
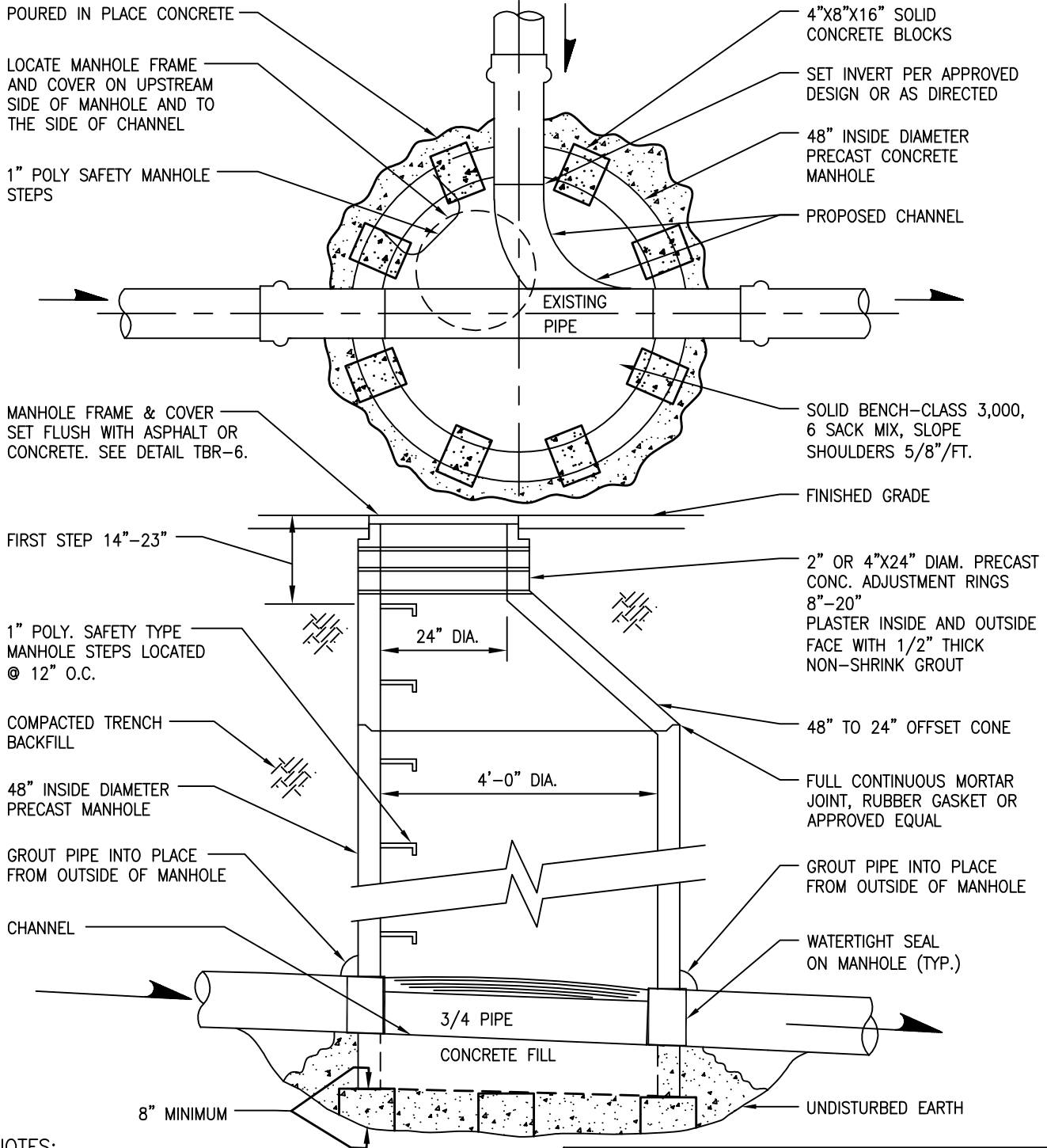


NOTES:

1. MANHOLES SHALL BE WATER TIGHT. GROUT PICK HOLES INSIDE AND OUT.
2. SURFACE RESTORATION IN ACCORDANCE WITH STANDARD SPECIFICATIONS AND LOCAL REGULATORY AUTHORITY.
3. IN NON PAVED AREAS INSTALL 6 FT. DIAMETER CONCRETE PAD 6 INCHES THICK AROUND FRAME AND COVER. UNLESS OTHERWISE DIRECTED BY THE DISTRICT.

 <p>ALDERWOOD WATER & WASTEWATER DISTRICT</p>	
<p>STANDARD PRECAST MANHOLE</p>	
DATE: 11-2015	DWG. S-3
<p>APPROVED BY: <u>DLH</u> DISTRICT ENGINEER</p>	



NOTES:

1. MANHOLES SHALL BE WATER TIGHT. GROUT PICK HOLES INSIDE AND OUT.
2. SURFACE RESTORATION IN ACCORDANCE WITH STANDARD SPECIFICATIONS AND LOCAL REGULATORY AUTHORITY.
3. IN NON PAVED AREAS INSTALL 6 FT. DIAMETER CONCRETE PAD 6 INCHES THICK AROUND FRAME AND COVER. UNLESS OTHERWISE DIRECTED BY THE DISTRICT.
4. TOP OF EXISTING PIPE SHALL BE CUT AND REMOVED ONLY AFTER NEW PIPE IS TESTED AND CCTV'D.



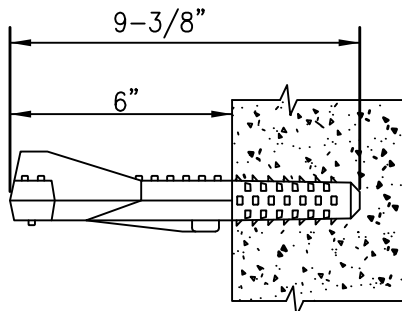
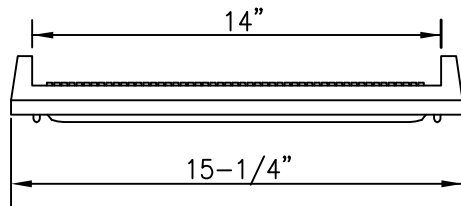
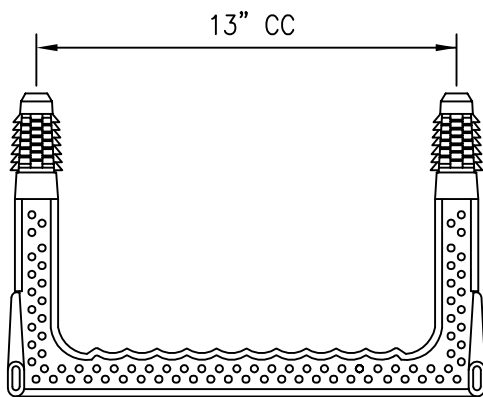
**SADDLE
MANHOLE**

DATE: 11-2015

DWG. S-3A

APPROVED BY: DLH

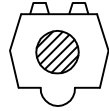
DISTRICT ENGINEER



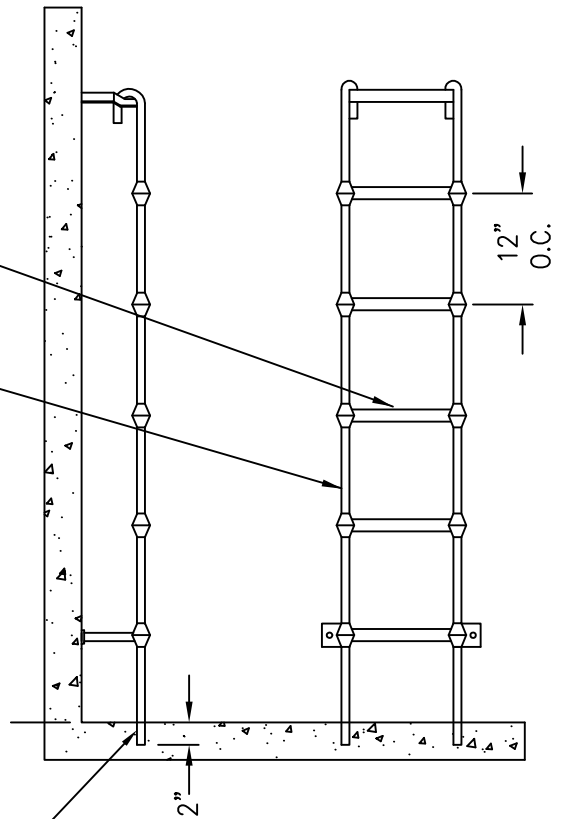
POLYPROPYLENE STEP, LANE NO. P-14938 OR EQUAL

POLYPROPYLENE
MANHOLE STEPS

RUNG
1/2" GRADE 60



RAIL
9/16" ROUND BAR



PROVIDE 2" MINIMUM PENETRATION INTO MANHOLE BASE. PROVIDE MEANS TO SECURELY ANCHOR INTO MANHOLE BASE AND BOLT LADDER TO SIDE OF MANHOLE

LADDER SHALL CONFORM TO COPOLYMER POLYPROPYLENE ASTM D-4101 1/2" GRADE 60 REINFORCING BAR A-615 9/16" COLD DRAWN BAR C-1018

POLYPROPYLENE LADDER



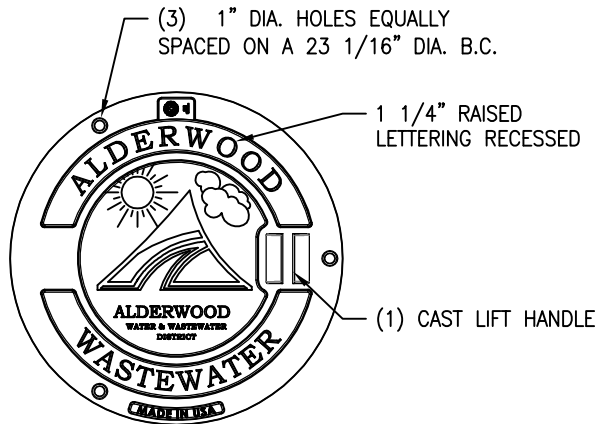
LDERWOOD
WATER & WASTEWATER
DISTRICT

**POLYPROPYLENE LADDER
AND MANHOLE STEPS**

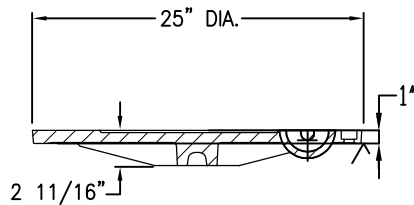
DATE: 11-2015

DWG. S-4

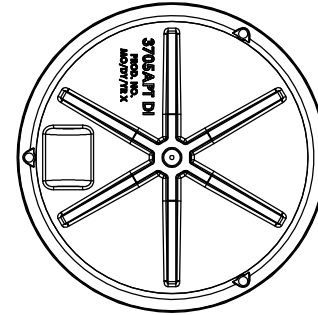
APPROVED BY: DLH
DISTRICT ENGINEER



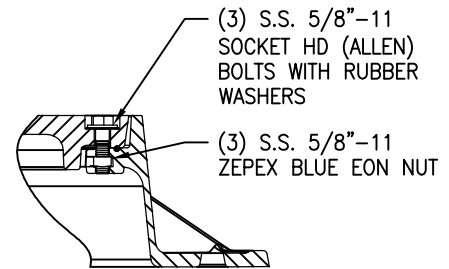
PLAN VIEW



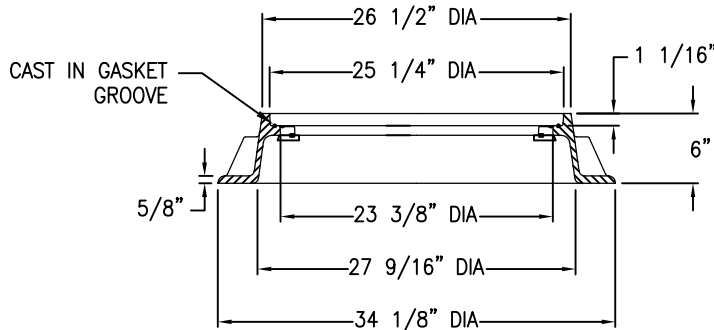
COVER SECTION



BOTTOM VIEW



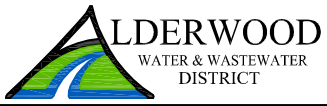
BOLT DETAIL

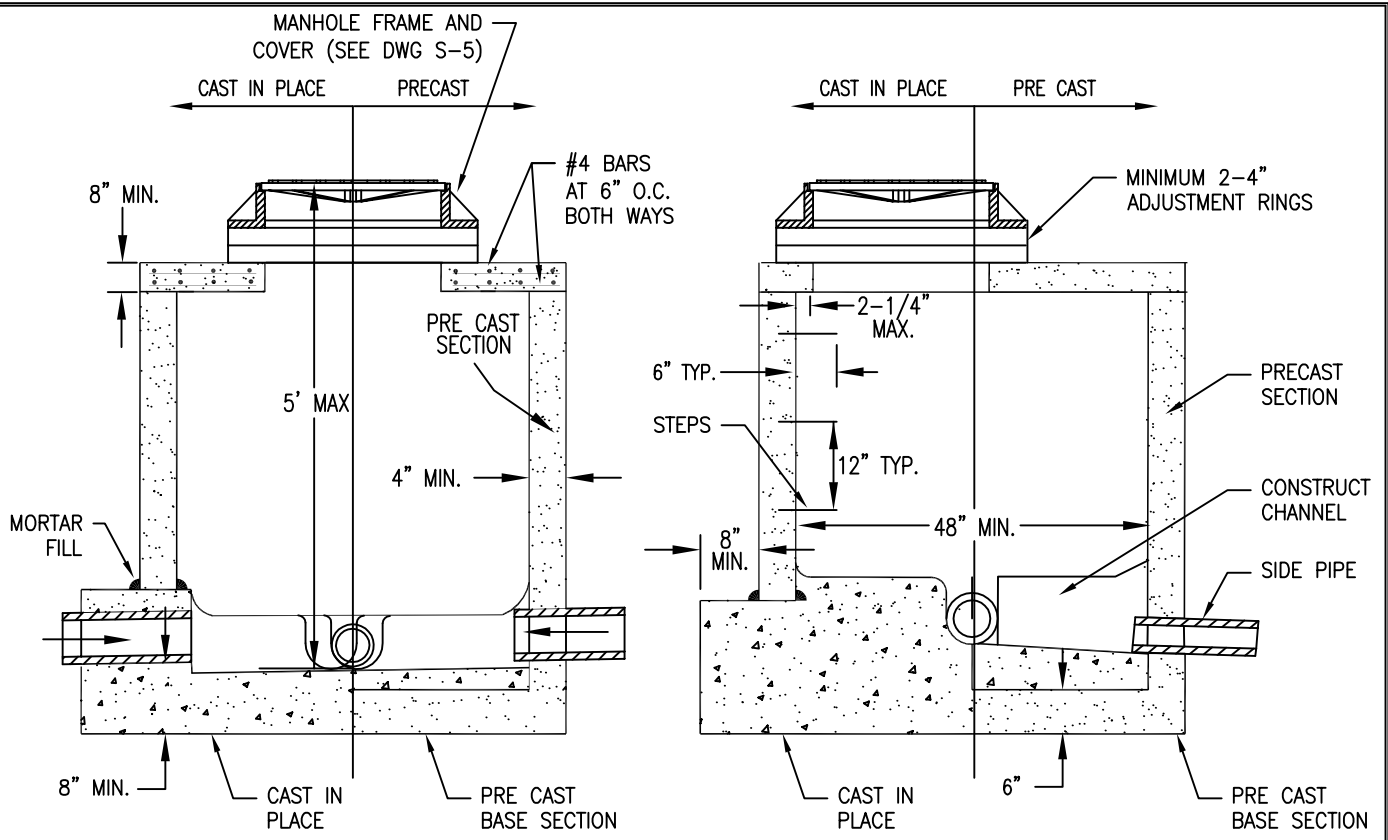


FRAME SECTION

NOTES

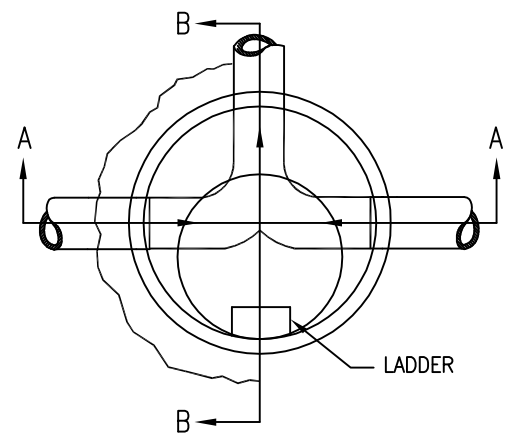
1. MATERIALS ARE DUCTILE IRON COVER ASTM A536, AND GRAY IRON IRON FRAME ASTM A48 CL35B PRODUCT# 3715ZPT.
2. MANUFACTURED IN THE USA BY EAST JORDAN IRON WORKS MANUFACTURING CO. HEAVY DUTY MANHOLE ASSEMBLY (H20 AND HS20 LOADINGS) OR APPROVED EQUAL.
3. MANHOLES LOCATED WITHIN NON-PAVED AREAS SHALL REQUIRE THE INSTALLATION OF GREEN FIBERGLASS MARKER POSTS 5' IN LENGTH WITH DECAL STATING "CAUTION SEWER PIPELINE". THE BURIED END SHALL BE "BARBED" OR AN ANCHOR KIT SHALL BE USED. INSTALL A CONCRETE COLLAR 6' DIAMETER 6" THICK UNLESS OTHERWISE DIRECTED BY THE DISTRICT.
4. 3/4" STRIP OF CONSEAL CD-101 MANHOLE RING AND COVER SEALANT REQUIRED BETWEEN COVER AND FRAME WHERE MANHOLE IS SUSCEPTIBLE TO INUNDATION OR THERE IS THE POTENTIAL FOR EXCESSIVE ODORS OR AS DIRECTED BY THE DISTRICT.
5. IN SIDEWALKS, RAMPS OR CROSSWALKS USE LID COMPLIANT TO AMERICANS WITH DISABILITIES ACT REQUIREMENTS.
6. SEE DETAIL TBR-6 FOR ADJUSTMENT DETAILS.

	
MANHOLE FRAME AND COVER	
DATE: 11-2015	DWG. S-5
APPROVED BY: _____ DLH _____ DISTRICT ENGINEER	




SECTION A-A

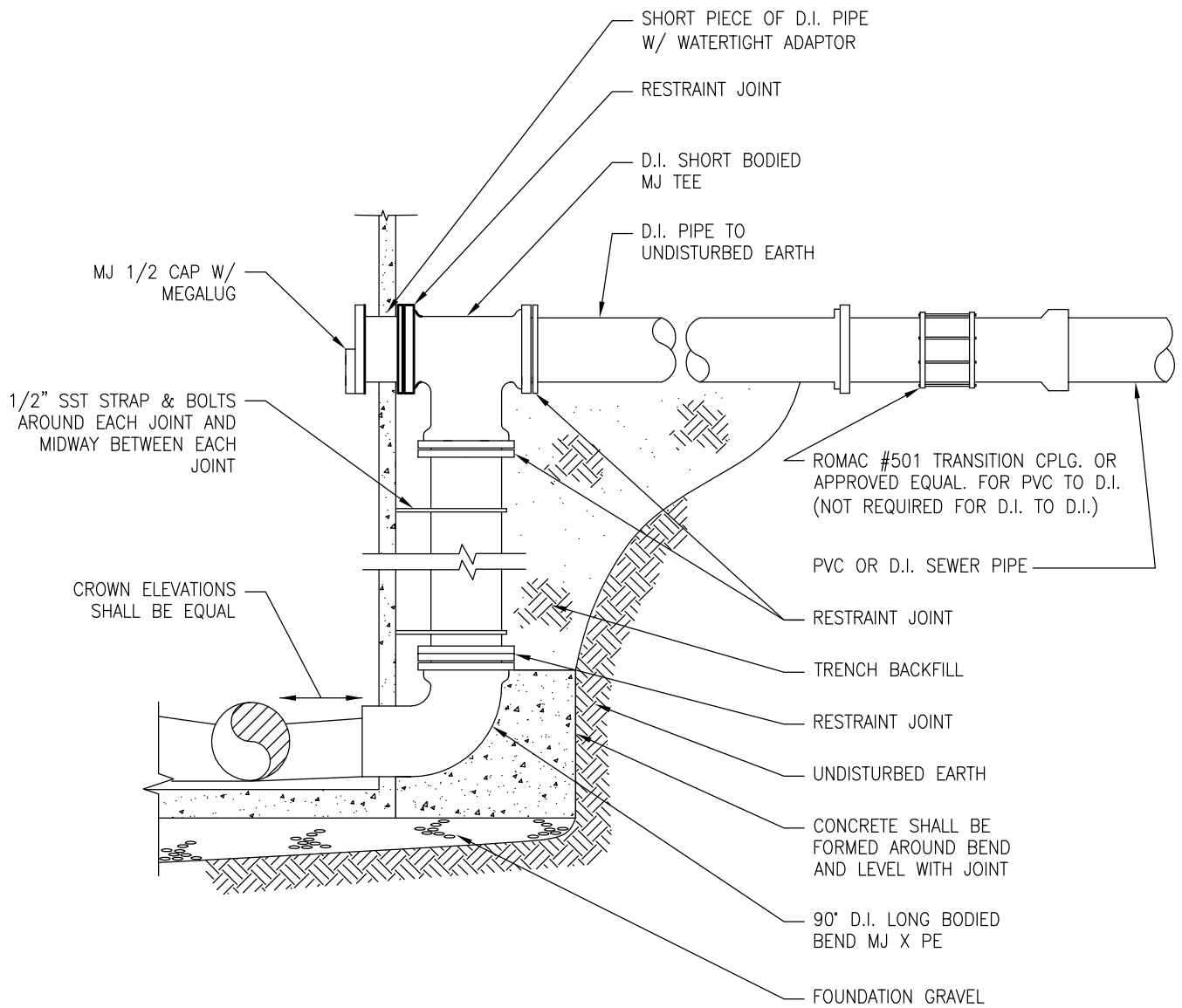
SECTION B-B



NOTES:

1. ONLY USED WITH SPECIAL WRITTEN APPROVAL FROM THE DISTRICT.
2. PRE CAST MANHOLE SECTION AND FLAT SLAB COVER SHALL CONFORM TO WSDOT STD DWG B-23C.
3. ALL MANHOLE JOINTS SHALL BE GROUTED WITH NON-SHRINK GROUT TO INSURE A WATER TIGHT SEAL AND THE INTERIOR SHALL BE TRAWLED TO A BROOM FINISH.
4. ALL CHANNELIZATION OF MANHOLE BASES SHALL BE COVERED BY A RIGID MATERIAL DURING CONSTRUCTION OF ROAD SURFACES TO PREVENT FOREIGN MATERIALS FROM ENTERING SYSTEM.
5. WHEN CONSTRUCTING MANHOLE OVER AN EXISTING MAIN, SUPPORT PIPE(S) AND MANHOLE SECTION WITH CONCRETE BLOCK AND POUR BASE AS SHOWN. REMOVE TOP 1/2 OF MAIN PIPE AND FORM SIDE CHANNEL(S) AS REQUIRED.

	
<p>SHALLOW MANHOLE UNDER 5' INVERT TO COVER</p>	
DATE: 11-2015	DWG. S-6
APPROVED BY: <u>DLH</u> DISTRICT ENGINEER	



NOTE:

1. ALL D.I. JOINTS TO BE RESTRAINED WITH MEGALUG TYPE DEVICES OR APPROVED EQUAL.
2. ALL D.I. PIPE AND FITTINGS TO BE EPOXY LINED.
3. ENTIRE MANHOLE INTERIOR TO BE COATED WITH RAVEN 400 OR EQUAL, UNLESS APPROVED OTHERWISE BY THE DISTRICT.



DROP MANHOLE CONNECTION

DATE: 05-2017

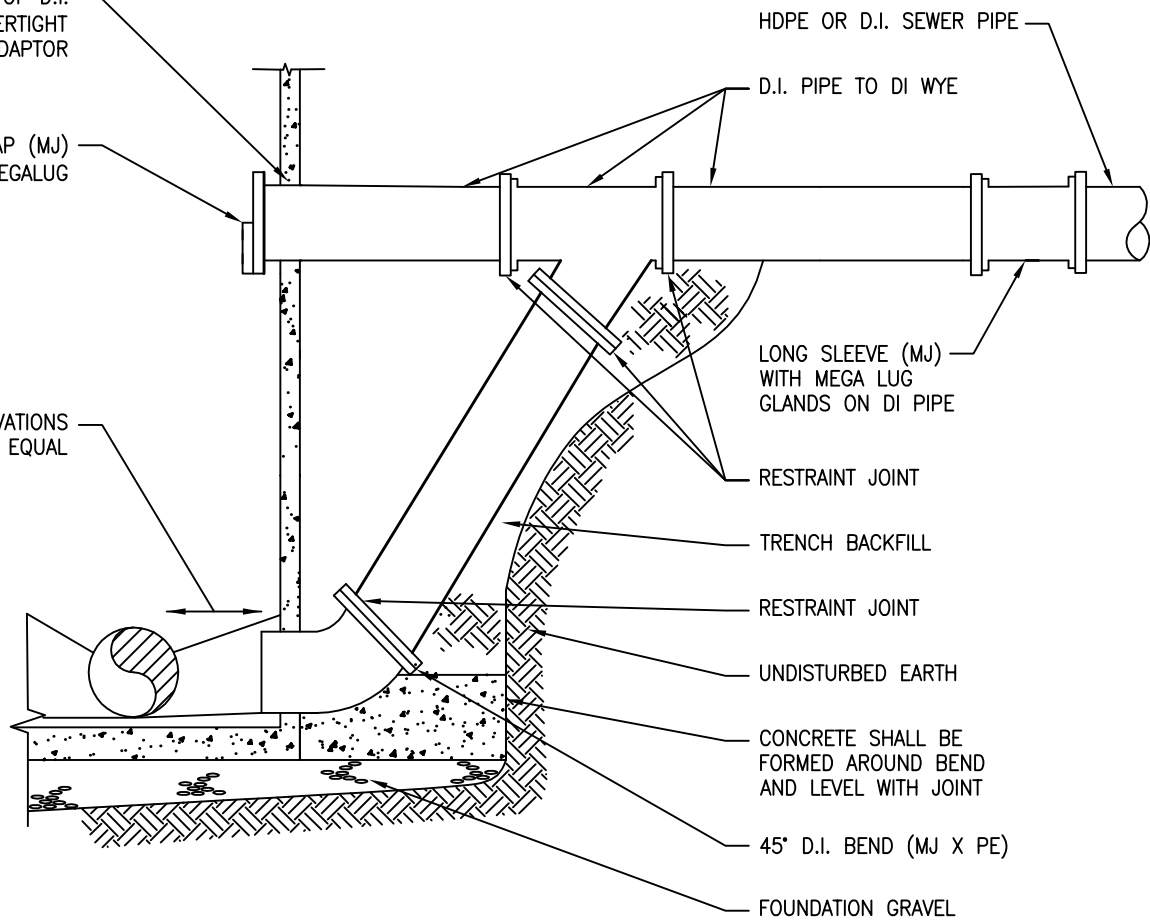
DWG. S-8

APPROVED BY: DLH
DISTRICT ENGINEER

SHORT PIECE OF D.I.
PIPE W/ WATERTIGHT
ADAPTOR

1/2 CAP (MJ)
W/ MEGALUG

CROWN ELEVATIONS
SHALL BE EQUAL



NOTES:

1. ALL D.I. JOINTS TO BE RESTRAINED WITH MEGALUG TYPE DEVICES OR APPROVED EQUAL.
2. ALL D.I. PIPE AND FITTINGS TO BE CERAMIC EPOXY LINED.
3. ENTIRE MANHOLE INTERIOR TO BE COATED WITH RAVEN 400 OR EQUAL.



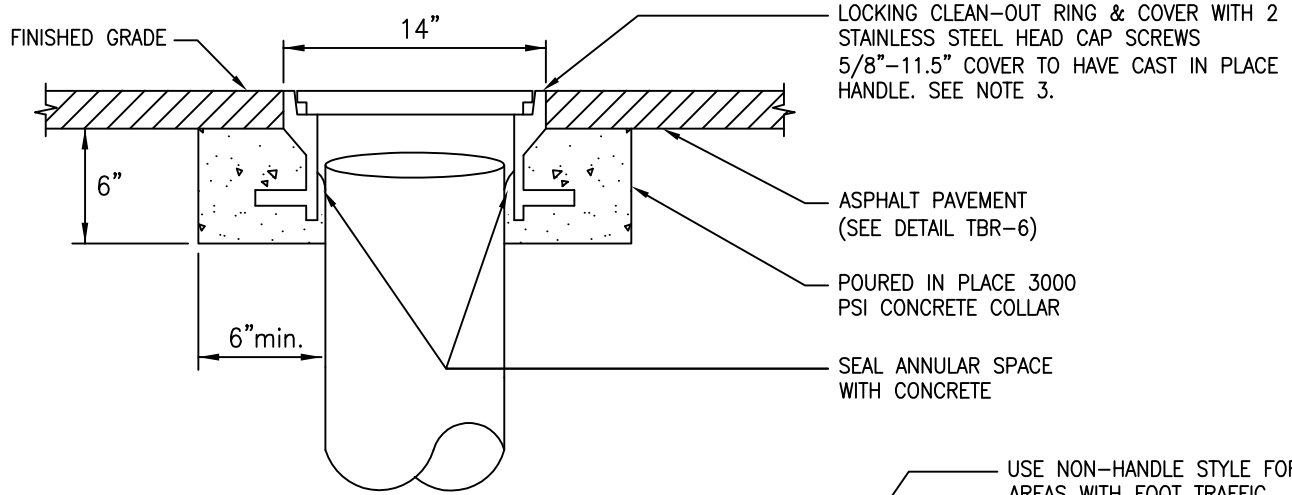
**FORCE MAIN DROP MANHOLE
CONNECTION**

DATE: 11-2015

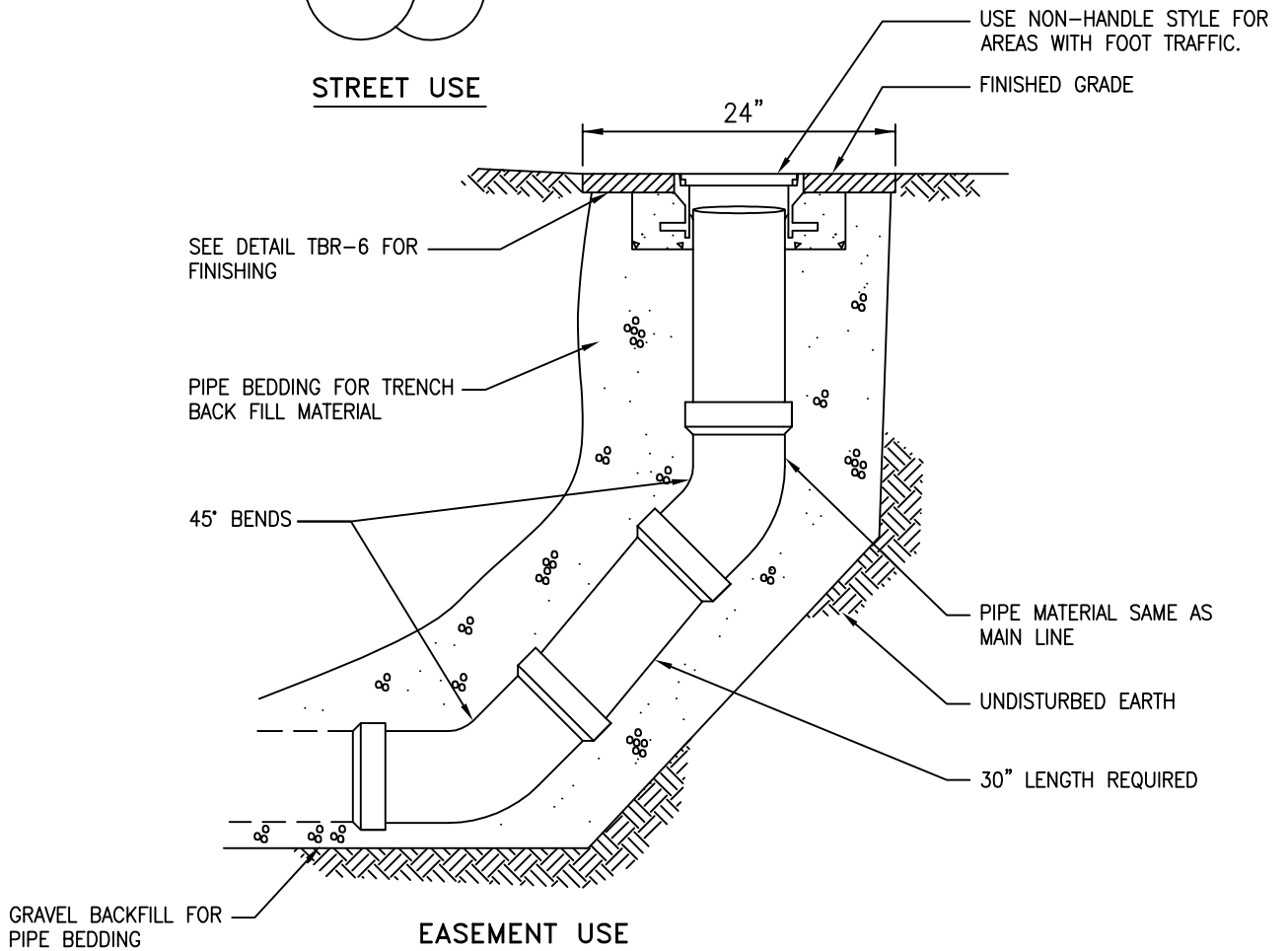
DWG. S-8A

APPROVED BY: _____ DLH _____
DISTRICT ENGINEER

NTS



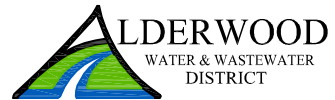
STREET USE



EASEMENT USE

NOTES:

1. RESTORATION SHALL BE IN ACCORDANCE WITH DETAIL TBR-6.
2. TRENCH BACKFILL SHALL BE COMPACTED AND TESTED IN ACCORDANCE WITH STANDARD SPECIFICATIONS AND LOCAL REGULATORY REQUIREMENTS.
3. RING AND COVER SHALL BE EJIW MFG. CO. MODEL NO. 00366107.



LAMPHOLE / CLEANOUT

DATE: 11-2015

DWG. S-9

APPROVED BY: DLH
DISTRICT ENGINEER

WRAP METALLIC MARKER TAPE AROUND SERVICE MARKER BOARD. 4 WRAPS MINIMUM. RUN UP BOARD TO SURFACE. MIN 4 WRAPS AT TOP ALSO.

INSTALL BURIED METALLIC MARKER TAPE 3' ABOVE PIPE. TAPE SHOULD READ "CAUTION BURIED SEWER BELOW". CARLTON IND., BLACKBURN MFG. CO. OR EQUAL.

6" SEWER LATERAL SHALL BE THE SAME MATERIAL AS THE MAIN LINE (PVC, EPOXY LINED D.I., C900 OR HDPE)

6" TEE ON SEWER MAIN

SEWER MAIN

FINISHED GRADE

PROPERTY LINE
PERMANENT EASEMENT LINE

2" X 4" BOARD SERVICE MARKER

4' MIN.

6' MINIMUM
VARIES

3'

APPROVED WATERTIGHT PLUG ON CAP WITH "SEWER" IN BLACK PERMANENT MARKER

MINIMUM SLOPE 2% OR 0.02 FT./FT.

45 DEGREES (100%) MAXIMUM SLOPE FOR PVC (2% MINIMUM SLOPE)

CONCRETE POURED IN PLACE FOR SEWER LATERAL OVER 15% SLOPE

1'

NOTES:

1. 2" X 4" BOARD – LENGTH AS REQUIRED IN EVEN FOOT INCREMENTS. PAINT TOP 4' ABOVE GROUND WITH WHITE PAINT. STENCIL IN BLOCK LETTERS THE WORD "SEWER" & TOTAL LENGTH OF THE 2" X 4" BOARD. LETTERING TO BE 3" IN HEIGHT. TOP OF 2" X 4" SHALL BE 4' ABOVE GROUND LEVEL.
2. FOR DUCTILE IRON PIPE IN RIGHT-OF-WAY & EASEMENTS, USE RESTRAINING DEVICE AS SPECIFIED BY THE DISTRICT.
3. PROVIDE DISTANCE IN FEET FROM TEE TO DOWNSTREAM MANHOLE TO THE DISTRICT.



**SEWER LATERAL
NEW CONSTRUCTION**

DATE: 11-2015

DWG. S-10

APPROVED BY: DLH
DISTRICT ENGINEER

WRAP METALLIC MARKER TAPE AROUND SERVICE MARKER BOARD. 4 WRAPS MINIMUM. RUN UP BOARD TO SURFACE. MIN 4 WRAPS AT TOP ALSO.

INSTALL BURIED METALLIC MARKER TAPE 3' ABOVE PIPE. TAPE SHOULD READ "CAUTION BURIED SEWER BELOW". CARLTON IND., BLACKBURN MFG. CO. OR EQUAL.

6" SEWER LATERAL PIPE MATERIAL SHALL MATCH THE MAIN LINE (EXCEPT CONCRETE) PVC, EPOXY LINED DI, C900 OR HDPE AS SPECIFIED BY DISTRICT.

6" TAPPING TEE/SADDLE ON SEWER MAIN SEE NOTE 4

SEWER MAIN

FINISHED GRADE

PROPERTY LINE
PERMANENT EASEMENT LINE

2" X 4" BOARD SERVICE MARKER

4'-0"

6'-0" MINIMUM
VARIES

APPROVED WATERTIGHT PLUG ON CAP WITH "SEWER" IN BLACK PERMANENT MARKER

MINIMUM SLOPE 2%

45 DEGREES (100%) MAXIMUM SLOPE FOR PVC 2% MINIMUM SLOPE

CONCRETE POURED IN PLACE FOR TAPPED SIDE SEWER OVER 15% SLOPE

1'-0"

NOTES:

1. 2" X 4" BOARD – LENGTH AS REQUIRED IN EVEN FOOT INCREMENTS. PAINT TOP 5' WITH WHITE PAINT. STENCIL IN BLOCK LETTERS THE WORD "SEWER" & TOTAL LENGTH OF THE 2" X 4" BOARD. LETTERING TO BE 3" IN HEIGHT. TOP OF 2" X 4" SHALL BE 4' ABOVE GROUND LEVEL.
2. CONTRACTOR TO PROVIDE ALL MATERIALS, TRAFFIC CONTROL, PERMITS, FLAGGING, SHORING AND MISCELLANEOUS WORK TO TAP THE MAIN AND INSTALL THE SIDE SERVICE.
3. FOR DUCTILE IRON PIPE IN RIGHT- OF-WAY & EASEMENTS, USE RESTRAINING DEVICE AS SPECIFIED BY THE DISTRICT.
4. FOR TAPS ON:
DI USE SST ROMAC, SMITH BLAIR, OR FORD TAPPING TEE. PVC OR CONCRETE, USE ROMAC CB TEE W/SST CLAMP, HDPE CONSULT THE DISTRICT.
5. PROVIDE DISTANCE IN FEET FROM TEE/SADDLE TO DOWNSTREAM MANHOLE TO THE DISTRICT.

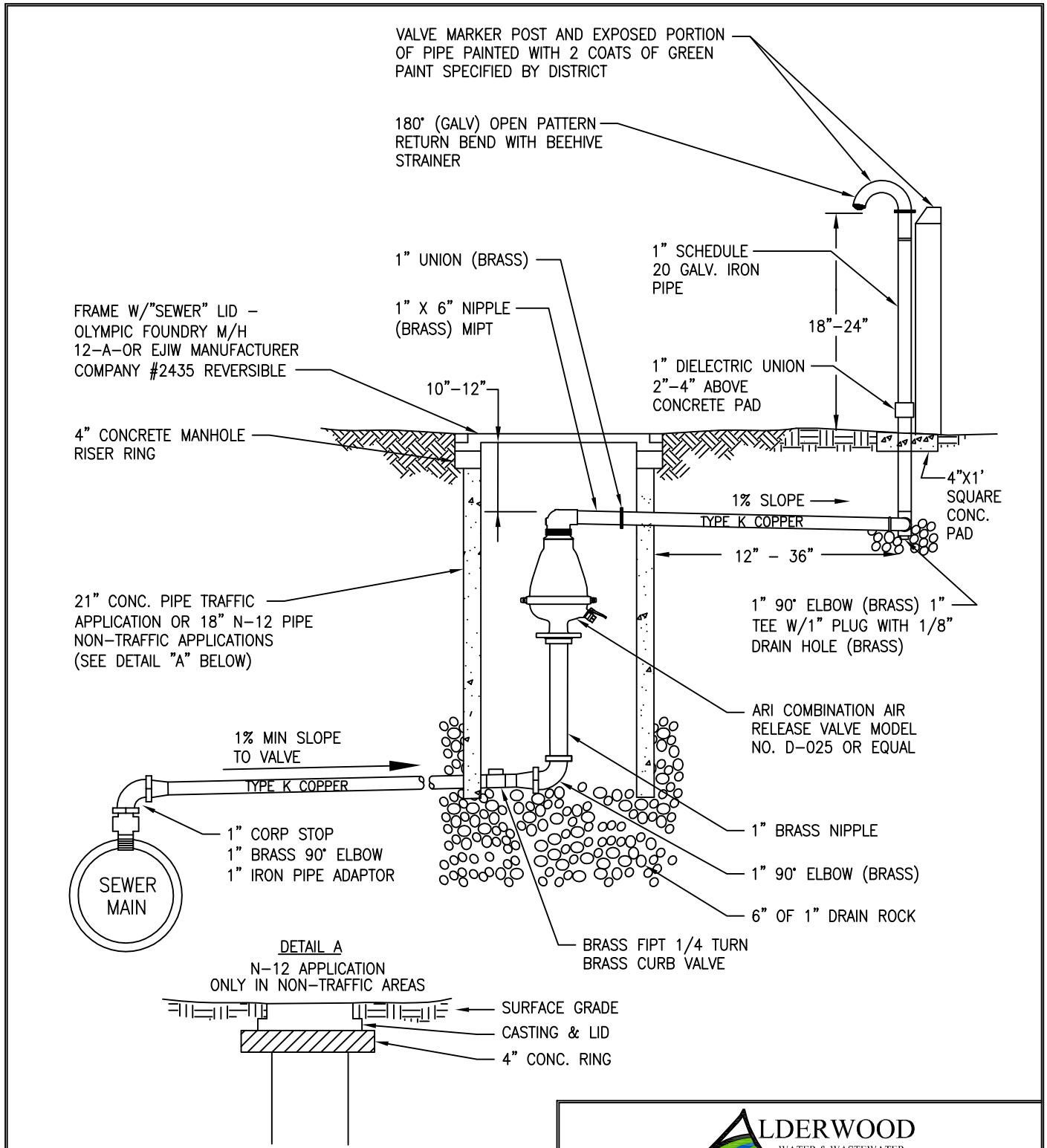


**SEWER LATERAL
EXISTING MAINS**

DATE: 11-2015


DWG. S-11

APPROVED BY: DLH
DISTRICT ENGINEER

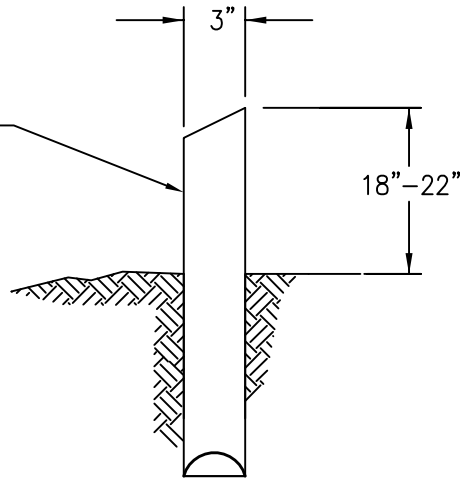


NOTES:

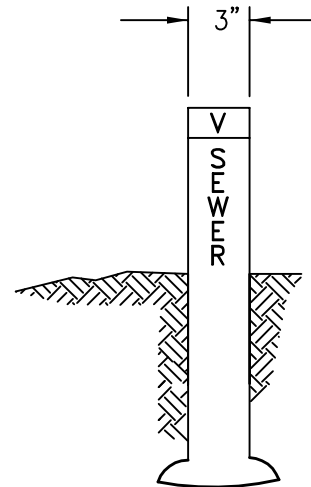
1. INSTALL AT HIGH POINTS IN THE WATER MAIN. LOCATIONS AS DIRECTED BY THE DISTRICT.
2. LOCATE AIR RELEASE DISCHARGE PIPE NEAR PROPERTY LINE OR AS DIRECTED BY THE DISTRICT.
3. LENGTH OF 1" TYPE K COPPER AS DIRECTED BY THE DISTRICT.

 <p>ALDERWOOD WATER & WASTEWATER DISTRICT</p>	
<p>1" WASTEWATER COMBINATION AIR AND VACUUM RELEASE VALVE</p>	
DATE: 11-2015	DWG. S-12
<p>APPROVED BY: <u>DLH</u> DISTRICT ENGINEER</p>	

REINFORCED CONCRETE MARKER
POST STAMPED WITH "V" AND
DISTANCE TO VALVE TO THE
NEAREST FOOT STENCILLED WITH
WHITE 2" NUMERALS



SIDE



FRONT

VALVE MARKER POST

NOTES:

1. INSTALL AT ALL VALVES NOT LOCATED WITHIN PAVED AREA.
2. THE LETTER V AND THE WORD SEWER SHALL BE CAST IN THE FACE OF THE MARKER FACING THE VALVE WITH THE DISTANCE TO THE VALVE PAINTED ON THE MARKER WITH WHITE ENAMEL PAINT.
3. PAINT THE ABOVE GROUND PORTION WITH 2 COATS OF GREEN PAINT SPECIFIED BY DISTRICT.
4. MARKERS SHALL BE DIRECT BURY.
5. 66" CARSONITE, HANSON TRI-FLEX, OR EQUAL MAY BE USED UPON APPROVAL BY THE DISTRICT.



ALDERWOOD
WATER & WASTEWATER
DISTRICT

SEWER VALVE MARKER POST

DATE: 11-2015

DWG. S-13

APPROVED BY: DLH
DISTRICT ENGINEER