



Building a Better World for All of Us®

NOT FOR CONSTRUCTION

Owner: New Horizon Academy, 3405 Annapolis Lane N., Suite 100, Plymouth, MN 55447, 763.557.1111

Architect: Short Elliott Hendrickson, Inc., 2000 South Colorado Boulevard, Tower One, Suite 6000, Denver, Colorado 80222, 720.540.6800

Structural Engineer: Short Elliott Hendrickson, Inc., 3535 Vadnais Center Drive, St. Paul, MN 55110, 651.490.2000

Mechanical Engineer: Short Elliott Hendrickson, Inc., 3535 Vadnais Center Drive, St. Paul, MN 55110, 651.490.2000

Electrical Engineer: Short Elliott Hendrickson, Inc., 3535 Vadnais Center Drive, St. Paul, MN 55110, 651.490.2000

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SEH Project Checked By: DRH Drawn By: AMP

Project Status: TOWN REVIEW Issue Date: 8/26/2020

TOWN REVIEW Issue Date: 1/22/2021

Revision Issue: Rev. # 1 Description TOWN COMMENTS Date 1/22/21

Revision Issue: Rev. # 1 Description TOWN COMMENTS Date 1/22/21

COVER SHEET

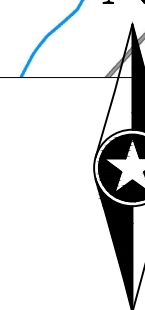
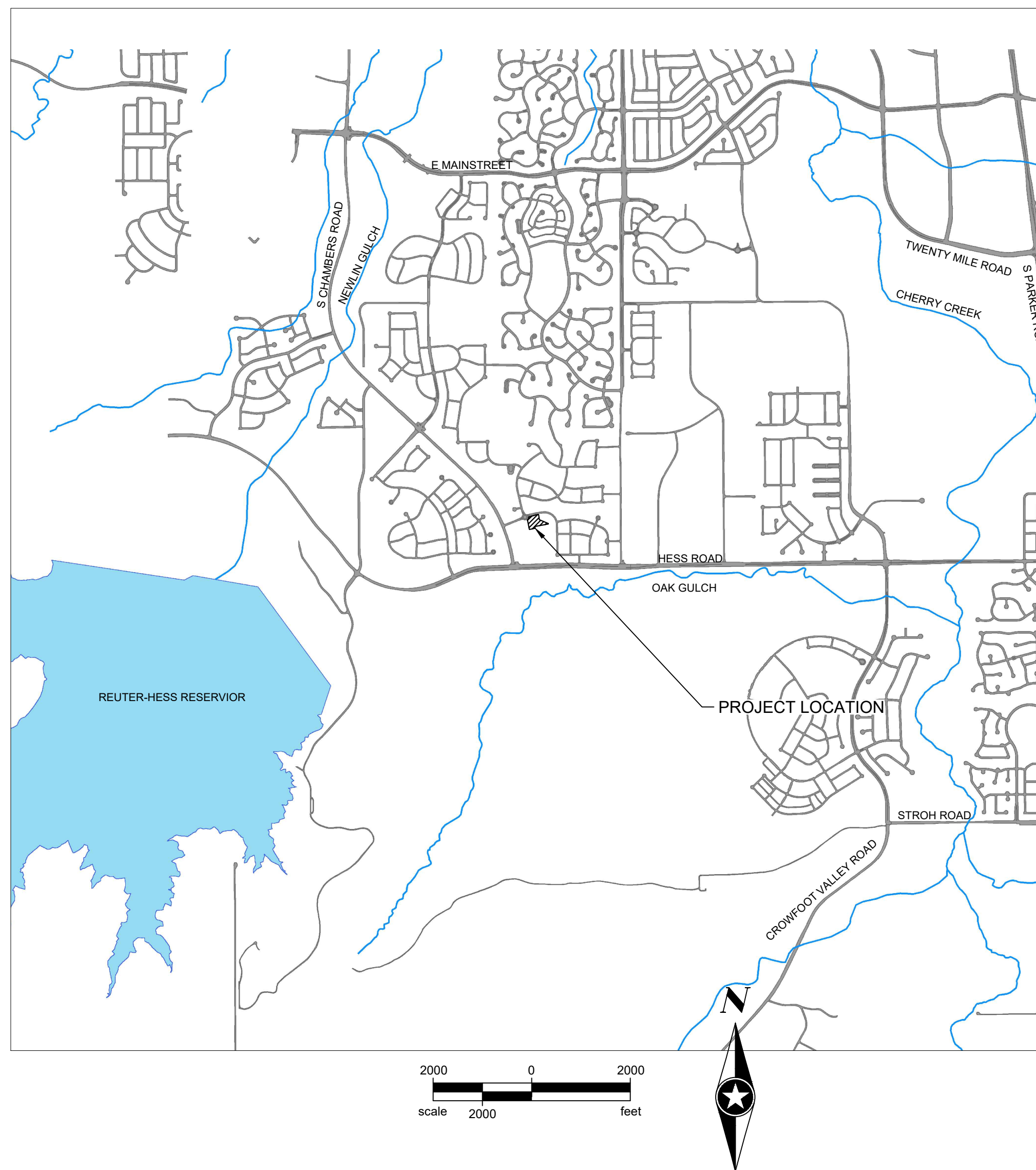
COVER SHEET

U0.0

DOUGLAS 234, FILING NO. 6

A PORTION OF THE SOUTHWEST QUARTER OF THE SOUTHWEST QUARTER OF SECTION 29, TOWNSHIP 6 SOUTH, RANGE 66 WEST OF THE 6TH PRINCIPAL MERIDIAN TOWN OF PARKER, COUNTY OF DOUGLAS, STATE OF COLORADO 1.65 ACRES

WATER & SEWER CONSTRUCTION PLANS FOR NEW HORIZON ACADEMY



PLAN SHEET INDEX

Table with 2 columns: SHEET NUMBER and SHEET TITLE. Rows include U0.0 COVER SHEET, U0.1 GENERAL NOTES, U1.0 OVERALL UTILITY PLAN, U1.1 SANITARY SERVICE PLAN & PROFILE, U1.2 - U1.3 SANITARY SEWER DETAILS, U1.4 WATER SERVICE PLAN & PROFILE, U1.5 - U1.7 WATER DETAILS.

MATERIALS LIST

Table with 3 columns: DESCRIPTION, UNIT, QTY. Lists materials like 6" SDR 35 SANITARY SEWER SERVICE PIPE, 8" DUCTILE IRON WATER MAIN, 1600 GAL COMMERCIAL GREASE INTERCEPTOR, etc.

- EXISTING symbols and descriptions: RIGHT OF WAY, PERMANENT EASEMENT, PROPERTY LINE, HORIZONTAL CONTROL POINT, BENCHMARK, SURVEY MARKER, SOIL BORING, SANITARY SEWER AND MANHOLE, FORCE MAIN AND LIFT STATION, SANITARY SEWER SERVICE & CLEANOUT, WATER MAIN, HYDRANT, VALVE AND MANHOLE, WATER SERVICE AND CURB STOP BOX, STORM SEWER, MANHOLE AND CATCH BASIN, CULVERT AND APRON ENDWALL, GAS MAIN, VALVE, VENT AND METER, HANDHOLE, BURIED FIBER OPTIC CABLE AND MANHOLE, BURIED PHONE CABLE, PEDESTAL AND MANHOLE, BURIED TV CABLE, PEDESTAL AND MANHOLE, BURIED ELECTRIC CABLE, PEDESTAL, MANHOLE, TRANSFORMER AND METER, OVERHEAD WIRE, POLE AND GUY WIRE, LIGHT POLE, TRAFFIC SIGNAL, STREET NAME SIGN, SIGN (NON STREET NAME), RAILROAD TRACKS, DECIDUOUS AND CONIFEROUS TREE, BUSH / SHRUB AND STUMP, EDGE OF WOODED AREA, WETLAND, BUILDING, FENCE (UNIDENTIFIED), BARBED WIRE FENCE, CHAIN LINK FENCE, ELECTRIC WIRE FENCE, WOOD FENCE, WOVEN WIRE FENCE, PLATE BEAM GUARDRAIL, CABLE GUARDRAIL, POST / BOLLARD, RETAINING WALL.

- PROPOSED symbols and descriptions: STREET CENTERLINE, RIGHT-OF-WAY, PERMANENT EASEMENT, TEMPORARY EASEMENT, CONSTRUCTION LIMITS, SANITARY SEWER, BULKHEAD AND MANHOLE, FORCE MAIN, SANITARY SERVICE AND CLEANOUT, WATER MAIN, TEE, HYDRANT, BULKHEAD AND VALVE, WATER VALVE MANHOLE, REDUCER, BEND AND CROSS, WATER SERVICE AND CURB STOP BOX, STORM SEWER, MANHOLE AND CATCH BASIN, CULVERT AND APRON ENDWALL, DRAIN TILE, DITCH / SWALE, RIPRAP, STREET NAME SIGN, SIGN (NON STREET NAME), RETAINING WALL.

SOIL PREPARATION AND PAVEMENT DESIGN NOTE

SOIL PREPARATION AND PAVEMENT DESIGN SHALL BE PER RECOMMENDATIONS FROM A GEOTECHNICAL REPORT PREPARED FOR THIS SITE AS FOLLOWS.

GEOTECHNICAL ENGINEER: ROCKY MOUNTAIN GROUP. PROJECT NO. 167366

THE CONTRACTOR MUST FULLY REVIEW THIS REPORT AND BRING ANY CONFLICTS BETWEEN IT AND THE CONSTRUCTION PLANS AND SPECIFICATIONS TO THE ENGINEER'S ATTENTION PRIOR TO BEGINNING WORK.

BASIS OF BEARINGS:

THE SOUTH LINE OF THE SOUTHWEST QUARTER OF SECTION 29 TOWNSHIP 6 SOUTH, RANGE 66 WEST, 6TH P.M. BEARING SOUTH 89°15'13" WEST AS SHOWN ON FINAL PLAT DOUGLAS 234 FILING NO. 1.

BENCHMARK

BENCHMARK IS BY GPS OBSERVATION NAVD 88. SET SITE BENCHMARK AT NORTHWEST CORNER OF INLET ON CHAMBERS RD. APPROXIMATELY 200'+/- NORTH OF HESS RD.



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PARKER WATER & SANITATION DISTRICT 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.
3. ALL ITEMS SHOWN ON THE PLANS AS EXISTING ARE SHOWN IN APPROXIMATE LOCATIONS ONLY.
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.
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.
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 THE LINES BY 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.
12. ALL SERVICES WILL BE PERMANENTLY MARKED ON CURB FACE AS FOLLOWS:
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.

PARKER WATER & SANITATION DISTRICT WATER 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.
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.
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.
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.
13. COMPACTION OF ALL TRENCHES MUST BE ATTAINED IN ACCORDANCE WITH THE SOILS 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 INSTALLED AND CHLORINATED PER PWSD SPECIFICATIONS.
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.

PARKER WATER & SANITATION DISTRICT SANITARY SEWER NOTES

- 1. ALL MATERIALS AND WORKMANSHIP SHALL BE IN CONFORMANCE WITH THE PWSD ENGINEERING STANDARDS AND SPECIFICATIONS, LATEST VERSION.
2. ALL SEWER MAINS SHALL BE PVC, ASTM D-3034, SDR 35 OR APPROVED EQUAL. ALL SEWER MAIN SIZE IS 8" IN DIAMETER UNLESS OTHERWISE NOTED.
3. SEWER LINES SHALL BE INSTALLED 5.0 FEET SOUTH OR WEST OF STREET CENTERLINE, UNLESS OTHERWISE SHOWN ON PLANS.
4. SEWER RIM ELEVATIONS SHOWN ARE APPROPRIATE ONLY AND ARE NOT TO BE TAKEN AS FINAL 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.
8. ALL MANHOLES SHALL BE 48-INCHES IN DIAMETER WITH 24-INCH RING AND COVER, ECCENTRIC CONE UNLESS OTHERWISE SPECIFIED.
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.
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.
14. PRIOR TO PROBATIONARY ACCEPTANCE WALK-THROUGH, THE CONTRACTOR SHALL JET CLEAN THE ENTIRE SANITARY SEWER SYSTEM AND PUMP OUT AT THE PLUGGED MANHOLE.

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Owner: New Horizon Academy, 3405 Annapolis Lane N, Suite 100, Plymouth, MN 55447, 763.557.1111
Architect: Short Elliott Hendrickson, Inc., 2000 South Colorado Boulevard, Tower One, Suite 6000, Denver, Colorado 80222, 720.540.6800
Landscape Architect: Short Elliott Hendrickson, Inc., 10901 Reed Circle Drive, Suite 300, Minnetonka, MN 55343, 952.912.2600
Civil Engineer: Short Elliott Hendrickson, Inc., 418 West Superior Street, Suite 200, Duluth, MN 55802, 218.279.3000
Structural Engineer: Short Elliott Hendrickson, Inc., 3535 Vadnais Center Drive, St. Paul, MN 55110, 651.490.2000
Mechanical Engineer: Short Elliott Hendrickson, Inc., 3535 Vadnais Center Drive, St. Paul, MN 55110, 651.490.2000
Electrical Engineer: Short Elliott Hendrickson, Inc., 3535 Vadnais Center Drive, St. Paul, MN 55110, 651.490.2000

NEW HORIZON ACADEMY - DOUGLAS 234 FILING, NO. 6 PARKER, CO

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Checked By: DRH
Drawn By: AMP

Project Status: TOWN REVIEW
Issue Date: 8/26/2020
TOWN REVIEW: 1/22/2021

Table with 3 columns: Rev. #, Description, Date. Row 1: 1, TOWN COMMENTS, 1/22/21

GENERAL NOTES
1
U0.1

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Owner
New Horizon Academy
3405 Annapolis Lane
N, Suite 100
Plymouth, MN 55447
763.557.1111

Architect
Short Elliott Hendrickson, Inc.
2000 South Colorado Boulevard
Tower One, Suite 6000
Denver, Colorado 80222
720.540.6800

Landscape Architect
Short Elliott Hendrickson, Inc.
10901 Red Circle Drive
Suite 300
Minnetonka, MN 55343
952.912.2600

Civil Engineer
Short Elliott Hendrickson, Inc.
418 West Superior Street
Suite 200
Duluth, MN 55802
218.279.3000

Structural Engineer
Short Elliott Hendrickson, Inc.
3535 Vadnais Center Drive
St. Paul, MN 55110
651.490.2000

Mechanical Engineer
Short Elliott Hendrickson, Inc.
3535 Vadnais Center Drive
St. Paul, MN 55110
651.490.2000

Electrical Engineer
Short Elliott Hendrickson, Inc.
3535 Vadnais Center Drive
St. Paul, MN 55110
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DOUGLAS 234 FILING, NO. 6**
PARKER, CO

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SEH Project NHOAC 156217
Checked By DRH
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Project Status TOWN REVIEW
Issue Date 8/26/2020
TOWN REVIEW 1/22/2021

Revision Issue

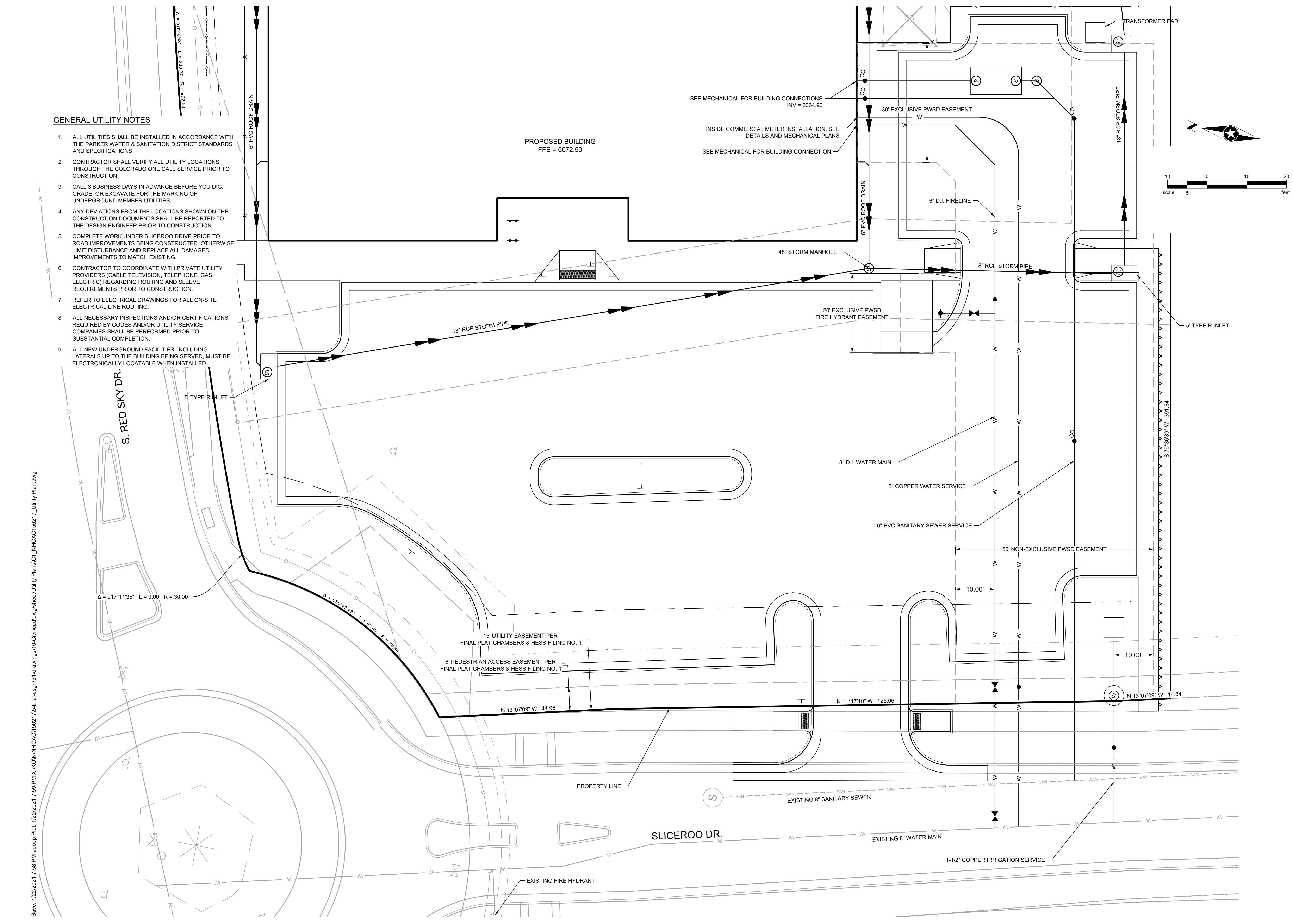
Rev. #	Description	Date
1	TOWN COMMENTS	1/22/21

OVERALL UTILITY PLAN

1
U1.0

GENERAL UTILITY NOTES

- ALL UTILITIES SHALL BE INSTALLED IN ACCORDANCE WITH THE PARKER WATER & SANITATION DISTRICT STANDARDS AND SPECIFICATIONS.
- CONTRACTOR SHALL VERIFY ALL UTILITY LOCATIONS THROUGH THE COLORADO ONE CALL SERVICE PRIOR TO CONSTRUCTION.
- CALL 3 BUSINESS DAYS IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES.
- ANY DEVIATIONS FROM THE LOCATIONS SHOWN ON THE CONSTRUCTION DOCUMENTS SHALL BE REPORTED TO THE DESIGN ENGINEER PRIOR TO CONSTRUCTION.
- COMPLETE WORK UNDER SLICEROO DRIVE PRIOR TO ROAD IMPROVEMENTS BEING CONSTRUCTED. OTHERWISE LIMIT DISTURBANCE AND REPLACE ALL DAMAGED IMPROVEMENTS TO MATCH EXISTING.
- CONTRACTOR TO COORDINATE WITH PRIVATE UTILITY PROVIDERS (CABLE TELEVISION, TELEPHONE, GAS, ELECTRIC) REGARDING ROUTING AND SLEEVE REQUIREMENTS PRIOR TO CONSTRUCTION.
- REFER TO ELECTRICAL DRAWINGS FOR ALL ON-SITE ELECTRICAL LINE ROUTING.
- ALL NECESSARY INSPECTIONS AND/OR CERTIFICATIONS REQUIRED BY CODES AND/OR UTILITY SERVICE COMPANIES SHALL BE PERFORMED PRIOR TO SUBSTANTIAL COMPLETION.
- ALL NEW UNDERGROUND FACILITIES, INCLUDING LATERALS UP TO THE BUILDING BEING SERVED, MUST BE ELECTRONICALLY LOCATABLE WHEN INSTALLED.



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Owner
New Horizon Academy
3405 Annapolis Lane
N., Suite 100
Plymouth, MN 55447
763.557.1111

Architect
Short Elliott Hendrickson, Inc.
2000 South Colorado Boulevard
Tower One, Suite 6000
Denver, Colorado 80222
720.540.6800

Landscape Architect
Short Elliott Hendrickson, Inc.
10901 Red Circle Drive
Suite 300
Minnetonka, MN 55343
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SEH Project Checked By Drawn By

Project Status
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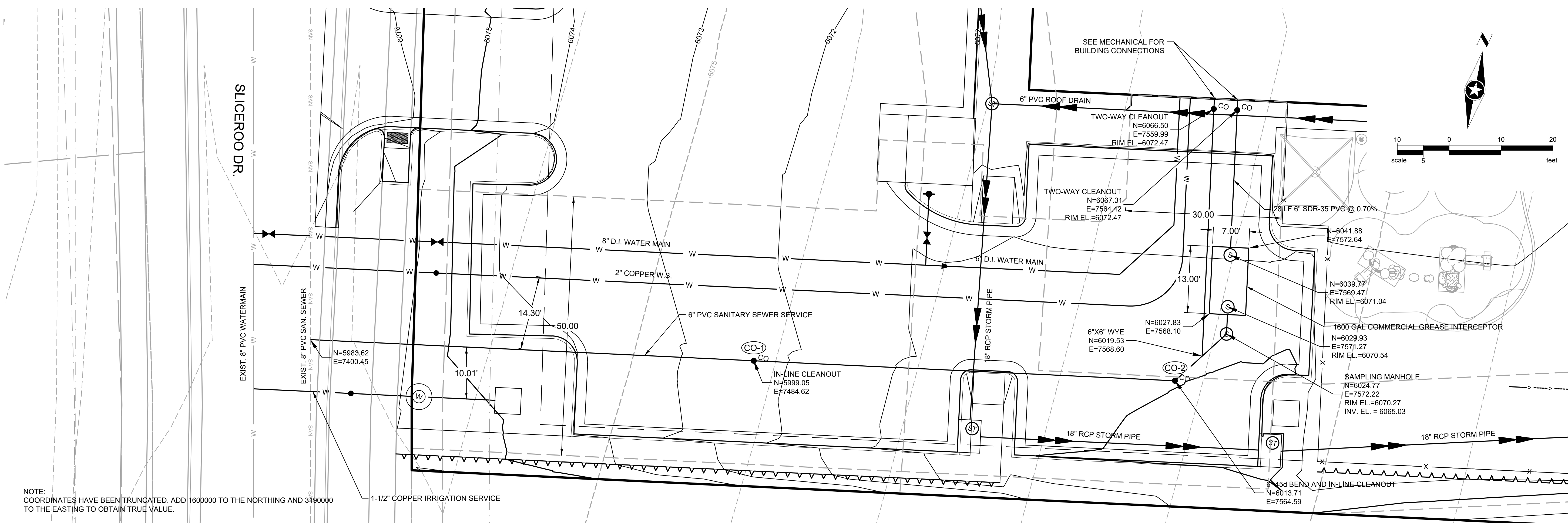
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Revision Issue
Rev. # 1
Description TOWN COMMENTS
Date 1/22/21

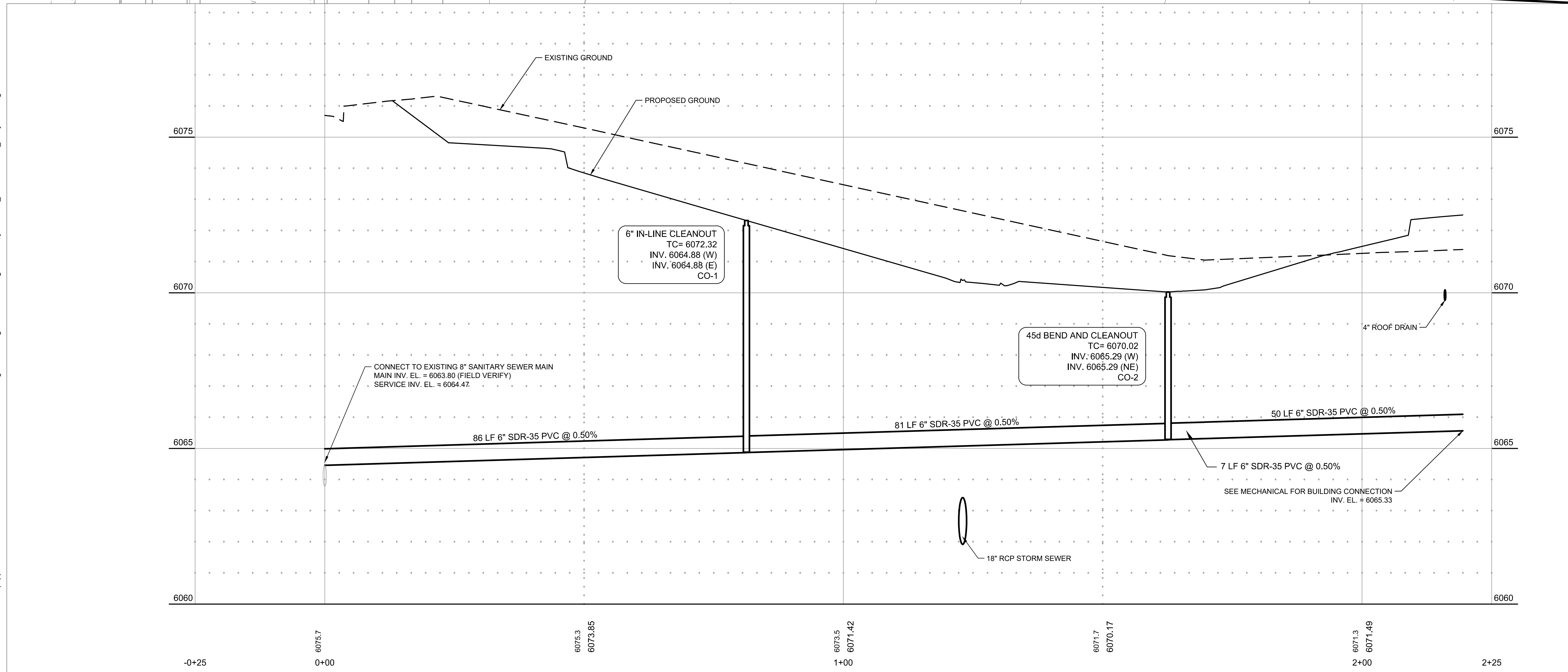
SANITARY SERVICE PLAN & PROFILE



U1.1



NOTE:
COORDINATES HAVE BEEN TRUNCATED. ADD 1600000 TO THE NORTHING AND 3190000 TO THE EASTING TO OBTAIN TRUE VALUE.



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Rev. # 1
Date 1/22/21

SANITARY DETAILS

U1.3

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SADDLE CONNECTION

SIDE VIEW

SECTION QUADRANT 1 SHOWN

Y - SADDLE DETAIL

NOTES:

- SADDLE FITTINGS TO BE PER ASTM D3034.
- CONNECTION SHALL BE Y - SADDLE WITH TWO BONDS

PARKER WATER & SANITATION DISTRICT	
P.V.C. SADDLE CONNECTION DETAIL	
SCALE: NONE	DATE: 2/98
APPROVED: PVR	1/16
DIRECTOR OF ENGINEERING	10/16

2016 REVISION SHEET S4.14

PLAN

SECTION

CAPACITY CHART

TOTAL WATER CAP. APPROX. (GALLONS)	GREASE CAP. APPROX. (CU. FT.)	DIMENSIONS (INCHES)				
		W	L	A	B	C
1190	61	72	96	64	32	40
1600	84	72	144	96	48	40
1840	103	72	144	96	48	46
2080	117	72	144	96	48	52
2560	150	72	144	96	48	64
3040	183	72	144	96	48	76
3280	202	72	144	96	48	82
3520	216	72	144	96	48	88

PARKER WATER & SANITATION DISTRICT

COMMERCIAL GREASE INTERCEPTOR

SHEET 1 OF 2

SCALE: NONE	DATE: 2/98
APPROVED: PVR	2/00
DIRECTOR OF ENGINEERING	01/02
	01/16
	10/16

2016 REVISION SHEET S5.1

PLAN

SECTION

CAPACITY CHART

TOTAL WATER CAP. APPROX. (GALLONS)	GREASE CAP. APPROX. (CU. FT.)	DIMENSIONS (INCHES)				
		W	L	A	B	C
1190	61	72	96	64	32	40
1600	84	72	144	96	48	40
1840	103	72	144	96	48	46
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2560	150	72	144	96	48	64
3040	183	72	144	96	48	76
3280	202	72	144	96	48	82
3520	216	72	144	96	48	88

PARKER WATER & SANITATION DISTRICT

COMMERCIAL GREASE INTERCEPTOR

SHEET 2 OF 2

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

2016 REVISION SHEET S5.2

SECTION

PARKER WATER & SANITATION DISTRICT

SAMPLING MANHOLE

SCALE: NONE DATE: 2/98

APPROVED: PVR 2/00 10/16

DIRECTOR OF ENGINEERING 4/01 1/08 1/16

2016 REVISION SHEET S5.3



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Owner
New Horizon Academy
3405 Annapolis Lane
N, Suite 100
Plymouth, MN 55447
763.557.1111

Architect
Short Elliott Hendrickson, Inc.
2000 South Colorado Boulevard
Tower One, Suite 6000
Denver, Colorado 80222
720.540.6800

Landscape Architect
Short Elliott Hendrickson, Inc.
10901 Red Circle Drive
Suite 300
Minnetonka, MN 55343
952.912.2600

Civil Engineer
Short Elliott Hendrickson, Inc.
418 West Superior Street
Suite 200
Duluth, MN 55802
218.279.3000

Structural Engineer
Short Elliott Hendrickson, Inc.
3535 Vadnais Center Drive
St. Paul, MN 55110
651.490.2000

Mechanical Engineer
Short Elliott Hendrickson, Inc.
3535 Vadnais Center Drive
St. Paul, MN 55110
651.490.2000

Electrical Engineer
Short Elliott Hendrickson, Inc.
3535 Vadnais Center Drive
St. Paul, MN 55110
651.490.2000

NEW HORIZON ACADEMY -
DOUGLAS 234 FILING, NO. 6
PARKER, CO

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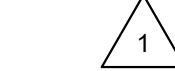
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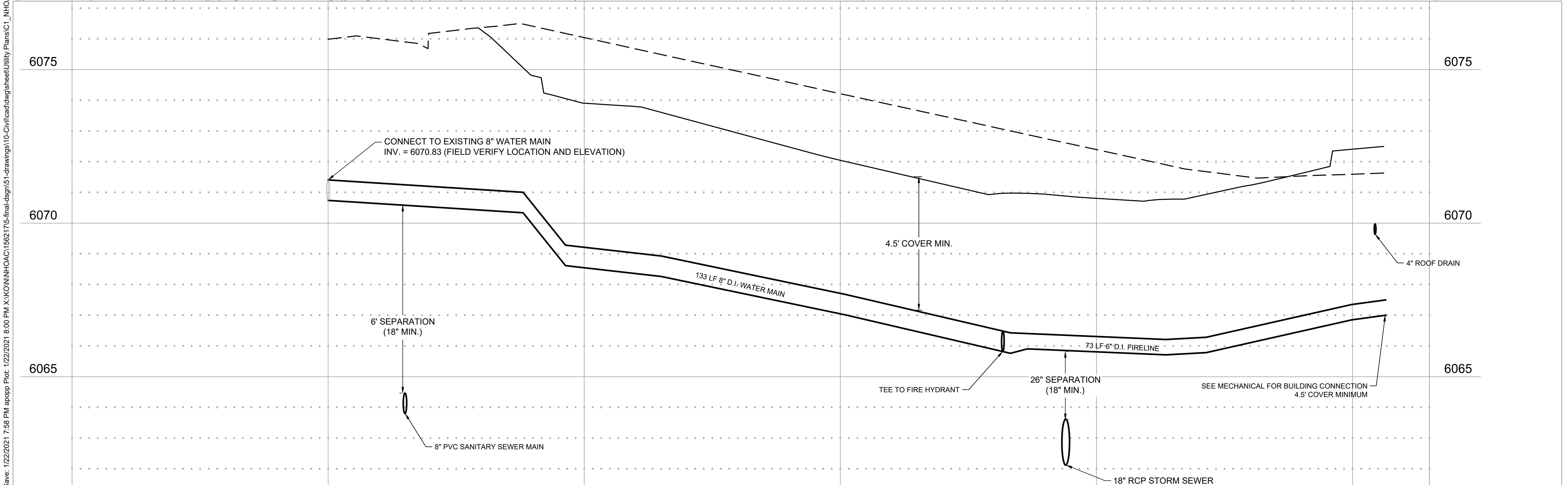
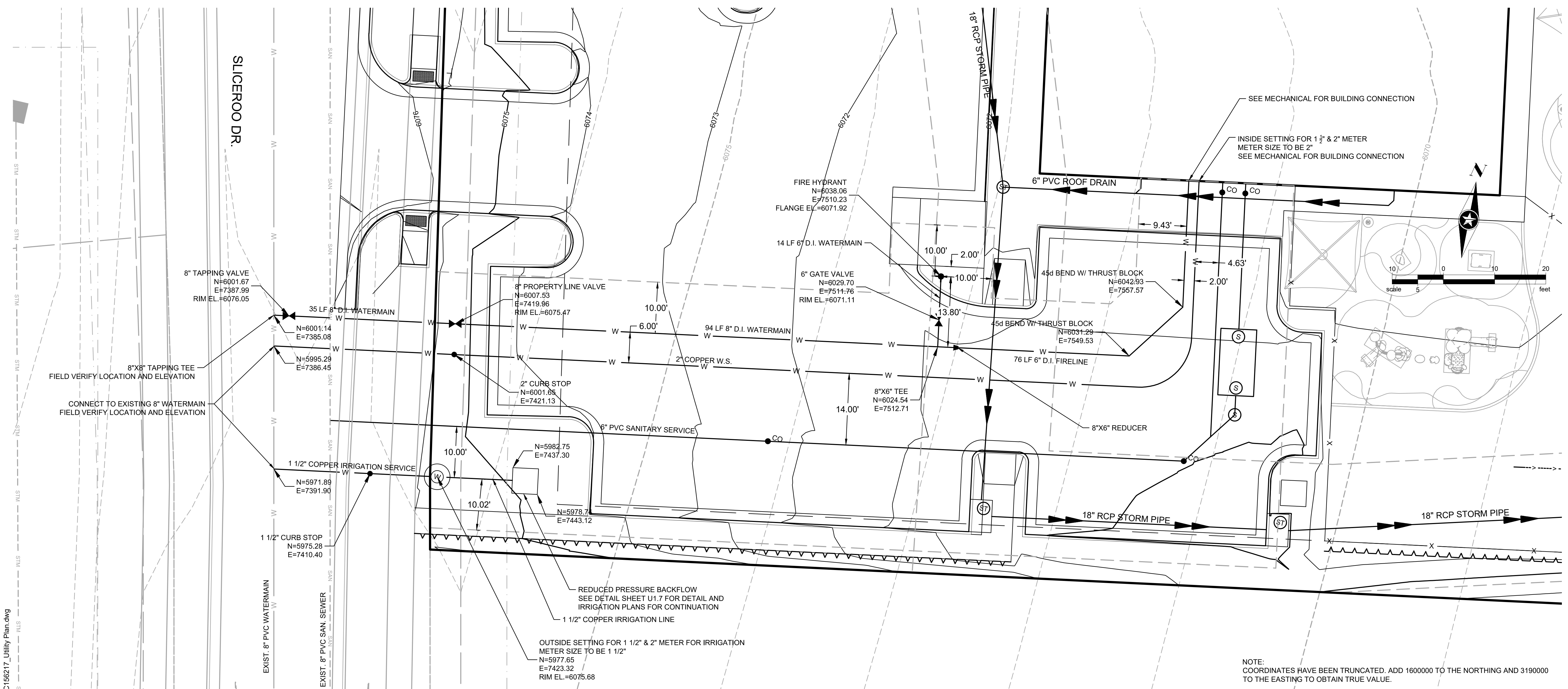
Project Status Issue Date
TOWN REVIEW 8/26/2020
TOWN REVIEW 1/22/2021

Rev. #	Description	Date
1	TOWN COMMENTS	1/22/21

WATER SERVICE PLAN & PROFILE



U1.4



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**NOT FOR
CONSTRUCTION**

Owner
New Horizon Academy
3405 Annapolis Lane
N., Suite 100
Plymouth, MN 55447
763.557.1111

Architect
Short Elliott Hendrickson, Inc.
2000 South Colorado Boulevard
Tower One, Suite 6000
Denver, Colorado 80222
720.540.6800

Landscapes Architect
Short Elliott Hendrickson, Inc.
10901 Reg Circle Drive
Suite 300
Minnetonka, MN 55343
952.912.2600

Civil Engineer
Short Elliott Hendrickson, Inc.
418 West Superior Street
Suite 200
Duluth, MN 55802
218.279.3000

Structural Engineer
Short Elliott Hendrickson, Inc.
3535 Vadnais Center Drive
St. Paul, MN 55110
651.490.2000

Mechanical Engineer
Short Elliott Hendrickson, Inc.
3535 Vadnais Center Drive
St. Paul, MN 55110
651.490.2000

Electrical Engineer
Short Elliott Hendrickson, Inc.
3535 Vadnais Center Drive
St. Paul, MN 55110
651.490.2000

NEW HORIZON ACADEMY -
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SEH Project Checked By Drawn By

NHOAC 156217 DRH AMP

Project Status TOWN REVIEW

Issue Date 8/26/2020

Revision Issue

Rev. # 1 Description TOWN COMMENTS Date 1/22/21

WATER DETAILS

U1.5

INSPECTION POLICY:

- ALL SERVICE INSPECTIONS MUST BE SCHEDULED AT LEAST 24 HOURS IN ADVANCE OF THE REQUESTED INSPECTION.
- SERVICE INSPECTIONS WILL OCCUR BETWEEN 1:00 P.M. AND 3:00 P.M. SPECIFIC INSPECTION TIMES ARE NOT AVAILABLE.
- 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.
- 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.
- 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.
- ALL EXCAVATIONS SHALL BE IN ACCORDANCE WITH OSHA STANDARDS.
- LOTS WITHOUT BUILDING ADDRESSES BEFORE DISTRICT INSPECTION OR METER SET WILL FAIL AUTOMATICALLY.
- CONTRACTOR MUST BE PRESENT AT TIME OF INSPECTION, UNLESS COORDINATED WITH DISTRICT INSPECTOR.

INSTALLATION NOTES:

WATER

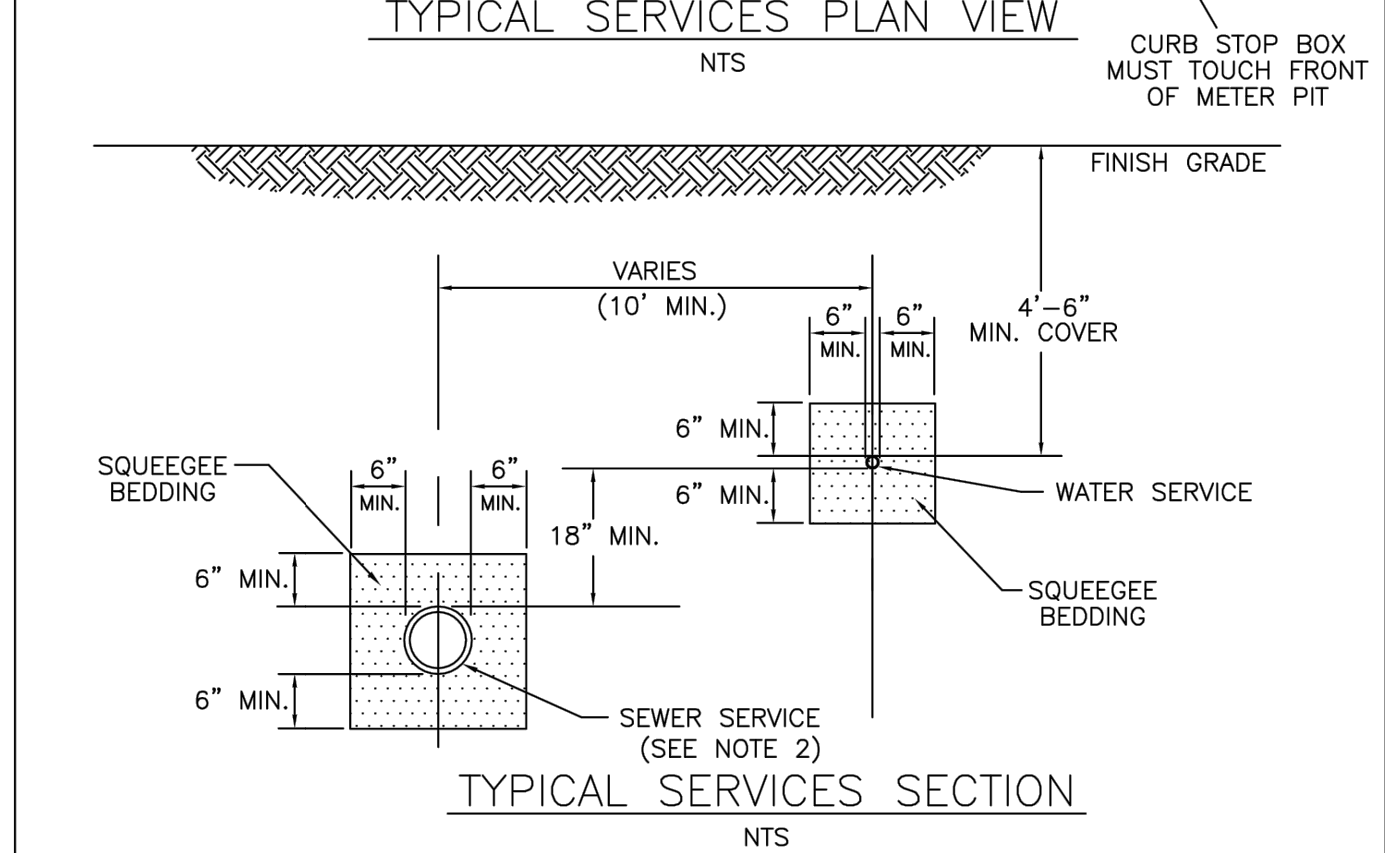
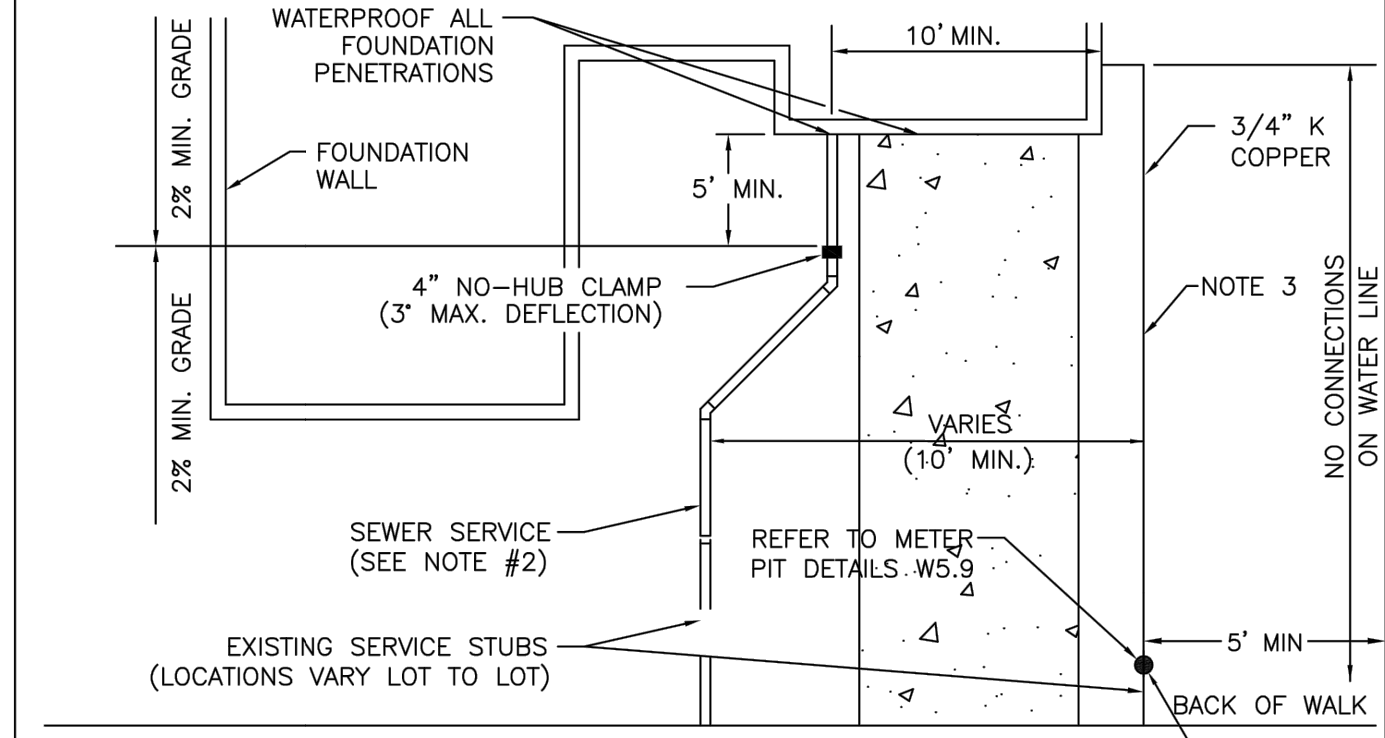
- ACCEPTABLE PIPE MATERIALS SHALL BE K-COPPER TUBING. (3/4" MIN.)
- APPROVED BEDDING TO BE SQUEEGEE.
- ONLY ONE COUPLING WILL BE ALLOWED BETWEEN THE SUB-IN AND BUILDING. COMPRESSION COUPLINGS WILL NOT BE ALLOWED ON NEW CONSTRUCTION. SILVER SOLDERED JOINTS MUST BE USED ON SERVICES LARGER THAN 3/4". SILVER SOLDERED JOINTS MUST BE INSPECTED BY PWSO PRIOR TO BURIAL. FLARED COUPLINGS WILL BE ALLOWED ON ALL SERVICES 3/4" AND SMALLER.
- 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.
- WATER SERVICE FOUNDATION PENETRATIONS SHALL BE WATERPROOFED USING MASTIC OR OTHER APPROVED METHOD, CRAWL SPACE REQUIRES CONTINUOUS COPPER WITH A 1" BURY.
- 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.
- MOVED CURB BOXES MUST BE INSPECTED BY PWSO PRIOR TO BURIAL.
- WATERLINE MUST BE ATTACHED TO A SUPPORT BOARD THAT IS MOUNTED TO THE WALL.
- NO VOIDS ALLOWED UNDER WATERLINES FROM STOP BOX TO FOUNDATION.
- CURBSTOP BOXES AND METER PITS CANNOT BE IN DRIVEWAYS.
- ONLY 3/4" (JUMPER) PIPES (RESIDENCES) ARE ALLOWED. (JUMPER) PIPES WILL BE REMOVED PRIOR TO METER SET DATE.
- ALL SERVICES WILL BE PERMANENTLY MARKED ON CURB FACE AS FOLLOWS:
"X" FOR SANITARY SEWER SERVICE
"V" FOR WATER SERVICES
- 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 PWSO 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 01/16 10/16
DIRECTOR OF ENGINEERING	

SHEET W1.1

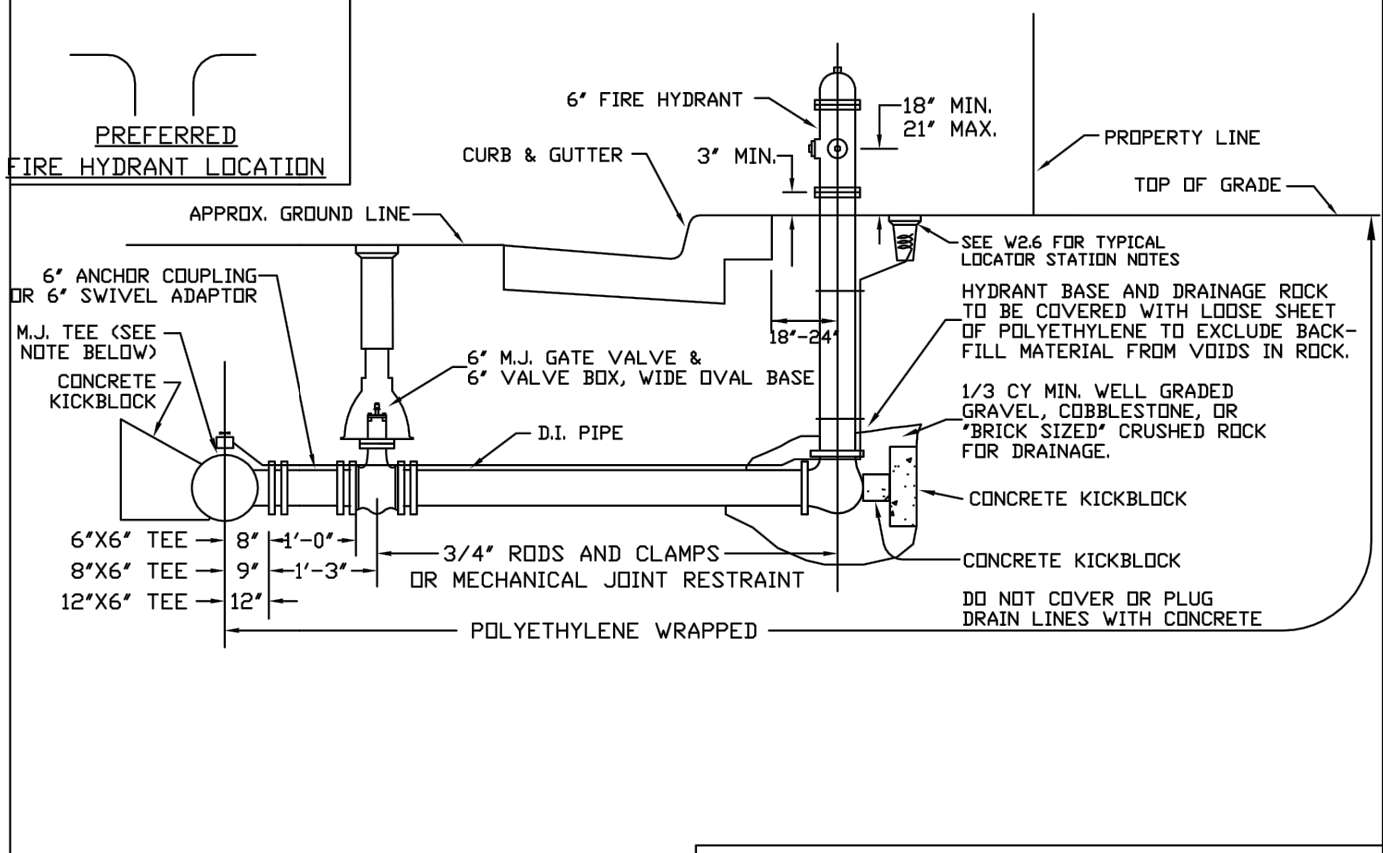
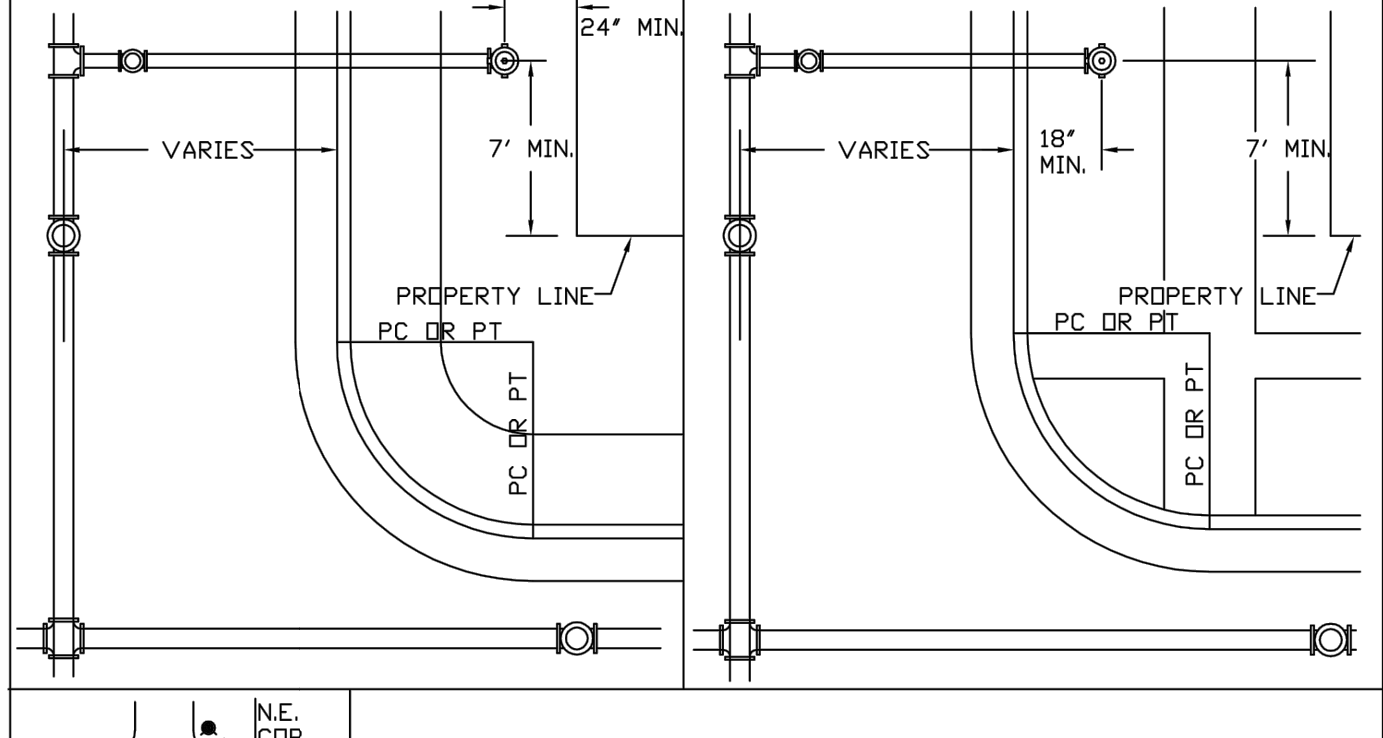


PARKER WATER & SANITATION DISTRICT

TYPICAL WATER SERVICES

SCALE: NONE	DATE: 2/96
APPROVED: PVR	1/04 10/16 06/05 12/07 1/16
DIRECTOR OF ENGINEERING	

SHEET W1.2

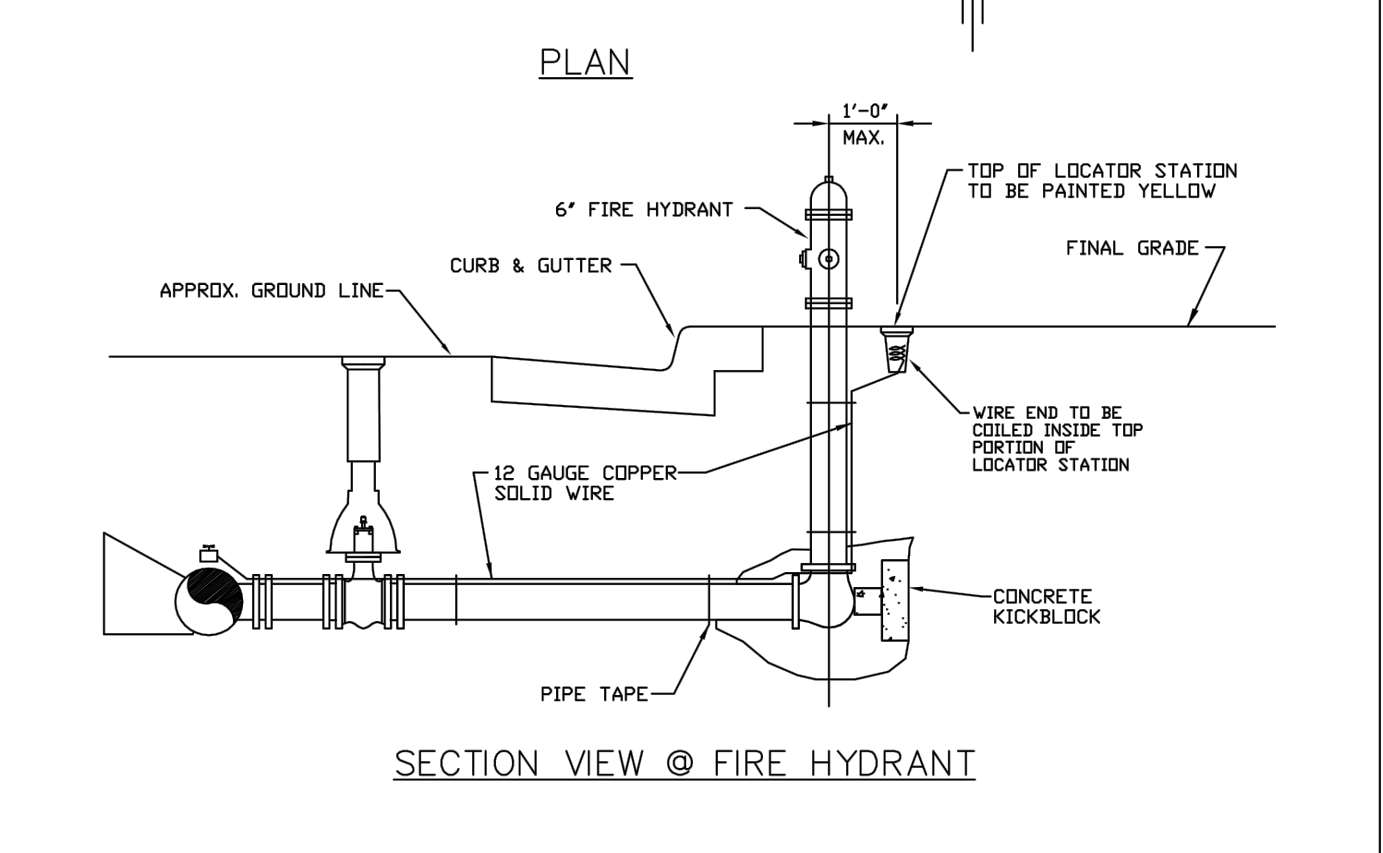
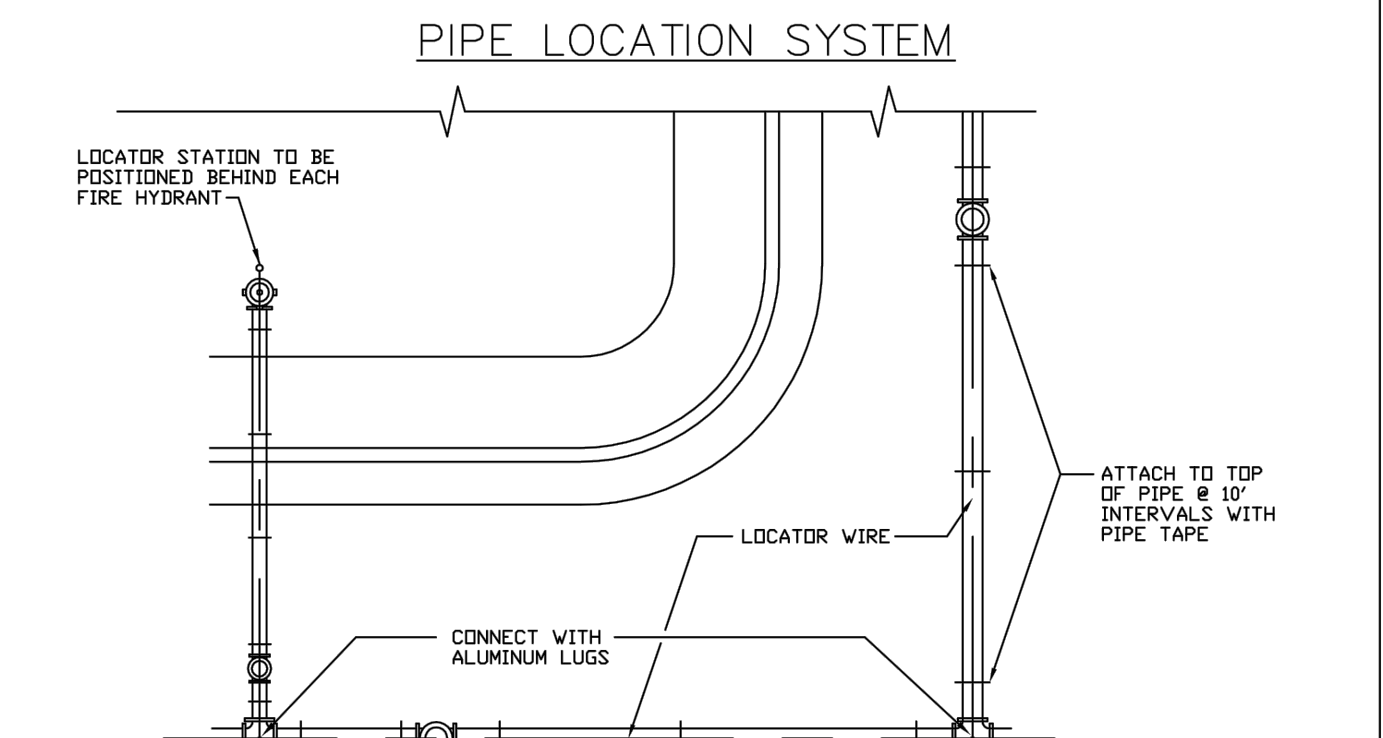


PARKER WATER & SANITATION DISTRICT

FIRE HYDRANTS LOCATION & INSTALLATION

SCALE: NONE	DATE: 2/96
APPROVED: PVR	4/01 10/16 01/02 12/07 1/16
DIRECTOR OF ENGINEERING	

SHEET W2.5

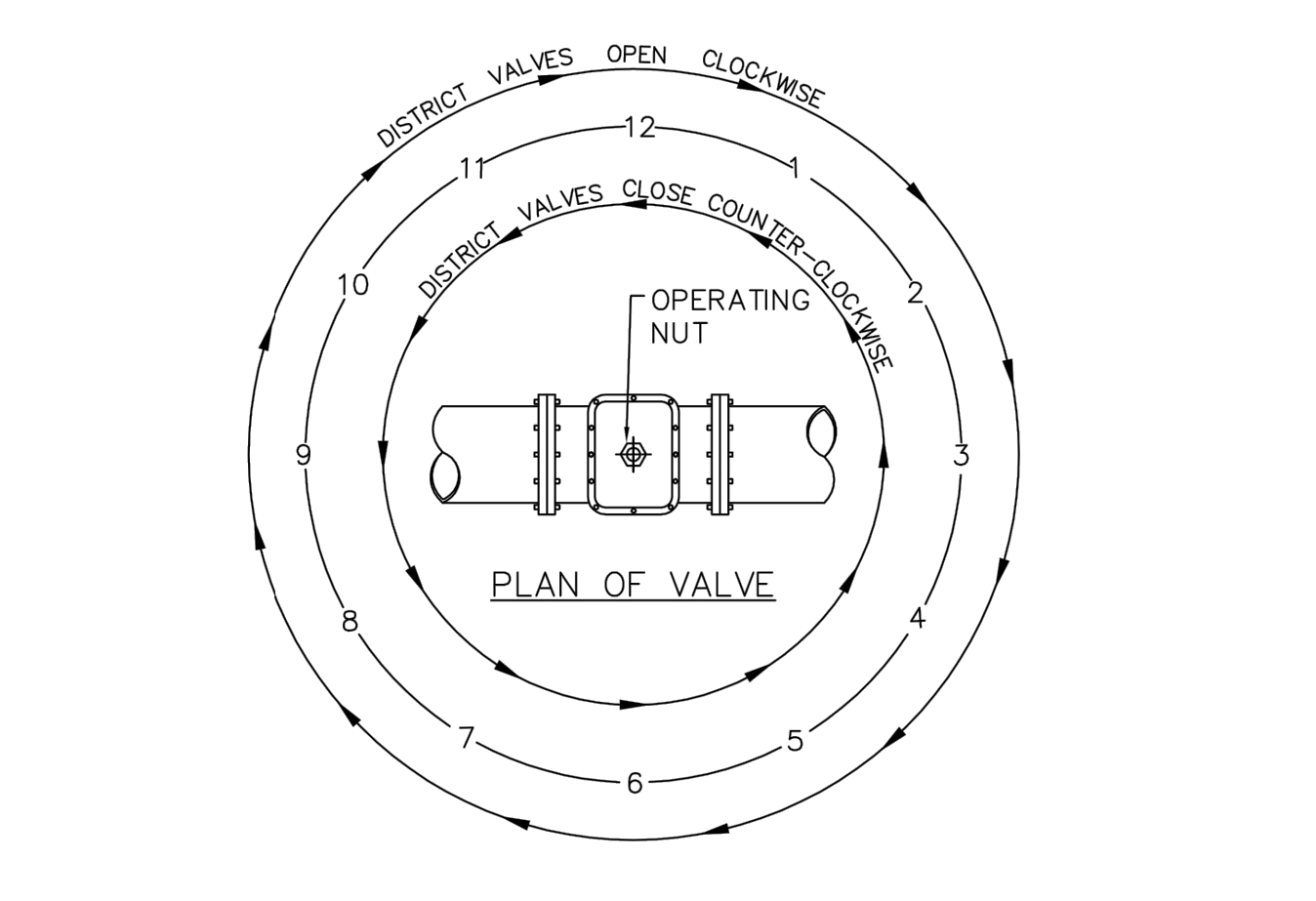


PARKER WATER & SANITATION DISTRICT

LOCATOR WIRE DETAILS

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

SHEET W2.6



VALVE OPENING & CLOSING PROCEDURE

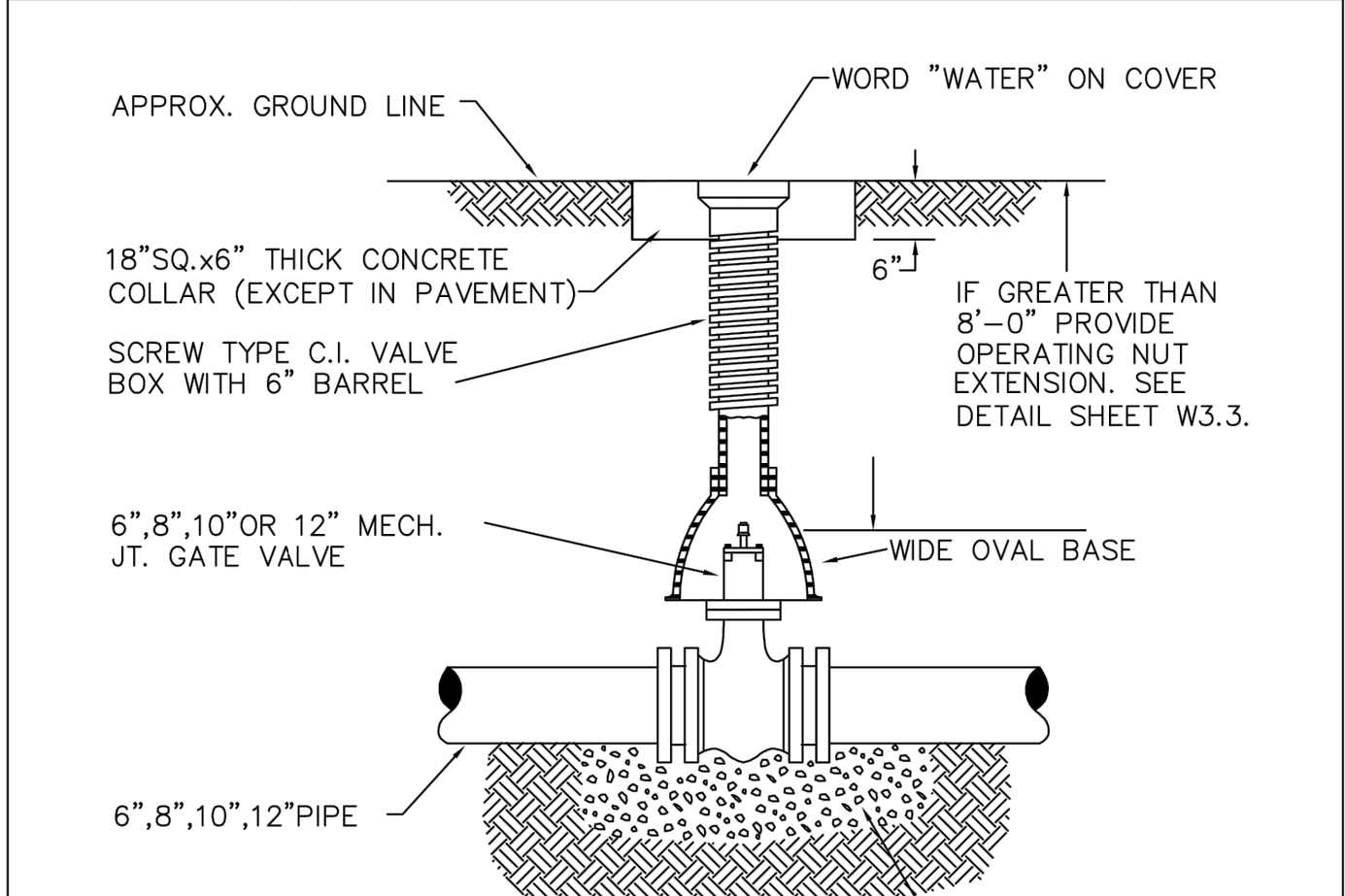
NOTE:
ONLY RIGHT HAND OPENING VALVES ALLOWED.

PARKER WATER & SANITATION DISTRICT

VALVE OPERATION

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

SHEET W3.4



6-INCH VALVE BOXES

CHECK MATERIAL SPECIFICATIONS

NOTES:

- ALL C.I. SHALL BE WRAPPED WITH 8 MIL. MIN. THICKNESS POLYETHYLENE.
- VALVE NUT SHALL BE CENTERED.
- VALVE BOX SHALL BE PLUMB.
- SEE MATERIAL SPECIFICATIONS FOR VALVE BOX WITH GREATER THAN BURIED DEPTH OF 4.5 FT.

PARKER WATER & SANITATION DISTRICT

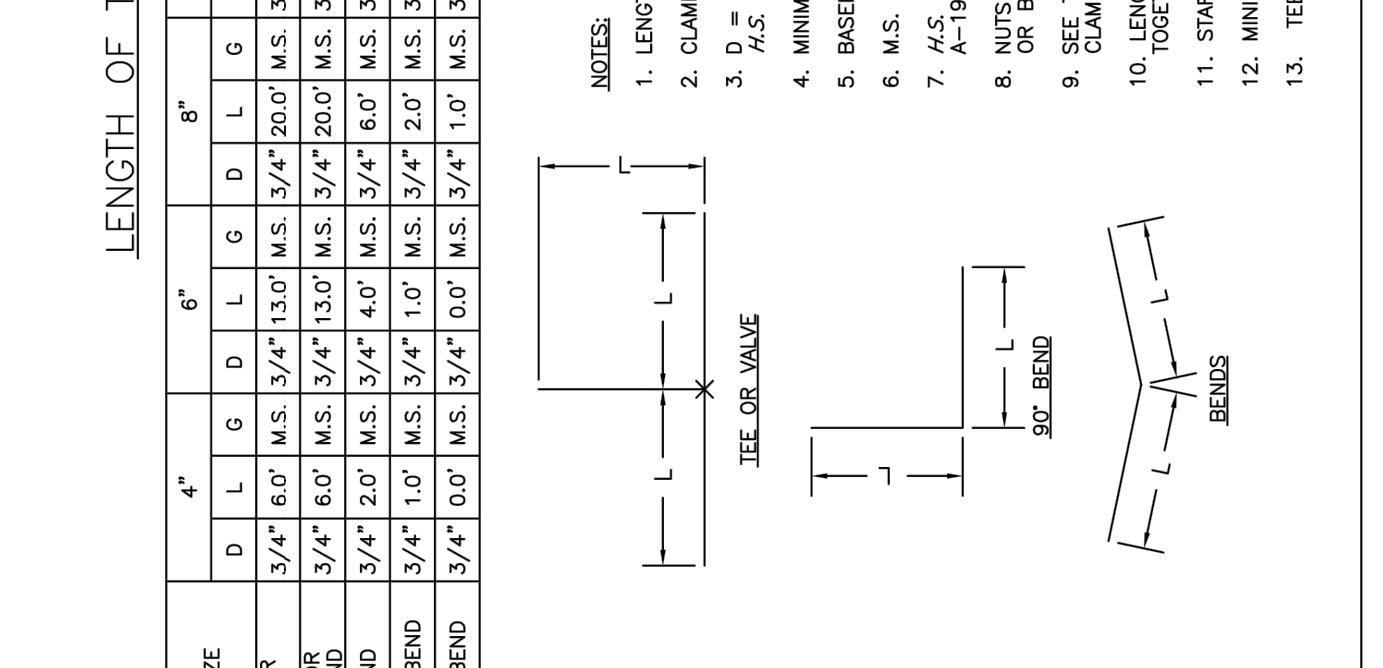
VALVE BOX DETAIL

SCALE: NONE	DATE: 2/96
APPROVED: PVR	5/98 10/16 8/99 12/07 1/16
DIRECTOR OF ENGINEERING	

SHEET W3.10

LENGTH OF TIED PIPE

PIPE SIZE	4"		6"		8"		12"		16"		20"		24"	
	D	G	D	G	D	G	D	G	D	G	D	G	D	G
TEE OR FLUO OR 90° BEND	3/4"	6.0"	3/4"	13.0"	M.S. 3/4"	20.0"	M.S. 3/4"	40.0"	M.S. 3/4"	60.0"	M.S. 3/4"	80.0"	M.S. 1"	155.0"
45° BEND	3/4"	6.0"	M.S. 3/4"	13.0"	M.S. 3/4"	20.0"	M.S. 3/4"	40.0"	M.S. 3/4"	60.0"	M.S. 3/4"	80.0"	M.S. 1"	155.0"
22-1/2° BEND	3/4"	2.0"	M.S. 3/4"	4.0"	M.S. 3/4"	6.0"	M.S. 3/4"	11.0"	M.S. 1"	16.0"	M.S. 3/4"	24.0"	M.S. 1"	45.0"
11-1/4° BEND	3/4"	1.0"	M.S. 3/4"	2.0"	M.S. 3/4"	3.0"	M.S. 3/4"	6.0"	M.S. 3/4"	9.0"	M.S. 3/4"	18.0"	M.S. 1"	12.0"

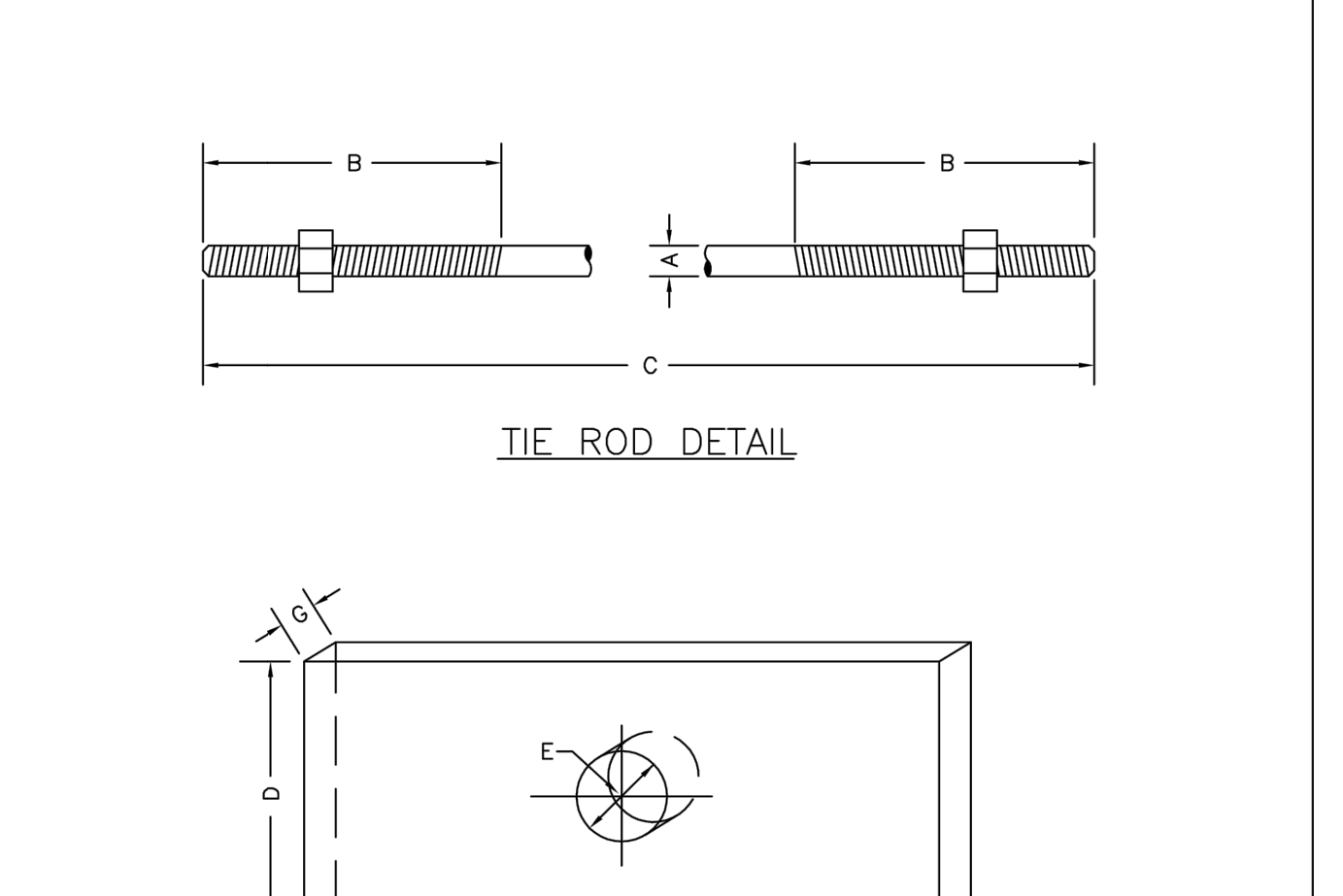


PARKER WATER & SANITATION DISTRICT

LENGTH OF TIED PIPE

SCALE: NONE	DATE: 2/96
APPROVED: PVR	4/01 1/16 10/16
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SHEET W3.11



TIE RODS

ROD DIAMETER	THREAD LENGTH	ROD LENGTH
3/4"	6"	1' TO 11' & 20'
1"	6"	1' TO 11' & 20'
1-1/4"	ALL THREAD	1' TO 11' & 20'

WASHERS

D	E	F	G
WIDTH	HOLE DIAMETER	LENGTH	THICKNESS
3"	7/8"	6"	3/8"
4"	1-1/8"	7"	1/2"
4"	1-3/8"	7"	5/8"

PARKER WATER & SANITATION DISTRICT

TIE ROD AND WASHER DETAILS

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

SHEET W3.12

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2016 REVISION SHEET W1.1

2016 REVISION SHEET W1.2

2016 REVISION SHEET W2.5

2016 REVISION SHEET W2.6

2016 REVISION SHEET W3.4

2016 REVISION SHEET W3.10

2016 REVISION SHEET W3.11

2016 REVISION SHEET W3.12

NOT FOR CONSTRUCTION

Owner
New Horizon Academy
3405 Annapolis Lane
N., Suite 100
Plymouth, MN 55447
763.557.1111

Architect
Short Elliott Hendrickson, Inc.
2000 South Colorado Boulevard
Tower One, Suite 6000
Denver, Colorado 80222
720.540.6800

Landscape Architect
Short Elliott Hendrickson, Inc.
10901 Reg Circle Drive
Suite 300
Minnetonka, MN 55343
952.912.2600

Civil Engineer
Short Elliott Hendrickson, Inc.
418 West Superior Street
Suite 200
Duluth, MN 55802
218.279.3000

Structural Engineer
Short Elliott Hendrickson, Inc.
3535 Vadnais Center Drive
St. Paul, MN 55110
651.490.2000

Mechanical Engineer
Short Elliott Hendrickson, Inc.
3535 Vadnais Center Drive
St. Paul, MN 55110
651.490.2000

Electrical Engineer
Short Elliott Hendrickson, Inc.
3535 Vadnais Center Drive
St. Paul, MN 55110
651.490.2000

Electrical Engineer
Short Elliott Hendrickson, Inc.
3535 Vadnais Center Drive
St. Paul, MN 55110
651.490.2000

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SEH Project
Checked By
Drawn By

Project Status
TOWN REVIEW
TOWN REVIEW

Issue Date
8/26/2020
1/22/2021

Revision
Rev. # 1
Description TOWN COMMENTS
Date 1/22/21

WATER DETAILS

1

U1.6

MECHANICAL JOINT RESTRAINT

11-1/4", 22-1/2", 45° & 90° BENDS

DEAD END

TEE

TYPICAL CROSS SECTION

SIZE OF PIPE	BENDS				TEE OR DEAD END
	11-1/4"	22-1/2"	45°	90°	
4"	1.00	1.00	1.00	1.80	1.50
6"	1.00	1.25	2.25	4.00	3.00
8"	1.00	2.00	4.00	7.50	5.25
12"	2.00	4.25	8.25	15.25	11.00
16"	3.50	6.50	12.50	23.00	16.50
20"	5.00	10.00	19.50	35.50	26.00
24"	6.50	13.00	26.00	47.00	33.00

MINIMUM BEARING SURFACE AREA (IN SQUARE FEET)

NOTES:

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

PARKER WATER & SANITATION DISTRICT
CONCRETE KICKBLOCKS BEARING SURFACES AND INSTALLATION

SCALE: NONE DATE: 2/96

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

2016 REVISION SHEET W3.18

WEDGE DETAIL

BOLT HOLE DETAIL

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

NOTES:

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

PARKER WATER & SANITATION DISTRICT
MECHANICAL JOINT RESTRAINT DETAILS

SCALE: NONE DATE: 2/96

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

2016 REVISION SHEET W3.17

FLANGE LUG DETAIL

DIMENSIONS (IN INCHES)

PIPE DIA.	N	O	H.S. ROD P	ROD DIA. Q	M.S. ROD R	ROD DIA. S	U	V	PIPE DIA.	
4	1-7/16	2	1-7/8	3/4	1-7/8	3/4	7/8	3/4	2-7/8	4
6	1-13/16	3-1/4	1-7/8	3/4	1-7/8	3/4	7/8	7/8	3-3/4	6
8	2-1/4	4-3/4	1-7/8	3/4	1-7/4	7/8	7/8	7/8	4-7/8	8
10	2-7/16	5-3/4	1-7/8	3/4	1-7/4	7/8	7/8	7/8	5-7/8	10
12	3-1/16	6-3/4	1-7/8	3/4	1-7/4	7/8	7/8	7/8	6-7/8	12
16	4-1/2	8-3/4	1-7/8	3/4	1-7/4	7/8	7/8	7/8	8-7/8	16
20	5-7/16	10-3/4	1-7/8	3/4	1-7/4	7/8	7/8	7/8	10-7/8	20
24	6-7/16	12-3/4	1-7/8	3/4	1-7/4	7/8	7/8	7/8	12-7/8	24

RODS AND CLAMPS NOT ALLOWED

NOTES:

- 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).
- 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 2H).
- FLANGE LUGS SHALL NOT BE USED ON VALVES.

PARKER WATER & SANITATION DISTRICT
FLANGE LUG DETAIL

SCALE: NONE DATE: 2/96

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

2016 REVISION SHEET W3.14

TIE ROD COUPLING DETAIL

11-7/8" (TYP)

5-7/8" 6" 5-7/8"

BLACK IRON PIPE (SEE TABLE BELOW)

1/4" X 3/4" X 6" SPACER BAR (SEE SECTION "A-A")

SECTION "A-A"

BLACK IRON PIPE (TYPICAL)

1/4" X 3/4" X 6" STEEL SPACER BAR

NOTE:
BLACK IRON PIPE = SCHEDULE 40.

ROD SIZE	PIPE DIAMETER
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: PVR 1/16 10/16
DIRECTOR OF ENGINEERING

2016 REVISION SHEET W3.13

STANDARD TRENCH SECTION

STREET CUT PATCH

PIPE DIAMETER	MINIMUM WIDTH	MAXIMUM WIDTH
4"	1'-4"	2'-4"
6"	1'-6"	2'-6"
8"	1'-8"	2'-8"
12"	2'-0"	3'-0"
16"	2'-4"	3'-4"
20"	2'-8"	3'-8"
24"	3'-0"	4'-0"

Well-Graded Sand for (24-inch or large diameter)

Sieve Size	Total Percent Passing by Weight
3/8 inch	100
No. 4	70-100
No. 8	36-93
No. 16	20-90
No. 30	8-85
No. 50	2-50
No. 100	1-10
No. 200	0-3

Squeezee Sand
for use with 20-inch or smaller

Sieve Size	Total Percent Passing by Weight
3/8 inch	100
No. 200	0-3

NOTES:

- LENGTH OF EXTENSION OF PIPE AND HARNESS RODS SHALL BE IN ACCORDANCE WITH THESE ENGINEERING STANDARDS.
- ALL WATER MAINS TWELVE (12") INCHES OR SMALLER, WHICH CROSS UNDER CONDUITS/STORM SEWER SHALL BE DUCTILE IRON OR PVC PER SPECIFICATIONS.
- A BORED CROSSING MAY BE REQUIRED BY THE ENGINEER.
- CONCRETE KICKBLOCKS PER SHEET W3.18.

PARKER WATER & SANITATION DISTRICT
CONDUIT OR STORM SEWER CROSSING

SCALE: NONE DATE: 2/96

APPROVED: PVR 5/98 2/00 1/16 10/16
DIRECTOR OF ENGINEERING

2016 REVISION SHEET W4.6

PIPE BEDDING:

(a) **Installation of Bedding and Pipe:** After completion of the trench excavation and proper preparation of the foundation, six inches (6") of bedding material shall be placed on the trench bottom for support under the pipe. Bell holes shall be dug deep enough to provide a minimum of two inches (2") of clearance between the bell and bedding material. All pipe shall be installed in such a manner as to insure full support of the pipe barrel over its entire length. After the pipe is adjusted for line and grade, and the joint is made, the bedding material shall be carefully placed and tamped under the haunches of the pipe and in the previously dug bell holes.

Tamping is herein defined as the act of placing approved bedding material under the haunches of the pipe, paying particular attention to voids, bell holes, and sling holes. The purpose of tamping is to ensure uniform support for the pipe.

The limits of bedding shall be from six inches (6") below the bottom of the pipe to twelve inches (12") above the top of the pipe. Approved backfill may then be installed to the groundline. See Chapter 2 of these Standards for backfill and compaction of backfill.

Compaction of bedding is not required. The only requirement is sufficient tamping to achieve uniform support under the pipe. See Sheet W4.1 of the Standard Details for a typical trench cross section.

(b) **Bedding Material:** The bedding material shall be a clean well-graded sand or squeeze sand and shall conform to the following limits when tested by means of laboratory sieves:

Well-Graded Sand for (24-inch or large diameter)

Squeezee Sand
for use with 20-inch or smaller

NOTES:

- If approved by the District, fines from the trench walls and spoils pile may be used to provide uniform support for the pipe. No rock or stone larger than that allowed by the sieve analysis, or any other detrimental substance, shall be placed closer to the pipe than six inches (6"). Approved bedding materials shall be stockpiled on the jobsite to be used in the event natural materials become unsatisfactory. The District reserves the right to require the use of the specified bedding material at any time.

PARKER WATER & SANITATION DISTRICT
PIPE BEDDING

SCALE: NONE DATE: 2/96

APPROVED: PVR 5/98 2/00 1/16 10/16
DIRECTOR OF ENGINEERING

2016 REVISION SHEET W4.2

STANDARD TRENCH SECTION

STREET CUT PATCH

PARKER WATER & SANITATION DISTRICT
TYPICAL TRENCH SECTION PIPE PROTECTION

SCALE: NONE DATE: 2/96

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

2016 REVISION SHEET W4.1

24" DIAMETER RING AND COVER

STANDARD LIFTING SLOT DETAIL

MACHINED SEAT

NOTE:

- Casting Specifications: ASTM A-48 With A Minimum Tensile Strength Of 25 KSI (Class 25)
- All Casting To Be Dipped In Asphalt Base Paint (Or Approved Equal).

PARKER WATER & SANITATION DISTRICT
24" DIAMETER RING AND COVER

SCALE: NONE DATE: 6/05

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

2016 REVISION SHEET W3.19

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**NOT FOR
CONSTRUCTION**

Owner
New Horizon Academy
3405 Annapolis Lane
N., Suite 100
Plymouth, MN 55447
763.557.1111

Architect
Short Elliott Hendrickson, Inc.
2000 South Colorado Boulevard
Tower One, Suite 6000
Denver, Colorado 80222
720.540.6800

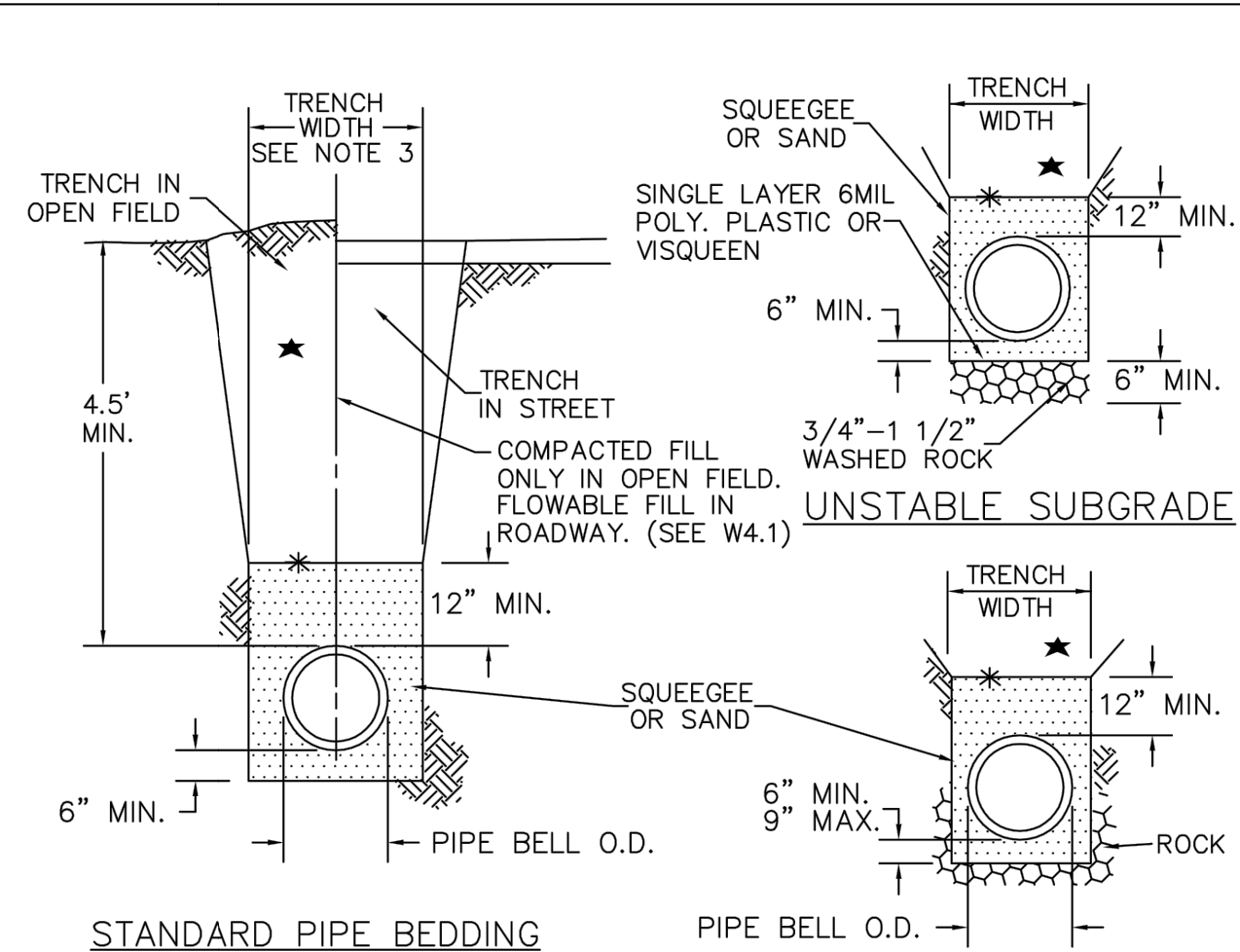
Landscape Architect
Short Elliott Hendrickson, Inc.
10901 Red Circle Drive
Suite 300
Minnetonka, MN 55343
952.912.2600

Civil Engineer
Short Elliott Hendrickson, Inc.
418 West Superior Street
Suite 200
Duluth, MN 55802
218.279.3000

Structural Engineer
Short Elliott Hendrickson, Inc.
3535 Vadnais Center Drive
St. Paul, MN 55110
651.490.2000

Mechanical Engineer
Short Elliott Hendrickson, Inc.
3535 Vadnais Center Drive
St. Paul, MN 55110
651.490.2000

Electrical Engineer
Short Elliott Hendrickson, Inc.
3535 Vadnais Center Drive
St. Paul, MN 55110
651.490.2000



STANDARD PIPE BEDDING

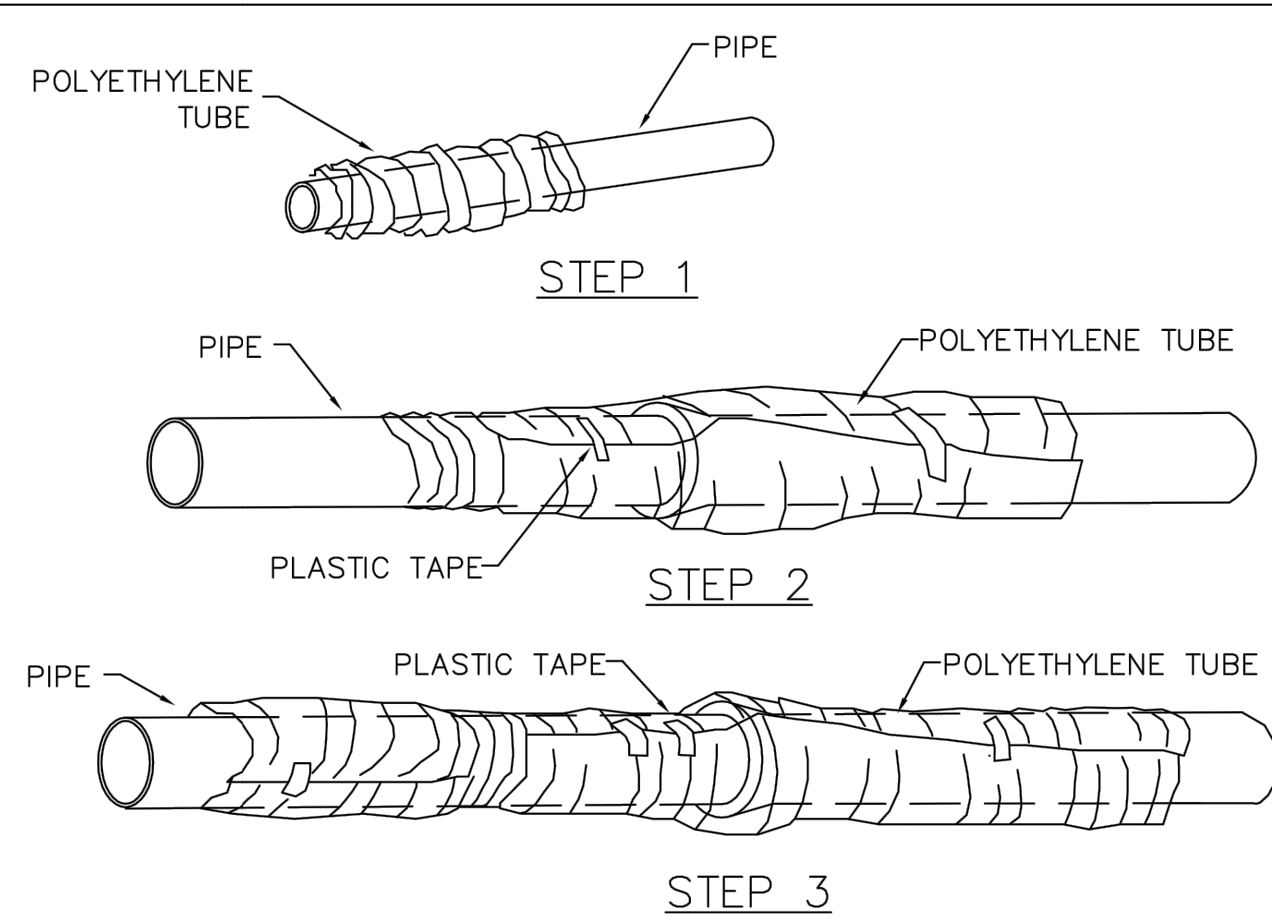
- * MACHINE COMPACTED TRENCH BACKFILL
- * LIMIT OF SLOPING OR BENCHING OF TRENCH WALLS
- UNDISTURBED GROUND

**PIPE BEDDING
IN ROCK**

NOTES:

1. MIN. COVER TO BE BELOW FINAL STREET GRADE. CONSTRUCTION OF WATER MAIN MAY NOT START UNTIL FINAL GRADE WITHIN 1 FOOT.
2. TRENCH TO BE BRACED OR SHEETED AS NECESSARY FOR THE PROTECTION OF OTHER UTILITIES AND TO MEET OSHA SAFETY REQUIREMENT.
3. TRENCH WIDTH SHALL NOT BE MORE THAN 16" NOR LESS THAN 12" WIDER THAN THE LARGEST OUTSIDE DIAMETER OF THE PIPE LAID THEREIN (BELL OR COUPLING O.D. IF APPLICABLE). REFER TO SHEET W4.1 FOR DIMENSIONS.

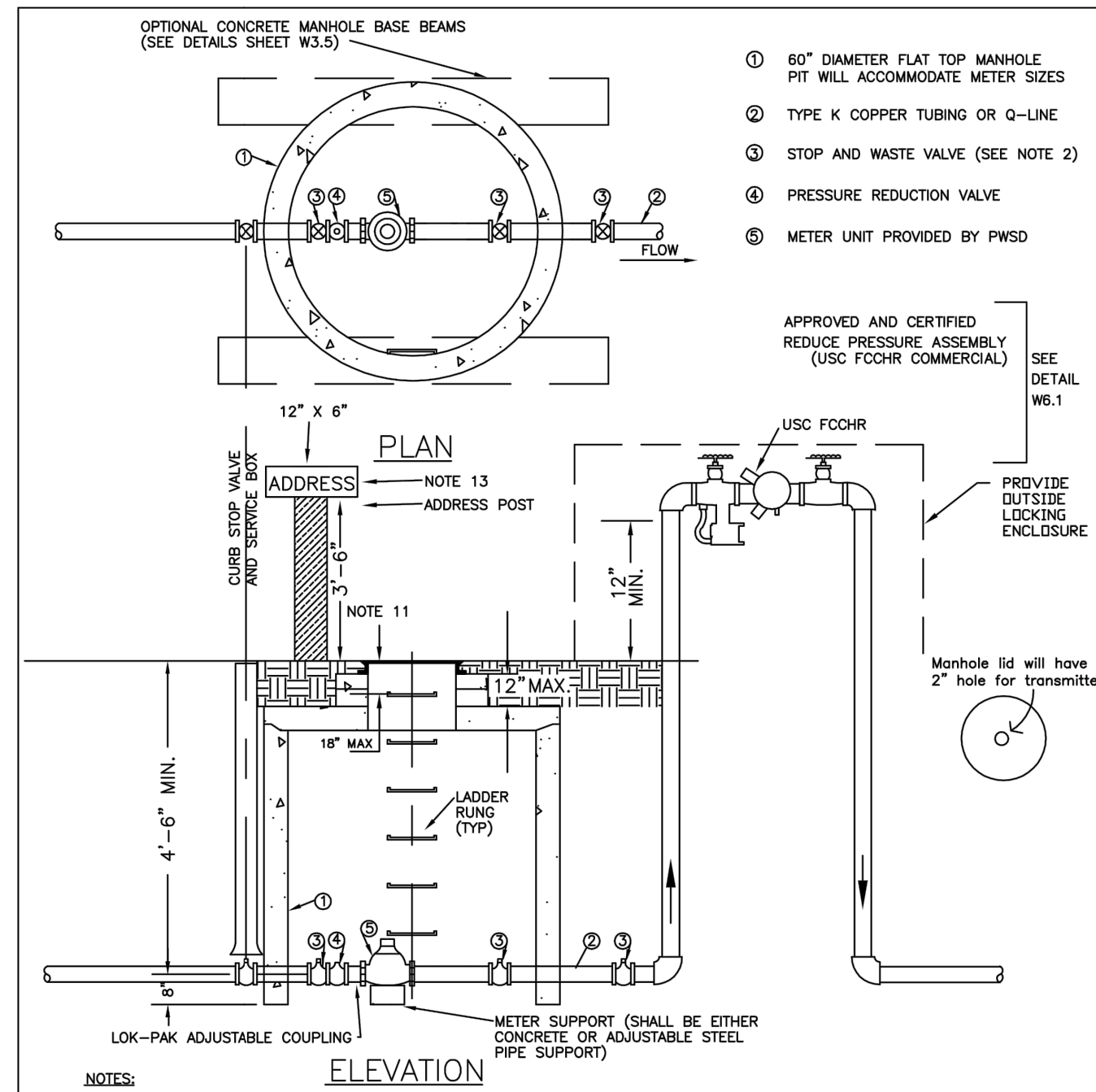
PARKER WATER & SANITATION DISTRICT	
BEDDING DETAILS	
SCALE: NONE	DATE: 2/96
APPROVED: PVR	1/16 10/16
DIRECTOR OF ENGINEERING	



FIELD INSTALLATION - POLYETHYLENE WRAP

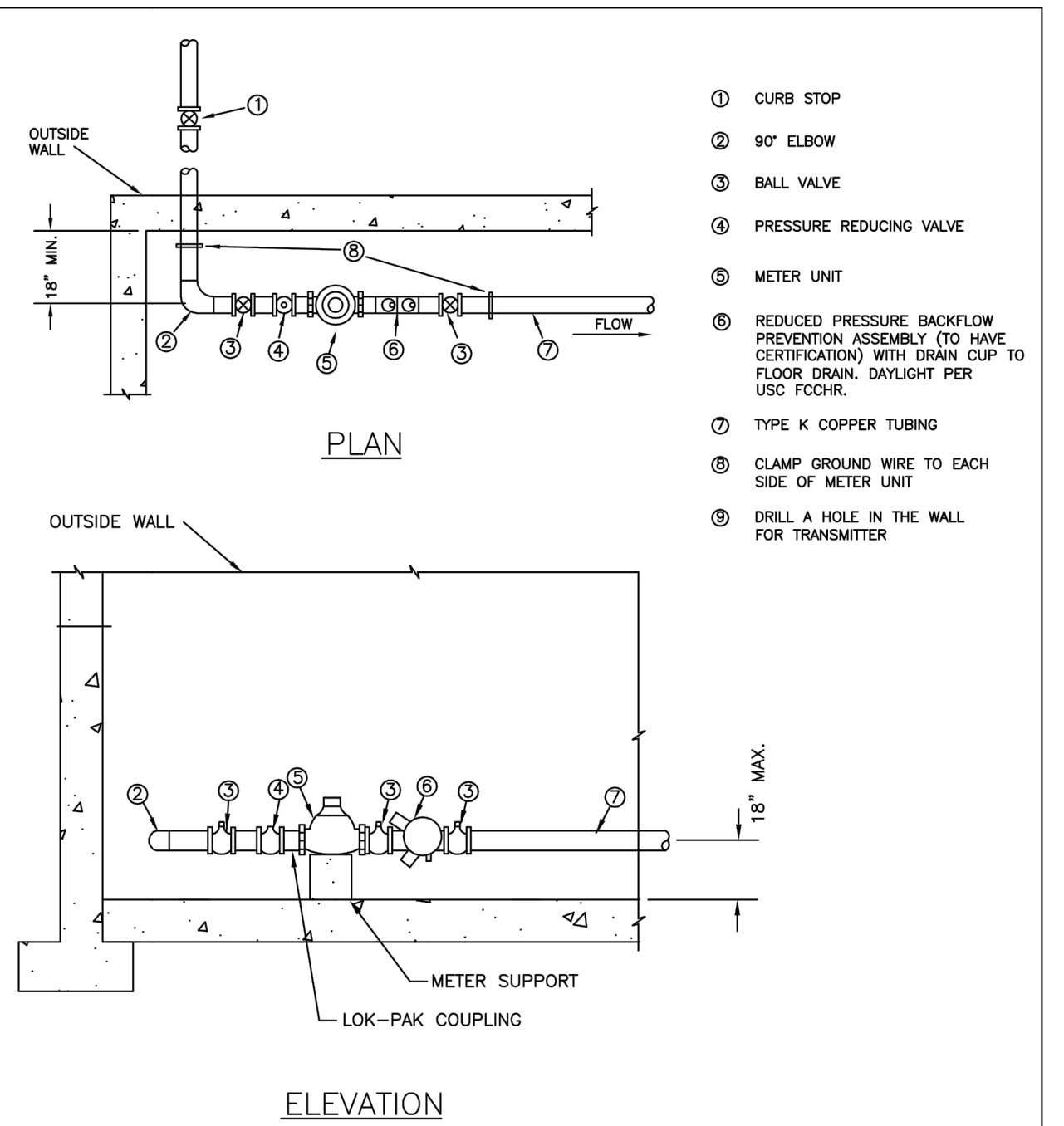
- STEP 1** - PLACE TUBE OF POLYETHYLENE MATERIAL ON PIPE PRIOR TO LOWERING IT INTO TRENCH.
- STEP 2** - PULL THE TUBE OVER THE LENGTH OF THE PIPE. TAPE TUBE TO PIPE AT JOINT. FOLD MATERIAL AROUND THE ADJACENT SPIGOT END AND WRAP WITH TAPE TO HOLD THE PLASTIC TUBE IN PLACE.
- STEP 3** - OVERLAP FIRST TUBE WITH ADJACENT TUBE AND SECURE WITH PLASTIC ADHESIVE TAPE. THE POLYETHYLENE TUBE MATERIAL COVERING THE PIPE SHALL BE LOOSE. EXCESS MATERIAL SHALL BE NEATLY DRAWN UP AROUND THE PIPE BARREL, FOLDED ON TOP OF PIPE AND TAPED IN PLACE.

PARKER WATER & SANITATION DISTRICT	
POLYETHYLENE WRAP	
SCALE: NONE	DATE: 2/96
APPROVED: PVR	1/16 10/16
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- NOTES:**
- 1 - MANHOLE BASE BEAMS SHALL BE REQUIRED FOR INSTALLATIONS IN DRIVEWAYS, OR PARKING AREAS.
 - 2 - STOP AND WASTE VALVE TO BE INSTALLED.
 - 3 - JOINTS INSIDE METER VAULT SHALL BE EITHER THREADED OR SOLDERED.
 - 4 - SEE WATER SYSTEM SPECIFICATIONS FOR GENERAL METER NOTES.
 - 5 - NO CONCRETE TO BE LAID IN FLOOR OF METER M.H.
 - 6 - METER SHALL BE FLANGED WITH BRASS COMPANION FLANGES.
 - 7 - NO CONNECTIONS OR CHANGES IN PIPE DIAMETER SHALL BE MADE IN THE METER PIT OR IN THE DISTANCE OF FIVE FEET BEYOND THE METER PIT ON THE OUTLET SIDE.
 - 8 - RAIN SENSOR AND ET CONTROLLER MUST BE PRESENT.
 - 9 - VALVE MUST BE CENTERED IN STOP BOX. NO DEBRIS OR STANDING WATER IN STOP BOX.
 - 10 - PLACEMENT OF STOP BOX MUST BE TOUCHING FRONT OF METER PIT.
 - 11 - SEE SHEET W3.19 FOR MANHOLE RING AND COVER DETAIL.
 - 12 - BACKFLOW MUST BE INSTALLED PRIOR TO SETTING METER.
 - 13 - LETTERS ON POST OR BACKFLOW ENCLOSURE 2" OR GREATER.
 - 14 - RAIN SENSOR AND ET CONTROLLER MUST BE PROVIDED AND INSTALLED PER MANUFACTURER'S REQUIREMENTS.

PARKER WATER & SANITATION DISTRICT	
OUTSIDE SETTING FOR 1 1/2" & 2" METER FOR IRRIGATION	
SCALE: NONE	DATE: 2/96
APPROVED: PVR	1/04 06/05 1/16 10/16
DIRECTOR OF ENGINEERING	



- NOTES:**
- 1 - PIPE JOINT SHALL BE THREADED OR SOLDERED WITH SILVER SOLDER.
 - 2 - INSTALLATION MUST ALLOW ACCESS FOR MAINTENANCE AND BE PROTECTED FROM FREEZING.
 - 3 - SEE WATER SYSTEM SPECIFICATIONS FOR GENERAL METER NOTES.
 - 4 - COMPANION FLANGES SHALL BE BRASS.
 - 5 - METER SUPPORT SHALL BE EITHER CONCRETE OR ADJ. STEEL PIPE (SEE SHEET W3.10)
 - 6 - 1/2" MINIMUM CLEARANCE AROUND BACKFLOW DEVICE
 - 7 - FLOOR DRAIN TO BE 2X PIPE SIZE
 - 8 - FOR IRRIGATION USES, ADD RAIN SENSOR AND SMART E.T. CONTROLLER

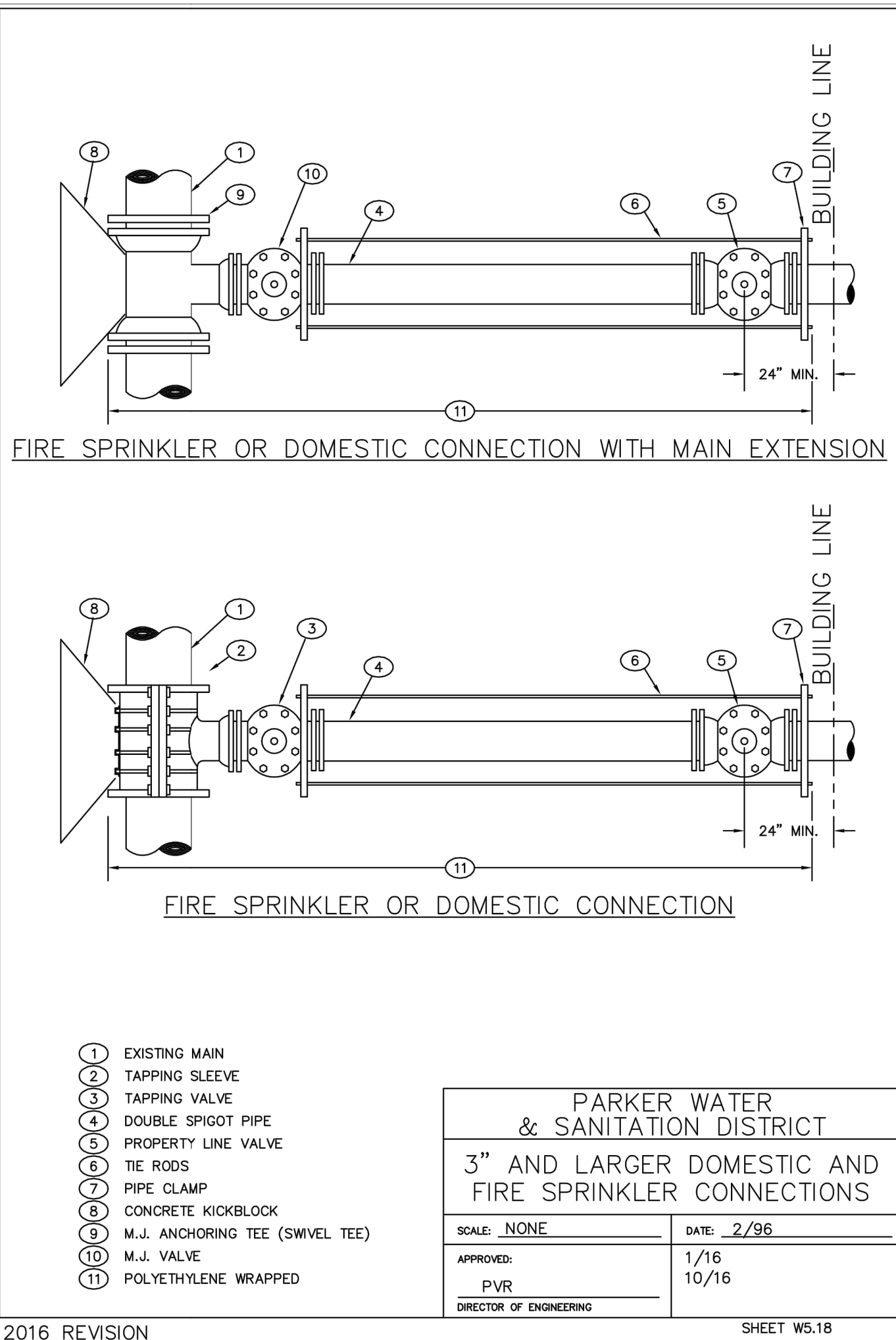
PARKER WATER & SANITATION DISTRICT	
INSIDE SETTING FOR 1 1/2" & 2" METER	
SCALE: NONE	DATE: 2/96
APPROVED: PVR	8/99 01/02 01/16 2/00 06/05 10/16 4/01 07/06
DIRECTOR OF ENGINEERING	

2016 REVISION

2016 REVISION

2016 REVISION

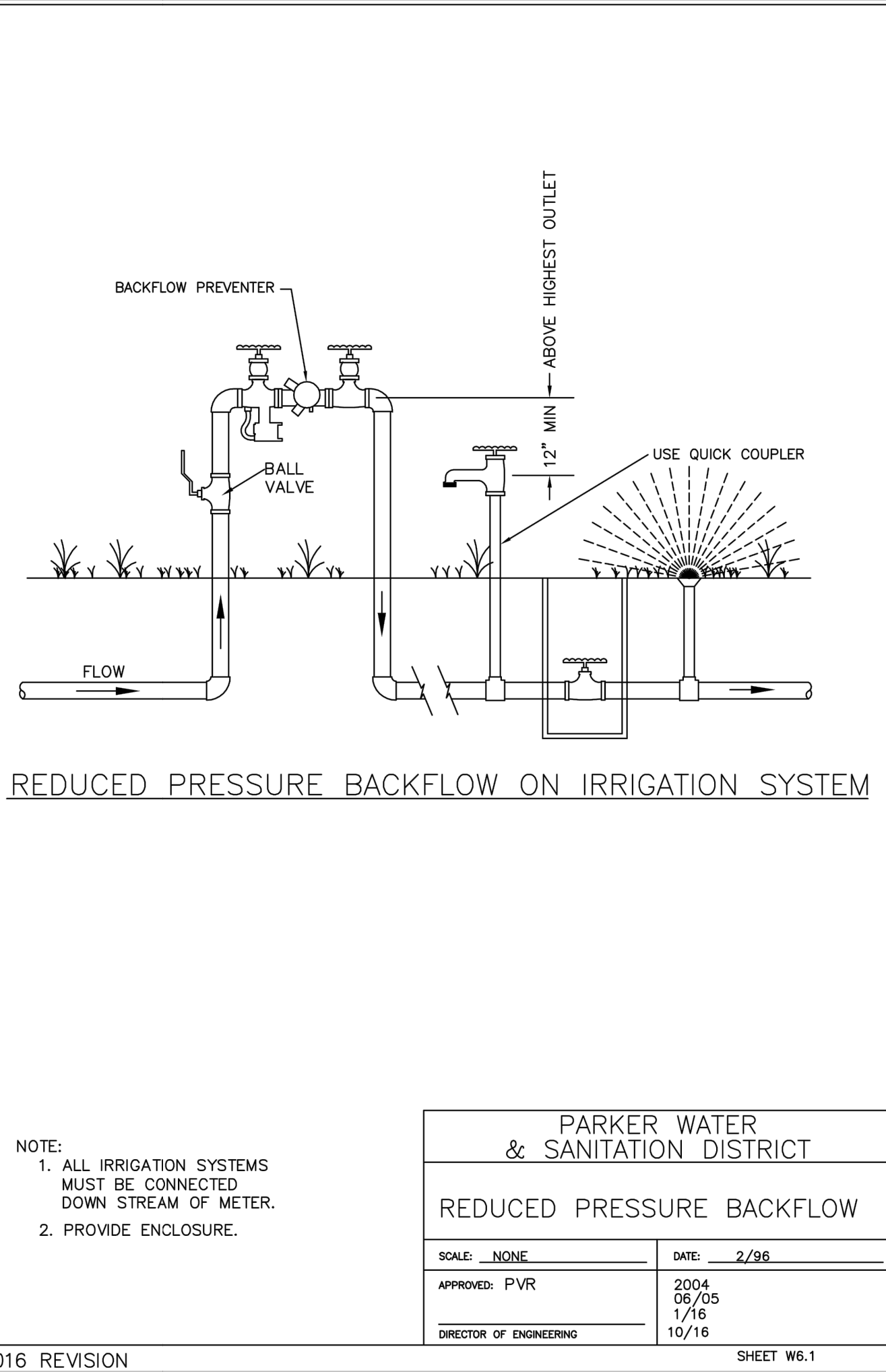
2016 REVISION



PARKER WATER & SANITATION DISTRICT	
3" AND LARGER DOMESTIC AND FIRE SPRINKLER CONNECTIONS	
SCALE: NONE	DATE: 2/96
APPROVED: PVR	1/16 10/16
DIRECTOR OF ENGINEERING	

2016 REVISION

SHEET W5.18



PARKER WATER & SANITATION DISTRICT	
REDUCED PRESSURE BACKFLOW	
SCALE: NONE	DATE: 2/96
APPROVED: PVR	2004 06/05 1/16 10/16
DIRECTOR OF ENGINEERING	

2016 REVISION

SHEET W6.1

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NEW HORIZON ACADEMY - DOUGLAS 234 FILING, NO. 6 PARKER, CO

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SEH Project Checked By Drawn By

Project Status TOWN REVIEW TOWN REVIEW

Revision Issue

WATER DETAILS



U1.7