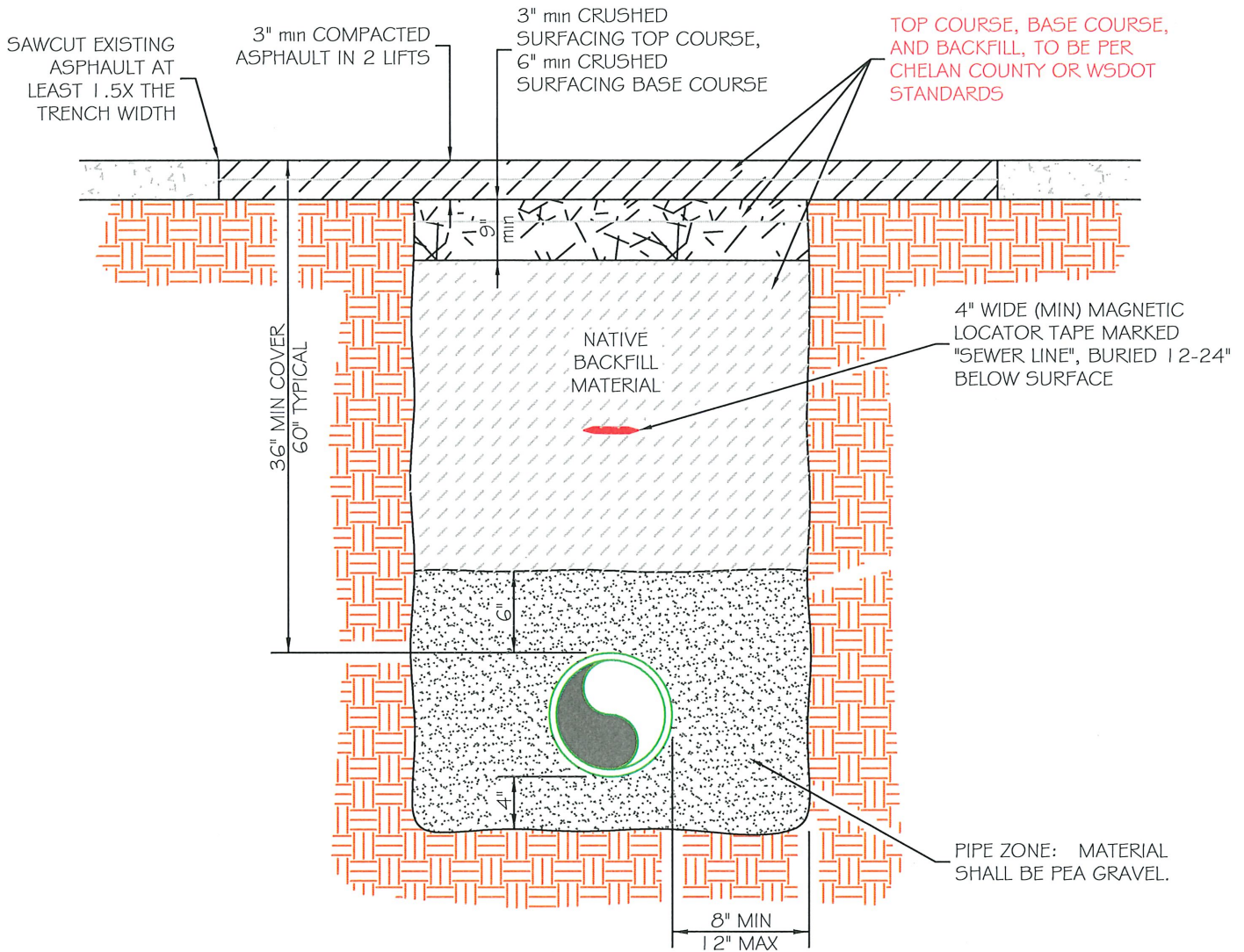


CALL 48 HOURS  
BEFORE YOU DIG:

Northwest Utility Notification Center  
1-800-553-4344



PROFILE

NOTES:

MATERIAL SUBSTITUTIONS OR DETERMINATION OF EQUAL ARE AT THE SOLE DISCRETION OF LAKE CHELAN RECLAMATION DISTRICT.

BACKFILL, SURFACE RESTORATION, AND MINIMUM PIPE DEPTH SHALL CONFORM TO THE REQUIREMENTS OF THE AGENCY HAVING JURISDICTION OVER THE ROAD RIGHT-OF-WAY.

TITLE

TYPICAL TRENCH  
SECTION

STANDARD SEWER DETAIL

SHEET

1 OF SET

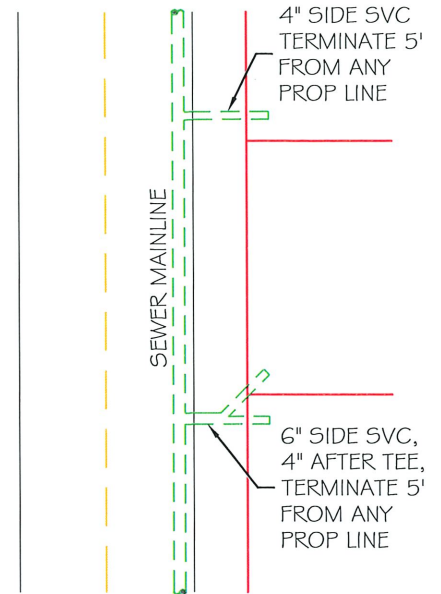
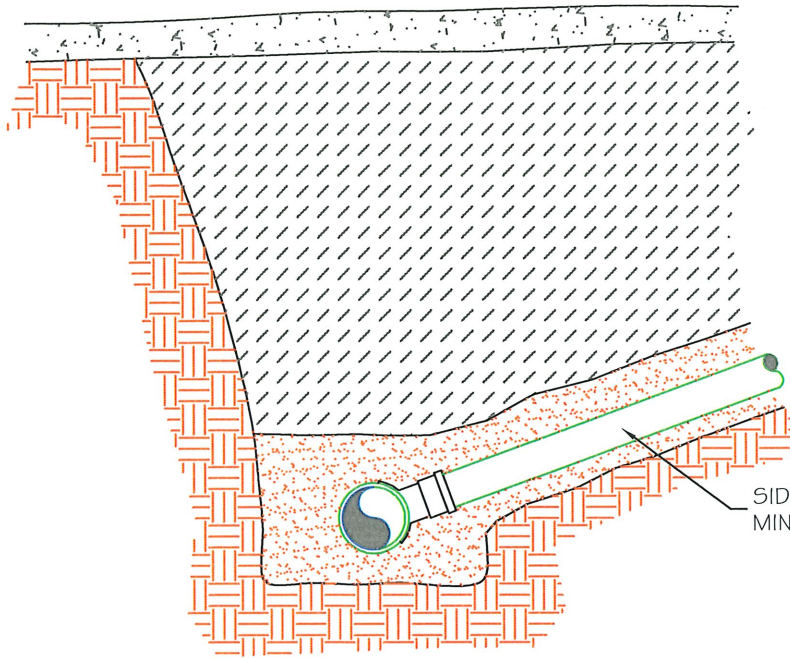
DWG SCALE

NO SCALE



DRAWN BY RIA

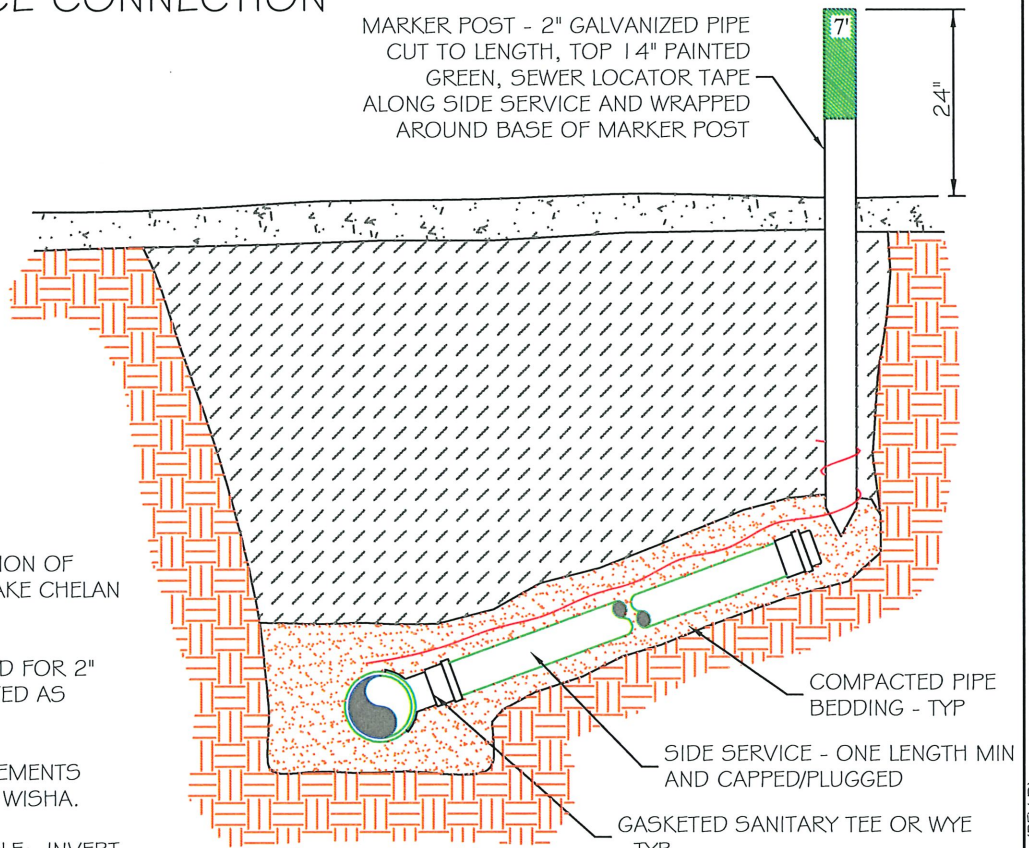
09.17.20 DomesticDetailstypical trench section.dwg (REV D)



PLAN

## PROFILE - SERVICE CONNECTION

MARKER POST - 2" GALVANIZED PIPE CUT TO LENGTH, TOP 1 4" PAINTED GREEN, SEWER LOCATOR TAPE ALONG SIDE SERVICE AND WRAPPED AROUND BASE OF MARKER POST



### NOTES:

MATERIAL SUBSTITUTIONS OR DETERMINATION OF EQUAL ARE AT THE SOLE DISCRETION OF LAKE CHELAN RECLAMATION DISTRICT.

6' METAL FENCE POST MAY BE SUBSTITUTED FOR 2" GALVANIZED PIPE MARKER POST AND PAINTED AS INDICATED.

DITCH SIDE SLOPES AND SHORING REQUIREMENTS SHALL BE IN COMPLIANCE WITH OSHA AND WISHA.

WHERE SIDE SEWER CONNECTS TO MANHOLE: INVERT OF SIDE SEWER SHALL BE EQUAL TO OR ABOVE MAIN SEWER CROWN, BUT NOT TO EXCEED 18" ABOVE INVERT OF MAIN SEWER.

UNLESS OTHERWISE INDICATED ON PLAN, SIDE SEWER SHALL BE MIN. OF 6' DEEP AT PROPERTY LINE, OR 5' LOWER THAN THE LOWEST HOUSE ELEVATION, WHICHEVER IS LOWER.

BACKFILL, SURFACE RESTORATION, AND MINIMUM PIPE DEPTH SHALL CONFORM TO THE REQUIREMENTS OF THE AGENCY HAVING JURISDICTION OVER THE ROAD RIGHT-OF-WAY.

## PROFILE - SERVICE STUBOUT

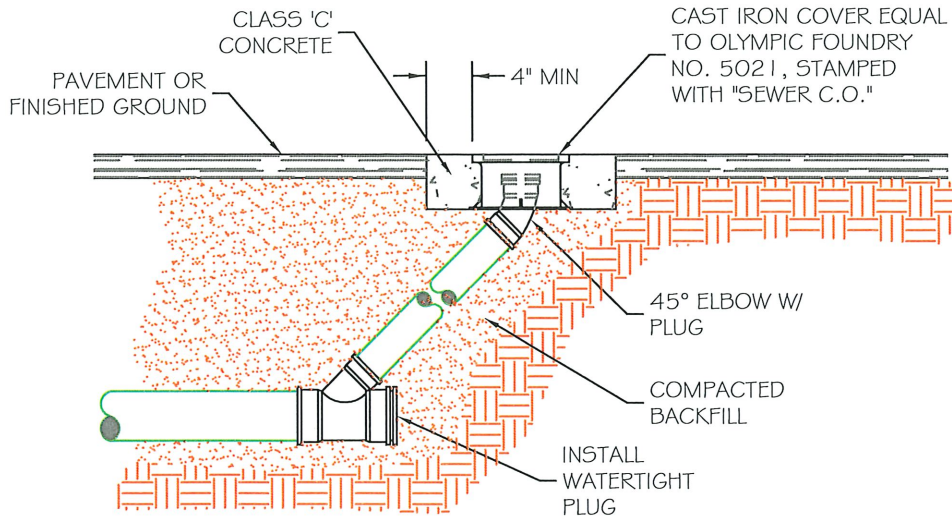
TITLE	
SIDE SEWERS	
STANDARD SEWER DETAIL	
SHEET	DWG SCALE
2 OF SET	NO SCALE



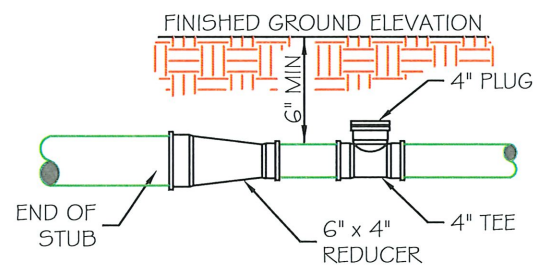
DRAWN BY RIA

09.17.20 13091720 Lake Chelan Reclamation District sewers.dwg (REV D)





## CLEANOUT



## TESTING TEE

NOTES:  
MATERIAL SUBSTITUTIONS OR DETERMINATION OF EQUAL ARE AT  
THE SOLE DISCRETION OF LAKE CHELAN RECLAMATION DISTRICT.

TITLE

CLEANOUT AND  
TESTING TEE

STANDARD SEWER DETAIL

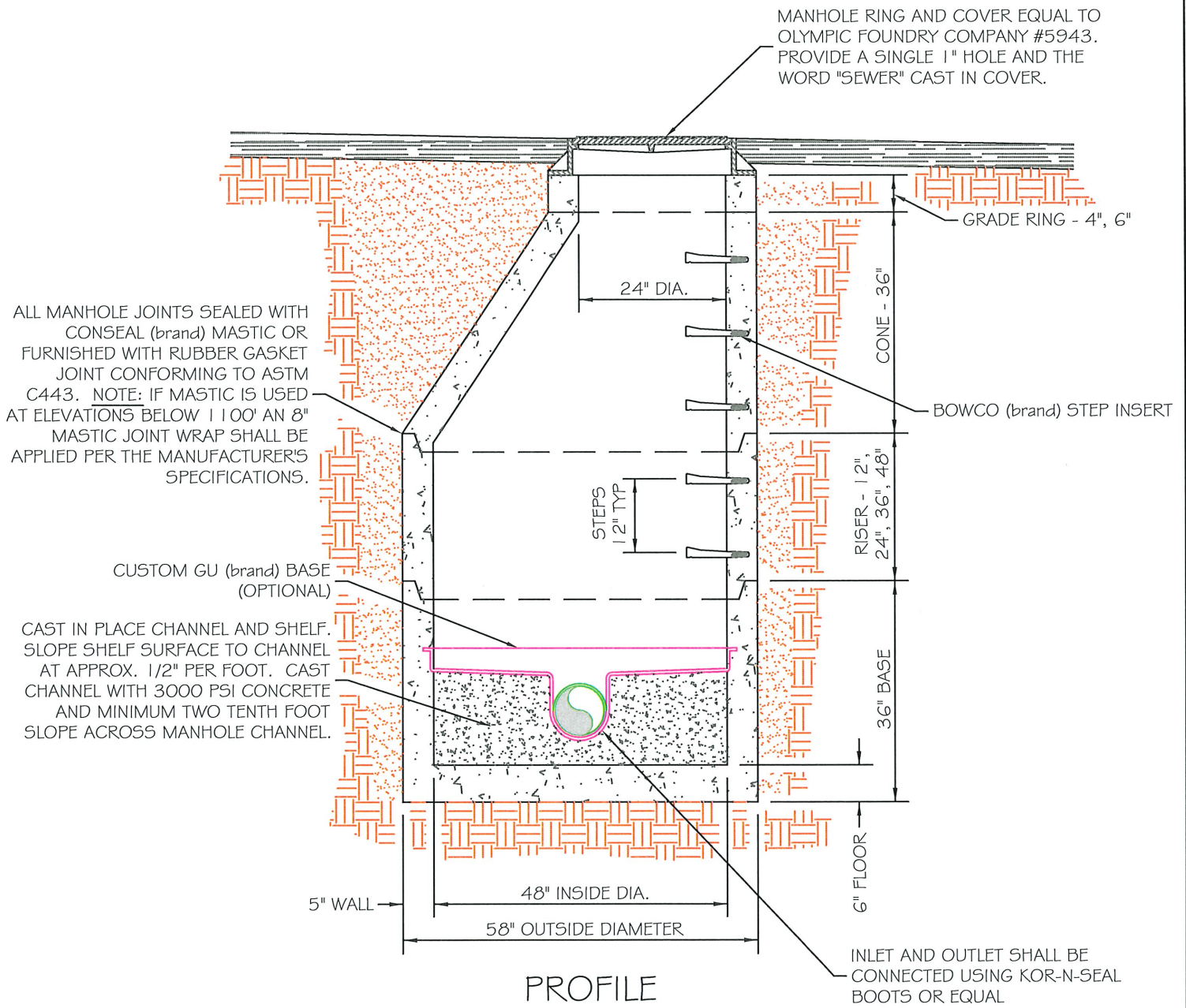
SHEET  
3 OF SET

DWG SCALE  
NO SCALE



DRAWN BY RIA

09.17.20 \SewerDetails\cleanout and testing tee.dwg (REV B)



**NOTE:**

MATERIAL SUBSTITUTIONS OR DETERMINATION OF EQUAL ARE AT THE SOLE DISCRETION OF LAKE CHELAN RECLAMATION DISTRICT.

TYPE I MANHOLE SUPPLIED BY H2 PRE-CAST INC. OR EQUAL.

MANHOLE ASSEMBLY MUST CONFORM WITH WSDOT/APWA STANDARD SPECIFICATIONS.

BACKFILL AND SURFACE RESTORATION SHALL CONFORM TO THE REQUIREMENTS OF THE AGENCY HAVING JURISDICTION OVER THE ROAD RIGHT-OF-WAY.

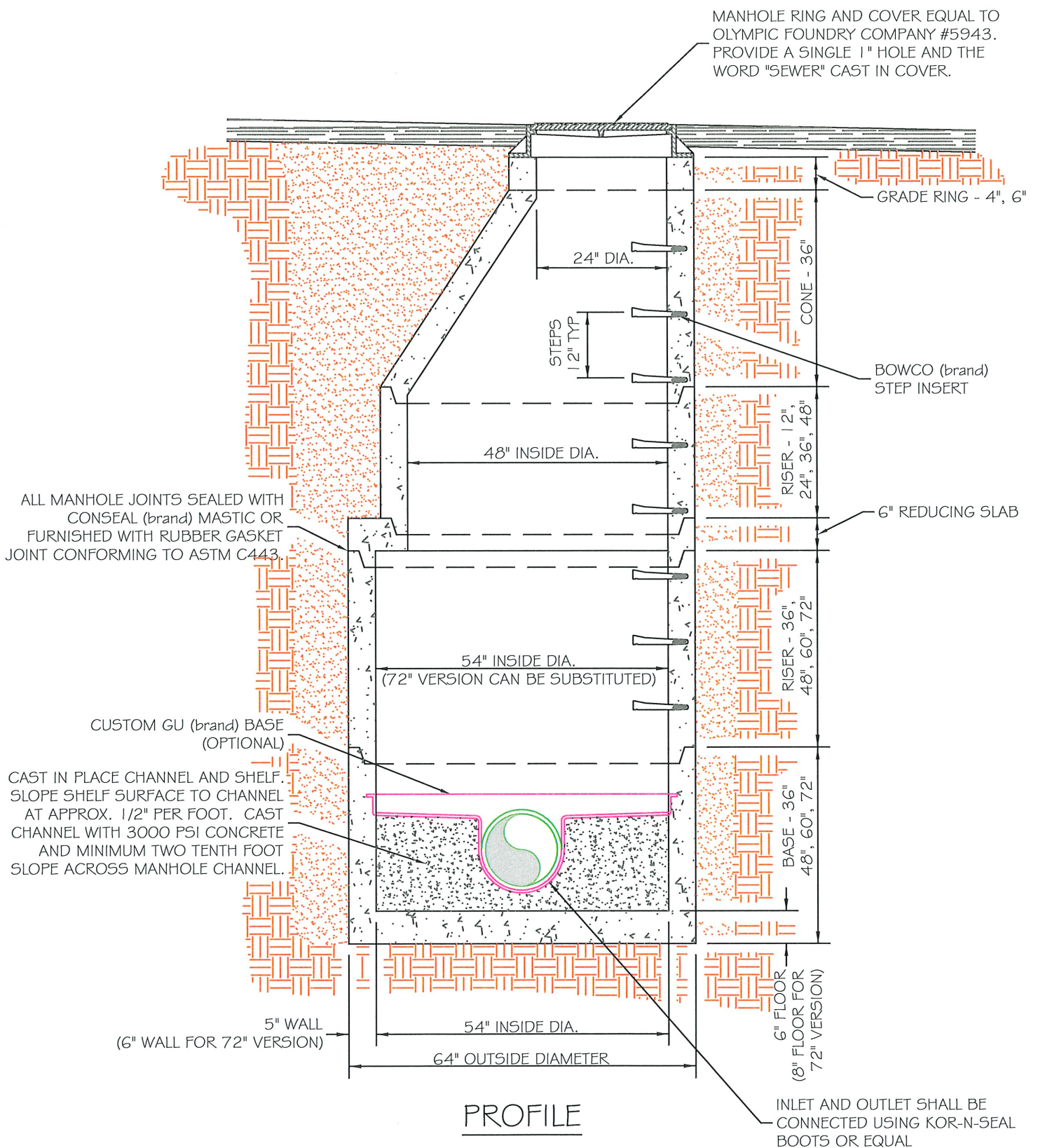
TITLE	
TYPE I MANHOLE	
STANDARD SEWER DETAIL	
SHEET	DWG SCALE
4 OF SET	NO SCALE



DRAWN BY R1A

09.17.20 \SewerDetails\type I manhole.dwg (REV C)





**NOTE:**

MATERIAL SUBSTITUTIONS OR DETERMINATION OF EQUAL ARE AT THE SOLE DISCRETION OF LAKE CHELAN RECLAMATION DISTRICT.

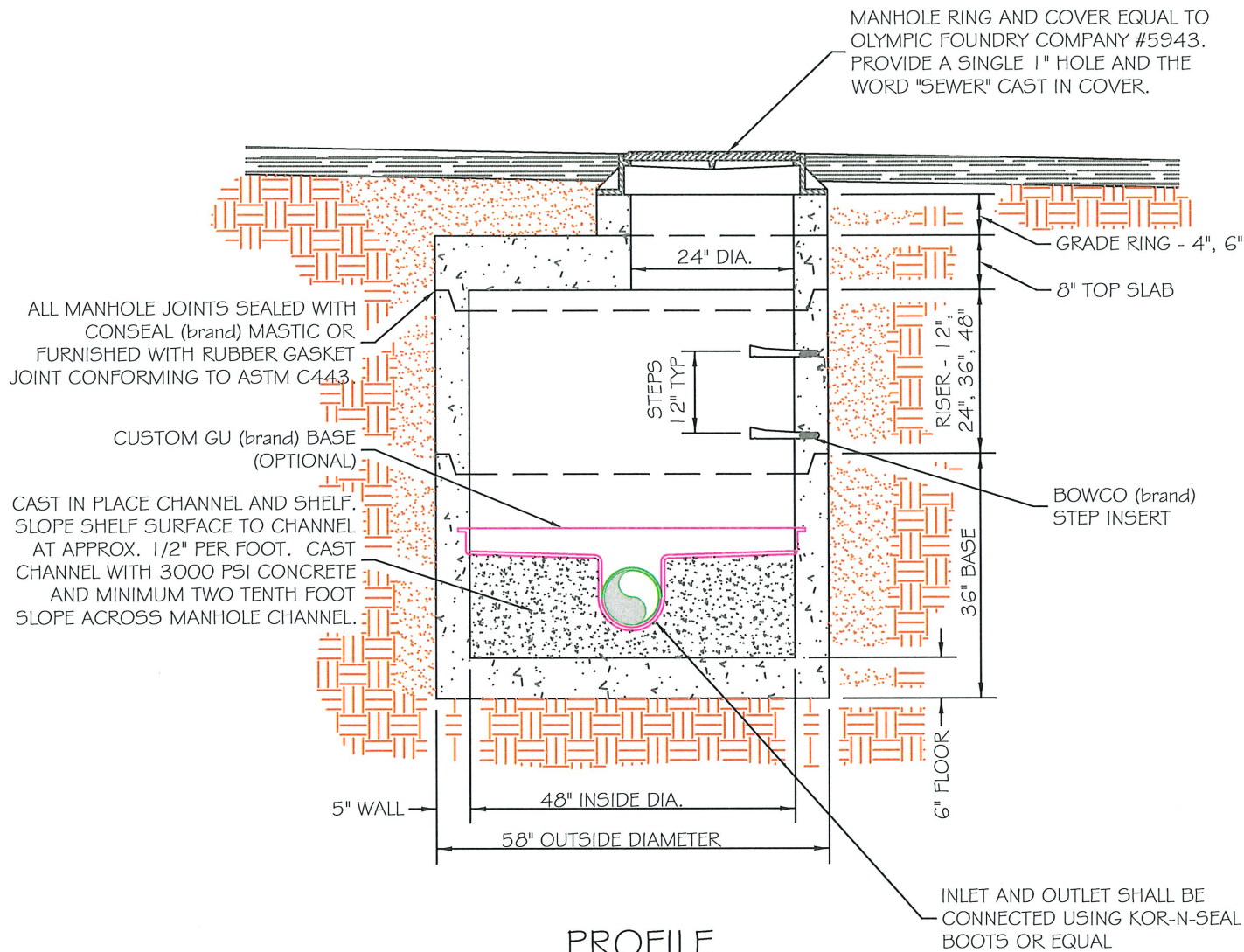
TYPE II MANHOLE SUPPLIED BY H2 PRE-CAST INC. OR EQUAL.

MANHOLE ASSEMBLY MUST CONFORM WITH WSDOT/APWA STANDARD SPECIFICATIONS.

BACKFILL AND SURFACE RESTORATION SHALL CONFORM TO THE REQUIREMENTS OF THE AGENCY HAVING JURISDICTION OVER THE ROAD RIGHT-OF-WAY.

TITLE	
TYPE II MANHOLE	
STANDARD SEWER DETAIL	
SHEET	DWG SCALE
5 OF SET	NO SCALE





**NOTE:**

MATERIAL SUBSTITUTIONS OR DETERMINATION OF EQUAL ARE AT THE SOLE DISCRETION OF LAKE CHELAN RECLAMATION DISTRICT.

TYPE III MANHOLE SUPPLIED BY H2 PRE-CAST INC. OR EQUAL.

MANHOLE ASSEMBLY MUST CONFORM WITH WSDOT/APWA STANDARD SPECIFICATIONS.

BACKFILL AND SURFACE RESTORATION SHALL CONFORM TO THE REQUIREMENTS OF THE AGENCY HAVING JURISDICTION OVER THE ROAD RIGHT-OF-WAY.

TITLE

**TYPE III  
MANHOLE**

STANDARD SEWER DETAIL

SHEET

6 OF SET

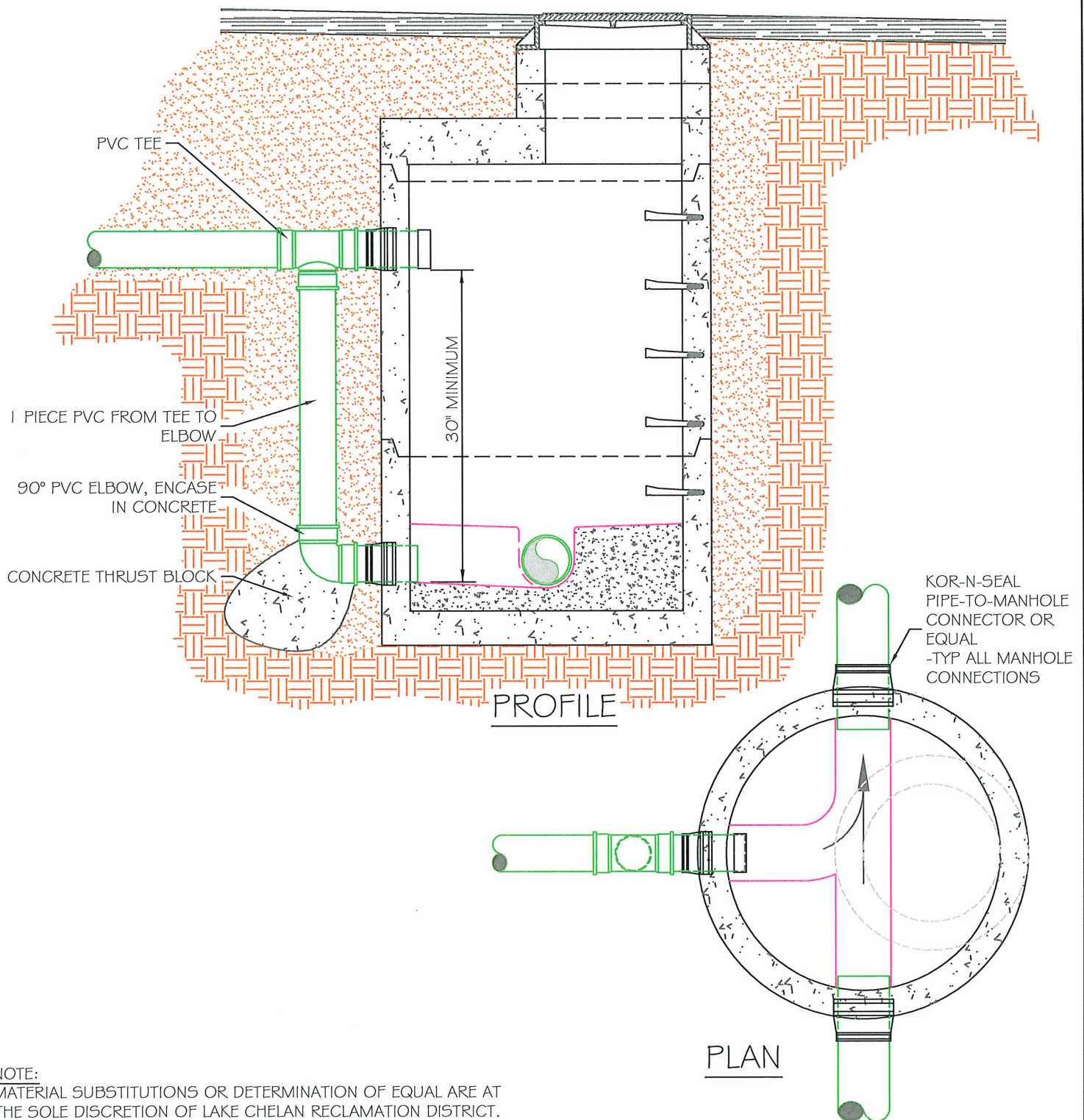
DWG SCALE

NO SCALE



DRAWN BY RIA





NOTE:  
MATERIAL SUBSTITUTIONS OR DETERMINATION OF EQUAL ARE AT THE SOLE DISCRETION OF LAKE CHELAN RECLAMATION DISTRICT.

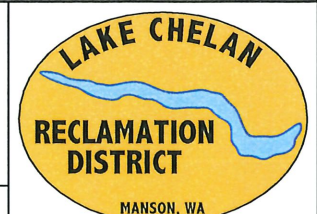
ALL PIPE AND FITTINGS TO BE D3034 GASKETTED SEWER PIPE.

TYPE III MANHOLE SUPPLIED BY H2 PRE-CAST INC. OR EQUAL.

MANHOLE ASSEMBLY MUST CONFORM WITH WSDOT/APWA STANDARD SPECIFICATIONS.

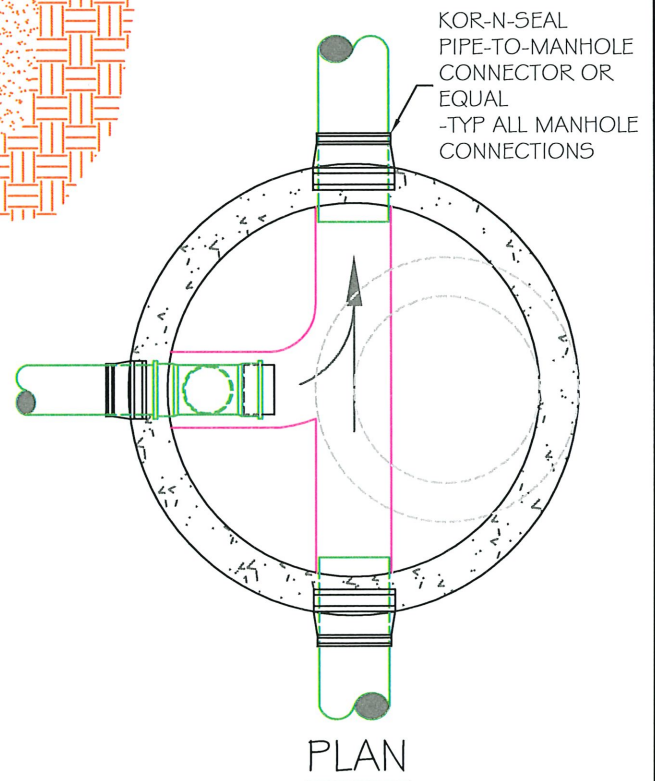
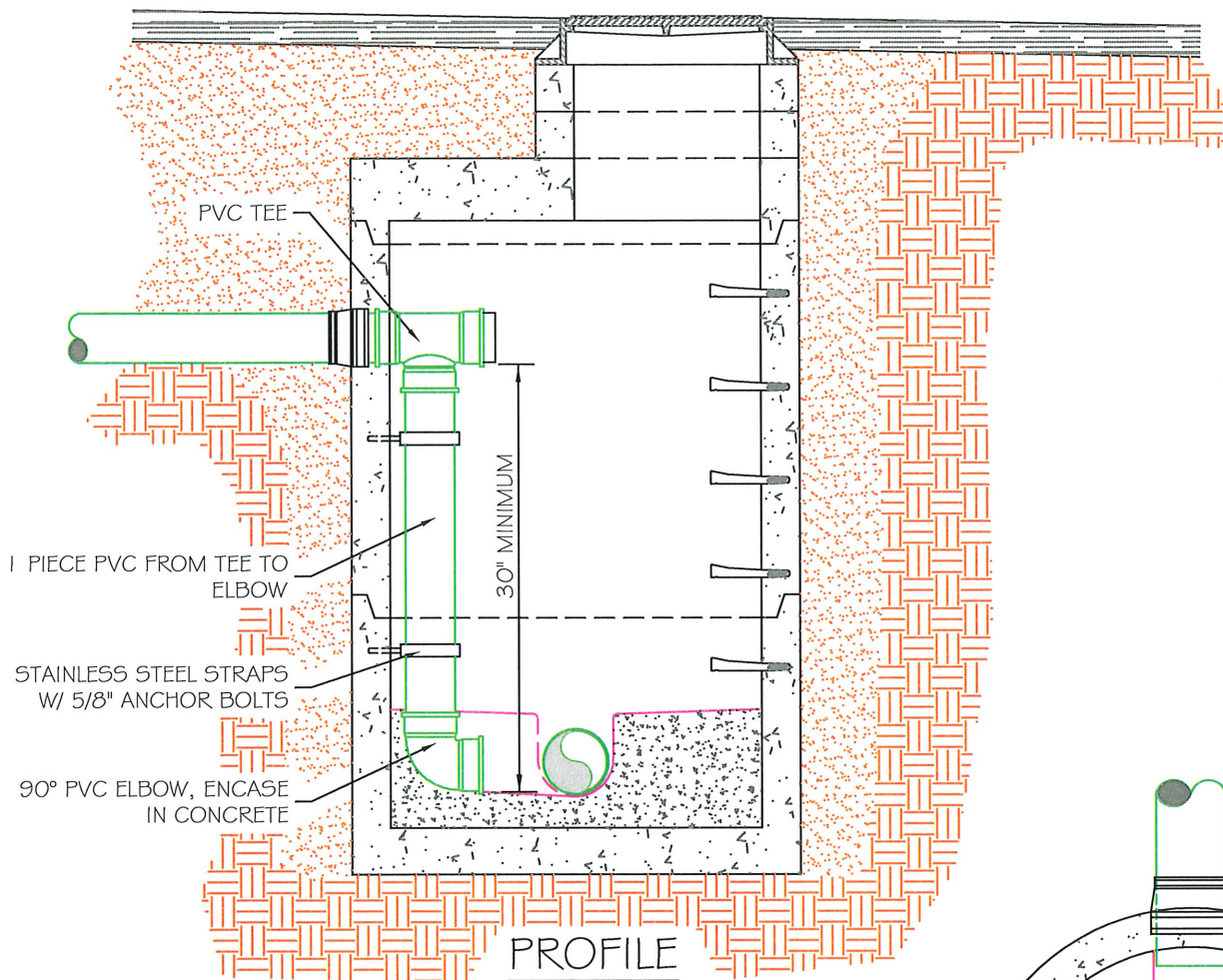
BACKFILL AND SURFACE RESTORATION SHALL CONFORM TO THE REQUIREMENTS OF THE AGENCY HAVING JURISDICTION OVER THE ROAD RIGHT-OF-WAY.

TITLE	
OUTSIDE DROP MANHOLE	
STANDARD SEWER DETAIL	
SHEET	DWG SCALE
7 OF SET	NO SCALE



DRAWN BY RIA

09.17.20 SewerDetailsoutside drop manhole.dwg (REV C)



NOTE:  
MATERIAL SUBSTITUTIONS OR DETERMINATION OF EQUAL ARE AT  
THE SOLE DISCRETION OF LAKE CHELAN RECLAMATION DISTRICT.

ALL PIPE AND FITTINGS TO BE D3034 GASKETTED SEWER PIPE.

TYPE III MANHOLE SUPPLIED BY H2 PRE-CAST INC. OR EQUAL.

MANHOLE ASSEMBLY MUST CONFORM WITH WSDOT/APWA  
STANDARD SPECIFICATIONS.

BACKFILL AND SURFACE RESTORATION SHALL CONFORM TO THE  
REQUIREMENTS OF THE AGENCY HAVING JURISDICTION OVER THE  
ROAD RIGHT-OF-WAY.

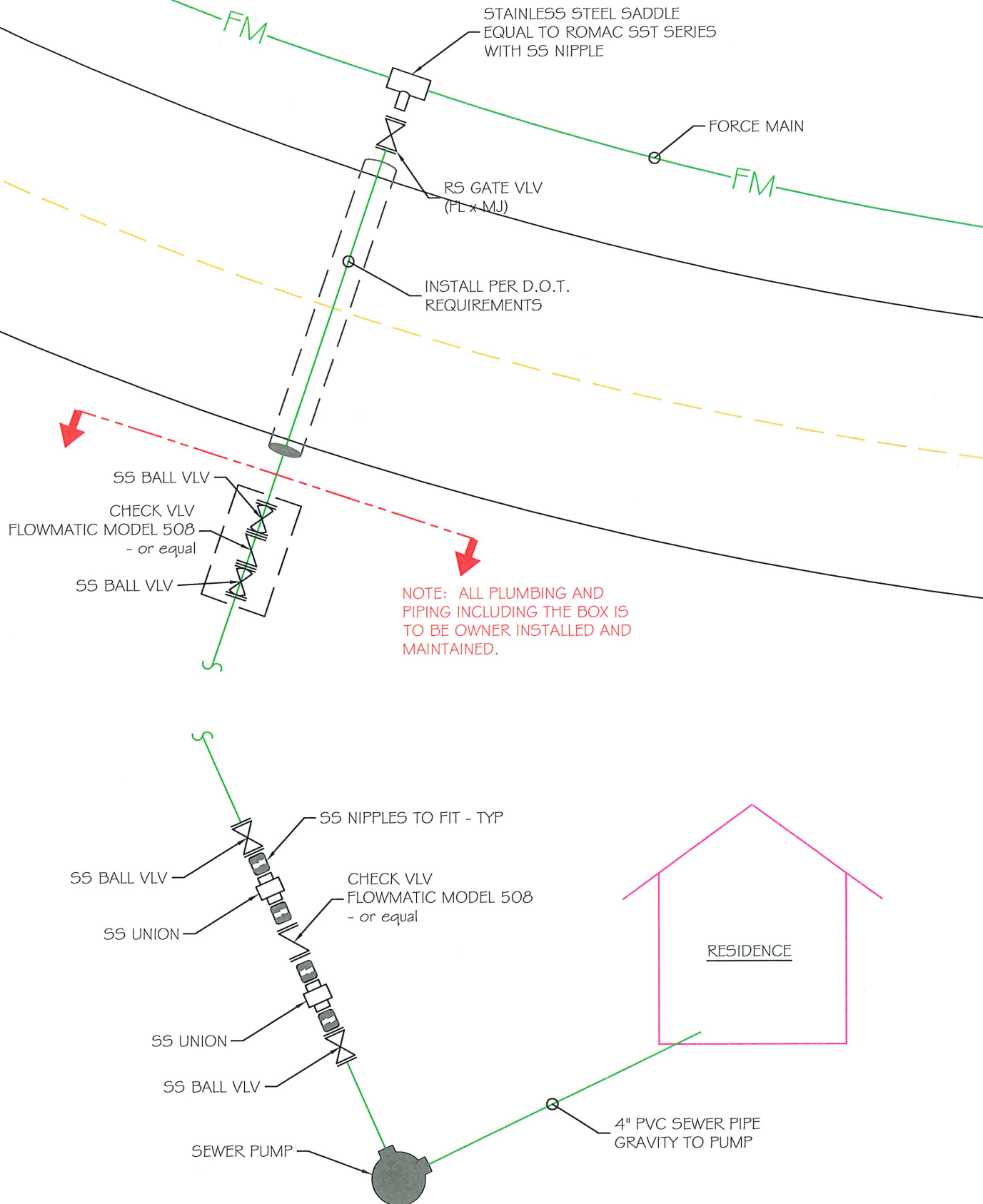
TITLE	
INSIDE DROP MANHOLE	
STANDARD SEWER DETAIL	
SHEET	DWG SCALE
8 OF SET	NO SCALE



DRAWN BY RIA

09.17.20 SewerDetailsInside drop manhole.dwg (REV C)





NOTES:  
MATERIAL SUBSTITUTIONS OR DETERMINATION OF EQUAL ARE AT  
THE SOLE DISCRETION OF LAKE CHELAN RECLAMATION DISTRICT.

ALL 3" PIPE AND FITTINGS MAY BE SUBSTITUTED WITH 2" IF A  
GRINDER PUMP IS TO BE USED.

TITLE

# FORCEMAIN SEWER CONNECTION I

STANDARD SEWER DETAIL

SHEET

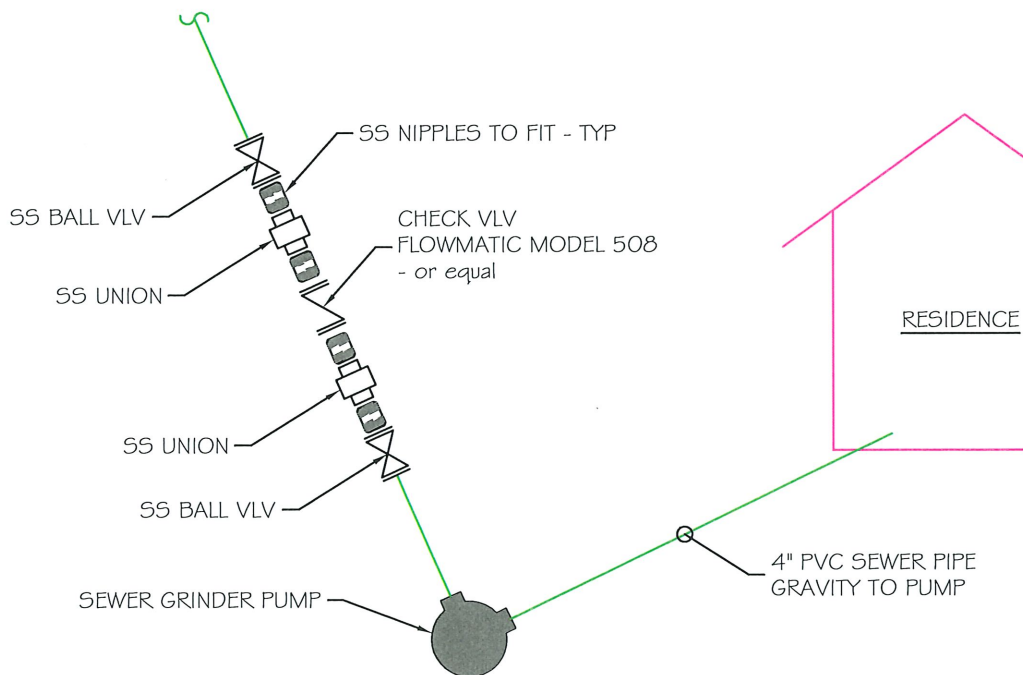
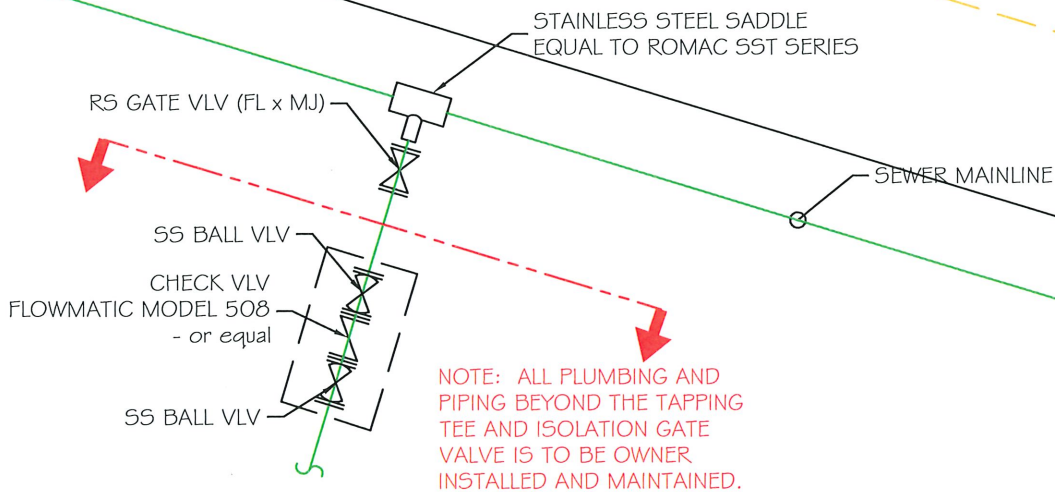
9 OF SET

DWG SCALE

NO SCALE



DRAWN BY RIA



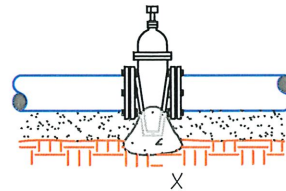
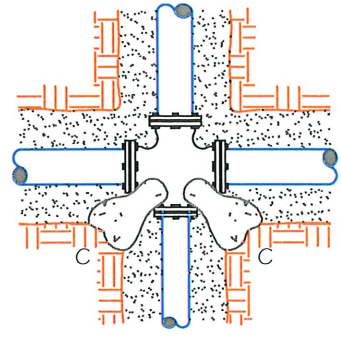
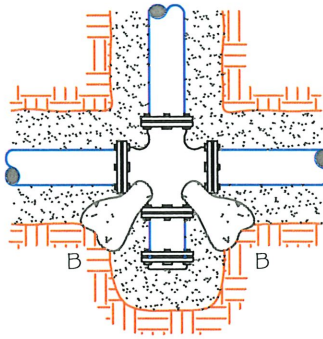
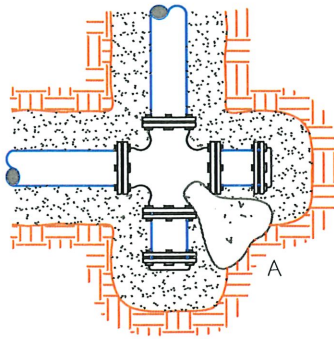
NOTES:  
MATERIAL SUBSTITUTIONS OR DETERMINATION OF EQUAL ARE AT  
THE SOLE DISCRETION OF LAKE CHELAN RECLAMATION DISTRICT.

TITLE	
FORCEMAIN SEWER CONNECTION II	
STANDARD SEWER DETAIL	
SHEET	DWG SCALE
10 OF SET	NO SCALE



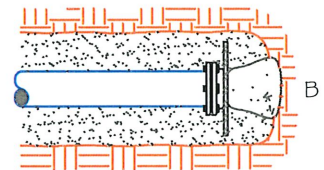
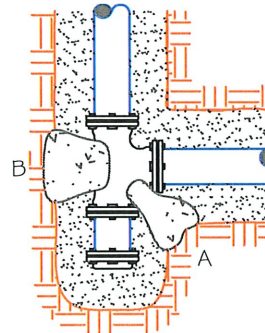
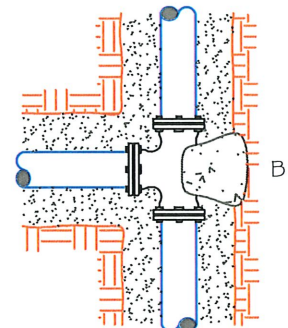
DRAWN BY RIA





THRUST BLOCK TABLE  
MIN. BEARING AREA AGAINST UNDISTURBED SOIL  
(FT<sup>2</sup>)

PIPE SIZE	A	B	C	D	E	X
4"	3	1	1	1	1	NONE
6"	4	4	2	1	1	NONE
8"	7	6	4	2	1	4
10"	11	10	6	3	2	6
12"	16	14	9	5	3	9
14"	22	19	12	6	3	12
16"	29	25	16	8	4	16
18"	36	31	20	10	5	20
20"	45	39	24	13	6	24
22"	54	47	29	15	8	29
24"	64	56	35	18	9	35
28"	87	76	48	24	12	48
30"	101	87	55	28	14	55
36"	145	125	78	40	20	78
42"	197	171	107	55	27	107
48"	257	223	140	71	36	140



NOTES:  
BEARING AREA OF CONCRETE THRUST-BLOCK BASED ON 200 PSI  
PRESSURE AND SAFE SOIL BEARING LOAD OF 2,000 POUNDS  
PER SQUARE FOOT.

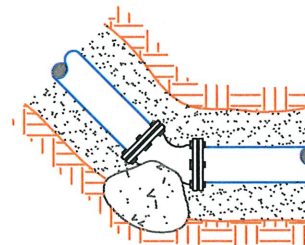
AREAS MUST BE ADJUSTED FOR OTHER PIPE SIZES, PRESSURES  
AND SOIL CONDITIONS.

CONCRETE BLOCKING SHALL BE CAST IN PLACE AND HAVE A  
MINIMUM OF 1/4 SQUARE FOOT BEARING AGAINST THE FITTING.

BLOCK SHALL BEAR AGAINST FITTINGS ONLY AND SHALL BE  
CLEAR OF JOINTS TO PERMIT TAKING UP OR DISMANTLING OF  
JOINT.

CONTRACTOR SHALL INSTALL BLOCKING ADEQUATE TO  
WITHSTAND FULL TEST PRESSURE AS WELL AS TO CONTINUOUSLY  
WITHSTAND OPERATION PRESSURE UNDER ALL CONDITIONS OF  
SERVICE.

MATERIAL SUBSTITUTIONS OR DETERMINATION OF EQUAL ARE AT  
THE SOLE DISCRETION OF LAKE CHELAN RECLAMATION DISTRICT.



A FOR 90° BEND  
C FOR 45° BEND  
D FOR 22-1/2° BEND  
E FOR 11-1/4° BEND

TITLE

CONCRETE  
BLOCKING

STANDARD SEWER DETAIL

SHEET

13 OF SET

DWG SCALE

NO SCALE



DRAWN BY RIA

04-09-01 SewerDetail\concrete blocking.dwg (REV A)

ALUMINUM ACCESS HATCH, 4'-0"W x 5'-0"L WITH SPRING ASSISTED DOUBLE LEAF H-20 LOAD RATED DOORS THAT LOCK IN THE VERTICAL POSITION, PROVIDE REMOVABLE SAFETY CHAINS, LADDER RUNGS ON UNDERSIDE OF DOOR WITH PIN LOCK, RECESSED LOCKING HASP COVERED WITH HINGED LID, 1-1/2"Ø FRAME.  
DRAIN ROUTED TO SUMP.  
IF VAULT IS WITHIN TRAVELED ROADWAY, PROVIDE (2) 30"Ø MANHOLE COVERS IN LIEU OF HATCH.

ELECTROMAGNETIC FLOW METER (FLxFL) WITH TRANSMITTER AND REMOTE INDICATOR, SPARKING TIGERMAG MODEL 655 OR APPROVED EQUAL, REDUCE FORCE MAIN SIZE AT METER AS SHOWN

ALUMINUM ACCESS LADDER WITH 3/4"Ø LADDER RUNGS AT 12" O.C., 2"x1/2" STRINGERS, AND SUPPORTS AT TOP AND BASE

ADJUSTABLE PIPE SUPPORT, AQUAL TO STANDON PIPE SUPPORT MODEL S-89 WITH 2-1/2"Ø STEEL PIPE, LENGTH TO FIT

ROTATE BEND AND DEFLECT PIPE AS NECESSARY TO KEEP TOP OF METER ELEVATION BELOW INVERT OF FORCE MAIN

SUMP PUMP IF REQUIRED, PROVIDE ISOLATION VALVE AND (2) SWING CHECKS ON DISCHARGE PIPE

MIN 6" COMPACTED CRUSHED ROCK ON FIRM SUBGRADE

## PROFILE

REDUCING TEE (FLxFLxFL) WITH FLxMJ ADAPTER AND CONCRETE THRUST BLOCKING

EXIST SEWER FORCE MAIN

DI PIPE, SAME SIZE AS EXISTING FORCE MAIN, LENGTH TO FIT (TYP)

REDUCING TEE (MJxMJxFL) WITH CONCRETE THRUST BLOCKING

FLOW DIRECTION

TRANSITION COUPLING FOR CONNECTION TO EXISTING FORCE MAIN PIPE (TYP)

MIN 4'-0" OUTLINE OF ACCESS HATCH

MIN 3'-0"

ECCENTRIC VLV (FLxFL) EQUAL TO M&H STYLE 820 WITH FLxMJ ADAPTER - TYP

90° BEND (MJxMJ) WITH CONCRETE THRUST BLOCKING

REMOTE TELEMETRY UNIT (RTU) AND CABINET PER DISTRICT STANDARDS

PRECAST CONCRETE VAULT SHALL BE UTILITY VAULT MODEL 687-LA OR AN APPROVED EQUAL, EXTERIOR COATING: HI-BUILD TNE-M-TAR INTERIOR COATING: HI-BUILD EPOXOLINE INTERIOR FLOOR: DEX-O-TEX M-E FLOORING

24 VDC PWR SUPPLY  
4-20mA SIGNAL

120 VAC POWER SUPPLY  
POWER POLE AND PWR SUPPLY

## PLAN

FLOW RATE RANGE (gpm)	MAG-METER DIA. (inches)
25-175	3
50-300	4
125-700	6
250-1250	8
* IF FLOW RATE IS NOT WITHIN RANGES SHOWN, CONSULT ENGINEER.	

NOTES:  
MATERIAL SUBSTITUTIONS OR DETERMINATION OF EQUAL ARE AT THE SOLE DISCRETION OF LAKE CHELAN RECLAMATION DISTRICT.

TITLE

FLOW METER VAULT

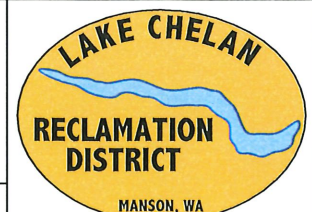
STANDARD SEWER DETAIL

SHEET

14 OF SET

DWG SCALE

NO SCALE



DRAWN BY RIA

SewerDetailFlow meter vault.dwg (REV A)

01.15.02