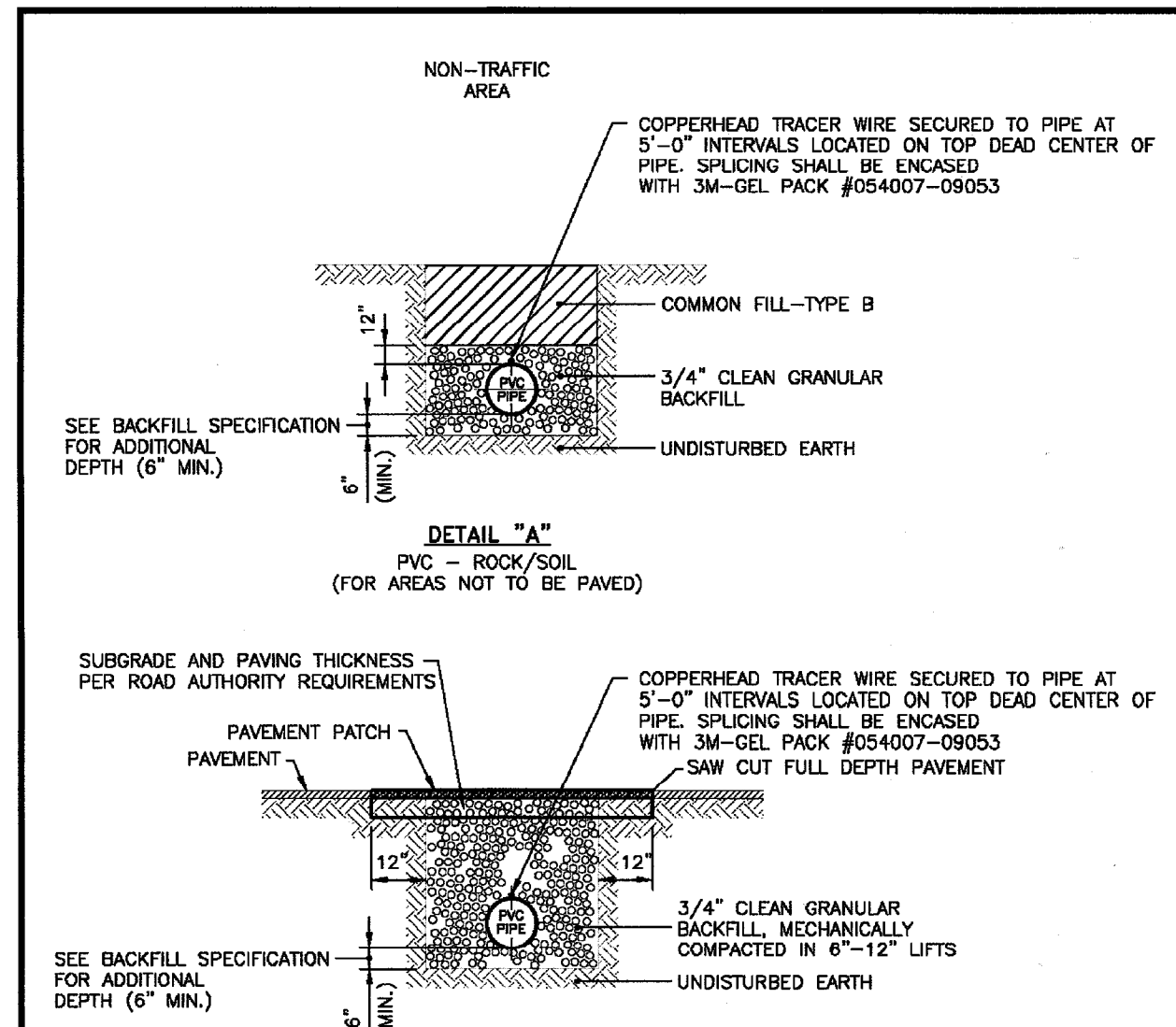


COMPACTED 3/4" CLEAN CRUSHED STONE BACKFILL TO NATURAL GROUND

PREFABRICATED STEEL REINFORCED CONCRETE BLOCKING PAD FOR VALVES USED WITH PVC PIPE. SEE DWG. NO. 0201-0601-SD12.

REVISIONS	MISSOURI AMERICAN WATER STANDARD CIVIL VALVE BOX INSTALLATION DETAIL
MISSOURI AMERICAN WATER ENGINEERING ST. LOUIS, MO. 63141	MISSOURI AMERICAN WATER ENGINEERING ST. LOUIS, MO. 63141
DESIGNED BY DATE 11-13-08	DESIGNED BY DATE 11-13-08
CHECKED BY DATE 11-13-08	CHECKED BY DATE 11-13-08
PROJECT NO. 0201-0601-SD59	PROJECT NO. 0201-0601-SD59
ISSUE APPROVED ONLY FOR CONTRACTOR PURPOSES	ISSUE APPROVED ONLY FOR CONTRACTOR PURPOSES



NON-TRAFFIC AREA

COPPERHEAD TRACER WIRE SECURED TO PIPE AT 5'-0" INTERVALS LOCATED ON TOP DEAD CENTER OF PIPE. SPLICING SHALL BE ENCASED WITH 3M-GEL PACK #054007-09053

COMMON FILL-TYPE B

3/4" CLEAN GRANULAR BACKFILL

UNDISTURBED EARTH

DETAIL "A" PVC - ROCK/SOIL (FOR AREAS NOT TO BE PAVED)

SUBGRADE AND PAVING THICKNESS PER ROAD AUTHORITY REQUIREMENTS

PAVEMENT PATCH

PAVEMENT

COPPERHEAD TRACER WIRE SECURED TO PIPE AT 5'-0" INTERVALS LOCATED ON TOP DEAD CENTER OF PIPE. SPLICING SHALL BE ENCASED WITH 3M-GEL PACK #054007-09053

SAW CUT FULL DEPTH PAVEMENT

3/4" CLEAN GRANULAR BACKFILL MECHANICALLY COMPACTED IN 6"-12" LIFTS

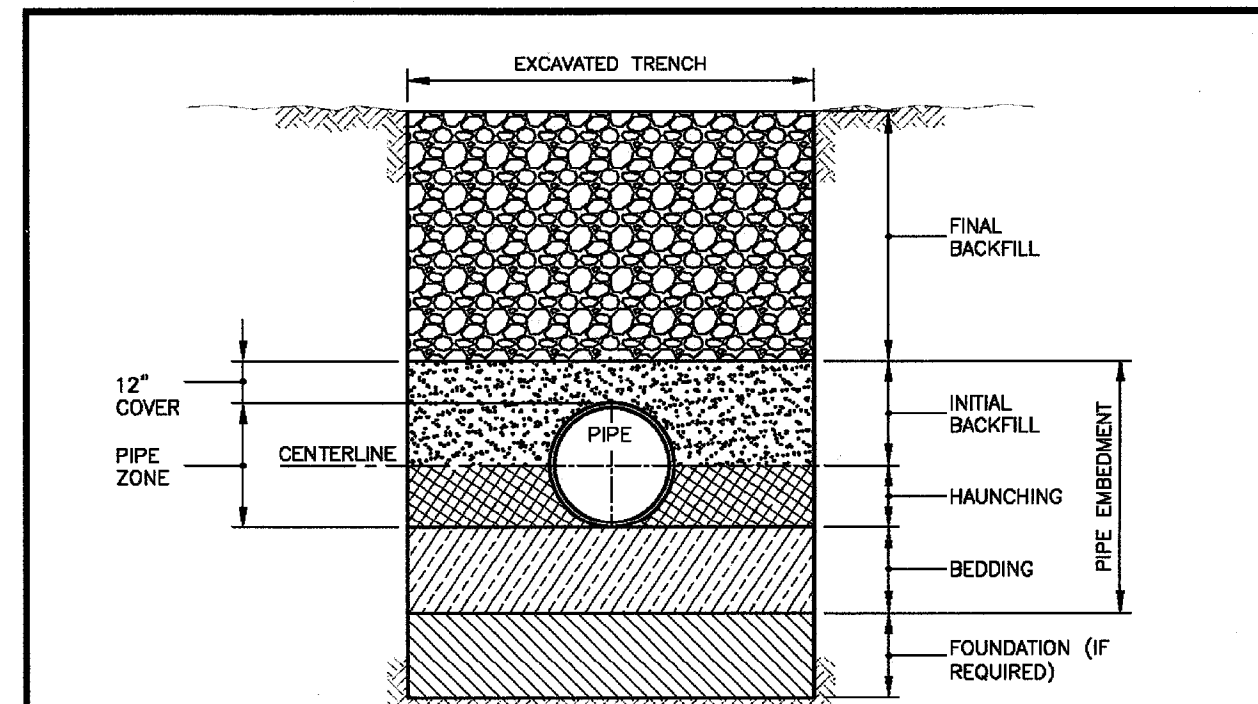
UNDISTURBED EARTH

DETAIL "B" FOR TRAFFIC AREAS AND WITHIN 36" OF TRAFFIC AREAS.

NOTE: SEE SPECIFICATION SECTION 02210 FOR DESCRIPTION OF BACKFILL AND BEDDING MATERIAL.

NOTE: 1. CAUTION MUST BE EXERCISED TO ENSURE PROPER PLACEMENT OF EMBEDMENT MATERIAL UNDER THE HAUNCHES OF THE PIPE.

REVISIONS	MISSOURI AMERICAN WATER STANDARD CIVIL TYPICAL INSTALLATION - PVC PIPE IN ROCK/SOIL DETAIL
MISSOURI AMERICAN WATER ENGINEERING ST. LOUIS, MO. 63141	MISSOURI AMERICAN WATER ENGINEERING ST. LOUIS, MO. 63141
DESIGNED BY DATE 11-13-08	DESIGNED BY DATE 11-13-08
CHECKED BY DATE 11-13-08	CHECKED BY DATE 11-13-08
PROJECT NO. 0201-0601-SD54	PROJECT NO. 0201-0601-SD54
ISSUE APPROVED ONLY FOR CONTRACTOR PURPOSES	ISSUE APPROVED ONLY FOR CONTRACTOR PURPOSES



TRENCH TERMINOLOGY

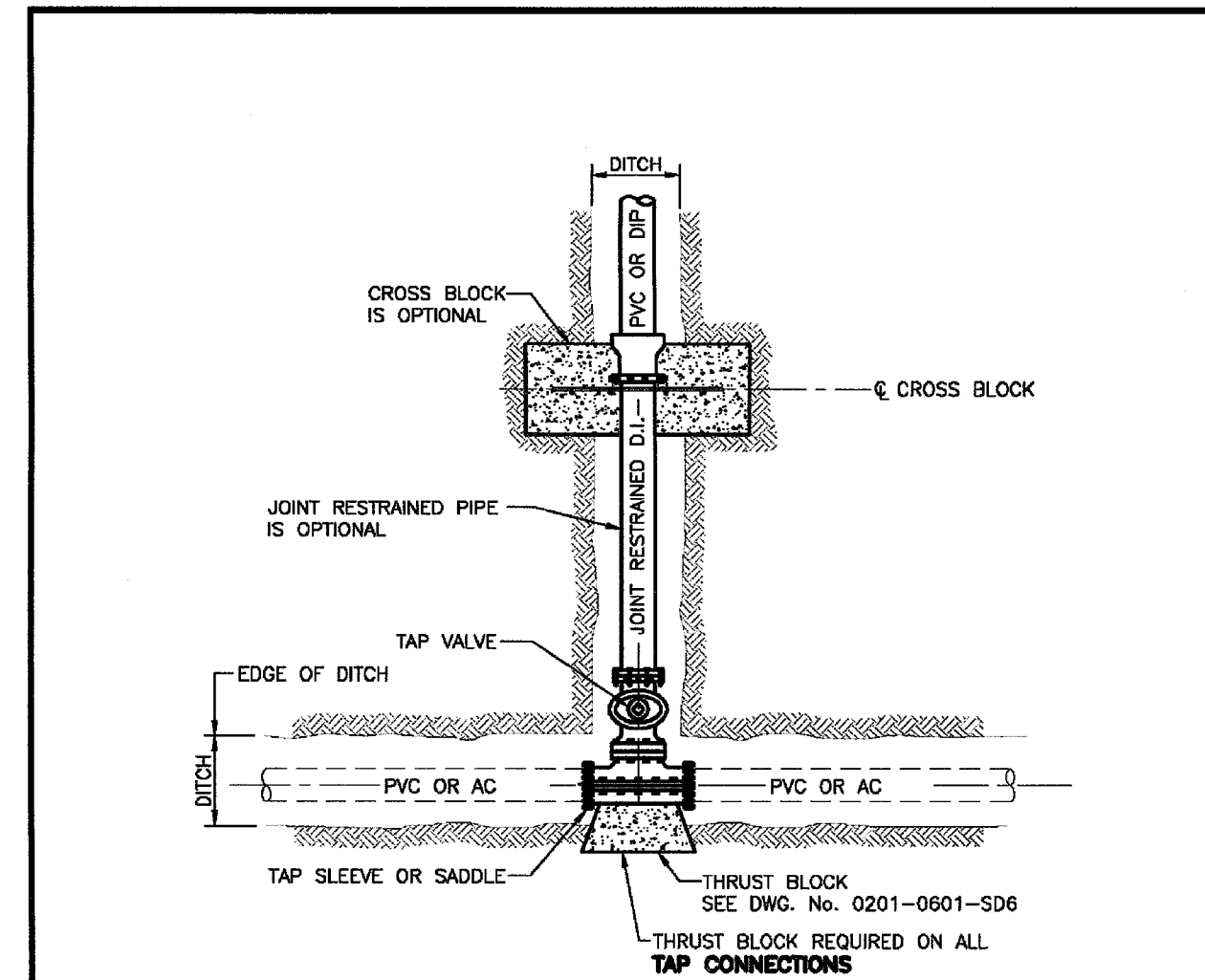
FOUNDATION: A FOUNDATION IS NECESSARY ONLY WHEN NATIVE SOILS ARE UNSTABLE. FOR SUCH CONDITIONS, THE TRENCH IS OVER-EXCAVATED AND A LAYER OF SUPPORTIVE MATERIAL IS PLACED AND COMPACTED TO PROVIDE A FIRM FOUNDATION FOR THE SUBSEQUENT PIPE EMBEDMENT MATERIALS. MUST BE APPROVED BY THE ENGINEER PRIOR TO OVER-DIG.

EMBEDMENT: THIS ZONE IS THE MOST IMPORTANT IN TERMS OF PIPE PERFORMANCE. IT IS DIVIDED INTO THE FOLLOWING SUB ZONES:

- BEDDING: TYPICALLY SIX INCHES OF SUPPORTIVE, COMPACTED MATERIAL. THIS ZONE PROVIDES EVEN SUPPORT FOR THE PIPE AND BRINGS IT TO GRADE.
- HAUNCHING: EXTENDS FROM THE BOTTOM OF THE PIPE TO THE CENTERLINE OF THE PIPE. IT PROVIDES THE MOST RESISTANCE TO PIPE DEFLECTION. SPECIFYING PROPER MATERIALS AND COMPACTION ARE MOST IMPORTANT FOR THIS ZONE.
- INITIAL BACKFILL: EXTENDS FROM THE SPRINGLINE TO A POINT ABOVE THE TOP OF THE PIPE. THIS ZONE PROVIDES SOME PIPE SUPPORT AND HELPS TO PREVENT DAMAGE TO THE PIPE DURING PLACEMENT OF THE FINAL BACKFILL. THE COVER EXTENDS FROM THE TOP OF THE PIPE TO THE TOP OF THE INITIAL BACKFILL. THE DEPTH OF COVER SHOULD BE AS MUCH AS NECESSARY TO PROTECT THE PIPE DURING PLACEMENT OF THE FINAL BACKFILL. TWELVE INCHES IS A COMMON DEPTH OF COVER.

FINAL BACKFILL: THIS ZONE EXTENDS FROM THE TOP OF THE INITIAL BACKFILL TO THE TOP OF THE TRENCH. THIS ZONE HAS LITTLE INFLUENCE ON PIPE PERFORMANCE, BUT CAN BE IMPORTANT TO THE INTEGRITY OF ROADS AND STRUCTURES. SEE SPECIFICATION SECTION 2210 FOR DESCRIPTION OF BACKFILL AND BEDDING MATERIAL.

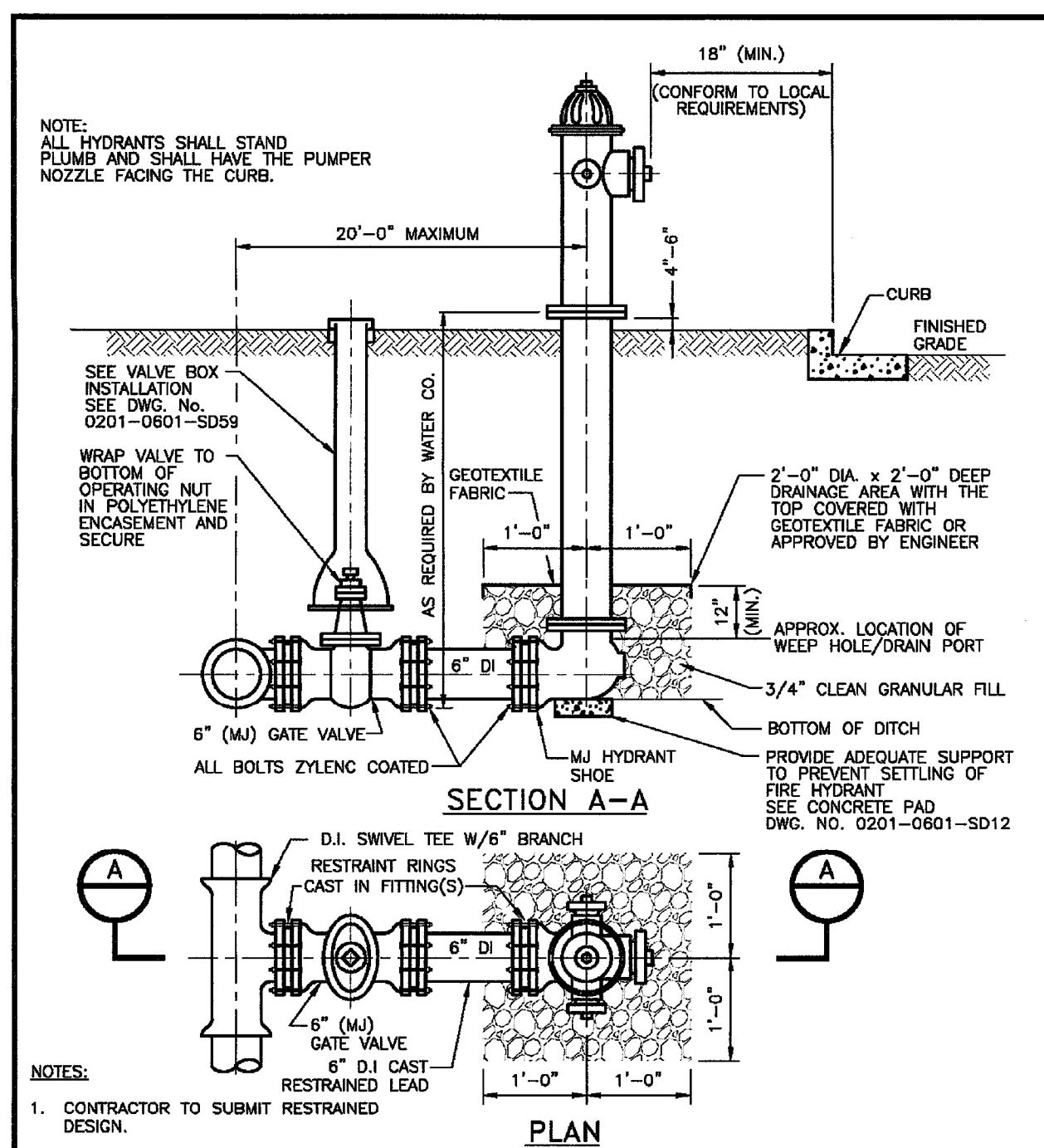
REVISIONS	MISSOURI AMERICAN WATER STANDARD CIVIL PIPE TRENCH TERMINOLOGY DETAIL
MISSOURI AMERICAN WATER ENGINEERING ST. LOUIS, MO. 63141	MISSOURI AMERICAN WATER ENGINEERING ST. LOUIS, MO. 63141
DESIGNED BY DATE 11-13-08	DESIGNED BY DATE 11-13-08
CHECKED BY DATE 11-13-08	CHECKED BY DATE 11-13-08
PROJECT NO. 0201-0601-SD53	PROJECT NO. 0201-0601-SD53
ISSUE APPROVED ONLY FOR CONTRACTOR PURPOSES	ISSUE APPROVED ONLY FOR CONTRACTOR PURPOSES



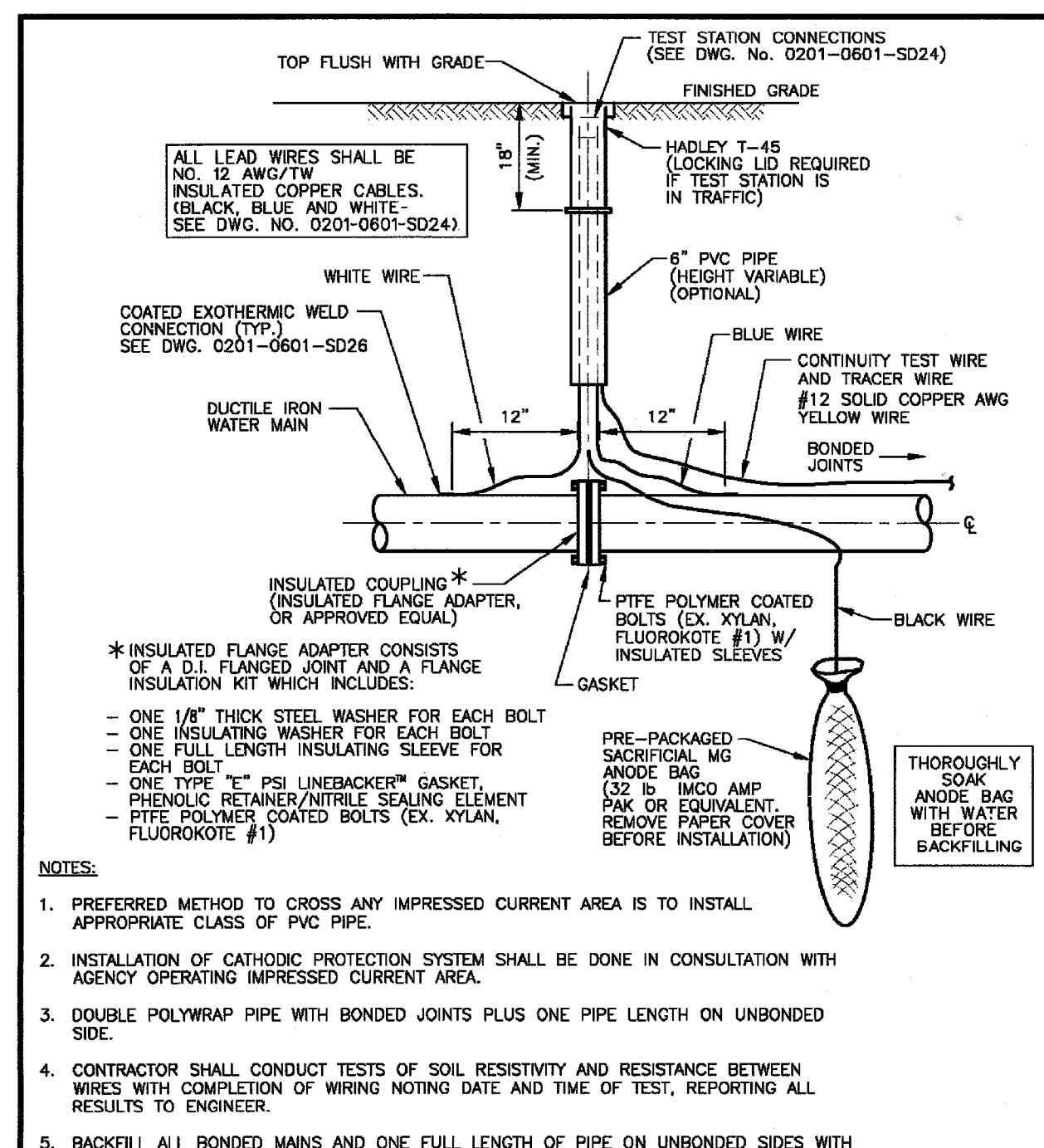
NOTES:

1. ALL TAP CONNECTIONS MADE ON PVC OR AC PIPE REQUIRE THRUST BLOCKING ON THE TAP SLEEVE/SADDLE PRIOR TO INSTALLING PIPE OUT OF THE TAP VALVE EVEN IF JOINT RESTRAINED PIPE AND/OR CROSS BLOCK IS INSTALLED.
2. SEE DWG. NO. 0201-0601-SD52 FOR PATENT TAP CONNECTION DETAILS.

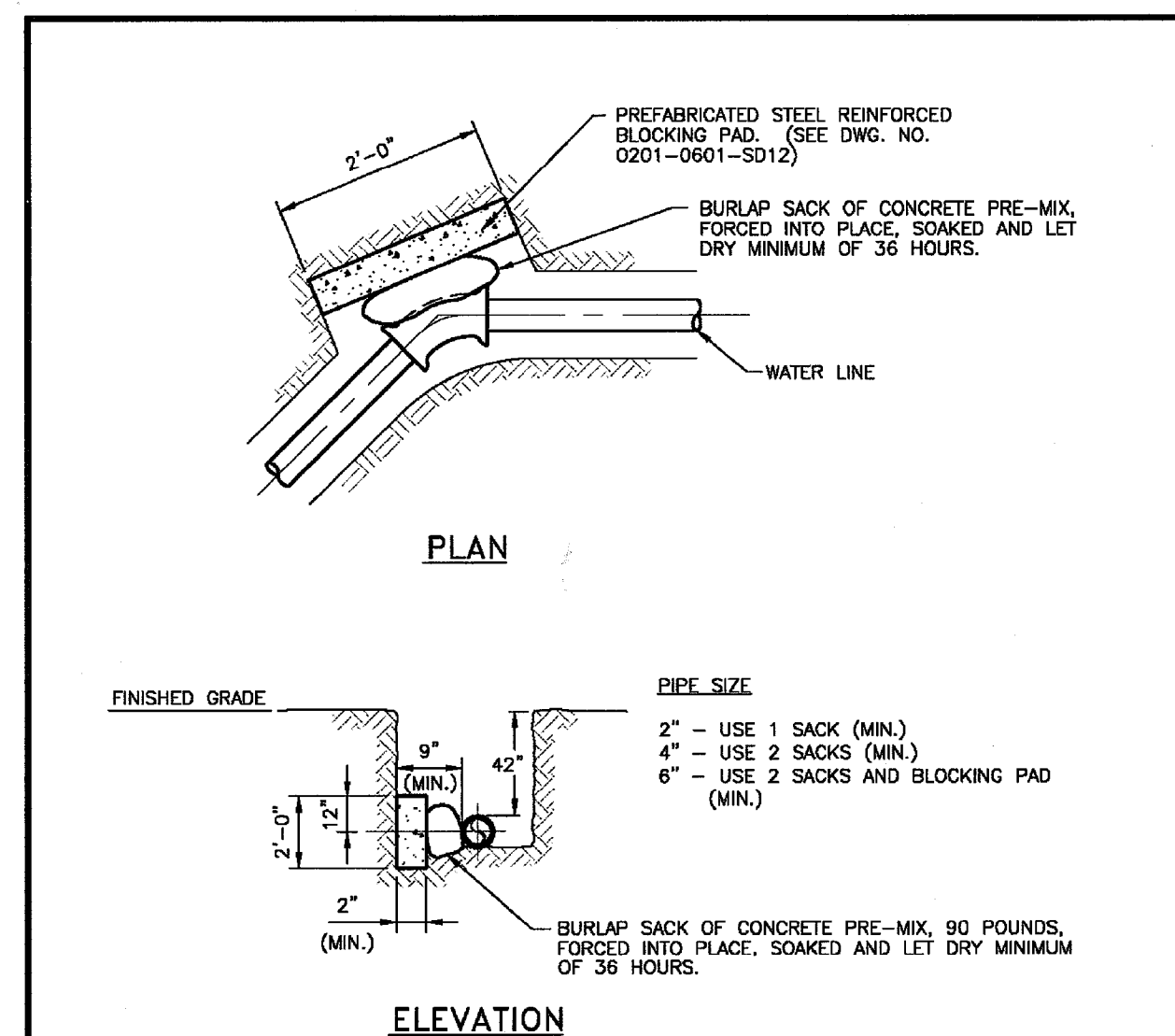
REVISIONS	MISSOURI AMERICAN WATER STANDARD CIVIL PVC/AC TAP CONNECTION DETAIL
MISSOURI AMERICAN WATER ENGINEERING ST. LOUIS, MO. 63141	MISSOURI AMERICAN WATER ENGINEERING ST. LOUIS, MO. 63141
DESIGNED BY DATE 11-13-08	DESIGNED BY DATE 11-13-08
CHECKED BY DATE 11-13-08	CHECKED BY DATE 11-13-08
PROJECT NO. 0201-0601-SD49	PROJECT NO. 0201-0601-SD49
ISSUE APPROVED ONLY FOR CONTRACTOR PURPOSES	ISSUE APPROVED ONLY FOR CONTRACTOR PURPOSES



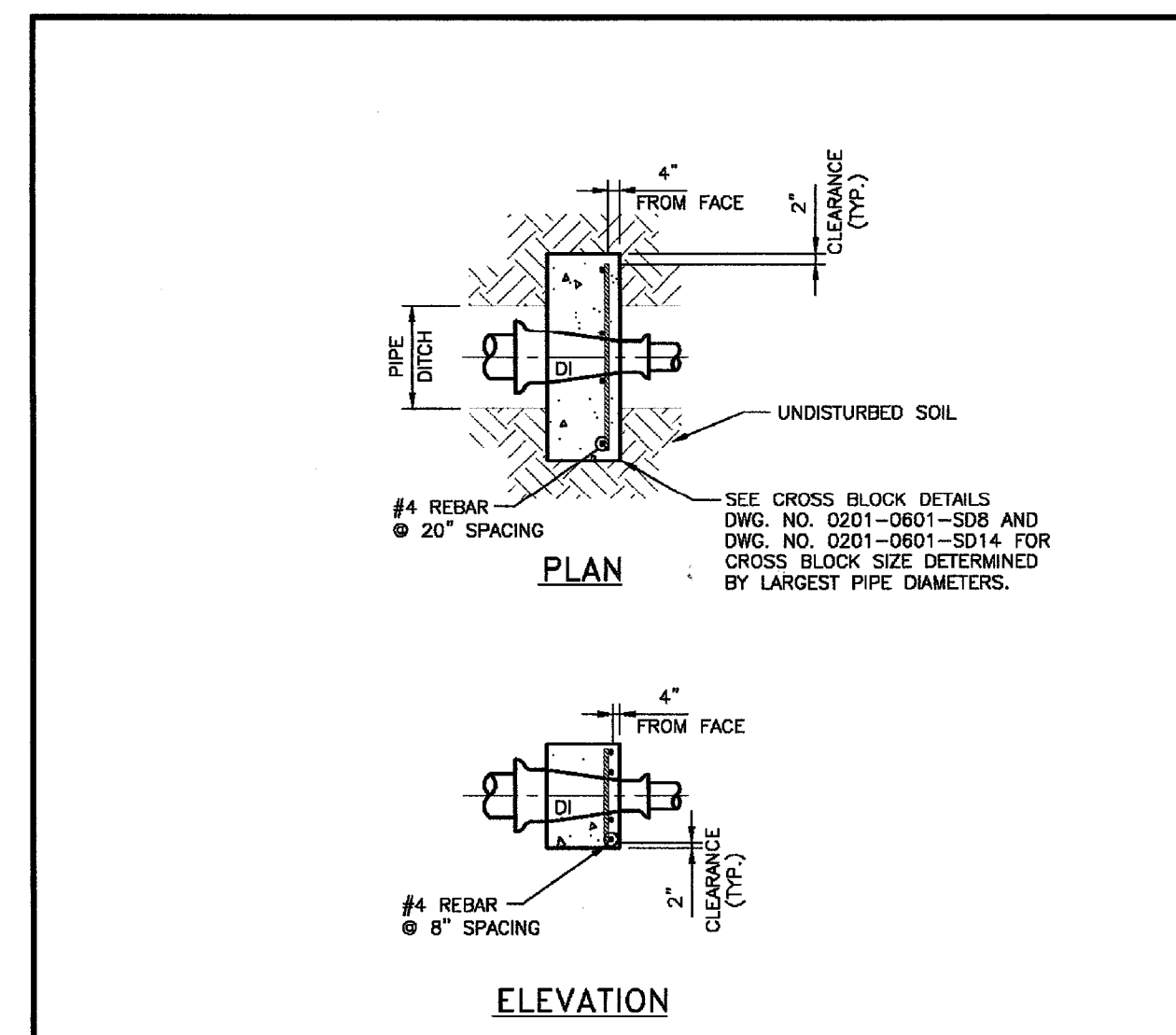
REVISIONS	MISSOURI AMERICAN WATER STANDARD CIVIL FIRE HYDRANT DETAIL
MISSOURI AMERICAN WATER ENGINEERING ST. LOUIS, MO. 63141	MISSOURI AMERICAN WATER ENGINEERING ST. LOUIS, MO. 63141
DESIGNED BY DATE 07-11-11	DESIGNED BY DATE 07-11-11
CHECKED BY DATE 11-13-08	CHECKED BY DATE 11-13-08
PROJECT NO. 0201-0601-SD31A	PROJECT NO. 0201-0601-SD31A
ISSUE APPROVED ONLY FOR CONTRACTOR PURPOSES	ISSUE APPROVED ONLY FOR CONTRACTOR PURPOSES



REVISIONS	MISSOURI AMERICAN WATER STANDARD CIVIL PLACEMENT OF ANODE BAG TEST STATION AND LEAD WIRES DETAIL
MISSOURI AMERICAN WATER ENGINEERING ST. LOUIS, MO. 63141	MISSOURI AMERICAN WATER ENGINEERING ST. LOUIS, MO. 63141
DESIGNED BY DATE 11-13-08	DESIGNED BY DATE 11-13-08
CHECKED BY DATE 11-13-08	CHECKED BY DATE 11-13-08
PROJECT NO. 0201-0601-SD22	PROJECT NO. 0201-0601-SD22
ISSUE APPROVED ONLY FOR CONTRACTOR PURPOSES	ISSUE APPROVED ONLY FOR CONTRACTOR PURPOSES



REVISIONS	MISSOURI AMERICAN WATER STANDARD CIVIL THRUST BLOCK AT HORIZONTAL BENDS 6" OR LESS DETAIL
MISSOURI AMERICAN WATER ENGINEERING ST. LOUIS, MO. 63141	MISSOURI AMERICAN WATER ENGINEERING ST. LOUIS, MO. 63141
DESIGNED BY DATE 11-13-08	DESIGNED BY DATE 11-13-08
CHECKED BY DATE 11-13-08	CHECKED BY DATE 11-13-08
PROJECT NO. 0201-0601-SD17	PROJECT NO. 0201-0601-SD17
ISSUE APPROVED ONLY FOR CONTRACTOR PURPOSES	ISSUE APPROVED ONLY FOR CONTRACTOR PURPOSES



REVISIONS	MISSOURI AMERICAN WATER STANDARD CIVIL REDUCER THRUST BLOCK DETAIL
MISSOURI AMERICAN WATER ENGINEERING ST. LOUIS, MO. 63141	MISSOURI AMERICAN WATER ENGINEERING ST. LOUIS, MO. 63141
DESIGNED BY DATE 11-13-08	DESIGNED BY DATE 11-13-08
CHECKED BY DATE 11-13-08	CHECKED BY DATE 11-13-08
PROJECT NO. 0201-0601-SD15	PROJECT NO. 0201-0601-SD15
ISSUE APPROVED ONLY FOR CONTRACTOR PURPOSES	ISSUE APPROVED ONLY FOR CONTRACTOR PURPOSES

PROJECT TITLE:  
THE LANDING OF OFALLON

ENGINEERING  
PLANNING  
SURVEYING

221 Point West Blvd.  
St. Charles, MO 63301  
636-928-6562  
FAX 636-928-1718

DISCLAIMER OF RESPONSIBILITY  
I hereby certify that the documents intended to be authorized by my seal are limited to this sheet, and I hereby disclaim any responsibility for all other Drawings, Specifications, Estimates, Reports or other documents or instruments relating to or intended to be used for any part or parts of the architectural or engineering project or survey.

REFERENCE DETAIL SHEET ONLY.  
CONTRACTOR TO OBTAIN CURRENT DETAILS AND SPECIFICATIONS FROM MISSOURI AMERICAN WATER DISTRICT. CONTRACTOR TO VERIFY WITH MISSOURI AMERICAN WATER ON METER SETTING SIZING AND ORDERING.

REVISIONS	
10-14-16	CITY COMMENTS
10-24-16	CITY COMMENTS

Developer / Owner:  
LENTY ARCHITECTURE  
3160 KETTLE COURT SE  
SALEM, OREGON 97301  
1-503-399-1090

WATER DETAILS - MISSOURI AMERICAN WATER

P+Z No. 20-16.02  
City No. 16-010424  
Page No. 17 of 31