Western Water Constructors, Inc.
license no. 188068

Submittal Cover

Job no. 16-05

CONTRACT NAME:	Manteca WQCF Digester Improvements	**SUB #:**	219
SPEC SECTION:	15117 Specialty Valves	**REV #:**	2
SUBMITTAL TITLE:	Telescoping Sludge Valves – O&M	**CODE:**	15117-06
FILE NAME:	219-R2_15117-06_Telescoping Sludge Valves-OM	**DATE:**	12/6/2017

WWC REVIEW/COMMENTS: ☒ **NO EXCEPTIONS** ☐ **EXCEPTIONS / DEVIATIONS AS NOTED**

Final O&M for record.

REVIEWED BY: ST **SIGNED:**

WWC HAS REVIEWED THIS SUBMITTAL FOR CONFORMANCE WITH THE PROJECT PLANS & SPECIFICATIONS.

OWNER REVIEW:

ITEM	DESCRIPTION	REVIEW STATUS				
		A	B	C	D	E
1	Telescoping Sludge Valves O&M	☐	☐	☐	☐	☐
2		☐	☐	☐	☐	☐
3		☐	☐	☐	☐	☐
4		☐	☐	☐	☐	☐
5		☐	☐	☐	☐	☐

LEGEND: **A =** No Exceptions Taken **B =** Make Correction Noted **C =** Correct & Resubmit
D = Rejected **E** = Accepted for Record

OWNER COMMENTS:

REVIEWER'S NAME: _____

REVIEWER'S SIGNATURE: _____ **DATE:** _____

707 Aviation Blvd
Santa Rosa, CA 95403

www.westernwater.com
general engineering contractors

p 707.540.9640
f 707.540.9641

EQUIPMENT SUMMARY FORM

1. EQUIPMENT ITEM Telescoping valve

2. MANUFACTURER Troy Valve

3. EQUIPMENT IDENTIFICATION NUMBER(S) DIG-VAL-07-115, DIG-VAL-07-125, DIG-VAL-07-135, DIG-VAL-07-145
(maps equipment number)

4. LOCATION OF EQUIPMENT _____

5. WEIGHT OF INDIVIDUAL COMPONENTS (OVER 100 POUNDS) _____

_____

_____

6. NAMEPLATE DATA - Horsepower _____
   Amperage _____
   Voltage _____
   Service Factor (S.F.) _____
   Speed _____
   ENC Type _____
   Capacity _____
   Other _____

7. MANUFACTURER'S LOCAL REPRESENTATIVE

   Name Troy Valve

   Address 182 Railroad St, Troy, PA 16947

   Telephone Number (570) 297-4442

8. MAINTENANCE REQUIREMENTS _____

_____

_____

9. LUBRICANT LIST _____

_____

10. SPARE PARTS (recommendations) _____

_____

11. COMMENTS _____

_____

TROY VALVE
A DIVISION OF PENN-TROY MANUFACTURING INC.

Rack & Pinion T-Valve Installation, Operation & Maintenance

CRITICAL: Telescoping valve slip tube assembly and valve operator must be plumb for proper operation. Stand pipe flange must be level before connecting telescoping valve companion flange.

Slip Tube Assembly

Installation

The first step in the installation of your t-valve should be the slip tube assembly. To begin with, the wiper gasket tension is preset. Install the slip tube assembly in receiving pipe in completely vertical line.

Attach the companion flange of the assembly to the receiving pipe flange with necessary hardware (not provided).

Gravity may pull the slip tube down. Block/prop up the slip tube in preparation for operator installation.

*NOTE: If the slip tube doesn't fall, the gasket tension may be too tight. Proper adjustment must be made before proceeding. Contact Troy Valve for additional "tension washers." When you receive them, remove the nuts from the compression ring, lift the ring and add one washer to each stud. Removing too many washers and then over-tightening the compression ring will over-tighten the gasket and make the valve hard to operate. Be sure that the slip tube is greased with a food grade grease before moving it up and down. Replace the compression ring and tighten nuts until bottomed out. Test to ensure slip tube falls gradually. If issues persist, do not proceed and contact us for further instructions.

Operation & Maintenance

- Ensure the slip tube assembly is adequately greased before operation is initiated. It is best to grease the tube/gasket at least quarterly.
- Be alert for symptoms of wear or of adjustments being necessary, such as hearing or feeling abnormal friction or the water level dropping below slip tube elevation.
- If you are having difficulty turning the operator/hand wheel, check to confirm proper tension of the assembly.
- If the wiper gasket must be replaced, remove the nuts from the compression ring, lift the

ring and remove the split MJ gasket. You will need to order a replacement gasket using the diameter of the receiving pipe flange. Once the replacement arrives, install and readjust per the installation instructions above.

- Addition or subtraction of tension washers may be necessary throughout the life of the valve to keep proper compression of the gasket.

Operator

Installation

If supplied with a floor stand mounting bracket, install this component first, ensuring the bracket is level in all directions. Telescoping valves and the receiving pipe must be installed completely vertical and in line. The slip tube must be able to travel up and down the receiving tube without hitting or scraping the inside of the receiving pipe. Do not fully tighten mounting bolts at this time as fine adjustment may be needed later. If the floor stand is shipped with an anti-rotation plate, install the floor stand with the anti-rotation plate on the bottom.

Unscrew the lift rod from its shipping location inside the slip tube. Grease the rack, then place it into the top of the gearbox while turning the hand wheel to engage the teeth. Caution must be taken when inserting the rack so as not to damage the nylon tipped rack guide set screws. Move the rack all the way down while adjusting the two rack guide set screws. Proper adjustment is 1/16" of clearance on each side of the rack. The two guide set screws are intended to guide the rack and should not be in constant contact. Thread the short threaded end of the lift rod with the washer and jam nut into the bottom of the rack. Use a plumb-bob to adjust the floor stand in order to obtain proper axial alignment. Once alignment is achieved, tighten mounting bolts of floor stand fully.

Install slip tube assembly to the riser pipe. The slip tube assembly includes the slip tube and the wiper gasket and companion flange assembly. Start by removing the bail riser crossbar, then remove the jam nut from the lift rod and thread the bail riser crossbar onto it. Then, replace the jam nut. Adjust the slip tube to an elevation above low water, but below high water. Operate the gearbox to adjust the height of the lift rod so that the bail riser crossbar can be remounted. Tighten the jam nut on the bail riser crossbar fully. Operate the valve between high and low water elevations to ensure both are achieved. If not achieved, fine adjustment can be made by removing the crossbar and turning it to adjust the height. Then, replace the bail riser crossbar and ensure the jam nut is tight. Operate the valve again to check elevations and readjust if necessary. Operate the valve back down to low water elevation.

Grease the rack and gear box and install the rack cover. Apply a Mylar strip on the exterior of the clear

rack cover tube. Then, install the clear rack cover tube into the aluminum tube housing on the top of the gearbox by embedding it into silicone sealant. Grease the slip tube with food-grade grease. Operate the valve to critical elevations and mark the Mylar strip/clear rack cover tube accordingly for quick reference.

*NOTE: It cannot be stressed enough that the valve should operate extremely freely with little to no resistance in the hand wheel. If you have to use excessive force to operate the valve, STOP! Check that all steps of this procedure have been performed properly and readjust for proper alignment and compression as necessary.

Safety

The Troy Valve Safety Lock Telescoping Valve has a self-locking gear operator that prevents the valve from traveling unless the hand wheel is intentionally turned by the operator. To prevent any possibility of pinching, the valve should not be operated unless the clear slip tube is in place over the rack.

Operation

Telescoping valves travel vertically to regulate the water level in either the tank they are located in or in an adjacent tank. The range of travel is dictated by the tank design and specifications.

- To lower the valve (open it) turn the operator counterclockwise
- To raise the valve (close it) turn the operator clockwise

The Troy Valve Telescoping Valve Operator has no separate locking mechanism to engage or disengage. There is no adjustment required either. Operation is simply to use hand wheel to adjust height of tube as required. Do not operate telescoping valve “dry”—lubricate slip tube with food-grade grease before traveling the tube up and down.

The see-through slip tube allows the operator to mark setting heights that are regularly used, directly on the acrylic cover.

Maintenance

The gearbox should be greased monthly via the grease fitting on the gearbox using a standard heavy machine grease. Grease the rack whenever it does not show obvious signs of grease being present with a standard heavy machine grease.

Routinely check the nylon tipped rack guide set screws for wear and replace/adjust as necessary. In addition, routinely do a visual inspection of the rack for any abnormal debris (i.e. metal chips, dirt, etc.).

If the wiper gasket must be replaced, simply remove the nuts holding down the gasket gland, slide the gland up, remove the split gasket and replace with a new split gasket from Troy Valve. Readjust the companion flange per the installation instructions. Order replacement gaskets by the diameter of the slip tube. Parts are available through Troy Valve, 800-232-4442.

Troubleshooting

If the t-valve is hard to operate:

- Ensure that the operator and slip tube are completely vertical and in line.
- Gear box and rack should be well greased. On non-rising stem operators, the stem should be well greased.
- The gasket retainer should not be tightened too tight or the split gasket may bind the tube. Only tighten the gasket retainer tight enough to hold the split gasket in place.
- Check adjustment of rack guide screws, per installation instructions.

Parts List and Predicted Life

See Troy Valve Telescoping Valve literature for a parts list. Although the life of the unit and parts are dependent on the type of usage and maintenance it receives, it is designed to last for many years of operation.

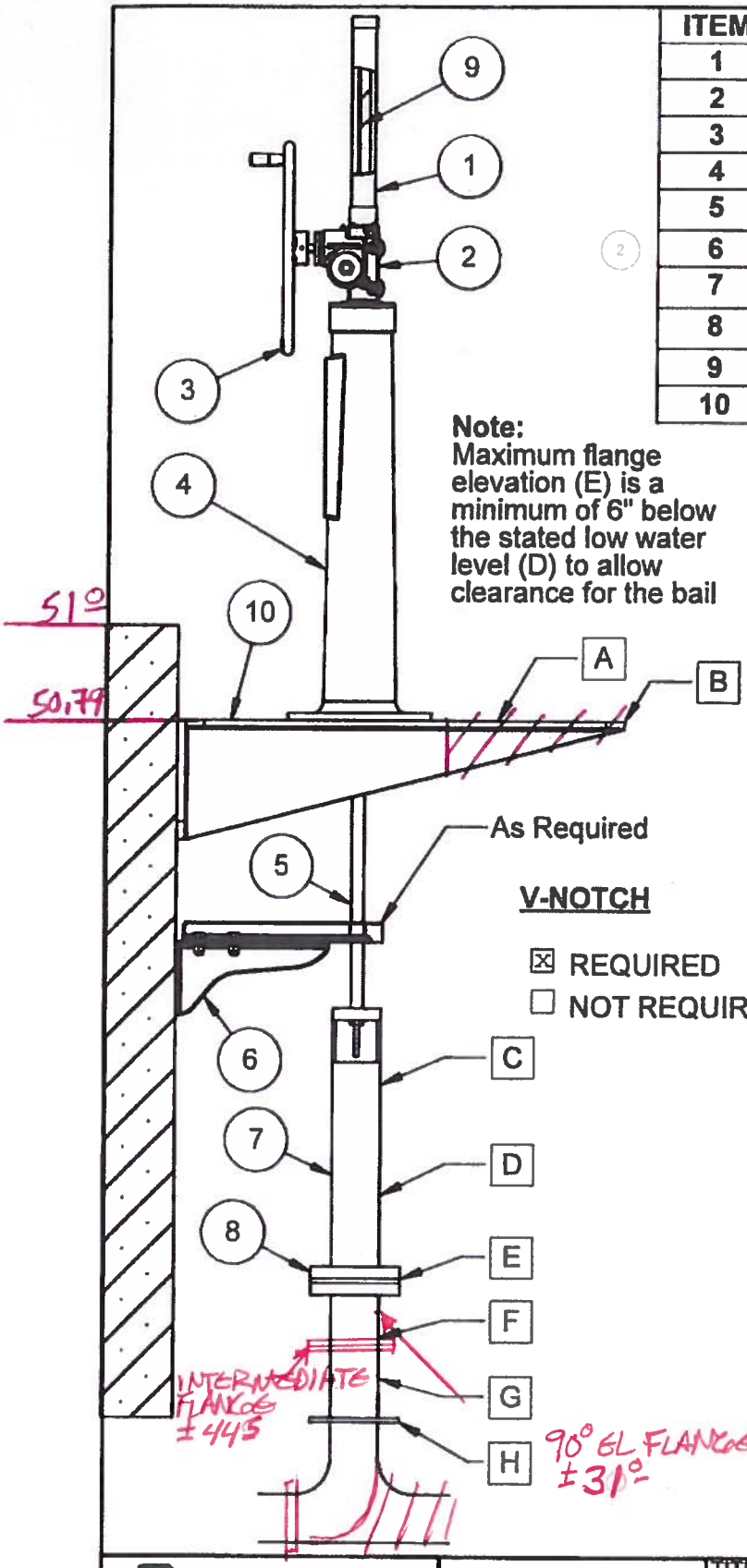
Wear Parts

The split gasket is the only predicted wear part of the valve. The life of this gasket is dependent on the amount of usage and conditions it sees. Before replacement is necessary, the gasket may be adjusted by tightening the gasket retainer.

Long Term Storage Prior to Installation

The valves and operator should be protected from excess sun exposure as the gaskets, which are normally submerged, may deteriorate if exposed to too much direct sunlight. The valves should not be stacked and the slip tube should be protected from crushing so that they do not go out of round.

ITEM	DESCRIPTION	QTY.	MAT'L
1	Rack Cover	1	Lexan
2	Gear Box	1	CI
3	Handwheel	1	CI/SS
4	Floorstand	1	DI/SS
5	Operating Stem	1	SS
6	Stem Guide	1	DI/SS
7	Slip Tube	1	SS
8	Flange	1	CI/SS
9	Rack	1	Steel/SS
10	Floorstand Bracket	1	DI/SS



Note:
Maximum flange elevation (E) is a minimum of 6" below the stated low water level (D) to allow clearance for the bail

Project: MATECA WWFQ

Req'd: 2 Size: 6 INCH

Sales Order #: _____

Contractor to Provide

A ~~FLOOR ELEVATION~~ TOP OF BRACKET
50.79

B ~~FLOOR THICKNESS~~

C HIGH WATER ELEVATION
485

D LOW WATER ELEVATION
465

E FLANGE ELEVATION
46° PER MAN. CAN ADJUST SLIGHTLY IF REQ'D

F RISER PIPE NOMINAL SIZE
6"

G PIPE MATERIAL
DIP

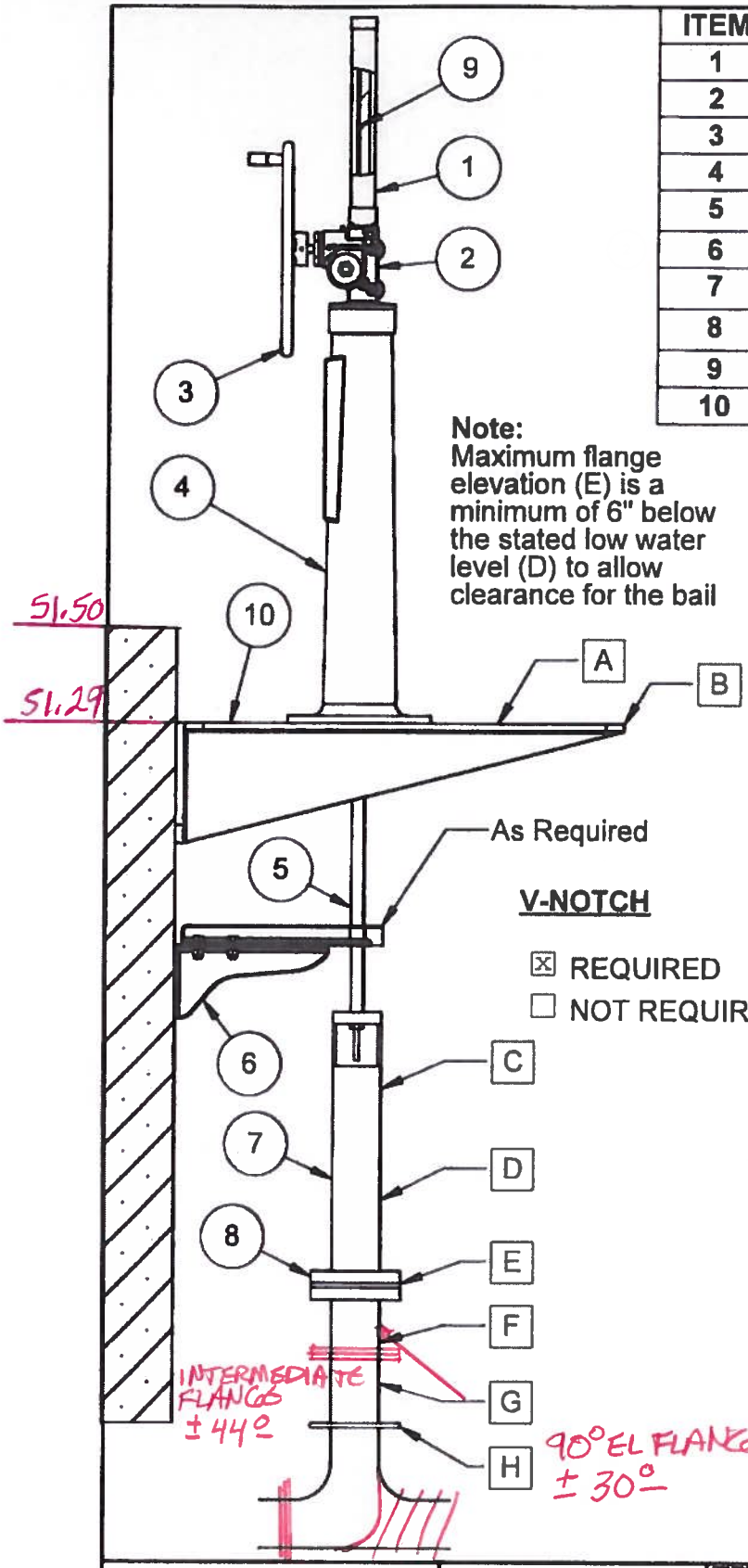
H TOP OF DRAIN PIPE FLANGE
445 INTERMEDIATE FLANGE

TROY VALVE
A DIVISION OF TROY-ITEX MANUFACTURING INC
MANUFACTURING TRUST.

www.TroyValve.com
PHONE: 1-570-297-2125
087-03 DO NOT SCALE DRAWING 2016

TITLE: T-Valve w/Flrstd Mounting Bracket
MAT'L: See Above
DATE: Oct 18, 2016
PART NO: TVROB
DWN. CAC
PAGE:

ITEM	DESCRIPTION	QTY.	MAT'L
1	Rack Cover	1	Lexan
2	Gear Box	1	CI
3	Handwheel	1	CI/SS
4	Floorstand	1	DI/SS
5	Operating Stem	1	SS
6	Stem Guide	1	DI/SS
7	Slip Tube	1	SS
8	Flange	1	CI/SS
9	Rack	1	Steel/SS
10	Floorstand Bracket	1	DI/SS



Note:
Maximum flange elevation (E) is a minimum of 6" below the stated low water level (D) to allow clearance for the bail

Project: MATECA WWFQ

Req'd: 2 Size: 8 INCH

Sales Order #: _____

Contractor to Provide

A ~~FLOOR ELEVATION~~ TOP OF BRACKET 51.29

B ~~FLOOR THICKNESS~~

C HIGH WATER ELEVATION 48.5

D LOW WATER ELEVATION 46.5

E FLANGE ELEVATION 46° PER MAN, CAN ADJUST SLIGHTLY IF REQ'D

F RISER PIPE NOMINAL SIZE 8"

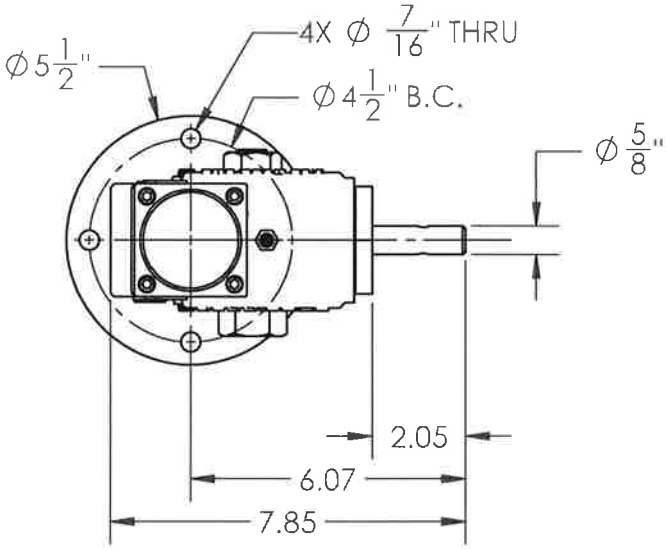
G PIPE MATERIAL DIP

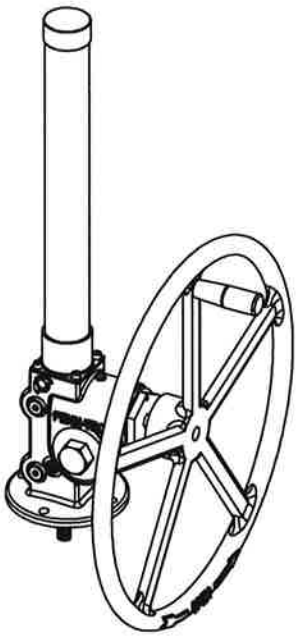
H TOP OF DRAIN PIPE FLANGE 44° INTERMEDIATE FLANGE

TROY VALVE
A DIVISION OF TROY MANUFACTURING INC
MANUFACTURING TRUST.

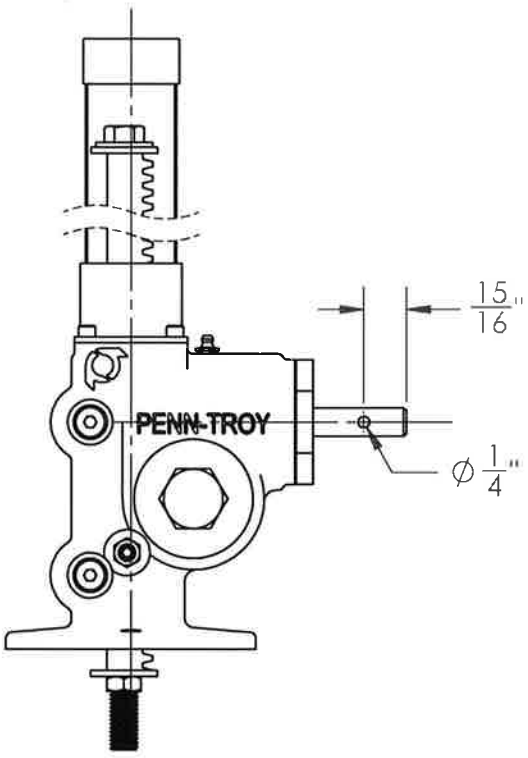
www.TroyValve.com
PHONE: 1-570-297-2125
087-03 DO NOT SCALE DRAWING 2016

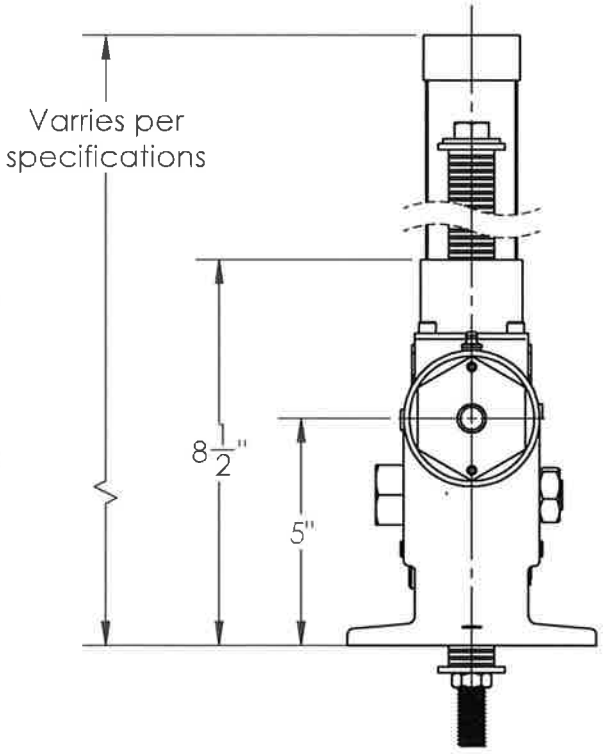
TITLE: T-Valve w/Flrstd Mounting Bracket
MAT'L: See Above
DATE: Oct 18, 2016
PART NO: TVROB
DWN. CAC
PAGE:



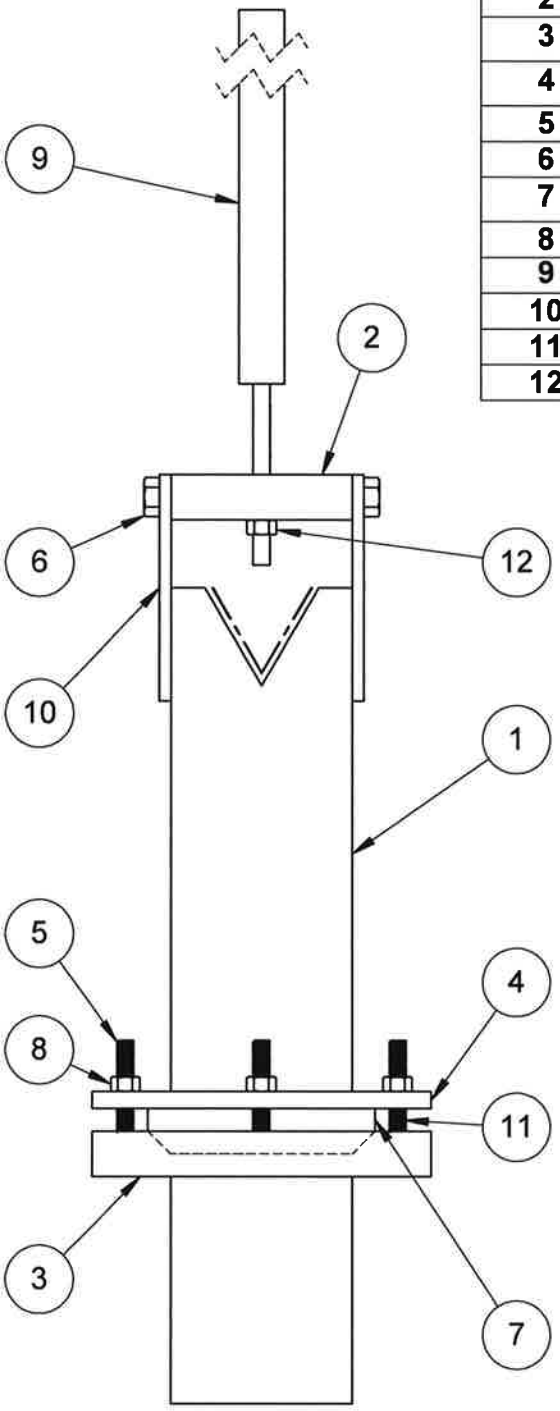


Shown with 18" handwheel and spinner attached





TROY VALVE A DIVISION OF PENN-TROY MANUFACTURING INC. MANUFACTURING TRUST.	www.TroyValve.com	TITLE: **Rack and Pinion Gearbox**		DWN. CAC
	PHONE: 1-570-297-2125	MAT'L: Ductile Iron	PART NO: MBGLIFT	PAGE:
	00D-03 DO NOT SCALE DRAWING 2016	DATE: Sep 22, 2016		



ITEM	DESCRIPTION	QTY.	MAT'L
1	Slip Tube	1	SS
2	Bail Crossbar	1	SS
3	Companion Flange	1	CI/SS
4	Compression Ring	1	SS
5	Stud	Varies	SS
6	HHCS	2	SS
7	Split Gasket	1	BUNA-N
8	Hex Nut	Varies	SS
9	Operating STem	1	SS
10	Bail Riser	2	SS
11	Tension Washer	Varies	SS
12	Jam Nut	1	SS

Notes:

- Pipe Length is Equal to Highwater Elevation Minus Flange Elevation Plus 12"
- Stem Allows for Minor Adjustment
- Hardware Material is determined by Slip Tube Material
- V-Notch Aids to Reach Low Water and Regulate Flow

SLIP TUBE

- [X] 304SS
- [ ] 316SS

COMPANION FLANGE

- [ ] CAST IRON
- [X] 304SS
- [ ] 316SS

V-NOTCH

- [ ] REQUIRED
- [ ] NOT REQUIRED

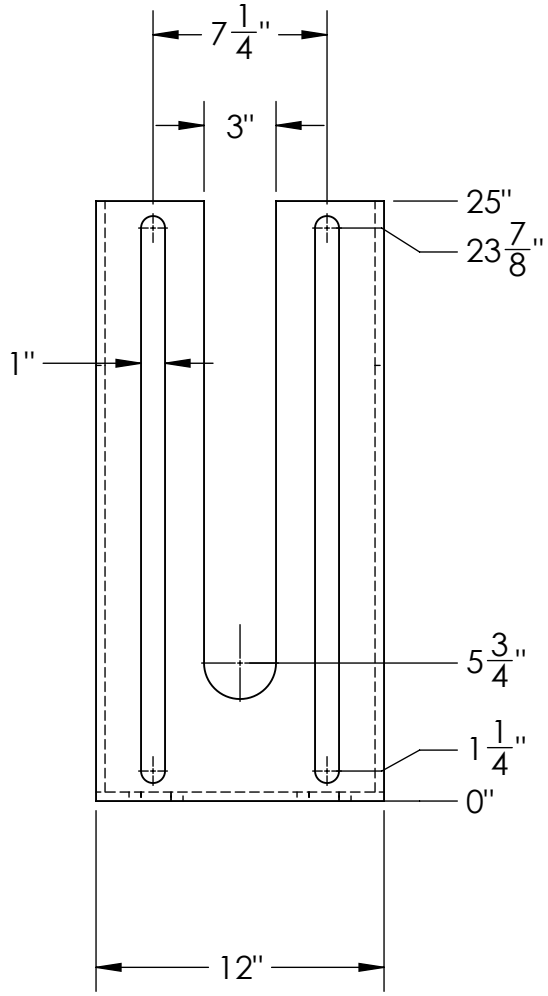
RISER PIPE NOMINAL SIZE

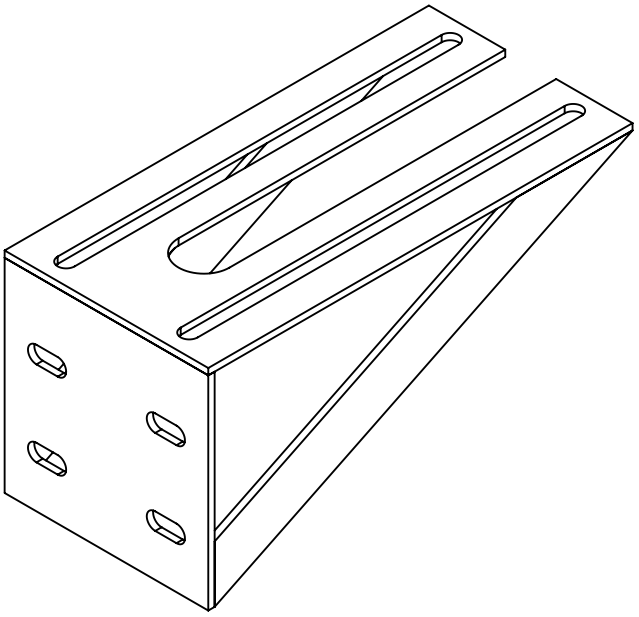
6 INCH *SCH 40*

TROY VALVE
A DIVISION OF FELIN-TROY MANUFACTURING INC.
MANUFACTURING TRUST.

www.TroyValve.com
PHONE: 1-570-297-2125
06D-02 DO NOT SCALE DRAWING 2016

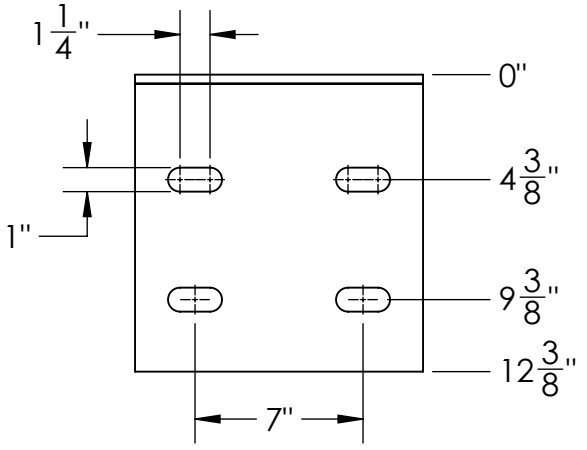
TITLE: **Slip Tube Assembly**
MAT'L: See Above
DATE: Sep 22, 2016
PART NO: MTELEVLV
DWN. CAC
PAGE:

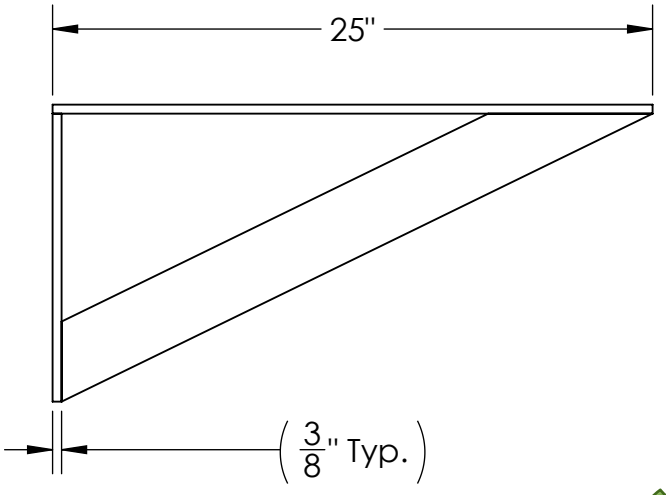




Notes:

- 5" - 20 1/2" adjustment from face of wall to c/l of stem
- To achieve the 5" minimum distance the stem must be ≤ 1 1/4" OD





304SS ☑
316SS ☐

TROY VALVE A DIVISION OF PENN-TROY MANUFACTURING INC. MANUFACTURING TRUST.	www.TroyValve.com	TITLE: **Flush F/S Wall Mounting Bracket-Long**		DWN. CAC
	PHONE: 1-570-297-2125	MAT'L: 304/316SS	PART NO: A25675LFLUSH	PAGE:
	00A-03 DO NOT SCALE DRAWING 2015	DATE: Mar 28, 2016		