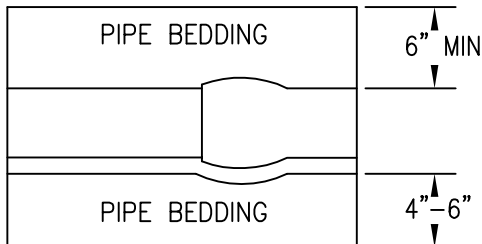


TABLE "A"

6" PIPE	-2'-6"
8" PIPE	-2'-6"
10" PIPE	-3'-0"
12" PIPE	-3'-0"
16" PIPE	-3'-6"
18" PIPE	-4'-0"
24" PIPE	-4'-0"

TRENCH BOTTOM DETAIL



KEEP TRENCH BOTTOM COMPACTED WITH UNIFORM GRADE. NO TEMPORARY SUPPORTS I.E. BLOCKS, ALLOWED TO SUPPORT PIPE. TRENCH BOTTOM SHALL BE TO GRADE PRIOR TO PIPE INSTALLATION.

NOTES:

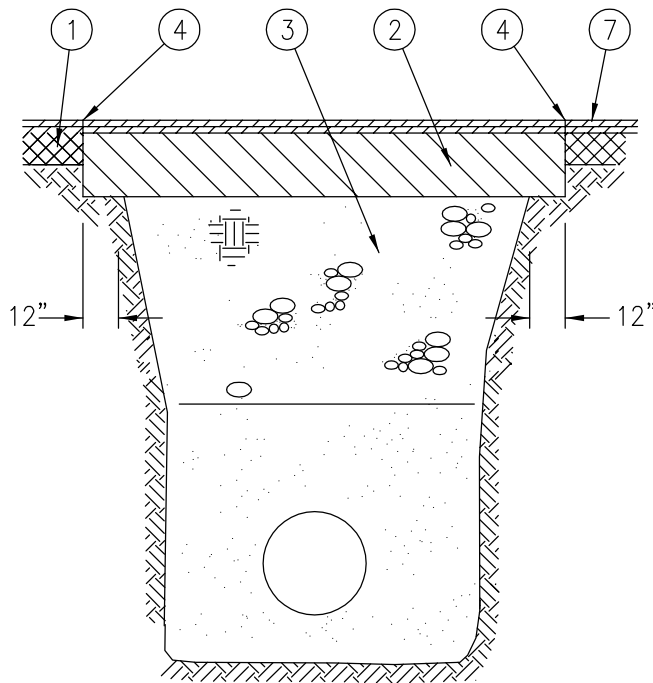
1. REFERENCE DIVISION 7
2. SURFACE RESTORATION IN ACCORDANCE WITH LOCAL JURISDICTIONAL REQUIREMENTS



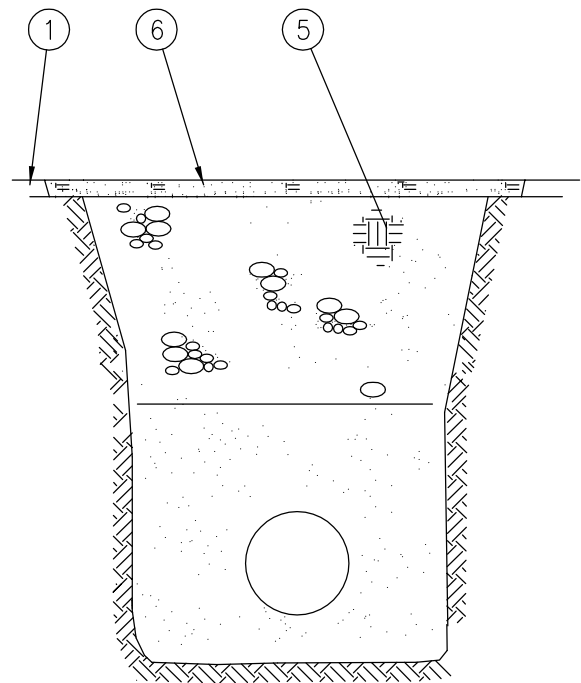
**TRENCH SECTION
PIPE BEDDING AND
TRENCH BACKFILL**

DATE: 11-2015 DWG. TBR-1

APPROVED BY: DLH
DISTRICT ENGINEER



ACP RESTORATION



**UNPAVED
SHOULDER AND
PRIVATE EASEMENT**

- ① EXISTING SURFACE
- ② LONGITUDINAL TRENCH – 6" HMA CLASS 1/2" OR 2" HMA CLASS 1/2" + 4" HMA CLASS 1"
TRANSVERSE TRENCH – 8" HMA CLASS 1/2" OR 2" HMA CLASS 1/2" + 6" HMA CLASS 1"
- ③ TRENCH BACKFILL OR CONTROL DENSITY FILL PER LOCAL JURISDICTIONAL REQUIREMENTS.
- ④ NEAT LINE ACP CUT. TACK EDGES WITH AR 4000 ASPHALT CEMENT. SEAL EDGES WITH AR 4000 ASPHALT CEMENT.
- ⑤ TRENCH BACKFILL.
- ⑥ RESTORE EXISTING SURFACE. TOP SOIL, CSTC (2" MINIMUM) OR AS NOTED ON PLANS.
- ⑦ 2" HMA CLASS 1/2" OVERLAY WHEN SPECIFIED ON PLANS OR REQUIRED BY THE JURISDICTIONAL AUTHORITY.

HMA= HOT MIX ASPHALT
 AR= ASPHALT RUBBER
 CSTC= CRUSHED SURFACE TOP COURSE
 ACP= ASPHALT CONCRETE PAVEMENT

NOTES:

- 1. RESTORATION TO BE EXISTING CONDITION OR BETTER.
- 2. ALL WORK TO COMPLY WITH REQUIREMENTS OF LOCAL JURISDICTIONAL AUTHORITY.
- 3. IF PERMEABLE SURFACE IS REQUIRED, INSTALL OR REPLACE IN KIND ACCORDING TO JURISDICTIONAL REQUIREMENTS.

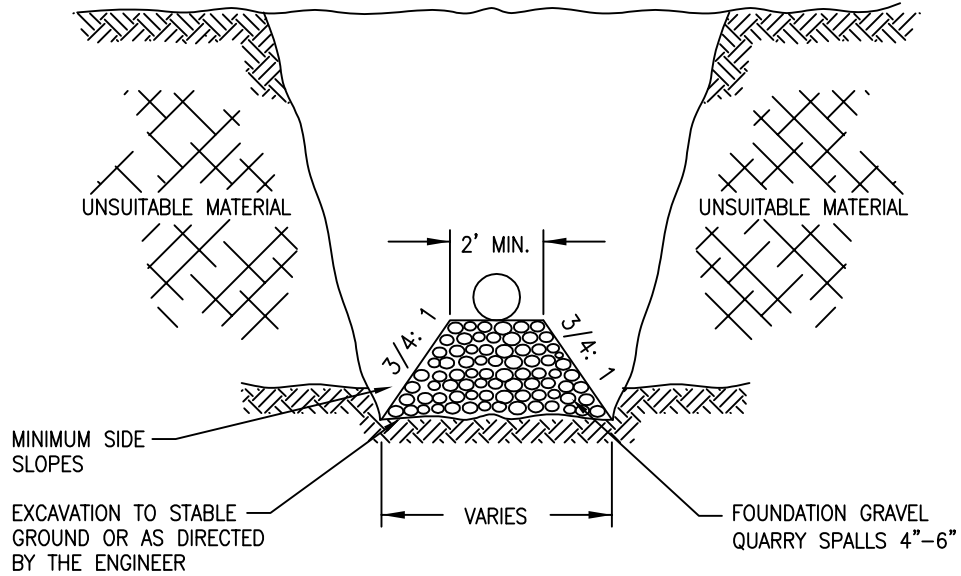


TRENCH SURFACE RESTORATION

DATE: 05-2017


DWG. TBR-2

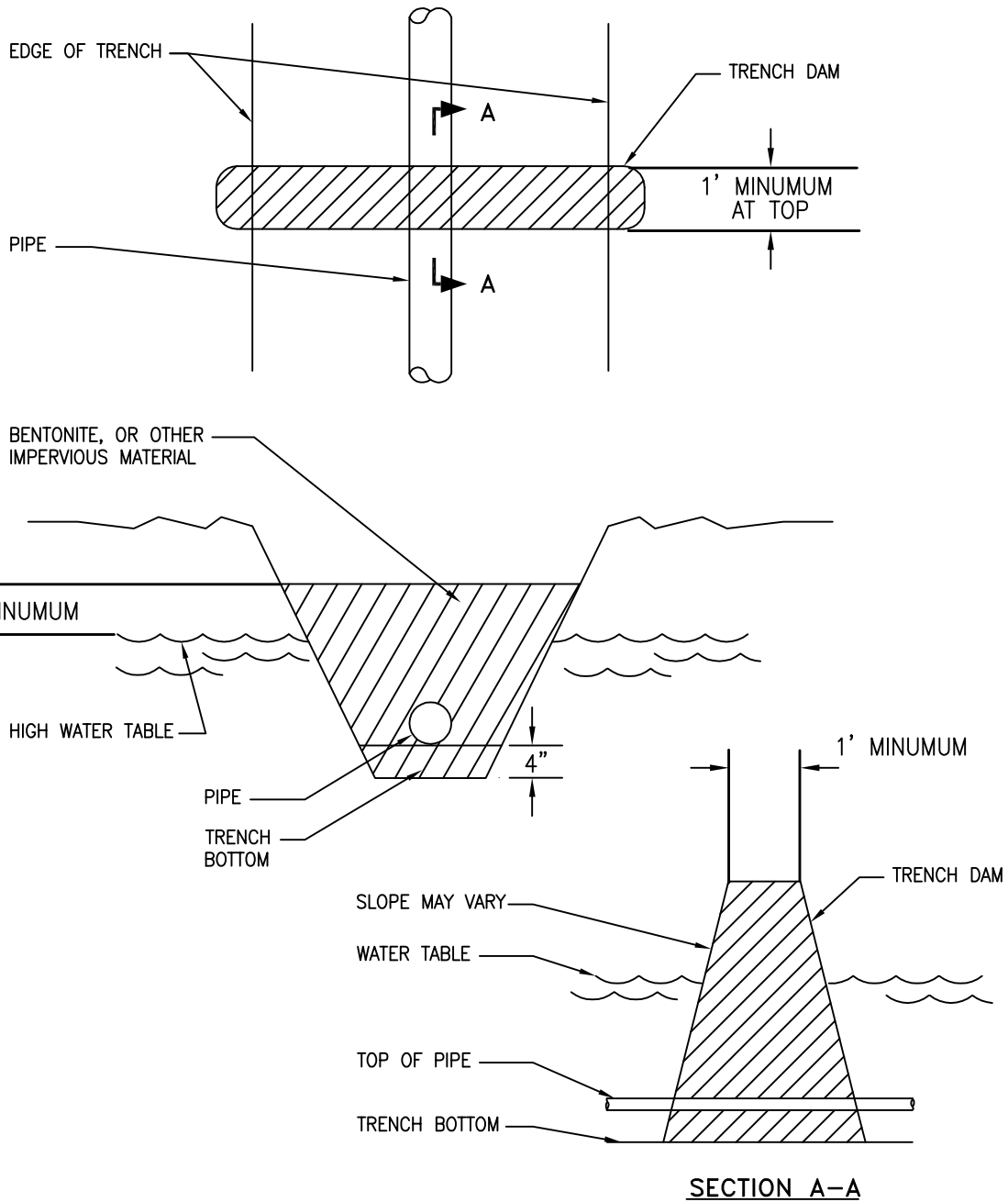
APPROVED BY: DLH
 DISTRICT ENGINEER



NOTES:

1. OVER EXCAVATION REQUIRED WHEN UNSUITABLE FOUNDATION MATERIALS ENCOUNTERED.
2. STRICTLY COMPLY WITH ALL TRENCH SAFETY SYSTEM REQUIREMENTS.
3. RESTRAINED JOINT PIPE MAY BE REQUIRED AS DIRECTED BY THE DISTRICT.
4. BACKFILL TRENCH IN ACCORDANCE WITH DIVISION 7 AND TBR-1.


 ALDERWOOD WATER & WASTEWATER DISTRICT	
UNSUITABLE FOUNDATION EXCAVATION	
DATE: 11-2015	DWG. TBR-3
APPROVED BY: _____ DLH _____ DISTRICT ENGINEER	

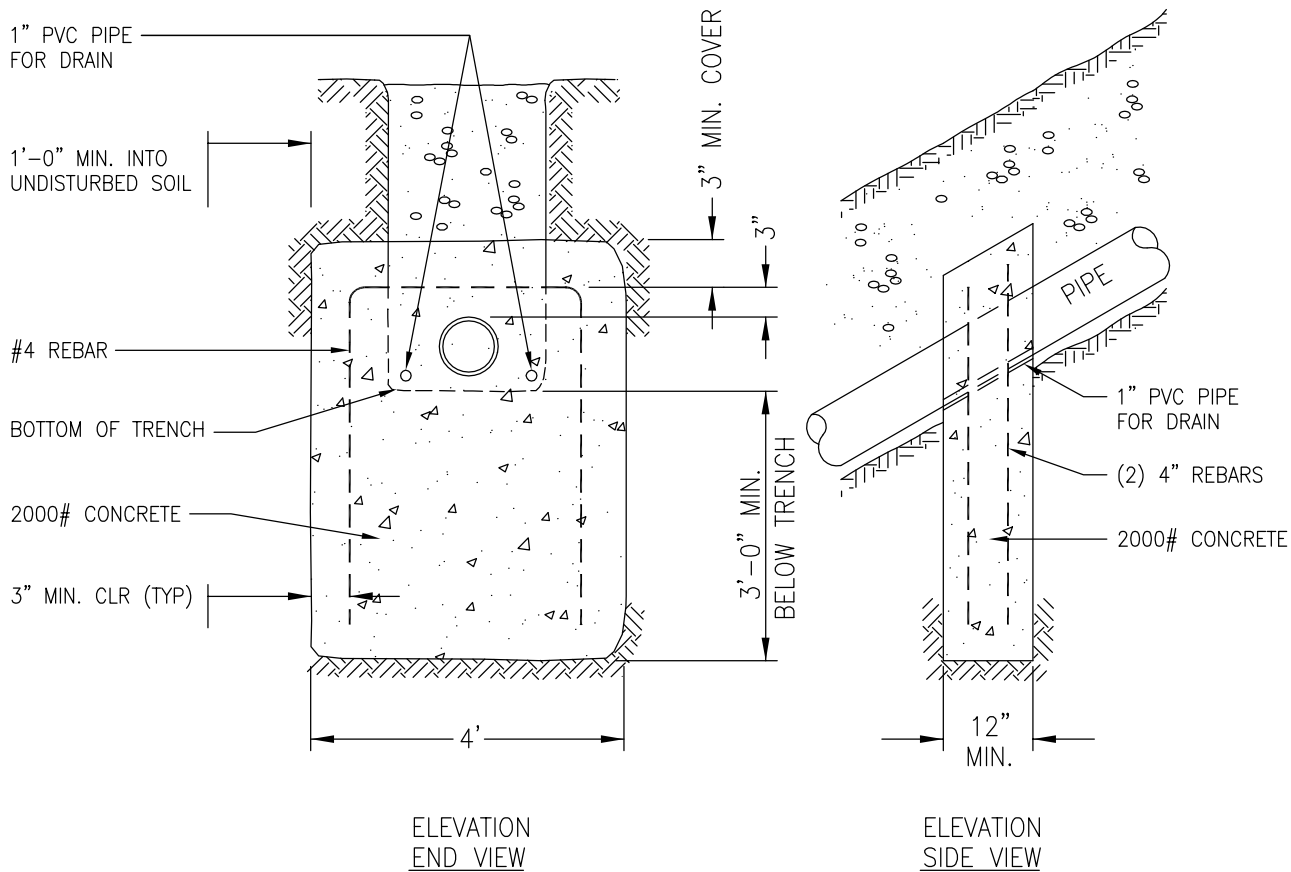


SECTION A-A

NOTES:

- 1. INSTALL IN HIGH GROUND WATER AREAS, ADJACENT TO WETLANDS AND STREAM CROSSINGS OR AS SHOWN ON PLANS OR AS DIRECTED BY THE DISTRICT.
- 2. ELEVATION AT TOP OF TRENCH DAM TO VARY BASED ON WATER TABLE AS DIRECTED BY THE DISTRICT.

 ALDERWOOD WATER & WASTEWATER DISTRICT	
TRENCH DAMS	
DATE: 11-2015	DWG. TBR-4
APPROVED BY: _____ DLH _____ DISTRICT ENGINEER	




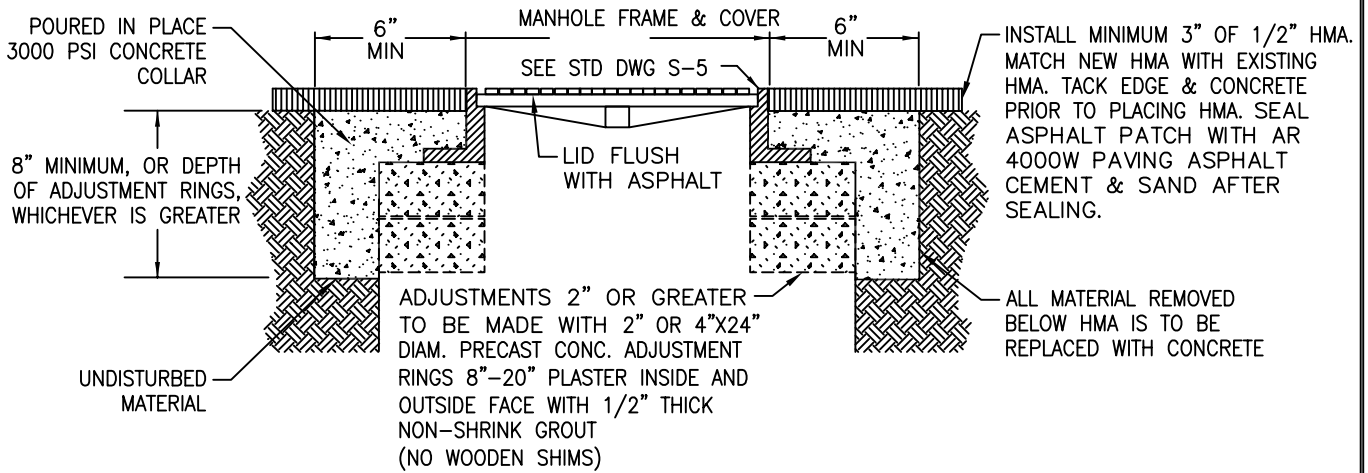
NOTES:

1. REQUIRED ON ALL PIPES WHERE SLOPE EQUALS 20% OR GREATER.
2. PROVIDE EROSION CONTROL AS REQUIRED BY JURISDICTIONAL AUTHORITY.
3. DO NOT USE ANCHORS IN SANDY MATERIAL, UNLESS DIRECTED OTHERWISE BY THE DISTRICT.
4. TIGHT WRAP PIPE WITH 8 MIL. PLASTIC ON DI.
5. ANCHOR PLACED ON THE LOWER SIDE OF THE BELL.
6. FOR HDPE, BUTT FUSE RING TO OUTSIDE OF PIPE DIRECTLY ABOVE ANCHOR LOCATION. FOR C-900, INSTALL A UNIFLANGE DIRECTLY ABOVE OR IN ANCHOR.

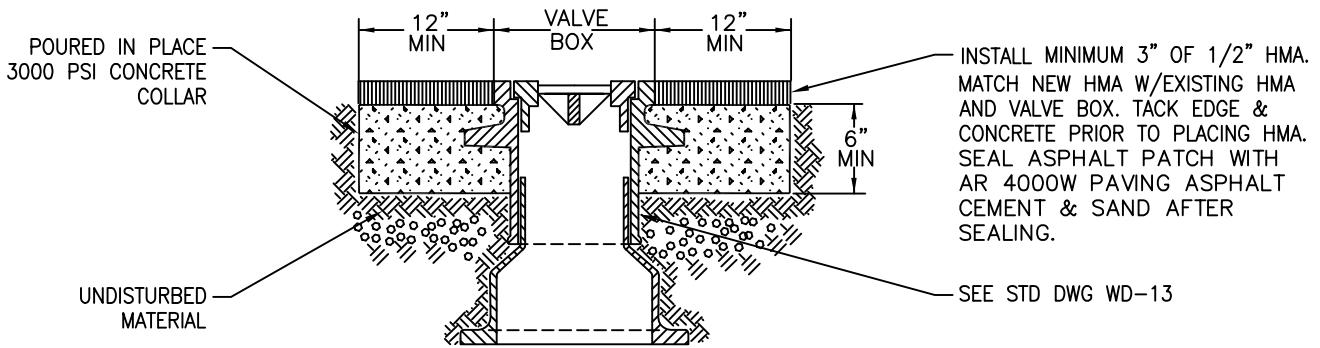
MINIMUM ANCHORAGE SPACING:

- NOT OVER 36 FEET CENTER TO CENTER ON GRADES 20 PERCENT AND UP TO 35 PERCENT.
- NOT OVER 24 FEET CENTER TO CENTER ON GRADES 35 PERCENT AND UP TO 50 PERCENT.
- NOT OVER 16 FEET CENTER TO CENTER ON GRADES 50 PERCENT AND OVER.

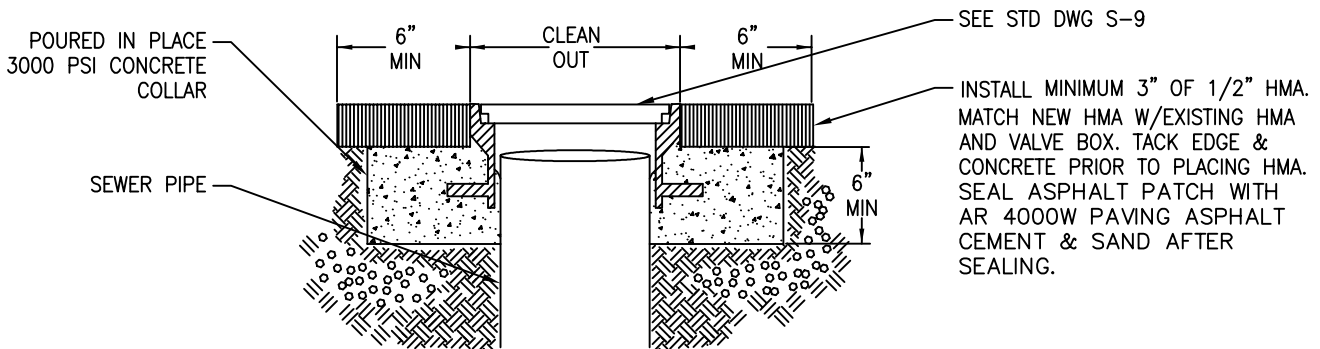
 ALDERWOOD WATER & WASTEWATER DISTRICT	
CONCRETE ANCHOR FOR PIPE IN STEEP SLOPES	
DATE: 05-2017	DWG. TBR-5
APPROVED BY: _____ DLH _____ DISTRICT ENGINEER	



MANHOLE FRAME & COVER



VALVE BOX



LAMPHOLE / CLEAN-OUT

NOTES:

1. A CONCRETE COLLAR IS REQUIRED ON ALL INSTALLATIONS. IN UNIMPROVED OR UNPAVED AREAS, INSTALL THE CONCRETE COLLAR TO FINISH GRADE AS FOLLOWS:

- MANHOLE: 6 FT DIA. 6 IN THICK
- VALVE BOX: 3 FT DIA. 4 IN THICK
- LAMPHOLE/CLEAN-OUT: 2 FT DIA. 6 IN THICK

UNLESS OTHERWISE DIRECTED BY THE DISTRICT.

2. IF MARKER POST IS REQUIRED, SEE DETAIL WD-18 OR S-5.

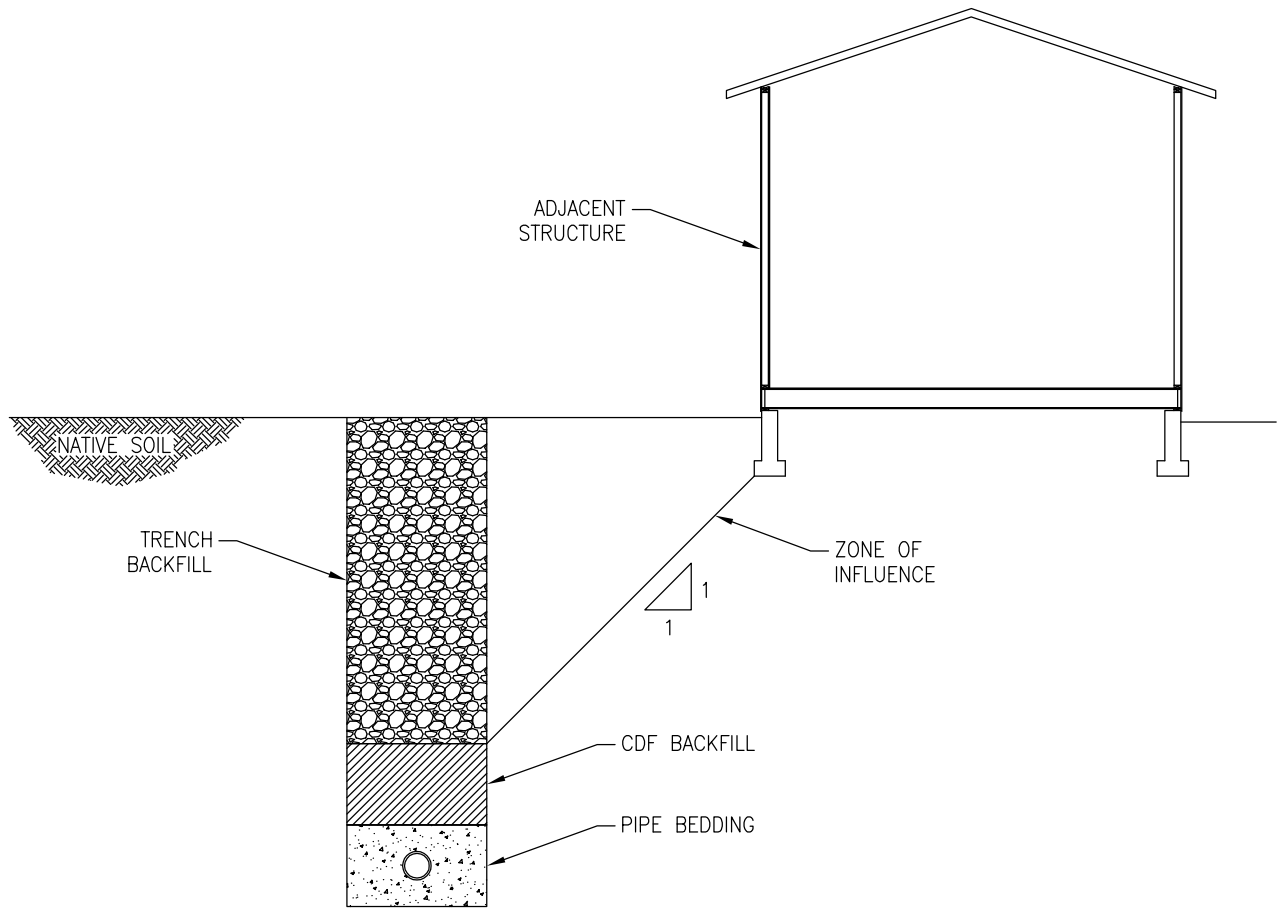


CASTING ADJUSTMENTS

DATE: 11-2015


DWG. TBR-6

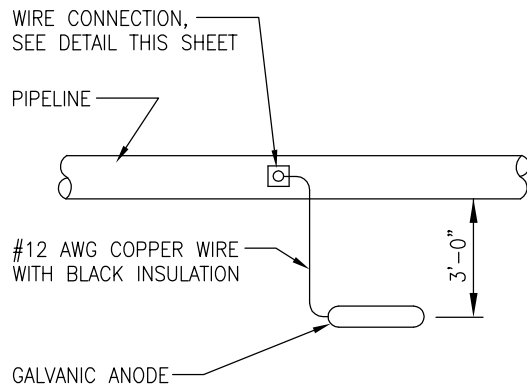
APPROVED BY: _____ DLH
DISTRICT ENGINEER



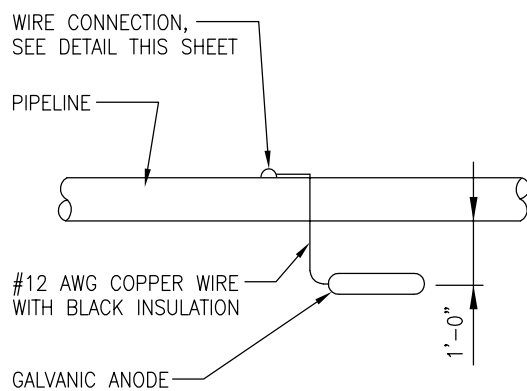
NOTES:

IN ACCORDANCE WITH SECTION 7 OF AWWD STANDARDS AND GUIDELINES, EXISTING AND PROPOSED STRUCTURES LOCATED WITHIN A 1:1 SLOPE FROM THE BOTTOM OF THE TRENCH EXCAVATION ARE CONSIDERED TO BE WITHIN A ZONE OF INFLUENCE ON THE TRENCH. PER THIS DOCUMENT, PORTIONS OF THE TRENCH EXCAVATION EXTENDING BELOW THIS 1:1 PLANE MUST BE FILLED FROM THE TOP OF BEDDING USING CONTROLLED DENSITY FILL (CDF). CDF TRENCH BACKFILL SHOULD ALSO BE USED WHEN INTERSECTED UTILITIES HAVE BEEN PROTECTED IN PLACE OR WHERE CONVENTIONAL TRENCH BACKFILL EQUIPMENT AND COMPACTION CANNOT BE EMPLOYED. CDF MATERIALS SHALL MEET MIX DESIGN REQUIREMENTS PER SECTION 7.2-010 OF AWWD STANDARDS AND GUIDELINES. METALLIC PIPES INSTALLED BELOW CONCRETE TREATED TRENCH BACKFILL SUCH AS CDF OR KILN DUST SHALL BE PROTECTED IN ACCORDANCE WITH SECTION 7-3.070 (f)

 ALDERWOOD WATER & WASTEWATER DISTRICT	
ZONE OF INFLUENCE	
DATE: 05-2017	DWG. TBR-7
APPROVED BY: _____ DLH _____ DISTRICT ENGINEER	



PLAN

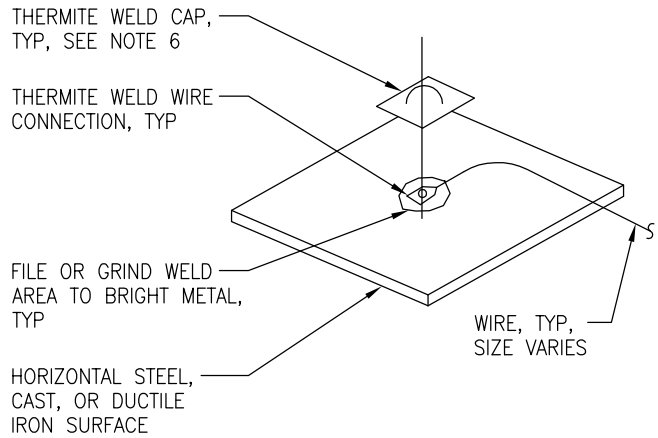


ELEVATION

GALVANIC ANODE INSTALLATION
FOR METALLIC PIPE
 NTS

NOTES:

1. COPPER SLEEVE REQUIRED FOR THERMITE WELDING OF #10 AWG AND SMALLER WIRE.
2. USE COPPER SLEEVE FOR THERMITE WELDING OF #4 AND #2 AWG JOINT BONDING WIRES.
3. WELDER AND CARTRIDGE SIZE VARIES ACCORDING TO SURFACE SHAPE, MATERIAL, AND HORIZONTAL OR VERTICAL SURFACE. CONSULT WELDER MANUFACTURER FOR RECOMMENDED WELDER AND CARTRIDGE.
4. FOR MULTIPLE WIRE CONNECTIONS TO PIPE SEPARATE THERMITE WELD WIRE CONNECTIONS BY ONE PIPE DIAMETER MINIMUM, 2'-0" MAXIMUM.
5. USE 15 GRAM MAXIMUM SIZE WELD CARTRIDGES FOR CONNECTIONS TO PETROLEUM AND NATURAL GAS PIPELINES OR STRUCTURES. WIRE CONNECTIONS SHALL BE AS SPECIFIED AND APPROVED BY THE OWNER.
6. COAT COMPLETED THERMITE WELD CONNECTIONS WITH ROYSTON HANDYCAP AND 747 PRIMER OR HEAT SHRINK AS SPECIFIED.



WIRE CONNECTION FOR
HORIZONTAL SURFACES
 NTS



**GALVANIC ANODE
 INSTALLATION**

DATE: 07-2017

DWG. TBR-8

APPROVED BY: _____ SDS
 DEVELOPMENT ENGINEER