NOTES:

1. CONSULT MANUFACTURER’S RECOMMENDED INSTALLATION PRACTICES. REQUIREMENTS MAY VARY.
2. WALL MOUNT SIGNAL CONDITIONER.
3. PROVIDE GROUNDING GASKET & STRAPS FOR NONCONDUCTIVE OR LINED PIPE.
4. USE RIGID CONDUIT WHEN SIGNAL LINE IS LONGER THAN 6’-0”.
**BILL OF MATERIALS:**

1. PROBE WITH MAGNETIC ELECTRODES
2. WELDED THREAPOSELET
3. INSERTION VALVE
4. CONNECTING FLANGE
5. SENSOR RETENTION CHAIN OR CABLE

**NOTES:**

1. INSTALL LIQUID TIGHT FLEXIBLE CONNECTING CABLE BETWEEN SENSOR AND JUNCTION BOX.
2. LOCATE INDICATOR/TRANSMITTER APPROXIMATELY FOUR FEET ABOVE FLOOR AND WIRE BETWEEN SENSOR CABLE AND LOCAL CONTROL PANEL WITH RIGID CONDUIT.
FLEXIBLE, WATERPROOF SIGNAL CABLE TO TRANSMITTER.

1/2" RIGID CONDUIT SIGNAL CABLE TO CONTROL PANEL

NEMA 4 JUNCTION BOX

HINGED LID COVERED INDICATING TRANSMITTER WITH 1/2" NPT CONDUIT FITTING

INLINE PIPE SPOOL PIECE WITH INTEGRAL TURBINE FLOW ELEMENT.
BILL OF MATERIALS:

1. TURBINE FLOW METER SENSING ELEMENT ASSEMBLY
2. ISOLATION VALVE
3. COMPRESSION COUPLING
4. CAST ALUMINUM ELECTRICAL CONNECTION JUNCTION BOX
5. THREADED RISER WELDED TO STEEL PIPE
6. FLEXIBLE, WATERPROOF SIGNAL CABLE TO TRANSMITTER
7. NEMA 4X TRANSMITTER WITH FLOW INDICATOR. LOCATE 4-5 FEET ABOVE FLOOR.

NOTES:

1. INSERT TURBINE SENSOR TO APPROXIMATE CENTER OF PIPE
2. CONNECT SIGNAL WIRES FROM TRANSMITTER TO LOCAL CONTROL PANEL VIA RIGID CONDUIT
SURFACE MOUNT INDICATING TRANSMITTER BETWEEN 40” & 60” ABOVE FLOOR LEVEL.

PROGRAMMABLE LEVEL INDICATING TRANSMITTER

CONTRACTOR TO FABRICATE MOUNTING FLANGE AND PROVIDE ALL FASTENERS TO SECURE TRANSDUCER IN CORE DRILLED HOLE.

CONTRACTOR TO CORE DRILL HOLE.

3/4” RIGID CONDUITS, POWER & SIGNAL WIRE TO CONTROL PANEL

3/4” RIGID CONDUIT OR FLEXIBLE WEATHERPROOF SENSOR CABLE FROM SENSOR TO TRANSMITTER

ONE FOOT CLEARANCE TO SIDE WALL FOR EVERY 10 FEET OF MEASURED DEPTH.

NON-CONTACTING ULTRASONIC LEVEL TRANSDUCER

12” MINIMUM DISTANCE FROM HIGHEST LEVEL POSSIBLE

DEPTH VARIES SEE I/O LIST FOR SPECIFIC INSTRUMENT RANGES

NOTE:
1. MOUNTING FLANGE TO BE MADE OF 1/4” ALUMINUM.
3/4" CONDUIT TO CONTROL PANEL

NEMA 4 JUNCTION BOX

3/4" CONDUIT TO JUNCTION BOX

SEAL CONDUIT END WITH RTV SILICONE SEALANT

FLEXIBLE SENSOR LEAD SUPPLIED WITH SWITCH

SECURELY FASTEN BRACKET TO WALL

LEVEL SWITCH WITH MOUNTING BRACKET AND SLOSH GUARD SHIELD

NOTES:
1. THE SWITCH WILL BE WIRED NORMALLY CLOSED (N.C.) OPEN ON RISE.
2. SWITCH MUST BE MOUNTED VERTICALLY TO PROVIDE SMOOTH FLOAT OPERATION.
BILL OF MATERIALS:

1. RIGID CONDUIT TO CONTROL PANEL
2. FLEXIBLE WEATHERPROOF CABLE
3. SURFACE MOUNTING BRACKET AS REQ'D (MINIMUM TWO.)
4. 1"-2" PIPE SUPPORT. LENGTH AS REQ'D
5. TIE WIRE TO POLE EVERY THREE FEET
6. POLE Clamp FOR FLOAT
7. FLOAT BULB WITH INTEGRAL HEAVY DUTY MERCURY SWITCH
BILL OF MATERIALS:

1. 3-VALVE MANIFOLD
2. HIGH TAP SHUTOFF VALVE
3. LOW TAP SHUTOFF VALVE
4. DIFFERENTIAL PRESSURE TRANSMITTER
5. BLEEDER VALVE

NOTES:

1. MOUNT WITH MANUFACTURERS SUPPLIED BRACKET ON 2" PIPE STAND.
2. PROVIDE NEMA 4 WALL MOUNTED JUNCTION BOX AND RIGID CONDUIT TO INTERFACE CABINET
3. PROVIDE FLEX CONDUIT TO MENA 4 JUNCTION BOX
BILL OF MATERIALS:

1. 3/4” THREADOLET
2. THERMOWELL
3. RTD MUST BE EASILY REMOVABLE
4. TWO WIRE TEMPERATURE TRANSMITTER (WALL MOUNTED)
5. WATERTIGHT FLEX CONDUIT
6. RIGID CONDUIT CONTAINING SIGNAL CABLE

NOTES:

1. THERMOWELL AND RTD ASSEMBLY TO BE MOUNTED VERTICALLY.
2. THERMOWELL DIMENSION SHOULD MEET MANUFACTURES, RECOMMENDATION. USE STAINLESS STEEL THERMOWELLS.
NOTES:

1. THERMOWELL AND RTD ASSEMBLY TO BE MOUNTED VERTICALLY.
2. THERMOWELL DIMENSION SHOULD MEET MANUFACTURES RECOMMENDATION. USE STAINLESS STEEL THERMOWELLS.
3. RTD MUST BE EASILY REMOVABLE.
FLEXIBLE CABLE/CONDUIT FROM SENSOR TO TRANSMITTER

WALL MOUNTED 2-WIRE INDICATING TRANSMITTER

SIGNAL/POWER RIGID CONDUIT TO LOCAL CONTROL PANEL

PROBE COMPRESSION CONNECTOR *

BALL VALVE * 1-1/4" FULL PORT 316 S.S.

1" NPT WELD-BOSS CONNECTION, SAME MATERIAL AS PIPE

PROBE *: SENSOR SHEATH WITH ANTI-BLOWOUT LIP. 16" STANDARD LENGTH

NOTES:
1. COMPONENTS DESIGNATED BY * ARE SUPPLIED BY INSTRUMENT MANUFACTURER.
2. PROVIDE A MINIMUM OF 14" CLEARANCE ABOVE PROBE FOR REMOVAL.
NOTES:

1. MOUNT PREAMPLIFIER AND TRANSMITTER ON WALL OR IN SAMPLE PANEL NEXT TO PROBE.
2. PROVIDE SAMPLE VALVE NEAR SAMPLER FOR CONFORMANCE CHECK.
3. INSTALL IN AREA WHERE EQUIPMENT CAN BE EASILY ACCESSED.
4. INSTALL PROBE IN HORIZONTAL SECTION OF SAMPLE LINE.
BILL OF MATERIALS:

1. 1/2" RIGID CONDUIT FOR 120 VAC CONDUCTORS.
2. JUNCTION BOX.
3. 1/2" FLEXIBLE CONDUIT.
4. MOUNTING BRACKET.
5. LIMIT SWITCH.
6. VALVE POSITION SPINDLE.
7. CONTROL VALVE.
NOTE:

1. MOUNT SWITCH AND ACTUATOR ON INNER MOST DOOR.
NOTES:
1. ROUND OFF ALL EXPOSED EDGES & CORNERS.
2. PAINT AL IN CONTACT WITH CONCRETE.
3. PROVIDE 6"x18"x18" CONCRETE BASE.
NOTES:

1. ROUND OFF ALL EXPOSED EDGES & CORNERS.
2. MOUNT RAINHOOD BETWEEN PANEL & SUPPORT. DRILL HOLES IN RAINHOOD AS PER MOUNTING HOLES FOR PANEL.
KEYNOTES:

1. INSTALL PIPE HEAVY TELPHONE SERVICE PER SPA STANDARDS.
2. INSTALL DRAINAGE PIPES AND CONDUIT PER SPA STANDARDS.
3. INSTALL ELECTRICAL SYSTEM AS PER MANUFACTURER'S INSTRUCTIONS. INSTALL CABLES.
4. INSTALL WATER SYSTEM AS PER MANUFACTURER'S INSTRUCTIONS. INSTALL WASTE SYSTEM AS PER MANUFACTURER'S INSTRUCTIONS.
5. INSTALL ELECTRICAL SYSTEM AS PER MANUFACTURER'S INSTRUCTIONS. INSTALL WATER SYSTEM AS PER MANUFACTURER'S INSTRUCTIONS.

GENERAL NOTES:

1. INSTALL PIPES AND ELECTRICAL SYSTEMS IN ACCORDANCE WITH APA STANDARDS.
2. INSTALL PIPES AND ELECTRICAL SYSTEMS IN ACCORDANCE WITH APA STANDARDS.
3. INSTALL PIPES AND ELECTRICAL SYSTEMS IN ACCORDANCE WITH APA STANDARDS.
4. INSTALL PIPES AND ELECTRICAL SYSTEMS IN ACCORDANCE WITH APA STANDARDS.
1. Install RCP thru, transmitter panel and antenna per detail sheet 701.
2. Remove cover before wire. Install covers and mounting hole return to owner's site. Secure with #10-24 X 3/4" zinc-plated screw RCP and power neutral. Power wiring to be run underground to transmitter panel per Section 1610.
3. Install flood switch 3X-100 say manufacture instructions.
4. Install flow meter system at regulator (2 flo's). Install per manufacturer instructions. Locate flow meter at transmission module(s) at RCP, install per manufacturer instructions.
5. (2) 3/4" conduit to +300, (X5-300, Z4-300)
6. (2) 1/2" conduit to +300, (X6-300, Z6-300)
7. (2) 1/2" conduit to -400, (X6-400)
8. (2) 3/4" Copper (3/4" conduit, 3/4" conduit. Conduit pressure downstream pressure. Open inline valve for 3/4" conduit. Install conduit from RCP panel. Install 3/4" conduit from owner's supplied isolation valves on flow through exhaust conduit to transmitter panel. Connect to transmission per FMA. Use metal clamps 3/4" diameter to 3/4" diameter to accommodate to vault wall to secure conduit turn in vault.
9. (4) 1/4" (3) 1/4" conduit (1/4" conduit, Z4-300, Z4-300, Z5-300, Z5-300, X5-600)
10. (2) 1/4" conduit (3/4"
11. (2) 1/4" conduit (3/4"
12. RCP and components shown within the RCP, provided by owner.

GENERAL NOTES:
1. Existing power, equipment & instrumentations are owned, maintained by owners.
2. Circuit lines shown are approximately shown in the field.
ISO OR GREYLINE MOUNTING RING, SCISSORS ASSEMBLY

TO CONTROL PANEL
(CONTINUOUS CABLE, NO SPLICES)

ISO OR GREYLINE MOUNTING RING, EXTENSION TYPE IF NEEDED *

CABLE TIE, AT 4" EQ SPCS OC, TYP

SUBMERSIBLE PRESSURE SENSOR *
MOUNT AT THE 5:30 OR 8:30 POSITION

SUBMERSIBLE PRESSURE SENSOR
FULL RING
INSTALLATION DETAIL
**SUBMERSIBLE PRESSURE SENSOR**

**PARTIAL RING**

**INSTALLATION DETAIL**

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**SECTION**

- **END ANCHOR, 1"**
  - Max from edge of mounting bracket, TYP

- **3/4" SS ANCHOR**
  - Min 1" long, pre-drill and epoxy adhesive, TYP

- **4" MIN**

- **SS MOUNTING BRACKET**
  - See Note 1

- **FLOW**

- **MOUNTED PRESSURE SENSOR**
  - See Notes 2 & 3

- **1/4" SS NUT AND SS WASHER**
  - Min 6, evenly spaced

- **MIN 10’ SPARE CABLE COILED PER SECTION 40 91 10**

- **SS CABLE CLIPS, TYP**

- **FLOW**

- **REINFORCED CONCRETE SEWER PIPE**

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**NOTES:**

1. **PARTIAL BAND MOUNTING BRACKET PER SECTION 40 91**
2. **DIMENSIONED FOR SEWER PIPE DIAMETER.**
3. **CONTACT SPU SOPA STAFF FOR CLOCK POSITION OF SENSOR IN PIPE.**
4. **SENSOR MOUNTED WITH CABLE END FACING UPSTREAM.**

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*See "MONITORING EQUIPMENT SPECIFICATIONS TABLE" for spec."
CABLE COILED (10' MIN) TO ACCOMMODATE REMOVAL AND MAINTENANCE OF SENSOR

TOP OF STORAGE TANK

6" DIAMETER SCHEDULE 80 PVC PIPE

1" DIAMETER PERFORATED VENTS, EACH SIDE, 6" O.C.

MOUNTING BRACKETS POWER STRUT WITH PS1100 6" BRACKETS; BRACKETS EVERY 4' MIN

SUBMERSIBLE LEVEL TRANSMITTER KPSI 750

INSTALL TWO (2) SS PINS THROUGH BOTTOM OF PVC PIPE TO SUPPORT TRANSDUCER

BOTTOM OF EXISTING STORAGE STRUCTURE

FACE OF TRANSDUCER MAXIMUM 4" FROM FLOOR.

SUSPENSION CABLE & 3/8" SS HOOK BOLT ANCHOR W/ 6" MIN EMBEDMENT

CONTINUOUS CABLE NO SPLICE TO CONTROL PANEL

PRE-DRILL HOLES FOR CONCRETE ANCHORS (TYP.)

KPSI PRESSURE TRANSDUCER IN STILLING WELL
INSTALLATION THROUGH STRUCTURE SLAB DETAIL

**TYPICAL ULTRASONIC LEVEL SENSORS**

* SEE MONITORING EQUIPMENT SPECIFICATIONS TABLE FOR SPEC.*

(PULSAR ULTRASONIC SENSOR)

SCALE: 1 = 1'-0"

STRUCTURE/MI INNER WALL

FLANGE

CUT AT BOTTOM OF SLAB, COUNTER SEAT

CORE Drill TO FIT 6" PVC SPool

6" PVC SPool

7" FLANGE

DO NOT TIGHTEN TRANSDUCER UNTIL TIGHTEN BACKOFF % TURN TO COUNTER TIGHTEN BY HAND

CONTAINER

(continuous cable no splices)

SIGNAL CABLE TO CONTROL PANEL

GRAVEL UP TO DIM G

BACKFILL W/ TYPE 17 CRUSHED

CEMENT CASKET

6" BBlD PVC FLANGE

W/ FLANGE ADAPTOR

ULTRASONIC LEVEL SENSOR

MAINTENANCE OF SENSOR

ACCOMMODATE REWIND AND ROLL

CABLE: CABLE (10, 15) TO 20'

ANCHOR W/ 2, 1/4" HOOK BOLT

SUSPENSION CABLE &

40 OS 23

AS VBOX PER SECTION

18" LD X RING, ID INSTALL

18", 9" SPool (D)

PC TUBE 18", 9" FRAME FLANGE

6", ASPHALT AT grade

08 BROMMEL SEAL

GRAB X 12"

M I CORE Drill THROUGH SLAB DRAYN

STRUCTURE/MI TOP SLAB
NEMA 4X JUNCTION BOX

3/4" FLEXIBLE WATER TIGHT CONDUIT

3/4" RIGID CONDUIT TO CONTROL PANEL

VAULT WALL

3/4" SS TEE

3/8" SS BALL VALVE W/PLUG

158 PSI

ROSEMOUNT 2088 (W/LOCAL INDICATOR)

3/8" SS BALL VALVE

STAINLESS STEEL PROCESS VARIABLE CONNECTIONS

MOUNT WITH WELDED STUDS OR WEDGE ANCHORS AS APPROPRIATE FOR WALL MATERIAL

NOTE: ALL PROCESS FITTINGS TO BE STAINLESS STEEL
ROSEMOUNT 3051

15.00 INWC

BRACKET MOUNTING HOLES
(3/8-16 UNC)
(2 PLACES)

DRAIN/VENT VALVE

3 WAY MANIFOLD

DIFFERENTIAL PRESSURE