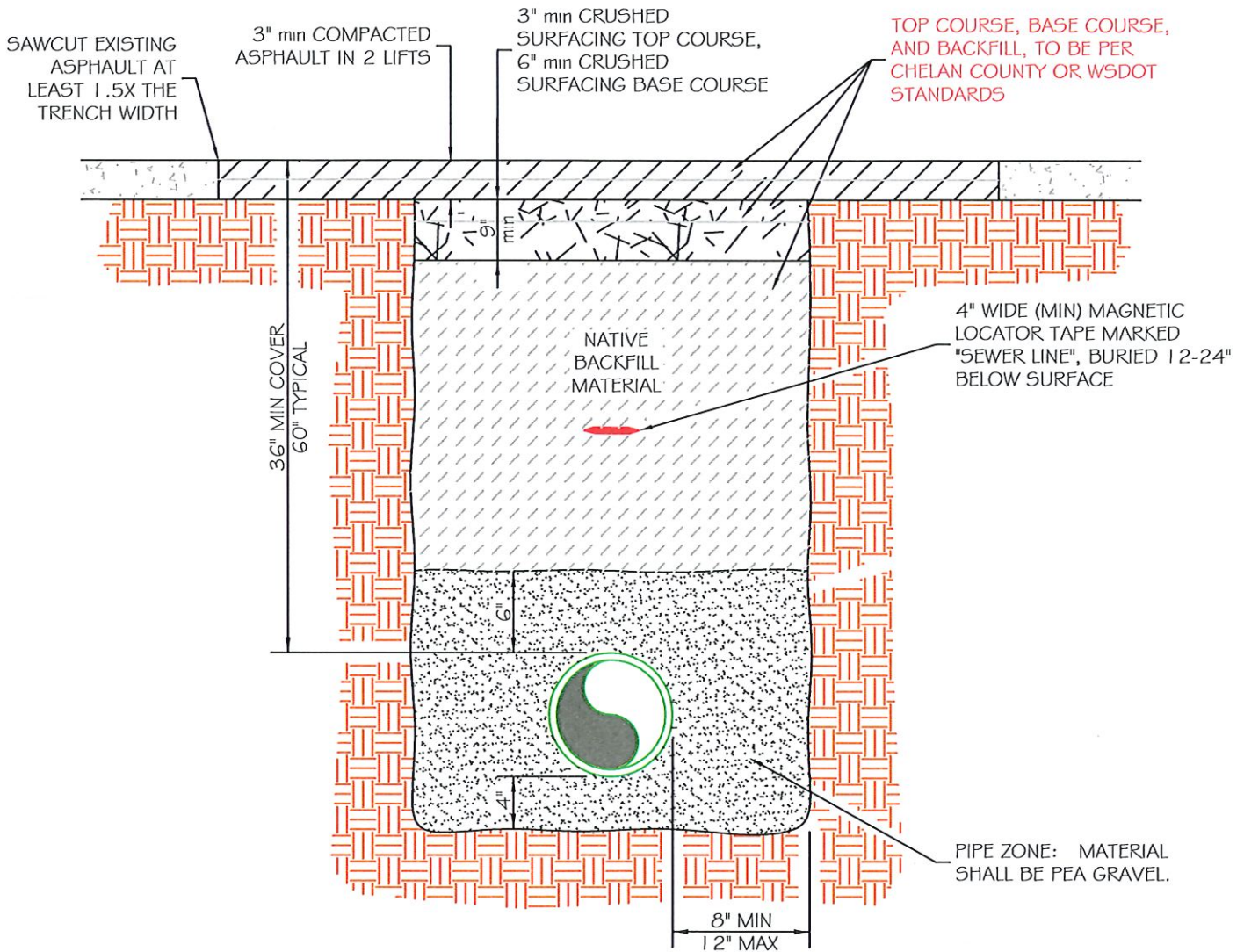


CALL 48 HOURS
BEFORE YOU DIG:

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

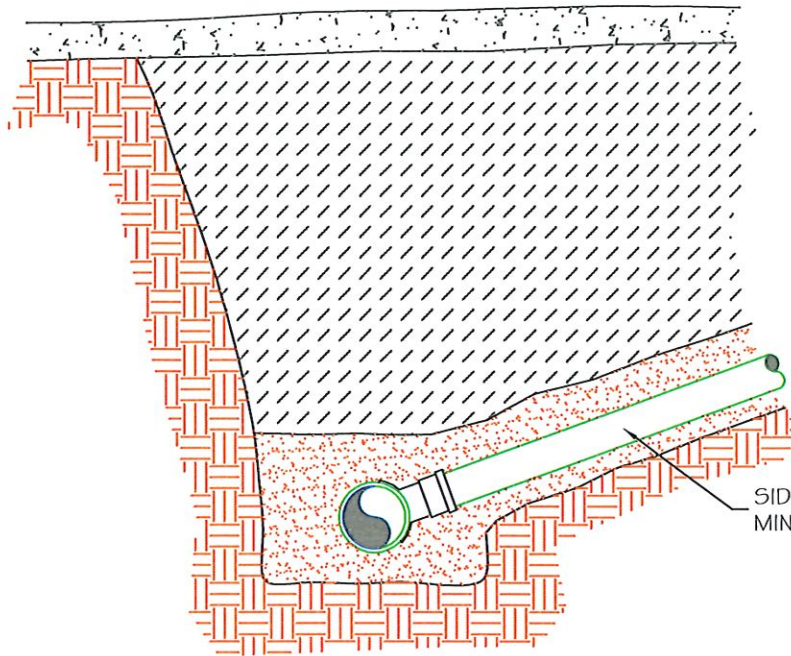
DWG SCALE

NO SCALE

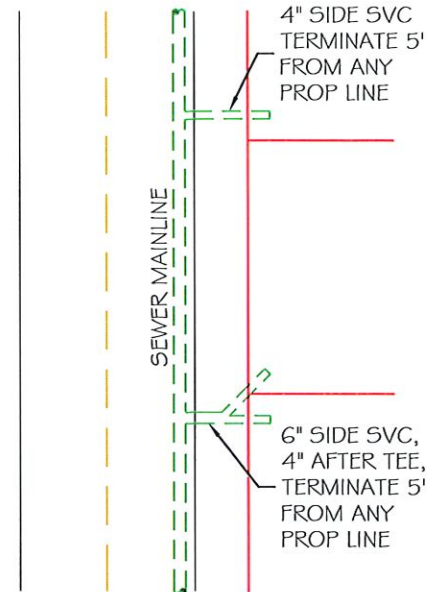


DRAWN BY RIA

09.17.20 DomesticDetailstypical trench section.dwg (REV D)



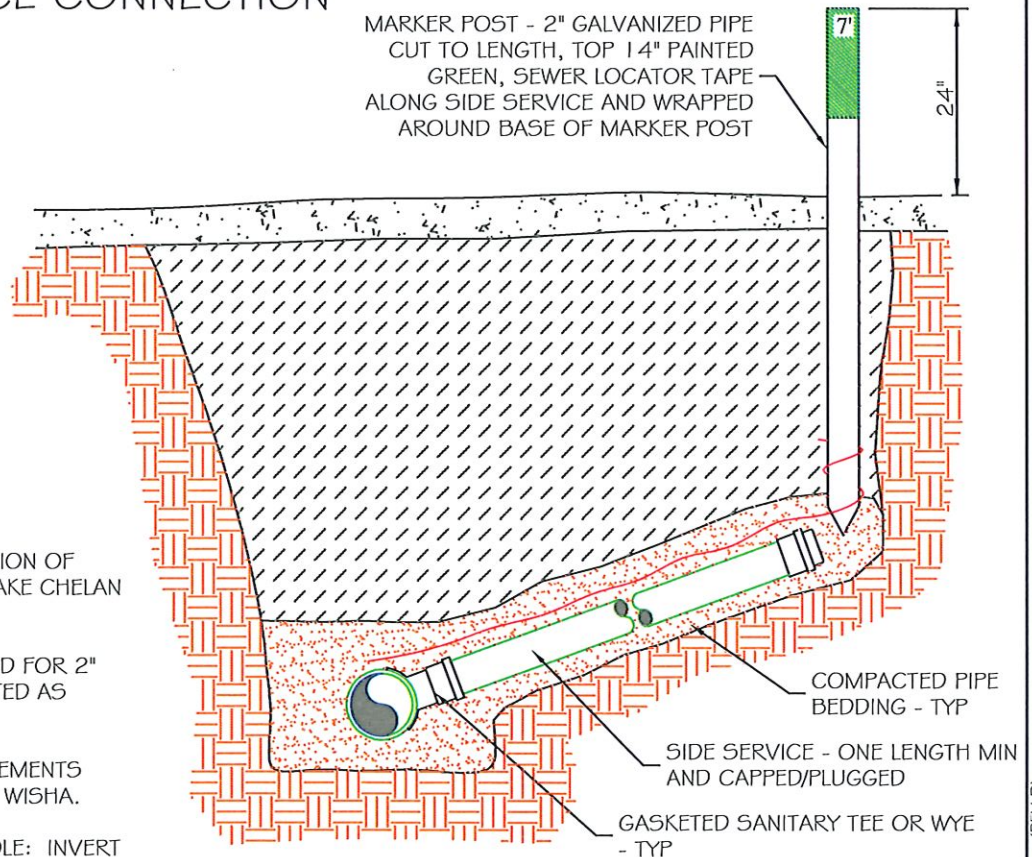
SIDE SERVICE -
MIN SLOPE 2%



PLAN

PROFILE - SERVICE CONNECTION

MARKER POST - 2" GALVANIZED PIPE
CUT TO LENGTH, TOP 14" PAINTED
GREEN, SEWER LOCATOR TAPE
ALONG SIDE SERVICE AND WRAPPED
AROUND BASE OF MARKER POST



COMPACTED PIPE
BEDDING - TYP

SIDE SERVICE - ONE LENGTH MIN
AND CAPPED/PLUGGED

GASKETED SANITARY TEE OR WYE
- TYP

PROFILE - SERVICE STUBOUT

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.

TITLE

SIDE SEWERS

STANDARD SEWER DETAIL

SHEET

2 OF SET

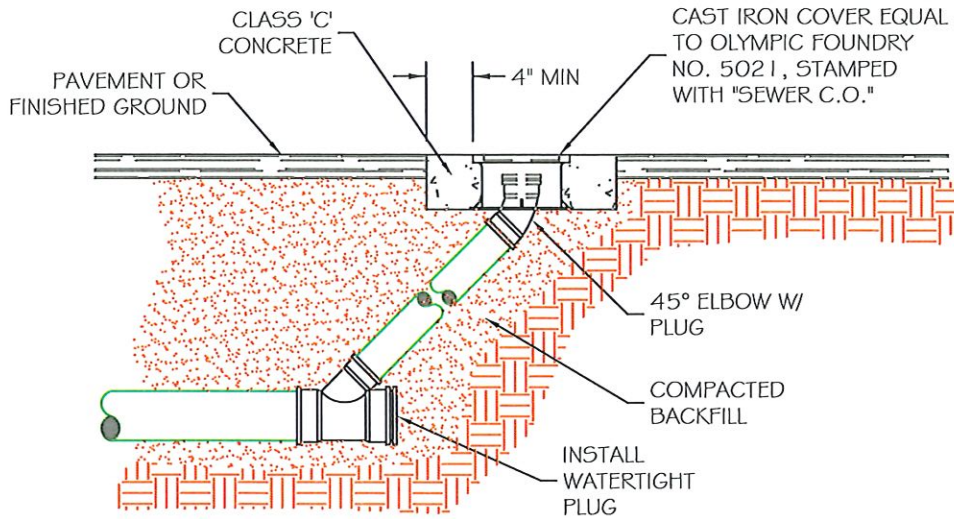
DWG SCALE

NO SCALE

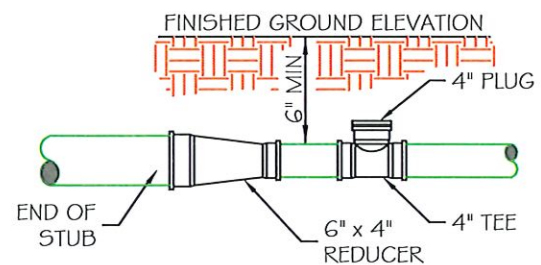


DRAWN BY RIA

09.17.20 SewerDetails\side 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

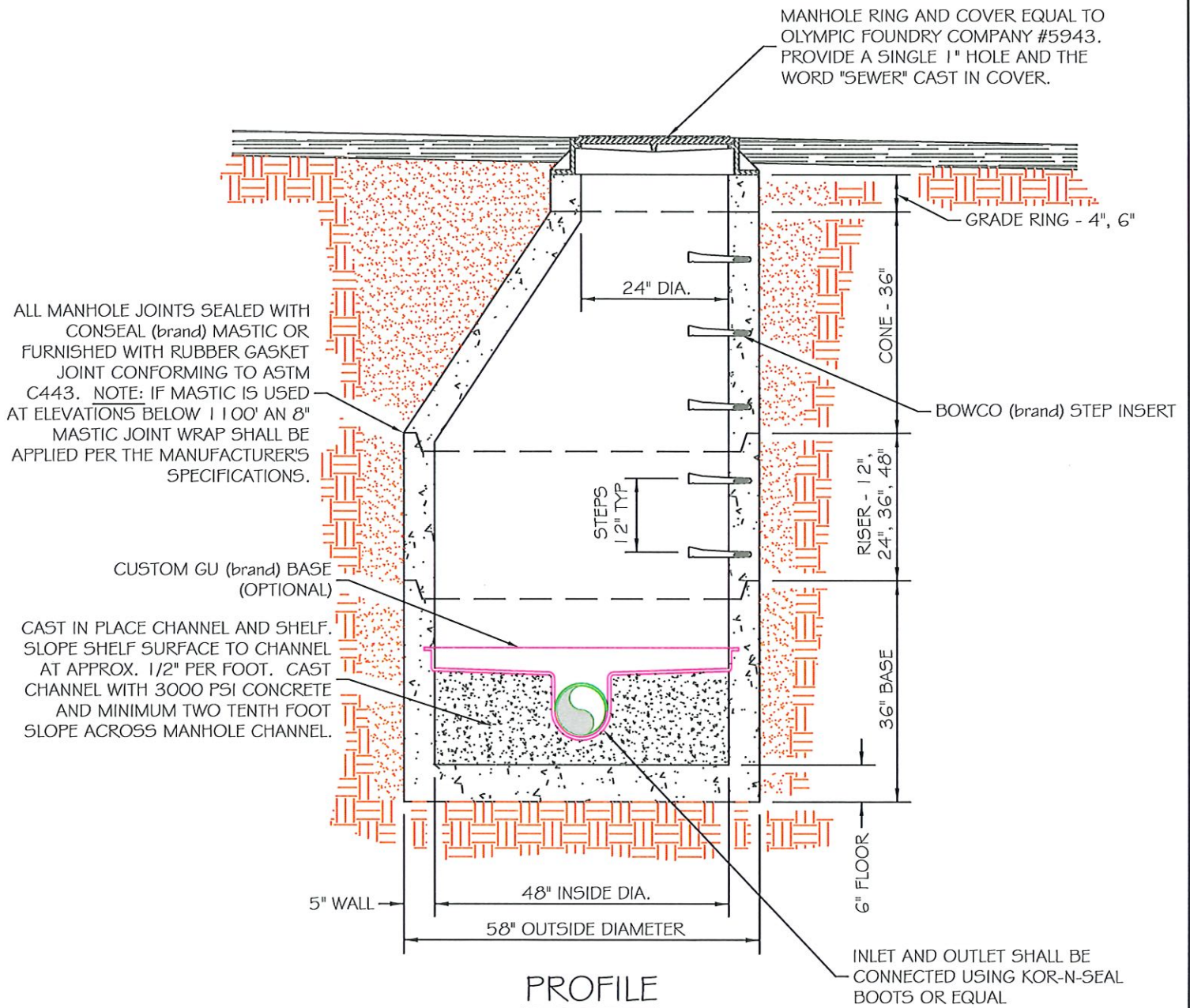
SHEET
3 OF SET

DWG SCALE
NO SCALE



DRAWN BY RJA

09.17.20 SewerDetailsCleanout 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

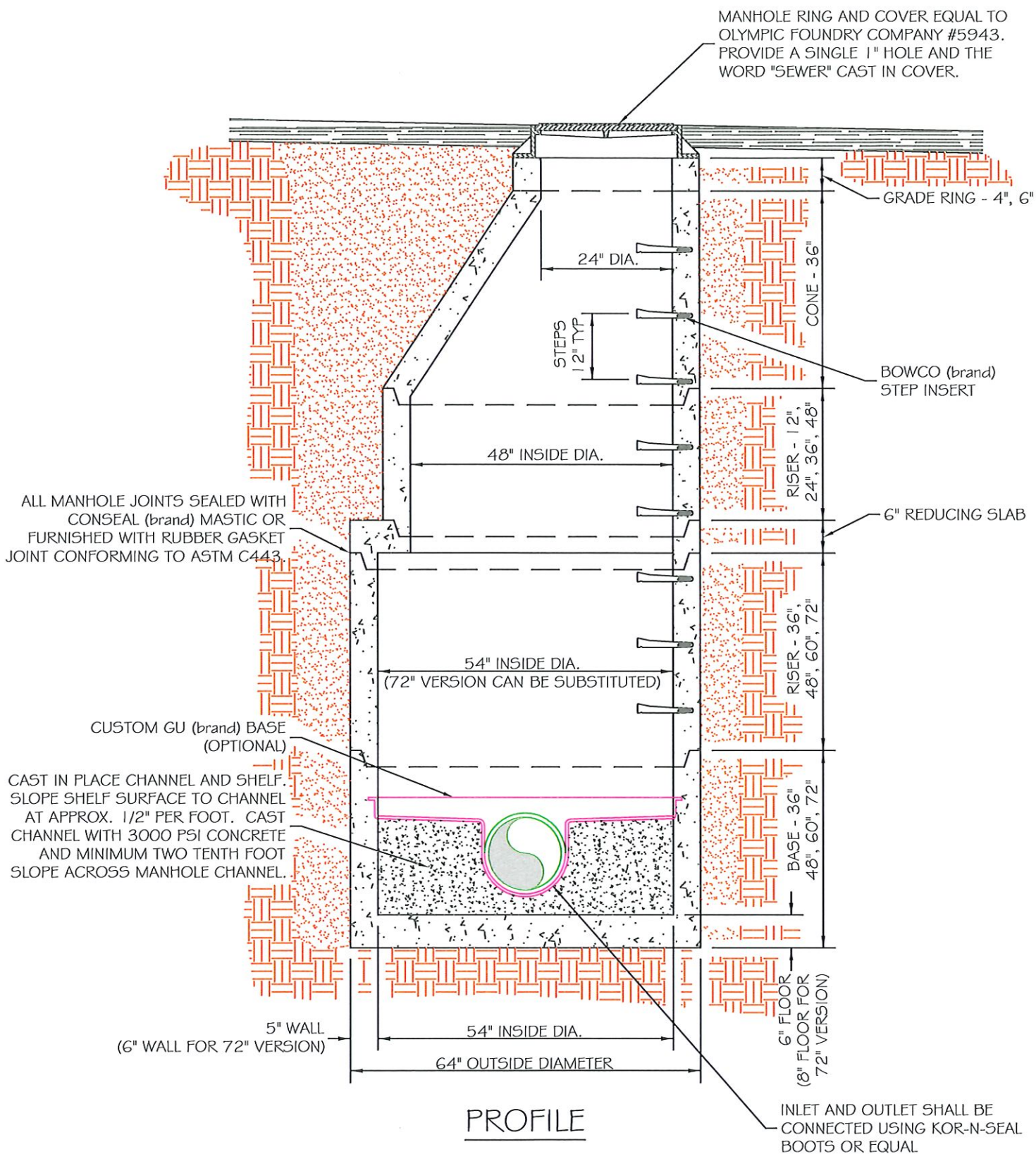
STANDARD SEWER DETAIL

SHEET
4 OF SET

DWG SCALE
NO SCALE



DRAWN BY R1A



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

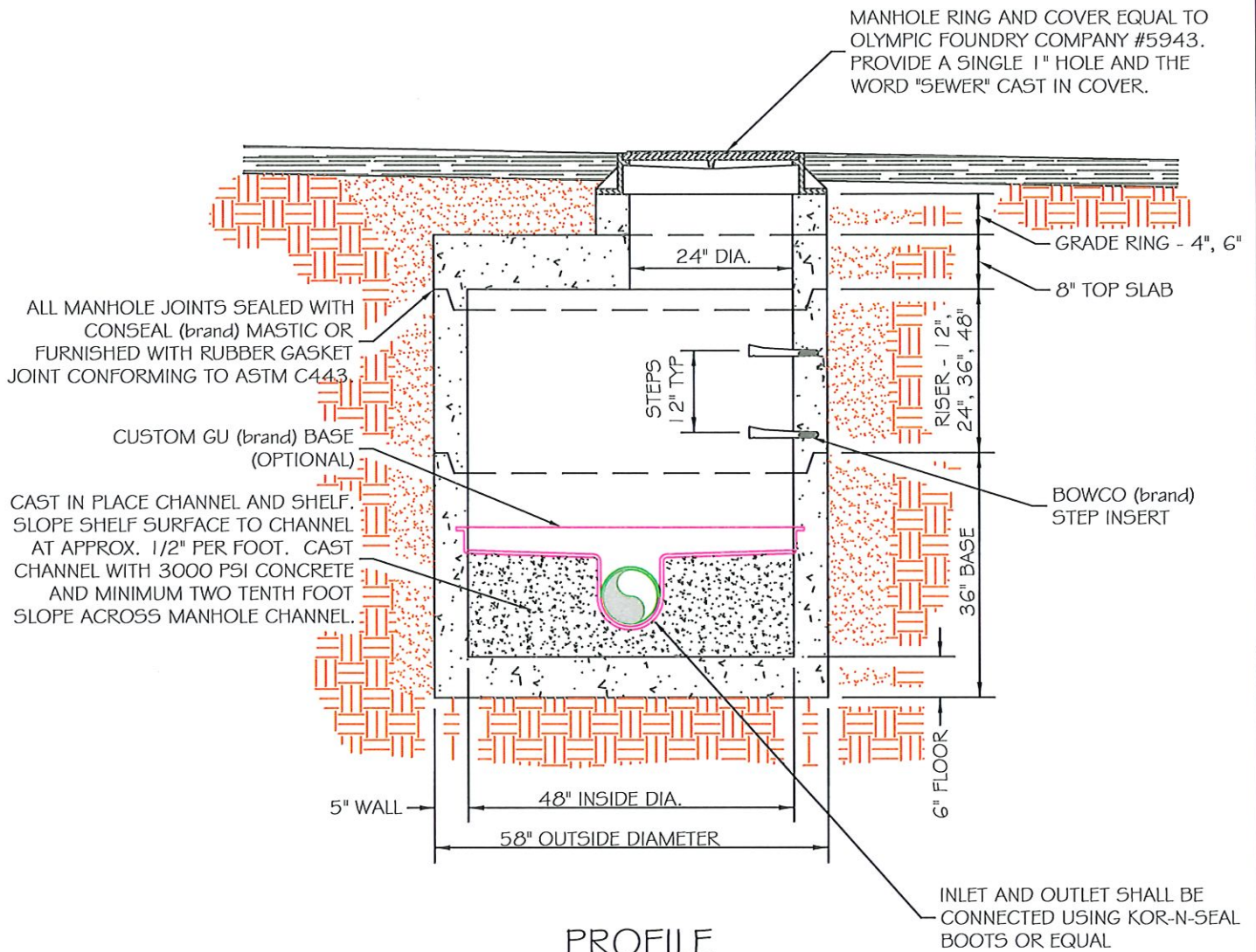
SHEET
5 OF SET

DWG SCALE
NO SCALE



DRAWN BY R1A

G:\SewerDetails\type II manhole.dwg (REV C) 09.17.20



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.

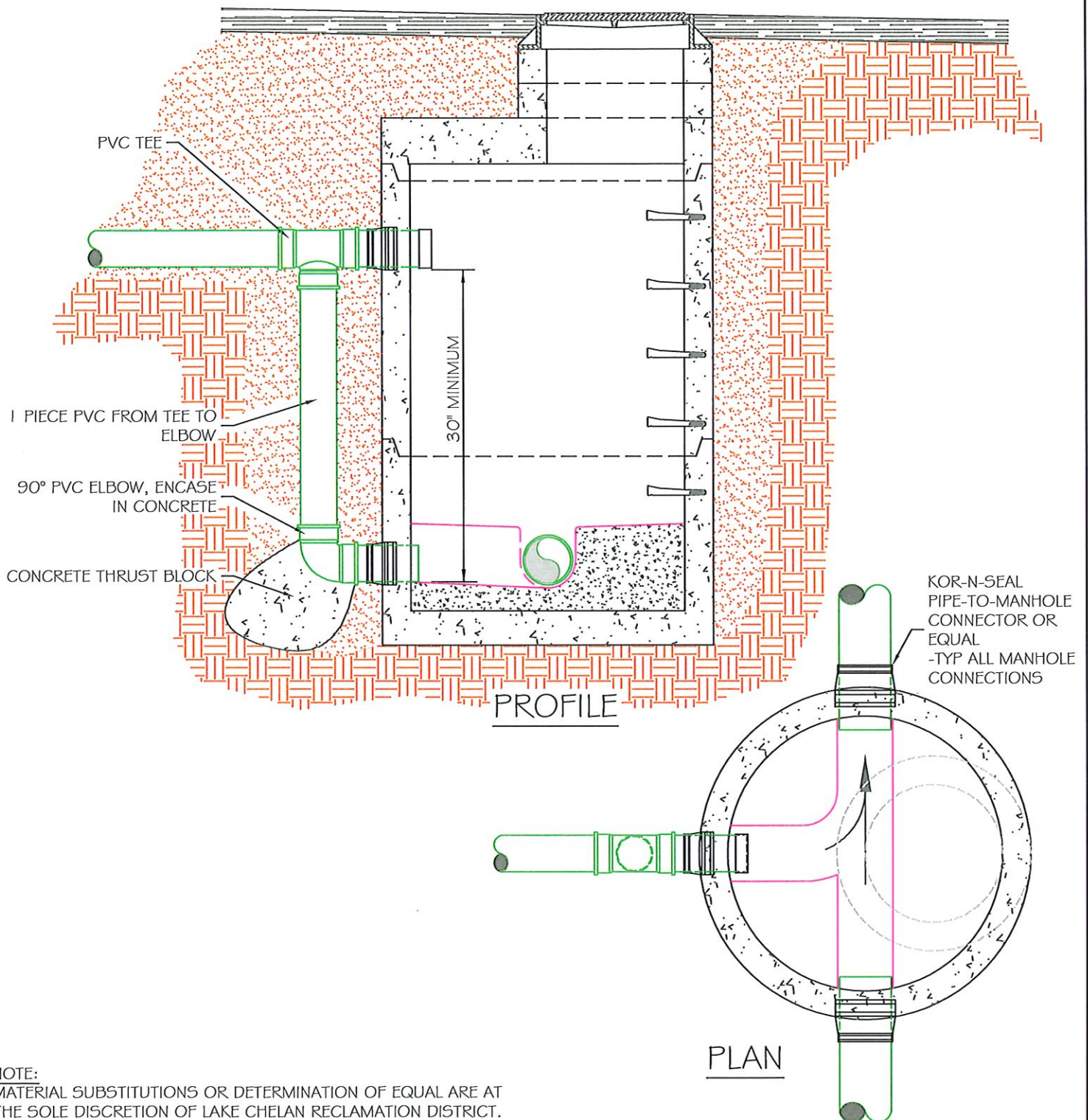
BACKFILL AND SURFACE RESTORATION SHALL CONFORM TO THE REQUIREMENTS OF THE AGENCY HAVING JURISDICTION OVER THE ROAD RIGHT-OF-WAY.

TITLE	
TYPE III MANHOLE	
STANDARD SEWER DETAIL	
SHEET	DWG SCALE
6 OF SET	NO SCALE



DRAWN BY R1A

09.17.20 09werDetails\type III manhole.dwg (REV C)



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

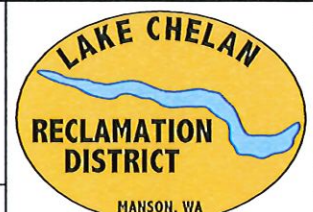
ALL PIPE AND FITTINGS TO BE D3034 GASKETTED SEWER PIPE.

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

MANHOLE ASSEMBLY MUST CONFORM WITH WSDOT/APWA STANDARD SPECIFICATIONS.

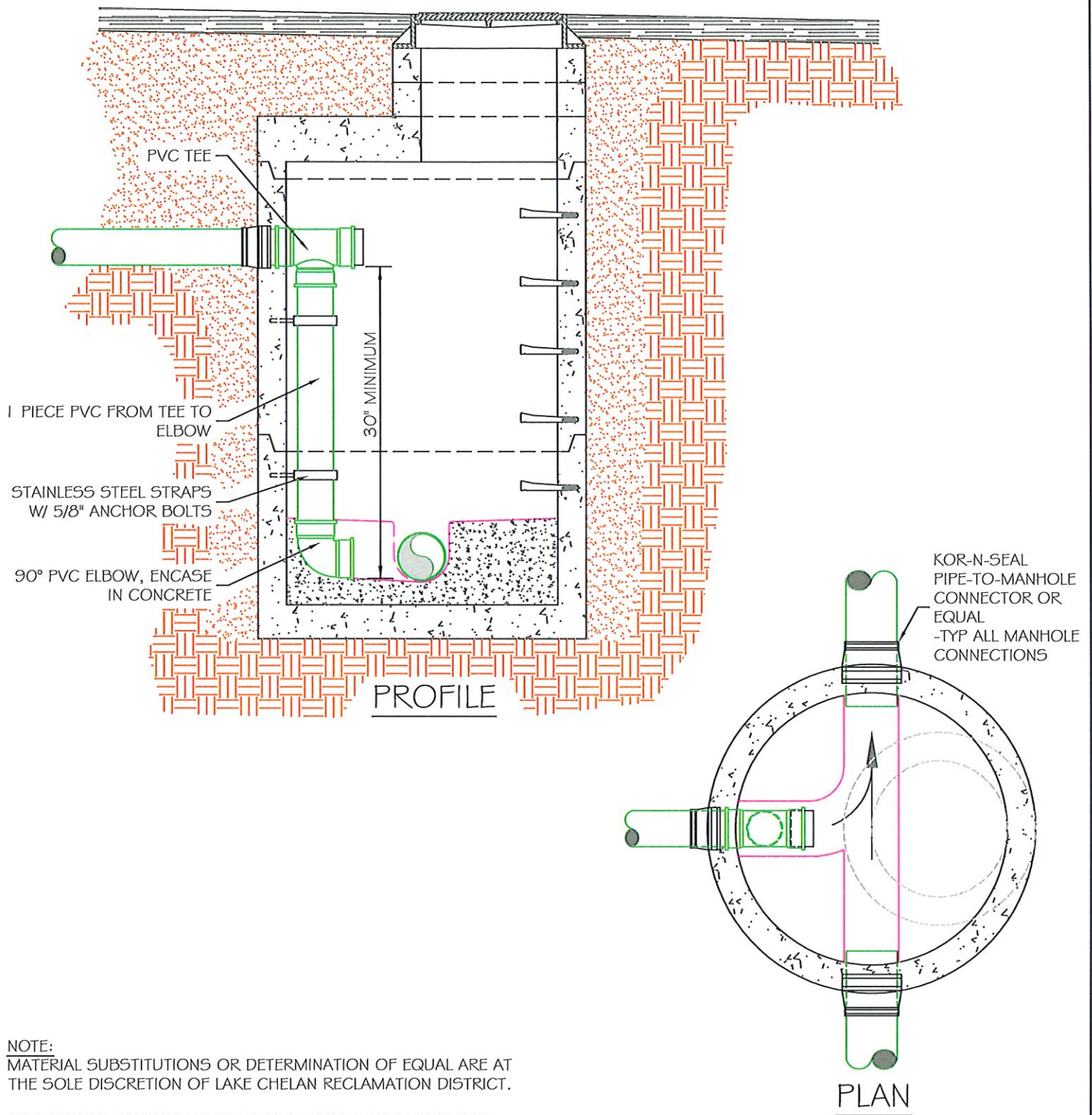
BACKFILL AND SURFACE RESTORATION SHALL CONFORM TO THE REQUIREMENTS OF THE AGENCY HAVING JURISDICTION OVER THE ROAD RIGHT-OF-WAY.

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



DRAWN BY R1A

09.17.20 SewerDetails\outside drop manhole.dwg (REV C)



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

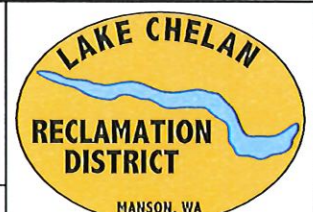
ALL PIPE AND FITTINGS TO BE D3034 GASKETTED SEWER PIPE.

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

MANHOLE ASSEMBLY MUST CONFORM WITH WSDOT/APWA
STANDARD SPECIFICATIONS.

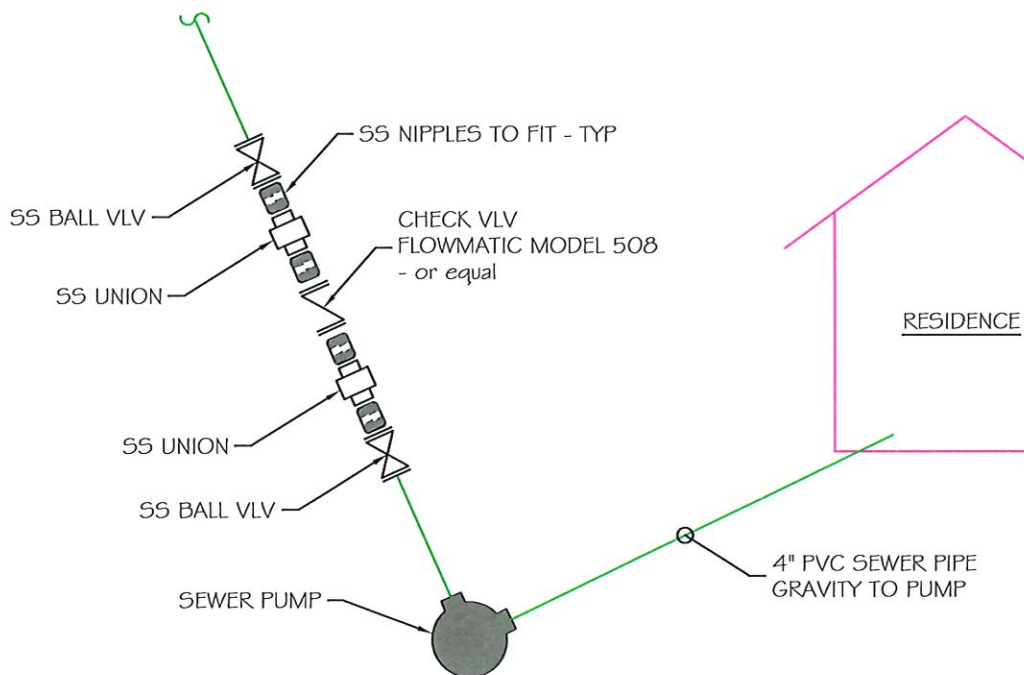
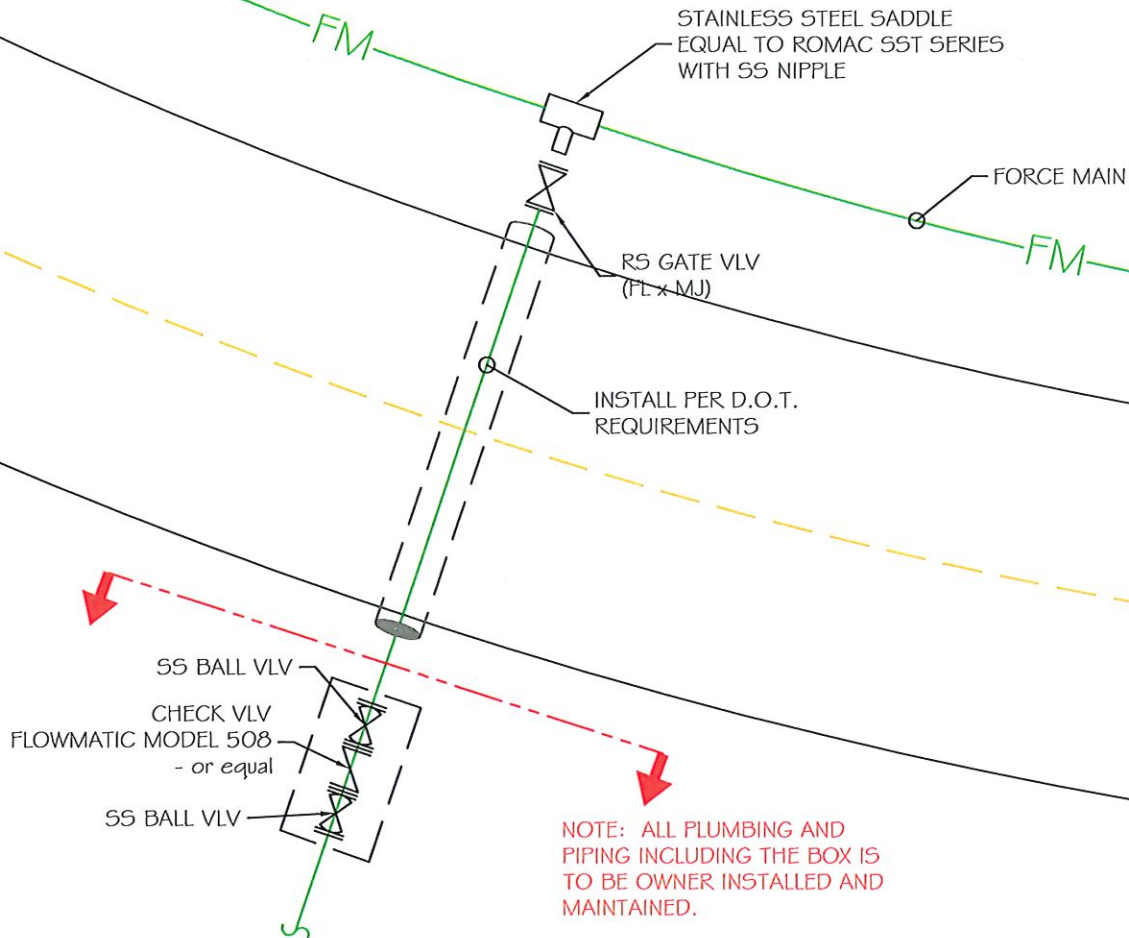
BACKFILL AND SURFACE RESTORATION SHALL CONFORM TO THE
REQUIREMENTS OF THE AGENCY HAVING JURISDICTION OVER THE
ROAD RIGHT-OF-WAY.

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



DRAWN BY R1A

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

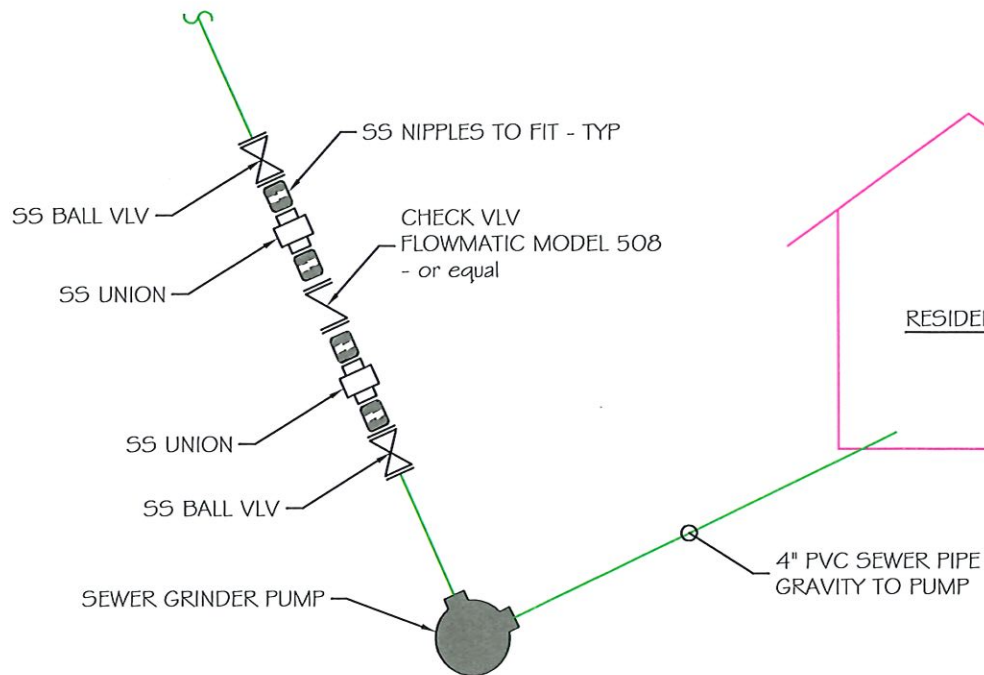
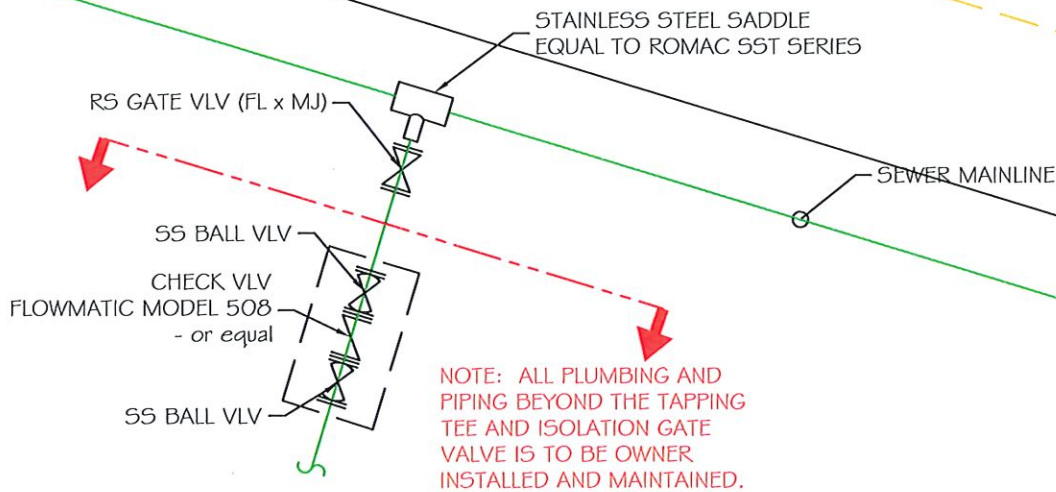
SHEET
9 OF SET

DWG SCALE
NO SCALE



DRAWN BY RJA

03.14.22 SewerDetails\forcemain_sewer_connection.dwg (REV C)

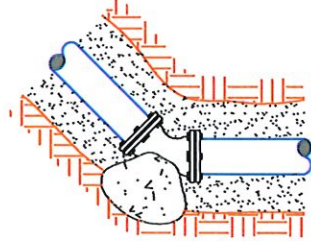
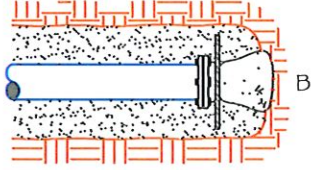
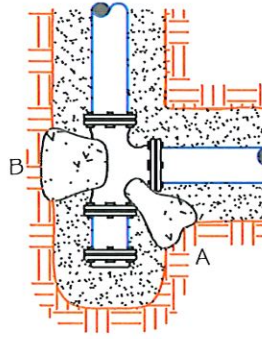
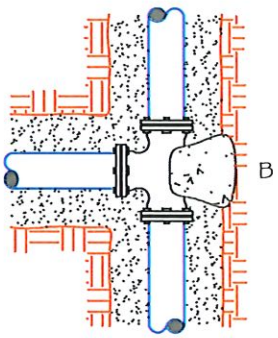
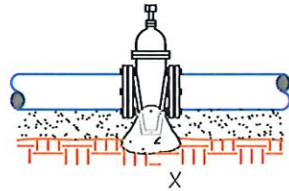
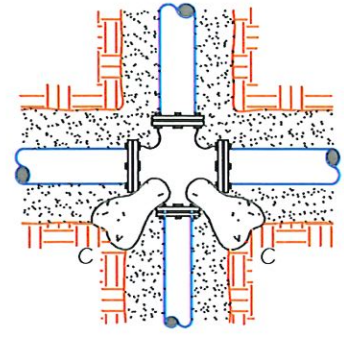
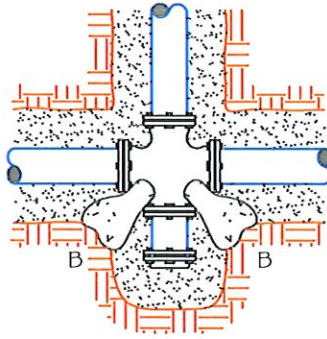
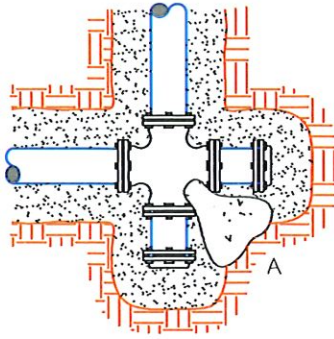


NOTES:
MATERIAL SUBSTITUTIONS OR DETERMINATION OF EQUAL ARE AT
THE SOLE DISCRETION OF LAKE CHELAN RECLAMATION DISTRICT.

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
(FT²)

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 R1A

04_09_01 PowerDetail\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

MIN 4'-0" OUTLINE OF ACCESS HATCH

MIN 3'-0"

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

TRANSITION COUPLING FOR CONNECTION TO EXISTING FORCE MAIN PIPE (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 R1A

G:\water\flow meter vault.dwg (REV A) 01.15.02