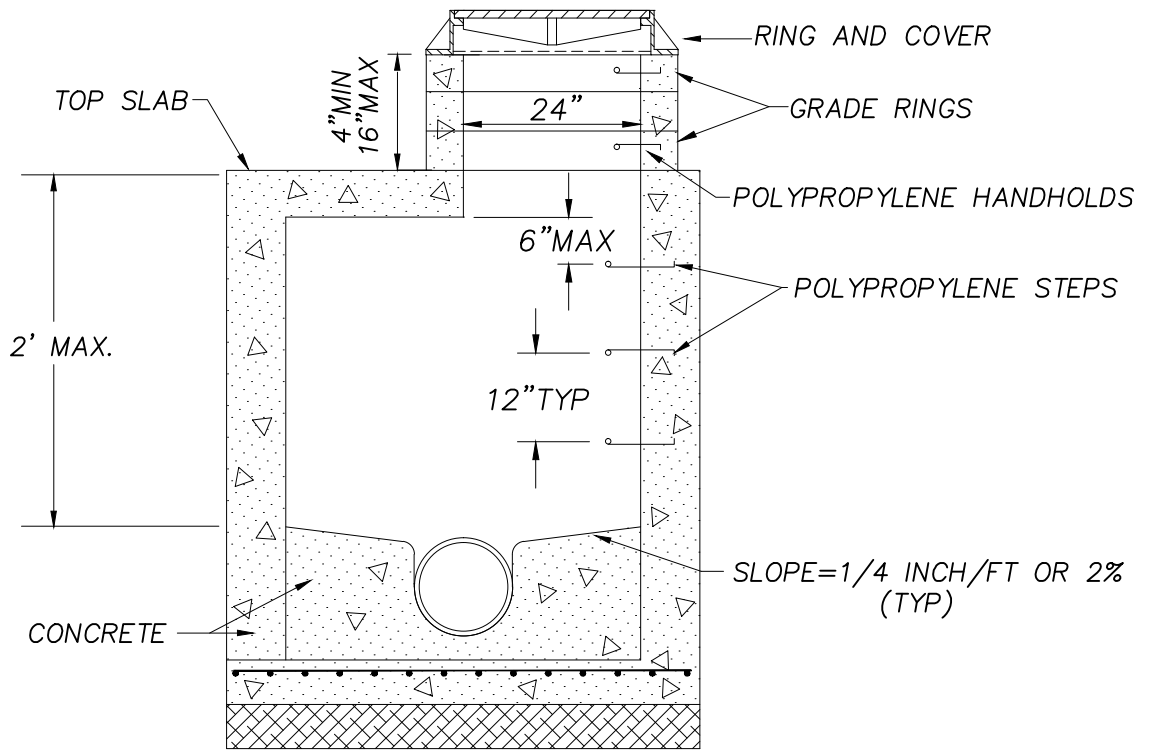


NOTES:

1. THIS DETAIL OUTLINES THE CITY OF OLYMPIA MODIFICATIONS TO THE WSDOT TYPE 1-48 INCH, 54 INCH AND 60 INCH MANHOLE.
2. PRECAST MANHOLES SHALL MEET THE REQUIREMENTS OF ASTM C478. JOINTS SHALL BE RUBBER GASKETED, CONFORMING TO ASTM C443 AND SHALL BE GROUTED FROM THE INSIDE. LIFT HOLES SHALL BE GROUTED FROM THE OUTSIDE AND INSIDE OF THE MANHOLE.
3. THE FIRST STEP OR HANDHOLD SHALL BE A MAXIMUM OF 12 INCHES FROM THE TOP OF THE COVER.
4. CONNECTION TO MANHOLE SHALL BE MADE BY KOR-N-SEAL FITTING ONLY. KOR-N-SEAL SHALL BE INSTALLED ACCORDING TO MANUFACTURERS SPECIFICATIONS. KNOCKOUTS WILL NOT BE ALLOWED.
5. SEE OLYMPIA STD. PLAN 7-3 FOR MANHOLE COLLAR INSTALLATION.
6. A EAST JORDAN WATERTITE CASTING SHALL BE INSTALLED IN ANY MANHOLE SUBJECT TO FLOODING.

APPROVED BY	REVISED DATE	CITY OF OLYMPIA	STD. PLAN NO.
	2/26/2013	TYPE 1 MANHOLE	7-1
CITY ENGINEER			

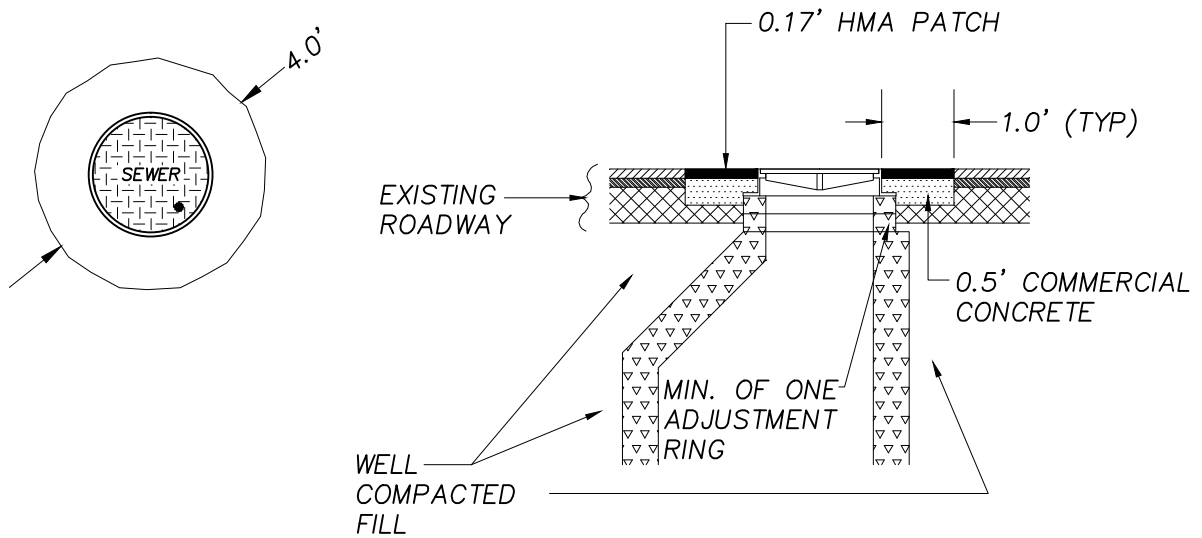


NOTES:

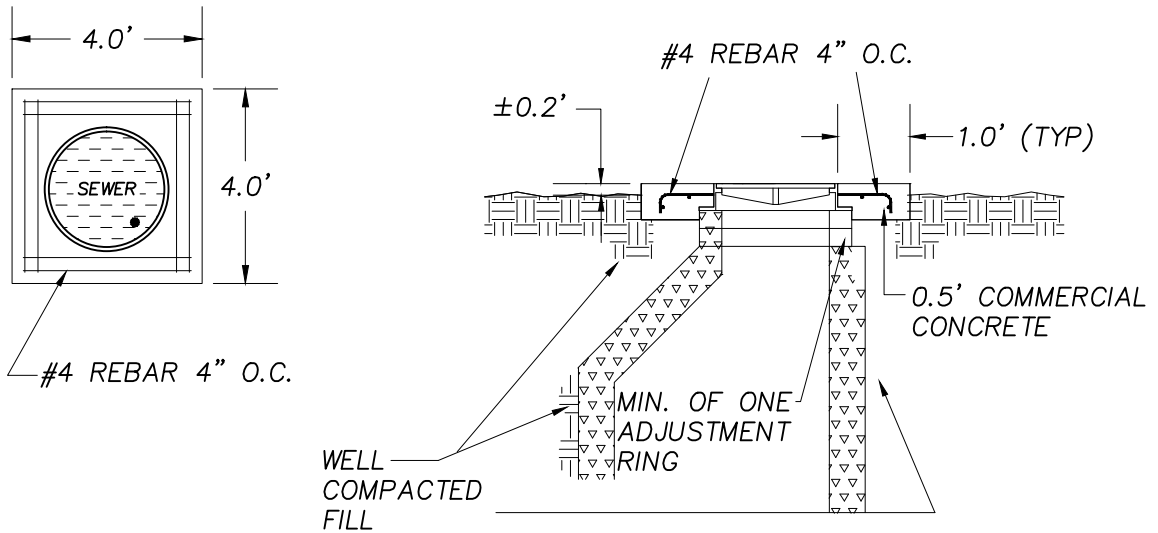
1. THIS DETAIL OUTLINES THE CITY OF OLYMPIA MODIFICATIONS TO THE WSDOT TYPE 3 MANHOLE FOR SHALLOW INSTALLATIONS.
2. PRECAST MANHOLES SHALL MEET THE REQUIREMENTS OF ASTM C478. JOINTS SHALL BE RUBBER GASKETED, CONFORMING TO ASTM C443 AND SHALL BE GROUTED FROM THE INSIDE. LIFT HOLES SHALL BE GROUTED FROM THE OUTSIDE AND INSIDE OF THE MANHOLE.
3. THE FIRST STEP OR HANDHOLD SHALL BE A MAXIMUM OF 12 INCHES FROM THE TOP OF THE COVER.
4. CONNECTION TO MANHOLE SHALL BE MADE BY KOR-N-SEAL FITTING ONLY. KOR-N-SEAL SHALL BE INSTALLED ACCORDING TO MANUFACTURERS SPECIFICATIONS. KNOCKOUTS WILL NOT BE ALLOWED.
5. SEE OLYMPIA STD. PLAN 7-3 FOR MANHOLE COLLAR INSTALLATION.
6. A EAST JORDAN WATERTITE CASTING SHALL BE INSTALLED IN ANY MANHOLE SUBJECT TO FLOODING.

APPROVED BY	REVISED DATE	CITY OF OLYMPIA	STD. PLAN NO.
CITY ENGINEER	2/26/2013	SHALLOW MANHOLE	7-2

## MANHOLE IN PAVED AREA



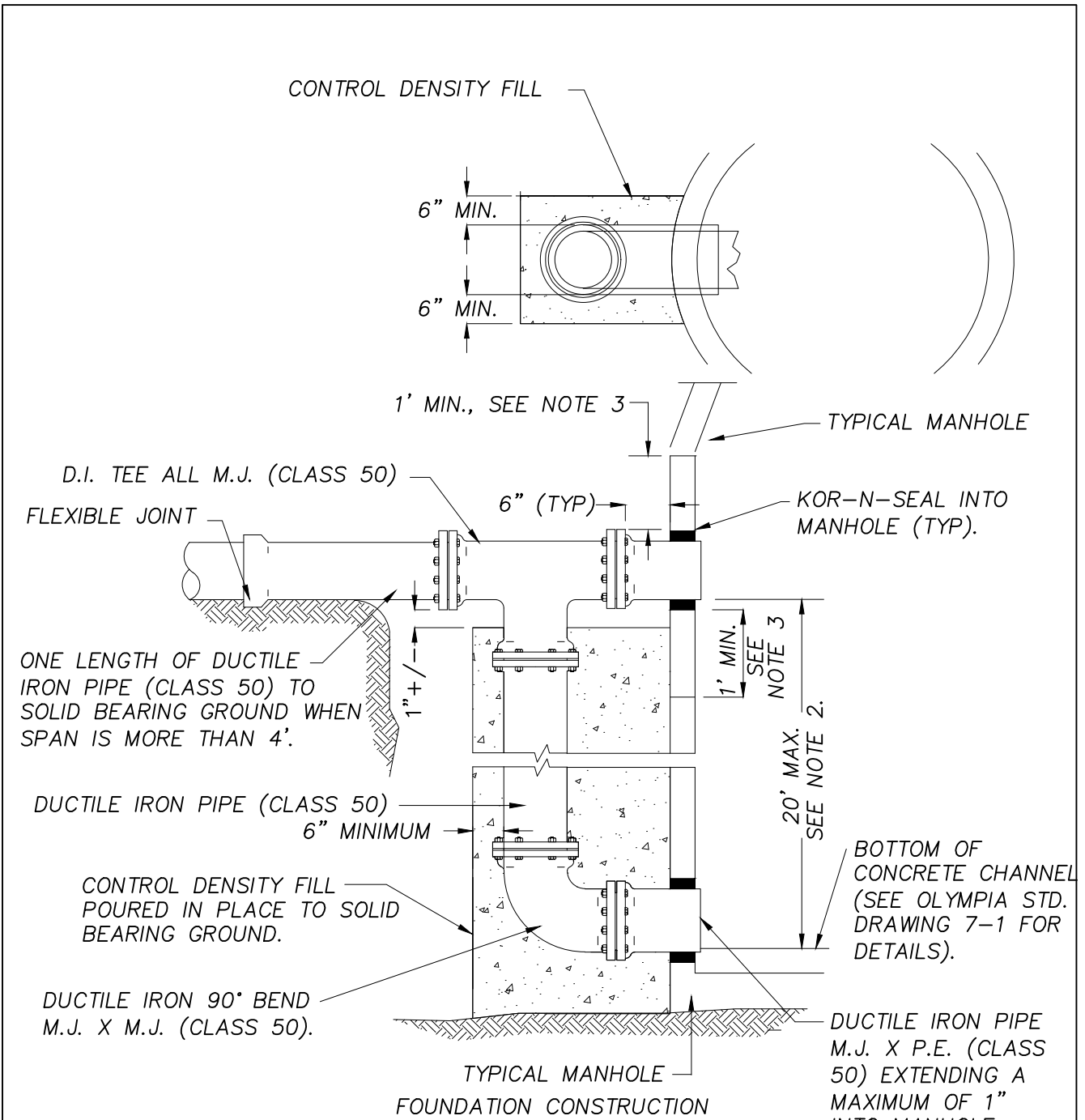
## MANHOLE OUTSIDE PAVED AREA



**NOTES:**

1. ON MANHOLE OUTSIDE ASPHALT, ADD REINFORCING STEEL AS SHOWN ABOVE. DEFORMED BAR TO MEET ASTM A615 GRADE 60,  $F_y=60,000$  P.S.I.
2. OPENING IN LID FOR USE OF MANHOLE HOOK IS REQUIRED.

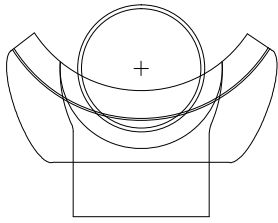
APPROVED BY	REVISED DATE	<b>CITY OF OLYMPIA</b>	STD. PLAN NO.
CITY ENGINEER	2/27/08	MANHOLE COLLAR	7-3



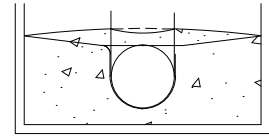
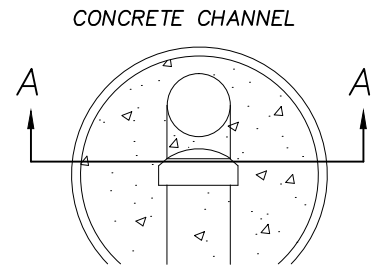
NOTES:

1. THE INTERIOR OF ALL DUCTILE IRON SHALL BE COATED WITH EPOXY, SEWPERCOAT OR TNEMEC 66.
2. DEPTHS OVER 20' MAY BE ALLOWED IF MEGA-LUG JOINTS ARE USED.
3. MAINTAIN A MINIMUM OF 1' BETWEEN MANHOLE JOINTS AND TEE.

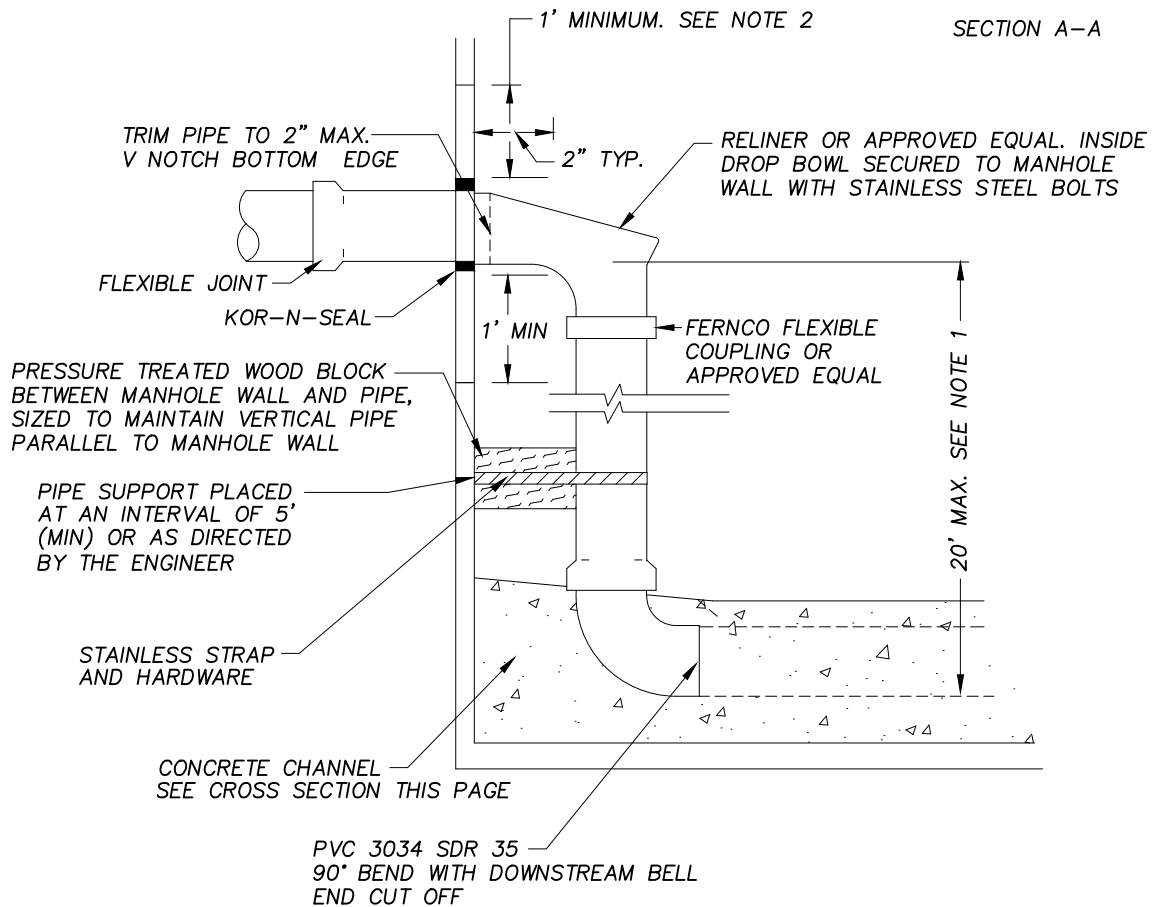
APPROVED BY	REVISED DATE	CITY OF OLYMPIA	STD. PLAN NO.
CITY ENGINEER	12-27-99	OUTSIDE DROP CONNECTION	7-4



DROP BOWL  
MOUNTING POSITION



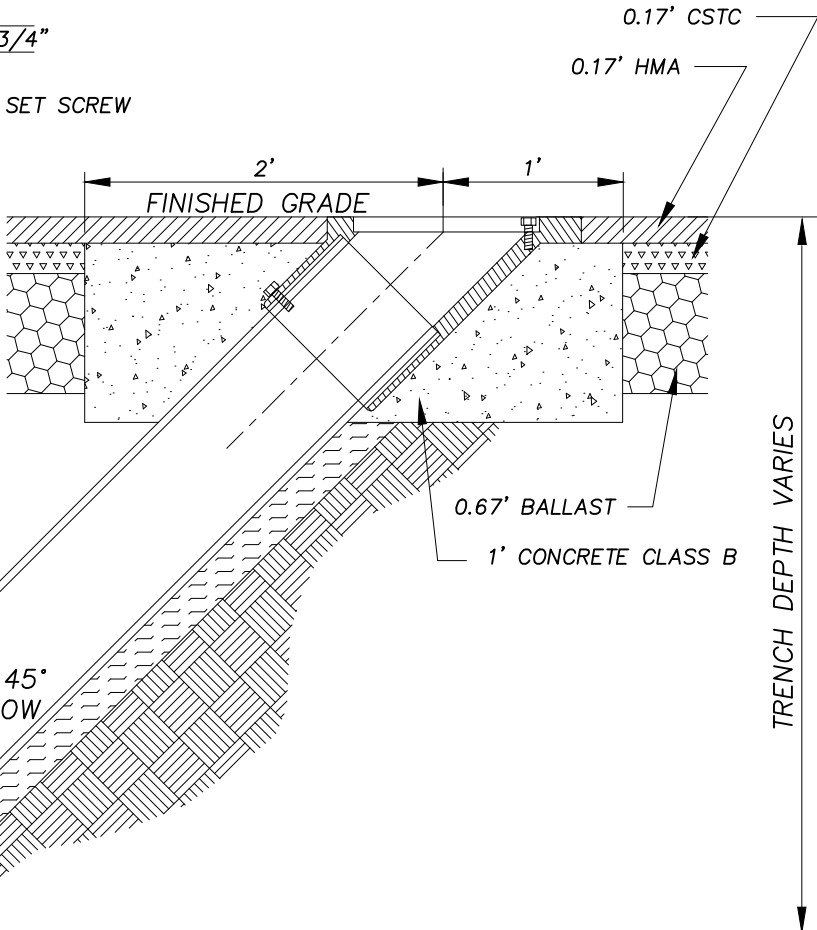
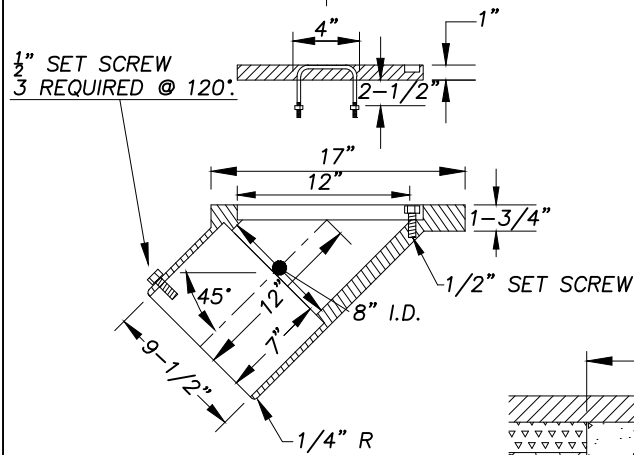
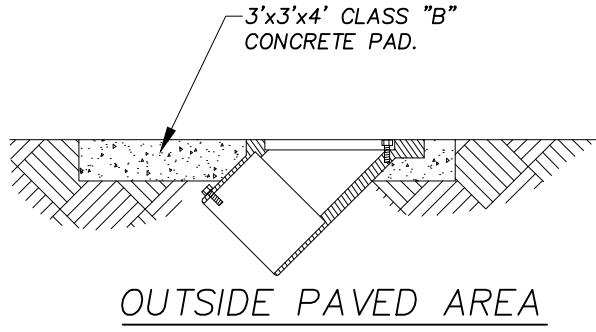
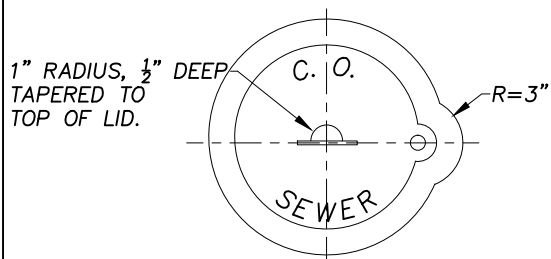
SECTION A-A



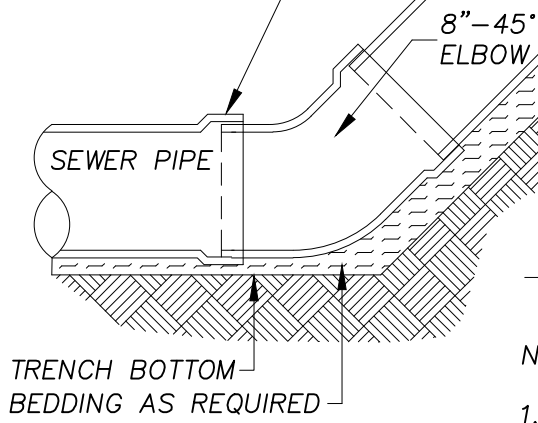
NOTES:

1. DEPTHS OVER 20 FEET MAY BE ALLOWED WHEN PROPER SUPPORT IS PROVIDED AS APPROVED BY THE CITY ENGINEER.
2. MAINTAIN A MINIMUM SEPARATION OF 1 FOOT BETWEEN MANHOLE JOINTS AND PIPE PENETRATIONS.
3. INSIDE DROP IS ONLY ALLOWED WHEN APPROVED BY THE CITY ENGINEER.

APPROVED BY	REVISED DATE	CITY OF OLYMPIA	STD. PLAN NO.
CITY ENGINEER	2/26/2013	INSIDE DROP CONNECTION	7-4A



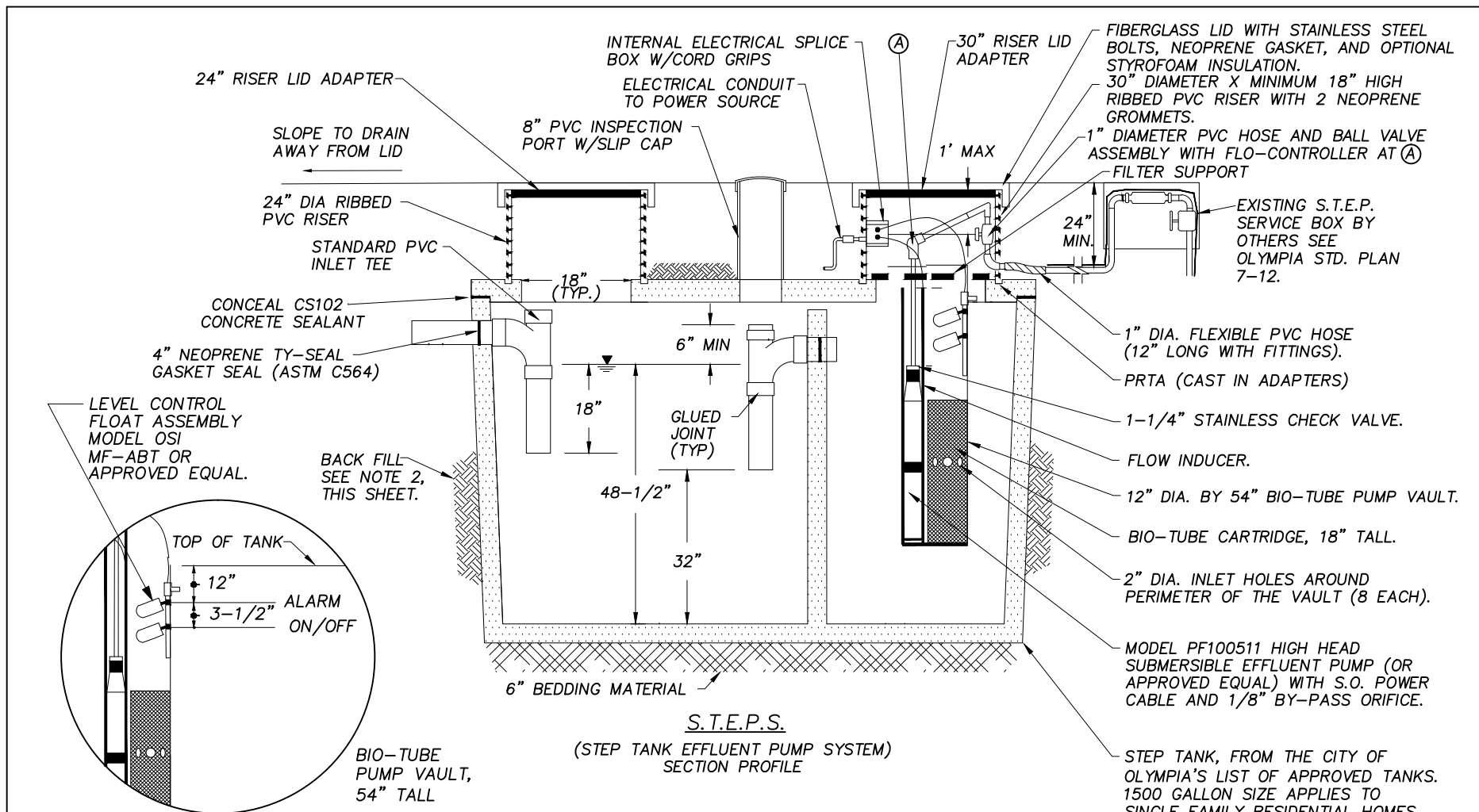
REDUCER AS REQUIRED TO PROVIDE A WATER TIGHT CONNECTION TO LARGER DIAMETER PIPE. SEE NOTE 2.



NOTES:

1. ALL SEWER PIPE SHALL BE ASTM 3034 SDR 35.
2. CLEANOUTS SHALL NOT BE INSTALLED ON SEWER MAINS LARGER THAN 8" DIAMETER, UNLESS APPROVED BY THE CITY OF OLYMPIA.

APPROVED BY	REVISED DATE	CITY OF OLYMPIA	STD. PLAN NO.
CITY ENGINEER	2/27/08	CLEANOUT	7-5



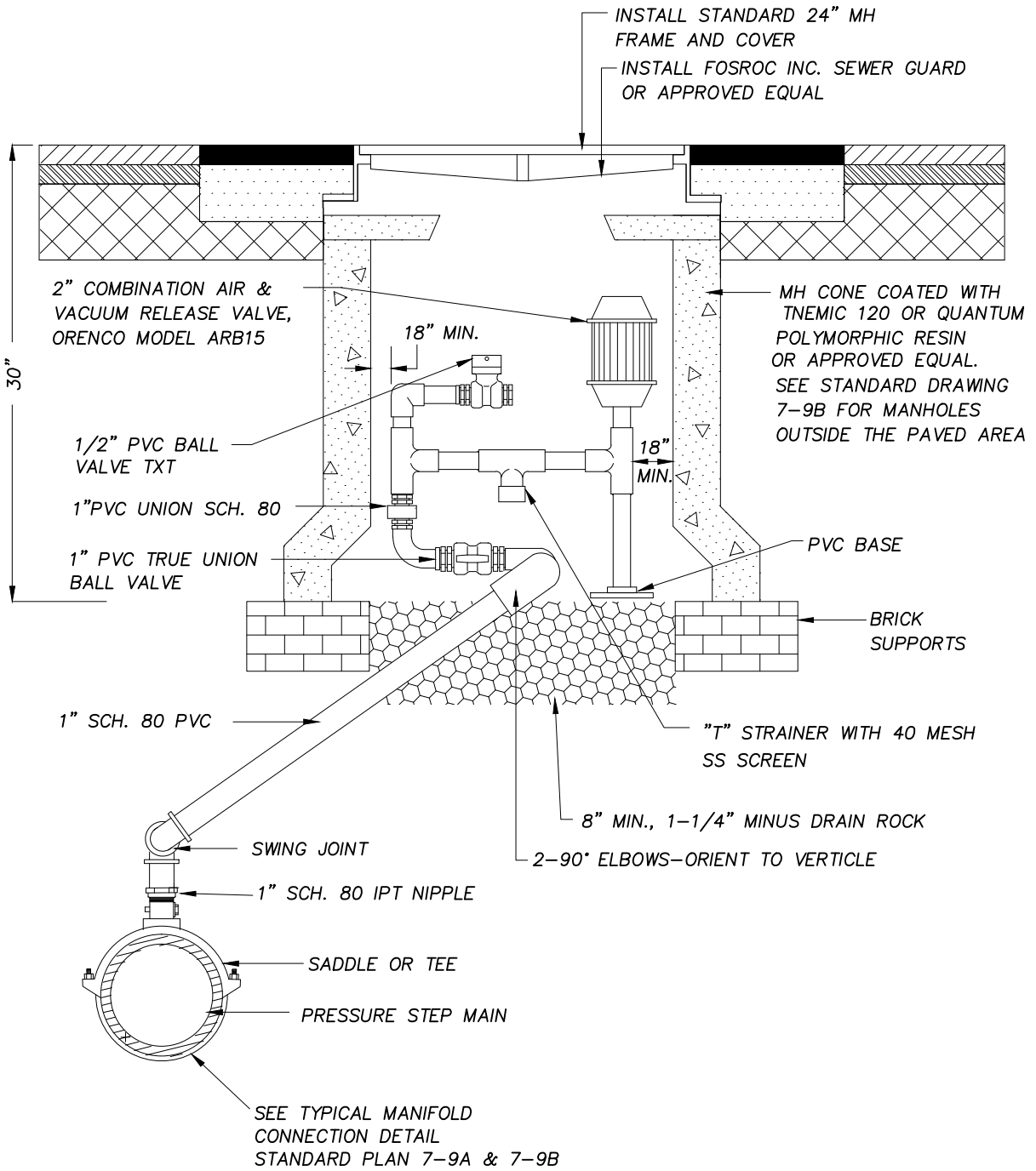
**S.T.E.P.S.**  
(STEP TANK EFFLUENT PUMP SYSTEM)  
SECTION PROFILE

**NOTES:**

1. TANK SHALL BE BEDDED ON 6" SAND OR PEA GRAVEL.
2. BACK FILL AGAINST SIDE SHALL BE COMPACTED IN 6" LIFTS TO THE SAME OR GREATER COMPACTION THAN THE SURROUNDING AREA.
3. LIFTING STRAP SHALL BE PROVIDED IF THE TOP OF THE FILTER IS GREATER THAN 2' BELOW THE TOP OF THE ACCESS LID.
4. RATIO OF TANK COMPARTMENT VOLUMES SHALL BE 2:1 (INLET:OUTLET).

5. THE TANKS SHALL BE DESIGNED WITH FOR THE FOLLOWING LOADING: TOP SLAB - 1000 P.S.F. WHEEL LOAD, 400 P.S.F. SOIL LOAD LATERAL LOAD - 62.4 P.C.F. HYDROSTATIC SOIL BEARING - 1000 P.S.F. ASSUMED
6. THESE REQUIREMENTS MAY CHANGE FOR H-20 LOADING. SEE SECTION 7E.060 FOR TANK DESIGN.

APPROVED BY	REVISED DATE	<b>CITY OF OLYMPIA</b> 1500 GALLON S.T.E.P. SYSTEM	STD. PLAN NO.
	2/26/2013		7-7
CITY ENGINEER			

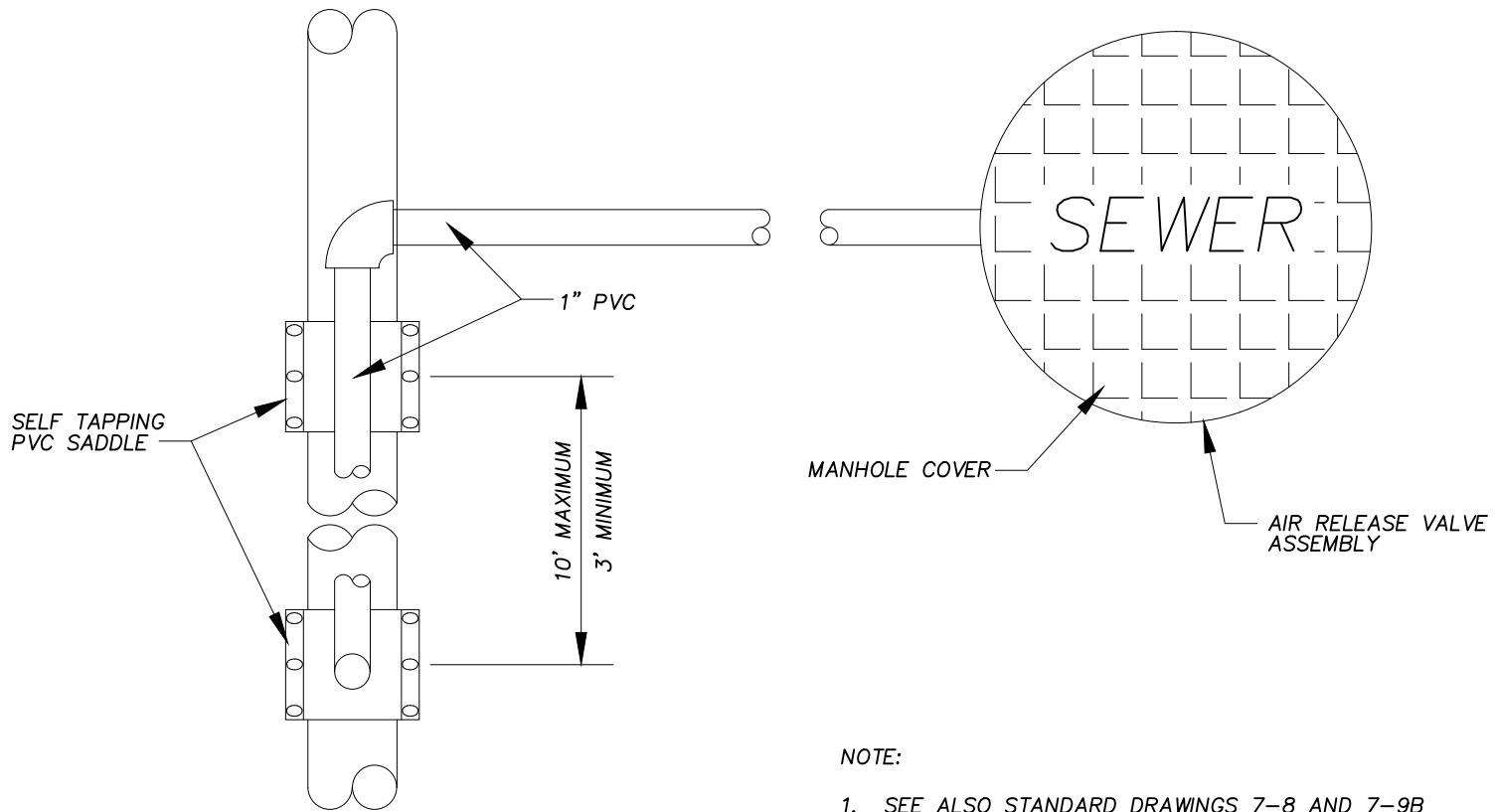


**NOTE:**

1. LOCATE AIR RELEASE ASSEMBLY IN SIDEWALK WHEN POSSIBLE.
2. SEE ALSO STANDARD DRAWINGS 7-9A AND 7-9B
3. AIR RELEASE ASSEMBLY SHALL BE ORENCO MODEL ARA2

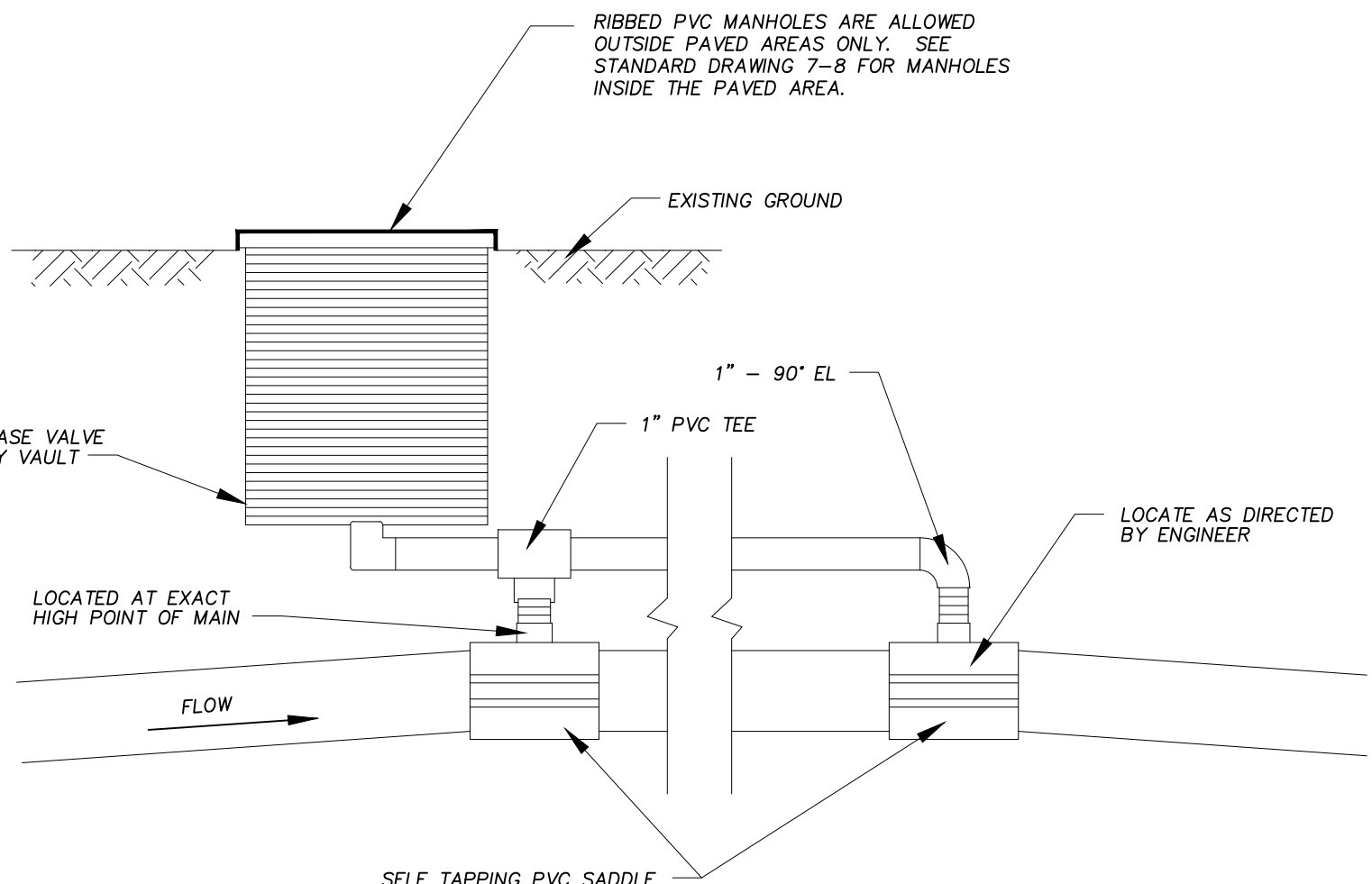
APPROVED BY	REVISED DATE	CITY OF OLYMPIA	STD. PLAN NO.
CITY ENGINEER	2/26/2013	S.T.E.P. SYSTEM AIR RELEASE ASSEMBLY	7-8





NOTE:  
 1. SEE ALSO STANDARD DRAWINGS 7-8 AND 7-9B

APPROVED BY	REVISED DATE	CITY OF OLYMPIA	STD. PLAN NO.
	11/1/96	TYPICAL S.T.E.P. AIR RELEASE MANIFOLD CONNECTION PLAN DETAIL	7-9A
CITY ENGINEER			



RIBBED PVC MANHOLES ARE ALLOWED OUTSIDE PAVED AREAS ONLY. SEE STANDARD DRAWING 7-8 FOR MANHOLES INSIDE THE PAVED AREA.

EXISTING GROUND

AIR RELEASE VALVE ASSEMBLY VAULT

1" - 90° EL

1" PVC TEE

LOCATE AS DIRECTED BY ENGINEER

LOCATED AT EXACT HIGH POINT OF MAIN

FLOW

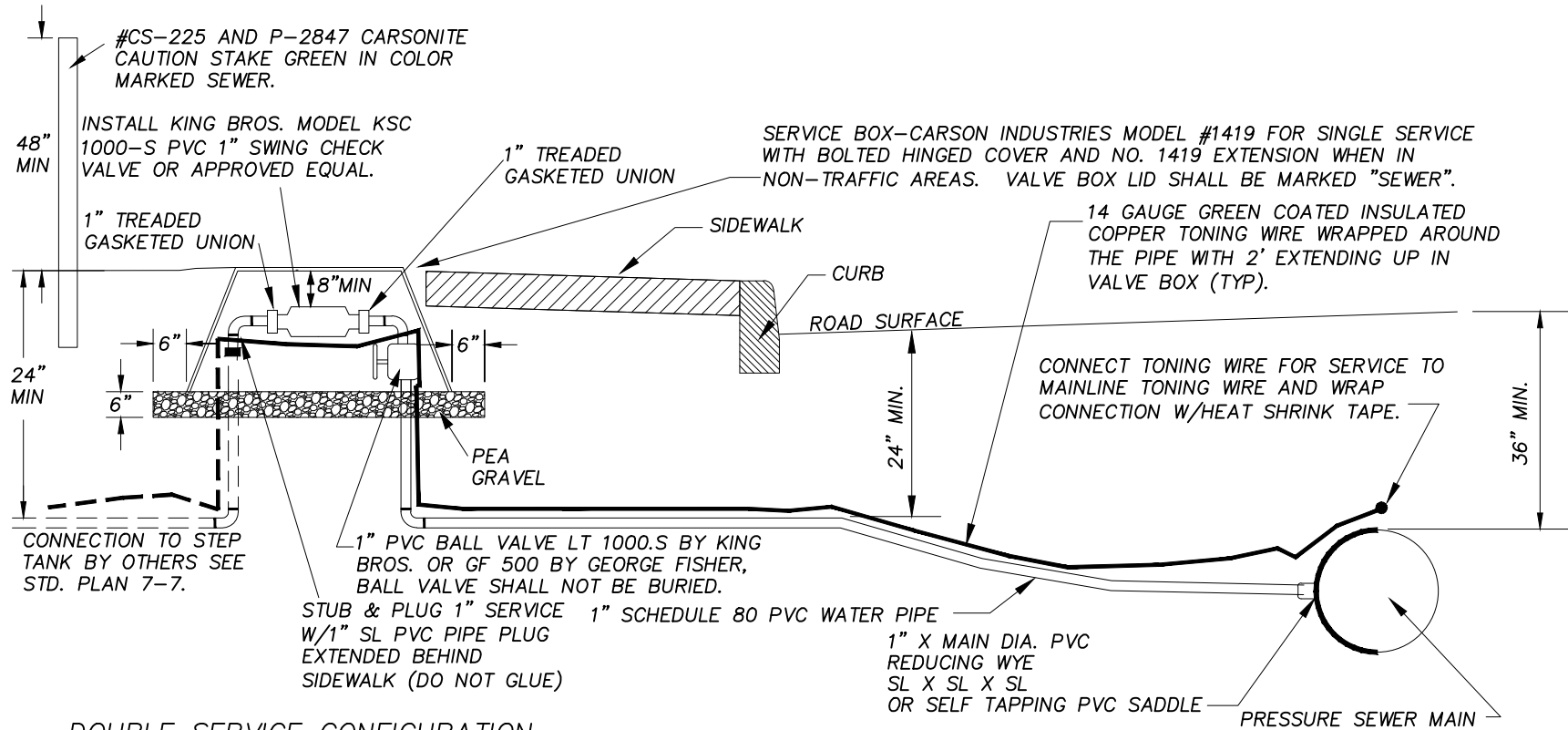
SELF TAPPING PVC SADDLE

PROFILE

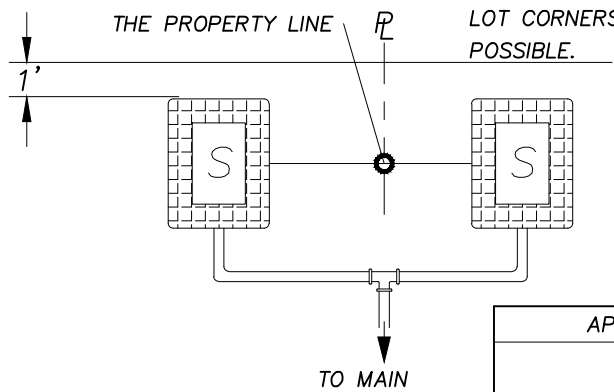
NOTES:

1. SEE ALSO STANDARD DRAWINGS 7-8 AND 7-9A
2. PROVIDE 18" (MIN) CLEARANCE BETWEEN ALL AIR RELEASE PIPING AND MANHOLE WALL.

APPROVED BY	REVISED DATE	CITY OF OLYMPIA	STD. PLAN NO.
	11/1/96	TYPICAL S.T.E.P. AIR RELEASE MANIFOLD CONNECTION SECTION DETAIL	7-9B
CITY ENGINEER			



RIGHT-DOUBLE SERVICE CONFIGURATION  
OF-WAY 4' TOTAL CENTERED ON THE PROPERTY LINE



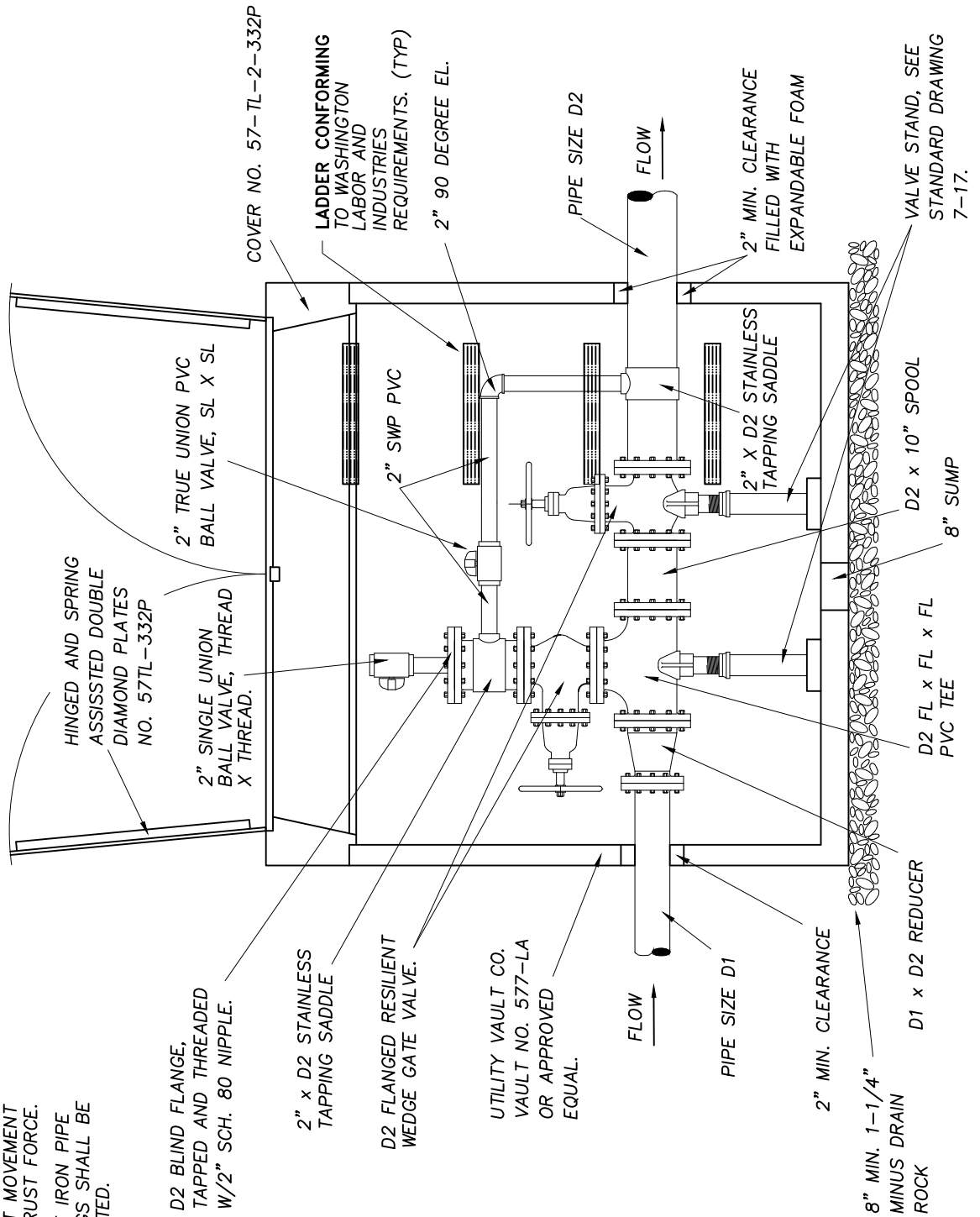
NOTES:

1. IF LIVE TAP IS REQUIRED, THE VALVES AT THE SERVICE BOX MUST BE INSTALLED PRIOR TO THE LIVE TAP.
2. ALL FITTINGS AND PIPE USED SHALL BE SCHEDULE 80.
3. CHECK VALVE AND BALL VALVE MAY BE SCHEDULE 40 THREADED GASKETED UNIONS.

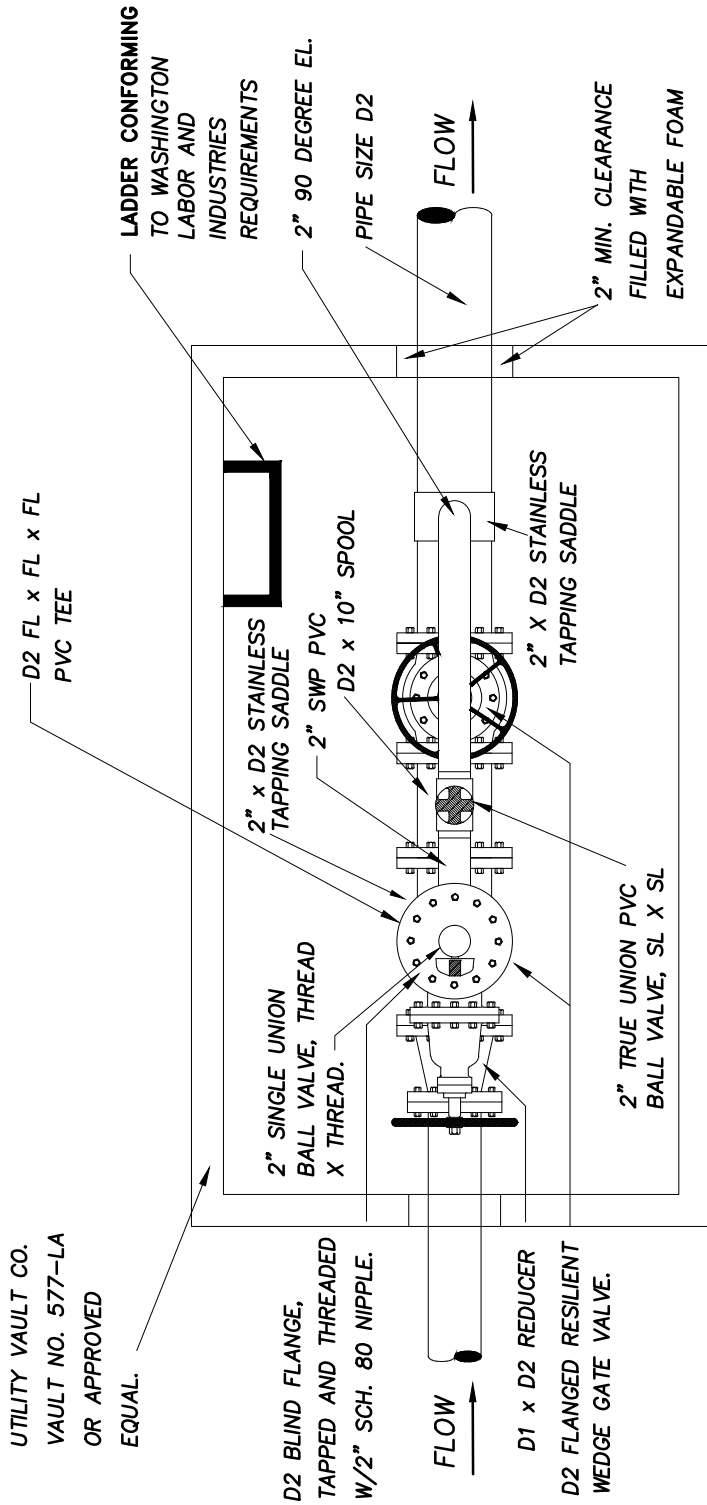
APPROVED BY	REVISED DATE	CITY OF OLYMPIA	STD. PLAN NO.
	2/26/2013	TYPICAL S.T.E.P. SYSTEM SERVICE CONNECTION	7-12
CITY ENGINEER			

NOTES:

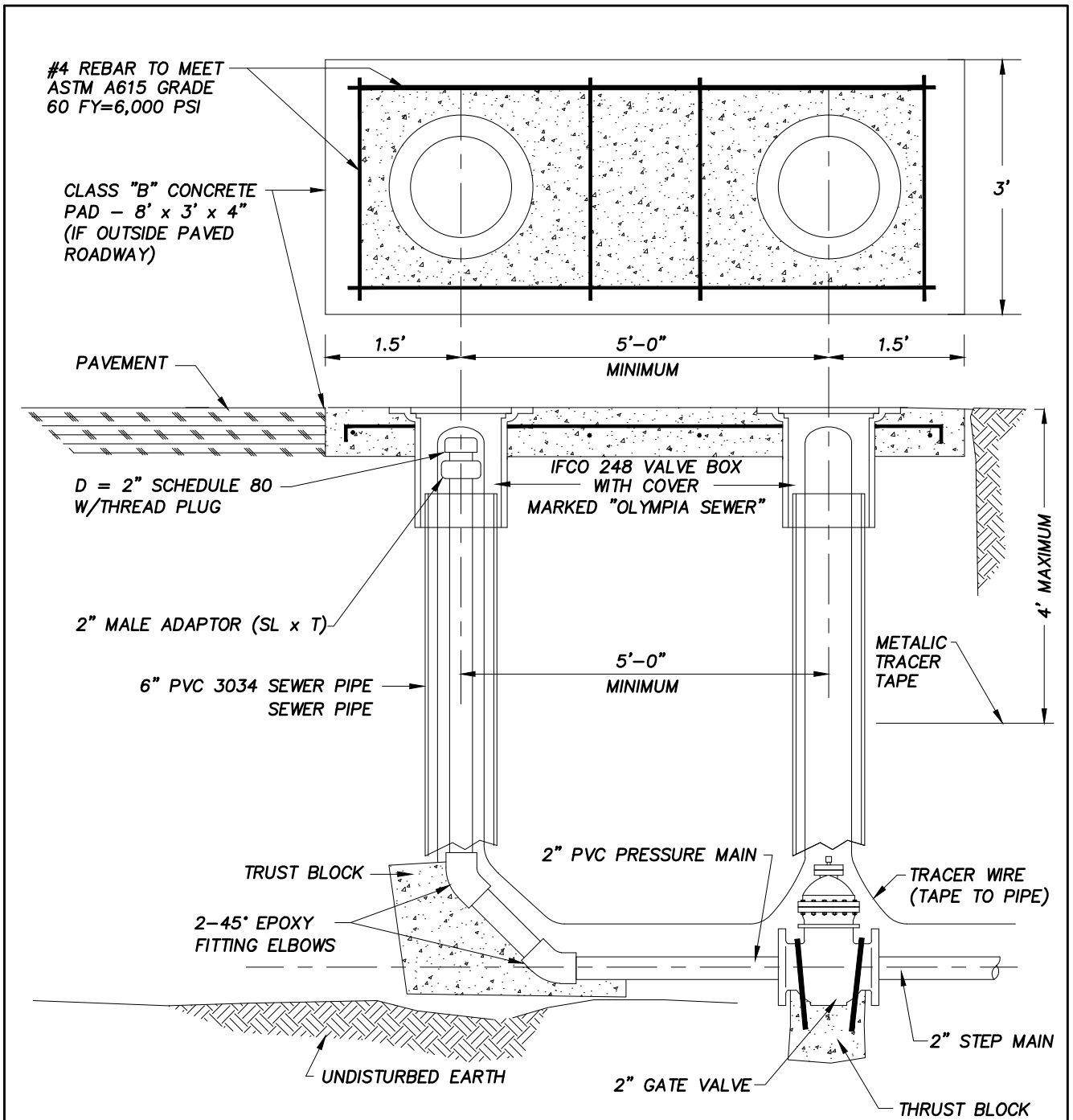
1. THE GATE VALVES SHALL BE RESTRAINED TO VAULT TO PREVENT MOVEMENT DUE TO THRUST FORCE.
2. ALL DUCTILE IRON PIPE AND FITTINGS SHALL BE EPOXY COATED.



APPROVED BY	REVISED DATE	CITY OF OLYMPIA	STD. PLAN NO.
CITY ENGINEER	11/1/96	PIGG PORT CROSS SECTION	7-13



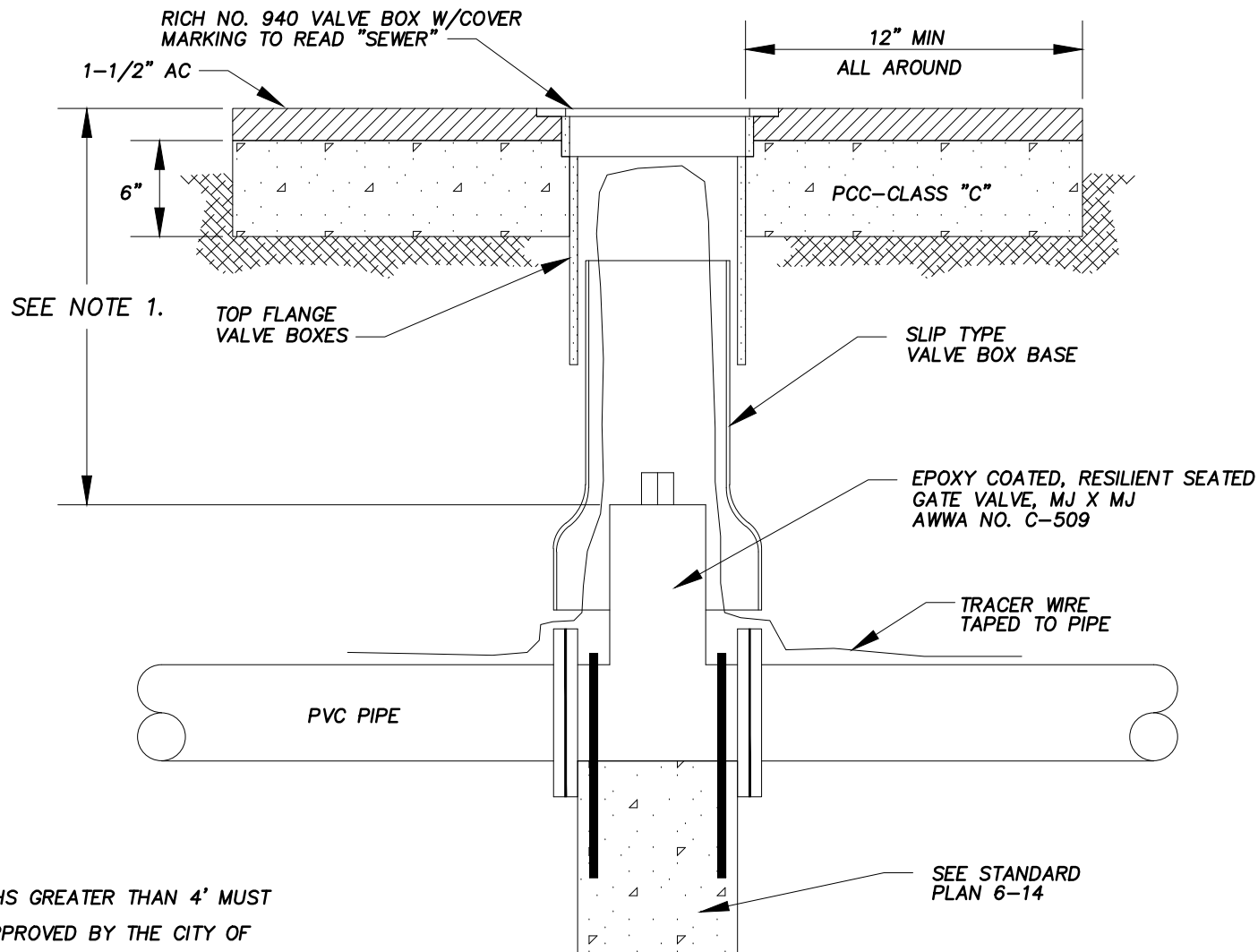
APPROVED BY	REVISED DATE	CITY OF OLYMPIA	STD. PLAN NO.
CITY ENGINEER	11/1/96	PIGG PORT PLAN VIEW	7-13A



**NOTES:**

1. A PIG PORT DETAIL SHALL BE SUBMITTED TO THE CITY FOR APPROVAL BY THE DIRECTOR OF PUBLIC WORKS WHEN USED WITH STEP MAINS LARGER THAN 2".
2. FOR STEP MAINS LARGER THAN 2", INSTALL BLIND FLANGE WITH A 2" TAP AND PLUG.

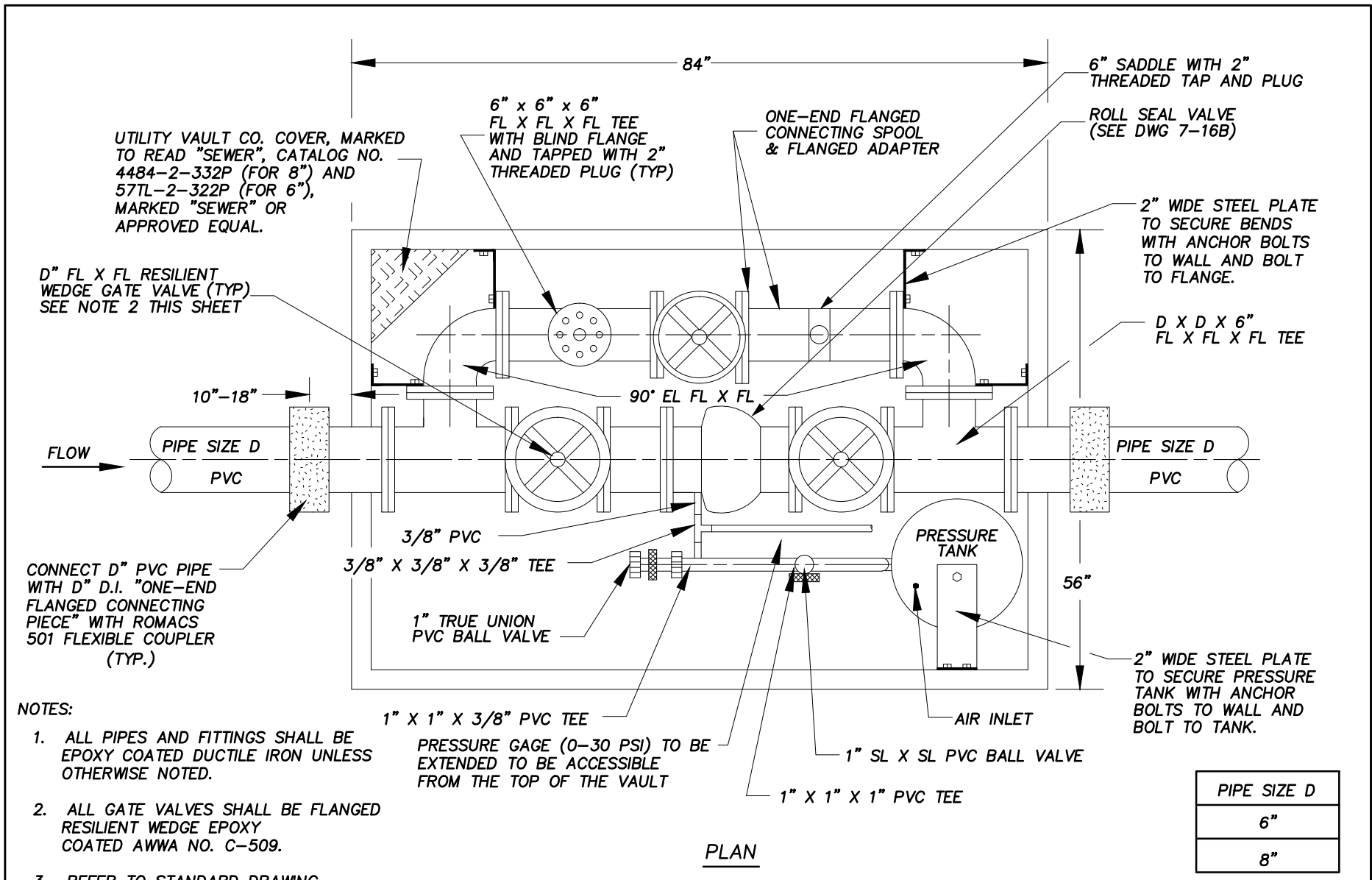
APPROVED BY	REVISED DATE	<b>CITY OF OLYMPIA</b> TERMINUS PIGG LAUNCH PORT	STD. PLAN NO.
	11/1/96		7-14
CITY ENGINEER			



**NOTE:**

1. DEPTHS GREATER THAN 4' MUST BE APPROVED BY THE CITY OF OLYMPIA PUBLIC WORKS DIRECTOR

APPROVED BY	REVISED DATE	CITY OF OLYMPIA	STD. PLAN NO.
	11/1/96	TYPICAL S.T.E.P. MAIN/FORCE MAIN GATE VALVE 2" OR GREATER	7-15
CITY ENGINEER			



UTILITY VAULT CO. COVER, MARKED TO READ "SEWER", CATALOG NO. 4484-2-332P (FOR 8") AND 57TL-2-322P (FOR 6"), MARKED "SEWER" OR APPROVED EQUAL.

D" FL X FL RESILIENT WEDGE GATE VALVE (TYP) SEE NOTE 2 THIS SHEET

CONNECT D" PVC PIPE WITH D" D.I. "ONE-END FLANGED CONNECTING PIECE" WITH ROMACS 501 FLEXIBLE COUPLER (TYP.)

**NOTES:**

1. ALL PIPES AND FITTINGS SHALL BE EPOXY COATED DUCTILE IRON UNLESS OTHERWISE NOTED.
2. ALL GATE VALVES SHALL BE FLANGED RESILIENT WEDGE EPOXY COATED AWWA NO. C-509.
3. REFER TO STANDARD DRAWING 7-16B FOR SECTION VIEW.
4. 18" MIN. WORKING CLEARANCE AROUND ALL PIPING.

PRESSURE GAGE (0-30 PSI) TO BE EXTENDED TO BE ACCESSIBLE FROM THE TOP OF THE VAULT

**PLAN**

PIPE SIZE D
6"
8"

APPROVED BY	REVISED DATE	CITY OF OLYMPIA 6" & 8" PRESSURE SUSTAINING DEVICE PLAN VIEW	STD. PLAN NO.
CITY ENGINEER	11/1/96		7-16A



UTILITY VAULT CO.  
VAULT NO. 4484-LA  
(FOR 6") AND 4484-LA  
(FOR 8") W/ BOTTOM  
OR APPROVED EQUAL

DUCTILE IRON FLANGE  
ADAPTER TO 4" LONG  
ONE-END FLANGED  
CONNECTING SPOOL

ROLL SEAL VALVE 06 AND 08  
-SS-NR65-L-15 316 STAINLESS  
STEEL BODY AND AN ELASTOMETRIC  
LINER OR CONTROL ELEMENT

PRESSURE GAGE (0-30 PSI)  
EXTENDED TO BE VISIBLE  
AND ACCESSIBLE FROM THE  
TOP OF THE VAULT

1" PVC 90° EL

PIPE SIZE D
6"
8"

FLOW

PIPE SIZE D  
PVC

PIPE SIZE D  
PVC

D X D X 6"  
FL X FL X FL  
DUCTILE IRON TEE

6" MIN. ALL AROUND  
PERIMETER OF VAULT

VALVE STAND-SEE  
STANDARD DRAWING 7-17

1" PVC SWP

12" CLEAN PEA GRAVEL  
FOR DRAIN

PROVIDE MIN. 6" OPENING  
FOR DRAIN

AQUA-AIR MODEL NO. V-45B  
TANK, SUITABLE FOR DIRICT  
BURY OR APPROVED EQUAL

NOTE:

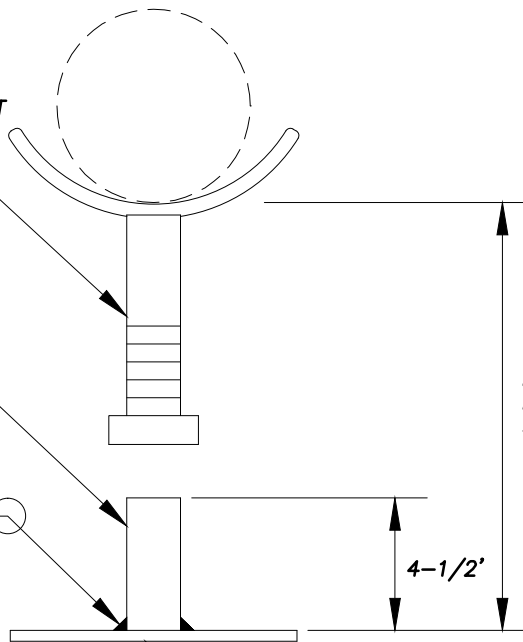
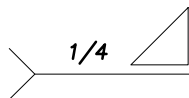
1. ALL PIPES AND FITTINGS SHALL BE EPOXY COATED DUCTILE IRON UNLESS OTHERWISE NOTED.
2. ALL GATE VALVES SHALL BE FLANGED RESILIENT WEDGE EPOXY COATED, AWWA NO. C-509

SECTION

APPROVED BY	REVISED DATE	CITY OF OLYMPIA	STD. PLAN NO.
	11/1/96	6" & 8" PRESSURE SUSTAINING DEVICE	7-16B
CITY ENGINEER		SECTION VIEW	

ADJUSTABLE PIPE SADDLE SUPPORT  
SUPPORT. GRINNELL FIGURE NO.  
264 OR APPROVED EQUAL

3" DIA. STEEL PIPE



HEIGHT ADJUSTABLE  
BETWEEN 8-1/4"  
AND 13-1/4"

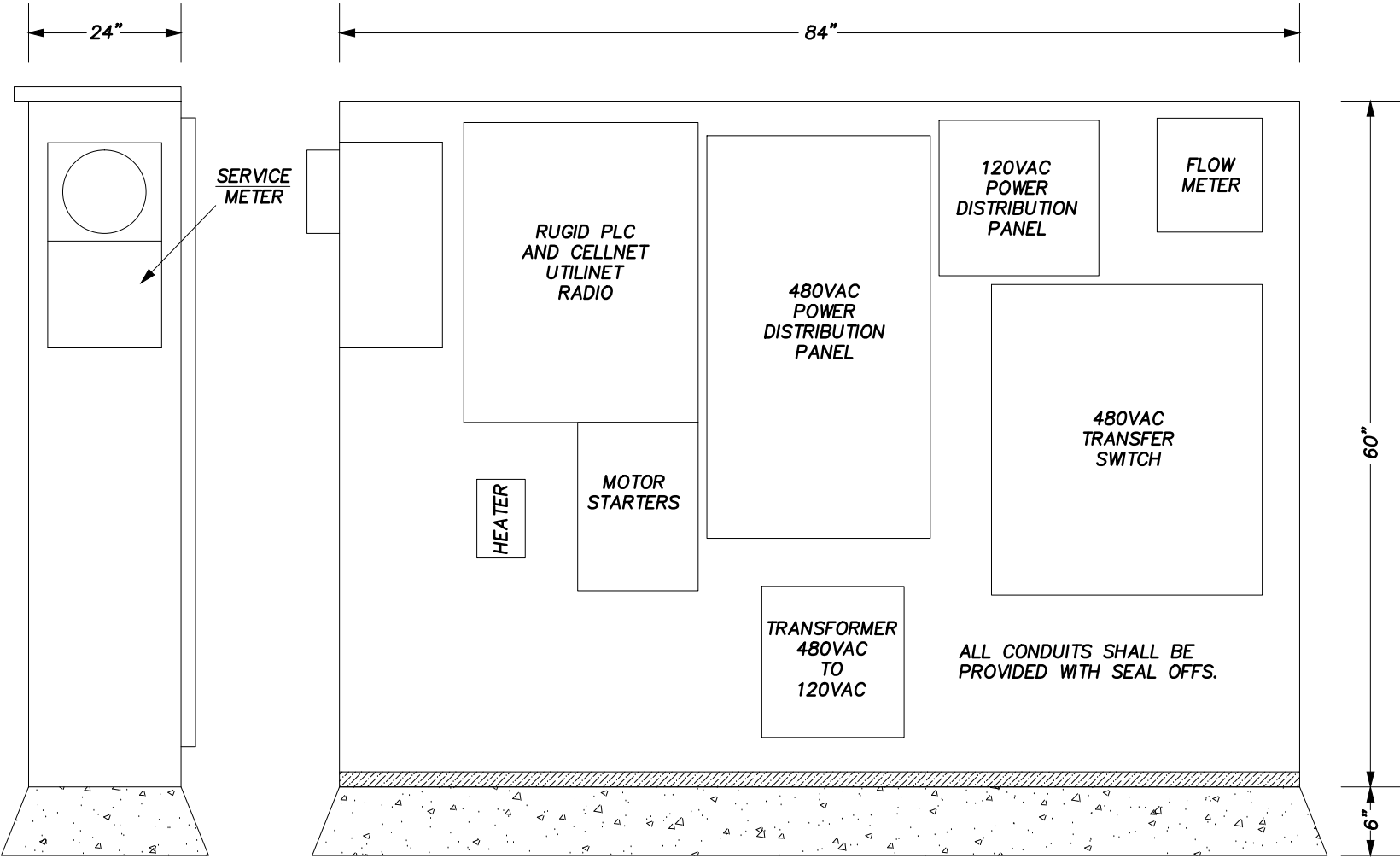
12" X 12" X 1/2" STEEL PLATE

NOTE:

1. AFTER FABRICATION, THE VALVE STAND BASE SHALL BE CLEANED, PRIMERED WITH FULLER O'BRIEN 621-04 BLOX-RUST ALKYD METAL PRIMER OR APPROVED EQUAL AND THEN PAINTED WITH FULLER O'BRIEN 612-XX HEAVY DUTY ALKYD ENAMEL OR APPROVED EQUAL.

APPROVED BY	REVISED DATE	CITY OF OLYMPIA	STD. PLAN NO.
	11/1/96	TYPICAL VALVE STAND	7-17
CITY ENGINEER			

# GENERAL CABINET LAYOUT



LEFT SIDE VIEW

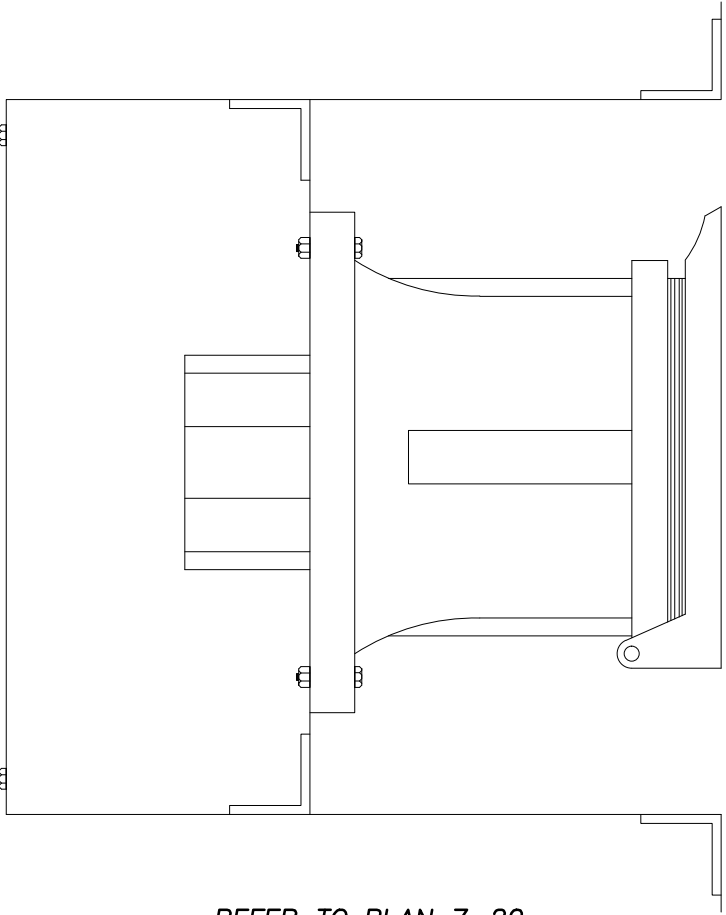
FRONT VIEW

**NOTE:**

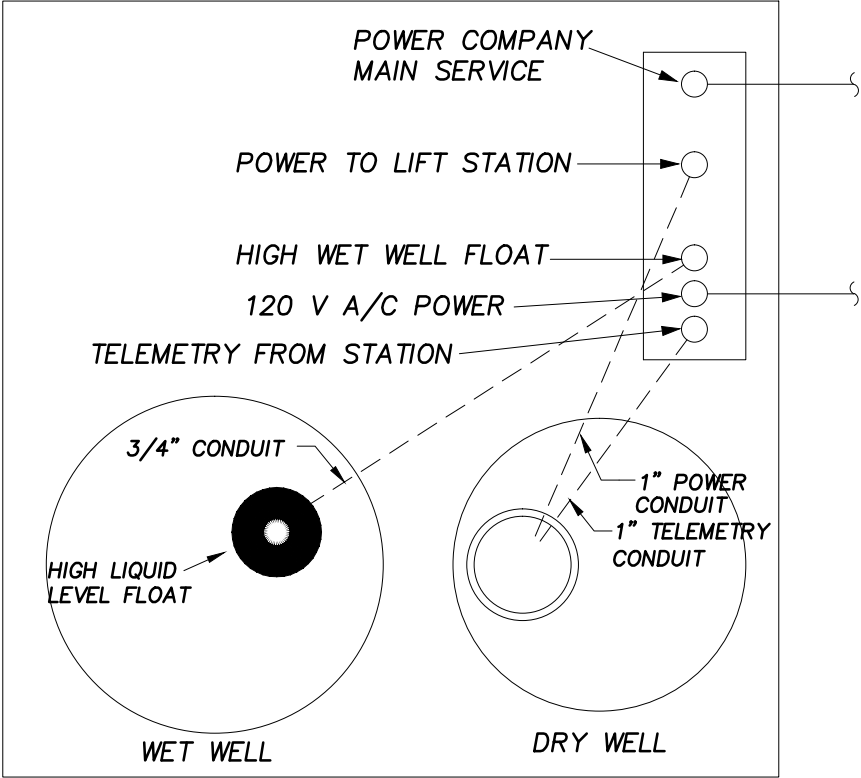
- SEE STANDARD DRAWING 7-18B FOR TOP SLAB PLAN

APPROVED BY	REVISED DATE	<b>CITY OF OLYMPIA</b>	STD. PLAN NO.
CITY ENGINEER	6/11/08	STANDARD LIFT STATION CONTROL LAYOUT	7-18A

NOTE: OTHER LAYOUTS MAY BE APPROVED TO MEET SPECIFIC NEEDS PROVIDING ALL ELEMENTS ARE PROVIDED

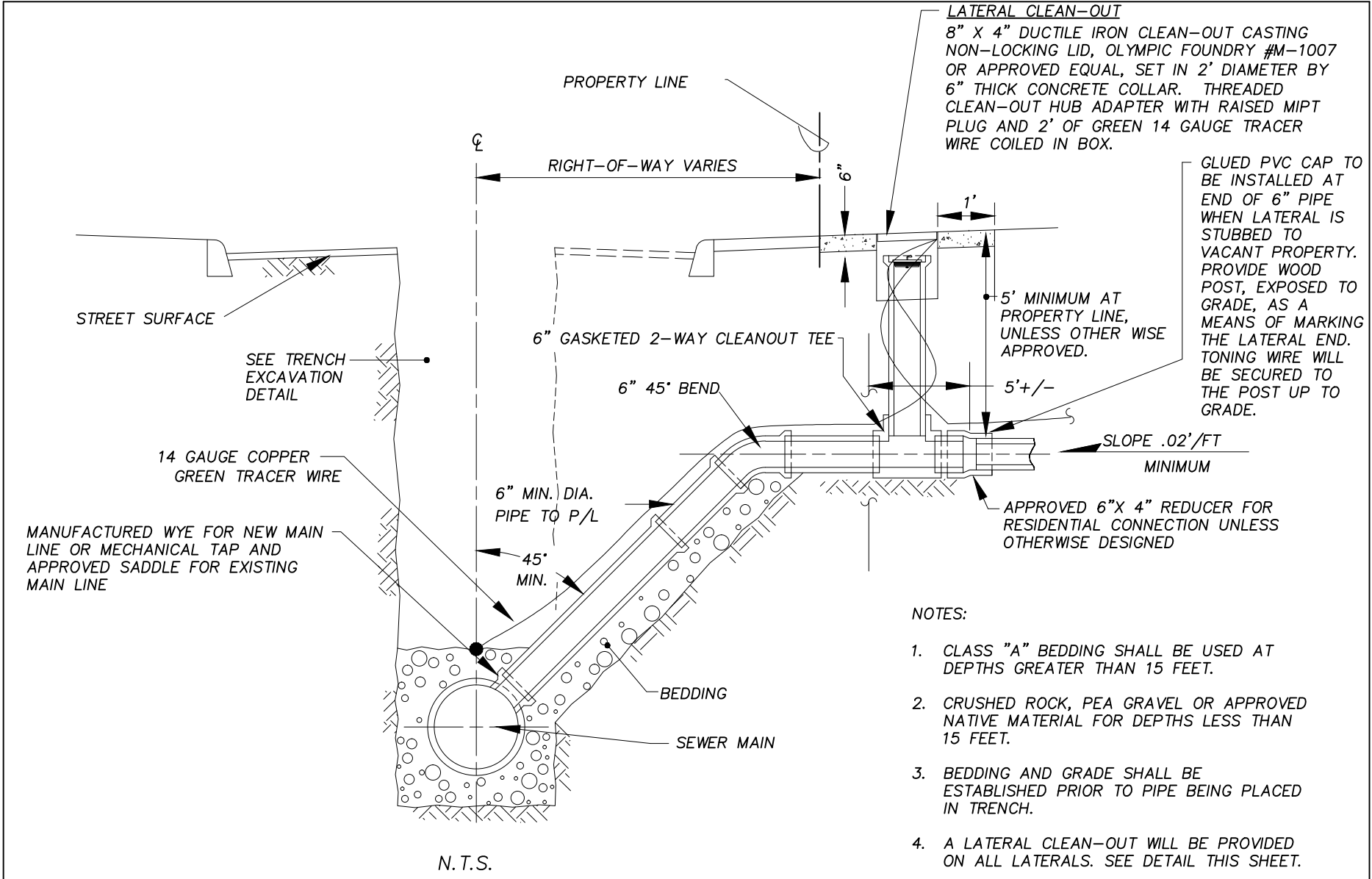


REFER TO PLAN 7-20  
GENERAL RECEPTACLE



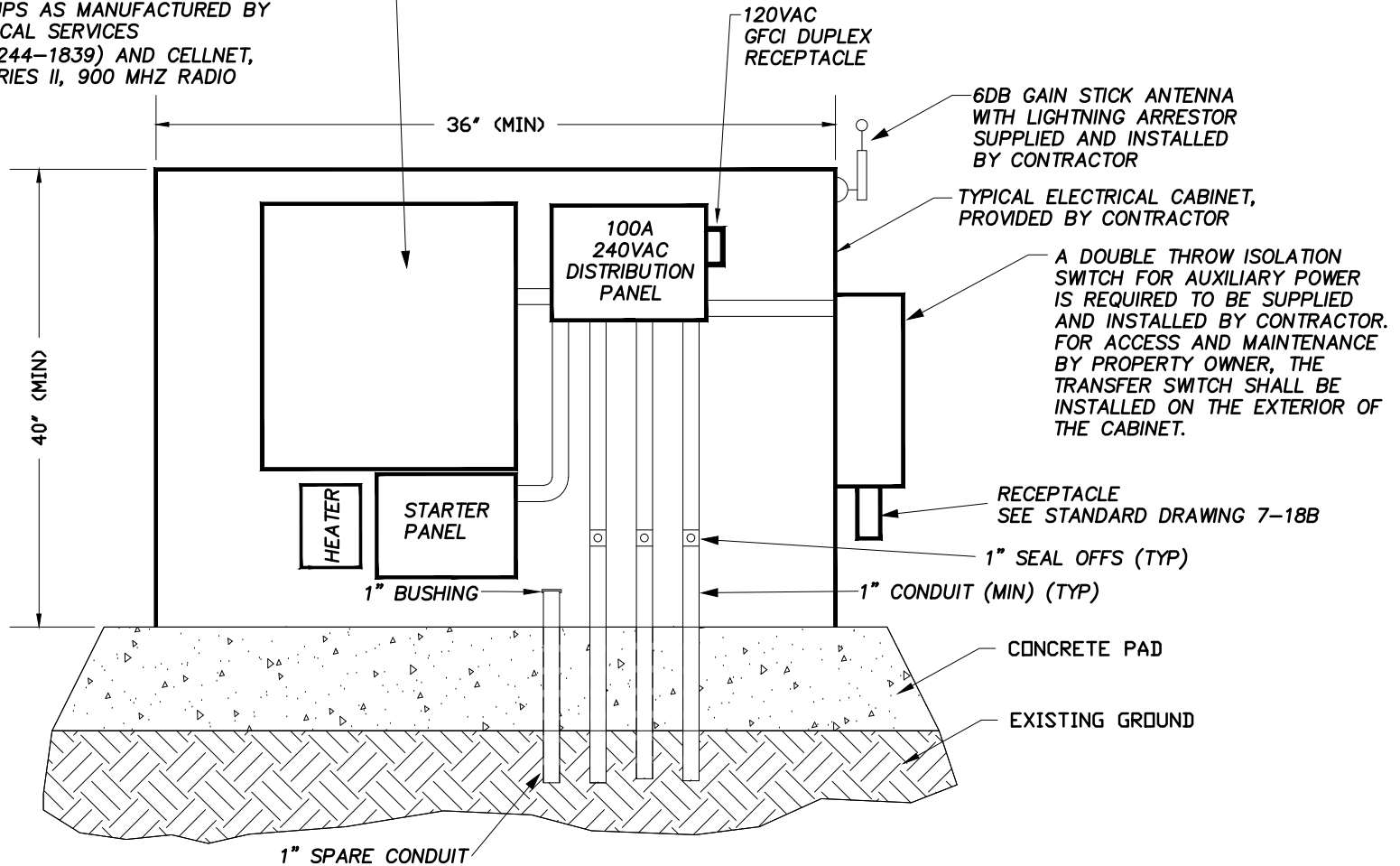
TOP SLAB PLAN  
SEE PLAN 7-18A FOR CONDUIT SIZES

APPROVED BY	REVISED DATE	<b>CITY OF OLYMPIA</b>	STD. PLAN NO.
	6/11/08	STANDARD LIFT STATION LAYOUT	7-18B
CITY ENGINEER			



APPROVED BY	REVISED DATE	CITY OF OLYMPIA SANITARY SEWER LATERAL SERVICE CONNECTION	STD. PLAN NO. 7-19
CITY ENGINEER	2/26/2013		

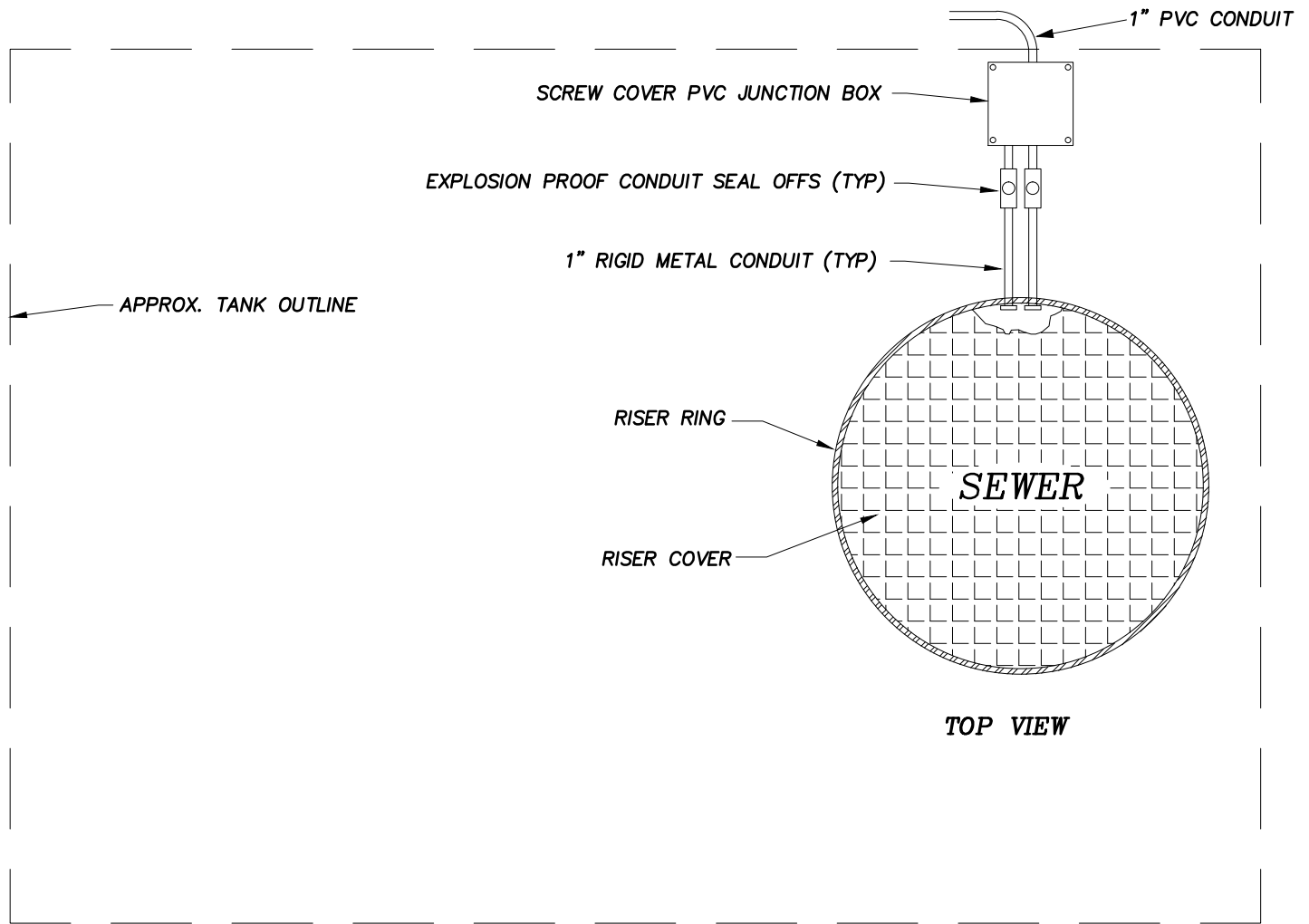
RUGID MODEL RUG9 PROGRAMMABLE LOGIC CONTROLLER (PLC) TYPE WITH SCADAMAX POWERFLY DC-UPS AS MANUFACTURED BY CALVERT TECHNICAL SERVICES (PHONE: (509) 244-1839) AND CELLNET, UTILINET IWR SERIES II, 900 MHZ RADIO



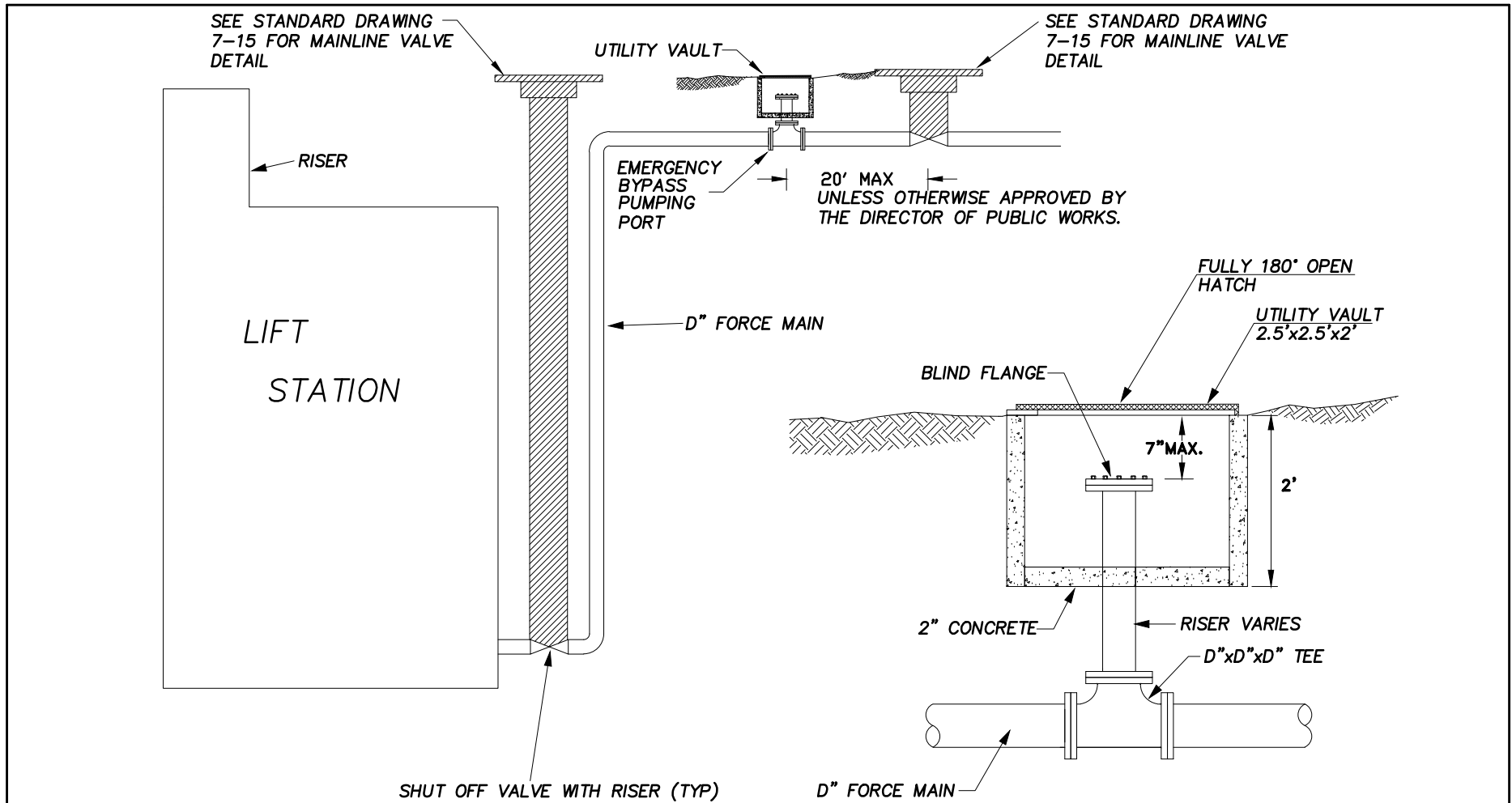
**NOTES:**

1. THE CONTRACTOR SHALL CONTACT THE PUMP STATIONS SUPERVISOR, CITY OF OLYMPIA DEPARTMENT OF PUBLIC WORKS, FOR COMPLETE ORDERING SPECIFICATIONS FOR PUMP CONTROL SYSTEM AND TELEMETRY.

APPROVED BY	REVISED DATE	<b>CITY OF OLYMPIA</b> COMMERCIAL / MULTI-FAMILY STEP SYSTEM ELECTRICAL CABINET LAYOUT	STD. PLAN NO.
CITY ENGINEER	6/10/08		7-20

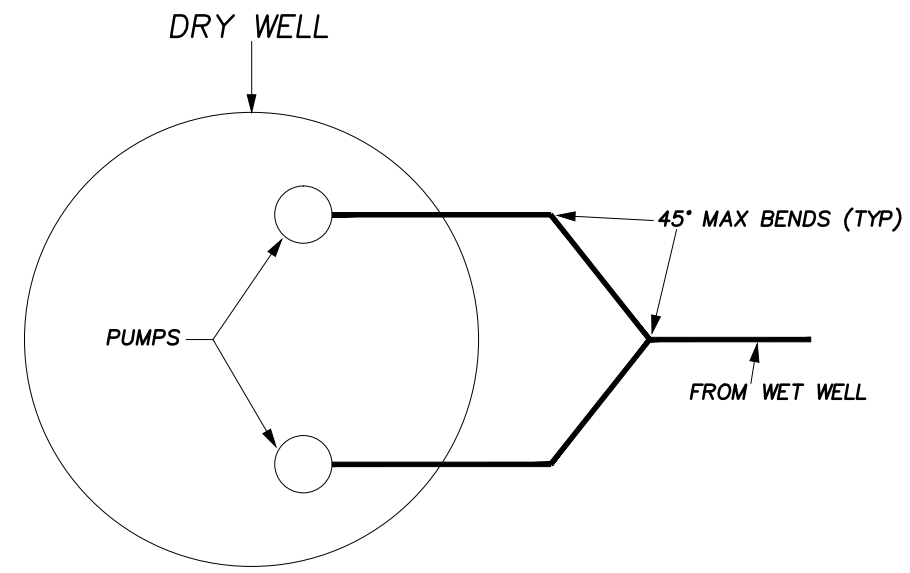


APPROVED BY	REVISED DATE	CITY OF OLYMPIA TYPICAL RISER CONDUIT PLAN FOR COMMERCIAL/MUTI-FAMILY STEP SYSTEM	STD. PLAN NO.
	11/1/96		7-21
CITY ENGINEER			

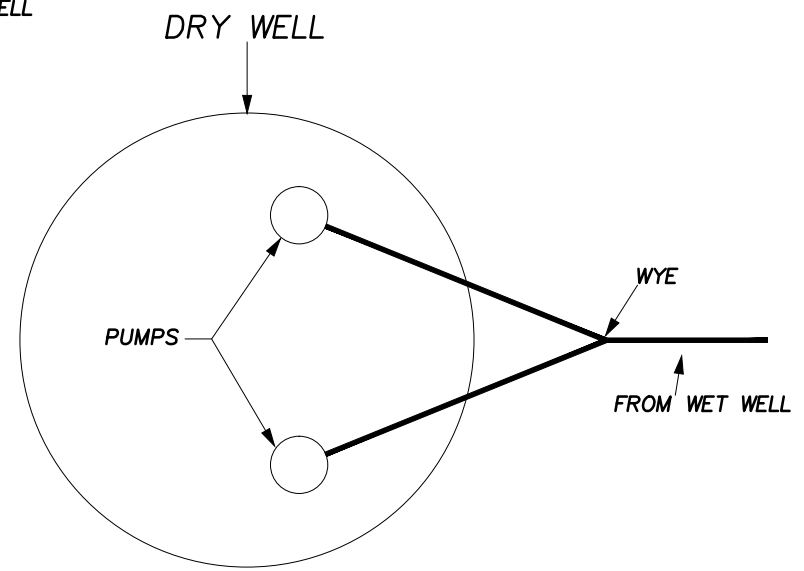


APPROVED BY	REVISED DATE	CITY OF OLYMPIA	STD. PLAN NO.
	6/25/08		
CITY ENGINEER		LIFT STATION EMERGENCY BYPASS PUMPING PORT	7-22



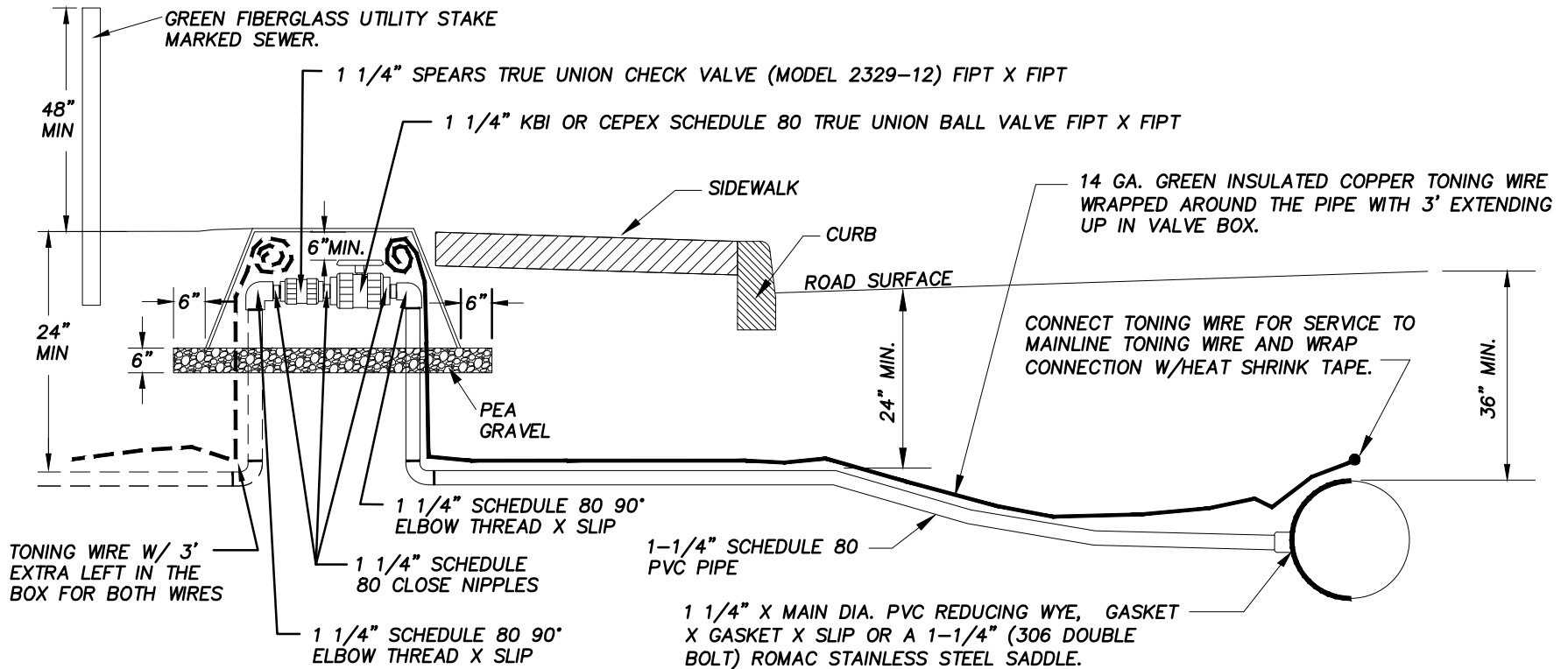


ALTERNATIVE "B"

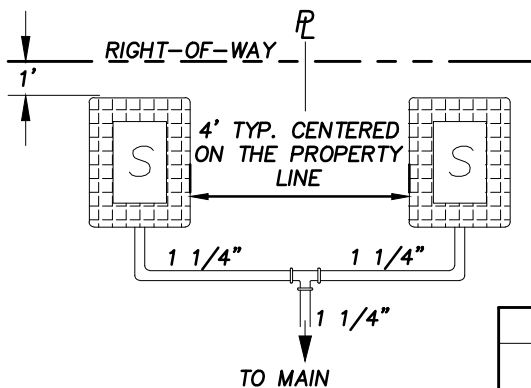


ALTERNATIVE "A"

APPROVED BY	REVISED DATE	CITY OF OLYMPIA	STD. PLAN NO.
	11/1/96	LIFT STATION INLET LAYOUT	7-23
CITY ENGINEER			



**DOUBLE SERVICE CONFIGURATION**



**NOTES:**

1. FILL SERVICE BOX WITH FIBERGLASS INSULATION AT TIME OF ON-SITE CONNECTION TO THE STUB.
2. AFTER THE HYDRO-STATIC TESTS HAVE BEEN APPROVED BY THE CITY INSPECTOR THE CHECK VALVE SHALL BE INSTALLED.
3. FUTURE LOT CONNECTIONS SHALL BE MADE AT THE 90° ELBOW WITH THE TONING WIRE INCLUDED IN THE INSTALLATION.
4. ALL FITTINGS AND PIPE SHALL BE SCHEDULE 80.
5. THE SERVICE BOX SHALL BE CARSON INDUSTRIES/MIDSTATES PLASTICS MODEL NO. 1324, (GREEN CARSON FOR EARTH BURY) AND (1324 MIDSTATES W/DUCTILE IRON TRAFFIC RATED LID),

APPROVED BY	REVISED DATE	CITY OF OLYMPIA	STD. PLAN NO.
CITY ENGINEER	7/29/08		
		TYPICAL GRINDER SYSTEM SERVICE CONNECTION	7-24