



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
Landscape Architect: Short Elliott Hendrickson, Inc., 10901 Reed Circle Drive, Suite 300, Minnetonka, MN 55343, 952.912.2600
Civil Engineer: 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

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

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SEH Project: NHOAC 156217
Checked By: DRH
Drawn By: AHP

Project Status: TOWN REVIEW 8/26/2020, TOWN REVIEW 1/22/2021, TOWN REVIEW 3/22/2021, TOWN REVIEW 6/4/2021

Revision Issue: Rev. # 1 Description TOWN COMMENTS Date 1/22/21, Rev. # 2 Description TOWN COMMENTS Date 3/22/21, Rev. # 3 Description TOWN COMMENTS Date 6/4/21

COVER SHEET

U0.0

CONTACT LIST

PARKER PUBLIC WORKS
20120 E MAINSTREET
PARKER, CO 80138
STREETS - MIKE WAUGH
STORM WATER - JACOB JAMES
303-840-9546

TOWN OF PARKER POLICE DEPARTMENT
196000 E PARKER SQUARE DR.
PARKER, CO 80134
303-841-9800

PARKER WATER AND SANITATION DISTRICT
18100 E. WOODMAN DR.
PARKER, CO 80134
303-841-4627

FIRE & LIFE SAFETY
RANDALL CAPRA
20120 E. MAINSTREET
CENTENNIAL, CO 80138
303-205-3169

UTILITY NOTIFICATION COMPANY OF COLORADO
2801 S. YOUNGFIELD ST. SUITE 301
GOLDEN, CO 80401
LOCAL CALLS
800-922-1987 (811)

XCEL ENERGY
MICHELLE ONAN
5909 E. 38TH AVE.
DENVER, CO 80207
303-329-1618

COMCAST
KEVIN YOUNG
6859 S. TUCSON WAY
ENGLEWOOD, CO 80112
720-490-3867

CENTURY LINK
WILLIAM BENSON
9750 E. COSTILLA AVE.
ENGLEWOOD, CO 80220
303-792-6069

COLORADO DEPARTMENT OF HEALTH
4210 E. 11TH AVE.
DENVER, CO
303-320-8333

INTERMOUNTAIN RURAL ELECTRIC ASSOCIATION
JASON JENKS
5496 NORTH US HWY 85
P.O. BOX DRAWER A
SEDALIA, CO 80135
303-688-3100

MILE HIGH FLOOD DISTRICT (MHFD)
MIKE SARMENTO
2480 W 26TH AVE. SUITE 156-B
DENVER, CO 80211
303-455-6277

Add Engineering firm contact information



Know what's below. Call before you dig.

FIRE DEPARTMENT APPROVAL

ALL FIRE HYDRANTS SHALL BE INSTALLED ACCORDING TO WATER UTILITY STANDARDS. THE NUMBER AND LOCATIONS OF THE FIRE HYDRANTS AS SHOWN ON THE OVERALL UTILITY PLAN ARE CORRECT AS SPECIFIED BY TOWN OF PARKER, COMMUNITY DEVELOPMENT DEPARTMENT.

FIRE CODE OFFICIAL OR DESIGNATED REPRESENTATIVE DATE

(NOTE - UNDERGROUND FIRE LINE (UFL) SUBMITTAL DOCUMENTS MUST MEET THE REQUIREMENTS OF NFPA 24 WHEN SUBMITTING FOR REVIEW.)

WATER/SANITARY SEWER APPROVAL

THE DISTRICT INSPECTOR MUST BE NOTIFIED AT LEAST 48 HOURS PRIOR TO START OF CONSTRUCTION. CALL PARKER WATER AND SANITATION DISTRICT AT 303-841-4627. THE DISTRICT WILL PROVIDE PERIODIC INSPECTIONS OF THE WORK. 24 HOUR NOTICE TO THE INSPECTOR IS REQUIRED FOR SCHEDULING INSPECTIONS. ANY WORK ACCOMPLISHED WITHOUT THE APPROVAL OF THE INSPECTOR WILL BE SUBJECT TO REJECTION.

REVIEWED FOR CONFORMANCE TO PARKER WATER AND SANITATION DISTRICT STANDARDS.

BY: (DISTRICT REPRESENTATIVE)

DATE SIGNED

APPROVED FOR CONSTRUCTION: PARKER WATER AND SANITATION DISTRICT

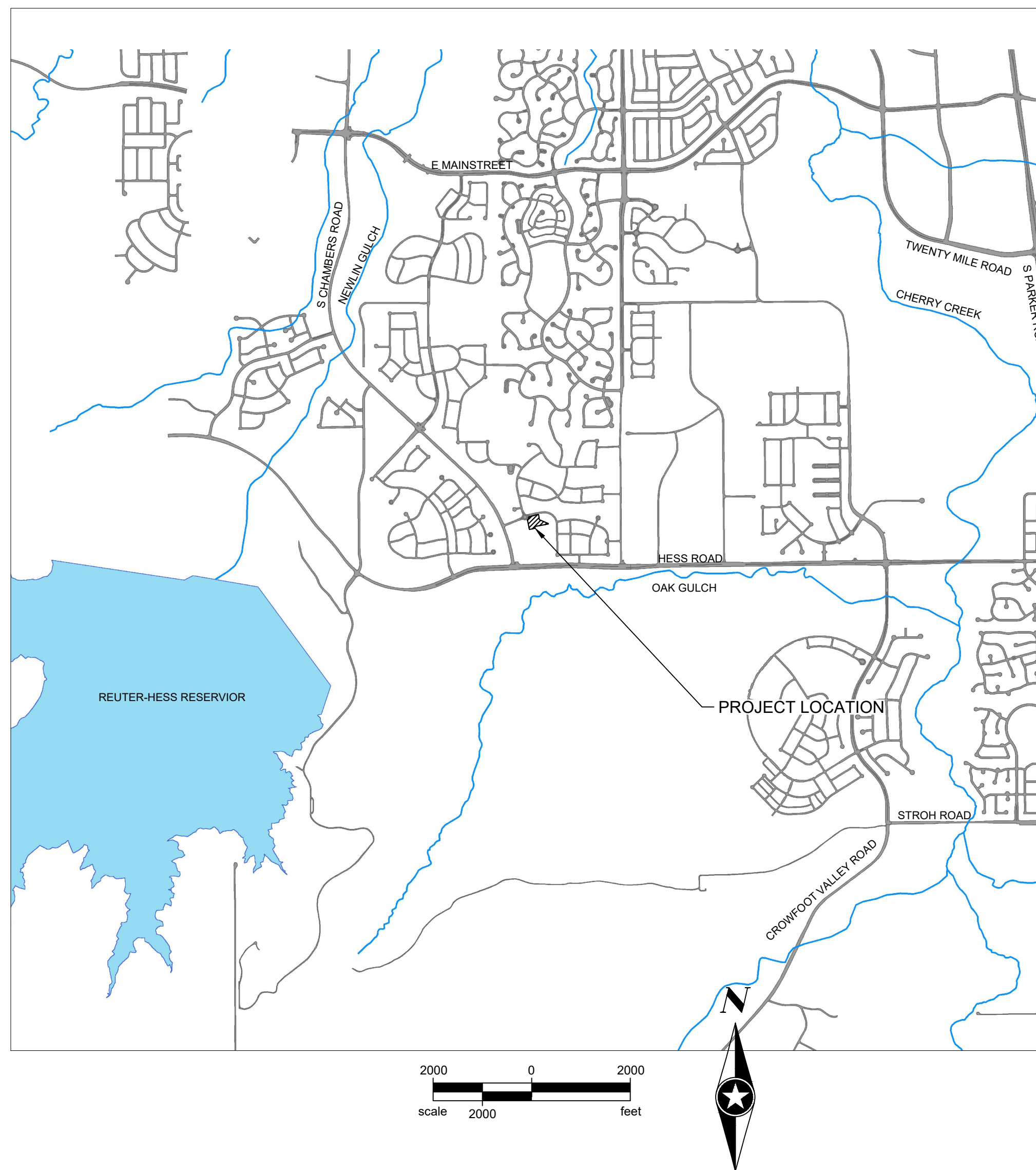
BY: (DISTRICT ENGINEER)

DATE SIGNED

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



- EXISTING: 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: 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.

Table with 4 columns: DESCRIPTION, UNIT, QTY, and MATERIALS LIST. Includes items like 6" SDR 35 SANITARY SEWER SERVICE PIPE, 8" DUCTILE IRON WATER MAIN, 1600 GAL COMMERCIAL GREASE INTERCEPTOR, etc. Some items are crossed out with red lines.

Materials list is incorrect.

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. 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 SIZE 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 THE 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 EXPENSE 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 MUST 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.

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. 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 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. 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.

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. SEWER LINES SHALL BE 10.00 FEET FROM WATER LINES EXCEPT WHEN CROSSING EACH OTHER. 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 FURNISH TO 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 WALK-THROUGH, THE CONTRACTOR SHALL JET CLEAN THE ENTIRE SANITARY SEWER SYSTEM AND PUMP OUT AT THE PLUGGED MANHOLE.



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.
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
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St. Paul, MN 55110
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PARKER, CO

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Checked By: DRH
Drawn By: AMP

Project Status	Issue Date
TOWN REVIEW	8/26/2020
TOWN REVIEW	1/22/2021
TOWN REVIEW	3/22/2021
TOWN REVIEW	6/4/2021

Rev. #	Description	Date
1	TOWN COMMENTS	1/22/21
2	TOWN COMMENTS	3/22/21
3	TOWN COMMENTS	6/4/21

GENERAL NOTES

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
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Landscape Architect
Short Elliott Hendrickson, Inc.
10901 Red Circle Drive
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1 TOWN COMMENTS 1/22/21
2 TOWN COMMENTS 3/22/21
3 TOWN COMMENTS 6/4/21

OVERALL UTILITY PLAN

U1.0

GENERAL UTILITY NOTES

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

Save: 6/4/2021 9:11 PM apopp Plot: 6/5/2021 10:31 AM X:\K\NHOAC156217\5-final-dgn\51-drawings\10-civil\cad\dwg\sheet\Utility Plans\C1_NHOAC156217_Utility Plan.dwg

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.

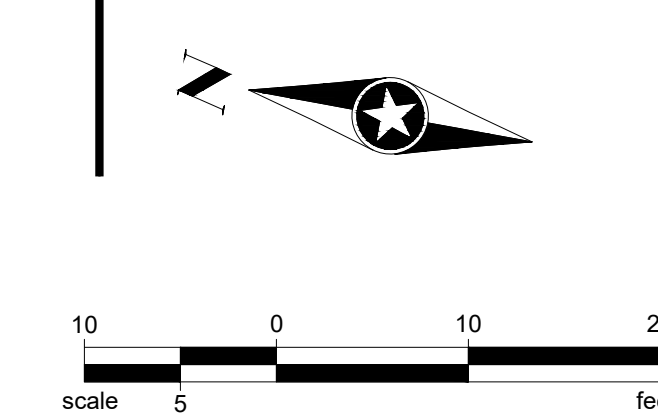
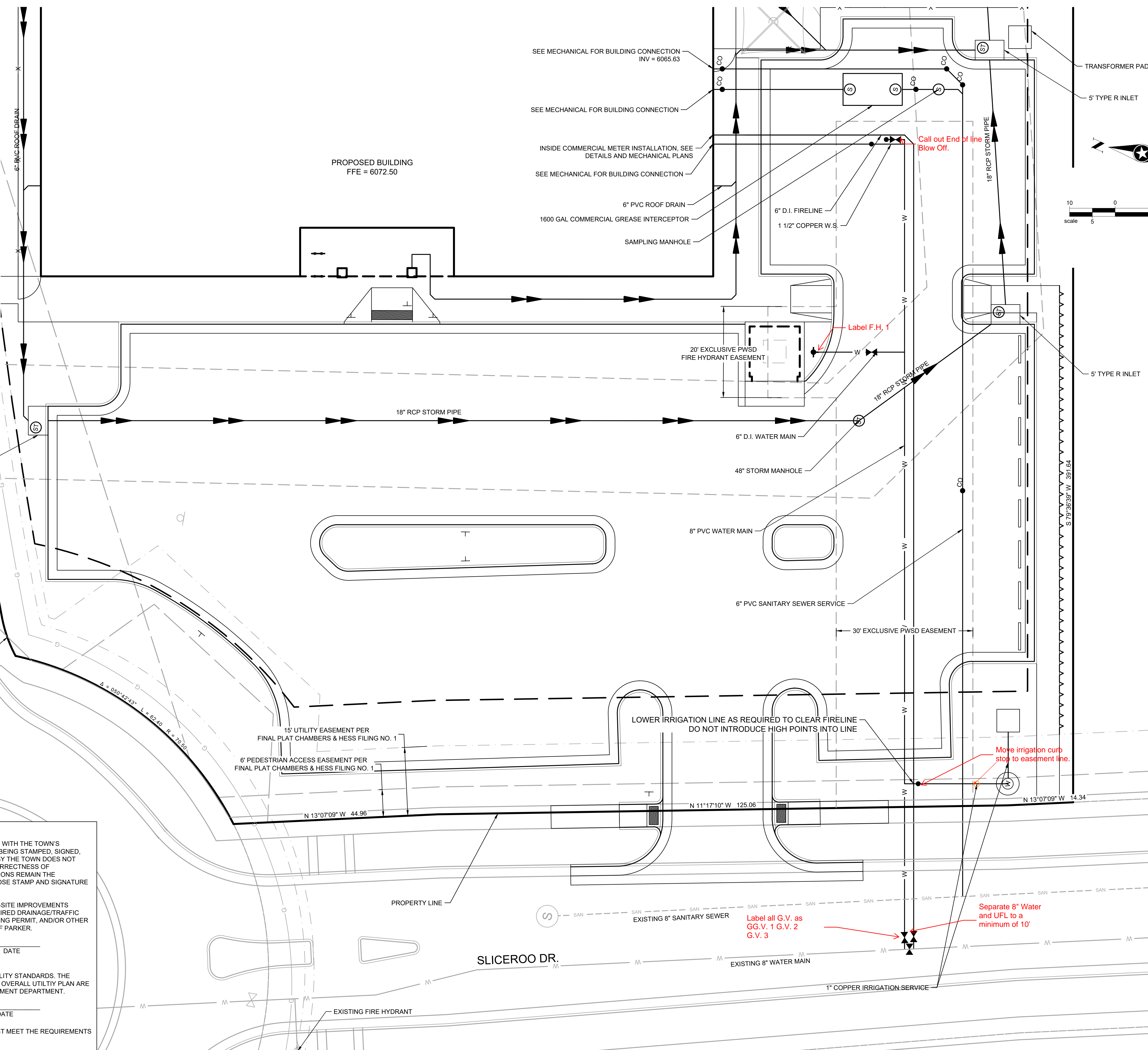
THIS REVIEW DOES NOT CONSTITUTE APPROVAL OF ANY PRIVATE ON-SITE IMPROVEMENTS WHICH MAY BE CONSTRUCTION CANNOT COMMENCE UNTIL ALL REQUIRED DRAINAGE/TRAFFIC REPORT(S), FINAL DEVELOPMENT PLAN(S), SPECIAL REVIEW(S), GRADING PERMIT, AND/OR OTHER PERMITS ARE COMPLETE, APPROVED AND ON FILE WITH THE TOWN OF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

TOWN OF PARKER, DIRECTOR OF ENGINEERING/PUBLIC WORKS DATE

FIRE DEPARTMENT APPROVAL
ALL FIRE HYDRANTS SHALL BE INSTALLED ACCORDING TO WATER UTILITY STANDARDS. THE NUMBER AND LOCATIONS OF THE FIRE HYDRANTS AS SHOWN ON THE OVERALL UTILITY PLAN ARE CORRECT AS SPECIFIED BY TOWN OF PARKER, COMMUNITY DEVELOPMENT DEPARTMENT.

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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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SEH Project NHOAC 156217
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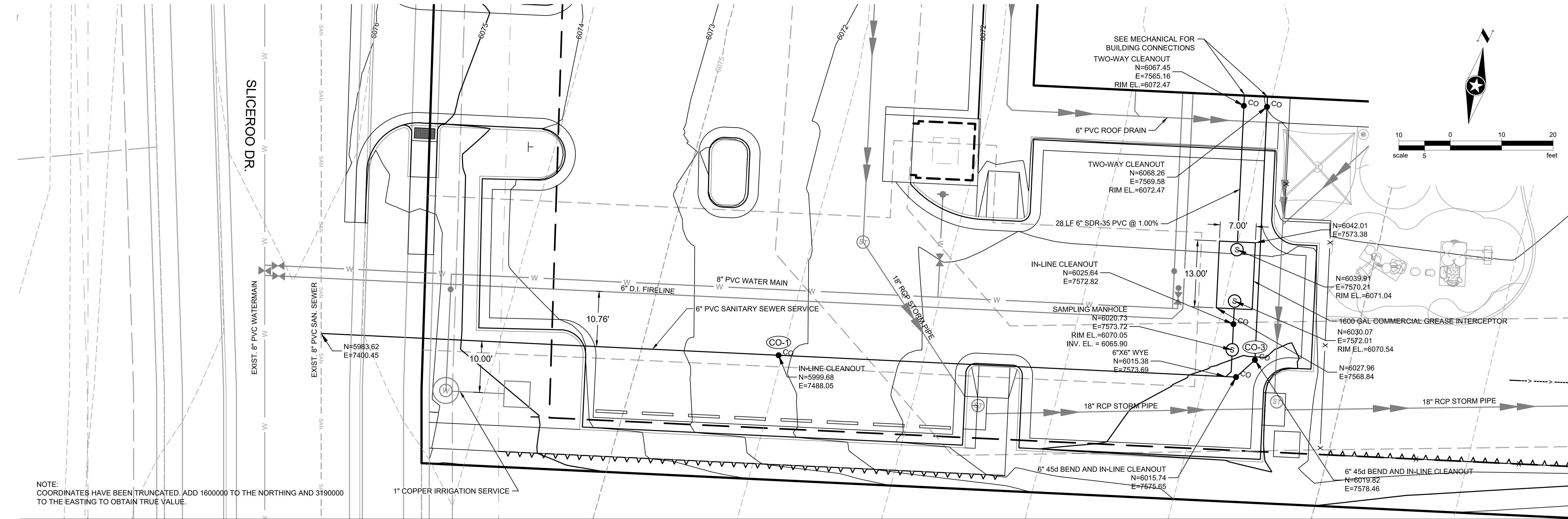
Project Status	Issue Date
TOWN REVIEW	8/26/2020
TOWN REVIEW	1/22/2021
TOWN REVIEW	3/22/2021
TOWN REVIEW	6/4/2021

Rev. #	Description	Date
1	TOWN COMMENTS	1/22/21
2	TOWN COMMENTS	3/22/21
3	TOWN COMMENTS	6/4/21

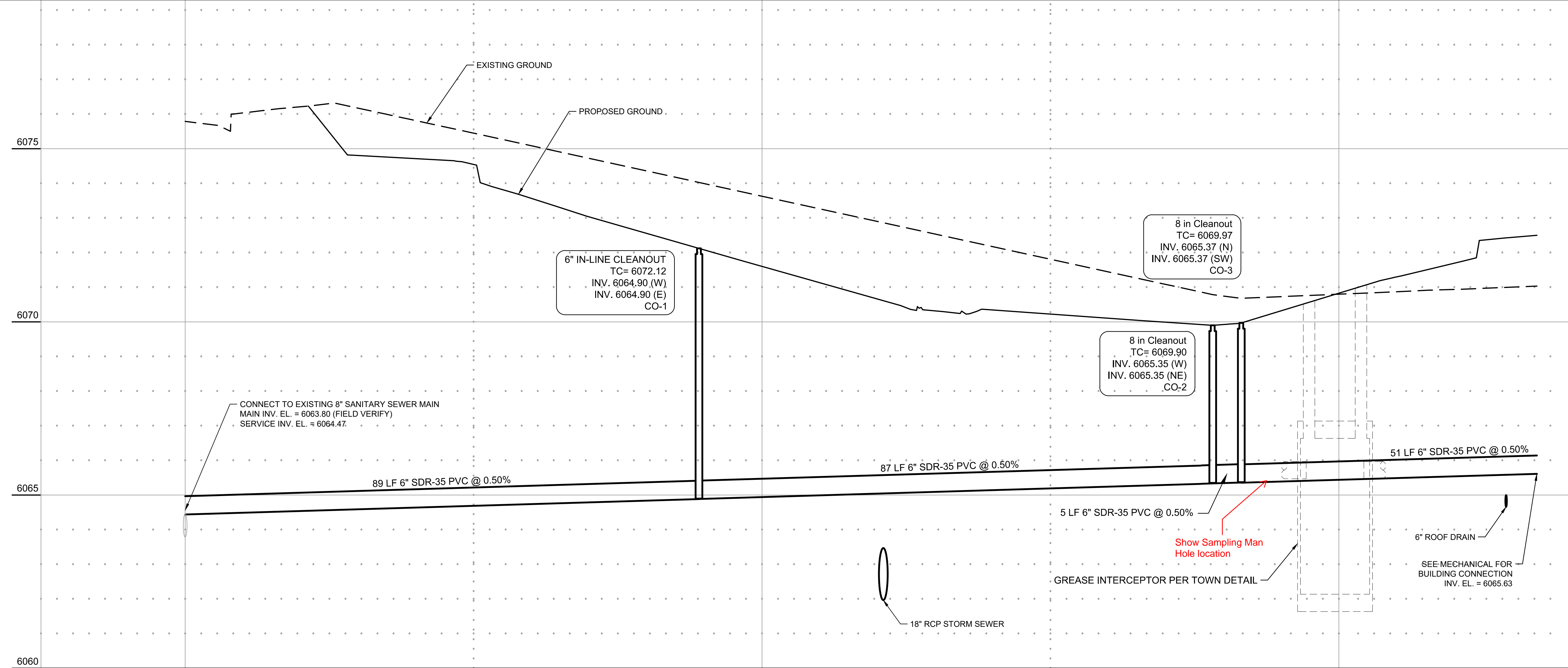
SANITARY SERVICE PLAN & PROFILE

2

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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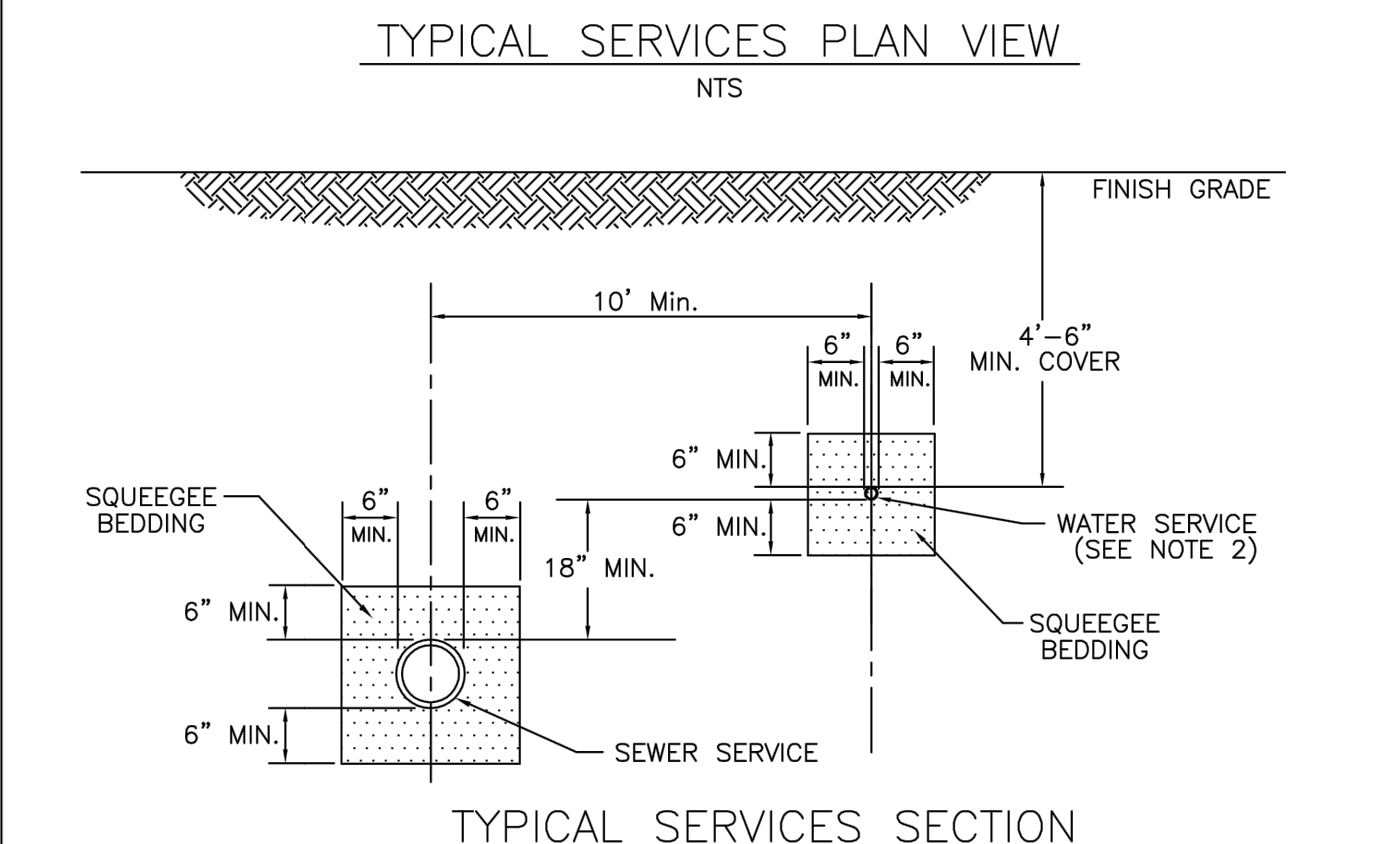
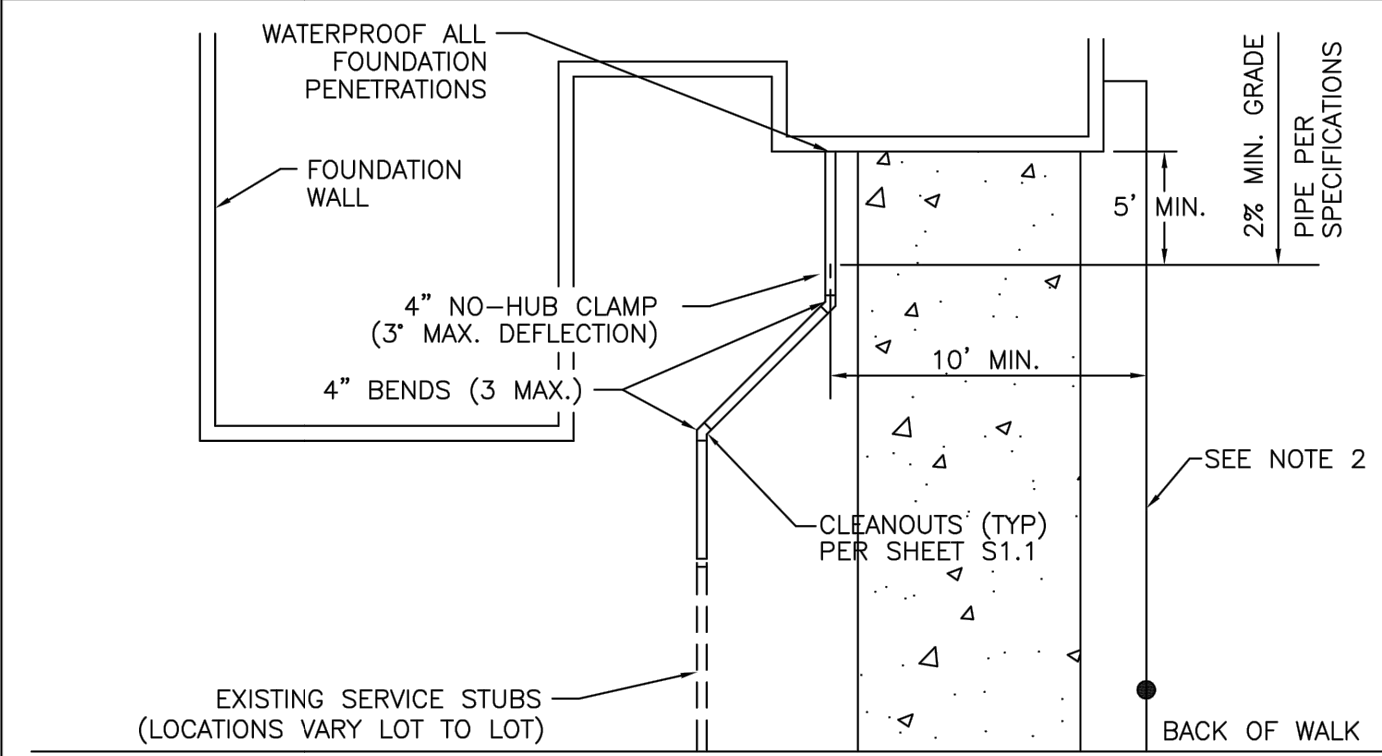
INSPECTION POLICY:

- ALL SERVICE INSPECTIONS MUST BE SCHEDULED WITH THE DISTRICT OFFICE AT LEAST 24 HOURS IN ADVANCE OF THE REQUESTED INSPECTION.
- 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.
- 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 OR LOT AND BLOCK NUMBERS BEFORE DISTRICT INSPECTION OR METER SET WILL FAIL AUTOMATICALLY.
- CONTRACTOR MUST BE PRESENT AT TIME OF INSPECTION UNLESS COORDINATED WITH DISTRICT INSPECTOR.

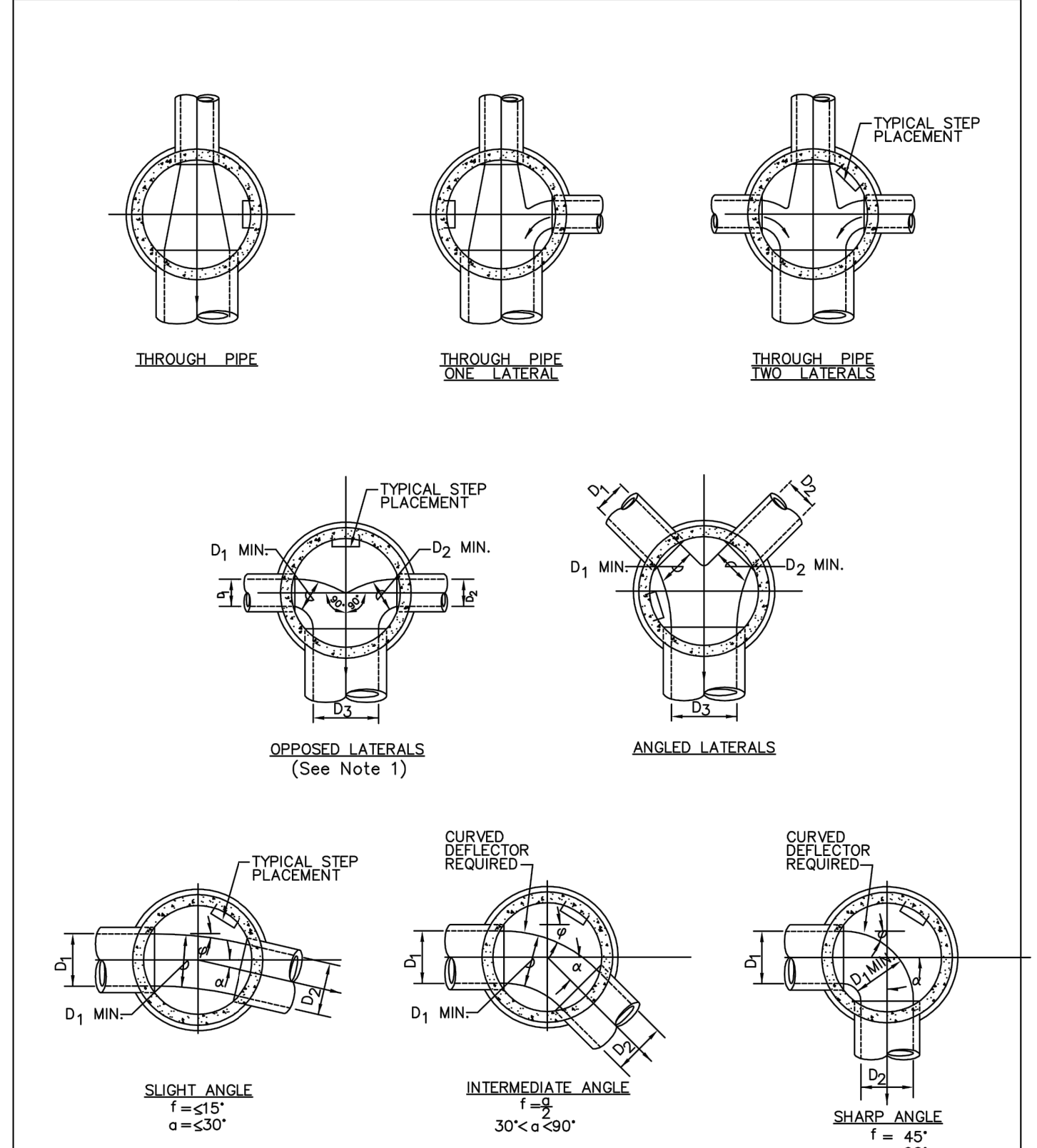
INSTALLATION NOTES:

- SEWER**
- ACCEPTABLE PIPE MATERIALS ARE TO BE SDR 35 PVC PIPE, ABS PIPE AND PVC SCHD 40 PIPE. APPROVED BEDDING IS TO BE SQUEEGEE.
 - NO-HUB CLAMPS SHALL BE USED TO JOIN 2 MALE PIPE ENDS WITH A MAXIMUM DEFLECTION OF 3".
 - MINIMUM GRADE SHALL BE 2%.
 - INSTALLATION SHALL INCLUDE NO MORE THAN 3 BENDS. 90° BENDS ARE NOT ALLOWED. SOLVENT WELDED PIPE WILL NOT BE ALLOWED.
 - 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.
 - STRESSING OF THE PIPE BETWEEN FITTINGS WILL NOT BE ALLOWED.
 - SEWER SERVICE LINE SHALL NOT BE LOCATED UNDER CONCRETE SURFACE.
 - ALL SERVICES WILL BE PERMANENTLY MARKED ON CURB FACE AS FOLLOWS:
"X" FOR SANITARY SEWER SERVICE
"V" FOR WATER SERVICES

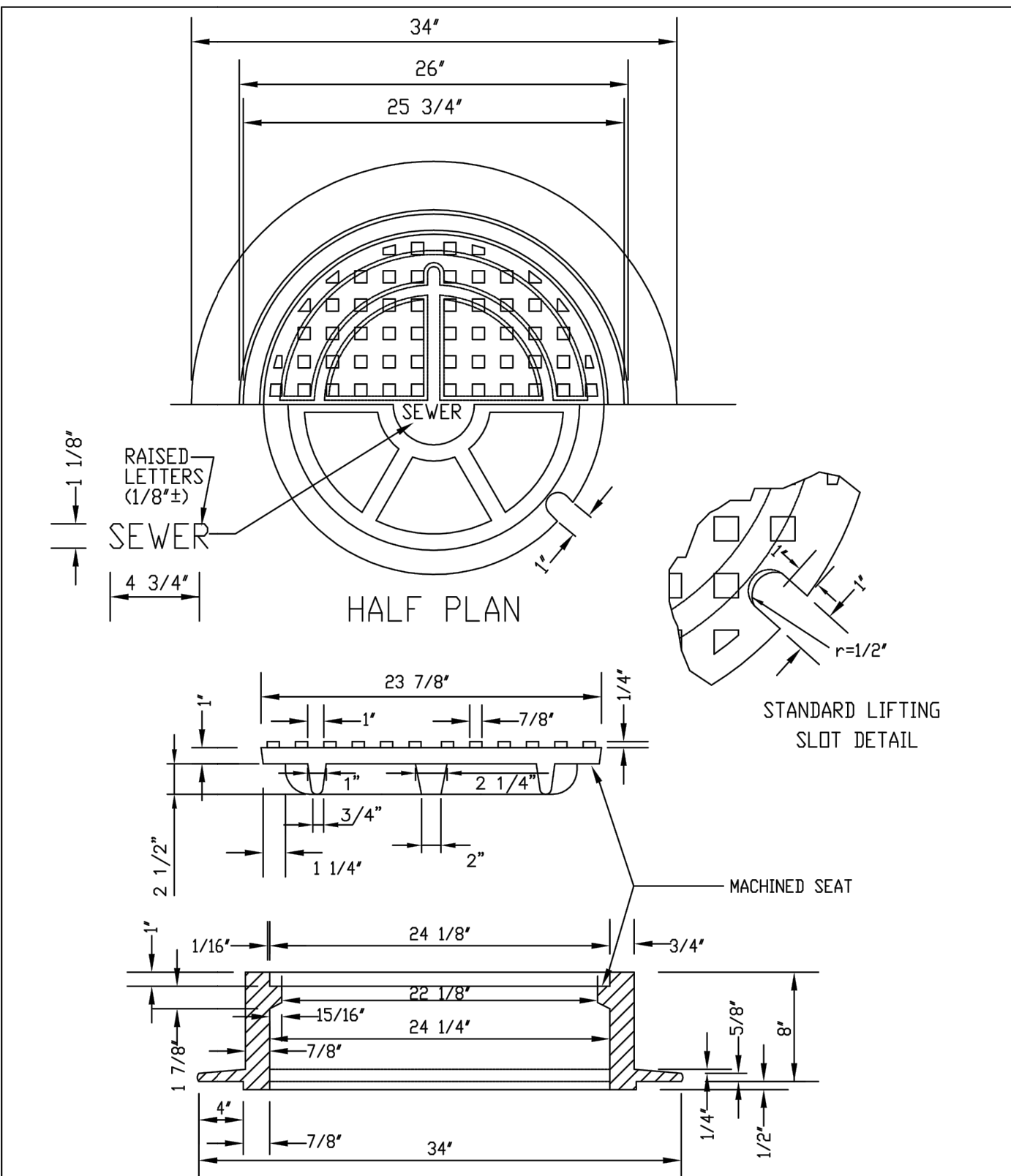
PARKER WATER & SANITATION DISTRICT	
DISTRICT POLICIES & INSTALLATION NOTES FOR SEWER SERVICES	
SCALE: NONE	DATE: 2/96
APPROVED: PVR	01/02 10/16 1/08 1/16
DIRECTOR OF ENGINEERING	



PARKER WATER & SANITATION DISTRICT	
TYPICAL SEWER SERVICES	
SCALE: NONE	DATE: 2/96
APPROVED: PVR	2/00 01/02 01/16 10/16
DIRECTOR OF ENGINEERING	

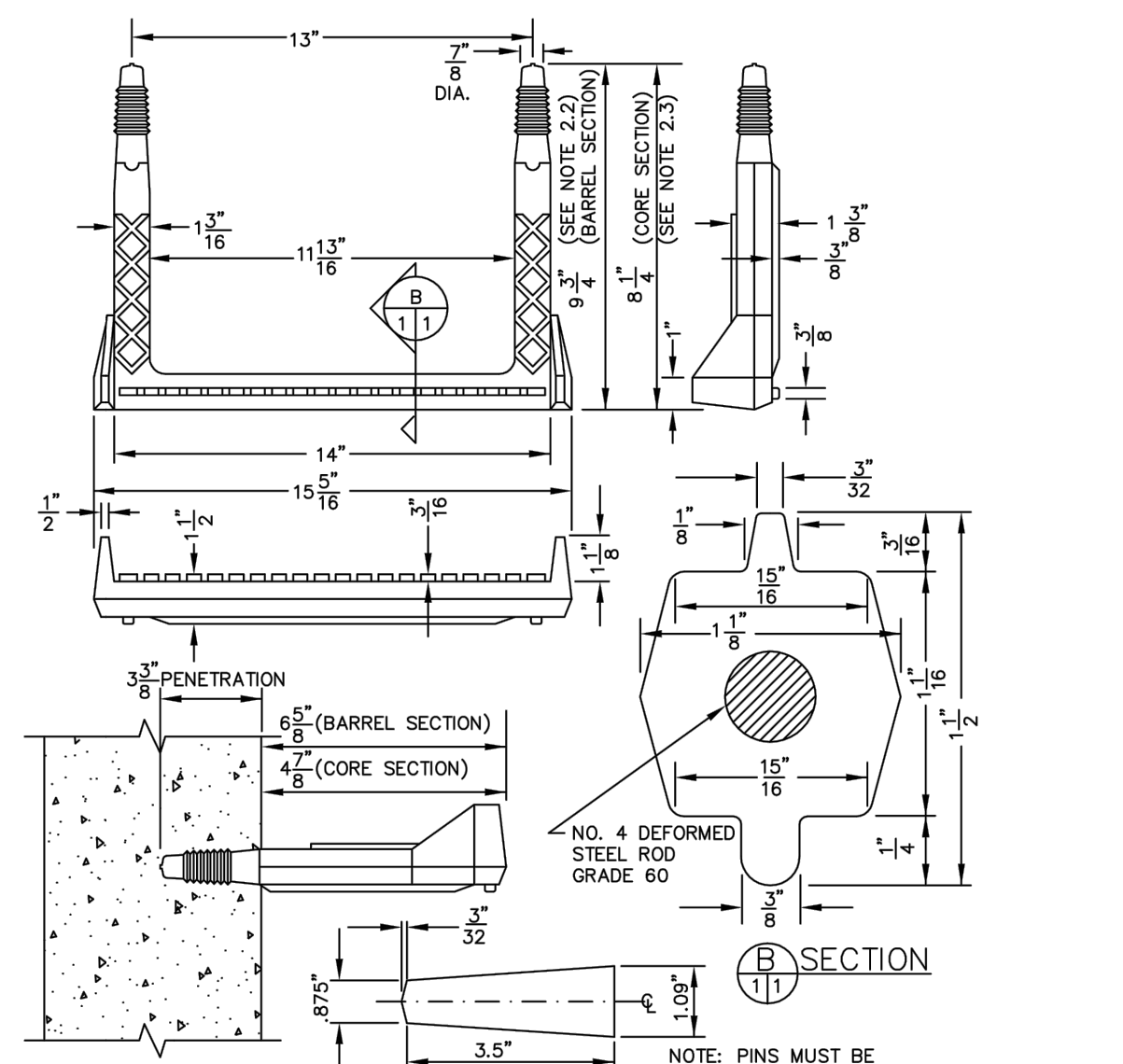


PARKER WATER & SANITATION DISTRICT	
TYPICAL BASE CHANNELIZATION DETAILS	
SCALE: NONE	DATE: 2/96
APPROVED: PVR	01/16 10/16
DIRECTOR OF ENGINEERING	



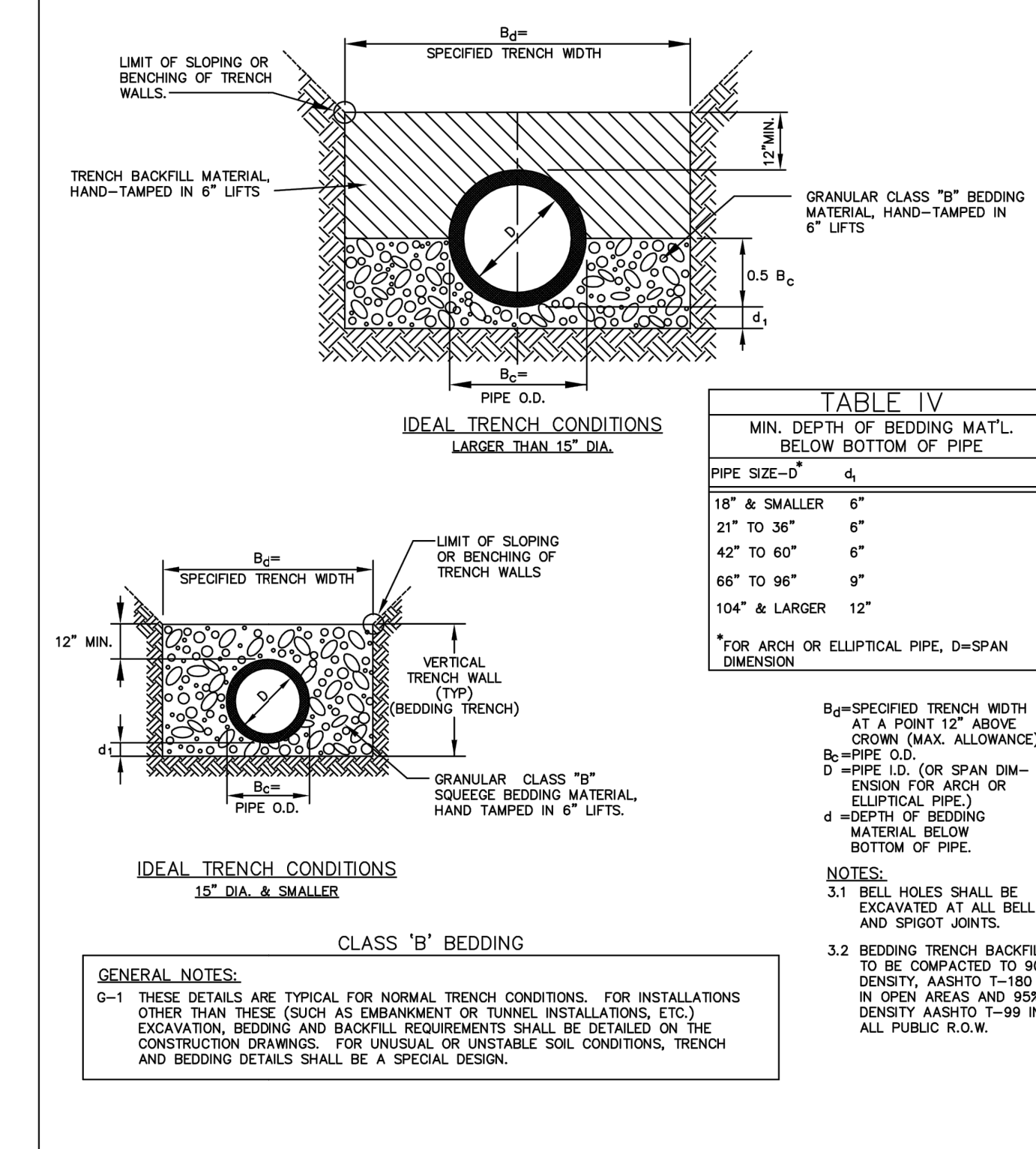
PARKER WATER & SANITATION DISTRICT	
24\"/> 	
SCALE: NONE	DATE: 2/96
APPROVED: PVR	01/16 10/16
DIRECTOR OF ENGINEERING	

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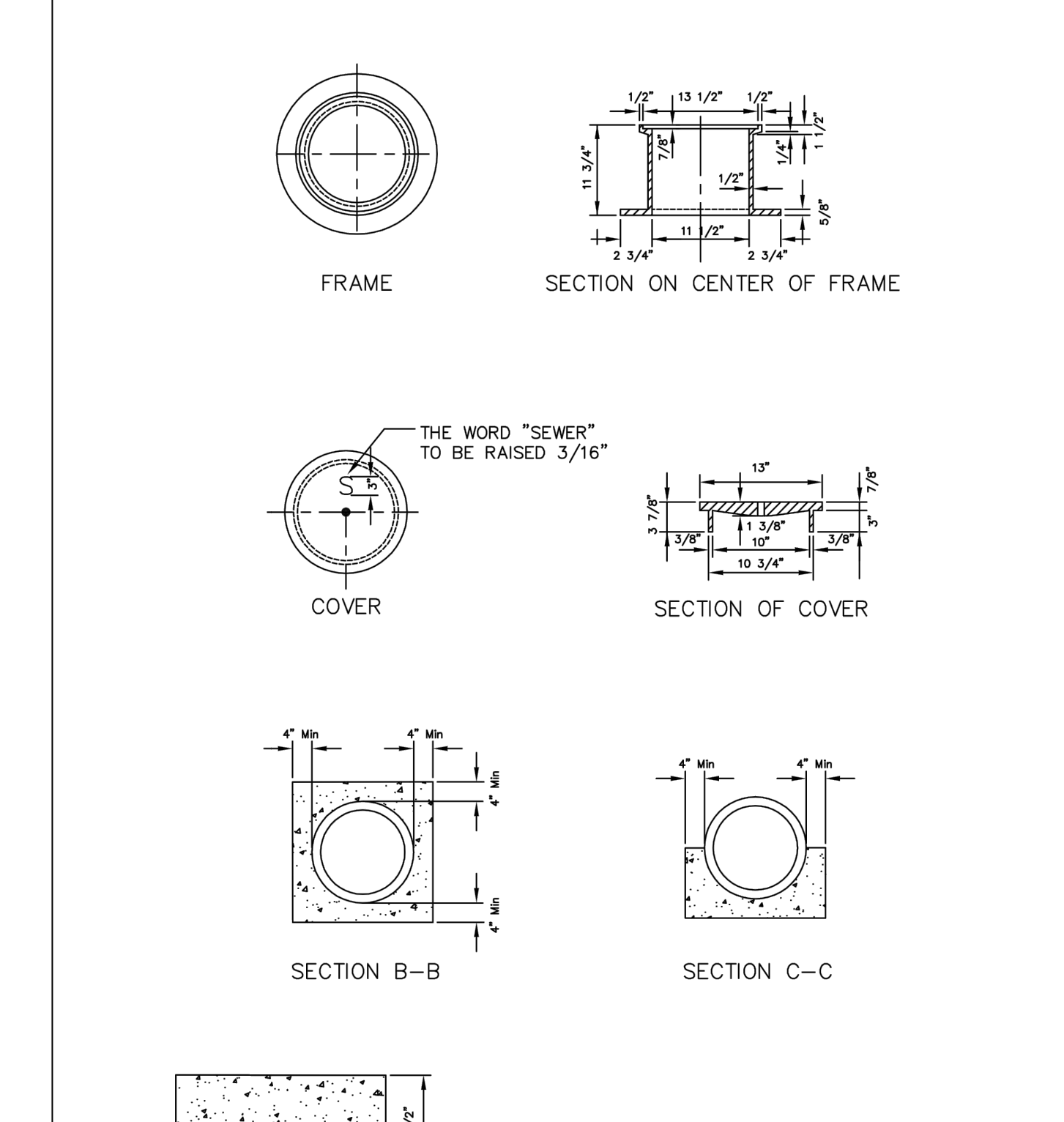


- NOTES:**
- ASTM SPECIFICATIONS:
a) ASTM C-478
b) ASTM A-181 GRADE 60 (STEEL ROD)
c) ASTM 2146-69, TYPE II, GRADE 18906 (POLYPROPYLENE)
 - STEPS INSTALLED IN MANHOLE BARREL SECTIONS OR VERTICAL WALLS OF STRUCTURE SHALL HAVE A 9-3/4 INCH LEG AND SHALL PROJECT FROM THE WALL 6-5/8 INCHES.
 - STEPS INSTALLED IN MANHOLE CONE SECTIONS SHALL HAVE AN 8-1/4 INCH LEG AND SHALL PROJECT FROM THE WALL 4-7/8 INCHES.
 - ALL STEPS SHALL HAVE A PENETRATION DEPTH INTO THE WALL OF 3-3/8 INCHES.
 - STEPS SHALL BE INSTALLED BY THE "PRESS-FIT" METHOD UTILIZING A SPECIALLY TAPERED PIN TO FORM THE INSERT HOLE AS SHOWN.
 - INSTALLED STEPS SHALL BE CAPABLE OF WITHSTANDING A PULL OUT FORCE OF 2500 P.S.I. PER LEG FOR A MINIMUM PERIOD OF TWO MINUTES.
 - STEPS SHALL BE INSTALLED BY THE "PRESS-FIT" METHOD EXCLUSIVELY FOLLOWING MANUFACTURER'S RECOMMENDED PROCEDURE AND SHALL NOT BE GROVED IN PLACE.

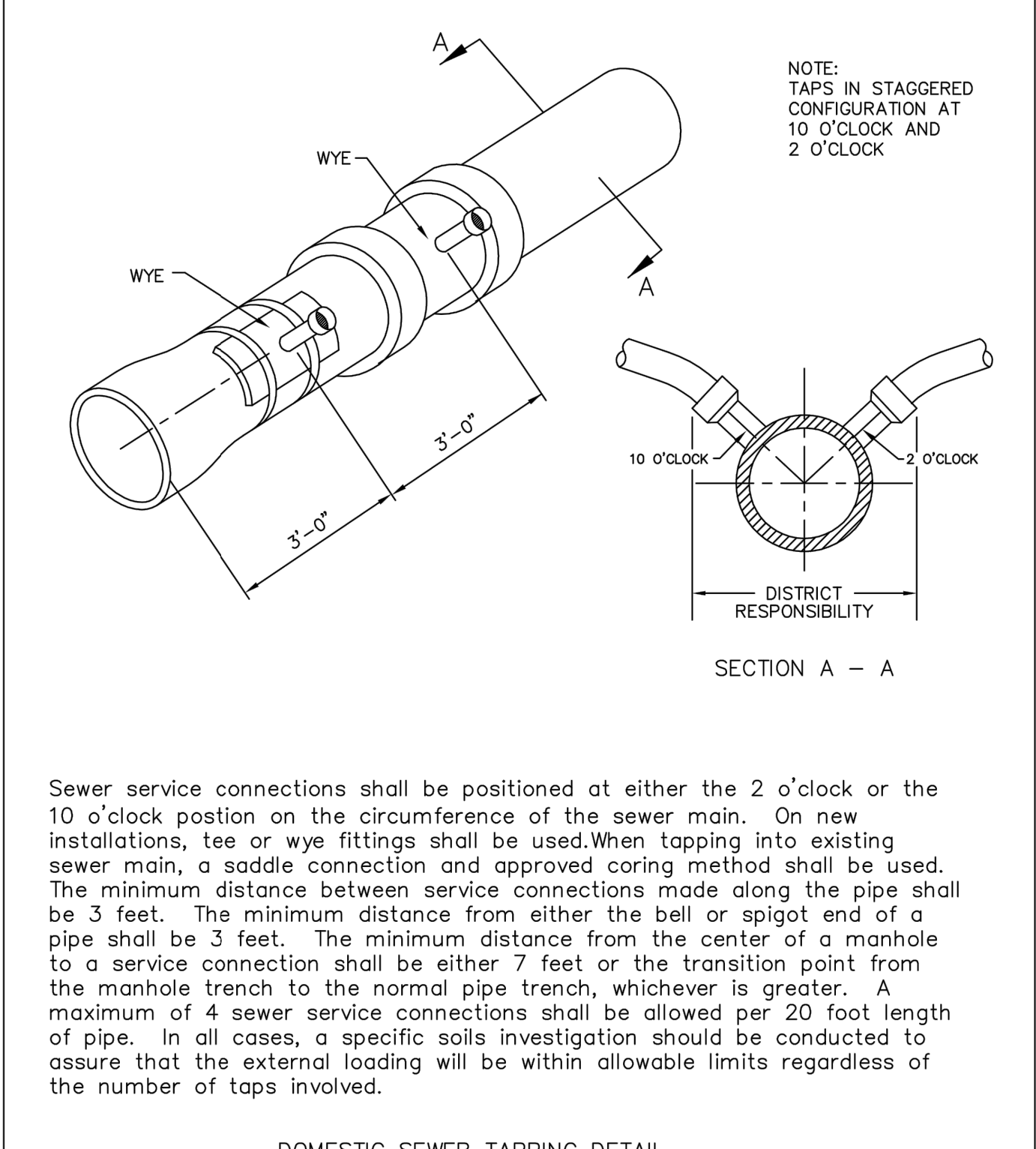
PARKER WATER & SANITATION DISTRICT	
POLYPROPYLENE REINFORCED PLASTIC MANHOLE STEP	
SCALE: NONE	DATE: 2/00
APPROVED: PVR	01/16 10/16
DIRECTOR OF ENGINEERING	



PARKER WATER & SANITATION DISTRICT	
TRENCHING AND BEDDING CLASS \"/> 	
SCALE: NONE	DATE: 2/96
APPROVED: PVR	5/98 2/00 1/16 10/16
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PARKER WATER & SANITATION DISTRICT	
IN-LINE CLEANOUT SECTIONS	
SCALE: NONE	DATE: 2/96
APPROVED: PVR	2/00 1/08 1/16 10/16
DIRECTOR OF ENGINEERING	



PARKER WATER & SANITATION DISTRICT	
DOMESTIC SEWER TAPPING DETAIL	
SCALE: NONE	DATE: 2/96
APPROVED: PVR	4/01 1/08 1/16 10/16
DIRECTOR OF ENGINEERING	

Rev. #	Description	Date
1	TOWN COMMENTS	1/22/21
2	TOWN COMMENTS	3/22/21
3	TOWN COMMENTS	6/4/21

**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.
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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SADDLE CONNECTION

SIDE VIEW

SECTION QUADRANT 1 SHOWN

PIPE JOINT (W/ ELASTOMERIC SEAL)

STRAP GUIDES

RUBBER GASKET

PIPE WALL

STAINLESS STEEL STRAP TO BE PLACED AT RIGHT ANGLES TO PIPE SURFACE (5 FT.-LBS TORQUE)

BEVEL THIS SIDE OF HOLE IN PIPE AT A 45° ANGLE SO THAT SADDLE STEM WILL FIT PROPERLY

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 10/16

DIRECTOR OF ENGINEERING

2016 REVISION SHEET S4.14

PARKER WATER & SANITATION DISTRICT

COMMERCIAL GREASE INTERCEPTOR

SHEET 1 OF 2

SCALE: NONE DATE: 2/98

APPROVED: PVR 2/00 01/02 01/16 10/16

DIRECTOR OF ENGINEERING

2016 REVISION SHEET S5.1

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

1. SAMPLE MANHOLE SHALL BE LESS THAN 20 FEET FROM CLEANOUT.

PARKER WATER & SANITATION DISTRICT

COMMERCIAL GREASE INTERCEPTOR

SHEET 2 OF 2

SCALE: NONE DATE: 2/98

APPROVED: PVR 01/02 01/16 10/16

DIRECTOR OF ENGINEERING

2016 REVISION SHEET S5.2

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

1. SAMPLE MANHOLE SHALL BE LESS THAN 20 FEET FROM CLEANOUT.

PARKER WATER & SANITATION DISTRICT

SAMPLING MANHOLE

SCALE: NONE DATE: 2/99

APPROVED: PVR 2/00 01/16 4/01 1/08 1/16

DIRECTOR OF ENGINEERING

2016 REVISION SHEET S5.3

NOTES:

- RING/COVER AND CHIMNEY SHALL BE FULLY CENTERED ON CONCRETE RINGS W/RAMNECK.
- FLAT TOP SECTIONS MAY BE USED IN LIEU OF ECCENTRIC MANHOLES WHEN SPECIALLY APPROVED BY DISTRICT ENGINEER.
- FOR MANHOLE DEPTHS LESS THAN 4' FROM RIM TO TOP OF BENCH, VERTICAL MANHOLE BARRELS WITH PRECAST FLAT TOP SECTIONS ARE REQUIRED.
- ALL PRECAST MANHOLE SECTIONS, FLAT TOPS, BARRELS, REDUCERS, ETC. SHALL CONFORM TO ASTM C-478, STANDARD SPECIFICATIONS FOR PRECAST REINFORCED CONCRETE SECTIONS.
- FLAT TOPS SHALL BE CAPABLE OF WITHSTANDING H-20 LIVE LOADS.
- ALL INTERIOR SEAMS AND PIN HOLES SHALL BE GROUDED WITH TYPE II CEMENT MIX.
- SHAPING FOR SMOOTH MANHOLE INVERTS MUST BE DONE BY FORMING OR SHAPING CONCRETE BASE.
- MANHOLE STEPS SHALL NOT BE INSTALLED OVER THE FLOW CHANNEL. THEY SHALL BE PLACED 12" MINIMUM OR 16" MAXIMUM IN STRAIGHT VERTICAL ALIGNMENT WITH THE BOTTOM STEP 8" ABOVE THE BENCH MINIMUM.
- FLEXIBLE ASPHALTIC SEALANT (RAMNECK ETC.) IS REQUIRED IN SHRAPLAP JOINTS AND IN JOINTS BETWEEN BASE, BARREL SECTIONS, CONE SECTIONS, FLAT TOPS, ETC.
- DESIGN ENGINEER OR DISTRICT ENGINEER MAY INCREASE MANHOLE SIZE FOR SPECIAL DESIGN CONSIDERATIONS.
- SLIP-RING FRAME RISERS MAY NOT BE USED.
- STEPS TO DESCEND TO BENCH NOT CHANNEL.

24" C.I. MH RING & COVER LID MAY HAVE NO PROTRUSIONS ABOVE MH RIM LEVEL

CONCRETE COLLAR (WHEN NOT IN PAVEMENT)

CHIMNEY 20" MAX.

REINFORCEMENT ASTM C-475

SHRAPLAP JOINT W/ ASPHALTIC SEALANT (TYP)

12" MIN. 18" MAX O.C. NO STAGGER

PRECAST RINGS

5"

2.0%

POURED IN PLACE BASE

MANHOLE I.D. + 16"

#4 @ 12" OR 6" X 6" - 0/0 W.W.F.

FROM SAND, OIL, GREASE & SANITARY WASTE INTERCEPTORS

NEW HORIZON ACADEMY - DOUGLAS 234 FILING, NO. 6

PARKER, CO

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SEH Project NHOAC 156217

Checked By DRH

Drawn By AMP

Project Status Issue Date

TOWN REVIEW 8/26/2020

TOWN REVIEW 1/22/2021

TOWN REVIEW 3/22/2021

TOWN REVIEW 6/4/2021

Revision Issue

Rev. # Description Date

1 TOWN COMMENTS 1/22/21

2 TOWN COMMENTS 3/22/21

3 TOWN COMMENTS 6/4/21

SANITARY DETAILS

U1.3



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

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

Civil Engineer
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.
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651.490.2000

Electrical Engineer
Short Elliott Hendrickson, Inc.
3535 Vadnais Center Drive
St. Paul, MN 55110
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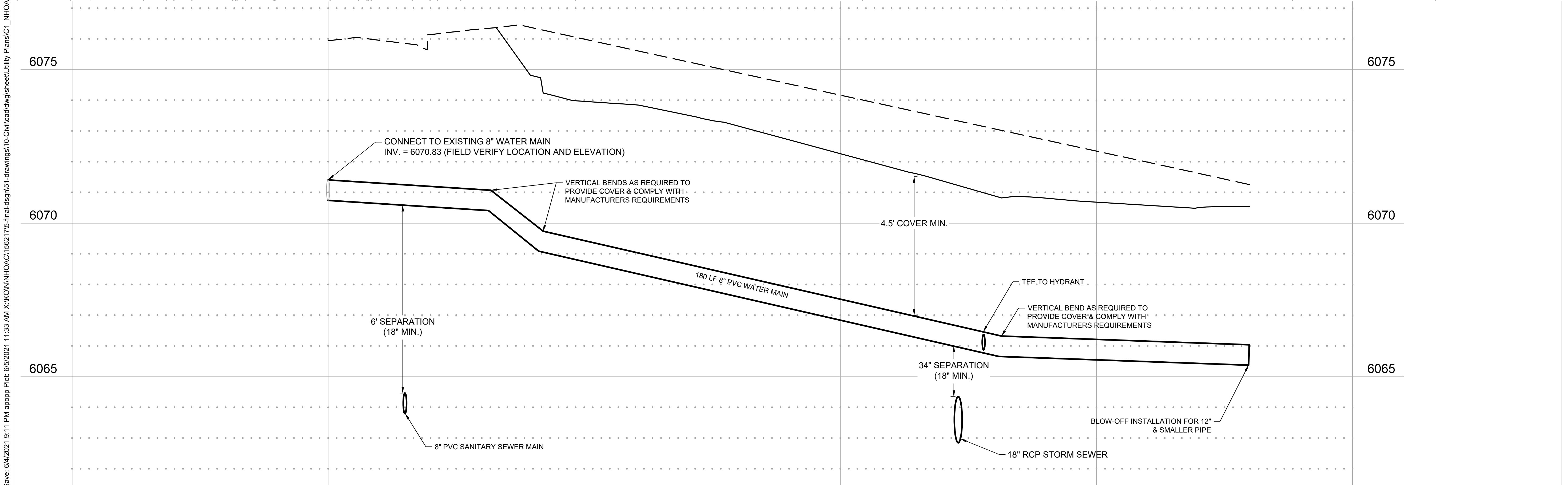
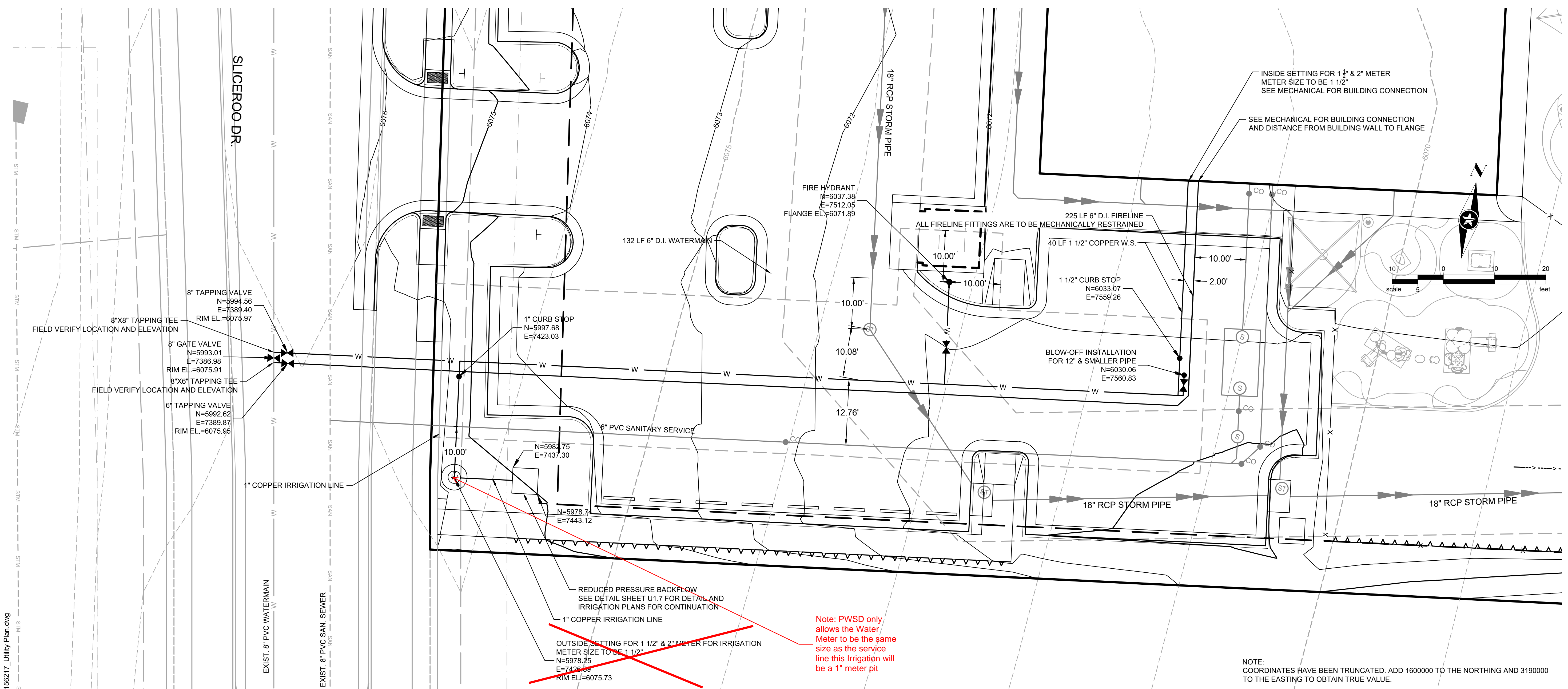
SEH Project: NHOC156217
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TOWN REVIEW	3/22/2021
TOWN REVIEW	6/4/2021

Rev. #	Description	Date
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3	TOWN COMMENTS	6/4/21

WATER SERVICE PLAN & PROFILE

U1.4



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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

Landscaping Architect
Short Elliott Hendrickson, Inc.
10901 Reg Circle Drive
Suite 300
Minnetonka, MN 55343
952.912.2800

Civil Engineer
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
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Short Elliott Hendrickson, Inc.
3535 Vadnais Center Drive
St. Paul, MN 55110
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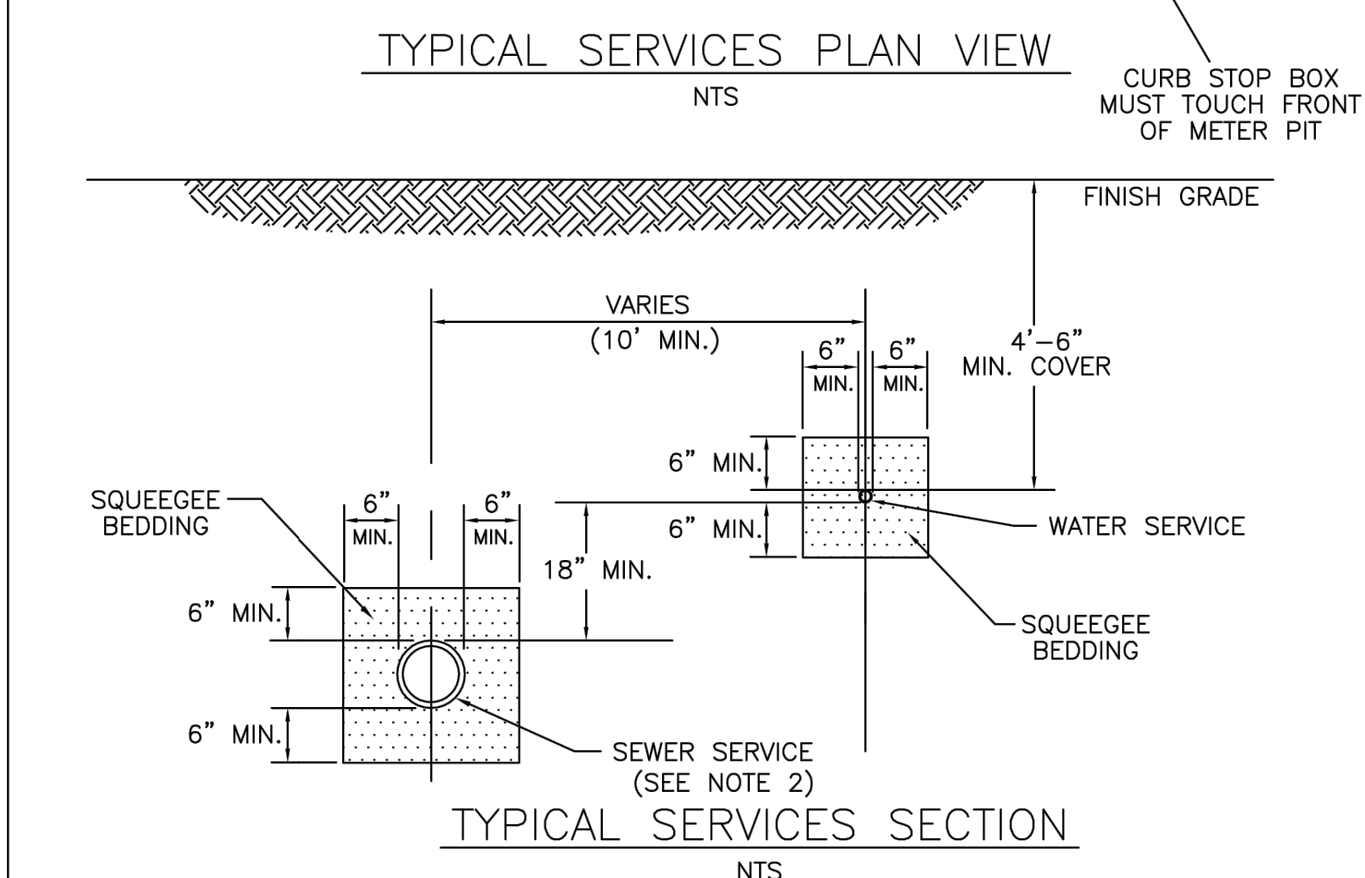
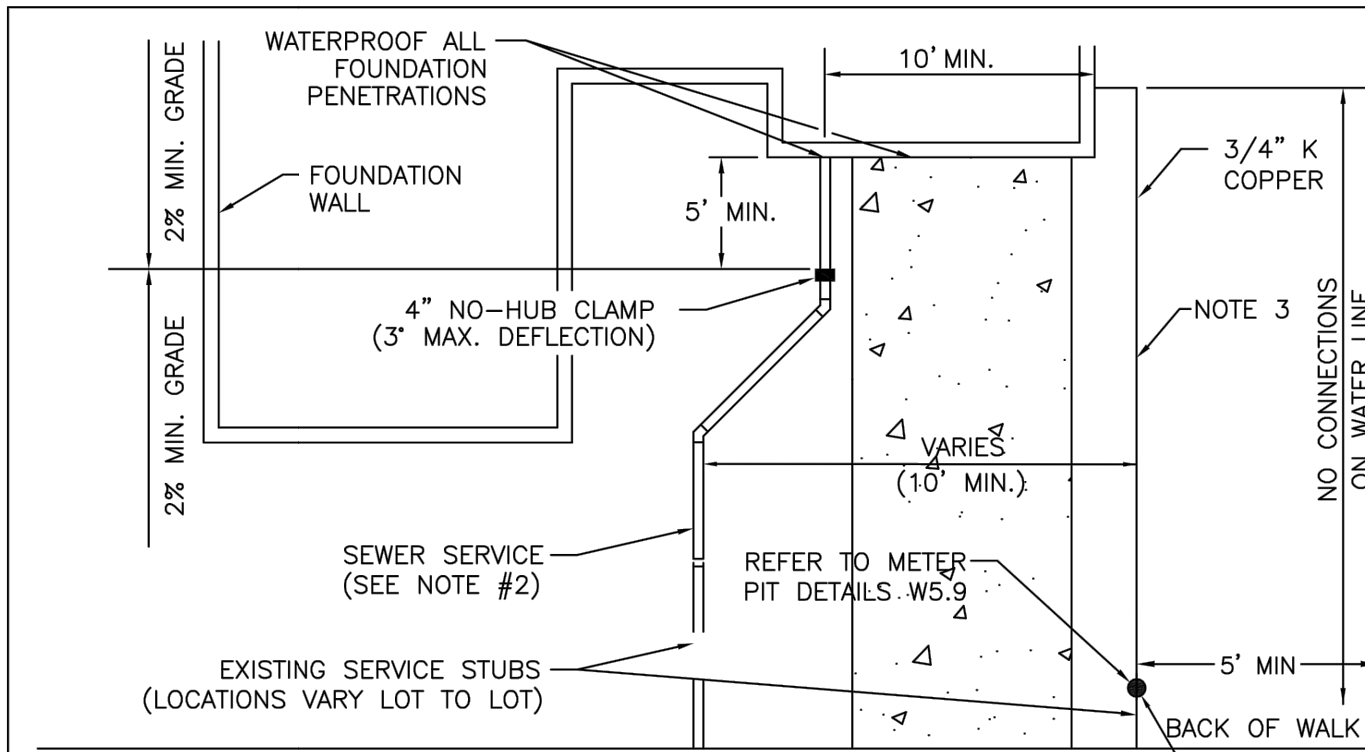
- INSPECTION POLICY:**
- ALL SERVICE INSPECTIONS MUST BE SCHEDULED AT LEAST 24 HOURS IN ADVANCE OF THE REQUESTED INSPECTION.
 - SERVICE INSPECTIONS WILL OCCUR BETWEEN 1:00 P.M. AND 3:00 P.M. SPECIFIC INSPECTION TIMES ARE NOT AVAILABLE.
 - IF THE CONTRACTOR IS NOT READY FOR INSPECTION WHEN THE INSPECTOR 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 PWS BEFORE 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 PWS BEFORE 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 PWS BEFORE BURIAL. FLARED COUPLINGS WILL BE ALLOWED ON ALL SERVICES 3/4" AND SMALLER.

PARKER WATER & SANITATION DISTRICT

DISTRICT POLICIES & INSTALLATION NOTES FOR WATER SERVICES

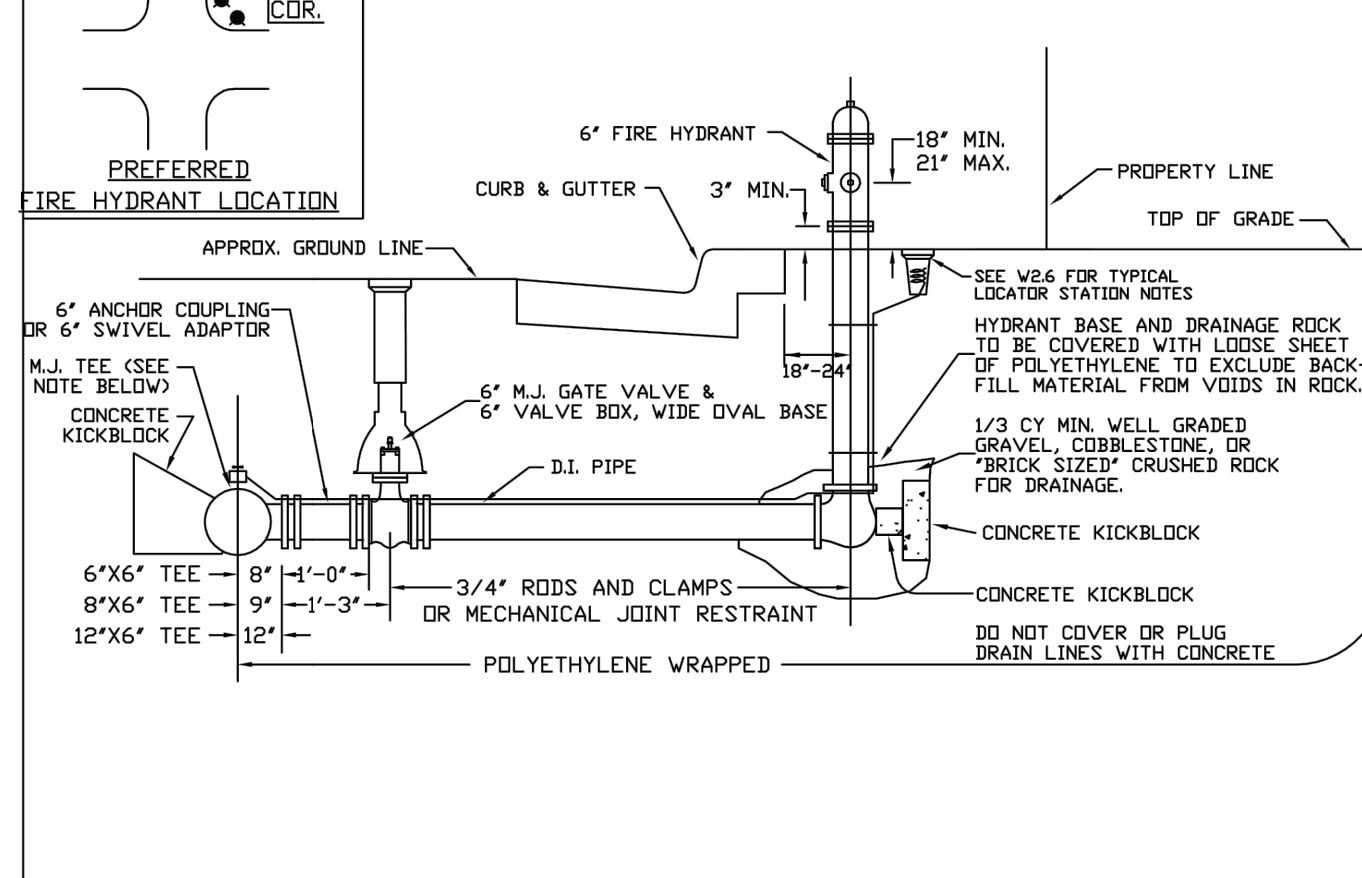
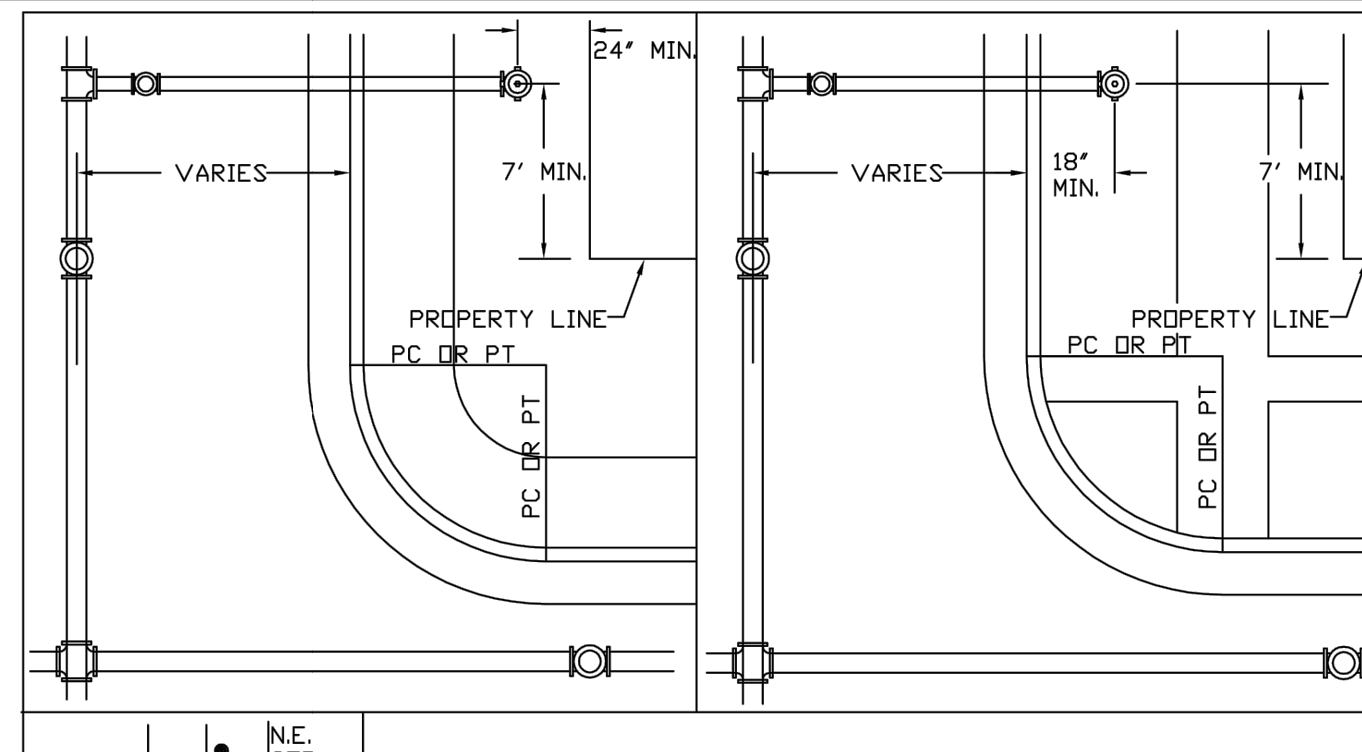
SCALE: NONE	DATE: 2/96
APPROVED:	1/04
PVR	1/16
DIRECTOR OF ENGINEERING	10/16



PARKER WATER & SANITATION DISTRICT

TYPICAL WATER SERVICES

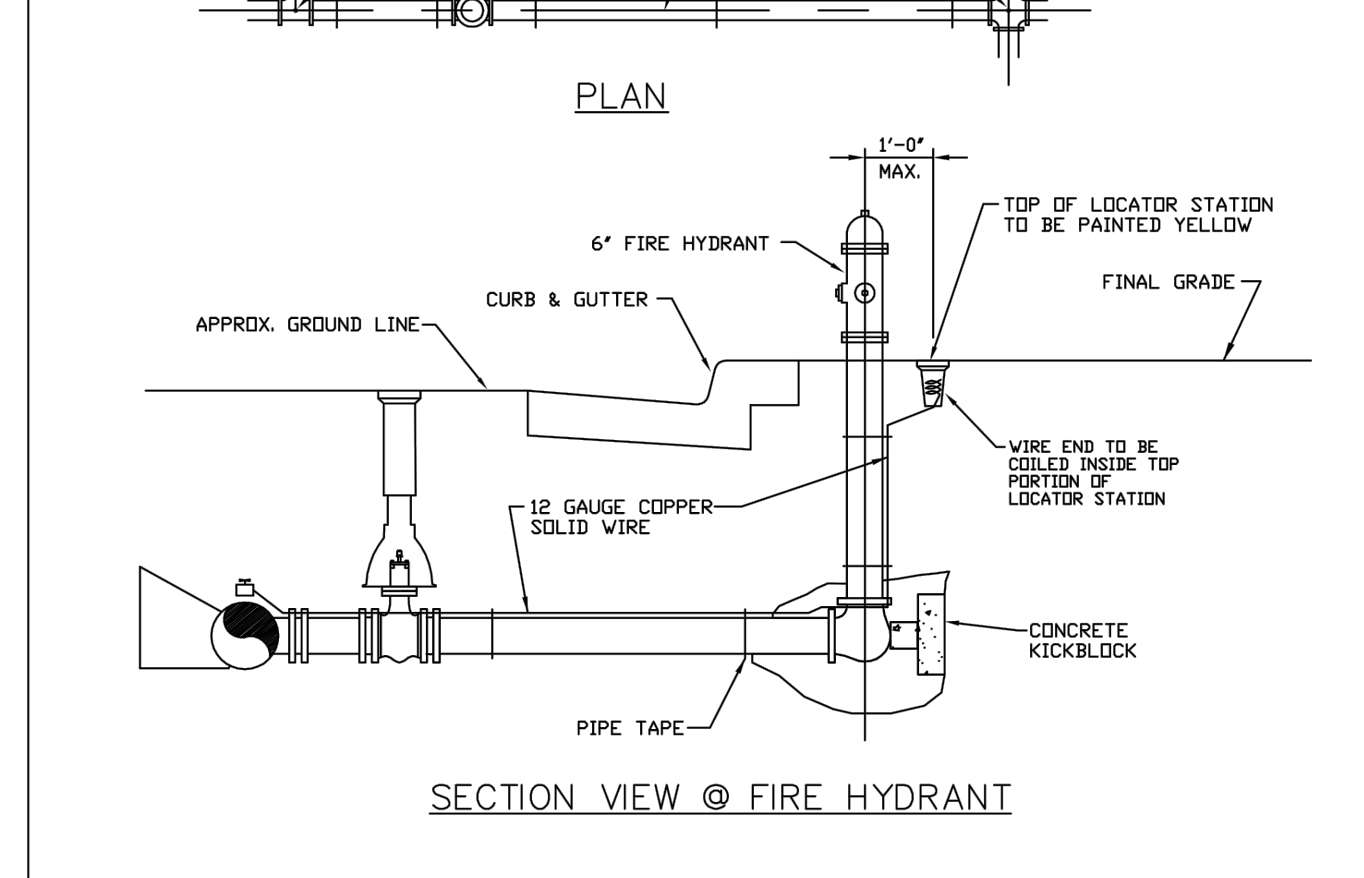
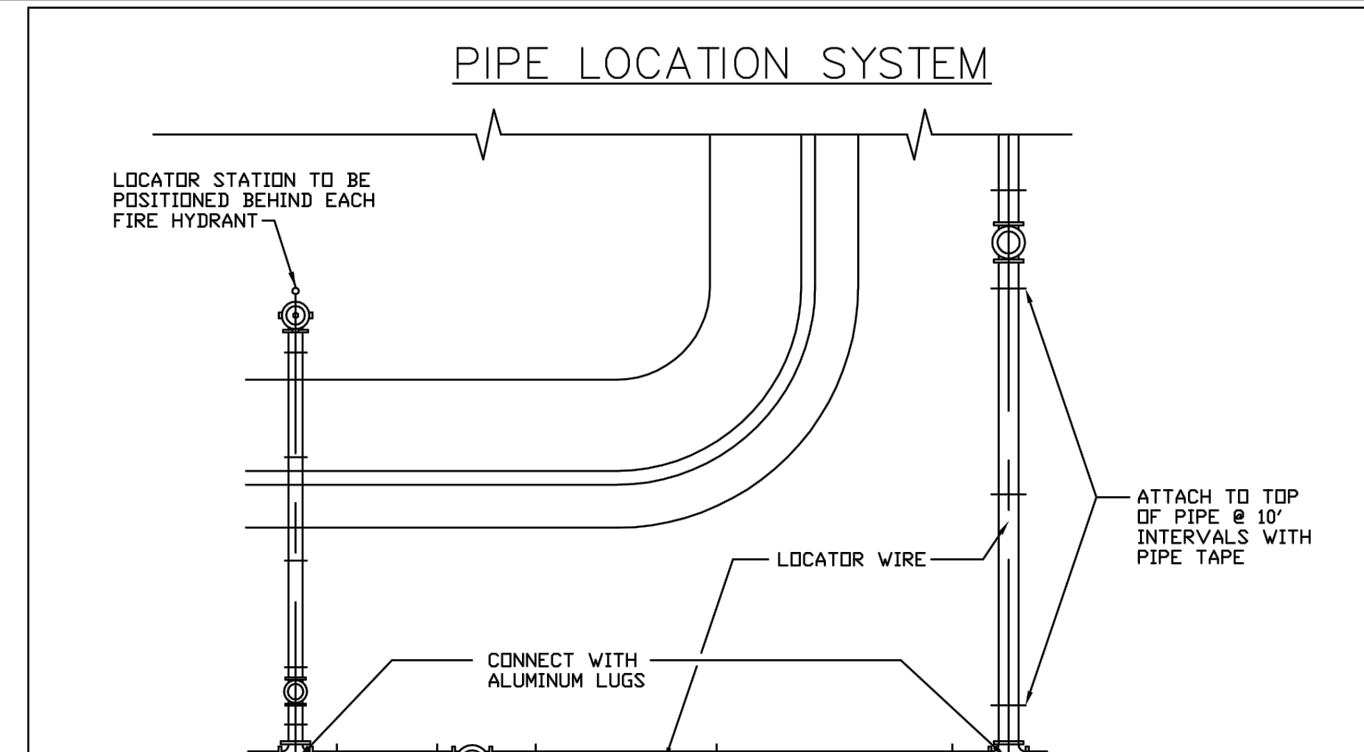
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APPROVED:	1/04 10/16
PVR	06/05
DIRECTOR OF ENGINEERING	12/07
	1/16



PARKER WATER & SANITATION DISTRICT

FIRE HYDRANTS LOCATION & INSTALLATION

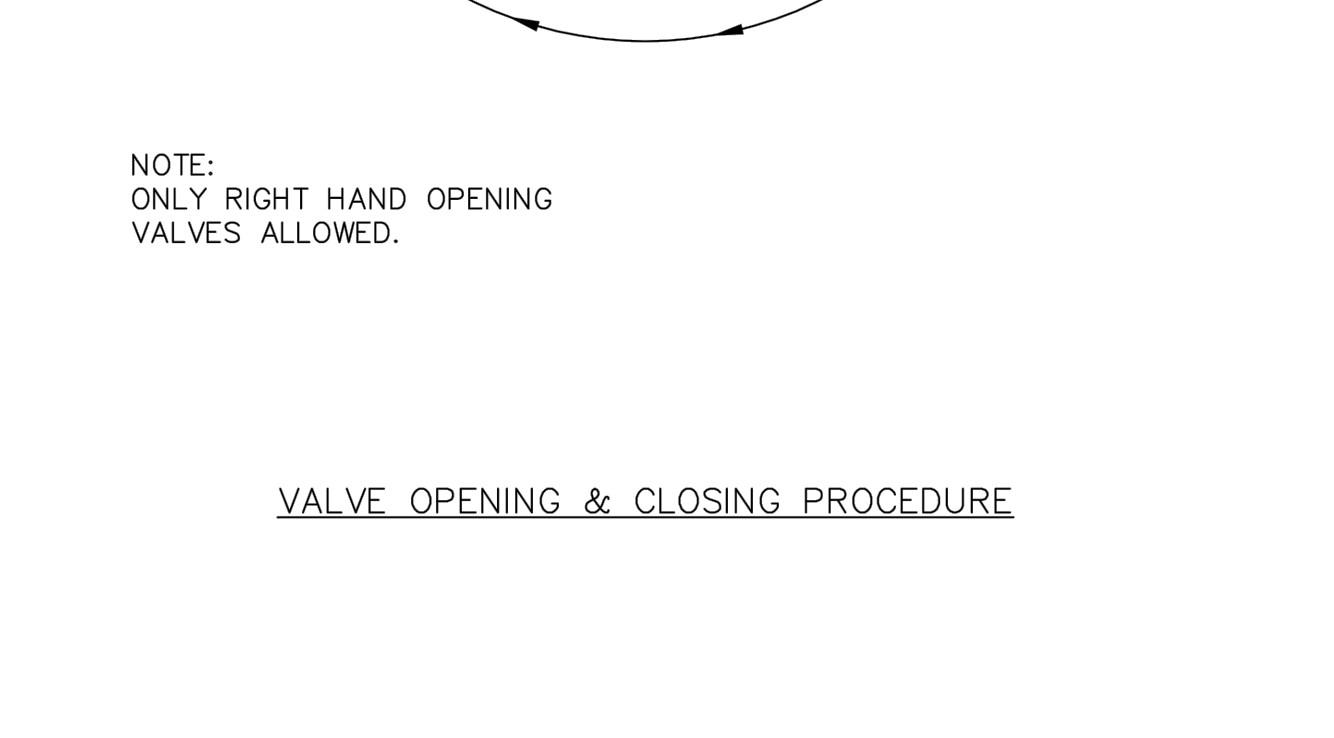
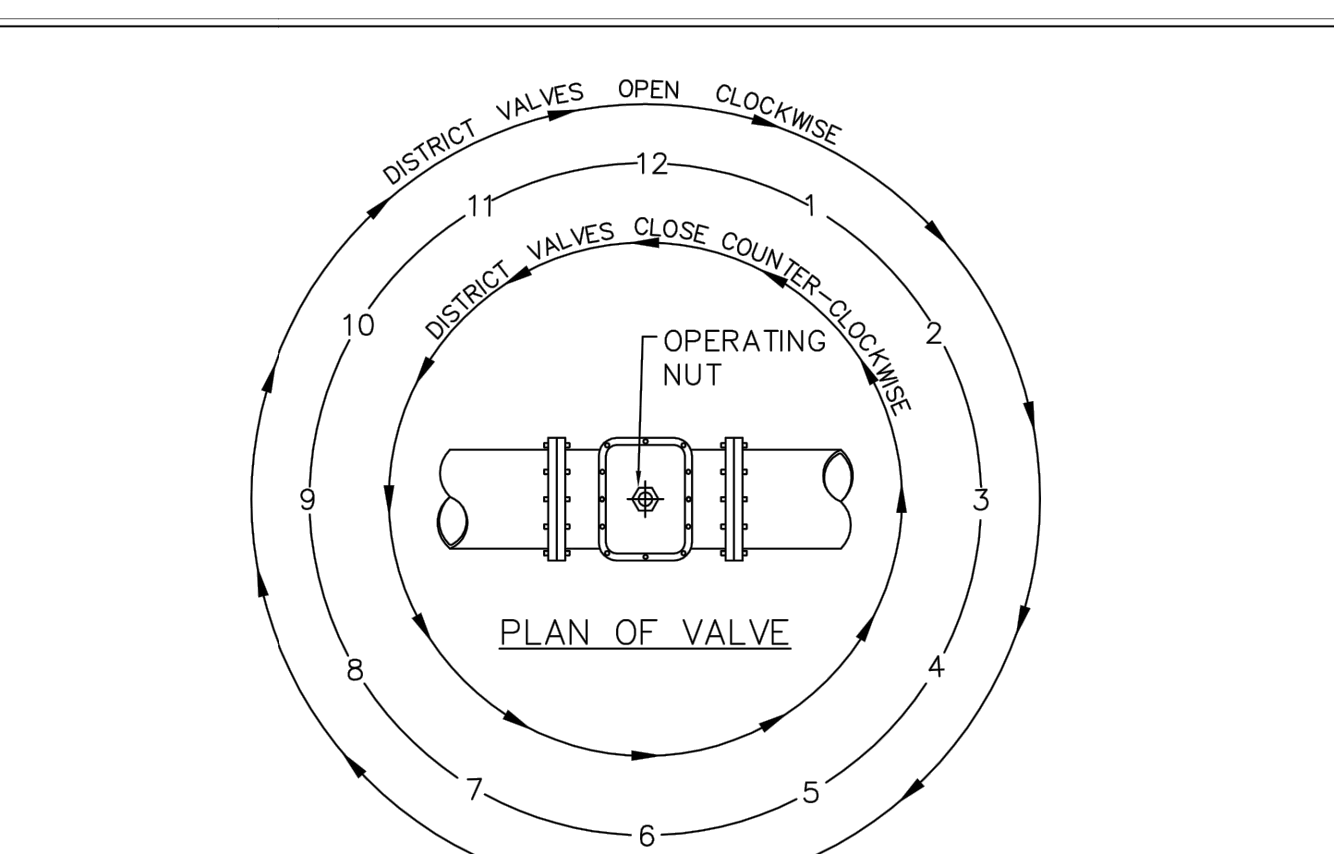
SCALE: NONE	DATE: 2/96
APPROVED:	4/01 10/16
PVR	01/02
DIRECTOR OF ENGINEERING	12/07
	1/16



PARKER WATER & SANITATION DISTRICT

LOCATOR WIRE DETAILS

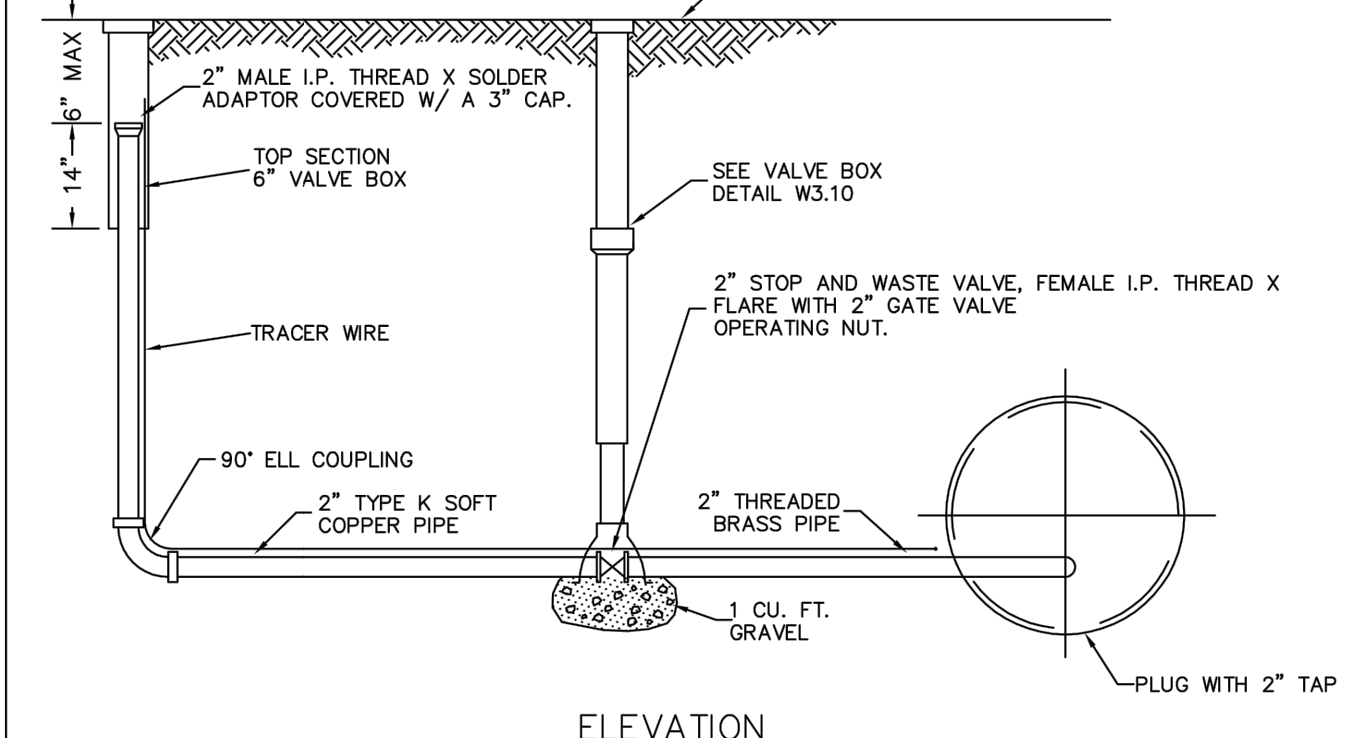
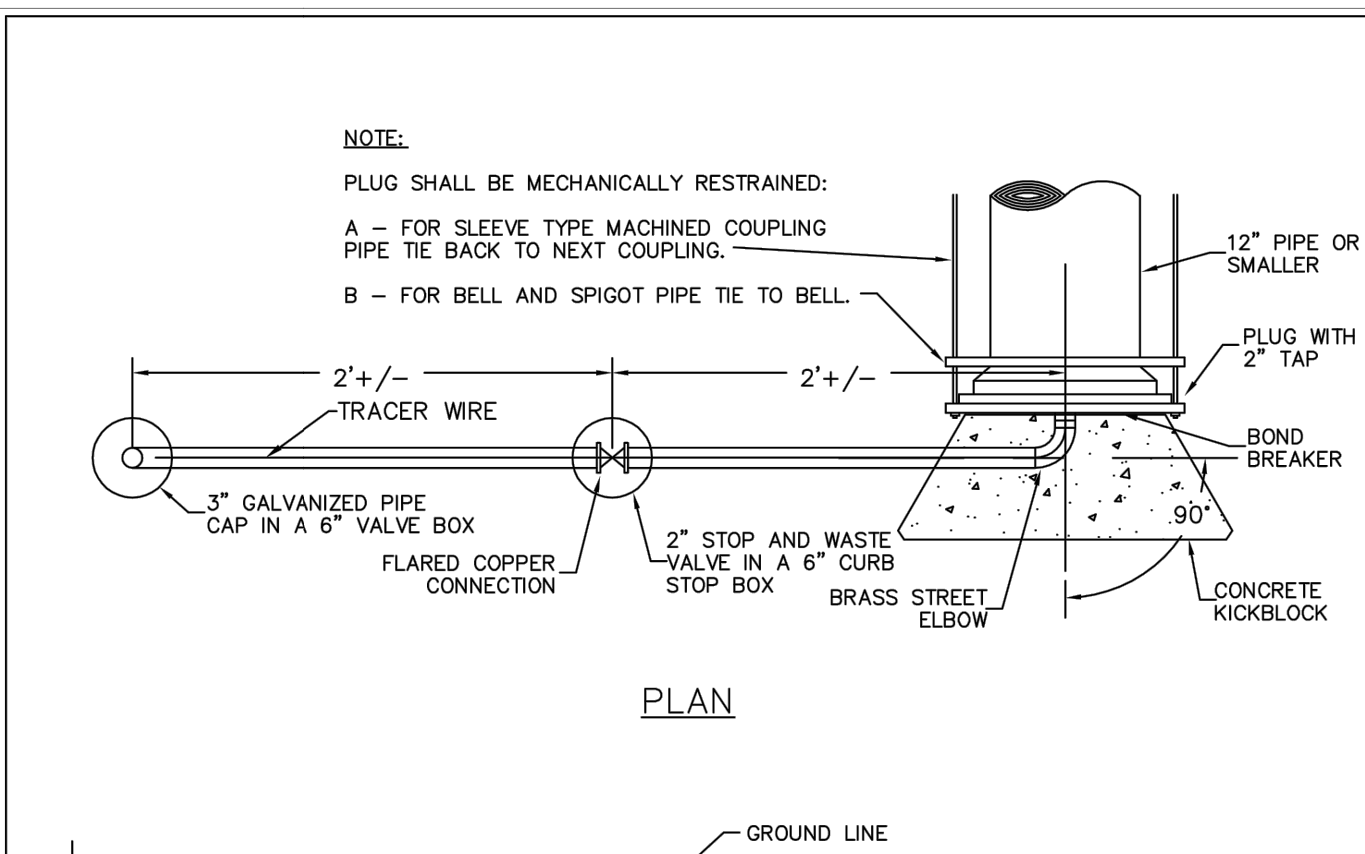
SCALE: NONE	DATE: 2/96
APPROVED:	4/01
PVR	01/02
DIRECTOR OF ENGINEERING	01/16
	10/16



PARKER WATER & SANITATION DISTRICT

VALVE OPERATION

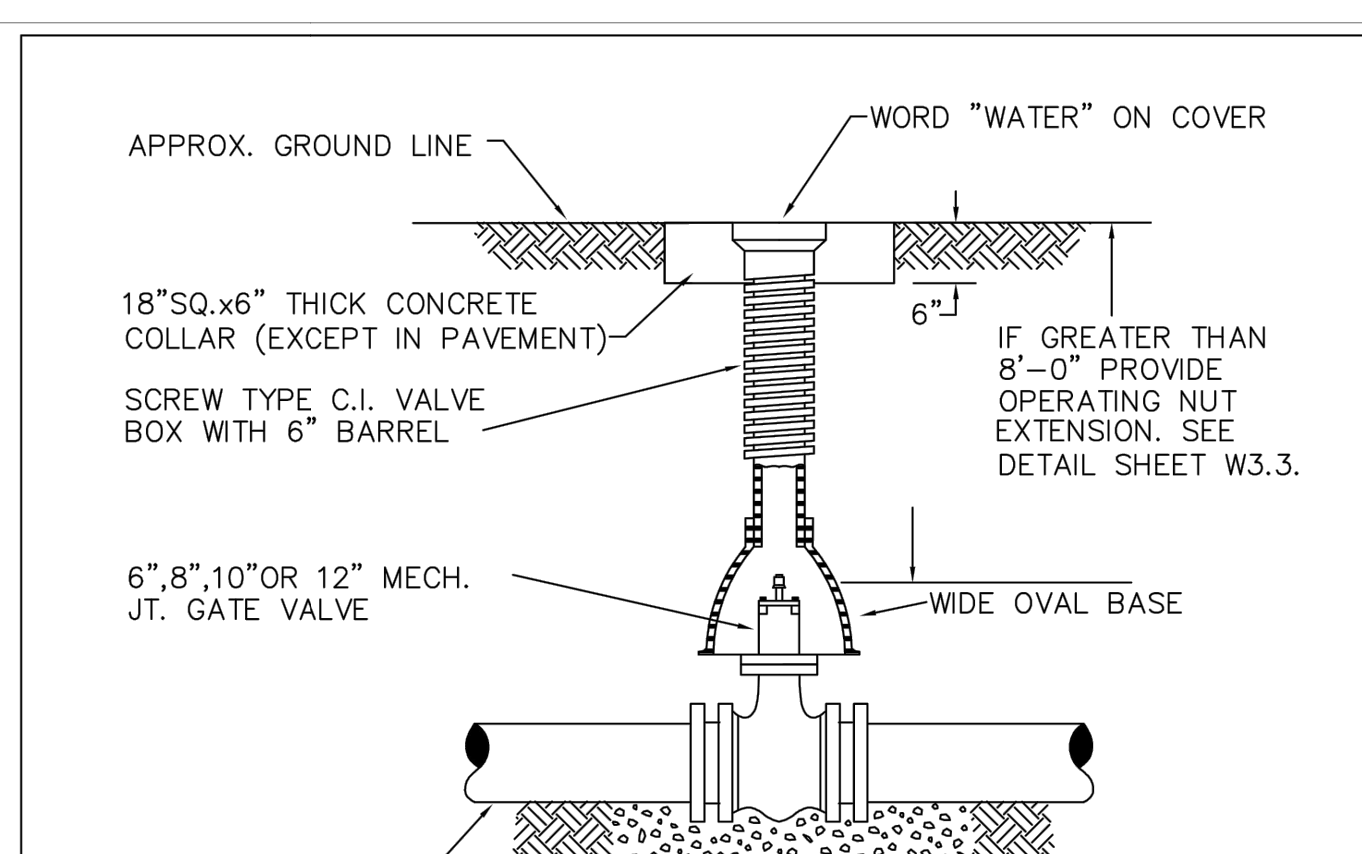
SCALE: NONE	DATE: 2/96
APPROVED:	1/16
PVR	10/16
DIRECTOR OF ENGINEERING	



PARKER WATER & SANITATION DISTRICT

BLOW-OFF INSTALLATION FOR 12" & SMALLER PIPE

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



PARKER WATER & SANITATION DISTRICT

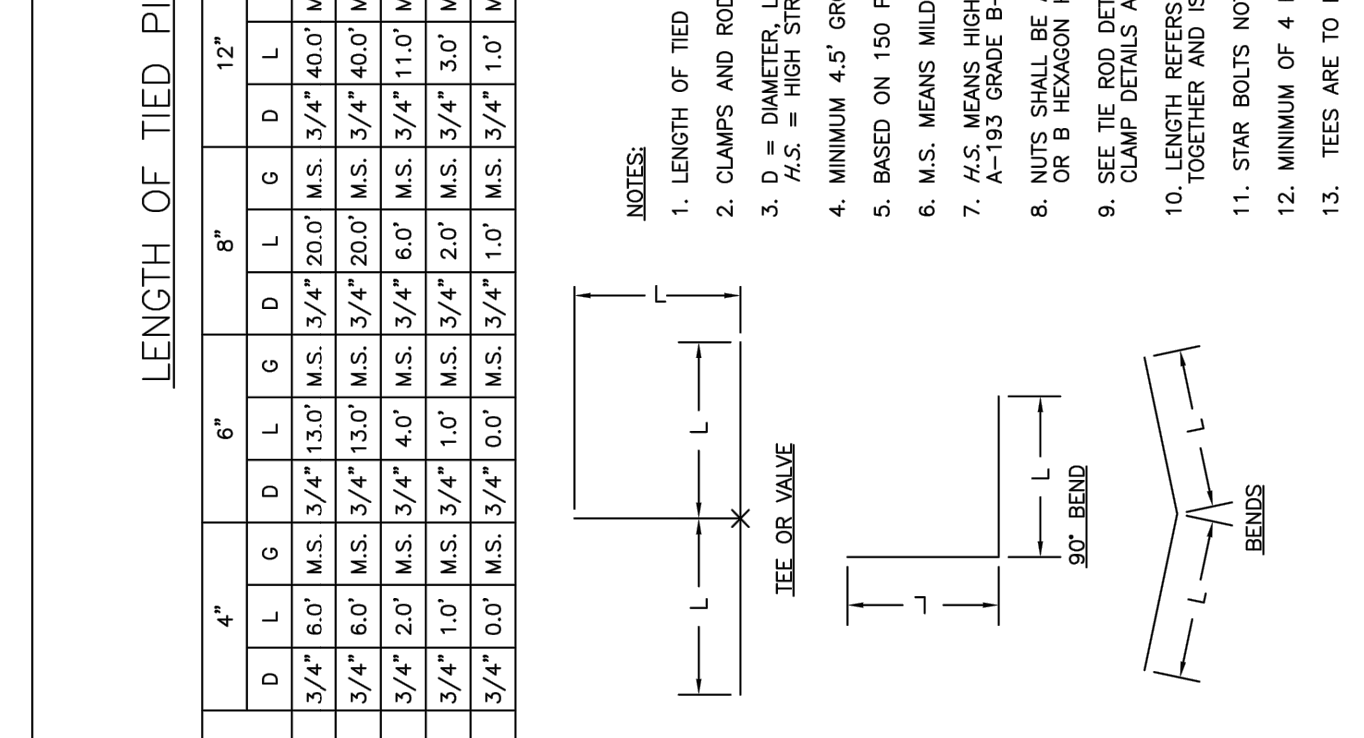
VALVE BOX DETAIL

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

PARKER WATER & SANITATION DISTRICT

LENGTH OF TIED PIPE

PIPE SIZE	4"		6"		8"		12"		16"		20"		24"	
	D	L	D	L	D	L	D	L	D	L	D	L	D	L
3/4" M.S.	6.0'	3.4'	6.0'	3.4'	6.0'	3.4'	6.0'	3.4'	6.0'	3.4'	6.0'	3.4'	6.0'	3.4'
1" M.S.	6.0'	3.4'	6.0'	3.4'	6.0'	3.4'	6.0'	3.4'	6.0'	3.4'	6.0'	3.4'	6.0'	3.4'
1 1/2" M.S.	6.0'	3.4'	6.0'	3.4'	6.0'	3.4'	6.0'	3.4'	6.0'	3.4'	6.0'	3.4'	6.0'	3.4'
2" M.S.	6.0'	3.4'	6.0'	3.4'	6.0'	3.4'	6.0'	3.4'	6.0'	3.4'	6.0'	3.4'	6.0'	3.4'
2 1/2" M.S.	6.0'	3.4'	6.0'	3.4'	6.0'	3.4'	6.0'	3.4'	6.0'	3.4'	6.0'	3.4'	6.0'	3.4'
3" M.S.	6.0'	3.4'	6.0'	3.4'	6.0'	3.4'	6.0'	3.4'	6.0'	3.4'	6.0'	3.4'	6.0'	3.4'
3 1/2" M.S.	6.0'	3.4'	6.0'	3.4'	6.0'	3.4'	6.0'	3.4'	6.0'	3.4'	6.0'	3.4'	6.0'	3.4'
4" M.S.	6.0'	3.4'	6.0'	3.4'	6.0'	3.4'	6.0'	3.4'	6.0'	3.4'	6.0'	3.4'	6.0'	3.4'
4 1/2" M.S.	6.0'	3.4'	6.0'	3.4'	6.0'	3.4'	6.0'	3.4'	6.0'	3.4'	6.0'	3.4'	6.0'	3.4'
5" M.S.	6.0'	3.4'	6.0'	3.4'	6.0'	3.4'	6.0'	3.4'	6.0'	3.4'	6.0'	3.4'	6.0'	3.4'
5 1/2" M.S.	6.0'	3.4'	6.0'	3.4'	6.0'	3.4'	6.0'	3.4'	6.0'	3.4'	6.0'	3.4'	6.0'	3.4'
6" M.S.	6.0'	3.4'	6.0'	3.4'	6.0'	3.4'	6.0'	3.4'	6.0'	3.4'	6.0'	3.4'	6.0'	3.4'
6 1/2" M.S.	6.0'	3.4'	6.0'	3.4'	6.0'	3.4'	6.0'	3.4'	6.0'	3.4'	6.0'	3.4'	6.0'	3.4'
7" M.S.	6.0'	3.4'	6.0'	3.4'	6.0'	3.4'	6.0'	3.4'	6.0'	3.4'	6.0'	3.4'	6.0'	3.4'
7 1/2" M.S.	6.0'	3.4'	6.0'	3.4'	6.0'	3.4'	6.0'	3.4'	6.0'	3.4'	6.0'	3.4'	6.0'	3.4'
8" M.S.	6.0'	3.4'	6.0'	3.4'	6.0'	3.4'	6.0'	3.4'	6.0'	3.4'	6.0'	3.4'	6.0'	3.4'
8 1/2" M.S.	6.0'	3.4'	6.0'	3.4'	6.0'	3.4'	6.0'	3.4'	6.0'	3.4'	6.0'	3.4'	6.0'	3.4'
9" M.S.	6.0'	3.4'	6.0'	3.4'	6.0'	3.4'	6.0'	3.4'	6.0'	3.4'	6.0'	3.4'	6.0'	3.4'
9 1/2" M.S.	6.0'	3.4'	6.0'	3.4'	6.0'	3.4'	6.0'	3.4'	6.0'	3.4'	6.0'	3.4'	6.0'	3.4'
10" M.S.	6.0'	3.4'	6.0'	3.4'	6.0'	3.4'	6.0'	3.4'	6.0'	3.4'	6.0'	3.4'	6.0'	3.4'
10 1/2" M.S.	6.0'	3.4'	6.0'	3.4'	6.0'	3.4'	6.0'	3.4'	6.0'	3.4'	6.0'	3.4'	6.0'	3.4'
11" M.S.	6.0'	3.4'	6.0'	3.4'	6.0'	3.4'	6.0'	3.4'	6.0'	3.4'	6.0'	3.4'	6.0'	3.4'
11 1/2" M.S.	6.0'	3.4'	6.0'	3.4'	6.0'	3.4'	6.0'	3.4'	6.0'	3.4'	6.0'	3.4'	6.0'	3.4'
12" M.S.	6.0'	3.4'	6.0'	3.4'	6.0'	3.4'	6.0'	3.4'	6.0'	3.4'	6.0'	3.4'	6.0'	3.4'



PARKER WATER & SANITATION DISTRICT

VALVE BOX DETAIL

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

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**NEW HORIZON ACADEMY -
DOUGLAS 234 FILING, NO. 6**

PARKER, CO

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SEH Project	NHOAC 156217
Checked By	DRH
Drawn By	AMP

Project Status	Issue Date
TOWN REVIEW	8/26/2020
TOWN REVIEW	1/22/2021
TOWN REVIEW	3/22/2021
TOWN REVIEW	6/4/2021

Rev. #	Description	Date
1	TOWN COMMENTS	1/22/21
2	TOWN COMMENTS	3/22/21
3	TOWN COMMENTS	6/4/21

WATER DETAILS

U1.5

**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.
Suite 300
Minnetonka, MN 55343
952.912.2600

Civil Engineer
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
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SEH Project: NHOC 156217
Checked By: AMP
Drawn By: AMP

Project Status	Issue Date
TOWN REVIEW	8/26/2020
TOWN REVIEW	1/22/2021
TOWN REVIEW	3/22/2021
TOWN REVIEW	6/4/2021

Rev. #	Description	Date
1	TOWN COMMENTS	1/22/21
2	TOWN COMMENTS	3/22/21
3	TOWN COMMENTS	6/4/21

WATER DETAILS

U1.6

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

FLANGE LUG DETAIL

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	1-11/16	2-7/4	1-7/8	3/4	1-7/8	3/4	7/8	3/4	2-7/8	6
8	2-1/4	2-3/4	1-7/8	3/4	1-7/4	1-7/8	7/8	1-1/4	3-1/4	8
10	2-7/16	2-3/4	1-7/8	3/4	1-7/4	1-7/8	7/8	1-1/4	3-1/4	10
12	2-7/16	2-3/4	1-7/8	3/4	1-7/4	1-7/8	7/8	1-1/4	3-1/4	12
16	2-7/16	2-3/4	1-7/8	3/4	1-7/4	1-7/8	7/8	1-1/4	3-1/4	16
20	2-7/16	2-3/4	1-7/8	3/4	1-7/4	1-7/8	7/8	1-1/4	3-1/4	20

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 2H).
3. 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

TIE ROD COUPLING DETAIL

SECTION "A-A"

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

TIE ROD DETAIL

WASHER DETAIL

A	B	C	D	E	F	G
ROD DIAMETER	THREAD LENGTH	ROD LENGTH	WIDTH	HOLE DIAMETER	LENGTH	THICKNESS
3/4"	8"	1' 10 11" & 20"	3"	7/8"	6"	3/8"
1-1/4"	ALL THREAD	1' 10 11" & 20"	4"	1-1/8"	7"	1/2"
						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: PVR 1/16, 10/16
DIRECTOR OF ENGINEERING

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 squeegee sand and shall conform to the following limits when tested by means of laboratory sieves:

Sieve Size	Total Percent Passing by Weight
3/8 inch	100
No. 4	70-100
No. 8	36-93
No. 16	20-80
No. 30	8-65
No. 50	2-50
No. 100	1-10
No. 200	0-3

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

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

Squeegee Sand
for use with 20-inch or smaller

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

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 material 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

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

HALF PLAN

STANDARD LIFTING SLOT DETAIL

**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

TEE

TYPICAL CROSS SECTION

SIZE OF PIPE	11-1/4"	22-1/2"	45"	90"	DEAD END
4"	1.00	1.00	1.00	1.00	1.50
6"	1.00	1.25	2.25	4.00	3.00
8"	1.00	2.00	4.00	7.50	5.25
10"	2.00	4.25	8.25	15.25	11.00
12"	3.50	6.50	12.50	23.00	16.50
16"	6.00	10.00	18.50	35.50	25.00
24"	6.50	13.00	26.00	43.00	33.00

**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

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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 Reg Circle Drive
Suite 300
Minnetonka, MN 55343
952.912.2600

Civil Engineer
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

PARKER WATER & SANITATION DISTRICT
CONDUIT OR STORM SEWER CROSSING

SCALE: NONE DATE: 2/96
APPROVED: 5/98 10/16 2/00 12/07 1/16
PVR DIRECTOR OF ENGINEERING

2016 REVISION SHEET W4.6

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

PARKER WATER & SANITATION DISTRICT
BEDDING DETAILS

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

2016 REVISION SHEET W4.8

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
POLYETHYLENE WRAP

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

2016 REVISION SHEET W4.11

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
OUTSIDE SETTING FOR 1 1/2" & 2" METER FOR IRRIGATION

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

2016 REVISION SHEET W5.12

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.

IRRIGATION ONLY
NOT TO BE USED IN COMMERCIAL OR NON-SINGLE FAMILY RESIDENTIAL WITHOUT EXPRESS PERMISSION OF THE PWSO ENGINEER.

METER YOKE DISTANCE
1.5" 13.25" WITH ADJUSTABLE FLANGE FOR GASKET
2" 17.25" WITH ADJUSTABLE FLANGE FOR GASKET

PARKER WATER & SANITATION DISTRICT
INSIDE SETTING FOR 1 1/2" & 2" METER

SCALE: NONE DATE: 2/96
APPROVED: 8/99 01/02 01/16 2/00 06/05 10/16 4/01 07/06
PVR DIRECTOR OF ENGINEERING

2016 REVISION SHEET W5.14

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 - 1.0' 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

METER YOKE DISTANCE
1.5" 13.25" WITH ADJUSTABLE FLANGE FOR GASKET
2" 17.25" WITH ADJUSTABLE FLANGE FOR GASKET

PARKER WATER & SANITATION DISTRICT
3" AND LARGER DOMESTIC AND FIRE SPRINKLER CONNECTIONS

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

2016 REVISION SHEET W5.18

LEGEND:
1 EXISTING MAIN
2 TAPPING SLEEVE
3 TAPPING VALVE
4 DOUBLE SPIGOT PIPE
5 PROPERTY LINE VALVE
6 TIE RODS
7 PIPE CLAMP
8 CONCRETE KICKBLOCK
9 M.L. ANCHORING TEE (SWIVEL TEE)
10 M.L. VALVE
11 POLYETHYLENE WRAPPED

PARKER WATER & SANITATION DISTRICT
REDUCED PRESSURE BACKFLOW

SCALE: NONE DATE: 2/96
APPROVED: 2004 06/05 1/16 10/16
PVR DIRECTOR OF ENGINEERING

2016 REVISION SHEET W5.1

NOTE:
1. ALL IRRIGATION SYSTEMS MUST BE CONNECTED DOWN STREAM OF METER.
2. PROVIDE ENCLOSURE.

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

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SEH Project NHOAC 156217
Checked By DRH
Drawn By AMP

Project Status Issue Date
TOWN REVIEW 8/26/2020
TOWN REVIEW 1/22/2021
TOWN REVIEW 3/22/2021
TOWN REVIEW 6/4/2021

Revision Issue
Rev. # Description Date
1 TOWN COMMENTS 1/22/21
2 TOWN COMMENTS 3/22/21
3 TOWN COMMENTS 6/4/21

WATER DETAILS

U1.7