FINAL UTILITY REPORT
FOR
HILLSIDE AT CASTLE ROCK
PHASES 3, 4 and 5
SPD25-0012

Prepared For:

BLVD Hillside, LLC
600 Grant Street, Ste 404
Denver, CO 80203
(303) 200-0742
Contact: Aaron Foy

Prepared By:

JR Engineering, LLC
7200 South Alton Way Suite C400
Centennial, CO 80112
(303) 740-9393
Contact: Kurtis Williams

June 3, 2026

UTILITY REPORT APPROVAL BLOCKS

ENGINEER'S CERTIFICATION

The enclosed utility report, and exhibits were prepared by me or under my direct supervision and is correct to the best of my knowledge and belief. Said utility report has been prepared in accordance with the applicable Town of Castle Rock criteria and is in conformance with the master utility plans for the affected area. I accept responsibility for any liability caused by negligent acts, errors, or omissions on my part in preparing this report.

Signature: _____
Kurtis W. Williams - Registered Professional Engineer
State of Colorado No. 34270
(Affix Seal)

OWNER/DEVELOPER'S STATEMENT

As Owner/Developer of Land(s) identified within this report, I agree to proceed, implement, and comply with all recommendations and requirements outlined herein.

_____
Name of Developer

_____
Authorized Signature

Contents

PROJECT LOCATION AND DESCRIPTION 1
Site Location 1
Description of Property and Land Use 1
Design Criteria 2
EXISTING WATER & WASTEWATER SYSTEM 2
Existing Domestic Distribution System 2
Existing Wastewater Facilities 3
CALCULATED WATER DEMANDS 3
Average Day Demands 3
Max Day Demands 4
Peak Hour Demands 5
Irrigation Demands 5
PROPOSED WATER SYSTEM 6
Proposed Distribution System 6
Proposed Supply Facilities 6
Required Fire Flow 6
Land Dedication and Easement Requirements 7
PROPOSED WATER SYSTEM ANALYSIS AND MODELING 7
Hydraulic Models 7
Hydraulic Modeling Scenarios 7
Hydraulic Modeling Output and Required Schematics 8
Required Fire Flow Results 8
CALCULATED WASTEWATER FLOWS 8
Average Daily Wastewater Flows (ADF) 8
Peaking Factor 8
Peak Design Flows (PDF) 8
PROPOSED WASTEWATER SYSTEM 9
Proposed Collection System 9
Proposed Wastewater Facilities 9
Land Dedication Requirements 9
PROPOSED WASTEWATER SYSTEM ANALYSIS AND MODELING 10
Hydraulic Models 10
Hydraulic Modeling Scenarios 10
Hydraulic Modeling Output and Required Schematics 10
POTENTIAL SUBDIVISION IMPROVMENTS AGREEMENT (SIA) ITEMS 10
POTENTIAL PERMITTING REQUIREMENTS 10
REFERENCES 11

APPENDIX

Appendix A – Vicinity Map
Appendix B – Water Demand Calculations
Appendix C – WaterCAD Model Results
Appendix D – Wastewater Demand Calculations
Appendix E – SewerCAD Model Results
Appendix F – Utility Plans
Appendix G – Reference Materials

PROJECT LOCATION AND DESCRIPTION

Site Location

The Hillside at Castle Rock Phase 3, 4 and 5 occupies approximately 18.52 acres and is located in the Southwest Quarter of Section 3 and Southeast Quarter of Section 4, Township 8 South, Range 67 West, 6th Principal Meridian, Douglas County, Castle Rock, Colorado. More specifically, approximately 1 mile west of Highway I-25 and northeast of the intersection of Wolfensberger Road and Coachline Road. The site is bordered on the north and west by the Meadows PD Fourth Amendment, unincorporated Douglas County to the east, Wolfensberger Road to the south and Coachline Road to the west. Refer to the Vicinity Map provided in Appendix A for more details.

Description of Property and Land Use

Hillside at Castle Rock Phase 3 & 4 occupies approximately 13.64 acres and is intended to be developed as an active adult, single family attached residential community. Phases 3 & 4 will consist of 65 total units. These units will be comprised of 46 paired units and 19 single family detached lots.

Phase 5 will include 48 single family equivalent town home units and occupies approximately 4.88 Acres.

All units will fall under the Town of Castle Rock - Single Family and Duplexes classification with a demand of 400 GPD/Unit and a 1.00 single family equivalent (SFE's). Irrigation demand for the duplex units is assumed to be equivalent to that of a single-family lot. This represents a conservative assumption, as duplex lots typically have smaller private yard areas and reduced irrigated frontage compared to standard single-family lots. By using the higher single-family demand rate, the design ensures sufficient irrigation capacity is accounted for, even under peak use conditions. Phases 3 & 4 will have approximately 3.51 acres of common area and open space, approximately 1.02 acres of which will be irrigated. Additionally, the average, peak, and max demands were calculated by the irrigation designer and are included in the appendix of this report. A summary of the irrigated areas is provided in Appendix G. The Irrigated area for phase 5 was assumed to be 2.4 acres and will be verified with a conformance letter at time of final.

The Phase 3 & 4 site's utilities will include the water main connections in Grayside Circle and Wolfensberger Road, sanitary sewer connections within Grayside Circle and Wolfensberger Road, and water and sanitary mains and 65 dwelling unit services within Grayside Circle. Phase 5 will include 48 units, serviced by utility connections located in alleys.

The water mains will be located within the dedicated street rights-of-ways with the exception of a tie-in into Wolfensberger Road. There will be easements dedicated to the Town of Castle Rock at the design location at the time of platting.

The site sits on a hillside with no existing irrigation canals or ditches and is located outside

any major or minor drainageways or floodplains.

Proposed easements necessary for Public Utilities will be provided with Final Construction Documents via separate document.

Design Criteria

The Town of Castle Rock Water System Design and the Wastewater Collection Design 2018 Criteria Manuals were used to evaluate and establish calculations for the potable water system and wastewater system within this report.

Description of Amendment Changes

Changes to the SDP 3rd Amendment since the SDP 1st and 2nd Amendment were approved (7/2022 & 4/2024) are as follows:

- Some of lot lines within Phases 3 & 4 were moved to accommodate new architectural products.
- 5-ft side lot dry utility easements were vacated, and 5-ft side lot drainage easements were added.
- Building rear setbacks changed for specific products.
- All phases, including The Arbors, Arbors Phase 5 is included with phase 3 and 4 in the SDP 3rd Amen
- The landscaping design changed due to new ToCR landscaping requirements.
- Irrigation design changed due to landscaping changes.

EXISTING WATER & WASTEWATER SYSTEM

Existing Domestic Distribution System

The site is partially developed with Phases 1 & 2 of the Hillside at Castle Rock development currently under construction. An existing 8-inch water main runs along the constructed portions of Grayside Circle. This 8-inch main connects to an existing 12-inch public water main that runs along Wolfensberger Road. The existing main is plugged at the northwest corner of the site, at the Boundary of Phase 2 and Phase 4 development. The Phase 3, 4 and 5 water main will tie into the existing 8-inch water main at this plug.

Existing 12-inch and 16-inch water main border the site to the south and west. There is a 16-inch water main in Wolfensberger Road from the intersection of Wolfensberger Road and Coachline Road to the Epiphany Lutheran Church entrance where it reduces in size to a 12-inch and continues northeast. There is also an existing 12-inch water main within Coachline Road. There are no known shortcomings from tying into these water mains. The water main being constructed as part of Phases 3, 4 and 5 will connect to the existing system at two locations;

- within Grayside Circle at the connection to Phases 2 & 3 construction extents
- at the eastern connection and intersection of E Wolfensberger Road and Gray side

Circle.

The site lies within the 3B (Blue-West) pressure zone and is served by Tank 8. The elevation for the zone is between 6236-feet to 6399-feet with a maximum HGL of 6523.3-feet. The design elevations for the site are between 6270-feet to 6400-feet and falls at the upper elevations of the zone. The elevation of Tank 8 is 6503.6-feet at 20% full, 6523.3-feet at 100% full. The tank has a diameter of 147-feet, a height of 24.8-feet and a volume of 3.13 MG.

The site will be gravity fed from Tank 8.

The maximum static pressure at the main line connections when there is 0 demand on the system and the tank is 100% full are 54 psi at Junction J10 within Coachline Road, 110 psi at Junction J18 at the westernmost connection within Wolfensberger Road. See Appendix C for the WaterCAD results.

The minimum static pressures at the main line connections when the tank is 20% full are 45 psi at Junction J10 within Coachline Road, 102 psi at Junction J18 at the westernmost connection within Wolfensberger Road. See Appendix C for WaterCAD results.

Existing Wastewater Collection System

Per *Town of Castle Rock* Sanitary Sewer Collection System Sub-Basin Boundaries, Figure 3.1, the site lies within sub-basin EPCRHS. The site is currently partially developed as Phases 1 & 2 are currently under construction.

An 8-inch sewer main was installed within Grayside Circle as part of the Hillside at Castle Rock Phase 1 & 2 improvements to serve the Phase 1 & 2 development. This 8-inch sewer main ends at manhole EX. SSMH-4.12, located at the northwest boundary of Phases 2 & 4. The existing 8-inch sewer main within Grayside Circle conveys sewer flows in a southerly direction within Grayside Circle to an existing manhole at the intersection of Grayside Circle and Wolfensberger Road built in Phase 1 & 2. Flows ultimately outfall into existing sewer manhole SMH-7696 located in Wolfensberger Road, following historic conditions.

CALCULATED WATER DEMANDS

Average Day Demand

Phases 3 & 4 will consist of 65 total proposed lots. Phase 5 will include 48 multi-family units. Single Family Lots and Duplex Lots units Average Day Demand (ADD) was calculated using the design criteria from the ADD Table in Section 4.4.1 of the *Town of Castle Rock Water System Design Criteria Manual* (TCRWSDCM). The following table shows the ADD for Phases 3, 4 and 5:

Table 1: Domestic Average Day demand – Phase 3, 4 and 5							
Phase	Land Use	Typical ADD/Unit (GPD/Unit)	Typical SFE's/Unit	Number of Units or Acres	AVG Day Demand (GPD)	AVG Day Demand (GPM)	AVG Annual Supply (Ac-ft/yr)
3 & 4	Single Family Lots	400	1.00	19	7,600	5	9
3 & 4	Duplex Lots	400	1.00	46	18,400	13	21
3 & 4	Zone 2 Irr.	-	-	1.0	17,280	12	1.0
5	Townhomes	400	1.00	48	19,200	13	22
5	Zone 2 Irr.	-	-	2.4	41,472	29	2.4
Total	-	-	-	-	103,952	72	54

The total Average Annual Supply for Phases 3,4 and 5 is 54 acre-ft/year. Refer to Appendix B for detailed calculations.

All service taps will be ¾" taps with a ¾" meter. Each individual application for home service will require an application showing total fixture count and Peak demand Estimate (Taken from Table AP103.3(3) 2018 IRC). If peak demand is above 20 GPM tap fees and credit against water bank will be based on a ¾" meter.

Max Day Demand

Maximum Day Demand (MDD) was calculated per Section 4.4.1.2 of the *Town of Castle Rock Water System Design Criteria Manual* (TCRWSDCM). MDD was calculated by multiplying ADD by a Peaking Factor of 2.5 for Single Family Lots and Duplex Lots units. The following table shows the MDD for Phases 3, 4 and 5:

	Table 2: Max Day Demand – Phase 3, 4 and 5							
Phase	Land Use	Typical ADD/Unit (GPD/Unit)	Typical SFE's/ Unit	Number of Units or Acres	Peaking Factor	Max Day Demand (GPD)	Max Day Demand (GPM)	MDD Annual Supply (Ac-ft/yr)
3 & 4	Single Family Lots	400	1.00	19	2.5	19,000	13	9
3 & 4	Duplex Lots	400	1.00	46	2.5	46,000	32	21
3 & 4	Zone 2 Irr.	-	-	1.02	-	17,280	12	1.0
5	Townhomes	400	1.0	48	2.5	48,000	33	22
5	Zone 2 Irr.	-	-	2.4	-	41,472	29	2.4
Total	-	-	-	-	-	171,752	119	54

Max Day Demand + 2 Hour Fire Flow

The required storage volume (in million gallons, MG) is taken from the Max Day Demand + 2 hours Fire Flow is 381,752 gallons (0.381 MG), where the fire flow is 1,750 GPM for

2 hours. Refer to Appendix B for detailed calculations. The total storage in the tank is 3.13 million gallons the 20% storage threshold is (0.626 MG) – this site meets that threshold.

Peak Hour Demand

Peak Hour Demand (PHD) was calculated per Section 4.4.1.2 of the *Town of Castle Rock Water System Design Criteria Manual (*TCRWSDCM). Peak Hour Demand was calculated by multiplying ADD by a Peaking Factor of 5.5 for residential and multi-family units. The irrigation PHD was provided by the irrigation designer and included in Appendix G. The following table shows the required Peak Hour for Phases 3, 4 and 5. Irrigation values for phase 5 were assumed base on open tracts and land use and will need to be verified by an irrigation designer.

Table 3: Peak Hour Demand – Phase 3, 4 and 5

Phase	Land Use	Typical ADD/Unit (GPD/Unit)	Typical SFE's/Unit	Number of Units or Acres	Peak Hour Demand (GPD)	Peak Hour Demand (GPM)	PHD Annual Supply (Ac-ft/yr)
3 & 4	Single Family Lots	400	1.00	19	41,800	29	47
3 & 4	Duplex Lots	400	1.00	46	101,200	70	113
3 & 4	Zone 2 Irr.	-	-	-	17,280	12	1.0
5	Townhomes	400	1.00	48	105,600	73	118
5	Zone 2 Irr.	-	-	-	41,472	29	2.4
Total	-	-	-	-	307,352	213	54

Irrigation Demands

2018 Town of Castle Rock Water System Design Criteria Manual, Section 4.4.1.2 states "Irrigation ADD demands are added directly to Max Day Demand (MDD) and Peak Hour Demand (PHD), without the application of any peaking factors."

MDD = Domestic ADD X Maximum Day Factor + Irrigation ADD
PHD = Domestic ADD X Peak Hour Factor + Irrigation ADD

Phase 3 & 4 development includes 1.02 acres of irrigated common area. Irrigation ADD, MDD, and PHD are provided by the irrigation designer. Refer to the irrigation calculations in the appendix for details.

Two taps were installed during the construction of Phases 1 & 2. These taps connect to the existing 8-inch water main running along Grayside Circle. These taps will provide two irrigation zones, Zone 1 & Zone 2 that will serve Phases 1 through 4 of the Hillside project. The required area to be irrigated for Phases 3 and 4 is 1.02 acres that will be within Zone 2. The required area to be irrigated in phase 5 is 2. Acres. 2.4 acres of irrigated area was assumed to be conservative and will be verified by the irrigation designer with a compliance letter. Please refer to Appendix B for the water demand calculations and

Appendix G for the Water Use chart Per Hydro-Systems. The site's total areas to be irrigated for Phases 3 and 4 are shown in irrigation worksheets included in the irrigation plans produced by Hydro-Systems irrigation consulting and Water Management.

The following table shows the required irrigation demand for Phases 3 & 4 per the irrigation designer:

The phase 5 irrigation demand has been assumed and will be verified with a conformance letter.

Table 4: Phase 3 & 4 Irrigation Demands

Phase	Area (Acres)	Average Annual Supply (ac-ft/yr)	Average Day Demand (GPD)	Average Day Demand (GPM)	Max Day Demand (GPM)	Peak Day Demand (GPM)
3 & 4	1.0	1.0	360	12	12	12
5	2.4	2.4	870	29	29	29

PROPOSED WATER SYSTEM

Proposed Distribution System

The proposed Phase 3, 4 and 5 water distribution system will consist of a single loop that begins at the existing stub within Grayside Circle constructed during Phases 1 & 2. The proposed 8-inch water line will connect to the existing 8-inch water line within Grayside Circle and extend north and east to the northeast intersection of Grayside Circle and Wolfensberger Road, where the water line will be upsized approximately 740 ft before it connects to an existing 12" water main in Wolfensberger Road to the existing 12" main.

Any future development of the existing water infrastructure needed to serve this site is the responsibility of the developer.

Proposed Supply Facilities

The site is located within the Town of Castle Rock Master plan area and does not require any additional infrastructure.

Required Fire Flow

Fire flow demands for the potable water distribution system were calculated using the 2018 International Fire Code for one- and two-family dwelling between 3,601 ft^2 and 4,800 ft^2

The minimum fire flow (2-hour duration) for any newly developed area is:

one- and two-family dwelling unit = 1,750 gpm.

The standalone single family lots and duplex lots will have traditional fire protection with flows provided by proposed hydrants located in the street right-of-way.

A signed Fire Flow Confirmation from Castle Rock Fire and Rescue is included in the Appendix.

Land Dedication Requirements

The proposed water distribution system for Phases 3, 4, and 5 will be located within the dedicated street rights-of-way or within utility easements.

PROPOSED WATER SYSTEM ANALYSIS AND MODELING

Hydraulic Models

Per *Town of Castle Rock Water System Design Criteria Manual,* a hydraulic analysis is required to analyze the hydraulic conditions of all proposed water mains. The proposed water infrastructure was analyzed using *WaterCAD* software. Reservoirs representing connections to the existing water main were utilized as the source for the distribution system. Junctions were used at all connections points. Additional nodes were added at each hydrant location throughout the site. The demands for each node were calculated from the demand spreadsheet and divided evenly throughout the site. Per *Town of Castle Rock Water System Design Criteria Manual,* a Hazen Williams C-Factor of 120 was used.

Hydraulic Modeling Scenarios

The following scenarios were used in accordance with *Town of Castle Rock Water System Design Criteria Manual,* to analyze proposed water infrastructure for Phases 3, 4 and 5:

- Minimum Static pressure with zero demand at 20% tank storage.
- Maximum Static pressure with zero demand at 100% tank storage.
- Minimum dynamic pressure (20% tank storage) with residential and irrigation demand Maximum Day Demand plus fire flow with closed pipes in looped system.
- Minimum dynamic pressure (20% tank storage) with residential and irrigation Peak Hour Demand.
- A redundancy Scenario where one connection was isolated. This was run for the 20% Peak Hour Demand scenario and the Average Day Demand + Fire Flow Scenario(s).

Hydraulic Modeling Output and Required Schematics shown within **Appendix C**.

Please refer to **Appendix C** for model output tables.

Required Fire Flow Results

The fire flow analysis was performed at junctions J12 and J13, J17, and J30 using a fire flow rate of 1,750 gpm total - in addition to maximum daily demand. In the J12 & J13 fire-flow scenario, the required 1,750 gpm fire flow was modeled as a split demand of 1,500 gpm at J12 and 270 gpm at J13 due to the close proximity of the hydrants. To confirm system redundancy, the analysis was run with pipes P-28, P-9, P-31, and P-29 taken offline. In all scenarios, available pressures remained at or above 20 psi at hydrants and velocities remained below 15 fps, meeting the Town of Castle Rock's fire flow criteria.

These results are in accordance with minimum standards established in the *Town of Castle Rock Water System Design Criteria Manual.* The fire flow results are shown in Appendix C of this report.

CALCULATED WASTEWATER FLOWS

Average Daily Wastewater Flows

Average Daily Flow (ADF) for each phase was calculated using the design criteria from the ADF Table in Section 4.4.1.1 of the *Town of Castle Rock Wastewater Collection Design Criteria Manual*. The following table shows the ADF for Phases 3, 4 and 5:

Table 5: Average Daily Flow – Phase 3, 4 and 5

Phase	Land Use	Typical ADF/Unit (GPD/Unit)	Typical SFE's/ Unit	Number of Units	AVG Daily Demand (GPD)	AVG Daily Demand (GPM)
3 & 4	Single Family Lots	200	1.00	19	3,800	2.64
3 & 4	Duplex Lots	200	1.00	46	9,200	6.39
5	Townhomes	200	1.00	48	9,600	6.67
Total	-	-	-	113	21,800	15.69

Peaking Factor

Peaking Factor (PF) is calculated based on the equation in Section 4.4.1.2 of the *Town of Castle Rock Wastewater Collection Design Criteria Manual.*

Peak Design Flows

Peak Design Flow (PDF) for Phases 3 & 4 was calculated using the design criteria set forth in Section 4.4.1.3 of the *Town of Castle Rock Wastewater Collection Design Criteria*

Manual. The following table shows the PDF for Phases 3, 4 and 5:

Table 6: Peak Daily Flow – Phase 3, 4 and 5

Phase	Land Use	Typical ADF/Unit (GPD/Unit)	Typical SFE's/Unit	Number of Units	Peaking Factor	Peak Daily Flow (GPD)	Peak Daily Demand (GPM)
3 & 4	Single Family Lots	200	1.00	19	5.0	19,380	13.46
3 & 4	Duplex Lots	200	1.00	46	5.0	46,920	32.58
5	Townhomes	200	1.00	48	5.0	48,960	34.00
Total	-	-	-	113	-	115,260	80.04

PROPOSED WASTEWATER SYSTEM

Proposed Collection System

A proposed 8-inch sanitary sewer main will tie into the existing 8-inch stub at the northwest boundary of Phases 2 and 4 in Grayside Circle. This main will extend northeasterly within Grayside Circle ROW. The main will tie into an existing 8-inch stub located at the northeast intersection of Grayside Circle and Wolfensberger Road. Flows are then conveyed southeast where they ultimately discharge into existing SMH-7696 and are conveyed northeast along Wolfensberger Road in an existing 8-inch main.

Any future development of the existing wastewater infrastructure needed to serve this site is the responsibility of the developer. Future phase 5 flows were accounted for as shown in Table 6 above.

Proposed Wastewater Facilities

There are no lift stations, force mains or pretreatment facilities associated with the development of this site.

Land Dedication Requirements

The entire wastewater system is intended to remain within the street right-of-way or within utility easements and will not need additional land dedications.

PROPOSED WASTEWATER SYSTEM ANALYSIS AND MODELING

Hydraulic Models

Per *Town of Castle Rock Wastewater Collection Design Criteria Manual*, a hydraulic analysis is required to analyze the hydraulic conditions of all proposed wastewater infrastructure. The proposed wastewater infrastructure was analyzed using *Bentley StormCAD* V8I software.

Manholes representing connections to the existing sanitary sewer main were utilized as the source for the distribution system. Flows were entered in a manholes. The loading flow for phase 3 and 4 was entered into manhole EXSSM 4.12 and the total flow from phase 3, 4 and 5 was entered into SSMH 1.7. Per *Town of Castle Rock Wastewater Collection Design Criteria Manual*, a Manning's "n" value coefficient of 0.011 was used.

Hydraulic Modeling Scenarios

The following scenarios were used in accordance with the *Town of Castle Rock Wastewater Collection Design Criteria Manual* to analyze wastewater infrastructure for Phase 3, 4 and 5:

- Average Daily flows (ADF) with inflows input into the model.
- Peak Daily Flow (PDF) also with inflows into the model.

Hydraulic Modeling Output and Required Schematics

Please refer to Appendix E for model output tables.

POTENTIAL SUBDIVISION IMPROVMENTS AGREEMENT (SIA) ITEMS

There are no known improvement agreements for these phases.

POTENTIAL PERMITTING REQUIREMENTS

There are no known permitting issues.

Disclaimer:

Castle Rock Water is not responsible or liable for assumptions made by the developer regarding utility information associated with the proposed development. Also see "Indemnification Statement" in Section 3.7.2 of the *Town of Castle Rock Water System Design Criteria Manual.*

REFERENCES

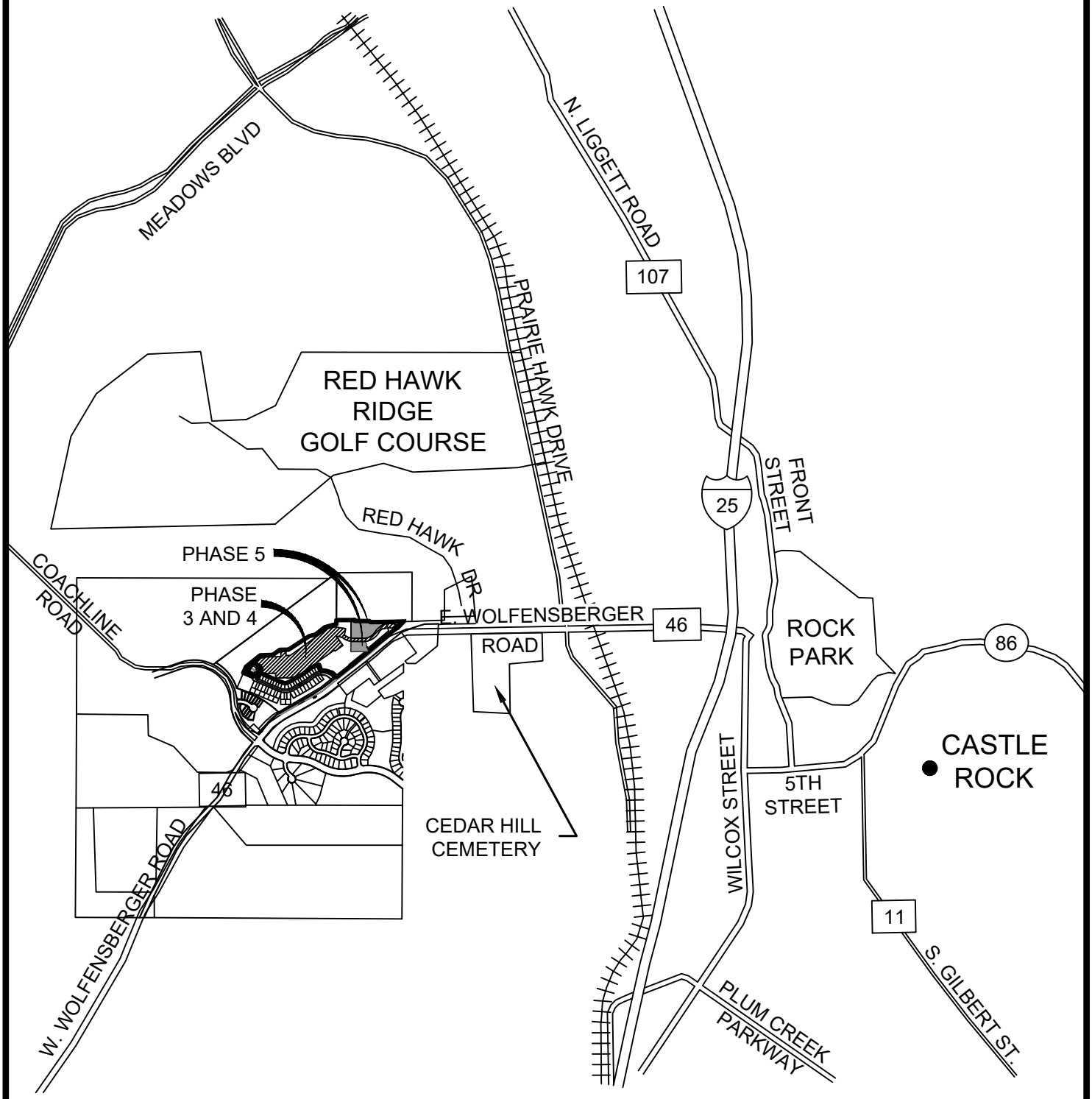
1) **Town of Castle Rock Water System Design Criteria Manual**, Castle Rock, Colorado, Revised December 2018.

2) **Town of Castle Rock Wastewater Collection Design Criteria Manual**, Castle Rock, Colorado, Revised December 2018.

3) **2023 Water Master Plan Update**, March 2011.

4) **2012 Wastewater Master Plan Update**, March 2011.

Appendix A - Vicinity Map



VICINITY MAP
HILLSIDE PHASE 3, 4, AND 5
JOB NO. 1619020
9/20/2024
SHEET 1 OF 1

J·R ENGINEERING
A Westrian Company

Centennial 303-740-9393 • Colorado Springs 719-593-2593
Fort Collins 970-491-9888 • www.jrengineering.com

Appendix B - Water Demand & Storage

Domestic - Demand Calculations

Project: HILLSIDE AT CASTLE ROCK
Section: PHASE 3, 4 and 5 - UTILITY REPORT

Created By: DSI DATE: 2/16/2026
Checked By: ARJ DATE: 2/16/2026

Site	Conceptual Land Use	Area (Acres)	Typical Average Day Flow (GPD/UNIT) (GPD/Acre)	Typical (SFE's/Unit)	Number of Units	Average Day Demand (GPD)	Average Day Demand (GPM)	Max Day Demand (GPD)	Max Day Demand (GPM)	Peak Hour Demand (GPD)	Peak Hour Demand (GPM)	Average Annual Supply (ac-ft/yr)
Phase 3 & 4	Single Family Lot	-	400	1	19	7,600	5	19,000	13	41,800	29	9
Phase 3 & 4	Duplex Lot	-	400	1	46	18,400	13	46,000	32	101,200	70	21
Phase 3 & 4	Irrigation Zone 2	1.02	-	-	-	17,280	12	17,280	12	17,280	12	1.0
Phase 5	Town Homes	-	400	1.00	48	19,200	13	48,000	33	105,600	73	22
Phase 5	Irrigation Zone 2	2.40	-	-	-	41,472	29	41,472	29	41,472	29	2.4
Total	-	3.42	-	-	113	103,952	72	171,752	119	307,352	213	54

Notes:

1 All tabulated ADD rates include irrigation demands with the exception of multi-family residential per Town of Castle Rock Water System 2018 Criteria Manual
2 Max Day Factor = 2.5
3 Peak Day Factor= 5.5
4 Fire Flow= 1,750 gpm (2 Hour)
5 Irrigation Peak Hour Demand provided by Irrigation designer
6 Storage Requirements:

Storage Volume = Max Day Demand (MG) + 2 Hour Fire Flow = 171,752 gallons + 210,000.00 = 381,752 gallons

7 All ADD rates taken from Table in section 4.4.1 of Town of Castle Rock Wat Syst. Criteria Manual.

PROJECT NAME: Hillside at Castle Rock - Phase 3, 4, and 5
PROJECT NUMBER: 1619020
DATE: February 16, 2026

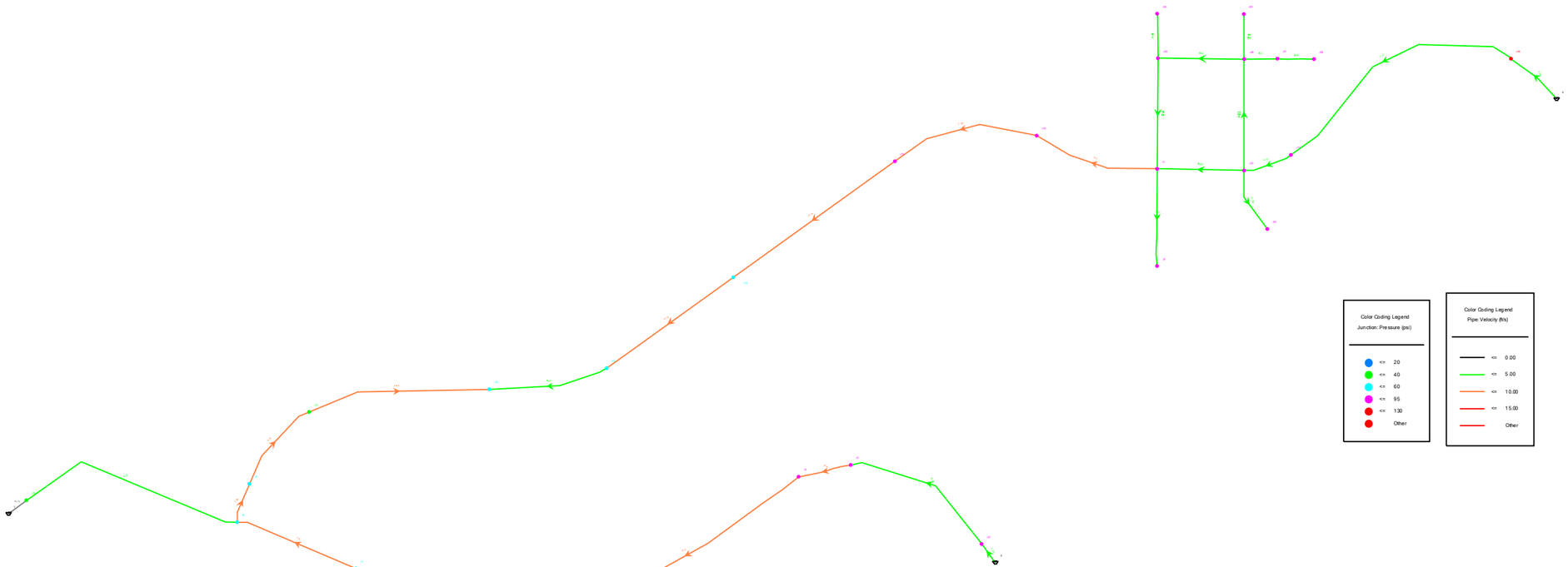
Water System Model Demand Input

Phase	Junction	Residential Units (SFE)	Average Day Demand (ADD)		Max Day Demand (MDD)					Peak Hour Demand (PHD)		
			Average Day Demand (GPD)	Average Day Demand (GPM)	Residential MDD (gpm)	Irrigation MDD (gpm)	Residential MDD + Irrigation ADD	Fireflow (gpm)	Total MDD + FF Demand (gpm)	Residential PHD (gpm)	Irrigation PHD (gpm)	Residential PHD + Irrigation ADD
	J3	3	1200	0.83	2.08	1.37	3.45		3.45	4.58	1.37	5.95
	J4	9	3600	2.50	6.25		6.25		6.25	13.75		13.75
	J5	11	4400	3.06	7.64		7.64		7.64	16.81		16.81
	J6	12	4800	3.33	8.33	2.74	11.07		11.07	18.33	2.74	21.07
	J7	10	4000	2.78	6.94		6.94		6.94	15.28		15.28
	J8	5	2000	1.39	3.47		3.47		3.47	7.64		7.64
	J9	2	800	0.56	1.39		1.39		1.39	3.06		3.06
	J11	2	800	0.56	1.39		1.39		1.39	3.06		3.06
1 & 2	J21	0	0	0.00	0.00		0.00		0.00	0.00		0.00
	J11	4	1600	1.11	2.78	12	14.78		14.78	6.11	12.00	18.11
	J12	13	5200	3.61	9.03		9.03	1500	1509.03	19.86		19.86
	J13	13	5200	3.61	9.03		9.03	250	259.03	19.86		19.86
	J14	15	6000	4.17	10.42		10.42		10.42	22.92		22.92
	J15	12	4800	3.33	8.33		8.33		8.33	18.33		18.33
	J16	8	3200	2.22	5.56		5.56		5.56	12.22		12.22
	J1	0	0	0.00	0.00	29	29.00		29.00	0.00	29.00	29.00
3, 4 and 5	J17	0	0	0.00	0.00		0.00	1750	1750.00	0.00		0.00
	J18	0	0	0.00	0.00		0.00		0.00	0.00		0.00
	J22	0	0	0.00	0.00		0.00		0.00	0.00		0.00
	J24	5	2000	1.39	3.47		3.47		3.47	7.64		7.64
	J25	16	6400	4.44	11.11		11.11		11.11	24.44		24.44
	J26	17	6800	4.72	11.81		11.81		11.81	25.97		25.97
	J30	0	0	0.00	0.00		0.00	1750	1750.00	0.00		0.00
	J2	10	4000	2.78	6.94		6.94		6.94	15.28		15.28
TOTAL	TOTAL	167			109.03	45.11		5250.00	3654.14	255.14	45.11	300.25
	1	2	3	4	5	6	7	8	9			

Note:
Single Family Equivalent (SFE), the Average Day Demand (ADD) is 400 gallons per day (gpd) per dwelling unit
ADD - Average Day Demand
Max Day Demand (MDD)
Peak Hour Demand (PHD)
Typical Average Day Flow 400 (GPD/UNIT)
Max Day Factor 2.5 - MDD=(Domestic ADD×2.5)+Irrigation ADD
Peak Hour Factor 5.5 - PHD=(Domestic ADD×5.5)+Irrigation ADD
J11 was input and the sum from the demands from phase 1 and 2

Appendix C - Water Hydraulic Modeling

Scenario: MDD+FF @ J12 & J13 +20% Res. P-28 OFF



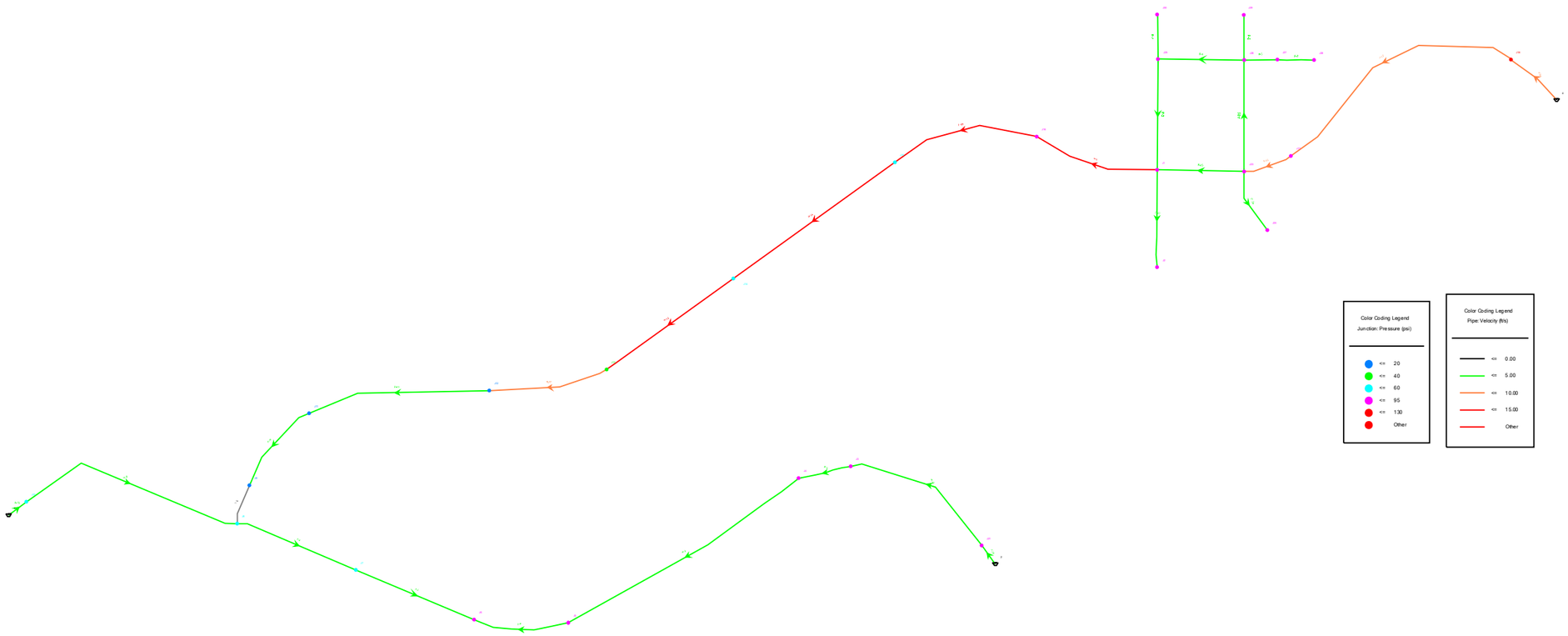
Scenario: MDD+FF @ J12 & J13 +20% Res. P-28 OFF
Current Time Step: 0.000 h
FlexTable: Pipe Table

ID	Label	Length (Scaled) (ft)	Start Node	Stop Node	Diameter (in)	Material	Hazen-Williams C	Has Check Valve?	Minor Loss Coefficient (Local)	Flow (gpm)	Velocity (ft/s)	Headloss Gradient (ft/ft)
101	P-1	203	J16	J1	8.0	PVC	120.0	False	0.000	-986	6.29	0.021
105	P-15	240	J15	J16	8.0	PVC	120.0	False	0.000	-980	6.26	0.020
106	P-14	315	J14	J15	8.0	PVC	120.0	False	0.000	-972	6.20	0.020
84	P-13	246	J13	J14	8.0	PVC	120.0	False	0.000	-961	6.14	0.020
94	P-2	84	J3	J4	8.0	PVC	120.0	False	0.000	860	5.49	0.016
93	P-3	431	J4	J5	8.0	PVC	120.0	False	0.000	853	5.45	0.016
92	P-4	152	J5	J6	8.0	PVC	120.0	False	0.000	846	5.40	0.016
91	P-5	203	J6	J7	8.0	PVC	120.0	False	0.000	835	5.33	0.015
90	P-6	203	J7	J8	8.0	PVC	120.0	False	0.000	828	5.28	0.015
88	P-9	65	J8	J9	8.0	PVC	120.0	False	0.000	824	5.26	0.015
87	P-10	151	J9	J11	8.0	PVC	120.0	False	0.000	823	5.25	0.015
86	P-11	291	J11	J12	8.0	PVC	120.0	False	0.000	807	5.15	0.014
85	P-12	191	J12	J13	8.0	PVC	120.0	False	0.000	-702	4.48	0.011
95	P-31	97	4	J18	12.0	PVC	120.0	False	0.000	1,048	2.97	0.003
104	P-17	424	J17	J18	12.0	PVC	120.0	False	0.000	-1,048	2.97	0.003
119	P-33	80	J23	J17	12.0	PVC	120.0	False	0.000	-1,048	2.97	0.003
118	P-16	137	J1	J23	12.0	PVC	120.0	False	0.000	-880	2.50	0.002
97	P-29	37	2	J21	12.0	PVC	120.0	False	0.000	863	2.45	0.002
103	P-20	258	J21	J3	12.0	PVC	120.0	False	0.000	863	2.45	0.002
159	P-35	176	J26	J23	8.0	PVC	120.0	False	0.000	-164	1.05	0.001
130	P-4	136	J25	J26	8.0	PVC	120.0	False	0.000	-152	0.97	0.001
129	P-3	175	J25	J1	8.0	PVC	120.0	False	0.000	141	0.90	0.001
99	P-27	154	J2	J1	8.0	PVC	120.0	False	0.000	-7	0.04	0.000
127	P-34	105	J23	J24	8.0	PVC	120.0	False	0.000	3	0.02	0.000
131	P-5	52	J26	J27	8.0	PVC	120.0	False	0.000	0	0.00	0.000
135	P-8	71	J26	J29	8.0	PVC	120.0	False	0.000	0	0.00	0.000
134	P-7	58	J27	J28	8.0	PVC	120.0	False	0.000	0	0.00	0.000
89	P-7	371	J8	J10	8.0	PVC	120.0	False	0.000	0	0.00	0.000
136	P-9	70	J25	J30	8.0	PVC	120.0	False	0.000	0	0.00	0.000
98	P-28	35	1	J10	8.0	PVC	120.0	False	0.000	(N/A)	(N/A)	(N/A)

Scenario: MDD+FF @ J12 & J13 +20% Res. P-28 OFF
Current Time Step: 0.000 h
FlexTable: Pipe Table

ID	Label	Length (Scaled) (ft)	Start Node	Stop Node	Diameter (in)	Material	Hazen-Williams C	Has Check Valve?	Minor Loss Coefficient (Local)	Flow (gpm)	Velocity (ft/s)	Headloss Gradient (ft/ft)
101	P-1	203	J16	J1	8.0	PVC	120.0	False	0.000	-986	6.29	0.021
105	P-15	240	J15	J16	8.0	PVC	120.0	False	0.000	-980	6.26	0.020
106	P-14	315	J14	J15	8.0	PVC	120.0	False	0.000	-972	6.20	0.020
84	P-13	246	J13	J14	8.0	PVC	120.0	False	0.000	-961	6.14	0.020
94	P-2	84	J3	J4	8.0	PVC	120.0	False	0.000	860	5.49	0.016
93	P-3	431	J4	J5	8.0	PVC	120.0	False	0.000	853	5.45	0.016
92	P-4	152	J5	J6	8.0	PVC	120.0	False	0.000	846	5.40	0.016
91	P-5	203	J6	J7	8.0	PVC	120.0	False	0.000	835	5.33	0.015
90	P-6	203	J7	J8	8.0	PVC	120.0	False	0.000	828	5.28	0.015
88	P-9	65	J8	J9	8.0	PVC	120.0	False	0.000	824	5.26	0.015
87	P-10	151	J9	J11	8.0	PVC	120.0	False	0.000	823	5.25	0.015
86	P-11	291	J11	J12	8.0	PVC	120.0	False	0.000	807	5.15	0.014
85	P-12	191	J12	J13	8.0	PVC	120.0	False	0.000	-702	4.48	0.011
95	P-31	97	4	J18	12.0	PVC	120.0	False	0.000	1,048	2.97	0.003
104	P-17	424	J17	J18	12.0	PVC	120.0	False	0.000	-1,048	2.97	0.003
119	P-33	80	J23	J17	12.0	PVC	120.0	False	0.000	-1,048	2.97	0.003
118	P-16	137	J1	J23	12.0	PVC	120.0	False	0.000	-880	2.50	0.002
97	P-29	37	2	J21	12.0	PVC	120.0	False	0.000	863	2.45	0.002
103	P-20	258	J21	J3	12.0	PVC	120.0	False	0.000	863	2.45	0.002
159	P-35	176	J26	J23	8.0	PVC	120.0	False	0.000	-164	1.05	0.001
130	P-4	136	J25	J26	8.0	PVC	120.0	False	0.000	-152	0.97	0.001
129	P-3	175	J25	J1	8.0	PVC	120.0	False	0.000	141	0.90	0.001
99	P-27	154	J2	J1	8.0	PVC	120.0	False	0.000	-7	0.04	0.000
127	P-34	105	J23	J24	8.0	PVC	120.0	False	0.000	3	0.02	0.000
131	P-5	52	J26	J27	8.0	PVC	120.0	False	0.000	0	0.00	0.000
135	P-8	71	J26	J29	8.0	PVC	120.0	False	0.000	0	0.00	0.000
134	P-7	58	J27	J28	8.0	PVC	120.0	False	0.000	0	0.00	0.000
89	P-7	371	J8	J10	8.0	PVC	120.0	False	0.000	0	0.00	0.000
136	P-9	70	J25	J30	8.0	PVC	120.0	False	0.000	0	0.00	0.000
98	P-28	35	1	J10	8.0	PVC	120.0	False	0.000	(N/A)	(N/A)	(N/A)

Scenario: MDD+FF @ J12 & J13 +20% Res. P-9 OFF



Scenario: MDD+FF @ J12 & J13 +20% Res. P-9 OFF
Current Time Step: 0.000 h
FlexTable: Pipe Table

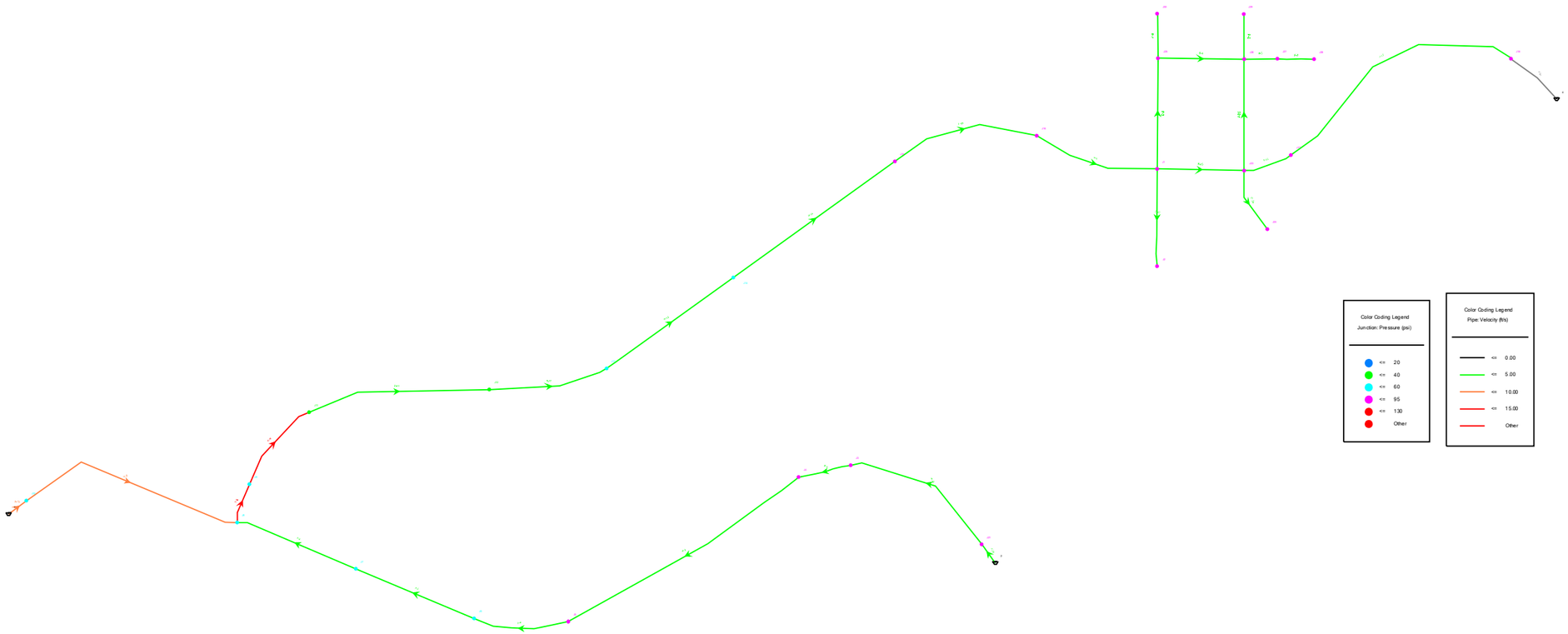
ID	Label	Length (Scaled) (ft)	Start Node	Stop Node	Diameter (in)	Material	Hazen-Williams C	Has Check Valve?	Minor Loss Coefficient (Local)	Flow (gpm)	Velocity (ft/s)	Headloss Gradient (ft/ft)
101	P-1	203	J16	J1	8.0	PVC	120.0	False	0.000	-1,810	11.55	0.064
105	P-15	240	J15	J16	8.0	PVC	120.0	False	0.000	-1,804	11.52	0.063
106	P-14	315	J14	J15	8.0	PVC	120.0	False	0.000	-1,796	11.46	0.063
84	P-13	246	J13	J14	8.0	PVC	120.0	False	0.000	-1,786	11.40	0.062
85	P-12	191	J12	J13	8.0	PVC	120.0	False	0.000	-1,527	9.74	0.046
95	P-31	97	4	J18	12.0	PVC	120.0	False	0.000	1,872	5.31	0.009
104	P-17	424	J17	J18	12.0	PVC	120.0	False	0.000	-1,872	5.31	0.009
119	P-33	80	J23	J17	12.0	PVC	120.0	False	0.000	-1,872	5.31	0.009
118	P-16	137	J1	J23	12.0	PVC	120.0	False	0.000	-1,583	4.49	0.007
159	P-35	176	J26	J23	8.0	PVC	120.0	False	0.000	-286	1.83	0.002
130	P-4	136	J25	J26	8.0	PVC	120.0	False	0.000	-274	1.75	0.002
129	P-3	175	J25	J1	8.0	PVC	120.0	False	0.000	263	1.68	0.002
94	P-2	84	J3	J4	8.0	PVC	120.0	False	0.000	20	0.13	0.000
86	P-11	291	J11	J12	8.0	PVC	120.0	False	0.000	-18	0.11	0.000
89	P-7	371	J8	J10	8.0	PVC	120.0	False	0.000	-16	0.10	0.000
98	P-28	35	1	J10	8.0	PVC	120.0	False	0.000	16	0.10	0.000
93	P-3	431	J4	J5	8.0	PVC	120.0	False	0.000	13	0.09	0.000
90	P-6	203	J7	J8	8.0	PVC	120.0	False	0.000	-12	0.08	0.000
97	P-29	37	2	J21	12.0	PVC	120.0	False	0.000	23	0.07	0.000
103	P-20	258	J21	J3	12.0	PVC	120.0	False	0.000	23	0.07	0.000
99	P-27	154	J2	J1	8.0	PVC	120.0	False	0.000	-7	0.04	0.000
92	P-4	152	J5	J6	8.0	PVC	120.0	False	0.000	6	0.04	0.000
91	P-5	203	J6	J7	8.0	PVC	120.0	False	0.000	-5	0.03	0.000
127	P-34	105	J23	J24	8.0	PVC	120.0	False	0.000	3	0.02	0.000
87	P-10	151	J9	J11	8.0	PVC	120.0	False	0.000	-1	0.01	0.000
136	P-9	70	J25	J30	8.0	PVC	120.0	False	0.000	0	0.00	0.000
131	P-5	52	J26	J27	8.0	PVC	120.0	False	0.000	0	0.00	0.000
135	P-8	71	J26	J29	8.0	PVC	120.0	False	0.000	0	0.00	0.000
134	P-7	58	J27	J28	8.0	PVC	120.0	False	0.000	0	0.00	0.000
88	P-9	65	J8	J9	8.0	PVC	120.0	False	0.000	(N/A)	(N/A)	(N/A)

C:\Users\Resources\DC\ACCDocs\JR Engineering\1619020\Project Files\WaterCAD\169020 WaterCAD model.wtg

Scenario: MDD+FF @ J12 & J13 +20% Res. P-9 OFF
Current Time Step: 0.000 h
FlexTable: Junction Table

ID	Label	Elevation (ft)	Zone	Demand Collection	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
64	J18	6,268.41	<None>	<Collection: 1 item>	0	6,502.69	102
65	J17	6,291.74	<None>	<Collection: 1 item>	0	6,498.70	90
126	J28	6,295.23	<None>	<Collection: 0 items>	0	6,497.59	88
117	J23	6,296.53	<None>	<Collection: 0 items>	0	6,497.95	87
125	J27	6,298.31	<None>	<Collection: 0 items>	0	6,497.59	86
122	J24	6,298.82	<None>	<Collection: 1 item>	3	6,497.95	86
121	J26	6,301.69	<None>	<Collection: 1 item>	12	6,497.59	85
123	J29	6,303.60	<None>	<Collection: 0 items>	0	6,497.59	84
61	J1	6,304.87	<None>	<Collection: 1 item>	29	6,497.01	83
63	J21	6,313.36	<None>	<Collection: 1 item>	0	6,503.60	82
60	J2	6,306.83	<None>	<Collection: 1 item>	7	6,497.01	82
120	J25	6,308.36	<None>	<Collection: 1 item>	11	6,497.32	82
124	J30	6,310.79	<None>	<Collection: 1 item>	0	6,497.32	81
79	J3	6,323.80	<None>	<Collection: 1 item>	3	6,503.60	78
66	J16	6,318.57	<None>	<Collection: 1 item>	6	6,484.13	72
78	J4	6,338.78	<None>	<Collection: 1 item>	6	6,503.60	71
77	J5	6,354.66	<None>	<Collection: 1 item>	8	6,503.59	65
76	J6	6,363.90	<None>	<Collection: 1 item>	11	6,503.59	61
67	J15	6,333.28	<None>	<Collection: 1 item>	8	6,468.97	59
75	J7	6,376.09	<None>	<Collection: 1 item>	7	6,503.59	55
74	J8	6,386.48	<None>	<Collection: 1 item>	3	6,503.60	51
72	J10	6,398.60	<None>	<Collection: 0 items>	0	6,503.60	45
68	J14	6,352.23	<None>	<Collection: 1 item>	10	6,449.22	42
69	J13	6,367.15	<None>	<Collection: 1 item>	259	6,433.97	29
70	J12	6,379.86	<None>	<Collection: 1 item>	1,509	6,425.10	20
73	J9	6,388.90	<None>	<Collection: 1 item>	1	6,425.10	16
71	J11	6,393.15	<None>	<Collection: 1 item>	16	6,425.10	14

Scenario: MDD+FF @ J12 & J13 +20% Res. P-31 OFF



Scenario: MDD+FF @ J12 & J13 +20% Res. P-31 OFF
Current Time Step: 0.000 h
FlexTable: Pipe Table

ID	Label	Length (Scaled) (ft)	Start Node	Stop Node	Diameter (in)	Material	Hazen-Williams C	Has Check Valve?	Minor Loss Coefficient (Local)	Flow (gpm)	Velocity (ft/s)	Headloss Gradient (ft/ft)
88	P-9	65	J8	J9	8.0	PVC	120.0	False	0.000	1,872	11.95	0.068
87	P-10	151	J9	J11	8.0	PVC	120.0	False	0.000	1,871	11.94	0.068
89	P-7	371	J8	J10	8.0	PVC	120.0	False	0.000	-1,218	7.77	0.031
98	P-28	35	1	J10	8.0	PVC	120.0	False	0.000	1,218	7.77	0.031
103	P-20	258	J21	J3	12.0	PVC	120.0	False	0.000	693	4.42	0.011
94	P-2	84	J3	J4	8.0	PVC	120.0	False	0.000	690	4.40	0.011
93	P-3	431	J4	J5	8.0	PVC	120.0	False	0.000	684	4.36	0.010
92	P-4	152	J5	J6	8.0	PVC	120.0	False	0.000	676	4.31	0.010
91	P-5	203	J6	J7	8.0	PVC	120.0	False	0.000	665	4.24	0.010
90	P-6	203	J7	J8	8.0	PVC	120.0	False	0.000	658	4.20	0.010
97	P-29	37	2	J21	12.0	PVC	120.0	False	0.000	693	2.83	0.004
86	P-11	291	J11	J12	8.0	PVC	120.0	False	0.000	105	0.67	0.000
85	P-12	191	J12	J13	8.0	PVC	120.0	False	0.000	96	0.61	0.000
84	P-13	246	J13	J14	8.0	PVC	120.0	False	0.000	87	0.55	0.000
106	P-14	315	J14	J15	8.0	PVC	120.0	False	0.000	76	0.49	0.000
105	P-15	240	J15	J16	8.0	PVC	120.0	False	0.000	68	0.43	0.000
101	P-1	203	J16	J1	8.0	PVC	120.0	False	0.000	62	0.40	0.000
129	P-3	175	J25	J1	8.0	PVC	120.0	False	0.000	-14	0.09	0.000
118	P-16	137	J1	J23	12.0	PVC	120.0	False	0.000	12	0.08	0.000
159	P-35	176	J26	J23	8.0	PVC	120.0	False	0.000	-12	0.08	0.000
99	P-27	154	J2	J1	8.0	PVC	120.0	False	0.000	-7	0.04	0.000
127	P-34	105	J23	J24	8.0	PVC	120.0	False	0.000	3	0.02	0.000
130	P-4	136	J25	J26	8.0	PVC	120.0	False	0.000	3	0.02	0.000
135	P-8	71	J26	J29	8.0	PVC	120.0	False	0.000	0	0.00	0.000
131	P-5	52	J26	J27	8.0	PVC	120.0	False	0.000	0	0.00	0.000
136	P-9	70	J25	J30	8.0	PVC	120.0	False	0.000	0	0.00	0.000
104	P-17	424	J17	J18	12.0	PVC	120.0	False	0.000	0	0.00	0.000
119	P-33	80	J23	J17	12.0	PVC	120.0	False	0.000	0	0.00	0.000
134	P-7	58	J27	J28	8.0	PVC	120.0	False	0.000	0	0.00	0.000
95	P-31	97	4	J18	12.0	PVC	120.0	False	0.000	(N/A)	(N/A)	(N/A)

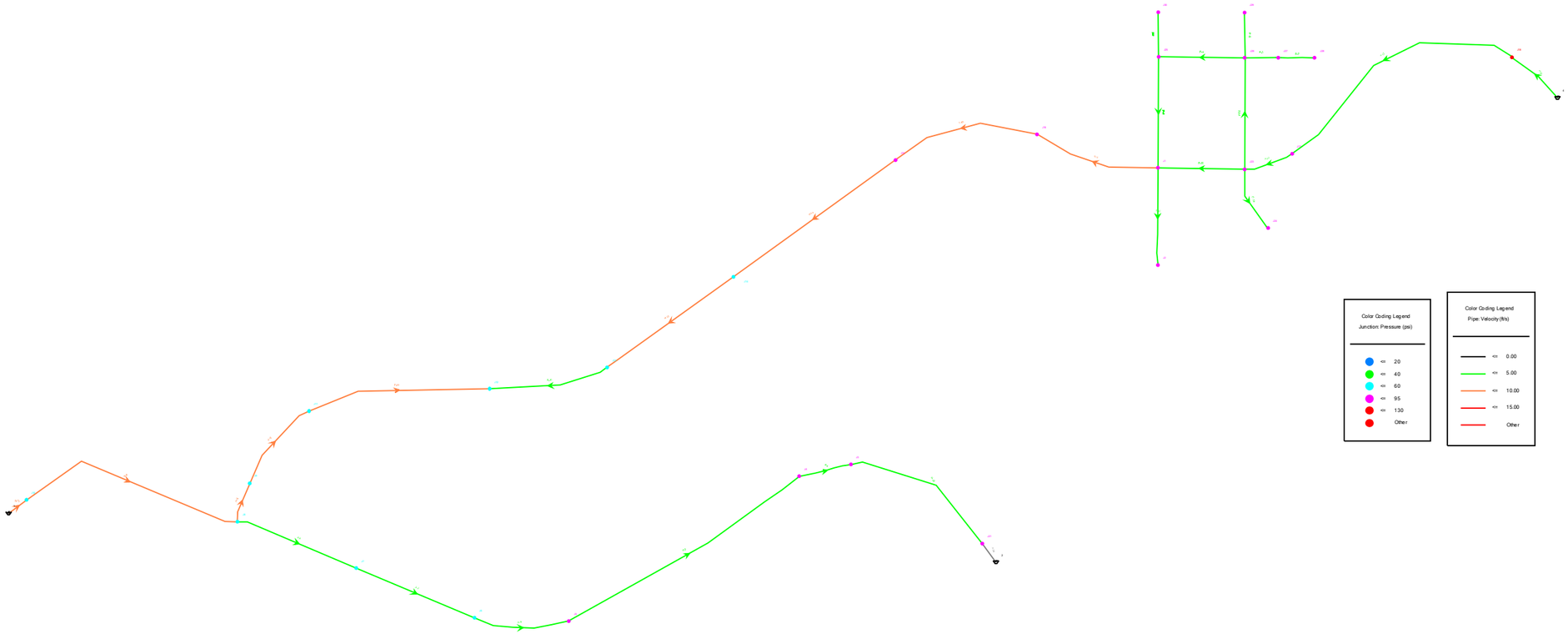
C:\Users\Resources\DC\ACCDocs\JR Engineering\1619020\Project Files\WaterCAD\169020 WaterCAD model.wtg

Scenario: MDD+FF @ J12 & J13 +20% Res. P-31 OFF
Current Time Step: 0.000 h
FlexTable: Junction Table

ID	Label	Elevation (ft)	Zone	Demand Collection	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
64	J18	6,268.41	<None>	<Collection: 1 item>	0	6,474.84	89
63	J21	6,313.36	<None>	<Collection: 1 item>	0	6,503.47	82
79	J3	6,323.80	<None>	<Collection: 1 item>	3	6,502.04	80
65	J17	6,291.74	<None>	<Collection: 1 item>	0	6,474.84	79
126	J28	6,295.23	<None>	<Collection: 0 items>	0	6,474.84	78
117	J23	6,296.53	<None>	<Collection: 0 items>	0	6,474.84	78
125	J27	6,298.31	<None>	<Collection: 0 items>	0	6,474.84	76
122	J24	6,298.82	<None>	<Collection: 1 item>	3	6,474.84	76
121	J26	6,301.69	<None>	<Collection: 1 item>	12	6,474.84	75
123	J29	6,303.60	<None>	<Collection: 0 items>	0	6,474.84	74
61	J1	6,304.87	<None>	<Collection: 1 item>	29	6,474.84	74
60	J2	6,306.83	<None>	<Collection: 1 item>	7	6,474.84	73
120	J25	6,308.36	<None>	<Collection: 1 item>	11	6,474.84	72
124	J30	6,310.79	<None>	<Collection: 1 item>	0	6,474.84	71
78	J4	6,338.78	<None>	<Collection: 1 item>	6	6,499.81	70
66	J16	6,318.57	<None>	<Collection: 1 item>	6	6,474.86	68
67	J15	6,333.28	<None>	<Collection: 1 item>	8	6,474.90	62
77	J5	6,354.66	<None>	<Collection: 1 item>	8	6,495.31	61
76	J6	6,363.90	<None>	<Collection: 1 item>	11	6,493.74	56
68	J14	6,352.23	<None>	<Collection: 1 item>	10	6,474.96	54
75	J7	6,376.09	<None>	<Collection: 1 item>	7	6,491.73	50
74	J8	6,386.48	<None>	<Collection: 1 item>	3	6,489.75	45
72	J10	6,398.60	<None>	<Collection: 0 items>	0	6,501.09	44
69	J13	6,367.15	<None>	<Collection: 1 item>	9	6,475.02	42
73	J9	6,388.90	<None>	<Collection: 1 item>	1	6,485.38	42
70	J12	6,379.86	<None>	<Collection: 1 item>	9	6,475.09	40
71	J11	6,393.15	<None>	<Collection: 1 item>	1,766	6,475.15	36

C:\Users\Resources\DC\ACCDocs\JR Engineering\1619020\Project Files\WaterCAD\169020 WaterCAD model.wtg

Scenario: MDD+FF @ J12 & J13 +20% Res. P-29 OFF



Scenario: MDD+FF @ J12 & J13 +20% Res. P-29 OFF
Current Time Step: 0.000 h
FlexTable: Pipe Table

ID	Label	Length (Scaled) (ft)	Start Node	Stop Node	Diameter (in)	Material	Hazen-Williams C	Has Check Valve?	Minor Loss Coefficient (Local)	Flow (gpm)	Velocity (ft/s)	Headloss Gradient (ft/ft)
89	P-7	371	J8	J10	8.0	PVC	120.0	False	0.000	-1,000	6.39	0.021
98	P-28	35	1	J10	8.0	PVC	120.0	False	0.000	1,000	6.39	0.021
88	P-9	65	J8	J9	8.0	PVC	120.0	False	0.000	962	6.14	0.020
87	P-10	151	J9	J11	8.0	PVC	120.0	False	0.000	960	6.13	0.020
86	P-11	291	J11	J12	8.0	PVC	120.0	False	0.000	944	6.03	0.019
101	P-1	203	J16	J1	8.0	PVC	120.0	False	0.000	-848	5.41	0.016
105	P-15	240	J15	J16	8.0	PVC	120.0	False	0.000	-843	5.38	0.015
106	P-14	315	J14	J15	8.0	PVC	120.0	False	0.000	-834	5.33	0.015
84	P-13	246	J13	J14	8.0	PVC	120.0	False	0.000	-824	5.26	0.015
85	P-12	191	J12	J13	8.0	PVC	120.0	False	0.000	-565	3.61	0.007
95	P-31	97	4	J18	12.0	PVC	120.0	False	0.000	911	2.58	0.002
104	P-17	424	J17	J18	12.0	PVC	120.0	False	0.000	-911	2.58	0.002
119	P-33	80	J23	J17	12.0	PVC	120.0	False	0.000	-911	2.58	0.002
118	P-16	137	J1	J23	12.0	PVC	120.0	False	0.000	-763	2.17	0.002
159	P-35	176	J26	J23	8.0	PVC	120.0	False	0.000	-144	0.92	0.001
130	P-4	136	J25	J26	8.0	PVC	120.0	False	0.000	-132	0.84	0.000
129	P-3	175	J25	J1	8.0	PVC	120.0	False	0.000	121	0.77	0.000
90	P-6	203	J7	J8	8.0	PVC	120.0	False	0.000	-35	0.23	0.000
91	P-5	203	J6	J7	8.0	PVC	120.0	False	0.000	-28	0.18	0.000
92	P-4	152	J5	J6	8.0	PVC	120.0	False	0.000	-17	0.11	0.000
93	P-3	431	J4	J5	8.0	PVC	120.0	False	0.000	-10	0.06	0.000
99	P-27	154	J2	J1	8.0	PVC	120.0	False	0.000	-7	0.04	0.000
127	P-34	105	J23	J24	8.0	PVC	120.0	False	0.000	3	0.02	0.000
94	P-2	84	J3	J4	8.0	PVC	120.0	False	0.000	-3	0.02	0.000
136	P-9	70	J25	J30	8.0	PVC	120.0	False	0.000	0	0.00	0.000
131	P-5	52	J26	J27	8.0	PVC	120.0	False	0.000	0	0.00	0.000
134	P-7	58	J27	J28	8.0	PVC	120.0	False	0.000	0	0.00	0.000
135	P-8	71	J26	J29	8.0	PVC	120.0	False	0.000	0	0.00	0.000
103	P-20	258	J21	J3	12.0	PVC	120.0	False	0.000	0	0.00	0.000
97	P-29	37	2	J21	12.0	PVC	120.0	False	0.000	(N/A)	(N/A)	(N/A)

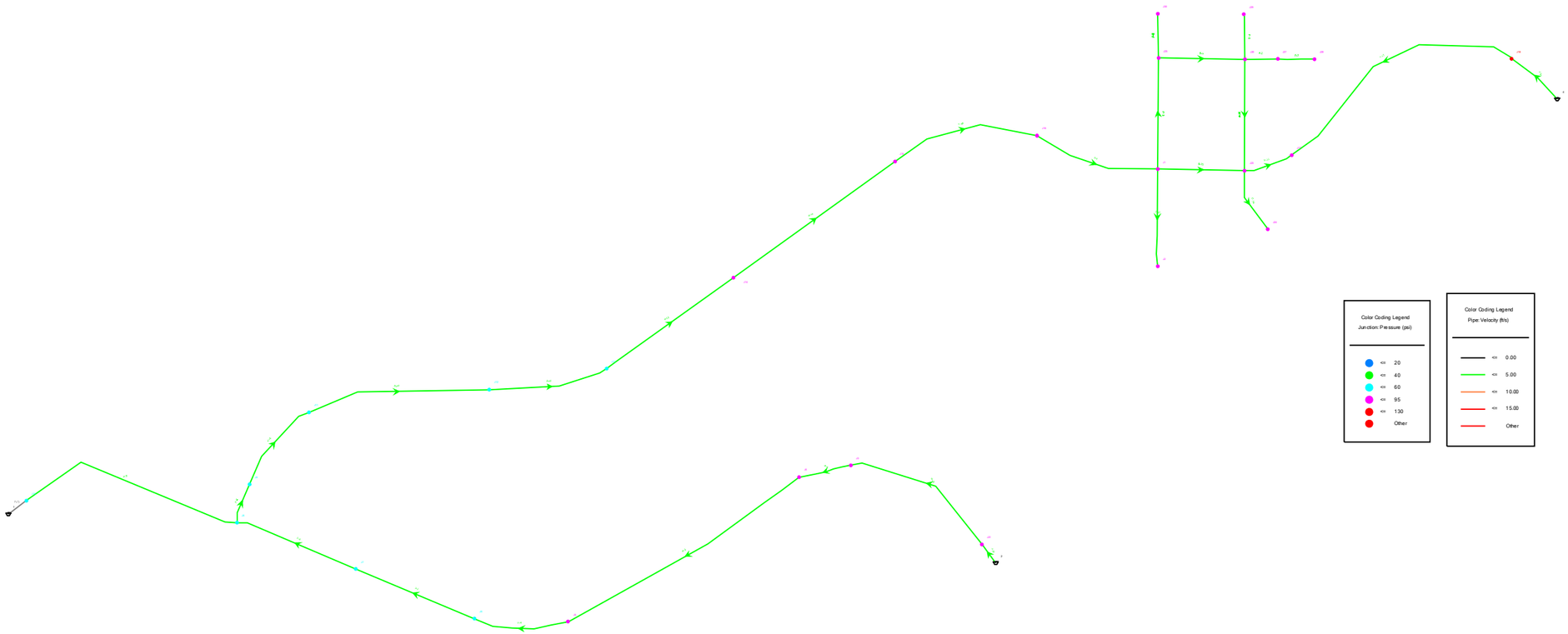
C:\Users\Resources\DC\ACCDocs\JR Engineering\1619020\Project Files\WaterCAD\169020 WaterCAD model.wtg

Scenario: MDD+FF @ J12 & J13 +20% Res. P-29 OFF
Current Time Step: 0.000 h
FlexTable: Junction Table

ID	Label	Elevation (ft)	Zone	Demand Collection	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
64	J18	6,268.41	<None>	<Collection: 1 item>	0	6,503.36	102
65	J17	6,291.74	<None>	<Collection: 1 item>	0	6,502.31	91
126	J28	6,295.23	<None>	<Collection: 0 items>	0	6,502.01	90
117	J23	6,296.53	<None>	<Collection: 0 items>	0	6,502.11	89
125	J27	6,298.31	<None>	<Collection: 0 items>	0	6,502.01	88
122	J24	6,298.82	<None>	<Collection: 1 item>	3	6,502.11	88
121	J26	6,301.69	<None>	<Collection: 1 item>	12	6,502.01	87
123	J29	6,303.60	<None>	<Collection: 0 items>	0	6,502.01	86
61	J1	6,304.87	<None>	<Collection: 1 item>	29	6,501.87	85
60	J2	6,306.83	<None>	<Collection: 1 item>	7	6,501.87	85
120	J25	6,308.36	<None>	<Collection: 1 item>	11	6,501.94	84
124	J30	6,310.79	<None>	<Collection: 1 item>	0	6,501.94	83
63	J21	6,313.36	<None>	<Collection: 1 item>	0	6,494.95	79
66	J16	6,318.57	<None>	<Collection: 1 item>	6	6,498.70	78
79	J3	6,323.80	<None>	<Collection: 1 item>	3	6,494.95	74
67	J15	6,333.28	<None>	<Collection: 1 item>	8	6,495.00	70
78	J4	6,338.78	<None>	<Collection: 1 item>	6	6,494.95	68
77	J5	6,354.66	<None>	<Collection: 1 item>	8	6,494.96	61
68	J14	6,352.23	<None>	<Collection: 1 item>	10	6,490.23	60
76	J6	6,363.90	<None>	<Collection: 1 item>	11	6,494.96	57
69	J13	6,367.15	<None>	<Collection: 1 item>	259	6,486.59	52
75	J7	6,376.09	<None>	<Collection: 1 item>	7	6,494.96	52
74	J8	6,386.48	<None>	<Collection: 1 item>	3	6,494.97	47
70	J12	6,379.86	<None>	<Collection: 1 item>	1,509	6,485.18	46
73	J9	6,388.90	<None>	<Collection: 1 item>	1	6,493.70	45
72	J10	6,398.60	<None>	<Collection: 0 items>	0	6,502.85	45
71	J11	6,393.15	<None>	<Collection: 1 item>	16	6,490.73	42

C:\Users\Resources\DC\ACCDocs\JR Engineering\1619020\Project Files\WaterCAD\169020 WaterCAD model.wtg

Scenario: MDD+FF @ J17 +20% Res. P-28 OFF



Scenario: MDD+FF @ J17 +20% Res. P-28 OFF
Current Time Step: 0.000 h
FlexTable: Pipe Table

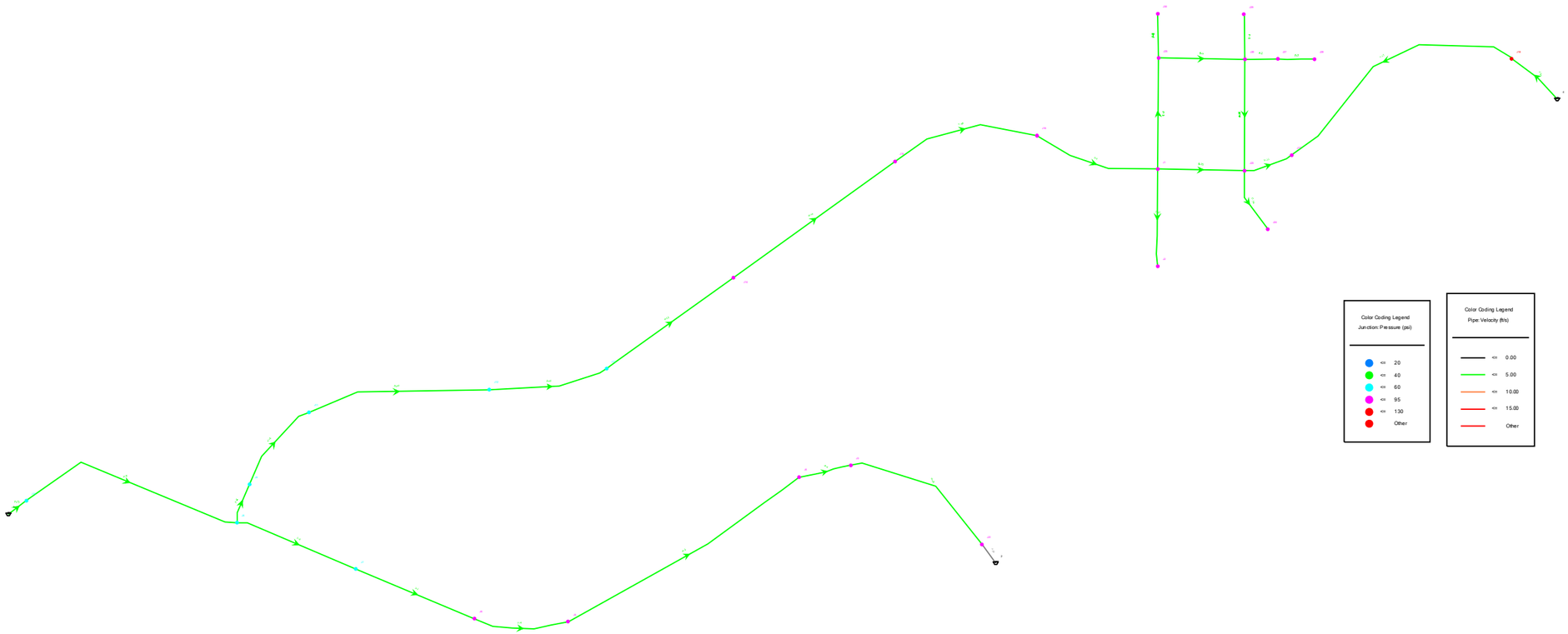
ID	Label	Length (Scaled) (ft)	Start Node	Stop Node	Diameter (in)	Material	Hazen-Williams C	Has Check Valve?	Minor Loss Coefficient (Local)	Flow (gpm)	Velocity (ft/s)	Headloss Gradient (ft/ft)
95	P-31	97	4	J18	12.0	PVC	120.0	False	0.000	1,635	4.64	0.007
104	P-17	424	J17	J18	12.0	PVC	120.0	False	0.000	-1,635	4.64	0.007
94	P-2	84	J3	J4	8.0	PVC	120.0	False	0.000	272	1.74	0.002
93	P-3	431	J4	J5	8.0	PVC	120.0	False	0.000	266	1.70	0.002
92	P-4	152	J5	J6	8.0	PVC	120.0	False	0.000	258	1.65	0.002
91	P-5	203	J6	J7	8.0	PVC	120.0	False	0.000	247	1.58	0.002
90	P-6	203	J7	J8	8.0	PVC	120.0	False	0.000	240	1.53	0.002
88	P-9	65	J8	J9	8.0	PVC	120.0	False	0.000	237	1.51	0.001
87	P-10	151	J9	J11	8.0	PVC	120.0	False	0.000	235	1.50	0.001
86	P-11	291	J11	J12	8.0	PVC	120.0	False	0.000	219	1.40	0.001
85	P-12	191	J12	J13	8.0	PVC	120.0	False	0.000	210	1.34	0.001
84	P-13	246	J13	J14	8.0	PVC	120.0	False	0.000	201	1.28	0.001
106	P-14	315	J14	J15	8.0	PVC	120.0	False	0.000	191	1.22	0.001
105	P-15	240	J15	J16	8.0	PVC	120.0	False	0.000	182	1.16	0.001
101	P-1	203	J16	J1	8.0	PVC	120.0	False	0.000	177	1.13	0.001
97	P-29	37	2	J21	12.0	PVC	120.0	False	0.000	276	0.78	0.000
103	P-20	258	J21	J3	12.0	PVC	120.0	False	0.000	276	0.78	0.000
119	P-33	80	J23	J17	12.0	PVC	120.0	False	0.000	115	0.33	0.000
118	P-16	137	J1	J23	12.0	PVC	120.0	False	0.000	112	0.32	0.000
129	P-3	175	J25	J1	8.0	PVC	120.0	False	0.000	-29	0.18	0.000
130	P-4	136	J25	J26	8.0	PVC	120.0	False	0.000	18	0.11	0.000
99	P-27	154	J2	J1	8.0	PVC	120.0	False	0.000	-7	0.04	0.000
159	P-35	176	J26	J23	8.0	PVC	120.0	False	0.000	6	0.04	0.000
127	P-34	105	J23	J24	8.0	PVC	120.0	False	0.000	3	0.02	0.000
131	P-5	52	J26	J27	8.0	PVC	120.0	False	0.000	0	0.00	0.000
89	P-7	371	J8	J10	8.0	PVC	120.0	False	0.000	0	0.00	0.000
134	P-7	58	J27	J28	8.0	PVC	120.0	False	0.000	0	0.00	0.000
136	P-9	70	J25	J30	8.0	PVC	120.0	False	0.000	0	0.00	0.000
135	P-8	71	J26	J29	8.0	PVC	120.0	False	0.000	0	0.00	0.000
98	P-28	35	1	J10	8.0	PVC	120.0	False	0.000	(N/A)	(N/A)	(N/A)

Scenario: MDD+FF @ J17 +20% Res. P-28 OFF
Current Time Step: 0.000 h
FlexTable: Junction Table

ID	Label	Elevation (ft)	Zone	Demand Collection	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
64	J18	6,268.41	<None>	<Collection: 1 item>	0	6,502.89	102
65	J17	6,291.74	<None>	<Collection: 1 item>	1,750	6,499.79	90
126	J28	6,295.23	<None>	<Collection: 0 items>	0	6,499.79	89
117	J23	6,296.53	<None>	<Collection: 0 items>	0	6,499.79	88
125	J27	6,298.31	<None>	<Collection: 0 items>	0	6,499.79	87
122	J24	6,298.82	<None>	<Collection: 1 item>	3	6,499.79	87
121	J26	6,301.69	<None>	<Collection: 1 item>	12	6,499.79	86
123	J29	6,303.60	<None>	<Collection: 0 items>	0	6,499.79	85
61	J1	6,304.87	<None>	<Collection: 1 item>	29	6,499.80	84
60	J2	6,306.83	<None>	<Collection: 1 item>	7	6,499.80	84
120	J25	6,308.36	<None>	<Collection: 1 item>	11	6,499.80	83
63	J21	6,313.36	<None>	<Collection: 1 item>	0	6,503.59	82
124	J30	6,310.79	<None>	<Collection: 1 item>	0	6,499.80	82
66	J16	6,318.57	<None>	<Collection: 1 item>	6	6,499.97	79
79	J3	6,323.80	<None>	<Collection: 1 item>	3	6,503.52	78
67	J15	6,333.28	<None>	<Collection: 1 item>	8	6,500.19	72
78	J4	6,338.78	<None>	<Collection: 1 item>	6	6,503.36	71
68	J14	6,352.23	<None>	<Collection: 1 item>	10	6,500.50	64
77	J5	6,354.66	<None>	<Collection: 1 item>	8	6,502.58	64
76	J6	6,363.90	<None>	<Collection: 1 item>	11	6,502.31	60
69	J13	6,367.15	<None>	<Collection: 1 item>	9	6,500.77	58
75	J7	6,376.09	<None>	<Collection: 1 item>	7	6,501.99	55
70	J12	6,379.86	<None>	<Collection: 1 item>	9	6,501.00	52
74	J8	6,386.48	<None>	<Collection: 1 item>	3	6,501.68	50
73	J9	6,388.90	<None>	<Collection: 1 item>	1	6,501.59	49
71	J11	6,393.15	<None>	<Collection: 1 item>	16	6,501.37	47
72	J10	6,398.60	<None>	<Collection: 0 items>	0	6,501.68	45

C:\Users\Resources\DC\ACCDocs\JR Engineering\1619020\Project Files\WaterCAD\169020 WaterCAD model.wtg

Scenario: MDD+FF @ J17 +20% Res. P-29 OFF



Scenario: MDD+FF @ J17 +20% Res. P-29 OFF
Current Time Step: 0.000 h
FlexTable: Pipe Table

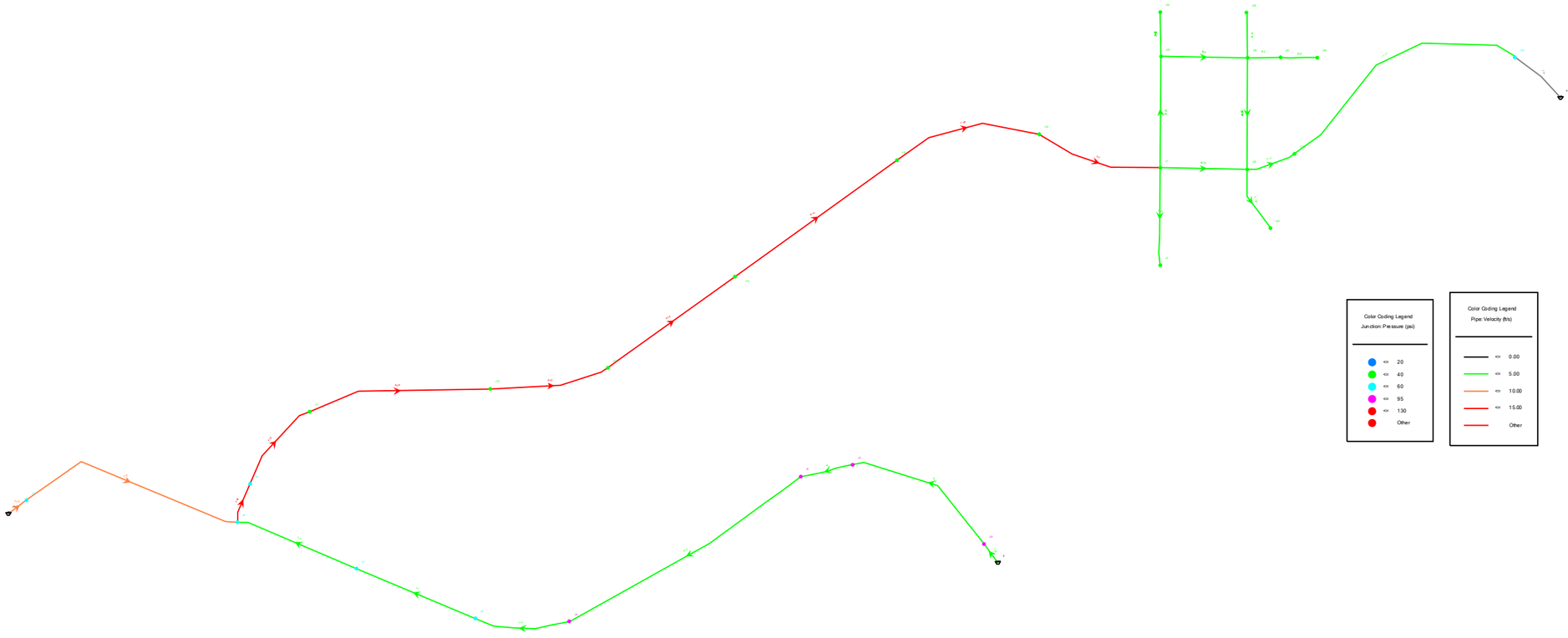
ID	Label	Length (Scaled) (ft)	Start Node	Stop Node	Diameter (in)	Material	Hazen-Williams C	Has Check Valve?	Minor Loss Coefficient (Local)	Flow (gpm)	Velocity (ft/s)	Headloss Gradient (ft/ft)
95	P-31	97	4	J18	12.0	PVC	120.0	False	0.000	1,596	4.53	0.007
104	P-17	424	J17	J18	12.0	PVC	120.0	False	0.000	-1,596	4.53	0.007
89	P-7	371	J8	J10	8.0	PVC	120.0	False	0.000	-315	2.01	0.002
98	P-28	35	1	J10	8.0	PVC	120.0	False	0.000	315	2.01	0.002
88	P-9	65	J8	J9	8.0	PVC	120.0	False	0.000	276	1.76	0.002
87	P-10	151	J9	J11	8.0	PVC	120.0	False	0.000	275	1.75	0.002
86	P-11	291	J11	J12	8.0	PVC	120.0	False	0.000	259	1.65	0.002
85	P-12	191	J12	J13	8.0	PVC	120.0	False	0.000	250	1.59	0.002
84	P-13	246	J13	J14	8.0	PVC	120.0	False	0.000	241	1.54	0.002
106	P-14	315	J14	J15	8.0	PVC	120.0	False	0.000	230	1.47	0.001
105	P-15	240	J15	J16	8.0	PVC	120.0	False	0.000	222	1.42	0.001
101	P-1	203	J16	J1	8.0	PVC	120.0	False	0.000	216	1.38	0.001
119	P-33	80	J23	J17	12.0	PVC	120.0	False	0.000	154	0.44	0.000
118	P-16	137	J1	J23	12.0	PVC	120.0	False	0.000	145	0.41	0.000
90	P-6	203	J7	J8	8.0	PVC	120.0	False	0.000	-35	0.23	0.000
129	P-3	175	J25	J1	8.0	PVC	120.0	False	0.000	-35	0.22	0.000
91	P-5	203	J6	J7	8.0	PVC	120.0	False	0.000	-28	0.18	0.000
130	P-4	136	J25	J26	8.0	PVC	120.0	False	0.000	24	0.15	0.000
92	P-4	152	J5	J6	8.0	PVC	120.0	False	0.000	-17	0.11	0.000
159	P-35	176	J26	J23	8.0	PVC	120.0	False	0.000	12	0.08	0.000
93	P-3	431	J4	J5	8.0	PVC	120.0	False	0.000	-10	0.06	0.000
99	P-27	154	J2	J1	8.0	PVC	120.0	False	0.000	-7	0.04	0.000
127	P-34	105	J23	J24	8.0	PVC	120.0	False	0.000	3	0.02	0.000
94	P-2	84	J3	J4	8.0	PVC	120.0	False	0.000	-3	0.02	0.000
135	P-8	71	J26	J29	8.0	PVC	120.0	False	0.000	0	0.00	0.000
134	P-7	58	J27	J28	8.0	PVC	120.0	False	0.000	0	0.00	0.000
136	P-9	70	J25	J30	8.0	PVC	120.0	False	0.000	0	0.00	0.000
131	P-5	52	J26	J27	8.0	PVC	120.0	False	0.000	0	0.00	0.000
103	P-20	258	J21	J3	12.0	PVC	120.0	False	0.000	0	0.00	0.000
97	P-29	37	2	J21	12.0	PVC	120.0	False	0.000	(N/A)	(N/A)	(N/A)

C:\Users\Resources\DC\ACCDocs\JR Engineering\1619020\Project Files\WaterCAD\169020 WaterCAD model.wtg

Scenario: MDD+FF @ J17 +20% Res. P-29 OFF
Current Time Step: 0.000 h
FlexTable: Junction Table

ID	Label	Elevation (ft)	Zone	Demand Collection	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
64	J18	6,268.41	<None>	<Collection: 1 item>	0	6,502.92	102
65	J17	6,291.74	<None>	<Collection: 1 item>	1,750	6,499.96	90
126	J28	6,295.23	<None>	<Collection: 0 items>	0	6,499.97	89
117	J23	6,296.53	<None>	<Collection: 0 items>	0	6,499.96	88
125	J27	6,298.31	<None>	<Collection: 0 items>	0	6,499.97	87
122	J24	6,298.82	<None>	<Collection: 1 item>	3	6,499.96	87
121	J26	6,301.69	<None>	<Collection: 1 item>	12	6,499.97	86
123	J29	6,303.60	<None>	<Collection: 0 items>	0	6,499.97	85
61	J1	6,304.87	<None>	<Collection: 1 item>	29	6,499.98	85
60	J2	6,306.83	<None>	<Collection: 1 item>	7	6,499.98	84
120	J25	6,308.36	<None>	<Collection: 1 item>	11	6,499.97	83
63	J21	6,313.36	<None>	<Collection: 1 item>	0	6,502.57	82
124	J30	6,310.79	<None>	<Collection: 1 item>	0	6,499.97	82
66	J16	6,318.57	<None>	<Collection: 1 item>	6	6,500.23	79
79	J3	6,323.80	<None>	<Collection: 1 item>	3	6,502.57	77
67	J15	6,333.28	<None>	<Collection: 1 item>	8	6,500.54	72
78	J4	6,338.78	<None>	<Collection: 1 item>	6	6,502.57	71
68	J14	6,352.23	<None>	<Collection: 1 item>	10	6,500.98	64
77	J5	6,354.66	<None>	<Collection: 1 item>	8	6,502.57	64
76	J6	6,363.90	<None>	<Collection: 1 item>	11	6,502.57	60
69	J13	6,367.15	<None>	<Collection: 1 item>	9	6,501.35	58
75	J7	6,376.09	<None>	<Collection: 1 item>	7	6,502.58	55
70	J12	6,379.86	<None>	<Collection: 1 item>	9	6,501.66	53
74	J8	6,386.48	<None>	<Collection: 1 item>	3	6,502.59	50
73	J9	6,388.90	<None>	<Collection: 1 item>	1	6,502.46	49
71	J11	6,393.15	<None>	<Collection: 1 item>	16	6,502.17	47
72	J10	6,398.60	<None>	<Collection: 0 items>	0	6,503.51	45

Scenario: MDD+FF @ J17 +20% Res. P-31 OFF



Scenario: MDD+FF @ J17 +20% Res. P-31 OFF
Current Time Step: 0.000 h
FlexTable: Pipe Table

ID	Label	Length (Scaled) (ft)	Start Node	Stop Node	Diameter (in)	Material	Hazen-Williams C	Has Check Valve?	Minor Loss Coefficient (Local)	Flow (gpm)	Velocity (ft/s)	Headloss Gradient (ft/ft)
88	P-9	65	J8	J9	8.0	PVC	120.0	False	0.000	1,872	11.95	0.068
87	P-10	151	J9	J11	8.0	PVC	120.0	False	0.000	1,871	11.94	0.068
86	P-11	291	J11	J12	8.0	PVC	120.0	False	0.000	1,855	11.84	0.067
85	P-12	191	J12	J13	8.0	PVC	120.0	False	0.000	1,846	11.78	0.066
84	P-13	246	J13	J14	8.0	PVC	120.0	False	0.000	1,837	11.72	0.065
106	P-14	315	J14	J15	8.0	PVC	120.0	False	0.000	1,826	11.66	0.065
105	P-15	240	J15	J16	8.0	PVC	120.0	False	0.000	1,818	11.60	0.064
101	P-1	203	J16	J1	8.0	PVC	120.0	False	0.000	1,812	11.57	0.064
89	P-7	371	J8	J10	8.0	PVC	120.0	False	0.000	-1,198	7.64	0.030
98	P-28	35	1	J10	8.0	PVC	120.0	False	0.000	1,198	7.64	0.030
119	P-33	80	J23	J17	12.0	PVC	120.0	False	0.000	1,750	4.96	0.008
94	P-2	84	J3	J4	8.0	PVC	120.0	False	0.000	710	4.53	0.011
93	P-3	431	J4	J5	8.0	PVC	120.0	False	0.000	704	4.49	0.011
92	P-4	152	J5	J6	8.0	PVC	120.0	False	0.000	696	4.44	0.011
91	P-5	203	J6	J7	8.0	PVC	120.0	False	0.000	685	4.37	0.011
90	P-6	203	J7	J8	8.0	PVC	120.0	False	0.000	678	4.33	0.010
118	P-16	137	J1	J23	12.0	PVC	120.0	False	0.000	1,504	4.27	0.006
97	P-29	37	2	J21	12.0	PVC	120.0	False	0.000	713	2.02	0.002
103	P-20	258	J21	J3	12.0	PVC	120.0	False	0.000	713	2.02	0.002
129	P-3	175	J25	J1	8.0	PVC	120.0	False	0.000	-272	1.74	0.002
130	P-4	136	J25	J26	8.0	PVC	120.0	False	0.000	261	1.67	0.002
159	P-35	176	J26	J23	8.0	PVC	120.0	False	0.000	249	1.59	0.002
99	P-27	154	J2	J1	8.0	PVC	120.0	False	0.000	-7	0.04	0.000
127	P-34	105	J23	J24	8.0	PVC	120.0	False	0.000	3	0.02	0.000
136	P-9	70	J25	J30	8.0	PVC	120.0	False	0.000	0	0.00	0.000
104	P-17	424	J17	J18	12.0	PVC	120.0	False	0.000	0	0.00	0.000
135	P-8	71	J26	J29	8.0	PVC	120.0	False	0.000	0	0.00	0.000
131	P-5	52	J26	J27	8.0	PVC	120.0	False	0.000	0	0.00	0.000
134	P-7	58	J27	J28	8.0	PVC	120.0	False	0.000	0	0.00	0.000
95	P-31	97	4	J18	12.0	PVC	120.0	False	0.000	(N/A)	(N/A)	(N/A)

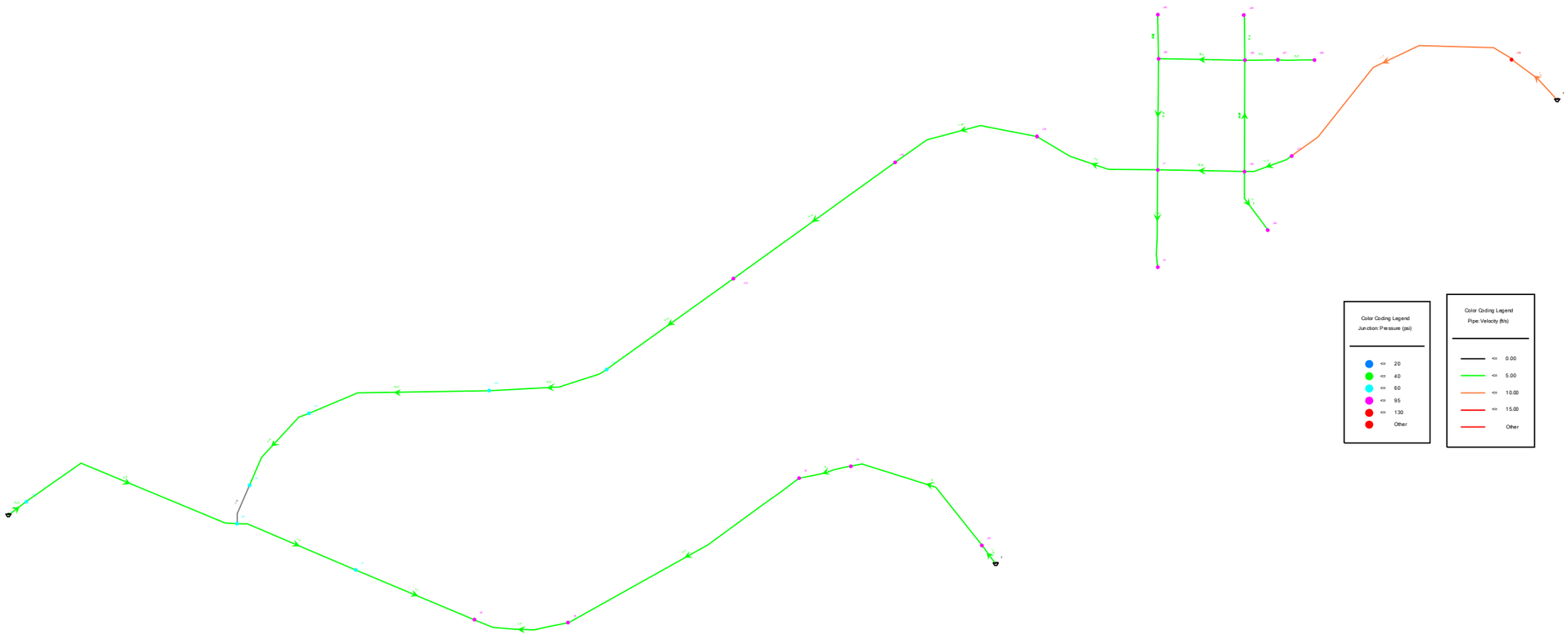
C:\Users\Resources\DC\ACCDocs\JR Engineering\1619020\Project Files\WaterCAD\169020 WaterCAD model.wtg

Scenario: MDD+FF @ J17 +20% Res. P-31 OFF
Current Time Step: 0.000 h
FlexTable: Junction Table

ID	Label	Elevation (ft)	Zone	Demand Collection	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
63	J21	6,313.36	<None>	<Collection: 1 item>	0	6,503.54	82
79	J3	6,323.80	<None>	<Collection: 1 item>	3	6,503.14	78
78	J4	6,338.78	<None>	<Collection: 1 item>	6	6,502.19	71
77	J5	6,354.66	<None>	<Collection: 1 item>	8	6,497.43	62
76	J6	6,363.90	<None>	<Collection: 1 item>	11	6,495.78	57
75	J7	6,376.09	<None>	<Collection: 1 item>	7	6,493.65	51
64	J18	6,268.41	<None>	<Collection: 1 item>	0	6,378.74	48
74	J8	6,386.48	<None>	<Collection: 1 item>	3	6,491.56	46
72	J10	6,398.60	<None>	<Collection: 0 items>	0	6,502.55	45
73	J9	6,388.90	<None>	<Collection: 1 item>	1	6,487.19	43
65	J17	6,291.74	<None>	<Collection: 1 item>	1,750	6,378.74	38
126	J28	6,295.23	<None>	<Collection: 0 items>	0	6,379.69	37
71	J11	6,393.15	<None>	<Collection: 1 item>	16	6,476.96	36
117	J23	6,296.53	<None>	<Collection: 0 items>	0	6,379.40	36
125	J27	6,298.31	<None>	<Collection: 0 items>	0	6,379.69	35
122	J24	6,298.82	<None>	<Collection: 1 item>	3	6,379.40	35
121	J26	6,301.69	<None>	<Collection: 1 item>	12	6,379.69	34
69	J13	6,367.15	<None>	<Collection: 1 item>	9	6,444.98	34
70	J12	6,379.86	<None>	<Collection: 1 item>	9	6,457.59	34
68	J14	6,352.23	<None>	<Collection: 1 item>	10	6,428.92	33
123	J29	6,303.60	<None>	<Collection: 0 items>	0	6,379.69	33
61	J1	6,304.87	<None>	<Collection: 1 item>	29	6,380.26	33
67	J15	6,333.28	<None>	<Collection: 1 item>	8	6,408.55	33
66	J16	6,318.57	<None>	<Collection: 1 item>	6	6,393.18	32
60	J2	6,306.83	<None>	<Collection: 1 item>	7	6,380.26	32
120	J25	6,308.36	<None>	<Collection: 1 item>	11	6,379.93	31
124	J30	6,310.79	<None>	<Collection: 1 item>	0	6,379.93	30

C:\Users\Resources\DC\ACCDocs\JR Engineering\1619020\Project Files\WaterCAD\169020 WaterCAD model.wtg

Scenario: MDD+FF @ J17 +20% Res. P-9 OFF



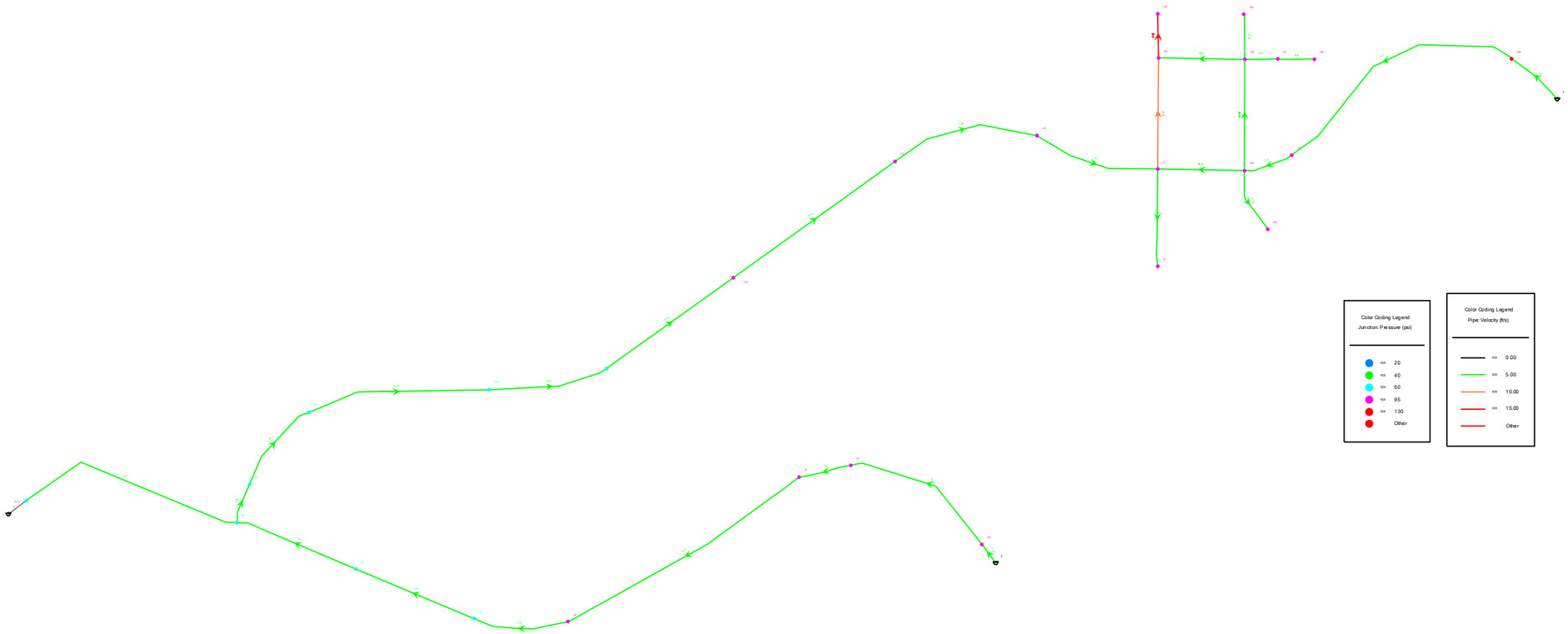
Scenario: MDD+FF @ J17 +20% Res. P-9 OFF
Current Time Step: 0.000 h
FlexTable: Pipe Table

ID	Label	Length (Scaled) (ft)	Start Node	Stop Node	Diameter (in)	Material	Hazen-Williams C	Has Check Valve?	Minor Loss Coefficient (Local)	Flow (gpm)	Velocity (ft/s)	Headloss Gradient (ft/ft)
95	P-31	97	4	J18	12.0	PVC	120.0	False	0.000	1,872	5.31	0.009
104	P-17	424	J17	J18	12.0	PVC	120.0	False	0.000	-1,872	5.31	0.009
101	P-1	203	J16	J1	8.0	PVC	120.0	False	0.000	-60	0.38	0.000
105	P-15	240	J15	J16	8.0	PVC	120.0	False	0.000	-54	0.35	0.000
119	P-33	80	J23	J17	12.0	PVC	120.0	False	0.000	-122	0.35	0.000
106	P-14	315	J14	J15	8.0	PVC	120.0	False	0.000	-46	0.29	0.000
118	P-16	137	J1	J23	12.0	PVC	120.0	False	0.000	-94	0.27	0.000
84	P-13	246	J13	J14	8.0	PVC	120.0	False	0.000	-36	0.23	0.000
85	P-12	191	J12	J13	8.0	PVC	120.0	False	0.000	-27	0.17	0.000
159	P-35	176	J26	J23	8.0	PVC	120.0	False	0.000	-25	0.16	0.000
94	P-2	84	J3	J4	8.0	PVC	120.0	False	0.000	20	0.13	0.000
86	P-11	291	J11	J12	8.0	PVC	120.0	False	0.000	-18	0.11	0.000
89	P-7	371	J8	J10	8.0	PVC	120.0	False	0.000	-16	0.10	0.000
98	P-28	35	1	J10	8.0	PVC	120.0	False	0.000	16	0.10	0.000
93	P-3	431	J4	J5	8.0	PVC	120.0	False	0.000	13	0.09	0.000
130	P-4	136	J25	J26	8.0	PVC	120.0	False	0.000	-13	0.08	0.000
90	P-6	203	J7	J8	8.0	PVC	120.0	False	0.000	-12	0.08	0.000
97	P-29	37	2	J21	12.0	PVC	120.0	False	0.000	23	0.07	0.000
103	P-20	258	J21	J3	12.0	PVC	120.0	False	0.000	23	0.07	0.000
99	P-27	154	J2	J1	8.0	PVC	120.0	False	0.000	-7	0.04	0.000
92	P-4	152	J5	J6	8.0	PVC	120.0	False	0.000	6	0.04	0.000
91	P-5	203	J6	J7	8.0	PVC	120.0	False	0.000	-5	0.03	0.000
127	P-34	105	J23	J24	8.0	PVC	120.0	False	0.000	3	0.02	0.000
129	P-3	175	J25	J1	8.0	PVC	120.0	False	0.000	2	0.01	0.000
87	P-10	151	J9	J11	8.0	PVC	120.0	False	0.000	-1	0.01	0.000
131	P-5	52	J26	J27	8.0	PVC	120.0	False	0.000	0	0.00	0.000
135	P-8	71	J26	J29	8.0	PVC	120.0	False	0.000	0	0.00	0.000
134	P-7	58	J27	J28	8.0	PVC	120.0	False	0.000	0	0.00	0.000
136	P-9	70	J25	J30	8.0	PVC	120.0	False	0.000	0	0.00	0.000
88	P-9	65	J8	J9	8.0	PVC	120.0	False	0.000	(N/A)	(N/A)	(N/A)

Scenario: MDD+FF @ J17 +20% Res. P-9 OFF
Current Time Step: 0.000 h
FlexTable: Junction Table

ID	Label	Elevation (ft)	Zone	Demand Collection	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
64	J18	6,268.41	<None>	<Collection: 1 item>	0	6,502.69	102
65	J17	6,291.74	<None>	<Collection: 1 item>	1,750	6,498.70	90
126	J28	6,295.23	<None>	<Collection: 0 items>	0	6,498.70	88
117	J23	6,296.53	<None>	<Collection: 0 items>	0	6,498.70	88
125	J27	6,298.31	<None>	<Collection: 0 items>	0	6,498.70	87
122	J24	6,298.82	<None>	<Collection: 1 item>	3	6,498.70	87
121	J26	6,301.69	<None>	<Collection: 1 item>	12	6,498.70	85
123	J29	6,303.60	<None>	<Collection: 0 items>	0	6,498.70	85
61	J1	6,304.87	<None>	<Collection: 1 item>	29	6,498.69	84
60	J2	6,306.83	<None>	<Collection: 1 item>	7	6,498.69	83
120	J25	6,308.36	<None>	<Collection: 1 item>	11	6,498.69	82
63	J21	6,313.36	<None>	<Collection: 1 item>	0	6,503.60	82
124	J30	6,310.79	<None>	<Collection: 1 item>	0	6,498.69	81
66	J16	6,318.57	<None>	<Collection: 1 item>	6	6,498.67	78
79	J3	6,323.80	<None>	<Collection: 1 item>	3	6,503.60	78
67	J15	6,333.28	<None>	<Collection: 1 item>	8	6,498.65	72
78	J4	6,338.78	<None>	<Collection: 1 item>	6	6,503.60	71
77	J5	6,354.66	<None>	<Collection: 1 item>	8	6,503.59	65
68	J14	6,352.23	<None>	<Collection: 1 item>	10	6,498.63	63
76	J6	6,363.90	<None>	<Collection: 1 item>	11	6,503.59	61
69	J13	6,367.15	<None>	<Collection: 1 item>	9	6,498.62	57
75	J7	6,376.09	<None>	<Collection: 1 item>	7	6,503.59	55
70	J12	6,379.86	<None>	<Collection: 1 item>	9	6,498.61	51
74	J8	6,386.48	<None>	<Collection: 1 item>	3	6,503.60	51
73	J9	6,388.90	<None>	<Collection: 1 item>	1	6,498.61	48
71	J11	6,393.15	<None>	<Collection: 1 item>	16	6,498.61	46
72	J10	6,398.60	<None>	<Collection: 0 items>	0	6,503.60	45

Scenario: MDD+FF @ J30 +20% Res.P-28 OFF



Scenario: MDD+FF @ J30 +20% Res.P-28 OFF
Current Time Step: 0.000 h
FlexTable: Pipe Table

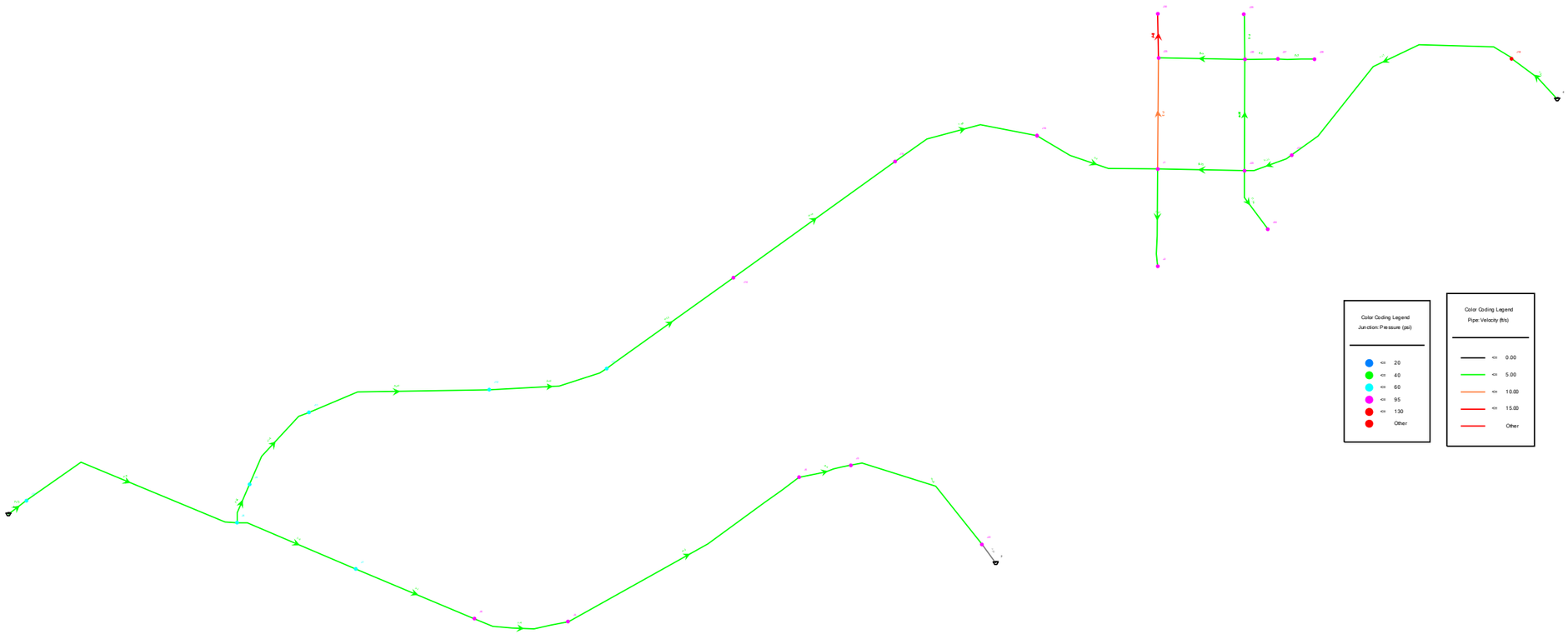
ID	Label	Length (Scaled) (ft)	Start Node	Stop Node	Diameter (in)	Material	Hazen-Williams C	Has Check Valve?	Minor Loss Coefficient (Local)	Flow (gpm)	Velocity (ft/s)	Headloss Gradient (ft/ft)
136	P-9	70	J25	J30	8.0	PVC	120.0	False	0.000	1,750	11.17	0.060
129	P-3	175	J25	J1	8.0	PVC	120.0	False	0.000	-1,003	6.40	0.021
159	P-35	176	J26	J23	8.0	PVC	120.0	False	0.000	-769	4.91	0.013
130	P-4	136	J25	J26	8.0	PVC	120.0	False	0.000	-758	4.84	0.013
95	P-31	97	4	J18	12.0	PVC	120.0	False	0.000	1,612	4.57	0.007
104	P-17	424	J17	J18	12.0	PVC	120.0	False	0.000	-1,612	4.57	0.007
119	P-33	80	J23	J17	12.0	PVC	120.0	False	0.000	-1,612	4.57	0.007
118	P-16	137	J1	J23	12.0	PVC	120.0	False	0.000	-839	2.38	0.002
94	P-2	84	J3	J4	8.0	PVC	120.0	False	0.000	296	1.89	0.002
93	P-3	431	J4	J5	8.0	PVC	120.0	False	0.000	290	1.85	0.002
92	P-4	152	J5	J6	8.0	PVC	120.0	False	0.000	282	1.80	0.002
91	P-5	203	J6	J7	8.0	PVC	120.0	False	0.000	271	1.73	0.002
90	P-6	203	J7	J8	8.0	PVC	120.0	False	0.000	264	1.69	0.002
88	P-9	65	J8	J9	8.0	PVC	120.0	False	0.000	261	1.66	0.002
87	P-10	151	J9	J11	8.0	PVC	120.0	False	0.000	259	1.65	0.002
86	P-11	291	J11	J12	8.0	PVC	120.0	False	0.000	243	1.55	0.002
85	P-12	191	J12	J13	8.0	PVC	120.0	False	0.000	234	1.49	0.001
84	P-13	246	J13	J14	8.0	PVC	120.0	False	0.000	225	1.44	0.001
106	P-14	315	J14	J15	8.0	PVC	120.0	False	0.000	215	1.37	0.001
105	P-15	240	J15	J16	8.0	PVC	120.0	False	0.000	206	1.32	0.001
101	P-1	203	J16	J1	8.0	PVC	120.0	False	0.000	201	1.28	0.001
97	P-29	37	2	J21	12.0	PVC	120.0	False	0.000	300	0.85	0.000
103	P-20	258	J21	J3	12.0	PVC	120.0	False	0.000	300	0.85	0.000
99	P-27	154	J2	J1	8.0	PVC	120.0	False	0.000	-7	0.04	0.000
127	P-34	105	J23	J24	8.0	PVC	120.0	False	0.000	3	0.02	0.000
89	P-7	371	J8	J10	8.0	PVC	120.0	False	0.000	0	0.00	0.000
135	P-8	71	J26	J29	8.0	PVC	120.0	False	0.000	0	0.00	0.000
134	P-7	58	J27	J28	8.0	PVC	120.0	False	0.000	0	0.00	0.000
131	P-5	52	J26	J27	8.0	PVC	120.0	False	0.000	0	0.00	0.000
98	P-28	35	1	J10	8.0	PVC	120.0	False	0.000	(N/A)	(N/A)	(N/A)

Scenario: MDD+FF @ J30 +20% Res.P-28 OFF
Current Time Step: 0.000 h
FlexTable: Junction Table

ID	Label	Elevation (ft)	Zone	Demand Collection	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
64	J18	6,268.41	<None>	<Collection: 1 item>	0	6,502.91	102
65	J17	6,291.74	<None>	<Collection: 1 item>	0	6,499.89	90
117	J23	6,296.53	<None>	<Collection: 0 items>	0	6,499.32	88
126	J28	6,295.23	<None>	<Collection: 0 items>	0	6,497.03	87
122	J24	6,298.82	<None>	<Collection: 1 item>	3	6,499.32	87
125	J27	6,298.31	<None>	<Collection: 0 items>	0	6,497.03	86
121	J26	6,301.69	<None>	<Collection: 1 item>	12	6,497.03	85
61	J1	6,304.87	<None>	<Collection: 1 item>	29	6,499.03	84
123	J29	6,303.60	<None>	<Collection: 0 items>	0	6,497.03	84
60	J2	6,306.83	<None>	<Collection: 1 item>	7	6,499.03	83
63	J21	6,313.36	<None>	<Collection: 1 item>	0	6,503.59	82
120	J25	6,308.36	<None>	<Collection: 1 item>	11	6,495.30	81
66	J16	6,318.57	<None>	<Collection: 1 item>	6	6,499.25	78
124	J30	6,310.79	<None>	<Collection: 1 item>	1,750	6,491.10	78
79	J3	6,323.80	<None>	<Collection: 1 item>	3	6,503.51	78
67	J15	6,333.28	<None>	<Collection: 1 item>	8	6,499.52	72
78	J4	6,338.78	<None>	<Collection: 1 item>	6	6,503.32	71
77	J5	6,354.66	<None>	<Collection: 1 item>	8	6,502.40	64
68	J14	6,352.23	<None>	<Collection: 1 item>	10	6,499.91	64
76	J6	6,363.90	<None>	<Collection: 1 item>	11	6,502.09	60
69	J13	6,367.15	<None>	<Collection: 1 item>	9	6,500.24	58
75	J7	6,376.09	<None>	<Collection: 1 item>	7	6,501.71	54
70	J12	6,379.86	<None>	<Collection: 1 item>	9	6,500.52	52
74	J8	6,386.48	<None>	<Collection: 1 item>	3	6,501.34	50
73	J9	6,388.90	<None>	<Collection: 1 item>	1	6,501.23	49
71	J11	6,393.15	<None>	<Collection: 1 item>	16	6,500.97	47
72	J10	6,398.60	<None>	<Collection: 0 items>	0	6,501.34	45

C:\Users\Resources\DC\ACCDocs\JR Engineering\1619020\Project Files\WaterCAD\169020 WaterCAD model.wtg

Scenario: MDD+FF @ J30 +20% Res.P-29 OFF



Scenario: MDD+FF @ J30 +20% Res.P-29 OFF
Current Time Step: 0.000 h
FlexTable: Pipe Table

ID	Label	Length (Scaled) (ft)	Start Node	Stop Node	Diameter (in)	Material	Hazen-Williams C	Has Check Valve?	Minor Loss Coefficient (Local)	Flow (gpm)	Velocity (ft/s)	Headloss Gradient (ft/ft)
136	P-9	70	J25	J30	8.0	PVC	120.0	False	0.000	1,750	11.17	0.060
129	P-3	175	J25	J1	8.0	PVC	120.0	False	0.000	-1,005	6.41	0.021
159	P-35	176	J26	J23	8.0	PVC	120.0	False	0.000	-768	4.90	0.013
130	P-4	136	J25	J26	8.0	PVC	120.0	False	0.000	-756	4.83	0.013
95	P-31	97	4	J18	12.0	PVC	120.0	False	0.000	1,570	4.45	0.007
104	P-17	424	J17	J18	12.0	PVC	120.0	False	0.000	-1,570	4.45	0.007
119	P-33	80	J23	J17	12.0	PVC	120.0	False	0.000	-1,570	4.45	0.007
118	P-16	137	J1	J23	12.0	PVC	120.0	False	0.000	-798	2.26	0.002
89	P-7	371	J8	J10	8.0	PVC	120.0	False	0.000	-341	2.18	0.003
98	P-28	35	1	J10	8.0	PVC	120.0	False	0.000	341	2.18	0.003
88	P-9	65	J8	J9	8.0	PVC	120.0	False	0.000	303	1.93	0.002
87	P-10	151	J9	J11	8.0	PVC	120.0	False	0.000	301	1.92	0.002
86	P-11	291	J11	J12	8.0	PVC	120.0	False	0.000	285	1.82	0.002
85	P-12	191	J12	J13	8.0	PVC	120.0	False	0.000	276	1.76	0.002
84	P-13	246	J13	J14	8.0	PVC	120.0	False	0.000	267	1.70	0.002
106	P-14	315	J14	J15	8.0	PVC	120.0	False	0.000	257	1.64	0.002
105	P-15	240	J15	J16	8.0	PVC	120.0	False	0.000	248	1.58	0.002
101	P-1	203	J16	J1	8.0	PVC	120.0	False	0.000	243	1.55	0.002
90	P-6	203	J7	J8	8.0	PVC	120.0	False	0.000	-35	0.23	0.000
91	P-5	203	J6	J7	8.0	PVC	120.0	False	0.000	-28	0.18	0.000
92	P-4	152	J5	J6	8.0	PVC	120.0	False	0.000	-17	0.11	0.000
93	P-3	431	J4	J5	8.0	PVC	120.0	False	0.000	-10	0.06	0.000
99	P-27	154	J2	J1	8.0	PVC	120.0	False	0.000	-7	0.04	0.000
127	P-34	105	J23	J24	8.0	PVC	120.0	False	0.000	3	0.02	0.000
94	P-2	84	J3	J4	8.0	PVC	120.0	False	0.000	-3	0.02	0.000
103	P-20	258	J21	J3	12.0	PVC	120.0	False	0.000	0	0.00	0.000
131	P-5	52	J26	J27	8.0	PVC	120.0	False	0.000	0	0.00	0.000
134	P-7	58	J27	J28	8.0	PVC	120.0	False	0.000	0	0.00	0.000
135	P-8	71	J26	J29	8.0	PVC	120.0	False	0.000	0	0.00	0.000
97	P-29	37	2	J21	12.0	PVC	120.0	False	0.000	(N/A)	(N/A)	(N/A)

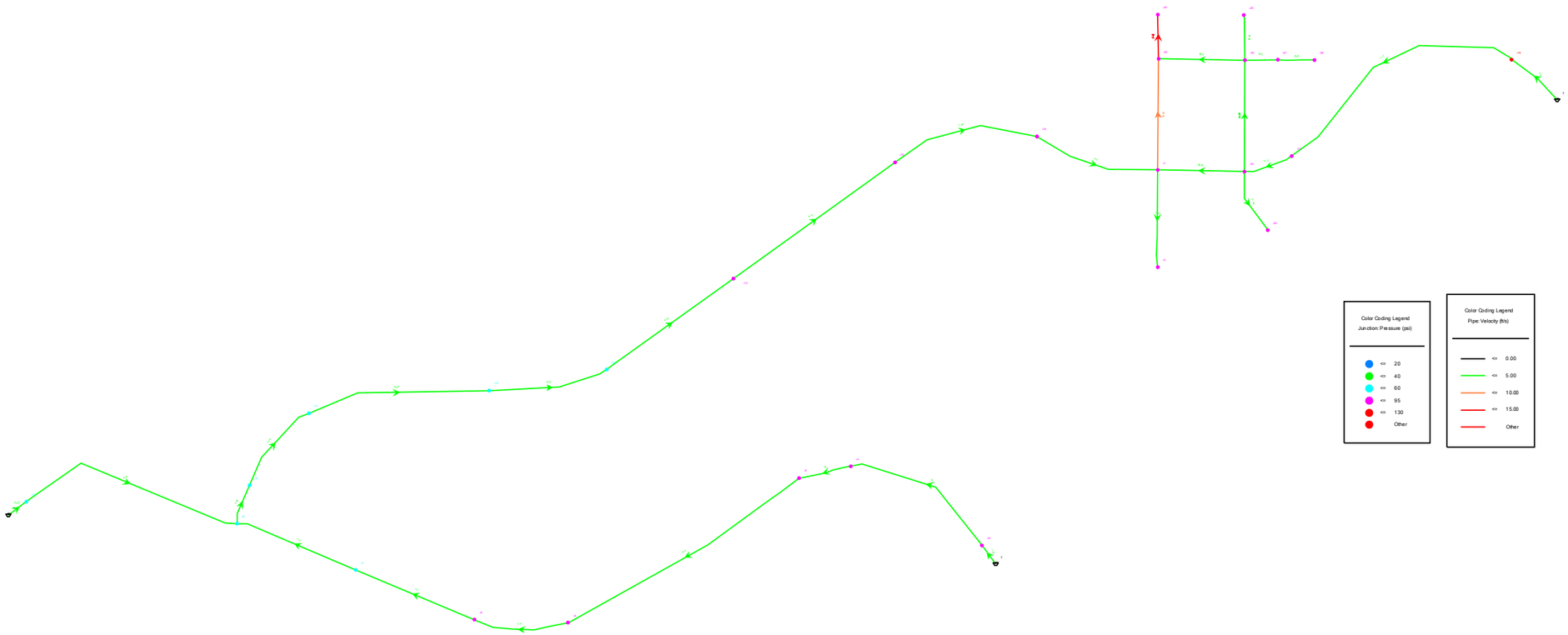
C:\Users\Resources\DC\ACCDocs\JR Engineering\1619020\Project Files\WaterCAD\169020 WaterCAD model.wtg

Scenario: MDD+FF @ J30 +20% Res.P-29 OFF
Current Time Step: 0.000 h
FlexTable: Junction Table

ID	Label	Elevation (ft)	Zone	Demand Collection	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
64	J18	6,268.41	<None>	<Collection: 1 item>	0	6,502.94	102
65	J17	6,291.74	<None>	<Collection: 1 item>	0	6,500.07	90
117	J23	6,296.53	<None>	<Collection: 0 items>	0	6,499.53	88
126	J28	6,295.23	<None>	<Collection: 0 items>	0	6,497.24	88
122	J24	6,298.82	<None>	<Collection: 1 item>	3	6,499.53	87
125	J27	6,298.31	<None>	<Collection: 0 items>	0	6,497.24	86
121	J26	6,301.69	<None>	<Collection: 1 item>	12	6,497.24	85
61	J1	6,304.87	<None>	<Collection: 1 item>	29	6,499.26	84
123	J29	6,303.60	<None>	<Collection: 0 items>	0	6,497.24	84
60	J2	6,306.83	<None>	<Collection: 1 item>	7	6,499.26	83
63	J21	6,313.36	<None>	<Collection: 1 item>	0	6,502.40	82
120	J25	6,308.36	<None>	<Collection: 1 item>	11	6,495.52	81
66	J16	6,318.57	<None>	<Collection: 1 item>	6	6,499.57	78
124	J30	6,310.79	<None>	<Collection: 1 item>	1,750	6,491.32	78
79	J3	6,323.80	<None>	<Collection: 1 item>	3	6,502.40	77
67	J15	6,333.28	<None>	<Collection: 1 item>	8	6,499.96	72
78	J4	6,338.78	<None>	<Collection: 1 item>	6	6,502.40	71
68	J14	6,352.23	<None>	<Collection: 1 item>	10	6,500.50	64
77	J5	6,354.66	<None>	<Collection: 1 item>	8	6,502.41	64
76	J6	6,363.90	<None>	<Collection: 1 item>	11	6,502.41	60
69	J13	6,367.15	<None>	<Collection: 1 item>	9	6,500.95	58
75	J7	6,376.09	<None>	<Collection: 1 item>	7	6,502.41	55
70	J12	6,379.86	<None>	<Collection: 1 item>	9	6,501.32	53
74	J8	6,386.48	<None>	<Collection: 1 item>	3	6,502.42	50
73	J9	6,388.90	<None>	<Collection: 1 item>	1	6,502.27	49
71	J11	6,393.15	<None>	<Collection: 1 item>	16	6,501.92	47
72	J10	6,398.60	<None>	<Collection: 0 items>	0	6,503.50	45

C:\Users\Resources\DC\ACCDocs\JR Engineering\1619020\Project Files\WaterCAD\169020 WaterCAD model.wtg

Scenario: MDD+FF @ J30 +20% Res.P-31 OFF



Scenario: MDD+FF @ J30 +20% Res.P-31 OFF
Current Time Step: 0.000 h
FlexTable: Pipe Table

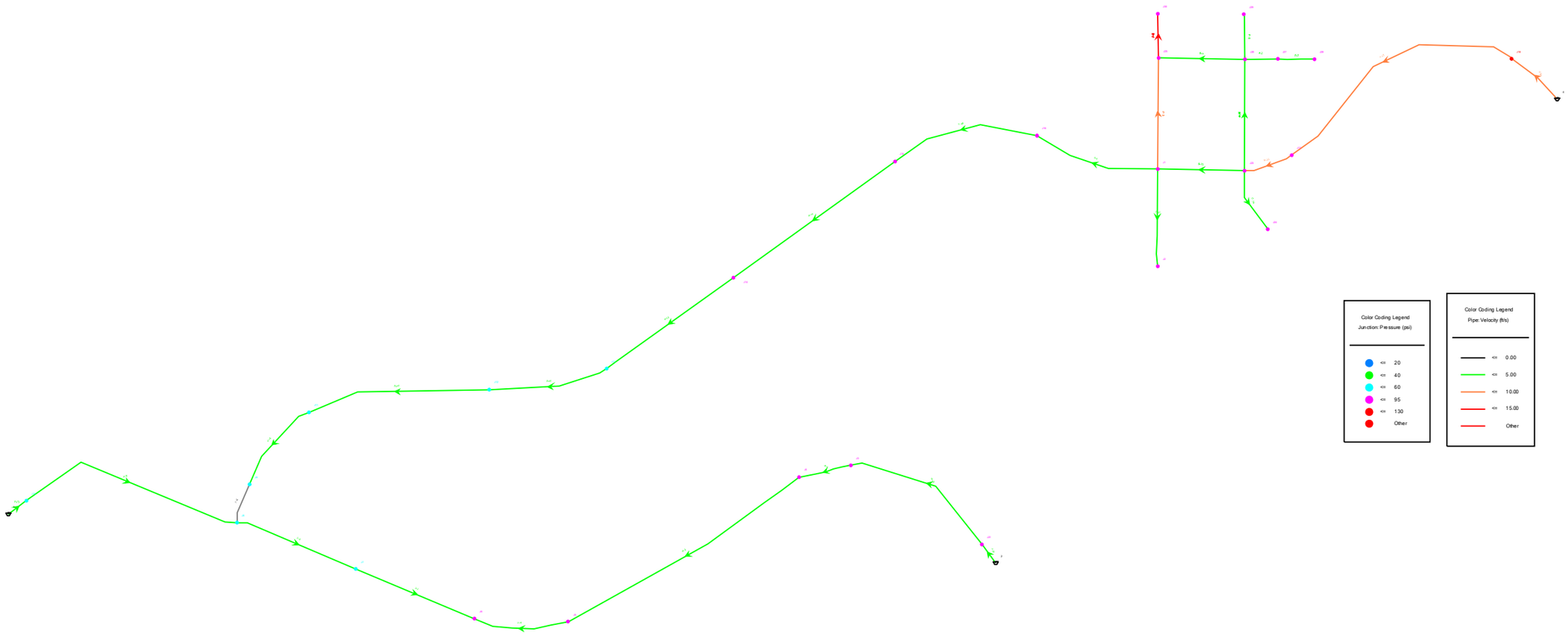
ID	Label	Length (Scaled) (ft)	Start Node	Stop Node	Diameter (in)	Material	Hazen-Williams C	Has Check Valve?	Minor Loss Coefficient (Local)	Flow (gpm)	Velocity (ft/s)	Headloss Gradient (ft/ft)
136	P-9	70	J25	J30	8.0	PVC	120.0	False	0.000	1,750	11.17	0.060
129	P-3	175	J25	J1	8.0	PVC	120.0	False	0.000	-1,006	6.42	0.021
159	P-35	176	J26	J23	8.0	PVC	120.0	False	0.000	-767	4.90	0.013
130	P-4	136	J25	J26	8.0	PVC	120.0	False	0.000	-755	4.82	0.013
95	P-31	97	4	J18	12.0	PVC	120.0	False	0.000	1,546	4.39	0.007
104	P-17	424	J17	J18	12.0	PVC	120.0	False	0.000	-1,546	4.39	0.007
119	P-33	80	J23	J17	12.0	PVC	120.0	False	0.000	-1,546	4.39	0.007
118	P-16	137	J1	J23	12.0	PVC	120.0	False	0.000	-776	2.20	0.002
88	P-9	65	J8	J9	8.0	PVC	120.0	False	0.000	326	2.08	0.003
87	P-10	151	J9	J11	8.0	PVC	120.0	False	0.000	325	2.07	0.003
86	P-11	291	J11	J12	8.0	PVC	120.0	False	0.000	309	1.97	0.002
85	P-12	191	J12	J13	8.0	PVC	120.0	False	0.000	300	1.91	0.002
84	P-13	246	J13	J14	8.0	PVC	120.0	False	0.000	291	1.85	0.002
106	P-14	315	J14	J15	8.0	PVC	120.0	False	0.000	280	1.79	0.002
105	P-15	240	J15	J16	8.0	PVC	120.0	False	0.000	272	1.73	0.002
101	P-1	203	J16	J1	8.0	PVC	120.0	False	0.000	266	1.70	0.002
89	P-7	371	J8	J10	8.0	PVC	120.0	False	0.000	-220	1.40	0.001
98	P-28	35	1	J10	8.0	PVC	120.0	False	0.000	220	1.40	0.001
94	P-2	84	J3	J4	8.0	PVC	120.0	False	0.000	142	0.90	0.001
93	P-3	431	J4	J5	8.0	PVC	120.0	False	0.000	135	0.86	0.001
92	P-4	152	J5	J6	8.0	PVC	120.0	False	0.000	128	0.82	0.000
91	P-5	203	J6	J7	8.0	PVC	120.0	False	0.000	117	0.75	0.000
90	P-6	203	J7	J8	8.0	PVC	120.0	False	0.000	110	0.70	0.000
97	P-29	37	2	J21	12.0	PVC	120.0	False	0.000	145	0.41	0.000
103	P-20	258	J21	J3	12.0	PVC	120.0	False	0.000	145	0.41	0.000
99	P-27	154	J2	J1	8.0	PVC	120.0	False	0.000	-7	0.04	0.000
127	P-34	105	J23	J24	8.0	PVC	120.0	False	0.000	3	0.02	0.000
131	P-5	52	J26	J27	8.0	PVC	120.0	False	0.000	0	0.00	0.000
134	P-7	58	J27	J28	8.0	PVC	120.0	False	0.000	0	0.00	0.000
135	P-8	71	J26	J29	8.0	PVC	120.0	False	0.000	0	0.00	0.000

C:\Users\Resources\DC\ACCDocs\JR Engineering\1619020\Project Files\WaterCAD\169020 WaterCAD model.wtg

Scenario: MDD+FF @ J30 +20% Res.P-31 OFF
Current Time Step: 0.000 h
FlexTable: Junction Table

ID	Label	Elevation (ft)	Zone	Demand Collection	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
64	J18	6,268.41	<None>	<Collection: 1 item>	0	6,502.96	102
65	J17	6,291.74	<None>	<Collection: 1 item>	0	6,500.17	90
117	J23	6,296.53	<None>	<Collection: 0 items>	0	6,499.64	88
126	J28	6,295.23	<None>	<Collection: 0 items>	0	6,497.36	88
122	J24	6,298.82	<None>	<Collection: 1 item>	3	6,499.64	87
125	J27	6,298.31	<None>	<Collection: 0 items>	0	6,497.36	86
121	J26	6,301.69	<None>	<Collection: 1 item>	12	6,497.36	85
61	J1	6,304.87	<None>	<Collection: 1 item>	29	6,499.39	84
123	J29	6,303.60	<None>	<Collection: 0 items>	0	6,497.36	84
60	J2	6,306.83	<None>	<Collection: 1 item>	7	6,499.39	83
63	J21	6,313.36	<None>	<Collection: 1 item>	0	6,503.60	82
120	J25	6,308.36	<None>	<Collection: 1 item>	11	6,495.64	81
66	J16	6,318.57	<None>	<Collection: 1 item>	6	6,499.76	79
124	J30	6,310.79	<None>	<Collection: 1 item>	1,750	6,491.44	78
79	J3	6,323.80	<None>	<Collection: 1 item>	3	6,503.58	78
67	J15	6,333.28	<None>	<Collection: 1 item>	8	6,500.21	72
78	J4	6,338.78	<None>	<Collection: 1 item>	6	6,503.53	71
77	J5	6,354.66	<None>	<Collection: 1 item>	8	6,503.30	64
68	J14	6,352.23	<None>	<Collection: 1 item>	10	6,500.85	64
76	J6	6,363.90	<None>	<Collection: 1 item>	11	6,503.23	60
69	J13	6,367.15	<None>	<Collection: 1 item>	9	6,501.37	58
75	J7	6,376.09	<None>	<Collection: 1 item>	7	6,503.15	55
70	J12	6,379.86	<None>	<Collection: 1 item>	9	6,501.81	53
74	J8	6,386.48	<None>	<Collection: 1 item>	3	6,503.08	51
73	J9	6,388.90	<None>	<Collection: 1 item>	1	6,502.91	49
71	J11	6,393.15	<None>	<Collection: 1 item>	16	6,502.51	47
72	J10	6,398.60	<None>	<Collection: 0 items>	0	6,503.55	45

Scenario: MDD+FF @ J30 +20% Res.P-9 OFF



Scenario: MDD+FF @ J30 +20% Res.P-9 OFF
Current Time Step: 0.000 h
FlexTable: Pipe Table

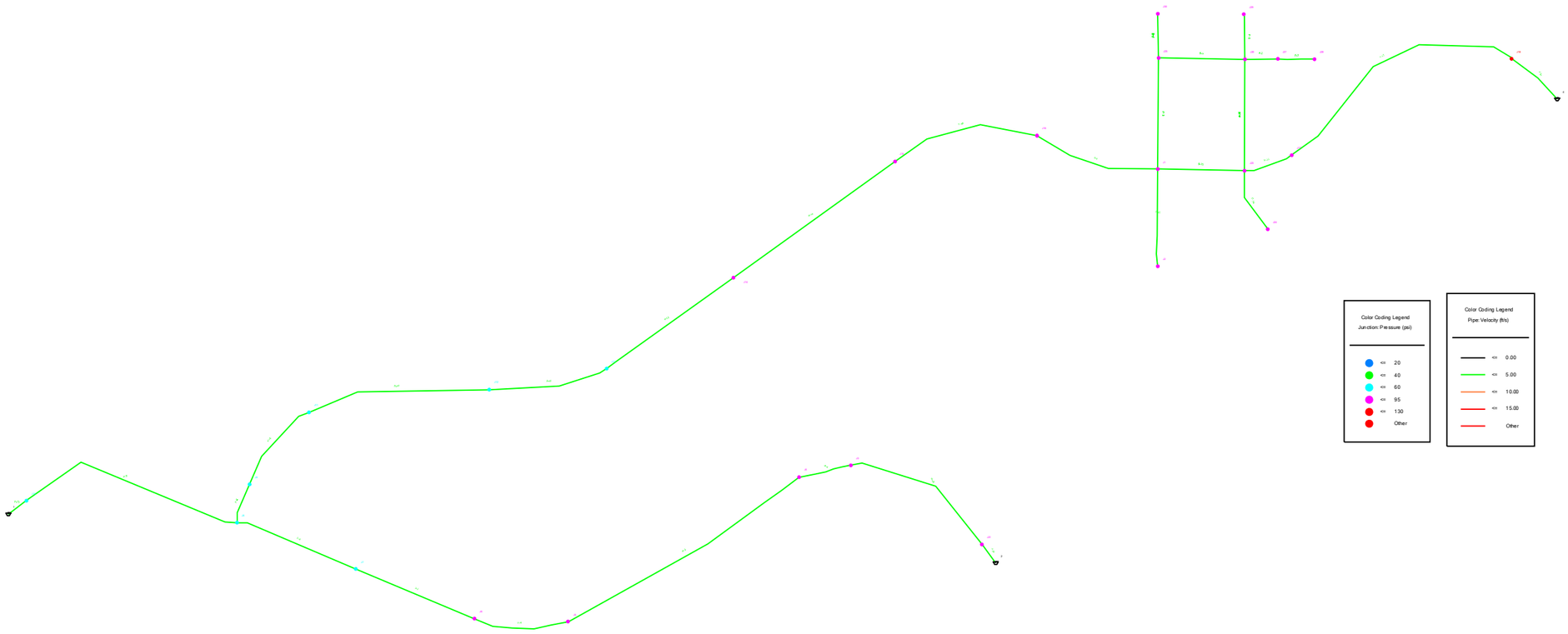
ID	Label	Length (Scaled) (ft)	Start Node	Stop Node	Diameter (in)	Material	Hazen-Williams C	Has Check Valve?	Minor Loss Coefficient (Local)	Flow (gpm)	Velocity (ft/s)	Headloss Gradient (ft/ft)
136	P-9	70	J25	J30	8.0	PVC	120.0	False	0.000	1,750	11.17	0.060
129	P-3	175	J25	J1	8.0	PVC	120.0	False	0.000	-993	6.34	0.021
95	P-31	97	4	J18	12.0	PVC	120.0	False	0.000	1,872	5.31	0.009
104	P-17	424	J17	J18	12.0	PVC	120.0	False	0.000	-1,872	5.31	0.009
119	P-33	80	J23	J17	12.0	PVC	120.0	False	0.000	-1,872	5.31	0.009
159	P-35	176	J26	J23	8.0	PVC	120.0	False	0.000	-780	4.98	0.013
130	P-4	136	J25	J26	8.0	PVC	120.0	False	0.000	-769	4.91	0.013
118	P-16	137	J1	J23	12.0	PVC	120.0	False	0.000	-1,088	3.09	0.003
101	P-1	203	J16	J1	8.0	PVC	120.0	False	0.000	-60	0.38	0.000
105	P-15	240	J15	J16	8.0	PVC	120.0	False	0.000	-54	0.35	0.000
106	P-14	315	J14	J15	8.0	PVC	120.0	False	0.000	-46	0.29	0.000
84	P-13	246	J13	J14	8.0	PVC	120.0	False	0.000	-36	0.23	0.000
85	P-12	191	J12	J13	8.0	PVC	120.0	False	0.000	-27	0.17	0.000
94	P-2	84	J3	J4	8.0	PVC	120.0	False	0.000	20	0.13	0.000
86	P-11	291	J11	J12	8.0	PVC	120.0	False	0.000	-18	0.11	0.000
89	P-7	371	J8	J10	8.0	PVC	120.0	False	0.000	-16	0.10	0.000
98	P-28	35	1	J10	8.0	PVC	120.0	False	0.000	16	0.10	0.000
93	P-3	431	J4	J5	8.0	PVC	120.0	False	0.000	13	0.09	0.000
90	P-6	203	J7	J8	8.0	PVC	120.0	False	0.000	-12	0.08	0.000
97	P-29	37	2	J21	12.0	PVC	120.0	False	0.000	23	0.07	0.000
103	P-20	258	J21	J3	12.0	PVC	120.0	False	0.000	23	0.07	0.000
99	P-27	154	J2	J1	8.0	PVC	120.0	False	0.000	-7	0.04	0.000
92	P-4	152	J5	J6	8.0	PVC	120.0	False	0.000	6	0.04	0.000
91	P-5	203	J6	J7	8.0	PVC	120.0	False	0.000	-5	0.03	0.000
127	P-34	105	J23	J24	8.0	PVC	120.0	False	0.000	3	0.02	0.000
87	P-10	151	J9	J11	8.0	PVC	120.0	False	0.000	-1	0.01	0.000
131	P-5	52	J26	J27	8.0	PVC	120.0	False	0.000	0	0.00	0.000
135	P-8	71	J26	J29	8.0	PVC	120.0	False	0.000	0	0.00	0.000
134	P-7	58	J27	J28	8.0	PVC	120.0	False	0.000	0	0.00	0.000
88	P-9	65	J8	J9	8.0	PVC	120.0	False	0.000	(N/A)	(N/A)	(N/A)

C:\Users\Resources\DC\ACCDocs\JR Engineering\1619020\Project Files\WaterCAD\169020 WaterCAD model.wtg

Scenario: MDD+FF @ J30 +20% Res.P-9 OFF
Current Time Step: 0.000 h
FlexTable: Junction Table

ID	Label	Elevation (ft)	Zone	Demand Collection	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
64	J18	6,268.41	<None>	<Collection: 1 item>	0	6,502.69	102
65	J17	6,291.74	<None>	<Collection: 1 item>	0	6,498.70	90
117	J23	6,296.53	<None>	<Collection: 0 items>	0	6,497.95	87
126	J28	6,295.23	<None>	<Collection: 0 items>	0	6,495.60	87
122	J24	6,298.82	<None>	<Collection: 1 item>	3	6,497.95	86
125	J27	6,298.31	<None>	<Collection: 0 items>	0	6,495.60	85
121	J26	6,301.69	<None>	<Collection: 1 item>	12	6,495.60	84
61	J1	6,304.87	<None>	<Collection: 1 item>	29	6,497.48	83
123	J29	6,303.60	<None>	<Collection: 0 items>	0	6,495.60	83
60	J2	6,306.83	<None>	<Collection: 1 item>	7	6,497.48	83
63	J21	6,313.36	<None>	<Collection: 1 item>	0	6,503.60	82
120	J25	6,308.36	<None>	<Collection: 1 item>	11	6,493.83	80
79	J3	6,323.80	<None>	<Collection: 1 item>	3	6,503.60	78
66	J16	6,318.57	<None>	<Collection: 1 item>	6	6,497.46	78
124	J30	6,310.79	<None>	<Collection: 1 item>	1,750	6,489.62	77
78	J4	6,338.78	<None>	<Collection: 1 item>	6	6,503.60	71
67	J15	6,333.28	<None>	<Collection: 1 item>	8	6,497.44	71
77	J5	6,354.66	<None>	<Collection: 1 item>	8	6,503.59	65
68	J14	6,352.23	<None>	<Collection: 1 item>	10	6,497.41	63
76	J6	6,363.90	<None>	<Collection: 1 item>	11	6,503.59	61
69	J13	6,367.15	<None>	<Collection: 1 item>	9	6,497.40	56
75	J7	6,376.09	<None>	<Collection: 1 item>	7	6,503.59	55
70	J12	6,379.86	<None>	<Collection: 1 item>	9	6,497.40	51
74	J8	6,386.48	<None>	<Collection: 1 item>	3	6,503.60	51
73	J9	6,388.90	<None>	<Collection: 1 item>	1	6,497.40	47
72	J10	6,398.60	<None>	<Collection: 0 items>	0	6,503.60	45
71	J11	6,393.15	<None>	<Collection: 1 item>	16	6,497.40	45

Scenario: 0 Demand at 20% Res



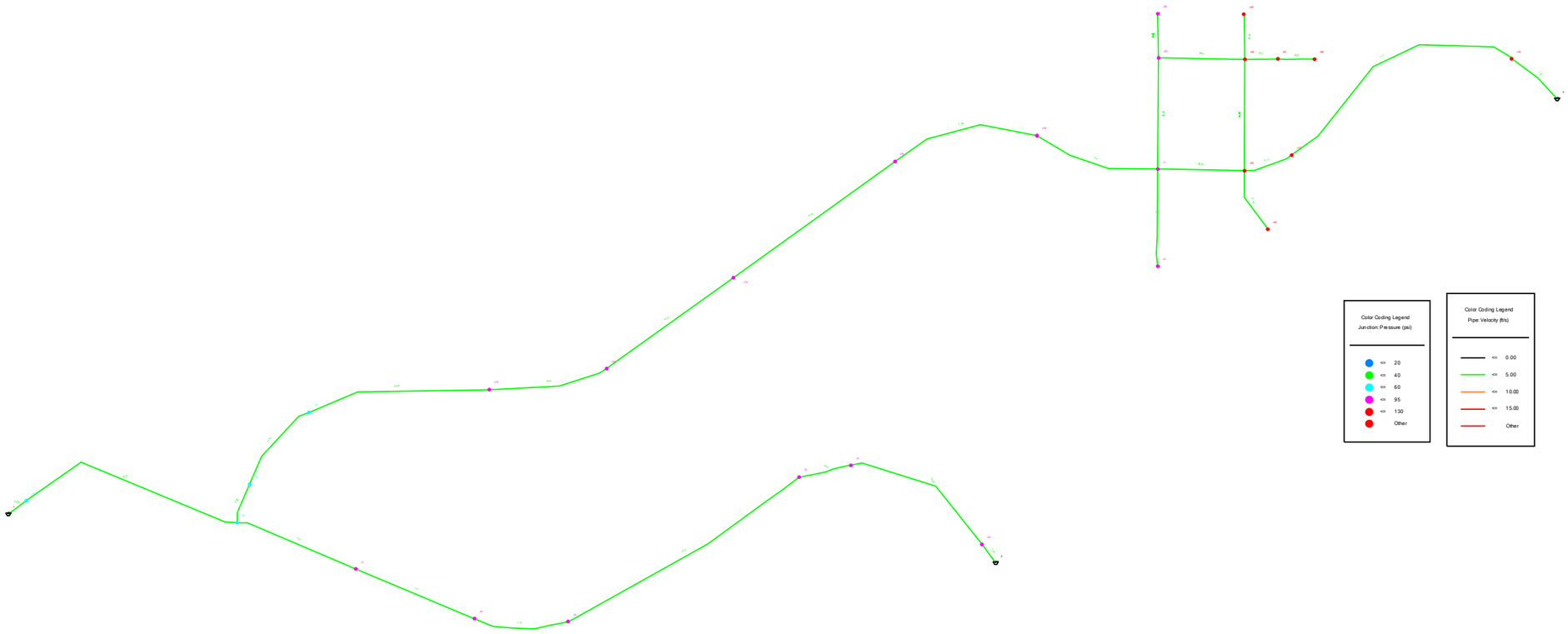
Scenario: 0 Demand at 20% Res
Current Time Step: 0.000 h
FlexTable: Pipe Table

ID	Label	Length (Scaled) (ft)	Start Node	Stop Node	Diameter (in)	Material	Hazen-Williams C	Has Check Valve?	Minor Loss Coefficient (Local)	Flow (gpm)	Velocity (ft/s)	Headloss Gradient (ft/ft)
94	P-2	84	J3	J4	8.0	PVC	120.0	False	0.000	0	0.00	0.000
103	P-20	258	J21	J3	8.0	PVC	120.0	False	0.000	0	0.00	0.000
91	P-5	203	J6	J7	8.0	PVC	120.0	False	0.000	0	0.00	0.000
90	P-6	203	J7	J8	8.0	PVC	120.0	False	0.000	0	0.00	0.000
93	P-3	431	J4	J5	8.0	PVC	120.0	False	0.000	0	0.00	0.000
92	P-4	152	J5	J6	8.0	PVC	120.0	False	0.000	0	0.00	0.000
84	P-13	246	J13	J14	8.0	PVC	120.0	False	0.000	0	0.00	0.000
105	P-15	240	J15	J16	8.0	PVC	120.0	False	0.000	0	0.00	0.000
85	P-12	191	J12	J13	8.0	PVC	120.0	False	0.000	0	0.00	0.000
101	P-1	203	J16	J1	8.0	PVC	120.0	False	0.000	0	0.00	0.000
106	P-14	315	J14	J15	8.0	PVC	120.0	False	0.000	0	0.00	0.000
86	P-11	291	J11	J12	8.0	PVC	120.0	False	0.000	0	0.00	0.000
88	P-9	65	J8	J9	8.0	PVC	120.0	False	0.000	0	0.00	0.000
87	P-10	151	J9	J11	8.0	PVC	120.0	False	0.000	0	0.00	0.000
97	P-29	37	2	J21	10.0	PVC	120.0	False	0.000	0	0.00	0.000
118	P-16	137	J1	J23	8.0	PVC	120.0	False	0.000	0	0.00	0.000
129	P-3	175	J25	J1	8.0	PVC	120.0	False	0.000	0	0.00	0.000
159	P-35	176	J26	J23	8.0	PVC	120.0	False	0.000	0	0.00	0.000
134	P-7	58	J27	J28	8.0	PVC	120.0	False	0.000	0	0.00	0.000
136	P-9	70	J25	J30	8.0	PVC	120.0	False	0.000	0	0.00	0.000
131	P-5	52	J26	J27	8.0	PVC	130.0	False	0.000	0	0.00	0.000
127	P-34	105	J23	J24	8.0	PVC	120.0	False	0.000	0	0.00	0.000
104	P-17	424	J17	J18	8.0	PVC	120.0	False	0.000	0	0.00	0.000
119	P-33	80	J23	J17	8.0	PVC	120.0	False	0.000	0	0.00	0.000
95	P-31	97	4	J18	8.0	PVC	120.0	False	0.000	0	0.00	0.000
89	P-7	371	J8	J10	8.0	PVC	120.0	False	0.000	0	0.00	0.000
98	P-28	35	1	J10	8.0	PVC	120.0	False	0.000	0	0.00	0.000
130	P-4	136	J25	J26	8.0	PVC	120.0	False	0.000	0	0.00	0.000
135	P-8	71	J26	J29	8.0	PVC	120.0	False	0.000	0	0.00	0.000
99	P-27	154	J2	J1	8.0	PVC	120.0	False	0.000	0	0.00	0.000

Scenario: 0 Demand at 20% Res
Current Time Step: 0.000 h
FlexTable: Junction Table

ID	Label	Elevation (ft)	Zone	Demand Collection	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
64	J18	6,268.54	<None>	<Collection: 1 item>	0	6,503.60	102
65	J17	6,292.53	<None>	<Collection: 1 item>	0	6,503.60	91
126	J28	6,295.23	<None>	<Collection: 0 items>	0	6,503.60	90
117	J23	6,295.95	<None>	<Collection: 0 items>	0	6,503.60	90
125	J27	6,298.31	<None>	<Collection: 0 items>	0	6,503.60	89
122	J24	6,298.82	<None>	<Collection: 1 item>	0	6,503.60	89
121	J26	6,301.69	<None>	<Collection: 1 item>	0	6,503.60	87
123	J29	6,303.60	<None>	<Collection: 0 items>	0	6,503.60	87
61	J1	6,304.20	<None>	<Collection: 1 item>	0	6,503.60	86
60	J2	6,306.83	<None>	<Collection: 1 item>	0	6,503.60	85
120	J25	6,308.36	<None>	<Collection: 1 item>	0	6,503.60	85
124	J30	6,310.79	<None>	<Collection: 1 item>	0	6,503.60	84
63	J21	6,313.36	<None>	<Collection: 1 item>	0	6,503.60	82
79	J3	6,316.77	<None>	<Collection: 1 item>	0	6,503.60	81
66	J16	6,317.91	<None>	<Collection: 1 item>	0	6,503.60	80
67	J15	6,332.00	<None>	<Collection: 1 item>	0	6,503.60	74
78	J4	6,338.78	<None>	<Collection: 1 item>	0	6,503.60	71
68	J14	6,350.91	<None>	<Collection: 1 item>	0	6,503.60	66
77	J5	6,354.66	<None>	<Collection: 1 item>	0	6,503.60	65
76	J6	6,363.90	<None>	<Collection: 1 item>	0	6,503.60	61
75	J7	6,376.09	<None>	<Collection: 1 item>	0	6,503.60	55
69	J13	6,377.11	<None>	<Collection: 1 item>	0	6,503.60	55
70	J12	6,383.83	<None>	<Collection: 1 item>	0	6,503.60	52
74	J8	6,386.48	<None>	<Collection: 1 item>	0	6,503.60	51
73	J9	6,388.90	<None>	<Collection: 1 item>	0	6,503.60	50
71	J11	6,393.15	<None>	<Collection: 1 item>	0	6,503.60	48
72	J10	6,398.60	<None>	<Collection: 0 items>	0	6,503.60	45

Scenario: 0 Demand at 100% Res



Scenario: 0 Demand at 100% Res
Current Time Step: 0.000 h
FlexTable: Pipe Table

ID	Label	Length (Scaled) (ft)	Start Node	Stop Node	Diameter (in)	Material	Hazen-Williams C	Has Check Valve?	Minor Loss Coefficient (Local)	Flow (gpm)	Velocity (ft/s)	Headloss Gradient (ft/ft)
87	P-10	151	J9	J11	8.0	PVC	120.0	False	0.000	0	0.00	0.000
86	P-11	291	J11	J12	8.0	PVC	120.0	False	0.000	0	0.00	0.000
88	P-9	65	J8	J9	8.0	PVC	120.0	False	0.000	0	0.00	0.000
106	P-14	315	J14	J15	8.0	PVC	120.0	False	0.000	0	0.00	0.000
85	P-12	191	J12	J13	8.0	PVC	120.0	False	0.000	0	0.00	0.000
105	P-15	240	J15	J16	8.0	PVC	120.0	False	0.000	0	0.00	0.000
84	P-13	246	J13	J14	8.0	PVC	120.0	False	0.000	0	0.00	0.000
101	P-1	203	J16	J1	8.0	PVC	120.0	False	0.000	0	0.00	0.000
90	P-6	203	J7	J8	8.0	PVC	120.0	False	0.000	0	0.00	0.000
91	P-5	203	J6	J7	8.0	PVC	120.0	False	0.000	0	0.00	0.000
93	P-3	431	J4	J5	8.0	PVC	120.0	False	0.000	0	0.00	0.000
92	P-4	152	J5	J6	8.0	PVC	120.0	False	0.000	0	0.00	0.000
94	P-2	84	J3	J4	8.0	PVC	120.0	False	0.000	0	0.00	0.000
103	P-20	258	J21	J3	8.0	PVC	120.0	False	0.000	0	0.00	0.000
159	P-35	176	J26	J23	8.0	PVC	120.0	False	0.000	0	0.00	0.000
97	P-29	37	2	J21	10.0	PVC	120.0	False	0.000	0	0.00	0.000
129	P-3	175	J25	J1	8.0	PVC	120.0	False	0.000	0	0.00	0.000
104	P-17	424	J17	J18	8.0	PVC	120.0	False	0.000	0	0.00	0.000
119	P-33	80	J23	J17	8.0	PVC	120.0	False	0.000	0	0.00	0.000
95	P-31	97	4	J18	8.0	PVC	120.0	False	0.000	0	0.00	0.000
118	P-16	137	J1	J23	8.0	PVC	120.0	False	0.000	0	0.00	0.000
136	P-9	70	J25	J30	8.0	PVC	120.0	False	0.000	0	0.00	0.000
134	P-7	58	J27	J28	8.0	PVC	120.0	False	0.000	0	0.00	0.000
99	P-27	154	J2	J1	8.0	PVC	120.0	False	0.000	0	0.00	0.000
135	P-8	71	J26	J29	8.0	PVC	120.0	False	0.000	0	0.00	0.000
131	P-5	52	J26	J27	8.0	PVC	130.0	False	0.000	0	0.00	0.000
130	P-4	136	J25	J26	8.0	PVC	120.0	False	0.000	0	0.00	0.000
89	P-7	371	J8	J10	8.0	PVC	120.0	False	0.000	0	0.00	0.000
98	P-28	35	1	J10	8.0	PVC	120.0	False	0.000	0	0.00	0.000
127	P-34	105	J23	J24	8.0	PVC	120.0	False	0.000	0	0.00	0.000

C:\Users\Resources\DC\ACCDocs\JR Engineering\1619020\Project Files\WaterCAD\169020 WaterCAD model.wtg

Scenario: 0 Demand at 100% Res
Current Time Step: 0.000 h
FlexTable: Junction Table

ID	Label	Elevation (ft)	Zone	Demand Collection	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
64	J18	6,268.54	<None>	<Collection: 1 item>	0	6,523.30	110
65	J17	6,292.53	<None>	<Collection: 1 item>	0	6,523.30	100
126	J28	6,295.23	<None>	<Collection: 0 items>	0	6,523.30	99
117	J23	6,295.95	<None>	<Collection: 0 items>	0	6,523.30	99
125	J27	6,298.31	<None>	<Collection: 0 items>	0	6,523.30	97
122	J24	6,298.82	<None>	<Collection: 1 item>	0	6,523.30	97
121	J26	6,301.69	<None>	<Collection: 1 item>	0	6,523.30	96
123	J29	6,303.60	<None>	<Collection: 0 items>	0	6,523.30	95
61	J1	6,304.20	<None>	<Collection: 1 item>	0	6,523.30	95
60	J2	6,306.83	<None>	<Collection: 1 item>	0	6,523.30	94
120	J25	6,308.36	<None>	<Collection: 1 item>	0	6,523.30	93
124	J30	6,310.79	<None>	<Collection: 1 item>	0	6,523.30	92
63	J21	6,313.36	<None>	<Collection: 1 item>	0	6,523.30	91
79	J3	6,316.77	<None>	<Collection: 1 item>	0	6,523.30	89
66	J16	6,317.91	<None>	<Collection: 1 item>	0	6,523.30	89
67	J15	6,332.00	<None>	<Collection: 1 item>	0	6,523.30	83
78	J4	6,338.78	<None>	<Collection: 1 item>	0	6,523.30	80
68	J14	6,350.91	<None>	<Collection: 1 item>	0	6,523.30	75
77	J5	6,354.66	<None>	<Collection: 1 item>	0	6,523.30	73
76	J6	6,363.90	<None>	<Collection: 1 item>	0	6,523.30	69
75	J7	6,376.09	<None>	<Collection: 1 item>	0	6,523.30	64
69	J13	6,377.11	<None>	<Collection: 1 item>	0	6,523.30	63
70	J12	6,383.83	<None>	<Collection: 1 item>	0	6,523.30	60
74	J8	6,386.48	<None>	<Collection: 1 item>	0	6,523.30	59
73	J9	6,388.90	<None>	<Collection: 1 item>	0	6,523.30	58
71	J11	6,393.15	<None>	<Collection: 1 item>	0	6,523.30	56
72	J10	6,398.60	<None>	<Collection: 1 item>	0	6,523.30	54

Appendix D - Sanitary Loading Calcs.

Wastewater- Loading Calculations

Project: HILLSIDE AT CASTLE ROCK
Section: PHASE 3, 4 AND 5

Created By: DSI DATE: 3/12/2025
Checked By: ARJ DATE:

Site	Conceptual Land Use	Typical Average Day Flow (GPM/Unit)	Typical SFE's/Unit	Number of Units	Average Day Flow (GPD)	Average Day Flow (GPM)	Average Day Flow (CFS)	Peaking Factor	Max Peaking Factor	Peak Daily Flow (GPD)	Peak Daily Flow (GPM)	Peak Daily Flow (CFS)
Phase 3 & 4	Single Family Lots	200	1	19	3,800.00	2.64	0.006	9.31	5.00	19,380.00	13.46	0.03
Phase 3 & 4	Duplexes Units	200	1	46	9,200.00	6.39	0.014	8.02	5.00	46,920.00	32.58	0.07
Phase 5	Single Family Lots	200	1	48	9,600.00	6.67	0.015	7.97	5.00	48,960.00	34.00	0.08
Total	-	-	-	113	22,600.00	15.69	0.03	-	-	115,260.00	80.04	0.18

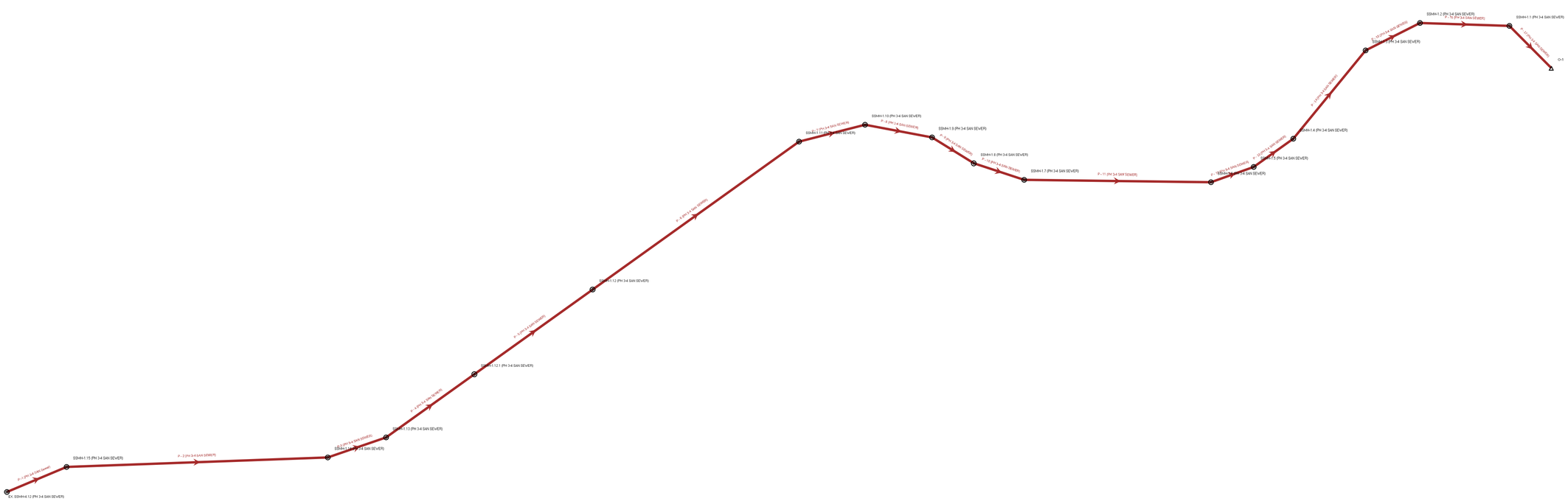
Notes:

1 $PF = 3.65 \times [(ADF)^{-0.168}]$ * PF SHALL NOT EXCEED 5.00

2 PDF = peak base flow + I/I allowance = (ADF*PF) + (0.1*ADF)

Appendix E - Sanitary Hydraulic Modeling

Scenario: Avg Day



Scenario: Avg Day
Current Time Step: 0.000 h
FlexTable: Conduit Table

Label	Diameter (in)	Length (User Defined) (ft)	Slope (ft/ft)	Manning's n	Flow (cfs)	Velocity (ft/s)	Invert (Start) (ft)	Invert (Stop) (ft)	HGL (In) (ft)	HGL (Out) (ft)	Depth (Normal) (ft)
P - 2 (PH 3-4 SAN SEWER)	8.0	327.5	0.062	0.011	0.02	2.75	6,383.38	6,362.96	6,383.45	6,362.99	0.04
P - 4 (PH 3-4 SAN SEWER)	8.0	135.9	0.055	0.011	0.02	2.62	6,358.69	6,351.22	6,358.76	6,351.26	0.04
P - 5 (PH 3-4 SAN SEWER)	8.0	182.3	0.060	0.011	0.02	2.71	6,351.02	6,340.10	6,351.08	6,340.14	0.04
P - 6 (PH 3-4 SAN SEWER)	8.0	318.3	0.060	0.011	0.02	2.71	6,339.90	6,320.84	6,339.97	6,320.88	0.04
P - 7 (PH 3-4 SAN SEWER)	8.0	85.4	0.060	0.011	0.02	2.71	6,320.65	6,315.53	6,320.71	6,315.57	0.04
P - 8 (PH 3-4 SAN SEWER)	8.0	85.4	0.060	0.011	0.02	2.71	6,315.34	6,310.22	6,315.40	6,310.26	0.04
P - 9 (PH 3-4 SAN SEWER)	8.0	61.7	0.055	0.011	0.02	2.62	6,310.02	6,306.63	6,310.08	6,306.67	0.04
P - 10 (PH 3-4 SAN SEWER)	8.0	66.3	0.055	0.011	0.02	2.62	6,306.44	6,302.79	6,306.50	6,302.83	0.04
P - 11 (PH 3-4 SAN SEWER)	8.0	234.1	0.056	0.011	0.03	2.98	6,302.60	6,289.45	6,302.67	6,289.50	0.04
P - 12 (PH 3-4 SAN SEWER)	8.0	56.8	0.055	0.011	0.03	2.96	6,289.25	6,286.13	6,289.33	6,286.18	0.04
P - 13 (PH 3-4 SAN SEWER)	8.0	60.7	0.060	0.011	0.03	3.05	6,285.94	6,282.30	6,286.01	6,282.35	0.04
P - 14 (PH 3-4 SAN SEWER)	8.0	143.3	0.059	0.011	0.03	3.03	6,282.10	6,273.67	6,282.18	6,273.72	0.04
P - 15 (PH 3-4 SAN SEWER)	8.0	76.2	0.060	0.011	0.03	3.05	6,273.47	6,268.91	6,273.55	6,268.96	0.04
P - 16 (PH 3-4 SAN SEWER)	8.0	112.2	0.040	0.011	0.03	2.65	6,268.71	6,264.22	6,268.79	6,264.27	0.05
P - 17 (PH 3-4 SAN SEWER)	8.0	74.5	0.041	0.011	0.03	2.66	6,264.02	6,261.00	6,264.10	6,261.05	0.05
P -1 (PH 3-4 SAN Sewer)	8.0	80.9	-0.030	0.011	0.02	2.11	6,383.58	6,385.99	6,386.05	6,383.62	0.04
P-3 (PH 3-4 SAN SEWER)	8.0	77.3	0.050	0.011	0.02	2.54	6,362.76	6,358.89	6,362.82	6,358.93	0.04

X:\1610000.all\1619020\Word\Reports\Hillside Phases 3, 4 and 5 Utility Study\Appendix E - Sanitary Hydraulic Modeling_StormCAD\Updated_StormCAD\StormCAD San Model.stsw

Scenario: Avg Day
Current Time Step: 0.000 h
FlexTable: Manhole Table

Label	Elevation (Ground) (ft)	Elevation (Invert) (ft)	Flow (Total Out) (cfs)	Velocity (Out) (ft/s)	Hydraulic Grade Line (In) (ft)	Hydraulic Grade Line (Out) (ft)	Headloss Method	HEC-22 Benching Method
EX. SSMH-4.12 (PH 3-4 SAN SEWER)	6,398.21	6,385.99	0.02	1.17	6,386.10	6,386.06	HEC-22 Energy (Third Edition)	Half
SSMH-1.1 (PH 3-4 SAN SEWER)	6,275.04	6,264.02	0.03	1.31	6,264.10	6,264.10	HEC-22 Energy (Third Edition)	Half
SSMH-1.10 (PH 3-4 SAN SEWER)	6,328.23	6,315.34	0.02	1.17	6,315.40	6,315.40	HEC-22 Energy (Third Edition)	Half
SSMH-1.11 (PH 3-4 SAN SEWER)	6,333.47	6,320.65	0.02	1.17	6,320.71	6,320.71	HEC-22 Energy (Third Edition)	Half
SSMH-1.12 (PH 3-4 SAN SEWER)	6,352.52	6,339.90	0.02	1.17	6,339.97	6,339.97	HEC-22 Energy (Third Edition)	Half
SSMH-1.12.1 (PH 3-4 SAN SEWER)	6,363.43	6,351.02	0.02	1.17	6,351.09	6,351.09	HEC-22 Energy (Third Edition)	Half
SSMH-1.13 (PH 3-4 SAN SEWER)	6,371.52	6,358.69	0.02	1.17	6,358.76	6,358.76	HEC-22 Energy (Third Edition)	Half
SSMH-1.14 (PH 3-4 SAN SEWER)	6,376.03	6,362.76	0.02	1.17	6,362.82	6,362.82	HEC-22 Energy (Third Edition)	Half
SSMH-1.15 (PH 3-4 SAN SEWER)	6,395.71	6,383.38	0.02	1.17	6,383.45	6,383.45	HEC-22 Energy (Third Edition)	Half
SSMH-1.2 (PH 3-4 SAN SEWER)	6,281.46	6,268.71	0.03	1.31	6,268.80	6,268.80	HEC-22 Energy (Third Edition)	Half
SSMH-1.3 (PH 3-4 SAN SEWER)	6,286.11	6,273.47	0.03	1.31	6,273.56	6,273.56	HEC-22 Energy (Third Edition)	Half
SSMH-1.4 (PH 3-4 SAN SEWER)	6,294.61	6,282.10	0.03	1.31	6,282.19	6,282.19	HEC-22 Energy (Third Edition)	Half
SSMH-1.5 (PH 3-4 SAN SEWER)	6,298.12	6,285.94	0.03	1.31	6,286.02	6,286.02	HEC-22 Energy (Third Edition)	Half
SSMH-1.6 (PH 3-4 SAN SEWER)	6,301.41	6,289.25	0.03	1.31	6,289.34	6,289.34	HEC-22 Energy (Third Edition)	Half
SSMH-1.7 (PH 3-4 SAN SEWER)	6,315.36	6,302.60	0.03	1.31	6,302.69	6,302.68	HEC-22 Energy (Third Edition)	Half
SSMH-1.8 (PH 3-4 SAN SEWER)	6,319.22	6,306.44	0.02	1.17	6,306.50	6,306.50	HEC-22 Energy (Third Edition)	Half
SSMH-1.9 (PH 3-4 SAN SEWER)	6,322.99	6,310.02	0.02	1.17	6,310.09	6,310.09	HEC-22 Energy (Third Edition)	Half

X:\1610000.all\1619020\Word\Reports\Hillside Phases 3, 4 and 5 Utility Study\Appendix E - Sanitary Hydraulic Modeling_StormCAD\Updated_StormCAD\StormCAD San Model.stsw

Scenario: Avg Day
Current Time Step: 0.000 h
FlexTable: Outfall Table

Label	Elevation (Ground) (ft)	Elevation (Invert) (ft)	Boundary Condition Type	Hydraulic Grade (ft)	Flow (Total Out) (cfs)	Elevation (User Defined Tailwater) (ft)
O-1	6,272.51	6,260.81	Free Outfall	6,261.05	0.03	-

X:\1610000.all\1619020\Word\Reports\Hillside Phases 3, 4 and 5 Utility Study\Appendix E - Sanitary Hydraulic Modeling_StormCAD\Updated_StormCAD\StormCAD San Model.stsw

Scenario: Peak Day
Current Time Step: 0.000 h
FlexTable: Conduit Table

Label	Diameter (in)	Length (User Defined) (ft)	Slope (ft/ft)	Manning's n	Flow (cfs)	Velocity (ft/s)	Invert (Start) (ft)	Invert (Stop) (ft)	HGL (In) (ft)	HGL (Out) (ft)	Depth (Normal) (ft)
P - 2 (PH 3-4 SAN SEWER)	8.0	327.5	0.062	0.011	0.10	4.48	6,383.38	6,362.96	6,383.53	6,363.03	0.08
P - 4 (PH 3-4 SAN SEWER)	8.0	135.9	0.055	0.011	0.10	4.28	6,358.69	6,351.22	6,358.84	6,351.30	0.08
P - 5 (PH 3-4 SAN SEWER)	8.0	182.3	0.060	0.011	0.10	4.41	6,351.02	6,340.10	6,351.16	6,340.18	0.08
P - 6 (PH 3-4 SAN SEWER)	8.0	318.3	0.060	0.011	0.10	4.41	6,339.90	6,320.84	6,340.05	6,320.92	0.08
P - 7 (PH 3-4 SAN SEWER)	8.0	85.4	0.060	0.011	0.10	4.41	6,320.65	6,315.53	6,320.79	6,315.61	0.08
P - 8 (PH 3-4 SAN SEWER)	8.0	85.4	0.060	0.011	0.10	4.41	6,315.34	6,310.22	6,315.48	6,310.30	0.08
P - 9 (PH 3-4 SAN SEWER)	8.0	61.7	0.055	0.011	0.10	4.28	6,310.02	6,306.63	6,310.16	6,306.71	0.08
P - 10 (PH 3-4 SAN SEWER)	8.0	66.3	0.055	0.011	0.10	4.28	6,306.44	6,302.79	6,306.58	6,302.87	0.08
P - 11 (PH 3-4 SAN SEWER)	8.0	234.1	0.056	0.011	0.18	5.15	6,302.60	6,289.45	6,302.79	6,289.56	0.10
P - 12 (PH 3-4 SAN SEWER)	8.0	56.8	0.055	0.011	0.18	5.11	6,289.25	6,286.13	6,289.45	6,286.24	0.11
P - 13 (PH 3-4 SAN SEWER)	8.0	60.7	0.060	0.011	0.18	5.26	6,285.94	6,282.30	6,286.13	6,282.41	0.10
P - 14 (PH 3-4 SAN SEWER)	8.0	143.3	0.059	0.011	0.18	5.23	6,282.10	6,273.67	6,282.30	6,273.78	0.10
P - 15 (PH 3-4 SAN SEWER)	8.0	76.2	0.060	0.011	0.18	5.26	6,273.47	6,268.91	6,273.67	6,269.01	0.10
P - 16 (PH 3-4 SAN SEWER)	8.0	112.2	0.040	0.011	0.18	4.57	6,268.71	6,264.22	6,268.91	6,264.34	0.11
P - 17 (PH 3-4 SAN SEWER)	8.0	74.5	0.041	0.011	0.18	4.59	6,264.02	6,261.00	6,264.21	6,261.11	0.11
P -1 (PH 3-4 SAN Sewer)	8.0	80.9	-0.030	0.011	0.10	3.45	6,383.58	6,385.99	6,386.13	6,383.67	0.09
P-3 (PH 3-4 SAN SEWER)	8.0	77.3	0.050	0.011	0.10	4.15	6,362.76	6,358.89	6,362.90	6,358.97	0.08

X:\1610000.all\1619020\Word\Reports\Hillside Phases 3, 4 and 5 Utility Study\Appendix E - Sanitary Hydraulic Modeling_StormCAD\Updated_StormCAD\StormCAD San Model.stsw

Scenario: Peak Day
Current Time Step: 0.000 h
FlexTable: Manhole Table

Label	Elevation (Ground) (ft)	Elevation (Invert) (ft)	Flow (Total Out) (cfs)	Velocity (Out) (ft/s)	Hydraulic Grade Line (In) (ft)	Hydraulic Grade Line (Out) (ft)	Headloss Method	HEC-22 Benching Method
EX. SSMH-4.12 (PH 3-4 SAN SEWER)	6,398.21	6,385.99	0.10	1.80	6,386.23	6,386.14	HEC-22 Energy (Third Edition)	Half
SSMH-1.1 (PH 3-4 SAN SEWER)	6,275.04	6,264.02	0.18	2.12	6,264.24	6,264.23	HEC-22 Energy (Third Edition)	Half
SSMH-1.10 (PH 3-4 SAN SEWER)	6,328.23	6,315.34	0.10	1.80	6,315.49	6,315.49	HEC-22 Energy (Third Edition)	Half
SSMH-1.11 (PH 3-4 SAN SEWER)	6,333.47	6,320.65	0.10	1.80	6,320.80	6,320.80	HEC-22 Energy (Third Edition)	Half
SSMH-1.12 (PH 3-4 SAN SEWER)	6,352.52	6,339.90	0.10	1.80	6,340.06	6,340.06	HEC-22 Energy (Third Edition)	Half
SSMH-1.12.1 (PH 3-4 SAN SEWER)	6,363.43	6,351.02	0.10	1.80	6,351.17	6,351.17	HEC-22 Energy (Third Edition)	Half
SSMH-1.13 (PH 3-4 SAN SEWER)	6,371.52	6,358.69	0.10	1.80	6,358.85	6,358.85	HEC-22 Energy (Third Edition)	Half
SSMH-1.14 (PH 3-4 SAN SEWER)	6,376.03	6,362.76	0.10	1.80	6,362.91	6,362.91	HEC-22 Energy (Third Edition)	Half
SSMH-1.15 (PH 3-4 SAN SEWER)	6,395.71	6,383.38	0.10	1.80	6,383.54	6,383.54	HEC-22 Energy (Third Edition)	Half
SSMH-1.2 (PH 3-4 SAN SEWER)	6,281.46	6,268.71	0.18	2.12	6,268.92	6,268.92	HEC-22 Energy (Third Edition)	Half
SSMH-1.3 (PH 3-4 SAN SEWER)	6,286.11	6,273.47	0.18	2.12	6,273.68	6,273.68	HEC-22 Energy (Third Edition)	Half
SSMH-1.4 (PH 3-4 SAN SEWER)	6,294.61	6,282.10	0.18	2.12	6,282.31	6,282.31	HEC-22 Energy (Third Edition)	Half
SSMH-1.5 (PH 3-4 SAN SEWER)	6,298.12	6,285.94	0.18	2.12	6,286.14	6,286.14	HEC-22 Energy (Third Edition)	Half
SSMH-1.6 (PH 3-4 SAN SEWER)	6,301.41	6,289.25	0.18	2.12	6,289.46	6,289.46	HEC-22 Energy (Third Edition)	Half
SSMH-1.7 (PH 3-4 SAN SEWER)	6,315.36	6,302.60	0.18	2.12	6,302.86	6,302.80	HEC-22 Energy (Third Edition)	Half
SSMH-1.8 (PH 3-4 SAN SEWER)	6,319.22	6,306.44	0.10	1.80	6,306.59	6,306.59	HEC-22 Energy (Third Edition)	Half
SSMH-1.9 (PH 3-4 SAN SEWER)	6,322.99	6,310.02	0.10	1.80	6,310.17	6,310.17	HEC-22 Energy (Third Edition)	Half

X:\1610000.all\1619020\Word\Reports\Hillside Phases 3, 4 and 5 Utility Study\Appendix E - Sanitary Hydraulic Modeling_StormCAD\Updated_StormCAD\StormCAD San Model.stsw

Scenario: Peak Day
Current Time Step: 0.000 h
FlexTable: Outfall Table

Label	Elevation (Ground) (ft)	Elevation (Invert) (ft)	Boundary Condition Type	Hydraulic Grade (ft)	Flow (Total Out) (cfs)	Elevation (User Defined Tailwater) (ft)
O-1	6,272.51	6,260.81	Free Outfall	6,261.11	0.18	-

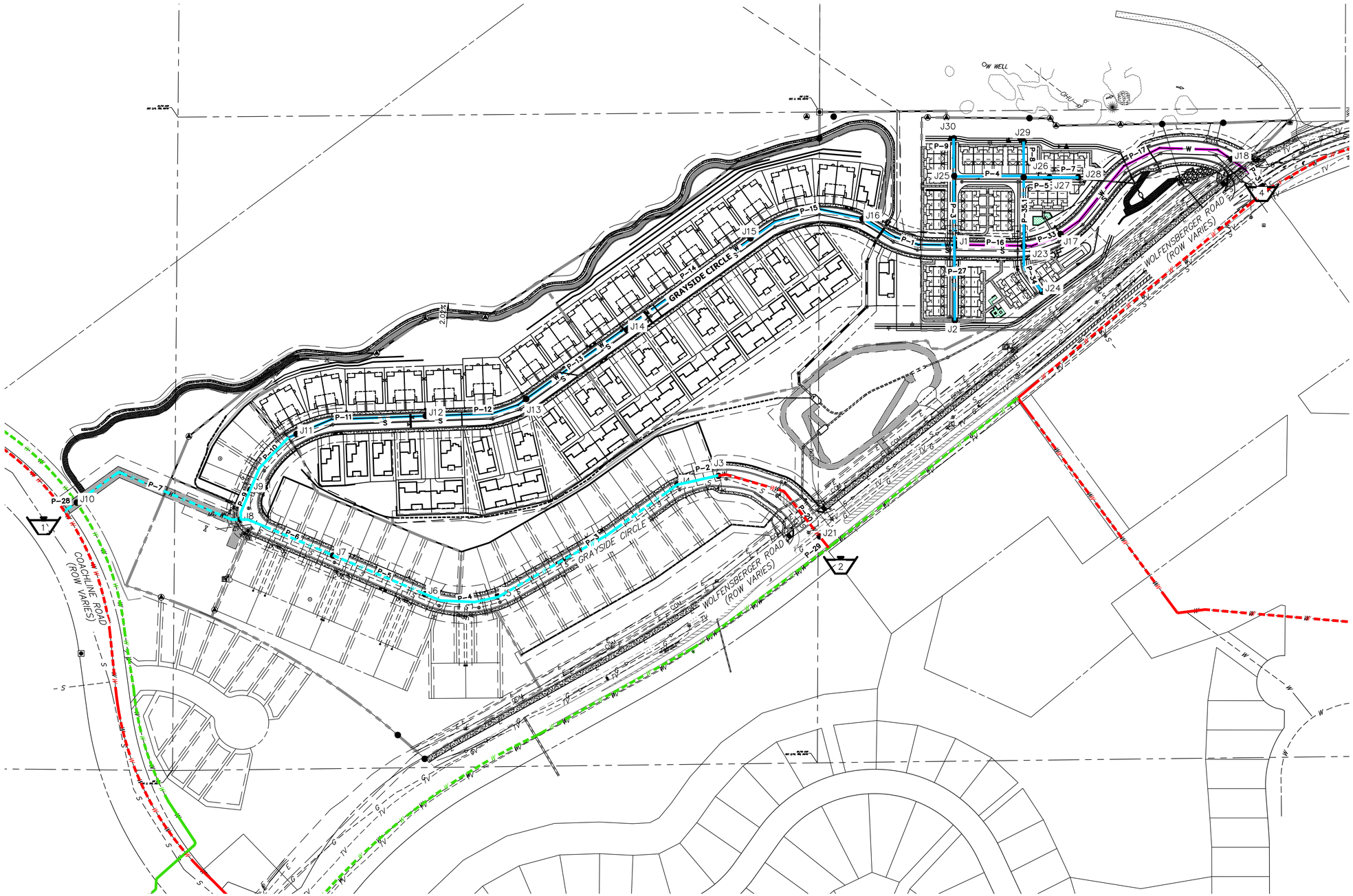
X:\1610000.all\1619020\Word\Reports\Hillside Phases 3, 4 and 5 Utility Study\Appendix E - Sanitary Hydraulic Modeling_StormCAD\Updated_StormCAD\StormCAD San Model.stsw

Appendix F - Plans and Maps

HILLSIDE AT CASTLE ROCK

PHASE 3, 4 AND 5

POTABLE WATER BASIN MAP



LEGEND

EX. WATER SIZE VARIES	W
EX. 8" WATER	W
EX. 12" WATER	W
EX. 16" WATER	W
8" WATER	W
FUTURE 8" WATER	W
12" WATER	W
NODE	J#
RESERVOIR	

N

100 50 0 100 200

ORIGINAL SCALE: 1" = 100'

WATER WORK MAP
HILLSIDE AT CASTLE ROCK – PHASE 3,4 & 5
JOB NO. 1619020
FEBRAURY 16, 2025
SHEET 1 OF 1

J·R ENGINEERING
A Westrian Company

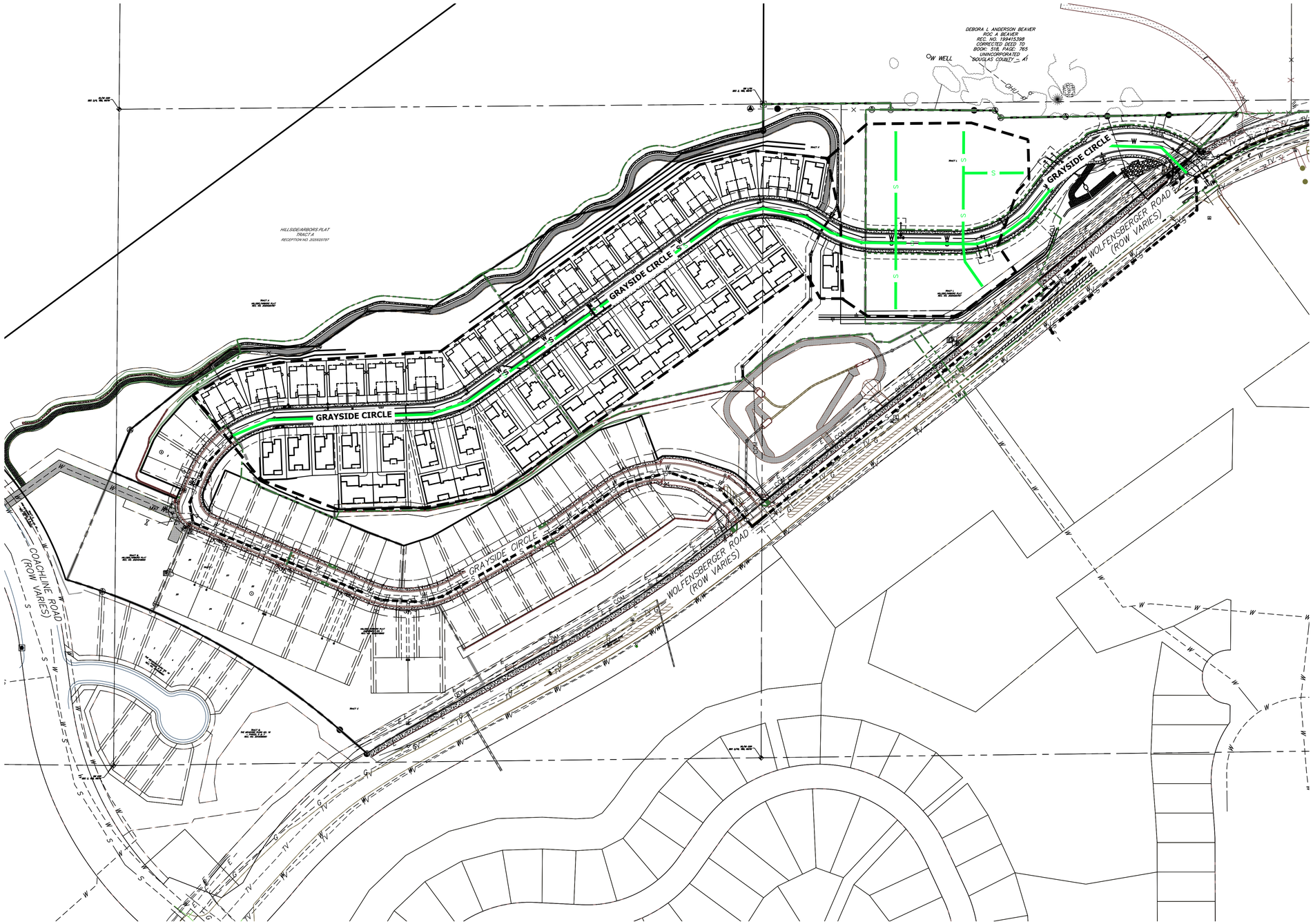
Centennial 303-740-9393 • Colorado Springs 719-593-2593
Fort Collins 970-491-9888 • www.jrengineering.com

C:\Users\FC\DC\ACCDocs\JR Engineering\1619020\Project Files\Drawings\Sheet Dwgs\Utility Report\1619020 Water Work Map.dwg, 1619020 - Potable Water Map, 2/18/2026 12:03:25 PM, FC

HILLSIDE AT CASTLE ROCK

PHASE 3, 4 AND 5

SANITARY BASIN MAP



LEGEND

BASIN DELINEATION

8" EX. SANITARY SEWER

8" SANITARY SEWER

100 50 0 100 200

ORIGINAL SCALE: 1" = 100'

SANITARY WORK MAP
HILLSIDE AT CASTLE ROCK – PHASE 3,4 & 5
JOB NO. 169020
DECEMBER 5, 2025
SHEET 1 OF 1

J·R ENGINEERING
A Westrian Company

Centennial 303-740-9393 • Colorado Springs 719-593-2593
Fort Collins 970-491-9888 • www.jrengineering.com

SITE DEVELOPMENT PLAN AMENDMENT 4

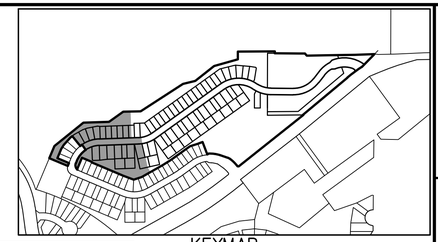
TRACTS K-1, L, & M, HILLSIDE/ARBORS AMENDMENT NO.1

HILLSIDE-ARBORS PHASES 3 & 4

LOCATED IN THE SOUTHWEST 1/4 OF SECTION 3 AND THE SOUTHEAST 1/4 OF SECTION 4,TOWNSHIP 8 SOUTH, RANGE 67 WEST OF THE 6TH P.M.,TOWN OF CASTLE ROCK , COUNTY OF DOUGLAS, STATE OF COLORADO

UTILITY NOTES

1. THIS SITE IS LOCATED WITHIN THE TOWN OF CASTLE ROCK 3B (BLUE–WEST) WATER PRESSURE ZONE.
2. ALL PROPOSED EASEMENTS MUST BE RECORDED PRIOR TO ISSUANCE OF CONSTRUCTION PERMITS.
3. ALL UTILITY EASEMENTS FOR WATER AND WASTEWATER LINES SHALL BE FOR THE EXCLUSIVE USE OF THE TOWN SO THAT ACCESS AND MAINTENANCE MAY BE PERFORMED.
4. THE MINIMUM SEPARATION BETWEEN WATERLINES, SANITARY SEWER AND STORM SEWER LINES IS 10 FEET.
5. THE MINIMUM SEPARATION BETWEEN WATER SERVICE LINES IS 5 FEET.
6. ANY TIE–IN, CROSSING OR LOWERING OF TOWN CRITICAL INFRASTRUCTURE WILL REQUIRE A TIME AND MATERIALS PERMIT (TMU) WITH FEES REQUIRED PRIOR TO CONSTRUCTION.



KEYMAP
SCALE:1"=500'

CURVE TABLE					
CURVE NO.	LENGTH	RADIUS	DELTA	CHORD DIRECTION	CHORD LENGTH
C6	4.51'	49.50'	5°12'57"	S20°14'19"W	4.50'
C8	50.28'	40.50'	71°08'14"	N12°43'19"W	47.12'
C9	100.47'	177.50'	32°25'50"	N39°03'43"E	99.13'
C10	15.98'	222.50'	4°06'55"	S53°13'10"W	15.98'

GENERAL NOTES:

1. REFERENCE HILLSIDE AT CASTLE ROCK IMPROVEMENT PLANS BY PARAGON ENGINEERING CONSULTANTS, INC. FOR STORM SEWER PIPE SIZES, STORM SEWER INLET TYPES AND SIZES, AND DETENTION POND DETAILS.

LEGEND

- PR. RIGHT OF WAY
- EX. RIGHT OF WAY
- PROPERTY LINE
- BOUNDARY LINE
- CENTERLINE
- PR. EASEMENT
- EX. EASEMENT
- PR. CURB & GUTTER
- EX. CURB & GUTTER
- PR. STREET LIGHT
- EX. STREET LIGHT
- PR. FIRE HYDRANT
- EX. FIRE HYDRANT
- PR. BLOW OFF VALVE
- PR. GATE VALVE
- PR. WATER LINE W/ GATE VALVE
- EX. WATER LINE W/ GATE VALVE
- PR. SANITARY SEWER W/ MANHOLE
- EX. SANITARY SEWER W/ MANHOLE
- PR. STORM SEWER W/ MANHOLE
- EX. STORM SEWER W/ MANHOLE
- PR. INLET
- U.E. INDICATES UTILITY EASEMENT
- PHASE BOUNDARY LINE
- EXISTING TRICKLE CHANNEL

50 25 0 50 100
ORIGINAL SCALE: 1" = 50'

SITE DEVELOPMENT PLAN AMENDMENT 4
TOWN OF CASTLE ROCK PROJECT NO. SDP25-0012

UNTIL SUCH TIME AS THESE PLANS ARE APPROVED BY THE APPROPRIATE REVIEWING AGENCIES, JR ENGINEERING APPROVES THEIR USE ONLY FOR THE PURPOSES DESIGNATED BY WRITTEN AUTHORIZATION.

PREPARED FOR
BLVD HILLSIDE LLC
5299 DTC BOULEVARD
SUITE 280
GREENWOOD VILLAGE, CO 80111
OFFICE PHONE
(303) 791–8180

J·R ENGINEERING
A Westrian Company
Centennial 303–740–9393 • Colorado Springs 719–593–2593
Fort Collins 970–491–9888 • www.jrengineering.com

No.	REVISION	BY	DATE

H–SCALE	1"= 50'
V–SCALE	N/A
DATE	6/3/26
DESIGNED BY	JP
DRAWN BY	MEP
CHECKED BY	

SITE DEVELOPMENT PLAN AMENDMENT 4
SITE AND UTILITY PLAN

SHEET 6 OF 22
JOB NO. 16190.20

C:\Users\paulsen\DC\ACCDocs\JR Engineering\16190\Project Files\Drawings\Sheet Dwgs\Phase 3-4 SDP\SDP-3rd Amend 05-07 Site.dwg, SDP SHEET 7, 6/3/2026 3:14:18 PM, paulsen

SITE DEVELOPMENT PLAN AMENDMENT 4

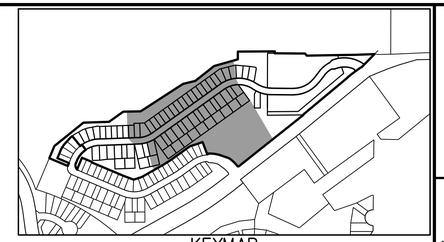
TRACTS K-1, L, & M, HILLSIDE/ARBORS AMENDMENT NO.1

HILLSIDE-ARBORS PHASES 3 & 4

LOCATED IN THE SOUTHWEST 1/4 OF SECTION 3 AND THE SOUTHEAST 1/4 OF SECTION 4,TOWNSHIP 8 SOUTH, RANGE 67 WEST OF THE 6TH P.M.,TOWN OF CASTLE ROCK , COUNTY OF DOUGLAS, STATE OF COLORADO

CURVE TABLE					
CURVE NO.	LENGTH	RADIUS	DELTA	CHORD DIRECTION	CHORD LENGTH
C7	62.77'	239.50'	15°01'04"	N46°21'16"W	62.60'

TYPICAL: MANHOLES NOT LOCATED WITHIN A PUBLIC STREET SHALL BE INSTALLED IN ACCORDANCE WITH SECTION 4.4.7-3 OF THE TOWN OF CASTLE ROCK WASTEWATER SYSTEM DESIGN CRITERIA MANUAL

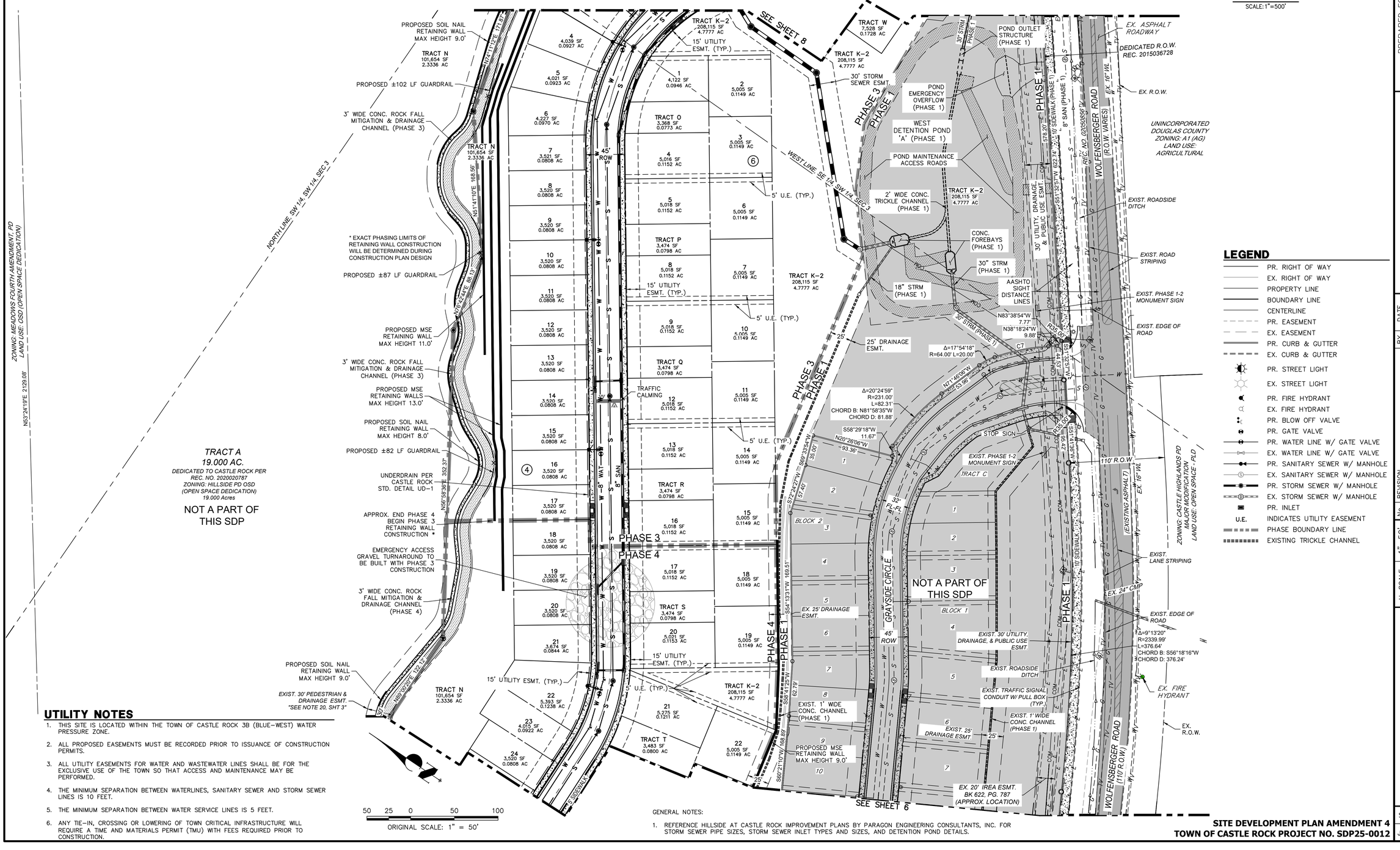


KEYMAP
SCALE:1"=500'

UNTIL SUCH TIME AS THESE DRAWINGS ARE APPROVED BY THE APPROPRIATE REVIEWING AGENCIES, JR ENGINEERING APPROVES THEIR USE ONLY FOR THE PURPOSES DESIGNATED BY WRITTEN AUTHORIZATION.

PREPARED FOR
BLVD HILLSIDE LLC
5299 DTC BOULEVARD
SUITE 280
GREENWOOD VILLAGE, CO 80111
OFFICE PHONE
(303) 791-8180

J·R ENGINEERING
A Westrian Company
Centennial 303-740-9393 • Colorado Springs 719-593-2593
Fort Collins 970-491-9888 • www.jrengineering.com



UTILITY NOTES

1. THIS SITE IS LOCATED WITHIN THE TOWN OF CASTLE ROCK 3B (BLUE-WEST) WATER PRESSURE ZONE.
2. ALL PROPOSED EASEMENTS MUST BE RECORDED PRIOR TO ISSUANCE OF CONSTRUCTION PERMITS.
3. ALL UTILITY EASEMENTS FOR WATER AND WASTEWATER LINES SHALL BE FOR THE EXCLUSIVE USE OF THE TOWN SO THAT ACCESS AND MAINTENANCE MAY BE PERFORMED.
4. THE MINIMUM SEPARATION BETWEEN WATERLINES, SANITARY SEWER AND STORM SEWER LINES IS 10 FEET.
5. THE MINIMUM SEPARATION BETWEEN WATER SERVICE LINES IS 5 FEET.
6. ANY TIE-IN, CROSSING OR LOWERING OF TOWN CRITICAL INFRASTRUCTURE WILL REQUIRE A TIME AND MATERIALS PERMIT (TMU) WITH FEES REQUIRED PRIOR TO CONSTRUCTION.

GENERAL NOTES:

1. REFERENCE HILLSIDE AT CASTLE ROCK IMPROVEMENT PLANS BY PARAGON ENGINEERING CONSULTANTS, INC. FOR STORM SEWER PIPE SIZES, STORM SEWER INLET TYPES AND SIZES, AND DETENTION POND DETAILS.

LEGEND

- PR. RIGHT OF WAY
- EX. RIGHT OF WAY
- PROPERTY LINE
- BOUNDARY LINE
- CENTERLINE
- PR. EASEMENT
- EX. EASEMENT
- PR. CURB & GUTTER
- EX. CURB & GUTTER
- PR. STREET LIGHT
- EX. STREET LIGHT
- PR. FIRE HYDRANT
- EX. FIRE HYDRANT
- PR. BLOW OFF VALVE
- PR. GATE VALVE
- PR. WATER LINE W/ GATE VALVE
- EX. WATER LINE W/ GATE VALVE
- PR. SANITARY SEWER W/ MANHOLE
- EX. SANITARY SEWER W/ MANHOLE
- PR. STORM SEWER W/ MANHOLE
- EX. STORM SEWER W/ MANHOLE
- PR. INLET
- U.E. INDICATES UTILITY EASEMENT
- PHASE BOUNDARY LINE
- EXISTING TRICKLE CHANNEL

No.	REVISION	BY	DATE

H-SCALE	1" = 50'
V-SCALE	N/A
DATE	6/3/26
DESIGNED BY	JP
DRAWN BY	MEP
CHECKED BY	

SITE DEVELOPMENT PLAN AMENDMENT 4
SITE AND UTILITY PLAN

SHEET 7 OF 22
JOB NO. 16190.20

SITE DEVELOPMENT PLAN AMENDMENT 4
TOWN OF CASTLE ROCK PROJECT NO. SDP25-0012

C:\Users\paulsen\DOCACCDocs\JR Engineering\16190\Project Files\Drawings\Sheet Dwgs\Phase 3-4 SDP\SDP-3rd Amend 05-07 Site.dwg, SDP SHEET 8, 6/3/2026 3:14:39 PM, paulsen

SITE DEVELOPMENT PLAN AMENDMENT 4

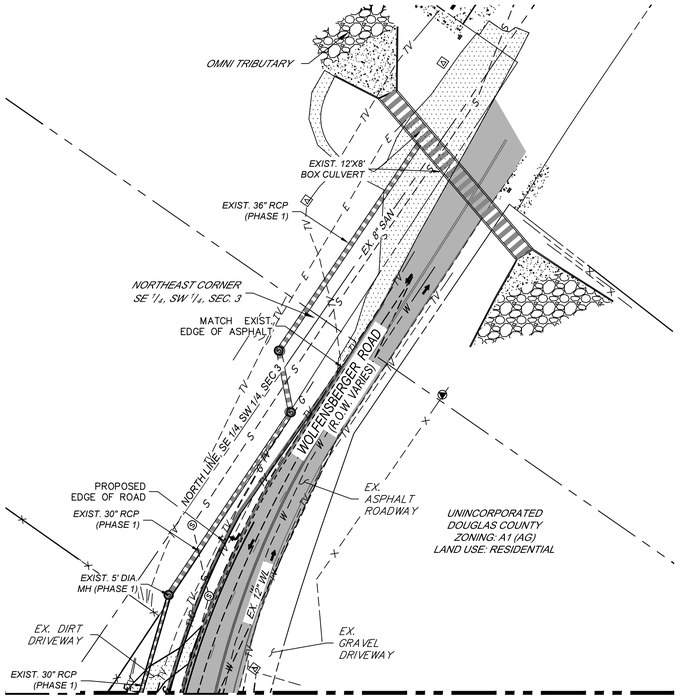
TRACTS K-1, L, & M, HILLSIDE/ARBORS AMENDMENT NO.1

HILLSIDE-ARBORS PHASES 3 & 4

LOCATED IN THE SOUTHWEST 1/4 OF SECTION 3 AND THE SOUTHEAST 1/4 OF SECTION 4,TOWNSHIP 8 SOUTH, RANGE 67 WEST OF THE 6TH P.M.,TOWN OF CASTLE ROCK , COUNTY OF DOUGLAS, STATE OF COLORADO

GENERAL NOTES:

1. REFERENCE HILLSIDE AT CASTLE ROCK IMPROVEMENT PLANS BY PARAGON ENGINEERING CONSULTANTS, INC. FOR STORM SEWER PIPE SIZES, STORM SEWER INLET TYPES AND SIZES, AND DETENTION POND DETAILS.



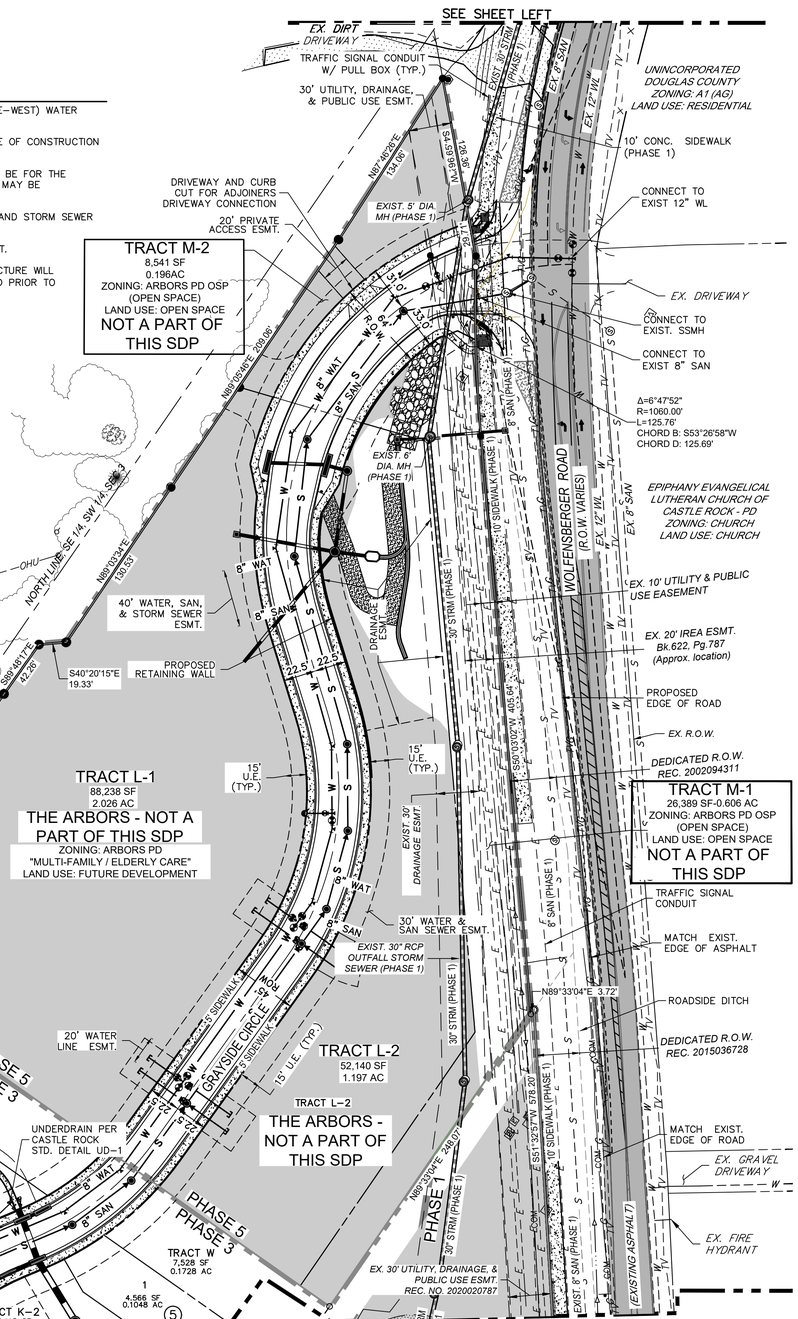
UTILITY NOTES

1. THIS SITE IS LOCATED WITHIN THE TOWN OF CASTLE ROCK 3B (BLUE–WEST) WATER PRESSURE ZONE.
2. ALL PROPOSED EASEMENTS MUST BE RECORDED PRIOR TO ISSUANCE OF CONSTRUCTION PERMITS.
3. ALL UTILITY EASEMENTS FOR WATER AND WASTEWATER LINES SHALL BE FOR THE EXCLUSIVE USE OF THE TOWN SO THAT ACCESS AND MAINTENANCE MAY BE PERFORMED.
4. THE MINIMUM SEPARATION BETWEEN WATERLINES, SANITARY SEWER AND STORM SEWER LINES IS 10 FEET.
5. THE MINIMUM SEPARATION BETWEEN WATER SERVICE LINES IS 5 FEET.
6. ANY TIE–IN, CROSSING OR LOWERING OF TOWN CRITICAL INFRASTRUCTURE WILL REQUIRE A TIME AND MATERIALS PERMIT (TMU) WITH FEES REQUIRED PRIOR TO CONSTRUCTION.

50 25 0 50 100

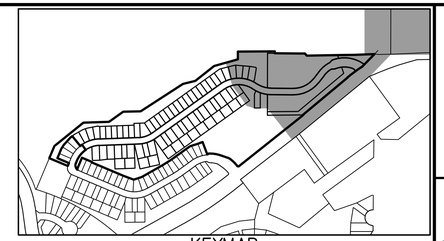
ORIGINAL SCALE: 1" = 50'

TYPICAL: MANHOLES NOT LOCATED WITHIN A PUBLIC STREET SHALL BE INSTALLED IN ACCORDANCE WITH SECTION 4.4.7-3 OF THE TOWN OF CASTLE ROCK WASTEWATER SYSTEM DESIGN CRITERIA MANUAL



LEGEND

- PR. RIGHT OF WAY
- EX. RIGHT OF WAY
- PROPERTY LINE
- BOUNDARY LINE
- CENTERLINE
- PR. EASEMENT
- EX. EASEMENT
- PR. CURB & GUTTER
- EX. CURB & GUTTER
- PR. STREET LIGHT
- EX. STREET LIGHT
- PR. FIRE HYDRANT
- EX. FIRE HYDRANT
- PR. BLOW OFF VALVE
- PR. GATE VALVE
- PR. WATER LINE W/ GATE VALVE
- EX. WATER LINE W/ GATE VALVE
- PR. SANITARY SEWER W/ MANHOLE
- EX. SANITARY SEWER W/ MANHOLE
- PR. STORM SEWER W/ MANHOLE
- EX. STORM SEWER W/ MANHOLE
- PR. INLET
- U.E. INDICATES UTILITY EASEMENT
- PHASE BOUNDARY LINE
- EXISTING TRICKLE CHANNEL



KEYMAP

SCALE:1"=500'

UNTIL SUCH TIME AS THESE DRAWINGS ARE APPROVED BY THE APPROPRIATE REVIEWING AGENCIES, JR ENGINEERING APPROVES THEIR USE ONLY FOR THE PURPOSES DESIGNATED BY WRITTEN AUTHORIZATION.

PREPARED FOR
BLVD HILLSIDE LLC
5299 DTC BOULEVARD
SUITE 280
GREENWOOD VILLAGE, CO 80111
OFFICE PHONE
(303) 791-8180

J·R ENGINEERING
A Westrian Company
Centennial 303-740-9393 • Colorado Springs 719-593-2593
Fort Collins 970-491-9888 • www.jrengineering.com

No.	REVISION	BY	DATE

H–SCALE	1"=50'	DESIGNED BY	JP
V–SCALE	N/A	DRAWN BY	MEP
DATE	6/3/26	CHECKED BY	

SITE DEVELOPMENT PLAN AMENDMENT 4

SITE AND UTILITY PLAN

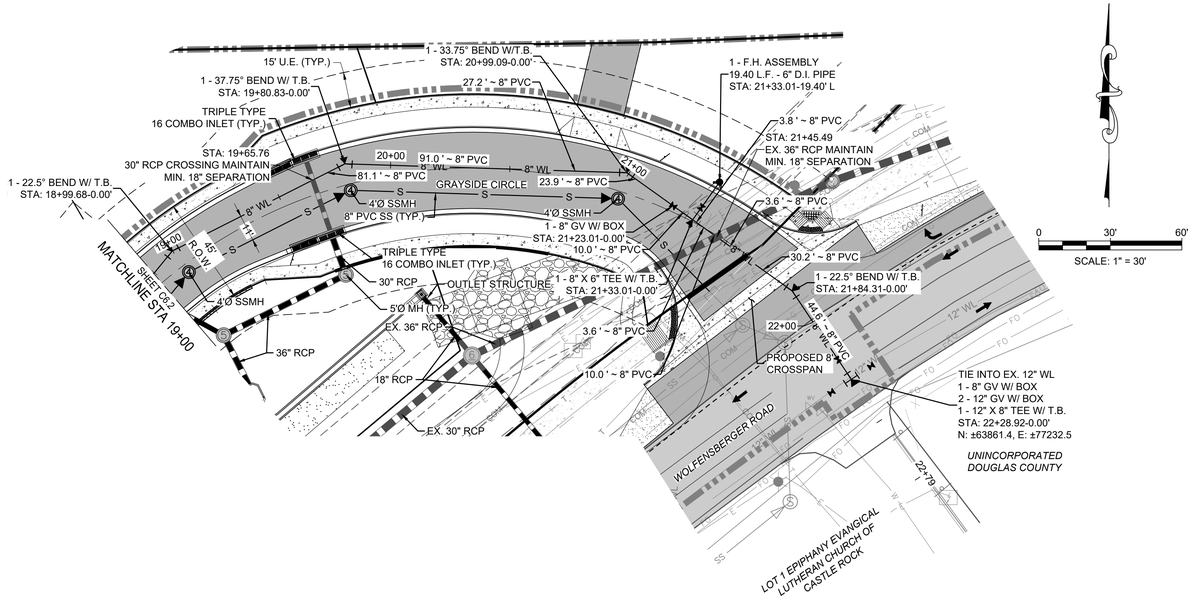
SHEET 8 OF 22

JOB NO. 16190.20

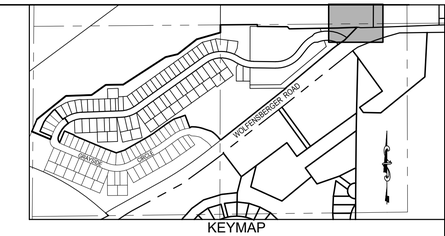
SITE DEVELOPMENT PLAN AMENDMENT 4
TOWN OF CASTLE ROCK PROJECT NO. SDP25-0012

C:\Users\paulsen\ID\ACCDocs\JR Engineering\16190\20\Project Files\Drawings\Sheet Dwgs\Phase 3-4 SDP\SDP-3rd Amend 05-07 Site.dwg, SDP SHEET 9, 6/3/2026 3:14:18 PM, paulsen)

© 2023, ALL RIGHTS RESERVED.



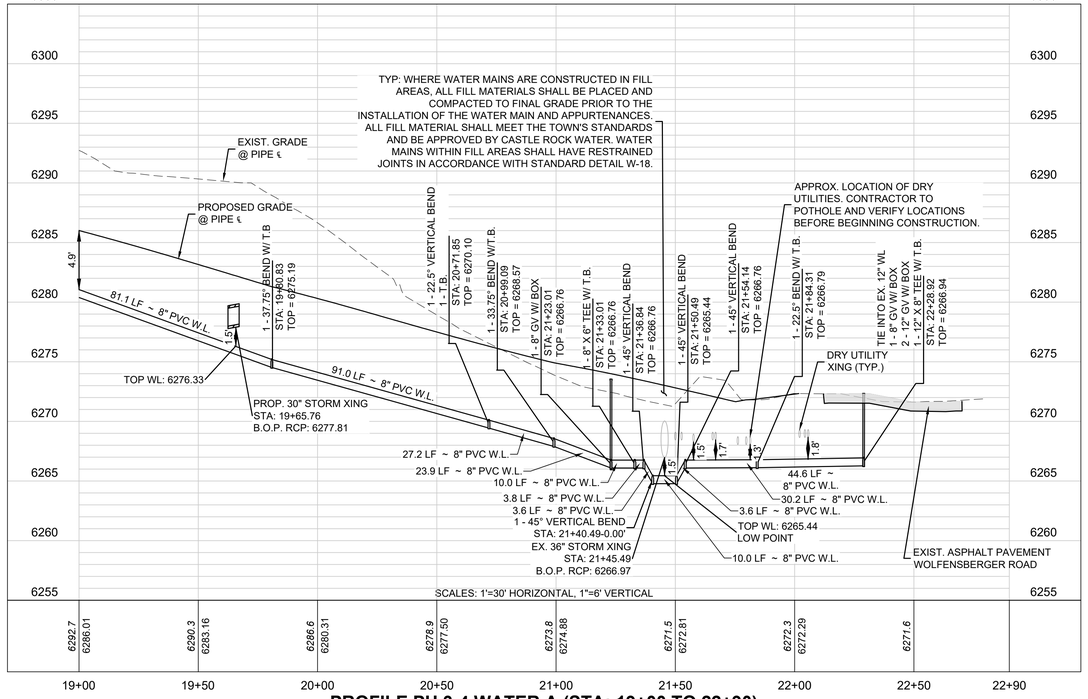
DRY UTILITY CROSSINGS			
	STATION AND CROSSING	NORTHING	EASTING
	21+50.00 - ELECTRIC LINE XING	63925.58	77169.78
	21+52.61 - ELECTRIC LINE XING	63924.06	77171.91
	21+65.97 - COM. LINE XING	63916.31	77182.78
	21+66.90 - ELECTRIC LINE XING	63915.75	77183.53
	21+76.02 - TELEPHONE LINE XING	63910.45	77190.95
	21+79.70 - ELECTRIC LINE XING	63908.31	77193.95
	21+81.35 - TELEPHONE LINE XING	63907.35	77195.28
	22+02.12 - COM. LINE XING	63893.91	77210.74
	22+04.30 - GAS LINE XING	63892.10	77211.95
	22+05.74 - GAS LINE XING	63890.91	77212.75



KEYMAP
SCALE: 1"=500'

UTILITY LEGEND:

- PROPERTY LINE
- RIGHT-OF-WAY
- LOT / TRACT LINE
- EXISTING LOT LINE
- X — EXISTING FENCE
- E — EXISTING ELECTRIC LINE
- G — EXISTING GAS MAIN
- CTV — EXISTING CATV
- COM — EXISTING COMMUNICATION
- S — EXISTING SANITARY SEWER
- W — EXISTING WATER MAIN
- EXIST. TRAFFIC SIGNAL CONDUIT W/ PULL BOX
- EXISTING STORM SEWER
- EXISTING SANITARY SEWER MH
- EXISTING STORM MANHOLE
- EXISTING STORM INLETS
- EXISTING FIRE HYDRANT
- EXISTING WATER VALVE
- EXISTING UTILITY RISER
- EXISTING STREET SIGN
- EXISTING ASPHALT PAVEMENT
- PROPOSED PHASING LINE
- S — PROPOSED SANITARY SEWER
- W — PROPOSED WATER MAIN
- S — PROPOSED SEWER SERVICE LINE
- W — PROPOSED WATER SERVICE LINE
- PROPOSED STORM SEWER
- PROPOSED AREA INLET
- PROPOSED TYPE 16 COMBO INLET
- PROPOSED STORM MANHOLE
- PROPOSED HYDRANT & ASSEMBLY
- PROPOSED W.L. REDUCER
- PROPOSED W.L. FITTINGS
- PROPOSED W.L. PLUG
- PROPOSED WATER VALVE
- PROPOSED S.S. CLEANOUT
- PROPOSED SIGN
- PROPOSED STREET LIGHT



PROFILE PH 3-4 WATER A (STA: 19+00 TO 22+90)

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 EXIST. WATER, SANITARY SEWER, AND/OR STORM SEWER SYSTEMS PROVIDED THAT THE UTILITY TIE-IN DOES NOT DISRUPT SERVICE TO EXIST. CR WATER CUSTOMERS. IF THE TIE-IN WILL DISRUPT UTILITY SERVICE, THEN THE 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 EXIST. CUSTOMERS AFFECTED BY THE TIE-IN. ALL TOWN UTILITY TIE-INS MUST BE APPROVED BY CR WATER PRIOR TO COMMENCING WORK.

EXISTING UTILITIES DISCLAIMER:

EXISTING UTILITIES SHOWN ON THESE IMPROVEMENT PLANS ARE APPROXIMATE ONLY. THEY HAVE BEEN LOCATED FROM FIELD SURVEYS AND UTILITY RECORDS. THE CONTRACTOR SHALL CONTACT ALL RESPECTIVE UTILITY COMPANIES TO HAVE ALL UTILITIES FIELD LOCATED PRIOR TO CONSTRUCTION.

THE CONTRACTOR SHALL TAKE THE NECESSARY PRECAUTIONS TO PROTECT ALL EXISTING UTILITIES ENCOUNTERED, AND SHALL BE RESPONSIBLE FOR THE IMMEDIATE REPAIR OF ALL UTILITIES DAMAGED DURING CONSTRUCTION WHETHER SHOWN ON THESE PLANS OR NOT.

IT SHALL BE THE CONTRACTOR'S FULL RESPONSIBILITY TO FIELD VERIFY THE LOCATION OF ALL EXISTING STRUCTURES AND UTILITIES SHOWN ON THESE IMPROVEMENT PLANS, TO ASCERTAIN WHETHER ANY STRUCTURES AND UTILITIES MAY EXIST, AND TO REPAIR OR REPLACE ANY STRUCTURES AND UTILITIES THAT MIGHT BE DAMAGED. IF ANY UNKNOWN SUBSURFACE STRUCTURES OR UTILITIES ARE ENCOUNTERED DURING CONSTRUCTION, IT SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE CIVIL ENGINEER WHOSE NAME APPEARS ON THESE PLANS.

IT SHALL BE THE CONTRACTOR'S FULL RESPONSIBILITY TO CONTACT THE EXISTING UTILITY PROVIDER(S) IN A TIMELY MANNER TO SCHEDULE ANY AND ALL UTILITY REALIGNMENTS DUE TO CONFLICTS WITH PROPOSED EARTHWORK GRADING AND/OR INFRASTRUCTURE BEING CONSTRUCTED PER THE ATTACHED CONSTRUCTION DOCUMENTS.

PROJECT BENCHMARK:

TOP OF THE SW 1/16 CORNER OF SECTION 3, TOWNSHIP 8 SOUTH, RANGE 67 WEST, BEING A 3" ALUMINUM CAP STAMPED "PLS 25629 1995" WITH AN ELEVATION OF 6352.83 FEET NAVD 88. THIS ELEVATION IS BASED UPON NGS STATION "N 393" WITH A PUBLISHED ELEVATION OF 6222.12 FEET NAVD 88.

811 Know what's below. Call before you dig.

CALL UTILITY NOTIFICATION CENTER OF COLORADO
1-800-922-1987 or 811
CALL 3-BUSINESS DAYS (NOT INCLUDING INITIAL DAY OF CONTACT) IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES.

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

No.	REVISION	BY	DATE

PRELIMINARY
NOT FOR
CONSTRUCTION

EES
ENTITLEMENT AND ENGINEERING SOLUTIONS, INC.
3801 E. Florida Avenue, Suite 425
Denver, CO 80210
303-572-7997 www.ees.us.com

BLVD. BUILDERS

CONSTRUCTION PLANS
HILLSIDE AT CASTLE ROCK - PHASES 3-4
CASTLE ROCK, COLORADO
PHASE 3 WATER PLAN & PROFILE 1

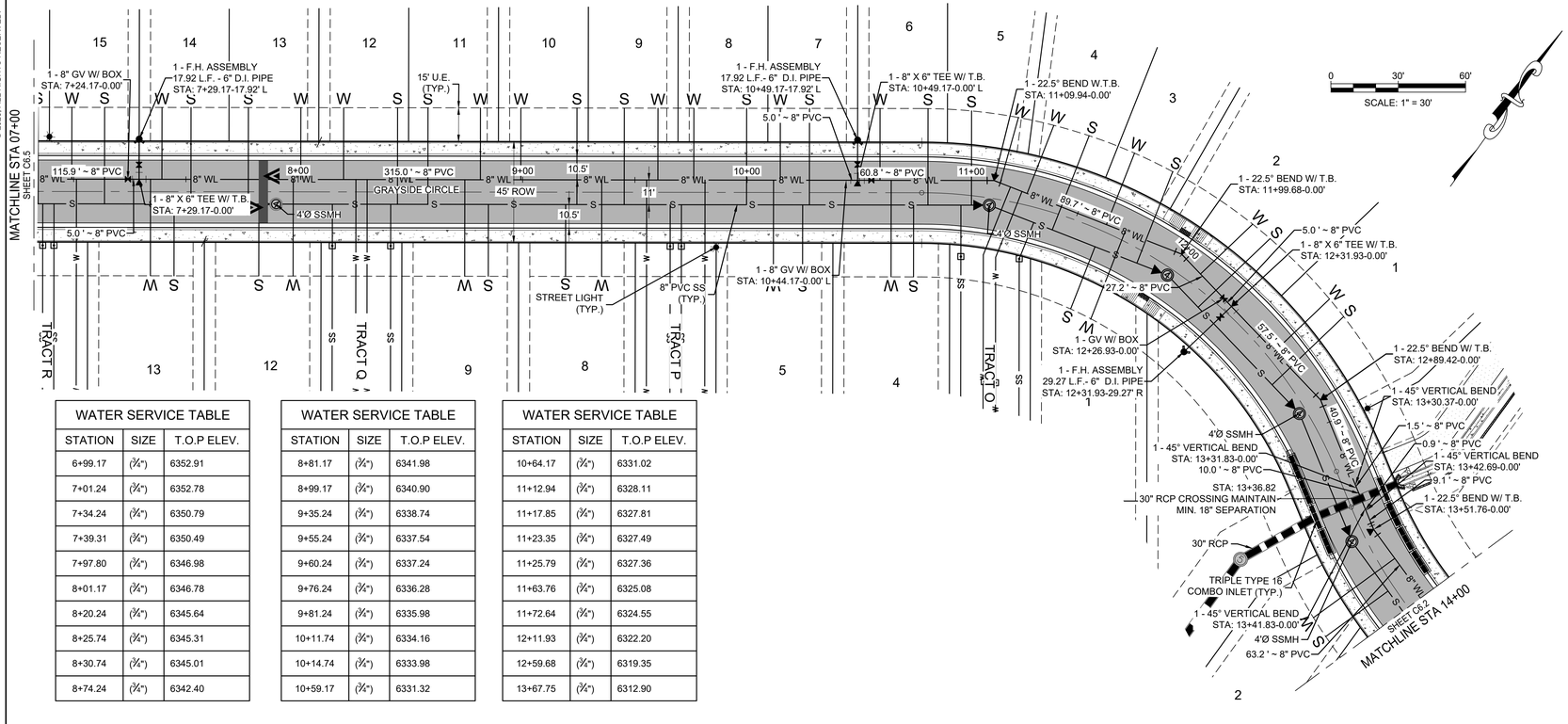
PROJECT NO:	BLV001.02
DESIGNED BY:	WLB
DRAWN BY:	WLB
DATE:	4/23/2024

C6.1
SHEET 14 OF 70

CD23-0036

P:\BLVD\WAY BUILDERS\HILLSIDE AT CASTLE ROCK\08 CAD\SHEET SET\PH 3-4 CDS\10 PHASE 3 WATER LINE PLAN AND PROFILE DWG 4/23/2024 12:51 PM David Ivinelli

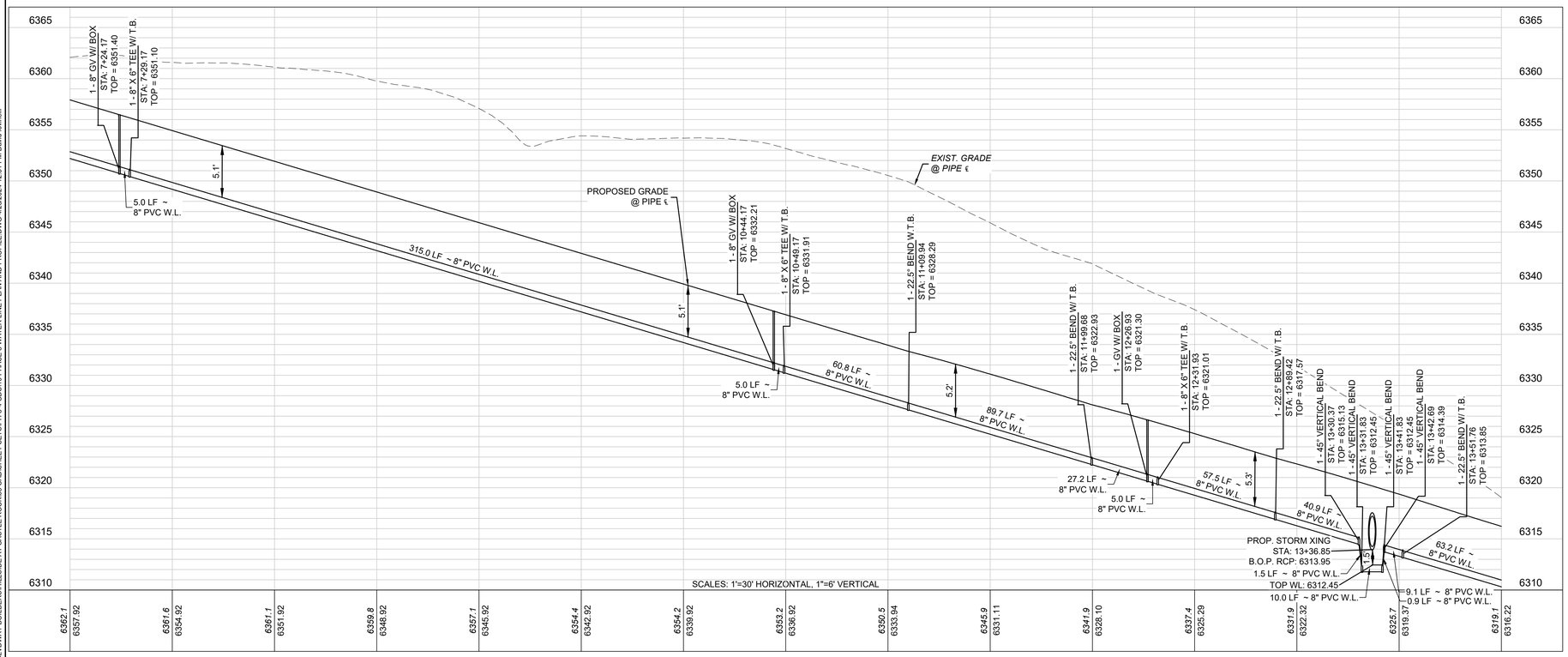
© 2023, ALL RIGHTS RESERVED.



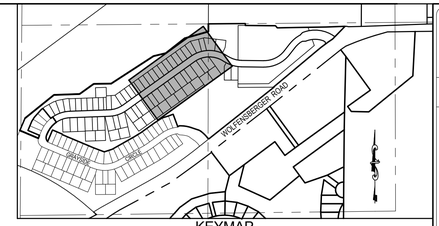
WATER SERVICE TABLE		
STATION	SIZE	T.O.P ELEV.
6+99.17	(¾")	6352.91
7+01.24	(¾")	6352.78
7+34.24	(¾")	6350.79
7+39.31	(¾")	6350.49
7+97.80	(¾")	6346.98
8+01.17	(¾")	6346.78
8+20.24	(¾")	6345.64
8+25.74	(¾")	6345.31
8+30.74	(¾")	6345.01
8+74.24	(¾")	6342.40

WATER SERVICE TABLE		
STATION	SIZE	T.O.P ELEV.
8+81.17	(¾")	6341.98
8+99.17	(¾")	6340.90
9+35.24	(¾")	6338.74
9+55.24	(¾")	6337.54
9+60.24	(¾")	6337.24
9+76.24	(¾")	6336.28
9+81.24	(¾")	6335.98
10+11.74	(¾")	6334.16
10+14.74	(¾")	6333.98
10+59.17	(¾")	6331.32

WATER SERVICE TABLE		
STATION	SIZE	T.O.P ELEV.
10+64.17	(¾")	6331.02
11+12.94	(¾")	6328.11
11+17.85	(¾")	6327.81
11+23.35	(¾")	6327.49
11+25.79	(¾")	6327.36
11+63.76	(¾")	6325.08
11+72.64	(¾")	6324.55
12+11.93	(¾")	6322.20
12+59.68	(¾")	6319.35
13+67.75	(¾")	6312.90



PROFILE PH 3-4 WATER A (STA: 7+00 TO 14+00)



UTILITY LEGEND:

- PROPERTY LINE
- RIGHT-OF-WAY
- LOT / TRACT LINE
- EXISTING LOT LINE
- X — EXISTING FENCE
- E — EXISTING ELECTRIC LINE
- G — EXISTING GAS MAIN
- CTV — EXISTING CATV
- COM — EXISTING COMMUNICATION
- S — EXISTING SANITARY SEWER
- W — EXISTING WATER MAIN
- EXIST. TRAFFIC SIGNAL CONDUIT W/ PULL BOX
- EXISTING STORM SEWER
- EXISTING SANITARY SEWER MH
- EXISTING STORM MANHOLE
- EXISTING STORM INLETS
- EXISTING FIRE HYDRANT
- EXISTING WATER VALVE
- EXISTING UTILITY RISER
- EXISTING STREET SIGN
- EXISTING ASPHALT PAVEMENT
- PROPOSED PHASING LINE
- S — PROPOSED SANITARY SEWER
- W — PROPOSED WATER MAIN
- S — PROPOSED SEWER SERVICE LINE
- W — PROPOSED WATER SERVICE LINE
- PROPOSED STORM SEWER
- PROPOSED AREA INLET
- PROPOSED TYPE 16 COMBO INLET
- PROPOSED STORM MANHOLE
- PROPOSED HYDRANT & ASSEMBLY
- PROPOSED W.L. REDUCER
- PROPOSED W.L. FITTINGS
- PROPOSED W.L. PLUG
- PROPOSED WATER VALVE
- PROPOSED S.S. CLEANOUT
- PROPOSED SIGN
- PROPOSED STREET LIGHT

PROJECT BENCHMARK:

TOP OF THE SW 1/16 CORNER OF SECTION 3, TOWNSHIP 8 SOUTH, RANGE 67 WEST, BEING A 3" ALUMINUM CAP STAMPED "PLS 25629 1995" WITH AN ELEVATION OF 6352.83 FEET NAVD 88. THIS ELEVATION IS BASED UPON NGS STATION "N 393" WITH A PUBLISHED ELEVATION OF 6222.12 FEET NAVD 88.

811 Know what's below. Call before you dig.

CALL UTILITY NOTIFICATION CENTER OF COLORADO
1-800-922-1987 or 811
CALL 3-BUSINESS DAYS (NOT INCLUDING INITIAL DAY OF CONTACT) IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES.

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

No.	REVISION	BY	DATE

PRELIMINARY NOT FOR CONSTRUCTION

EES ENTITLEMENT AND ENGINEERING SOLUTIONS, INC.
3801 E. Florida Avenue, Suite 425
Denver, CO 80210
303-572-7997 www.ees.us.com

BLVD. BUILDERS

CONSTRUCTION PLANS

HILLSIDE AT CASTLE ROCK - PHASES 3-4

CASTLE ROCK, COLORADO

C6.3 - PHASE 3 WATER PLAN & PROFILE 3

PROJECT NO:	BLV001.02
DESIGNED BY:	WLB
DRAWN BY:	WLB
DATE:	4/23/2024

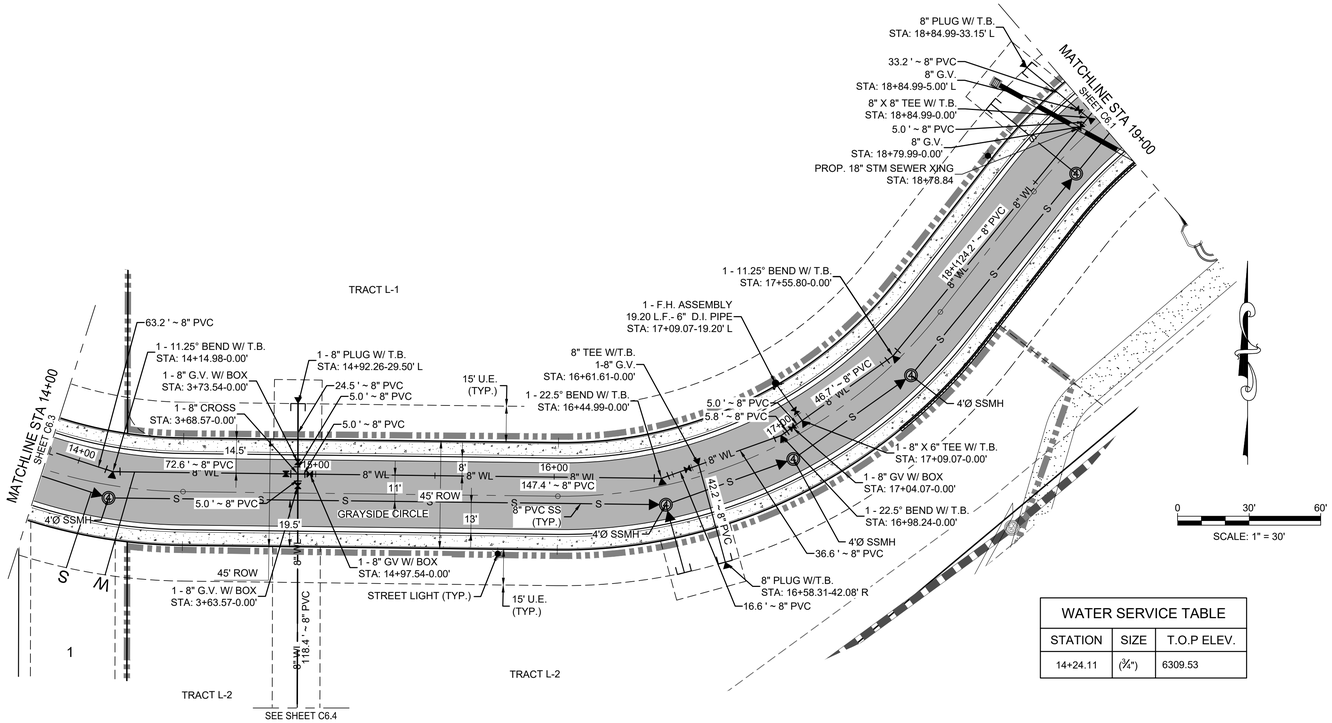
C6.3

SHEET 16 OF 70

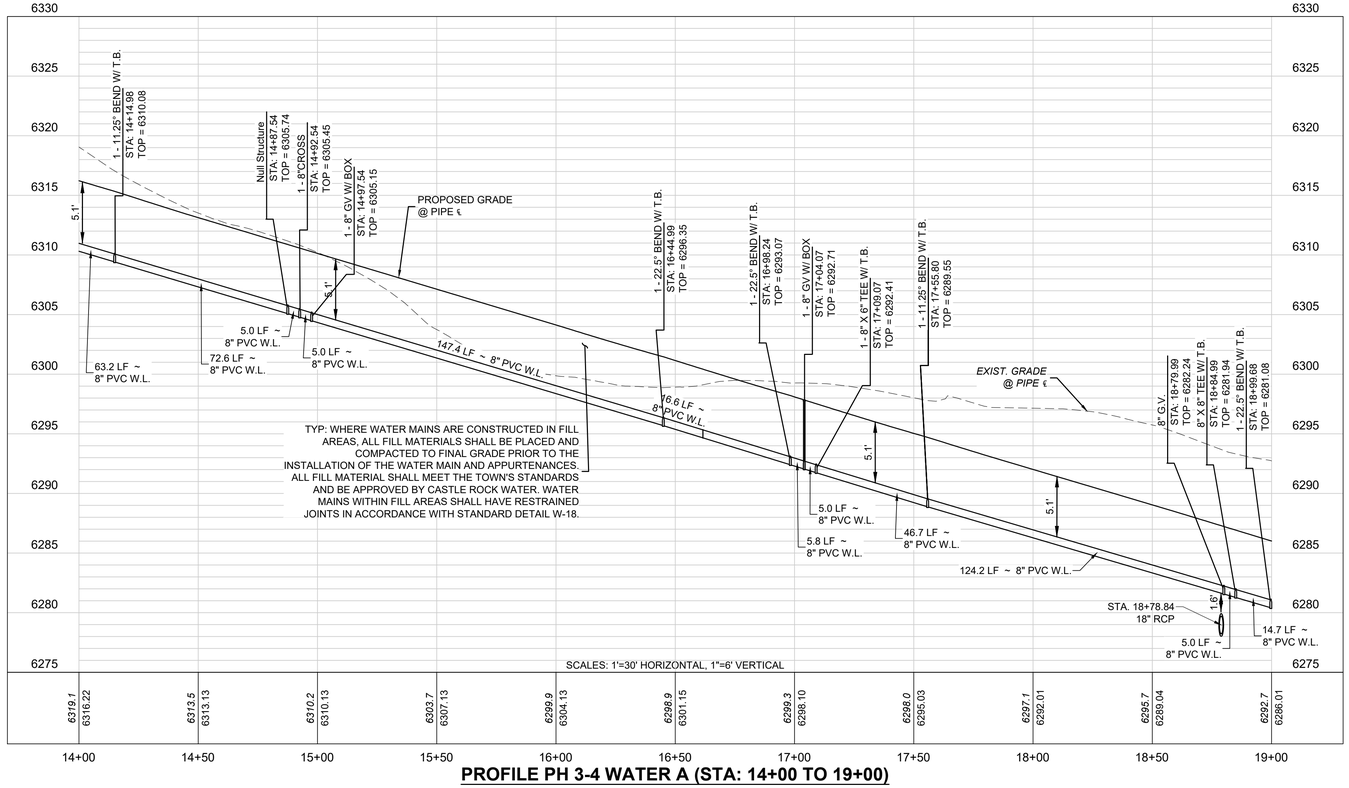
CD23-0036

P:\BLVD\WAY BUILDERS\HILLSIDE AT CASTLE ROCK\08 CAD\SHEET SETS\PH 3-4 CDS\10 PHASE 3 WATER LINE PLAN AND PROFILE DWG 4/23/2024 12:51 PM David Iovinelli

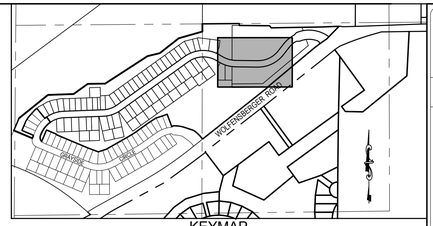
© 2023, ALL RIGHTS RESERVED.



WATER SERVICE TABLE		
STATION	SIZE	T.O.P ELEV.
14+24.11	(3/4")	6309.53



PROFILE PH 3-4 WATER A (STA: 14+00 TO 19+00)



KEYMAP
SCALE: 1"=500'

UTILITY LEGEND:

- PROPERTY LINE
- RIGHT-OF-WAY
- LOT / TRACT LINE
- EXISTING LOT LINE
- X — EXISTING FENCE
- E — EXISTING ELECTRIC LINE
- G — EXISTING GAS MAIN
- CTV — EXISTING CATV
- COM — EXISTING COMMUNICATION
- S — EXISTING SANITARY SEWER
- W — EXISTING WATER MAIN
- EXIST. TRAFFIC SIGNAL CONDUIT W/ PULL BOX
- EXISTING STORM SEWER
- EXISTING SANITARY SEWER MH
- EXISTING STORM MANHOLE
- EXISTING STORM INLETS
- EXISTING FIRE HYDRANT
- EXISTING WATER VALVE
- EXISTING UTILITY RISER
- EXISTING STREET SIGN
- EXISTING ASPHALT PAVEMENT
- PROPOSED PHASING LINE
- S — PROPOSED SANITARY SEWER
- W — PROPOSED WATER MAIN
- S — PROPOSED SEWER SERVICE LINE
- W — PROPOSED WATER SERVICE LINE
- PROPOSED STORM SEWER
- PROPOSED AREA INLET
- PROPOSED TYPE 16 COMBO INLET
- PROPOSED STORM MANHOLE
- PROPOSED HYDRANT & ASSEMBLY
- PROPOSED W.L. REDUCER
- PROPOSED W.L. FITTINGS
- PROPOSED W.L. PLUG
- PROPOSED WATER VALVE
- PROPOSED S.S. CLEANOUT
- PROPOSED SIGN
- PROPOSED STREET LIGHT

PROJECT BENCHMARK:

TOP OF THE SW 1/16 CORNER OF SECTION 3, TOWNSHIP 8 SOUTH, RANGE 67 WEST, BEING A 3" ALUMINUM CAP STAMPED "PLS 25629 1995" WITH AN ELEVATION OF 6352.83 FEET NAVD 88. THIS ELEVATION IS BASED UPON NGS STATION "N 393" WITH A PUBLISHED ELEVATION OF 6222.12 FEET NAVD 88.

811 Know what's below. Call before you dig.

CALL UTILITY NOTIFICATION CENTER OF COLORADO
1-800-922-1987 or 811
CALL 3-BUSINESS DAYS (NOT INCLUDING INITIAL DAY OF CONTACT) IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES.

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

No.	REVISION	BY	DATE

PRELIMINARY NOT FOR CONSTRUCTION

EES ENTITLEMENT AND ENGINEERING SOLUTIONS, INC.
3801 E. Florida Avenue, Suite 425
Denver, CO 80210
303-572-7997 www.ees.us.com

BLVD. BUILDERS

CONSTRUCTION PLANS

HILLSIDE AT CASTLE ROCK - PHASES 3-4

CASTLE ROCK, COLORADO

PHASE 3 WATER PLAN & PROFILE 2

PROJECT NO:	BLV001.02
DESIGNED BY:	WLB
DRAWN BY:	WLB
DATE:	4/23/2024

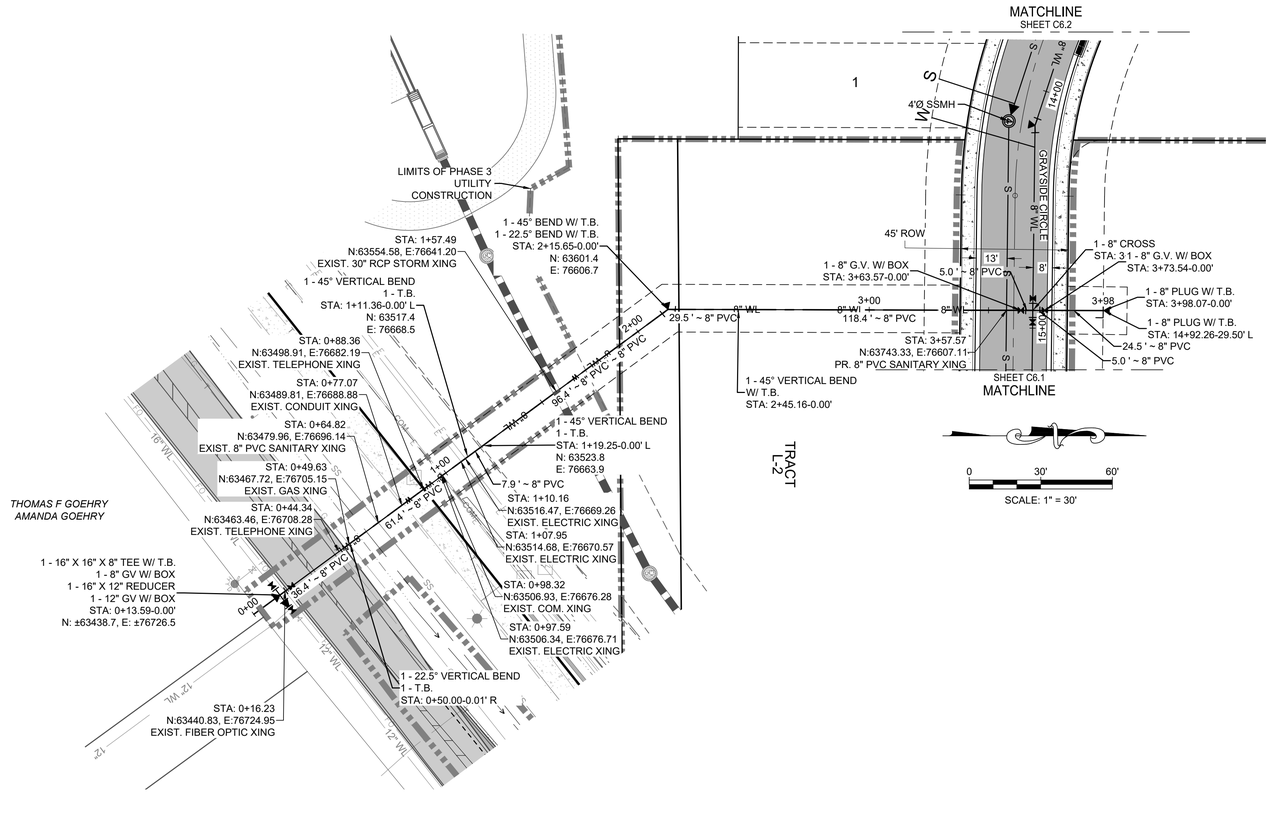
C6.2

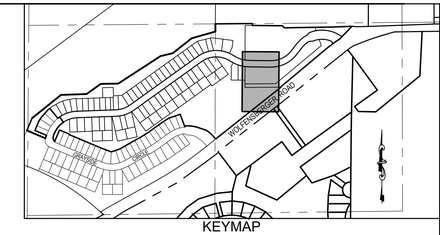
SHEET 15 OF 70

CD23-0036

P:\BLVDWAY BUILDERS\HILLSIDE AT CASTLE ROCK\06 CAD\SHEET SETS\PH 3-4 CDS\10 PHASE 3 WATER LINE PLAN AND PROFILE.DWG 4/23/2024 12:52 PM David Iovinelli

© 2023, ALL RIGHTS RESERVED.

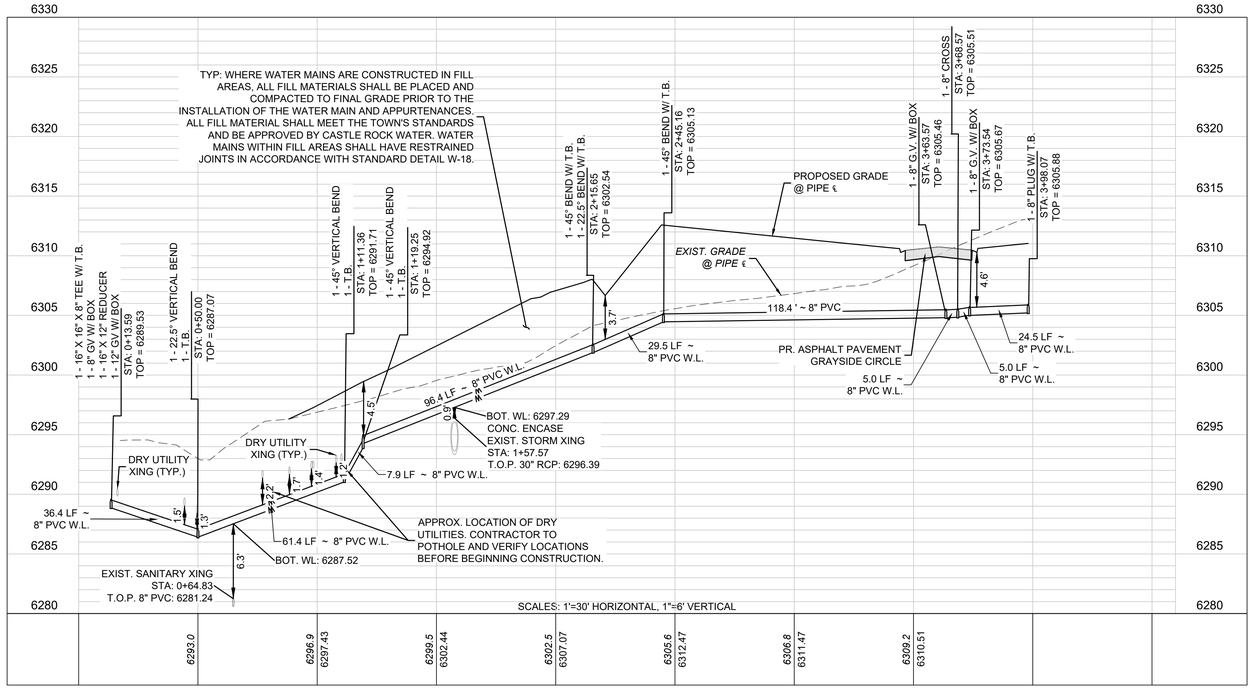




KEYMAP
SCALE: 1"=500'

UTILITY LEGEND:

- PROPERTY LINE
- RIGHT-OF-WAY
- LOT / TRACT LINE
- EXISTING LOT LINE
- X — EXISTING FENCE
- E — EXISTING ELECTRIC LINE
- G — EXISTING GAS MAIN
- CTV — EXISTING CATV
- COM — EXISTING COMMUNICATION
- S — EXISTING SANITARY SEWER
- W — EXISTING WATER MAIN
- EXIST. TRAFFIC SIGNAL CONDUIT W/ PULL BOX
- EXISTING STORM SEWER
- EXISTING SANITARY SEWER MH
- EXISTING STORM MANHOLE
- EXISTING STORM INLETS
- EXISTING FIRE HYDRANT
- EXISTING WATER VALVE
- EXISTING UTILITY RISER
- EXISTING STREET SIGN
- EXISTING ASPHALT PAVEMENT
- PROPOSED PHASING LINE
- S — PROPOSED SANITARY SEWER
- W — PROPOSED WATER MAIN
- S — PROPOSED SEWER SERVICE LINE
- W — PROPOSED WATER SERVICE LINE
- PROPOSED STORM SEWER
- PROPOSED AREA INLET
- PROPOSED TYPE 16 COMBO INLET
- PROPOSED STORM MANHOLE
- PROPOSED HYDRANT & ASSEMBLY
- PROPOSED W.L. REDUCER
- PROPOSED W.L. FITTINGS
- PROPOSED W.L. PLUG
- PROPOSED WATER VALVE
- PROPOSED S.S. CLEANOUT
- PROPOSED SIGN
- PROPOSED STREET LIGHT



PROFILE PH3-4 WATER B (STA: 0+00 TO 4+60)

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 EXIST. WATER, SANITARY SEWER, AND/OR STORM SEWER SYSTEMS PROVIDED THAT THE UTILITY TIE-IN DOES NOT DISRUPT SERVICE TO EXIST. CR WATER CUSTOMERS. IF THE TIE-IN WILL DISRUPT UTILITY SERVICE, THEN THE 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 EXIST. CUSTOMERS AFFECTED BY THE TIE-IN. ALL TOWN UTILITY TIE-INS MUST BE APPROVED BY CR WATER PRIOR TO COMMENCING WORK.

PROJECT BENCHMARK:

TOP OF THE SW 1/16 CORNER OF SECTION 3, TOWNSHIP 8 SOUTH, RANGE 67 WEST, BEING A 3" ALUMINUM CAP STAMPED "PLS 25629 1995" WITH AN ELEVATION OF 6352.83 FEET NAVD 88. THIS ELEVATION IS BASED UPON NGS STATION "N 393" WITH A PUBLISHED ELEVATION OF 6222.12 FEET NAVD 88.

811 Know what's below. Call before you dig.

CALL UTILITY NOTIFICATION CENTER OF COLORADO
1-800-922-1987 or 811
CALL 3-BUSINESS DAYS (NOT INCLUDING INITIAL DAY OF CONTACT) IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES.

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

No.	REVISION	BY	DATE

PRELIMINARY NOT FOR CONSTRUCTION

EES ENTITLEMENT AND ENGINEERING SOLUTIONS, INC.
3801 E. Florida Avenue, Suite 425
Denver, CO 80210
303-572-7997
www.ees.us.com

BLVD. BUILDERS

CONSTRUCTION PLANS

HILLSIDE AT CASTLE ROCK - PHASES 3-4

CASTLE ROCK, COLORADO

PHASE 3 WATER PLAN & PROFILE 4

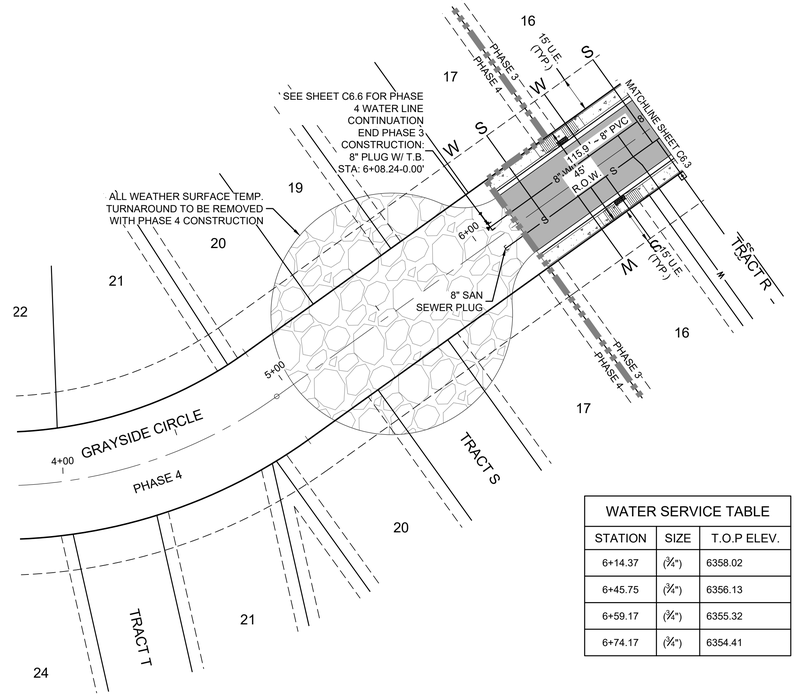
PROJECT NO:	BLV001.02
DESIGNED BY:	WLB
DRAWN BY:	WLB
DATE:	4/23/2024

C6.4
SHEET 17 OF 70

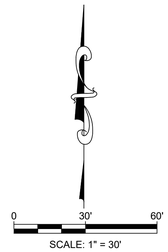
CD23-0036

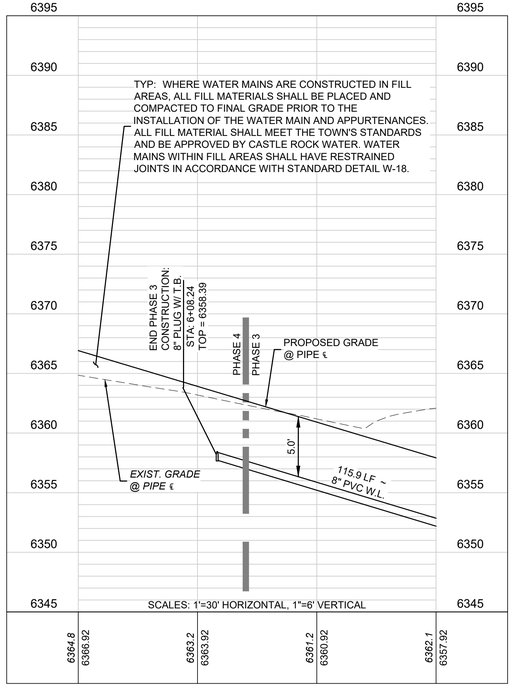
P:\BLVDWAY BUILDERS\HILLSIDE AT CASTLE ROCK\06 CAD\SHEET SET\PH 3-4 CDS\10 PHASE 3 WATER LINE PLAN AND PROFILE.DWG 4/23/2024 12:52 PM David Iovinelli

© 2023, ALL RIGHTS RESERVED.

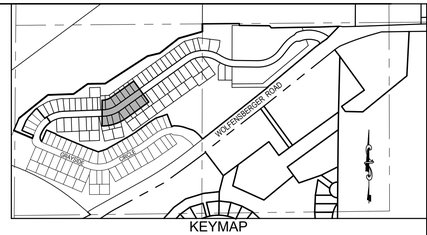


WATER SERVICE TABLE		
STATION	SIZE	T.O.P ELEV.
6+14.37	(¾")	6358.02
6+45.75	(¾")	6356.13
6+59.17	(¾")	6355.32
6+74.17	(¾")	6354.41





PROFILE PH 3-4 WATER A (STA: 5+50 TO 7+00)



KEYMAP
SCALE: 1"=500'

UTILITY LEGEND:

- PROPERTY LINE
- RIGHT-OF-WAY
- LOT / TRACT LINE
- EXISTING LOT LINE
- X — EXISTING FENCE
- E — EXISTING ELECTRIC LINE
- G — EXISTING GAS MAIN
- CTV — EXISTING CATV
- COM — EXISTING COMMUNICATION
- S — EXISTING SANITARY SEWER
- W — EXISTING WATER MAIN
- EXIST. TRAFFIC SIGNAL CONDUIT W/ PULL BOX
- EXISTING STORM SEWER
- EXISTING SANITARY SEWER MH
- EXISTING STORM MANHOLE
- EXISTING STORM INLETS
- EXISTING FIRE HYDRANT
- EXISTING WATER VALVE
- EXISTING UTILITY RISER
- EXISTING STREET SIGN
- EXISTING ASPHALT PAVEMENT
- PROPOSED PHASING LINE
- S — PROPOSED SANITARY SEWER
- W — PROPOSED WATER MAIN
- S — PROPOSED SEWER SERVICE LINE
- W — PROPOSED WATER SERVICE LINE
- PROPOSED STORM SEWER
- PROPOSED AREA INLET
- PROPOSED TYPE 16 COMBO INLET
- PROPOSED STORM MANHOLE
- PROPOSED HYDRANT & ASSEMBLY
- PROPOSED W.L. REDUCER
- PROPOSED W.L. FITTINGS
- PROPOSED W.L. PLUG
- PROPOSED WATER VALVE
- PROPOSED S.S. CLEANOUT
- PROPOSED SIGN
- PROPOSED STREET LIGHT

PROJECT BENCHMARK:

TOP OF THE SW 1/16 CORNER OF SECTION 3, TOWNSHIP 8 SOUTH, RANGE 67 WEST, BEING A 3" ALUMINUM CAP STAMPED "PLS 25629 1995" WITH AN ELEVATION OF 6352.83 FEET NAVD 88. THIS ELEVATION IS BASED UPON NGS STATION "N 393" WITH A PUBLISHED ELEVATION OF 6222.12 FEET NAVD 88.

811 Know what's below. Call before you dig.

CALL UTILITY NOTIFICATION CENTER OF COLORADO
1-800-922-1987 or 811
CALL 3-BUSINESS DAYS (NOT INCLUDING INITIAL DAY OF CONTACT) IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES.

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

No.	REVISION	BY	DATE

PRELIMINARY NOT FOR CONSTRUCTION

EES ENTITLEMENT AND ENGINEERING SOLUTIONS, INC.
3801 E. Florida Avenue, Suite 425
Denver, CO 80210
303-572-7997 www.ees.us.com

BLVD. BUILDERS

CONSTRUCTION PLANS

HILLSIDE AT CASTLE ROCK - PHASES 3-4

CASTLE ROCK, COLORADO

PHASE 3 WATER PLAN & PROFILE 5

PROJECT NO:	BLV001.02
DESIGNED BY:	WLB
DRAWN BY:	WLB
DATE:	4/23/2024

C6.5

SHEET 18 OF 70

CD23-0036

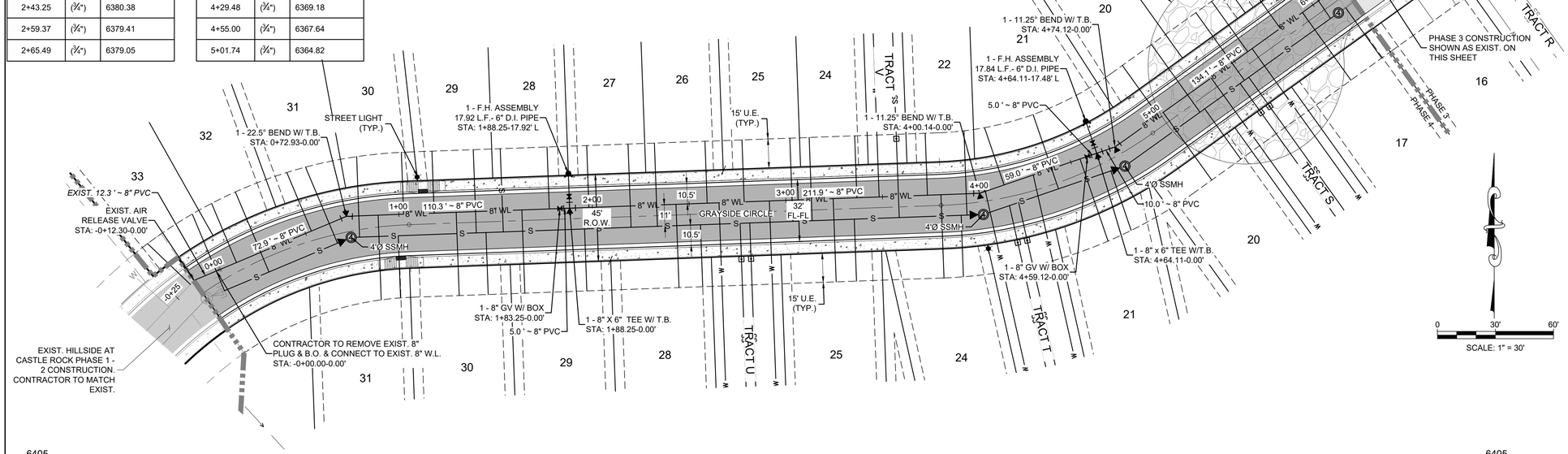
P:\BLVDWAY BUILDERS\HILLSIDE AT CASTLE ROCK\06 CAD\SHEET SET\SPH 3-4 CDS\09 PHASE 4 WATER LINE PLAN AND PROFILE.DWG 4/23/2024 12:53 PM David Iovinelli

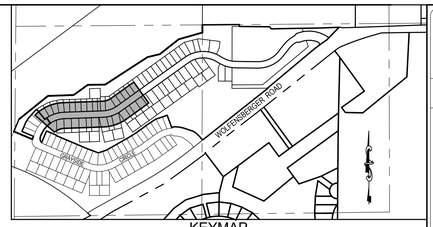
© 2023, ALL RIGHTS RESERVED

WATER SERVICE TABLE		
STATION	SIZE	T.O.P ELEV.
0+11.26	(¾")	6392.66
0+53.25	(¾")	6391.26
0+89.29	(¾")	6389.62
1+02.44	(¾")	6388.84
1+18.25	(¾")	6387.89
1+29.62	(¾")	6387.21
1+63.56	(¾")	6385.17
1+77.75	(¾")	6384.32
1+98.25	(¾")	6383.09
2+43.25	(¾")	6380.38
2+59.37	(¾")	6379.41
2+65.49	(¾")	6379.05

WATER SERVICE TABLE		
STATION	SIZE	T.O.P ELEV.
2+78.49	(¾")	6378.26
2+91.49	(¾")	6377.48
3+24.49	(¾")	6375.50
3+36.76	(¾")	6374.76
3+48.25	(¾")	6374.07
3+73.21	(¾")	6372.57
3+80.21	(¾")	6372.15
4+03.33	(¾")	6370.76
4+13.53	(¾")	6370.14
4+29.48	(¾")	6369.18
4+55.00	(¾")	6367.64
5+01.74	(¾")	6364.82

WATER SERVICE TABLE		
STATION	SIZE	T.O.P ELEV.
5+04.74	(¾")	6364.64
5+35.24	(¾")	6362.80
5+58.49	(¾")	6361.39
5+61.24	(¾")	6361.23
5+79.17	(¾")	6360.15
5+93.24	(¾")	6359.30
6+14.37	(¾")	6358.02



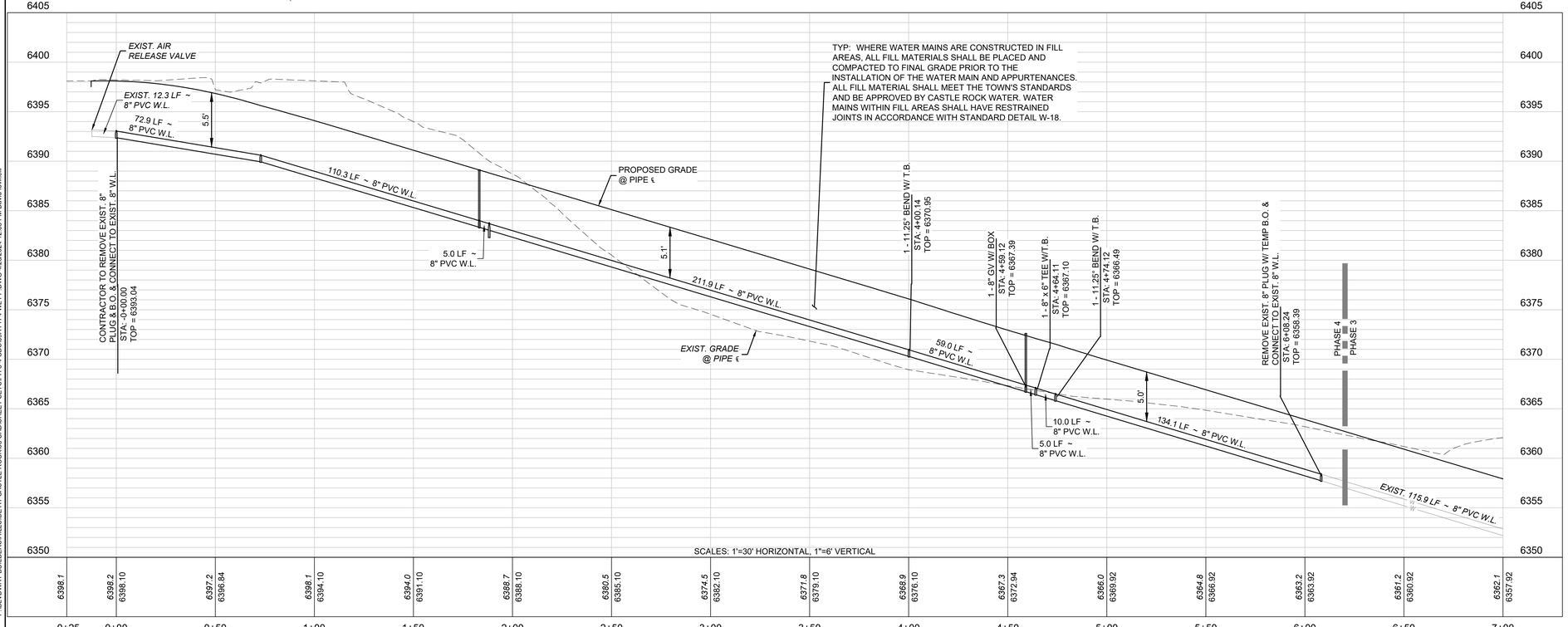


KEYMAP
SCALE: 1"=500'

SCALE: 1" = 30'

UTILITY LEGEND:

- PROPERTY LINE
- RIGHT-OF-WAY
- LOT / TRACT LINE
- EXISTING LOT LINE
- X — EXISTING FENCE
- E — EXISTING ELECTRIC LINE
- G — EXISTING GAS MAIN
- CTV — EXISTING CATV
- COM — EXISTING COMMUNICATION
- S — EXISTING SANITARY SEWER
- W — EXISTING WATER MAIN
- EXIST. TRAFFIC SIGNAL CONDUIT W/ PULL BOX
- EXISTING STORM SEWER
- EXISTING SANITARY SEWER MH
- EXISTING STORM MANHOLE
- EXISTING STORM INLETS
- EXISTING FIRE HYDRANT
- EXISTING WATER VALVE
- EXISTING UTILITY RISER
- EXISTING STREET SIGN
- EXISTING ASPHALT PAVEMENT
- PROPOSED PHASING LINE
- S — PROPOSED SANITARY SEWER
- W — PROPOSED WATER MAIN
- S — PROPOSED SEWER SERVICE LINE
- W — PROPOSED WATER SERVICE LINE
- PROPOSED STORM SEWER
- PROPOSED AREA INLET
- PROPOSED TYPE 16 COMBO INLET
- PROPOSED STORM MANHOLE
- PROPOSED HYDRANT & ASSEMBLY
- PROPOSED W.L. REDUCER
- PROPOSED W.L. FITTINGS
- PROPOSED W.L. PLUG
- PROPOSED WATER VALVE
- PROPOSED S.S. CLEANOUT
- PROPOSED SIGN
- PROPOSED STREET LIGHT



PROFILE PH 3-4 WATER A (STA: -0+25 TO 7+00)

PROJECT BENCHMARK:

TOP OF THE SW 1/16 CORNER OF SECTION 3, TOWNSHIP 8 SOUTH, RANGE 67 WEST, BEING A 3" ALUMINUM CAP STAMPED "PLS 25629 1995" WITH AN ELEVATION OF 6352.83 FEET NAVD 88. THIS ELEVATION IS BASED UPON NGS STATION "N 393" WITH A PUBLISHED ELEVATION OF 6222.12 FEET NAVD 88.

811 Know what's below. Call before you dig.

CALL UTILITY NOTIFICATION CENTER OF COLORADO
1-800-922-1987 or 811
CALL 3-BUSINESS DAYS (NOT INCLUDING INITIAL DAY OF CONTACT) IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES.

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

No.	REVISION	BY	DATE

PRELIMINARY NOT FOR CONSTRUCTION

EES ENTITLEMENT AND ENGINEERING SOLUTIONS, INC.
3801 E. Florida Avenue, Suite 425
Denver, CO 80210
303-572-7997 www.ees.us.com

BLVD. BUILDERS

CONSTRUCTION PLANS

HILLSIDE AT CASTLE ROCK - PHASES 3-4

CASTLE ROCK, COLORADO

PHASE 4 WATER PLAN & PROFILE

PROJECT NO:	BLV001.02
DESIGNED BY:	WLB
DRAWN BY:	WLB
DATE:	4/23/2024

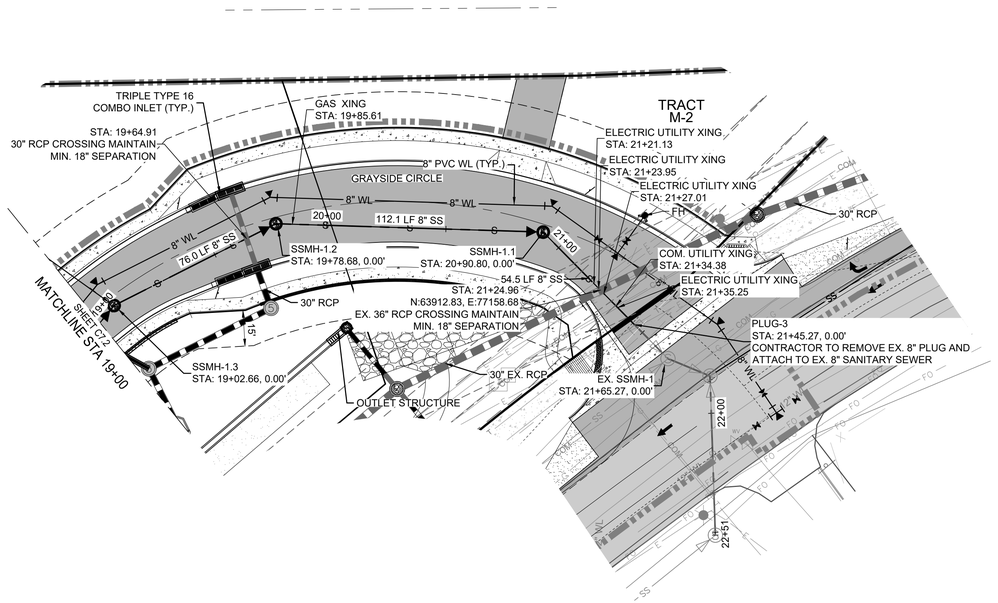
C6.6

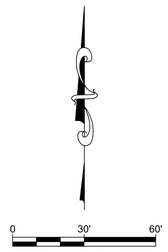
SHEET 19 OF 70

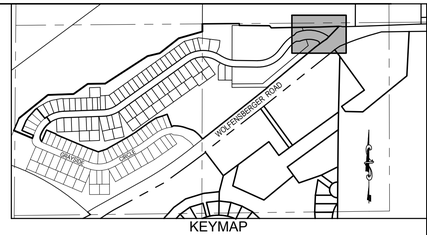
CD23-0036

P:\BLVDWAY BUILDERS\HILLSIDE AT CASTLE ROCK\06 CAD\SHEET SETS\PH 3-4 CDS\09A PH 4 WL PP.DWG 4/23/2024 12:53 PM David Townsell

© 2023, ALL RIGHTS RESERVED.



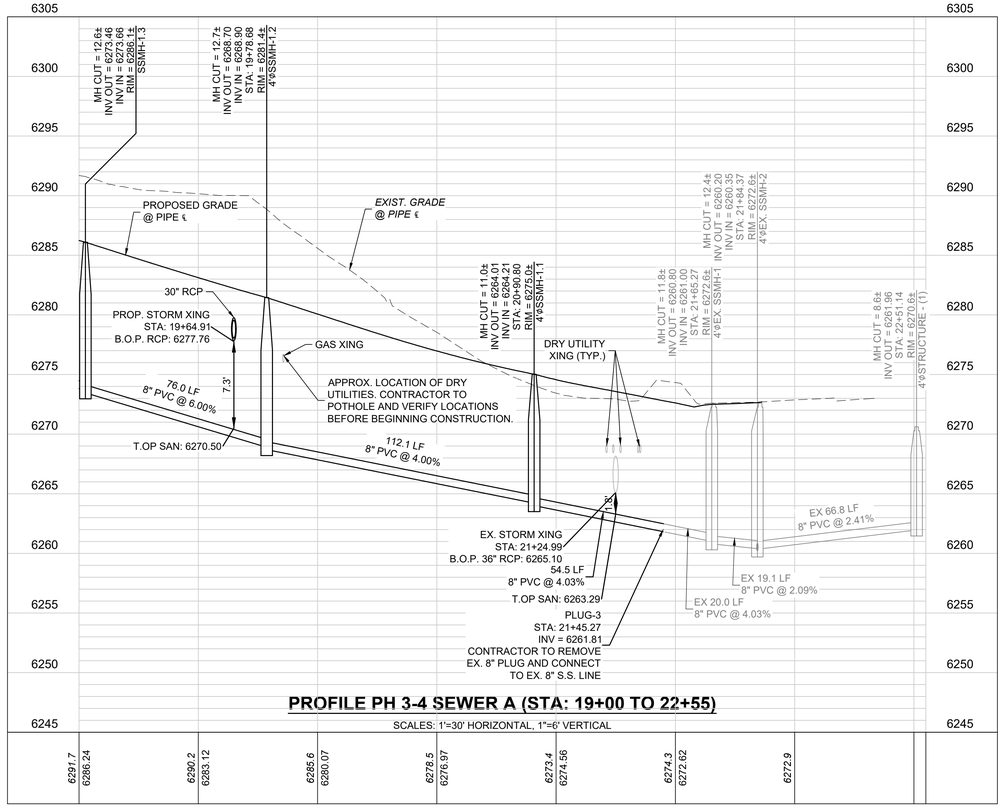




KEYMAP
SCALE: 1"=500'

UTILITY LEGEND:

- PROPERTY LINE
- RIGHT-OF-WAY
- LOT / TRACT LINE
- EXISTING LOT LINE
- X — EXISTING FENCE
- E — EXISTING ELECTRIC LINE
- G — EXISTING GAS MAIN
- CTV — EXISTING CATV
- COM — EXISTING COMMUNICATION
- S — EXISTING SANITARY SEWER
- W — EXISTING WATER MAIN
- EXIST. TRAFFIC SIGNAL CONDUIT W/ PULL BOX
- EXISTING STORM SEWER
- EXISTING SANITARY SEWER MH
- EXISTING STORM MANHOLE
- EXISTING STORM INLETS
- EXISTING FIRE HYDRANT
- EXISTING WATER VALVE
- EXISTING UTILITY RISER
- EXISTING STREET SIGN
- EXISTING ASPHALT PAVEMENT
- PROPOSED PHASING LINE
- S — PROPOSED SANITARY SEWER
- W — PROPOSED WATER MAIN
- S — PROPOSED SEWER SERVICE LINE
- W — PROPOSED WATER SERVICE LINE
- PROPOSED STORM SEWER
- PROPOSED AREA INLET
- PROPOSED TYPE 16 COMBO INLET
- PROPOSED STORM MANHOLE
- PROPOSED HYDRANT & ASSEMBLY
- PROPOSED W.L. REDUCER
- PROPOSED W.L. FITTINGS
- PROPOSED W.L. PLUG
- PROPOSED WATER VALVE
- PROPOSED S.S. CLEANOUT
- PROPOSED SIGN
- PROPOSED STREET LIGHT



PROFILE PH 3-4 SEWER A (STA: 19+00 TO 22+55)

SCALES: 1'=30' HORIZONTAL, 1"=6' VERTICAL

PROJECT BENCHMARK:

TOP OF THE SW 1/16 CORNER OF SECTION 3, TOWNSHIP 8 SOUTH, RANGE 67 WEST, BEING A 3" ALUMINUM CAP STAMPED "PLS 25629 1995" WITH AN ELEVATION OF 6352.83 FEET NAVD 88. THIS ELEVATION IS BASED UPON NGS STATION "N 393" WITH A PUBLISHED ELEVATION OF 6222.12 FEET NAVD 88.

811 Know what's below. Call before you dig.

CALL UTILITY NOTIFICATION CENTER OF COLORADO
1-800-922-1987 or 811
CALL 3-BUSINESS DAYS (NOT INCLUDING INITIAL DAY OF CONTACT) IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES.

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

No.	REVISION	BY	DATE

PRELIMINARY
NOT FOR
CONSTRUCTION

EES
ENTITLEMENT AND ENGINEERING SOLUTIONS, INC.
3801 E. Florida Avenue, Suite 425
Denver, CO 80210
303-572-7997 www.ees.us.com

BLVD. BUILDERS

CONSTRUCTION PLANS

HILLSIDE AT CASTLE ROCK - PHASES 3-4

CASTLE ROCK, COLORADO

PHASE 3 SANITARY SEWER PLAN & PROFILE 1

PROJECT NO:	BLV001.02
DESIGNED BY:	WLB
DRAWN BY:	WLB
DATE:	4/23/2024

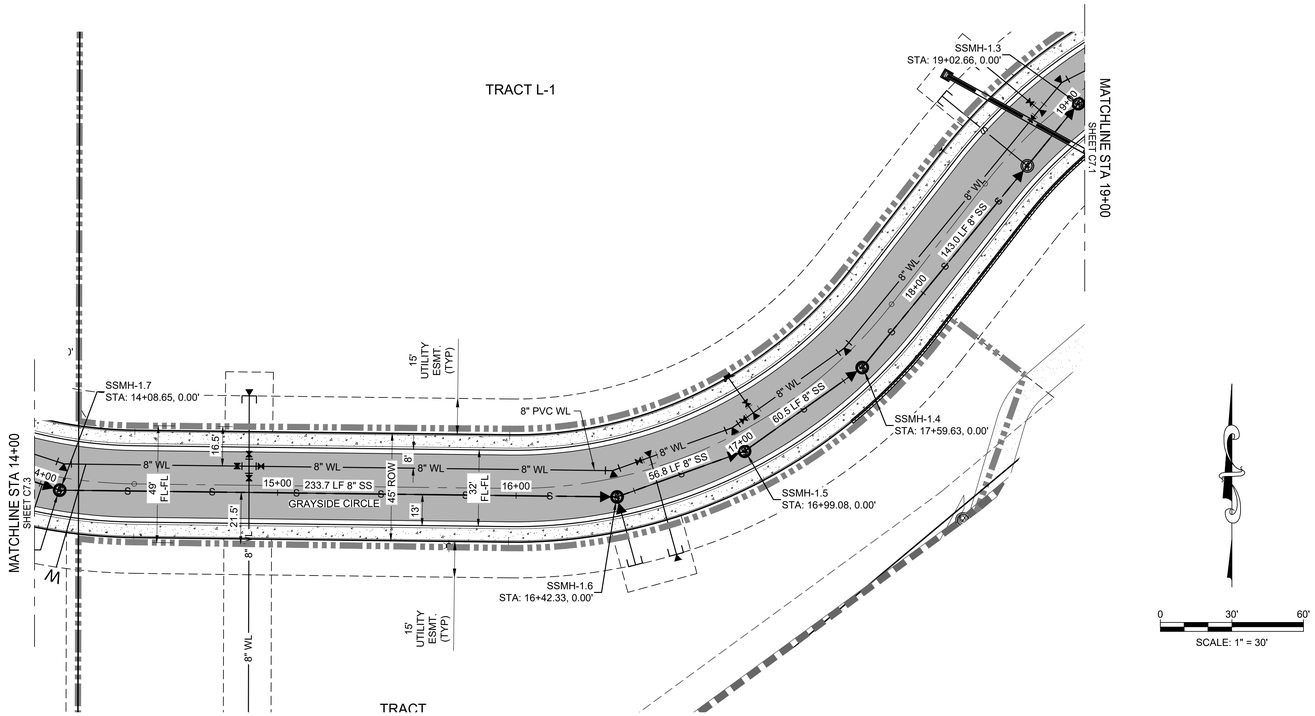
C7.1

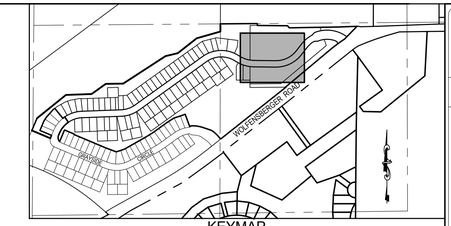
SHEET 25 OF 70

CD23-0036

P:\BLVDWAY BUILDERS\HILLSIDE AT CASTLE ROCK\06 CAD\SHEET SET\PH 3-4 CDS\12 SANITARY SEWER PLAN AND PROFILE DWG 4/23/2024 12:58 PM David Iovinelli

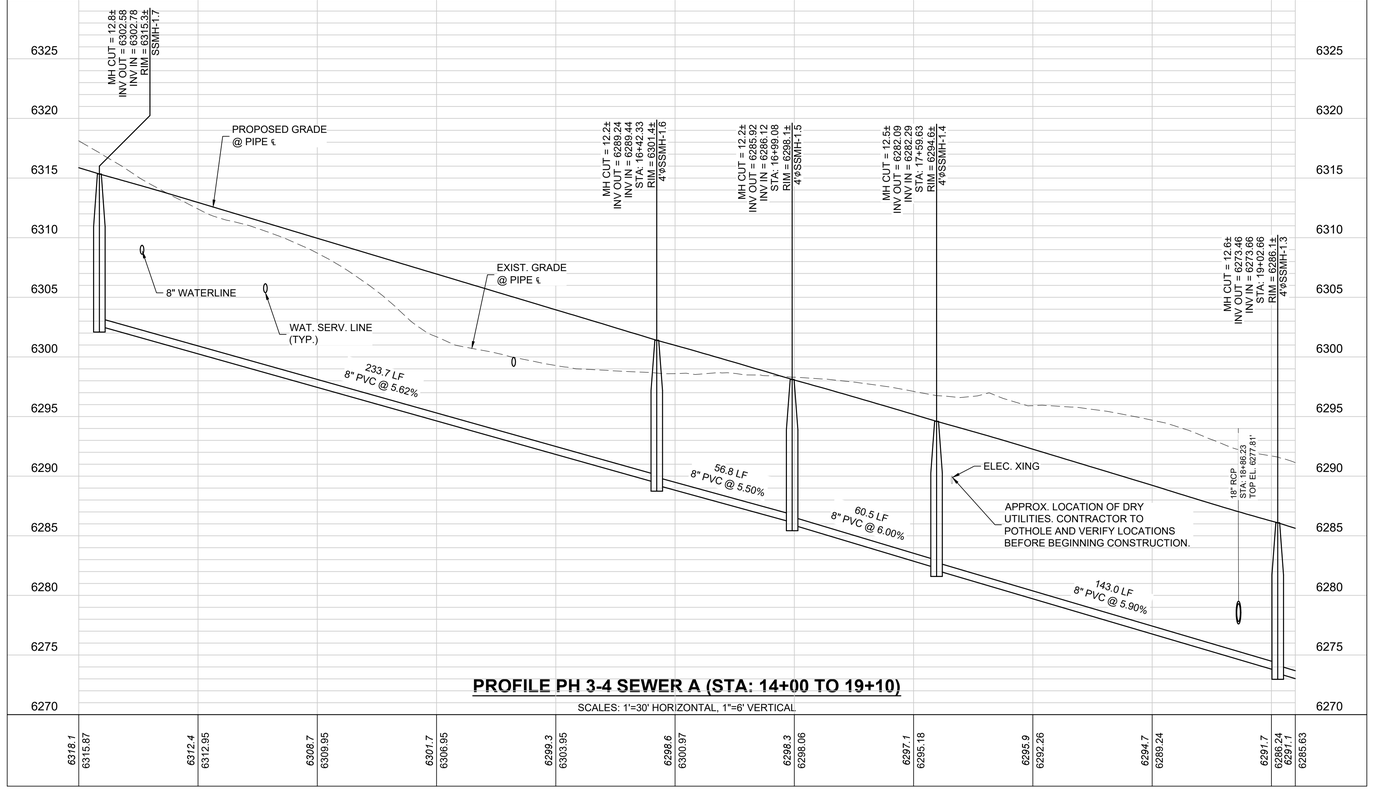
© 2023, ALL RIGHTS RESERVED.





UTILITY LEGEND:

- PROPERTY LINE
- RIGHT-OF-WAY
- LOT / TRACT LINE
- EXISTING LOT LINE
- X — EXISTING FENCE
- E — EXISTING ELECTRIC LINE
- G — EXISTING GAS MAIN
- CTV — EXISTING CATV
- COM — EXISTING COMMUNICATION
- S — EXISTING SANITARY SEWER
- W — EXISTING WATER MAIN
- EXIST. TRAFFIC SIGNAL CONDUIT W/ PULL BOX
- EXISTING STORM SEWER
- EXISTING SANITARY SEWER MH
- EXISTING STORM MANHOLE
- EXISTING STORM INLETS
- EXISTING FIRE HYDRANT
- EXISTING WATER VALVE
- EXISTING UTILITY RISER
- EXISTING STREET SIGN
- EXISTING ASPHALT PAVEMENT
- PROPOSED PHASING LINE
- S — PROPOSED SANITARY SEWER
- W — PROPOSED WATER MAIN
- S — PROPOSED SEWER SERVICE LINE
- W — PROPOSED WATER SERVICE LINE
- PROPOSED STORM SEWER
- PROPOSED AREA INLET
- PROPOSED TYPE 16 COMBO INLET
- PROPOSED STORM MANHOLE
- PROPOSED HYDRANT & ASSEMBLY
- PROPOSED W.L. REDUCER
- PROPOSED W.L. FITTINGS
- PROPOSED W.L. PLUG
- PROPOSED WATER VALVE
- PROPOSED S.S. CLEANOUT
- PROPOSED SIGN
- PROPOSED STREET LIGHT



PROFILE PH 3-4 SEWER A (STA: 14+00 TO 19+10)

SCALES: 1'=30' HORIZONTAL, 1"=6' VERTICAL

PROJECT BENCHMARK:

TOP OF THE SW 1/16 CORNER OF SECTION 3, TOWNSHIP 8 SOUTH, RANGE 67 WEST, BEING A 3" ALUMINUM CAP STAMPED "PLS 25629 1995" WITH AN ELEVATION OF 6352.83 FEET NAVD 88. THIS ELEVATION IS BASED UPON NGS STATION "N 393" WITH A PUBLISHED ELEVATION OF 6222.12 FEET NAVD 88.

811 Know what's below. Call before you dig.

CALL UTILITY NOTIFICATION CENTER OF COLORADO
1-800-922-1987 or 811
CALL 3-BUSINESS DAYS (NOT INCLUDING INITIAL DAY OF CONTACT) IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES.

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

No.	REVISION	BY	DATE

PRELIMINARY
NOT FOR
CONSTRUCTION

EES
ENTITLEMENT AND ENGINEERING SOLUTIONS, INC.
3801 E. Florida Avenue, Suite 425
Denver, CO 80210
303-572-7997 www.ees.us.com

BLVD. BUILDERS

CONSTRUCTION PLANS

HILLSIDE AT CASTLE ROCK - PHASES 3-4

CASTLE ROCK, COLORADO

PHASE 3 SANITARY SEWER PLAN & PROFILE 2

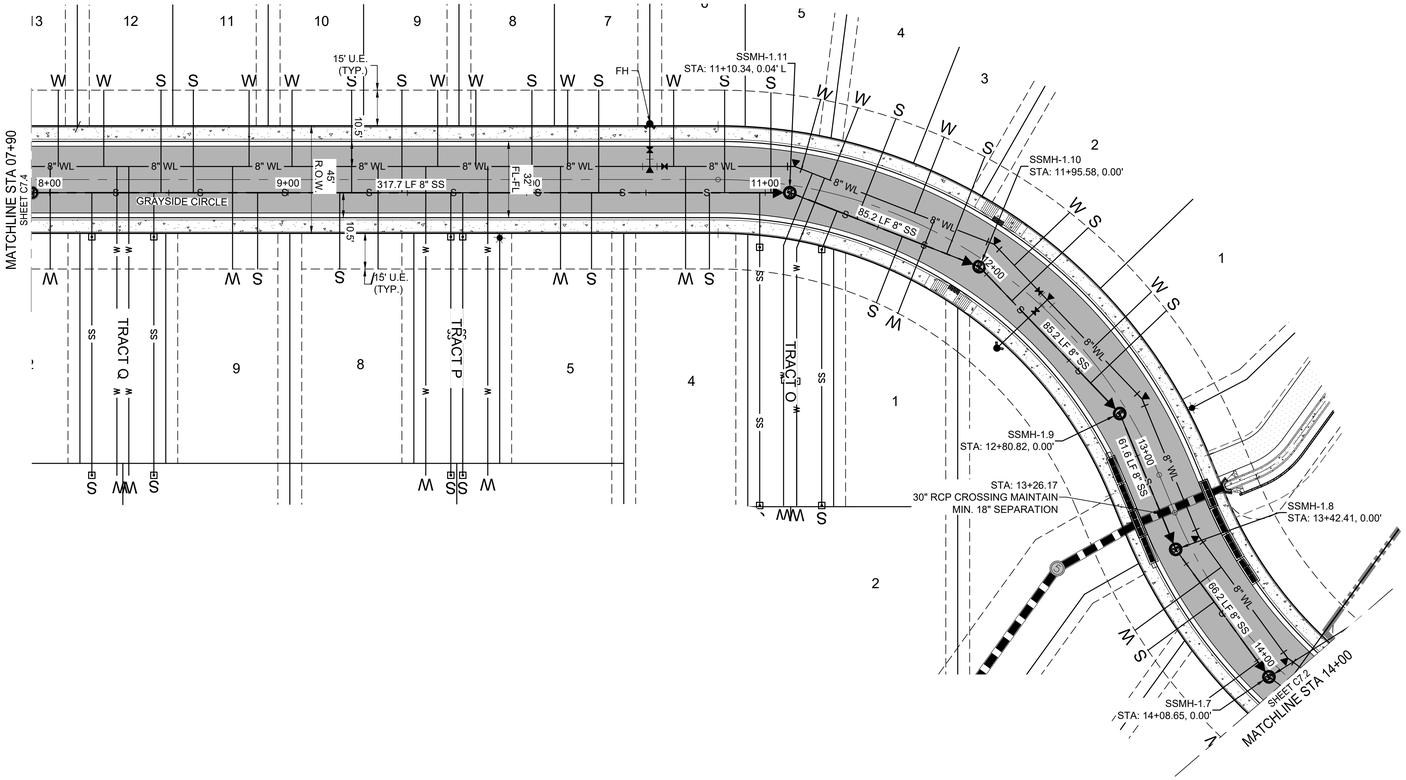
PROJECT NO:	BLV001.02
DESIGNED BY:	WLB
DRAWN BY:	WLB
DATE:	4/23/2024

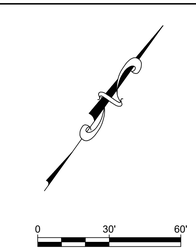
C7.2
SHEET 26 OF 70

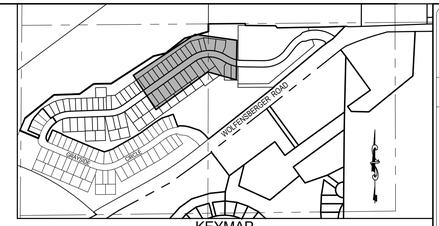
CD23-0036

P:\BLVDWAY BUILDERS\HILLSIDE AT CASTLE ROCK\06 CAD\SHEET SETS\PH 3-4 CDS\12 SANITARY SEWER PLAN AND PROFILE.DWG 4/23/2024 12:59 PM David Iovinelli

© 2023, ALL RIGHTS RESERVED.



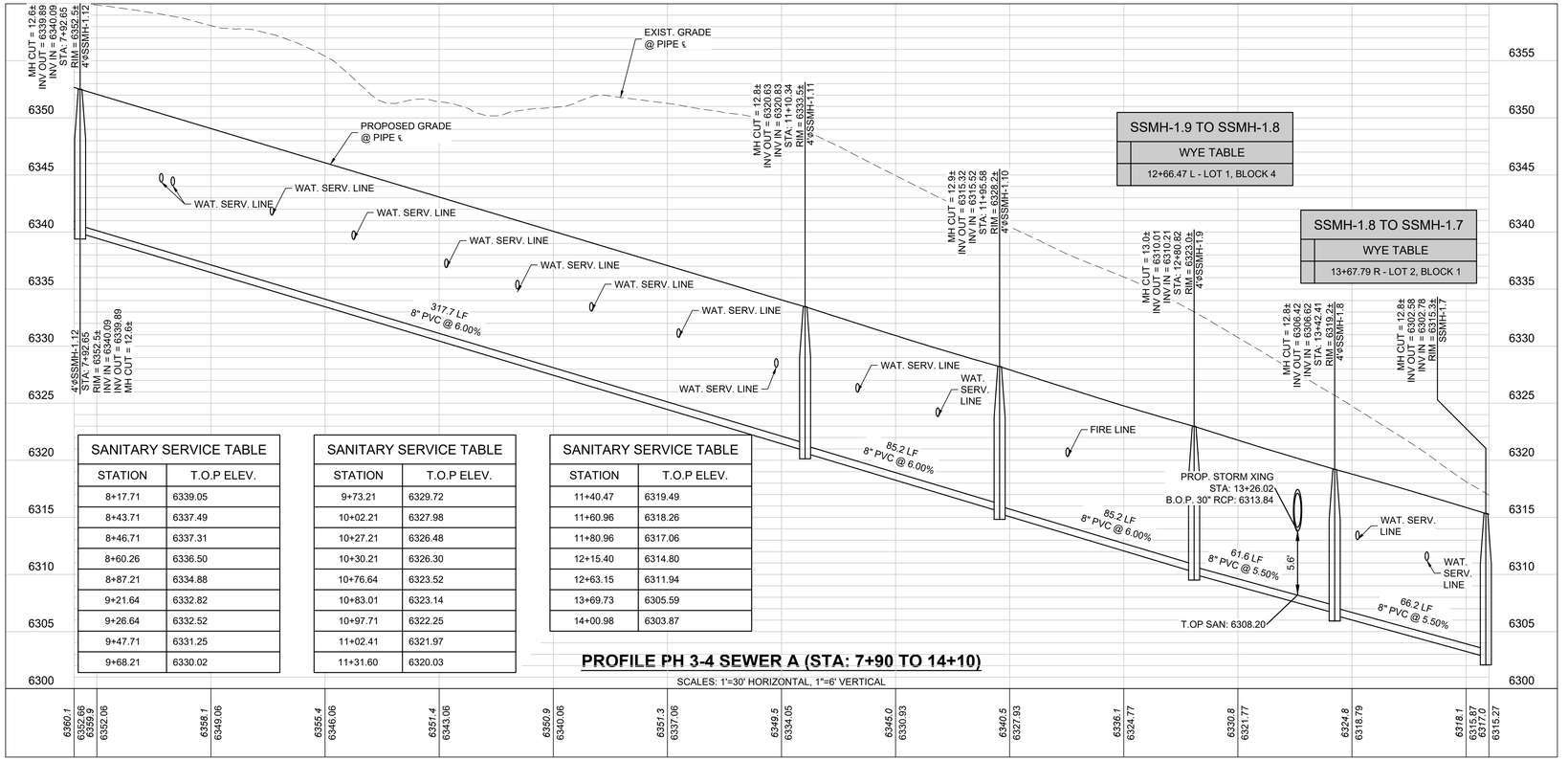




KEYMAP
SCALE: 1"=500'

UTILITY LEGEND:

- PROPERTY LINE
- RIGHT-OF-WAY
- LOT / TRACT LINE
- EXISTING LOT LINE
- EXISTING FENCE
- EXISTING ELECTRIC LINE
- EXISTING GAS MAIN
- EXISTING CATV
- EXISTING COMMUNICATION
- EXISTING SANITARY SEWER
- EXISTING WATER MAIN
- EXIST. TRAFFIC SIGNAL CONDUIT W/ PULL BOX
- EXISTING STORM SEWER
- EXISTING SANITARY SEWER MH
- EXISTING STORM MANHOLE
- EXISTING STORM INLETS
- EXISTING FIRE HYDRANT
- EXISTING WATER VALVE
- EXISTING UTILITY RISER
- EXISTING STREET SIGN
- EXISTING ASPHALT PAVEMENT
- PROPOSED PHASING LINE
- PROPOSED SANITARY SEWER
- PROPOSED WATER MAIN
- PROPOSED SEWER SERVICE LINE
- PROPOSED WATER SERVICE LINE
- PROPOSED STORM SEWER
- PROPOSED AREA INLET
- PROPOSED TYPE 16 COMBO INLET
- PROPOSED STORM MANHOLE
- PROPOSED HYDRANT & ASSEMBLY
- PROPOSED W.L. REDUCER
- PROPOSED W.L. FITTINGS
- PROPOSED W.L. PLUG
- PROPOSED WATER VALVE
- PROPOSED S.S. CLEANOUT
- PROPOSED SIGN
- PROPOSED STREET LIGHT



SSMH-1.9 TO SSMH-1.8
WYE TABLE
12+66.47 L - LOT 1, BLOCK 4

SSMH-1.8 TO SSMH-1.7
WYE TABLE
13+67.79 R - LOT 2, BLOCK 1

SANITARY SERVICE TABLE	
STATION	T.O.P ELEV.
8+17.71	6339.05
8+43.71	6337.49
8+46.71	6337.31
8+60.26	6336.50
8+87.21	6334.88
9+21.64	6332.82
9+26.64	6332.52
9+47.71	6331.25
9+68.21	6330.02

SANITARY SERVICE TABLE	
STATION	T.O.P ELEV.
9+73.21	6329.72
10+02.21	6327.98
10+27.21	6326.48
10+30.21	6326.30
10+76.64	6323.52
10+83.01	6323.14
10+97.71	6322.25
11+02.41	6321.97
11+31.60	6320.03

SANITARY SERVICE TABLE	
STATION	T.O.P ELEV.
11+40.47	6319.49
11+60.96	6318.26
11+80.96	6317.06
12+15.40	6314.80
12+63.15	6311.94
13+69.73	6305.59
14+00.98	6303.87

PROFILE PH 3-4 SEWER A (STA: 7+90 TO 14+10)

SCALES: 1'=30' HORIZONTAL, 1'=6' VERTICAL

PROJECT BENCHMARK:

TOP OF THE SW 1/16 CORNER OF SECTION 3, TOWNSHIP 8 SOUTH, RANGE 67 WEST, BEING A 3" ALUMINUM CAP STAMPED "PLS 25629 1995" WITH AN ELEVATION OF 6352.83 FEET NAVD 88. THIS ELEVATION IS BASED UPON NGS STATION "N 393" WITH A PUBLISHED ELEVATION OF 6222.12 FEET NAVD 88.

811 Know what's below. Call before you dig.

CALL UTILITY NOTIFICATION CENTER OF COLORADO
1-800-922-1987 or 811
CALL 3-BUSINESS DAYS (NOT INCLUDING INITIAL DAY OF CONTACT) IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES.

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

No.	REVISION	BY	DATE

PRELIMINARY NOT FOR CONSTRUCTION

EES ENTITLEMENT AND ENGINEERING SOLUTIONS, INC.
3801 E. Florida Avenue, Suite 425
Denver, CO 80210
303-572-7997 www.ees.us.com

BLVD. BUILDERS

CONSTRUCTION PLANS

HILLSIDE AT CASTLE ROCK - PHASES 3-4

CASTLE ROCK, COLORADO

PHASE 3 SANITARY SEWER PLAN & PROFILE 3

PROJECT NO:	BLV001.02
DESIGNED BY:	WLB
DRAWN BY:	WLB
DATE:	4/23/2024

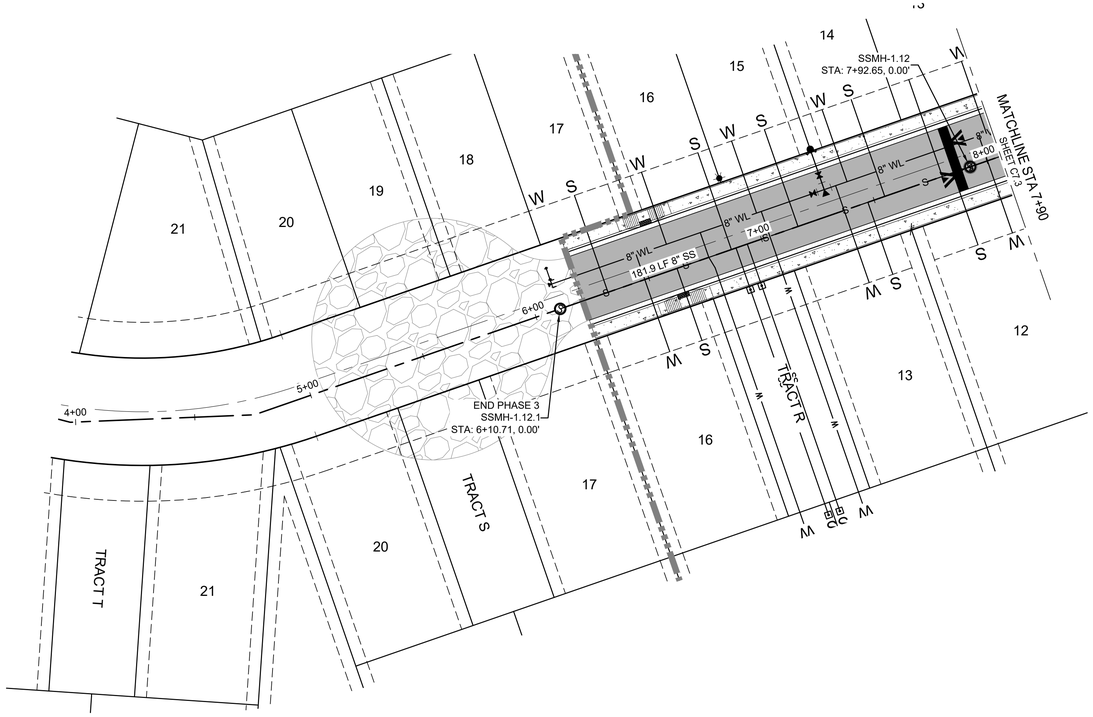
C7.3

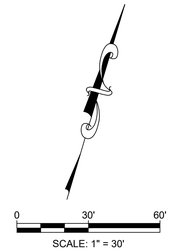
SHEET 27 OF 70

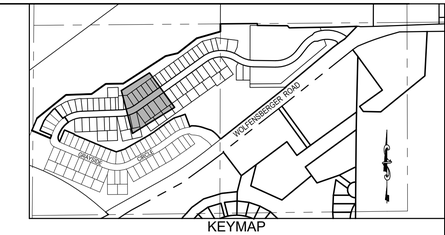
CD23-0036

P:\BLVD\WAY BUILDERS\HILLSIDE AT CASTLE ROCK\06 CAD\SHEET SETS\PH 3-4 CDS\12 SANITARY SEWER PLAN AND PROFILE.DWG 4/23/2024 12:59 PM David Iovinelli

© 2023, ALL RIGHTS RESERVED.



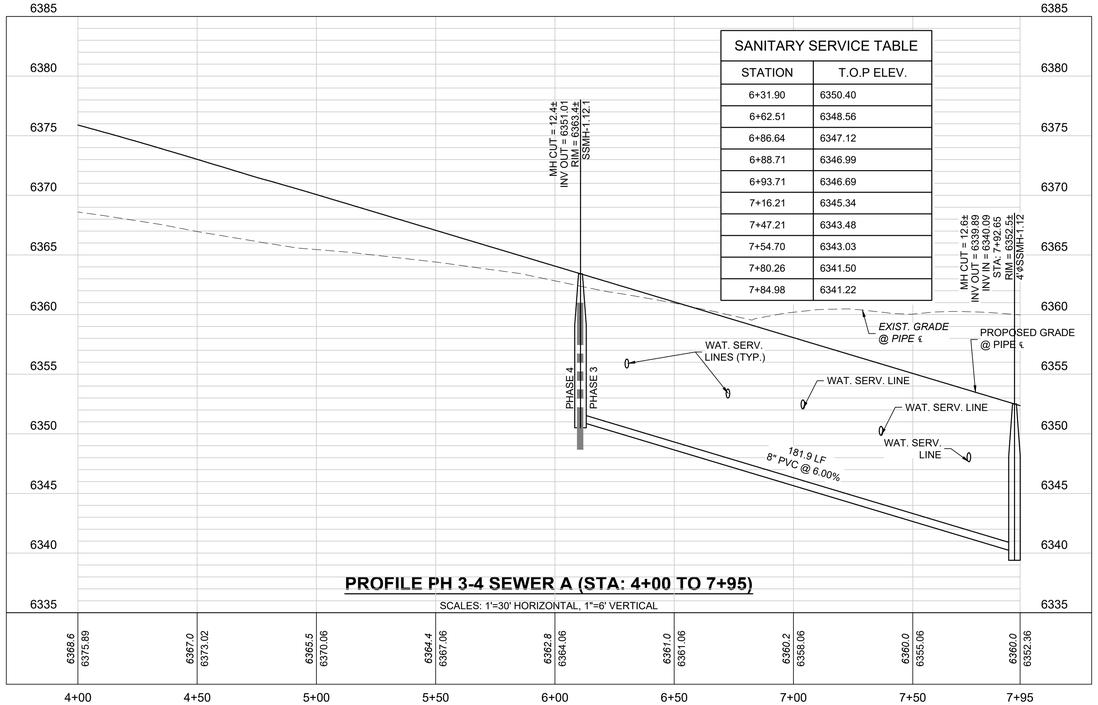




KEYMAP
SCALE: 1"=500'

UTILITY LEGEND:

- PROPERTY LINE
- RIGHT-OF-WAY
- LOT / TRACT LINE
- EXISTING LOT LINE
- EXISTING FENCE (X)
- EXISTING ELECTRIC LINE (E)
- EXISTING GAS MAIN (G)
- EXISTING CATV (CTV)
- EXISTING COMMUNICATION (COM)
- EXISTING SANITARY SEWER (S)
- EXISTING WATER MAIN (W)
- EXIST. TRAFFIC SIGNAL CONDUIT W/ PULL BOX
- EXISTING STORM SEWER
- EXISTING SANITARY SEWER MH
- EXISTING STORM MANHOLE
- EXISTING STORM INLETS
- EXISTING FIRE HYDRANT
- EXISTING WATER VALVE
- EXISTING UTILITY RISER
- EXISTING STREET SIGN
- EXISTING ASPHALT PAVEMENT
- PROPOSED PHASING LINE
- PROPOSED SANITARY SEWER (S)
- PROPOSED WATER MAIN (W)
- PROPOSED SEWER SERVICE LINE (S)
- PROPOSED WATER SERVICE LINE (W)
- PROPOSED STORM SEWER
- PROPOSED AREA INLET
- PROPOSED TYPE 16 COMBO INLET
- PROPOSED STORM MANHOLE (5)
- PROPOSED HYDRANT & ASSEMBLY
- PROPOSED W.L. REDUCER
- PROPOSED W.L. FITTINGS
- PROPOSED W.L. PLUG
- PROPOSED WATER VALVE
- PROPOSED S.S. CLEANOUT
- PROPOSED SIGN
- PROPOSED STREET LIGHT



SANITARY SERVICE TABLE	
STATION	T.O.P ELEV.
6+31.90	6350.40
6+62.51	6348.56
6+86.64	6347.12
6+88.71	6346.99
6+93.71	6346.69
7+16.21	6345.34
7+47.21	6343.48
7+54.70	6343.03
7+80.26	6341.50
7+84.98	6341.22

PROJECT BENCHMARK:

TOP OF THE SW 1/16 CORNER OF SECTION 3, TOWNSHIP 8 SOUTH, RANGE 67 WEST, BEING A 3" ALUMINUM CAP STAMPED "PLS 25629 1995" WITH AN ELEVATION OF 6352.83 FEET NAVD 88. THIS ELEVATION IS BASED UPON NGS STATION "N 393" WITH A PUBLISHED ELEVATION OF 6222.12 FEET NAVD 88.

811 Know what's below. Call before you dig.

CALL UTILITY NOTIFICATION CENTER OF COLORADO
1-800-922-1987 or 811
CALL 3-BUSINESS DAYS (NOT INCLUDING INITIAL DAY OF CONTACT) IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES.

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

No.	REVISION	BY	DATE

PRELIMINARY NOT FOR CONSTRUCTION

EES ENTITLEMENT AND ENGINEERING SOLUTIONS, INC.
3801 E. Florida Avenue, Suite 425
Denver, CO 80210
303-572-7997 www.ees.us.com

BLVD. BUILDERS

CONSTRUCTION PLANS

HILLSIDE AT CASTLE ROCK - PHASES 3-4

CASTLE ROCK, COLORADO

PHASE 3 SANITARY SEWER PLAN & PROFILE 4

PROJECT NO:	BLV001.02
DESIGNED BY:	WLB
DRAWN BY:	WLB
DATE:	4/23/2024

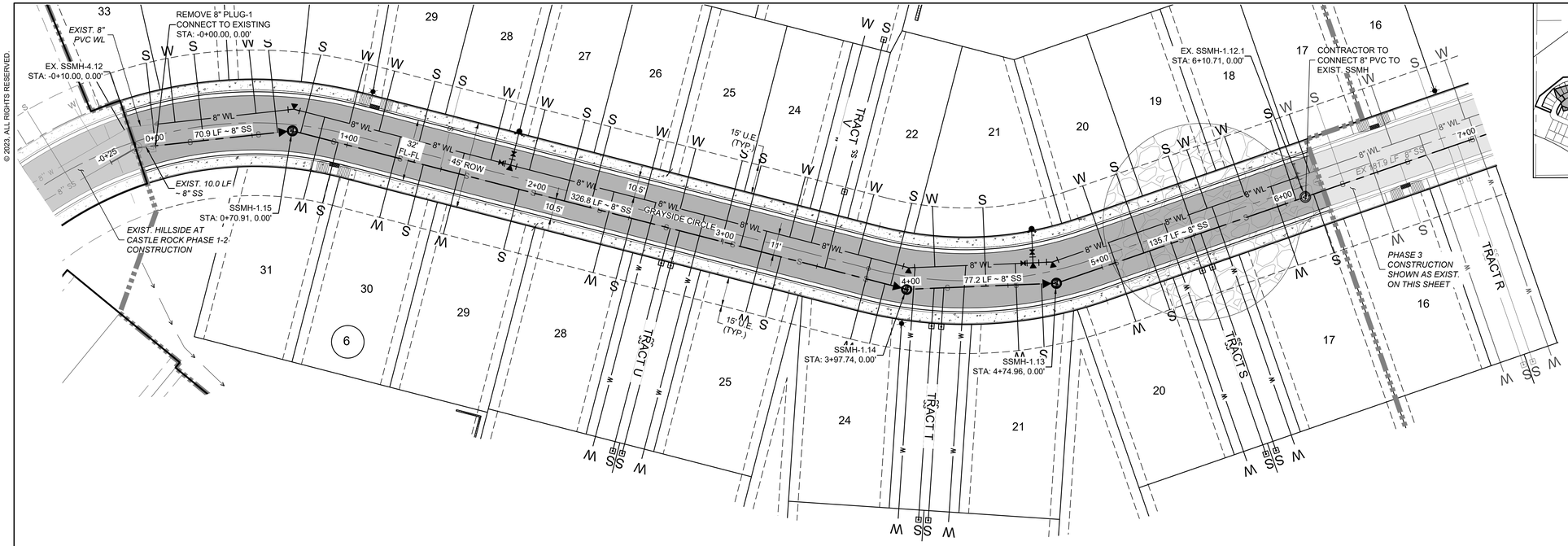
C7.4

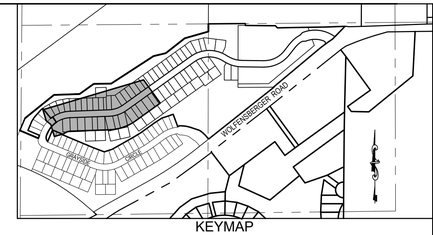
SHEET 28 OF 70

CD23-0036

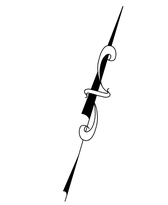
P:\BLVDWAY BUILDERS\HILLSIDE AT CASTLE ROCK\06 CAD\SHEET SET\SPH 3-4 CDS\12 SANITARY SEWER PLAN AND PROFILE.DWG 4/23/2024 1:00 PM David Iovinelli

© 2023, ALL RIGHTS RESERVED.

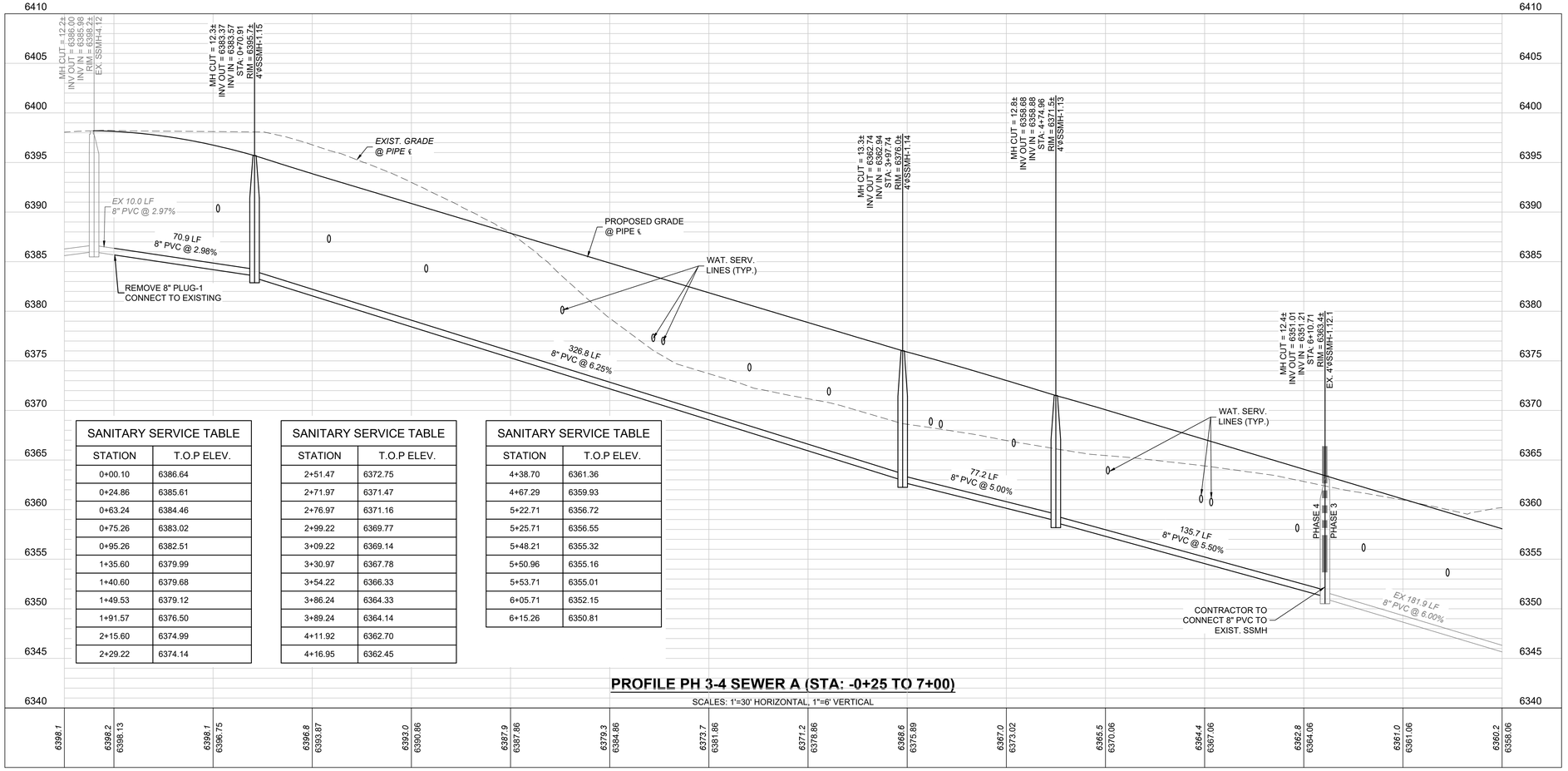




KEYMAP
SCALE: 1"=500'



0 30' 60'
SCALE: 1" = 30'



SANITARY SERVICE TABLE	
STATION	T.O.P ELEV.
0+00.10	6386.64
0+24.86	6385.61
0+63.24	6384.46
0+75.26	6383.02
0+95.26	6382.51
1+35.60	6379.99
1+40.60	6379.68
1+49.53	6379.12
1+91.57	6376.50
2+15.60	6374.99
2+29.22	6374.14

SANITARY SERVICE TABLE	
STATION	T.O.P ELEV.
2+51.47	6372.75
2+71.97	6371.47
2+76.97	6371.16
2+99.22	6369.77
3+09.22	6369.14
3+30.97	6367.78
3+54.22	6366.33
3+86.24	6364.33
3+89.24	6364.14
4+11.92	6362.70
4+16.95	6362.45

SANITARY SERVICE TABLE	
STATION	T.O.P ELEV.
4+38.70	6361.36
4+67.29	6359.93
5+22.71	6356.72
5+25.71	6356.55
5+48.21	6355.32
5+50.96	6355.16
5+53.71	6355.01
6+05.71	6352.15
6+15.26	6350.81

PROFILE PH 3-4 SEWER A (STA: -0+25 TO 7+00)

SCALES: 1"=30' HORIZONTAL, 1"=6' VERTICAL

UTILITY LEGEND:

- PROPERTY LINE
- RIGHT-OF-WAY
- LOT / TRACT LINE
- EXISTING LOT LINE
- X — EXISTING FENCE
- E — EXISTING ELECTRIC LINE
- G — EXISTING GAS MAIN
- CTV — EXISTING CATV
- COM — EXISTING COMMUNICATION
- S — EXISTING SANITARY SEWER
- W — EXISTING WATER MAIN
- EXIST. TRAFFIC SIGNAL CONDUIT W/ PULL BOX
- EXISTING STORM SEWER
- EXISTING SANITARY SEWER MH
- EXISTING STORM MANHOLE
- EXISTING STORM INLETS
- EXISTING FIRE HYDRANT
- EXISTING WATER VALVE
- EXISTING UTILITY RISER
- EXISTING STREET SIGN
- EXISTING ASPHALT PAVEMENT
- PROPOSED PHASING LINE
- S — PROPOSED SANITARY SEWER
- W — PROPOSED WATER MAIN
- S — PROPOSED SEWER SERVICE LINE
- W — PROPOSED WATER SERVICE LINE
- PROPOSED STORM SEWER
- PROPOSED AREA INLET
- PROPOSED TYPE 16 COMBO INLET
- PROPOSED STORM MANHOLE
- PROPOSED HYDRANT & ASSEMBLY
- PROPOSED W.L. REDUCER
- PROPOSED W.L. FITTINGS
- PROPOSED W.L. PLUG
- PROPOSED WATER VALVE
- PROPOSED S.S. CLEANOUT
- PROPOSED SIGN
- PROPOSED STREET LIGHT

PROJECT BENCHMARK:

TOP OF THE SW 1/16 CORNER OF SECTION 3, TOWNSHIP 8 SOUTH, RANGE 67 WEST, BEING A 3" ALUMINUM CAP STAMPED "PLS 25629 1995" WITH AN ELEVATION OF 6352.83 FEET NAVD 88. THIS ELEVATION IS BASED UPON NGS STATION "N 393" WITH A PUBLISHED ELEVATION OF 6222.12 FEET NAVD 88.

811 Know what's below. Call before you dig.

CALL UTILITY NOTIFICATION CENTER OF COLORADO
1-800-922-1987 or 811
CALL 3-BUSINESS DAYS (NOT INCLUDING INITIAL DAY OF CONTACT) IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES.

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

No.	REVISION	BY	DATE

PRELIMINARY NOT FOR CONSTRUCTION

EES ENTITLEMENT AND ENGINEERING SOLUTIONS, INC.
3801 E. Florida Avenue, Suite 425
Denver, CO 80210
303-572-7997 www.ees.us.com

BLVD BUILDERS

CONSTRUCTION PLANS

HILLSIDE AT CASTLE ROCK - PHASES 3-4

CASTLE ROCK, COLORADO

PHASE 4 SANITARY SEWER PLAN & PROFILE 1

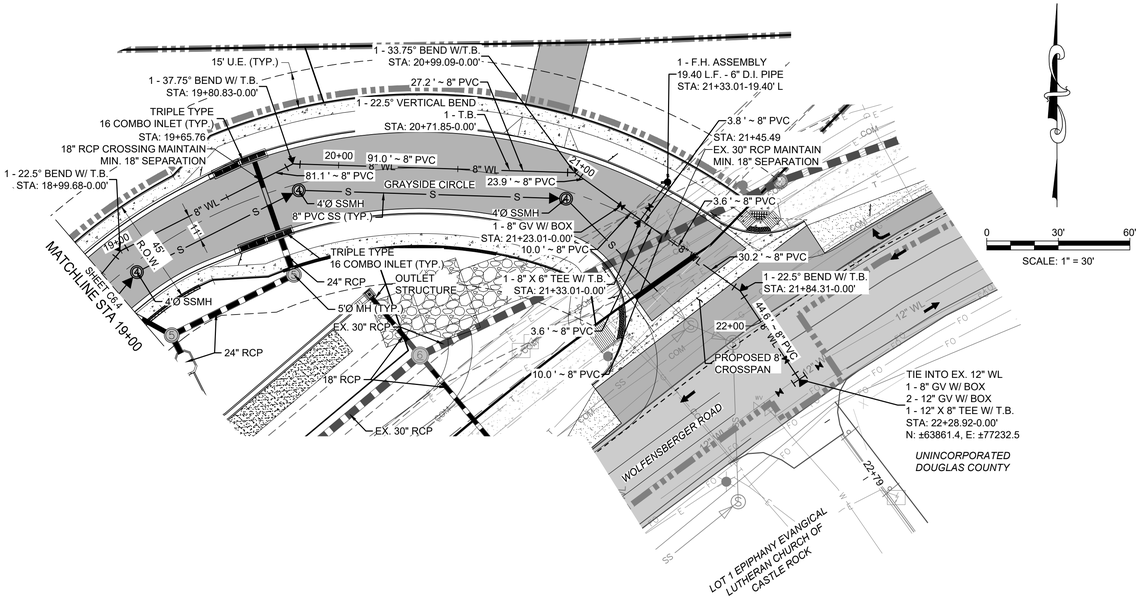
PROJECT NO:	BLV001.02
DESIGNED BY:	WLB
DRAWN BY:	WLB
DATE:	4/23/2024

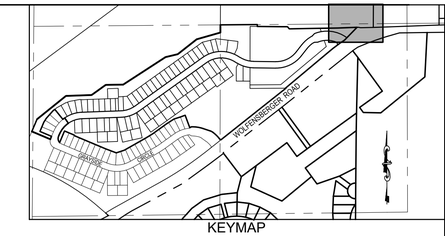
C7.5
SHEET 29 OF 70

CD23-0036

P:\BLVD\WAY BUILDERS\HILLSIDE AT CASTLE ROCK\08 CAD\SHEET SETS\PH 3-4 CDS\12A PH 4 SAN SEWER PP.DWG 4/23/2024 1:00 PM David Ironwill

© 2024, ALL RIGHTS RESERVED.



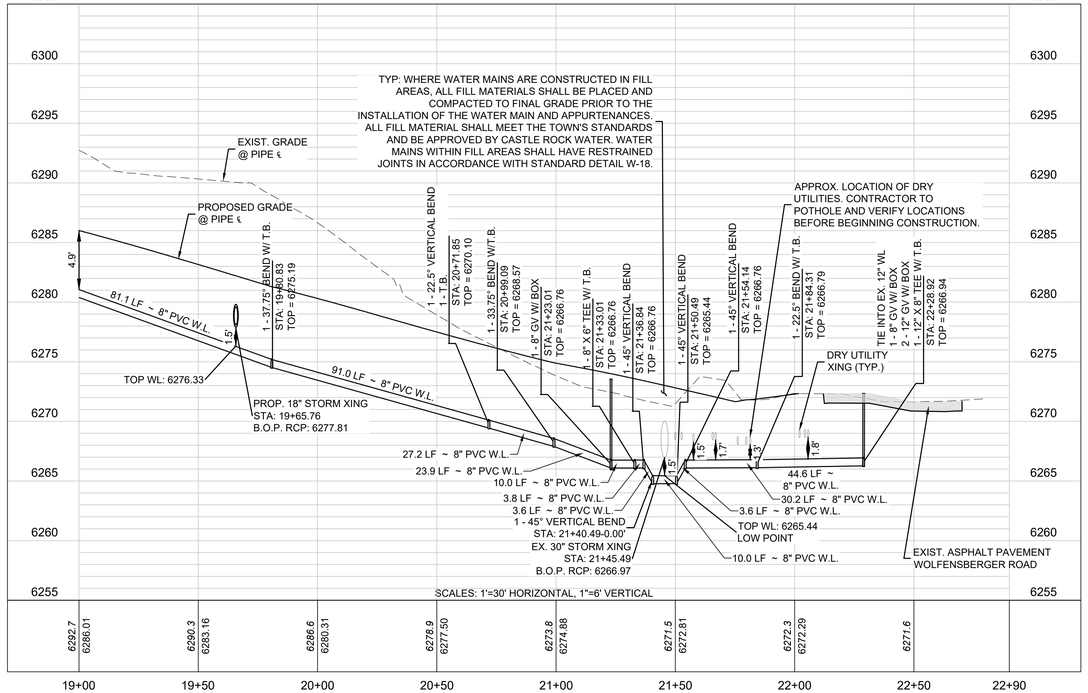


KEYMAP
SCALE: 1"=500'

DRY UTILITY CROSSINGS			
	STATION AND CROSSING	NORTHING	EASTING
	21+50.00 - ELECTRIC LINE XING	63925.58	77169.78
	21+52.61 - ELECTRIC LINE XING	63924.06	77171.91
	21+65.97 - COM. LINE XING	63916.31	77182.78
	21+66.90 - ELECTRIC LINE XING	63915.75	77183.53
	21+76.02 - TELEPHONE LINE XING	63910.45	77190.95
	21+79.70 - ELECTRIC LINE XING	63908.31	77193.95
	21+81.35 - TELEPHONE LINE XING	63907.35	77195.28
	22+02.12 - COM. LINE XING	63893.91	77210.74
	22+04.30 - GAS LINE XING	63892.10	77211.95
	22+05.74 - GAS LINE XING	63890.91	77212.75

UTILITY LEGEND:

- PROPERTY LINE
- RIGHT-OF-WAY
- LOT / TRACT LINE
- EXISTING LOT LINE
- X — EXISTING FENCE
- E — EXISTING ELECTRIC LINE
- G — EXISTING GAS MAIN
- CTV — EXISTING CATV
- COM — EXISTING COMMUNICATION
- S — EXISTING SANITARY SEWER
- W — EXISTING WATER MAIN
- EXIST. TRAFFIC SIGNAL CONDUIT W/ PULL BOX
- EXISTING STORM SEWER
- EXISTING SANITARY SEWER MH
- EXISTING STORM MANHOLE
- EXISTING STORM INLETS
- EXISTING FIRE HYDRANT
- EXISTING WATER VALVE
- EXISTING UTILITY RISER
- EXISTING STREET SIGN
- EXISTING ASPHALT PAVEMENT
- PROPOSED PHASING LINE
- S — PROPOSED SANITARY SEWER
- W — PROPOSED WATER MAIN
- S — PROPOSED SEWER SERVICE LINE
- W — PROPOSED WATER SERVICE LINE
- PROPOSED STORM SEWER
- PROPOSED AREA INLET
- PROPOSED TYPE 16 COMBO INLET
- PROPOSED STORM MANHOLE
- PROPOSED HYDRANT & ASSEMBLY
- PROPOSED W.L. REDUCER
- PROPOSED W.L. FITTINGS
- PROPOSED W.L. PLUG
- PROPOSED WATER VALVE
- PROPOSED S.S. CLEANOUT
- PROPOSED SIGN
- PROPOSED STREET LIGHT



PROFILE PH 3-4 WATER A (STA: 19+00 TO 22+90)

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 EXIST. WATER, SANITARY SEWER, AND/OR STORM SEWER SYSTEMS PROVIDED THAT THE UTILITY TIE-IN DOES NOT DISRUPT SERVICE TO EXIST. CR WATER CUSTOMERS. IF THE TIE-IN WILL DISRUPT UTILITY SERVICE, THEN THE 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 EXIST. CUSTOMERS AFFECTED BY THE TIE-IN. ALL TOWN UTILITY TIE-INS MUST BE APPROVED BY CR WATER PRIOR TO COMMENCING WORK.

EXISTING UTILITIES DISCLAIMER:

EXISTING UTILITIES SHOWN ON THESE IMPROVEMENT PLANS ARE APPROXIMATE ONLY. THEY HAVE BEEN LOCATED FROM FIELD SURVEYS AND UTILITY RECORDS. THE CONTRACTOR SHALL CONTACT ALL RESPECTIVE UTILITY COMPANIES TO HAVE ALL UTILITIES FIELD LOCATED PRIOR TO CONSTRUCTION.

THE CONTRACTOR SHALL TAKE THE NECESSARY PRECAUTIONS TO PROTECT ALL EXISTING UTILITIES ENCOUNTERED, AND SHALL BE RESPONSIBLE FOR THE IMMEDIATE REPAIR OF ALL UTILITIES DAMAGED DURING CONSTRUCTION WHETHER SHOWN ON THESE PLANS OR NOT.

IT SHALL BE THE CONTRACTOR'S FULL RESPONSIBILITY TO FIELD VERIFY THE LOCATION OF ALL EXISTING STRUCTURES AND UTILITIES SHOWN ON THESE IMPROVEMENT PLANS, TO ASCERTAIN WHETHER ANY STRUCTURES AND UTILITIES MAY EXIST, AND TO REPAIR OR REPLACE ANY STRUCTURES AND UTILITIES THAT MIGHT BE DAMAGED. IF ANY UNKNOWN SUBSURFACE STRUCTURES OR UTILITIES ARE ENCOUNTERED DURING CONSTRUCTION, IT SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE CIVIL ENGINEER WHOSE NAME APPEARS ON THESE PLANS.

IT SHALL BE THE CONTRACTOR'S FULL RESPONSIBILITY TO CONTACT THE EXISTING UTILITY PROVIDER(S) IN A TIMELY MANNER TO SCHEDULE ANY AND ALL UTILITY REALIGNMENTS DUE TO CONFLICTS WITH PROPOSED EARTHWORK GRADING AND/OR INFRASTRUCTURE BEING CONSTRUCTED PER THE ATTACHED CONSTRUCTION DOCUMENTS.

PROJECT BENCHMARK:

TOP OF THE SW 1/16 CORNER OF SECTION 3, TOWNSHIP 8 SOUTH, RANGE 67 WEST, BEING A 3" ALUMINUM CAP STAMPED "PLS 25629 1995" WITH AN ELEVATION OF 6352.83 FEET NAVD 88. THIS ELEVATION IS BASED UPON NGS STATION "N 393" WITH A PUBLISHED ELEVATION OF 6222.12 FEET NAVD 88.

811 Know what's below. Call before you dig.

CALL UTILITY NOTIFICATION CENTER OF COLORADO
1-800-922-1987 or 811
CALL 3-BUSINESS DAYS (NOT INCLUDING INITIAL DAY OF CONTACT) IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES.

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

No.	REVISION	BY	DATE

PRELIMINARY NOT FOR CONSTRUCTION

EES ENTITLEMENT AND ENGINEERING SOLUTIONS, INC.
3801 E. Florida Avenue, Suite 425
Denver, CO 80210
303-572-7997 www.ees.us.com

BLVD. BUILDERS

CONSTRUCTION PLANS
HILLSIDE AT CASTLE ROCK - PHASES 3-4
CASTLE ROCK, COLORADO
PHASE 3 WATER PLAN & PROFILE 1

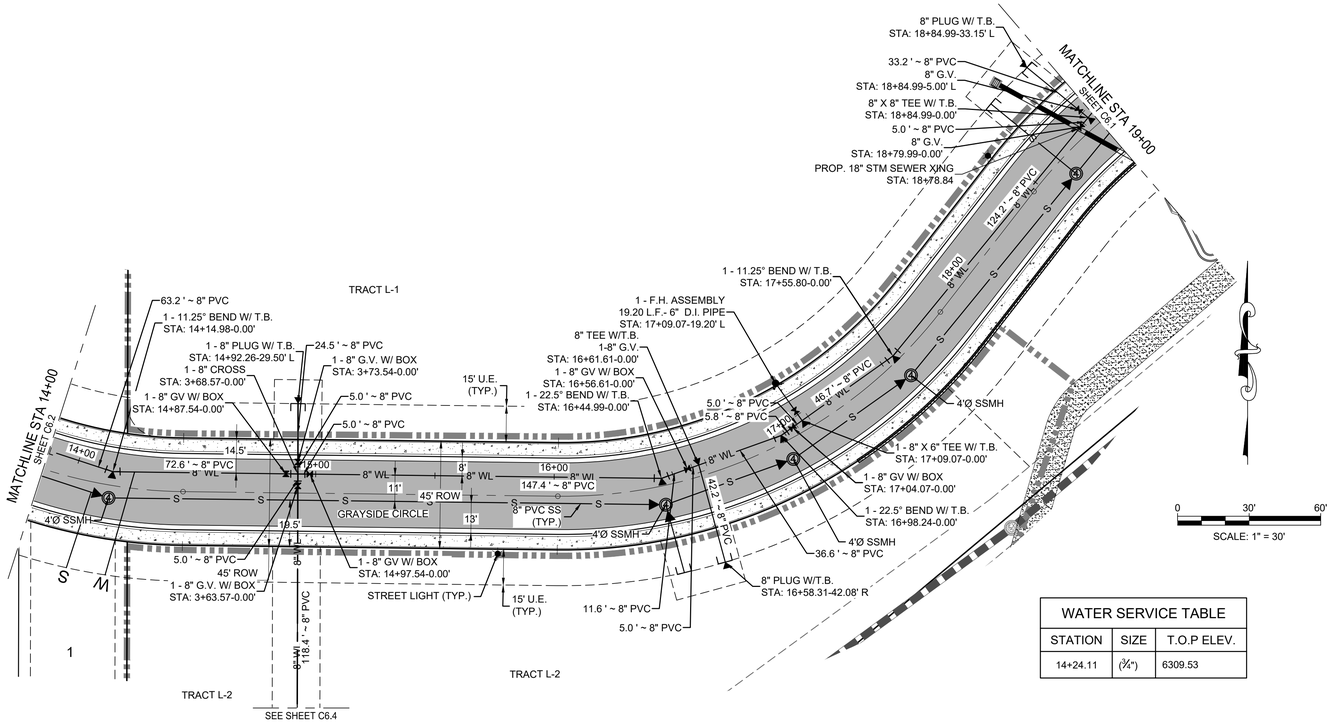
PROJECT NO:	BLV001.02
DESIGNED BY:	WLB
DRAWN BY:	WLB
DATE:	5/30/2024

C6.1
SHEET 14 OF 70

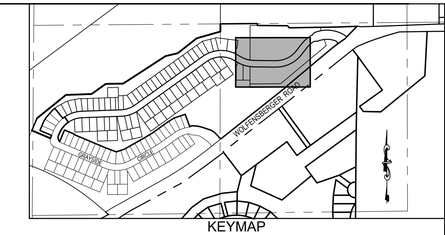
CD23-0036

P:\BLVD\WAY BUILDERS\HILLSIDE AT CASTLE ROCK\06 CAD\SHEET SET\PH 3-4 CDS\10 PHASE 3 WATER LINE PLAN AND PROFILE DWG 5/30/2024 3:20 PM David Kohlwilli

© 2024, ALL RIGHTS RESERVED.



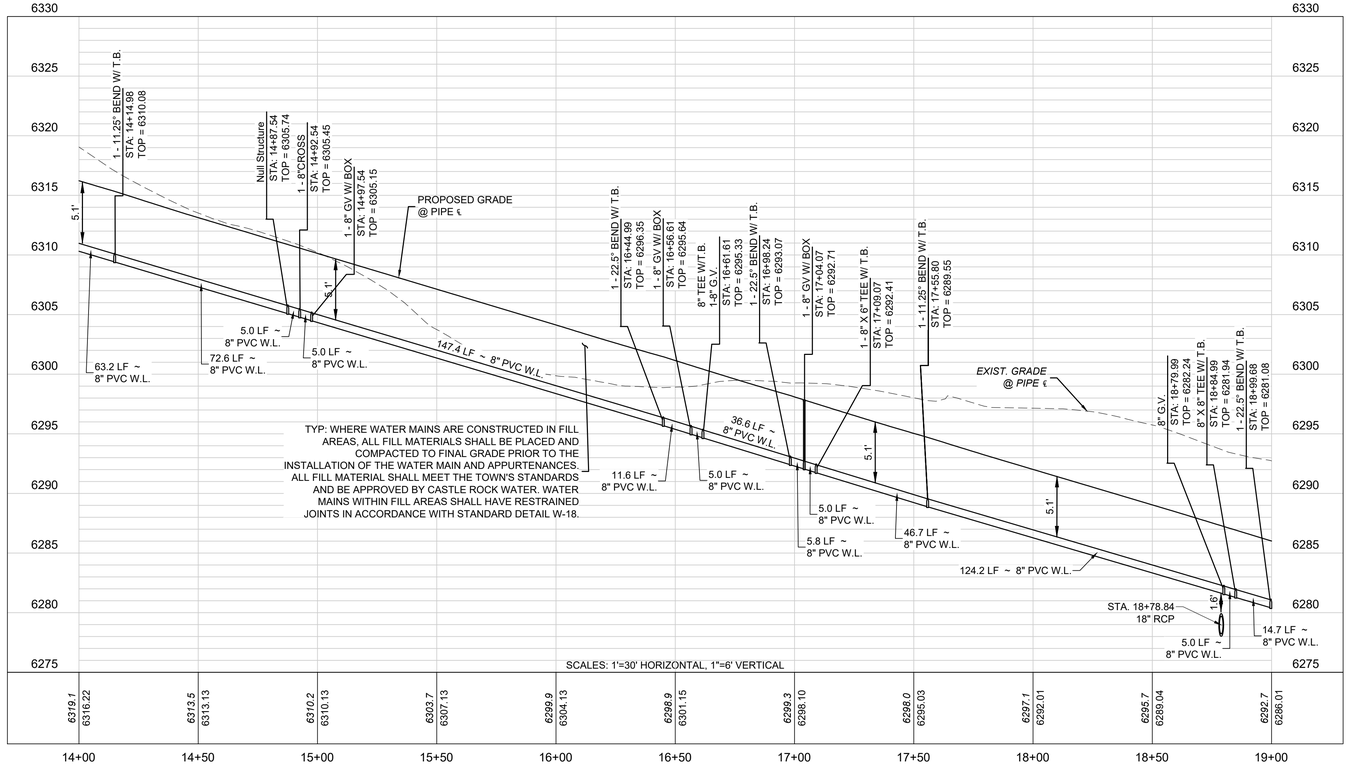
WATER SERVICE TABLE		
STATION	SIZE	T.O.P ELEV.
14+24.11	(¾")	6309.53



KEYMAP
SCALE: 1"=500'

UTILITY LEGEND:

- PROPERTY LINE
- RIGHT-OF-WAY
- LOT / TRACT LINE
- EXISTING LOT LINE
- X — EXISTING FENCE
- E — EXISTING ELECTRIC LINE
- G — EXISTING GAS MAIN
- CTV — EXISTING CATV
- COM — EXISTING COMMUNICATION
- S — EXISTING SANITARY SEWER
- W — EXISTING WATER MAIN
- EXIST. TRAFFIC SIGNAL CONDUIT W/ PULL BOX
- EXISTING STORM SEWER
- EXISTING SANITARY SEWER MH
- EXISTING STORM MANHOLE
- EXISTING STORM INLETS
- EXISTING FIRE HYDRANT
- EXISTING WATER VALVE
- EXISTING UTILITY RISER
- EXISTING STREET SIGN
- EXISTING ASPHALT PAVEMENT
- PROPOSED PHASING LINE
- S — PROPOSED SANITARY SEWER
- W — PROPOSED WATER MAIN
- S — PROPOSED SEWER SERVICE LINE
- W — PROPOSED WATER SERVICE LINE
- PROPOSED STORM SEWER
- PROPOSED AREA INLET
- PROPOSED TYPE 16 COMBO INLET
- PROPOSED STORM MANHOLE
- PROPOSED HYDRANT & ASSEMBLY
- PROPOSED W.L. REDUCER
- PROPOSED W.L. FITTINGS
- PROPOSED W.L. PLUG
- PROPOSED WATER VALVE
- PROPOSED S.S. CLEANOUT
- PROPOSED SIGN
- PROPOSED STREET LIGHT



PROFILE PH 3-4 WATER A (STA: 14+00 TO 19+00)

PROJECT BENCHMARK:

TOP OF THE SW 1/16 CORNER OF SECTION 3, TOWNSHIP 8 SOUTH, RANGE 67 WEST, BEING A 3" ALUMINUM CAP STAMPED "PLS 25629 1995" WITH AN ELEVATION OF 6352.83 FEET NAVD 88. THIS ELEVATION IS BASED UPON NGS STATION "N 393" WITH A PUBLISHED ELEVATION OF 6222.12 FEET NAVD 88.

CALL UTILITY NOTIFICATION CENTER OF COLORADO
1-800-922-1987 or 811
CALL 3-BUSINESS DAYS (NOT INCLUDING INITIAL DAY OF CONTACT) IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES.
Know what's below. Call before you dig.

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

No.	REVISION	BY	DATE

PRELIMINARY NOT FOR CONSTRUCTION

EES ENTITLEMENT AND ENGINEERING SOLUTIONS, INC.
3801 E. Florida Avenue, Suite 425
Denver, CO 80210
303-572-7997 www.ees.us.com

BLVD. BUILDERS

CONSTRUCTION PLANS

HILLSIDE AT CASTLE ROCK - PHASES 3-4

CASTLE ROCK, COLORADO

PHASE 3 WATER PLAN & PROFILE 3

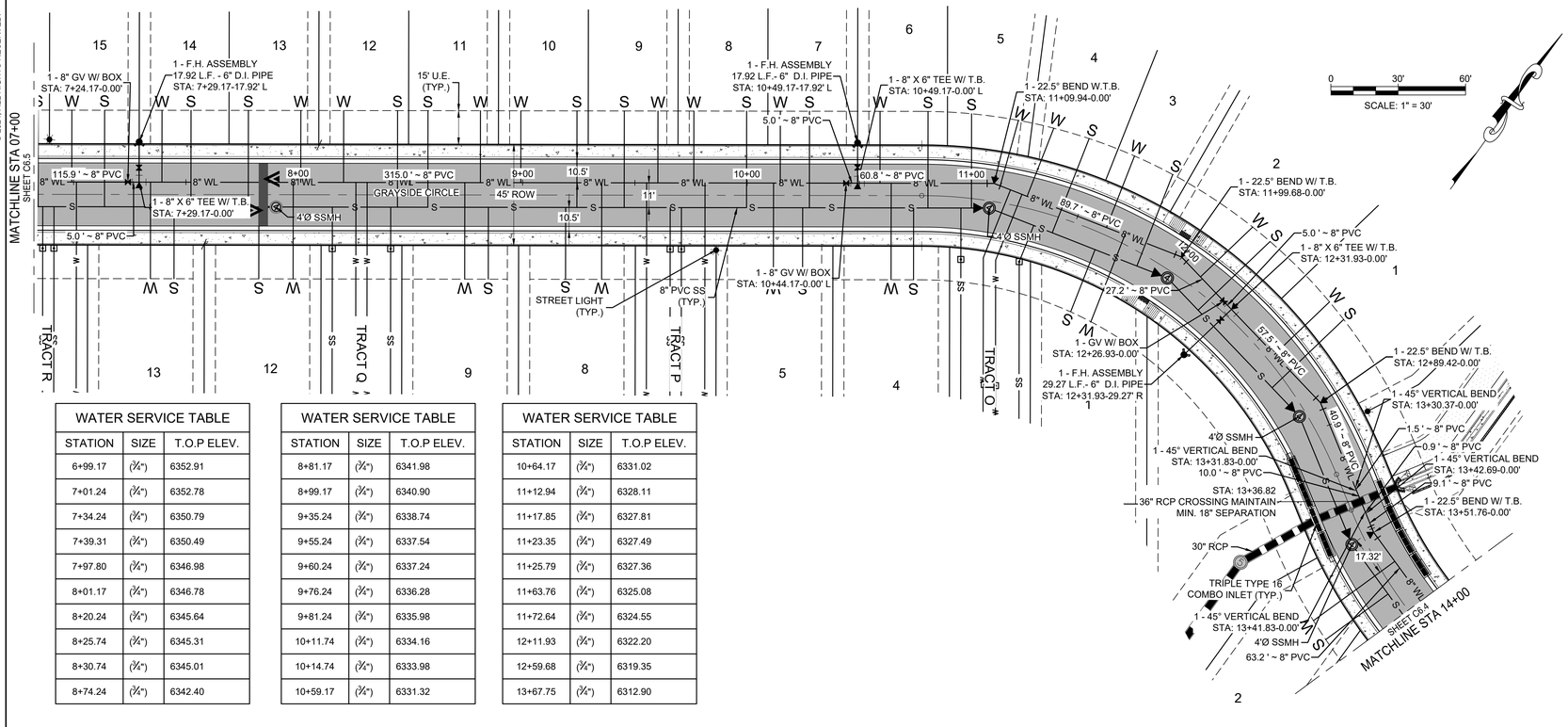
PROJECT NO:	BLV001.02
DESIGNED BY:	WLB
DRAWN BY:	WLB
DATE:	5/30/2024

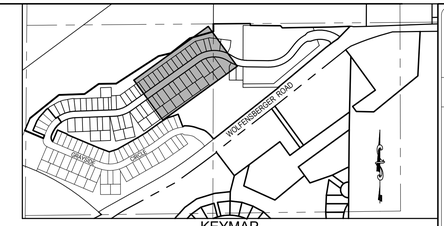
C6.2
SHEET 16 OF 70

CD23-0036

P:\BLVDWAY BUILDERS\HILLSIDE AT CASTLE ROCK\06 CAD\SHEET SET\PH 3-4 CDS\10 PHASE 3 WATER LINE PLAN AND PROFILE.DWG 5/30/2024 3:20 PM David Ivinnelli

© 2024, ALL RIGHTS RESERVED.





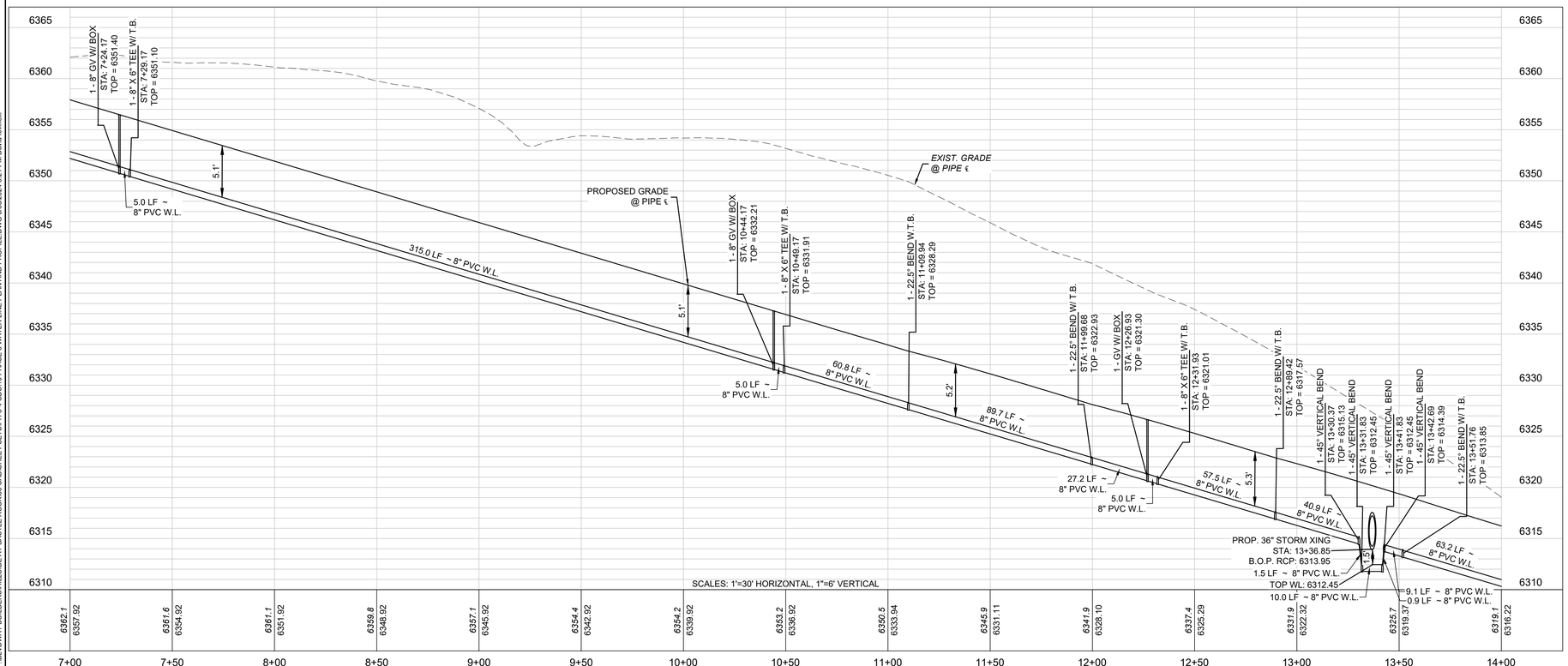
UTILITY LEGEND:

- PROPERTY LINE
- RIGHT-OF-WAY
- LOT / TRACT LINE
- EXISTING LOT LINE
- X — EXISTING FENCE
- E — EXISTING ELECTRIC LINE
- G — EXISTING GAS MAIN
- CTV — EXISTING CATV
- COM — EXISTING COMMUNICATION
- S — EXISTING SANITARY SEWER
- W — EXISTING WATER MAIN
- EXIST. TRAFFIC SIGNAL CONDUIT W/ PULL BOX
- EXISTING STORM SEWER
- EXISTING SANITARY SEWER MH
- EXISTING STORM MANHOLE
- EXISTING STORM INLETS
- EXISTING FIRE HYDRANT
- EXISTING WATER VALVE
- EXISTING UTILITY RISER
- EXISTING STREET SIGN
- EXISTING ASPHALT PAVEMENT
- PROPOSED PHASING LINE
- S — PROPOSED SANITARY SEWER
- W — PROPOSED WATER MAIN
- S — PROPOSED SEWER SERVICE LINE
- W — PROPOSED WATER SERVICE LINE
- PROPOSED STORM SEWER
- PROPOSED AREA INLET
- PROPOSED TYPE 16 COMBO INLET
- PROPOSED STORM MANHOLE
- PROPOSED HYDRANT & ASSEMBLY
- PROPOSED W.L. REDUCER
- PROPOSED W.L. FITTINGS
- PROPOSED W.L. PLUG
- PROPOSED WATER VALVE
- PROPOSED S.S. CLEANOUT
- PROPOSED SIGN
- PROPOSED STREET LIGHT

WATER SERVICE TABLE		
STATION	SIZE	T.O.P ELEV.
6+99.17	(¾")	6352.91
7+01.24	(¾")	6352.78
7+34.24	(¾")	6350.79
7+39.31	(¾")	6350.49
7+97.80	(¾")	6346.98
8+01.17	(¾")	6346.78
8+20.24	(¾")	6345.64
8+25.74	(¾")	6345.31
8+30.74	(¾")	6345.01
8+74.24	(¾")	6342.40

WATER SERVICE TABLE		
STATION	SIZE	T.O.P ELEV.
8+81.17	(¾")	6341.98
8+99.17	(¾")	6340.90
9+35.24	(¾")	6338.74
9+55.24	(¾")	6337.54
9+60.24	(¾")	6337.24
9+76.24	(¾")	6336.28
9+81.24	(¾")	6335.98
10+11.74	(¾")	6334.16
10+14.74	(¾")	6333.98
10+59.17	(¾")	6331.32

WATER SERVICE TABLE		
STATION	SIZE	T.O.P ELEV.
10+64.17	(¾")	6331.02
11+12.94	(¾")	6328.11
11+17.85	(¾")	6327.81
11+23.35	(¾")	6327.49
11+25.79	(¾")	6327.36
11+63.76	(¾")	6325.08
11+72.64	(¾")	6324.55
12+11.93	(¾")	6322.20
12+59.68	(¾")	6319.35
13+67.75	(¾")	6312.90



PROFILE PH 3-4 WATER A (STA: 7+00 TO 14+00)

PROJECT BENCHMARK:

TOP OF THE SW 1/16 CORNER OF SECTION 3, TOWNSHIP 8 SOUTH, RANGE 67 WEST, BEING A 3" ALUMINUM CAP STAMPED "PLS 25629 1995" WITH AN ELEVATION OF 6352.83 FEET NAVD 88. THIS ELEVATION IS BASED UPON NGS STATION "N 393" WITH A PUBLISHED ELEVATION OF 6222.12 FEET NAVD 88.

811 Know what's below. Call before you dig.

CALL UTILITY NOTIFICATION CENTER OF COLORADO
1-800-922-1987 or 811
CALL 3-BUSINESS DAYS (NOT INCLUDING INITIAL DAY OF CONTACT) IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES.

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

No.	REVISION	BY	DATE

PRELIMINARY NOT FOR CONSTRUCTION

EES ENTITLEMENT AND ENGINEERING SOLUTIONS, INC.
3801 E. Florida Avenue, Suite 425
Denver, CO 80210
303-572-7997 www.ees.us.com

BLVD. BUILDERS

CONSTRUCTION PLANS

HILLSIDE AT CASTLE ROCK - PHASES 3-4

CASTLE ROCK, COLORADO

C6.2 - PHASE 3 WATER PLAN & PROFILE 3

PROJECT NO:	BLV001.02
DESIGNED BY:	WLB
DRAWN BY:	WLB
DATE:	5/30/2024

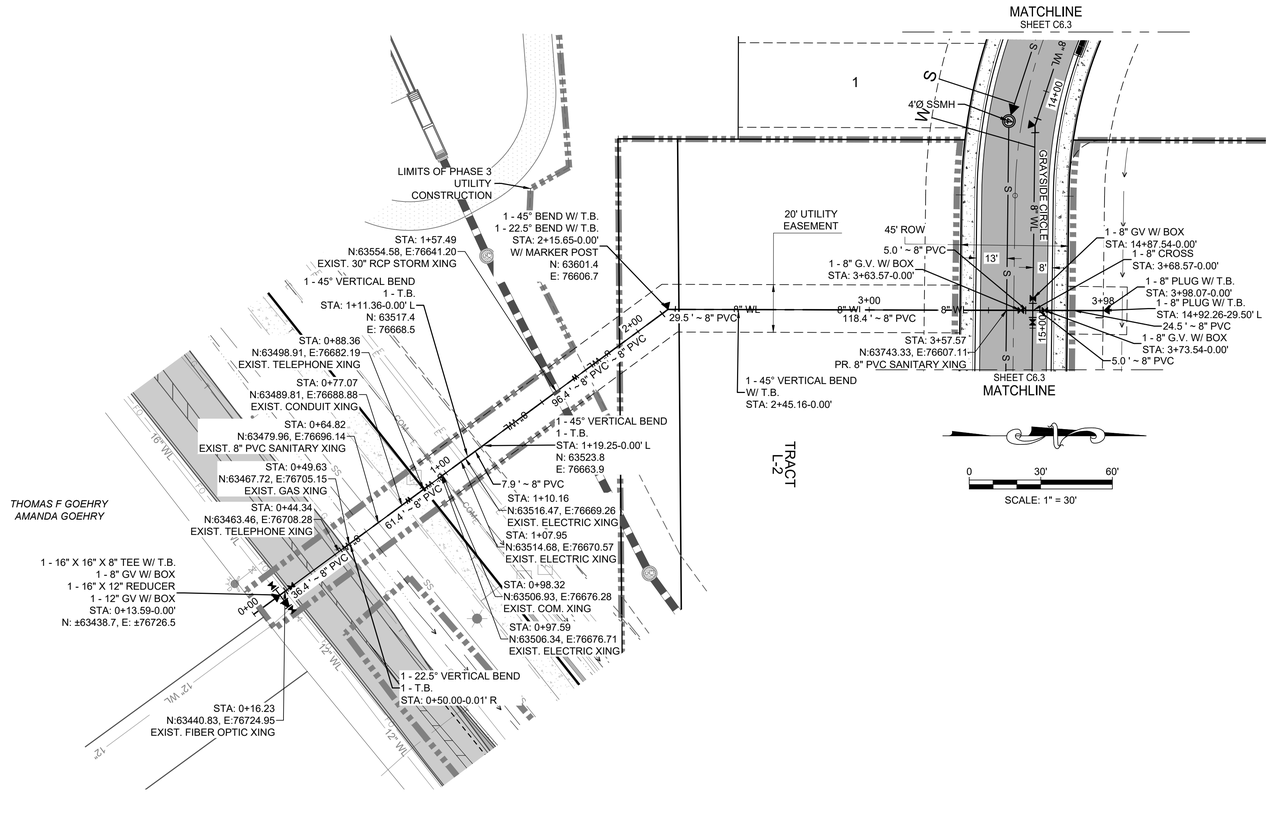
C6.2

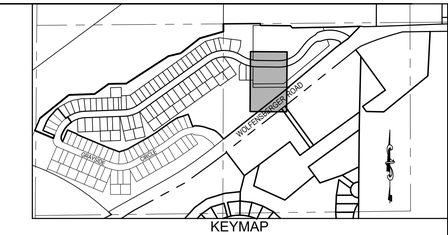
SHEET 16 OF 70

CD23-0036

P:\BLVD\WAY BUILDERS\HILLSIDE AT CASTLE ROCK\06 CAD\SHEET SETS\PH 3-4 CDS\10 PHASE 3 WATER LINE PLAN AND PROFILE DWG 5/30/2024 3:21 PM David Ivimeli

© 2024, ALL RIGHTS RESERVED.

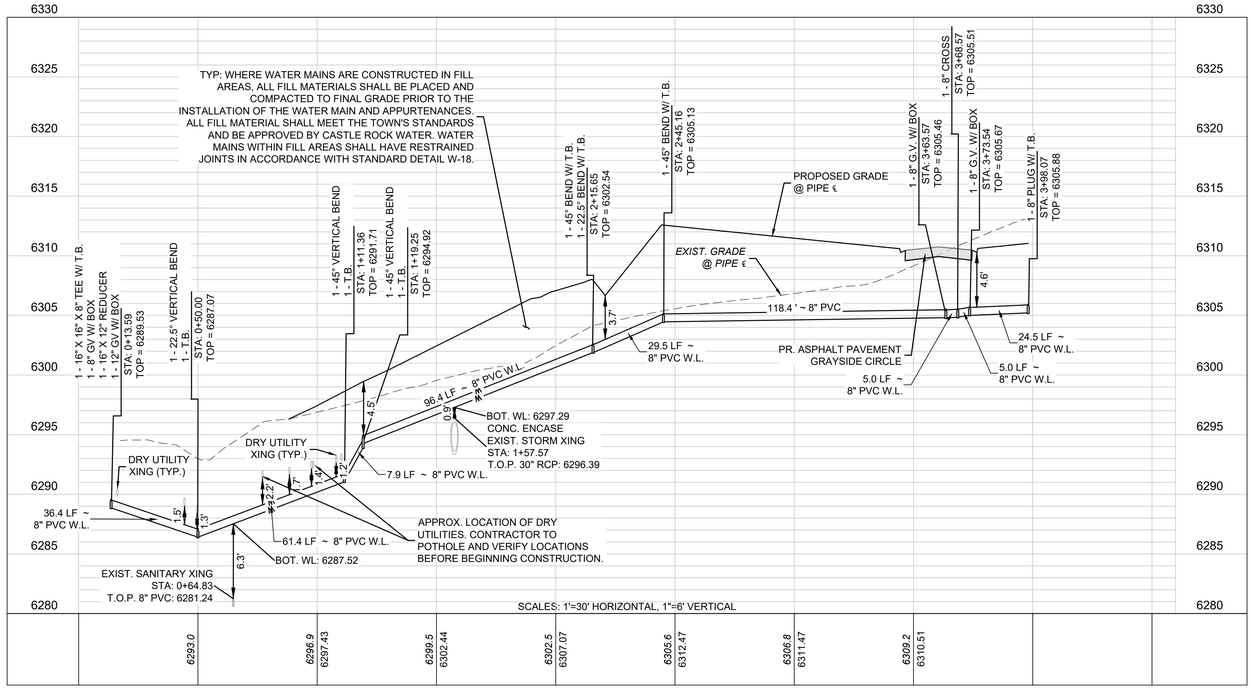




KEYMAP
SCALE: 1"=500'

UTILITY LEGEND:

- PROPERTY LINE
- RIGHT-OF-WAY
- LOT / TRACT LINE
- EXISTING LOT LINE
- X — EXISTING FENCE
- E — EXISTING ELECTRIC LINE
- G — EXISTING GAS MAIN
- CTV — EXISTING CATV
- COM — EXISTING COMMUNICATION
- S — EXISTING SANITARY SEWER
- W — EXISTING WATER MAIN
- EXIST. TRAFFIC SIGNAL CONDUIT W/ PULL BOX
- EXISTING STORM SEWER
- EXISTING SANITARY SEWER MH
- EXISTING STORM MANHOLE
- EXISTING STORM INLETS
- EXISTING FIRE HYDRANT
- EXISTING WATER VALVE
- EXISTING UTILITY RISER
- EXISTING STREET SIGN
- EXISTING ASPHALT PAVEMENT
- PROPOSED PHASING LINE
- S — PROPOSED SANITARY SEWER
- W — PROPOSED WATER MAIN
- S — PROPOSED SEWER SERVICE LINE
- W — PROPOSED WATER SERVICE LINE
- PROPOSED STORM SEWER
- PROPOSED AREA INLET
- PROPOSED TYPE 16 COMBO INLET
- PROPOSED STORM MANHOLE
- PROPOSED HYDRANT & ASSEMBLY
- PROPOSED W.L. REDUCER
- PROPOSED W.L. FITTINGS
- PROPOSED W.L. PLUG
- PROPOSED WATER VALVE
- PROPOSED S.S. CLEANOUT
- PROPOSED SIGN
- PROPOSED STREET LIGHT



PROFILE PH3-4 WATER B (STA: 0+00 TO 4+60)

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 EXIST. WATER, SANITARY SEWER, AND/OR STORM SEWER SYSTEMS PROVIDED THAT THE UTILITY TIE-IN DOES NOT DISRUPT SERVICE TO EXIST. CR WATER CUSTOMERS. IF THE TIE-IN WILL DISRUPT UTILITY SERVICE, THEN THE 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 EXIST. CUSTOMERS AFFECTED BY THE TIE-IN. ALL TOWN UTILITY TIE-INS MUST BE APPROVED BY CR WATER PRIOR TO COMMENCING WORK.

PROJECT BENCHMARK:

TOP OF THE SW 1/16 CORNER OF SECTION 3, TOWNSHIP 8 SOUTH, RANGE 67 WEST, BEING A 3" ALUMINUM CAP STAMPED "PLS 25629 1995" WITH AN ELEVATION OF 6352.83 FEET NAVD 88. THIS ELEVATION IS BASED UPON NGS STATION "N 393" WITH A PUBLISHED ELEVATION OF 6222.12 FEET NAVD 88.

811 Know what's below. Call before you dig.

CALL UTILITY NOTIFICATION CENTER OF COLORADO
1-800-922-1987 or 811
CALL 3-BUSINESS DAYS (NOT INCLUDING INITIAL DAY OF CONTACT) IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES.

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

No.	REVISION	BY	DATE

PRELIMINARY NOT FOR CONSTRUCTION

EES ENTITLEMENT AND ENGINEERING SOLUTIONS, INC.
3801 E. Florida Avenue, Suite 425
Denver, CO 80210
303-572-7997
www.ees.us.com

BLVD. BUILDERS

CONSTRUCTION PLANS

HILLSIDE AT CASTLE ROCK - PHASES 3-4

CASTLE ROCK, COLORADO

PHASE 3 WATER PLAN & PROFILE 4

PROJECT NO:	BLV001.02
DESIGNED BY:	WLB
DRAWN BY:	WLB
DATE:	5/30/2024

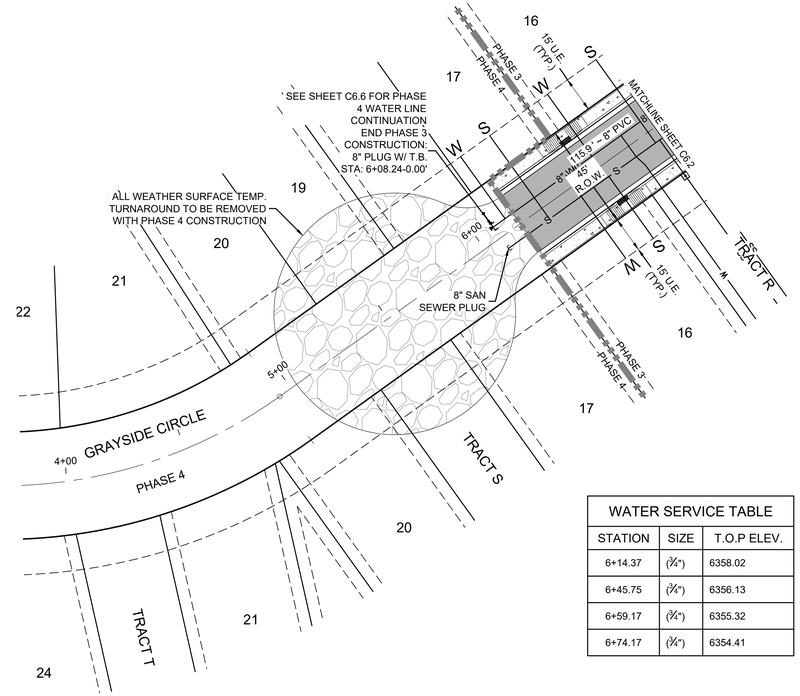
C6.4

SHEET 17 OF 70

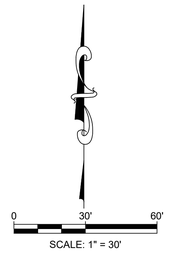
CD23-0036

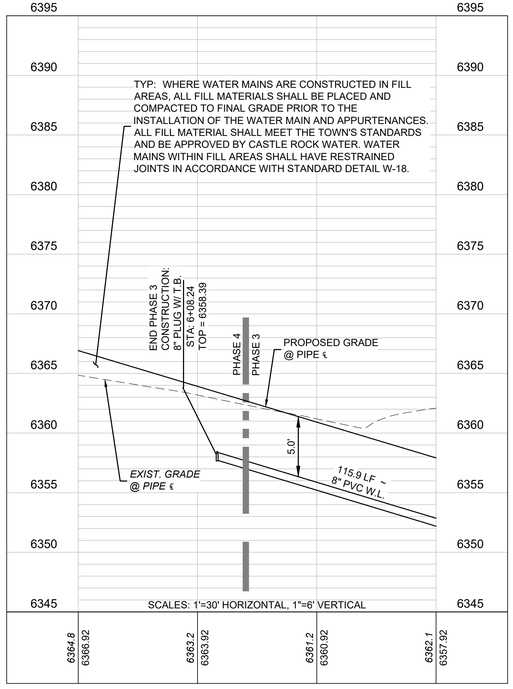
P:\BLVDWAY BUILDERS\HILLSIDE AT CASTLE ROCK\06 CAD\SHEET SET\PH 3-4 CDS\10 PHASE 3 WATER LINE PLAN AND PROFILE.DWG 5/30/2024 3:21 PM David Iovinelli

© 2024, ALL RIGHTS RESERVED.

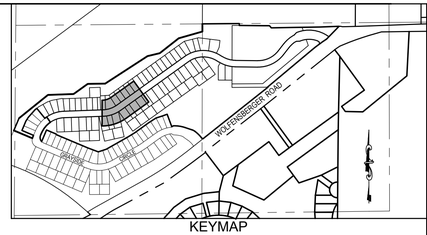


WATER SERVICE TABLE		
STATION	SIZE	T.O.P ELEV.
6+14.37	(¾")	6358.02
6+45.75	(¾")	6356.13
6+59.17	(¾")	6355.32
6+74.17	(¾")	6354.41





PROFILE PH 3-4 WATER A (STA: 5+50 TO 7+00)



KEYMAP
SCALE: 1"=500'

UTILITY LEGEND:

- PROPERTY LINE
- RIGHT-OF-WAY
- LOT / TRACT LINE
- EXISTING LOT LINE
- X — EXISTING FENCE
- E — EXISTING ELECTRIC LINE
- G — EXISTING GAS MAIN
- CTV — EXISTING CATV
- COM — EXISTING COMMUNICATION
- S — EXISTING SANITARY SEWER
- W — EXISTING WATER MAIN
- EXIST. TRAFFIC SIGNAL CONDUIT W/ PULL BOX
- EXISTING STORM SEWER
- EXISTING SANITARY SEWER MH
- EXISTING STORM MANHOLE
- EXISTING STORM INLETS
- EXISTING FIRE HYDRANT
- EXISTING WATER VALVE
- EXISTING UTILITY RISER
- EXISTING STREET SIGN
- EXISTING ASPHALT PAVEMENT
- PROPOSED PHASING LINE
- S — PROPOSED SANITARY SEWER
- W — PROPOSED WATER MAIN
- S — PROPOSED SEWER SERVICE LINE
- W — PROPOSED WATER SERVICE LINE
- PROPOSED STORM SEWER
- PROPOSED AREA INLET
- PROPOSED TYPE 16 COMBO INLET
- PROPOSED STORM MANHOLE
- PROPOSED HYDRANT & ASSEMBLY
- PROPOSED W.L. REDUCER
- PROPOSED W.L. FITTINGS
- PROPOSED W.L. PLUG
- PROPOSED WATER VALVE
- PROPOSED S.S. CLEANOUT
- PROPOSED SIGN
- PROPOSED STREET LIGHT

PROJECT BENCHMARK:

TOP OF THE SW 1/16 CORNER OF SECTION 3, TOWNSHIP 8 SOUTH, RANGE 67 WEST, BEING A 3" ALUMINUM CAP STAMPED "PLS 25629 1995" WITH AN ELEVATION OF 6352.83 FEET NAVD 88. THIS ELEVATION IS BASED UPON NGS STATION "N 393" WITH A PUBLISHED ELEVATION OF 6222.12 FEET NAVD 88.

811 Know what's below. Call before you dig.

CALL UTILITY NOTIFICATION CENTER OF COLORADO
1-800-922-1987 or 811
CALL 3-BUSINESS DAYS (NOT INCLUDING INITIAL DAY OF CONTACT) IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES.

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

No.	REVISION	BY	DATE

PRELIMINARY NOT FOR CONSTRUCTION

EES ENTITLEMENT AND ENGINEERING SOLUTIONS, INC.
3801 E. Florida Avenue, Suite 425
Denver, CO 80210
303-572-7997 www.ees.us.com

BLVD. BUILDERS

CONSTRUCTION PLANS

HILLSIDE AT CASTLE ROCK - PHASES 3-4

CASTLE ROCK, COLORADO

PHASE 3 WATER PLAN & PROFILE 5

PROJECT NO:	BLV001.02
DESIGNED BY:	WLB
DRAWN BY:	WLB
DATE:	5/30/2024

C6.5

SHEET 18 OF 70

CD23-0036

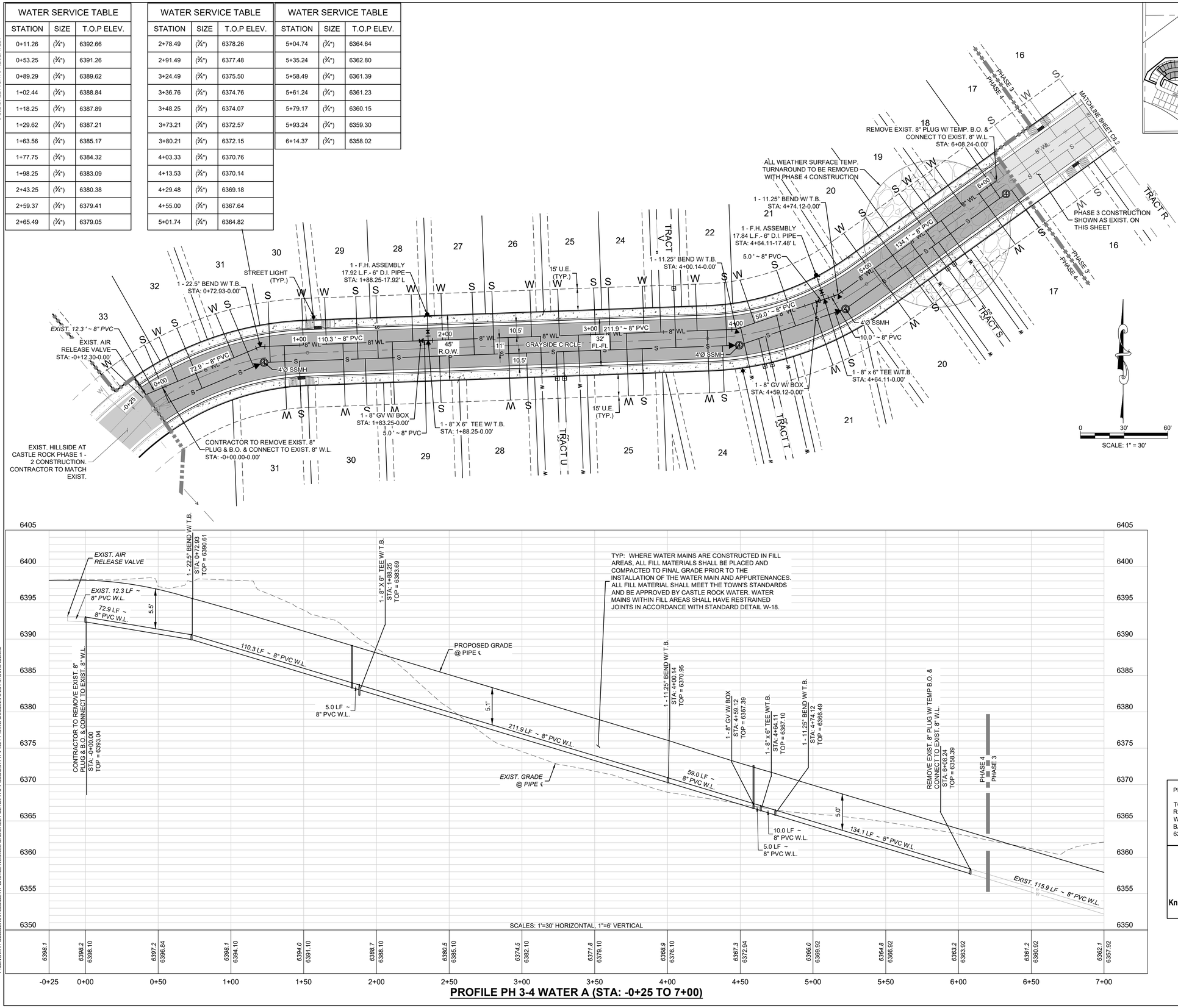
P:\BLVDWAY BUILDERS\HILLSIDE AT CASTLE ROCK\06 CAD\SHEET SET\SPH 3-4 CDS\09 PHASE 4 WATER LINE PLAN AND PROFILE.DWG 5/30/2024 3:22 PM David Iovinelli

© 2024, ALL RIGHTS RESERVED

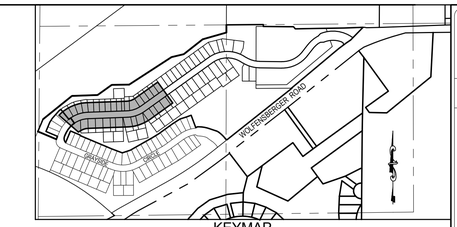
WATER SERVICE TABLE		
STATION	SIZE	T.O.P ELEV.
0+11.26	(¾")	6392.66
0+53.25	(¾")	6391.26
0+89.29	(¾")	6389.62
1+02.44	(¾")	6388.84
1+18.25	(¾")	6387.89
1+29.62	(¾")	6387.21
1+63.56	(¾")	6385.17
1+77.75	(¾")	6384.32
1+98.25	(¾")	6383.09
2+43.25	(¾")	6380.38
2+59.37	(¾")	6379.41
2+65.49	(¾")	6379.05

WATER SERVICE TABLE		
STATION	SIZE	T.O.P ELEV.
2+78.49	(¾")	6378.26
2+91.49	(¾")	6377.48
3+24.49	(¾")	6375.50
3+36.76	(¾")	6374.76
3+48.25	(¾")	6374.07
3+73.21	(¾")	6372.57
3+80.21	(¾")	6372.15
4+03.33	(¾")	6370.76
4+13.53	(¾")	6370.14
4+29.48	(¾")	6369.18
4+55.00	(¾")	6367.64
5+01.74	(¾")	6364.82

WATER SERVICE TABLE		
STATION	SIZE	T.O.P ELEV.
5+04.74	(¾")	6364.64
5+35.24	(¾")	6362.80
5+58.49	(¾")	6361.39
5+61.24	(¾")	6361.23
5+79.17	(¾")	6360.15
5+93.24	(¾")	6359.30
6+14.37	(¾")	6358.02



0 30' 60'
SCALE: 1" = 30'



KEYMAP
SCALE: 1"=500'

UTILITY LEGEND:

- PROPERTY LINE
- RIGHT-OF-WAY
- LOT / TRACT LINE
- EXISTING LOT LINE
- X — EXISTING FENCE
- E — EXISTING ELECTRIC LINE
- G — EXISTING GAS MAIN
- CTV — EXISTING CATV
- COM — EXISTING COMMUNICATION
- S — EXISTING SANITARY SEWER
- W — EXISTING WATER MAIN
- EXIST. TRAFFIC SIGNAL CONDUIT W/ PULL BOX
- EXISTING STORM SEWER
- EXISTING SANITARY SEWER MH
- EXISTING STORM MANHOLE
- EXISTING STORM INLETS
- EXISTING FIRE HYDRANT
- EXISTING WATER VALVE
- EXISTING UTILITY RISER
- EXISTING STREET SIGN
- EXISTING ASPHALT PAVEMENT
- PROPOSED PHASING LINE
- S — PROPOSED SANITARY SEWER
- W — PROPOSED WATER MAIN
- S — PROPOSED SEWER SERVICE LINE
- W — PROPOSED WATER SERVICE LINE
- PROPOSED STORM SEWER
- PROPOSED AREA INLET
- PROPOSED TYPE 16 COMBO INLET
- PROPOSED STORM MANHOLE
- PROPOSED HYDRANT & ASSEMBLY
- PROPOSED W.L. REDUCER
- PROPOSED W.L. FITTINGS
- PROPOSED W.L. PLUG
- PROPOSED WATER VALVE
- PROPOSED S.S. CLEANOUT
- PROPOSED SIGN
- PROPOSED STREET LIGHT

SCALES: 1'=30' HORIZONTAL, 1"=6' VERTICAL

PROFILE PH 3-4 WATER A (STA: -0+25 TO 7+00)

PROJECT BENCHMARK:

TOP OF THE SW 1/16 CORNER OF SECTION 3, TOWNSHIP 8 SOUTH, RANGE 67 WEST, BEING A 3" ALUMINUM CAP STAMPED "PLS 25629 1995" WITH AN ELEVATION OF 6352.83 FEET NAVD 88. THIS ELEVATION IS BASED UPON NGS STATION "N 393" WITH A PUBLISHED ELEVATION OF 6222.12 FEET NAVD 88.

811 Know what's below. Call before you dig.

CALL UTILITY NOTIFICATION CENTER OF COLORADO
1-800-922-1987 or 811
CALL 3-BUSINESS DAYS (NOT INCLUDING INITIAL DAY OF CONTACT) IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES.

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

No.	REVISION	BY	DATE

PRELIMINARY NOT FOR CONSTRUCTION

EES ENTITLEMENT AND ENGINEERING SOLUTIONS, INC.
3801 E. Florida Avenue, Suite 425
Denver, CO 80210
303-572-7997 www.ees.us.com

BLVD. BUILDERS

CONSTRUCTION PLANS

HILLSIDE AT CASTLE ROCK - PHASES 3-4

CASTLE ROCK, COLORADO

PHASE 4 WATER PLAN & PROFILE

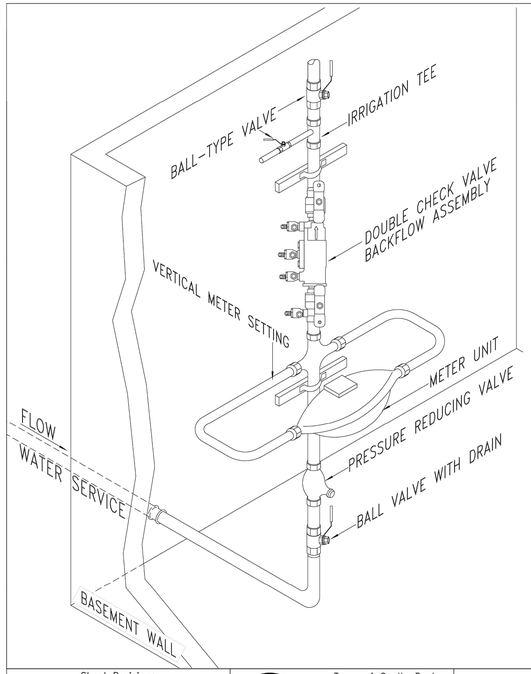
PROJECT NO:	BLV001.02
DESIGNED BY:	WLB
DRAWN BY:	WLB
DATE:	5/30/2024

C6.6
SHEET 19 OF 70

CD23-0036

P:\BLVDWAY BUILDERS\HILLSIDE AT CASTLE ROCK\06 CAD\SHEET SETS\PH 3-4 CDS\09A PH 4 WL PP.DWG 5/30/2024 3:23 PM David Iovinelli

© 2024, ALL RIGHTS RESERVED.



NOTES:

1. METER SHALL BE SUPPLIED BY THE TOWN. PROOF OF PERMIT, PAID TAP FEES, APPROVED WATER CALCULATION, AND COMPLETE WEATHER BARRIER INSPECTION ARE REQUIRED IN ORDER TO OBTAIN A METER.
2. ENTIRE METER ASSEMBLY SET MUST BE ACCESSIBLE AT ALL TIMES PER MUNICIPAL CODE 13.12.050 A, AND SHALL NOT BE LOCATED IN A CRAWL SPACE.
3. INSTALL METER WIRE PROVIDED BY TOWN AT EXTERIOR OF HOUSE NO MORE THAN 4 FEET BACK FROM FRONT.
4. METER WIRE SHALL NOT BE BLOCKED BY FENCE, LANDSCAPING, FIXTURES, OR BACKFLOW ASSEMBLY. LEAVE WIRE LONG ENOUGH TO FREELY MOVE 2 FEET IN AND OUT OF EXTERIOR WALL. TOTAL LENGTH OF WIRE SHALL NOT EXCEED 50 FEET. CONDUIT MUST BE SECURED EVERY 4 FEET.
5. WIRE CONDUIT MUST TERMINATE WITHIN 12 INCHES OF METER. INSTALL METER WIRE INSIDE OF ¾-INCH CONDUIT EMT OR PLASTIC. BENDS SHALL NOT EXCEED 30 DEGREES.
6. RESIDENTIAL CURB STOPS ARE NOT ALLOWED IN DRIVEWAYS WITHOUT AN APPROVED FIELD CHANGE ORDER. REFER TO DETAIL W-4Q.
7. A 2x4 MUST BE SECURED TO THE WALL AT BOTH THE YOKE ASSEMBLY AND POTABLE/IRRIGATION TEE TO SECURE THE TREE. COPPER, TWO HOLE PIPE HANGER MUST BE USED FOR SECUREMENT.
8. PROVIDE A FLUSH MOUNTABLE SURFACE 8 INCHES BY 8 INCHES WHICH IS CENTERED ON CONDUIT. CONDUIT MUST BE FLUSH WITH EXTERIOR WALL AND SECURED AT INTERIOR WALL AT EXIT POINT.
9. COPPER METER YOKE SHALL BE AN A.Y. MCDONALD 743Y2--DO 33 REVERSE C-STYLE METER IN-SETTER OR AN APPROVED EQUAL (¾"x¾" METER). ¾-INCH, TYPE-K COPPER – INSTALLED CONTINUOUS FROM CURB STOP TO POTABLE/IRRIGATION TEE.
10. METER SHOULD BE SET WITHIN 4 FEET OF POINT OF ENTRY. NO TEES PRIOR TO METER. BALL VALVE SHOULD BE WITHIN 2 FEET OF POINT ENTRY. IF METER CANNOT BE WITHIN 4 FEET, THEN A SECOND BALL VALVE IS REQUIRED AHEAD OF METER ASSEMBLY.
11. ALL BRASS P.R.V. IS REQUIRED.
12. COMPRESSION FITTINGS ARE NOT ALLOWED ON METER TREE.
13. VAPOR BARRIER MUST BE INSTALLED PRIOR TO INSPECTION. WATER LINE MUST BE CHARGED TO THE POTABLE/IRRIGATION TEE AND NO LEAKS SHALL BE PRESENT AT INSPECTION SITE.
14. IF POINT OF ENTRY OCCURS THROUGH THE FOUNDATION FLOOR REQUIRING A HORIZONTAL BEND AND EXTENSION GREATER THAN 12 INCHES INTO THE METER TREE, THERE MUST BE ANOTHER POINT OF SECUREMENT A MINIMUM OF 12 INCHES FROM THE WALL.

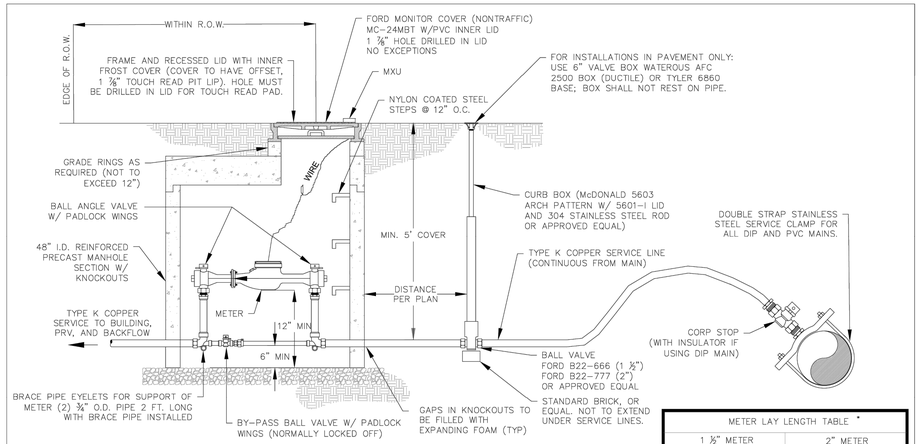
Sheet Revisions	
Date	Comments
2/22	REVISED PER STAFF COMMENTS
7/22	REVISED PER STAFF COMMENTS
10/22	REVISED PER STAFF COMMENTS

Town of Castle Rock
COLORADO
Town of Castle Rock
100 N. Wilcox St.
Castle Rock, CO 80104
Phone: (720) 733-2200
Fax: (720) 733-2217
Development Services

INSIDE RESIDENTIAL WATER METER SET

Issued By: Town of Castle Rock, Development Services January 1, 2023

DETAIL PLAN NO.
W-1A
Sheet 1 of 1



METER LAY LENGTH TABLE *	
1 ½" METER	2" METER
13 ¼"	15 ½"

*LENGTH INCLUDES TWO (2) ⅛" GASKETS

NOTES:

1. FLANGED METER AND WIRE SHALL BE SUPPLIED BY THE TOWN AND INSTALLED BY THE CONTRACTOR.
2. FORD 1 ½" CUSTOMSETTER 1 ½"-VBB76-12B-11-66-NL & C84-66QNL; 2" METER 2"-VBB77-12B-11-77-NL & C84-77QNL WITH BYPASS.
3. METER WILL NOT BE SET IF CURB STOP BOX IS NOT UP TO GRADE, IF WIRE IS IN THE WRONG AREA OR IF AN ASSEMBLY IS NOT IN PLACE.
4. THERMAL EXPANSION REQUIRED ON POTABLE SERVICES, NOT REQUIRED ON IRRIGATION SERVICES.
5. WHEN INSTALLING SENSUS OMNI METERS WITH STRAINER, A MINIMUM OF 2 ½ PIPE DIAMETERS OF STRAIGHT RUN PIPE OR EQUIVALENT FULL OPEN COMPONENTS IS REQUIRED UPSTREAM AND DOWNSTREAM OF THE METER OR STRAINER FLANGES. FULL OPEN FLOW COMPONENTS MAY CONSIST OF: STRAIGHT PIPE, FULL OPEN GATE VALVES, BYPASS TEES AND CONCENTRIC REDUCERS (1 NOMINAL PIPE SIZE REDUCTION ONLY). FOR ALL OTHER INSTALLATION CONFIGURATIONS, A MINIMUM OF 5 PIPE DIAMETERS OF STRAIGHT RUN IS REQUIRED UPSTREAM.
6. ALL COPPER PIPES REQUIRE A POLYWRAP SLEEVE TAPED DOWN AT BENDS AND AROUND CORP STOPS.
7. ALL SERVICES SHALL BE INSTALLED WITH BEDDING MATERIAL A MINIMUM OF 4" ABOVE AND BELOW THE PIPE.

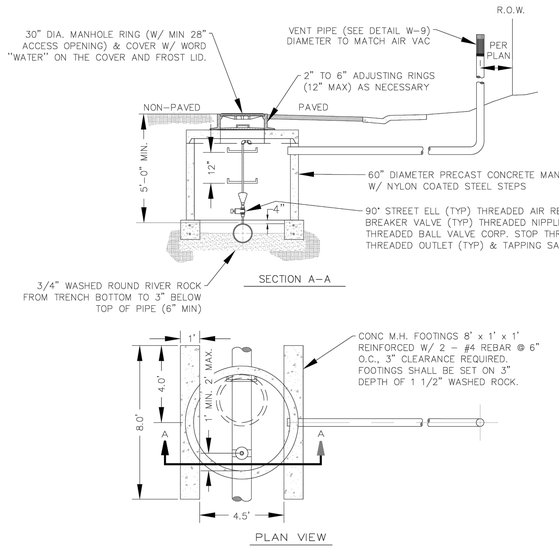
Sheet Revisions	
Date	Comments
8/13	REVISED PER STAFF COMMENTS
3/20	REVISED PER STAFF COMMENTS
6/22	REVISED PER STAFF COMMENTS

Town of Castle Rock
COLORADO
Town of Castle Rock
100 N. Wilcox St.
Castle Rock, CO 80104
Phone: (720) 733-2200
Fax: (720) 733-2217
Development Services

1-1/2 INCH & 2 INCH POTABLE WATER SERVICES

Issued By: Town of Castle Rock, Development Services January 1, 2023

DETAIL PLAN NO.
W-3
Sheet 1 of 1



SECTION A-A

PLAN VIEW

NOTES:

1. AIR RELEASE VALVE SHALL BE PLACED @ THE HIGH POINT OF THE MAIN WATER LINE OR AS DETERMINED THROUGH PLAN REVIEW.
2. ARI D-040 COMBINATION AIR VALVE "BARAK" SHALL BE USED. SIZING TO BE ESTABLISHED FROM THE MANUFACTURERS SIZING TABLES & APPROVED BY THE TOWN.
3. CASTING SPECS: ASTM A-48 W/ A MIN TENSILE STRENGTH OF 30,000 PSI (CLASS 30). (NEENAH TYPE R-1758 RING & COVER OR APPROVED EQUAL).
4. DO NOT USE IN APPLICATIONS WHERE MANHOLES ARE WITHIN DRAINAGE WAYS.
5. STANDARD MANUFACTURER'S LETTERING SIZES & PATTERNS (LETTERING SHALL BE CAST AS PART OF COVER).

Sheet Revisions	
Date	Comments
8/13	REVISED PER STAFF COMMENTS
3/19	REVISED PER STAFF COMMENTS
3/20	REVISED PER STAFF COMMENTS
6/22	REVISED PER STAFF COMMENTS

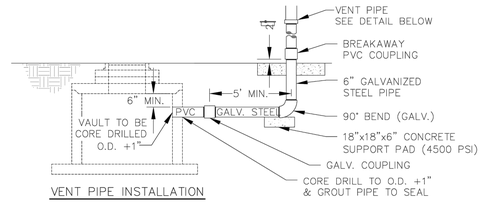
Town of Castle Rock
COLORADO
Town of Castle Rock
100 N. Wilcox St.
Castle Rock, CO 80104
Phone: (720) 733-2200
Fax: (720) 733-2217
Development Services

AIR RELEASE VALVE & VAULT

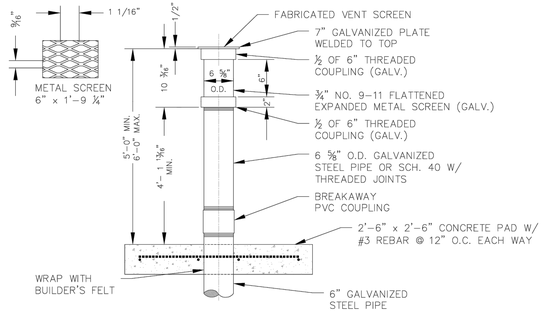
Issued By: Town of Castle Rock, Development Services January 1, 2023

DETAIL PLAN NO.
W-8
Sheet 1 of 1

NOTE: VENT PIPES TO BE LOCATED IN THE FIELD @ THE NEAREST INTERSECTION OF THE STREET PROPERTY LINE & SIDE LOT LINE. PAINT PIPE SAFETY YELLOW & LOCATE MANHOLE W/ DISTANCE & DIRECTIONS SIMILAR TO MARKER POST.



VENT PIPE INSTALLATION



VENT PIPE & BREAK-AWAY COUPLING DETAILS

Sheet Revisions	
Date	Comments
3/19	REVISED PER STAFF COMMENTS
3/20	REVISED PER STAFF COMMENTS
6/22	REVISED PER STAFF COMMENTS

Town of Castle Rock
COLORADO
Town of Castle Rock
100 N. Wilcox St.
Castle Rock, CO 80104
Phone: (720) 733-2200
Fax: (720) 733-2217
Development Services

VENT PIPE

Issued By: Town of Castle Rock, Development Services January 1, 2023

DETAIL PLAN NO.
W-9
Sheet 1 of 1

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

No.	REVISION	BY	DATE

PRELIMINARY NOT FOR CONSTRUCTION

EES ENTITLEMENT AND ENGINEERING SOLUTIONS, INC.
3801 E. Florida Avenue, Suite 425
Denver, CO 80210
303-572-7987 www.ees.us.com

BLVD. BUILDERS

CONSTRUCTION PLANS

HILLSIDE AT CASTLE ROCK - PHASES 3-4

CASTLE ROCK, COLORADO

WATER DETAILS 1

PROJECT NO:	BLV001.02
DESIGNED BY:	WLB
DRAWN BY:	WLB
DATE:	5/30/2024

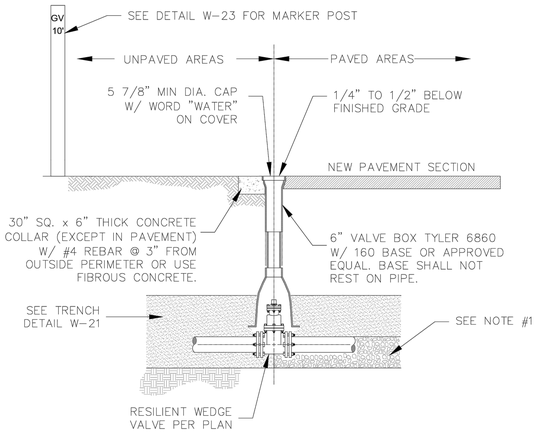
C6.7

SHEET 20 OF 70

CD23-0036

P:\BLVDWAY BUILDERS\HILLSIDE AT CASTLE ROCK\06 CAD\SHEET SETS\PH 3-4 CDS\11 WATER DETAILS.DWG 5/30/2024 3:23 PM David Iovine®

© 2024, ALL RIGHTS RESERVED.



NOTES:

1. CARE SHALL BE TAKEN WHEN INSTALLING VALVES TO ASSURE PROPER SUPPORT OF THE VALVE. THE ENGINEER MAY REQUIRE 3/4" CRUSHED ROCK TO BE INSTALLED UNDER THE VALVE TO PROVIDE PROPER SUPPORT.
2. VALVES SHALL NOT BE PLACED IN CONCRETE CROSS PANS, GUTTERS, OR OTHER DRAINAGE WAYS.
3. OPERATING NUTS OR EXTENSIONS SHALL NOT BE SET CLOSER THAN THREE (3) FEET FROM FINISHED GRADE. IF OPERATING NUT IS DEEPER THAN FIVE (5) FEET FROM FINAL GRADE, PROVIDE A 1 1/4" EXTENSION SHAFT W/ CENTERING RING. OPERATOR EXTENSIONS SHALL BE CONNECTED TO THE VALVE OPERATOR NUT USING A SET SCREW.
4. GATE VALVE SHALL BE POLYETHYLENE WRAPPED (8 MIL).
5. CONCRETE COLLARS & MARKER POSTS ARE REQUIRED WHEN VALVE IS LOCATED IN AN UNPAVED AREA.
6. VALVE BOXES ARE TO BE BROUGHT UP TO GRADE @ THE TIME OF PAVEMENT PLACEMENT OR OVERLAY. VALVE BOX ADJUSTING RINGS ARE NOT ALLOWED.
7. SEE DETAILS W-13 & W-14 FOR TYPICAL VALVE LOCATIONS.
8. TRACER WIRE SHALL BE ROUTED AROUND TO NORTH OR EAST OF VALVE BOX (SEE DETAIL W-28).

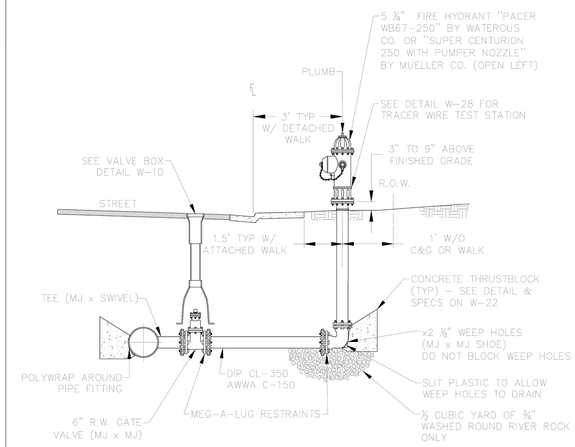
Sheet Revisions	
Date	Comments
3/19	REVISED PER STAFF COMMENTS
3/20	REVISED PER STAFF COMMENTS

Town of Castle Rock
100 N. Wilcox St.
Castle Rock, CO 80104
Phone: (720) 733-2200
Fax: (720) 733-2217
Development Services

TYPICAL VALVE BOX

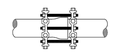
Issued By: Town of Castle Rock, Development Services January 1, 2023

DETAIL PLAN NO.
W-10
Sheet 1 of 1



NOTES:

1. ALL HYDRANTS SHALL BE PAINTED "SAFETY YELLOW" FROM THE FACTORY. FIELD RE-PAINTING MAY BE REQUIRED BY THE PUBLIC WORKS INSPECTOR.
2. THE CONNECTIONS SHALL BE 2 TO 2 ½" NOZZLES AND 1 TO 5 ¼" PUMPER NOZZLE, ALL THREADS TO BE NATIONAL STANDARD W/ 1 ½" PENTAGONAL CAP NUTS. ALL HYDRANTS SHALL BE AWWA C-502-94 STANDARD OPEN LEFT.
3. NO TAPS SHALL BE ALLOWED BETWEEN THE HYDRANT & THE MAIN.
4. THE ENTIRE FIRE HYDRANT ASSEMBLY SHALL BE WRAPPED W/ 8 MIL POLYETHYLENE, INCLUDING THE RISER PORTION, TO FINISHED GRADE. CUT HOLE IN WRAP AT WEEP HOLE.
5. ALL FIRE HYDRANTS SHALL BE INSTALLED PLUMB & LOCATED ACCORDING TO PROJECT PLANS.
6. SEE FIRE HYDRANT LOCATION DETAILS W-13 & W-14 FOR PROPER LOCATION RELATIVE TO OTHER IMPROVEMENTS & REFER TO APPROVED PLANS.
7. THE MECHANICAL JOINTS OF THE FIRE HYDRANT ASSEMBLY SHALL BE RESTRAINED VIA MEG-A-LUG JOINT CLAMPS.
8. NO MORE THAN ONE HYDRANT EXTENSION, NOT TO EXCEED 24" MAY BE USED. OVERALL HEIGHT MAY NOT EXCEED 8'.
9. A TRACER WIRE TEST STATION IS REQUIRED; REFER TO DETAIL W-28.
10. FOR BURY DEPTHS GREATER THAN 8' REFER TO DETAIL W-11A.



TYPICAL JOINT RESTRAINT DETAIL FOR MULTIPLE JOINT ASSEMBLIES (NOT TO SCALE)

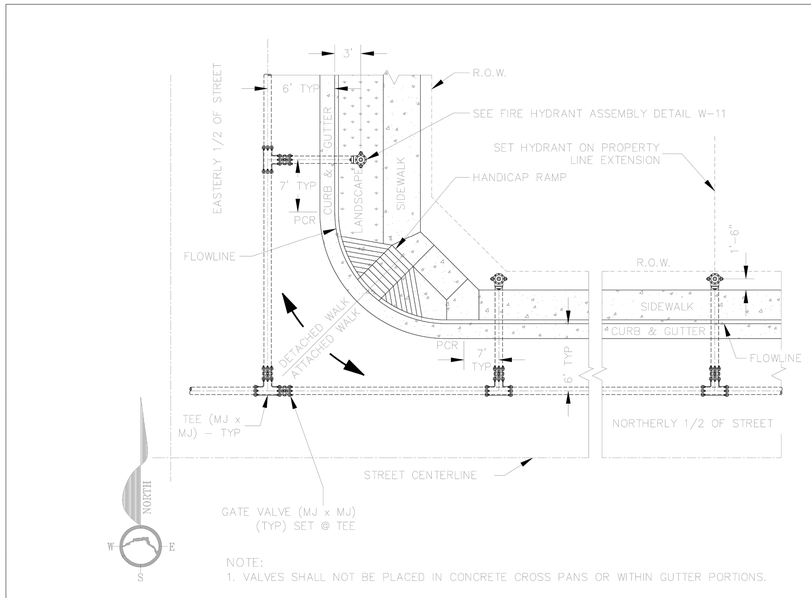
Sheet Revisions	
Date	Comments
3/19	REVISED PER STAFF COMMENTS
3/20	REVISED PER STAFF COMMENTS
6/22	REVISED PER STAFF COMMENTS

Town of Castle Rock
100 N. Wilcox St.
Castle Rock, CO 80104
Phone: (720) 733-2200
Fax: (720) 733-2217
Development Services

FIRE HYDRANT ASSEMBLY

Issued By: Town of Castle Rock, Development Services January 1, 2023

DETAIL PLAN NO.
W-11
Sheet 1 of 1



NOTE:
1. VALVES SHALL NOT BE PLACED IN CONCRETE CROSS PANS OR WITHIN GUTTER PORTIONS.

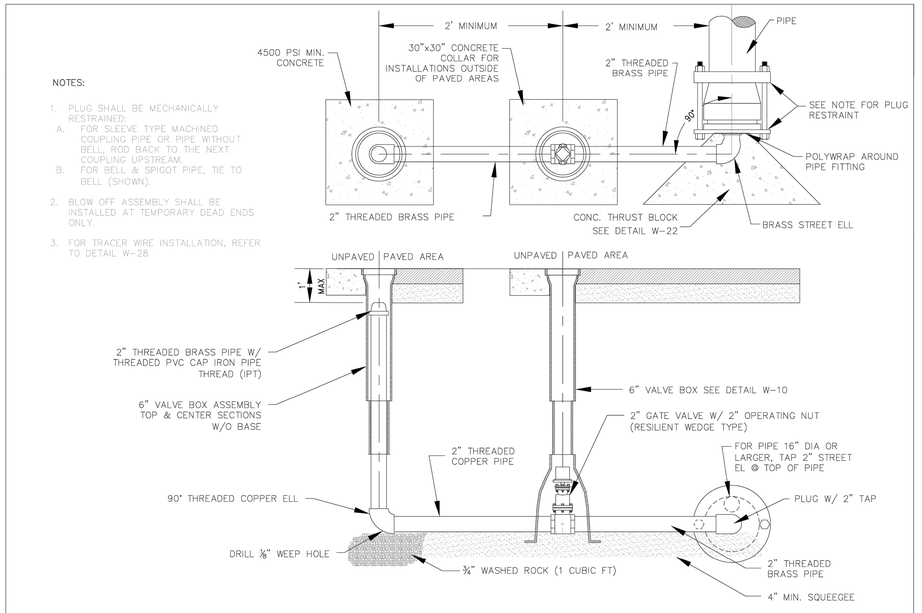
Sheet Revisions	
Date	Comments
3/19	REVISED PER STAFF COMMENTS
3/20	REVISED PER STAFF COMMENTS
12/21	REVISED PER STAFF COMMENTS

Town of Castle Rock
100 N. Wilcox St.
Castle Rock, CO 80104
Phone: (720) 733-2217
Development Services

VALVE & HYDRANT LOCATIONS

Issued By: Town of Castle Rock, Development Services January 1, 2023

DETAIL PLAN NO.
W-13
Sheet 1 of 1



NOTES:

1. PLUG SHALL BE MECHANICALLY RESTRAINED:
   A. FOR SLEEVE TYPE MACHINED COUPLING PIPE OR PIPE WITHOUT BELL, ROD BACK TO THE NEXT COUPLING UPSTREAM.
   B. FOR BELL & SPIGOT PIPE, TIE TO BELL (SHOWN).
2. BLOW OFF ASSEMBLY SHALL BE INSTALLED AT TEMPORARY DEAD ENDS ONLY.
3. FOR TRACER WIRE INSTALLATION, REFER TO DETAIL W-28

Sheet Revisions	
Date	Comments
3/19	REVISED PER STAFF COMMENTS
3/20	REVISED PER STAFF COMMENTS
6/22	REVISED PER STAFF COMMENTS

Town of Castle Rock
100 N. Wilcox St.
Castle Rock, CO 80104
Phone: (720) 733-2200
Fax: (720) 733-2217
Development Services

TEMPORARY BLOW-OFF ASSEMBLY

Issued By: Town of Castle Rock, Development Services January 1, 2023

DETAIL PLAN NO.
W-16
Sheet 1 of 1

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

No.	REVISION	BY	DATE

PRELIMINARY NOT FOR CONSTRUCTION

EES
ENTITLEMENT AND ENGINEERING SOLUTIONS, INC.
3801 E. Florida Avenue, Suite 425
Denver, CO 80210
303-572-7937 www.ees.us.com

BLVD. BUILDERS

CONSTRUCTION PLANS

HILLSIDE AT CASTLE ROCK - PHASES 3-4

CASTLE ROCK, COLORADO

WATER DETAILS 2

PROJECT NO:	BLV001.02
DESIGNED BY:	WLB
DRAWN BY:	WLB
DATE:	5/30/2024

C6.8

SHEET 21 OF 70

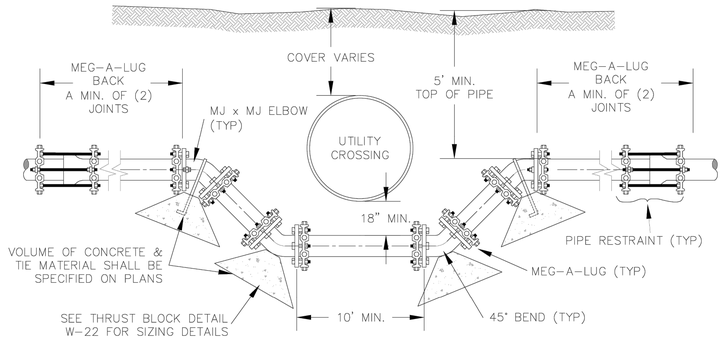
CD23-0036

P:\BLVD\WAY BUILDERS\HILLSIDE AT CASTLE ROCK\08 CAD\SHEET SET\SPH 3-4 CDS\11 WATER DETAILS.DWG 5/30/2024 3:23 PM David Iovinelli

© 2024, ALL RIGHTS RESERVED.

NOTES:

1. WHERE WATER LINE COVER EXCEEDS 7'-6" AT THE LOW POINT OF THE CONDUIT CROSSING, VERTICAL BENDS ARE REQUIRED. WHEN COVER IS LESS THAN 7'-6", PIPE JOINTS MAY BE DEFLECTED 1/2 THE MANUFACTURER'S RECOMMENDED DEFLECTION IN LIEU OF VERTICAL BENDS. THE LIMITS OF THE DEPRESSED AREA SHALL BE DOCUMENTED ON THE "AS-BUILT" DRAWINGS.
2. IF UTILITY CROSSING IS SANITARY SEWER & IS OVER A RAW OR POTABLE WATER LINE, ALL UTILITY CROSSING JOINTS WITHIN 10' SHALL BE ENCASED 1' BOTH SIDES OF THE JOINT W/ CONCRETE. SEE ENCASEMENT DETAIL W-20.
3. MULTIPLE JOINTS BETWEEN MEG-A-LUG FITTINGS SHALL BE RESTRAINED.
4. SEE PIPE RESTRAINT TABLE (DETAIL W-18) FOR SPECIFICATIONS.
5. NO TEES, SERVICE CONNECTIONS, VALVES, OR FIRE HYDRANT CONNECTIONS ARE ALLOWED IN LOWERING.
6. PIPE MATERIAL IN LOWERED SECTION SHALL MATCH THE MAIN LINE.



Sheet Revisions	
Date	Comments
3/19	REVISED PER STAFF COMMENTS
3/20	REVISED PER STAFF COMMENTS

Town of Castle Rock
100 N. Wilcox St.
Castle Rock, CO 80104
Phone: (720) 733-2200
Fax: (720) 733-2217
Development Services

WATERLINE LOWERING

Issued By: Town of Castle Rock, Development Services January 1, 2023

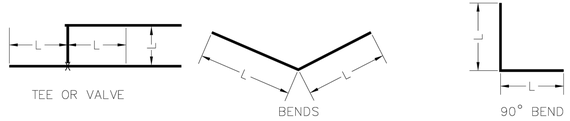
DETAIL PLAN NO.
W-17
Sheet 1 of 1

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	
Date	Comments
3/19	REVISED PER STAFF COMMENTS
3/20	REVISED PER STAFF COMMENTS

Town of Castle Rock
100 N. Wilcox St.
Castle Rock, CO 80104
Phone: (720) 733-2200
Fax: (720) 733-2217
Development Services

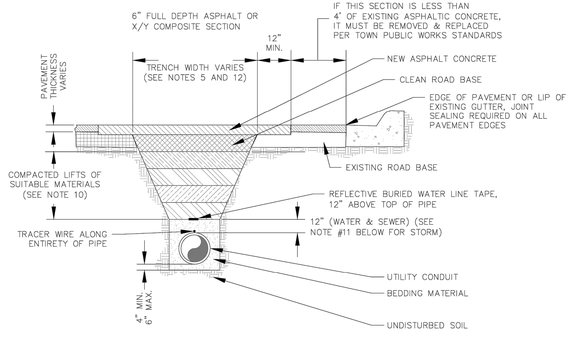
PIPE RESTRAINT TABLE

Issued By: Town of Castle Rock, Development Services January 1, 2023

DETAIL PLAN NO.
W-18
Sheet 1 of 1

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.



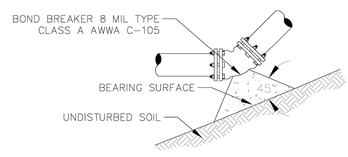
Sheet Revisions	
Date	Comments
3/19	REVISED PER STAFF COMMENTS
3/20	REVISED PER STAFF COMMENTS

Town of Castle Rock
100 N. Wilcox St.
Castle Rock, CO 80104
Phone: (720) 733-2200
Fax: (720) 733-2217
Development Services

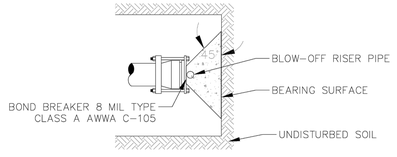
WATER TRENCH DETAIL

Issued By: Town of Castle Rock, Development Services January 1, 2023

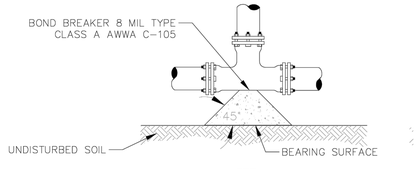
DETAIL PLAN NO.
W-21
Sheet 1 of 1



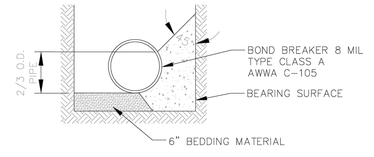
11 1/4, 22 1/2 & 45 BENDS



DEAD END



TEE



TYPICAL CROSS SECTION

NOTES:

1. 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 4500 PSI.
2. ALL SIZES OF BENDS, TEES & DEAD ENDS SHALL HAVE CONCRETE THRUSTBLOCKS.
3. 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

Sheet Revisions	
Date	Comments
3/19	REVISED PER STAFF COMMENTS
3/20	REVISED PER STAFF COMMENTS
6/22	REVISED PER STAFF COMMENTS

Town of Castle Rock
100 N. Wilcox St.
Castle Rock, CO 80104
Phone: (720) 733-2200
Fax: (720) 733-2217
Development Services

HORIZONTAL BEND THRUSTBLOCKS

Issued By: Town of Castle Rock, Development Services January 1, 2023

DETAIL PLAN NO.
W-22
Sheet 1 of 1

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

No.	REVISION	BY	DATE

PRELIMINARY NOT FOR CONSTRUCTION

EES ENTITLEMENT AND ENGINEERING SOLUTIONS, INC.
3801 E. Florida Avenue, Suite 425
Denver, CO 80210
303-572-7987 www.ees.us.com

BLVD. BUILDERS

CONSTRUCTION PLANS

HILLSIDE AT CASTLE ROCK - PHASES 3-4

CASTLE ROCK, COLORADO

WATER DETAILS 3

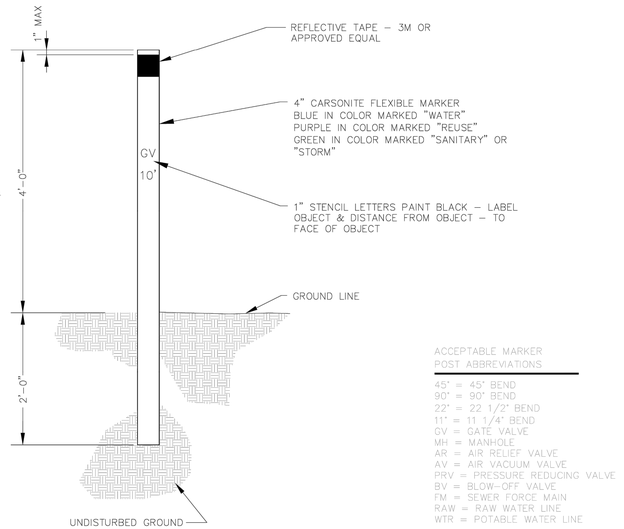
PROJECT NO:	BLV001.02
DESIGNED BY:	WLB
DRAWN BY:	WLB
DATE:	5/30/2024

C6.9
SHEET 22 OF 70

CD23-0036

P:\BLVDWAY BUILDERS\HILLSIDE AT CASTLE ROCK\08 CAD\SHEET SETS\PH 3-4 CDS\11 WATER DETAILS.DWG 5/30/2024 3:24 PM David Iovinelli

© 2024, ALL RIGHTS RESERVED.



NOTES:

1. USE MARKER POST IN AREAS WHERE UTILITY CANNOT BE LOCATED FROM OTHER IMPROVEMENTS.
2. SET POST 3 FEET MIN. AND 5 FEET MAX. FROM THE ASSET TO BE MARKED.

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

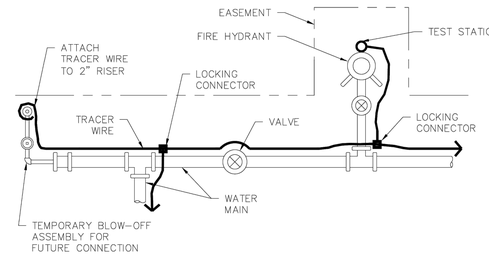
Sheet Revisions	
Date	Comments
3/19	REVISED PER STAFF COMMENTS
3/20	REVISED PER STAFF COMMENTS
7/22	REVISED PER STAFF COMMENTS

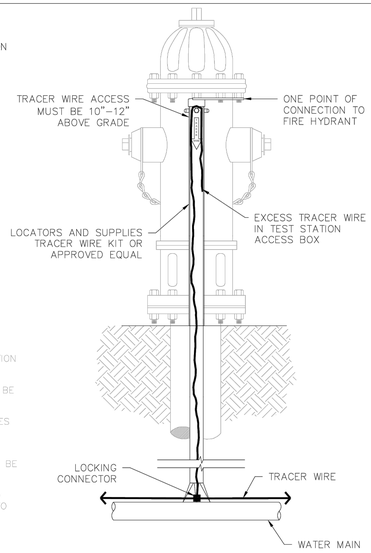
Town of Castle Rock
100 N. Wilcox St.
Castle Rock, CO 80104
Phone: (720) 733-2200
Fax: (720) 733-2217
Development Services

MARKER POST

Issued By: Town of Castle Rock, Development Services January 1, 2023

DETAIL PLAN NO.
W-23
Sheet 1 of 1





TRACER WIRE SAMPLE PLAN

NOTES:

1. REFER TO STANDARD NOTES FOR TOWN OF CASTLE ROCK GENERAL TRACER WIRE REQUIREMENTS. FOR TEST STATION AT MANHOLE, REFER TO DETAIL SD-5.
2. TRACER WIRE AND TEST STATION LIDS SHALL BE BLUE FOR POTABLE WATER DISTRIBUTION SYSTEM AND PURPLE FOR RECLAIMED OR RAW WATER COMPONENTS.
3. TRACER WIRE IN PLAN IS SHOWN AWAY FROM PIPE FOR CLARITY. TRACER WIRE SHALL BE FASTENED TO THE PIPE WITH TAPE OR PLASTIC TIES AT 5-FOOT INTERVALS.
4. TRACER WIRE SHALL BE LAID CONTINUOUSLY, PASSING AROUND THE OUTSIDE OF VALVES AND FITTINGS ON THE NORTH OR EAST SIDE.
5. TEST STATIONS SHALL BE INSTALLED AT EVERY FIRE HYDRANT, AS SHOWN, OR AT A MINIMUM INTERVAL OF 500 FEET. TEST STATIONS NOT LOCATED NEAR HYDRANTS MUST BE PLACED BEHIND EDGE OF PAVEMENT.
6. AT ALL TEMPORARY BLOW-OFFS, THE END OF THE TRACER WIRE SHALL BE CONTAINED WITHIN A CORROSION PREVENTION CAP, THEN BROUGHT TO SURFACE AND ATTACHED TO THE RISER PIPE AT GRADE WITHIN THE EASEMENT OR R.O.W.
7. TEST STATIONS SHALL LIE WITHIN UTILITY EASEMENT OR PUBLIC R.O.W.
8. PROVIDE ADEQUATE LENGTH OF TRACER WIRE TO EXTEND 12 INCHES ABOVE GRADE.
9. TEST STATIONS NOT LOCATED AT A FIRE HYDRANT MUST BE AT GRADE WITH LOCKING LID.

FIRE HYDRANT TRACER WIRE DETAIL

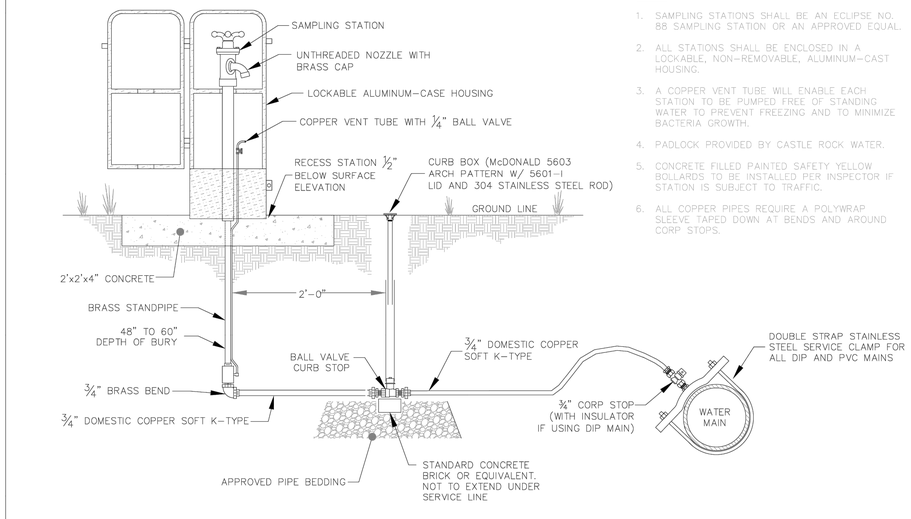
Sheet Revisions	
Date	Comments
3/19	REVISED PER STAFF COMMENTS
3/20	REVISED PER STAFF COMMENTS
7/22	REVISED PER STAFF COMMENTS

Town of Castle Rock
100 N. Wilcox St.
Castle Rock, CO 80104
Phone: (720) 733-2200
Fax: (720) 733-2217
Development Services

TRACER WIRE DETAIL

Issued By: Town of Castle Rock, Development Services January 1, 2023

DETAIL PLAN NO.
W-28
Sheet 1 of 1



NOTES:

1. SAMPLING STATIONS SHALL BE AN ECLIPSE NO. 88 SAMPLING STATION OR AN APPROVED EQUAL.
2. ALL STATIONS SHALL BE ENCLOSED IN A LOCKABLE, NON-REMOVABLE, ALUMINUM-CAST HOUSING.
3. A COPPER VENT TUBE WILL ENABLE EACH STATION TO BE PUMPED FREE OF STANDING WATER TO PREVENT FREEZING AND TO MINIMIZE BACTERIA GROWTH.
4. PADLOCK PROVIDED BY CASTLE ROCK WATER.
5. CONCRETE FILLED PAINTED SAFETY YELLOW BOLLARDS TO BE INSTALLED PER INSPECTOR IF STATION IS SUBJECT TO TRAFFIC.
6. ALL COPPER PIPES REQUIRE A POLYWRAP SLEEVE TAPED DOWN AT BENDS AND AROUND CORP STOPS.

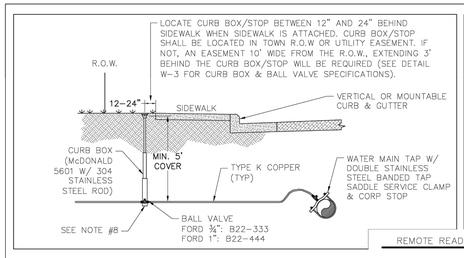
Sheet Revisions	
Date	Comments
3/19	REVISED PER STAFF COMMENTS
3/20	REVISED PER STAFF COMMENTS
6/22	REVISED PER STAFF COMMENTS

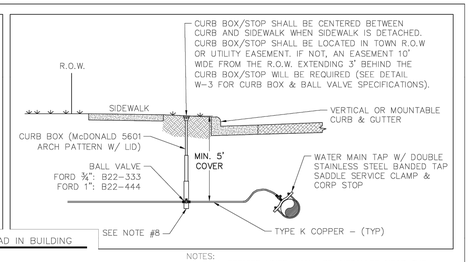
Town of Castle Rock
100 N. Wilcox St.
Castle Rock, CO 80104
Phone: (720) 733-2200
Fax: (720) 733-2217
Development Services

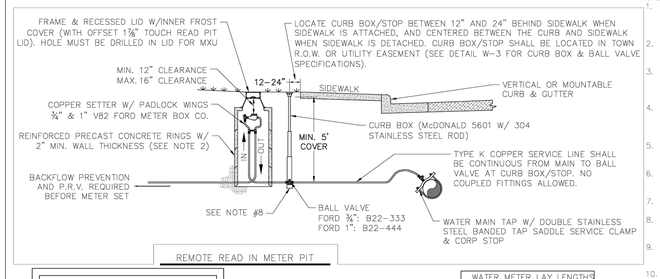
SAMPLING STATION

Issued By: Town of Castle Rock, Development Services January 1, 2023

DETAIL PLAN NO.
W-29
Sheet 1 of 1







ANY VARIATION OR DEVIATION FROM THIS STANDARD REQUIRES APPROVAL PRIOR TO INSTALLATION FROM CASTLE ROCK WATER.

WATER METER LAY LENGTHS
3/4" = 7 3/4"
1" = 11 1/4"
*LAY LENGTHS INCLUDE TWO 1/8" GASKETS

NOTES:

1. ALL SERVICE LINES SHALL BE INSTALLED NEAR THE CENTER OF THE FRONT LOT LINE AT LEAST 5 FEET FROM SIDE OF LOT.
2. METER PITS SHALL BE 20" I.D. FOR ¾" SERVICE LINES, AND 24" I.D. FOR 1" SERVICES (HDPE TYPE IS ALLOWED).
3. REQUIRED BACKFLOW PREVENTION ASSEMBLY TYPE IS CONTINGENT ON TYPE OF WATER USE, AS DETERMINED BY CASTLE ROCK WATER.
4. ALL TOWN SIDE COUPLINGS TO BE FORD QUICK JOINT COMPRESSION FITTINGS, OR APPROVED EQUAL (TIGHTEN TO STOP).
5. THERMAL EXPANSION TANK REQUIRED ON INSTALLATIONS (NOT REQUIRED ON IRRIGATION SERVICES).
6. CORP STOP WITH SERVICE INSULATOR REQUIRED FOR D.I.P. MAIN.
7. MARK A "V" IN CURB FACE PERPENDICULAR TO VALVE.
8. STANDARD CONCRETE BRICK OR APPROVED EQUIVALENT NOT TO EXTEND UNDERNEATH SERVICE LINES.
9. ALL COPPER PIPES REQUIRE POLYWRAP TAPED DOWN AT BENDS AND CORP STOPS.
10. T-POST IS REQUIRED ON BOTH SIDES OF THE CURB STOP, WRAPPED WITH CONSTRUCTION FENCE FOR THE DURATIONS OF CONSTRUCTION.
11. CURB STOP SHALL BE PLACED AT THE SAME ELEVATION OF THE SIDEWALK OR AT FINISHED GRADE.
12. ALL SERVICES SHALL BE INSTALLED WITH BEDDING MATERIAL A MINIMUM OF 4" ABOVE AND BELOW THE PIPE.

Sheet Revisions	
Date	Comments
7/17	REVISED PER STAFF COMMENTS
3/19	REVISED PER STAFF COMMENTS
3/20	REVISED PER STAFF COMMENTS
10/22	REVISED PER STAFF COMMENTS

Town of Castle Rock
100 N. Wilcox St.
Castle Rock, CO 80104
Phone: (720) 733-2200
Fax: (720) 733-2217
Development Services

3/4 INCH & 1 INCH WATER SERVICES

Issued By: Town of Castle Rock, Development Services January 1, 2023

DETAIL PLAN NO.
W-2
Sheet 1 of 1

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

No.	REVISION	BY	DATE

PRELIMINARY NOT FOR CONSTRUCTION

EES ENTITLEMENT AND ENGINEERING SOLUTIONS, INC.
3801 E. Florida Avenue, Suite 425
Denver, CO 80210
303-572-7987 www.ees.us.com

BLVD. BUILDERS

CONSTRUCTION PLANS

HILLSIDE AT CASTLE ROCK - PHASES 3-4

CASTLE ROCK, COLORADO

WATER DETAILS 3

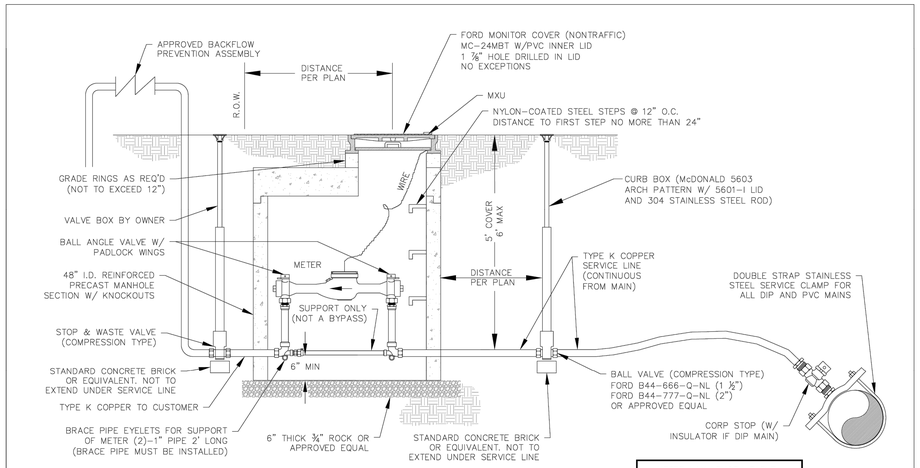
PROJECT NO:	BLV001.02
DESIGNED BY:	WLB
DRAWN BY:	WLB
DATE:	5/30/2024

C6.10
SHEET 23 OF 70

CD23-0036

P:\BLVDWAY BUILDERS\HILLSIDE AT CASTLE ROCK\08 CAD\SHEET SET\PH 3-4 CDS\11 WATER DETAILS.DWG 5/30/2024 3:24 PM David Iovine

© 2024, ALL RIGHTS RESERVED.



METER LAY LENGTH TABLE	
1 1/2" METER	2" METER
13 1/4" *	17 1/4" *

* LENGTH INCLUDES TWO (2) 1/8" GASKETS

NOTES:
1. METER AND WIRE SUPPLIED BY THE TOWN, CONTRACTOR TO INSTALL.
2. METER WILL NOT BE RELEASED TO CONTRACTOR IF CURB STOP BOX IS NOT UP TO FINISHED GRADE, IF WIRE IS IN WRONG AREA, OR IF AN ASSEMBLY IS NOT IN PLACE
3. FORD 1.5" METER VBB76-12-11-66-NL & C84-66ONL; 2" METER VBB77-12-11-77-NL & C84-77ONL WITHOUT BYPASS.
4. PRIOR TO METER RELEASE, IRRIGATION POINT OF CONNECTION MUST BE COMPLETE AS INDICATED ON TOWN DETAIL IR-9.
5. WHEN INSTALLING SENSUS OMNI METERS WITH STRAINER, A MINIMUM OF 2 ½ PIPE DIAMETERS OF STRAIGHT RUN PIPE OR EQUIVALENT FULL OPEN COMPONENTS IS REQUIRED UPSTREAM AND DOWNSTREAM OF THE METER OR STRAINER FLANGES. FULL OPEN FLOW COMPONENTS MAY CONSIST OF: STRAIGHT PIPE, FULL OPEN GATE VALVES, BYPASS TEES AND CONCENTRIC REDUCERS (1 NOMINAL PIPE SIZE REDUCTION ONLY). FOR ALL OTHER INSTALLATION CONFIGURATIONS, A MINIMUM OF 5 PIPE DIAMETERS OF STRAIGHT RUN IS REQUIRED UPSTREAM.

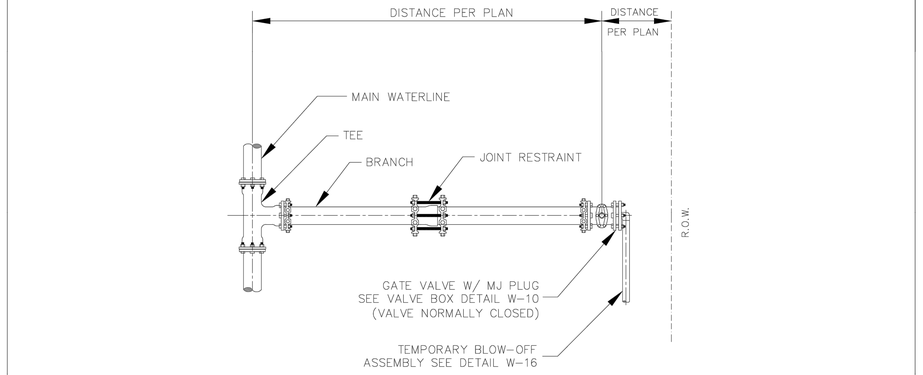
Sheet Revisions	
Date	Comments
5/19	REVISED PER STAFF COMMENTS
6/22	REVISED PER STAFF COMMENTS

Town of Castle Rock
100 N. Wilcox St.
Castle Rock, CO 80104
Phone: (720) 733-2200
Fax: (720) 733-2217
Development Services

1-1/2 INCH & 2 INCH IRRIGATION METER

Issued By: Town of Castle Rock, Development Services January 1, 2023

DETAIL PLAN NO.
W-4B
Sheet 1 of 1



NOTES:
1. ALL FITTINGS SHALL BE MJ WITH MEG-A-LUG.
2. LOCATION OF STUB OUT SHALL BE PER PLAN.
3. LOCATION OF STUB OUT MUST BE SHOWN WITH CARSONITE MARKER.
4. STUB OUT SHALL BE PRESSURE TESTED & CLEAR WATER TESTED @ TIME OF MAIN LINE TESTING. VALVE SHALL BE CLOSED AFTER TESTS.
5. STUB OUT SHALL BE FULLY RESTRAINED FROM THE TEE.
6. FOR TRACER WIRE INSTALLATION, REFER TO DETAIL W-28

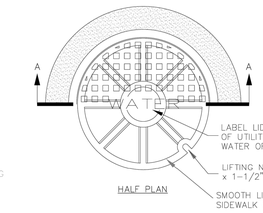
Sheet Revisions	
Date	Comments
3/19	REVISED PER STAFF COMMENTS
3/20	REVISED PER STAFF COMMENTS

Town of Castle Rock
100 N. Wilcox St.
Castle Rock, CO 80104
Phone: (720) 733-2200
Fax: (720) 733-2217
Development Services

STUB OUT CONFIGURATION

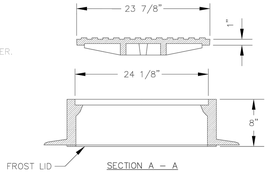
Issued By: Town of Castle Rock, Development Services January 1, 2023

DETAIL PLAN NO.
W-15
Sheet 1 of 1



HALF PLAN

NOTES:
1. CASTING SPECIFICATIONS: ASTM A-48 WITH A MINIMUM TENSILE STRENGTH OF 30,000 PSI (CLASS 30). (NEENAH TYPE R-1706 RING AND COVER OR EQUIVALENT).
2. H-20 DESIGN LOAD RATING IS REQUIRED.
3. DO NOT USE IN APPLICATIONS WHERE MANHOLES ARE WITHIN DRAINAGE WAYS.
4. STANDARD MANUFACTURER'S LETTERING SIZES & PATTERNS. (LETTERING SHALL BE CAST AS PART OF COVER).
5. MANHOLES PLACED OUTSIDE OF ROW MUST HAVE CARSONITE MARKER.



SECTION A – A

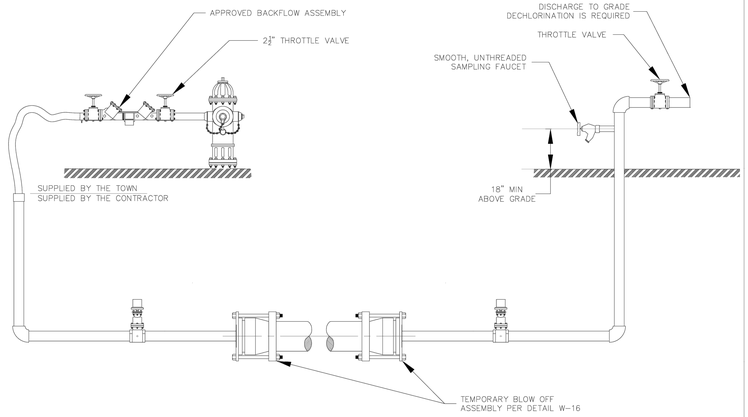
Sheet Revisions	
Date	Comments
5/19	REVISED PER STAFF COMMENTS
6/22	REVISED PER STAFF COMMENTS

Town of Castle Rock
100 N. Wilcox St.
Castle Rock, CO 80104
Phone: (720) 733-2200
Fax: (720) 733-2217
Development Services

WATER MANHOLE 24 INCH RING & COVER

Issued By: Town of Castle Rock, Development Services January 1, 2022

DETAIL PLAN NO.
W-26
Sheet 1 of 1



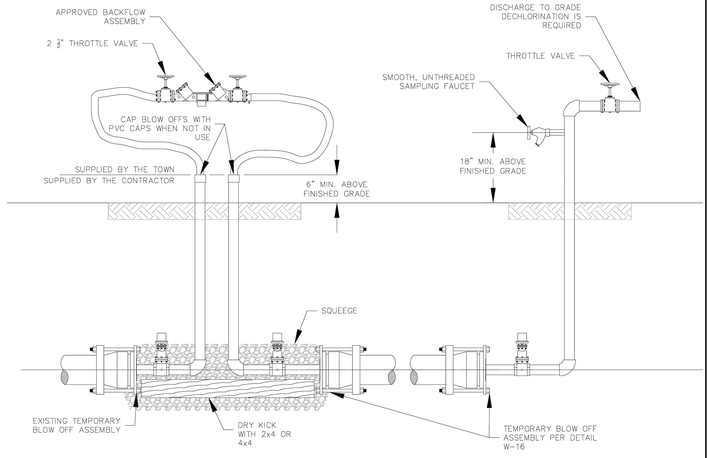
Sheet Revisions	
Date	Comments
8/16	NEW DETAIL
3/19	REVISED PER STAFF COMMENTS
3/20	REVISED PER STAFF COMMENTS

Town of Castle Rock
100 N. Wilcox St.
Castle Rock, CO 80104
Phone: (720) 733-2200
Fax: (720) 733-2217
Development Services

MAIN DISINFECTION UP TO 12"

Issued By: Town of Castle Rock, Development Services January 1, 2023

DETAIL PLAN NO.
W-35A
Sheet 1 of 1



Sheet Revisions	
Date	Comments
8/16	NEW DETAIL
3/19	REVISED PER STAFF COMMENTS
3/20	REVISED PER STAFF COMMENTS

Town of Castle Rock
100 N. Wilcox St.
Castle Rock, CO 80104
Phone: (720) 733-2200
Fax: (720) 733-2217
Development Services

MAIN DISINFECTION UP TO 12"

Issued By: Town of Castle Rock, Development Services January 1, 2023

DETAIL PLAN NO.
W-35B
Sheet 1 of 1

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

No.	REVISION	BY	DATE

PRELIMINARY NOT FOR CONSTRUCTION

EES ENTITLEMENT AND ENGINEERING SOLUTIONS, INC.
3801 E. Florida Avenue, Suite 425
Denver, CO 80210
303-572-7987 www.ees.us.com

BLVD. BUILDERS

CONSTRUCTION PLANS

HILLSIDE AT CASTLE ROCK - PHASES 3-4

CASTLE ROCK, COLORADO

WATER DETAILS 4

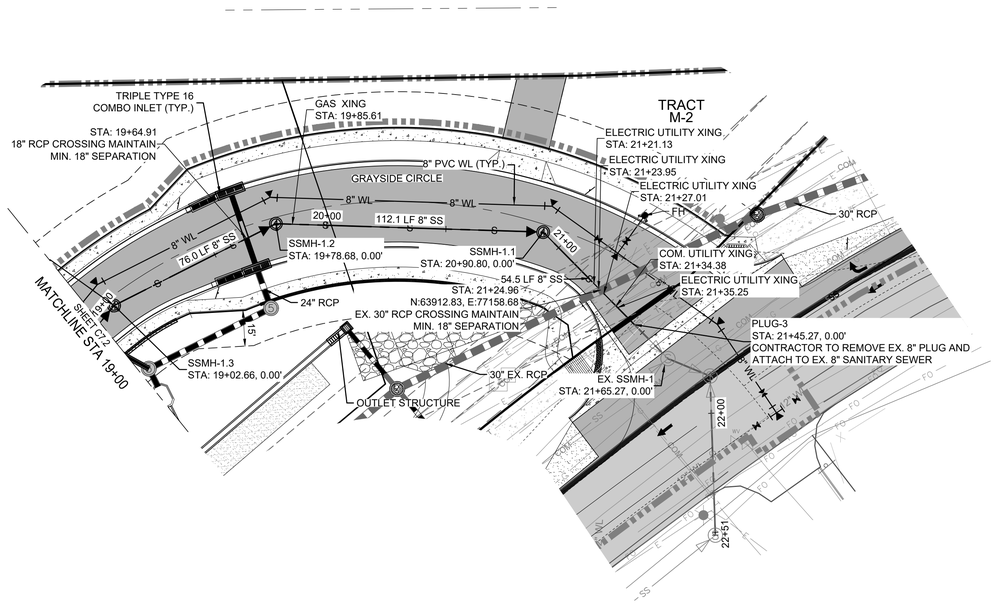
PROJECT NO: BLV001.02
DESIGNED BY: WLB
DRAWN BY: WLB
DATE: 5/30/2024

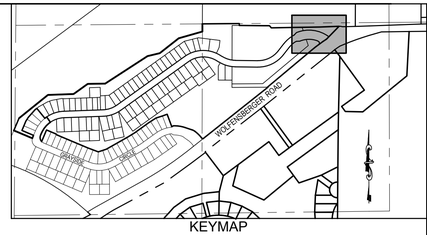
C6.11
SHEET 24 OF 70

CD23-0036

P:\BLVDWAY BUILDERS\HILLSIDE AT CASTLE ROCK\08 CAD\SHEET SET\PH 3-4 CDS\11 WATER DETAILS.DWG 5/30/2024 3:24 PM David Iovinelli

© 2024, ALL RIGHTS RESERVED.

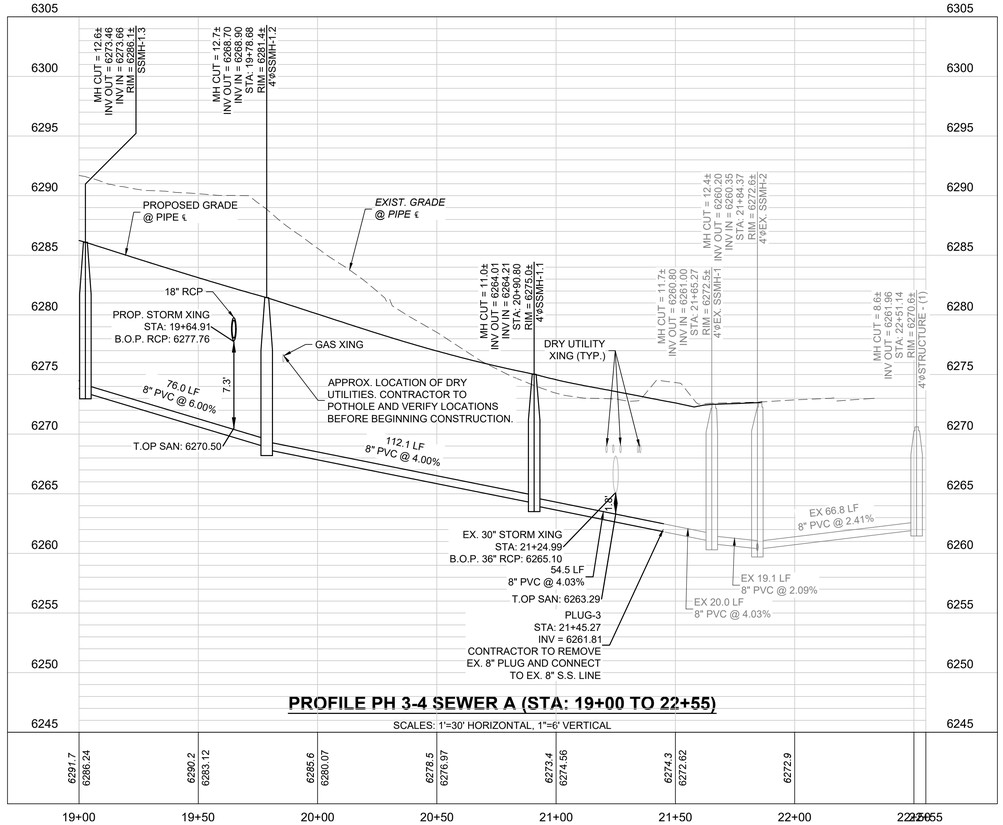




KEYMAP
SCALE: 1"=500'

UTILITY LEGEND:

- PROPERTY LINE
- RIGHT-OF-WAY
- LOT / TRACT LINE
- EXISTING LOT LINE
- X — EXISTING FENCE
- E — EXISTING ELECTRIC LINE
- G — EXISTING GAS MAIN
- CTV — EXISTING CATV
- COM — EXISTING COMMUNICATION
- S — EXISTING SANITARY SEWER
- W — EXISTING WATER MAIN
- EXIST. TRAFFIC SIGNAL CONDUIT W/ PULL BOX
- EXISTING STORM SEWER
- EXISTING SANITARY SEWER MH
- EXISTING STORM MANHOLE
- EXISTING STORM INLETS
- EXISTING FIRE HYDRANT
- EXISTING WATER VALVE
- EXISTING UTILITY RISER
- EXISTING STREET SIGN
- EXISTING ASPHALT PAVEMENT
- PROPOSED PHASING LINE
- S — PROPOSED SANITARY SEWER
- W — PROPOSED WATER MAIN
- S — PROPOSED SEWER SERVICE LINE
- W — PROPOSED WATER SERVICE LINE
- PROPOSED STORM SEWER
- PROPOSED AREA INLET
- PROPOSED TYPE 16 COMBO INLET
- PROPOSED STORM MANHOLE
- PROPOSED HYDRANT & ASSEMBLY
- PROPOSED W.L. REDUCER
- PROPOSED W.L. FITTINGS
- PROPOSED W.L. PLUG
- PROPOSED WATER VALVE
- PROPOSED S.S. CLEANOUT
- PROPOSED SIGN
- PROPOSED STREET LIGHT



PROFILE PH 3-4 SEWER A (STA: 19+00 TO 22+55)

SCALES: 1'=30' HORIZONTAL, 1"=6' VERTICAL

PROJECT BENCHMARK:

TOP OF THE SW 1/16 CORNER OF SECTION 3, TOWNSHIP 8 SOUTH, RANGE 67 WEST, BEING A 3" ALUMINUM CAP STAMPED "PLS 25629 1995" WITH AN ELEVATION OF 6352.83 FEET NAVD 88. THIS ELEVATION IS BASED UPON NGS STATION "N 393" WITH A PUBLISHED ELEVATION OF 6222.12 FEET NAVD 88.

811 Know what's below. Call before you dig.

CALL UTILITY NOTIFICATION CENTER OF COLORADO
1-800-922-1987 or 811
CALL 3-BUSINESS DAYS (NOT INCLUDING INITIAL DAY OF CONTACT) IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES.

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

No.	REVISION	BY	DATE

PRELIMINARY
NOT FOR
CONSTRUCTION

EES
ENTITLEMENT AND ENGINEERING SOLUTIONS, INC.
3801 E. Florida Avenue, Suite 425
Denver, CO 80210
303-572-7997 www.ees.us.com

BLVD. BUILDERS

CONSTRUCTION PLANS

HILLSIDE AT CASTLE ROCK - PHASES 3-4

CASTLE ROCK, COLORADO

PHASE 3 SANITARY SEWER
PLAN & PROFILE 1

PROJECT NO:	BLV001.02
DESIGNED BY:	WLB
DRAWN BY:	WLB
DATE:	5/30/2024

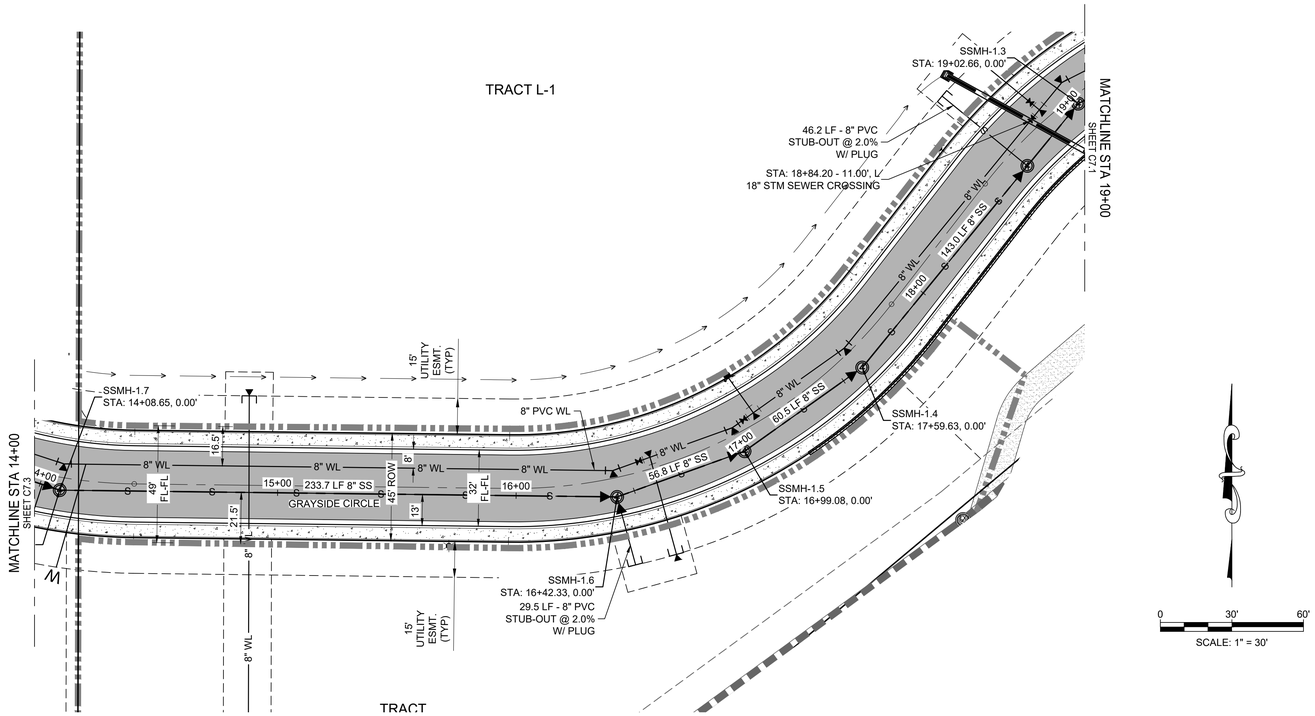
C7.1

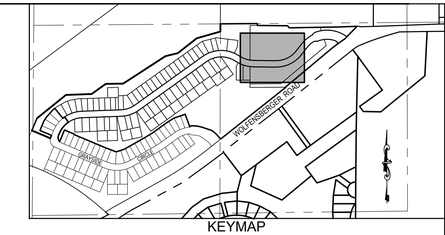
SHEET 25 OF 70

CD23-0036

P:\BLVDWAY BUILDERS\HILLSIDE AT CASTLE ROCK\06 CAD\SHEET SET\SPH 3-4 CDS\12 SANITARY SEWER PLAN AND PROFILE.DWG 5/30/2024 3:25 PM David Iovinelli

© 2024, ALL RIGHTS RESERVED.

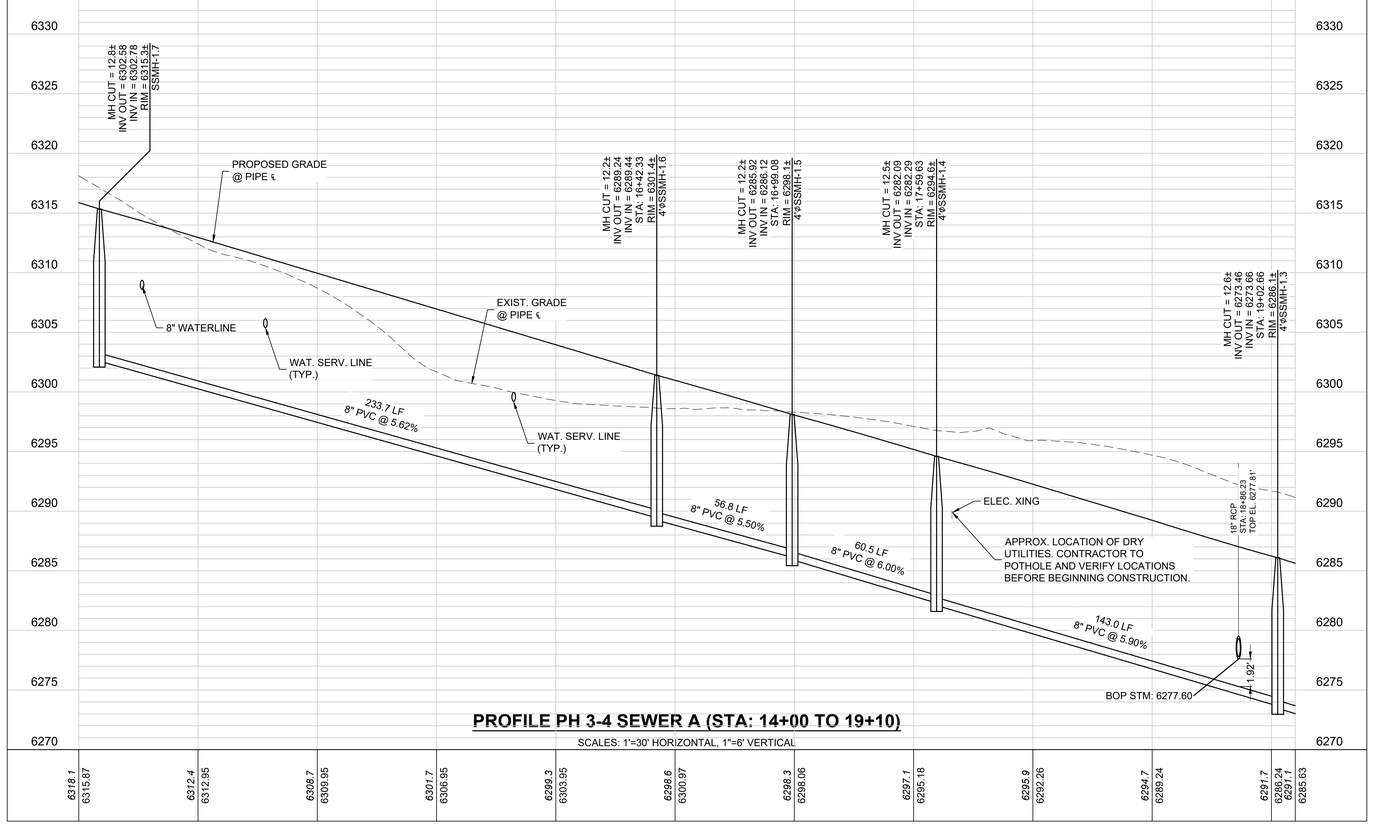




KEYMAP
SCALE: 1"=500'

UTILITY LEGEND:

- PROPERTY LINE
- RIGHT-OF-WAY
- LOT / TRACT LINE
- EXISTING LOT LINE
- X — EXISTING FENCE
- E — EXISTING ELECTRIC LINE
- G — EXISTING GAS MAIN
- CTV — EXISTING CATV
- COM — EXISTING COMMUNICATION
- S — EXISTING SANITARY SEWER
- W — EXISTING WATER MAIN
- EXIST. TRAFFIC SIGNAL CONDUIT W/ PULL BOX
- EXISTING STORM SEWER
- EXISTING SANITARY SEWER MH
- EXISTING STORM MANHOLE
- EXISTING STORM INLETS
- EXISTING FIRE HYDRANT
- EXISTING WATER VALVE
- EXISTING UTILITY RISER
- EXISTING STREET SIGN
- EXISTING ASPHALT PAVEMENT
- PROPOSED PHASING LINE
- S — PROPOSED SANITARY SEWER
- W — PROPOSED WATER MAIN
- S — PROPOSED SEWER SERVICE LINE
- W — PROPOSED WATER SERVICE LINE
- PROPOSED STORM SEWER
- PROPOSED AREA INLET
- PROPOSED TYPE 16 COMBO INLET
- PROPOSED STORM MANHOLE
- PROPOSED HYDRANT & ASSEMBLY
- PROPOSED W.L. REDUCER
- PROPOSED W.L. FITTINGS
- PROPOSED W.L. PLUG
- PROPOSED WATER VALVE
- PROPOSED S.S. CLEANOUT
- PROPOSED SIGN
- PROPOSED STREET LIGHT



PROFILE PH 3-4 SEWER A (STA: 14+00 TO 19+10)

SCALES: 1'=30' HORIZONTAL, 1"=6' VERTICAL

PROJECT BENCHMARK:

TOP OF THE SW 1/16 CORNER OF SECTION 3, TOWNSHIP 8 SOUTH, RANGE 67 WEST, BEING A 3" ALUMINUM CAP STAMPED "PLS 25629 1995" WITH AN ELEVATION OF 6352.83 FEET NAVD 88. THIS ELEVATION IS BASED UPON NGS STATION "N 393" WITH A PUBLISHED ELEVATION OF 6222.12 FEET NAVD 88.

811 Know what's below. Call before you dig.

CALL UTILITY NOTIFICATION CENTER OF COLORADO
1-800-922-1987 or 811
CALL 3-BUSINESS DAYS (NOT INCLUDING INITIAL DAY OF CONTACT) IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES.

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

No.	REVISION	BY	DATE

PRELIMINARY
NOT FOR
CONSTRUCTION

EES ENTITLEMENT AND ENGINEERING SOLUTIONS, INC.
3801 E. Florida Avenue, Suite 425
Denver, CO 80210
303-572-7997 www.ees.us.com

BLVD. BUILDERS

CONSTRUCTION PLANS
HILLSIDE AT CASTLE ROCK - PHASES 3-4
CASTLE ROCK, COLORADO

PHASE 3 SANITARY SEWER PLAN & PROFILE 2

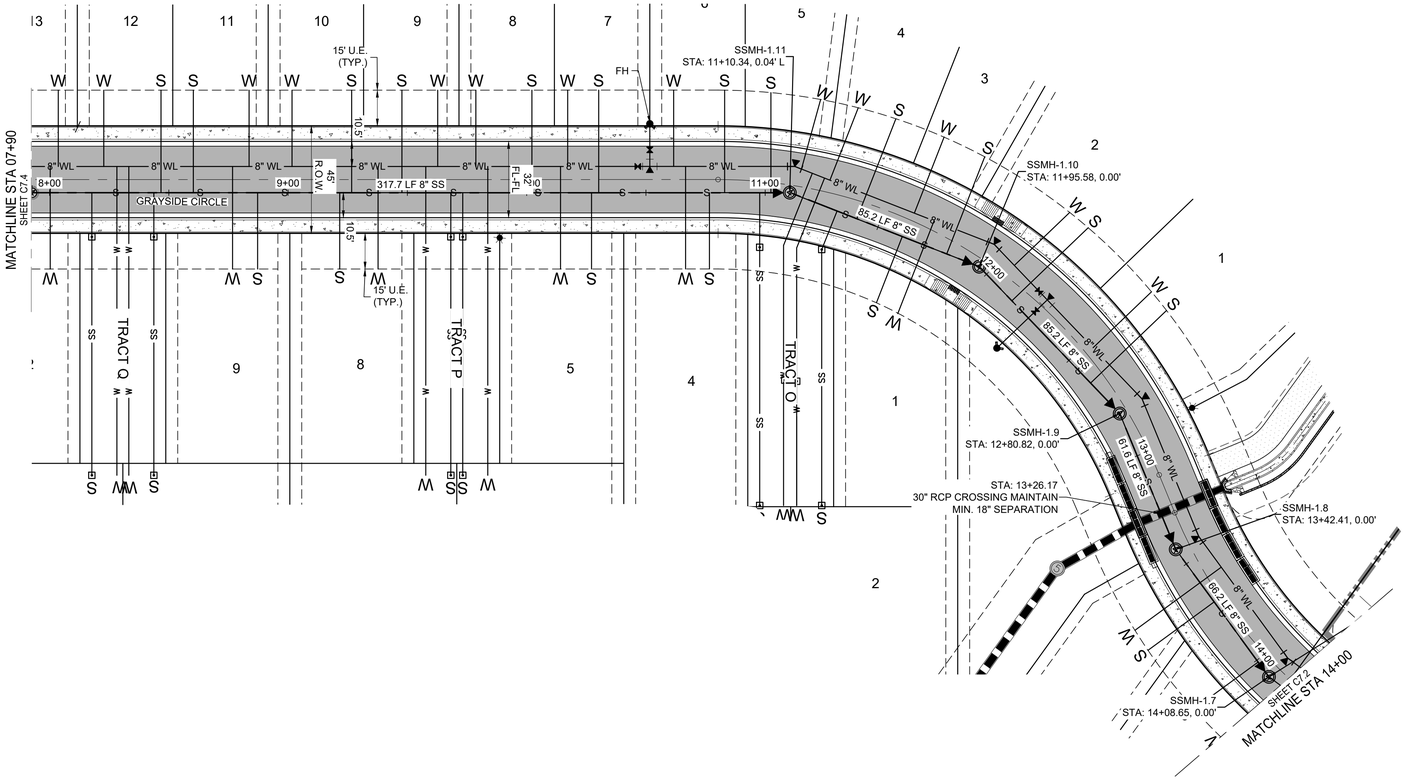
PROJECT NO:	BLV001.02
DESIGNED BY:	WLB
DRAWN BY:	WLB
DATE:	5/30/2024

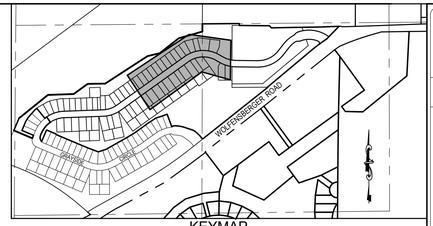
C7.2
SHEET 26 OF 70

CD23-0036

P:\BLVDWAY BUILDERS\HILLSIDE AT CASTLE ROCK\06 CAD\SHEET SETS\PH 3-4 CDS\12 SANITARY SEWER PLAN AND PROFILE.DWG 5/30/2024 3:25 PM David Ironhelll

© 2024, ALL RIGHTS RESERVED.

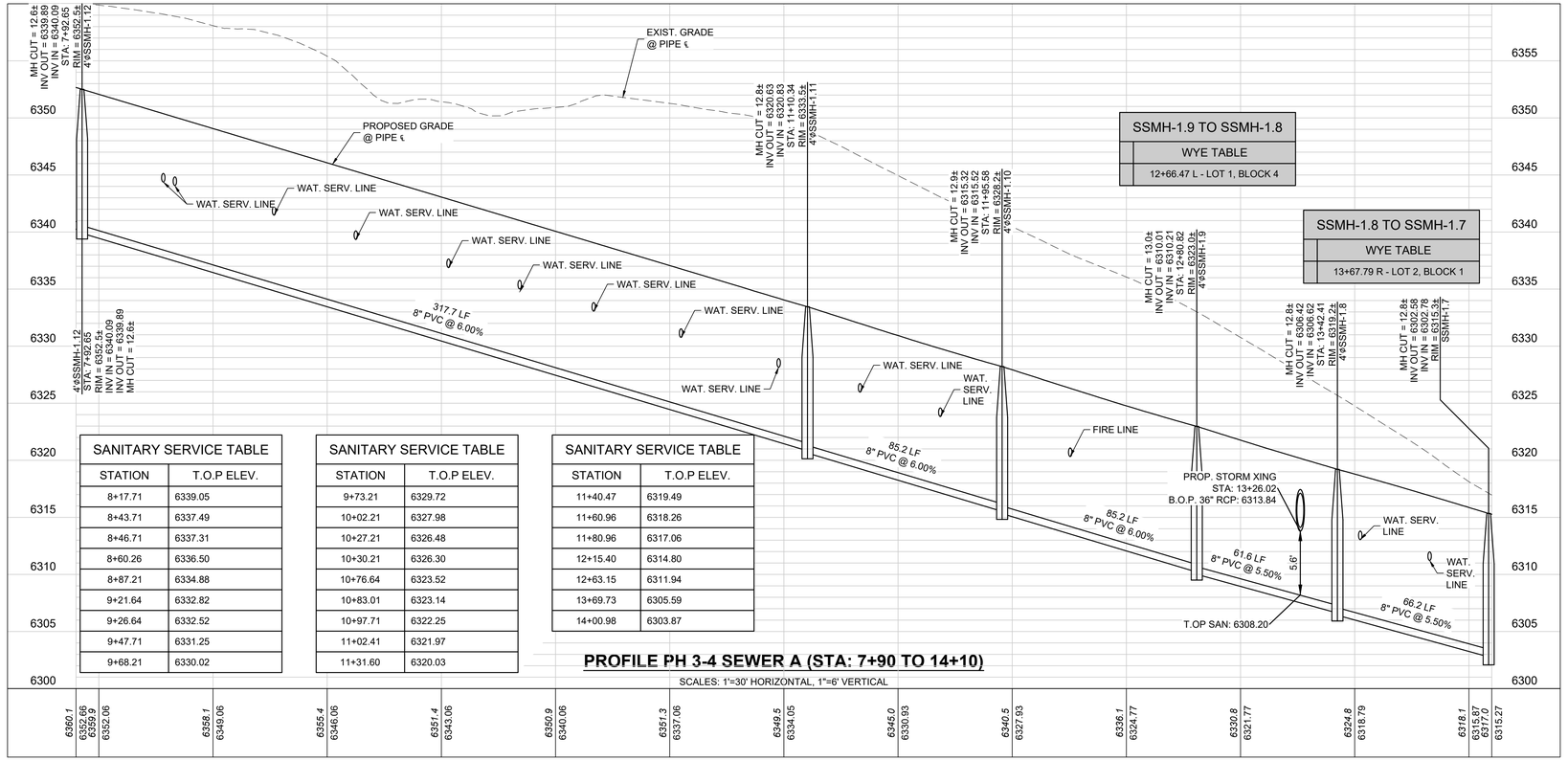




KEYMAP
SCALE: 1"=500'

UTILITY LEGEND:

- PROPERTY LINE
- RIGHT-OF-WAY
- LOT / TRACT LINE
- EXISTING LOT LINE
- EXISTING FENCE
- EXISTING ELECTRIC LINE
- EXISTING GAS MAIN
- EXISTING CATV
- EXISTING COMMUNICATION
- EXISTING SANITARY SEWER
- EXISTING WATER MAIN
- EXIST. TRAFFIC SIGNAL CONDUIT W/ PULL BOX
- EXISTING STORM SEWER
- EXISTING SANITARY SEWER MH
- EXISTING STORM MANHOLE
- EXISTING STORM INLETS
- EXISTING FIRE HYDRANT
- EXISTING WATER VALVE
- EXISTING UTILITY RISER
- EXISTING STREET SIGN
- EXISTING ASPHALT PAVEMENT
- PROPOSED PHASING LINE
- PROPOSED SANITARY SEWER
- PROPOSED WATER MAIN
- PROPOSED SEWER SERVICE LINE
- PROPOSED WATER SERVICE LINE
- PROPOSED STORM SEWER
- PROPOSED AREA INLET
- PROPOSED TYPE 16 COMBO INLET
- PROPOSED STORM MANHOLE
- PROPOSED HYDRANT & ASSEMBLY
- PROPOSED W.L. REDUCER
- PROPOSED W.L. FITTINGS
- PROPOSED W.L. PLUG
- PROPOSED WATER VALVE
- PROPOSED S.S. CLEANOUT
- PROPOSED SIGN
- PROPOSED STREET LIGHT



SANITARY SERVICE TABLE	
STATION	T.O.P ELEV.
8+17.71	6339.05
8+43.71	6337.49
8+46.71	6337.31
8+60.26	6336.50
8+87.21	6334.88
9+21.64	6332.82
9+26.64	6332.52
9+47.71	6331.25
9+68.21	6330.02

SANITARY SERVICE TABLE	
STATION	T.O.P ELEV.
9+73.21	6329.72
10+02.21	6327.98
10+27.21	6326.48
10+30.21	6326.30
10+76.64	6323.52
10+83.01	6323.14
10+97.71	6322.25
11+02.41	6321.97
11+31.60	6320.03

SANITARY SERVICE TABLE	
STATION	T.O.P ELEV.
11+40.47	6319.49
11+60.96	6318.26
11+80.96	6317.06
12+15.40	6314.80
12+63.15	6311.94
13+69.73	6305.59
14+00.98	6303.87

SSMH-1.9 TO SSMH-1.8
WYE TABLE
12+66.47 L - LOT 1, BLOCK 4

SSMH-1.8 TO SSMH-1.7
WYE TABLE
13+67.79 R - LOT 2, BLOCK 1

PROFILE PH 3-4 SEWER A (STA: 7+90 TO 14+10)

SCALES: 1"=30' HORIZONTAL, 1"=6' VERTICAL

PROJECT BENCHMARK:

TOP OF THE SW 1/16 CORNER OF SECTION 3, TOWNSHIP 8 SOUTH, RANGE 67 WEST, BEING A 3" ALUMINUM CAP STAMPED "PLS 25629 1995" WITH AN ELEVATION OF 6352.83 FEET NAVD 88. THIS ELEVATION IS BASED UPON NGS STATION "N 393" WITH A PUBLISHED ELEVATION OF 6222.12 FEET NAVD 88.

811 Know what's below. Call before you dig.

CALL UTILITY NOTIFICATION CENTER OF COLORADO
1-800-922-1987 or 811
CALL 3-BUSINESS DAYS (NOT INCLUDING INITIAL DAY OF CONTACT) IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES.

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

No.	REVISION	BY	DATE

PRELIMINARY NOT FOR CONSTRUCTION

EES ENTITLEMENT AND ENGINEERING SOLUTIONS, INC.
3801 E. Florida Avenue, Suite 425
Denver, CO 80210
303-572-7997 www.ees.us.com

BLVD. BUILDERS

CONSTRUCTION PLANS

HILLSIDE AT CASTLE ROCK - PHASES 3-4

CASTLE ROCK, COLORADO

PHASE 3 SANITARY SEWER PLAN & PROFILE 3

PROJECT NO:	BLV001.02
DESIGNED BY:	WLB
DRAWN BY:	WLB
DATE:	5/30/2024

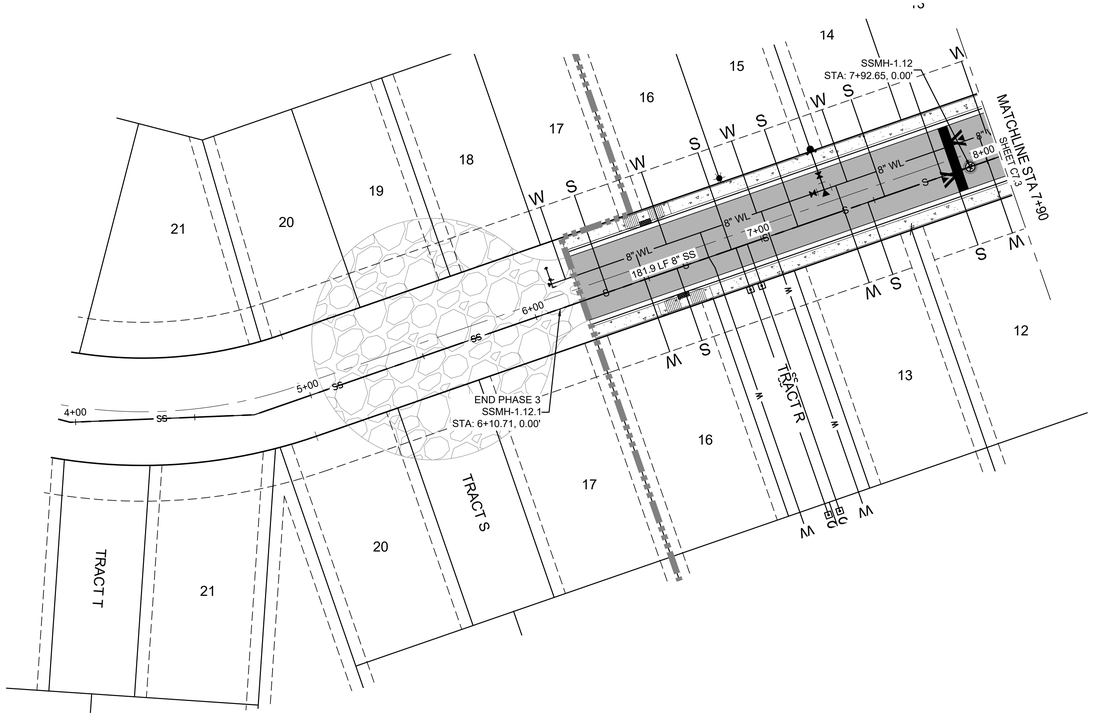
C7.3

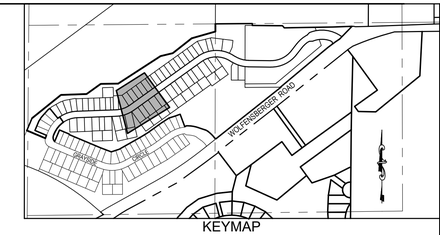
SHEET 27 OF 70

CD23-0036

P:\BLVD\WAY BUILDERS\HILLSIDE AT CASTLE ROCK\06 CAD\SHEET SETS\PH 3-4 CDS\12 SANITARY SEWER PLAN AND PROFILE.DWG 5/30/2024 3:26 PM David Iovinelli

© 2024, ALL RIGHTS RESERVED.



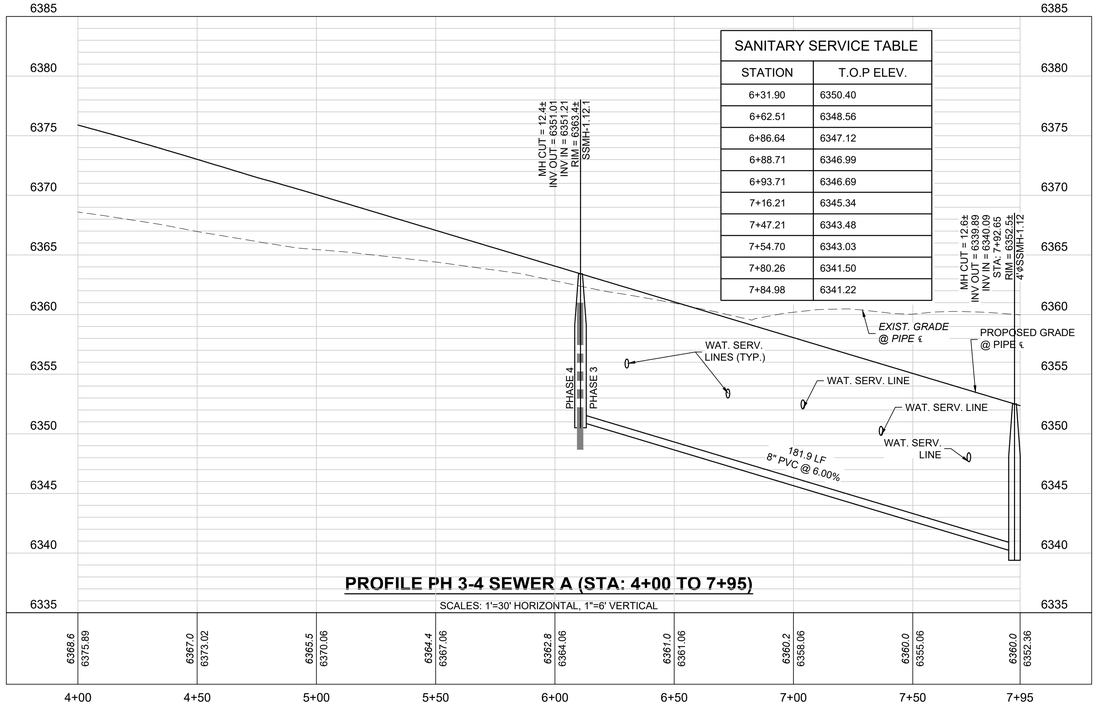


KEYMAP
SCALE: 1"=500'

UTILITY LEGEND:

- PROPERTY LINE
- RIGHT-OF-WAY
- LOT / TRACT LINE
- EXISTING LOT LINE
- X — EXISTING FENCE
- E — EXISTING ELECTRIC LINE
- G — EXISTING GAS MAIN
- CTV — EXISTING CATV
- COM — EXISTING COMMUNICATION
- S — EXISTING SANITARY SEWER
- W — EXISTING WATER MAIN
- EXIST. TRAFFIC SIGNAL CONDUIT W/ PULL BOX
- EXISTING STORM SEWER
- Ⓢ EXISTING SANITARY SEWER MH
- Ⓓ EXISTING STORM MANHOLE
- EXISTING STORM INLETS
- EXISTING FIRE HYDRANT
- EXISTING WATER VALVE
- EXISTING UTILITY RISER
- EXISTING STREET SIGN
- EXISTING ASPHALT PAVEMENT
- PROPOSED PHASING LINE
- S — PROPOSED SANITARY SEWER
- W — PROPOSED WATER MAIN
- S — PROPOSED SEWER SERVICE LINE
- W — PROPOSED WATER SERVICE LINE
- PROPOSED STORM SEWER
- PROPOSED AREA INLET
- PROPOSED TYPE 16 COMBO INLET
- PROPOSED STORM MANHOLE
- PROPOSED HYDRANT & ASSEMBLY
- PROPOSED W.L. REDUCER
- PROPOSED W.L. FITTINGS
- PROPOSED W.L. PLUG
- PROPOSED WATER VALVE
- PROPOSED S.S. CLEANOUT
- PROPOSED SIGN
- PROPOSED STREET LIGHT

SANITARY SERVICE TABLE	
STATION	T.O.P ELEV.
6+31.90	6350.40
6+62.51	6348.56
6+86.64	6347.12
6+88.71	6346.99
6+93.71	6346.69
7+16.21	6345.34
7+47.21	6343.48
7+54.70	6343.03
7+80.26	6341.50
7+84.98	6341.22



PROFILE PH 3-4 SEWER A (STA: 4+00 TO 7+95)

SCALES: 1'=30' HORIZONTAL, 1'=6' VERTICAL

PROJECT BENCHMARK:

TOP OF THE SW 1/16 CORNER OF SECTION 3, TOWNSHIP 8 SOUTH, RANGE 67 WEST, BEING A 3" ALUMINUM CAP STAMPED "PLS 25629 1995" WITH AN ELEVATION OF 6352.83 FEET NAVD 88. THIS ELEVATION IS BASED UPON NGS STATION "N 393" WITH A PUBLISHED ELEVATION OF 6222.12 FEET NAVD 88.

811 Know what's below. Call before you dig.

CALL UTILITY NOTIFICATION CENTER OF COLORADO
1-800-922-1987 or 811
CALL 3-BUSINESS DAYS (NOT INCLUDING INITIAL DAY OF CONTACT) IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES.

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

No.	REVISION	BY	DATE

PRELIMINARY NOT FOR CONSTRUCTION

EES ENTITLEMENT AND ENGINEERING SOLUTIONS, INC.
3801 E. Florida Avenue, Suite 425
Denver, CO 80210
303-572-7997 www.ees.us.com

BLVD. BUILDERS

CONSTRUCTION PLANS

HILLSIDE AT CASTLE ROCK - PHASES 3-4

CASTLE ROCK, COLORADO

PHASE 3 SANITARY SEWER PLAN & PROFILE 4

PROJECT NO:	BLV001.02
DESIGNED BY:	WLB
DRAWN BY:	WLB
DATE:	5/30/2024

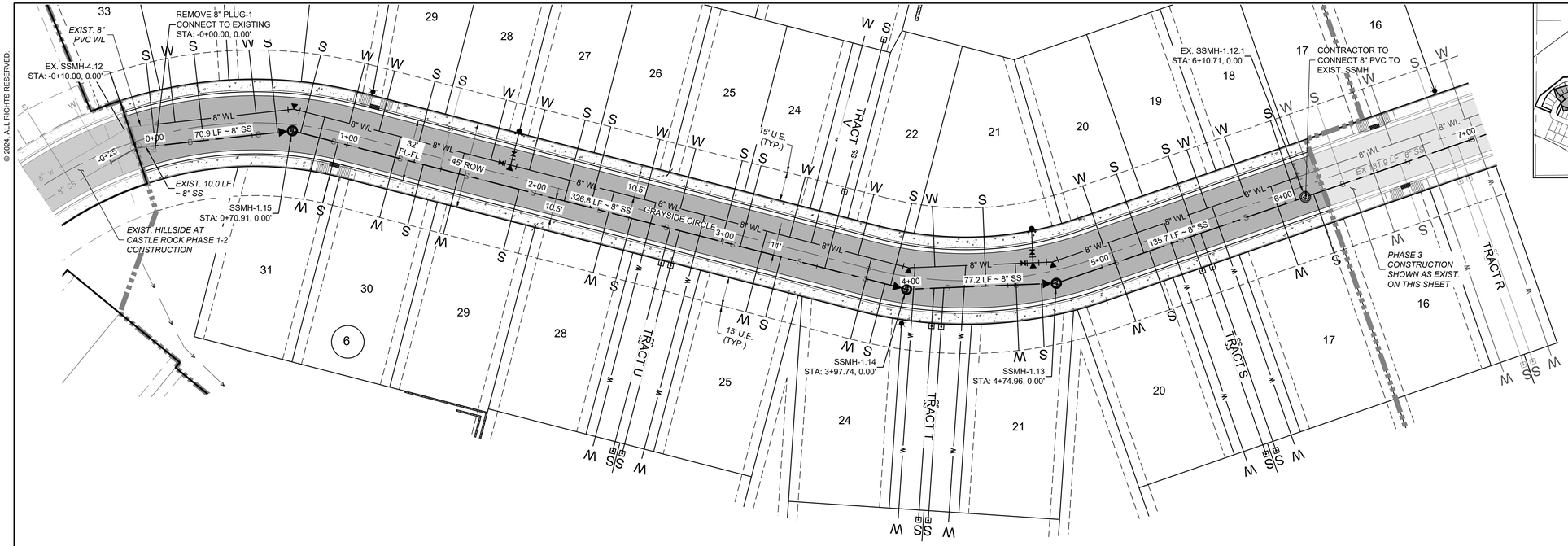
C7.4

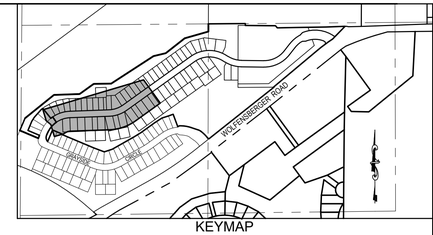
SHEET 28 OF 70

CD23-0036

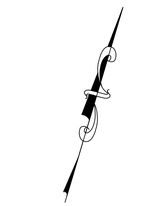
P:\BLVDWAY BUILDERS\HILLSIDE AT CASTLE ROCK\06 CAD\SHEET SET\PH 3-4 CDS\12 SANITARY SEWER PLAN AND PROFILE.DWG 5/30/2024 3:27 PM David Iovinelli

© 2024, ALL RIGHTS RESERVED.

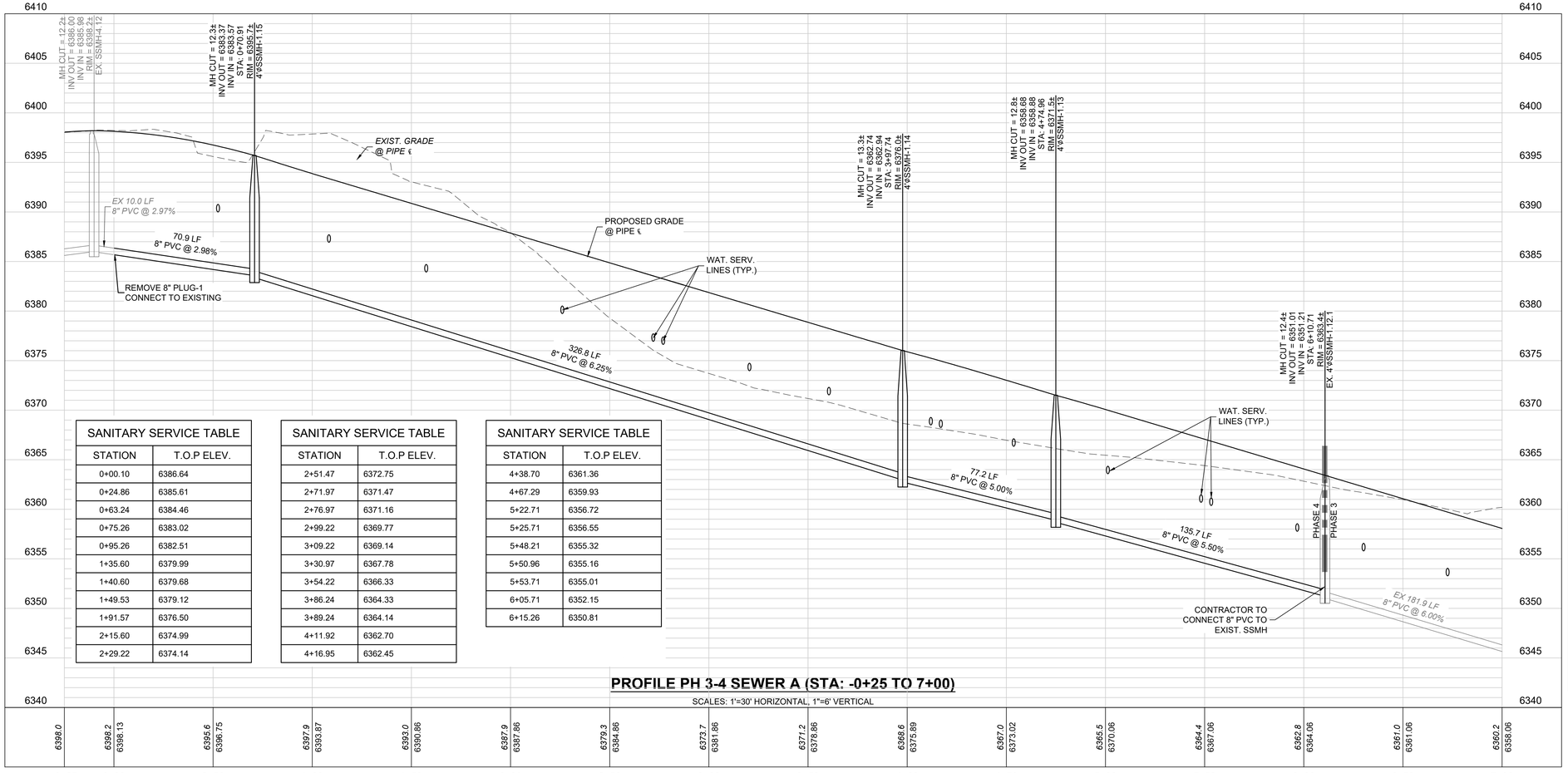




KEYMAP
SCALE: 1"=500'



0 30' 60'
SCALE: 1" = 30'



SANITARY SERVICE TABLE	
STATION	T.O.P ELEV.
0+00.10	6386.64
0+24.86	6385.61
0+63.24	6384.46
0+75.26	6383.02
0+95.26	6382.51
1+35.60	6379.99
1+40.60	6379.68
1+49.53	6379.12
1+91.57	6376.50
2+15.60	6374.99
2+29.22	6374.14

SANITARY SERVICE TABLE	
STATION	T.O.P ELEV.
2+51.47	6372.75
2+71.97	6371.47
2+76.97	6371.16
2+99.22	6369.77
3+09.22	6369.14
3+30.97	6367.78
3+54.22	6366.33
3+86.24	6364.33
3+89.24	6364.14
4+11.92	6362.70
4+16.95	6362.45

SANITARY SERVICE TABLE	
STATION	T.O.P ELEV.
4+38.70	6361.36
4+67.29	6359.93
5+22.71	6356.72
5+25.71	6356.55
5+48.21	6355.32
5+50.96	6355.16
5+53.71	6355.01
6+05.71	6352.15
6+15.26	6350.81

PROFILE PH 3-4 SEWER A (STA: -0+25 TO 7+00)

SCALES: 1"=30' HORIZONTAL, 1"=6' VERTICAL

UTILITY LEGEND:

- PROPERTY LINE
- RIGHT-OF-WAY
- LOT / TRACT LINE
- EXISTING LOT LINE
- X — EXISTING FENCE
- E — EXISTING ELECTRIC LINE
- G — EXISTING GAS MAIN
- CTV — EXISTING CATV
- COM — EXISTING COMMUNICATION
- S — EXISTING SANITARY SEWER
- W — EXISTING WATER MAIN
- EXIST. TRAFFIC SIGNAL CONDUIT W/ PULL BOX
- EXISTING STORM SEWER
- EXISTING SANITARY SEWER MH
- EXISTING STORM MANHOLE
- EXISTING STORM INLETS
- EXISTING FIRE HYDRANT
- EXISTING WATER VALVE
- EXISTING UTILITY RISER
- EXISTING STREET SIGN
- EXISTING ASPHALT PAVEMENT
- PROPOSED PHASING LINE
- S — PROPOSED SANITARY SEWER
- W — PROPOSED WATER MAIN
- S — PROPOSED SEWER SERVICE LINE
- W — PROPOSED WATER SERVICE LINE
- PROPOSED STORM SEWER
- PROPOSED AREA INLET
- PROPOSED TYPE 16 COMBO INLET
- PROPOSED STORM MANHOLE
- PROPOSED HYDRANT & ASSEMBLY
- PROPOSED W.L. REDUCER
- PROPOSED W.L. FITTINGS
- PROPOSED W.L. PLUG
- PROPOSED WATER VALVE
- PROPOSED S.S. CLEANOUT
- PROPOSED SIGN
- PROPOSED STREET LIGHT

PROJECT BENCHMARK:

TOP OF THE SW 1/16 CORNER OF SECTION 3, TOWNSHIP 8 SOUTH, RANGE 67 WEST, BEING A 3" ALUMINUM CAP STAMPED "PLS 25629 1995" WITH AN ELEVATION OF 6352.83 FEET NAVD 88. THIS ELEVATION IS BASED UPON NGS STATION "N 393" WITH A PUBLISHED ELEVATION OF 6222.12 FEET NAVD 88.

Know what's below. Call before you dig.

CALL UTILITY NOTIFICATION CENTER OF COLORADO
1-800-922-1987 or 811
CALL 3-BUSINESS DAYS (NOT INCLUDING INITIAL DAY OF CONTACT) IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES.

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

No.	REVISION	BY	DATE

PRELIMINARY NOT FOR CONSTRUCTION

EES ENTITLEMENT AND ENGINEERING SOLUTIONS, INC.
3801 E. Florida Avenue, Suite 425
Denver, CO 80210
303-572-7997 www.ees.us.com

BLVD BUILDERS

CONSTRUCTION PLANS

HILLSIDE AT CASTLE ROCK - PHASES 3-4

CASTLE ROCK, COLORADO

PHASE 4 SANITARY SEWER PLAN & PROFILE 1

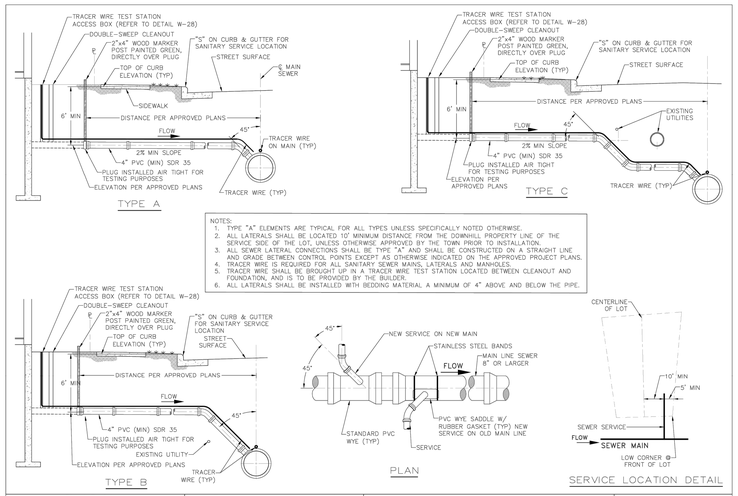
PROJECT NO:	BLV001.02
DESIGNED BY:	WLB
DRAWN BY:	WLB
DATE:	5/30/2024

C7.5
SHEET 29 OF 70

CD23-0036

P:\BLVDWAY BUILDERS\HILLSIDE AT CASTLE ROCK\08 CAD\SHEET SETS\PH 3-4 CDS\12A PH 4 SAN SEWER PP.DWG 5/30/2024 3:28 PM David Ironwill

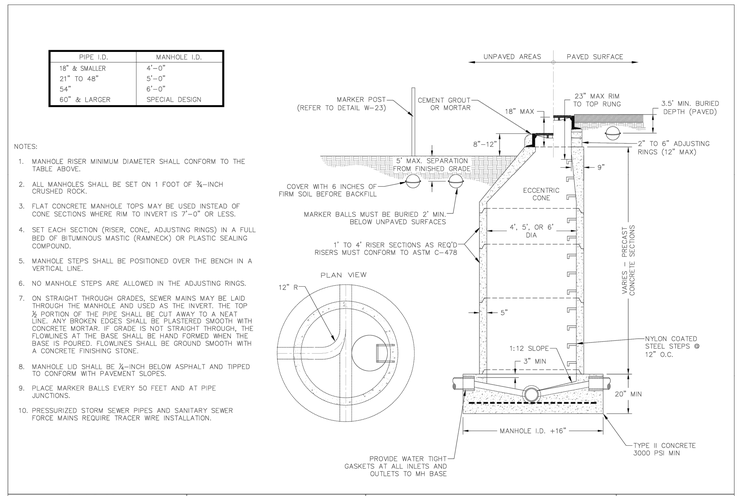
© 2024, ALL RIGHTS RESERVED.



Sheet Revisions		
Date	Comments	
3/20	REVISED PER STAFF COMMENTS	
12/22	REVISED PER STAFF COMMENTS	

Town of Castle Rock
100 N. Wilcox St.
Castle Rock, CO 80104
Phone: (720) 733-2200
Fax: (720) 733-2217
Development Services

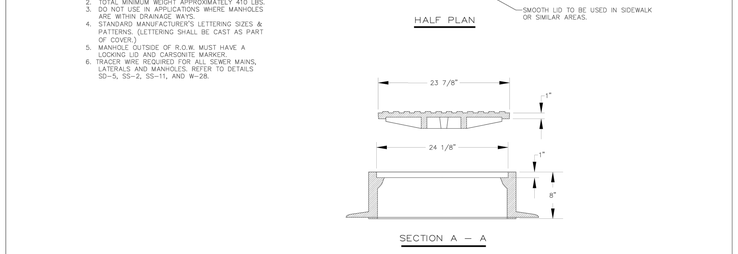
SEWER LATERAL CONNECTIONS	DETAIL PLAN NO.
Issued By: Town of Castle Rock, Development Services January 1, 2023	SS-2
	Sheet 1 of 1



Sheet Revisions		
Date	Comments	
3/20	REVISED PER STAFF COMMENTS	
1/21	REVISED PER STAFF COMMENTS	
12/22	REVISED PER STAFF COMMENTS	

Town of Castle Rock
100 N. Wilcox St.
Castle Rock, CO 80104
Phone: (720) 733-2200
Fax: (720) 733-2217
Development Services

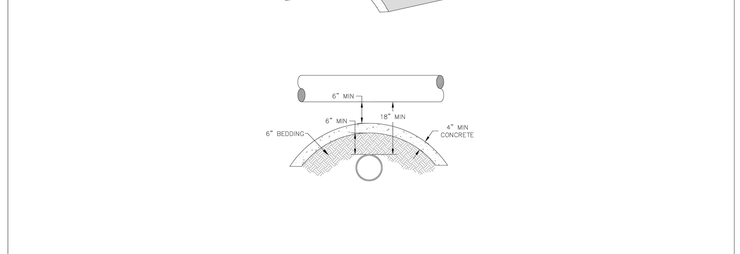
SANITARY AND STORM SEWER MANHOLE	DETAIL PLAN NO.
Issued By: Town of Castle Rock, Development Services January 1, 2023	SS-3
	1 of 1



Sheet Revisions		
Date	Comments	
3/20	REVISED PER STAFF COMMENTS	

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	DETAIL PLAN NO.
Issued By: Town of Castle Rock, Development Services January 1, 2023	SS-4
	Sheet 1 of 1



Sheet Revisions		
Date	Comments	
3/20	REVISED PER STAFF COMMENTS	

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	DETAIL PLAN NO.
Issued By: Town of Castle Rock, Development Services January 1, 2023	SS-6
	Sheet 1 of 1

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

No.	REVISION	BY	DATE

PRELIMINARY
NOT FOR
CONSTRUCTION

EES
ENTITLEMENT AND ENGINEERING SOLUTIONS, INC.
3801 E. Florida Avenue, Suite 425
Denver, CO 80210
303-572-7997 www.ees.us.com

BLVD. BUILDERS

CONSTRUCTION PLANS

HILLSIDE AT CASTLE ROCK - PHASES 3-4

CASTLE ROCK, COLORADO

SANITARY SEWER DETAILS 1

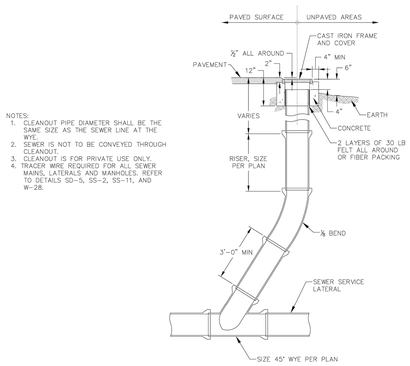
PROJECT NO:	BLV001.02
DESIGNED BY:	WLB
DRAWN BY:	WLB
DATE:	5/30/2024

C7.6
SHEET 30 OF 70

CD23-0036

P:\BLVDWAY BUILDERS\HILLSIDE AT CASTLE ROCK\06 CAD\SHEET SETS\PH 3-4 CDS\13 SANITARY SEWER DETAILS.DWG 5/30/2024 3:28 PM David Iovinelli

© 2024, ALL RIGHTS RESERVED.



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 SD-5, SS-2, SS-11, AND W-28.

Sheet Revisions		
Date	Comments	
3/20	REVISED PER STAFF COMMENTS	

Town of Castle Rock
COLORADO

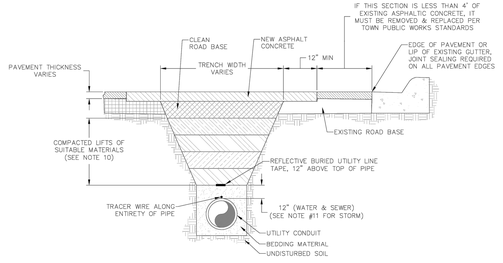
Town of Castle Rock
100 N. Wilcox St.
Castle Rock, CO 80104
Phone: (720) 733-2200
Fax: (720) 733-2217
Development Services

SEWER CLEANOUT

Issued By: Town of Castle Rock, Development Services January 1, 2023

DETAIL PLAN NO.
SS-7
Sheet 1 of 1

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 MOPEC 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		
Date	Comments	
3/20	REVISED PER STAFF COMMENTS	
8/22	REVISED PER STAFF COMMENTS	

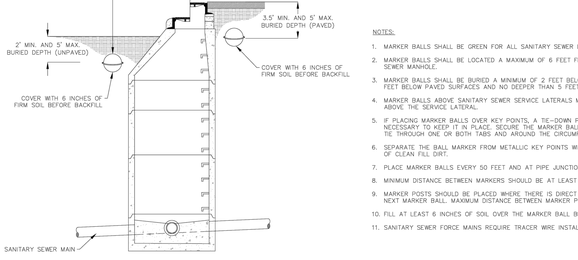
Town of Castle Rock
COLORADO

Town of Castle Rock
100 N. Wilcox St.
Castle Rock, CO 80104
Phone: (720) 733-2200
Fax: (720) 733-2217
Development Services

SANITARY SEWER TRENCH DETAIL

Issued By: Town of Castle Rock, Development Services January 1, 2023

DETAIL PLAN NO.
SS-8
Sheet 1 of 1



NOTES:
1. MARKER BALLS SHALL BE GREEN FOR ALL SANITARY SEWER LATERALS AND MANHOLES.
2. MARKER BALLS SHALL BE LOCATED A MAXIMUM OF 6 FEET FROM EVERY SANITARY SEWER MANHOLE.
3. MARKER BALLS SHALL BE BURIED A MINIMUM OF 2 FEET BELOW UNPAVED SURFACES, 3.5 FEET BELOW PAVED SURFACES AND NO DEEPER THAN 5 FEET BELOW FINISHED GRADE.
4. MARKER BALLS ABOVE SANITARY SEWER SERVICE LATERALS MUST BE LOCATED DIRECTLY ABOVE THE SERVICE LATERAL.
5. IF PLACING MARKER BALLS OVER KEY POINTS, A TIE-DOWN PROCEDURE MAY BE NECESSARY TO KEEP IT IN PLACE. SECURE THE MARKER BALL BY INSERTING A CABLE TIE THROUGH ONE OR BOTH TABS AND AROUND THE CIRCUMFERENCE OF THE PIPE.
6. SEPARATE THE BALL MARKER FROM METALLIC KEY POINTS WITH A MINIMUM OF 4 INCHES OF CLEAN FILL DIRT.
7. PLACE MARKER BALLS EVERY 50 FEET AND AT PIPE JUNCTIONS.
8. MINIMUM DISTANCE BETWEEN MARKERS SHOULD BE AT LEAST 6 FEET.
9. MARKER POSTS SHOULD BE PLACED WHERE THERE IS DIRECT LINE OF SIGHT TO THE NEXT MARKER BALL. MAXIMUM DISTANCE BETWEEN MARKER POSTS SHOULD BE 400 FEET.
10. FILL AT LEAST 6 INCHES OF SOIL OVER THE MARKER BALL BEFORE BACKFILL.
11. SANITARY SEWER FORCE MAINS REQUIRE TRACER WIRE INSTALLATION.

Sheet Revisions		
Date	Comments	
12/21	REVISED PER STAFF COMMENTS	
10/22	REVISED PER STAFF COMMENTS	

Town of Castle Rock
COLORADO

Town of Castle Rock
100 N. Wilcox St.
Castle Rock, CO 80104
Phone: (720) 733-2200
Fax: (720) 733-2217
Development Services

MARKER BALLS FOR SANITARY SEWERS

Issued By: Town of Castle Rock, Development Services January 1, 2023

DETAIL PLAN NO.
SS-11
Sheet 1 of 1

No.	REVISION	BY	DATE

PRELIMINARY
NOT FOR
CONSTRUCTION

EES
ENTITLEMENT AND ENGINEERING SOLUTIONS, INC.
3801 E. Florida Avenue, Suite 425
Denver, CO 80210
303-572-7997 www.ees.us.com

BLVD. BUILDERS

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

CONSTRUCTION PLANS

HILLSIDE AT CASTLE ROCK - PHASES 3-4

CASTLE ROCK, COLORADO

SANITARY SEWER DETAILS 2

PROJECT NO:	BLV001.02
DESIGNED BY:	WLB
DRAWN BY:	WLB
DATE:	5/30/2024

C7.7
SHEET 31 OF 70

CD23-0036

P:\BLVD\WAY BUILDERS\HILLSIDE AT CASTLE ROCK\08 CAD\SHEET SET\SPH 3-4 CDS\13 SANITARY SEWER DETAILS.DWG 5/30/2024 3:28 PM David Iovinelli

Appendix G - Reference Materials

July 25, 2025

Town of Castle Rock
Fire and Rescue Department
300 Perry St.
Castle Rock, CO 80104

J·R ENGINEERING
A Westrian Company

RE: Confirmation of Fire Flow Adequacy for Hillside at Castle Rock – Phases 3, 4, and 5

Dear Fire Protection:

This letter is provided to document updates regarding the required fire flow for the Hillside at Castle Rock development, specifically for Phases 3, 4, and 5.

Phases 3 & 4 of the development will consist of approximately 65 residential units, including 46 paired (duplex) units and 19 single-family detached units. Fire flow for these units will be provided via public hydrants (1,750 gpm @ 20 psi for 2-hours) located within the adjacent public rights-of-way.

The development, originally referenced in the April 2016 Paragon Consultants utility and fire flow correspondence, has since undergone revisions to its planning and building configurations. The initially planned fire flow for the Assisted Living facility was 2,875 gallons per minute (gpm). However, the Assisted Living component is no longer proposed as part of this development. In its place, revised residential layouts have been introduced, including single-family, duplex and multifamily units all of which are construction type V-B and are not sprinklered.

The largest unit is a single-family home with 3,699 square feet including the optional finished basement. As a result of these changes and the incorporation of fire-resistant construction, the required fire flow has been reduced to 1,750 gpm at 20 psi for a duration of 2 hours. This revised fire flow applies to Phases 3 and 4 of the project.

Phase 5 will include 48 multifamily equivalent townhome units constructed with 2-hour fire-resistance-rated fire walls separating units. This enhanced fire-resistant construction further supports the justification for the reduced fire flow requirement of 1,500 gpm at 20 psi for a duration of 2-hours.

All future development phases will be supported by appropriately sized utility infrastructure, including water mains and hydrants, consistent with the Town of Castle Rock's adopted fire protection and water system criteria.

If you have any questions, please call me at 303-267-6190.

FIRE REVIEW AND PERMIT 18541

Respectfully submitted,

JR ENGINEERING, LLC

Kurtis W. Williams, PE

Fire flow and duration 1750 GPM at 20 PSI for two hours

08/01/2025

Castel Rock Fire & Rescue Representative Date

7200 South Alton Way, Suite C400, Centennial, CO 80112
303-740-9393 • Fax: 303-721-9019 • www.jrengineering.com

Project Name: **Hillside at Castle Rock**
Project Location: ***Tap 2*** ***Phases 3 & 4 Only***
Date prepared: ***29-May-24***

Seasonal Water Use and Peak Flow Projections Prepared By HydroSystems-KDI, Inc.

Description	Irrigated Area (Acre)	Month	Application Rate (in/mo/sqft)	Water Application (gallons)	Peak Season Projected Demand (GPM)
		May	1.67	2,787	
Sapphire Point Blend	0.06	June	2.22	3,708	
Spray Irrigated		July	**2.40**	**4,006**	**0.7**
		August	2.09	3,484	
		September	1.62	2,697	
Irrigation Season Totals			10.00	16,683	
				0.05	acre-feet
		May	1.67	43,610	
Shrubs & Trees	0.96	June	2.22	58,029	
Drip Irrigated		July	**2.40**	**62,689**	**11.2**
		August	2.09	54,512	
		September	1.62	42,203	
Irrigation Season Totals			10.00	261,042	
				0.80	acre-feet

Site Totals

Irrigated Area:	***44,555***	***Sq.Ft.***	***1.02***	***Acres***
Water Use per Year:	***277,724***	***Gallons***	***0.85***	***Acre-feet***
Average Water per Year:	***6.23***	***Gallons/SqFt***	***10.00***	***Inches/SqFt***
Peak Season Monthly Water Use:	***66,695***	***Gallons***	***0.20***	***Acre-feet***
Average Peak Season Flow:	***12***	***GPM***		
Required Tap Size:	***1***	***Inches***		

Projections are based on a three day per week, seven hour per day, peak season watering schedule.
Peak season application for Sapphire Point Blend is 0.54" per week.
Peak season application for Shrubs & Trees is 0.54" per week.

Castle Rock Water
175 Kellogg Court, Castle Rock CO 80109
720-733-6000

Final Utility Report Checklist

The Final Utility Report must be in conformance with the latest Town of Castle Rock Water and Wastewater System Design Criteria Manuals, available on the Town's website.

For the Final Utility Report, the Preliminary Utility Report and associated hydraulic modeling shall be thoroughly updated to reflect the final design and layout of all water/wastewater system facilities and mains since the approval of the Site Development Plan (SDP), and as now shown on the Construction Drawings (CDs). The Final Utility Report shall describe adherence to the Preliminary Utility Report or describe deviations, and shall resolve any outstanding issues regarding the Town's ability to serve the development. As applicable, hydraulic modeling shall be provided for both the initial phase of development represented on the CDs, and for full build-out of the overall site. The Final Utility Report shall include a discussion of applicable SCADA requirements.

The following outline sets forth the **required minimum** content to be provided in the Final Utility Report that shall be submitted with the CDs. This report must be prepared by, or the report preparation supervised by a registered Professional Engineer licensed in Colorado. A copy of this checklist must be submitted with the Final Utility Report.

Please check off the following items to assure your report is complete. Appropriate notations shall be provided with the checklist. For example, if a specific item is not addressed or not applicable, an explanation needs to be provided.

Included	N/A	
X		**TITLE SHEET**
X		A. Name of Project, including legal name of development
X		B. Address
X		C. Owner
X		D. Developer
X		E. Engineer
X		F. Submittal date and revision dates as applicable
X		**APPROVAL BLOCK SHEET** (Available on Town's website)
X		**TABLE OF CONTENTS**
X		**PROJECT LOCATION AND DESCRIPTION**
X		A. Site Location
X		B. Description of Property and Land Use
X		**CALCULATED WATER DEMANDS**
X		A. Average Day Demands (ADD)
X		B. Max Day Demands (MDD)

Final Utility Report – Formatting Checklist

Included	N/A	
X		**CALCULATED WATER DEMANDS (CONT.)**
X		C. Peak Hour Demands (PHD)
X		D. Irrigation Demands
X		**EXISTING WATER SYSTEM**
X		A. Existing Distribution System
X		B. Existing Supply Facilities
X		**PROPOSED WATER SYSTEM**
X		A. Proposed Distribution System
X		B. Proposed Supply Facilities
X		C. Required Fire Flows
X		D. Land Dedication Requirements
X		**PROPOSED WATER SYSTEM ANALYSIS AND MODELING**
X		A. Hydraulic Models
X		B. Hydraulic Modeling Scenarios
X		C. Hydraulic Modeling Output and Required Schematics
X		D. Fire Flow Test Results
X		**CALCULATED WASTEWATER FLOWS**
X		A. Average Day Wastewater Flows (ADF)
X		B. Peaking Factor (PF)
X		C. Peak Design Flows (PDF)
X		**EXISTING WASTEWATER SYSTEM**
X		A. Existing Collection System
X		**PROPOSED WASTEWATER SYSTEM**
X		A. Proposed Collection System
X		B. Proposed Wastewater Facilities
X		C. Land Dedication Requirements
X		**PROPOSED WASTEWATER SYSTEM ANALYSIS AND MODELING**
X		A. Hydraulic Models
X		B. Hydraulic Modeling Scenarios
X		C. Hydraulic Modeling Output and Required Schematics
X		**POTENTIAL SUBDIVISION IMPROVEMENTS AGREEMENT (SIA) ITEMS**
X		**POTENTIAL PERMITTING REQUIREMENTS**
X		**REFERENCES**

Final Utility Report – Formatting Checklist

Included	N/A	
X		**APPENDICES**
X		Appendix A — Water Demands
X		Water Fixture Unit Counts and Tap/Meter Sizing Calculations
X		Irrigation Demands
X		Hydraulic Worksheet(s) and Irrigation Chart(s)
X		Appendix B — Water Storage
X		Confirmation Memo for Required Fire Flow
X		Appendix C — Water Hydraulic Analysis and Modeling
X		Fire Flow Test Results
X		Appendix D — Wastewater Flows
X		Appendix E — Wastewater Hydraulic Modeling
X		Appendix F — Maps and Plans
X		A. Vicinity Map
X		B. Utility Map(s) provided by the Utilities Department
X		C. Overall Utility Plan from the CDs
X		D. Water/Wastewater Utility Plan(s)

Notes/Comments: