

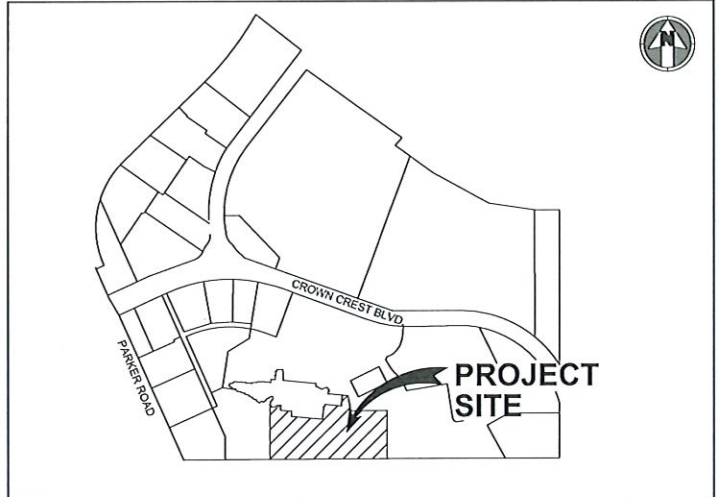
ADVENTHEALTH PARKER EXPANSION

A PARCEL OF LAND BEING A PORTION OF LOT 1, BLOCK 1, CROWN POINT F#1, AMENDMENT 28 **30?**
SITUATED IN THE NORTHWEST QUARTER OF SECTION 10, TOWNSHIP 6 SOUTH, RANGE 66 WEST OF THE 6TH PRINCIPAL MERIDIAN,
TOWN OF PARKER, COUNTY OF DOUGLAS, STATE OF COLORADO

Amendment has been updated to 30.

Approval Agency list?
PE Statement?
Benchmarks?
Basis of Bearing?
Verify Legal Description has correct Amendment.

These items have been added to the cover page.



VICINITY MAP
NO SCALE

| Sheet Number | Sheet Title |
|--------------|-------------------------------------|
| C500 | WATER AND SANITARY COVER SHEET |
| C501 | WATER AND SANITARY NOTES AND LEGEND |
| C511 | UTILITY PLAN |
| C512 | UTILITY PLAN |
| C531 | SANITARY PLAN AND PROFILE |
| C532 | SANITARY PLAN AND PROFILE |
| C551 | WATER AND SANITARY DETAILS |
| C552 | WATER AND SANITARY DETAILS |

| MATERIALS LIST | |
|----------------|----------|
| ITEM | QUANTITY |
| 12" DIP | 306 LF |
| 8" DIP | 74 LF |
| 6" DIP | 97 LF |
| 4" DIP | 137 LF |
| FIRE HYDRANT | 3 |
| 4" WATER METER | 1 |
| 12" GATE VALVE | 2 |
| 8" GATE VALVE | 1 |
| 6" GATE VALVE | 3 |
| 4" GATE VALVE | 1 |
| 12"X12" TEE | 1 |
| 12"X6" TEE | 2 |
| 12"X8" TEE | 1 |
| 12"X4" TEE | 1 |
| 45" BEND | 1 |
| 22.5" BEND | 2 |
| 11.25" BEND | 1 |
| VERTICAL BEND | 4 |
| 10" PVC | 923 |
| 4" MANHOLE | 6 |
| DUAL CLEANOUT | 1 |

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 THE 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.)

FIRE FLOW BLOCK

TOTAL FIRE FLOW REQUIRED FOR THIS SITE IS 2,000 GPM MINIMUM @ 20 PSI RESIDUAL PRESSURE
THIS FLOW MUST BE PROVIDED FROM A MINIMUM OF 2 FIRE HYDRANTS
INDIVIDUALLY, EACH FIRE HYDRANT MUST SUPPLY 1500 GPM MINIMUM @ 20 PSI RESIDUAL PRESSURE

CODE USED FOR ANALYSIS: 2018 IFC WITH APPENDICES B, C AND D

OCCUPANCY TYPE: L2

CONSTRUCTION TYPE: IA

FIRE FLOW CALCULATION AREA: 80,280 SF
TOTAL BUILDING AREA: 80,280 SF

BUILDING IS ANTICIPATED TO BE CONSTRUCTED WITH AN AUTOMATED FIRE SPRINKLER SYSTEM (NFPA 13) SO FIRE FLOW REQUIREMENT HAS BEEN REDUCED BY 50%.

Removed.

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 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: _____

APPROVED FOR CONSTRUCTION:
PARKER WATER AND SANITATION DISTRICT

BY: _____
(DISTRICT ENGINEER)

DATE: _____

S. A. MIRO, INC.
CIVIL + STRUCTURAL CONSULTING ENGINEERS
4582 S. Uster St., Suite 750
Denver, CO 80237
303-741-3737
www.samiro.com

Know what's below.
Call before you dig.

| NO. | DESCRIPTION | DATE |
|-----|------------------------|-----------|
| 1 | CONSTRUCTION DOCUMENTS | 5/31/2024 |

PROJECT: ADVENTHEALTH PARKER EXPANSION
PARKER, CO 80138

DRAWING TITLE: WATER AND SANITARY COVER SHEET

FILE PATH: C:\Users\eddo\OneDrive\Documents\S.A. Miro, Inc.\Civil\Jobs\23079 AHP Expansion\05 CAD\Plans and Details\C500-WATR-SSEW-COVR.dwg C500 - 5/31/2024

THIS DOCUMENT IS SUBJECT TO CHANGE AS A RESULT OF JURISDICTIONAL APPROVALS. CONSTRUCTION DOCUMENTS SHALL CONTAIN THE APPROVAL SIGNATURES OF THE REVIEWING ENTITIES. THIS DOCUMENT IS NOT FOR CONSTRUCTION.

DESIGNED BY: RJH
DRAWN BY: EDS
CHECKED BY: MHV
MIRO JOB NO. 23079
DRAWING NUMBER: **C500**

MASTER LEGEND:

| | |
|-----------------|--------------------------|
| PROPOSED | |
| | PROPERTY LINE |
| | SECTION LINE |
| | RIGHT OF WAY LINE |
| | CENTER LINE |
| | CURB AND GUTTER |
| | SIDEWALK |
| | WALL |
| | FENCE |
| | SIGN |
| | LIGHT |
| | TREE |
| | MINOR CONTOURS |
| | MAJOR CONTOURS |
| | RIDGE LINE |
| | SPOT ELEVATION |
| | CABLE TV LINE |
| | COMMUNICATION LINE |
| | ELECTRICAL LINE |
| | OVERHEAD ELECTRICAL LINE |
| | FIBER OPTIC LINE |
| | GAS LINE |
| | TELEPHONE LINE |
| | IRRIGATION LINE |
| | RAW WATER LINE |
| | SANITARY SEWER LINE |
| | STEAM LINE |
| | STORM SEWER LINE |
| | WATER LINE |
| | EASEMENT |
| | INLET |
| | FLARED END SECTIONS |
| | CLEANOUT |
| | FIRE HYDRANT |
| | VALVE |
| | WATER FITTINGS |
| | PEDESTAL |
| | UTILITY CROSSING |
| | MANHOLES |
| | LAMB TONGUE ROOF DRAIN |
| | OVERFLOW |
| EXISTING | |
| | CURB AND GUTTER |
| | SIDEWALK |
| | WALL |
| | FENCE |
| | SIGN |
| | LIGHT |
| | TREE |
| | MINOR CONTOURS |
| | MAJOR CONTOURS |
| | SPOT ELEVATION |
| | CABLE TV LINE |
| | COMMUNICATION LINE |
| | ELECTRICAL LINE |
| | OVERHEAD ELECTRICAL LINE |
| | FIBER OPTIC LINE |
| | GAS LINE |
| | TELEPHONE LINE |
| | IRRIGATION LINE |
| | RAW WATER LINE |
| | SANITARY SEWER LINE |
| | STEAM LINE |
| | STORM SEWER LINE |
| | WATER LINE |
| | EASEMENT |
| | INLET |
| | FLARED END SECTIONS |
| | CLEANOUT |
| | FIRE HYDRANT |
| | VALVE |
| | PEDESTAL |
| | MANHOLES |

COTTONWOOD WATER AND SANITATION DISTRICT GENERAL NOTES :

- ALL MAINS, SYSTEM PLANS AND CONSTRUCTION SHALL CONFORM TO THE COTTONWOOD WATER AND SANITATION DISTRICT (THE DISTRICT) SPECIFICATIONS AND SHALL BE SUBJECT TO CONSTRUCTION OBSERVATION BY DISTRICT PERSONNEL OR REPRESENTATIVES. ALL MATERIAL AND WORKMANSHIP SHALL BE IN CONFORMANCE WITH DISTRICT SPECIFICATIONS AND STANDARDS.
- THE OWNER, HIS/HER ENGINEER, OR CONTRACTOR SHALL SCHEDULE A PRECONSTRUCTION MEETING WITH THE DISTRICT MANAGER AND DISTRICT ENGINEER AT LEAST 48 HOURS PRIOR TO THE START OF CONSTRUCTION. PLANS WITH THE DISTRICT REVIEW STAMP WILL BE DISTRIBUTED PRIOR TO OR AT THE PRECONSTRUCTION MEETING. NO CONSTRUCTION WILL BE PERMITTED UNTIL FORMAL RECORDING OF EASEMENTS IS COMPLETE. NO CONSTRUCTION WILL BE PERMITTED PRIOR TO THE PRECONSTRUCTION MEETING.
- ALL WATER MAINS INSTALLED SHALL CONFORM TO DENVER WATER MATERIAL SPECIFICATIONS.
 - DUCTILE IRON PIPE MS-1 AWWA C151 CLASS 50 WITH POLYWRAP
 - POLYVINYL CHLORIDE (PVC) MS-2 AWWA C900-07 DR14 PVC
- THE APPROVAL OF THE CONSTRUCTION PLANS SIGNIFIES ONLY THAT THE PLANS MEET THE MINIMUM REQUIREMENTS OF THE DISTRICT'S STANDARDS AND SPECIFICATIONS BASED ON THE INFORMATION PROVIDED BY THE DESIGN ENGINEER, OWNER-DEVELOPER, AND CONTRACTOR. APPROVAL IS NOT A REPRESENTATION OR WARRANTY THAT THE SYSTEM AND ASSOCIATED COMPONENTS WILL PERFORM ANY CERTAIN FUNCTIONS.
- THE DISTRICT, ITS REPRESENTATIVE, AND/OR THE DISTRICT ENGINEER, IS NOT A GUARANTOR OF THE CONSTRUCTION CONTRACTORS' OBLIGATIONS AND PERFORMANCE OF CONTRACT.
- OBSERVATION OF WORK IN PROGRESS AND ON-SITE VISITS ARE NOT TO BE CONSTRUED AS A GUARANTEE BY THE DISTRICT OR DISTRICT ENGINEER OF THE CONTRACTOR'S CONTRACTUAL COMMITMENT.
- THE DISTRICT AND/OR DISTRICT ENGINEER IS NOT RESPONSIBLE FOR SAFETY IN, ON, OR ABOUT THE PROJECT SITE, NOR FOR COMPLIANCE BY THE APPROPRIATE PARTY OF ANY REGULATIONS RELATING THERETO.
- THE DISTRICT AND/OR DISTRICT ENGINEER, EXERCISES NO CONTROL OF THE SAFETY OR ADEQUACY OF ANY EQUIPMENT, BUILDING COMPONENTS, SCAFFOLDING, FORMS, OR ANY OTHER WORK AIDS USED IN OR ABOUT THE PROJECT, OR IN THE SUPERINTENDING OF THE SAME.
- THE CONTRACTOR AGREES THAT HE/SHE SHALL ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THE PROJECT, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY; THAT THIS REQUIREMENT SHALL APPLY CONTINUOUSLY, AND NOT BE LIMITED TO NORMAL WORKING HOURS, AND THAT THE CONTRACTOR SHALL DEFEND, INDEMNIFY AND HOLD HARMLESS FROM ANY AND ALL LIABILITY, REAL OR ALLEGED, IN CONNECTION WITH THE PERFORMANCE OF WORK ON THIS PROJECT, EXCEPTING FOR LIABILITY ARISING FROM THE SOLE NEGLIGENCE OF THE OWNER, THE DESIGN ENGINEER, OR THE COUNTY.
- THE CONTRACTOR IS RESPONSIBLE FOR:
 - A. NOTIFYING ALL CUSTOMERS POSSIBLY AFFECTED BY OUTAGE OF WATER OR SEWER SERVICE DURING CONSTRUCTION PRIOR TO SHUTTING OFF SAID SERVICE.
 - B. OBTAINING, AT THE CONTRACTOR'S EXPENSE, ALL APPLICABLE LICENSES, PERMITS, BONDS, ETC. REQUIRED FOR MAIN INSTALLATION/SYSTEM MODIFICATIONS.
 - C. CONTACTING THE DISTRICT FOR A PRE-CONSTRUCTION MEETING AT 303-649-8857. CONSTRUCTION CANNOT START FOR AT LEAST 48 HOURS AFTER THE MEETING HAS BEEN HELD.
 - D. NOTIFYING THE DISTRICT 48 HOURS IN ADVANCE OF ANY NEEDS TO SHUT DOWN ANY PORTION OF THE EXISTING WATER AND/OR SANITARY SEWER SYSTEM.
 - E. NOTIFYING THE DISTRICT 48 HOURS IN ADVANCE FOR CONSTRUCTION OBSERVATIONS.
 - F. IN CASE OF AN EMERGENCY AFTER WORKING HOURS CALL THE DISTRICT OFFICE AT (303) 428-3167 FOR RECORDED INSTRUCTIONS.
- UNDERGROUND UTILITIES IN THE AREA OF CONSTRUCTION HAVE BEEN LOCATED FROM FIELD INVESTIGATION AND THE BEST AVAILABLE UTILITY RECORDS AND ARE APPROXIMATE ONLY. THE DISTRICT ENGINEER ASSUMES NO RESPONSIBILITY FOR UTILITY LOCATIONS. THE CONTRACTOR IS RESPONSIBLE TO FIELD VERIFY THE LOCATION OF ALL UTILITIES PRIOR TO THE COMMENCEMENT OF ANY CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL UTILITY LINES WHETHER SHOWN ON THE PLANS OR NOT. THE CONTRACTOR SHALL COORDINATE HIS/HER ACTIVITIES WITH THE AFFECTED UTILITY COMPANIES AND SHALL NOTIFY THE UTILITY NOTIFICATION CENTER, PHONE NO. 1-800-922-1987, 48 HOURS PRIOR TO STARTING CONSTRUCTION.
- CONTRACTOR SHALL PERFORM POT-HOLING ON EXISTING UTILITIES PRIOR TO THE CONSTRUCTION OF THE WATER AND/OR SANITARY SEWER LINES. THIS WORK SHALL BE CONSIDERED INCIDENTAL TO THE INSTALLATION COST OF THE PIPELINE.
- THE CONTRACTOR SHALL HAVE IN HIS/HER POSSESSION AT ALL TIMES ONE (1) SIGNED COPY OF THE PROJECT PLANS SIGNED BY THE DISTRICT.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING AND REPLACING ANY EXISTING SIGNS, STRUCTURES, FENCES, ETC ENCOUNTERED ON THE JOB AND RESTORING THEM TO THEIR ORIGINAL CONDITION.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING ANY GROUNDWATER ENCOUNTERED DURING THE CONSTRUCTION OF ANY PORTION OF THIS PROJECT. GROUNDWATER SHALL BE PUMPED, PIPED, REMOVED AND DISPOSED OF IN A MANNER WHICH DOES NOT CAUSE FLOODING OF EXISTING STREETS NOR EROSION ON ADJUTING PROPERTIES IN ORDER TO CONSTRUCT THE IMPROVEMENTS SHOWN ON THESE PLANS. USE OF THE DISTRICTS SEWER SYSTEM FOR THE DISPOSAL OF GROUND WATER IS PROHIBITED WITHOUT WRITTEN CONSENT FROM THE DISTRICT. NO CONCRETE SHALL BE PLACED WHERE GROUNDWATER IS VISIBLE OR UNTIL THE GROUNDWATER TABLE HAS BEEN LOWERED BELOW THE PROPOSED IMPROVEMENTS. ANY UNSTABLE AREAS, AS A RESULT OF GROUNDWATER, ENCOUNTERED DURING THE CONSTRUCTION OF THE PROPOSED IMPROVEMENTS SHALL BE STABILIZED AS AGREED UPON BY THE DISTRICT AND THE DESIGN ENGINEER AT THE TIME OF THE OCCURENCE.
- IT SHALL BE THE DESIGN ENGINEER'S RESPONSIBILITY TO RESOLVE CONSTRUCTION PROBLEMS WITH THE DISTRICT DUE TO CHANGED CONDITIONS ENCOUNTERED DURING THE PROGRESS OF ANY PORTION OF THE PROPOSED WORK. IF, IN THE OPINION OF THE DISTRICT, PROPOSED ALTERATIONS TO THE SIGNED CONSTRUCTION PLANS INVOLVES SIGNIFICANT CHANGES TO THE CHARACTER OF THE WORK, OR TO FUTURE CONTIGUOUS PUBLIC OR PRIVATE IMPROVEMENTS, THE DESIGN ENGINEER SHALL BE RESPONSIBLE FOR SUBMITTING REVISED PLANS TO THE DISTRICT FOR REVIEW PRIOR TO ANY FURTHER CONSTRUCTION RELATED TO THAT PORTION OF THE WORK.
- THE OWNER IS RESPONSIBLE FOR ALL COSTS ASSOCIATED WITH PLAN REVIEW AND CONSTRUCTION OBSERVATION.
- MAINTAIN MINIMUM OF 10 FEET SEPARATION BETWEEN WATER AND SANITARY SEWER MAINS AND SERVICES IN ACCORDANCE WITH COLORADO STATE DEPARTMENT OF HEALTH AND ENVIRONMENT STANDARDS.
- THE CONTRACTOR WILL BE REQUIRED TO PROVIDE A TRAFFIC CONTROL PLAN TO DOUGLAS COUNTY AND TO CDOT PRIOR TO ISSUANCE OF A STREET CUT PERMIT.
- SHOP DRAWINGS ARE TO BE SUBMITTED AT LEAST 48 HOURS PRIOR TO THE INSTALLATION OF ANY MATERIALS FOR ALL PIPES, FITTINGS AND APPURTENANCES.

COTTONWOOD WATER NOTES :

- EXISTING VALVES IN THE DISTRICT SERVICE AREA MAY ONLY BE OPERATED BY DISTRICT PERSONNEL.
- BEFORE ANY TAPS ARE MADE TO MAINS, APPLICATION(S) FOR THE TAPS MUST BE RECEIVED AND APPROVED BY THE DISTRICT.
- IRRIGATION DEMANDS MUST BE FORMALLY SUBMITTED FOR ALL PROJECT REQUIRING WATER FOR LANDSCAPING PURPOSES.
- FINAL PLUMBING PLANS MUST BE RECEIVED AND REVIEWED BY THE DISTRICT ENGINEER BEFORE WATER SERVICE TAPS CAN BE AWARDED IN ORDER TO PERFORM FUTURE UNIT ANALYSIS TO VERIFY TAP SIZE FOR ALL COMMERCIAL, INDUSTRIAL AND MULTI-FAMILY DEVELOPMENTS.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROCUREMENT OF ALL PERMITS NECESSARY FOR THE CONSTRUCTION OF THE WATER LINE WORK.
- PRIOR TO INSTALLATION OF WATER MAINS, ROAD CONSTRUCTION MUST HAVE PROGRESSED TO AT LEAST THE "SUB-GRADE" STAGE. SUB-GRADE IS DEFINED AS AN ELEVATION OF NO MORE THAN SEVEN (7) INCHES BELOW THE FINISHED STREET GRADE. THE CONTRACTOR WILL ADJUST ALL VALVE BOXES AND FIRE HYDRANTS TO THE FINAL FINISHED GRADE.
- ALL WATER MAINS SHALL HAVE A MINIMUM OF FOUR AND ONE-HALF (4-1/2) FEET OF COVER AND ARE TO BE THREE (3) FEET FROM THE EDGE OF THE GUTTER PAN.
- DISTANCE FOR WATER LINES IS THE HORIZONTAL DISTANCE BETWEEN CENTER OF FITTING TO CENTER OF VALVE, METER, ETC. THEREFORE, THE DISTANCES SHOWN ON THE PLANS ARE APPROXIMATE AND COULD VARY DUE TO VERTICAL ALIGNMENT AT FITTING DIMENSIONS.
- ALL HYDRANT LATERALS AND FIRE LINES SHALL BE DUCTILE IRON PIPE CLASS 50 AND FULLY RESTRAINED WITH POLYWRAP.
- ALL WATER LINE VALVES SHALL BE SET AT THE INTERSECTION OF THE EXTENDED PROPERTY LINE AND WATER LINE, EXCEPT WHERE THAT POINT FALLS IN THE FLOW LINE OF A CONCRETE CROSS PAN. IN THAT CASE, THE VALVE SHALL BE LOCATED SO THAT THE SURFACE DRAINAGE DOES NOT INFILTRATE THE VALVE BOX. IF A TAPPING TEE IS NOT LOCATED ON A PROPERTY LINE THEN THE ASSOCIATED VALVE WILL NOT BE REQUIRED AS SHOWN ON THE PLANS. VALVE BOXES SHALL BE SET AT AN ELEVATION IN ACCORDANCE WITH COUNTY PAVING REQUIREMENTS.
- ALL VALVES, VALVE BOXES, CURB STOPS AND/OR METER PIT COVERS SHALL HAVE THE WORD "WATER" STAMPED ON THEM. ALL POTABLE WATER VALVES SHALL BE OPENED IN A CLOCKWISE DIRECTION. ALL VALVE BOXES AND FIRE HYDRANTS WILL BE ADJUSTED TO THE FINAL FINISHED GRADE BY THE CONTRACTOR.
- ALL IRRIGATION AND NON-POTABLE PIPE SHALL BE PURPLE IN COLOR OR SHALL BE LABELED WITH PURPLE TAPE READING "CAUTION NONPOTABLE WATER" ALONG THE FULL LENGTH OF THE PIPE.
- POLYETHYLENE WRAPPINGS SHALL BE INSTALLED AROUND ALL DUCTILE IRON PIPE, FITTINGS, VALVES, FIRE HYDRANT BARRELS, AND RODS AND CLAMPS. THE POLYETHYLENE SHALL HAVE A MINIMUM THICKNESS OF EIGHT (8) MILS.
- TRACER WIRE, GAUGE 12 COPPER, SHALL BE INSTALLED ON ALL WATER LINES, FIRE HYDRANTS LATERALS AND APPURTENANCES.
- INDIVIDUAL SERVICE LINES ARE REQUIRED TO HAVE PRVs WHEN SYSTEM PRESSURE EXCEEDS 80 PSI IN ACCORDANCE WITH UNIFORM PLUMBING CODE.
- A BACKFLOW PREVENTION DEVICE APPROVED BY DENVER WATER IS REQUIRED ON THE TREATED WATER SERVICE LINE FOR:
 - A. ALL COMMERCIAL AND MULTI-FAMILY DOMESTIC TAPS.
 - B. FIRE LINES
- ALL WATER LINES SHALL BE CHLORINATED IN ACCORDANCE WITH AWWA C-651, "DISINFECTING WATER MAINS." THE REQUIRED METHOD IS TO USE SUFFICIENT CHLORINE TABLET TO PRODUCE A 25 MG/L SOLUTION. THESE TABLETS SHALL BE ADHERED TO THE TOP OF THE PIPE WITH A FOOD GRADE ADHESIVE SUCH AS PERMATED CLEAR RTV. CHLORINATION OF 16-INCH AND LARGER PIPE REQUIRE A CHLORINE SLURRY. THE CHLORINATION OF ANY FINISHED PIPELINE SHALL BE COMPLETED PRIOR TO HYDROSTATIC TESTING.
- THE WATER QUALITY CONTROL DIVISION OF THE COLORADO DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT (CDPHE) REQUIRES ALL WATER LINE CONTRACTORS TO POSSESS A CURRENT DISCHARGE PERMIT FOR DISCHARGES OF CHLORINATED AND PROCESS WATERS ASSOCIATED WITH THE INSTALLATION OF NEW MAINS OR CONDUITS. CONTACT CDPHE WATER QUALITY CONTROL DIVISION AT (303) 692-3539 FOR INFORMATION ON OBTAINING THE REQUIRED PERMIT.
- HYDROSTATIC TESTING: ALL WATER LINES SHALL BE HYDROSTATIC TESTED IN ACCORDANCE WITH AWWA C-600 SECTION 4 "HYDROSTATIC TESTING". ALL WATER LINES SHALL BE TESTED TO A MINIMUM OF 150 PSI. THE TEST SHALL BE SCHEDULED WITH THE DISTRICT AUTHORITY AND COORDINATED WITH ANY OTHER REVIEWING OR APPROVING AGENCY. THE CONTRACTOR SHALL FURNISH ALL EQUIPMENT FOR TESTING. THE ALLOWABLE LEAKAGE RATES ARE AS FOLLOWS:

| PIPE I.D. | ALLOWABLE LEAKAGE PER 1000 FEET | |
|-----------|---------------------------------|---------------|
| | D.I.P | PVC |
| 4" | 0.37 GAL/HOUR | 0.33 GAL/HOUR |
| 6" | 0.55 GAL/HOUR | 0.50 GAL/HOUR |
| 8" | 0.74 GAL/HOUR | 0.66 GAL/HOUR |
| 12" | 1.10 GAL/HOUR | 1.00 GAL/HOUR |
| 16" | 1.47 GAL/HOUR | |
| 20" | 1.84 GAL/HOUR | |
- ONLY ONE (1) POINT OF CONNECTION WILL BE ALLOWED UNTIL ALL TESTING OF NEW INSTALLATIONS IS COMPLETED TO THE DISTRICT'S SATISFACTION.
- PROBATIONARY ACCEPTANCE OF THE NEW WATER LINES IS CONTINGENT UPON RECEIVING COPIES OF:
 - A. PASSING WATER LINE TRENCH COMPACTION TEST RESULTS;
 - B. PASSING HYDROSTATIC PRESSURE TEST RESULTS;
 - C. RECORD DRAWINGS
 - D. PASSING HEALTH DEPARTMENT TESTS (CHLORINE AND/OR CLEAR WATER AS REQUIRED)
- THE COST OF THE WATER LINE CONSTRUCTION IS \$_____.
- THE STATIC PRESSURE MEASURED AT THE FIRE HYDRANT LOCATED AT THE PARKER ADVENTIST HOSPITAL IS 90 PSI. PLEASE INTERPOLATE TO DETERMINE THE PRESSURE AT THE CONNECTION TO THE EXISTING SYSTEM, 9395 CROWN CREST BLVD, PARKER, CO 80138

COTTONWOOD SANITARY SEWER NOTES :

- THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROCUREMENT OF ALL PERMITS NECESSARY FOR THE CONSTRUCTION OF THE SANITARY SEWER LINE WORK.
- THE CONTRACTOR IS RESPONSIBLE FOR:
 - A. NOTIFYING THE DISTRICT 48 HOURS IN ADVANCE OF ANY NEED TO SHUT DOWN ANY PORTION OF THE EXISTING SANITARY SEWER SYSTEM.
 - B. NOTIFYING THE DISTRICT 48 HOURS IN ADVANCE OF THE WORK.
 - C. IN CASE OF AN EMERGENCY AFTER WORKING HOURS, CALL THE DISTRICT OFFICE AT (303) 886-2275 FOR RECORDED INSTRUCTIONS.
- UNDERDRAINS ARE NOT PART OF THE SANITARY SEWER LINES OR SYSTEM AND WILL NOT BE ALLOWED IN THE SAME TRENCH AS THE SANITARY SEWER MAINS. UNDERDRAINS SHALL NOT BE ACCEPTED, MAINTAINED OR SUBJECT TO CONSTRUCTION OBSERVATION BY THE DISTRICT. THE DISTRICT HAS NO SPECIFICATIONS FOR UNDERDRAINS AND WILL ONLY REVIEW THEIR PROPOSED LOCATION RELATIVE TO THE SANITARY SEWER LINES.
- THE CONTRACTOR SHALL VERIFY EXISTING MANHOLE INVERTS TO BE CONNECTED TO PRIOR TO CONSTRUCTION STAKING AND CONSTRUCTION.
- PRIOR TO INSTALLATION OF SANITARY SEWER MAINS, ROAD CONSTRUCTION MUST HAVE PROGRESSED TO AT LEAST THE SUB-GRADE STAGE. SUB-GRADE IS DEFINED AS AN ELEVATION OF NO MORE THAN SEVEN (7) INCHES BELOW THE FINISHED STREET GRADE. THE CONTRACTOR SHALL ADJUST ALL MANHOLE COVERS TO THE FINAL FINISHED GRADE.
- THE LENGTH OF SANITARY SEWER IS THE HORIZONTAL DISTANCE BETWEEN CENTERS OF MANHOLE. THEREFORE DISTANCES SHOWN ON THE PLANS ARE APPROXIMATE AND COULD VARY DUE TO VERTICAL ALIGNMENT AND MANHOLE DIMENSIONS.
- THE PIPE USED FOR SANITARY SEWER MAINS SHALL BE IN ACCORDANCE WITH ASTM D-3034 SDR 35 PVC PIPE IN PAVED RIGHTS-OF-WAY AND EASEMENTS, AND AWWA C-900 CLASS 165 (DR25) IN UNPAVED EASEMENTS OR AS NOTED ON THE PROJECT PLANS.
- MANHOLE RIMS SHALL BE SET AT AN ELEVATION RELATIVE TO THE PAVEMENT, IN ACCORDANCE WITH COUNTY STANDARDS. WHETHER THE MANHOLE IS IN A PAVED OR UNPAVED GRADE, A MAXIMUM ACCEPTABLE VERTICAL ADJUSTMENT UTILIZING CONCRETE RINGS IS TWELVE (12) INCHES.
- THE CONTRACTOR SHALL TAKE CARE TO PROPERLY SHAPE ALL MANHOLE INVERTS AND BENCHES IN ACCORDANCE WITH DISTRICT STANDARDS AND SPECIFICATIONS, TO PROMOTE SMOOTH FLOW THROUGH THE MANHOLE. INVERTS OF LINES INTERSECTING AT 90 DEGREES AND AT HIGHLY DIVERGENT OR FLAT SLOPES ARE ESPECIALLY CRITICAL. MANHOLE INVERTS SHALL BE CONSTRUCTED WITH A SMOOTH TROWEL FINISH, AND BENCHES FINISHED WITH A LIGHT BROOM, NON-SKID FINISH.
- TRACER WIRE, GAUGE 12 COPPER, SHALL BE INSTALLED ON ALL SEWER LINES, MANHOLES, AND CLEANOUTS.
- THE SANITARY SEWER SERVICE SHALL BE STUBBED OUT. THE END OF THE STUB SHALL BE WITNESSED BY A WOOD, CARSONITE OR METAL POST AT LEAST FOUR FEET LONG, BURIED TO EXPOSE ONE FOOT. THE CONTRACTOR SHALL FURNISH THE AUTHORITY WITH AN AS-BUILT LOCATION OF THE WYE.
- THE SANITARY SEWER SYSTEM WILL BE TESTED IN ACCORDANCE WITH THE DISTRICT STANDARDS AND SPECIFICATIONS. THE DISTRICT WILL REQUIRE THE DEVELOPER TO:
 - A. LOW PRESSURE AIR TEST 100% OF THE NEW SYSTEM, AND
 - B. DEFLECTION TEST, AT A MINIMUM 33% OF THE SYSTEM FIFTEEN (15) FEET OR LESS IN DEPTH, AND 100% OF THE SYSTEM GREATER THAN FIFTEEN (15) FEET IN DEPTH.
 - C. JET AND TV/VIDEO TAPE 100% OF THE SYSTEM.
- PROBATIONARY ACCEPTANCE OF THE NEW SANITARY SEWER MAINS IS CONTINGENT UPON RECEIVING COPIES OF:
 - A. SANITARY SEWER TRENCH COMPACTION TEST RESULTS,
 - B. RECORD DRAWINGS, AND
 - C. COMPLETION OF SYSTEM TESTING.
- CONNECTIONS TO EXISTING DISTRICT LINES WILL BE PERMITTED UPON ACCEPTANCE OF THE NEW SANITARY SEWER SYSTEM. EXISTING PIPE AT THE POINT OF CONNECTION SHALL NOT BE "BROKEN OUT" UNTIL THE NEW SYSTEM IS ACCEPTED.
- MONITORING MANHOLES ARE REQUIRED FOR ALL COMMERCIAL AND INDUSTRIAL SANITARY SERVICE LINES.
- PIPE BEDDING UP TO 16 FEET IN DEPTH IS TO BE SQUEEGEE. PIPE BEDDING IN EXCESS OF 16 FEET IN DEPTH IS TO BE 3/4-INCH AGGREGATE. PIPE BEDDING IN EXCESS OF 22 FEET MUST BE SPECIFIED BY THE DISTRICT ENGINEER.

ABBREVIATIONS:

| | | | |
|-------|---------------------------------|------|--------------------------------|
| BFV | BUTTERFLY VALVE | PCC | POINT OF COMPOUND CURVATURE |
| BOV | BLOW OFF VALVE | PCR | POINT OF CURB RETURN |
| BW | BOTTOM OF WALL @ FINISHED GRADE | PI | POINT ON INTERSECTION |
| CL | CENTERLINE | PRC | POINT OF REVERSE CURVATURE |
| CMP | CORRUGATED METAL PIPE | PT | POINT OF TANGENCY |
| EJ | EXPANSION JOINT | PVC | POLYVINYL CHLORIDE |
| ELEC. | ELECTRIC | RCP | REINFORCED CONCRETE PIPE |
| ELEV. | ELEVATION | RCB | REINFORCED CONCRETE BOX |
| EX | EXISTING | RL | RIDGE LINE |
| FES | FLARED END SECTION | ROW | RIGHT OF WAY |
| FG | FINISHED GRADE | RT | RIGHT |
| FS | FINISHED SURFACE | SD | STORM DRAINAGE SEWER |
| FL | FLOWLINE | SS | SANITARY SEWER |
| GB | GRADE BREAK | STA | STATION |
| HP | HIGH POINT | STRM | STORM SEWER |
| FH | FIRE HYDRANT | TOF | TOP OF FLANGE |
| INV. | INVERT | TOP | TOP OF PIPE |
| IRR | IRRIGATION | TW | TOP OF WALL @ FINISHED GRADE |
| KB | KICK BLOCK | TYP. | TYPICAL |
| LF | LINEAR FEET | VCP | VITRIFIED CLAY PIPE |
| LT | LEFT | VPC | VERTICAL POINT OF CURVATURE |
| ME | MATCH EXISTING | VPI | VERTICAL POINT OF INTERSECTION |
| MH | MANHOLE | VPT | VERTICAL POINT OF TANGENCY |
| PC | POINT OF CURVATURE | WATR | WATER LINE |

M I R O
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 4582 S. Usher St., Suite 750
 Denver, CO 80237
 303-741-3737
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811
 Know what's below.
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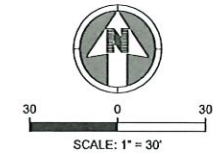
| DATE | DESCRIPTION |
|-----------|------------------------|
| 5/31/2024 | CONSTRUCTION DOCUMENTS |
| NO. | |

ADVENTHEALTH PARKER EXPANSION
PARKER, CO 80138
WATER AND SANITARY NOTES AND LEGEND
 PROJECT: ADVENTHEALTH PARKER EXPANSION
 DRAWING: WATER AND SANITARY NOTES AND LEGEND
 FILE PATH: C:\Users\ed54\OneDrive\Documents\A. Miro, Inc\Civil\Jobs\23179\AHP Expansion\05 CAD\Plans and Details\C500-WATR-SEWER-COVAR.dwg C501 - 5/31/2024

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DESIGNED BY: RJH
 DRAWN BY: EDS
 CHECKED BY: MIV
 MIRO JOB NO. 23079
 DRAWING NUMBER:

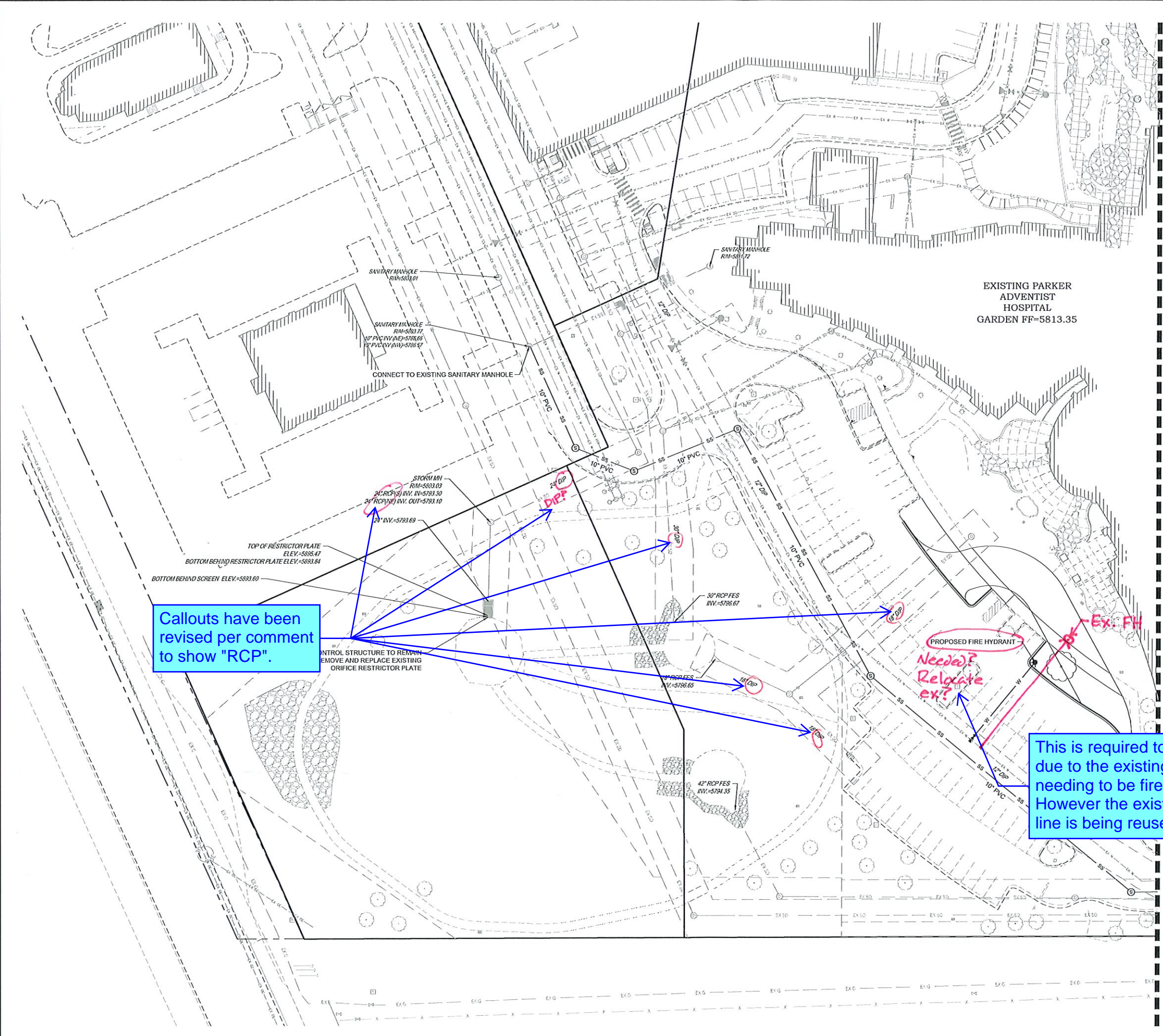
C501



NOTES:
 1. INSTALL 4" PERFORATED PERIMETER DRAIN PIPE ENCASES IN GRANULAR ROCK AND DRAINAGE FABRIC AROUND THE PERIMETER OF THE PROPOSED ADDITION. CONNECT TO EXISTING PERIMETER DRAIN SYSTEM OR PIPE TO STORM MAIN AS NECESSARY. CONTRACTOR SHALL LOCATE AND IDENTIFY SIZES AND DEPTHS OF EXISTING PERIMETER DRAIN SYSTEMS PRIOR TO CONSTRUCTION TO ESTABLISH FINAL OUTFALL LOCATIONS. THE PIPE SHALL BE SLOPED AT 0.5% MINIMUM.

LEGEND:

| | | |
|----------|-------|------------------------------------|
| --- | EX E | EXISTING SURVEYED ELECTRICAL LINE |
| --- | EX FO | EXISTING SURVEYED FIBER OPTIC LINE |
| --- | EX G | EXISTING SURVEYED GAS LINE |
| --- | EX T | EXISTING SURVEYED TELEPHONE LINE |
| --- | EX SS | EXISTING SURVEYED SANITARY LINE |
| --- | EX S2 | EXISTING SURVEYED STORM LINE |
| --- | EX W | EXISTING SURVEYED WATER LINE |
| --- | --- | EXISTING DESIGNED ELECTRICAL LINE |
| --- | --- | EXISTING DESIGNED GAS LINE |
| --- | --- | EXISTING DESIGNED SANITARY LINE |
| --- | --- | EXISTING DESIGNED STORM LINE |
| --- | --- | EXISTING DESIGNED WATER LINE |
| --- | --- | EXISTING EASEMENT |
| [Symbol] | --- | EXISTING STORM INLET |
| [Symbol] | --- | EXISTING CLEANOUT |
| [Symbol] | --- | EXISTING FIRE HYDRANT |
| [Symbol] | --- | EXISTING WATER VALVE |
| [Symbol] | --- | EXISTING MANHOLES |
| --- | E | PROPOSED ELECTRICAL LINE |
| --- | FO | PROPOSED FIBER OPTIC LINE |
| --- | G | PROPOSED GAS LINE |
| --- | T | PROPOSED TELEPHONE LINE |
| --- | SS | PROPOSED SANITARY LINE |
| --- | S2 | PROPOSED STORM LINE |
| --- | W | PROPOSED WATER LINE |
| [Symbol] | --- | PROPOSED STORM INLET |
| [Symbol] | --- | PROPOSED CLEANOUT |
| [Symbol] | --- | PROPOSED FIRE HYDRANT |
| [Symbol] | --- | PROPOSED WATER VALVE |
| [Symbol] | --- | PROPOSED WATER FITTINGS |
| [Symbol] | --- | PROPOSED MANHOLES |



Callouts have been revised per comment to show "RCP".

This is required to be relocated due to the existing location needing to be fire truck accessible. However the existing hydrant fire line is being reused

SEE SHEET C512

| DATE | DESCRIPTION |
|---|------------------------|
| 5/31/2024 <td>CONSTRUCTION DOCUMENTS</td> | CONSTRUCTION DOCUMENTS |

| | |
|----------------|---|
| PROJECT: | ADVENTHEALTH PARKER EXPANSION PARKER, CO 80138 |
| DRAWING TITLE: | UTILITY PLAN |
| FILE PATH: | |

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DESIGNED BY: RJH
 DRAWN BY: EDS
 CHECKED BY: MHV
 MIRO JOB NO. 23079

DRAWING NUMBER:
C511



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SCALE: 1" = 30'

NOTES:

1. INSTALL 4" PERFORATED PERIMETER DRAIN PIPE ENCASED IN GRANULAR ROCK AND DRAINAGE FABRIC AROUND THE PERIMETER OF THE PROPOSED ADDITION. CONNECT TO EXISTING PERIMETER DRAIN SYSTEM OR PIPE TO STORM MAIN AS NECESSARY. CONTRACTOR SHALL LOCATE AND IDENTIFY SIZES AND DEPTHS OF EXISTING PERIMETER DRAIN SYSTEMS PRIOR TO CONSTRUCTION TO ESTABLISH FINAL OUTFALL LOCATIONS. THE PIPE SHALL BE SLOPED AT 0.5% MINIMUM.

LEGEND:

| | | |
|-----|------------|------------------------------------|
| --- | EX E | EXISTING SURVEYED ELECTRICAL LINE |
| --- | EX FO | EXISTING SURVEYED FIBER OPTIC LINE |
| --- | EX G | EXISTING SURVEYED GAS LINE |
| --- | EX T | EXISTING SURVEYED TELEPHONE LINE |
| --- | EX SS | EXISTING SURVEYED SANITARY LINE |
| --- | EX SD | EXISTING SURVEYED STORM LINE |
| --- | EX W | EXISTING SURVEYED WATER LINE |
| --- | --- | EXISTING DESIGNED ELECTRICAL LINE |
| --- | --- | EXISTING DESIGNED GAS LINE |
| --- | --- | EXISTING DESIGNED SANITARY LINE |
| --- | --- | EXISTING DESIGNED STORM LINE |
| --- | --- | EXISTING DESIGNED WATER LINE |
| --- | --- | EXISTING EASEMENT |
| ⊠ | --- | EXISTING STORM INLET |
| ⊙ | --- | EXISTING CLEANOUT |
| ⊕ | --- | EXISTING FIRE HYDRANT |
| ⊖ | --- | EXISTING WATER VALVE |
| ⊗ | --- | EXISTING MANHOLES |
| --- | E | PROPOSED ELECTRICAL LINE |
| --- | FO | PROPOSED FIBER OPTIC LINE |
| --- | G | PROPOSED GAS LINE |
| --- | T | PROPOSED TELEPHONE LINE |
| --- | SS | PROPOSED SANITARY LINE |
| --- | SD | PROPOSED STORM LINE |
| --- | W | PROPOSED WATER LINE |
| ⊠ | --- | PROPOSED STORM INLET |
| ⊙ | --- | PROPOSED CLEANOUT |
| ⊕ | --- | PROPOSED FIRE HYDRANT |
| ⊖ | --- | PROPOSED WATER VALVE |
| ⊗ | --- | PROPOSED WATER FITTINGS |
| ⊗ | T, S, D, W | PROPOSED MANHOLES |

SEE SHEET C511

EXISTING PARKER
 ADVENTIST
 HOSPITAL
 GARDEN FF=5813.35

EXISTING MOB

Gate valves added per comments.

is 4" still sufficient?

Revised to show RCP.

Water plan and profile included.

Grease interceptor connection has been added to the plan.

Callouts have been added per comment.

Gate valves added per comments.

Demo plan provided.

All easements are shown on utility plan per comment.

Callout has been revised per comment to show "RCP".

Provide Plan & Profile for proposed water. ✓
 Callout all fittings, valves, pipe size & material, etc.
 Provide a Demo plan.
 Show Proposed Easements

ADVENTHEALTH PARKER EXPANSION
 PARKER, CO 80138

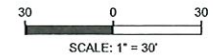
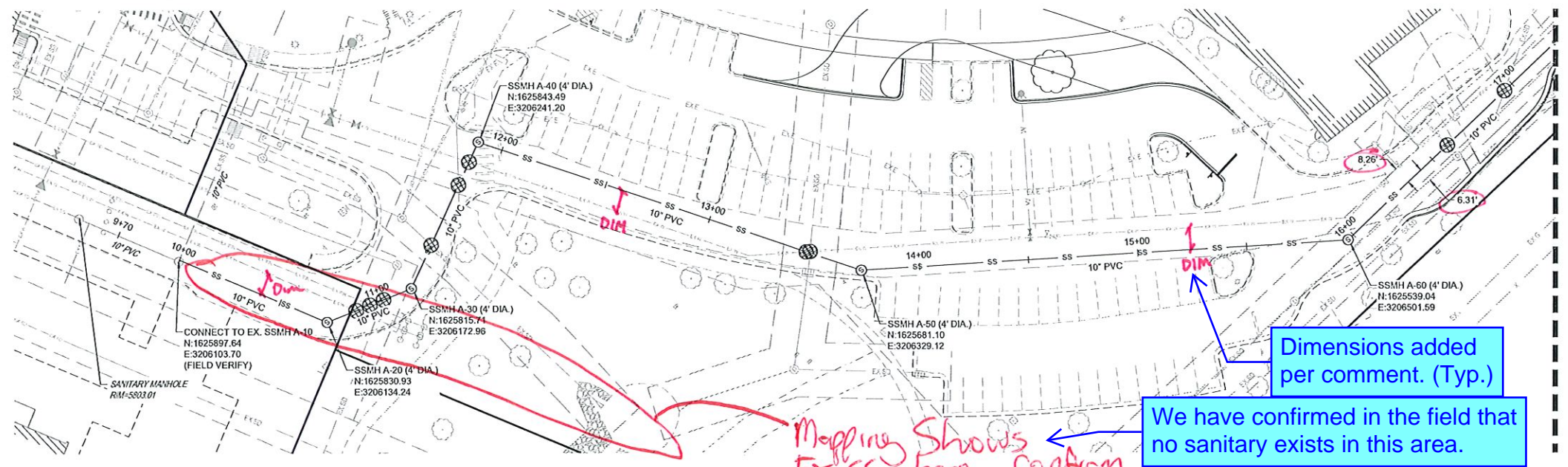
UTILITY PLAN

PROJECT: ADVENTHEALTH PARKER EXPANSION
 DRAWING TITLE: UTILITY PLAN
 FILE PATH:

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 DRAWN BY: EDS
 CHECKED BY: MHV
 MIRO JOB NO. 23079

DRAWING NUMBER:
C512



- NOTES:
- SEE SHEET C501 FOR SANITARY NOTES AND LEGEND.
 - ALL EXISTING DRY UTILITIES ARE ASSUMED TO BE 3' DEEP TO TOP OF PIPE.
 - ALL EXISTING WATER LINES ARE ASSUMED TO BE 4.5' DEEP TO TOP OF PIPE.
 - THE CONTRACTOR SHALL POTHOLE ALL EXISTING UTILITY CROSSINGS PRIOR TO CONSTRUCTION AND NOTIFY THE ENGINEER OF ANY POTENTIAL CONFLICTS IMMEDIATELY.

LEGEND:

UTILITY CROSSING

S. A. MIRO, INC.
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| 5/31/2024 <td>CONSTRUCTION DOCUMENTS</td> | CONSTRUCTION DOCUMENTS |
| NO. 1 | |

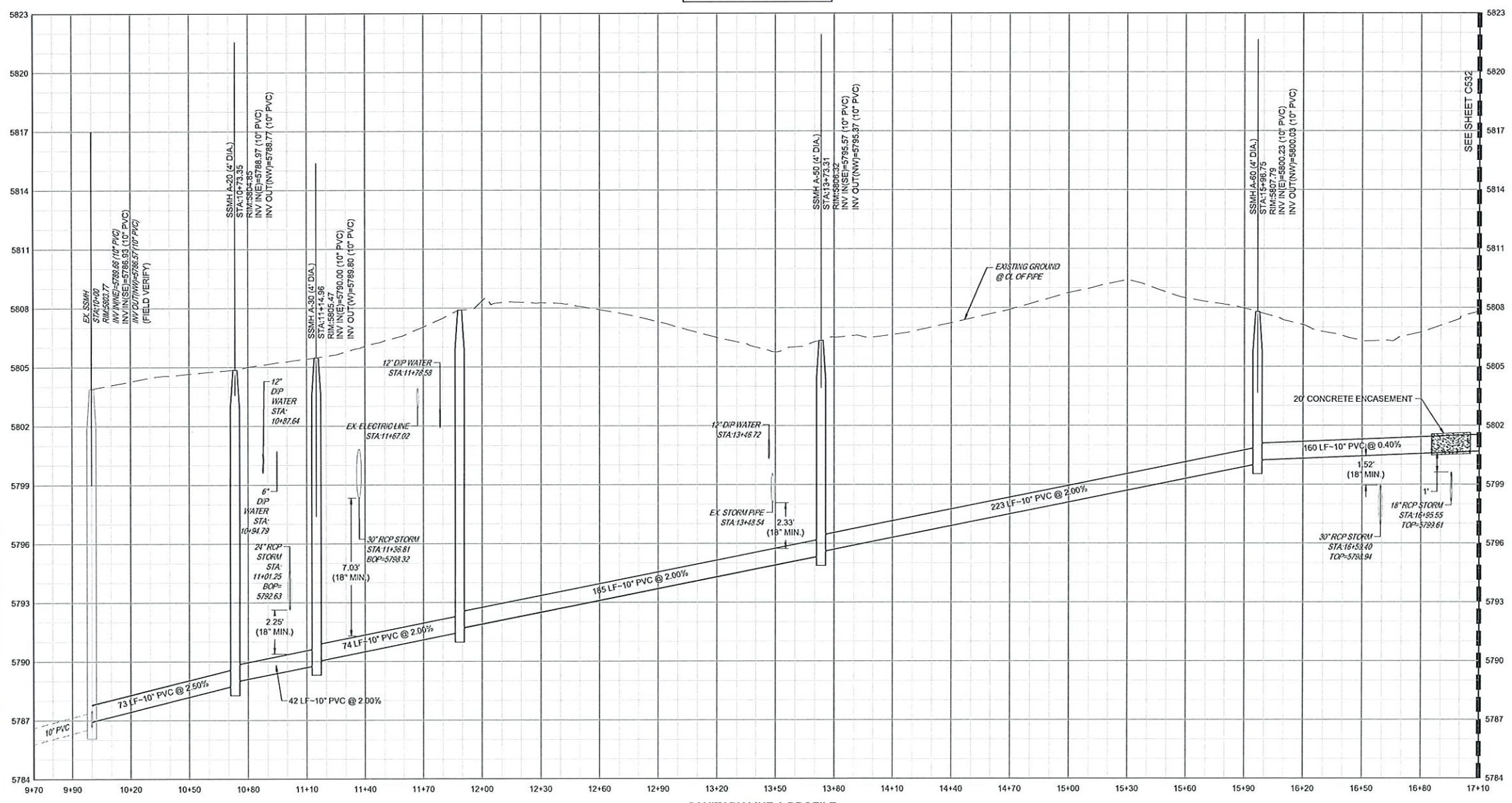
Dimensions added per comment. (Typ.)

We have confirmed in the field that no sanitary exists in this area.

Mapping Shows Ex SS here. Confirm.

If so, Remove.

VERTICAL SCALE: 1"=3'
 HORIZONTAL SCALE: 1"=30'



PROJECT: **ADVENTHEALTH PARKER EXPANSION**
PARKER, CO 80138

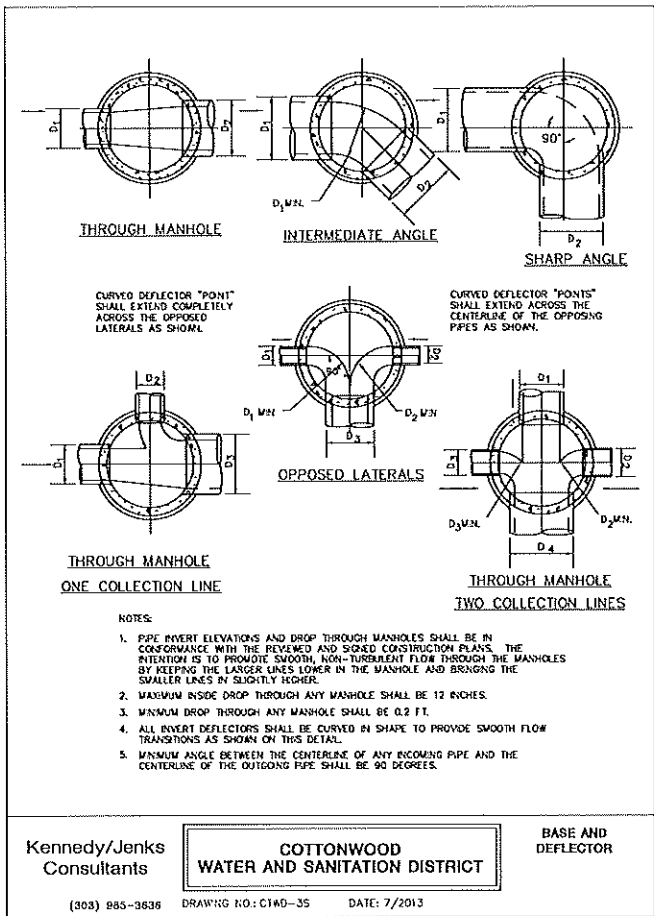
DRAWING TITLE: **SANITARY PLAN AND PROFILE**

FILE PATH:

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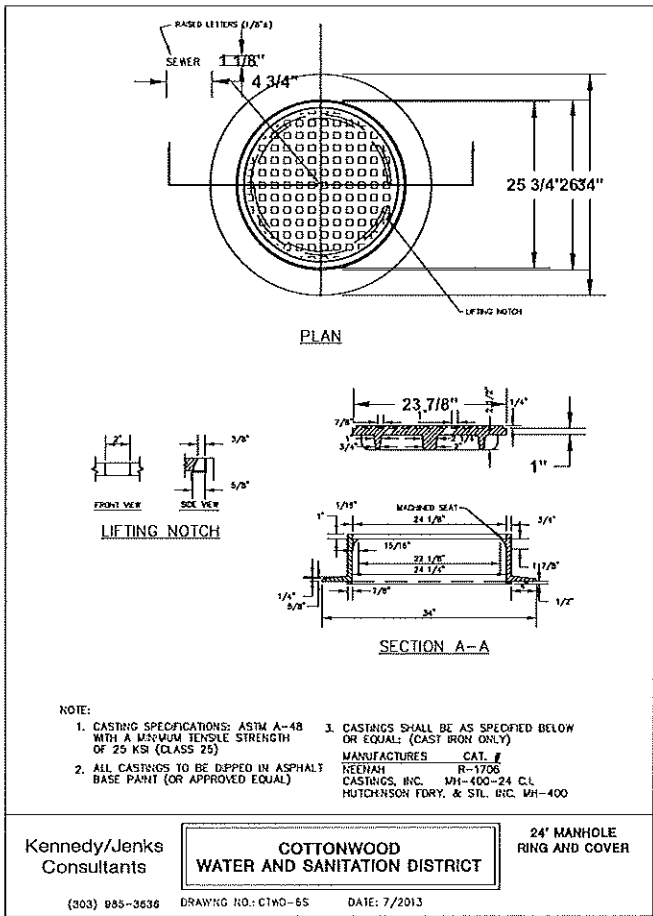
DESIGNED BY: R/JH
 DRAWN BY: E/DS
 CHECKED BY: M/HV
 MIRO JOB NO. 23079

DRAWING NUMBER:
C531



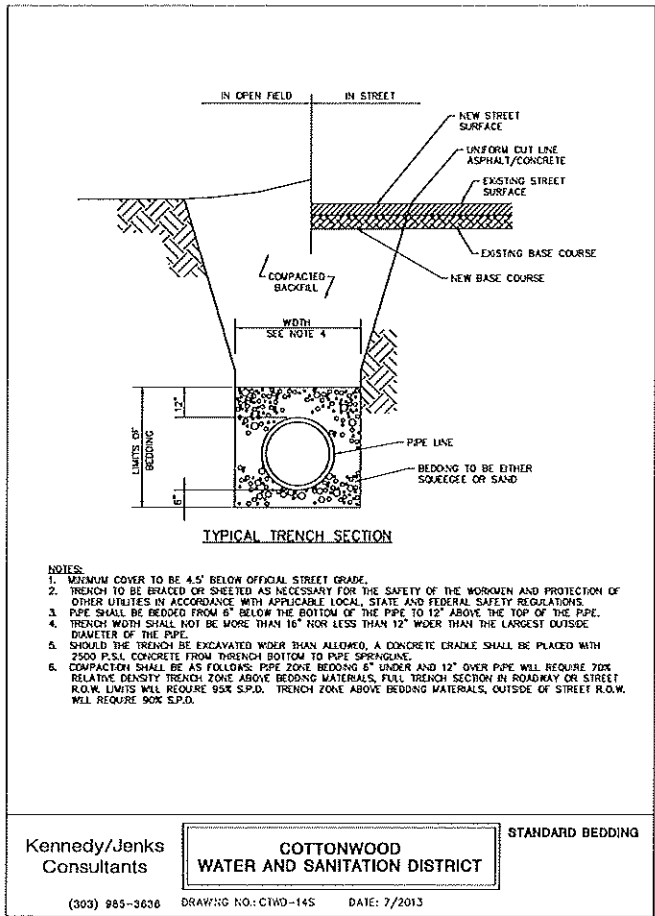
Kennedy/Jenks Consultants
COTTONWOOD WATER AND SANITATION DISTRICT
 BASE AND DEFLECTOR

(303) 985-3636 DRAWING NO: C1W0-35 DATE: 7/2013



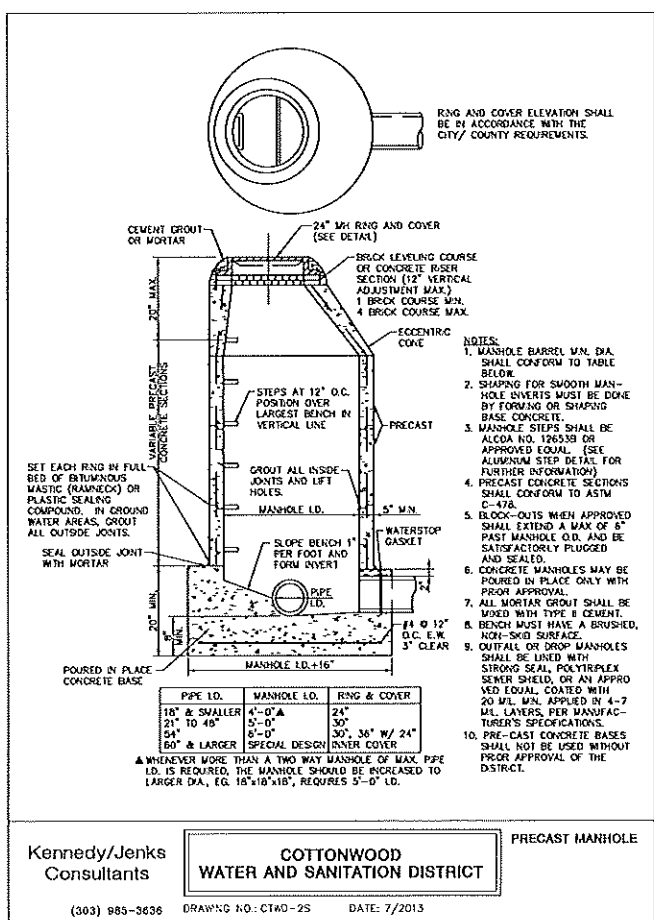
Kennedy/Jenks Consultants
COTTONWOOD WATER AND SANITATION DISTRICT
 24" MANHOLE RING AND COVER

(303) 985-3636 DRAWING NO: C1W0-65 DATE: 7/2013



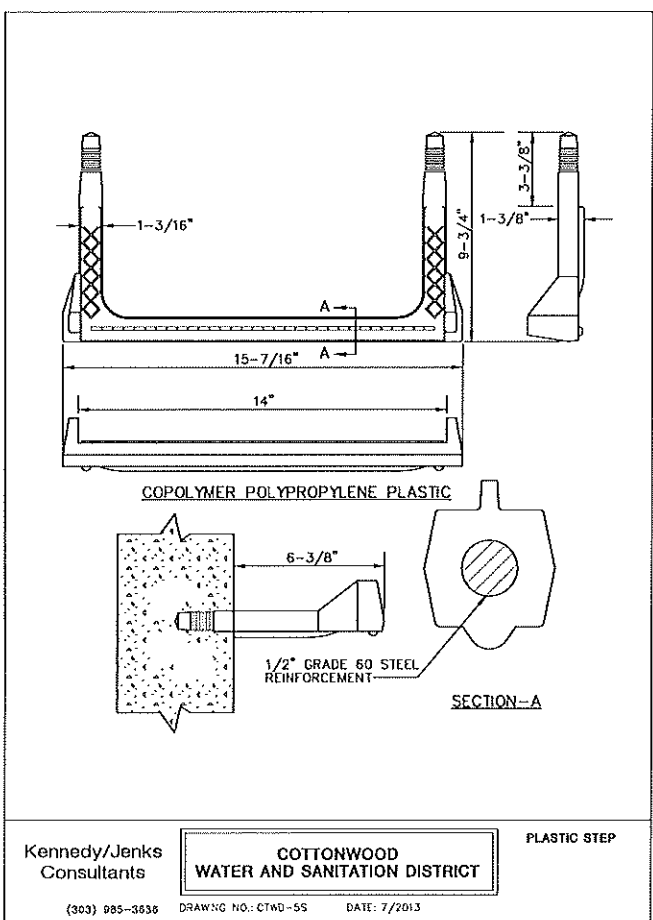
Kennedy/Jenks Consultants
COTTONWOOD WATER AND SANITATION DISTRICT
 STANDARD BEDDING

(303) 985-3636 DRAWING NO: C1W0-145 DATE: 7/2013



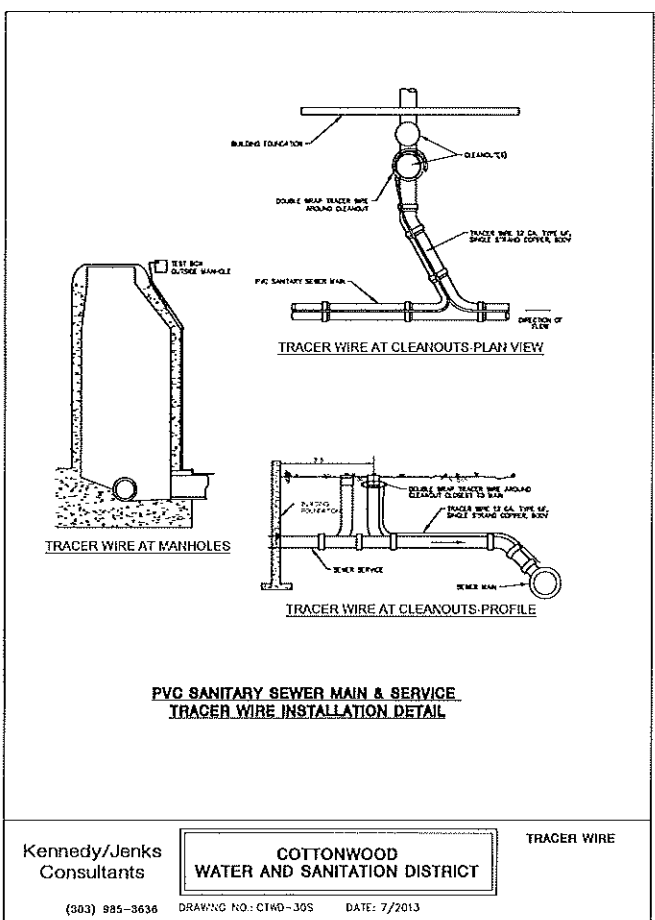
Kennedy/Jenks Consultants
COTTONWOOD WATER AND SANITATION DISTRICT
 PRECAST MANHOLE

(303) 985-3636 DRAWING NO: C1W0-25 DATE: 7/2013



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 PLASTIC STEP

(303) 985-3636 DRAWING NO: C1W0-55 DATE: 7/2013



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 TRACER WIRE

(303) 985-3636 DRAWING NO: C1W0-305 DATE: 7/2013

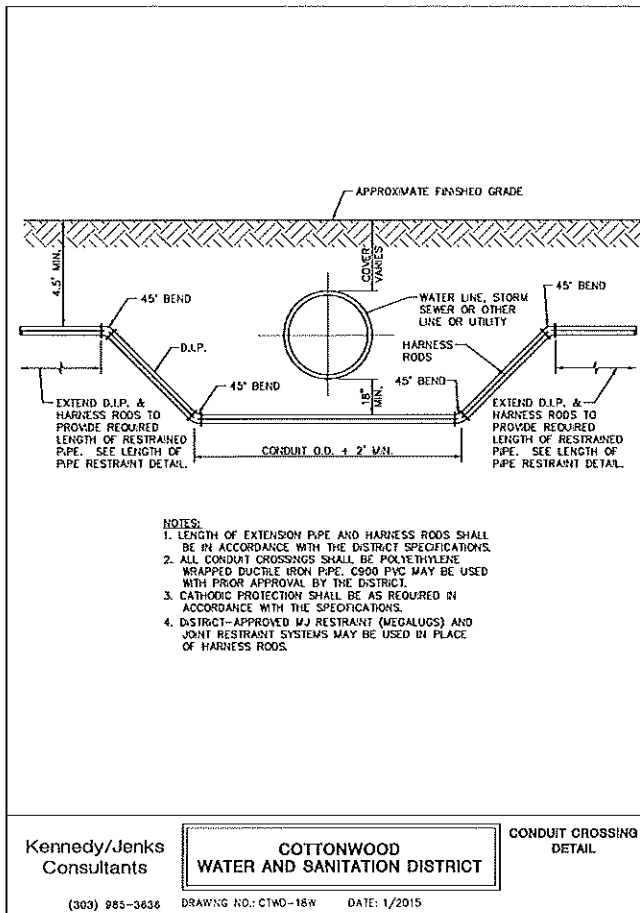
| DATE | DESCRIPTION | NO. |
|-----------|------------------------|-----|
| 8/11/2024 | CONSTRUCTION DOCUMENTS | 1 |

PROJECT: **ADVENTHEALTH PARKER EXPANSION PARKER, CO 80138**
 DRAWING TITLE: **WATER AND SANITARY DETAILS**
 FILE PATH: C:\Users\aloc\OneDrive\A. Miro, Inc.\Civil\Library\23079 AHP Expansion\05 CAD\Plans and Details\C551-WATR-SSEW-DT-LS.dwg C552 - 5/8/2024

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 DRAWN BY: EDS
 CHECKED BY: MHV
 MIRO JOB NO. 23079
 DRAWING NUMBER:

C552



Kennedy/Jenks Consultants
COTTONWOOD WATER AND SANITATION DISTRICT
CONDUIT CROSSING DETAIL
(303) 985-3636 DRAWING NO.: CTWD-18W DATE: 1/2015

ROD DIAMETER, GRADE & LENGTH OF RESTRAINED PIPE

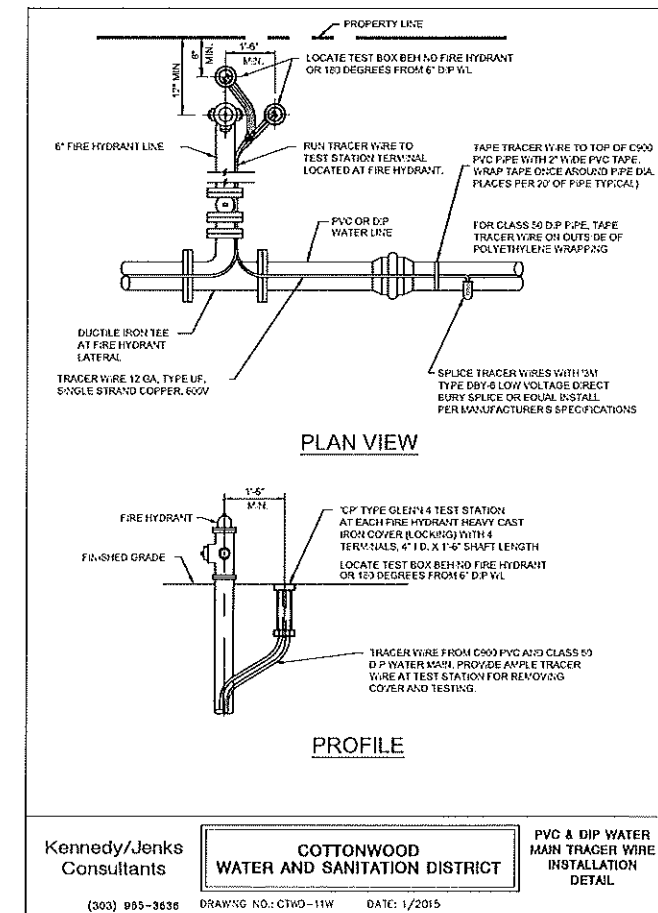
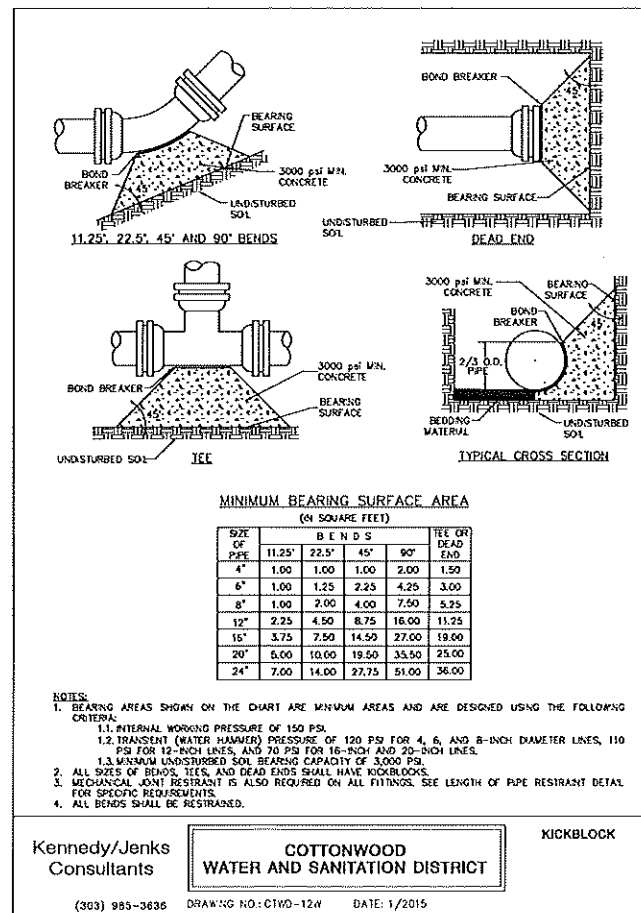
| PIPE SIZE | 4" | | | 6" | | | 8" | | | 12" | | | 15" | | | 20" | | | 24" | | | |
|---------------------|------|-----|----|------|-----|----|------|-----|----|------|-----|----|------|------|----|--------|------|----|-----|------|---|---|
| | D | L | G | D | L | G | D | L | G | D | L | G | D | L | G | D | L | G | D | L | G | |
| 90° BEND, TEE, PLUG | 3/4" | 30" | MS | 3/4" | 45" | MS | 3/4" | 60" | MS | 3/4" | 90" | MS | 1" | 120" | MS | 1 1/4" | 150" | MS | - | 180" | - | - |
| VALVE | 3/4" | 30" | MS | 3/4" | 45" | MS | 3/4" | 60" | MS | 3/4" | 90" | MS | 1" | 120" | MS | 1 1/4" | 150" | MS | - | 180" | - | - |
| 45° BEND | 3/4" | 15" | MS | 3/4" | 15" | MS | 3/4" | 15" | MS | 3/4" | 15" | MS | 1" | 15" | MS | 1 1/4" | 15" | MS | - | 15" | - | - |
| 12 1/2" BEND | 3/4" | 2" | MS | 3/4" | 4" | MS | 3/4" | 5" | MS | 3/4" | 7" | MS | 3/4" | 8" | MS | 3/4" | 10" | MS | - | 12" | - | - |
| 11 1/4" BEND | 3/4" | 2" | MS | 3/4" | 2" | MS | 3/4" | 2" | MS | 3/4" | 2" | MS | 3/4" | 2" | MS | 3/4" | 2" | MS | - | 2" | - | - |

NOTES:
1. LENGTH OF RESTRAINED PIPE MEASURED EACH WAY FROM VALVES AND BENDS.
2. CLAMPS, RODS & MEGALUGS NOT ALLOWED FOR 24" & LARGER PIPES.
3. D=DIAMETER, L=LENGTH, G=GRADE, MS=MILD STEEL, HS=HIGH STRENGTH.
4. MIN 4.5" GROUND COVER REQ.
5. BASED ON 150 PSI INTERNAL PRESSURE.
6. MS = MILD STEEL ROD ASTM A 36.
7. HS = HIGH STRENGTH ROD ASTM A 193 GRADE B7.
8. NUTS SHALL BE ASTM A 307 GRADE A OR B HEXAGON HEAVY SERIES. HS NUTS SHALL CONFORM TO MS-22.
9. SEE TEE ROD DETAIL DRAWING. ALSO, TEE ROD COUPLING DETAILS, CLAMP DETAILS AND SET CLAMP DETAILS.
10. LENGTH REFERS TO THE AMOUNT OF PIPE WHICH MUST BE RESTRAINED TOGETHER AND IS NOT NECESSARILY THE LENGTH OF THE RODS.
11. LENGTH OF RESTRAINED PIPE CHART IS ALSO FOR THE LENGTH OF JOINT RESTRAINT FOR MEGALUGS.
12. CROSSES MUST BE RESTRAINED IN ALL APPLICABLE DIRECTIONS.
13. 12" AND SMALLER IN LINE VALVES AND TEES SHALL HAVE A MECHANICAL JOINT RESTRAINT DEVICE ON EACH SIDE OF THE FITTING OR VALVE. MECHANICAL JOINT RESTRAINT DEVICE SHALL BE PER MS-2.
14. A SECOND VALVE WILL BE REQ. TO BE CLOSED WHEN EXCAVATING NEXT TO A EXIST VALVE.
15. ON PLUGS, TEES AND BENDS KICKBLOCK SHALL BE USED IN ADDITION TO RESTRAINT.
16. WHEN REDUCERS ARE USED ON VALVE INSTALLATIONS THE LENGTH OF RESTRAINT SHALL BE BASED ON THE SIZE OF THE PIPE NOT THE SIZE OF THE VALVE.

TEE
PLUG
90° BEND
VALVE
BENDS

LENGTH OF RESTRAINED PIPE

Kennedy/Jenks Consultants
COTTONWOOD WATER AND SANITATION DISTRICT
(303) 985-3636 DRAWING NO.: CTWD-9W DATE: 1/2015



| DATE | DESCRIPTION | NO. |
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PROJECT: ADVENTHEALTH PARKER EXPANSION PARKER, CO 80138
DRAWING TITLE: WATER AND SANITARY DETAILS
FILE PATH: C:\Users\bdobson\Documents\S. A. Miro\In-Civil\Jobs\23079 AHP Expansion\05 CAD\Plans and Details\C553-WATR-SSEW-DTLS.dwg

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DESIGNED BY: RJH
DRAWN BY: EDS
CHECKED BY: MHV
MIRO JOB NO. 23079
DRAWING NUMBER: **C553**