be periodically replenished. As well, the operation of the pH probe is very similar to that of a wet cell battery, as such, probes **do require periodic replacement.** It is crucial that a maintenance program be established and adhered to ensure the safe, effective operation of the system.

A wide variety of customised options and variations are available. Such things as heavy duty (pedestrian area) tank lids, inspection ports, special sizes, custom outlets and inlets, as well as expertise in specifying and designing a system are available. We will be pleased to review your specific needs.

Note: A completed tank drawing showing locations and sizes of inlets & outlets should be provided with every neutralization tank order or request for quotation.

Tank System Specification Sheet

Specifying a basic **pHpro™** tank may be done in three easy steps, resulting in the appropriate part number for ordering the product.

1. Specify tank style as follows:

- **T5-** Cylindrical Tank • On-Floor Only • Light Duty Moulded Lid • Bolted & Gasketted
- **T6-** Cylindrical Tank • On-Floor *or* Flush With Floor • 1" Thick Plastic Lid, with 1/8" Thick Scoriated Aluminum Cover • Bolted & Gasketted
- **T7-** Rectangular Tank • On-Floor Only • Light Duty Moulded Lid • Bolted & Gasketted
- **T8-** Rectangular Tank • Undercounter • Light Duty Integral (Moulded-On) Lid

2. Specify inlet/outlet size as follows:

15 (1-1/2")	**20** (2")	**30** (3")	**40** (4")

Fittings are available in FIPT or plain pipe. They may be located anywhere on the tank, using the appropriate tank drawing. Multiple inlets, outlets, vents and waterfeeds may be specified. Standard tanks as described in our price list include one inlet, outlet and vent only. T6- style tanks up to 22" diameter do not include an access port; T6- tanks 22" and greater in diameter include a standard 10" diameter access port. Access ports are not available for T5 moulded tank lids; 4" diameter cleanout-style inspection ports may be specified for T5 tanks.

3. Specify tank size using **Tank Size & Chip Chart**: use "Imperial/U.S. Gallon (Empty)" size column. For extra clarity, we recommend including the tank dimensions: diameter X height for T5- and T6- tanks; length X width X height for T7- tanks. T8- tanks are available in 2-gallon and 6-gallon capacities only. All tanks in price lists are in Imperial gallons. Completing all three steps will result in a part number.

T6 - 30 - 125A

- **T6** — FLUSH WITH FLOOR LID
- **30** — 3" CONNECTIONS
- **125A** — 125 GALLON (30 X 50")

pHpro™ Tank Sample Specifications:

T5 Tanks: On-Floor Installations Only

Tank shall be **pHpro** T5-style [*insert part number*] seamless, LLDPE, rotationally moulded, cylindrical tank, with light duty moulded lid, gasketted and bolted to tank. All tank connections shall be FIPT or plain pipe, and shall be heat fused to tank, and shall be located as shown on tank drawing. Completed drawing must be submitted to **Watts pHpro** prior to manufacture.

T6 Tanks: On-Floor or Flush-with-Floor Installations

Tank shall be **pHpro** T6-style [*insert part number*] seamless, LLDPE, rotationally moulded, cylindrical tank, with 1" thick plastic lid with 1/8" thick scoriated aluminum cover, gasketted and bolted to tank. All bolts shall be countersunk. All tank connections shall be FIPT or plain pipe, and shall be heat fused to tank, and shall be located as shown on tank drawing. Completed drawing must be submitted to **Watts pHpro** prior to manufacture.

For tanks 22" in diameter and greater only: tank lid shall include a 10" diameter inspection port, gasketted and secured to lid with screws.

Sample Specifications: *(cont.)*

T7 Tanks: On-Floor Installations Only
Tank shall be **pHpro** T7-style [*insert part number*] seamless, LLDPE, rotationally moulded, rectangular tank, with light duty moulded lid, gasketted and bolted to tank. All tank connections shall be FIPT or plain pipe and shall be heat fused to tank, and shall be located as shown on tank drawing. Completed drawing must be submitted to **Watts pHpro** prior to manufacture.

T8 Tanks: On-Floor / Undercounter Installations Only
Tank shall be **pHpro** T8-style [*insert part number*] seamless, LLDPE, rotationally moulded, rectangular tank, with light duty integral lid. All tank connections shall be FIPT or plain pipe, and shall be heat fused or integral to tank, and shall be located as shown on tank drawing. Completed drawing must be submitted to **Watts pHpro** prior to manufacture.

Options for all Tanks:
Tank shall come equipped with optional probe holder outlet, or additional inlet(s) / outlet(s), or sight glass, or waterfeed, or level switch.

pHpro™ Sediment Interceptor Sample Specifications:

SI5 Sediment Interceptors: On-Floor Installations Only
Sediment interceptor shall be **pHpro** SI5-style [*insert part number*] seamless, LLDPE, rotationally moulded, cylindrical tank, with light duty moulded lid, gasketted and bolted to tank; basket shall be fabricated from 1/8" thick perforated PE sheet. Perforations shall be 1/8" diameter maximum. All sediment interceptor connections shall be FIPT or plain pipe, and shall be heat fused to interceptor, and shall be located as shown on interceptor drawing. Completed drawing must be submitted to **Watts pHpro** prior to manufacture.

SI6 Sediment Interceptors: On-Floor or Flush-with-Floor Installations
Sediment interceptor shall be **pHpro** SI6-style [*insert part number*] seamless, LLDPE, rotationally moulded, cylindrical tank, with 1" thick plastic lid with 1/8" thick scoriated aluminum cover, gasketted and bolted to tank; basket shall be fabricated from 1/8" thick perforated PE sheet. Perforations shall be 1/8" diameter maximum. All bolts shall be countersunk. All sediment interceptor connections shall be FIPT or plain pipe, and shall be heat fused to interceptor, and shall be located as shown on interceptor drawing. Completed drawing must be submitted to **Watts pHpro** prior to manufacture.

For SI6 sediment interceptors 22" in diameter and greater only: interceptor lid shall include a 10" diameter inspection port, gasketted and secured to lid with screws.

pHpro™ pH Monitor / Sensor Sample Specification

pH monitor shall be **pHpro** model TB540TRANS, with NEMA 4 enclosure, 4-20 mA non-isolated output, dual HI/LO alarm contacts, LCD display with 0-14 pH range, 0.01 pH resolution, +/- 2% set point accuracy. Sensor shall be **pHpro** model TB551311SENS, with submersible ryton body, high temperature glass electrode, integral thermocompensator, 15 feet integral sensor cable.

T5 - TANK DATA SHEET

(TO ACCOMPANY ALL T5-TANK ORDERS)

Customer / P.O.#: _____

Tank Part No.	
Empty Tank Size (Gallons):	
Diameter x Height (A x B):	
Inlet Center from Floor (C):	
Outlet Center from Floor (D):	
Vent Center from Floor (E):	

CONNECTION STYLE (CHECK ONE):

FIPT ☐

PLAIN PIPE ☐

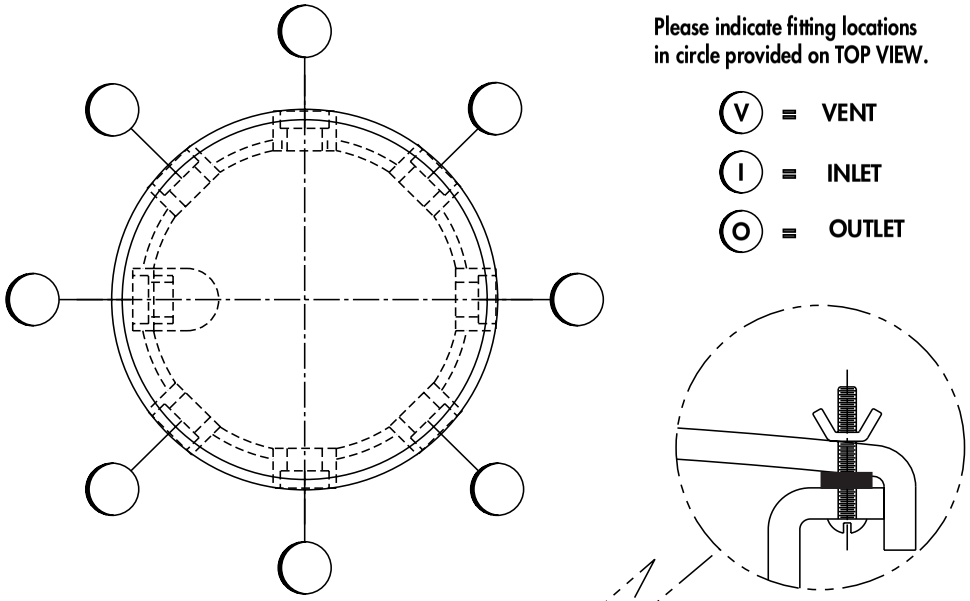
Non-Standard Add-ons:
(Connection sizes, Extra Connections)

Please indicate fitting locations in circle provided on TOP VIEW.

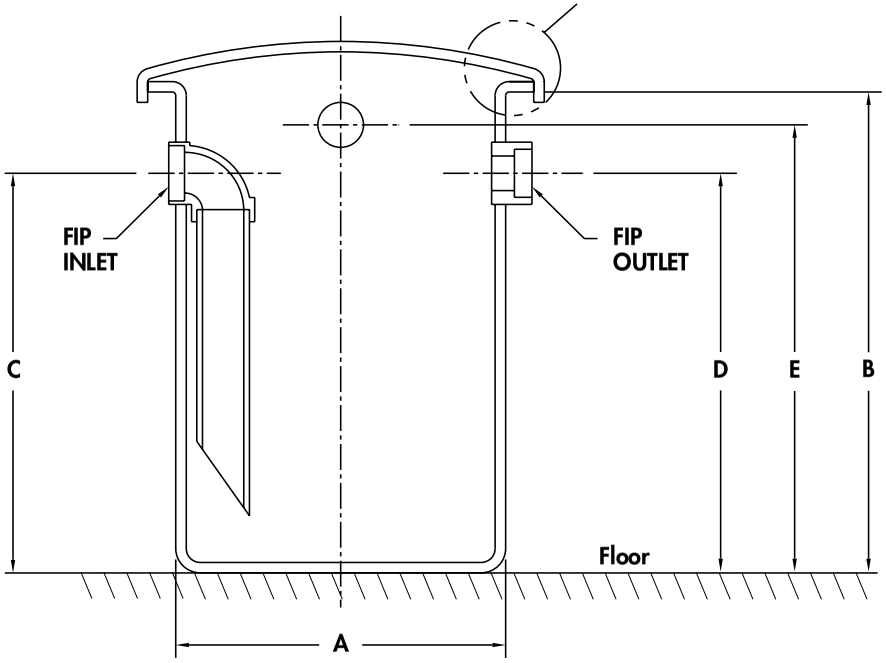
(V) = VENT

(I) = INLET

(O) = OUTLET



TOP VIEW



SIDE VIEW

Drawing No. phpro-24-03-99.dwg

Consult Factory for all applications outside of listed parameters.

T6 - TANK DATA SHEET

(TO ACCOMPANY ALL T6-TANK ORDERS)

Customer / P.O.#: _____

Tank Part No.	
Empty Tank Size (Gallons):	
Diameter X Height (A X B):	
Inlet Center from Floor (C):	
Outlet Center from Floor (D):	
Vent Center from Floor (E):	
CONNECTION STYLE (CHECK ONE):	
FIPT	☐
PLAIN PIPE	☐
FLUSH MOUNT LID DETAILS: (Materials, Thicknesses, Finishes)	
Non-Standard Add-ons: (Connection sizes, Extra Connections)	

WATTS pH PRO

Please indicate fitting locations in circle provided on TOP VIEW.

(V) = VENT

(I) = INLET

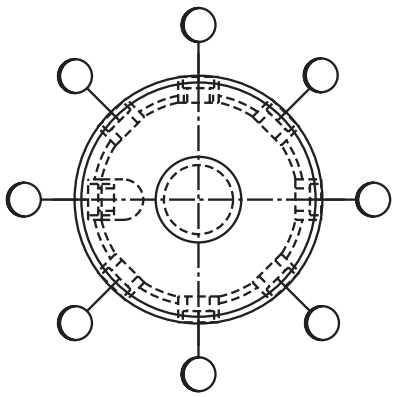
(O) = OUTLET

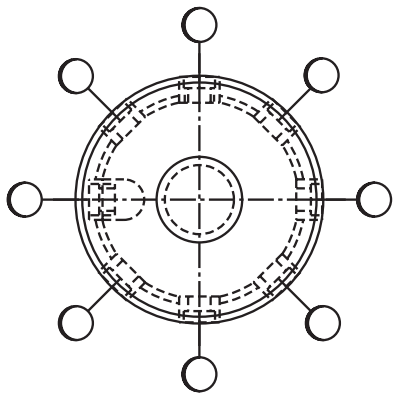
Drawing No. phpro-05-03-99.dwg

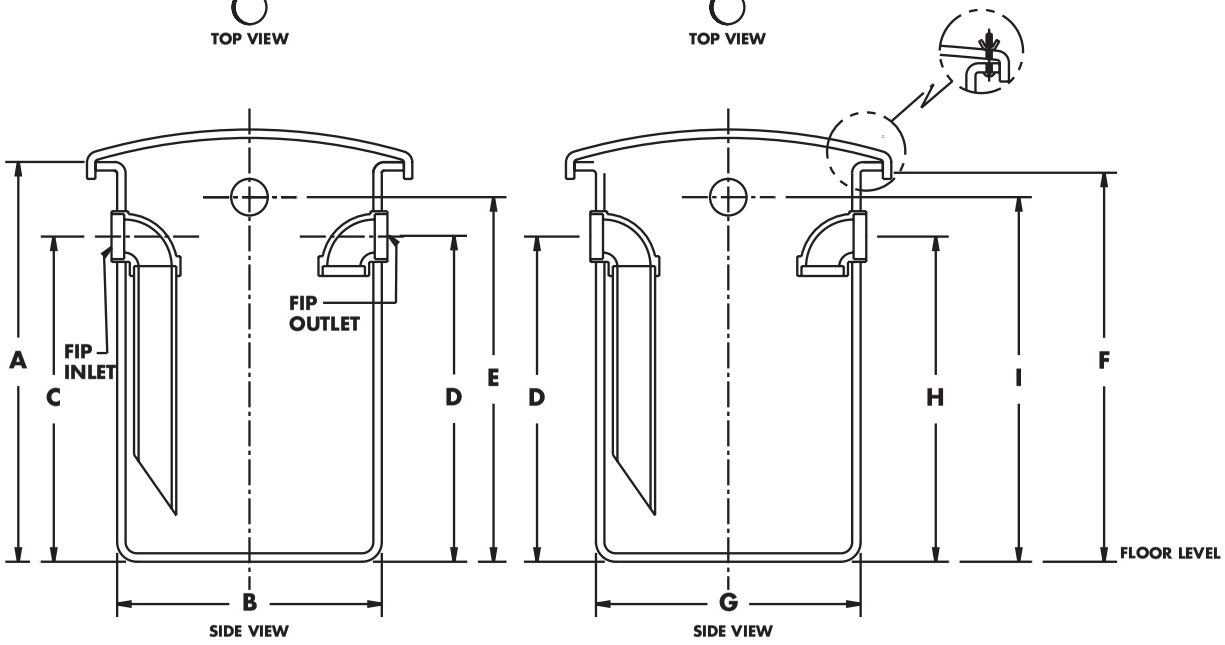
T5 - TANK DATA SHEET
For Double Tank
Buffer / Neutralization

Please indicate fitting locations in circle provided on TOP VIEW.

- (V) = VENT
- (I) = INLET
- (O) = OUTLET







BUFFER :

Tank Part No. _____

Empty Tank Size (Gallons): _____

Diameter X Height (B X A): _____

Inlet Center from Floor (C): _____

Outlet Center from Floor (D): _____

Vent Center from Floor (E): _____

NEUTRALIZER :

Tank Part No. _____

Empty Tank Size (Gallons): _____

Diameter X Height (G X F): _____

Inlet Center from Floor (D): _____

Outlet Center from Floor (H): _____

Vent Center from Floor (I): _____

Customer / P.O.#: _____

CONNECTION STYLE (CHECK ONE):

FIPT ☐

PLAIN PIPE ☐

FLUSH MOUNT LID DETAILS:
(Materials, Thicknesses, Finishes)

Non-Standard Add-ons:
(Connection sizes, Extra Connections, Probe Holders)

BUFFER : _____

NEUTRALIZER : _____

WATTS PH PRO

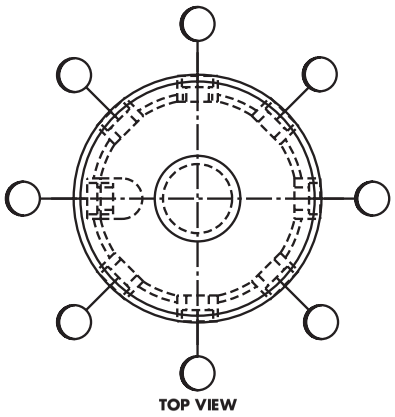
Drawing No. phpro-02-22-00a.dwg

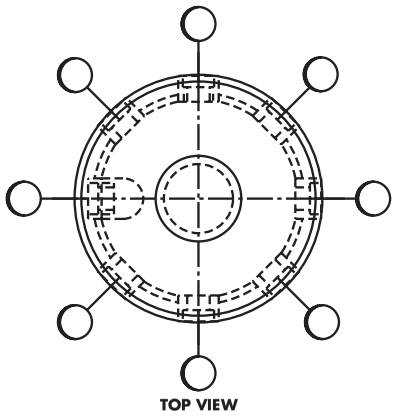
Consult Factory for all applications outside of listed parameters.

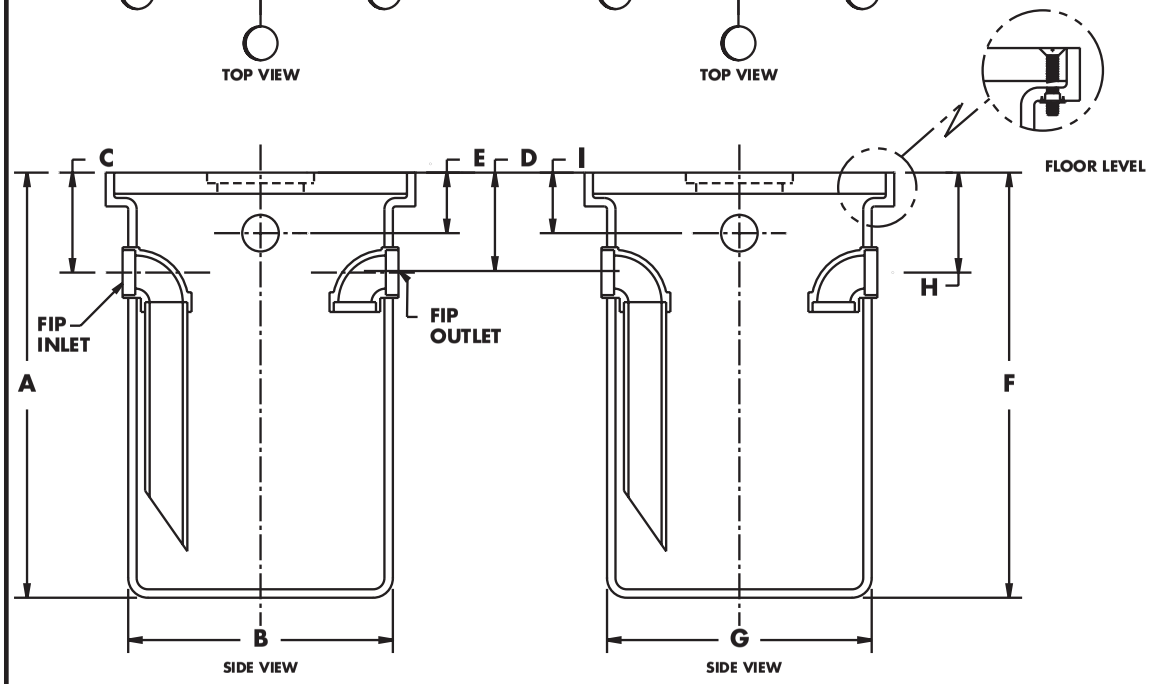
T6 - TANK DATA SHEET
For Double Tank
Buffer / Neutralization

Please indicate fitting locations in circle provided on TOP VIEW.

V = VENT
I = INLET
O = OUTLET







BUFFER :

Tank Part No. _____

Empty Tank Size (Gallons): _____

Diameter X Height (B X A): _____

Inlet Center from Floor (C): _____

Outlet Center from Floor (D): _____

Vent Center from Floor (E): _____

NEUTRALIZER :

Tank Part No. _____

Empty Tank Size (Gallons): _____

Diameter X Height (G X F): _____

Inlet Center from Floor (D): _____

Outlet Center from Floor (H): _____

Vent Center from Floor (I): _____

Customer / P.O.#: _____

CONNECTION STYLE (CHECK ONE):

FIPT ☐

PLAIN PIPE ☐

FLUSH MOUNT LID DETAILS:
(Materials, Thicknesses, Finishes)

Non-Standard Add-ons:
(Connection sizes, Extra Connections, Probe Holders)

BUFFER : _____

NEUTRALIZER : _____

WATTS PH PRO

Drawing No. phpro-02-22-00.dwg

Consult Factory for all applications outside of listed parameters.

T7 - TANK DATA SHEET

(TO ACCOMPANY ALL T7-TANK ORDERS)

Customer / P.O.#: _____

Tank Part No.	
Empty Tank Size (Gallons):	
Length X Width X Height (A X B X C)	
Inlet Center from Floor (D):	
Outlet Center from Floor (E):	
Vent Center from Floor (F):	
CONNECTION STYLE (CHECK ONE):	
FIPT	☐
PLAIN PIPE	☐
Non-Standard Add-ons: (Connection sizes, Extra Connections)	

WATTS pH PRO

Drawing No. phpro-29-03-99.dwg

T8-2 - TANK DATA SHEET

(TO ACCOMPANY ALL T8-2 TANK ORDERS)

Customer / P.O.#: _____

Tank Part No. [ ]

Empty Tank Size (Gallons): [2 Gallons]

Non-Standard Add-ons:
(Connection sizes, Extra Connections)

_____
_____
_____
_____
_____
_____

WATTS pH PRO

Notes:
Dimensions are nominal inch, mm/inch shown.
1-1/2" Standard Connections are flush with tank top.

Indicate location(s) of optional connection(s).
Locations of standard connections are as shown.

Drawing No. phpro-05-03-99.dwg

T8-6A - TANK DATA SHEET

(TO ACCOMPANY ALL T8-6 TANK ORDERS)

Customer / P.O.#: _____

Tank Part No. _____

Empty Tank Size (Gallons): 6 gallons

Non-Standard Add-ons:
(Connection sizes, Extra Connections)

_____

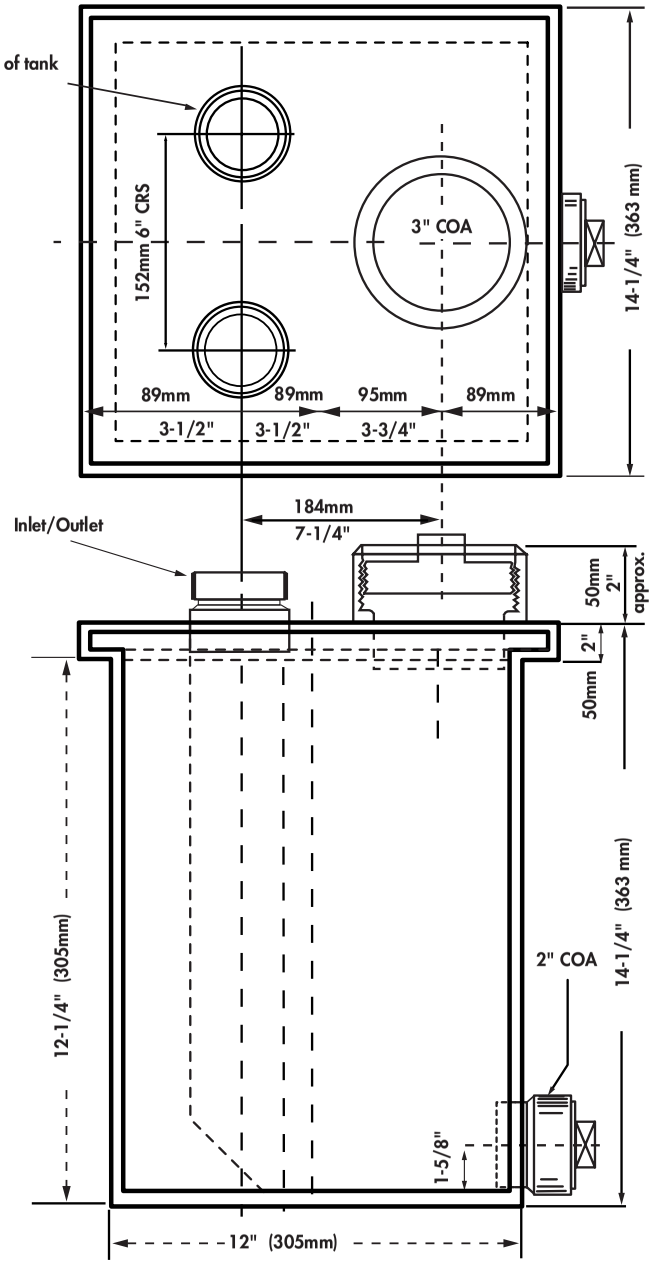
_____

_____

_____

_____

_____



Notes:
Dimensions are nominal inch, mm/inch shown.

Indicate location(s) of optional connection(s).
Locations of standard connections are as shown.

Drawing No. phpro-05-03-99.dwg

Consult Factory for all applications outside of listed parameters.

T8-6B - TANK DATA SHEET

(TO ACCOMPANY ALL T8-6 TANK ORDERS)

Customer / P.O.#: _____

Tank Part No.

Empty Tank Size (Gallons): 6 gallons

Non-Standard Add-ons:
(Connection sizes, Extra Connections)

WATTS pH PRO

Notes:
Dimensions are nominal inch, mm/inch shown.

Indicate location(s) of optional connection(s).
Locations of standard connections are as shown.

Drawing No. phpro-05-03-99.dwg

SI5 - SEDIMENT INTERCPTOR DATA SHEET

(TO ACCOMPANY ALL SI5-SEDIMENT INTERCEPTOR ORDERS)

Customer / P.O.#: _____

Tank Part No.	
Empty Tank Size (Gallons):	
Diameter x Height (A x B):	
Inlet Center from Floor (C):	
Outlet Center from Floor (D):	
Vent Center from Floor (E):	N/A

CONNECTION STYLE (CHECK ONE):

FIPT ☐ PLAIN PIPE ☐

Non-Standard Add-ons:
(Connection sizes, Extra Connections)

_____

_____

_____

_____

_____

_____

WATTS pH PRO

Please indicate fitting locations in circle provided on TOP VIEW.

(I) = INLET

(O) = OUTLET

Drawing No. phpro-24-03-99.dwg

SI6 - SEDIMENT INTERCPTOR DATA SHEET

(TO ACCOMPANY ALL SI6-SEDIMENT INTERCEPTOR ORDERS)

Customer / P.O.#: _____

Tank Part No.	
Empty Tank Size (Gallons):	
Diameter x Height (A x B):	
Inlet Center from Floor (C):	
Outlet Center from Floor (D):	
Vent Center from Floor (E):	N/A

CONNECTION STYLE (CHECK ONE):

FIPT ☐ PLAIN PIPE ☐

FLUSH MOUNT LID DETAILS:
(Materials, Thicknesses, Finishes)

Non-Standard Add-ons:
(Connection sizes, Extra Connections)

WATTS pH PRO

Please indicate fitting locations in circle provided on TOP VIEW.

(I) = INLET

(O) = OUTLET

Drawing No. phpro-05-03-99.dwg

pHpro Standard Tank Fitting Locations

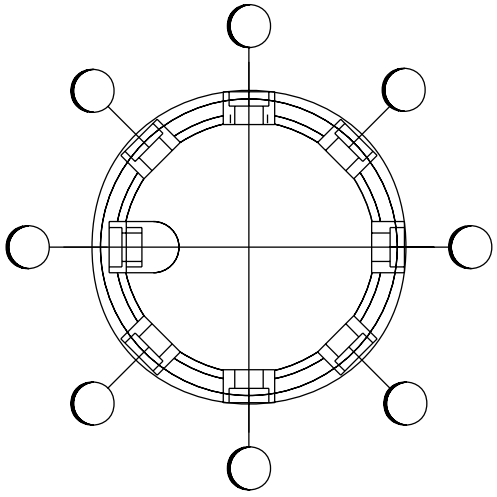
NOTE: For T5 and T7 Tanks, all dimensions are from underside top flange to centerline.
For T6 Tanks, all dimensions are from floor level to centerline.
All dimensions are in inches.

T5 and **T7** Standard Connection Locations

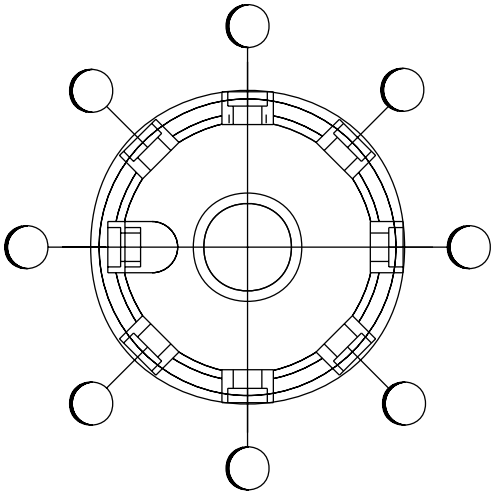
CONNECTION SIZE	(C) INLET	(D) OUTLET	(E) VENT	VENT SIZE
1.5	4	5	3	1.5
2	4	5	3	2
3	5	6	4	2
4	6	7	5	3

T6 Standard Connection Locations

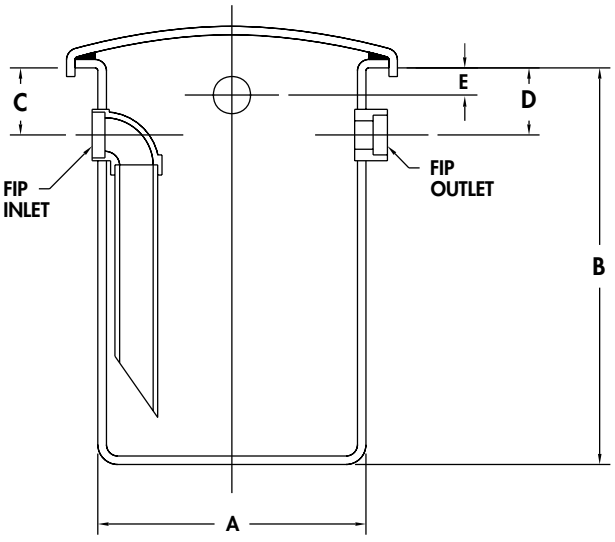
CONNECTION SIZE	(C) INLET	(D) OUTLET	(E) VENT	VENT SIZE
1.5	5	6	4	1.5
2	5	6	4	2
3	6	7	5	2
4	7	8	6	3



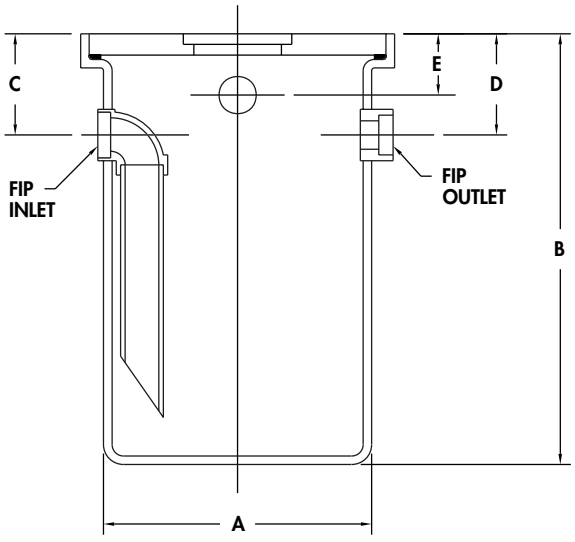
TOP VIEW



TOP VIEW



SIDE VIEW



SIDE VIEW