

CANYONS SOUTH FILING NO. 3
PROPOSED SANITARY SEWER AND WATER PLANS
SITUATED IN PORTIONS OF SECTION 19 AND SECTION 30 IN TOWNSHIP 7 SOUTH,
RANGE 66 WEST OF THE 6TH PRINCIPAL MERIDIAN,
COUNTY OF DOUGLAS, STATE OF COLORADO
PROJECT NUMER CD22-0015

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22	TOTAL SHEETS

PROJECT VARIANCES

NONE

INDEMNIFICATION AND ADHERENCE TO STANDARDS STATEMENTS

THESE PLANS HAVE BEEN REVIEWED BY THE TOWN OF CASTLE ROCK FOR CONCEPT ONLY. THE REVIEW DOES NOT IMPLY RESPONSIBILITY BY THE REVIEWING DEPARTMENT, THE TOWN ENGINEER, OR THE TOWN OF CASTLE ROCK FOR ACCURACY AND CORRECTNESS OF THE CALCULATIONS. FURTHERMORE, THE REVIEW DOES NOT IMPLY THAT QUANTITIES OF ITEMS ON THE PLANS ARE THE FINAL QUANTITIES REQUIRED. THE REVIEW SHALL NOT BE CONSTRUED FOR ANY REASON AS ACCEPTANCE OF FINANCIAL RESPONSIBILITY BY THE TOWN FOR ADDITIONAL QUANTITIES OF ITEMS SHOWN THAT MAY BE REQUIRED DURING THE CONSTRUCTION PHASE.

ALL WORK SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE TOWN OF CASTLE ROCK MUNICIPAL CODE, TECHNICAL MANUALS AND/OR OTHER TOWN–APPROVED APPLICABLE STANDARDS.

TOWN APPROVAL BLOCK

TOWN OF CASTLE ROCK APPROVAL PLANS
ARE HEREBY APPROVED FOR ONE YEAR FROM
DATE OF DEVELOPMENT SERVICES APPROVAL

APPROVED BY:

DEVELOPMENT SERVICES DATE

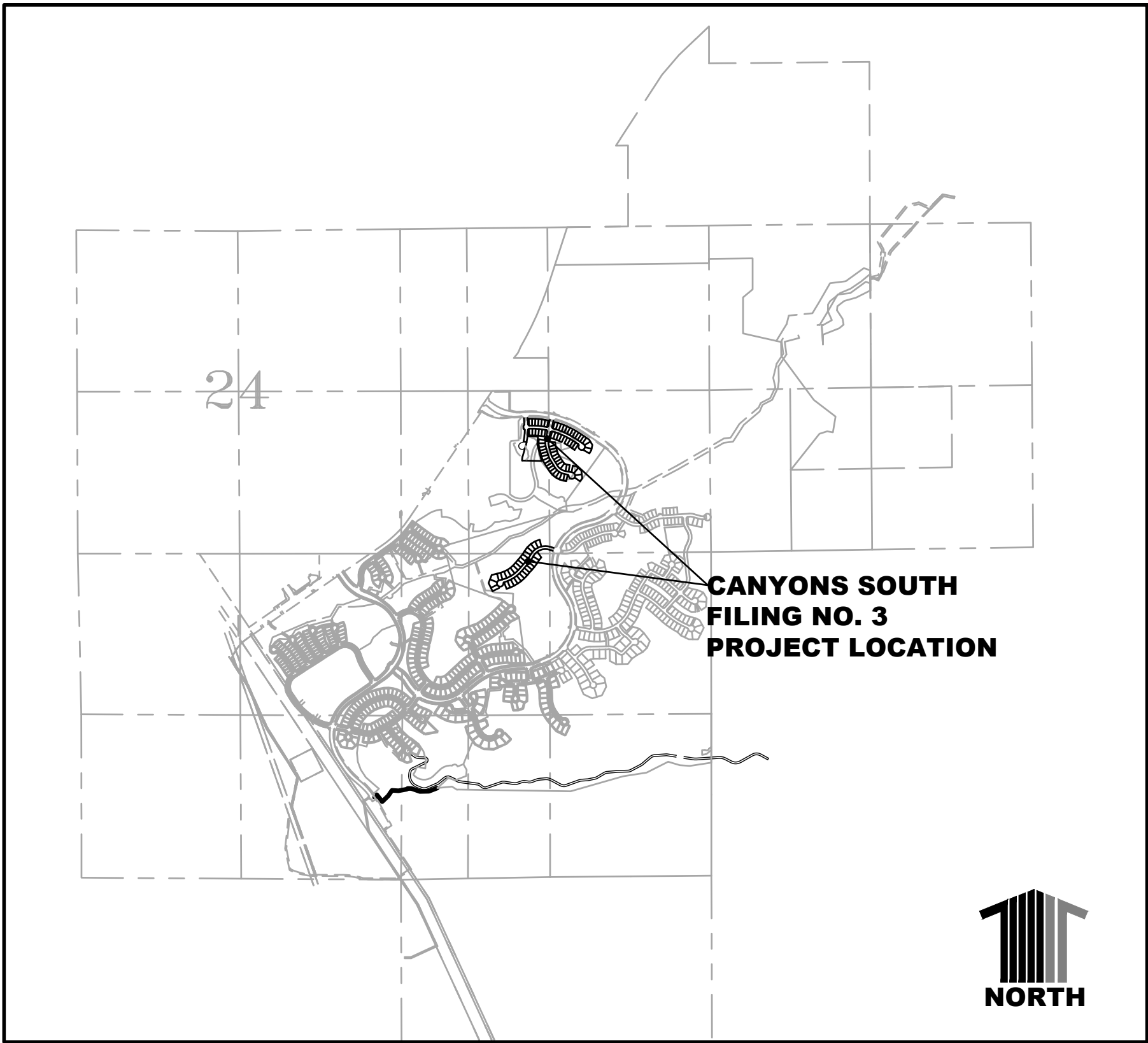
PROFESSIONAL ENGINEER CERTIFICATION

I HEREBY AFFIRM THAT THESE FINAL CONSTRUCTION PLANS WERE PREPARED UNDER MY DIRECT SUPERVISION, IN ACCORDANCE WITH ALL APPLICABLE TOWN OF CASTLE ROCK AND STATE OF COLORADO STANDARDS AND STATUES, RESPECTIVELY, AND THAT I AM FULLY RESPONSIBLE FOR ALL DESIGN AND REVISIONS RELATIVE TO SAID PLANS.

BRIAN K. MOSS DATE
REGISTERED PROFESSIONAL ENGINEER
STATE OF COLORADO NO. 37702

LEGEND

ROW/PROPERTY LINE	---
CENTERLINE	---
PROPERTY BOUNDARY	---
EASEMENT	---
PROP. WATER MAIN	—W—W—
PROP. WATER VALVE	⋈
PROP. FIRE HYDRANT	←
PROP. SANITARY SEWER MAIN	→⊙→
PROP. STORM DRAIN	—⊙—
PROP. STORM DRAIN INLET	□
SANITARY SEWER MANHOLE NUMBER	16
STORM DRAINAGE MANHOLE NUMBER	MH-5
EX. GAS MAIN	—G—G—G—
EX. WATER MAIN	—W—W—W—
EX. WATER VALVE	⋈
EX. FIRE HYDRANT	←
EX. SANITARY SEWERS	→⊙→
EX. STORM DRAIN	—⊙—
EX. STORM DRAIN INLET	□
EX. POWER POLE	—○—
EX. UNDERGROUND ELECTRIC	—E—E—
EX. UNDERGROUND TELEPHONE	—T—
EX. FENCE	—X—X—X—



VICINITY MAP

SCALE: 1"=2000'

PROJECT BENCHMARK:

(AZTEC #401)
DOUGLAS COUNTY BENCHMARK TT17A

(NAVD88 DATUM) ELEVATION=6483.68

BASIS OF BEARINGS:

EAST LINE OF THE SOUTHWEST ONE–QUARTER OF THE SOUTHWEST ONE–QUARTER OF SAID SECTION 20, MONUMENTED ON THE NORTH END BY A FOUND 3–1/4" ALUMINUM CAP STAMPED "PLS 131155" AND ON THE SOUTH END BY A FOUND 2–1/2" ALUMINUM CAP STAMPED "PLS 23515" "2003", ASSUMED TO BEAR SOUTH 00°30'17" EAST 1,324.72 FEET.

OWNER/DEVELOPER:

HT CANYONS SOUTH DEVELOPMENT LP
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UNCC
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811
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Utility Notification
Center of Colorado

Administrative Office 303–232–1991
16361 Table Mountain Parkway
Golden, Co. 80403

CALL 2 BUSINESS DAYS IN ADVANCE BEFORE YOU DIG,
GRADE OR EXCAVATE FOR THE MARKING OF
UNDERGROUND MEMBER UTILITIES.

CALIBRE ENGINEERING, INC. ASSUMES NO RESPONSIBILITY FOR EXISTING UTILITY LOCATIONS (HORIZONTAL AND VERTICAL). THE EXISTING UTILITIES SHOWN ON THIS DRAWING HAVE BEEN PLOTTED FROM THE BEST AVAILABLE INFORMATION. IT IS, HOWEVER, THE RESPONSIBILITY OF THE CONTRACTOR TO FIELD VERIFY THE LOCATIONS OF ALL UTILITIES PRIOR TO THE COMMENCEMENT OF ANY CONSTRUCTION ACTIVITIES.

Hines

Drawing Name 53T1.dwg			
Job Number HINES CS3			
Prepared For HINES	Designer KWS	Drafter JAH	Checked BKM

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CANYONS SOUTH FILING NO. 3
SANITARY SEWER AND WATER PLANS
TITLE SHEET

Sheet T1	1 of 22
Date APRIL 14, 2022	

DATE	REVISION DESCRIPTION

PATH: J:\HINES CS\CADD\CIVIL\63 F3 SANITARY AND WATER\63GN1.DWG
PLOTTED BY: KYLER SANFORD PLOT DATE: 4/14/2022 11:41 AM
XREFS: 23TB

TOWN OF CASTLE ROCK
GENERAL NOTES

- ALL MATERIALS, WORKMANSHIP, AND CONSTRUCTION OF PUBLIC IMPROVEMENTS SHALL MEET OR EXCEED THE STANDARDS AND SPECIFICATIONS SET FORTH IN THE TOWN OF CASTLE ROCK (TCR) MUNICIPAL CODE, TCR TECHNICAL MANUALS, AND APPLICABLE STATE AND FEDERAL REGULATIONS. WHERE THERE IS CONFLICT BETWEEN THESE PLANS AND THE TECHNICAL MANUAL OR ANY APPLICABLE STANDARDS, THE MORE STRINGENT STANDARD SHALL APPLY. ALL WORK SHALL BE INSPECTED AND APPROVED BY THE TCR CONSTRUCTION INSPECTOR.
- THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF THE VARIOUS UTILITY COMPANIES AND, WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED UPON AS BEING EXACT OR COMPLETE.
- THE CONTRACTOR MUST CALL THE LOCAL UTILITY LOCATION CENTER AT LEAST 72 HOURS BEFORE ANY EXCAVATION TO REQUEST EXACT FIELD LOCATIONS OF THE UTILITIES. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL VERIFY PERTINENT LOCATIONS AND ELEVATIONS, ESPECIALLY AT CONNECTION POINTS AND AT POTENTIAL UTILITY CONFLICTS. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES THAT CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THESE PLANS.
- THE CONTRACTOR SHALL COORDINATE AND COOPERATE WITH THE TOWN AND ALL UTILITY COMPANIES INVOLVED WITH REGARD TO RELOCATIONS OR ADJUSTMENTS OF EXISTING UTILITIES DURING CONSTRUCTION AND TO ASSURE THAT THE WORK IS ACCOMPLISHED IN A TIMELY FASHION AND WITH A MINIMUM DISRUPTION OF SERVICE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING ALL PARTIES AFFECTED BY ANY DISRUPTION OF ANY UTILITY SERVICE.
- CONTRACTOR SHALL PROVIDE A MINIMUM SEVENTY-TWO (72) HOURS NOTICE TO THE ON-SITE TCR CONSTRUCTION INSPECTOR, (720) 733-2200, PRIOR TO MAKING ANY CONNECTIONS/TIE-INS TO EXISTING WATER, SANITARY SEWER, AND/OR STORM SEWER SYSTEMS PROVIDED THAT THE UTILITY TIE-IN DOES NOT DISRUPT SERVICE TO EXISTING CR WATER CUSTOMERS. IF THE TIE-IN WILL DISRUPT UTILITY SERVICE, THEN CONTRACTOR SHALL PROVIDE A MINIMUM OF THREE (3) WEEKS NOTICE TO THE TCR CONSTRUCTION INSPECTOR TO ALLOW TIME FOR CR WATER TO PROVIDE WRITTEN NOTIFICATION TO EXISTING CUSTOMERS AFFECTED BY THE TIE-IN. ALL TOWN UTILITY TIE-INS MUST BE APPROVED BY CR WATER PRIOR TO COMMENCING WORK.
- THE CONTRACTOR SHALL HAVE ONE (1) SIGNED COPY OF THE APPROVED PLANS, ONE (1) COPY OF THE APPROPRIATE CRITERIA AND SPECIFICATIONS, AND A COPY OF ANY PERMITS AND EXTENSION AGREEMENTS NEEDED FOR THE JOB ONSITE AT ALL TIMES.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL ASPECTS OF SAFETY INCLUDING, BUT NOT LIMITED TO, EXCAVATION, TRENCHING, SHORING, TRAFFIC CONTROL, AND SECURITY.
- IF DURING THE CONSTRUCTION PROCESS CONDITIONS ARE ENCOUNTERED WHICH COULD INDICATE A SITUATION THAT IS NOT IDENTIFIED IN THE PLANS OR SPECIFICATIONS, THE CONTRACTOR SHALL CONTACT THE TCR CONSTRUCTION INSPECTOR IMMEDIATELY.
- ALL REFERENCES TO ANY PUBLISHED STANDARDS SHALL REFER TO THE LATEST REVISION OF SAID STANDARD UNLESS SPECIFICALLY STATED OTHERWISE.
- THE CONTRACTOR SHALL SUBMIT A TRAFFIC CONTROL PLAN IN ACCORDANCE WITH MUTCD TO THE APPROPRIATE RIGHT-OF-WAY AUTHORITY (TOWN, COUNTY OR STATE) FOR APPROVAL PRIOR TO ANY CONSTRUCTION ACTIVITIES WITHIN OR AFFECTING THE RIGHT-OF-WAY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ANY AND ALL TRAFFIC CONTROL DEVICES AS MAY BE REQUIRED BY THE CONSTRUCTION ACTIVITIES.
- THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL LABOR AND MATERIALS NECESSARY FOR THE COMPLETION OF THE INTENDED IMPROVEMENTS SHOWN ON THESE DRAWINGS OR AS DESIGNATED TO BE PROVIDED, INSTALLED, OR CONSTRUCTED UNLESS SPECIFICALLY NOTED OTHERWISE.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR RECORDING AS-BUILT INFORMATION ON A SET OF RECORD DRAWINGS KEPT ON THE CONSTRUCTION SITE AND AVAILABLE TO THE TCR CONSTRUCTION INSPECTOR AT ALL TIMES.
- DIMENSIONS FOR LAYOUT AND CONSTRUCTION ARE NOT TO BE SCALED FROM ANY DRAWING. IF PERTINENT DIMENSIONS ARE NOT SHOWN, CONTACT THE CONSULTANT ENGINEER FOR CLARIFICATION AND ANNOTATE THE DIMENSION ON THE AS-BUILT RECORD DRAWINGS.
- ALL INITIAL SEDIMENT CONTROL MEASURES SHALL BE INSTALLED PER THE TEMPORARY EROSION & SEDIMENT CONTROL (TESC) PLAN PRIOR TO ANY EARTH-DISTURBING ACTIVITY. ALL EROSION AND SEDIMENT CONTROL PRACTICES MUST BE MAINTAINED IN EFFECTIVE OPERATING CONDITION AT ALL TIMES. REMOVAL OF CONTROL MEASURES SHALL NOT OCCUR WITHOUT THE APPROVAL OF THE STORMWATER INSPECTOR. THE CONTRACTOR SHALL BE RESPONSIBLE FOR KEEPING ROADWAYS FREE AND CLEAR OF ALL CONSTRUCTION DEBRIS AND DIRT TRACKED FROM THE SITE. THE CONTRACTOR SHALL ALSO COMPLY WITH ALL TERMS AND CONDITIONS OF THE COLORADO CONSTRUCTION GENERAL PERMIT FOR STORMWATER DISCHARGES.
- THE CONTRACTOR SHALL PROVIDE AN ACTION PLAN IMMEDIATELY FOLLOWING THE PRE-CONSTRUCTION MEETING DETAILING SUFFICIENT MEANS TO MITIGATE DUST ON SITE DURING OVERLOT GRADING, ROCK CRUSHING OR OTHER EARTHWORK ACTIVITIES. IF THE CONTRACTOR FAILS TO CONTROL DUST, ALL EARTH DISTURBING ACTIVITIES SHALL BE STOPPED UNTIL SUFFICIENT MEASURES ARE TAKEN TO THE TOWN'S SATISFACTION. THE CONTRACTOR SHALL ALSO COMPLY WITH ALL TERMS AND CONDITIONS OF THE COLORADO AIR QUALITY REGULATIONS FOR LAND DEVELOPMENT, AS REQUIRED.
- THE CONTRACTOR SHALL SEQUENCE INSTALLATION OF UTILITIES IN SUCH A MANNER AS TO MINIMIZE POTENTIAL UTILITY CONFLICTS. IN GENERAL, STORM SEWER AND SANITARY SEWER SHOULD BE CONSTRUCTED PRIOR TO INSTALLATION OF THE WATER LINES AND DRY UTILITIES.
- THERE SHALL BE NO SITE CONSTRUCTION ACTIVITIES ON SATURDAYS UNLESS SPECIFICALLY APPROVED BY THE TCR CONSTRUCTION INSPECTOR AND NO SITE CONSTRUCTION ACTIVITIES ON SUNDAYS OR HOLIDAYS UNLESS THERE IS PRIOR WRITTEN APPROVAL BY THE PUBLIC WORKS DIRECTOR.
- NO SOLID OBJECT (EXCLUDING FIRE HYDRANTS AND TRAFFIC CONTROL DEVICES AND TRAFFIC SIGNS) EXCEEDING THIRTY (30) INCHES IN HEIGHT ABOVE THE FLOWLINE ELEVATION OF THE ADJACENT STREET, INCLUDING BUT NOT LIMITED TO BUILDINGS, UTILITY CABINETS, WALLS, FENCES, LANDSCAPE PLANTINGS, CROPS, CUT SLOPES, AND BERMS, SHALL BE PLACED WITHIN SIGHT DISTANCE LINES AND SIGHT DISTANCE EASEMENTS.
- THIS PROPERTY IS LOCATED WITHIN ZONE X AS PER FEMA FIRM PANEL NO. 08035C0187G DATED 3/16/2016. NO PORTIONS OF THE PROPERTY ARE LOCATED WITHIN A DESIGNATED 100-YEAR FLOODPLAIN ZONE A/AE.
- (AZTEC #401) DOUGLAS COUNTY BENCHMARK 5517A (NAVD88 DATUM) ELEVATION = 6483.68.
- EAST LINE OF THE SOUTHWEST ONE-QUARTER OF THE SOUTHWEST ONE-QUARTER OF SAID SECTION 20 MONUMENTED ON THE NORTH END BY A FOUND 3-14" ALUMINUM CAP STAMPED "PLS 131155" AND ON THE SOUTH END BY A FOUND 2-1/2" ALUMINUM CAP STAMPED "PLS 23515" "2003", ASSUMED TO BEAR SOUTH 00°30'17" EAST 1324.72 FEET.

TOWN OF CASTLE ROCK
WATER LINE CONSTRUCTION NOTES

- ALL WATER LINE CONSTRUCTION IS SUBJECT TO THE GENERAL NOTES ON THE COVER SHEET OF THESE PLANS AS WELL AS THE WATER LINE CONSTRUCTION NOTES LISTED HEREIN.
- ALL WATER LINES SHALL BE: 1) DUCTILE IRON PIPE (DIP), CONFORMING TO THE REQUIREMENTS OF AWWA C150, CL350 (6"-12"), CL250 (16"AND 20"), CL200 (>24"), WITH PUSH-ON GASKETED JOINTS OR MECHANICAL JOINT ENDS, IN CONFORMANCE WITH AWWA C111. PIPE SHALL BE CEMENT-LINED IN ACCORDANCE WITH AWWA C104, AND AN EXTERIOR COATING IN ACCORDANCE WITH C151;OR 2) PVC PIPE, CONFORMING TO AWWA C900 FOR PIPE SIZES 8"AND 12", CL305 (DR14) AND AWWA C905 FOR PIPE SIZE OF 16", CL235 (DR18). MINIMUM DISTRIBUTION MAIN SIZE SHALL BE 8". WATER LINES THAT ARE 10", 14", AND 18" IN DIAMETER ARE NOT PERMITTED.
- WATER LINE FITTINGS SHALL BE DIP CONFORMING TO AWWA C153 OR C110 AND SHALL HAVE A PRESSURE RATING NOT LESS THAN THE PIPE. ALL FITTINGS SHALL BE MECHANICAL JOINT, UNLESS APPROVED BY CASTLE ROCKWATER.
- ALL DIP AND FITTINGS SHALL BE ENCASED IN POLYETHYLENE TO PREVENT CORROSION. POLYETHYLENE WRAP, TAPE AND INSTALLATION SHALL MEET THE REQUIREMENTS OF AWWA C105.
- GATE VALVES SHALL BE DESIGNED AND MANUFACTURED IN ACCORDANCE WITH AWWA C509-1 AND AWWA C515-01, AS APPROPRIATE, AND SHALL BE DUCTILE IRON BODY AND BONNET, RESILIENT-SEATED WEDGE GATE, NON-RISING STEM TYPE, O-RING SEALS, AND SLIP-ON CONNECTIONS (TAPPING VALVES, WHERE ALLOWED, SHALL BE FLANGE X MJ). VALVE ENDS SHALL BE MECHANICAL JOINT, UNLESS OTHERWISE SPECIFIED IN THE PLANS. THE VALVES SHALL BE SUITABLE FOR A WORKING PRESSURE OF 200 PSI. THEY SHALL BE CLOSED BY TURNING CLOCKWISE AND SHALL HAVE TWO-INCH SQUARE CAST IRON OPERATING NUTS WITH AN ARROWCAST IN THE NUT INDICATING THE DIRECTION OF OPENING. VALVES SHALL BE POLYETHYLENE WRAPPED IN ACCORDANCE WITH AWWA C105. THEY SHALL BE OF SUCH DESIGN AS TO MAINTAIN THE FULL AREA OF THE PIPE THROUGH THE VALVE WHEN OPEN AND SHALL BE DESIGNED TO TAKE FULL PRESSURE ON EITHER FACE. VALVE SHALL HAVE TYPE 304 STAINLESS STEEL BONNET BOLTS AND NUTS AND TYPE 304 STAINLESS STEEL O-RING GLAND BOLTS AND NUTS. VALVES SHALL BE MANUFACTURED BY AMERICAN FLOW CONTROL, KENNEDY OR MUELLER AND SHALL HAVE THE MANUFACTURER'S NAME OR INITIALS AND THE PRESSURE RATING CAST ON THE BODY.
- ALL FIRE HYDRANTS SHALL BE "PACER WB67-250"BY WATEROUS CO. OR "SUPER CENTURION 250"BY MUELLER CO., OPENING TO THE LEFT. REFER TO TCR STANDARD DETAIL W-11.
- ALL WATER LINES SHALL BE BURIED AN ABSOLUTE MINIMUM OF 5 FEET FROM FINAL GRADE TO THE TOP OF THE WATER MAIN. THE MAXIMUM BURY DEPTH SHALL BE 6 FEET, UNLESS ADDITIONAL DEPTH IS REQUIRED FOR UTILITY CROSSINGS OR OTHER CONFLICTS. WHEREVER SUCH CROSSINGS OR CONFLICTS OCCUR, THE TCR STANDARD DETAIL W-17 SHALL BE USED.
- ALL WATER LINES SHALL BE BEDDED IN ACCORDANCE WITH TCR STANDARD DETAIL W-21.
- CONTRACTOR SHALL MAINTAIN A MINIMUM 18-INCH VERTICAL CLEARANCE AND 10-FOOT HORIZONTAL CLEARANCE EDGE-TO-EDGE BETWEEN ALL WATER LINES AND ANY OTHER PIPED UTILITIES.
- ALL BENDS, TEES, FIRE HYDRANTS AND PLUGS AT DEAD-END MAINS SHALL BE RESTRAINED FROM THRUST BY USING MEGALUG RESTRAINTS PER TCR STANDARD DETAIL W-18 IN COMBINATION WITH CONCRETE THRUST BLOCKS PER TCR STANDARD DETAIL W-22.
- CONTRACTOR SHALL BE RESPONSIBLE FOR ADJUSTING ALL FIRE HYDRANTS AND VALVE BOXES TO FINISH GRADE IN ACCORDANCE WITH TCR STANDARD DETAILS W-10 AND W-11.
- PRIOR TO CONNECTING TO THE TOWN'S EXISTING WATER SYSTEM, ALL NEW WATERLINES AND/OR SEGMENTS OF WATERLINES SHALL BE DISINFECTED, PRESSURE TESTED, AND BACTERIOLOGICALLY TESTED IN ACCORDANCE WITH SECTION 450.5 OF THE TOWN OF CASTLE ROCK CONSTRUCTION METHODOLOGY AND MATERIALS MANUAL; AWWA C651-14 AND C600-5.2; AND DETAILS W-35A AND/OR W-35B. PLEASE NOTE THAT THIS DISINFECTION AND TESTING WILL BE PERFORMED WHILE THE NEW WATERLINES AND/OR SEGMENTS OF WATERLINES ARE NOT PHYSICALLY CONNECTED TO THE TOWN'S EXISTING WATER SYSTEM. TOWN AND CONTRACTOR SHALL FURNISH MATERIALS AS SHOWN ON DETAILS W-35A AND/OR W-35B. CONTRACTOR SHALL PERFORM ALL PROCEDURES FOR TESTING, FLUSHING AND DISINFECTING OF ALL WATER LINES. TESTING SHALL BE DONE IN THE PRESENCE OF THE TCR CONSTRUCTION INSPECTOR. CONTRACTOR SHALL PROVIDE A MINIMUM SEVENTY-TWO (72) HOUR NOTICE TO, AND OBTAIN APPROVAL FROM THE ON-SITE TCR CONSTRUCTION INSPECTOR, (720)733-2200, PRIOR TO DISINFECTION, PRESSURE TESTING, AND BACTERIOLOGICAL TESTING OF ANY NEW WATERLINES AND/OR SEGMENTS OF WATERLINES.
- DISTANCES FOR WATER LINES ARE HORIZONTAL DISTANCE FROM THE CENTER OF THE FITTING TO CENTER OF THE FITTING. THEREFORE, DISTANCES SHOWN ON THE PLANS ARE APPROXIMATE AND COULD VARY DUE TO VERTICAL ALIGNMENT AND FITTING DIMENSIONS.
- ALL DOMESTIC WATER SERVICE LINES SHALL BE TYPE K COPPER INSULATED WITH POLYWRAP, FROM THE MAIN TO THE METER. THE WATER METER SHALL BE SUPPLIED BY THE TOWN AND INSTALLED BY THE CONTRACTOR. THE WATER METER WILL BE AVAILABLE FOR PICK UP AT CASTLE ROCK WATER. THE INDIVIDUAL PICKING UP THE WATER METER MUST HAVE PROOF OF A PERMIT AND MUST HAVE PAID ALL FEES ASSOCIATED WITH THE WATER METER.
- WATER LINE TRENCHES SHALL BE SLOPED OR BRACED AND SHEETED AS NECESSARY FOR THE SAFETY OF THE WORKERS AND THE PROTECTION OF OTHER UTILITIES, IN COMPLIANCE WITH ALL APPLICABLE STATE AND FEDERAL REQUIREMENTS. FOR ALL EXCAVATION OPERATIONS, SAFETY IS THE RESPONSIBILITY OF THE CONTRACTOR.
- WATER LINES SHALL BE ALIGNED 6 FEET OFF THE NORTH AND EAST GUTTER FLOW LINES OF PUBLIC STREETS WHEREVER POSSIBLE. SEE DETAIL W-13.
- WHERE WATER LINE IMPROVEMENTS ARE DIFFICULT TO LOCATE ON THE SURFACE, THE CONTRACTOR SHALL BE REQUIRED TO INSTALL PERMANENT WATER LINE MARKERS, IN ACCORDANCE WITH TCR STANDARD DETAIL W-23, OR AT THE DISCRETION OF THE TCR CONSTRUCTION INSPECTOR.
- TRACER WIRE SHALL BE USED ON ALL DIP AND PVC WATER MAINS, AND WARNING TAPE SHALL BE PLACED 1 FOOT ABOVE ALL DIP AND PVC PIPE REFER TO TOWN OF CASTLE ROCK STANDARD TRACER WIRE REQUIREMENTS, IN THESE GENERAL NOTES. TEST STATIONS SHALL BE CONSTRUCTED PER STANDARD DETAIL W-28.
- THE MINIMUM DISTANCE BETWEEN TEES, CROSSES, VALVES, AND BENDS SHALL BE 10 FEET WHEREVER POSSIBLE.
- MAXIMUM DEFLECTION FOR WATER MAINS SHALL NOT EXCEED ONE-HALF OF THE MANUFACTURER'S MAXIMUM ALLOWABLE DEFLECTION OR 2.5 DEGREES, WHICHEVER IS LESS.
- ALL RESIDENTIAL WATER SERVICE LINES SHALL BE CONSTRUCTED PERPENDICULAR TO THE FRONT PROPERTY LINE IN CONFORMANCE WITH THE TOWN OF CASTLE ROCK WATER SYSTEM DESIGN CRITERIA MANUAL AND WATER DETAILS.
- THE MAXIMUM DEFLECTION OF DOMESTIC WATER SERVICE LINES AND IRRIGATION LINES SHALL NOT EXCEED THE MANUFACTURER'S MAXIMUM ALLOWABLE DEFLECTION.
- THE SIZE OF THE IRRIGATION TAP, LINE, METER AND BACK FLOW PREVENTION ASSEMBLY SHALL BE THE SAME TO A MINIMUM DISTANCE OF 10 PIPE DIAMETERS PAST THE WINTERIZATION TEE.
- THE MINIMUM HORIZONTAL SEPARATION BETWEEN UTILITY LINES CARRYING THE SAME MATERIAL (E.G., WATER AND WATER) SHALL BE 5 FEET.
- WHEN INSTALLING CUT IN TEES OR OTHER APPURTENANCES ON/IN AN EXISTING WATER LINE, THE PIPE MATERIAL BETWEEN THE EXISTING WATERLINE AND THE CUT IN TEE OR OTHER APPURTENANCE SHALL REMAIN CONSISTENT.
- CONTRACTOR IS RESPONSIBLE TO PROVIDE BACKFLOW PREVENTION DOWNSTREAM OF THE METER. ACCEPTABLE BACKFLOW PREVENTION ASSEMBLIES ARE AS FOLLOWS:
 - COMMERCIAL POTABLE WATER SERVICE: REDUCED PRESSURE ASSEMBLY.
 - RESIDENTIAL POTABLE WATER SERVICE: DOUBLE CHECK VALVE ASSEMBLY, REDUCED PRESSURE ASSEMBLY.
 - COMMERCIAL FIRE SERVICE: REDUCED PRESSURE DETECTOR ASSEMBLY, DOUBLE CHECK VALVE DETECTOR ASSEMBLY.
 - RESIDENTIAL FIRE SERVICE: REDUCED PRESSURE DETECTOR ASSEMBLY, DOUBLE CHECK VALVE DETECTOR ASSEMBLY.
 - COMMERCIAL AND MULTIFAMILY IRRIGATION WATER SERVICE: REDUCED PRESSURE ASSEMBLY.THE DOUBLE CHECK DETECTOR ASSEMBLY (DCDA) IS THE ONLY BACK FLOW PREVENTION DEVICE RATED FOR HORIZONTAL OR VERTICAL INSTALLATION.

TOWN OF CASTLE ROCK
SANITARY SEWER CONSTRUCTION NOTES

- ALL SANITARY SEWER CONSTRUCTION IS SUBJECT TO THE GENERAL NOTES ON THE COVER SHEET OF THESE PLANS AS WELL AS THE SANITARY SEWER CONSTRUCTION NOTES LISTED HEREIN.
- ALL SANITARY SEWER PIPELINES SHALL BE PVC, SDR-35, IN ACCORDANCE WITH ASTM D-3034, BELL AND SPIGOT WITH ELASTOMERIC SEAL.
- ALL SANITARY SEWER PIPELINES SHALL HAVE A MINIMUM COVER OF 5 FEET AND MAXIMUM COVER OF 20 FEET.
- ALL SANITARY SEWER PIPELINES SHALL BE BEDDED IN ACCORDANCE WITH TCR STANDARD DETAIL SS-8.
- ALL MANHOLE RIM ELEVATIONS GIVEN ON THESE PLANS ARE CONSIDERED APPROXIMATE. THE CONTRACTOR SHALL SET THE FINAL RIM ELEVATION BASED ON THE COMPLETE FINISH SURFACE AND PER TCR STANDARD DETAIL SS-3.
- SANITARY SEWER PIPELINE SHALL BE ALIGNED 6 FEET OFF THE SOUTH AND WEST GUTTER FLOW LINES OF PUBLIC STREETS WHEREVER POSSIBLE.
- ALL SEWER LINES SHALL HAVE A MINIMUM HORIZONTAL SEPARATION OF 10 FEET EDGE-TO-EDGE FROM ALL WATER LINES. WHERE LINES CROSS, THERE SHALL BE A MINIMUM OF 18" CLEAR VERTICAL SEPARATION.
- ALL SANITARY SEWER LINES MUST BE TESTED IN ACCORDANCE WITH SECTION 450.6 OF THE TOWN OF CASTLE ROCK CONSTRUCTION METHODOLOGY AND MATERIALS MANUAL IN THE PRESENCE OF A TCR CONSTRUCTION INSPECTOR.
- ALL SANITARY SEWER LINE TRENCHES SHALL BE SLOPED OR BRACED AND SHEETED AS NECESSARY FOR THE SAFETY OF THE WORKERS AND THE PROTECTION OF OTHER UTILITIES, IN COMPLIANCE WITH ALL APPLICABLE STATE AND FEDERAL REQUIREMENTS. ALL EXCAVATION OPERATION SAFETY IS THE RESPONSIBILITY OF THE CONTRACTOR.
- SANITARY SEWER SERVICES SHALL BE CONNECTED A MINIMUM OF 5 FEET OUTSIDE OF MANHOLES WITH A WYE CONNECTION IN ACCORDANCE WITH TCR STANDARD DETAIL SS-2.
- MINIMUM COVER FOR SANITARY SEWER SERVICE LINES SHALL BE 5 FEET AND THE MINIMUM SLOPE SHALL BE 2.0%.
- ALL SANITARY SEWER SERVICE LINES SHALL BE CONSTRUCTED ALONG THE SHORTEST AND STRAIGHTEST ROUTE POSSIBLE IN CONFORMANCE WITH THE TOWN OF CASTLE ROCK WASTEWATER SYSTEM DESIGN CRITERIA MANUAL.
- THE MINIMUM HORIZONTAL SEPARATION BETWEEN UTILITY LINES CARRYING THE SAME MATERIAL (E.G., WASTEWATER AND WASTEWATER) SHALL BE 5 FEET.
- THE PLUM CREEK WASTEWATER AUTHORITY MUST APPROVE OIL AND GREASE INTERCEPTORS FOR COMMERCIAL INSTALLATIONS.
- ALL MANHOLES SHALL BE PLACED ON A MINIMUM OF 1' OF ¾" WASH ROCK. IF ADDITIONAL SUBGRADE IS DISTURBED, EXCAVATION SHALL BE BACKFILLED WITH ¾" WASH ROCK OR OTHER APPROVED STRUCTURAL SOIL COMPACTED TO 95% OF ASTM D698 UNLESS OTHERWISE INSTRUCTED BY THE INSPECTOR.

DATE	REVISION DESCRIPTION

	Drawing Name 53GN1.dwg					 <div>Calibre Engineering, Inc. 9090 South Ridgeline Boulevard, Suite 105 Highlands Ranch, CO 80129 (303) 730-0434 www.calibre-engineering.com Construction Management Civil Engineering Surveying</div>	CANYONS SOUTH FILING NO. 3			Sheet GN1		2 of 22
	Job Number HINES CS3						SANITARY SEWER AND WATER PLANS			GENERAL NOTES		Date APRIL 14, 2022
	Prepared For HINES	Designer KWS	Drafter JAH	Checked BKM								

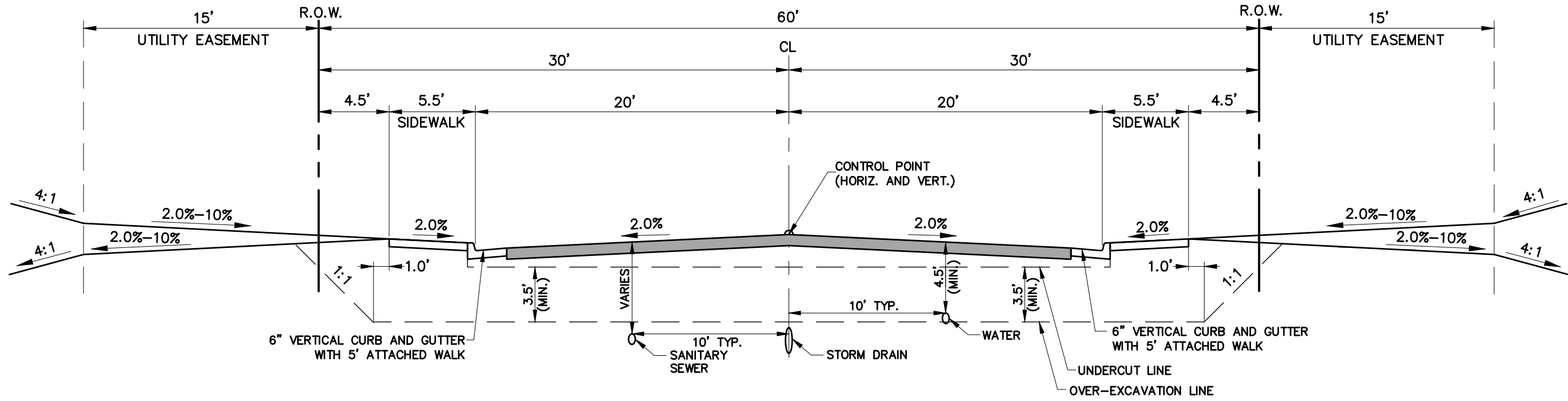
PATH: J:\HINES CS\CADD\CIVIL\53 F3 SANITARY AND WATER\53TY1.DWG
PLOTTED BY: KYLER SANFORD PLOT DATE: 4/14/2022 11:41 AM
XREFS:

TOWN OF CASTLE ROCK
FIRE NOTES

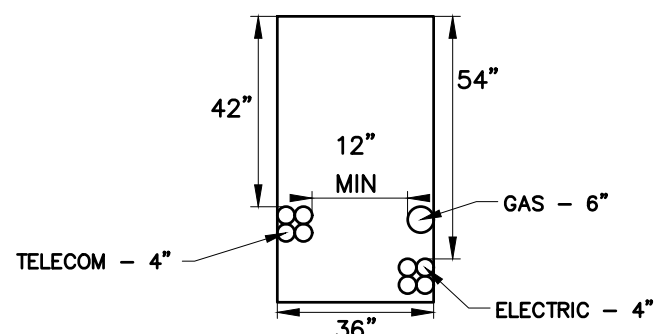
- IT IS THE RESPONSIBILITY OF THE PROPERTY OWNER TO MAINTAIN DRIVE LANES FOR EMERGENCY VEHICLE INGRESS AND EGRESS, INCLUDING SNOW REMOVAL.
- EMERGENCY VEHICLE ACCESS ROAD IS REQUIRED TO ALLOW ACCESS WITHIN 150' OF ALL EXTERIOR OF THE BUILDING BY AN APPROVED ROUTE.
- FIRE APPARATUS ACCESS ROADS SHALL BE DESIGNED AND MAINTAINED TO SUPPORT THE IMPOSED LOADS OF FIRES APPARATUS AND SHALL BE PROVIDED WITH A SURFACE SO AS TO PROVIDE ALL-WEATHER DRIVING CAPABILITIES. ACCESS ROAD SHALL BE EITHER CONCRETE, ASPHALT, OR OTHER APPROVED ALTERNATIVE MATERIAL ACCOMPANIED WITH AN ENGINEER'S STAMP STATING THE MATERIAL WILL SUPPORT A 75,000 POUND IMPOSED LOAD.
- FIRE HYDRANT(S) ARE REQUIRED TO BE INSTALLED AND MADE SERVICEABLE PRIOR TO COMBUSTIBLE MATERIALS BEING BROUGHT ONTO THE SITE AND DURING THE TIME OF VERTICAL CONSTRUCTION.
- "NO PARKING FIRE LANE" SIGNS ARE REQUIRED IN AREAS THAT MEET THE FOLLOWING CRITERIA AND IN AREAS DESIGNATED BY THE FIRE PREVENTION BUREAU. SIGNS SHALL BE POSTED ON BOTH SIDES OF FIRE DEPARTMENT ACCESS ROADWAYS, PUBLIC OR PRIVATE ROADWAYS AND DRIVEWAYS LESS THAN 26 FEET WIDE. SIGNS SHALL BE POSTED ON ONE SIDE ONLY OF FIRE DEPARTMENT ACCESS ROADWAYS, PUBLIC OR PRIVATE ROADWAYS OR DRIVEWAYS BETWEEN 26 FEET WIDE AND 32 FEET WIDE. NO SIGNAGE IS REQUIRED FOR ACCESS ROADWAY FIRE DEPARTMENT ACCESS ROADWAYS, PUBLIC OR PRIVATE ROADWAYS OR DRIVEWAYS EXCEEDING 32 FEET WIDE.
- WHEN FIRE APPARATUS ACCESS ROADS OR A WATER SUPPLY FOR FIRE PROTECTION IS REQUIRED TO BE INSTALLED, SUCH PROTECTION SHALL BE INSTALLED AND MADE SERVICEABLE PRIOR TO COMBUSTIBLE MATERIALS BEING BROUGHT ONTO THE SITE AND THE BUILDING CONSTRUCTION GOING VERTICAL.
- TRACER WIRE SHALL BE INSTALLED ON ALL FIRE SERVICE LINES AND AT ALL FIRE HYDRANTS. REFER TO TOWN OF CASTLE ROCK STANDARD DETAILS, THE WATER LINE CONSTRUCTION NOTES, AND THE TRACER WIRE INSTALLATION NOTES LISTED HEREIN.

TOWN OF CASTLE ROCK
TRACER WIRE INSTALLATION NOTES

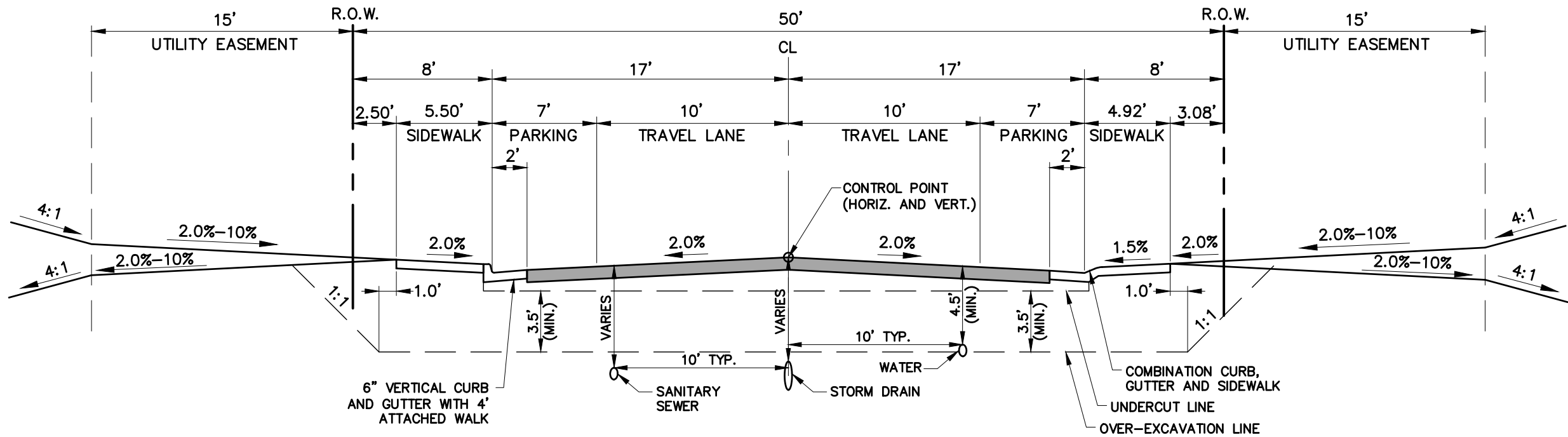
- ALL WORK SHALL BE DONE IN ACCORDANCE WITH CURRENT TOWN OF CASTLE ROCK STANDARD NOTES, DETAILS AND SPECIFICATIONS.
- TRACER WIRE IS REQUIRED ON ALL UNDERGROUND PIPE. A MAINLINE TRACER WIRE MUST BE INSTALLED WITH ALL SERVICE LATERAL TRACER WIRES PROPERLY CONNECTED TO ENSURE FULL LOCATING CAPABILITIES FROM A SINGLE CONNECTION POINT.
- TRACER WIRE COLORS FOR STORM SEWER, DRAIN LINES, SANITARY SEWER, AND WATER MAINS SHALL BE IN ACCORDANCE WITH AMERICAN PUBLIC WORKS ASSOCIATION (APWA) UNIFORM COLOR CODE. ALL GROUNDING WIRE SHALL BE RED OR BLACK.
- "OPEN TRENCH" TRACER WIRE SHALL BE #8 OR #10 AWG COPPER SOLID OR #12 AWG COPPER CLAD HIGH STRENGTH WITH MINIMUM 30-MIL HDPE INSULATION THICKNESS COMPLYING WITH ASTM D-1248, AND A MINIMUM AVERAGE TENSILE BREAK LOAD OF 450 LBS.
- TRACER WIRE SHALL BE SECURED EVERY 5 FEET TO THE TOP OF THE PIPE AND TO THE SIDES OF MANHOLES AND INLETS USING TAPE, PLASTIC TIES, OR APPROVED ADHESIVE AT 5-FOOT INTERVALS.
- TRACER WIRE SHALL BE SECURELY BONDED TOGETHER AT ALL WIRE JOINTS WITH LOCKABLE, CORROSION PROOF, WATERTIGHT CONNECTORS SPECIFICALLY DESIGNED FOR DIRECT BURIAL, AND FILLED WITH NON-HARDENING DIELECTRIC SILICONE SEALANT.
- ANY DAMAGE OCCURRING DURING INSTALLATION OF THE TRACER WIRE MUST BE IMMEDIATELY REPAIRED BY REMOVING THE DAMAGED WIRE AND INSTALLING A NEW SECTION OF WIRE WITH APPROVED CONNECTORS. TAPING AND/OR SPRAY COATING IS NOT ALLOWED.
- A MINIMUM OF 2 FEET OF EXCESS/SLACK WIRE IS REQUIRED IN ALL TRACER WIRE TEST STATIONS, MANHOLES, AND INLETS AFTER MEETING FINAL ELEVATION.
- TRACER WIRE MUST BE PROPERLY GROUNDED AT ALL DEAD ENDS (MANHOLES, INLETS, OUTFALLS, FUTURE CONNECTIONS, ETC.) USING A MAGNESIUM GROUND ROD. THE GROUND ROD WILL BE CONNECTED TO 12- OR 14-AWG COPPER-CLAD STEEL WIRE WITH 30 MIL HDPE INSULATION AND RATED FOR DIRECT BURY USE AT 30 VOLTS WITH 21% CONDUCTIVITY.
- TEST STATIONS SHALL PROVIDE PROTECTED ACCESS FOR A DIRECT CONNECTION TO THE TRACER WIRE SYSTEM AT GROUND SURFACE.
- TRUNK LINE TRACER WIRE SHALL BE CONTINUOUS, AND PASS AROUND THE OUTSIDE OF VALVES AND OTHER STRUCTURES ON THE NORTH OR EAST SIDE.
- THE CONTRACTOR SHALL OBTAIN ALL REQUIRED PERMITS (EXCAVATION, CONCRETE, TRAFFIC CONTROL, ETC.) AND PROVIDE A MINIMUM TWENTY-FOUR (24) HOURS NOTICE TO THE ON-SITE TOR CONSTRUCTION INSPECTOR, (720) 733-2200, TO REQUEST A TRACER WIRE INSPECTION.
- ALL NEW TRACER WIRE INSTALLATIONS SHALL BE TESTED AND LOCATED PRIOR TO ACCEPTANCE. TESTING AND LOCATING SHALL BE PERFORMED BY THE TOR CONSTRUCTION INSPECTOR AT THE COMPLETION OF ROUGH GRADING AND PRIOR TO FINAL ACCEPTANCE OF THE PROJECT. ANY DEFICIENCIES SHALL BE CORRECTED PRIOR TO FINAL ACCEPTANCE.



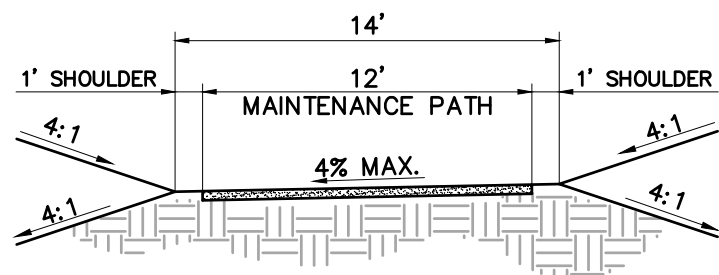
**60' R.O.W.
ENTRY STREET (NO MEDIAN)**
N.T.S.



CONDUIT TRENCH SECTION
N.T.S.



**50' R.O.W.
URBAN LOCAL (TYPE I)**
N.T.S.



MAINTENANCE PATH
N.T.S.

Hines

Drawing Name
53TY1.dwg
Job Number
HINES CS3
Prepared For
HINES

Designer
RLS
Drafter
KWS
Checked
BKM

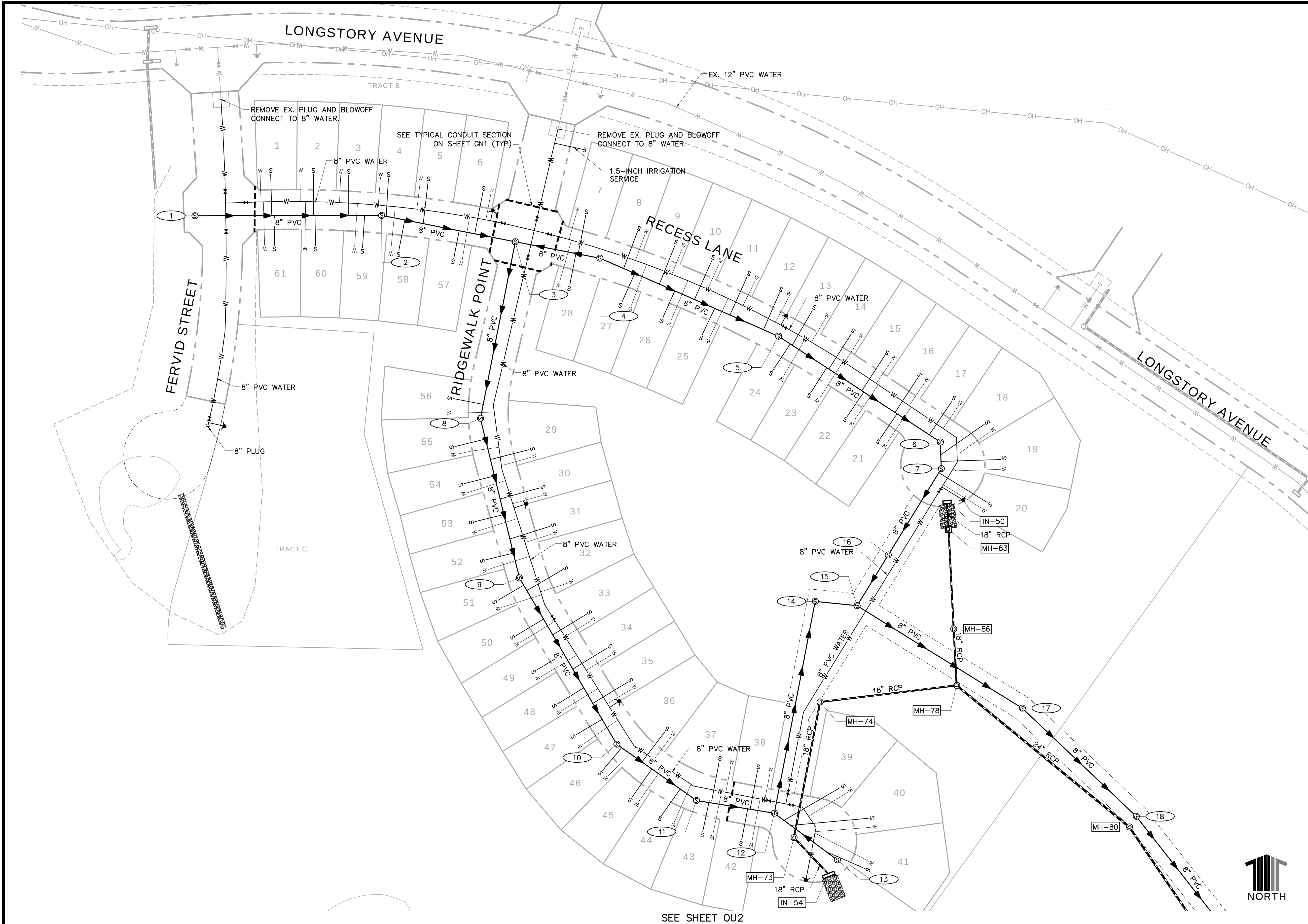
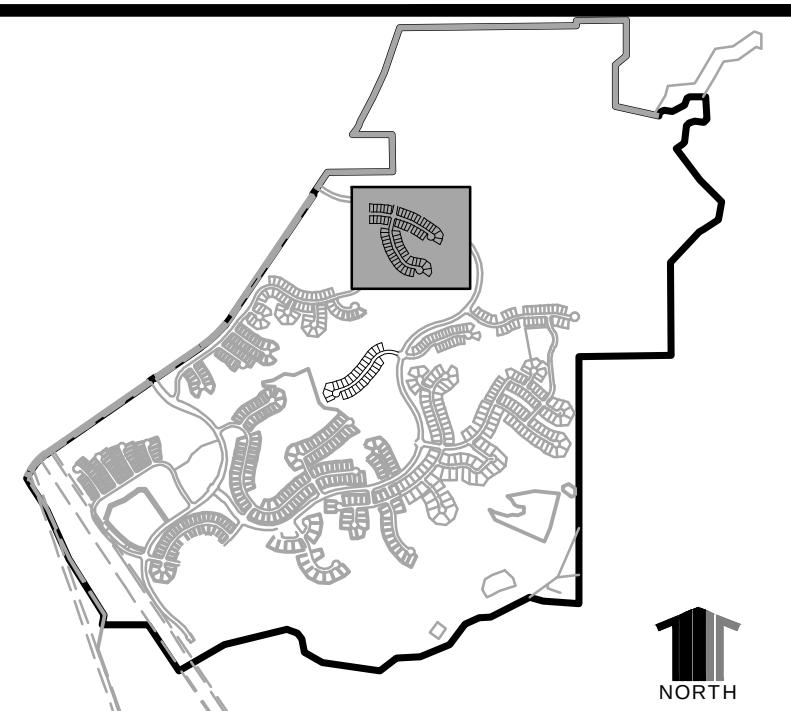
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CANYONS SOUTH FILING NO. 3
SANITARY SEWER AND WATER PLANS
GENERAL NOTES AND TYPICAL SECTIONS

Sheet
TY1
Date
APRIL 14, 2022
3 of 22

PATH: J:\HINES\CS\CADD\CIVIL\F3 ROADWAY AND STORM DRAINAGE\52OU1.DWG
PLOTTED BY: KYLER SANFORD PLOT DATE: 4/21/2022 3:44 PM
XREFS:



- KEYMAP**
- CONSTRUCTION NOTES:**
1. ALL STORM DRAIN CONSTRUCTION WITHIN THE CANYONS SOUTH SITE WILL CONFORM TO DOUGLAS COUNTY STANDARDS AND SPECIFICATIONS.
 2. ALL DIMENSIONS ARE TO CENTERLINE, EXCEPT PROFILES, WHICH ARE CENTERLINE DIMENSIONS, UNLESS OTHERWISE NOTED.
 3. SEE SHEET TY1 FOR TYPICAL CONDUIT TRENCH SECTION.

- LEGEND**
- ① PROPOSED STORM DRAIN MANHOLE
 - PROPOSED STORM DRAIN
 - PROPOSED STORM DRAIN INLET
 - ① EXISTING STORM DRAIN MANHOLE
 - EXISTING STORM DRAIN
 - EXISTING STORM DRAIN INLET
 - PROPOSED SANITARY SEWER MAIN
 - PROPOSED SANITARY SEWER MANHOLE
 - EXISTING SANITARY SEWER MAIN
 - EXISTING SANITARY SEWER MANHOLE
 - PROPOSED WATERMAIN
 - PROPOSED FIRE HYDRANT
 - PROPOSED GATE VALVE
 - EXISTING WATERMAIN
 - EXISTING FIRE HYDRANT
 - EXISTING GATE VALVE
 - EXISTING GATE VALVE
 - PROPOSED CONDUIT
 - ★ PROPOSED LIGHTPOLE

PROJECT BENCHMARK:
(AZTEC #401)
DOUGLAS COUNTY BENCHMARK TT17A
(NAVD88 DATUM) ELEVATION=6483.68

811 UNCC
CALL BEFORE
YOU DIG
811
OR
1-800-922-1987
Utility Notification
Center of Colorado

ASSISTANT DIRECTOR OF DEVELOPMENT REVIEW

DATE
THESE CONSTRUCTION PLANS HAVE BEEN
REVIEWED BY DOUGLAS COUNTY FOR STREET
AND DRAINAGE, AND GRADING, EROSION AND
SEDIMENT CONTROL IMPROVEMENTS ONLY.

ENGINEERING DIVISION ACCEPTANCE BLOCK

DATE	REVISION	DESCRIPTION

Hines

Drawing Name 52OU1.dwg	0 30 60 120
Job Number HINES CS3	1 inch = 60 ft. Horizontal
Prepared For HINES	Designer RLS
	Drafter JAH
	Checked BKM

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CANYONS SOUTH FILING NO. 3
SANITARY SEWER AND WATER PLANS
OVERALL UTILITY PLAN

Sheet OU1	4 of 22
Date APRIL 14, 2022	

PATH: J:\HINES\CS\CADD\CIVIL\62 F3 ROADWAY AND STORM DRAINAGE\62OU1.DWG
PLOTTED BY: KYLER SANFORD PLOT DATE: 4/14/2022 11:42 AM
XREFS:



KEYMAP

CONSTRUCTION NOTES:

- ALL STORM DRAIN CONSTRUCTION WITHIN THE CANYONS SOUTH SITE WILL CONFORM TO DOUGLAS COUNTY STANDARDS AND SPECIFICATIONS.
- ALL DIMENSIONS ARE TO FLOWLINE, EXCEPT PROFILES, WHICH ARE CENTERLINE DIMENSIONS, UNLESS OTHERWISE NOTED.
- SEE SHEET TY1 FOR TYPICAL CONDUIT TRENCH SECTION.

LEGEND

①	PROPOSED STORM DRAIN MANHOLE
---	PROPOSED STORM DRAIN
⊕	PROPOSED STORM DRAIN INLET
①	EXISTING STORM DRAIN MANHOLE
---	EXISTING STORM DRAIN
⊕	EXISTING STORM DRAIN INLET
→	PROPOSED SANITARY SEWER MAIN
⊕	PROPOSED SANITARY SEWER MANHOLE
→	EXISTING SANITARY SEWER MAIN
⊕	EXISTING SANITARY SEWER MANHOLE
→	PROPOSED WATERMAIN
⊕	PROPOSED FIRE HYDRANT
→	PROPOSED GATE VALVE
→	EXISTING WATERMAIN
⊕	EXISTING FIRE HYDRANT
→	EXISTING GATE VALVE
→	EXISTING GATE VALVE
---	PROPOSED CONDUIT
☆	PROPOSED LIGHTPOLE

PROJECT BENCHMARK:

(AZTEC #401)
DOUGLAS COUNTY BENCHMARK TT17A
(NAVD88 DATUM) ELEVATION=6483.68

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ENGINEERING DIVISION ACCEPTANCE BLOCK

DATE	REVISION	DESCRIPTION



Drawing Name 52OU1.dwg	0 30 60 120 1 inch = 60 ft. Horizontal		
Job Number HINES CS3	Designer RLS	Drafter JAH	Checked BKM
Prepared For HINES			

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CANYONS SOUTH FILING NO. 3

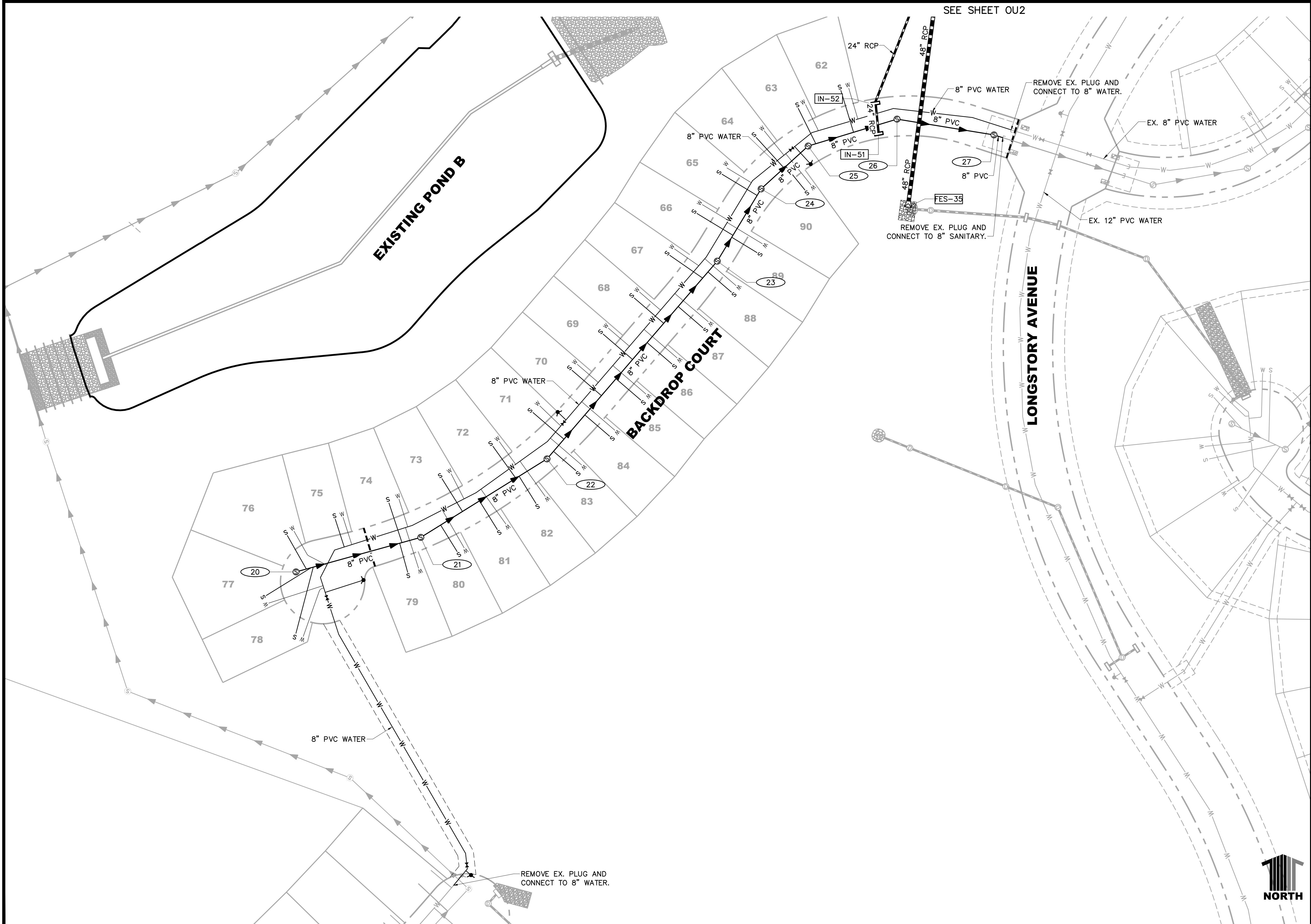
SANITARY SEWER AND WATER PLANS

OVERALL UTILITY PLAN

Sheet
OU2
Date
APRIL 14, 2022

5 of 22

PATH: J:\HINES\CS\ADDCIVIL\52F3 ROADWAY AND STORM DRAINAGE\52OU1.DWG
PLOT BY: KYLER SANFORD PLOT DATE: 4/14/2022 11:42 AM
XREFS:



KEYMAP

CONSTRUCTION NOTES:

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LEGEND

	PROPOSED STORM DRAIN MANHOLE
	PROPOSED STORM DRAIN
	PROPOSED STORM DRAIN INLET
	EXISTING STORM DRAIN MANHOLE
	EXISTING STORM DRAIN
	EXISTING STORM DRAIN INLET
	PROPOSED SANITARY SEWER MAIN
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	EXISTING SANITARY SEWER MAIN
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	PROPOSED GATE VALVE
	EXISTING WATERMAIN
	EXISTING FIRE HYDRANT
	EXISTING GATE VALVE
	EXISTING GATE VALVE
	PROPOSED CONDUIT
	PROPOSED LIGHTPOLE

PROJECT BENCHMARK:

(AZTEC #401)
DOUGLAS COUNTY BENCHMARK TT17A
(NAVD88 DATUM) ELEVATION=6483.68

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DATE

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ENGINEERING DIVISION ACCEPTANCE BLOCK

DATE	REVISION	DESCRIPTION



Drawing Name 52OU1.dwg			
Job Number HINES CS3	Designer RLS	Drafter JAH	Checked BKM
Prepared For HINES			

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CANYONS SOUTH FILING NO. 3

SANITARY SEWER AND WATER PLANS

OVERALL UTILITY PLAN

Sheet
OU3
Date
APRIL 14, 2022

6
of
22

PATH: J:\HINES\CS\CADD\CIVIL\53 F3 SANITARY AND WATER\53SW1.DWG
PLOTTED BY: KYLER SANFORD PLOT DATE: 4/14/2022 11:43 AM
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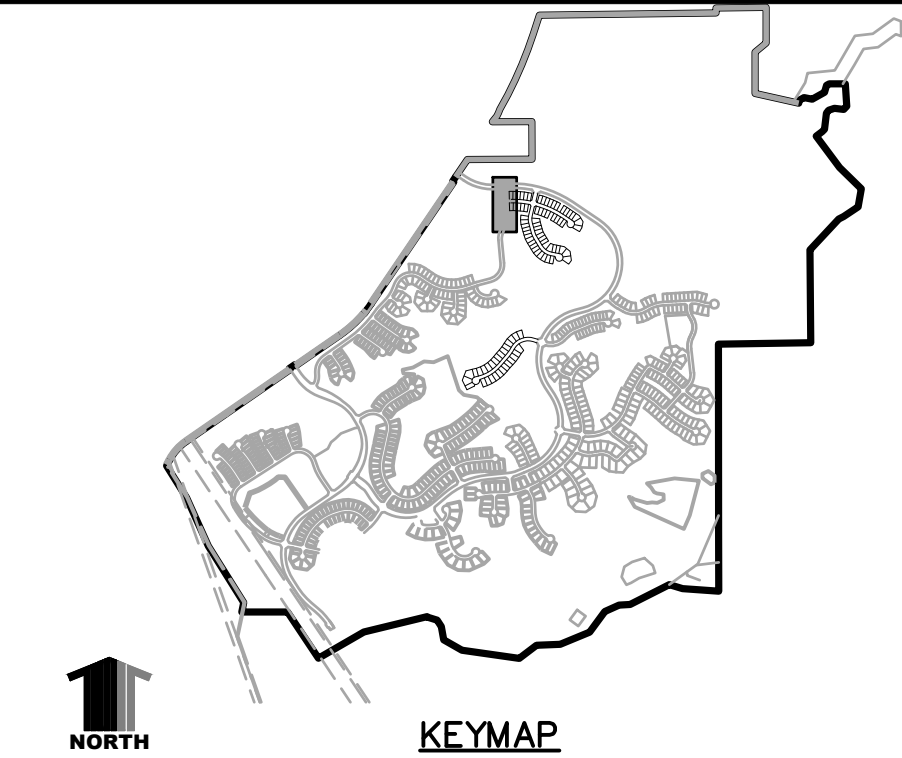
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Job Number HINES CS3	Designer KWS	Drafter JAH	Checked BKM
Prepared For HINES			

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CANYONS SOUTH FILING NO. 3
SANITARY SEWER AND WATER PLANS
SANITARY AND WATER PLAN AND PROFILE



CONSTRUCTION NOTES:

- ALL SANITARY SEWER CONSTRUCTION IS SUBJECT TO THE TOWN OF CASTLE ROCK WASTEWATER COLLECTION DESIGN CRITERIA MANUAL, WELL AS THE SANITARY SEWER CONSTRUCTION NOTES LISTED HEREIN.
 - ALL SANITARY SEWER PIPELINES SHALL BE PVC, SDR-35, IN ACCORDANCE WITH ASTM D-3034, BELL AND SPIGOT WITH ELASTOMERIC SEAL.
 - ALL SANITARY SEWER PIPELINES SHALL HAVE A MINIMUM COVER OF 5 FEET AND MAXIMUM COVER OF 20 FEET.
 - ALL SANITARY SEWER PIPELINES SHALL BE BEDDED IN ACCORDANCE WITH TCR STANDARD DETAIL SS-8.
 - ALL MANHOLE RIM ELEVATIONS GIVEN ON THESE PLANS ARE CONSIDERED APPROXIMATE. THE CONTRACTOR SHALL SET THE FINAL RIM ELEVATION BASED ON THE COMPLETE FINISH SURFACE AND PER TCR STANDARD DETAIL SS-3.
 - ALL SEWER LINES SHALL HAVE A MINIMUM HORIZONTAL SEPARATION OF 10 FEET EDGE-TO-EDGE FROM ALL WATER LINES. WHERE LINES CROSS, THERE SHALL BE A MINIMUM OF 18" CLEAR VERTICAL SEPARATION.
 - ALL SANITARY SEWER LINES MUST BE TESTED IN ACCORDANCE WITH SECTION 450.6 OF THE TOWN OF CASTLE ROCK CONSTRUCTION METHODOLOGY AND MATERIALS MANUAL IN THE PRESENCE OF A TCR CONSTRUCTION INSPECTOR.
 - ALL SANITARY SEWER LINE TRENCHES SHALL BE SLOPED OR BRACED AND SHEETED AS NECESSARY FOR THE SAFETY OF THE WORKERS AND THE PROTECTION OF OTHER UTILITIES, IN COMPLIANCE WITH ALL APPLICABLE STATE AND FEDERAL REQUIREMENTS. ALL EXCAVATION OPERATION SAFETY IS THE RESPONSIBILITY OF THE CONTRACTOR.
 - ALL MANHOLES SHALL BE PLACED ON A MINIMUM OF 1' OF 3/4" WASH ROCK. IF ADDITIONAL SUBGRADE IS DISTURBED, EXCAVATION SHALL BE BACKFILLED WITH 3/4" WASH ROCK OR OTHER APPROVED STRUCTURAL SOIL COMPACTED TO 95% OF ASTM D698 UNLESS OTHERWISE INSTRUCTED BY THE INSPECTOR.
 - ALL MANHOLES LOCATED OUTSIDE OF PAVED ROW SHALL BE CONSTRUCTED WITH A LOCKING-TYPE COVER WITH THE MANHOLE RING BOLTED TO THE MANHOLE CONE AND RAISED 8"-12" ABOVE GRADE PER STANDARD DETAIL SS-3.
- 1 INDICATES UTILITY CROSSING NUMBER (SEE CROSSING TABLE LEFT COLUMN)
- INDICATES WATER LOWERING PER TOCR DETAIL W-17 (SEE SHEET DT4)

PROJECT BENCHMARK:
(AZTEC #401)
DOUGLAS COUNTY BENCHMARK TT17A
(NAVD88 DATUM) ELEVATION=6483.68

811

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Utility Notification
Center of Colorado

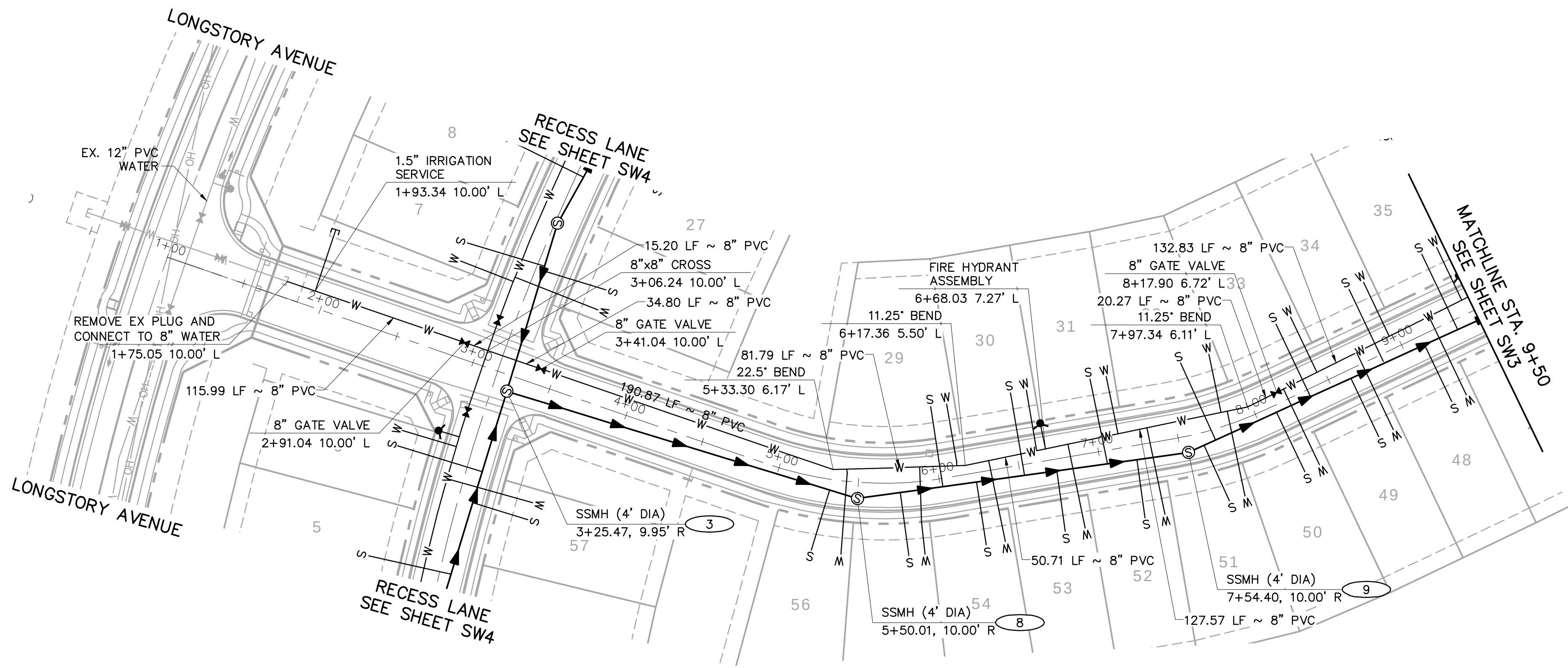
TOWN APPROVAL BLOCK

TOWN OF CASTLE ROCK APPROVAL PLANS
ARE HEREBY APPROVED FOR ONE YEAR FROM
DATE OF DEVELOPMENT SERVICES APPROVAL
APPROVED BY:

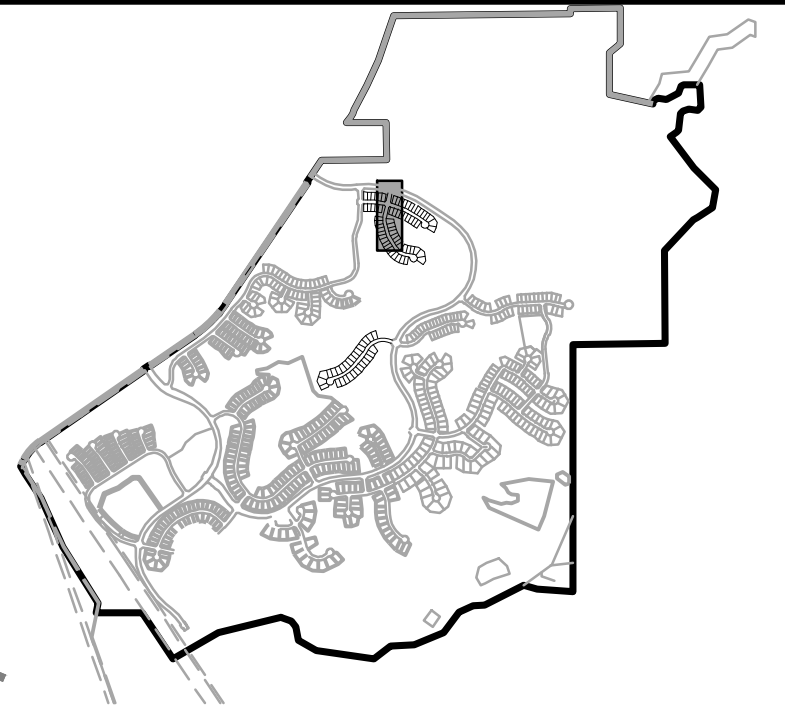
DEVELOPMENT SERVICES DATE

Sheet
SW1
Date
APRIL 14, 2022

7
of
22



RIDGEWALK POINT



- CONSTRUCTION NOTES:**
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- 1 INDICATES UTILITY CROSSING NUMBER (SEE CROSSING TABLE LEFT COLUMN)
- INDICATES WATER LOWERING PER TOCR DETAIL W-17 (SEE SHEET DT4)

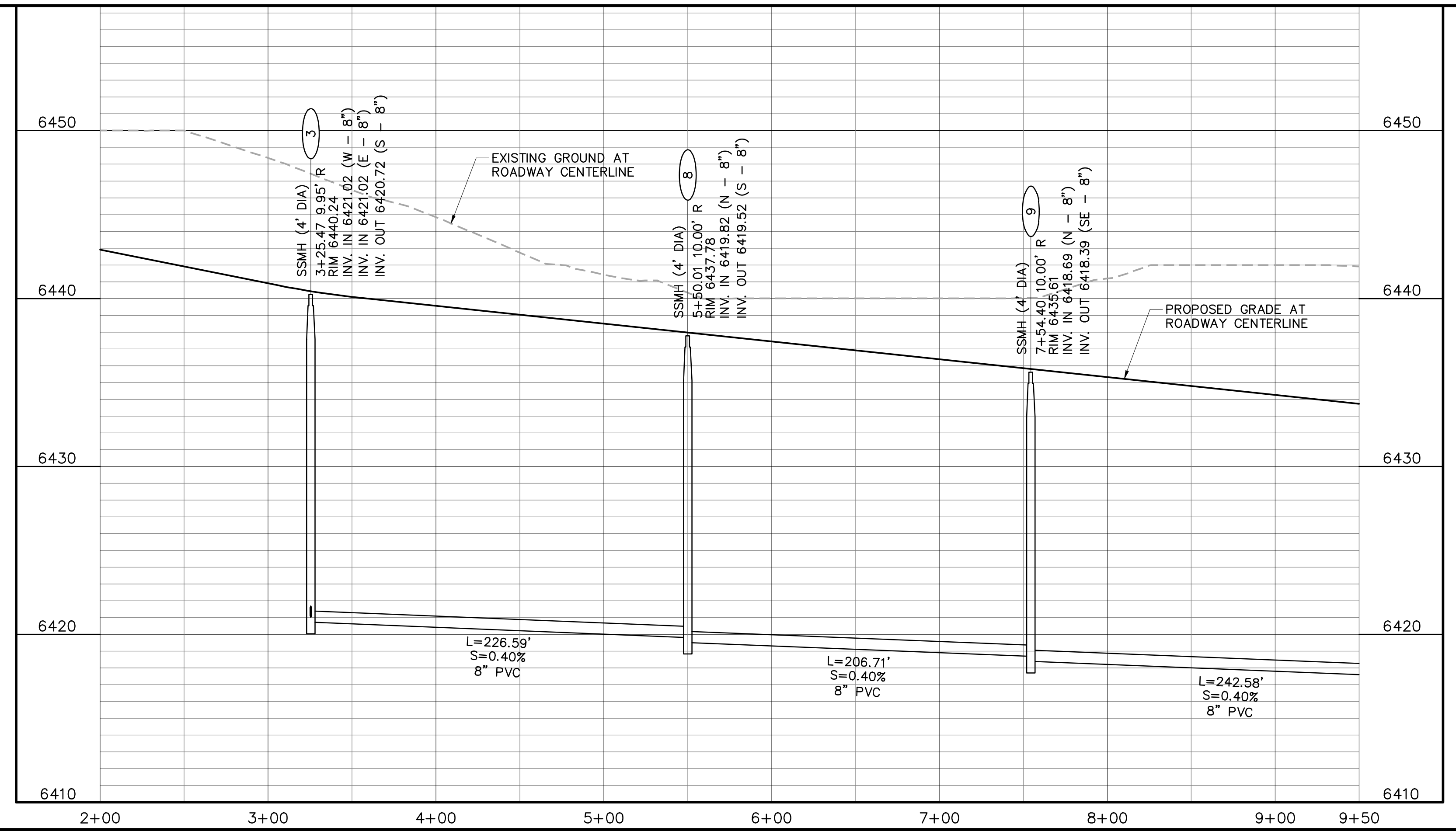
PROJECT BENCHMARK:
(AZTEC #401)
DOUGLAS COUNTY BENCHMARK TT17A
(NAVD88 DATUM) ELEVATION=6483.68



TOWN APPROVAL BLOCK

TOWN OF CASTLE ROCK APPROVAL PLANS ARE HEREBY APPROVED FOR ONE YEAR FROM DATE OF DEVELOPMENT SERVICES APPROVAL

APPROVED BY: _____
DEVELOPMENT SERVICES DATE



PATH: J:\HINES\CS\CADD\CIVIL\53 F3 SANITARY AND WATER\53SW2-SW3.DWG
PLOTTED BY: KYLER SANFORD PLOT DATE: 4/20/2022 4:27 PM
XREFS:

DATE	REVISION	DESCRIPTION



Drawing Name
53SW2-SW3.dwg
Job Number
HINES CS3
Prepared For
HINES

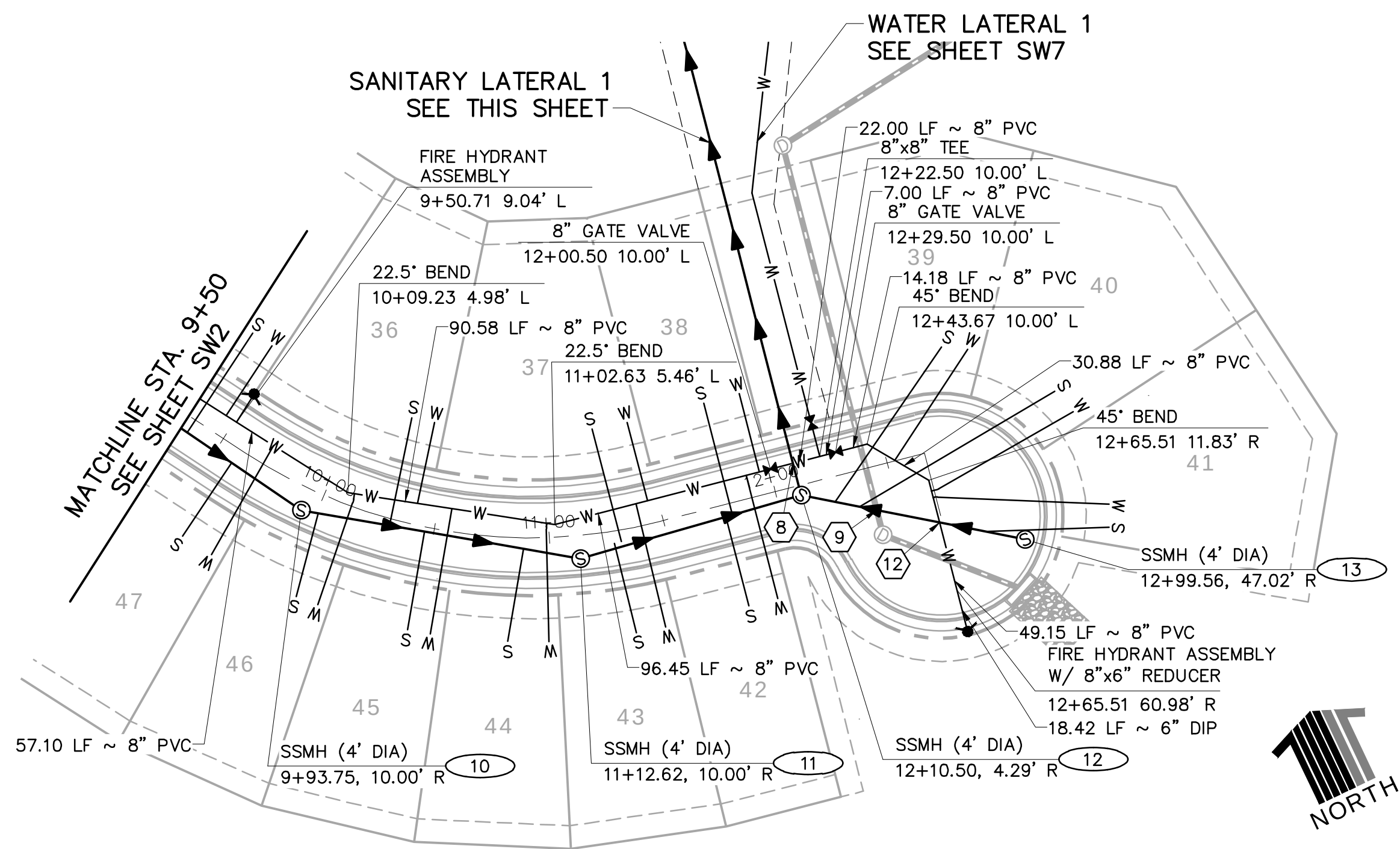
0	25	50	100
1 inch = 50 ft. Horizontal	1 inch = 5 ft. Vertical		
Designer	Drafter	Checked	
KWS	JAH	BKM	

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CANYONS SOUTH FILING NO. 3
SANITARY SEWER AND WATER PLANS
SANITARY AND WATER PLAN AND PROFILE

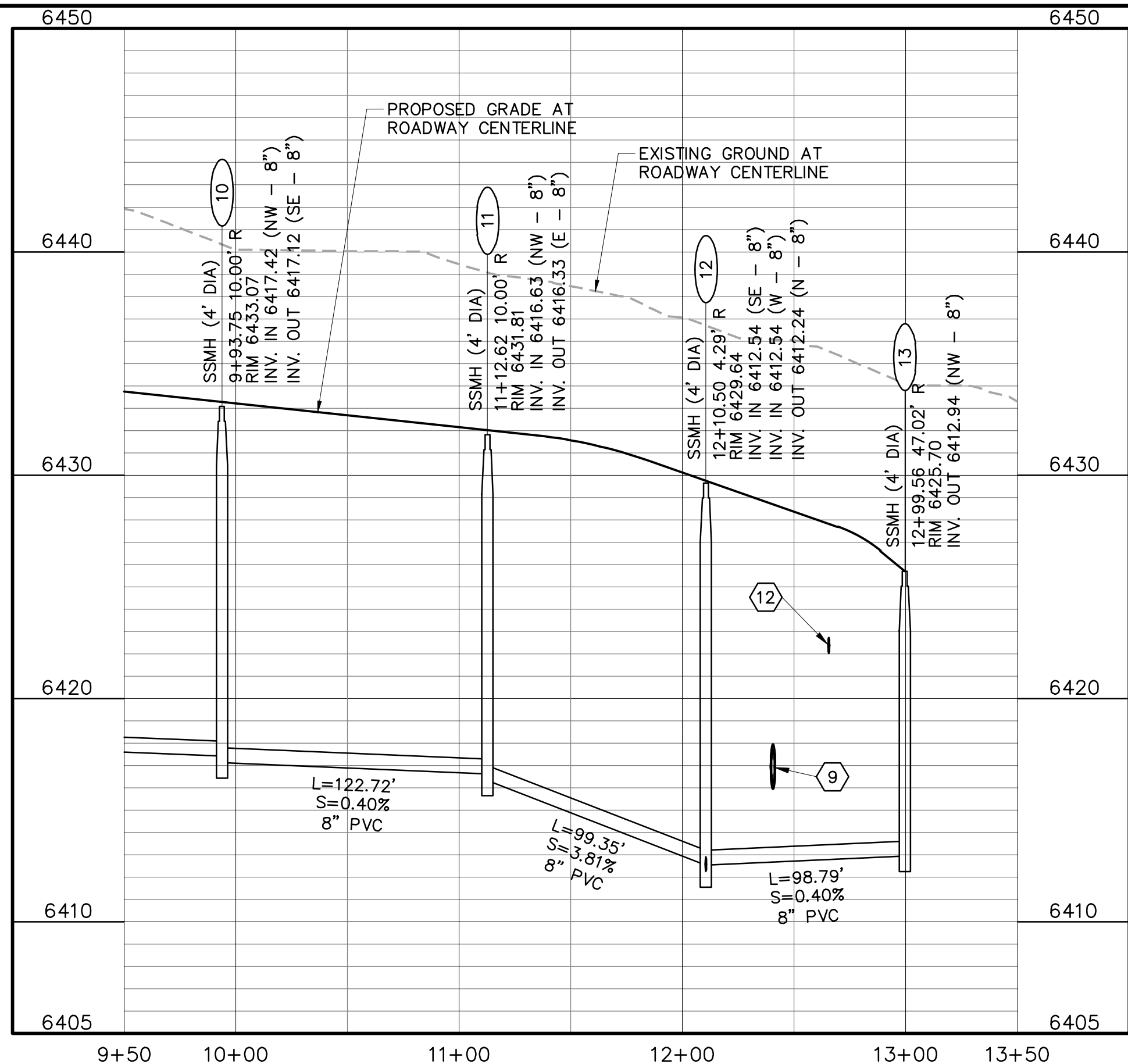
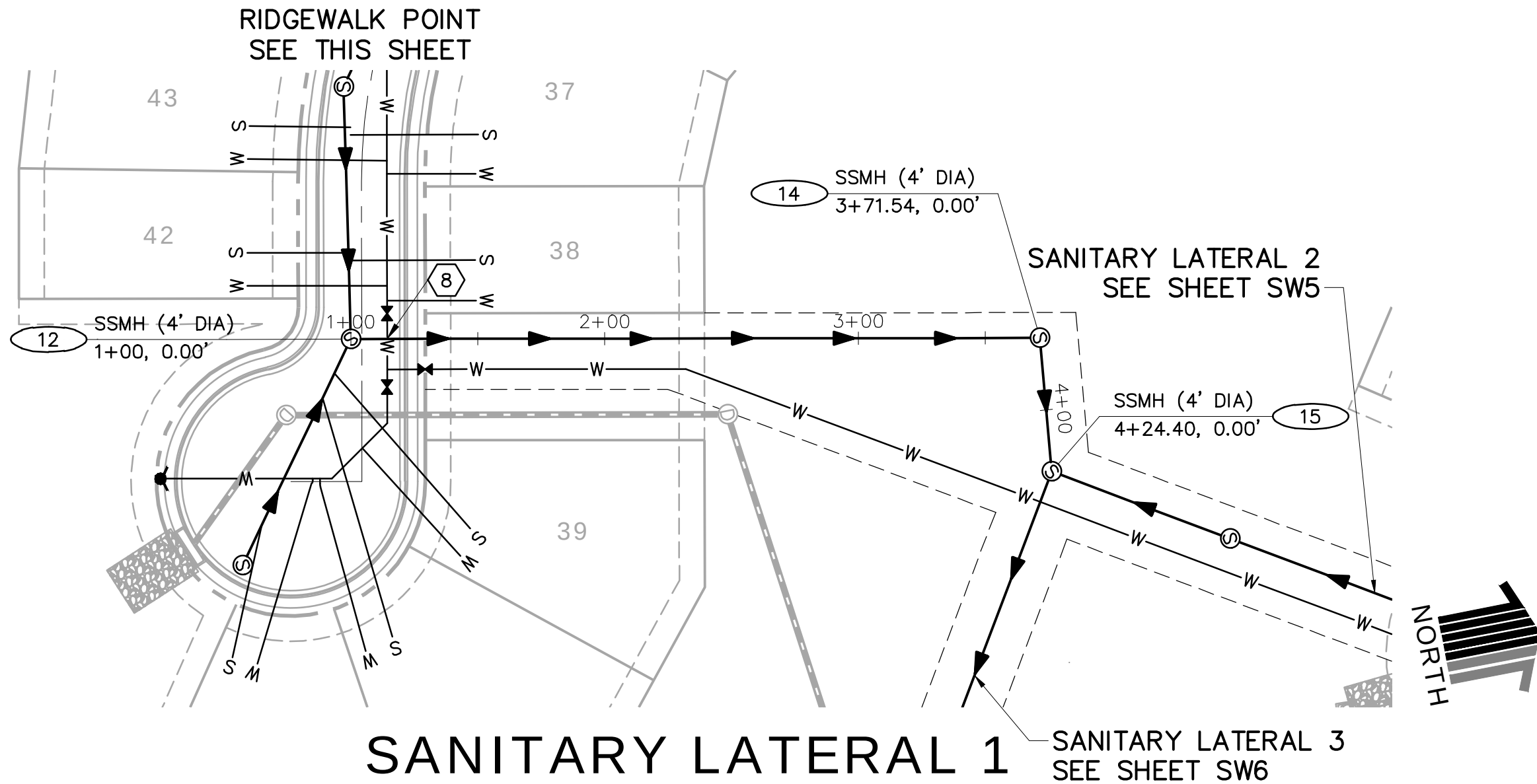
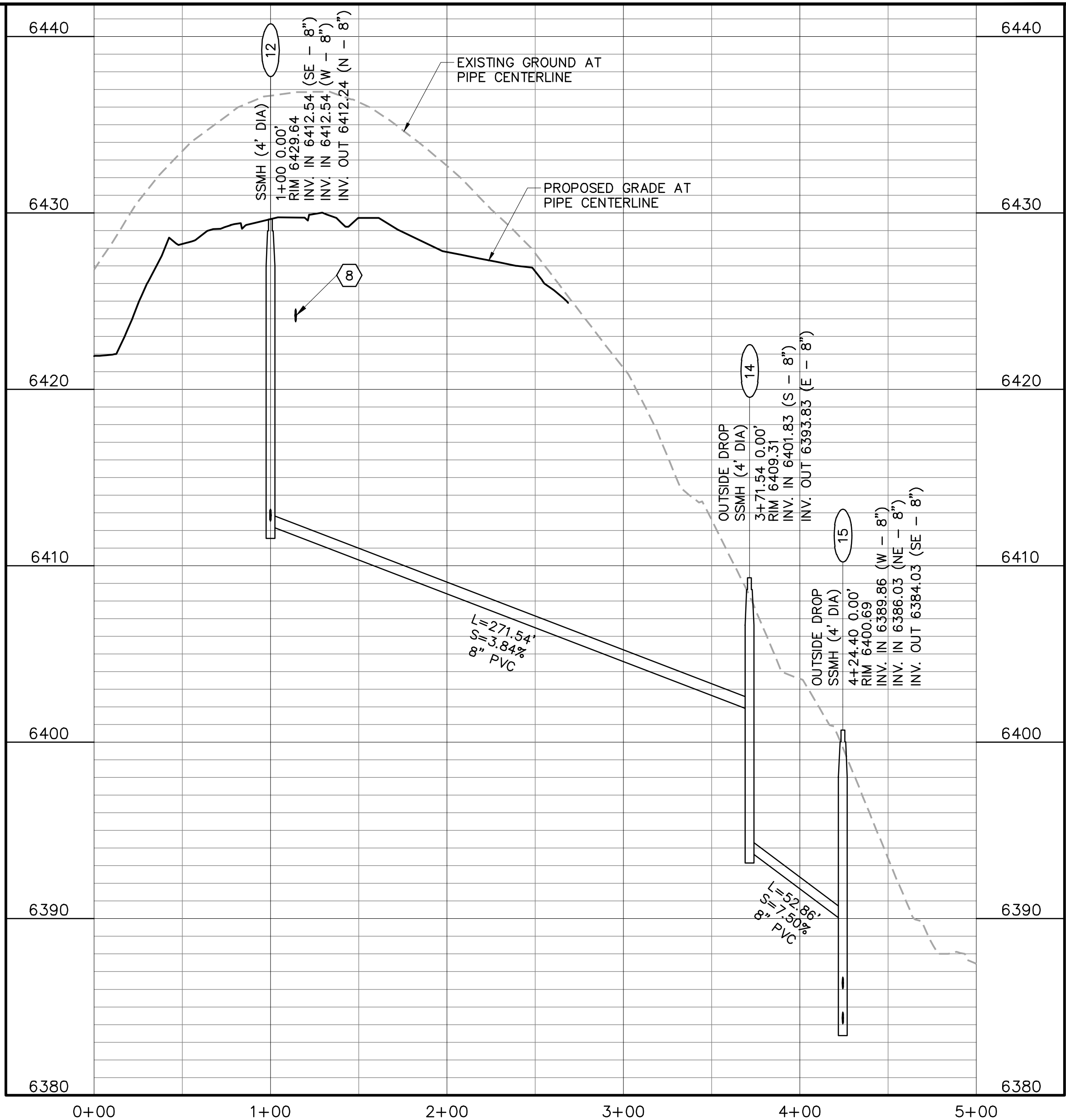
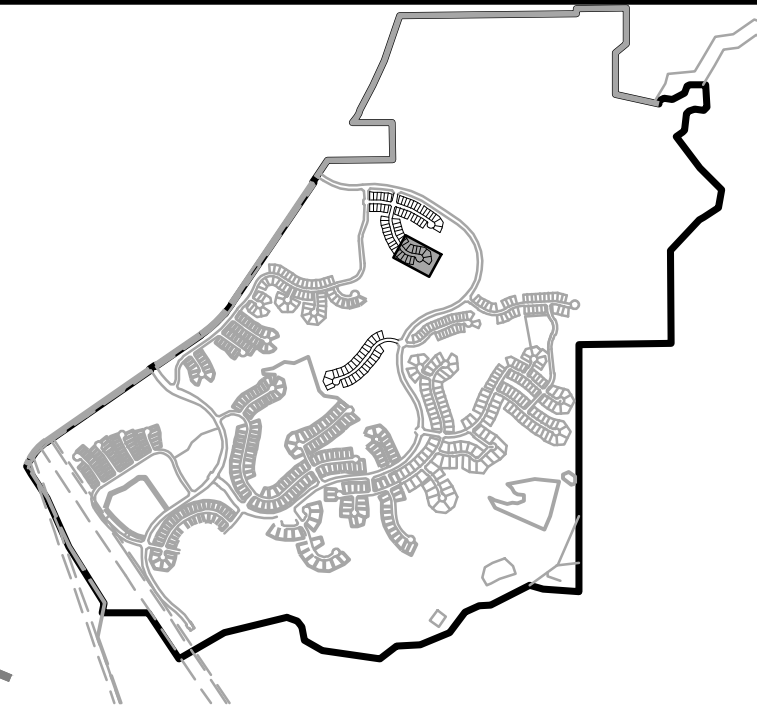
Sheet
SW2
of
22
Date
APRIL 14, 2022

PATH: J:\HINES\CS\CADD\CIVIL\53 F3 SANITARY AND WATER\53SW2-SW3.DWG
PLOTTED BY: KYLER SANFORD PLOT DATE: 4/20/2022 4:32 PM
XREFS:



RIDGEWALK POINT

UTILITY CROSSINGS						
NO	DESC	ELEV	OVER/UNDER	DESC	ELEV	CLEAR
8	8" PVC	TOP=6412.38	UNDER	8" PVC WAT	BOP=6423.84	11.46'
9	8" PVC	TOP=6413.36	UNDER	18" RCP	BOP=6416.36	2.99'
12	8" PVC	TOP=6413.47	UNDER	8" PVC WAT	BOP=6421.12	7.65'



KEYMAP

CONSTRUCTION NOTES:

- ALL SANITARY SEWER CONSTRUCTION IS SUBJECT TO THE TOWN OF CASTLE ROCK WASTEWATER COLLECTION DESIGN CRITERIA MANUAL, WELL AS THE SANITARY SEWER CONSTRUCTION NOTES LISTED HEREIN.
- ALL SANITARY SEWER PIPELINES SHALL BE PVC, SDR-35, IN ACCORDANCE WITH ASTM D-3034, BELL AND SPIGOT WITH ELASTOMERIC SEAL.
- ALL SANITARY SEWER PIPELINES SHALL HAVE A MINIMUM COVER OF 5 FEET AND MAXIMUM COVER OF 20 FEET.
- ALL SANITARY SEWER PIPELINES SHALL BE BEDDED IN ACCORDANCE WITH TCR STANDARD DETAIL SS-8.
- ALL MANHOLE RIM ELEVATIONS GIVEN ON THESE PLANS ARE CONSIDERED APPROXIMATE. THE CONTRACTOR SHALL SET THE FINAL RIM ELEVATION BASED ON THE COMPLETE FINISH SURFACE AND PER TCR STANDARD DETAIL SS-3.
- ALL SEWER LINES SHALL HAVE A MINIMUM HORIZONTAL SEPARATION OF 10 FEET EDGE-TO-EDGE FROM ALL WATER LINES. WHERE LINES CROSS, THERE SHALL BE A MINIMUM OF 18" CLEAR VERTICAL SEPARATION.
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- ALL MANHOLES SHALL BE PLACED ON A MINIMUM OF 1' OF 3/4" WASH ROCK. IF ADDITIONAL SUBGRADE IS DISTURBED, EXCAVATION SHALL BE BACKFILLED WITH 3/4" WASH ROCK OR OTHER APPROVED STRUCTURAL SOIL COMPACTED TO 95% OF ASTM D698 UNLESS OTHERWISE INSTRUCTED BY THE INSPECTOR.
- ALL MANHOLES LOCATED OUTSIDE OF PAVED ROW SHALL BE CONSTRUCTED WITH A LOCKING-TYPE COVER WITH THE MANHOLE RING BOLTED TO THE MANHOLE CONE AND RAISED 8"-12" ABOVE GRADE PER STANDARD DETAIL SS-3.

- 1 INDICATES UTILITY CROSSING NUMBER
(SEE CROSSING TABLE LEFT COLUMN)
- 15 INDICATES WATER LOWERING PER TOCR
DETAIL W-17 (SEE SHEET DT4)

PROJECT BENCHMARK:

(AZTEC #401)
DOUGLAS COUNTY BENCHMARK TT17A
(NAVD88 DATUM) ELEVATION=6483.68



1-800-922-1987

Utility Notification
Center of Colorado

TOWN APPROVAL BLOCK

TOWN OF CASTLE ROCK APPROVAL PLANS
ARE HEREBY APPROVED FOR ONE YEAR FROM
DATE OF DEVELOPMENT SERVICES APPROVAL

APPROVED BY:

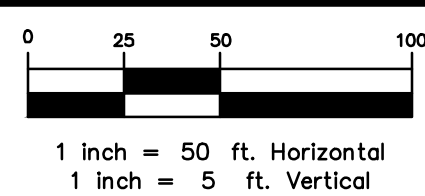
DEVELOPMENT SERVICES DATE

Hines

Drawing Name
53SW2-SW3.dwg

Job Number
HINES CS3

Prepared For
HINES



Designer
KWS

Drafter
JAH

Checked
BKM

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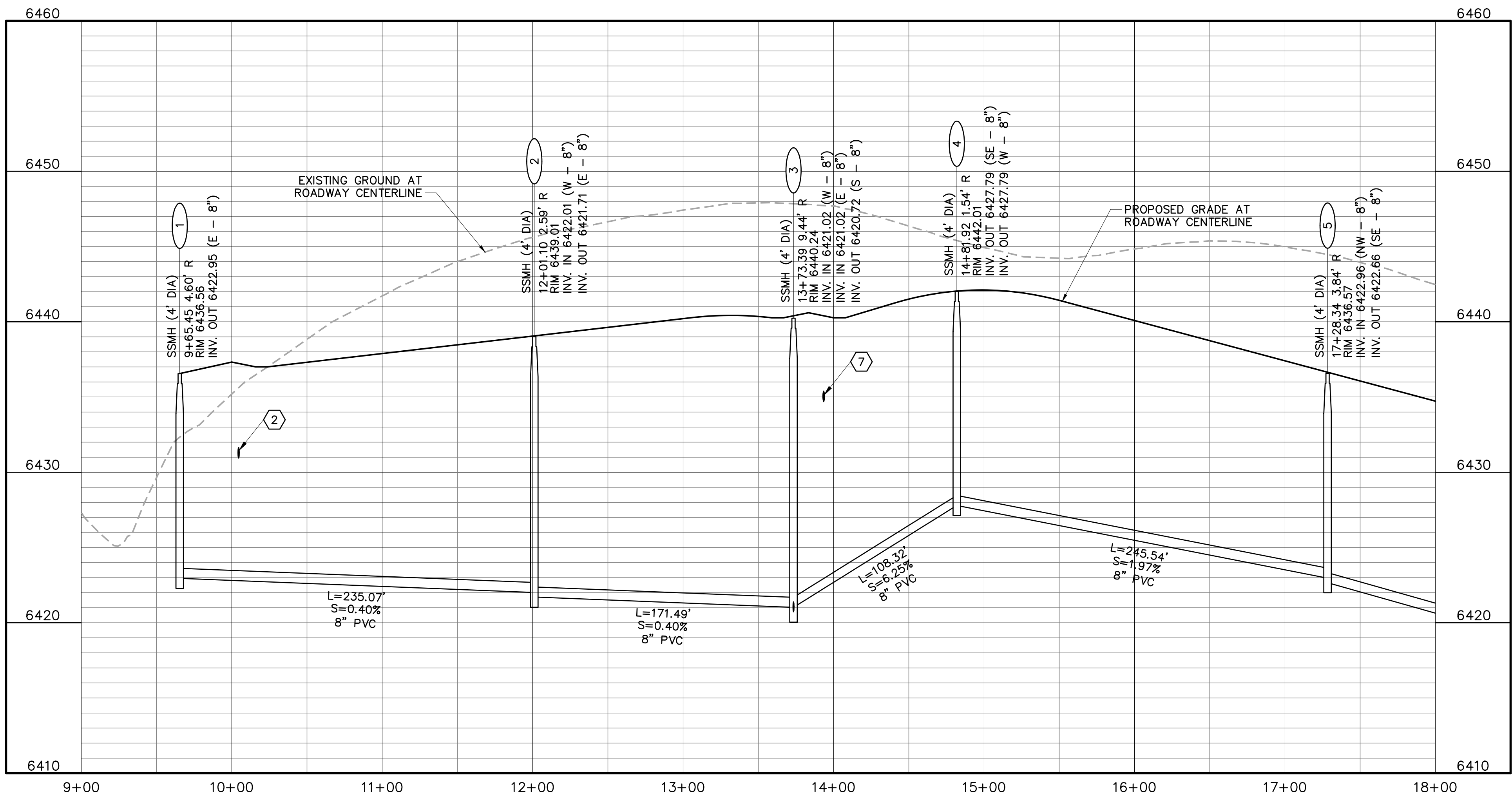
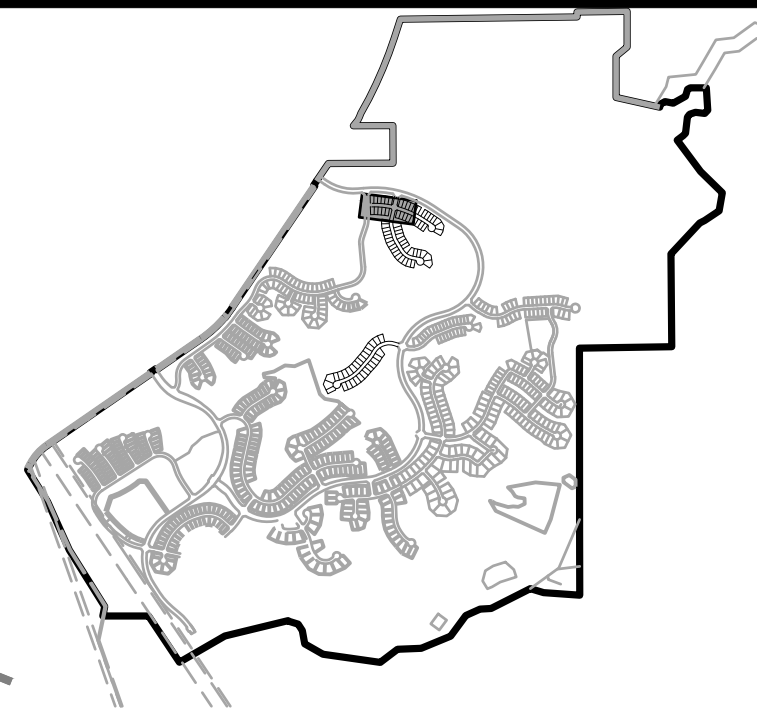
CANYONS SOUTH FILING NO. 3
SANITARY SEWER AND WATER PLANS
SANITARY AND WATER PLAN AND PROFILE

Sheet
SW3
9 of 22
Date
APRIL 14, 2022



UTILITY CROSSINGS						
NO	DESC	ELEV	OVER/UNDER	DESC	ELEV	CLEAR
2	8" PVC	TOP=6423.48	UNDER	8" PVC WAT	BOP=6430.74	7.26'
7	8" PVC	TOP=6422.96	UNDER	8" PVC WAT	BOP=6434.54	11.58'

RECESS LANE



KEYMAP

CONSTRUCTION NOTES:

1. ALL SANITARY SEWER CONSTRUCTION IS SUBJECT TO THE TOWN OF CASTLE ROCK WASTEWATER COLLECTION DESIGN CRITERIA MANUAL, WELL AS THE SANITARY SEWER CONSTRUCTION NOTES LISTED HEREIN.
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 5. ALL MANHOLE RIM ELEVATIONS GIVEN ON THESE PLANS ARE CONSIDERED APPROXIMATE. THE CONTRACTOR SHALL SET THE FINAL RIM ELEVATION BASED ON THE COMPLETE FINISH SURFACE AND PER TCR STANDARD DETAIL SS-3.
 6. ALL SEWER LINES SHALL HAVE A MINIMUM HORIZONTAL SEPARATION OF 10 FEET EDGE-TO-EDGE FROM ALL WATER LINES. WHERE LINES CROSS, THERE SHALL BE A MINIMUM OF 18" CLEAR VERTICAL SEPARATION.
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- ① INDICATES UTILITY CROSSING NUMBER
(SEE CROSSING TABLE LEFT COLUMN)
- ☹ INDICATES WATER LOWERING PER TOCR
DETAIL W-17 (SEE SHEET DT4)

PROJECT BENCHMARK:

(AZTEC #401)
DOUGLAS COUNTY BENCHMARK TT17A
(NAVD88 DATUM) ELEVATION=6483.68



UNCC
CALL BEFORE
YOU DIG

 811
OR
1-800-922-1987

Utility Notification
Center of Colorado

TOWN APPROVAL BLOCK

TOWN OF CASTLE ROCK APPROVAL PLANS
ARE HEREBY APPROVED FOR ONE YEAR FROM
DATE OF DEVELOPMENT SERVICES APPROVAL

APPROVED BY:

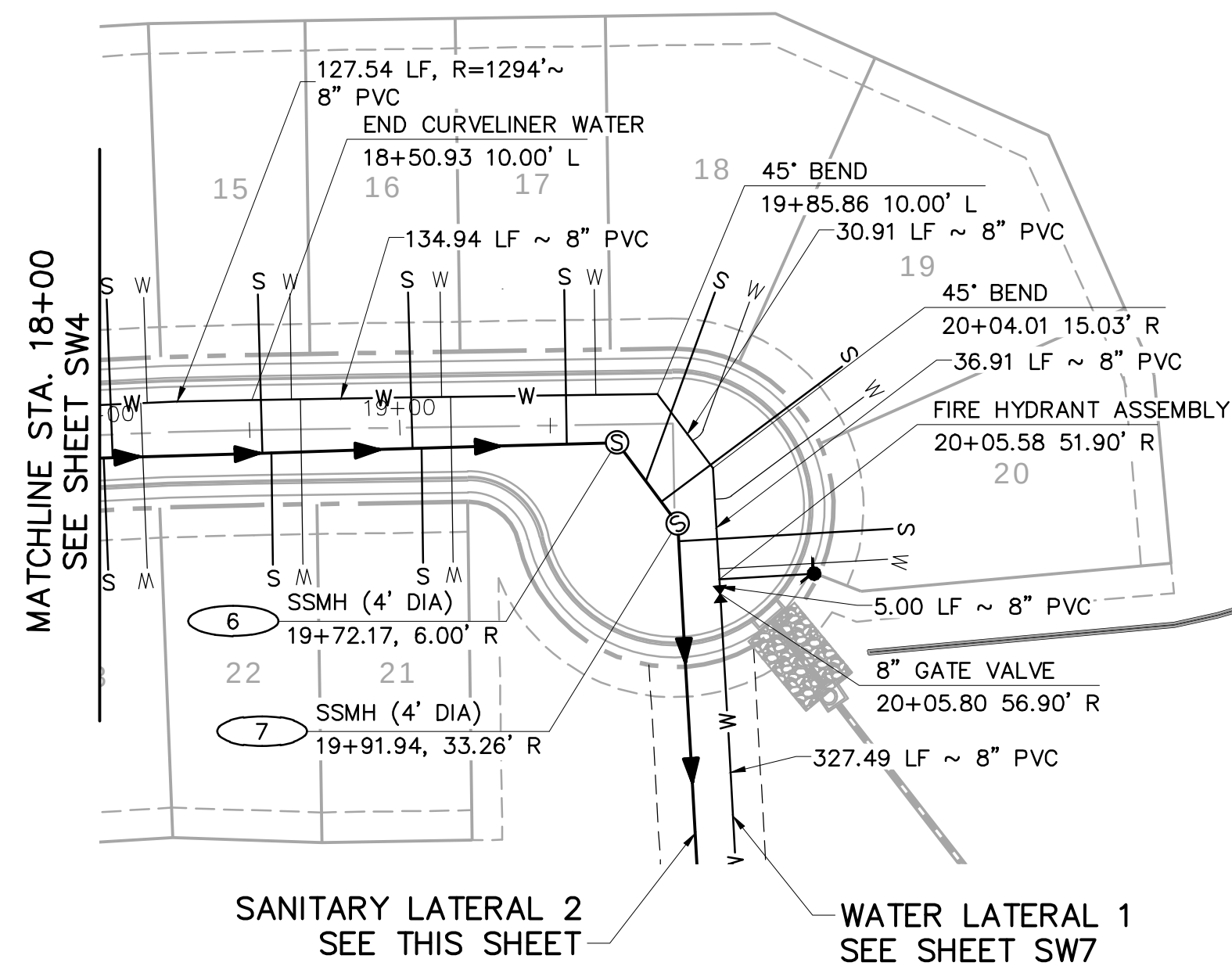
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Sheet

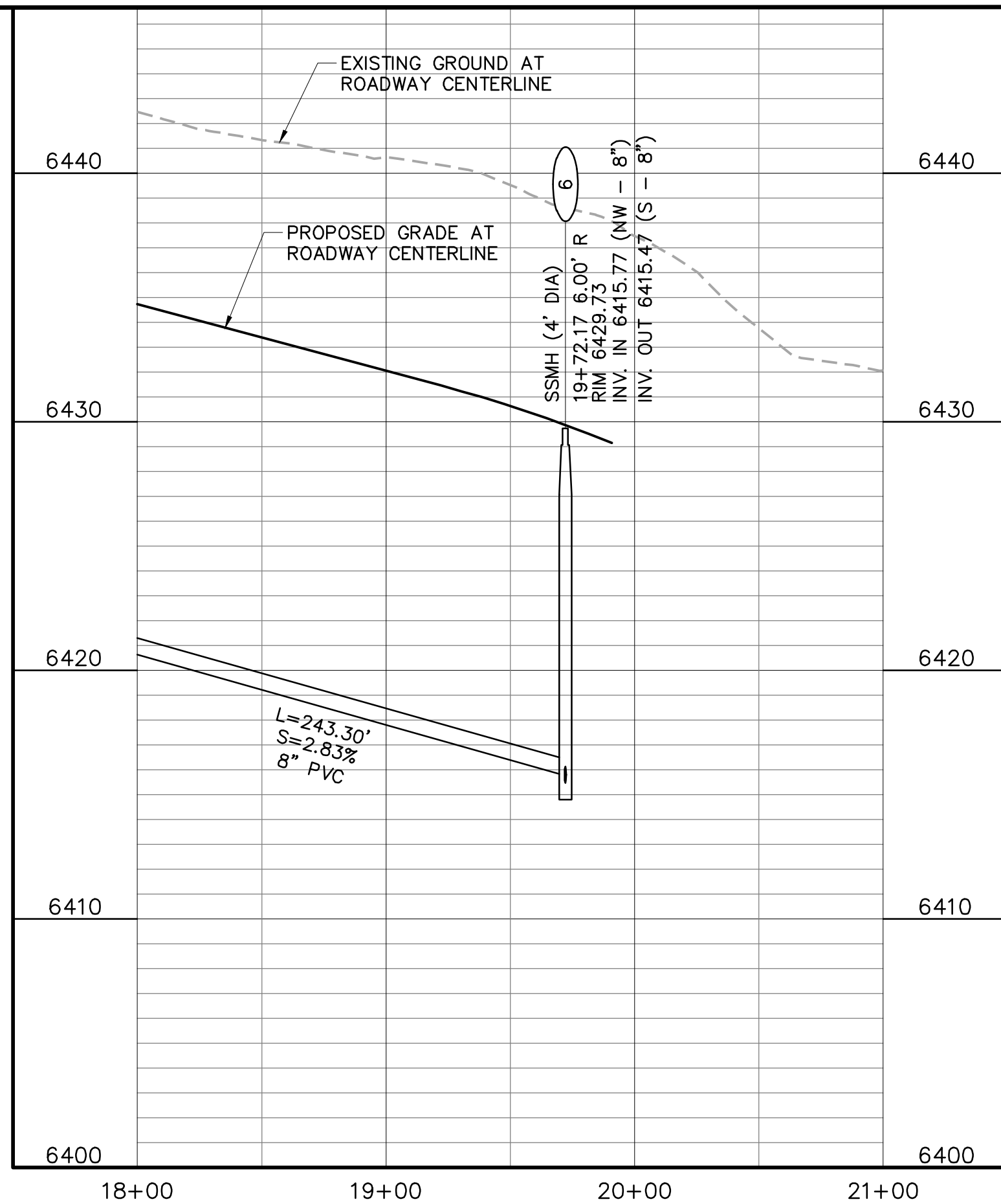
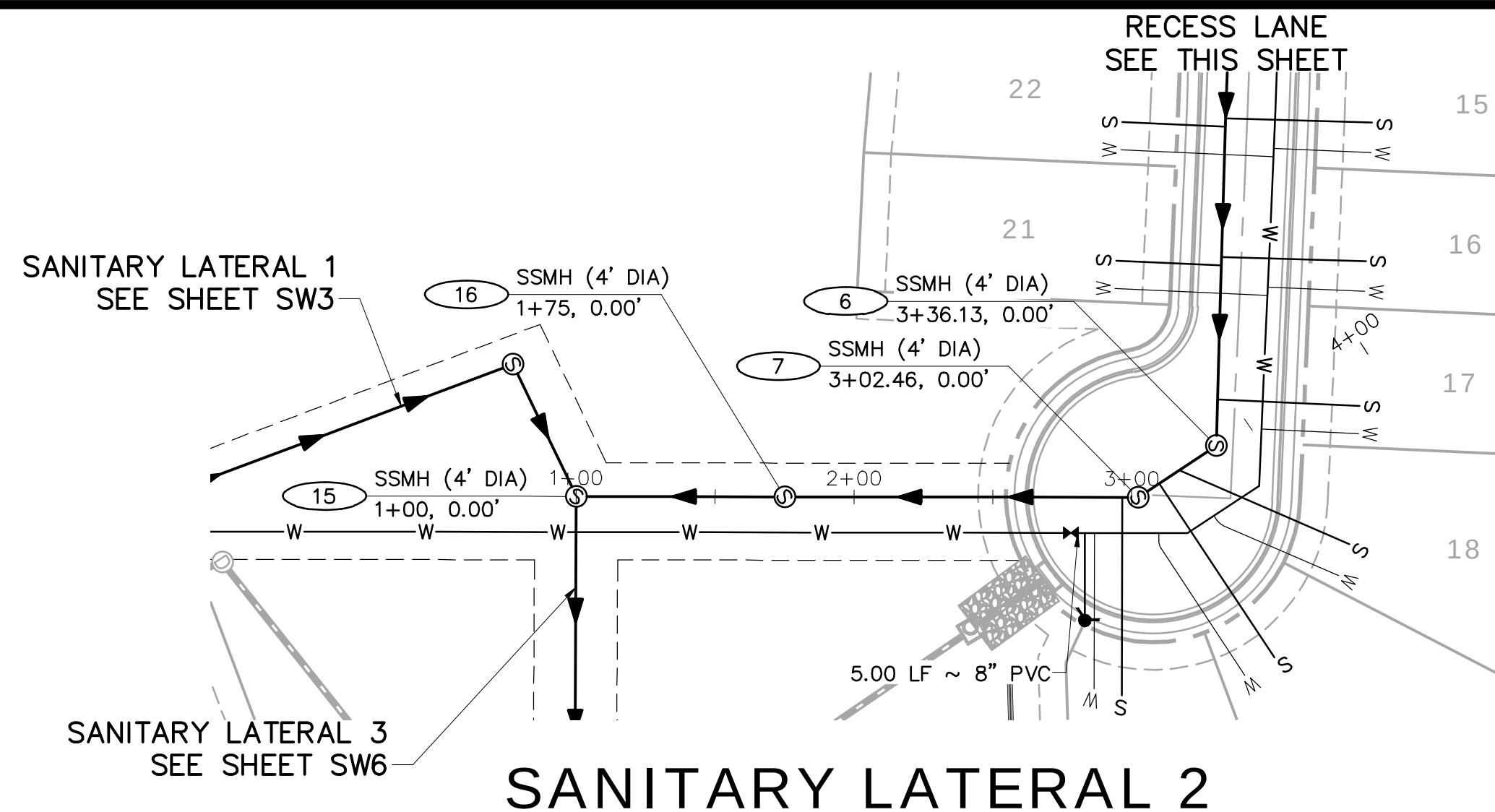
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Date
APRIL 14, 2022

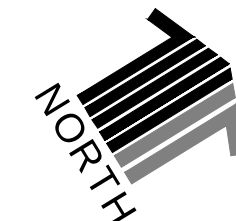
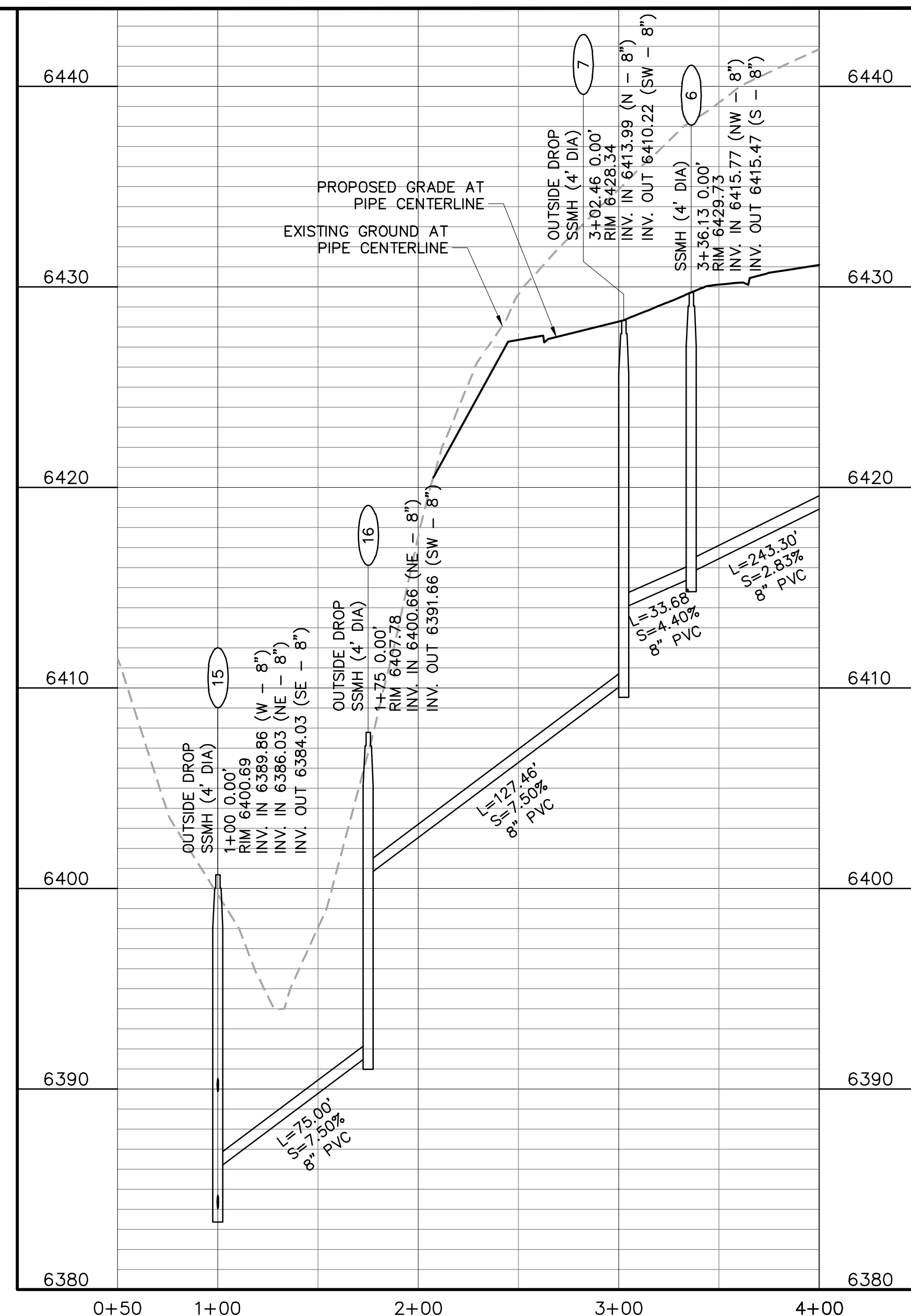
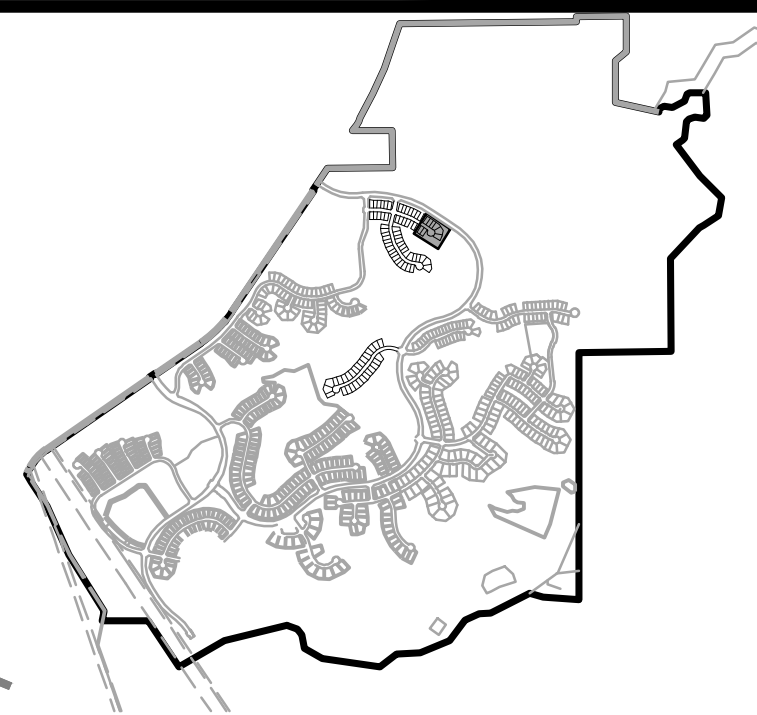
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PLOTTED BY: KYLER SANFORD PLOT DATE: 4/14/2022 2:22 PM
XREFS:



RECESS LANE



SANITARY LATERAL 2



KEYMAP

CONSTRUCTION NOTES:

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- 1 INDICATES UTILITY CROSSING NUMBER (SEE CROSSING TABLE LEFT COLUMN)
- INDICATES WATER LOWERING PER TOCR DETAIL W-17 (SEE SHEET DT4)

PROJECT BENCHMARK:

(AZTEC #401)
DOUGLAS COUNTY BENCHMARK TT17A
(NAVD88 DATUM) ELEVATION=6483.68



Utility Notification
Center of Colorado

TOWN APPROVAL BLOCK

TOWN OF CASTLE ROCK APPROVAL PLANS
ARE HEREBY APPROVED FOR ONE YEAR FROM
DATE OF DEVELOPMENT SERVICES APPROVAL
APPROVED BY:

DEVELOPMENT SERVICES DATE

Hines

Drawing Name
53SW4-SW5.dwg
Job Number
HINES CS3
Prepared For
HINES

1 inch = 50 ft. Horizontal
1 inch = 5 ft. Vertical

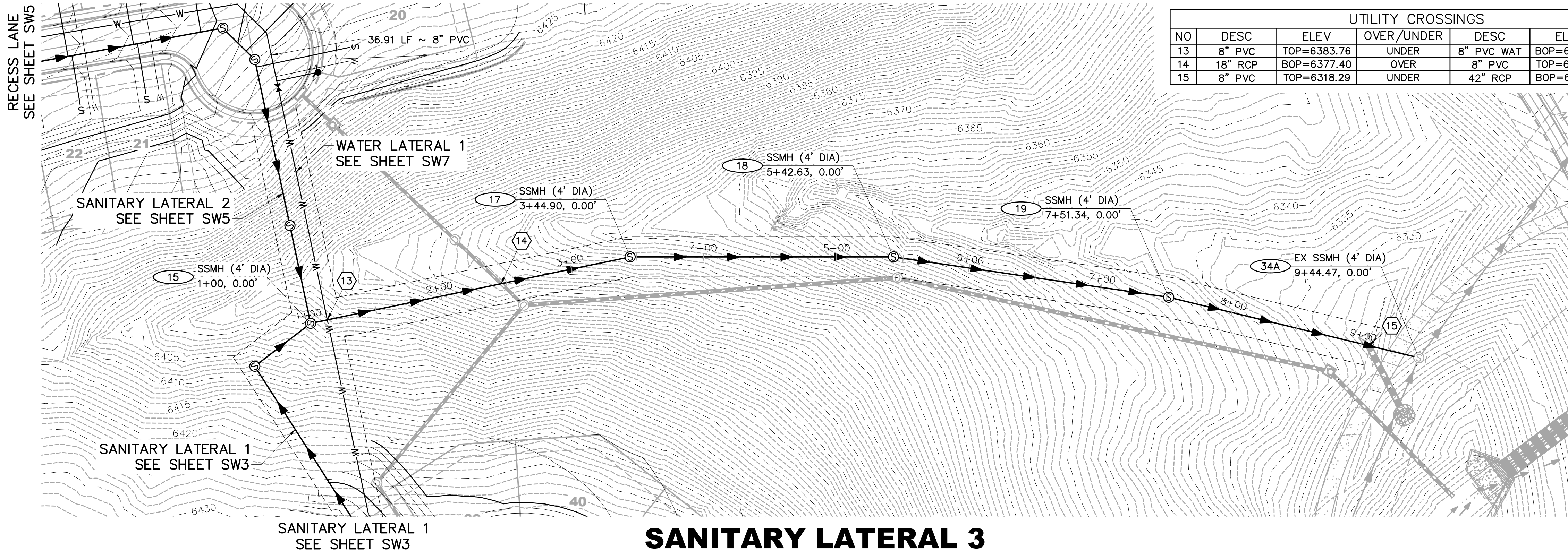
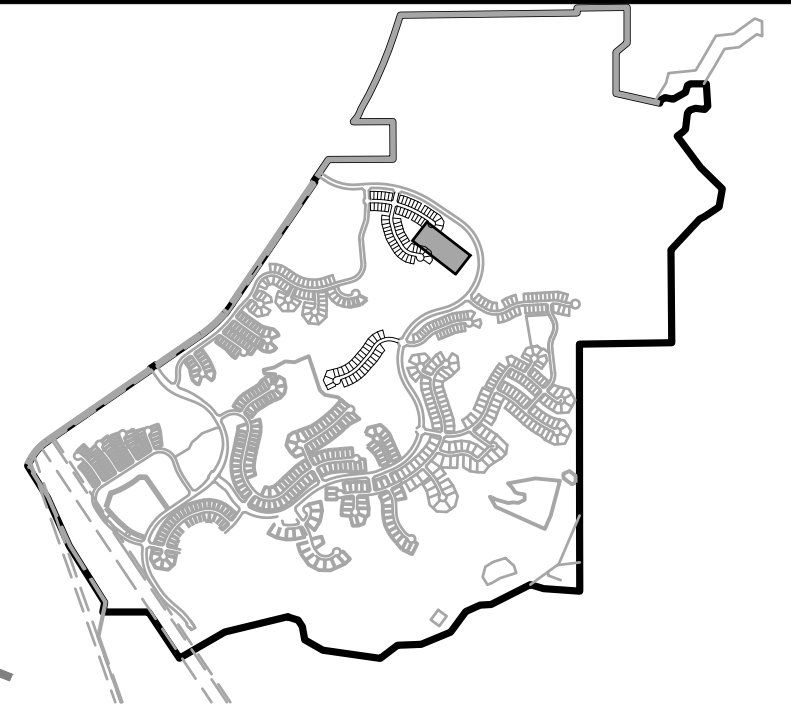
Designer
KWS
Drafter
JAH
Checked
BKM

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CANYONS SOUTH FILING NO. 3
SANITARY SEWER AND WATER PLANS
SANITARY AND WATER PLAN AND PROFILE

Sheet
SW5
of
22
Date
APRIL 14, 2022

PATH: J:\HINES CS\CADD\CIVIL\53 F3 SANITARY AND WATER\53SW6-SW7.DWG
PLOTTED BY: KYLER SANFORD PLOT DATE: 4/14/2022 11:45 AM
XREFS:



CONSTRUCTION NOTES:

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- 1 INDICATES UTILITY CROSSING NUMBER
(SEE CROSSING TABLE LEFT COLUMN)
- 15 INDICATES WATER LOWERING PER TCR
DETAIL W-17 (SEE SHEET DT4)

PROJECT BENCHMARK:

(AZTEC #401)
DOUGLAS COUNTY BENCHMARK TT17A
(NAVD88 DATUM) ELEVATION=6483.68



1-800-922-1987

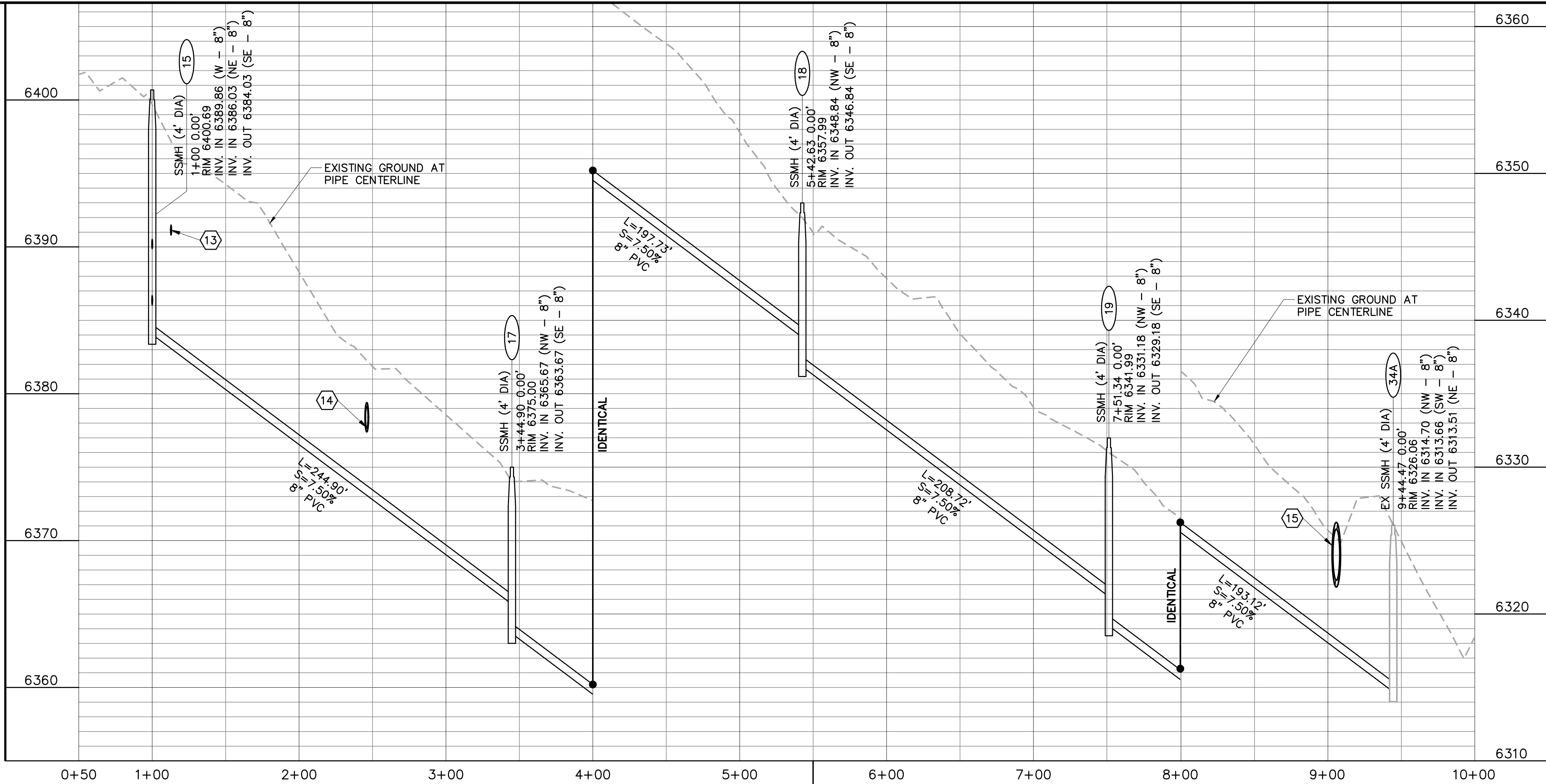
Utility Notification
Center of Colorado

TOWN APPROVAL BLOCK

TOWN OF CASTLE ROCK APPROVAL PLANS
ARE HEREBY APPROVED FOR ONE YEAR FROM
DATE OF DEVELOPMENT SERVICES APPROVAL

APPROVED BY:

DEVELOPMENT SERVICES DATE



Hines

Drawing Name 53SW6-SW7.dwg	0 25 50 100 1 inch = 50 ft. Horizontal		
Job Number HINES CS3	Designer KWS	Drafter JAH	Checked BKM
Prepared For HINES			

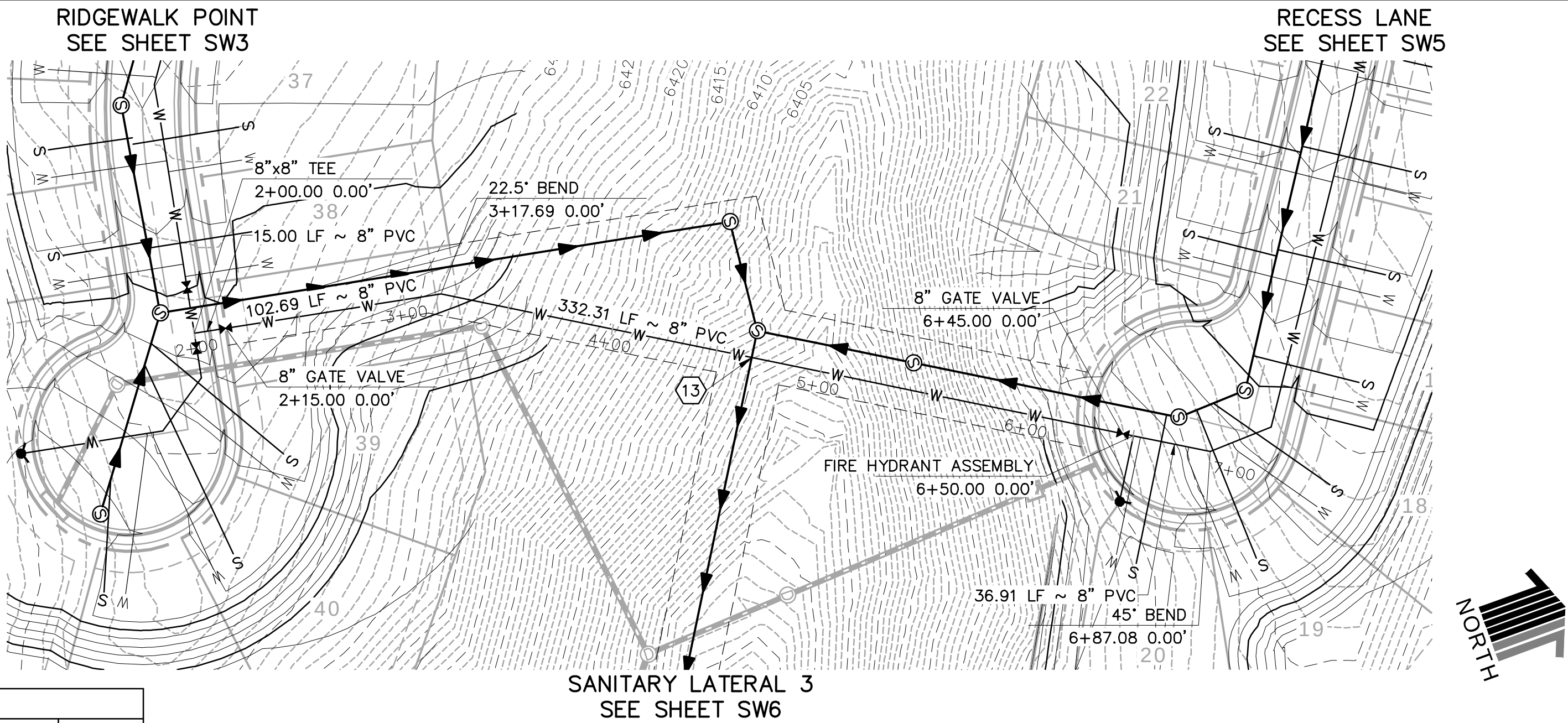
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CANYONS SOUTH FILING NO. 3
SANITARY SEWER AND WATER PLANS
SANITARY AND WATER PLAN AND PROFILE

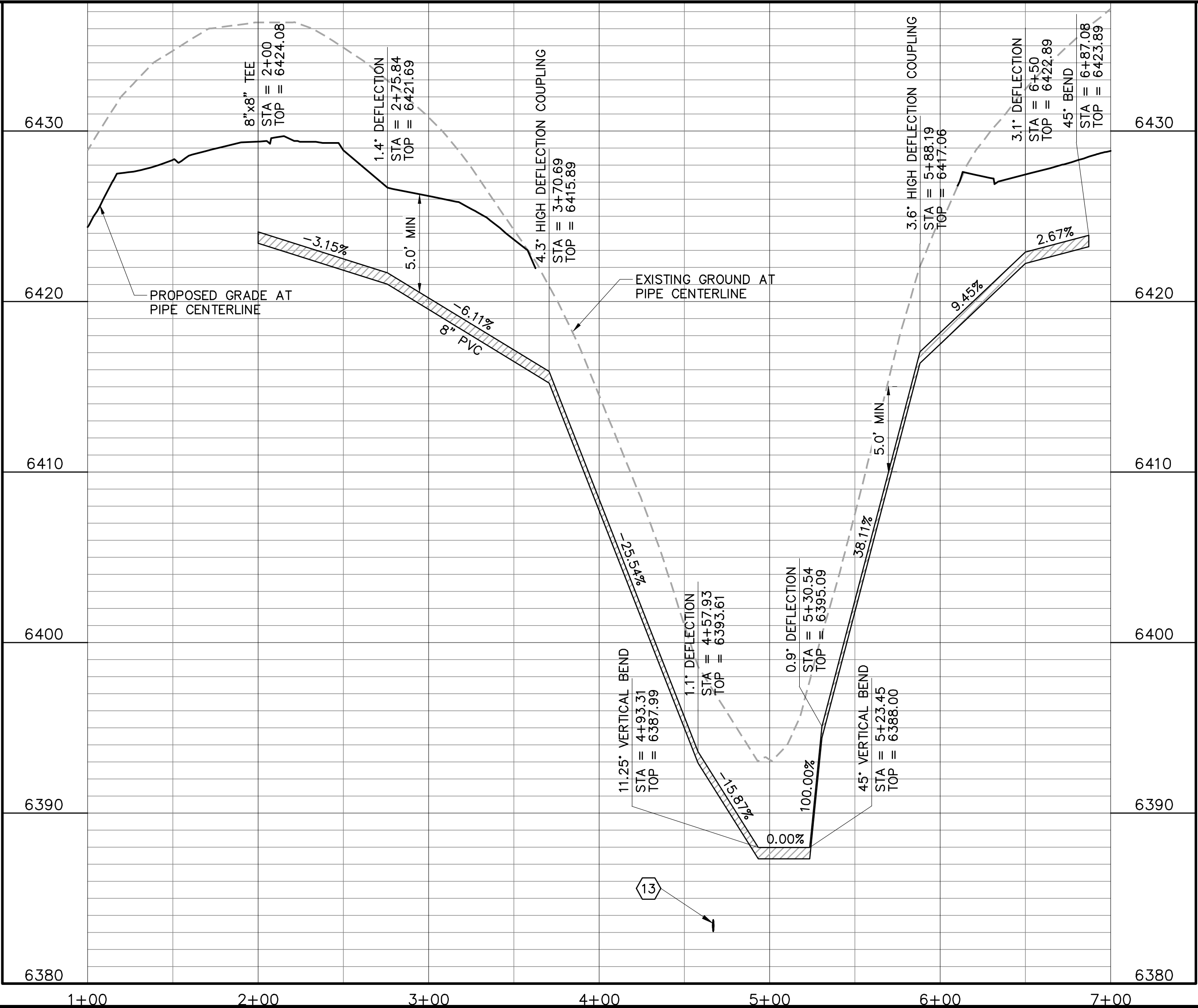
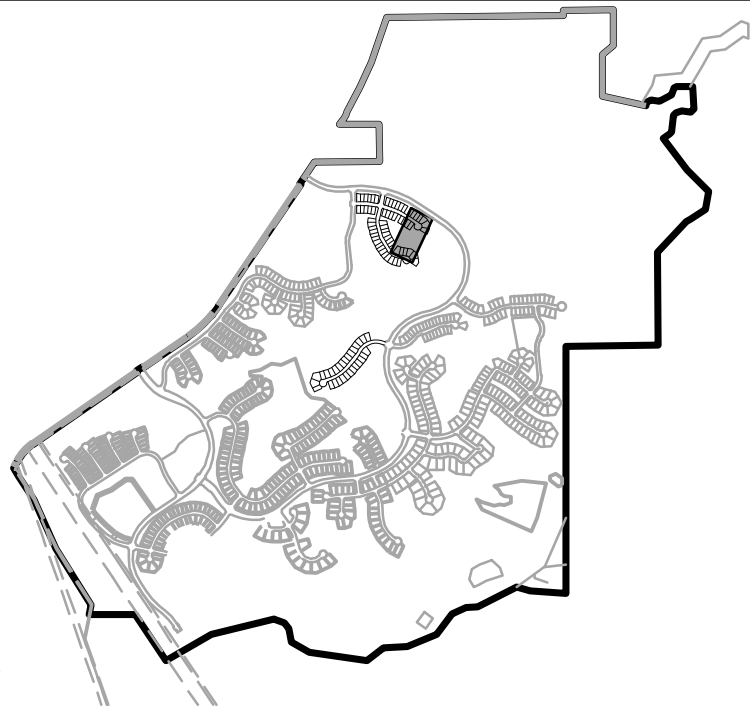
Sheet SW6	12 of 22
Date APRIL 14, 2022	

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PLOTTED BY: KYLER SANFORD PLOT DATE: 4/19/2022 9:07 AM
XREFS:



UTILITY CROSSINGS						
NO	DESC	ELEV	OVER/UNDER	DESC	ELEV	CLEAR
13	8" PVC	TOP=6383.76	UNDER	8" PVC WAT	BOP=6390.79	7.03'

WATER LATERAL 1



KEYMAP

CONSTRUCTION NOTES:

- ALL WATER MAINS CONSTRUCTION WITHIN THE CANYONS SOUTH SITE WILL CONFORM TO TOWN OF CASTLE ROCK DEVELOPMENT SERVICES DEPARTMENT.
- THE CANYONS SOUTH SITE IS WITHIN THE RED PRESSURE ZONE IN ITS ENTIRETY.
- REFERENCE CANYONS SOUTH FILING NO. 1A PROPOSED ROADWAY AND STORM DRAINAGE PLANS FOR ROADWAY AND STORM SEWER INFORMATION. REFERENCE CANYONS SOUTH FILING NO. 1A SANITARY SEWER OUTFALL PLANS FOR SANITARY SEWER OUTFALL INFORMATION.
- IN ALL LOCATIONS WHERE STORM SEWER CROSSES WATER, ABOVE OR BELOW, EACH STORM SEWER JOINT WITHIN THE TRENCH WIDTH OF THE CROSSING SHALL BE ENCASED IN A 6" THICK CONCRETE COLLAR EXTENDING 6" BEYOND BOTH SIDES OF THE JOINT. MANHOLE RIMS SHALL BE SET 8"-12" ABOVE THE GRADE AND ALL MANHOLE RIMS TO BE SET OUTSIDE THE MAINTENANCE PATH.
- ALL MAINTENANCE ACCESS ROADS SHALL NOT EXCEED 4% CROSS SLOPE OR 10% LONGITUDINAL SLOPE AND SHALL BE A MINIMUM 12' PER TOWN OF CASTLE ROCK CRITERIA.
- CONTRACTOR SHALL PROVIDE A MINIMUM SEVENTY TWO (72) HOURS' NOTICE TO THE ON-SITE TCR CONSTRUCTION INSPECTOR, (720) 733-2200, PRIOR TO MAKING ANY CONNECTIONS OR TIE-INS TO EXISTING WATER SYSTEM PROVIDED THAT THE UTILITY TIE-IN DOES NOT DISRUPT SERVICE TO EXISTING CR WATER CUSTOMERS. IF THE TIE-IN WILL DISRUPT UTILITY SERVICE, THEN CONTRACTOR SHALL PROVIDE A MINIMUM OF THREE (3) WEEKS' NOTICE TO THE TCR CONSTRUCTION INSPECTOR TO ALLOW TIME FOR CR WATER TO PROVIDE WRITTEN NOTIFICATION TO EXISTING CUSTOMERS AFFECTED BY THE TIE-IN. ALL TOWN UTILITY TIE-INS MUST BE APPROVED BY CR WATER PRIOR TO COMMENCING WORK.
- CONTRACTOR SHALL NOTIFY CASTLE ROCK WATER OF ANY WORK THAT REQUIRES SHUTDOWN OR INTERRUPTION OF SERVICE OF EXISTING WATER MAINS THREE WEEKS PRIOR TO THE PROPOSED SHUTDOWN OR INTERRUPTION UNLESS OTHERWISE APPROVED BY CASTLE ROCK WATER.
- WHERE WATER MAINS ARE CONSTRUCTED IN FILL AREAS, ALL FILL MATERIALS SHALL BE PLACED AND COMPACTED TO FINAL GRADE PRIOR TO THE INSTALLATION OF THE WATER MAIN AND APPURTENANCES. ALL FILL MATERIAL SHALL MEET THE TOWN'S STANDARDS AND BE APPROVED BY CASTLE ROCK WATER. WATER MAINS WITHIN FILL AREAS SHALL HAVE RESTRAINED JOINTS IN ACCORDANCE WITH STANDARD DETAIL W-18.
- ALL MANHOLES LOCATED OUTSIDE OF PAVED ROW SHALL BE CONSTRUCTED WITH A LOCKING-TYPE COVER WITH THE MANHOLE RING BOLTED TO THE MANHOLE CONE.

① INDICATES UTILITY CROSSING NUMBER
(SEE CROSSING TABLE LEFT COLUMN)

PROJECT BENCHMARK:

(AZTEC #401)
DOUGLAS COUNTY BENCHMARK TT17A
(NAVD88 DATUM) ELEVATION=6483.68



TOWN APPROVAL BLOCK

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APPROVED BY:

DEVELOPMENT SERVICES DATE

Hines

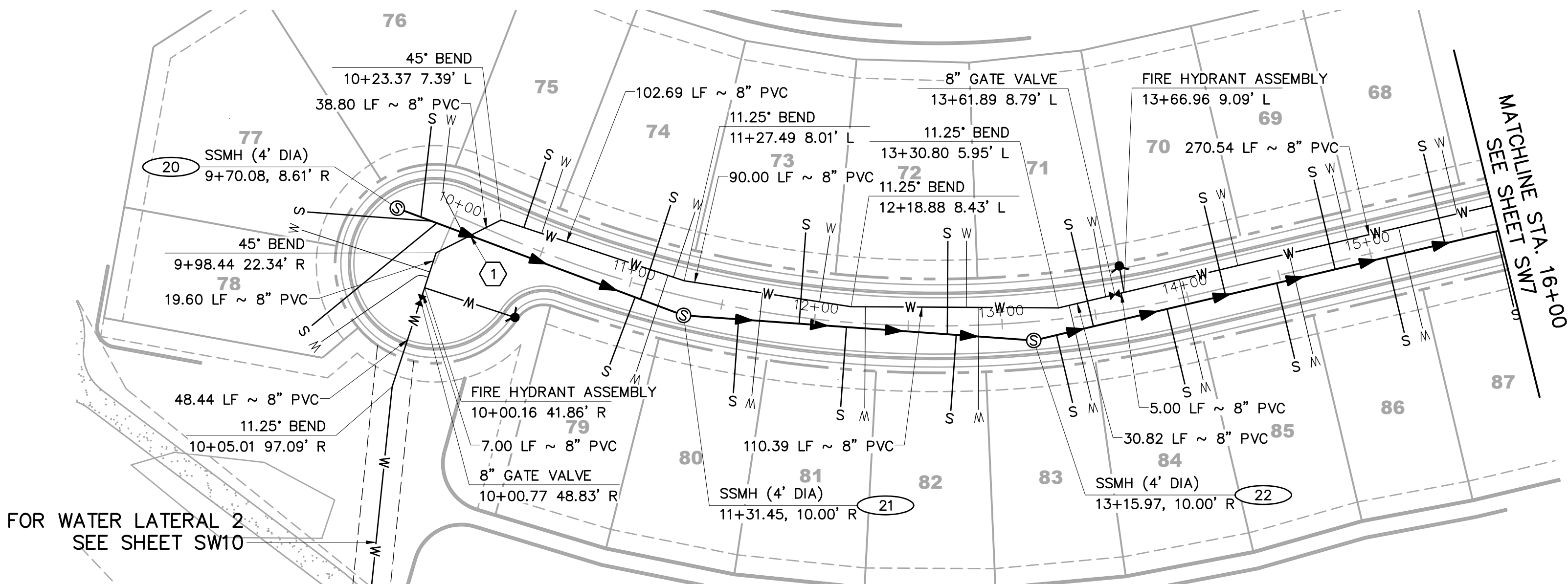
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Job Number HINES CS3	Designer KWS	Drafter JAH	Checked BKM
Prepared For HINES			

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CANYONS SOUTH FILING NO. 3
SANITARY SEWER AND WATER PLANS
SANITARY AND WATER PLAN AND PROFILE

Sheet
SW7
of
22
Date
APRIL 14, 2022

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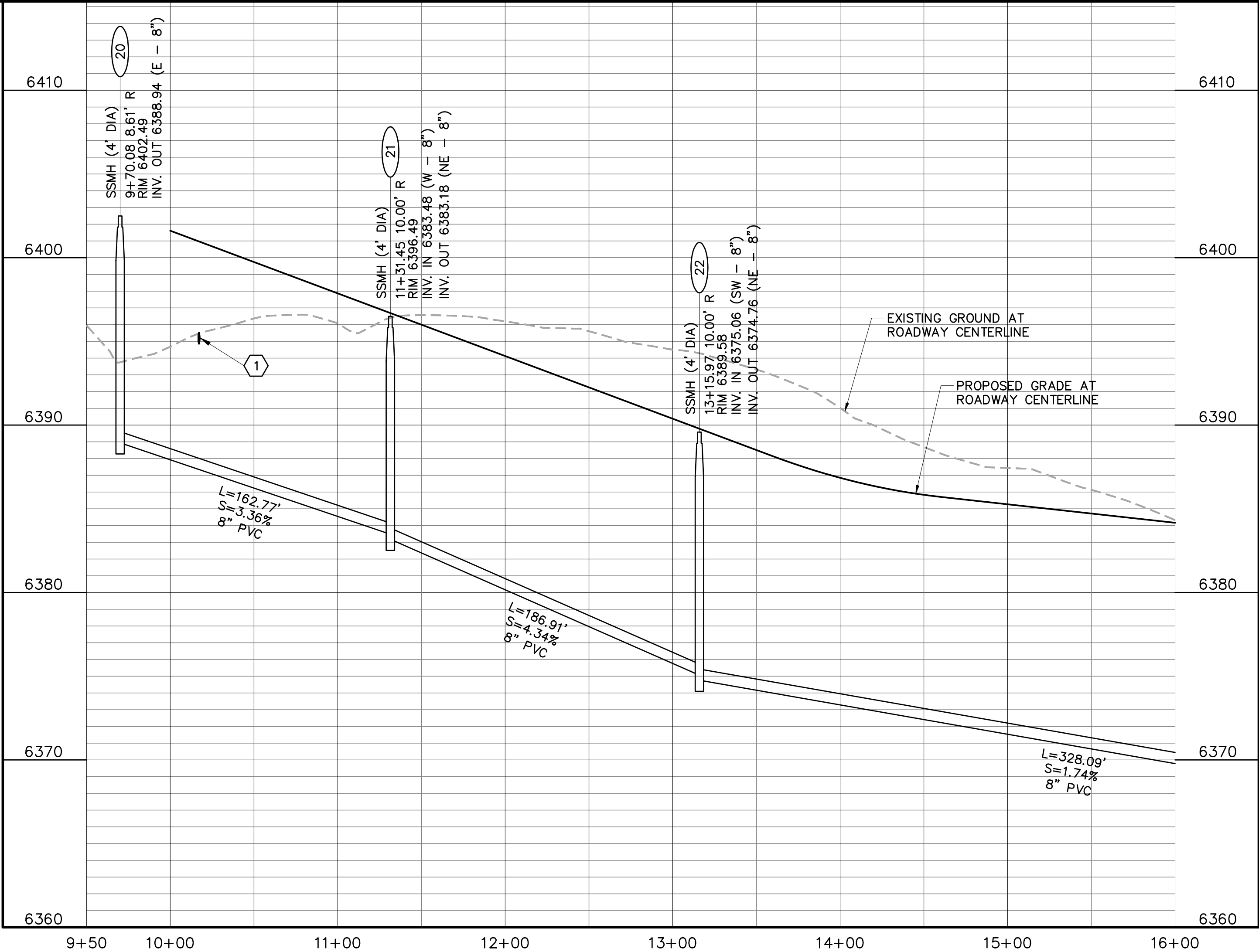
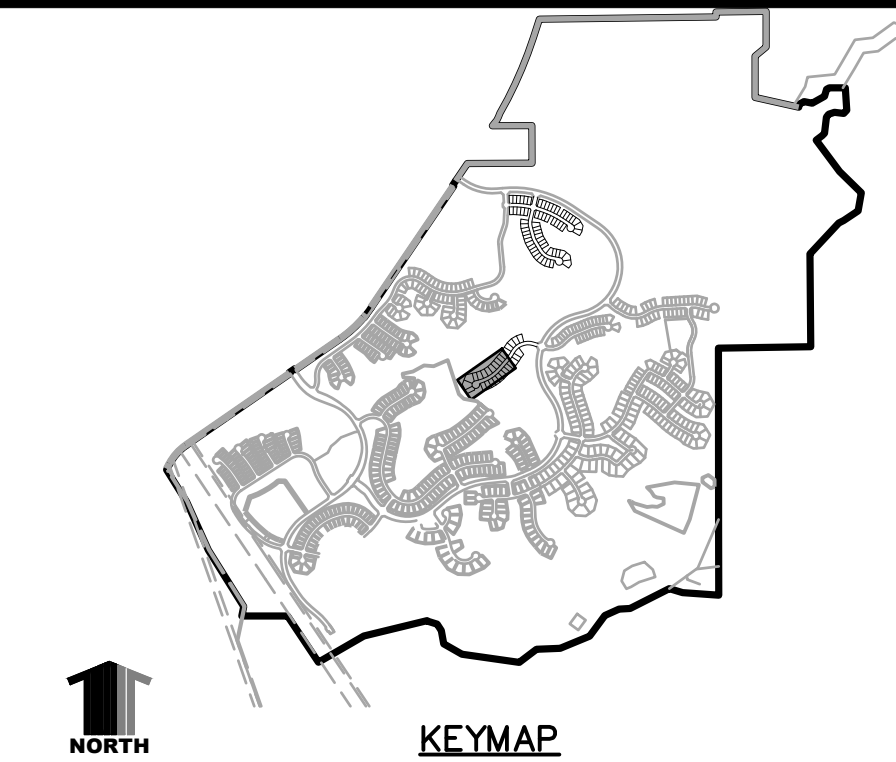


FOR WATER LATERAL 2
SEE SHEET SW10



BACKDROP COURT

UTILITY CROSSINGS						
NO	DESC	ELEV	OVER/UNDER	DESC	ELEV	CLEAR
1	8" PVC	TOP=6388.24	UNDER	8" PVC WAT	BOP=6394.84	6.60'



CONSTRUCTION NOTES:

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- ⊖ INDICATES WATER LOWERING PER TOCR DETAIL W-17 (SEE SHEET DT4)

PROJECT BENCHMARK:

(AZTEC #401)
DOUGLAS COUNTY BENCHMARK TT17A
(NAVD88 DATUM) ELEVATION=6483.68



OR
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Utility Notification
Center of Colorado

TOWN APPROVAL BLOCK

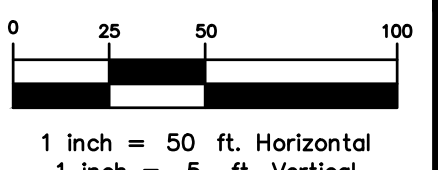
TOWN OF CASTLE ROCK APPROVAL PLANS
ARE HEREBY APPROVED FOR ONE YEAR FROM
DATE OF DEVELOPMENT SERVICES APPROVAL

APPROVED BY:

DEVELOPMENT SERVICES DATE

Hines

Drawing Name 53SW8-SW9.dwg		
Job Number HINES CS3		
Prepared For HINES		
Designer KWS	Drafter JAH	Checked BKM

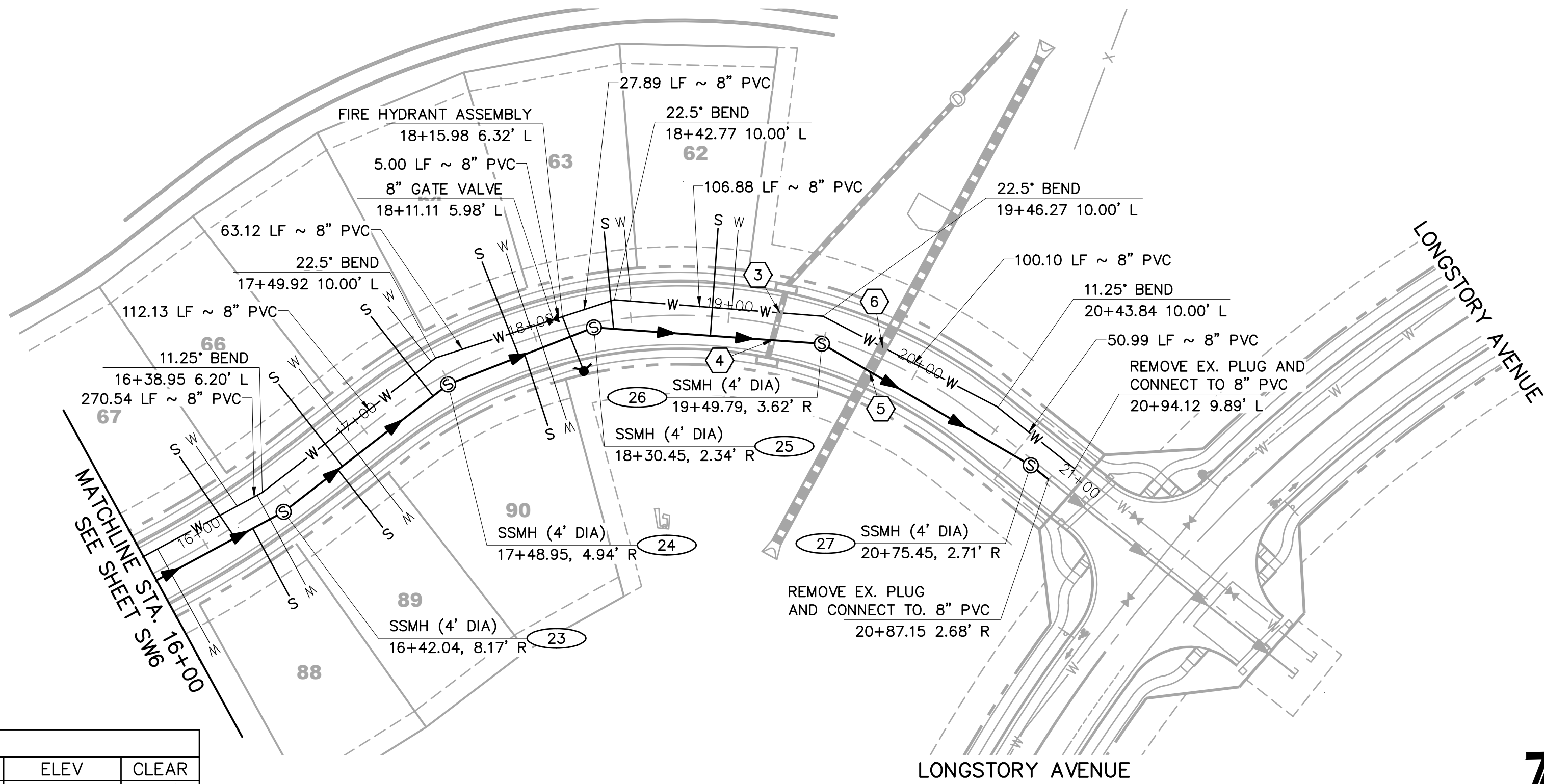


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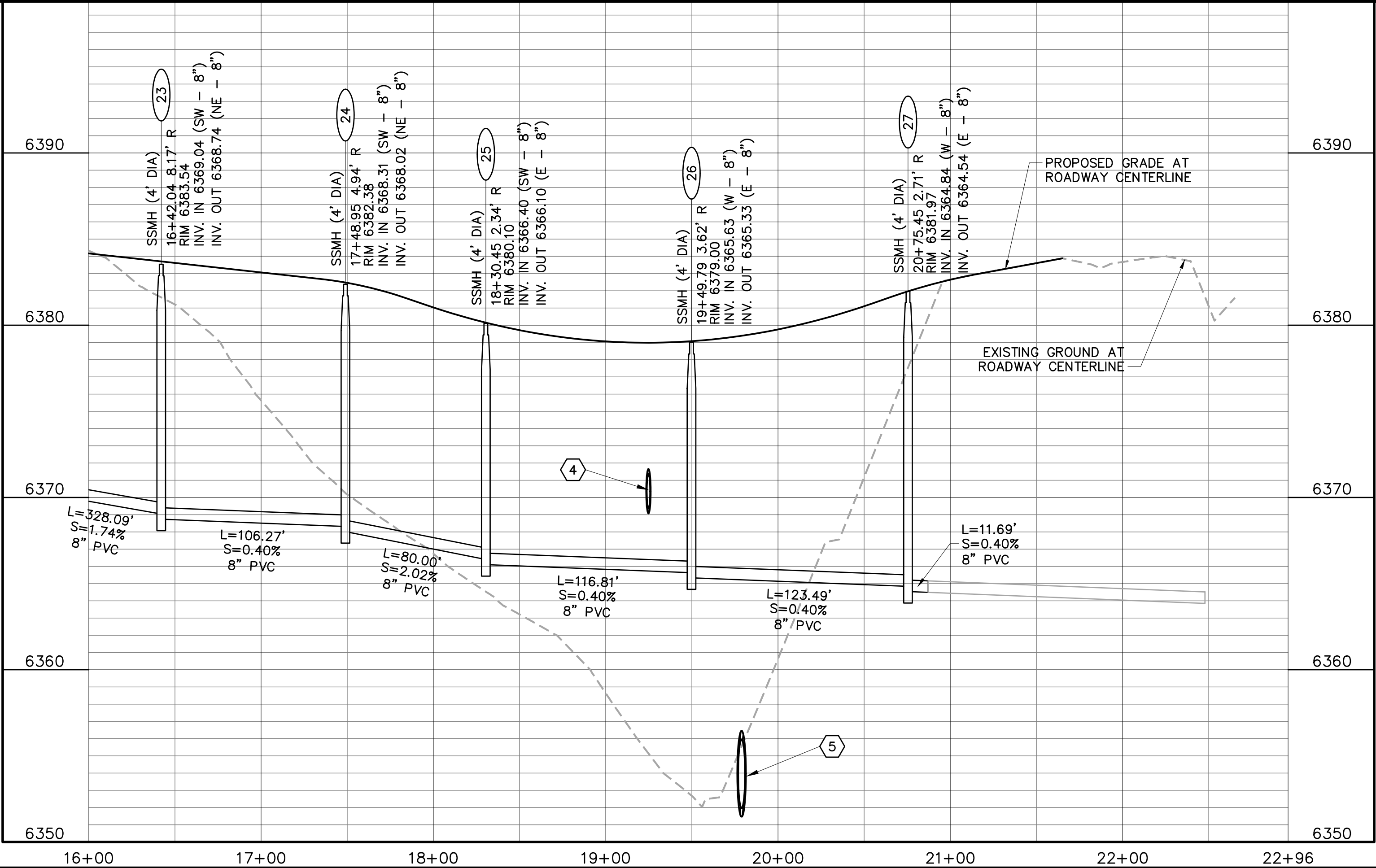
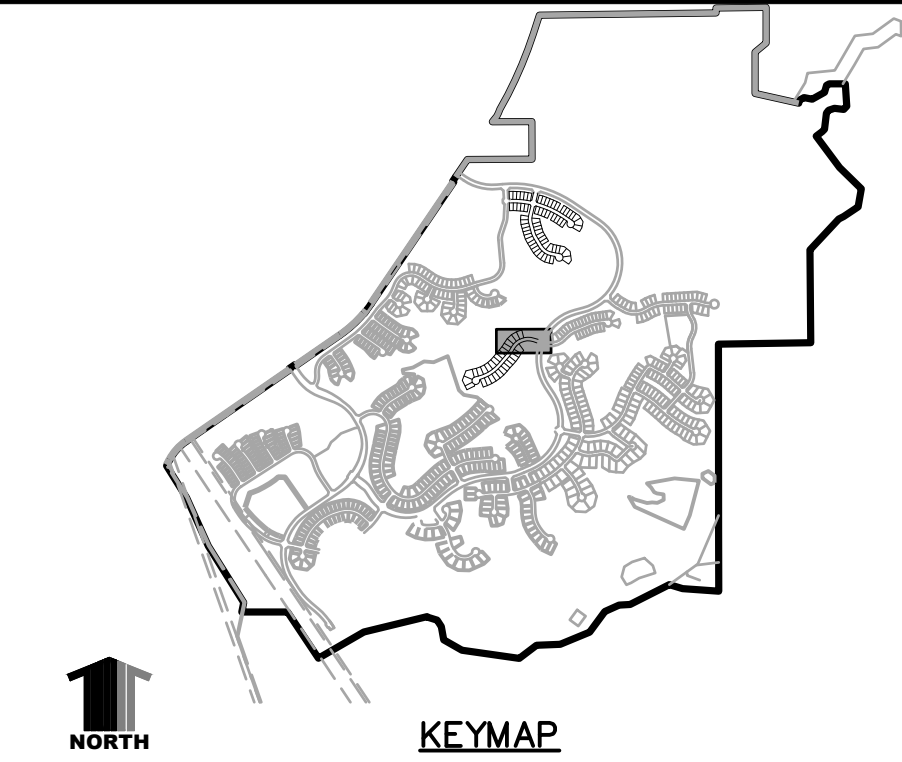
CANYONS SOUTH FILING NO. 3
SANITARY SEWER AND WATER PLANS
SANITARY AND WATER PLAN AND PROFILE

Sheet SW8	14 of 22
Date APRIL 14, 2022	



UTILITY CROSSINGS						
NO	DESC	ELEV	OVER/UNDER	DESC	ELEV	CLEAR
3	24" RCP	TOP=6371.59	UNDER	8" PVC WAT	BOP=6373.09	1.50'
4	24" RCP	BOP=6369.15	OVER	8" PVC	TOP=6366.42	2.73'
5	48" RCP	TOP=6356.93	UNDER	8" PVC	BOP=6365.20	8.28'
6	48" RCP	TOP=6356.15	UNDER	8" PVC WAT	BOP=6373.39	17.24'

BACKDROP COURT



- CONSTRUCTION NOTES:**
- ALL SANITARY SEWER CONSTRUCTION IS SUBJECT TO THE TOWN OF CASTLE ROCK WASTEWATER COLLECTION DESIGN CRITERIA MANUAL, WELL AS THE SANITARY SEWER CONSTRUCTION NOTES LISTED HEREIN.
 - ALL SANITARY SEWER PIPELINES SHALL BE PVC, SDR-35, IN ACCORDANCE WITH ASTM D-3034, BELL AND SPIGOT WITH ELASTOMERIC SEAL.
 - ALL SANITARY SEWER PIPELINES SHALL HAVE A MINIMUM COVER OF 5 FEET AND MAXIMUM COVER OF 20 FEET.
 - ALL SANITARY SEWER PIPELINES SHALL BE BEDDED IN ACCORDANCE WITH TCR STANDARD DETAIL SS-8.
 - ALL MANHOLE RIM ELEVATIONS GIVEN ON THESE PLANS ARE CONSIDERED APPROXIMATE. THE CONTRACTOR SHALL SET THE FINAL RIM ELEVATION BASED ON THE COMPLETE FINISH SURFACE AND PER TCR STANDARD DETAIL SS-3.
 - ALL SEWER LINES SHALL HAVE A MINIMUM HORIZONTAL SEPARATION OF 10 FEET EDGE-TO-EDGE FROM ALL WATER LINES. WHERE LINES CROSS, THERE SHALL BE A MINIMUM OF 18" CLEAR VERTICAL SEPARATION.
 - ALL SANITARY SEWER LINES MUST BE TESTED IN ACCORDANCE WITH SECTION 450.6 OF THE TOWN OF CASTLE ROCK CONSTRUCTION METHODOLOGY AND MATERIALS MANUAL IN THE PRESENCE OF A TCR CONSTRUCTION INSPECTOR.
 - ALL SANITARY SEWER LINE TRENCHES SHALL BE SLOPED OR BRACED AND SHEETED AS NECESSARY FOR THE SAFETY OF THE WORKERS AND THE PROTECTION OF OTHER UTILITIES, IN COMPLIANCE WITH ALL APPLICABLE STATE AND FEDERAL REQUIREMENTS. ALL EXCAVATION OPERATION SAFETY IS THE RESPONSIBILITY OF THE CONTRACTOR.
 - ALL MANHOLES SHALL BE PLACED ON A MINIMUM OF 1' OF 3/4" WASH ROCK. IF ADDITIONAL SUBGRADE IS DISTURBED, EXCAVATION SHALL BE BACKFILLED WITH 3/4" WASH ROCK OR OTHER APPROVED STRUCTURAL SOIL COMPACTED TO 95% OF ASTM D698 UNLESS OTHERWISE INSTRUCTED BY THE INSPECTOR.
 - ALL MANHOLES LOCATED OUTSIDE OF PAVED ROW SHALL BE CONSTRUCTED WITH A LOCKING-TYPE COVER WITH THE MANHOLE RING BOLTED TO THE MANHOLE CONE AND RAISED 8"-12" ABOVE GRADE PER STANDARD DETAIL SS-3.
- 1 INDICATES UTILITY CROSSING NUMBER (SEE CROSSING TABLE LEFT COLUMN)
- INDICATES WATER LOWERING PER TOCR DETAIL W-17 (SEE SHEET DT4)

PROJECT BENCHMARK:
(AZTEC #401)
DOUGLAS COUNTY BENCHMARK TT17A
(NAVD88 DATUM) ELEVATION=6483.68

811 UNCC
CALL BEFORE
YOU DIG
811
OR
1-800-922-1987
Utility Notification
Center of Colorado

TOWN APPROVAL BLOCK

TOWN OF CASTLE ROCK APPROVAL PLANS
ARE HEREBY APPROVED FOR ONE YEAR FROM
DATE OF DEVELOPMENT SERVICES APPROVAL

APPROVED BY: _____

DEVELOPMENT SERVICES DATE

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PLOTTED BY: KYLER SANFORD PLOT DATE: 4/14/2022 11:46 AM
XREFS:

DATE	REVISION	DESCRIPTION

Drawing Name
53SW8-SW9.dwg

Job Number
HINES CS3

Prepared For
HINES

0 25 50 100

1 inch = 50 ft. Horizontal
1 inch = 5 ft. Vertical

Designer KWS	Drafter JAH	Checked BKM
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CANYONS SOUTH FILING NO. 3

SANITARY SEWER AND WATER PLANS

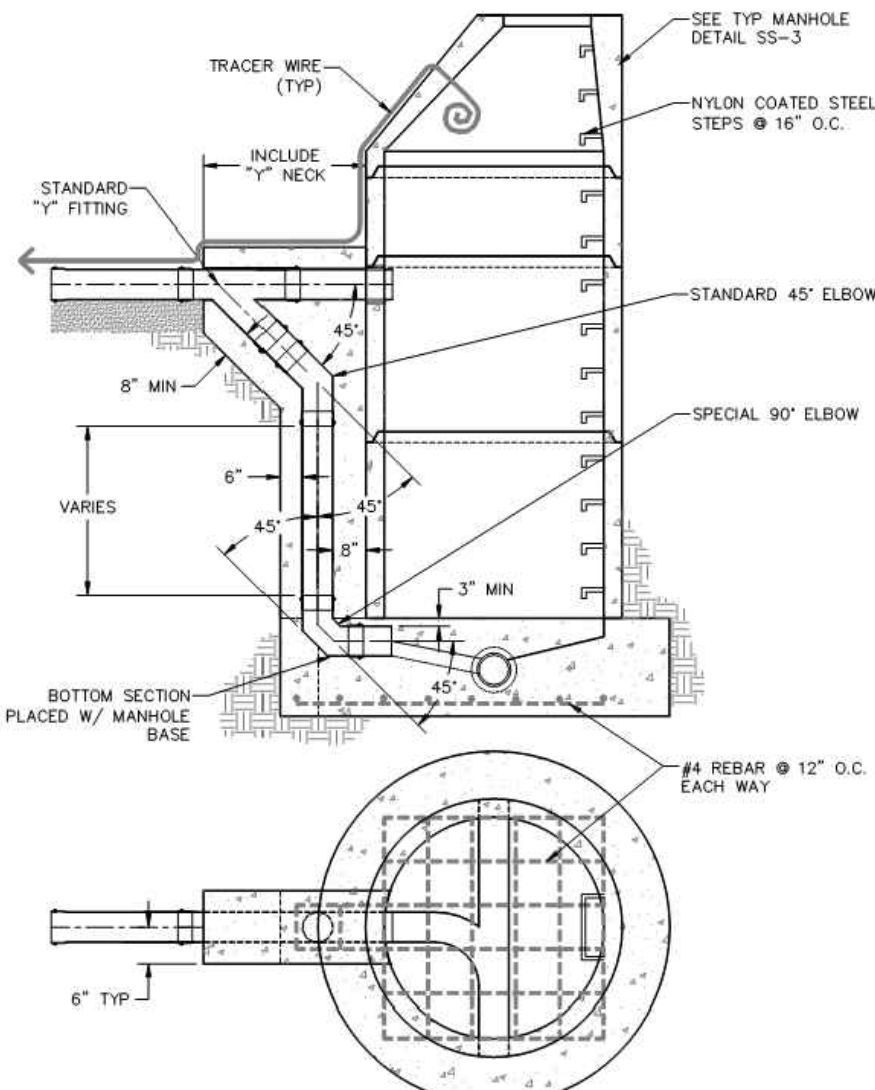
SANITARY AND WATER PLAN AND PROFILE

Sheet
SW9
of
22

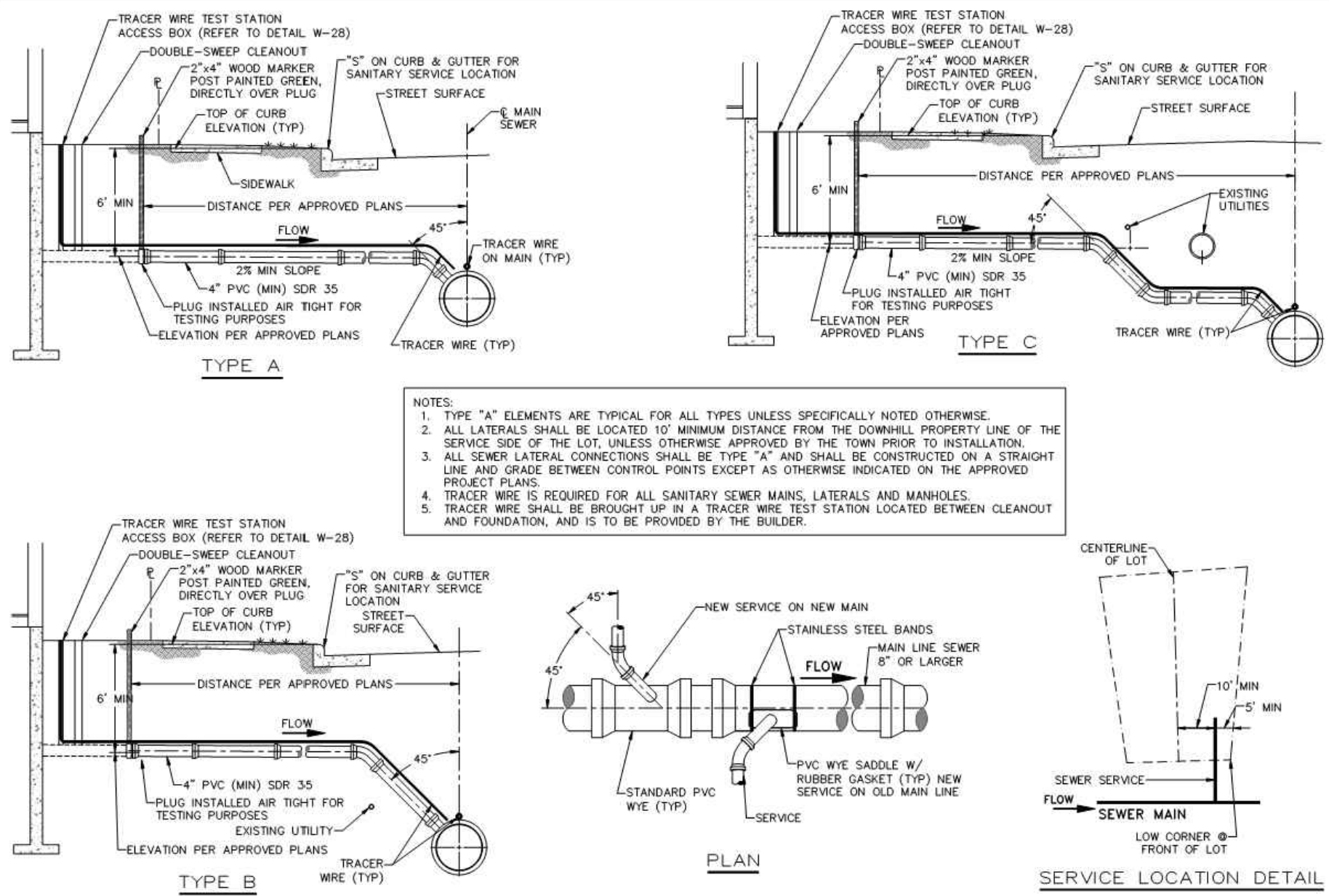
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APRIL 14, 2022

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PLOTTED BY: KYLER SANFORD PLOT DATE: 4/14/2022 11:47 AM
XREFS:

- NOTES:
1. CONCRETE ENCASEMENT SHALL BE CLASS II TYPE III MIN 6" THICK ALL AROUND DROP.
 2. DIAMETER OF DROP SHALL MATCH LINE PIPE DIAMETER.
 3. TRACER WIRE REQUIRED FOR ALL SANITARY SEWER MAINS, LATERALS AND MANHOLES. REFER TO DETAILS SS-2, SS-11, AND W-28.



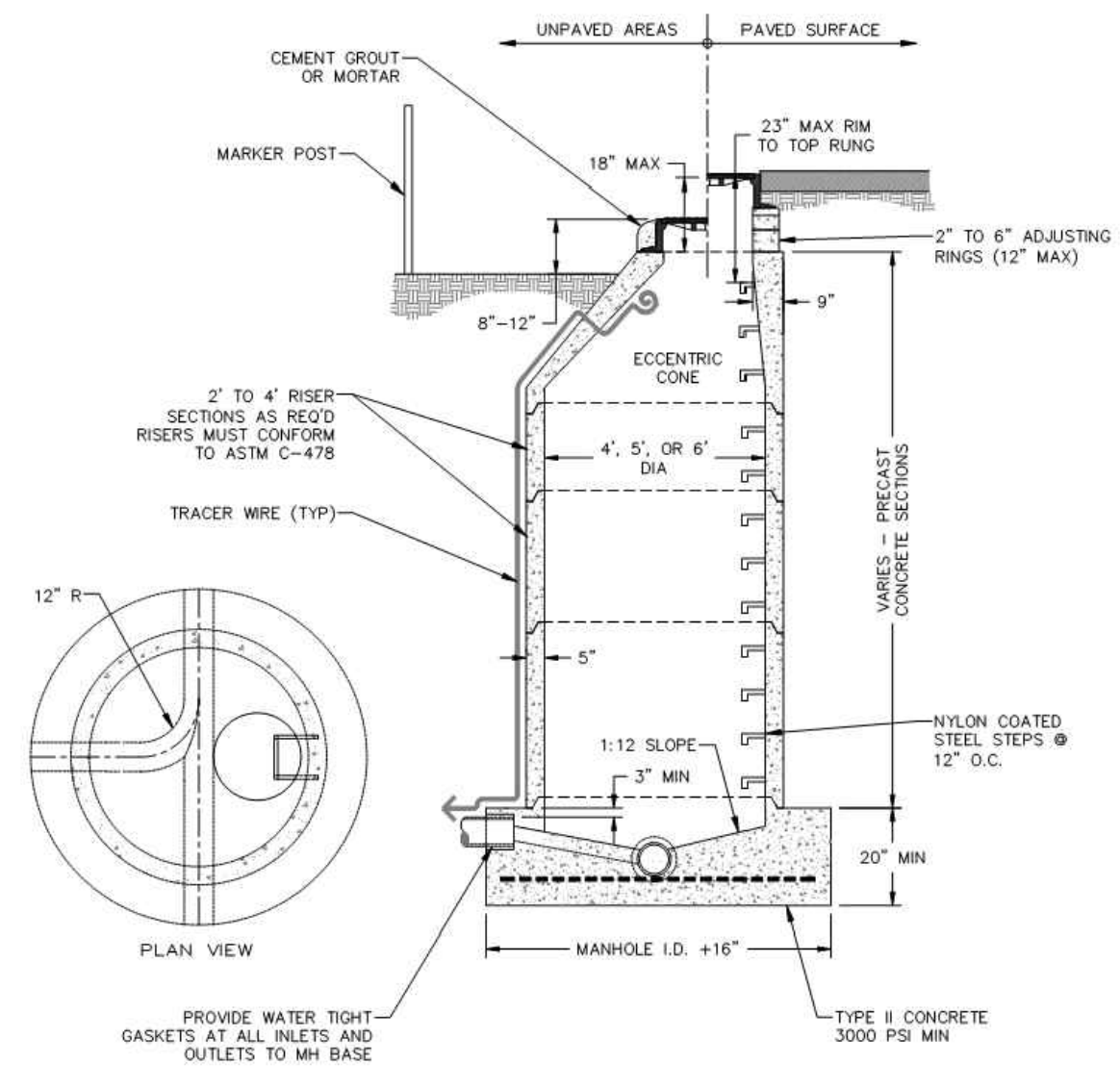
Sheet Revisions			Town of Castle Rock 100 N. Wilcox St. Castle Rock, CO 80104 Phone: (720) 733-2200 Fax: (720) 733-2217 Development Services	SEWER OUTSIDE DROP MANHOLE Issued By: Town of Castle Rock, Development Services March 2, 2020	DETAIL PLAN NO.	
Date	Comments				SS-1	
3/20	REVISED PER STAFF COMMENTS				Sheet 1 of 1	



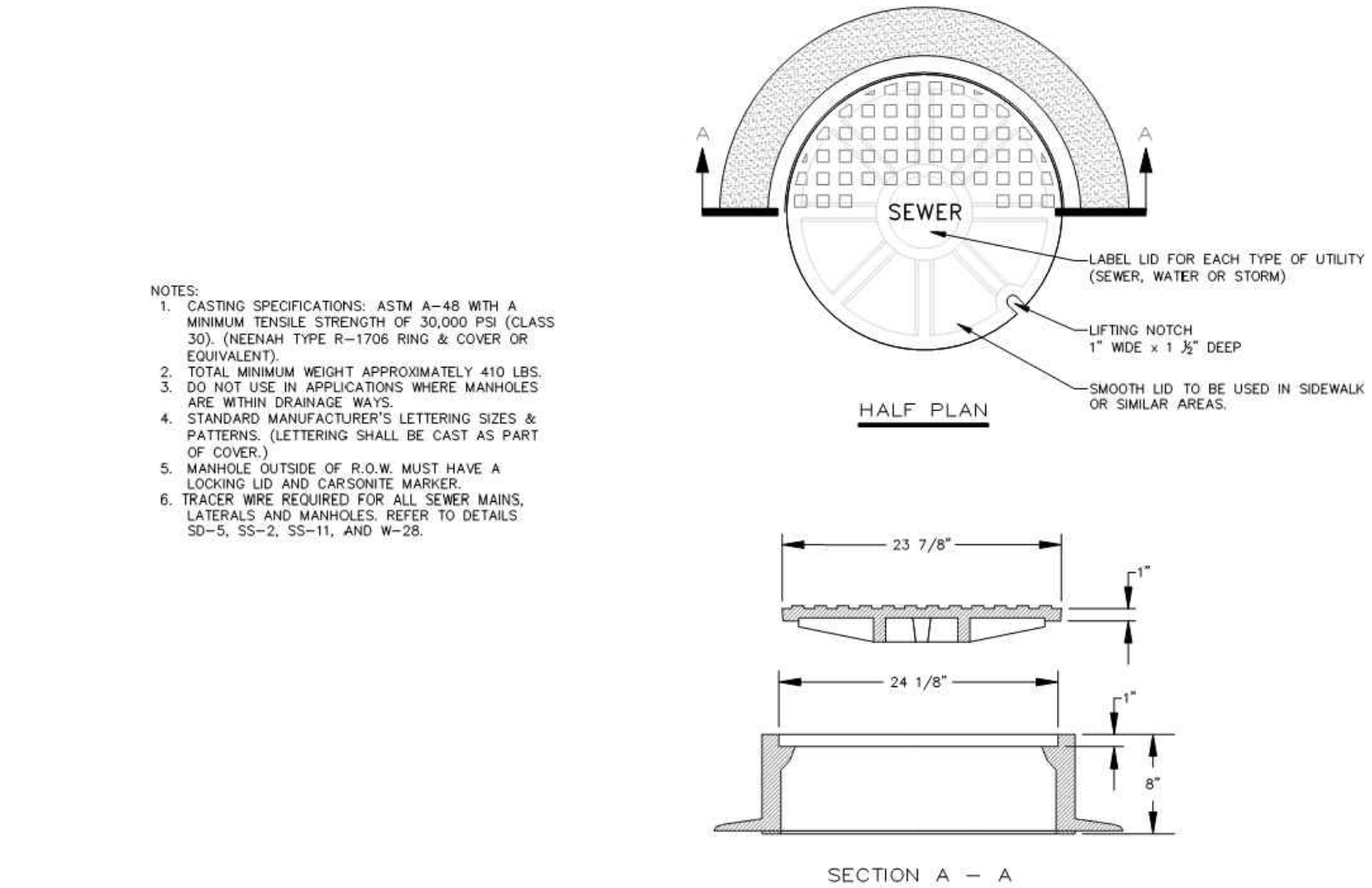
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Date	Comments				SS-2	
3/20	REVISED PER STAFF COMMENTS				Sheet 1 of 1	

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

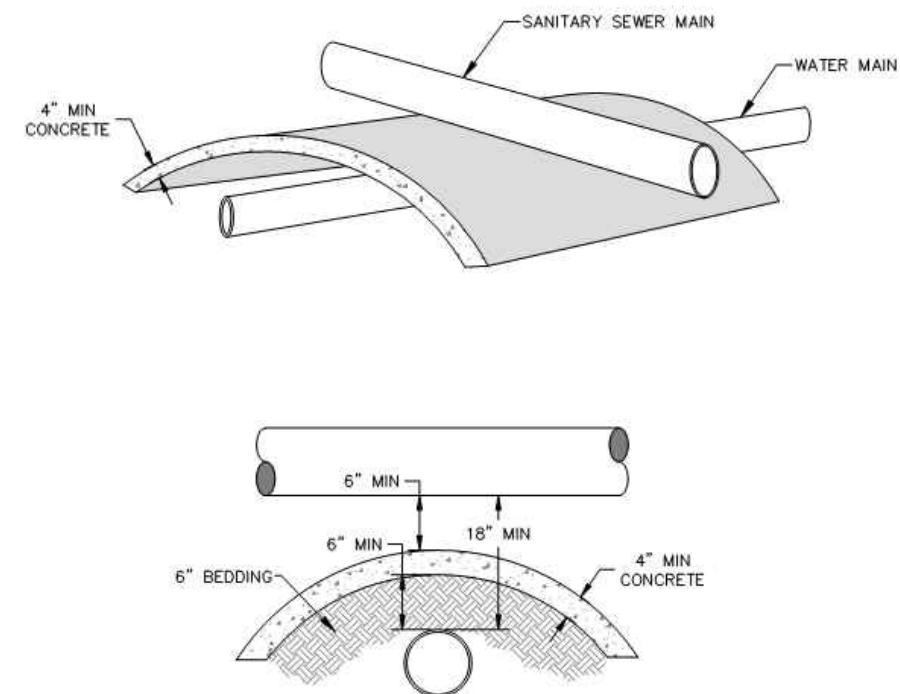
- NOTES:
1. MANHOLE RISER MINIMUM DIAMETER SHALL CONFORM TO THE TABLE ABOVE.
 2. FLAT CONCRETE MANHOLE TOPS MAY BE USED INSTEAD OF CONE SECTIONS WHERE RIM TO INVERT IS 7'-0" OR LESS.
 3. SET EACH SECTION (RISER, CONE, ADJUSTING RINGS) IN A FULL BED OF BITUMINOUS MASTIC (RAMNECK) OR PLASTIC SEALING COMPOUND.
 4. MANHOLE STEPS SHALL BE POSITIONED OVER THE BENCH IN A VERTICAL LINE.
 5. NO MANHOLE STEPS ARE ALLOWED IN THE ADJUSTING RINGS. ON STRAIGHT THROUGH GRADES, SEWER MAINS MAY BE LAID THROUGH THE MANHOLE AND USED AS THE INVERT. THE TOP 1/3 PORTION OF THE PIPE SHALL BE CUT AWAY TO A NEAT LINE. ANY BROKEN EDGES SHALL BE PLASTERED SMOOTH WITH CONCRETE MORTAR. IF GRADE IS NOT STRAIGHT THROUGH, THE FLOWLINES AT THE BASE SHALL BE HAND FORMED WHEN THE BASE IS POURED. FLOWLINES SHALL BE GROUND SMOOTH WITH A CONCRETE FINISHING STONE.
 7. MANHOLE LID SHALL BE 1" BELOW ASPHALT AND TIPPED TO CONFORM WITH PAVEMENT SLOPES.
 8. TRACER WIRE IS REQUIRED FOR ALL SEWER MAINS, LATERALS AND MANHOLES. REFER TO DETAILS SD-5, SS-2, SS-11, AND W-28.



Sheet Revisions			Town of Castle Rock 100 N. Wilcox St. Castle Rock, CO 80104 Phone: (720) 733-2200 Fax: (720) 733-2217 Development Services	SANITARY AND STORM SEWER MANHOLE Issued By: Town of Castle Rock, Development Services March 2, 2020	DETAIL PLAN NO.	
Date	Comments				SS-3	
3/20	REVISED PER STAFF COMMENTS				1 of 1	



Sheet Revisions			Town of Castle Rock 100 N. Wilcox St. Castle Rock, CO 80104 Phone: (720) 733-2200 Fax: (720) 733-2217 Development Services	SEWER MANHOLE 24" RING & COVER Issued By: Town of Castle Rock, Development Services March 2, 2020	DETAIL PLAN NO.	
Date	Comments				SS-4	
3/20	REVISED PER STAFF COMMENTS				Sheet 1 of 1	



Sheet Revisions			Town of Castle Rock 100 N. Wilcox St. Castle Rock, CO 80104 Phone: (720) 733-2200 Fax: (720) 733-2217 Development Services	SEWER PIPE CROSSING CONCRETE BLANKET Issued By: Town of Castle Rock, Development Services March 2, 2020	DETAIL PLAN NO.	
Date	Comments				SS-6	
3/20	REVISED PER STAFF COMMENTS				Sheet 1 of 1	

Hines

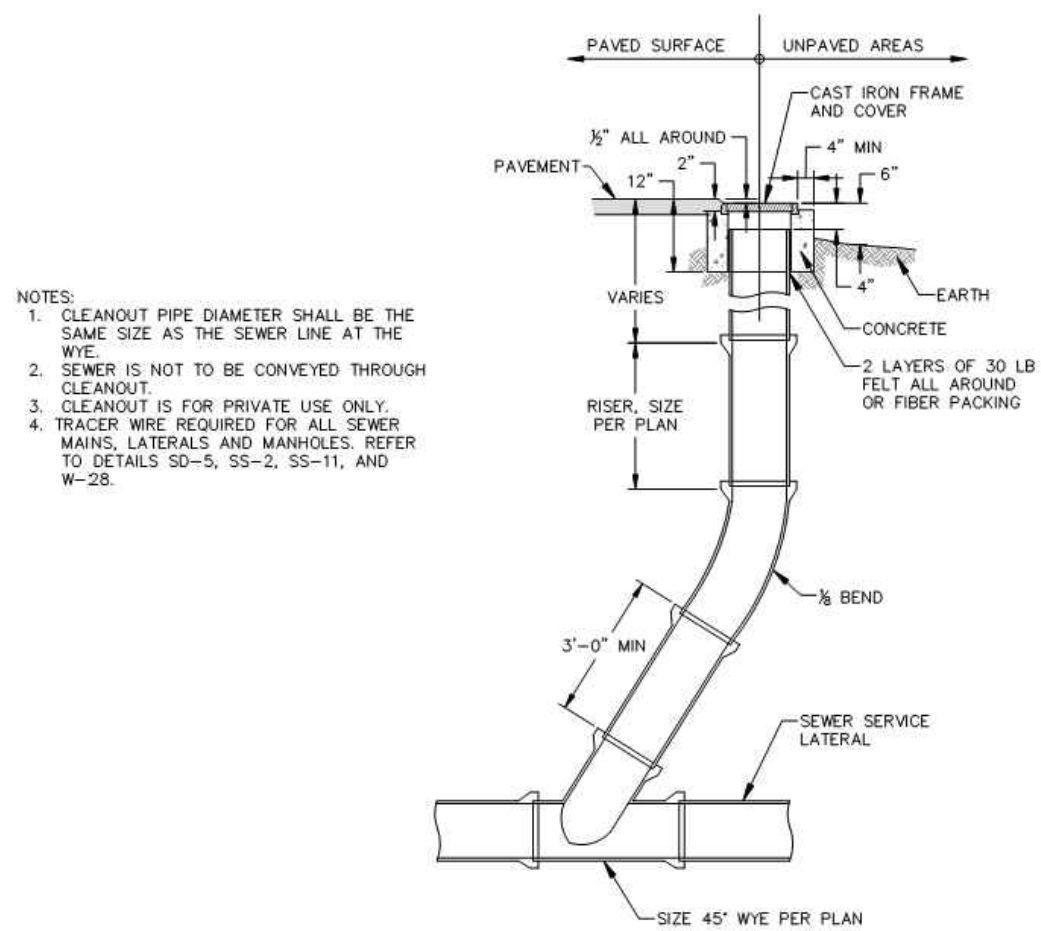
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Job Number HINES CS3			
Prepared For HINES			
Designer KWS	Drafter JAH	Checked BKM	

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CANYONS SOUTH FILING NO. 3
SANITARY SEWER AND WATER PLANS
DETAILS-SANITARY SEWER

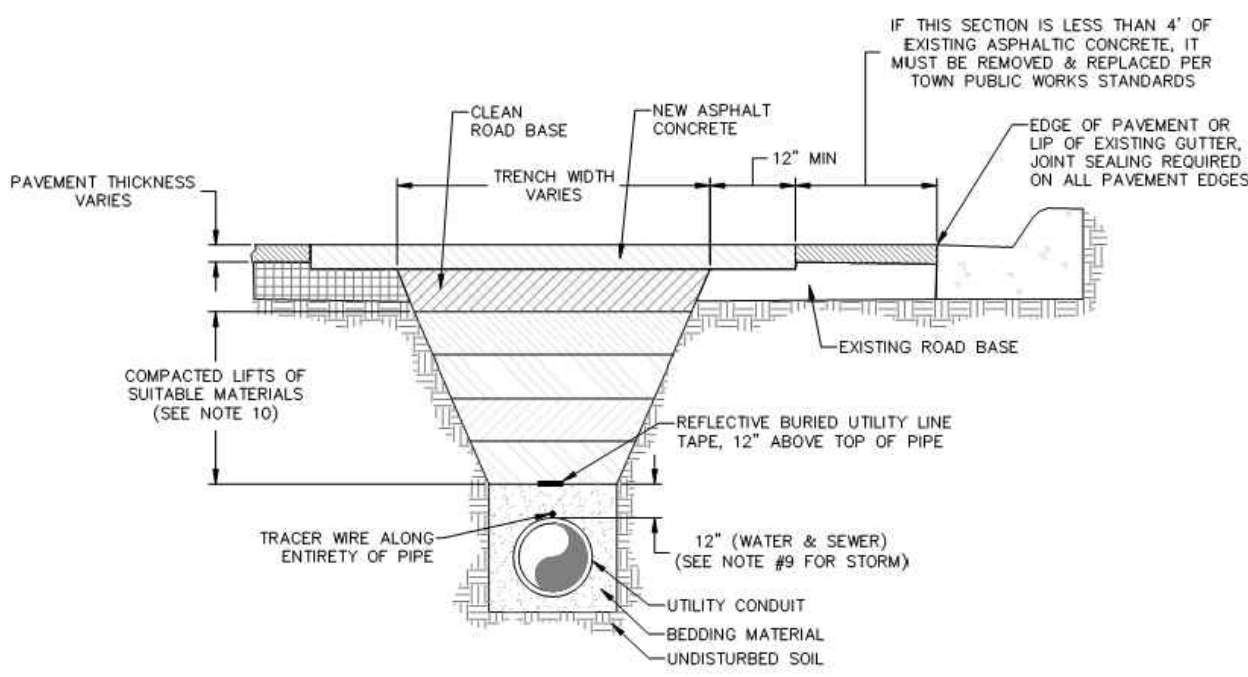
Sheet DT1	17 of 22
Date APRIL 14, 2022	

PATH: J:\HINES\CS\ADD\CVIL\63 F3 SANITARY AND WATER\63DT1-DETAILS SANITARY.DWG
PLOTTED BY: KYLER SANFORD PLOT DATE: 4/14/2022 11:47 AM
XREFS:



- NOTES:
1. CLEANOUT PIPE DIAMETER SHALL BE THE SAME SIZE AS THE SEWER LINE AT THE WYE.
 2. SEWER IS NOT TO BE CONVEYED THROUGH CLEANOUT.
 3. CLEANOUT IS FOR PRIVATE USE ONLY.
 4. TRACER WIRE REQUIRED FOR ALL SEWER MAINS, LATERALS AND MANHOLES. REFER TO DETAILS SS-5, SS-2, SS-11, AND W-28.

- NOTES:
1. ALL TRENCHES SHALL BE BACKFILLED IN ACCORDANCE WITH THIS DETAIL UNLESS OTHERWISE SPECIFIED BY PUBLIC WORKS.
 2. PRIOR TO PLACEMENT OF CONCRETE, ALL EDGES SHALL BE SAW CUT TO A CLEAN, STRAIGHT, AND VERTICAL EDGE.
 3. PRIOR TO PLACEMENT OF ASPHALT, 18 INCHES OF ADJACENT ASPHALT SHALL BE MILLED TO 2 INCH DEPTH ON ALL SIDES TO MATCH EXISTING PAVEMENT. INNER SURFACE TO BE TACKED WITH HSS-1.
 4. WHEN SUBSTITUTING FOR BACKFILL MATERIAL, FLOWABLE FILL SHALL CONFORM TO MPEC CLSM STANDARDS.
 5. TRENCH WIDTH SHALL NOT BE MORE THAN 16" NOR LESS THAN 12" WIDER THAN THE DIAMETER OF THE PIPE.
 6. 95% OF ASTM D698 STANDARD COMPACTION EFFORT IS REQUIRED ON ALL TRENCHING ZONES, IN BOTH IMPROVED & UNIMPROVED AREAS.
 7. IN UNIMPROVED AREAS, ALL DISTURBED AREAS SHALL BE REGRADED, SEEDED & MULCHED.
 8. IN CONCRETE ROADWAYS, A MINIMUM OF 1/2 PANEL WIDTH OR 10' x 5' SECTION WILL BE ALLOWED TO REMAIN, OTHERWISE THE ENTIRE CONCRETE PANEL MUST BE REPLACED.
 9. USE #4 REBAR AT 2' CENTERS ALONG THE PERIMETER OF CONCRETE REPLACEMENT SECTIONS.
 10. 6" MAXIMUM COMPACTION LIFT THICKNESS IF FLOWABLE FILL NOT REQUIRED.
 11. BEDDING MATERIAL DEPTH WHEN INSTALLING STORM SEWER SHALL BE UP TO SPRING LINE, EXCEPT IN AREAS OF UNSUITABLE BACKFILL, THEN BEDDING MATERIAL SHALL BE 12" ABOVE PIPE.
 12. TRENCH WIDTHS LESS THAN 4' OR TRENCHING THAT EXPERIENCES CAVE-INS OR SLOUGHING SHALL REQUIRE FLOWABLE FILL IN ORDER TO ACHIEVE COMPACTION.



- SANITARY SEWER SERVICE LINE ABANDONMENT REQUIREMENTS
1. ABANDONMENT TO INCLUDE REMOVAL OF SERVICE WITHIN RIGHT-OF-WAY AND INSTALLATION OF CONCRETE CAP ON SERVICE LINE.
 2. AREA TO BE REPAIRED AND REPLACED TO MATCH THE CONDITIONS OF SURROUNDING AREA.
 3. ABANDONMENT REQUEST LETTER MUST BE SUBMITTED TO CASTLE ROCK WATER BILLING AND BE APPROVED BY ENGINEERING TO DISCONTINUE ACCOUNT.
 4. PUBLIC WORKS PERMIT IS REQUIRED TO ABANDONED SERVICE.
 5. ABANDONMENT OPTION TO BE DETERMINED BY PUBLIC WORKS INSPECTOR AND CASTLE ROCK WATER.
 6. INTERNAL ABANDONMENT WITH CPP LINING AS APPROVED BY CASTLE ROCK WATER. MINIMUM 4' SECTION OF LINING.

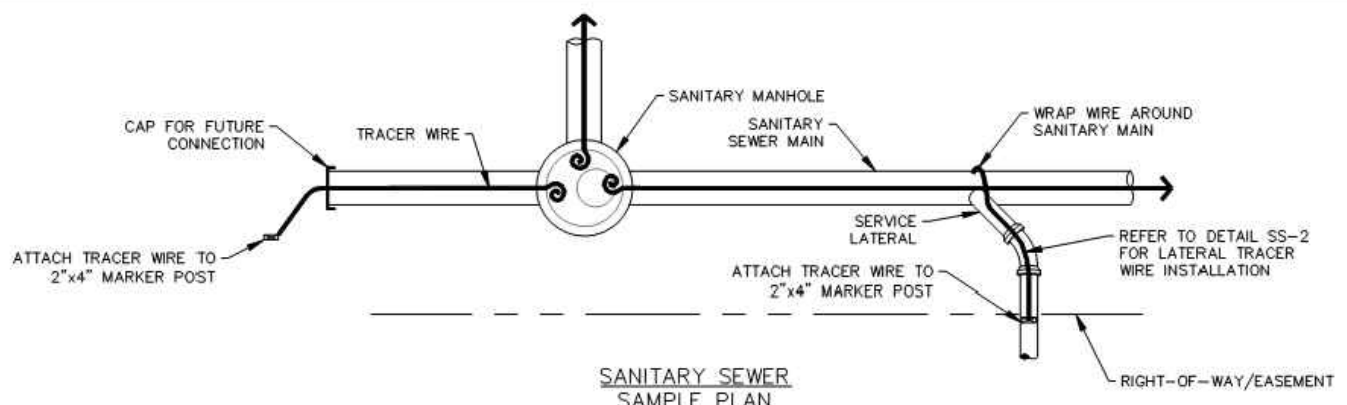
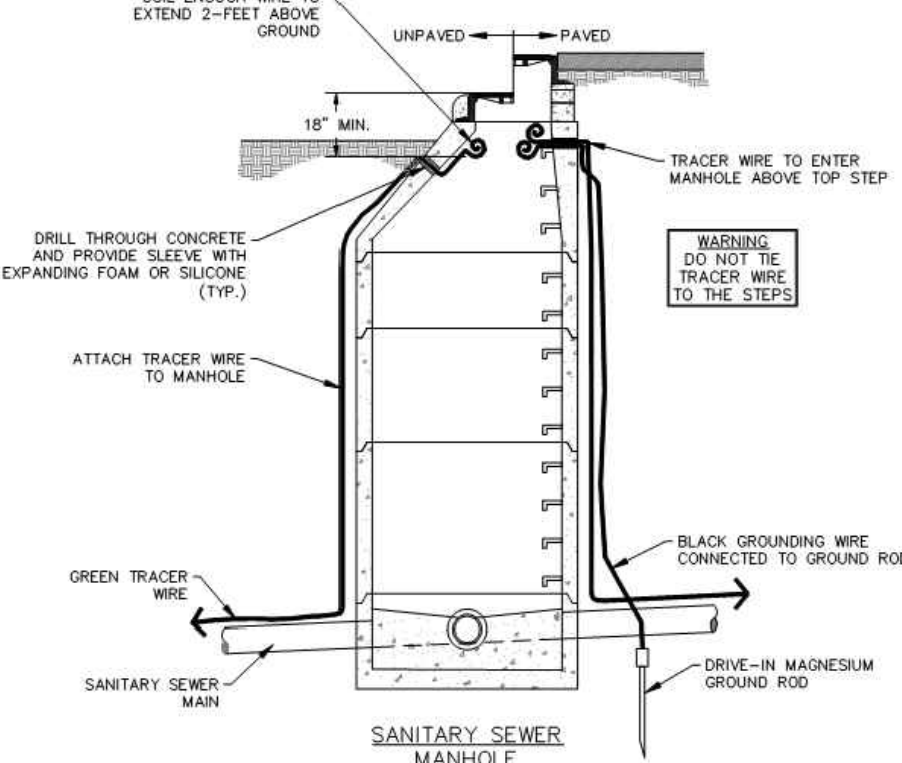


- A. FOR EXISTING SADDLE STRAP CONNECTION, PULL OUT EXISTING SERVICE AND INSTALL PLUG.
- B. REPLACE PIPE SECTION CONNECTIONS SHOULD BE FERNOCO STRONG BACK, CAULDER OR APPROVED EQUIVALENT. REPLACEMENT PIPE SHALL BE PVC, SIZES MIN. IF INSTALLED ON LARGE DIAMETER PIPE, FACTORY TRANSITION COUPLING MUST BE USED.

Sheet Revisions		Town of Castle Rock 100 N. Wilson St. Castle Rock, CO 80104 Phone: (720) 733-2200 Fax: (720) 733-2217 Development Services	SEWER CLEANOUT	DETAIL PLAN NO. SS-7	Sheet 1 of 1
Date	Comments				
3/20	REVISED PER STAFF COMMENTS				

Sheet Revisions		Town of Castle Rock 100 N. Wilson St. Castle Rock, CO 80104 Phone: (720) 733-2200 Fax: (720) 733-2217 Development Services	SANITARY SEWER TRENCH DETAIL	DETAIL PLAN NO. SS-8	Sheet 1 of 1
Date	Comments				
3/20	REVISED PER STAFF COMMENTS				

Sheet Revisions		Town of Castle Rock 100 N. Wilson St. Castle Rock, CO 80104 Phone: (720) 733-2200 Fax: (720) 733-2217 Development Services	SEWER SERVICE LINE ABANDONMENT DETAIL	DETAIL PLAN NO. SS-9	Sheet 1 of 2
Date	Comments				
3/20	REVISED PER STAFF COMMENTS				



- NOTES:
1. REFER TO STANDARD NOTES FOR TOWN OF CASTLE ROCK GENERAL TRACER WIRE REQUIREMENTS.
 2. TRACER WIRE AND TEST STATION LIDS SHALL BE GREEN FOR ALL SANITARY SEWERS AND MANHOLES.
 3. REFER TO DETAIL W-28 FOR STANDARD TRACER WIRE TEST STATION REQUIREMENTS.
 4. TRACER WIRE SHALL BE SECURELY FASTENED TO PIPES AND MANHOLES USING TAPE, PLASTIC TIES, OR APPROVED ADHESIVE AT 5-FOOT INTERVALS.
 5. TRACER WIRE SHALL BE LOCATED WITHIN EVERY SANITARY SEWER MANHOLE BY DIRECTING THE WIRE VERTICALLY FROM THE MAIN UP TO AND THEN THROUGH THE CONE. A MINIMUM OF 2 FT OF WIRE SHALL BE NEATLY COILED AND PROTECTED, AND SHALL BE PLACED NO DEEPER THAN 18 INCHES BELOW THE MANHOLE LID.
 6. SANITARY SEWER SERVICE LATERAL TRACER WIRE MUST TERMINATE AT A TEST STATION LOCATED DIRECTLY ABOVE THE SERVICE LATERAL AT THE EDGE OF THE ROAD RIGHT-OF-WAY OR BEHIND SIDEWALK. AS AN ALTERNATIVE, THE BUILDER/DEVELOPER WILL PROVIDE A TEST STATION NEAR THE BUILDING CLEANOUT AS SHOWN ON DETAIL SS-2.
 7. AT ALL FUTURE CONNECTION STUB OUTS, THE END OF THE TRACER WIRE SHALL BE CONTAINED WITHIN A CORROSION PREVENTION CAP, THEN BROUGHT TO SURFACE AND ATTACHED TO THE 2"x4" WOOD MARKER POST AT GRADE WITHIN THE EASEMENT OR R.O.W.

Sheet Revisions		Town of Castle Rock 100 N. Wilson St. Castle Rock, CO 80104 Phone: (720) 733-2200 Fax: (720) 733-2217 Development Services	TRACER WIRE FOR SANITARY SEWERS	DETAIL PLAN NO. SS-11	Sheet 1 of 1
Date	Comments				
1/2020	NEW DRAWING				

Hines

Drawing Name
53DT1-Details Sanitary.dwg
Job Number
HINES CS3
Prepared For
HINES

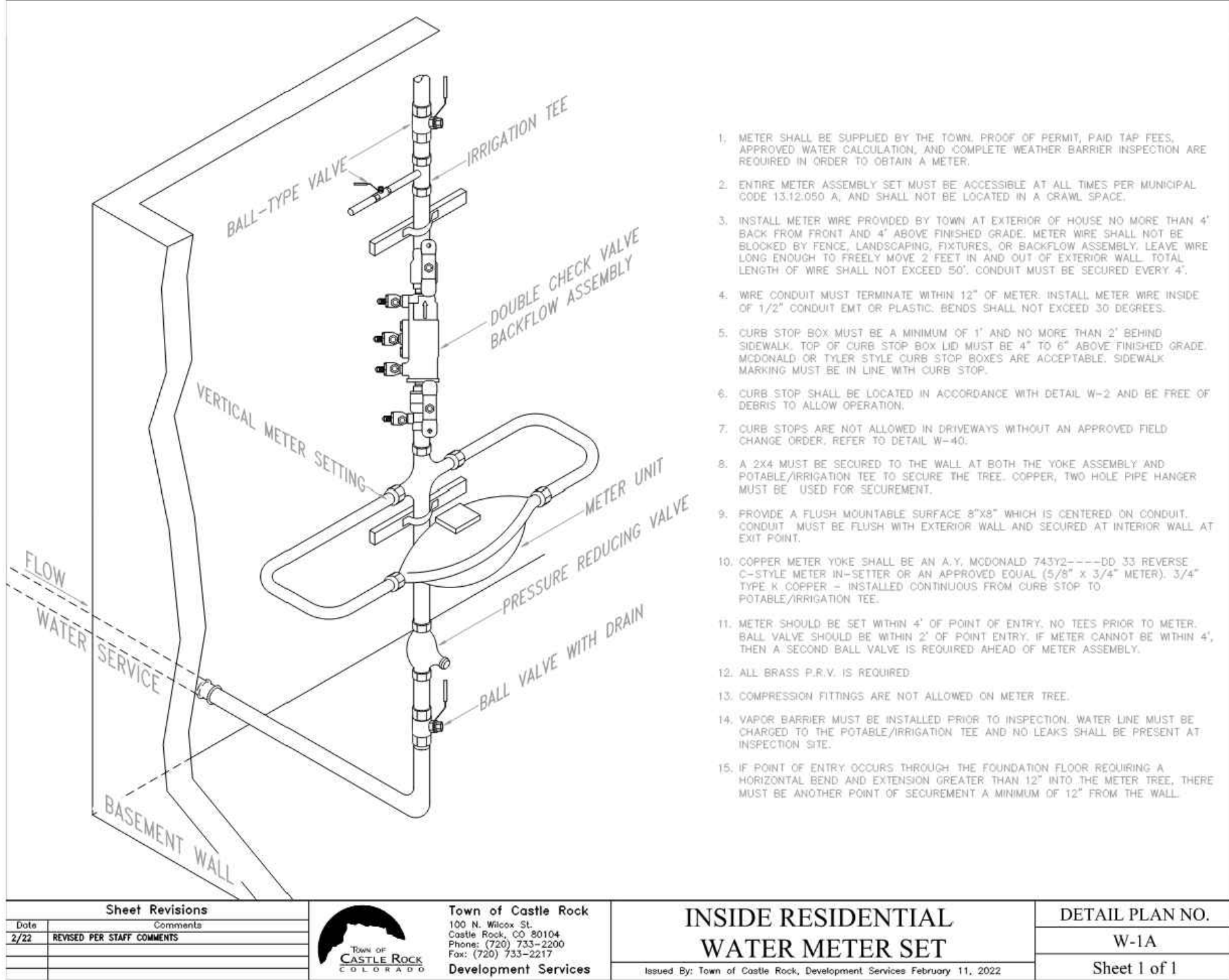
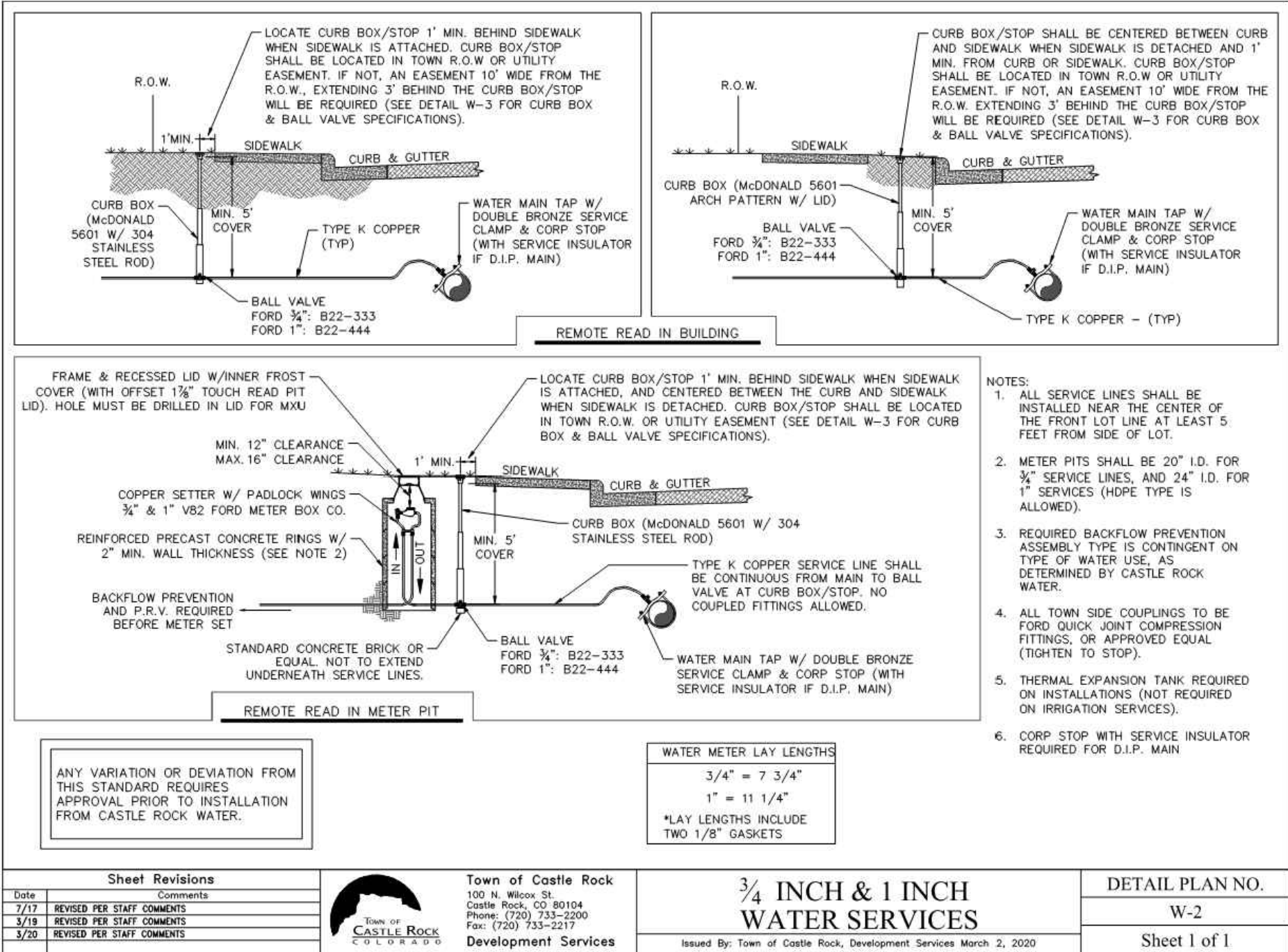
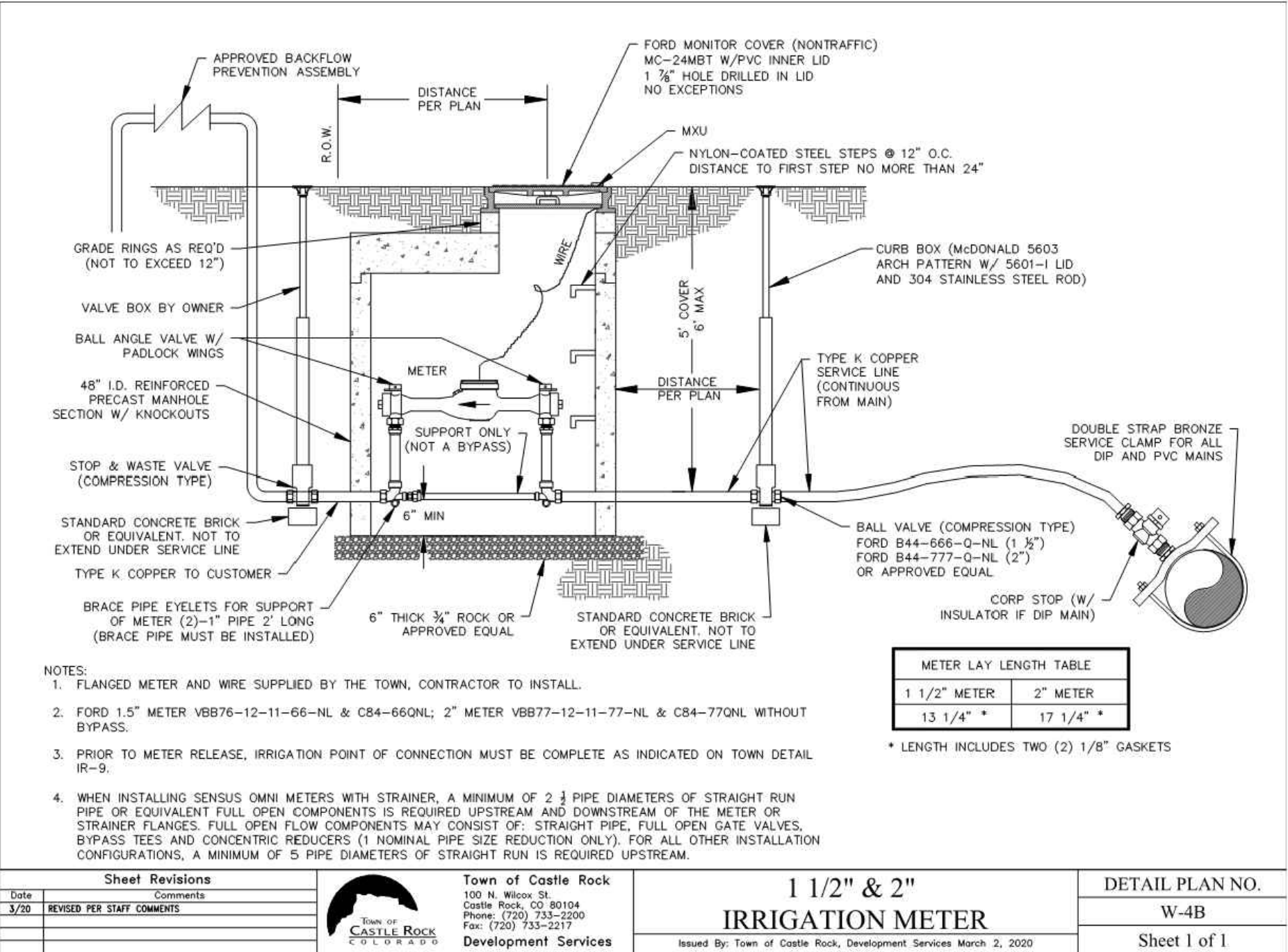
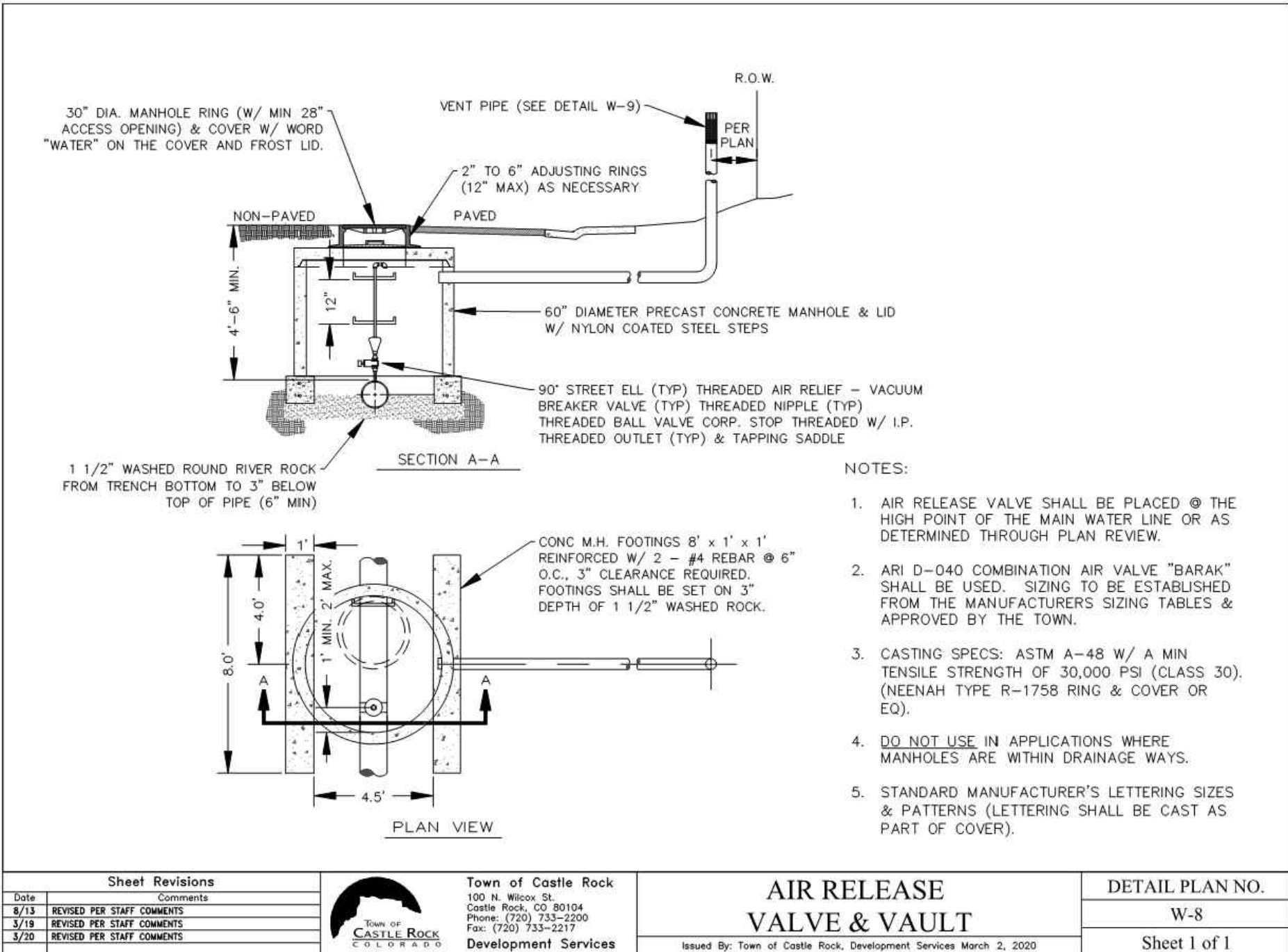
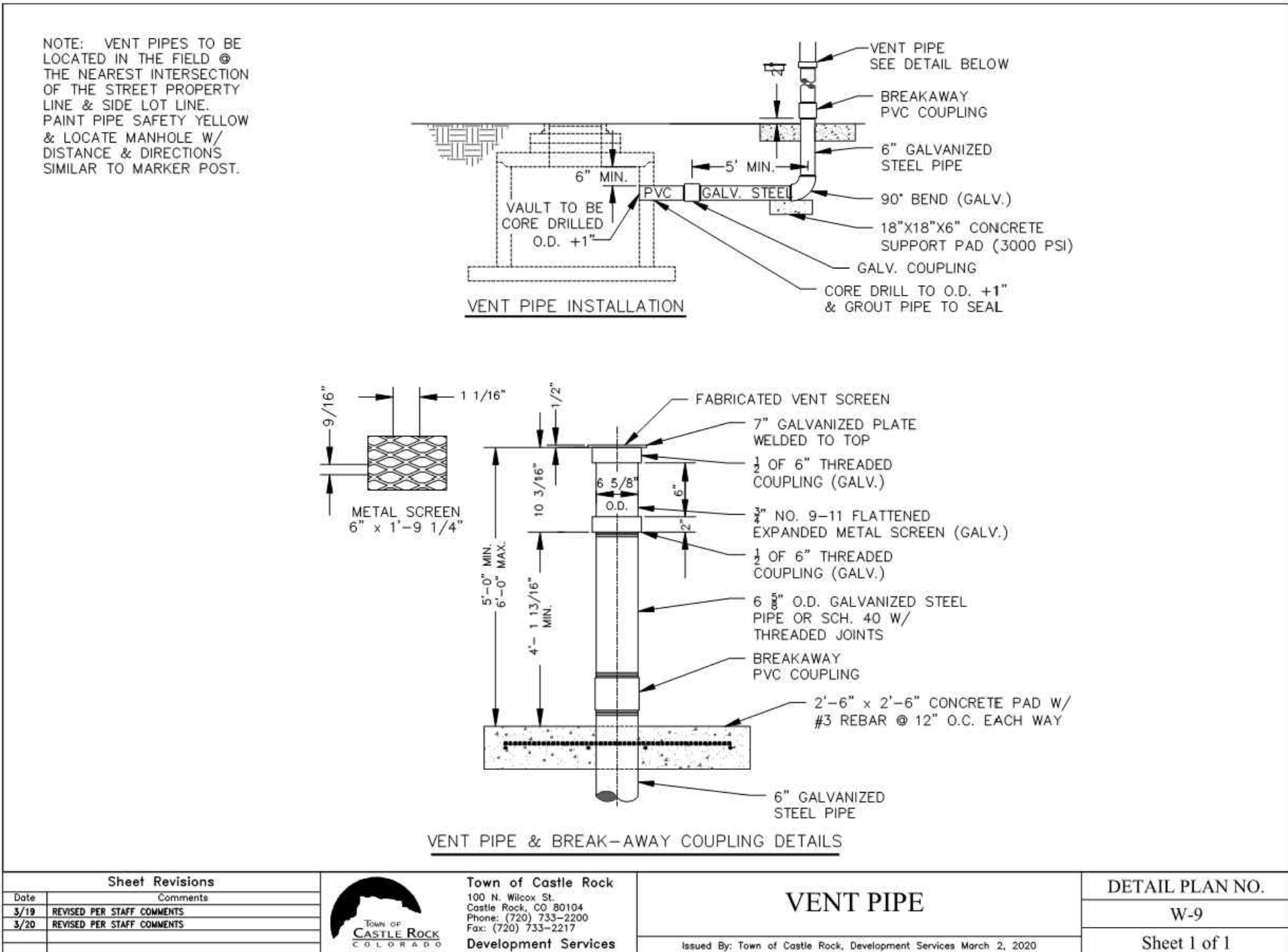
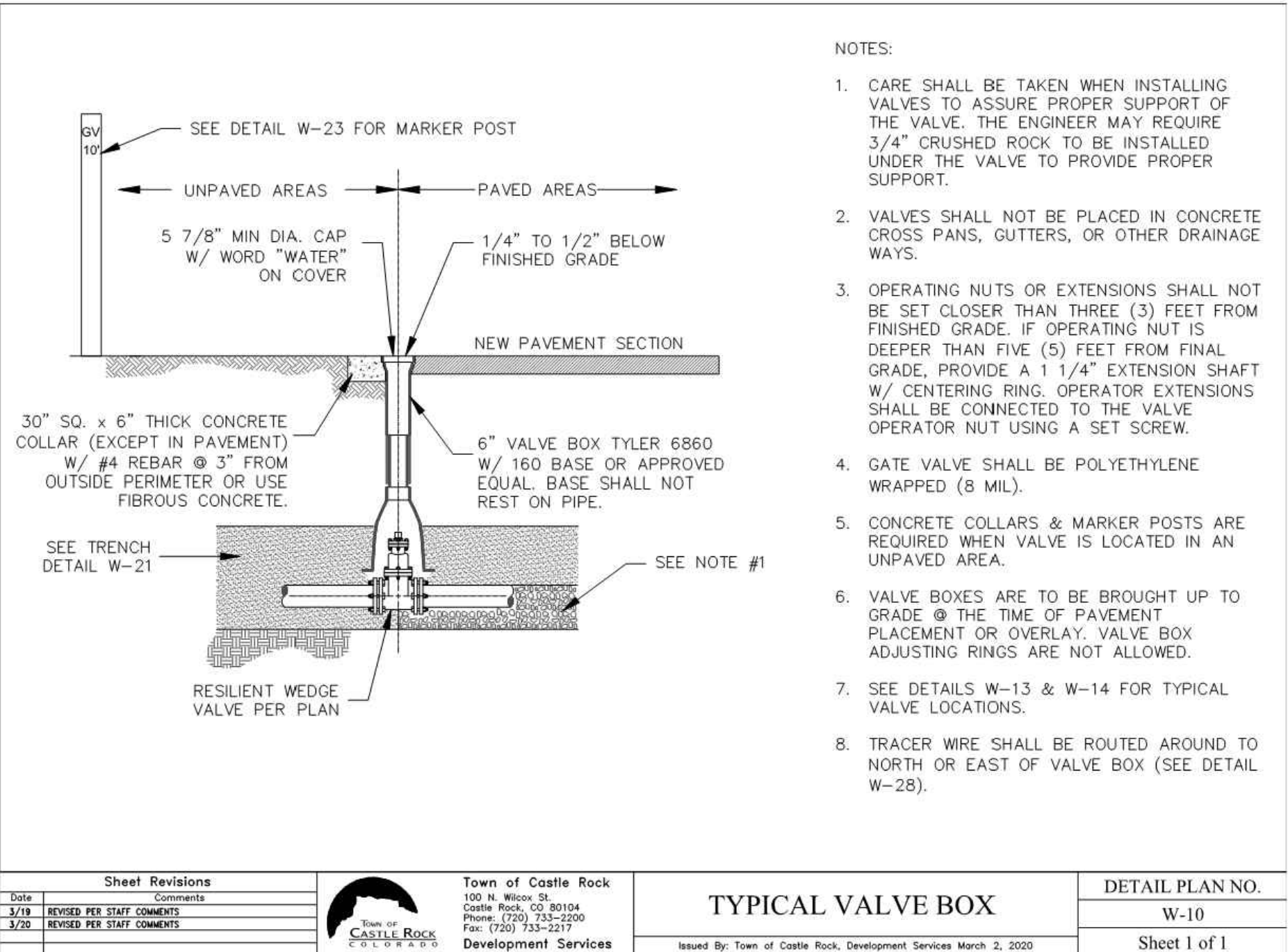
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Drafter
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SANITARY SEWER AND WATER PLANS
DETAILS-SANITARY SEWER

Sheet
DT2
Date
APRIL 14, 2022
18
of
22

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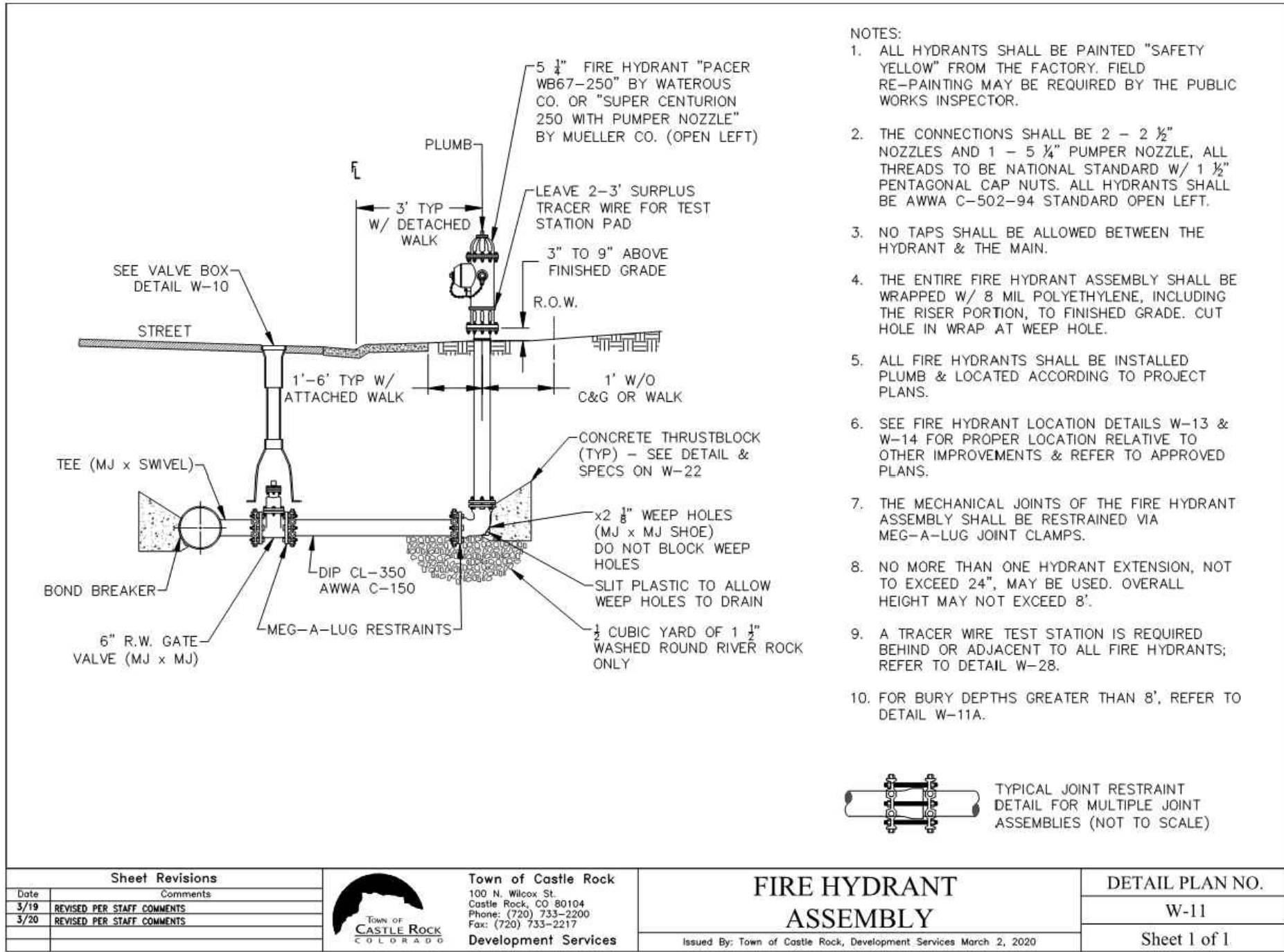
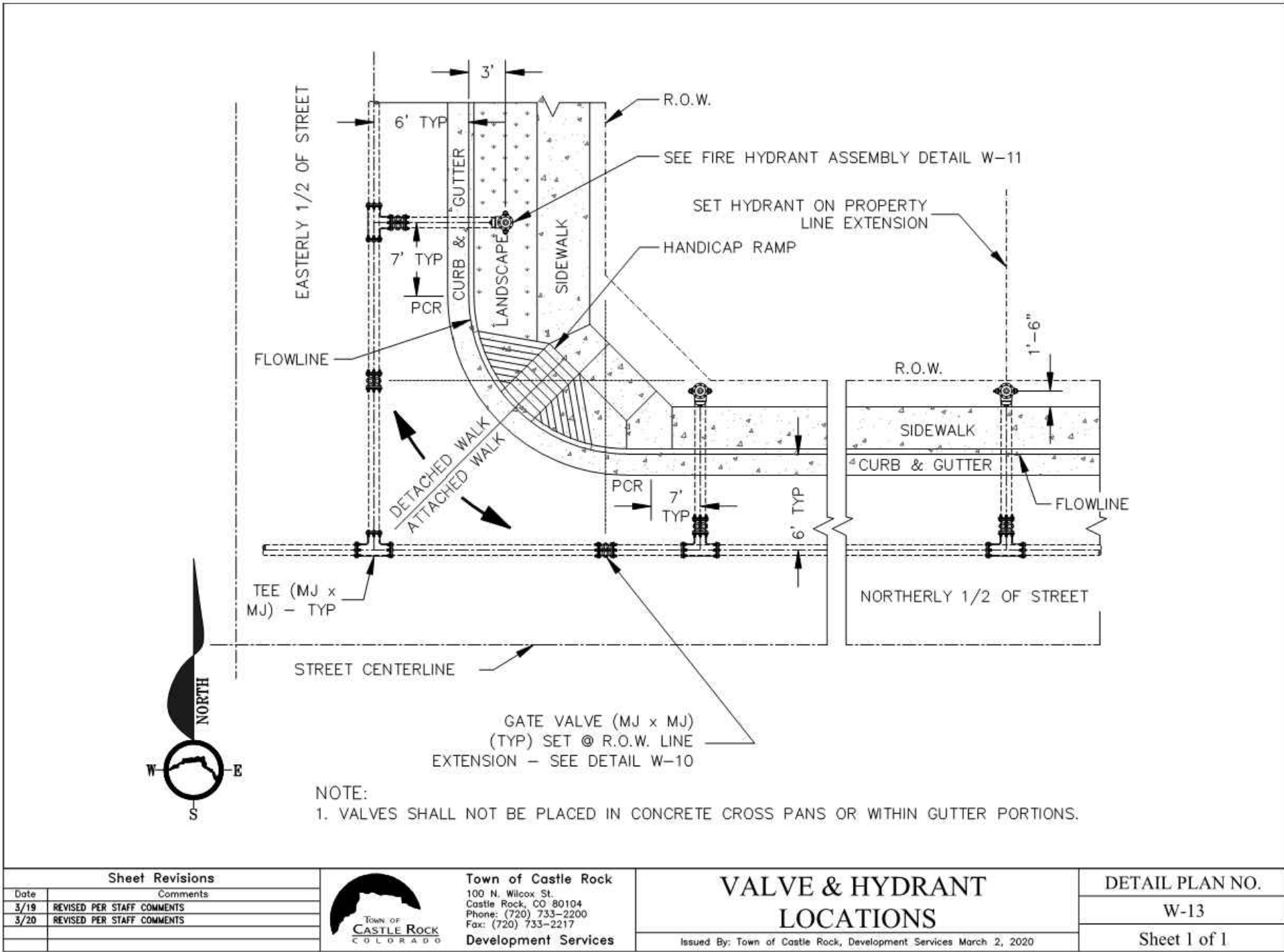
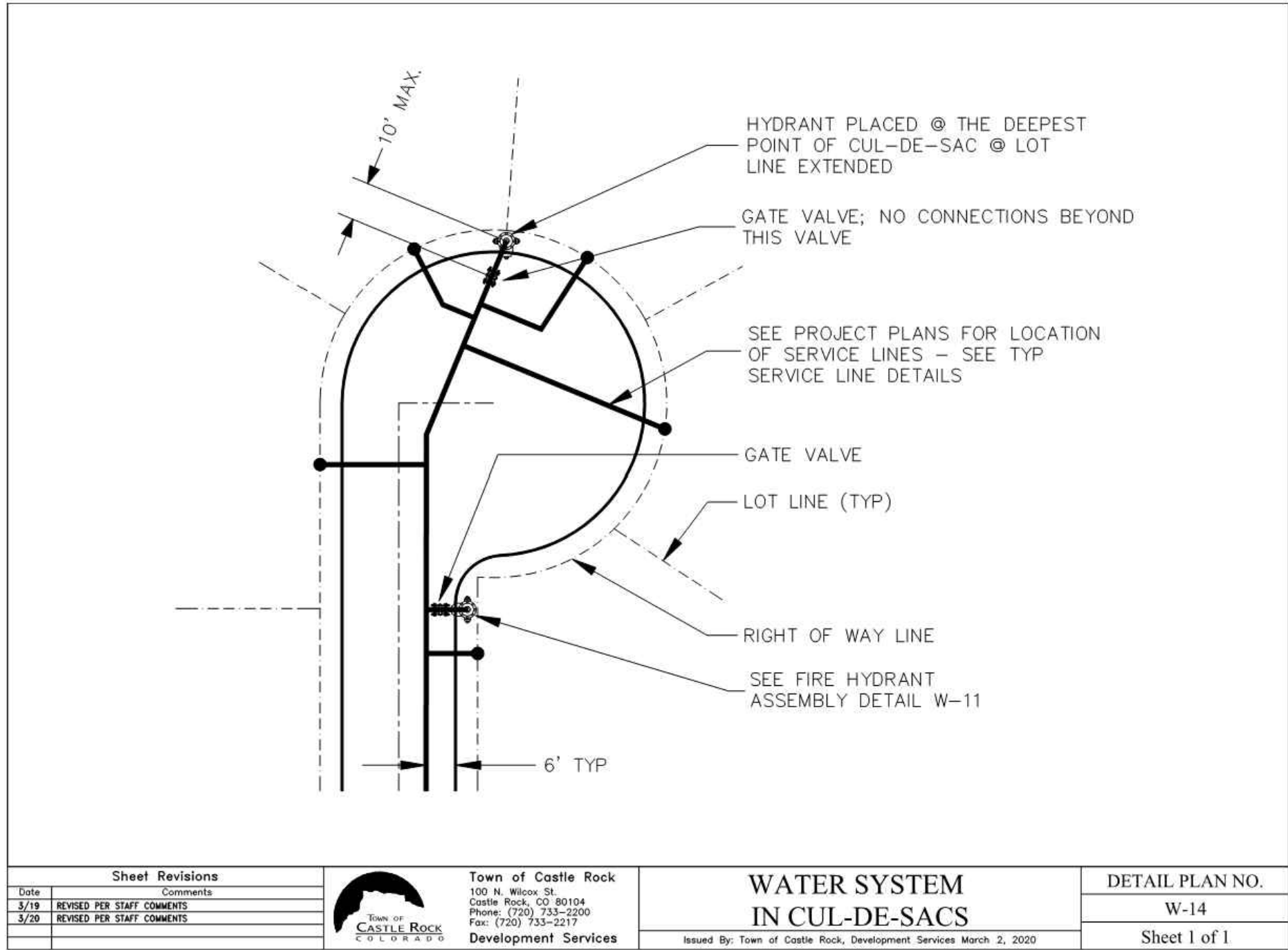
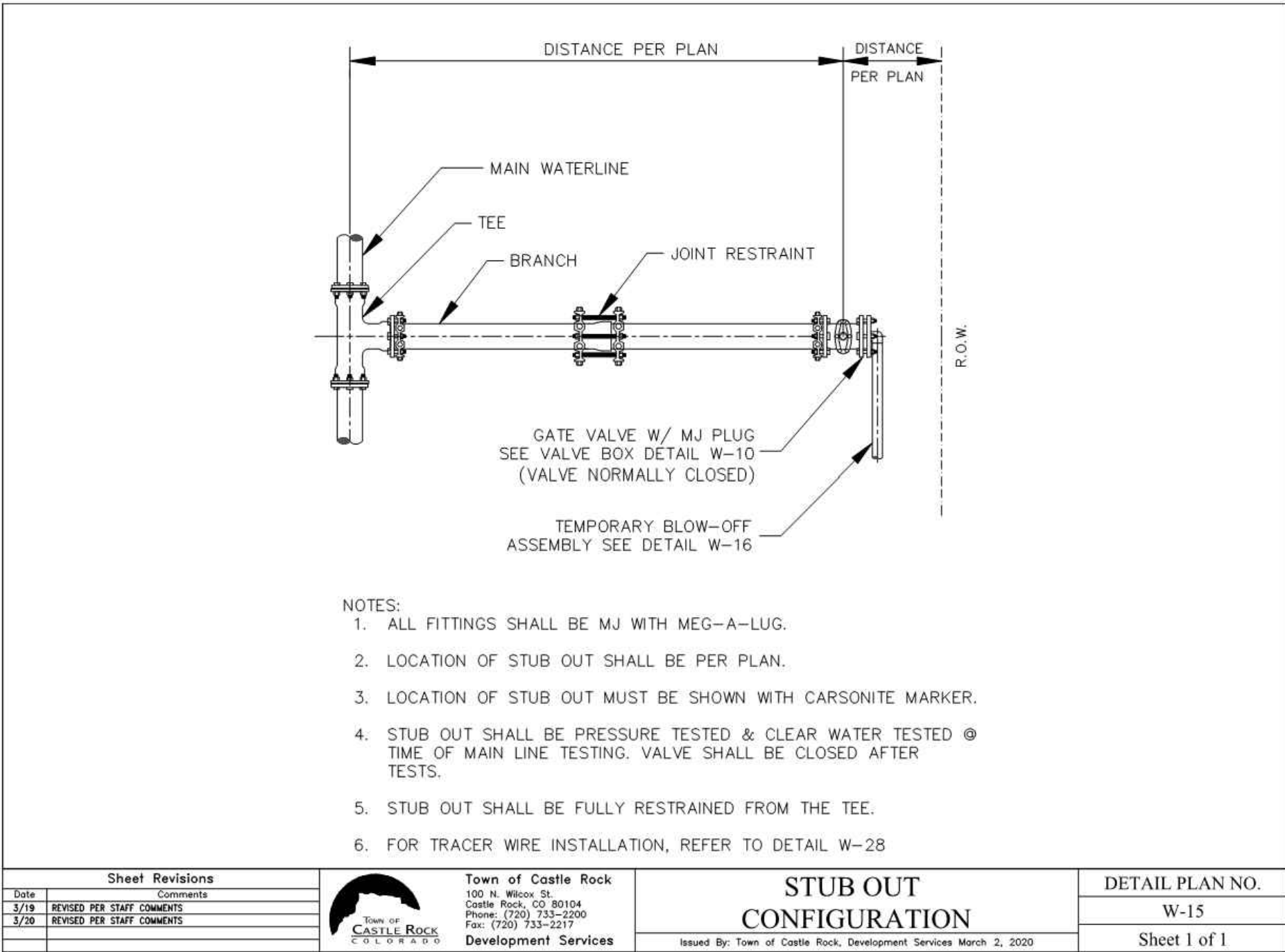
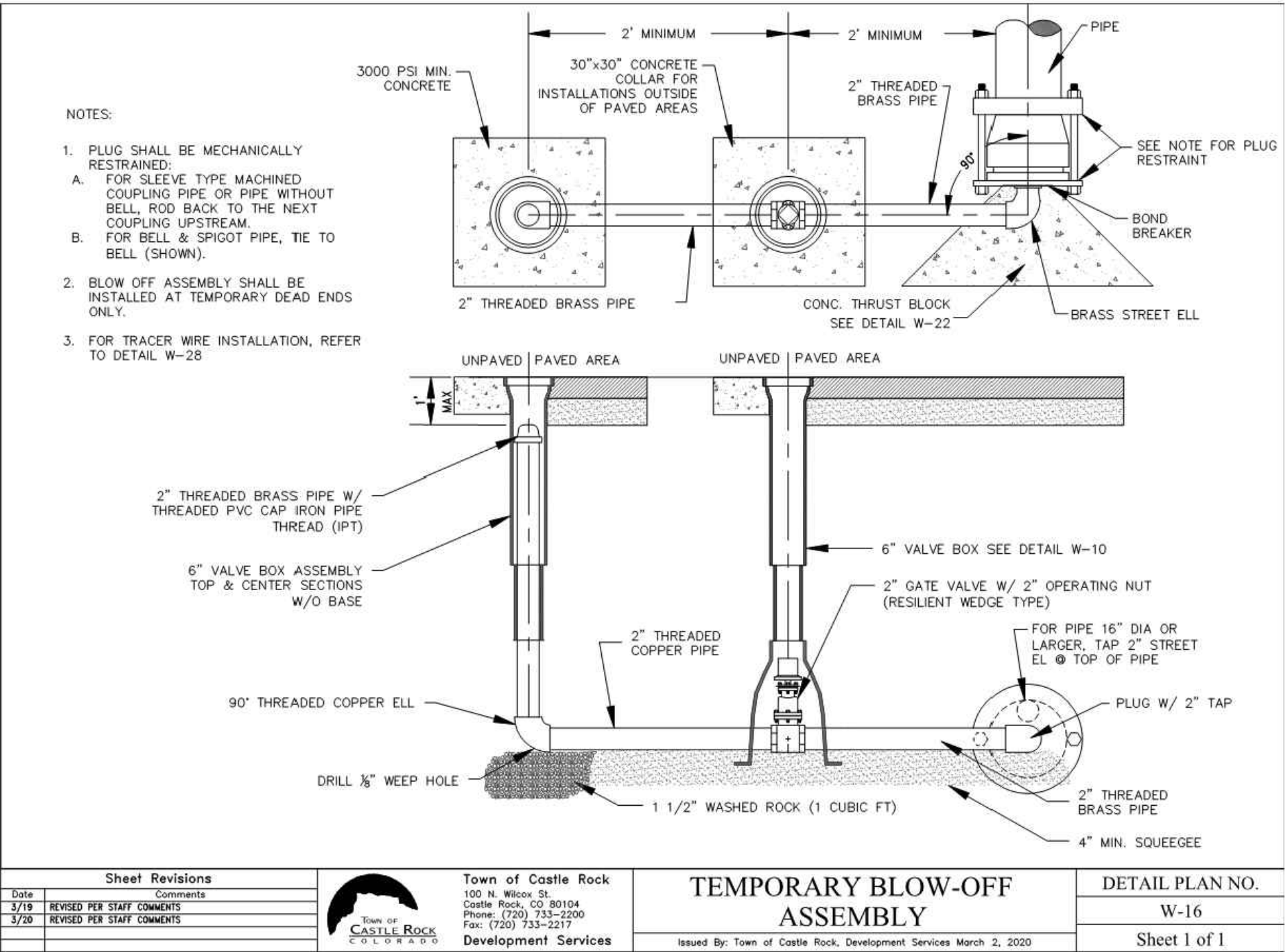
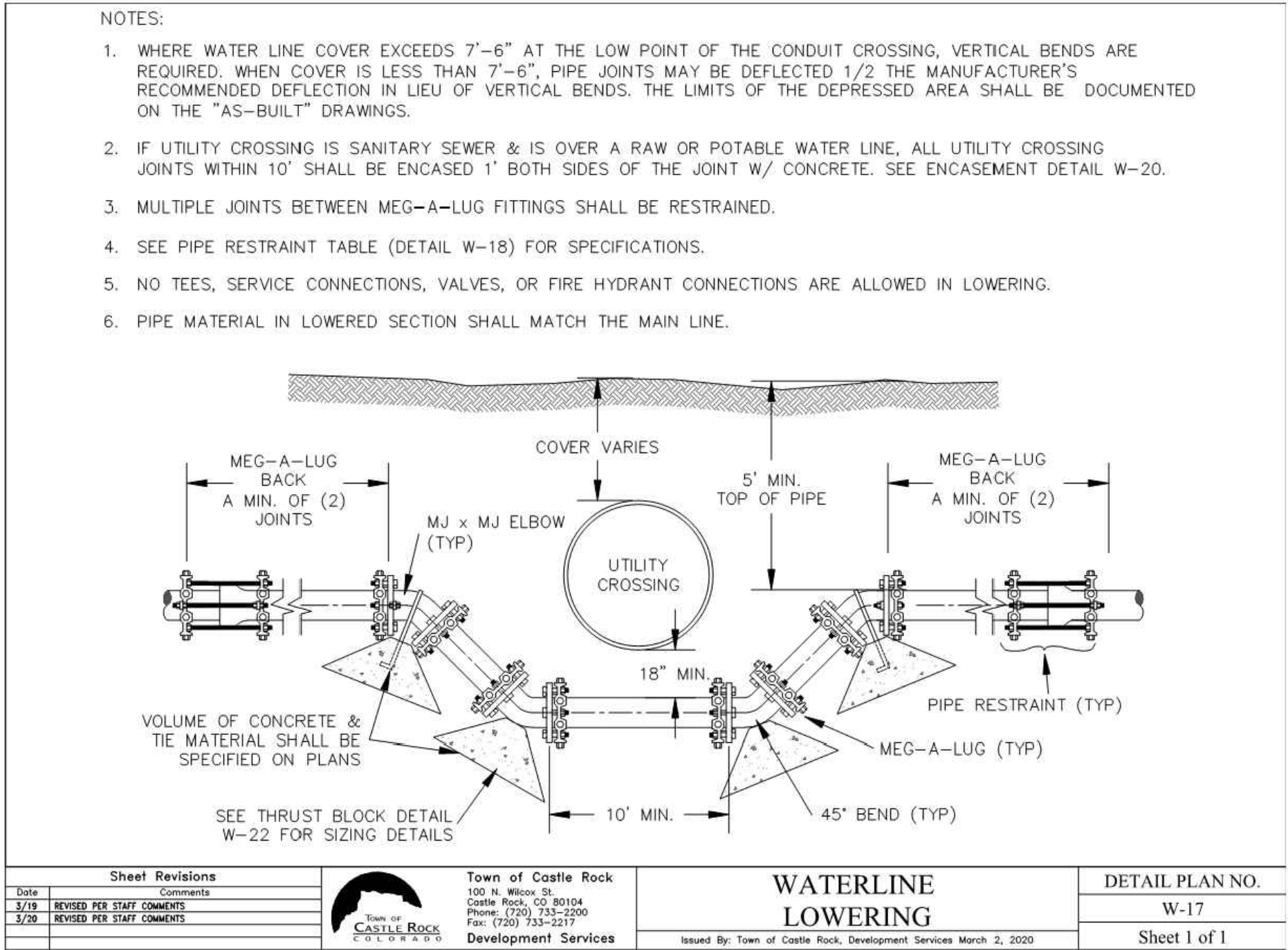
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Prepared For	HINES
Designer	KWS
Drafter	JAH
Checked	BKM

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CANYONS SOUTH FILING NO. 3
SANITARY SEWER AND WATER PLANS
DETAILS-WATER

Sheet
DT3
Date
APRIL 14, 2022

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PLOTTED BY: KYLER SANFORD PLOT DATE: 4/14/2022 11:47 AM
XREFS:



Hines

Drawing Name
53DT3-Details Water.dwg

Job Number
HINES CS3

Prepared For
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CANYONS SOUTH FILING NO. 3
SANITARY SEWER AND WATER PLANS
DETAILS-WATER

Sheet
DT4

Date
APRIL 14, 2022

PATH: J:\HINES\CS\ADD\CVIL\53 F3 SANITARY AND WATER\53DT3-DETAILS WATER.DWG
PLOTTED BY: KYLER SANFORD PLOT DATE: 4/14/2022 11:47 AM
XREFS:

LENGTH OF RESTRAINED PIPE							
PIPE SIZE	4"	6"	8"	12"	16"	20"	24"
FITTING	L	L	L	L	L	L	L
90° BEND, TEE, PLUG OR VALVE	30'	45'	60'	86'	108'	132'	155'
45° BEND	M1	13'	18'	25'	32'	39'	45'
22 1/2° BEND	M1	M1	M1	M1	M1	M1	M1
11 1/4° BEND	--	--	M1	M1	M1	M1	M1

LEGEND
L = LENGTH
M1 = MINIMUM OF 1 FULL LENGTH OF PIPE

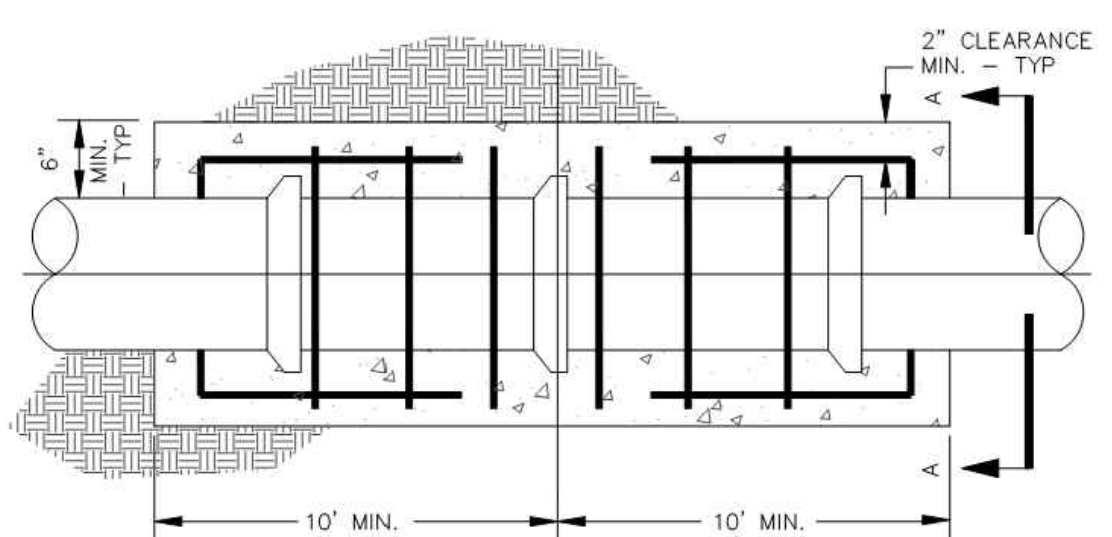
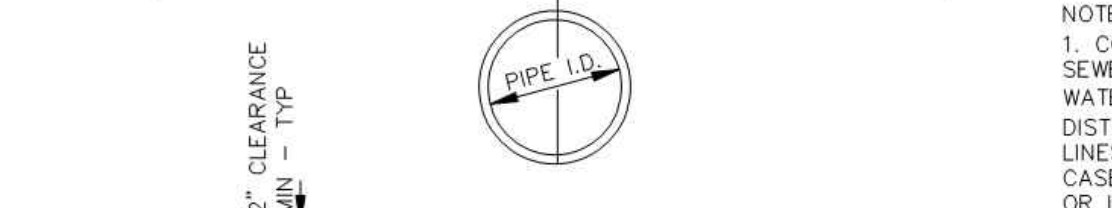
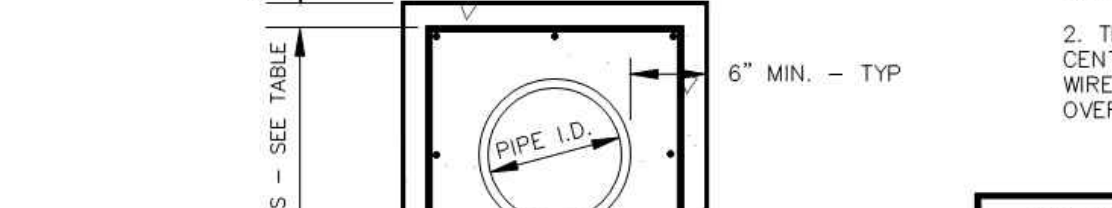
TEE OR VALVE

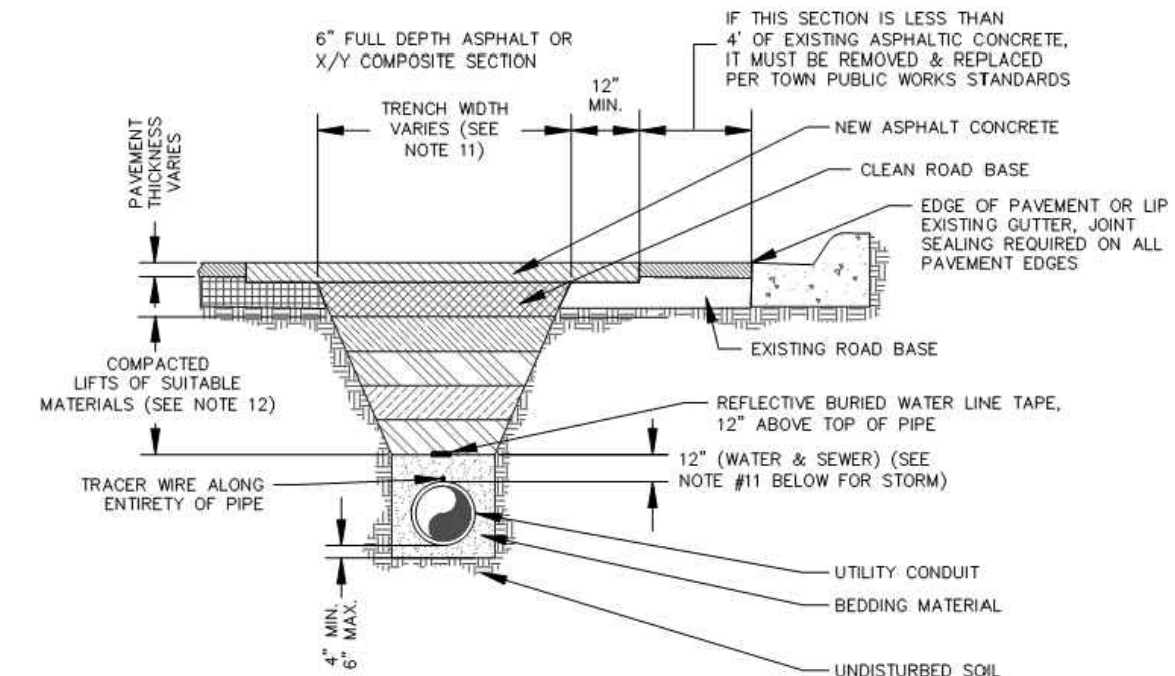
BENDS

90° BEND

NOTES:
1. LENGTH OF RESTRAINED PIPE MEASURED EACH WAY FROM VALVES & BENDS.
2. MINIMUM 5' GROUND COVER REQUIRED.
3. ALL FITTINGS SHALL BE FITTED WITH MEG-A-LUGS.
4. PIPE RESTRAINTS SHALL BE AS FOLLOWS:
A. D.I.P. - RESTRAINTS FOR STD. MECHANICAL JOINTS SHALL BE OF HIGH STRENGTH DUCTILE IRON CONFORMING TO ASTM A536, GRADE 65-45-12. MECH. JOINTS SHALL HAVE A WATER WORKING PRESSURE OF 100 P.S.I. MINIMUM AND SHALL BE EBBA IRON INC., MEG-A-LUG SERIES 1100, FORD METER BOX CO., UNI-FLANGE 1400 OR APPROVED EQUAL.
B. PVC - RESTRAINT DEVICES SHALL BE MANUFACTURED OF HIGH STRENGTH DUCTILE IRON, ASTM A536, GRADE 65-45-12 IN 2" - 24" SIZES, ASTM A36 IN SIZES 30" - 36", FULL RATED PRESSURE OF THE PVC PIPE AND SHALL BE EBBA IRON INC., MEG-A-LUG SERIES 1100 FORD METER BOX, UNI-FLANGE 1400 OR APPROVED EQUAL.

Sheet Revisions	Town of Castle Rock	PIPE RESTRAINT TABLE	DETAIL PLAN NO.
Date	100 N. Wilson St. Castle Rock, CO 80104 Phone: (720) 733-2200 Fax: (720) 733-2217		
3/18 REVISED PER STAFF COMMENTS	Development Services	Issued By: Town of Castle Rock, Development Services March 2, 2020	W-18
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		<p>NOTES:</p> <p>1. CONCRETE ENCASEMENT WILL BE REQUIRED ON SEWER LINE WHEN CLEAR VERTICAL DISTANCE FROM WATER LINE IS LESS THAN 1'-6" OR HORIZONTAL DISTANCE IS LESS THAN 10' BETWEEN PARALLEL LINES. CONCRETE ENCASEMENT REQUIRED IN ALL CASES WHERE SEWER LINE IS ABOVE WATER LINE OR IS UNDER A WATERWAY CROSSING.</p> <p>2. TRACER WIRE SHALL BE CONTINUOUS ON TOP CENTER OF WATER AND SEWER MAINS, PER TRACER WIRE GENERAL NOTES. CONCRETE WILL BE POURED OVER TOP OF TRACER WIRE.</p>																
																		
																		
<table><tr><th>PIPE I.D.</th><th>NO. OF LONGITUDINAL BARS & LOCATION</th></tr><tr><td>6" to 8"</td><td>4 - #4 BARS 1 EACH CORNER</td></tr><tr><td>10" to 18"</td><td>8 - #4 BARS 3 EACH SIDE</td></tr><tr><td>21" to 33"</td><td>12 - #4 BARS 4 EACH SIDE</td></tr><tr><td>36"</td><td>16 - #4 BARS 5 EACH SIDE</td></tr></table>		PIPE I.D.	NO. OF LONGITUDINAL BARS & LOCATION	6" to 8"	4 - #4 BARS 1 EACH CORNER	10" to 18"	8 - #4 BARS 3 EACH SIDE	21" to 33"	12 - #4 BARS 4 EACH SIDE	36"	16 - #4 BARS 5 EACH SIDE							
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WATER TRENCH DETAIL			
			
NOTES: 1. ALL TRENCHES SHALL BE BACKFILLED IN ACCORDANCE WITH THIS DETAIL UNLESS OTHERWISE SPECIFIED BY PUBLIC WORKS. 2. PRIOR TO PLACEMENT OF CONCRETE, ALL EDGES SHALL BE SAW CUT TO A CLEAN, STRAIGHT, AND VERTICAL EDGE. 3. PRIOR TO PLACEMENT OF ASPHALT, 18 INCHES OF ADJACENT ASPHALT SHALL BE MILLED TO 2 INCH DEPTH ON ALL SIDES TO MATCH EXISTING PAVEMENT. INNER SURFACE TO BE TACKED WITH HSS-1. 4. WHEN SUBSTITUTING FOR BACKFILL MATERIAL, FLOWABLE FILL SHALL CONFORM TO MGPEC CLSM STANDARDS. 5. TRENCH WIDTH SHALL NOT BE MORE THAN 16" NOR LESS THAN 12" WIDER THAN THE DIAMETER OF THE PIPE. 6. 95% OF ASTM D698 STANDARD COMPACTION EFFORT IS REQUIRED ON ALL TRENCHING ZONES, IN BOTH IMPROVED & UNIMPROVED AREAS. 7. IN UNIMPROVED AREAS, ALL DISTURBED AREAS SHALL BE REGRADED, SEEDED & MULCHED. 8. IN CONCRETE ROADWAYS, A MINIMUM OF 1/2 PANEL WIDTH OR 10' x 5' SECTION WILL BE ALLOWED TO REMAIN, OTHERWISE THE ENTIRE CONCRETE PANEL MUST BE REPLACED. 9. USE #4 REBAR AT 2' CENTERS ALONG THE PERIMETER OF CONCRETE REPLACEMENT SECTIONS. 10. 6" MAXIMUM COMPACTED LIFT THICKNESS IF FLOWABLE FILL NOT REQUIRED. 11. BEDDING MATERIAL DEPTH WHEN INSTALLING STORM SEWER SHALL BE UP TO SPRING LINE, EXCEPT IN AREAS OF UNSUITABLE BACKFILL, THEN BEDDING MATERIAL SHALL BE 12" ABOVE PIPE. 12. TRENCH WIDTHS LESS THAN 4' OR TRENCHING THAT EXPERIENCES CAVE-INS OR SLOUGHING SHALL REQUIRE FLOWABLE FILL IN ORDER TO ACHIEVE COMPACTION.			
Sheet Revisions	Town of Castle Rock	WATER TRENCH DETAIL	DETAIL PLAN NO.
Date	100 N. Wilson St. Castle Rock, CO 80104 Phone: (720) 733-2200 Fax: (720) 733-2217		
3/18 REVISED PER STAFF COMMENTS	Development Services	Issued By: Town of Castle Rock, Development Services March 2, 2020	W-21
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11 1/4, 22 1/2 & 45 BENDS

TEE

DEAD END

TYPICAL CROSS SECTION

NOTES:

- BEARING AREAS SHOWN ON THE CHART ARE MINIMUM AREAS & ARE DESIGNED USING THE FOLLOWING CRITERIA:
A. INTERNAL WORKING PRESSURE OF 150 PSI.
B. TRANSIENT (WATER HAMMER) PRESSURE OF 120 PSI FOR 4", 6" & 8" DIAMETER LINES, 110 PSI FOR 12" LINES, & 70 PSI FOR 20" LINES.
C. THRUSTBLOCK CONCRETE SHALL HAVE A MINIMUM STRENGTH OF 3000 PSI.
- ALL SIZES OF BENDS, TEES & DEAD ENDS SHALL HAVE CONCRETE THRUSTBLOCKS.
- THRUSTBLOCKS ARE NOT A SUBSTITUTE FOR JOINT RESTRAINT.

MINIMUM BEARING SURFACE AREA

(IN SQUARE FEET)

SIZE OF PIPE	BENDS				TEE OR DEAD END
	11 1/4"	22 1/2"	45"	90"	
6"	2.00	2.00	2.25	4.25	3.00
8"	2.00	2.00	4.00	8.00	5.25
12"	2.00	4.25	8.25	12.00	11.00
16"	3.50	6.50	12.50	23.00	16.50
20"	5.00	10.00	19.50	35.50	25.00

Date	Sheet Revisions
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Town of Castle Rock
100 N. Wilson St.
Castle Rock, CO 80104
Phone: (720) 733-2200
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Development Services

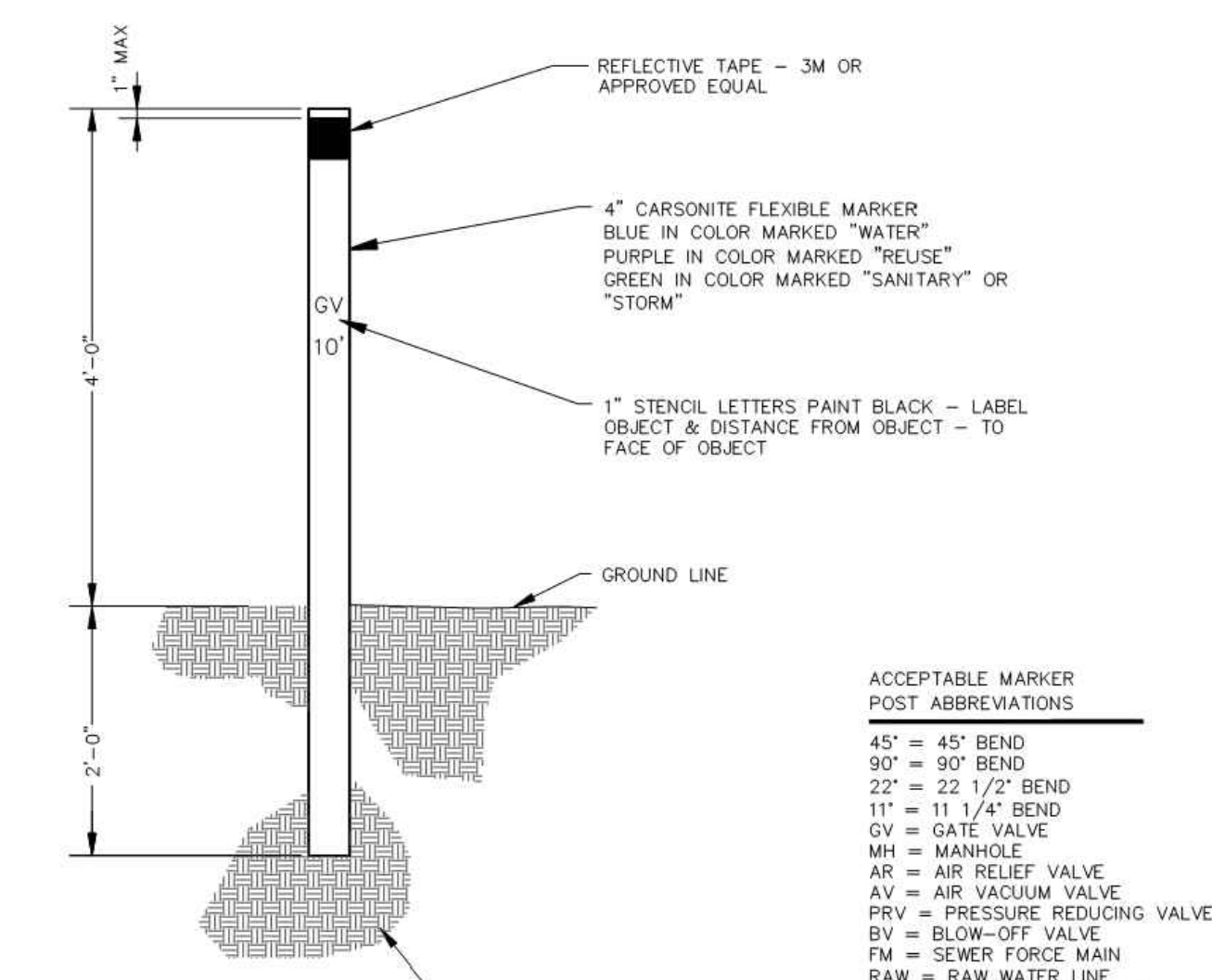
HORIZONTAL BEND
THRUSTBLOCKS

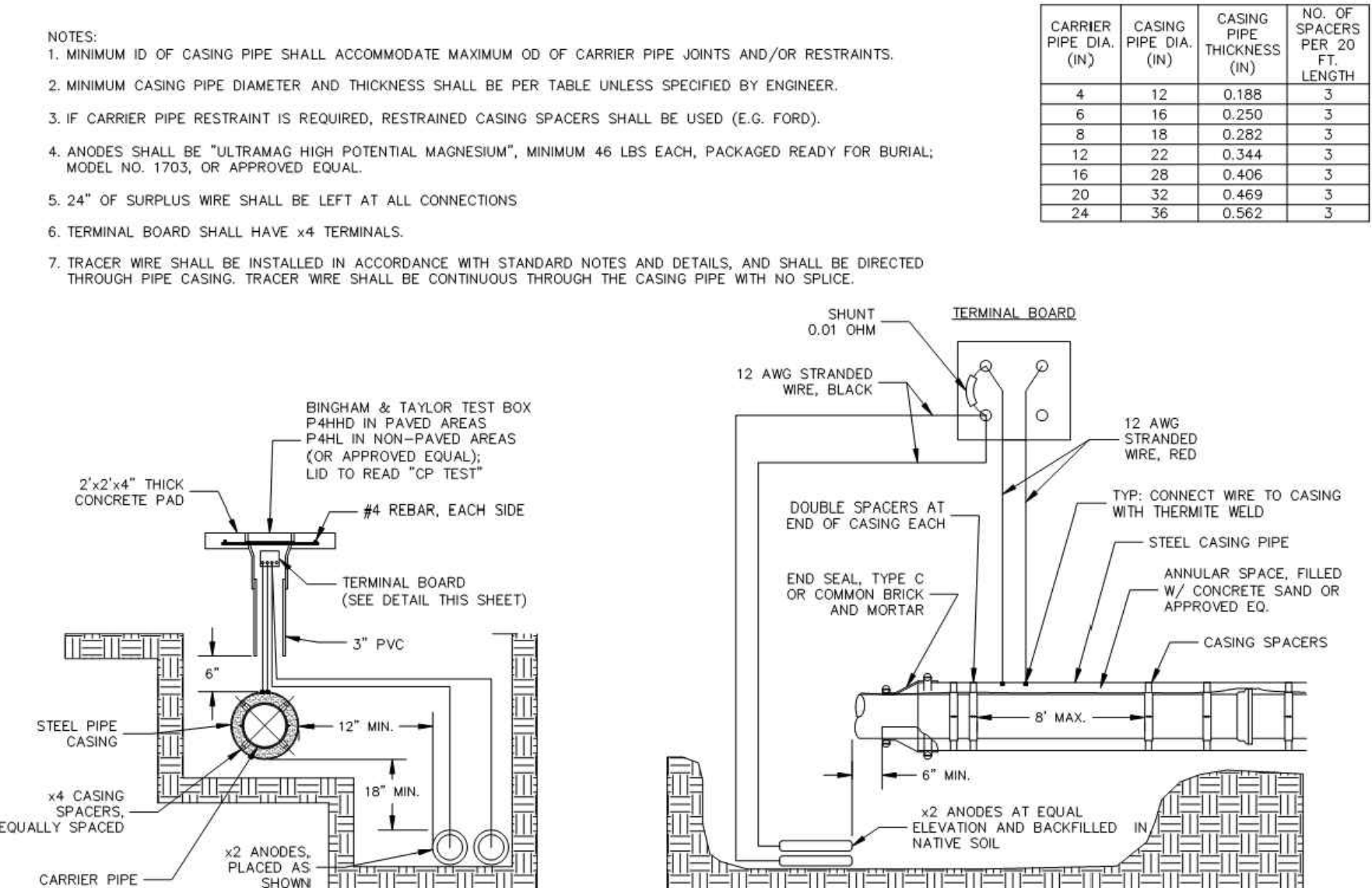
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DETAIL PLAN NO.

W-22

Sheet 1 of 1

MARKER POST			
			
ACCEPTABLE MARKER POST ABBREVIATIONS 45° = 45° BEND 90° = 90° BEND 22° = 22 1/2° BEND 11° = 11 1/4° BEND GV = GATE VALVE MH = MANHOLE AR = AIR RELIEF VALVE AV = AIR VACUUM VALVE PRV = PRESSURE REDUCING VALVE BV = BLOW-OFF VALVE FM = SEWER FORCE MAIN RAW = RAW WATER LINE WTR = POTABLE WATER LINE			
NOTE: 1. USE MARKER POST IN AREAS WHERE UTILITY CANNOT BE LOCATED FROM OTHER IMPROVEMENTS.			
Sheet Revisions	Town of Castle Rock	MARKER POST	DETAIL PLAN NO.
Date	100 N. Wilson St. Castle Rock, CO 80104 Phone: (720) 733-2200 Fax: (720) 733-2217		
3/18 REVISED PER STAFF COMMENTS	Development Services	Issued By: Town of Castle Rock, Development Services March 2, 2020	W-23
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PIPE CASING																																			
																																			
NOTES: 1. MINIMUM ID OF CASING PIPE SHALL ACCOMMODATE MAXIMUM OD OF CARRIER PIPE JOINTS AND/OR RESTRAINTS. 2. MINIMUM CASING PIPE DIAMETER AND THICKNESS SHALL BE PER TABLE UNLESS SPECIFIED BY ENGINEER. 3. IF CARRIER PIPE RESTRAINT IS REQUIRED, RESTRAINED CASING SPACERS SHALL BE USED (E.G. FORD). 4. ANODES SHALL BE "ULTRAMAG HIGH POTENTIAL MAGNESIUM", MINIMUM 46 LBS EACH, PACKAGED READY FOR BURIAL; MODEL NO. 1703, OR APPROVED EQUAL. 5. 24" OF SURPLUS WIRE SHALL BE LEFT AT ALL CONNECTIONS. 6. TERMINAL BOARD SHALL HAVE x4 TERMINALS. 7. TRACER WIRE SHALL BE INSTALLED IN ACCORDANCE WITH STANDARD NOTES AND DETAILS, AND SHALL BE DIRECTED THROUGH PIPE CASING. TRACER WIRE SHALL BE CONTINUOUS THROUGH THE CASING PIPE WITH NO SPLICE.																																			
<table><tr><th>CARRIER PIPE DIA. (IN)</th><th>CASING PIPE DIA. (IN)</th><th>CASING PIPE THICKNESS (IN)</th><th>NO. OF SPACERS PER 20 FT LENGTH</th></tr><tr><td>4</td><td>12</td><td>0.188</td><td>3</td></tr><tr><td>6</td><td>16</td><td>0.250</td><td>3</td></tr><tr><td>8</td><td>18</td><td>0.282</td><td>3</td></tr><tr><td>12</td><td>22</td><td>0.344</td><td>3</td></tr><tr><td>16</td><td>28</td><td>0.406</td><td>3</td></tr><tr><td>20</td><td>32</td><td>0.469</td><td>3</td></tr><tr><td>24</td><td>36</td><td>0.562</td><td>3</td></tr></table>				CARRIER PIPE DIA. (IN)	CASING PIPE DIA. (IN)	CASING PIPE THICKNESS (IN)	NO. OF SPACERS PER 20 FT LENGTH	4	12	0.188	3	6	16	0.250	3	8	18	0.282	3	12	22	0.344	3	16	28	0.406	3	20	32	0.469	3	24	36	0.562	3
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3/20 REVISED PER STAFF COMMENTS			Sheet 1 of 1																																

Hines

Drawing Name
53DT3-Details Water.dwg

Job Number
HINES CS3

Prepared For
HINES

Designer
KWS

Drafter
JAH

Checked
BKM

Calibre

Calibre Engineering, Inc.
9090 South Ridgeline Boulevard, Suite 105
Highlands Ranch, CO 80129 (303) 730-0434
www.calibre-engineering.com
Construction Management Civil Engineering Surveying

CANYONS SOUTH FILING NO. 3
SANITARY SEWER AND WATER PLANS
DETAILS-WATER

Sheet

DT5

Date
APRIL 14, 2022

21
of
22

