



**GENERAL NOTES:**

1. ALL MATERIALS AND WORKMANSHIP SHALL BE IN CONFORMANCE WITH THE PWSD ENGINEERING STANDARDS AND SPECIFICATIONS, LATEST VERSION.
2. THE CONTRACTOR SHALL CONTACT ALL APPROPRIATE UTILITY COMPANIES AND THE TOWN OF PARKER, DOUGLAS COUNTY AND OTHER NEIGHBORING CITIES AND TOWNS PRIOR TO THE BEGINNING OF ANY CONSTRUCTION. CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ANY EXISTING UTILITY (INCLUDING DEPTHS) WHICH MAY CONFLICT WITH THE PROPOSED CONSTRUCTION. ALL EXISTING UTILITIES SHALL BE PROTECTED FROM DAMAGE BY THE CONTRACTOR. DAMAGED UTILITIES SHALL BE REPAIRED BY THE CONTRACTOR AT HIS OWN EXPENSE.
3. ALL ITEMS SHOWN ON THE PLANS AS EXISTING ARE SHOWN IN APPROXIMATE LOCATIONS ONLY. THE ACTUAL LOCATIONS MAY VARY FROM THE PLANS, ESPECIALLY IN THE CASE OF UNDERGROUND UTILITIES. WHENEVER THE CONTRACTOR DISCOVERS A DISCREPANCY IN LOCATIONS CONTACT THE PWSD IMMEDIATELY.
4. PWSD ENGINEER AND OTHER APPROVING AGENCIES ARE TO BE NOTIFIED 48 HOURS PRIOR TO CONSTRUCTION.
5. THE CONTRACTOR SHALL OBTAIN, AT HIS EXPENSE, ALL PERMITS NECESSARY TO PERFORM THE PROPOSED WORK.
6. ALL CONCRETE SHALL BE A MINIMUM OF CLASS A, 6 SACK, TYPE II, 3000-POUND COMPRESSION STRENGTH.
7. THE DESIGN ENGINEER SHALL SUBMIT ONE (1) SET OF "AS-BUILT" DRAWINGS AND ELECTRONIC FILES TO THE DISTRICT ENGINEER FOR APPROVAL BY DISTRICT. AFTER APPROVAL HAS BEEN GRANTED BY THE DISTRICT ENGINEER, FULL SIZED PRINTS SHALL BE TRANSMITTED TO THE PWSD OFFICE.
8. NO WORK SHALL BE BACKFILLED UNTIL THE CONSTRUCTION HAS BEEN INSPECTED AND APPROVED FOR BACKFILLING BY THE DISTRICT ENGINEER OR REPRESENTATIVE OF THE DISTRICT ENGINEER. ALL BACKFILL MATERIAL SHALL BE COMPACTED TO 95% STANDARD PROCTOR DENSITY. COMPACTION TESTS MUST BE SUBMITTED TO DISTRICT ENGINEER PRIOR TO PROBATIONARY ACCEPTANCE.
9. TRENCHES SHALL BE EXCAVATED AND THE PIPE EXPOSED FOR THE INSPECTION AT ANY LOCATION ON THE PROJECT IF SO ORDERED BY THE INSPECTOR.
10. THE CONTRACTOR WILL BE HELD RESPONSIBLE FOR THE PROPER FUNCTIONING OF LINES (WATER AND SEWER) FOR UP TO TWO (2) YEARS FROM THE DATE OF PROBATIONARY ACCEPTANCE OF LINES BY THE DISTRICT. ANY MALFUNCTION DURING THIS PERIOD OF GUARANTEE SHALL BE REMEDIED BY THE CONTRACTOR TO THE SATISFACTION OF THE DISTRICT ENGINEER AT NO COST TO THE DISTRICT.
11. SURFACE GRADES ARE TO BE WITHIN PLUS OR MINUS ONE FOOT OF FINISHED GRADE AND VERIFICATION OF COMPACTION RESULTS OBTAINED PRIOR TO THE INSTALLATION OF WATER AND SEWER LINES. RESULTS MAY BE SUBMITTED TO THE DISTRICT ENGINEER.
12. ALL SERVICES WILL BE PERMANENTLY MARKED ON CURB FACE AS FOLLOWS:  
"X" FOR SANITARY SERVICE SEWERS  
"V" FOR WATER SERVICES
13. NO TREES ALLOWED IN EASEMENTS OR WITHIN 8' OF WATER OR SANITARY SEWER MAINS IN RIGHT OF WAY.
14. THE CONTRACTOR SHALL HAVE IN HIS POSSESSION AT ALL TIMES ONE (1) SIGNED COPY OF THE PLANS WHICH HAVE BEEN APPROVED BY THE PWSD AND THE DISTRICT ENGINEER AND ONE (1) COPY OF THE LATEST PWSD SPECIFICATION MANUAL.

**WATER SYSTEM NOTES:**

1. ALL MATERIALS AND WORKMANSHIP SHALL BE IN CONFORMANCE WITH THE PWSD ENGINEERING STANDARDS AND SPECIFICATIONS, LATEST REVISION.
2. ALL WATER MAINS SHALL BE PER PWSD MATERIALS SPECIFICATIONS. ALL MATERIALS IN CONTACT WITH POTABLE WATER SHALL BE SUITABLE FOR CHLORINATED AND CHLORAMINATED WATER.
3. ALL BENDS, PLUGS, REDUCERS AND FIRE HYDRANTS TO BE RODDED OR MEGA-LUGGED. ALL FITTINGS SHALL BE WRAPPED PER PWSD MATERIALS SPECIFICATIONS.
4. THERE SHALL BE A MINIMUM COVER OF 4.5 FEET OVER ALL WATER MAINS.
5. FIRE HYDRANTS SHALL CONFORM TO AWWA C-502 "DRY BARREL FIRE HYDRANTS" PIPE HYDRANT ASSEMBLIES PER PWSD SPECIFICATIONS.
6. ALL BENDS, TEES, FIRE HYDRANTS, BLOW-OFFS, AND PLUGS AT DEAD END MAINS SHALL BE PROTECTED FROM THRUST WITH CONCRETE THRUST BLOCKS.
7. PRECAUTIONS SHALL BE TAKEN TO PROTECT THE INTERIOR OF PIPES, FITTINGS, AND VALVES AGAINST CONTAMINATION. ALL OPENINGS IN THE PIPELINE SHALL BE CLOSED WITH WATERTIGHT PLUGS WHEN PIPE LAYING IS STOPPED AT THE CLOSE OF THE DAY'S WORK OR FOR OTHER REASONS, SUCH AS REST BREAKS OR MEAL PERIODS.
8. VALVES IN STREETS ARE TO BE LOCATED AT PROPERTY LINE EXTENSIONS EXCEPT FOR TAPPING TEES; WHERE AN ADDITIONAL VALVE SHALL BE PLACED ON THE TAPPING TEE. OTHER LOCATIONS SHOWN ON THE PLANS.
9. WHEN NECESSARY TO LOWER OR RAISE WATER LINES AT STORM DRAINS AND OTHER UTILITY CROSSING, A MINIMUM CLEARANCE OF 1.5 FEET SHALL BE MAINTAINED BETWEEN OUTSIDE OF PIPES.
10. THE CONTRACTOR SHALL NOTIFY THE PWSD AT LEAST 48 HOURS PRIOR TO ANY CONSTRUCTION. IF WORK IS SUSPENDED FOR ANY PERIOD OF TIME AFTER INITIAL START UP, THE CONTRACTOR MUST NOTIFY THE DISTRICT ENGINEER 48 HOURS PRIOR TO RE-START.
11. PIPE BEDDING SHALL BE A CLEAN, WELL-GRADED SAND OR SQUEEGEE SAND IN ACCORDANCE WITH PWSD STANDARDS AND SPECIFICATIONS, LATEST REVISION.
12. THE CONTRACTOR SHALL NOTIFY THE PUBLIC UTILITY COMPANIES AND DETERMINE THE LOCATION OF ALL EXISTING UNDERGROUND UTILITIES PRIOR TO PROCEEDING WITH THE EXCAVATION. ALL WORK PERFORMED IN THE AREA OF THE PUBLIC UTILITIES SHALL BE PERFORMED ACCORDING TO THE REQUIREMENTS OF THESE AGENCIES.
13. COMPACTION OF ALL TRENCHES MUST BE ATTAINED IN ACCORDANCE WITH THE SOIL REPORTS AND COMPACTION TEST RESULTS SUBMITTED TO THE DISTRICT ENGINEER PRIOR TO PROBATIONARY ACCEPTANCE.
14. AT LEAST FIVE (5) DAYS PRIOR TO THE START OF CONSTRUCTION, A PRE-CONSTRUCTION MEETING WILL BE HELD AT THE OFFICE OF THE DISTRICT ENGINEER AND ATTENDED BY THE CONTRACTOR, DESIGN ENGINEER, AND REPRESENTATIVE OF OTHER APPROVING AGENCIES.
15. CHLORINATION AND FLUSHING: ALL WATER MAINS SHALL BE TESTED PER THE REQUIREMENTS OF THE PWSD SPECIFICATIONS CHLORINATION OF FINISHED PIPELINE COMPLETED BEFORE HYDROSTATIC TESTING.
16. HYDROSTATIC TESTING: ALL WATER MAINS SHALL BE TESTED PER THE REQUIREMENTS OF THE PWSD SPECIFICATIONS UP TO MINIMUM OF 150 PSI IN THE PRESENCE OF A PWSD INSPECTOR/ENGINEER.

**SANITARY SEWER SYSTEM NOTES:**

1. ALL MATERIALS AND WORKMANSHIP SHALL BE IN CONFORMANCE WITH THE PWSD ENGINEERING STANDARDS AND SPECIFICATIONS, LATEST REVISION.
2. ALL SEWER MAINS SHALL BE PVC, ASTM D-3034, SDR 35 OR APPROVED EQUAL. ALL SEWER MAIN SIZE IS 8" DIAMETER UNLESS OTHERWISE NOTED.
3. SEWER LINES SHALL BE INSTALLED 5.0 FEET SOUTH OR WEST OF STREET CENTERLINE. SEWER LINES SHALL BE 10 FEET FROM WATER LINES EXCEPT WHEN CROSSING EACH OTHER. SEWER LINES, SEWER LINES WHICH CROSS LESS THAN 1.50 FEET VERTICALLY FROM THE WATER MAIN SHALL BE ENCASED IN CONCRETE AS PER PWSD SPECIFICATIONS. USE RUBBER GASKETS FOR PVC ENCASEMENT.
4. SEWER RIM ELEVATIONS SHOWN ARE APPROPRIATE ONLY AND ARE NOT TO BE TAKEN AS FINAL ELEVATIONS. RING AND COVER SHALL BE SET IN CENTERED CONCRETE RINGS WITH RAM-NECK FOR ADJUSTMENT TO MATCH FINAL PAVEMENT ELEVATIONS.
5. THE CONTRACTOR AND SURVEY CREW SHALL VERIFY ELEVATIONS OF EXISTING SEWER LINES AND MANHOLES TO BE TIED TO PRIOR TO CONSTRUCTION OR STAKING OF SANITARY SEWER.
6. NO UNDERDRAIN SYSTEM WILL BE ALLOWED TO BE PLACED IN MAINLINE OR SEWER SERVICE TRENCHES.
7. SEWER SERVICE TEES FOR EACH UNIT SHALL BE STAKED BY A SURVEY CREW AND FURNISHED AND INSTALLED BY THE CONTRACTOR. THE CONTRACTOR SHALL FURNISHED OR INSTALLED BY THE CONTRACTOR. THE CONTRACTOR SHALL FURNISH THE THE ENGINEER "AS CONSTRUCTED" LOCATION OF TEES. SEWER WYES SHALL BE USED RATHER THAN TEES.
8. ALL MANHOLES SHALL BE 48 INCHES IN DIAMETER WITH 24-INCH RING AND COVER, ECCENTRIC CONE UNLESS OTHERWISE SPECIFIED. ALL MANHOLES SHALL HAVE SHAPED INVERTS.
9. PIPE BEDDING SHALL BE CLASS "B" AND SHALL CONFORM TO ASTM C-33 OR D-448 GRADATION NO. 6 OR NO. 67.
10. AT LEAST FIVE (5) DAYS PRIOR TO THE START OF CONSTRUCTION, A PRE-CONSTRUCTION MEETING WILL BE HELD AT THE OFFICE OF THE DISTRICT ENGINEER AND ATTENDED BY THE CONTRACTOR AND REPRESENTATIVES OF THE OTHER APPROVING AGENCIES. IT WILL BE THE RESPONSIBILITY OF THE CONTRACTOR TO CONTACT THE DISTRICT ENGINEER TO SCHEDULE THIS MEETING.
11. THE CONTRACTOR SHALL HAVE IN HIS POSSESSION AT ALL TIMES ONE (1) SIGNED COPY OF THE PLANS WHICH HAVE BEEN APPROVED BY THE PWSD AND THE DISTRICT ENGINEER AND ONE (1) COPY OF THE LATEST PWSD SPECIFICATION MANUAL.
12. ALL SEWER LINES SHALL BE TESTED IN ACCORDANCE WITH THE PWSD STANDARDS AND SPECIFICATIONS PRIOR TO ACCEPTANCE OR ANY CONNECTION TO AN EXISTING SEWER LINE.
13. PRIOR TO STARTING WORK WHERE SEWER MAIN IS TO BE CONNECTED TO EXISTING PWSD SEWER SYSTEMS, THE NEAREST MANHOLE TO THE POINT OF TIE-IN SHALL BE PLUGGED WITH A PLUMBER'S PLUG ON THE INLET SIDE BY THE CONTRACTOR. THIS PLUG SHALL REMAIN IN PLACE UNTIL FINAL PROBATIONARY ACCEPTANCE BY PWSD. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PUMPING AND CLEANING THESE MANHOLES AND REMOVING THE PLUG WHEN INSTRUCTED BY THE DISTRICT.
14. PRIOR TO PROBATIONARY ACCEPTANCE WALKTHROUGH, THE CONTRACTOR SHALL JET CLEAN THE ENTIRE SANITARY SEWER SYSTEM AND PUMP OUT AT THE PLUGGED MANHOLE.

**WATER & SEWER IMPROVEMENT PLANS FOR**  
**DOUGLAS 234**  
**FILING NO. 6**  
 DOUGLAS COUNTY, COLORADO

**RICK**  
**ENGINEERING COMPANY**  
 9801 EAST EASTER AVE  
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 303.537.8020  
 Tucson - San Diego - Riverside - Orange  
 Sacramento - San Luis Obispo - Phoenix  
 rickengineering.com



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NO.	DESCRIPTION	DATE:
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SCALE: NTS  
 DATE: 5/6/2020  
 DRAWN BY: WD  
 CHECKED BY: JS  
 JOB NO: D01173-A

**NOTES**

PROJECT NO.  
 D01173-A  
 DRAWING NO.  
 2  
 SHEET NO. 2 OF 12 SHEETS

PRELIMINARY  
NOT FOR CONSTRUCTION

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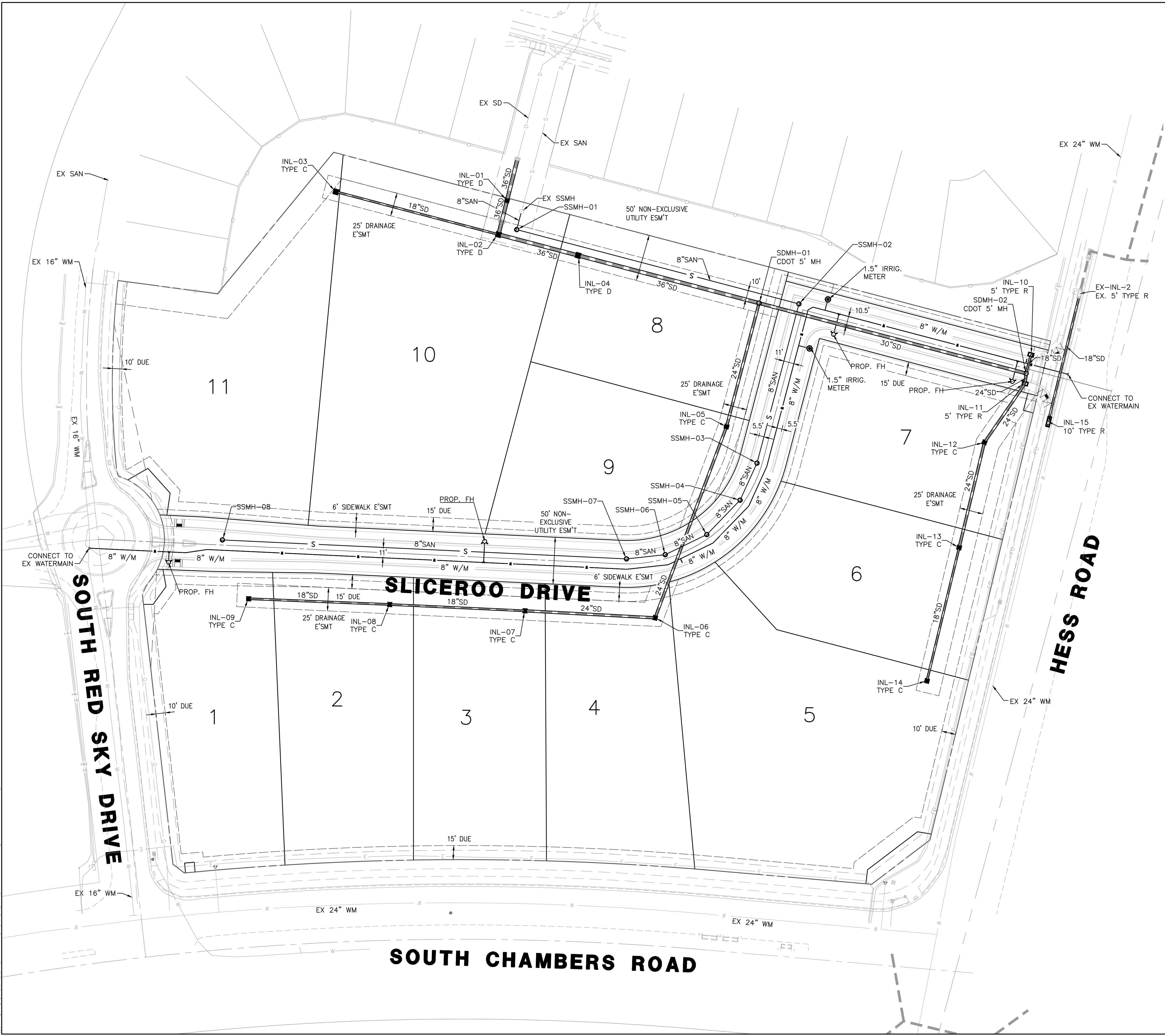
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SCALE: NTS  
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DRAWN BY: WD  
CHECKED BY: JS  
JOB NO: D01173-A

**OVERALL  
UTILITY  
PLAN**

PROJECT NO.  
D01173-A  
DRAWING NO.  
3  
SHEET NO. 3 OF 12 SHEETS

PRELIMINARY  
NOT FOR CONSTRUCTION



**NOTES**

1. THE PROPOSED UTILITY CONNECTION WILL REQUIRE A TOWN RIGHT-OF-WAY PERMIT PRIOR TO COMMENCING WORK. THE TOWN PREFERENCES CONNECTIONS TO BE BORED TO THE EXTENT POSSIBLE, AND ANY STREET CUT ALLOWED BY THE TOWN WILL BE REQUIRED TO BE PATCHED ACCORDING TO THE TOWN'S CONSTRUCTION STANDARDS AND DETAILS. THE LIMITS OF PATCHING WILL BE DETERMINED BY THE TOWN AT THE TIME OF CONSTRUCTION. THE TOWN OF PARKER DOES NOT ALLOW ROADWAY CLOSURES FOR UTILITY WORK.

**TOWN OF PARKER APPROVAL**

THE TOWN OF PARKER REVIEW CONSTITUTES GENERAL COMPLIANCE WITH THE TOWN'S STANDARDS AND APPROVED VARIANCES, SUBJECT TO THESE PLANS BEING STAMPED, SIGNED, AND DATED BY THE PROFESSIONAL ENGINEER OF RECORD. REVIEW BY THE TOWN DOES NOT CONSTITUTE APPROVAL OF THE PLAN DESIGN OR ACCURACY AND CORRECTNESS OF ENGINEERING CALCULATIONS. ERRORS IN THE DESIGN OR CALCULATIONS REMAIN THE RESPONSIBILITY OF THE REGISTERED PROFESSIONAL ENGINEER WHOSE STAMP AND SIGNATURE ARE AFFIXED TO THIS DOCUMENT.

THIS REVIEW DOES NOT CONSTITUTE APPROVAL OF ANY PRIVATE ON-SITE IMPROVEMENTS WHICH MAY BE SHOWN. CONSTRUCTION CANNOT COMMENCE UNTIL ALL REQUIRED DRAINAGE/TRAFFIC REPORT(S), FINAL DEVELOPMENT PLAN(S), SPECIAL REVIEW(S), GRADING PERMIT, AND/OR OTHER PERMITS ARE COMPLETE, APPROVED AND ON FILE WITH THE TOWN OF PARKER.

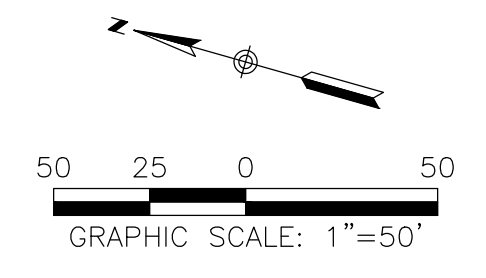
TOWN OF PARKER, DIRECTOR OF ENGINEERING/PUBLIC WORKS \_\_\_\_\_ DATE \_\_\_\_\_

**FIRE DEPARTMENT APPROVAL**

ALL FIRE HYDRANTS SHALL BE INSTALLED ACCORDING TO DISTRICT STANDARDS. THE NUMBER AND LOCATIONS OF THE FIRE HYDRANTS AS SHOWN ON THE OVERALL UTILITY PLAN ARE CORRECT AS SPECIFIED BY THE SOUTH METRO FIRE PROTECTION DISTRICT.

SIGNATURE OF FIRE CHIEF OR DESIGNATED REPRESENTATIVE \_\_\_\_\_

DATE \_\_\_\_\_

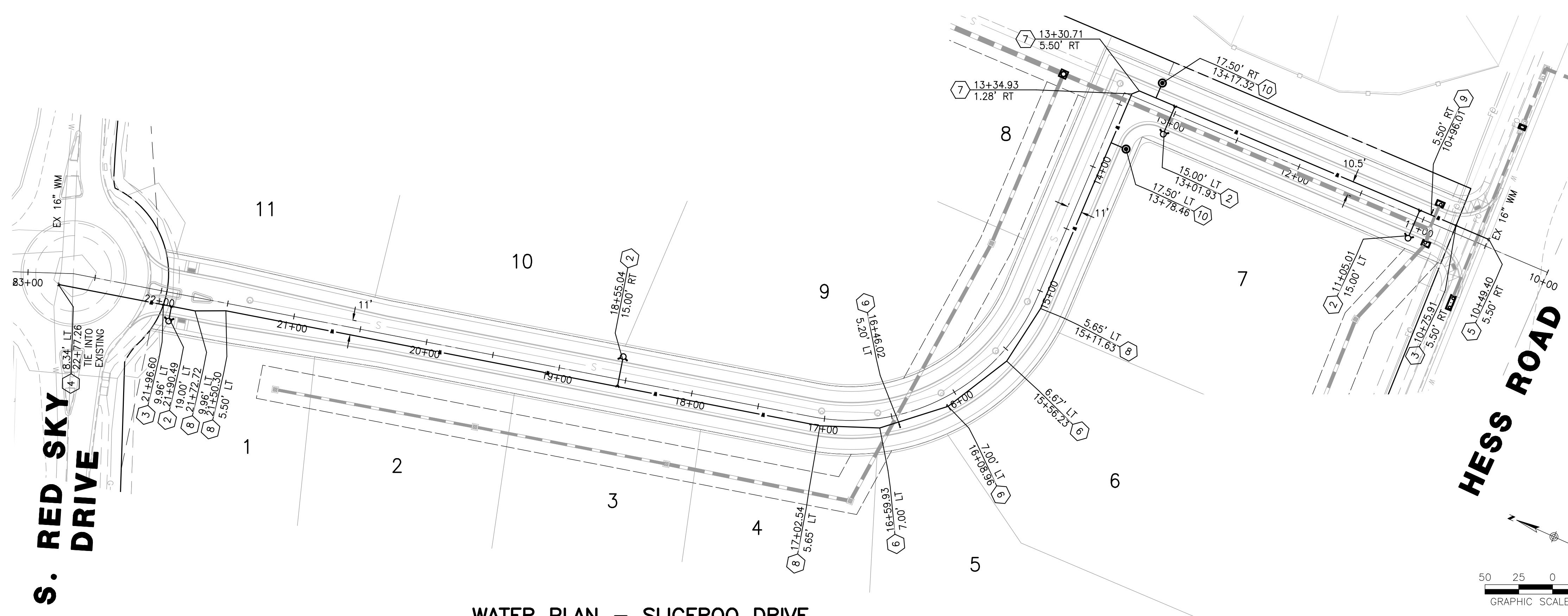


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**CONSTRUCTION NOTES**

- ① WATER SERVICE CONNECTION PER PWSD STD DTL W1.2
- ② FIRE HYDRANT ASSEMBLY PER PWSD STD DTL W2.5
- ③ 8" GATE GALVE
- ④ 16"x8" TEE
- ⑤ 24"x8" TEE
- ⑥ 22.5' BEND AND THRUST BLOCK
- ⑦ 45' BEND AND THRUST BLOCK
- ⑧ 11.25' BEND AND THRUST BLOCK
- ⑨ LOW POINT BLOW OFF PER PWSD STD DTL W3.8
- ⑩ 1.5" IRRIGATION METER

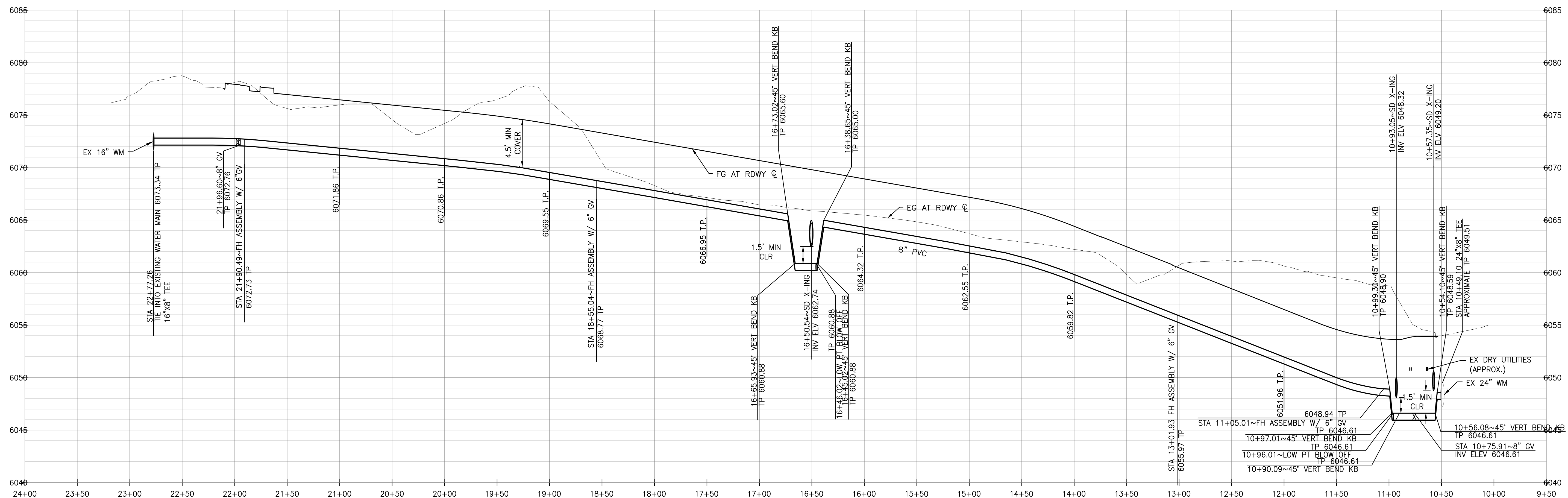


**WATER PLAN – SLICEROO DRIVE**

SCALE: HORIZ. 1" = 50'

**GENERAL NOTES**

- EXISTING WATER MAIN DEPTH UNKNOWN. EXISTING ELEVATIONS ARE APPROXIMATE. CONTRACTOR SHALL CONFIRM THE EXISTING WATER MAIN DEPTH BENEATH ALL PROPOSED STREET IMPROVEMENTS PRIOR TO CONSTRUCTION. ANY AREAS WHERE THE EXISTING WATER MAIN DEPTH WILL BE LESS THAN 4.5' AS A RESULT OF THE PROPOSED IMPROVEMENTS WILL REQUIRE A WATER MAIN LOWERING. THE CONTRACTOR SHALL HAVE A PARKER WATER & SANITATION DISTRICT INSPECTOR ON SITE FOR ANY POTHOLES FOR THE EXISTING WATER MAIN DEPTH.



**WATER PROFILE – SLICEROO DRIVE**

SCALE: HORIZ. 1"=50', VERT. 1"=5'

**WATER & SEWER IMPROVEMENT PLANS FOR  
DOUGLAS 234  
FILING NO. 6**  
DOUGLAS COUNTY, COLORADO

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CHECKED BY: JS  
JOB NO: D01173-A

**WATER  
PLAN &  
PROFILE**

PROJECT NO.  
D01173-A  
DRAWING NO.  
5  
SHEET NO. 5 OF 12 SHEETS

PRELIMINARY  
NOT FOR CONSTRUCTION

**DISTRICT POLICIES & INSTALLATION NOTES FOR SEWER SERVICES:**

**INSTALLATION NOTES:**

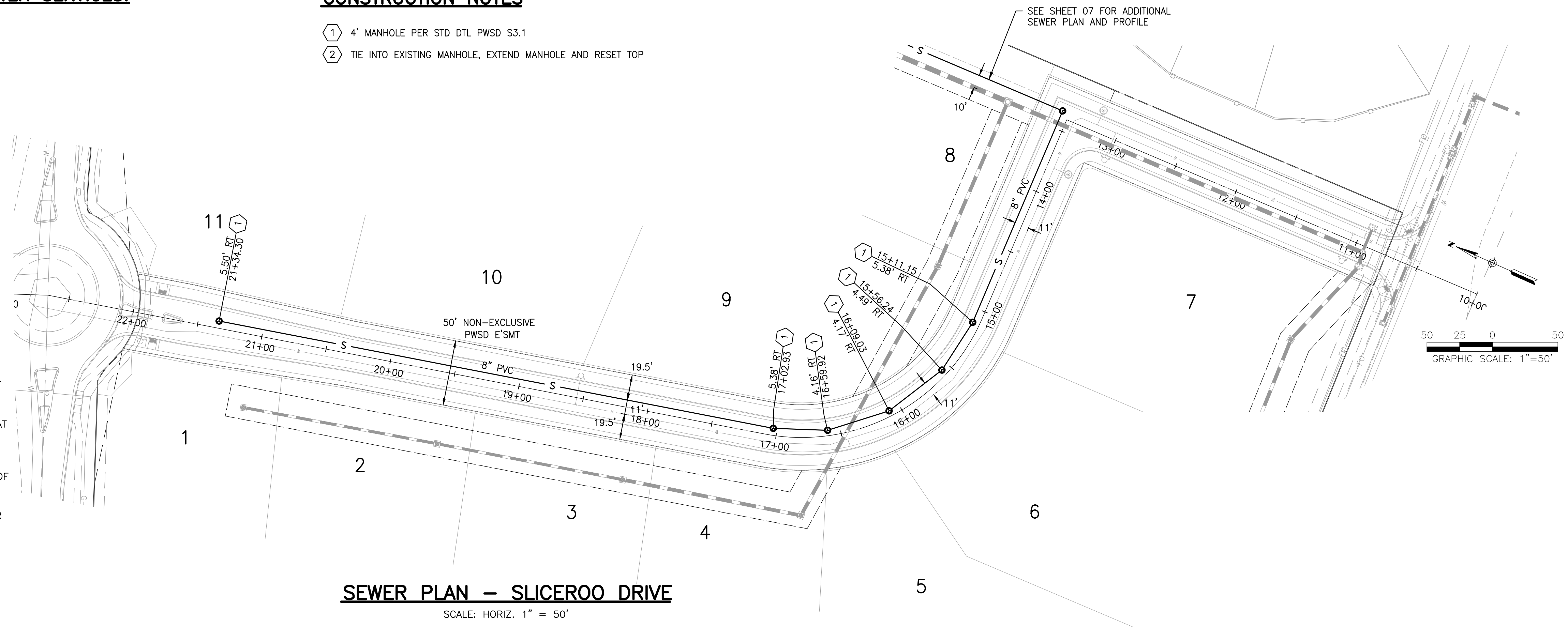
1. ACCEPTABLE PIPE MATERIALS ARE TO BE SDR 35 PVC PIPE, ABS PIPE AND PVC SCHEDULE 40 PIPE. APPROVED BEDDING IS TO BE SQUEEGEE.
2. NO-HUB CLAMPS SHALL BE USED TO JOIN 2 MALE PIPE ENDS WITH A MAXIMUM DEFLECTION OF 3'.
3. MINIMUM GRADE SHALL BE 2%.
4. INSTALLATION SHALL NOT INCLUDE MORE THAN 3 BENDS. 90° BENDS ARE NOT ALLOWED. SOLVENT WELDED PIPE WILL NOT BE ALLOWED.
5. CLEAN-OUTS SHALL BE INSTALLED AT 100' INTERVALS AND EVERY CHANGE IN DIRECTION. CLEAN-OUTS ARE NOT REQUIRED FOR SERVICES LESS THAN 100' UNLESS THERE ARE CHANGES IN DIRECTION. PROVIDE DUAL CLEAN-OUT WITHIN 5 FEET OF FOUNDATION.
6. STRESSING THE PIPE BETWEEN FITTINGS WILL NOT BE ALLOWED.
7. SEWER SERVICE LINE SHALL NOT BE LOCATED UNDER CONCRETE SURFACE.
8. ALL SERVICES SHALL BE PERMANENTLY MARKED ON CURB FACE AS FOLLOWS:  
"X" FOR SANITARY SEWER SERVICE  
"Y" FOR WATER SERVICES

**INSPECTION POLICY:**

1. ALL SERVICE INSPECTIONS MUST BE SCHEDULED AT LEAST 24 HOURS IN ADVANCE OF THE REQUESTED INSPECTION.
2. IF THE CONTRACTOR IS NOT READY FOR INSPECTION WHEN THE INSPECTOR ARRIVES AT THE SITE, A RE-INSPECTION WILL HAVE TO BE SCHEDULED IN ACCORDANCE WITH NOTE 1 ABOVE AND A RE-INSPECTION FEE CHARGED.
3. SHOULD THE SERVICE LINES BE DAMAGED BY LATER CONSTRUCTION, AN INSPECTION OF THE REPAIR WILL BE REQUIRED IN ACCORDANCE WITH NOTES 1 AND 2 ABOVE.
4. THE CONTRACTOR SHALL LEAVE ALL PIPE AND FITTINGS EXPOSED FOR THE INSPECTOR TO OBSERVE. INSPECTORS WILL NOT ENTER ANY EXCAVATIONS TO CHECK MATERIALS. THE TOP LAYER OF BEDDING CAN BE ADDED AFTER THE INSPECTION HAS BEEN COMPLETED.
5. ALL EXCAVATIONS SHALL BE IN ACCORDANCE WITH OSHA STANDARDS.
6. LOTS WITHOUT BUILDING ADDRESSES OR LOT AND BLOCK NUMBERS BEFORE DISTRICT INSPECTION OR METER SET WILL FAIL AUTOMATICALLY.
7. CONTRACTOR MUST BE PRESENT AT TIME OF INSPECTION, UNLESS COORDINATED WITH DISTRICT INSPECTOR.

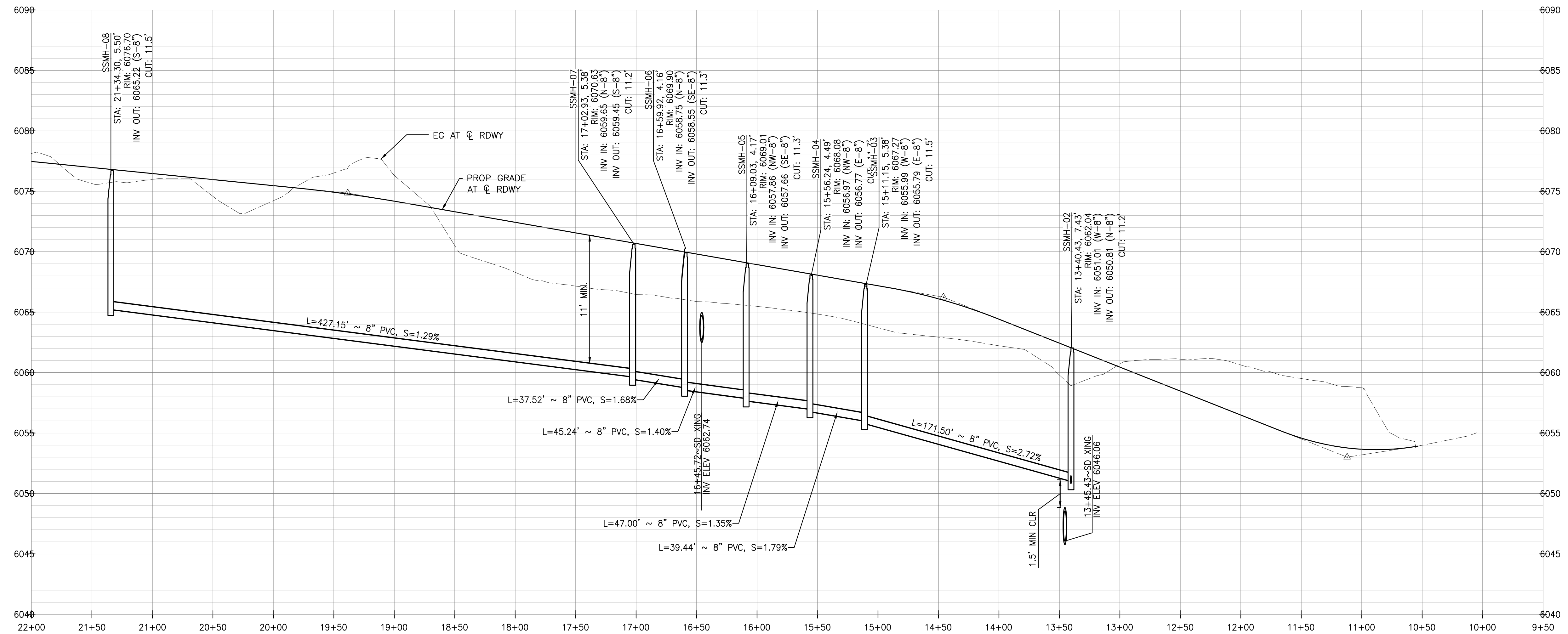
**CONSTRUCTION NOTES**

- 1 4' MANHOLE PER STD DTL PWS S3.1
- 2 TIE INTO EXISTING MANHOLE, EXTEND MANHOLE AND RESET TOP



**SEWER PLAN - SLICEROO DRIVE**

SCALE: HORIZ. 1" = 50'



**SEWER PROFILE - SLICEROO DRIVE**

SCALE: HORIZ. 1"=50', VERT. 1"=5'

**WATER & SEWER IMPROVEMENT PLANS FOR DOUGLAS 234 FILING NO. 6**  
DOUGLAS COUNTY, COLORADO

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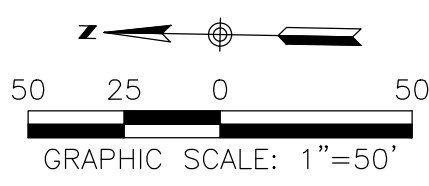
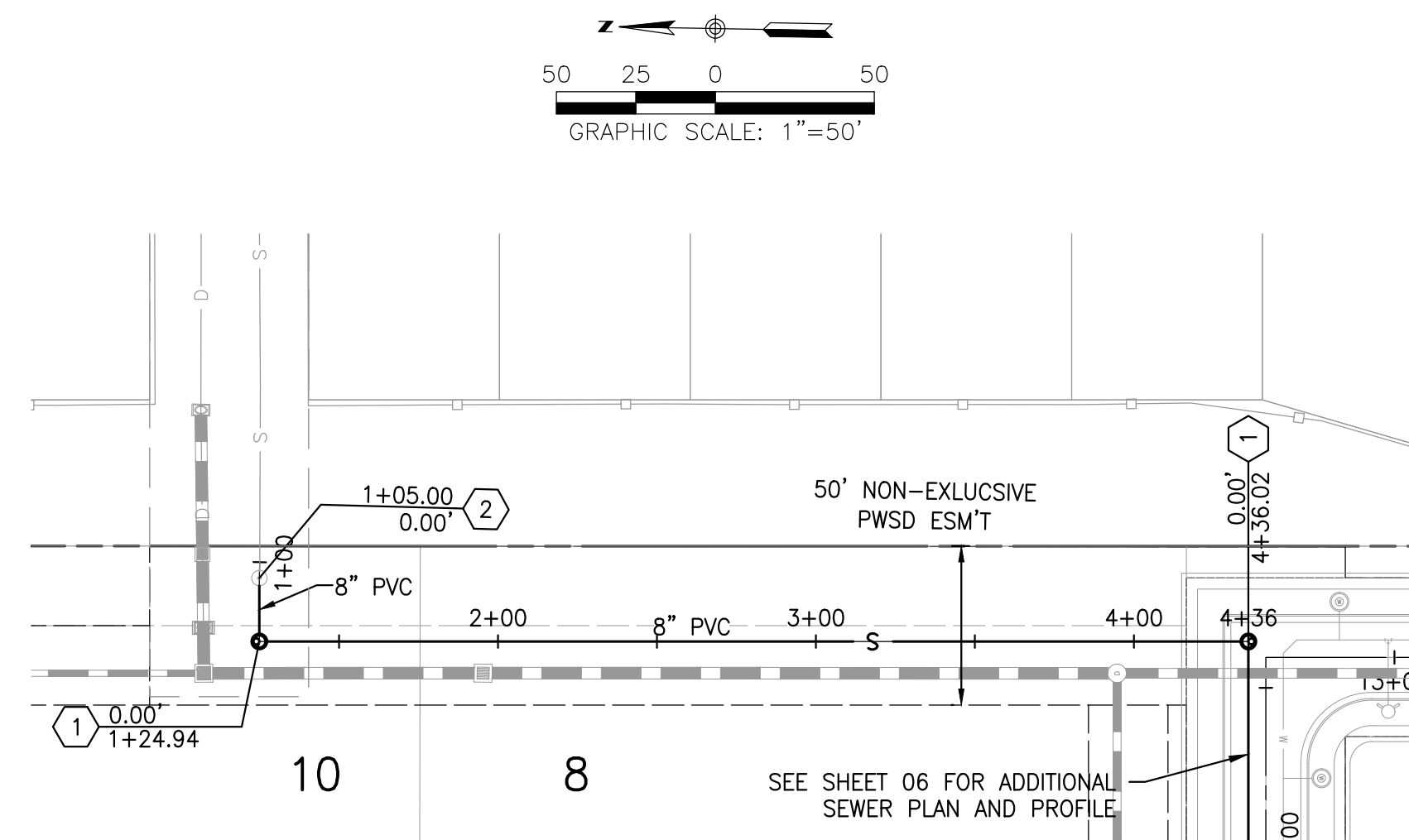
**SLICEROO DR SEWER PLAN & PROFILE**

PROJECT NO. D01173-A

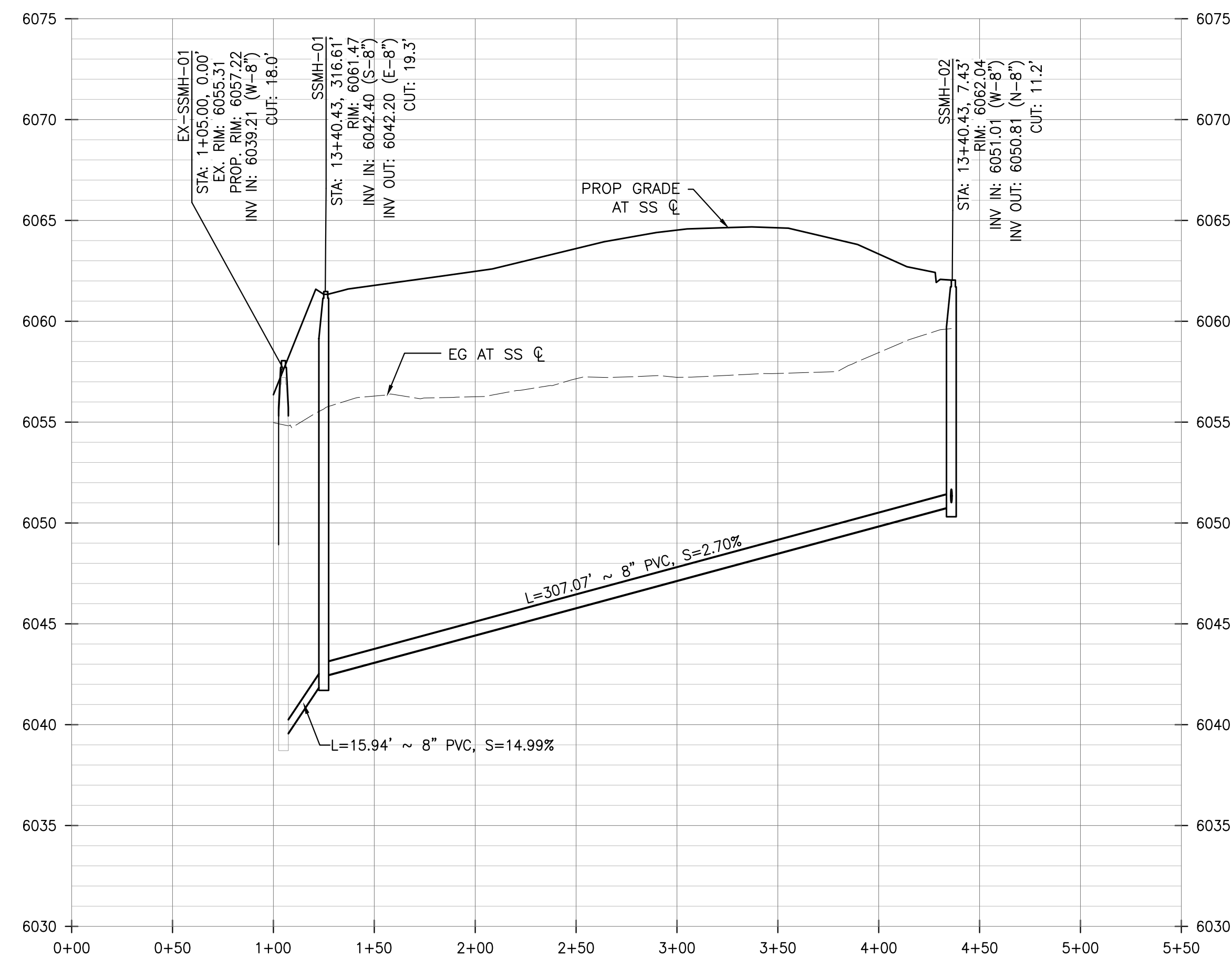
DRAWING NO. 6

SHEET NO. 6 OF 12 SHEETS

PRELIMINARY NOT FOR CONSTRUCTION



**SEWER PLAN**  
SCALE: HORIZ. 1" = 50'



**SEWER PROFILE**  
SCALE: HORIZ. 1" = 50', VERT. 1" = 5'

**DISTRICT POLICIES & INSTALLATION NOTES FOR SEWER SERVICES:**

**INSTALLATION NOTES:**

1. ACCEPTABLE PIPE MATERIALS ARE TO BE SDR 35 PVC PIPE, ABS PIPE AND PVC SCHEDULE 40 PIPE. APPROVED BEDDING IS TO BE SQUEEGEE.
2. NO-HUB CLAMPS SHALL BE USED TO JOIN 2 MALE PIPE ENDS WITH A MAXIMUM DEFLECTION OF 3".
3. MINIMUM GRADE SHALL BE 2%.
4. INSTALLATION SHALL NOT INCLUDE MORE THAN 3 BENDS. 90° BENDS ARE NOT ALLOWED. SOLVENT WELDED PIPE WILL NOT BE ALLOWED.
5. CLEAN-OUTS SHALL BE INSTALLED AT 100' INTERVALS AND EVERY CHANGE IN DIRECTION. CLEAN-OUTS ARE NOT REQUIRED FOR SERVICES LESS THAN 100' UNLESS THERE ARE CHANGES IN DIRECTION. PROVIDE DUAL CLEAN-OUT WITHIN 5 FEET OF FOUNDATION.
6. STRESSING THE PIPE BETWEEN FITTINGS WILL NOT BE ALLOWED.
7. SEWER SERVICE LINE SHALL NOT BE LOCATED UNDER CONCRETE SURFACE.
8. ALL SERVICES SHALL BE PERMANENTLY MARKED ON CURB FACE AS FOLLOWS:  
"X" FOR SANITARY SEWER SERVICE  
"Y" FOR WATER SERVICES

**INSPECTION POLICY:**

1. ALL SERVICE INSPECTIONS MUST BE SCHEDULED AT LEAST 24 HOURS IN ADVANCE OF THE REQUESTED INSPECTION.
2. IF THE CONTRACTOR IS NOT READY FOR INSPECTION WHEN THE INSPECTOR ARRIVES AT THE SITE, A RE-INSPECTION WILL HAVE TO BE SCHEDULED IN ACCORDANCE WITH NOTE 1 ABOVE AND A RE-INSPECTION FEE CHARGED.
3. SHOULD THE SERVICE LINES BE DAMAGED BY LATER CONSTRUCTION, AN INSPECTION OF THE REPAIR WILL BE REQUIRED IN ACCORDANCE WITH NOTES 1 AND 2 ABOVE.
4. THE CONTRACTOR SHALL LEAVE ALL PIPE AND FITTINGS EXPOSED FOR THE INSPECTOR TO OBSERVE. INSPECTORS WILL NOT ENTER ANY EXCAVATIONS TO CHECK MATERIALS. THE TOP LAYER OF BEDDING CAN BE ADDED AFTER THE INSPECTION HAS BEEN COMPLETED.
5. ALL EXCAVATIONS SHALL BE IN ACCORDANCE WITH OSHA STANDARDS.
6. LOTS WITHOUT BUILDING ADDRESSES OR LOT AND BLOCK NUMBERS BEFORE DISTRICT INSPECTION OR METER SET WILL FAIL AUTOMATICALLY.
7. CONTRACTOR MUST BE PRESENT AT TIME OF INSPECTION, UNLESS COORDINATED WITH DISTRICT INSPECTOR.

**CONSTRUCTION NOTES**

- ① 4' MANHOLE PER STD DTL PWSD S3.1
- ② TIE INTO EXISTING MANHOLE, EXTEND MANHOLE & RESET MANHOLE TOP

**WATER & SEWER IMPROVEMENT PLANS FOR**  
**DOUGLAS 234**  
**FILING NO. 6**  
 DOUGLAS COUNTY, COLORADO

**RICK**  
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**SEWER PLAN & PROFILE**

PROJECT NO.  
 D01173-A  
 DRAWING NO.  
 7  
 SHEET NO. 7 OF 12 SHEETS

PRELIMINARY  
NOT FOR CONSTRUCTION

- INSPECTION POLICY:**
1. ALL SERVICE INSPECTIONS MUST BE SCHEDULED AT LEAST 24 HOURS IN ADVANCE OF THE REQUESTED INSPECTION.
  2. SERVICE INSPECTIONS WILL OCCUR BETWEEN 1:00 P.M. AND 3:00 P.M. SPECIFIC INSPECTION TIMES ARE NOT AVAILABLE.
  3. IF THE CONTRACTOR IS NOT READY FOR INSPECTION WHEN THE INSPECTOR ARRIVES AT THE SITE OR SERVICE FAILS, A RE-INSPECTION WILL HAVE TO BE SCHEDULED IN ACCORDANCE WITH NOTES 1 AND 2 ABOVE AND A RE-INSPECTION FEE CHARGED.
  4. SHOULD THE SERVICE LINES BE DAMAGED BY LATER CONSTRUCTION, AN INSPECTION OF THE REPAIR WILL BE REQUIRED IN ACCORDANCE WITH NOTES 1 AND 2 ABOVE.
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**INSTALLATION NOTES:**

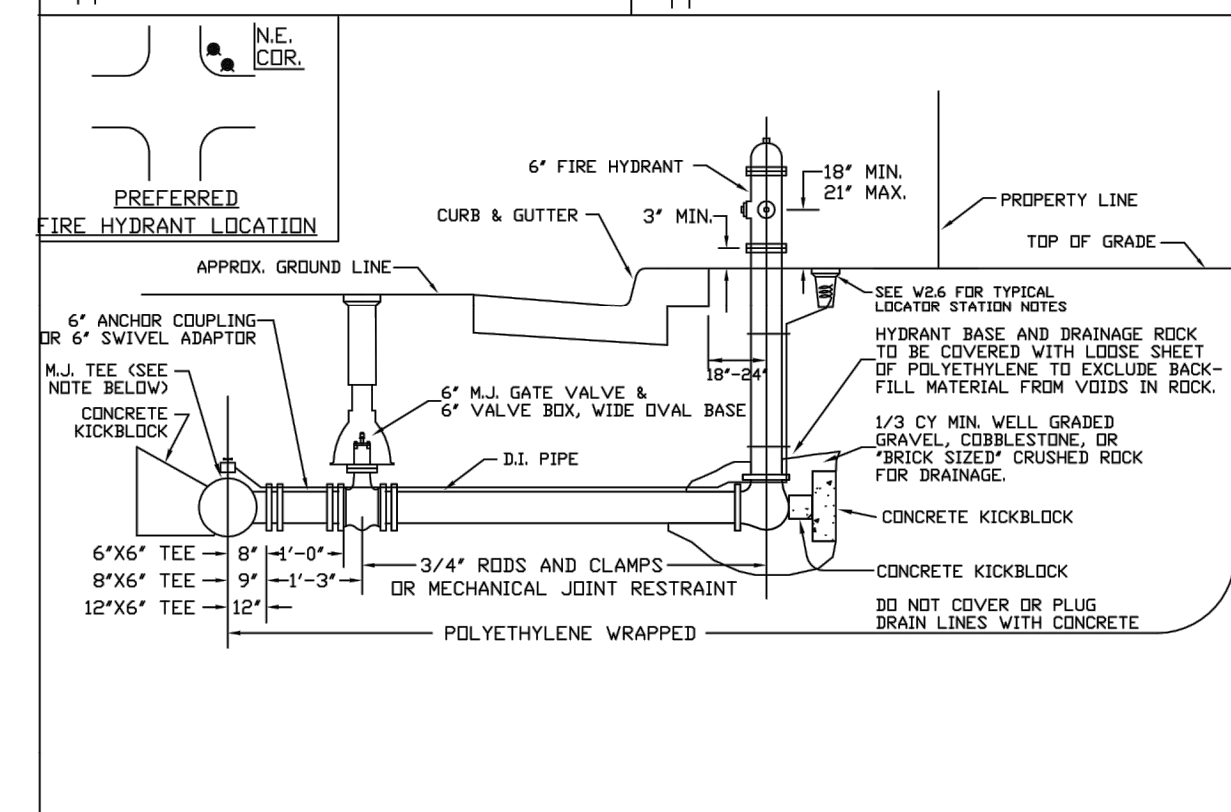
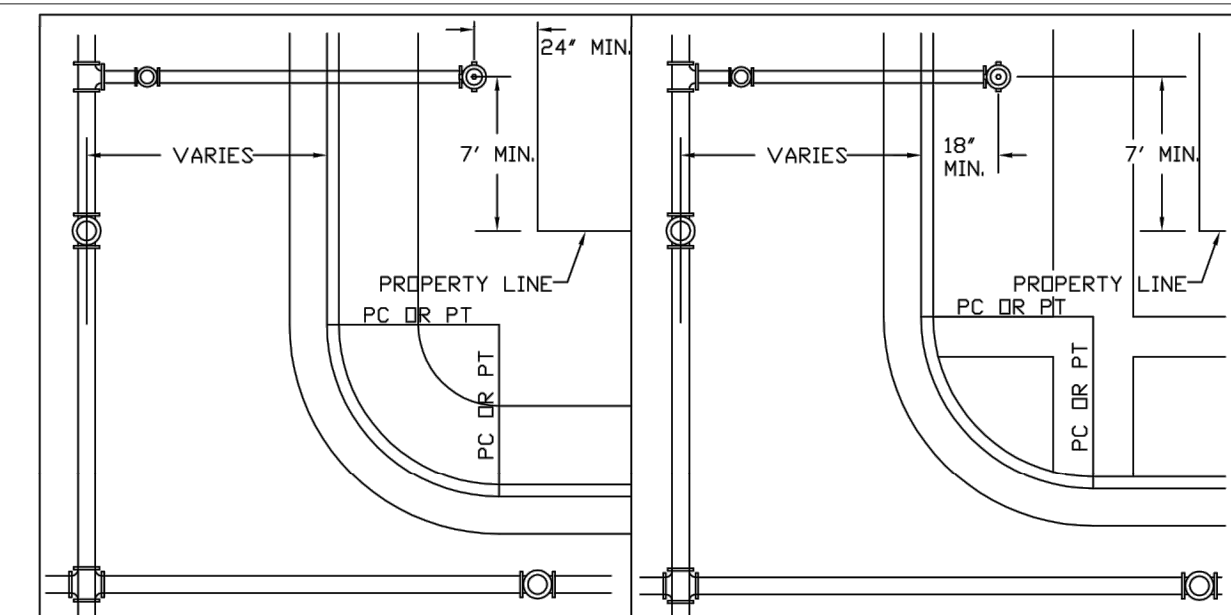
- WATER**
1. ACCEPTABLE PIPE MATERIALS SHALL BE K-COPPER TUBING. (3/4" MIN.)
  2. APPROVED BEDDING TO BE SQUEEGEE.
  3. ONLY ONE COUPLING WILL BE ALLOWED BETWEEN THE STUB-IN AND BUILDING. COMPRESSION COUPLINGS WILL NOT BE ALLOWED ON NEW CONSTRUCTION. SILVER SOLDERED JOINTS MUST BE USED ON SERVICES LARGER THAN 3/4". SILVER SOLDERED JOINTS MUST BE INSPECTED BY PWSD PRIOR TO BURIAL. FLARED COUPLINGS WILL BE ALLOWED ON ALL SERVICES 3/4" AND SMALLER.
  4. A WATER SERVICE WHICH CROSSES A SEWER SERVICE CAN DO SO ONLY AT A 45-90° ANGLE. WATER SERVICES SHALL BE LOCATED A MINIMUM OF 18" ABOVE SEWER SERVICE.
  5. WATER SERVICE FOUNDATION PENETRATIONS SHALL BE WATERPROOFED USING MASTIC OR OTHER APPROVED METHOD, CRAWL SPACE REQUIRES CONTINUOUS COPPER WITH A 1" BURY.
  6. CURB STOP MUST BE PLUMB AND CENTERED OVER THE NUT. IT SHOULD BE STRAPPED TO THE METER PIT (RESIDENTIAL INSTALLATIONS) OR CENTERED OVER THE EASEMENT LINE (COMMERCIAL INSTALLATIONS). THE ASSEMBLY MUST BE AT OR SLIGHTLY ABOVE FINISHED GRADE.
  7. MOVED CURB BOXES MUST BE INSPECTED BY PWSD PRIOR TO BURIAL.
  8. WATERLINE MUST BE ATTACHED TO A SUPPORT BOARD THAT IS MOUNTED TO THE WALL.
  9. NO VOIDS ALLOWED UNDER WATERLINES FROM STOP BOX TO FOUNDATION.
  10. CURBSTOP BOXES AND METER PITS CANNOT BE IN DRIVEWAYS.
  11. ONLY 3/4" (JUMPER) PIPES (RESIDENCES) ARE ALLOWED. (JUMPER) PIPES WILL BE REMOVED PRIOR TO METER SET DATE.
  12. ALL SERVICES WILL BE PERMANENTLY MARKED ON CURB FACE AS FOLLOWS:  
 "W" FOR SANITARY SEWER SERVICE  
 "V" FOR WATER SERVICES
  13. NO SPLICES OR FLARED COUPLINGS ALLOWED ON SERVICES LARGER THAN 3/4". SILVER SOLDERED JOINTS MUST BE USED IN MOVING STOPBOXES ON SERVICES LARGER THAN 3/4". SILVER SOLDERED JOINTS MUST BE INSPECTED BY PWSD PRIOR TO BURIAL. FLARED COUPLINGS WILL BE ALLOWED ON ALL SERVICES 3/4" AND SMALLER.

**PARKER WATER & SANITATION DISTRICT**  
DISTRICT POLICIES & INSTALLATION NOTES FOR WATER SERVICES

SCALE: NONE	DATE: 2/96
APPROVED: PVR	1/04 1/16 10/16
DIRECTOR OF ENGINEERING	

2016 REVISION

SHEET W1.1

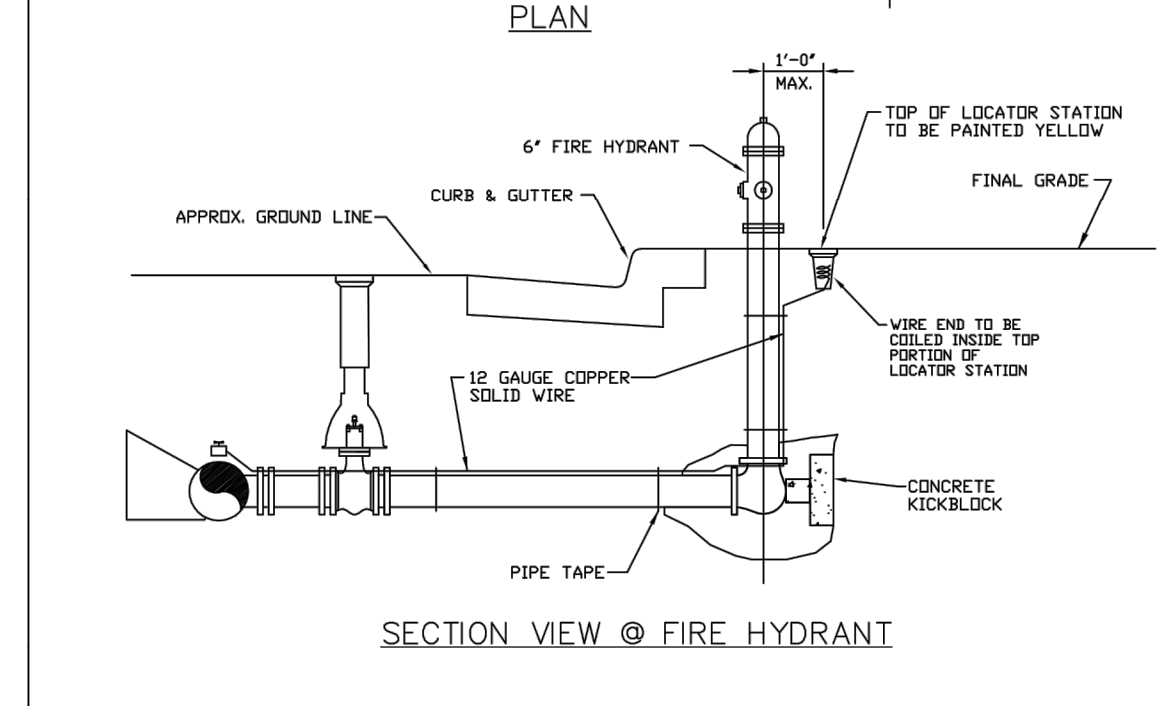
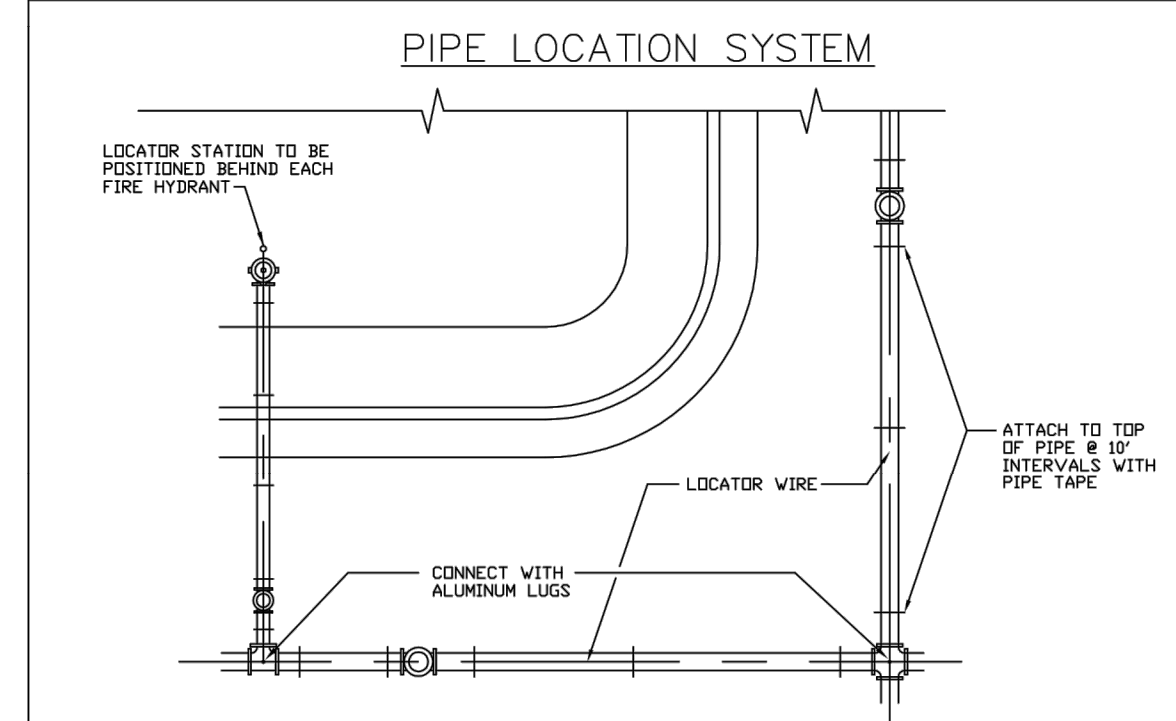


**PARKER WATER & SANITATION DISTRICT**  
FIRE HYDRANTS LOCATION & INSTALLATION

SCALE: NONE	DATE: 2/96
APPROVED: PVR	4/01 01/02 12/07 1/16
DIRECTOR OF ENGINEERING	

2016 REVISION

SHEET W2.5

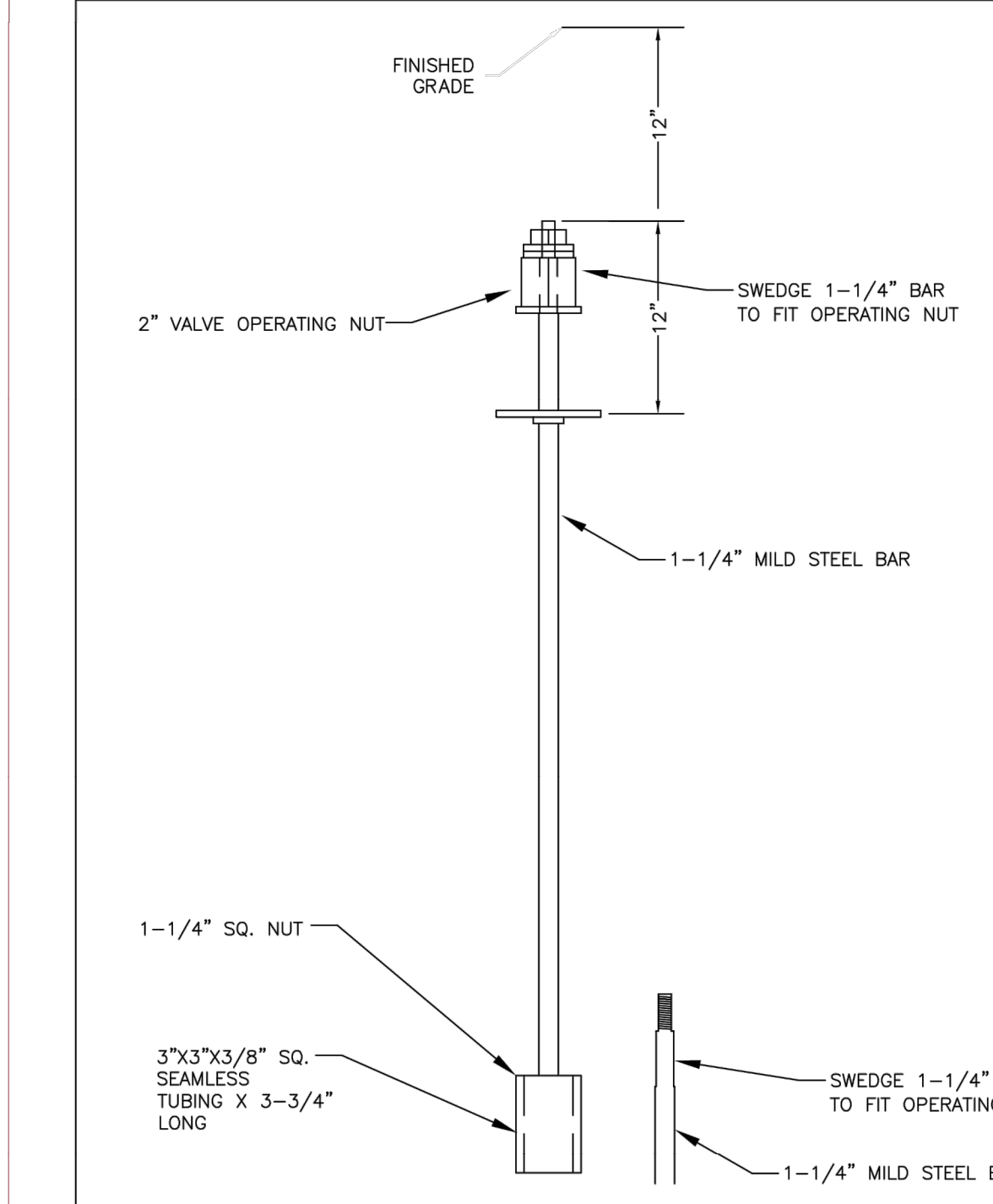


**PARKER WATER & SANITATION DISTRICT**  
LOCATOR WIRE DETAILS

SCALE: NONE	DATE: 2/96
APPROVED: PVR	4/01 01/02 01/16 10/16
DIRECTOR OF ENGINEERING	

2016 REVISION

SHEET W2.6

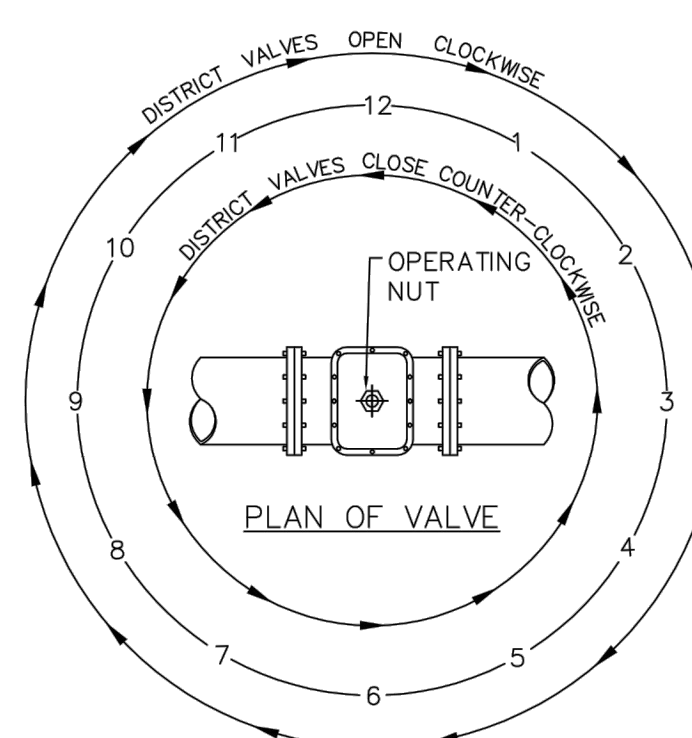


**PARKER WATER & SANITATION DISTRICT**  
VALVE OPERATOR EXTENSION

SCALE: NONE	DATE: 5/98
APPROVED: PVR	2/00 12/07 1/16 10/16
DIRECTOR OF ENGINEERING	

2016 REVISION

SHEET W3.3



NOTE:  
ONLY RIGHT HAND OPENING VALVES ALLOWED.

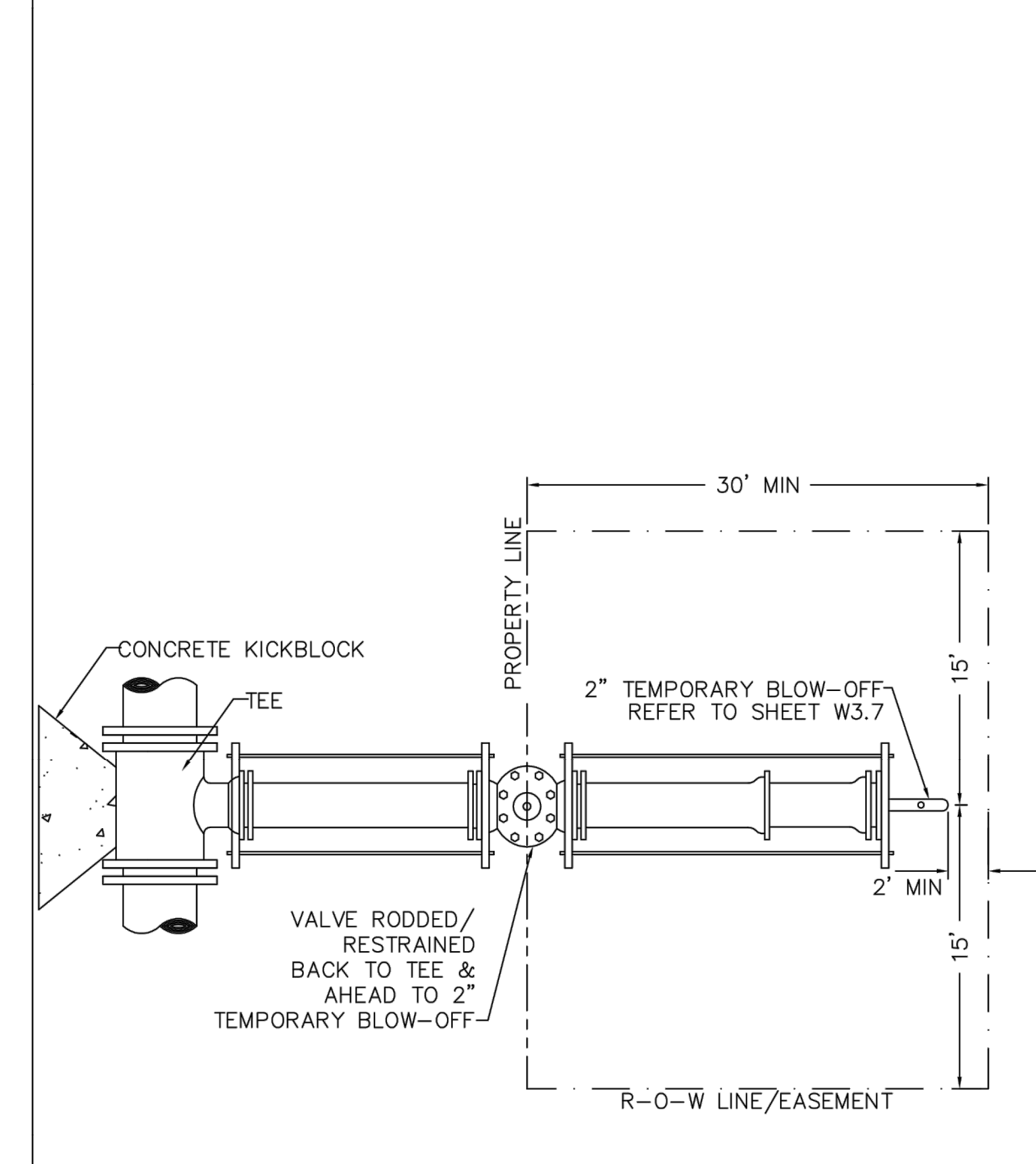
**VALVE OPENING & CLOSING PROCEDURE**

**PARKER WATER & SANITATION DISTRICT**  
VALVE OPERATION

SCALE: NONE	DATE: 2/96
APPROVED: PVR	1/16 10/16
DIRECTOR OF ENGINEERING	

2016 REVISION

SHEET W3.4

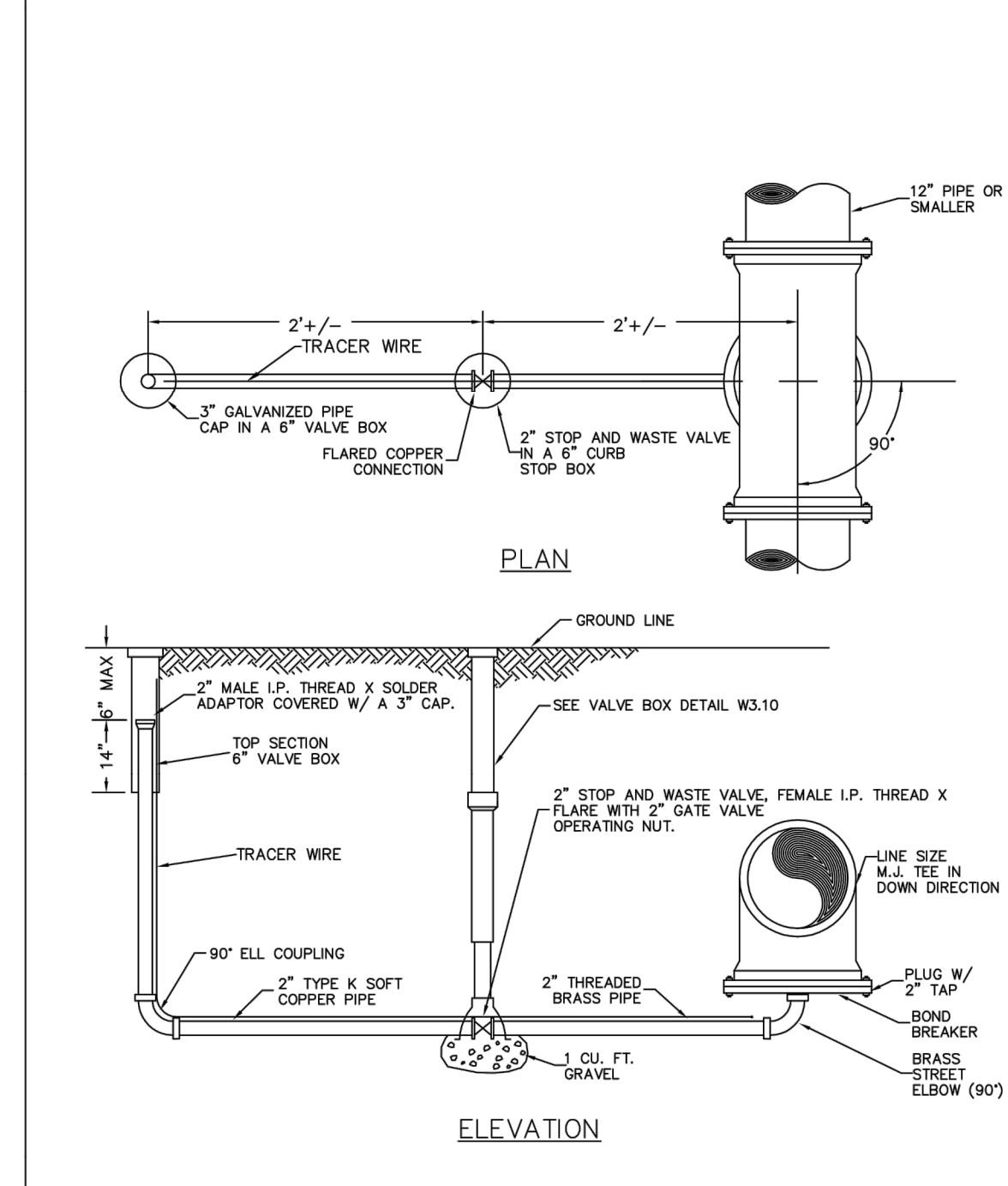


**PARKER WATER & SANITATION DISTRICT**  
STUB-OUT CONFIGURATIONS

SCALE: NONE	DATE: 2/96
APPROVED: PVR	1/16 10/16
DIRECTOR OF ENGINEERING	

2016 REVISION

SHEET W3.5

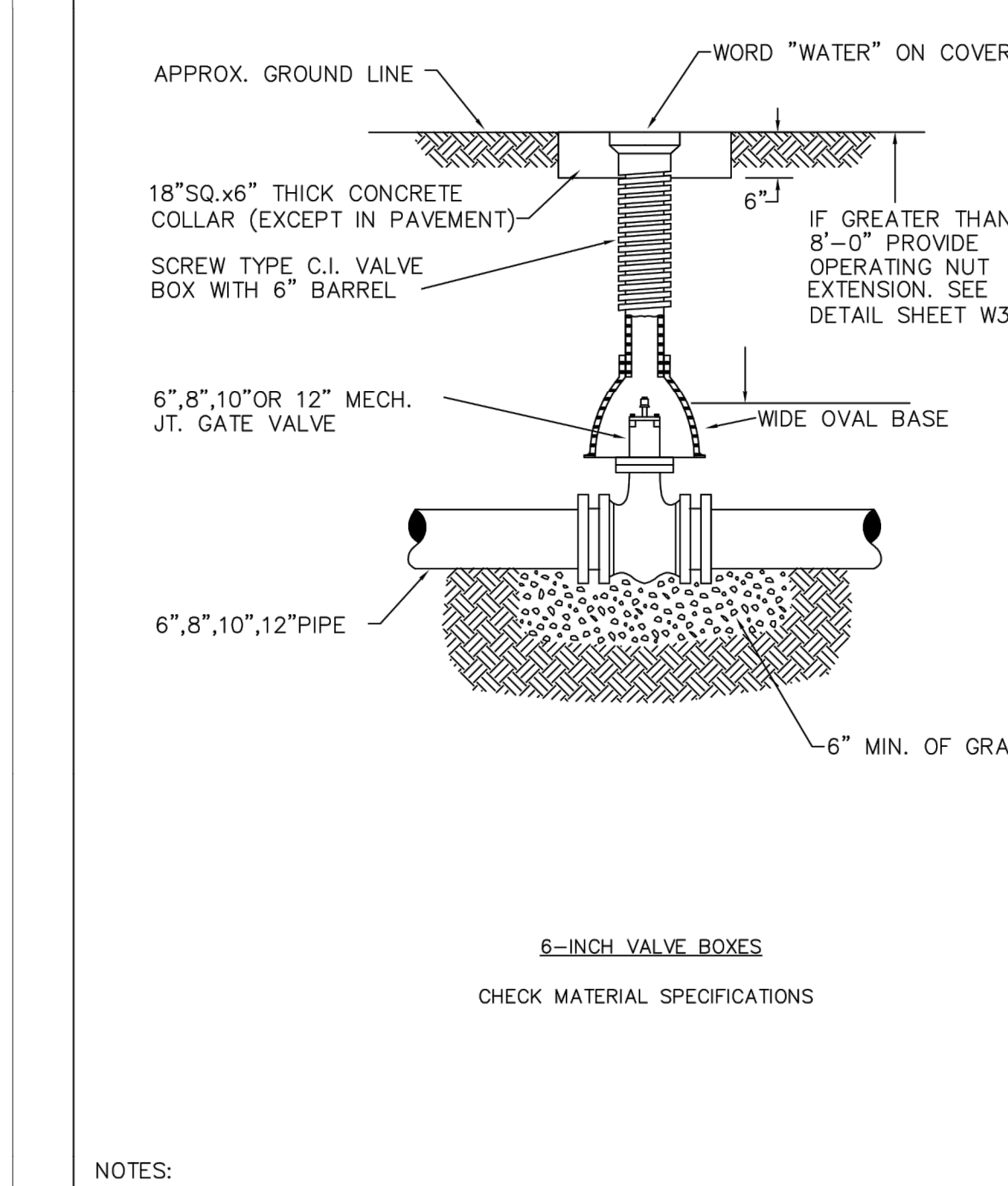


**PARKER WATER & SANITATION DISTRICT**  
LOW POINT BLOW-OFF WITH SAND TRAP

SCALE: NONE	DATE: 2/96
APPROVED: PVR	4/01 10/16
DIRECTOR OF ENGINEERING	

2016 REVISION

SHEET W3.8



**PARKER WATER & SANITATION DISTRICT**  
VALVE BOX DETAIL

SCALE: NONE	DATE: 2/96
APPROVED: PVR	5/98 10/16 6/99 12/07 1/16
DIRECTOR OF ENGINEERING	

2016 REVISION

SHEET W3.10

**WATER & SEWER IMPROVEMENT PLANS FOR DOUGLAS 234 FILING NO. 6**  
DOUGLAS COUNTY, COLORADO

**RICK ENGINEERING COMPANY**  
9801 EAST EASTER AVE  
CENTENNIAL, CO 80112  
303.537.8020  
Tucson - San Diego - Riverside - Orange  
Sacramento - San Luis Obispo - Phoenix  
rickengineering.com



REVISIONS:

NO.	DESCRIPTION	DATE:
1		

SCALE: NTS  
DATE: 5/6/2020  
DRAWN BY: WD  
CHECKED BY: JS  
JOB NO: D01173-A

**WATER DETAILS**

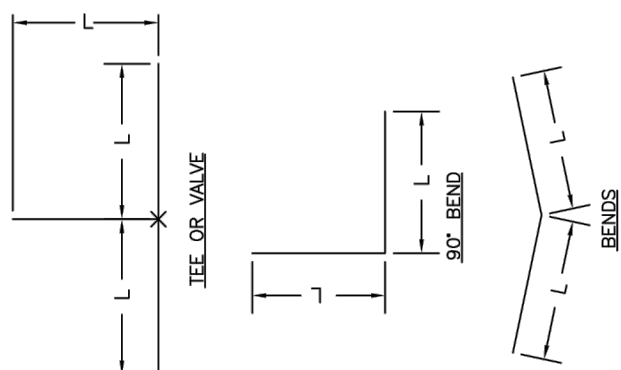
PROJECT NO. D01173-A  
DRAWING NO. 8  
SHEET NO. 8 OF 12 SHEETS

PRELIMINARY  
NOT FOR CONSTRUCTION

LENGTH OF TIED PIPE

PIPE SIZE	4"	6"	8"	12"	16"	20"	24"
PIPE DIA.	D	D	D	D	D	D	D
VALVE OR PLUG DIA.	L	L	L	L	L	L	L
40° BEND	3/4" 6.0'	3/4" 3.0'	3/4" 3.0'	3/4" 3.0'	3/4" 3.0'	3/4" 3.0'	3/4" 3.0'
22-1/2° BEND	3/4" 6.0'	3/4" 3.0'	3/4" 3.0'	3/4" 3.0'	3/4" 3.0'	3/4" 3.0'	3/4" 3.0'
11-1/4° BEND	3/4" 6.0'	3/4" 3.0'	3/4" 3.0'	3/4" 3.0'	3/4" 3.0'	3/4" 3.0'	3/4" 3.0'

- NOTES:
1. LENGTH OF TIED PIPE MEASURED EACH WAY FROM VALVES AND BENDS.
  2. CLAMPS AND RODS NOT ALLOWED FOR 24" AND LARGER PIPES.
  3. D = DIAMETER, L = LENGTH, G = GRADE, M.S. = MILD STEEL.
  4. MINIMUM 4.5" GROUND COVER REQUIRED.
  5. BASED ON 150 PSI INTERNAL PRESSURE.
  6. M.S. MEANS MILD STEEL ROD A.S.T.M. STANDARD DESIGNATION A-36.
  7. H.S. MEANS HIGH STRENGTH STEEL ROD A.S.T.M. STANDARD DESIGNATION A-193 GRADE B-7.
  8. "N" IS HEXAGON HEAVY SERIES.
  9. SEE THE ROD DETAIL DRAWING, ALSO, THE ROD COUPLING DETAILS, CLAMP DETAILS AND SET CLAMP DETAILS.
  10. LENGTH REFERS TO THE AMOUNT OF PIPE WHICH MUST BE TIED TO THE RODS.
  11. STAR BOLTS NOT ALLOWED ON PIPE LARGER THAN 16".
  12. MINIMUM OF 4 RODS REQUIRED ON 16" PIPE IF STAR BOLTS ARE USED.
  13. TEES ARE TO BE RODDED ON BRANCH ONLY.

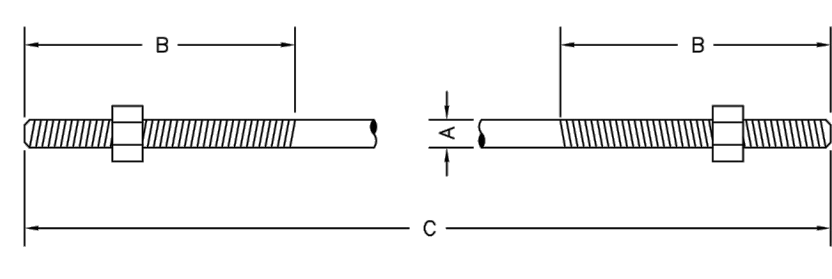


PARKER WATER & SANITATION DISTRICT  
LENGTH OF TIED PIPE

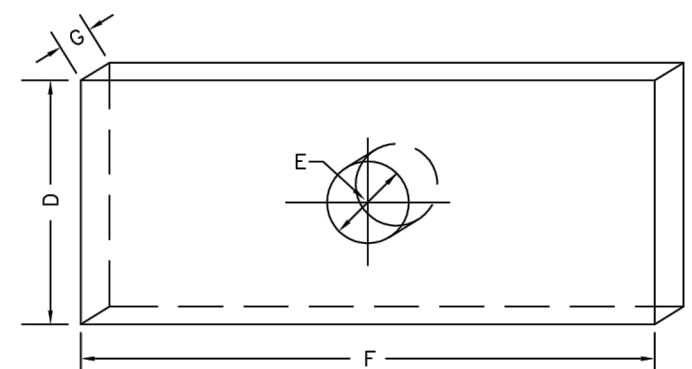
SCALE: NONE DATE: 2/96

APPROVED: 4/01 1/16 10/16  
PVR DIRECTOR OF ENGINEERING

SHEET W3.11



TIE ROD DETAIL



WASHER DETAIL

TIE RODS		WASHERS		
ROD DIA.	THREAD	D	F	G
3/4"	10 11 & 20"	WIDTH	HOLE DIA.	LENGTH
1"	10 11 & 20"	4"	3/8"	THICKNESS
1-1/4"	ALL THREAD	4"	1-1/8"	7"
			1-3/8"	5/8"

NOTES:

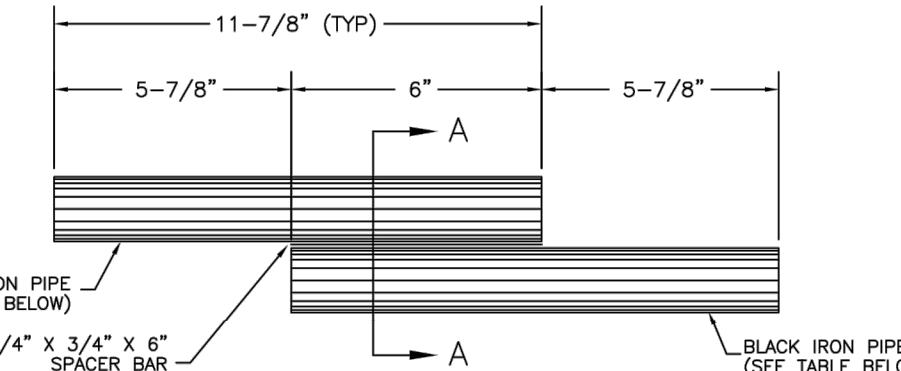
1. SEE TIED JOINTS ROD DIMENSIONS SHEET.
2. SEE CLAMP DETAILS AND DIMENSIONS (SHEET W3.15) FOR PROPER PLACEMENT OF WASHERS.

PARKER WATER & SANITATION DISTRICT  
TIE ROD AND WASHER DETAILS

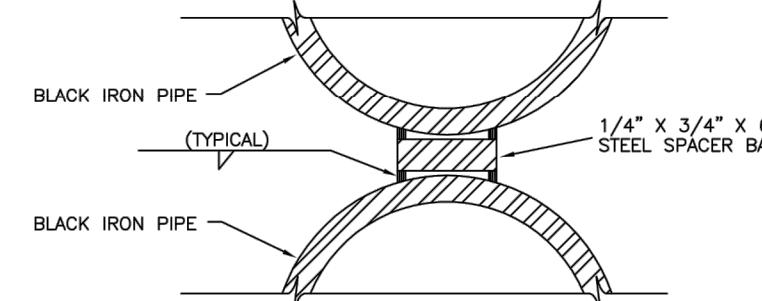
SCALE: NONE DATE: 2/96

APPROVED: 1/16 10/16  
PVR DIRECTOR OF ENGINEERING

SHEET W3.12



TIE ROD COUPLING DETAIL



SECTION "A-A"

NOTES:

BLACK IRON PIPE = SCHEDULE 40.

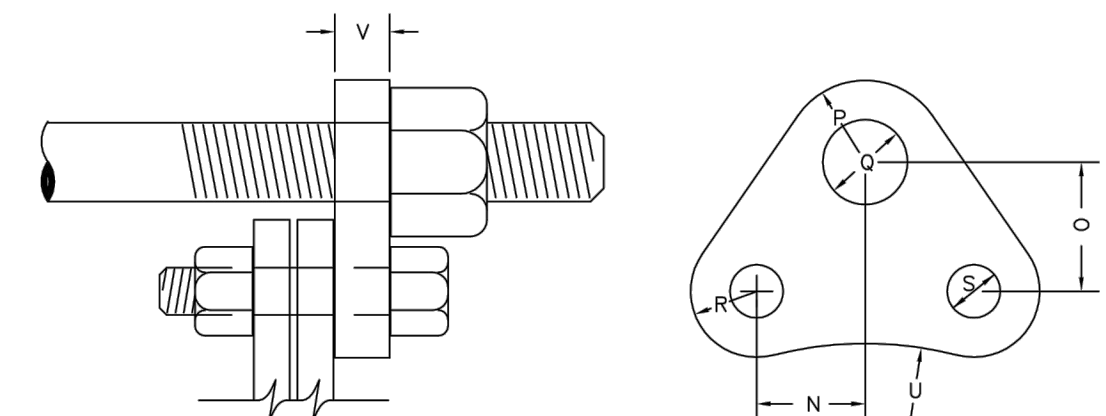
ROD SIZE	PIPE DIA.
3/4"	1"
1"	1-1/4"
1-1/4"	1-1/2"

PARKER WATER & SANITATION DISTRICT  
TIE ROD COUPLING

SCALE: NONE DATE: 2/96

APPROVED: 1/16 10/16  
PVR DIRECTOR OF ENGINEERING

SHEET W3.13



FLANGE LUG DETAIL

DIMENSIONS (IN INCHES)

PIPE DIA.	N	O	P	Q	R	S	U	V	PIPE DIA.	
4"	1-7/16	2-1/4	1-7/8	3/4	1-7/8	3/4	7/8	3/4	2-7/8	4"
6"	1-7/8	2-3/4	1-7/8	3/4	1-7/8	3/4	7/8	3/4	3-1/4	6"
8"	1-7/8	2-3/4	1-7/8	3/4	1-7/8	3/4	7/8	3/4	3-1/4	8"
12"	1-7/8	2-3/4	1-7/8	3/4	1-7/8	3/4	7/8	3/4	3-1/4	12"
20"	1-7/8	2-3/4	1-7/8	3/4	1-7/8	3/4	7/8	3/4	3-1/4	20"

RODS AND CLAMPS NOT ALLOWED.

NOTES:

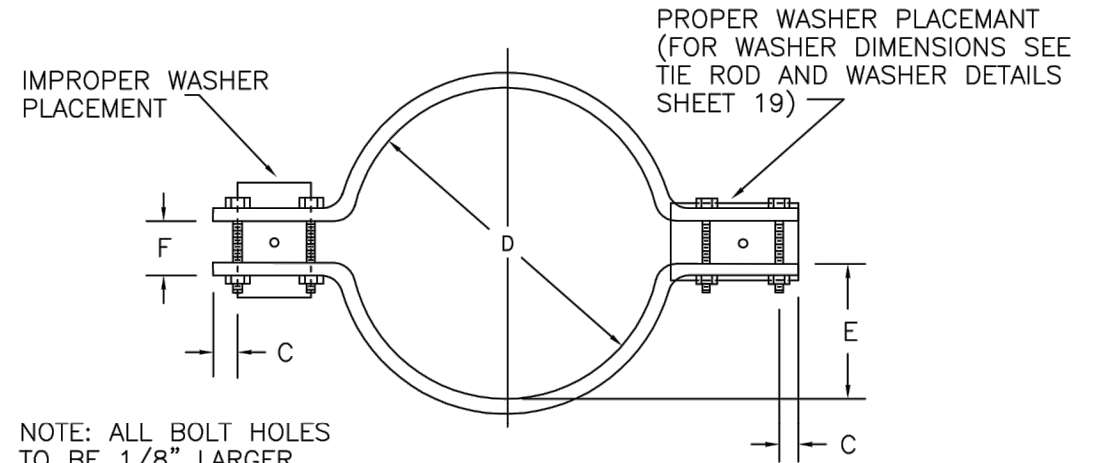
1. M.S. MEANS MILD STEEL ROD A.S.T.M. STANDARD DESIGNATION A-36. (NUTS SHALL BE A.S.T.M. STANDARD DESIGNATION A-307 GRADE A OR B HEXAGON HEAVY SERIES).
2. H.S. MEANS HIGH STRENGTH STEEL ROD A.S.T.M. STANDARD DESIGNATION A-193 GRADE B7. (NUTS SHALL BE A.S.T.M. STANDARD DESIGNATION A-194 GRADE B7).
3. FLANGE LUGS SHALL NOT BE USED ON VALVES.

PARKER WATER & SANITATION DISTRICT  
FLANGE LUG DETAIL

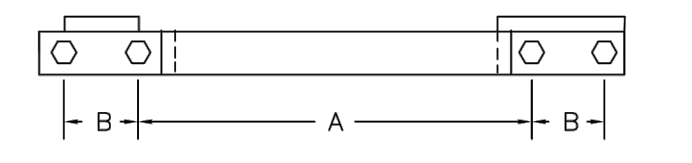
SCALE: NONE DATE: 2/96

APPROVED: 1/16 10/16  
PVR DIRECTOR OF ENGINEERING

SHEET W3.14



NOTE: ALL BOLT HOLES TO BE 1/8" LARGER DIA. THAN BOLT.



CLAMP DETAILS

DIMENSIONS

TABLE OF DIMENSIONS FOR CLAMPS

PIPE DIA.	BAR SIZE	A	B	C	D	E	F	BOLT SIZES	PIPE DIA.	
4	1-1/2X1/2	9-3/4	7-1/2	3-1/2	3-1/2	1	1	6-3/4	4-7/8	4
6	2X1/2	13	9-1/2	4	4-1/2	2	2	10-1/4	7-1/8	6
8	2-1/2X1/2	15	12-3/4	4-3/4	4-1/2	1-1/4	1-1/2	12-1/4	8-1/4	8
12	2-1/2X5/8	17-1/2	16-3/8	4-3/4	4-3/4	1	1-1/4	14-1/2	13-1/2	12
16	3X3/4	24-1/2	21-7/8	4-1/2	4-3/4	1-1/2	1-1/2	19-3/4	17-1/2	16
20	3X3/4	30-1/2	25-5/8	4-1/2	4-3/4	1-1/2	1-1/2	24-3/4	21-3/4	20

RODS AND CLAMPS NOT ALLOWED

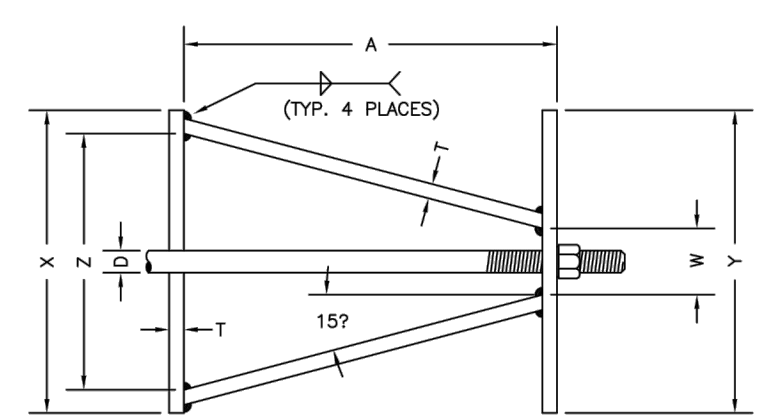
NOTE: ALL DIMENSIONS IN INCHES  
CLAMPS MAY NOT BE USED ON PVC PIPE.

PARKER WATER & SANITATION DISTRICT  
CLAMP DETAILS AND DIMENSIONS

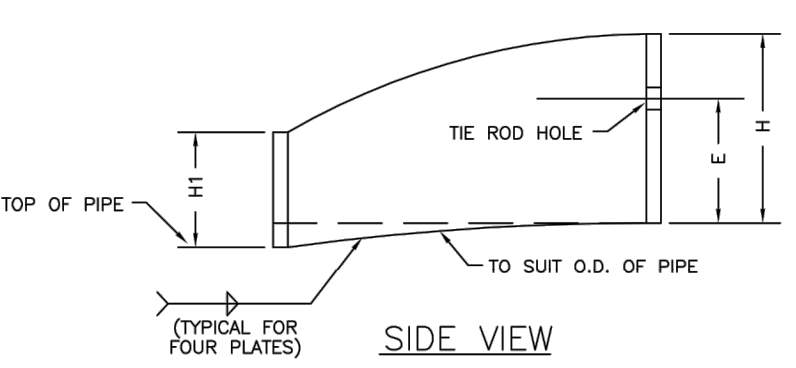
SCALE: NONE DATE: 2/96

APPROVED: 12/07 1/16 10/16  
PVR DIRECTOR OF ENGINEERING

SHEET W3.15



TOP VIEW



SIDE VIEW

HARNES LUG DIMENSIONS

CARRIER PIPE NOMINAL DIA.	STUD DIA.	A	W	Z	T	H	E	H1	Y	X
4" TO 16"	3/4"	5"	1-1/2"	3-3/4"	3/8"	4-1/8"	3-1/8"	2"	4-1/2"	5"
20"	1"	5-3/4"	1-3/4"	4-7/16"	3/8"	4-1/2"	3-1/4"	2"	5-1/4"	5-11/16"

NOTES:

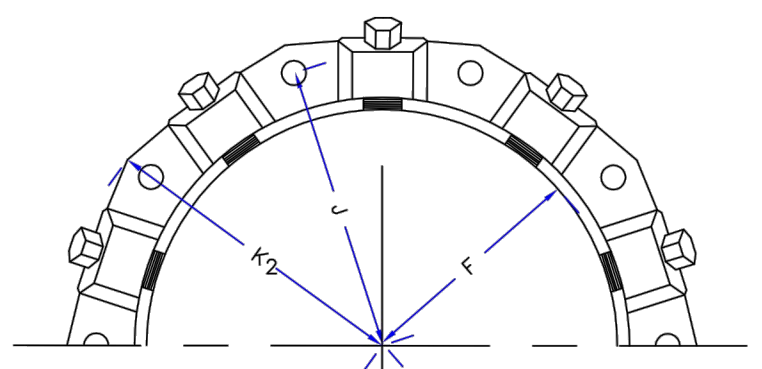
1. USE TWO HIGH STRENGTH STEEL TIE RODS AT END OF CASING.
2. THE ROD HOLE DIAMETER 1/8" LARGER THAN STUD DIAMETER.
3. BOTTOM EDGE OF ALL PLATES SHAPED TO FIT O.D. OF PIPE.

PARKER WATER & SANITATION DISTRICT  
HARNES LUG DETAILS

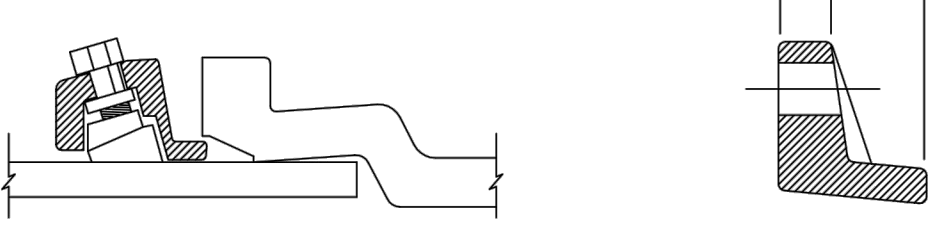
SCALE: NONE DATE: 2/96

APPROVED: 1/16 10/16  
PVR DIRECTOR OF ENGINEERING

SHEET W3.16



MECHANICAL JOINT RESTRAINT



WEDGE DETAIL BOLT HOLE DETAIL

NOMINAL PIPE SIZE	NO. OF BOLTS	NO. OF WEDGES	K2 INCHES	J INCHES	F INCHES	M INCHES
4"	2	2	11.12	9.5	7.00	0.88
6"	6	3	13.37	11.75	9.15	1.00
8"	6	4	15.62	14.00	11.20	1.00
10"	8	6	17.88	16.25	13.30	1.25
12"	8	8	17.88	16.25	13.30	1.25

NOTES:

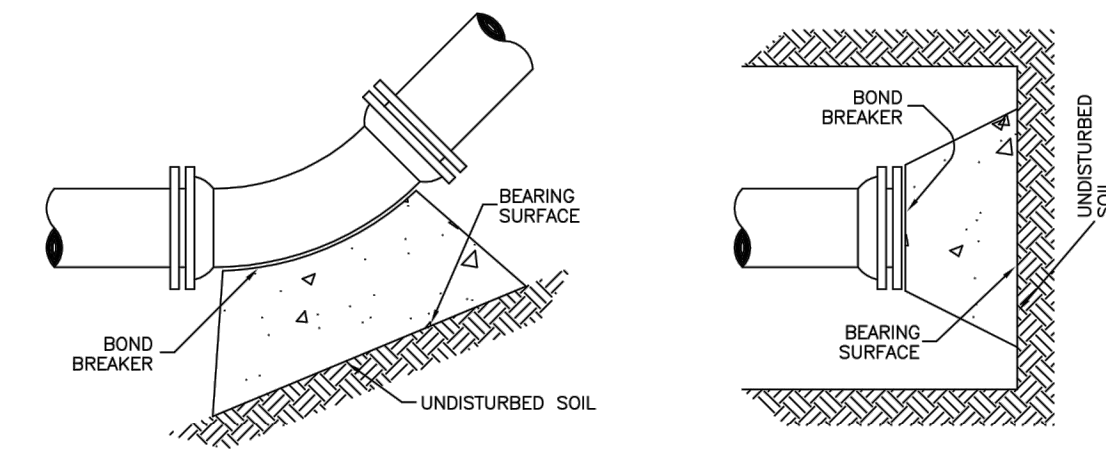
1. DIMENSIONS FOR 16" AND 20" D.I. PIPE NOT SHOWN.

PARKER WATER & SANITATION DISTRICT  
MECHANICAL JOINT RESTRAINT DETAILS

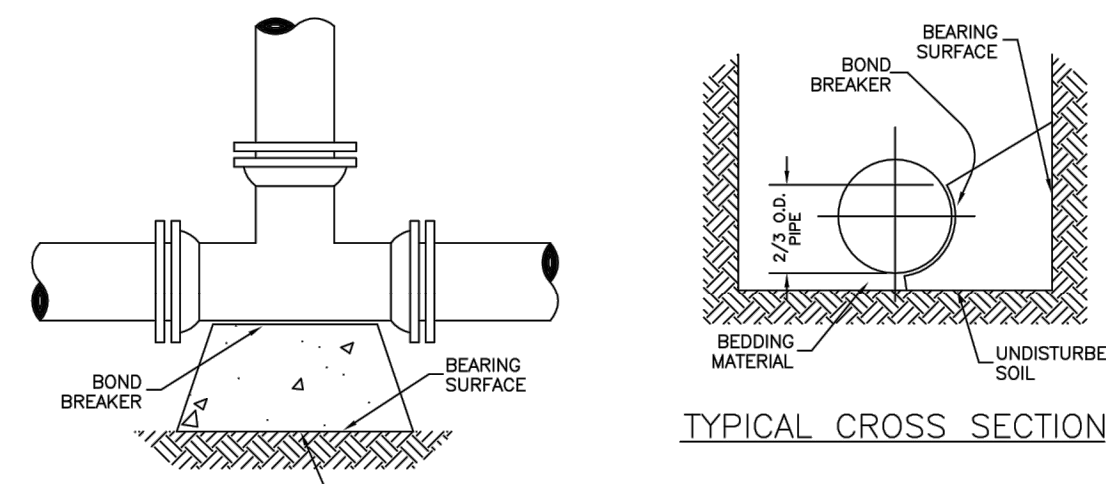
SCALE: NONE DATE: 2/96

APPROVED: 2/00 12/07 1/16 10/16  
PVR DIRECTOR OF ENGINEERING

SHEET W3.17



11-1/4, 22-1/2, 45° & 90° BENDS



DEAD END TYPICAL CROSS SECTION

MINIMUM BEARING SURFACE AREA (IN SQUARE FEET)

PIPE SIZE	11-1/4"	22-1/2"	45°	90°	TEE OR DEAD END
4"	1.00	1.00	1.50	1.50	1.50
6"	1.00	1.25	2.25	4.00	3.50
8"	1.00	2.00	4.00	7.50	5.25
10"	2.00	3.25	8.00	15.25	11.00
12"	3.50	6.50	12.50	23.00	16.50
20"	5.00	10.00	19.50	35.50	25.00
24"	6.50	13.00	26.00	47.00	33.00

NOTES:

1. ALL VALVES, TEES, BENDS AND PLUGS SHALL BE RESTRAINED AND KICKBLOCKED.
2. BEARING SURFACES SHOWN IN CHART ARE MINIMUM.
3. BASED ON 150 PSI PIPE PRESSURE PLUS WATER HAMMER.
4. 4", 6" AND 8" WATER HAMMER = 120 PSI. 12" WATER HAMMER = 110 PSI. 16", 20" AND 24" WATER HAMMER = 70 PSI.
5. SOIL BEARING CAPACITY = 3,000 LBS./SQ. FT.

PARKER WATER & SANITATION DISTRICT  
CONCRETE KICKBLOCKS BEARING SURFACES AND INSTALLATION

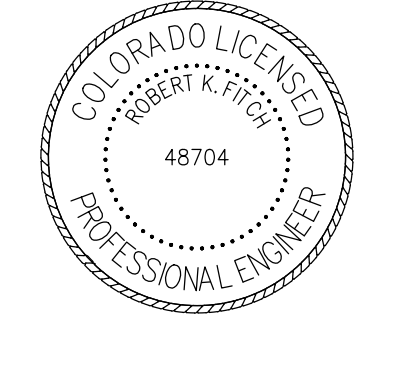
SCALE: NONE DATE: 2/96

APPROVED: 4/01 1/16 10/16  
PVR DIRECTOR OF ENGINEERING

SHEET W3.18

WATER & SEWER IMPROVEMENT PLANS FOR  
DOUGLAS 234  
FILING NO. 6  
DOUGLAS COUNTY, COLORADO

**RICK**  
ENGINEERING COMPANY  
9801 EAST EASTER AVE  
CENTENNIAL, CO 80112  
303.537.8020  
Tucson - San Diego - Riverside - Orange  
Sacramento - San Luis Obispo - Phoenix  
rickengineering.com



REVISIONS:

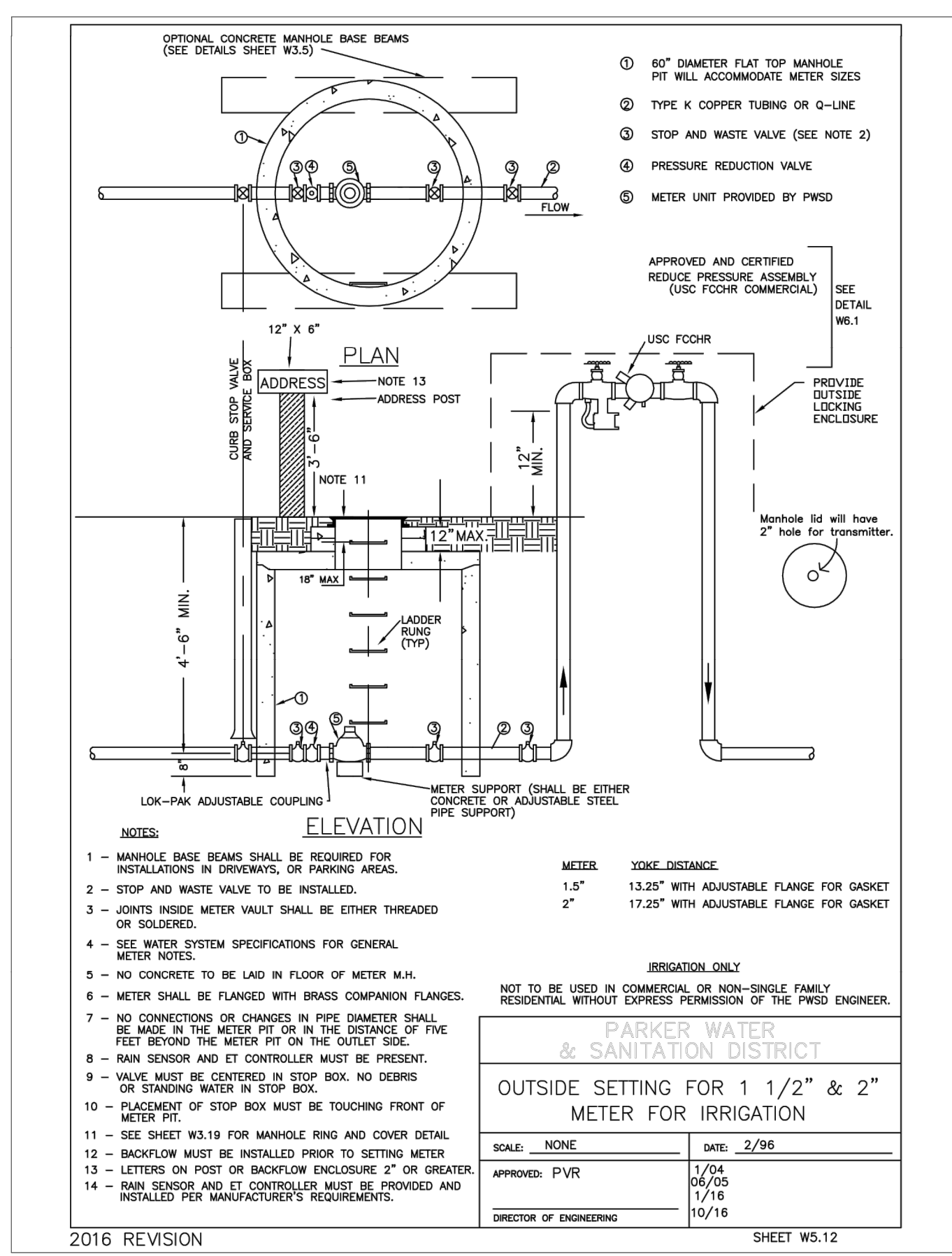
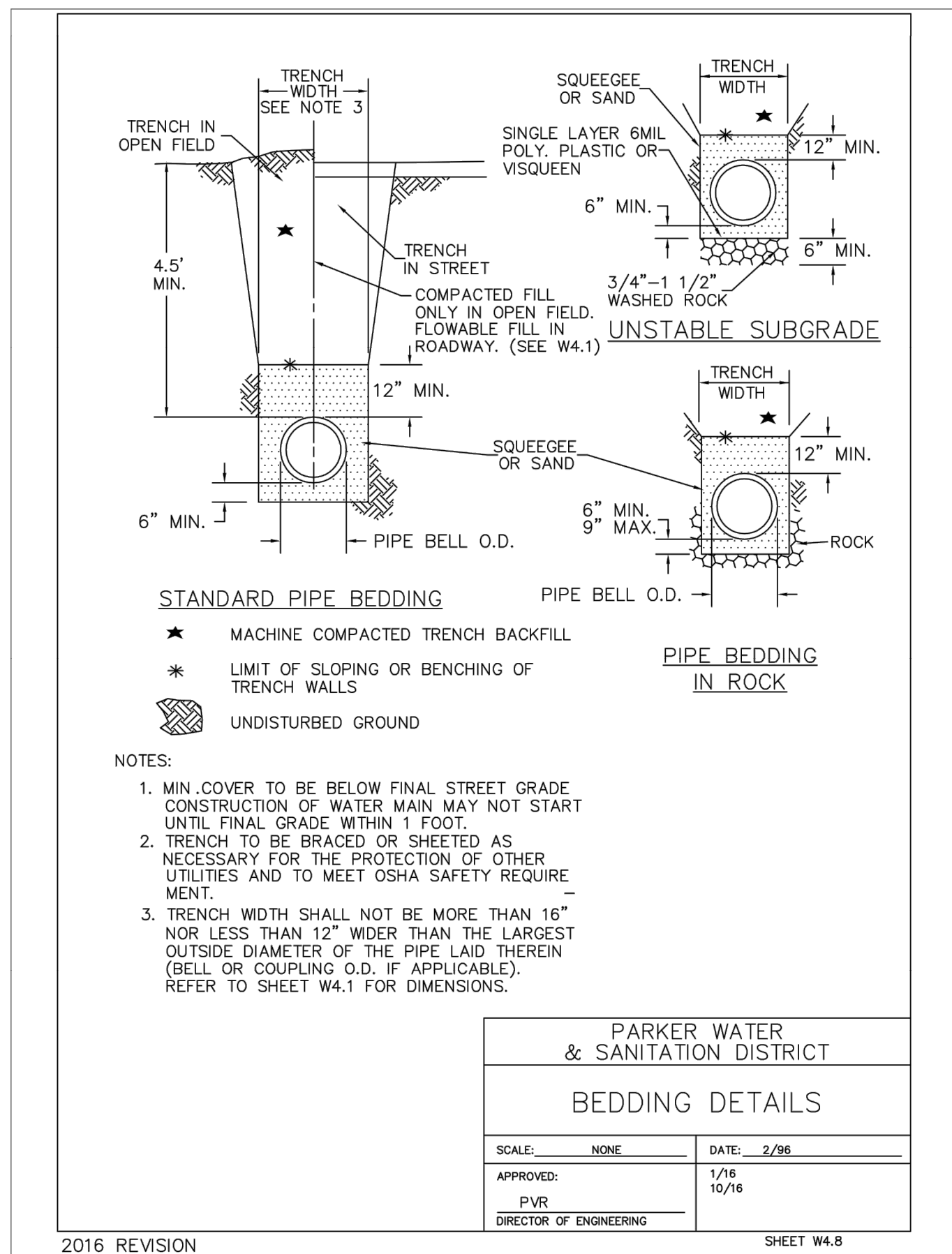
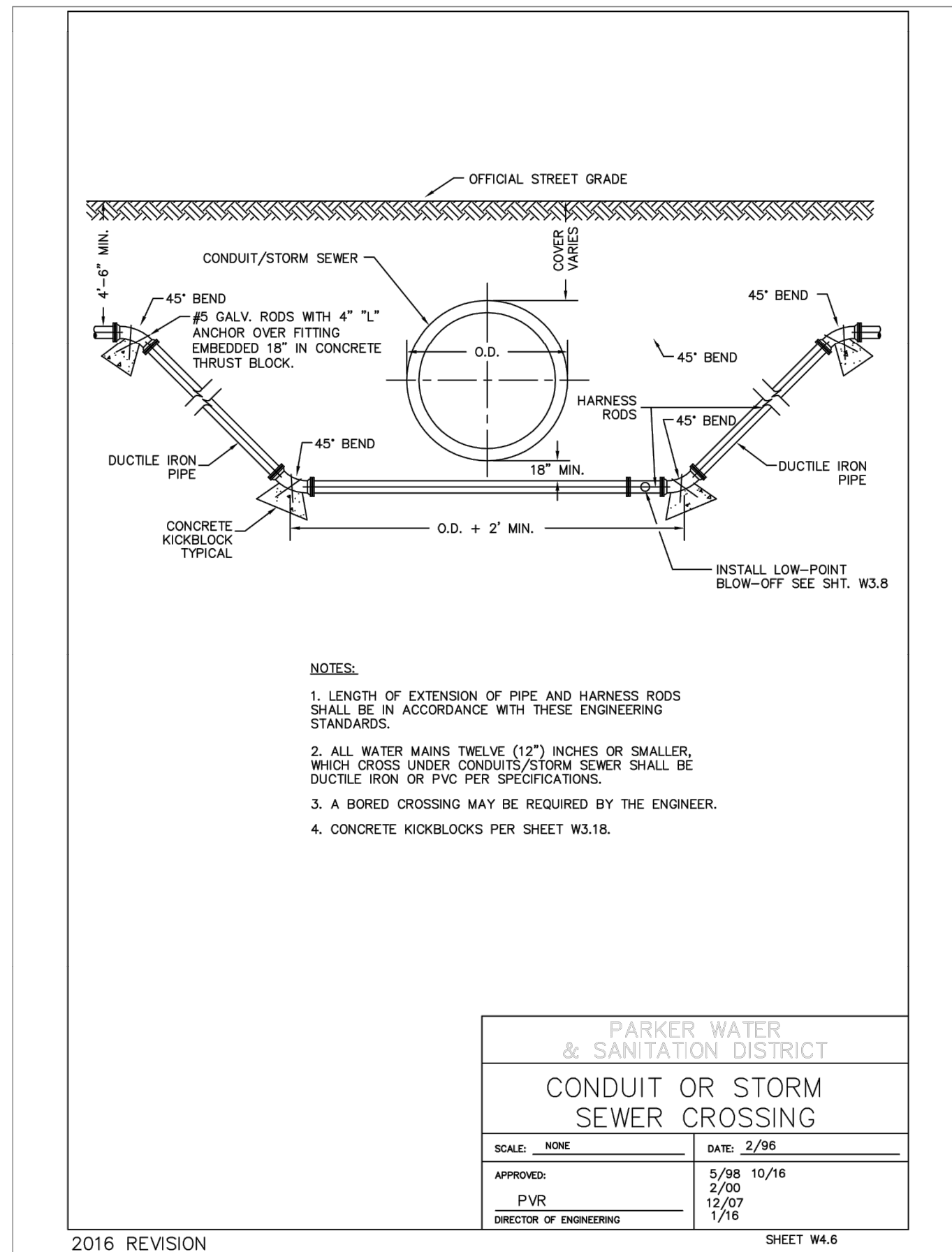
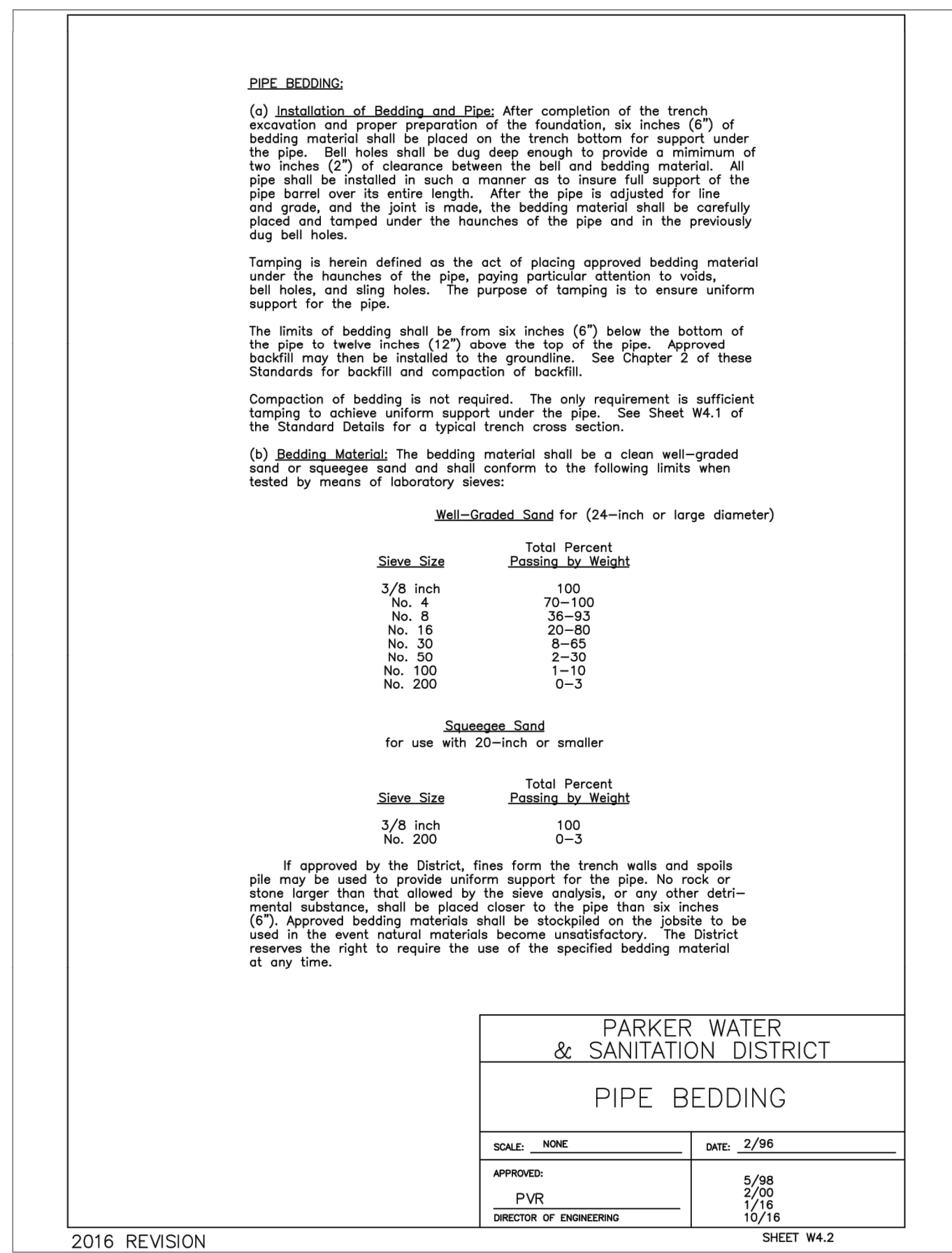
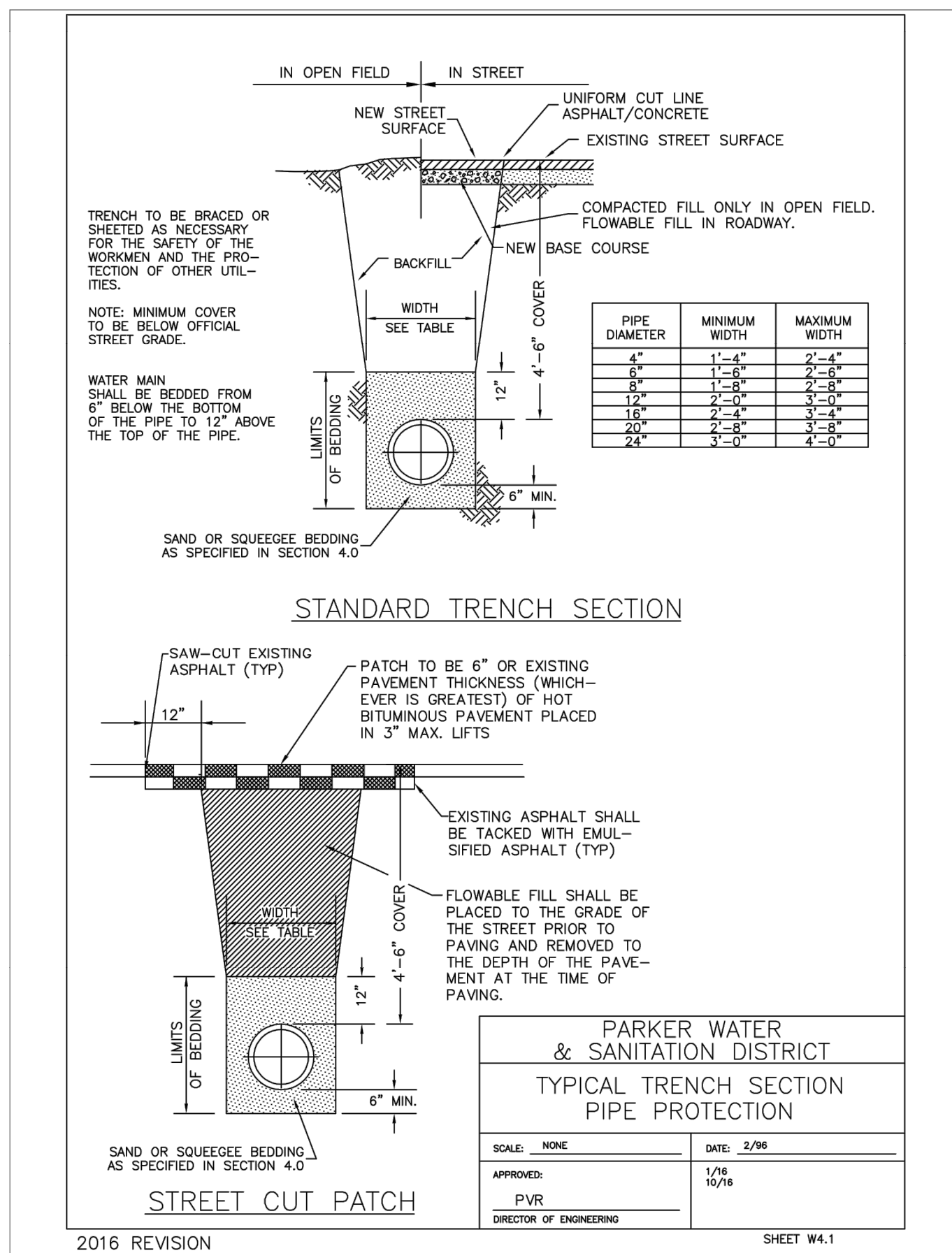
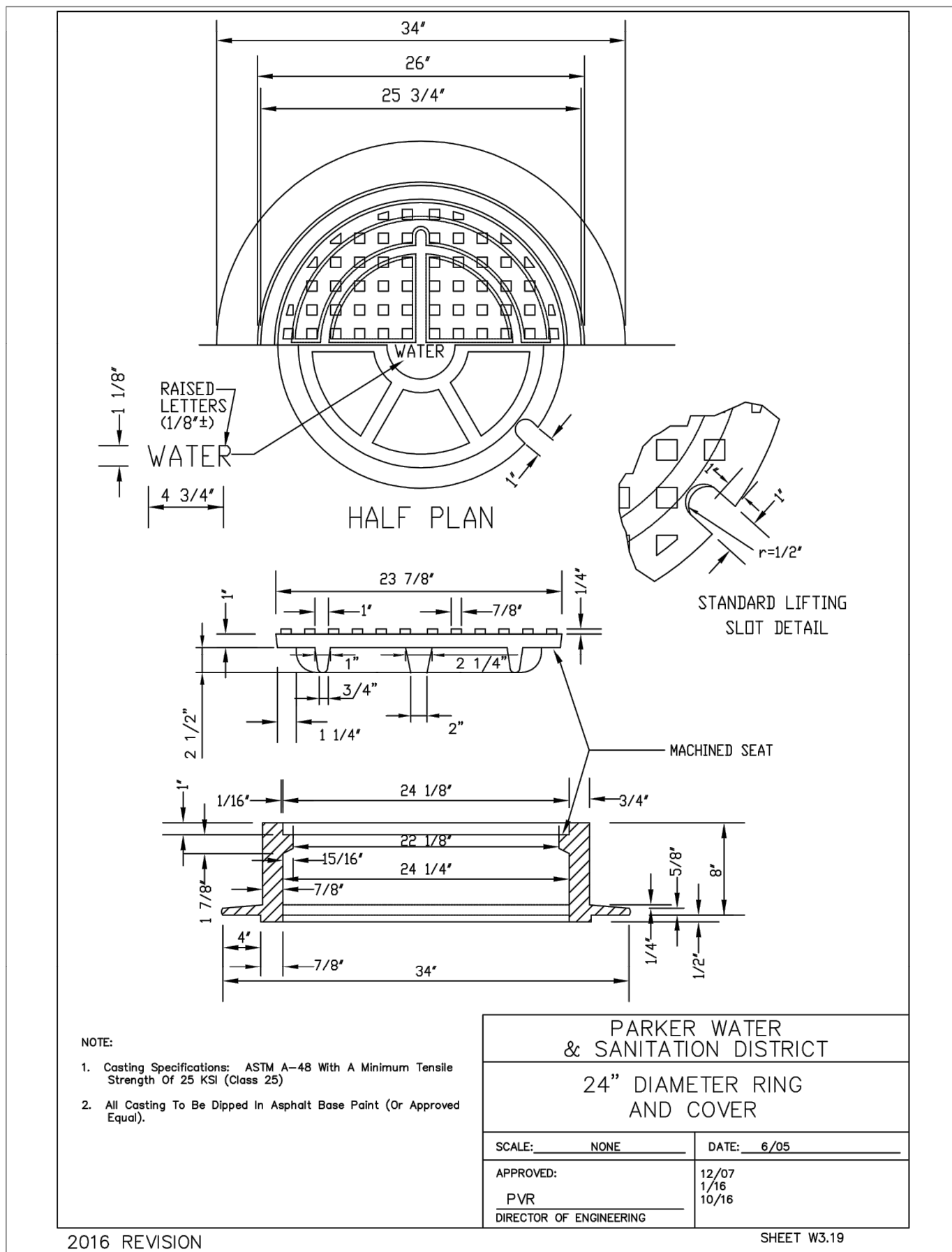
NO.	DESCRIPTION	DATE:
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SCALE: NTS  
DATE: 5/6/2020  
DRAWN BY: WD  
CHECKED BY: JS  
JOB NO: D01173-A

WATER DETAILS

PROJECT NO. D01173-A  
DRAWING NO. 9  
SHEET NO. 9 OF 12 SHEETS

PRELIMINARY NOT FOR CONSTRUCTION



**WATER & SEWER IMPROVEMENT PLANS FOR  
DOUGLAS 234  
FILING NO. 6**  
DOUGLAS COUNTY, COLORADO

**RICK  
ENGINEERING COMPANY**  
9801 EAST EASTER AVE  
CENTENNIAL, CO 80112  
303.537.8020  
Tucson - San Diego - Riverside - Orange  
Sacramento - San Luis Obispo - Phoenix  
rickengineering.com



REVISIONS:

NO.	DESCRIPTION	DATE:
1		

SCALE: NTS  
DATE: 5/6/2020  
DRAWN BY: WD  
CHECKED BY: JS  
JOB NO: D01173-A

**WATER  
DETAILS**

PROJECT NO: D01173-A  
DRAWING NO: 10  
SHEET NO. 10 OF 12 SHEETS

PRELIMINARY  
NOT FOR CONSTRUCTION

**INSPECTION POLICY:**

1. ALL SERVICE INSPECTIONS MUST BE SCHEDULED WITH THE DISTRICT OFFICE AT LEAST 24 HOURS IN ADVANCE OF THE REQUESTED INSPECTION.
2. IF THE CONTRACTOR IS NOT READY FOR INSPECTION WHEN THE INSPECTOR ARRIVES AT THE SITE, A RE-INSPECTION WILL HAVE TO BE SCHEDULED IN ACCORDANCE WITH NOTE 1 ABOVE AND A RE-INSPECTION FEE CHARGED.
3. SHOULD THE SERVICE LINES BE DAMAGED BY LATER CONSTRUCTION, AN INSPECTION OF THE REPAIR WILL BE REQUIRED IN ACCORDANCE WITH NOTES 1 AND 2 ABOVE.
4. THE CONTRACTOR SHALL LEAVE ALL PIPE AND FITTINGS EXPOSED FOR THE INSPECTOR TO OBSERVE. INSPECTORS WILL NOT ENTER ANY EXCAVATIONS TO CHECK MATERIALS. THE TOP LAYER OF BEDDING CAN BE ADDED AFTER THE INSPECTION HAS BEEN COMPLETED.
5. ALL EXCAVATIONS SHALL BE IN ACCORDANCE WITH OSHA STANDARDS.
6. LOTS WITHOUT BUILDING ADDRESSES OR LOT AND BLOCK NUMBERS BEFORE DISTRICT INSPECTION OR METER SET WILL FAIL AUTOMATICALLY.
7. CONTRACTOR MUST BE PRESENT AT TIME OF INSPECTION UNLESS COORDINATED WITH DISTRICT INSPECTOR.

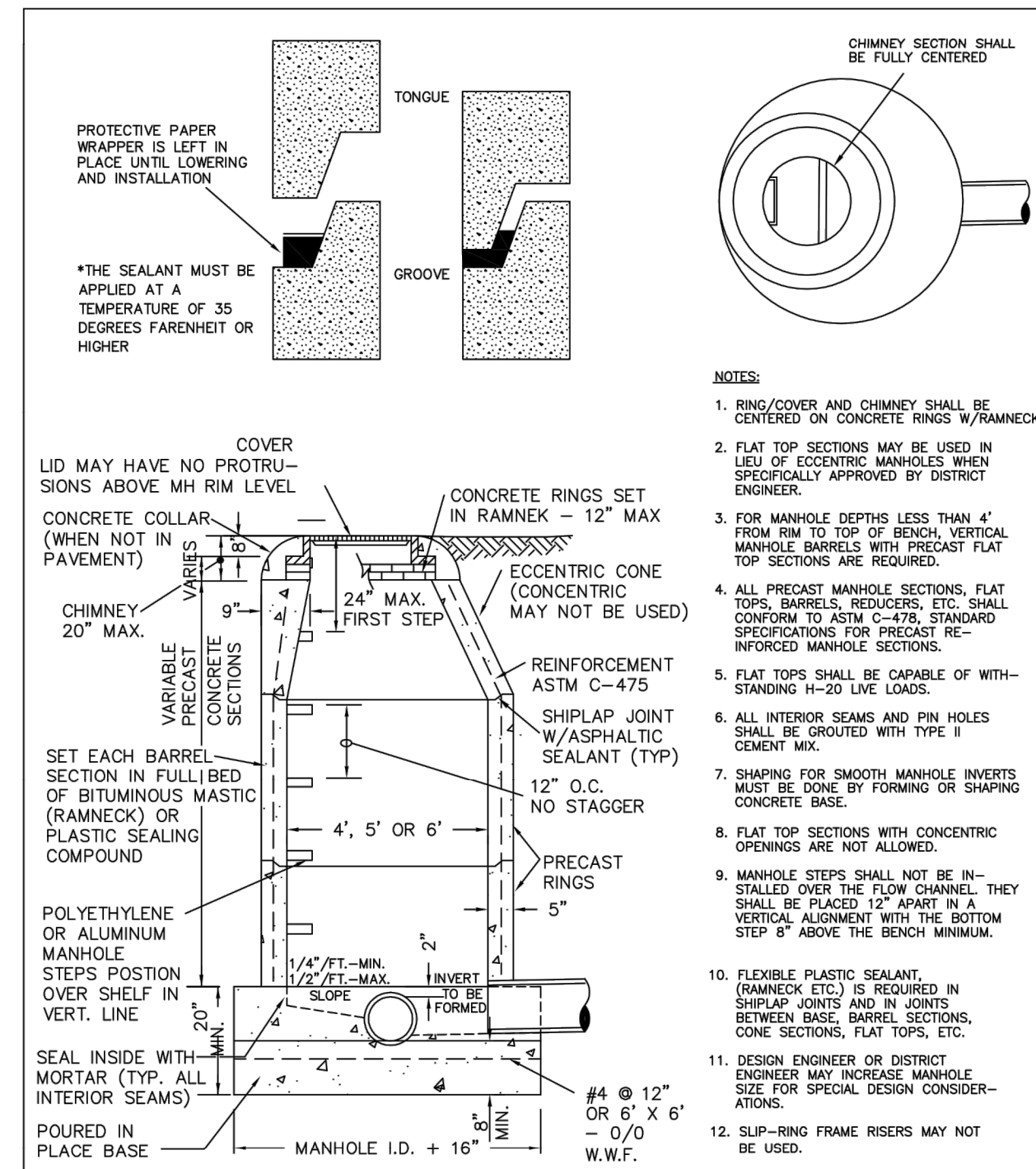
**INSTALLATION NOTES:**  
**SEWER**

1. ACCEPTABLE PIPE MATERIALS ARE TO BE SDR 35 PVC PIPE, ABS PIPE AND PVC SCHD 40 PIPE. APPROVED BEDDING IS TO BE SQUEEGE.
2. NO-HUB CLAMPS SHALL BE USED TO JOIN 2 MALE PIPE ENDS WITH A MAXIMUM DEFLECTION OF 3".
3. MINIMUM GRADE SHALL BE 2%.
4. INSTALLATION SHALL INCLUDE NO MORE THAN 3 BENDS. 90° BENDS ARE NOT ALLOWED. SOLVENT WELDED PIPE WILL NOT BE ALLOWED.
5. CLEAN-OUTS SHALL BE INSTALLED AT 100' INTERVALS AND EVERY CHANGE IN DIRECTION. CLEAN-OUTS ARE NOT REQUIRED FOR SERVICES LESS THAN 100' UNLESS THERE ARE CHANGES IN DIRECTION. PROVIDE DUAL CLEAN-OUT WITHIN 5 FEET OF FOUNDATION.
6. STRESSING OF THE PIPE BETWEEN FITTINGS WILL NOT BE ALLOWED.
7. SEWER SERVICE LINE SHALL NOT BE LOCATED UNDER CONCRETE SURFACE.
8. ALL SERVICES WILL BE PERMANENTLY MARKED ON CURB FACE AS FOLLOWS:  
 \* FOR SANITARY SEWER SERVICE  
 V FOR WATER SERVICES

**PARKER WATER & SANITATION DISTRICT**  
**DISTRICT POLICIES & INSTALLATION NOTES FOR SEWER SERVICES**

SCALE: NONE DATE: 2/98  
APPROVED: PVR 01/02 10/16 1/08 1/16  
DIRECTOR OF ENGINEERING SHEET S3.1

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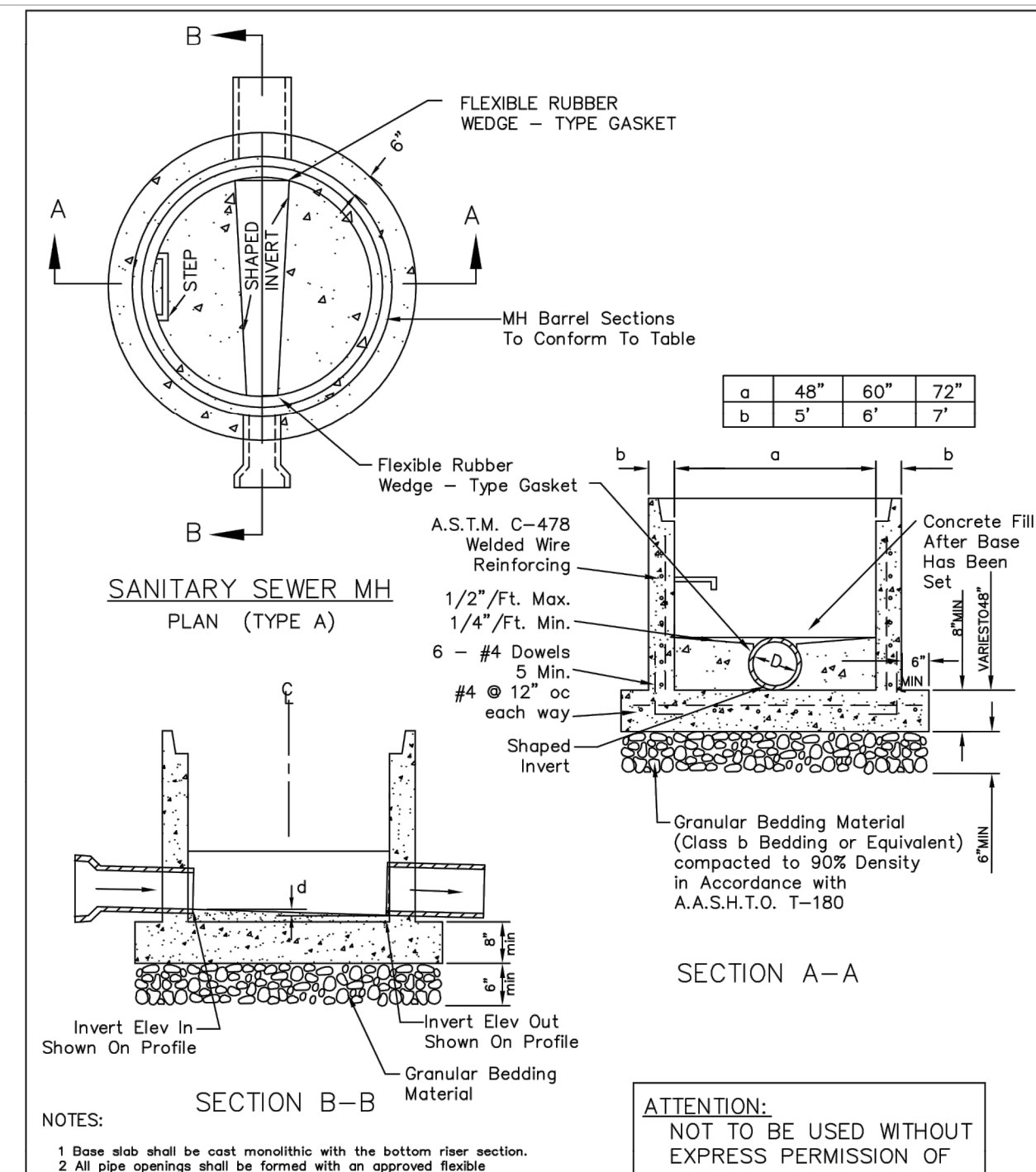


PIPE I.D.	MANHOLE I.D.
18" & SMALLER	4'-0"
21" TO 48"	5'-0"
54"	6'-0"
60" & LARGER	SPECIAL DESIGN

**PARKER WATER & SANITATION DISTRICT**  
**PARKER MANHOLE ECCENTRIC CONE**

SCALE: NONE DATE: 2/98  
APPROVED: PVR 4/01 10/16 01/02 1/08 1/16  
DIRECTOR OF ENGINEERING SHEET S3.1

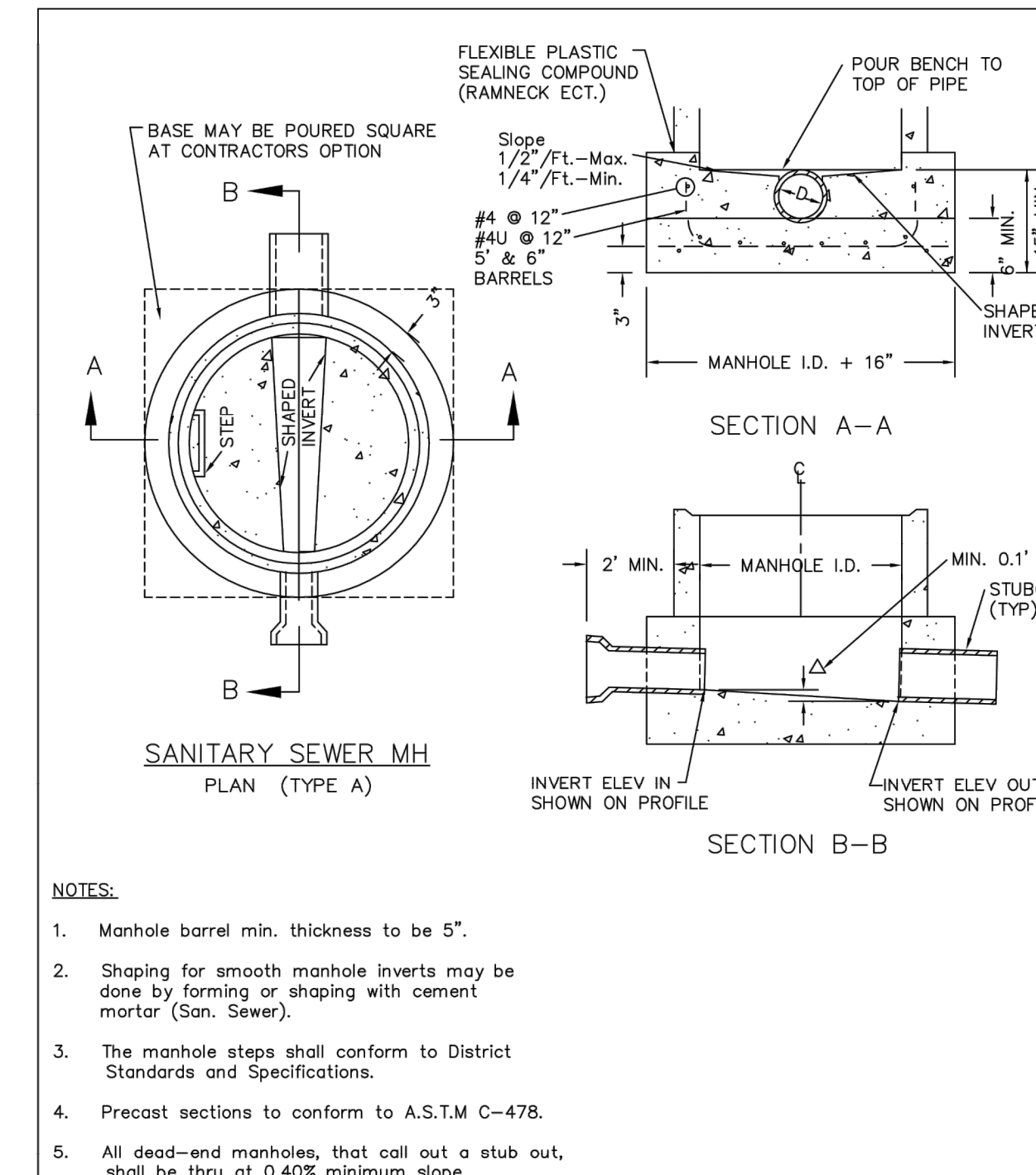
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**PARKER WATER & SANITATION DISTRICT**  
**PRECAST MANHOLE BASE DETAIL**

SCALE: NONE DATE: 2/98  
APPROVED: PVR 01/02 10/16  
DIRECTOR OF ENGINEERING SHEET S3.4

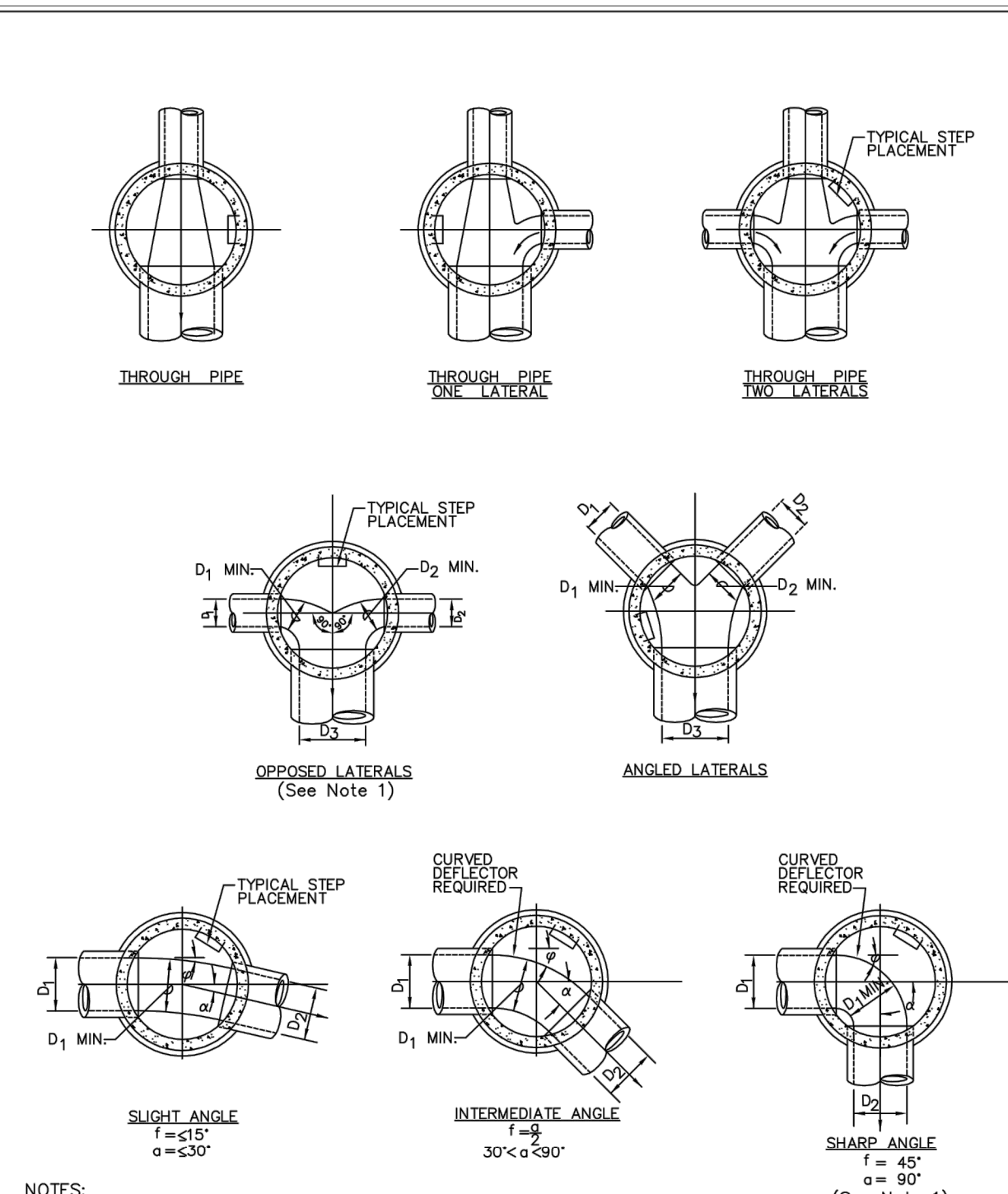
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**PARKER WATER & SANITATION DISTRICT**  
**CAST-IN-PLACE MANHOLE BASE DETAIL**

SCALE: NONE DATE: 2/98  
APPROVED: PVR 01/02 01/16 10/16  
DIRECTOR OF ENGINEERING SHEET S3.5

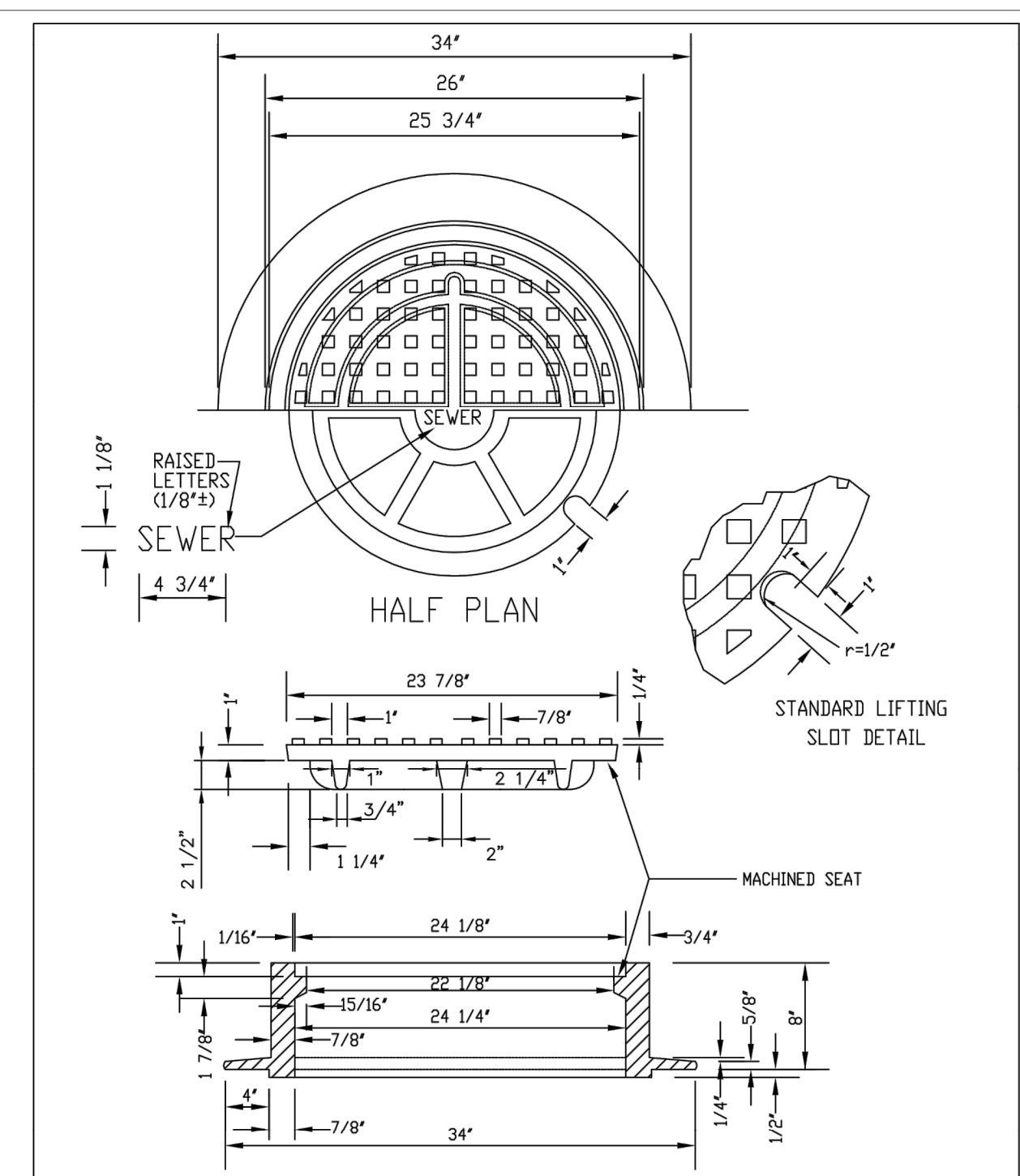
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**PARKER WATER & SANITATION DISTRICT**  
**TYPICAL BASE CHANNELIZATION DETAILS**

SCALE: NONE DATE: 2/98  
APPROVED: PVR 01/16 10/16  
DIRECTOR OF ENGINEERING SHEET S3.7

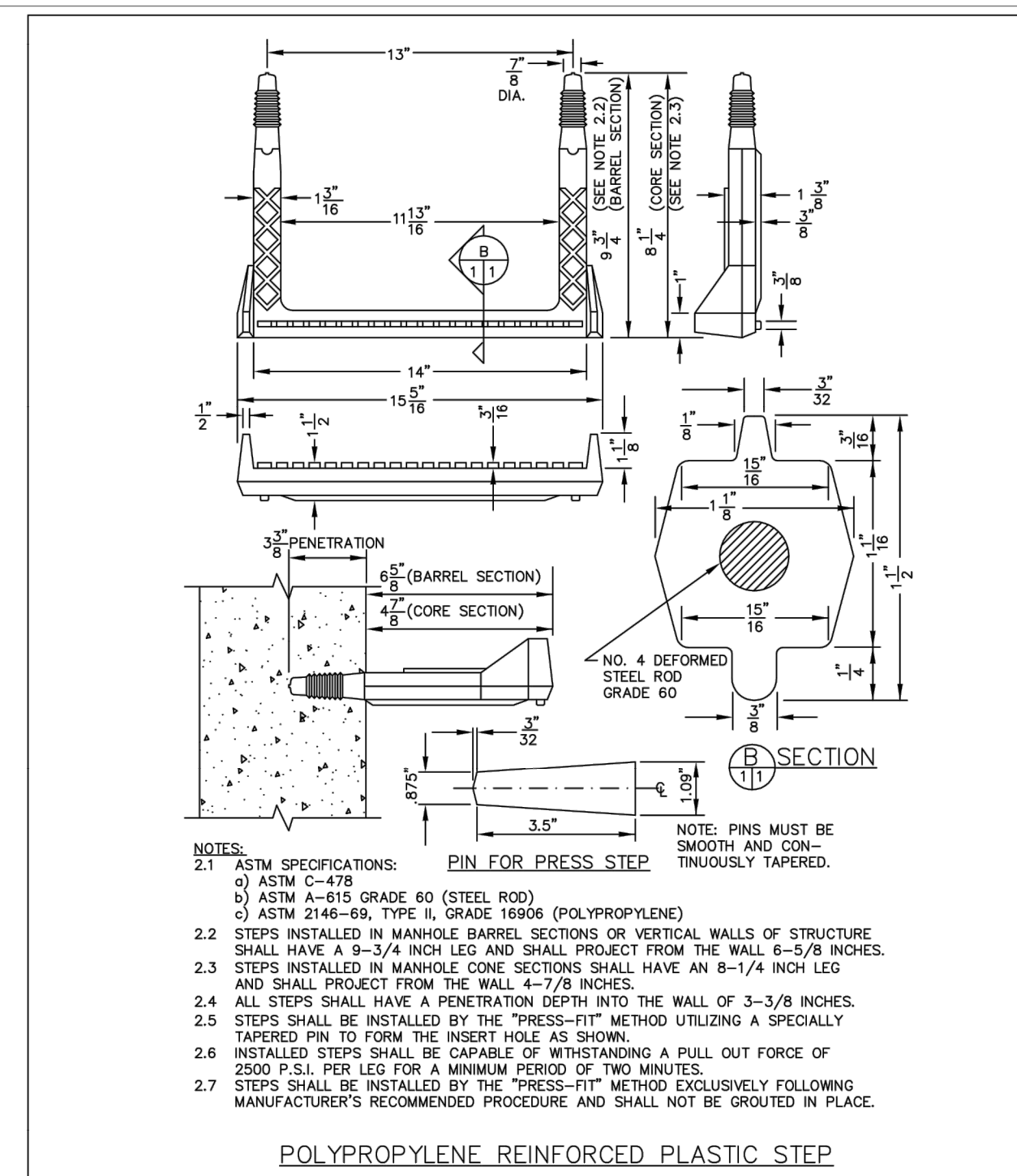
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**PARKER WATER & SANITATION DISTRICT**  
**24" DIAMETER RING AND COVER**

SCALE: NONE DATE: 2/98  
APPROVED: PVR 01/16 10/16  
DIRECTOR OF ENGINEERING SHEET S3.9

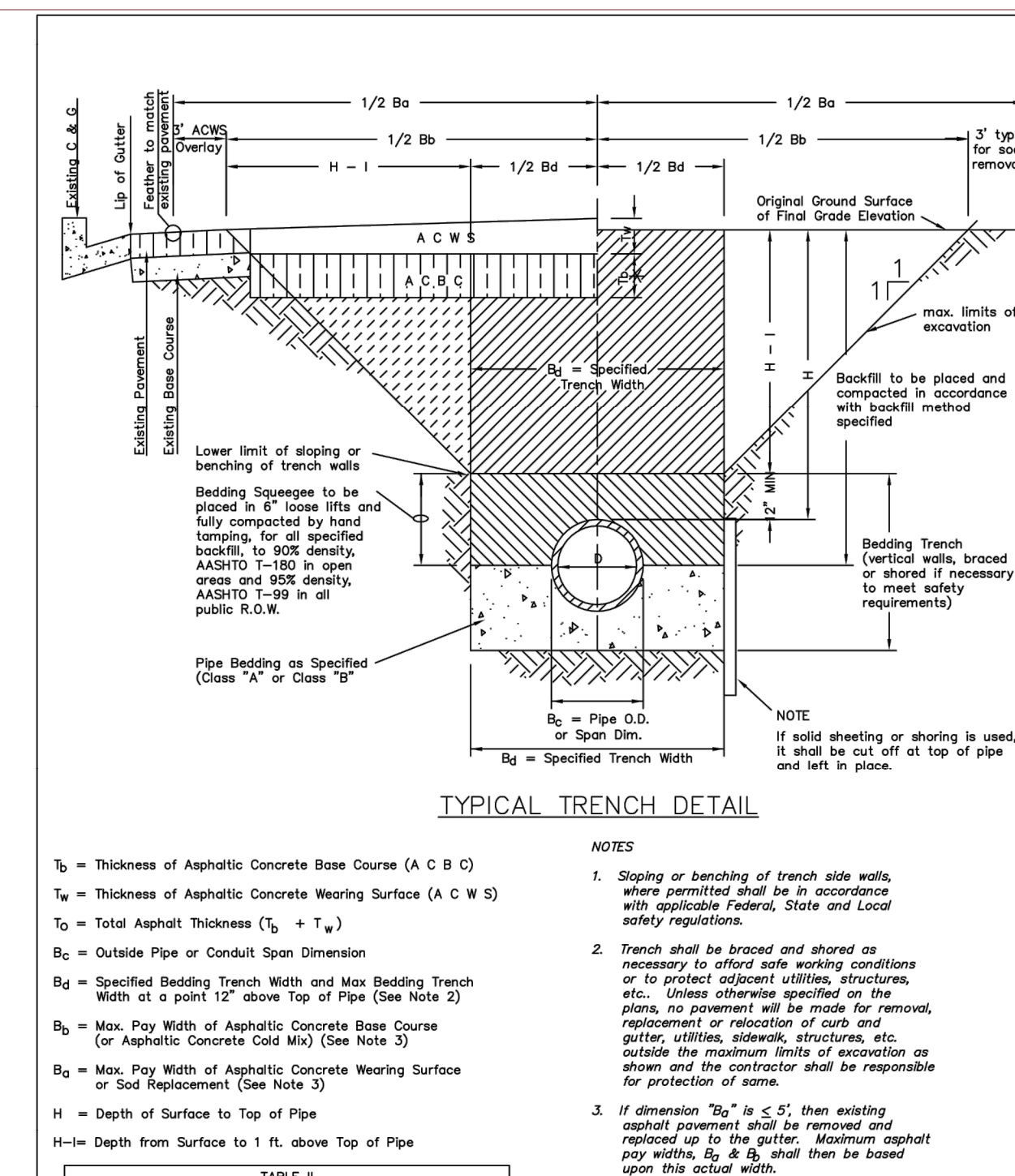
2016 REVISION



**PARKER WATER & SANITATION DISTRICT**  
**POLYPROPYLENE REINFORCED PLASTIC MANHOLE STEP**

SCALE: NONE DATE: 2/00  
APPROVED: PVR 01/16 10/16  
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**PARKER WATER & SANITATION DISTRICT**  
**SEWER TRENCHING AND BEDDING DETAIL**

SCALE: NONE DATE: 2/98  
APPROVED: PVR 5/98 1/16 10/16  
DIRECTOR OF ENGINEERING SHEET S4.1

2016 REVISION

**WATER & SEWER IMPROVEMENT PLANS FOR**  
**DOUGLAS 234**  
**FILING NO. 6**  
DOUGLAS COUNTY, COLORADO

**RICK**  
**ENGINEERING COMPANY**  
9801 EAST EASTER AVE  
CENTENNIAL, CO 80112  
303.537.8020  
Tucson - San Diego - Riverside - Orange  
Sacramento - San Luis Obispo - Phoenix  
rickengineering.com



**REVISIONS:**

NO.	DESCRIPTION	DATE:
Δ	-	-

SCALE: NTS  
DATE: 5/6/2020  
DRAWN BY: WD  
CHECKED BY: JS  
JOB NO: D01173-A

**SEWER DETAILS**

PROJECT NO. D01173-A  
DRAWING NO. 11  
SHEET NO. 11 OF 12 SHEETS

PRELIMINARY NOT FOR CONSTRUCTION



NO.	DESCRIPTION	DATE:
△	-	-

SCALE: NTS  
 DATE: 5/6/2020  
 DRAWN BY: WD  
 CHECKED BY: JS  
 JOB NO: D01173-A

**SEWER DETAILS**

PROJECT NO.  
 D01173-A  
 DRAWING NO.  
 12  
 SHEET NO. 12 OF 12 SHEETS

PRELIMINARY  
 NOT FOR CONSTRUCTION

**MANHOLE INVERT TIE-IN**

NOTES:  
 1 - NEW BENCH SHALL INCLUDE REINFORCEMENT TO CONTROL CONCRETE CRACKING.

PARKER WATER & SANITATION DISTRICT	
MANHOLE INVERT TIE-IN DETAIL	
SCALE: NONE	DATE: 2/96
APPROVED: PVR	5/98 2/00 1/16 10/16
DIRECTOR OF ENGINEERING	

2016 REVISION SHEET 54.9

**CLASS 'B' BEDDING**

GENERAL NOTES:  
 G-1 THESE DETAILS ARE TYPICAL FOR NORMAL TRENCH CONDITIONS. FOR INSTALLATIONS OTHER THAN THESE (SUCH AS EMBANKMENT OR TUNNEL INSTALLATIONS, ETC.) EXCAVATION, BEDDING AND BACKFILL REQUIREMENTS SHALL BE DETAILED ON THE CONSTRUCTION DRAWINGS. FOR UNUSUAL OR UNSTABLE SOIL CONDITIONS, TRENCH AND BEDDING DETAILS SHALL BE A SPECIAL DESIGN.

PARKER WATER & SANITATION DISTRICT	
TRENCHING AND BEDDING CLASS "B"	
SCALE: NONE	DATE: 2/96
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DIRECTOR OF ENGINEERING	

2016 REVISION SHEET 54.5

**ROCK EXCAVATION**

PARKER WATER & SANITATION DISTRICT	
TRENCHING AND BEDDING CLASS "B"	
SCALE: NONE	DATE: 2/96
APPROVED: PVR	5/98 2/00 1/16 10/16
DIRECTOR OF ENGINEERING	

2016 REVISION SHEET 54.4

**IDEAL TRENCH CONDITIONS**

PARKER WATER & SANITATION DISTRICT	
TRENCHING AND BEDDING CLASS "B"	
SCALE: NONE	DATE: 2/96
APPROVED: PVR	5/98 2/00 1/16 10/16
DIRECTOR OF ENGINEERING	

2016 REVISION SHEET 54.3

**SADDLE CONNECTION**

**SECTION QUADRANT 1 SHOWN**

**Y - SADDLE DETAIL**

NOTES:  
 1. SADDLE FITTINGS TO BE PER ASTM D3034.  
 2. CONNECTION SHALL BE Y - SADDLE WITH TWO BONDS

PARKER WATER & SANITATION DISTRICT	
P.V.C. SADDLE CONNECTION DETAIL	
SCALE: NONE	DATE: 2/96
APPROVED: PVR	1/18 10/16
DIRECTOR OF ENGINEERING	

2016 REVISION SHEET 54.14

**MANHOLE STUB-OUT DETAIL**

PARKER WATER & SANITATION DISTRICT	
MANHOLE STUB-OUT DETAIL	
SCALE: NONE	DATE: 2/96
APPROVED: PVR	1/16 10/16
DIRECTOR OF ENGINEERING	

2016 REVISION SHEET 54.10